wwPDB EM Validation Summary Report

Mar 10, 2025 – 08:55 PM EDT

PDB ID	:	9CPC
EMDB ID	:	EMD-45802
Title	:	Atomic model of porcine brain ventricles cilia doublet microtubule (48-nm periodicity)
Authors	:	Sun, C.; Zeng, J.; Zhang, R.
Deposited on	:	2024-07-18
Resolution	:	3.65 Å(reported)

This is a wwPDB EM Validation Summary Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

The following versions of software and data (see references ⓘ) were used in the production of this report:

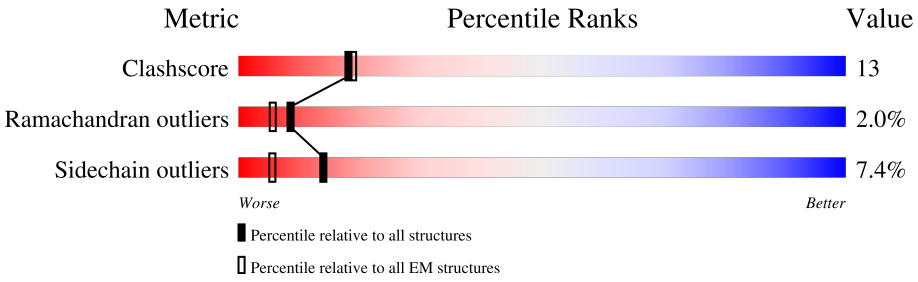
EMDB validation analysis	:	0.0.1.dev117
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.41.4

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 3.65 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	1A	1048	54% 55% 44%
1	1B	1048	14% 14% 86%
2	1C	685	23% 30% 69%
2	1D	685	19% 30% 69%
3	1F	262	65% 64% 35%
3	1G	262	65% 32% 30% 35%
4	1H	711	19% 26% 73%
4	1I	711	12% 12% 88%

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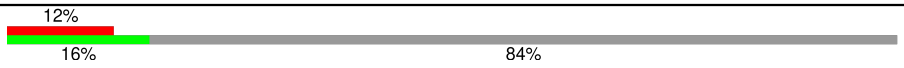
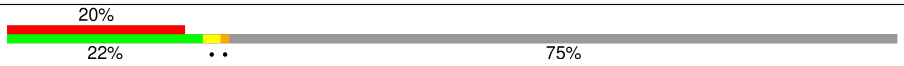
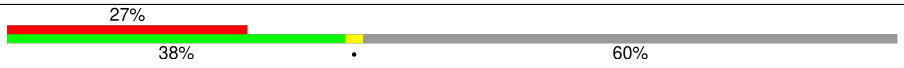
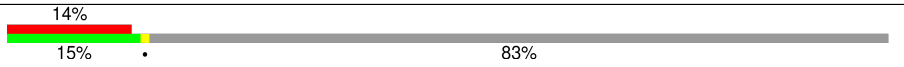
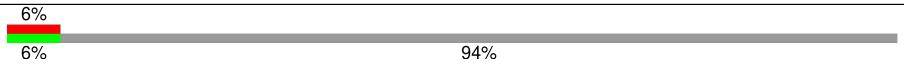
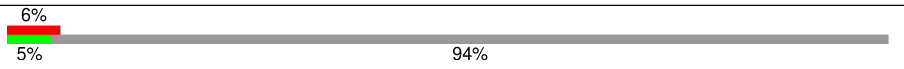
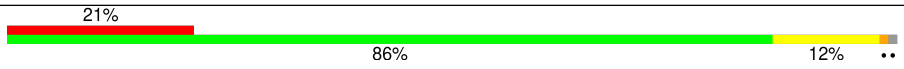
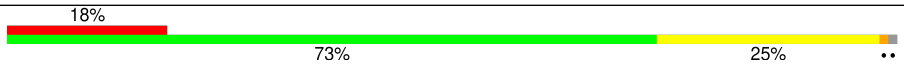
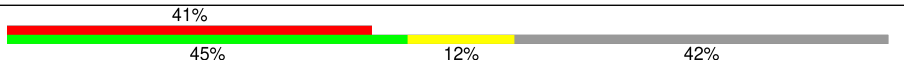
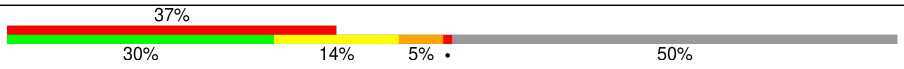
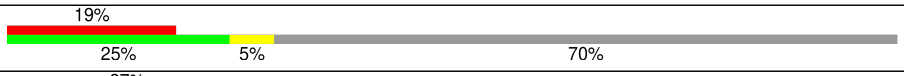
Mol	Chain	Length	Quality of chain
4	1J	711	
5	1L	620	
5	1M	620	
5	1N	620	
6	1P	1456	
6	1Q	1456	
7	1S	620	
7	1T	620	
7	1U	620	
8	1W	549	
8	1X	549	
8	1Y	549	
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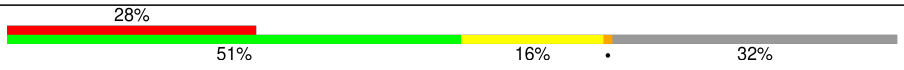
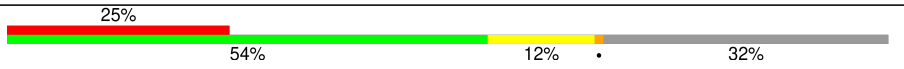
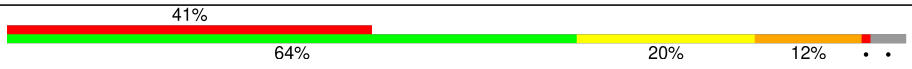
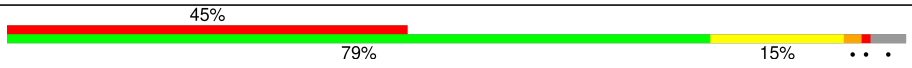
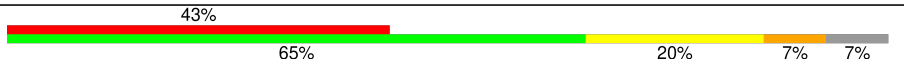
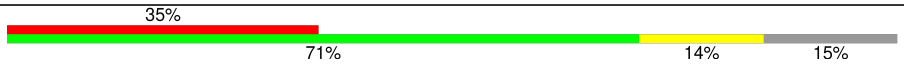
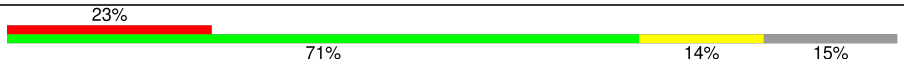
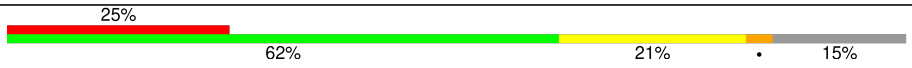
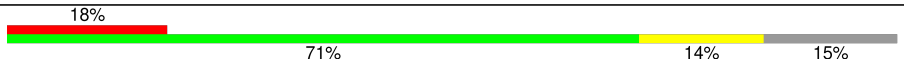
9	2B	552	
9	2C	552	
10	2E	170	
10	2F	170	
10	2G	170	
11	2I	256	
11	2J	256	
11	2K	256	
12	2M	257	
12	2N	257	
12	2O	257	
12	2P	257	

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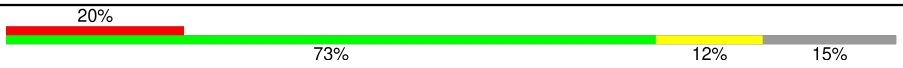
Mol	Chain	Length	Quality of chain
12	2Q	257	
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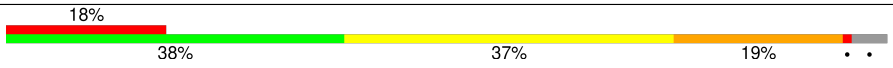
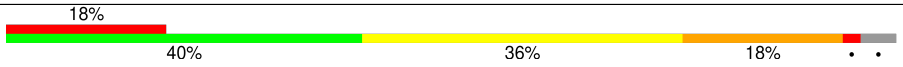
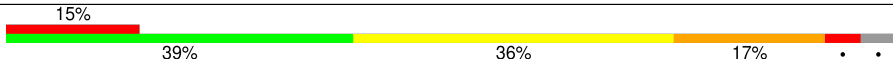
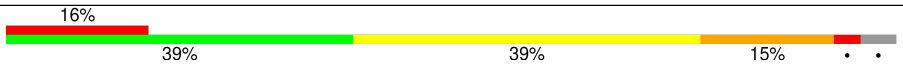
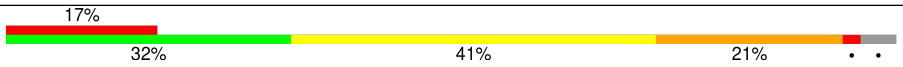
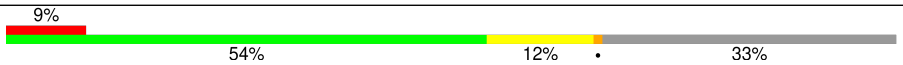
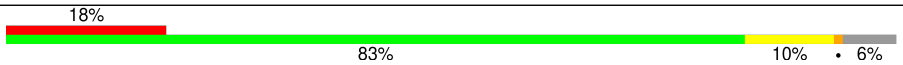
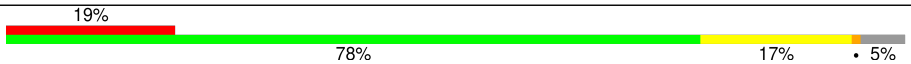
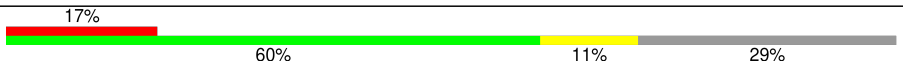
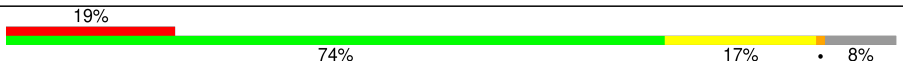
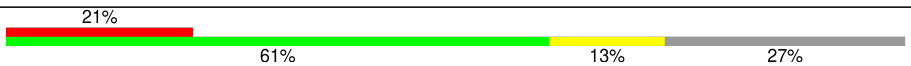
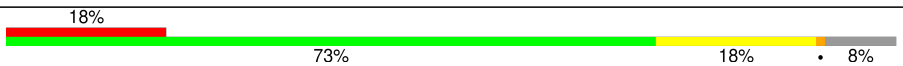
13	2T	193	
13	2U	193	
13	2V	193	
13	2W	193	
13	2X	193	
14	3A	177	
14	3B	177	
14	3C	177	
15	3E	418	
15	3F	418	
15	3G	418	
15	3H	418	
16	3J	430	
16	3K	430	
16	3L	430	
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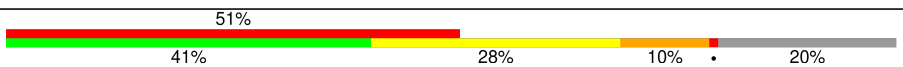
17	3O	490	
17	3P	490	
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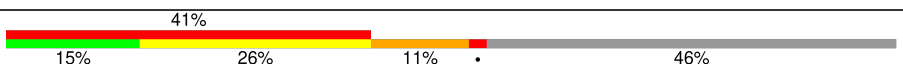
17	3R	490	
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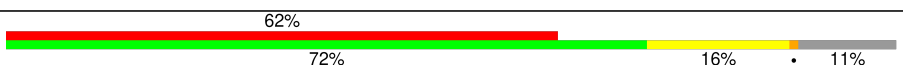
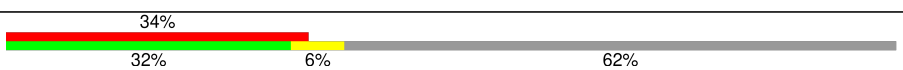
18	3U	447	
18	3V	447	

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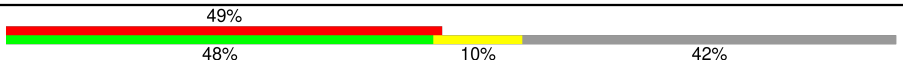
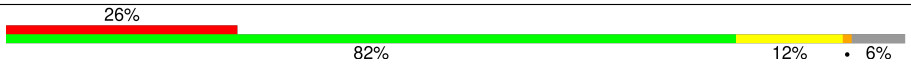
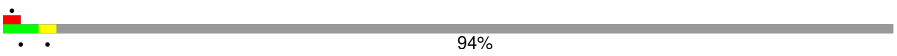
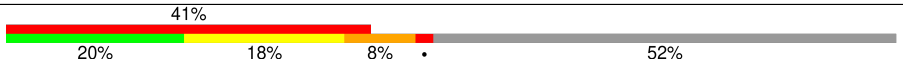
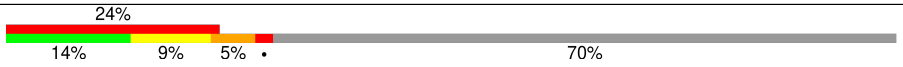
Mol	Chain	Length	Quality of chain
18	3W	447	
19	3Y	377	
19	3Z	377	
20	4A	379	
20	4B	379	
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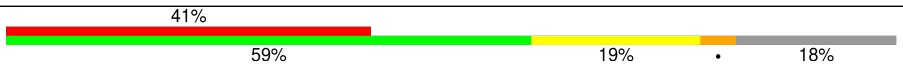
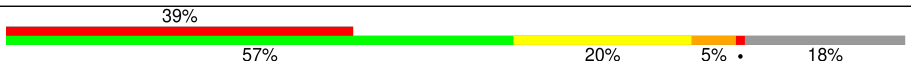
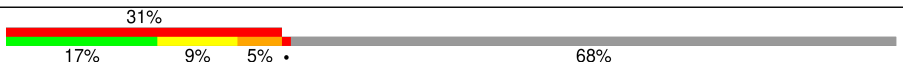
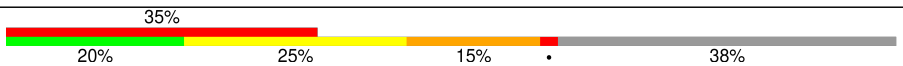
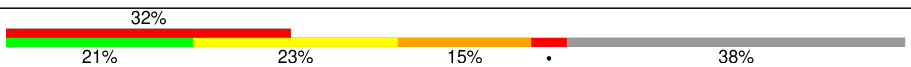
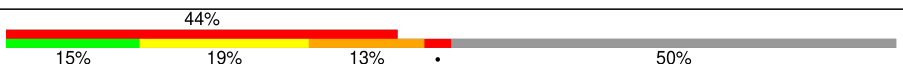
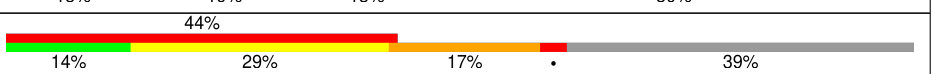
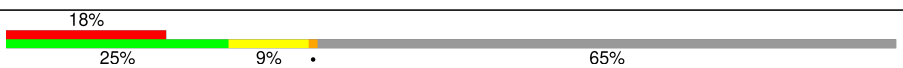
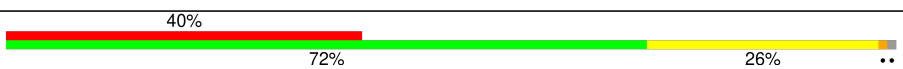
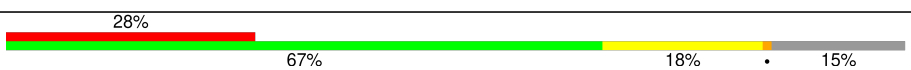
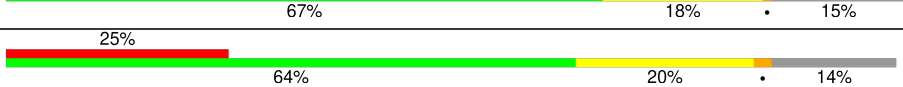
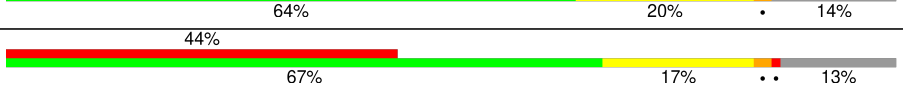
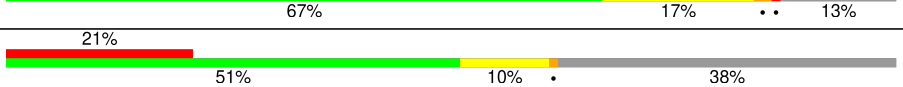
21	4F	640	
22	4H	748	
22	4I	748	
22	4J	748	
22	4K	748	
23	4M	272	
23	4N	272	
23	4P	272	
23	4Q	272	
23	4R	272	
24	4O	252	
25	4T	469	
26	4V	377	
26	4W	377	
27	4Y	314	
27	4Z	314	
28	5B	230	
29	5D	136	

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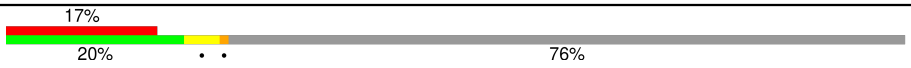
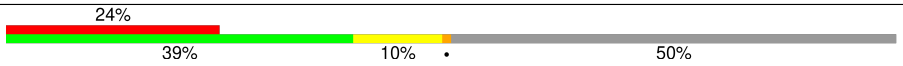
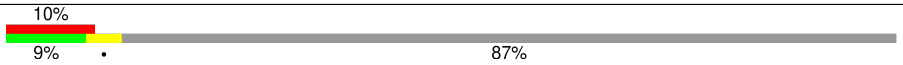
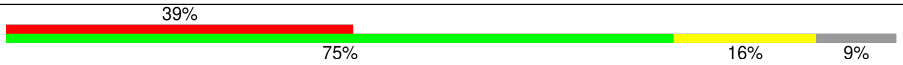
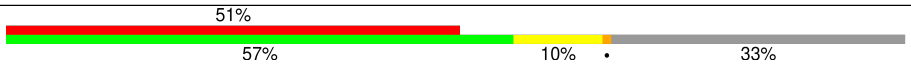
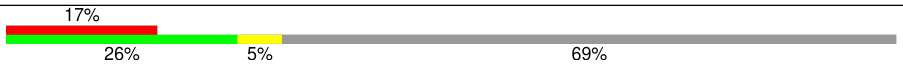
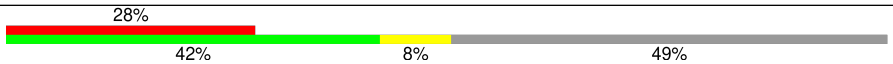
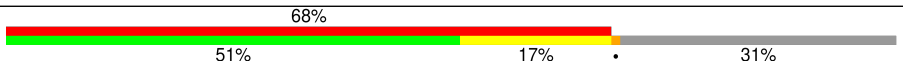
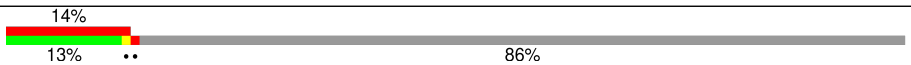
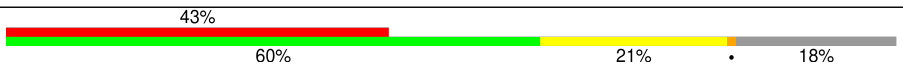
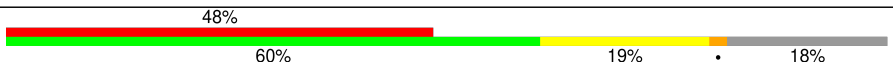
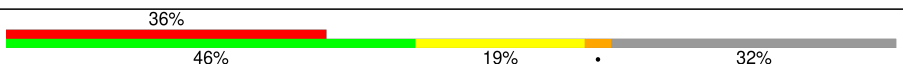
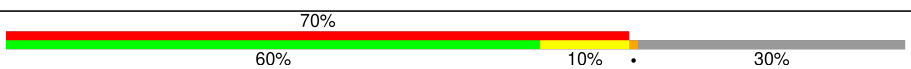
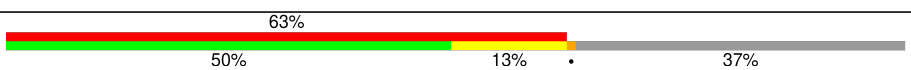
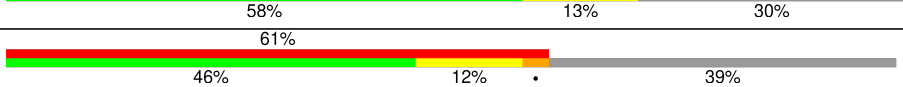
Mol	Chain	Length	Quality of chain
29	5E	136	
30	5G	121	
31	5I	879	
31	5J	879	
32	5L	101	
33	5N	495	
33	5O	495	
34	5Q	514	
34	5R	514	
35	5T	196	
35	5U	196	
36	5W	282	
36	5X	282	
36	5Y	282	
36	5Z	282	
37	6A	135	
38	6C	310	
38	6D	310	
39	6F	223	
39	6G	223	
39	6H	223	
39	6I	223	
39	6J	223	
39	6K	223	
39	6L	223	

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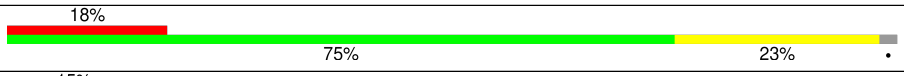
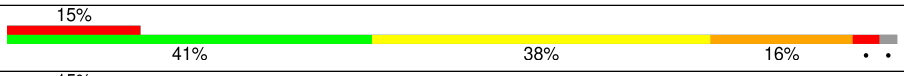
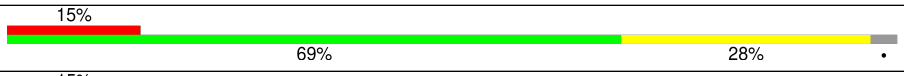
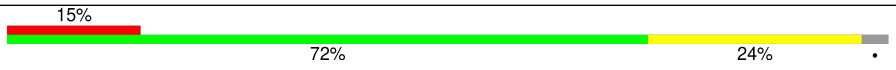
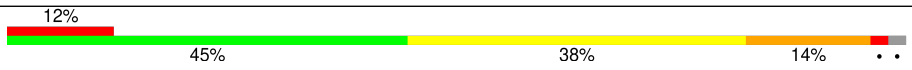
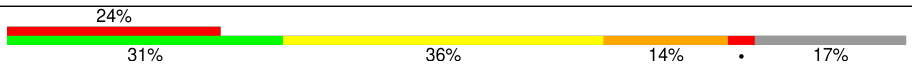
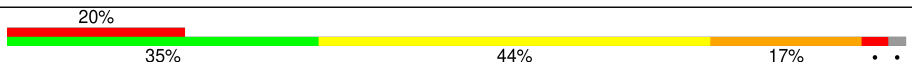
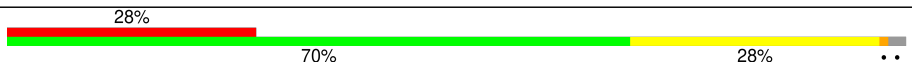
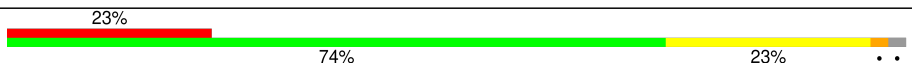
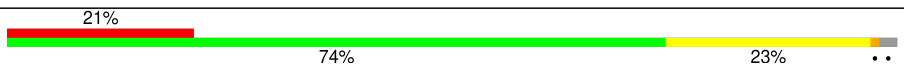
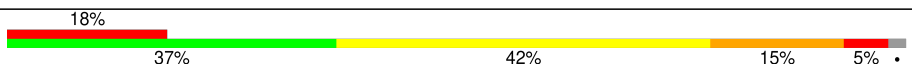
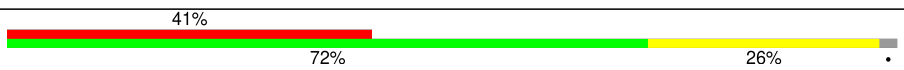
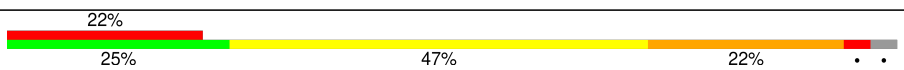
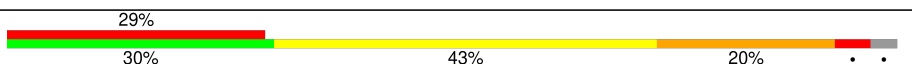
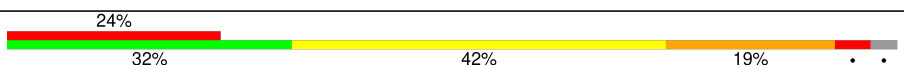
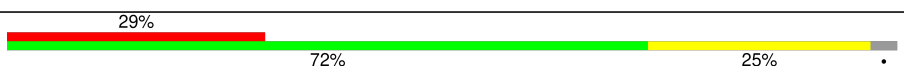
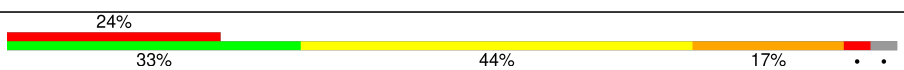
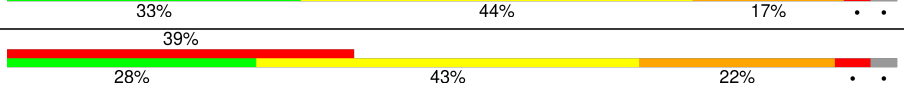
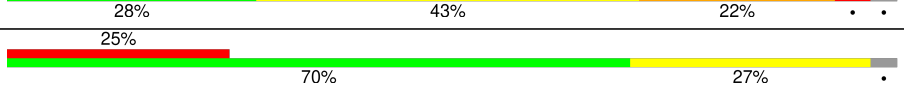
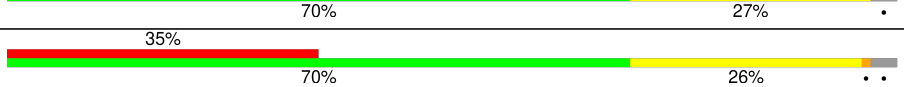
Mol	Chain	Length	Quality of chain
40	AA	447	
40	AE	447	
40	AF	447	
40	AG	447	
40	AH	447	
40	BA	447	
40	BE	447	
40	BF	447	
40	BG	447	
40	BH	447	
40	BI	447	
40	CA	447	
40	CE	447	
40	CF	447	
40	CG	447	
40	CH	447	
40	CI	447	
40	DA	447	
40	DE	447	
40	DF	447	
40	DG	447	
40	DH	447	
40	DI	447	
40	EA	447	
40	EE	447	

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Mol	Chain	Length	Quality of chain
40	EF	447	24% 70% 27%
40	EG	447	21% 70% 25%
40	EH	447	16% 38% 38% 16%
40	EI	447	32% 33% 37% 22% 5%
40	FA	447	19% 38% 35% 22%
40	FE	447	40% 73% 24%
40	FF	447	22% 75% 22%
40	FG	447	23% 74% 22%
40	FH	447	23% 74% 23%
40	FI	447	34% 72% 24%
40	GA	447	19% 70% 26%
40	GE	447	32% 32% 43% 20%
40	GF	447	20% 73% 23%
40	GG	447	18% 71% 23%
40	GH	447	13% 38% 40% 16%
40	GI	447	21% 37% 39% 17%
40	HA	447	17% 72% 24%
40	HE	447	32% 35% 37% 21%
40	HF	447	17% 73% 24%
40	HG	447	15% 77% 19%
40	HH	447	18% 72% 24%
40	HI	447	21% 69% 28%
40	IA	447	19% 73% 24%
40	IE	447	41% 72% 22% 6%
40	IF	447	21% 72% 24%

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Mol	Chain	Length	Quality of chain
40	IG	447	18% 71% 25%
40	IH	447	16% 70% 26%
40	II	447	20% 67% 30%
40	JA	447	20% 73% 24%
40	JD	447	27% 69% 28%
40	JE	447	23% 71% 26%
40	JF	447	21% 74% 21%
40	JG	447	19% 77% 21%
40	JH	447	21% 72% 25%
40	KA	447	15% 74% 22%
40	KD	447	15% 73% 23%
40	KE	447	13% 71% 26%
40	KF	447	16% 77% 19%
40	KG	447	15% 73% 26%
40	KH	447	15% 71% 27%
40	LA	447	14% 74% 24%
40	LD	447	11% 74% 22%
40	LE	447	13% 78% 18%
40	LF	447	5% 49% 33% 13%
40	LG	447	44% 38% 13%
40	LH	447	13% 75% 22%
40	MA	447	6% 51% 35% 10%
40	MD	447	14% 79% 18%
40	ME	447	12% 77% 19%
40	MF	447	5% 47% 36% 12%

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Mol	Chain	Length	Quality of chain
40	MG	447	5% 46% 38% 12%
40	MH	447	7% 50% 32% 15%
40	NA	447	26% 70% 26%
40	ND	447	24% 39% 39% 15%
40	NE	447	29% 71% 25%
40	NF	447	26% 72% 24%
40	NG	447	27% 71% 25%
40	NH	447	30% 71% 26%
40	OA	447	24% 72% 25%
40	OD	447	46% 67% 27%
40	OE	447	28% 71% 25%
40	OF	447	32% 69% 29%
40	OG	447	28% 69% 28%
40	OH	447	27% 30% 43% 20%
40	PA	447	36% 68% 28%
40	PD	447	63% 65% 26% 9%
40	PE	447	39% 71% 26%
40	PF	447	39% 69% 28%
40	PG	447	39% 70% 26%
40	PH	447	41% 68% 28%
40	QA	447	45% 68% 28%
40	QE	447	52% 62% 34%
40	QF	447	39% 71% 25%
40	QG	447	43% 69% 26%
40	QH	447	49% 74% 23%

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Mol	Chain	Length	Quality of chain
40	RA	447	42% 69% 27%
40	RE	447	51% 67% 29%
40	RF	447	42% 69% 26%
40	RG	447	41% 66% 30%
40	RH	447	47% 71% 25%
40	RI	447	70% 62% 21% 16%
40	SA	447	36% 65% 28%
40	SE	447	47% 66% 31%
40	SF	447	41% 66% 30%
40	SG	447	36% 67% 29%
40	SH	447	39% 65% 31%
40	SI	447	70% 74% 22%
40	TA	447	32% 72% 25%
40	TE	447	48% 72% 24%
40	TF	447	36% 71% 25%
40	TG	447	36% 72% 25%
40	TH	447	28% 70% 26%
40	TI	447	52% 70% 26%
40	UA	447	32% 73% 23%
40	UE	447	42% 68% 28%
40	UF	447	26% 34% 41% 19%
40	UG	447	34% 70% 26%
40	UH	447	27% 72% 25%
40	UI	447	31% 29% 45% 21%
40	VA	447	25% 72% 25%

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Mol	Chain	Length	Quality of chain
40	VF	447	28% 71% 27%
40	VG	447	17% 73% 23%
40	VH	447	20% 78% 19%
40	VI	447	24% 75% 23%
40	VJ	447	23% 68% 28%
40	WA	447	23% 74% 24%
40	WE	447	24% 74% 24%
40	WF	447	16% 71% 26%
40	WG	447	17% 65% 31%
40	WH	447	19% 73% 26%
40	WI	447	19% 74% 23%
41	AB	449	18% 71% 24% 5%
41	AL	449	12% 74% 21% 5%
41	AM	449	14% 73% 22% 5%
41	AN	449	14% 72% 22% 5%
41	AO	449	8% 47% 38% 9% 5%
41	AP	449	17% 75% 20% 5%
41	BB	449	15% 44% 35% 15% 5%
41	BL	449	23% 71% 24% 5%
41	BM	449	14% 39% 39% 15% 5%
41	BN	449	20% 70% 24% 5%
41	BO	449	15% 45% 34% 13% 5%
41	BP	449	13% 40% 39% 14% 5%
41	CB	449	23% 65% 30% 5%
41	CL	449	26% 33% 40% 18% 5%

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Mol	Chain	Length	Quality of chain
41	CM	449	18% 41% 38% 13% • 5%
41	CN	449	15% 34% 40% 18% • 5%
41	CO	449	18% 34% 44% 16% • 5%
41	CP	449	17% 35% 39% 18% • 5%
41	DB	449	22% 30% 44% 18% • 5%
41	DL	449	53% 27% 41% 22% 5% 5%
41	DM	449	22% 29% 41% 21% • 5%
41	DN	449	20% 25% 44% 21% 6% 5%
41	DO	449	28% 69% 26% • 5%
41	DP	449	22% 35% 38% 19% • 5%
41	EB	449	20% 69% 25% • 5%
41	EL	449	59% 61% 20% 19%
41	EM	449	18% 30% 43% 20% • 5%
41	EN	449	21% 70% 25% 5%
41	EO	449	18% 74% 21% 5%
41	EP	449	18% 36% 41% 15% • 5%
41	FB	449	20% 73% 21% • 5%
41	FM	449	24% 68% 27% 5%
41	FN	449	21% 71% 24% 5%
41	FO	449	19% 67% 28% 5%
41	FP	449	25% 68% 26% • 5%
41	GB	449	17% 73% 22% • 5%
41	GM	449	21% 67% 28% • 5%
41	GN	449	13% 36% 42% 15% • 5%
41	GO	449	15% 70% 25% 5%

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Mol	Chain	Length	Quality of chain
41	GP	449	21% 67% 27% 5%
41	HB	449	15% 73% 22% • 5%
41	HM	449	18% 68% 27% 5%
41	HN	449	11% 39% 39% 14% • 5%
41	HO	449	14% 68% 26% • 5%
41	HP	449	17% 76% 19% • 5%
41	HQ	449	37% 70% 24% • 5%
41	IB	449	15% 72% 23% 5%
41	IM	449	21% 69% 26% 5%
41	IN	449	19% 69% 26% 5%
41	IO	449	15% 72% 22% 5%
41	IP	449	15% 67% 28% 5%
41	IQ	449	22% 69% 25% • 5%
41	JB	449	14% 67% 28% 5%
41	JL	449	20% 69% 25% • 5%
41	JM	449	11% 33% 42% 18% • 5%
41	JN	449	19% 69% 26% 5%
41	JO	449	17% 75% 20% 5%
41	KB	449	13% 71% 23% • 5%
41	KL	449	8% 41% 39% 14% • 5%
41	KM	449	14% 75% 19% • 5%
41	KN	449	15% 73% 22% 5%
41	KO	449	14% 69% 26% 5%
41	KP	449	26% 65% 21% 14%
41	LB	449	8% 72% 23% 5%

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Mol	Chain	Length	Quality of chain
41	LL	449	10% 73% 22% • 5%
41	LM	449	11% 75% 20% 5%
41	LN	449	11% 73% 22% 5%
41	LO	449	10% 71% 23% • 5%
41	LP	449	12% 78% 18% 5%
41	MB	449	12% 71% 24% 5%
41	ML	449	9% 73% 22% 5%
41	MM	449	11% 76% 19% • 5%
41	MN	449	11% 69% 25% • 5%
41	MO	449	5% 47% 36% 10% • 5%
41	MP	449	11% 71% 23% 5%
41	NB	449	24% 69% 25% • 5%
41	NL	449	31% 68% 26% • 5%
41	NM	449	27% 73% 22% • 5%
41	NN	449	29% 67% 28% 5%
41	NO	449	28% 72% 23% 5%
41	NP	449	41% 64% 28% • 7%
41	OB	449	24% 66% 29% • 5%
41	OL	449	32% 67% 27% • 5%
41	OM	449	26% 67% 27% 5%
41	ON	449	27% 65% 30% • 5%
41	OO	449	30% 64% 31% 5%
41	OP	449	42% 68% 26% • 5%
41	PB	449	39% 63% 31% • 5%
41	PL	449	44% 66% 29% 5%

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Mol	Chain	Length	Quality of chain
41	PM	449	40% 67% 27% • 5%
41	PN	449	37% 71% 24% 5%
41	PO	449	42% 70% 24% 5%
41	PP	449	47% 67% 27% • 5%
41	QB	449	34% 23% 43% 24% 5% 5%
41	QL	449	54% 69% 25% • 5%
41	QM	449	45% 66% 28% • 5%
41	QN	449	45% 67% 27% • 5%
41	QO	449	48% 72% 22% • 5%
41	QP	449	46% 23% 40% 27% 5% 5%
41	RB	449	42% 69% 25% • 5%
41	RL	449	64% 71% 23% • 5%
41	RM	449	44% 66% 28% • 5%
41	RN	449	42% 68% 27% 5%
41	RO	449	42% 65% 29% • 5%
41	RP	449	51% 67% 27% • 5%
41	SB	449	37% 66% 26% • 5%
41	SL	449	57% 58% 27% 15%
41	SM	449	39% 70% 25% 5%
41	SN	449	34% 71% 23% • 5%
41	SO	449	24% 28% 46% 17% 5% 5%
41	SP	449	42% 67% 27% • 5%
41	TB	449	30% 71% 23% • 5%
41	TL	449	63% 66% 20% 14%
41	TM	449	33% 65% 30% • 5%

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Mol	Chain	Length	Quality of chain
41	TN	449	27% 71% 23% • 5%
41	TO	449	26% 66% 28% • 5%
41	TP	449	32% 65% 29% • 5%
41	UB	449	29% 68% 26% • 5%
41	UM	449	32% 69% 26% 5%
41	UN	449	29% 64% 30% • 5%
41	UO	449	23% 68% 26% • 5%
41	UP	449	19% 32% 41% 20% • 5%
41	VB	449	18% 69% 26% • 5%
41	VN	449	19% 71% 23% • 5%
41	VO	449	19% 68% 27% 5%
41	VP	449	23% 68% 27% 5%
41	VQ	449	21% 73% 22% • 5%
41	WB	449	18% 67% 28% 5%
41	WM	449	12% 39% 37% 16% • 5%
41	WN	449	11% 37% 39% 16% • 5%
41	WO	449	22% 69% 26% 5%
41	WP	449	17% 73% 22% 5%
41	WQ	449	29% 73% 21% 6%

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
42	GTP	MB	502	-	-	X	-
42	GTP	MN	501	-	-	X	-

2 Entry composition (i)

There are 43 unique types of molecules in this entry. The entry contains 1114625 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Armadillo repeat-containing protein 4 isoform 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	1A	587	Total	C	N	O	S	0	0
			4498	2806	817	843	32		
1	1B	149	Total	C	N	O	S	0	0
			1135	698	212	217	8		

- Molecule 2 is a protein called Outer dynein arm-docking complex subunit 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	1C	211	Total	C	N	O	S	0	0
			1699	1076	297	317	9		
2	1D	211	Total	C	N	O	S	0	0
			1699	1076	297	317	9		

- Molecule 3 is a protein called EF-hand calcium binding domain 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	1F	171	Total	C	N	O	S	0	0
			1375	887	219	255	14		
3	1G	171	Total	C	N	O	S	0	0
			1375	887	219	255	14		

- Molecule 4 is a protein called Coiled-coil domain-containing protein 114 isoform X2.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	1H	195	Total	C	N	O	S	0	0
			1633	1001	326	299	7		
4	1I	88	Total	C	N	O	S	0	0
			727	439	150	134	4		
4	1J	115	Total	C	N	O	S	0	0
			973	601	189	180	3		

- Molecule 5 is a protein called Outer dynein arm docking complex subunit 3.

Mol	Chain	Residues	Atoms	AltConf	Trace
5	1L	155	Total C N O S 1306 801 247 253 5	0	0
5	1M	248	Total C N O S 2086 1287 392 402 5	0	0
5	1N	103	Total C N O 865 539 164 162	0	0

There are 72 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
1L	478	ALA	-	insertion	UNP A0A5G2RIE6
1L	479	ASP	-	insertion	UNP A0A5G2RIE6
1L	480	SER	-	insertion	UNP A0A5G2RIE6
1L	481	ALA	-	insertion	UNP A0A5G2RIE6
1L	482	PRO	-	insertion	UNP A0A5G2RIE6
1L	483	GLU	-	insertion	UNP A0A5G2RIE6
1L	484	GLU	-	insertion	UNP A0A5G2RIE6
1L	485	ALA	-	insertion	UNP A0A5G2RIE6
1L	486	PRO	-	insertion	UNP A0A5G2RIE6
1L	487	PRO	-	insertion	UNP A0A5G2RIE6
1L	488	ARG	-	insertion	UNP A0A5G2RIE6
1L	489	ALA	-	insertion	UNP A0A5G2RIE6
1L	490	PRO	-	insertion	UNP A0A5G2RIE6
1L	491	GLN	-	insertion	UNP A0A5G2RIE6
1L	492	ASP	-	insertion	UNP A0A5G2RIE6
1L	493	VAL	-	insertion	UNP A0A5G2RIE6
1L	494	ARG	-	insertion	UNP A0A5G2RIE6
1L	495	GLY	-	insertion	UNP A0A5G2RIE6
1L	496	SER	-	insertion	UNP A0A5G2RIE6
1L	497	SER	-	insertion	UNP A0A5G2RIE6
1L	498	THR	-	insertion	UNP A0A5G2RIE6
1L	499	ILE	-	insertion	UNP A0A5G2RIE6
1L	500	THR	-	insertion	UNP A0A5G2RIE6
1L	501	GLN	-	insertion	UNP A0A5G2RIE6
1M	478	ALA	-	insertion	UNP A0A5G2RIE6
1M	479	ASP	-	insertion	UNP A0A5G2RIE6
1M	480	SER	-	insertion	UNP A0A5G2RIE6
1M	481	ALA	-	insertion	UNP A0A5G2RIE6
1M	482	PRO	-	insertion	UNP A0A5G2RIE6
1M	483	GLU	-	insertion	UNP A0A5G2RIE6
1M	484	GLU	-	insertion	UNP A0A5G2RIE6
1M	485	ALA	-	insertion	UNP A0A5G2RIE6
1M	486	PRO	-	insertion	UNP A0A5G2RIE6

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Chain	Residue	Modelled	Actual	Comment	Reference
1M	487	PRO	-	insertion	UNP A0A5G2RIE6
1M	488	ARG	-	insertion	UNP A0A5G2RIE6
1M	489	ALA	-	insertion	UNP A0A5G2RIE6
1M	490	PRO	-	insertion	UNP A0A5G2RIE6
1M	491	GLN	-	insertion	UNP A0A5G2RIE6
1M	492	ASP	-	insertion	UNP A0A5G2RIE6
1M	493	VAL	-	insertion	UNP A0A5G2RIE6
1M	494	ARG	-	insertion	UNP A0A5G2RIE6
1M	495	GLY	-	insertion	UNP A0A5G2RIE6
1M	496	SER	-	insertion	UNP A0A5G2RIE6
1M	497	SER	-	insertion	UNP A0A5G2RIE6
1M	498	THR	-	insertion	UNP A0A5G2RIE6
1M	499	ILE	-	insertion	UNP A0A5G2RIE6
1M	500	THR	-	insertion	UNP A0A5G2RIE6
1M	501	GLN	-	insertion	UNP A0A5G2RIE6
1N	478	ALA	-	insertion	UNP A0A5G2RIE6
1N	479	ASP	-	insertion	UNP A0A5G2RIE6
1N	480	SER	-	insertion	UNP A0A5G2RIE6
1N	481	ALA	-	insertion	UNP A0A5G2RIE6
1N	482	PRO	-	insertion	UNP A0A5G2RIE6
1N	483	GLU	-	insertion	UNP A0A5G2RIE6
1N	484	GLU	-	insertion	UNP A0A5G2RIE6
1N	485	ALA	-	insertion	UNP A0A5G2RIE6
1N	486	PRO	-	insertion	UNP A0A5G2RIE6
1N	487	PRO	-	insertion	UNP A0A5G2RIE6
1N	488	ARG	-	insertion	UNP A0A5G2RIE6
1N	489	ALA	-	insertion	UNP A0A5G2RIE6
1N	490	PRO	-	insertion	UNP A0A5G2RIE6
1N	491	GLN	-	insertion	UNP A0A5G2RIE6
1N	492	ASP	-	insertion	UNP A0A5G2RIE6
1N	493	VAL	-	insertion	UNP A0A5G2RIE6
1N	494	ARG	-	insertion	UNP A0A5G2RIE6
1N	495	GLY	-	insertion	UNP A0A5G2RIE6
1N	496	SER	-	insertion	UNP A0A5G2RIE6
1N	497	SER	-	insertion	UNP A0A5G2RIE6
1N	498	THR	-	insertion	UNP A0A5G2RIE6
1N	499	ILE	-	insertion	UNP A0A5G2RIE6
1N	500	THR	-	insertion	UNP A0A5G2RIE6
1N	501	GLN	-	insertion	UNP A0A5G2RIE6

- Molecule 6 is a protein called EFCAB6.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	1P	84	Total	C	N	O	S	0	0
			704	456	126	119	3		
6	1Q	81	Total	C	N	O	S	0	0
			675	436	122	114	3		

- Molecule 7 is a protein called Cilia- and flagella-associated protein 52.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	1S	611	Total	C	N	O	S	0	0
			4712	2983	817	883	29		
7	1T	611	Total	C	N	O	S	0	0
			4712	2983	817	883	29		
7	1U	611	Total	C	N	O	S	0	0
			4712	2983	817	883	29		

- Molecule 8 is a protein called Cilia- and flagella-associated protein 45.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	1W	316	Total	C	N	O	S	0	0
			2722	1643	539	528	12		
8	1X	275	Total	C	N	O	S	0	0
			2293	1398	427	452	16		
8	1Y	162	Total	C	N	O	S	0	0
			1331	819	242	260	10		
8	1Z	196	Total	C	N	O	S	0	0
			1680	1016	338	323	3		

- Molecule 9 is a protein called Cilia and flagella associated protein 210.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	2B	373	Total	C	N	O	S	0	0
			3205	1994	606	596	9		
9	2C	80	Total	C	N	O	S	0	0
			665	413	122	127	3		

- Molecule 10 is a protein called Cilia and flagella associated protein 276.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	2E	115	Total	C	N	O	S	0	0
			930	577	173	177	3		
10	2F	115	Total	C	N	O	S	0	0
			930	577	173	177	3		

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Mol	Chain	Residues	Atoms					AltConf	Trace
10	2G	115	Total	C	N	O	S	0	0
			930	577	173	177	3		

- Molecule 11 is a protein called Enkurin.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	2I	247	Total	C	N	O	S	0	0
			2024	1294	350	373	7		
11	2J	247	Total	C	N	O	S	0	0
			2027	1296	350	373	8		
11	2K	237	Total	C	N	O	S	0	0
			1947	1244	336	359	8		

- Molecule 12 is a protein called Parkin coregulated.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	2M	219	Total	C	N	O	S	0	0
			1767	1144	297	316	10		
12	2N	219	Total	C	N	O	S	0	0
			1767	1144	297	316	10		
12	2O	219	Total	C	N	O	S	0	0
			1767	1144	297	316	10		
12	2P	219	Total	C	N	O	S	0	0
			1767	1144	297	316	10		
12	2Q	219	Total	C	N	O	S	0	0
			1767	1144	297	316	10		
12	2R	219	Total	C	N	O	S	0	0
			1767	1144	297	316	10		

- Molecule 13 is a protein called Cilia- and flagella-associated protein 20.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	2T	185	Total	C	N	O	S	0	0
			1540	990	269	274	7		
13	2U	185	Total	C	N	O	S	0	0
			1540	990	269	274	7		
13	2V	185	Total	C	N	O	S	0	0
			1540	990	269	274	7		
13	2W	185	Total	C	N	O	S	0	0
			1540	990	269	274	7		
13	2X	185	Total	C	N	O	S	0	0
			1540	990	269	274	7		

- Molecule 14 is a protein called Protein Flattop.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	3A	118	Total	C	N	O	S	0	0
			924	586	170	166	2		
14	3B	118	Total	C	N	O	S	0	0
			924	586	170	166	2		
14	3C	118	Total	C	N	O	S	0	0
			924	586	170	166	2		

- Molecule 15 is a protein called Tektin.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	3E	394	Total	C	N	O	S	0	0
			3216	1989	591	627	9		
15	3F	397	Total	C	N	O	S	0	0
			3241	2006	595	631	9		
15	3G	136	Total	C	N	O	S	0	0
			1096	675	207	211	3		
15	3H	298	Total	C	N	O	S	0	0
			2451	1517	447	481	6		

- Molecule 16 is a protein called Tektin.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	3J	397	Total	C	N	O	S	0	0
			3234	1990	599	629	16		
16	3K	316	Total	C	N	O	S	0	0
			2559	1578	463	503	15		
16	3L	397	Total	C	N	O	S	0	0
			3234	1990	599	629	16		
16	3M	114	Total	C	N	O	S	0	0
			939	572	184	181	2		

- Molecule 17 is a protein called Tektin.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	3O	391	Total	C	N	O	S	0	0
			3180	1957	581	627	15		
17	3P	391	Total	C	N	O	S	0	0
			3180	1957	581	627	15		
17	3Q	131	Total	C	N	O	S	0	0
			1058	654	192	207	5		
17	3R	264	Total	C	N	O	S	0	0
			2149	1319	393	428	9		

- Molecule 18 is a protein called Tektin.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	3T	398	Total	C	N	O	S	0	0
			3284	2024	605	637	18		
18	3U	399	Total	C	N	O	S	0	0
			3289	2027	606	638	18		
18	3V	170	Total	C	N	O	S	0	0
			1405	863	255	280	7		
18	3W	259	Total	C	N	O	S	0	0
			2121	1310	398	402	11		

- Molecule 19 is a protein called RIB43A domain with coiled-coils 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	3Y	356	Total	C	N	O	S	0	0
			2977	1815	580	571	11		
19	3Z	22	Total	C	N	O	S	0	0
			194	121	33	39	1		

- Molecule 20 is a protein called RIB43A-like with coiled-coils protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	4A	181	Total	C	N	O	S	0	0
			1485	891	294	286	14		
20	4B	115	Total	C	N	O	S	0	0
			943	561	185	193	4		

- Molecule 21 is a protein called EF-hand domain containing 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	4D	468	Total	C	N	O	S	0	0
			3844	2478	648	702	16		
21	4E	468	Total	C	N	O	S	0	0
			3844	2478	648	702	16		
21	4F	468	Total	C	N	O	S	0	0
			3844	2478	648	702	16		

- Molecule 22 is a protein called EF-hand domain-containing family member C2.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	4H	354	Total	C	N	O	S	0	0
			2895	1866	483	532	14		

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Mol	Chain	Residues	Atoms					AltConf	Trace
22	4I	612	Total	C	N	O	S	0	0
			5027	3227	847	926	27		
22	4J	615	Total	C	N	O	S	0	0
			5055	3247	851	930	27		
22	4K	242	Total	C	N	O	S	0	0
			1983	1268	340	363	12		

- Molecule 23 is a protein called Ciliary microtubule inner protein 2B.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	4M	170	Total	C	N	O	S	0	0
			1330	859	229	235	7		
23	4N	170	Total	C	N	O	S	0	0
			1320	853	228	234	5		
23	4P	87	Total	C	N	O	S	0	0
			705	457	121	124	3		
23	4Q	136	Total	C	N	O	S	0	0
			1070	687	186	193	4		
23	4R	167	Total	C	N	O	S	0	0
			1319	851	229	232	7		

There are 10 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
4M	271	ALA	-	insertion	UNP A0A8D1CRM3
4M	?	-	SER	deletion	UNP A0A8D1CRM3
4N	271	ALA	-	insertion	UNP A0A8D1CRM3
4N	?	-	SER	deletion	UNP A0A8D1CRM3
4P	271	ALA	-	insertion	UNP A0A8D1CRM3
4P	?	-	SER	deletion	UNP A0A8D1CRM3
4Q	271	ALA	-	insertion	UNP A0A8D1CRM3
4Q	?	-	SER	deletion	UNP A0A8D1CRM3
4R	271	ALA	-	insertion	UNP A0A8D1CRM3
4R	?	-	SER	deletion	UNP A0A8D1CRM3

- Molecule 24 is a protein called Ciliary microtubule inner protein 2B.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	4O	87	Total	C	N	O	S	0	0
			702	455	121	124	2		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
4O	271	ALA	-	insertion	UNP A0A8D1QC18

- Molecule 25 is a protein called Sperm-associated antigen 8 isoform 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	4T	162	Total	C	N	O	S	0	0
			1320	825	245	243	7		

- Molecule 26 is a protein called Nucleoside diphosphate kinase homolog 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	4V	373	Total	C	N	O	S	0	0
			2946	1876	500	548	22		
26	4W	373	Total	C	N	O	S	0	0
			2946	1876	500	548	22		

- Molecule 27 is a protein called Cilia and flagella associated protein 161.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	4Y	267	Total	C	N	O	S	0	0
			2145	1359	378	395	13		
27	4Z	270	Total	C	N	O	S	0	0
			2160	1369	380	398	13		

- Molecule 28 is a protein called Chromosome 1 C9orf135 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	5B	200	Total	C	N	O	S	0	0
			1625	1030	278	311	6		

- Molecule 29 is a protein called Piercer of microtubule wall 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	5D	84	Total	C	N	O	S	0	0
			697	442	125	127	3		
29	5E	33	Total	C	N	O	S	0	0
			280	180	47	52	1		

- Molecule 30 is a protein called Chromosome 1 C15orf65 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	5G	93	Total	C	N	O	S	0	0
			708	445	123	136	4		

- Molecule 31 is a protein called EF-hand domain family member B.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	5I	443	Total	C	N	O	S	0	0
			3576	2284	630	653	9		
31	5J	112	Total	C	N	O	S	0	0
			898	563	161	172	2		

- Molecule 32 is a protein called Cilia and flagella associated protein 141.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	5L	92	Total	C	N	O	S	0	0
			736	460	140	130	6		

- Molecule 33 is a protein called Meiosis-specific nuclear structural protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	5N	334	Total	C	N	O	S	0	0
			2883	1791	520	556	16		
33	5O	151	Total	C	N	O	S	0	0
			1277	783	242	245	7		

- Molecule 34 is a protein called Cilia- and flagella-associated protein 53.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	5Q	262	Total	C	N	O	S	0	0
			2216	1361	412	433	10		
34	5R	198	Total	C	N	O	S	0	0
			1671	1019	319	326	7		

- Molecule 35 is a protein called CFAP107/C1orf158.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	5T	135	Total	C	N	O	S	0	0
			1118	732	196	188	2		
35	5U	28	Total	C	N	O		0	0
			223	141	41	41			

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
5T	40F	UNK	THR	conflict	UNP A0A8D1WB49
5U	46	UNK	THR	conflict	UNP A0A8D1WB49

- Molecule 36 is a protein called Cilia and flagella associated protein 77.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	5W	231	Total	C	N	O	S	0	0
			1868	1186	349	325	8		
36	5X	231	Total	C	N	O	S	0	0
			1868	1186	349	325	8		
36	5Y	185	Total	C	N	O	S	0	0
			1487	942	277	262	6		
36	5Z	59	Total	C	N	O	S	0	0
			488	310	93	83	2		

- Molecule 37 is a protein called Cilia and flagella associated protein 144.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	6A	116	Total	C	N	O	S	0	0
			992	626	184	180	2		

- Molecule 38 is a protein called Cilia-and flagella-associated protein 96.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	6C	212	Total	C	N	O	S	0	0
			1698	1086	290	315	7		
38	6D	65	Total	C	N	O	S	0	0
			495	318	87	87	3		

- Molecule 39 is a protein called Sperm acrosome associated 9.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	6F	157	Total	C	N	O	S	0	0
			1264	789	229	236	10		
39	6G	157	Total	C	N	O	S	0	0
			1264	789	229	236	10		
39	6H	141	Total	C	N	O	S	0	0
			1134	710	202	213	9		
39	6I	157	Total	C	N	O	S	0	0
			1264	789	229	236	10		
39	6J	157	Total	C	N	O	S	0	0
			1264	789	229	236	10		

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Mol	Chain	Residues	Atoms					AltConf	Trace
39	6K	157	Total	C	N	O	S	0	0
			1264	789	229	236	10		
39	6L	137	Total	C	N	O	S	0	0
			1095	694	190	204	7		

- Molecule 40 is a protein called Tubulin alpha chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	AA	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	AE	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	AF	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	AG	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	AH	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	BA	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	BE	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	BF	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	BG	432	Total	C	N	O	S	0	0
			3392	2148	576	646	22		
40	BH	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	BI	373	Total	C	N	O	S	0	0
			2932	1855	501	555	21		
40	CA	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	CE	440	Total	C	N	O	S	0	0
			3438	2174	584	658	22		
40	CF	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	CG	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	CH	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	CI	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		

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Mol	Chain	Residues	Atoms					AltConf	Trace
40	DA	432	Total	C	N	O	S	0	0
			3390	2147	576	645	22		
40	DE	435	Total	C	N	O	S	0	0
			3410	2157	579	652	22		
40	DF	432	Total	C	N	O	S	0	0
			3390	2147	576	645	22		
40	DG	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	DH	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	DI	432	Total	C	N	O	S	0	0
			3390	2147	576	645	22		
40	EA	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	EE	435	Total	C	N	O	S	0	0
			3415	2161	580	652	22		
40	EF	435	Total	C	N	O	S	0	0
			3415	2161	580	652	22		
40	EG	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	EH	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	EI	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	FA	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	FE	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	FF	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	FG	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	FH	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	FI	434	Total	C	N	O	S	0	0
			3402	2152	577	651	22		
40	GA	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	GE	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	GF	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		

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Mol	Chain	Residues	Atoms					AltConf	Trace
40	GG	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	GH	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	GI	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	HA	435	Total	C	N	O	S	0	0
			3410	2157	579	652	22		
40	HE	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	HF	432	Total	C	N	O	S	0	0
			3392	2148	576	646	22		
40	HG	434	Total	C	N	O	S	0	0
			3402	2153	578	649	22		
40	HH	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	HI	435	Total	C	N	O	S	0	0
			3415	2161	580	652	22		
40	IA	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	IE	420	Total	C	N	O	S	0	0
			3286	2074	557	633	22		
40	IF	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	IG	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	IH	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	II	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	JA	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	JD	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	JE	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	JF	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	JG	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	JH	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		

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Mol	Chain	Residues	Atoms					AltConf	Trace
40	KA	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	KD	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	KE	434	Total	C	N	O	S	0	0
			3402	2153	578	649	22		
40	KF	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	KG	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	KH	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	LA	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	LD	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	LE	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	LF	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	LG	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	LH	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	MA	432	Total	C	N	O	S	0	0
			3392	2148	576	646	22		
40	MD	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	ME	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	MF	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	MG	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	MH	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	NA	432	Total	C	N	O	S	0	0
			3392	2148	576	646	22		
40	ND	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	NE	434	Total	C	N	O	S	0	0
			3402	2153	578	649	22		

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Mol	Chain	Residues	Atoms					AltConf	Trace
40	NF	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	NG	432	Total	C	N	O	S	0	0
			3392	2148	576	646	22		
40	NH	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	OA	436	Total	C	N	O	S	0	0
			3422	2165	581	654	22		
40	OD	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	OE	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	OF	436	Total	C	N	O	S	0	0
			3419	2163	581	653	22		
40	OG	436	Total	C	N	O	S	0	0
			3415	2160	580	653	22		
40	OH	436	Total	C	N	O	S	0	0
			3419	2163	581	653	22		
40	PA	432	Total	C	N	O	S	0	0
			3392	2148	576	646	22		
40	PD	408	Total	C	N	O	S	0	0
			3196	2023	543	610	20		
40	PE	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	PF	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	PG	431	Total	C	N	O	S	0	0
			3384	2144	575	643	22		
40	PH	431	Total	C	N	O	S	0	0
			3384	2144	575	643	22		
40	QA	432	Total	C	N	O	S	0	0
			3392	2148	576	646	22		
40	QE	431	Total	C	N	O	S	0	0
			3384	2144	575	643	22		
40	QF	431	Total	C	N	O	S	0	0
			3384	2144	575	643	22		
40	QG	432	Total	C	N	O	S	0	0
			3390	2147	576	645	22		
40	QH	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	RA	432	Total	C	N	O	S	0	0
			3390	2147	576	645	22		

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Mol	Chain	Residues	Atoms					AltConf	Trace
40	RE	431	Total	C	N	O	S	0	0
			3384	2144	575	643	22		
40	RF	431	Total	C	N	O	S	0	0
			3384	2144	575	643	22		
40	RG	432	Total	C	N	O	S	0	0
			3390	2147	576	645	22		
40	RH	431	Total	C	N	O	S	0	0
			3384	2144	575	643	22		
40	RI	376	Total	C	N	O	S	0	0
			2962	1875	505	562	20		
40	SA	432	Total	C	N	O	S	0	0
			3390	2147	576	645	22		
40	SE	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	SF	432	Total	C	N	O	S	0	0
			3390	2147	576	645	22		
40	SG	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	SH	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	SI	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	TA	432	Total	C	N	O	S	0	0
			3390	2147	576	645	22		
40	TE	432	Total	C	N	O	S	0	0
			3392	2148	576	646	22		
40	TF	432	Total	C	N	O	S	0	0
			3392	2148	576	646	22		
40	TG	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	TH	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	TI	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	UA	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	UE	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	UF	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	UG	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		

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Mol	Chain	Residues	Atoms					AltConf	Trace
40	UH	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	UI	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	VA	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	VF	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	VG	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	VH	434	Total	C	N	O	S	0	0
			3406	2155	578	651	22		
40	VI	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	VJ	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	WA	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	WE	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	WF	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		
40	WG	432	Total	C	N	O	S	0	0
			3390	2147	576	645	22		
40	WH	440	Total	C	N	O	S	0	0
			3442	2177	585	658	22		
40	WI	433	Total	C	N	O	S	0	0
			3398	2151	577	648	22		

- Molecule 41 is a protein called Tubulin beta chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	AB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	AL	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	AM	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	AN	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	AO	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		

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Mol	Chain	Residues	Atoms					AltConf	Trace
41	AP	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	BB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	BL	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	BM	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	BN	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	BO	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	BP	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	CB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	CL	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	CM	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	CN	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	CO	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	CP	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	DB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	DL	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	DM	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	DN	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	DO	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	DP	428	Total	C	N	O	S	0	0
			3337	2096	577	637	27		
41	EB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	EL	364	Total	C	N	O	S	0	0
			2826	1775	489	538	24		

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Mol	Chain	Residues	Atoms					AltConf	Trace
41	EM	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	EN	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	EO	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	EP	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	FB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	FM	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	FN	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	FO	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	FP	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	GB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	GM	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	GN	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	GO	428	Total	C	N	O	S	0	0
			3335	2095	574	639	27		
41	GP	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	HB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	HM	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	HN	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	HO	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	HP	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	HQ	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	IB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		

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Mol	Chain	Residues	Atoms					AltConf	Trace
41	IM	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	IN	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	IO	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	IP	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	IQ	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	JB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	JL	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	JM	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	JN	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	JO	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	KB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	KL	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	KM	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	KN	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	KO	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	KP	386	Total	C	N	O	S	0	0
			3007	1892	519	573	23		
41	LB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	LL	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	LM	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	LN	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	LO	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		

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Mol	Chain	Residues	Atoms					AltConf	Trace
41	LP	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	MB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	ML	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	MM	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	MN	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	MO	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	MP	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	NB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	NL	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	NM	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	NN	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	NO	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	NP	418	Total	C	N	O	S	0	0
			3264	2052	565	621	26		
41	OB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	OL	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	OM	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	ON	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	OO	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	OP	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	PB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	PL	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		

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Mol	Chain	Residues	Atoms					AltConf	Trace
41	PM	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	PN	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	PO	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	PP	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	QB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	QL	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	QM	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	QN	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	QO	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	QP	428	Total	C	N	O	S	0	0
			3327	2090	575	636	26		
41	RB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	RL	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	RM	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	RN	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	RO	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	RP	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	SB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	SL	381	Total	C	N	O	S	0	0
			2964	1861	512	567	24		
41	SM	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	SN	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	SO	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		

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Mol	Chain	Residues	Atoms					AltConf	Trace
41	SP	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	TB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	TL	387	Total	C	N	O	S	0	0
			3019	1899	521	576	23		
41	TM	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	TN	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	TO	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	TP	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	UB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	UM	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	UN	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	UO	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	UP	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	VB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	VN	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	VO	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	VP	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	VQ	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	WB	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	WM	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	WN	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	WO	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		

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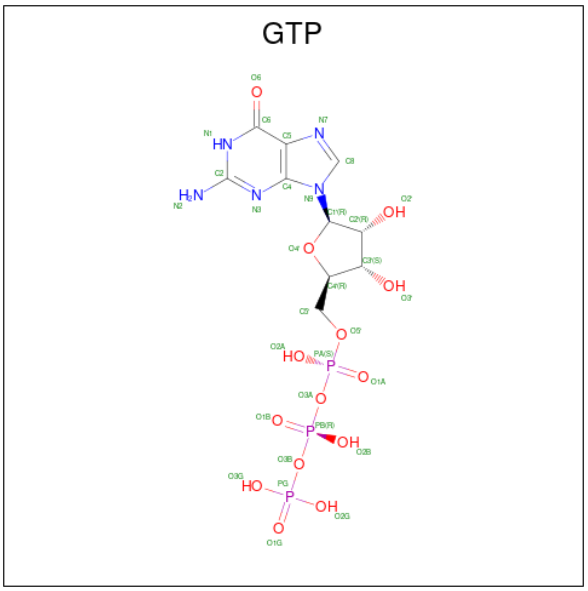
Mol	Chain	Residues	Atoms					AltConf	Trace
41	WP	428	Total	C	N	O	S	0	0
			3341	2098	577	639	27		
41	WQ	421	Total	C	N	O	S	0	0
			3285	2065	569	625	26		

- Molecule 42 is GUANOSINE-5'-TRIPHOSPHATE (three-letter code: GTP) (formula: $C_{10}H_{16}N_5O_{14}P_3$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
42	AA	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	AE	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	AF	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	AG	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	AH	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	BA	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	BF	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	BG	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	BH	1	Total	C	N	O	P	0
			32	10	5	14	3	

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Mol	Chain	Residues	Atoms					AltConf
42	BI	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	BL	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	CA	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	CE	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	CF	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	CG	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	CH	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	CI	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	DA	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	DE	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	DF	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	DG	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	DH	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	DI	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	EA	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	EF	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	EG	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	EH	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	EI	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	EL	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	FB	1	Total	C	N	O	P	0
			32	10	5	14	3	

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Mol	Chain	Residues	Atoms					AltConf
42	FE	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	FI	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	FM	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	FN	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	FO	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	GA	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	GB	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	GE	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	GF	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	GH	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	GP	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	HA	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	HB	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	HE	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	HH	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	HM	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	HP	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	IA	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	IE	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	IF	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	IG	1	Total	C	N	O	P	0
			32	10	5	14	3	

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Mol	Chain	Residues	Atoms					AltConf
42	IH	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	II	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	JA	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	JB	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	JD	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	JE	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	JF	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	JO	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	KB	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	KD	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	KE	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	KM	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	KN	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	KO	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	LA	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	LB	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	LD	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	LL	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	LM	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	LO	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	MB	1	Total	C	N	O	P	0
			32	10	5	14	3	

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Mol	Chain	Residues	Atoms					AltConf
42	MD	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	MH	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	ML	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	MM	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	MN	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	ND	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	NE	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	NG	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	NM	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	NN	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	NO	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	OB	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	OD	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	OL	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	OM	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	ON	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	OO	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	PB	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	PD	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	PE	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	PM	1	Total	C	N	O	P	0
			32	10	5	14	3	

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Mol	Chain	Residues	Atoms					AltConf
42	PN	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	PO	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	QF	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	QG	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	QL	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	QN	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	QO	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	RE	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	RF	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	RG	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	RN	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	RO	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	RP	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	SG	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	SH	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	SL	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	SM	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	SN	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	SP	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	TF	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	TG	1	Total	C	N	O	P	0
			32	10	5	14	3	

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Mol	Chain	Residues	Atoms					AltConf
42	TH	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	TI	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	TL	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	TN	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	UA	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	UB	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	UE	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	UI	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	UM	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	UO	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	VA	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	VB	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	VF	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	VN	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	VP	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	VQ	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	WA	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	WE	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	WF	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	WG	1	Total	C	N	O	P	0
			32	10	5	14	3	
42	WI	1	Total	C	N	O	P	0
			32	10	5	14	3	

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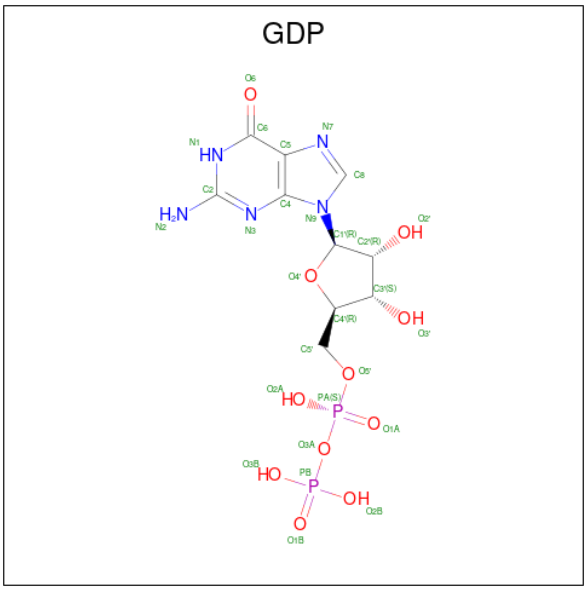
Mol	Chain	Residues	Atoms					AltConf
42	WO	1	Total	C	N	O	P	0
			32	10	5	14	3	

- Molecule 43 is GUANOSINE-5'-DIPHOSPHATE (three-letter code: GDP) (formula: $C_{10}H_{15}N_5O_{11}P_2$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
43	AB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	AL	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	AM	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	AN	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	AO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	AP	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	BB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	BL	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	BM	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	BN	1	Total	C	N	O	P	0
			28	10	5	11	2	

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Mol	Chain	Residues	Atoms					AltConf
43	BO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	BP	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	CB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	CL	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	CM	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	CN	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	CO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	CP	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	DB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	DL	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	DM	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	DN	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	DO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	DP	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	EB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	EL	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	EM	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	EN	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	EO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	EP	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	FB	1	Total	C	N	O	P	0
			28	10	5	11	2	

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Mol	Chain	Residues	Atoms					AltConf
43	FM	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	FN	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	FO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	FP	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	GB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	GM	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	GN	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	GO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	GP	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	HB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	HM	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	HN	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	HO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	HP	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	HQ	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	IB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	IM	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	IN	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	IO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	IP	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	IQ	1	Total	C	N	O	P	0
			28	10	5	11	2	

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Mol	Chain	Residues	Atoms					AltConf
43	JB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	JL	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	JM	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	JN	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	JO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	KB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	KL	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	KM	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	KN	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	KO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	KP	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	LB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	LL	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	LM	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	LN	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	LO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	LP	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	MB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	ML	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	MM	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	MN	1	Total	C	N	O	P	0
			28	10	5	11	2	

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Mol	Chain	Residues	Atoms					AltConf
43	MO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	MP	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	NB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	NL	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	NM	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	NN	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	NO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	NP	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	OB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	OL	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	OM	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	ON	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	OO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	OP	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	PB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	PL	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	PM	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	PN	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	PO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	PP	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	QB	1	Total	C	N	O	P	0
			28	10	5	11	2	

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Mol	Chain	Residues	Atoms					AltConf
43	QL	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	QM	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	QN	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	QO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	QP	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	RB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	RL	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	RM	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	RN	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	RO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	RP	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	SB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	SL	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	SM	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	SN	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	SO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	SP	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	TB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	TL	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	TM	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	TN	1	Total	C	N	O	P	0
			28	10	5	11	2	

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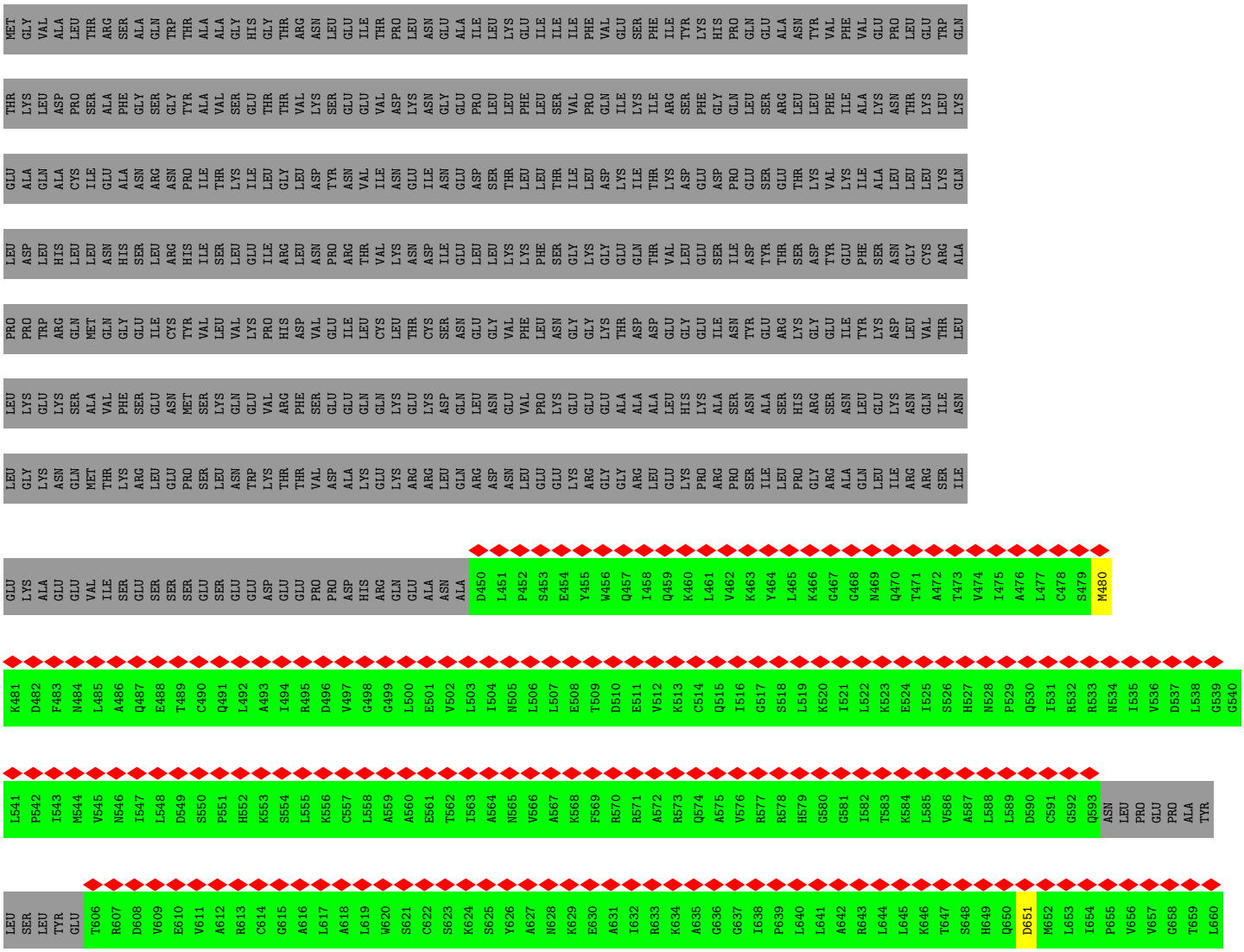
Mol	Chain	Residues	Atoms					AltConf
43	TO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	TP	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	UB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	UM	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	UN	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	UO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	UP	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	VB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	VN	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	VO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	VP	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	VQ	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	WB	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	WM	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	WN	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	WO	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	WP	1	Total	C	N	O	P	0
			28	10	5	11	2	
43	WQ	1	Total	C	N	O	P	0
			28	10	5	11	2	

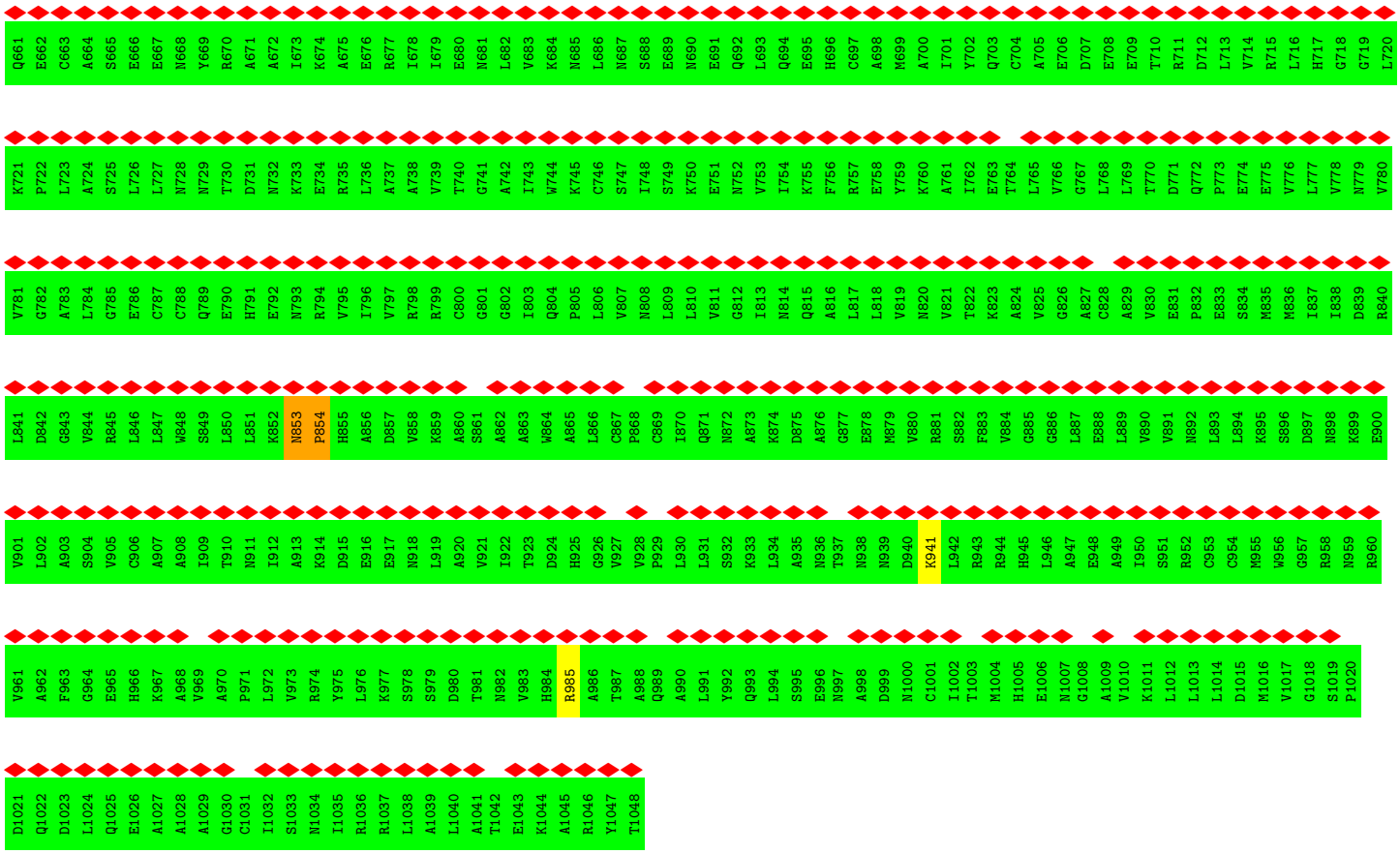
3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: Armadillo repeat-containing protein 4 isoform 1

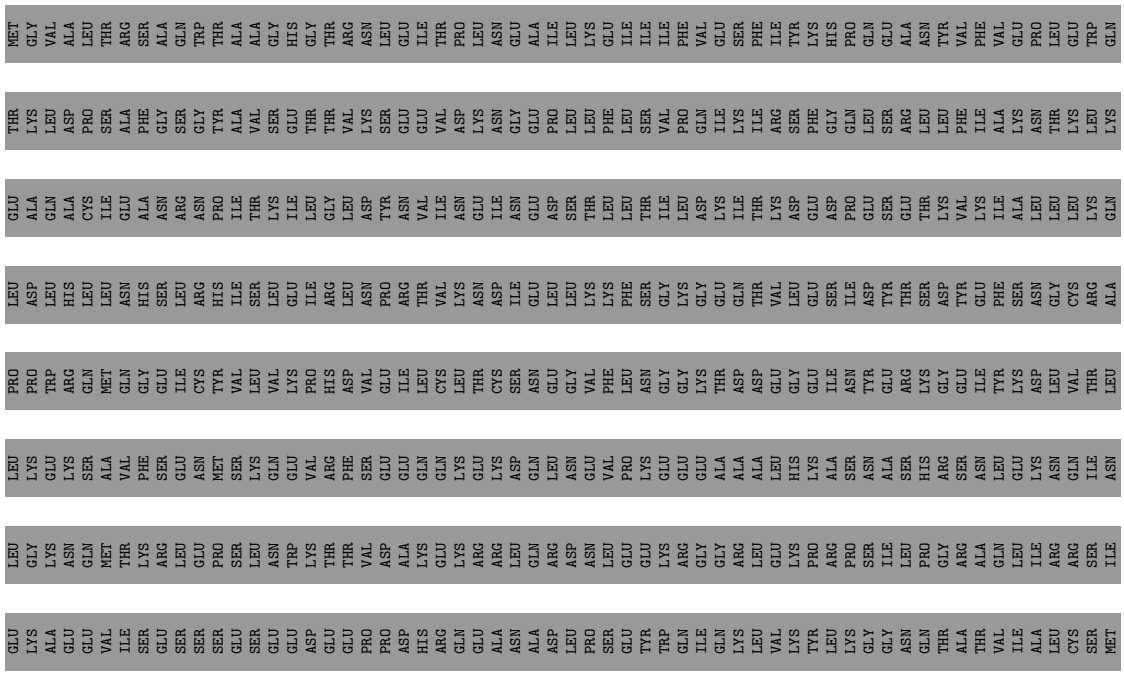
Chain 1A:

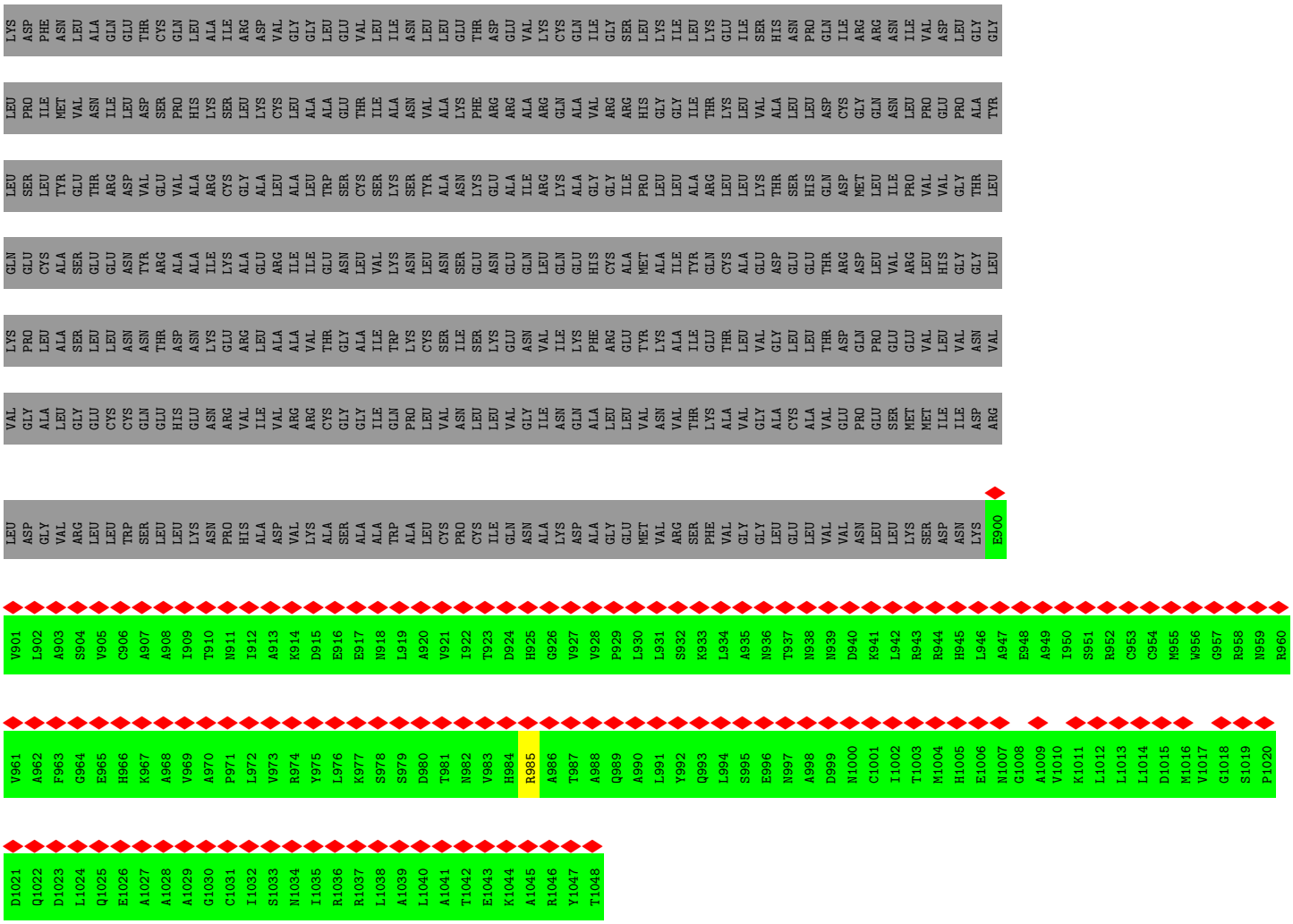




- Molecule 1: Armadillo repeat-containing protein 4 isoform 1

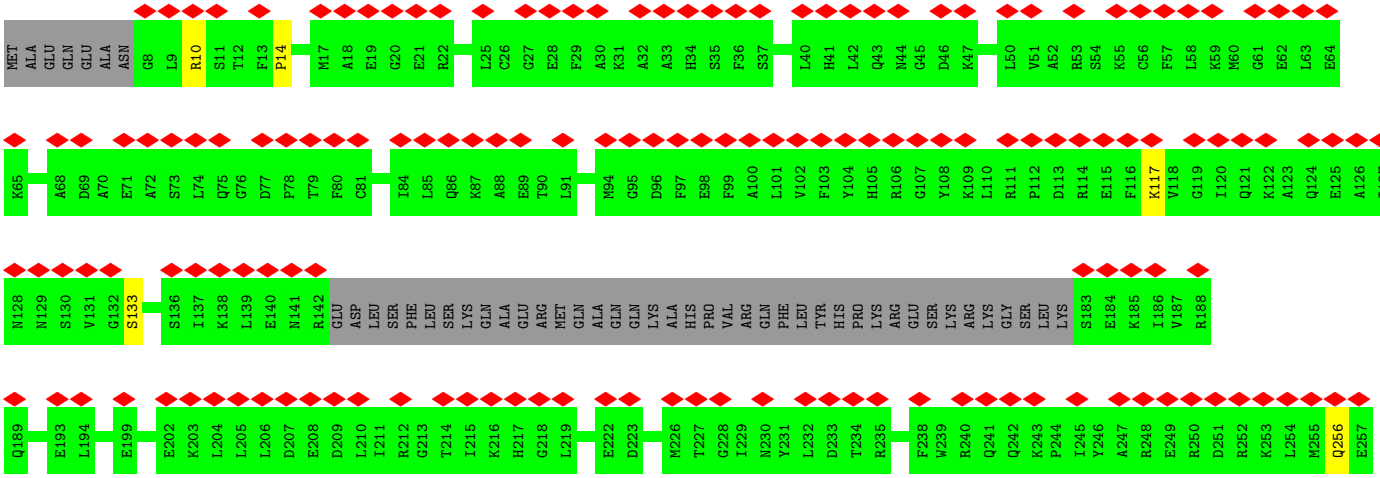
Chain 1B:





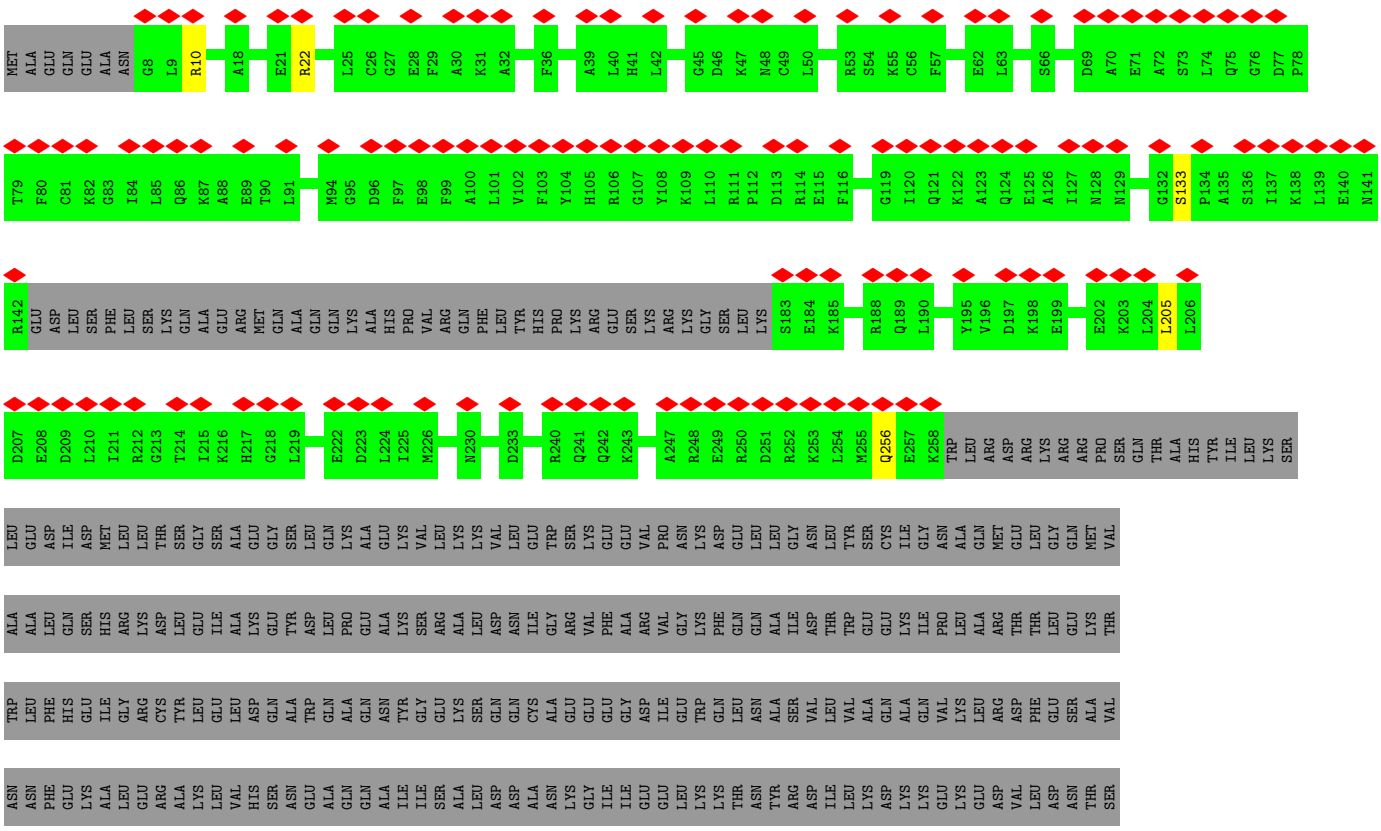
• Molecule 2: Outer dynein arm-docking complex subunit 4

Chain 1C:



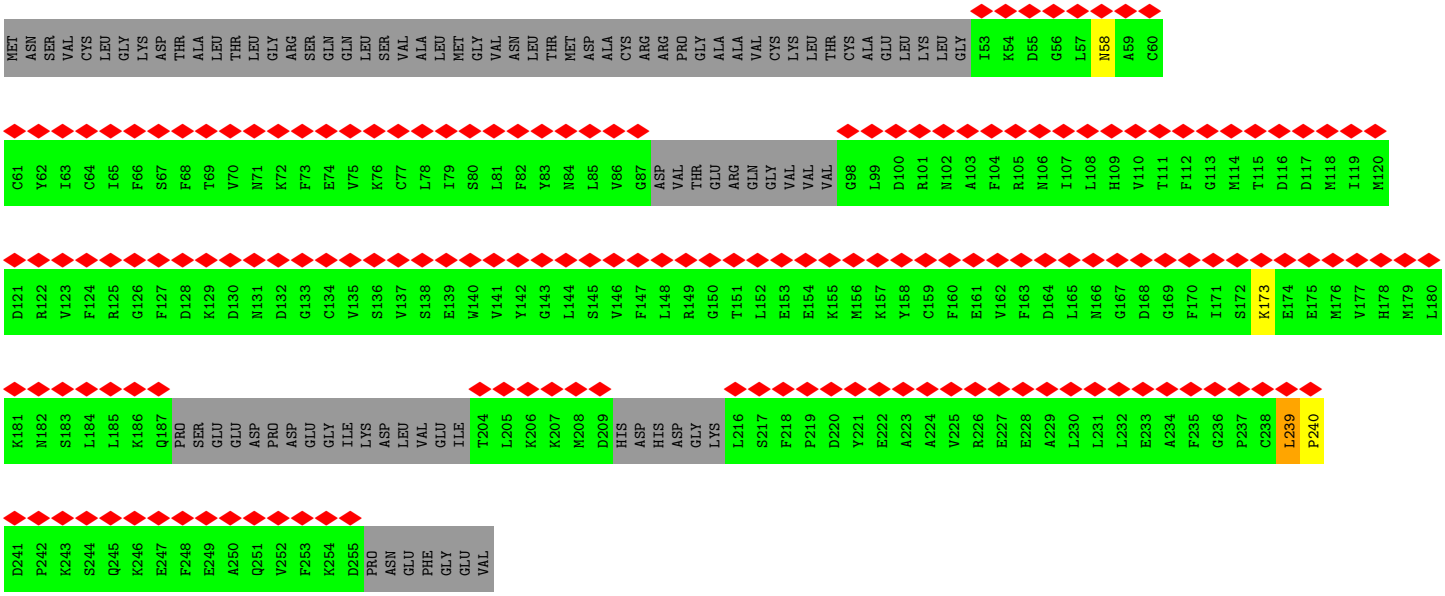
• Molecule 2: Outer dynein arm-docking complex subunit 4

Chain 1D:



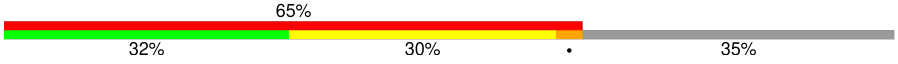
• Molecule 3: EF-hand calcium binding domain 1

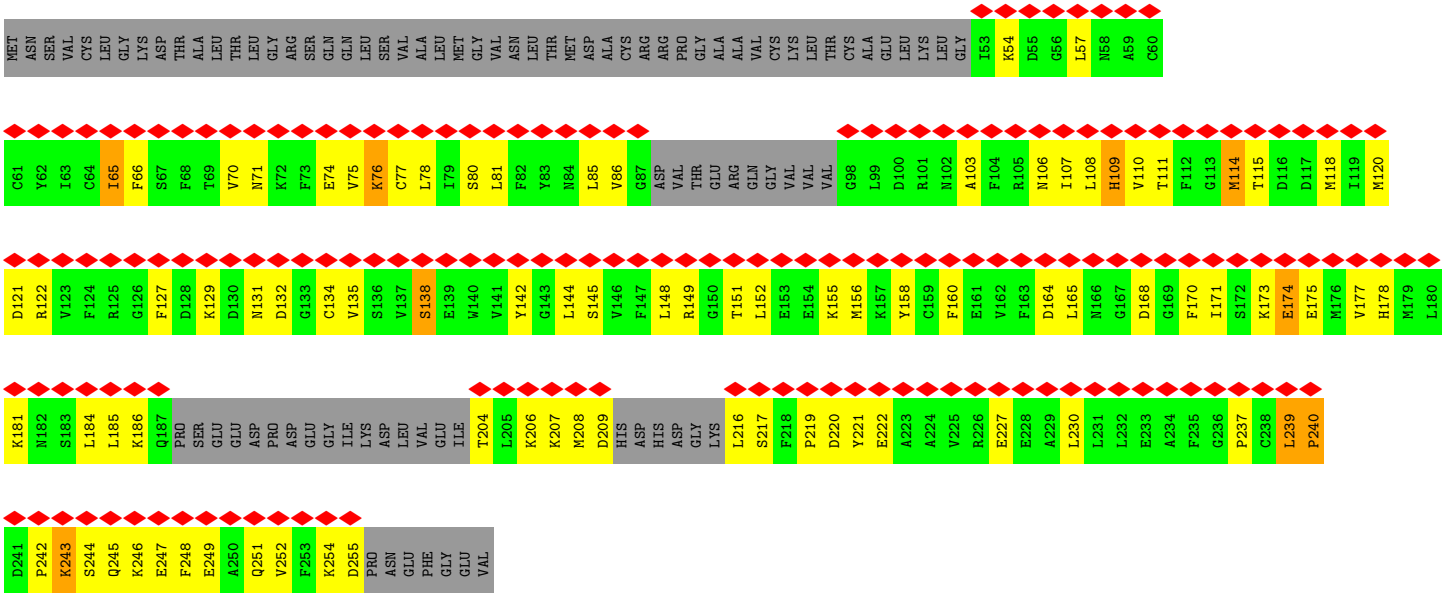
Chain 1F:



• Molecule 3: EF-hand calcium binding domain 1

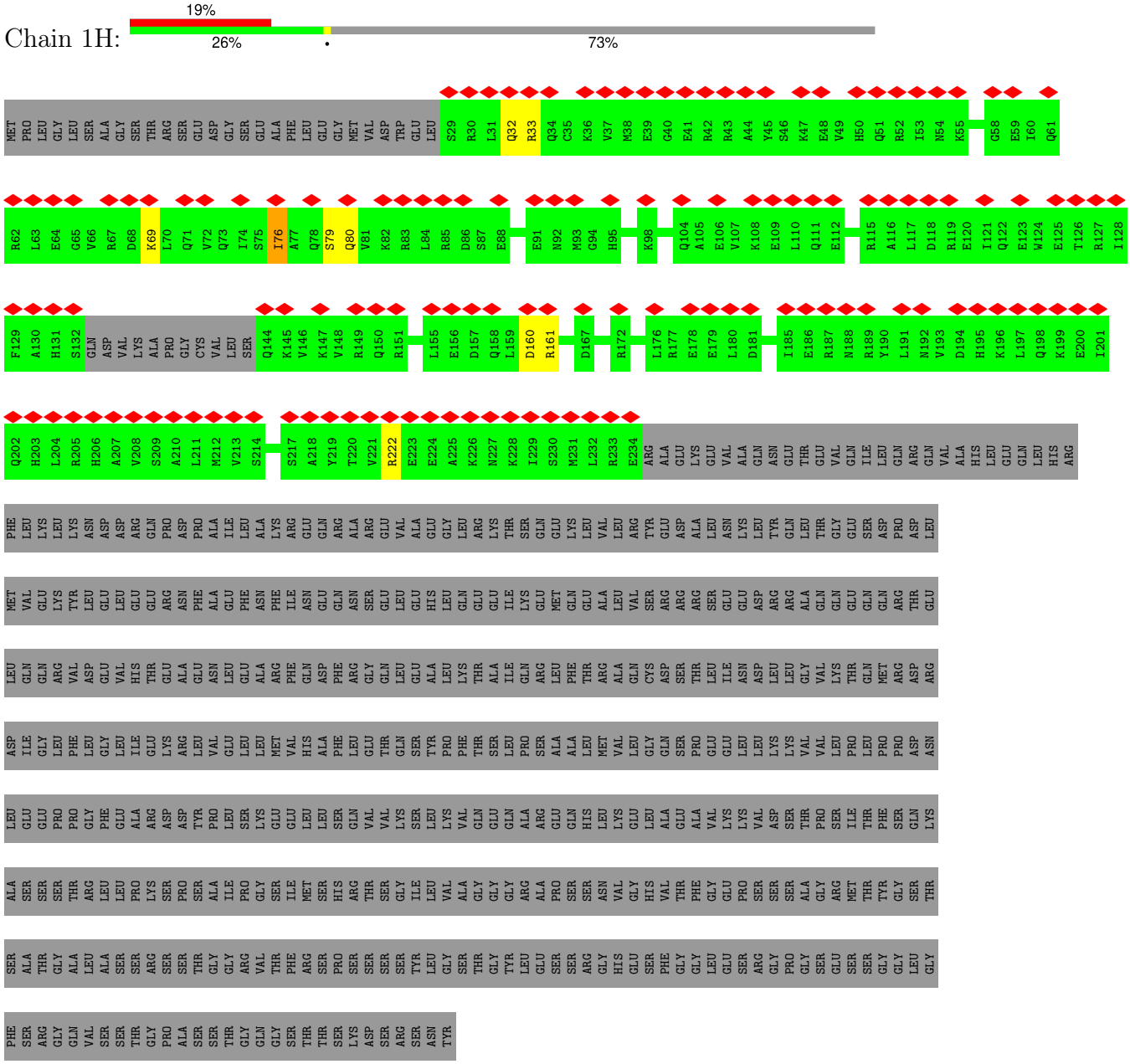
Chain 1G:





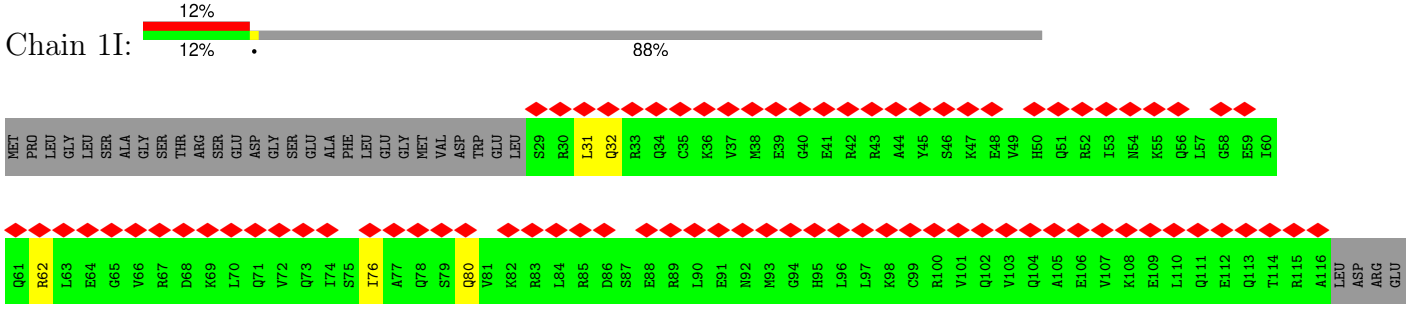
• Molecule 4: Coiled-coil domain-containing protein 114 isoform X2

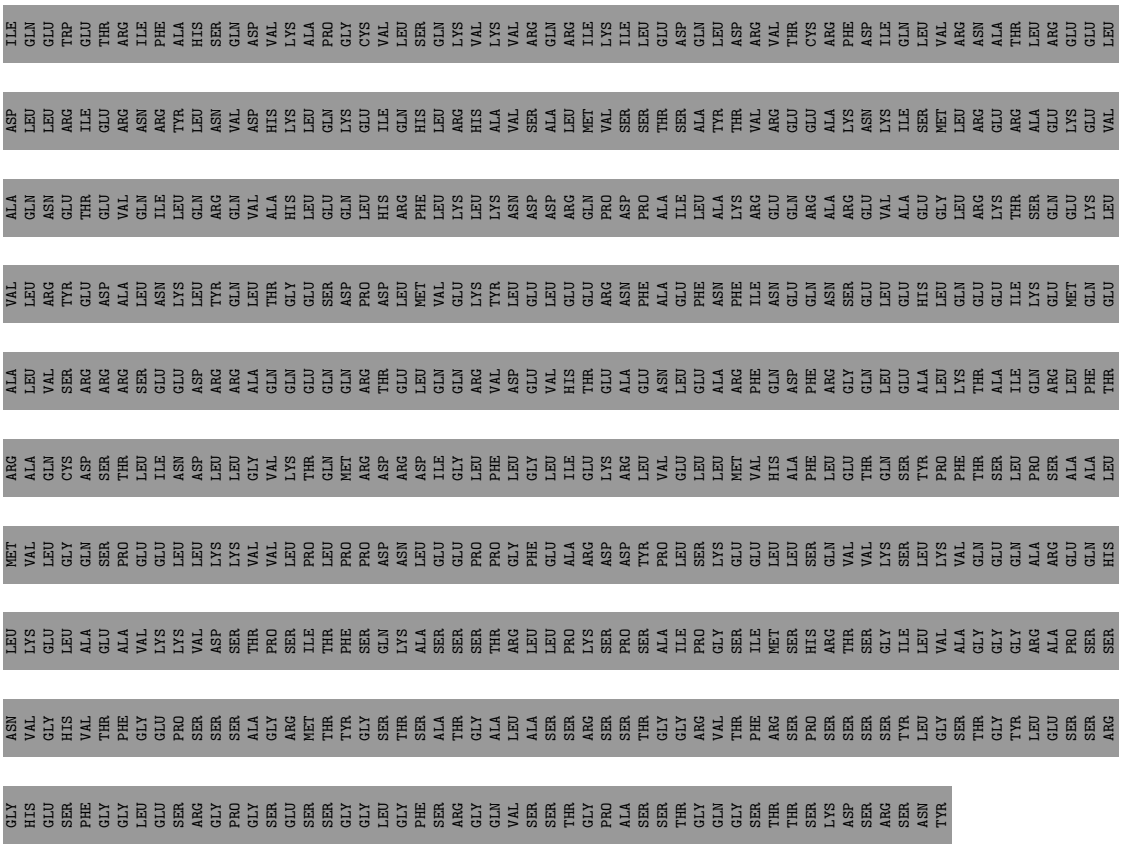
Chain 1H:



• Molecule 4: Coiled-coil domain-containing protein 114 isoform X2

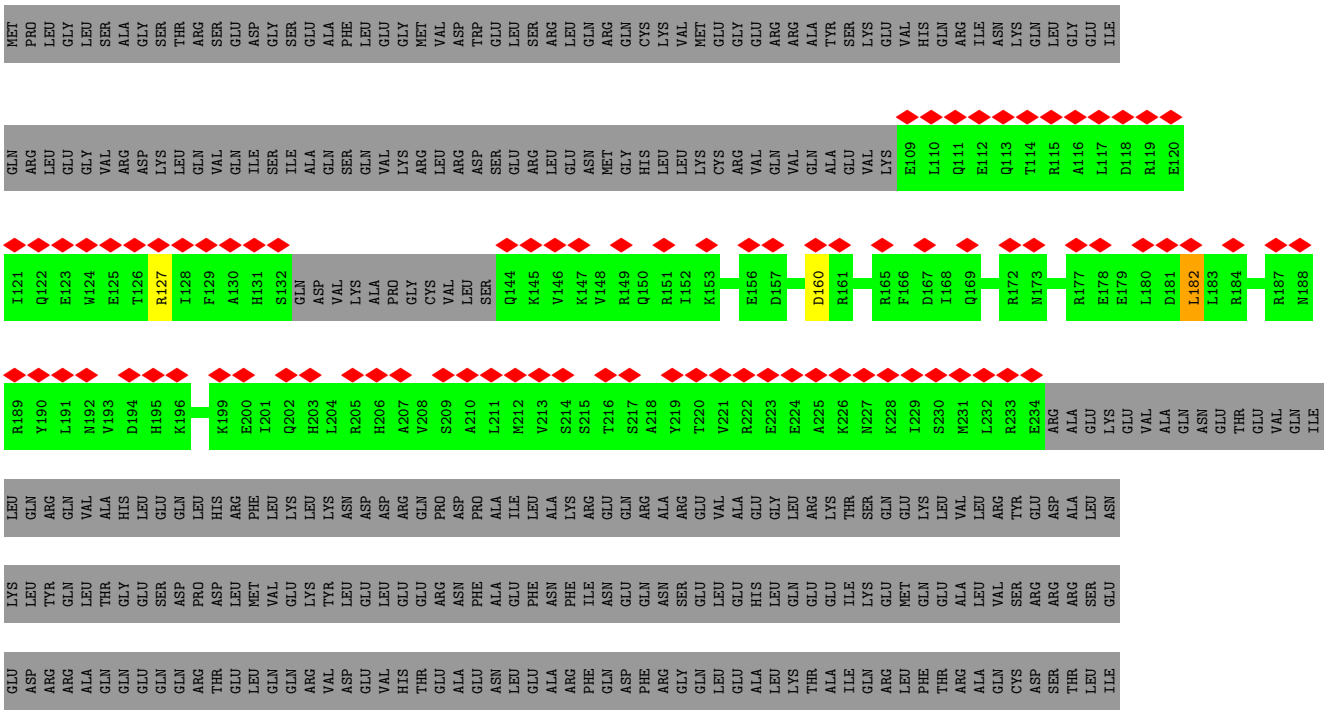
Chain 1I:

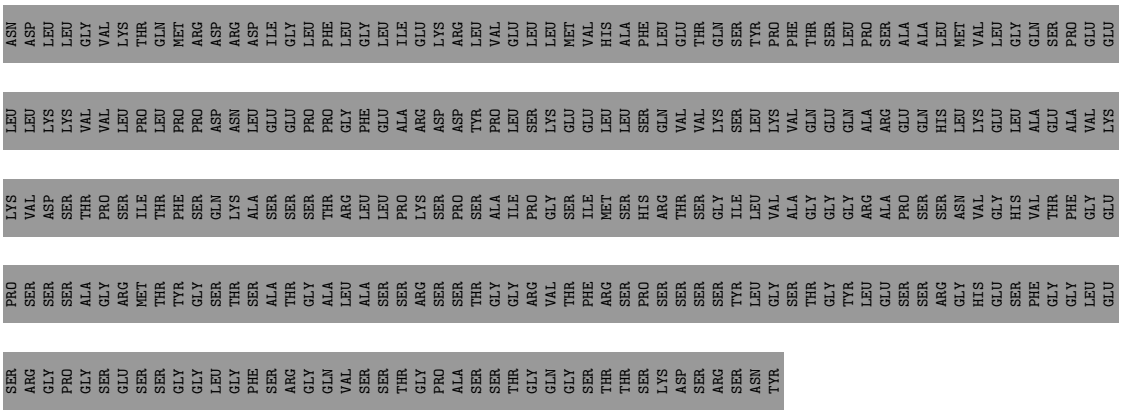




• Molecule 4: Coiled-coil domain-containing protein 114 isoform X2

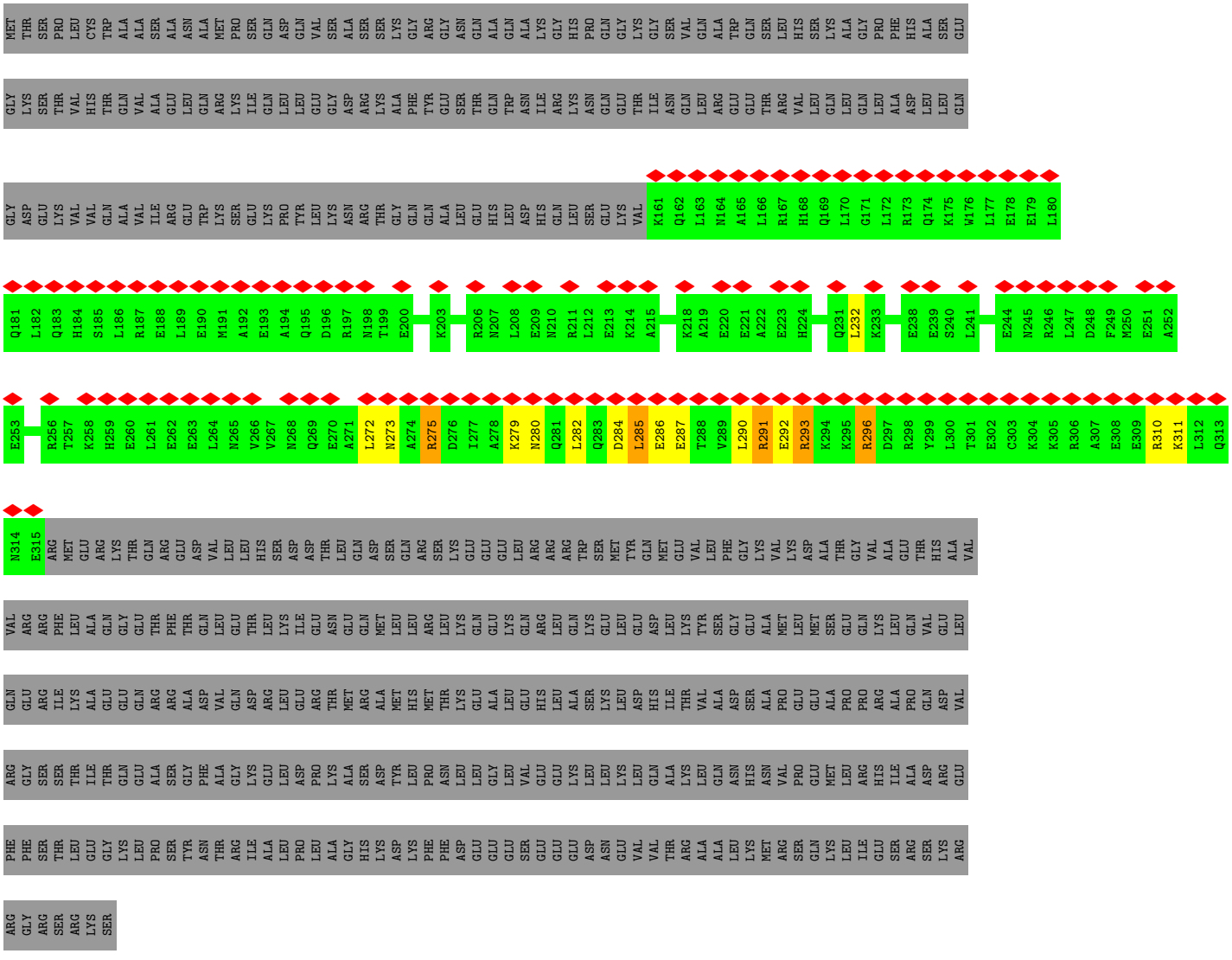
Chain 1J:





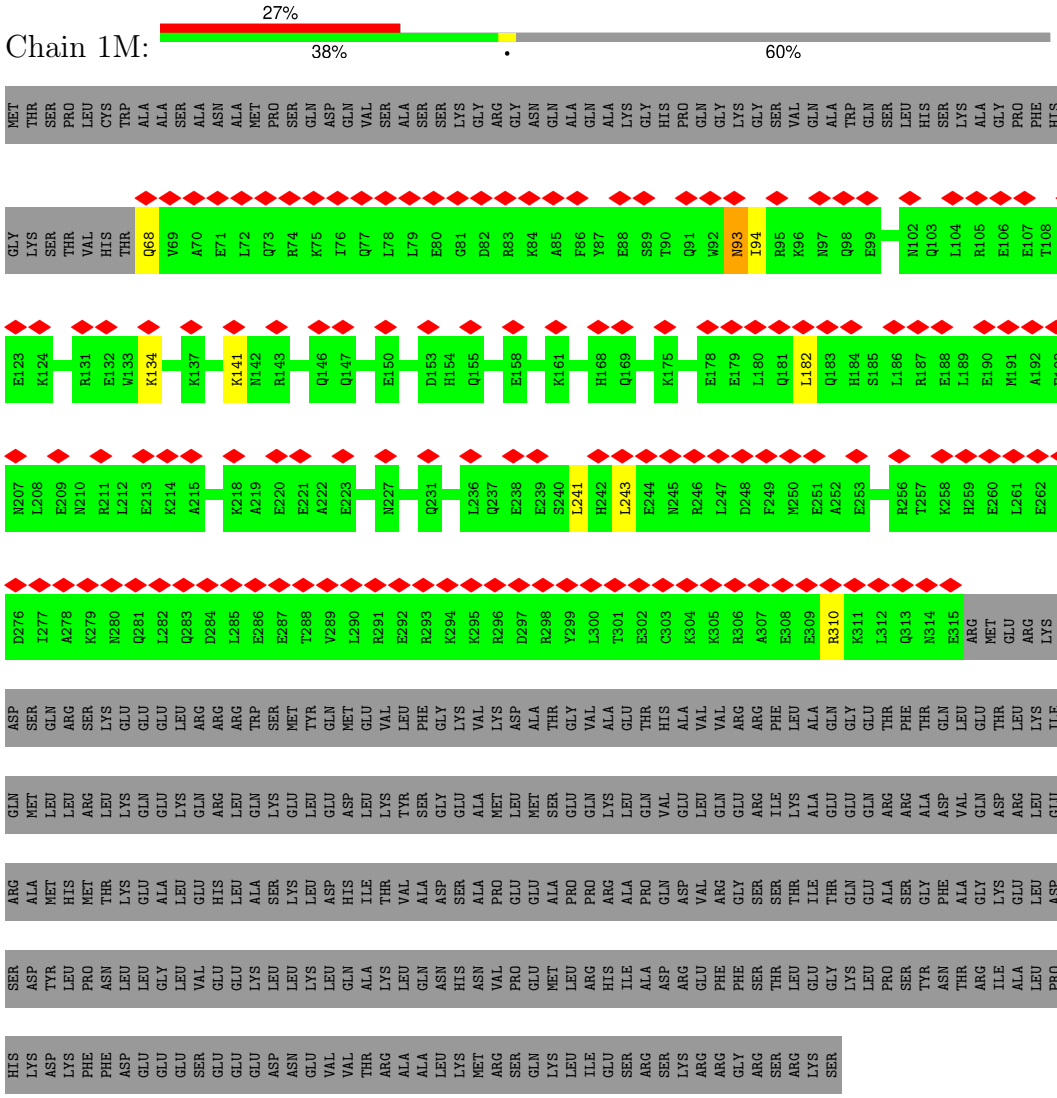
• Molecule 5: Outer dynein arm docking complex subunit 3

Chain 1L:



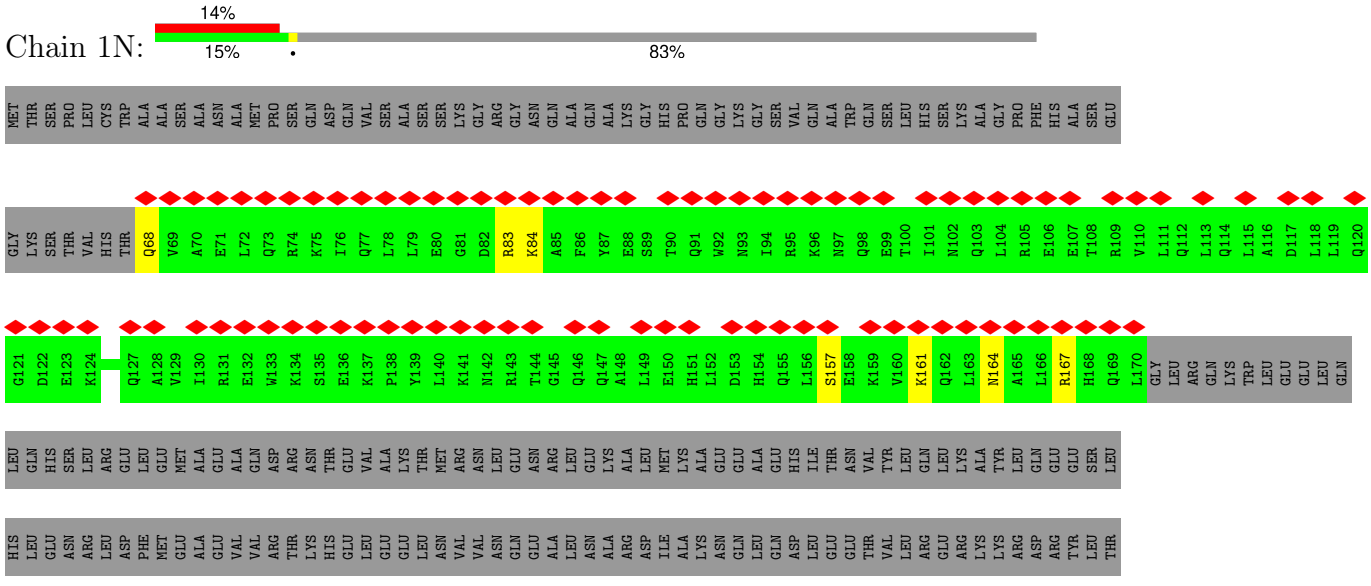
• Molecule 5: Outer dynein arm docking complex subunit 3

Chain 1M:



• Molecule 5: Outer dynein arm docking complex subunit 3

Chain 1N:



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LYS ASP ALA THR GLY VAL ALA GLU THR HIS ALA VAL VAL ARG ARG PHE LEU ALA GLN GLY GLU THR PHE THR GLN LEU GLU THR LEU LYS ILE GLU ASN GLU GLN MET LEU LEU ARG LEU LYS GLN GLU LYS GLN LEU GLN LYS GLU LEU GLU ASP LEU LYS TYR SER GLY GLU ALA

MET LEU MET SER GLU GLN LYS LEU GLN VAL GLU LEU GLN GLU ARG ILE LYS ALA GLU GLU GLN ARG ALA ASP VAL GLN ASP ARG LEU GLU ARG THR MET ARG ALA MET HIS MET THR LYS GLU ALA LEU GLU LEU ALA SER LYS LEU HIS ILE THR VAL ALA ASP SER ALA

PRO GLU GLU ALA PRO PRO ARG ALA PRO GLN ASP VAL ARG GLY SER SER THR ILE THR LEU GLU GLY PHE ALA SER ASP TYR LEU PRO ASN LEU LEU GLY LEU VAL GLU GLU LYS LEU LYS LEU GLN ALA LYS LEU GLN ASN HIS ASN

VAL PRO GLU MET LEU ARG HIS ILE ALA ASP ARG GLU PHE PHE SER THR LEU GLU GLY LYS LEU PRO SER TYR ASN THR ARG ILE ALA LEU PRO LEU ALA GLY HIS LYS ASP LYS PHE PHE ASP GLU GLU SER GLU GLU GLU ASP ASN GLU VAL THR ARG ALA ALA LEU LYS MET

ARG SER GLN LYS LEU ILE GLU SER LYS ARG ARG GLY ARG SER ARG LYS SER

• Molecule 6: EFCAB6

Chain 1P: 6% 6% 94%

MET SER THR PRO SER SER THR THR ALA MET ALA ASN PRO ILE LEU LEU SER SER LEU ASP VAL LYS ARG ILE LEU LEU PHE GLN SER ILE THR ASN LYS GLY ASP ASP LEU LYS LYS ALA PHE HIS LEU LEU LEU ASP THR GLY ASN ASP ARG THR VAL SER LYS ASN GLU LEU ARG VAL ILE ALA

ASP PHE LEU LEU PRO LEU THR ARG GLU GLN PHE GLN ASP ILE LEU ALA GLN ILE PRO LEU THR ARG ALA GLY ALA VAL PRO TYR LEU GLU PHE LEU SER ARG PHE GLY GLY THR ASP LEU ASN VAL ASN ALA VAL LYS ARG GLY GLY GLU ASN ALA MET ASN HIS CYS ARG THR LEU ARG

ASP LEU GLU ALA GLN VAL ALA GLU LYS ILE PHE LYS ASN ILE HIS THR VAL ALA LYS ALA PHE LYS LEU LEU LEU ASP VAL ASN LYS THR GLY LEU VAL GLN ILE ALA ARG GLU LEU ARG ARG VAL LEU GLU THR SER VAL ARG GLY LEU LEU ASP GLU ARG PHE TYR PHE ARG PHE ALA LYS HIS

TYR ASN VAL ASP LYS ASP THR ALA VAL ASP TYR ASN VAL PHE LEU LYS ASN ASP ASP LEU ASN LEU LYS TYR ASP VAL GLY SER GLN GLU VAL SER TRP GLU GLU GLN ARG ALA LYS ASN PRO SER ARG GLU CYS LEU PRO SER SER LEU SER PRO GLU ASP ILE ARG

GLY ASN TYR SER LEU ASP ASP LEU GLU ARG VAL PHE CYS GLN GLU LEU SER ARG SER HIS GLU ARG VAL GLU LYS ALA LEU SER ALA GLY ASP PRO SER ARG GLY GLY TYR VAL SER LEU ASN TYR LEU LYS ILE VAL LEU GLY ASP THR PHE VAL CYS ARG LEU PRO ARG ARG ILE PHE ILE

GLN LEU MET LYS ARG PHE GLY LEU LYS THR THR ALA LYS ILE ASN TRP LYS GLN PHE LEU THR SER ILE TYR GLU PRO GLN TRP LEU GLU THR SER ASN LYS ILE PRO MET THR LYS ARG ASN SER ILE ASN SER ARG GLN PRO ARG GLN GLU ASN ILE ILE PRO ARG LEU PHE SER HIS

GLU ASP HIS SER THR ALA LEU LYS GLU ALA LEU LEU ILE ILE ASN SER LYS PRO GLY ARG GLN ILE THR GLY GLU GLU LEU ARG HIS THR LEU ASN ASN ASP MET ALA VAL LYS ILE SER ASP SER GLU PHE LYS GLU LEU MET ARG THR LEU ASP PRO GLY SER THR GLY TRP VAL ASN VAL

SER THR PHE VAL GLU LEU LEU GLU GLU LYS LYS PRO ARG LEU SER LYS PRO SER PRO CYS GLU ASP PRO LYS ALA PRO LEU LEU LEU ALA TRP ASP SER VAL GLU GLU ILE VAL HIS HIS SER VAL THR ARG ASN LEU UNK GLY PHE ARG ARG MET LEU GLN SER CYS ASP LEU GLY LEU ASP

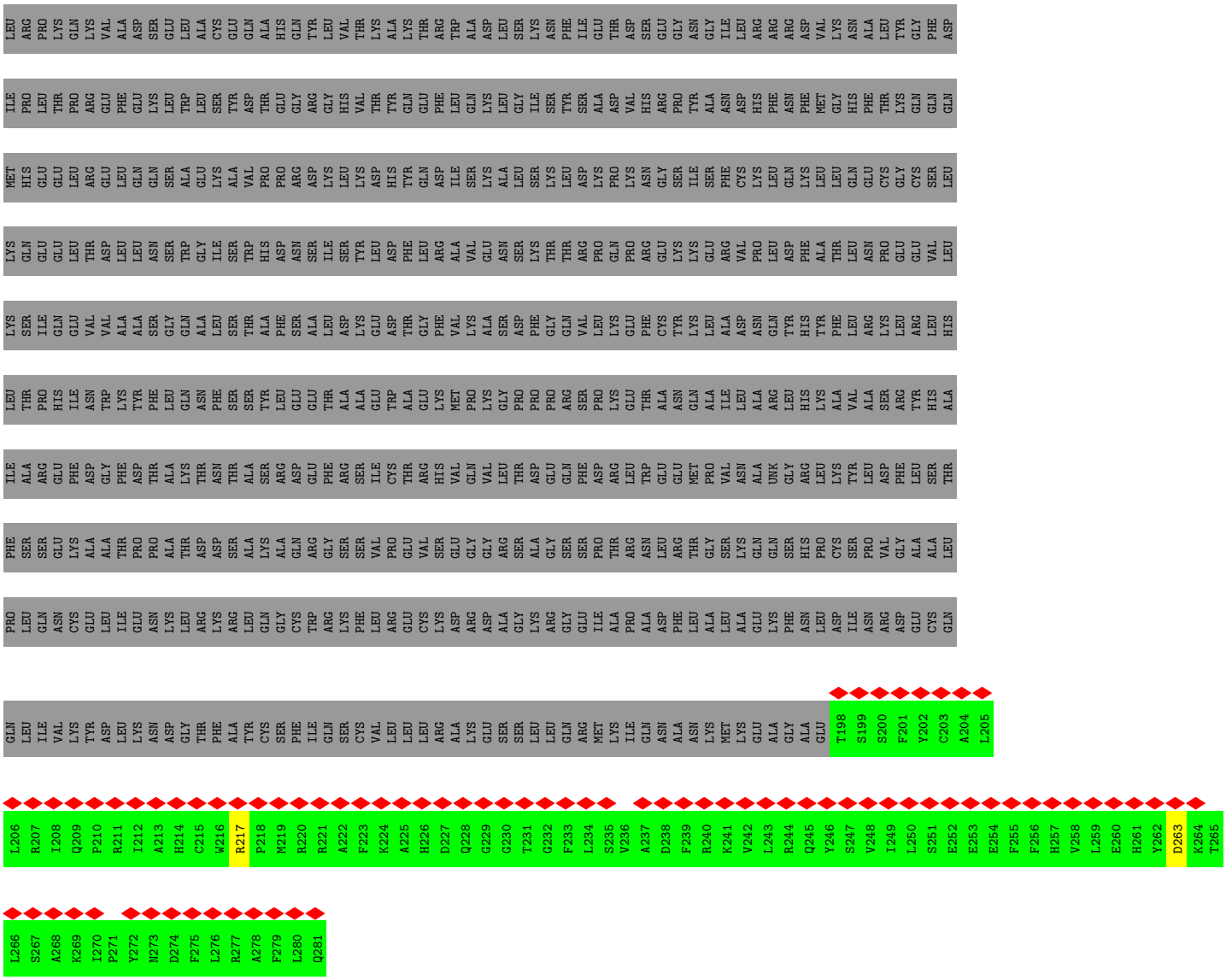
GLY LEU VAL GLY ARG GLN ASN PHE LYS LYS LYS LEU CYS ASN LYS PHE GLN ASP ILE THR SER GLY ARG ILE LEU TYR LYS LYS LEU LEU LEU ALA CYS LEU GLY ILE ASN GLY PRO PRO THR VAL SER PRO VAL LEU

VAL PRO LYS ASP GLN LEU PHE ASN GLU HIS PHE GLN LYS GLU ASP GLN GLN PRO ASP LEU SER GLU GLU ARG THR GLU PRO THR GLU SER LYS SER ALA VAL THR LYS GLU GLU VAL ILE GLU LYS LEU GLU ASP CYS ILE ARG GLN ARG ASP PRO PHE ARG LYS

ARG PHE LEU ASP PHE SER LYS GLU GLU HIS GLY MET PRO MET ASP ASP ASP GLN TYR ALA LEU LEU THR ALA LYS ILE GLY TYR LYS LYS GLU GLY MET SER TYR LEU ASP PHE ALA THR GLY PHE GLU ASP ALA

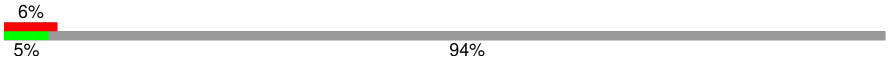
ALA MET ASN GLY PRO GLU ALA ALA THR PRO PRO GLN THR ARG SER ASP SER SER LEU ILE THR ALA LYS GLU CYS LEU ARG ARG GLN PHE PRO ARG ARG LEU LYS GLU PHE PHE PRO ARG ASP PRO TYR ALA ALA PHE ASP ASN LEU ASP ARG ASP GLY LEU ILE

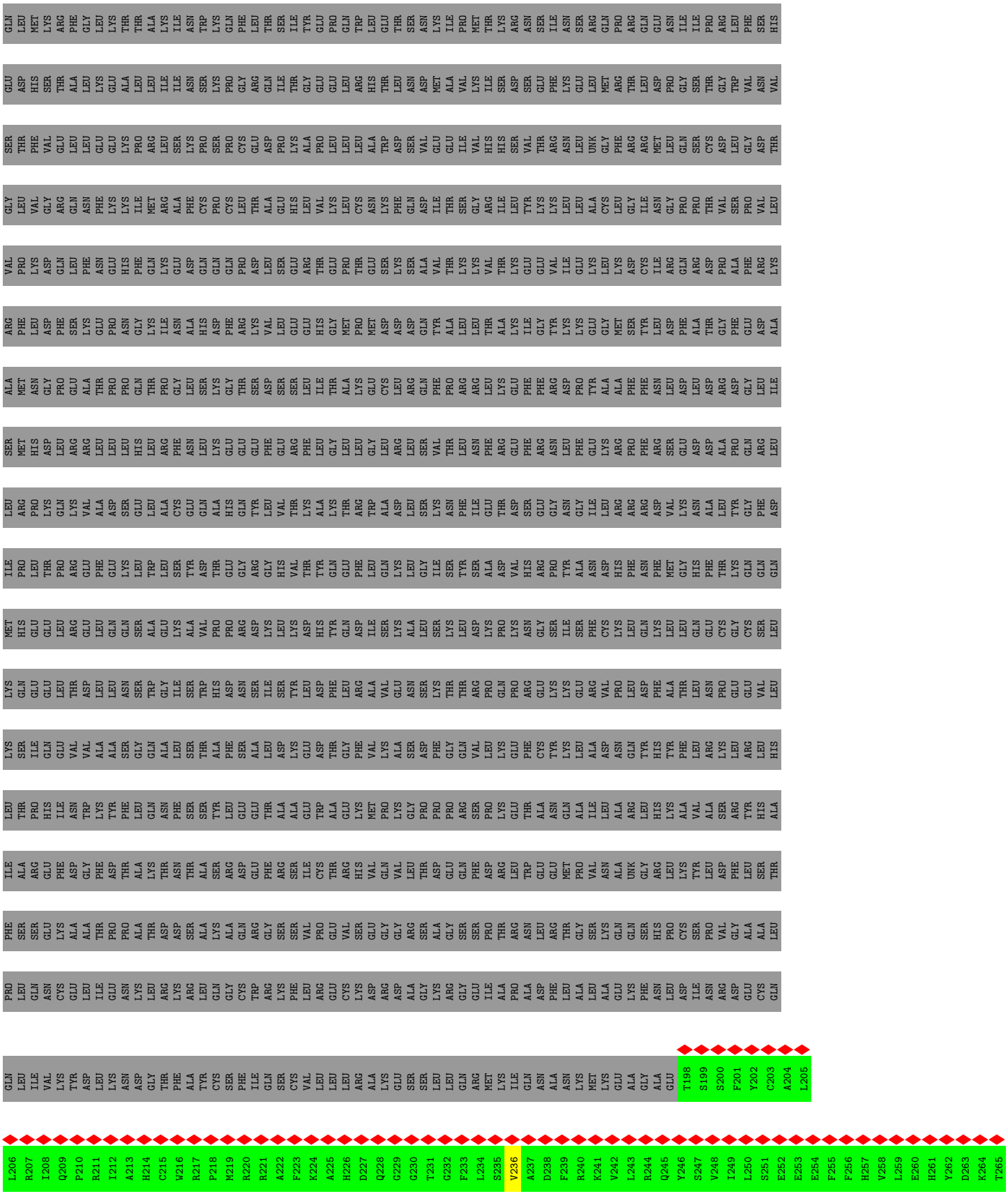
SER MET HIS ASP LEU ARG ARG LEU LEU LEU HIS LEU ARG PHE ASN LEU LYS GLU GLU ARG PHE LEU GLY LEU LEU GLY LEU ARG LEU SER VAL THR LEU ASN PHE ARG GLU PHE ARG ASN LEU PHE GLU LYS ARG PRO PHE ARG SER GLU ASP ASP ALA PRO GLN ARG LEU



• Molecule 6: EFCAB6

Chain 1Q:

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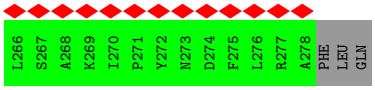
GLU ASP HIS SER THR ALA LEU LYS GLU ALA LEU LEU ILE ILE ASN SER LYS PRO GLY ARG GLN ILE THR GLY GLU GLU LEU ARG HIS THR LEU ASN ASP MET ALA VAL LYS ILE ILE SER ASP SER GLU PHE LYS GLU LEU MET ARG THR LEU ASP PRO GLY SER THR GLY TRP VAL ASN VAL
SER THR PHE VAL GLU LEU LEU GLU GLU LYS PRO ARG LEU SER LYS PRO SER PRO CYS GLU ASP PRO LYS ALA PRO LEU LEU LEU LEU ALA TRP ASP SER VAL GLU GLU ILE VAL HIS HIS SER VAL THR ARG ASN LEU UNK GLY PHE ARG THR ARG MET LEU GLN SER CYS ASP LEU GLY SER
GLY LEU VAL GLY ARG GLN ASN PHE LYS LYS ILE MET ARG ALA PHE CYS PRO CYS LEU THR ALA GLU HIS LEU VAL LYS LEU CYS ASN LYS PHE GLN ASP ILE THR SER GLY ARG ILE LEU TYR LYS LYS LEU LEU ALA CYS LEU GLY ILE ASN GLY PRO GLN PRO THR VAL THR ASN LEU
VAL PRO LYS ASP GLN LEU PHE ASN GLU HIS PHE GLN LYS GLU ASP GLN GLN GLN PRO ASP LEU SER GLU ARG THR GLU GLU ARG THR LYS LYS VAL THR LYS GLU GLU VAL ILE GLU GLU LYS LEU LYS ASP SER ALA VAL THR LYS GLN ARG ASP PRO ALA PHE ARG LYS
ARG PHE LEU ASP PHE SER LYS GLU HIS ASP PHE ARG LYS VAL LEU GLU GLU HIS GLY MET PRO MET ASP ASP GLN TYR ALA LEU LEU THR ALA LYS ILE GLY TYR LYS LYS GLU GLY MET SER TYR LEU ASP PHE ALA THR GLY PHE GLU ASP ASP
ALA MET ASN GLY PRO GLU ALA THR PRO PRO GLN THR PRO GLY LEU SER SER LEU ILE THR ALA LYS SER GLU CYS LEU ARG GLN PHE PRO ARG ARG LEU LYS GLU PHE PHE ARG ASP PRO TYR ALA ALA PHE PHE ASN LEU ASP PRO ALA ASP GLY LEU ILE
SER MET HIS ASP LEU ARG ARG LEU LEU LEU HIS LEU GLU GLU ARG PHE LEU GLY LEU LEU GLY LEU ARG LEU SER VAL THR LEU ASN PHE ARG GLU PHE ARG ASN LEU PHE GLU LYS ARG PRO PHE ARG SER GLU ASP ASP ALA PRO GLN ARG LEU
LEU ARG PRO LYS GLN LYS VAL ALA ASP SER GLU LEU ALA CYS GLU GLN ALA HIS GLN TYR TYR LEU VAL THR LYS ALA LYS THR ARG TRP ALA ASP LEU SER LYS ASN PHE ILE GLU THR ASP SER GLU GLY ASN GLY ILE LEU ARG ARG ARG ASP LEU TYR GLY PHE ASP
ILE PRO LEU THR PRO ARG GLU PHE GLU LYS LEU TRP LEU SER TYR ASP THR GLU GLY ARG GLY HIS VAL THR TYR GLN GLU PHE LEU GLN LYS LEU GLY ILE SER TYR SER ALA ASP VAL HIS ARG PRO TYR ALA ASN ASP HIS PHE ASN PHE MET GLY HIS PHE THR LYS GLN GLN GLN
MET HIS GLU GLU LEU ARG GLU LEU GLN GLN SER ALA GLU LYS ALA VAL PRO PRO ARG ASP LYS LEU LYS ASP HIS TYR GLN GLU ASP ILE SER LYS ALA LEU SER LYS LEU ASP ASN GLY SER ILE SER PHE CYS LYS LEU GLN GLU CYS GLY CYS SER LEU
LYS GLN GLU GLU LEU THR ASP LEU LEU ASN SER ILE SER TYR LEU ASP PHE LEU ARG ALA VAL GLU ASN SER THR PHE GLY GLN ALA LEU SER THR ALA PHE SER ALA LEU ASP LYS GLU ASP THR GLY PHE VAL LYS ALA SER ASP PHE THR ALA PHE GLY GLN VAL LEU LYS GLU PHE CYS TYR LYS LEU ALA ASN GLN ALA ILE LEU ALA ASP ASN GLN LEU TYR HIS LYS PHE LEU ARG LYS LEU SER ARG TYR HIS ALA
LEU THR PRO HIS ILE ASN TRP LYS TYR PHE LEU GLN ASN PHE SER SER TYR LEU GLU GLU THR LYS ALA ALA GLU TRP ALA GLU LYS MET PRO LYS GLY PRO PRO PRO PRO ARG SER PRO LYS GLU THR ALA ASN GLN ALA ILE LEU ALA ARG LEU TYR ILE SER ALA VAL ALA SER ARG TYR HIS ALA
ILE ALA ARG GLU PHE ASP THR ALA LYS THR ASN THR ALA SER ARG GLU PHE ASP ILE CYS THR ARG HIS VAL GLN VAL LEU THR ASP GLU GLN PHE ASP ARG LEU TRP GLU GLU MET PRO VAL ASN ALA UNK GLY ARG LEU HIS LYS TYR LEU ASP ASP ALA SER ARG TYR LEU SER
PHE SER SER GLU LYS ALA THR ASP ASP SER ALA ALA LYS ARG SER VAL PRO GLU VAL SER ARG GLU GLY GLY ARG SER SER PRO THR ARG ASN LEU ARG THR GLY SER LYS ALA LYS GLN SER PRO VAL GLY ALA LEU
PRO LEU GLN ASN CYS GLU LEU ILE GLU CYS LYS ASP ARG ASP ALA GLY LYS GLY GLU ILE ALA PRO ALA ASP PHE LEU ALA LEU ALA GLU LYS PHE ASN ARG ASP GLU CYS LEU

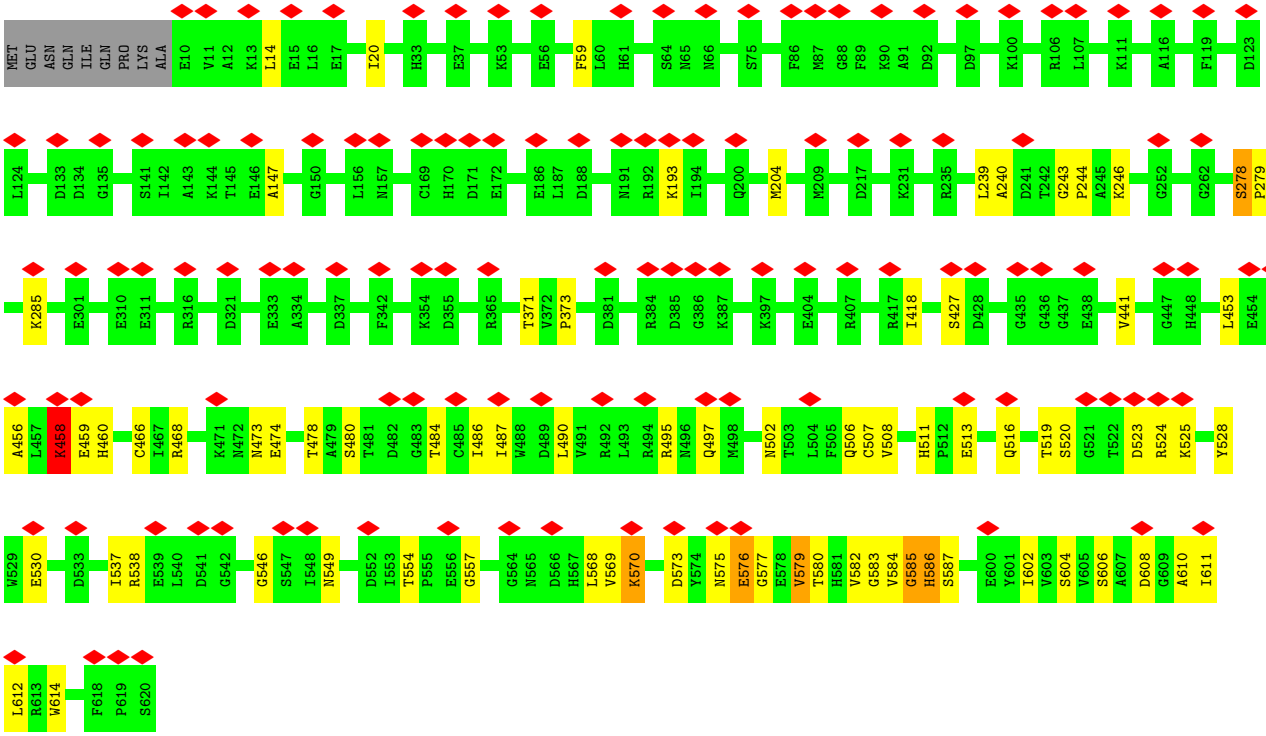
GLN LEU ILE VAL LYS TYR ASP LEU LYS ASN ASP GLY THR PHE ALA TYR CYS SER PHE ILE GLN SER CYS VAL LEU LEU LEU ARG ASP ARG ASP ALA LYS ALA ASP LYS LYS ALA LYS ASP ALA LYS ASP MET LYS ILE GLN ASN ALA ASN LYS MET LYS GLU ALA GLY GLU
T198 S199 S200 F201 Y202 C203 A204 L205

L206 R207 I208 Q209 P210 R211 I212 A213 H214 C215 W216 R217 P218 M219 R220 R221 A222 F223 K224 A225 H226 D227 Q228 G229 G230 T231 G232 F233 L234 S235 V236 A237 D238 F239 R240 K241 V242 L243 R244 Q245 Y246 S247 V248 I249 L250 S251 E252 E253 E254 F255 F256 H257 V258 L259 E260 H261 Y262 D263 K264 T265



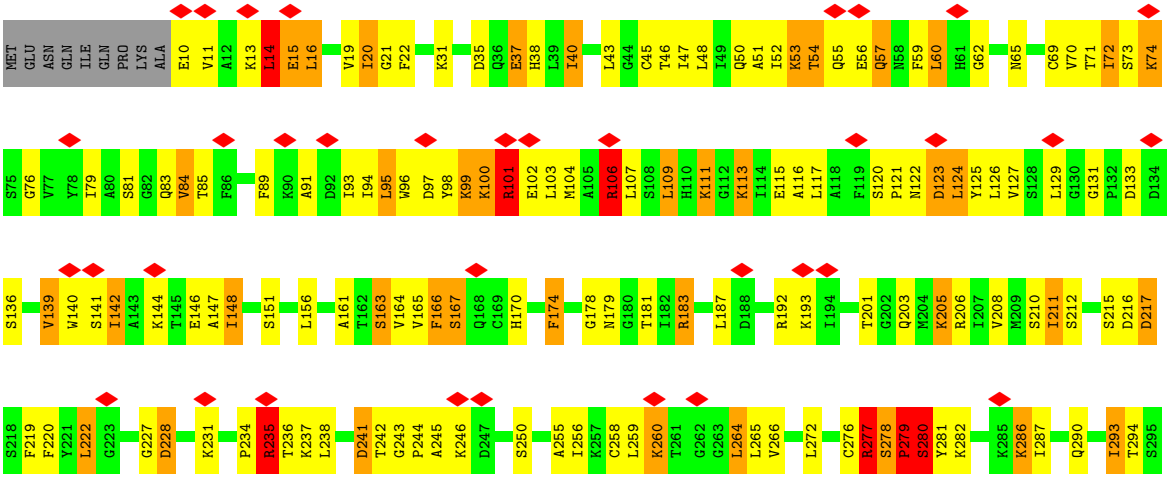
• Molecule 7: Cilia- and flagella-associated protein 52

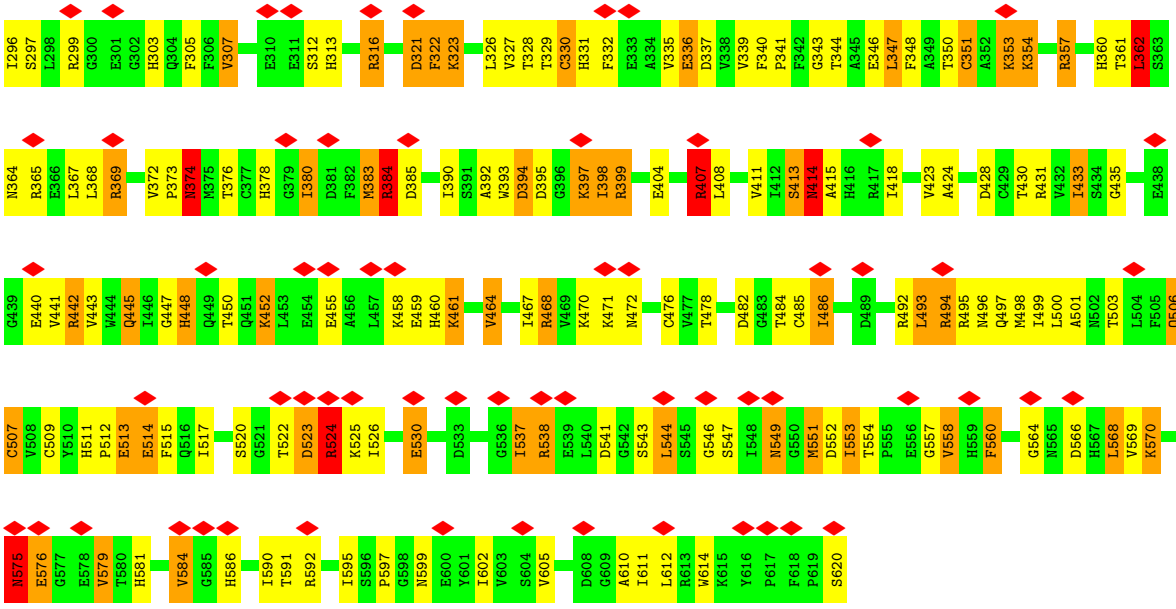
Chain 1S:



• Molecule 7: Cilia- and flagella-associated protein 52

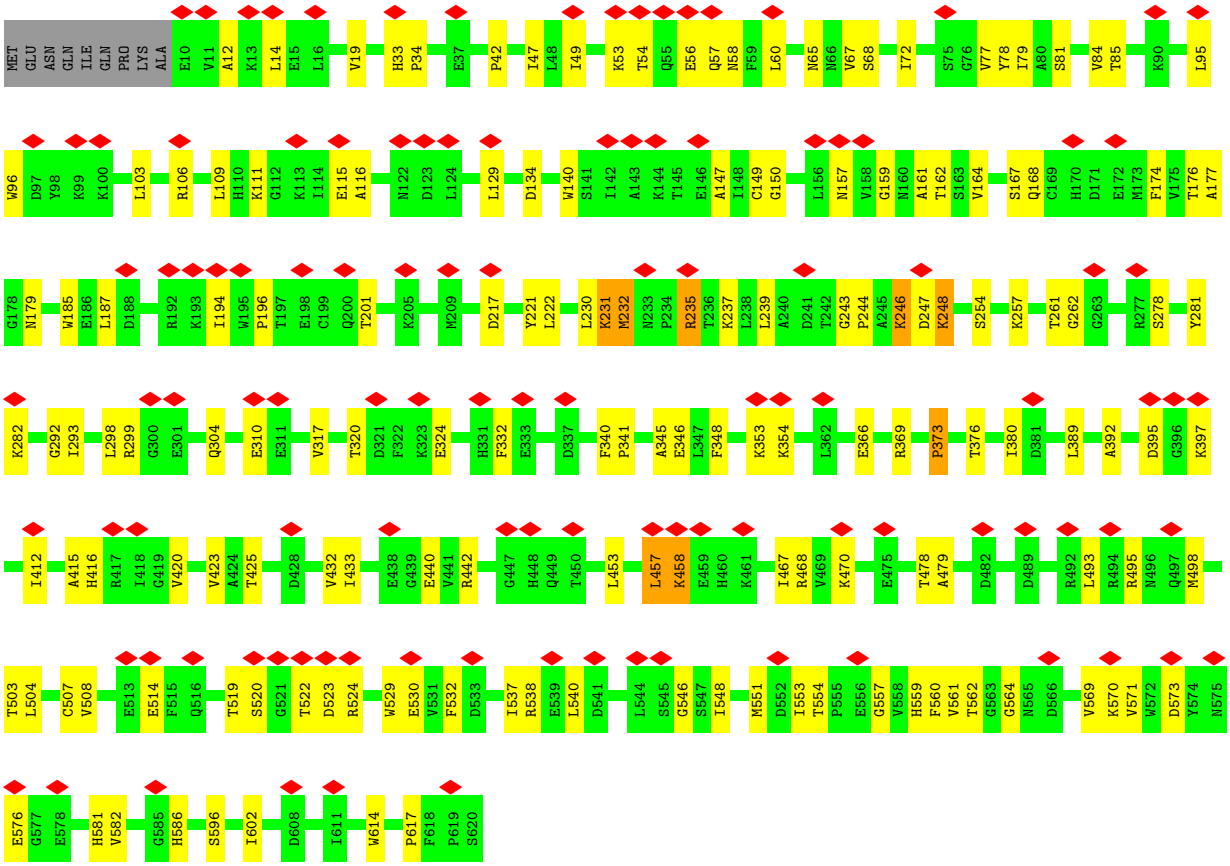
Chain 1T:





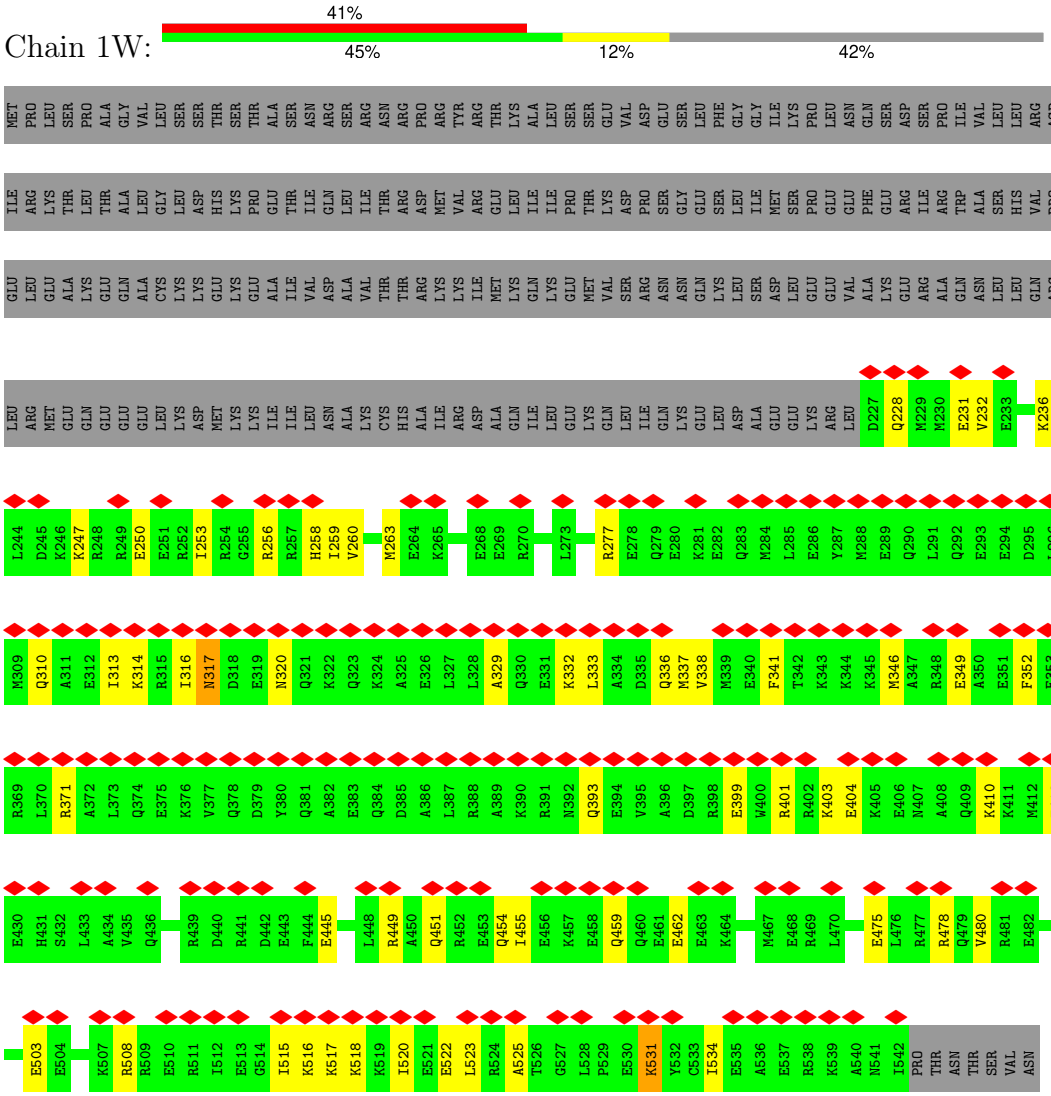
• Molecule 7: Cilia- and flagella-associated protein 52

Chain 1U:



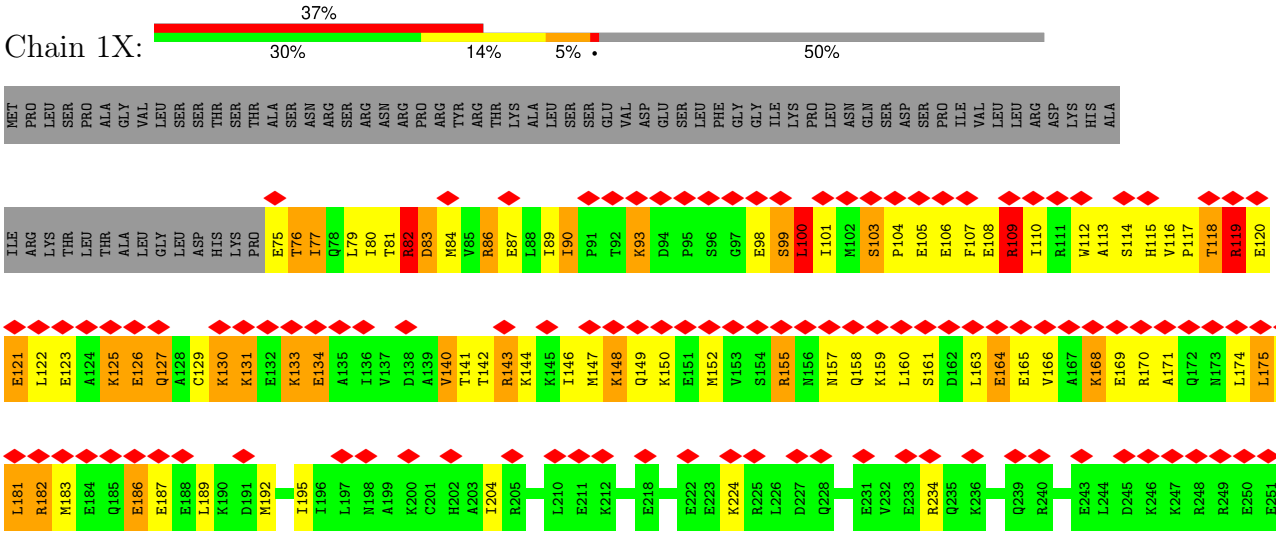
• Molecule 8: Cilia- and flagella-associated protein 45

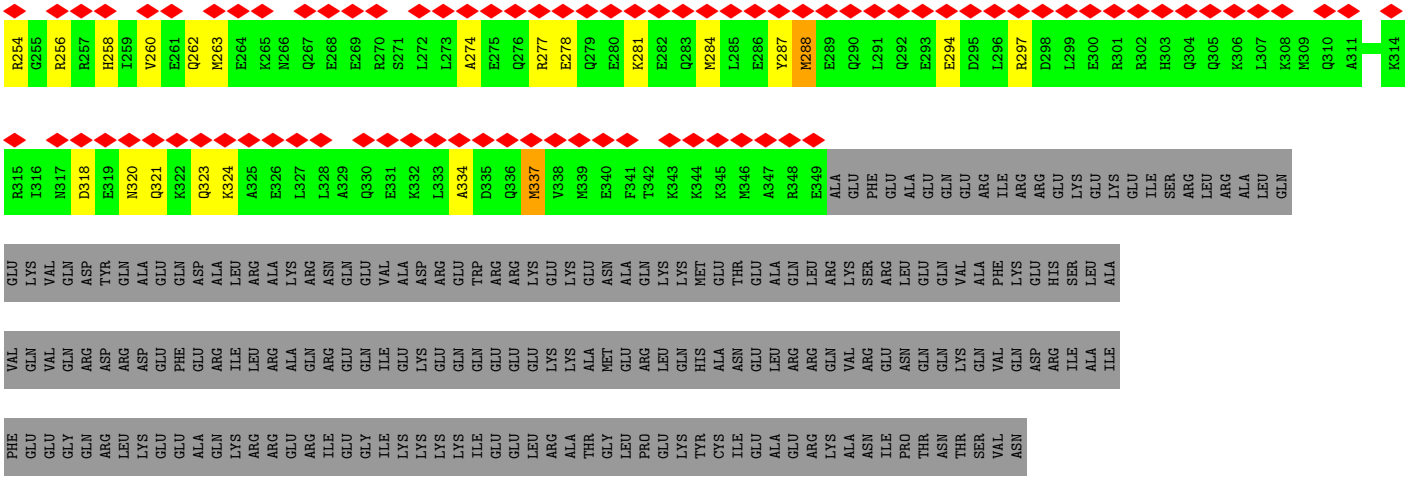
Chain 1W:



• Molecule 8: Cilia- and flagella-associated protein 45

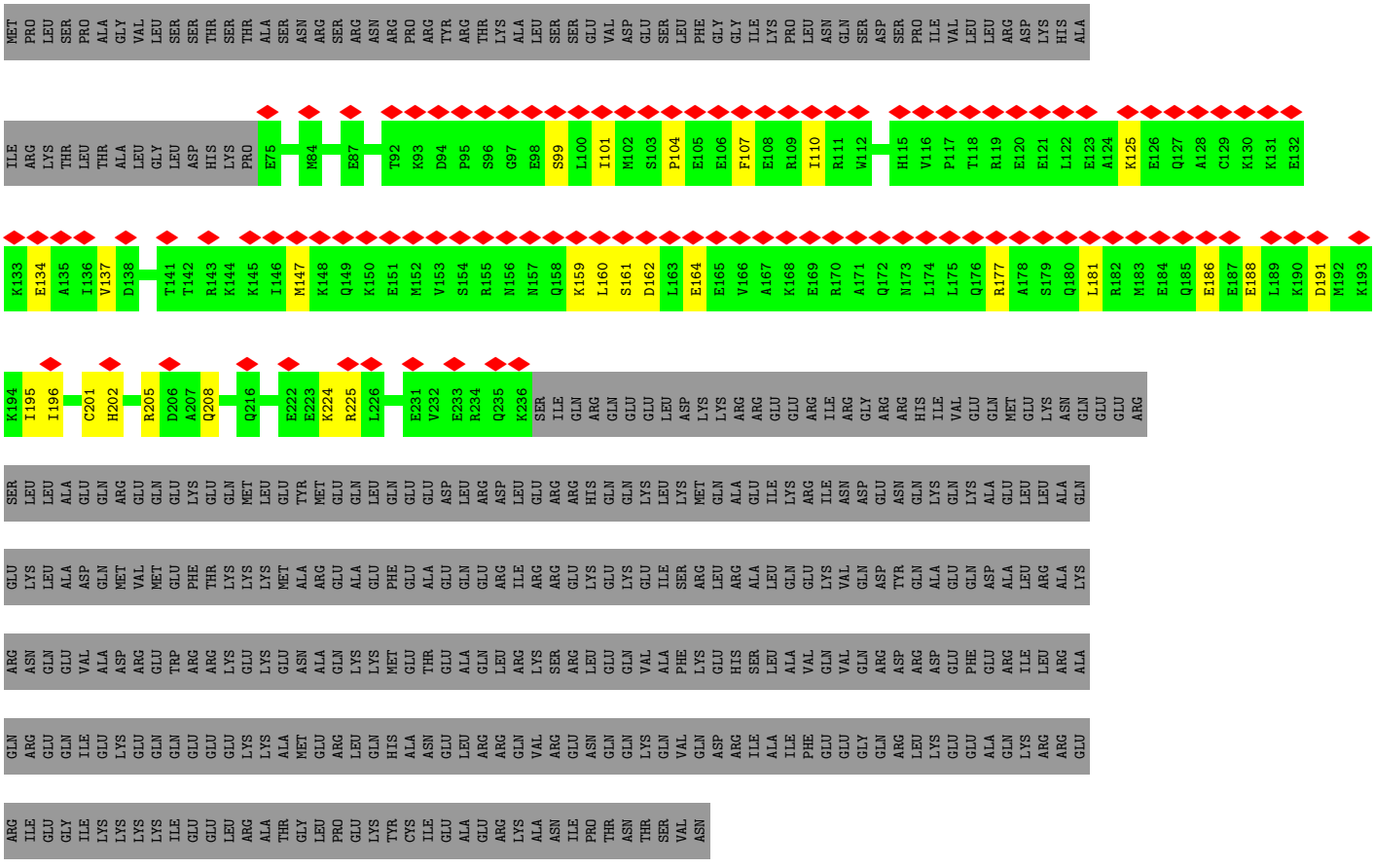
Chain 1X:





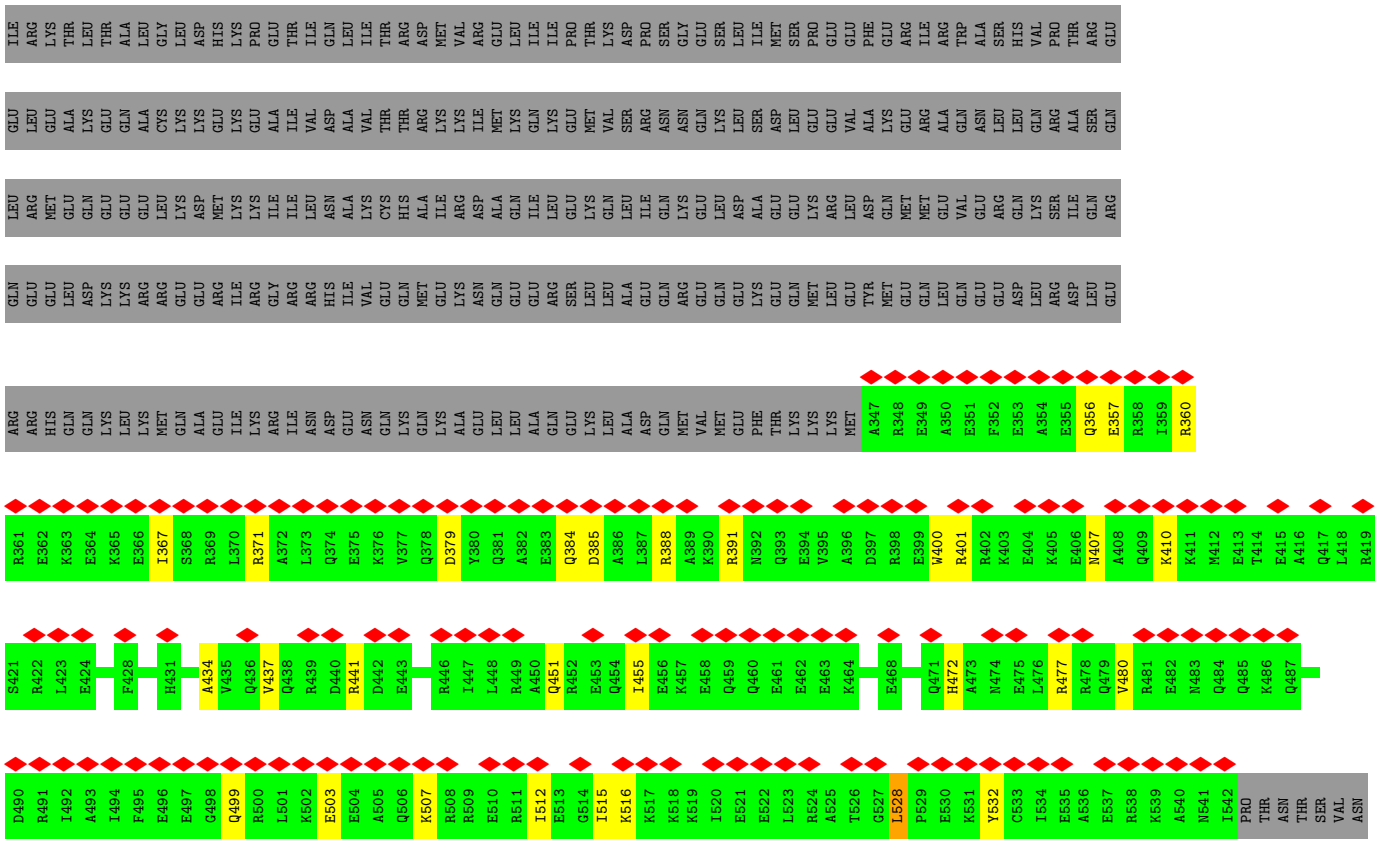
• Molecule 8: Cilia- and flagella-associated protein 45

Chain 1Y:



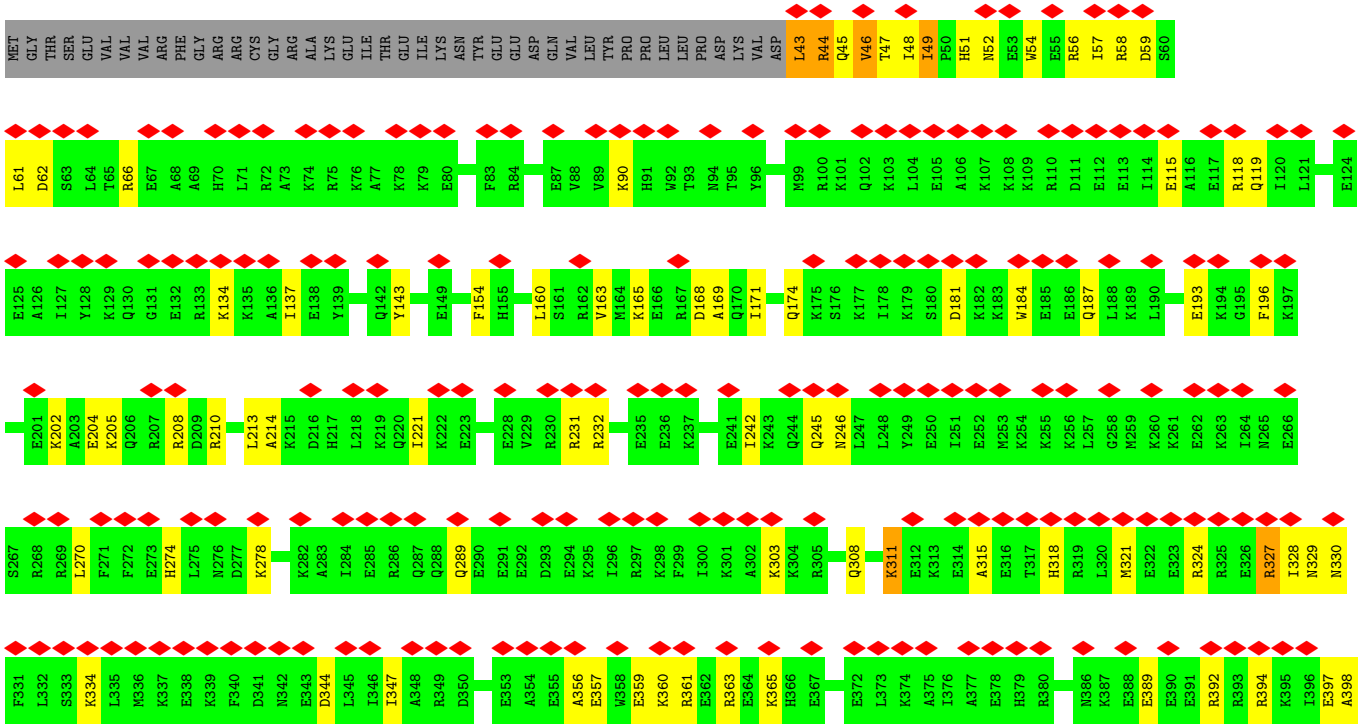
• Molecule 8: Cilia- and flagella-associated protein 45

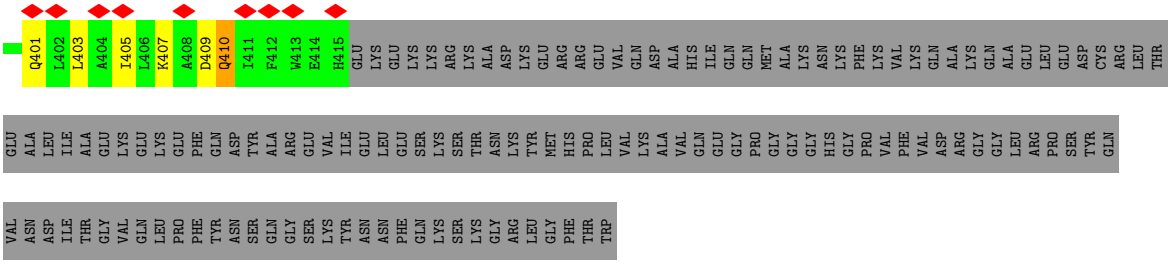
Chain 1Z:



• Molecule 9: Cilia and flagella associated protein 210

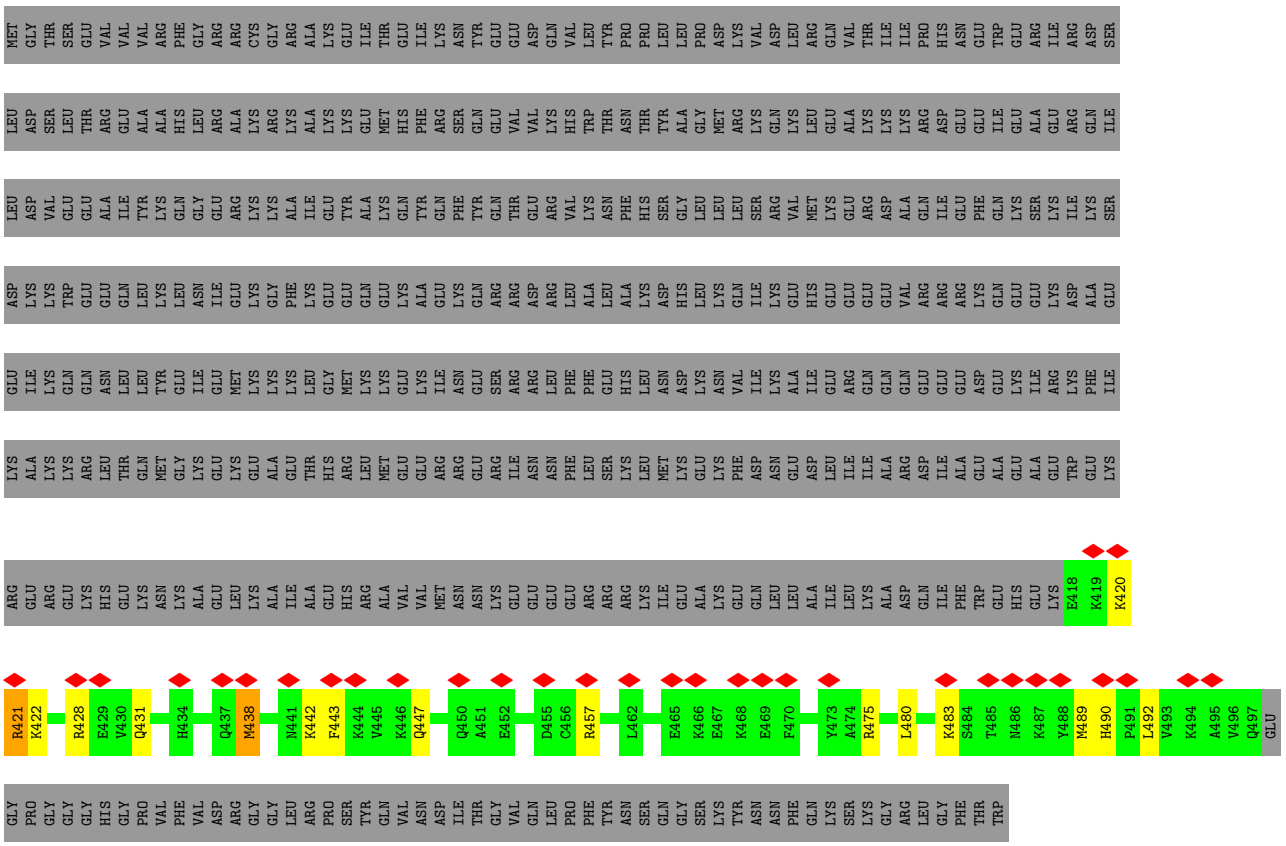
Chain 2B:





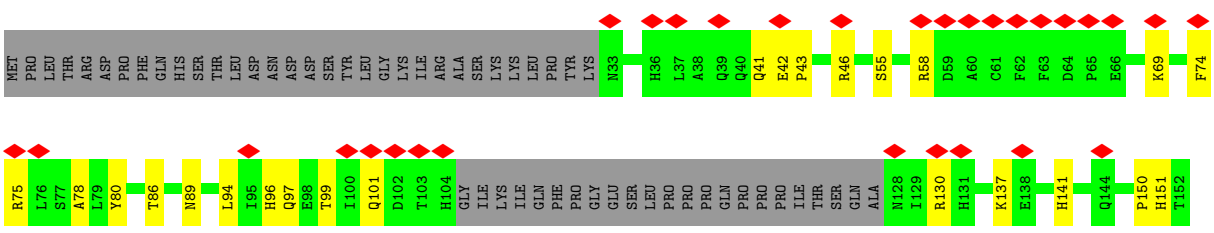
• Molecule 9: Cilia and flagella associated protein 210

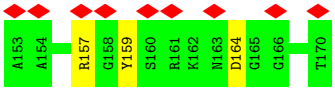
Chain 2C:



• Molecule 10: Cilia and flagella associated protein 276

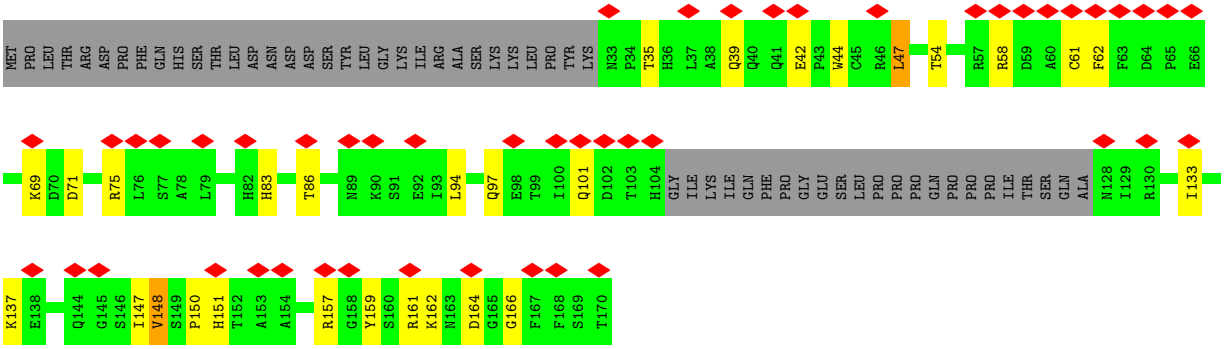
Chain 2E:





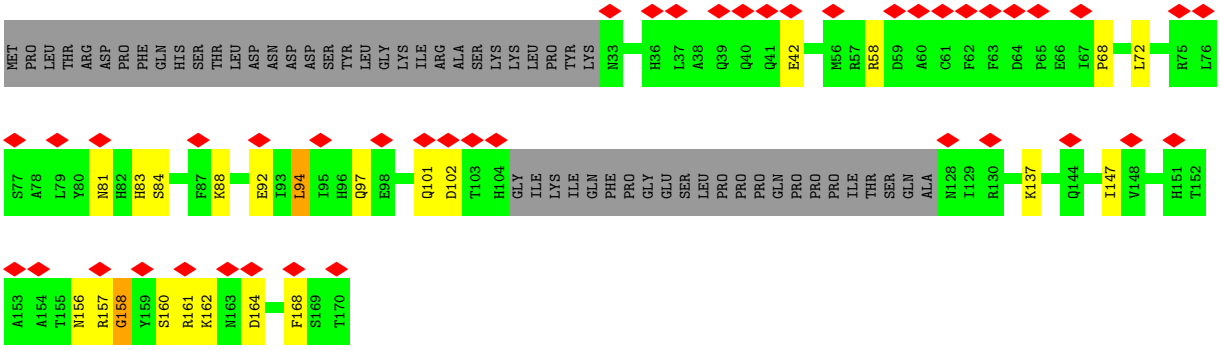
• Molecule 10: Cilia and flagella associated protein 276

Chain 2F:



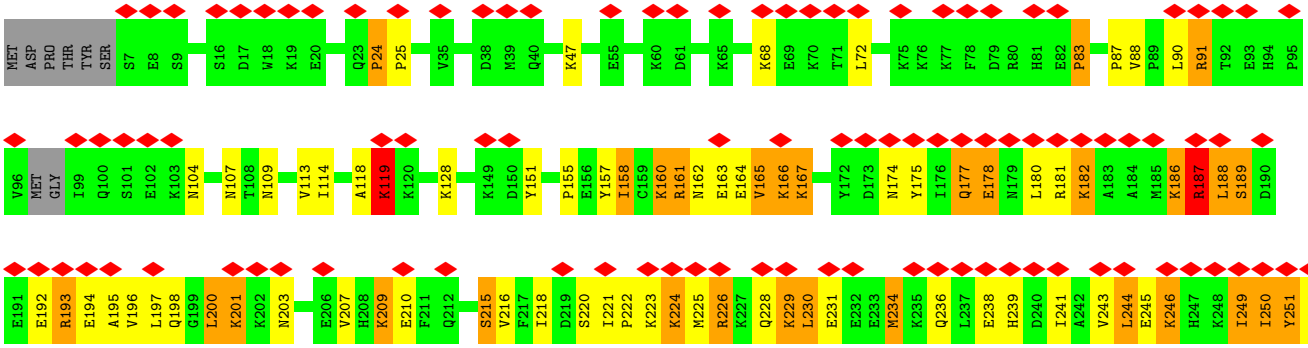
• Molecule 10: Cilia and flagella associated protein 276

Chain 2G:



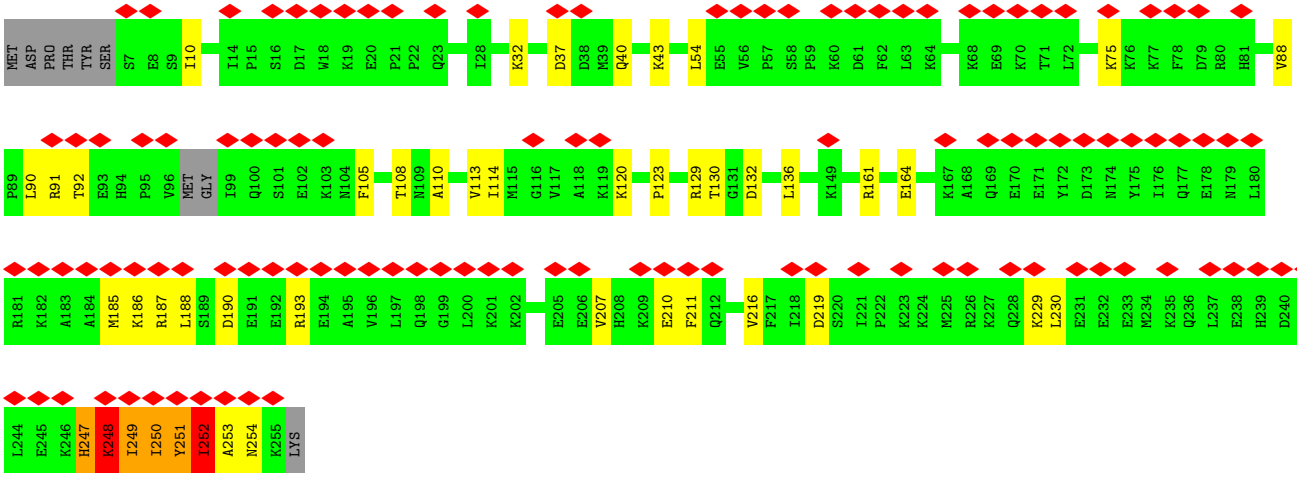
• Molecule 11: Enkurin

Chain 2I:



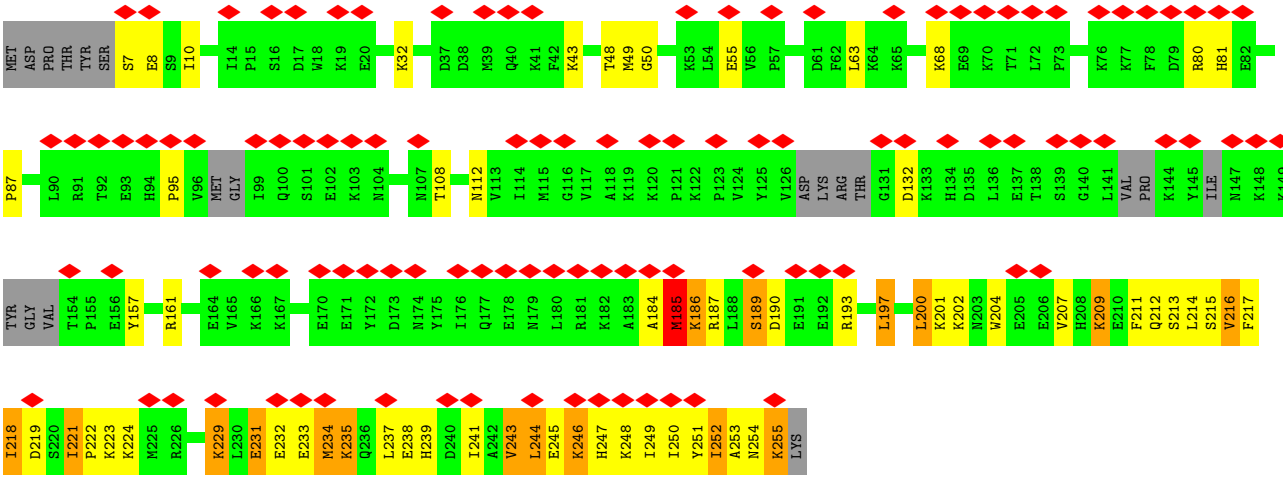
• Molecule 11: Enkurin

Chain 2J:



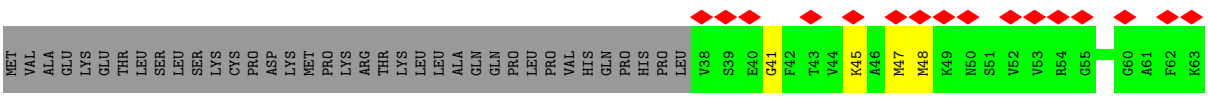
• Molecule 11: Enkurin

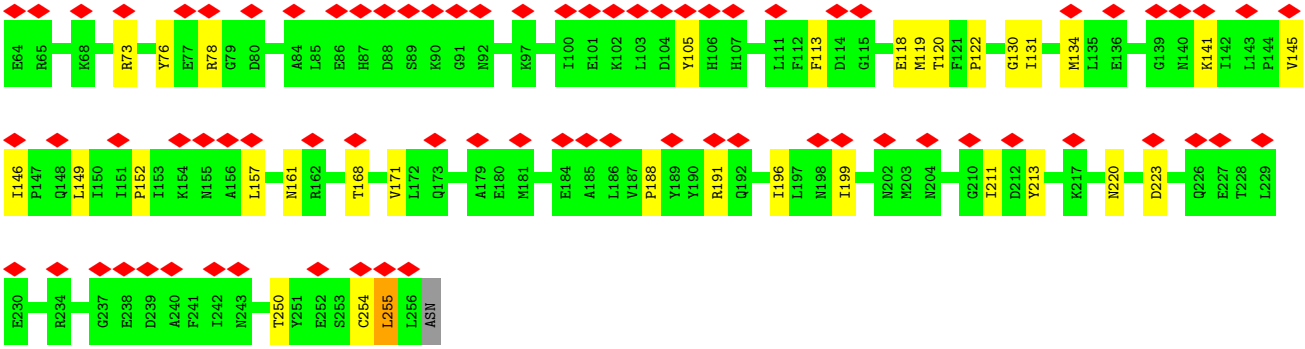
Chain 2K:



• Molecule 12: Parkin coregulated

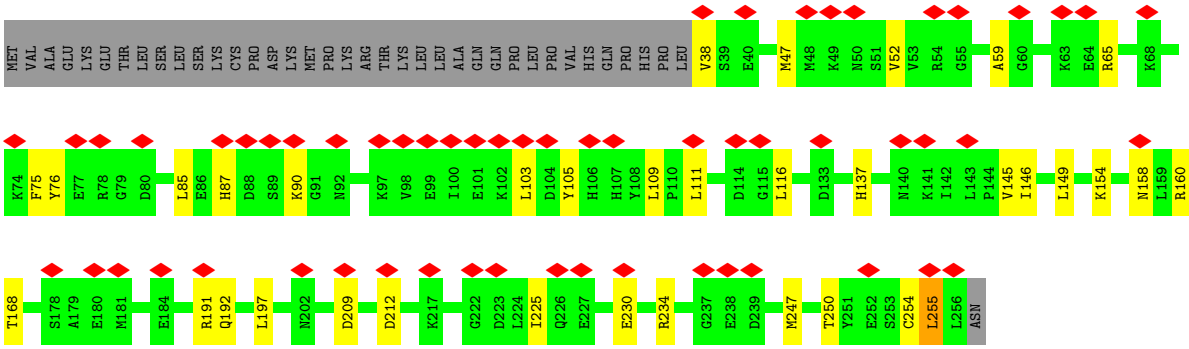
Chain 2M:





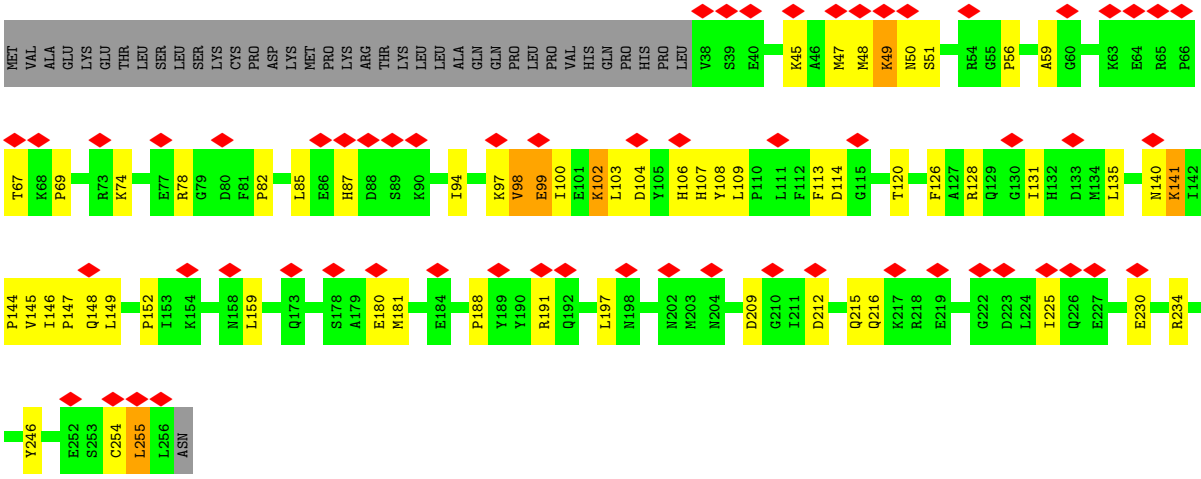
• Molecule 12: Parkin coregulated

Chain 2N:



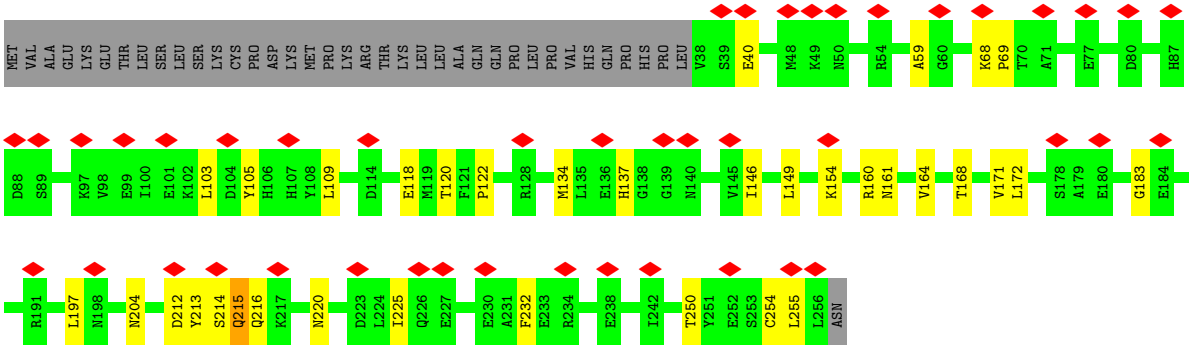
• Molecule 12: Parkin coregulated

Chain 2O:



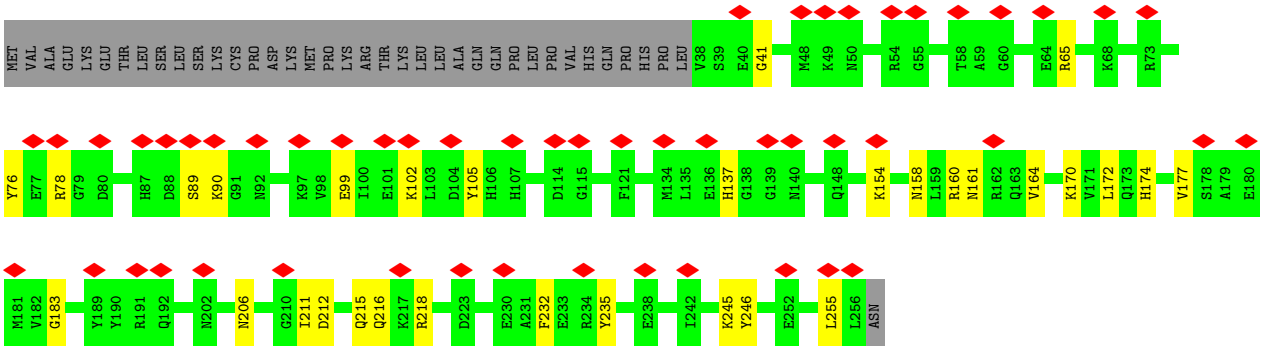
• Molecule 12: Parkin coregulated

Chain 2P:



• Molecule 12: Parkin coregulated

Chain 2Q:

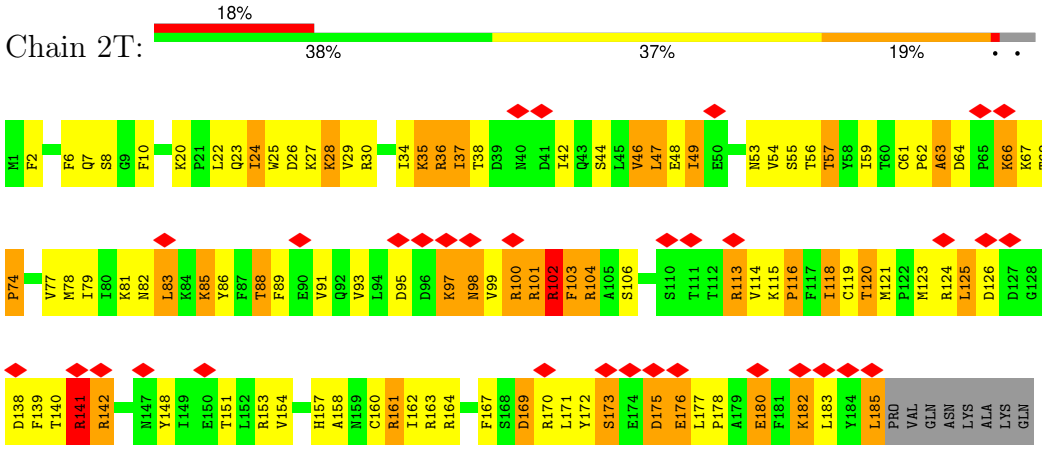


• Molecule 12: Parkin coregulated

Chain 2R:

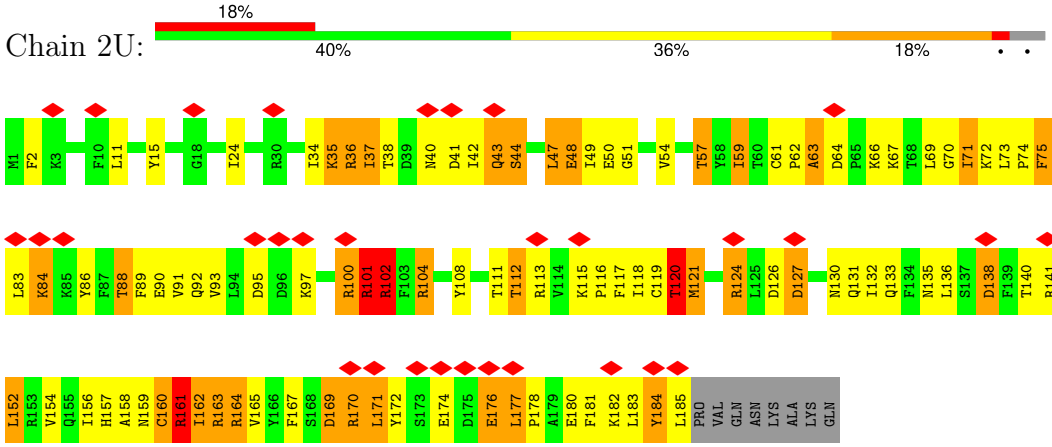
• Molecule 13: Cilia- and flagella-associated protein 20

Chain 2T:



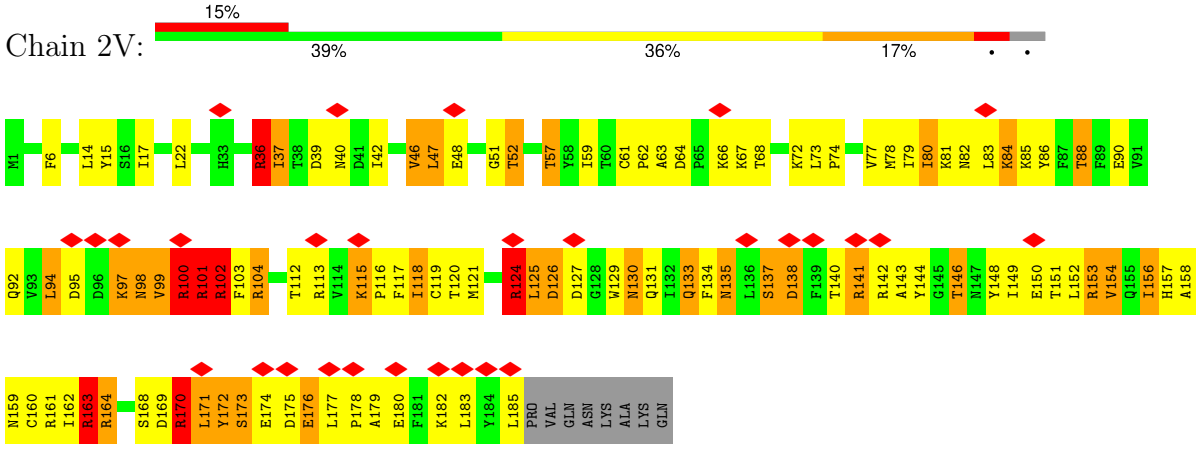
• Molecule 13: Cilia- and flagella-associated protein 20

Chain 2U:



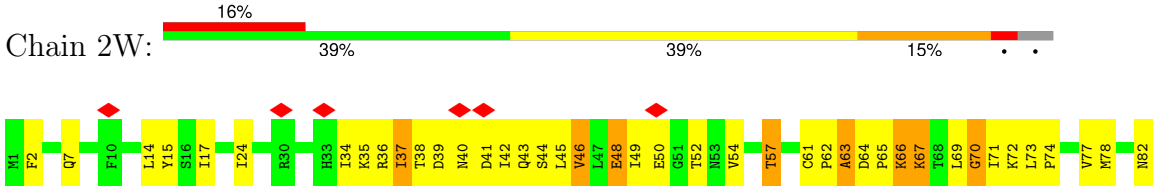
• Molecule 13: Cilia- and flagella-associated protein 20

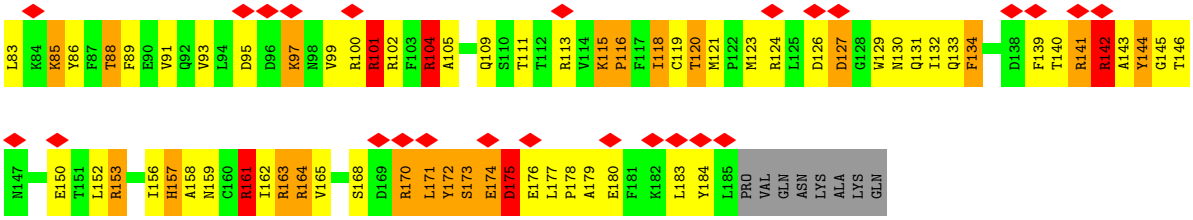
Chain 2V:



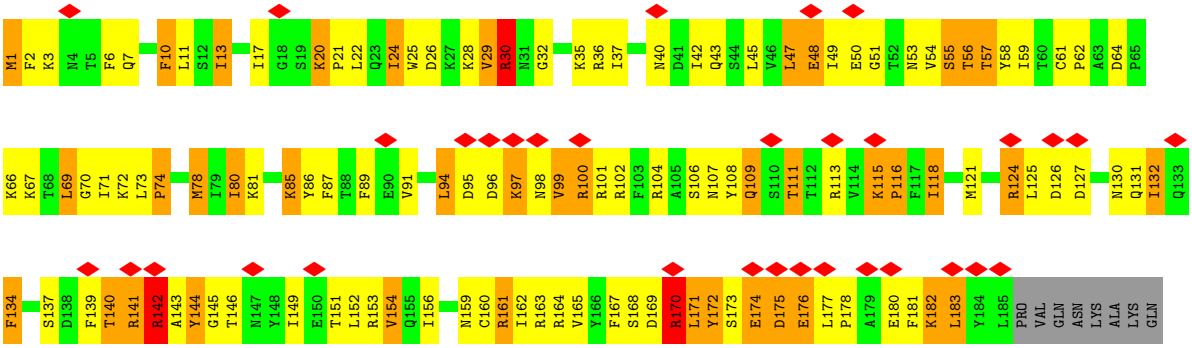
• Molecule 13: Cilia- and flagella-associated protein 20

Chain 2W:

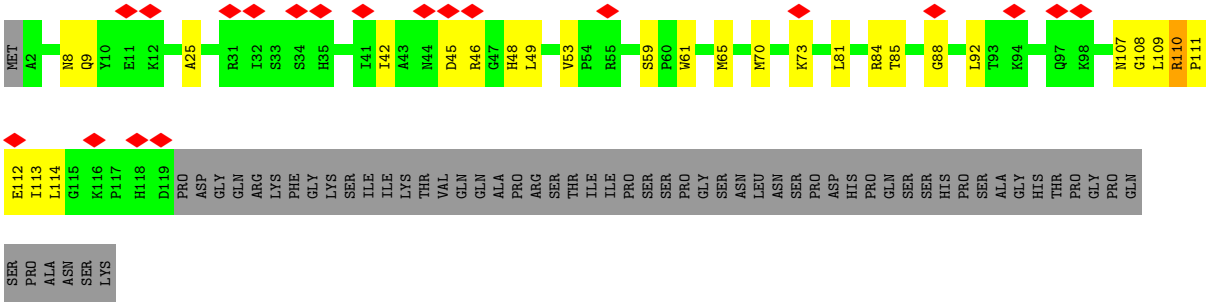




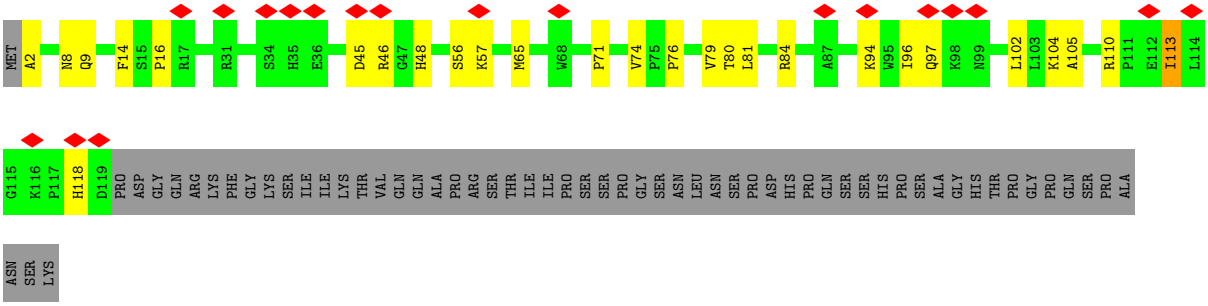
• Molecule 13: Cilia- and flagella-associated protein 20



• Molecule 14: Protein Flattop

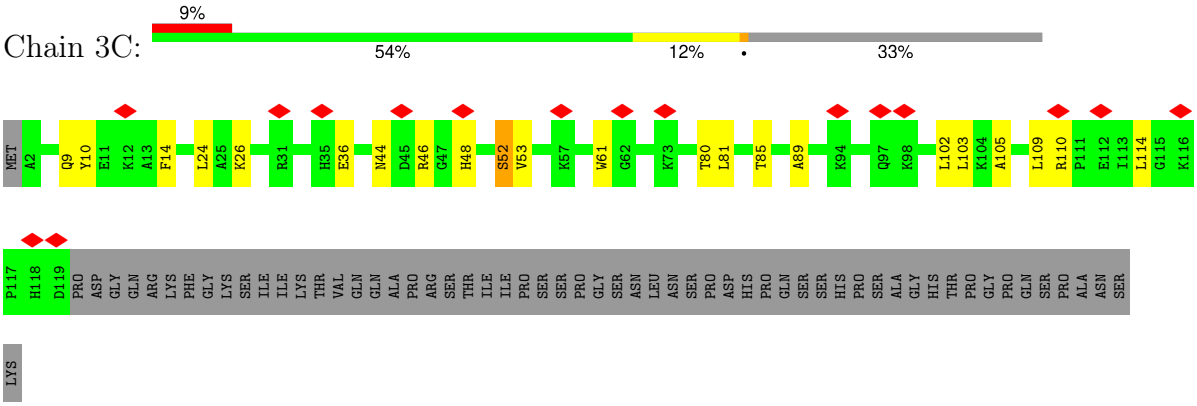


• Molecule 14: Protein Flattop



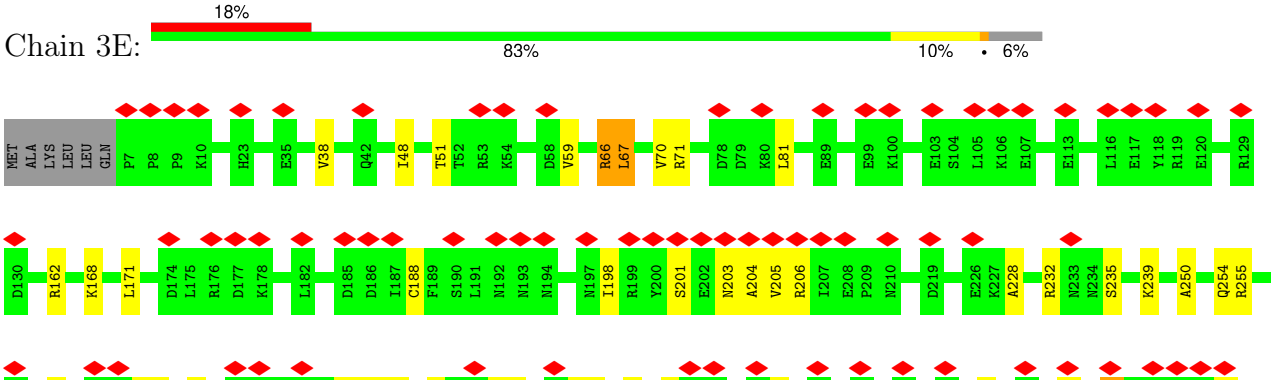
• Molecule 14: Protein Flattop

Chain 3C:



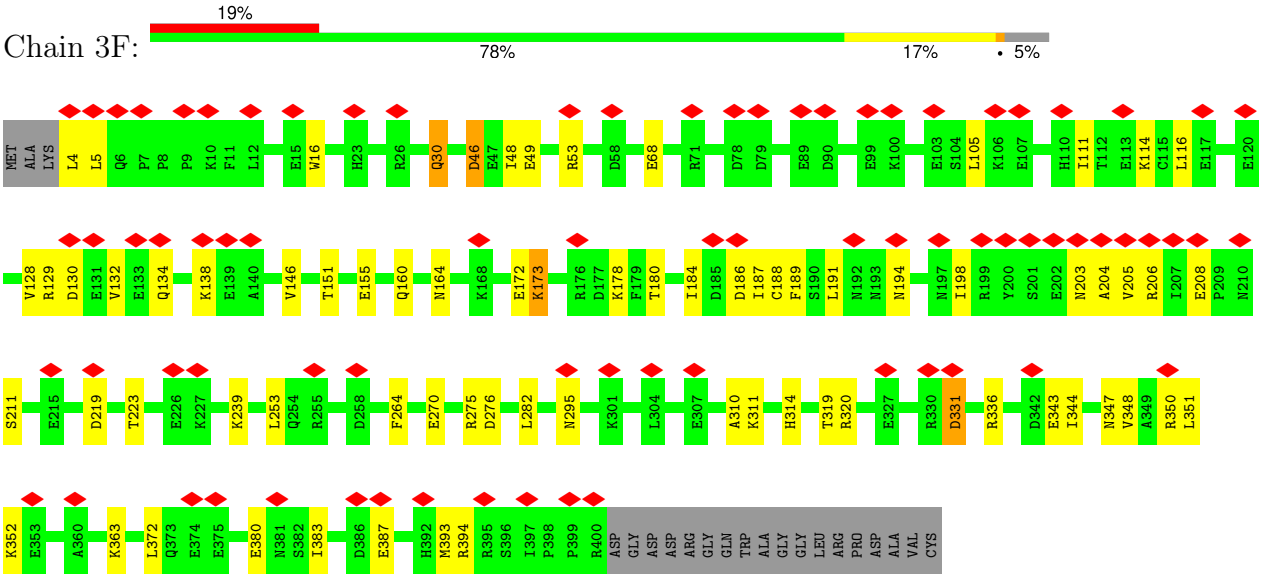
• Molecule 15: Tektin

Chain 3E:



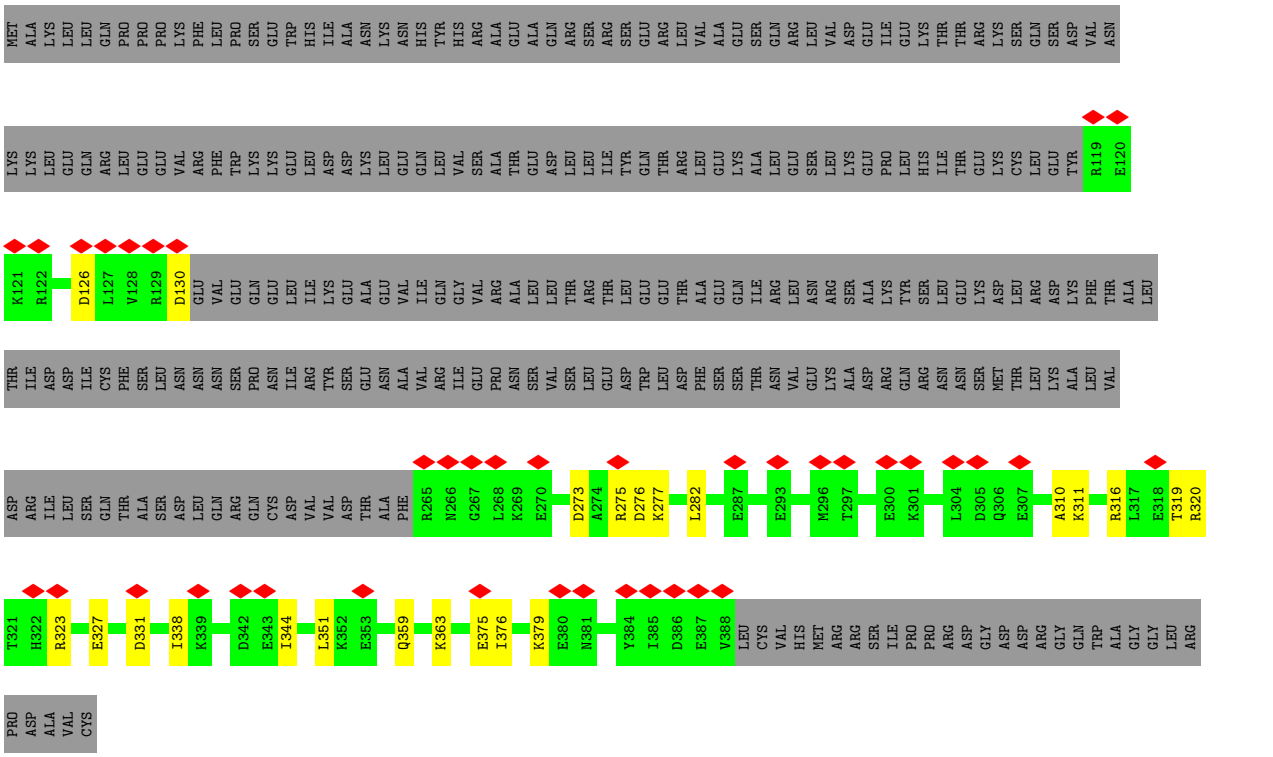
• Molecule 15: Tektin

Chain 3F:



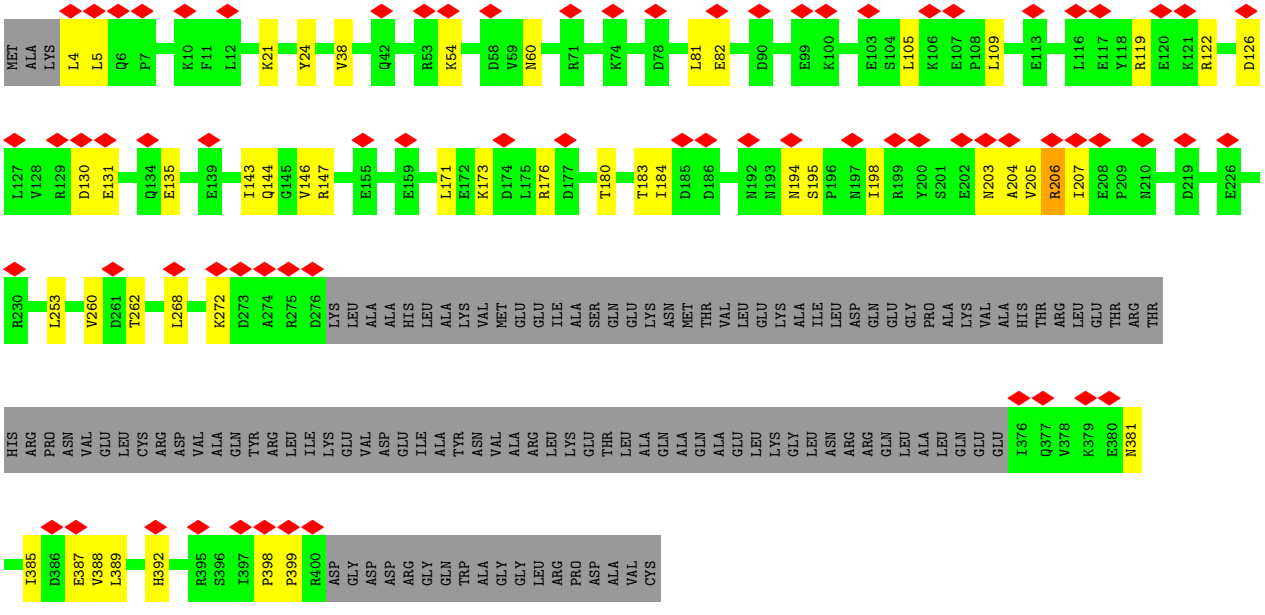
• Molecule 15: Tektin

Chain 3G:



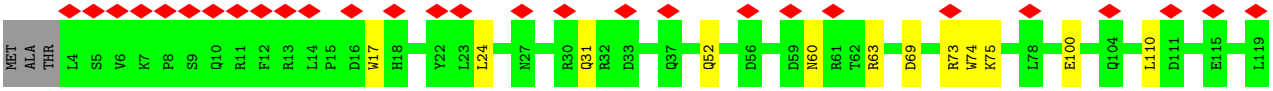
• Molecule 15: Tektin

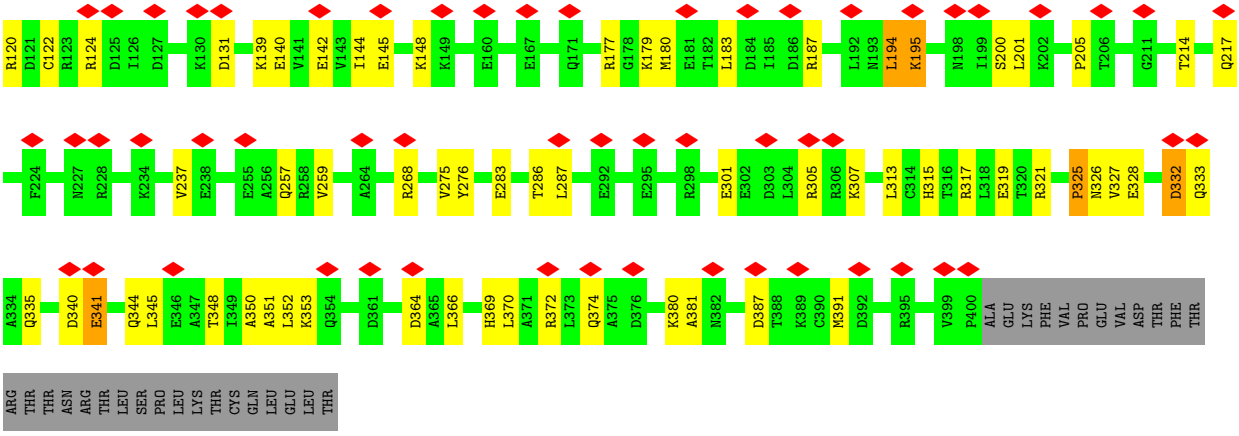
Chain 3H:



• Molecule 16: Tektin

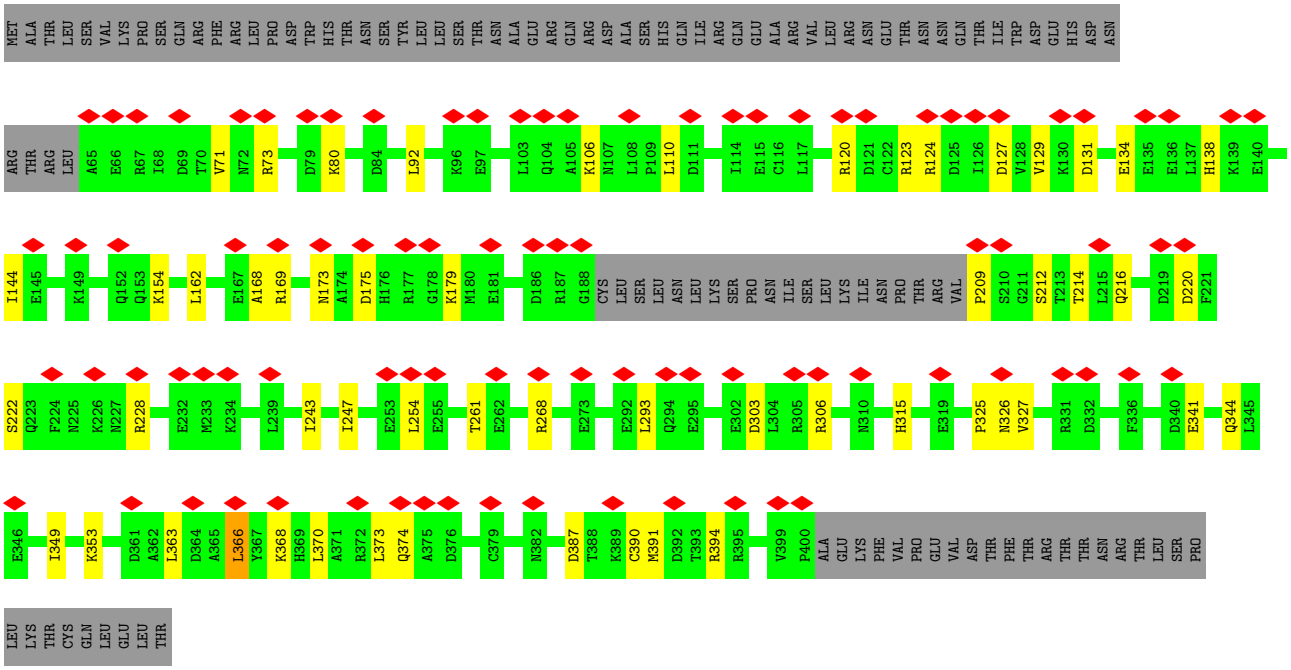
Chain 3J:





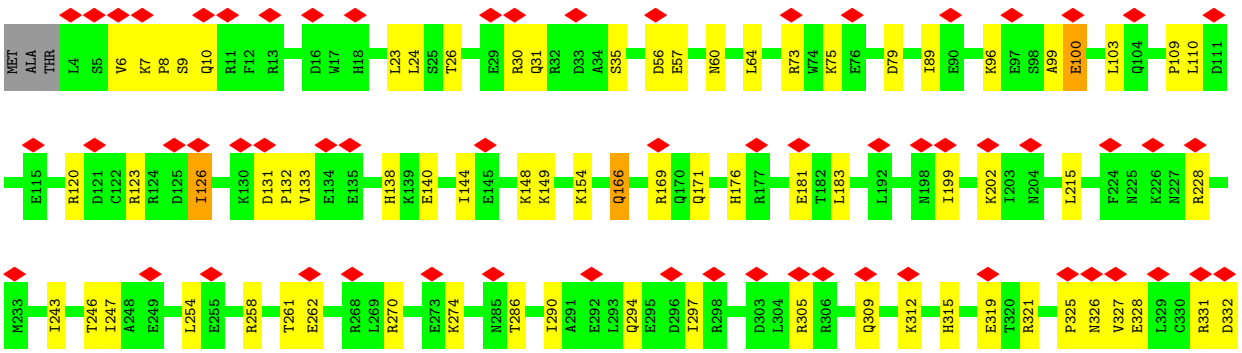
• Molecule 16: Tektin

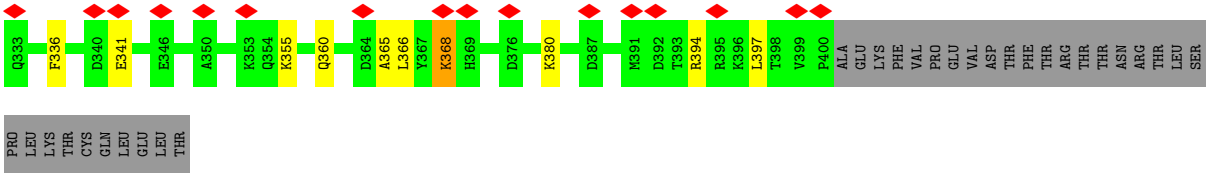
Chain 3K:



• Molecule 16: Tektin

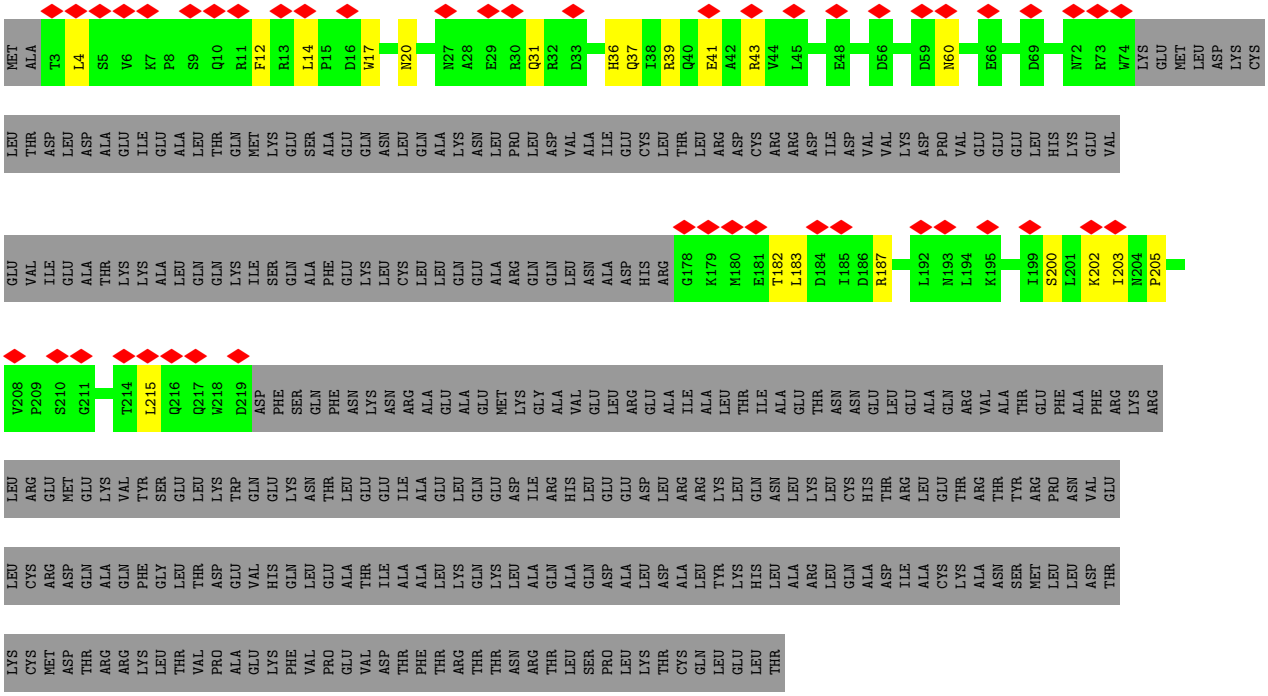
Chain 3L:





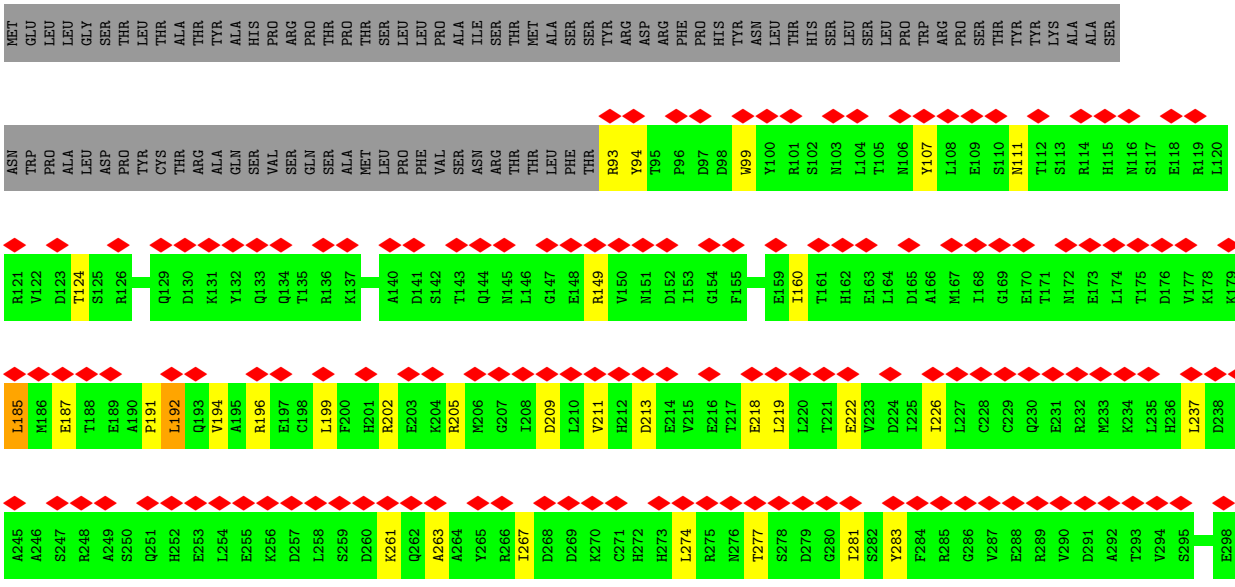
• Molecule 16: Tektin

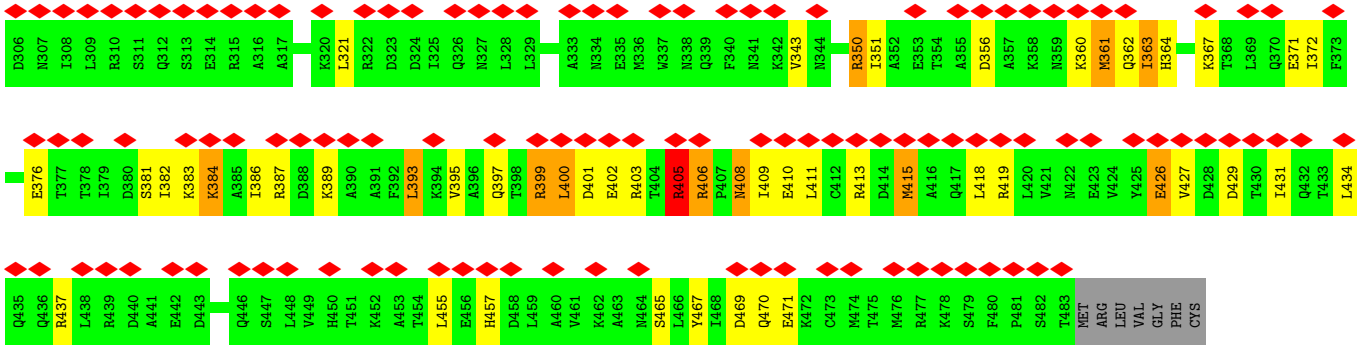
Chain 3M:



• Molecule 17: Tektin

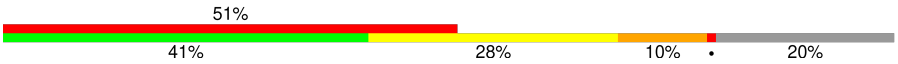
Chain 3O:

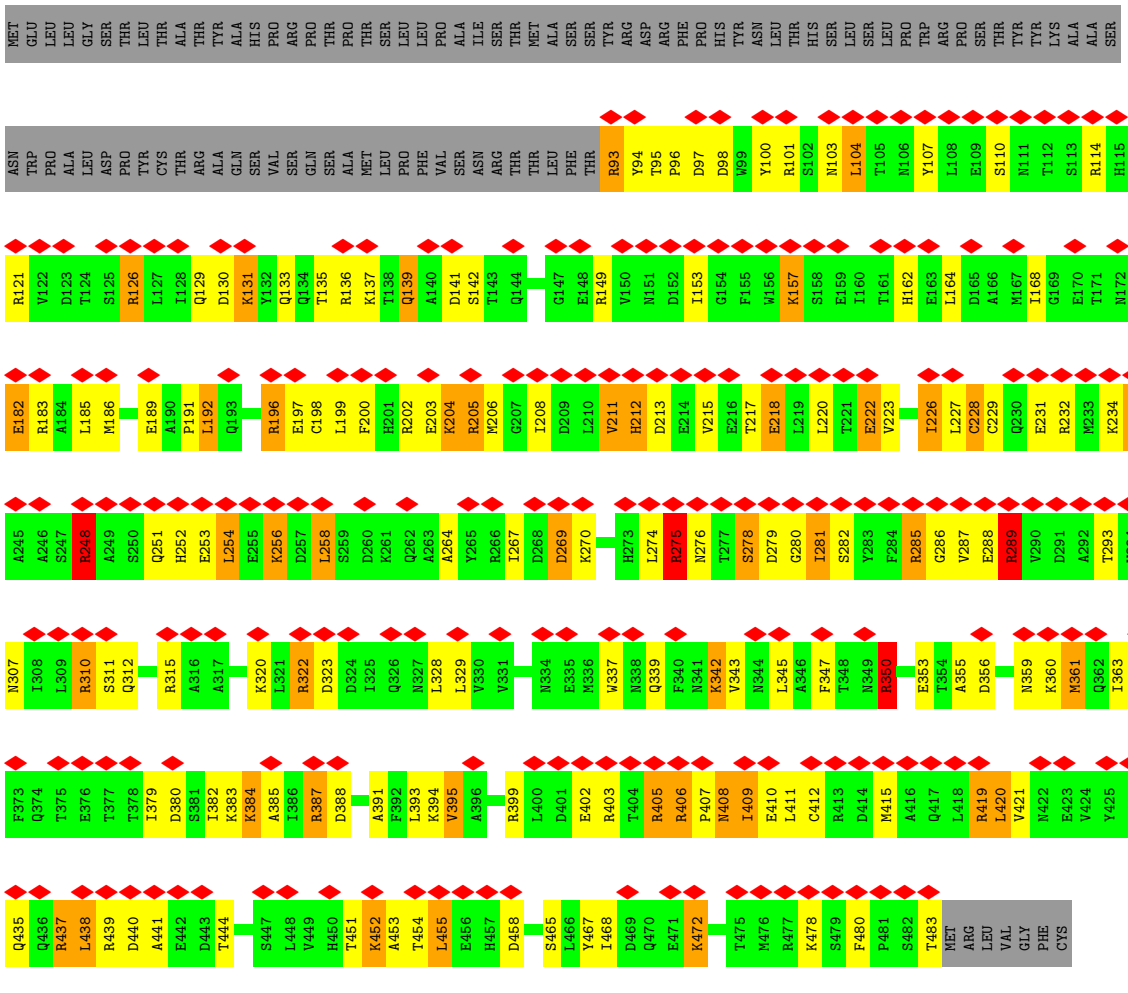




• Molecule 17: Tektin

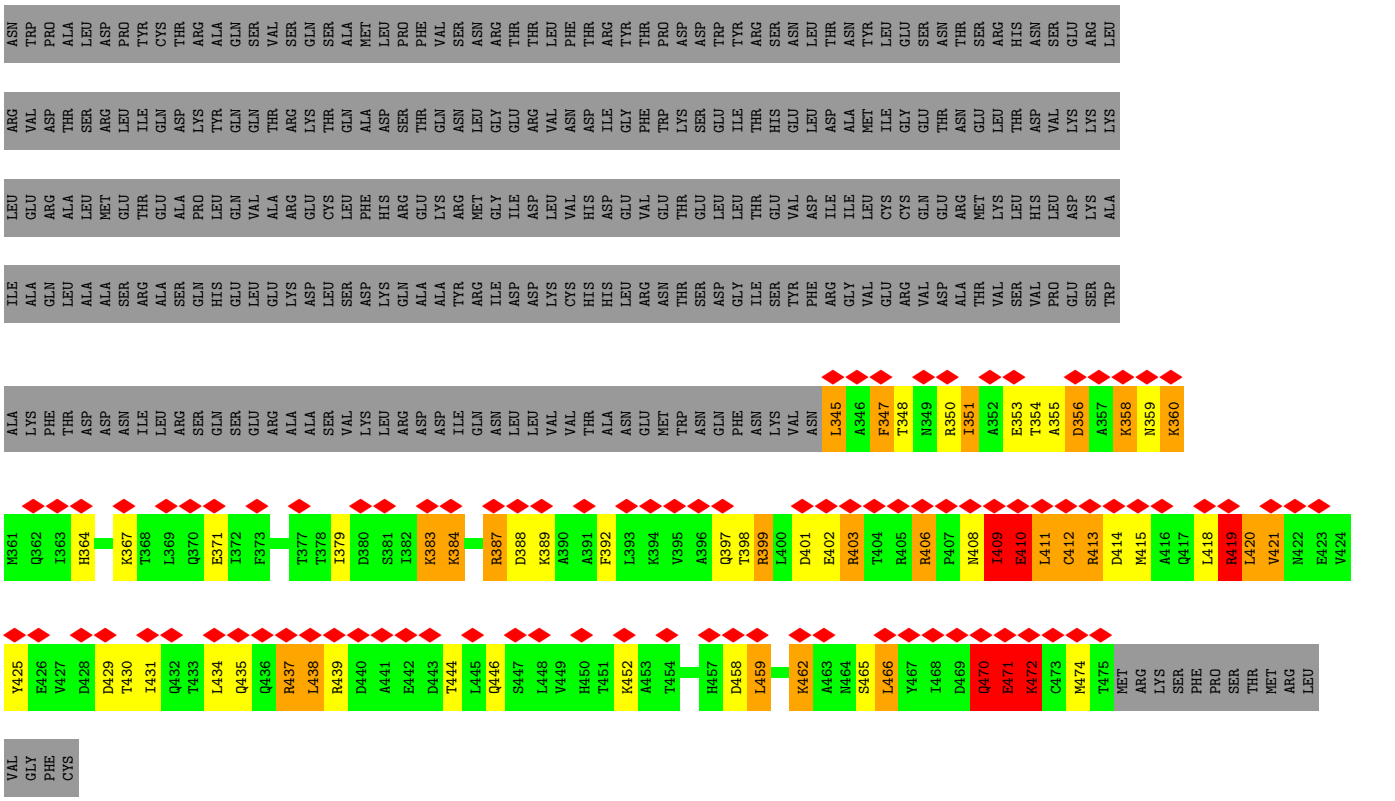
Chain 3P:





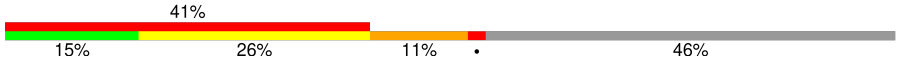
• Molecule 17: Tektin

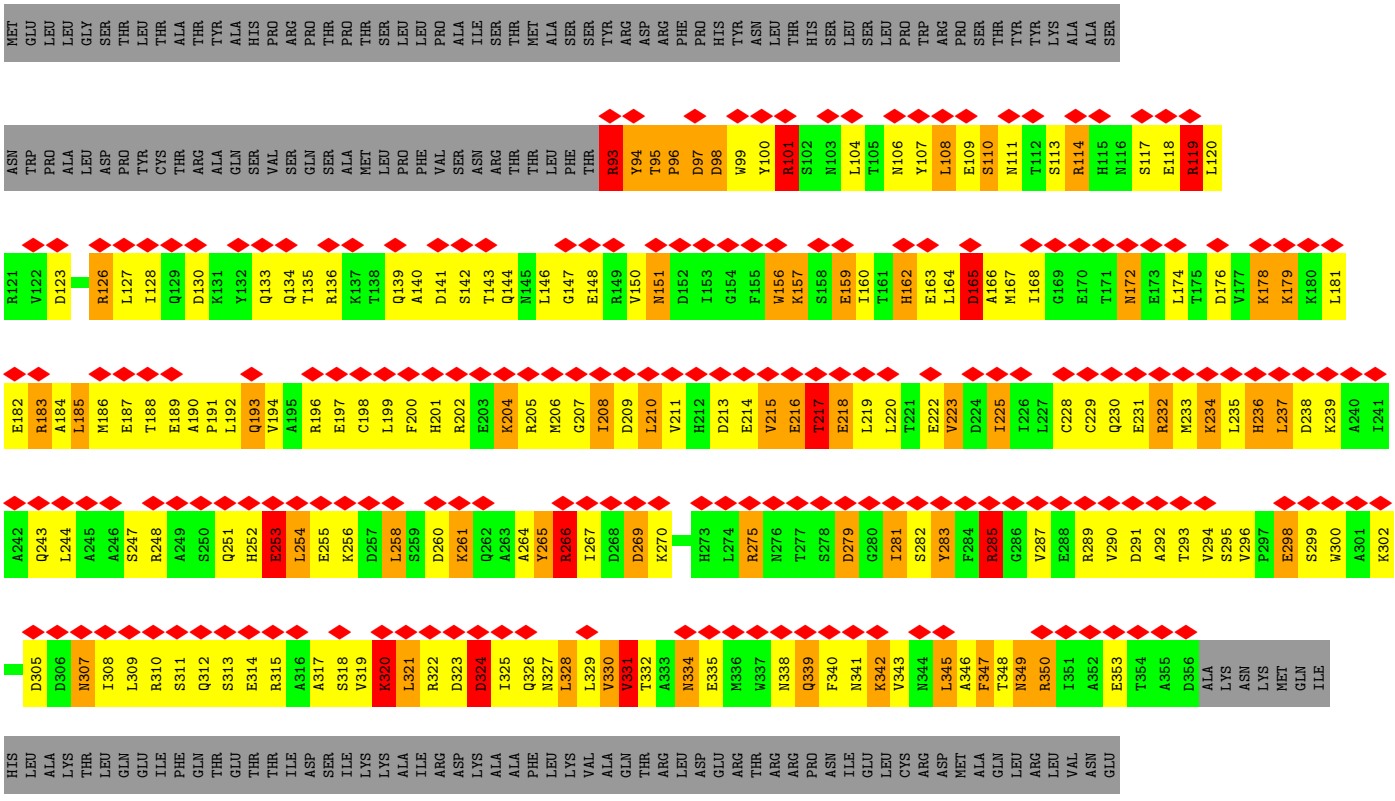
Chain 3Q:

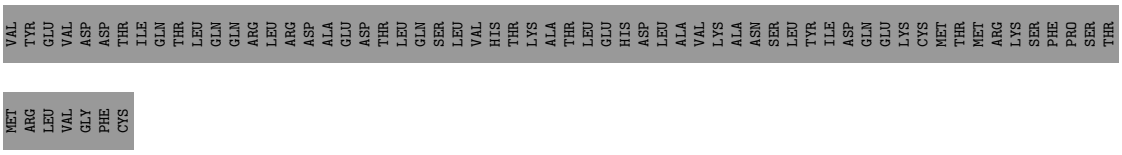


• Molecule 17: Tektin

Chain 3R:

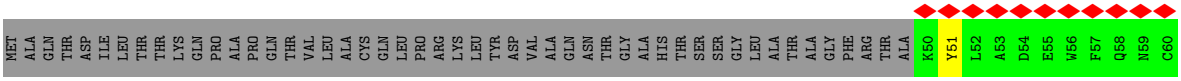


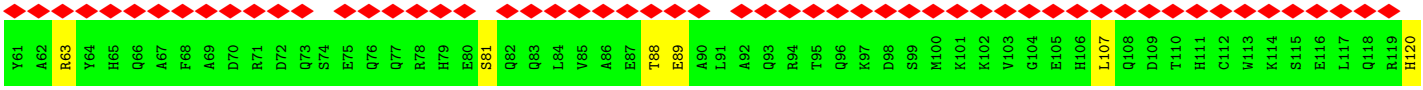


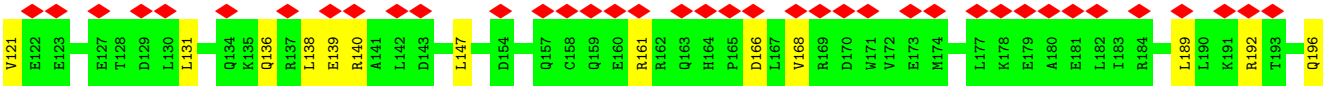


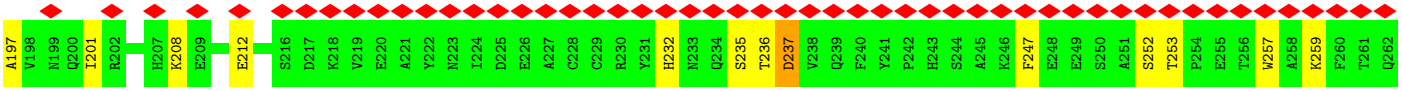
• Molecule 18: Tektin

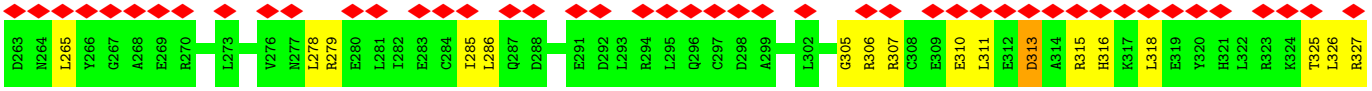
Chain 3T:

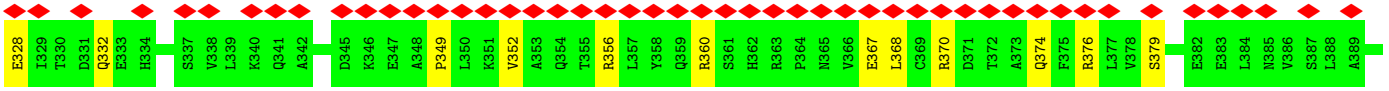


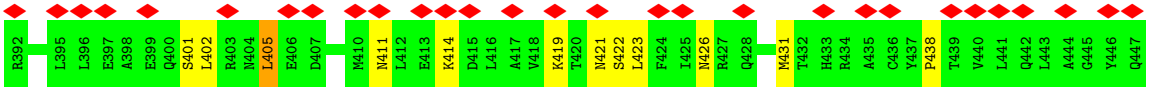






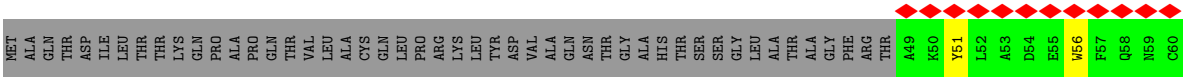


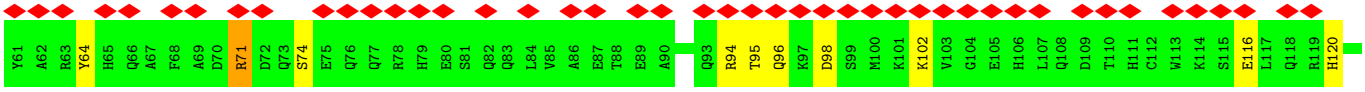


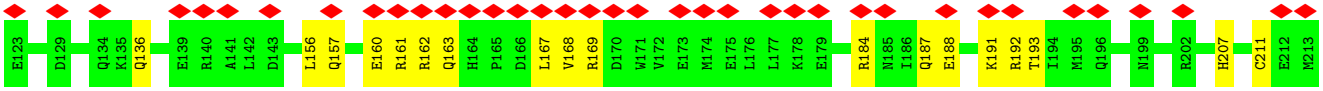


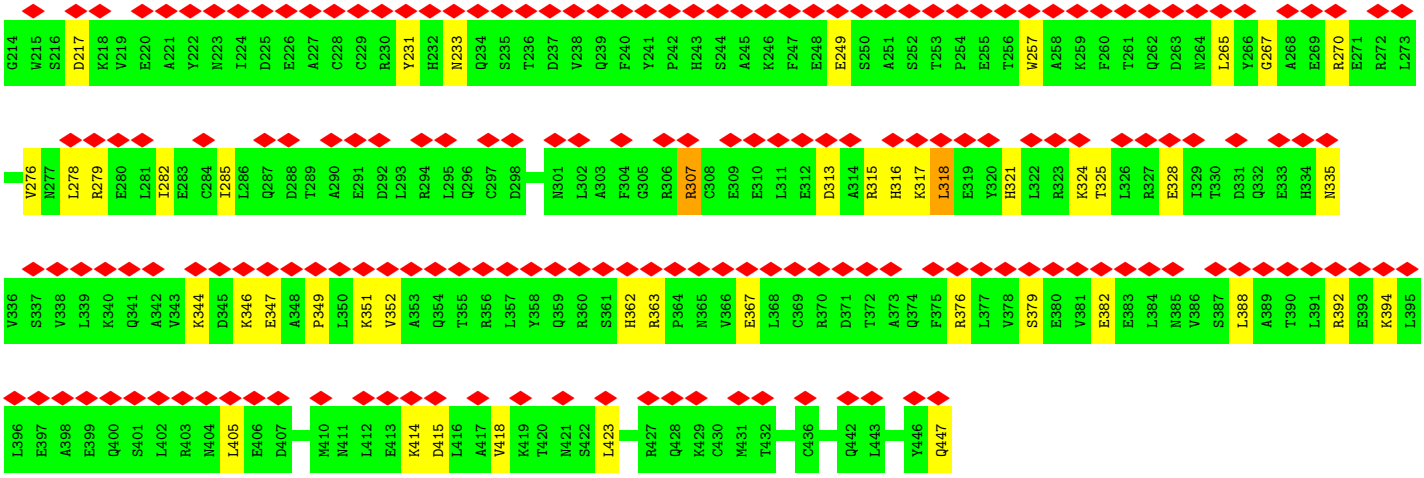
• Molecule 18: Tektin

Chain 3U:



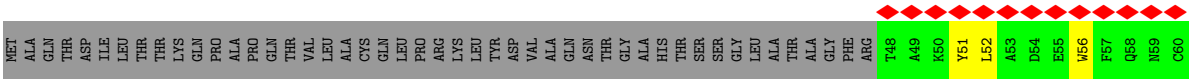


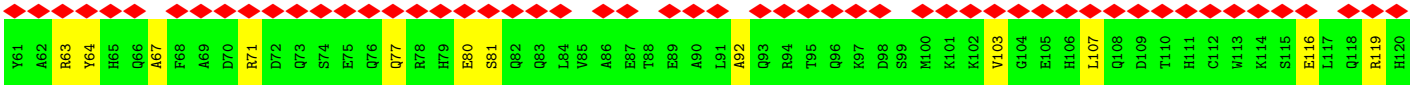


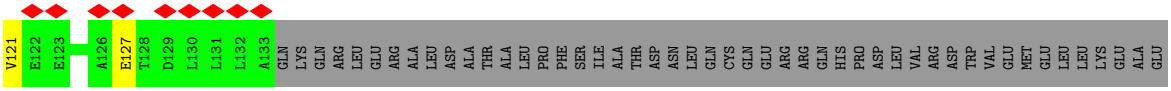


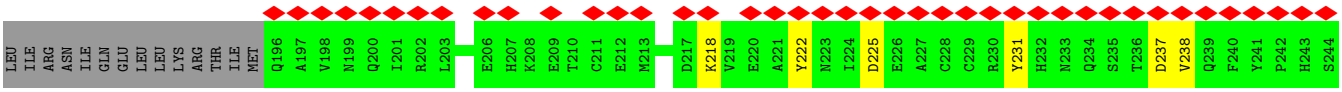
• Molecule 18: Tektin

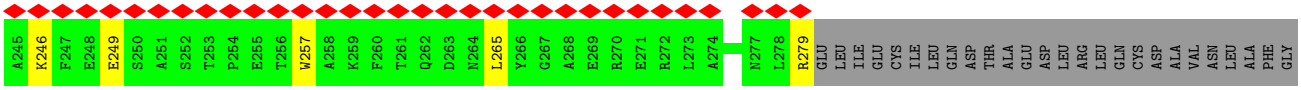
Chain 3V:





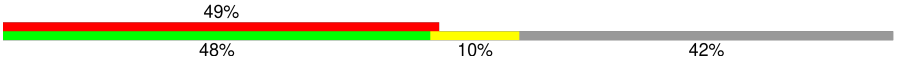


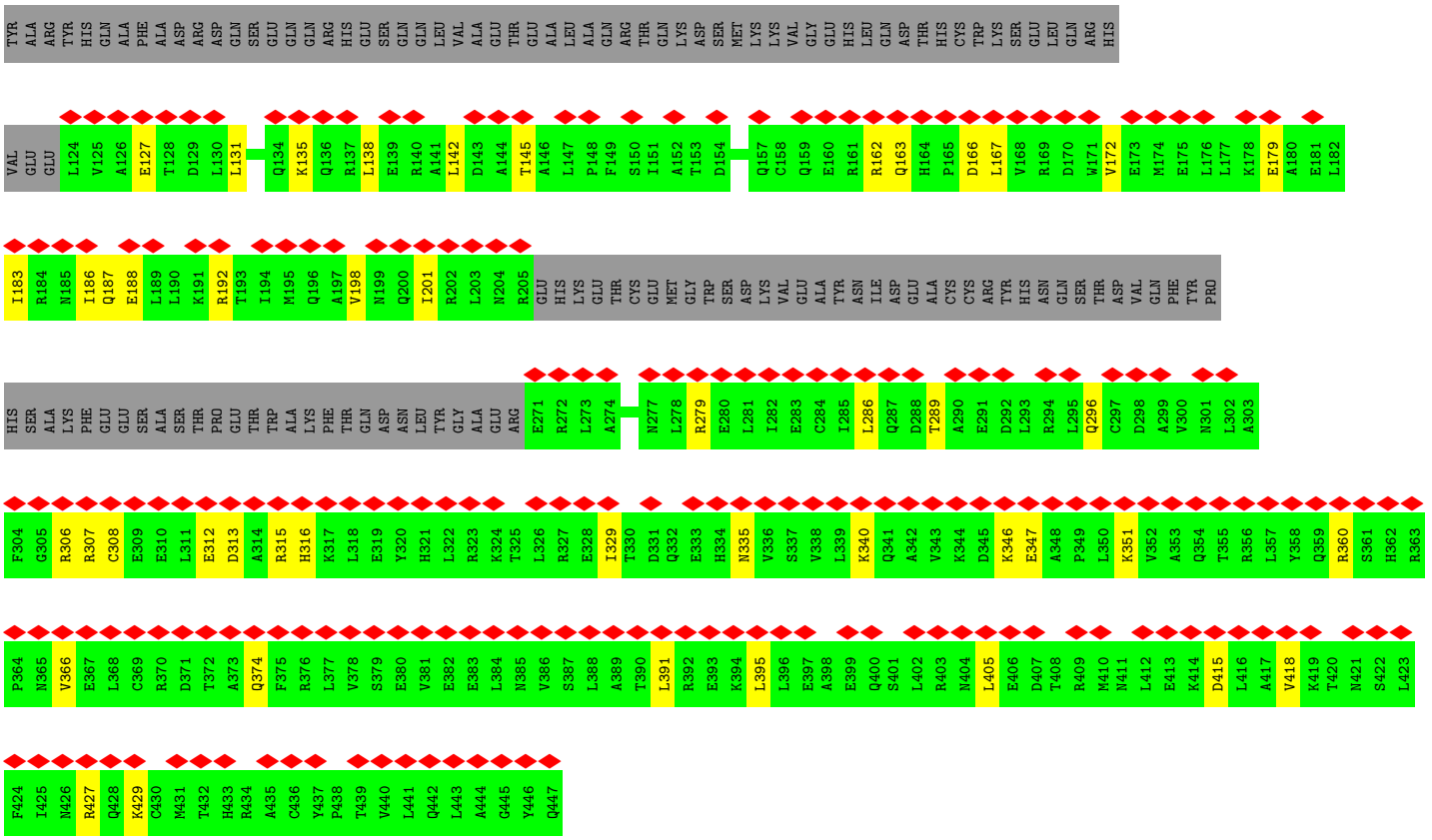




• Molecule 18: Tektin

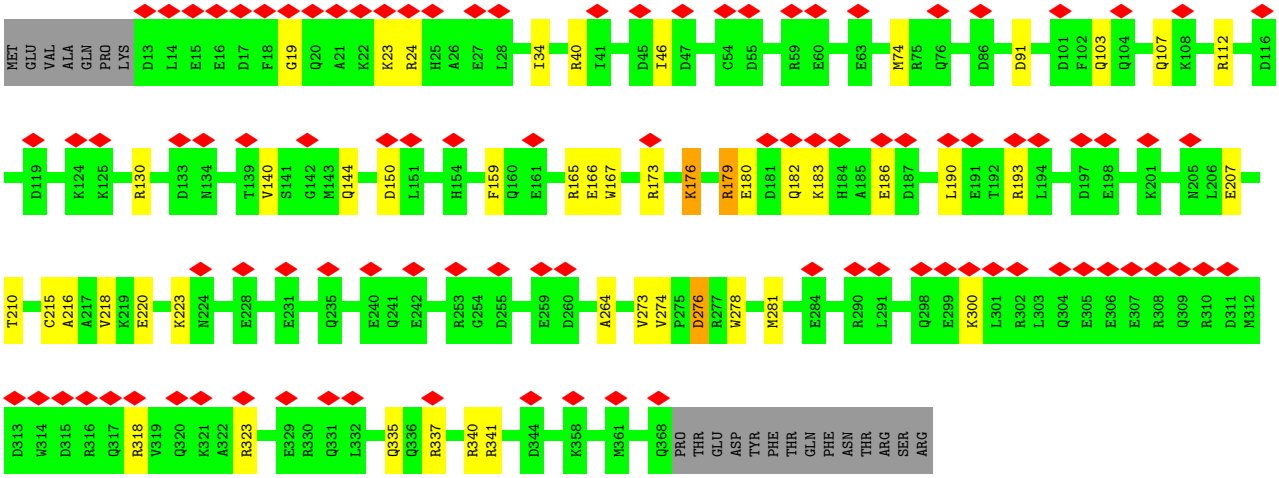
Chain 3W:





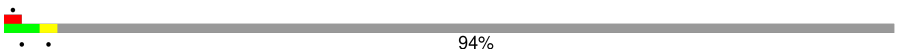
• Molecule 19: RIB43A domain with coiled-coils 2

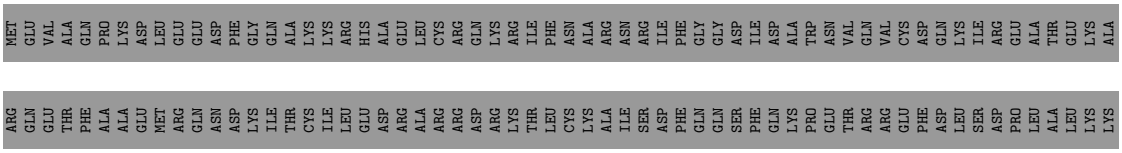
Chain 3Y:



• Molecule 19: RIB43A domain with coiled-coils 2

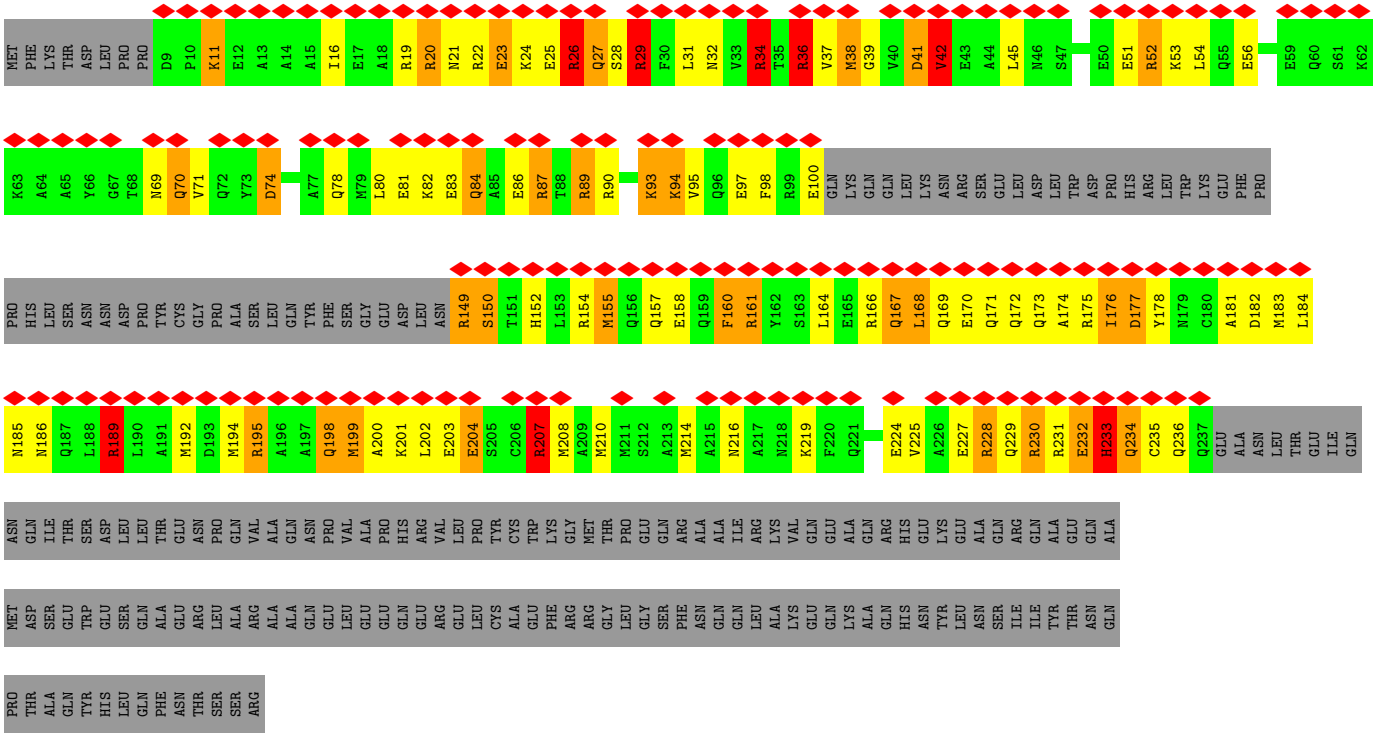
Chain 3Z:





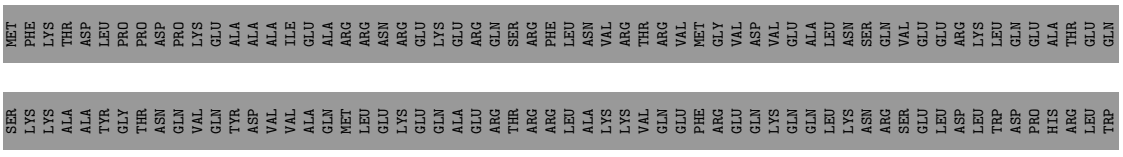
• Molecule 20: RIB43A-like with coiled-coils protein 1

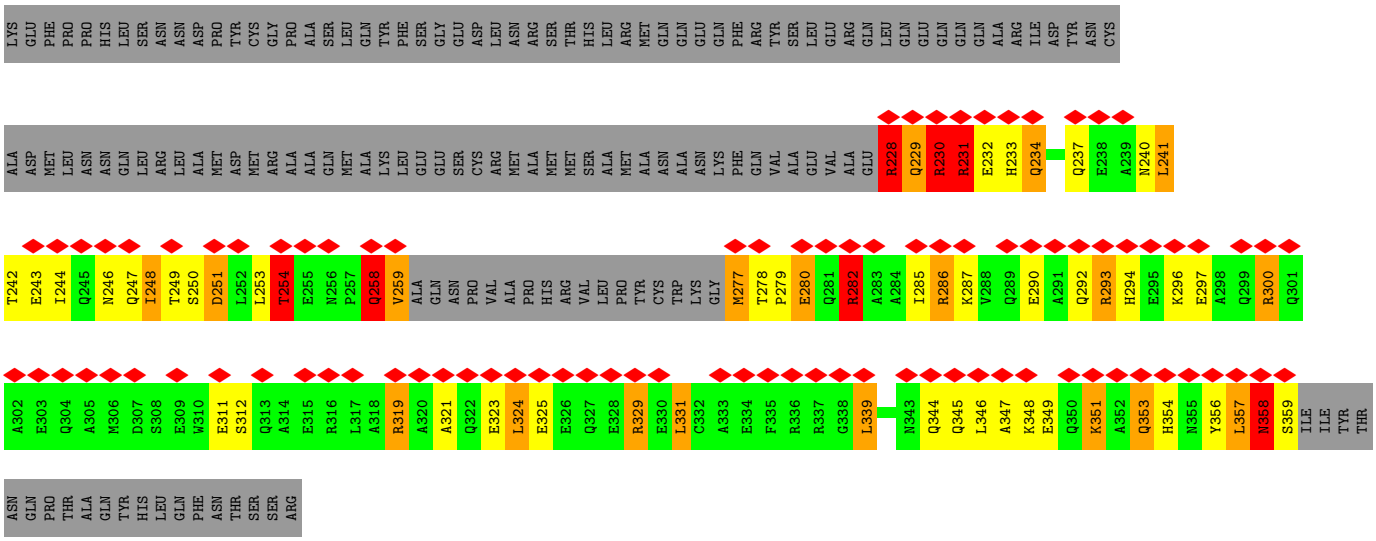
Chain 4A:



• Molecule 20: RIB43A-like with coiled-coils protein 1

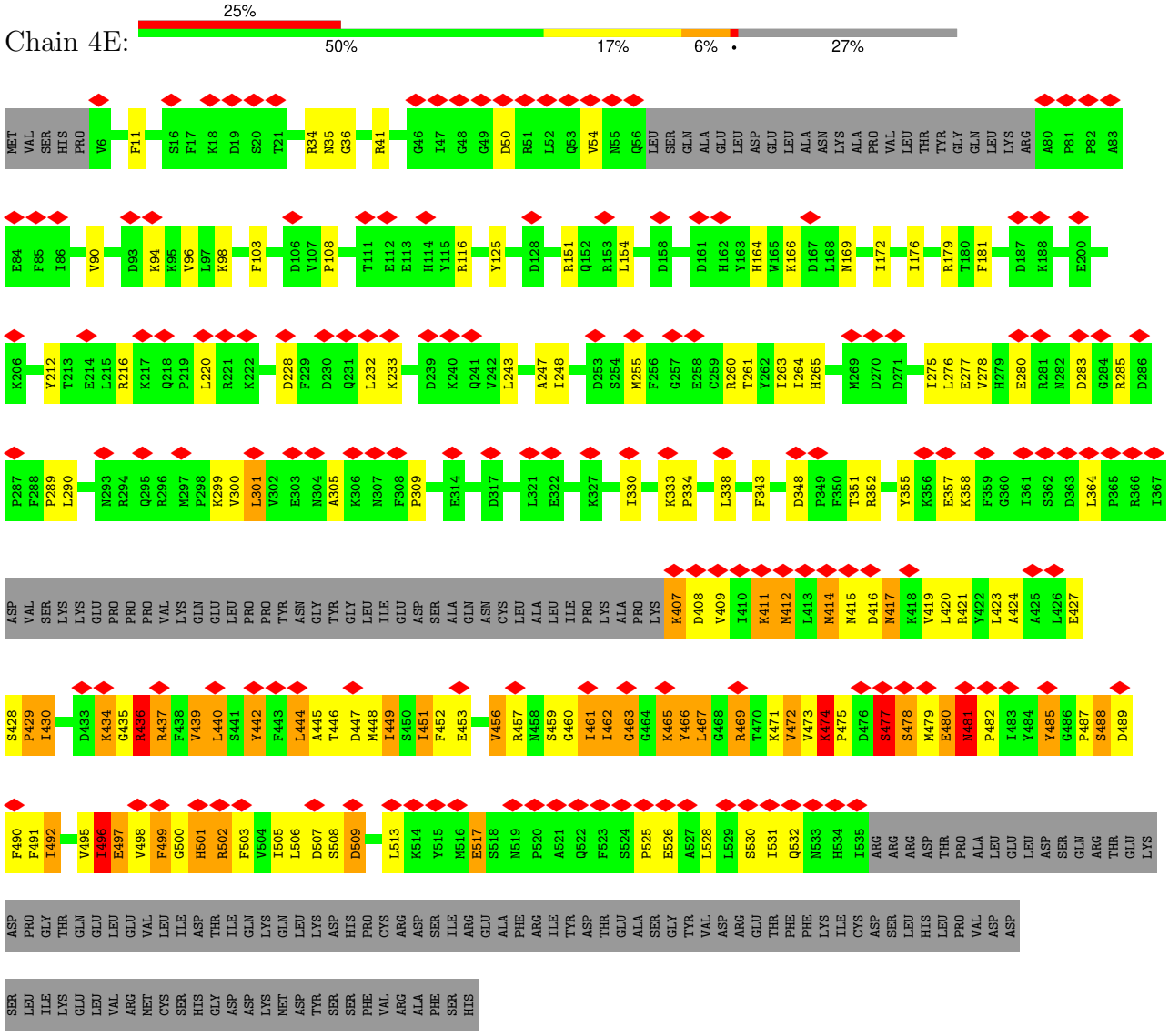
Chain 4B:





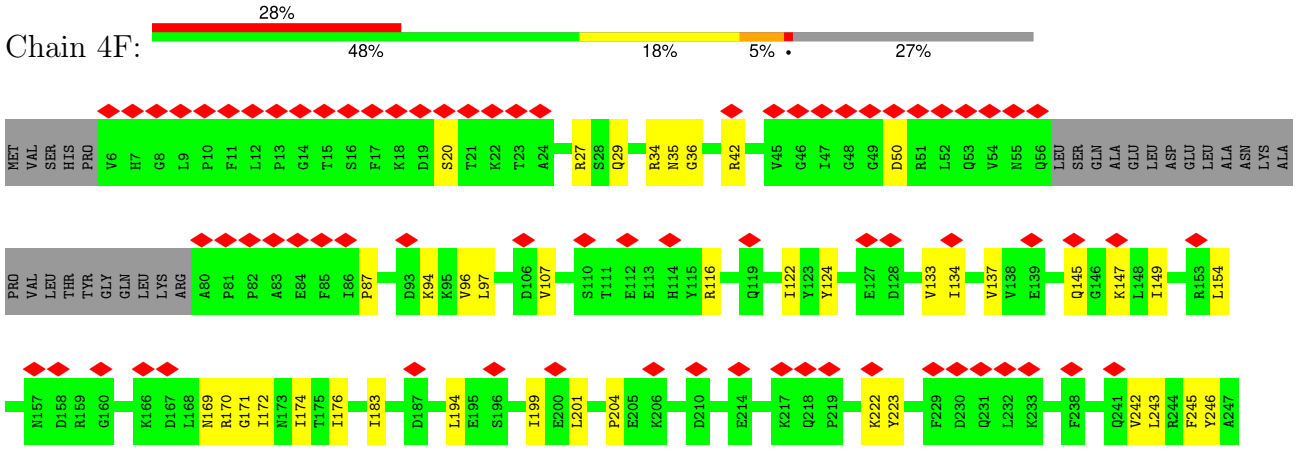
• Molecule 21: EF-hand domain containing 1

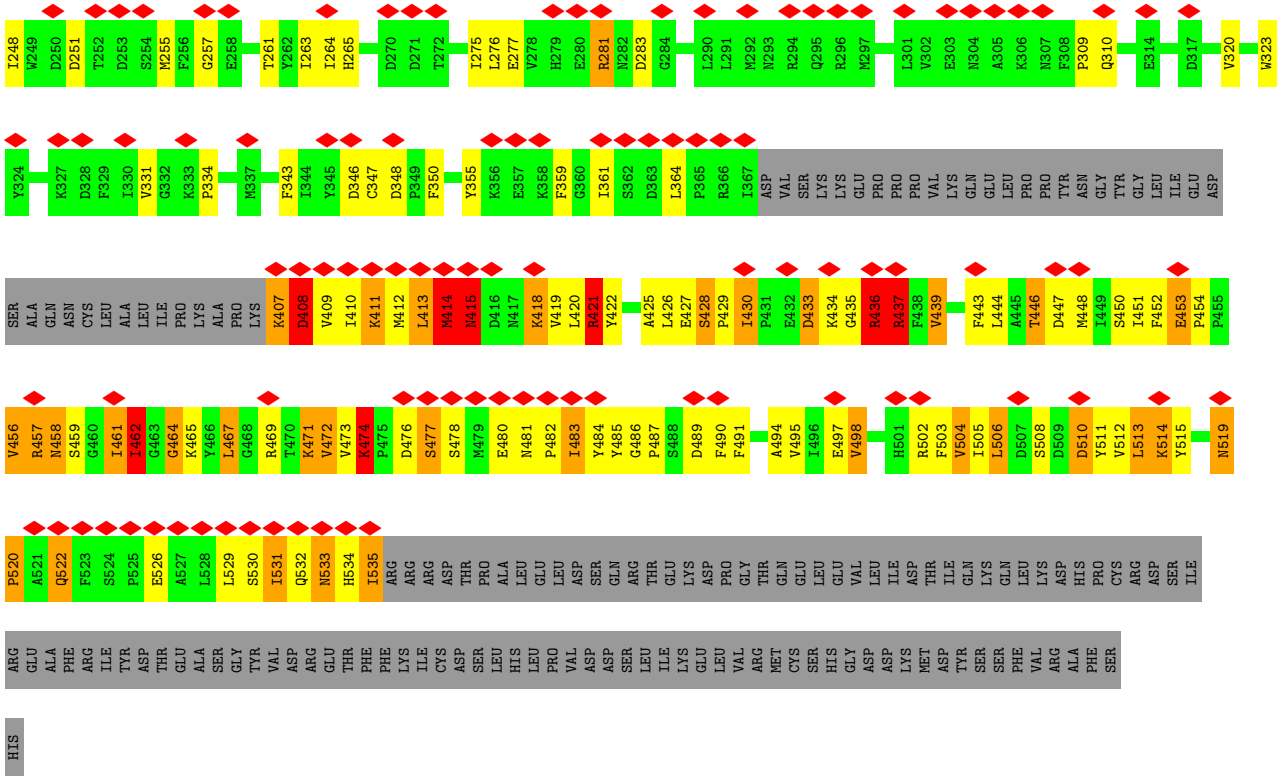
Chain 4E:



• Molecule 21: EF-hand domain containing 1

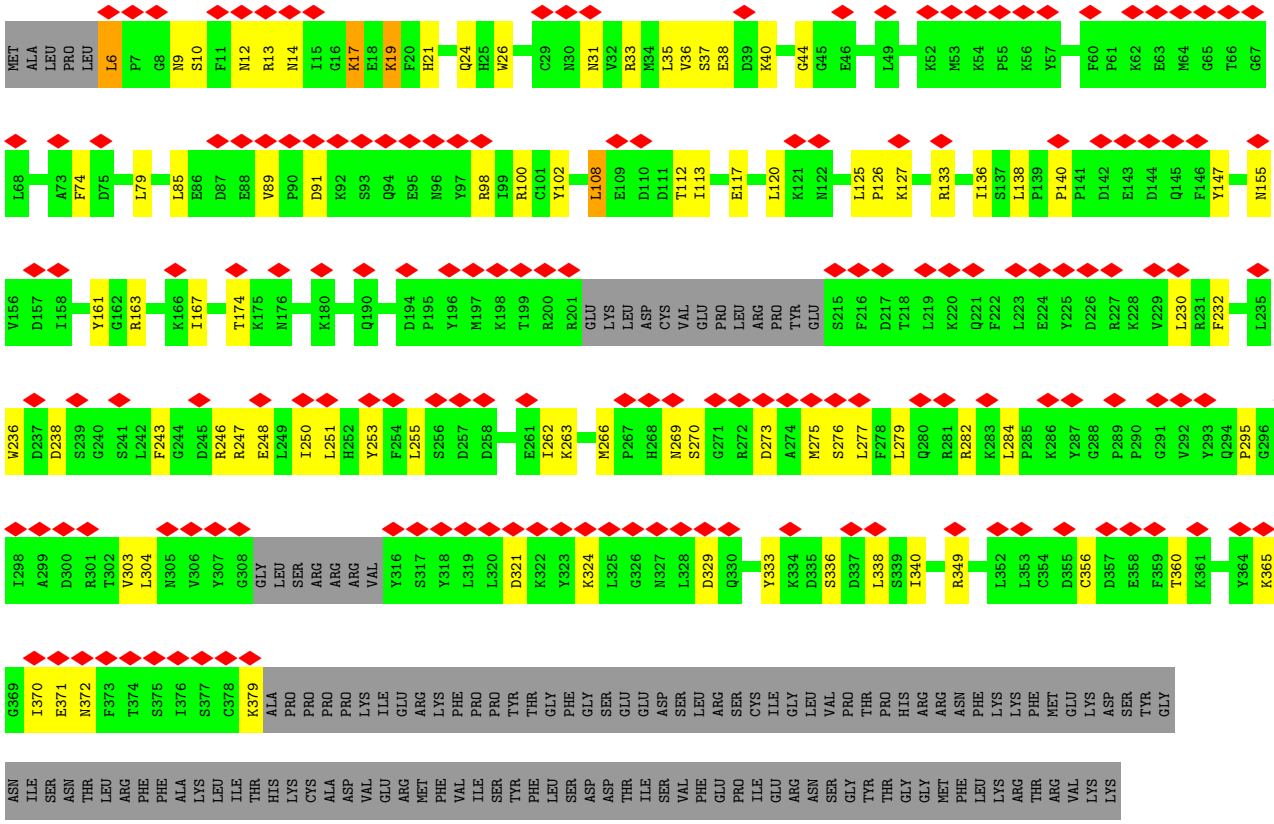
Chain 4F:

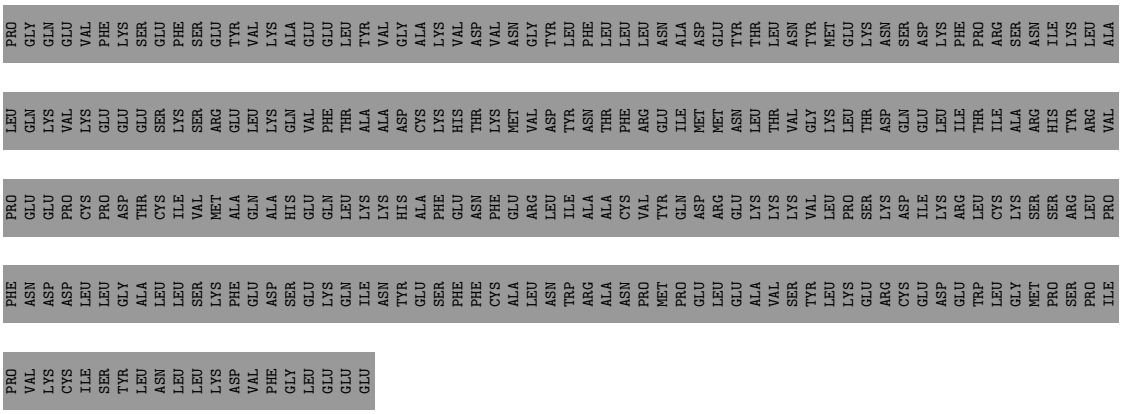




• Molecule 22: EF-hand domain-containing family member C2

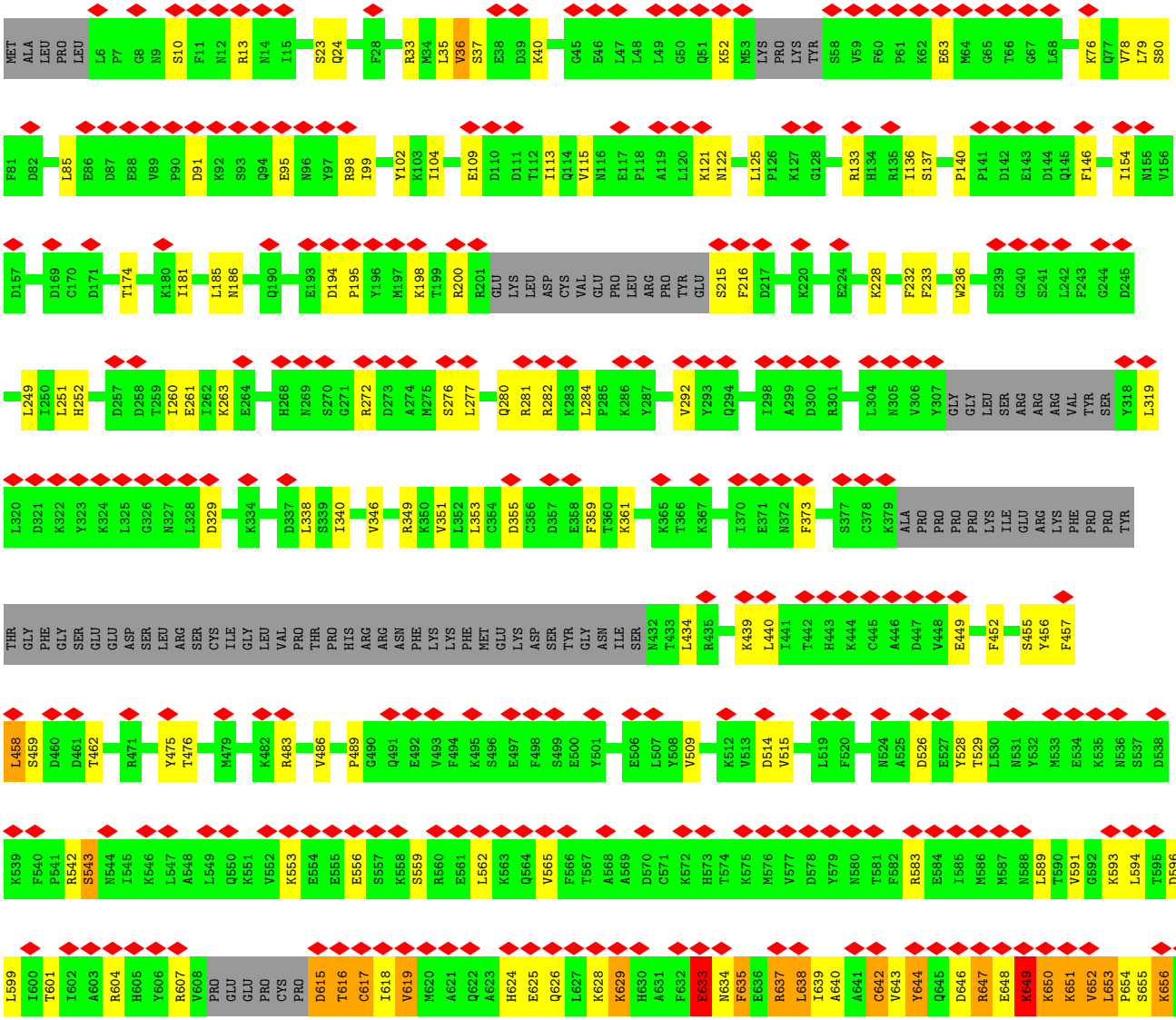
Chain 4H:

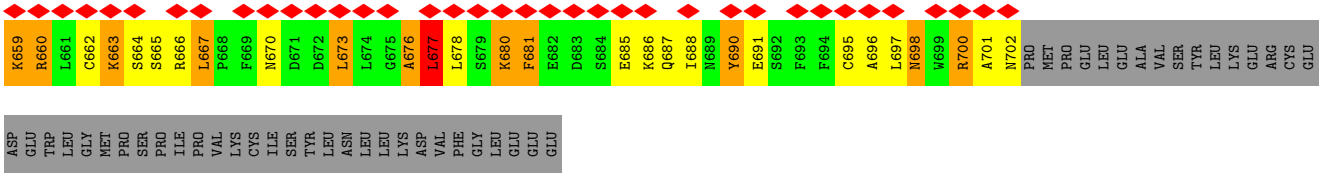




• Molecule 22: EF-hand domain-containing family member C2

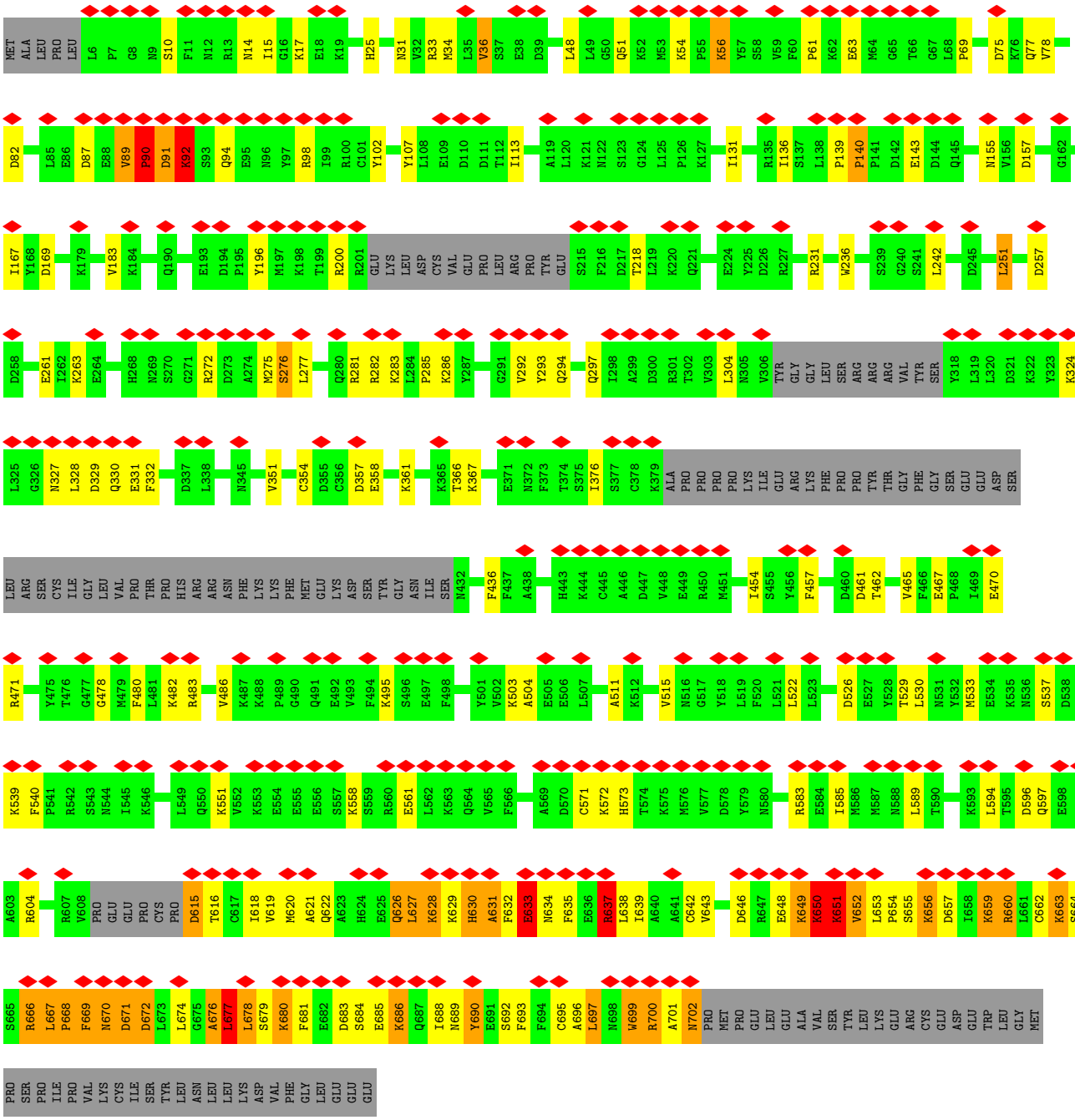
Chain 4I:





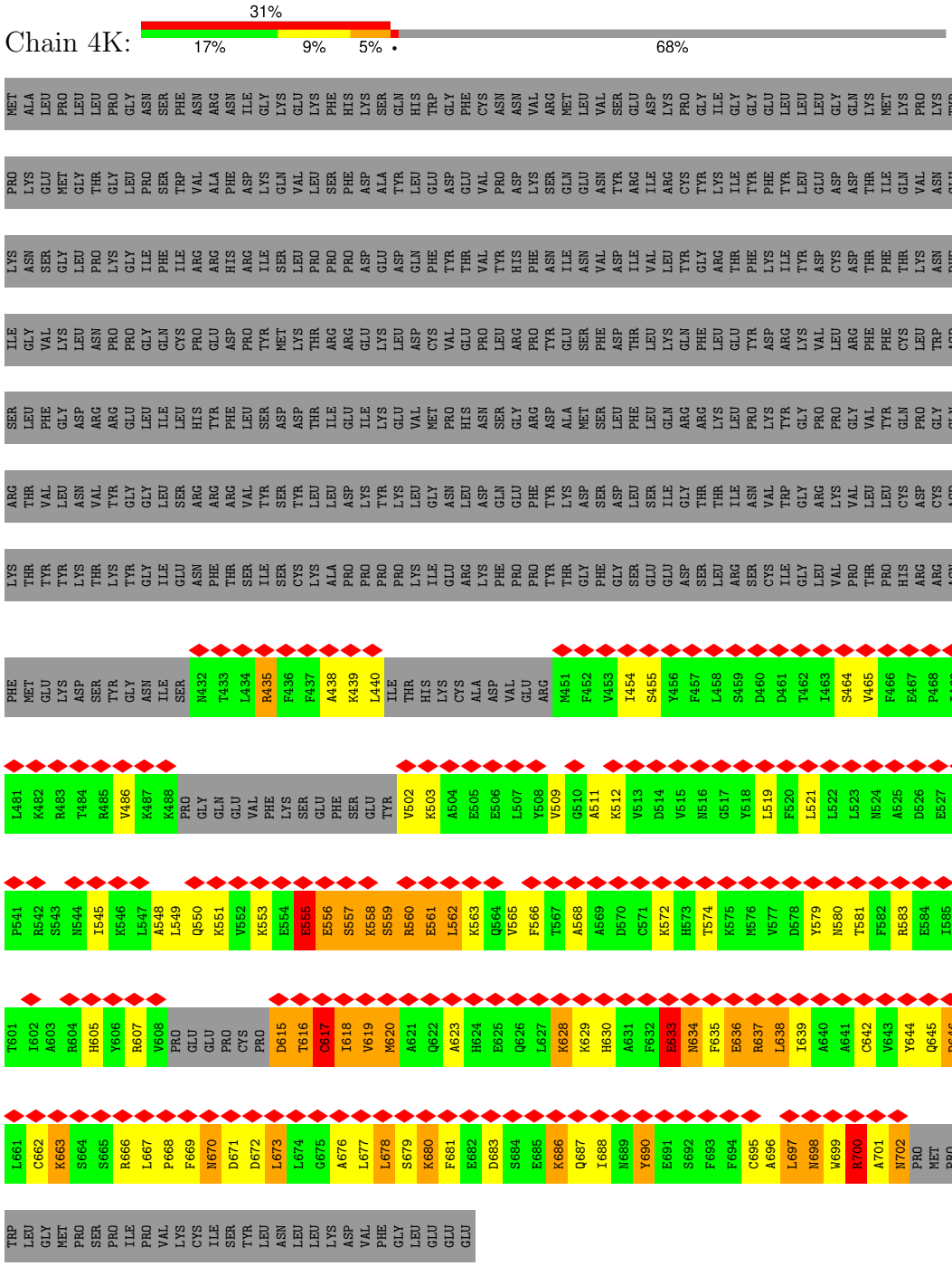
• Molecule 22: EF-hand domain-containing family member C2

Chain 4J:



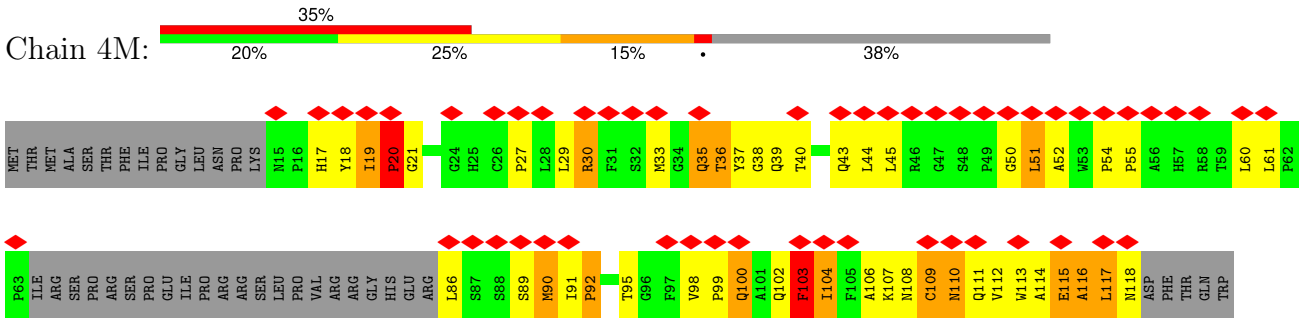
• Molecule 22: EF-hand domain-containing family member C2

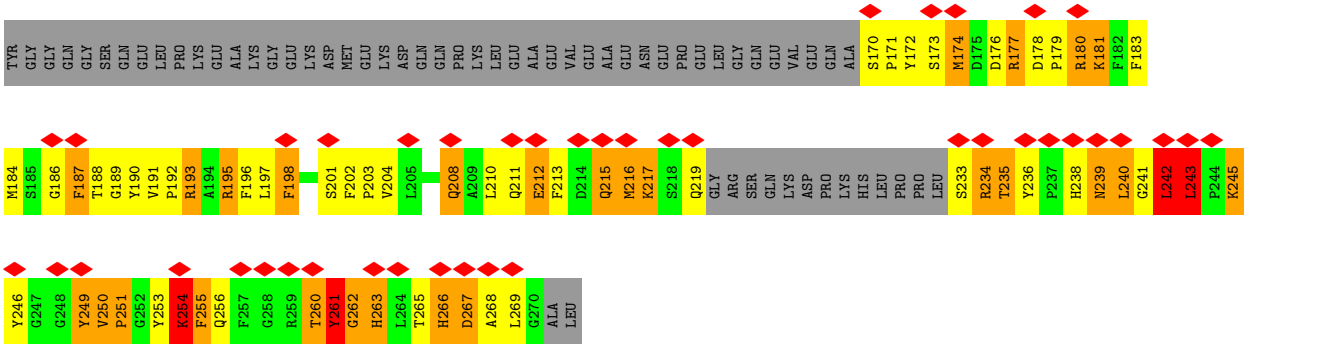
Chain 4K:



• Molecule 23: Ciliary microtubule inner protein 2B

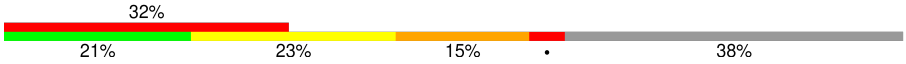
Chain 4M:

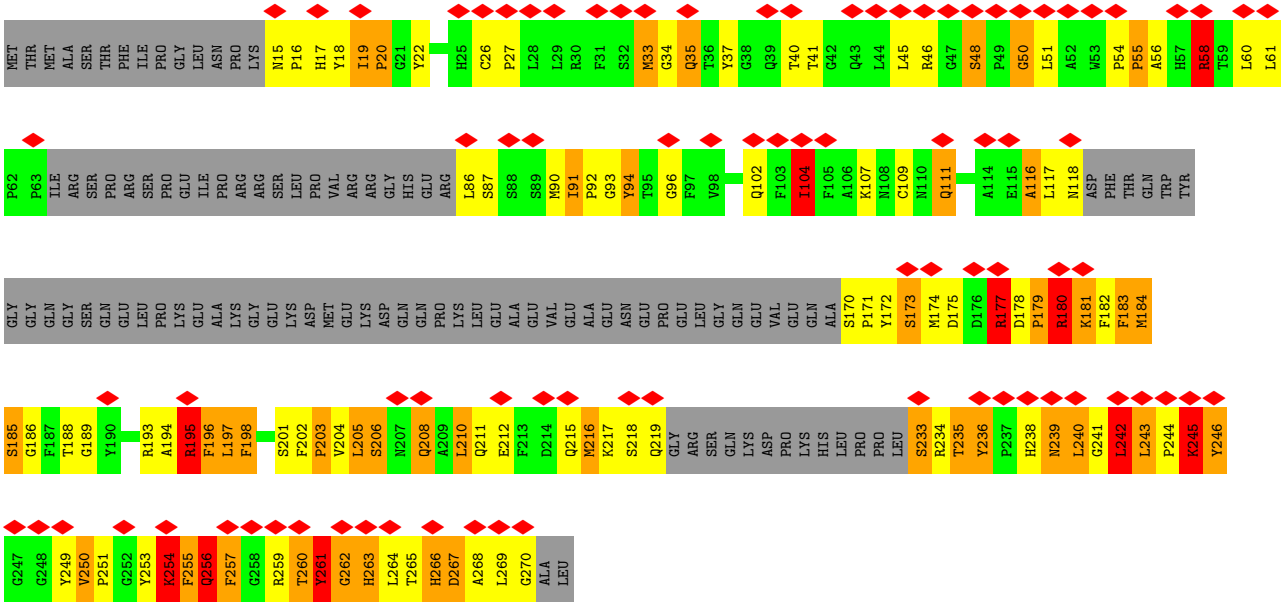




• Molecule 23: Ciliary microtubule inner protein 2B

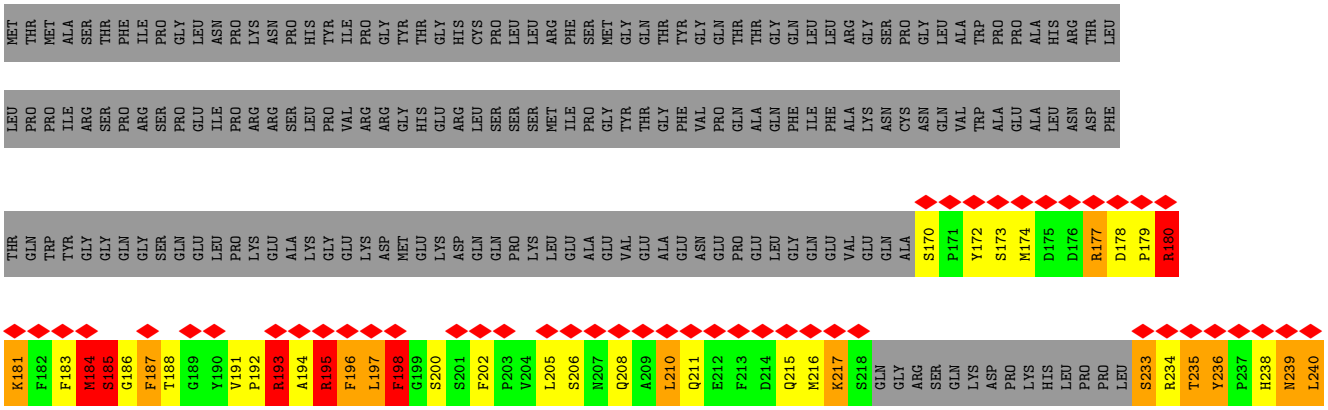
Chain 4N:





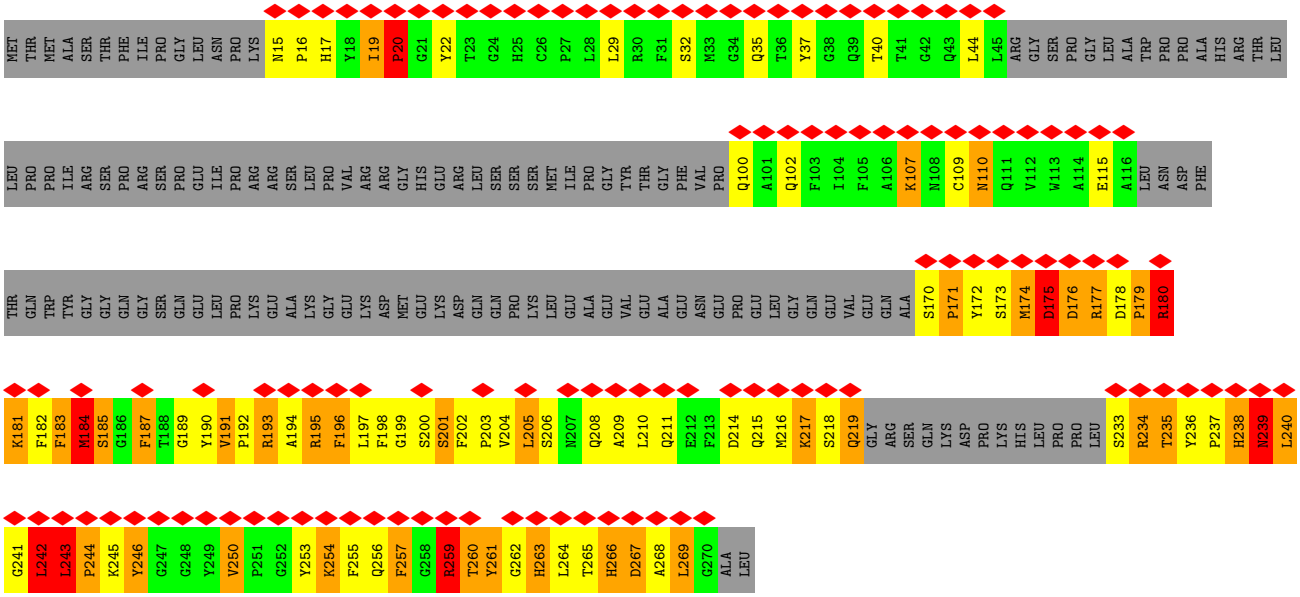
• Molecule 23: Ciliary microtubule inner protein 2B

Chain 4P:



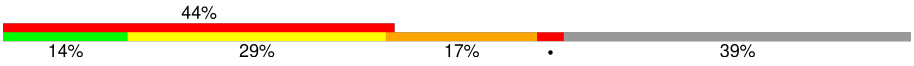
• Molecule 23: Ciliary microtubule inner protein 2B

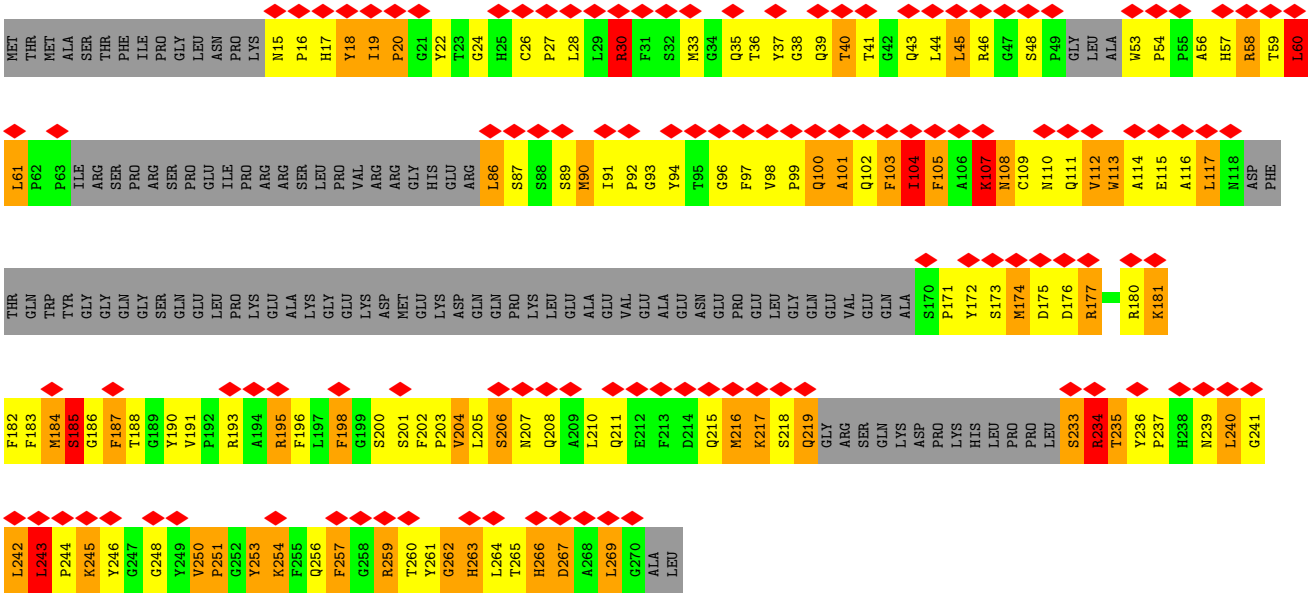
Chain 4Q:



• Molecule 23: Ciliary microtubule inner protein 2B

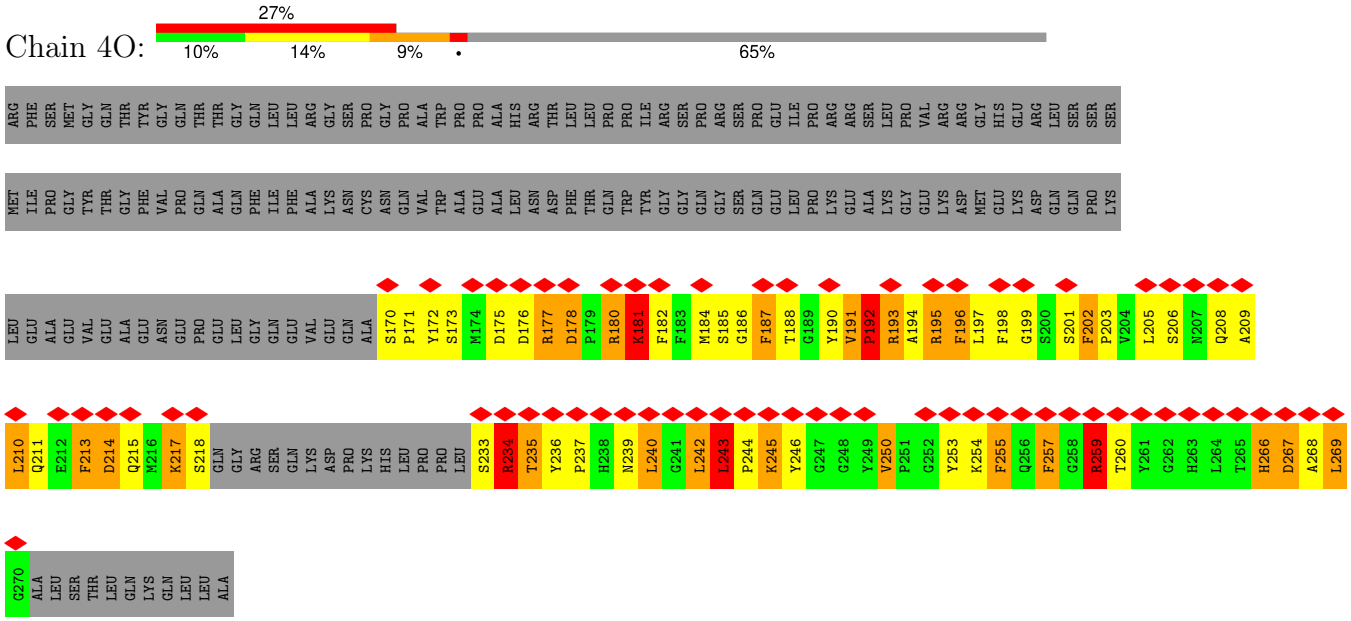
Chain 4R:





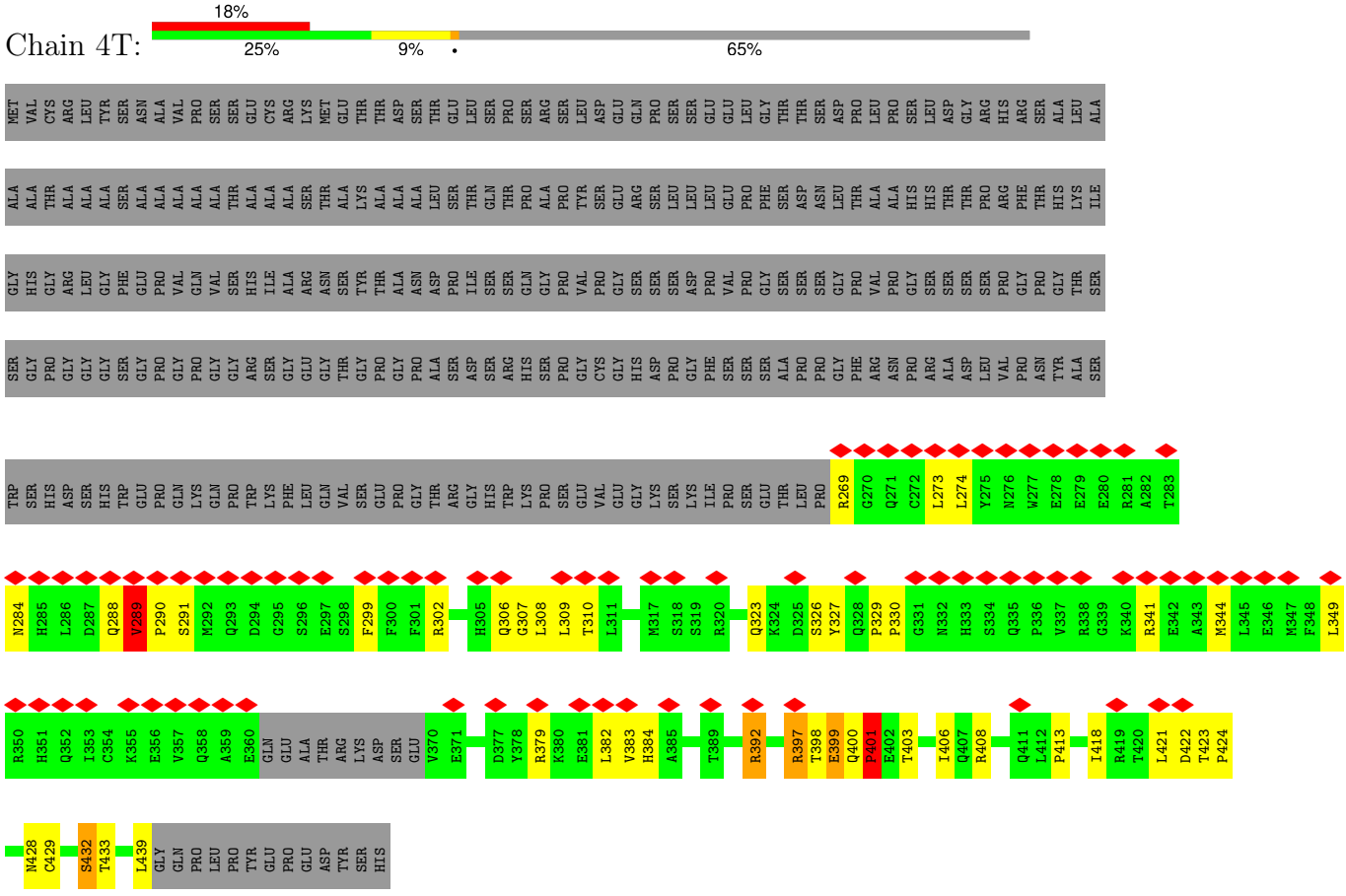
• Molecule 24: Ciliary microtubule inner protein 2B

Chain 4O:



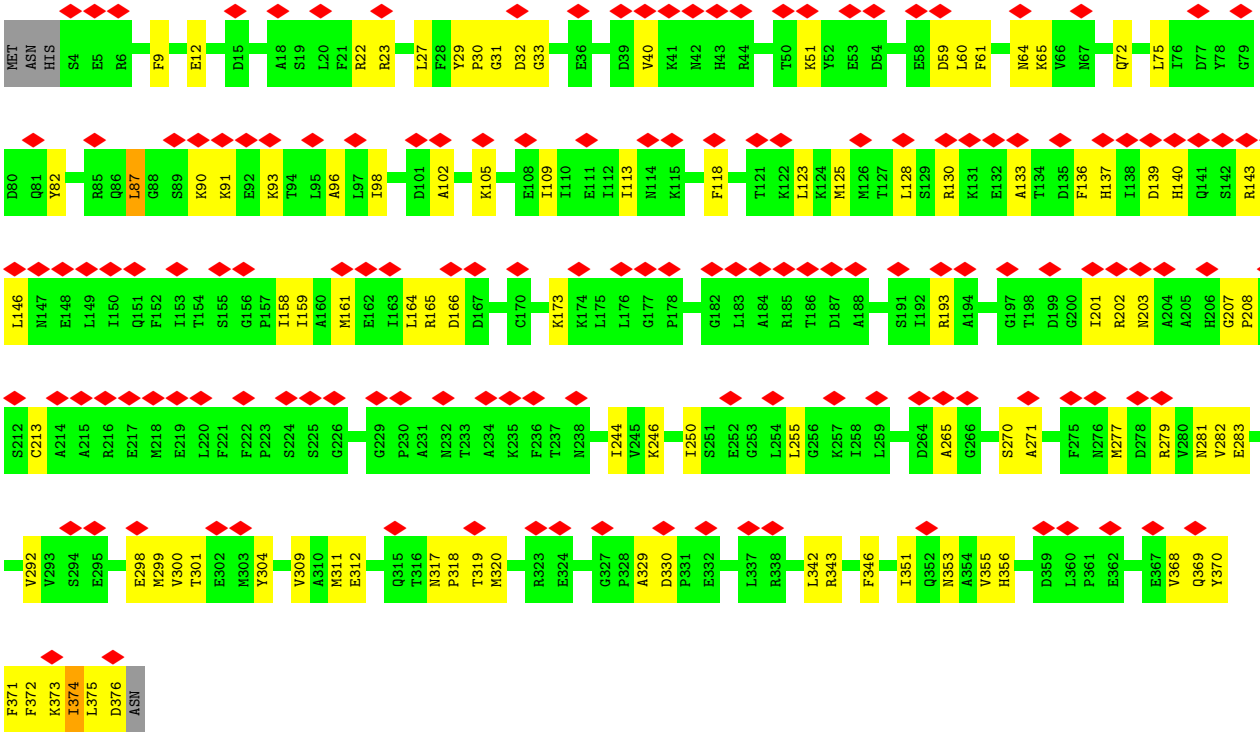
• Molecule 25: Sperm-associated antigen 8 isoform 1

Chain 4T:



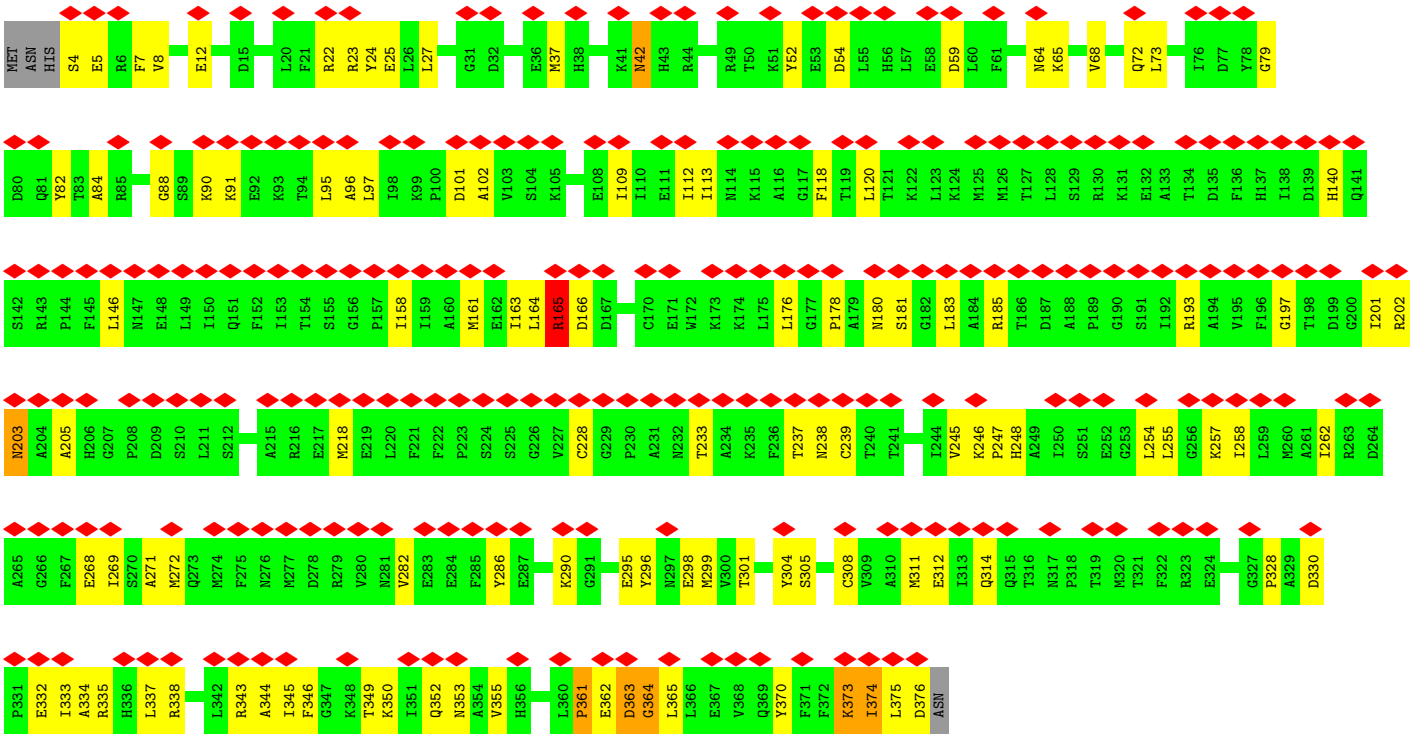
• Molecule 26: Nucleoside diphosphate kinase homolog 7

Chain 4V:



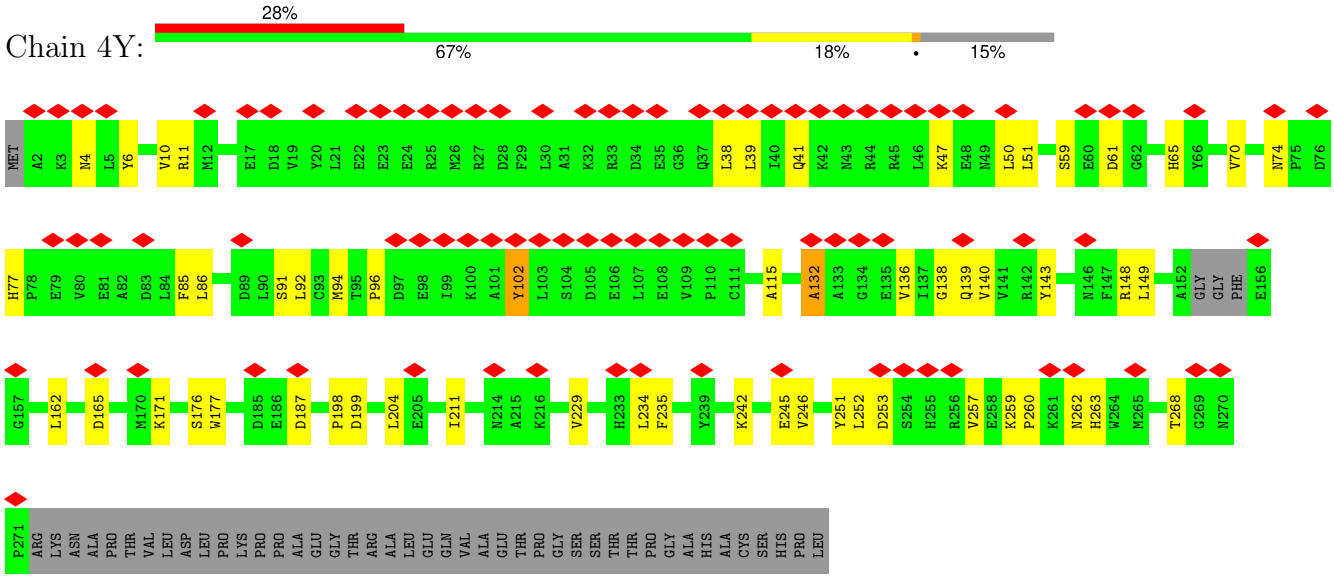
• Molecule 26: Nucleoside diphosphate kinase homolog 7

Chain 4W:



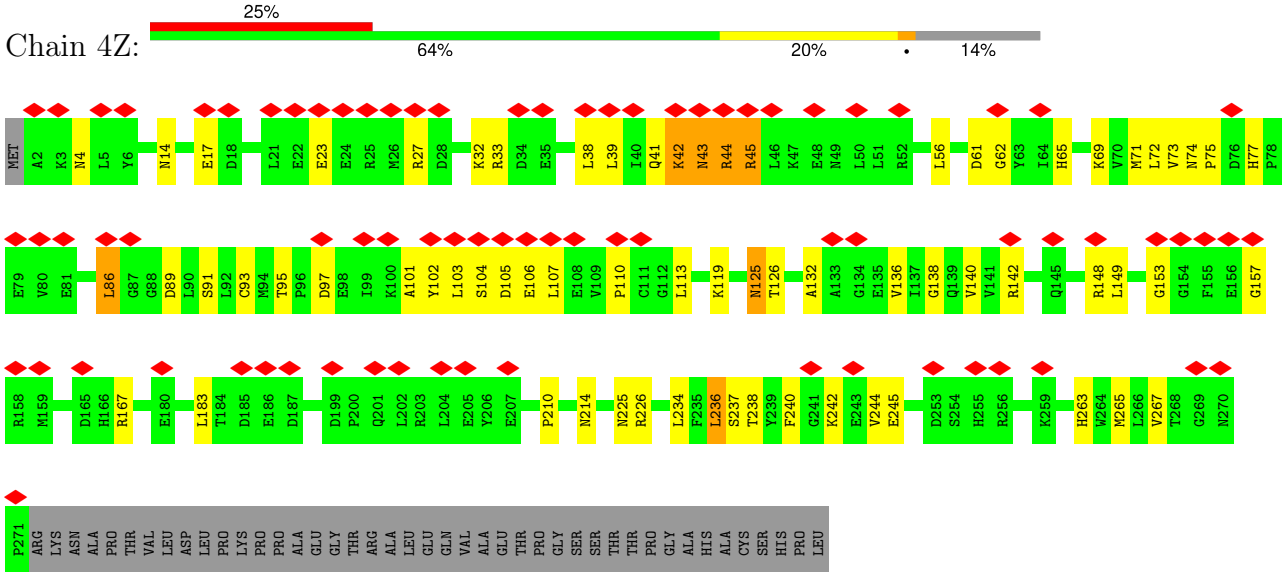
• Molecule 27: Cilia and flagella associated protein 161

Chain 4Y:



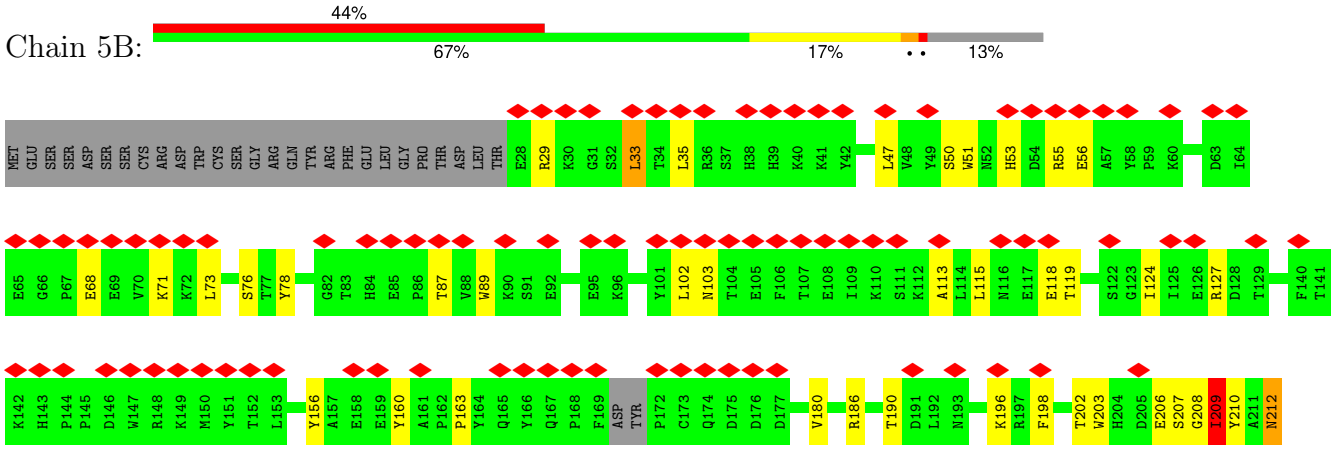
• Molecule 27: Cilia and flagella associated protein 161

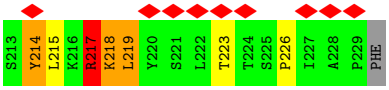
Chain 4Z:



• Molecule 28: Chromosome 1 C9orf135 homolog

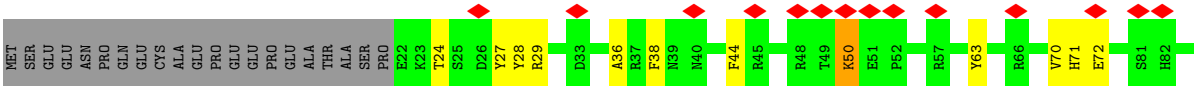
Chain 5B:

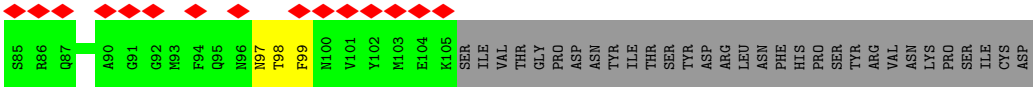




• Molecule 29: Piercer of microtubule wall 1

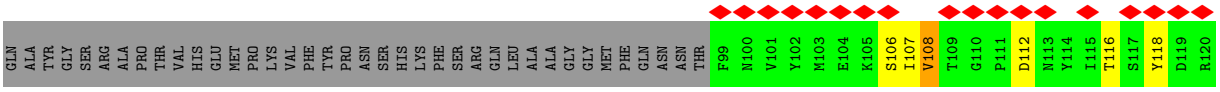
Chain 5D:

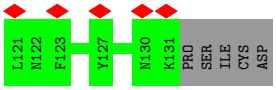




• Molecule 29: Piercer of microtubule wall 1

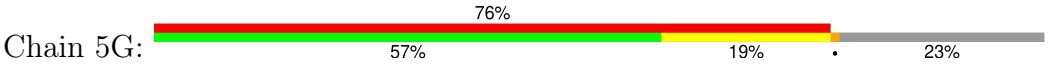
Chain 5E:

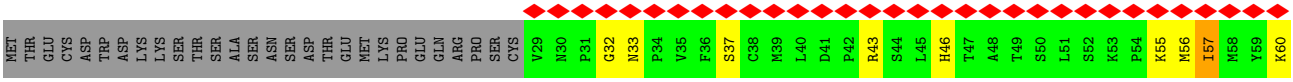


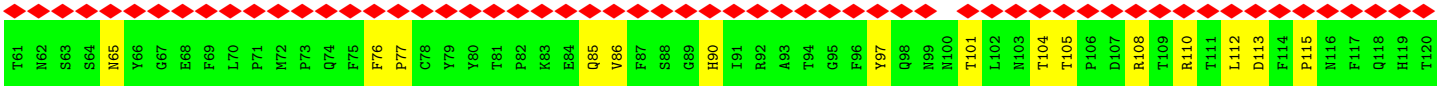


• Molecule 30: Chromosome 1 C15orf65 homolog

Chain 5G:

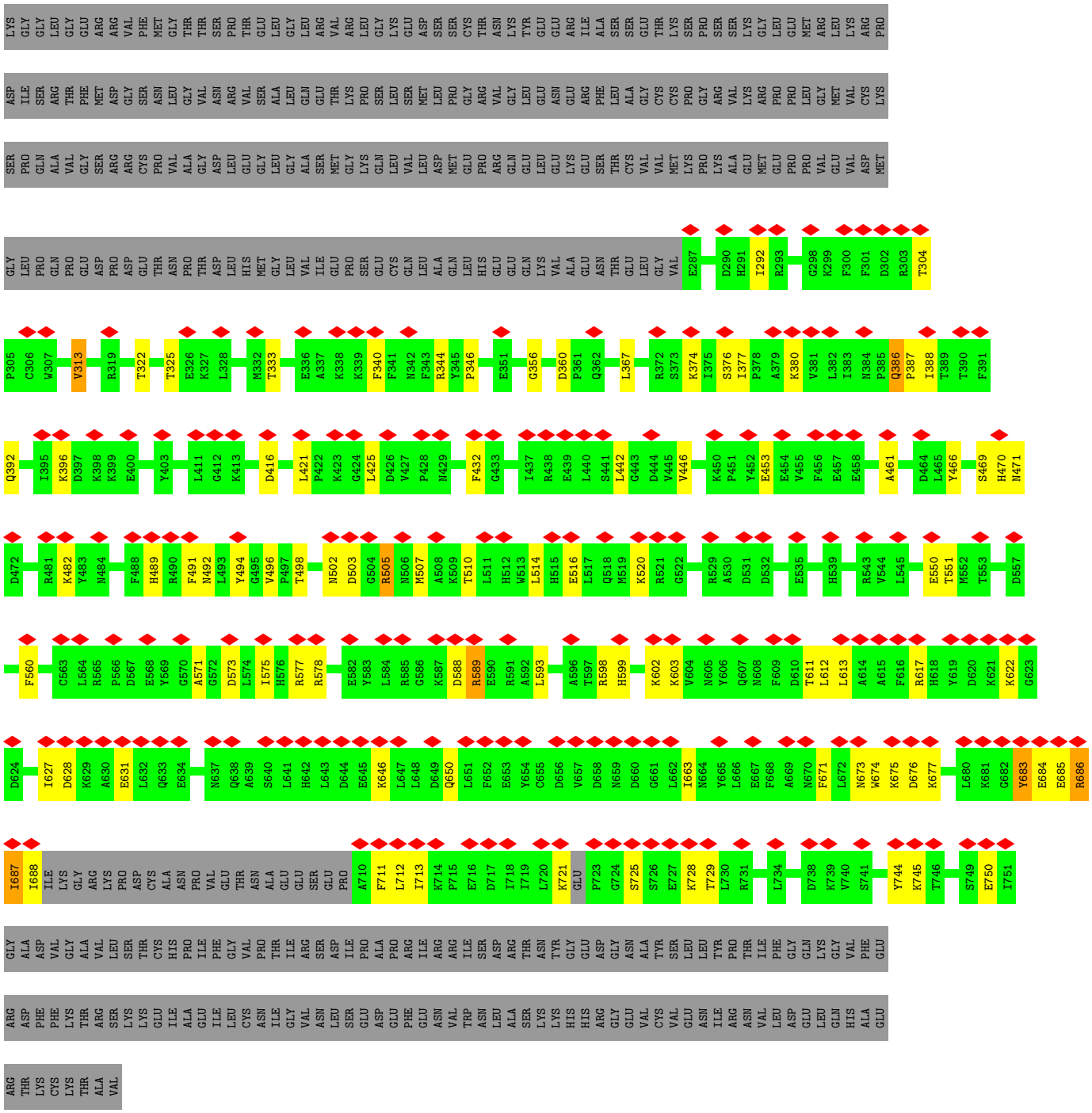






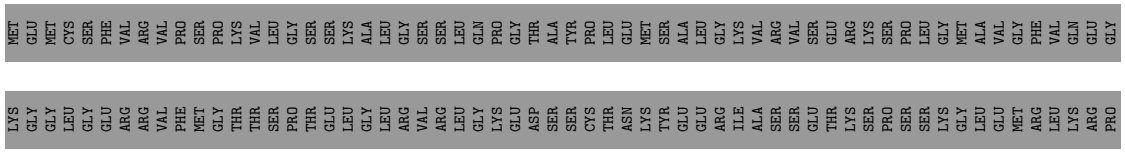
• Molecule 31: EF-hand domain family member B

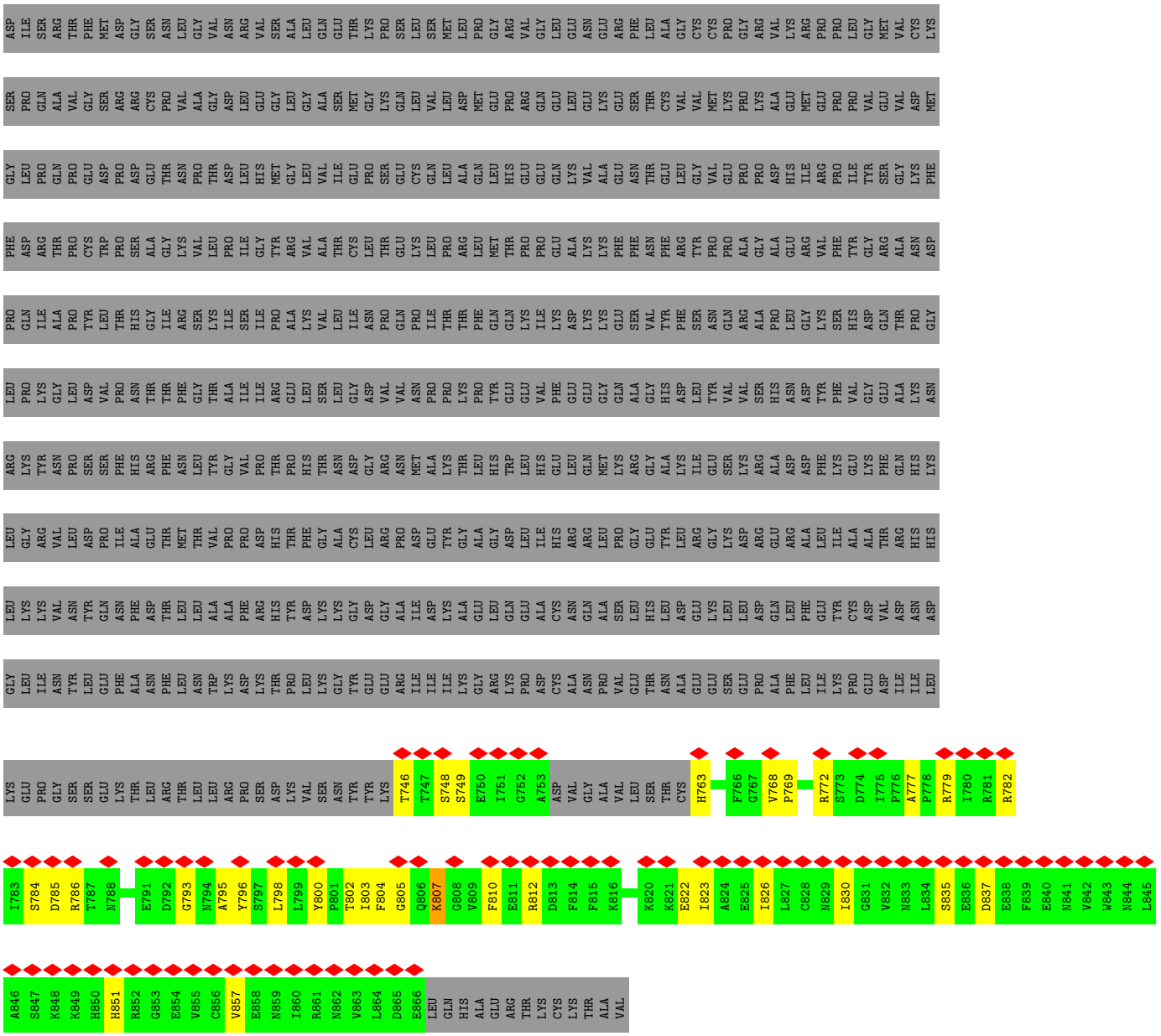
Chain 5I:

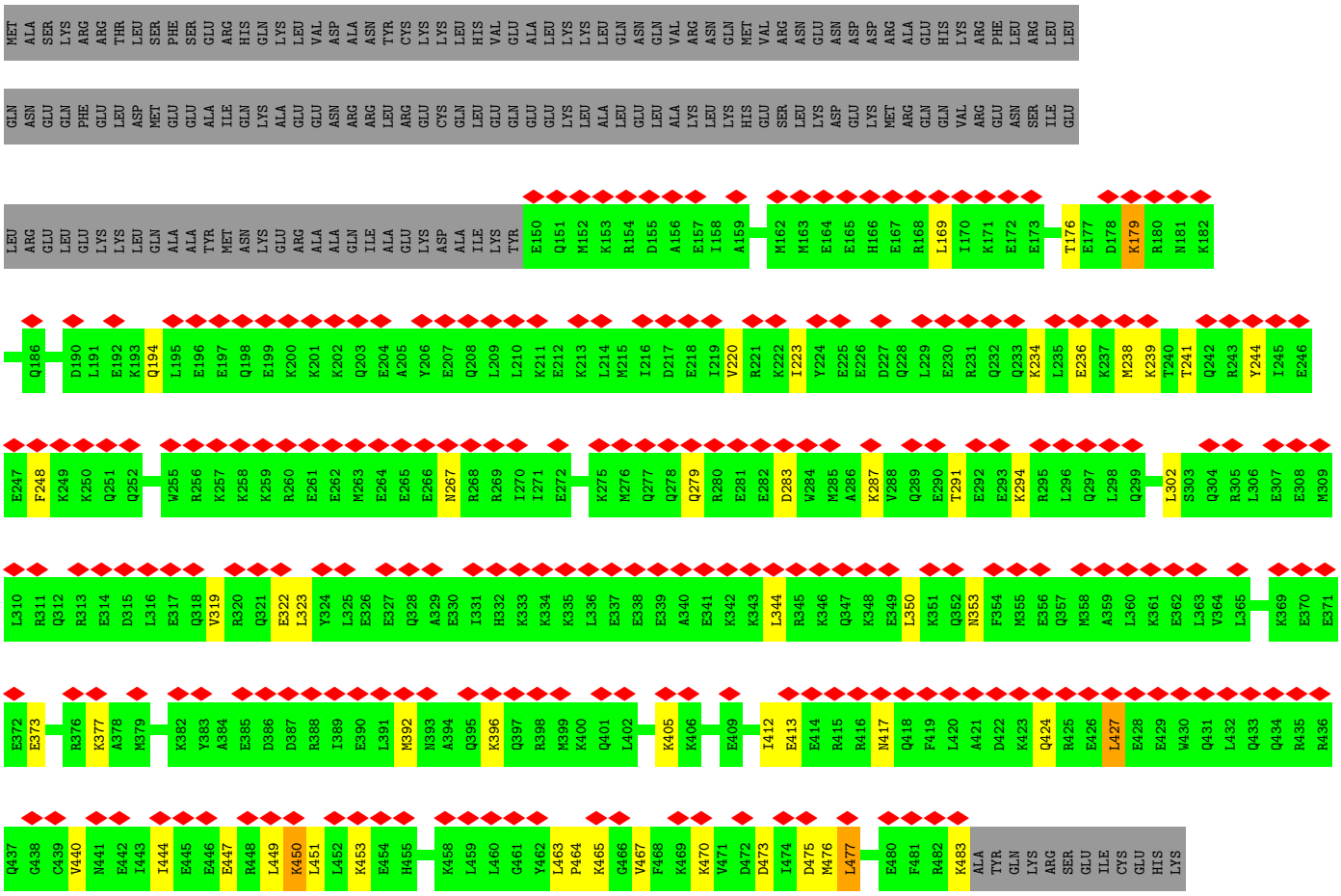


• Molecule 31: EF-hand domain family member B

Chain 5J:

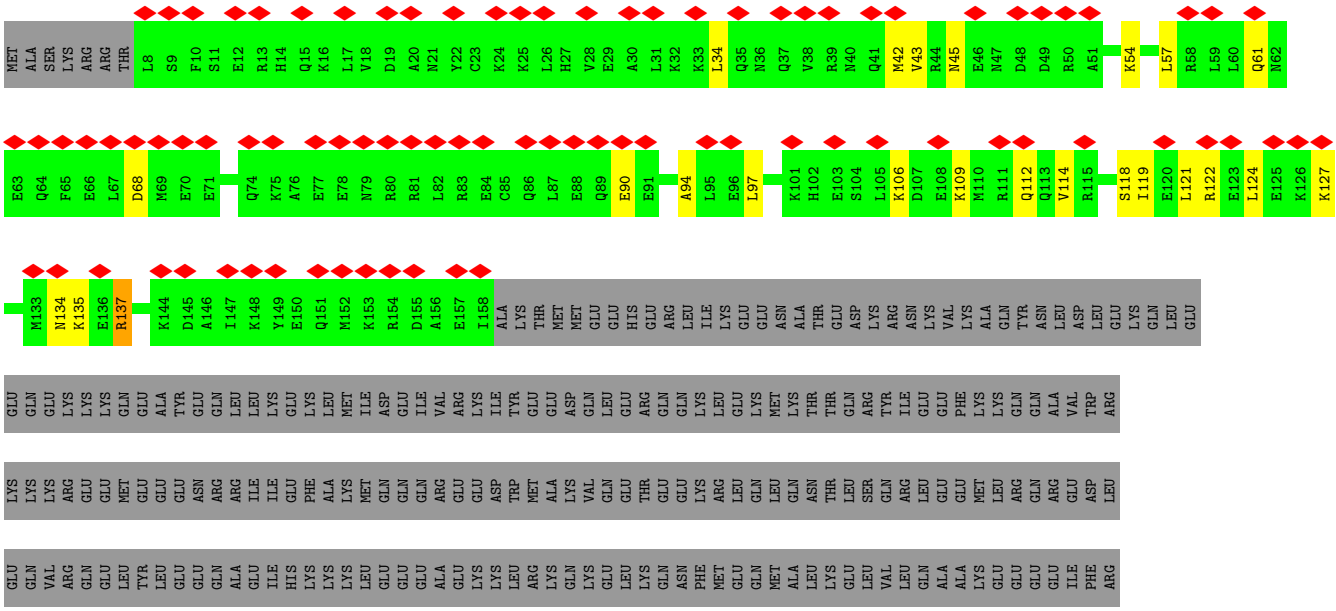


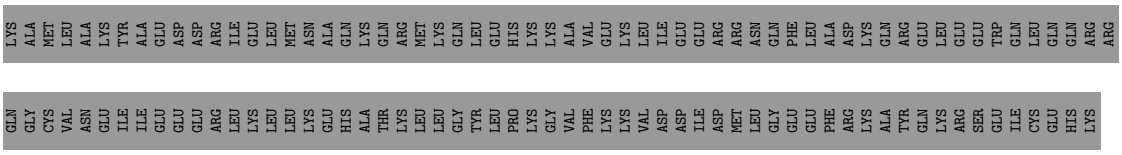

ASP ILE SER ARG THR PHE MET ASP GLY SER ASN LEU GLY VAL ASN ARG VAL SER ALA LEU GLN GLU THR LYS PRO SER LEU SER MET LEU PRO GLY ARG VAL GLY LEU GLU ASN GLU ARG PHE LEU ALA GLY CYS CYS PRO GLY ARG VAL LYS ARG PRO PRO LEU GLY MET VAL CYS LYS
SER PRO GLN ALA VAL GLY SER ARG ARG CYS PRO VAL ALA GLY ASP LEU GLU GLY GLY LEU GLY ALA GLY ALA SER MET GLY LYS GLN LEU VAL LEU ASP MET GLU PRO ARG GLN GLU LEU GLU LYS GLU SER THR CYS VAL VAL MET LYS PRO LYS ALA GLU MET GLU PRO PRO VAL GLU VAL ASP MET
GLY LEU PRO GLN PRO GLU ASP PRO ASP GLU THR ASN PRO THR ASP LEU HIS MET GLY LEU GLY VAL ALA ILE GLU PRO SER GLU CYS GLN LEU ALA GLN LEU HIS GLU GLU GLN LYS VAL ALA GLU ASN THR GLU LEU GLY VAL GLU PRO PRO ALA GLY ALA GLU ARG VAL PHE TYR GLY ARG ALA ASN ASP
PHE ASP ARG THR PRO CYS TRP PRO SER ALA GLY LYS VAL LEU PRO ILE GLY TYR ARG VAL ALA THR CYS LEU THR GLU LYS LEU PRO PRO ARG LEU MET THR PRO PRO GLU ALA LYS LYS PHE PHE ASN PHE ARG TYR PRO PRO ALA GLY ALA GLU ARG VAL PHE TYR GLY ARG ASP ASP
PRO GLN ILE ALA PRO TYR LEU THR HIS GLY ILE ARG SER LYS ILE SER ILE PRO ALA LYS VAL LEU ILE ASN PRO GLN PRO ILE THR THR PHE GLN GLN LYS ILE LYS ASP LYS LYS GLU SER VAL TYR PHE SER ASN GLN ARG ALA PRO LEU GLY LYS SER HIS ASP GLN THR PRO GLY
LEU PRO LYS GLY LEU ASP VAL PRO ASN THR THR PHE GLY THR ALA ILE ILE ARG GLU LEU SER LEU GLY ASP VAL VAL ASN PRO PRO PRO LYS PRO TYR GLU VAL PHE GLU GLU GLY GLN ALA ALA GLY HIS ASP LEU TYR VAL VAL SER HIS ASN ASP TYR PHE VAL GLY GLU ALA LYS ASN
ARG LYS TYR ASN PRO SER SER PHE HIS ARG PHE ASN LEU TYR GLY VAL PRO THR PRO HIS THR ASN ASP GLY ARG ASN MET ALA LYS THR LEU HIS TRP LEU HIS GLU LEU GLN MET LYS ARG GLY ALA LYS ILE GLU SER LYS ARG ALA ASP ASP PHE LYS GLU LYS PHE GLN HIS LYS
LEU GLY ARG VAL LEU ASP PRO ILE ALA GLU THR MET THR VAL PRO PRO ASP HIS THR PHE GLY ALA CYS LEU ARG PRO ASP GLU TYR GLY ALA GLY ASP GLY ILE HIS ARG GLY ILE ILE ALA GLU



• Molecule 33: Meiosis-specific nuclear structural protein 1

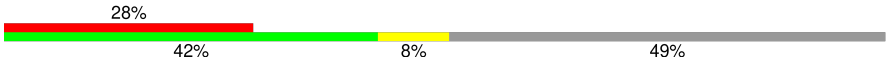
Chain 5O:

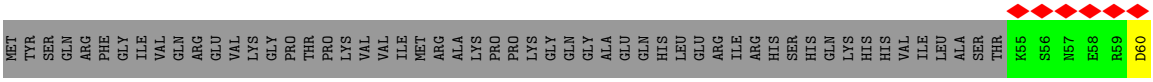


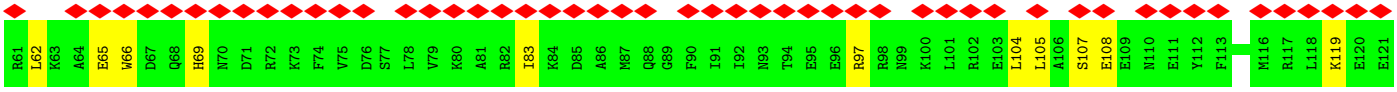


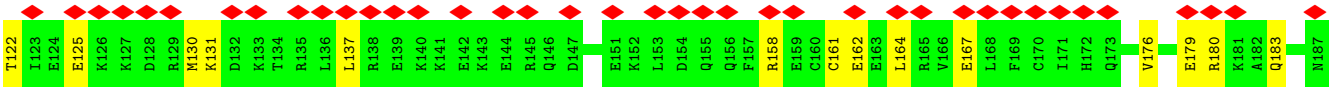
• Molecule 34: Cilia- and flagella-associated protein 53

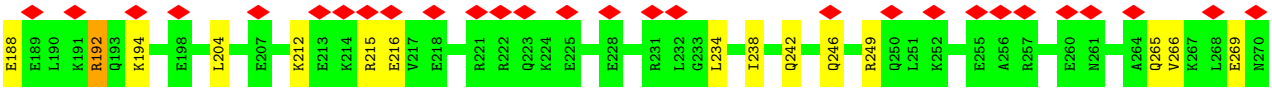
Chain 5Q:

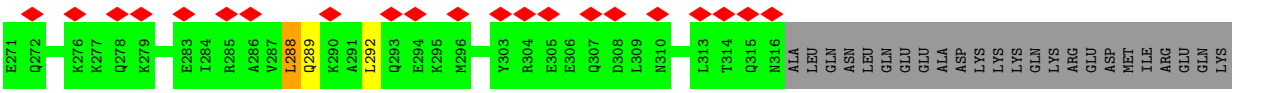


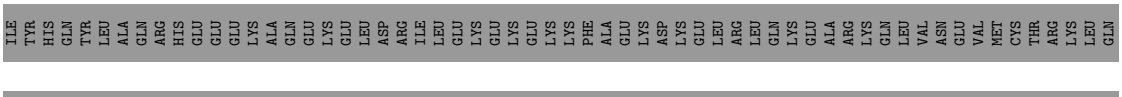


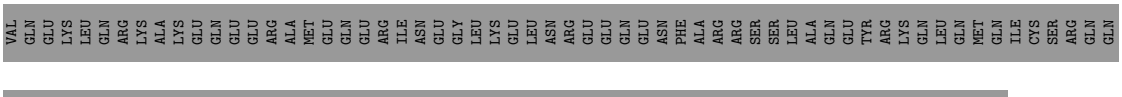


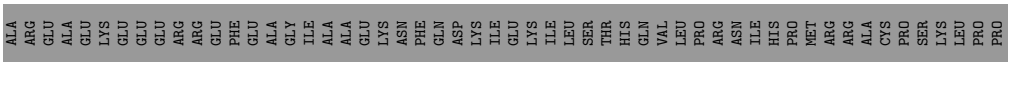






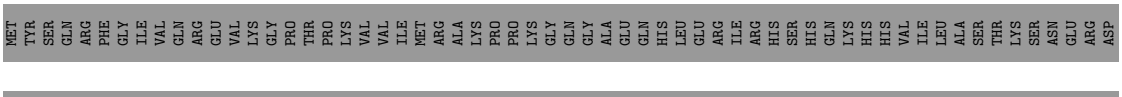


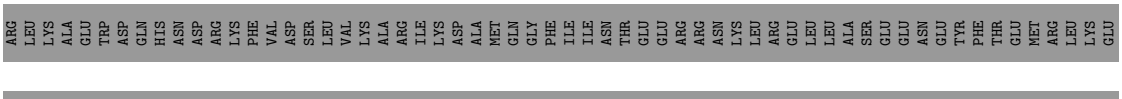


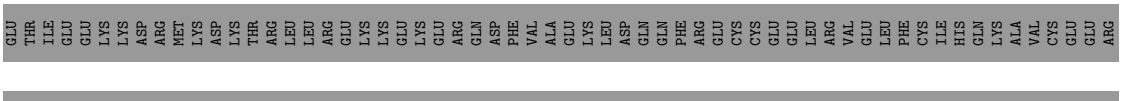


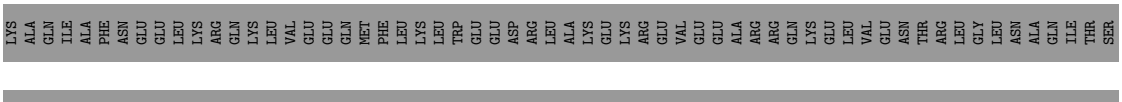
• Molecule 34: Cilia- and flagella-associated protein 53

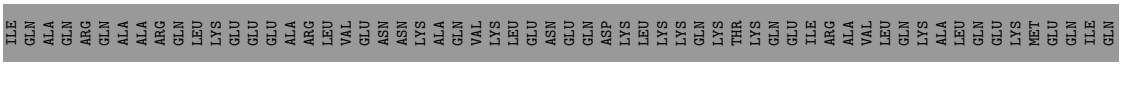
Chain 5R:

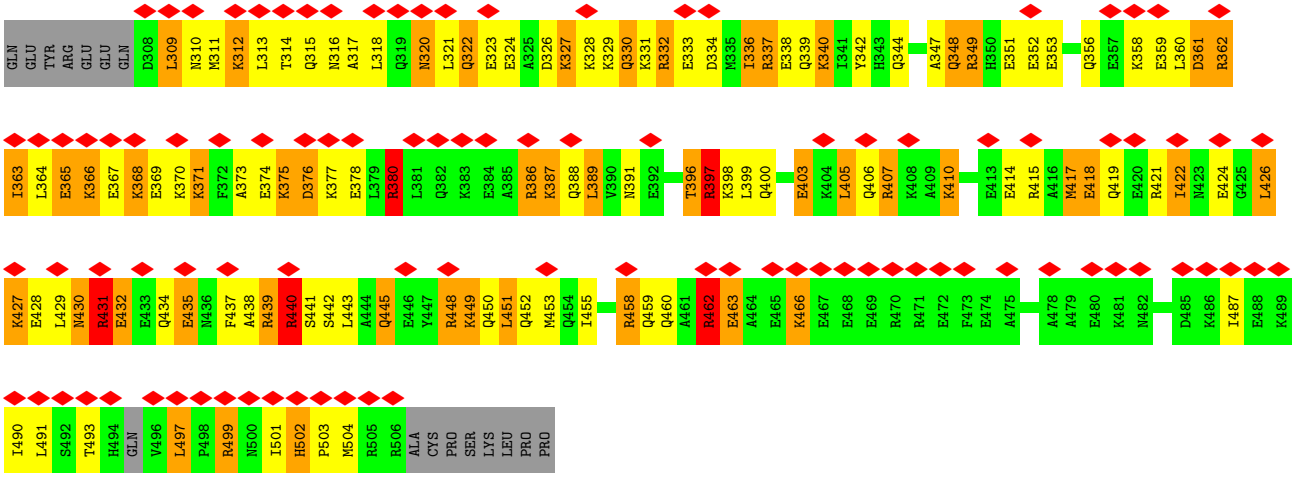






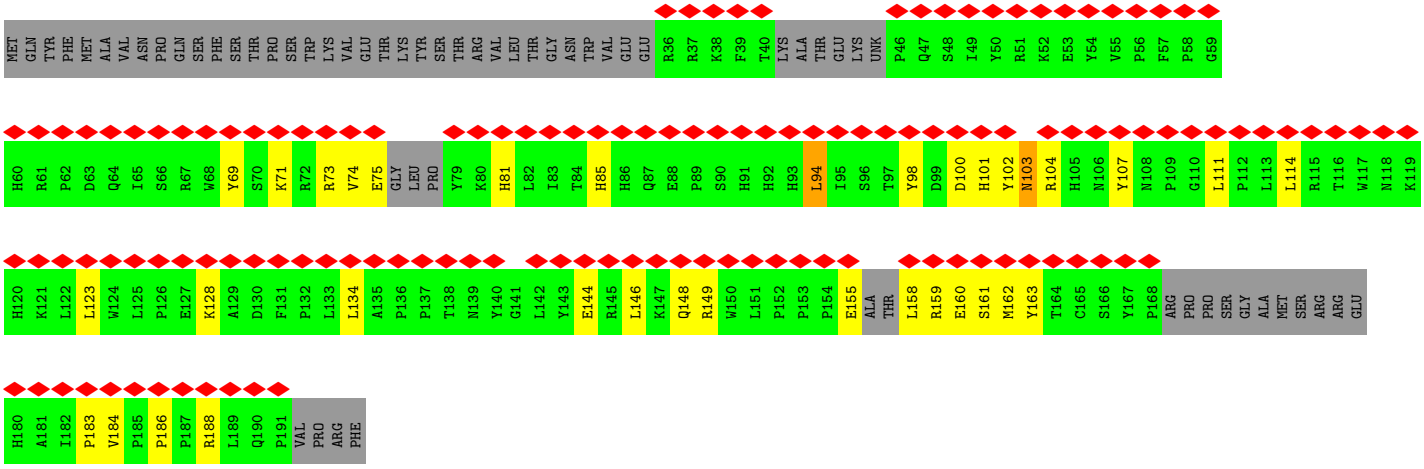






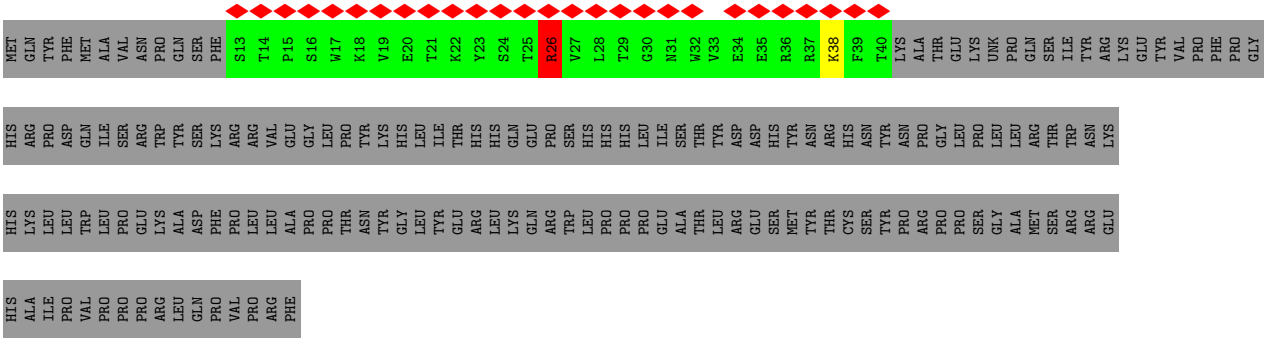
• Molecule 35: CFAP107/C1orf158

Chain 5T:



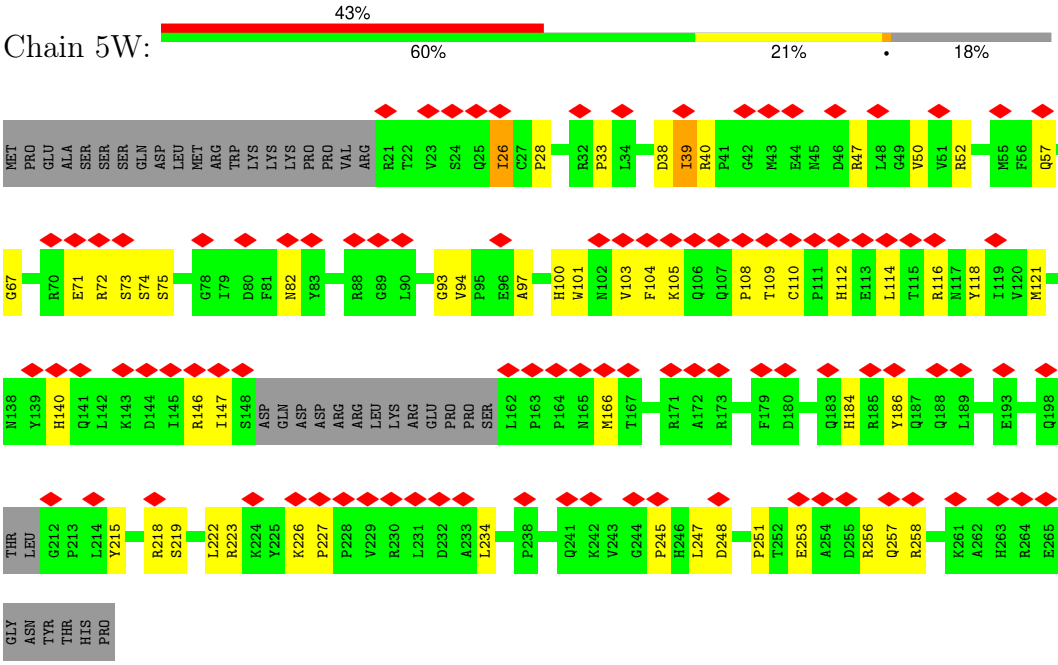
• Molecule 35: CFAP107/C1orf158

Chain 5U:



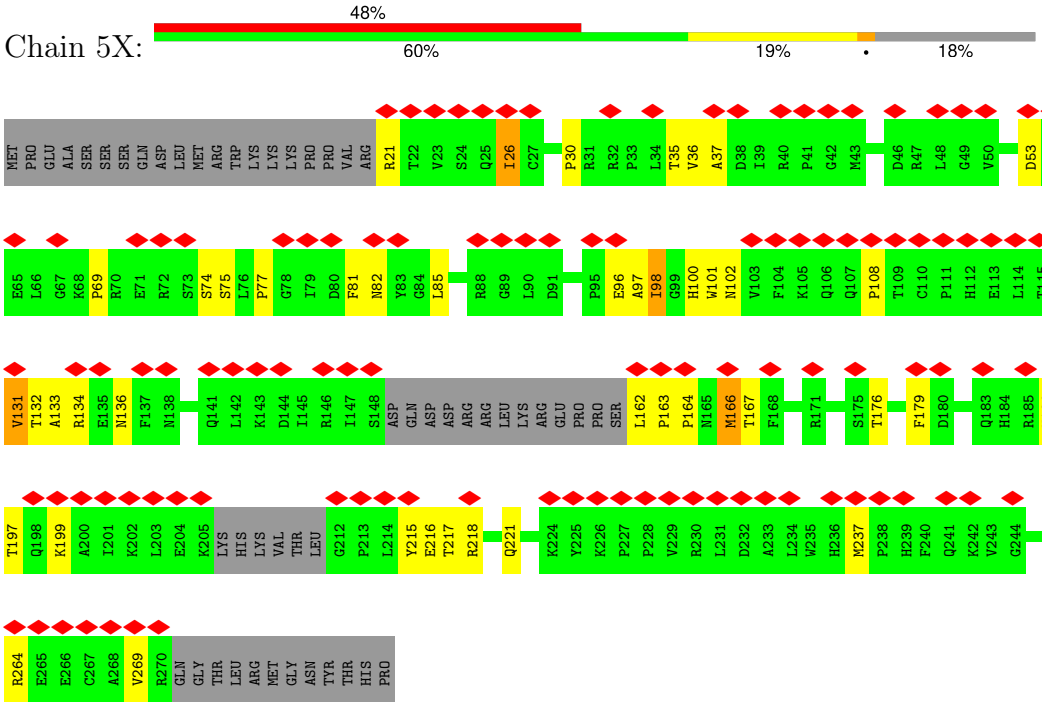
• Molecule 36: Cilia and flagella associated protein 77

Chain 5W:



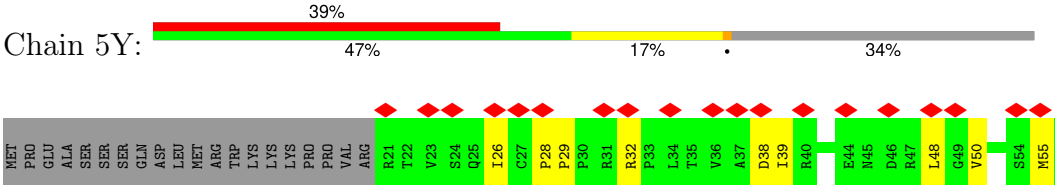
• Molecule 36: Cilia and flagella associated protein 77

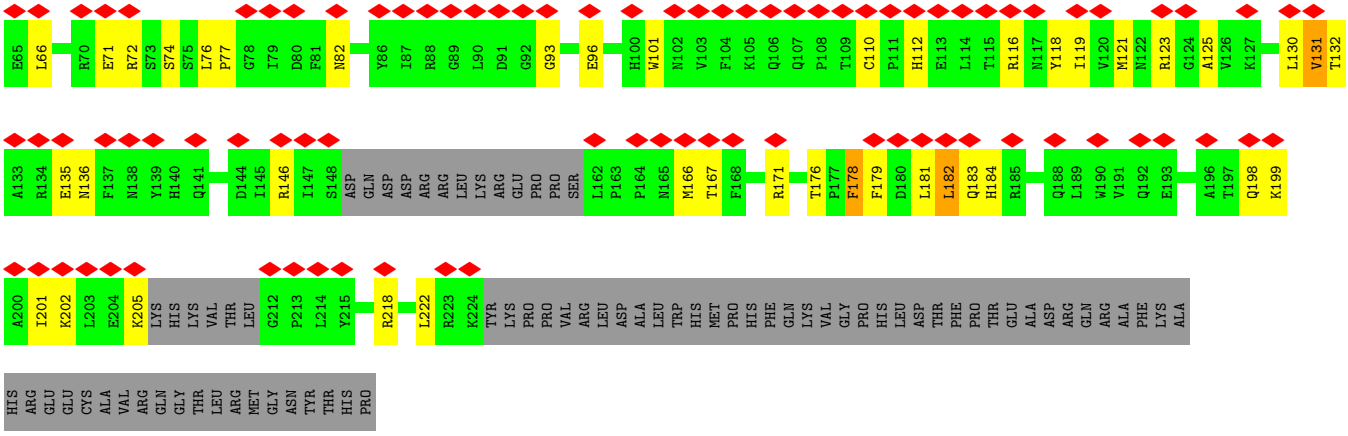
Chain 5X:



• Molecule 36: Cilia and flagella associated protein 77

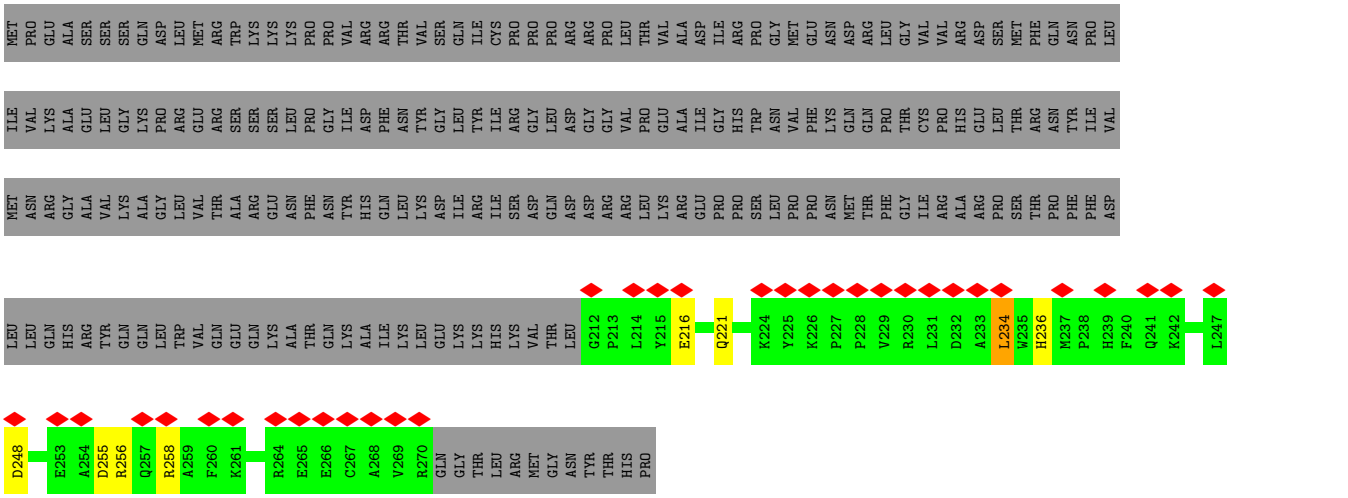
Chain 5Y:





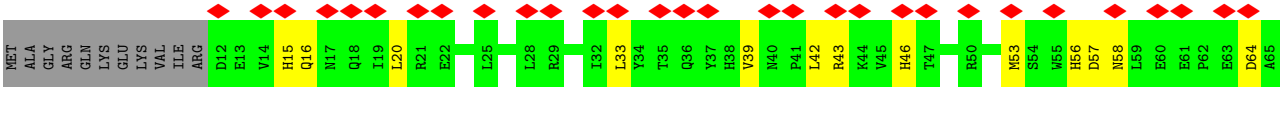
• Molecule 36: Cilia and flagella associated protein 77

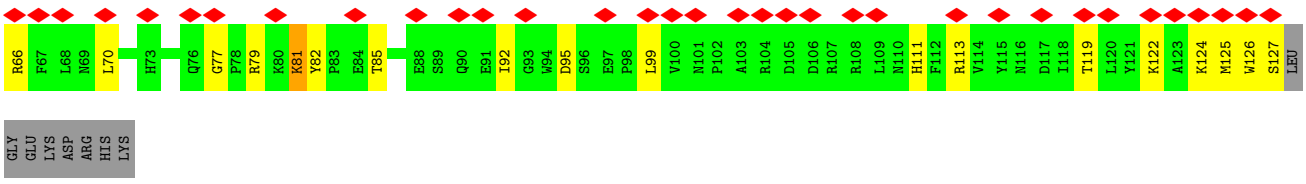
Chain 5Z:



• Molecule 37: Cilia and flagella associated protein 144

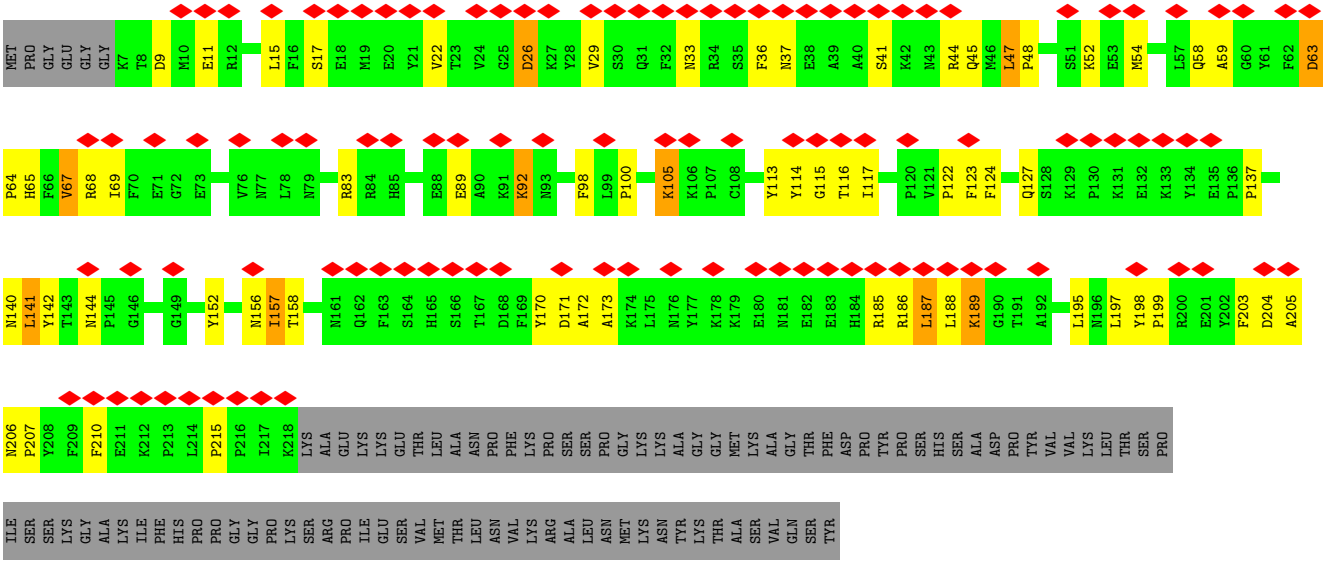
Chain 6A:

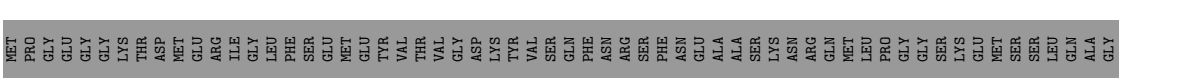




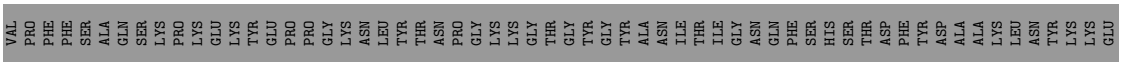
• Molecule 38: Cilia-and flagella-associated protein 96

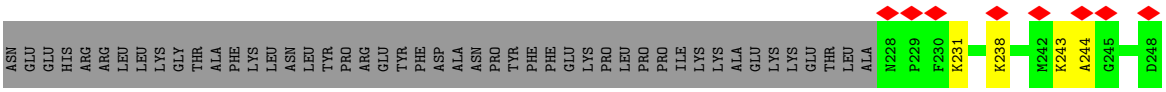
Chain 6C:

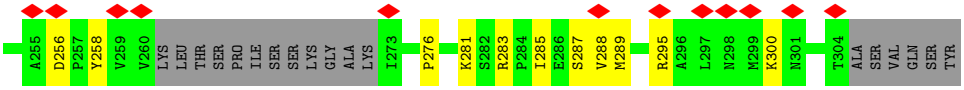




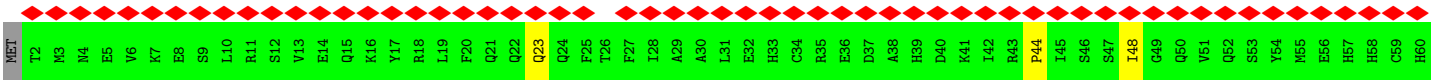
• Molecule 38: Cilia-and flagella-associated protein 96

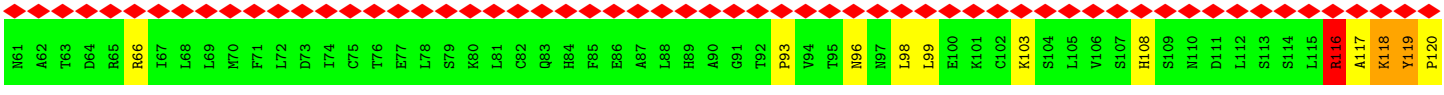


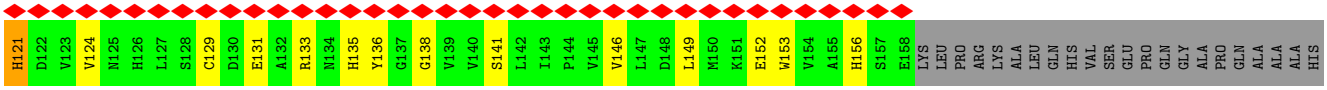




• Molecule 39: Sperm acrosome associated 9

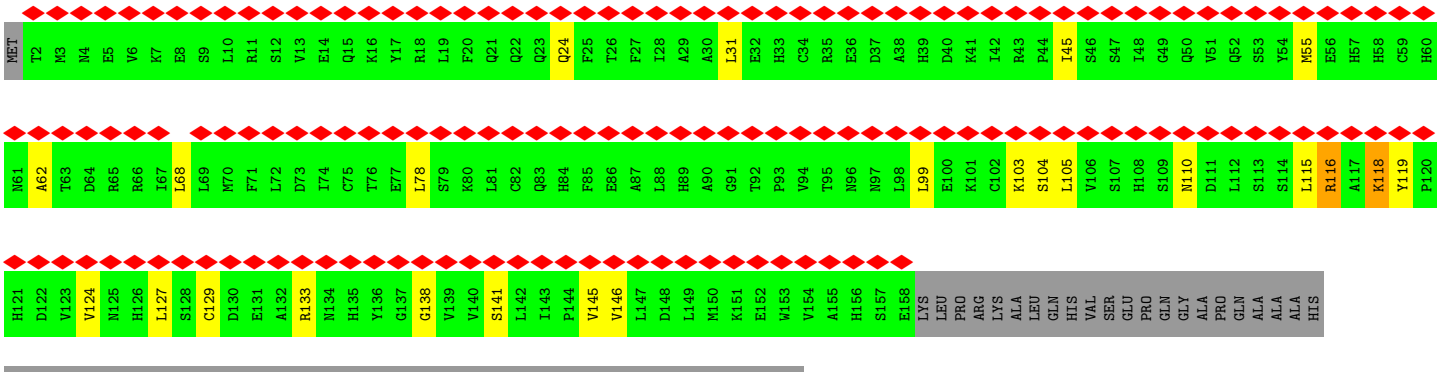






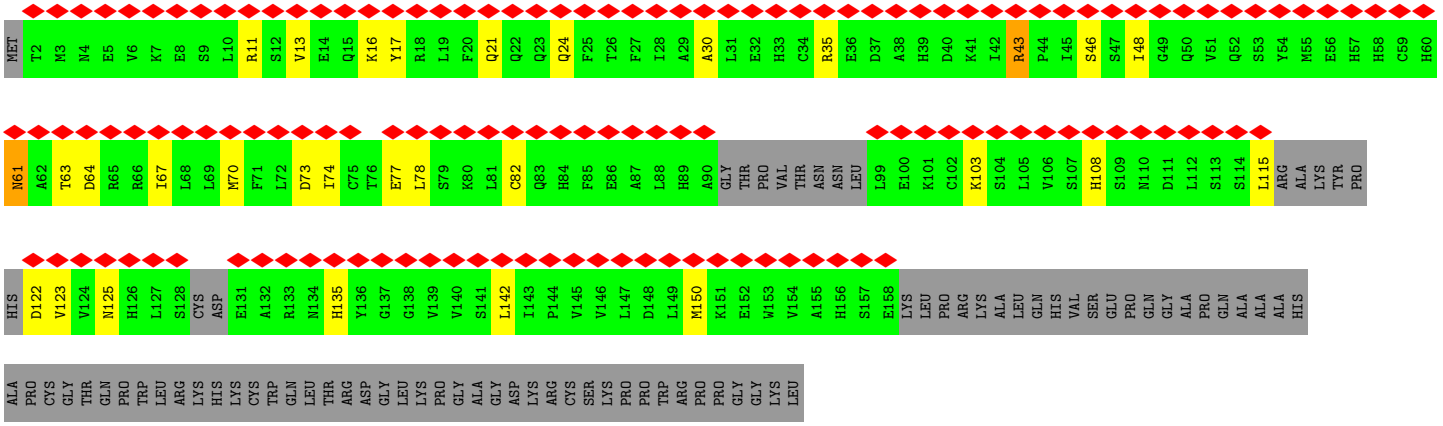
• Molecule 39: Sperm acrosome associated 9

Chain 6G:



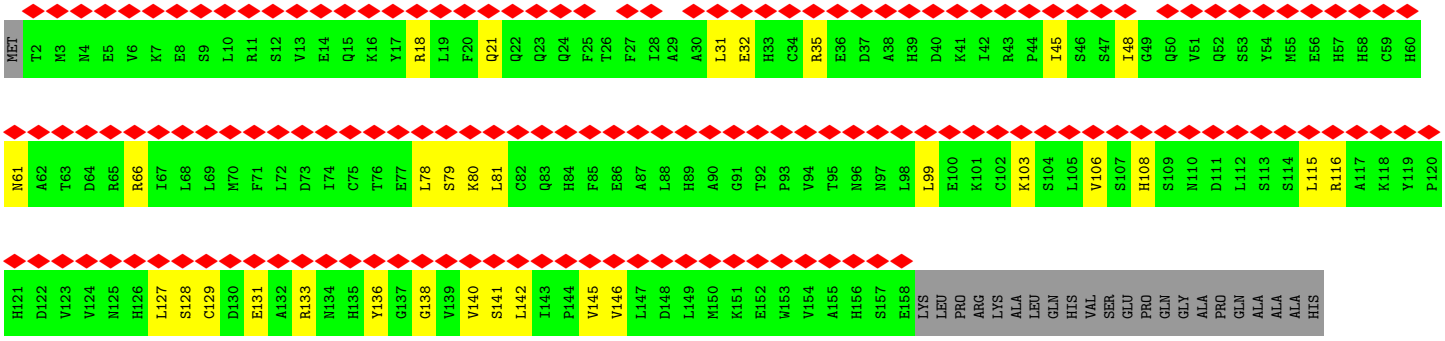
• Molecule 39: Sperm acrosome associated 9

Chain 6H:



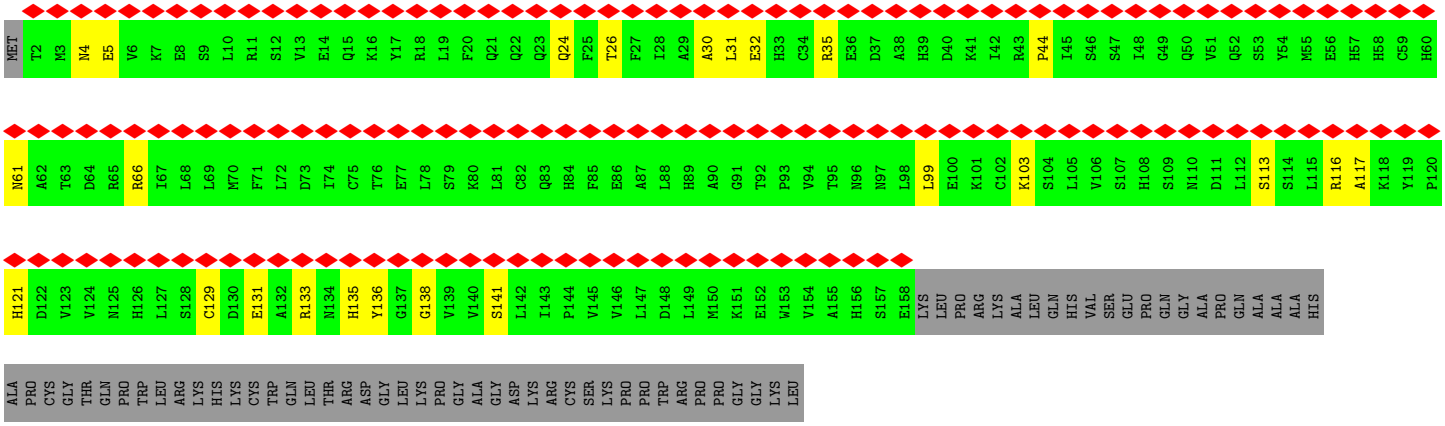
• Molecule 39: Sperm acrosome associated 9

Chain 6I:



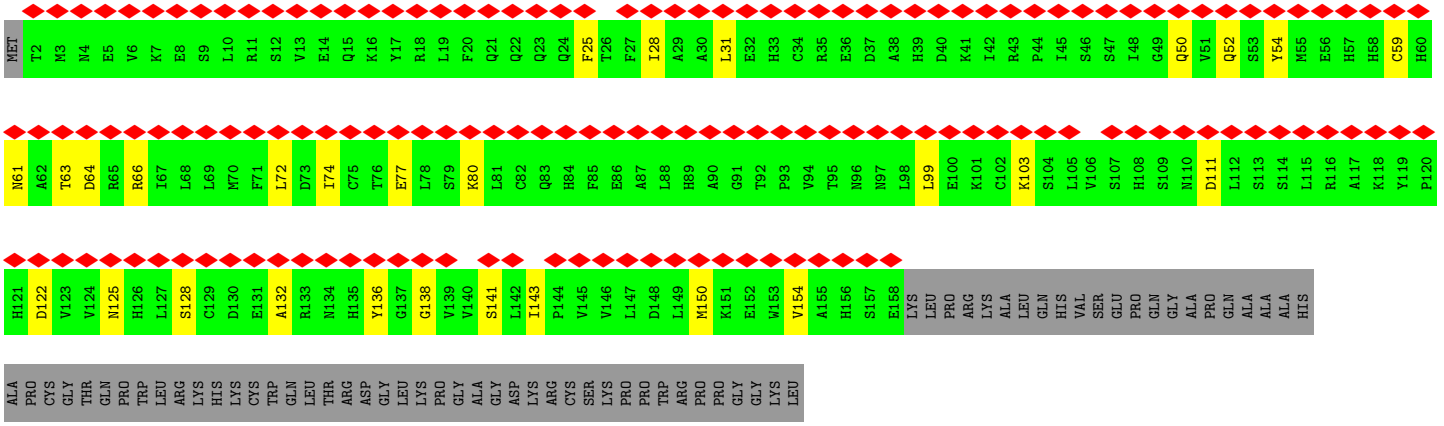
• Molecule 39: Sperm acrosome associated 9

Chain 6J:



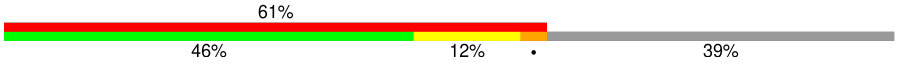
• Molecule 39: Sperm acrosome associated 9

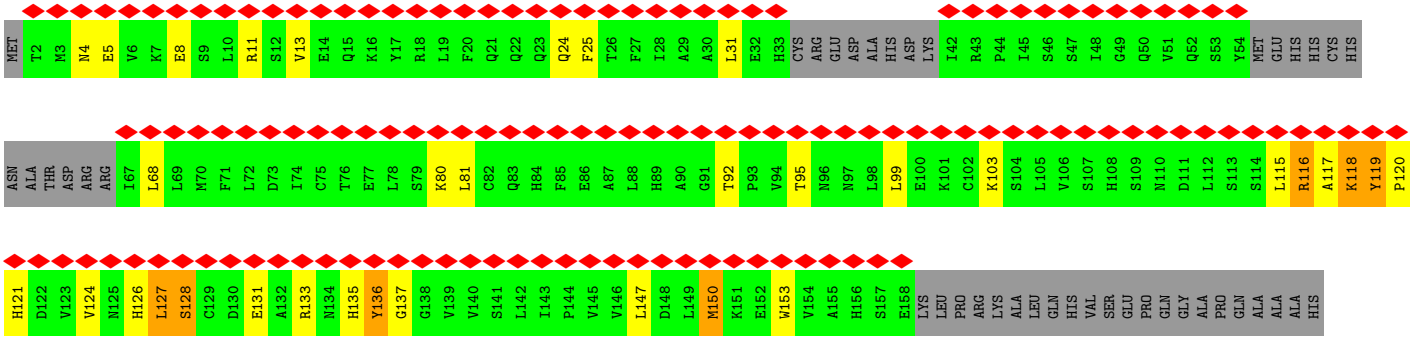
Chain 6K:



• Molecule 39: Sperm acrosome associated 9

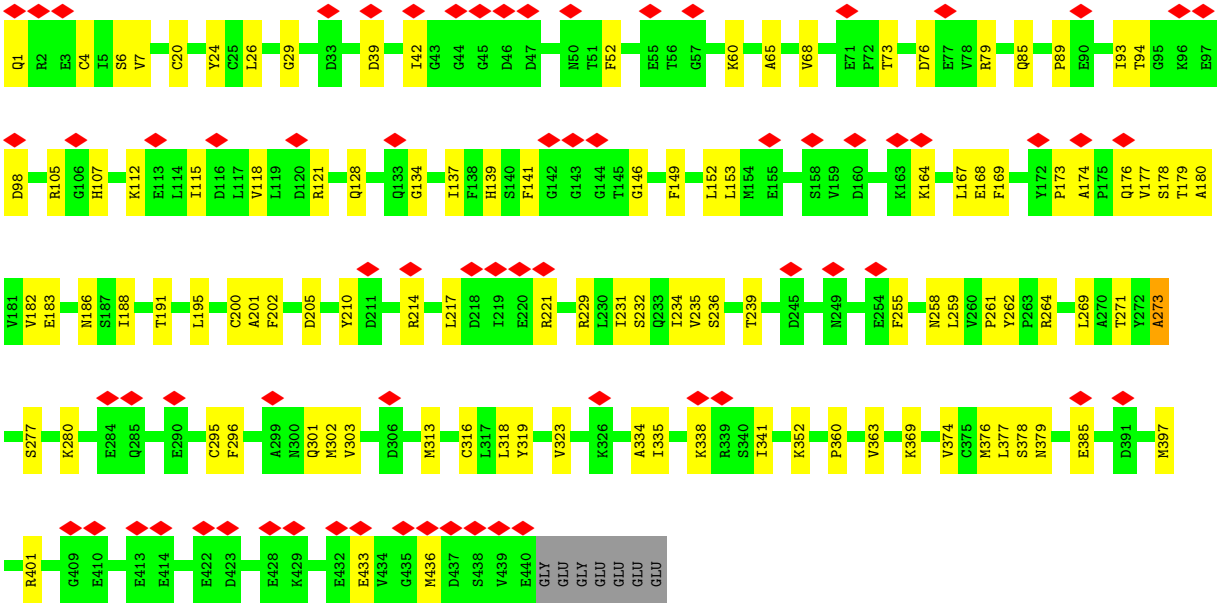
Chain 6L:





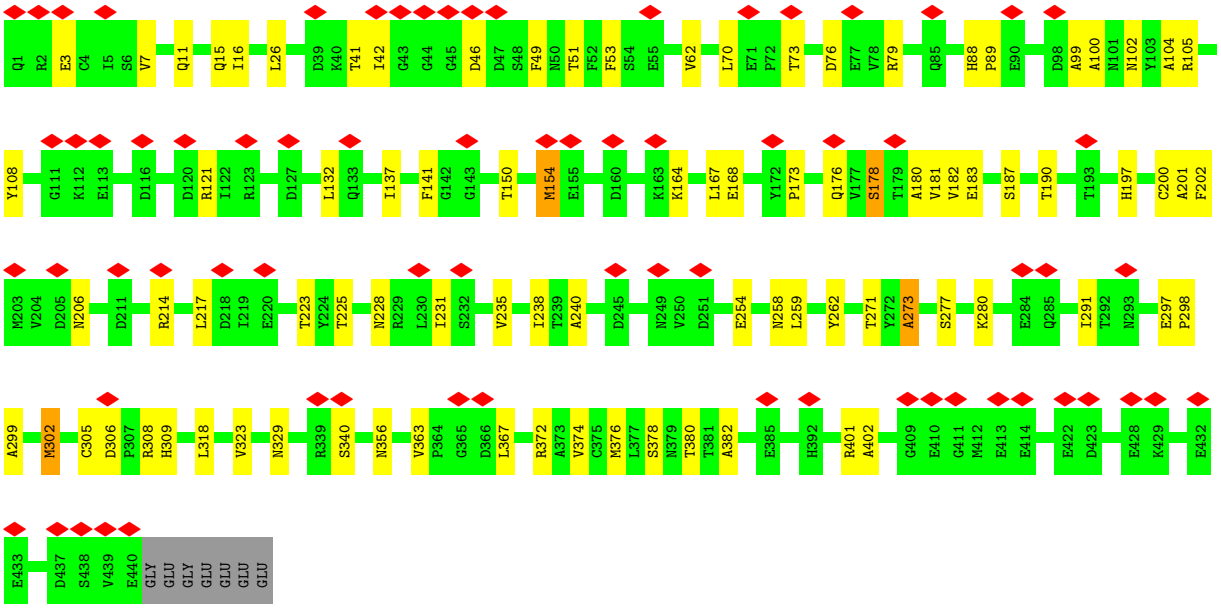
• Molecule 40: Tubulin alpha chain

Chain AA:



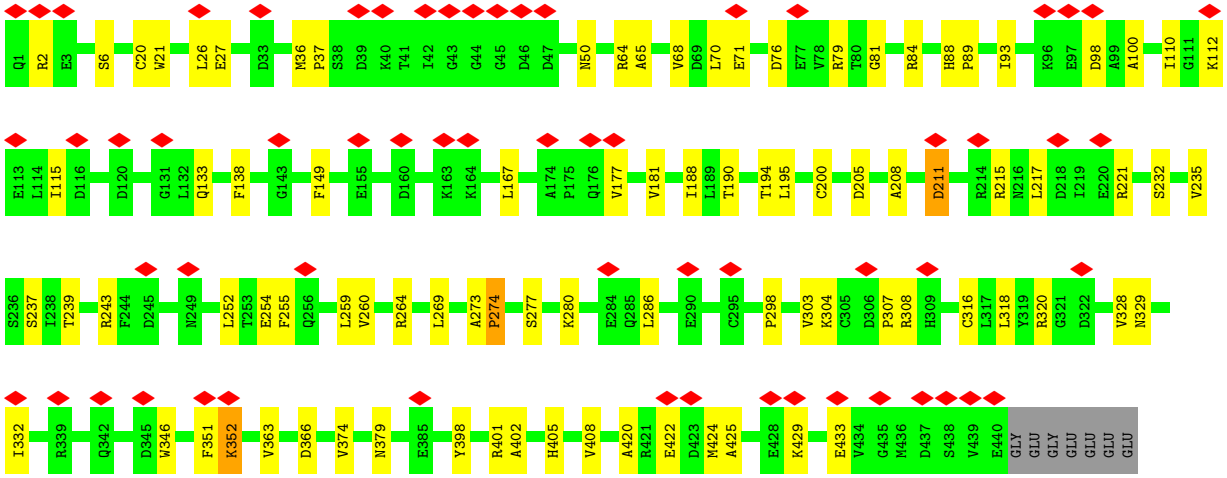
• Molecule 40: Tubulin alpha chain

Chain AE:



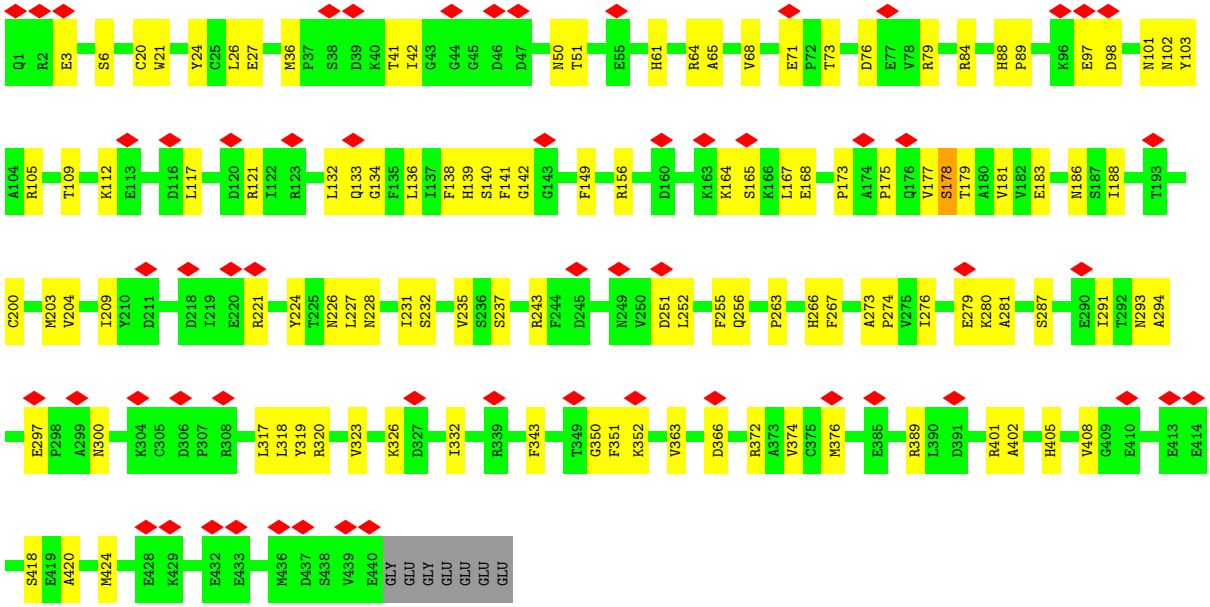
• Molecule 40: Tubulin alpha chain

Chain AF:



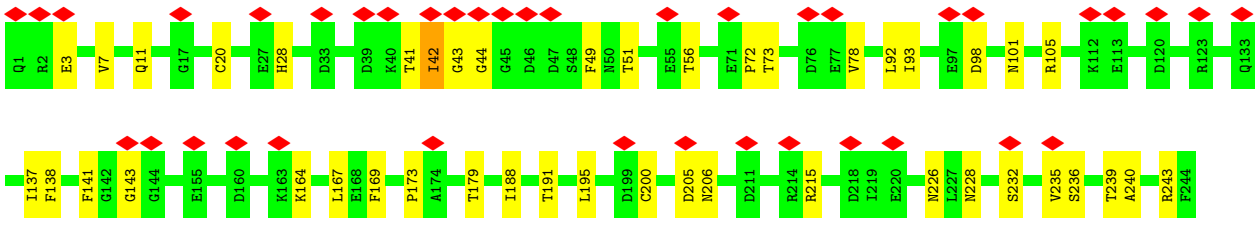
• Molecule 40: Tubulin alpha chain

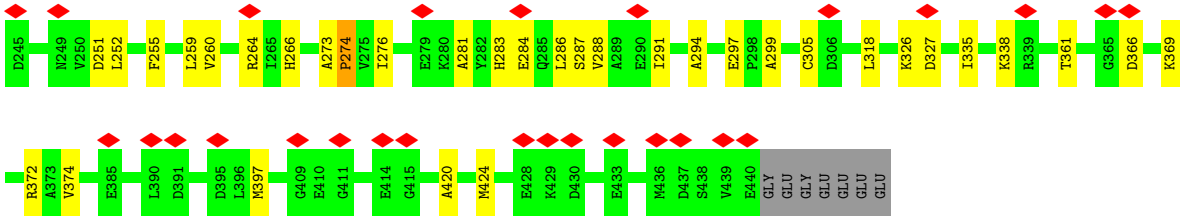
Chain AG:



• Molecule 40: Tubulin alpha chain

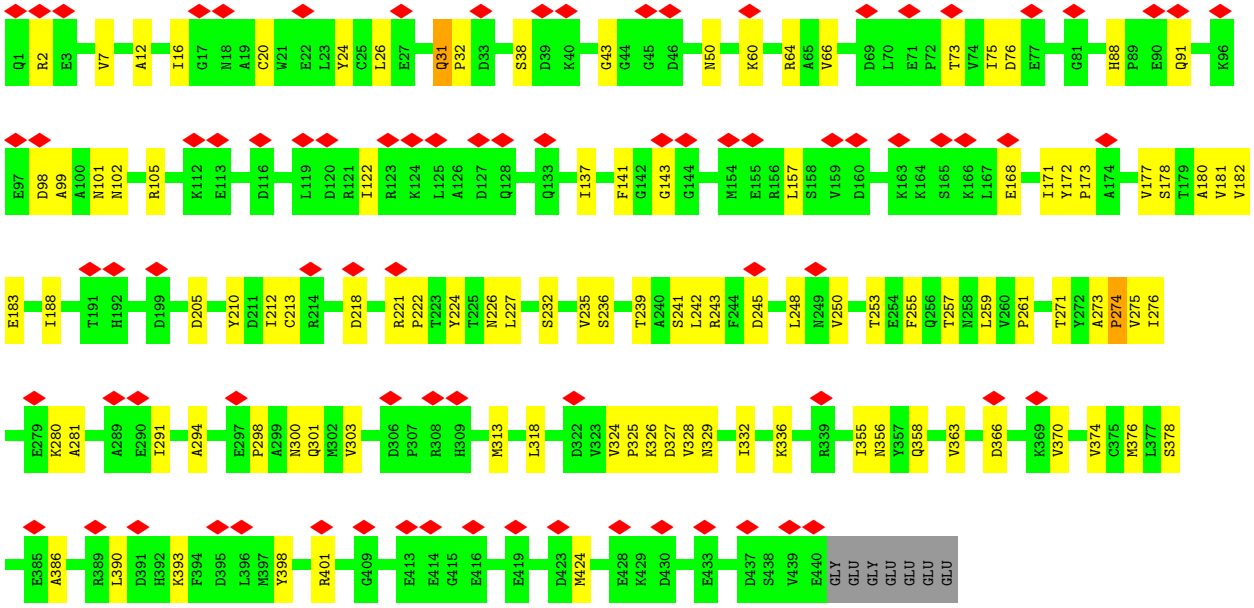
Chain AH:





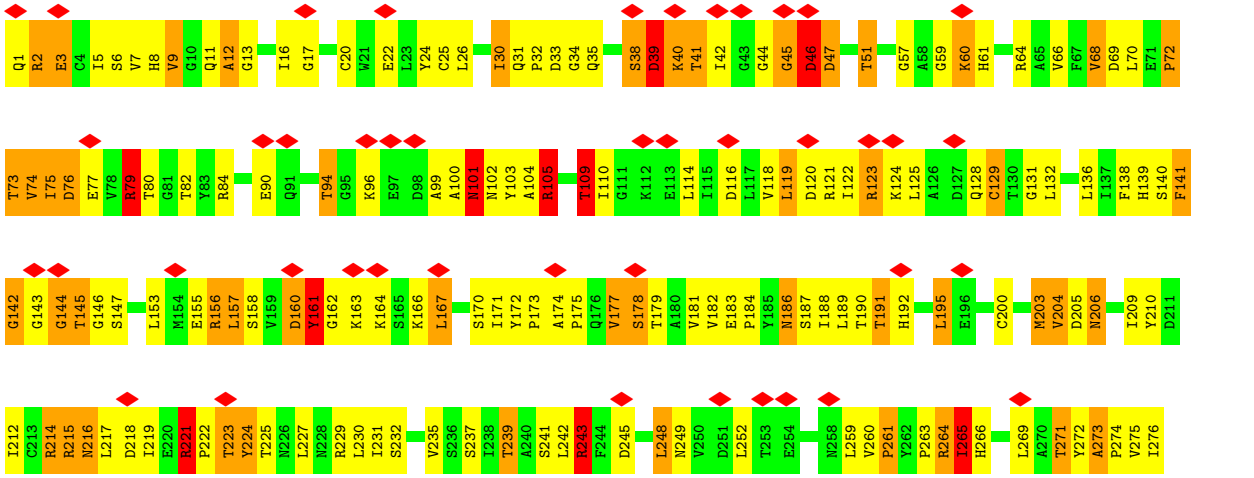
• Molecule 40: Tubulin alpha chain

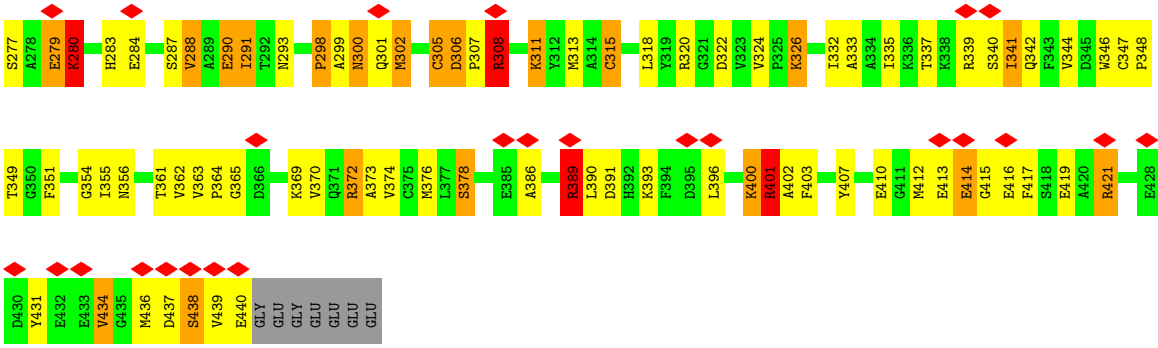
Chain BA:



• Molecule 40: Tubulin alpha chain

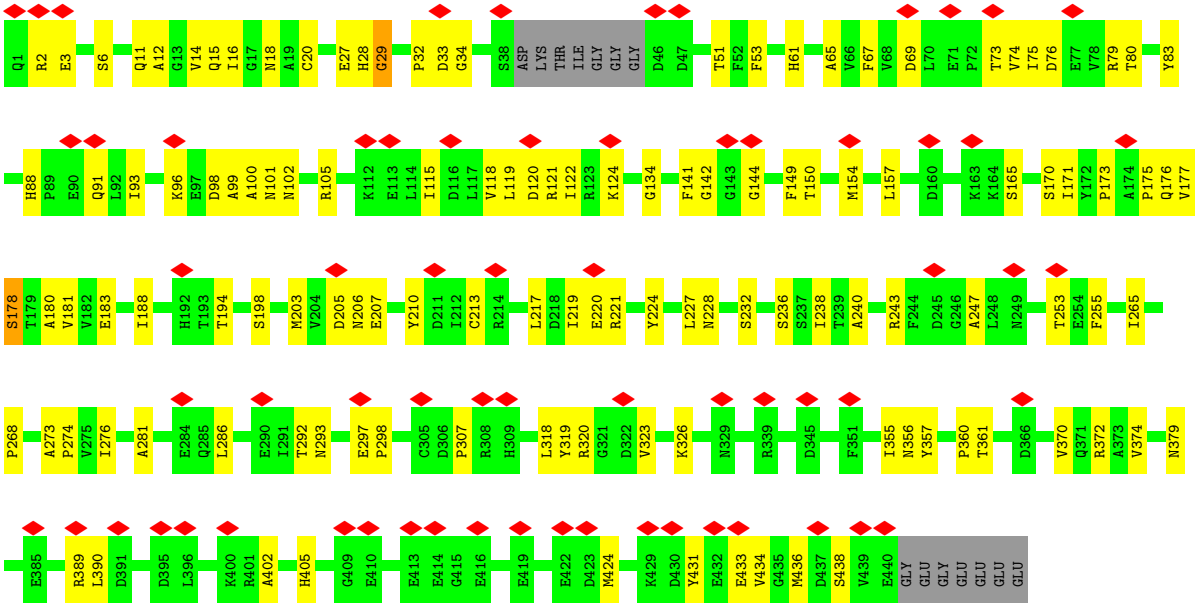
Chain BE:





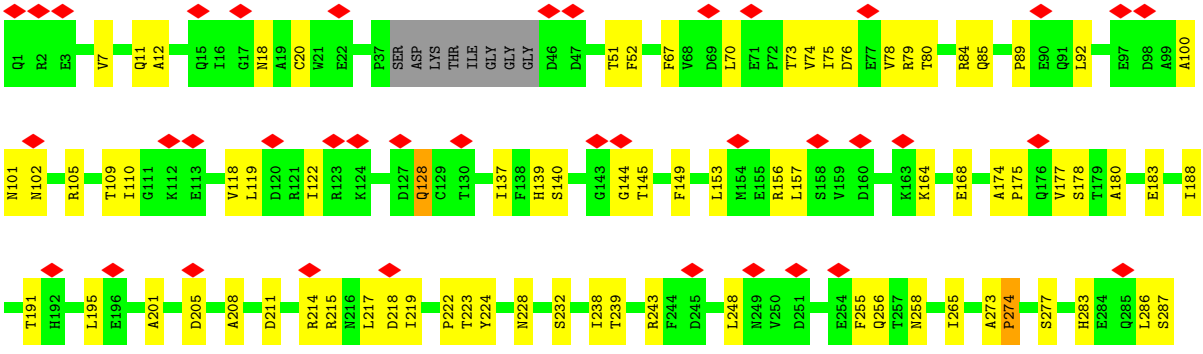
• Molecule 40: Tubulin alpha chain

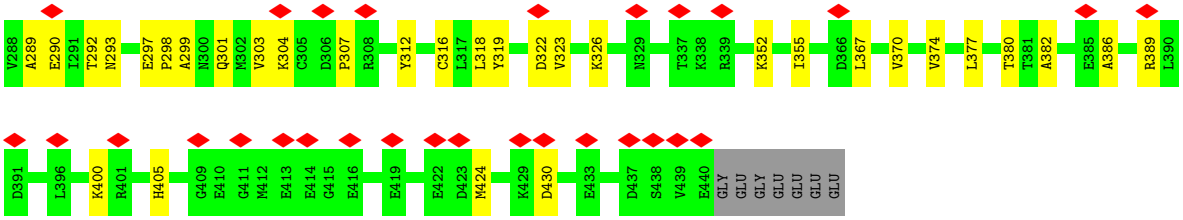
Chain BF:



• Molecule 40: Tubulin alpha chain

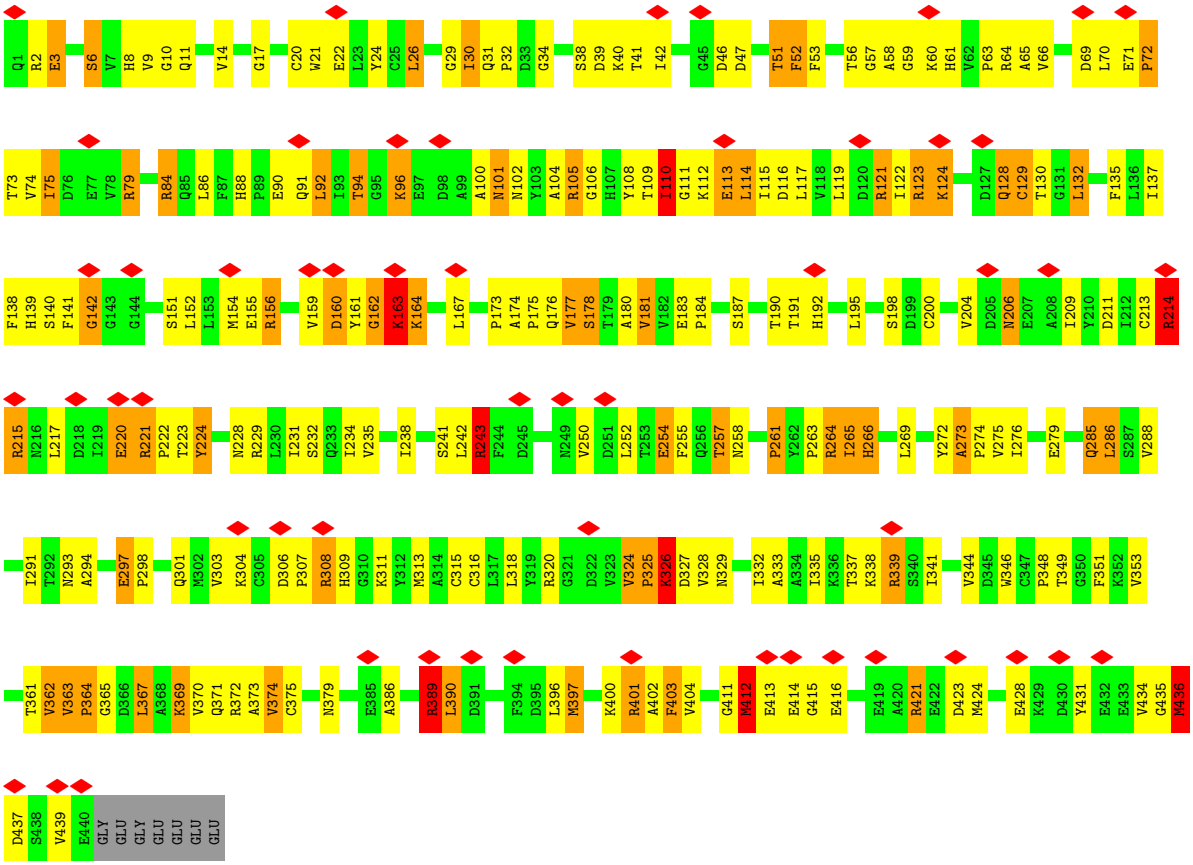
Chain BG:





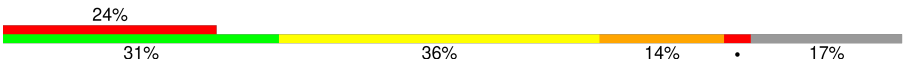
• Molecule 40: Tubulin alpha chain

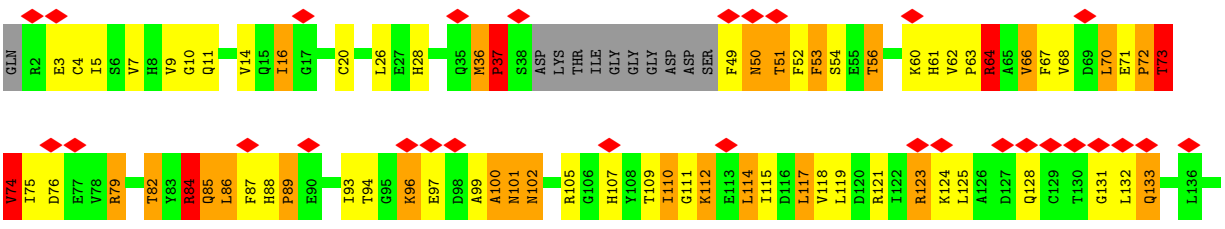
Chain BH:

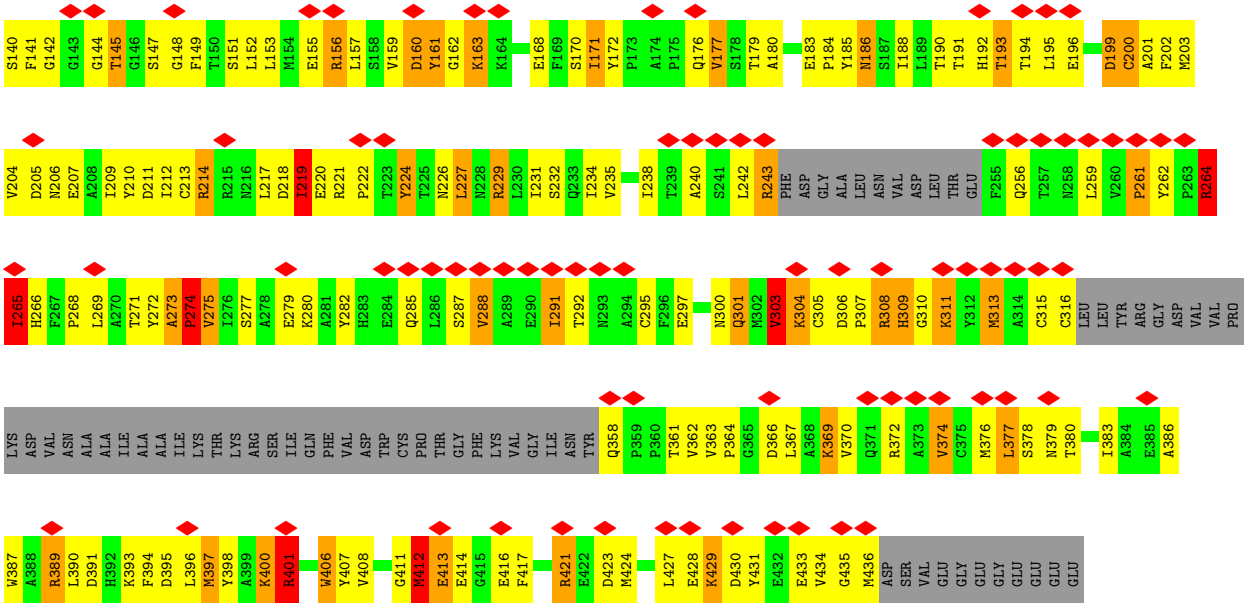


• Molecule 40: Tubulin alpha chain

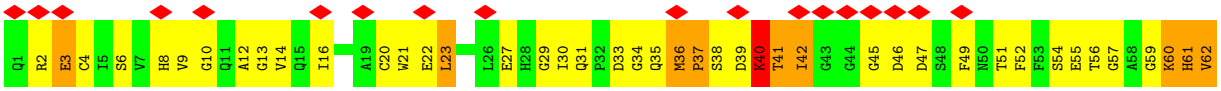
Chain BI:

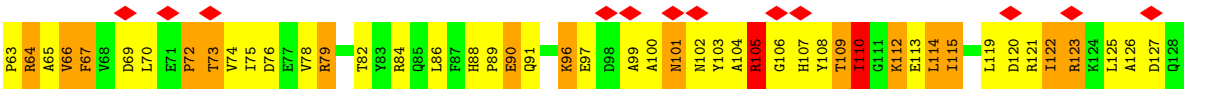


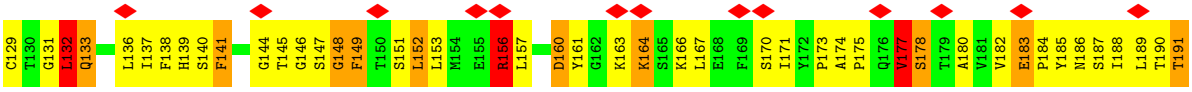


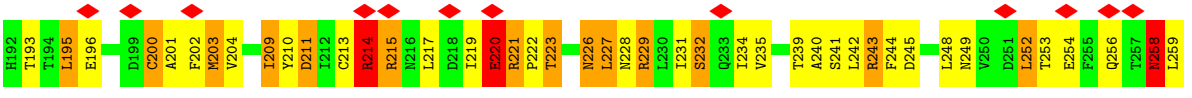


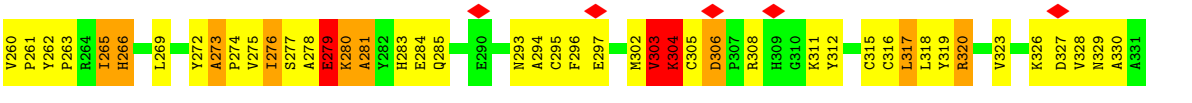
• Molecule 40: Tubulin alpha chain

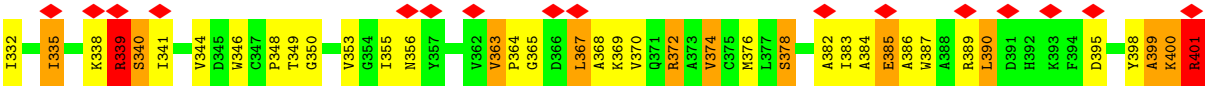






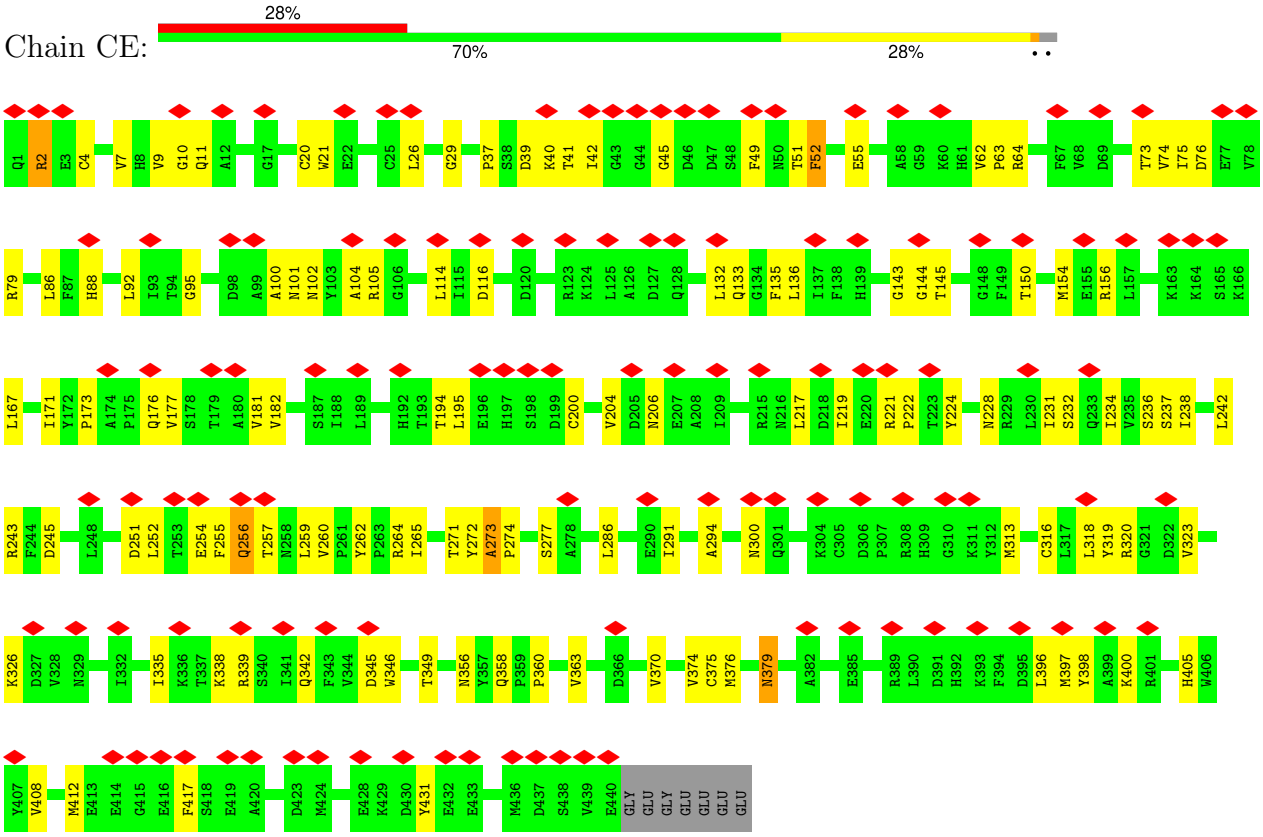






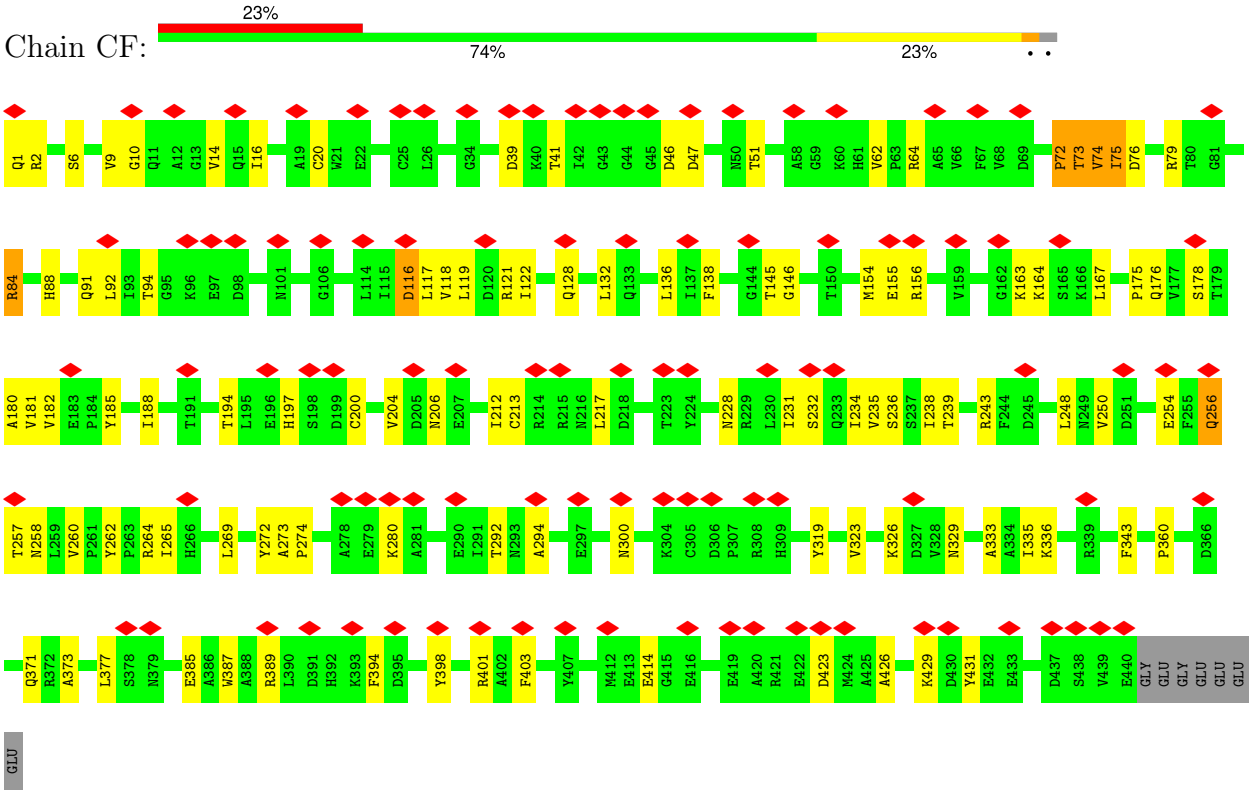
• Molecule 40: Tubulin alpha chain

Chain CE:



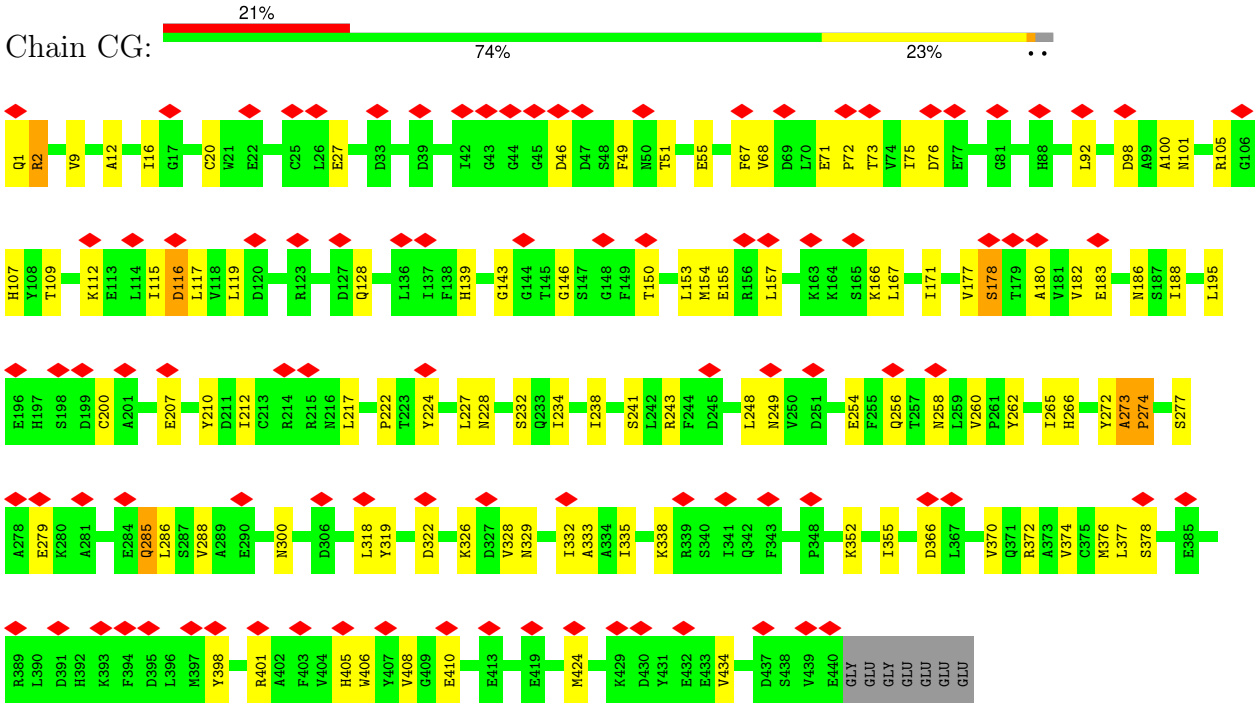
• Molecule 40: Tubulin alpha chain

Chain CF:



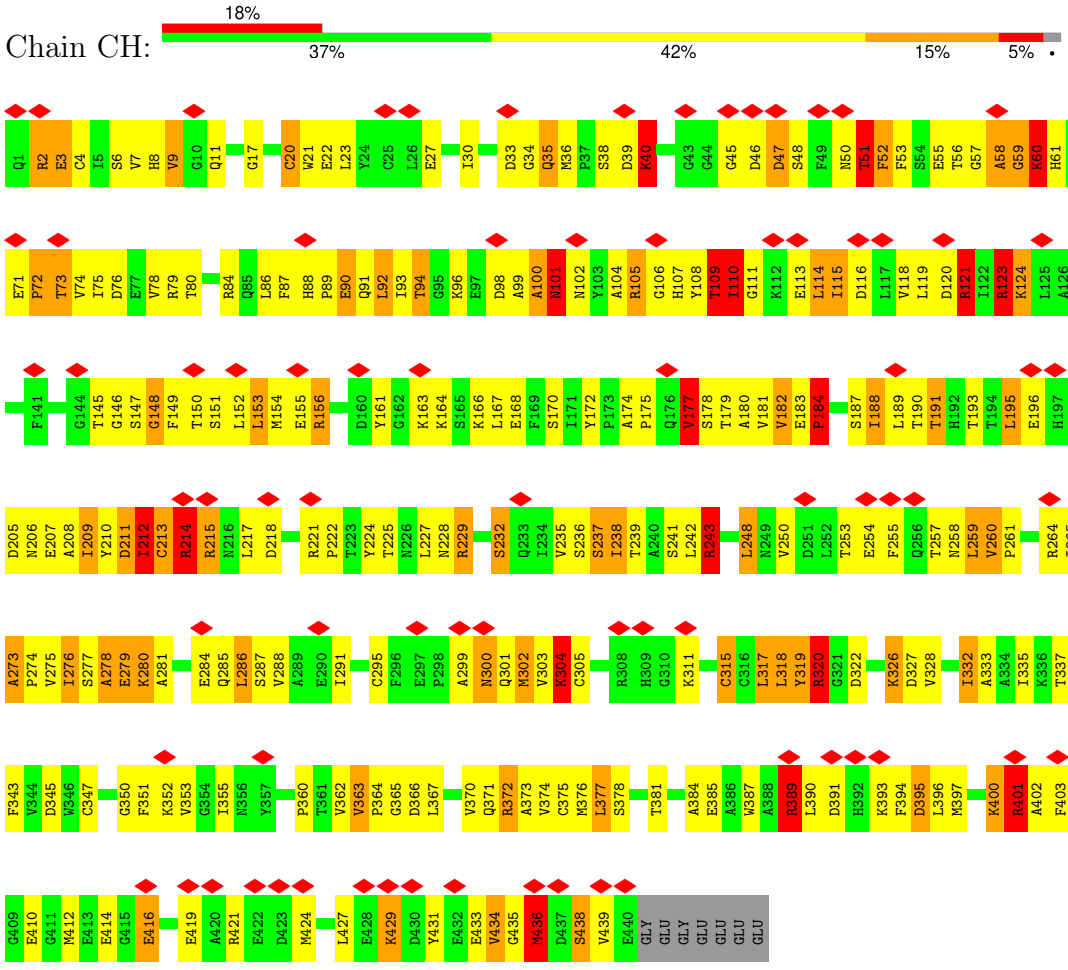
• Molecule 40: Tubulin alpha chain

Chain CG:



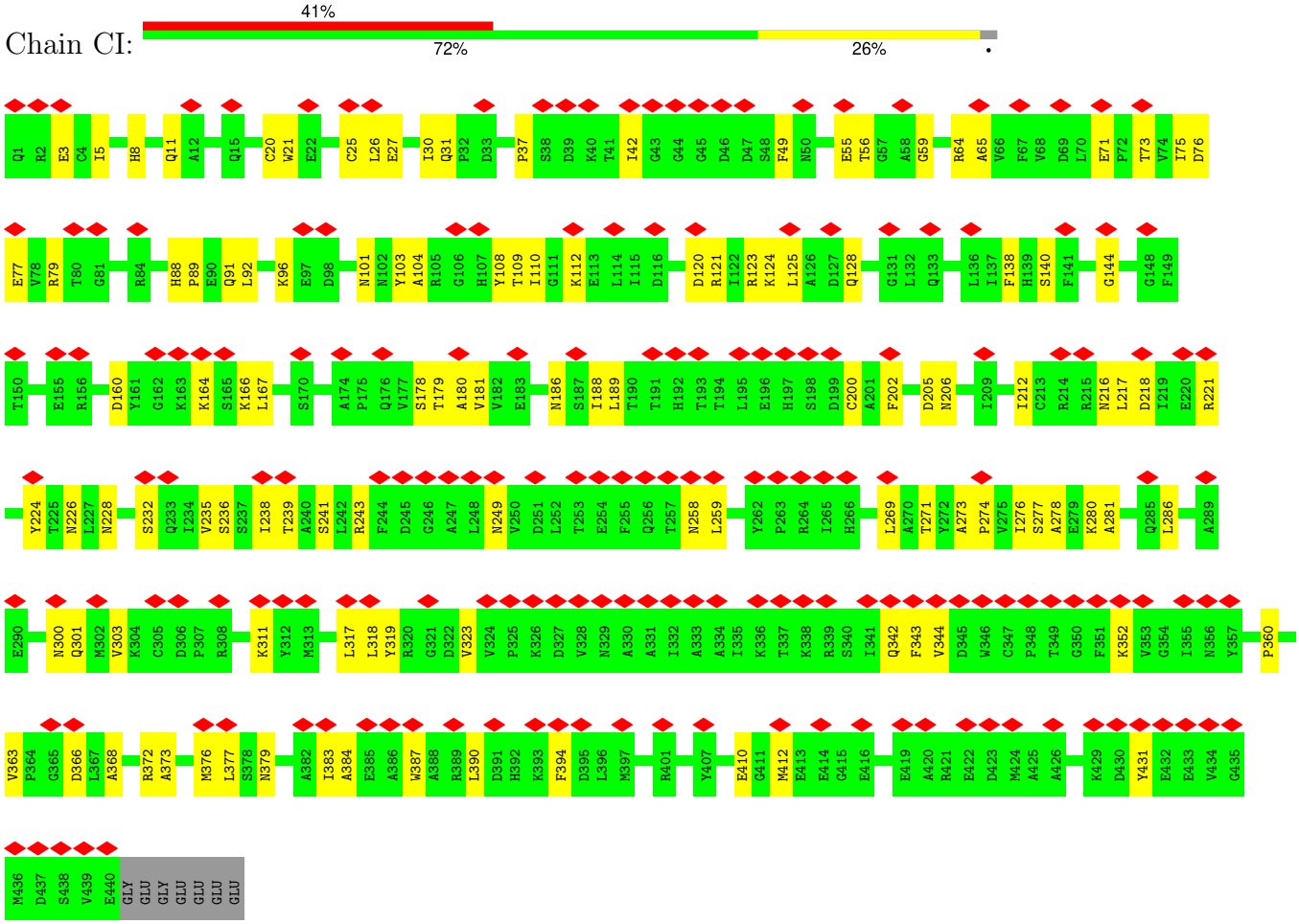
• Molecule 40: Tubulin alpha chain

Chain CH:



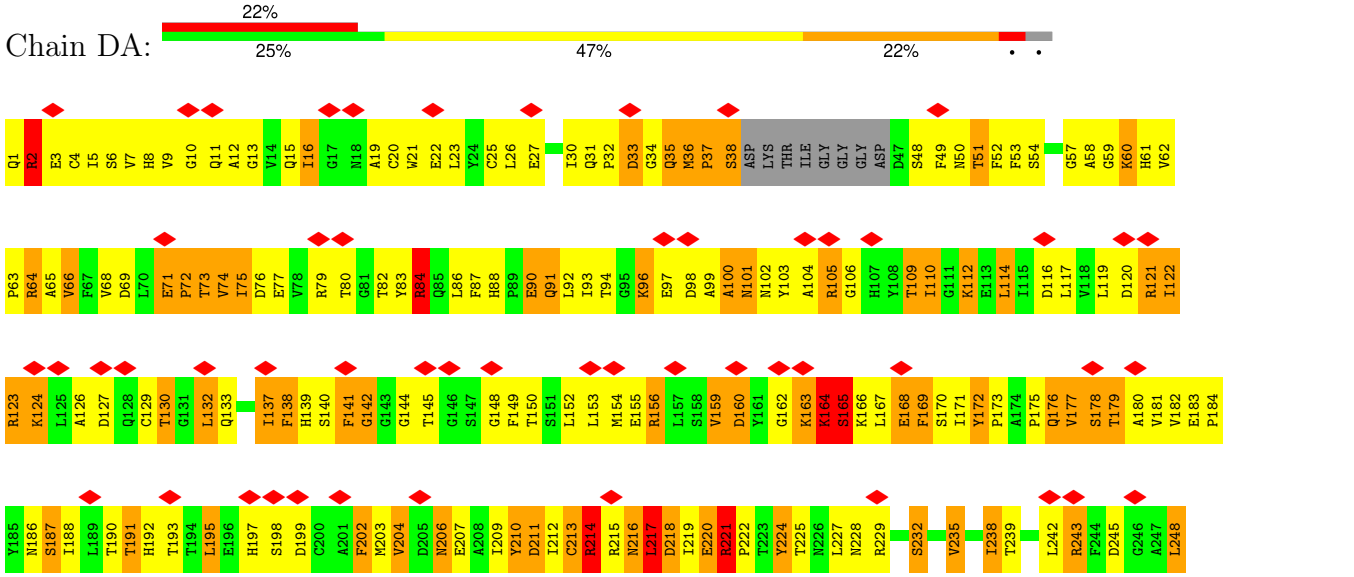
• Molecule 40: Tubulin alpha chain

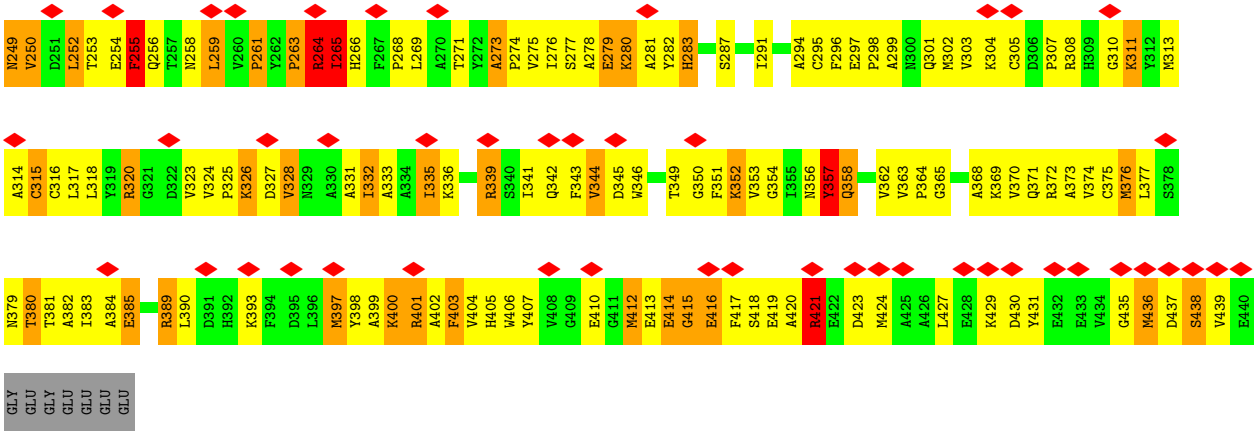
Chain CI:



• Molecule 40: Tubulin alpha chain

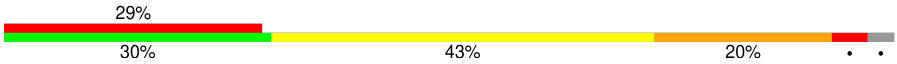
Chain DA:

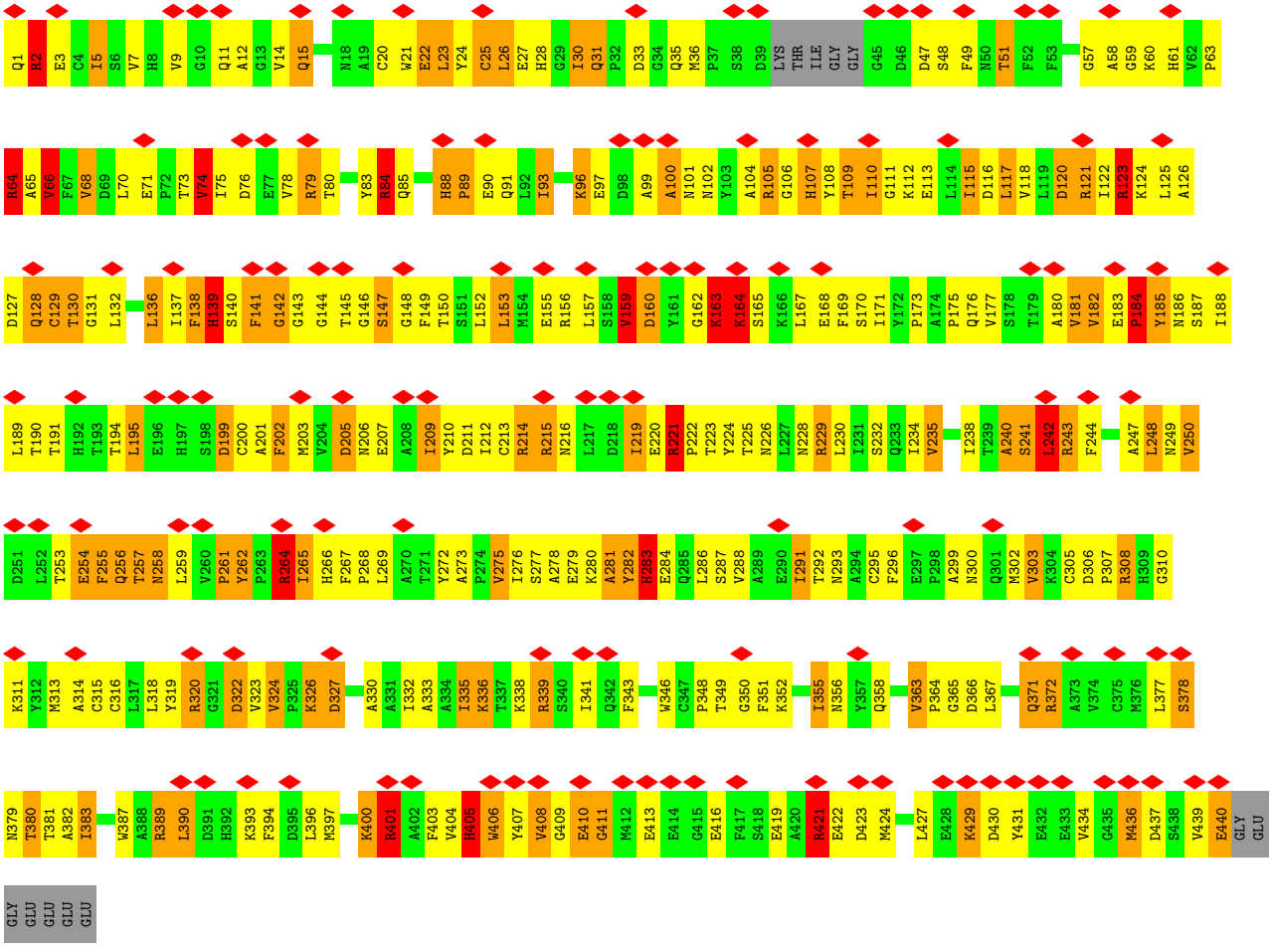




• Molecule 40: Tubulin alpha chain

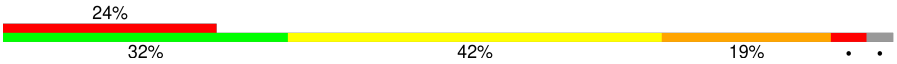
Chain DE:

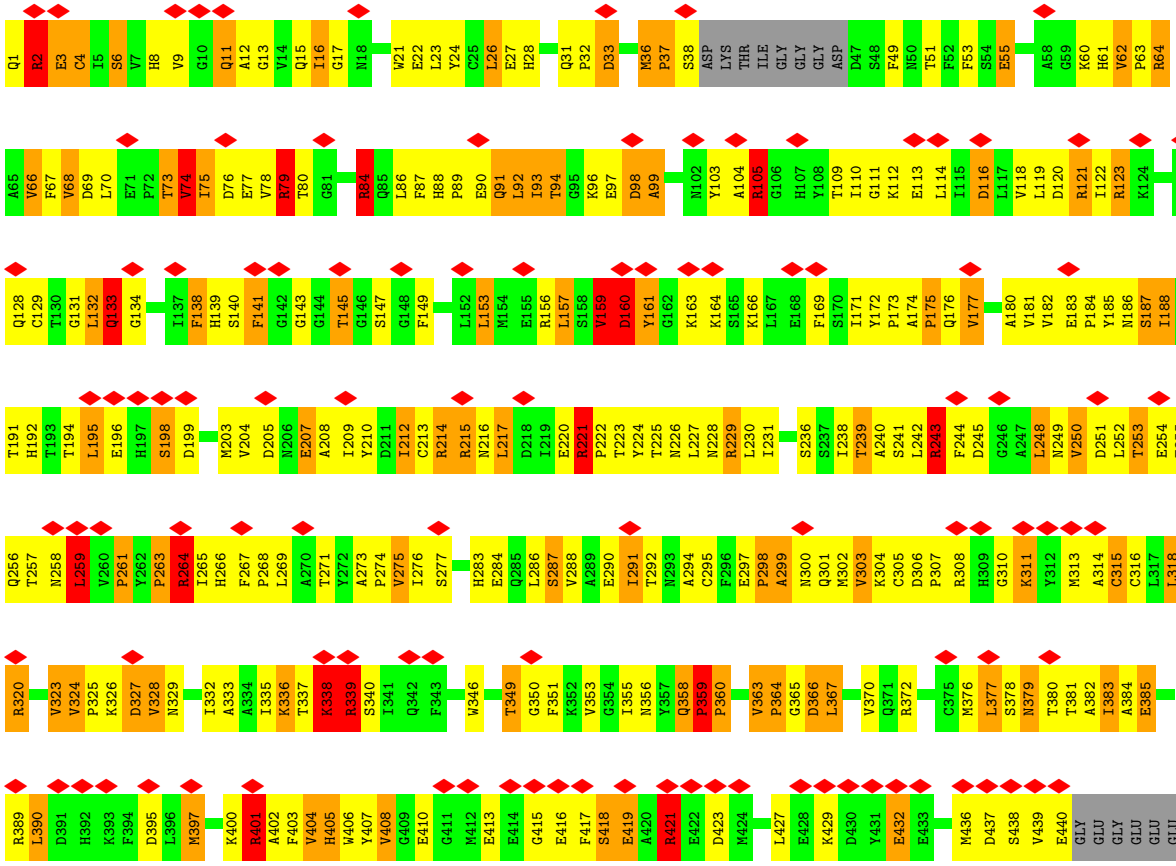




• Molecule 40: Tubulin alpha chain

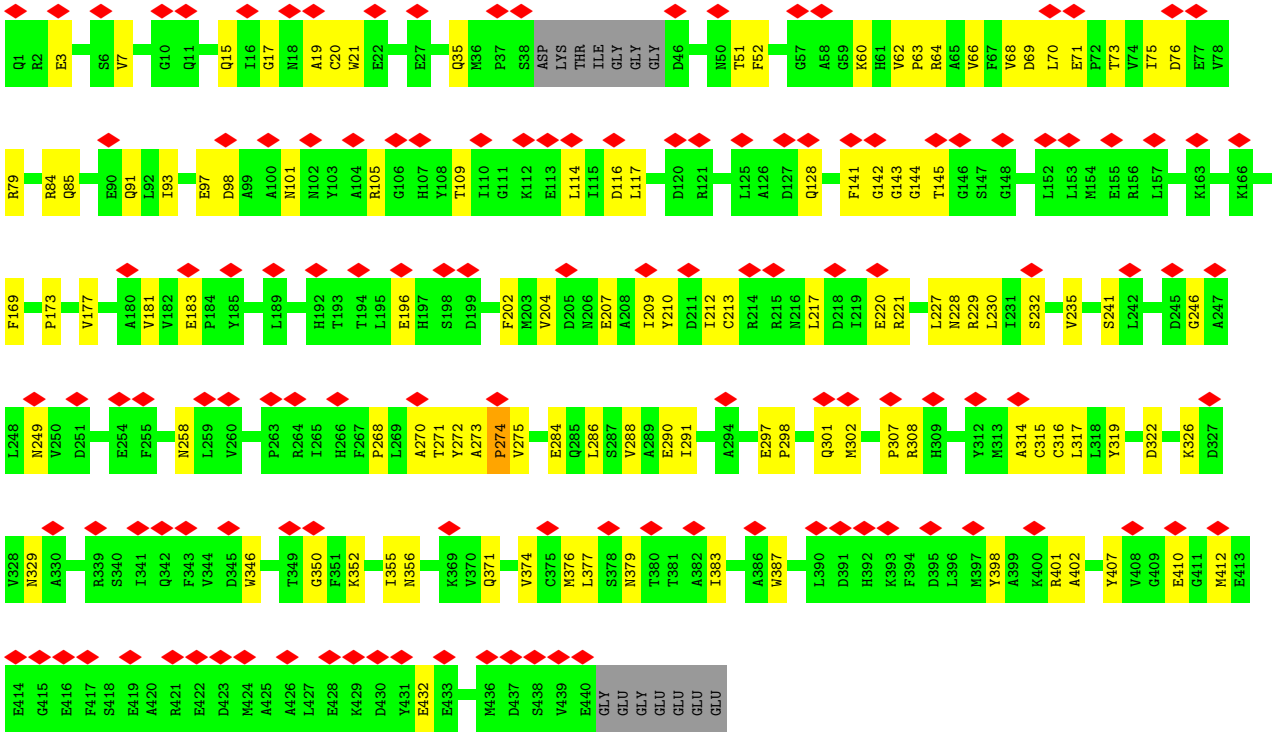
Chain DF:





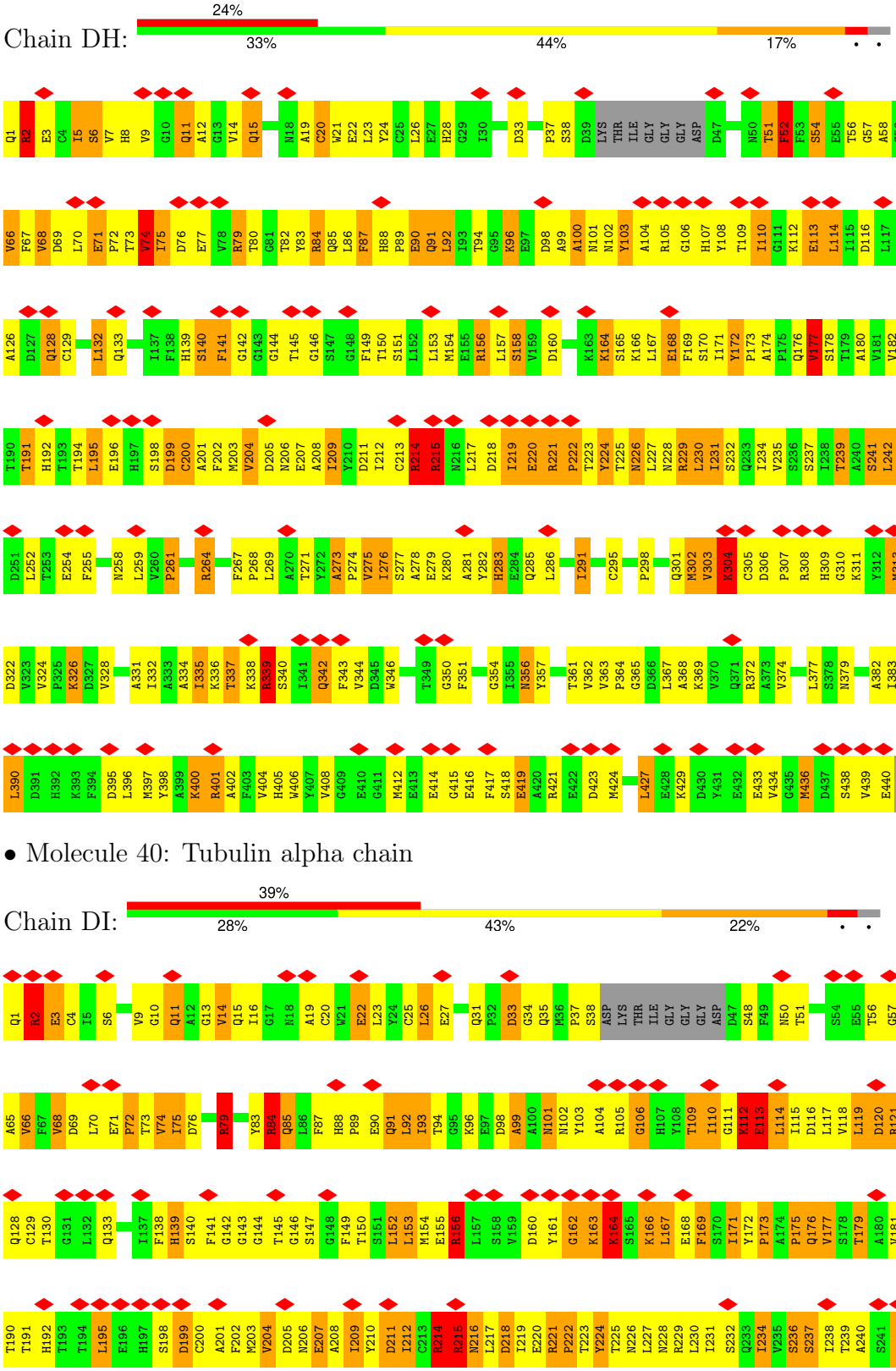
• Molecule 40: Tubulin alpha chain

Chain DG:



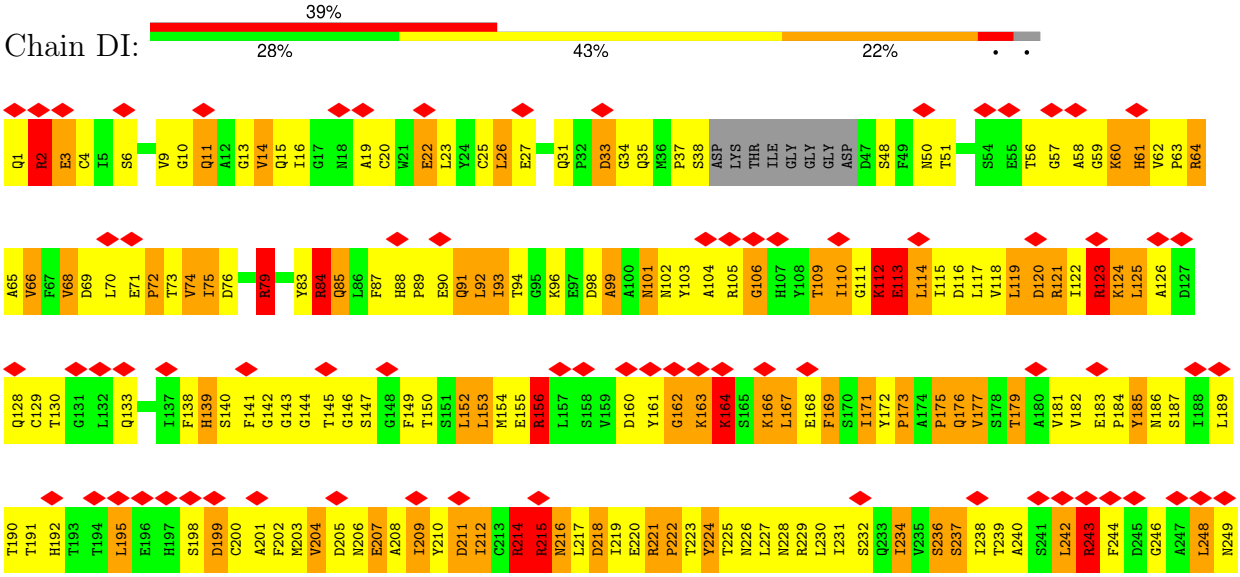
• Molecule 40: Tubulin alpha chain

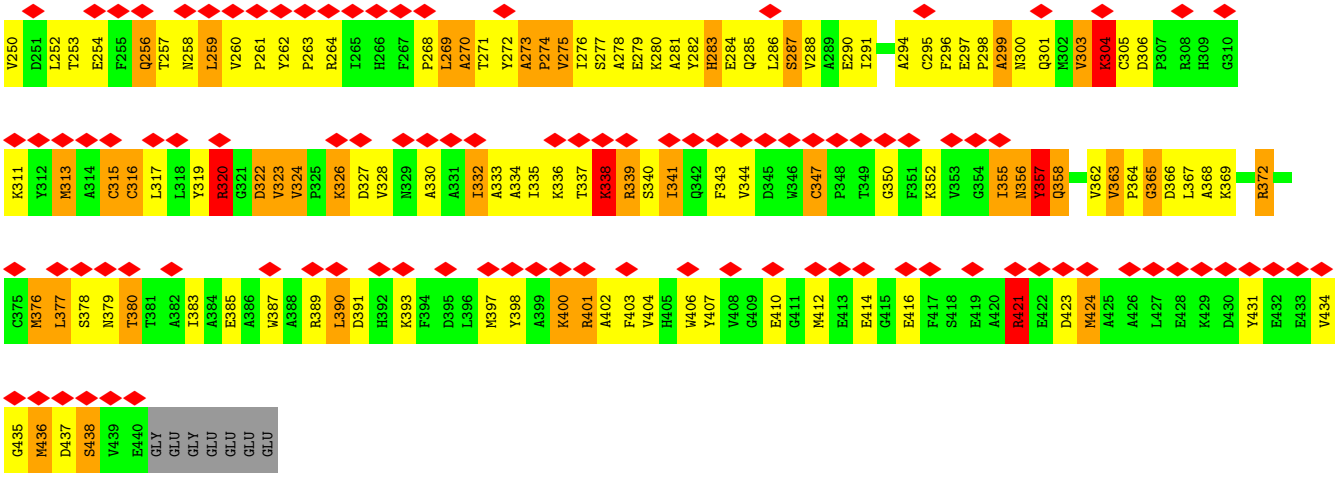
Chain DH:



• Molecule 40: Tubulin alpha chain

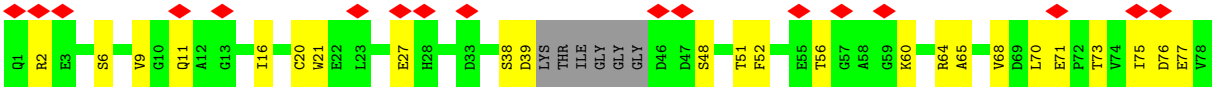
Chain DI:

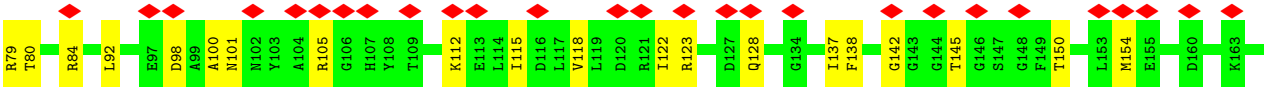


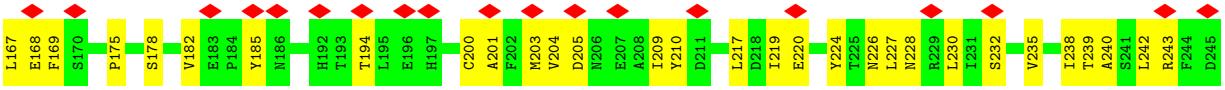


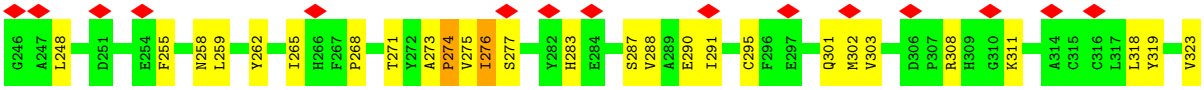
• Molecule 40: Tubulin alpha chain

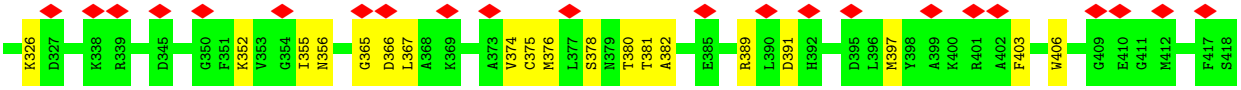
Chain EA:

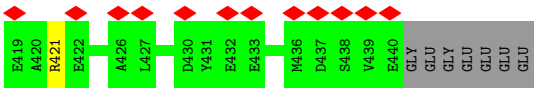






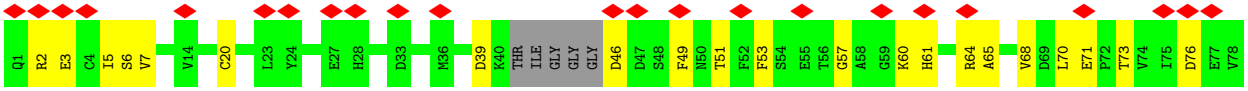






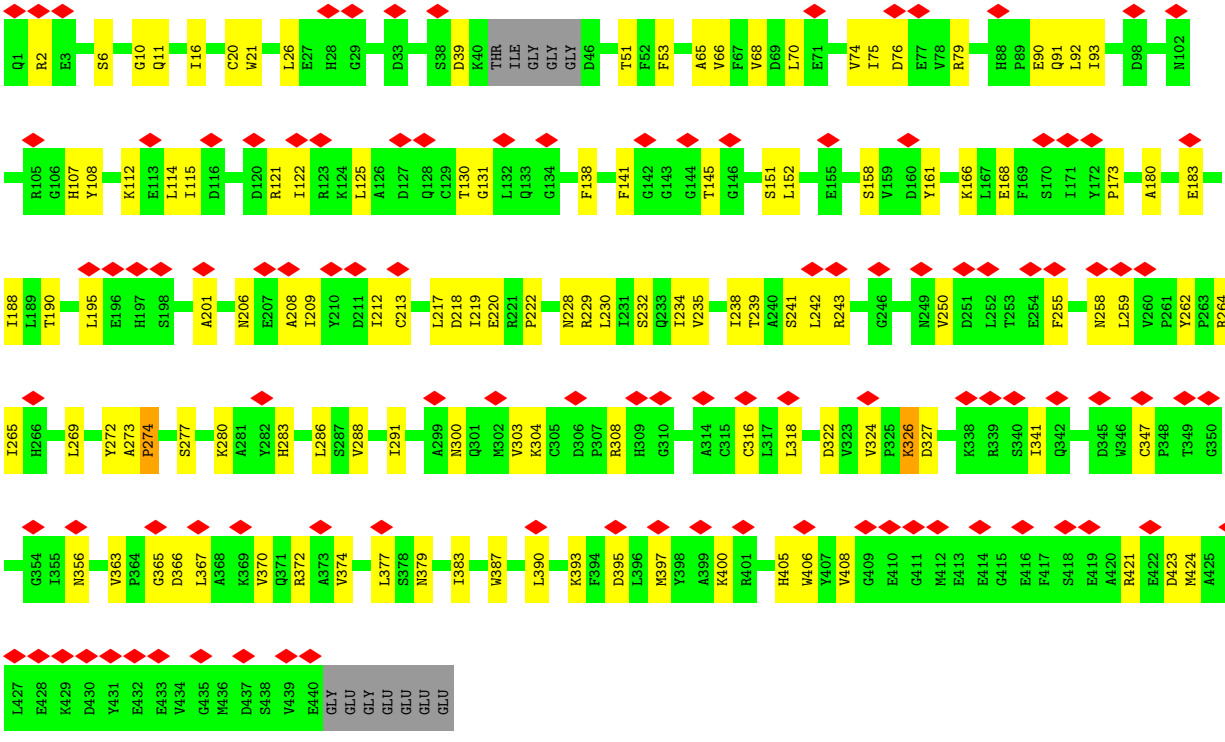
• Molecule 40: Tubulin alpha chain

Chain EE:



• Molecule 40: Tubulin alpha chain

Chain EF:



• Molecule 40: Tubulin alpha chain

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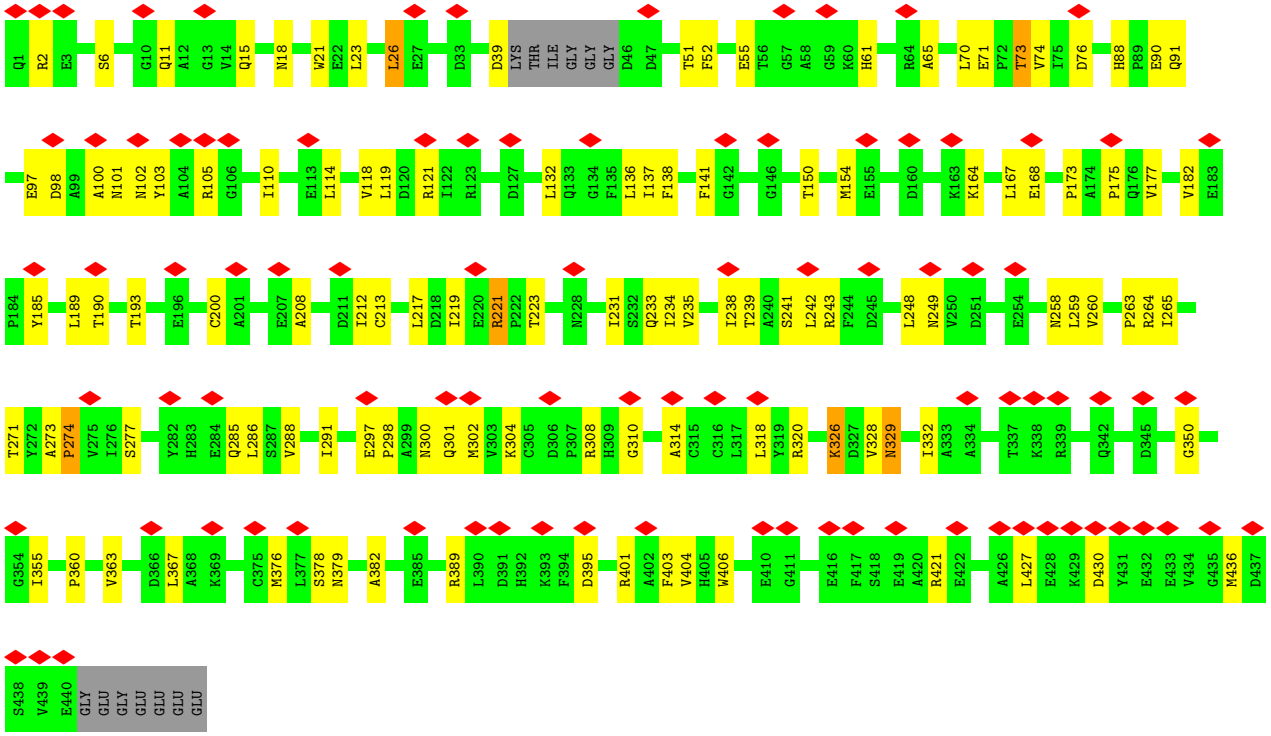

• Molecule 40: Tubulin alpha chain

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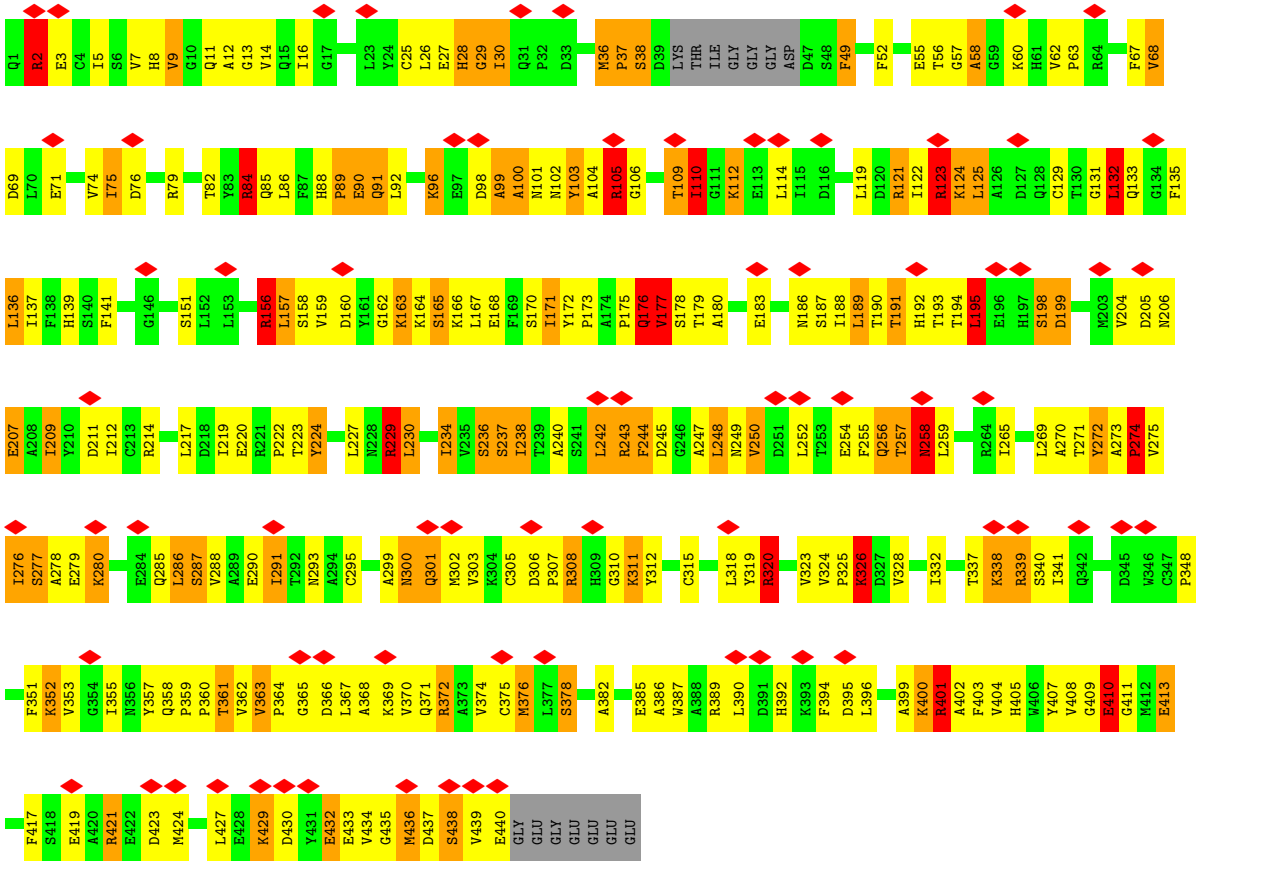
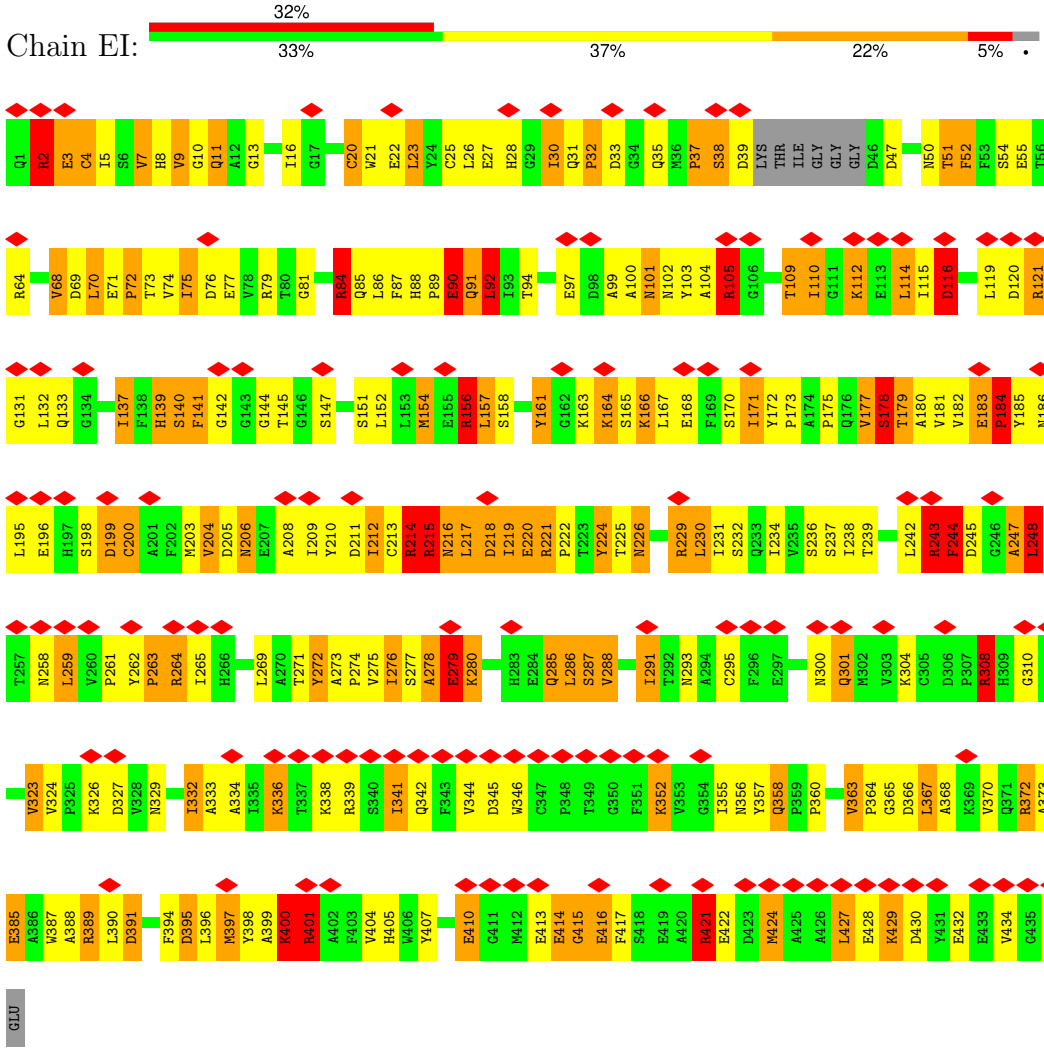


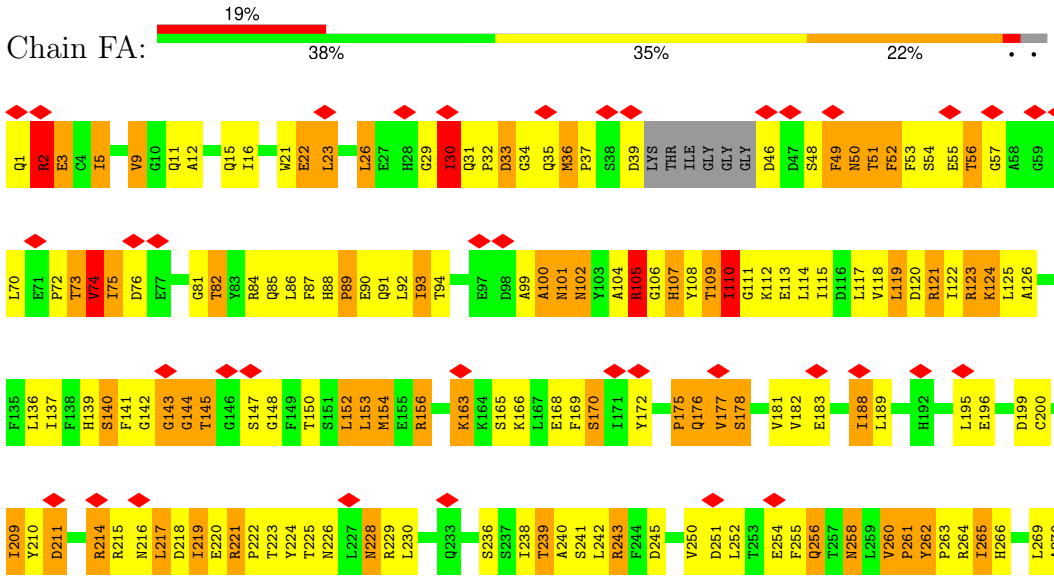
• Molecule 40: Tubulin alpha chain

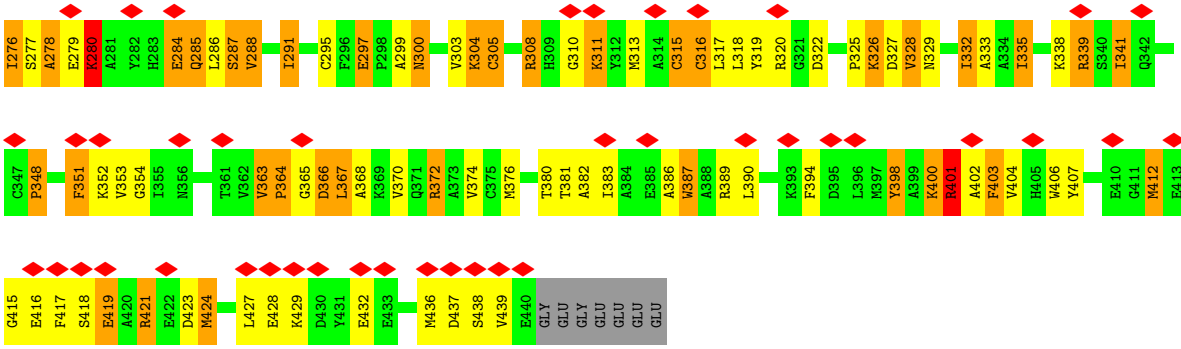
Chain EI:



• Molecule 40: Tubulin alpha chain

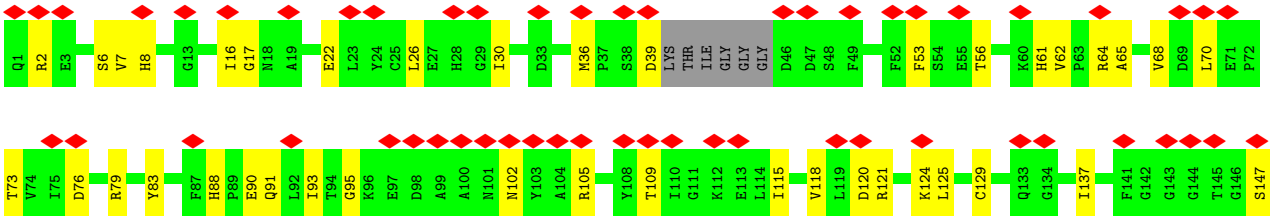
Chain FA:





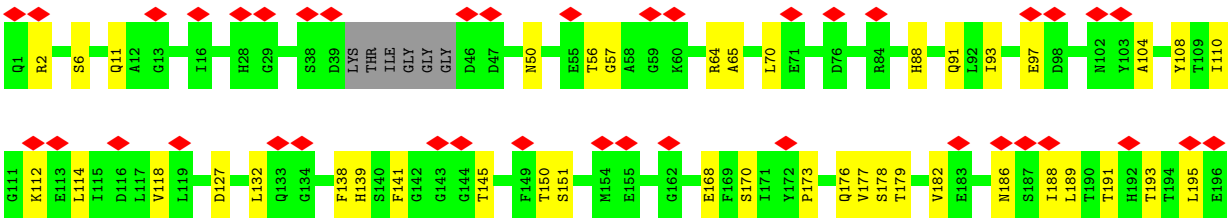
• Molecule 40: Tubulin alpha chain

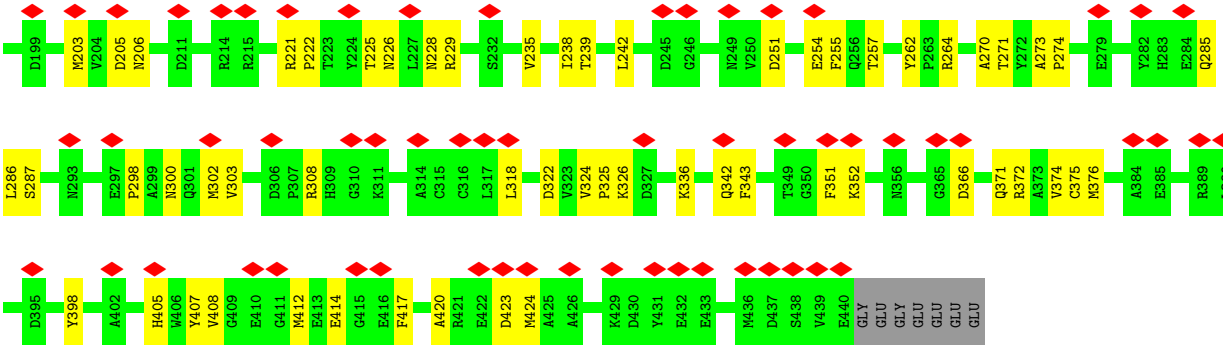
Chain FE:



• Molecule 40: Tubulin alpha chain

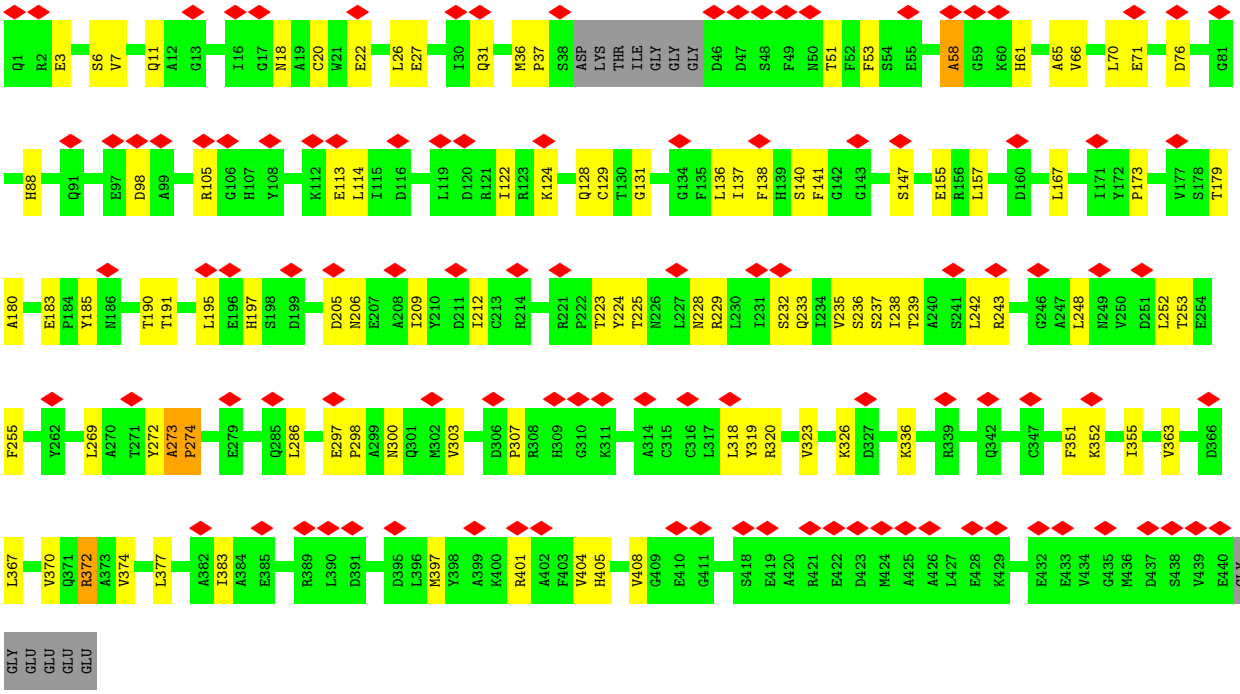
Chain FF:





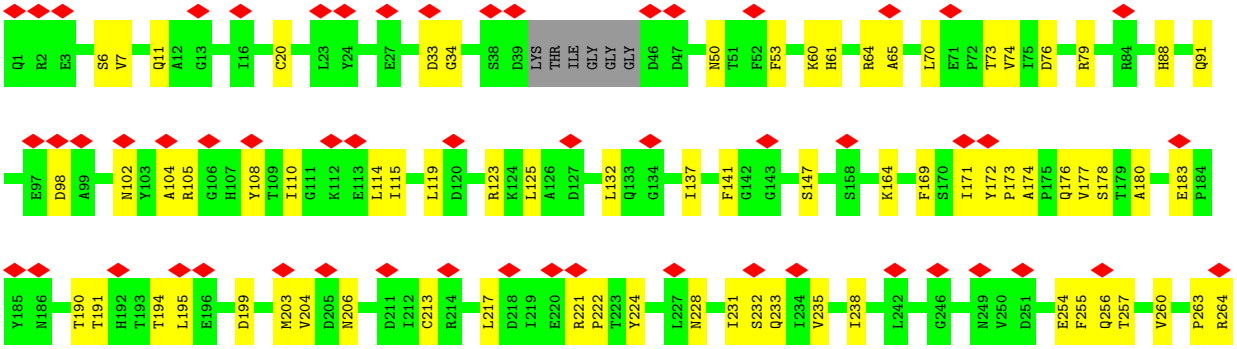
• Molecule 40: Tubulin alpha chain

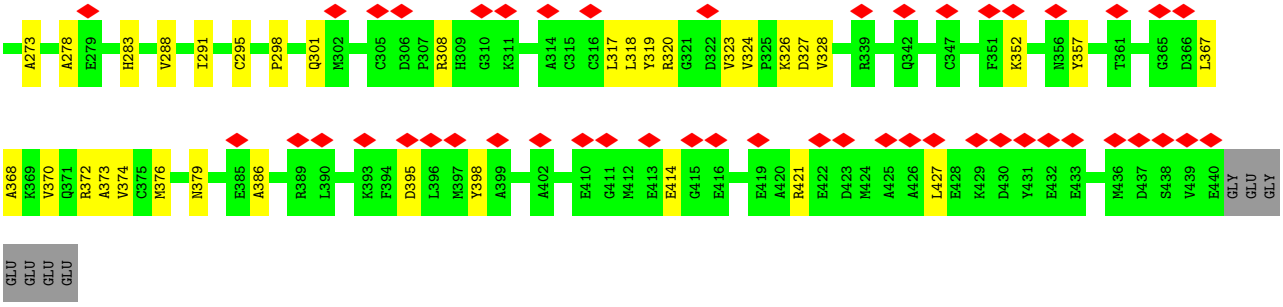
Chain FG:



• Molecule 40: Tubulin alpha chain

Chain FH:





• Molecule 40: Tubulin alpha chain

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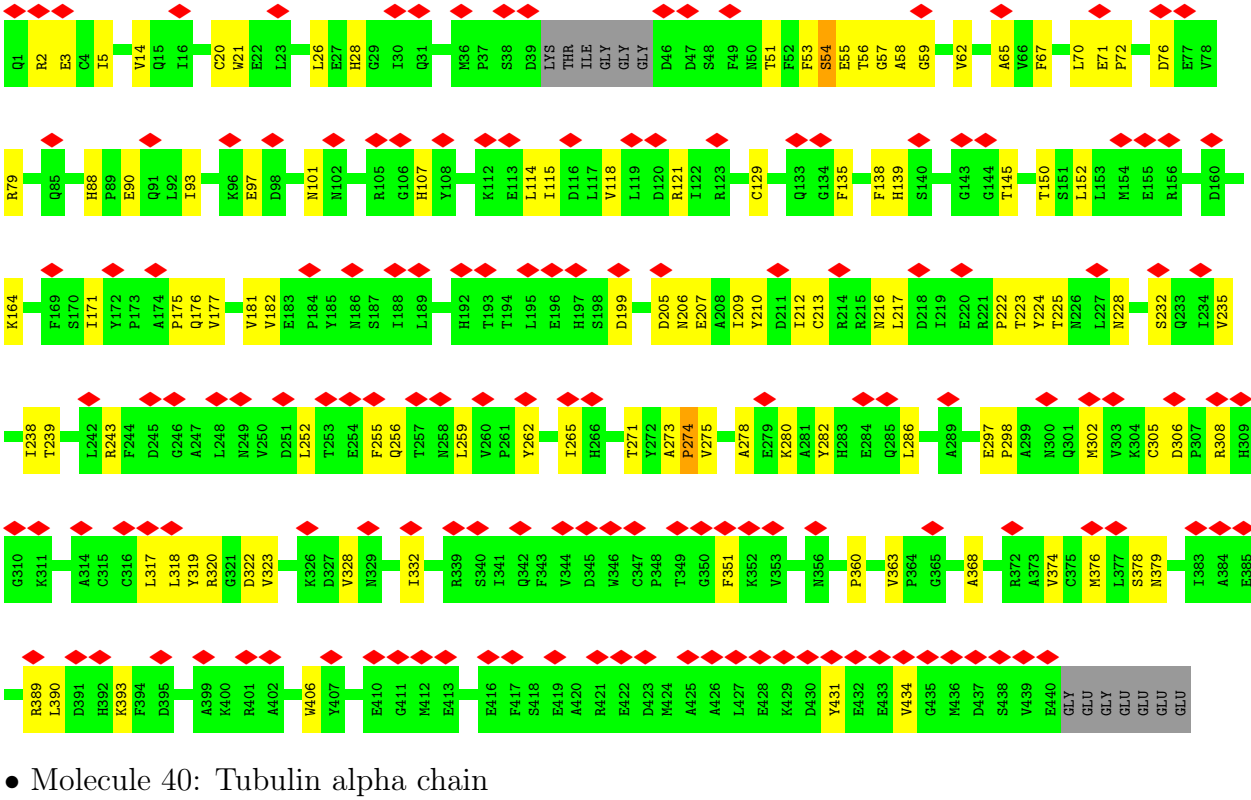

• Molecule 40: Tubulin alpha chain

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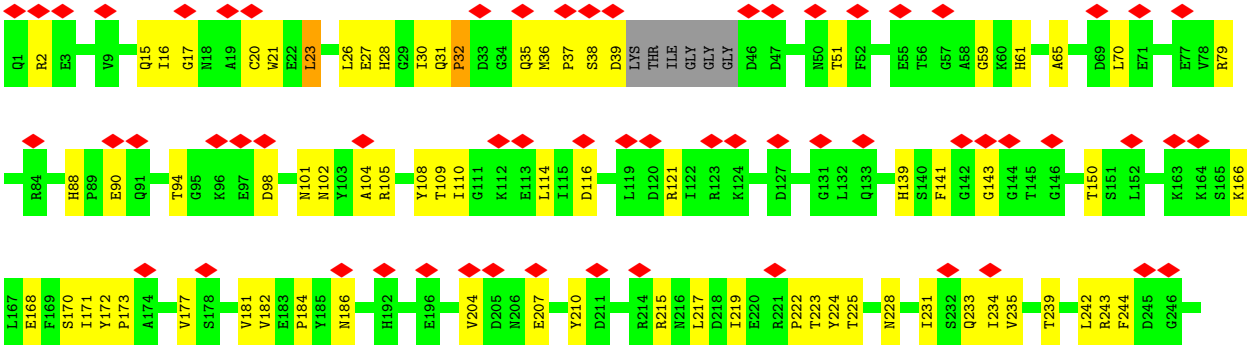
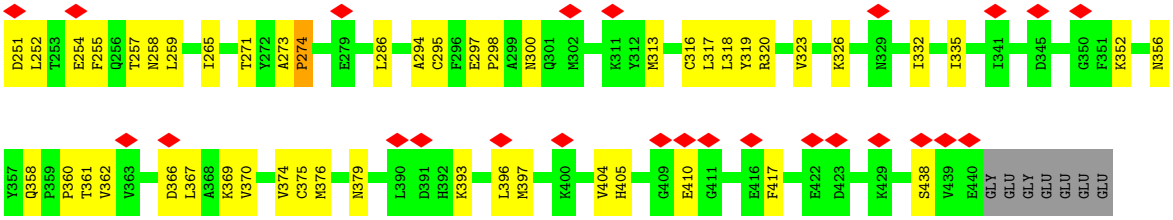
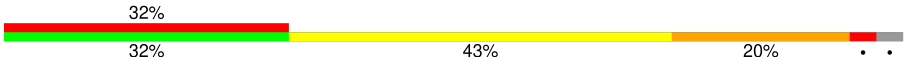
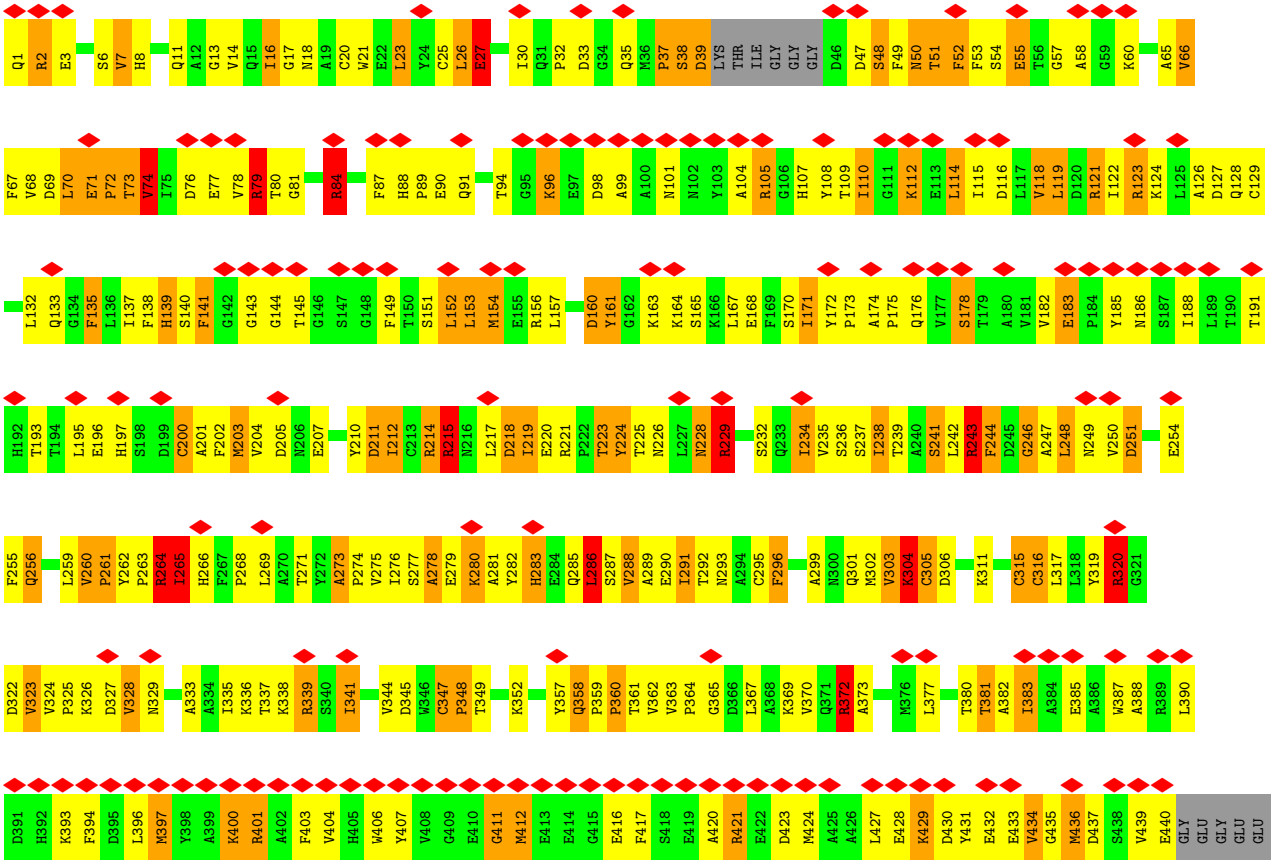




• Molecule 40: Tubulin alpha chain

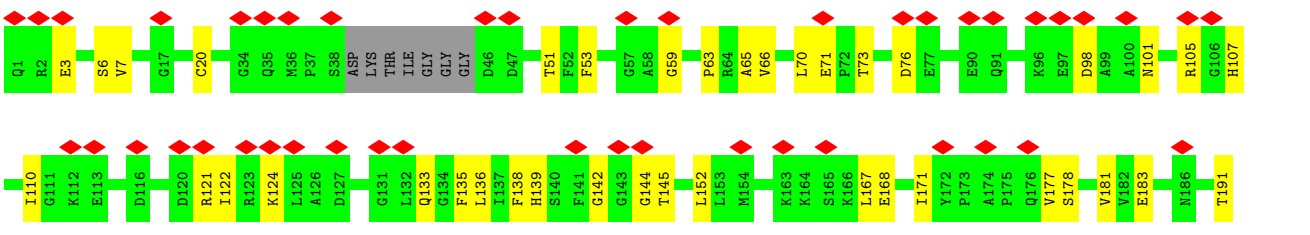
Chain GE:

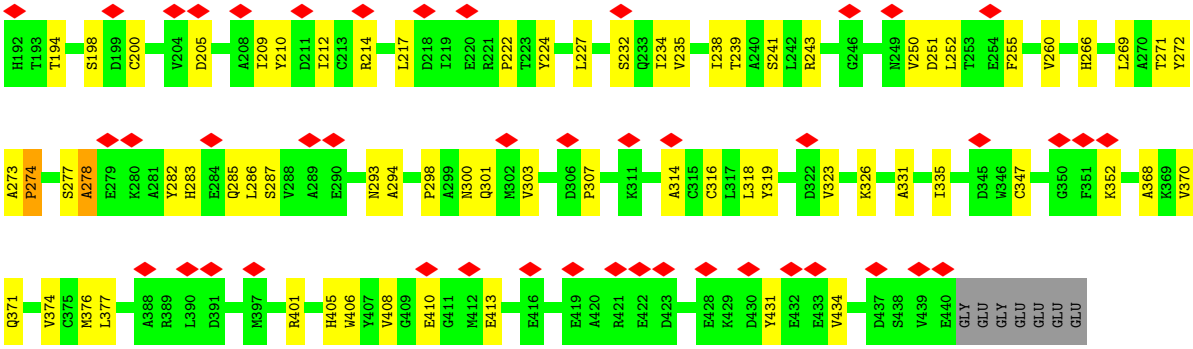




• Molecule 40: Tubulin alpha chain

Chain GF:





• Molecule 40: Tubulin alpha chain

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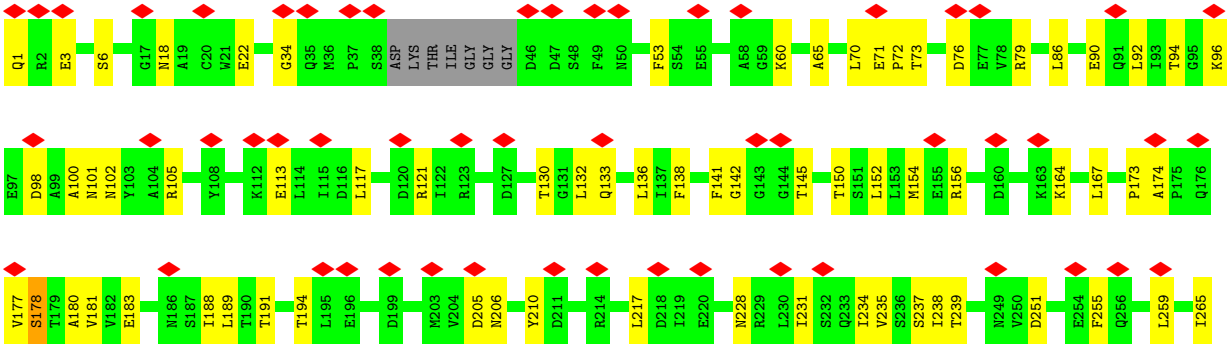

• Molecule 40: Tubulin alpha chain

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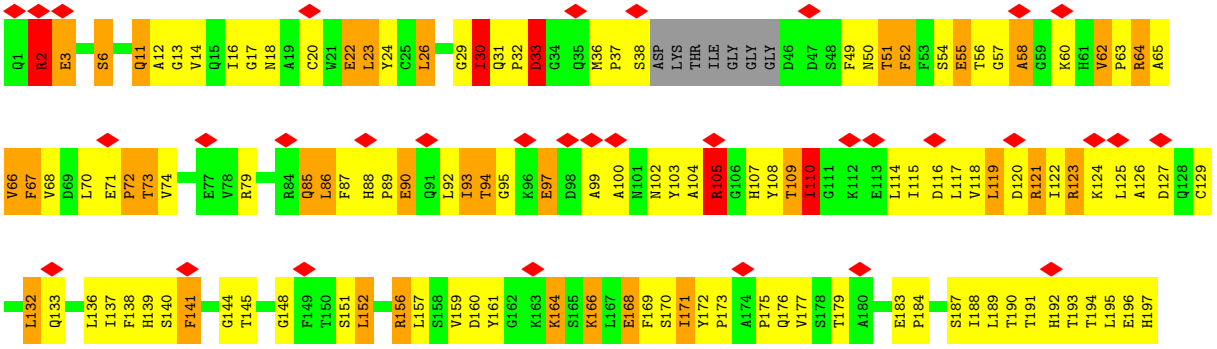

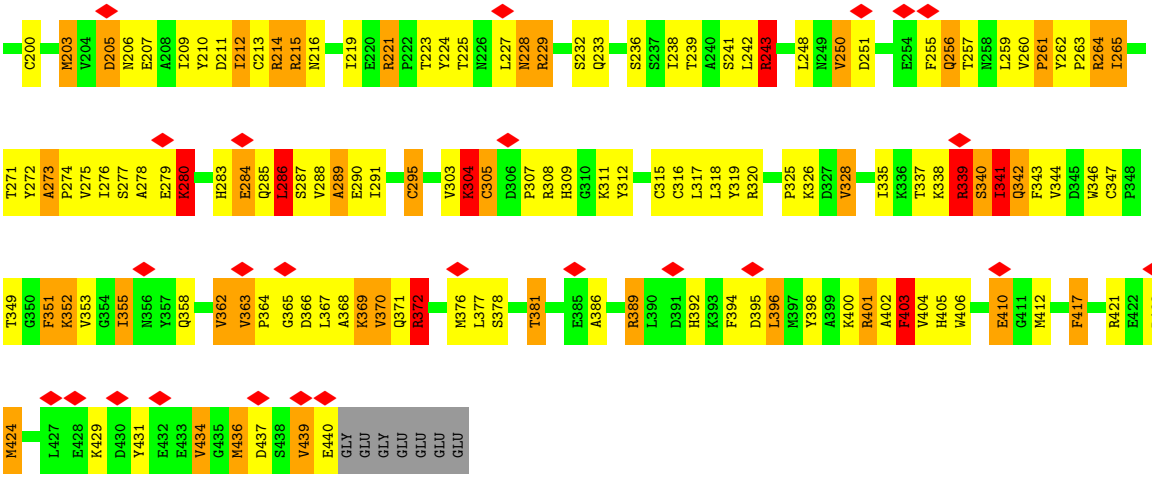

• Molecule 40: Tubulin alpha chain

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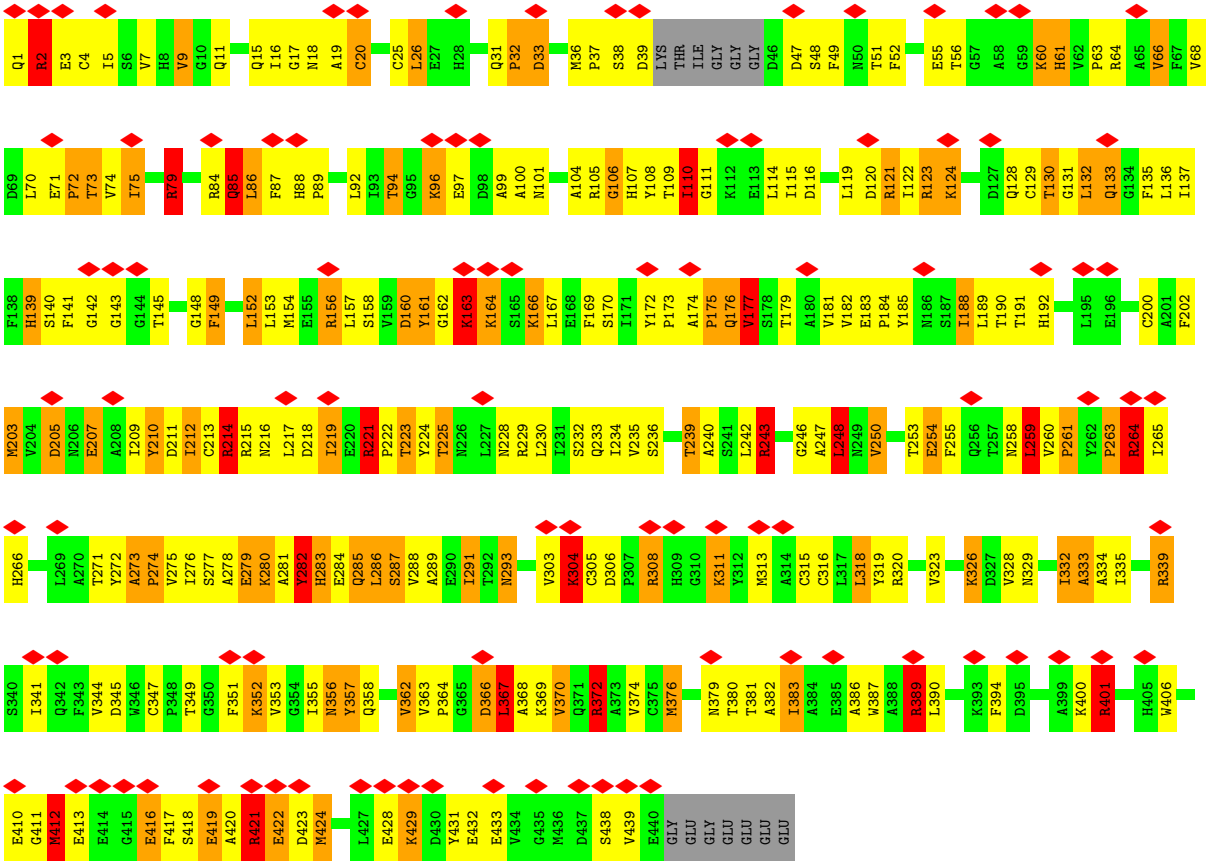
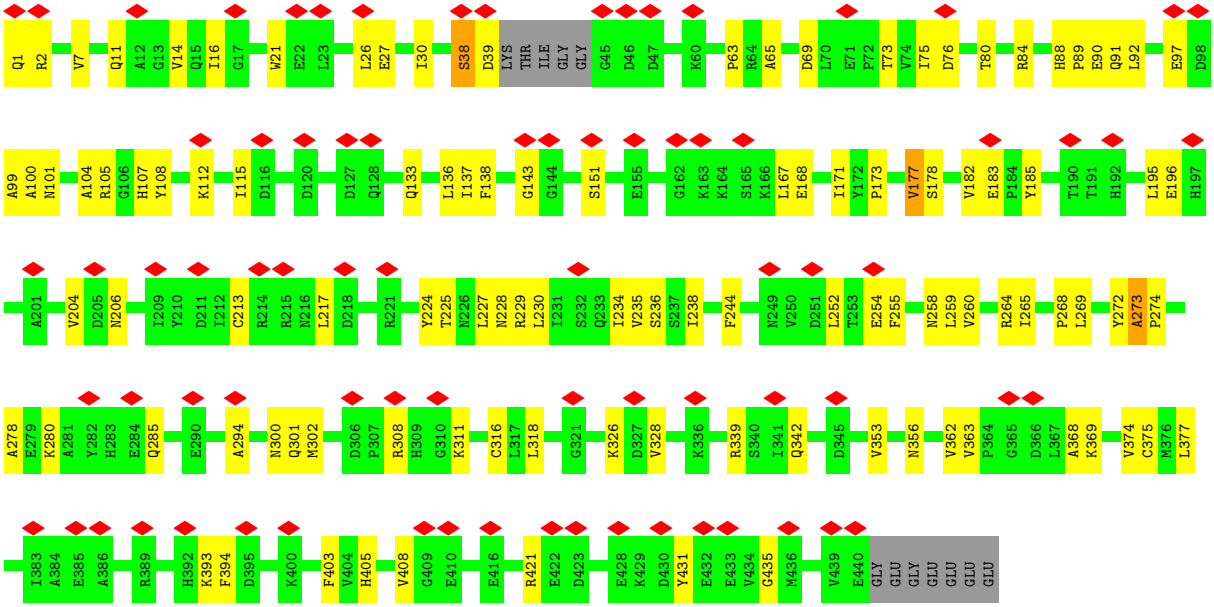


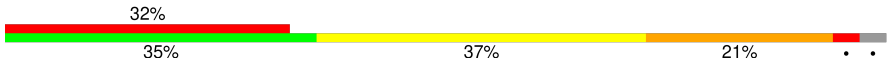
• Molecule 40: Tubulin alpha chain

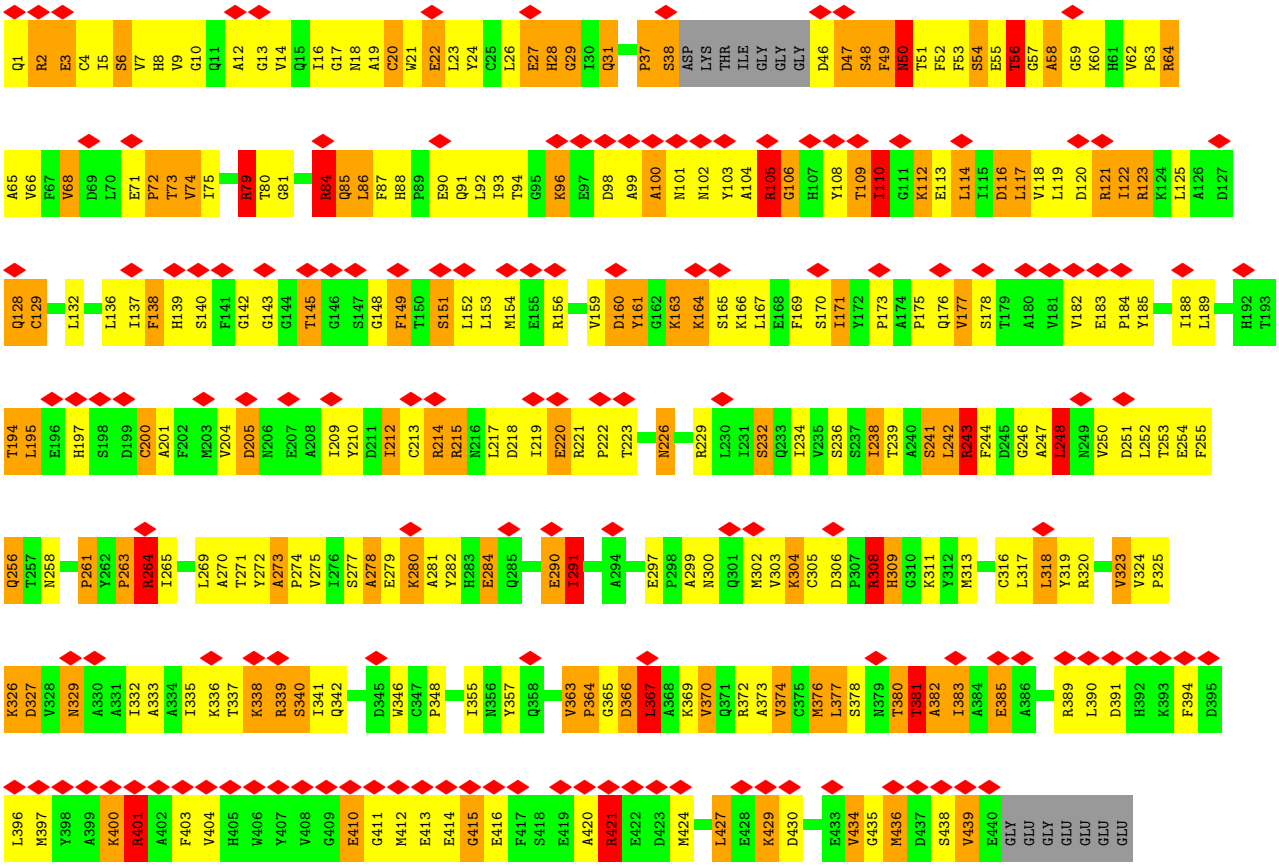
Chain HA:



• Molecule 40: Tubulin alpha chain

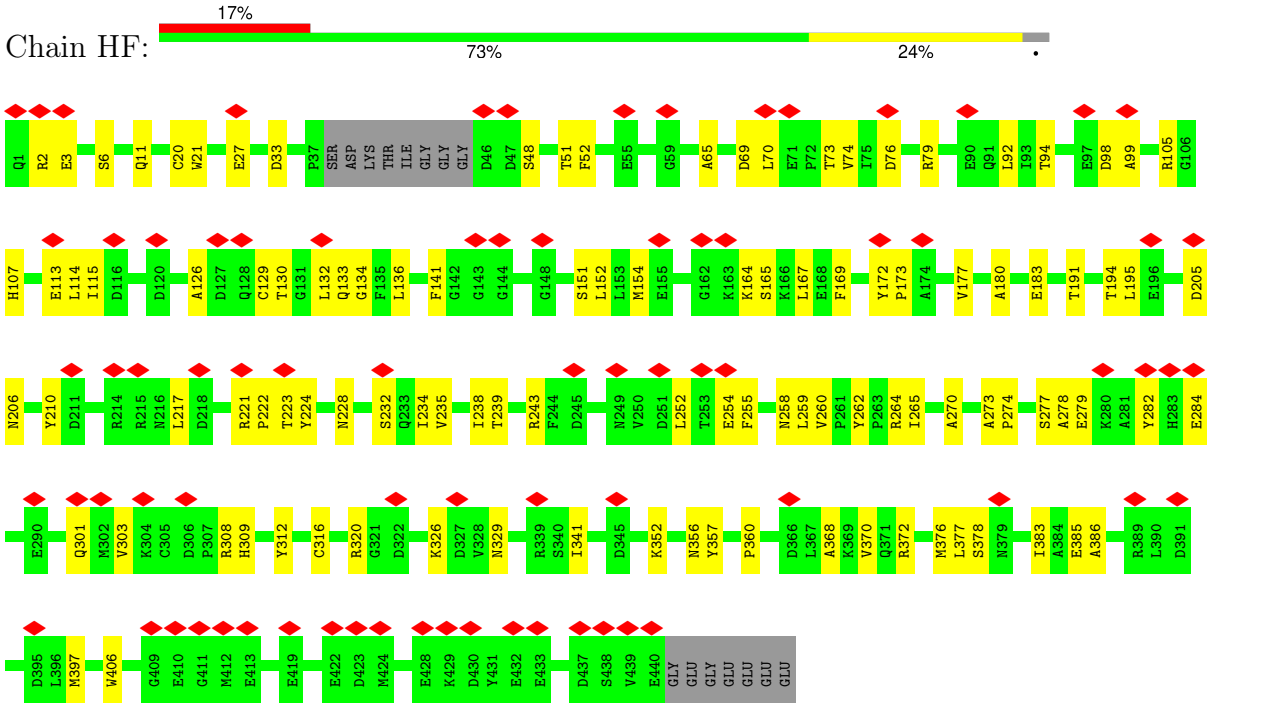
Chain HE:





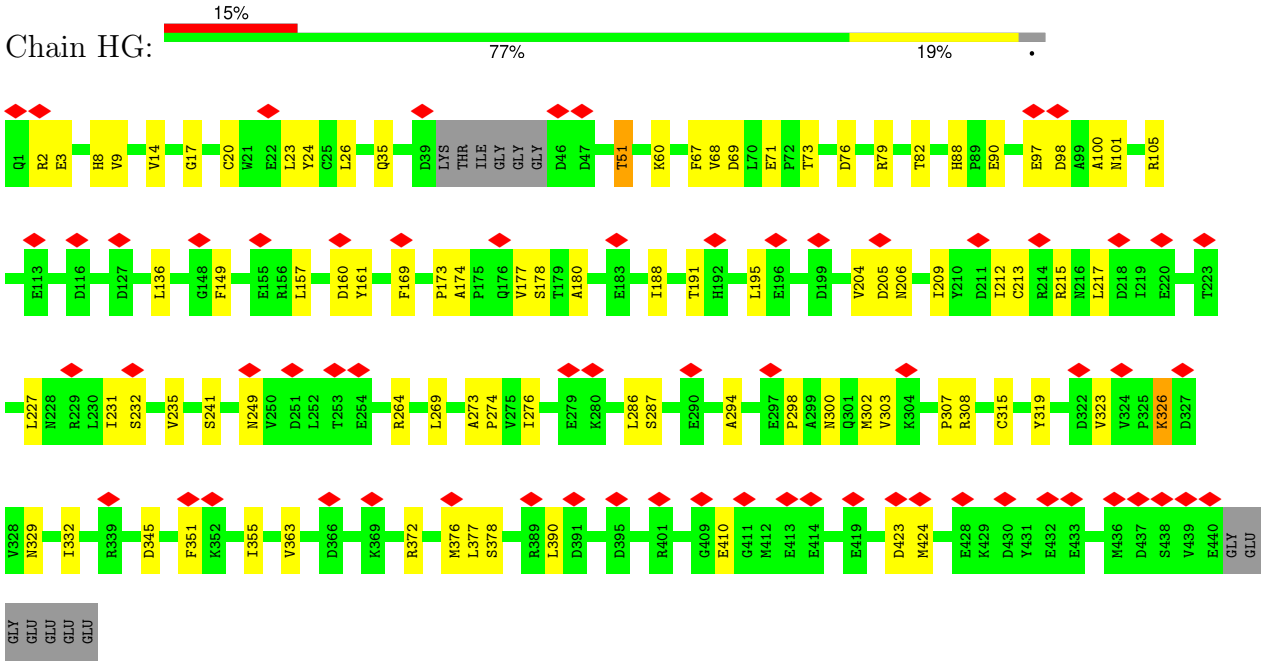
• Molecule 40: Tubulin alpha chain

Chain HF:



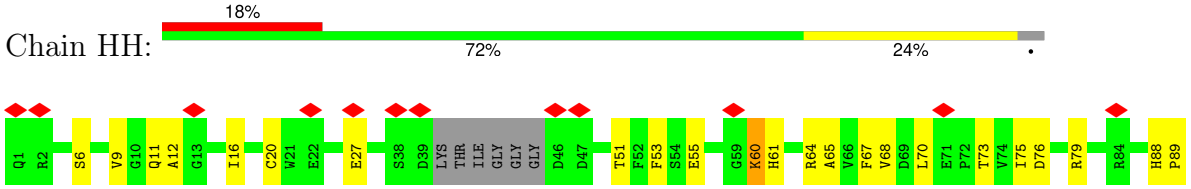
• Molecule 40: Tubulin alpha chain

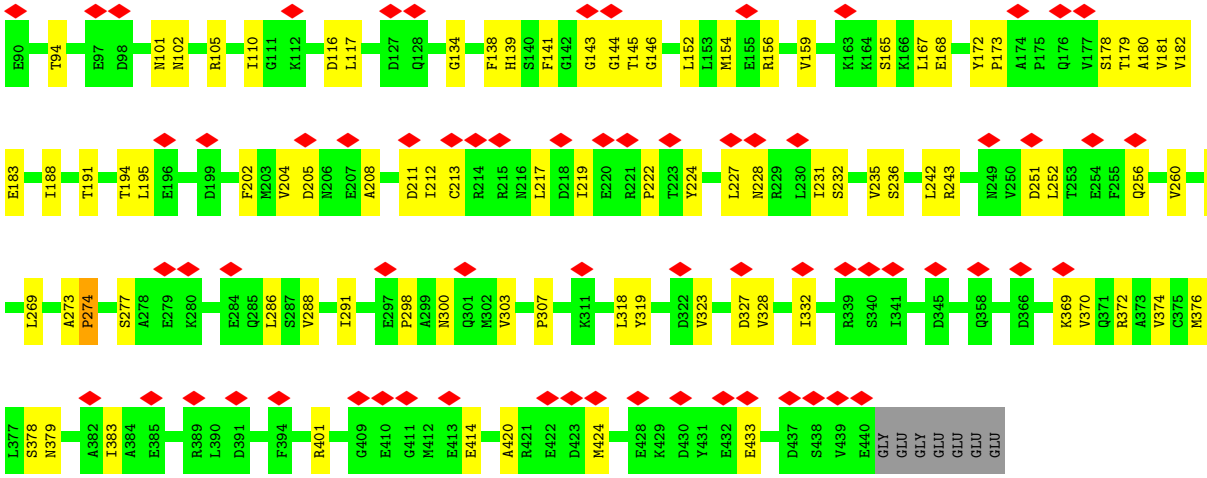
Chain HG:



• Molecule 40: Tubulin alpha chain

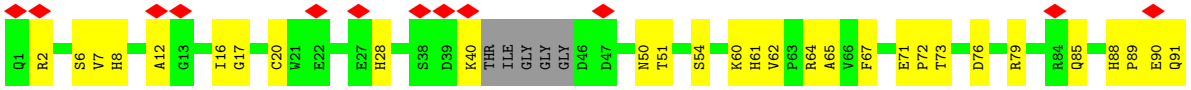
Chain HH:





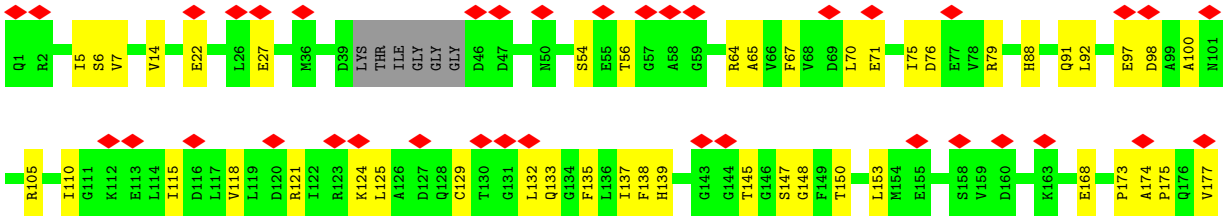
• Molecule 40: Tubulin alpha chain

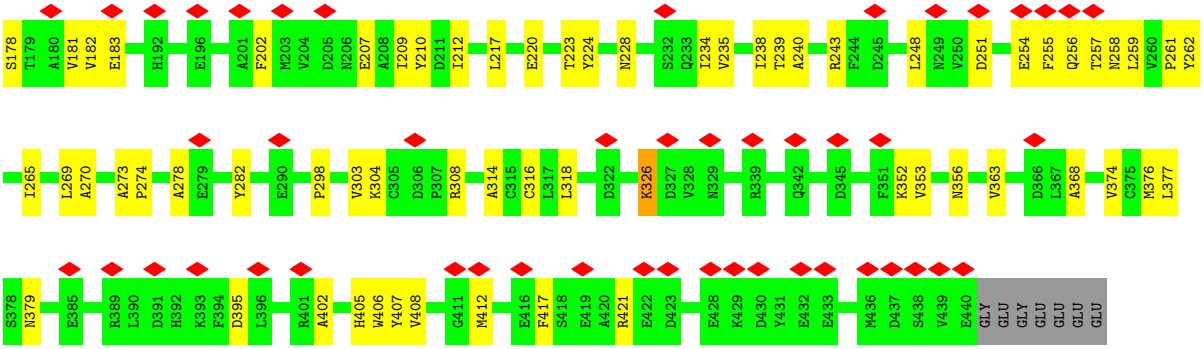
Chain HI:



• Molecule 40: Tubulin alpha chain

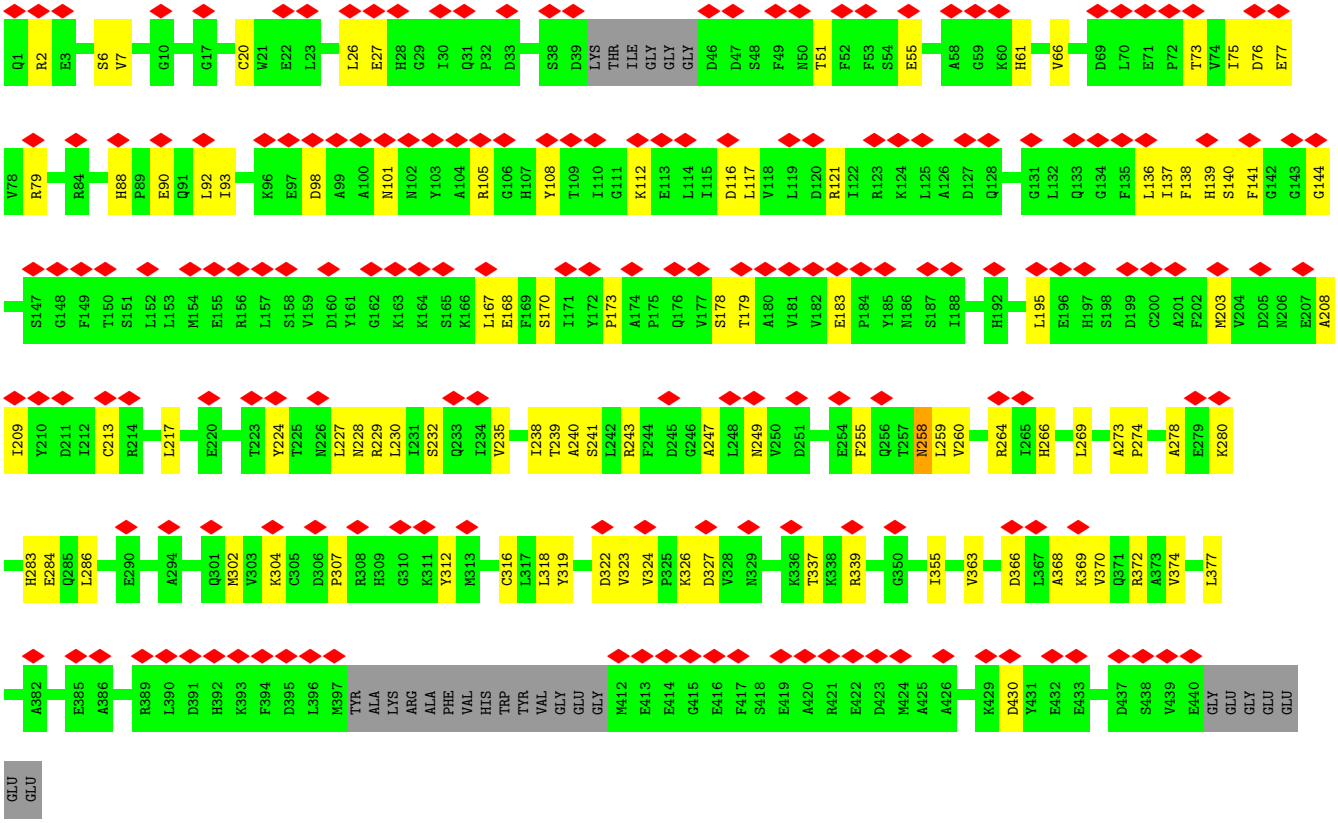
Chain IA:





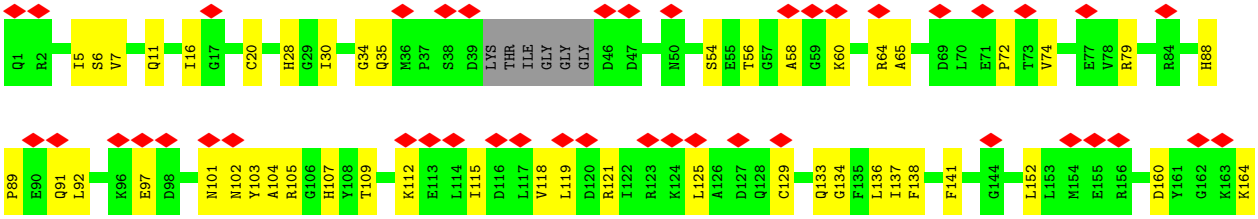
• Molecule 40: Tubulin alpha chain

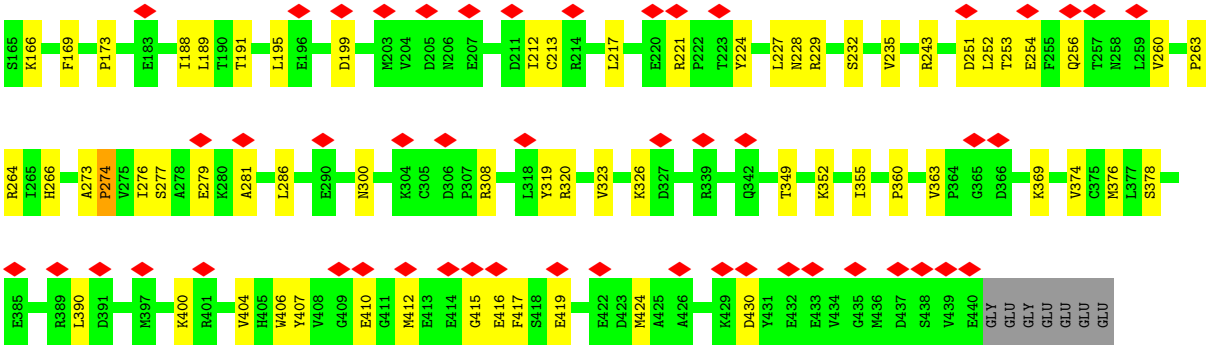
Chain IE:



• Molecule 40: Tubulin alpha chain

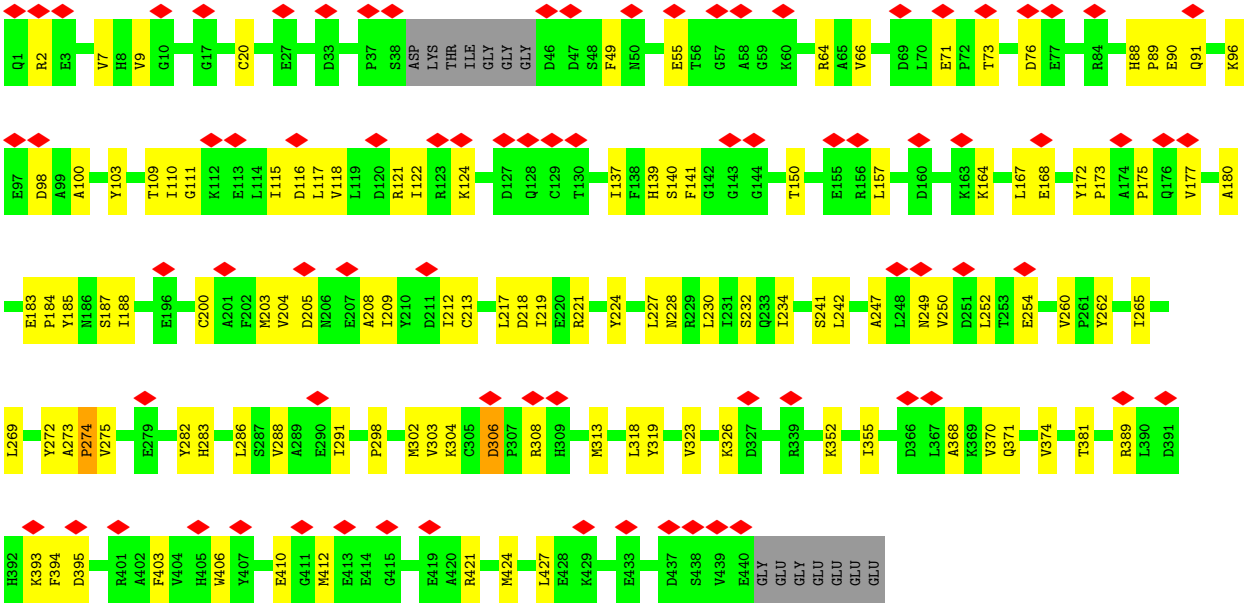
Chain IF:





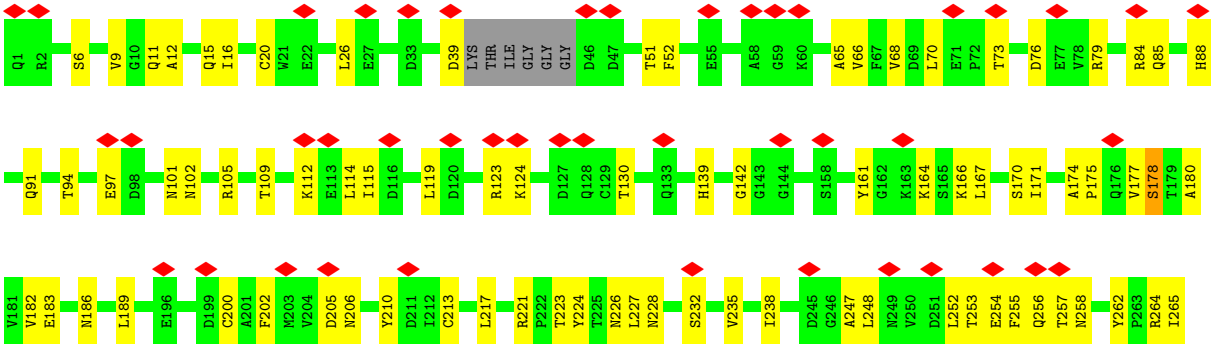
• Molecule 40: Tubulin alpha chain

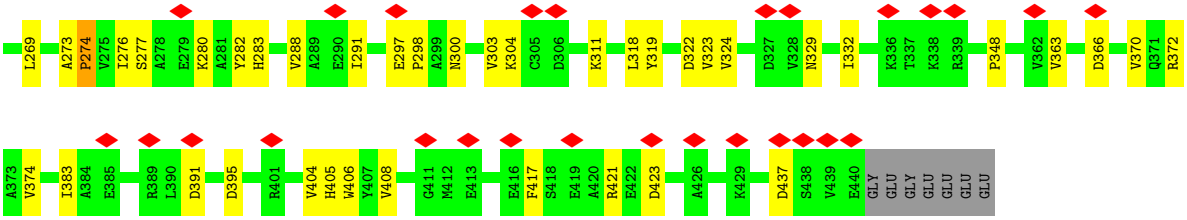
Chain IG:



• Molecule 40: Tubulin alpha chain

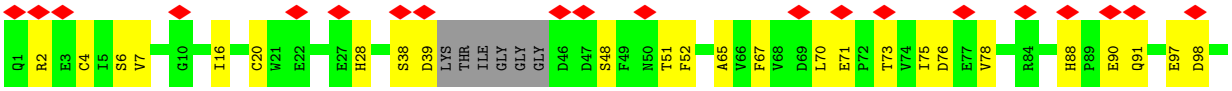
Chain IH:

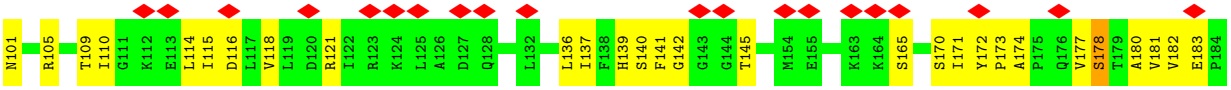


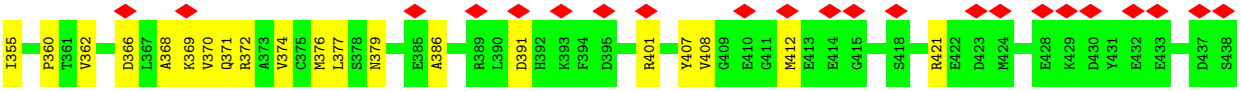


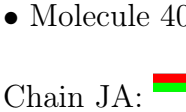
• Molecule 40: Tubulin alpha chain

Chain II:



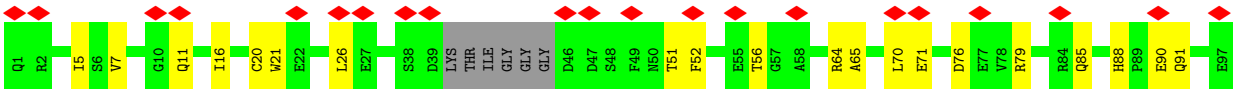


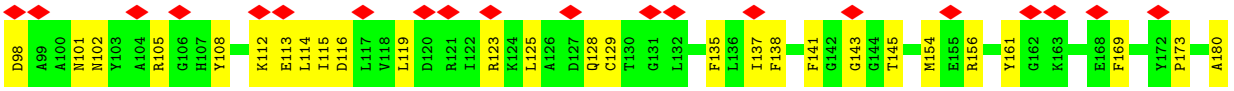


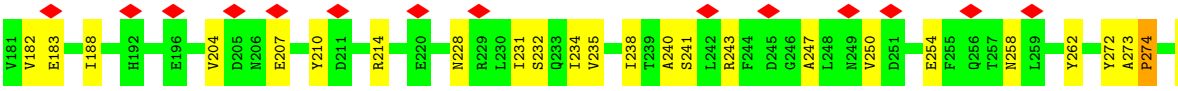


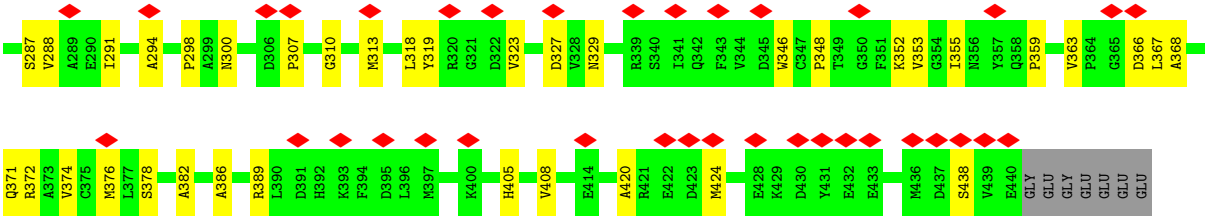
• Molecule 40: Tubulin alpha chain

Chain JA:



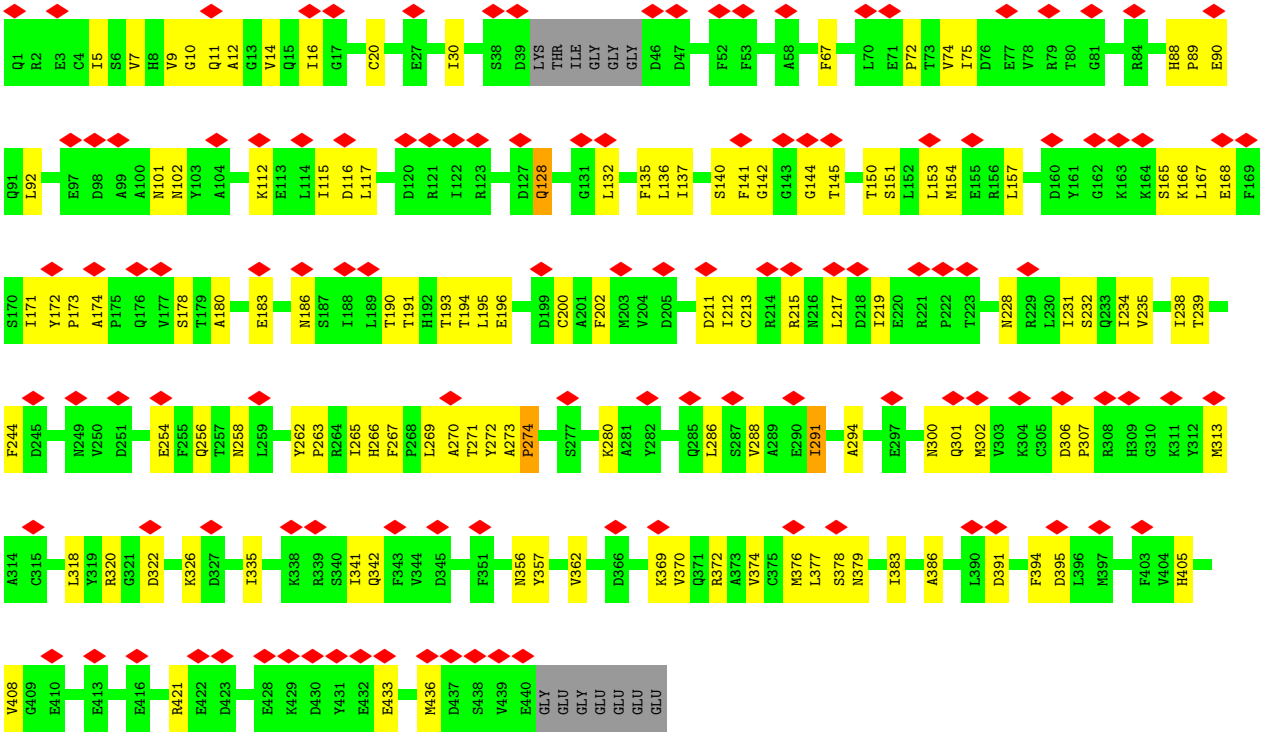






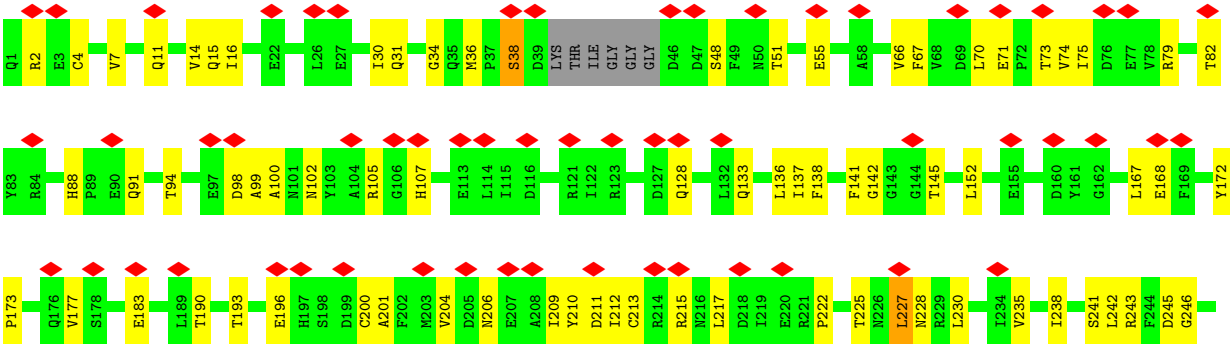
• Molecule 40: Tubulin alpha chain

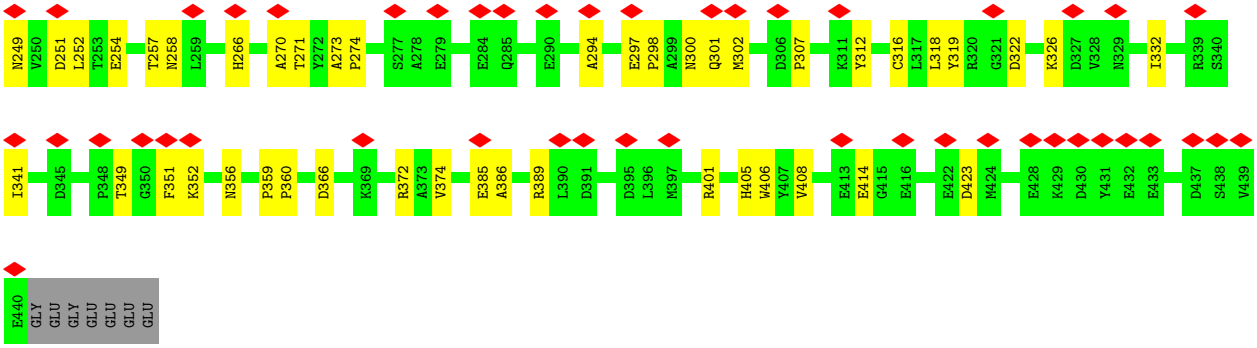
Chain JD:



• Molecule 40: Tubulin alpha chain

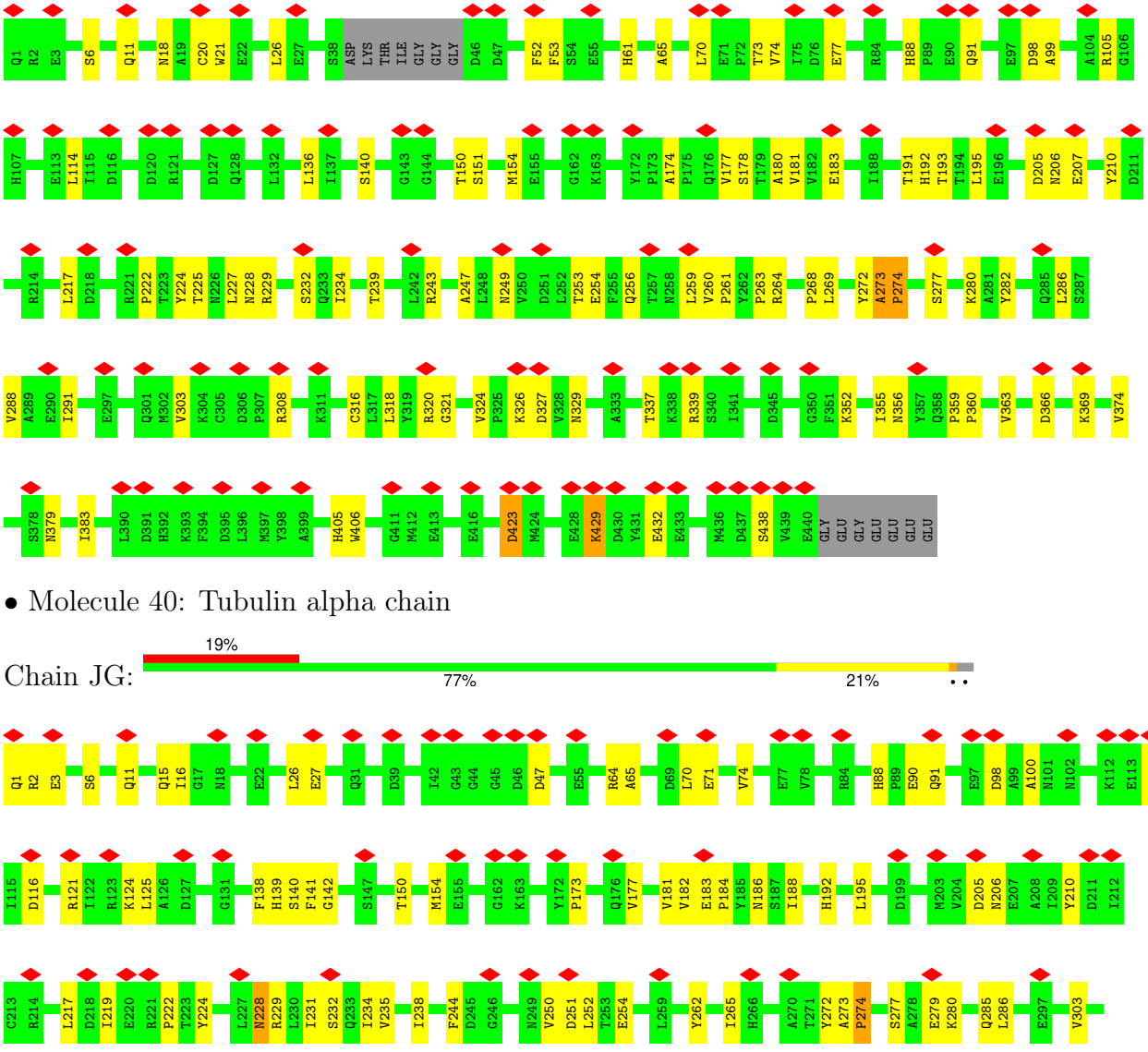
Chain JE:





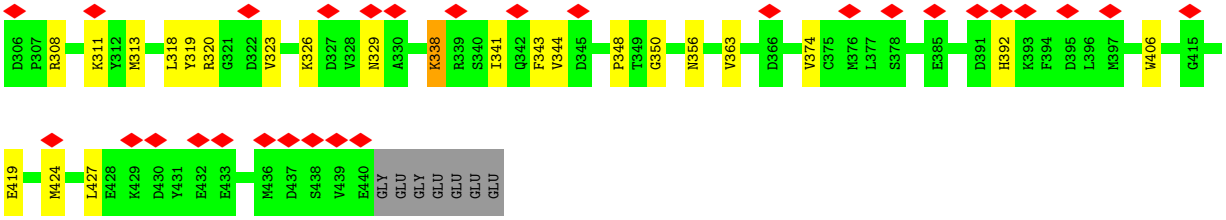
• Molecule 40: Tubulin alpha chain

Chain JF:

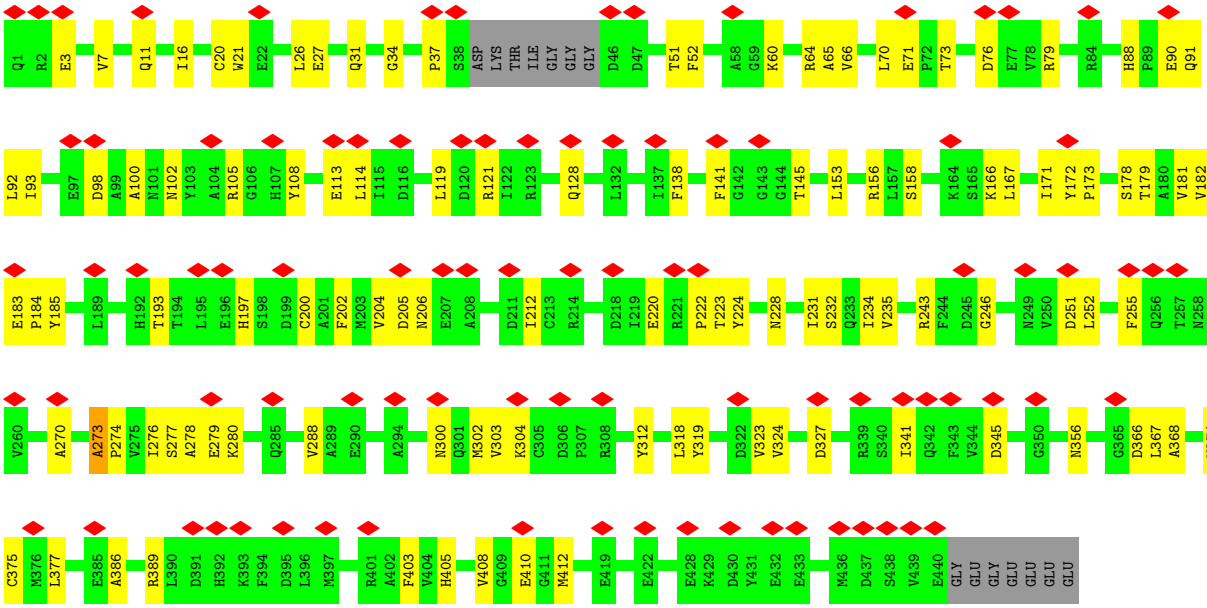


• Molecule 40: Tubulin alpha chain

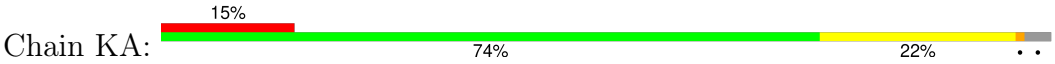
Chain JG:

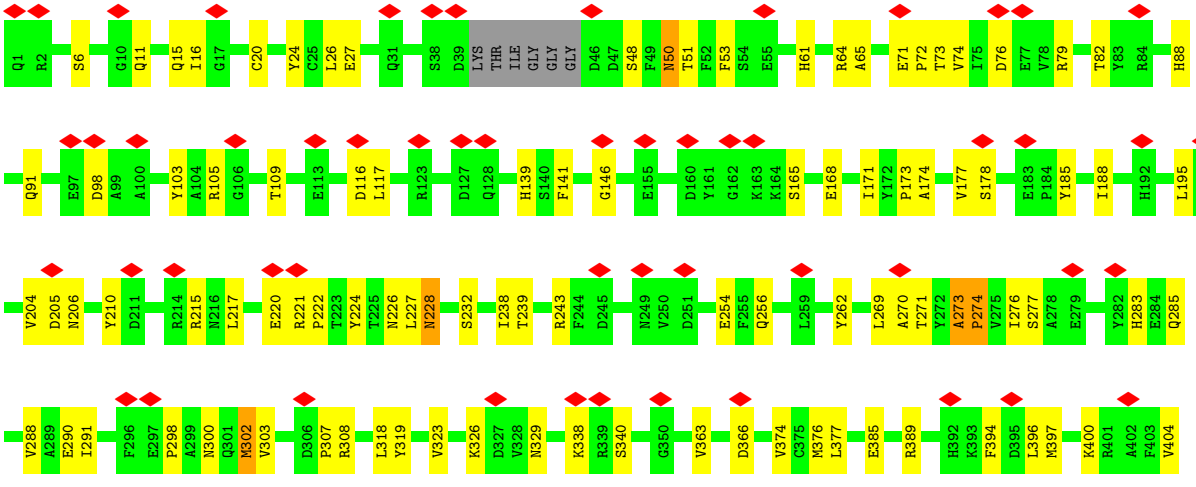


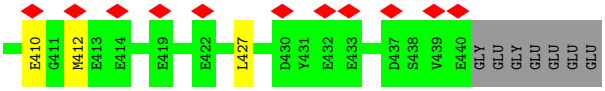
• Molecule 40: Tubulin alpha chain



• Molecule 40: Tubulin alpha chain

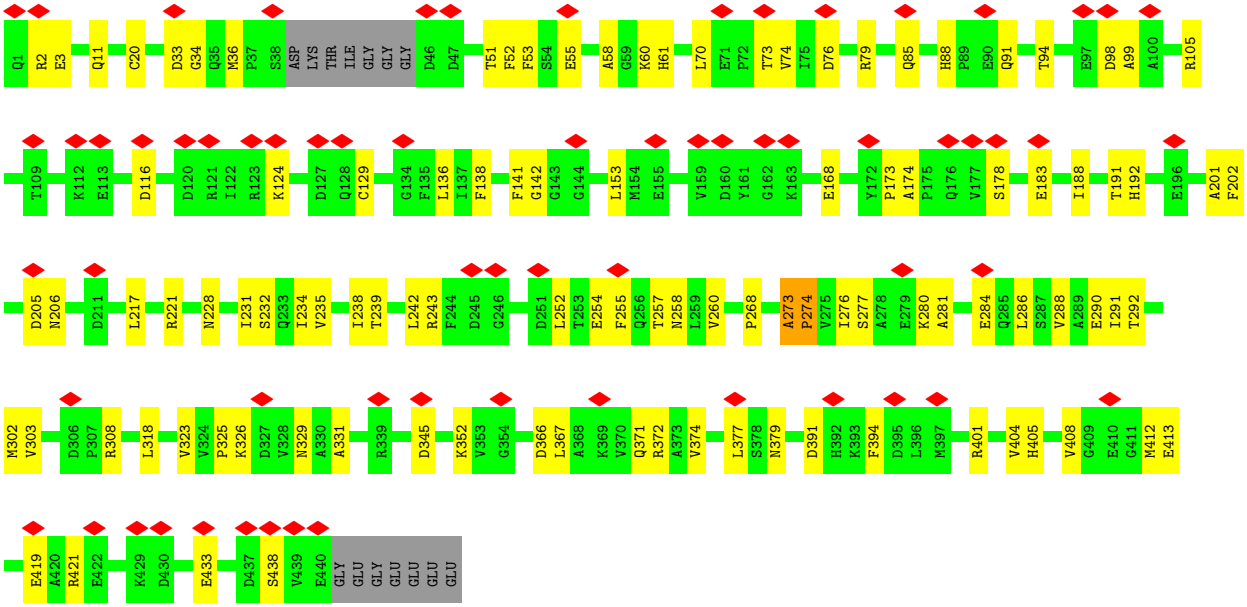






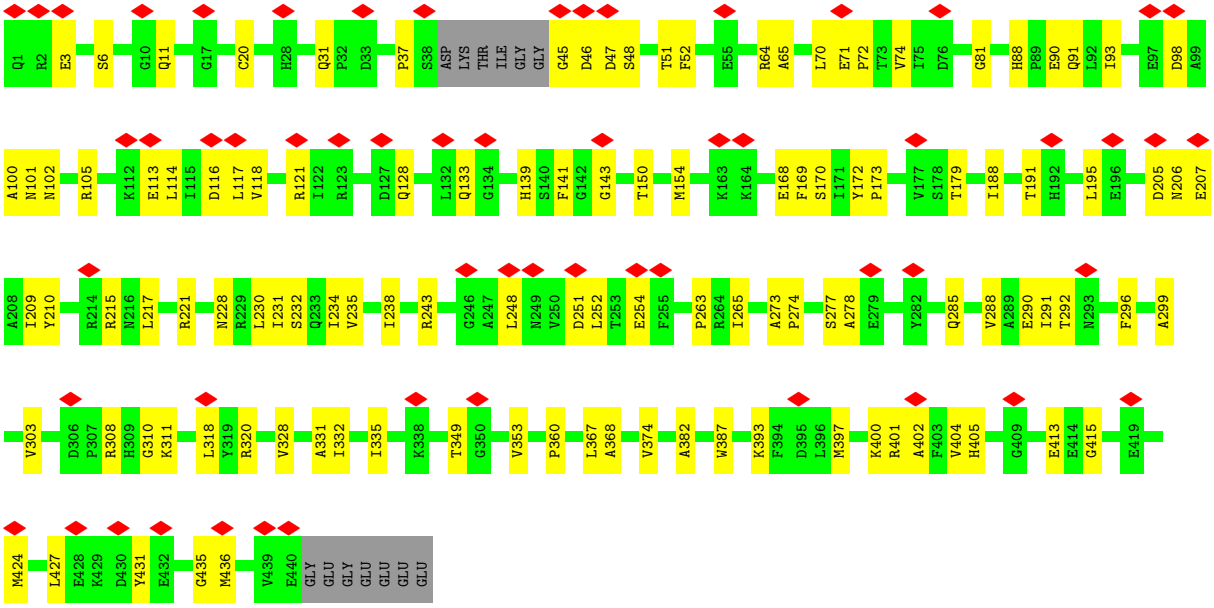
• Molecule 40: Tubulin alpha chain

Chain KD:



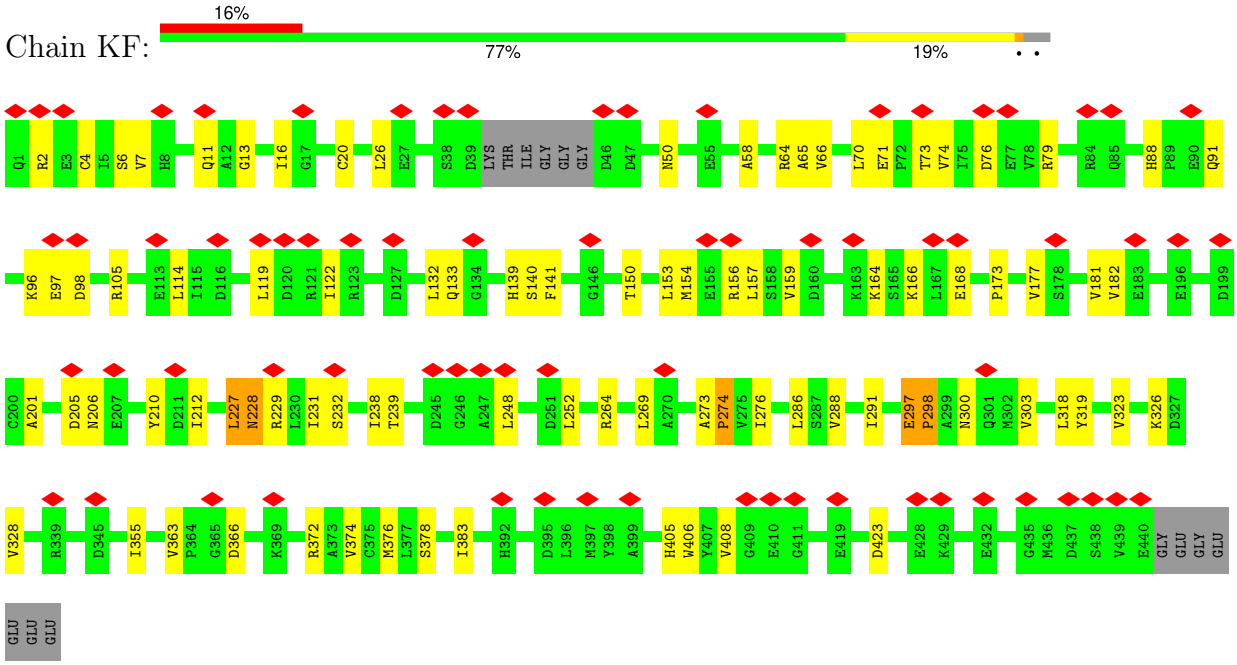
• Molecule 40: Tubulin alpha chain

Chain KE:



• Molecule 40: Tubulin alpha chain

Chain KF:



• Molecule 40: Tubulin alpha chain

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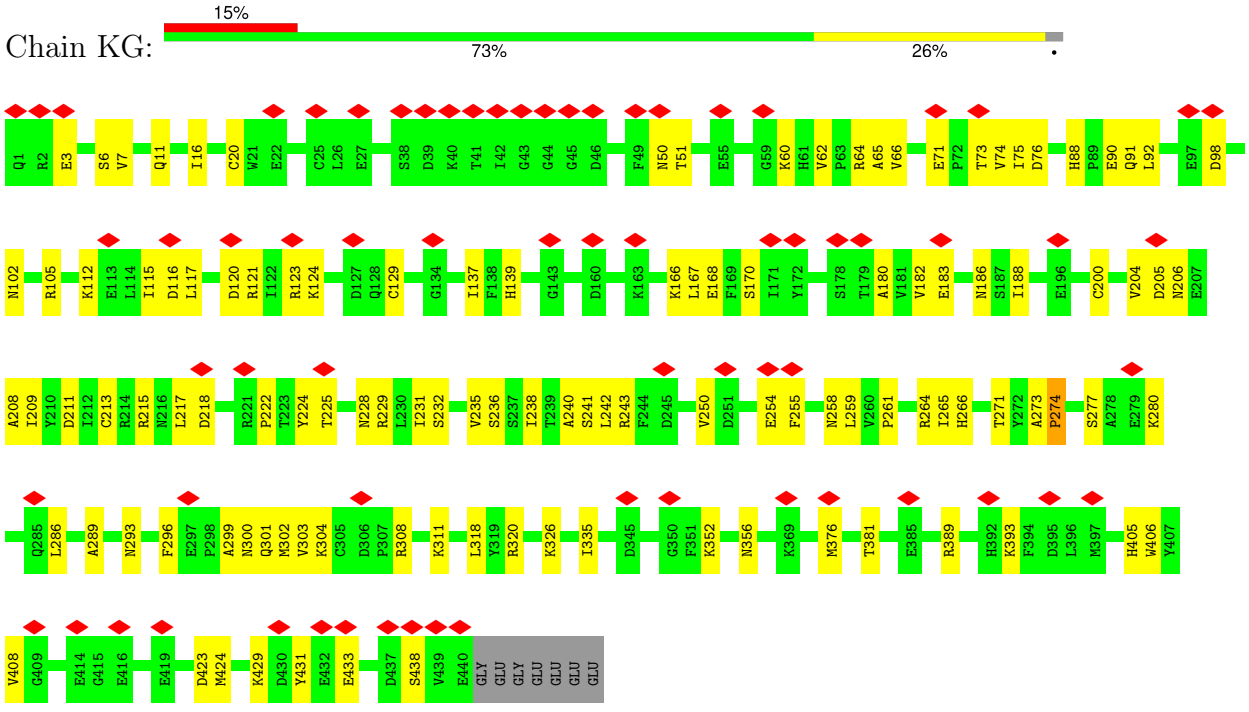
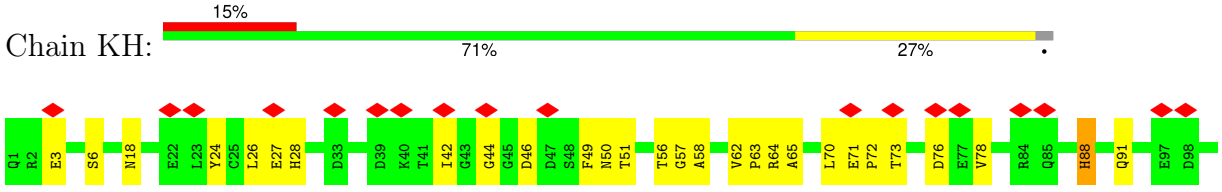
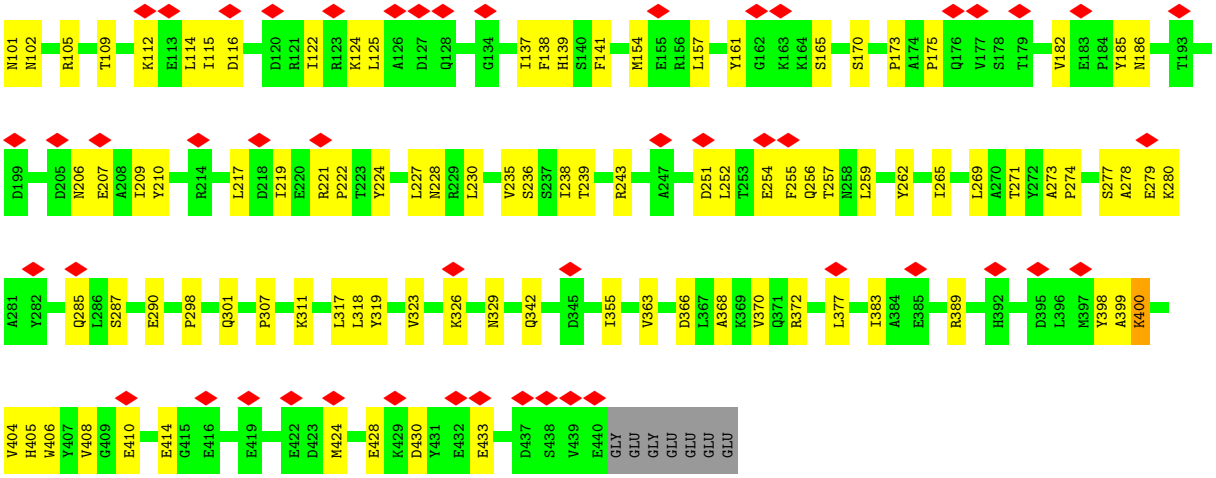


• Molecule 40: Tubulin alpha chain

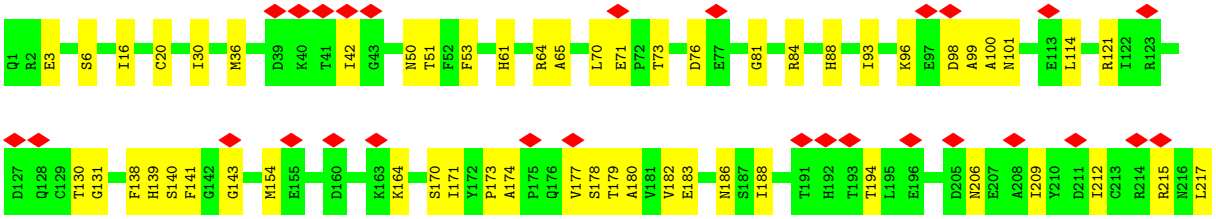
Chain KH:





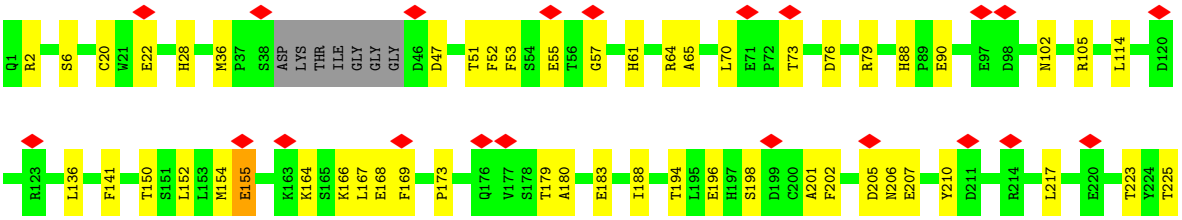
• Molecule 40: Tubulin alpha chain

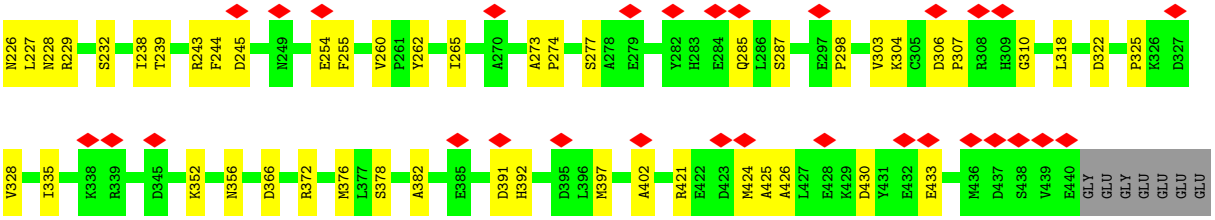
Chain LA:



• Molecule 40: Tubulin alpha chain

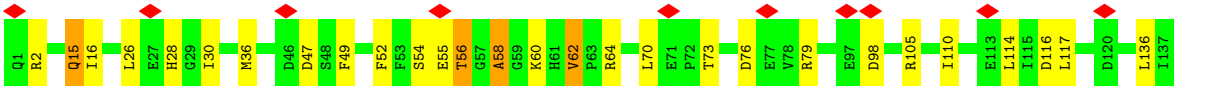
Chain LD:

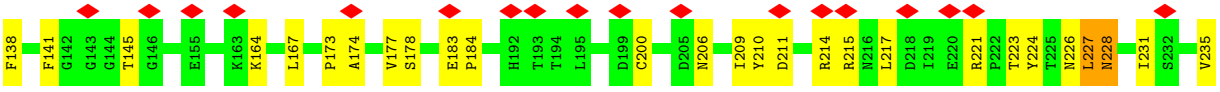


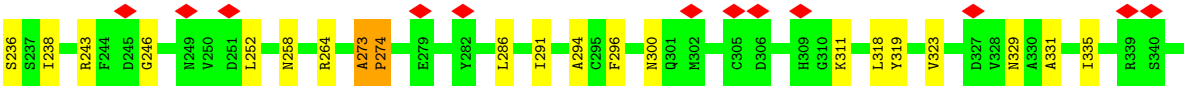


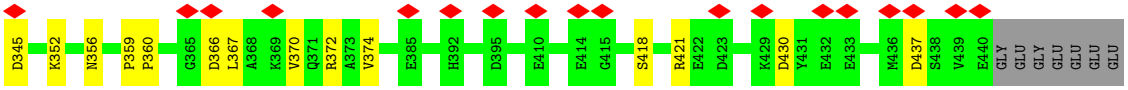
• Molecule 40: Tubulin alpha chain

Chain LE:



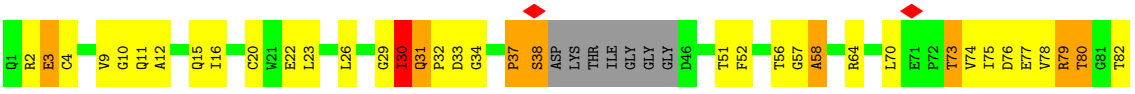


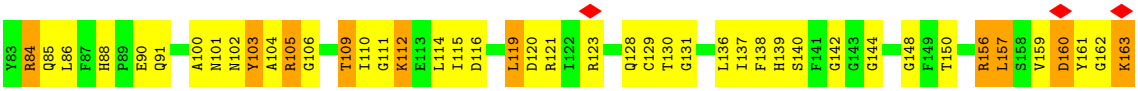


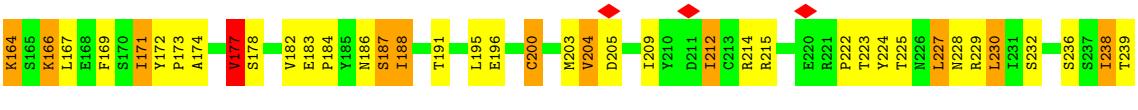


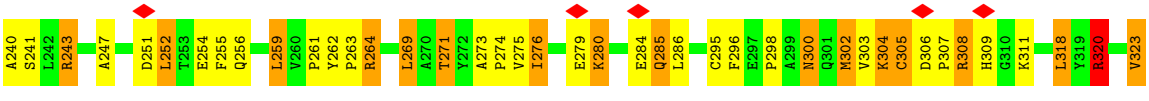
• Molecule 40: Tubulin alpha chain

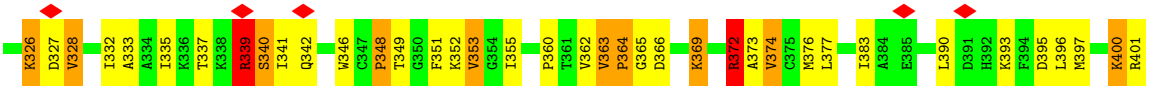
Chain LF:

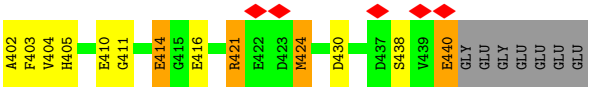












• Molecule 40: Tubulin alpha chain

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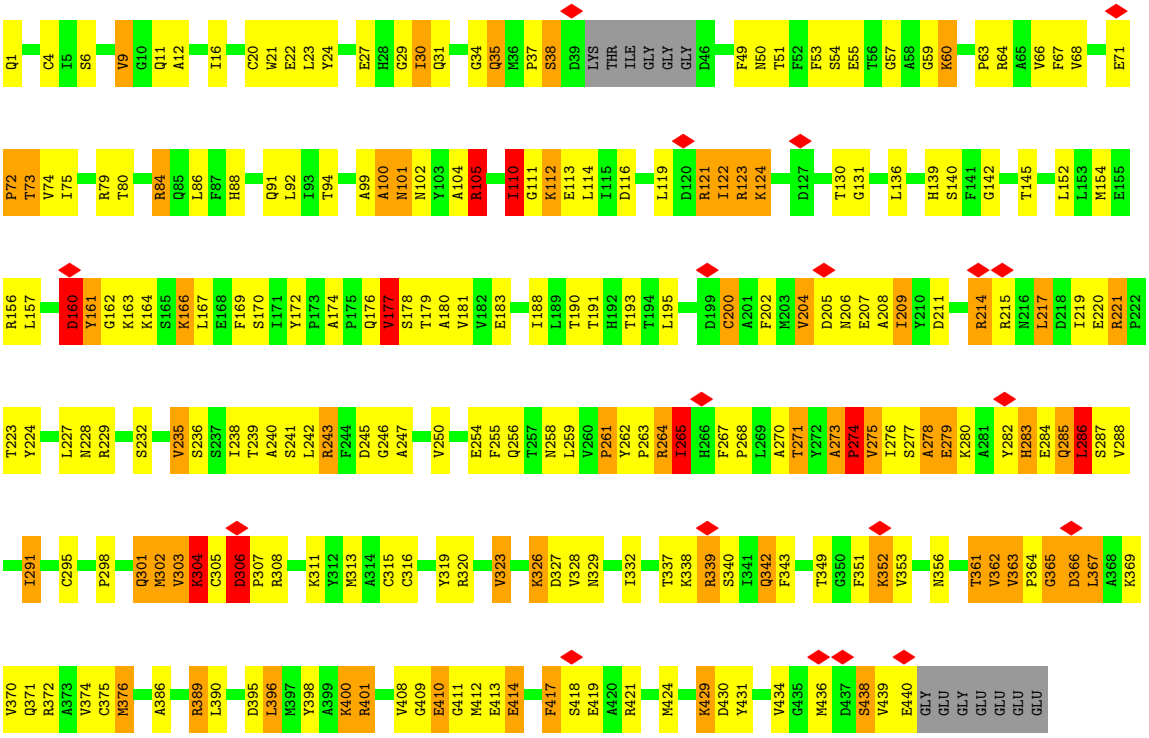
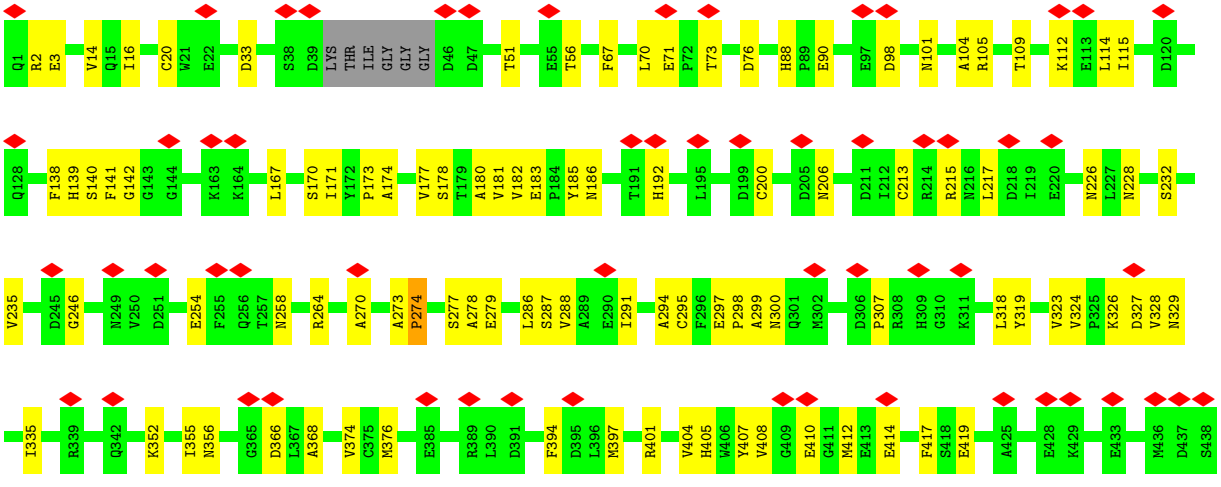
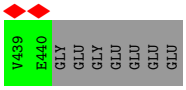


• Molecule 40: Tubulin alpha chain

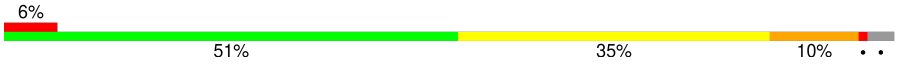
Chain LH:

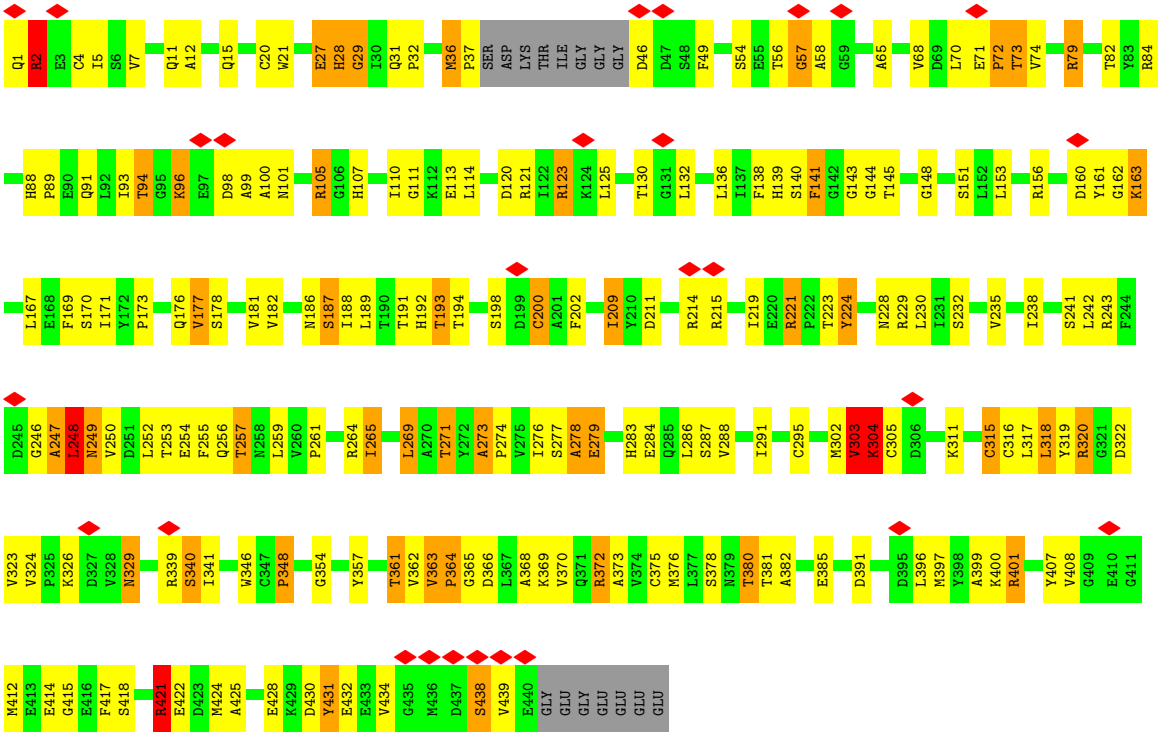




• Molecule 40: Tubulin alpha chain

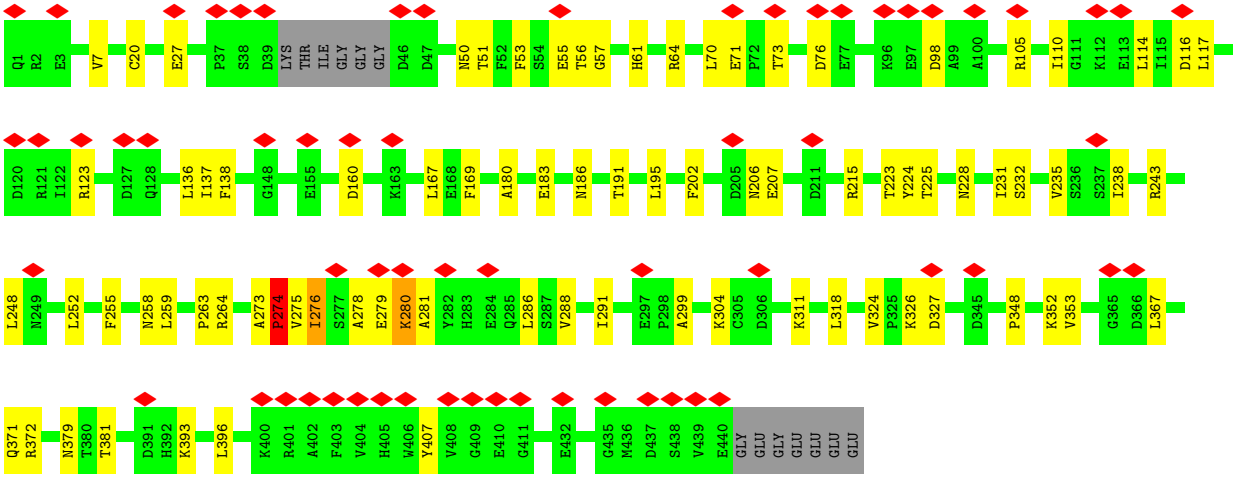
Chain MA:





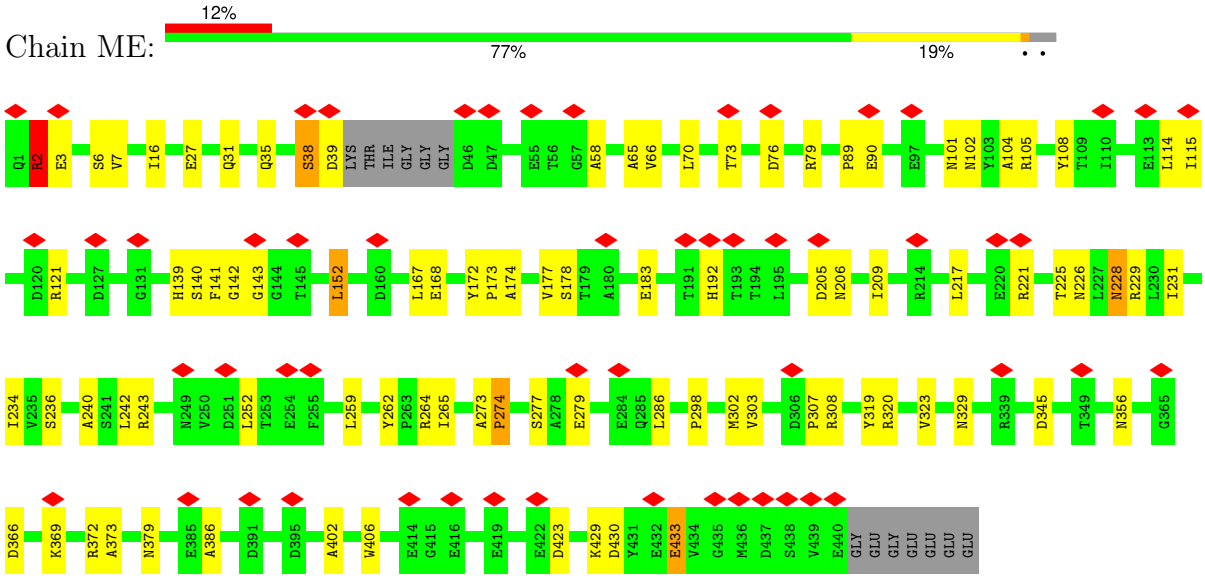
• Molecule 40: Tubulin alpha chain

Chain MD:



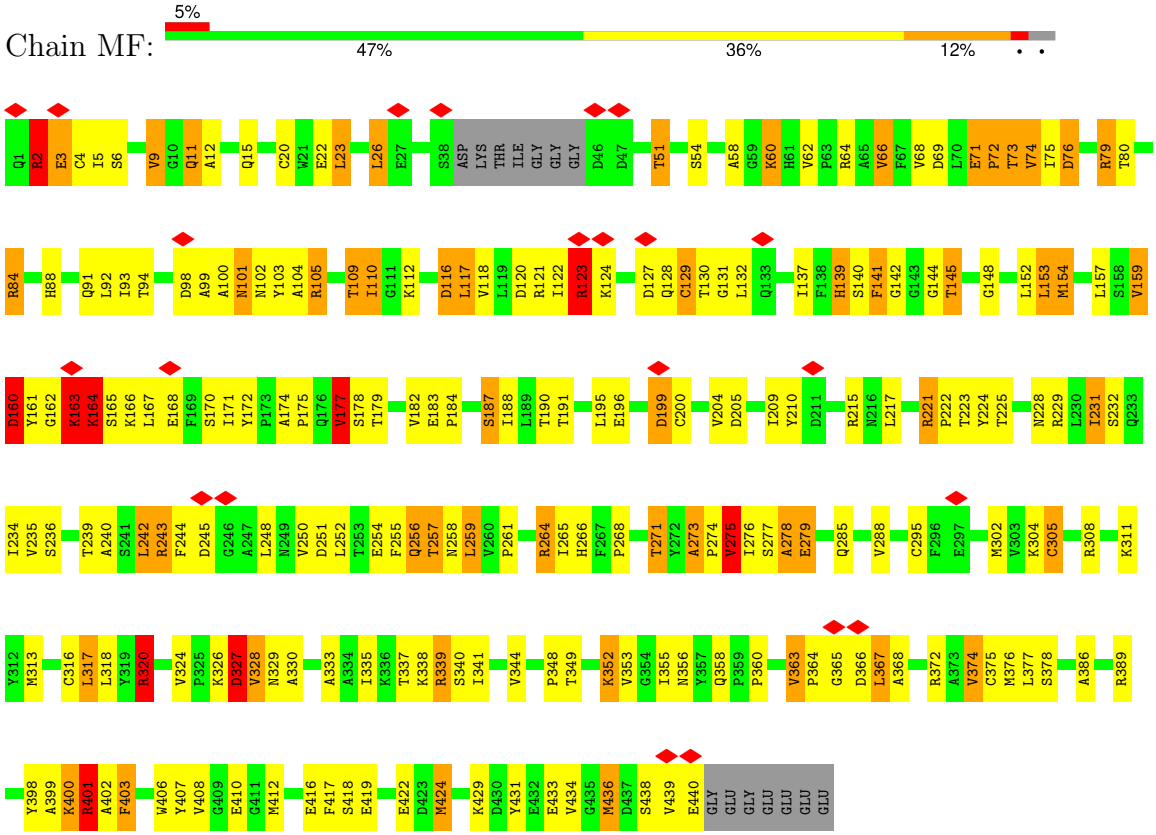
• Molecule 40: Tubulin alpha chain

Chain ME:



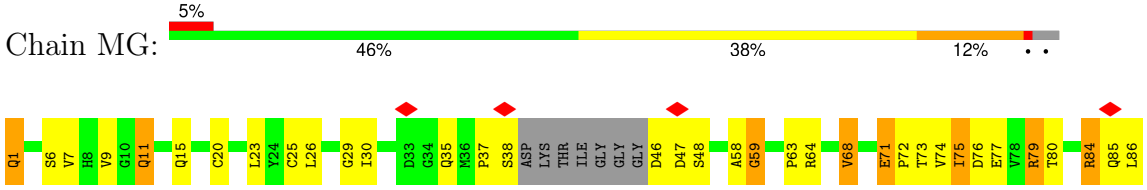
• Molecule 40: Tubulin alpha chain

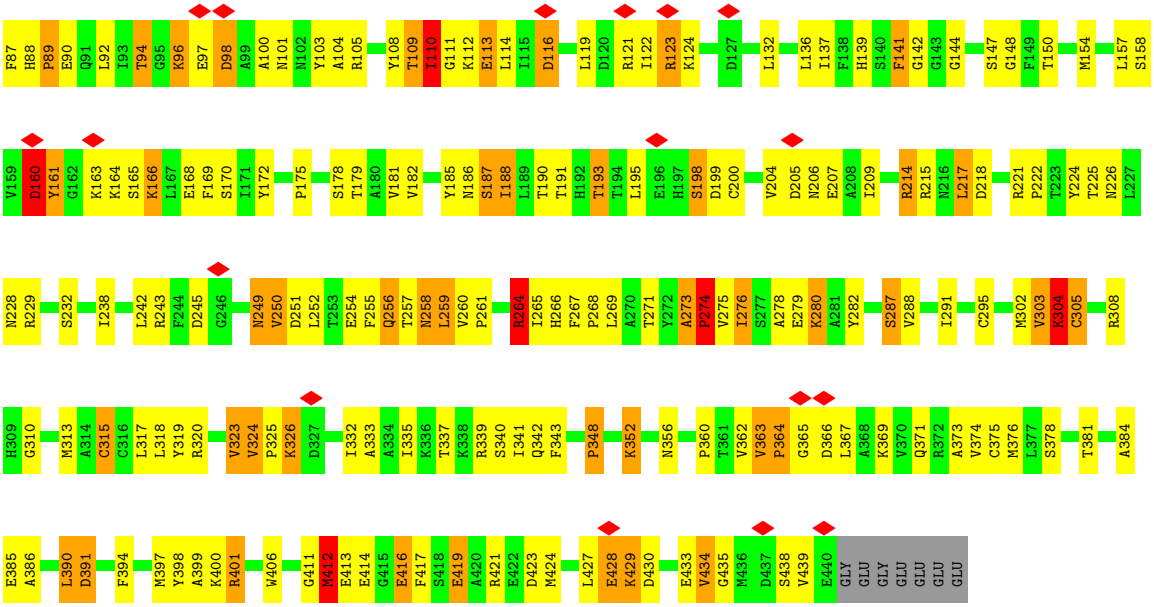
Chain MF:



• Molecule 40: Tubulin alpha chain

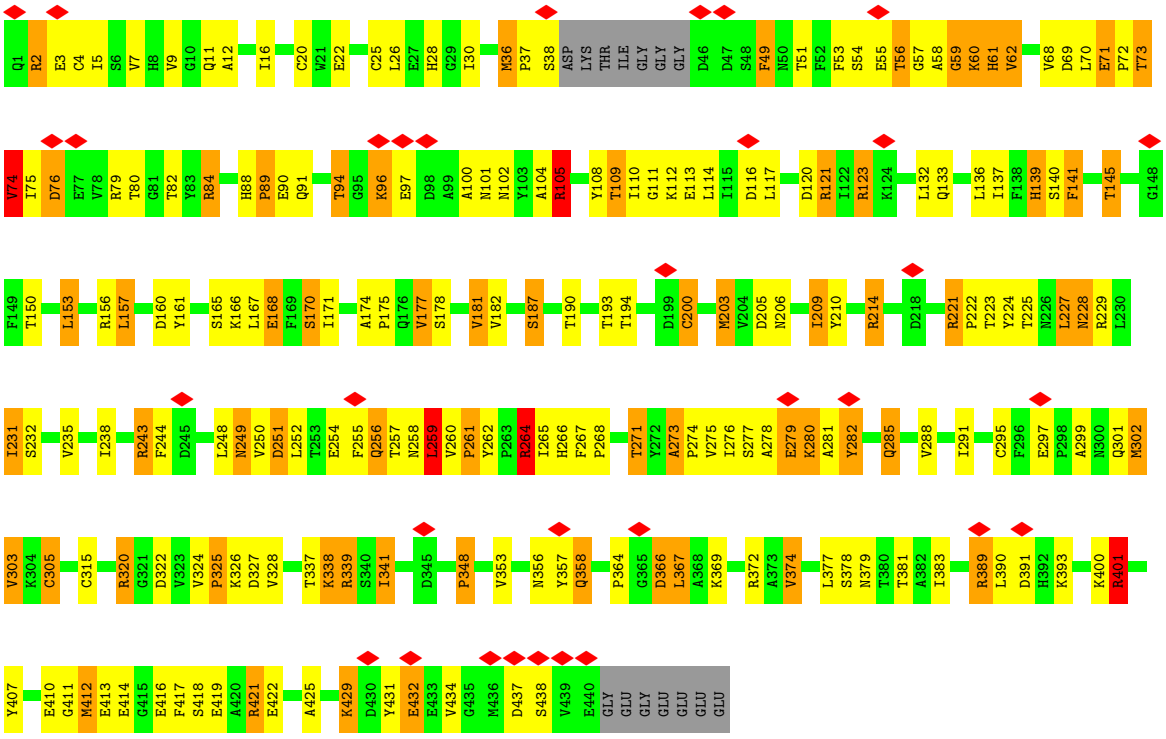
Chain MG:





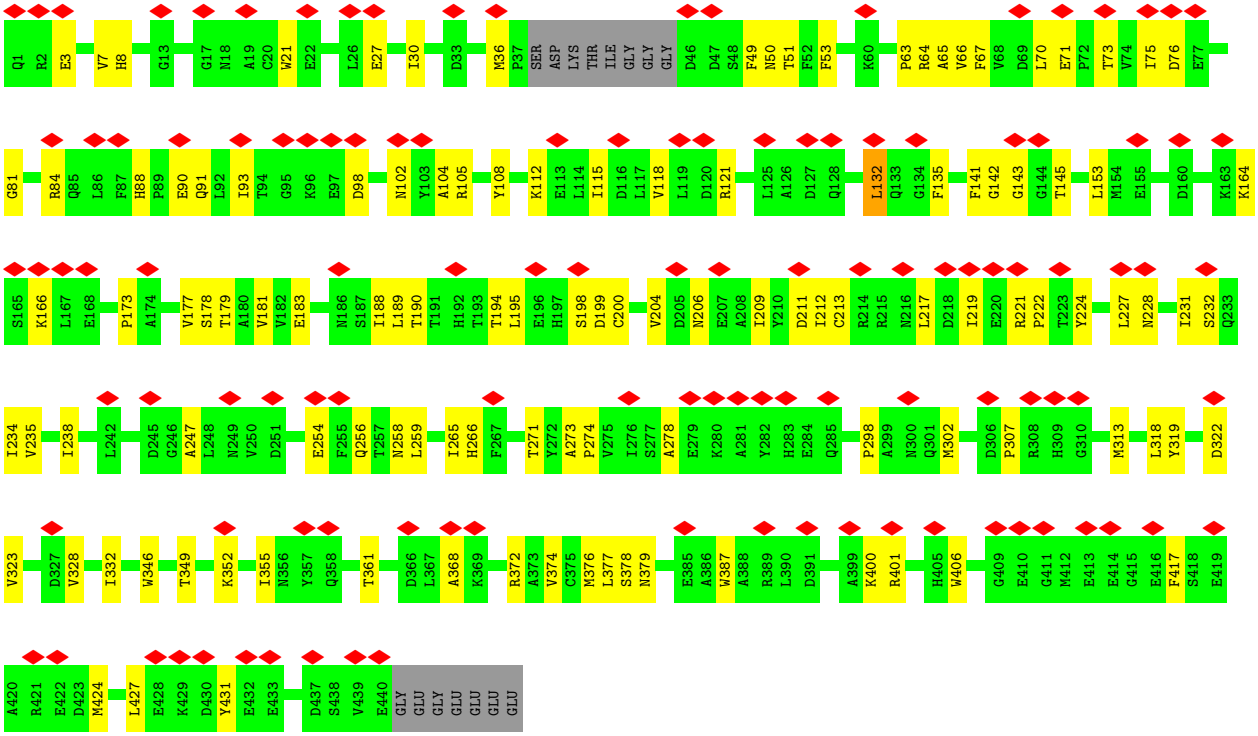
• Molecule 40: Tubulin alpha chain

Chain MH:



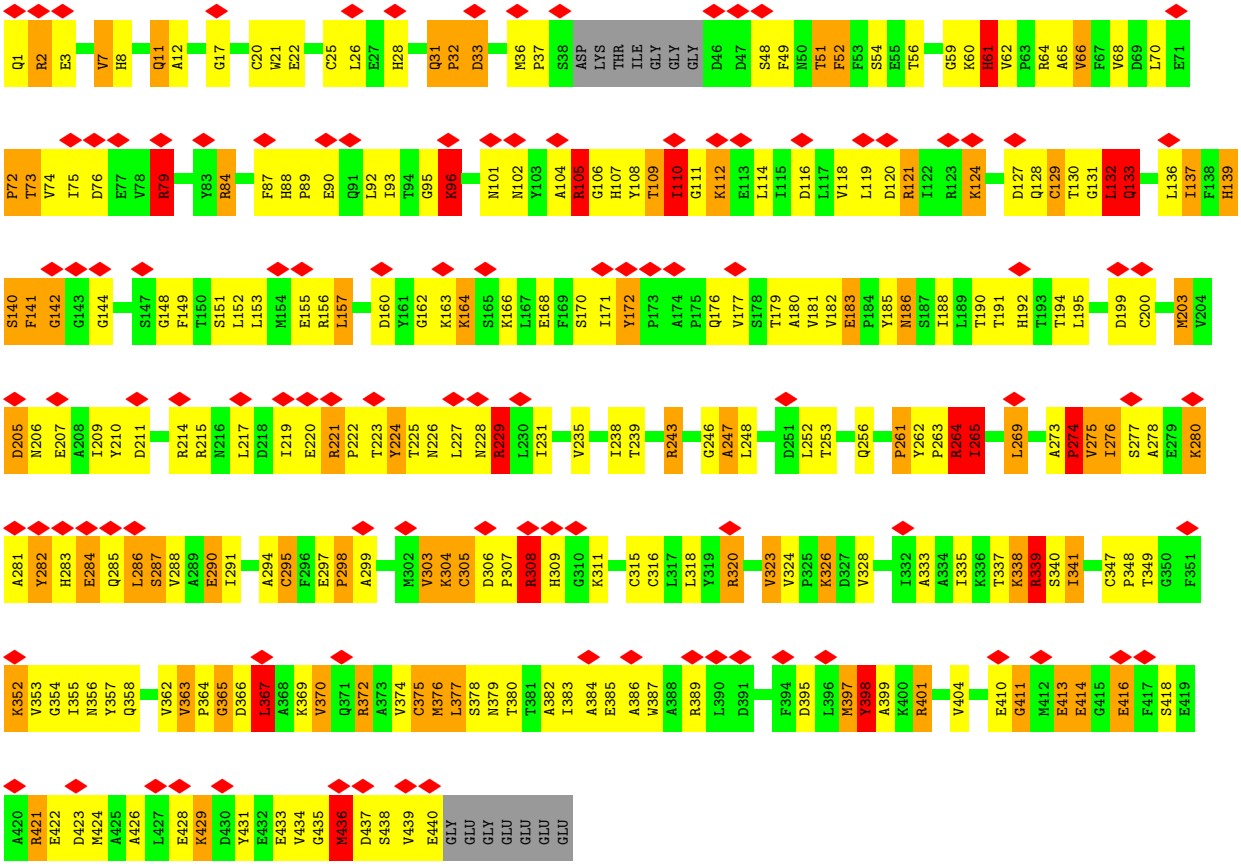
• Molecule 40: Tubulin alpha chain

Chain NA:



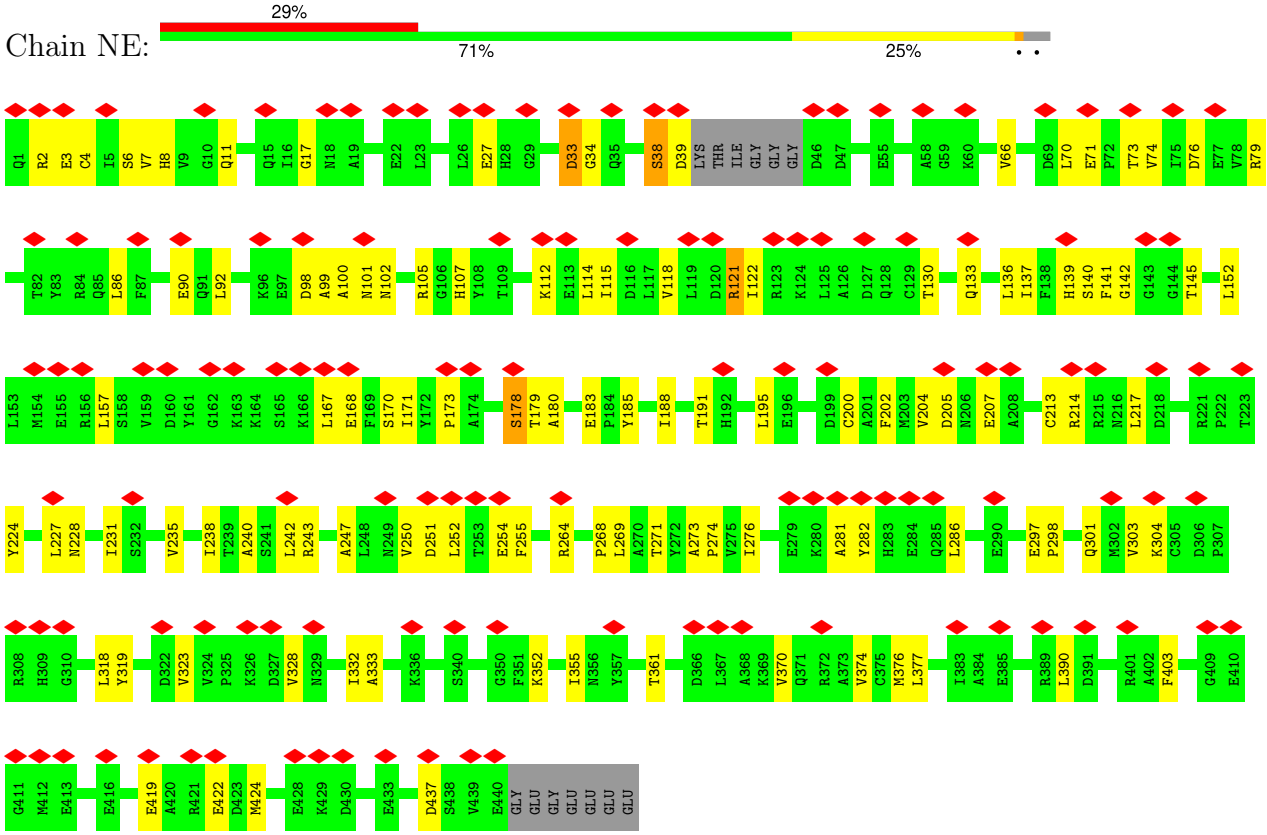
• Molecule 40: Tubulin alpha chain

Chain ND:



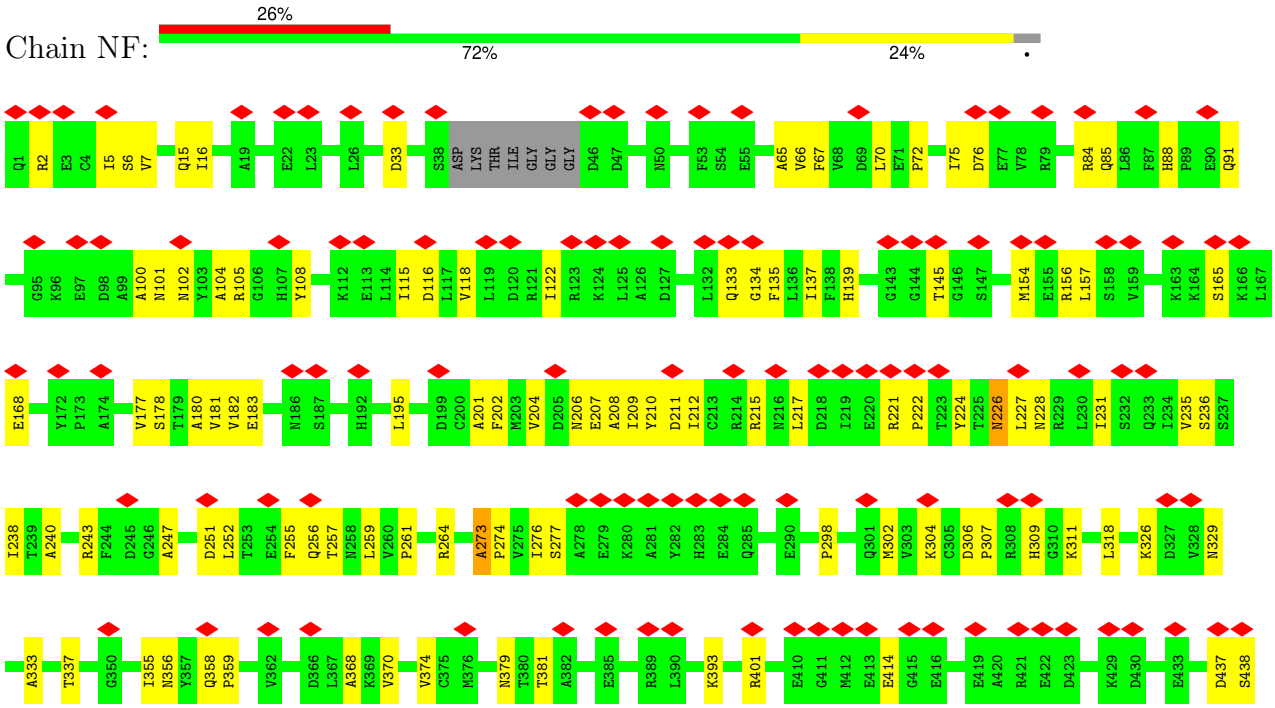
• Molecule 40: Tubulin alpha chain

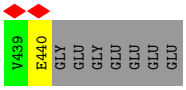
Chain NE:



• Molecule 40: Tubulin alpha chain

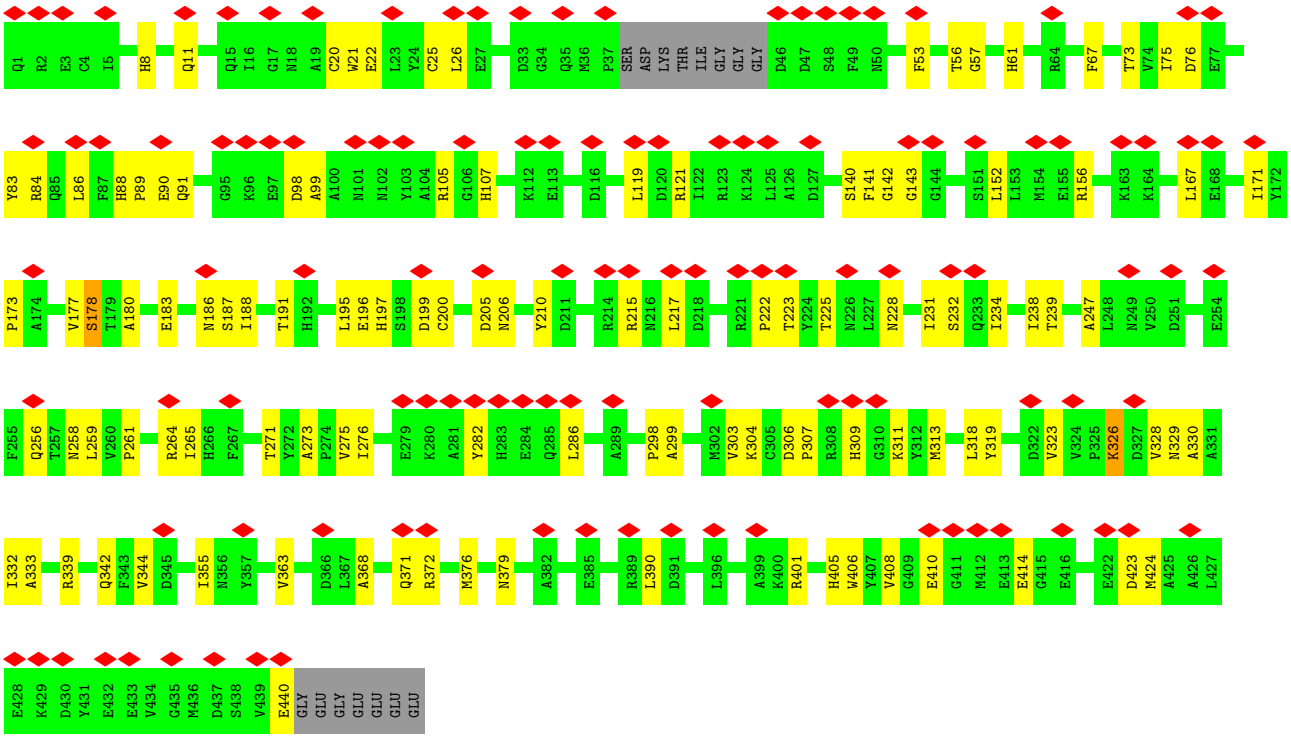
Chain NF:





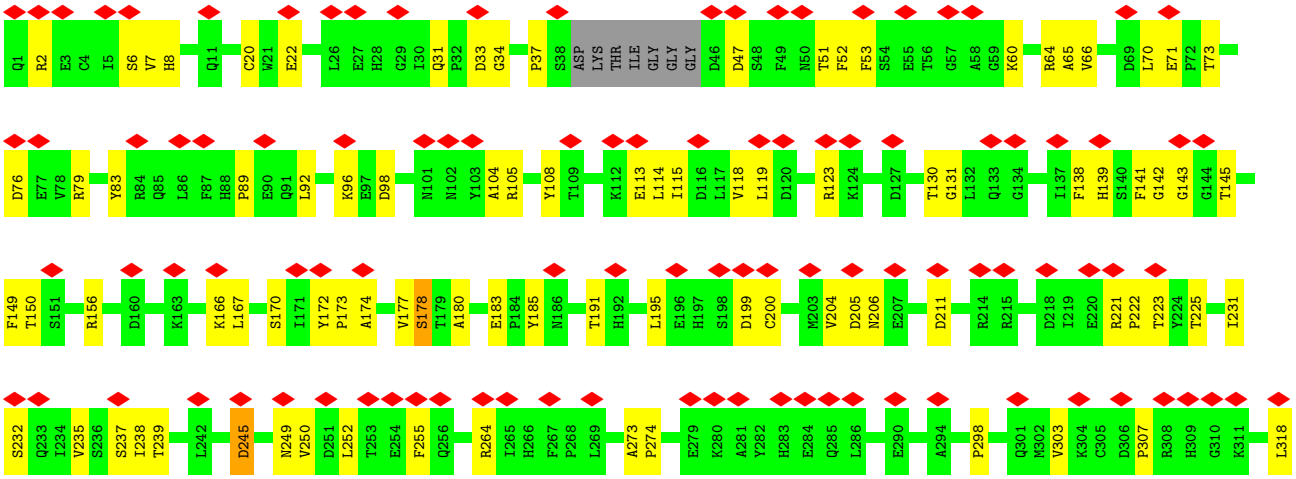
• Molecule 40: Tubulin alpha chain

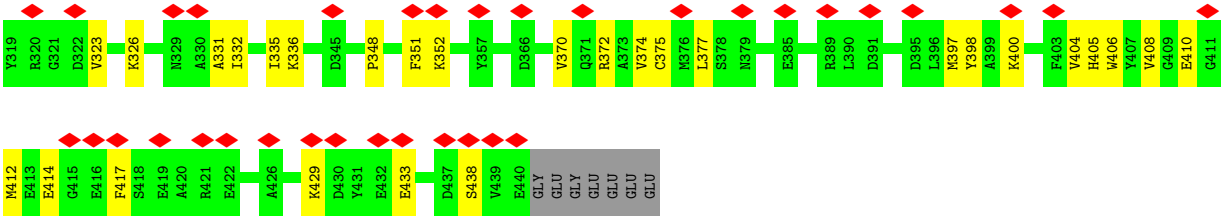
Chain NG:



• Molecule 40: Tubulin alpha chain

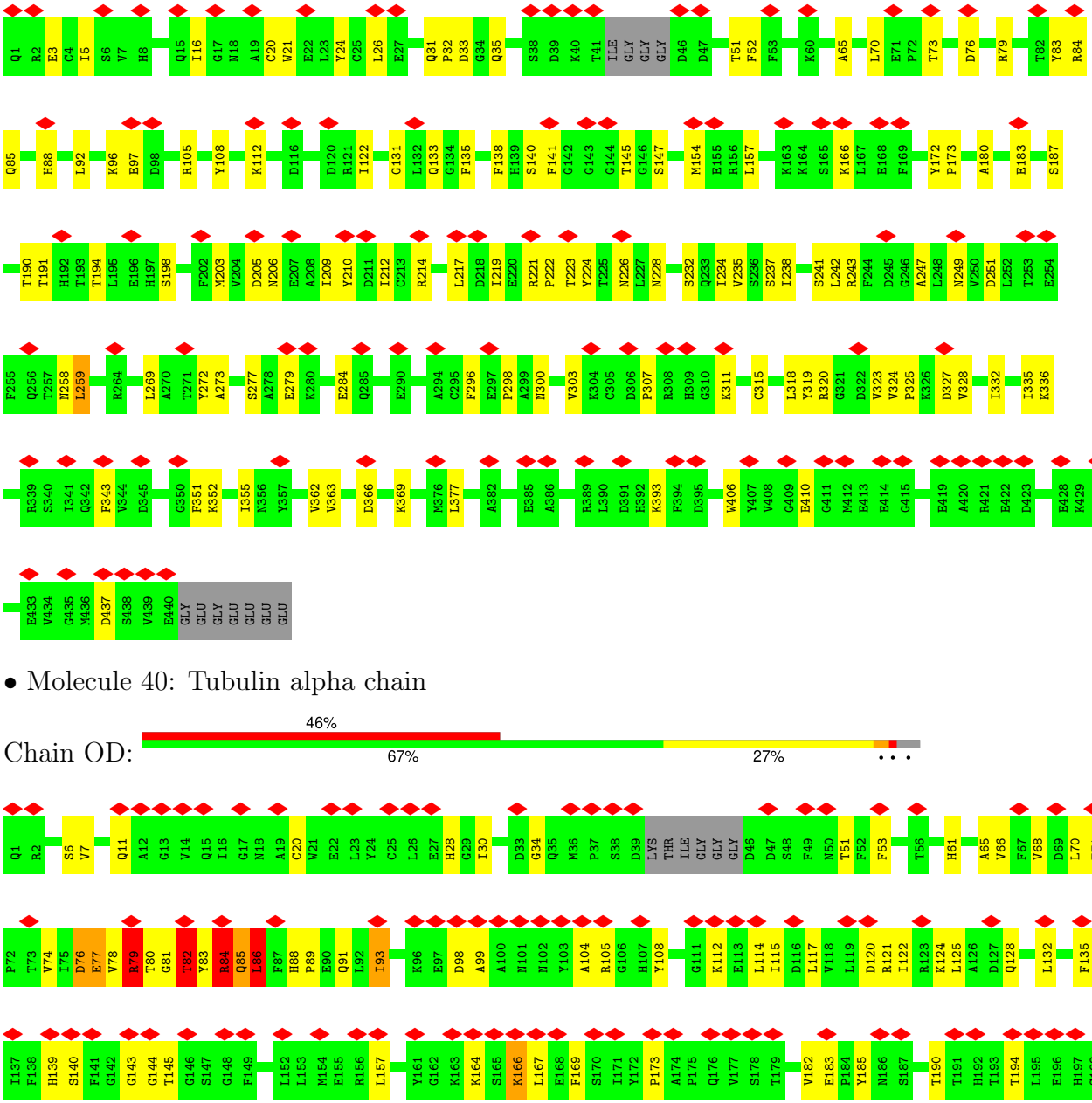
Chain NH:





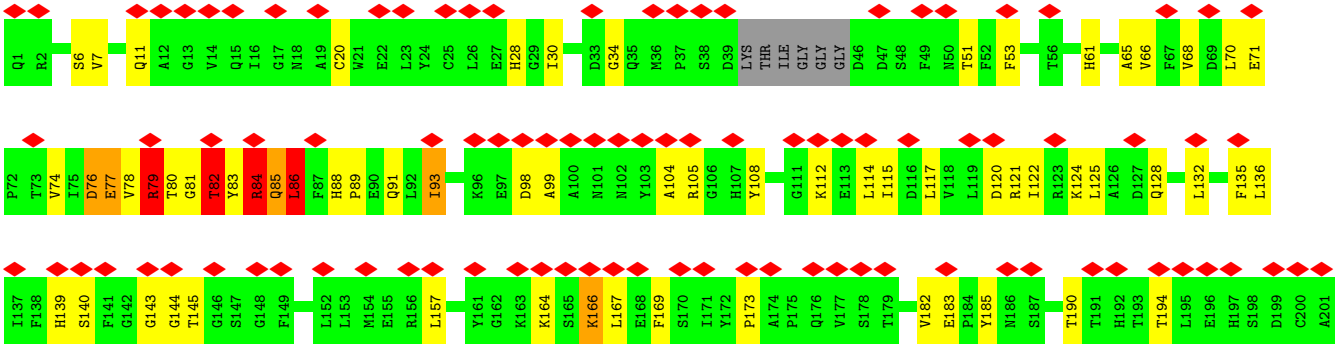
• Molecule 40: Tubulin alpha chain

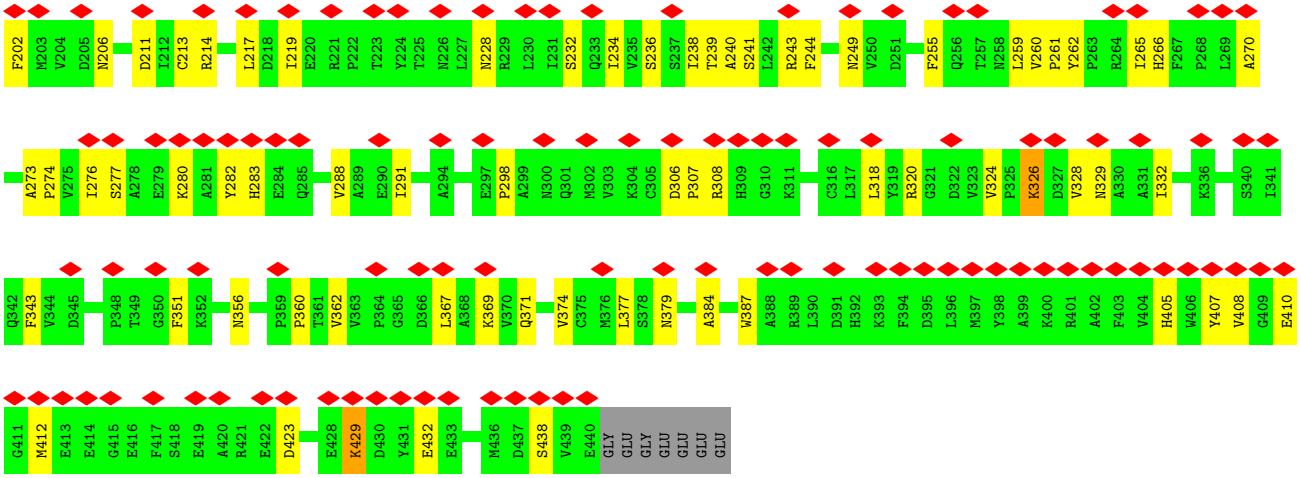
Chain OA:



• Molecule 40: Tubulin alpha chain

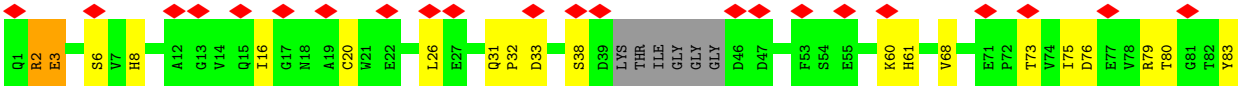
Chain OD:

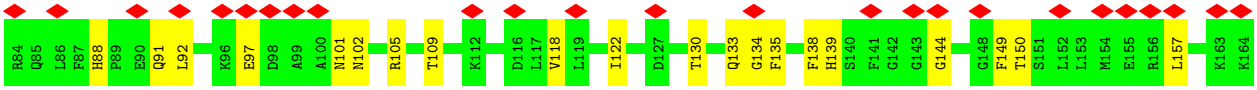


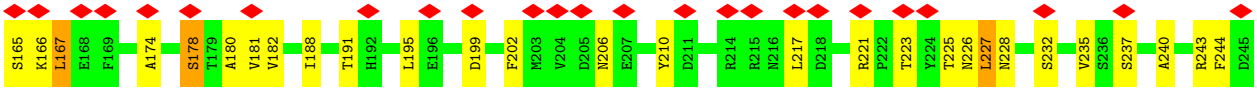


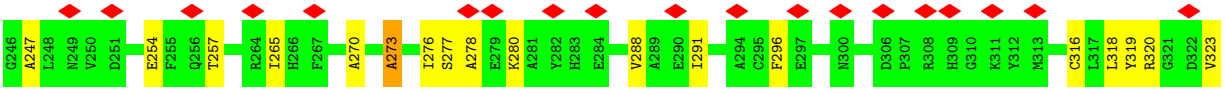
• Molecule 40: Tubulin alpha chain

Chain OE:



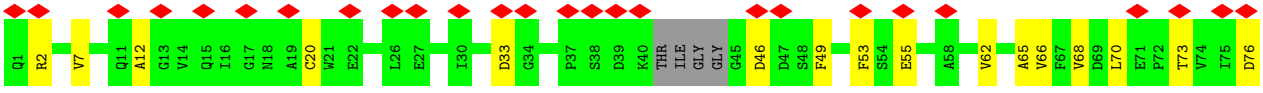


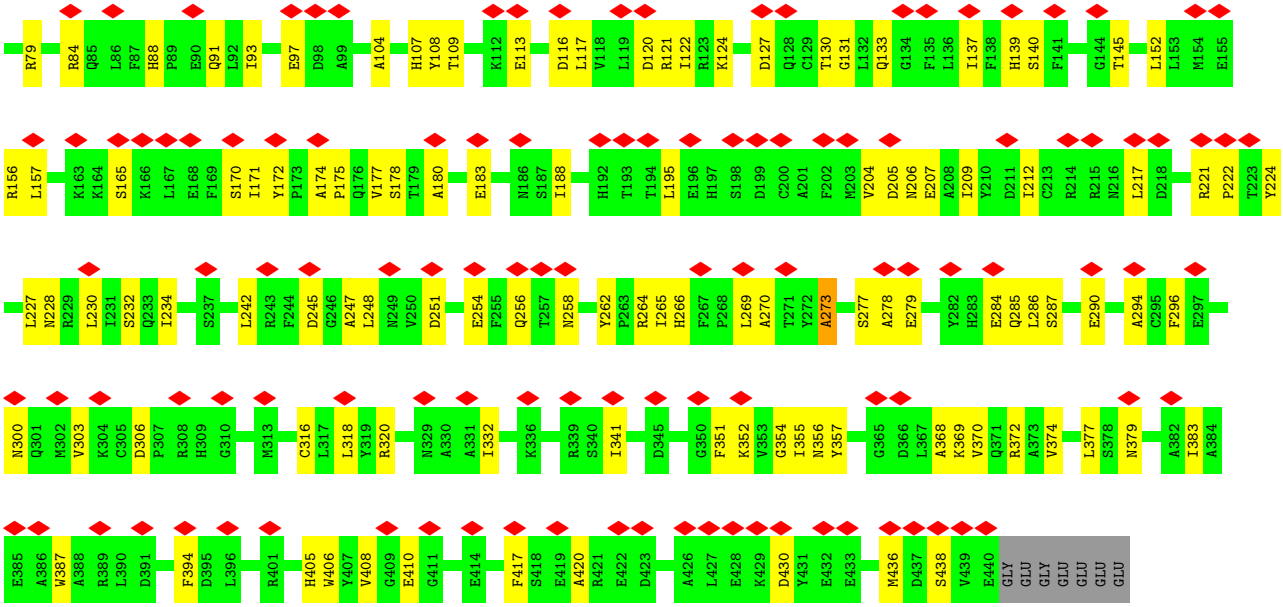




• Molecule 40: Tubulin alpha chain

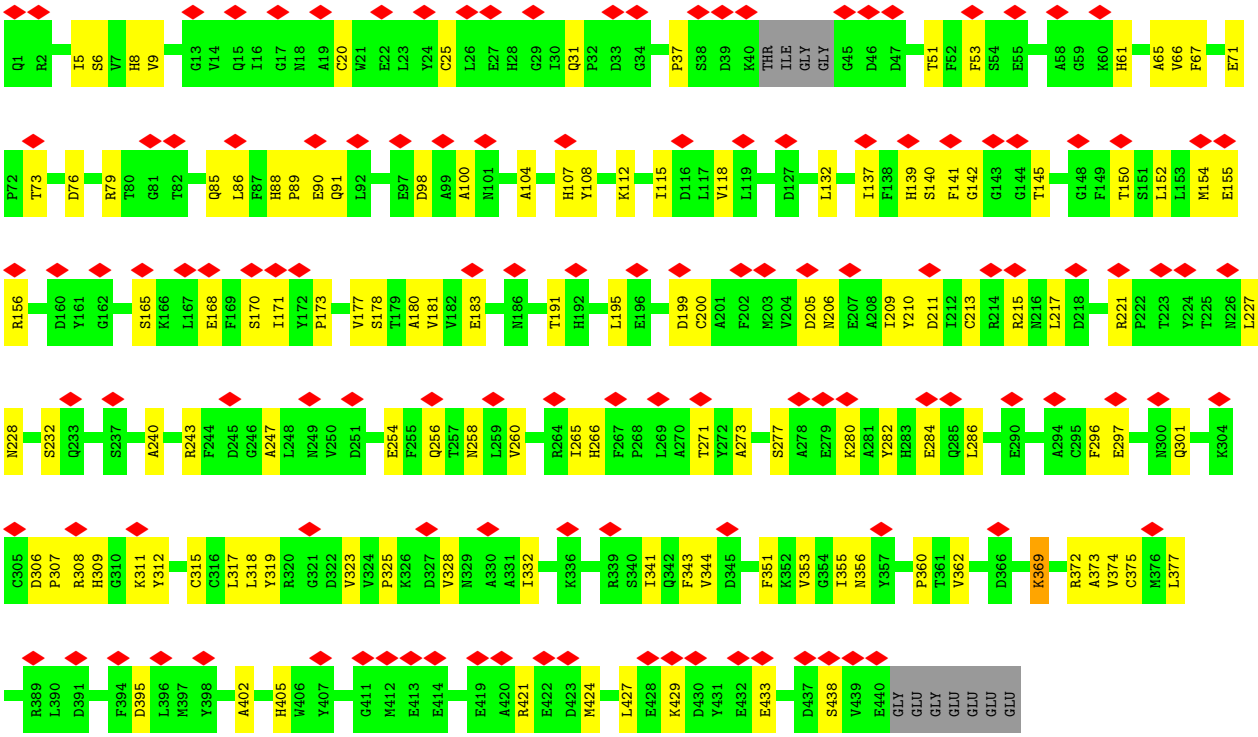
Chain OF:





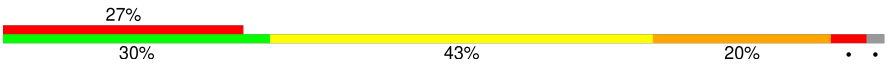
• Molecule 40: Tubulin alpha chain

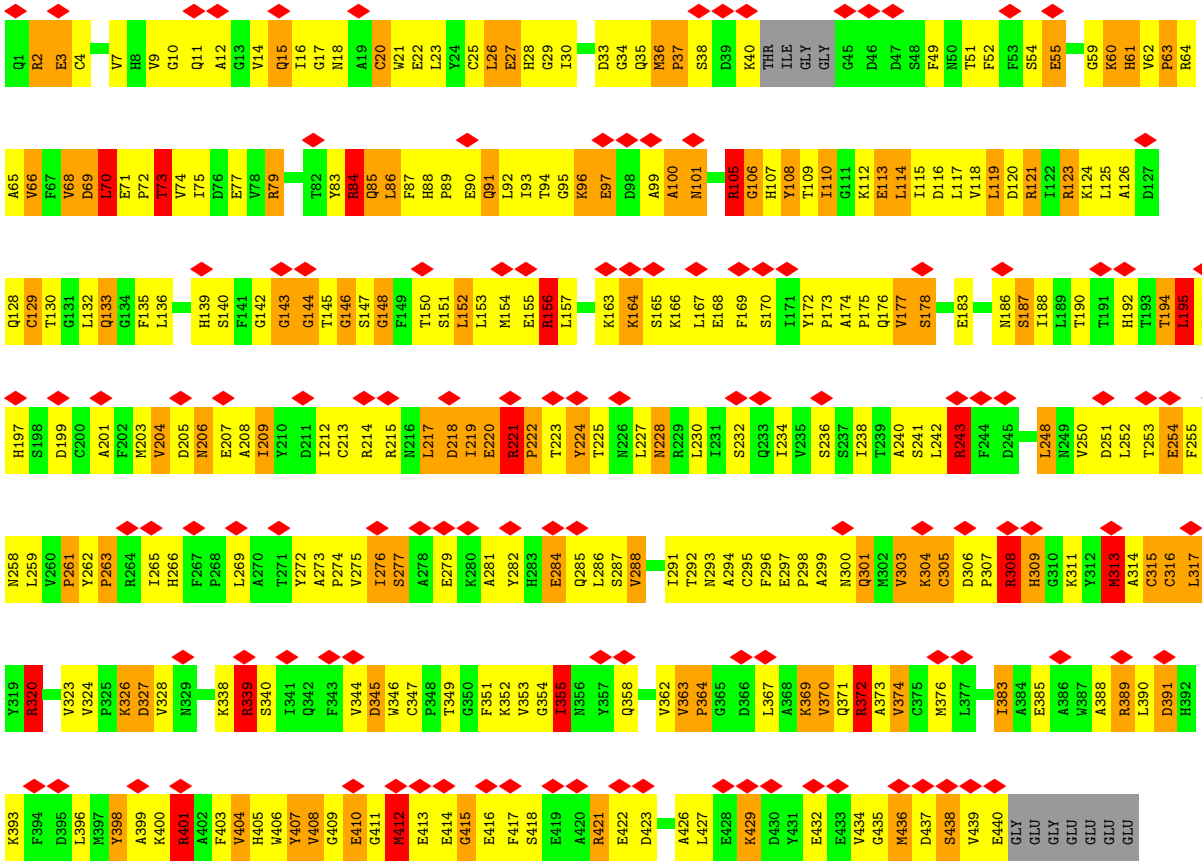
Chain OG:



• Molecule 40: Tubulin alpha chain

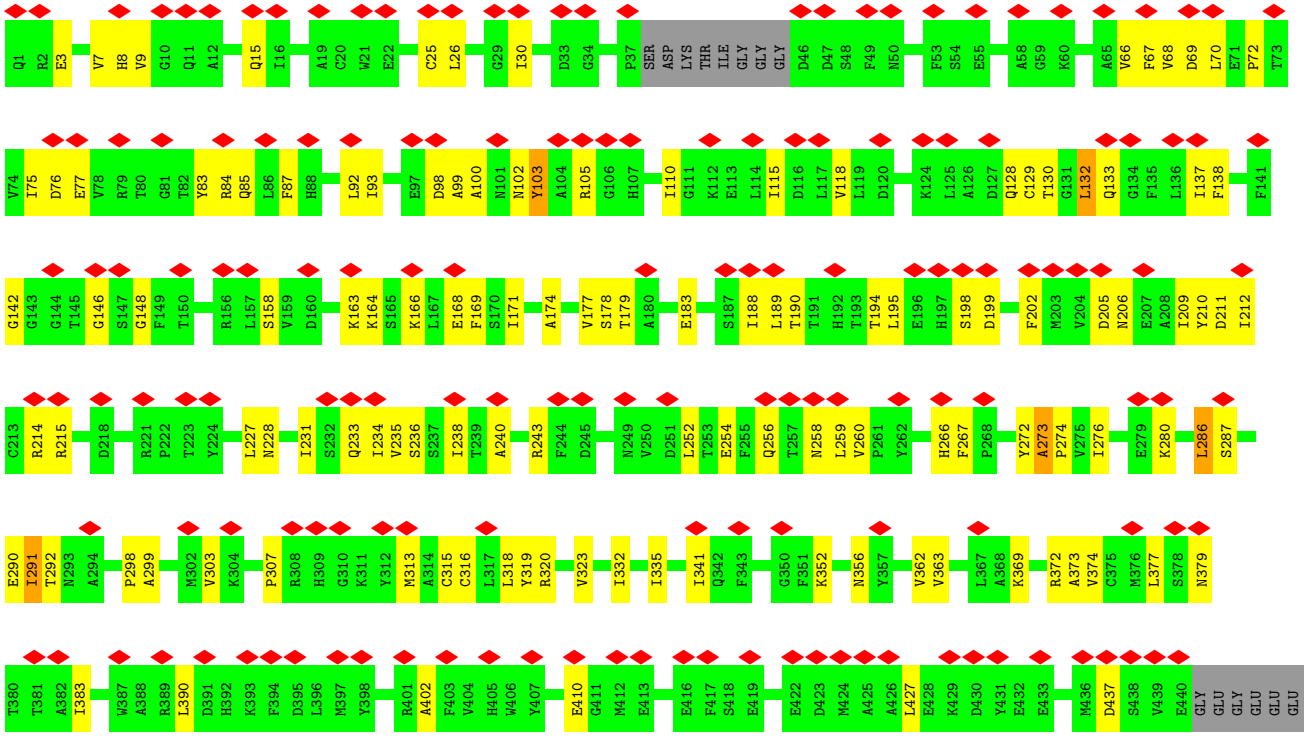
Chain OH:





• Molecule 40: Tubulin alpha chain

Chain PA:



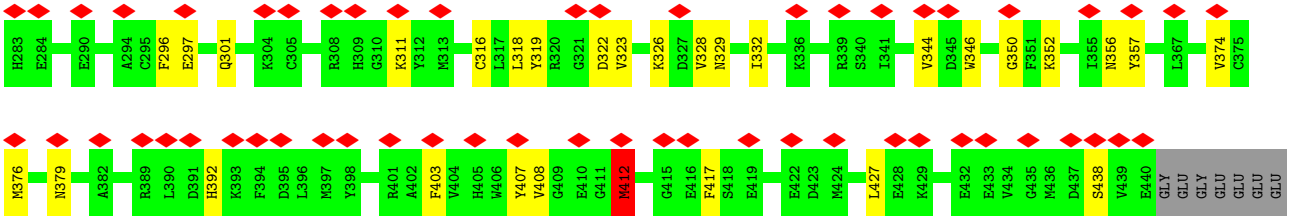
GLU

• Molecule 40: Tubulin alpha chain

Chain PD:

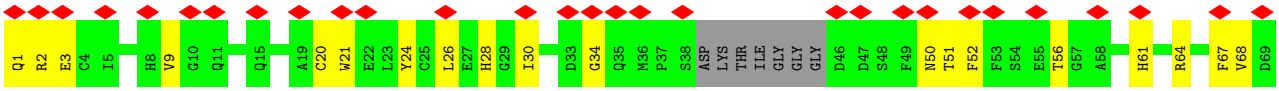
• Molecule 40: Tubulin alpha chain

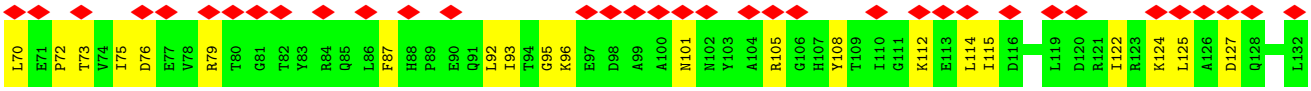
Chain PE:

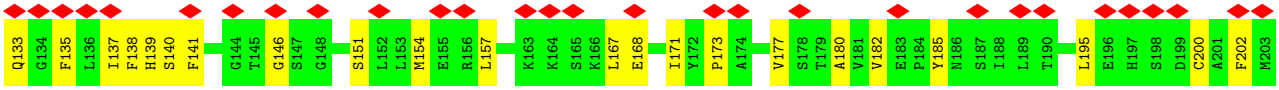


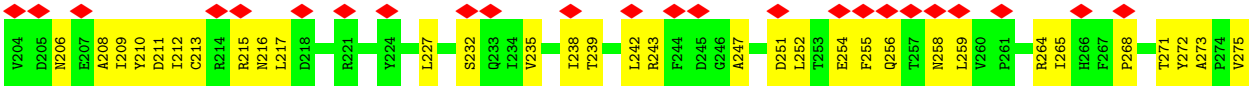
• Molecule 40: Tubulin alpha chain

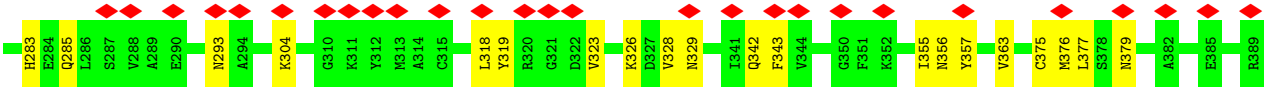
Chain PF:

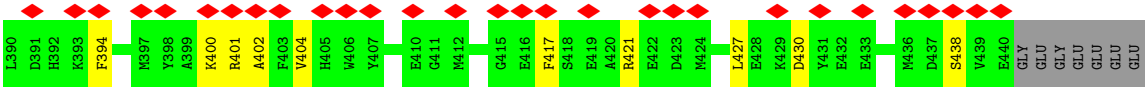






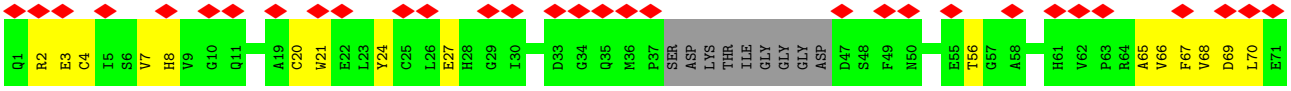


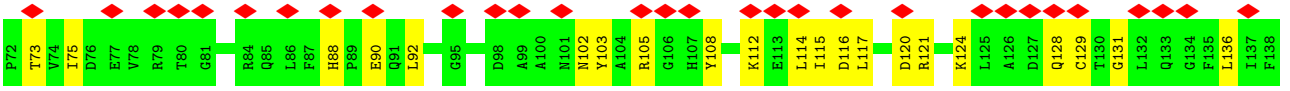


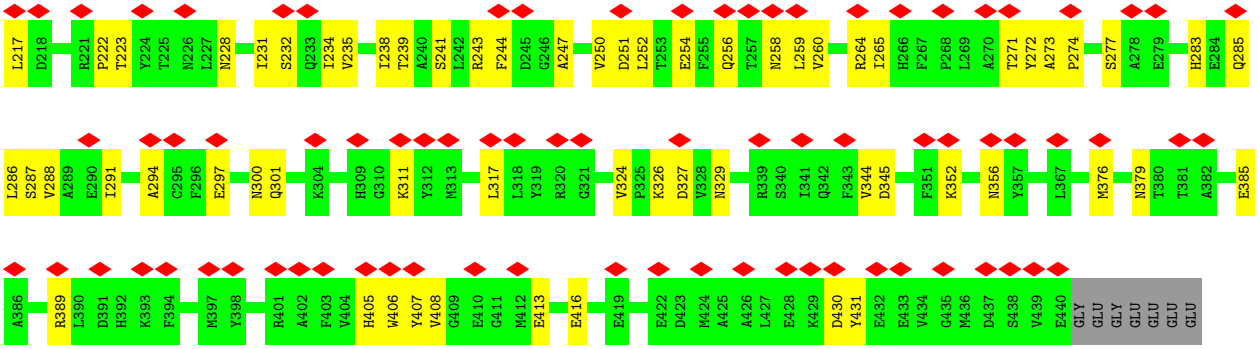


• Molecule 40: Tubulin alpha chain

Chain PG:

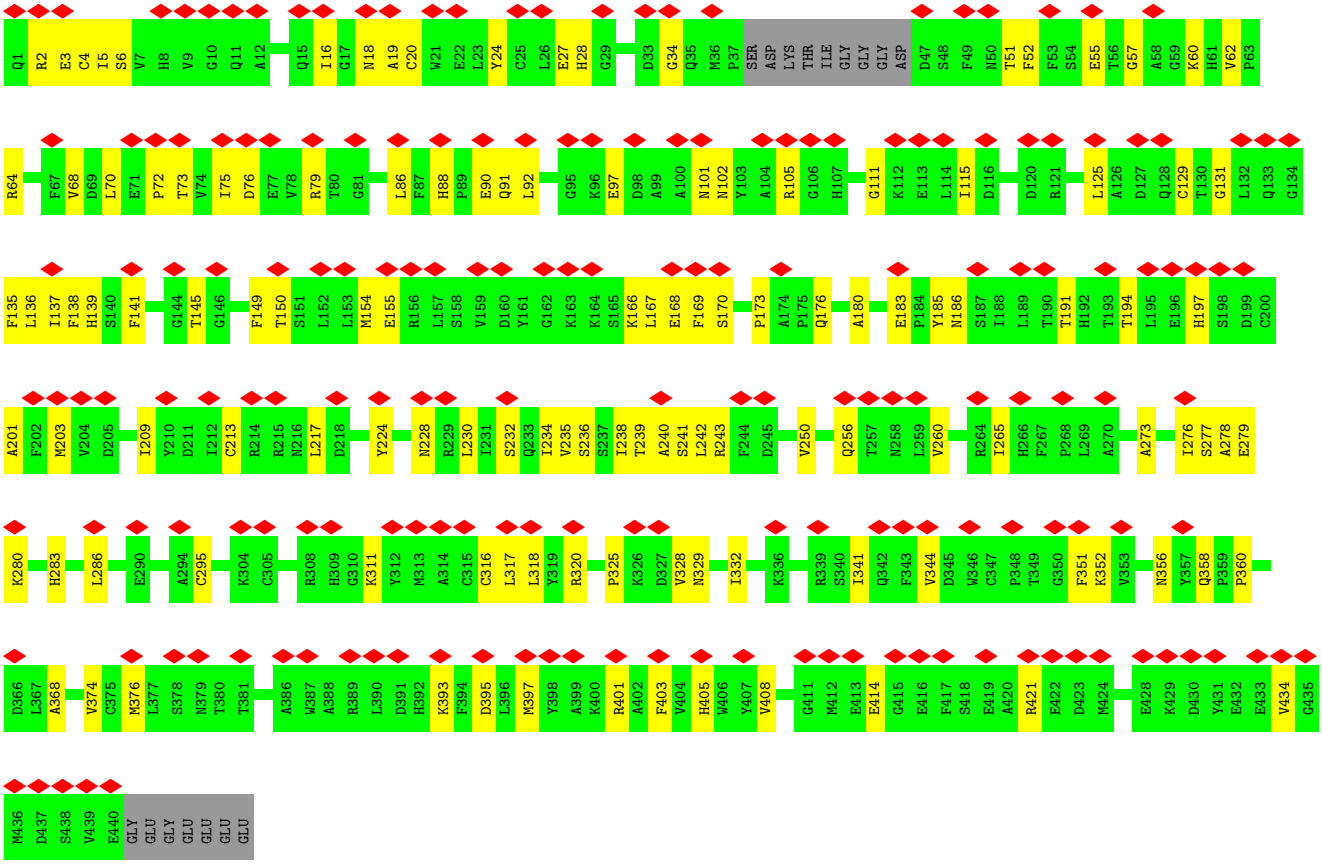






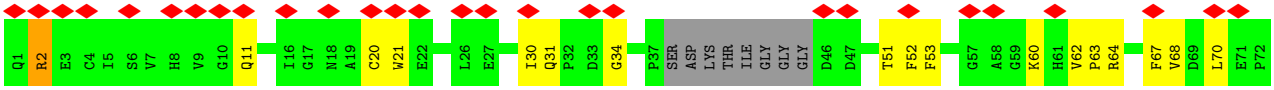
• Molecule 40: Tubulin alpha chain

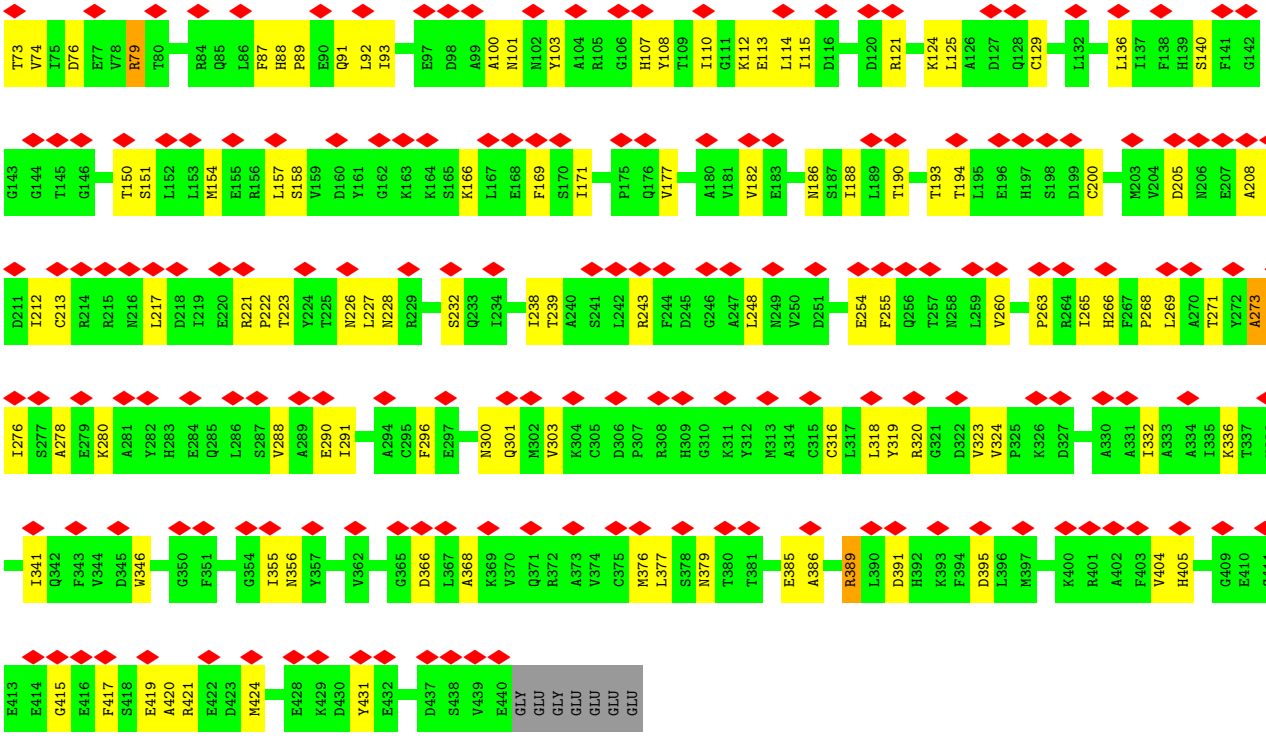
Chain PH:



• Molecule 40: Tubulin alpha chain

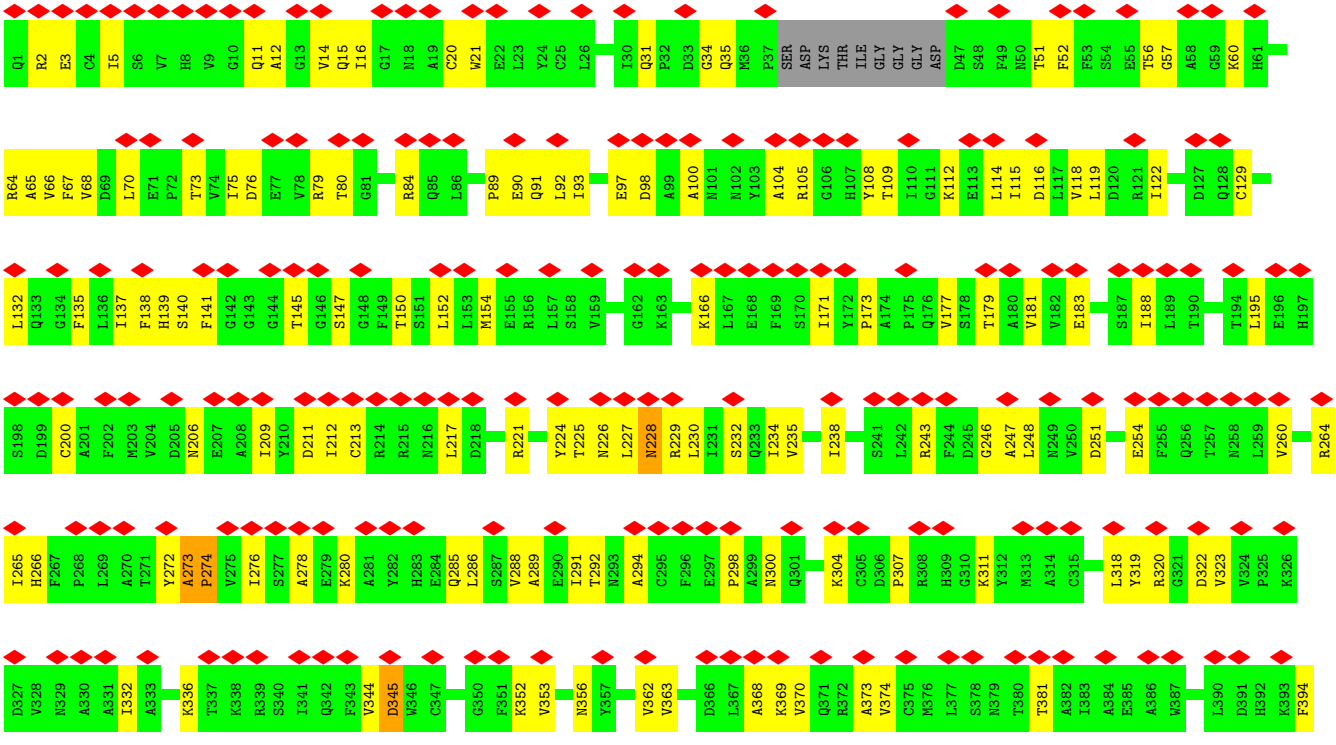
Chain QA:

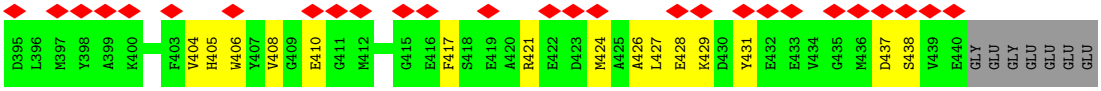




• Molecule 40: Tubulin alpha chain

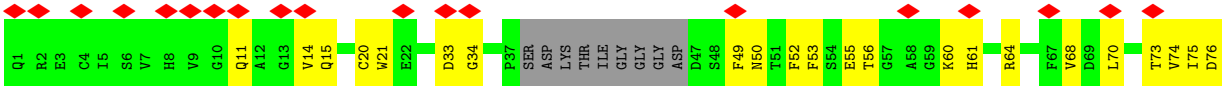
Chain QE:

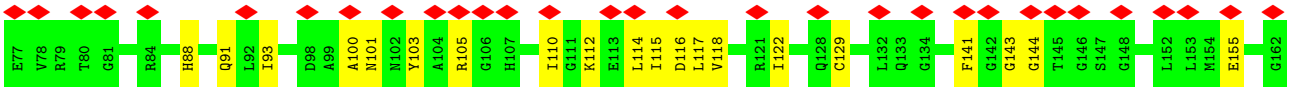


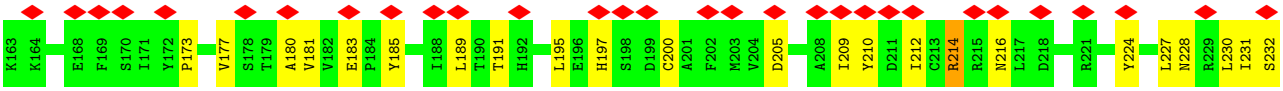


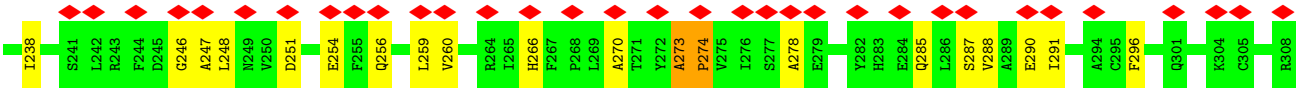
• Molecule 40: Tubulin alpha chain

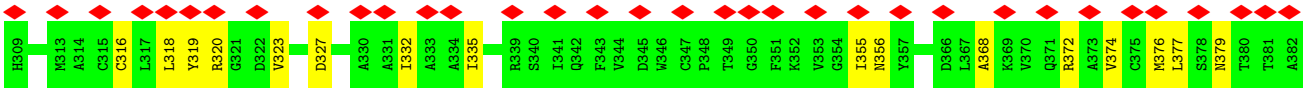
Chain QF:

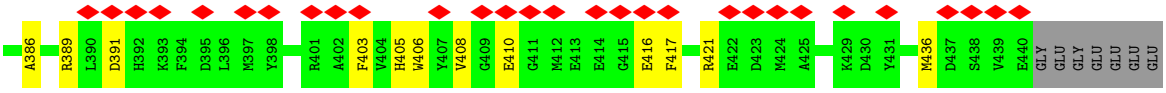






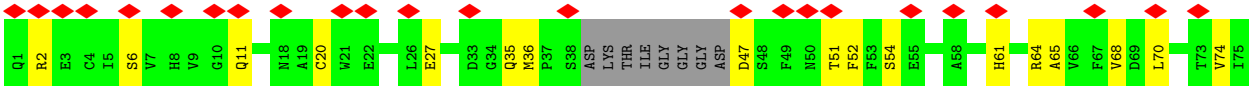


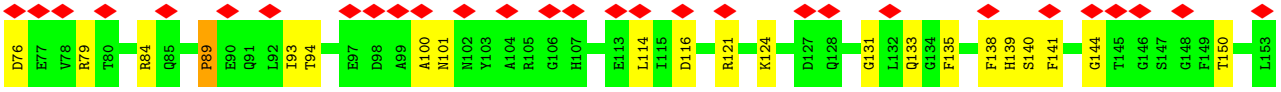


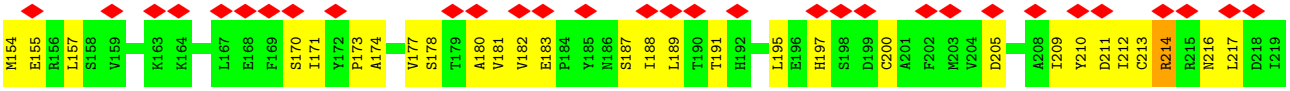


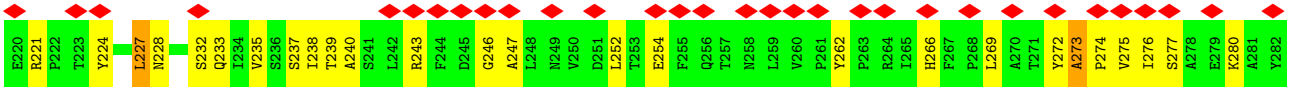
• Molecule 40: Tubulin alpha chain

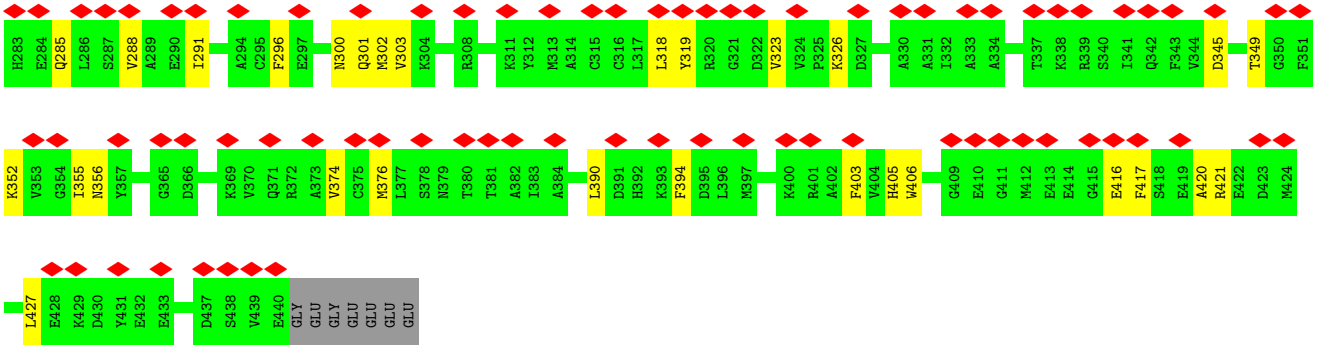
Chain QG:





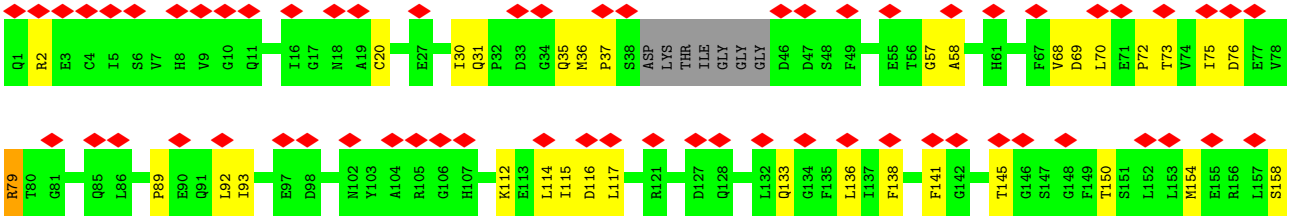






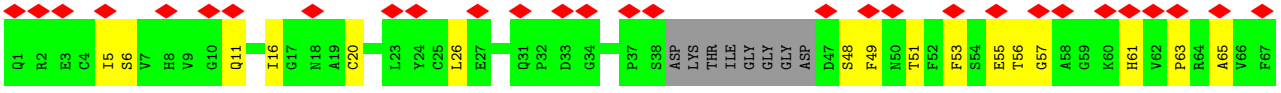
• Molecule 40: Tubulin alpha chain

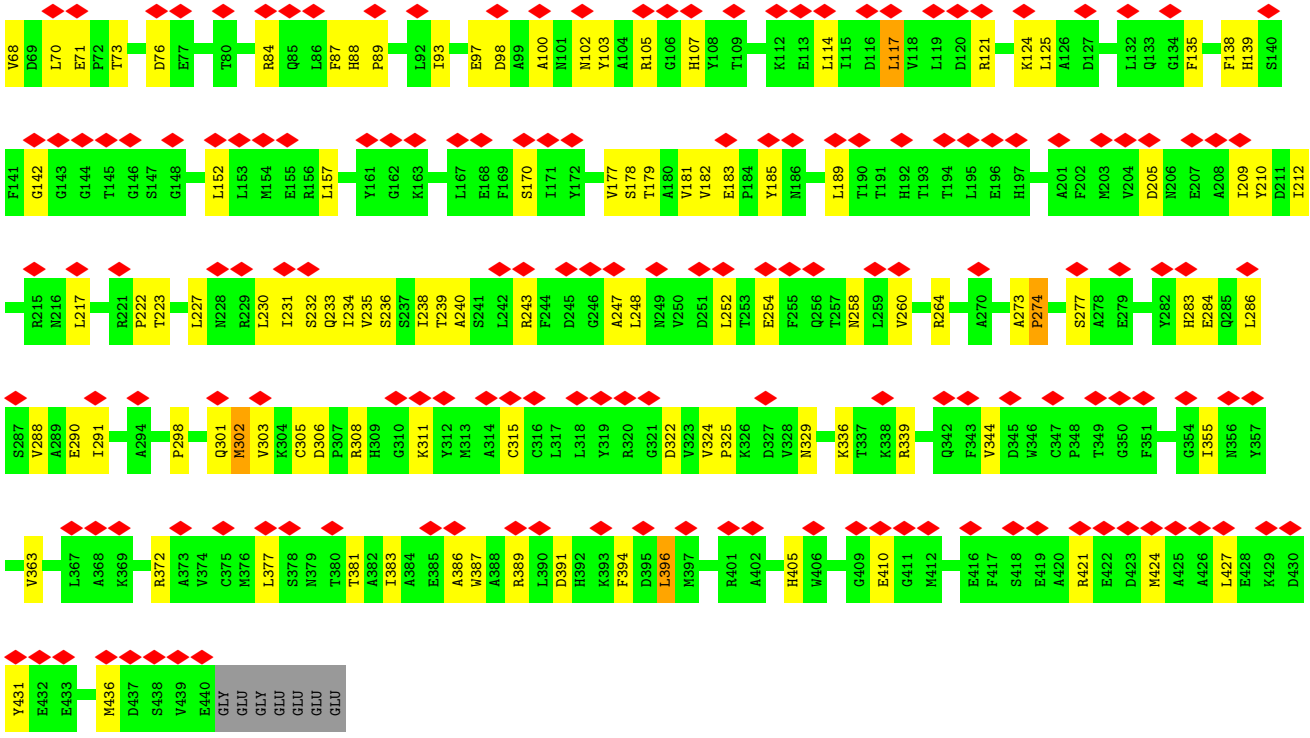
Chain QH:



• Molecule 40: Tubulin alpha chain

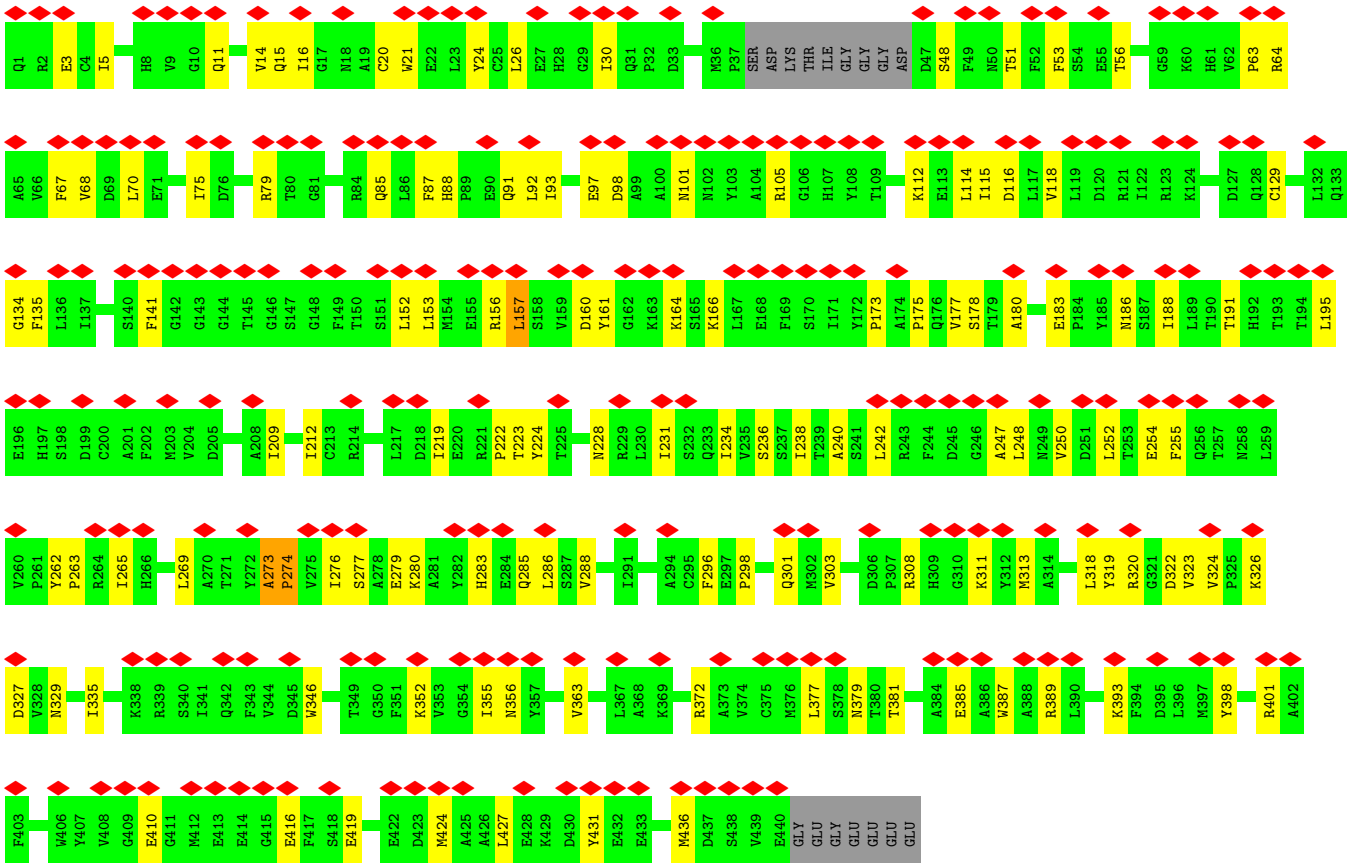
Chain RA:





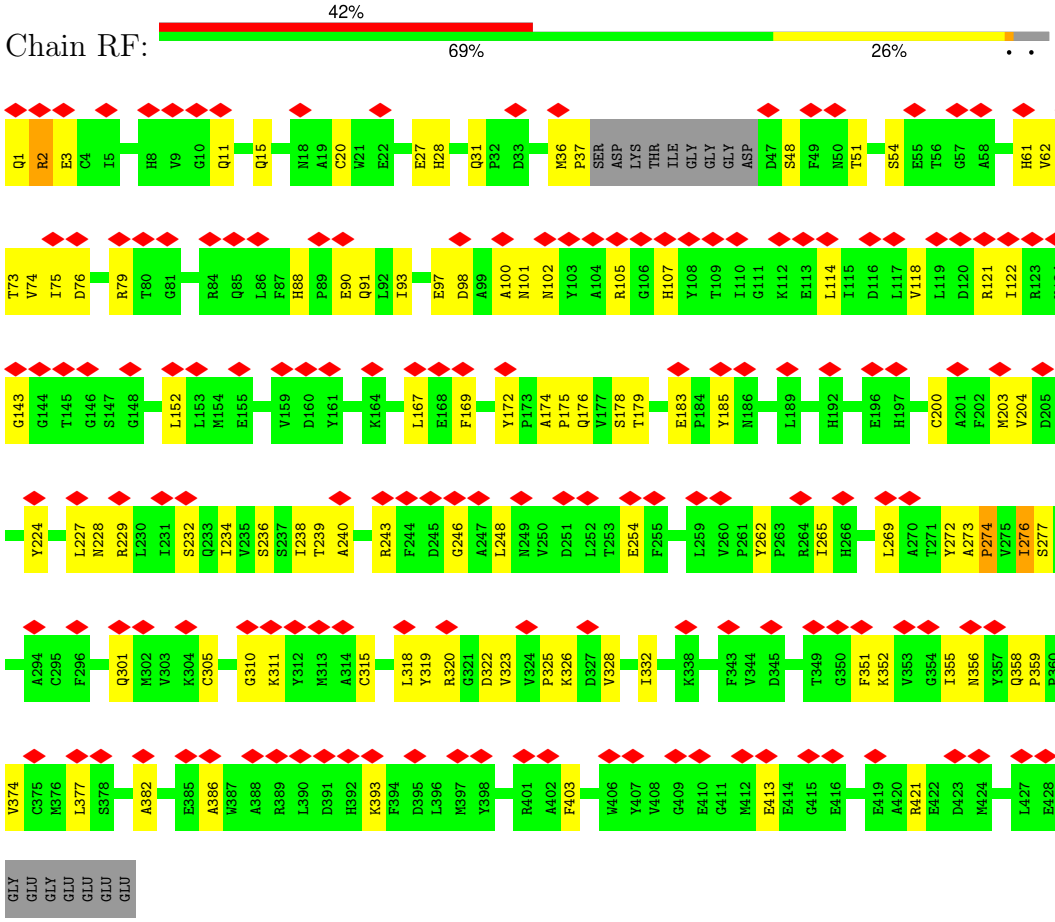
• Molecule 40: Tubulin alpha chain

Chain RE:



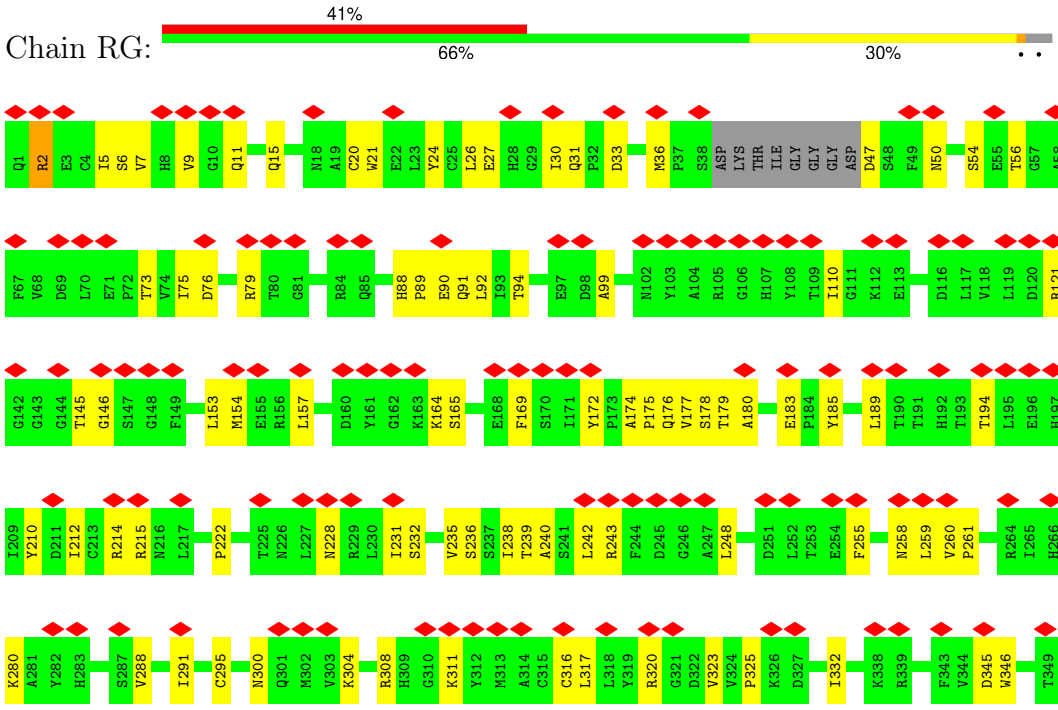
• Molecule 40: Tubulin alpha chain

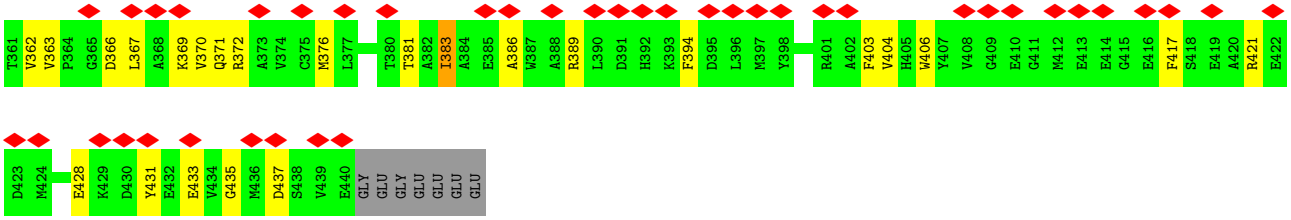
Chain RF:



• Molecule 40: Tubulin alpha chain

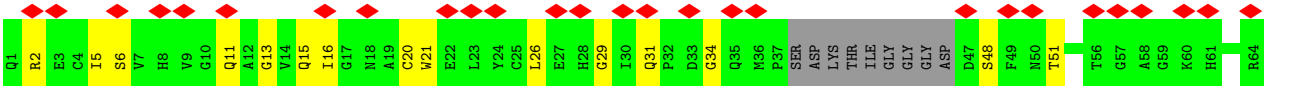
Chain RG:

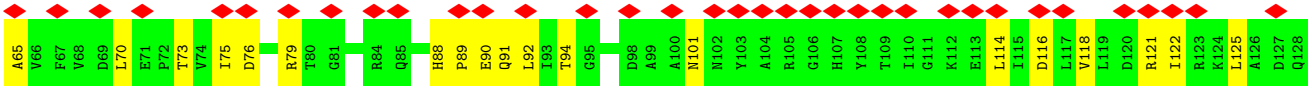


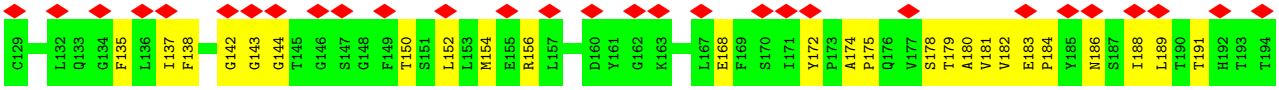


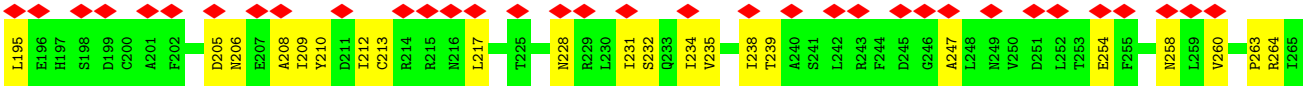
• Molecule 40: Tubulin alpha chain

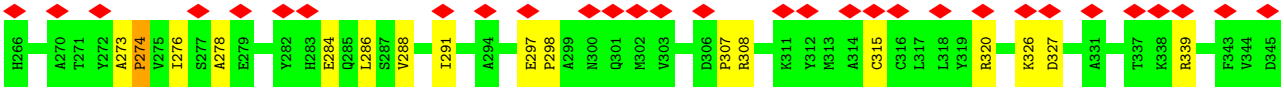
Chain RH:

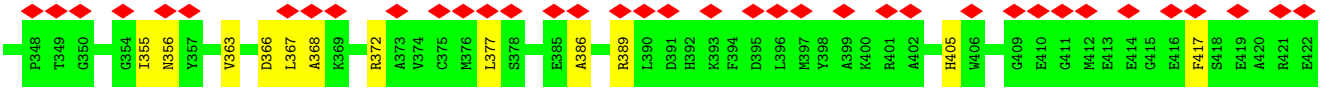


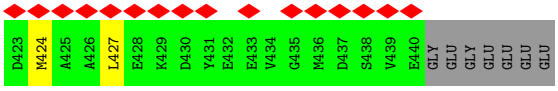






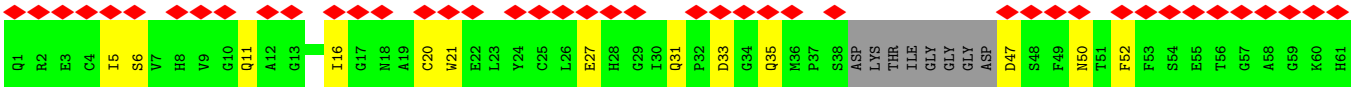


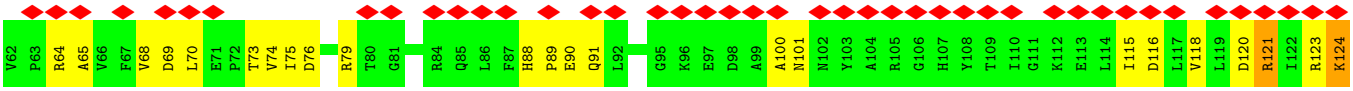


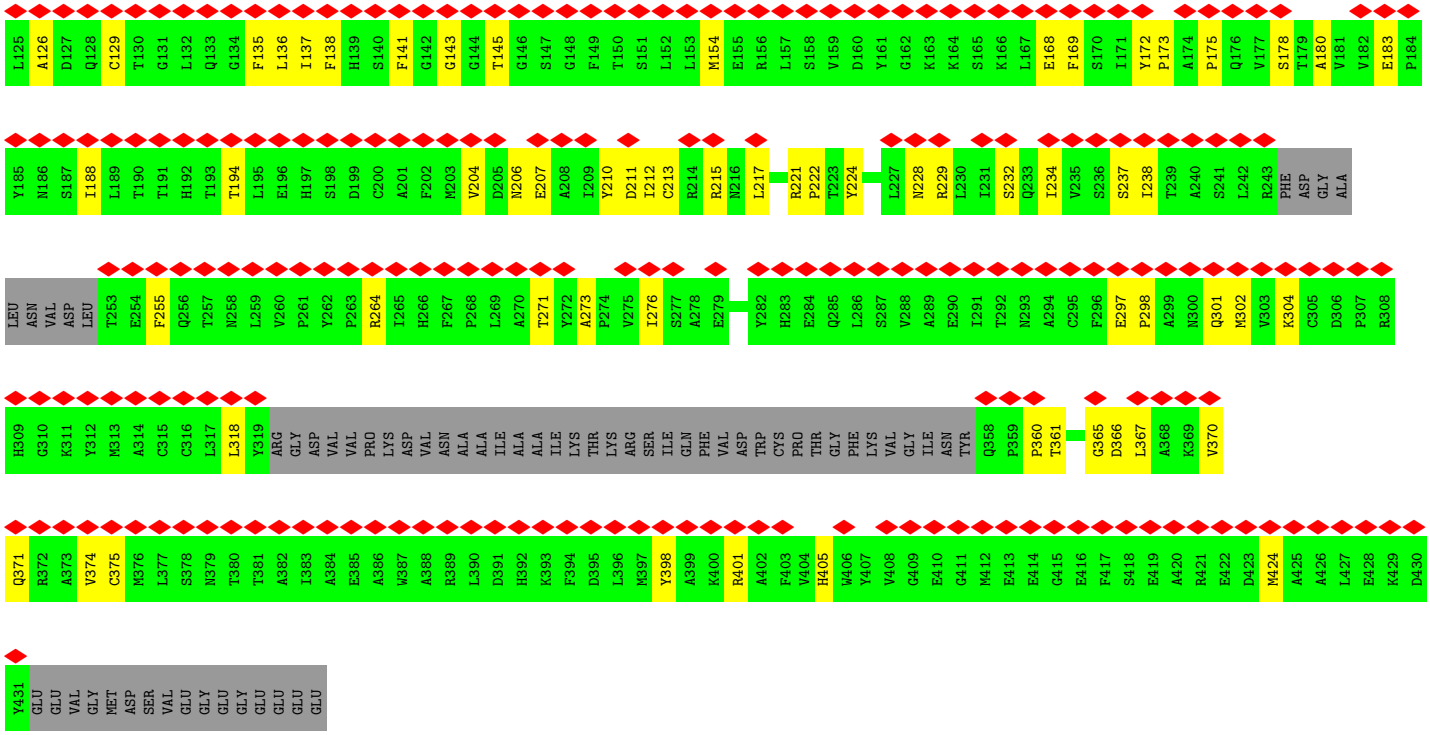


• Molecule 40: Tubulin alpha chain

Chain RI:





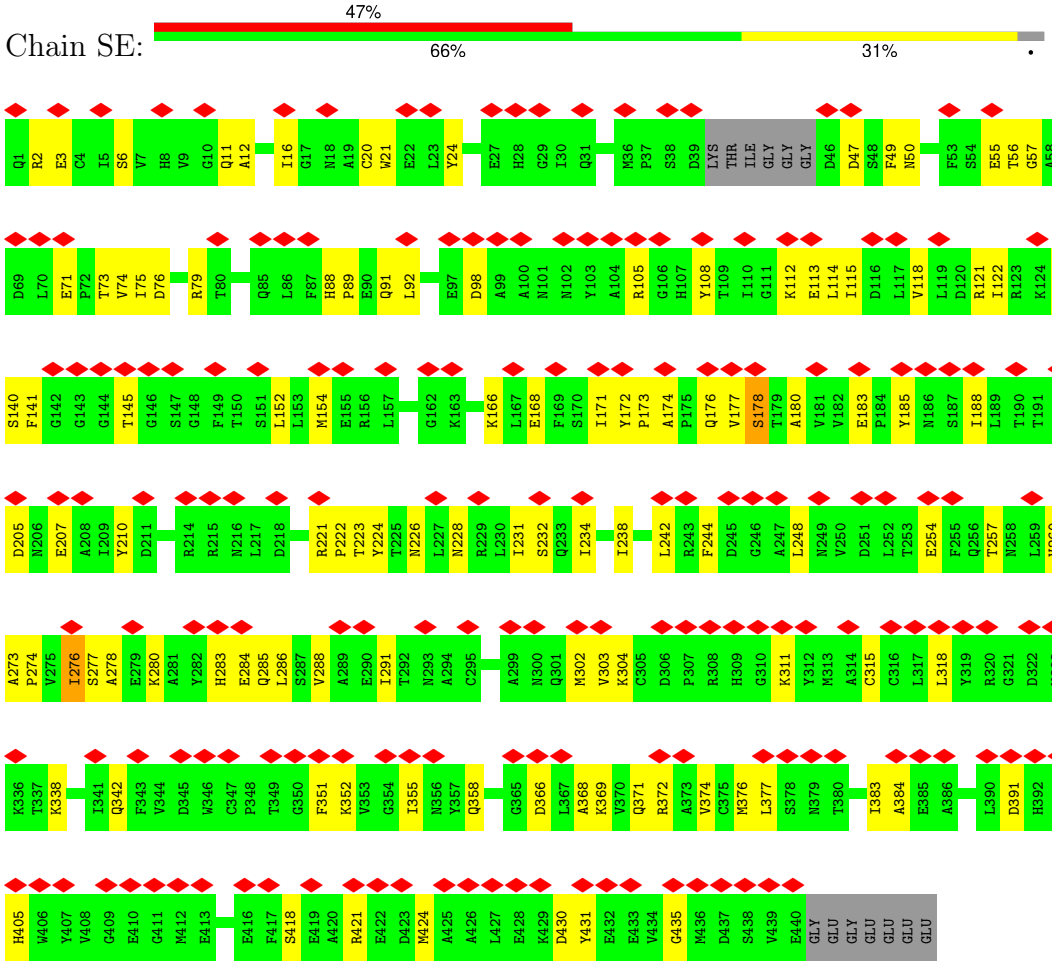


• Molecule 40: Tubulin alpha chain

Chain SA:

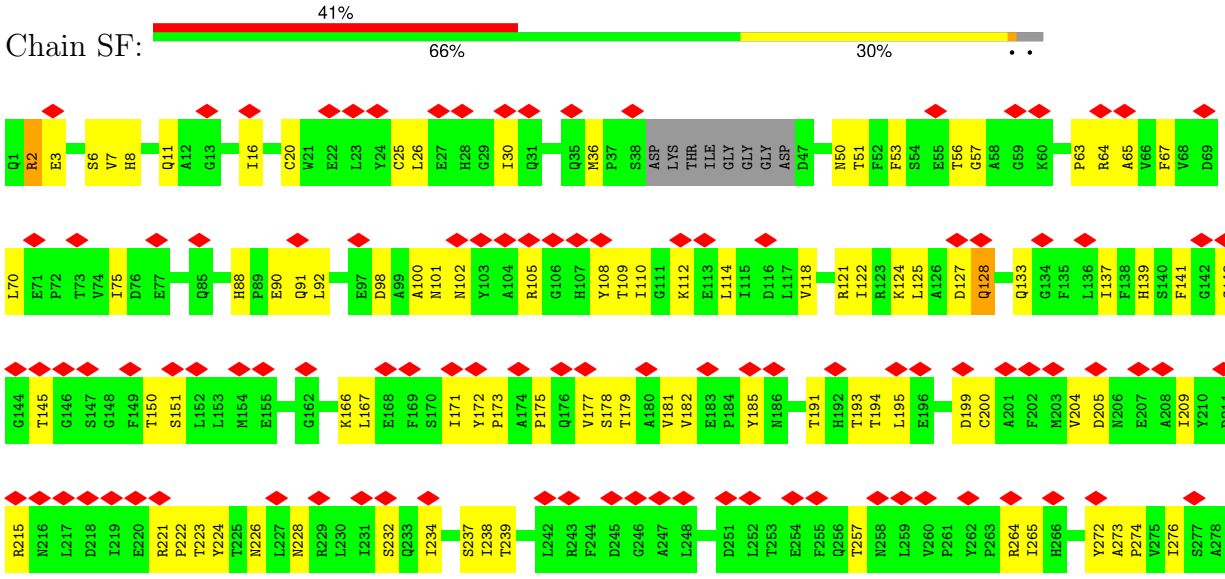
• Molecule 40: Tubulin alpha chain

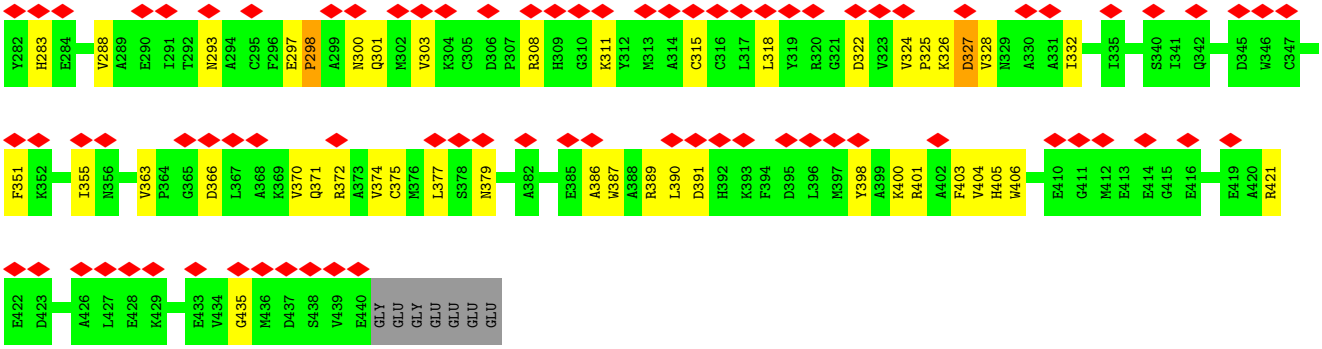
Chain SE:



• Molecule 40: Tubulin alpha chain

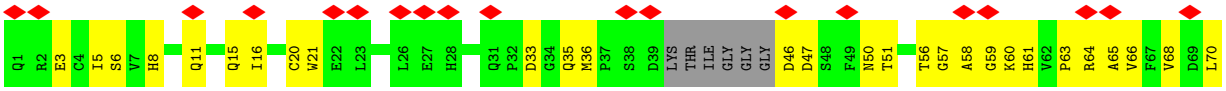
Chain SF:

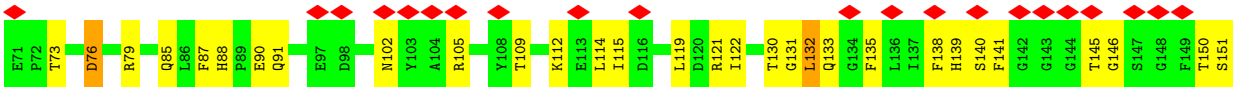


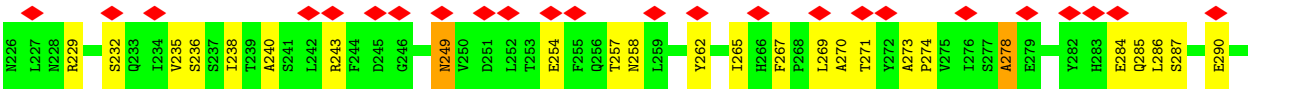


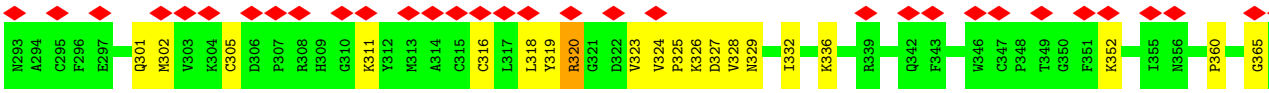
• Molecule 40: Tubulin alpha chain

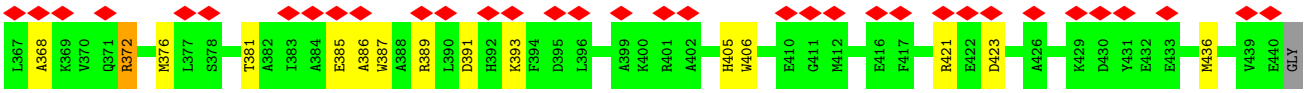
Chain SG:

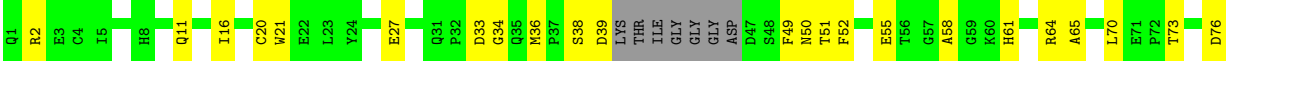






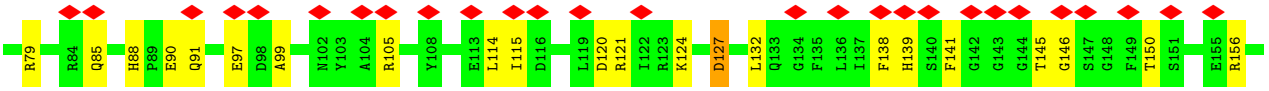


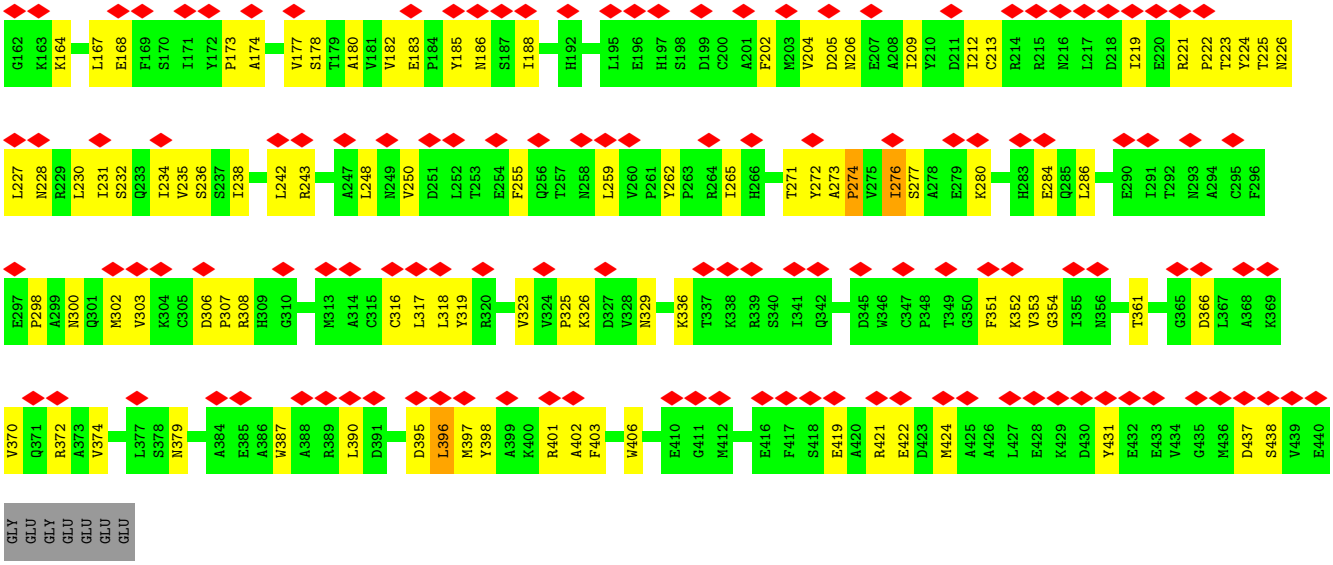




• Molecule 40: Tubulin alpha chain

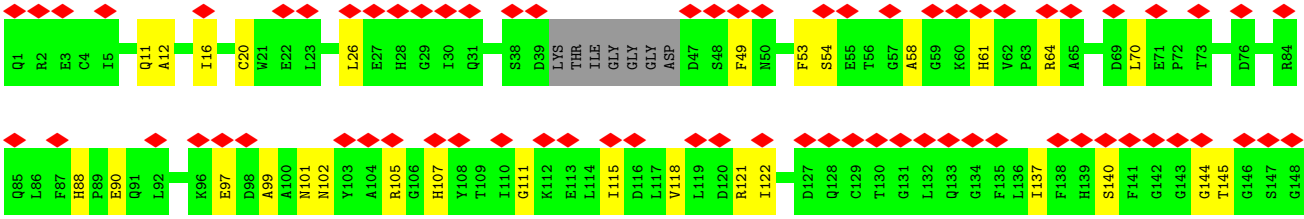
Chain SH:





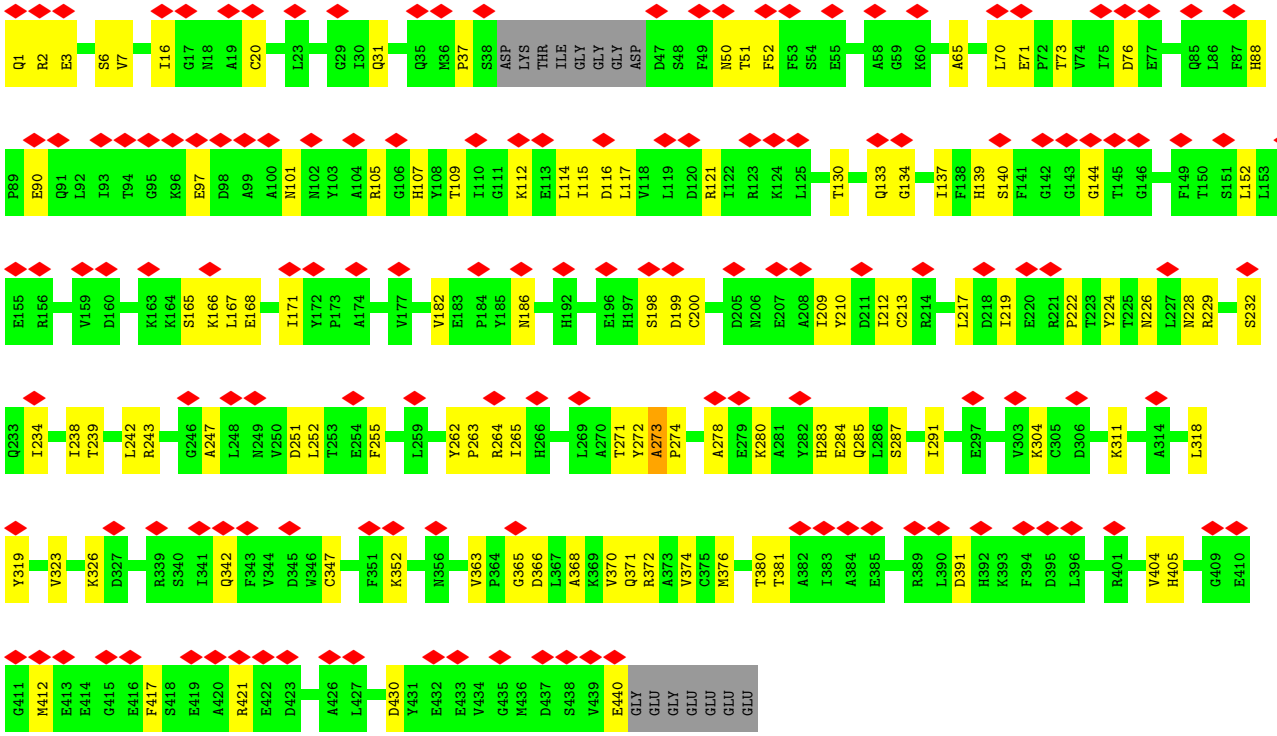
• Molecule 40: Tubulin alpha chain

Chain SI:



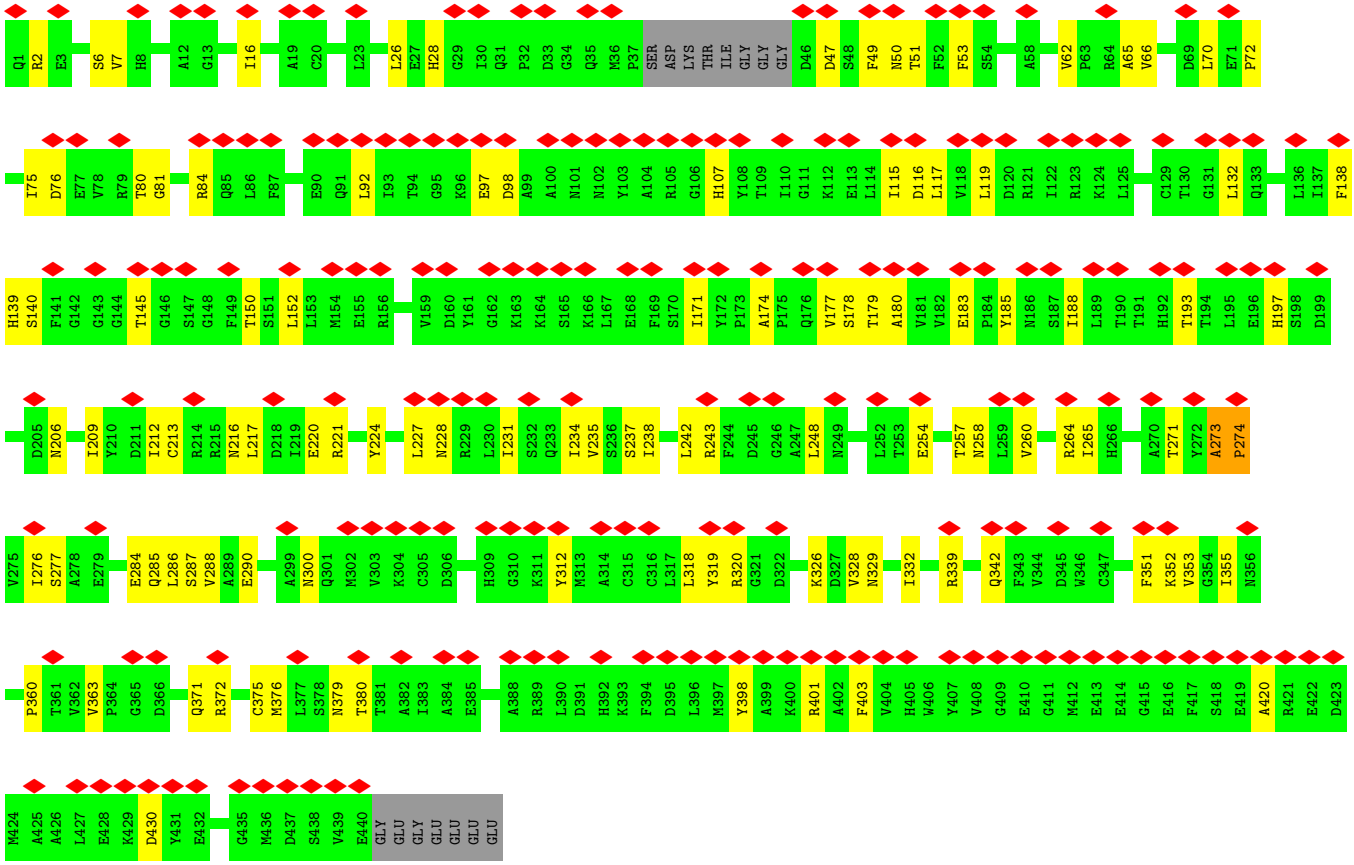
• Molecule 40: Tubulin alpha chain

Chain TA:



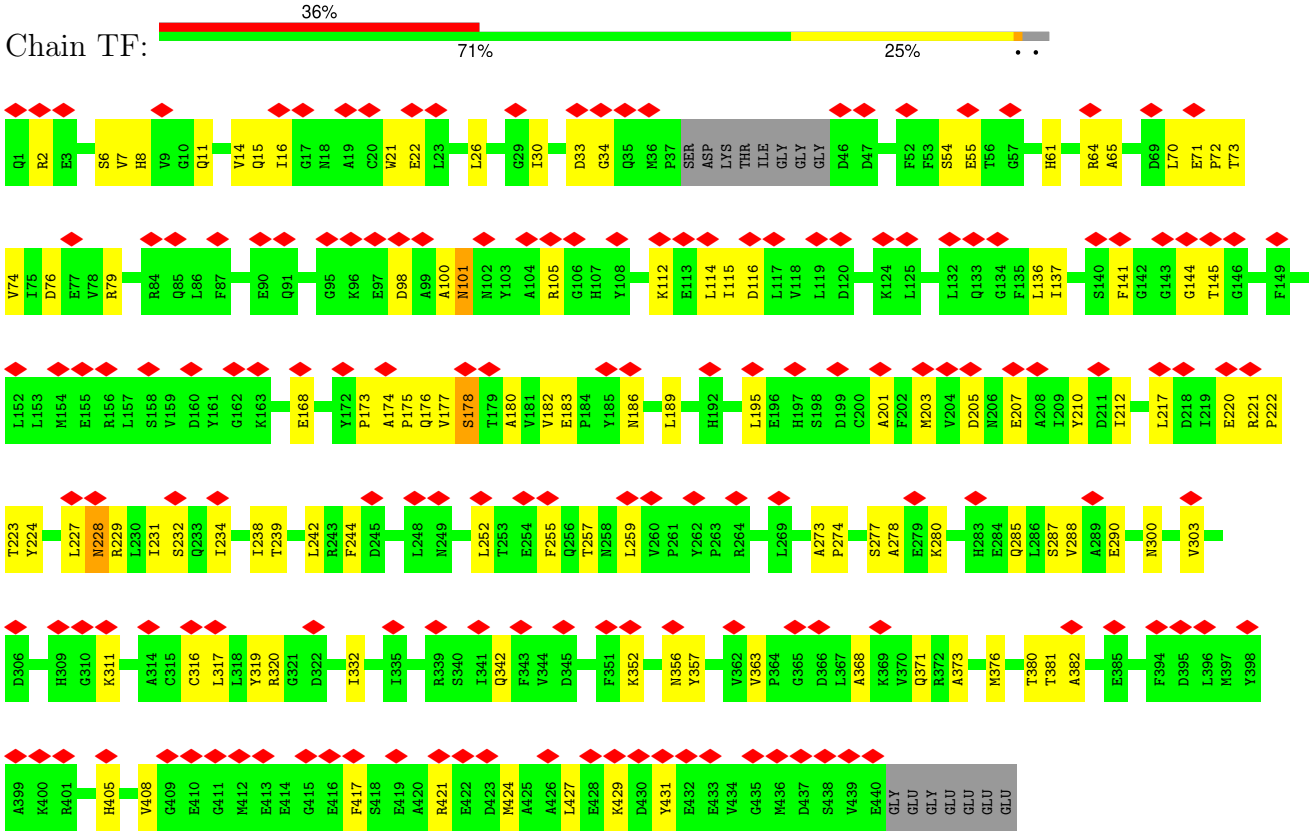
• Molecule 40: Tubulin alpha chain

Chain TE:



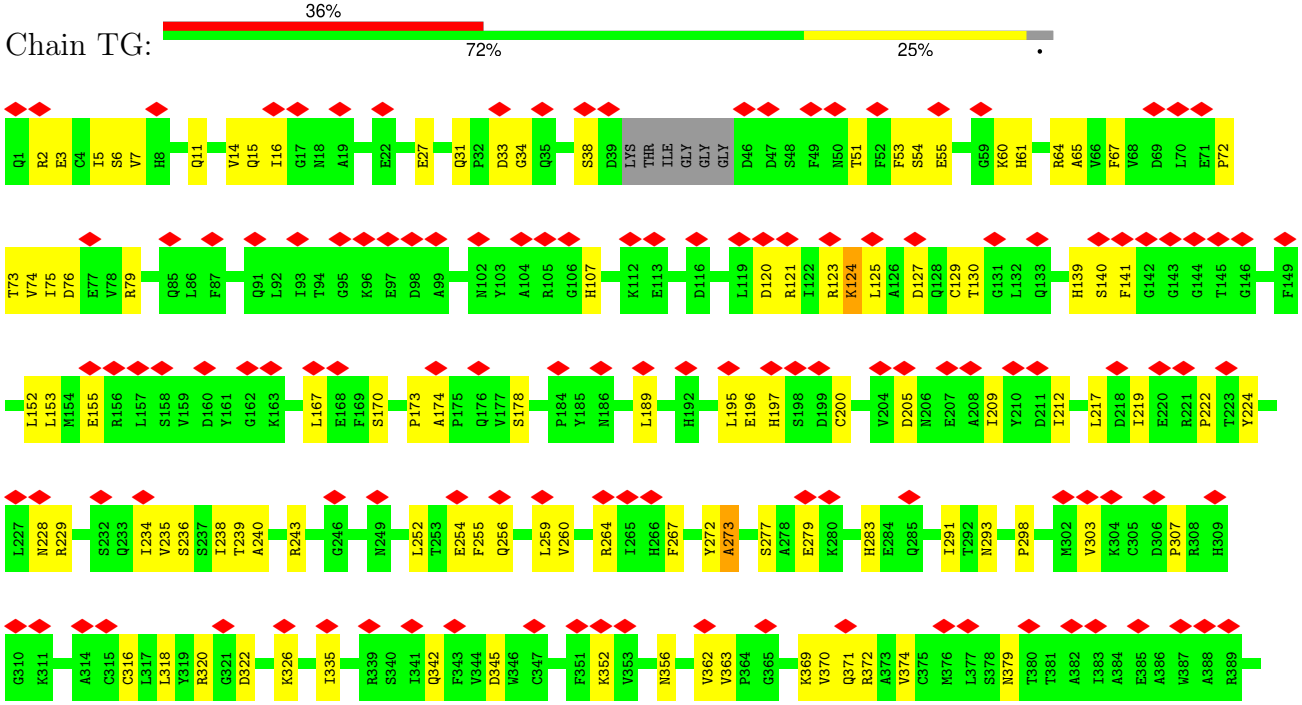
• Molecule 40: Tubulin alpha chain

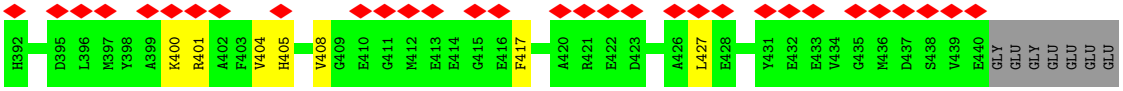
Chain TF:



• Molecule 40: Tubulin alpha chain

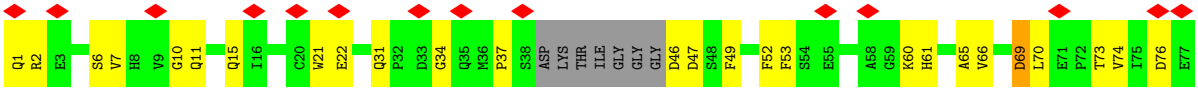
Chain TG:

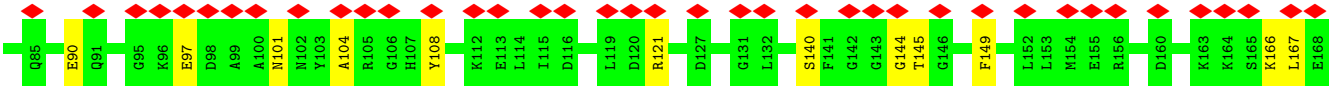


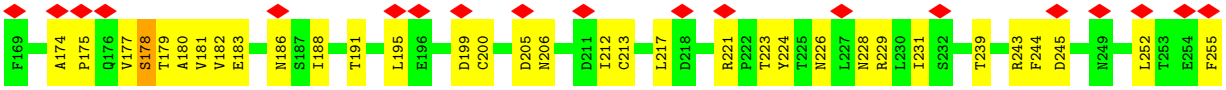


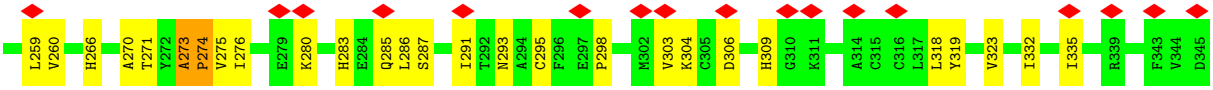
• Molecule 40: Tubulin alpha chain

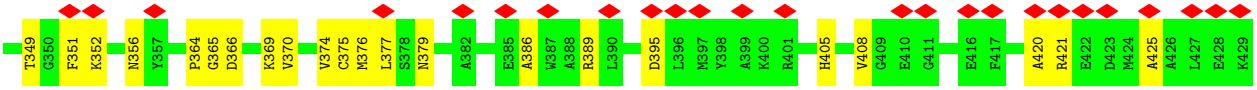
Chain TH:

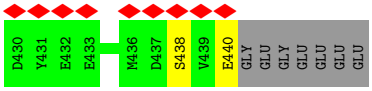






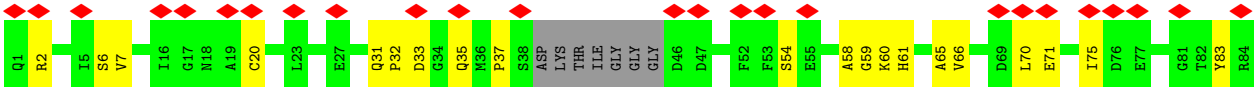


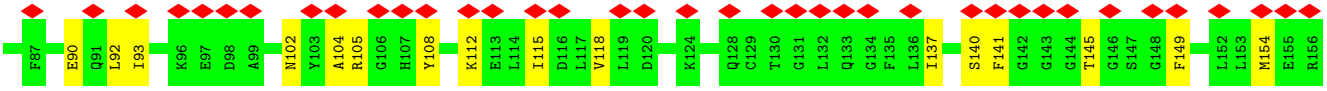


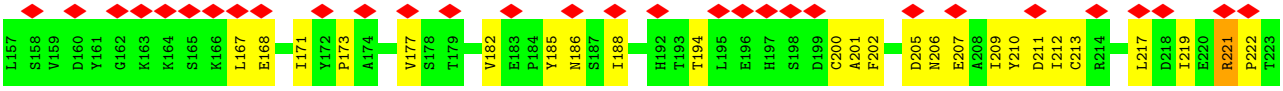


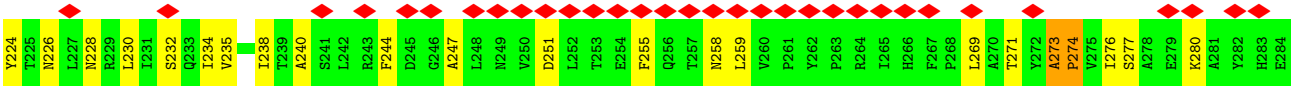
• Molecule 40: Tubulin alpha chain

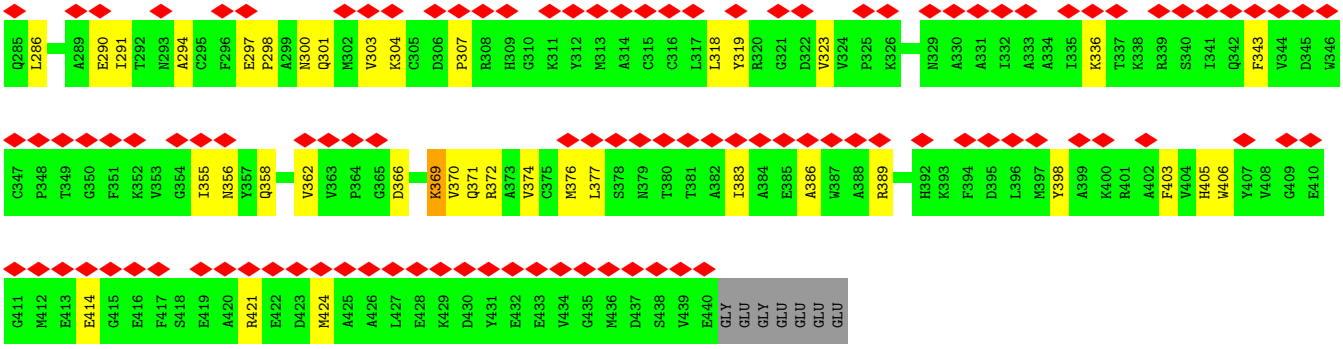
Chain TI:





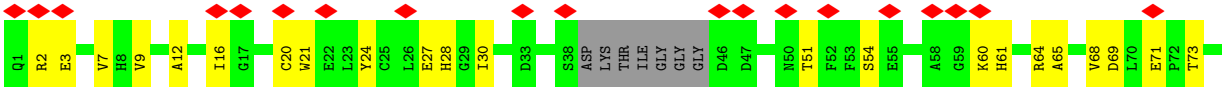


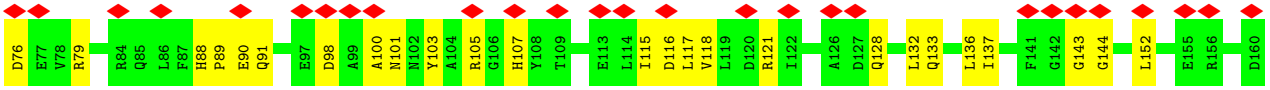


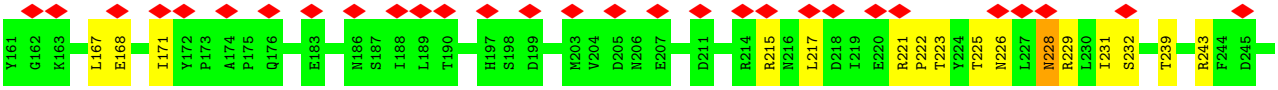


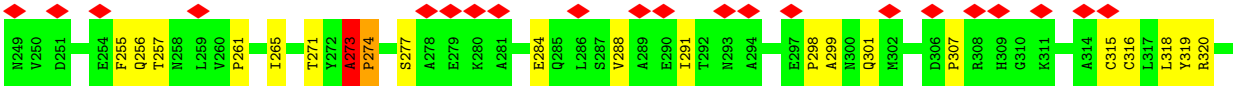
• Molecule 40: Tubulin alpha chain

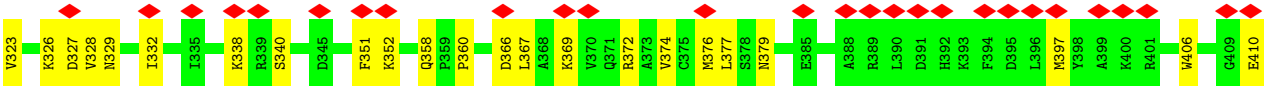
Chain UA:

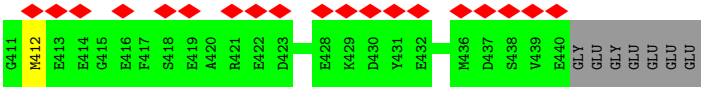






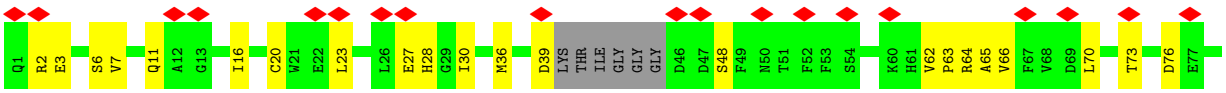


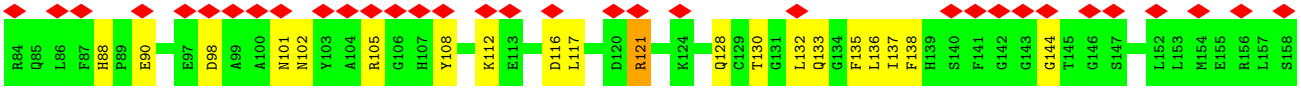


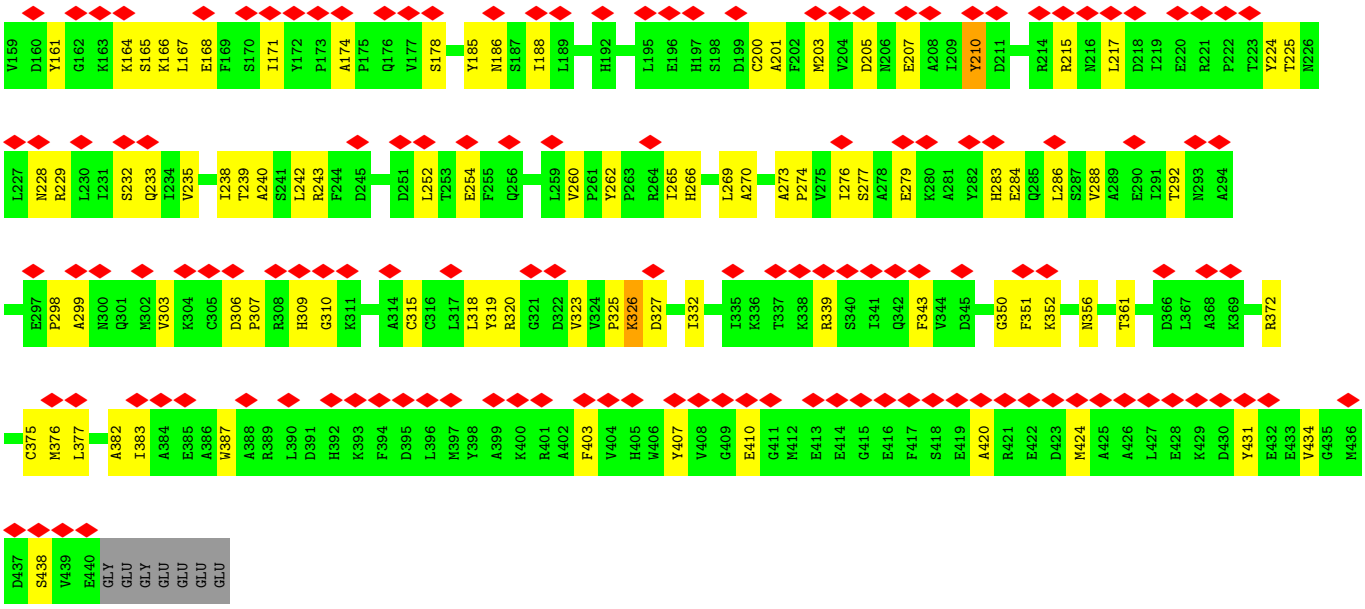


• Molecule 40: Tubulin alpha chain

Chain UE:

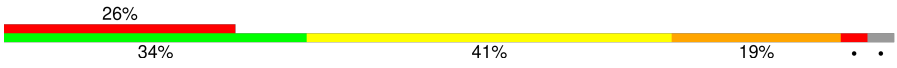


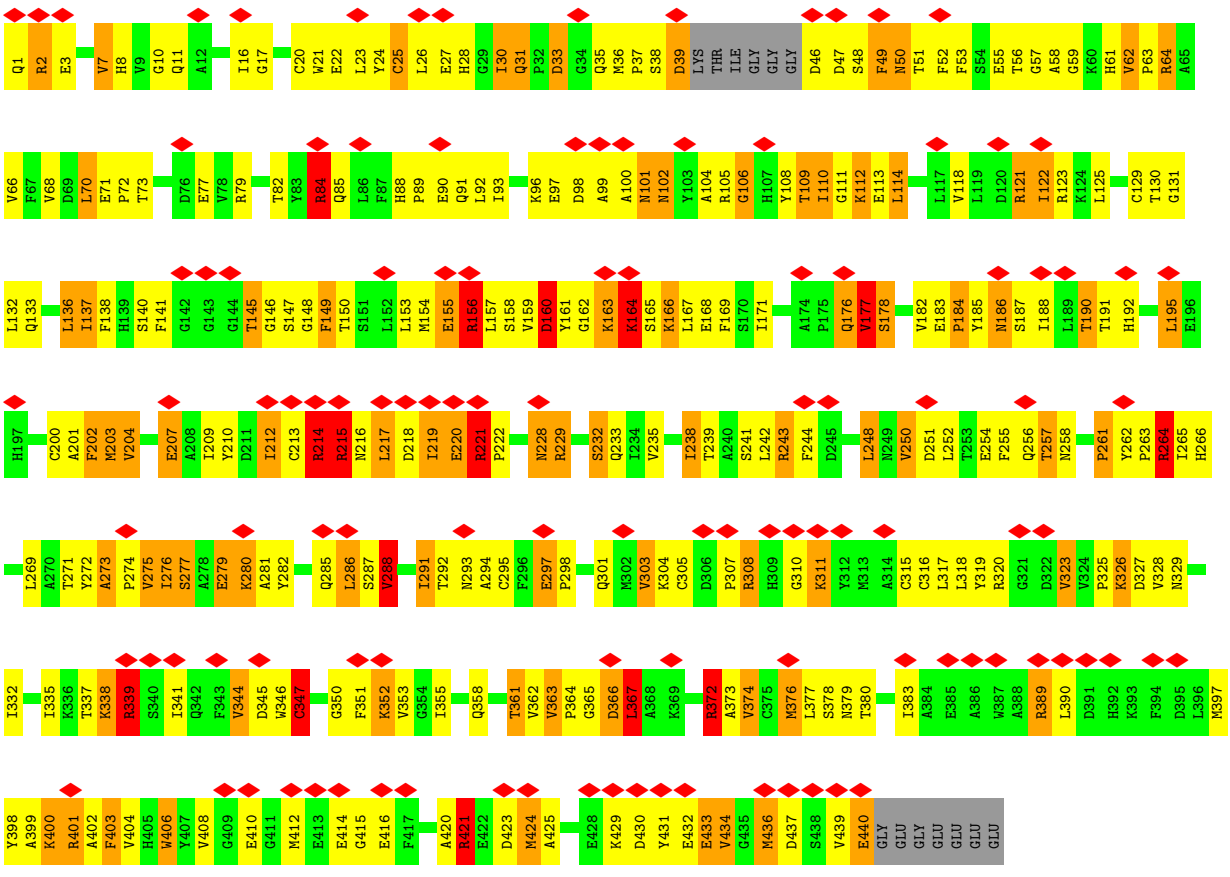




• Molecule 40: Tubulin alpha chain

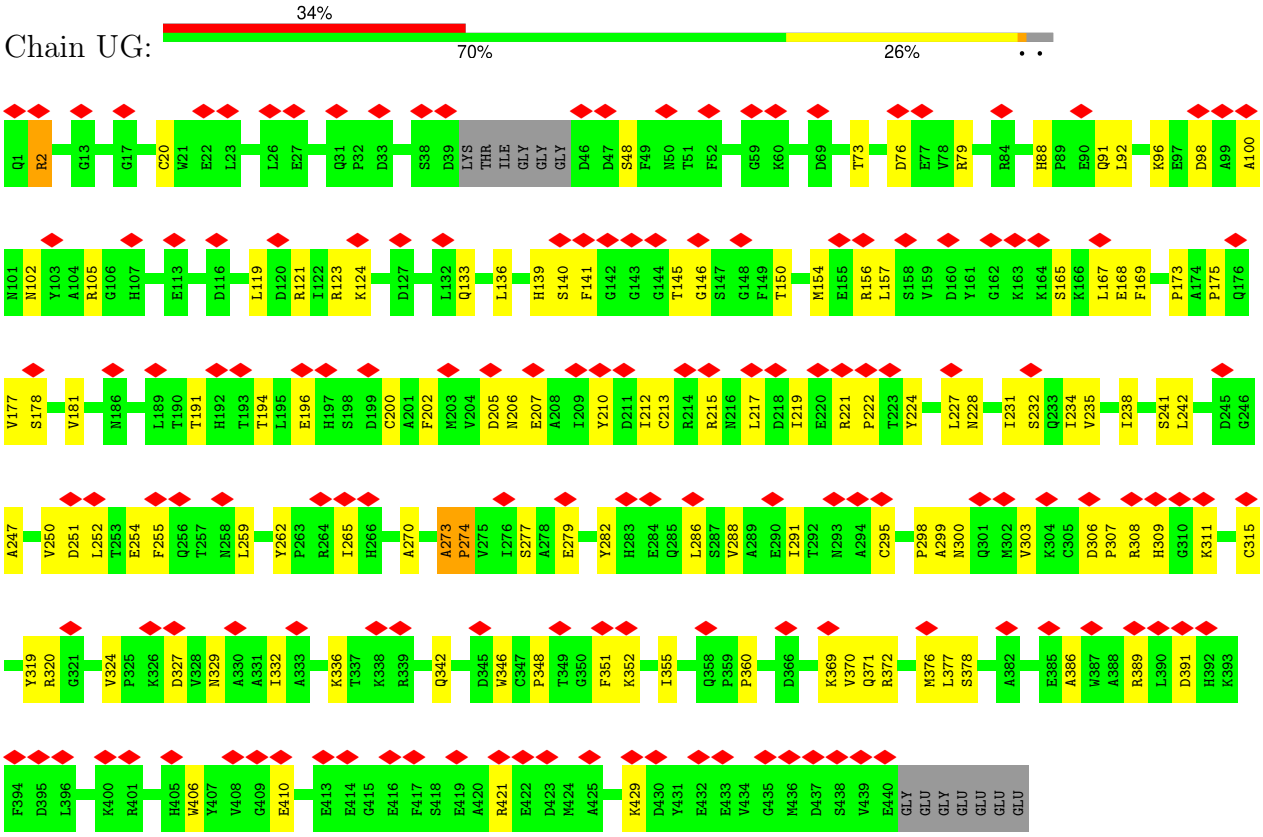
Chain UF:





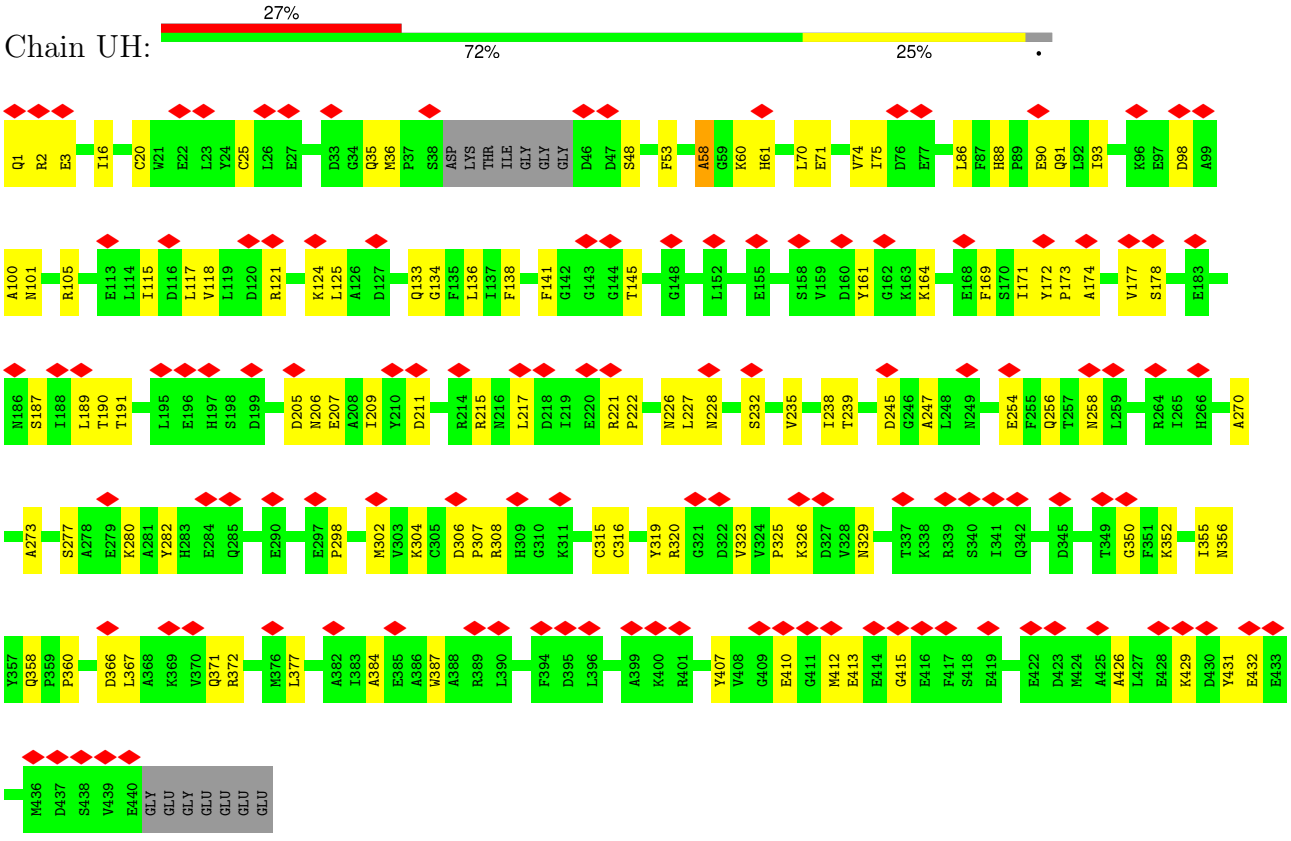
• Molecule 40: Tubulin alpha chain

Chain UG:



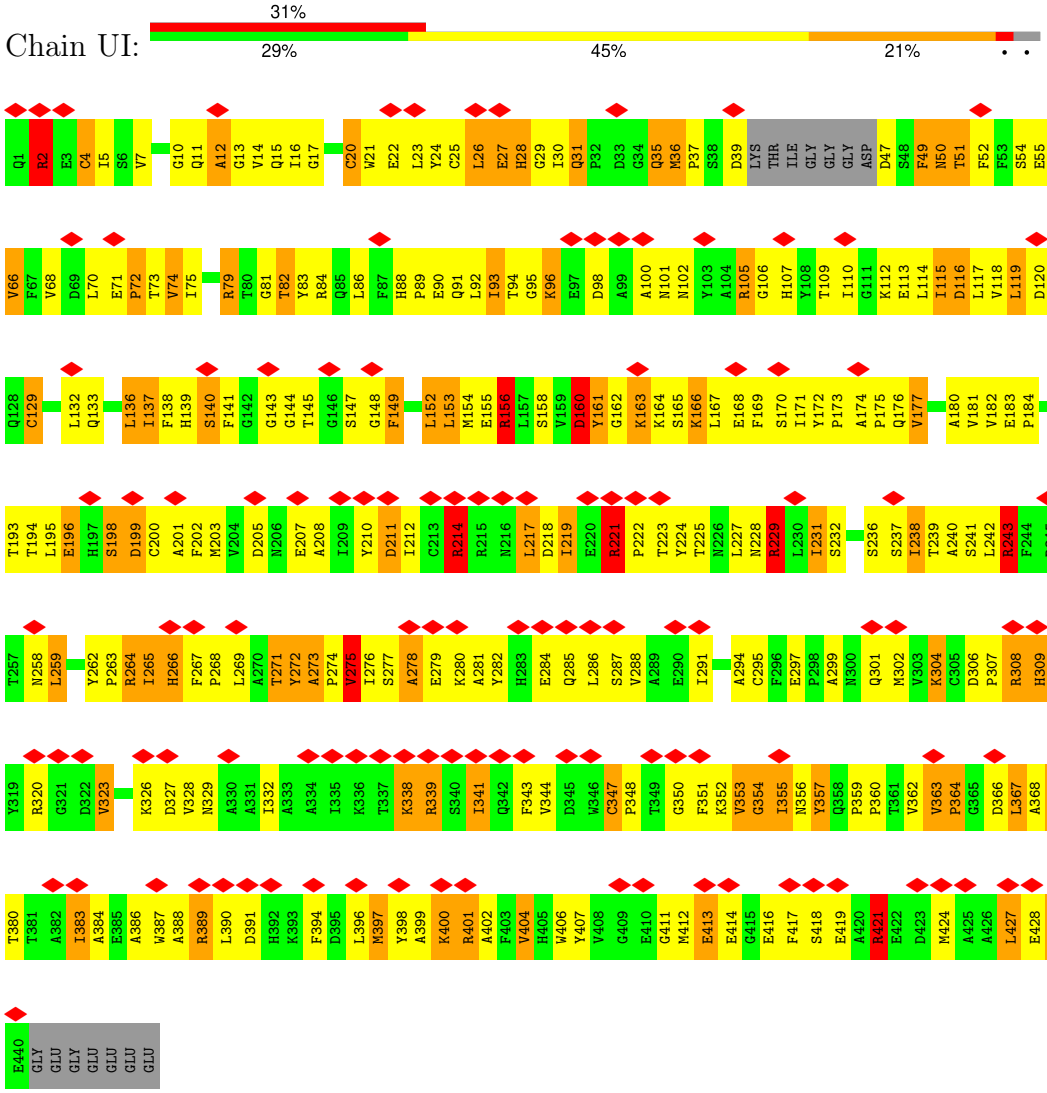
• Molecule 40: Tubulin alpha chain

Chain UH:



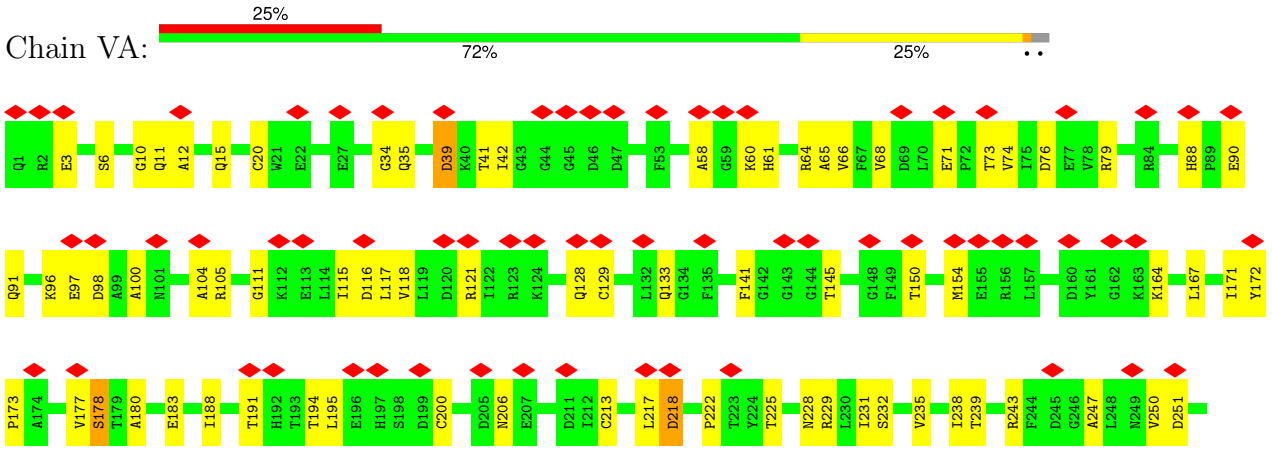
• Molecule 40: Tubulin alpha chain

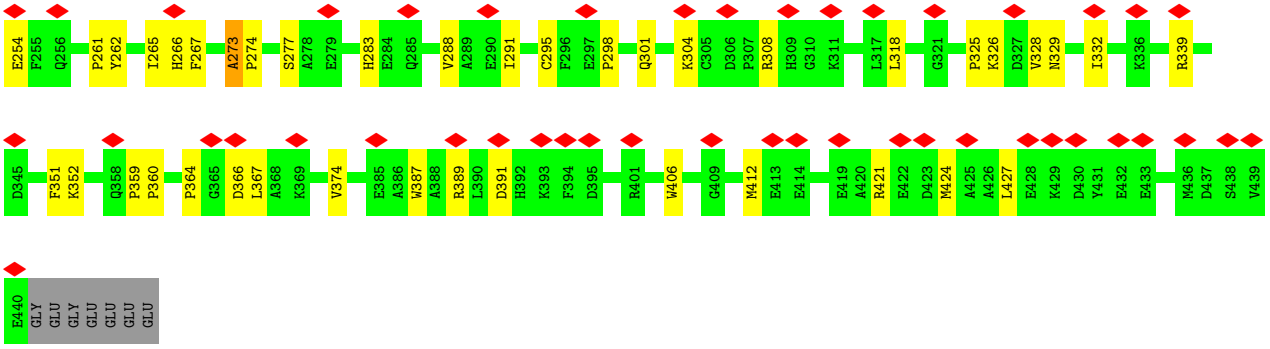
Chain UI:



• Molecule 40: Tubulin alpha chain

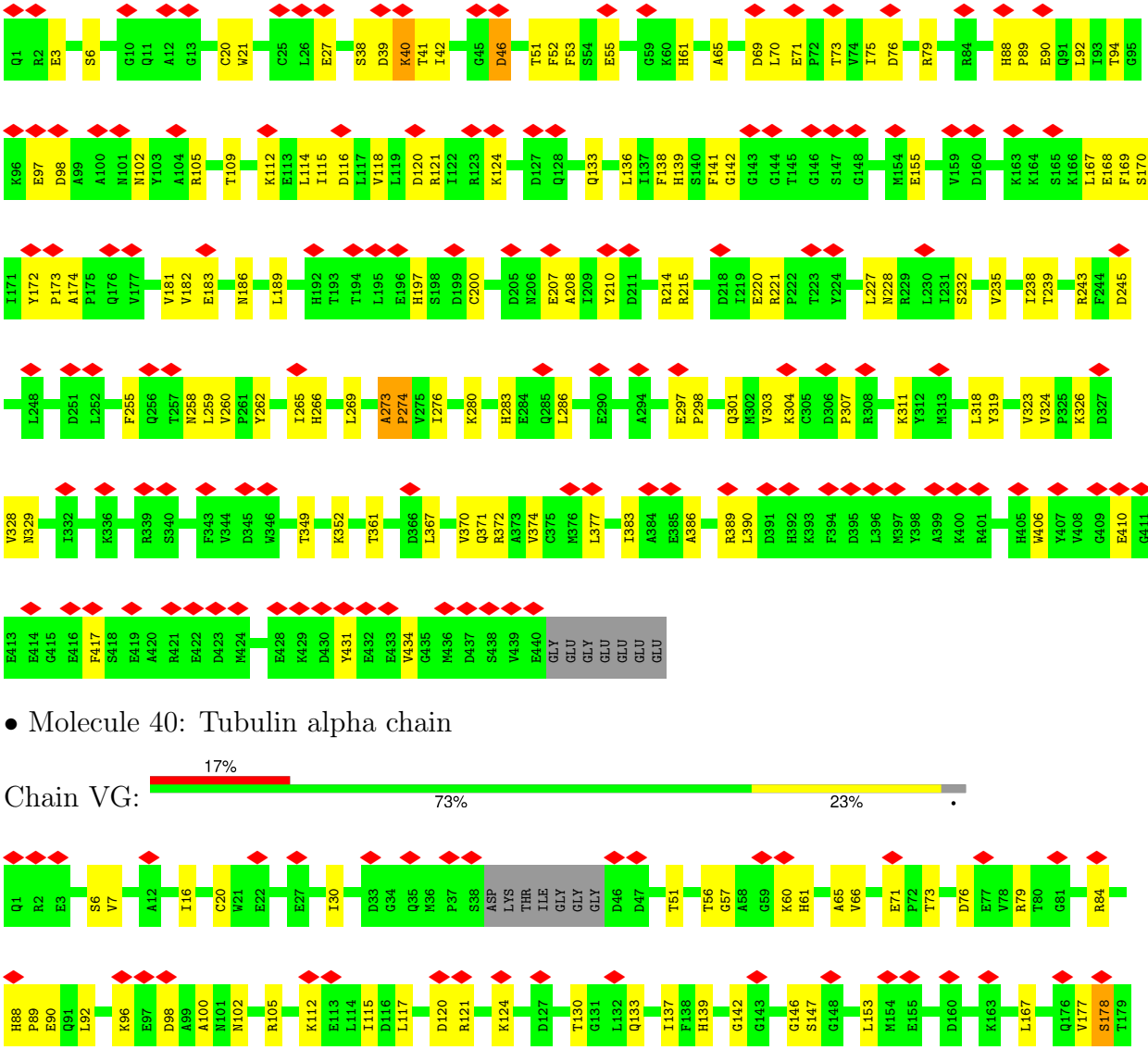
Chain VA:





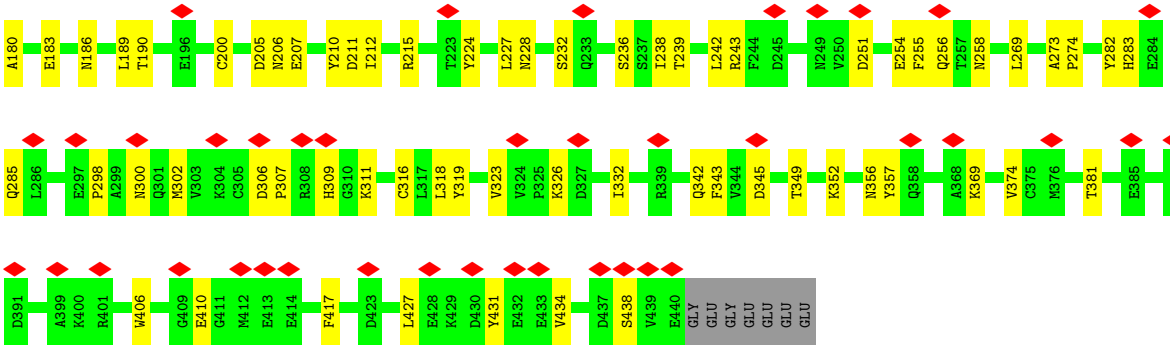
• Molecule 40: Tubulin alpha chain

Chain VF:



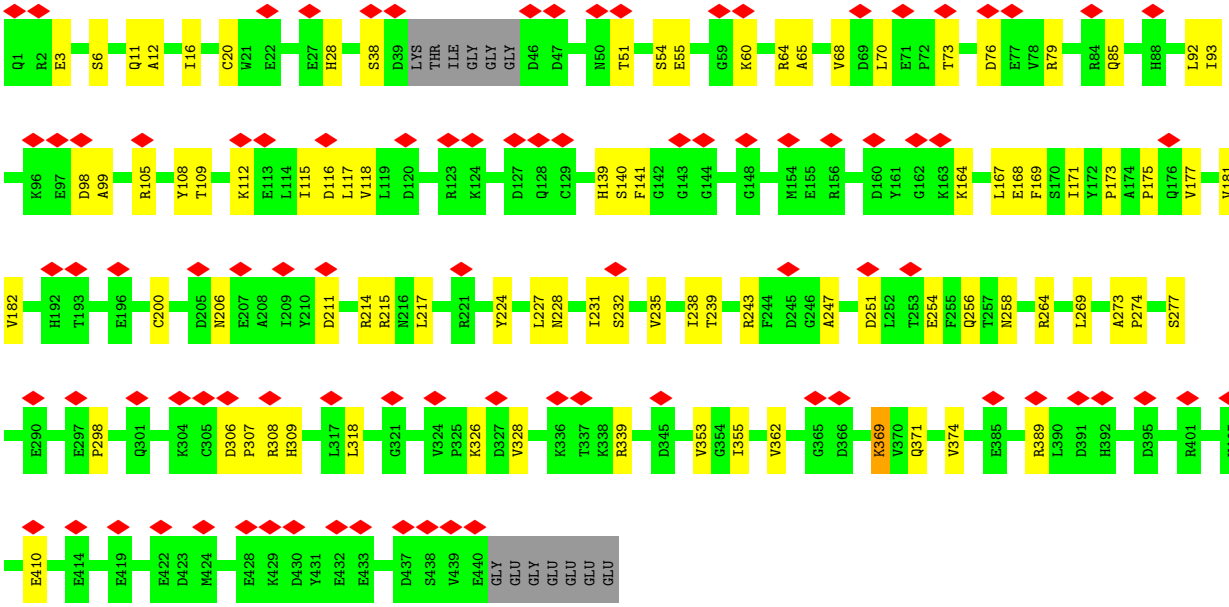
• Molecule 40: Tubulin alpha chain

Chain VG:



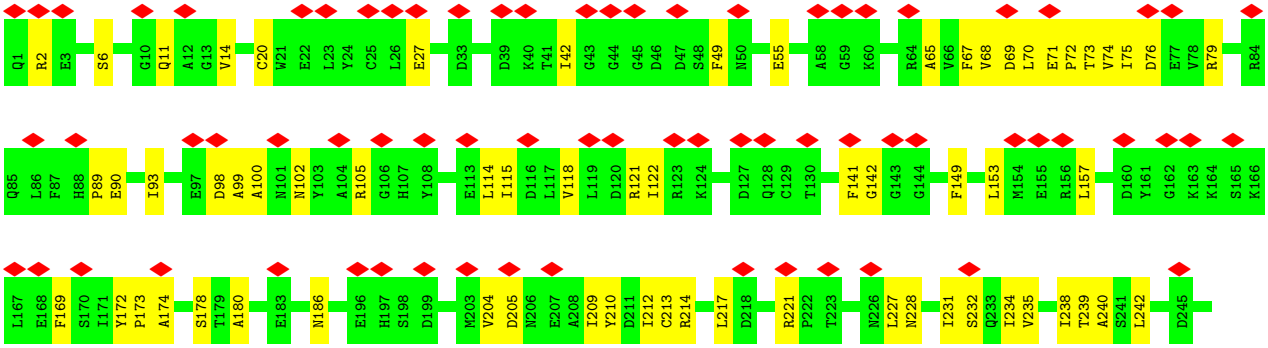
• Molecule 40: Tubulin alpha chain

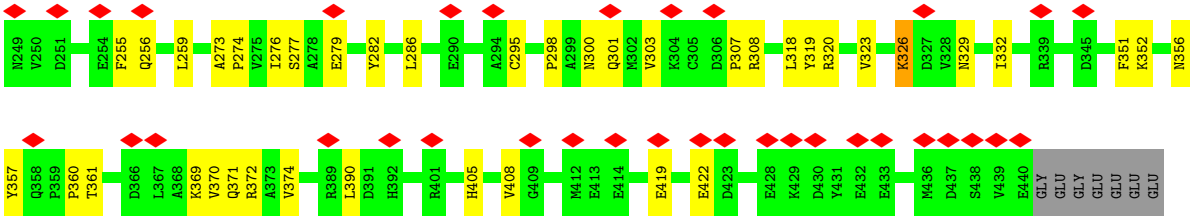
Chain VH:



• Molecule 40: Tubulin alpha chain

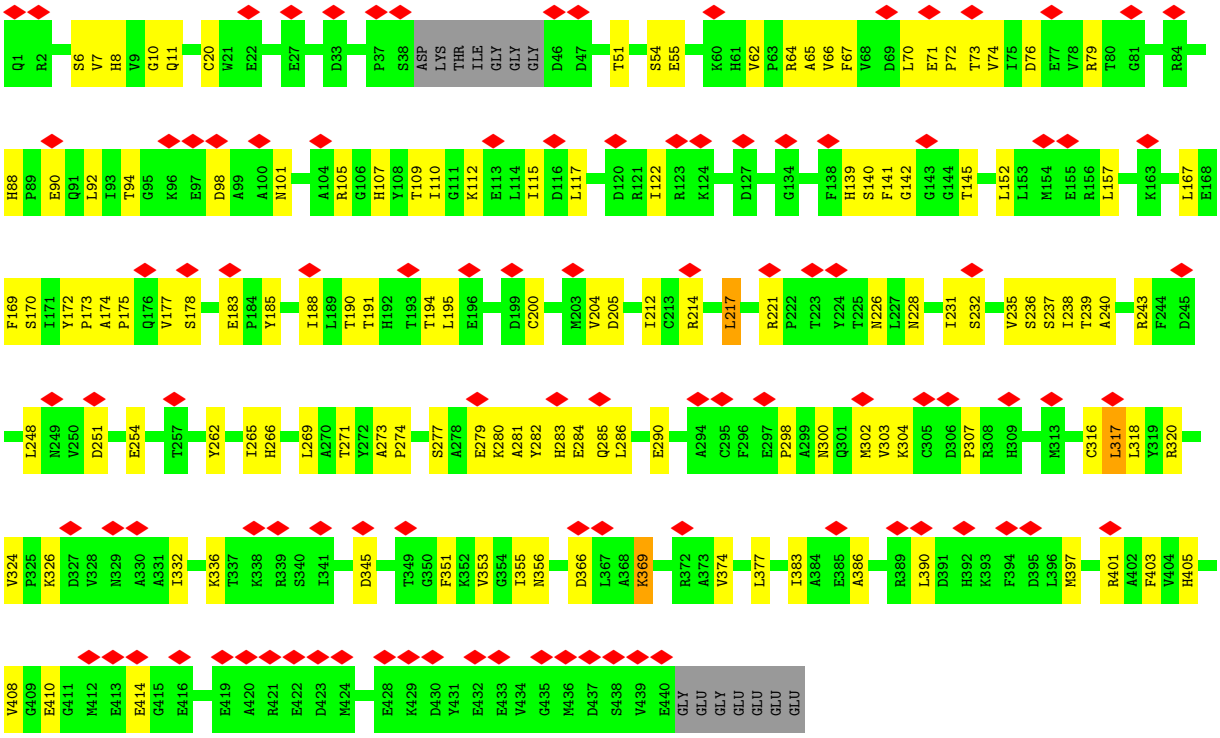
Chain VI:





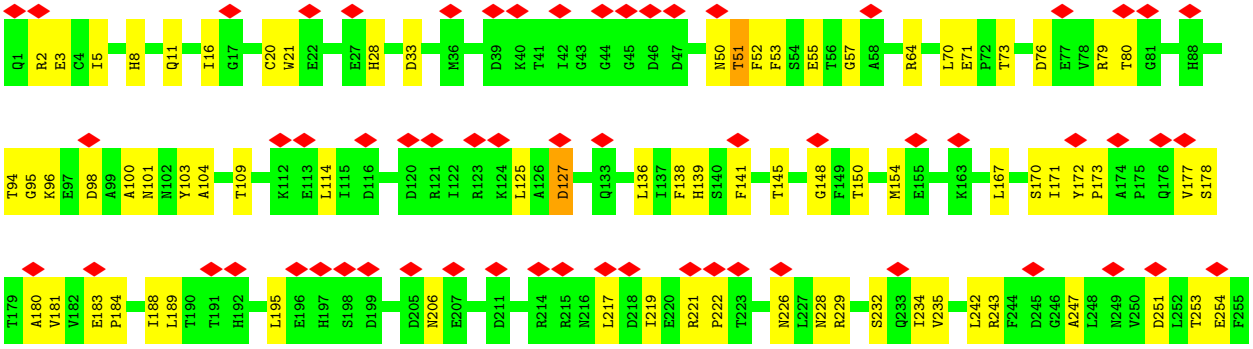
• Molecule 40: Tubulin alpha chain

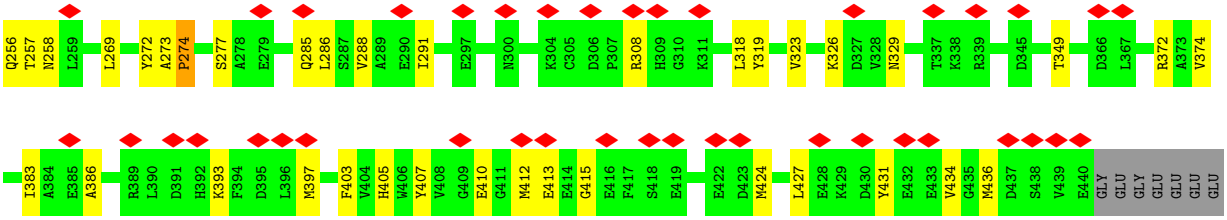
Chain VJ:



• Molecule 40: Tubulin alpha chain

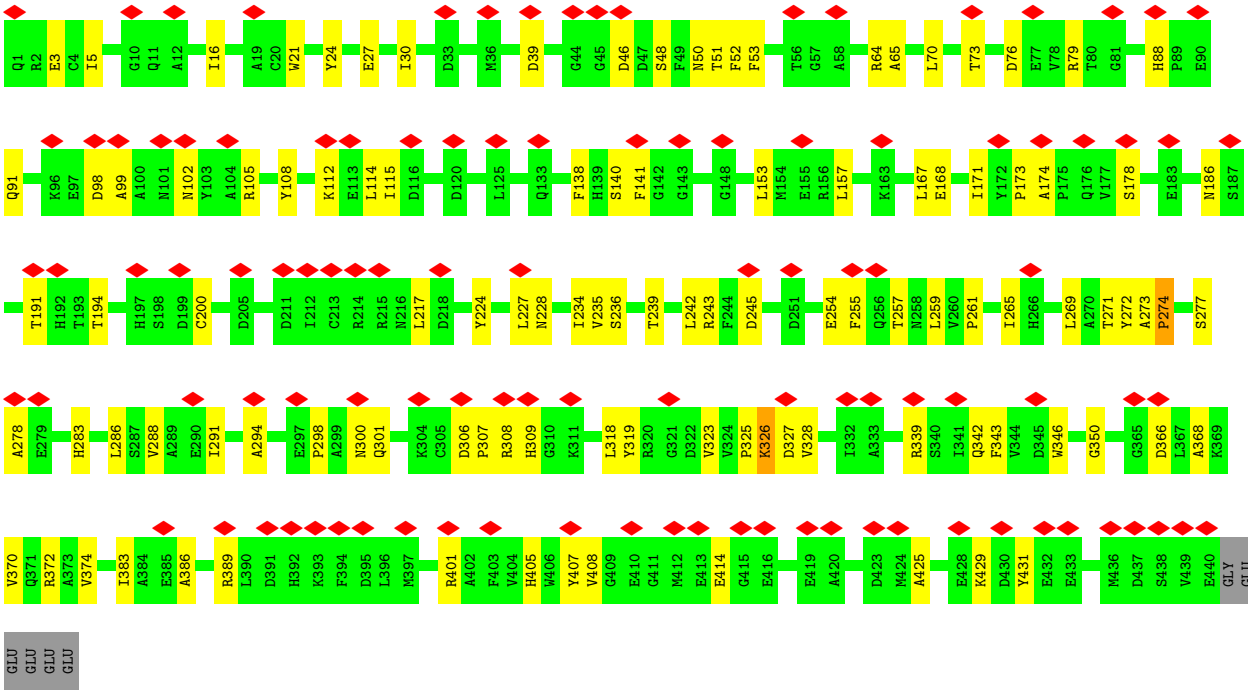
Chain WA:





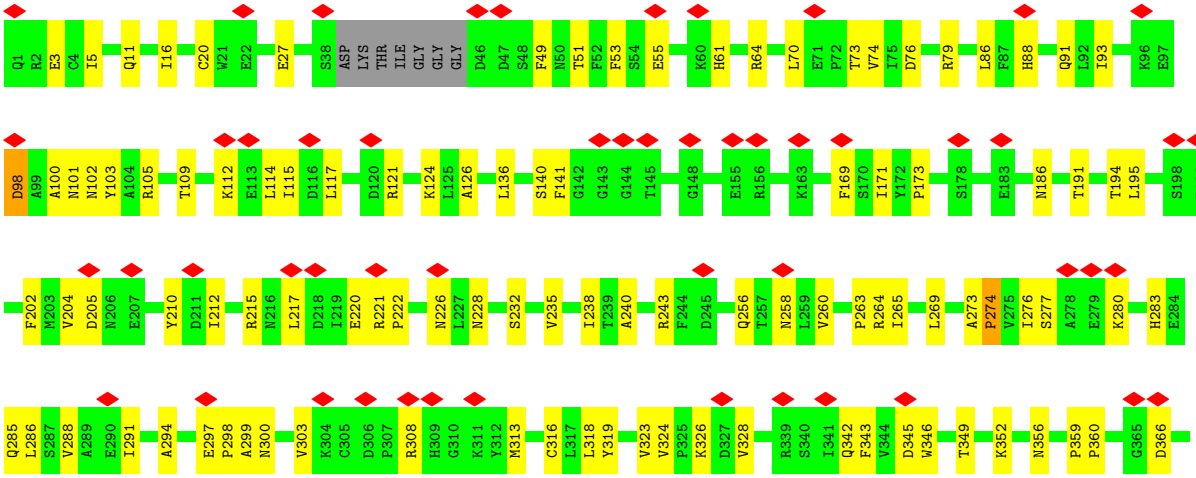
• Molecule 40: Tubulin alpha chain

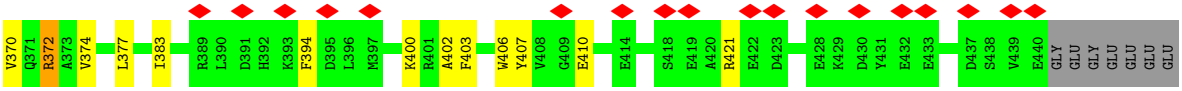
Chain WE:



• Molecule 40: Tubulin alpha chain

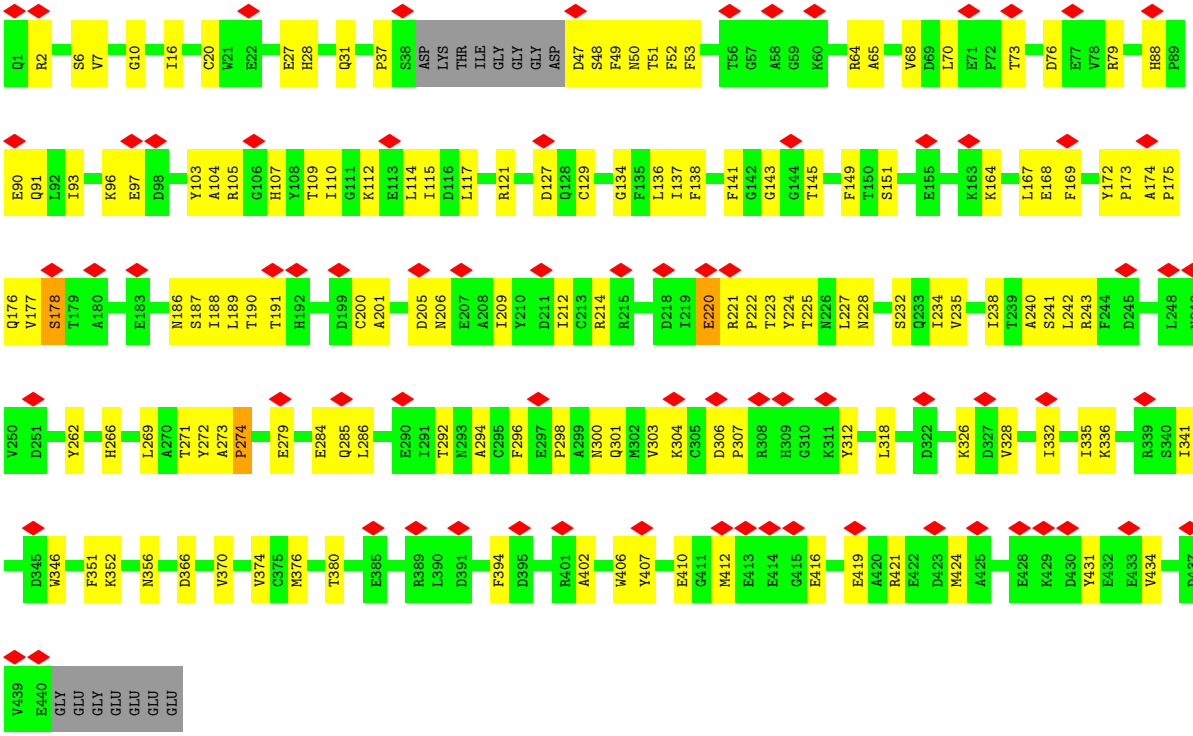
Chain WF:





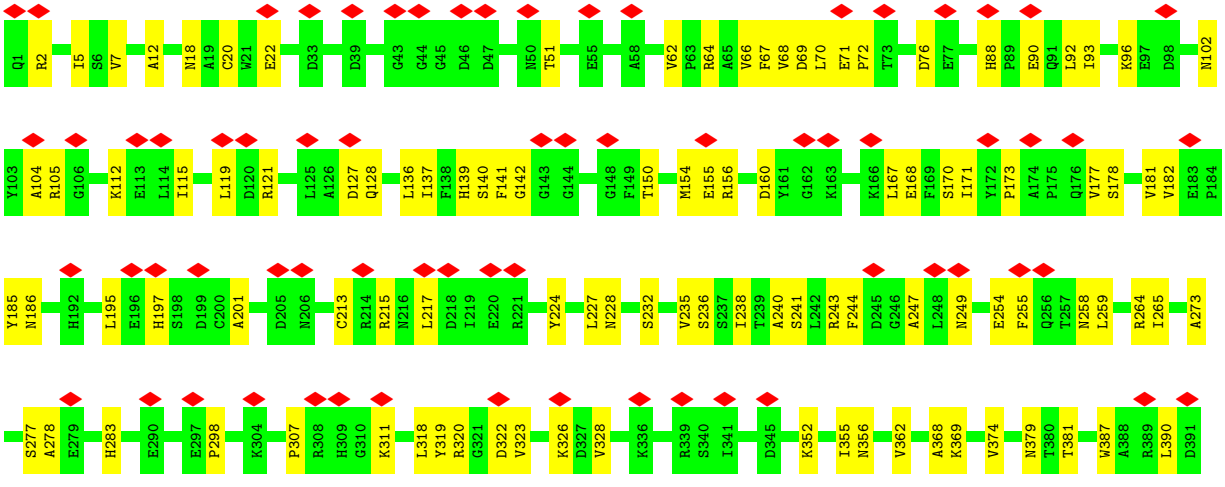
• Molecule 40: Tubulin alpha chain

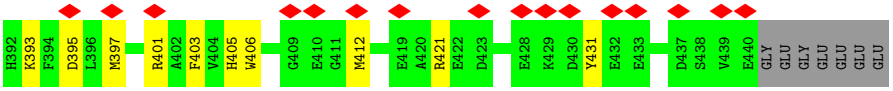
Chain WG:



• Molecule 40: Tubulin alpha chain

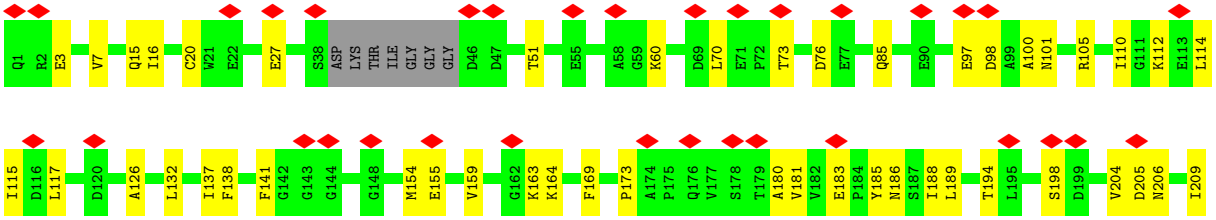
Chain WH:

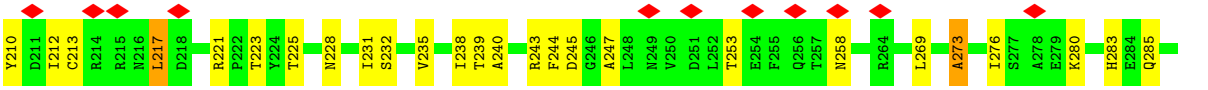


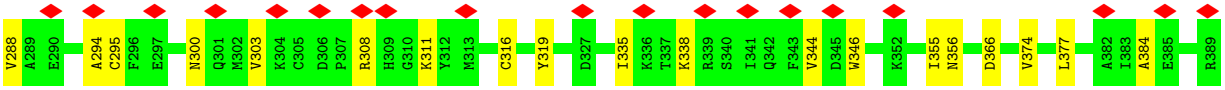


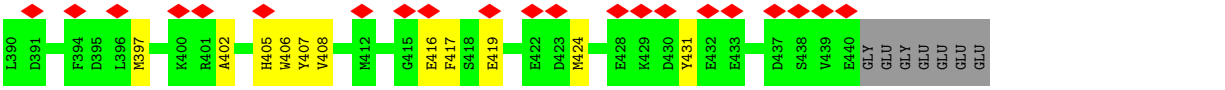
• Molecule 40: Tubulin alpha chain

Chain WI:



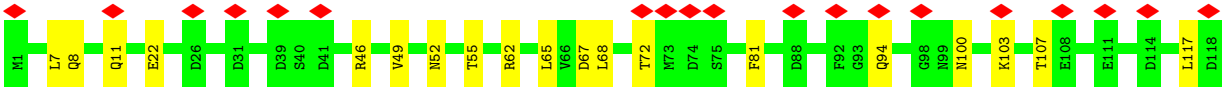


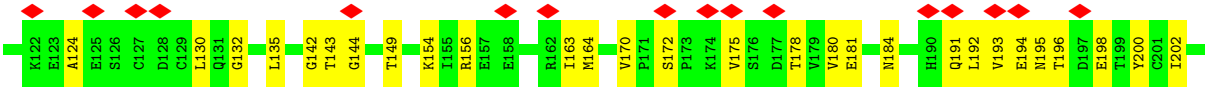


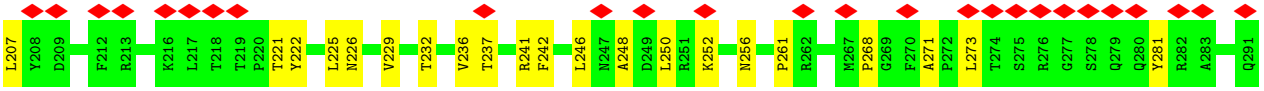


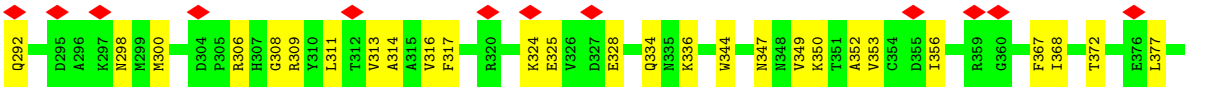
• Molecule 41: Tubulin beta chain

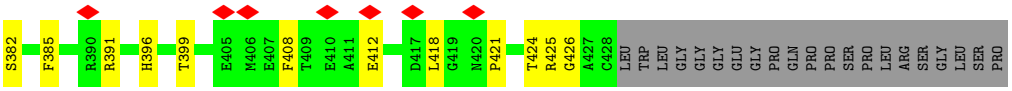
Chain AB:





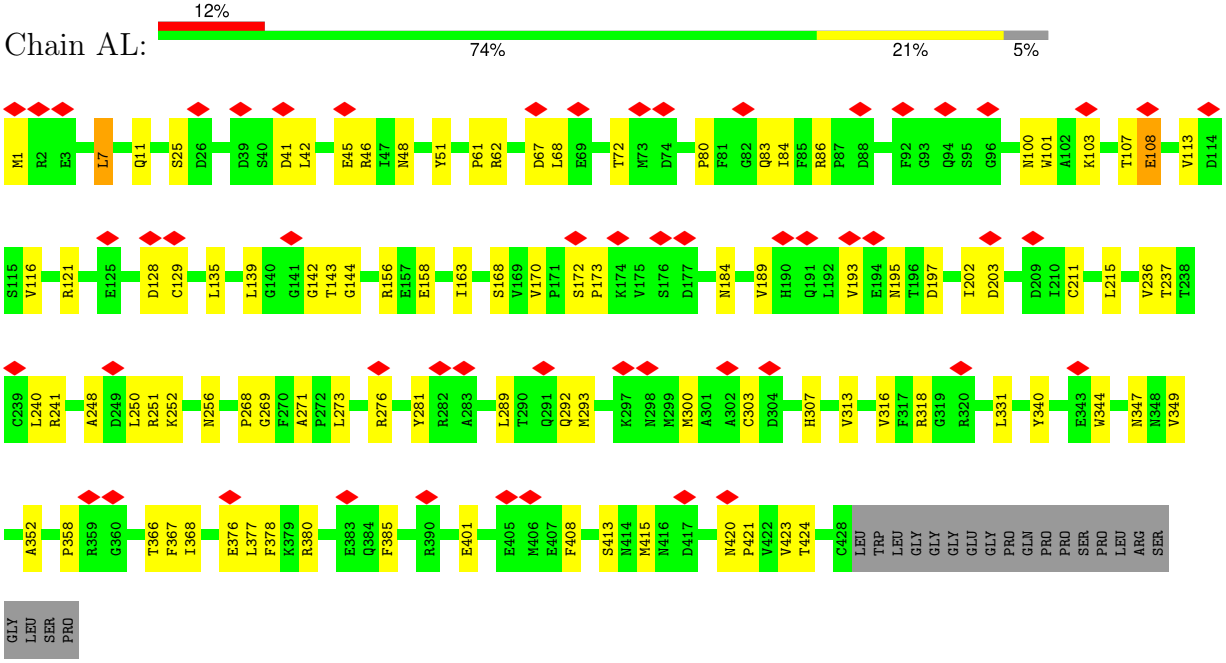






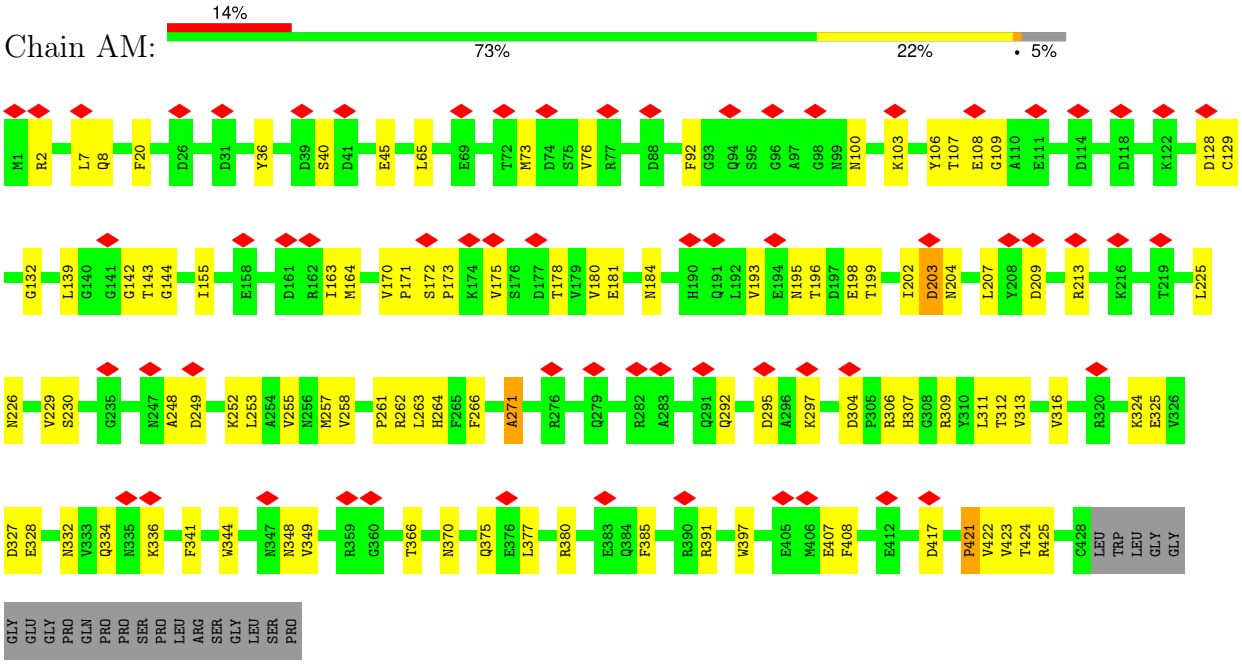
• Molecule 41: Tubulin beta chain

Chain AL:



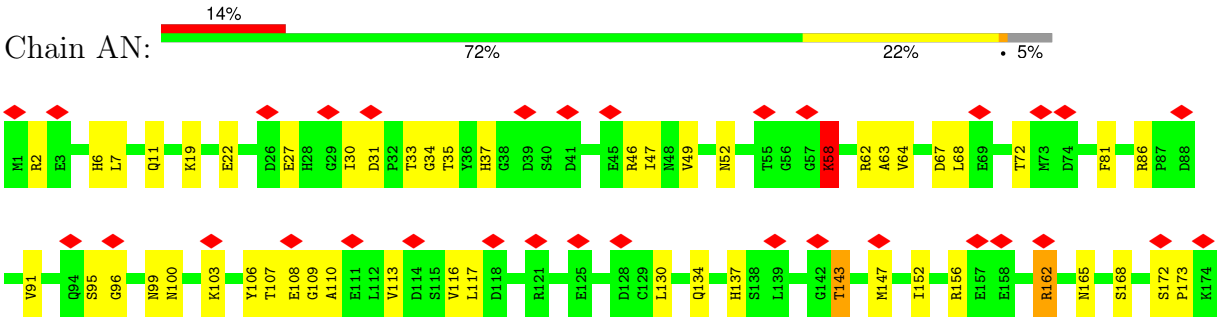
• Molecule 41: Tubulin beta chain

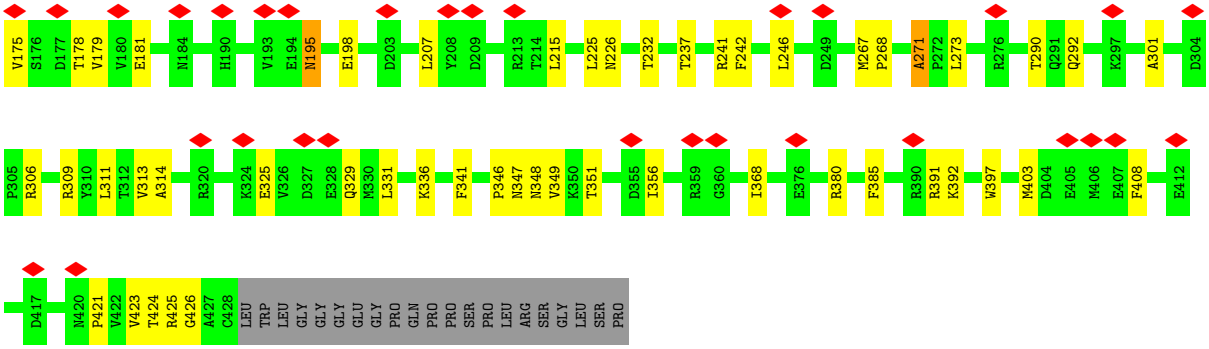
Chain AM:



• Molecule 41: Tubulin beta chain

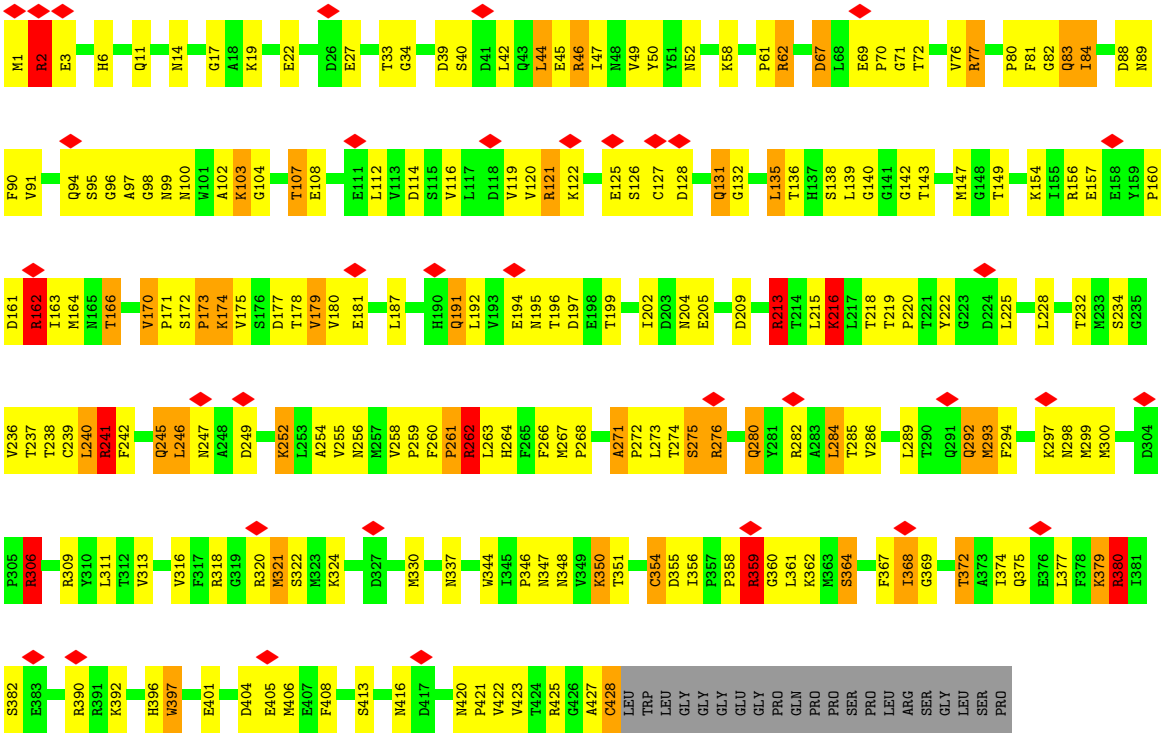
Chain AN:





• Molecule 41: Tubulin beta chain

Chain AO:



• Molecule 41: Tubulin beta chain

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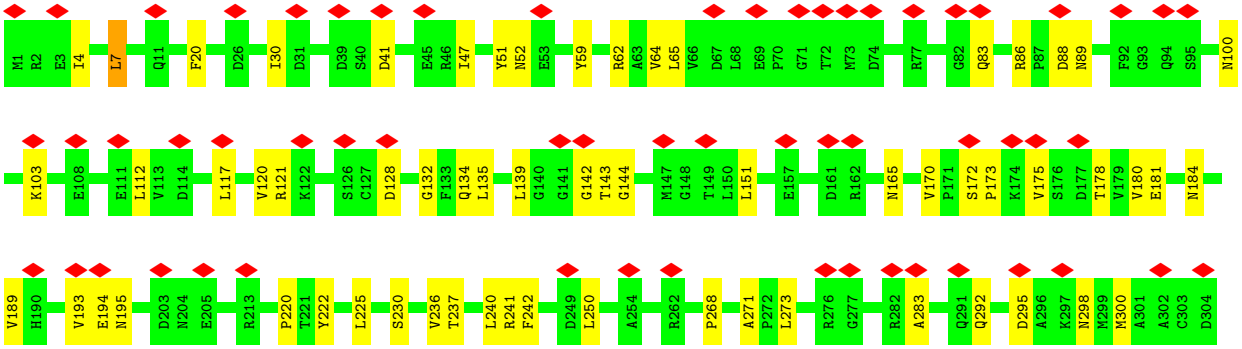
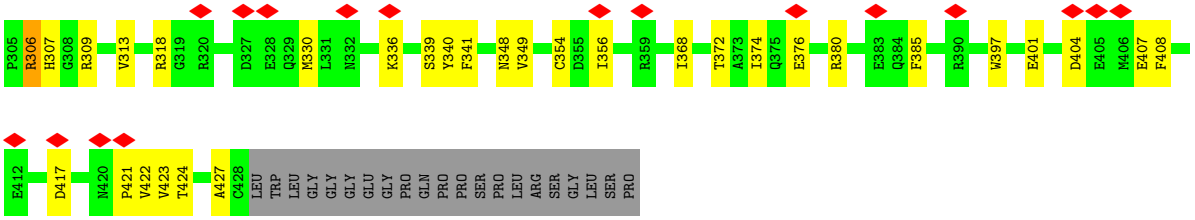
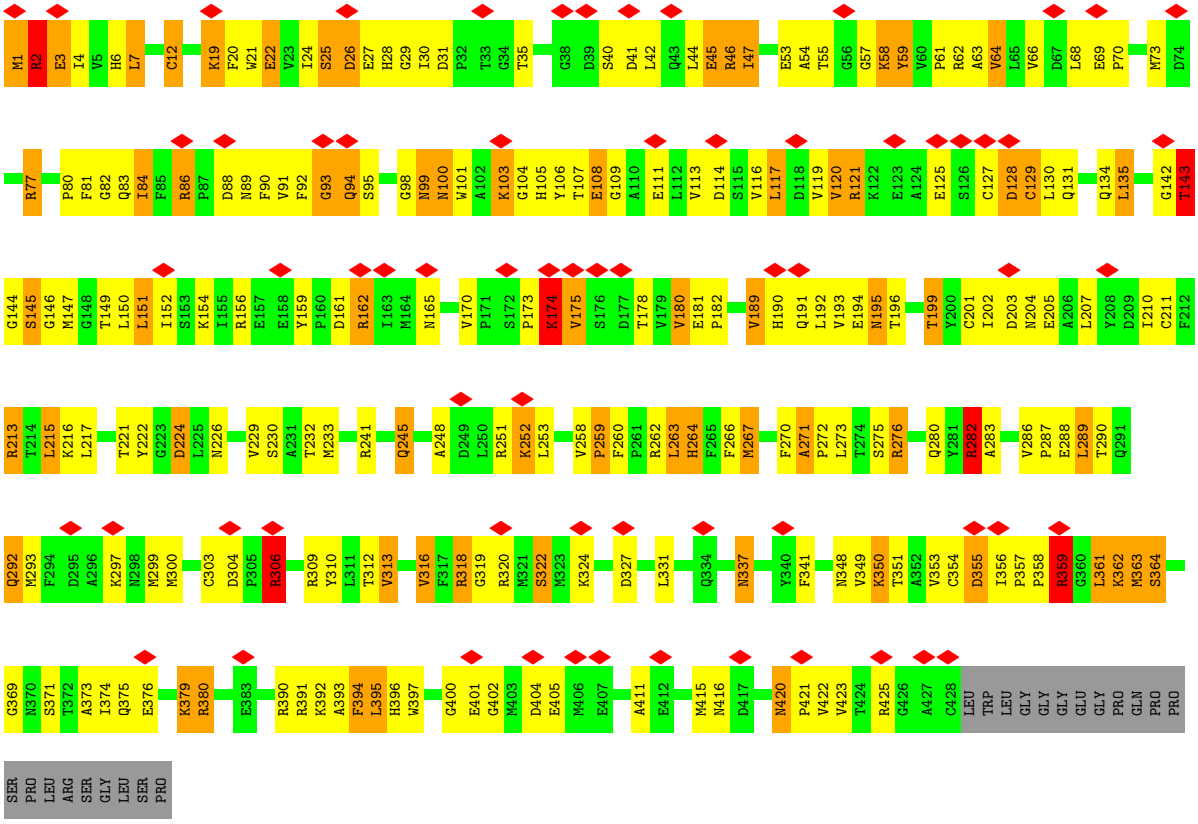




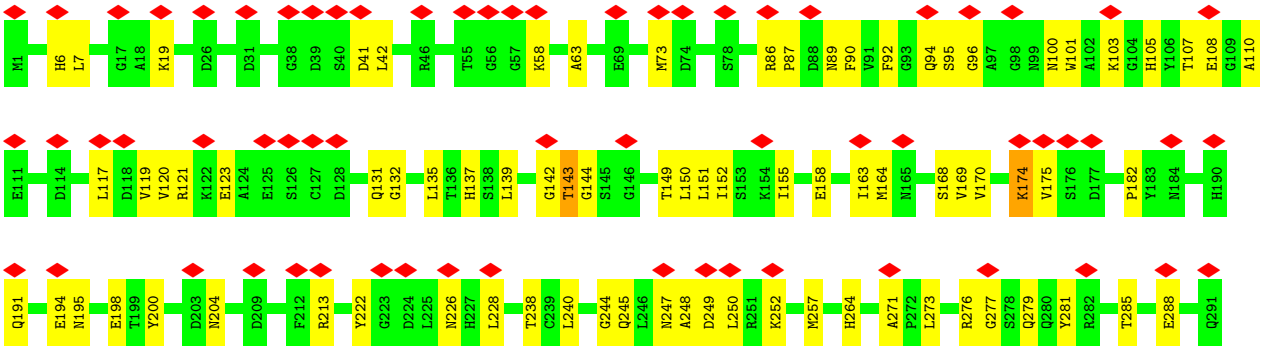
• Molecule 41: Tubulin beta chain

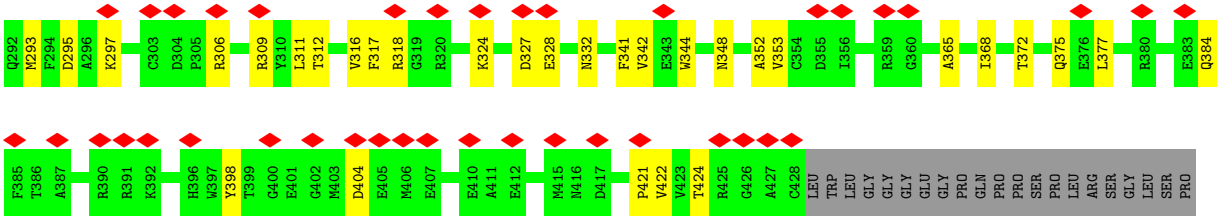
Chain BB:



• Molecule 41: Tubulin beta chain

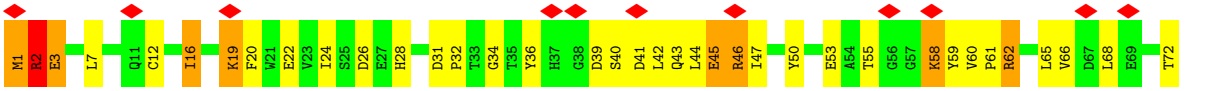
Chain BL:

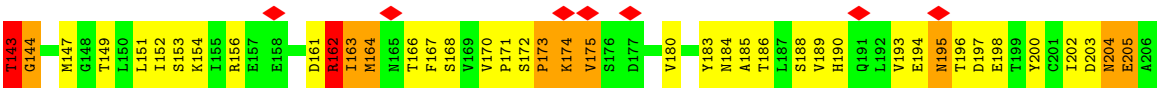


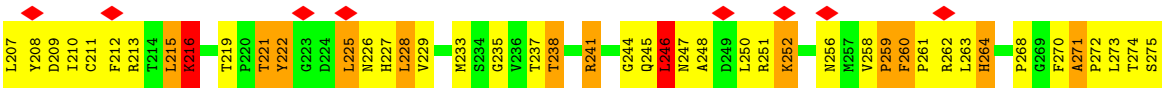


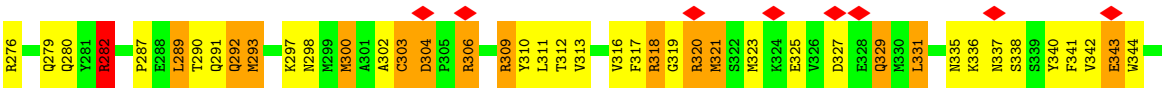
• Molecule 41: Tubulin beta chain

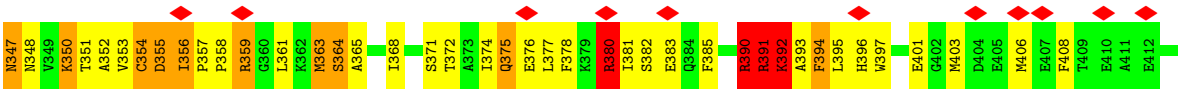
Chain BM:

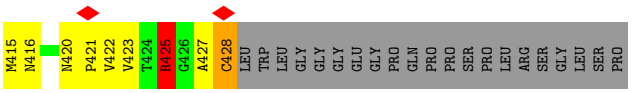






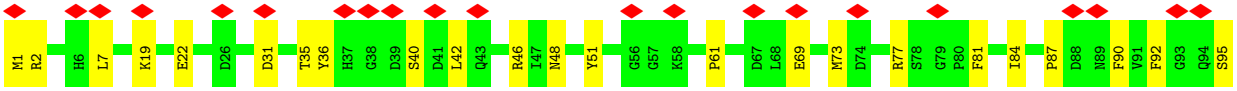


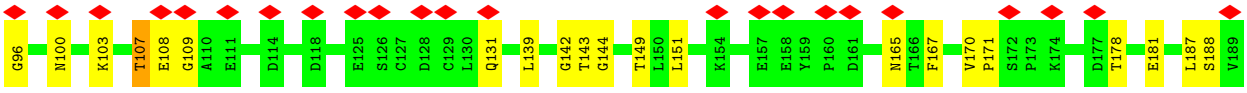


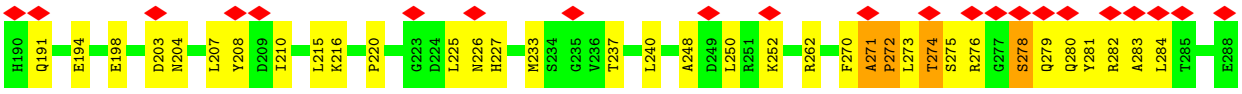


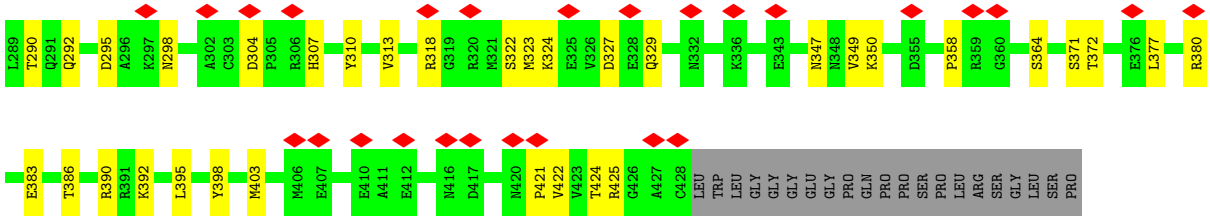
• Molecule 41: Tubulin beta chain

Chain BN:



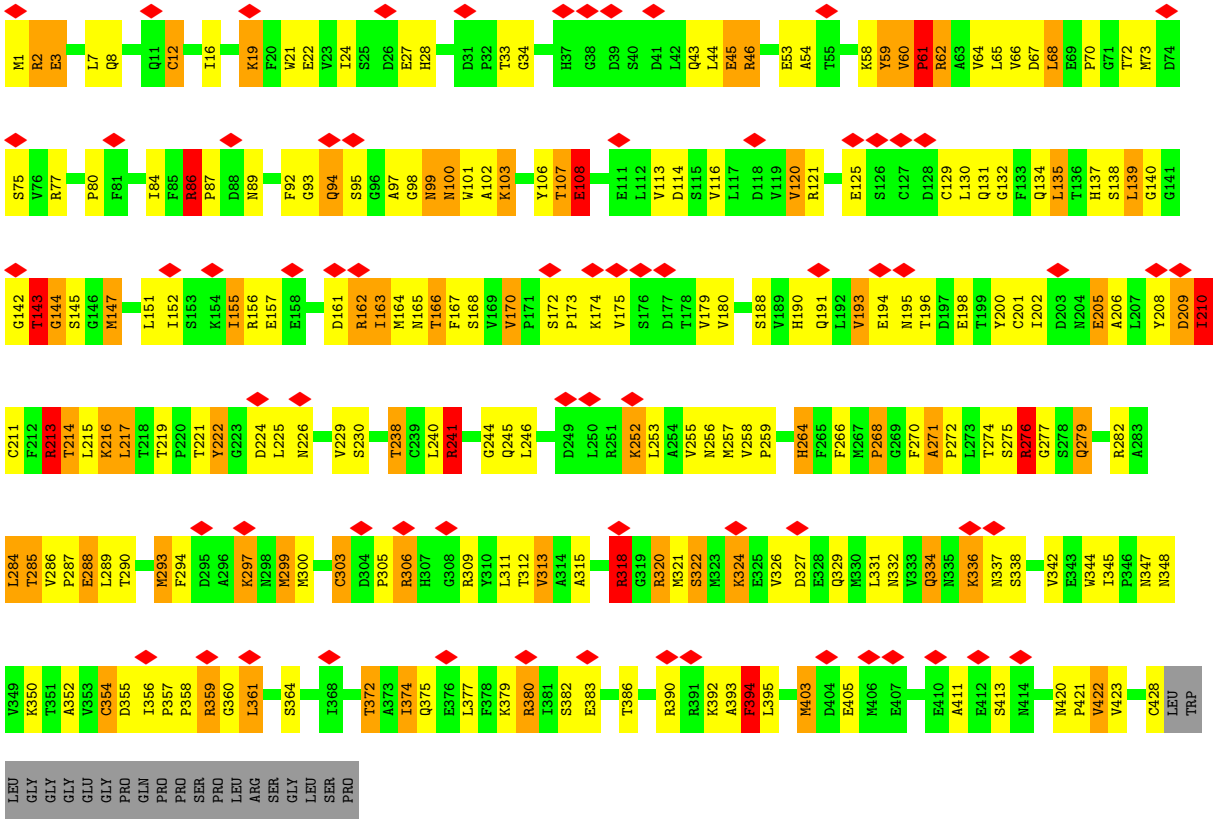






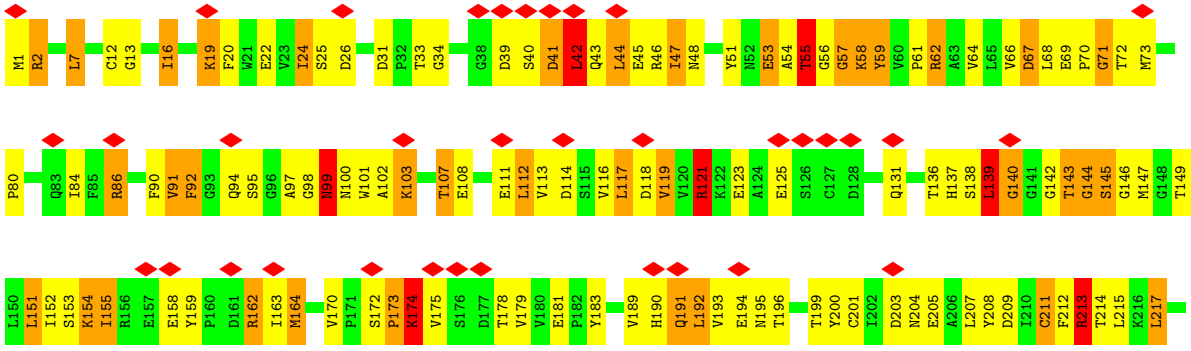
• Molecule 41: Tubulin beta chain

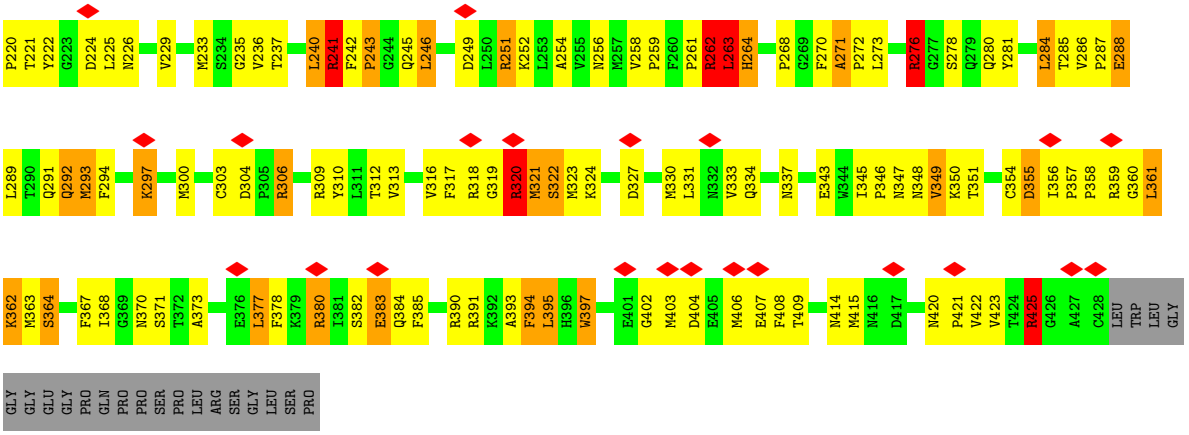
Chain BO:



• Molecule 41: Tubulin beta chain

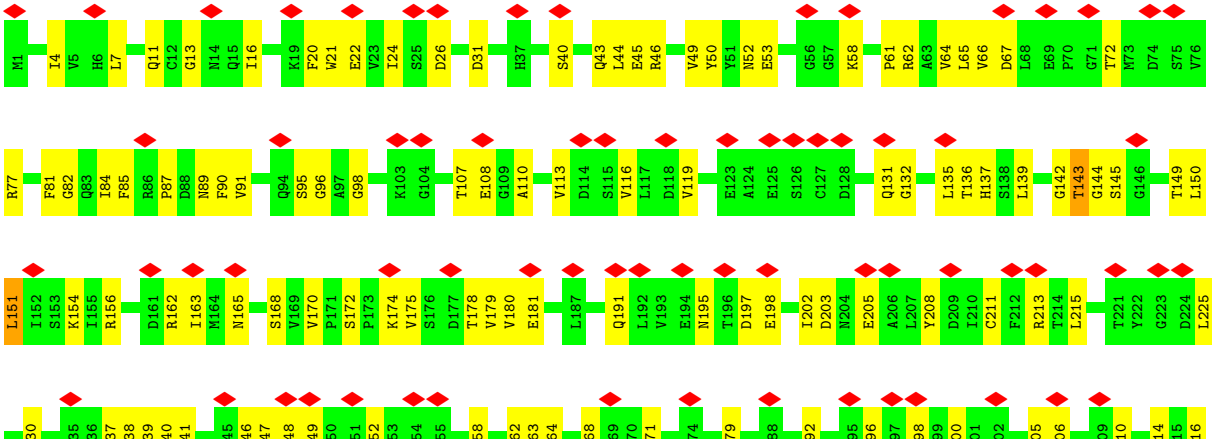
Chain BP:





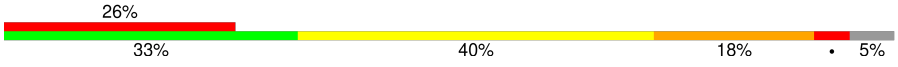
• Molecule 41: Tubulin beta chain

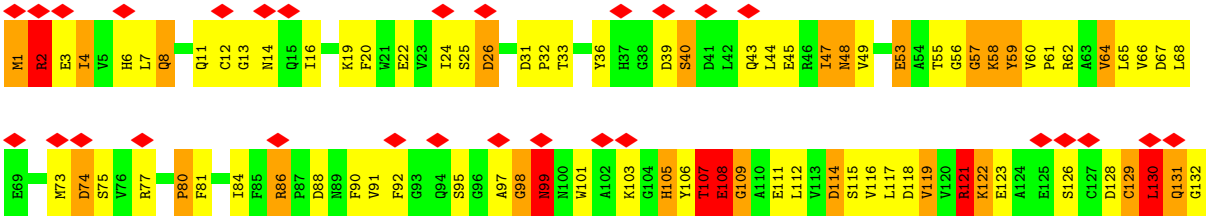
Chain CB:

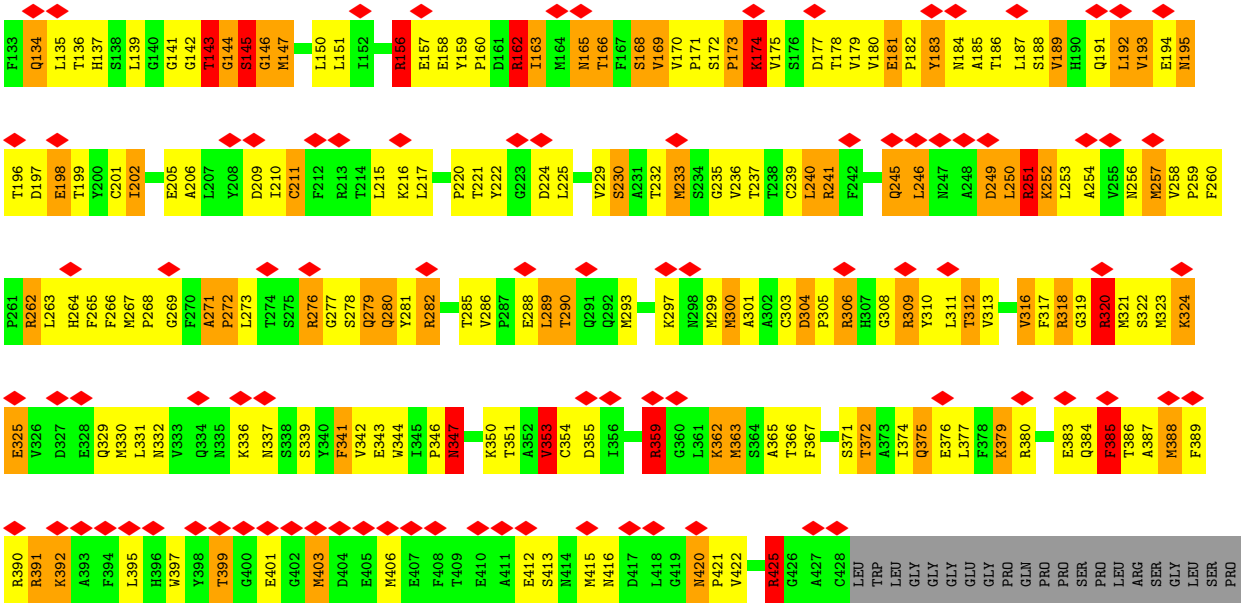


• Molecule 41: Tubulin beta chain

Chain CL:

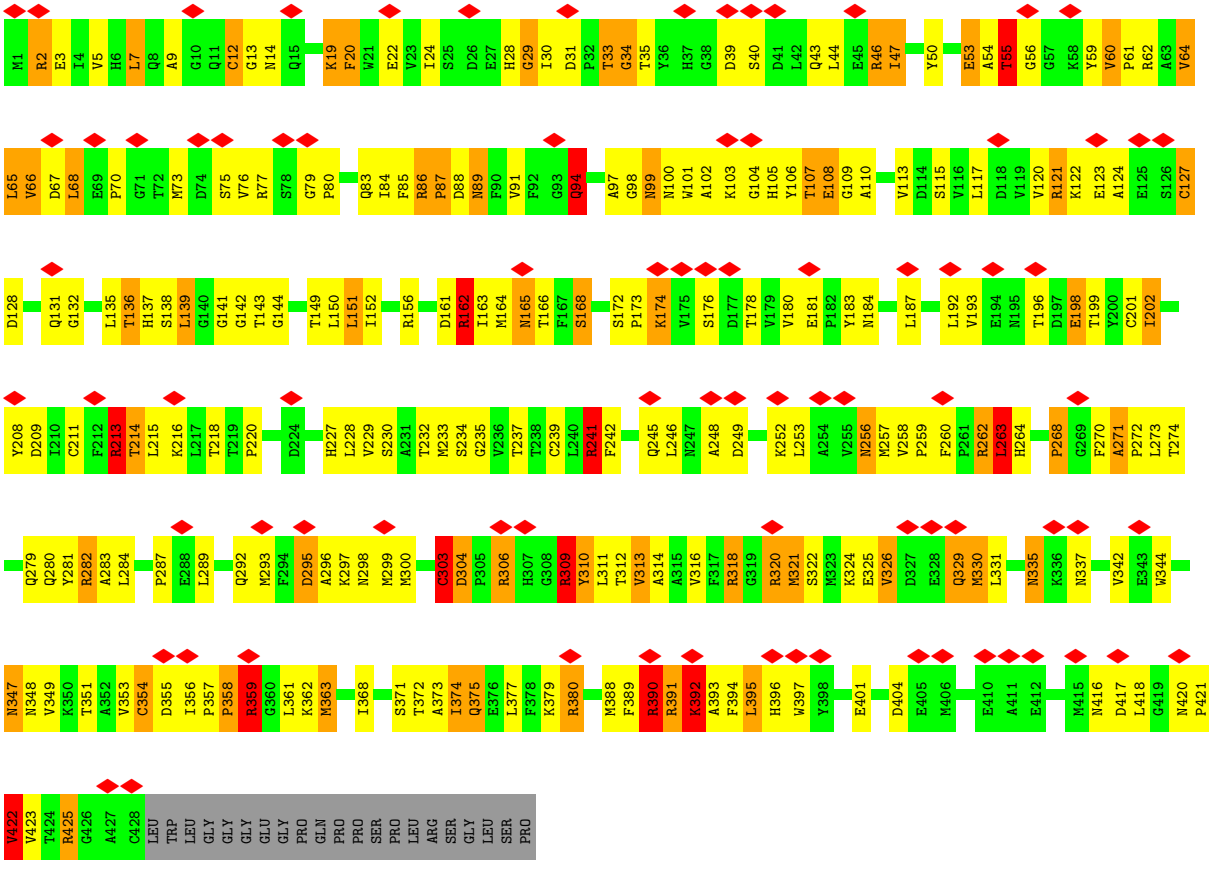






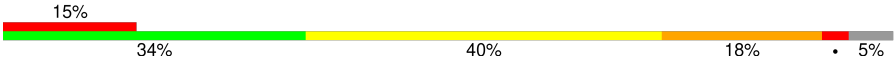
• Molecule 41: Tubulin beta chain

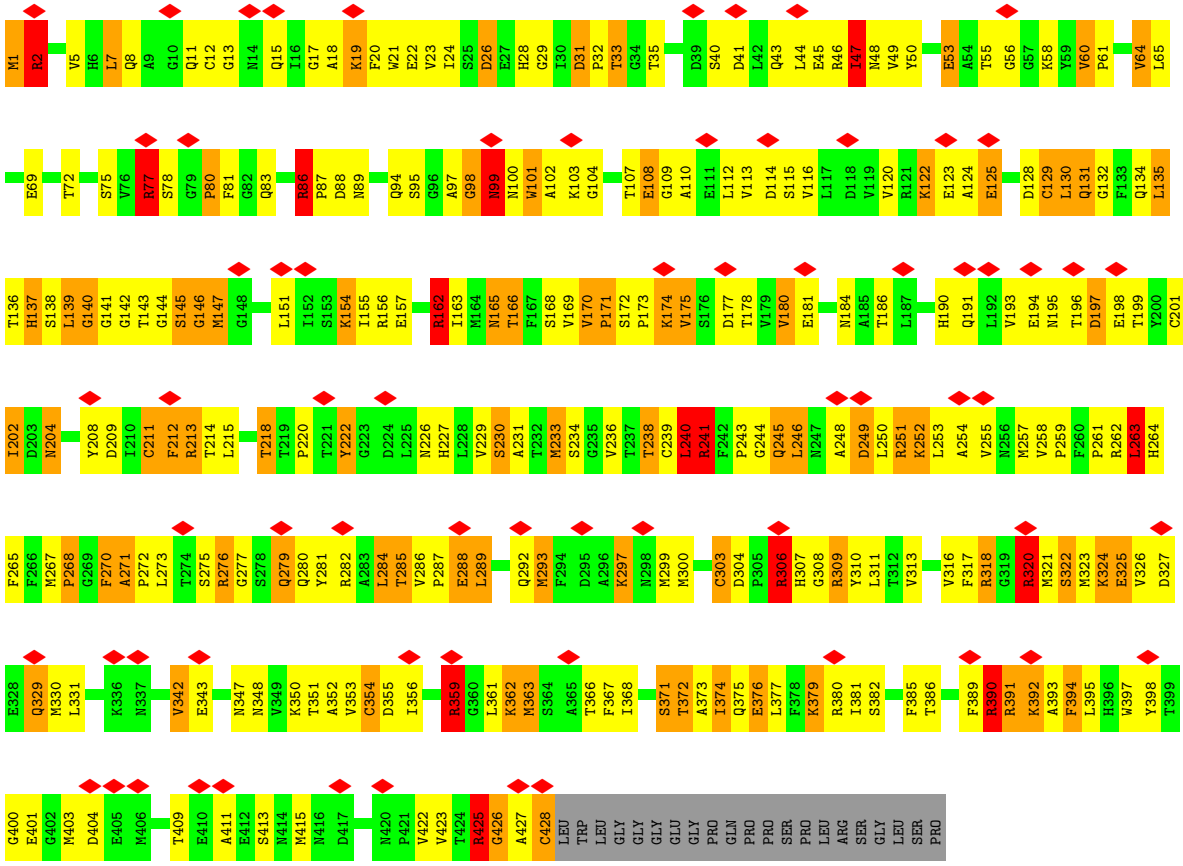
Chain CM:



• Molecule 41: Tubulin beta chain

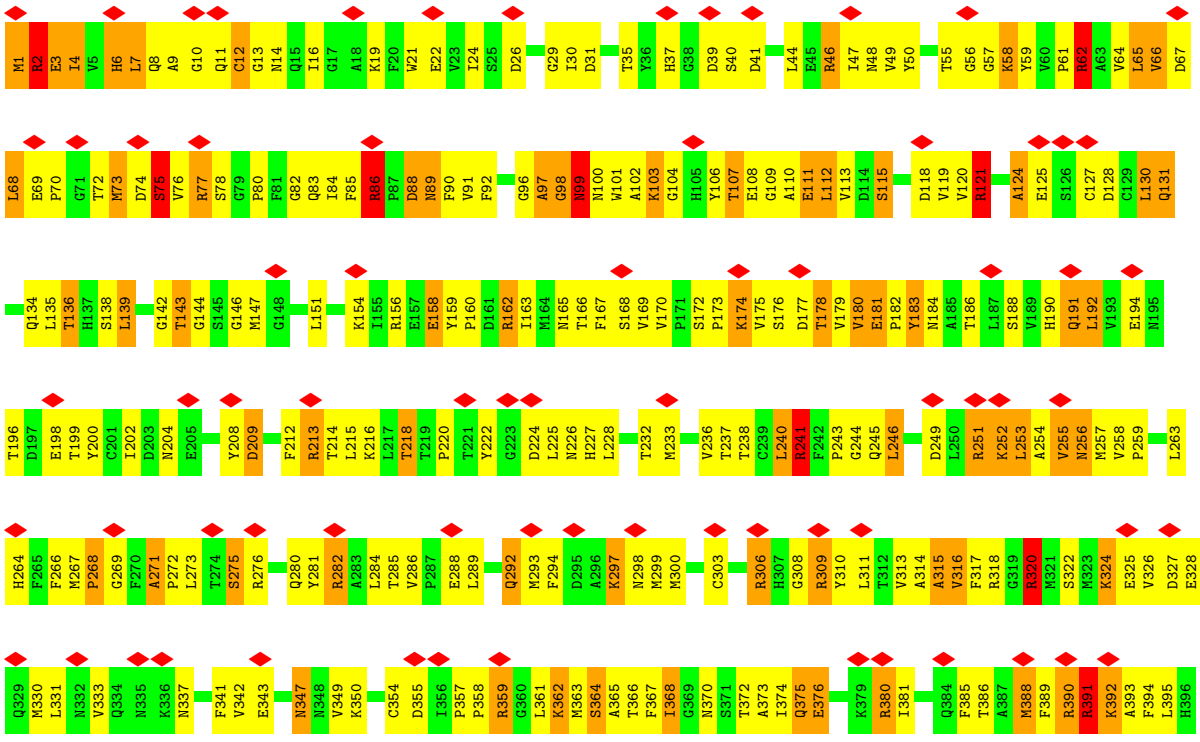
Chain CN:

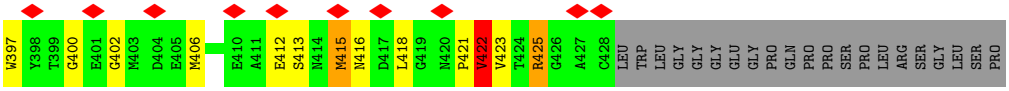




• Molecule 41: Tubulin beta chain

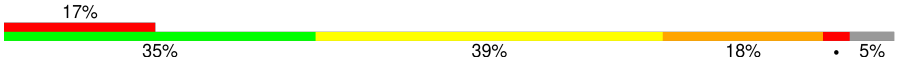
Chain CO:

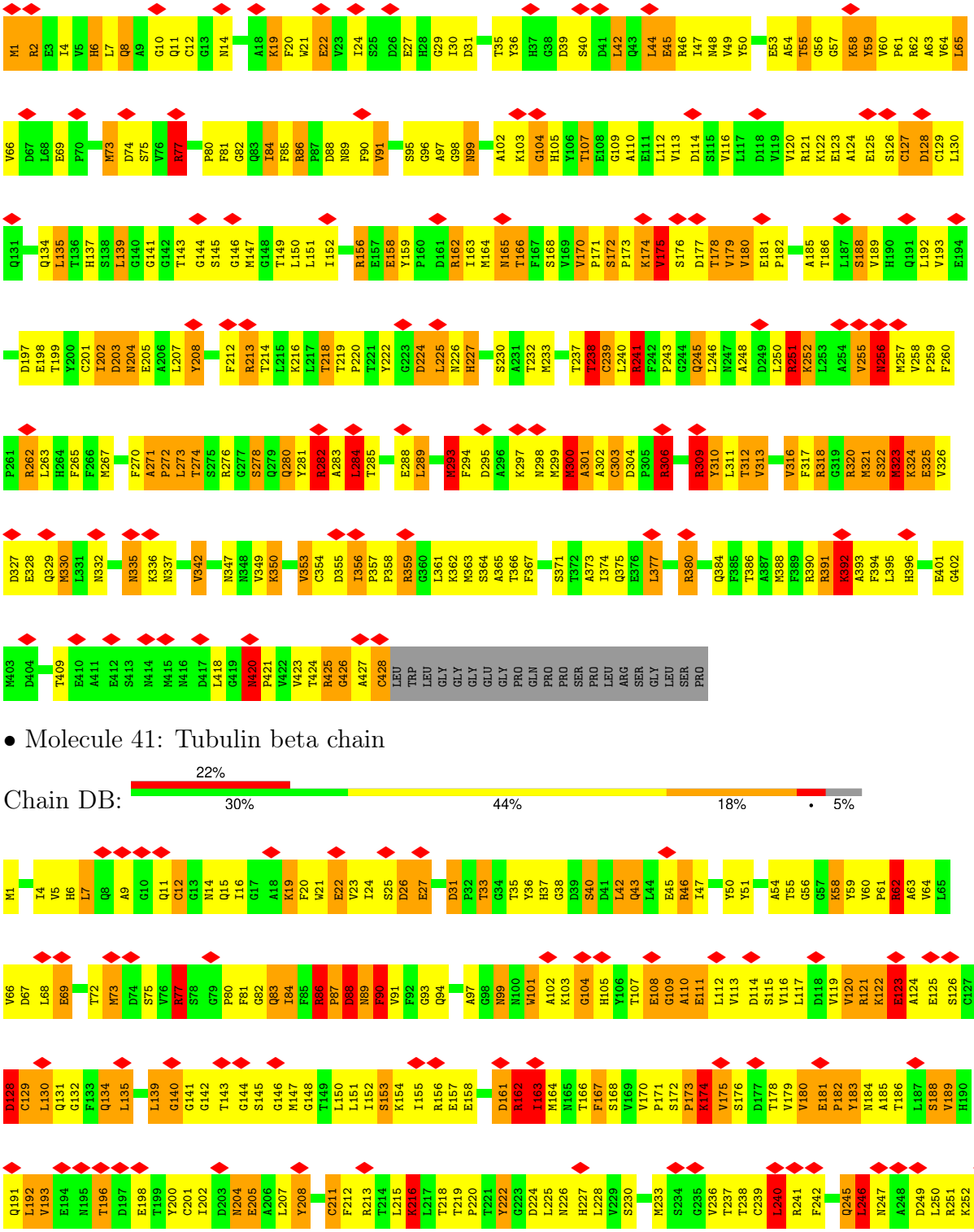




• Molecule 41: Tubulin beta chain

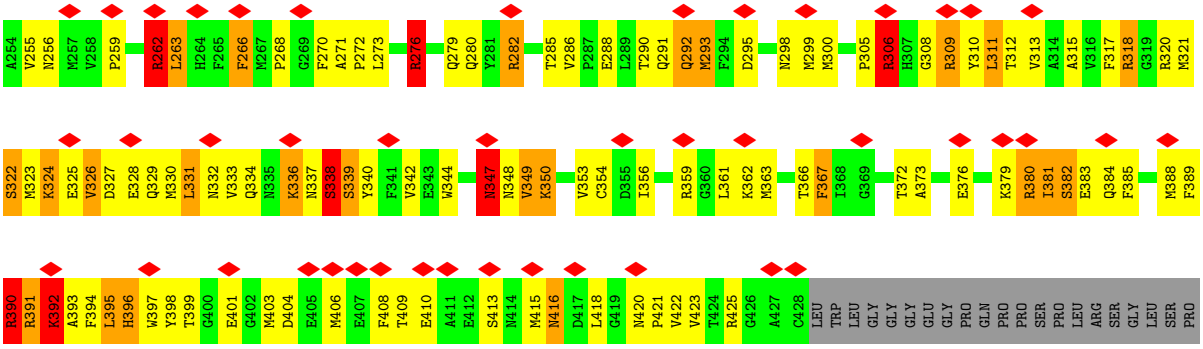
Chain CP:





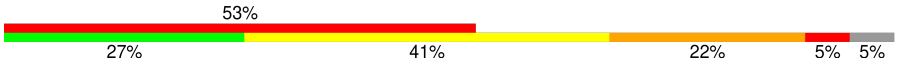
• Molecule 41: Tubulin beta chain

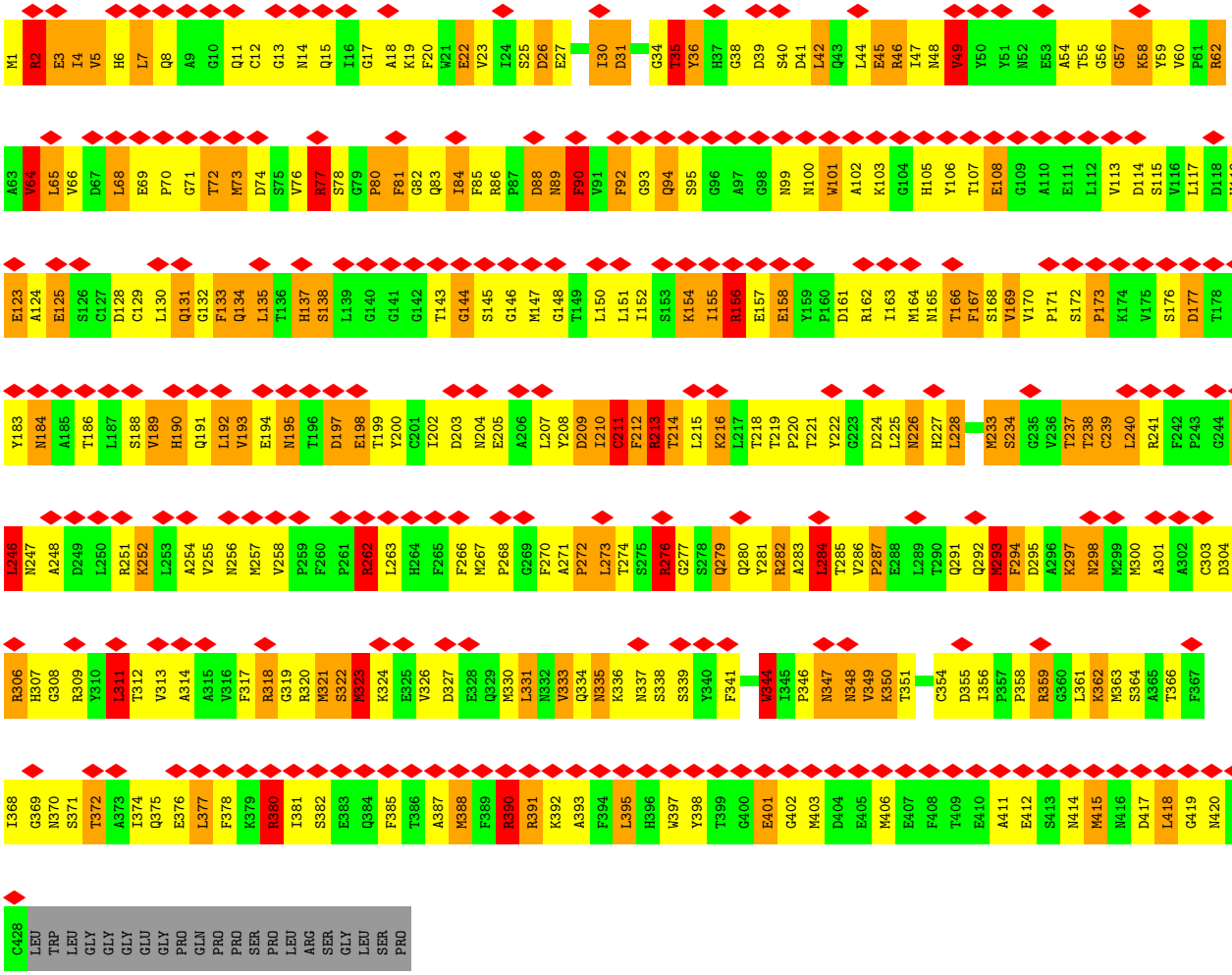
Chain DB:



• Molecule 41: Tubulin beta chain

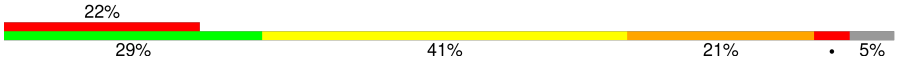
Chain DL:

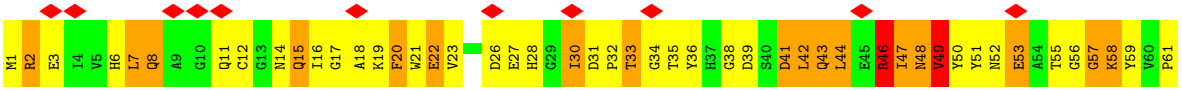


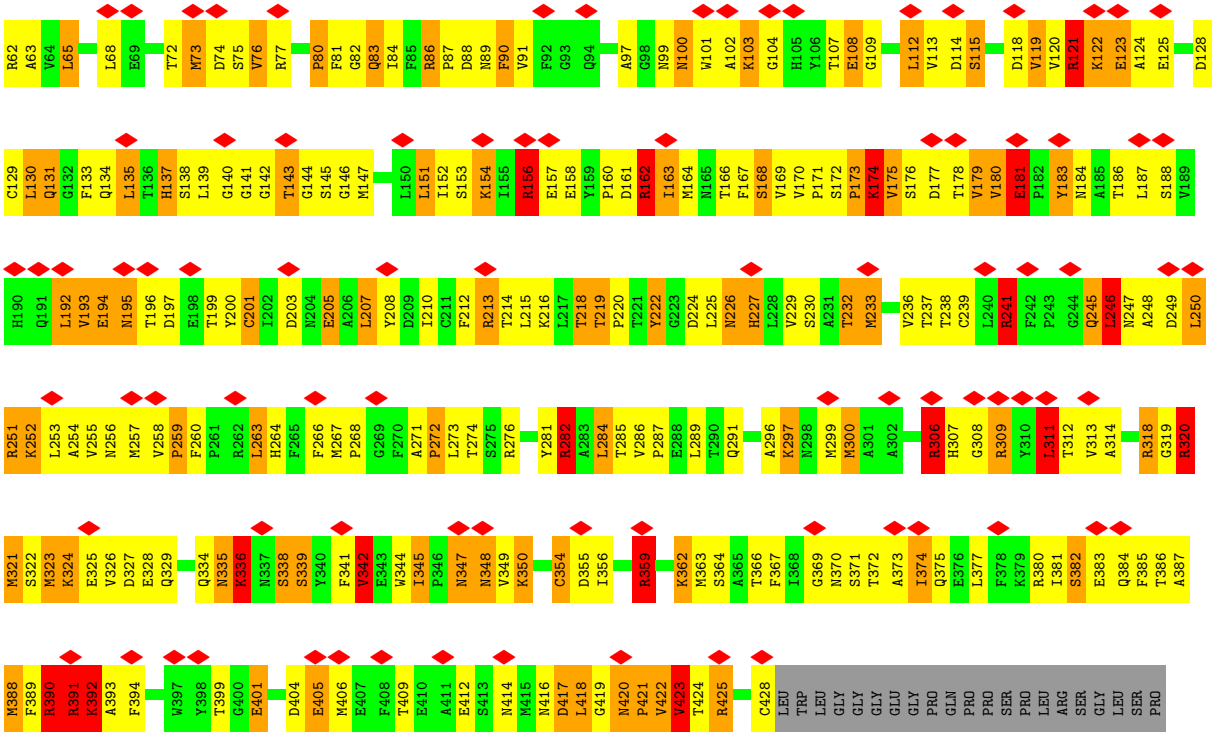


• Molecule 41: Tubulin beta chain

Chain DM:

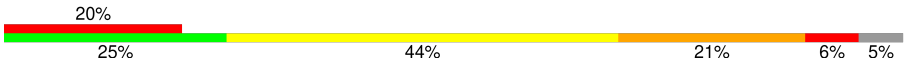


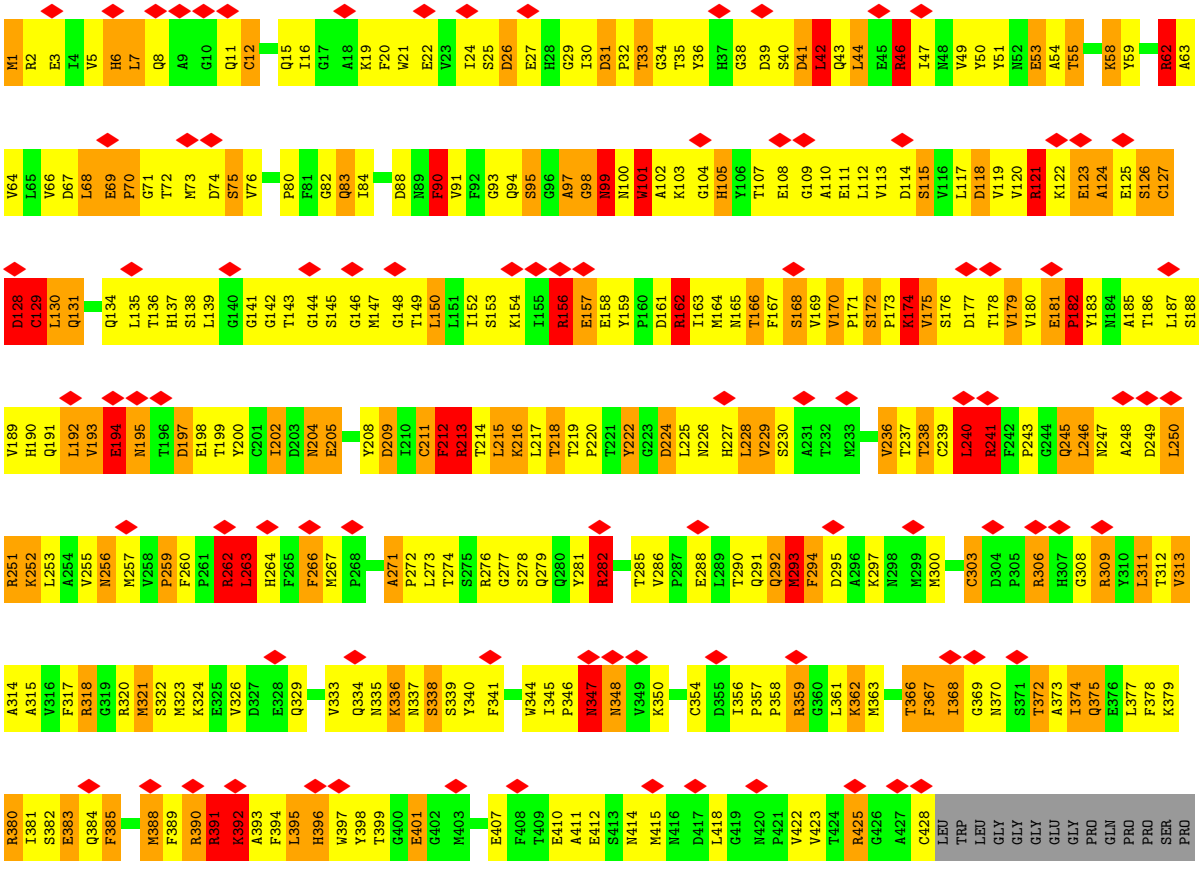




• Molecule 41: Tubulin beta chain

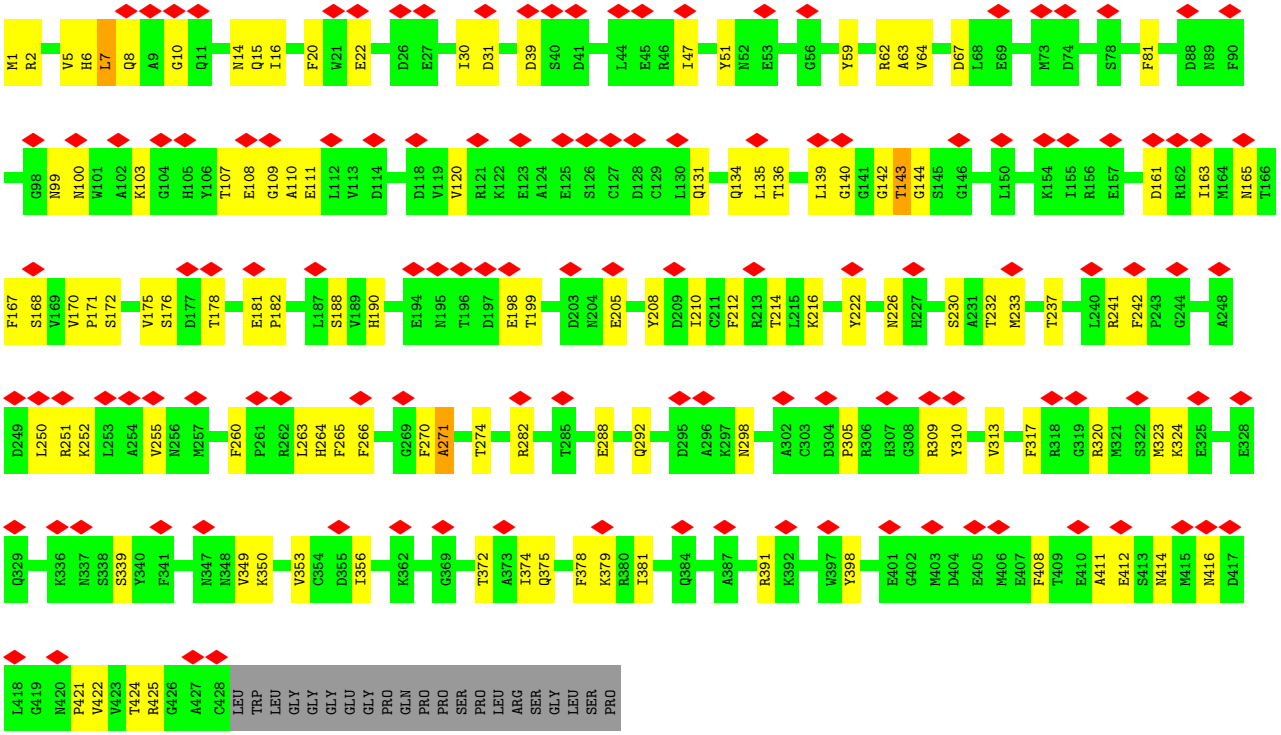
Chain DN:





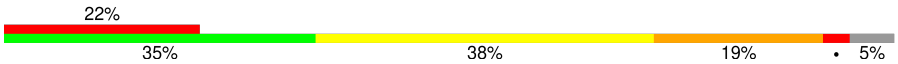
• Molecule 41: Tubulin beta chain

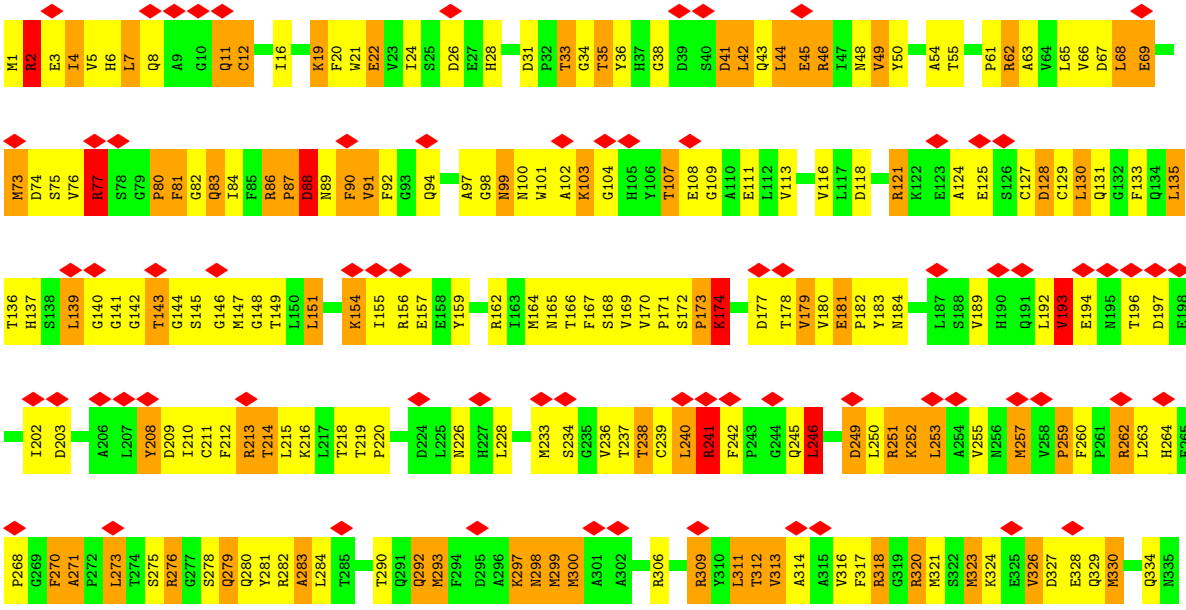
Chain DO:

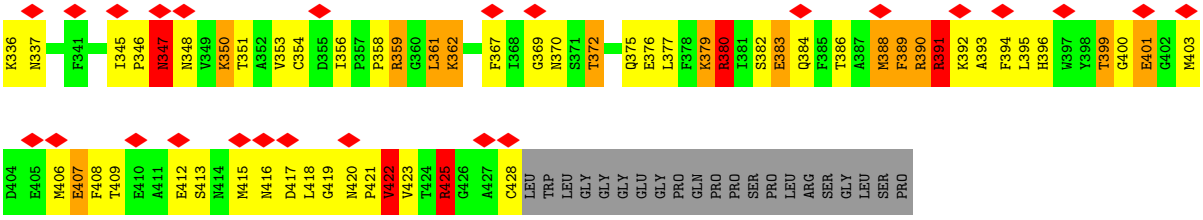


• Molecule 41: Tubulin beta chain

Chain DP:

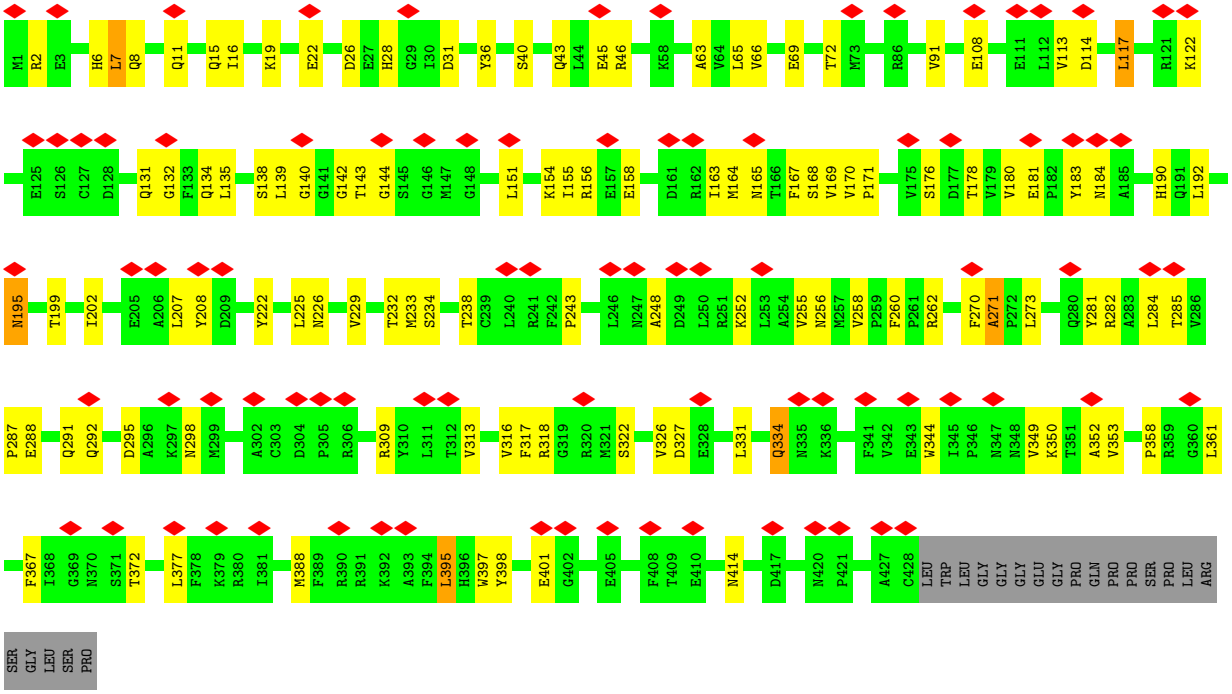






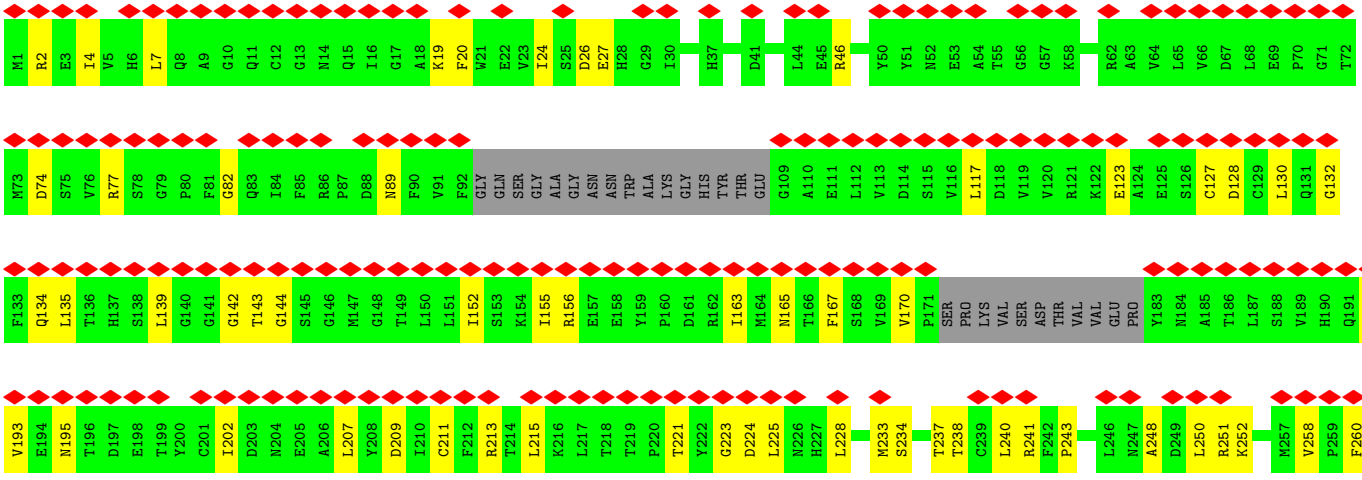
• Molecule 41: Tubulin beta chain

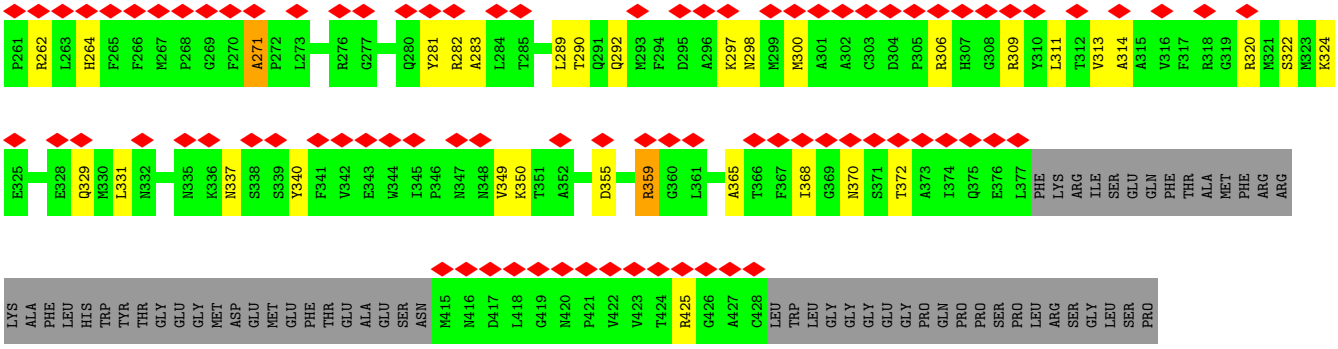
Chain EB:



• Molecule 41: Tubulin beta chain

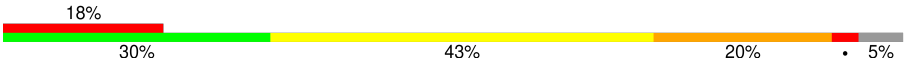
Chain EL:

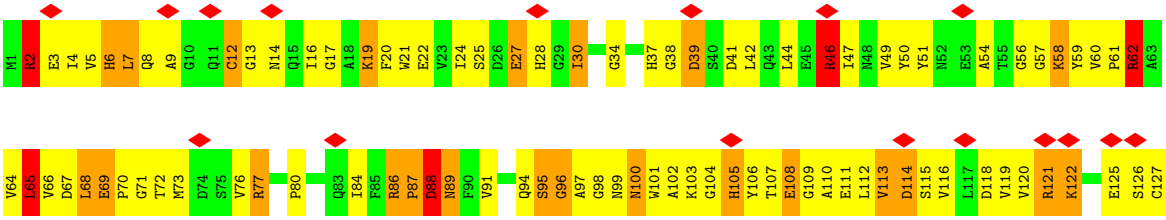


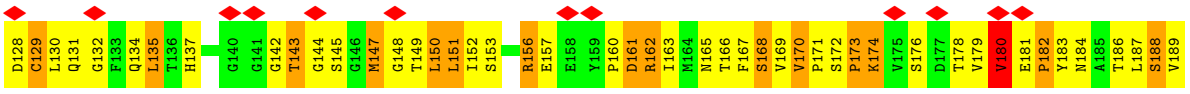


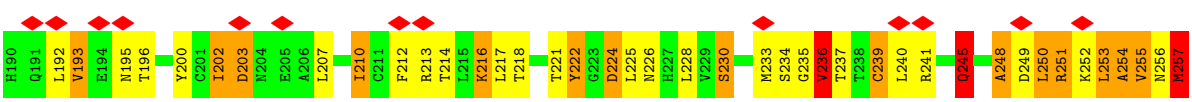
• Molecule 41: Tubulin beta chain

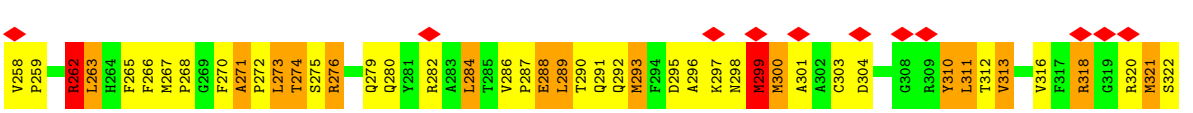
Chain EM:

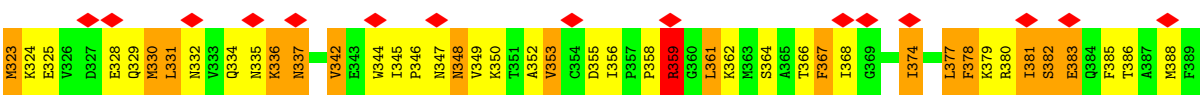


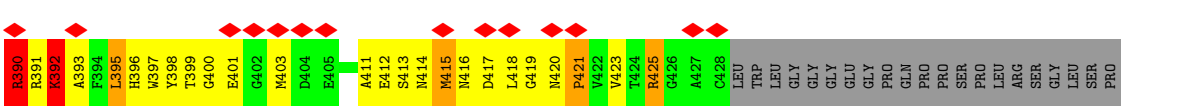






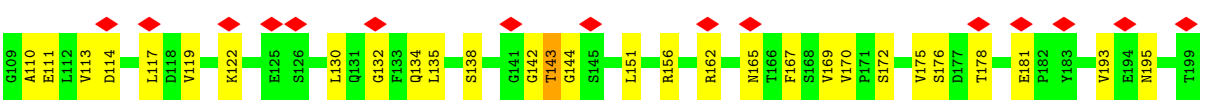


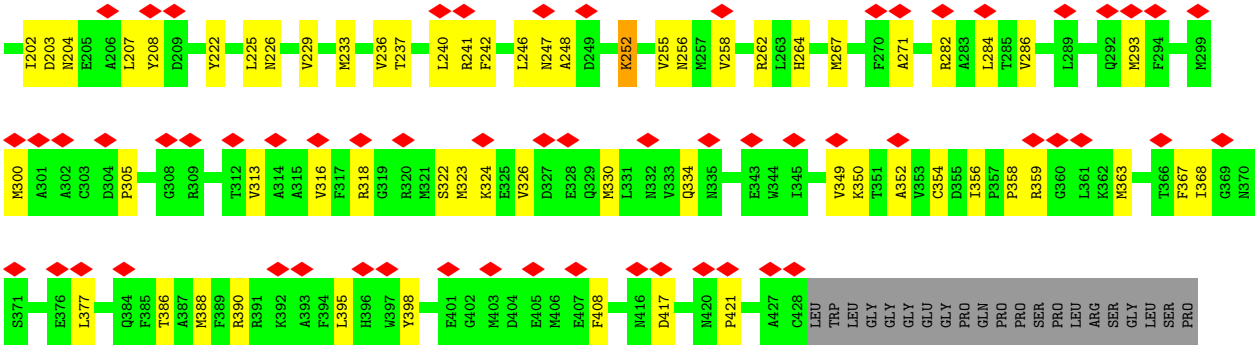




• Molecule 41: Tubulin beta chain

Chain EN:





• Molecule 41: Tubulin beta chain

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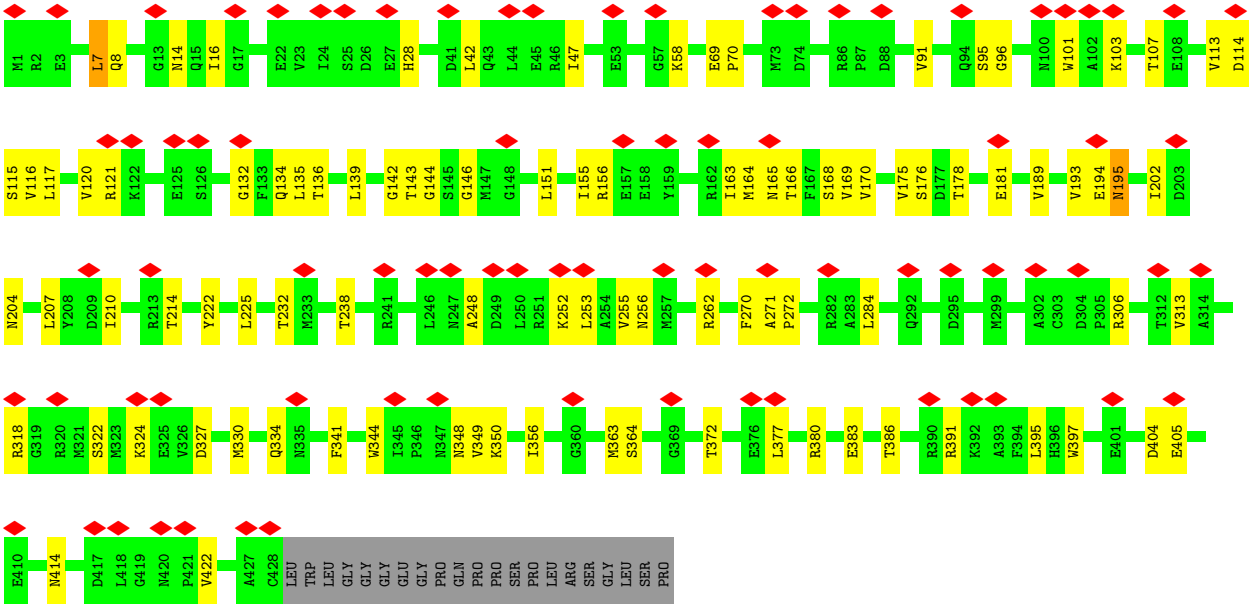
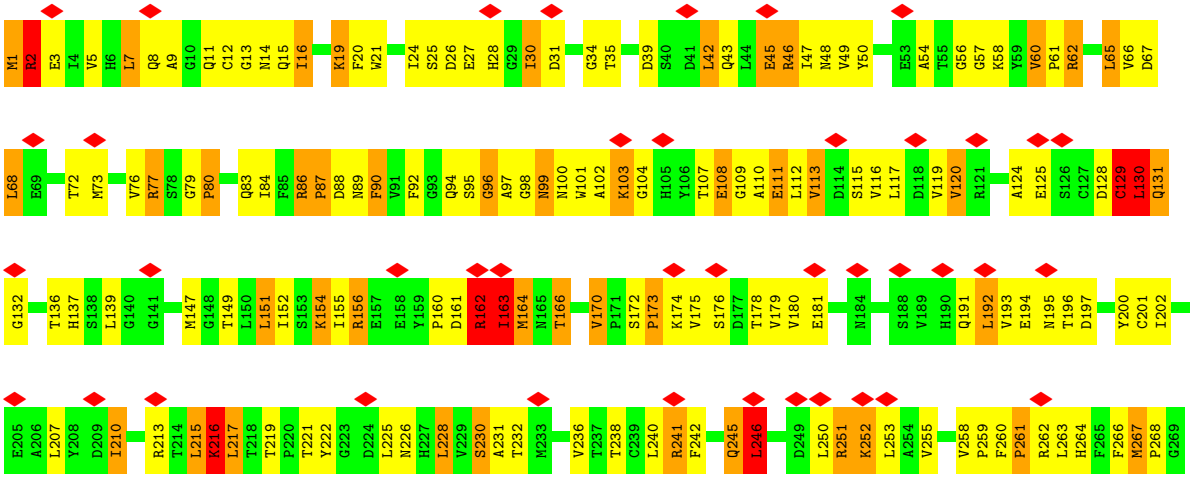
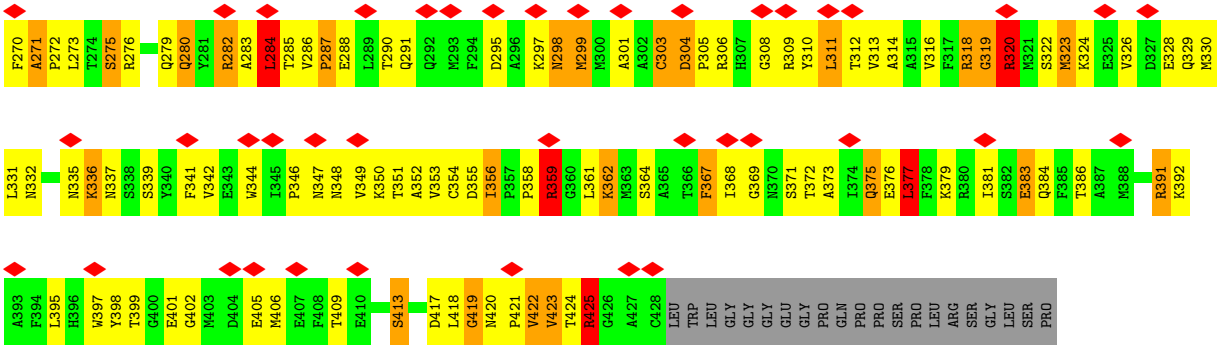


• Molecule 41: Tubulin beta chain

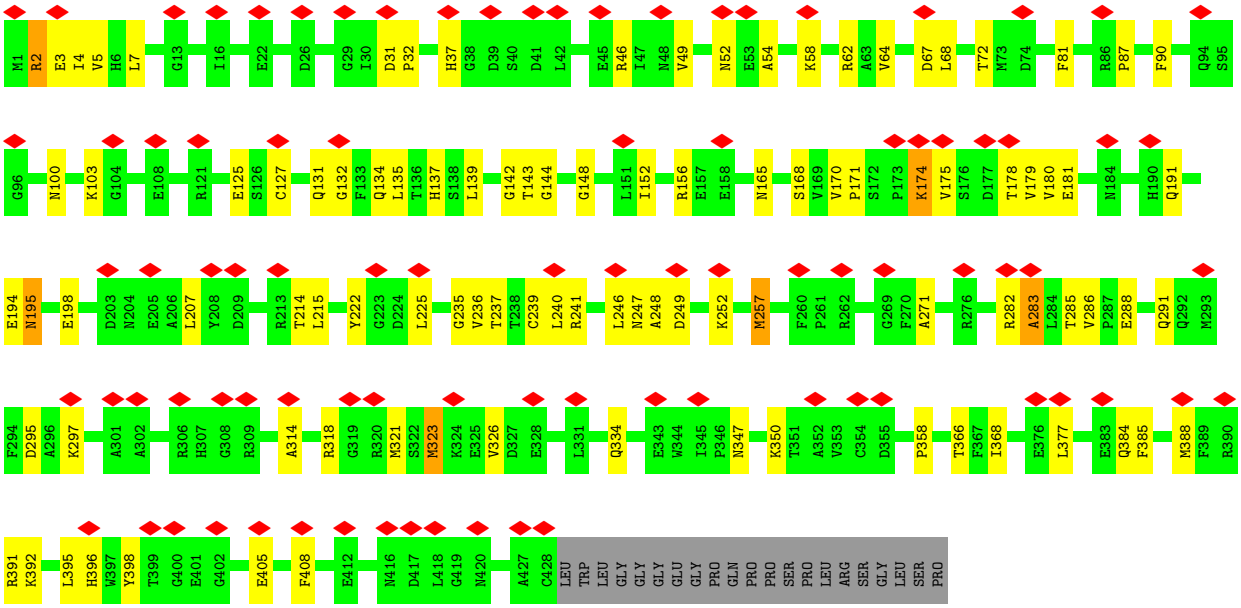
Chain EP:





• Molecule 41: Tubulin beta chain

Chain FB:



• Molecule 41: Tubulin beta chain

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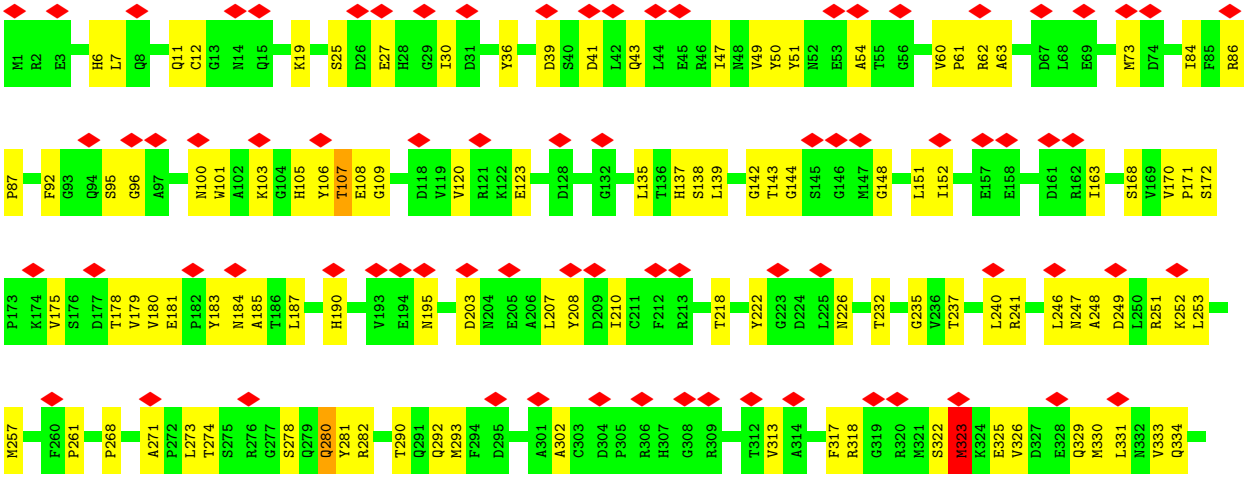

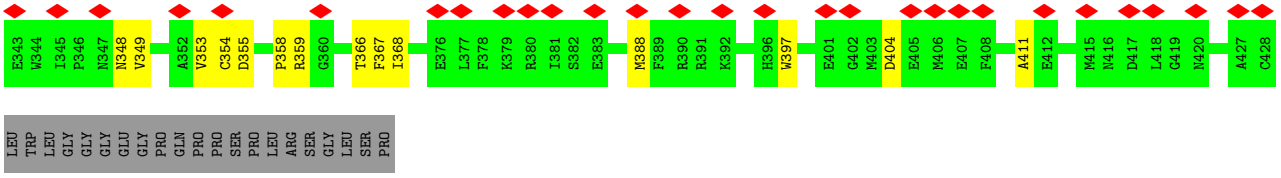

• Molecule 41: Tubulin beta chain

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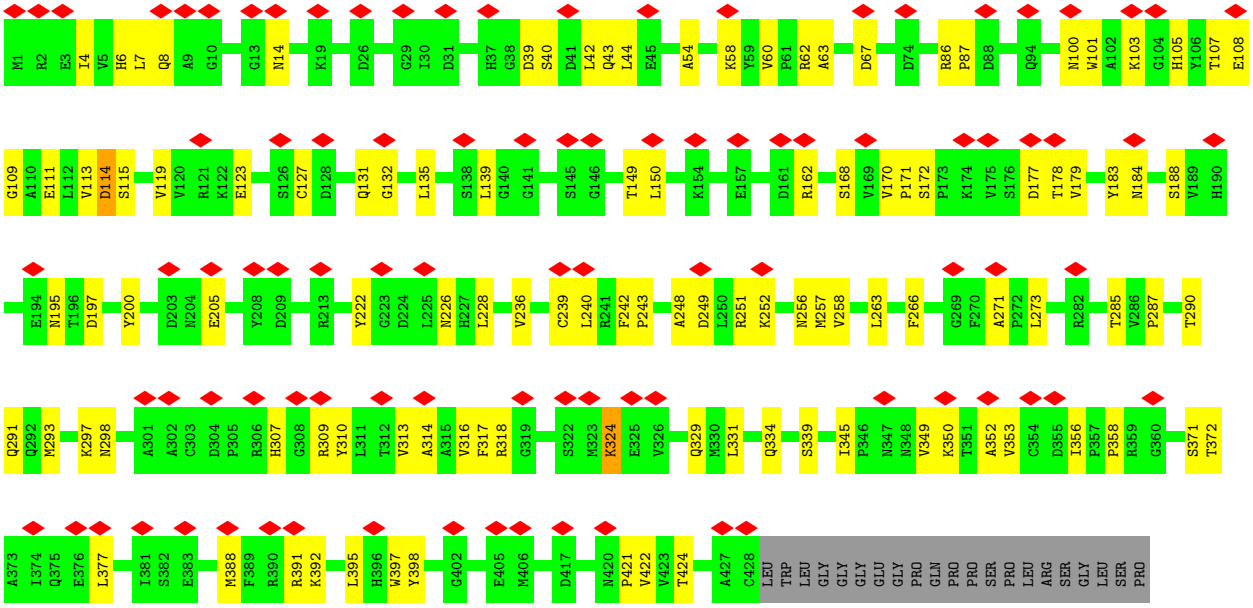
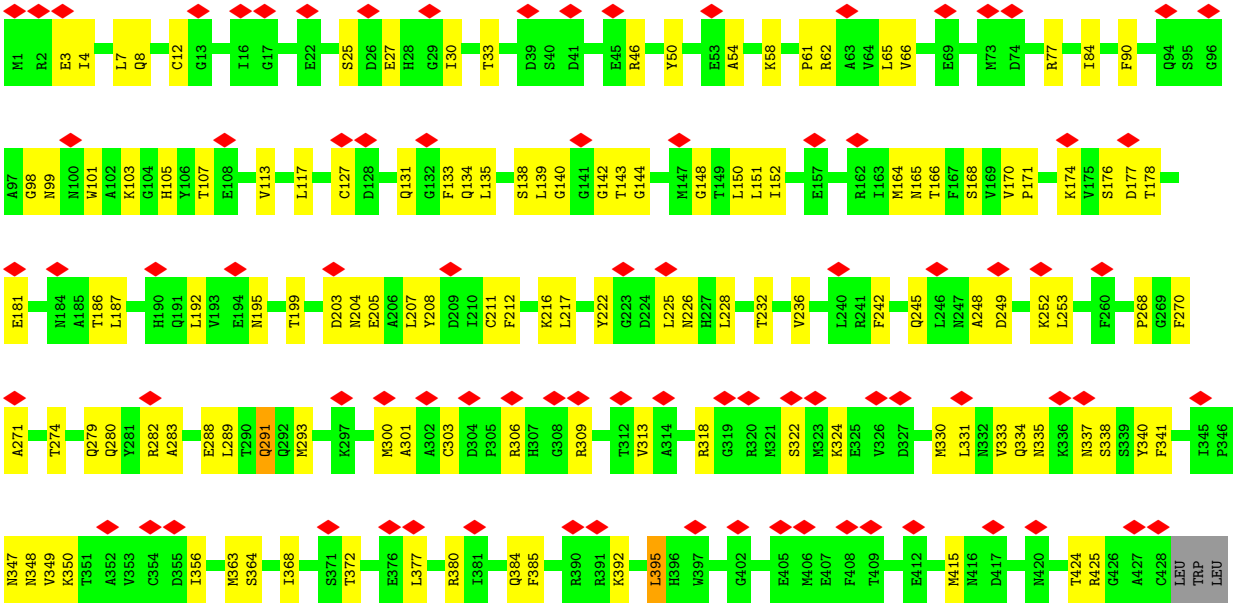


• Molecule 41: Tubulin beta chain

Chain FO:

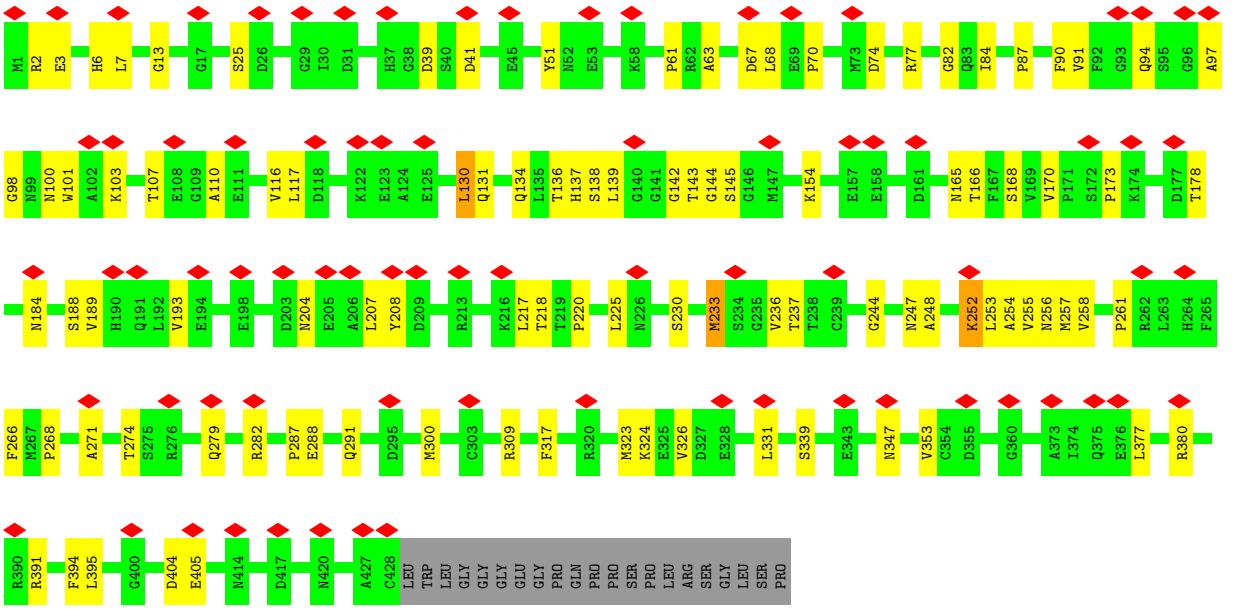


• Molecule 41: Tubulin beta chain

Chain FP:

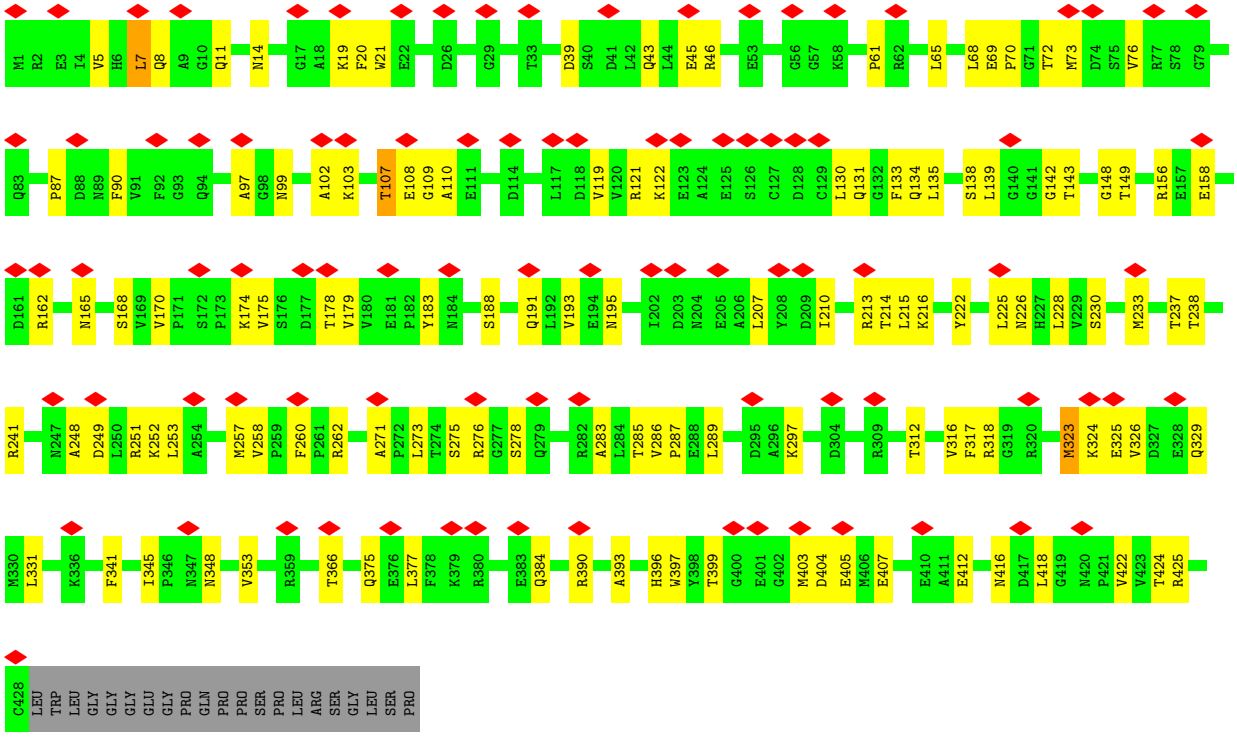
• Molecule 41: Tubulin beta chain

Chain GB:



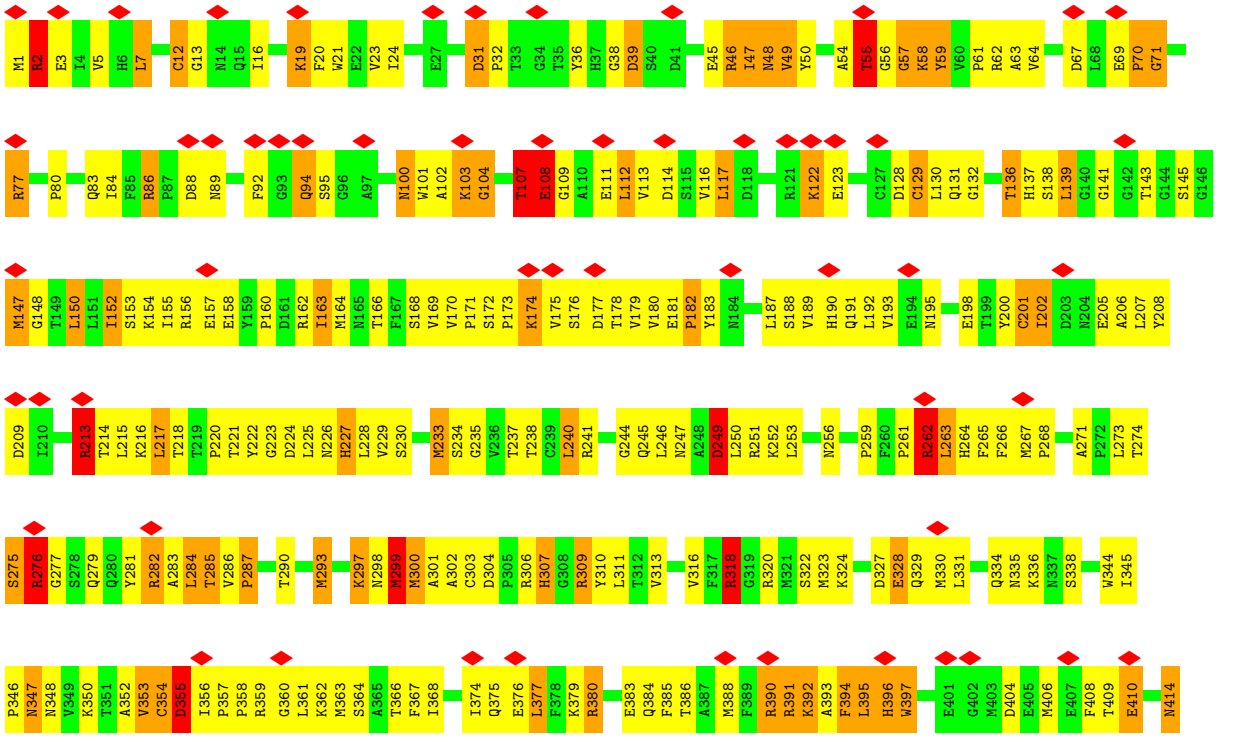
• Molecule 41: Tubulin beta chain

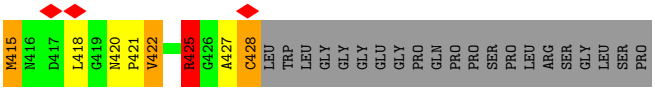
Chain GM:



• Molecule 41: Tubulin beta chain

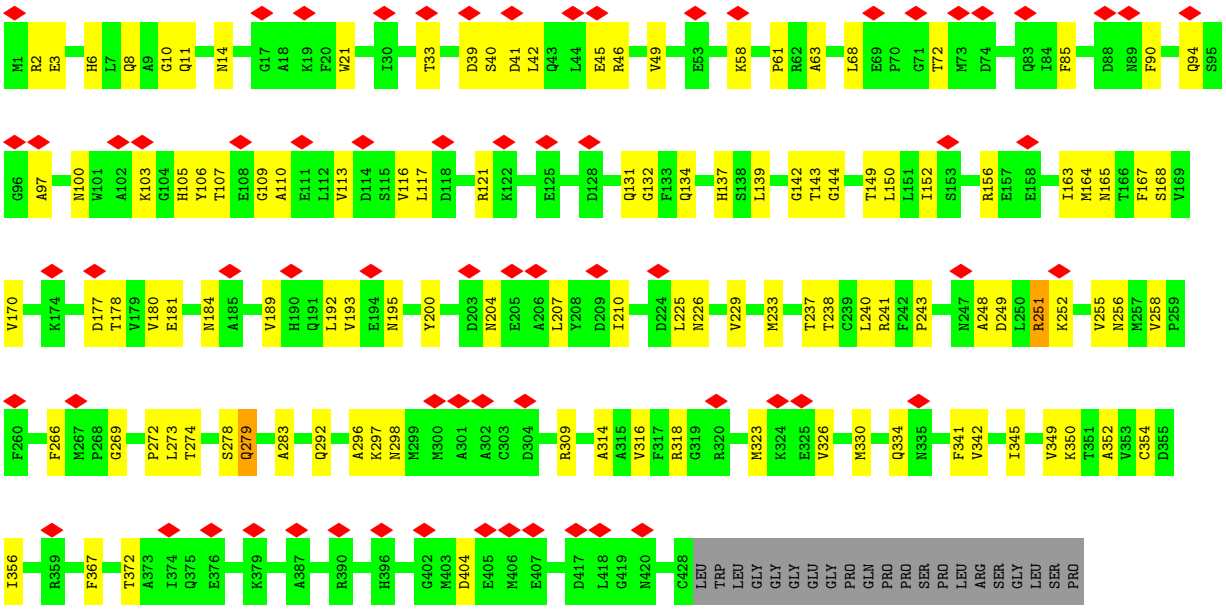
Chain GN:





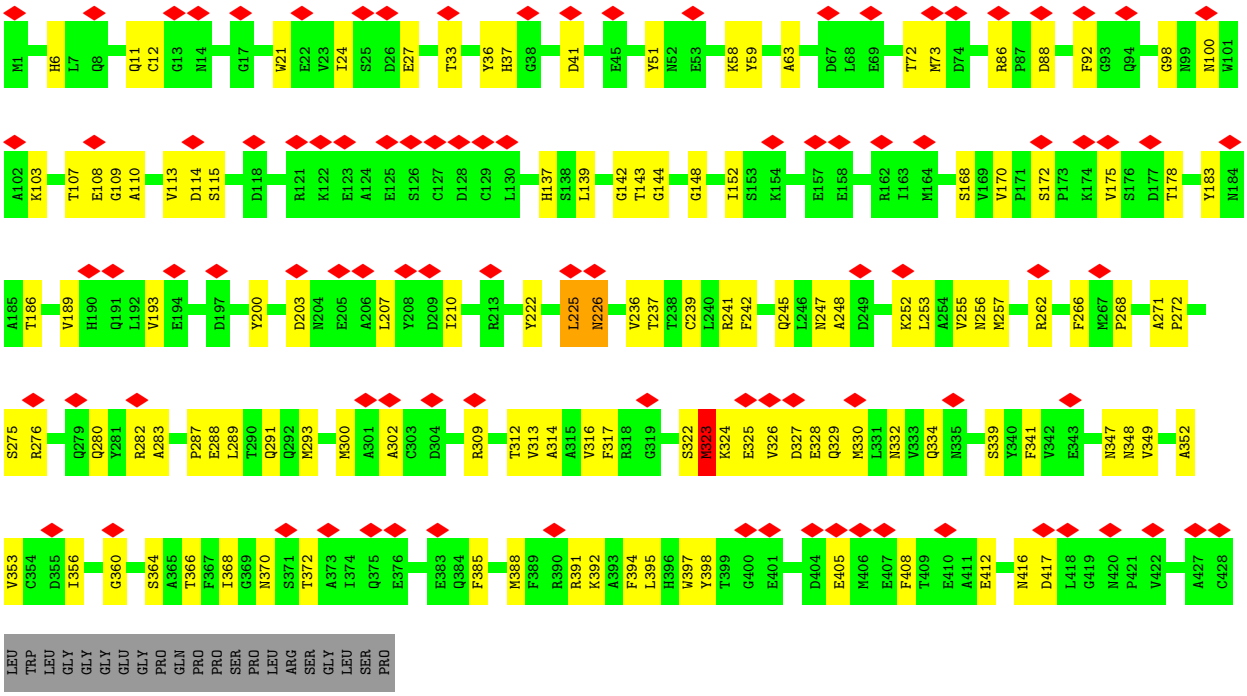
• Molecule 41: Tubulin beta chain

Chain GO:



• Molecule 41: Tubulin beta chain

Chain GP:



• Molecule 41: Tubulin beta chain

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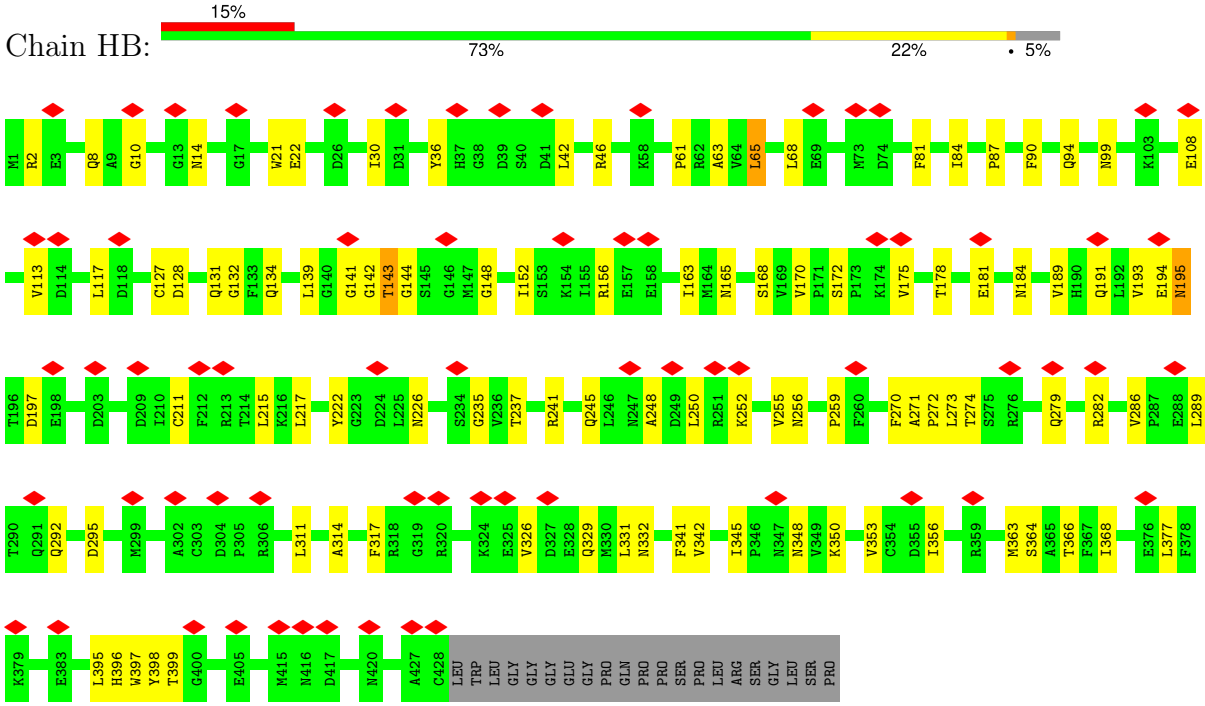
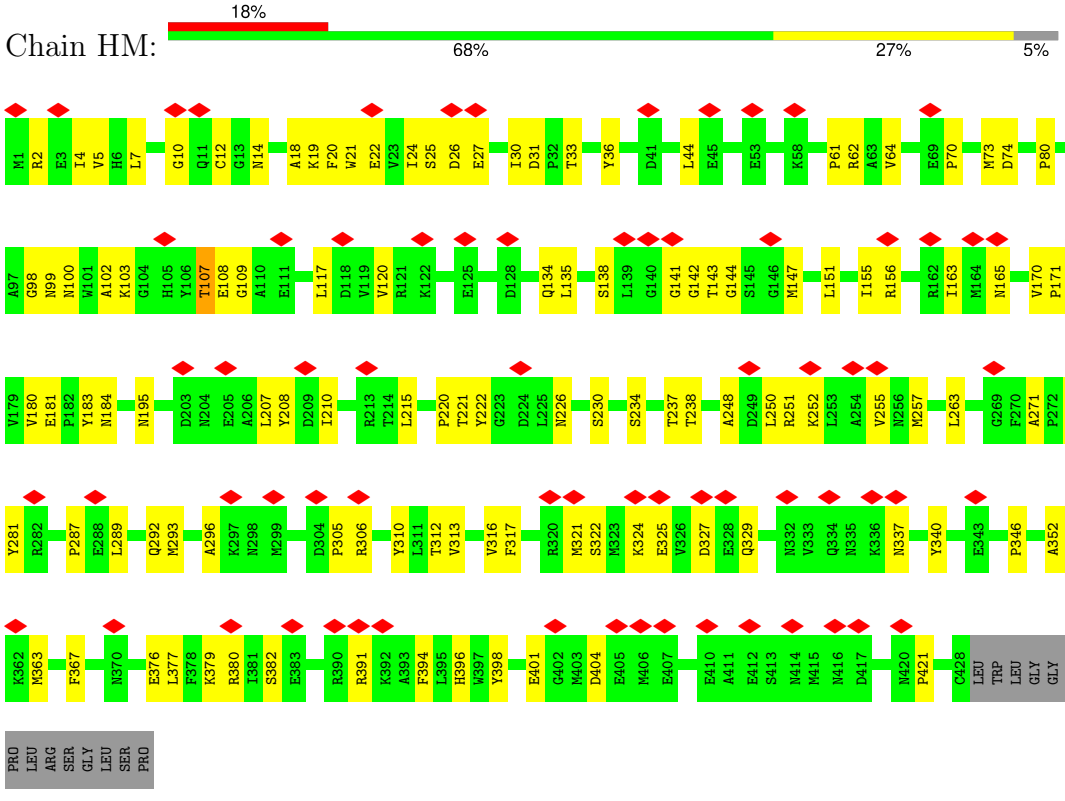


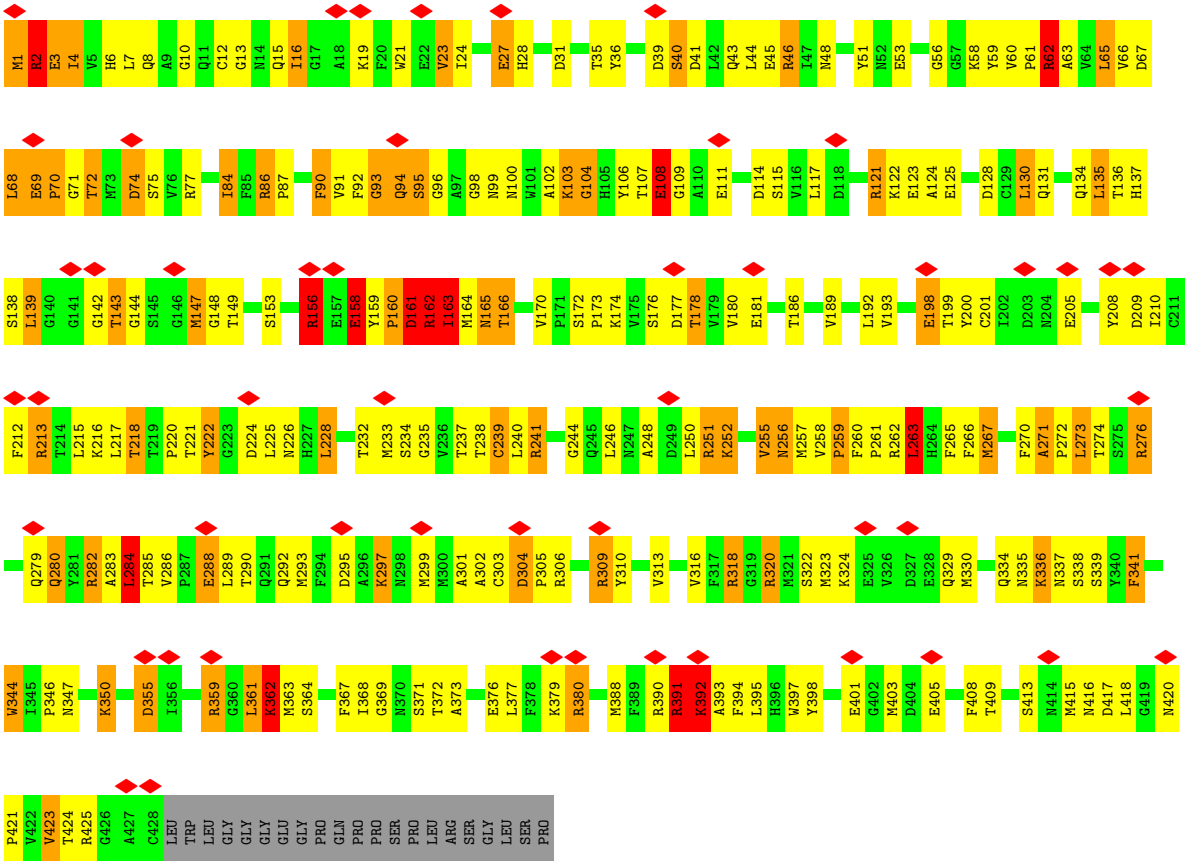
• Molecule 41: Tubulin beta chain

Chain HM:



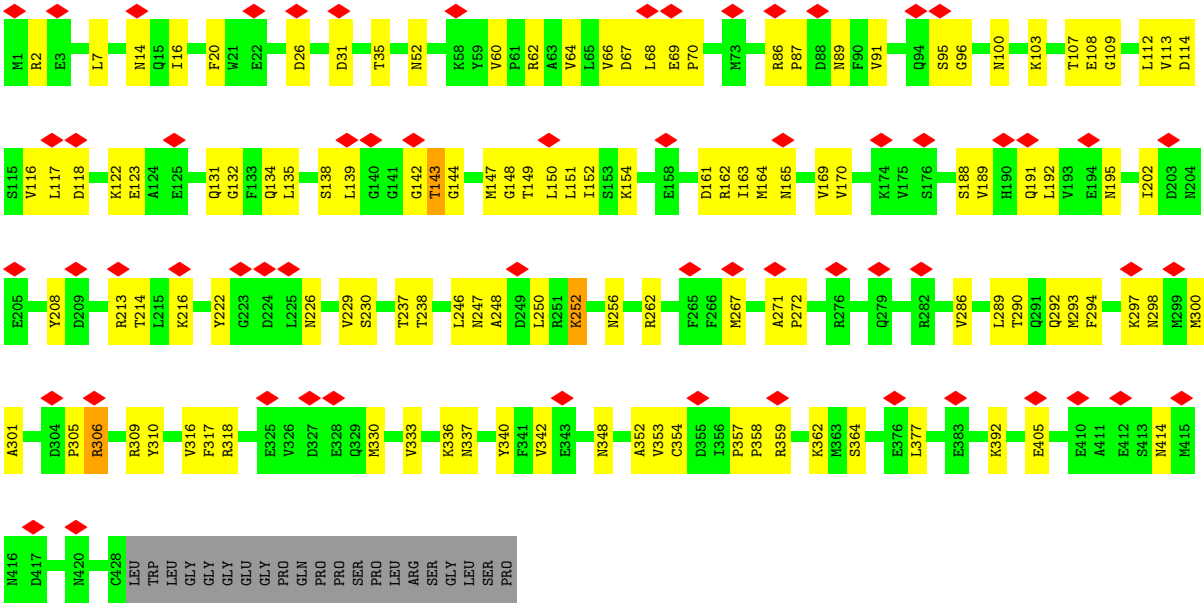
• Molecule 41: Tubulin beta chain

Chain HN:



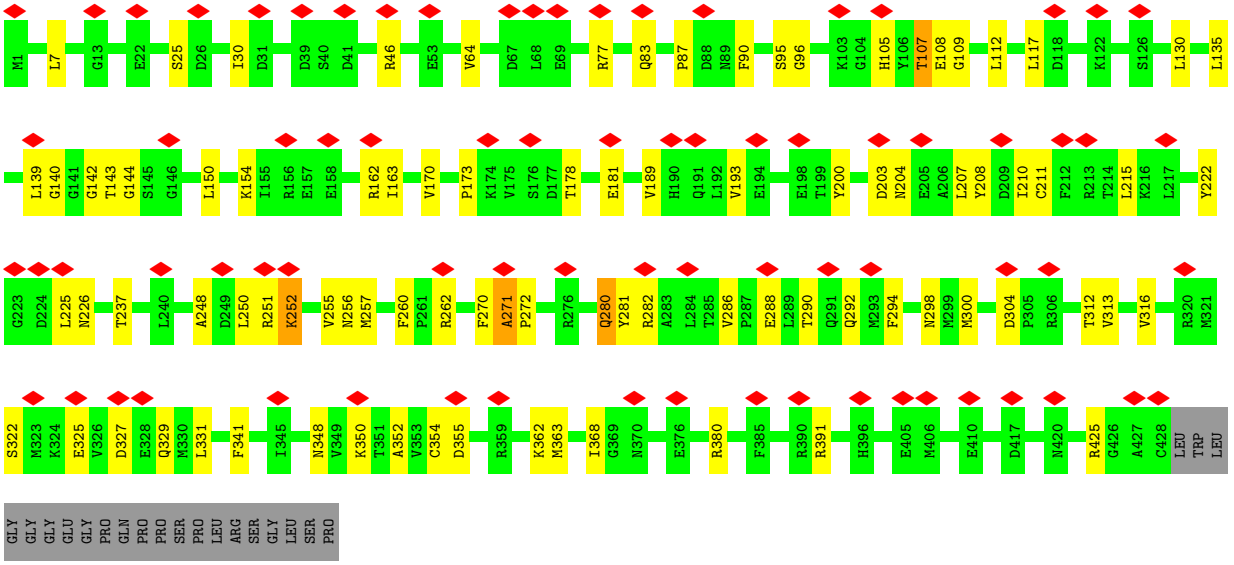
• Molecule 41: Tubulin beta chain

Chain HO:



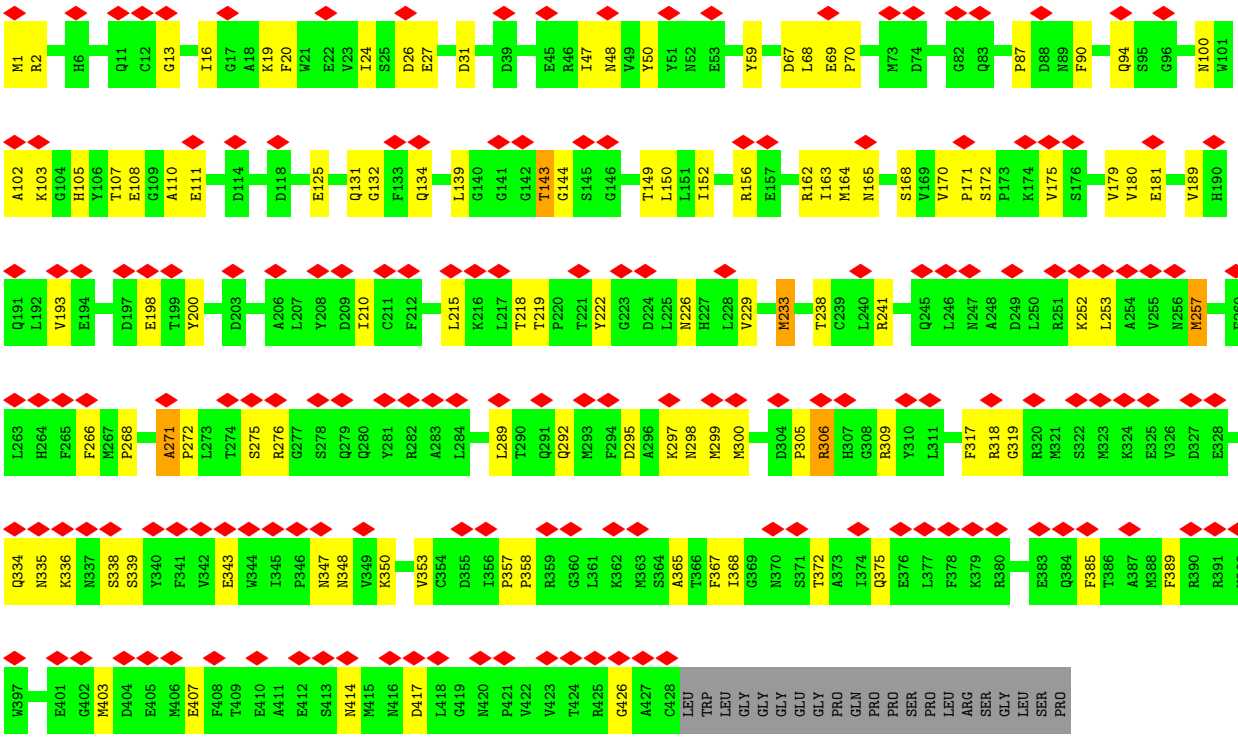
• Molecule 41: Tubulin beta chain

Chain HP:



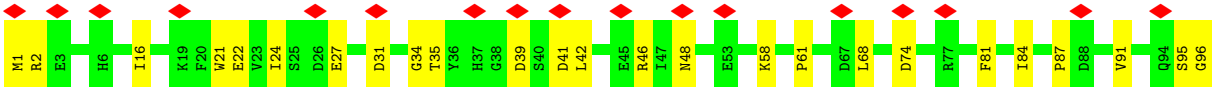
• Molecule 41: Tubulin beta chain

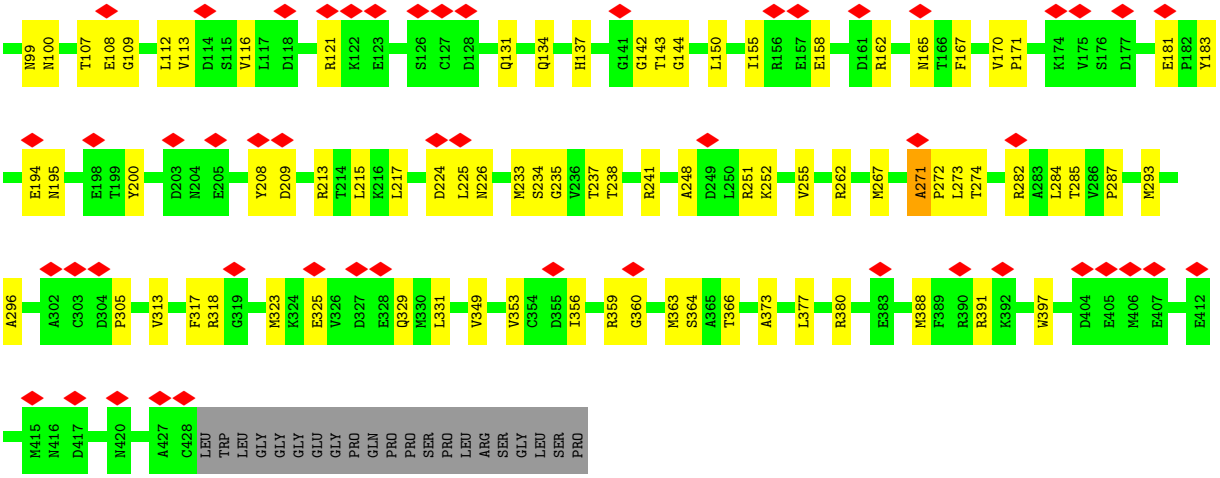
Chain HQ:



• Molecule 41: Tubulin beta chain

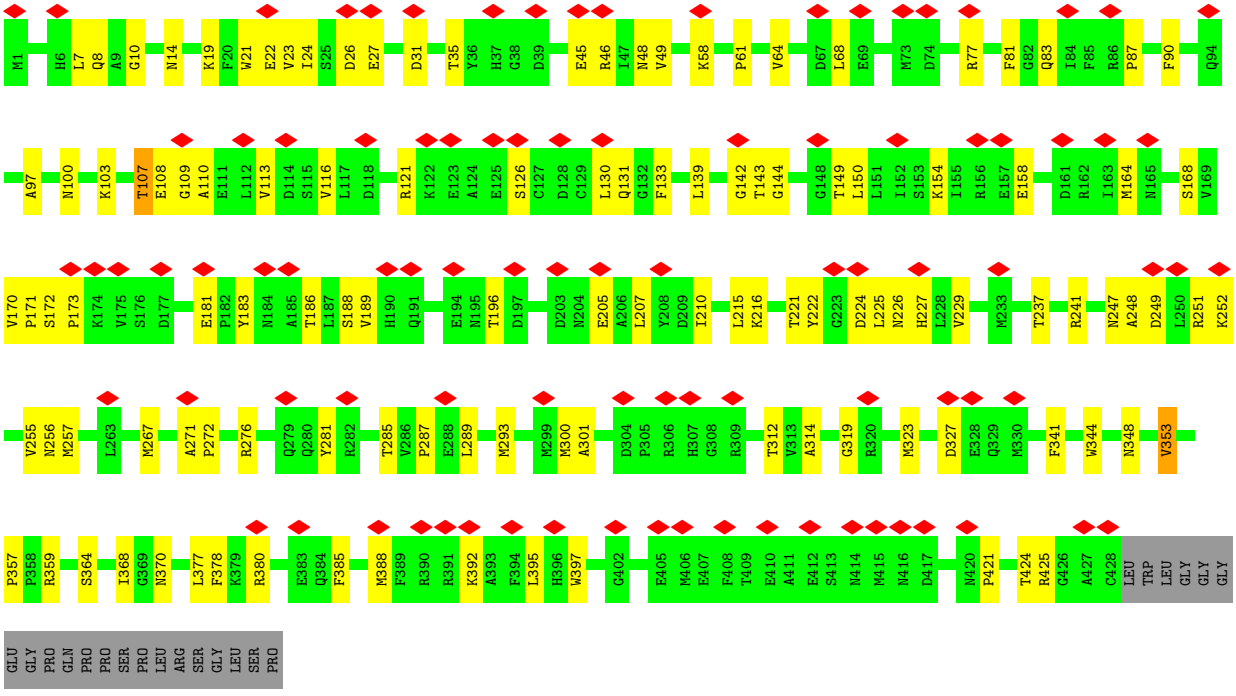
Chain IB:





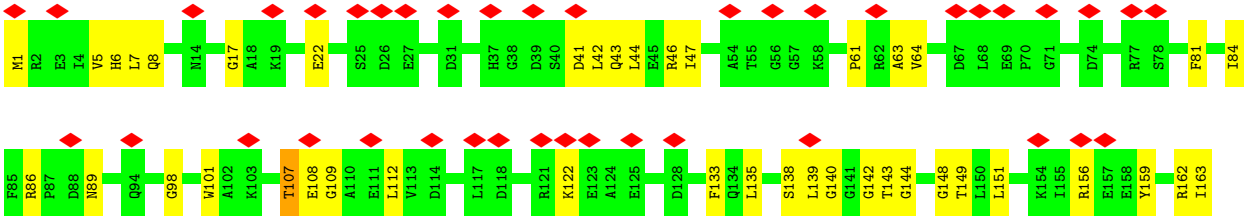
• Molecule 41: Tubulin beta chain

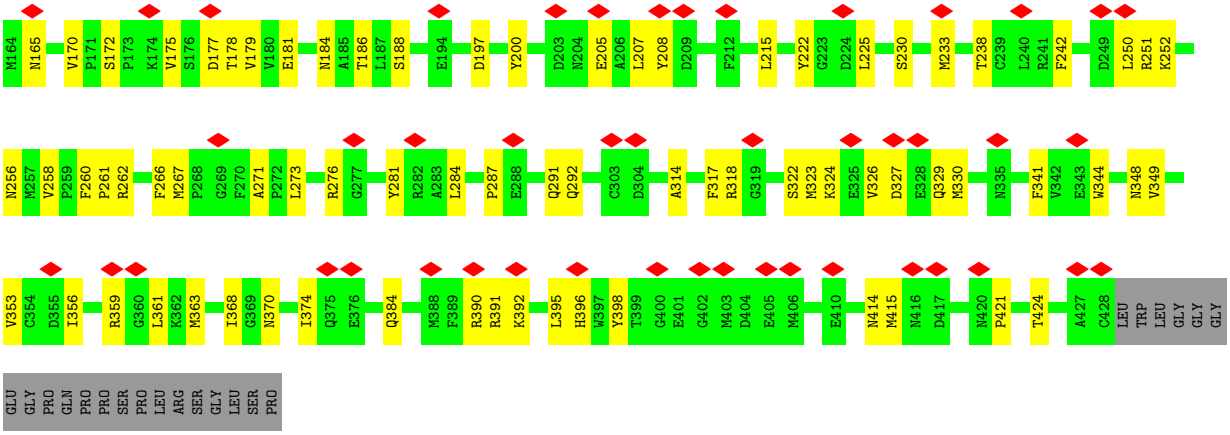
Chain IM:



• Molecule 41: Tubulin beta chain

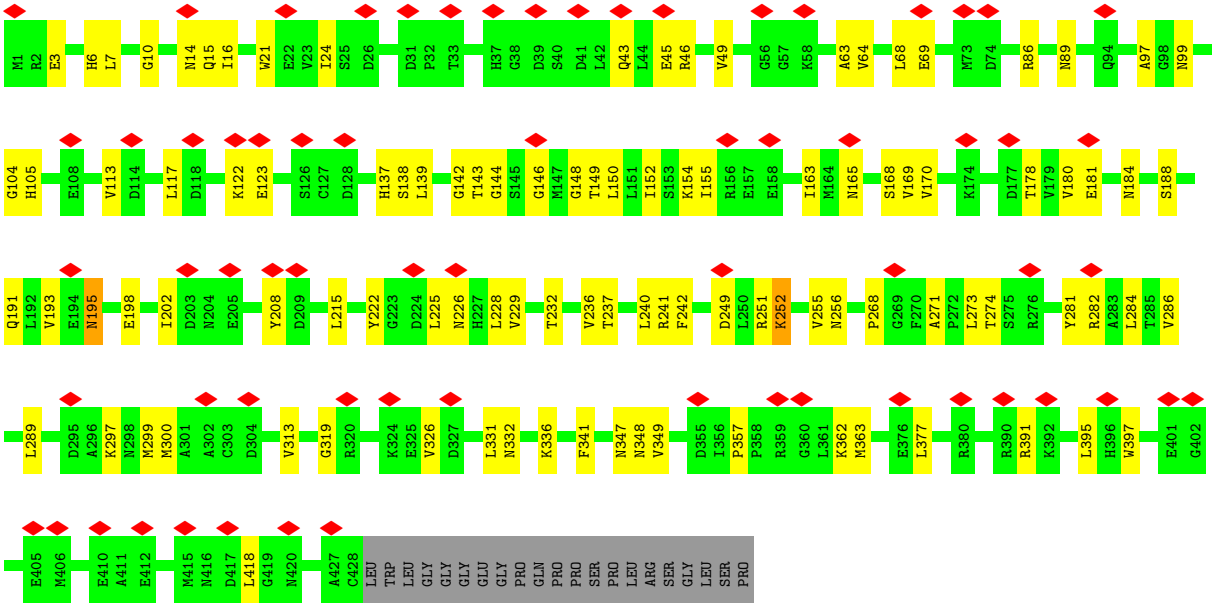
Chain IN:





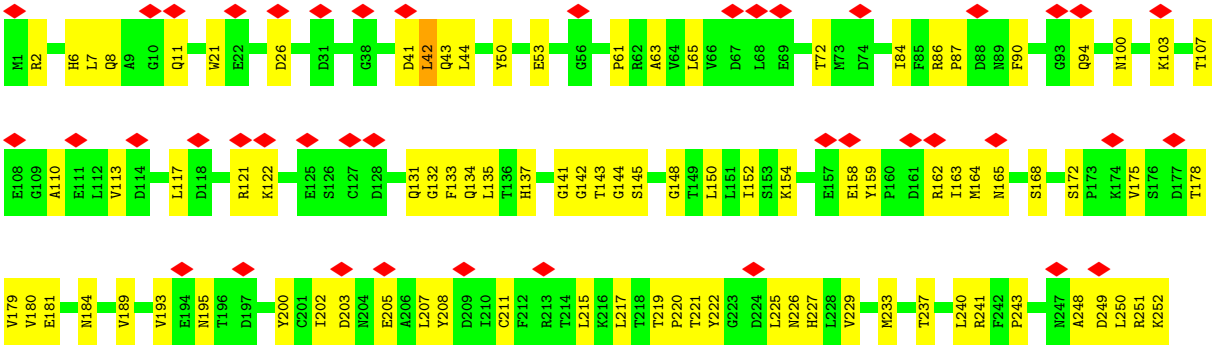
• Molecule 41: Tubulin beta chain

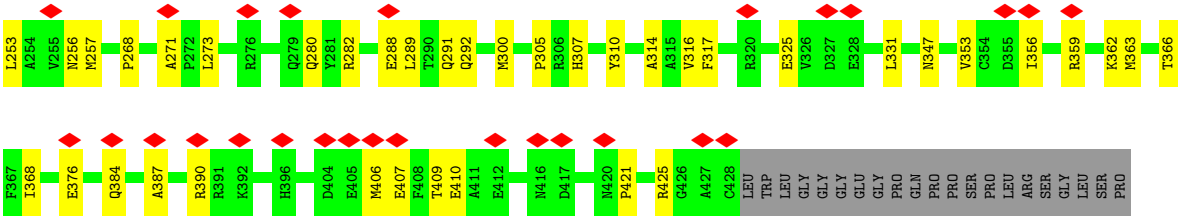
Chain IO:



• Molecule 41: Tubulin beta chain

Chain IP:



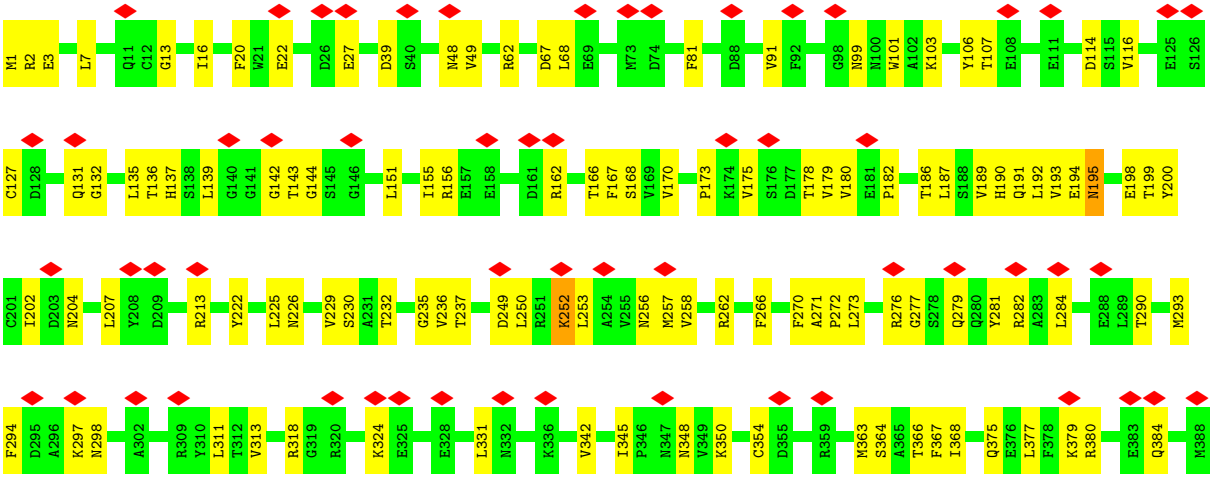


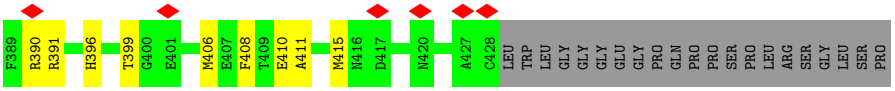
• Molecule 41: Tubulin beta chain

Chain IQ:

• Molecule 41: Tubulin beta chain

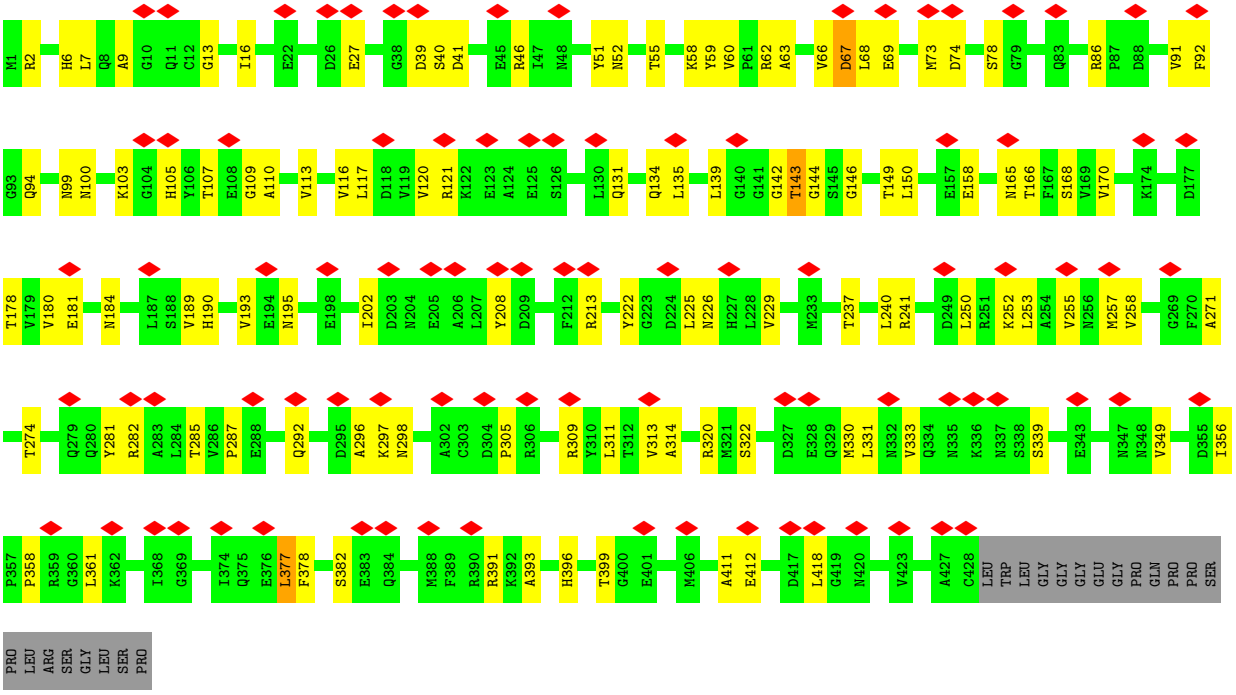
Chain JB:





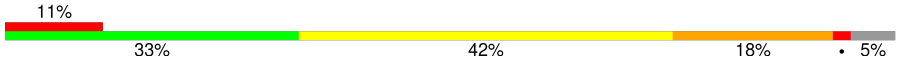
• Molecule 41: Tubulin beta chain

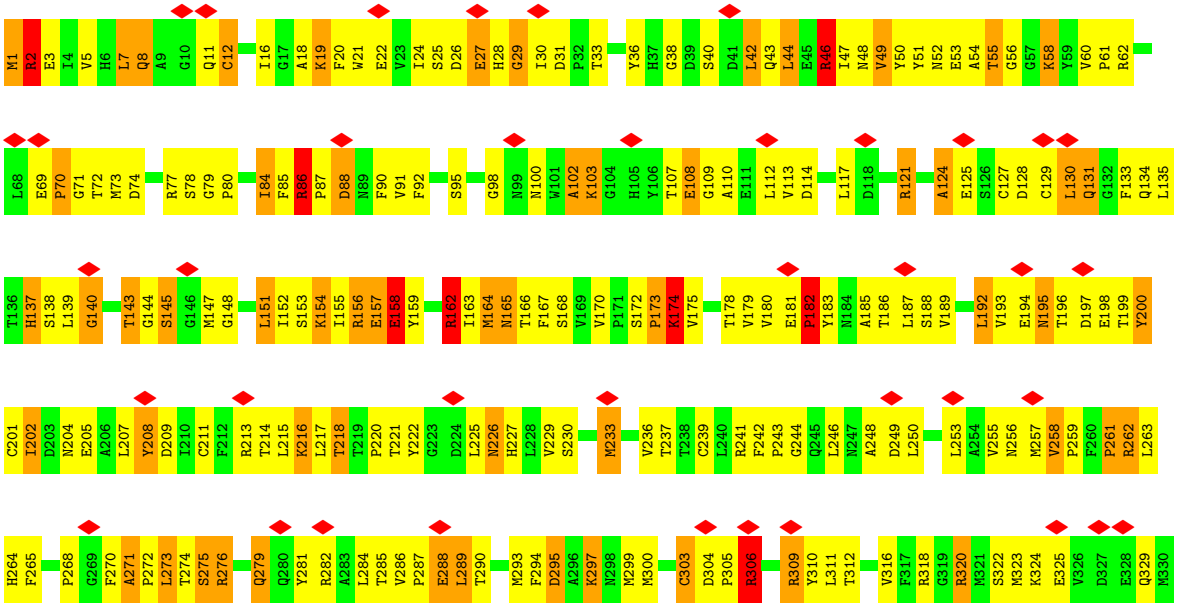
Chain JL:

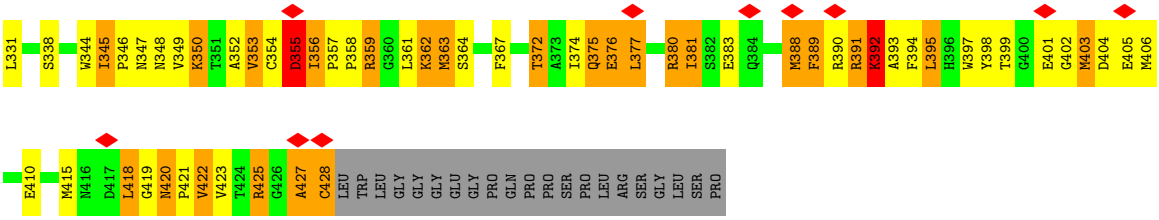


• Molecule 41: Tubulin beta chain

Chain JM:

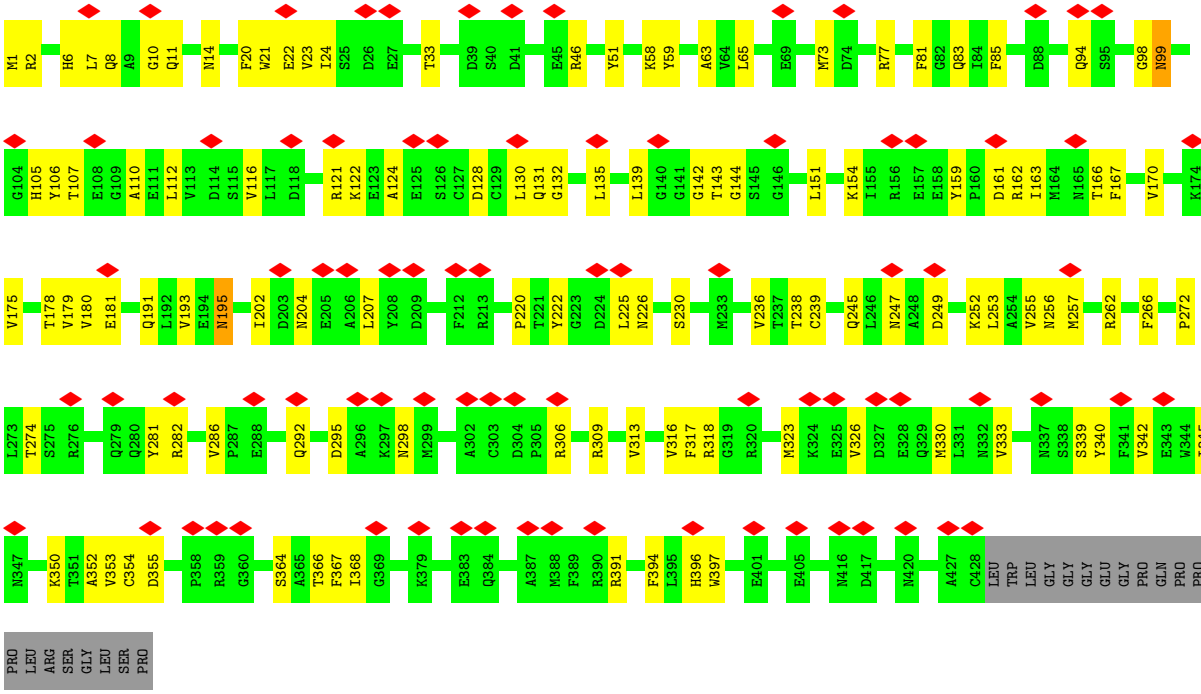






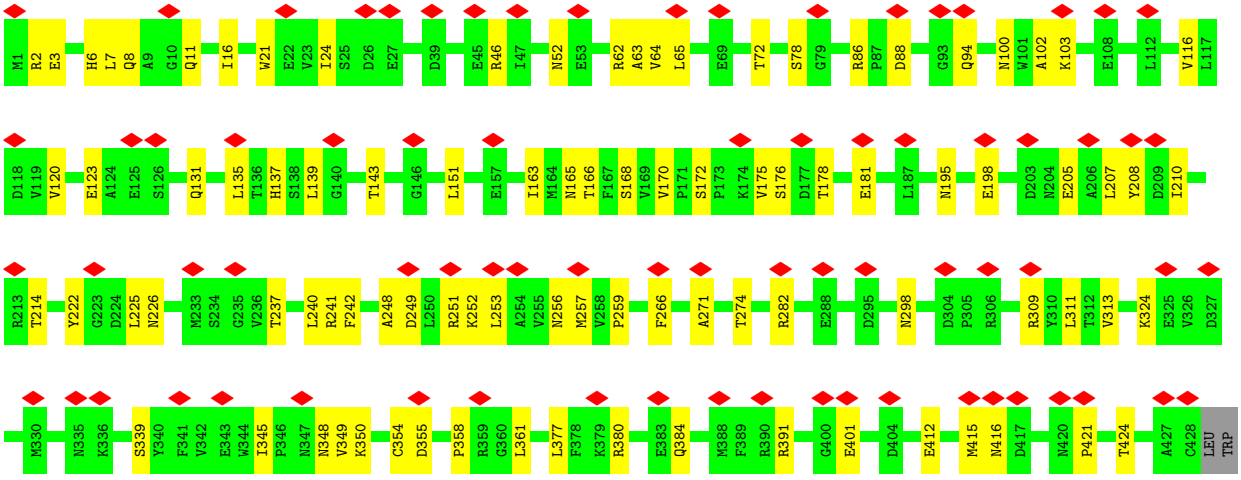
• Molecule 41: Tubulin beta chain

Chain JN:



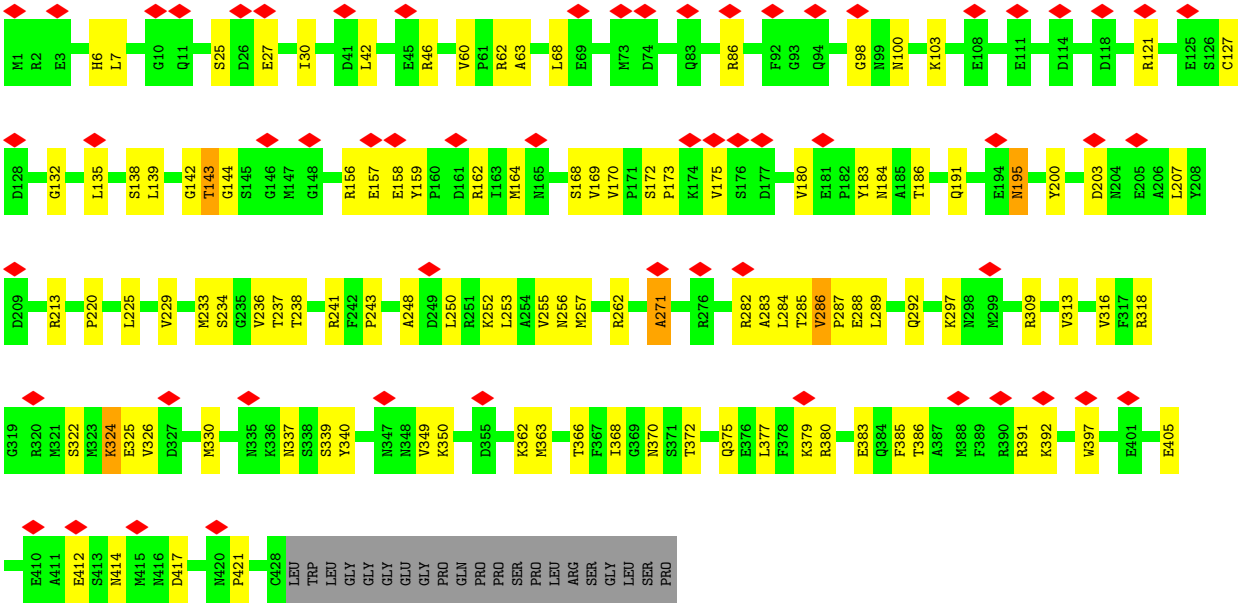
• Molecule 41: Tubulin beta chain

Chain JO:



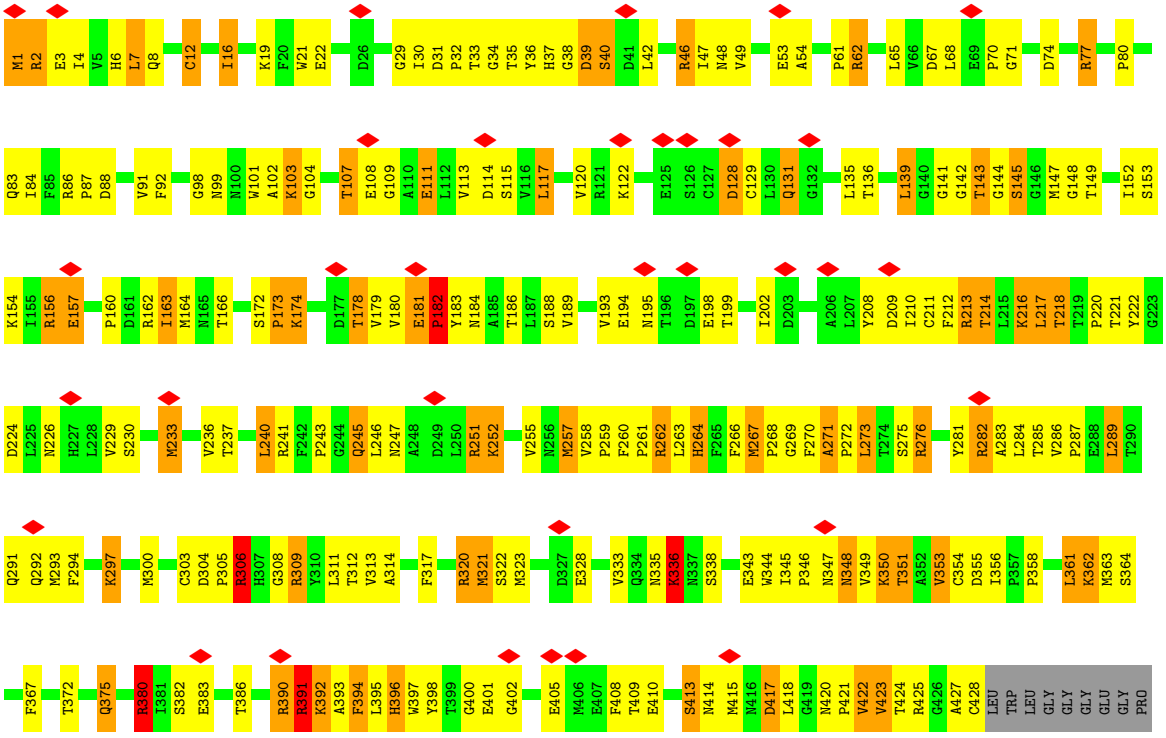
• Molecule 41: Tubulin beta chain

Chain KB:



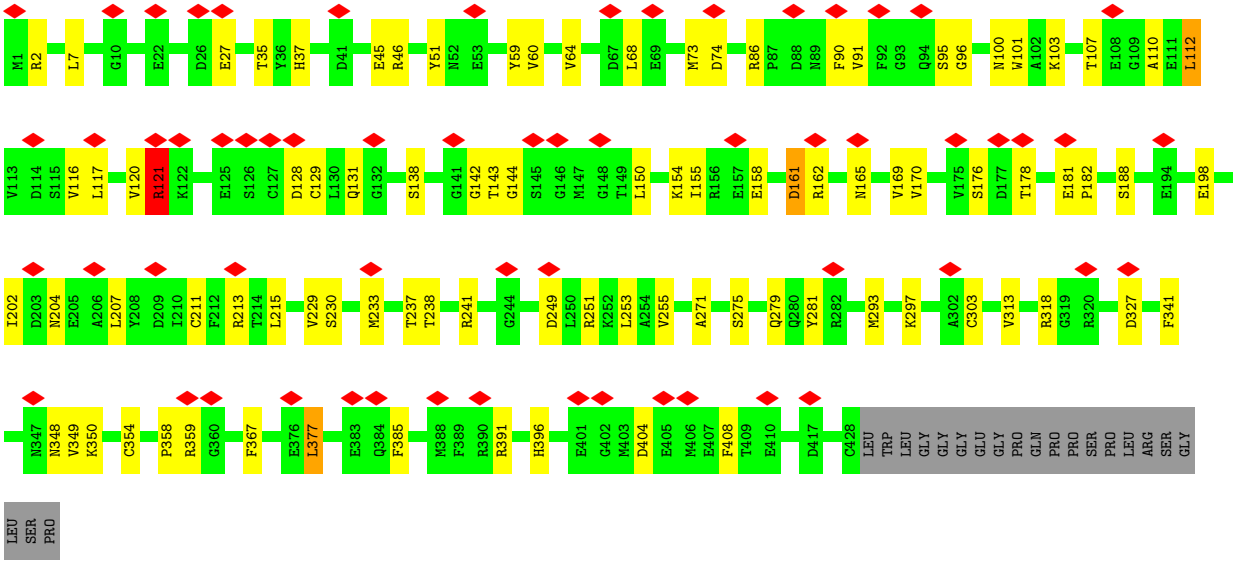
• Molecule 41: Tubulin beta chain

Chain KL:



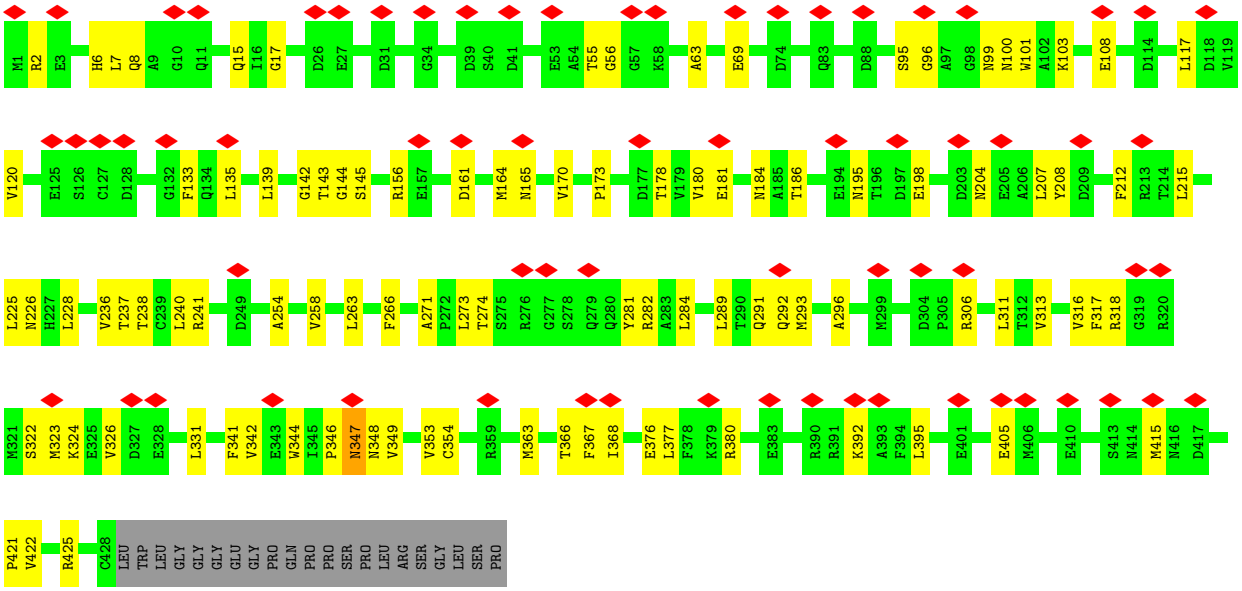
• Molecule 41: Tubulin beta chain

Chain KM:



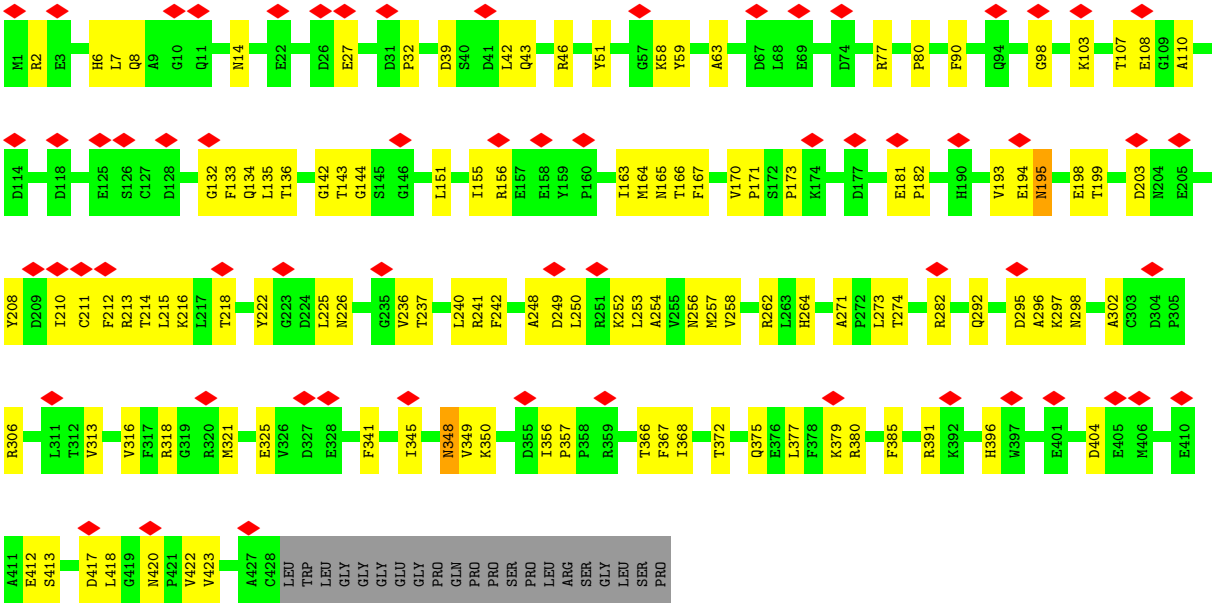
• Molecule 41: Tubulin beta chain

Chain KN:



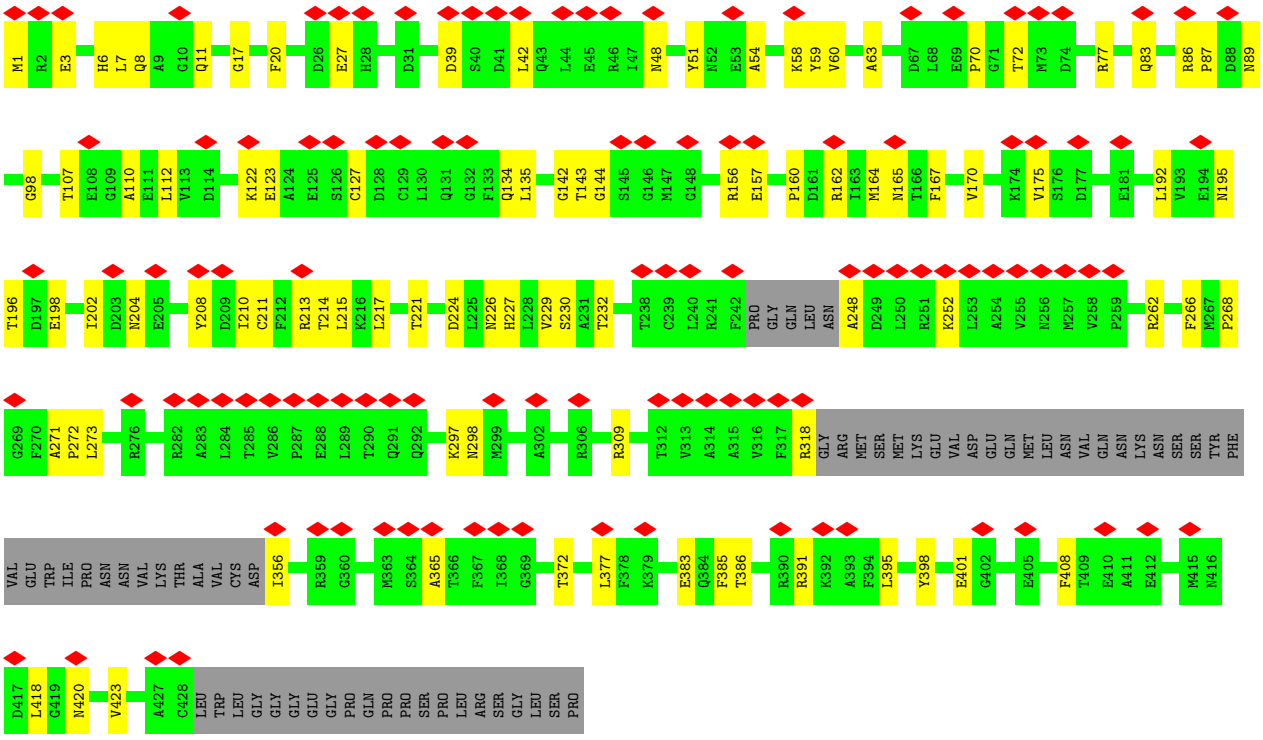
• Molecule 41: Tubulin beta chain

Chain KO:



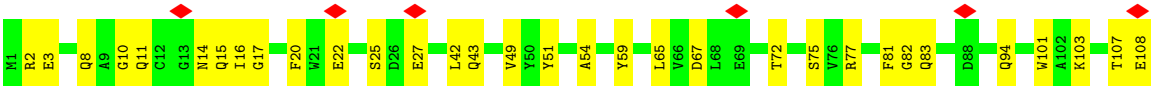
• Molecule 41: Tubulin beta chain

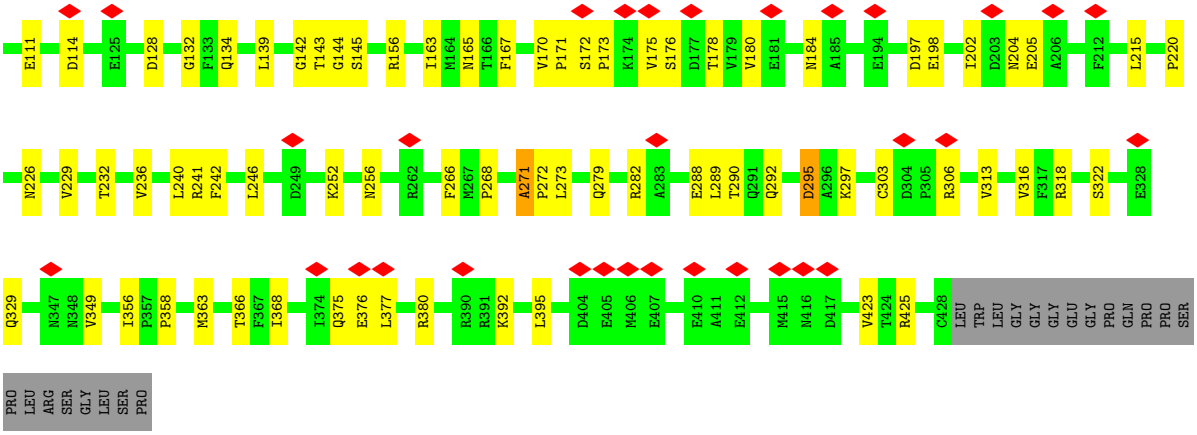
Chain KP:



• Molecule 41: Tubulin beta chain

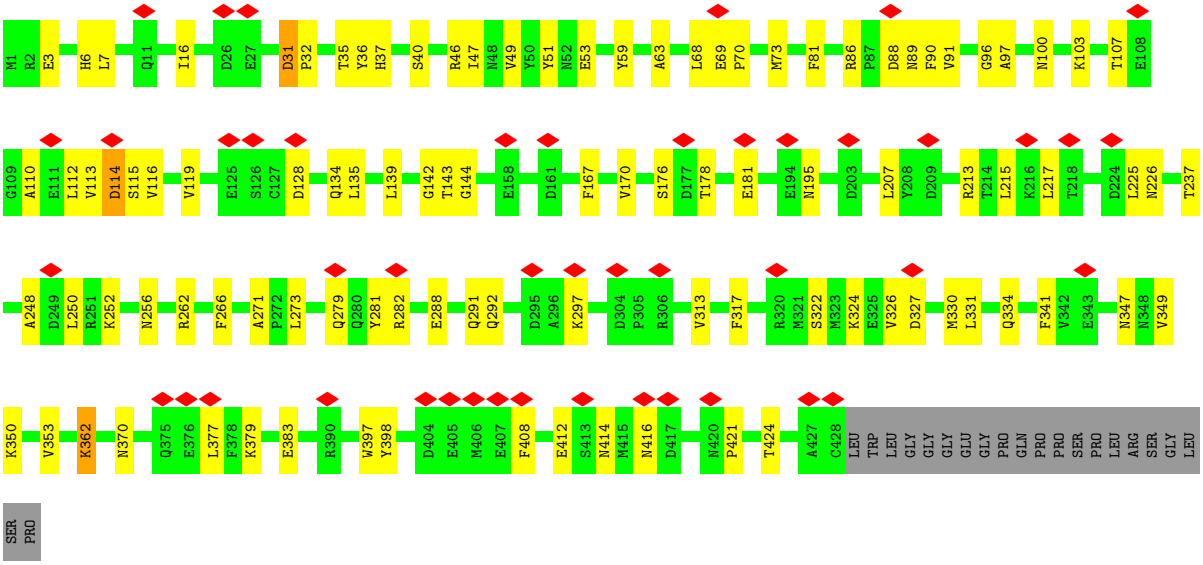
Chain LB:





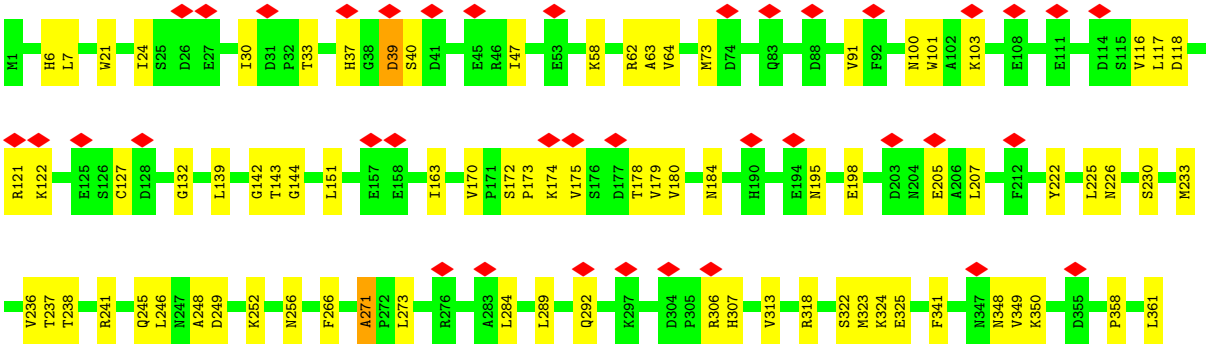
• Molecule 41: Tubulin beta chain

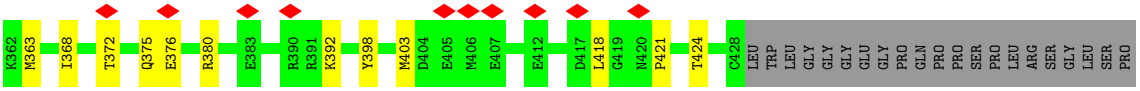
Chain LL:



• Molecule 41: Tubulin beta chain

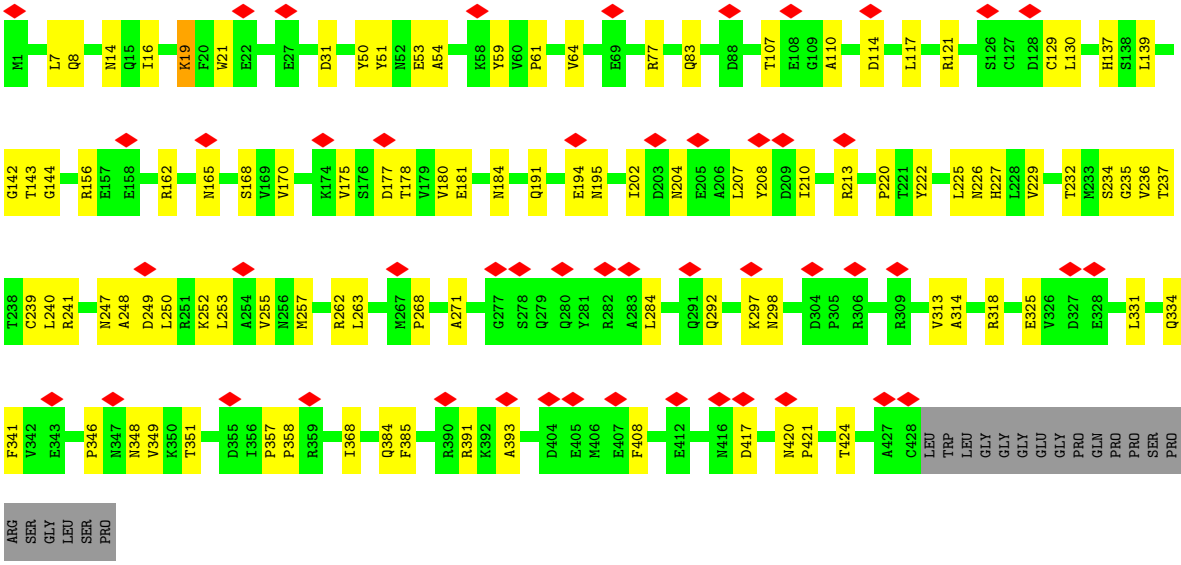
Chain LM:





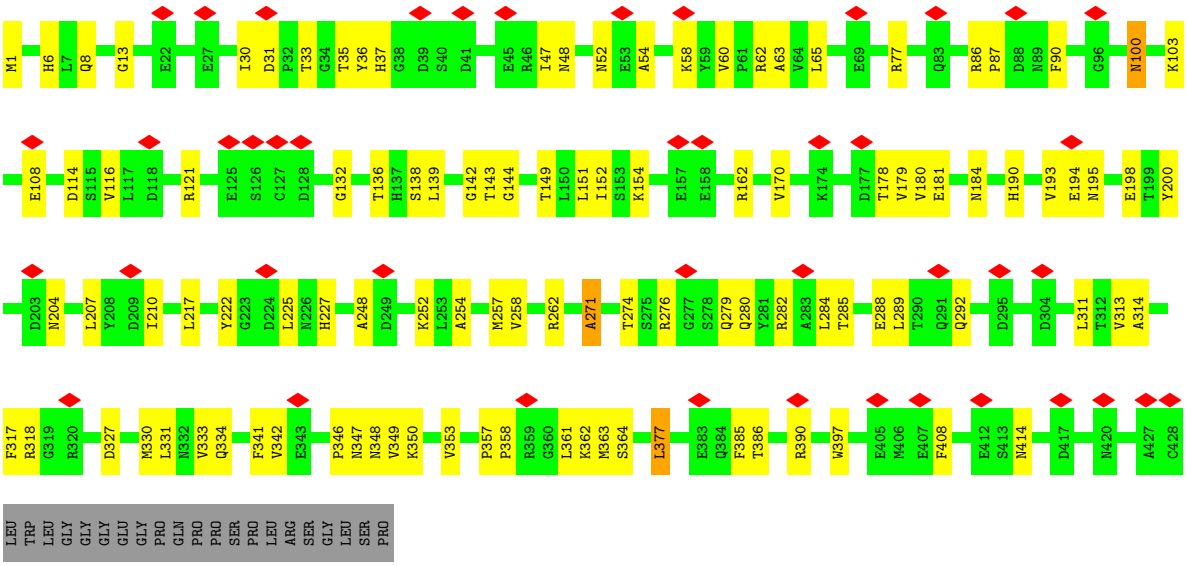
• Molecule 41: Tubulin beta chain

Chain LN:



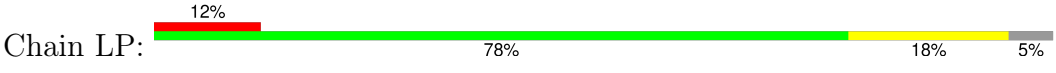
• Molecule 41: Tubulin beta chain

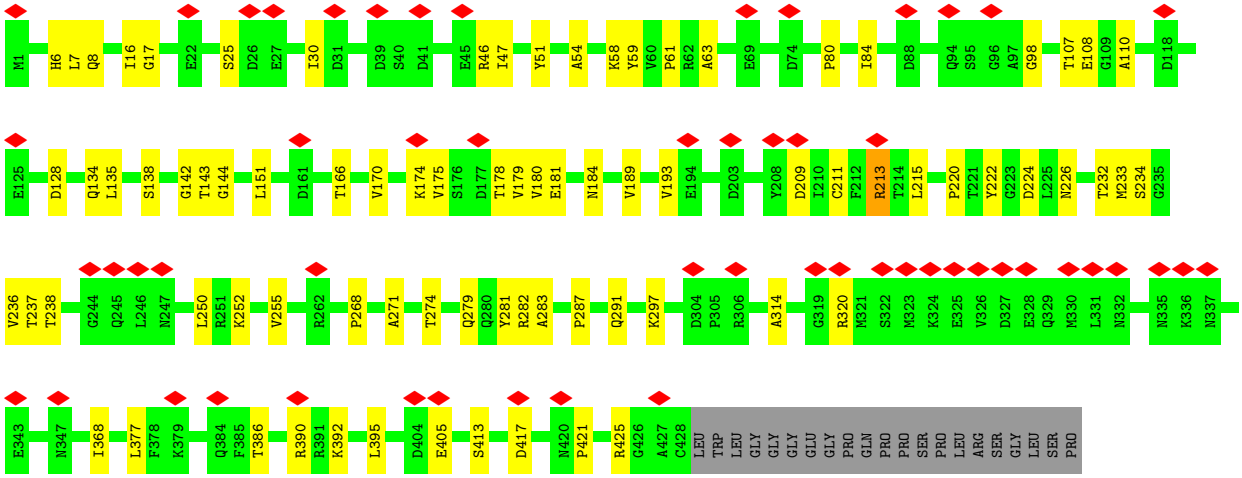
Chain LO:



• Molecule 41: Tubulin beta chain

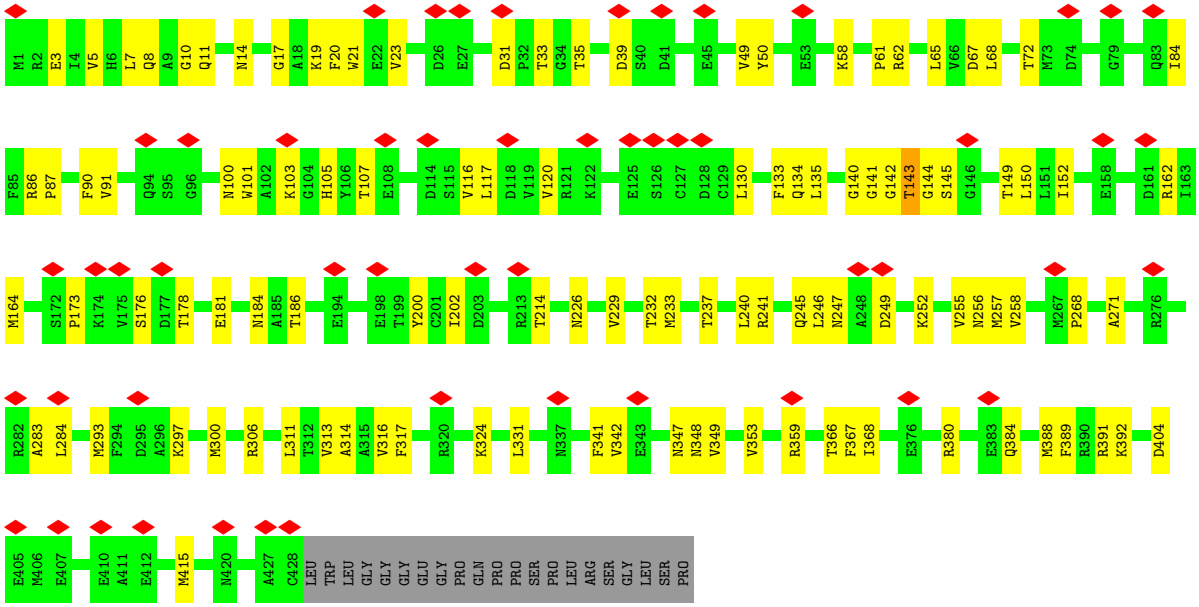
Chain LP:





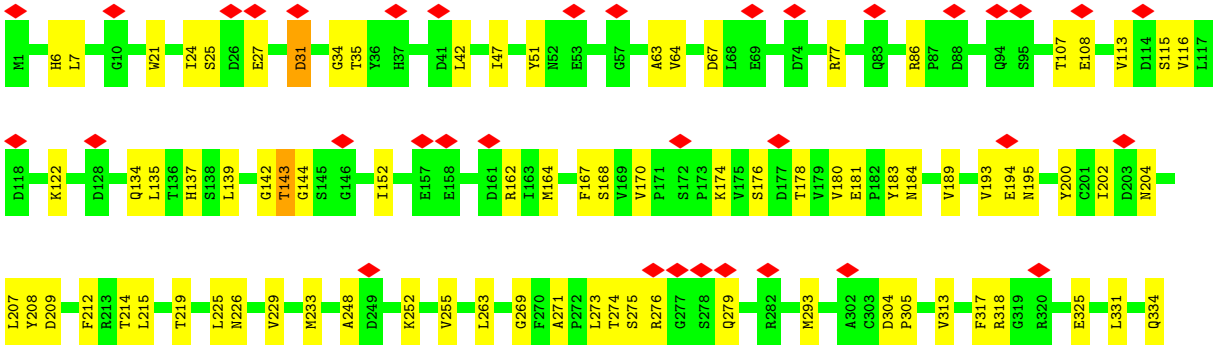
• Molecule 41: Tubulin beta chain

Chain MB:



• Molecule 41: Tubulin beta chain

Chain ML:



• Molecule 41: Tubulin beta chain

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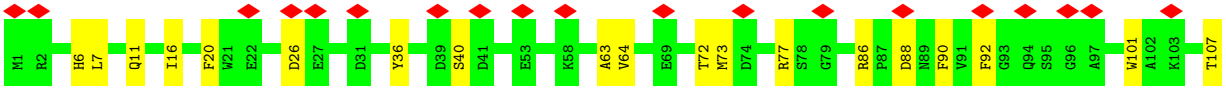
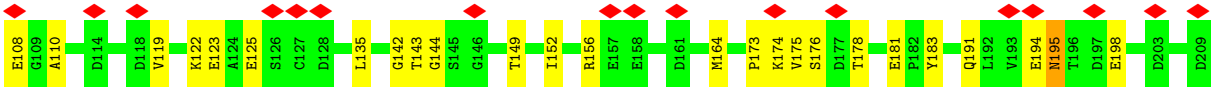
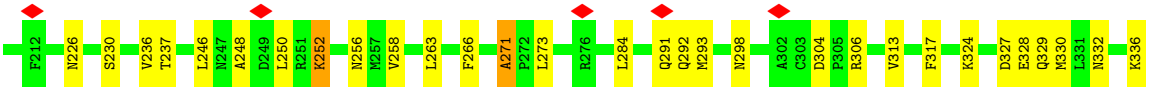
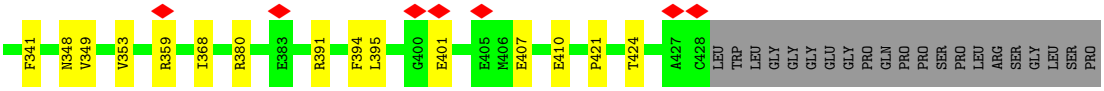


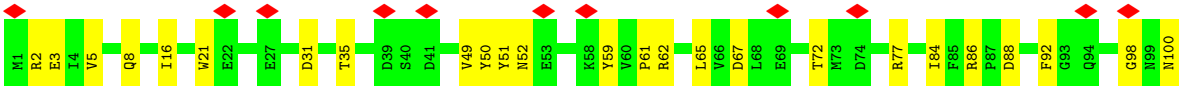


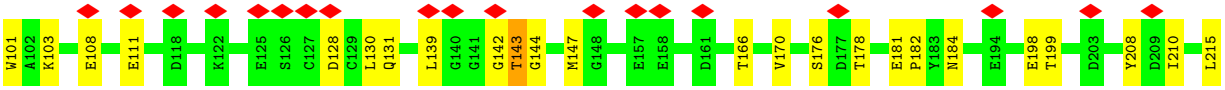


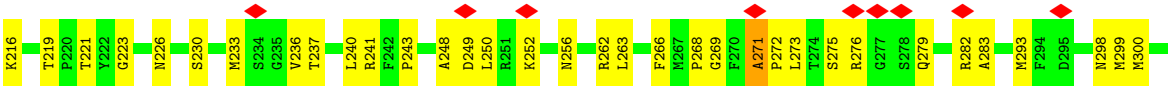


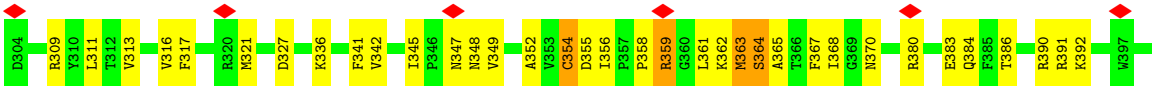
• Molecule 41: Tubulin beta chain

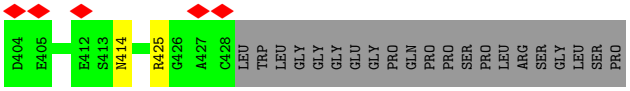
Chain MN:





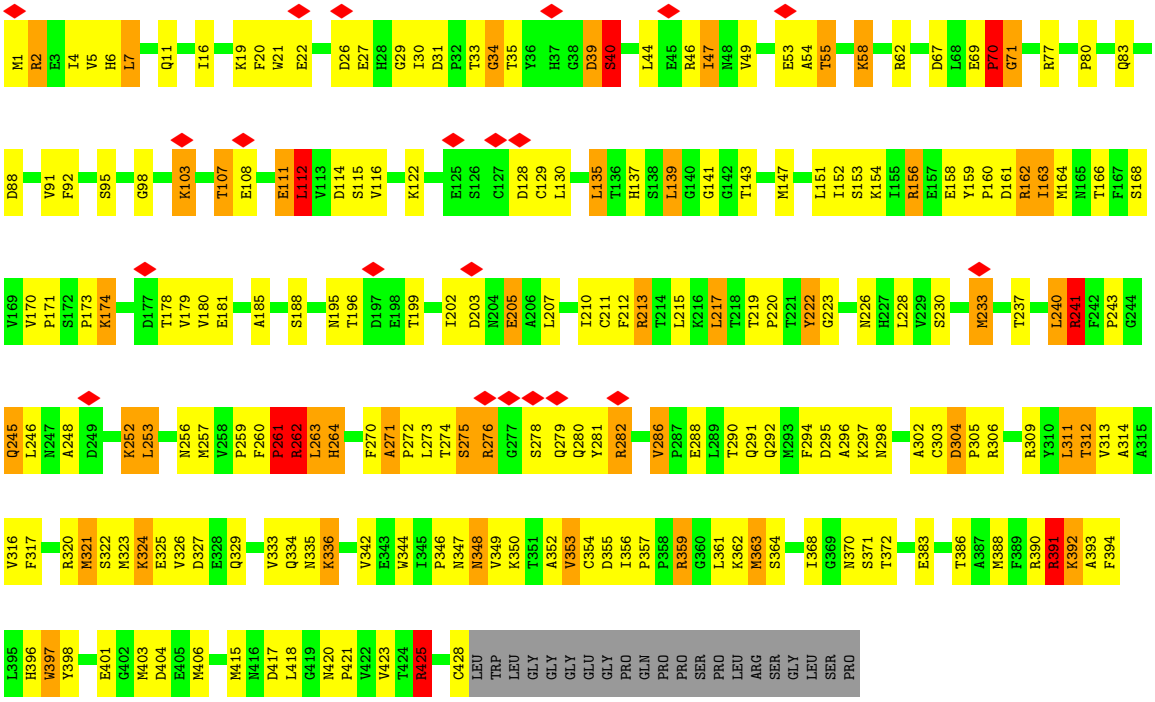






• Molecule 41: Tubulin beta chain

Chain MO:



• Molecule 41: Tubulin beta chain

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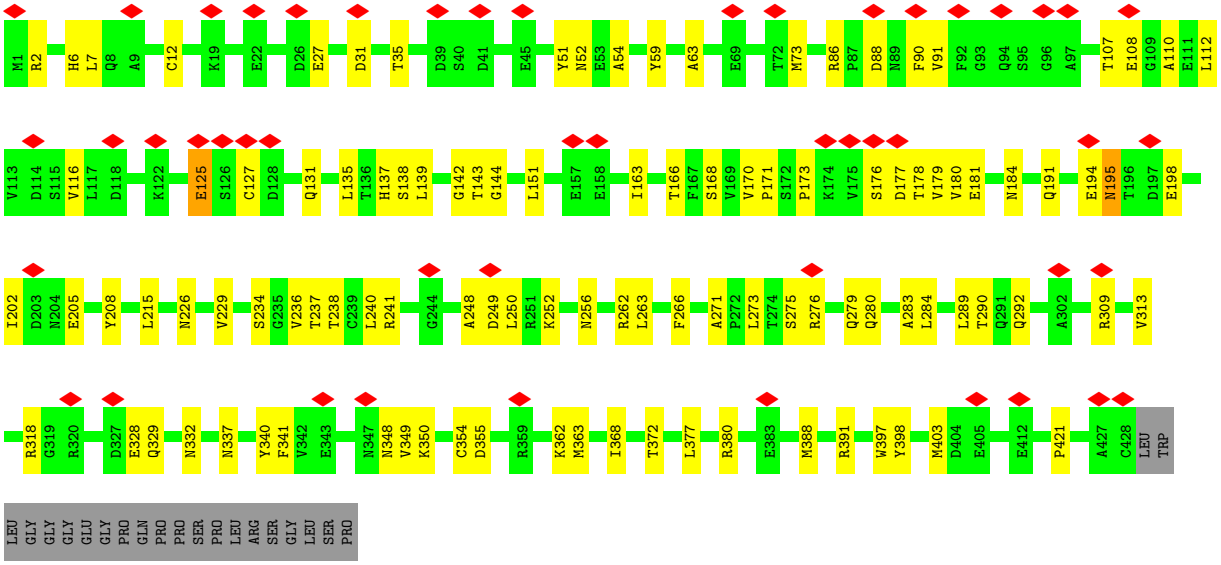
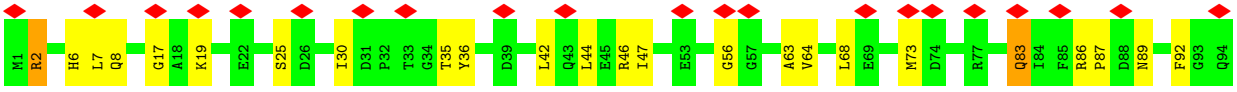
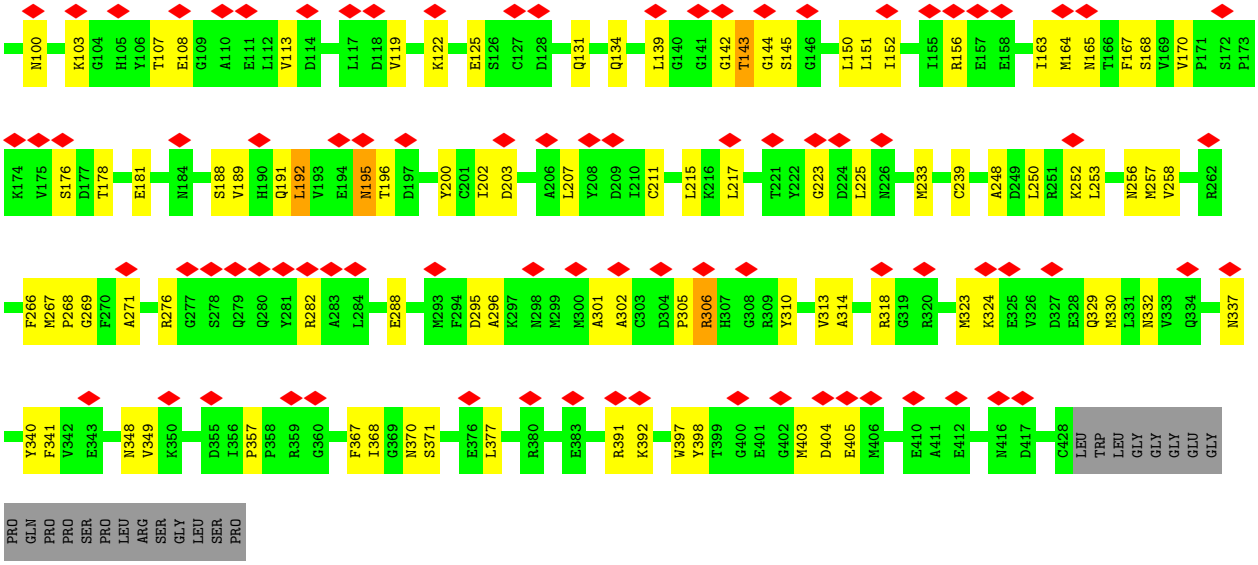


• Molecule 41: Tubulin beta chain

Chain NB:





• Molecule 41: Tubulin beta chain

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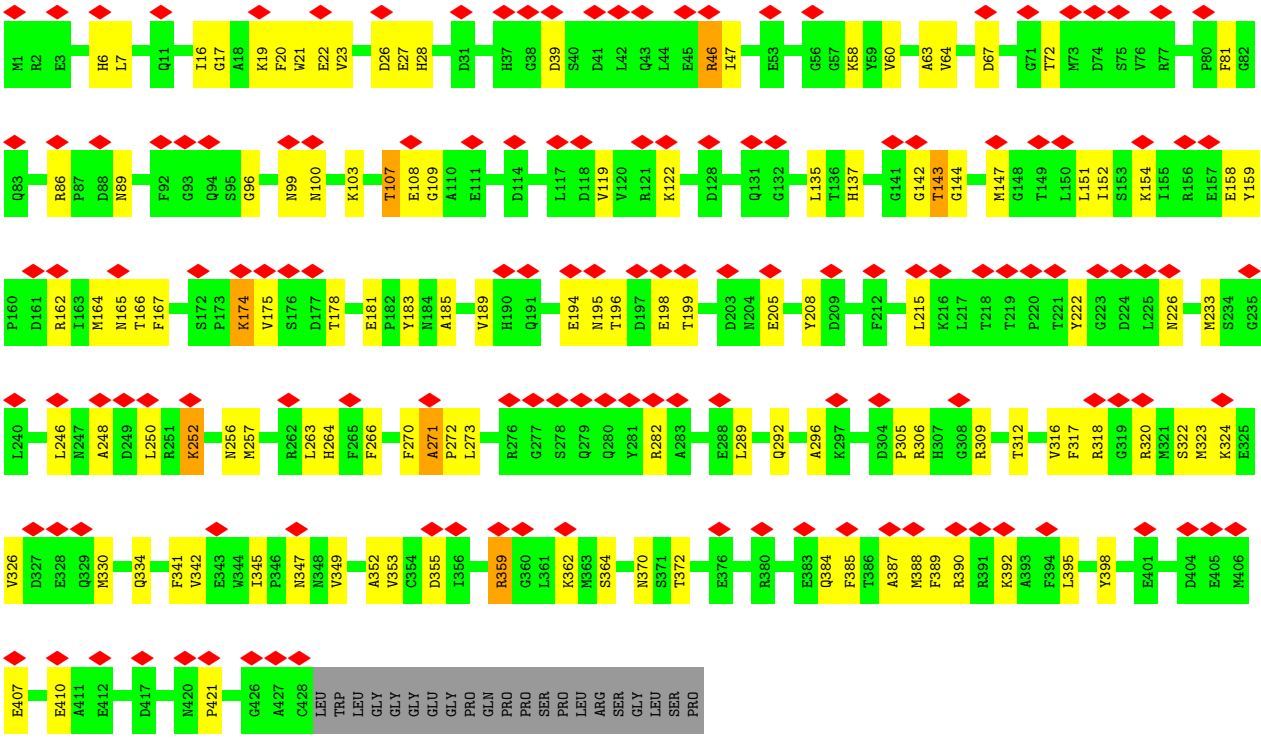
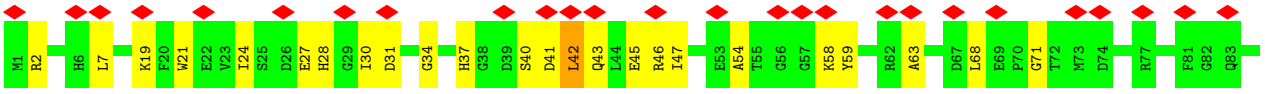
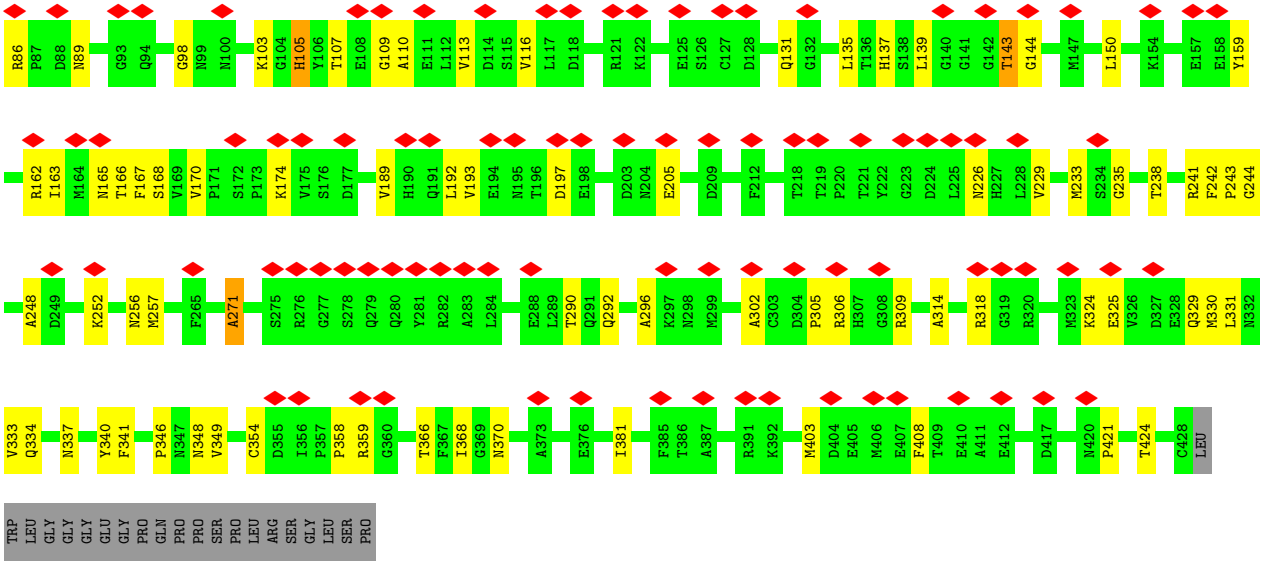


• Molecule 41: Tubulin beta chain

Chain NM:





• Molecule 41: Tubulin beta chain

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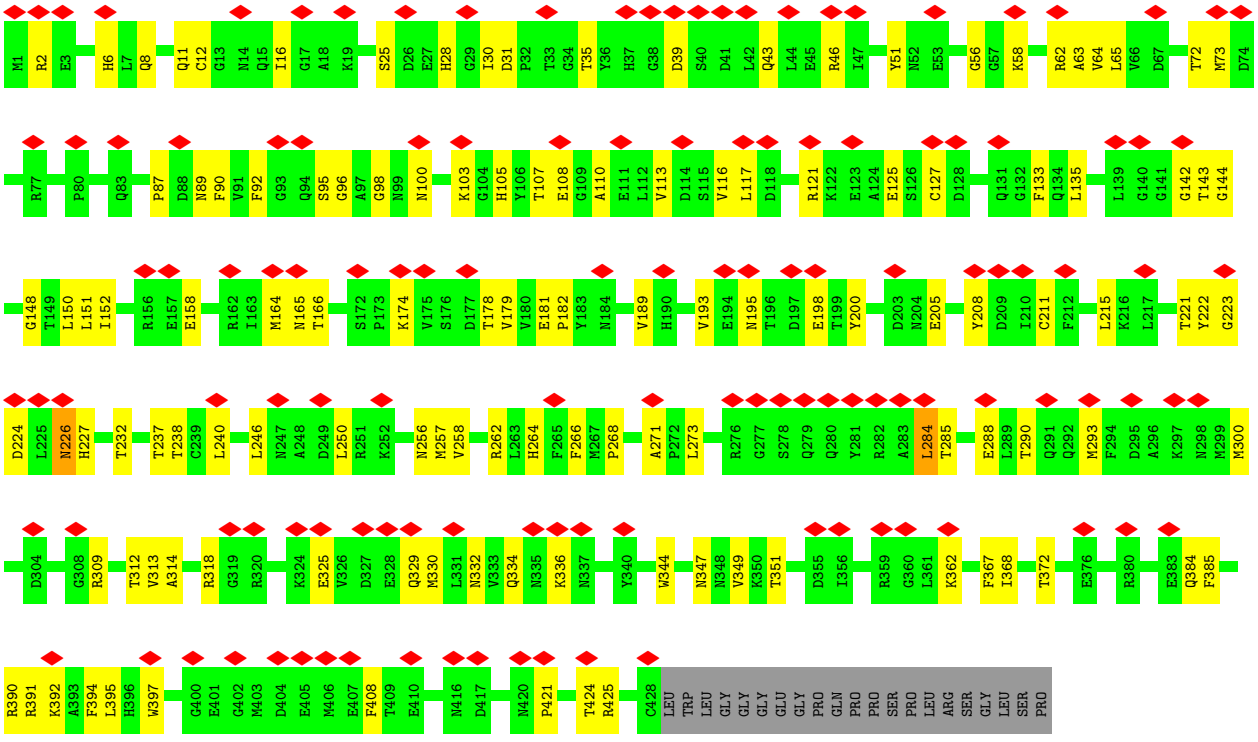
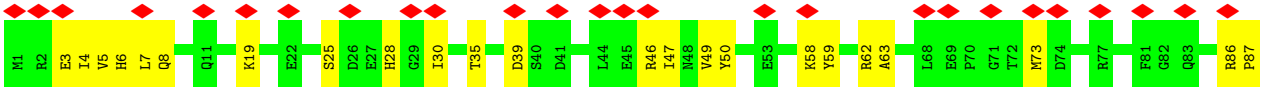
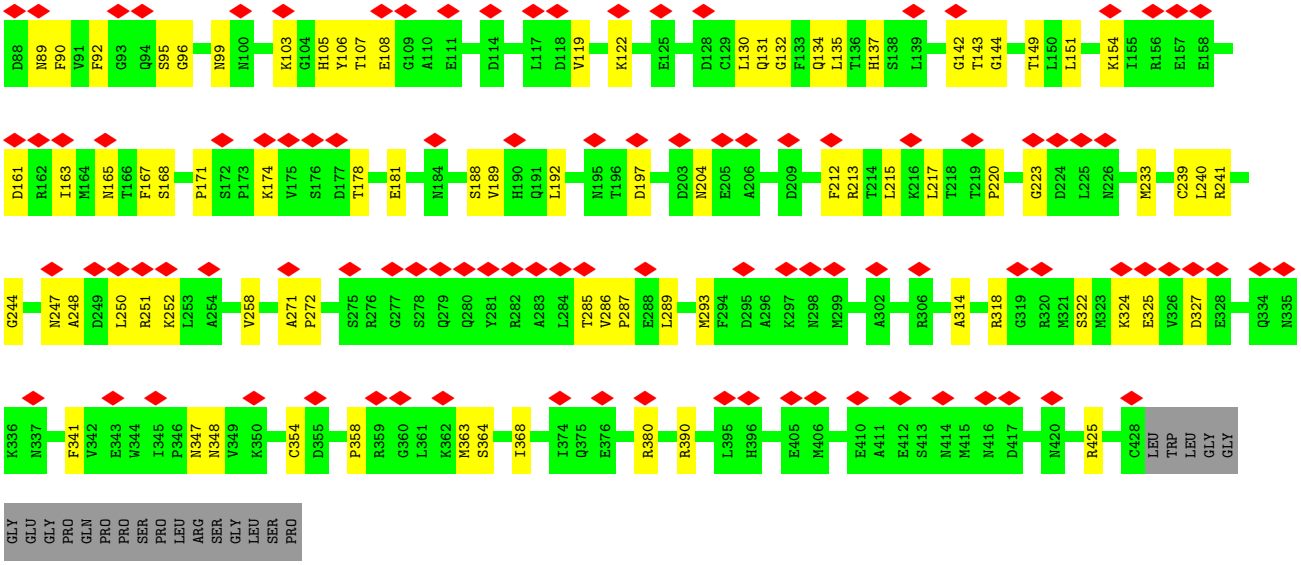


• Molecule 41: Tubulin beta chain

Chain NO:





• Molecule 41: Tubulin beta chain

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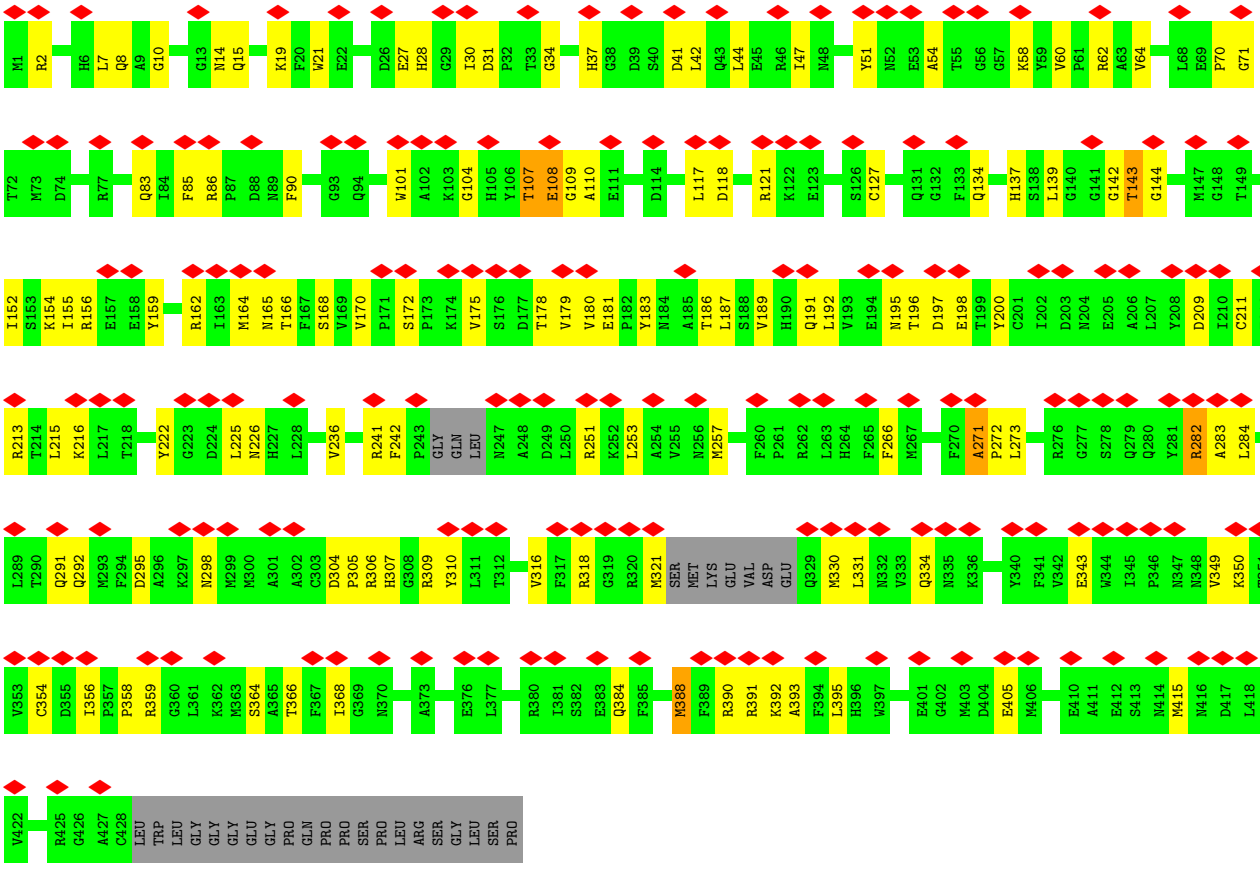
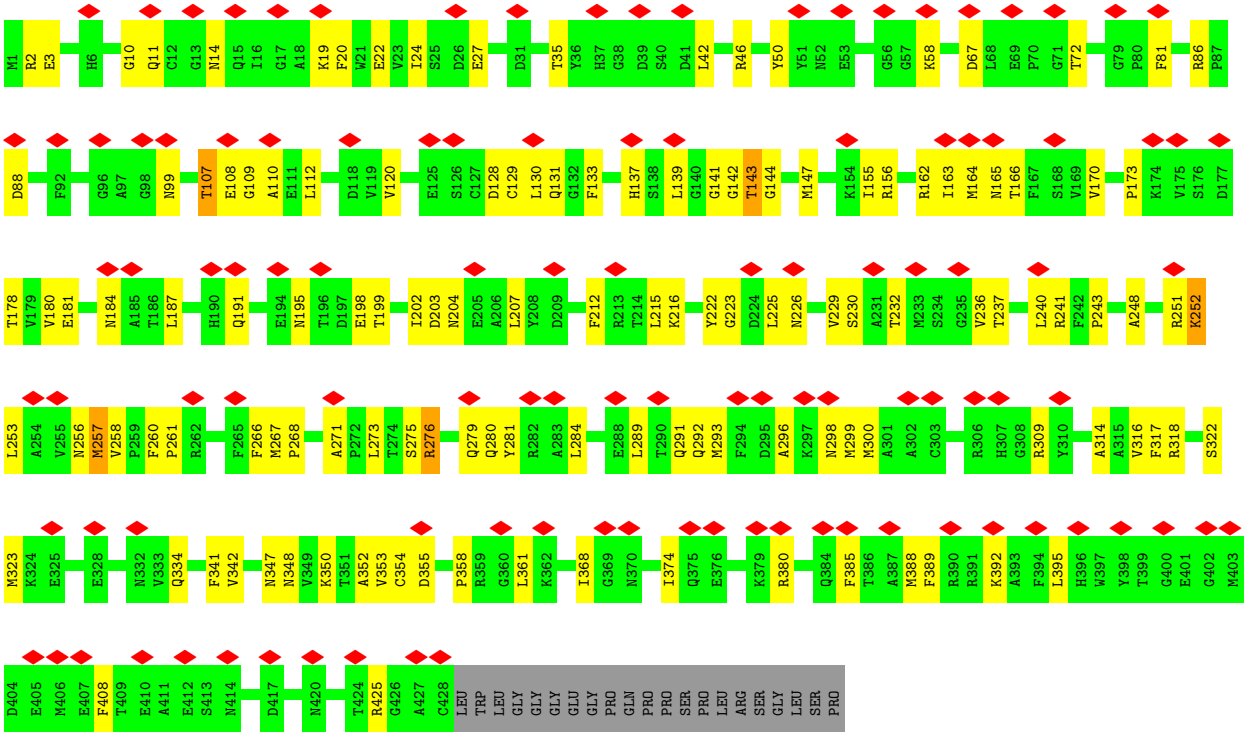


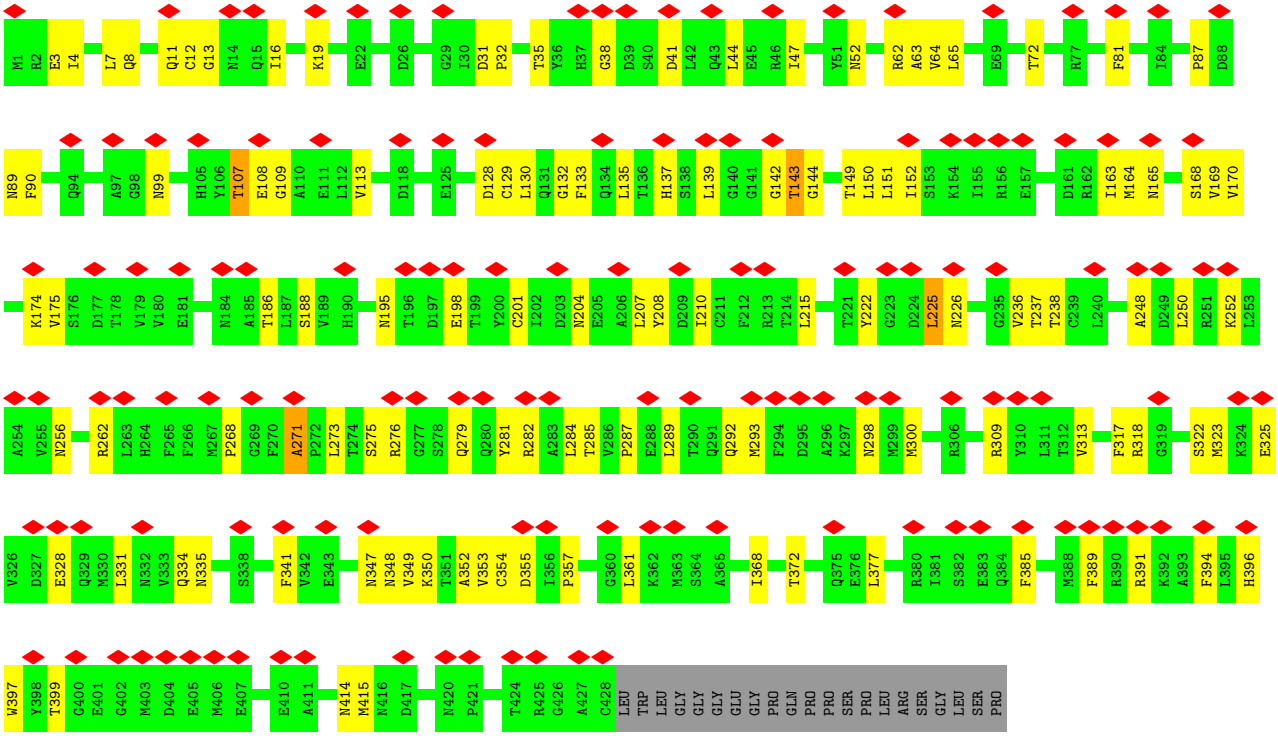
• Molecule 41: Tubulin beta chain

Chain OB:



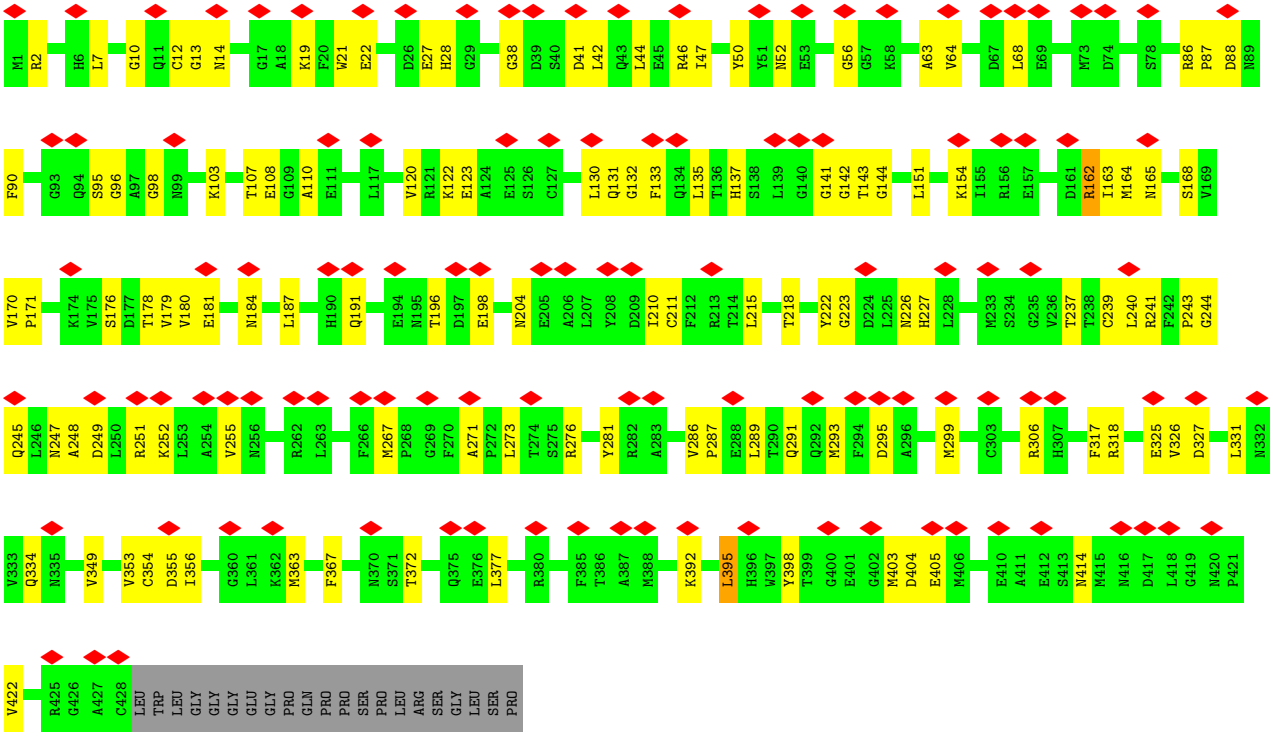
• Molecule 41: Tubulin beta chain

Chain OL:



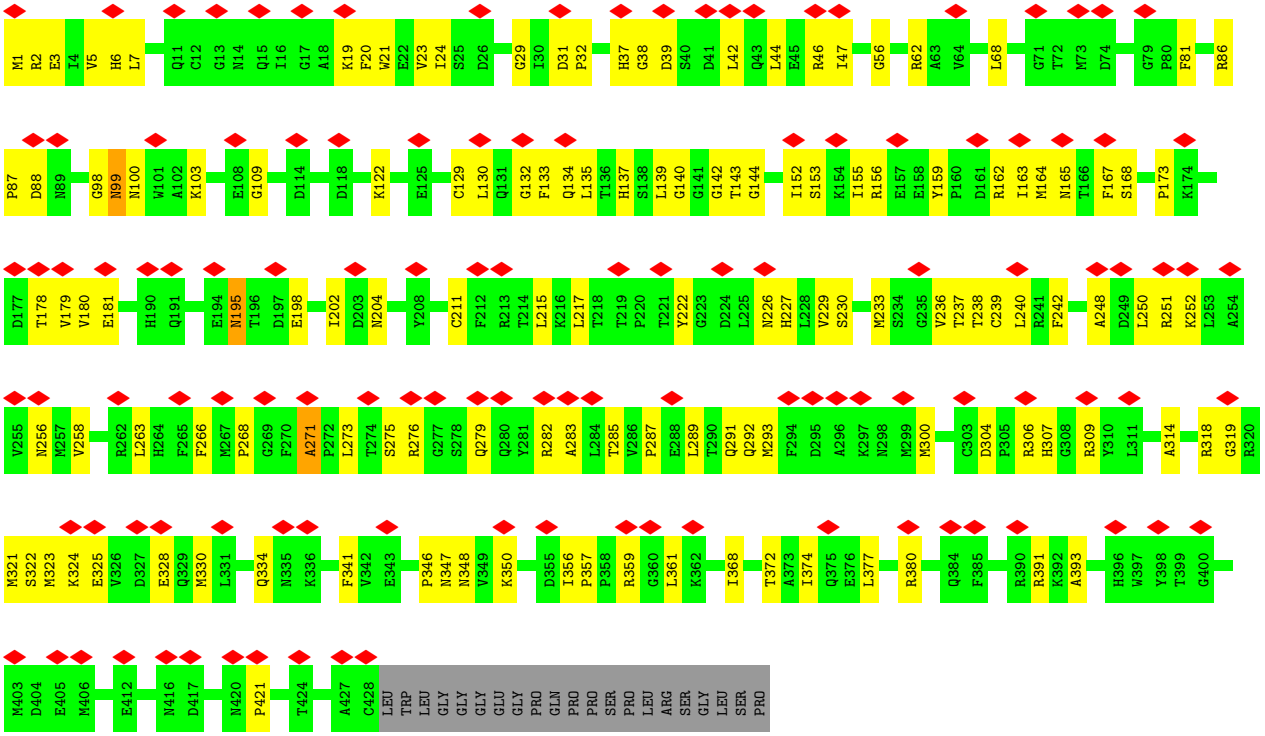
• Molecule 41: Tubulin beta chain

Chain OM:



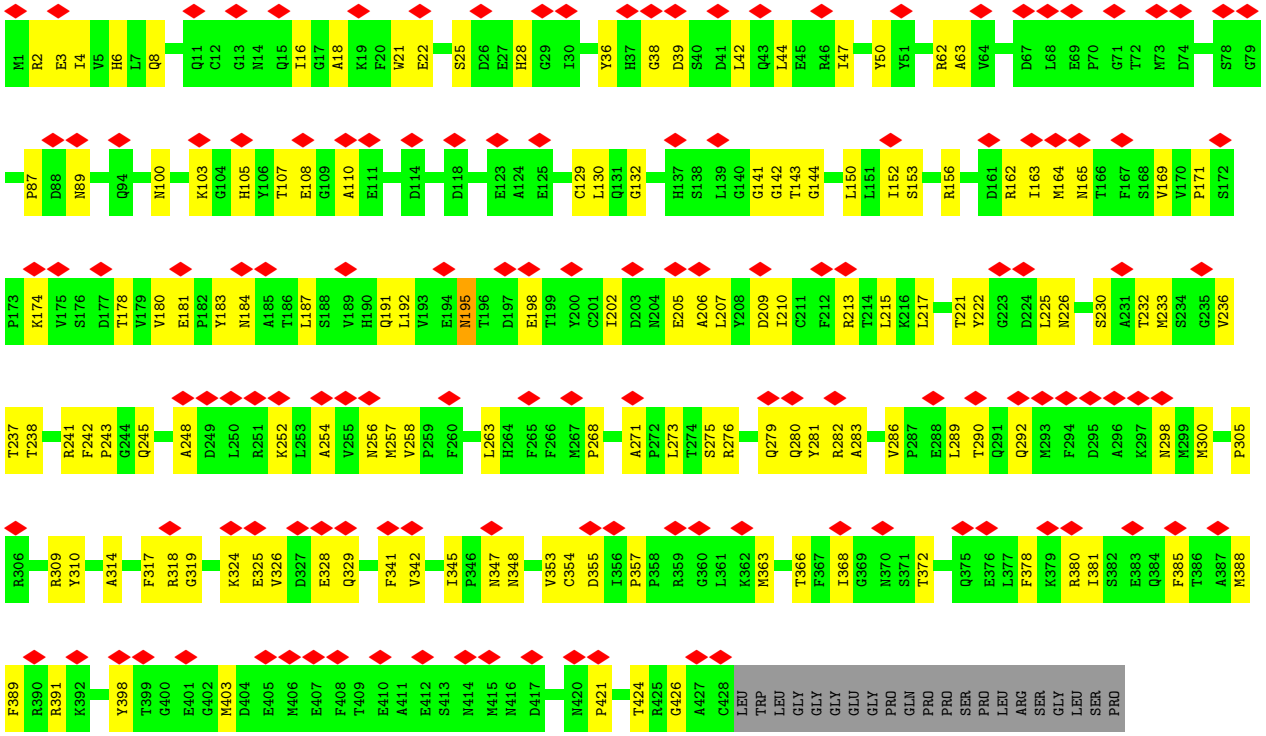
• Molecule 41: Tubulin beta chain

Chain ON:



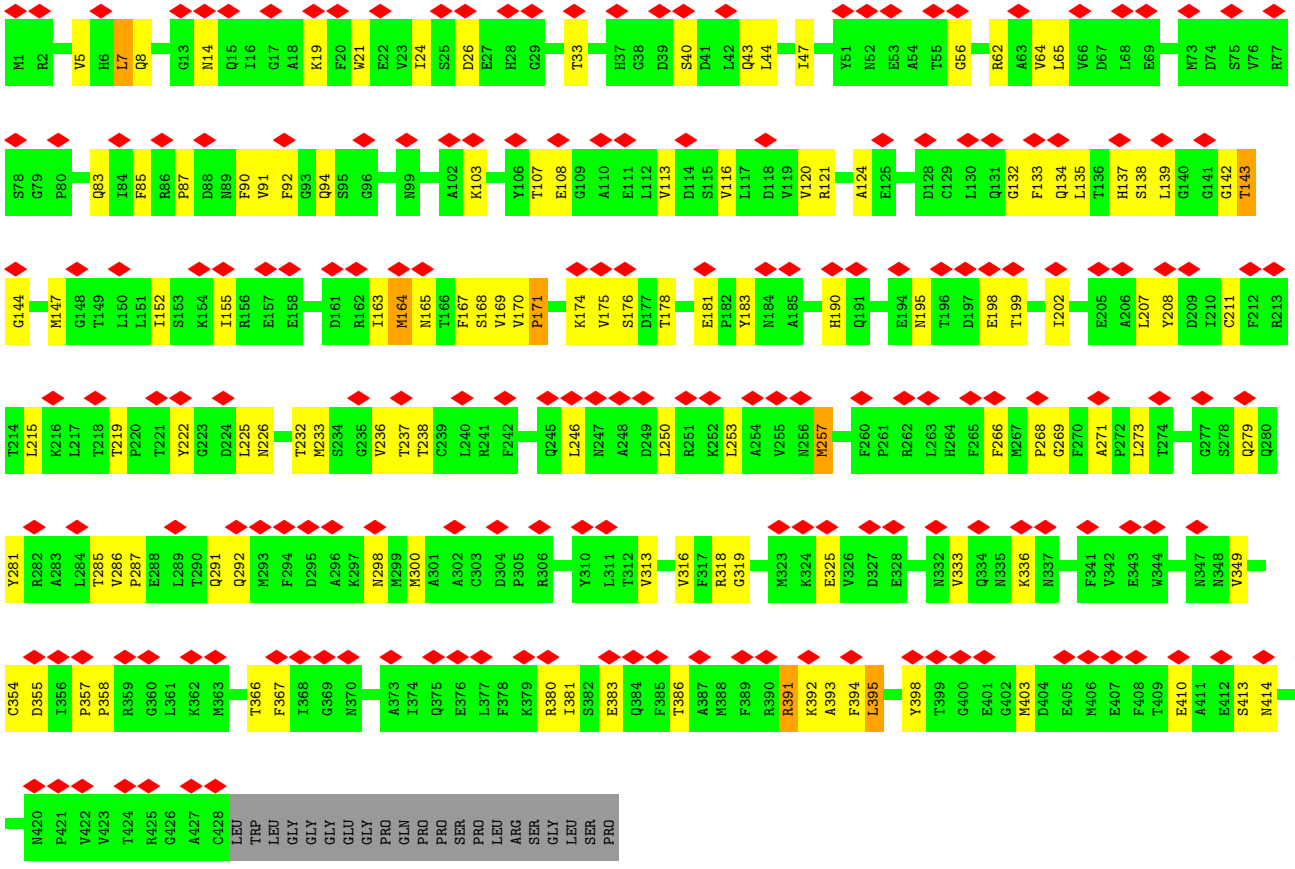
• Molecule 41: Tubulin beta chain

Chain OO:



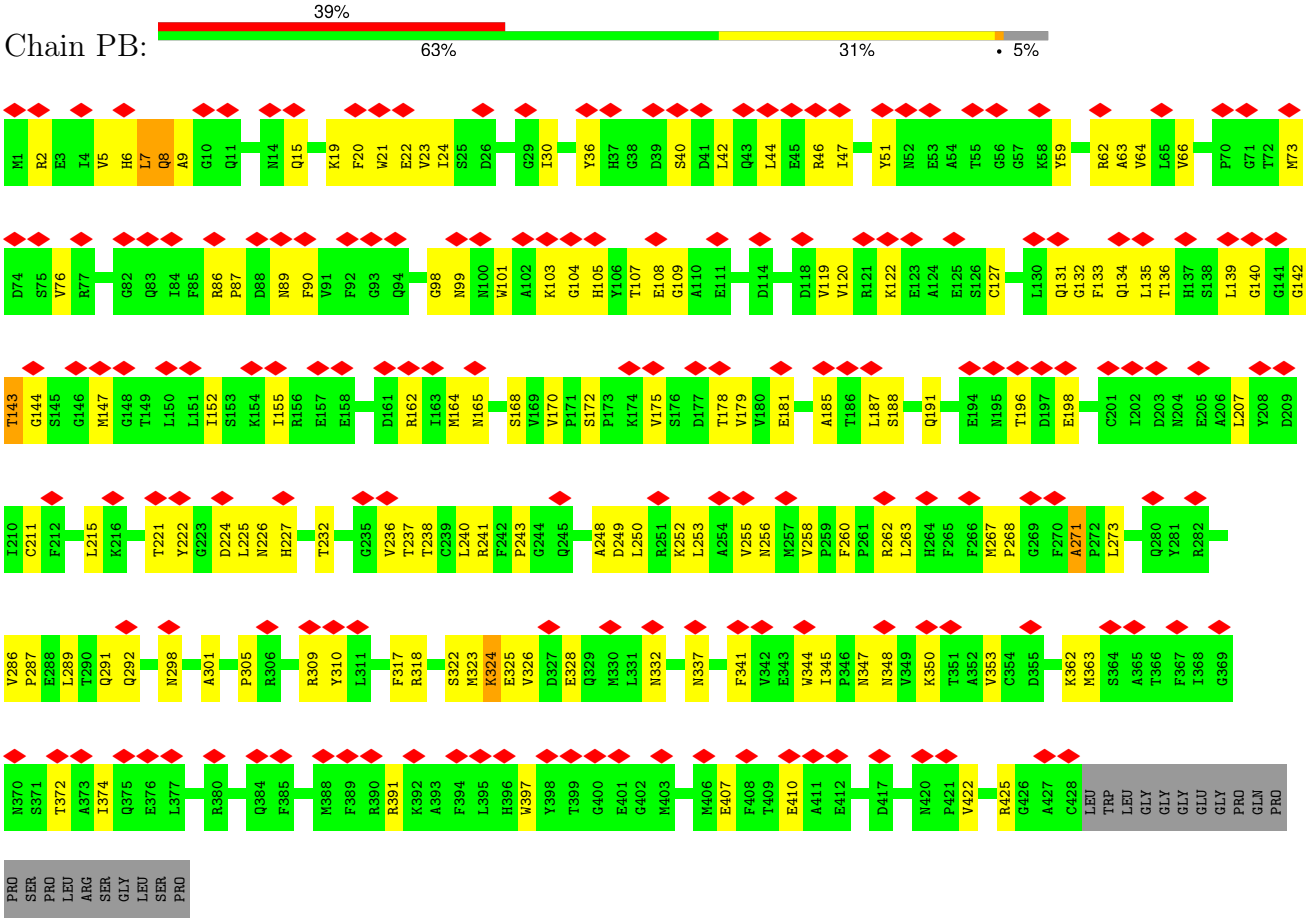
• Molecule 41: Tubulin beta chain

Chain OP:



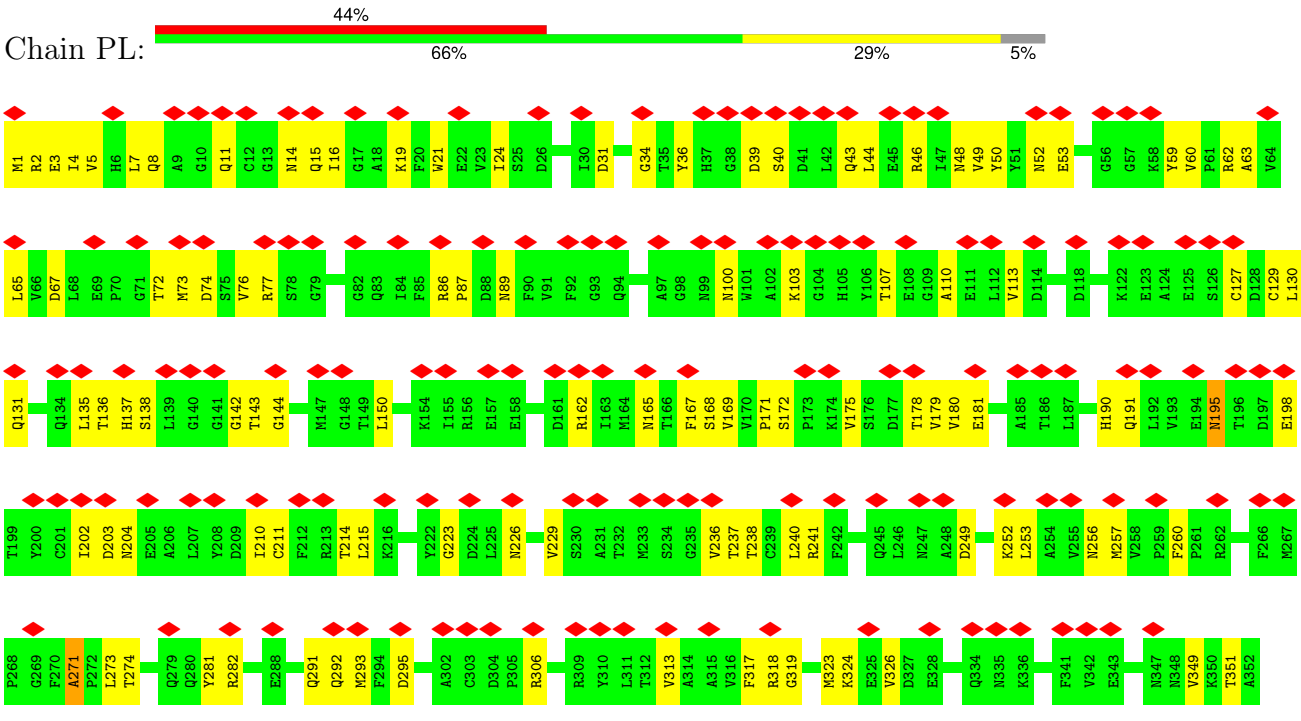
• Molecule 41: Tubulin beta chain

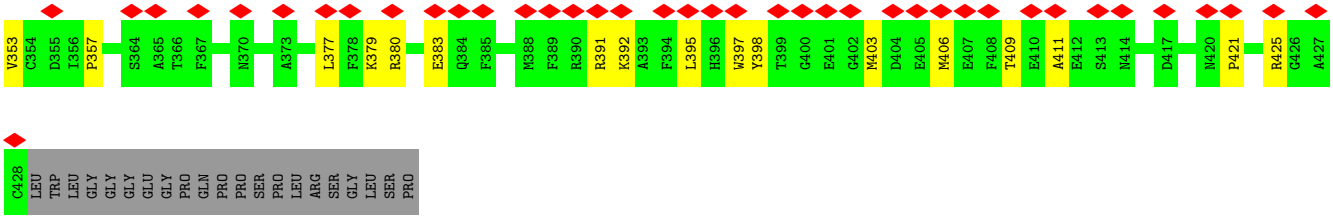
Chain PB:



• Molecule 41: Tubulin beta chain

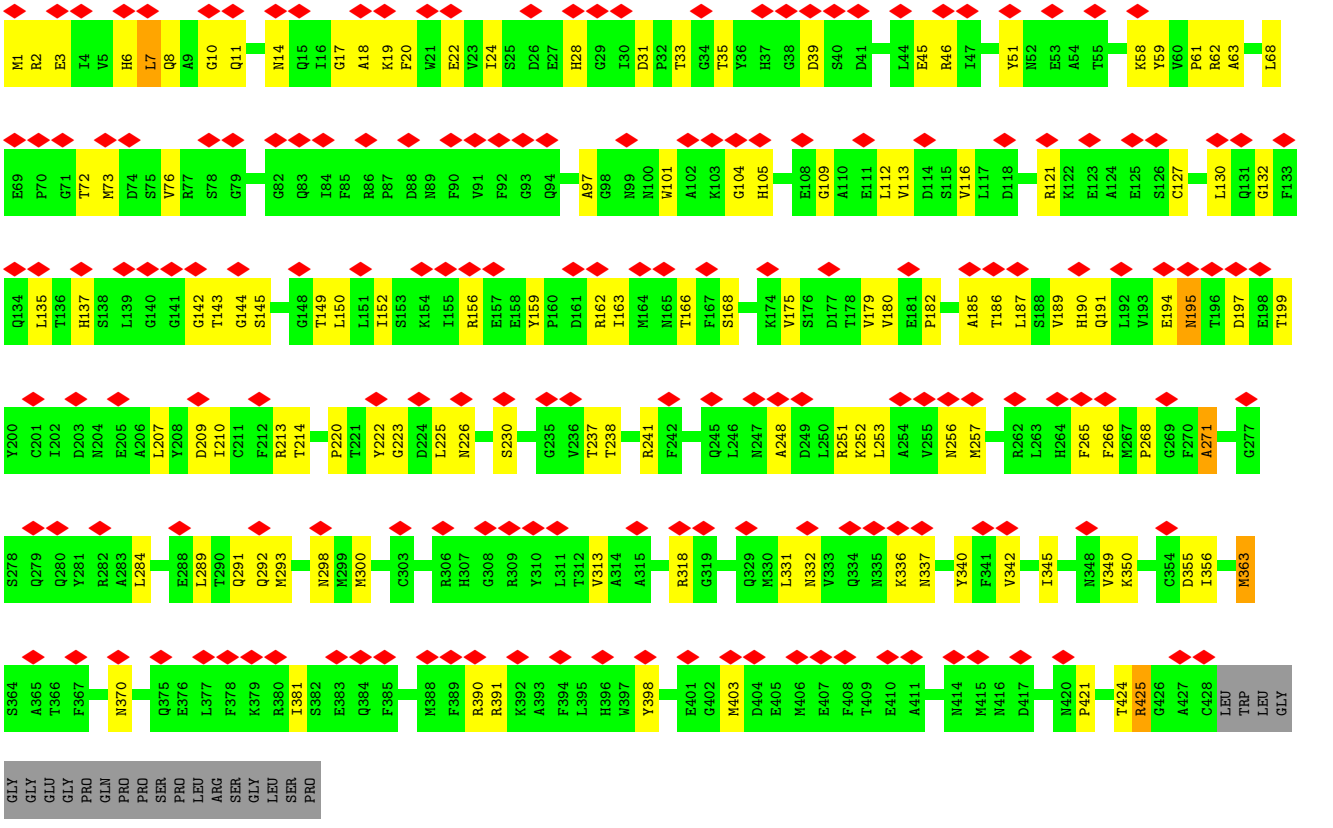
Chain PL:





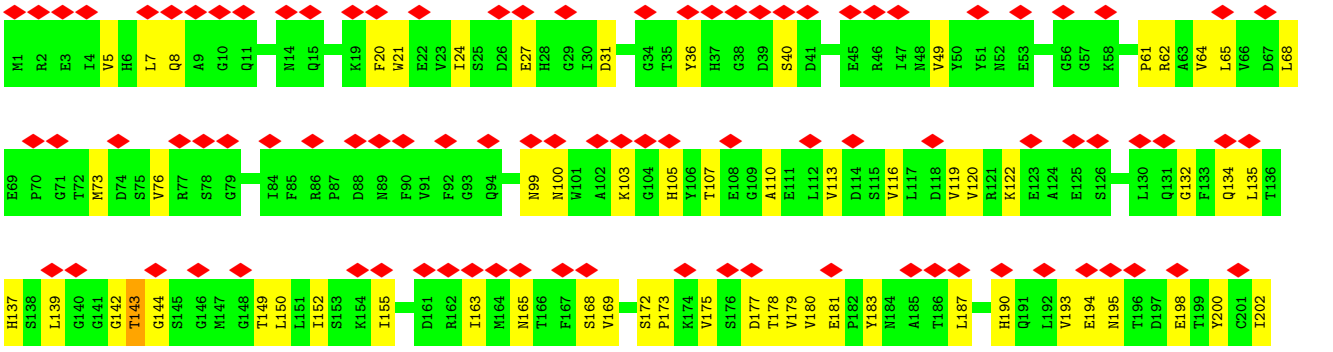
• Molecule 41: Tubulin beta chain

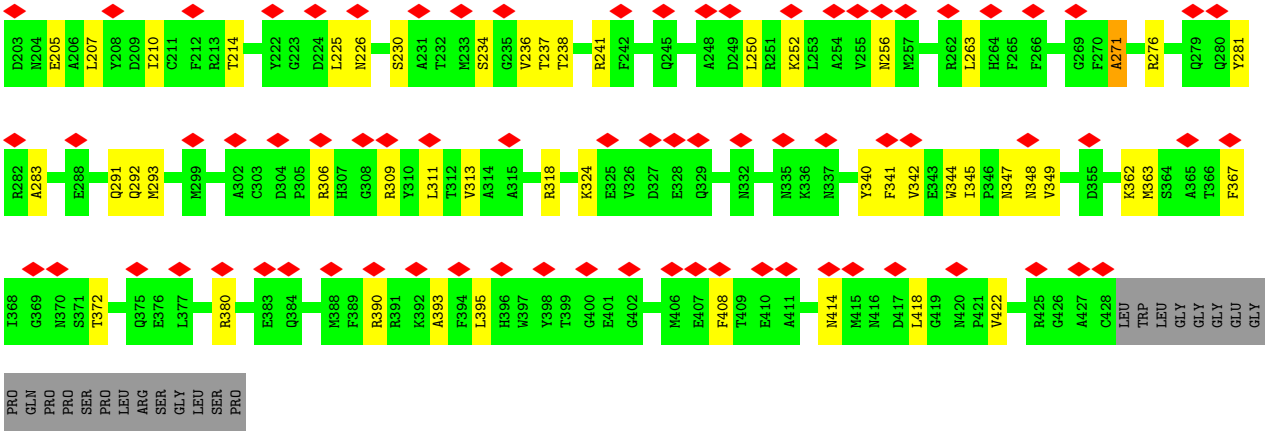
Chain PM:



• Molecule 41: Tubulin beta chain

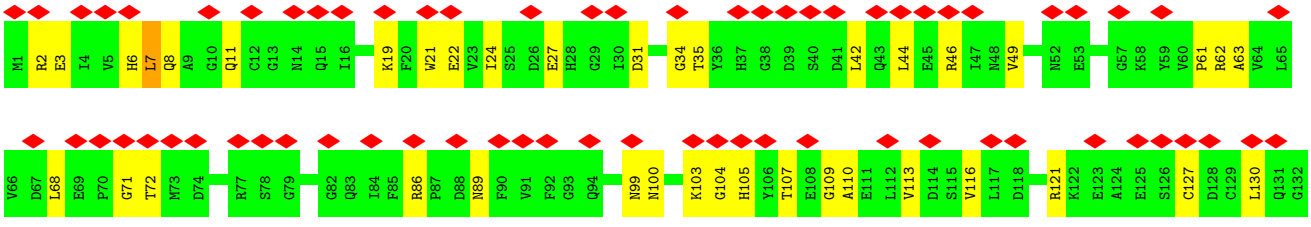
Chain PN:





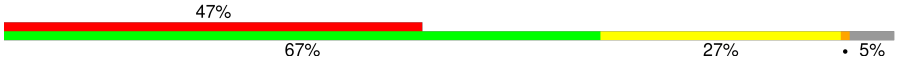
• Molecule 41: Tubulin beta chain

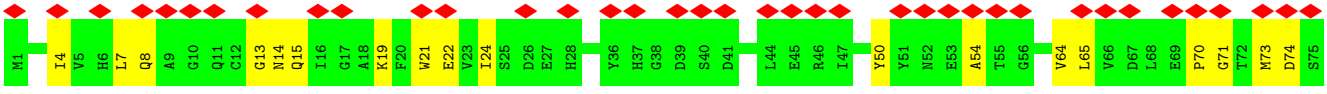
Chain PO:

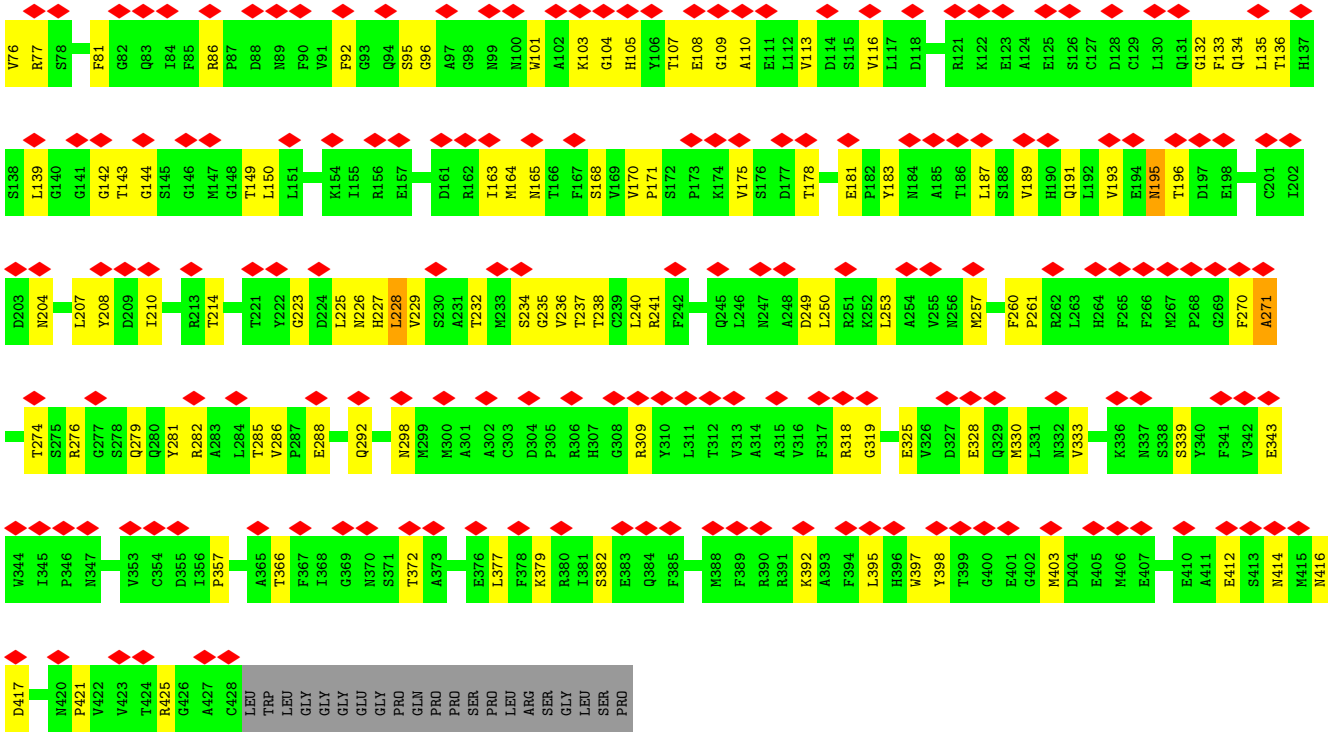


• Molecule 41: Tubulin beta chain

Chain PP:

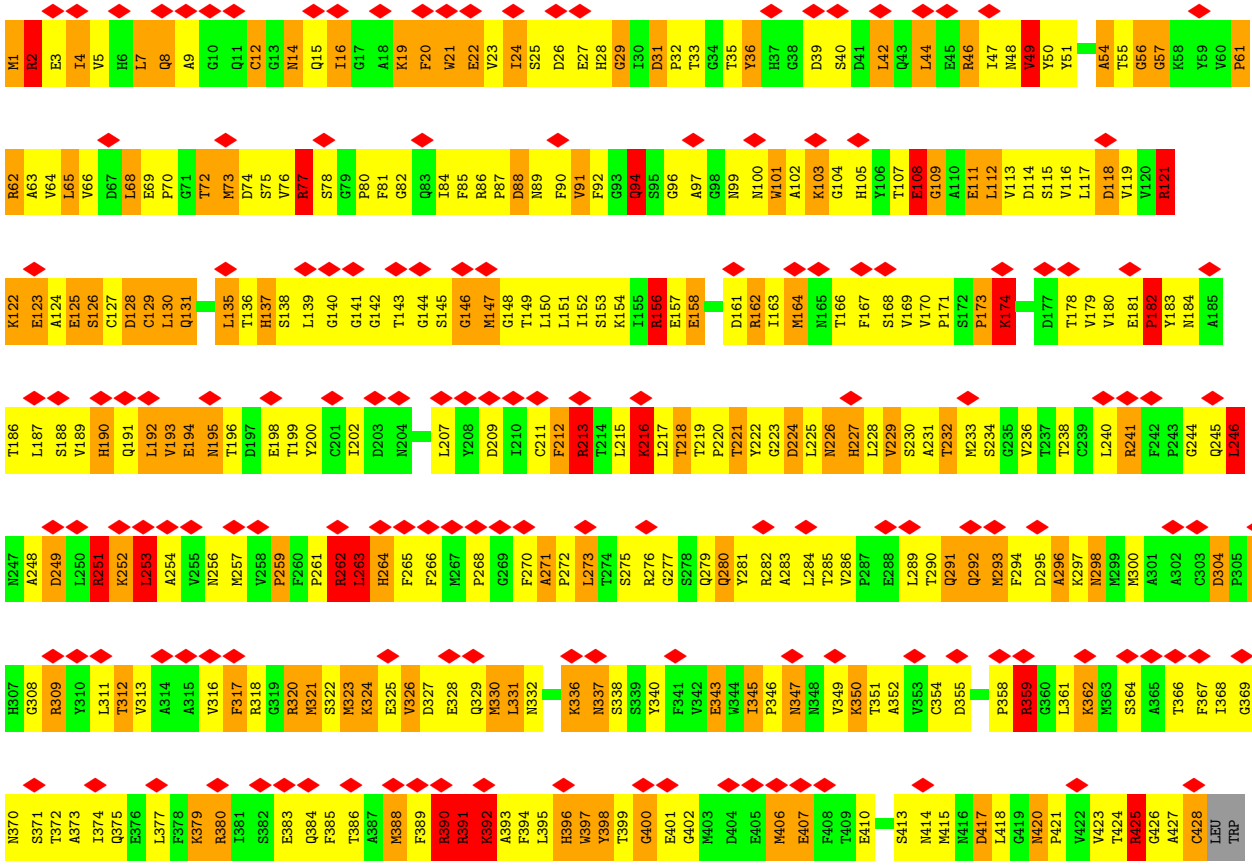






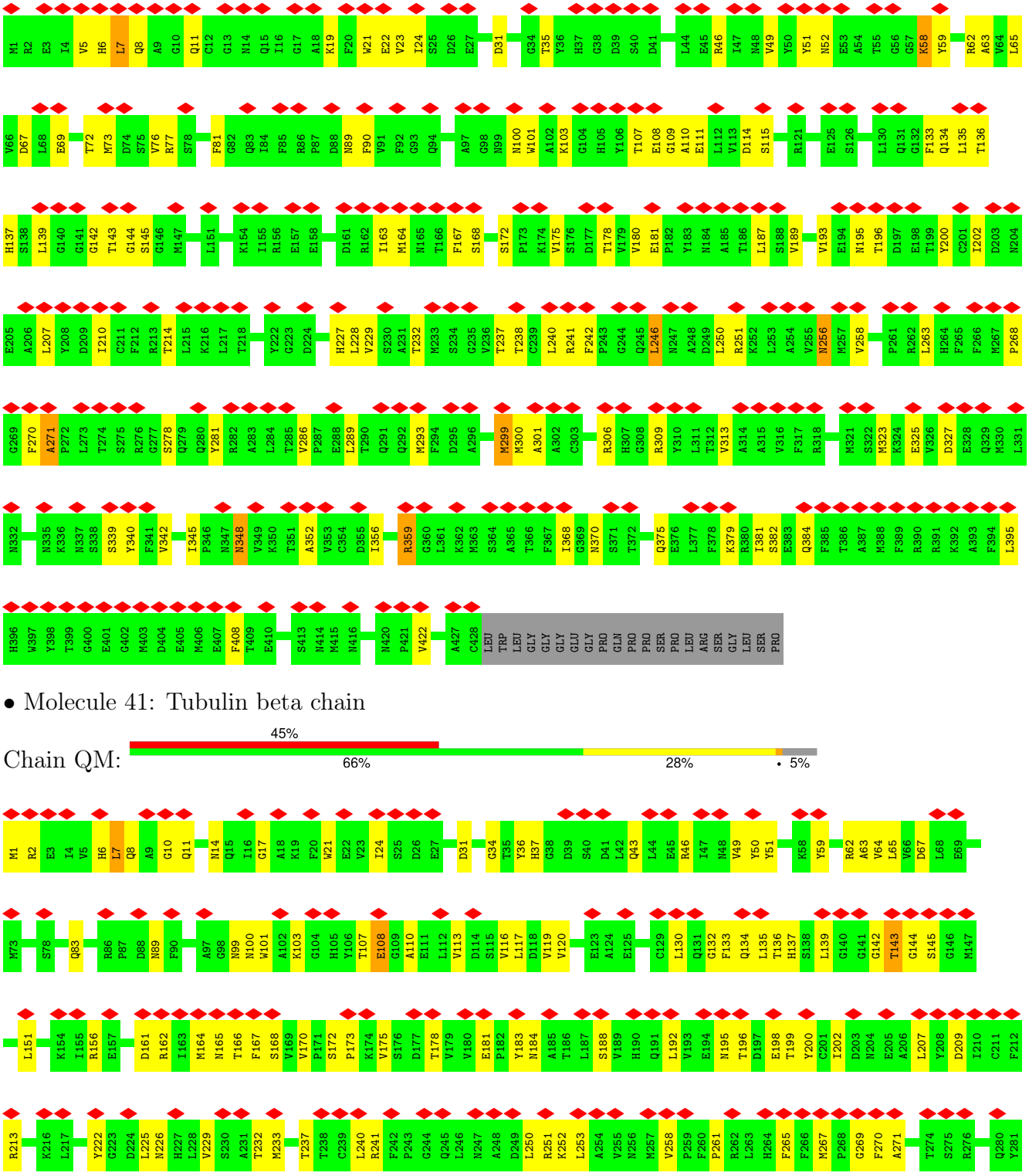
• Molecule 41: Tubulin beta chain

Chain QB:



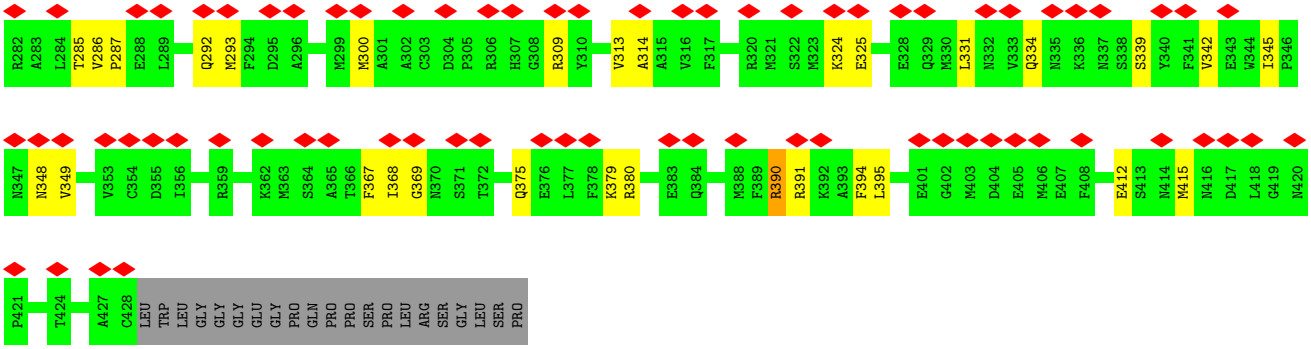
• Molecule 41: Tubulin beta chain

Chain QL:



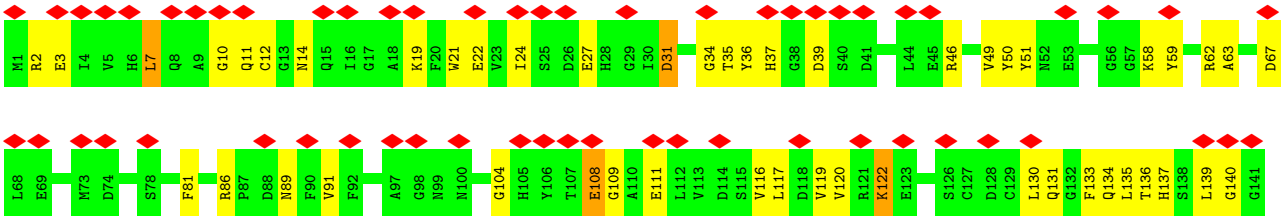
• Molecule 41: Tubulin beta chain

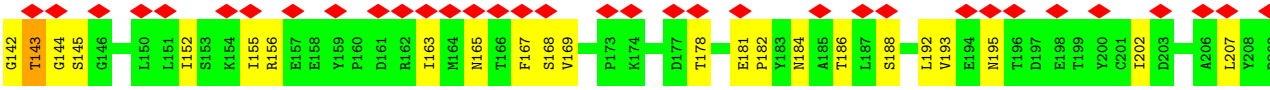
Chain QM:

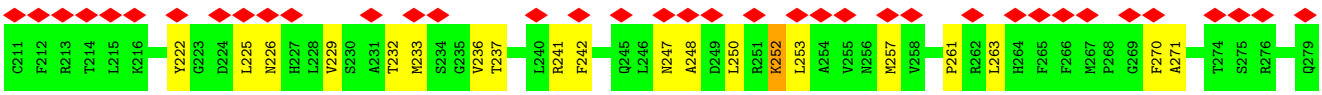


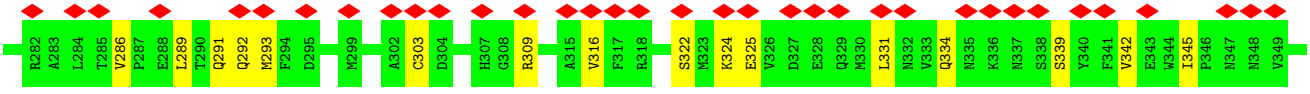
• Molecule 41: Tubulin beta chain

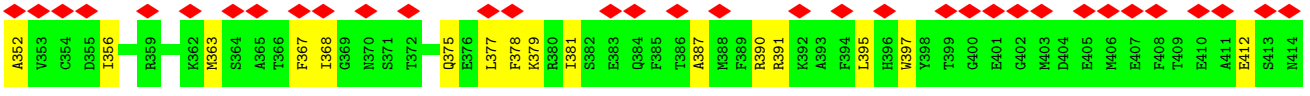
Chain QN:

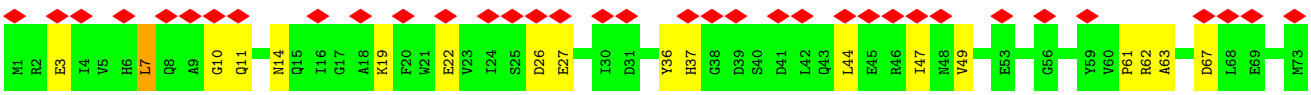






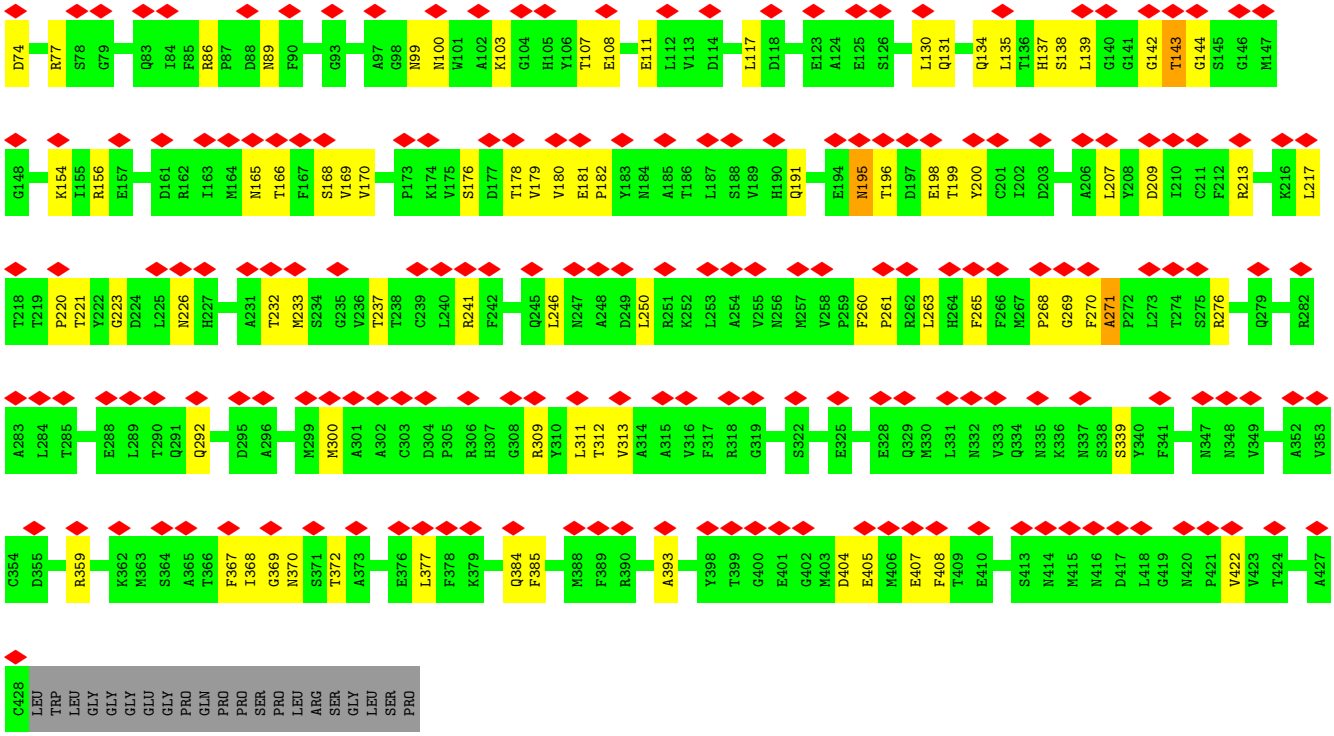






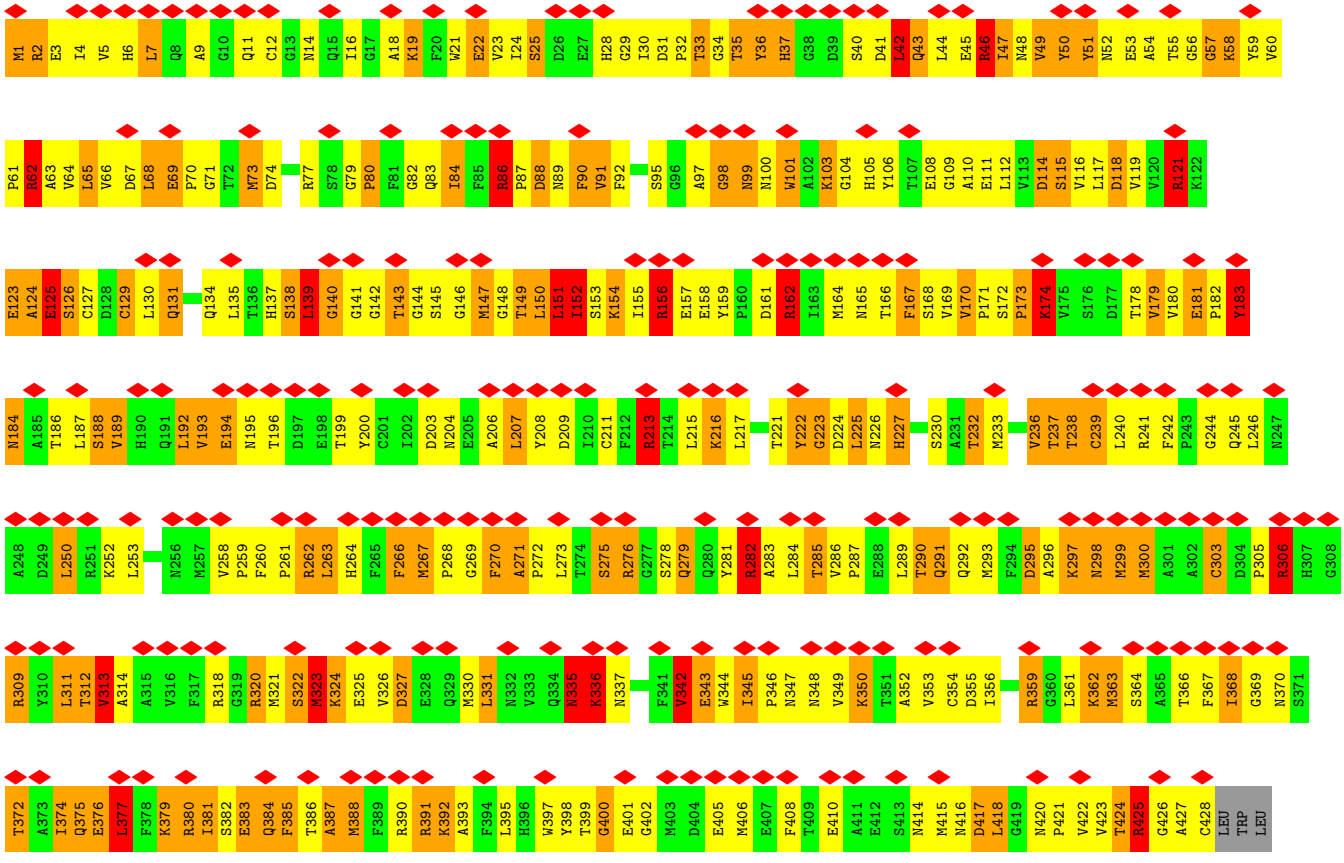
• Molecule 41: Tubulin beta chain

Chain QO:



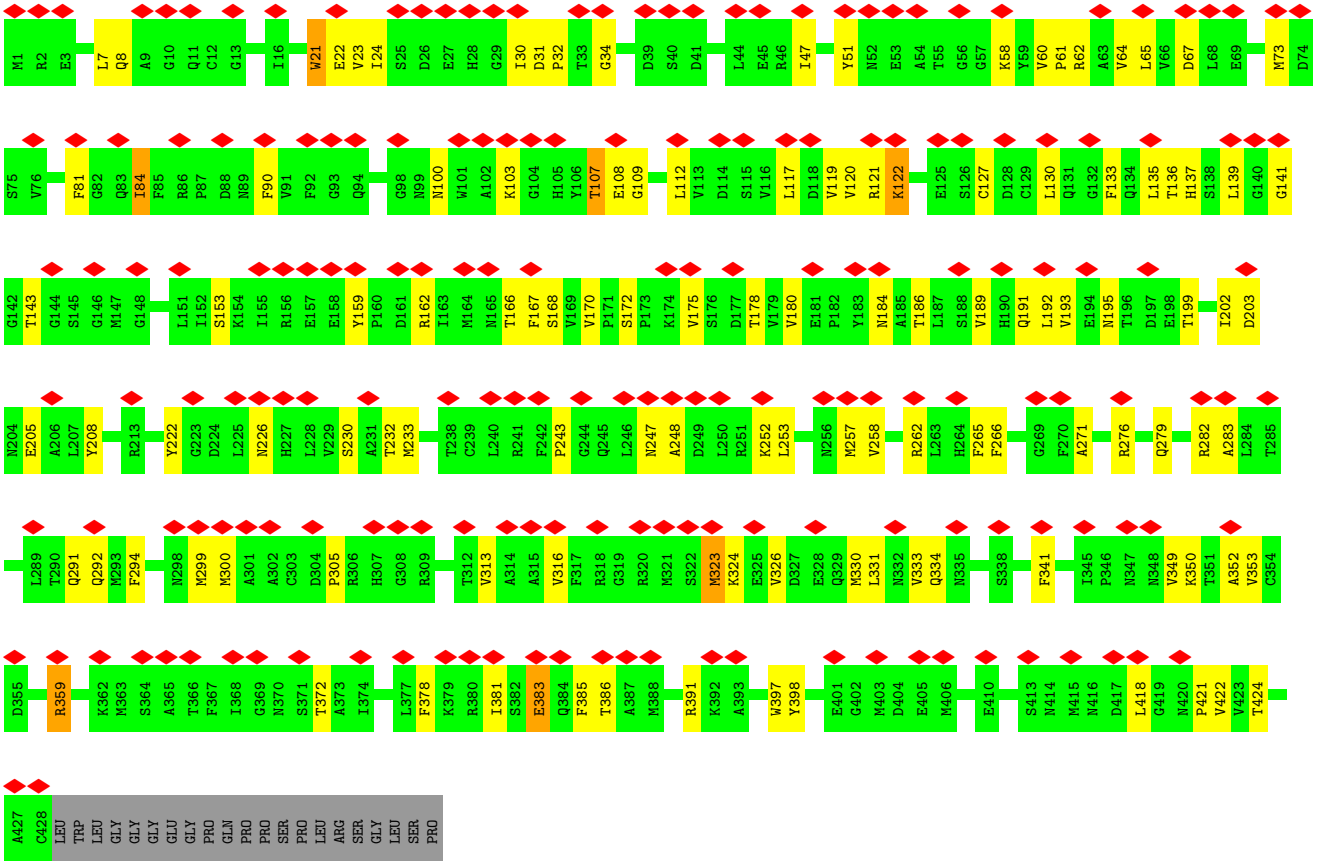
• Molecule 41: Tubulin beta chain

Chain QP:



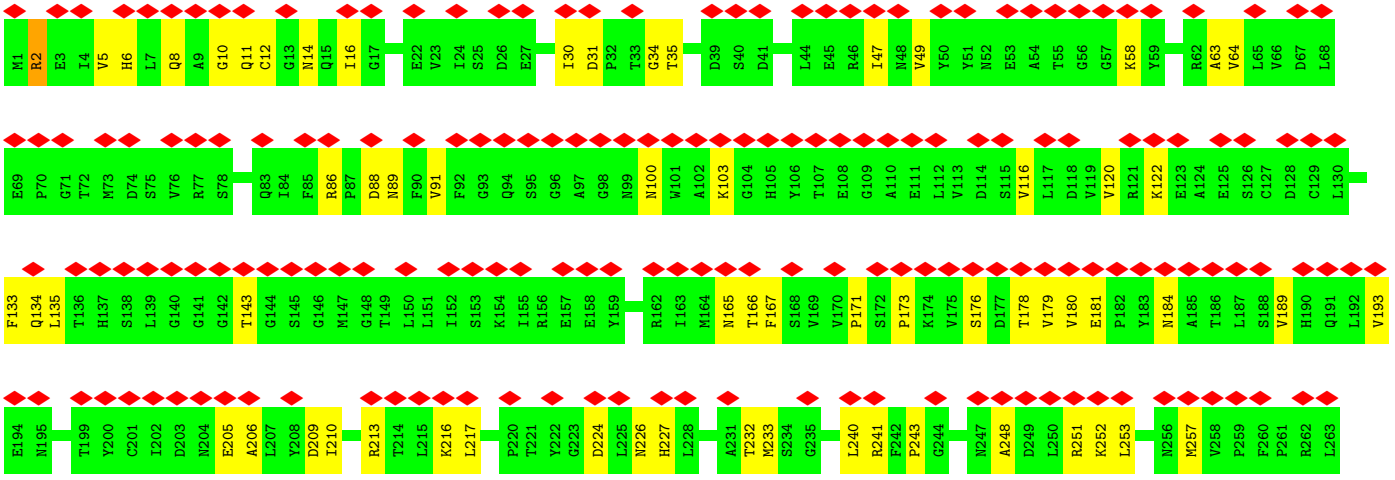
• Molecule 41: Tubulin beta chain

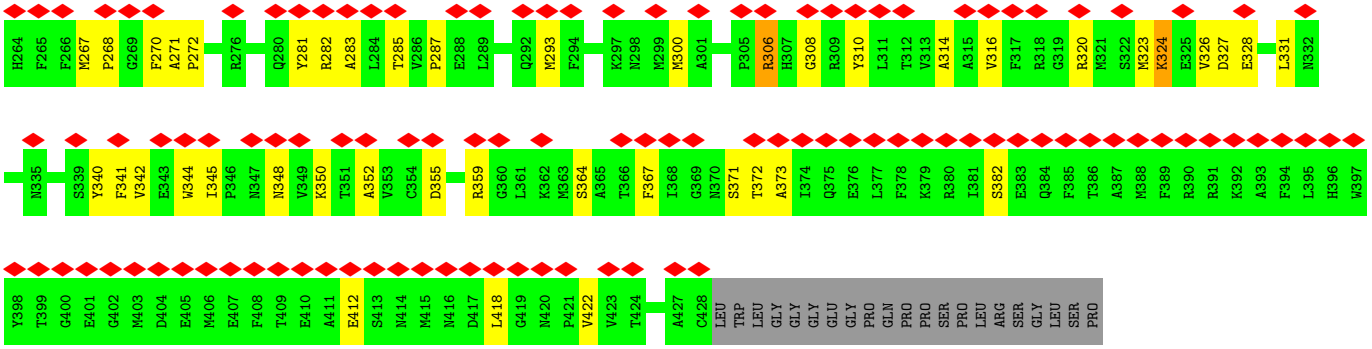
Chain RB:



• Molecule 41: Tubulin beta chain

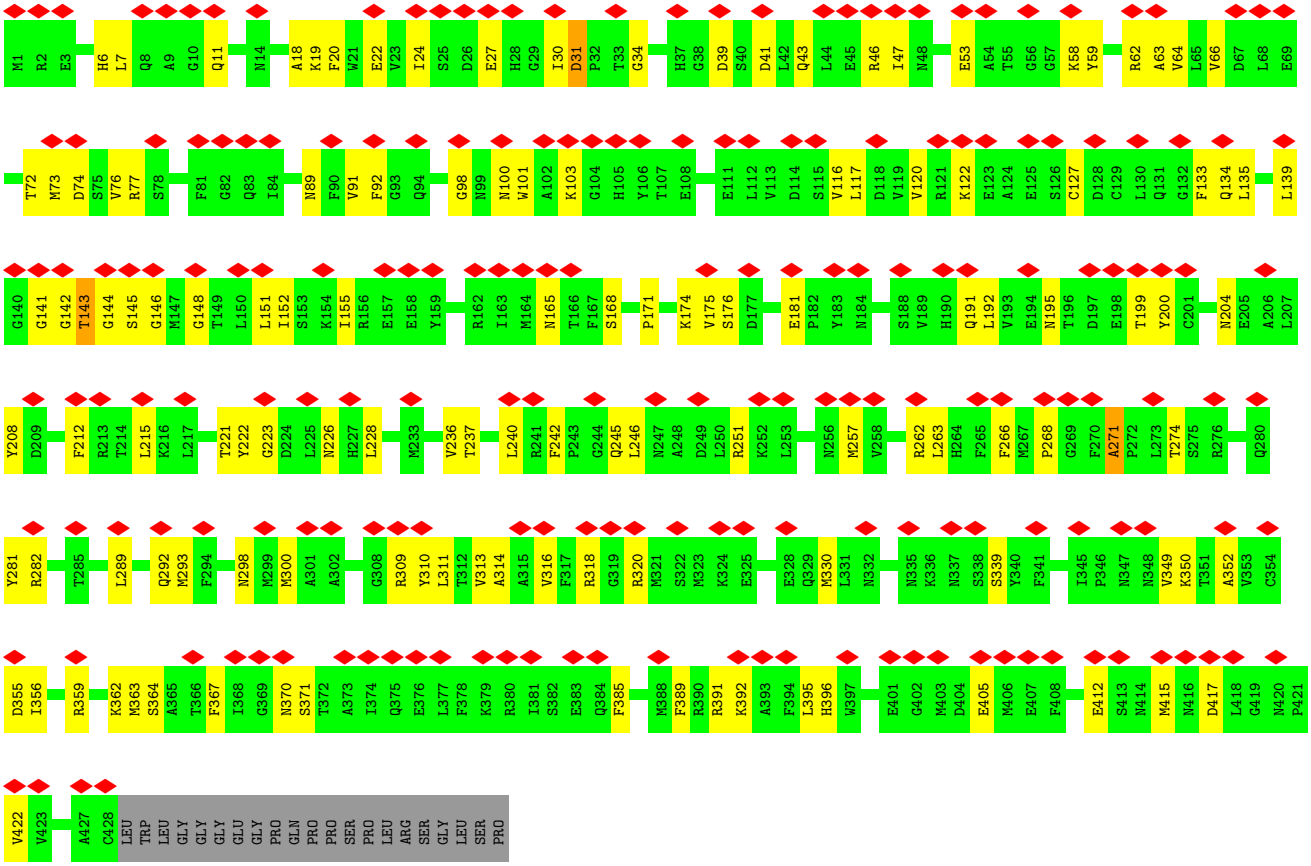
Chain RL:





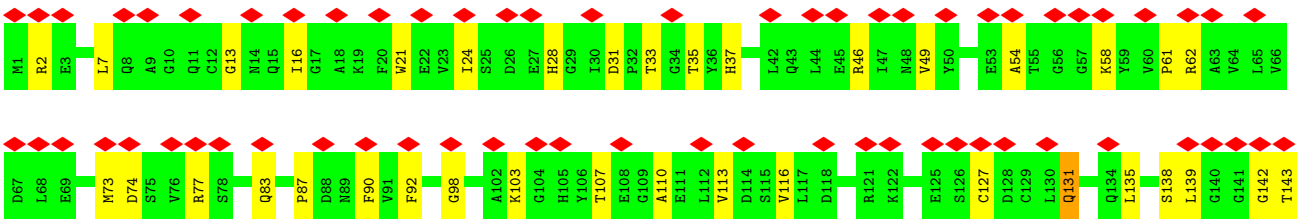
• Molecule 41: Tubulin beta chain

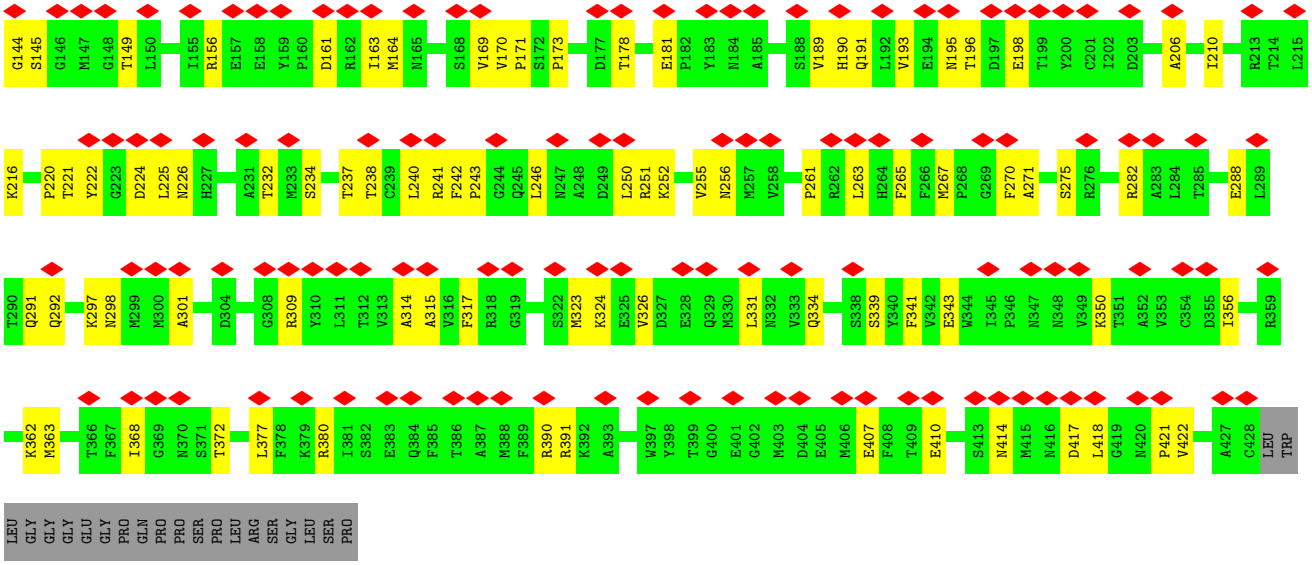
Chain RM:



• Molecule 41: Tubulin beta chain

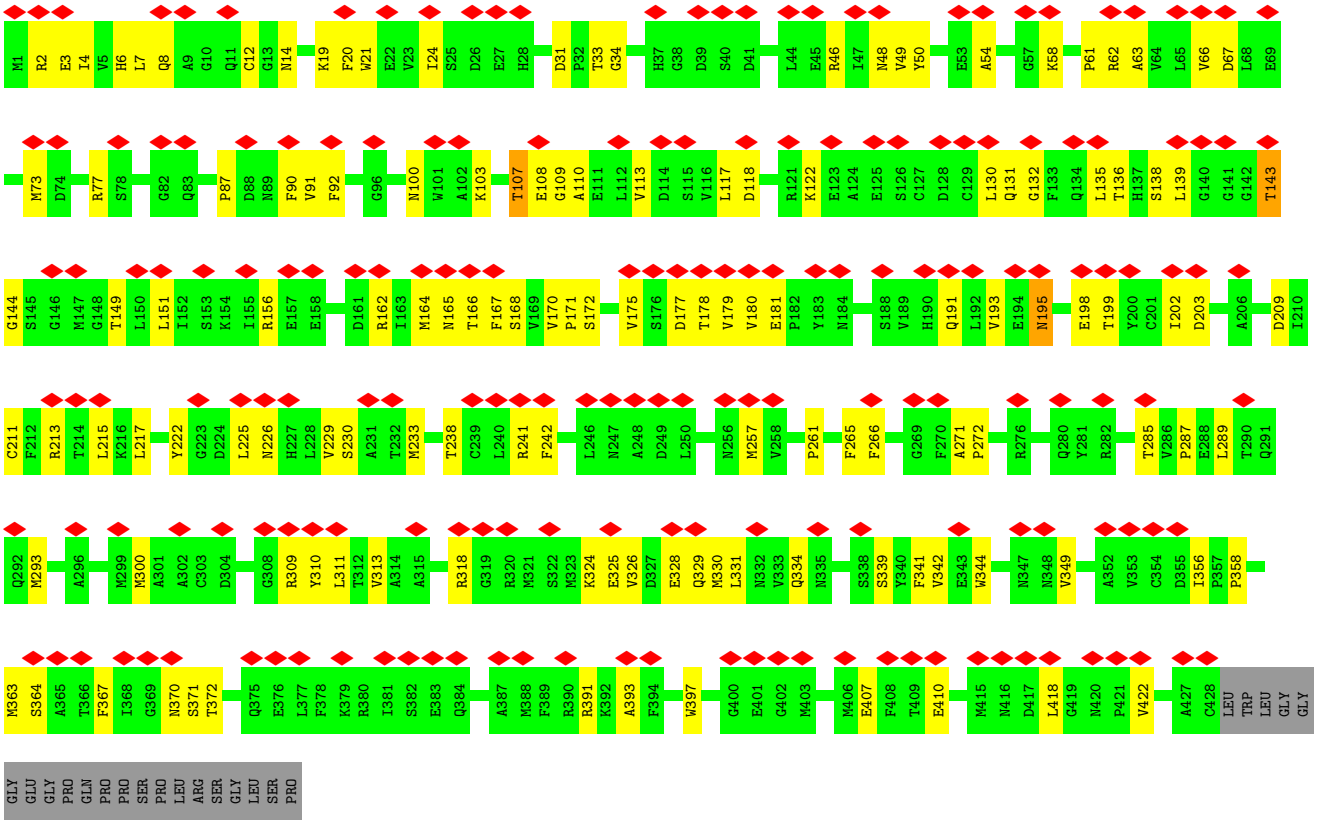
Chain RN:





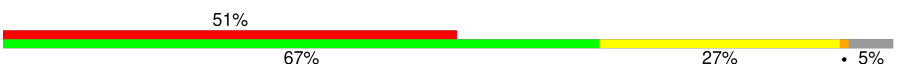
• Molecule 41: Tubulin beta chain

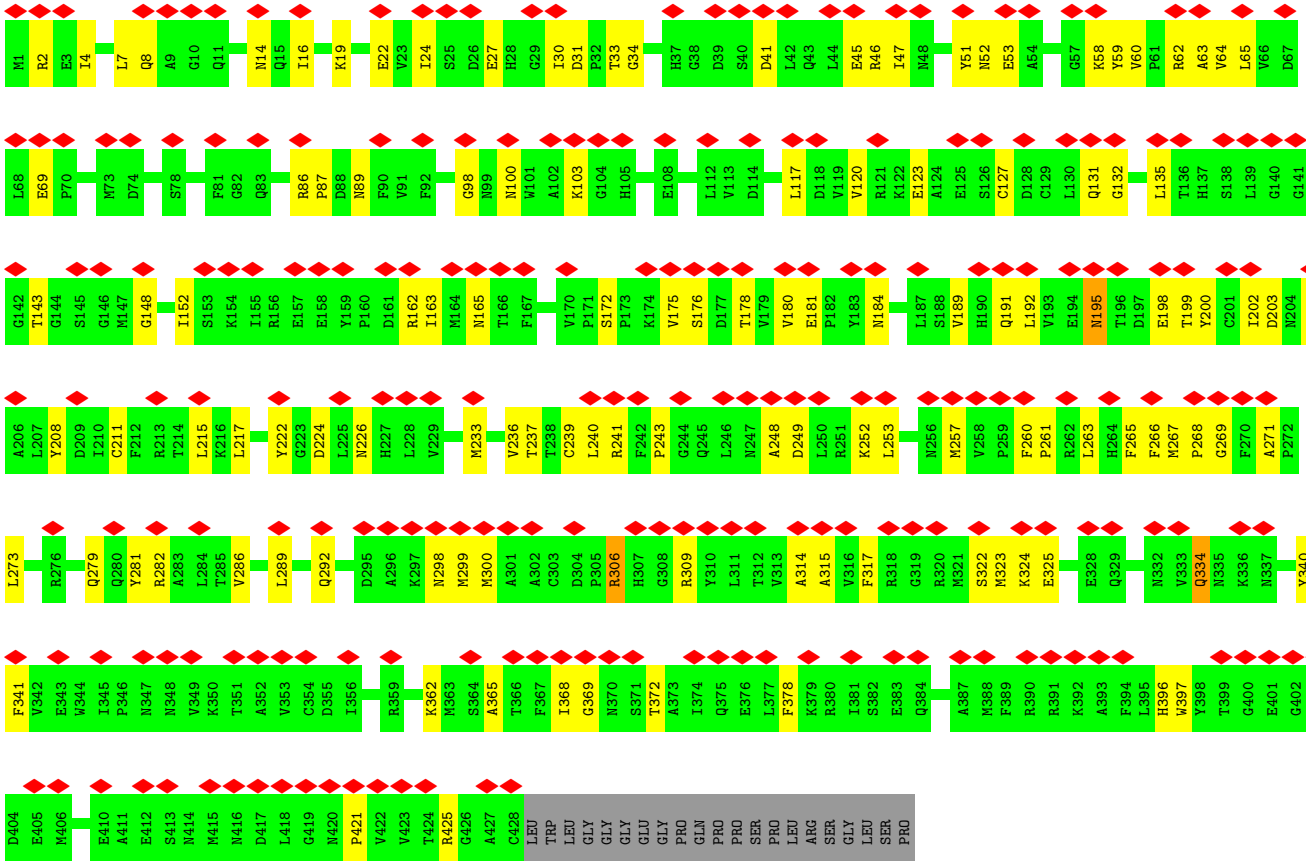
Chain RO:



• Molecule 41: Tubulin beta chain

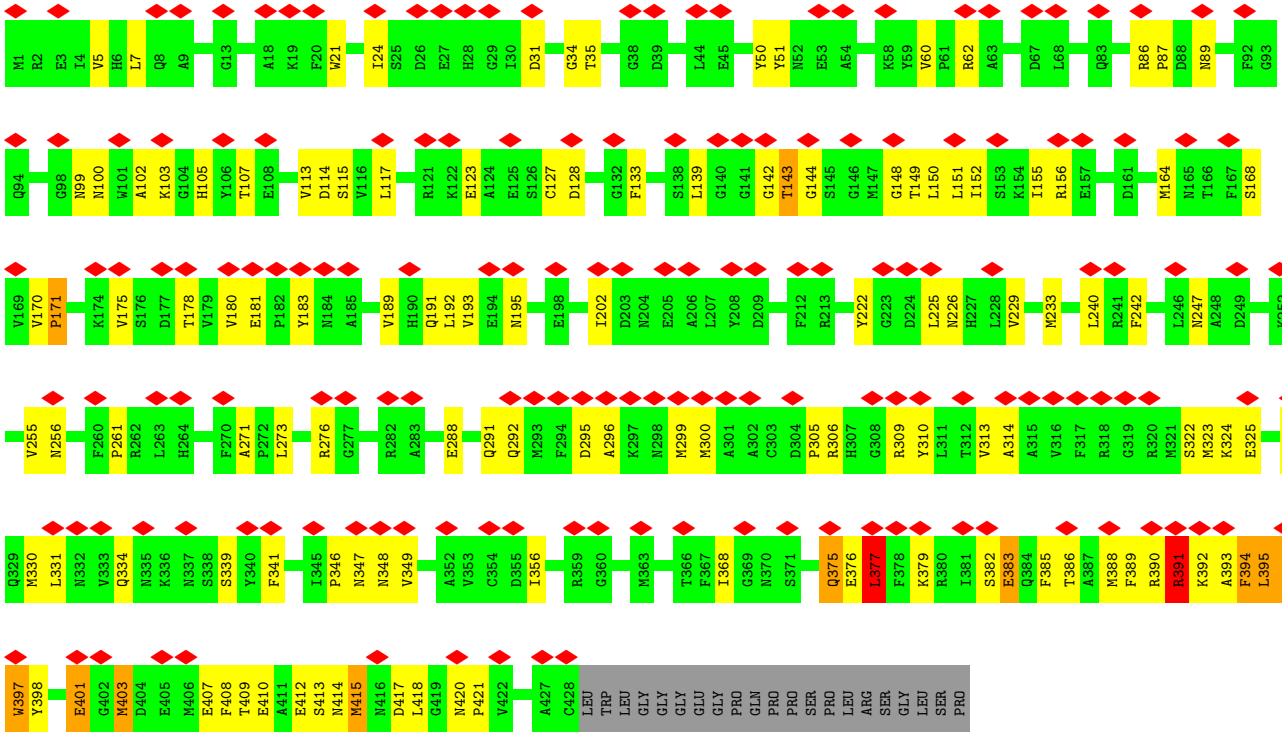
Chain RP:





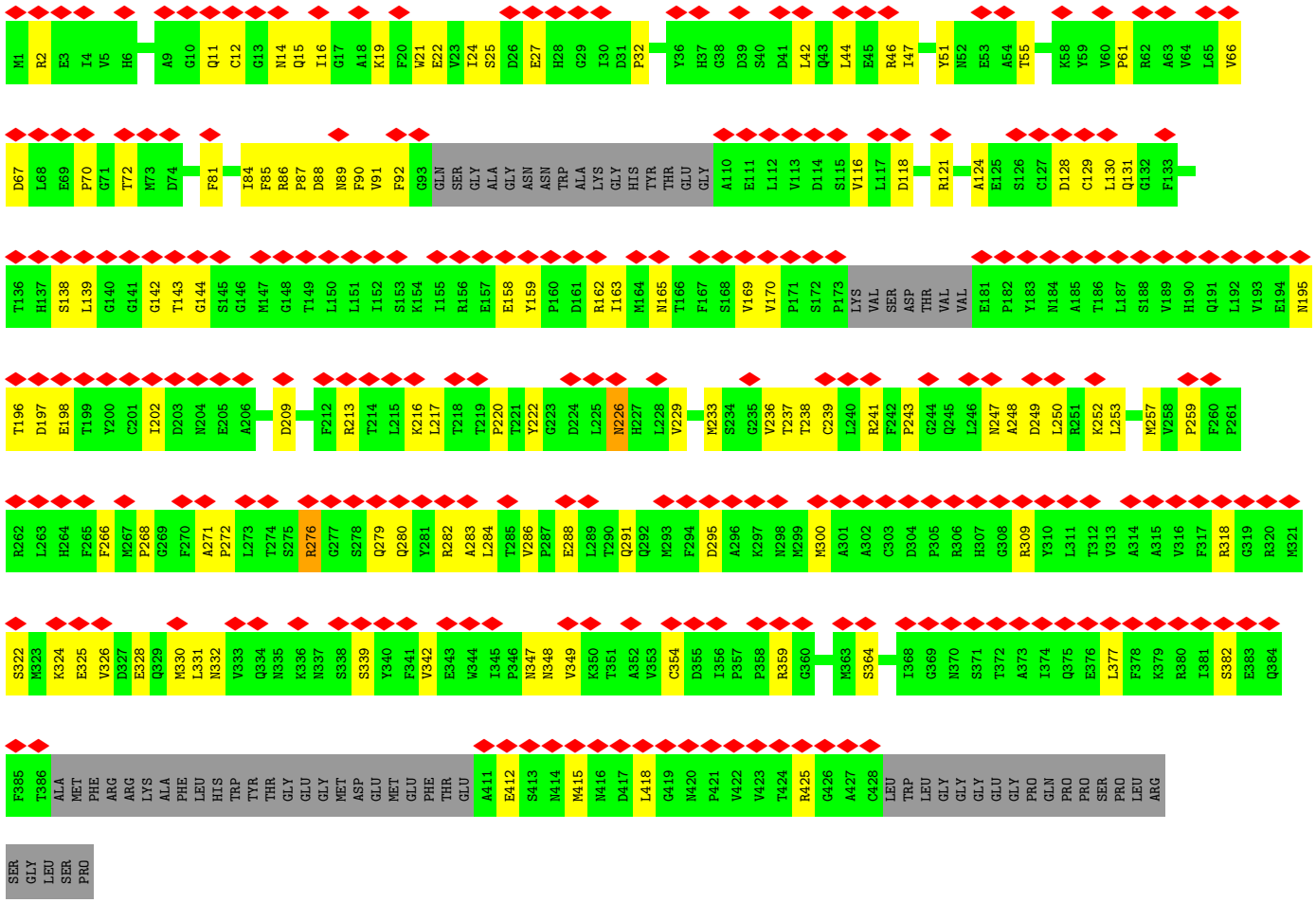
• Molecule 41: Tubulin beta chain

Chain SB:



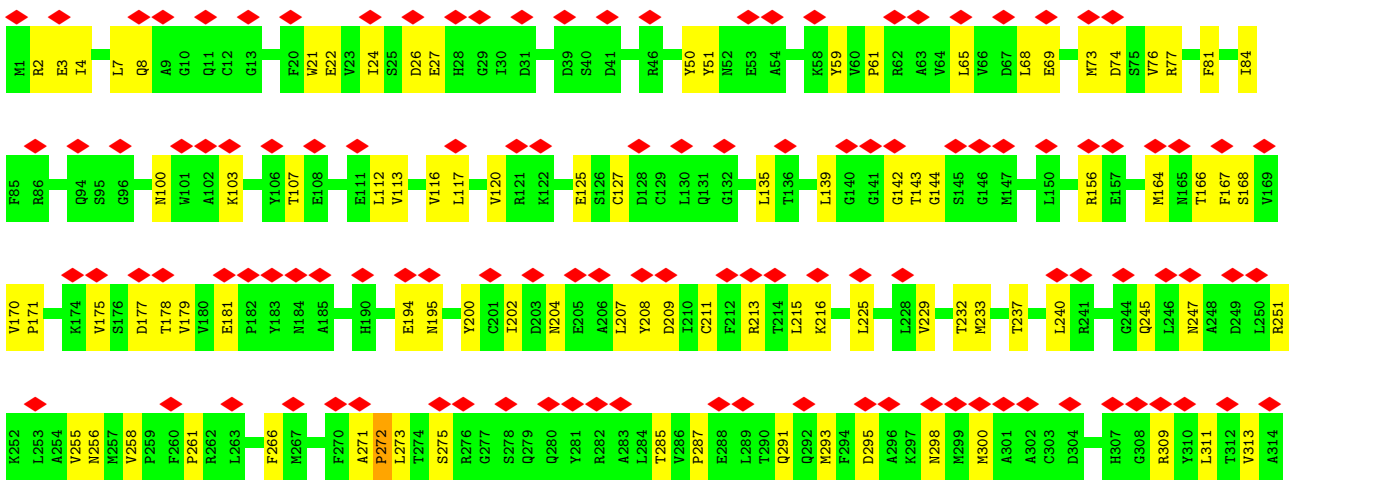
• Molecule 41: Tubulin beta chain

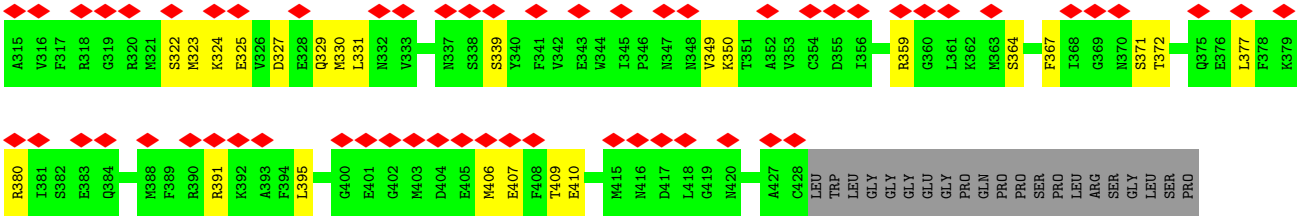
Chain SL:



• Molecule 41: Tubulin beta chain

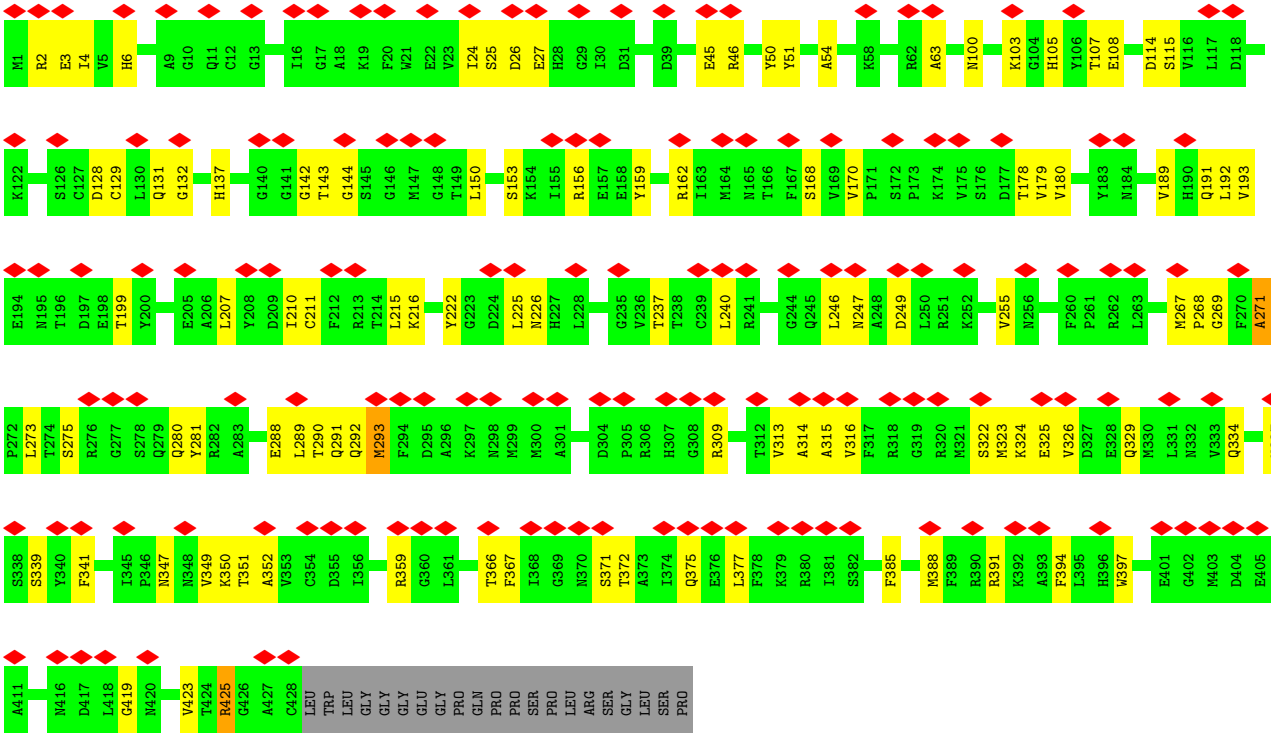
Chain SM:





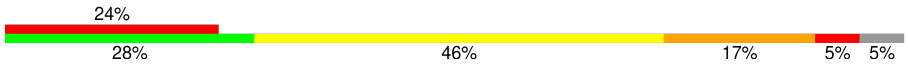
• Molecule 41: Tubulin beta chain

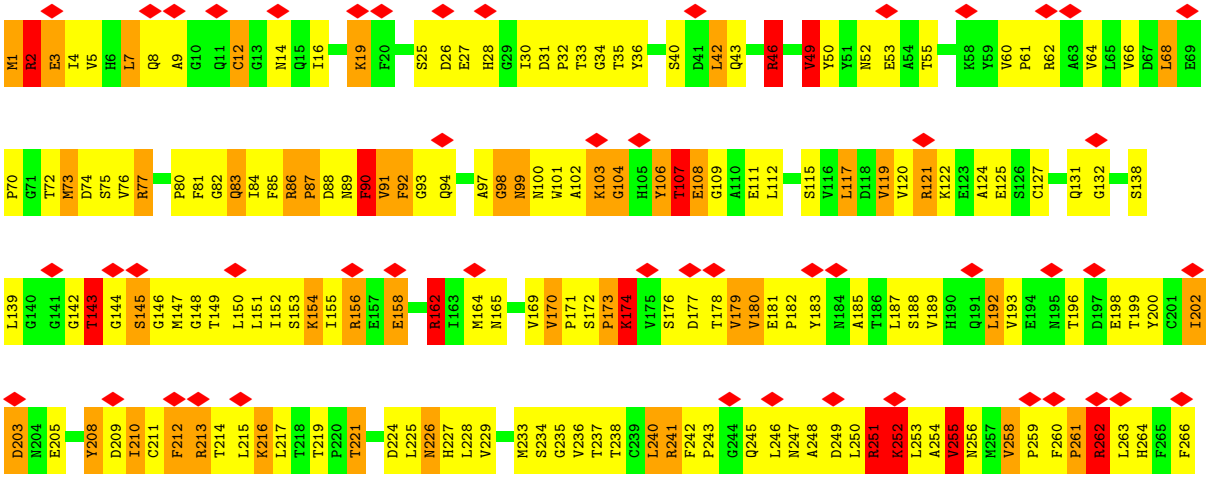
Chain SN:

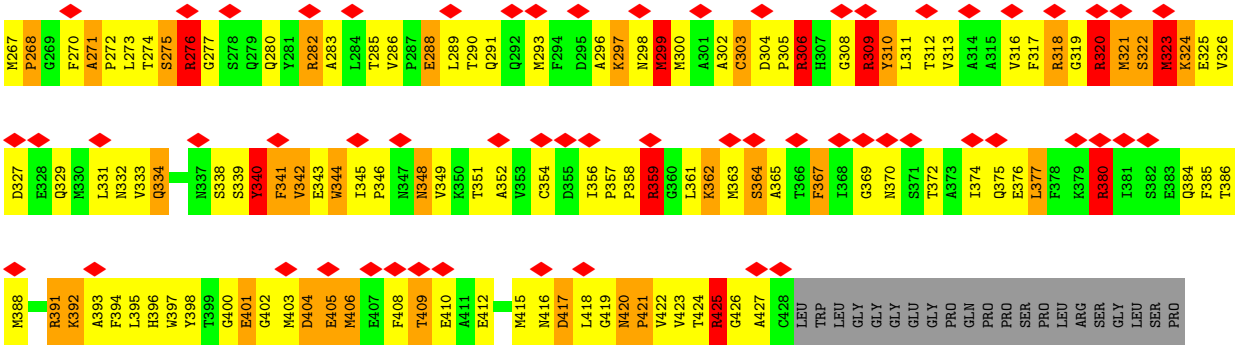


• Molecule 41: Tubulin beta chain

Chain SO:

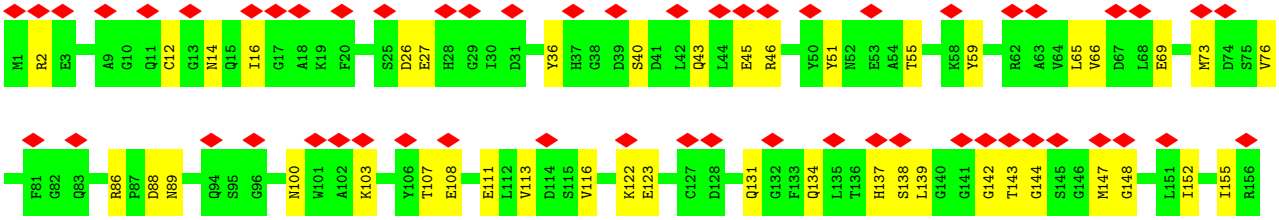


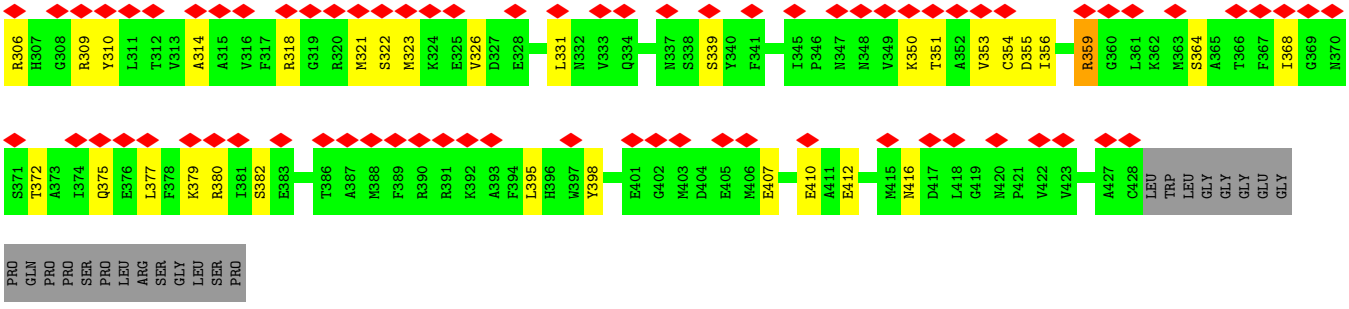




• Molecule 41: Tubulin beta chain

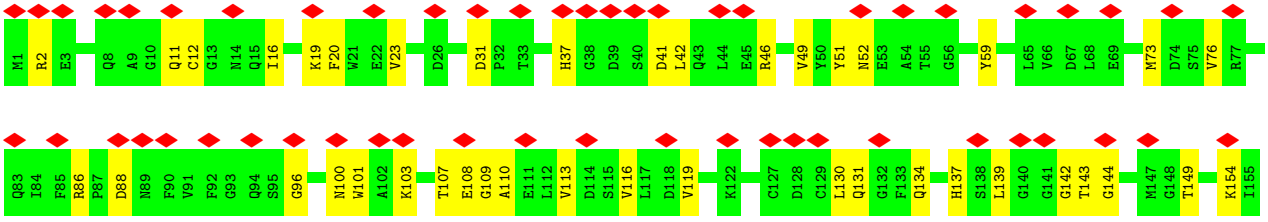
Chain SP:

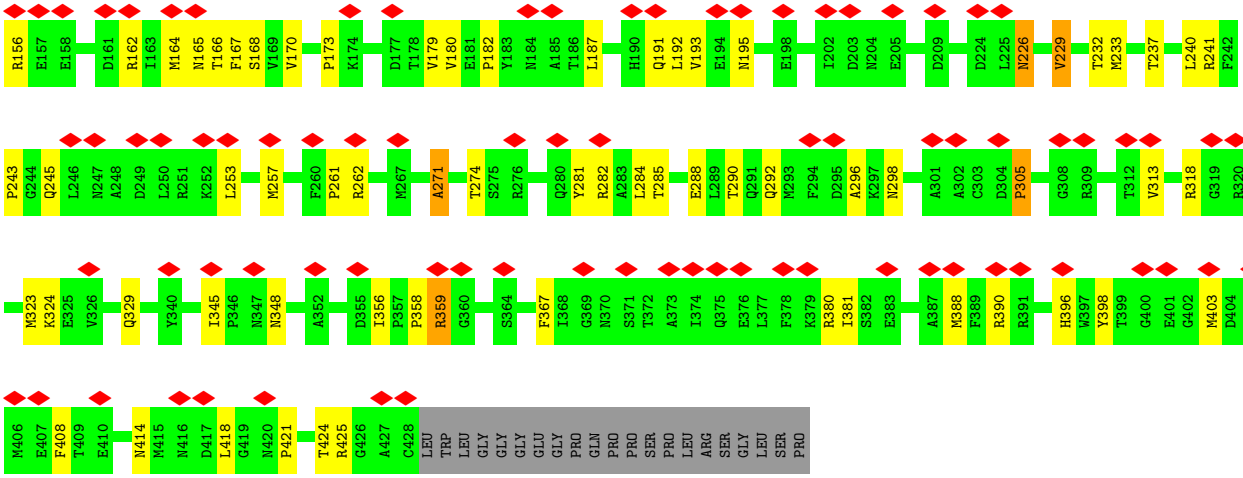




• Molecule 41: Tubulin beta chain

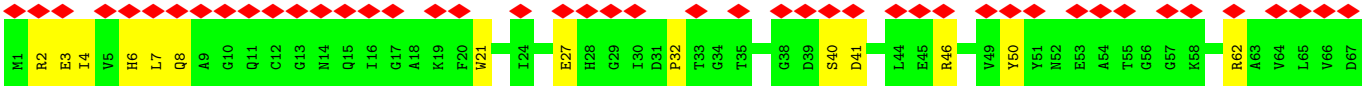
Chain TB:

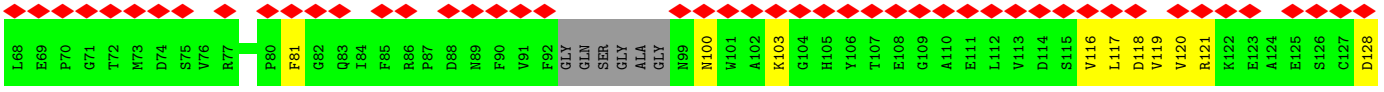


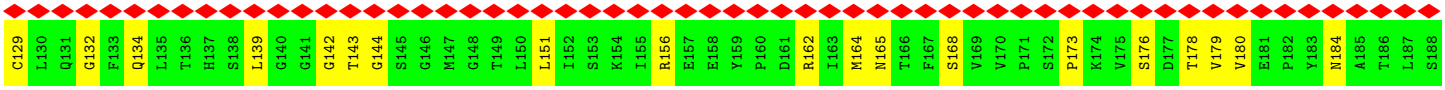


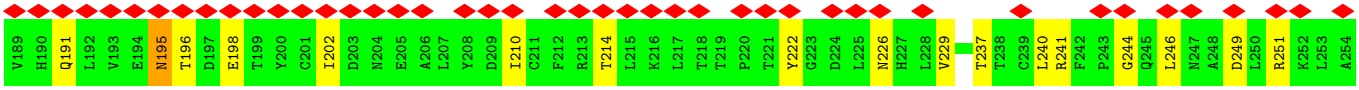
• Molecule 41: Tubulin beta chain

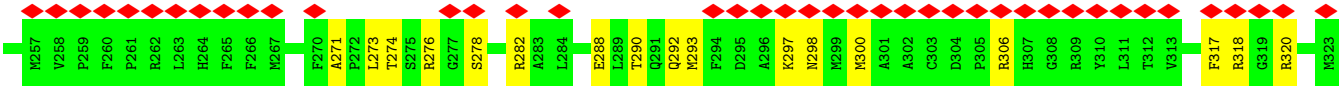
Chain TL:

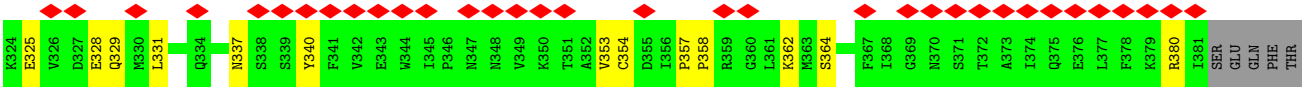


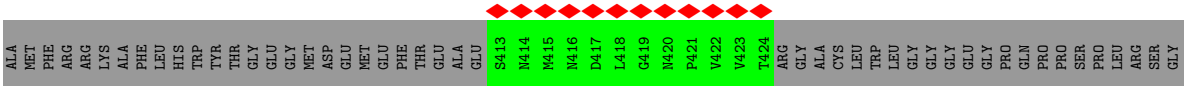






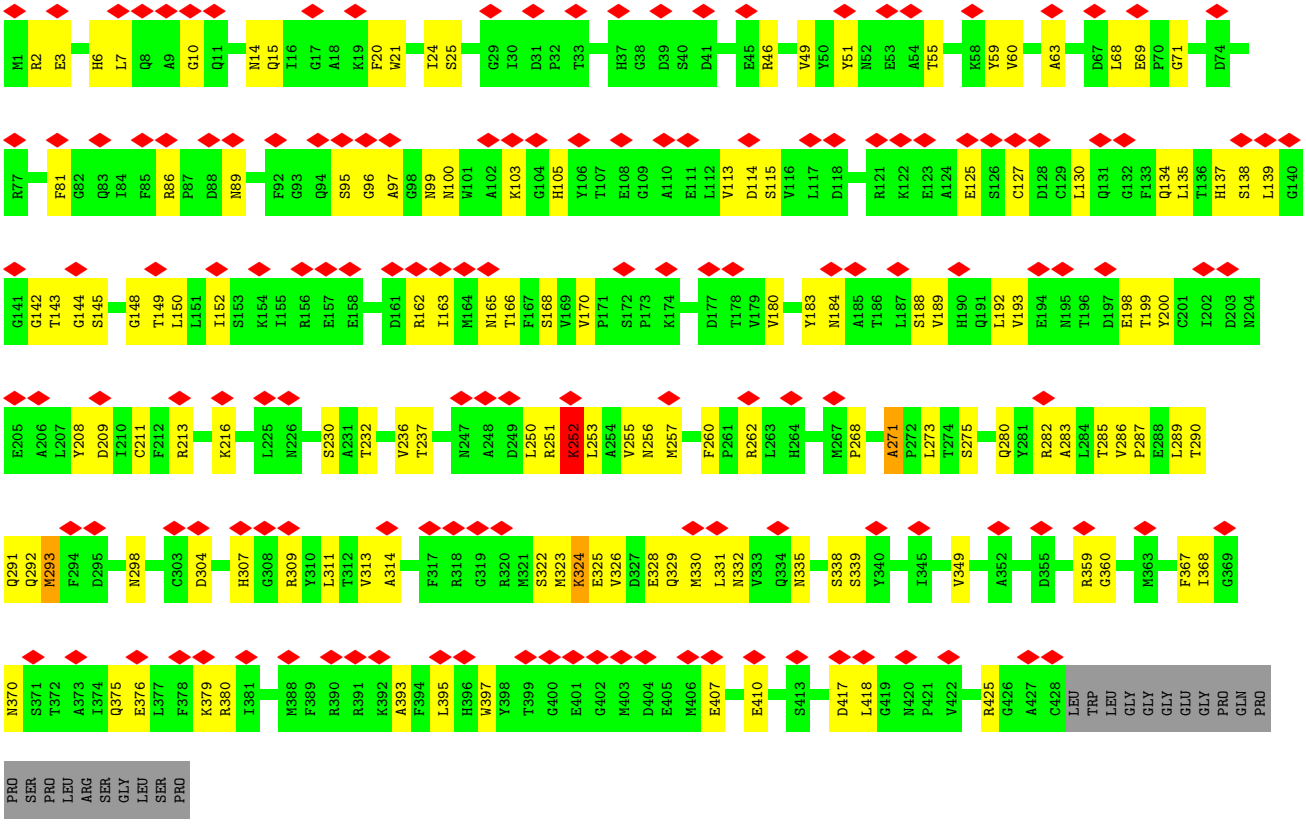






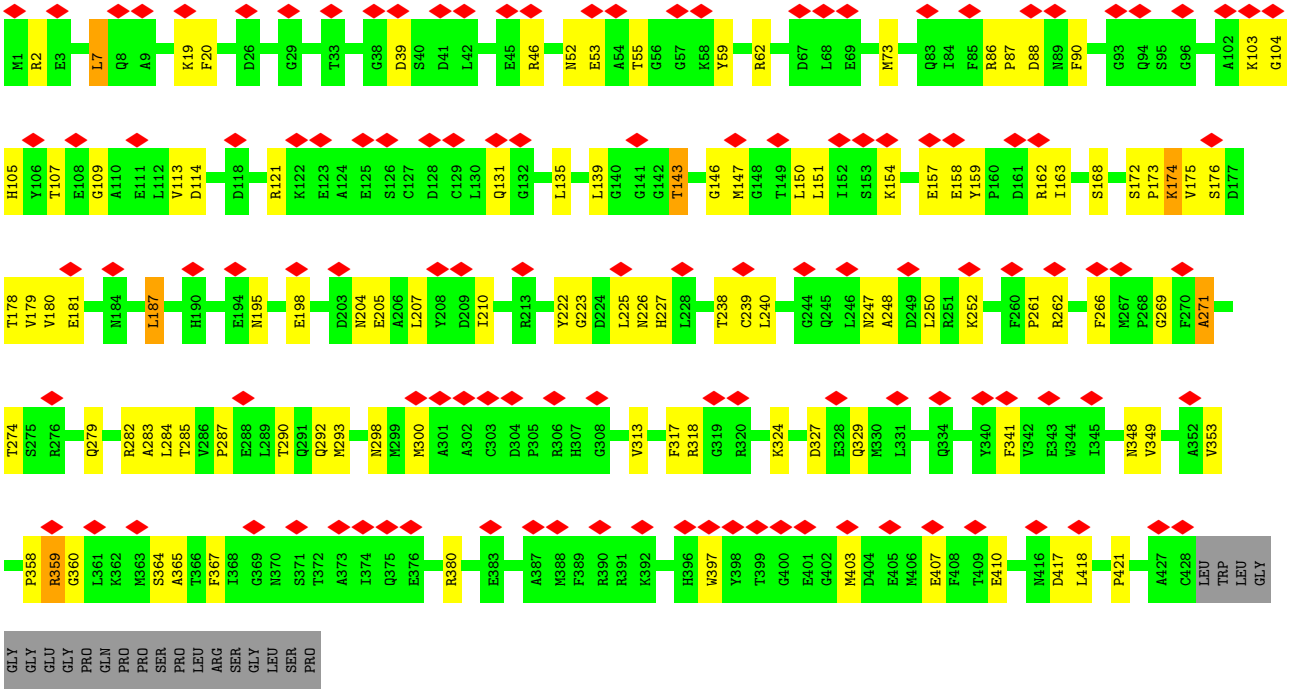
• Molecule 41: Tubulin beta chain

Chain TM:



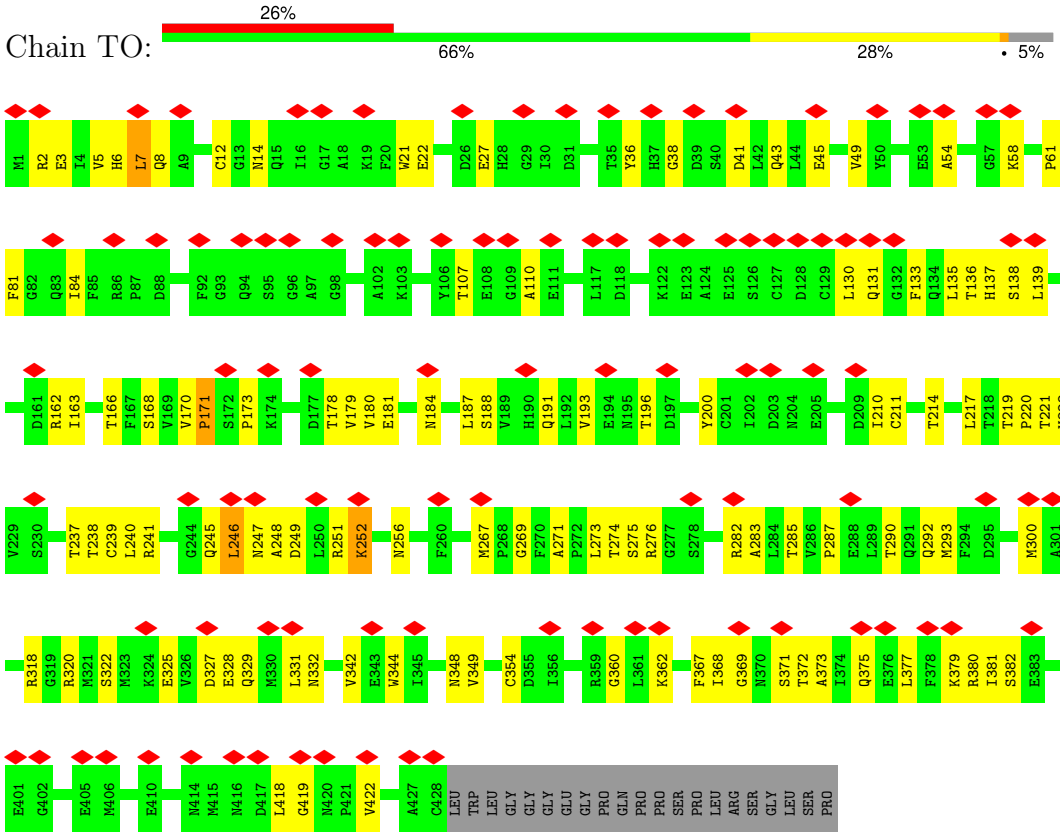
• Molecule 41: Tubulin beta chain

Chain TN:



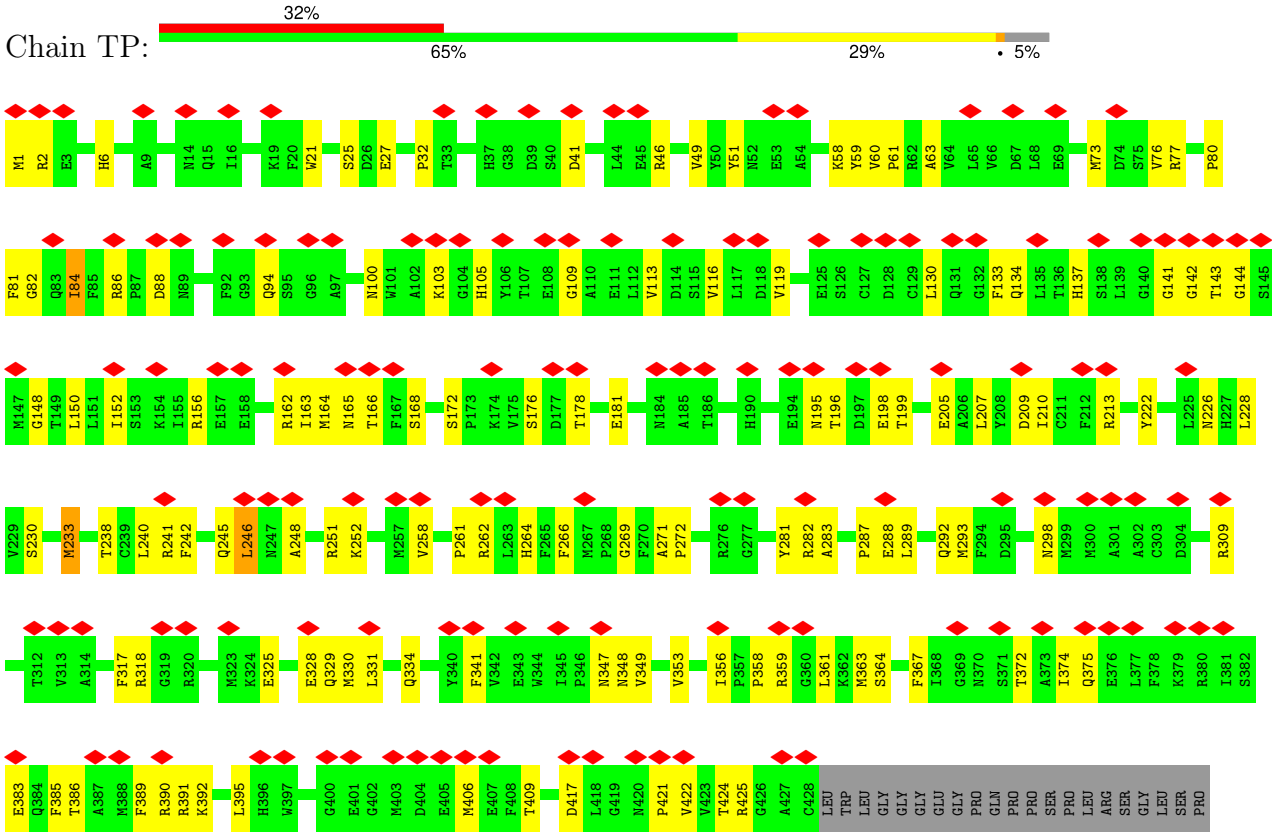
• Molecule 41: Tubulin beta chain

Chain TO:



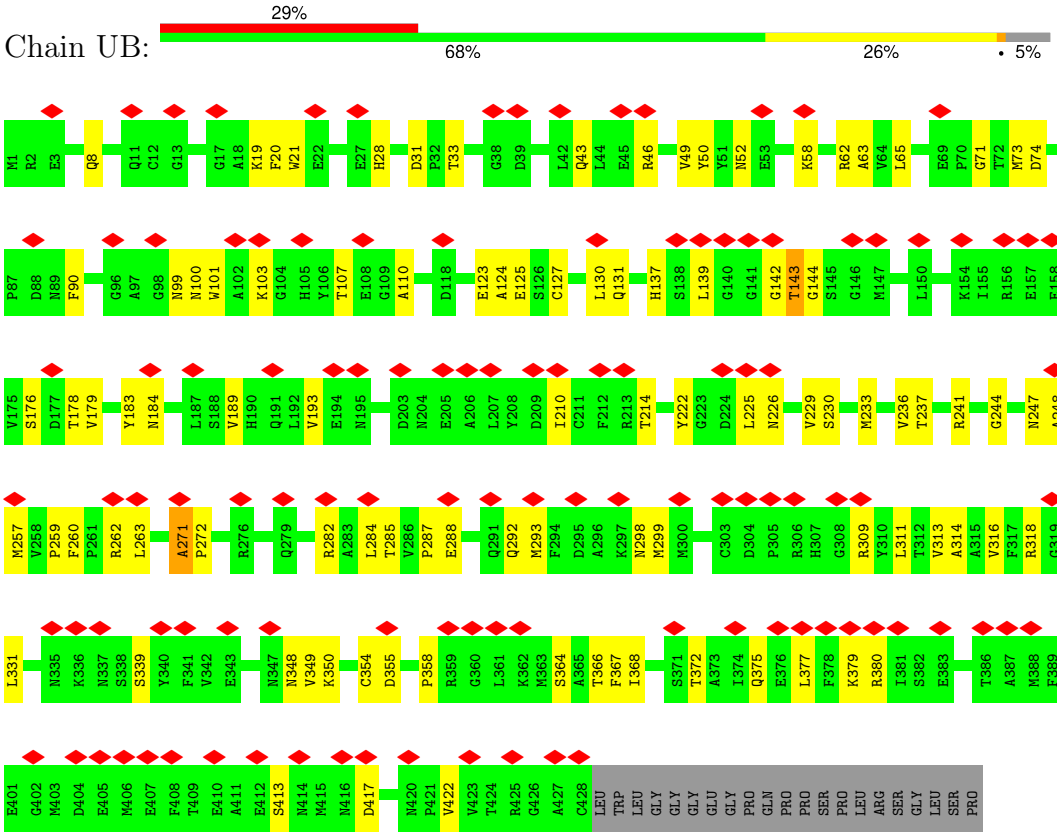
• Molecule 41: Tubulin beta chain

Chain TP:



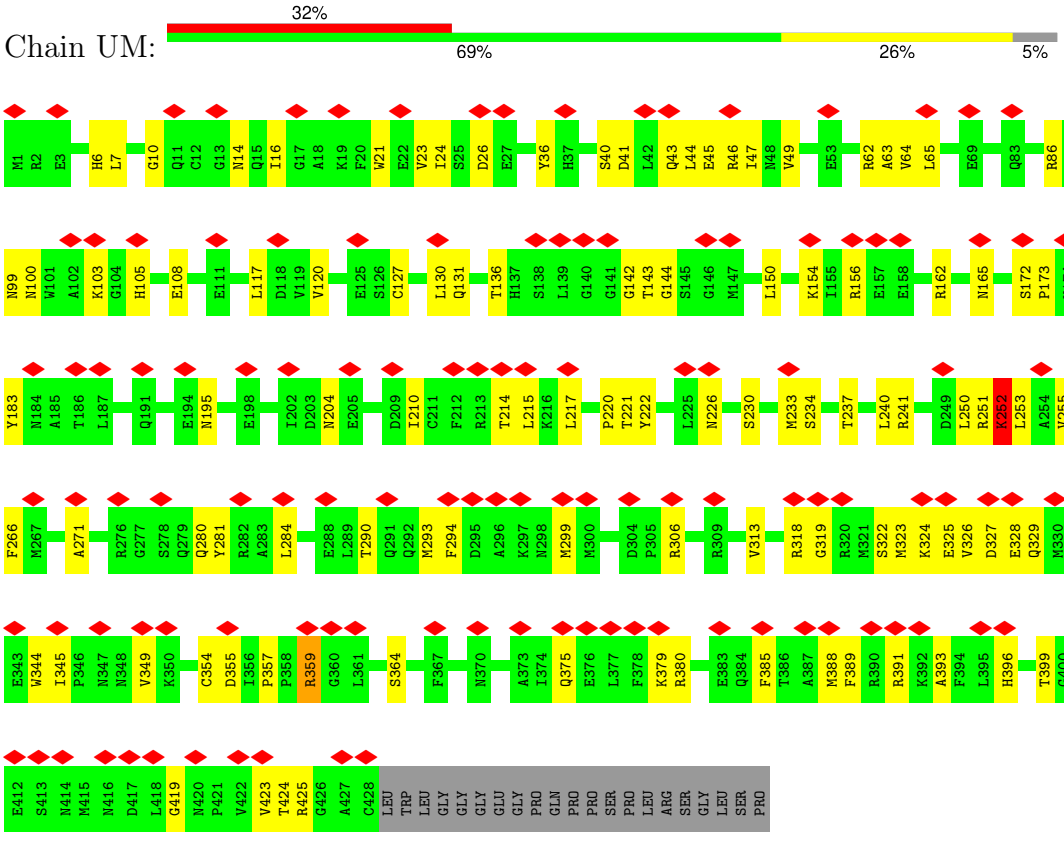
• Molecule 41: Tubulin beta chain

Chain UB:



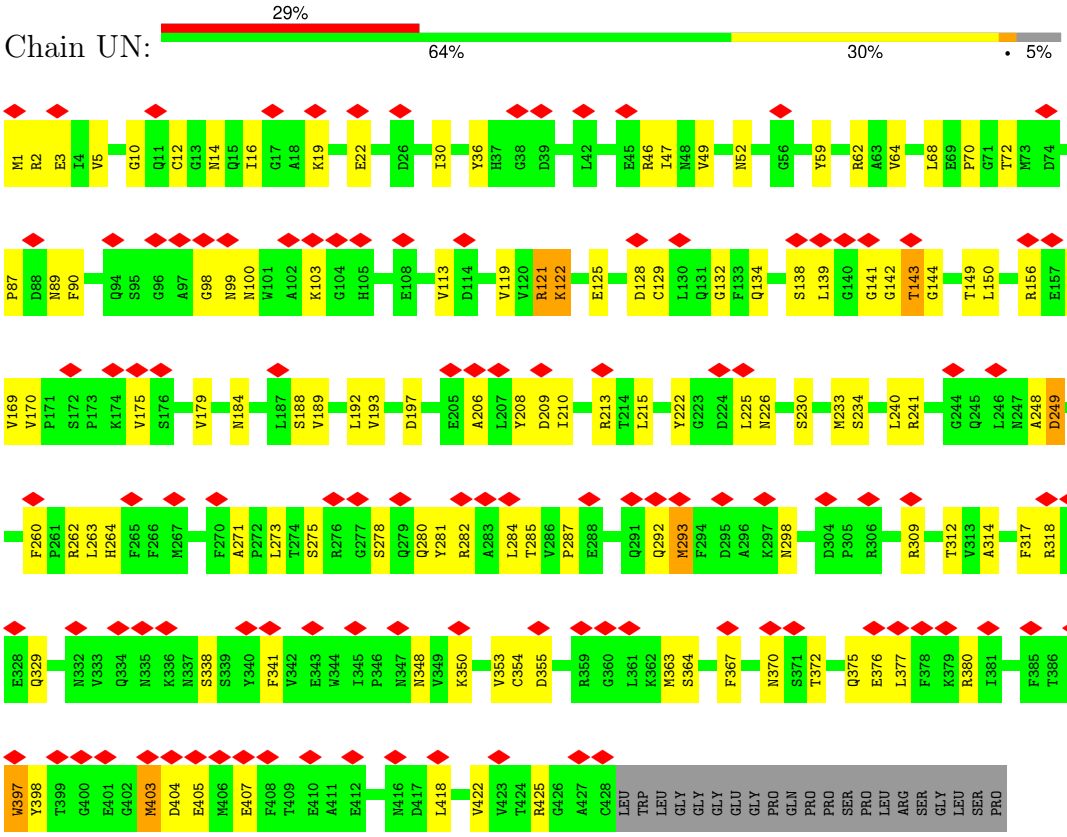
• Molecule 41: Tubulin beta chain

Chain UM:



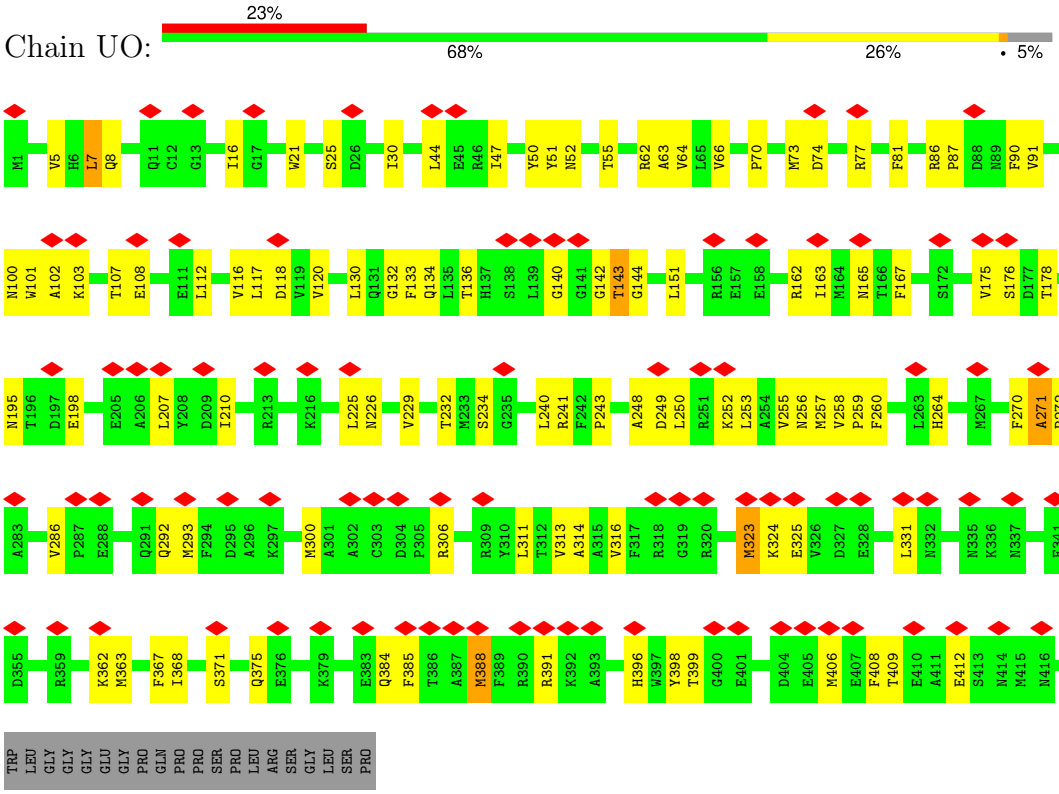
• Molecule 41: Tubulin beta chain

Chain UN:



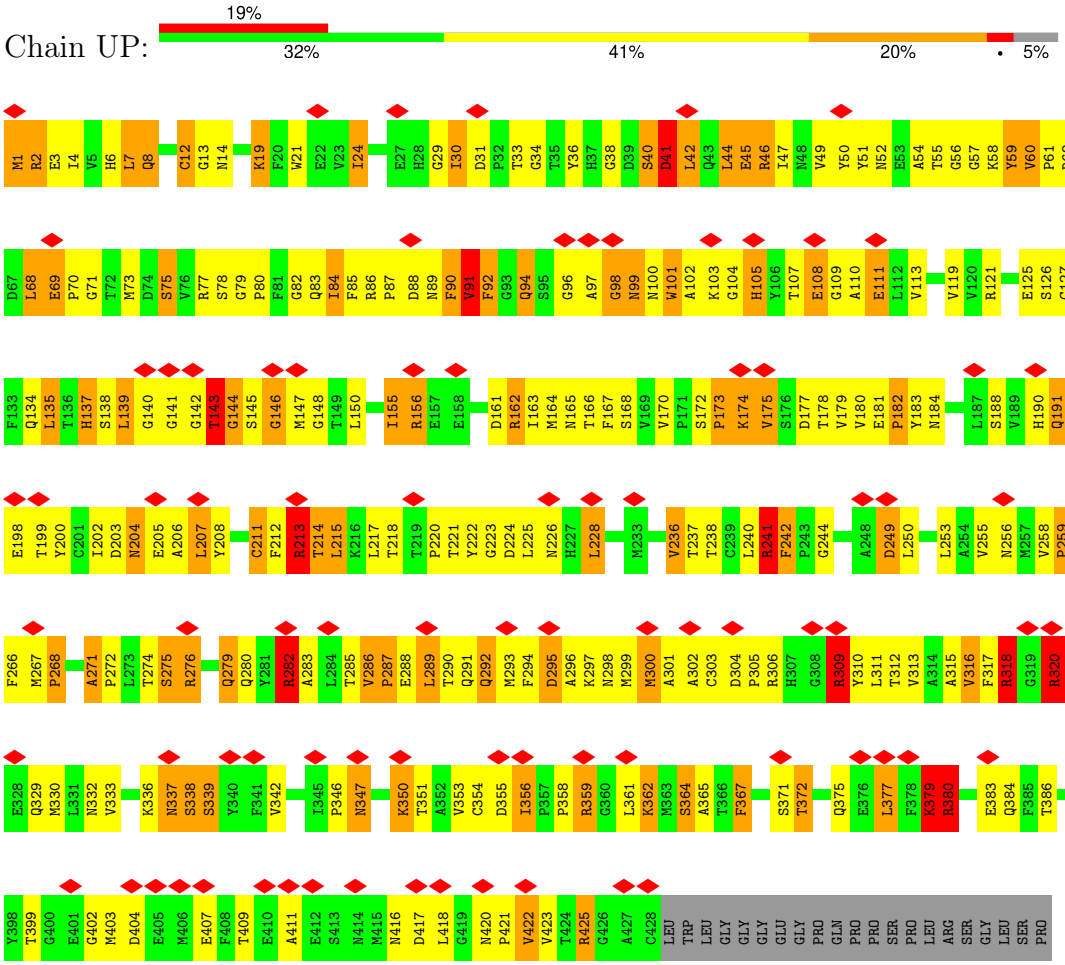
• Molecule 41: Tubulin beta chain

Chain UO:



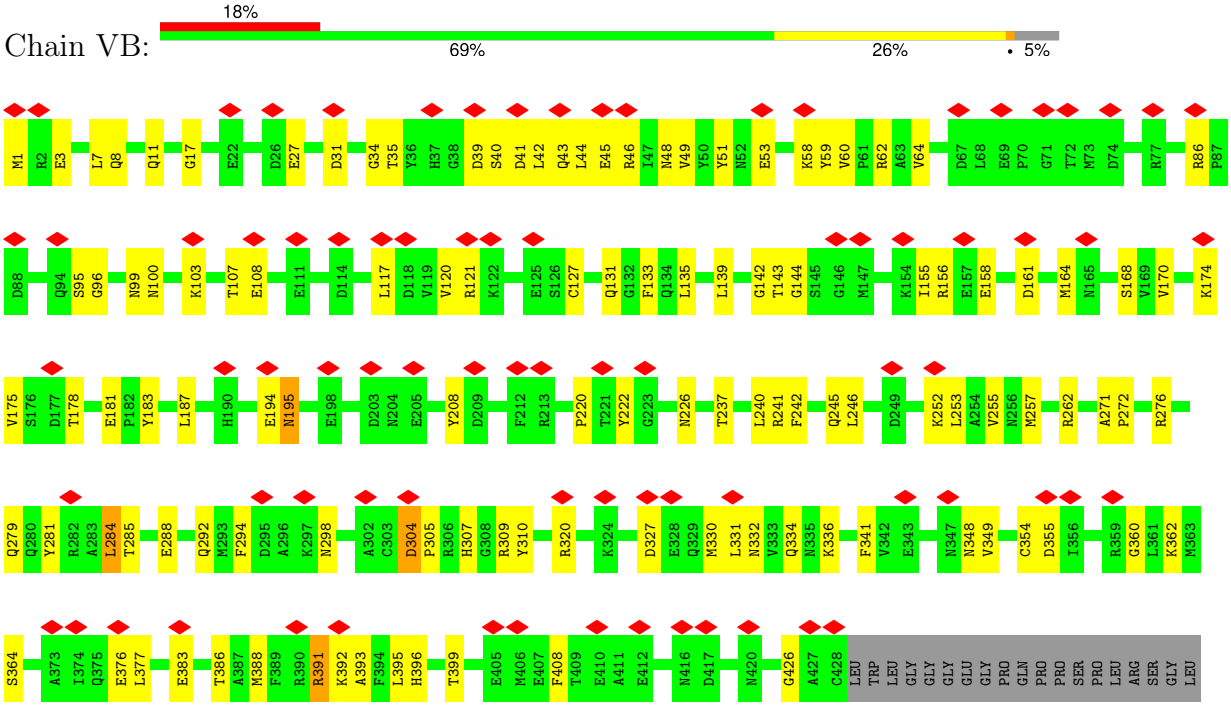
• Molecule 41: Tubulin beta chain

Chain UP:



• Molecule 41: Tubulin beta chain

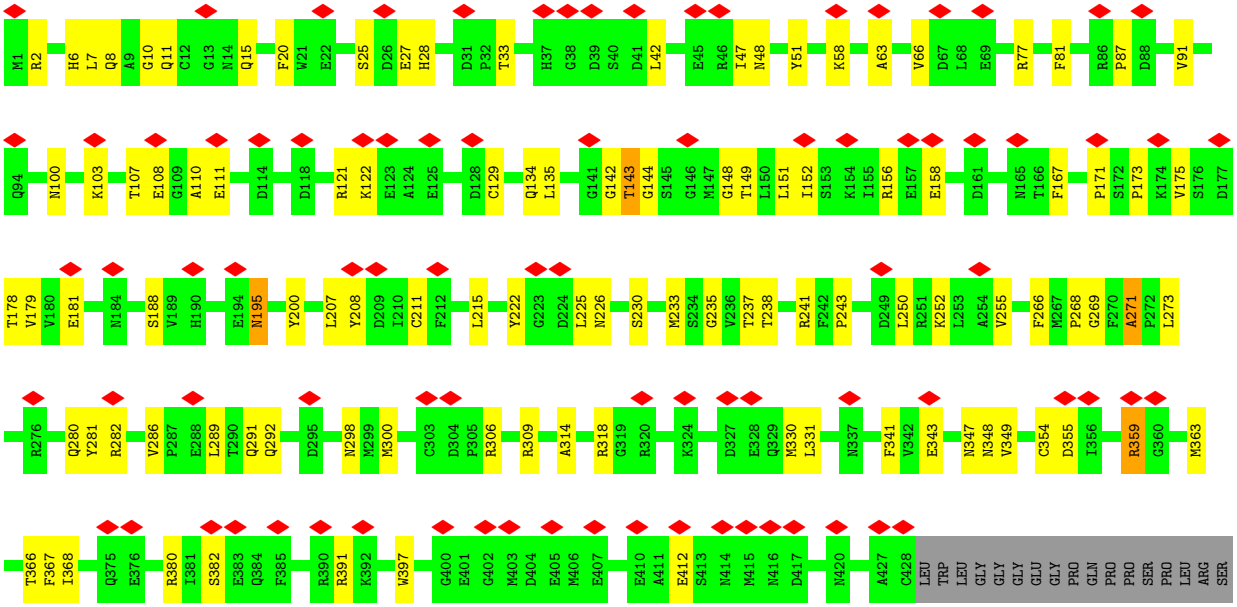
Chain VB:



SER
PRO

• Molecule 41: Tubulin beta chain

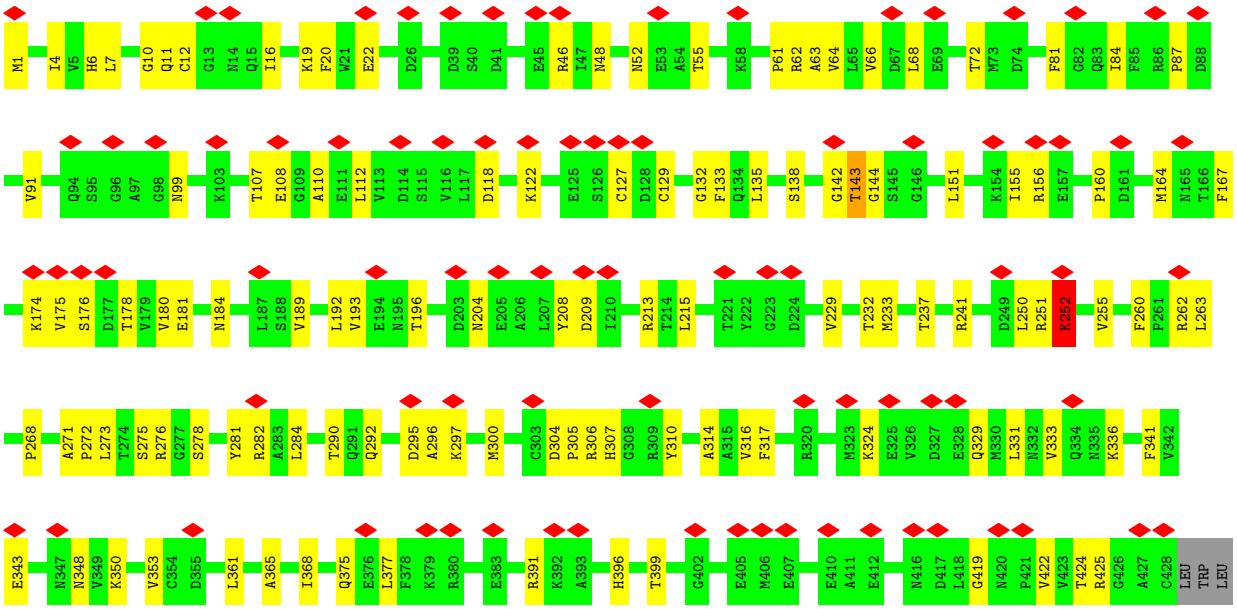
Chain VN:



GLY
LEU
SER
PRO

• Molecule 41: Tubulin beta chain

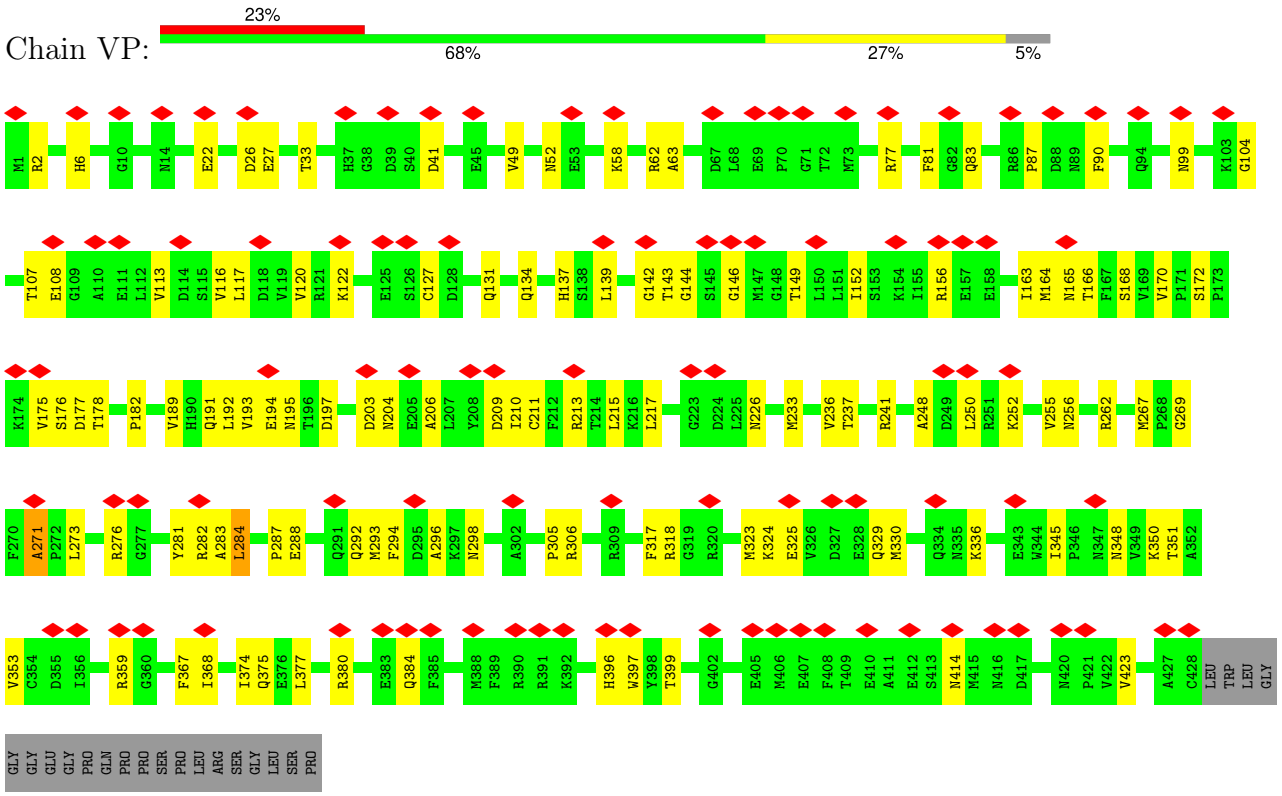
Chain VO:



GLY
GLY
GLY
GLU
GLY
PRO
GLN
PRO
PRO
SER
PRO
LEU
ARG
SER
GLY
LEU
SER
PRO

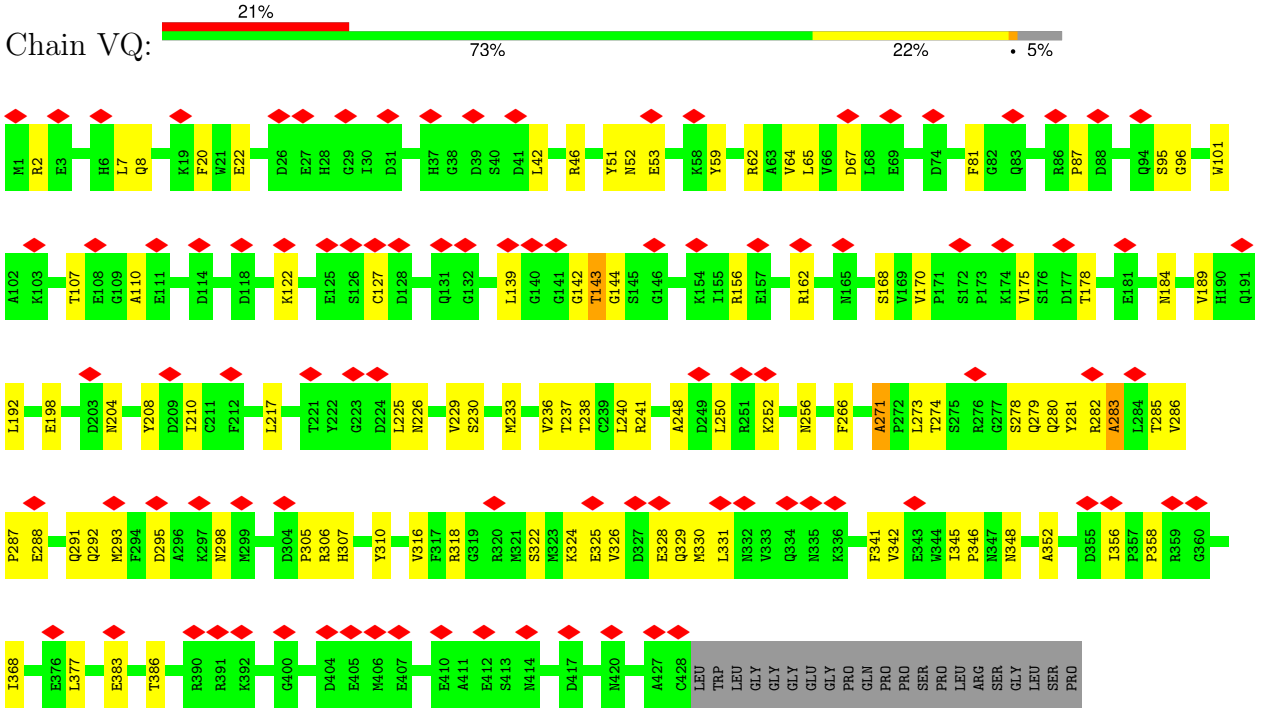
• Molecule 41: Tubulin beta chain

Chain VP:



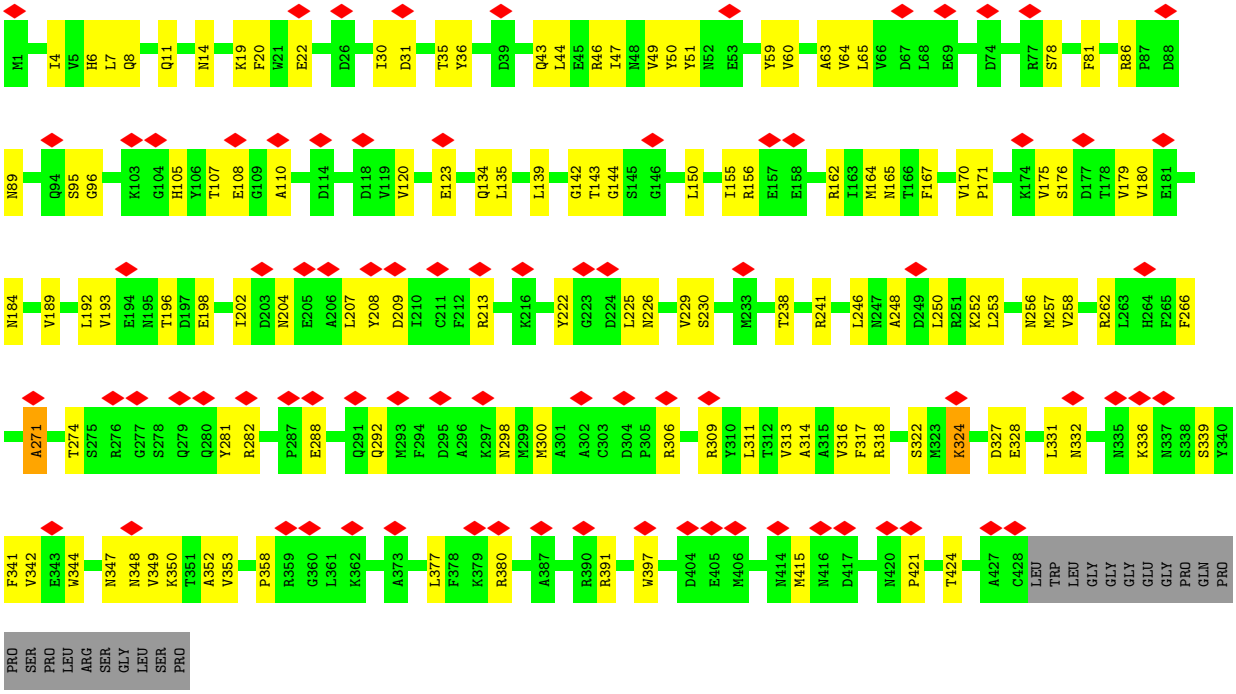
• Molecule 41: Tubulin beta chain

Chain VQ:



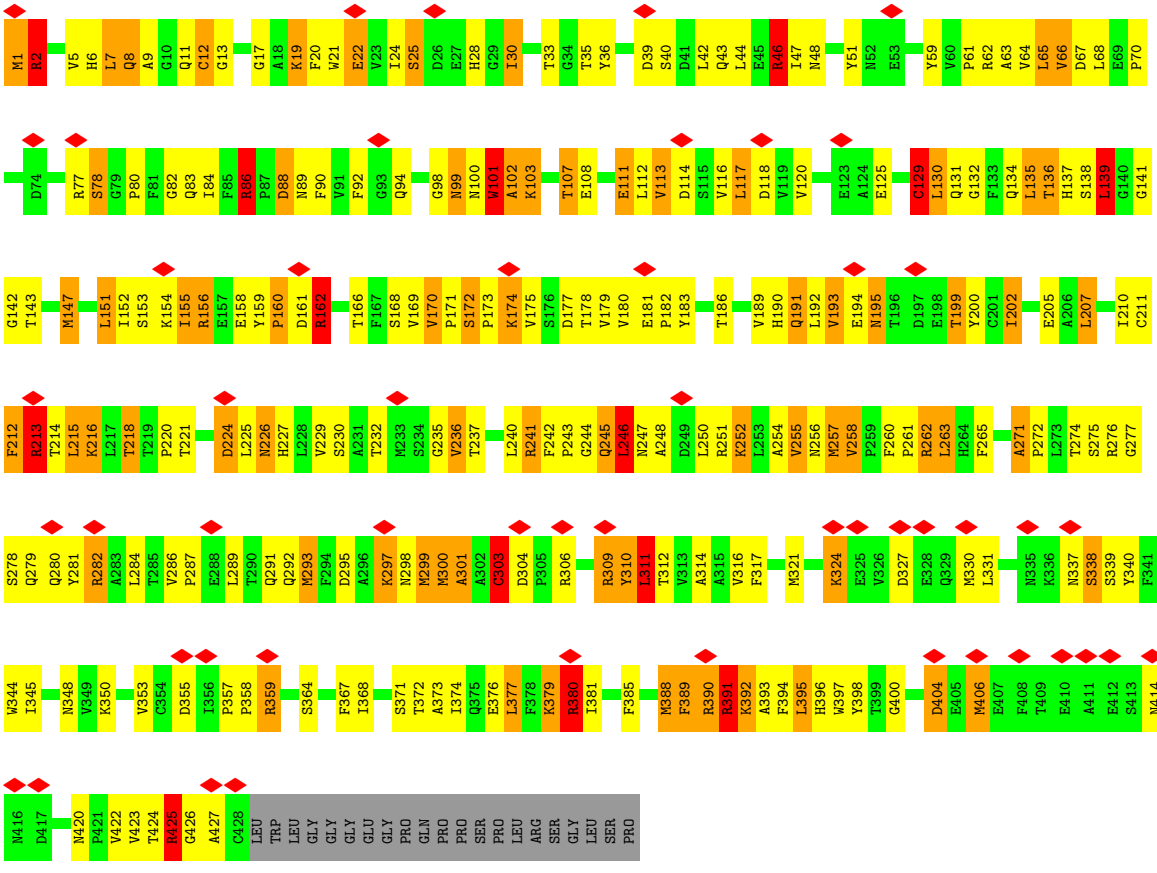
• Molecule 41: Tubulin beta chain

Chain WB:



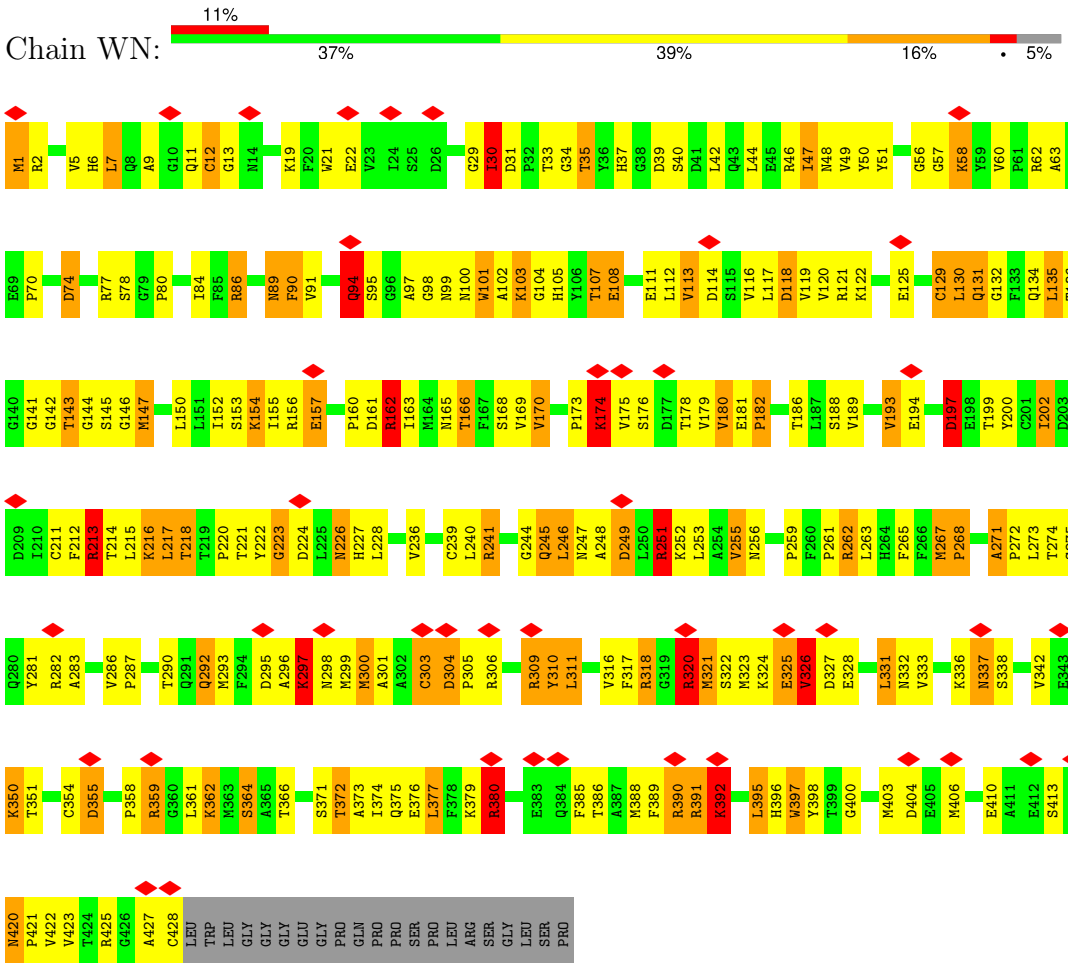
• Molecule 41: Tubulin beta chain

Chain WM:



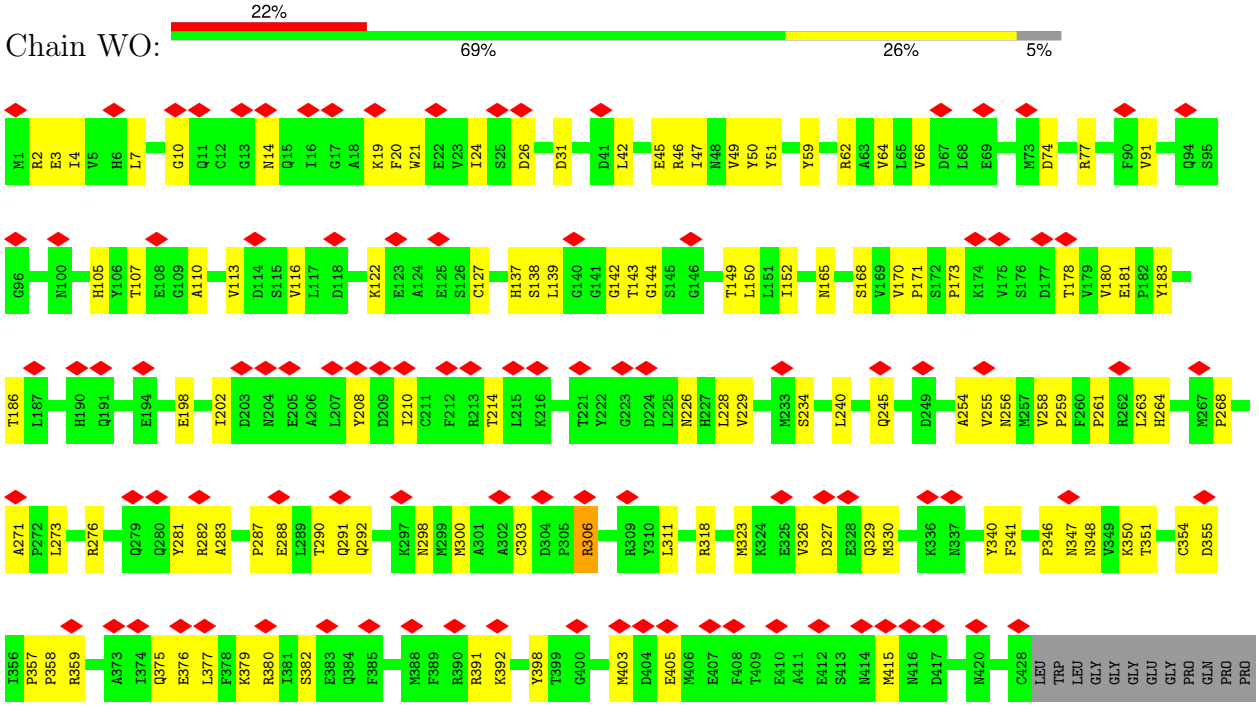
• Molecule 41: Tubulin beta chain

Chain WN:



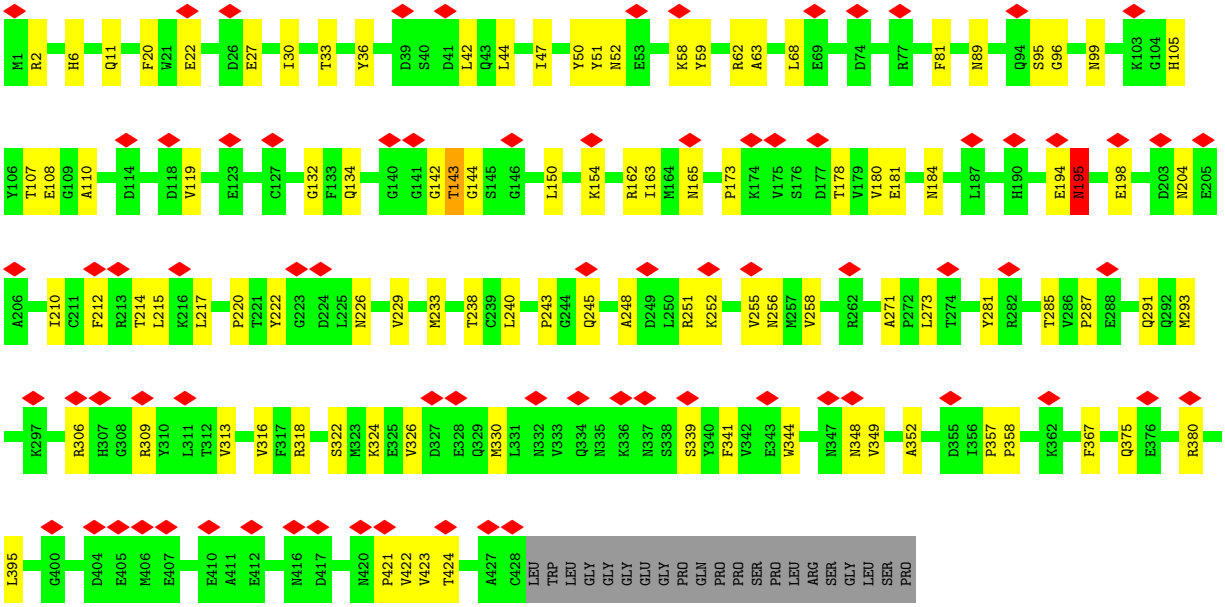
• Molecule 41: Tubulin beta chain

Chain WO:



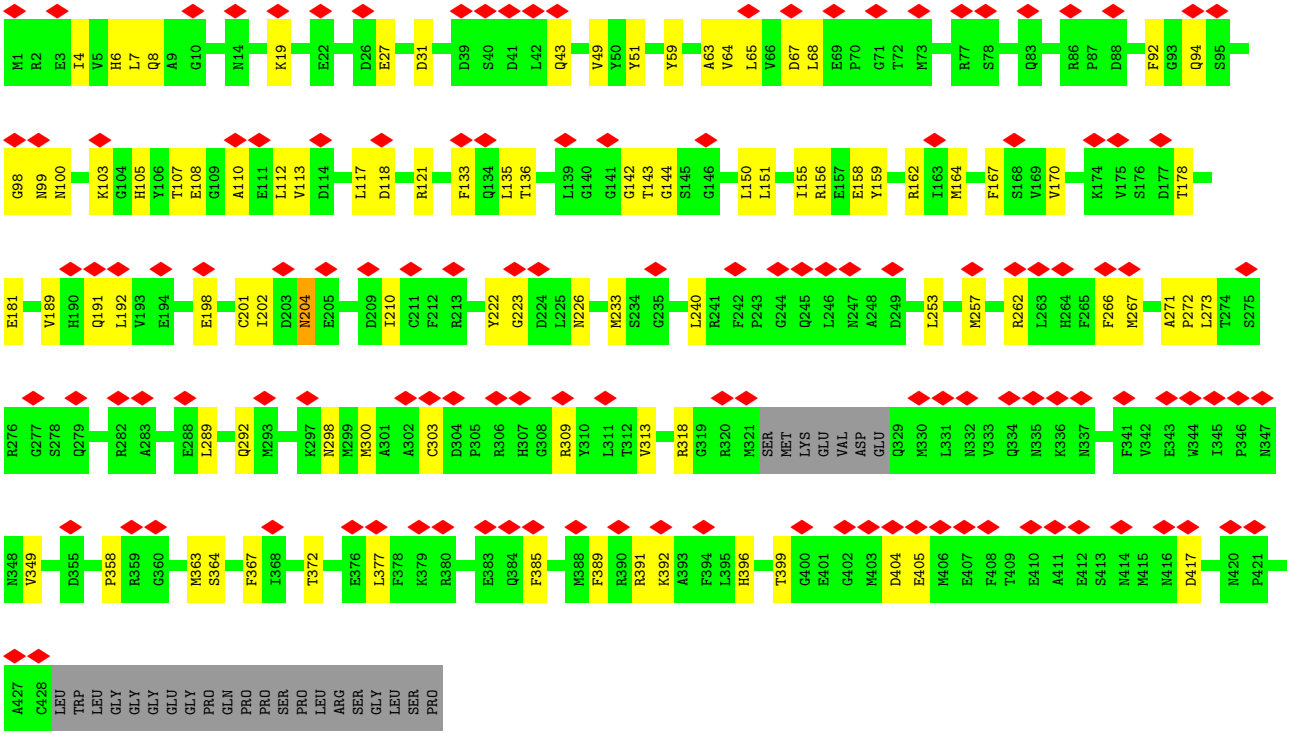
• Molecule 41: Tubulin beta chain

Chain WP:



• Molecule 41: Tubulin beta chain

Chain WQ:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	113809	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	2.382	Depositor
Minimum map value	0.000	Depositor
Average map value	0.011	Depositor
Map value standard deviation	0.079	Depositor
Recommended contour level	0.35	Depositor
Map size (Å)	686.08, 686.08, 686.08	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.34, 1.34, 1.34	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: GDP, GTP

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	1A	0.30	0/4550	0.63	2/6154 (0.0%)
1	1B	0.27	0/1148	0.60	1/1555 (0.1%)
2	1C	0.35	0/1727	0.74	0/2313
2	1D	0.35	0/1727	0.70	1/2313 (0.0%)
3	1F	0.31	0/1400	0.61	0/1875
3	1G	0.61	0/1400	0.59	0/1875
4	1H	0.39	0/1644	0.76	1/2193 (0.0%)
4	1I	0.34	0/729	0.82	1/967 (0.1%)
4	1J	0.34	0/981	0.76	1/1313 (0.1%)
5	1L	0.38	0/1316	0.78	1/1760 (0.1%)
5	1M	0.33	0/2106	0.73	2/2823 (0.1%)
5	1N	0.33	0/875	0.70	0/1175
6	1P	0.30	0/724	0.62	0/974
6	1Q	0.29	0/694	0.58	0/935
7	1S	0.35	0/4812	0.66	0/6518
7	1T	0.65	0/4812	0.66	0/6518
7	1U	0.33	0/4812	0.67	1/6518 (0.0%)
8	1W	0.36	0/2736	0.79	1/3616 (0.0%)
8	1X	0.50	0/2305	0.80	2/3061 (0.1%)
8	1Y	0.32	0/1339	0.68	0/1784
8	1Z	0.36	0/1690	0.76	0/2237
9	2B	0.39	0/3244	0.75	1/4299 (0.0%)
9	2C	0.36	0/671	0.75	1/890 (0.1%)
10	2E	0.34	0/954	0.66	1/1289 (0.1%)
10	2F	0.37	1/954 (0.1%)	0.69	2/1289 (0.2%)
10	2G	0.29	0/954	0.65	1/1289 (0.1%)
11	2I	0.52	1/2068 (0.0%)	0.63	1/2777 (0.0%)
11	2J	0.32	0/2071	0.66	1/2780 (0.0%)
11	2K	0.43	0/1985	0.58	0/2656
12	2M	0.30	0/1810	0.63	1/2447 (0.0%)
12	2N	0.33	0/1810	0.69	1/2447 (0.0%)
12	2O	0.43	0/1810	0.68	2/2447 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
12	2P	0.32	0/1810	0.64	0/2447
12	2Q	0.33	0/1810	0.67	1/2447 (0.0%)
12	2R	0.32	0/1810	0.68	3/2447 (0.1%)
13	2T	0.63	0/1573	0.66	0/2122
13	2U	0.60	0/1573	0.67	0/2122
13	2V	0.60	0/1573	0.65	0/2122
13	2W	0.60	0/1573	0.66	0/2122
13	2X	0.65	0/1573	0.68	0/2122
14	3A	0.29	0/951	0.62	0/1294
14	3B	0.31	0/951	0.71	2/1294 (0.2%)
14	3C	0.32	0/951	0.61	0/1294
15	3E	0.31	0/3254	0.60	1/4383 (0.0%)
15	3F	0.34	0/3279	0.64	3/4418 (0.1%)
15	3G	0.29	0/1102	0.57	0/1477
15	3H	0.31	0/2481	0.62	0/3342
16	3J	0.33	0/3272	0.62	2/4409 (0.0%)
16	3K	0.31	0/2583	0.64	2/3471 (0.1%)
16	3L	0.30	0/3272	0.61	1/4409 (0.0%)
16	3M	0.28	0/955	0.64	0/1294
17	3O	0.40	0/3220	0.65	4/4342 (0.1%)
17	3P	0.66	0/3220	0.61	0/4342
17	3Q	0.65	0/1066	0.61	0/1436
17	3R	0.62	0/2179	0.58	0/2941
18	3T	0.32	0/3334	0.64	4/4495 (0.1%)
18	3U	0.34	0/3339	0.68	2/4502 (0.0%)
18	3V	0.29	0/1433	0.54	0/1934
18	3W	0.30	0/2140	0.65	0/2881
19	3Y	0.34	0/3013	0.65	2/4026 (0.0%)
19	3Z	0.44	0/198	0.56	0/266
20	4A	0.63	0/1494	0.59	0/1989
20	4B	0.64	0/951	0.60	0/1273
21	4D	0.44	0/3944	0.67	3/5339 (0.1%)
21	4E	0.44	0/3944	0.63	2/5339 (0.0%)
21	4F	0.43	0/3944	0.64	0/5339
22	4H	0.33	0/2970	0.67	2/4009 (0.0%)
22	4I	0.38	0/5138	0.65	1/6912 (0.0%)
22	4J	0.40	0/5169	0.74	10/6956 (0.1%)
22	4K	0.50	0/2015	0.67	1/2698 (0.0%)
23	4M	0.66	0/1374	0.67	0/1862
23	4N	0.68	1/1364 (0.1%)	0.63	0/1851
23	4P	0.68	1/729 (0.1%)	0.62	0/981
23	4Q	0.69	0/1103	0.64	0/1490
23	4R	0.67	0/1362	0.64	0/1843

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
24	4O	0.69	0/726	0.70	1/978 (0.1%)
25	4T	0.36	0/1360	0.70	1/1847 (0.1%)
26	4V	0.33	0/3009	0.72	3/4063 (0.1%)
26	4W	0.35	0/3009	0.72	3/4063 (0.1%)
27	4Y	0.31	0/2195	0.64	2/2970 (0.1%)
27	4Z	0.30	0/2212	0.71	4/2995 (0.1%)
28	5B	0.36	0/1671	0.68	3/2267 (0.1%)
29	5D	0.30	0/720	0.68	0/974
29	5E	0.31	0/288	0.73	0/390
30	5G	0.29	0/729	0.64	0/996
31	5I	0.36	0/3672	0.72	1/4968 (0.0%)
31	5J	0.32	0/915	0.66	0/1234
32	5L	0.34	0/749	0.73	0/1010
33	5N	0.36	0/2907	0.73	3/3851 (0.1%)
33	5O	0.36	0/1286	0.72	1/1707 (0.1%)
34	5Q	0.36	0/2231	0.75	2/2965 (0.1%)
34	5R	0.64	0/1681	0.64	0/2226
35	5T	0.30	0/1164	0.65	1/1592 (0.1%)
35	5U	0.31	0/229	0.75	0/312
36	5W	0.33	0/1917	0.78	0/2595
36	5X	0.33	0/1917	0.79	4/2595 (0.2%)
36	5Y	0.30	0/1521	0.79	2/2056 (0.1%)
36	5Z	0.34	0/504	0.76	1/682 (0.1%)
37	6A	0.32	0/1019	0.82	0/1382
38	6C	0.41	0/1746	0.81	2/2348 (0.1%)
38	6D	0.31	0/511	0.67	0/690
39	6F	0.30	0/1290	0.53	0/1743
39	6G	0.30	0/1290	0.53	0/1743
39	6H	0.30	0/1153	0.65	0/1551
39	6I	0.26	0/1290	0.56	0/1743
39	6J	0.24	0/1290	0.50	0/1743
39	6K	0.28	0/1290	0.58	0/1743
39	6L	0.39	0/1115	0.60	1/1506 (0.1%)
40	AA	0.31	0/3520	0.61	1/4778 (0.0%)
40	AE	0.32	0/3520	0.61	1/4778 (0.0%)
40	AF	0.33	0/3520	0.63	4/4778 (0.1%)
40	AG	0.32	0/3520	0.60	0/4778
40	AH	0.31	0/3520	0.59	0/4778
40	BA	0.32	0/3520	0.62	2/4778 (0.0%)
40	BE	0.66	0/3520	0.66	0/4778
40	BF	0.35	0/3475	0.67	1/4717 (0.0%)
40	BG	0.66	3/3469 (0.1%)	0.94	7/4709 (0.1%)
40	BH	0.66	0/3520	0.66	0/4778

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
40	BI	0.66	0/2998	0.66	0/4064
40	CA	0.66	0/3520	0.67	0/4778
40	CE	0.33	0/3516	0.67	1/4774 (0.0%)
40	CF	0.35	0/3520	0.67	2/4778 (0.0%)
40	CG	0.33	0/3520	0.67	2/4778 (0.0%)
40	CH	0.66	0/3520	0.68	0/4778
40	CI	0.32	0/3520	0.64	0/4778
40	DA	0.66	0/3467	0.67	0/4706
40	DE	0.65	0/3487	0.66	0/4733
40	DF	0.65	0/3467	0.67	0/4706
40	DG	0.31	0/3475	0.64	1/4717 (0.0%)
40	DH	0.66	0/3475	0.69	0/4717
40	DI	0.66	0/3467	0.66	0/4706
40	EA	0.33	0/3483	0.62	1/4728 (0.0%)
40	EE	0.31	0/3492	0.64	0/4739
40	EF	0.33	0/3492	0.63	0/4739
40	EG	0.36	1/3483 (0.0%)	0.69	3/4728 (0.1%)
40	EH	0.66	0/3475	0.67	0/4717
40	EI	0.66	0/3483	0.65	0/4728
40	FA	0.65	0/3483	0.67	0/4728
40	FE	0.30	0/3483	0.65	2/4728 (0.0%)
40	FF	0.34	0/3483	0.65	1/4728 (0.0%)
40	FG	0.32	0/3475	0.65	2/4717 (0.0%)
40	FH	0.33	0/3483	0.64	1/4728 (0.0%)
40	FI	0.36	0/3479	0.67	2/4724 (0.0%)
40	GA	0.37	0/3483	0.66	0/4728
40	GE	0.66	0/3483	0.65	0/4728
40	GF	0.32	0/3475	0.65	0/4717
40	GG	0.38	0/3475	0.66	4/4717 (0.1%)
40	GH	0.65	0/3475	0.66	0/4717
40	GI	0.66	0/3483	0.66	0/4728
40	HA	0.32	0/3487	0.67	1/4733 (0.0%)
40	HE	0.66	0/3475	0.63	0/4717
40	HF	0.30	0/3469	0.63	1/4709 (0.0%)
40	HG	0.34	0/3479	0.68	1/4723 (0.0%)
40	HH	0.32	0/3483	0.65	3/4728 (0.1%)
40	HI	0.33	0/3492	0.65	0/4739
40	IA	0.35	0/3483	0.69	1/4728 (0.0%)
40	IE	0.31	0/3356	0.61	0/4554
40	IF	0.32	0/3483	0.65	1/4728 (0.0%)
40	IG	0.33	0/3475	0.67	3/4717 (0.1%)
40	IH	0.35	0/3483	0.63	0/4728
40	II	0.33	0/3483	0.65	0/4728

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
40	JA	0.33	0/3483	0.65	0/4728
40	JD	0.32	0/3483	0.68	3/4728 (0.1%)
40	JE	0.34	0/3483	0.66	2/4728 (0.0%)
40	JF	0.32	0/3475	0.63	2/4717 (0.0%)
40	JG	0.32	0/3520	0.63	0/4778
40	JH	0.30	0/3475	0.60	1/4717 (0.0%)
40	KA	0.32	0/3483	0.64	1/4728 (0.0%)
40	KD	0.33	0/3475	0.62	3/4717 (0.1%)
40	KE	0.31	0/3479	0.60	0/4722
40	KF	0.63	5/3483 (0.1%)	0.74	5/4728 (0.1%)
40	KG	0.32	0/3520	0.65	2/4778 (0.0%)
40	KH	0.33	0/3520	0.64	1/4778 (0.0%)
40	LA	0.32	0/3520	0.59	0/4778
40	LD	0.31	0/3475	0.61	1/4717 (0.0%)
40	LE	0.33	0/3520	0.65	3/4778 (0.1%)
40	LF	0.66	0/3475	0.68	0/4717
40	LG	0.66	0/3483	0.68	0/4728
40	LH	0.33	0/3483	0.61	1/4728 (0.0%)
40	MA	0.66	0/3469	0.67	0/4709
40	MD	0.33	0/3483	0.61	3/4728 (0.1%)
40	ME	0.33	1/3483 (0.0%)	0.63	3/4728 (0.1%)
40	MF	0.66	0/3475	0.68	0/4717
40	MG	0.66	0/3475	0.67	0/4717
40	MH	0.66	0/3475	0.67	0/4717
40	NA	0.32	0/3469	0.64	2/4709 (0.0%)
40	ND	0.65	0/3475	0.64	0/4717
40	NE	0.32	0/3479	0.68	3/4723 (0.1%)
40	NF	0.31	0/3475	0.60	0/4717
40	NG	0.33	0/3469	0.66	0/4709
40	NH	0.32	0/3475	0.66	3/4717 (0.1%)
40	OA	0.33	0/3499	0.65	0/4749
40	OD	0.34	0/3483	0.67	1/4728 (0.0%)
40	OE	0.32	0/3483	0.66	2/4728 (0.0%)
40	OF	0.33	0/3496	0.66	2/4744 (0.0%)
40	OG	0.32	0/3492	0.67	0/4740
40	OH	0.66	0/3496	0.68	0/4744
40	PA	0.36	0/3469	0.69	3/4709 (0.1%)
40	PD	0.31	0/3265	0.67	5/4432 (0.1%)
40	PE	0.32	0/3475	0.64	3/4717 (0.1%)
40	PF	0.31	0/3475	0.67	0/4717
40	PG	0.32	0/3461	0.67	1/4698 (0.0%)
40	PH	0.30	0/3461	0.64	1/4698 (0.0%)
40	QA	0.32	0/3469	0.65	3/4709 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
40	QE	0.33	0/3461	0.65	1/4698 (0.0%)
40	QF	0.32	0/3461	0.63	0/4698
40	QG	0.33	0/3467	0.68	4/4706 (0.1%)
40	QH	0.33	0/3475	0.69	4/4717 (0.1%)
40	RA	0.32	0/3467	0.68	4/4706 (0.1%)
40	RE	0.32	0/3461	0.67	2/4698 (0.0%)
40	RF	0.33	0/3461	0.70	1/4698 (0.0%)
40	RG	0.33	0/3467	0.69	3/4706 (0.1%)
40	RH	0.31	0/3461	0.65	1/4698 (0.0%)
40	RI	0.32	0/3029	0.66	2/4108 (0.0%)
40	SA	0.35	0/3467	0.67	2/4706 (0.0%)
40	SE	0.34	0/3483	0.70	1/4728 (0.0%)
40	SF	0.35	0/3467	0.73	3/4706 (0.1%)
40	SG	0.34	0/3483	0.71	2/4728 (0.0%)
40	SH	0.35	0/3475	0.69	4/4717 (0.1%)
40	SI	0.30	0/3475	0.64	2/4717 (0.0%)
40	TA	0.32	0/3467	0.65	0/4706
40	TE	0.31	0/3469	0.67	2/4709 (0.0%)
40	TF	0.32	0/3469	0.68	0/4709
40	TG	0.34	0/3483	0.67	0/4728
40	TH	0.34	0/3475	0.69	3/4717 (0.1%)
40	TI	0.31	0/3475	0.63	0/4717
40	UA	0.33	0/3475	0.69	5/4717 (0.1%)
40	UE	0.32	0/3483	0.67	4/4728 (0.1%)
40	UF	0.65	0/3483	0.66	0/4728
40	UG	0.35	0/3483	0.67	0/4728
40	UH	0.33	0/3475	0.68	1/4717 (0.0%)
40	UI	0.66	0/3475	0.66	0/4717
40	VA	0.33	0/3520	0.67	3/4778 (0.1%)
40	VF	0.32	0/3520	0.63	0/4778
40	VG	0.34	0/3475	0.68	3/4717 (0.1%)
40	VH	0.31	0/3483	0.63	1/4728 (0.0%)
40	VI	0.33	0/3520	0.65	1/4778 (0.0%)
40	VJ	0.36	0/3475	0.71	3/4717 (0.1%)
40	WA	0.32	0/3520	0.67	2/4778 (0.0%)
40	WE	0.32	0/3520	0.62	0/4778
40	WF	0.33	0/3475	0.64	2/4717 (0.0%)
40	WG	0.35	0/3467	0.67	5/4706 (0.1%)
40	WH	0.33	0/3520	0.65	1/4778 (0.0%)
40	WI	0.34	0/3475	0.65	2/4717 (0.0%)
41	AB	0.30	0/3415	0.60	0/4628
41	AL	0.31	0/3415	0.63	2/4628 (0.0%)
41	AM	0.34	1/3415 (0.0%)	0.67	7/4628 (0.2%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
41	AN	0.33	0/3415	0.63	0/4628
41	AO	0.66	0/3415	0.66	0/4628
41	AP	0.33	1/3415 (0.0%)	0.65	5/4628 (0.1%)
41	BB	0.65	0/3415	0.67	0/4628
41	BL	0.33	1/3415 (0.0%)	0.66	2/4628 (0.0%)
41	BM	0.66	0/3415	0.67	0/4628
41	BN	0.34	0/3415	0.70	3/4628 (0.1%)
41	BO	0.66	0/3415	0.67	0/4628
41	BP	0.66	0/3415	0.69	1/4628 (0.0%)
41	CB	0.33	0/3415	0.70	5/4628 (0.1%)
41	CL	0.65	0/3415	0.67	0/4628
41	CM	0.66	0/3415	0.68	0/4628
41	CN	0.65	0/3415	0.69	0/4628
41	CO	0.65	0/3415	0.69	0/4628
41	CP	0.66	0/3415	0.67	0/4628
41	DB	0.66	0/3415	0.69	1/4628 (0.0%)
41	DL	0.66	0/3415	0.67	1/4628 (0.0%)
41	DM	0.65	0/3415	0.69	0/4628
41	DN	0.65	0/3415	0.68	0/4628
41	DO	0.33	0/3415	0.72	4/4628 (0.1%)
41	DP	0.65	0/3411	0.67	0/4623
41	EB	0.33	0/3415	0.71	6/4628 (0.1%)
41	EL	0.32	0/2882	0.67	3/3905 (0.1%)
41	EM	0.65	0/3415	0.68	0/4628
41	EN	0.33	0/3415	0.68	3/4628 (0.1%)
41	EO	0.31	0/3415	0.66	1/4628 (0.0%)
41	EP	0.65	0/3415	0.70	0/4628
41	FB	0.33	1/3415 (0.0%)	0.66	2/4628 (0.0%)
41	FM	0.33	0/3415	0.68	2/4628 (0.0%)
41	FN	0.37	1/3415 (0.0%)	0.71	5/4628 (0.1%)
41	FO	0.34	0/3415	0.69	3/4628 (0.1%)
41	FP	0.34	0/3415	0.72	4/4628 (0.1%)
41	GB	0.33	0/3415	0.66	6/4628 (0.1%)
41	GM	0.33	0/3415	0.71	3/4628 (0.1%)
41	GN	0.65	0/3415	0.67	0/4628
41	GO	0.37	0/3409	0.72	2/4621 (0.0%)
41	GP	0.34	0/3415	0.71	5/4628 (0.1%)
41	HB	0.33	1/3415 (0.0%)	0.65	1/4628 (0.0%)
41	HM	0.32	0/3415	0.66	1/4628 (0.0%)
41	HN	0.64	0/3415	0.66	0/4628
41	HO	0.33	0/3415	0.67	1/4628 (0.0%)
41	HP	0.32	0/3415	0.71	3/4628 (0.1%)
41	HQ	0.34	0/3415	0.70	5/4628 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
41	IB	0.32	0/3415	0.65	1/4628 (0.0%)
41	IM	0.33	0/3415	0.67	1/4628 (0.0%)
41	IN	0.33	0/3415	0.65	1/4628 (0.0%)
41	IO	0.32	0/3415	0.68	3/4628 (0.1%)
41	IP	0.33	0/3415	0.65	3/4628 (0.1%)
41	IQ	0.32	0/3415	0.68	2/4628 (0.0%)
41	JB	0.33	0/3415	0.68	1/4628 (0.0%)
41	JL	0.34	0/3415	0.71	2/4628 (0.0%)
41	JM	0.65	0/3415	0.67	0/4628
41	JN	0.33	0/3415	0.69	3/4628 (0.1%)
41	JO	0.31	0/3415	0.65	1/4628 (0.0%)
41	KB	0.33	0/3415	0.65	2/4628 (0.0%)
41	KL	0.65	0/3415	0.68	0/4628
41	KM	0.33	0/3415	0.68	4/4628 (0.1%)
41	KN	0.31	0/3415	0.63	1/4628 (0.0%)
41	KO	0.33	0/3415	0.67	0/4628
41	KP	0.32	0/3073	0.63	1/4162 (0.0%)
41	LB	0.31	0/3415	0.63	3/4628 (0.1%)
41	LL	0.34	0/3415	0.64	4/4628 (0.1%)
41	LM	0.31	0/3415	0.64	3/4628 (0.1%)
41	LN	0.31	0/3415	0.61	1/4628 (0.0%)
41	LO	0.32	0/3415	0.66	1/4628 (0.0%)
41	LP	0.30	0/3415	0.63	0/4628
41	MB	0.32	0/3415	0.65	2/4628 (0.0%)
41	ML	0.32	0/3415	0.64	2/4628 (0.0%)
41	MM	0.34	1/3415 (0.0%)	0.66	3/4628 (0.1%)
41	MN	0.33	0/3415	0.61	0/4628
41	MO	0.66	0/3415	0.67	0/4628
41	MP	0.32	0/3415	0.64	2/4628 (0.0%)
41	NB	0.32	0/3415	0.69	5/4628 (0.1%)
41	NL	0.36	1/3415 (0.0%)	0.71	2/4628 (0.0%)
41	NM	0.31	0/3415	0.66	1/4628 (0.0%)
41	NN	0.35	0/3415	0.69	3/4628 (0.1%)
41	NO	0.32	0/3415	0.68	0/4628
41	NP	0.31	0/3336	0.67	1/4520 (0.0%)
41	OB	0.32	0/3415	0.68	5/4628 (0.1%)
41	OL	0.37	1/3415 (0.0%)	0.74	4/4628 (0.1%)
41	OM	0.34	0/3415	0.72	1/4628 (0.0%)
41	ON	0.32	0/3415	0.67	3/4628 (0.1%)
41	OO	0.34	0/3415	0.66	1/4628 (0.0%)
41	OP	0.35	0/3415	0.71	8/4628 (0.2%)
41	PB	0.34	0/3415	0.67	1/4628 (0.0%)
41	PL	0.32	0/3415	0.66	0/4628

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
41	PM	0.33	0/3415	0.68	4/4628 (0.1%)
41	PN	0.33	1/3415 (0.0%)	0.66	1/4628 (0.0%)
41	PO	0.31	0/3415	0.68	4/4628 (0.1%)
41	PP	0.33	0/3415	0.70	2/4628 (0.0%)
41	QB	0.65	0/3415	0.67	0/4628
41	QL	0.32	0/3415	0.68	5/4628 (0.1%)
41	QM	0.34	0/3415	0.71	4/4628 (0.1%)
41	QN	0.32	0/3415	0.69	5/4628 (0.1%)
41	QO	0.41	2/3415 (0.1%)	0.79	5/4628 (0.1%)
41	QP	0.66	0/3400	0.68	0/4609
41	RB	0.34	0/3415	0.69	3/4628 (0.1%)
41	RL	0.33	0/3415	0.68	2/4628 (0.0%)
41	RM	0.33	0/3415	0.71	3/4628 (0.1%)
41	RN	0.31	0/3415	0.68	2/4628 (0.0%)
41	RO	0.34	0/3415	0.70	0/4628
41	RP	0.32	0/3415	0.68	0/4628
41	SB	0.35	0/3415	0.67	1/4628 (0.0%)
41	SL	0.31	0/3024	0.67	0/4097
41	SM	0.33	1/3415 (0.0%)	0.66	1/4628 (0.0%)
41	SN	0.35	1/3415 (0.0%)	0.73	4/4628 (0.1%)
41	SO	0.65	0/3415	0.67	0/4628
41	SP	0.34	0/3415	0.69	1/4628 (0.0%)
41	TB	0.35	1/3415 (0.0%)	0.72	4/4628 (0.1%)
41	TL	0.30	0/3083	0.66	0/4182
41	TM	0.34	0/3415	0.75	7/4628 (0.2%)
41	TN	0.33	0/3415	0.71	4/4628 (0.1%)
41	TO	0.34	0/3415	0.73	4/4628 (0.1%)
41	TP	0.33	0/3415	0.71	3/4628 (0.1%)
41	UB	0.33	0/3415	0.67	4/4628 (0.1%)
41	UM	0.33	0/3415	0.70	3/4628 (0.1%)
41	UN	0.37	0/3415	0.76	7/4628 (0.2%)
41	UO	0.37	0/3415	0.73	4/4628 (0.1%)
41	UP	0.65	0/3415	0.66	0/4628
41	VB	0.32	0/3415	0.68	5/4628 (0.1%)
41	VN	0.32	0/3415	0.64	0/4628
41	VO	0.33	0/3415	0.70	4/4628 (0.1%)
41	VP	0.32	0/3415	0.67	2/4628 (0.0%)
41	VQ	0.33	0/3415	0.63	1/4628 (0.0%)
41	WB	0.33	0/3415	0.67	3/4628 (0.1%)
41	WM	0.65	0/3415	0.68	0/4628
41	WN	0.65	0/3415	0.67	0/4628
41	WO	0.32	0/3415	0.67	1/4628 (0.0%)
41	WP	0.34	0/3415	0.65	1/4628 (0.0%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
41	WQ	0.31	0/3358	0.69	4/4551 (0.1%)
All	All	0.42	29/1130564 (0.0%)	0.67	567/1531441 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	1A	0	3
3	1F	0	1
5	1L	0	4
5	1M	0	1
5	1N	0	1
7	1S	0	3
7	1T	0	19
7	1U	0	3
8	1W	0	1
8	1X	0	7
9	2B	0	2
10	2G	0	2
11	2I	0	6
11	2K	0	1
12	2N	0	1
12	2O	0	1
12	2P	0	1
12	2Q	0	1
13	2T	0	13
13	2U	0	12
13	2V	0	13
13	2W	0	11
13	2X	0	13
14	3C	0	1
15	3E	0	1
17	3O	0	7
17	3P	0	27
17	3Q	0	8
17	3R	0	8
18	3U	0	1
19	3Y	0	3
19	3Z	0	1
20	4A	0	18

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Mol	Chain	#Chirality outliers	#Planarity outliers
20	4B	0	8
21	4D	0	7
21	4E	0	5
21	4F	0	6
22	4H	0	3
22	4I	0	6
22	4J	0	4
22	4K	0	5
23	4M	0	6
23	4N	0	5
23	4P	0	4
23	4Q	0	6
23	4R	0	8
24	4O	0	5
25	4T	0	4
26	4V	0	2
26	4W	0	1
27	4Z	0	1
28	5B	0	1
29	5D	0	1
30	5G	0	1
31	5I	0	3
33	5N	0	1
33	5O	0	1
34	5R	0	15
35	5U	0	1
36	5W	0	2
36	5X	0	1
38	6C	0	5
38	6D	0	1
39	6F	0	1
39	6G	0	2
39	6H	0	1
39	6L	0	3
40	AA	0	1
40	AE	0	1
40	AF	0	1
40	AG	0	1
40	AH	0	1
40	BA	0	1
40	BE	0	19
40	BF	0	2

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Mol	Chain	#Chirality outliers	#Planarity outliers
40	BG	0	1
40	BH	0	18
40	BI	0	15
40	CA	0	16
40	CE	0	1
40	CF	0	2
40	CG	0	1
40	CH	0	16
40	CI	0	2
40	DA	0	17
40	DE	0	18
40	DF	0	17
40	DH	0	15
40	DI	0	19
40	EA	0	1
40	EE	0	2
40	EF	0	2
40	EG	0	2
40	EH	0	12
40	EI	0	19
40	FA	0	19
40	FF	0	1
40	FG	0	3
40	FI	0	1
40	GE	0	14
40	GF	0	1
40	GH	0	16
40	GI	0	19
40	HA	0	2
40	HE	0	20
40	HF	0	1
40	HG	0	2
40	HH	0	1
40	HI	0	1
40	IA	0	2
40	IE	0	1
40	IF	0	1
40	IG	0	2
40	IH	0	1
40	II	0	1
40	JA	0	1
40	JD	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
40	JE	0	1
40	JF	0	1
40	JG	0	3
40	JH	0	1
40	KA	0	3
40	KD	0	1
40	KE	0	1
40	KF	0	2
40	KG	0	1
40	KH	0	2
40	LA	0	1
40	LD	0	1
40	LE	0	4
40	LF	0	16
40	LG	0	18
40	LH	0	1
40	MA	0	13
40	ME	0	2
40	MF	0	16
40	MG	0	15
40	MH	0	18
40	NA	0	2
40	ND	0	18
40	NE	0	2
40	NF	0	1
40	NG	0	2
40	NH	0	1
40	OA	0	3
40	OD	0	4
40	OE	0	2
40	OF	0	1
40	OG	0	1
40	OH	0	18
40	PA	0	1
40	PD	0	1
40	PE	0	3
40	PF	0	1
40	PG	0	1
40	PH	0	1
40	QA	0	1
40	QE	0	2
40	QF	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
40	QG	0	3
40	QH	0	1
40	RA	0	1
40	RE	0	1
40	RF	0	1
40	RG	0	2
40	RH	0	1
40	RI	0	3
40	SA	0	5
40	SE	0	2
40	SF	0	1
40	SG	0	1
40	SH	0	2
40	SI	0	2
40	TA	0	1
40	TE	0	1
40	TF	0	3
40	TG	0	1
40	TH	0	1
40	TI	0	2
40	UA	0	2
40	UE	0	2
40	UF	0	17
40	UG	0	1
40	UH	0	1
40	UI	0	17
40	VA	0	1
40	VF	0	1
40	VG	0	1
40	VH	0	2
40	VI	0	2
40	VJ	0	1
40	WA	0	1
40	WE	0	2
40	WF	0	1
40	WG	0	1
40	WH	0	2
40	WI	0	1
41	AB	0	2
41	AL	0	1
41	AM	0	1
41	AN	0	2

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Mol	Chain	#Chirality outliers	#Planarity outliers
41	AO	0	15
41	AP	0	1
41	BB	0	20
41	BL	0	1
41	BM	0	20
41	BN	0	4
41	BO	0	18
41	BP	0	18
41	CB	0	1
41	CL	0	19
41	CM	0	19
41	CN	0	19
41	CO	0	20
41	CP	0	19
41	DB	0	18
41	DL	0	16
41	DM	0	20
41	DN	0	18
41	DO	0	3
41	DP	0	23
41	EB	0	2
41	EL	0	2
41	EM	0	17
41	EN	0	1
41	EO	0	2
41	EP	0	17
41	FB	0	3
41	FM	0	3
41	FN	0	1
41	FO	0	1
41	FP	0	3
41	GB	0	1
41	GM	0	3
41	GN	0	19
41	GP	0	4
41	HB	0	1
41	HM	0	2
41	HN	0	20
41	HO	0	1
41	HP	0	2
41	HQ	0	1
41	IB	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
41	IM	0	3
41	IN	0	2
41	IO	0	1
41	IP	0	1
41	IQ	0	1
41	JB	0	1
41	JL	0	2
41	JM	0	17
41	JO	0	2
41	KB	0	1
41	KL	0	16
41	KM	0	3
41	KN	0	2
41	KO	0	1
41	KP	0	1
41	LB	0	1
41	LL	0	1
41	LM	0	1
41	LN	0	1
41	LO	0	1
41	LP	0	2
41	MB	0	1
41	ML	0	1
41	MM	0	2
41	MN	0	2
41	MO	0	16
41	MP	0	2
41	NB	0	2
41	NL	0	4
41	NM	0	1
41	NN	0	2
41	NO	0	2
41	NP	0	2
41	OB	0	3
41	OL	0	2
41	OM	0	2
41	ON	0	1
41	OO	0	1
41	OP	0	3
41	PB	0	1
41	PL	0	1
41	PM	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
41	PN	0	2
41	PO	0	1
41	PP	0	1
41	QB	0	19
41	QL	0	1
41	QO	0	1
41	QP	0	18
41	RB	0	4
41	RL	0	1
41	RM	0	2
41	RO	0	2
41	RP	0	1
41	SB	0	3
41	SL	0	2
41	SM	0	1
41	SN	0	2
41	SO	0	20
41	SP	0	3
41	TB	0	1
41	TL	0	1
41	TM	0	2
41	TN	0	1
41	TO	0	3
41	TP	0	1
41	UB	0	2
41	UM	0	2
41	UN	0	2
41	UO	0	1
41	UP	0	18
41	VB	0	1
41	VN	0	1
41	VO	0	2
41	VP	0	1
41	VQ	0	2
41	WB	0	1
41	WM	0	19
41	WN	0	19
41	WO	0	1
41	WP	0	1
41	WQ	0	1
All	All	0	1619

The worst 5 of 29 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
40	BG	298	PRO	CG-CD	-27.70	0.59	1.50
40	KF	298	PRO	CB-CG	20.07	2.50	1.50
40	KF	298	PRO	CG-CD	-18.29	0.90	1.50
40	BG	298	PRO	CB-CG	14.73	2.23	1.50
41	QO	61	PRO	CG-CD	-12.65	1.08	1.50

The worst 5 of 567 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
40	BG	298	PRO	N-CD-CG	-31.90	55.34	103.20
40	BG	298	PRO	CA-CB-CG	-21.99	62.23	104.00
41	QO	61	PRO	N-CD-CG	-18.71	75.13	103.20
40	KF	298	PRO	CB-CG-CD	-18.04	36.15	106.50
40	KF	298	PRO	N-CD-CG	-15.25	80.33	103.20

There are no chirality outliers.

5 of 1619 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	1A	853	ASN	Peptide
1	1A	854	PRO	Peptide
1	1A	985	ARG	Sidechain
3	1F	239	LEU	Peptide
5	1L	275	ARG	Sidechain

5.2 Too-close contacts (i)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	1A	4498	0	4639	0	0
1	1B	1135	0	1145	0	0
2	1C	1699	0	1707	3	0
2	1D	1699	0	1707	5	0
3	1F	1375	0	1352	0	0
3	1G	1375	0	1352	0	0
4	1H	1633	0	1697	9	0
4	1I	727	0	760	2	0
4	1J	973	0	1000	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	1L	1306	0	1320	0	0
5	1M	2086	0	2111	5	0
5	1N	865	0	883	5	0
6	1P	704	0	693	3	0
6	1Q	675	0	665	1	0
7	1S	4712	0	4688	43	0
7	1T	4712	0	4688	175	0
7	1U	4712	0	4688	99	0
8	1W	2722	0	2757	50	0
8	1X	2293	0	2341	75	0
8	1Y	1331	0	1385	30	0
8	1Z	1680	0	1702	25	0
9	2B	3205	0	3280	68	0
9	2C	665	0	684	12	0
10	2E	930	0	884	28	0
10	2F	930	0	883	32	0
10	2G	930	0	884	19	0
11	2I	2024	0	2087	81	0
11	2J	2027	0	2094	53	0
11	2K	1947	0	2005	54	0
12	2M	1767	0	1775	26	0
12	2N	1767	0	1775	23	0
12	2O	1767	0	1775	36	0
12	2P	1767	0	1775	22	0
12	2Q	1767	0	1775	23	0
12	2R	1767	0	1775	34	0
13	2T	1540	0	1570	57	0
13	2U	1540	0	1570	54	0
13	2V	1540	0	1570	66	0
13	2W	1540	0	1570	56	0
13	2X	1540	0	1570	67	0
14	3A	924	0	929	26	0
14	3B	924	0	929	22	0
14	3C	924	0	929	25	0
15	3E	3216	0	3264	34	0
15	3F	3241	0	3293	55	0
15	3G	1096	0	1133	17	0
15	3H	2451	0	2472	31	0
16	3J	3234	0	3253	56	0
16	3K	2559	0	2580	37	0
16	3L	3234	0	3253	69	0
16	3M	939	0	921	19	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
17	3O	3180	0	3164	59	0
17	3P	3180	0	3164	87	0
17	3Q	1058	0	1084	34	0
17	3R	2149	0	2100	153	0
18	3T	3284	0	3219	57	0
18	3U	3289	0	3224	59	0
18	3V	1405	0	1305	23	0
18	3W	2121	0	2172	28	0
19	3Y	2977	0	2950	40	0
19	3Z	194	0	178	6	0
20	4A	1485	0	1469	69	0
20	4B	943	0	892	34	0
21	4D	3844	0	3793	110	0
21	4E	3844	0	3793	100	0
21	4F	3844	0	3793	111	0
22	4H	2895	0	2829	59	0
22	4I	5027	0	4986	124	0
22	4J	5055	0	5016	159	0
22	4K	1983	0	2007	81	0
23	4M	1330	0	1263	112	0
23	4N	1320	0	1243	118	0
23	4P	705	0	667	87	0
23	4Q	1070	0	980	84	0
23	4R	1319	0	1254	121	0
24	4O	702	0	660	51	0
25	4T	1320	0	1261	36	0
26	4V	2946	0	2926	65	0
26	4W	2946	0	2926	75	0
27	4Y	2145	0	2100	34	0
27	4Z	2160	0	2105	40	0
28	5B	1625	0	1551	33	0
29	5D	697	0	655	14	0
29	5E	280	0	265	7	0
30	5G	708	0	640	20	0
31	5I	3576	0	3546	81	0
31	5J	898	0	877	27	0
32	5L	736	0	697	13	0
33	5N	2883	0	2948	36	0
33	5O	1277	0	1295	23	0
34	5Q	2216	0	2238	57	0
34	5R	1671	0	1683	83	0
35	5T	1118	0	1046	31	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
35	5U	223	0	199	2	0
36	5W	1868	0	1868	50	0
36	5X	1868	0	1868	41	0
36	5Y	1487	0	1504	38	0
36	5Z	488	0	474	6	0
37	6A	992	0	965	33	0
38	6C	1698	0	1638	67	0
38	6D	495	0	500	12	0
39	6F	1264	0	1236	17	0
39	6G	1264	0	1236	14	0
39	6H	1134	0	1103	16	0
39	6I	1264	0	1236	22	0
39	6J	1264	0	1236	15	0
39	6K	1264	0	1236	18	0
39	6L	1095	0	1090	19	0
40	AA	3442	0	3348	79	0
40	AE	3442	0	3348	66	0
40	AF	3442	0	3348	59	0
40	AG	3442	0	3348	105	0
40	AH	3442	0	3349	60	0
40	BA	3442	0	3348	70	0
40	BE	3442	0	3349	140	0
40	BF	3398	0	3304	88	0
40	BG	3392	0	3299	85	0
40	BH	3442	0	3349	134	0
40	BI	2932	0	2845	139	0
40	CA	3442	0	3349	170	0
40	CE	3438	0	3338	96	0
40	CF	3442	0	3349	77	0
40	CG	3442	0	3349	75	0
40	CH	3442	0	3349	168	0
40	CI	3442	0	3347	79	0
40	DA	3390	0	3300	262	0
40	DE	3410	0	3311	211	0
40	DF	3390	0	3300	211	0
40	DG	3398	0	3304	91	0
40	DH	3398	0	3304	215	0
40	DI	3390	0	3300	225	0
40	EA	3406	0	3308	96	0
40	EE	3415	0	3321	86	0
40	EF	3415	0	3321	99	0
40	EG	3406	0	3308	81	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
40	EH	3398	0	3304	178	0
40	EI	3406	0	3308	221	0
40	FA	3406	0	3308	214	0
40	FE	3406	0	3308	68	0
40	FF	3406	0	3308	65	0
40	FG	3398	0	3304	66	0
40	FH	3406	0	3308	71	0
40	FI	3402	0	3297	72	0
40	GA	3406	0	3308	105	0
40	GE	3406	0	3308	201	0
40	GF	3398	0	3302	83	0
40	GG	3398	0	3304	87	0
40	GH	3398	0	3304	160	0
40	GI	3406	0	3308	188	0
40	HA	3410	0	3311	76	0
40	HE	3398	0	3304	194	0
40	HF	3392	0	3299	77	0
40	HG	3402	0	3304	62	0
40	HH	3406	0	3308	71	0
40	HI	3415	0	3321	95	0
40	IA	3406	0	3308	78	0
40	IE	3286	0	3197	70	0
40	IF	3406	0	3308	81	0
40	IG	3398	0	3304	79	0
40	IH	3406	0	3308	90	0
40	II	3406	0	3308	104	0
40	JA	3406	0	3308	76	0
40	JD	3406	0	3308	82	0
40	JE	3406	0	3307	90	0
40	JF	3398	0	3304	64	0
40	JG	3442	0	3349	65	0
40	JH	3398	0	3304	76	0
40	KA	3406	0	3308	69	0
40	KD	3398	0	3304	68	0
40	KE	3402	0	3306	83	0
40	KF	3406	0	3308	72	0
40	KG	3442	0	3349	80	0
40	KH	3442	0	3349	84	0
40	LA	3442	0	3349	74	0
40	LD	3398	0	3304	66	0
40	LE	3442	0	3349	60	0
40	LF	3398	0	3304	130	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
40	LG	3406	0	3308	168	0
40	LH	3406	0	3308	69	0
40	MA	3392	0	3299	116	0
40	MD	3406	0	3307	57	0
40	ME	3406	0	3308	59	0
40	MF	3398	0	3304	157	0
40	MG	3398	0	3304	159	0
40	MH	3398	0	3304	138	0
40	NA	3392	0	3299	89	0
40	ND	3398	0	3304	155	0
40	NE	3402	0	3304	81	0
40	NF	3398	0	3304	80	0
40	NG	3392	0	3299	74	0
40	NH	3398	0	3304	82	0
40	OA	3422	0	3328	78	0
40	OD	3406	0	3308	100	0
40	OE	3406	0	3308	72	0
40	OF	3419	0	3324	85	0
40	OG	3415	0	3313	88	0
40	OH	3419	0	3324	211	0
40	PA	3392	0	3299	90	0
40	PD	3196	0	3120	76	0
40	PE	3398	0	3304	73	0
40	PF	3398	0	3304	84	0
40	PG	3384	0	3295	82	0
40	PH	3384	0	3295	89	0
40	QA	3392	0	3299	88	0
40	QE	3384	0	3295	116	0
40	QF	3384	0	3295	79	0
40	QG	3390	0	3300	98	0
40	QH	3398	0	3304	62	0
40	RA	3390	0	3300	87	0
40	RE	3384	0	3295	92	0
40	RF	3384	0	3295	83	0
40	RG	3390	0	3300	98	0
40	RH	3384	0	3295	76	0
40	RI	2962	0	2876	76	0
40	SA	3390	0	3300	105	0
40	SE	3406	0	3308	94	0
40	SF	3390	0	3300	103	0
40	SG	3406	0	3308	105	0
40	SH	3398	0	3304	111	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
40	SI	3398	0	3304	78	0
40	TA	3390	0	3300	80	0
40	TE	3392	0	3299	79	0
40	TF	3392	0	3298	74	0
40	TG	3406	0	3308	90	0
40	TH	3398	0	3304	90	0
40	TI	3398	0	3304	79	0
40	UA	3398	0	3304	76	0
40	UE	3406	0	3308	86	0
40	UF	3406	0	3308	215	0
40	UG	3406	0	3308	85	0
40	UH	3398	0	3304	89	0
40	UI	3398	0	3304	205	0
40	VA	3442	0	3349	85	0
40	VF	3442	0	3349	84	0
40	VG	3398	0	3304	83	0
40	VH	3406	0	3308	65	0
40	VI	3442	0	3349	77	0
40	VJ	3398	0	3304	87	0
40	WA	3442	0	3349	90	0
40	WE	3442	0	3349	76	0
40	WF	3398	0	3304	98	0
40	WG	3390	0	3300	100	0
40	WH	3442	0	3349	79	0
40	WI	3398	0	3304	73	0
41	AB	3341	0	3241	73	0
41	AL	3341	0	3241	63	0
41	AM	3341	0	3241	62	0
41	AN	3341	0	3240	67	0
41	AO	3341	0	3241	109	0
41	AP	3341	0	3241	54	0
41	BB	3341	0	3241	115	0
41	BL	3341	0	3239	74	0
41	BM	3341	0	3241	145	0
41	BN	3341	0	3239	94	0
41	BO	3341	0	3241	127	0
41	BP	3341	0	3241	159	0
41	CB	3341	0	3241	94	0
41	CL	3341	0	3241	166	0
41	CM	3341	0	3241	161	0
41	CN	3341	0	3241	195	0
41	CO	3341	0	3241	175	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
41	CP	3341	0	3241	166	0
41	DB	3341	0	3241	187	0
41	DL	3341	0	3241	221	0
41	DM	3341	0	3241	227	0
41	DN	3341	0	3241	245	0
41	DO	3341	0	3241	80	0
41	DP	3337	0	3237	205	0
41	EB	3341	0	3239	78	0
41	EL	2826	0	2764	67	0
41	EM	3341	0	3241	209	0
41	EN	3341	0	3239	76	0
41	EO	3341	0	3241	68	0
41	EP	3341	0	3241	179	0
41	FB	3341	0	3239	74	0
41	FM	3341	0	3239	91	0
41	FN	3341	0	3239	74	0
41	FO	3341	0	3240	81	0
41	FP	3341	0	3241	84	0
41	GB	3341	0	3240	68	0
41	GM	3341	0	3239	97	0
41	GN	3341	0	3241	176	0
41	GO	3335	0	3230	73	0
41	GP	3341	0	3239	93	0
41	HB	3341	0	3240	61	0
41	HM	3341	0	3240	89	0
41	HN	3341	0	3241	152	0
41	HO	3341	0	3240	82	0
41	HP	3341	0	3239	56	0
41	HQ	3341	0	3241	72	0
41	IB	3341	0	3241	67	0
41	IM	3341	0	3241	81	0
41	IN	3341	0	3239	84	0
41	IO	3341	0	3239	69	0
41	IP	3341	0	3241	86	0
41	IQ	3341	0	3241	76	0
41	JB	3341	0	3240	87	0
41	JL	3341	0	3239	78	0
41	JM	3341	0	3241	188	0
41	JN	3341	0	3239	79	0
41	JO	3341	0	3240	61	0
41	KB	3341	0	3238	71	0
41	KL	3341	0	3241	143	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
41	KM	3341	0	3240	59	0
41	KN	3341	0	3239	71	0
41	KO	3341	0	3239	89	0
41	KP	3007	0	2916	57	0
41	LB	3341	0	3239	74	0
41	LL	3341	0	3239	65	0
41	LM	3341	0	3239	55	0
41	LN	3341	0	3239	80	0
41	LO	3341	0	3239	81	0
41	LP	3341	0	3241	55	0
41	MB	3341	0	3239	77	0
41	ML	3341	0	3239	73	0
41	MM	3341	0	3240	55	0
41	MN	3341	0	3239	81	0
41	MO	3341	0	3241	125	0
41	MP	3341	0	3241	75	0
41	NB	3341	0	3239	83	0
41	NL	3341	0	3240	82	0
41	NM	3341	0	3239	77	0
41	NN	3341	0	3240	85	0
41	NO	3341	0	3239	64	0
41	NP	3264	0	3165	84	0
41	OB	3341	0	3239	93	0
41	OL	3341	0	3239	88	0
41	OM	3341	0	3238	81	0
41	ON	3341	0	3239	95	0
41	OO	3341	0	3239	104	0
41	OP	3341	0	3241	77	0
41	PB	3341	0	3239	111	0
41	PL	3341	0	3241	87	0
41	PM	3341	0	3239	88	0
41	PN	3341	0	3239	68	0
41	PO	3341	0	3240	76	0
41	PP	3341	0	3241	84	0
41	QB	3341	0	3241	260	0
41	QL	3341	0	3240	74	0
41	QM	3341	0	3241	91	0
41	QN	3341	0	3239	85	0
41	QO	3341	0	3239	69	0
41	QP	3327	0	3220	270	0
41	RB	3341	0	3241	79	0
41	RL	3341	0	3241	71	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
41	RM	3341	0	3241	88	0
41	RN	3341	0	3238	89	0
41	RO	3341	0	3239	96	0
41	RP	3341	0	3240	90	0
41	SB	3341	0	3241	86	0
41	SL	2964	0	2892	79	0
41	SM	3341	0	3240	82	0
41	SN	3341	0	3240	71	0
41	SO	3341	0	3241	253	0
41	SP	3341	0	3239	91	0
41	TB	3341	0	3240	79	0
41	TL	3019	0	2950	60	0
41	TM	3341	0	3240	88	0
41	TN	3341	0	3239	82	0
41	TO	3341	0	3239	97	0
41	TP	3341	0	3241	93	0
41	UB	3341	0	3239	83	0
41	UM	3341	0	3240	88	0
41	UN	3341	0	3241	104	0
41	UO	3341	0	3240	87	0
41	UP	3341	0	3241	203	0
41	VB	3341	0	3239	88	0
41	VN	3341	0	3239	76	0
41	VO	3341	0	3240	90	0
41	VP	3341	0	3239	86	0
41	VQ	3341	0	3239	78	0
41	WB	3341	0	3241	87	0
41	WM	3341	0	3241	167	0
41	WN	3341	0	3241	164	0
41	WO	3341	0	3239	82	0
41	WP	3341	0	3241	73	0
41	WQ	3285	0	3188	60	0
42	AA	32	0	12	1	0
42	AE	32	0	12	2	0
42	AF	32	0	12	0	0
42	AG	32	0	12	3	0
42	AH	32	0	12	2	0
42	BA	32	0	12	0	0
42	BF	32	0	11	2	0
42	BG	32	0	12	2	0
42	BH	32	0	12	1	0
42	BI	32	0	12	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
42	BL	32	0	12	1	0
42	CA	32	0	12	1	0
42	CE	32	0	11	5	0
42	CF	32	0	11	2	0
42	CG	32	0	11	3	0
42	CH	32	0	12	1	0
42	CI	32	0	12	4	0
42	DA	32	0	12	7	0
42	DE	32	0	12	6	0
42	DF	32	0	12	4	0
42	DG	32	0	11	4	0
42	DH	32	0	12	2	0
42	DI	32	0	12	8	0
42	EA	32	0	11	5	0
42	EF	32	0	11	2	0
42	EG	32	0	11	1	0
42	EH	32	0	12	1	0
42	EI	32	0	12	0	0
42	EL	32	0	11	2	0
42	FB	32	0	11	3	0
42	FE	32	0	11	1	0
42	FI	32	0	11	2	0
42	FM	32	0	11	3	0
42	FN	32	0	12	2	0
42	FO	32	0	11	1	0
42	GA	32	0	10	4	0
42	GB	32	0	11	3	0
42	GE	32	0	12	0	0
42	GF	32	0	10	1	0
42	GH	32	0	12	2	0
42	GP	32	0	12	3	0
42	HA	32	0	11	4	0
42	HB	32	0	12	1	0
42	HE	32	0	12	0	0
42	HH	32	0	11	2	0
42	HM	32	0	11	2	0
42	HP	32	0	11	2	0
42	IA	32	0	11	2	0
42	IE	32	0	11	3	0
42	IF	32	0	11	2	0
42	IG	32	0	11	4	0
42	IH	32	0	11	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
42	II	32	0	11	3	0
42	JA	32	0	11	4	0
42	JB	32	0	11	3	0
42	JD	32	0	10	0	0
42	JE	32	0	11	3	0
42	JF	32	0	11	2	0
42	JO	32	0	11	5	0
42	KB	32	0	11	3	0
42	KD	32	0	11	3	0
42	KE	32	0	11	3	0
42	KM	32	0	10	2	0
42	KN	32	0	10	3	0
42	KO	32	0	10	2	0
42	LA	32	0	11	4	0
42	LB	32	0	12	3	0
42	LD	32	0	11	2	0
42	LL	32	0	11	3	0
42	LM	32	0	12	5	0
42	LO	32	0	11	4	0
42	MB	32	0	12	9	0
42	MD	32	0	11	2	0
42	MH	32	0	12	1	0
42	ML	32	0	11	2	0
42	MM	32	0	12	8	0
42	MN	32	0	12	9	0
42	ND	32	0	12	1	0
42	NE	32	0	11	3	0
42	NG	32	0	11	5	0
42	NM	32	0	11	4	0
42	NN	32	0	10	4	0
42	NO	32	0	11	3	0
42	OB	32	0	11	4	0
42	OD	32	0	11	5	0
42	OL	32	0	11	2	0
42	OM	32	0	10	2	0
42	ON	32	0	11	2	0
42	OO	32	0	12	3	0
42	PB	32	0	11	0	0
42	PD	32	0	11	0	0
42	PE	32	0	11	2	0
42	PM	32	0	11	0	0
42	PN	32	0	12	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
42	PO	32	0	11	2	0
42	QF	32	0	11	2	0
42	QG	32	0	11	2	0
42	QL	32	0	10	2	0
42	QN	32	0	11	2	0
42	QO	32	0	11	1	0
42	RE	32	0	11	0	0
42	RF	32	0	11	4	0
42	RG	32	0	11	3	0
42	RN	32	0	11	0	0
42	RO	32	0	11	1	0
42	RP	32	0	11	4	0
42	SG	32	0	11	0	0
42	SH	32	0	10	3	0
42	SL	32	0	10	1	0
42	SM	32	0	11	2	0
42	SN	32	0	10	3	0
42	SP	32	0	10	1	0
42	TF	32	0	9	0	0
42	TG	32	0	10	5	0
42	TH	32	0	11	2	0
42	TI	32	0	10	4	0
42	TL	32	0	10	3	0
42	TN	32	0	10	1	0
42	UA	32	0	10	2	0
42	UB	32	0	11	3	0
42	UE	32	0	11	3	0
42	UI	32	0	12	5	0
42	UM	32	0	12	1	0
42	UO	32	0	11	3	0
42	VA	32	0	11	3	0
42	VB	32	0	11	4	0
42	VF	32	0	11	1	0
42	VN	32	0	11	2	0
42	VP	32	0	11	1	0
42	VQ	32	0	11	1	0
42	WA	32	0	11	3	0
42	WE	32	0	11	4	0
42	WF	32	0	11	2	0
42	WG	32	0	11	5	0
42	WI	32	0	11	4	0
42	WO	32	0	10	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
43	AB	28	0	11	1	0
43	AL	28	0	11	0	0
43	AM	28	0	11	1	0
43	AN	28	0	11	1	0
43	AO	28	0	12	0	0
43	AP	28	0	12	0	0
43	BB	28	0	12	3	0
43	BL	28	0	11	2	0
43	BM	28	0	12	2	0
43	BN	28	0	11	1	0
43	BO	28	0	12	0	0
43	BP	28	0	12	1	0
43	CB	28	0	11	1	0
43	CL	28	0	12	1	0
43	CM	28	0	12	2	0
43	CN	28	0	12	4	0
43	CO	28	0	12	5	0
43	CP	28	0	12	4	0
43	DB	28	0	12	4	0
43	DL	28	0	12	3	0
43	DM	28	0	12	2	0
43	DN	28	0	12	3	0
43	DO	28	0	11	1	0
43	DP	28	0	12	5	0
43	EB	28	0	11	1	0
43	EL	28	0	11	0	0
43	EM	28	0	12	4	0
43	EN	28	0	11	0	0
43	EO	28	0	11	0	0
43	EP	28	0	12	5	0
43	FB	28	0	11	0	0
43	FM	28	0	11	0	0
43	FN	28	0	11	0	0
43	FO	28	0	11	2	0
43	FP	28	0	11	3	0
43	GB	28	0	11	1	0
43	GM	28	0	11	2	0
43	GN	28	0	12	2	0
43	GO	28	0	11	0	0
43	GP	28	0	11	2	0
43	HB	28	0	11	0	0
43	HM	28	0	11	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
43	HN	28	0	12	2	0
43	HO	28	0	11	1	0
43	HP	28	0	11	0	0
43	HQ	28	0	11	0	0
43	IB	28	0	11	0	0
43	IM	28	0	11	0	0
43	IN	28	0	11	0	0
43	IO	28	0	11	1	0
43	IP	28	0	11	0	0
43	IQ	28	0	11	0	0
43	JB	28	0	11	2	0
43	JL	28	0	11	1	0
43	JM	28	0	12	6	0
43	JN	28	0	11	1	0
43	JO	28	0	11	1	0
43	KB	28	0	10	0	0
43	KL	28	0	12	2	0
43	KM	28	0	11	1	0
43	KN	28	0	11	3	0
43	KO	28	0	11	0	0
43	KP	28	0	11	2	0
43	LB	28	0	11	2	0
43	LL	28	0	11	0	0
43	LM	28	0	11	1	0
43	LN	28	0	11	1	0
43	LO	28	0	11	2	0
43	LP	28	0	11	1	0
43	MB	28	0	11	1	0
43	ML	28	0	11	2	0
43	MM	28	0	11	1	0
43	MN	28	0	11	2	0
43	MO	28	0	12	1	0
43	MP	28	0	11	1	0
43	NB	28	0	11	0	0
43	NL	28	0	11	0	0
43	NM	28	0	11	2	0
43	NN	28	0	11	2	0
43	NO	28	0	11	1	0
43	NP	28	0	11	0	0
43	OB	28	0	11	1	0
43	OL	28	0	11	2	0
43	OM	28	0	11	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
43	ON	28	0	11	1	0
43	OO	28	0	11	0	0
43	OP	28	0	11	0	0
43	PB	28	0	11	2	0
43	PL	28	0	11	4	0
43	PM	28	0	11	0	0
43	PN	28	0	11	1	0
43	PO	28	0	11	0	0
43	PP	28	0	11	3	0
43	QB	28	0	12	5	0
43	QL	28	0	11	0	0
43	QM	28	0	11	2	0
43	QN	28	0	11	1	0
43	QO	28	0	11	1	0
43	QP	28	0	12	6	0
43	RB	28	0	11	0	0
43	RL	28	0	11	1	0
43	RM	28	0	11	1	0
43	RN	28	0	11	1	0
43	RO	28	0	11	1	0
43	RP	28	0	11	2	0
43	SB	28	0	11	1	0
43	SL	28	0	11	2	0
43	SM	28	0	11	0	0
43	SN	28	0	11	1	0
43	SO	28	0	12	3	0
43	SP	28	0	11	1	0
43	TB	28	0	11	0	0
43	TL	28	0	11	0	0
43	TM	28	0	11	0	0
43	TN	28	0	11	2	0
43	TO	28	0	11	1	0
43	TP	28	0	11	1	0
43	UB	28	0	11	1	0
43	UM	28	0	11	1	0
43	UN	28	0	11	1	0
43	UO	28	0	11	2	0
43	UP	28	0	12	2	0
43	VB	28	0	11	1	0
43	VN	28	0	11	0	0
43	VO	28	0	11	1	0
43	VP	28	0	11	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
43	VQ	28	0	11	1	0
43	WB	28	0	11	1	0
43	WM	28	0	12	1	0
43	WN	28	0	12	1	0
43	WO	28	0	11	2	0
43	WP	28	0	11	1	0
43	WQ	28	0	11	1	0
All	All	1114625	0	1082601	28457	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 13.

The worst 5 of 28457 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:4M:92:PRO:HG2	40:AG:89:PRO:CG	1.36	1.53
40:KF:298:PRO:N	40:KF:298:PRO:CG	1.71	1.46
11:2I:167:LYS:HZ3	11:2I:167:LYS:CB	1.09	1.44
11:2I:83:PRO:CB	11:2I:83:PRO:CG	1.89	1.43
41:QB:104:GLY:HA2	41:QB:109:GLY:CA	1.51	1.39

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	1A	583/1048 (56%)	561 (96%)	20 (3%)	2 (0%)	37 67
1	1B	147/1048 (14%)	145 (99%)	2 (1%)	0	100 100
2	1C	207/685 (30%)	189 (91%)	16 (8%)	2 (1%)	13 44
2	1D	207/685 (30%)	193 (93%)	12 (6%)	2 (1%)	13 44

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
3	1F	163/262 (62%)	145 (89%)	16 (10%)	2 (1%)	11 40
3	1G	163/262 (62%)	76 (47%)	61 (37%)	26 (16%)	0 2
4	1H	191/711 (27%)	187 (98%)	3 (2%)	1 (0%)	25 57
4	1I	86/711 (12%)	82 (95%)	3 (4%)	1 (1%)	11 40
4	1J	111/711 (16%)	108 (97%)	3 (3%)	0	100 100
5	1L	153/620 (25%)	143 (94%)	6 (4%)	4 (3%)	4 27
5	1M	246/620 (40%)	235 (96%)	7 (3%)	4 (2%)	8 35
5	1N	101/620 (16%)	98 (97%)	3 (3%)	0	100 100
6	1P	82/1456 (6%)	77 (94%)	5 (6%)	0	100 100
6	1Q	79/1456 (5%)	69 (87%)	10 (13%)	0	100 100
7	1S	609/620 (98%)	537 (88%)	64 (10%)	8 (1%)	10 39
7	1T	609/620 (98%)	427 (70%)	148 (24%)	34 (6%)	1 15
7	1U	609/620 (98%)	533 (88%)	75 (12%)	1 (0%)	44 72
8	1W	314/549 (57%)	307 (98%)	7 (2%)	0	100 100
8	1X	273/549 (50%)	234 (86%)	33 (12%)	6 (2%)	5 30
8	1Y	160/549 (29%)	149 (93%)	11 (7%)	0	100 100
8	1Z	194/549 (35%)	189 (97%)	4 (2%)	1 (0%)	25 57
9	2B	371/552 (67%)	353 (95%)	16 (4%)	2 (0%)	25 57
9	2C	78/552 (14%)	73 (94%)	4 (5%)	1 (1%)	10 39
10	2E	111/170 (65%)	93 (84%)	17 (15%)	1 (1%)	14 46
10	2F	111/170 (65%)	95 (86%)	15 (14%)	1 (1%)	14 46
10	2G	111/170 (65%)	97 (87%)	13 (12%)	1 (1%)	14 46
11	2I	243/256 (95%)	191 (79%)	51 (21%)	1 (0%)	30 62
11	2J	243/256 (95%)	217 (89%)	21 (9%)	5 (2%)	5 31
11	2K	225/256 (88%)	189 (84%)	31 (14%)	5 (2%)	5 30
12	2M	217/257 (84%)	194 (89%)	23 (11%)	0	100 100
12	2N	217/257 (84%)	196 (90%)	21 (10%)	0	100 100
12	2O	217/257 (84%)	184 (85%)	29 (13%)	4 (2%)	7 33
12	2P	217/257 (84%)	195 (90%)	22 (10%)	0	100 100
12	2Q	217/257 (84%)	197 (91%)	20 (9%)	0	100 100
12	2R	217/257 (84%)	189 (87%)	28 (13%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
13	2T	183/193 (95%)	146 (80%)	28 (15%)	9 (5%)	2 17
13	2U	183/193 (95%)	137 (75%)	38 (21%)	8 (4%)	2 19
13	2V	183/193 (95%)	140 (76%)	37 (20%)	6 (3%)	3 24
13	2W	183/193 (95%)	132 (72%)	39 (21%)	12 (7%)	1 13
13	2X	183/193 (95%)	130 (71%)	42 (23%)	11 (6%)	1 14
14	3A	116/177 (66%)	107 (92%)	9 (8%)	0	100 100
14	3B	116/177 (66%)	102 (88%)	14 (12%)	0	100 100
14	3C	116/177 (66%)	100 (86%)	16 (14%)	0	100 100
15	3E	392/418 (94%)	381 (97%)	10 (3%)	1 (0%)	37 67
15	3F	395/418 (94%)	375 (95%)	19 (5%)	1 (0%)	37 67
15	3G	132/418 (32%)	127 (96%)	5 (4%)	0	100 100
15	3H	294/418 (70%)	280 (95%)	13 (4%)	1 (0%)	37 67
16	3J	395/430 (92%)	377 (95%)	15 (4%)	3 (1%)	16 48
16	3K	312/430 (73%)	304 (97%)	7 (2%)	1 (0%)	37 67
16	3L	395/430 (92%)	377 (95%)	16 (4%)	2 (0%)	25 57
16	3M	110/430 (26%)	106 (96%)	4 (4%)	0	100 100
17	3O	389/490 (79%)	366 (94%)	22 (6%)	1 (0%)	37 67
17	3P	389/490 (79%)	334 (86%)	50 (13%)	5 (1%)	10 39
17	3Q	129/490 (26%)	107 (83%)	15 (12%)	7 (5%)	1 16
17	3R	262/490 (54%)	164 (63%)	80 (30%)	18 (7%)	1 12
18	3T	396/447 (89%)	381 (96%)	15 (4%)	0	100 100
18	3U	397/447 (89%)	381 (96%)	16 (4%)	0	100 100
18	3V	166/447 (37%)	162 (98%)	4 (2%)	0	100 100
18	3W	255/447 (57%)	241 (94%)	14 (6%)	0	100 100
19	3Y	354/377 (94%)	344 (97%)	10 (3%)	0	100 100
19	3Z	20/377 (5%)	19 (95%)	1 (5%)	0	100 100
20	4A	177/379 (47%)	145 (82%)	26 (15%)	6 (3%)	3 24
20	4B	111/379 (29%)	87 (78%)	19 (17%)	5 (4%)	2 18
21	4D	462/640 (72%)	373 (81%)	67 (14%)	22 (5%)	2 17
21	4E	462/640 (72%)	373 (81%)	73 (16%)	16 (4%)	3 23
21	4F	462/640 (72%)	379 (82%)	67 (14%)	16 (4%)	3 23

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
22	4H	348/748 (46%)	296 (85%)	50 (14%)	2 (1%)	22 54
22	4I	600/748 (80%)	500 (83%)	90 (15%)	10 (2%)	7 34
22	4J	605/748 (81%)	471 (78%)	115 (19%)	19 (3%)	3 25
22	4K	234/748 (31%)	160 (68%)	65 (28%)	9 (4%)	2 21
23	4M	162/272 (60%)	84 (52%)	58 (36%)	20 (12%)	0 3
23	4N	162/272 (60%)	84 (52%)	51 (32%)	27 (17%)	0 2
23	4P	83/272 (30%)	44 (53%)	24 (29%)	15 (18%)	0 1
23	4Q	128/272 (47%)	71 (56%)	41 (32%)	16 (12%)	0 3
23	4R	157/272 (58%)	83 (53%)	55 (35%)	19 (12%)	0 4
24	4O	83/252 (33%)	37 (45%)	42 (51%)	4 (5%)	2 17
25	4T	158/469 (34%)	122 (77%)	31 (20%)	5 (3%)	3 24
26	4V	371/377 (98%)	312 (84%)	57 (15%)	2 (0%)	25 57
26	4W	371/377 (98%)	317 (85%)	47 (13%)	7 (2%)	6 33
27	4Y	263/314 (84%)	236 (90%)	25 (10%)	2 (1%)	16 48
27	4Z	268/314 (85%)	230 (86%)	35 (13%)	3 (1%)	12 42
28	5B	196/230 (85%)	165 (84%)	30 (15%)	1 (0%)	25 57
29	5D	82/136 (60%)	68 (83%)	13 (16%)	1 (1%)	11 40
29	5E	31/136 (23%)	24 (77%)	6 (19%)	1 (3%)	3 24
30	5G	91/121 (75%)	71 (78%)	19 (21%)	1 (1%)	12 42
31	5I	437/879 (50%)	366 (84%)	65 (15%)	6 (1%)	9 37
31	5J	108/879 (12%)	101 (94%)	6 (6%)	1 (1%)	14 46
32	5L	90/101 (89%)	90 (100%)	0	0	100 100
33	5N	332/495 (67%)	324 (98%)	8 (2%)	0	100 100
33	5O	149/495 (30%)	147 (99%)	2 (1%)	0	100 100
34	5Q	260/514 (51%)	250 (96%)	9 (4%)	1 (0%)	30 62
34	5R	194/514 (38%)	155 (80%)	36 (19%)	3 (2%)	8 36
35	5T	125/196 (64%)	109 (87%)	15 (12%)	1 (1%)	16 48
35	5U	26/196 (13%)	19 (73%)	7 (27%)	0	100 100
36	5W	225/282 (80%)	190 (84%)	27 (12%)	8 (4%)	3 22
36	5X	225/282 (80%)	189 (84%)	29 (13%)	7 (3%)	3 25
36	5Y	179/282 (64%)	151 (84%)	22 (12%)	6 (3%)	3 24

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
36	5Z	57/282 (20%)	52 (91%)	5 (9%)	0	100	100
37	6A	114/135 (84%)	96 (84%)	17 (15%)	1 (1%)	14	46
38	6C	210/310 (68%)	168 (80%)	34 (16%)	8 (4%)	2	21
38	6D	61/310 (20%)	51 (84%)	9 (15%)	1 (2%)	8	35
39	6F	155/223 (70%)	148 (96%)	6 (4%)	1 (1%)	22	54
39	6G	155/223 (70%)	147 (95%)	7 (4%)	1 (1%)	22	54
39	6H	133/223 (60%)	120 (90%)	13 (10%)	0	100	100
39	6I	155/223 (70%)	149 (96%)	6 (4%)	0	100	100
39	6J	155/223 (70%)	150 (97%)	5 (3%)	0	100	100
39	6K	155/223 (70%)	150 (97%)	5 (3%)	0	100	100
39	6L	131/223 (59%)	117 (89%)	12 (9%)	2 (2%)	8	36
40	AA	438/447 (98%)	402 (92%)	36 (8%)	0	100	100
40	AE	438/447 (98%)	402 (92%)	33 (8%)	3 (1%)	19	51
40	AF	438/447 (98%)	408 (93%)	29 (7%)	1 (0%)	44	72
40	AG	438/447 (98%)	412 (94%)	24 (6%)	2 (0%)	25	57
40	AH	438/447 (98%)	401 (92%)	35 (8%)	2 (0%)	25	57
40	BA	438/447 (98%)	410 (94%)	27 (6%)	1 (0%)	44	72
40	BE	438/447 (98%)	324 (74%)	82 (19%)	32 (7%)	1	11
40	BF	429/447 (96%)	400 (93%)	26 (6%)	3 (1%)	19	51
40	BG	428/447 (96%)	393 (92%)	34 (8%)	1 (0%)	44	72
40	BH	438/447 (98%)	323 (74%)	82 (19%)	33 (8%)	1	10
40	BI	365/447 (82%)	249 (68%)	84 (23%)	32 (9%)	0	7
40	CA	438/447 (98%)	301 (69%)	101 (23%)	36 (8%)	1	8
40	CE	438/447 (98%)	402 (92%)	34 (8%)	2 (0%)	25	57
40	CF	438/447 (98%)	404 (92%)	31 (7%)	3 (1%)	19	51
40	CG	438/447 (98%)	404 (92%)	32 (7%)	2 (0%)	25	57
40	CH	438/447 (98%)	313 (72%)	87 (20%)	38 (9%)	0	7
40	CI	438/447 (98%)	409 (93%)	27 (6%)	2 (0%)	25	57
40	DA	428/447 (96%)	245 (57%)	130 (30%)	53 (12%)	0	3
40	DE	431/447 (96%)	276 (64%)	112 (26%)	43 (10%)	0	6
40	DF	428/447 (96%)	271 (63%)	126 (29%)	31 (7%)	1	11

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
40	DG	429/447 (96%)	391 (91%)	37 (9%)	1 (0%)	44 72
40	DH	429/447 (96%)	273 (64%)	123 (29%)	33 (8%)	1 9
40	DI	428/447 (96%)	252 (59%)	131 (31%)	45 (10%)	0 5
40	EA	430/447 (96%)	399 (93%)	29 (7%)	2 (0%)	25 57
40	EE	431/447 (96%)	398 (92%)	31 (7%)	2 (0%)	25 57
40	EF	431/447 (96%)	397 (92%)	33 (8%)	1 (0%)	44 72
40	EG	430/447 (96%)	393 (91%)	35 (8%)	2 (0%)	25 57
40	EH	429/447 (96%)	279 (65%)	108 (25%)	42 (10%)	0 6
40	EI	430/447 (96%)	257 (60%)	137 (32%)	36 (8%)	0 8
40	FA	430/447 (96%)	280 (65%)	114 (26%)	36 (8%)	0 8
40	FE	430/447 (96%)	394 (92%)	36 (8%)	0	100 100
40	FF	430/447 (96%)	389 (90%)	39 (9%)	2 (0%)	25 57
40	FG	429/447 (96%)	392 (91%)	36 (8%)	1 (0%)	44 72
40	FH	430/447 (96%)	393 (91%)	37 (9%)	0	100 100
40	FI	430/447 (96%)	384 (89%)	45 (10%)	1 (0%)	44 72
40	GA	430/447 (96%)	399 (93%)	28 (6%)	3 (1%)	19 51
40	GE	430/447 (96%)	261 (61%)	135 (31%)	34 (8%)	1 9
40	GF	429/447 (96%)	390 (91%)	36 (8%)	3 (1%)	19 51
40	GG	429/447 (96%)	390 (91%)	34 (8%)	5 (1%)	11 40
40	GH	429/447 (96%)	289 (67%)	107 (25%)	33 (8%)	1 9
40	GI	430/447 (96%)	278 (65%)	117 (27%)	35 (8%)	1 8
40	HA	431/447 (96%)	386 (90%)	42 (10%)	3 (1%)	19 51
40	HE	429/447 (96%)	261 (61%)	127 (30%)	41 (10%)	0 6
40	HF	428/447 (96%)	391 (91%)	36 (8%)	1 (0%)	44 72
40	HG	430/447 (96%)	383 (89%)	44 (10%)	3 (1%)	19 51
40	HH	430/447 (96%)	401 (93%)	27 (6%)	2 (0%)	25 57
40	HI	431/447 (96%)	397 (92%)	33 (8%)	1 (0%)	44 72
40	IA	430/447 (96%)	388 (90%)	41 (10%)	1 (0%)	44 72
40	IE	414/447 (93%)	387 (94%)	25 (6%)	2 (0%)	25 57
40	IF	430/447 (96%)	390 (91%)	38 (9%)	2 (0%)	25 57
40	IG	429/447 (96%)	391 (91%)	37 (9%)	1 (0%)	44 72

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
40	IH	430/447 (96%)	401 (93%)	27 (6%)	2 (0%)	25 57
40	II	430/447 (96%)	394 (92%)	34 (8%)	2 (0%)	25 57
40	JA	430/447 (96%)	391 (91%)	38 (9%)	1 (0%)	44 72
40	JD	430/447 (96%)	397 (92%)	31 (7%)	2 (0%)	25 57
40	JE	430/447 (96%)	399 (93%)	29 (7%)	2 (0%)	25 57
40	JF	429/447 (96%)	395 (92%)	33 (8%)	1 (0%)	44 72
40	JG	438/447 (98%)	407 (93%)	30 (7%)	1 (0%)	44 72
40	JH	429/447 (96%)	392 (91%)	36 (8%)	1 (0%)	44 72
40	KA	430/447 (96%)	397 (92%)	31 (7%)	2 (0%)	25 57
40	KD	429/447 (96%)	394 (92%)	32 (8%)	3 (1%)	19 51
40	KE	430/447 (96%)	392 (91%)	36 (8%)	2 (0%)	25 57
40	KF	430/447 (96%)	397 (92%)	32 (7%)	1 (0%)	44 72
40	KG	438/447 (98%)	409 (93%)	28 (6%)	1 (0%)	44 72
40	KH	438/447 (98%)	395 (90%)	42 (10%)	1 (0%)	44 72
40	LA	438/447 (98%)	408 (93%)	29 (7%)	1 (0%)	44 72
40	LD	429/447 (96%)	400 (93%)	28 (6%)	1 (0%)	44 72
40	LE	438/447 (98%)	400 (91%)	36 (8%)	2 (0%)	25 57
40	LF	429/447 (96%)	333 (78%)	72 (17%)	24 (6%)	1 15
40	LG	430/447 (96%)	335 (78%)	67 (16%)	28 (6%)	1 13
40	LH	430/447 (96%)	400 (93%)	29 (7%)	1 (0%)	44 72
40	MA	428/447 (96%)	329 (77%)	74 (17%)	25 (6%)	1 14
40	MD	430/447 (96%)	393 (91%)	33 (8%)	4 (1%)	14 46
40	ME	430/447 (96%)	396 (92%)	32 (7%)	2 (0%)	25 57
40	MF	429/447 (96%)	325 (76%)	77 (18%)	27 (6%)	1 13
40	MG	429/447 (96%)	316 (74%)	94 (22%)	19 (4%)	2 19
40	MH	429/447 (96%)	323 (75%)	82 (19%)	24 (6%)	1 15
40	NA	428/447 (96%)	396 (92%)	31 (7%)	1 (0%)	44 72
40	ND	429/447 (96%)	289 (67%)	103 (24%)	37 (9%)	0 8
40	NE	430/447 (96%)	392 (91%)	35 (8%)	3 (1%)	19 51
40	NF	429/447 (96%)	397 (92%)	32 (8%)	0	100 100
40	NG	428/447 (96%)	391 (91%)	36 (8%)	1 (0%)	44 72

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
40	NH	429/447 (96%)	398 (93%)	29 (7%)	2 (0%)	25 57
40	OA	432/447 (97%)	387 (90%)	45 (10%)	0	100 100
40	OD	430/447 (96%)	390 (91%)	34 (8%)	6 (1%)	9 37
40	OE	430/447 (96%)	393 (91%)	35 (8%)	2 (0%)	25 57
40	OF	432/447 (97%)	397 (92%)	34 (8%)	1 (0%)	44 72
40	OG	432/447 (97%)	398 (92%)	33 (8%)	1 (0%)	44 72
40	OH	432/447 (97%)	275 (64%)	120 (28%)	37 (9%)	0 8
40	PA	428/447 (96%)	384 (90%)	41 (10%)	3 (1%)	19 51
40	PD	400/447 (90%)	364 (91%)	35 (9%)	1 (0%)	37 67
40	PE	429/447 (96%)	388 (90%)	41 (10%)	0	100 100
40	PF	429/447 (96%)	393 (92%)	36 (8%)	0	100 100
40	PG	427/447 (96%)	386 (90%)	39 (9%)	2 (0%)	25 57
40	PH	427/447 (96%)	401 (94%)	26 (6%)	0	100 100
40	QA	428/447 (96%)	393 (92%)	34 (8%)	1 (0%)	44 72
40	QE	427/447 (96%)	391 (92%)	35 (8%)	1 (0%)	44 72
40	QF	427/447 (96%)	395 (92%)	31 (7%)	1 (0%)	44 72
40	QG	428/447 (96%)	396 (92%)	31 (7%)	1 (0%)	44 72
40	QH	429/447 (96%)	399 (93%)	28 (6%)	2 (0%)	25 57
40	RA	428/447 (96%)	391 (91%)	36 (8%)	1 (0%)	44 72
40	RE	427/447 (96%)	388 (91%)	37 (9%)	2 (0%)	25 57
40	RF	427/447 (96%)	384 (90%)	42 (10%)	1 (0%)	44 72
40	RG	428/447 (96%)	384 (90%)	44 (10%)	0	100 100
40	RH	427/447 (96%)	387 (91%)	37 (9%)	3 (1%)	19 51
40	RI	368/447 (82%)	343 (93%)	24 (6%)	1 (0%)	37 67
40	SA	428/447 (96%)	381 (89%)	40 (9%)	7 (2%)	8 35
40	SE	430/447 (96%)	392 (91%)	36 (8%)	2 (0%)	25 57
40	SF	428/447 (96%)	392 (92%)	35 (8%)	1 (0%)	44 72
40	SG	430/447 (96%)	380 (88%)	48 (11%)	2 (0%)	25 57
40	SH	429/447 (96%)	392 (91%)	36 (8%)	1 (0%)	44 72
40	SI	429/447 (96%)	394 (92%)	34 (8%)	1 (0%)	44 72
40	TA	428/447 (96%)	397 (93%)	31 (7%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
40	TE	428/447 (96%)	394 (92%)	33 (8%)	1 (0%)	44 72
40	TF	428/447 (96%)	392 (92%)	34 (8%)	2 (0%)	25 57
40	TG	430/447 (96%)	383 (89%)	46 (11%)	1 (0%)	44 72
40	TH	429/447 (96%)	394 (92%)	33 (8%)	2 (0%)	25 57
40	TI	429/447 (96%)	398 (93%)	29 (7%)	2 (0%)	25 57
40	UA	429/447 (96%)	384 (90%)	43 (10%)	2 (0%)	25 57
40	UE	430/447 (96%)	397 (92%)	31 (7%)	2 (0%)	25 57
40	UF	430/447 (96%)	276 (64%)	119 (28%)	35 (8%)	1 8
40	UG	430/447 (96%)	389 (90%)	39 (9%)	2 (0%)	25 57
40	UH	429/447 (96%)	389 (91%)	38 (9%)	2 (0%)	25 57
40	UI	429/447 (96%)	274 (64%)	119 (28%)	36 (8%)	0 8
40	VA	438/447 (98%)	393 (90%)	41 (9%)	4 (1%)	14 46
40	VF	438/447 (98%)	403 (92%)	31 (7%)	4 (1%)	14 46
40	VG	429/447 (96%)	393 (92%)	33 (8%)	3 (1%)	19 51
40	VH	430/447 (96%)	387 (90%)	41 (10%)	2 (0%)	25 57
40	VI	438/447 (98%)	401 (92%)	36 (8%)	1 (0%)	44 72
40	VJ	429/447 (96%)	388 (90%)	40 (9%)	1 (0%)	44 72
40	WA	438/447 (98%)	410 (94%)	26 (6%)	2 (0%)	25 57
40	WE	438/447 (98%)	404 (92%)	33 (8%)	1 (0%)	44 72
40	WF	429/447 (96%)	385 (90%)	43 (10%)	1 (0%)	44 72
40	WG	428/447 (96%)	393 (92%)	33 (8%)	2 (0%)	25 57
40	WH	438/447 (98%)	403 (92%)	34 (8%)	1 (0%)	44 72
40	WI	429/447 (96%)	398 (93%)	31 (7%)	0	100 100
41	AB	426/449 (95%)	400 (94%)	25 (6%)	1 (0%)	44 72
41	AL	426/449 (95%)	393 (92%)	30 (7%)	3 (1%)	19 51
41	AM	426/449 (95%)	398 (93%)	25 (6%)	3 (1%)	19 51
41	AN	426/449 (95%)	398 (93%)	25 (6%)	3 (1%)	19 51
41	AO	426/449 (95%)	335 (79%)	70 (16%)	21 (5%)	2 17
41	AP	426/449 (95%)	396 (93%)	28 (7%)	2 (0%)	25 57
41	BB	426/449 (95%)	326 (76%)	75 (18%)	25 (6%)	1 14
41	BL	426/449 (95%)	397 (93%)	27 (6%)	2 (0%)	25 57

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
41	BM	426/449 (95%)	312 (73%)	84 (20%)	30 (7%)	1 11
41	BN	426/449 (95%)	388 (91%)	35 (8%)	3 (1%)	19 51
41	BO	426/449 (95%)	322 (76%)	81 (19%)	23 (5%)	1 16
41	BP	426/449 (95%)	322 (76%)	75 (18%)	29 (7%)	1 12
41	CB	426/449 (95%)	398 (93%)	27 (6%)	1 (0%)	44 72
41	CL	426/449 (95%)	306 (72%)	84 (20%)	36 (8%)	0 8
41	CM	426/449 (95%)	305 (72%)	93 (22%)	28 (7%)	1 13
41	CN	426/449 (95%)	298 (70%)	98 (23%)	30 (7%)	1 11
41	CO	426/449 (95%)	279 (66%)	110 (26%)	37 (9%)	0 7
41	CP	426/449 (95%)	276 (65%)	112 (26%)	38 (9%)	0 7
41	DB	426/449 (95%)	260 (61%)	125 (29%)	41 (10%)	0 6
41	DL	426/449 (95%)	252 (59%)	126 (30%)	48 (11%)	0 4
41	DM	426/449 (95%)	268 (63%)	121 (28%)	37 (9%)	0 7
41	DN	426/449 (95%)	257 (60%)	120 (28%)	49 (12%)	0 4
41	DO	426/449 (95%)	396 (93%)	28 (7%)	2 (0%)	25 57
41	DP	426/449 (95%)	272 (64%)	121 (28%)	33 (8%)	1 9
41	EB	426/449 (95%)	400 (94%)	23 (5%)	3 (1%)	19 51
41	EL	356/449 (79%)	329 (92%)	26 (7%)	1 (0%)	37 67
41	EM	426/449 (95%)	270 (63%)	116 (27%)	40 (9%)	0 7
41	EN	426/449 (95%)	399 (94%)	26 (6%)	1 (0%)	44 72
41	EO	426/449 (95%)	396 (93%)	28 (7%)	2 (0%)	25 57
41	EP	426/449 (95%)	276 (65%)	123 (29%)	27 (6%)	1 13
41	FB	426/449 (95%)	393 (92%)	31 (7%)	2 (0%)	25 57
41	FM	426/449 (95%)	393 (92%)	30 (7%)	3 (1%)	19 51
41	FN	426/449 (95%)	391 (92%)	34 (8%)	1 (0%)	44 72
41	FO	426/449 (95%)	393 (92%)	31 (7%)	2 (0%)	25 57
41	FP	426/449 (95%)	393 (92%)	31 (7%)	2 (0%)	25 57
41	GB	426/449 (95%)	398 (93%)	26 (6%)	2 (0%)	25 57
41	GM	426/449 (95%)	399 (94%)	25 (6%)	2 (0%)	25 57
41	GN	426/449 (95%)	277 (65%)	118 (28%)	31 (7%)	1 11
41	GO	426/449 (95%)	401 (94%)	23 (5%)	2 (0%)	25 57

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
41	GP	426/449 (95%)	393 (92%)	32 (8%)	1 (0%)	44 72
41	HB	426/449 (95%)	397 (93%)	26 (6%)	3 (1%)	19 51
41	HM	426/449 (95%)	399 (94%)	25 (6%)	2 (0%)	25 57
41	HN	426/449 (95%)	289 (68%)	110 (26%)	27 (6%)	1 13
41	HO	426/449 (95%)	401 (94%)	24 (6%)	1 (0%)	44 72
41	HP	426/449 (95%)	392 (92%)	32 (8%)	2 (0%)	25 57
41	HQ	426/449 (95%)	397 (93%)	27 (6%)	2 (0%)	25 57
41	IB	426/449 (95%)	401 (94%)	23 (5%)	2 (0%)	25 57
41	IM	426/449 (95%)	398 (93%)	26 (6%)	2 (0%)	25 57
41	IN	426/449 (95%)	398 (93%)	26 (6%)	2 (0%)	25 57
41	IO	426/449 (95%)	399 (94%)	25 (6%)	2 (0%)	25 57
41	IP	426/449 (95%)	397 (93%)	27 (6%)	2 (0%)	25 57
41	IQ	426/449 (95%)	389 (91%)	35 (8%)	2 (0%)	25 57
41	JB	426/449 (95%)	395 (93%)	29 (7%)	2 (0%)	25 57
41	JL	426/449 (95%)	394 (92%)	30 (7%)	2 (0%)	25 57
41	JM	426/449 (95%)	286 (67%)	110 (26%)	30 (7%)	1 11
41	JN	426/449 (95%)	393 (92%)	31 (7%)	2 (0%)	25 57
41	JO	426/449 (95%)	396 (93%)	28 (7%)	2 (0%)	25 57
41	KB	426/449 (95%)	397 (93%)	27 (6%)	2 (0%)	25 57
41	KL	426/449 (95%)	305 (72%)	100 (24%)	21 (5%)	2 17
41	KM	426/449 (95%)	399 (94%)	26 (6%)	1 (0%)	44 72
41	KN	426/449 (95%)	403 (95%)	21 (5%)	2 (0%)	25 57
41	KO	426/449 (95%)	389 (91%)	35 (8%)	2 (0%)	25 57
41	KP	380/449 (85%)	356 (94%)	22 (6%)	2 (0%)	25 57
41	LB	426/449 (95%)	393 (92%)	32 (8%)	1 (0%)	44 72
41	LL	426/449 (95%)	392 (92%)	32 (8%)	2 (0%)	25 57
41	LM	426/449 (95%)	393 (92%)	31 (7%)	2 (0%)	25 57
41	LN	426/449 (95%)	403 (95%)	22 (5%)	1 (0%)	44 72
41	LO	426/449 (95%)	399 (94%)	24 (6%)	3 (1%)	19 51
41	LP	426/449 (95%)	403 (95%)	22 (5%)	1 (0%)	44 72
41	MB	426/449 (95%)	402 (94%)	23 (5%)	1 (0%)	44 72

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
41	ML	426/449 (95%)	392 (92%)	32 (8%)	2 (0%)	25 57
41	MM	426/449 (95%)	396 (93%)	27 (6%)	3 (1%)	19 51
41	MN	426/449 (95%)	400 (94%)	25 (6%)	1 (0%)	44 72
41	MO	426/449 (95%)	334 (78%)	71 (17%)	21 (5%)	2 17
41	MP	426/449 (95%)	401 (94%)	23 (5%)	2 (0%)	25 57
41	NB	426/449 (95%)	392 (92%)	32 (8%)	2 (0%)	25 57
41	NL	426/449 (95%)	398 (93%)	25 (6%)	3 (1%)	19 51
41	NM	426/449 (95%)	390 (92%)	35 (8%)	1 (0%)	44 72
41	NN	426/449 (95%)	397 (93%)	27 (6%)	2 (0%)	25 57
41	NO	426/449 (95%)	394 (92%)	30 (7%)	2 (0%)	25 57
41	NP	412/449 (92%)	382 (93%)	27 (7%)	3 (1%)	19 51
41	OB	426/449 (95%)	404 (95%)	20 (5%)	2 (0%)	25 57
41	OL	426/449 (95%)	396 (93%)	27 (6%)	3 (1%)	19 51
41	OM	426/449 (95%)	383 (90%)	42 (10%)	1 (0%)	44 72
41	ON	426/449 (95%)	389 (91%)	35 (8%)	2 (0%)	25 57
41	OO	426/449 (95%)	390 (92%)	33 (8%)	3 (1%)	19 51
41	OP	426/449 (95%)	391 (92%)	33 (8%)	2 (0%)	25 57
41	PB	426/449 (95%)	392 (92%)	32 (8%)	2 (0%)	25 57
41	PL	426/449 (95%)	399 (94%)	25 (6%)	2 (0%)	25 57
41	PM	426/449 (95%)	395 (93%)	29 (7%)	2 (0%)	25 57
41	PN	426/449 (95%)	394 (92%)	30 (7%)	2 (0%)	25 57
41	PO	426/449 (95%)	397 (93%)	27 (6%)	2 (0%)	25 57
41	PP	426/449 (95%)	392 (92%)	32 (8%)	2 (0%)	25 57
41	QB	426/449 (95%)	244 (57%)	127 (30%)	55 (13%)	0 3
41	QL	426/449 (95%)	389 (91%)	34 (8%)	3 (1%)	19 51
41	QM	426/449 (95%)	391 (92%)	32 (8%)	3 (1%)	19 51
41	QN	426/449 (95%)	393 (92%)	30 (7%)	3 (1%)	19 51
41	QO	426/449 (95%)	391 (92%)	32 (8%)	3 (1%)	19 51
41	QP	426/449 (95%)	233 (55%)	133 (31%)	60 (14%)	0 3
41	RB	426/449 (95%)	396 (93%)	28 (7%)	2 (0%)	25 57
41	RL	426/449 (95%)	397 (93%)	28 (7%)	1 (0%)	44 72

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
41	RM	426/449 (95%)	398 (93%)	27 (6%)	1 (0%)	44 72
41	RN	426/449 (95%)	389 (91%)	35 (8%)	2 (0%)	25 57
41	RO	426/449 (95%)	392 (92%)	31 (7%)	3 (1%)	19 51
41	RP	426/449 (95%)	385 (90%)	39 (9%)	2 (0%)	25 57
41	SB	426/449 (95%)	376 (88%)	45 (11%)	5 (1%)	11 40
41	SL	373/449 (83%)	347 (93%)	24 (6%)	2 (0%)	25 57
41	SM	426/449 (95%)	391 (92%)	32 (8%)	3 (1%)	19 51
41	SN	426/449 (95%)	393 (92%)	31 (7%)	2 (0%)	25 57
41	SO	426/449 (95%)	243 (57%)	146 (34%)	37 (9%)	0 7
41	SP	426/449 (95%)	388 (91%)	36 (8%)	2 (0%)	25 57
41	TB	426/449 (95%)	391 (92%)	32 (8%)	3 (1%)	19 51
41	TL	381/449 (85%)	350 (92%)	29 (8%)	2 (0%)	25 57
41	TM	426/449 (95%)	398 (93%)	27 (6%)	1 (0%)	44 72
41	TN	426/449 (95%)	396 (93%)	28 (7%)	2 (0%)	25 57
41	TO	426/449 (95%)	394 (92%)	31 (7%)	1 (0%)	44 72
41	TP	426/449 (95%)	399 (94%)	26 (6%)	1 (0%)	44 72
41	UB	426/449 (95%)	400 (94%)	25 (6%)	1 (0%)	44 72
41	UM	426/449 (95%)	397 (93%)	27 (6%)	2 (0%)	25 57
41	UN	426/449 (95%)	391 (92%)	34 (8%)	1 (0%)	44 72
41	UO	426/449 (95%)	396 (93%)	28 (7%)	2 (0%)	25 57
41	UP	426/449 (95%)	277 (65%)	116 (27%)	33 (8%)	1 9
41	VB	426/449 (95%)	393 (92%)	31 (7%)	2 (0%)	25 57
41	VN	426/449 (95%)	392 (92%)	32 (8%)	2 (0%)	25 57
41	VO	426/449 (95%)	398 (93%)	27 (6%)	1 (0%)	44 72
41	VP	426/449 (95%)	390 (92%)	34 (8%)	2 (0%)	25 57
41	VQ	426/449 (95%)	390 (92%)	35 (8%)	1 (0%)	44 72
41	WB	426/449 (95%)	400 (94%)	25 (6%)	1 (0%)	44 72
41	WM	426/449 (95%)	316 (74%)	91 (21%)	19 (4%)	2 18
41	WN	426/449 (95%)	298 (70%)	102 (24%)	26 (6%)	1 14
41	WO	426/449 (95%)	392 (92%)	33 (8%)	1 (0%)	44 72
41	WP	426/449 (95%)	397 (93%)	27 (6%)	2 (0%)	25 57

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
41	WQ	417/449 (93%)	385 (92%)	31 (7%)	1 (0%)	44 72
All	All	139272/166243 (84%)	121168 (87%)	15381 (11%)	2723 (2%)	8 32

5 of 2723 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	1C	133	SER
2	1C	256	GLN
2	1D	256	GLN
3	1F	240	PRO
3	1G	65	ILE

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	1A	489/903 (54%)	488 (100%)	1 (0%)	92 96
1	1B	121/903 (13%)	121 (100%)	0	100 100
2	1C	181/588 (31%)	180 (99%)	1 (1%)	84 90
2	1D	181/588 (31%)	181 (100%)	0	100 100
3	1F	153/229 (67%)	151 (99%)	2 (1%)	65 77
3	1G	153/229 (67%)	82 (54%)	71 (46%)	0 0
4	1H	181/623 (29%)	180 (99%)	1 (1%)	84 90
4	1I	80/623 (13%)	79 (99%)	1 (1%)	65 77
4	1J	108/623 (17%)	107 (99%)	1 (1%)	75 84
5	1L	141/547 (26%)	127 (90%)	14 (10%)	6 26
5	1M	226/547 (41%)	224 (99%)	2 (1%)	75 84
5	1N	94/547 (17%)	92 (98%)	2 (2%)	48 67
6	1P	74/1287 (6%)	74 (100%)	0	100 100
6	1Q	71/1287 (6%)	71 (100%)	0	100 100
7	1S	517/525 (98%)	505 (98%)	12 (2%)	45 64

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
7	1T	517/525 (98%)	357 (69%)	160 (31%)	0 1
7	1U	517/525 (98%)	510 (99%)	7 (1%)	62 77
8	1W	287/498 (58%)	284 (99%)	3 (1%)	73 82
8	1X	251/498 (50%)	199 (79%)	52 (21%)	1 6
8	1Y	149/498 (30%)	146 (98%)	3 (2%)	50 68
8	1Z	173/498 (35%)	171 (99%)	2 (1%)	67 79
9	2B	338/493 (69%)	327 (97%)	11 (3%)	33 56
9	2C	71/493 (14%)	70 (99%)	1 (1%)	62 77
10	2E	104/154 (68%)	104 (100%)	0	100 100
10	2F	104/154 (68%)	104 (100%)	0	100 100
10	2G	104/154 (68%)	104 (100%)	0	100 100
11	2I	227/237 (96%)	186 (82%)	41 (18%)	1 8
11	2J	228/237 (96%)	221 (97%)	7 (3%)	35 57
11	2K	219/237 (92%)	194 (89%)	25 (11%)	4 21
12	2M	192/228 (84%)	192 (100%)	0	100 100
12	2N	192/228 (84%)	192 (100%)	0	100 100
12	2O	192/228 (84%)	182 (95%)	10 (5%)	19 45
12	2P	192/228 (84%)	191 (100%)	1 (0%)	86 92
12	2Q	192/228 (84%)	191 (100%)	1 (0%)	86 92
12	2R	192/228 (84%)	192 (100%)	0	100 100
13	2T	173/180 (96%)	116 (67%)	57 (33%)	0 1
13	2U	173/180 (96%)	117 (68%)	56 (32%)	0 1
13	2V	173/180 (96%)	114 (66%)	59 (34%)	0 1
13	2W	173/180 (96%)	121 (70%)	52 (30%)	0 2
13	2X	173/180 (96%)	110 (64%)	63 (36%)	0 0
14	3A	99/150 (66%)	98 (99%)	1 (1%)	73 82
14	3B	99/150 (66%)	98 (99%)	1 (1%)	73 82
14	3C	99/150 (66%)	99 (100%)	0	100 100
15	3E	358/375 (96%)	357 (100%)	1 (0%)	91 94
15	3F	361/375 (96%)	356 (99%)	5 (1%)	62 77
15	3G	117/375 (31%)	117 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
15	3H	278/375 (74%)	276 (99%)	2 (1%)	81 88
16	3J	356/387 (92%)	348 (98%)	8 (2%)	47 65
16	3K	278/387 (72%)	276 (99%)	2 (1%)	81 88
16	3L	356/387 (92%)	354 (99%)	2 (1%)	84 90
16	3M	107/387 (28%)	107 (100%)	0	100 100
17	3O	354/442 (80%)	331 (94%)	23 (6%)	14 39
17	3P	354/442 (80%)	249 (70%)	105 (30%)	0 2
17	3Q	117/442 (26%)	72 (62%)	45 (38%)	0 0
17	3R	238/442 (54%)	144 (60%)	94 (40%)	0 0
18	3T	358/396 (90%)	356 (99%)	2 (1%)	84 90
18	3U	358/396 (90%)	356 (99%)	2 (1%)	84 90
18	3V	149/396 (38%)	149 (100%)	0	100 100
18	3W	235/396 (59%)	234 (100%)	1 (0%)	89 93
19	3Y	317/337 (94%)	310 (98%)	7 (2%)	47 65
19	3Z	22/337 (6%)	20 (91%)	2 (9%)	7 29
20	4A	155/331 (47%)	96 (62%)	59 (38%)	0 0
20	4B	98/331 (30%)	60 (61%)	38 (39%)	0 0
21	4D	424/580 (73%)	375 (88%)	49 (12%)	4 21
21	4E	424/580 (73%)	379 (89%)	45 (11%)	5 24
21	4F	424/580 (73%)	378 (89%)	46 (11%)	5 23
22	4H	319/683 (47%)	311 (98%)	8 (2%)	42 61
22	4I	556/683 (81%)	515 (93%)	41 (7%)	11 35
22	4J	559/683 (82%)	519 (93%)	40 (7%)	12 36
22	4K	218/683 (32%)	173 (79%)	45 (21%)	1 6
23	4M	139/230 (60%)	80 (58%)	59 (42%)	0 0
23	4N	136/230 (59%)	78 (57%)	58 (43%)	0 0
23	4P	74/230 (32%)	38 (51%)	36 (49%)	0 0
23	4Q	107/230 (46%)	60 (56%)	47 (44%)	0 0
23	4R	139/230 (60%)	84 (60%)	55 (40%)	0 0
24	4O	73/213 (34%)	37 (51%)	36 (49%)	0 0
25	4T	148/394 (38%)	143 (97%)	5 (3%)	32 55

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
26	4V	319/323 (99%)	317 (99%)	2 (1%)	84 90
26	4W	319/323 (99%)	312 (98%)	7 (2%)	47 65
27	4Y	231/268 (86%)	231 (100%)	0	100 100
27	4Z	231/268 (86%)	229 (99%)	2 (1%)	75 84
28	5B	177/209 (85%)	171 (97%)	6 (3%)	32 55
29	5D	74/122 (61%)	74 (100%)	0	100 100
29	5E	32/122 (26%)	32 (100%)	0	100 100
30	5G	75/114 (66%)	73 (97%)	2 (3%)	40 60
31	5I	386/760 (51%)	382 (99%)	4 (1%)	73 82
31	5J	99/760 (13%)	97 (98%)	2 (2%)	50 68
32	5L	72/92 (78%)	71 (99%)	1 (1%)	62 77
33	5N	310/456 (68%)	306 (99%)	4 (1%)	65 77
33	5O	137/456 (30%)	137 (100%)	0	100 100
34	5Q	239/469 (51%)	238 (100%)	1 (0%)	89 93
34	5R	177/469 (38%)	101 (57%)	76 (43%)	0 0
35	5T	118/182 (65%)	117 (99%)	1 (1%)	79 86
35	5U	22/182 (12%)	20 (91%)	2 (9%)	7 29
36	5W	201/251 (80%)	200 (100%)	1 (0%)	86 92
36	5X	201/251 (80%)	198 (98%)	3 (2%)	60 75
36	5Y	162/251 (64%)	160 (99%)	2 (1%)	67 79
36	5Z	51/251 (20%)	51 (100%)	0	100 100
37	6A	108/124 (87%)	107 (99%)	1 (1%)	75 84
38	6C	178/260 (68%)	171 (96%)	7 (4%)	27 52
38	6D	55/260 (21%)	55 (100%)	0	100 100
39	6F	144/196 (74%)	139 (96%)	5 (4%)	31 55
39	6G	144/196 (74%)	141 (98%)	3 (2%)	48 67
39	6H	129/196 (66%)	127 (98%)	2 (2%)	58 74
39	6I	144/196 (74%)	144 (100%)	0	100 100
39	6J	144/196 (74%)	144 (100%)	0	100 100
39	6K	144/196 (74%)	144 (100%)	0	100 100
39	6L	126/196 (64%)	120 (95%)	6 (5%)	21 47

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
40	AA	371/376 (99%)	371 (100%)	0	100 100
40	AE	371/376 (99%)	368 (99%)	3 (1%)	79 86
40	AF	371/376 (99%)	370 (100%)	1 (0%)	91 94
40	AG	371/376 (99%)	371 (100%)	0	100 100
40	AH	371/376 (99%)	371 (100%)	0	100 100
40	BA	371/376 (99%)	371 (100%)	0	100 100
40	BE	371/376 (99%)	241 (65%)	130 (35%)	0 0
40	BF	367/376 (98%)	367 (100%)	0	100 100
40	BG	366/376 (97%)	364 (100%)	2 (0%)	86 92
40	BH	371/376 (99%)	273 (74%)	98 (26%)	0 3
40	BI	316/376 (84%)	201 (64%)	115 (36%)	0 0
40	CA	371/376 (99%)	244 (66%)	127 (34%)	0 1
40	CE	370/376 (98%)	367 (99%)	3 (1%)	79 86
40	CF	371/376 (99%)	364 (98%)	7 (2%)	52 69
40	CG	371/376 (99%)	368 (99%)	3 (1%)	79 86
40	CH	371/376 (99%)	236 (64%)	135 (36%)	0 0
40	CI	371/376 (99%)	371 (100%)	0	100 100
40	DA	366/376 (97%)	245 (67%)	121 (33%)	0 1
40	DE	368/376 (98%)	238 (65%)	130 (35%)	0 0
40	DF	366/376 (97%)	231 (63%)	135 (37%)	0 0
40	DG	367/376 (98%)	366 (100%)	1 (0%)	91 94
40	DH	367/376 (98%)	241 (66%)	126 (34%)	0 1
40	DI	366/376 (97%)	241 (66%)	125 (34%)	0 1
40	EA	368/376 (98%)	366 (100%)	2 (0%)	86 92
40	EE	369/376 (98%)	363 (98%)	6 (2%)	58 74
40	EF	369/376 (98%)	368 (100%)	1 (0%)	91 94
40	EG	368/376 (98%)	365 (99%)	3 (1%)	79 86
40	EH	367/376 (98%)	245 (67%)	122 (33%)	0 1
40	EI	368/376 (98%)	223 (61%)	145 (39%)	0 0
40	FA	368/376 (98%)	244 (66%)	124 (34%)	0 1
40	FE	368/376 (98%)	368 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
40	FF	368/376 (98%)	368 (100%)	0	100 100
40	FG	367/376 (98%)	366 (100%)	1 (0%)	91 94
40	FH	368/376 (98%)	368 (100%)	0	100 100
40	FI	367/376 (98%)	363 (99%)	4 (1%)	70 81
40	GA	368/376 (98%)	365 (99%)	3 (1%)	79 86
40	GE	368/376 (98%)	235 (64%)	133 (36%)	0 0
40	GF	367/376 (98%)	367 (100%)	0	100 100
40	GG	367/376 (98%)	356 (97%)	11 (3%)	36 58
40	GH	367/376 (98%)	254 (69%)	113 (31%)	0 1
40	GI	368/376 (98%)	241 (66%)	127 (34%)	0 1
40	HA	368/376 (98%)	366 (100%)	2 (0%)	86 92
40	HE	367/376 (98%)	235 (64%)	132 (36%)	0 0
40	HF	366/376 (97%)	365 (100%)	1 (0%)	91 94
40	HG	367/376 (98%)	367 (100%)	0	100 100
40	HH	368/376 (98%)	368 (100%)	0	100 100
40	HI	369/376 (98%)	369 (100%)	0	100 100
40	IA	368/376 (98%)	367 (100%)	1 (0%)	91 94
40	IE	358/376 (95%)	356 (99%)	2 (1%)	84 90
40	IF	368/376 (98%)	367 (100%)	1 (0%)	91 94
40	IG	367/376 (98%)	367 (100%)	0	100 100
40	IH	368/376 (98%)	366 (100%)	2 (0%)	86 92
40	II	368/376 (98%)	367 (100%)	1 (0%)	91 94
40	JA	368/376 (98%)	368 (100%)	0	100 100
40	JD	368/376 (98%)	365 (99%)	3 (1%)	79 86
40	JE	368/376 (98%)	368 (100%)	0	100 100
40	JF	367/376 (98%)	365 (100%)	2 (0%)	86 92
40	JG	371/376 (99%)	367 (99%)	4 (1%)	70 81
40	JH	367/376 (98%)	367 (100%)	0	100 100
40	KA	368/376 (98%)	366 (100%)	2 (0%)	86 92
40	KD	367/376 (98%)	365 (100%)	2 (0%)	86 92
40	KE	367/376 (98%)	366 (100%)	1 (0%)	91 94

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
40	KF	368/376 (98%)	367 (100%)	1 (0%)	91 94
40	KG	371/376 (99%)	371 (100%)	0	100 100
40	KH	371/376 (99%)	370 (100%)	1 (0%)	91 94
40	LA	371/376 (99%)	369 (100%)	2 (0%)	86 92
40	LD	367/376 (98%)	367 (100%)	0	100 100
40	LE	371/376 (99%)	364 (98%)	7 (2%)	52 69
40	LF	367/376 (98%)	276 (75%)	91 (25%)	0 4
40	LG	368/376 (98%)	268 (73%)	100 (27%)	0 2
40	LH	368/376 (98%)	367 (100%)	1 (0%)	91 94
40	MA	366/376 (97%)	279 (76%)	87 (24%)	0 4
40	MD	368/376 (98%)	365 (99%)	3 (1%)	79 86
40	ME	368/376 (98%)	366 (100%)	2 (0%)	86 92
40	MF	367/376 (98%)	277 (76%)	90 (24%)	0 4
40	MG	367/376 (98%)	272 (74%)	95 (26%)	0 3
40	MH	367/376 (98%)	276 (75%)	91 (25%)	0 4
40	NA	366/376 (97%)	366 (100%)	0	100 100
40	ND	367/376 (98%)	239 (65%)	128 (35%)	0 0
40	NE	367/376 (98%)	367 (100%)	0	100 100
40	NF	367/376 (98%)	366 (100%)	1 (0%)	91 94
40	NG	366/376 (97%)	364 (100%)	2 (0%)	86 92
40	NH	367/376 (98%)	367 (100%)	0	100 100
40	OA	370/376 (98%)	369 (100%)	1 (0%)	91 94
40	OD	368/376 (98%)	360 (98%)	8 (2%)	47 65
40	OE	368/376 (98%)	365 (99%)	3 (1%)	79 86
40	OF	369/376 (98%)	367 (100%)	2 (0%)	86 92
40	OG	368/376 (98%)	366 (100%)	2 (0%)	86 92
40	OH	369/376 (98%)	224 (61%)	145 (39%)	0 0
40	PA	366/376 (97%)	366 (100%)	0	100 100
40	PD	349/376 (93%)	348 (100%)	1 (0%)	91 94
40	PE	367/376 (98%)	364 (99%)	3 (1%)	79 86
40	PF	367/376 (98%)	367 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
40	PG	365/376 (97%)	365 (100%)	0	100 100
40	PH	365/376 (97%)	365 (100%)	0	100 100
40	QA	366/376 (97%)	363 (99%)	3 (1%)	79 86
40	QE	365/376 (97%)	363 (100%)	2 (0%)	86 92
40	QF	365/376 (97%)	364 (100%)	1 (0%)	91 94
40	QG	366/376 (97%)	366 (100%)	0	100 100
40	QH	367/376 (98%)	366 (100%)	1 (0%)	91 94
40	RA	366/376 (97%)	363 (99%)	3 (1%)	79 86
40	RE	365/376 (97%)	364 (100%)	1 (0%)	91 94
40	RF	365/376 (97%)	364 (100%)	1 (0%)	91 94
40	RG	366/376 (97%)	365 (100%)	1 (0%)	91 94
40	RH	365/376 (97%)	363 (100%)	2 (0%)	86 92
40	RI	320/376 (85%)	318 (99%)	2 (1%)	84 90
40	SA	366/376 (97%)	355 (97%)	11 (3%)	36 58
40	SE	368/376 (98%)	365 (99%)	3 (1%)	79 86
40	SF	366/376 (97%)	363 (99%)	3 (1%)	79 86
40	SG	368/376 (98%)	365 (99%)	3 (1%)	79 86
40	SH	367/376 (98%)	366 (100%)	1 (0%)	91 94
40	SI	367/376 (98%)	367 (100%)	0	100 100
40	TA	366/376 (97%)	365 (100%)	1 (0%)	91 94
40	TE	366/376 (97%)	366 (100%)	0	100 100
40	TF	366/376 (97%)	363 (99%)	3 (1%)	79 86
40	TG	368/376 (98%)	366 (100%)	2 (0%)	86 92
40	TH	367/376 (98%)	367 (100%)	0	100 100
40	TI	367/376 (98%)	365 (100%)	2 (0%)	86 92
40	UA	367/376 (98%)	366 (100%)	1 (0%)	91 94
40	UE	368/376 (98%)	365 (99%)	3 (1%)	79 86
40	UF	368/376 (98%)	250 (68%)	118 (32%)	0 1
40	UG	368/376 (98%)	365 (99%)	3 (1%)	79 86
40	UH	367/376 (98%)	367 (100%)	0	100 100
40	UI	367/376 (98%)	239 (65%)	128 (35%)	0 0

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
40	VA	371/376 (99%)	370 (100%)	1 (0%)	91 94
40	VF	371/376 (99%)	370 (100%)	1 (0%)	91 94
40	VG	367/376 (98%)	367 (100%)	0	100 100
40	VH	368/376 (98%)	367 (100%)	1 (0%)	91 94
40	VI	371/376 (99%)	368 (99%)	3 (1%)	79 86
40	VJ	367/376 (98%)	366 (100%)	1 (0%)	91 94
40	WA	371/376 (99%)	369 (100%)	2 (0%)	86 92
40	WE	371/376 (99%)	369 (100%)	2 (0%)	86 92
40	WF	367/376 (98%)	366 (100%)	1 (0%)	91 94
40	WG	366/376 (97%)	366 (100%)	0	100 100
40	WH	371/376 (99%)	370 (100%)	1 (0%)	91 94
40	WI	367/376 (98%)	365 (100%)	2 (0%)	86 92
41	AB	365/381 (96%)	365 (100%)	0	100 100
41	AL	365/381 (96%)	365 (100%)	0	100 100
41	AM	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	AN	365/381 (96%)	361 (99%)	4 (1%)	70 81
41	AO	365/381 (96%)	266 (73%)	99 (27%)	0 2
41	AP	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	BB	365/381 (96%)	252 (69%)	113 (31%)	0 1
41	BL	365/381 (96%)	363 (100%)	2 (0%)	86 92
41	BM	365/381 (96%)	251 (69%)	114 (31%)	0 1
41	BN	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	BO	365/381 (96%)	251 (69%)	114 (31%)	0 1
41	BP	365/381 (96%)	253 (69%)	112 (31%)	0 1
41	CB	365/381 (96%)	362 (99%)	3 (1%)	79 86
41	CL	365/381 (96%)	217 (60%)	148 (40%)	0 0
41	CM	365/381 (96%)	263 (72%)	102 (28%)	0 2
41	CN	365/381 (96%)	236 (65%)	129 (35%)	0 0
41	CO	365/381 (96%)	248 (68%)	117 (32%)	0 1
41	CP	365/381 (96%)	225 (62%)	140 (38%)	0 0
41	DB	365/381 (96%)	234 (64%)	131 (36%)	0 0

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
41	DL	365/381 (96%)	227 (62%)	138 (38%)	0 0
41	DM	365/381 (96%)	219 (60%)	146 (40%)	0 0
41	DN	365/381 (96%)	222 (61%)	143 (39%)	0 0
41	DO	365/381 (96%)	362 (99%)	3 (1%)	79 86
41	DP	364/381 (96%)	241 (66%)	123 (34%)	0 1
41	EB	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	EL	312/381 (82%)	311 (100%)	1 (0%)	91 94
41	EM	365/381 (96%)	237 (65%)	128 (35%)	0 0
41	EN	365/381 (96%)	365 (100%)	0	100 100
41	EO	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	EP	365/381 (96%)	252 (69%)	113 (31%)	0 1
41	FB	365/381 (96%)	363 (100%)	2 (0%)	86 92
41	FM	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	FN	365/381 (96%)	361 (99%)	4 (1%)	70 81
41	FO	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	FP	365/381 (96%)	362 (99%)	3 (1%)	79 86
41	GB	365/381 (96%)	365 (100%)	0	100 100
41	GM	365/381 (96%)	365 (100%)	0	100 100
41	GN	365/381 (96%)	249 (68%)	116 (32%)	0 1
41	GO	364/381 (96%)	361 (99%)	3 (1%)	79 86
41	GP	365/381 (96%)	365 (100%)	0	100 100
41	HB	365/381 (96%)	365 (100%)	0	100 100
41	HM	365/381 (96%)	363 (100%)	2 (0%)	86 92
41	HN	365/381 (96%)	238 (65%)	127 (35%)	0 0
41	HO	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	HP	365/381 (96%)	365 (100%)	0	100 100
41	HQ	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	IB	365/381 (96%)	363 (100%)	2 (0%)	86 92
41	IM	365/381 (96%)	365 (100%)	0	100 100
41	IN	365/381 (96%)	363 (100%)	2 (0%)	86 92
41	IO	365/381 (96%)	365 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
41	IP	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	IQ	365/381 (96%)	363 (100%)	2 (0%)	86 92
41	JB	365/381 (96%)	365 (100%)	0	100 100
41	JL	365/381 (96%)	365 (100%)	0	100 100
41	JM	365/381 (96%)	235 (64%)	130 (36%)	0 0
41	JN	365/381 (96%)	363 (100%)	2 (0%)	86 92
41	JO	365/381 (96%)	365 (100%)	0	100 100
41	KB	365/381 (96%)	365 (100%)	0	100 100
41	KL	365/381 (96%)	256 (70%)	109 (30%)	0 2
41	KM	365/381 (96%)	365 (100%)	0	100 100
41	KN	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	KO	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	KP	326/381 (86%)	326 (100%)	0	100 100
41	LB	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	LL	365/381 (96%)	363 (100%)	2 (0%)	86 92
41	LM	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	LN	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	LO	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	LP	365/381 (96%)	365 (100%)	0	100 100
41	MB	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	ML	365/381 (96%)	365 (100%)	0	100 100
41	MM	365/381 (96%)	365 (100%)	0	100 100
41	MN	365/381 (96%)	360 (99%)	5 (1%)	62 77
41	MO	365/381 (96%)	270 (74%)	95 (26%)	0 3
41	MP	365/381 (96%)	363 (100%)	2 (0%)	86 92
41	NB	365/381 (96%)	362 (99%)	3 (1%)	79 86
41	NL	365/381 (96%)	362 (99%)	3 (1%)	79 86
41	NM	365/381 (96%)	363 (100%)	2 (0%)	86 92
41	NN	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	NO	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	NP	356/381 (93%)	352 (99%)	4 (1%)	70 81

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
41	OB	365/381 (96%)	365 (100%)	0	100 100
41	OL	365/381 (96%)	365 (100%)	0	100 100
41	OM	365/381 (96%)	362 (99%)	3 (1%)	79 86
41	ON	365/381 (96%)	361 (99%)	4 (1%)	70 81
41	OO	365/381 (96%)	365 (100%)	0	100 100
41	OP	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	PB	365/381 (96%)	361 (99%)	4 (1%)	70 81
41	PL	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	PM	365/381 (96%)	365 (100%)	0	100 100
41	PN	365/381 (96%)	363 (100%)	2 (0%)	86 92
41	PO	365/381 (96%)	365 (100%)	0	100 100
41	PP	365/381 (96%)	365 (100%)	0	100 100
41	QB	365/381 (96%)	223 (61%)	142 (39%)	0 0
41	QL	365/381 (96%)	361 (99%)	4 (1%)	70 81
41	QM	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	QN	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	QO	365/381 (96%)	365 (100%)	0	100 100
41	QP	361/381 (95%)	223 (62%)	138 (38%)	0 0
41	RB	365/381 (96%)	362 (99%)	3 (1%)	79 86
41	RL	365/381 (96%)	361 (99%)	4 (1%)	70 81
41	RM	365/381 (96%)	365 (100%)	0	100 100
41	RN	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	RO	365/381 (96%)	365 (100%)	0	100 100
41	RP	365/381 (96%)	363 (100%)	2 (0%)	86 92
41	SB	365/381 (96%)	349 (96%)	16 (4%)	24 49
41	SL	328/381 (86%)	326 (99%)	2 (1%)	84 90
41	SM	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	SN	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	SO	365/381 (96%)	252 (69%)	113 (31%)	0 1
41	SP	365/381 (96%)	363 (100%)	2 (0%)	86 92
41	TB	365/381 (96%)	363 (100%)	2 (0%)	86 92

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
41	TL	335/381 (88%)	333 (99%)	2 (1%)	84 90
41	TM	365/381 (96%)	361 (99%)	4 (1%)	70 81
41	TN	365/381 (96%)	361 (99%)	4 (1%)	70 81
41	TO	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	TP	365/381 (96%)	365 (100%)	0	100 100
41	UB	365/381 (96%)	365 (100%)	0	100 100
41	UM	365/381 (96%)	363 (100%)	2 (0%)	86 92
41	UN	365/381 (96%)	365 (100%)	0	100 100
41	UO	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	UP	365/381 (96%)	232 (64%)	133 (36%)	0 0
41	VB	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	VN	365/381 (96%)	362 (99%)	3 (1%)	79 86
41	VO	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	VP	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	VQ	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	WB	365/381 (96%)	363 (100%)	2 (0%)	86 92
41	WM	365/381 (96%)	241 (66%)	124 (34%)	0 1
41	WN	365/381 (96%)	225 (62%)	140 (38%)	0 0
41	WO	365/381 (96%)	364 (100%)	1 (0%)	91 94
41	WP	365/381 (96%)	363 (100%)	2 (0%)	86 92
41	WQ	358/381 (94%)	357 (100%)	1 (0%)	91 94
All	All	120294/142337 (84%)	111437 (93%)	8857 (7%)	14 35

5 of 8857 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
40	ND	166	LYS
40	OH	320	ARG
40	ND	132	LEU
40	UI	114	LEU
41	CL	276	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 942 such sidechains are listed below:

Mol	Chain	Res	Type
41	EP	8	GLN
41	UP	131	GLN
41	IP	11	GLN
40	UI	35	GLN
40	RG	206	ASN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains (i)

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

269 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
42	GTP	CE	501	-	29,34,34	1.45	3 (10%)	35,54,54	1.33	7 (20%)
43	GDP	CN	501	-	25,30,30	0.87	1 (4%)	30,47,47	1.50	4 (13%)
42	GTP	AH	501	-	29,34,34	1.31	3 (10%)	35,54,54	1.34	5 (14%)
42	GTP	GB	502	-	29,34,34	1.28	2 (6%)	35,54,54	1.43	7 (20%)
43	GDP	PB	501	-	25,30,30	0.91	0	30,47,47	1.34	4 (13%)
43	GDP	SB	501	-	25,30,30	0.86	1 (4%)	30,47,47	2.02	6 (20%)
43	GDP	RB	501	-	25,30,30	0.90	0	30,47,47	1.39	5 (16%)
42	GTP	IA	501	-	29,34,34	1.32	2 (6%)	35,54,54	1.32	6 (17%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
42	GTP	PD	501	-	29,34,34	1.29	2 (6%)	35,54,54	1.28	5 (14%)
42	GTP	WG	501	-	29,34,34	1.33	3 (10%)	35,54,54	1.38	7 (20%)
43	GDP	HB	501	-	25,30,30	0.89	0	30,47,47	1.29	4 (13%)
43	GDP	DO	501	-	25,30,30	0.86	0	30,47,47	1.40	4 (13%)
42	GTP	PE	501	-	29,34,34	1.36	2 (6%)	35,54,54	1.40	7 (20%)
42	GTP	NM	501	-	29,34,34	1.32	3 (10%)	35,54,54	1.27	5 (14%)
43	GDP	DN	501	-	25,30,30	0.91	0	30,47,47	1.39	4 (13%)
43	GDP	QN	502	-	25,30,30	0.88	0	30,47,47	1.42	5 (16%)
43	GDP	IB	501	-	25,30,30	0.91	0	30,47,47	1.35	5 (16%)
42	GTP	OM	501	-	29,34,34	1.28	4 (13%)	35,54,54	1.29	4 (11%)
43	GDP	MN	502	-	25,30,30	0.88	0	30,47,47	1.32	4 (13%)
43	GDP	OB	501	-	25,30,30	0.92	0	30,47,47	1.34	4 (13%)
42	GTP	OO	501	-	29,34,34	1.28	2 (6%)	35,54,54	1.36	6 (17%)
43	GDP	SL	502	-	25,30,30	0.95	0	30,47,47	1.92	6 (20%)
43	GDP	FN	502	-	25,30,30	0.85	1 (4%)	30,47,47	2.07	6 (20%)
42	GTP	UA	501	-	29,34,34	1.74	6 (20%)	35,54,54	2.01	9 (25%)
43	GDP	TM	501	-	25,30,30	0.90	0	30,47,47	1.34	4 (13%)
43	GDP	WQ	501	-	25,30,30	0.90	0	30,47,47	1.21	4 (13%)
42	GTP	JE	501	-	29,34,34	1.27	2 (6%)	35,54,54	1.27	7 (20%)
43	GDP	NM	502	-	25,30,30	0.89	0	30,47,47	1.46	5 (16%)
42	GTP	MH	501	-	29,34,34	1.38	3 (10%)	35,54,54	1.38	7 (20%)
42	GTP	PM	501	-	29,34,34	1.29	2 (6%)	35,54,54	1.37	5 (14%)
42	GTP	VF	501	-	29,34,34	1.30	4 (13%)	35,54,54	1.31	6 (17%)
43	GDP	OL	502	-	25,30,30	0.93	0	30,47,47	1.24	4 (13%)
42	GTP	CH	501	-	29,34,34	1.31	2 (6%)	35,54,54	1.33	6 (17%)
42	GTP	EL	501	-	29,34,34	1.32	3 (10%)	35,54,54	1.30	7 (20%)
42	GTP	KD	501	-	29,34,34	1.36	2 (6%)	35,54,54	1.40	5 (14%)
42	GTP	TH	501	-	29,34,34	1.36	3 (10%)	35,54,54	1.25	5 (14%)
42	GTP	II	501	-	29,34,34	1.35	2 (6%)	35,54,54	1.43	7 (20%)
42	GTP	LL	501	-	29,34,34	1.46	3 (10%)	35,54,54	1.64	6 (17%)
43	GDP	ON	502	-	25,30,30	0.90	0	30,47,47	1.43	4 (13%)
43	GDP	EO	501	-	25,30,30	0.91	0	30,47,47	1.23	4 (13%)
43	GDP	RL	501	-	25,30,30	0.99	1 (4%)	30,47,47	1.23	4 (13%)
42	GTP	TF	501	-	29,34,34	1.43	3 (10%)	35,54,54	1.59	8 (22%)
42	GTP	ON	501	-	29,34,34	1.28	2 (6%)	35,54,54	1.37	7 (20%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
43	GDP	MP	501	-	25,30,30	0.90	1 (4%)	30,47,47	1.49	4 (13%)
43	GDP	DM	501	-	25,30,30	0.82	0	30,47,47	1.70	6 (20%)
42	GTP	ML	501	-	29,34,34	1.44	3 (10%)	35,54,54	1.52	7 (20%)
43	GDP	RM	501	-	25,30,30	0.89	1 (4%)	30,47,47	1.78	8 (26%)
43	GDP	GB	501	-	25,30,30	0.91	0	30,47,47	1.28	4 (13%)
42	GTP	AG	501	-	29,34,34	1.23	2 (6%)	35,54,54	1.37	6 (17%)
43	GDP	AO	501	-	25,30,30	0.90	0	30,47,47	1.32	4 (13%)
42	GTP	DG	501	-	29,34,34	1.47	4 (13%)	35,54,54	1.47	8 (22%)
43	GDP	BO	501	-	25,30,30	0.91	0	30,47,47	1.25	4 (13%)
43	GDP	VP	502	-	25,30,30	0.89	0	30,47,47	1.39	4 (13%)
42	GTP	LB	502	-	29,34,34	1.35	2 (6%)	35,54,54	1.37	7 (20%)
42	GTP	HE	501	-	29,34,34	1.36	2 (6%)	35,54,54	1.39	7 (20%)
42	GTP	TN	501	-	29,34,34	1.38	4 (13%)	35,54,54	1.32	5 (14%)
42	GTP	UM	501	-	29,34,34	1.30	2 (6%)	35,54,54	1.43	6 (17%)
42	GTP	TI	501	-	29,34,34	1.66	2 (6%)	35,54,54	1.72	6 (17%)
42	GTP	MM	501	-	29,34,34	1.41	3 (10%)	35,54,54	1.63	8 (22%)
43	GDP	CP	501	-	25,30,30	0.93	0	30,47,47	1.31	4 (13%)
43	GDP	WP	501	-	25,30,30	0.90	0	30,47,47	1.25	4 (13%)
43	GDP	OP	501	-	25,30,30	0.92	1 (4%)	30,47,47	1.17	4 (13%)
43	GDP	NN	502	-	25,30,30	1.01	1 (4%)	30,47,47	2.21	6 (20%)
43	GDP	JL	501	-	25,30,30	0.95	2 (8%)	30,47,47	2.36	7 (23%)
42	GTP	RG	501	-	29,34,34	1.27	2 (6%)	35,54,54	1.38	5 (14%)
43	GDP	RN	502	-	25,30,30	0.94	1 (4%)	30,47,47	2.58	6 (20%)
43	GDP	UN	501	-	25,30,30	0.91	0	30,47,47	1.23	4 (13%)
42	GTP	GH	501	-	29,34,34	1.31	2 (6%)	35,54,54	1.47	8 (22%)
42	GTP	TG	501	-	29,34,34	1.30	4 (13%)	35,54,54	1.52	5 (14%)
43	GDP	PN	502	-	25,30,30	0.90	0	30,47,47	1.35	4 (13%)
42	GTP	RN	501	-	29,34,34	1.27	3 (10%)	35,54,54	1.36	6 (17%)
42	GTP	OB	502	-	29,34,34	1.36	3 (10%)	35,54,54	1.45	7 (20%)
43	GDP	SM	502	-	25,30,30	0.90	0	30,47,47	1.40	6 (20%)
42	GTP	WO	501	-	29,34,34	1.28	2 (6%)	35,54,54	1.42	7 (20%)
43	GDP	TP	501	-	25,30,30	0.91	1 (4%)	30,47,47	2.44	6 (20%)
43	GDP	TB	501	-	25,30,30	0.89	0	30,47,47	2.07	9 (30%)
42	GTP	PN	501	-	29,34,34	1.27	2 (6%)	35,54,54	1.34	5 (14%)
43	GDP	KL	501	-	25,30,30	0.89	0	30,47,47	1.28	4 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
43	GDP	UM	502	-	25,30,30	0.91	1 (4%)	30,47,47	1.15	2 (6%)
43	GDP	LN	501	-	25,30,30	0.88	0	30,47,47	1.26	4 (13%)
43	GDP	JO	502	-	25,30,30	0.89	0	30,47,47	1.26	4 (13%)
42	GTP	AF	501	-	29,34,34	1.26	2 (6%)	35,54,54	1.36	6 (17%)
42	GTP	BA	501	-	29,34,34	1.26	2 (6%)	35,54,54	1.35	5 (14%)
43	GDP	AN	501	-	25,30,30	0.89	1 (4%)	30,47,47	1.45	4 (13%)
42	GTP	EG	501	-	29,34,34	1.66	4 (13%)	35,54,54	1.71	9 (25%)
43	GDP	QM	501	-	25,30,30	0.91	1 (4%)	30,47,47	1.53	4 (13%)
43	GDP	LM	502	-	25,30,30	0.88	1 (4%)	30,47,47	1.50	4 (13%)
42	GTP	GP	501	-	29,34,34	1.48	4 (13%)	35,54,54	1.71	7 (20%)
42	GTP	WF	501	-	29,34,34	1.37	4 (13%)	35,54,54	1.37	7 (20%)
43	GDP	AL	501	-	25,30,30	0.88	0	30,47,47	1.19	4 (13%)
43	GDP	IP	501	-	25,30,30	0.94	0	30,47,47	1.26	4 (13%)
42	GTP	GE	501	-	29,34,34	1.28	3 (10%)	35,54,54	1.27	4 (11%)
42	GTP	FB	502	-	29,34,34	1.26	2 (6%)	35,54,54	1.43	7 (20%)
42	GTP	DI	501	-	29,34,34	1.48	3 (10%)	35,54,54	1.79	7 (20%)
42	GTP	EI	501	-	29,34,34	1.37	4 (13%)	35,54,54	1.45	6 (17%)
42	GTP	HH	501	-	29,34,34	1.32	3 (10%)	35,54,54	1.46	6 (17%)
43	GDP	CM	501	-	25,30,30	0.90	0	30,47,47	1.36	4 (13%)
43	GDP	EN	501	-	25,30,30	0.88	2 (8%)	30,47,47	2.07	7 (23%)
43	GDP	LP	501	-	25,30,30	0.87	0	30,47,47	1.26	4 (13%)
42	GTP	LM	501	-	29,34,34	1.38	2 (6%)	35,54,54	1.34	7 (20%)
43	GDP	CO	501	-	25,30,30	0.90	1 (4%)	30,47,47	1.51	4 (13%)
43	GDP	CB	501	-	25,30,30	0.91	1 (4%)	30,47,47	1.40	4 (13%)
43	GDP	NO	502	-	25,30,30	0.92	0	30,47,47	1.30	4 (13%)
42	GTP	IE	501	-	29,34,34	1.31	3 (10%)	35,54,54	1.28	5 (14%)
42	GTP	WE	501	-	29,34,34	1.28	2 (6%)	35,54,54	1.42	6 (17%)
42	GTP	MB	502	-	29,34,34	1.54	5 (17%)	35,54,54	1.40	5 (14%)
42	GTP	DE	501	-	29,34,34	1.27	3 (10%)	35,54,54	1.37	5 (14%)
43	GDP	GM	501	-	25,30,30	0.90	1 (4%)	30,47,47	1.46	4 (13%)
43	GDP	HO	501	-	25,30,30	0.89	0	30,47,47	1.24	4 (13%)
42	GTP	NO	501	-	29,34,34	1.30	2 (6%)	35,54,54	1.29	6 (17%)
42	GTP	HA	501	-	29,34,34	1.31	3 (10%)	35,54,54	1.39	7 (20%)
42	GTP	BI	501	-	29,34,34	1.22	2 (6%)	35,54,54	1.45	6 (17%)
43	GDP	KB	501	-	25,30,30	0.88	0	30,47,47	1.25	4 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
43	GDP	MO	501	-	25,30,30	0.89	0	30,47,47	1.33	4 (13%)
42	GTP	IF	501	-	29,34,34	1.28	2 (6%)	35,54,54	1.35	7 (20%)
43	GDP	PM	502	-	25,30,30	0.93	0	30,47,47	1.23	4 (13%)
42	GTP	IH	501	-	29,34,34	1.42	3 (10%)	35,54,54	1.50	8 (22%)
42	GTP	HP	501	-	29,34,34	1.38	5 (17%)	35,54,54	1.39	6 (17%)
42	GTP	RO	501	-	29,34,34	1.25	2 (6%)	35,54,54	1.40	7 (20%)
43	GDP	EL	502	-	25,30,30	0.93	0	30,47,47	1.16	4 (13%)
42	GTP	HB	502	-	29,34,34	1.30	3 (10%)	35,54,54	1.36	5 (14%)
42	GTP	MD	501	-	29,34,34	1.43	4 (13%)	35,54,54	1.55	8 (22%)
42	GTP	ND	501	-	29,34,34	1.26	3 (10%)	35,54,54	1.24	3 (8%)
43	GDP	VN	502	-	25,30,30	0.91	0	30,47,47	1.27	4 (13%)
42	GTP	HM	501	-	29,34,34	1.38	3 (10%)	35,54,54	1.42	7 (20%)
42	GTP	QF	501	-	29,34,34	1.36	4 (13%)	35,54,54	1.42	7 (20%)
42	GTP	VQ	501	-	29,34,34	1.31	3 (10%)	35,54,54	1.32	7 (20%)
43	GDP	JB	501	-	25,30,30	0.88	0	30,47,47	1.44	4 (13%)
43	GDP	MM	502	-	25,30,30	0.87	0	30,47,47	1.32	4 (13%)
43	GDP	QL	502	-	25,30,30	0.93	0	30,47,47	1.22	4 (13%)
43	GDP	TN	502	-	25,30,30	0.90	1 (4%)	30,47,47	1.31	4 (13%)
43	GDP	TO	501	-	25,30,30	0.83	0	30,47,47	1.86	6 (20%)
43	GDP	KP	501	-	25,30,30	0.86	0	30,47,47	1.47	4 (13%)
43	GDP	GN	501	-	25,30,30	0.88	1 (4%)	30,47,47	1.63	6 (20%)
42	GTP	QG	501	-	29,34,34	1.36	3 (10%)	35,54,54	1.39	7 (20%)
42	GTP	BL	501	-	29,34,34	1.29	2 (6%)	35,54,54	1.40	5 (14%)
43	GDP	UB	501	-	25,30,30	0.86	0	30,47,47	1.32	4 (13%)
42	GTP	WI	501	-	29,34,34	1.30	2 (6%)	35,54,54	1.48	7 (20%)
43	GDP	AM	501	-	25,30,30	0.87	1 (4%)	30,47,47	1.54	4 (13%)
43	GDP	HP	502	-	25,30,30	0.89	0	30,47,47	1.22	4 (13%)
42	GTP	UB	502	-	29,34,34	1.34	2 (6%)	35,54,54	1.38	6 (17%)
43	GDP	EM	501	-	25,30,30	0.91	2 (8%)	30,47,47	1.99	7 (23%)
43	GDP	FB	501	-	25,30,30	0.90	0	30,47,47	1.35	4 (13%)
43	GDP	WB	501	-	25,30,30	0.90	0	30,47,47	1.28	4 (13%)
43	GDP	DP	501	-	25,30,30	0.90	0	30,47,47	1.21	4 (13%)
43	GDP	VO	501	-	25,30,30	0.88	0	30,47,47	1.37	4 (13%)
42	GTP	CF	501	-	29,34,34	1.36	4 (13%)	35,54,54	1.34	6 (17%)
43	GDP	LO	502	-	25,30,30	0.89	0	30,47,47	1.31	4 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
43	GDP	PP	501	-	25,30,30	0.90	0	30,47,47	1.35	4 (13%)
42	GTP	UO	501	-	29,34,34	1.31	2 (6%)	35,54,54	1.36	6 (17%)
42	GTP	DA	501	-	29,34,34	1.35	4 (13%)	35,54,54	1.43	8 (22%)
42	GTP	PO	501	-	29,34,34	1.39	2 (6%)	35,54,54	1.40	8 (22%)
42	GTP	LO	501	-	29,34,34	1.35	3 (10%)	35,54,54	1.40	6 (17%)
42	GTP	SG	501	-	29,34,34	1.26	2 (6%)	35,54,54	1.39	7 (20%)
42	GTP	UE	501	-	29,34,34	1.37	5 (17%)	35,54,54	1.28	6 (17%)
43	GDP	WO	502	-	25,30,30	0.91	0	30,47,47	1.41	5 (16%)
43	GDP	UP	501	-	25,30,30	0.89	0	30,47,47	1.26	5 (16%)
43	GDP	MB	501	-	25,30,30	0.89	1 (4%)	30,47,47	1.41	4 (13%)
43	GDP	SO	501	-	25,30,30	0.84	0	30,47,47	1.66	5 (16%)
42	GTP	KO	501	-	29,34,34	1.77	5 (17%)	35,54,54	1.80	7 (20%)
43	GDP	IQ	501	-	25,30,30	0.93	0	30,47,47	1.16	4 (13%)
42	GTP	DF	501	-	29,34,34	1.40	4 (13%)	35,54,54	1.47	6 (17%)
42	GTP	QO	501	-	29,34,34	1.28	2 (6%)	35,54,54	1.32	5 (14%)
43	GDP	OO	502	-	25,30,30	0.92	0	30,47,47	1.23	4 (13%)
43	GDP	WM	501	-	25,30,30	0.89	1 (4%)	30,47,47	1.50	4 (13%)
42	GTP	LD	501	-	29,34,34	1.24	2 (6%)	35,54,54	1.29	5 (14%)
42	GTP	FI	501	-	29,34,34	1.32	2 (6%)	35,54,54	1.49	7 (20%)
42	GTP	KN	501	-	29,34,34	1.40	5 (17%)	35,54,54	1.79	8 (22%)
42	GTP	MN	501	-	29,34,34	1.34	4 (13%)	35,54,54	1.34	5 (14%)
42	GTP	SN	501	-	29,34,34	1.46	4 (13%)	35,54,54	1.46	8 (22%)
43	GDP	UO	502	-	25,30,30	0.87	0	30,47,47	1.39	5 (16%)
42	GTP	OD	501	-	29,34,34	1.33	4 (13%)	35,54,54	1.37	6 (17%)
43	GDP	OM	502	-	25,30,30	0.93	0	30,47,47	1.23	4 (13%)
42	GTP	EF	501	-	29,34,34	1.32	2 (6%)	35,54,54	1.38	6 (17%)
42	GTP	JF	501	-	29,34,34	1.31	2 (6%)	35,54,54	1.42	8 (22%)
43	GDP	NL	501	-	25,30,30	0.90	0	30,47,47	1.20	4 (13%)
43	GDP	VB	501	-	25,30,30	0.88	0	30,47,47	1.27	4 (13%)
42	GTP	SL	501	-	29,34,34	1.40	4 (13%)	35,54,54	1.52	8 (22%)
43	GDP	JN	501	-	25,30,30	0.90	0	30,47,47	1.27	4 (13%)
42	GTP	FN	501	-	29,34,34	1.36	5 (17%)	35,54,54	1.33	7 (20%)
42	GTP	JB	502	-	29,34,34	1.64	3 (10%)	35,54,54	2.00	9 (25%)
43	GDP	JM	501	-	25,30,30	0.89	0	30,47,47	1.34	4 (13%)
42	GTP	WA	501	-	29,34,34	1.31	3 (10%)	35,54,54	1.37	7 (20%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
43	GDP	KO	502	-	25,30,30	0.89	2 (8%)	30,47,47	2.05	7 (23%)
43	GDP	VQ	502	-	25,30,30	0.89	0	30,47,47	1.48	4 (13%)
43	GDP	QB	501	-	25,30,30	0.90	0	30,47,47	1.21	4 (13%)
43	GDP	EB	501	-	25,30,30	0.88	0	30,47,47	1.37	4 (13%)
42	GTP	EH	501	-	29,34,34	1.25	2 (6%)	35,54,54	1.28	5 (14%)
42	GTP	FM	501	-	29,34,34	1.45	4 (13%)	35,54,54	1.43	8 (22%)
42	GTP	BF	501	-	29,34,34	1.33	3 (10%)	35,54,54	1.36	7 (20%)
42	GTP	SH	501	-	29,34,34	1.28	2 (6%)	35,54,54	1.46	7 (20%)
42	GTP	AE	501	-	29,34,34	1.25	2 (6%)	35,54,54	1.28	3 (8%)
42	GTP	FO	501	-	29,34,34	1.42	4 (13%)	35,54,54	1.54	7 (20%)
43	GDP	HQ	501	-	25,30,30	0.89	0	30,47,47	1.19	4 (13%)
43	GDP	IO	501	-	25,30,30	0.91	0	30,47,47	1.27	4 (13%)
43	GDP	LL	502	-	25,30,30	0.90	1 (4%)	30,47,47	1.23	3 (10%)
43	GDP	IM	501	-	25,30,30	0.90	0	30,47,47	1.31	4 (13%)
42	GTP	VP	501	-	29,34,34	1.30	3 (10%)	35,54,54	1.44	7 (20%)
42	GTP	QN	501	-	29,34,34	1.53	5 (17%)	35,54,54	1.42	6 (17%)
42	GTP	UI	501	-	29,34,34	1.39	4 (13%)	35,54,54	1.45	7 (20%)
42	GTP	TL	501	-	29,34,34	1.43	4 (13%)	35,54,54	1.42	7 (20%)
43	GDP	BN	501	-	25,30,30	0.87	0	30,47,47	1.50	4 (13%)
42	GTP	BH	501	-	29,34,34	1.28	3 (10%)	35,54,54	1.38	6 (17%)
42	GTP	JO	501	-	29,34,34	1.42	2 (6%)	35,54,54	1.41	7 (20%)
42	GTP	QL	501	-	29,34,34	1.75	7 (24%)	35,54,54	1.86	12 (34%)
42	GTP	FE	501	-	29,34,34	1.26	2 (6%)	35,54,54	1.34	5 (14%)
42	GTP	GF	501	-	29,34,34	1.46	5 (17%)	35,54,54	1.47	8 (22%)
42	GTP	BG	501	-	29,34,34	1.25	2 (6%)	35,54,54	1.35	4 (11%)
42	GTP	CI	501	-	29,34,34	1.26	1 (3%)	35,54,54	1.33	5 (14%)
42	GTP	VB	502	-	29,34,34	1.35	2 (6%)	35,54,54	1.32	7 (20%)
43	GDP	BB	501	-	25,30,30	0.91	1 (4%)	30,47,47	1.35	4 (13%)
42	GTP	RE	501	-	29,34,34	1.26	2 (6%)	35,54,54	1.40	6 (17%)
43	GDP	FM	502	-	25,30,30	0.90	0	30,47,47	1.20	4 (13%)
43	GDP	FO	502	-	25,30,30	0.87	0	30,47,47	1.34	4 (13%)
43	GDP	IN	501	-	25,30,30	0.90	0	30,47,47	1.24	4 (13%)
42	GTP	JA	501	-	29,34,34	1.59	4 (13%)	35,54,54	1.42	8 (22%)
43	GDP	LB	501	-	25,30,30	0.89	0	30,47,47	1.28	4 (13%)
43	GDP	PO	502	-	25,30,30	0.92	0	30,47,47	1.34	4 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
43	GDP	TL	502	-	25,30,30	0.97	2 (8%)	30,47,47	2.69	6 (20%)
42	GTP	NG	501	-	29,34,34	1.36	2 (6%)	35,54,54	1.34	5 (14%)
43	GDP	CL	501	-	25,30,30	0.90	0	30,47,47	1.30	4 (13%)
42	GTP	EA	501	-	29,34,34	1.36	3 (10%)	35,54,54	1.38	7 (20%)
43	GDP	WN	501	-	25,30,30	0.88	0	30,47,47	1.34	4 (13%)
43	GDP	KM	502	-	25,30,30	0.89	0	30,47,47	1.33	4 (13%)
42	GTP	AA	501	-	29,34,34	1.33	5 (17%)	35,54,54	1.35	5 (14%)
42	GTP	KM	501	-	29,34,34	1.57	3 (10%)	35,54,54	1.67	8 (22%)
42	GTP	OL	501	-	29,34,34	1.28	2 (6%)	35,54,54	1.40	7 (20%)
42	GTP	PB	502	-	29,34,34	1.34	4 (13%)	35,54,54	1.34	7 (20%)
43	GDP	RO	502	-	25,30,30	0.88	0	30,47,47	1.35	4 (13%)
42	GTP	IG	501	-	29,34,34	1.36	2 (6%)	35,54,54	1.35	7 (20%)
42	GTP	JD	501	-	29,34,34	1.39	4 (13%)	35,54,54	1.37	6 (17%)
42	GTP	VA	501	-	29,34,34	1.38	3 (10%)	35,54,54	1.40	9 (25%)
43	GDP	GP	502	-	25,30,30	1.06	2 (8%)	30,47,47	2.27	8 (26%)
43	GDP	GO	501	-	25,30,30	0.89	0	30,47,47	1.31	4 (13%)
43	GDP	DL	501	-	25,30,30	1.12	3 (12%)	30,47,47	2.61	7 (23%)
42	GTP	SM	501	-	29,34,34	1.29	2 (6%)	35,54,54	1.38	7 (20%)
43	GDP	NP	501	-	25,30,30	0.89	0	30,47,47	1.21	4 (13%)
43	GDP	AB	501	-	25,30,30	0.88	1 (4%)	30,47,47	1.45	4 (13%)
43	GDP	PL	501	-	25,30,30	0.93	0	30,47,47	1.30	4 (13%)
43	GDP	ML	502	-	25,30,30	0.90	0	30,47,47	1.32	4 (13%)
43	GDP	AP	501	-	25,30,30	0.94	1 (4%)	30,47,47	1.05	2 (6%)
43	GDP	BL	502	-	25,30,30	0.90	0	30,47,47	1.32	4 (13%)
42	GTP	KE	501	-	29,34,34	1.33	4 (13%)	35,54,54	1.35	5 (14%)
42	GTP	RF	501	-	29,34,34	1.27	2 (6%)	35,54,54	1.31	6 (17%)
43	GDP	NB	501	-	25,30,30	0.90	0	30,47,47	1.29	4 (13%)
42	GTP	DH	501	-	29,34,34	1.70	5 (17%)	35,54,54	1.99	8 (22%)
43	GDP	HN	501	-	25,30,30	0.88	0	30,47,47	1.30	4 (13%)
42	GTP	VN	501	-	29,34,34	1.27	2 (6%)	35,54,54	1.37	7 (20%)
42	GTP	RP	501	-	29,34,34	1.18	2 (6%)	35,54,54	1.38	5 (14%)
43	GDP	FP	501	-	25,30,30	0.97	1 (4%)	30,47,47	2.43	7 (23%)
42	GTP	SP	501	-	29,34,34	1.29	4 (13%)	35,54,54	1.35	5 (14%)
43	GDP	BM	501	-	25,30,30	0.88	0	30,47,47	1.38	4 (13%)
42	GTP	KB	502	-	29,34,34	1.37	2 (6%)	35,54,54	1.44	8 (22%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
43	GDP	BP	501	-	25,30,30	0.90	1 (4%)	30,47,47	1.46	4 (13%)
42	GTP	CA	501	-	29,34,34	1.28	2 (6%)	35,54,54	1.32	6 (17%)
43	GDP	QP	501	-	25,30,30	1.03	1 (4%)	30,47,47	2.42	7 (23%)
43	GDP	SN	502	-	25,30,30	0.94	2 (8%)	30,47,47	2.74	7 (23%)
42	GTP	NE	501	-	29,34,34	1.32	2 (6%)	35,54,54	1.44	7 (20%)
42	GTP	NN	501	-	29,34,34	1.34	2 (6%)	35,54,54	1.37	4 (11%)
42	GTP	LA	501	-	29,34,34	1.29	2 (6%)	35,54,54	1.38	6 (17%)
43	GDP	EP	501	-	25,30,30	0.85	1 (4%)	30,47,47	2.41	8 (26%)
43	GDP	DB	501	-	25,30,30	0.86	0	30,47,47	1.64	6 (20%)
42	GTP	CG	501	-	29,34,34	1.39	3 (10%)	35,54,54	1.45	7 (20%)
43	GDP	QO	502	-	25,30,30	0.91	0	30,47,47	1.35	4 (13%)
43	GDP	HM	502	-	25,30,30	0.87	0	30,47,47	1.51	4 (13%)
43	GDP	RP	502	-	25,30,30	0.80	2 (8%)	30,47,47	2.69	8 (26%)
43	GDP	SP	502	-	25,30,30	0.95	1 (4%)	30,47,47	1.11	1 (3%)
43	GDP	KN	502	-	25,30,30	0.85	0	30,47,47	1.39	4 (13%)
42	GTP	GA	501	-	29,34,34	1.65	5 (17%)	35,54,54	1.55	8 (22%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
42	GTP	CE	501	-	-	8/18/38/38	0/3/3/3
43	GDP	CN	501	-	-	3/12/32/32	0/3/3/3
42	GTP	AH	501	-	-	4/18/38/38	0/3/3/3
42	GTP	GB	502	-	-	9/18/38/38	0/3/3/3
43	GDP	PB	501	-	-	4/12/32/32	0/3/3/3
43	GDP	SB	501	-	-	2/12/32/32	0/3/3/3
43	GDP	RB	501	-	-	3/12/32/32	0/3/3/3
42	GTP	IA	501	-	-	4/18/38/38	0/3/3/3
42	GTP	PD	501	-	-	3/18/38/38	0/3/3/3
42	GTP	WG	501	-	-	8/18/38/38	0/3/3/3
43	GDP	HB	501	-	-	4/12/32/32	0/3/3/3
43	GDP	DO	501	-	-	3/12/32/32	0/3/3/3
42	GTP	PE	501	-	-	6/18/38/38	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
42	GTP	NM	501	-	-	5/18/38/38	0/3/3/3
43	GDP	DN	501	-	-	3/12/32/32	0/3/3/3
43	GDP	QN	502	-	-	4/12/32/32	0/3/3/3
43	GDP	IB	501	-	-	4/12/32/32	0/3/3/3
42	GTP	OM	501	-	-	6/18/38/38	0/3/3/3
43	GDP	MN	502	-	-	4/12/32/32	0/3/3/3
43	GDP	OB	501	-	-	4/12/32/32	0/3/3/3
42	GTP	OO	501	-	-	6/18/38/38	0/3/3/3
43	GDP	SL	502	-	-	2/12/32/32	0/3/3/3
43	GDP	FN	502	-	-	2/12/32/32	0/3/3/3
42	GTP	UA	501	-	-	4/18/38/38	0/3/3/3
43	GDP	TM	501	-	-	4/12/32/32	0/3/3/3
43	GDP	WQ	501	-	-	4/12/32/32	0/3/3/3
42	GTP	JE	501	-	-	6/18/38/38	0/3/3/3
43	GDP	NM	502	-	-	3/12/32/32	0/3/3/3
42	GTP	MH	501	-	-	8/18/38/38	0/3/3/3
42	GTP	PM	501	-	-	6/18/38/38	0/3/3/3
42	GTP	VF	501	-	-	10/18/38/38	0/3/3/3
43	GDP	OL	502	-	-	4/12/32/32	0/3/3/3
42	GTP	CH	501	-	-	6/18/38/38	0/3/3/3
42	GTP	EL	501	-	-	5/18/38/38	0/3/3/3
42	GTP	KD	501	-	-	7/18/38/38	0/3/3/3
42	GTP	TH	501	-	-	4/18/38/38	0/3/3/3
42	GTP	II	501	-	-	6/18/38/38	0/3/3/3
42	GTP	LL	501	-	-	6/18/38/38	0/3/3/3
43	GDP	ON	502	-	-	4/12/32/32	0/3/3/3
43	GDP	EO	501	-	-	3/12/32/32	0/3/3/3
43	GDP	RL	501	-	-	4/12/32/32	0/3/3/3
42	GTP	TF	501	-	-	6/18/38/38	0/3/3/3
42	GTP	ON	501	-	-	6/18/38/38	0/3/3/3
43	GDP	MP	501	-	-	2/12/32/32	0/3/3/3
43	GDP	DM	501	-	-	2/12/32/32	0/3/3/3
42	GTP	ML	501	-	-	6/18/38/38	0/3/3/3
43	GDP	RM	501	-	-	2/12/32/32	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
43	GDP	GB	501	-	-	4/12/32/32	0/3/3/3
42	GTP	AG	501	-	-	6/18/38/38	0/3/3/3
43	GDP	AO	501	-	-	4/12/32/32	0/3/3/3
42	GTP	DG	501	-	-	8/18/38/38	0/3/3/3
43	GDP	BO	501	-	-	4/12/32/32	0/3/3/3
43	GDP	VP	502	-	-	4/12/32/32	0/3/3/3
42	GTP	LB	502	-	-	4/18/38/38	0/3/3/3
42	GTP	HE	501	-	-	5/18/38/38	0/3/3/3
42	GTP	TN	501	-	-	5/18/38/38	0/3/3/3
42	GTP	UM	501	-	-	2/18/38/38	0/3/3/3
42	GTP	TI	501	-	-	7/18/38/38	0/3/3/3
42	GTP	MM	501	-	-	7/18/38/38	0/3/3/3
43	GDP	CP	501	-	-	4/12/32/32	0/3/3/3
43	GDP	WP	501	-	-	4/12/32/32	0/3/3/3
43	GDP	OP	501	-	-	4/12/32/32	0/3/3/3
43	GDP	NN	502	-	-	3/12/32/32	0/3/3/3
43	GDP	JL	501	-	-	4/12/32/32	0/3/3/3
42	GTP	RG	501	-	-	8/18/38/38	0/3/3/3
43	GDP	RN	502	-	-	2/12/32/32	0/3/3/3
43	GDP	UN	501	-	-	4/12/32/32	0/3/3/3
42	GTP	GH	501	-	-	6/18/38/38	0/3/3/3
42	GTP	TG	501	-	-	6/18/38/38	0/3/3/3
43	GDP	PN	502	-	-	4/12/32/32	0/3/3/3
42	GTP	RN	501	-	-	9/18/38/38	0/3/3/3
42	GTP	OB	502	-	-	8/18/38/38	0/3/3/3
43	GDP	SM	502	-	-	3/12/32/32	0/3/3/3
42	GTP	WO	501	-	-	7/18/38/38	0/3/3/3
43	GDP	TP	501	-	-	3/12/32/32	0/3/3/3
43	GDP	TB	501	-	-	3/12/32/32	0/3/3/3
42	GTP	PN	501	-	-	8/18/38/38	0/3/3/3
43	GDP	KL	501	-	-	4/12/32/32	0/3/3/3
43	GDP	UM	502	-	-	3/12/32/32	0/3/3/3
43	GDP	LN	501	-	-	4/12/32/32	0/3/3/3
43	GDP	JO	502	-	-	4/12/32/32	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
42	GTP	AF	501	-	-	7/18/38/38	0/3/3/3
42	GTP	BA	501	-	-	8/18/38/38	0/3/3/3
43	GDP	AN	501	-	-	4/12/32/32	0/3/3/3
42	GTP	EG	501	-	-	8/18/38/38	0/3/3/3
43	GDP	QM	501	-	-	4/12/32/32	0/3/3/3
43	GDP	LM	502	-	-	3/12/32/32	0/3/3/3
42	GTP	GP	501	-	-	6/18/38/38	0/3/3/3
42	GTP	WF	501	-	-	6/18/38/38	0/3/3/3
43	GDP	AL	501	-	-	4/12/32/32	0/3/3/3
43	GDP	IP	501	-	-	4/12/32/32	0/3/3/3
42	GTP	GE	501	-	-	4/18/38/38	0/3/3/3
42	GTP	FB	502	-	-	6/18/38/38	0/3/3/3
42	GTP	DI	501	-	-	6/18/38/38	0/3/3/3
42	GTP	EI	501	-	-	3/18/38/38	0/3/3/3
42	GTP	HH	501	-	-	4/18/38/38	0/3/3/3
43	GDP	CM	501	-	-	2/12/32/32	0/3/3/3
43	GDP	EN	501	-	-	2/12/32/32	0/3/3/3
43	GDP	LP	501	-	-	4/12/32/32	0/3/3/3
42	GTP	LM	501	-	-	2/18/38/38	0/3/3/3
43	GDP	CO	501	-	-	3/12/32/32	0/3/3/3
43	GDP	CB	501	-	-	2/12/32/32	0/3/3/3
43	GDP	NO	502	-	-	4/12/32/32	0/3/3/3
42	GTP	IE	501	-	-	7/18/38/38	0/3/3/3
42	GTP	WE	501	-	-	6/18/38/38	0/3/3/3
42	GTP	MB	502	-	-	7/18/38/38	0/3/3/3
42	GTP	DE	501	-	-	9/18/38/38	0/3/3/3
43	GDP	GM	501	-	-	3/12/32/32	0/3/3/3
43	GDP	HO	501	-	-	4/12/32/32	0/3/3/3
42	GTP	NO	501	-	-	5/18/38/38	0/3/3/3
42	GTP	HA	501	-	-	9/18/38/38	0/3/3/3
42	GTP	BI	501	-	-	6/18/38/38	0/3/3/3
43	GDP	KB	501	-	-	3/12/32/32	0/3/3/3
43	GDP	MO	501	-	-	4/12/32/32	0/3/3/3
42	GTP	IF	501	-	-	6/18/38/38	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
43	GDP	PM	502	-	-	5/12/32/32	0/3/3/3
42	GTP	IH	501	-	-	7/18/38/38	0/3/3/3
42	GTP	HP	501	-	-	8/18/38/38	0/3/3/3
42	GTP	RO	501	-	-	7/18/38/38	0/3/3/3
43	GDP	EL	502	-	-	4/12/32/32	0/3/3/3
42	GTP	HB	502	-	-	5/18/38/38	0/3/3/3
42	GTP	MD	501	-	-	6/18/38/38	0/3/3/3
42	GTP	ND	501	-	-	6/18/38/38	0/3/3/3
43	GDP	VN	502	-	-	4/12/32/32	0/3/3/3
42	GTP	HM	501	-	-	6/18/38/38	0/3/3/3
42	GTP	QF	501	-	-	9/18/38/38	0/3/3/3
42	GTP	VQ	501	-	-	9/18/38/38	0/3/3/3
43	GDP	JB	501	-	-	4/12/32/32	0/3/3/3
43	GDP	MM	502	-	-	4/12/32/32	0/3/3/3
43	GDP	QL	502	-	-	4/12/32/32	0/3/3/3
43	GDP	TN	502	-	-	3/12/32/32	0/3/3/3
43	GDP	TO	501	-	-	3/12/32/32	0/3/3/3
43	GDP	KP	501	-	-	3/12/32/32	0/3/3/3
43	GDP	GN	501	-	-	3/12/32/32	0/3/3/3
42	GTP	QG	501	-	-	8/18/38/38	0/3/3/3
42	GTP	BL	501	-	-	2/18/38/38	0/3/3/3
43	GDP	UB	501	-	-	4/12/32/32	0/3/3/3
42	GTP	WI	501	-	-	6/18/38/38	0/3/3/3
43	GDP	AM	501	-	-	4/12/32/32	0/3/3/3
43	GDP	HP	502	-	-	4/12/32/32	0/3/3/3
42	GTP	UB	502	-	-	3/18/38/38	0/3/3/3
43	GDP	EM	501	-	-	2/12/32/32	0/3/3/3
43	GDP	FB	501	-	-	5/12/32/32	0/3/3/3
43	GDP	WB	501	-	-	4/12/32/32	0/3/3/3
43	GDP	DP	501	-	-	2/12/32/32	0/3/3/3
43	GDP	VO	501	-	-	4/12/32/32	0/3/3/3
42	GTP	CF	501	-	-	8/18/38/38	0/3/3/3
43	GDP	LO	502	-	-	4/12/32/32	0/3/3/3
43	GDP	PP	501	-	-	3/12/32/32	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
42	GTP	UO	501	-	-	7/18/38/38	0/3/3/3
42	GTP	DA	501	-	-	8/18/38/38	0/3/3/3
42	GTP	PO	501	-	-	4/18/38/38	0/3/3/3
42	GTP	LO	501	-	-	9/18/38/38	0/3/3/3
42	GTP	SG	501	-	-	6/18/38/38	0/3/3/3
42	GTP	UE	501	-	-	7/18/38/38	0/3/3/3
43	GDP	WO	502	-	-	4/12/32/32	0/3/3/3
43	GDP	UP	501	-	-	3/12/32/32	0/3/3/3
43	GDP	MB	501	-	-	4/12/32/32	0/3/3/3
43	GDP	SO	501	-	-	2/12/32/32	0/3/3/3
42	GTP	KO	501	-	-	10/18/38/38	0/3/3/3
43	GDP	IQ	501	-	-	4/12/32/32	0/3/3/3
42	GTP	DF	501	-	-	3/18/38/38	0/3/3/3
42	GTP	QO	501	-	-	2/18/38/38	0/3/3/3
43	GDP	OO	502	-	-	4/12/32/32	0/3/3/3
43	GDP	WM	501	-	-	4/12/32/32	0/3/3/3
42	GTP	LD	501	-	-	8/18/38/38	0/3/3/3
42	GTP	FI	501	-	-	6/18/38/38	0/3/3/3
42	GTP	KN	501	-	-	4/18/38/38	0/3/3/3
42	GTP	MN	501	-	-	5/18/38/38	0/3/3/3
42	GTP	SN	501	-	-	8/18/38/38	0/3/3/3
43	GDP	UO	502	-	-	4/12/32/32	0/3/3/3
42	GTP	OD	501	-	-	8/18/38/38	0/3/3/3
43	GDP	OM	502	-	-	4/12/32/32	0/3/3/3
42	GTP	EF	501	-	-	8/18/38/38	0/3/3/3
42	GTP	JF	501	-	-	2/18/38/38	0/3/3/3
43	GDP	NL	501	-	-	4/12/32/32	0/3/3/3
43	GDP	VB	501	-	-	3/12/32/32	0/3/3/3
42	GTP	SL	501	-	-	5/18/38/38	0/3/3/3
43	GDP	JN	501	-	-	4/12/32/32	0/3/3/3
42	GTP	FN	501	-	-	8/18/38/38	0/3/3/3
42	GTP	JB	502	-	-	6/18/38/38	0/3/3/3
43	GDP	JM	501	-	-	4/12/32/32	0/3/3/3
42	GTP	WA	501	-	-	9/18/38/38	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
43	GDP	KO	502	-	-	2/12/32/32	0/3/3/3
43	GDP	VQ	502	-	-	4/12/32/32	0/3/3/3
43	GDP	QB	501	-	-	3/12/32/32	0/3/3/3
43	GDP	EB	501	-	-	3/12/32/32	0/3/3/3
42	GTP	EH	501	-	-	7/18/38/38	0/3/3/3
42	GTP	FM	501	-	-	9/18/38/38	0/3/3/3
42	GTP	BF	501	-	-	7/18/38/38	0/3/3/3
42	GTP	SH	501	-	-	5/18/38/38	0/3/3/3
42	GTP	AE	501	-	-	5/18/38/38	0/3/3/3
42	GTP	FO	501	-	-	2/18/38/38	0/3/3/3
43	GDP	HQ	501	-	-	3/12/32/32	0/3/3/3
43	GDP	IO	501	-	-	4/12/32/32	0/3/3/3
43	GDP	LL	502	-	-	4/12/32/32	0/3/3/3
43	GDP	IM	501	-	-	4/12/32/32	0/3/3/3
42	GTP	VP	501	-	-	3/18/38/38	0/3/3/3
42	GTP	QN	501	-	-	5/18/38/38	0/3/3/3
42	GTP	UI	501	-	-	8/18/38/38	0/3/3/3
42	GTP	TL	501	-	-	2/18/38/38	0/3/3/3
43	GDP	BN	501	-	-	4/12/32/32	0/3/3/3
42	GTP	BH	501	-	-	8/18/38/38	0/3/3/3
42	GTP	JO	501	-	-	6/18/38/38	0/3/3/3
42	GTP	QL	501	-	-	7/18/38/38	0/3/3/3
42	GTP	FE	501	-	-	5/18/38/38	0/3/3/3
42	GTP	GF	501	-	-	7/18/38/38	0/3/3/3
42	GTP	BG	501	-	-	7/18/38/38	0/3/3/3
42	GTP	CI	501	-	-	7/18/38/38	0/3/3/3
42	GTP	VB	502	-	-	4/18/38/38	0/3/3/3
43	GDP	BB	501	-	-	4/12/32/32	0/3/3/3
42	GTP	RE	501	-	-	7/18/38/38	0/3/3/3
43	GDP	FM	502	-	-	2/12/32/32	0/3/3/3
43	GDP	FO	502	-	-	3/12/32/32	0/3/3/3
43	GDP	IN	501	-	-	4/12/32/32	0/3/3/3
42	GTP	JA	501	-	-	4/18/38/38	0/3/3/3
43	GDP	LB	501	-	-	4/12/32/32	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
43	GDP	PO	502	-	-	4/12/32/32	0/3/3/3
43	GDP	TL	502	-	-	4/12/32/32	0/3/3/3
42	GTP	NG	501	-	-	2/18/38/38	0/3/3/3
43	GDP	CL	501	-	-	3/12/32/32	0/3/3/3
42	GTP	EA	501	-	-	5/18/38/38	0/3/3/3
43	GDP	WN	501	-	-	4/12/32/32	0/3/3/3
43	GDP	KM	502	-	-	4/12/32/32	0/3/3/3
42	GTP	AA	501	-	-	3/18/38/38	0/3/3/3
42	GTP	KM	501	-	-	5/18/38/38	0/3/3/3
42	GTP	OL	501	-	-	10/18/38/38	0/3/3/3
42	GTP	PB	502	-	-	6/18/38/38	0/3/3/3
43	GDP	RO	502	-	-	3/12/32/32	0/3/3/3
42	GTP	IG	501	-	-	6/18/38/38	0/3/3/3
42	GTP	JD	501	-	-	5/18/38/38	0/3/3/3
42	GTP	VA	501	-	-	7/18/38/38	0/3/3/3
43	GDP	GP	502	-	-	4/12/32/32	0/3/3/3
43	GDP	GO	501	-	-	4/12/32/32	0/3/3/3
43	GDP	DL	501	-	-	4/12/32/32	0/3/3/3
42	GTP	SM	501	-	-	4/18/38/38	0/3/3/3
43	GDP	NP	501	-	-	5/12/32/32	0/3/3/3
43	GDP	AB	501	-	-	4/12/32/32	0/3/3/3
43	GDP	PL	501	-	-	4/12/32/32	0/3/3/3
43	GDP	ML	502	-	-	4/12/32/32	0/3/3/3
43	GDP	AP	501	-	-	4/12/32/32	0/3/3/3
43	GDP	BL	502	-	-	3/12/32/32	0/3/3/3
42	GTP	KE	501	-	-	8/18/38/38	0/3/3/3
42	GTP	RF	501	-	-	7/18/38/38	0/3/3/3
43	GDP	NB	501	-	-	4/12/32/32	0/3/3/3
42	GTP	DH	501	-	-	7/18/38/38	0/3/3/3
43	GDP	HN	501	-	-	5/12/32/32	0/3/3/3
42	GTP	VN	501	-	-	6/18/38/38	0/3/3/3
42	GTP	RP	501	-	-	4/18/38/38	0/3/3/3
43	GDP	FP	501	-	-	2/12/32/32	0/3/3/3
42	GTP	SP	501	-	-	4/18/38/38	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
43	GDP	BM	501	-	-	4/12/32/32	0/3/3/3
42	GTP	KB	502	-	-	7/18/38/38	0/3/3/3
43	GDP	BP	501	-	-	4/12/32/32	0/3/3/3
42	GTP	CA	501	-	-	8/18/38/38	0/3/3/3
43	GDP	QP	501	-	-	2/12/32/32	0/3/3/3
43	GDP	SN	502	-	-	3/12/32/32	0/3/3/3
42	GTP	NE	501	-	-	6/18/38/38	0/3/3/3
42	GTP	NN	501	-	-	5/18/38/38	0/3/3/3
42	GTP	LA	501	-	-	4/18/38/38	0/3/3/3
43	GDP	EP	501	-	-	2/12/32/32	0/3/3/3
43	GDP	DB	501	-	-	3/12/32/32	0/3/3/3
42	GTP	CG	501	-	-	8/18/38/38	0/3/3/3
43	GDP	QO	502	-	-	4/12/32/32	0/3/3/3
43	GDP	HM	502	-	-	4/12/32/32	0/3/3/3
43	GDP	RP	502	-	-	1/12/32/32	0/3/3/3
43	GDP	SP	502	-	-	4/12/32/32	0/3/3/3
43	GDP	KN	502	-	-	4/12/32/32	0/3/3/3
42	GTP	GA	501	-	-	3/18/38/38	0/3/3/3

The worst 5 of 452 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
42	TI	501	GTP	C5-C6	-5.97	1.35	1.47
42	JB	502	GTP	C5-C6	-5.87	1.35	1.47
42	KO	501	GTP	C5-C6	-5.67	1.36	1.47
42	EG	501	GTP	C5-C6	-5.64	1.36	1.47
42	UA	501	GTP	C5-C6	-5.47	1.36	1.47

The worst 5 of 1480 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
43	SN	502	GDP	O6-C6-C5	-8.40	107.66	124.32
43	DL	501	GDP	N2-C2-N3	-8.23	103.62	119.67
43	TL	502	GDP	O6-C6-C5	-8.08	108.31	124.32
43	RN	502	GDP	O6-C6-C5	-7.61	109.23	124.32
43	RP	502	GDP	C2-N1-C6	-7.58	111.25	125.11

There are no chirality outliers.

5 of 1290 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
42	AA	501	GTP	O4'-C4'-C5'-O5'
42	AE	501	GTP	C5'-O5'-PA-O3A
42	AE	501	GTP	C5'-O5'-PA-O1A
42	AE	501	GTP	C5'-O5'-PA-O2A
42	AF	501	GTP	C5'-O5'-PA-O3A

There are no ring outliers.

219 monomers are involved in 527 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
42	CE	501	GTP	5	0
43	CN	501	GDP	4	0
42	AH	501	GTP	2	0
42	GB	502	GTP	3	0
43	PB	501	GDP	2	0
43	SB	501	GDP	1	0
42	IA	501	GTP	2	0
42	WG	501	GTP	5	0
43	DO	501	GDP	1	0
42	PE	501	GTP	2	0
42	NM	501	GTP	4	0
43	DN	501	GDP	3	0
43	QN	502	GDP	1	0
42	OM	501	GTP	2	0
43	MN	502	GDP	2	0
43	OB	501	GDP	1	0
42	OO	501	GTP	3	0
43	SL	502	GDP	2	0
42	UA	501	GTP	2	0
43	WQ	501	GDP	1	0
42	JE	501	GTP	3	0
43	NM	502	GDP	2	0
42	MH	501	GTP	1	0
42	VF	501	GTP	1	0
43	OL	502	GDP	2	0
42	CH	501	GTP	1	0
42	EL	501	GTP	2	0
42	KD	501	GTP	3	0
42	TH	501	GTP	2	0
42	II	501	GTP	3	0
42	LL	501	GTP	3	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
43	ON	502	GDP	1	0
43	RL	501	GDP	1	0
42	ON	501	GTP	2	0
43	MP	501	GDP	1	0
43	DM	501	GDP	2	0
42	ML	501	GTP	2	0
43	RM	501	GDP	1	0
43	GB	501	GDP	1	0
42	AG	501	GTP	3	0
42	DG	501	GTP	4	0
43	VP	502	GDP	1	0
42	LB	502	GTP	3	0
42	TN	501	GTP	1	0
42	UM	501	GTP	1	0
42	TI	501	GTP	4	0
42	MM	501	GTP	8	0
43	CP	501	GDP	4	0
43	WP	501	GDP	1	0
43	NN	502	GDP	2	0
43	JL	501	GDP	1	0
42	RG	501	GTP	3	0
43	RN	502	GDP	1	0
43	UN	501	GDP	1	0
42	GH	501	GTP	2	0
42	TG	501	GTP	5	0
43	PN	502	GDP	1	0
42	OB	502	GTP	4	0
42	WO	501	GTP	1	0
43	TP	501	GDP	1	0
42	PN	501	GTP	2	0
43	KL	501	GDP	2	0
43	UM	502	GDP	1	0
43	LN	501	GDP	1	0
43	JO	502	GDP	1	0
43	AN	501	GDP	1	0
42	EG	501	GTP	1	0
43	QM	501	GDP	2	0
43	LM	502	GDP	1	0
42	GP	501	GTP	3	0
42	WF	501	GTP	2	0
42	FB	502	GTP	3	0
42	DI	501	GTP	8	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
42	HH	501	GTP	2	0
43	CM	501	GDP	2	0
43	LP	501	GDP	1	0
42	LM	501	GTP	5	0
43	CO	501	GDP	5	0
43	CB	501	GDP	1	0
43	NO	502	GDP	1	0
42	IE	501	GTP	3	0
42	WE	501	GTP	4	0
42	MB	502	GTP	9	0
42	DE	501	GTP	6	0
43	GM	501	GDP	2	0
43	HO	501	GDP	1	0
42	NO	501	GTP	3	0
42	HA	501	GTP	4	0
42	BI	501	GTP	1	0
43	MO	501	GDP	1	0
42	IF	501	GTP	2	0
42	IH	501	GTP	3	0
42	HP	501	GTP	2	0
42	RO	501	GTP	1	0
42	HB	502	GTP	1	0
42	MD	501	GTP	2	0
42	ND	501	GTP	1	0
42	HM	501	GTP	2	0
42	QF	501	GTP	2	0
42	VQ	501	GTP	1	0
43	JB	501	GDP	2	0
43	MM	502	GDP	1	0
43	TN	502	GDP	2	0
43	TO	501	GDP	1	0
43	KP	501	GDP	2	0
43	GN	501	GDP	2	0
42	QG	501	GTP	2	0
42	BL	501	GTP	1	0
43	UB	501	GDP	1	0
42	WI	501	GTP	4	0
43	AM	501	GDP	1	0
42	UB	502	GTP	3	0
43	EM	501	GDP	4	0
43	WB	501	GDP	1	0
43	DP	501	GDP	5	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
43	VO	501	GDP	1	0
42	CF	501	GTP	2	0
43	LO	502	GDP	2	0
43	PP	501	GDP	3	0
42	UO	501	GTP	3	0
42	DA	501	GTP	7	0
42	PO	501	GTP	2	0
42	LO	501	GTP	4	0
42	UE	501	GTP	3	0
43	WO	502	GDP	2	0
43	UP	501	GDP	2	0
43	MB	501	GDP	1	0
43	SO	501	GDP	3	0
42	KO	501	GTP	2	0
42	DF	501	GTP	4	0
42	QO	501	GTP	1	0
43	WM	501	GDP	1	0
42	LD	501	GTP	2	0
42	FI	501	GTP	2	0
42	KN	501	GTP	3	0
42	MN	501	GTP	9	0
42	SN	501	GTP	3	0
43	UO	502	GDP	2	0
42	OD	501	GTP	5	0
42	EF	501	GTP	2	0
42	JF	501	GTP	2	0
43	VB	501	GDP	1	0
42	SL	501	GTP	1	0
43	JN	501	GDP	1	0
42	FN	501	GTP	2	0
42	JB	502	GTP	3	0
43	JM	501	GDP	6	0
42	WA	501	GTP	3	0
43	VQ	502	GDP	1	0
43	QB	501	GDP	5	0
43	EB	501	GDP	1	0
42	EH	501	GTP	1	0
42	FM	501	GTP	3	0
42	BF	501	GTP	2	0
42	SH	501	GTP	3	0
42	AE	501	GTP	2	0
42	FO	501	GTP	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
43	IO	501	GDP	1	0
42	VP	501	GTP	1	0
42	QN	501	GTP	2	0
42	UI	501	GTP	5	0
42	TL	501	GTP	3	0
43	BN	501	GDP	1	0
42	BH	501	GTP	1	0
42	JO	501	GTP	5	0
42	QL	501	GTP	2	0
42	FE	501	GTP	1	0
42	GF	501	GTP	1	0
42	BG	501	GTP	2	0
42	CI	501	GTP	4	0
42	VB	502	GTP	4	0
43	BB	501	GDP	3	0
43	FO	502	GDP	2	0
42	JA	501	GTP	4	0
43	LB	501	GDP	2	0
42	NG	501	GTP	5	0
43	CL	501	GDP	1	0
42	EA	501	GTP	5	0
43	WN	501	GDP	1	0
43	KM	502	GDP	1	0
42	AA	501	GTP	1	0
42	KM	501	GTP	2	0
42	OL	501	GTP	2	0
43	RO	502	GDP	1	0
42	IG	501	GTP	4	0
42	VA	501	GTP	3	0
43	GP	502	GDP	2	0
43	DL	501	GDP	3	0
42	SM	501	GTP	2	0
43	AB	501	GDP	1	0
43	PL	501	GDP	4	0
43	ML	502	GDP	2	0
43	BL	502	GDP	2	0
42	KE	501	GTP	3	0
42	RF	501	GTP	4	0
42	DH	501	GTP	2	0
43	HN	501	GDP	2	0
42	VN	501	GTP	2	0
42	RP	501	GTP	4	0

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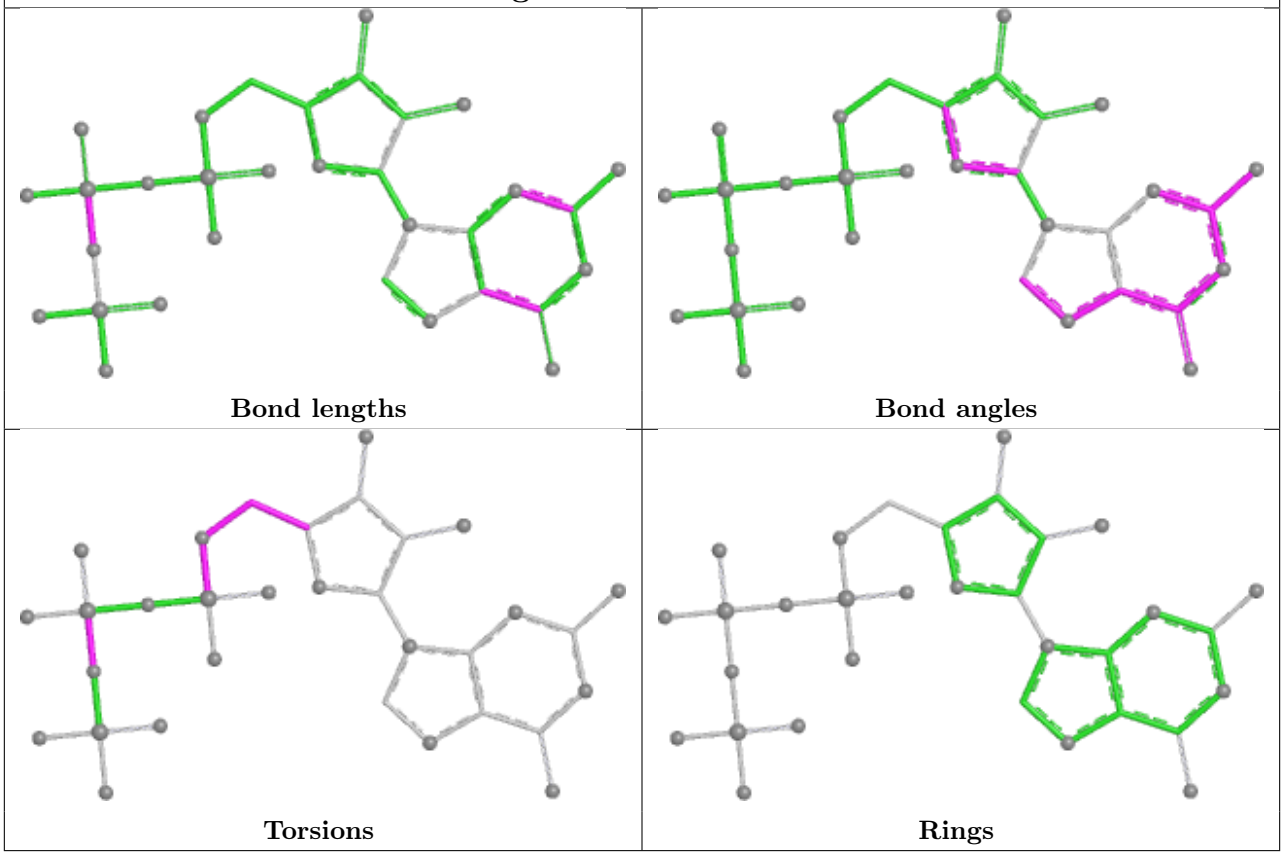
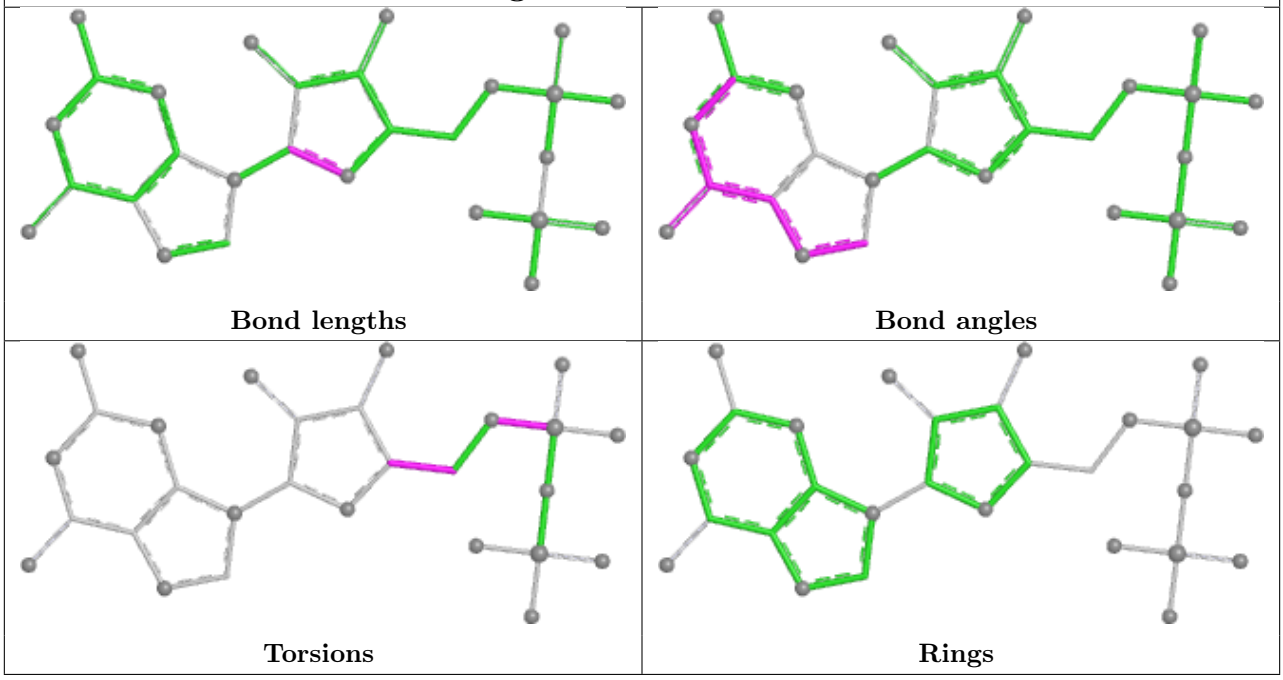
Mol	Chain	Res	Type	Clashes	Symm-Clashes
43	FP	501	GDP	3	0
42	SP	501	GTP	1	0
43	BM	501	GDP	2	0
42	KB	502	GTP	3	0
43	BP	501	GDP	1	0
42	CA	501	GTP	1	0
43	QP	501	GDP	6	0
43	SN	502	GDP	1	0
42	NE	501	GTP	3	0
42	NN	501	GTP	4	0
42	LA	501	GTP	4	0
43	EP	501	GDP	5	0
43	DB	501	GDP	4	0
42	CG	501	GTP	3	0
43	QO	502	GDP	1	0
43	HM	502	GDP	1	0
43	RP	502	GDP	2	0
43	SP	502	GDP	1	0
43	KN	502	GDP	3	0
42	GA	501	GTP	4	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

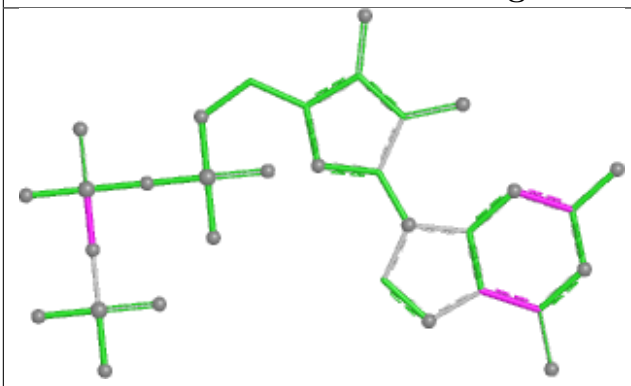
Ligand GTP CE 501



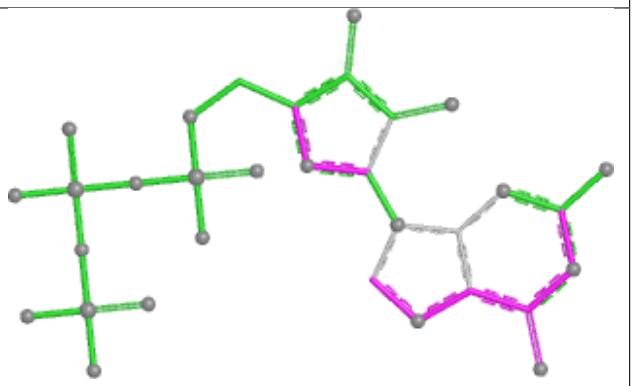
Ligand GDP CN 501



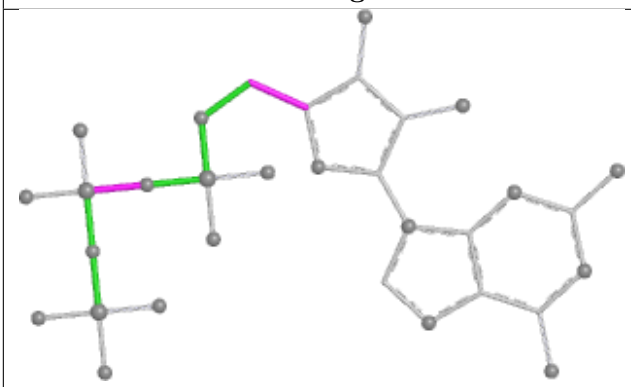
Ligand GTP AH 501



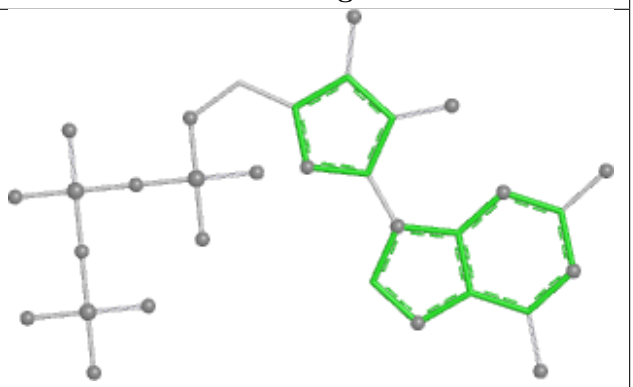
Bond lengths



Bond angles

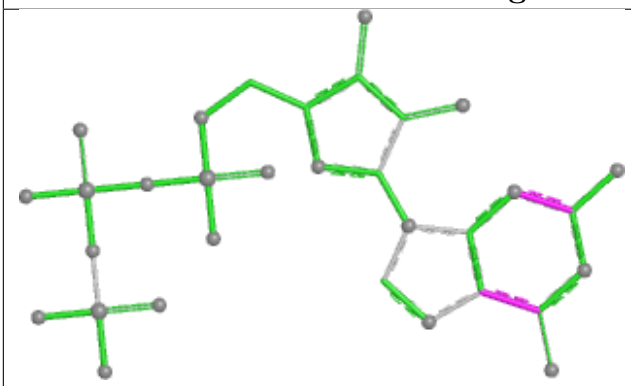


Torsions



Rings

Ligand GTP GB 502



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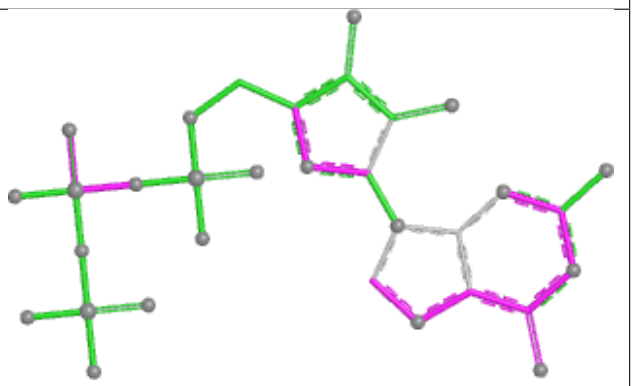

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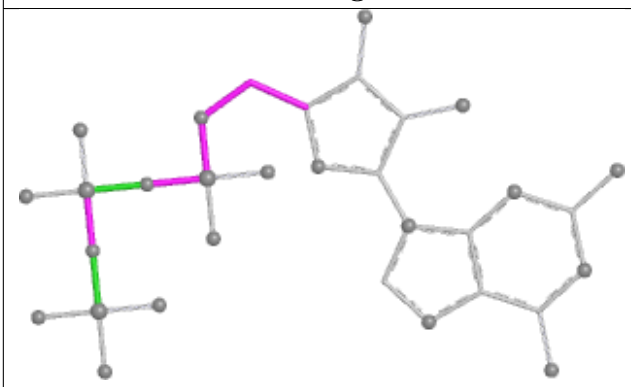

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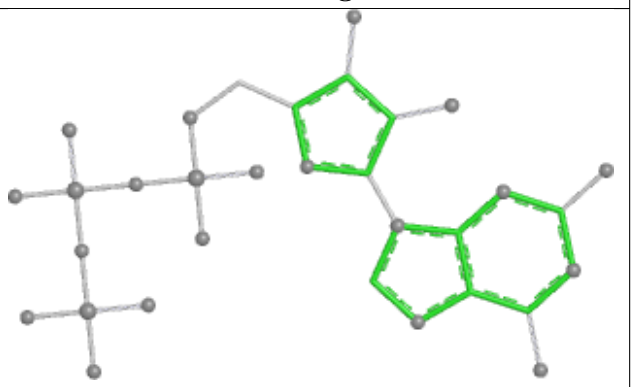
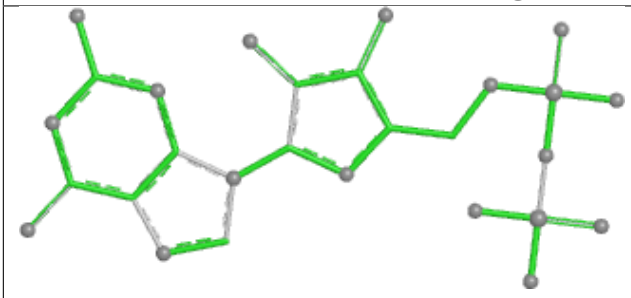


Rings

Ligand GDP PB 501



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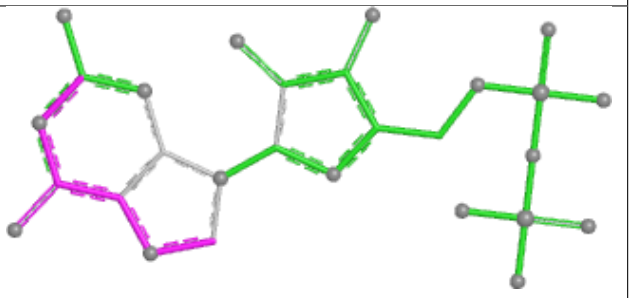
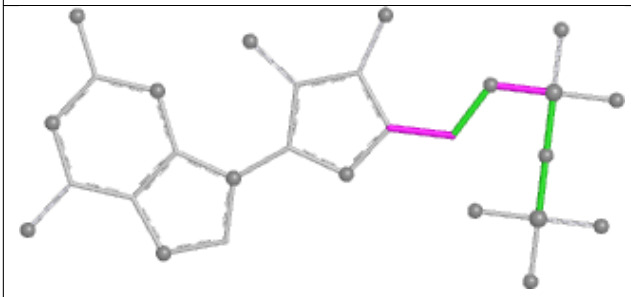


Bond angles



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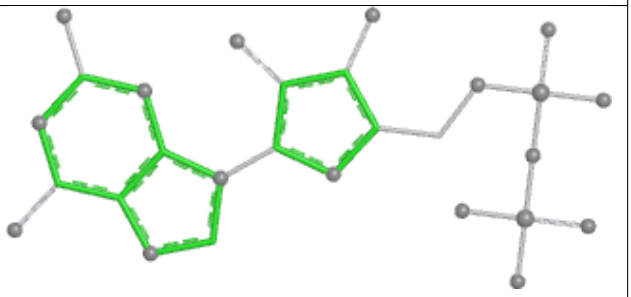

Rings

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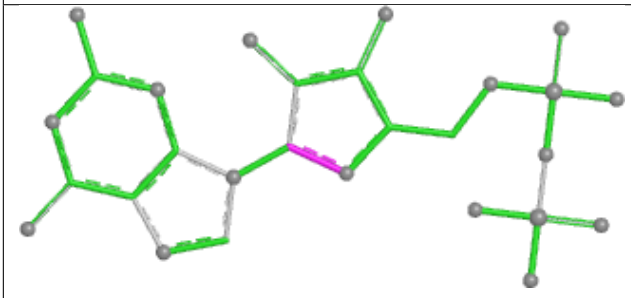

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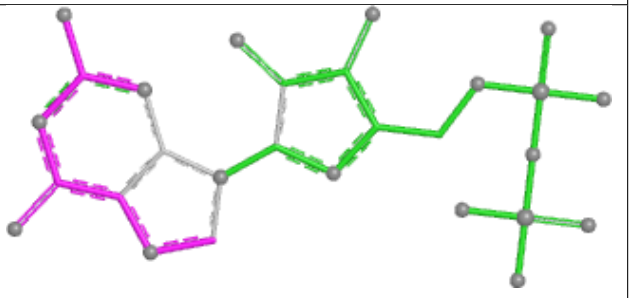

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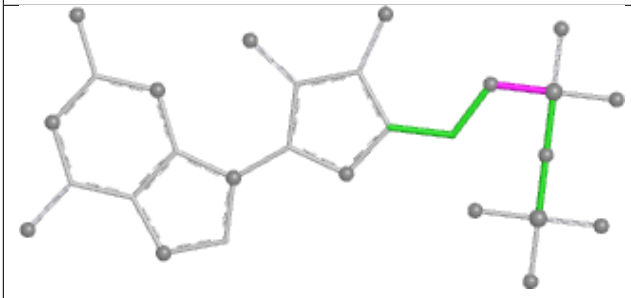

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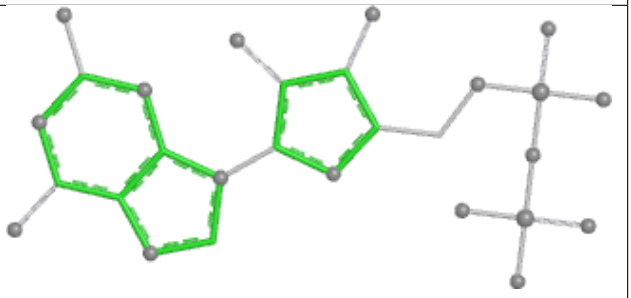

Rings

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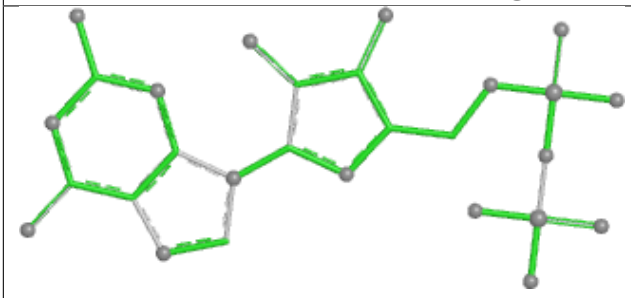

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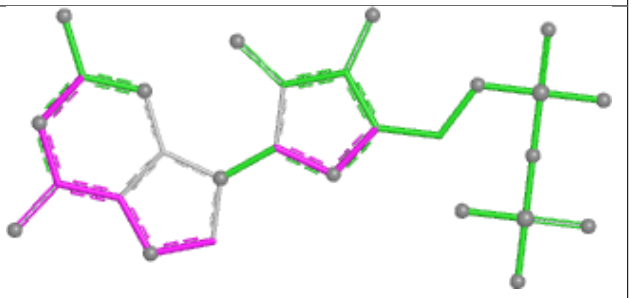

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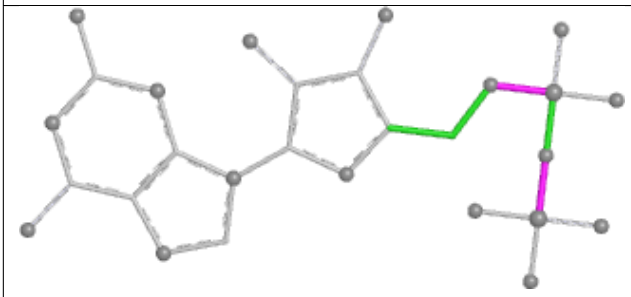

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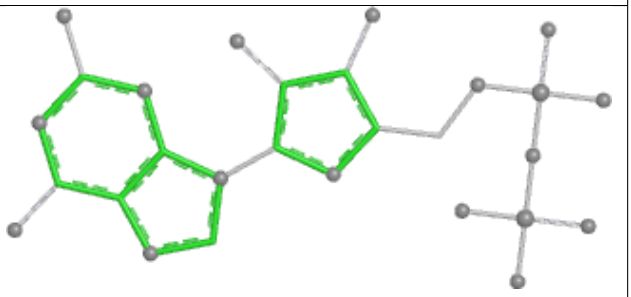
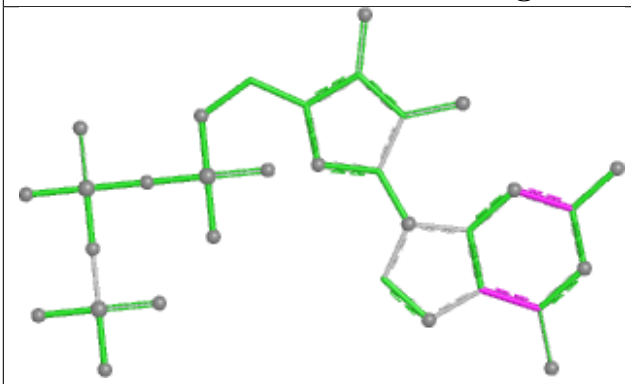


Rings

Ligand GTP IA 501



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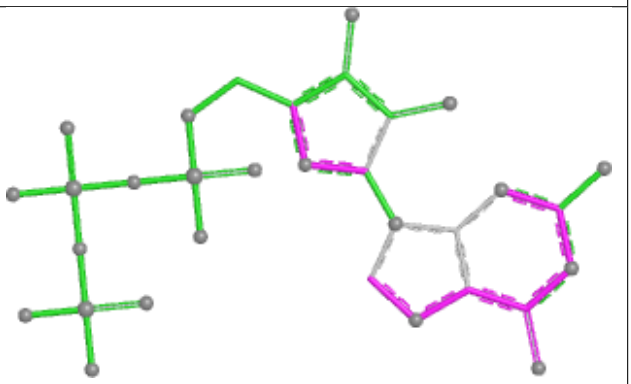

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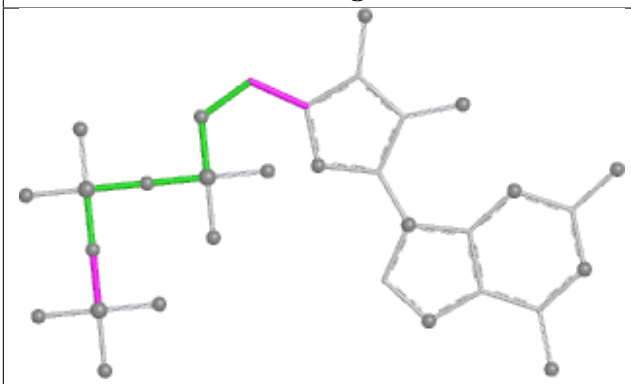

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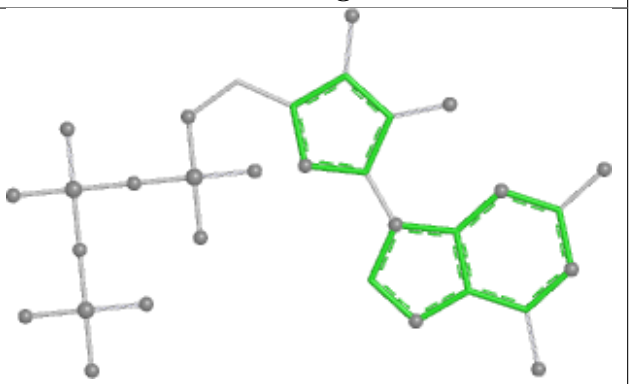
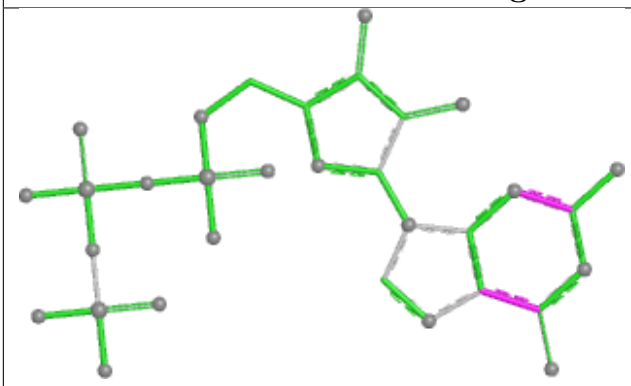


Rings

Ligand GTP PD 501



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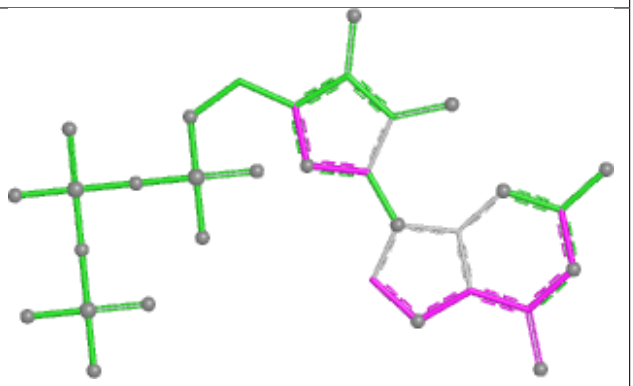

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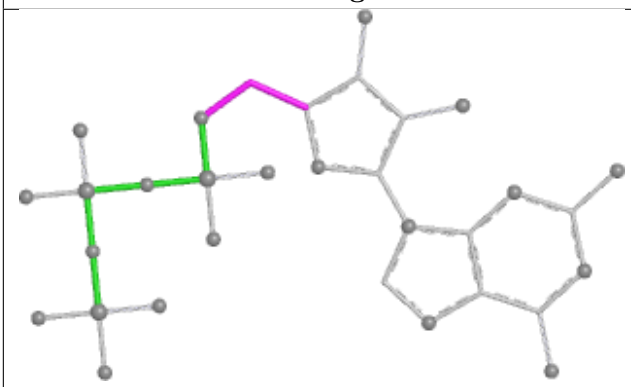

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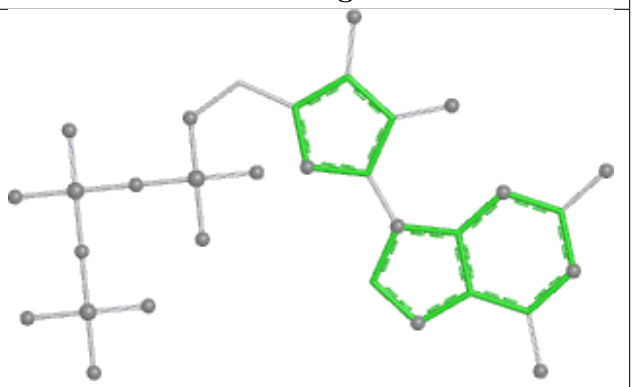

Rings

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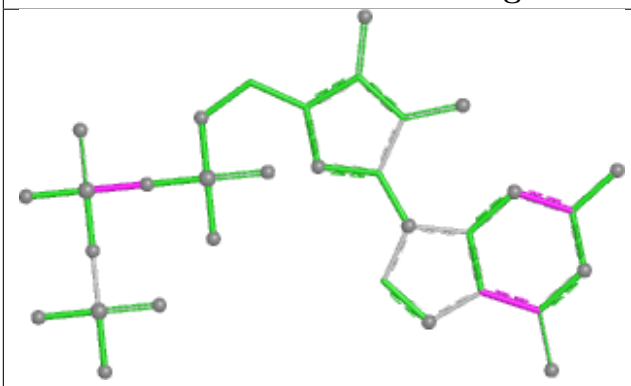

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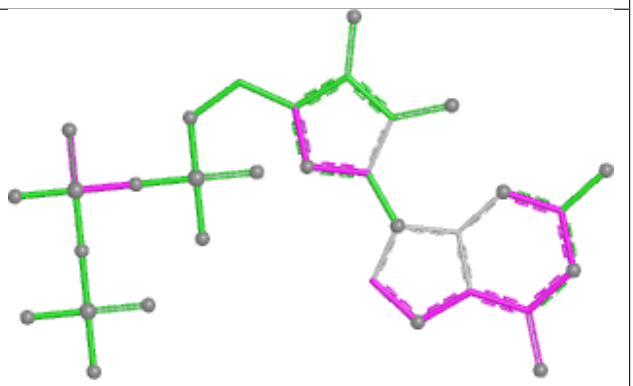

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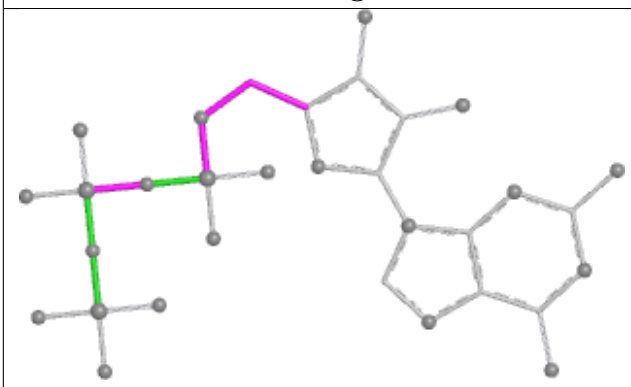

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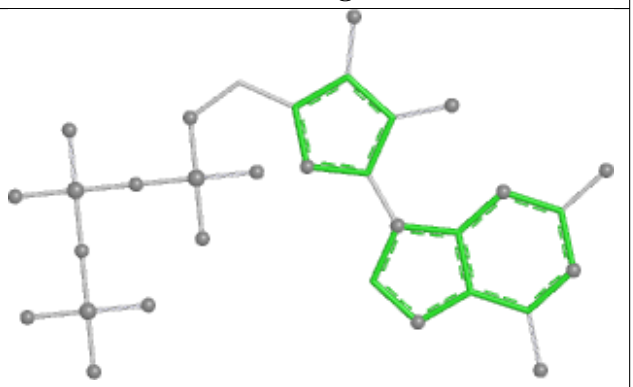
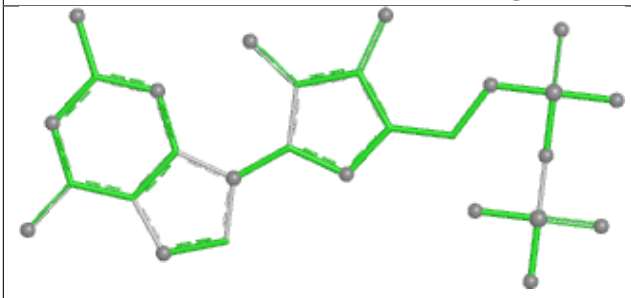


Rings

Ligand GDP HB 501



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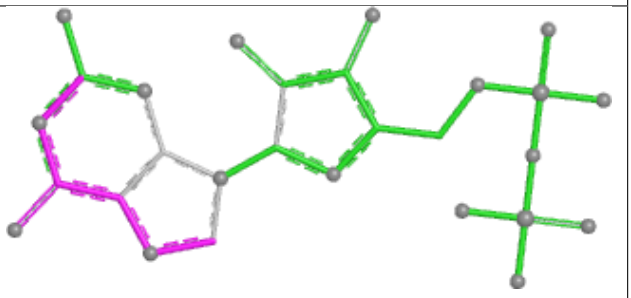

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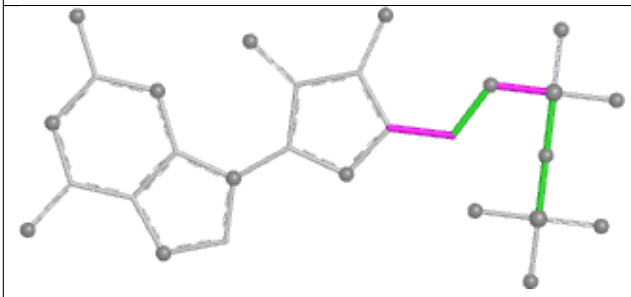

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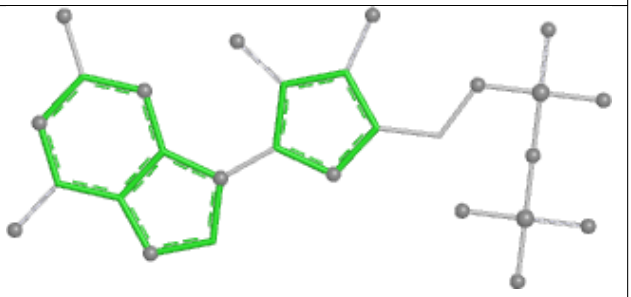
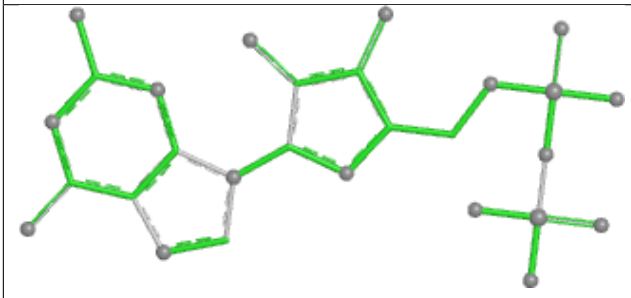


Rings

Ligand GDP DO 501



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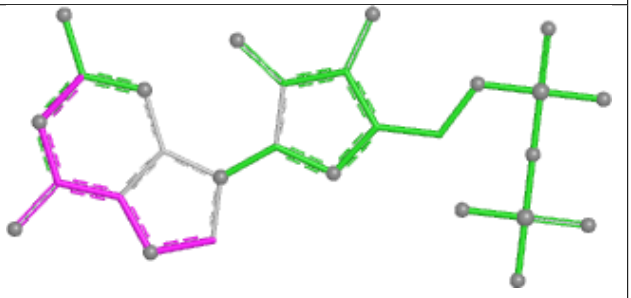
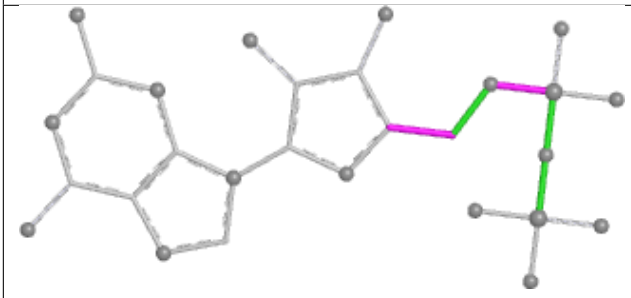


Bond angles



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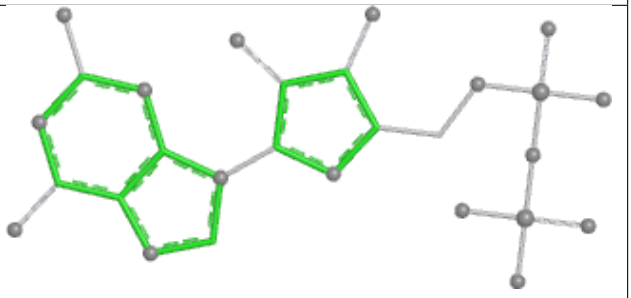

Rings

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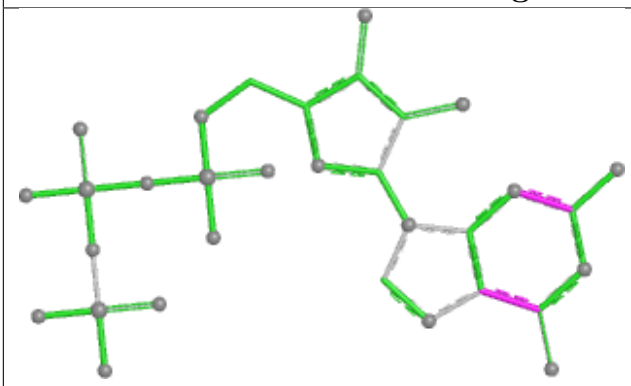
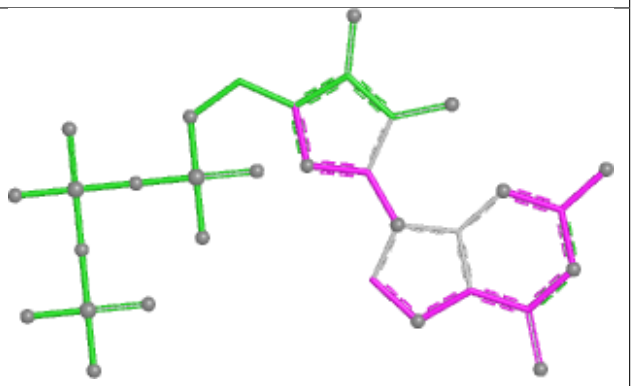


Bond lengths



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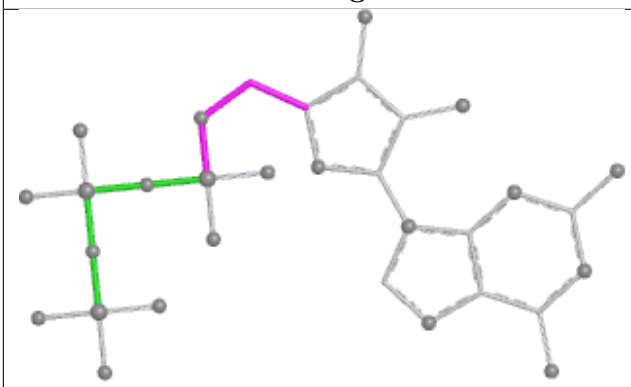
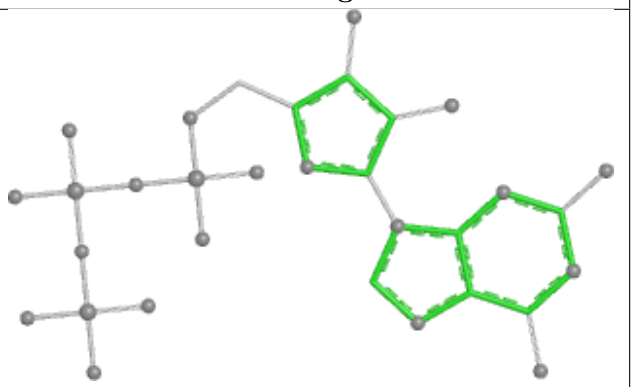
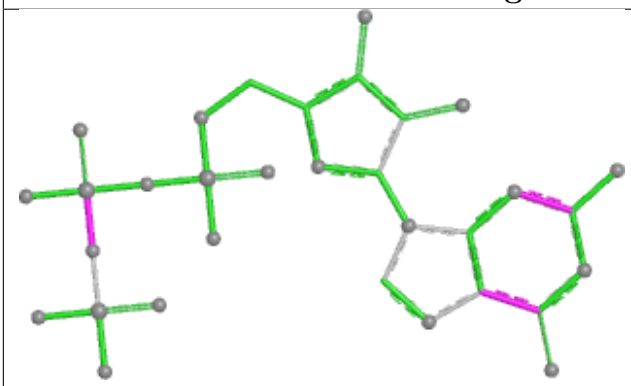


Torsions



Rings

Ligand GTP NM 501



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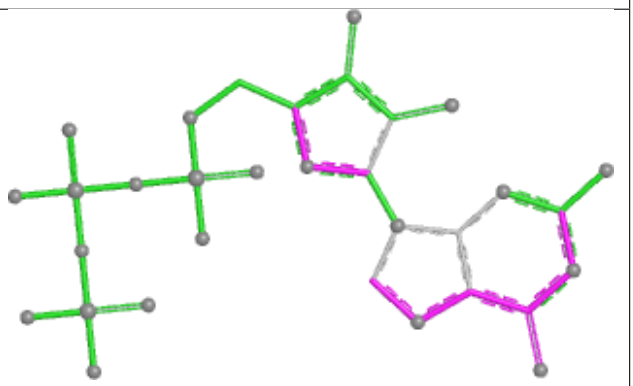

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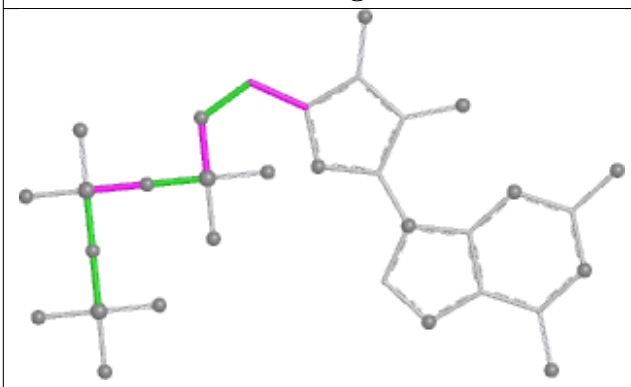

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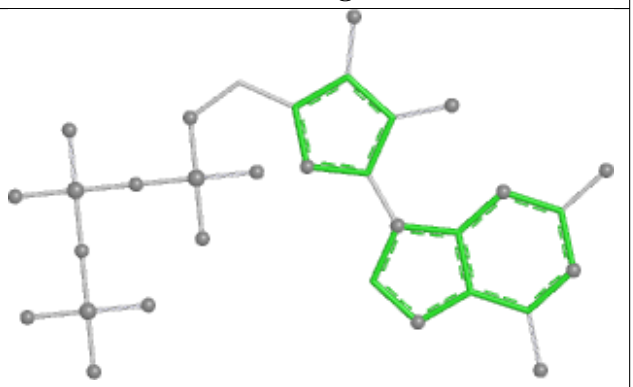
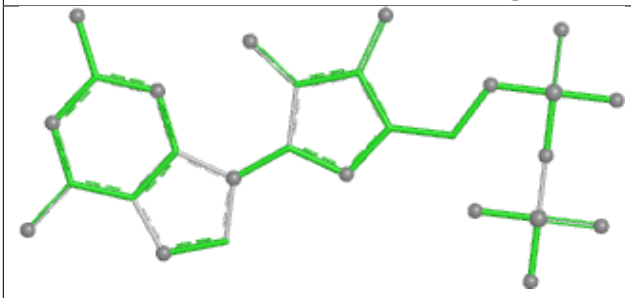


Rings

Ligand GDP DN 501



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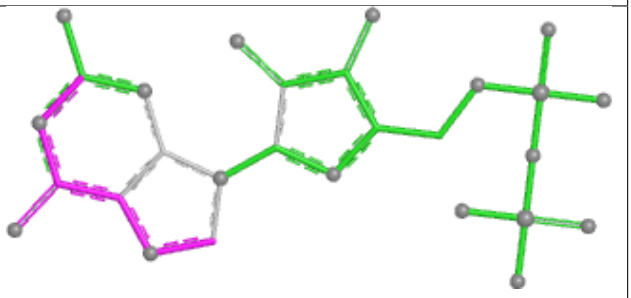

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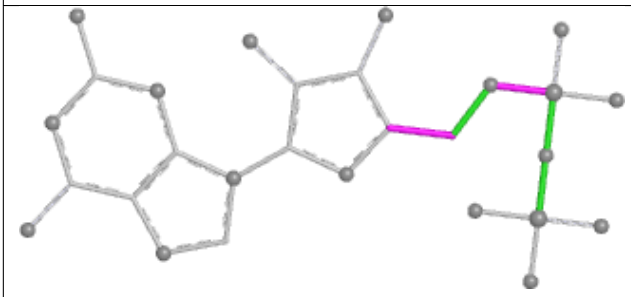

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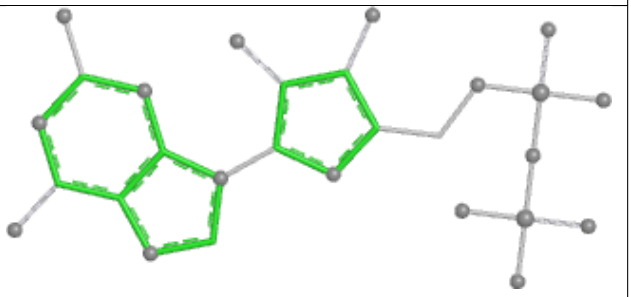

Rings

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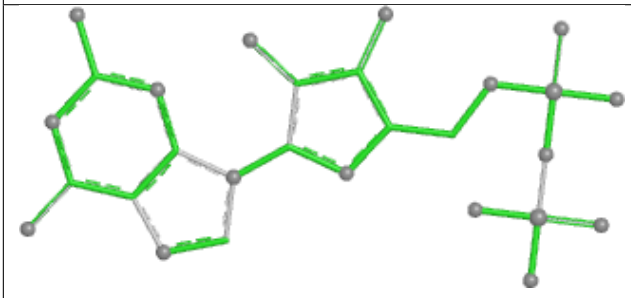

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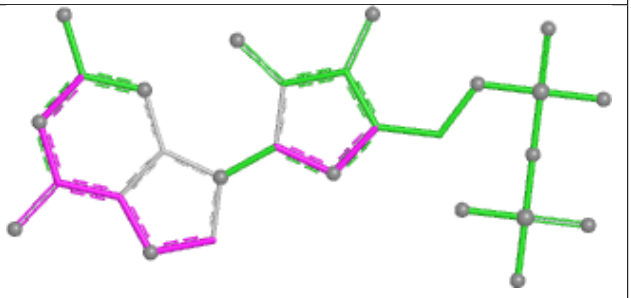

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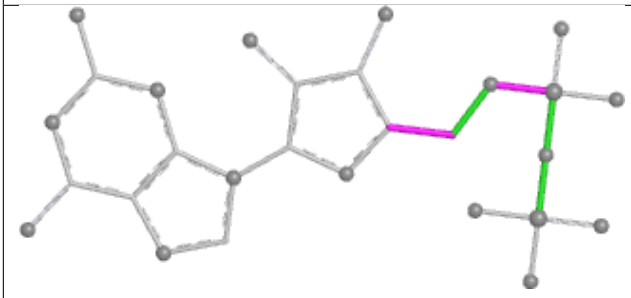

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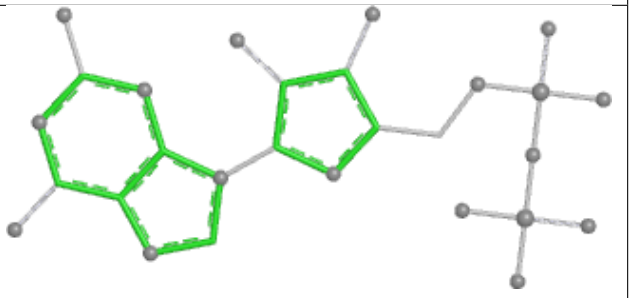

Rings

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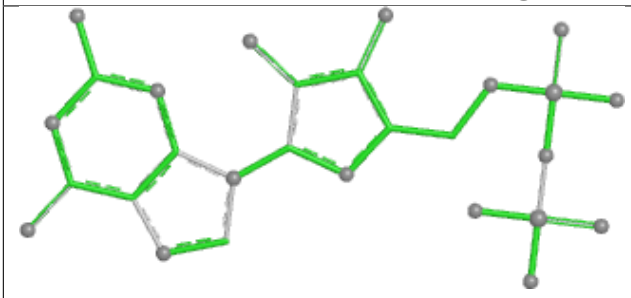

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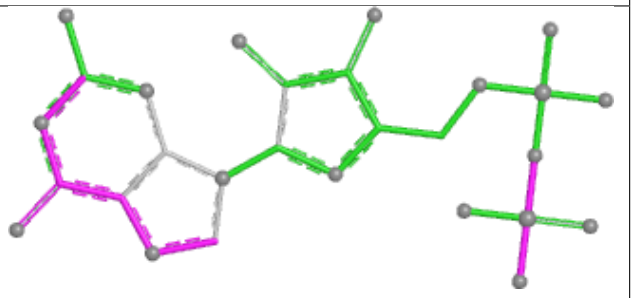

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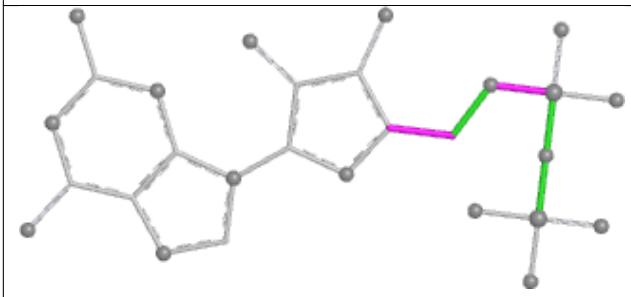

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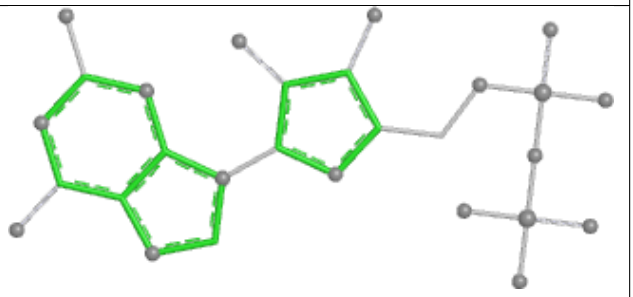
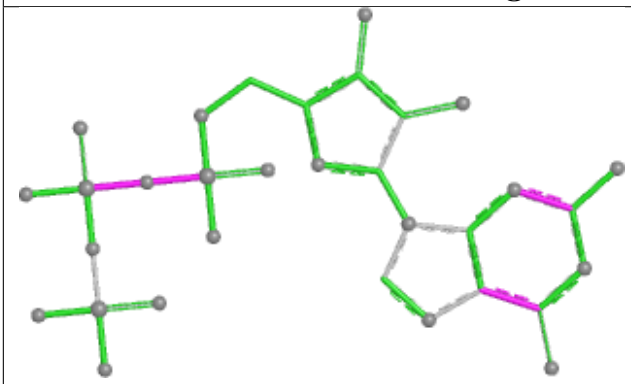


Rings

Ligand GTP OM 501



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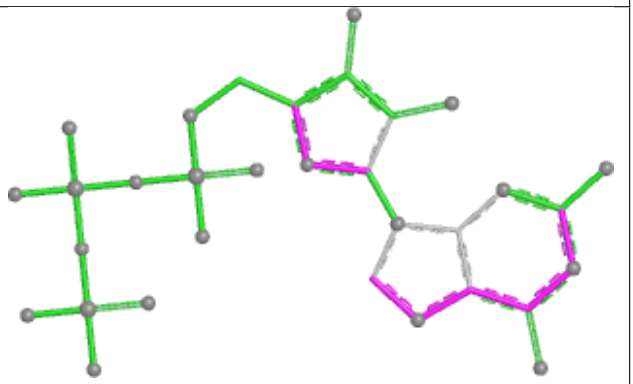

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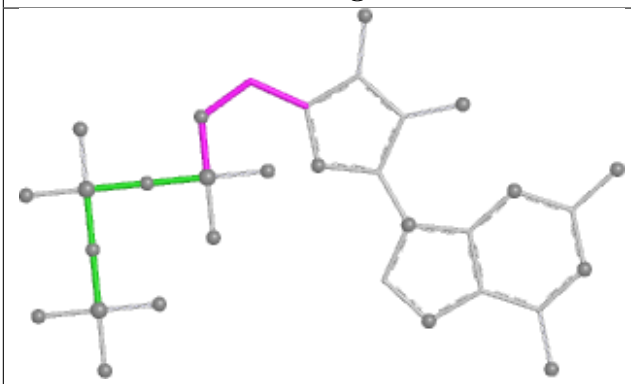

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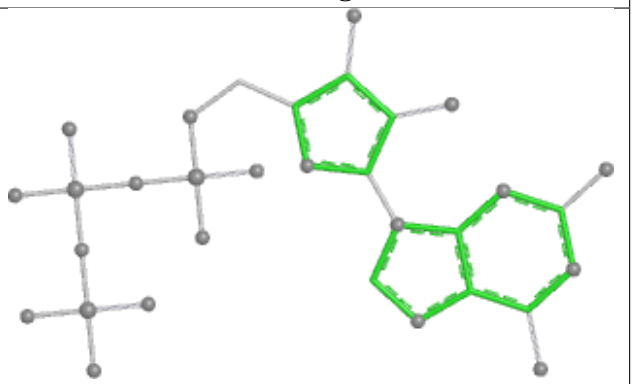
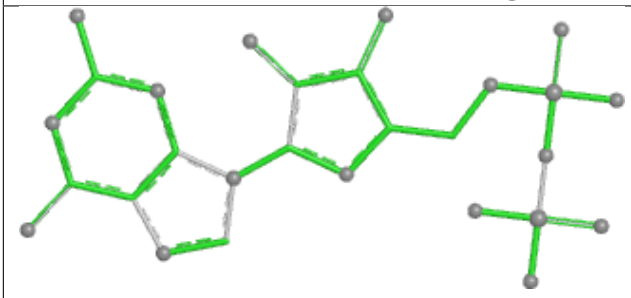


Rings

Ligand GDP MN 502



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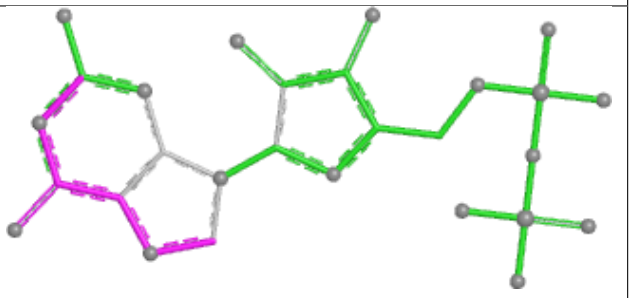

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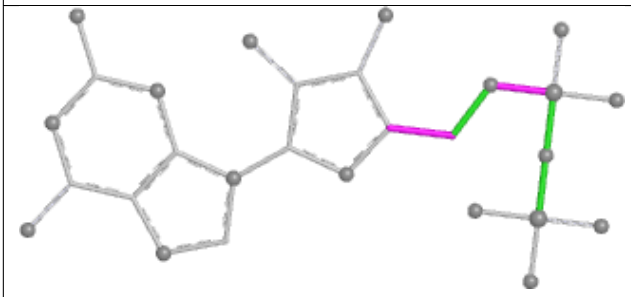

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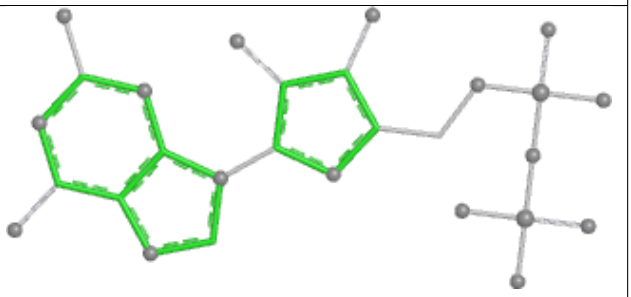
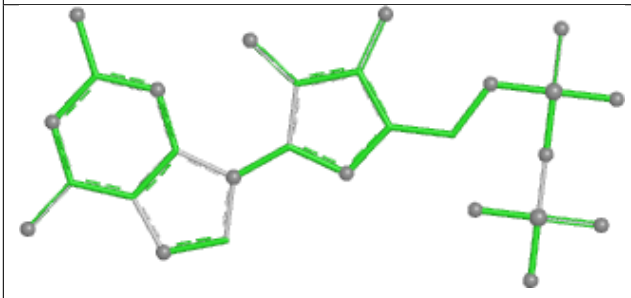


Rings

Ligand GDP OB 501



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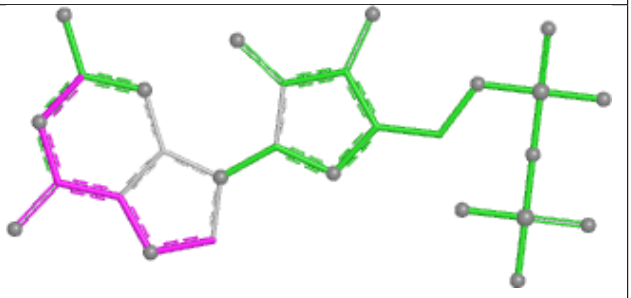

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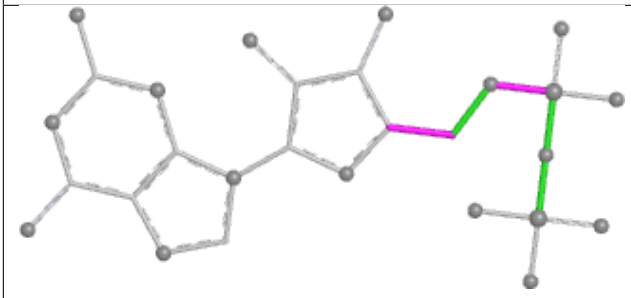

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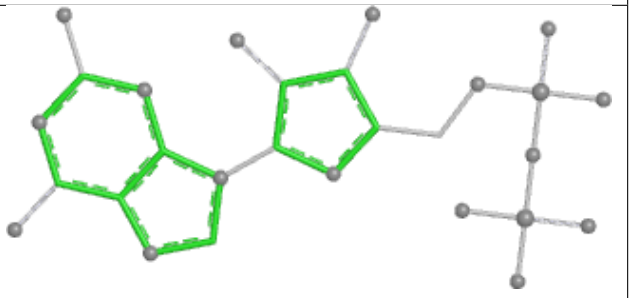
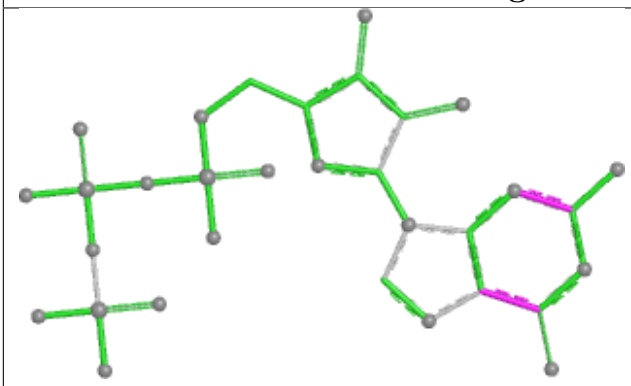


Rings

Ligand GTP OO 501



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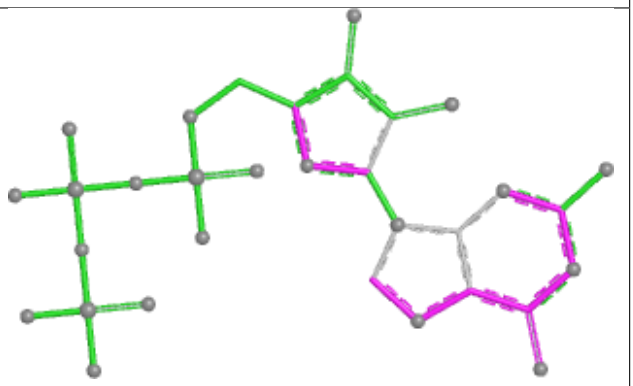

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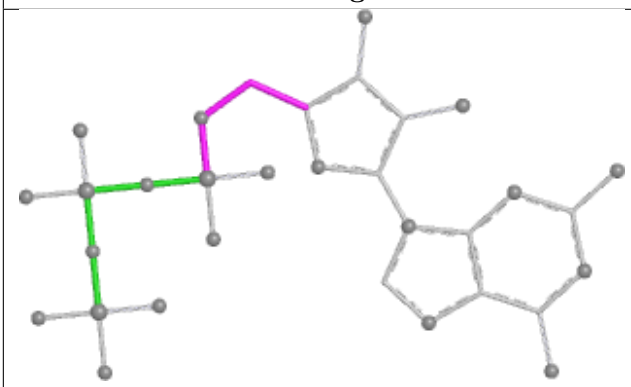

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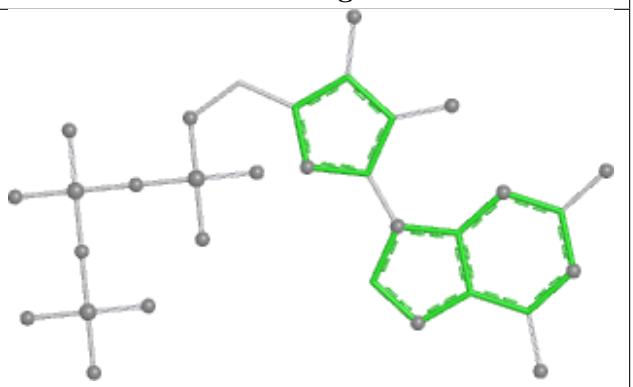
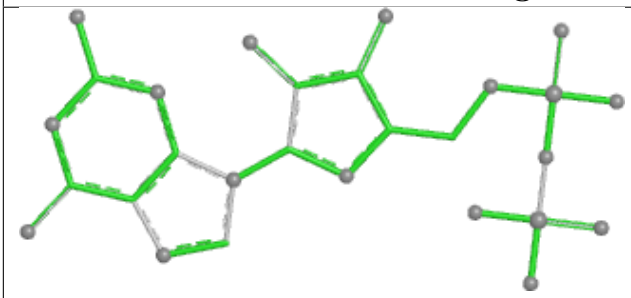


Rings

Ligand GDP SL 502



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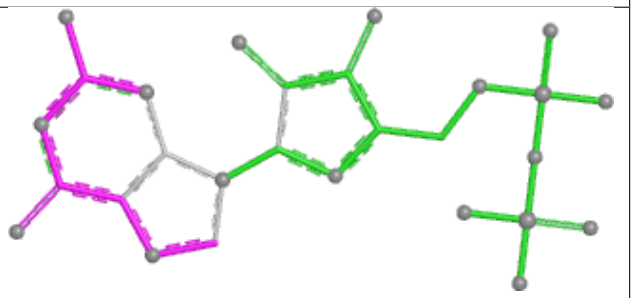

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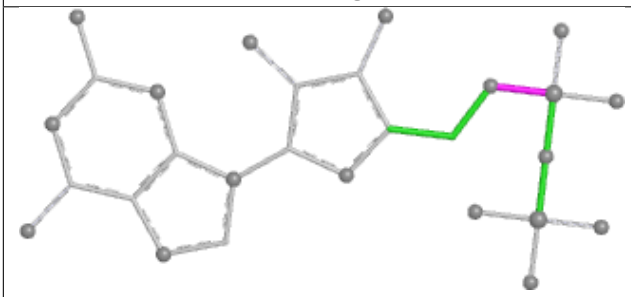

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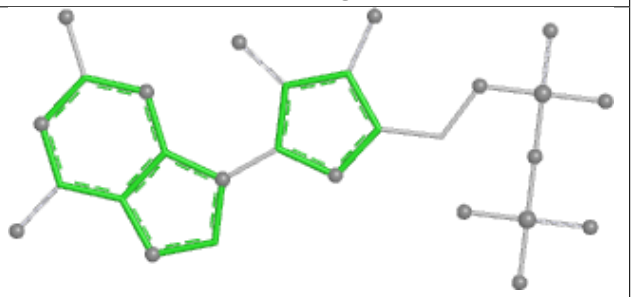
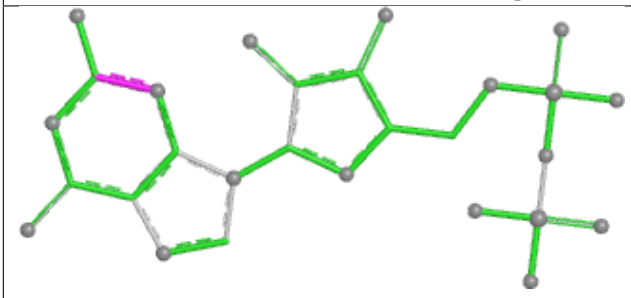


Rings

Ligand GDP FN 502



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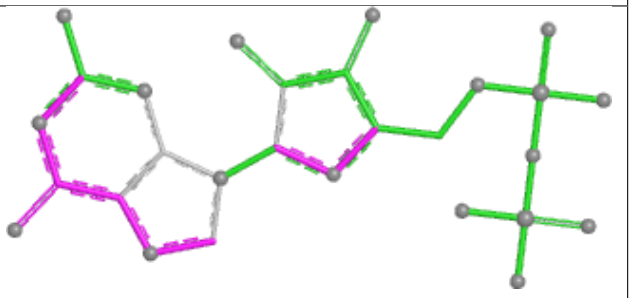

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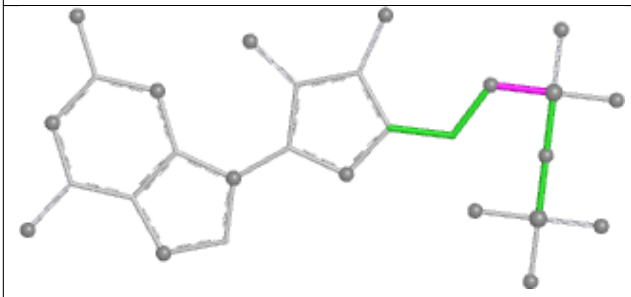

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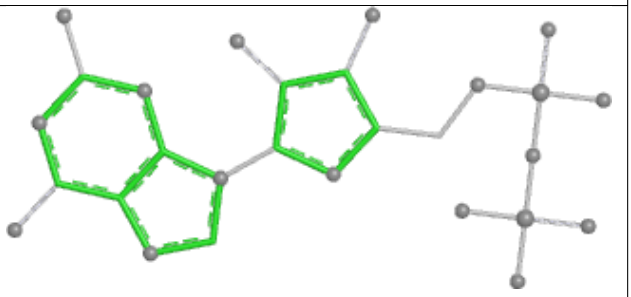
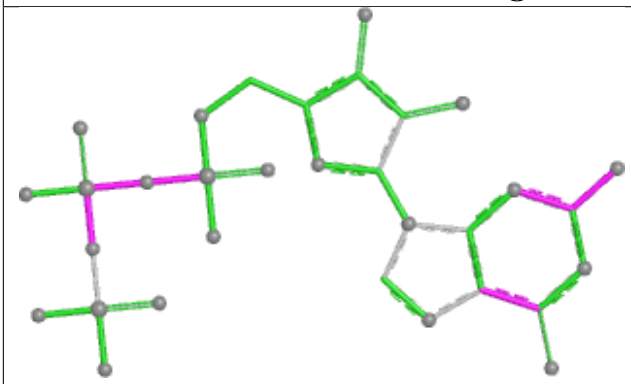


Rings

Ligand GTP UA 501



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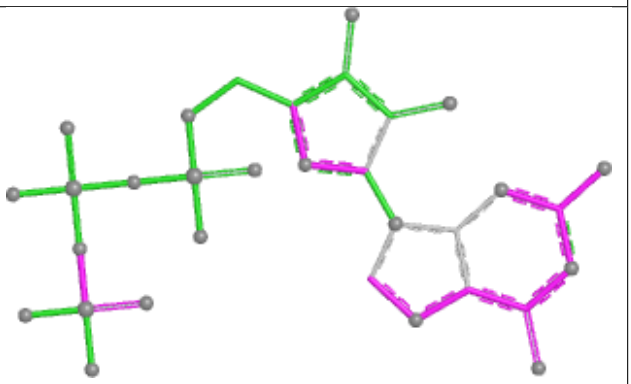

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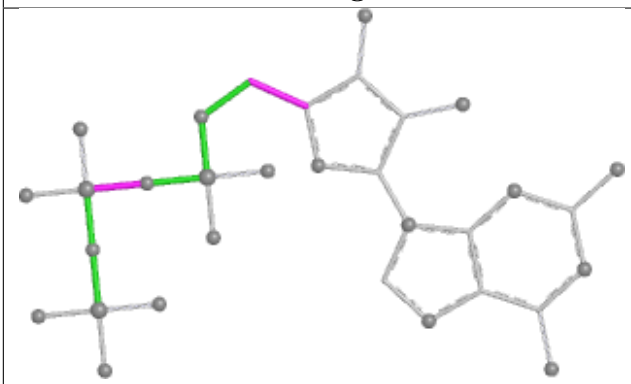

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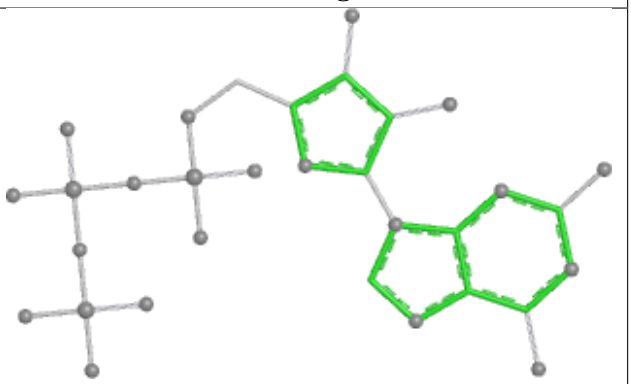
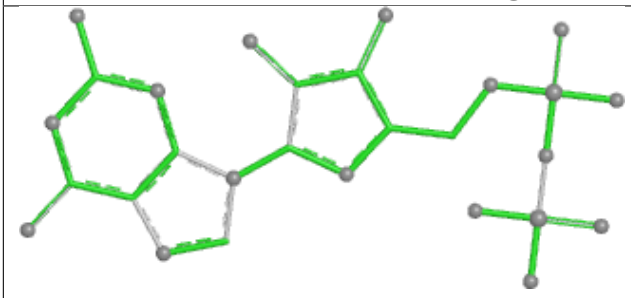


Rings

Ligand GDP TM 501



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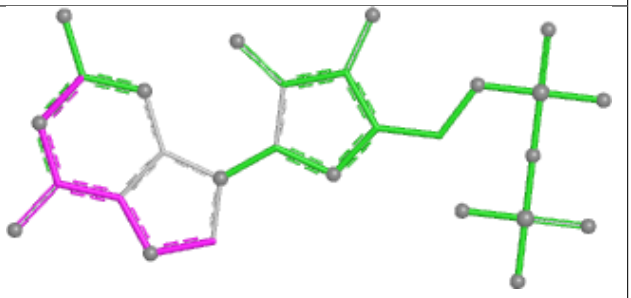

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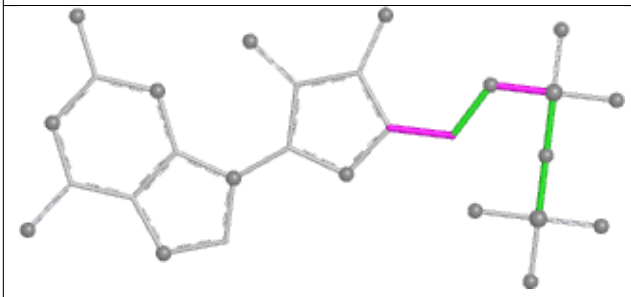

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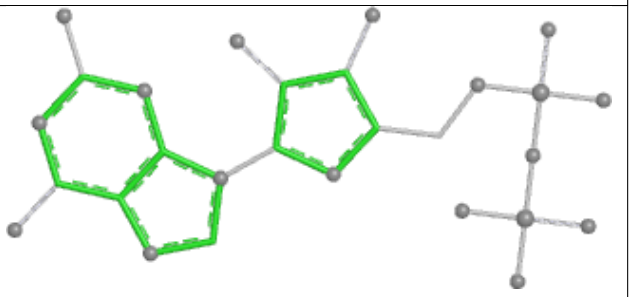
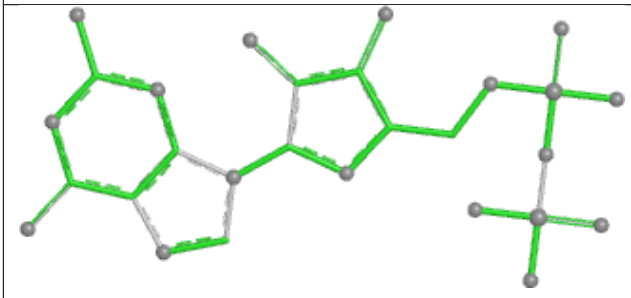


Rings

Ligand GDP WQ 501



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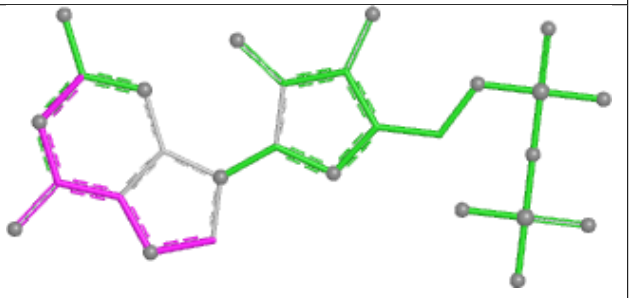

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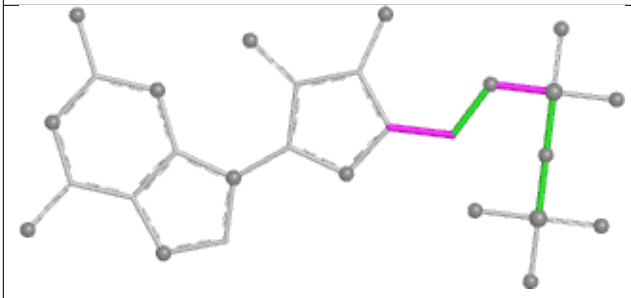

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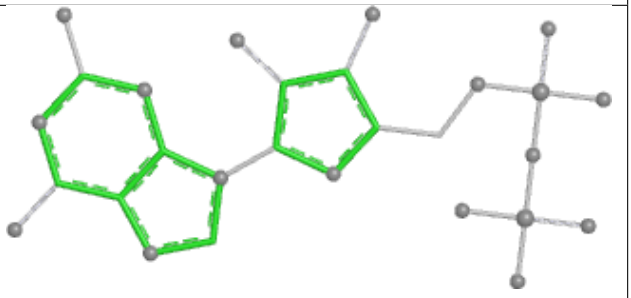
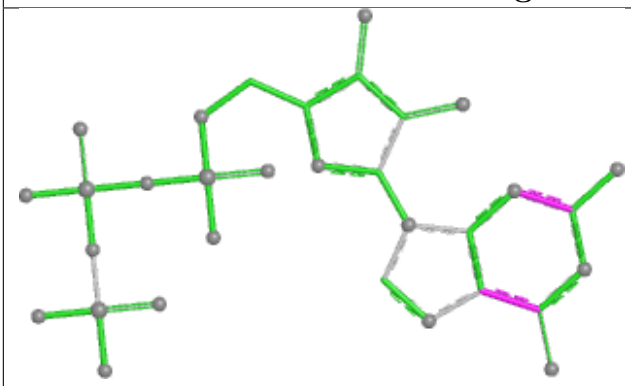


Rings

Ligand GTP JE 501



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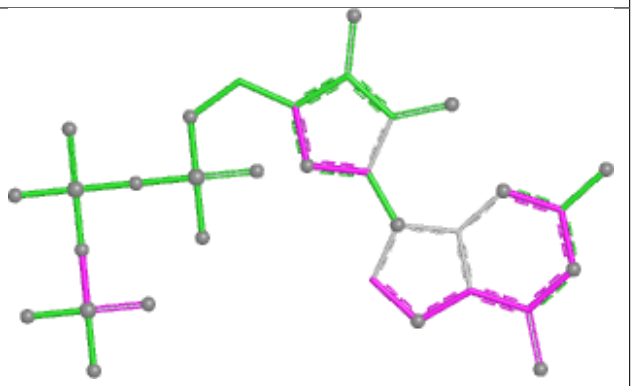

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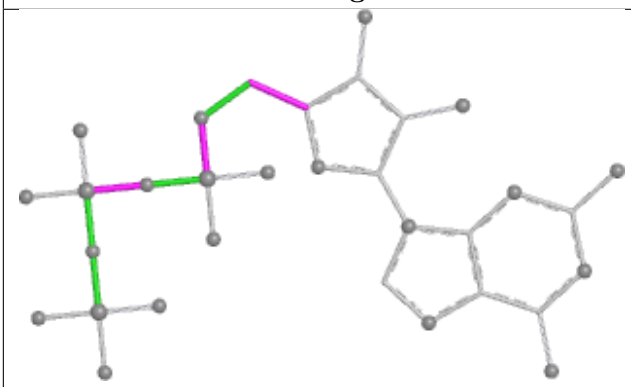
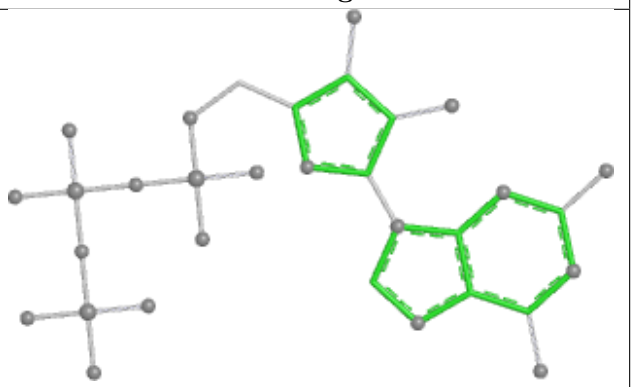
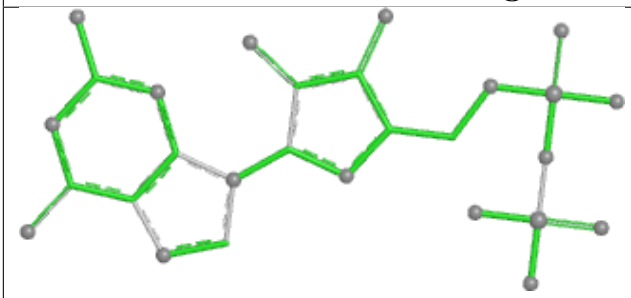


Torsions



Rings

Ligand GDP NM 502



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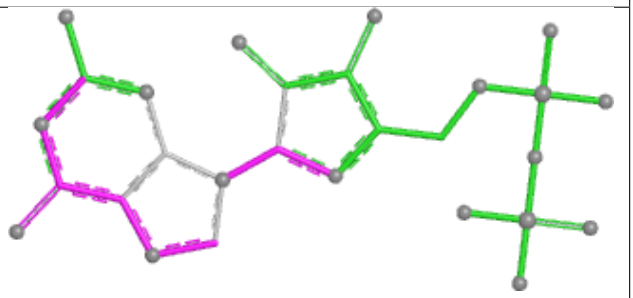

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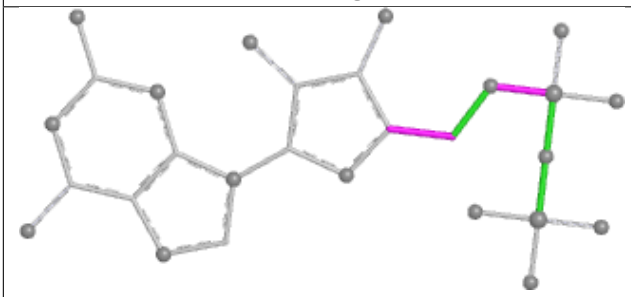

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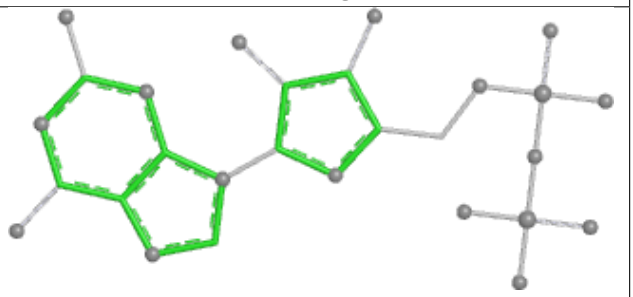
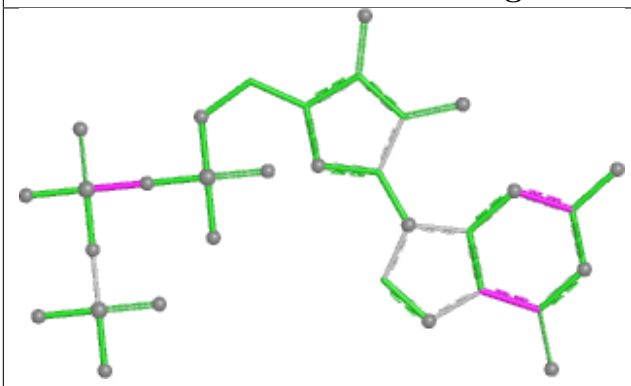


Rings

Ligand GTP MH 501



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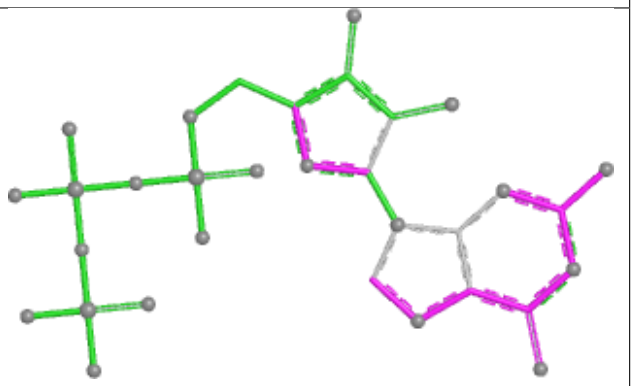

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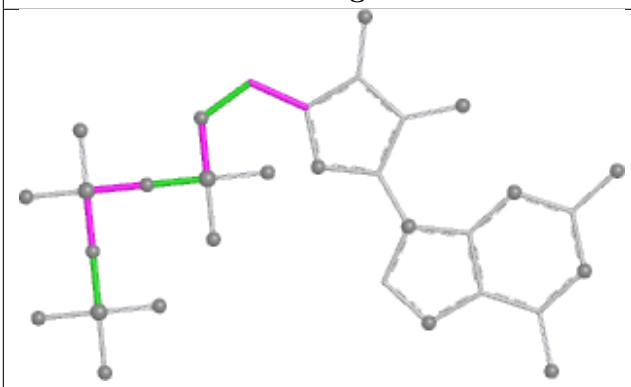

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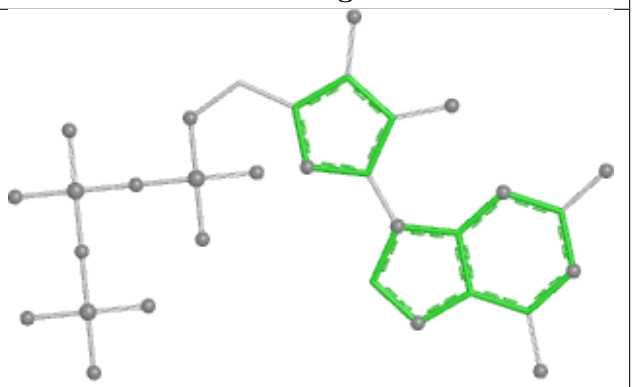
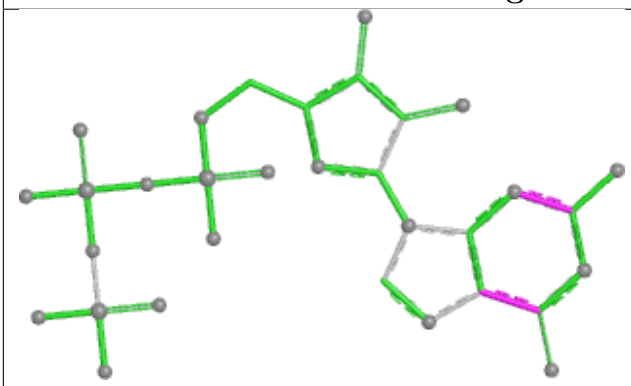


Rings

Ligand GTP PM 501



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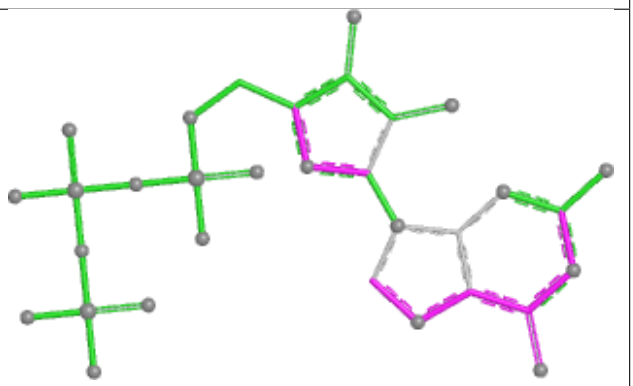

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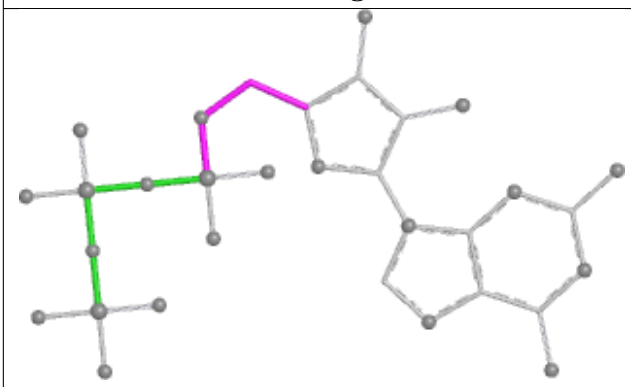

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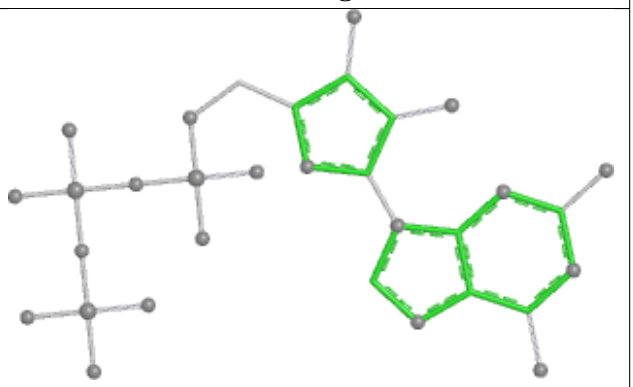

Rings

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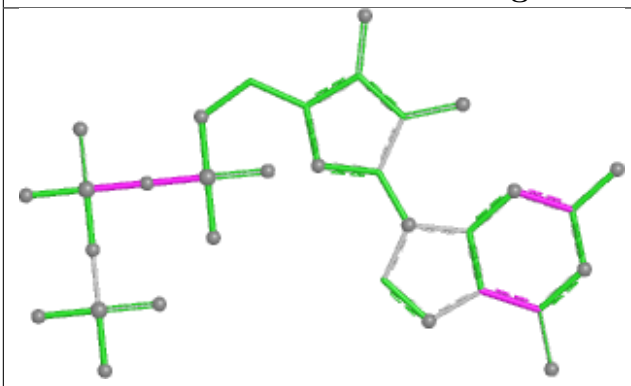

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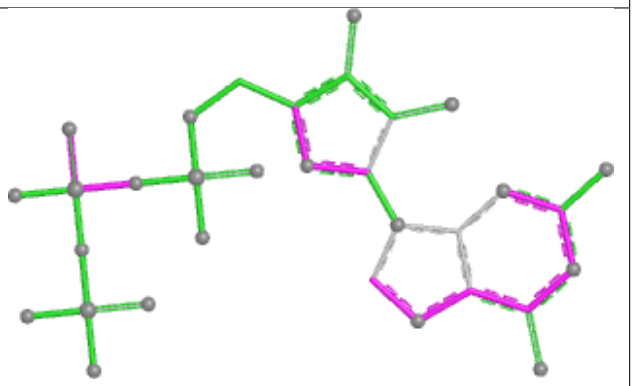

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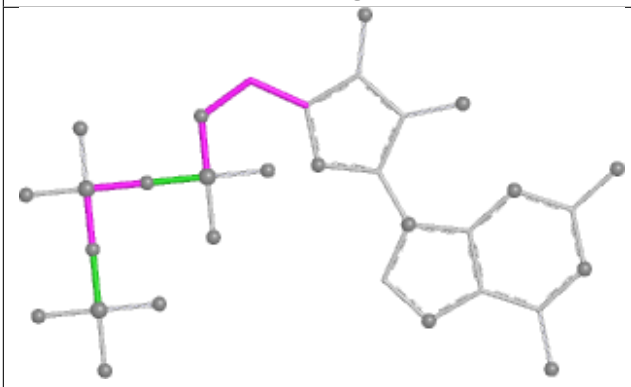

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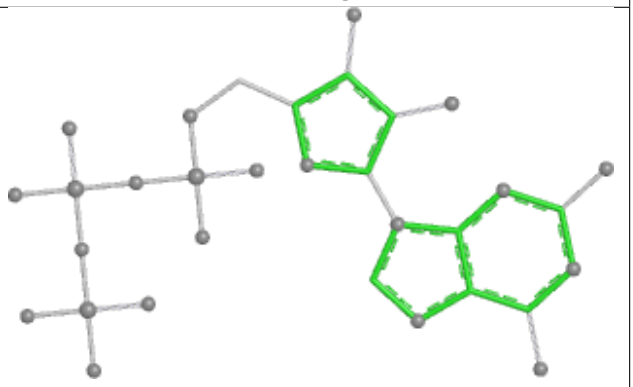

Rings

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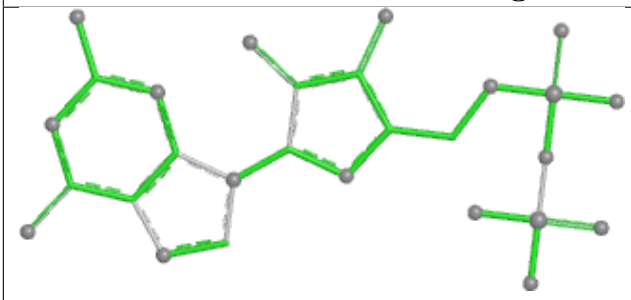

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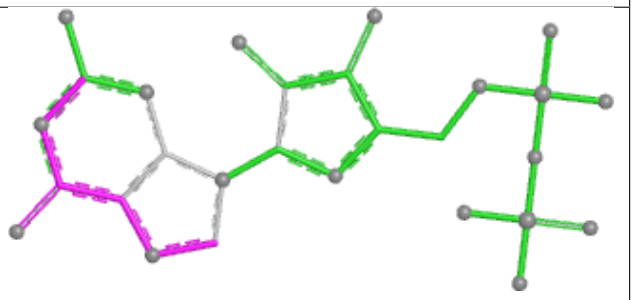

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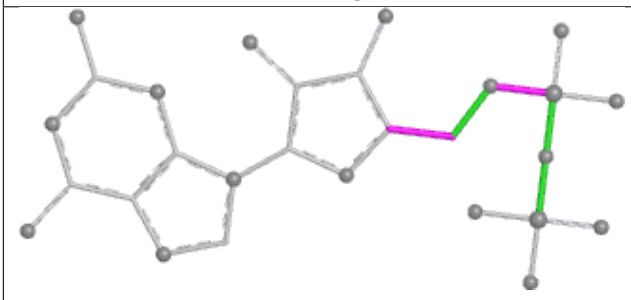

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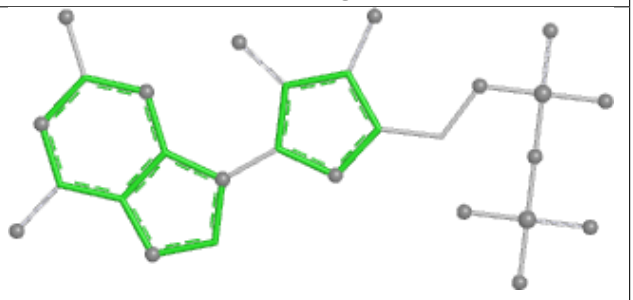
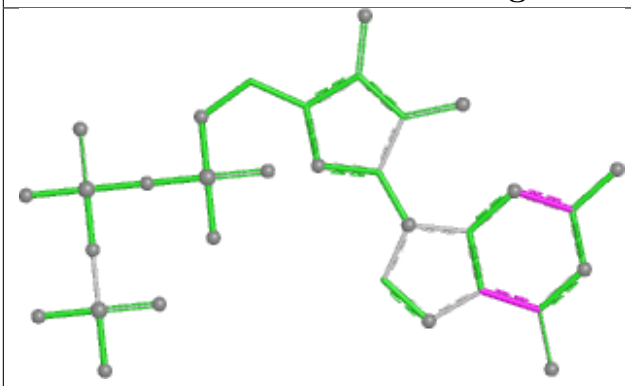


Rings

Ligand GTP CH 501



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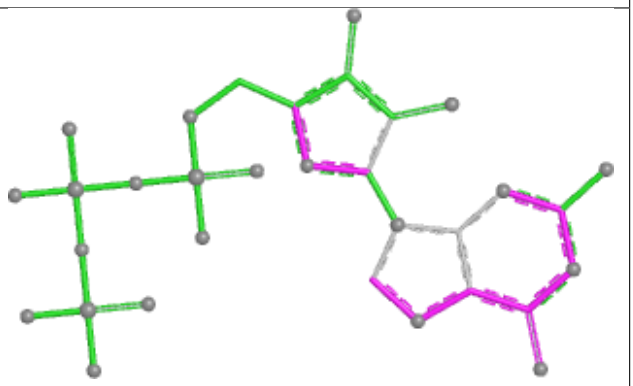

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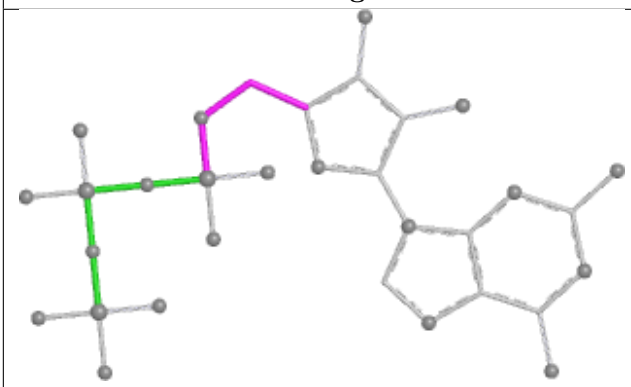

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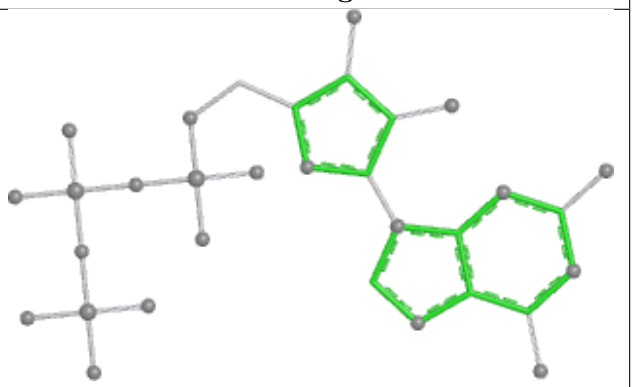

Rings

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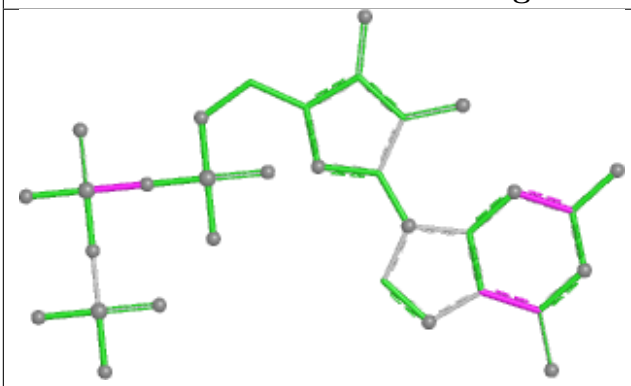

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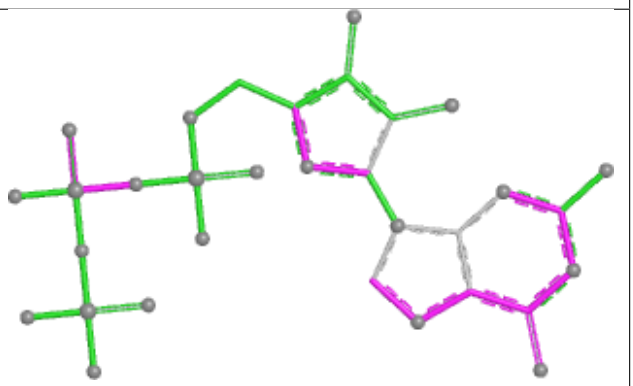

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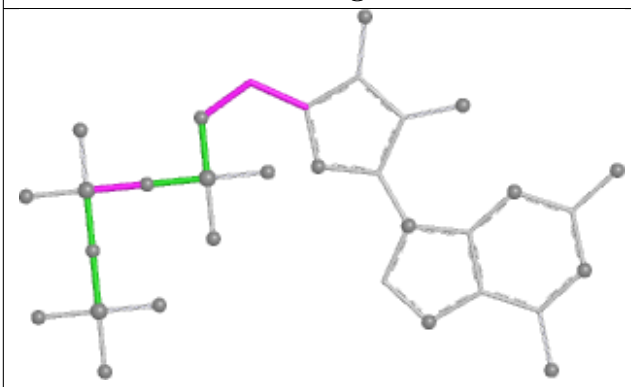

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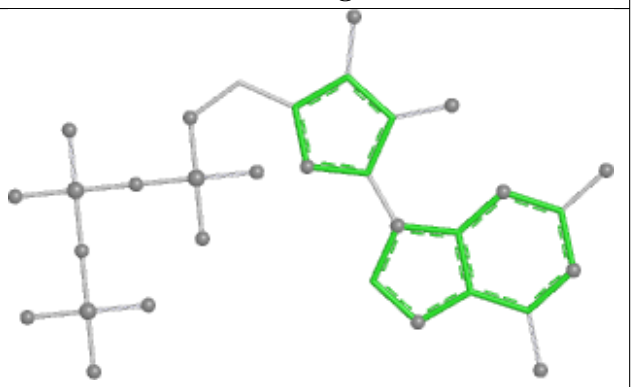
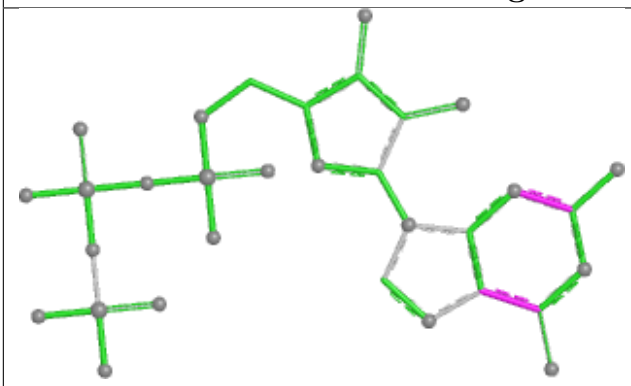


Rings

Ligand GTP KD 501



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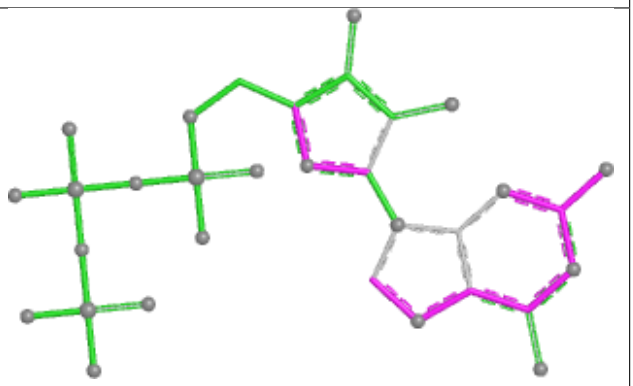

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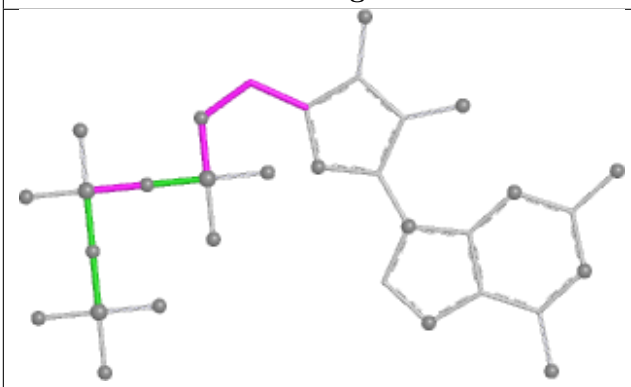

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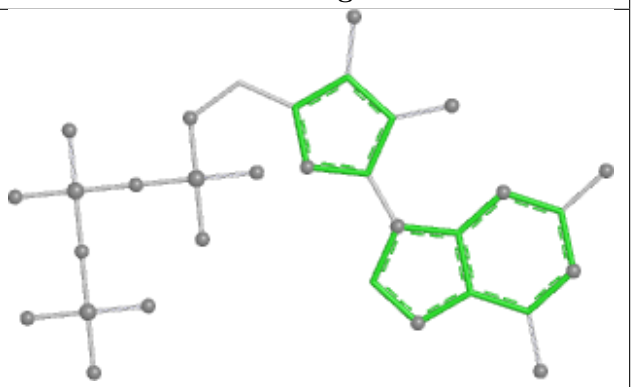

Rings

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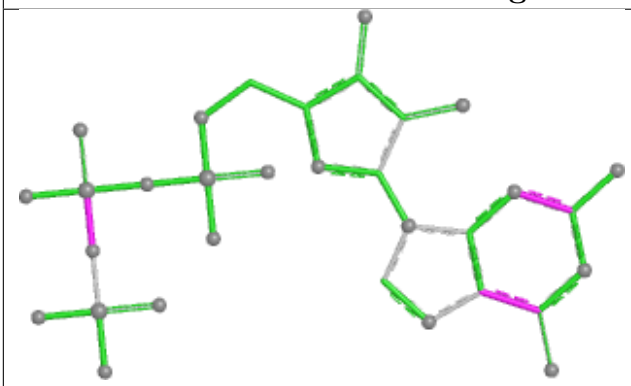

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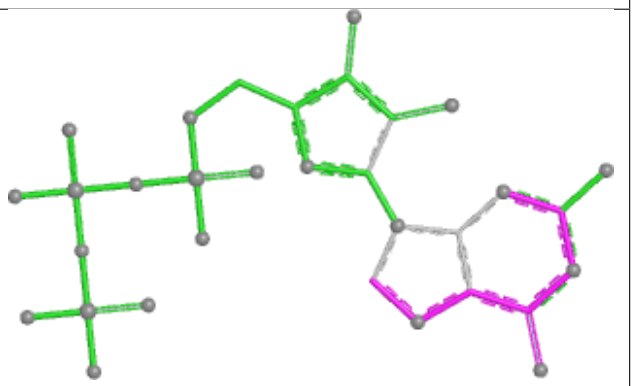

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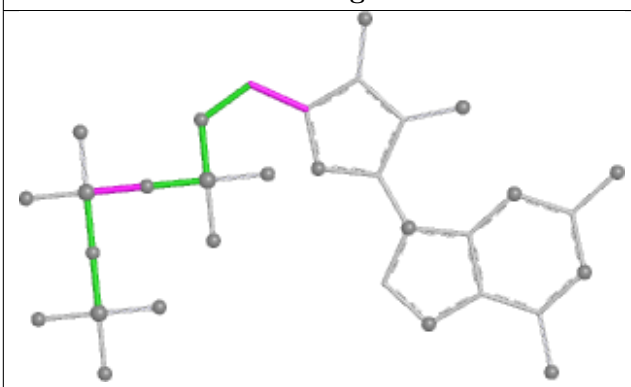

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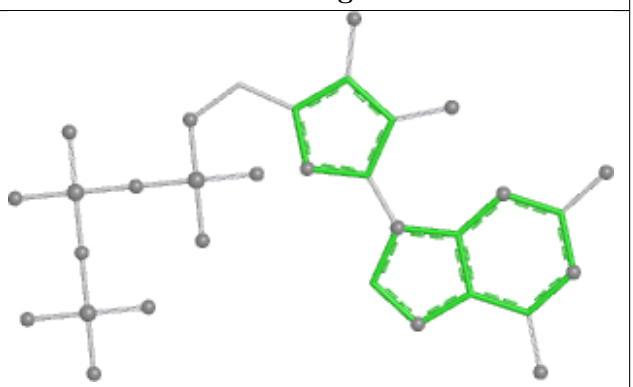
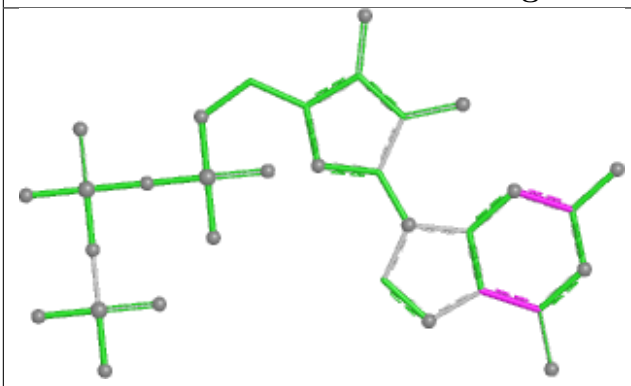


Rings

Ligand GTP II 501



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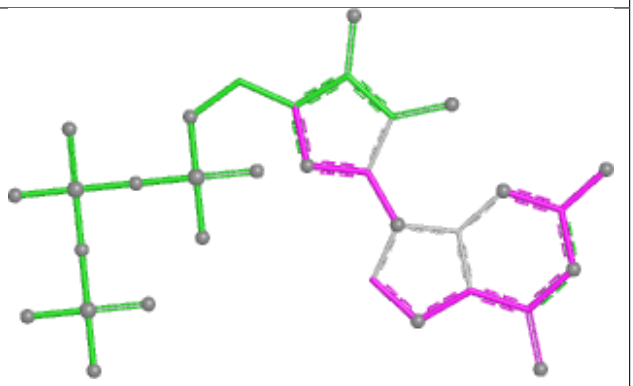

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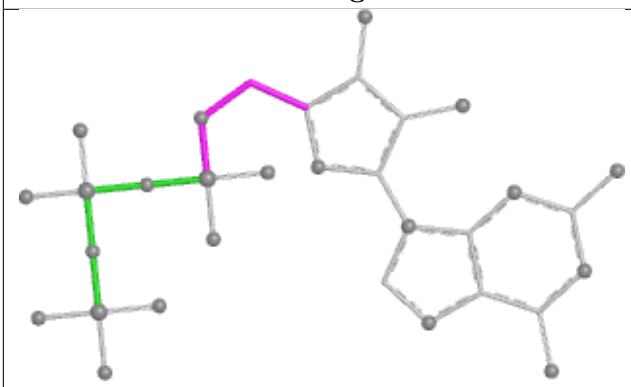

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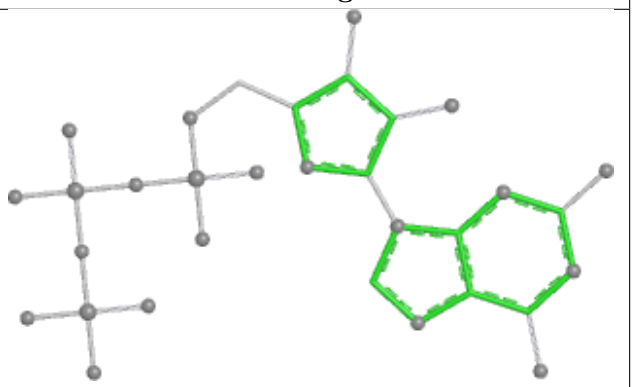

Rings

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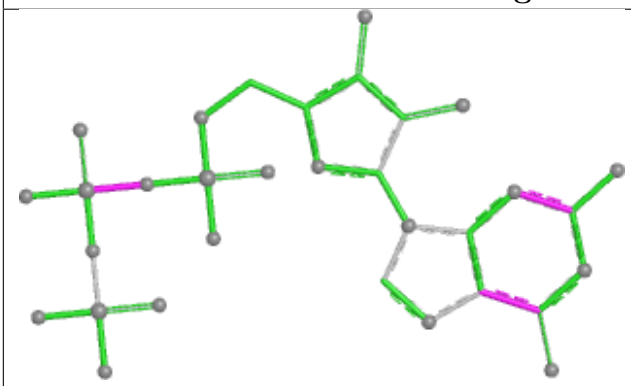

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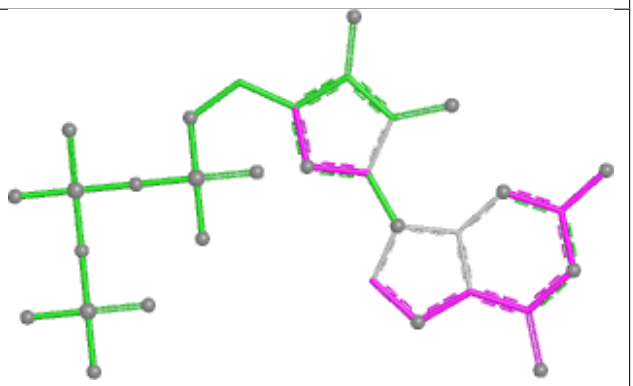

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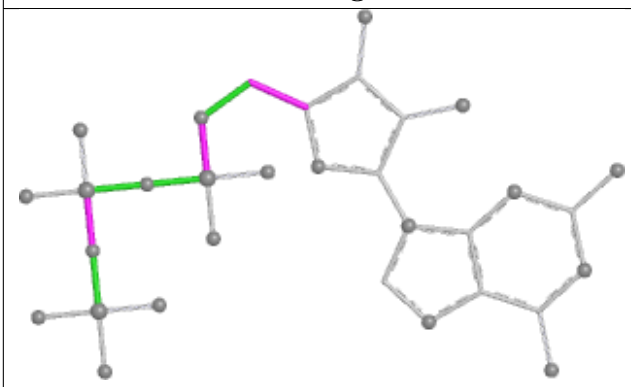

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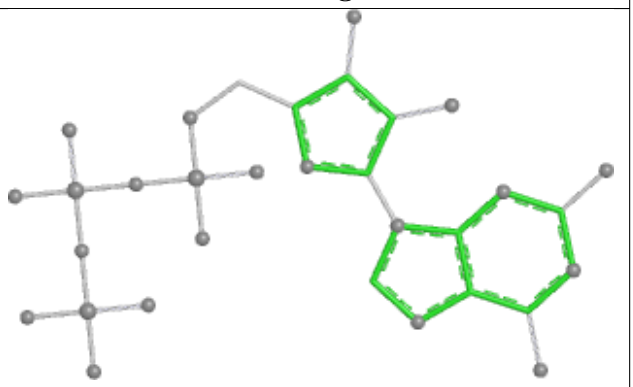
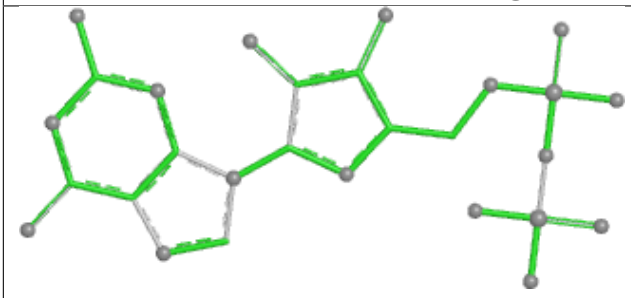


Rings

Ligand GDP ON 502



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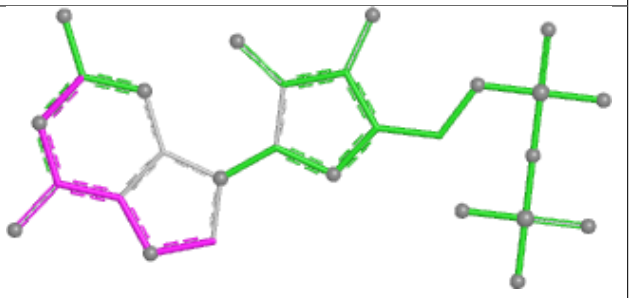

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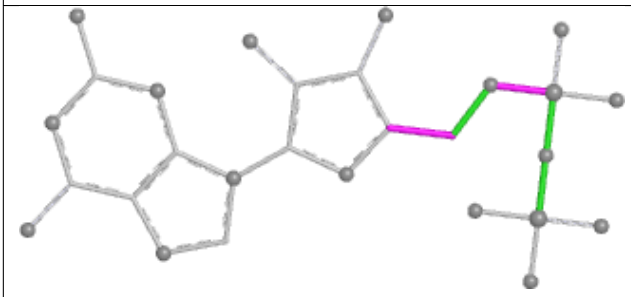

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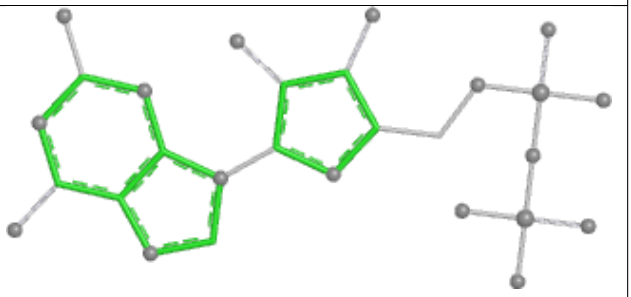
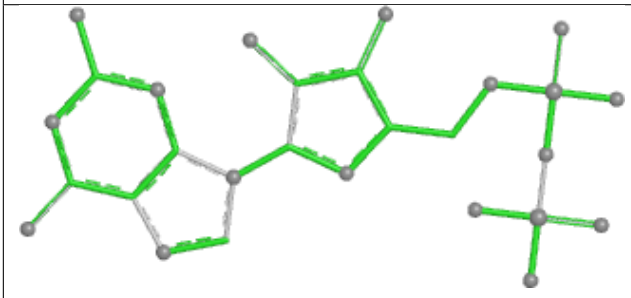


Rings

Ligand GDP EO 501



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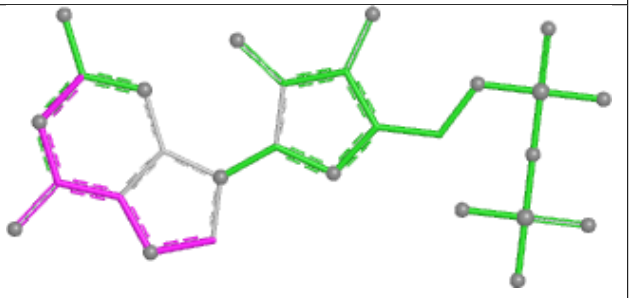

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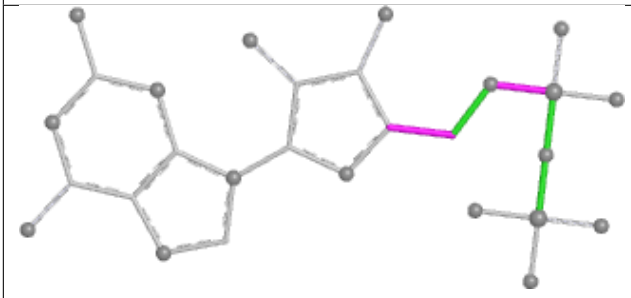

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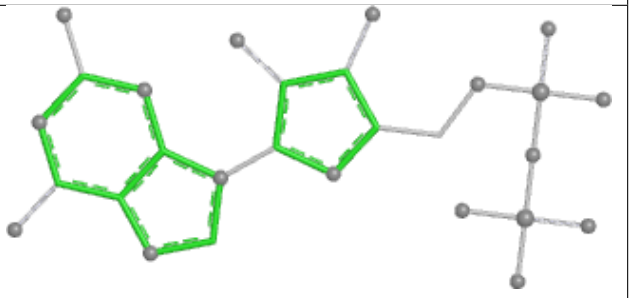
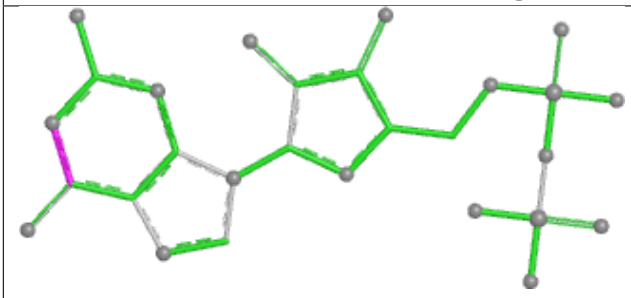
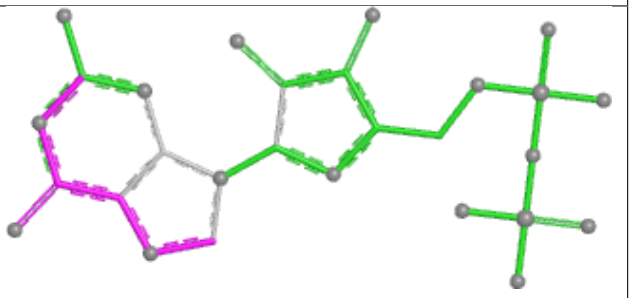


Rings

Ligand GDP RL 501



Bond lengths



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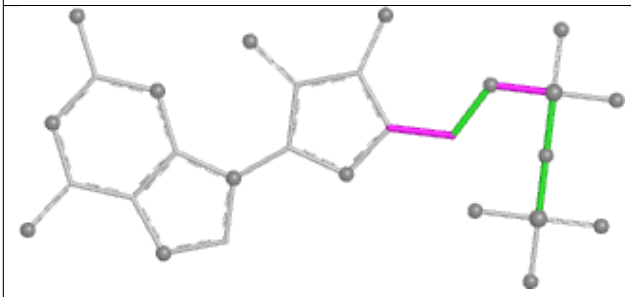
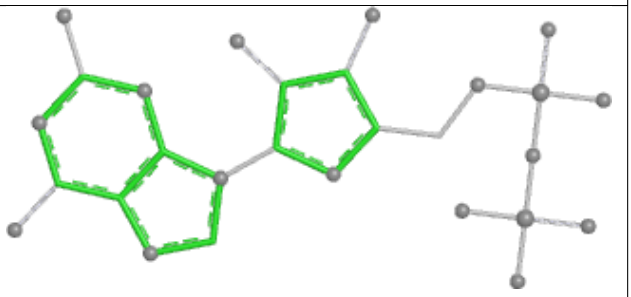
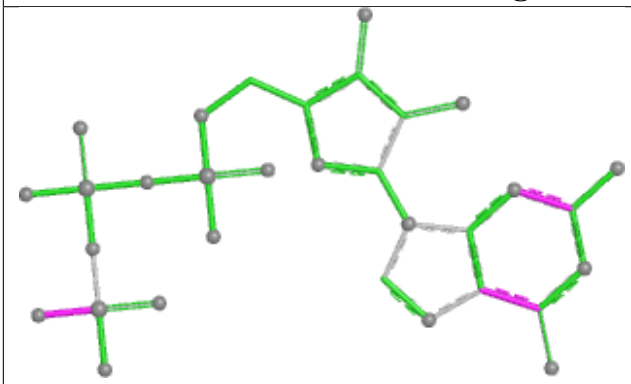


Torsions



Rings

Ligand GTP TF 501



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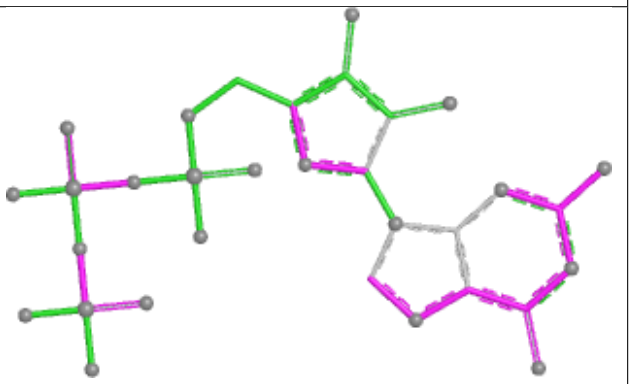

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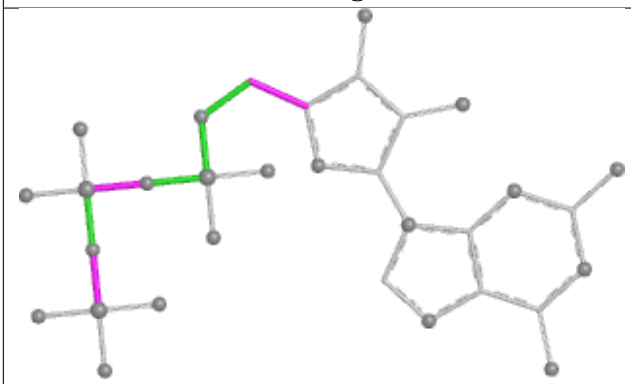

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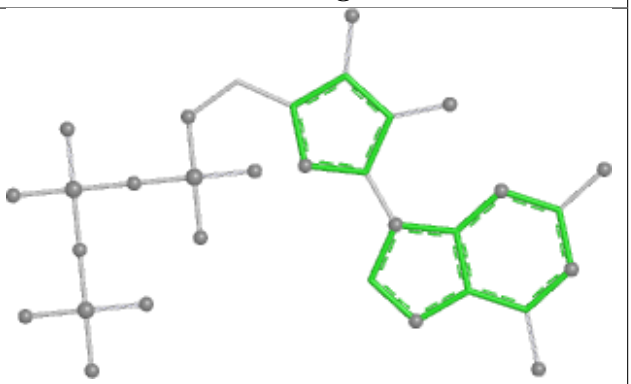
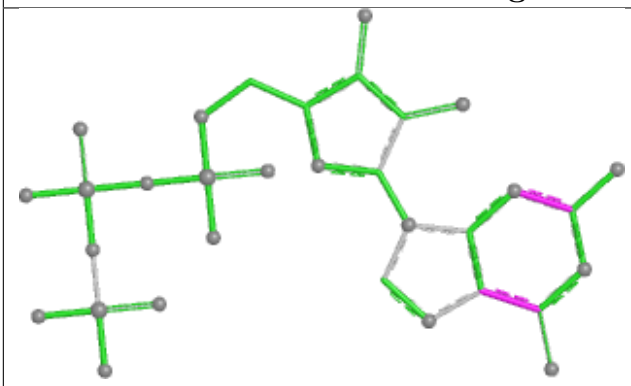


Rings

Ligand GTP ON 501



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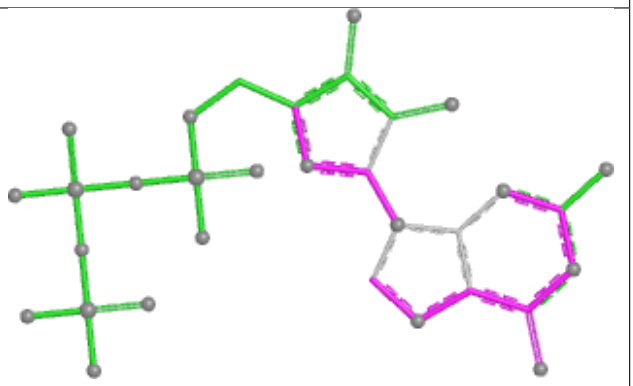

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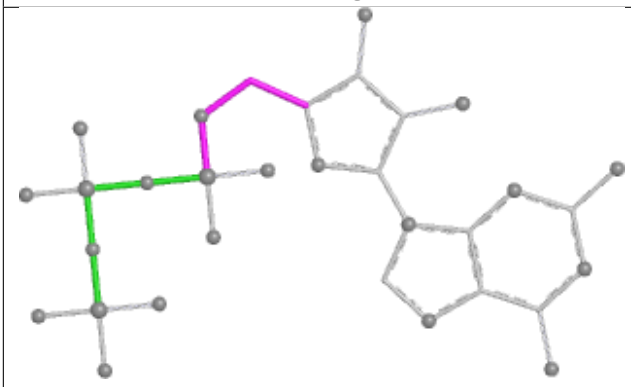

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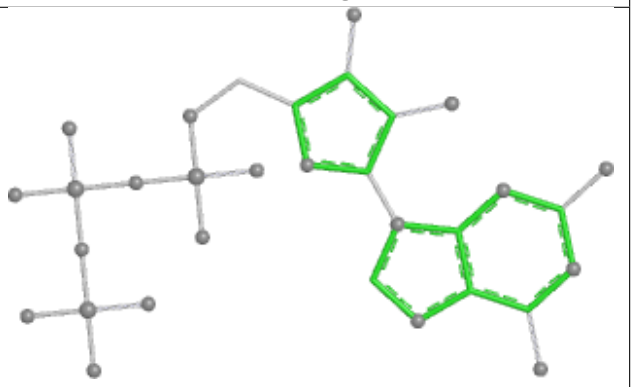
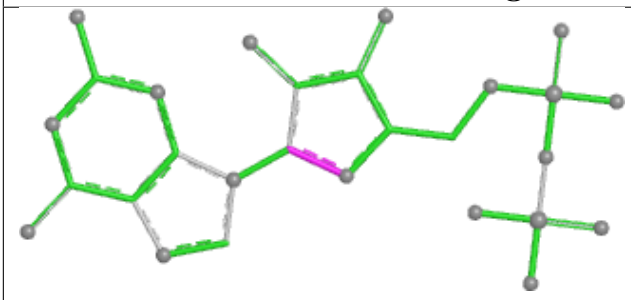


Rings

Ligand GDP MP 501



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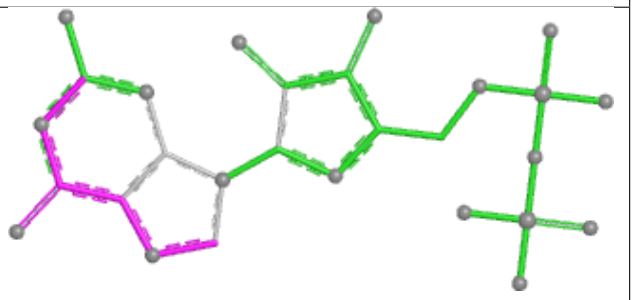

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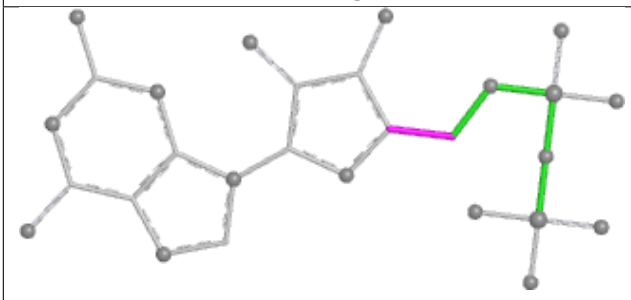

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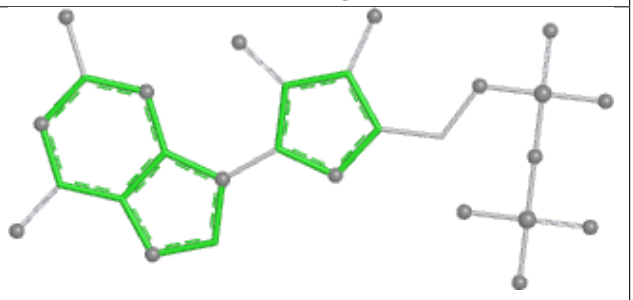

Rings

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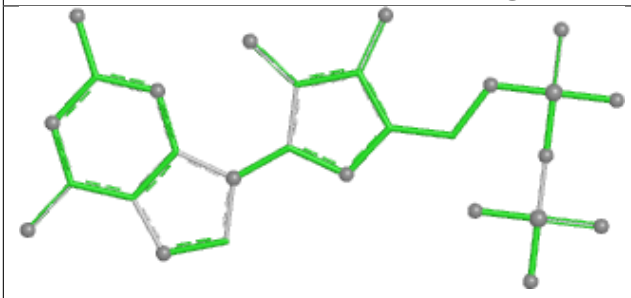

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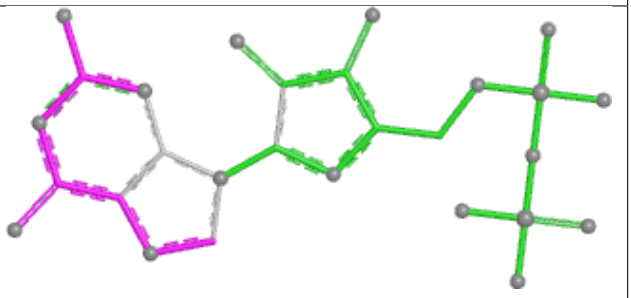

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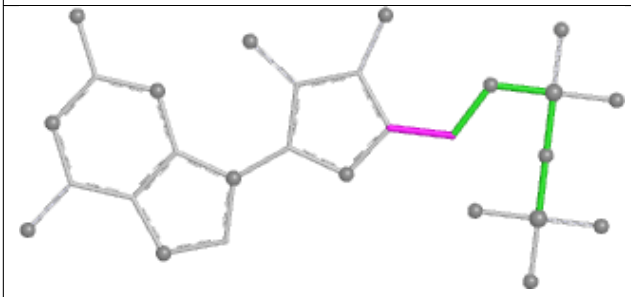

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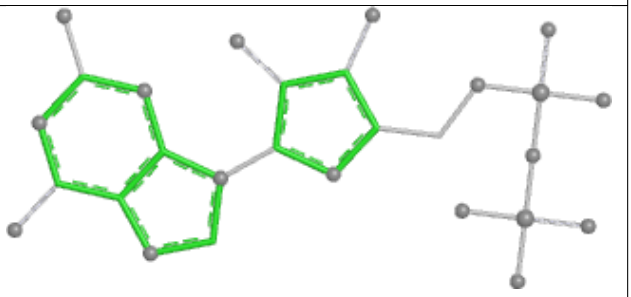

Rings

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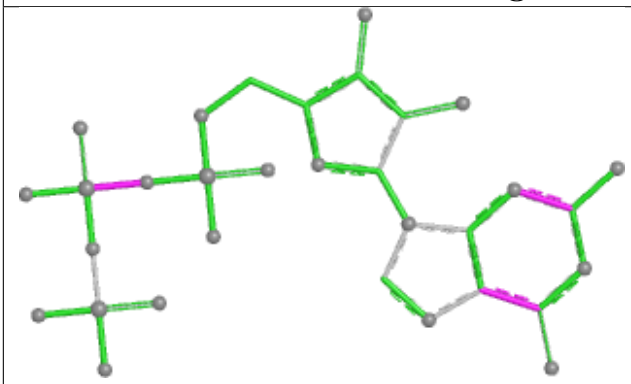

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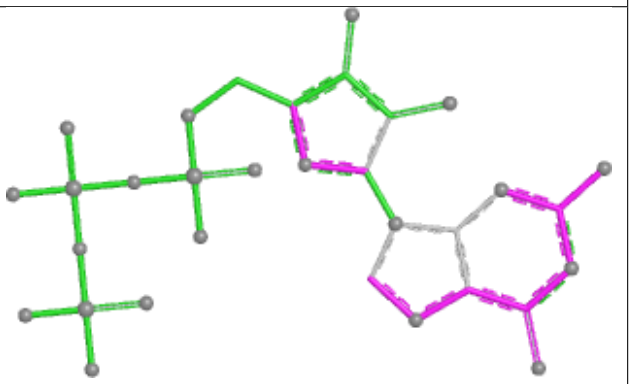

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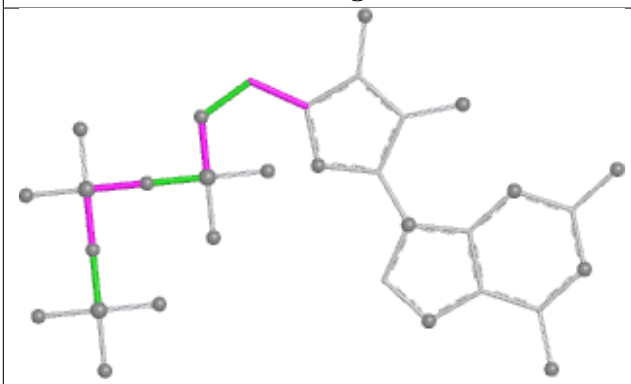

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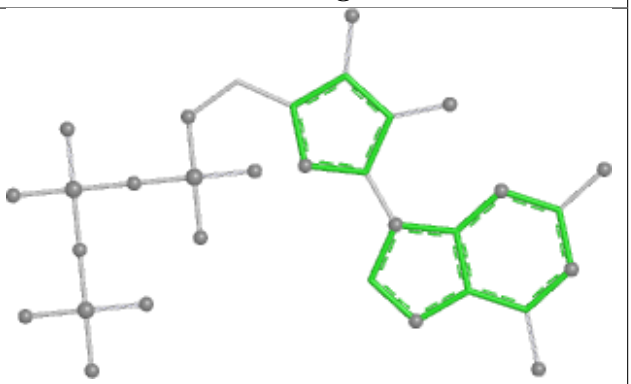

Rings

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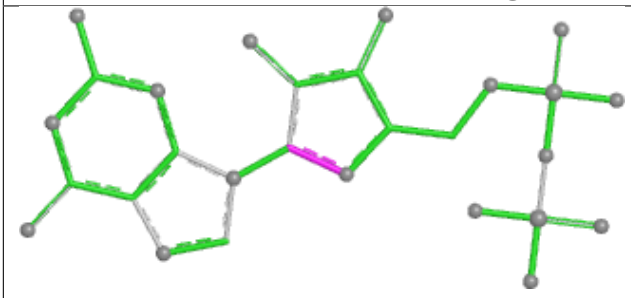

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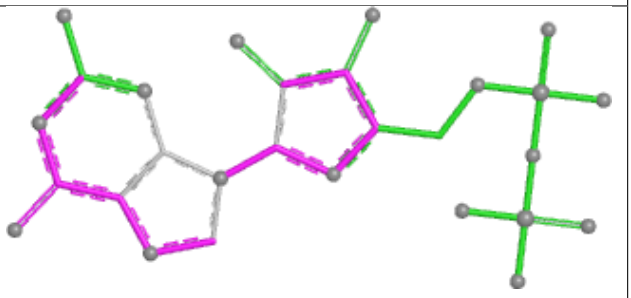

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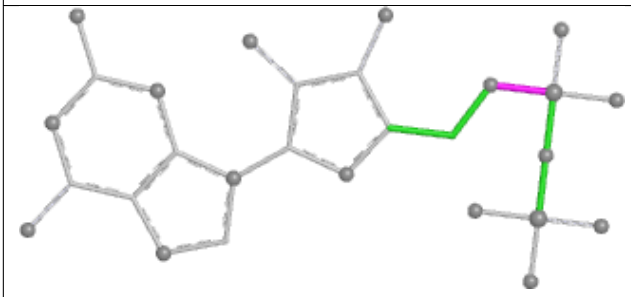

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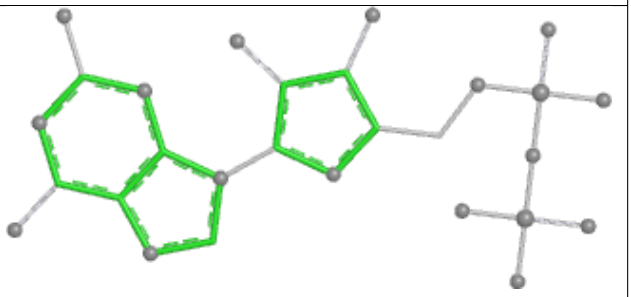

Rings

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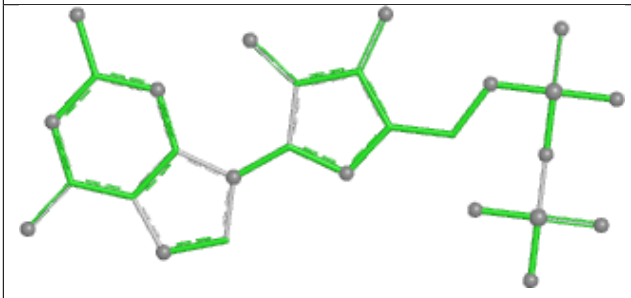

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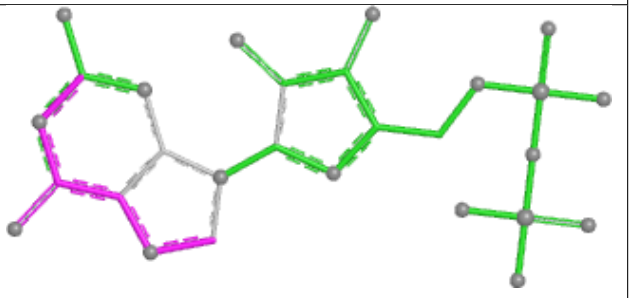

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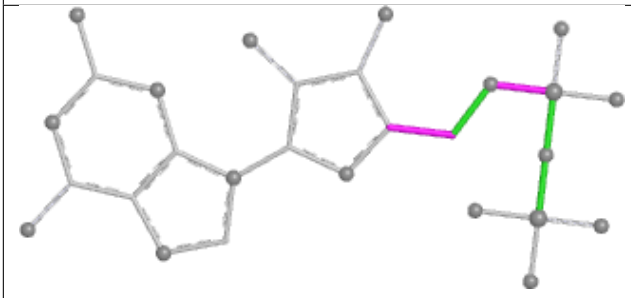

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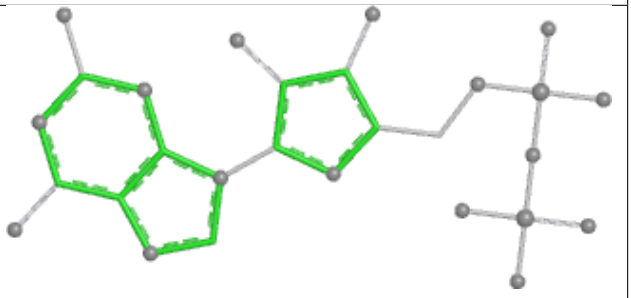
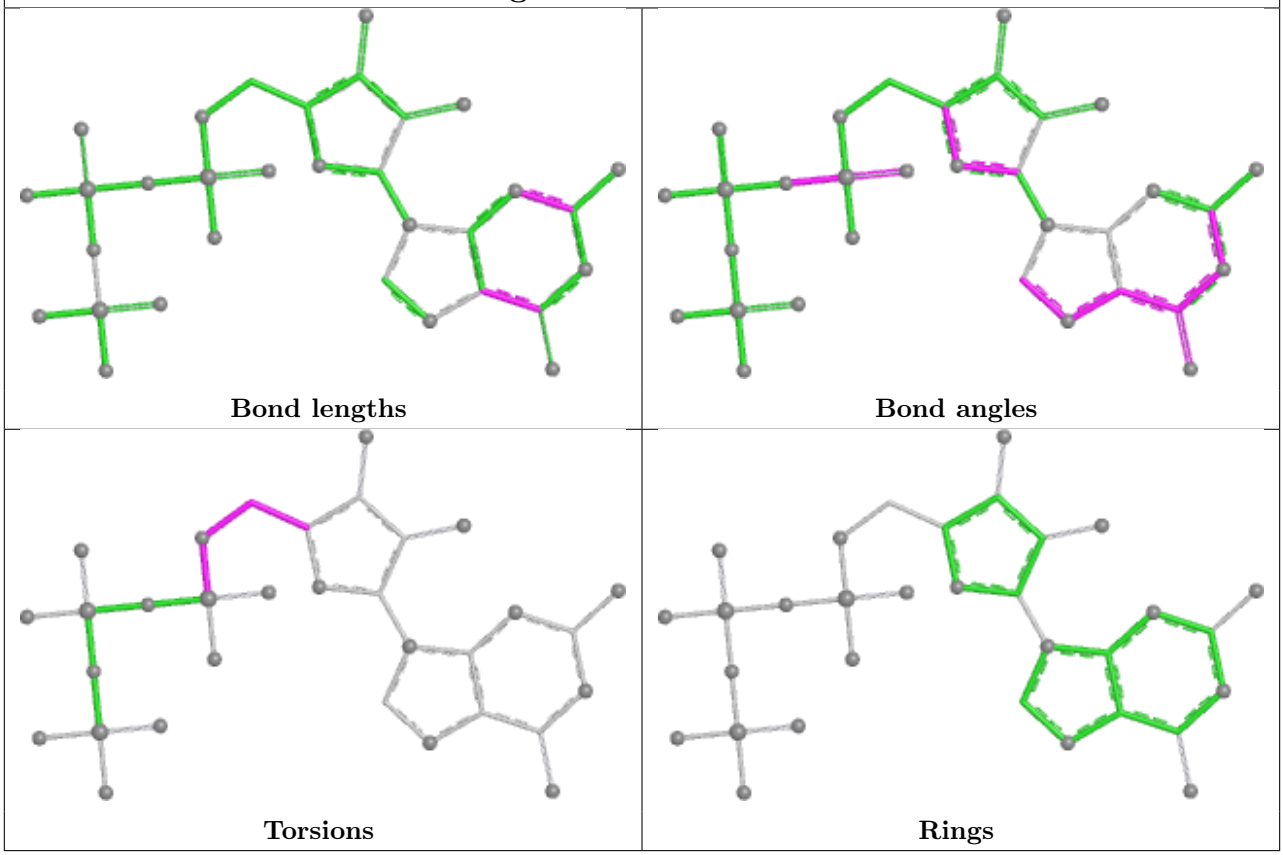
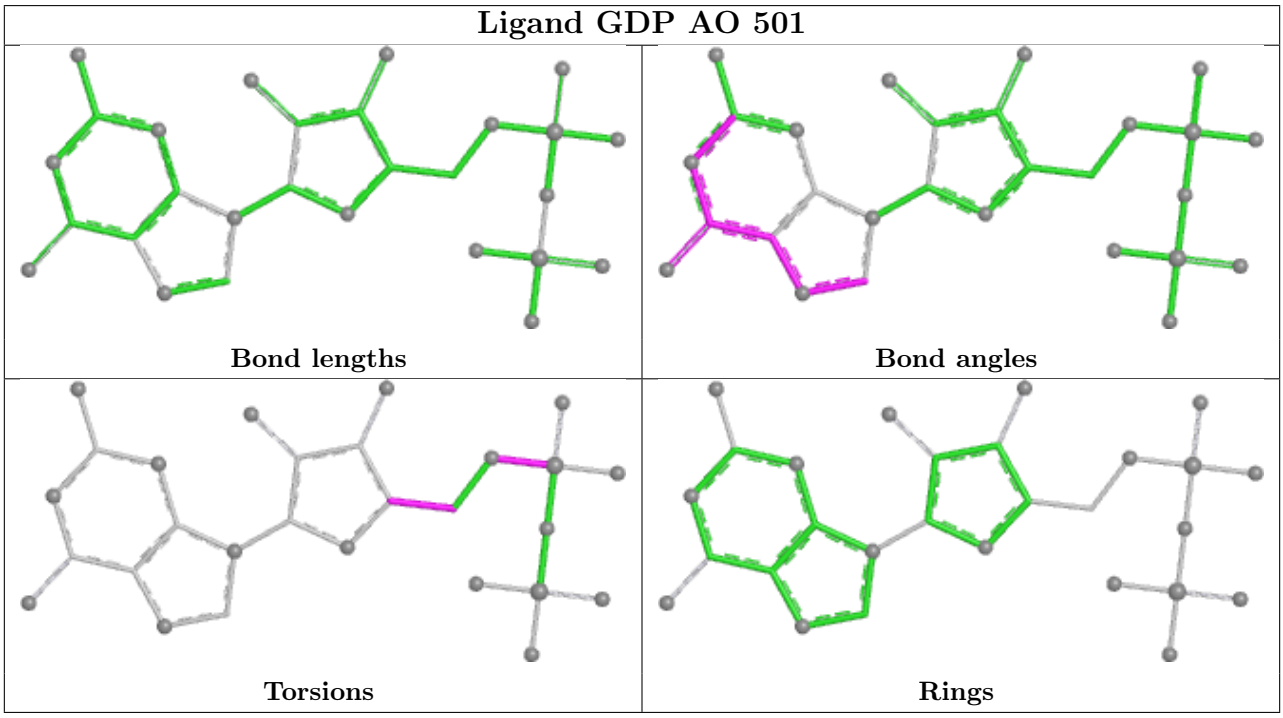


Rings

Ligand GTP AG 501



Ligand GDP AO 501



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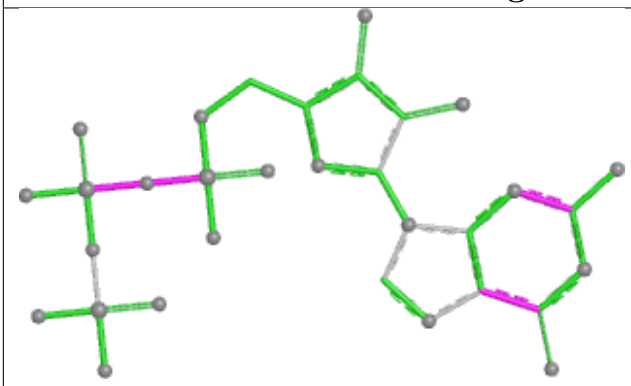

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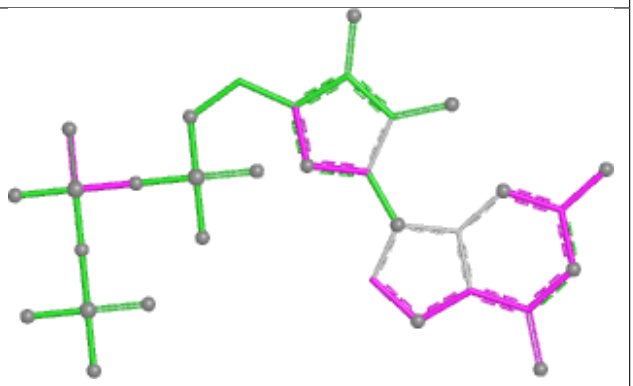

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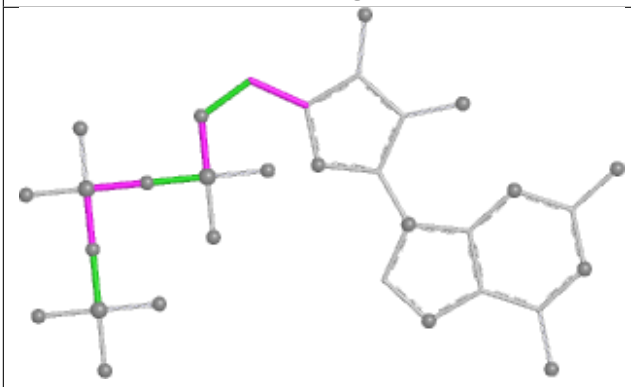

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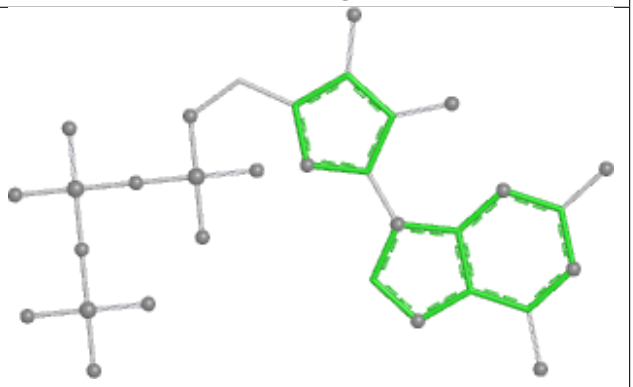
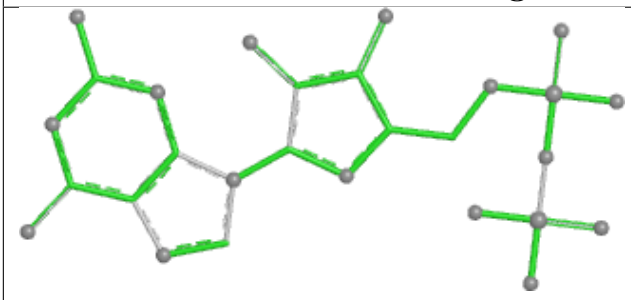


Rings

Ligand GDP BO 501



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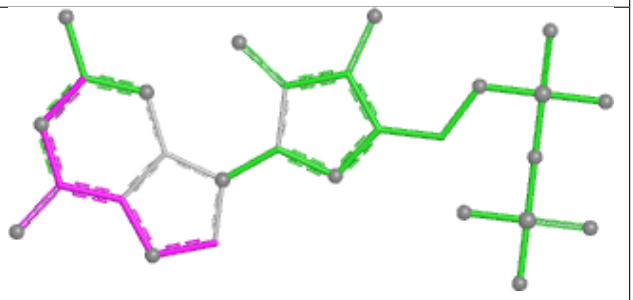

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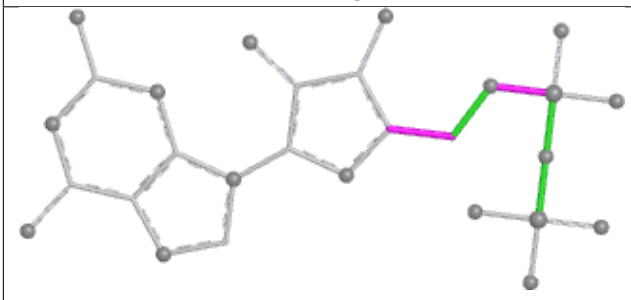

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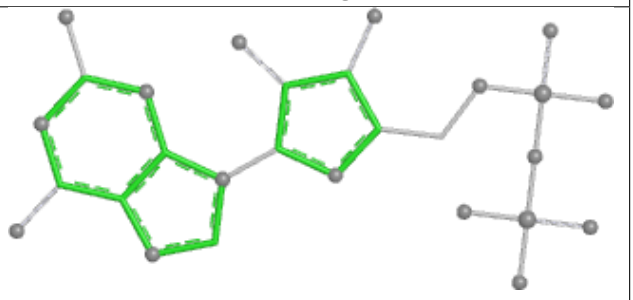
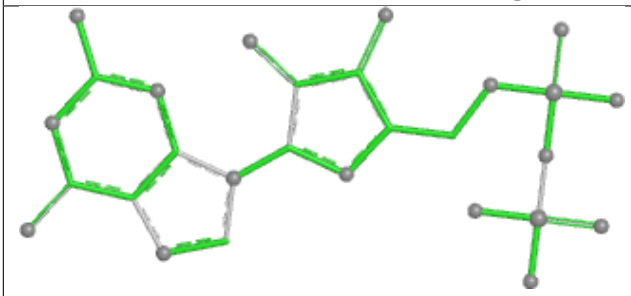


Rings

Ligand GDP VP 502



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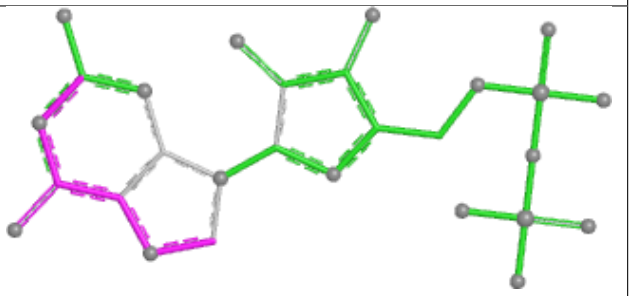

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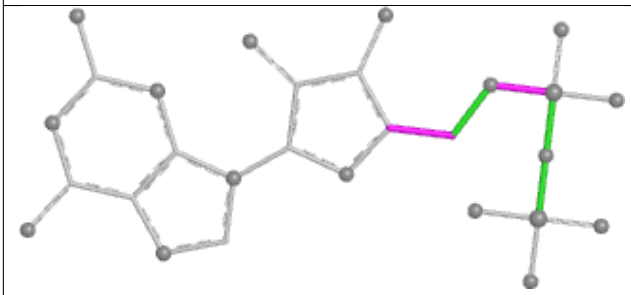

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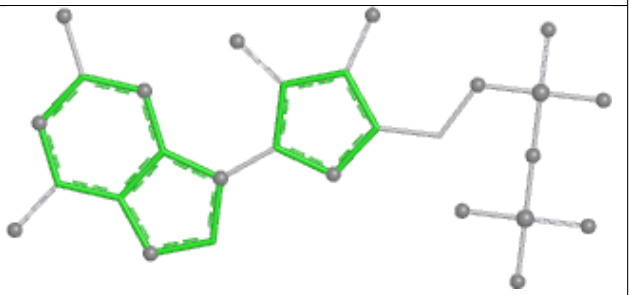
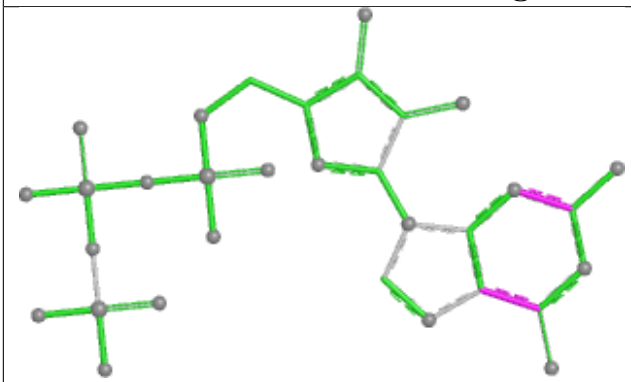


Rings

Ligand GTP LB 502



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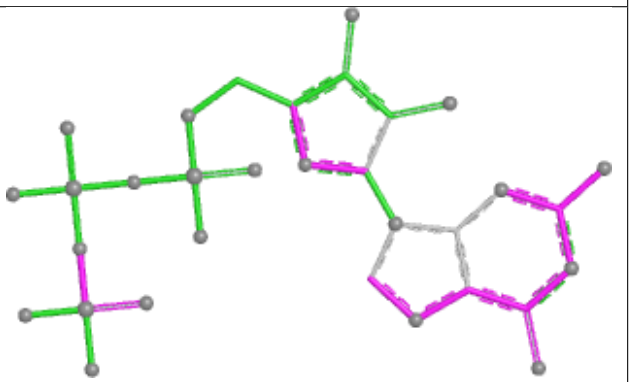

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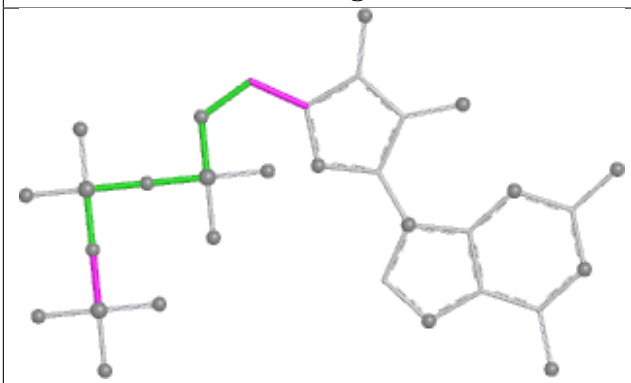

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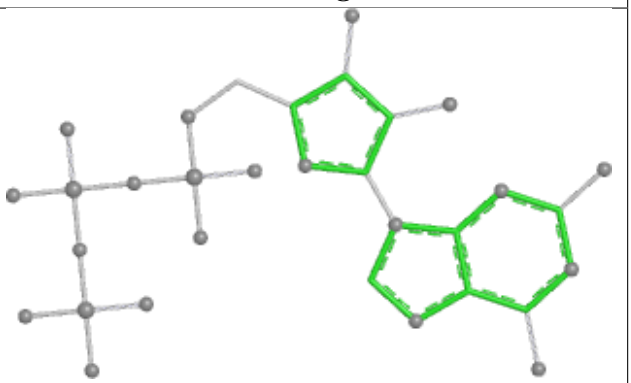
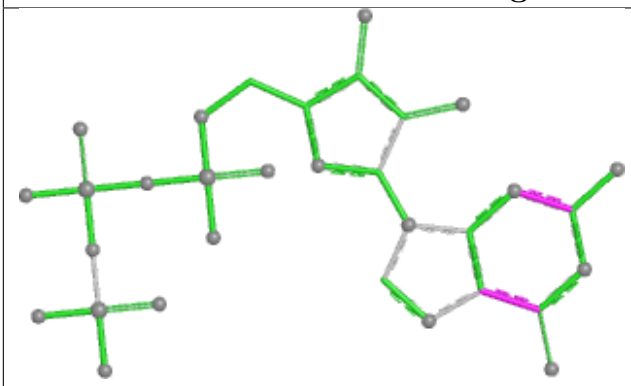


Rings

Ligand GTP HE 501



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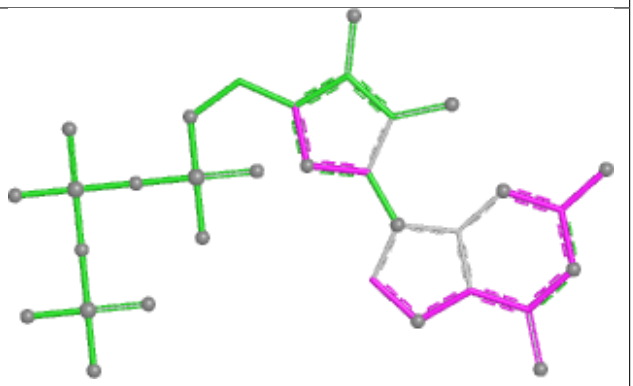

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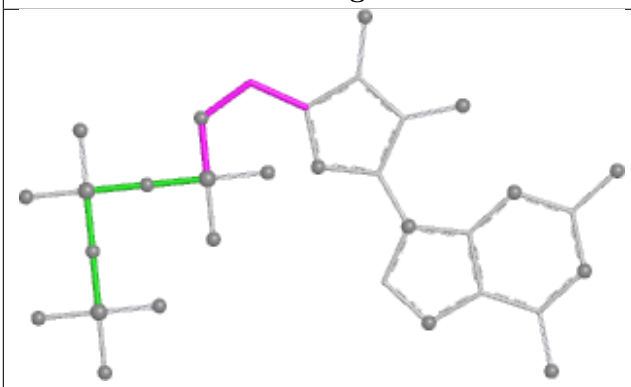

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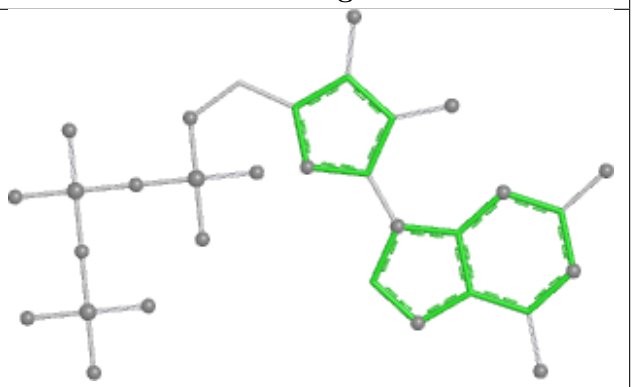

Rings

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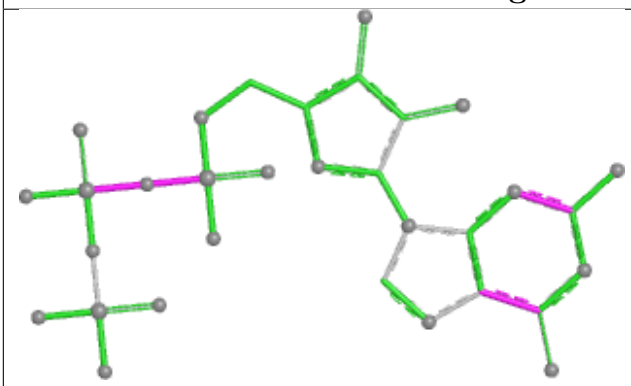
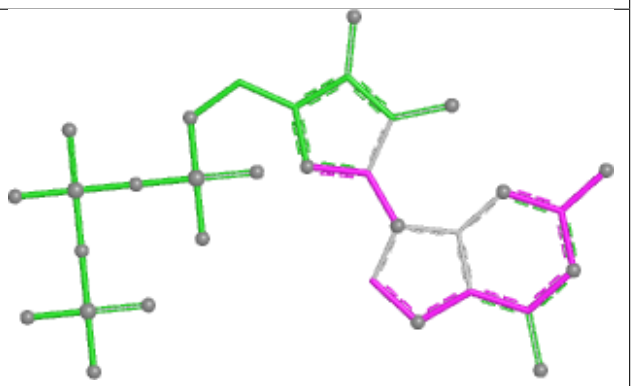


Bond lengths



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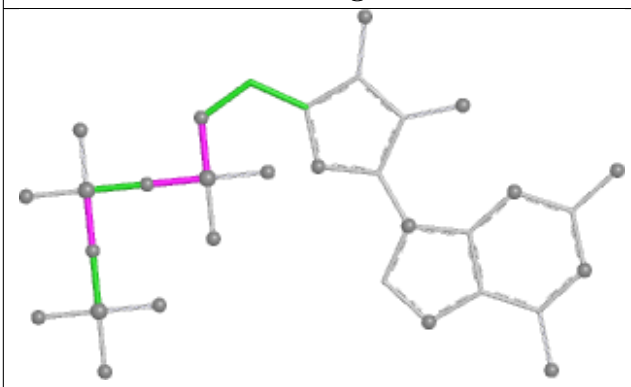
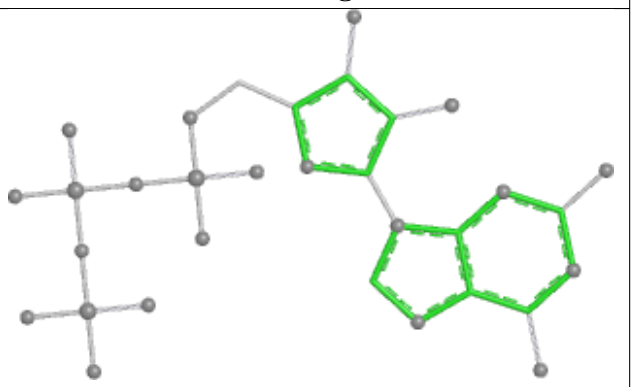
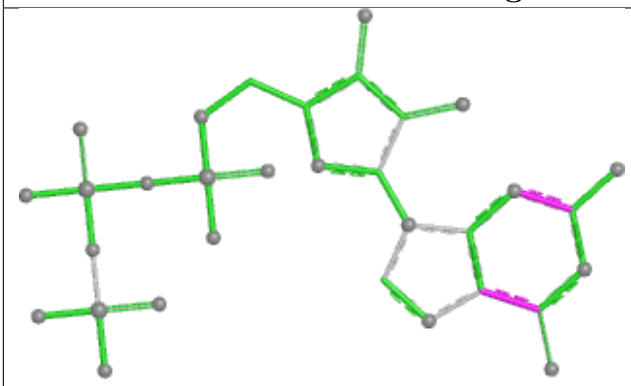


Torsions



Rings

Ligand GTP UM 501



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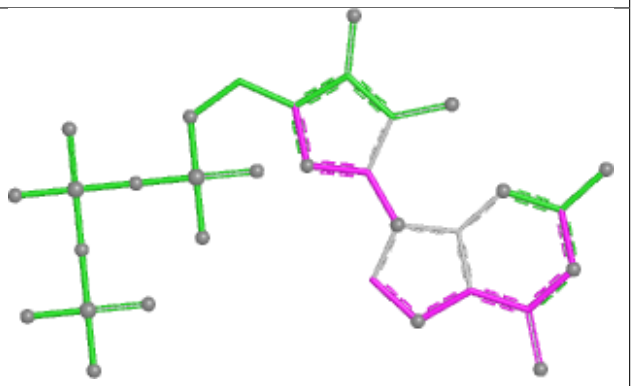

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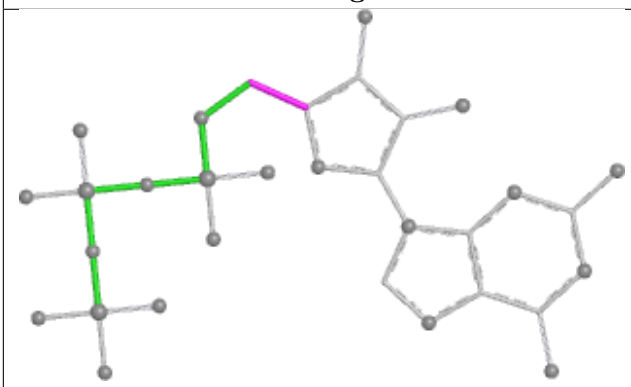

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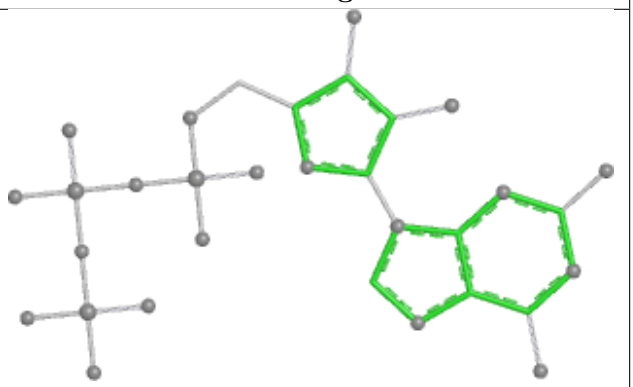
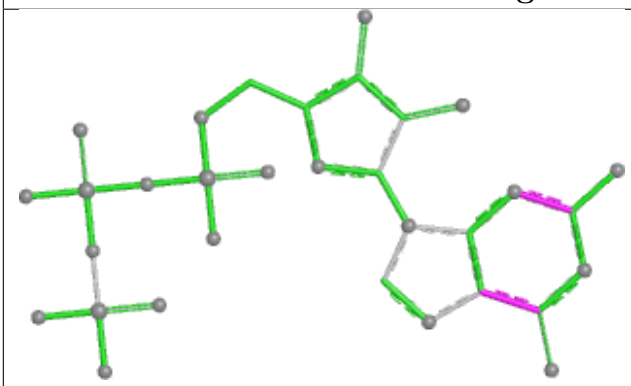


Rings

Ligand GTP TI 501



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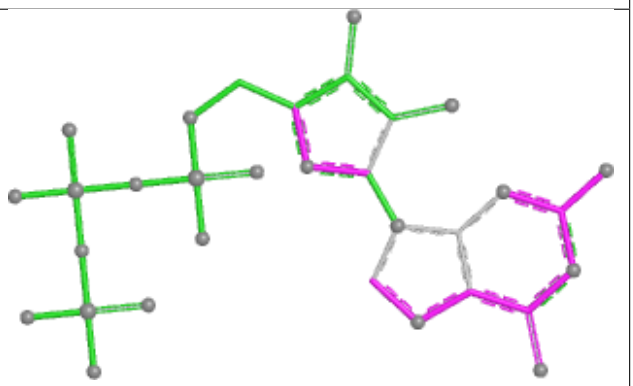

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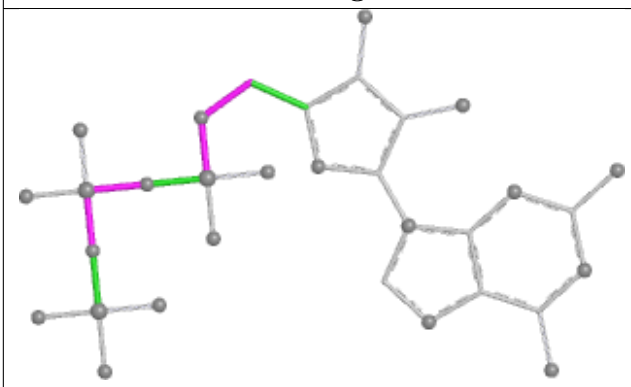

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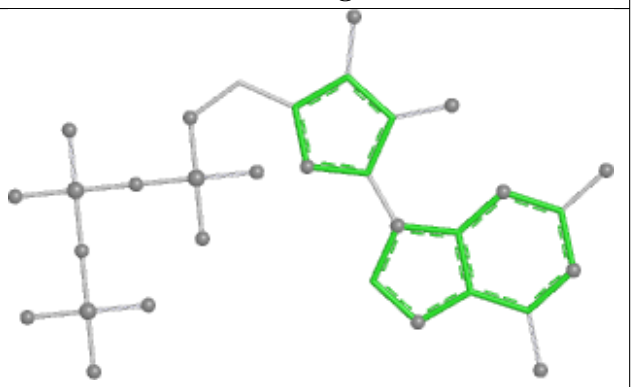

Rings

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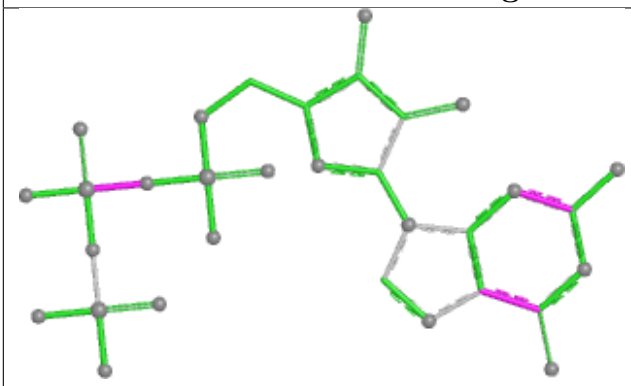

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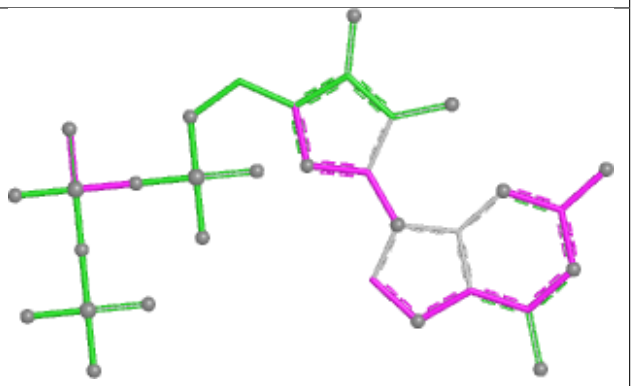

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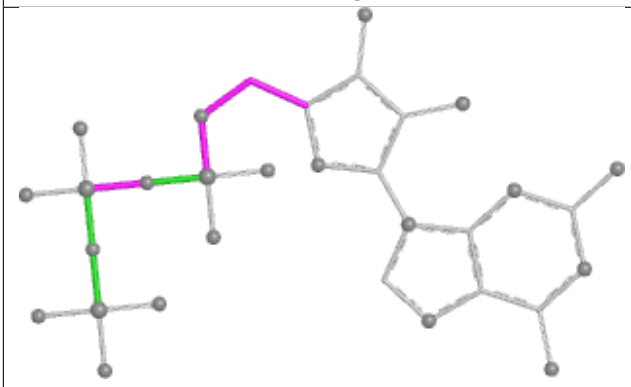

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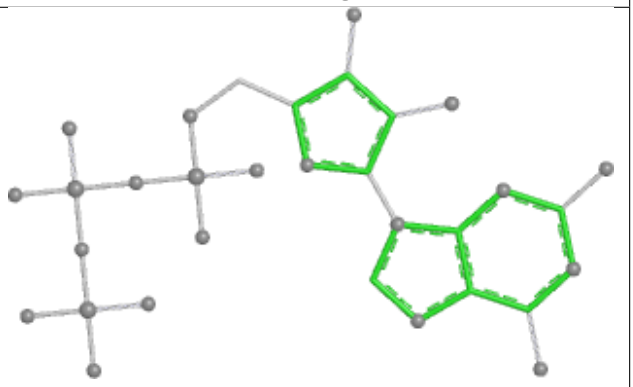
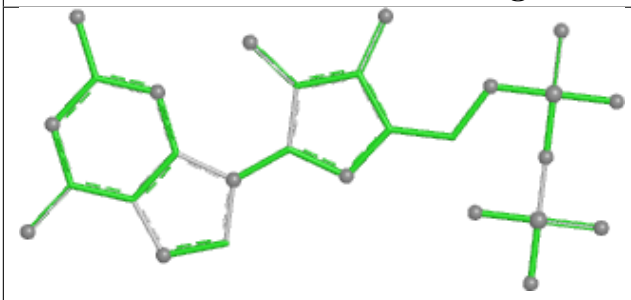


Rings

Ligand GDP CP 501



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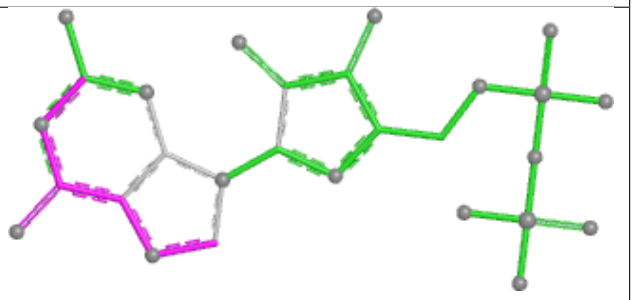

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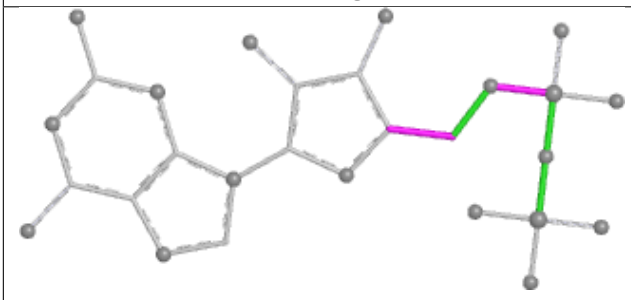

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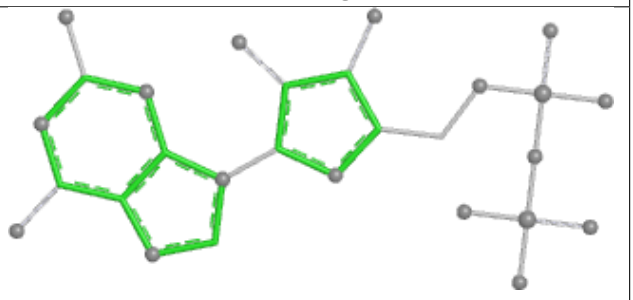

Rings

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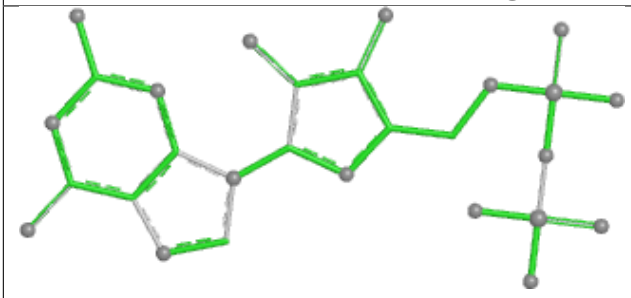

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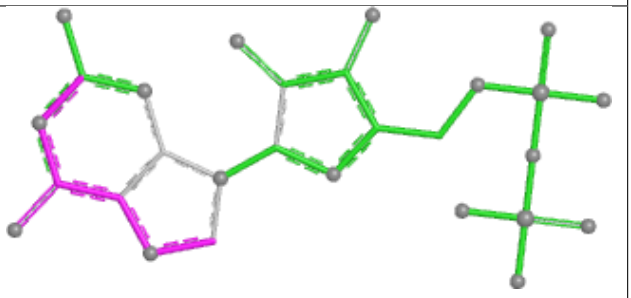

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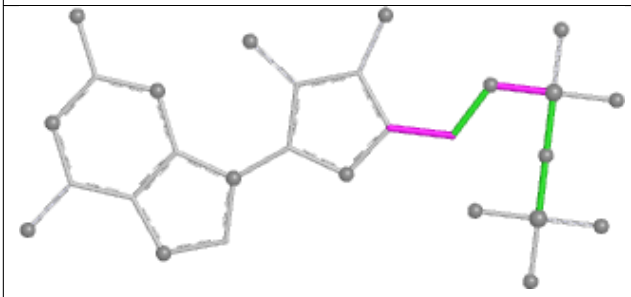

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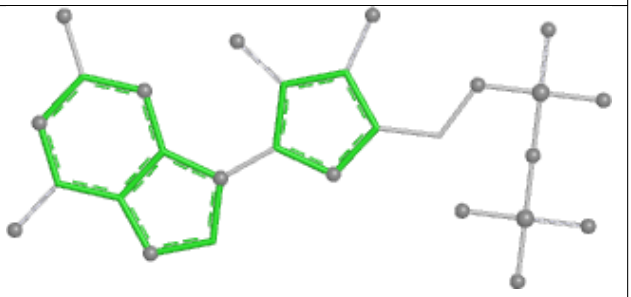

Rings

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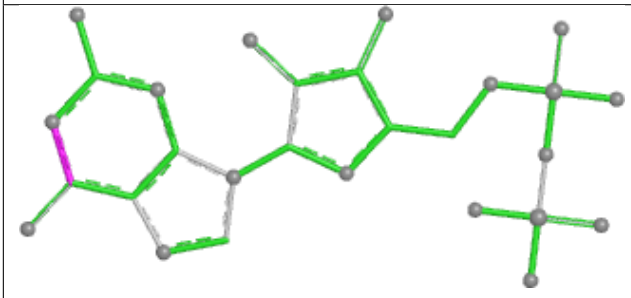

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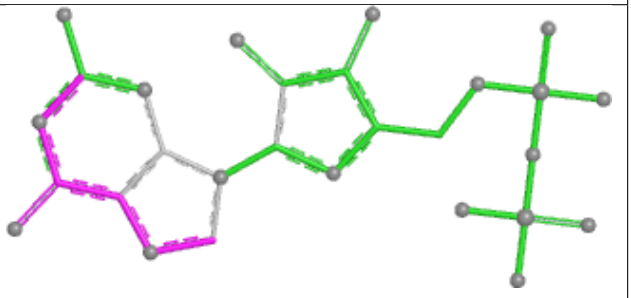

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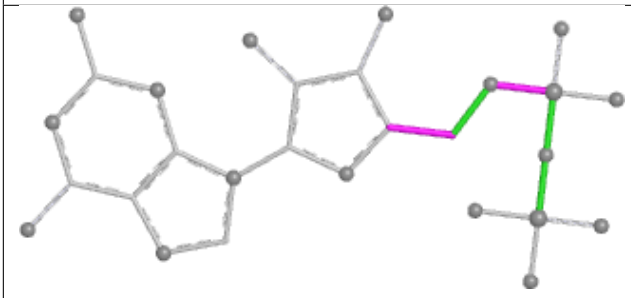

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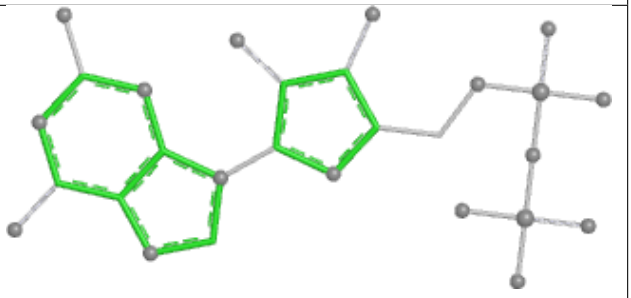

Rings

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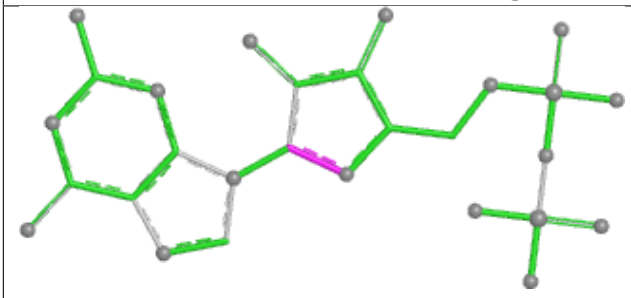

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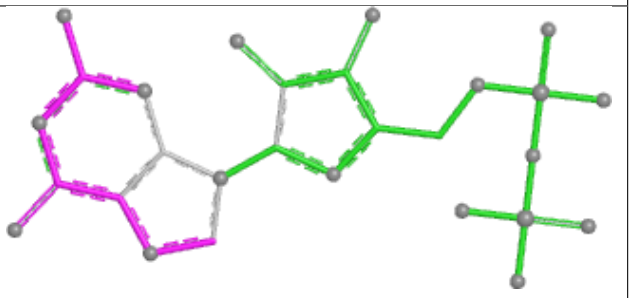

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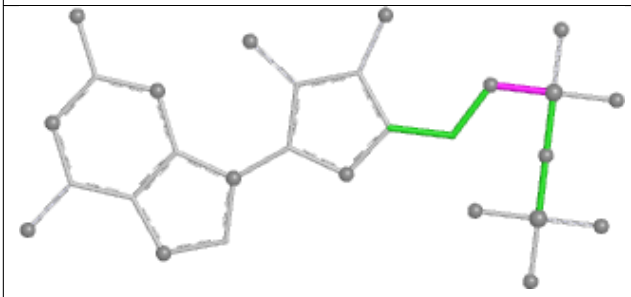

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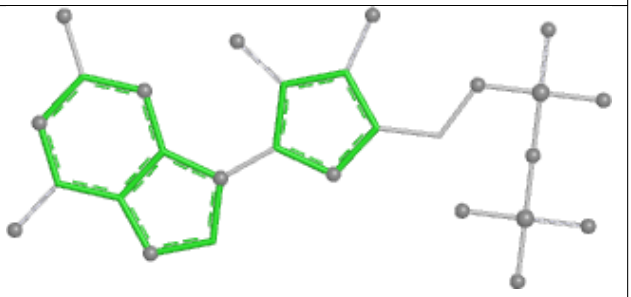
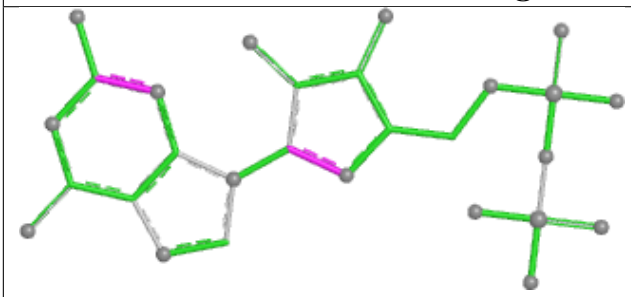


Rings

Ligand GDP JL 501



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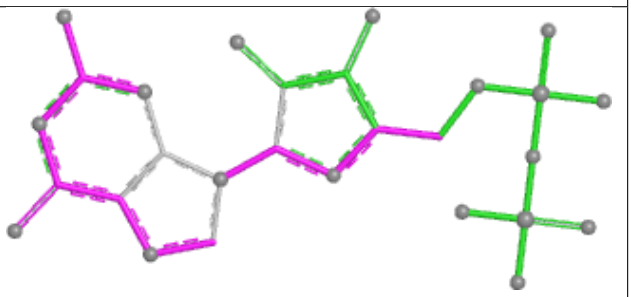

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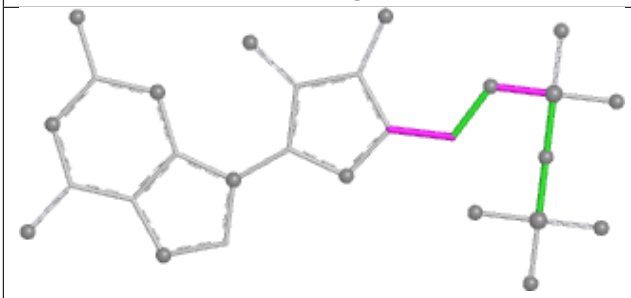

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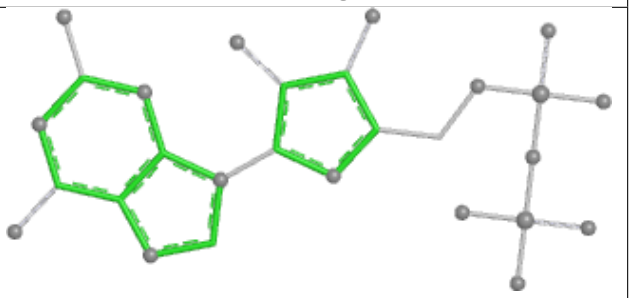
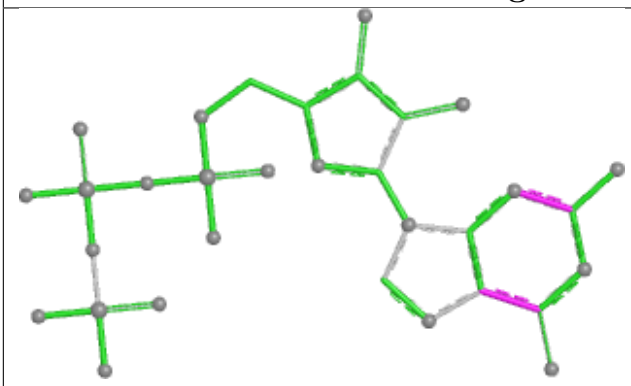


Rings

Ligand GTP RG 501



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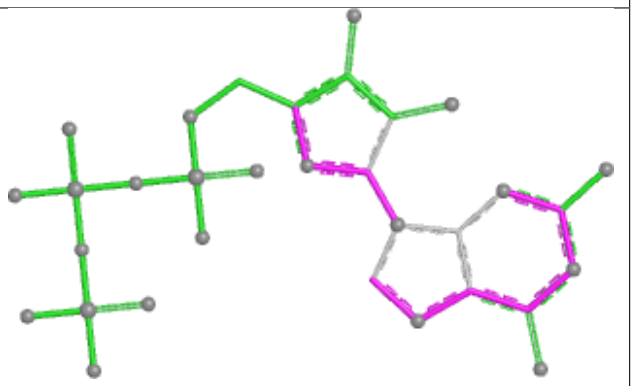

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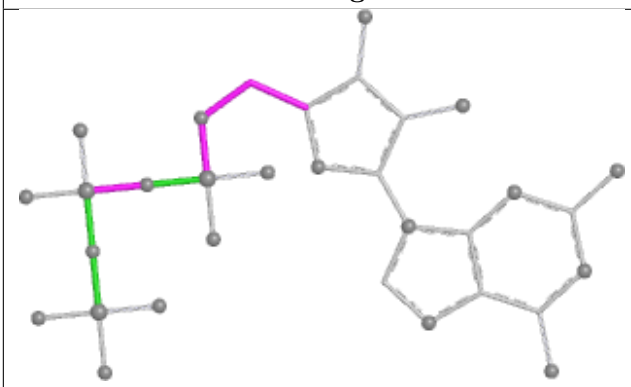

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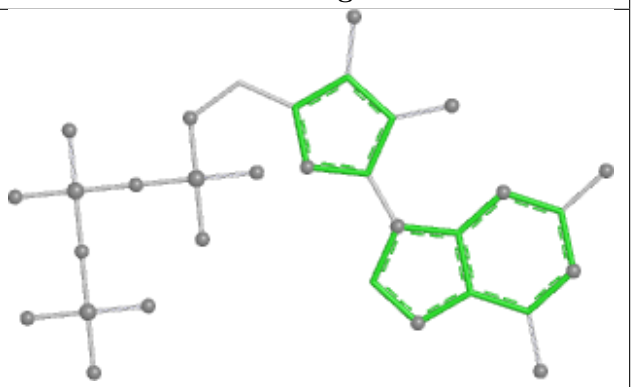
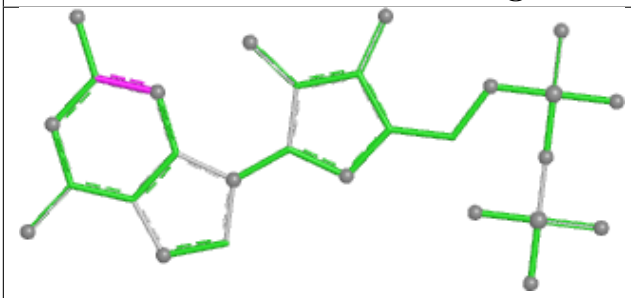


Rings

Ligand GDP RN 502



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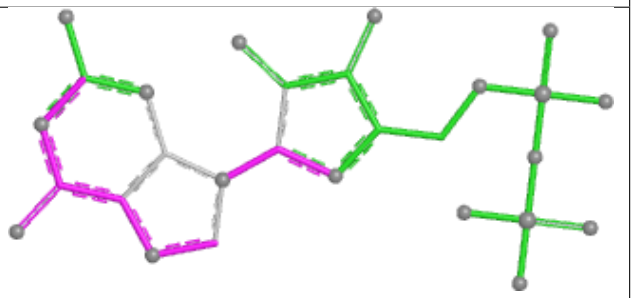

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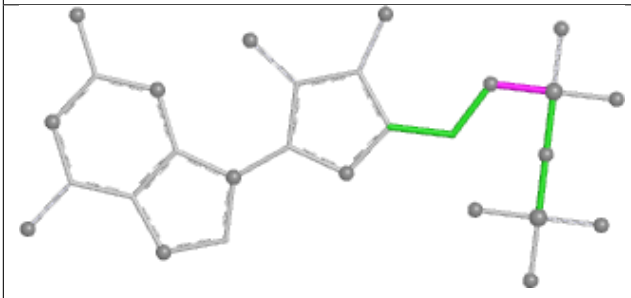

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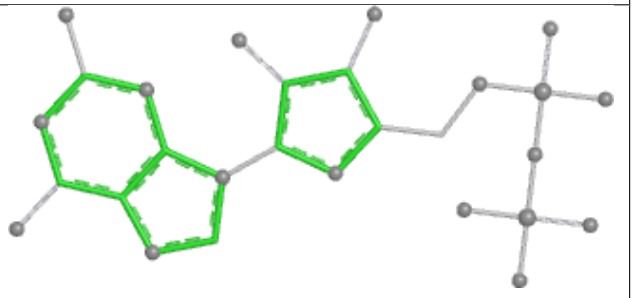
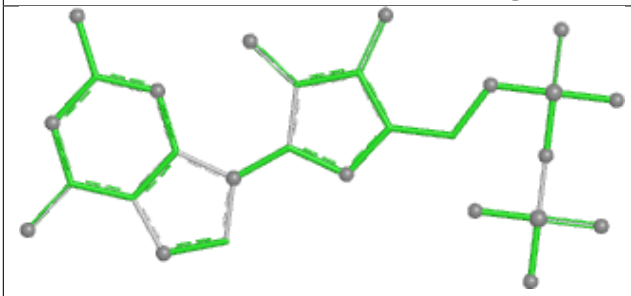


Rings

Ligand GDP UN 501



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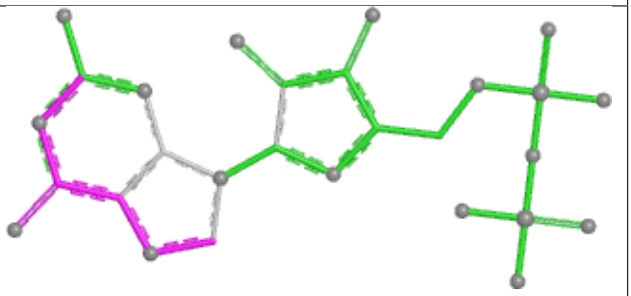

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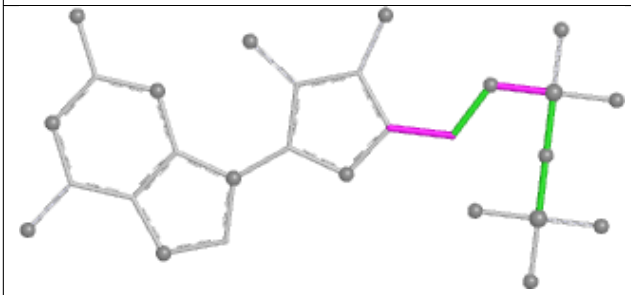

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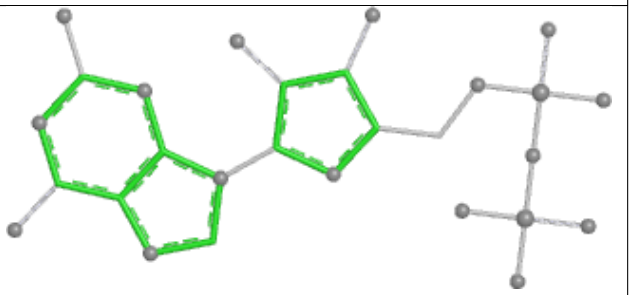
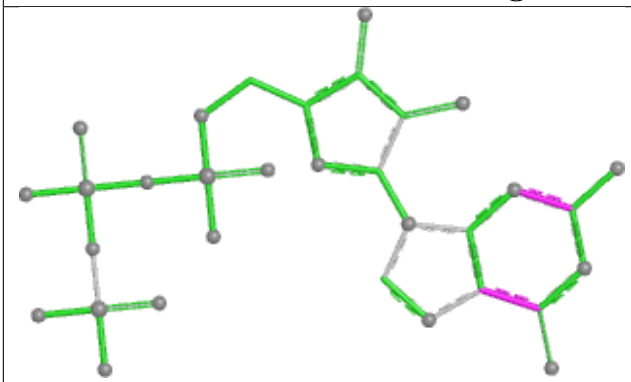


Rings

Ligand GTP GH 501



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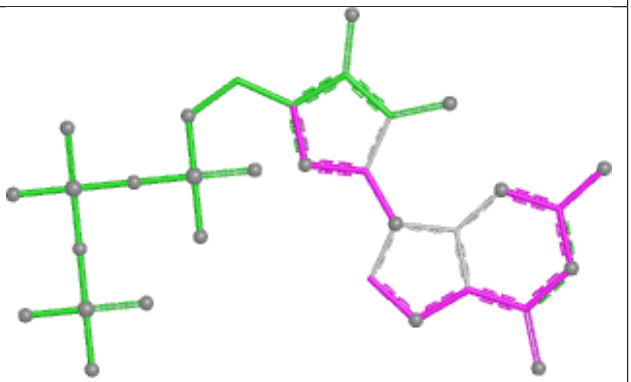

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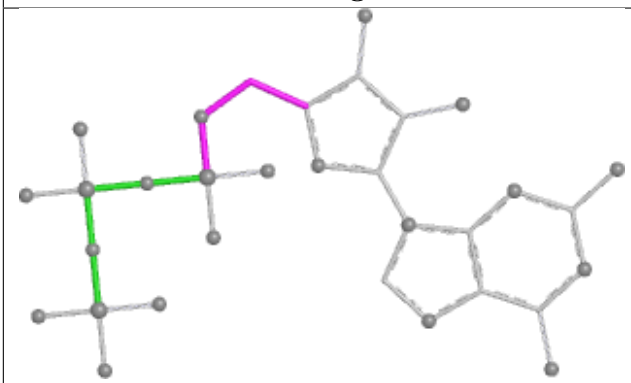

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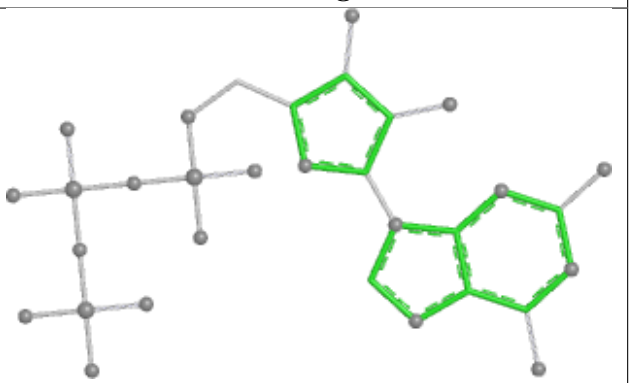
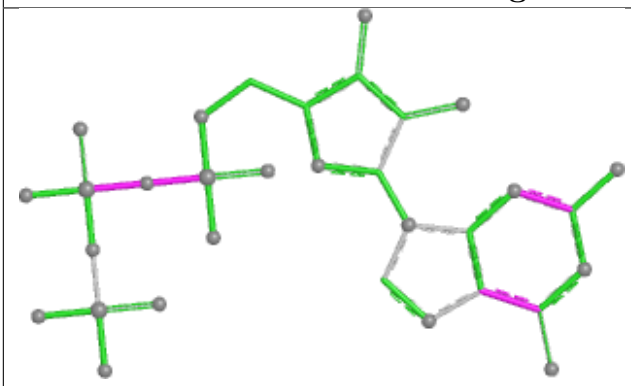


Rings

Ligand GTP TG 501



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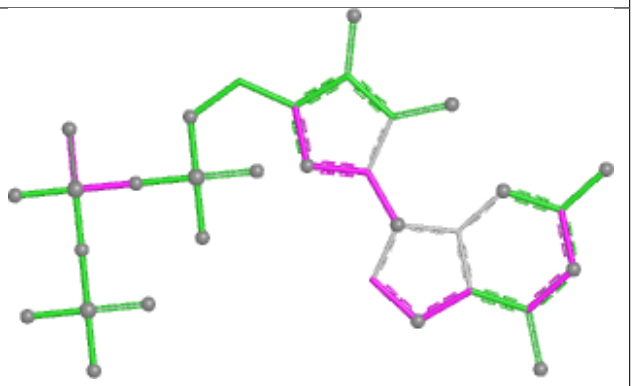
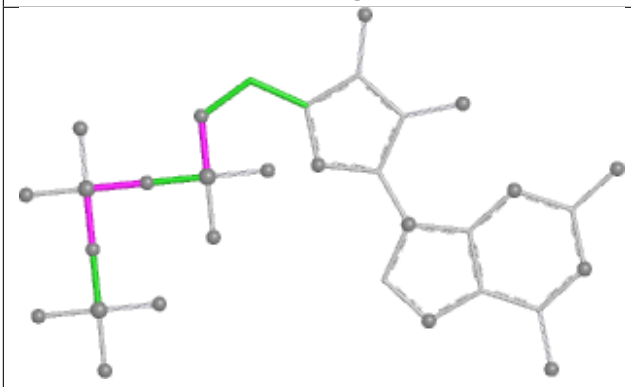


Bond angles



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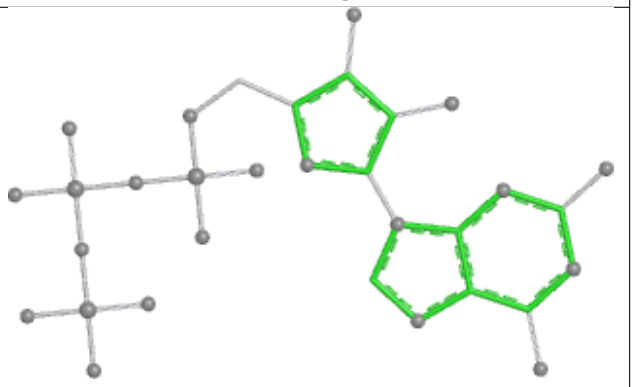
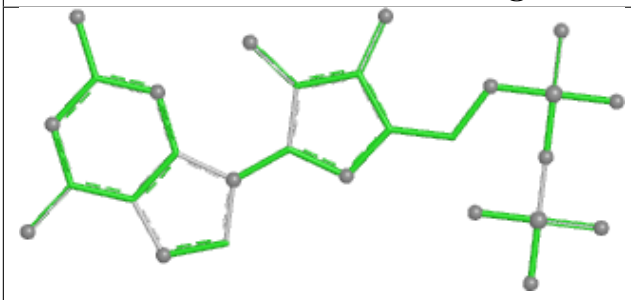


Rings

Ligand GDP PN 502



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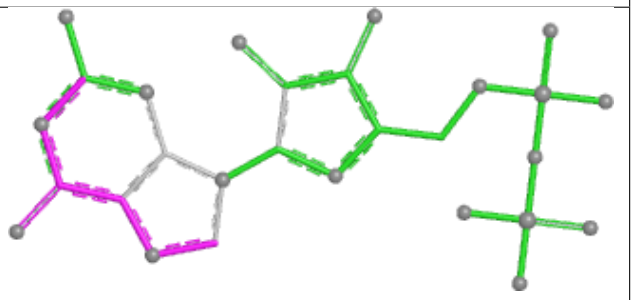

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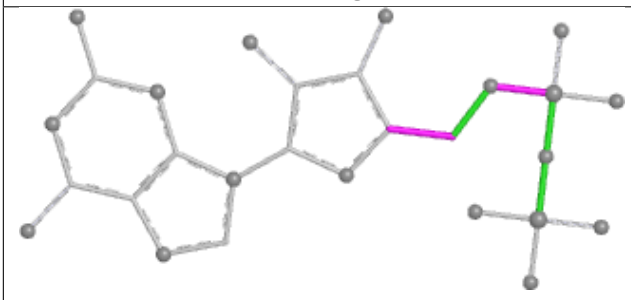
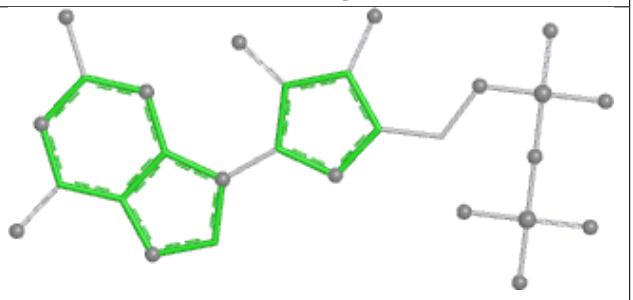
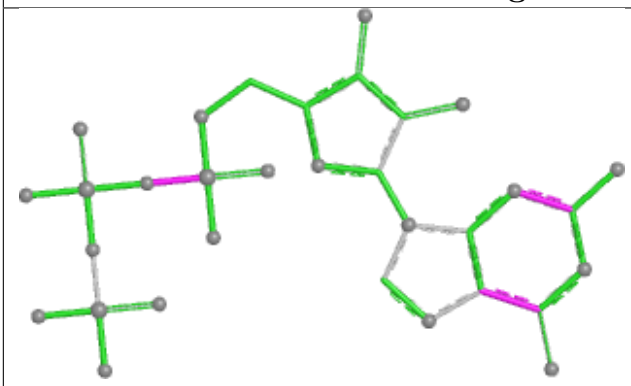


Torsions



Rings

Ligand GTP RN 501



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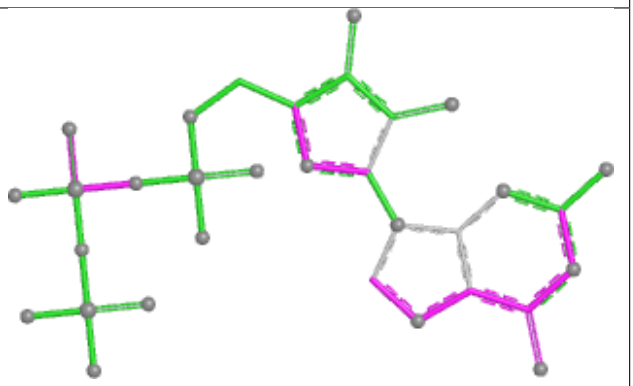

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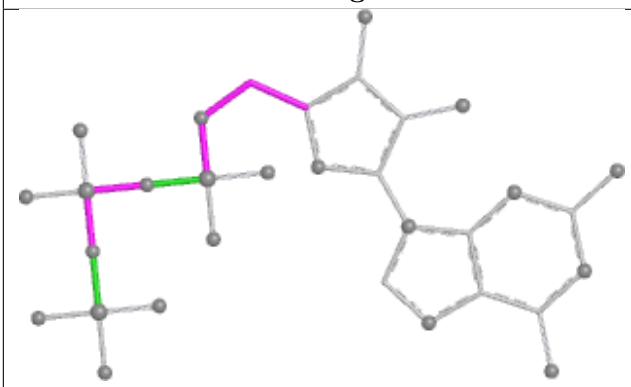

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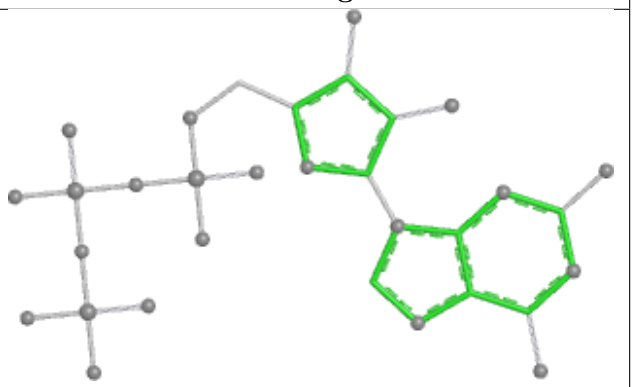
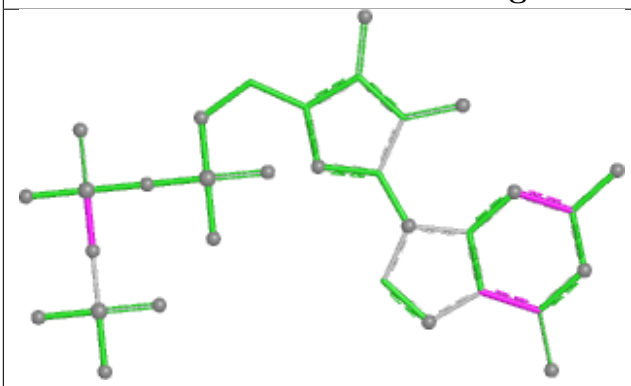


Rings

Ligand GTP OB 502



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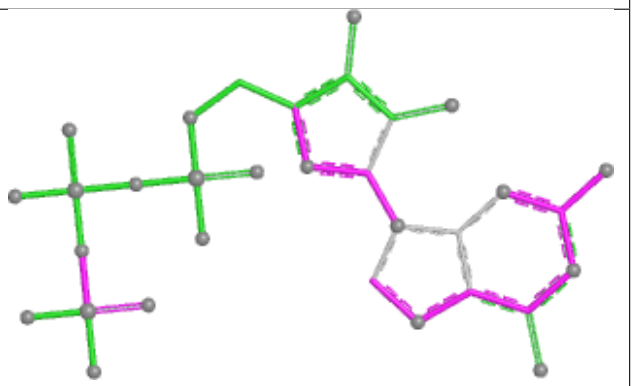

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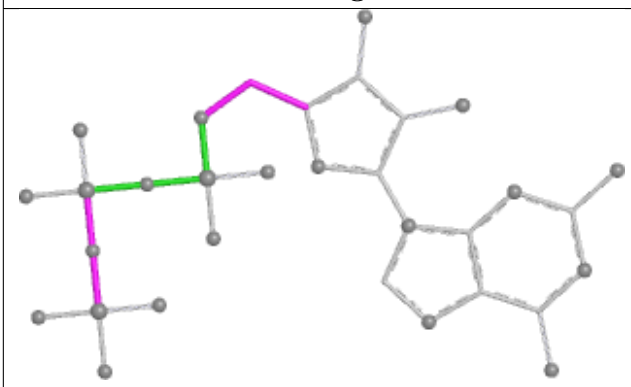

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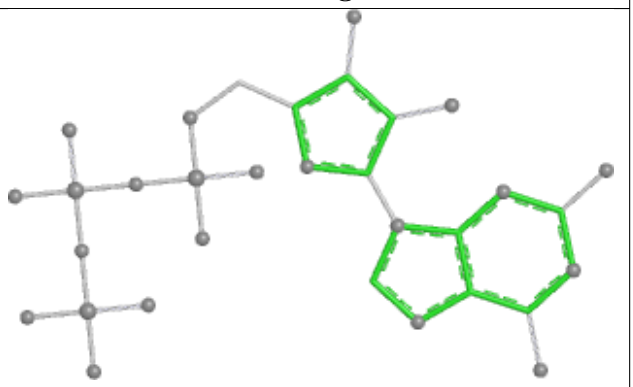
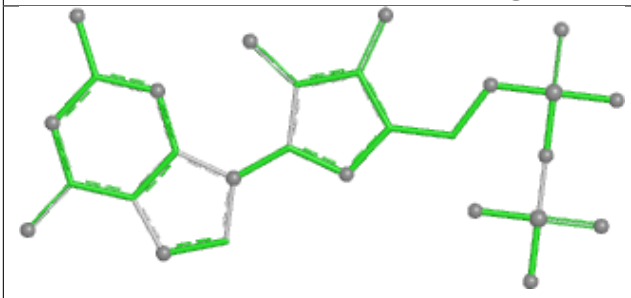


Rings

Ligand GDP SM 502



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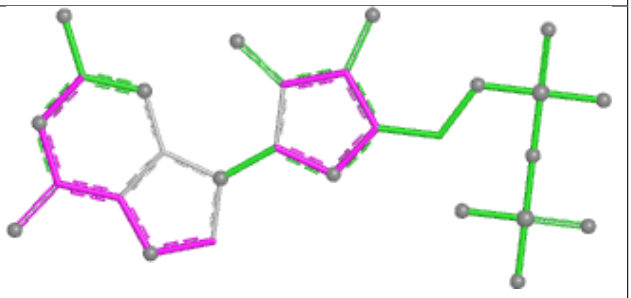

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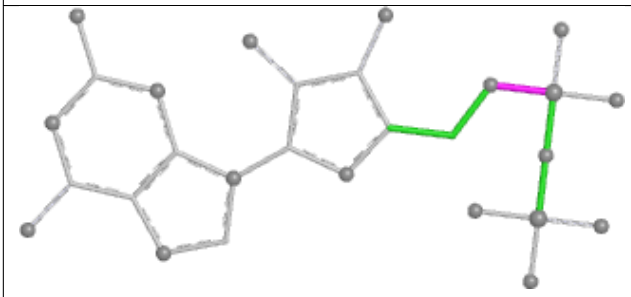

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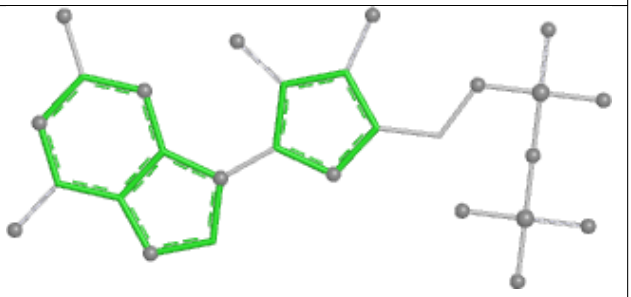

Rings

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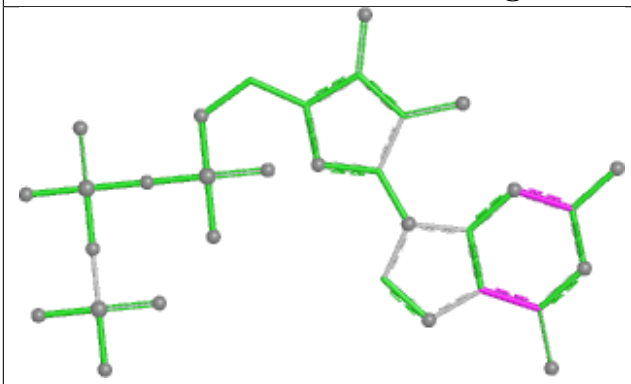

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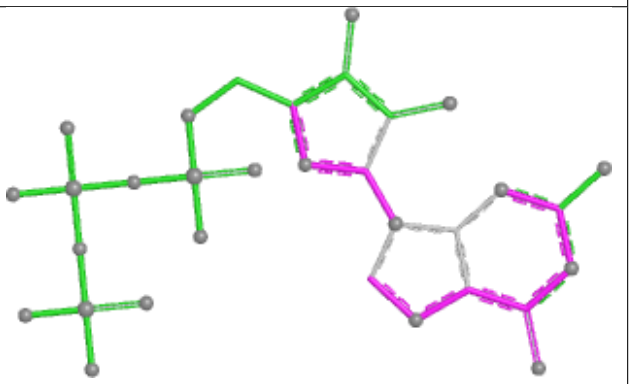

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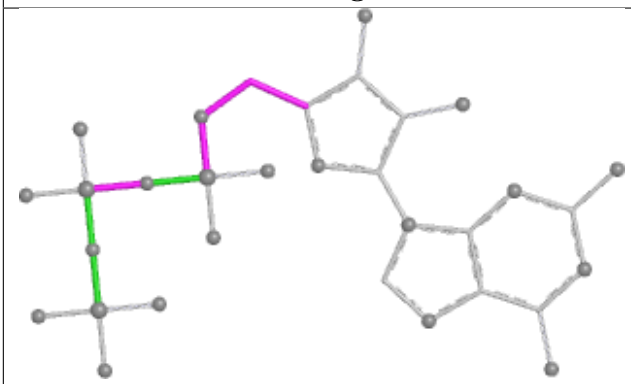

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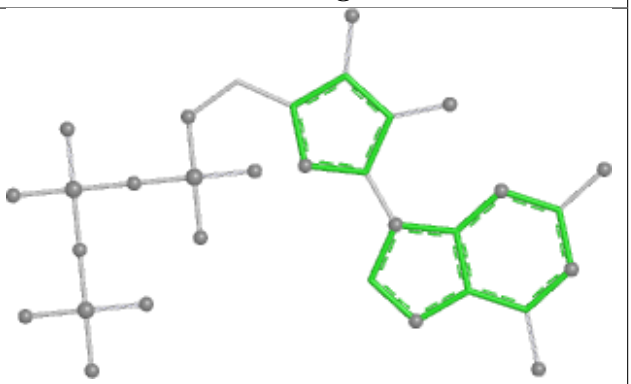

Rings

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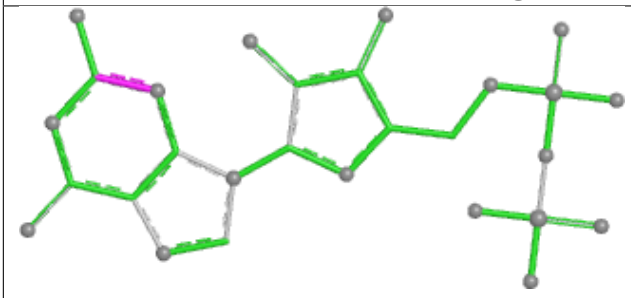

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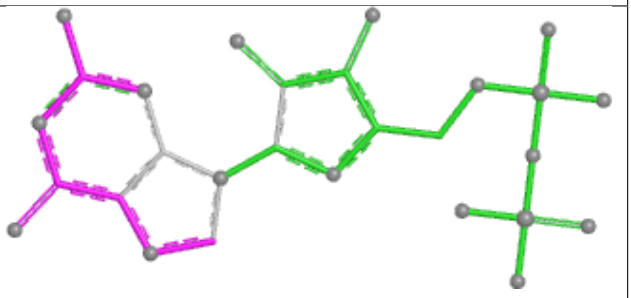

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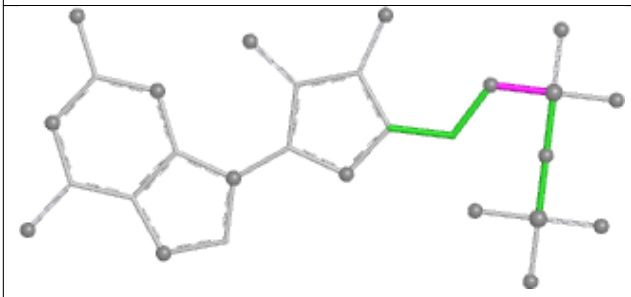

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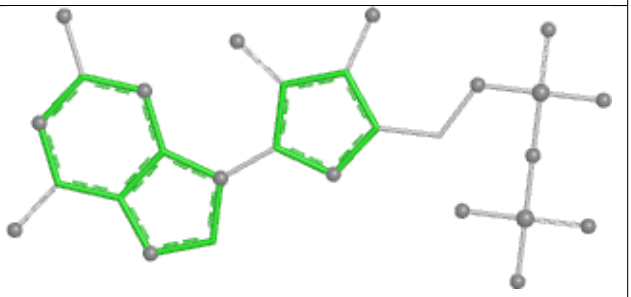

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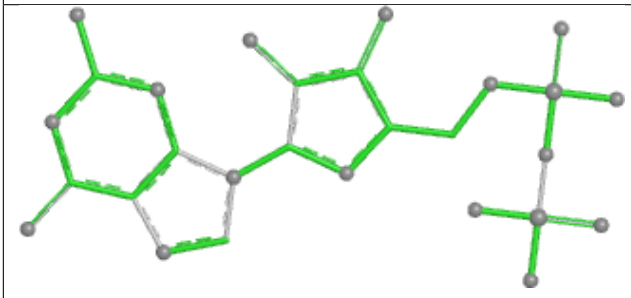

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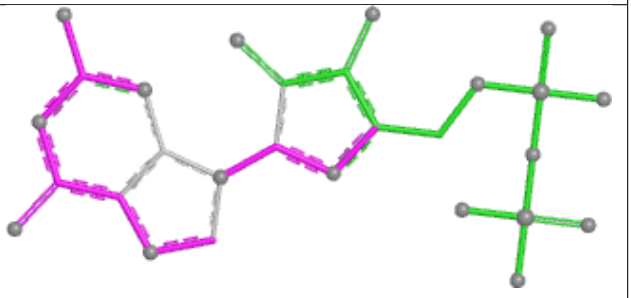

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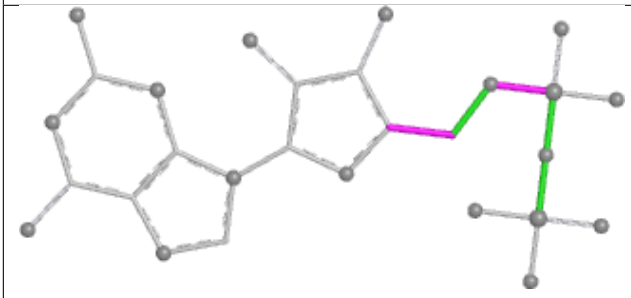

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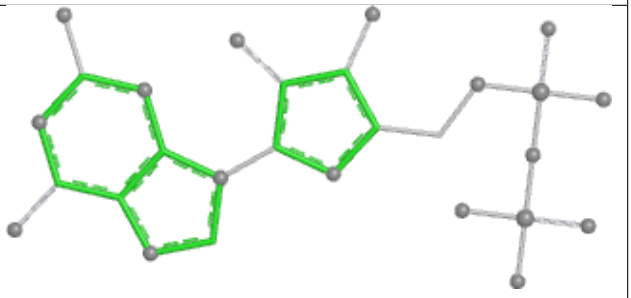

Rings

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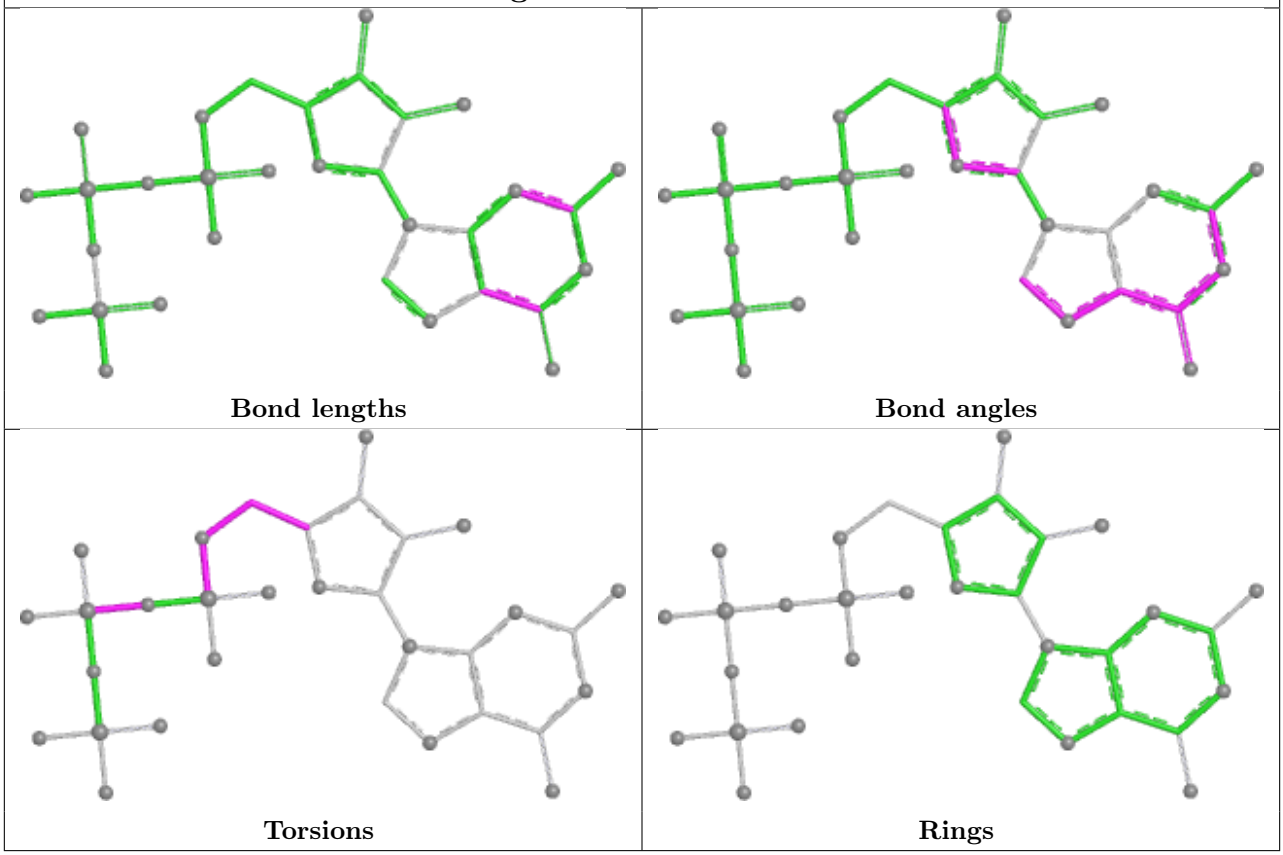

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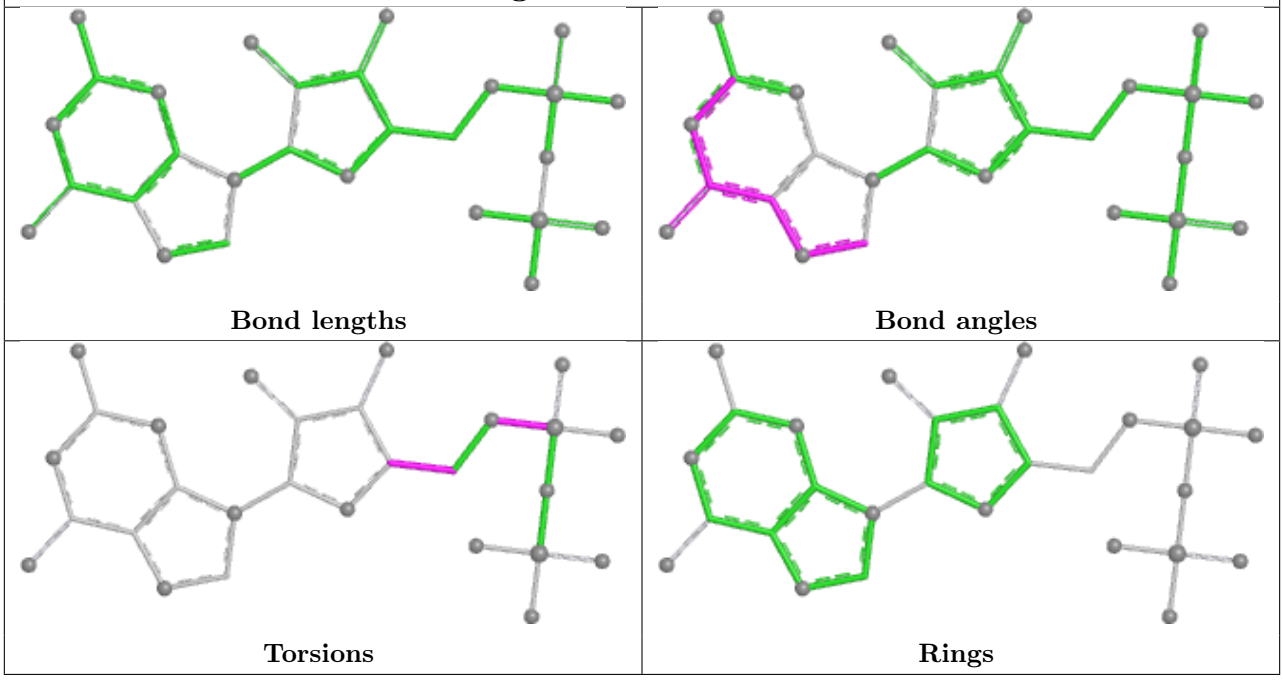

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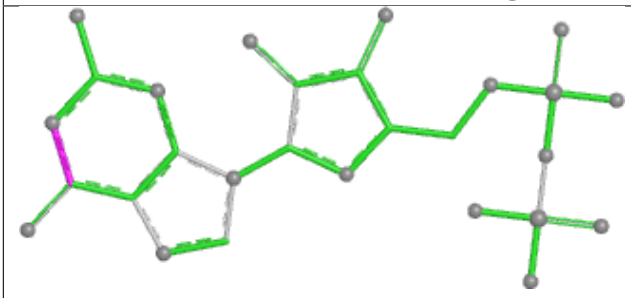

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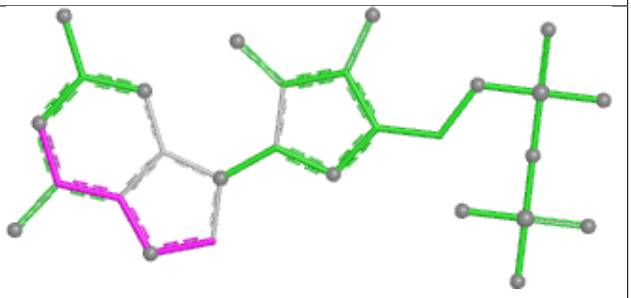

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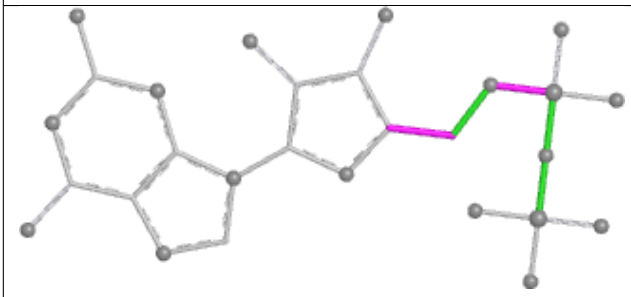

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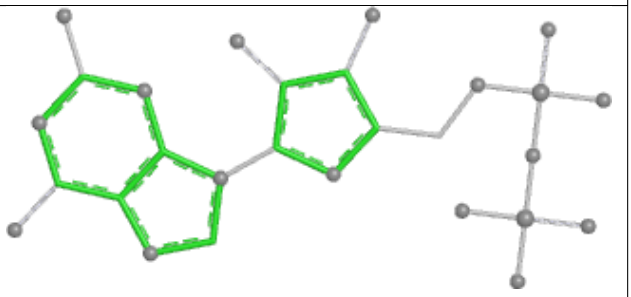

Rings

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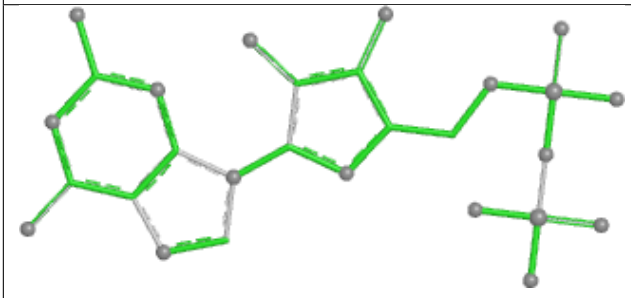

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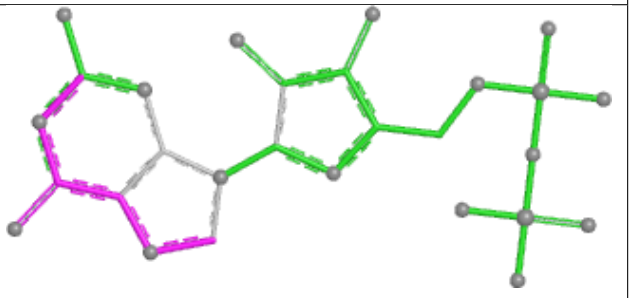

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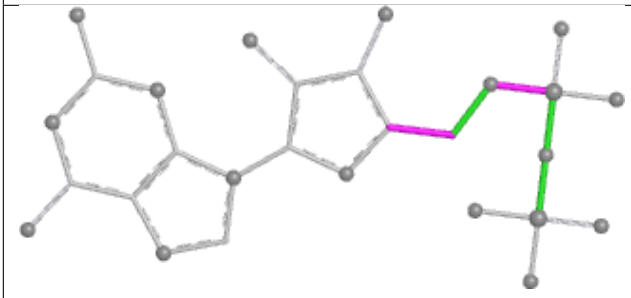

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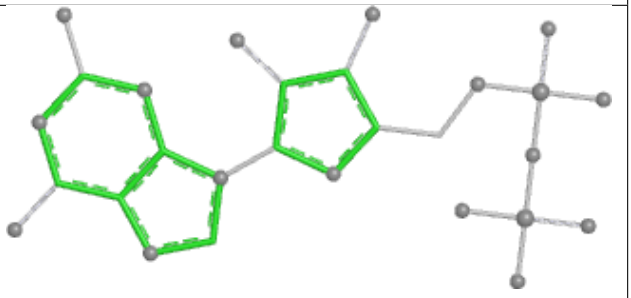

Rings

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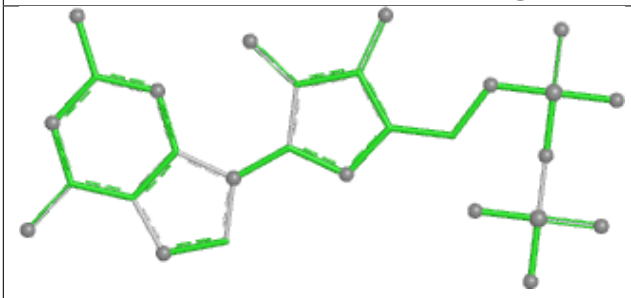
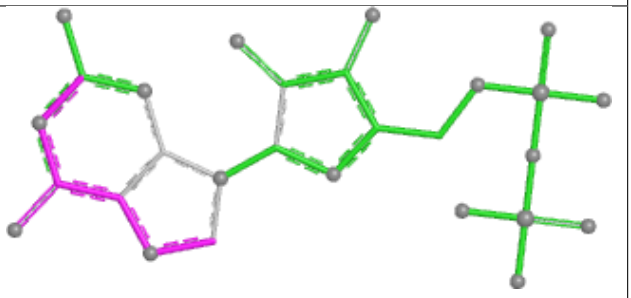
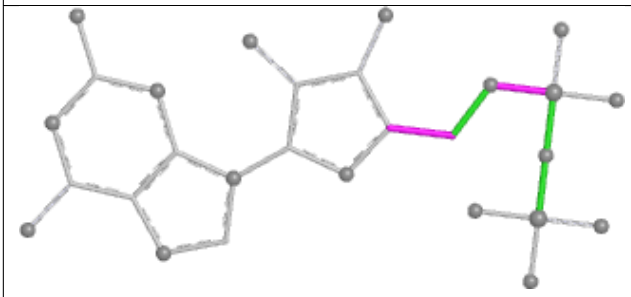
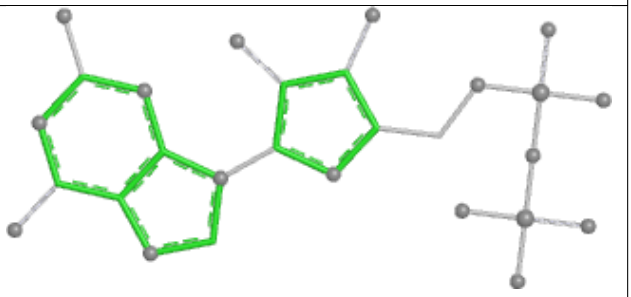
 Bond lengths	 Bond angles
 Torsions	 Rings

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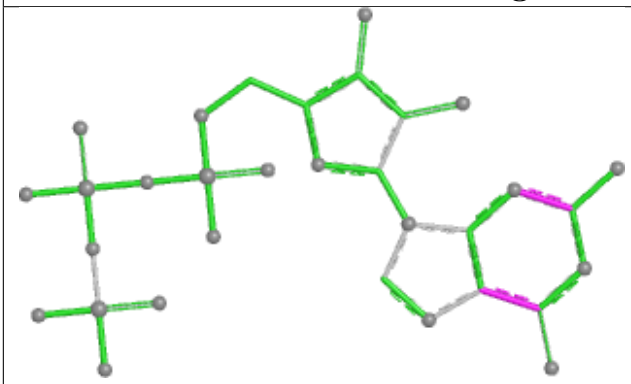
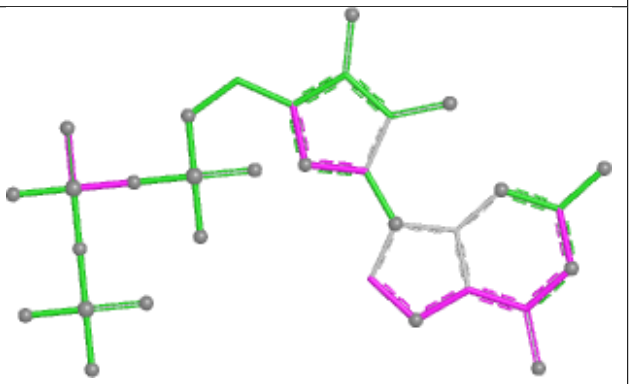
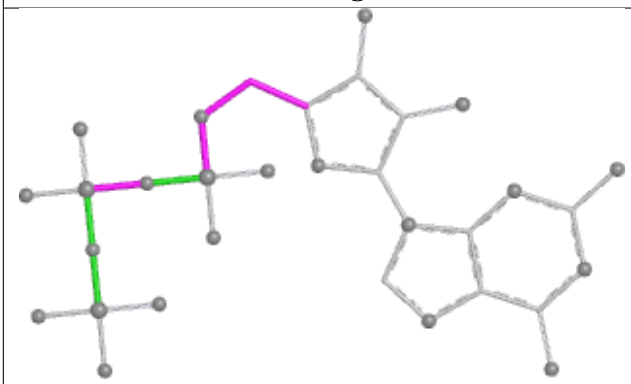
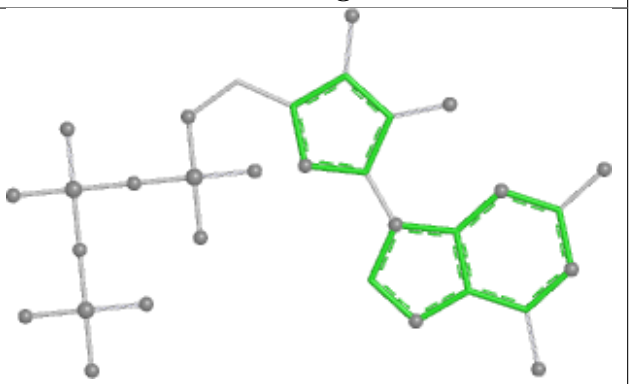
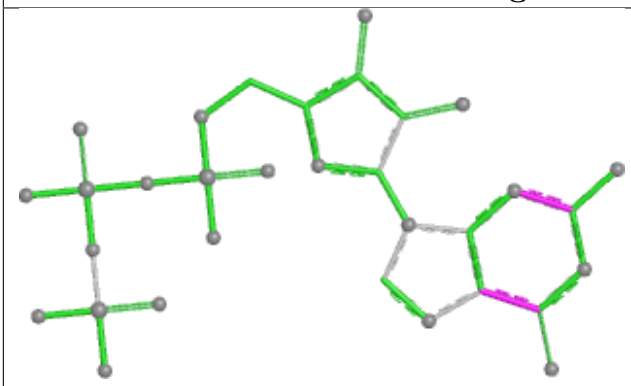
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand GTP BA 501



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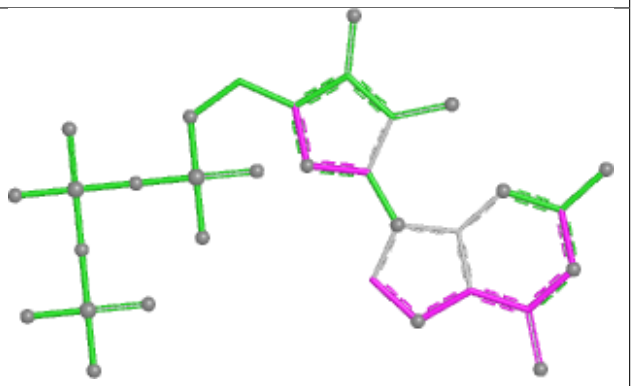

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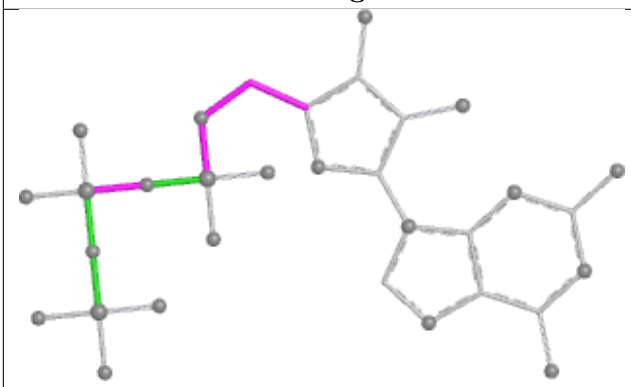

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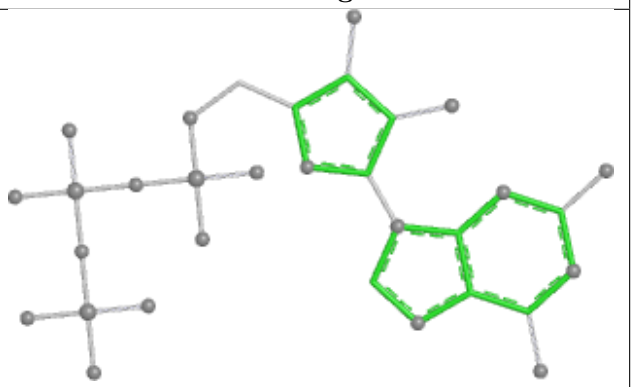
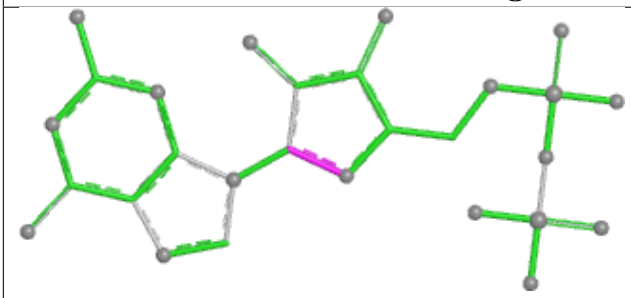


Rings

Ligand GDP AN 501



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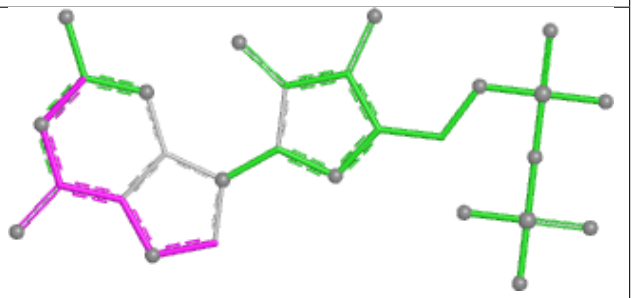

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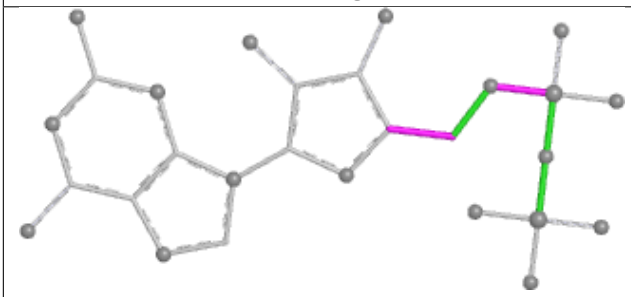

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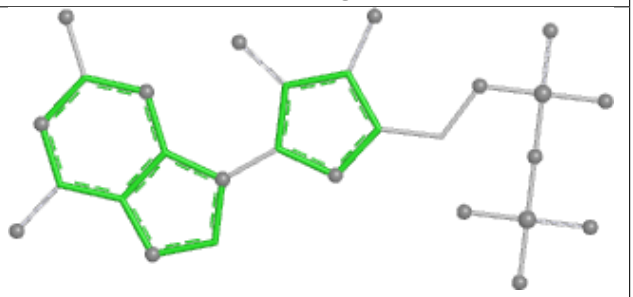

Rings

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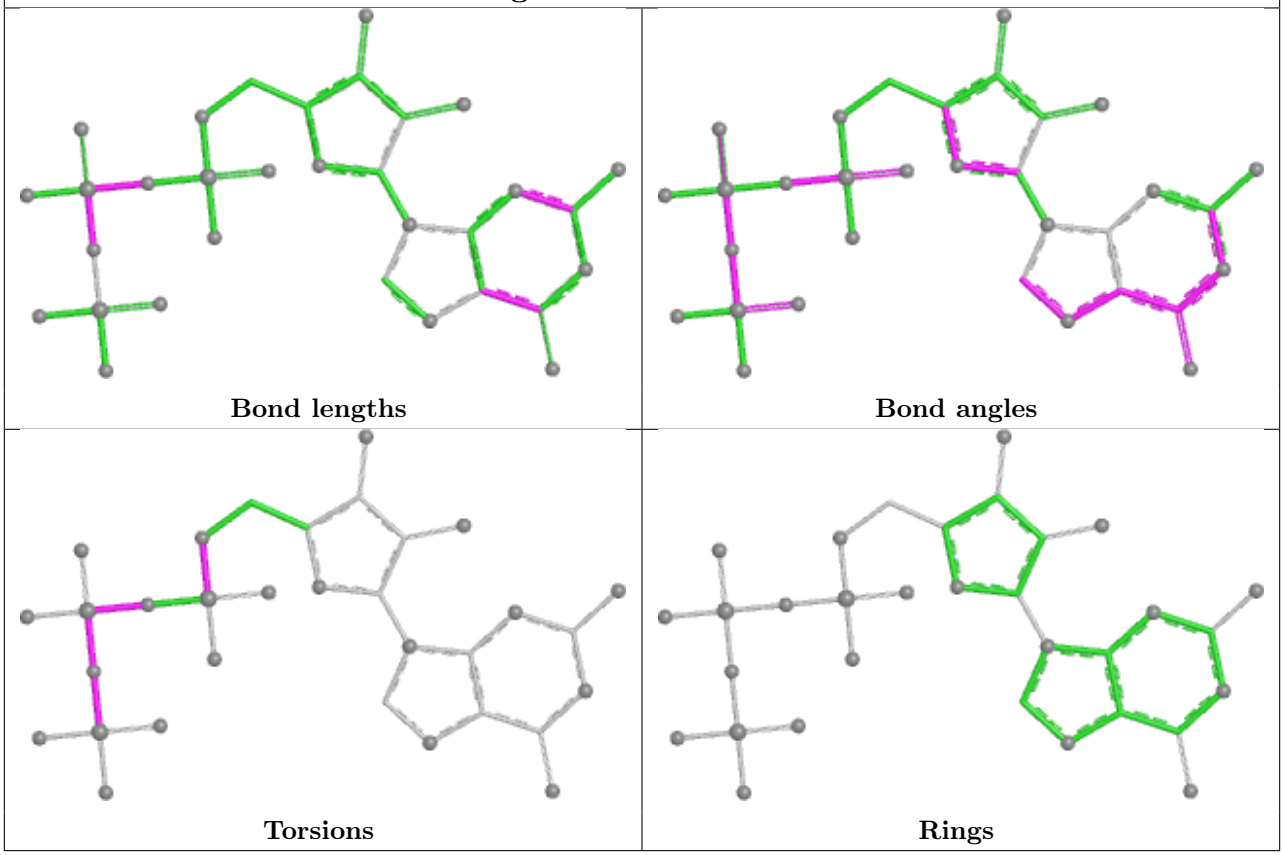
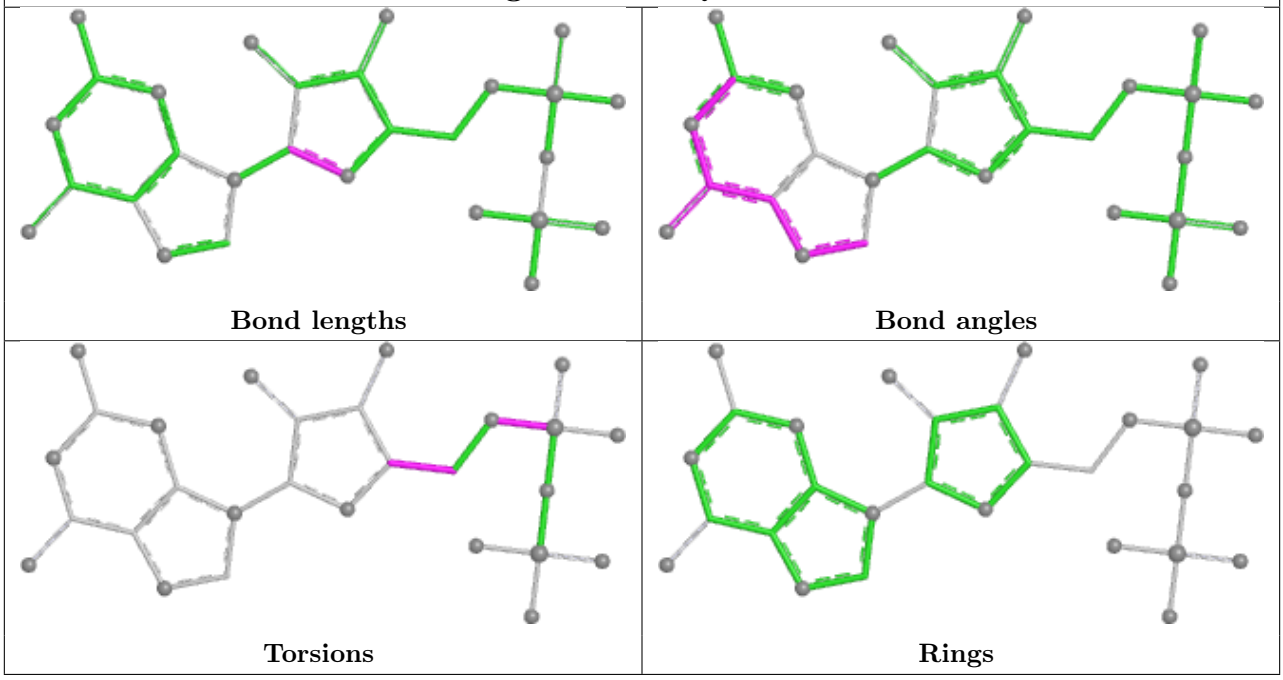
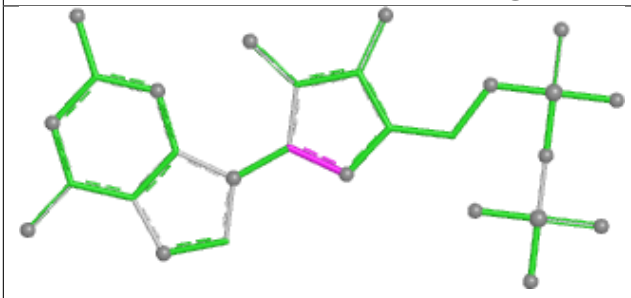


Ligand GDP QM 501



Ligand GDP LM 502



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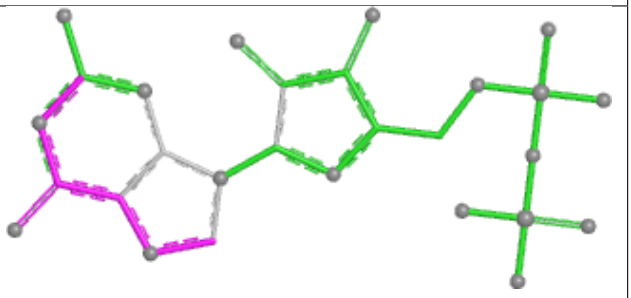

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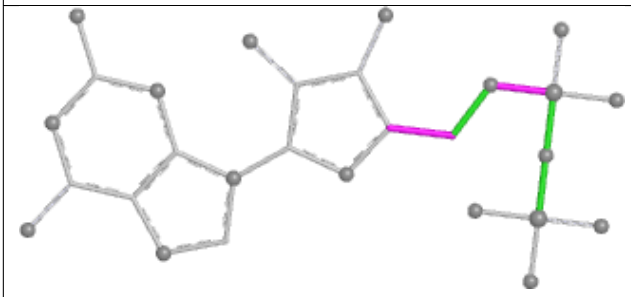
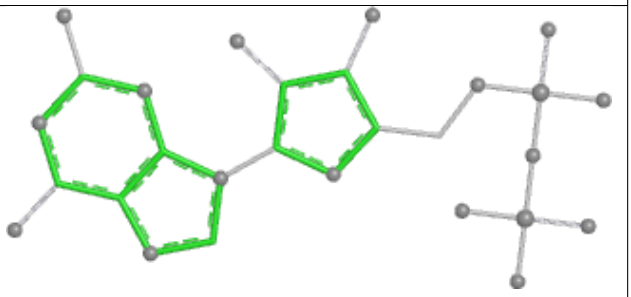
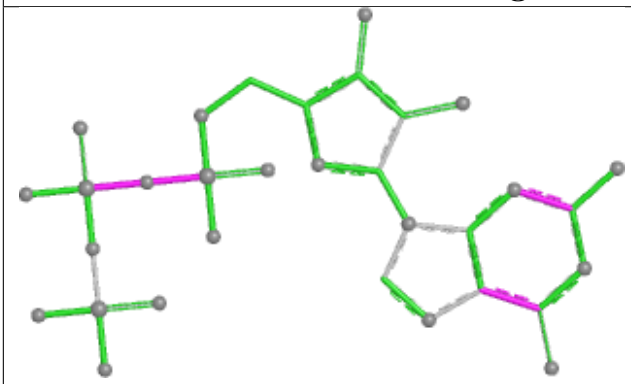


Torsions



Rings

Ligand GTP GP 501



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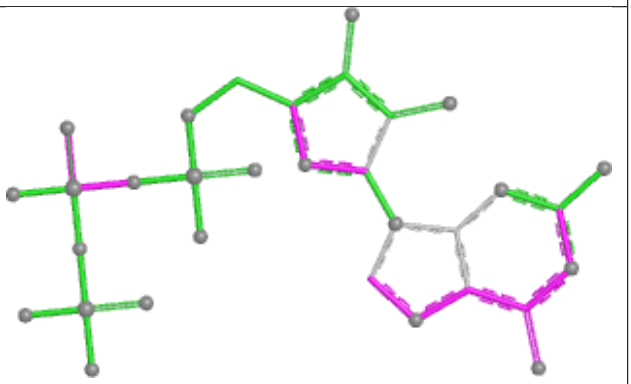

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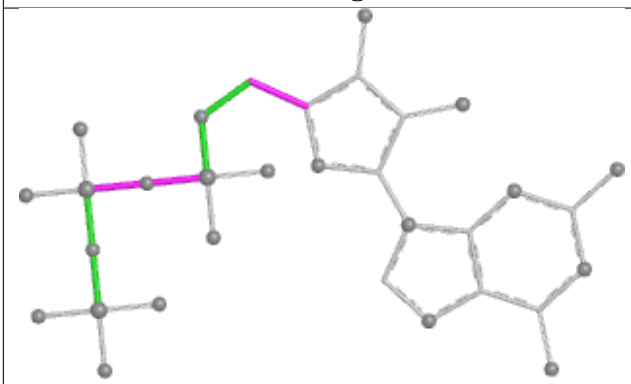

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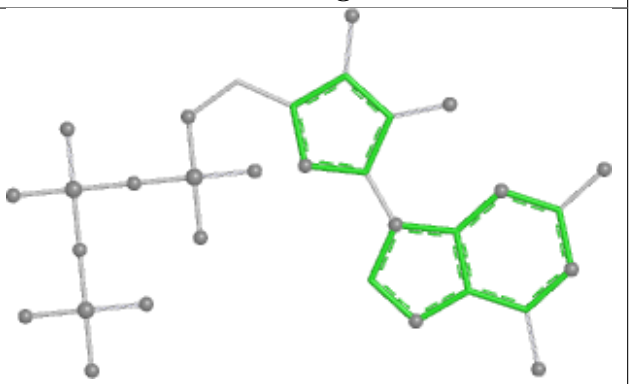

Rings

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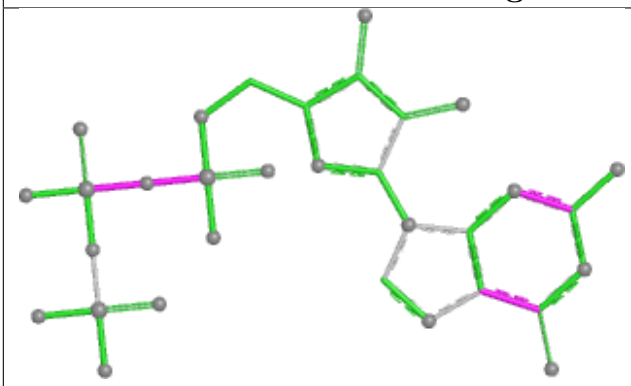

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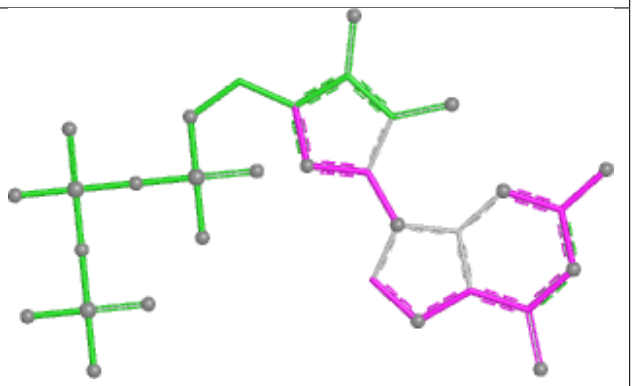

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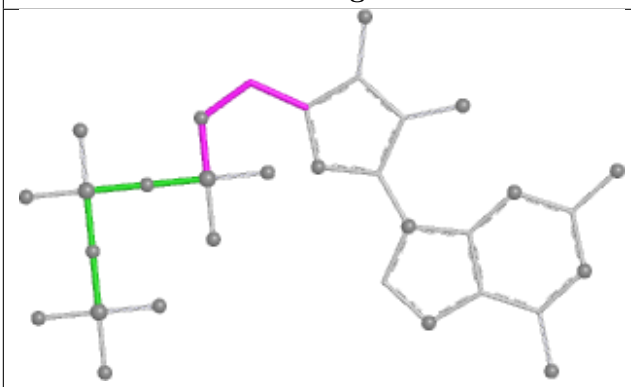

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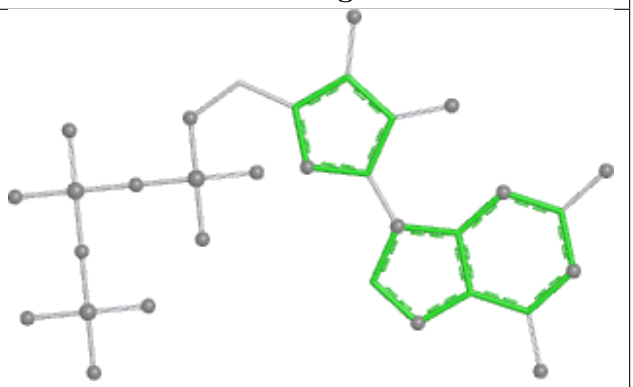
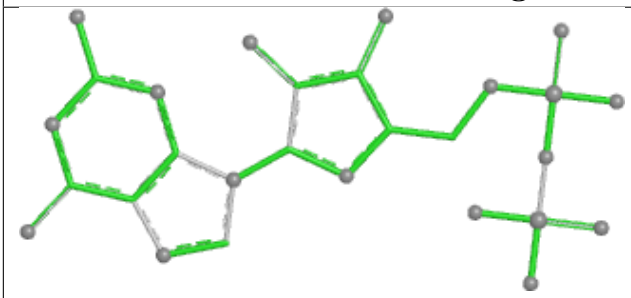


Rings

Ligand GDP AL 501



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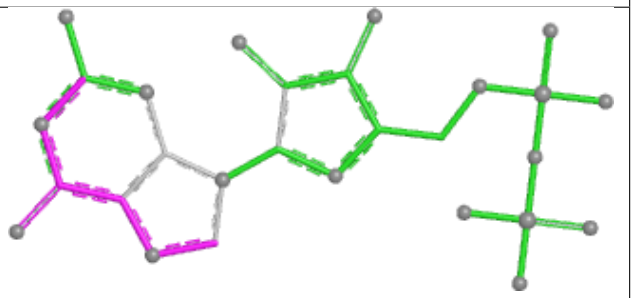

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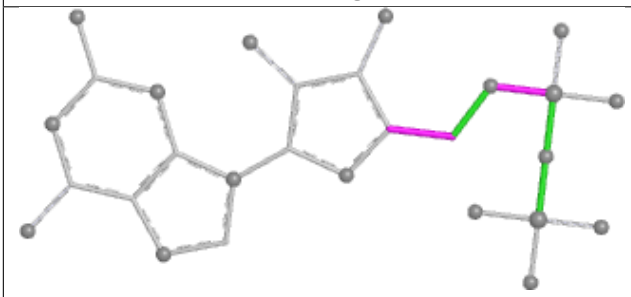

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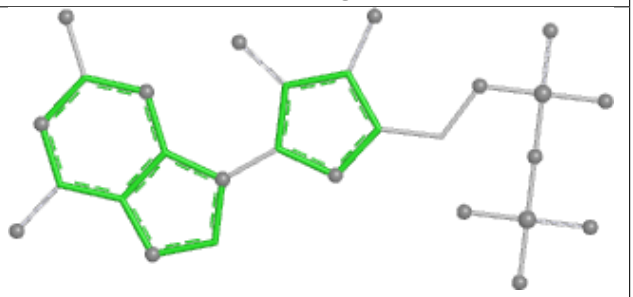

Rings

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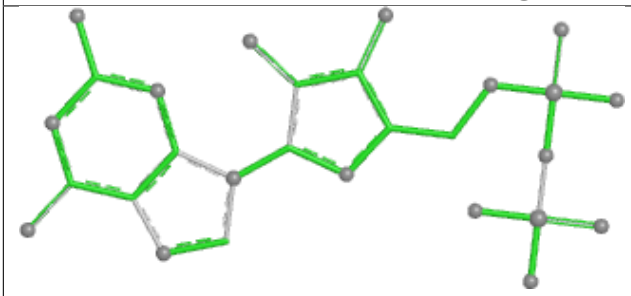

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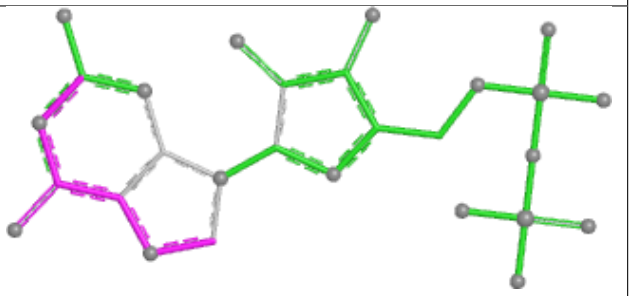

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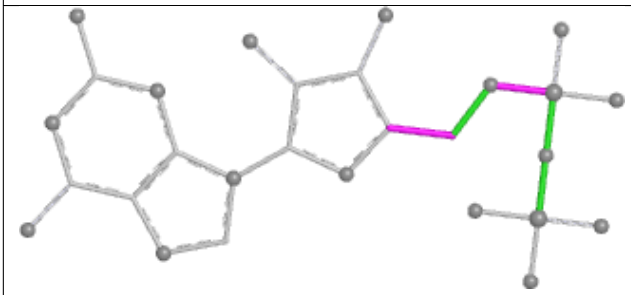

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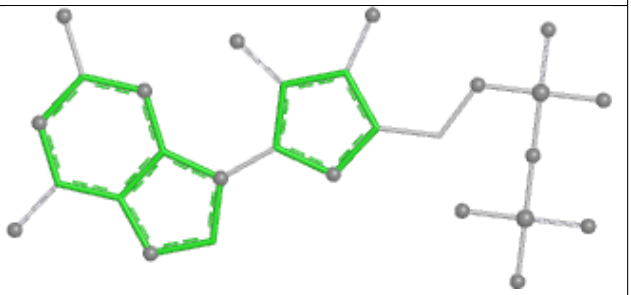

Rings

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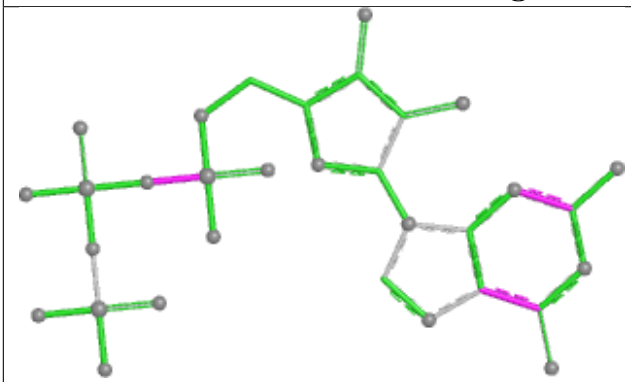

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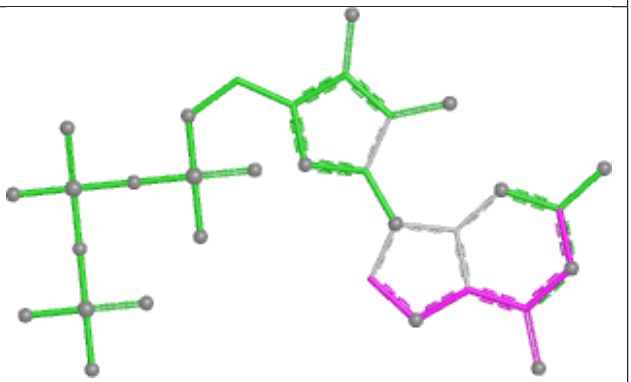

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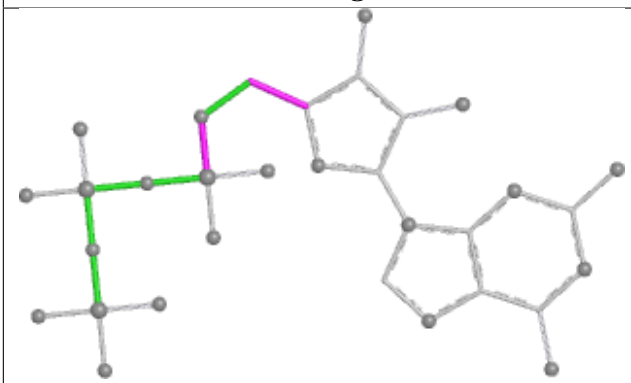

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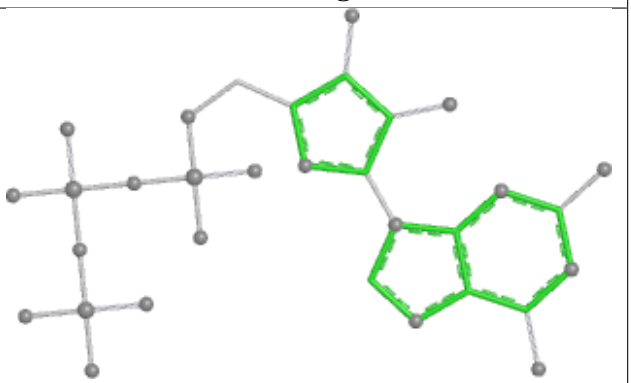
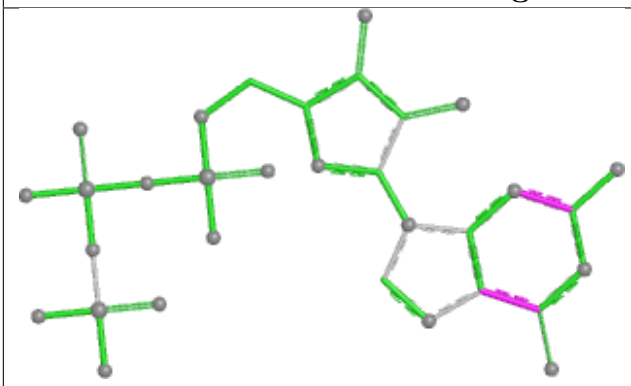


Rings

Ligand GTP FB 502



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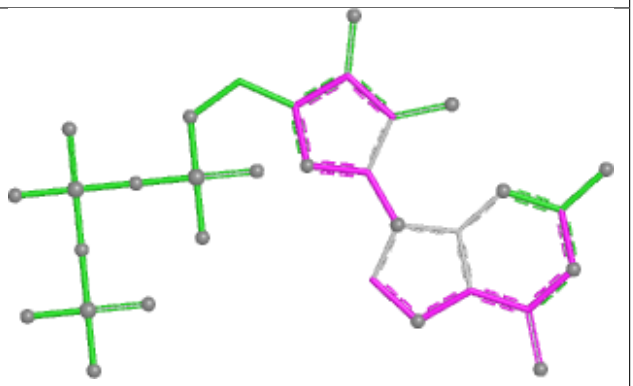

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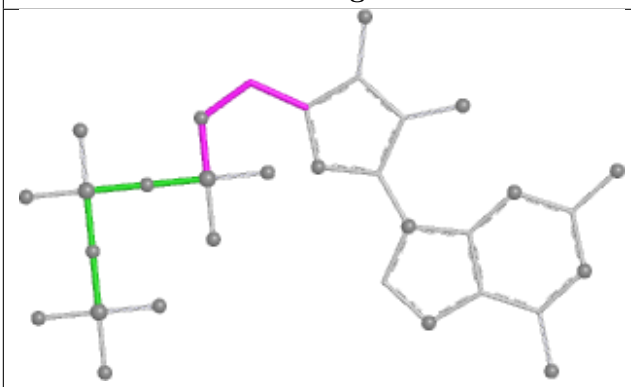

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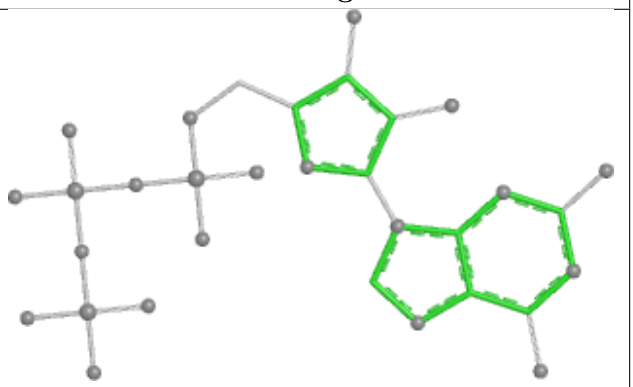

Rings

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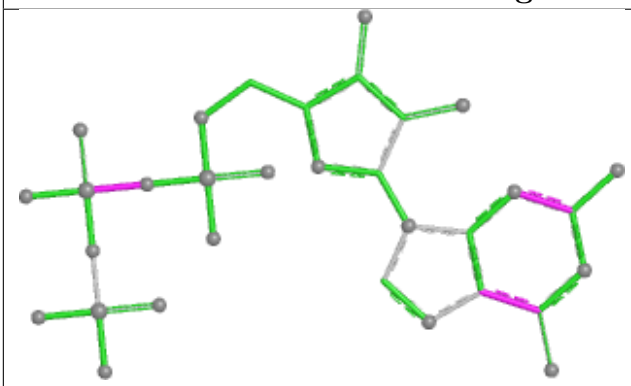

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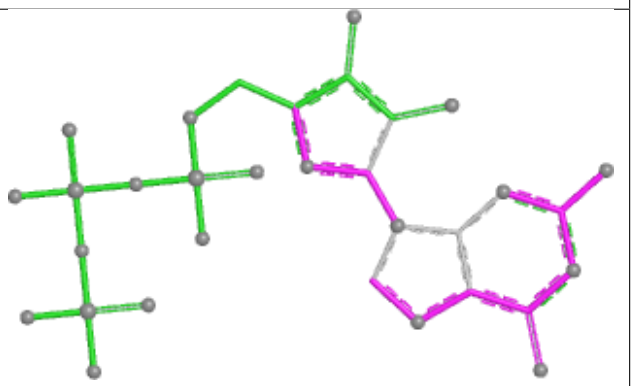

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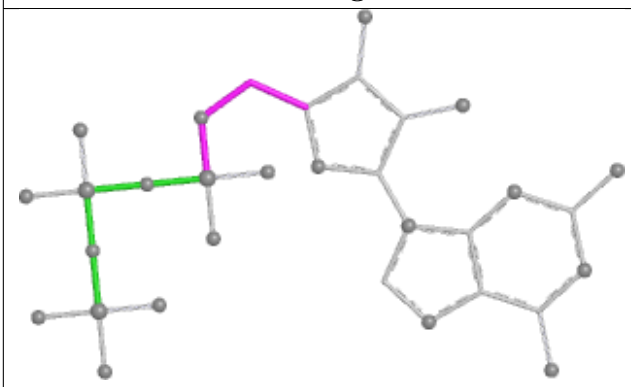

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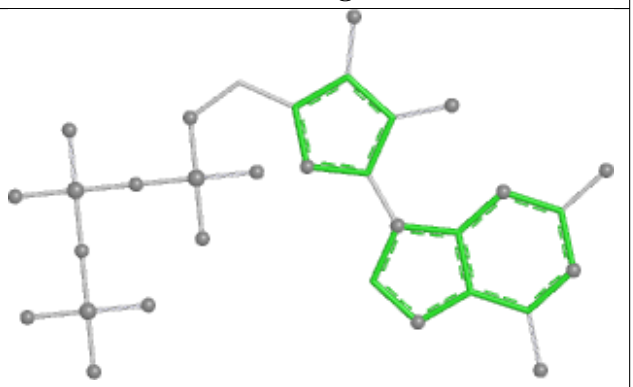

Rings

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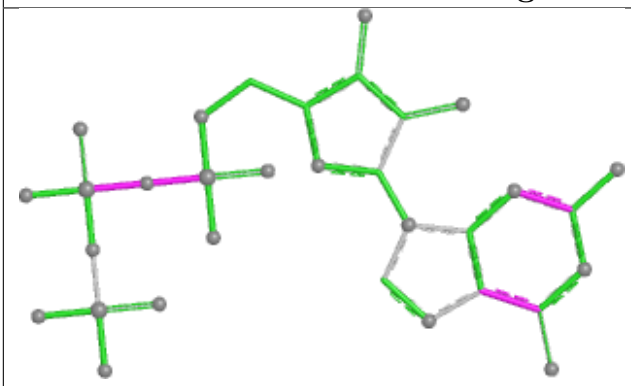

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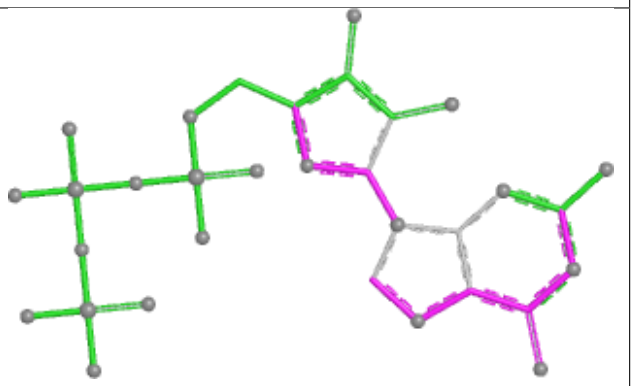

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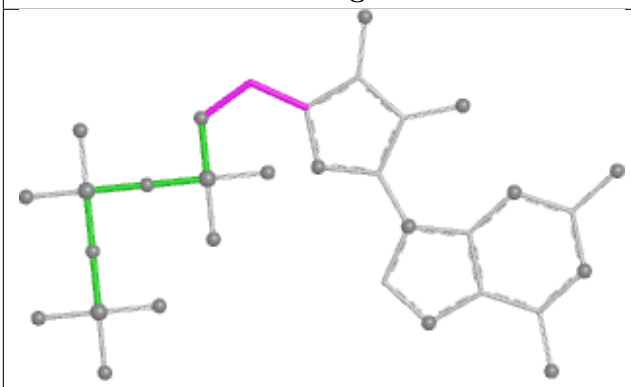

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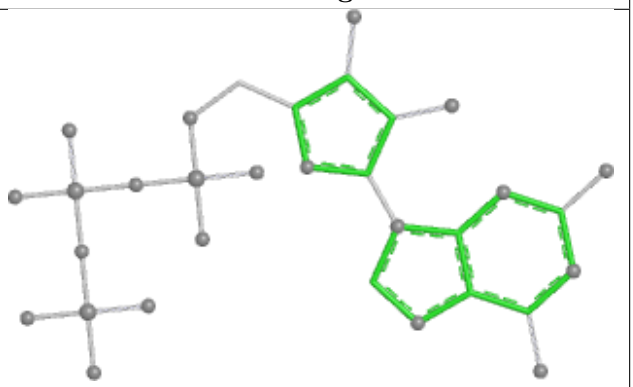

Rings

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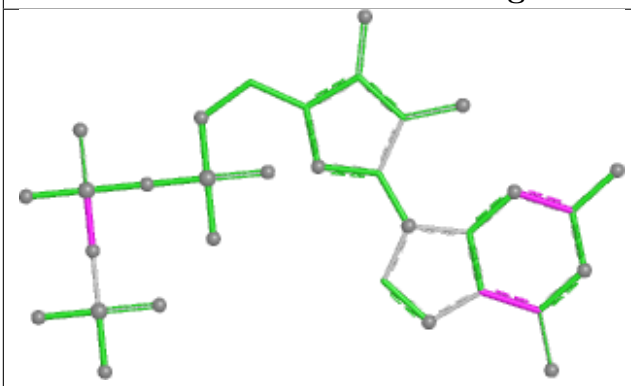

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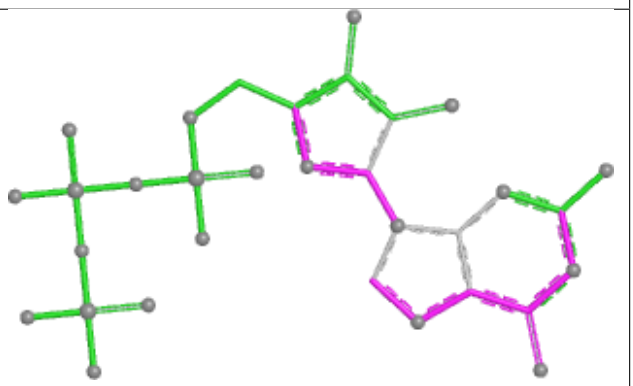

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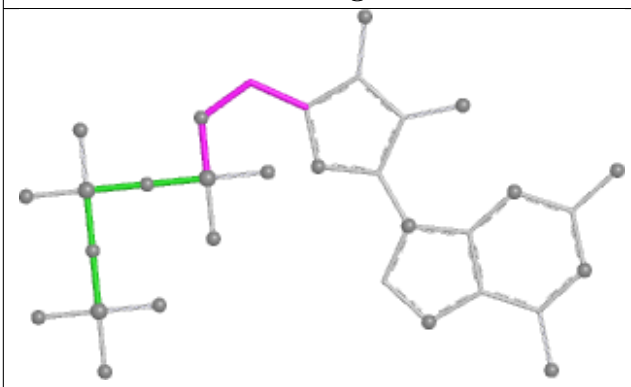

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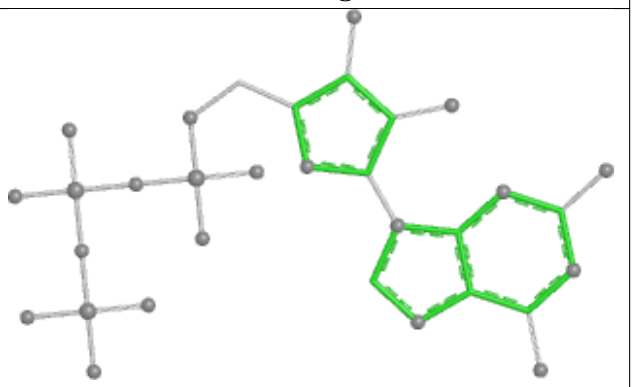

Rings

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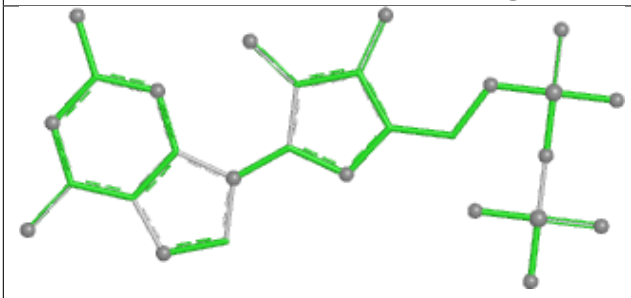

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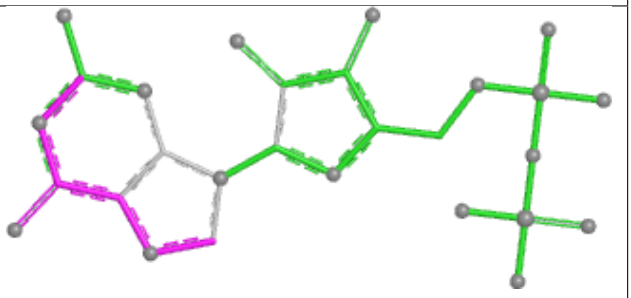

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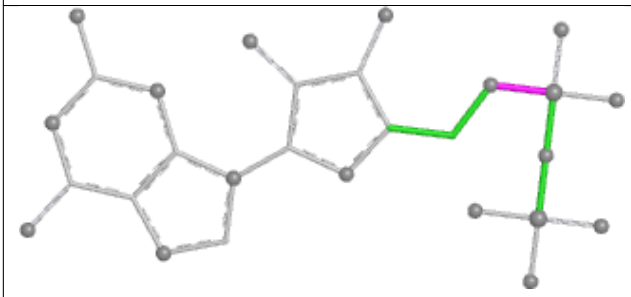

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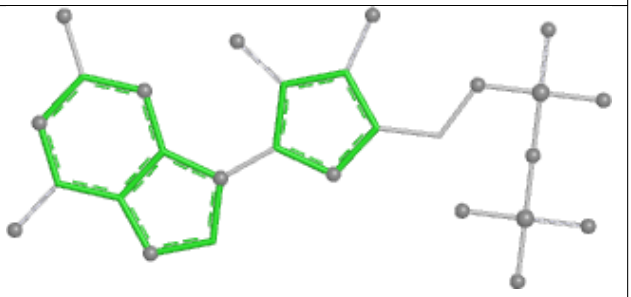
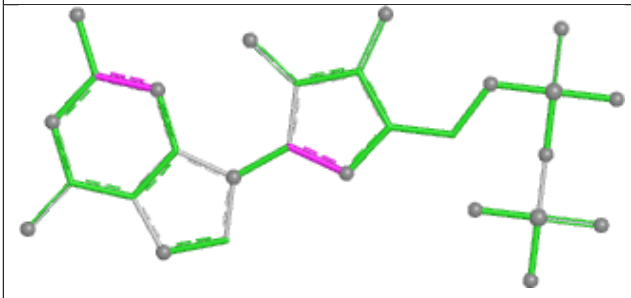


Rings

Ligand GDP EN 501



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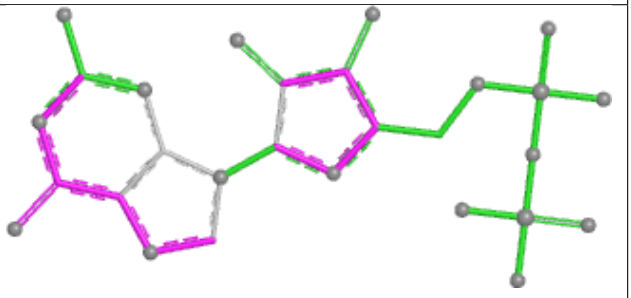

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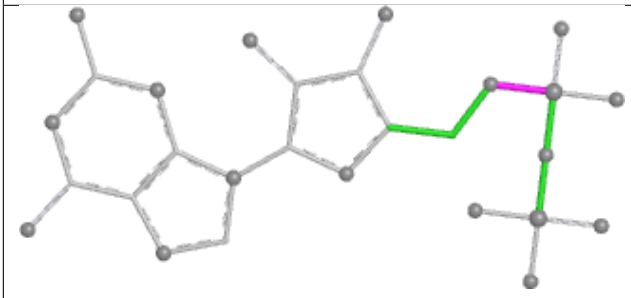

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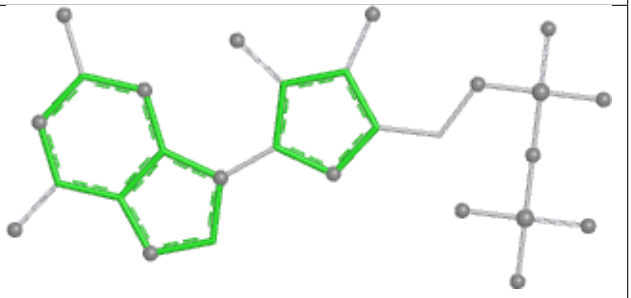
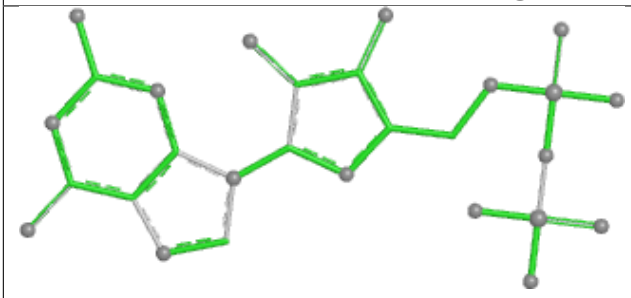


Rings

Ligand GDP LP 501



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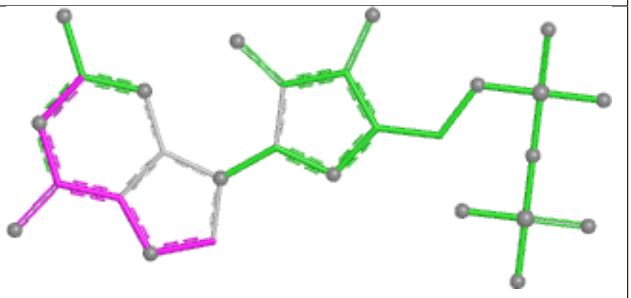

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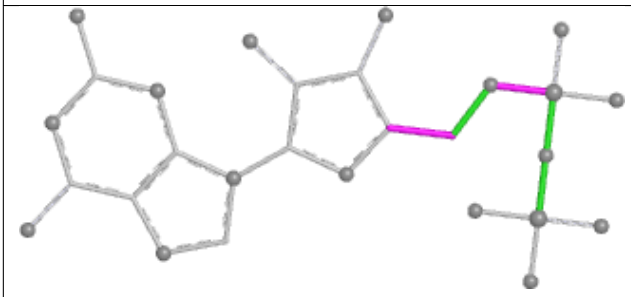

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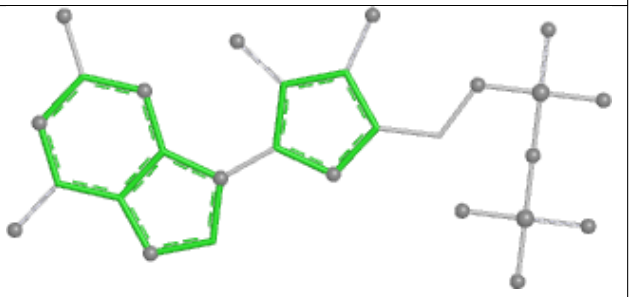
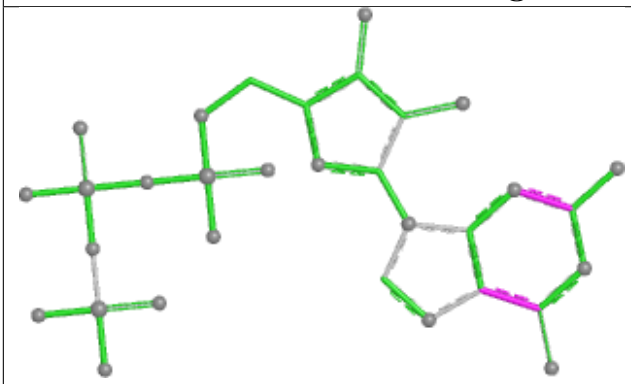


Rings

Ligand GTP LM 501



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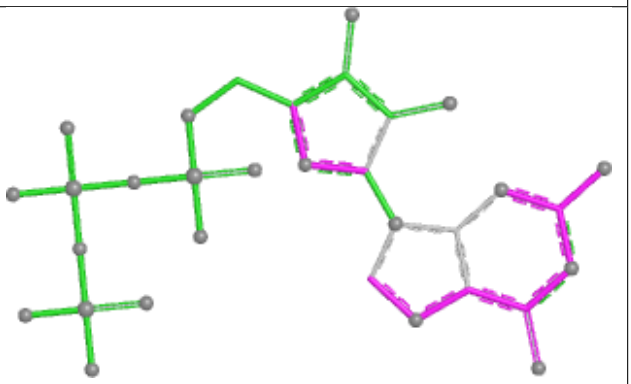

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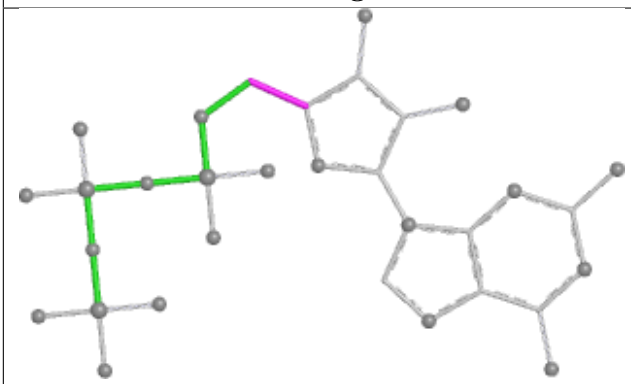
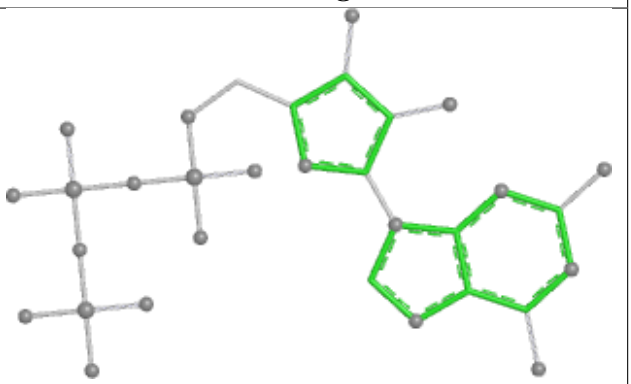
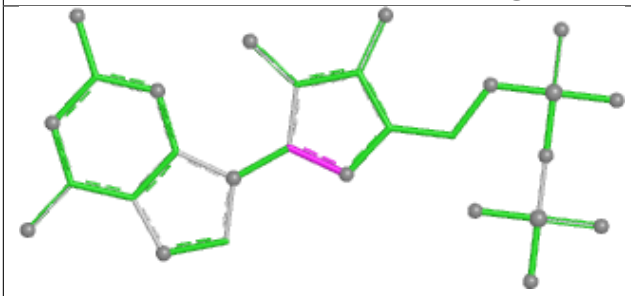


Torsions



Rings

Ligand GDP CO 501



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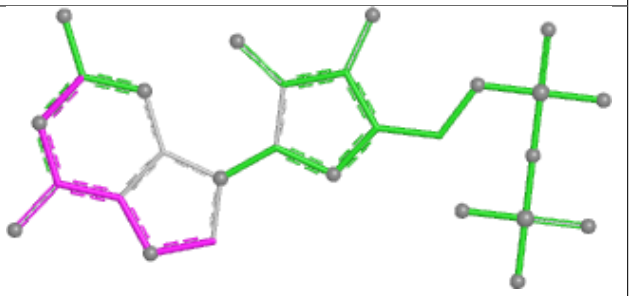

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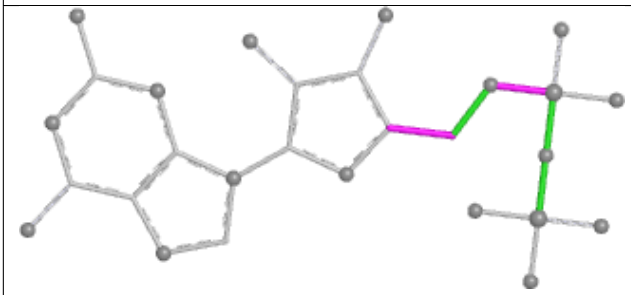

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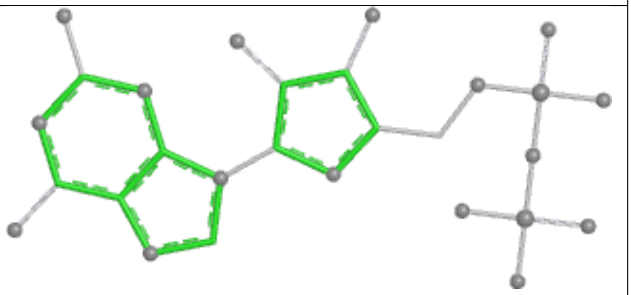
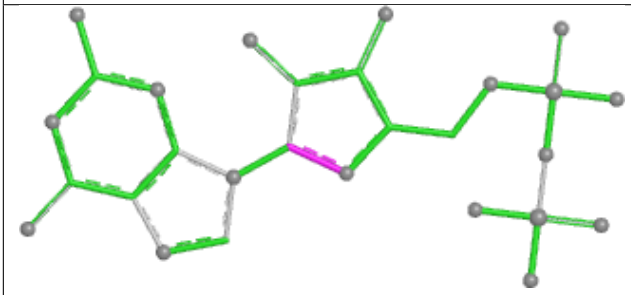


Rings

Ligand GDP CB 501



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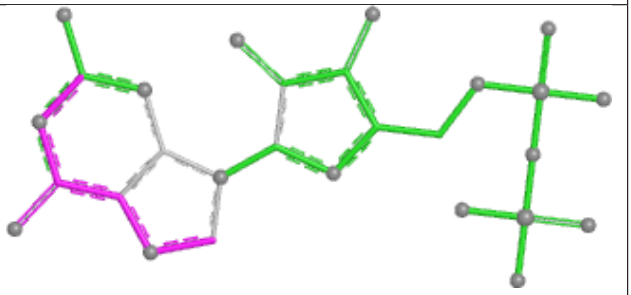

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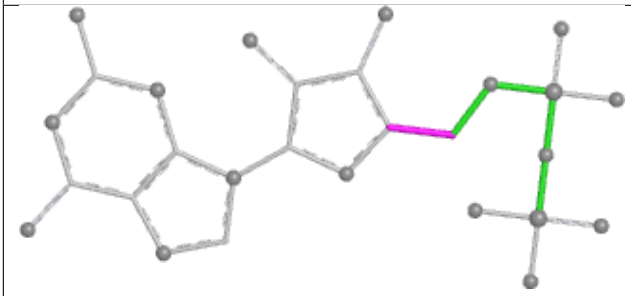

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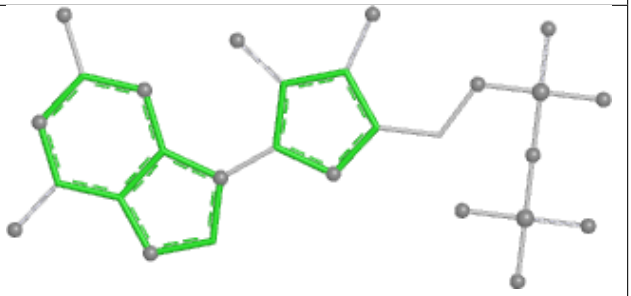

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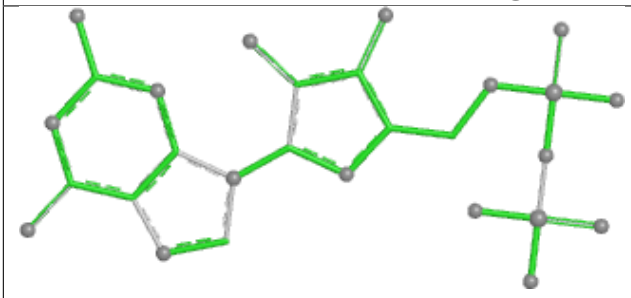

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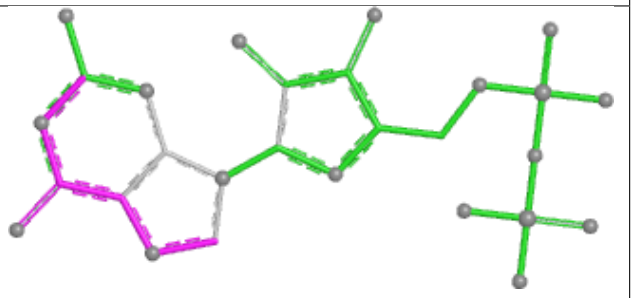

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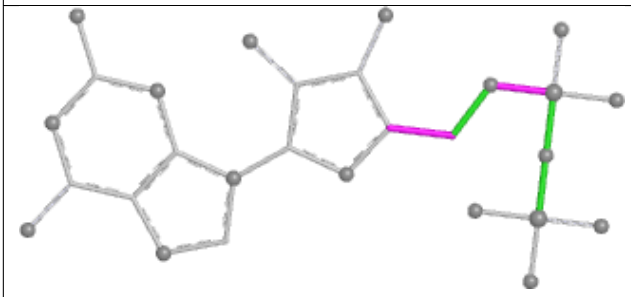

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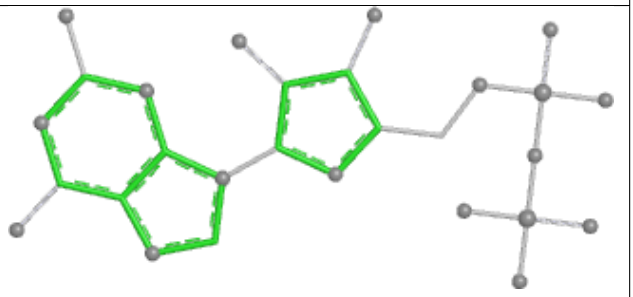
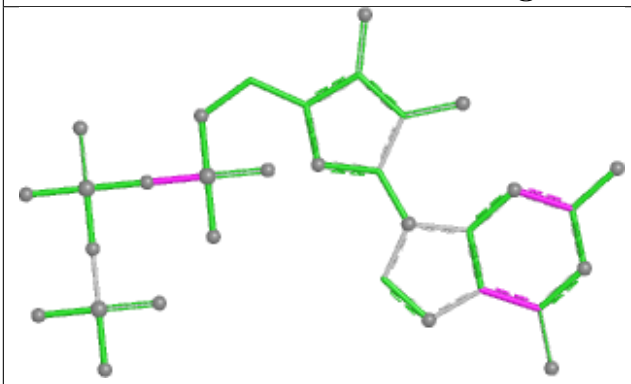


Rings

Ligand GTP IE 501



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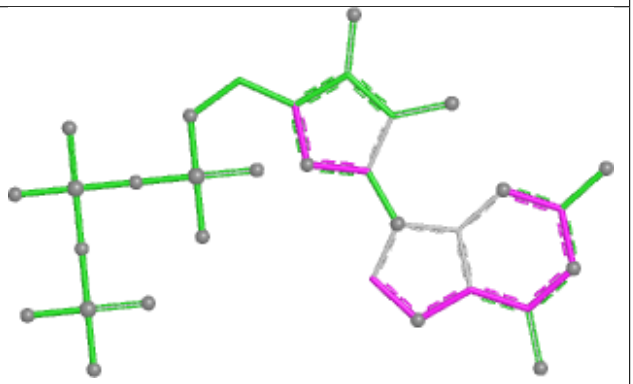

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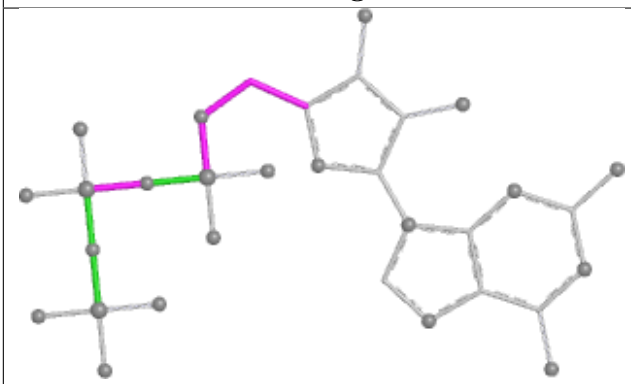

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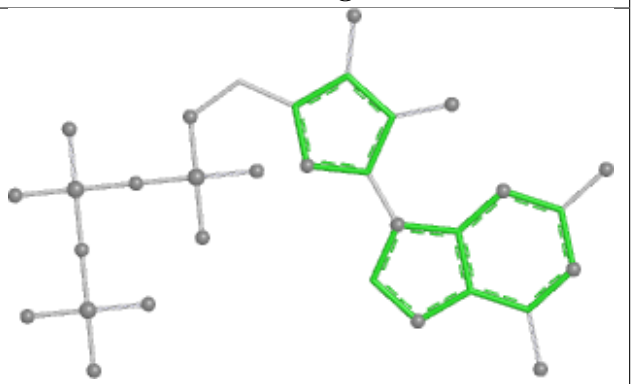

Rings

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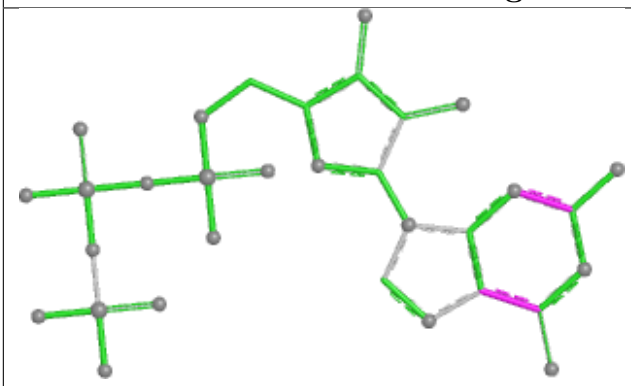

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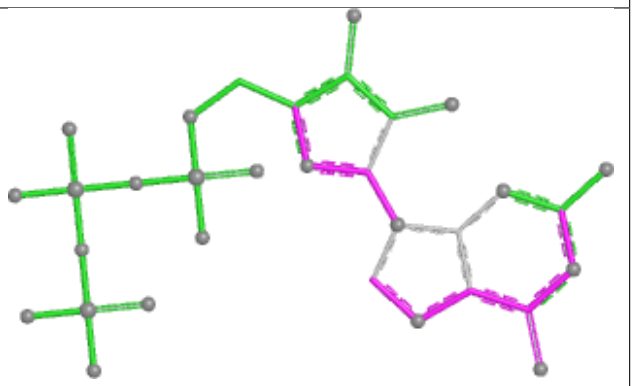

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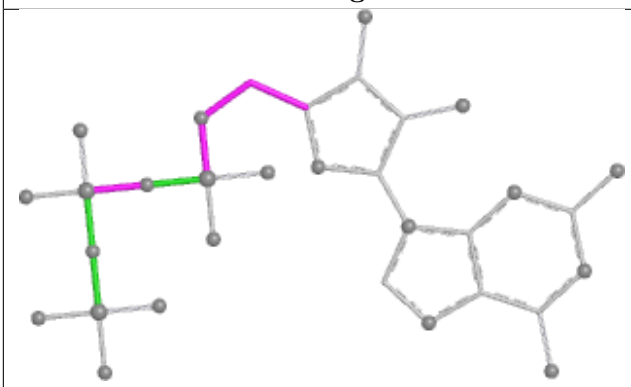

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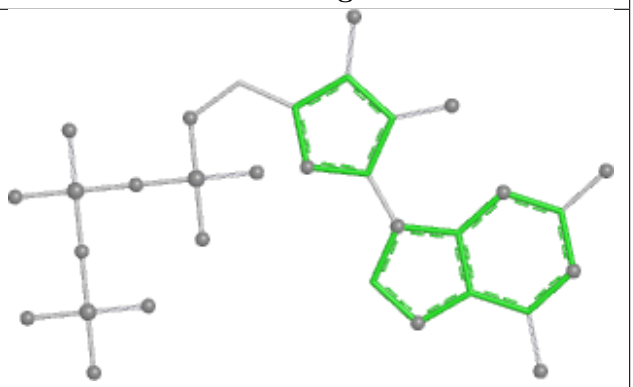

Rings

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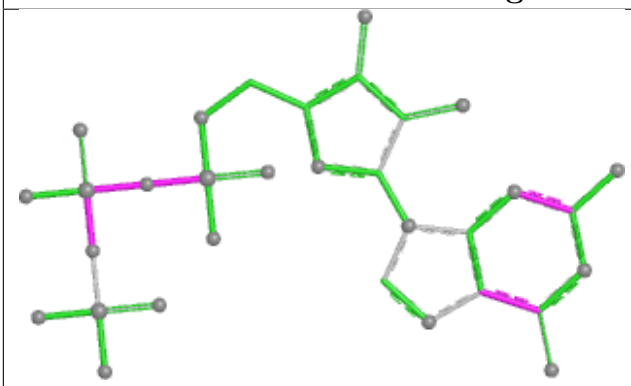

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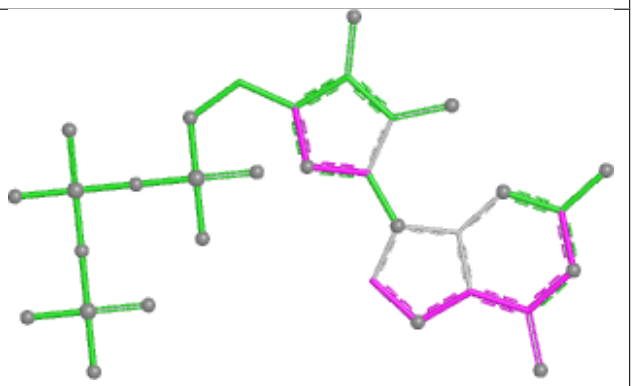

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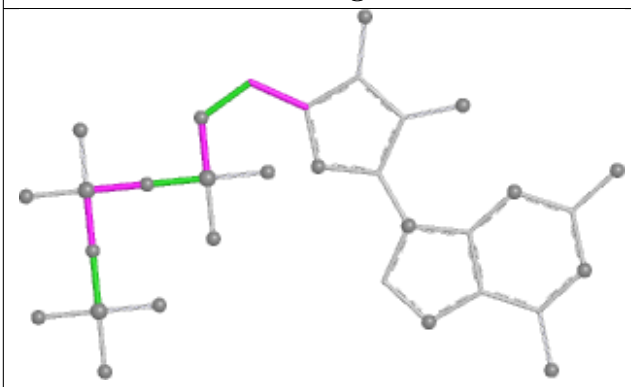

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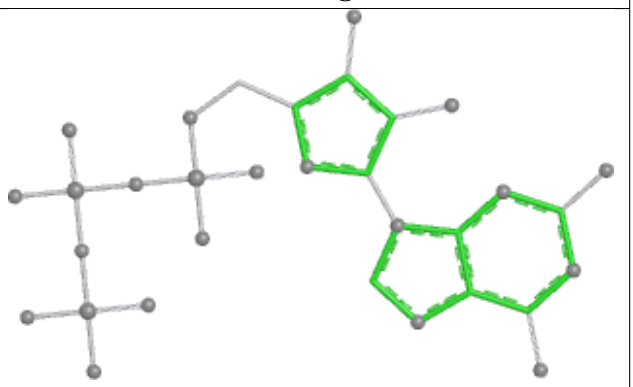

Rings

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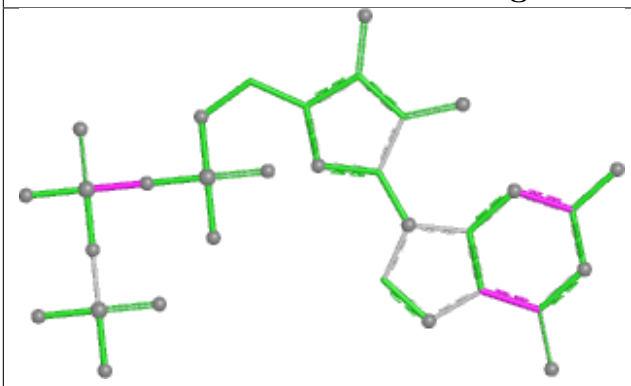

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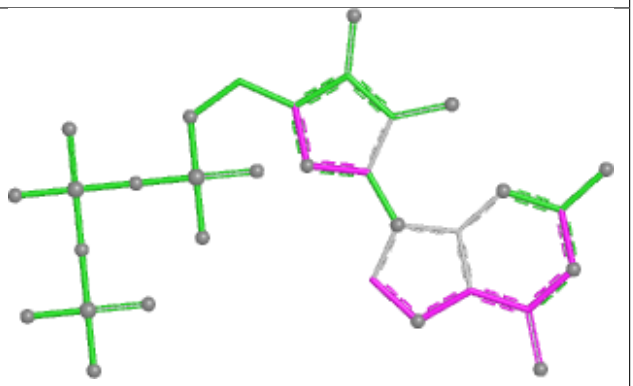

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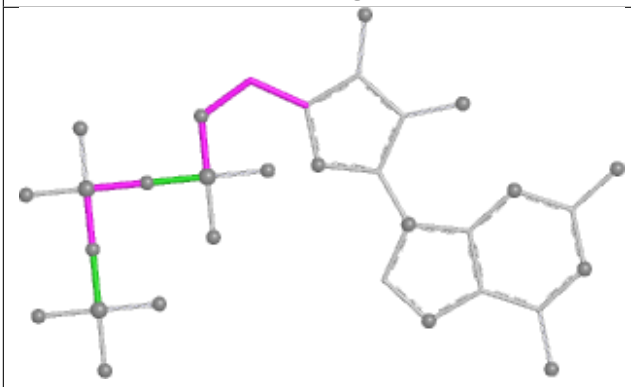

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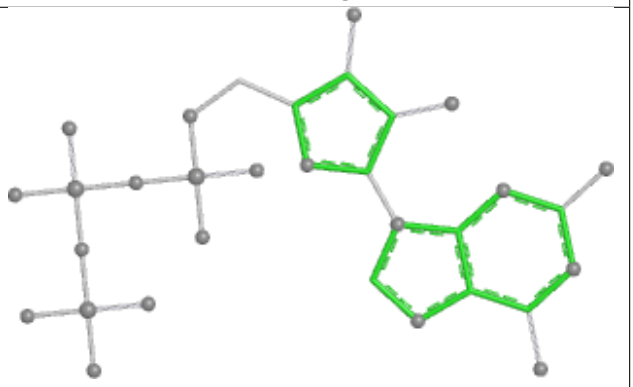

Rings

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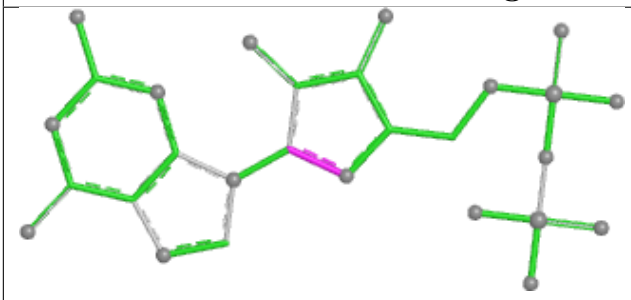

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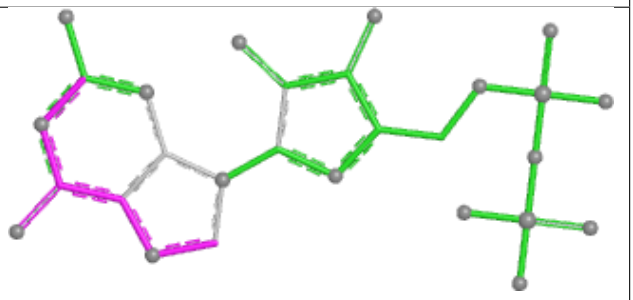

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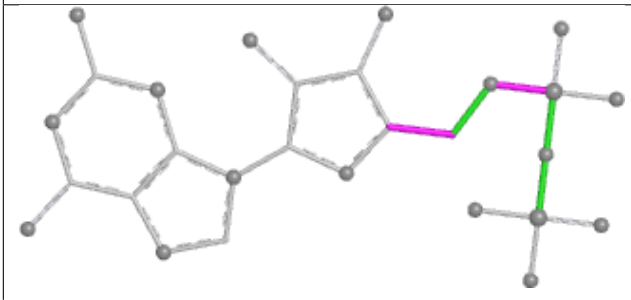

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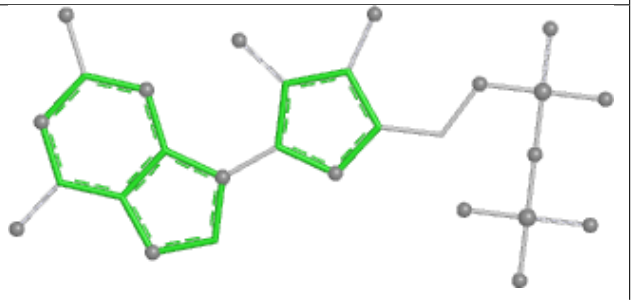

Rings

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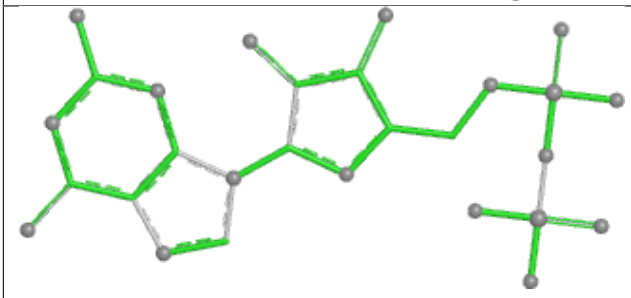

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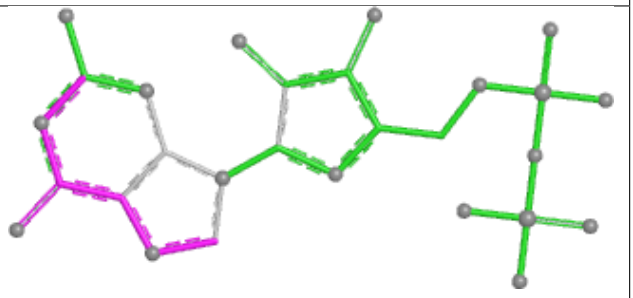

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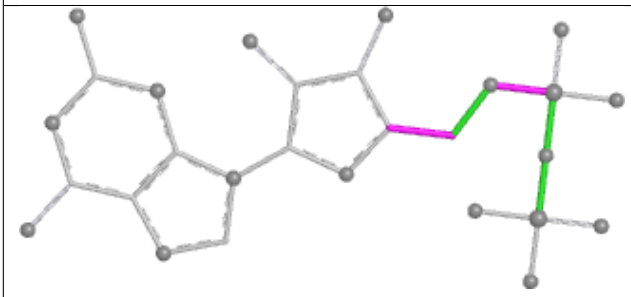

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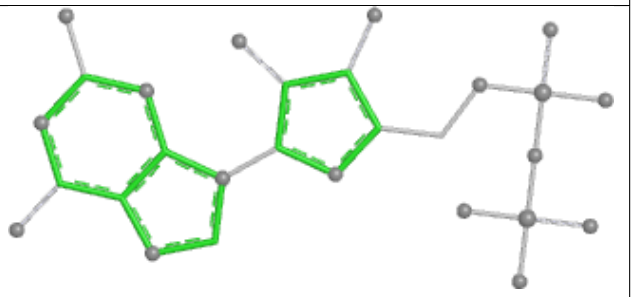

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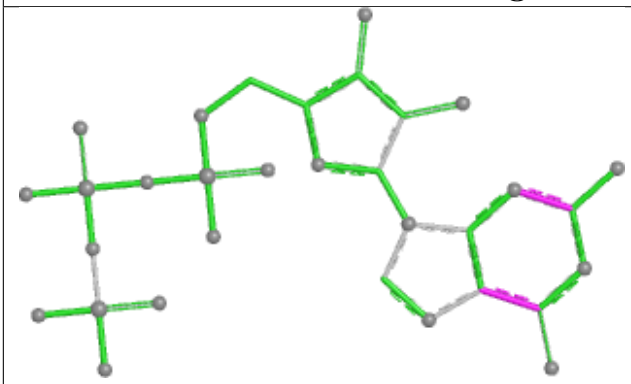

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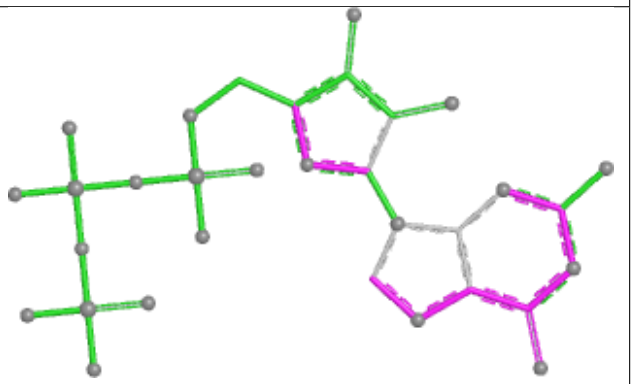

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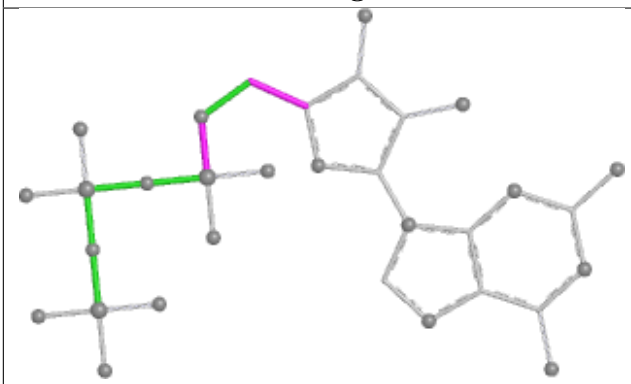

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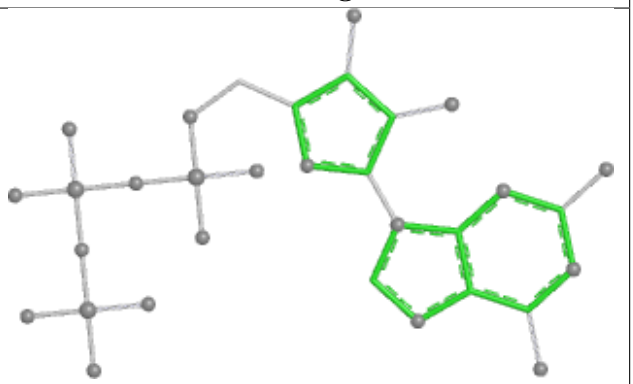

Rings

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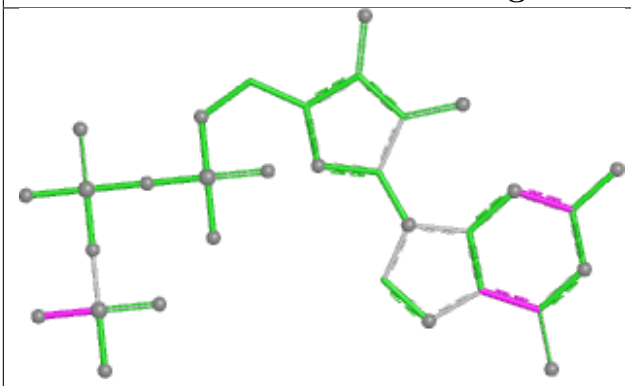

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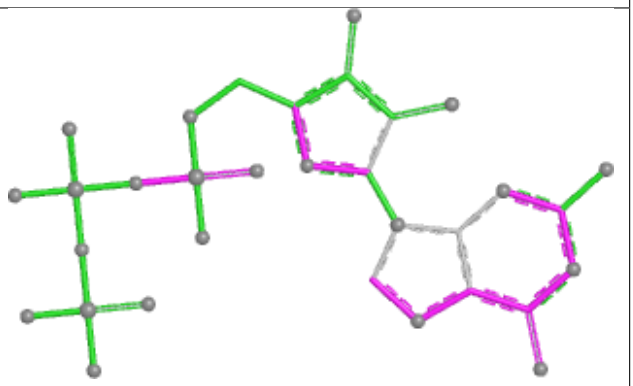

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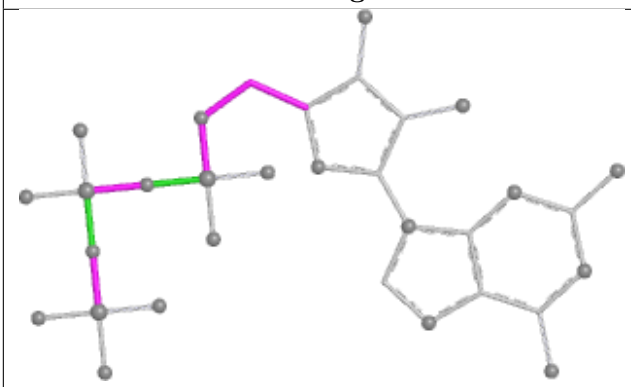

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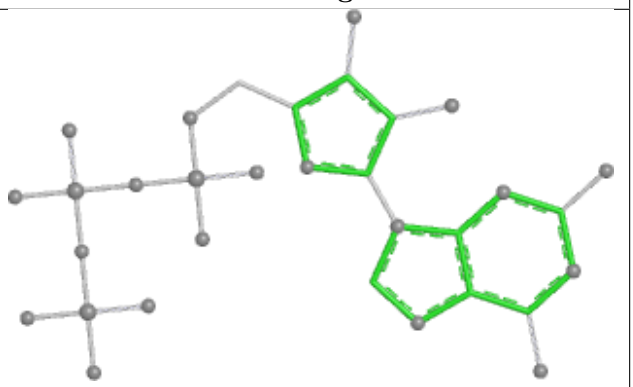

Rings

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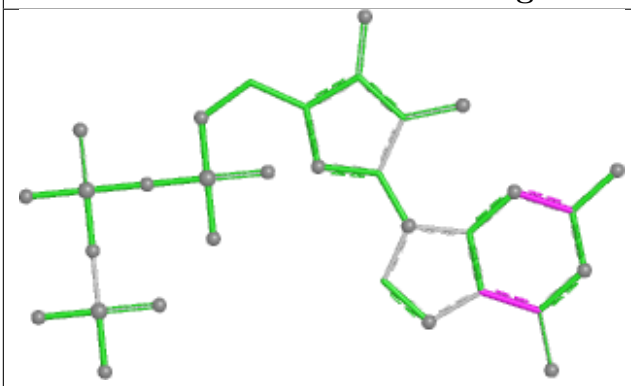

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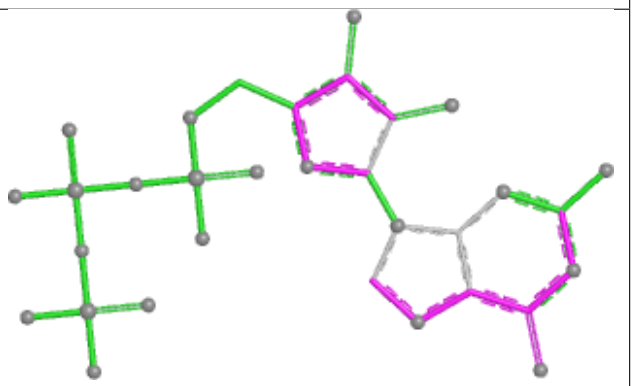

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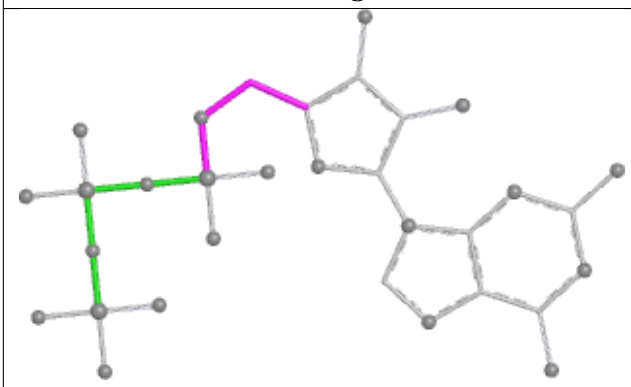

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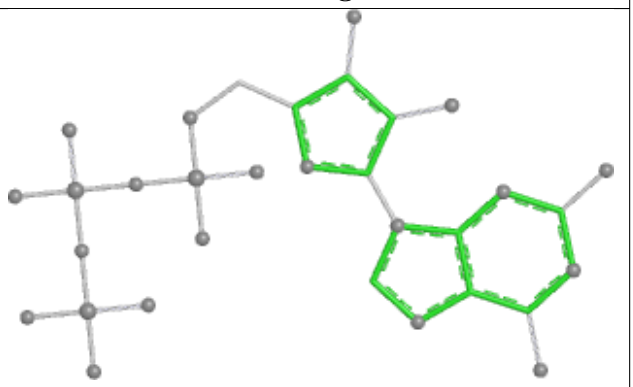

Rings

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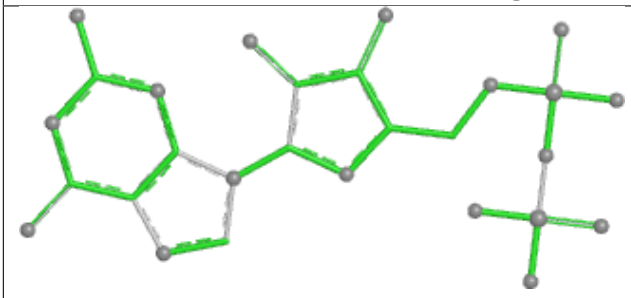

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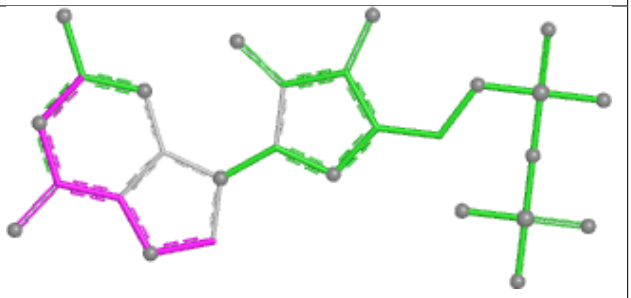

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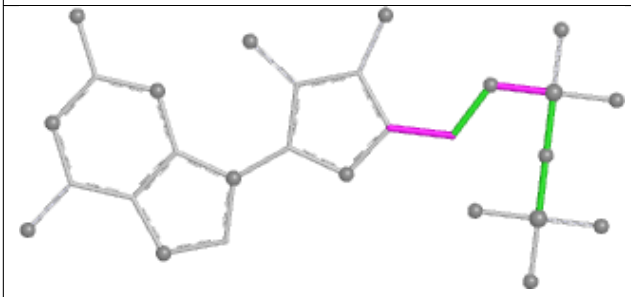

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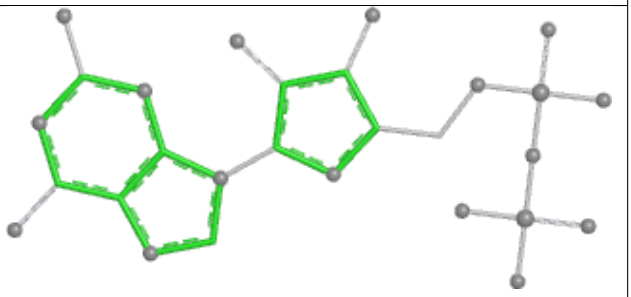

Rings

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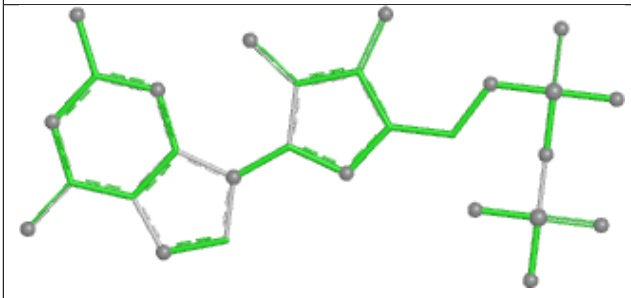

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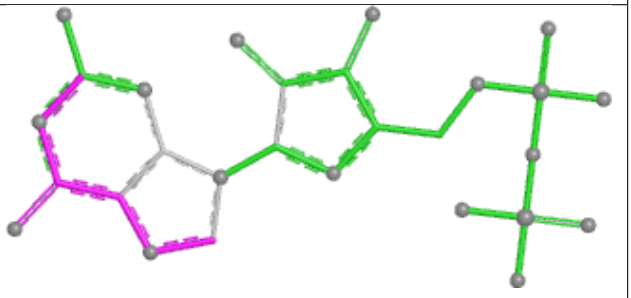
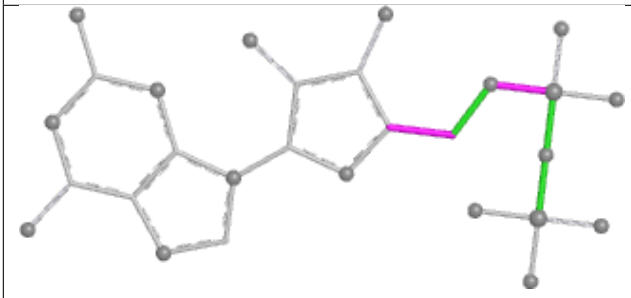
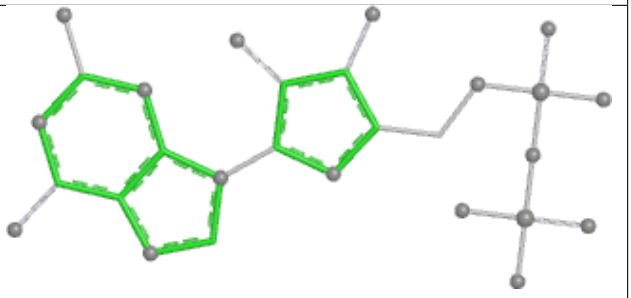


Bond angles

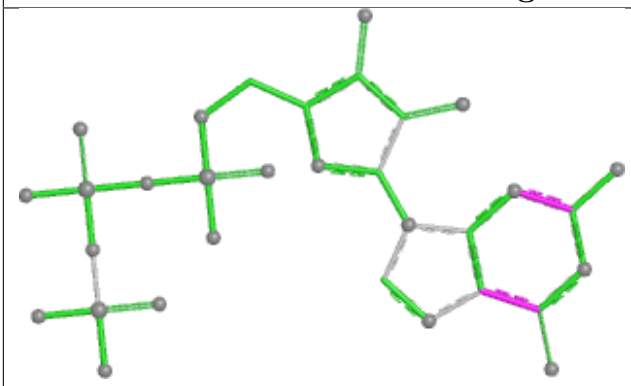


Torsions



Rings

Ligand GTP IF 501



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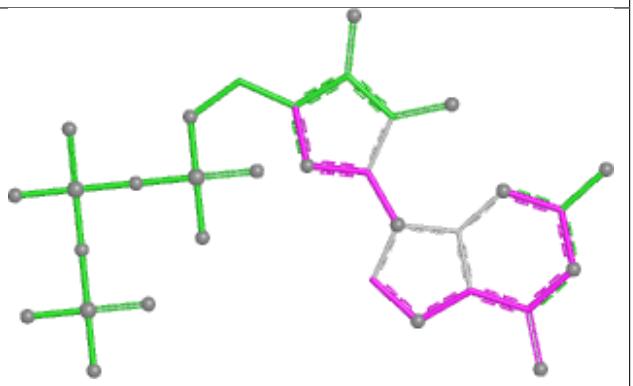

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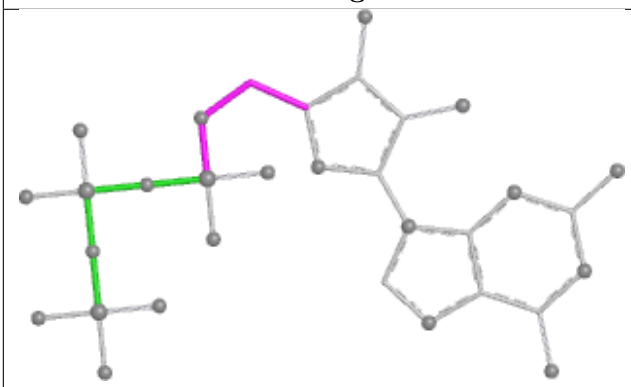

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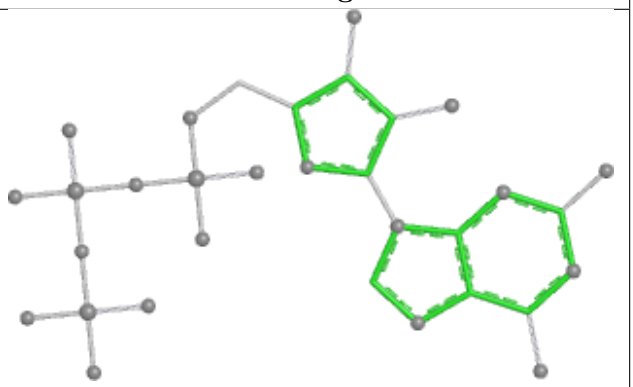
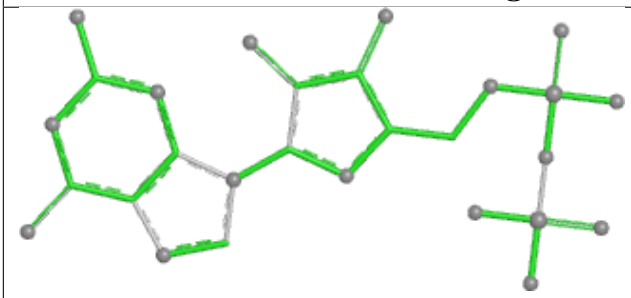


Rings

Ligand GDP PM 502



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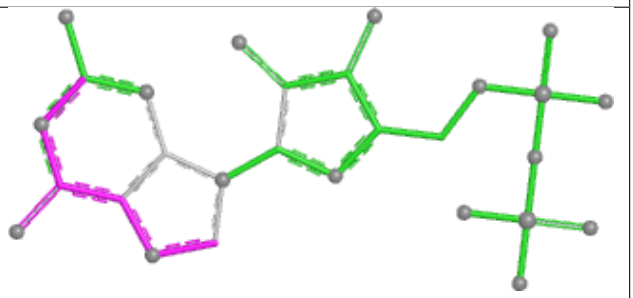

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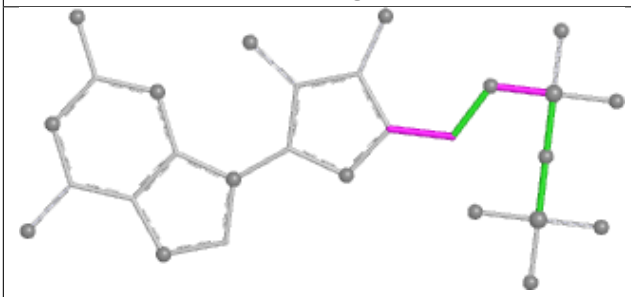

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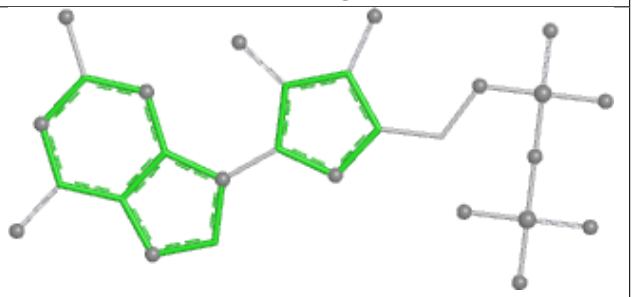
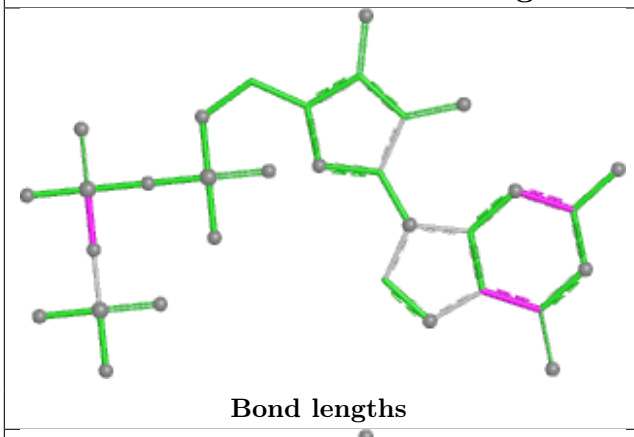


Rings

Ligand GTP IH 501



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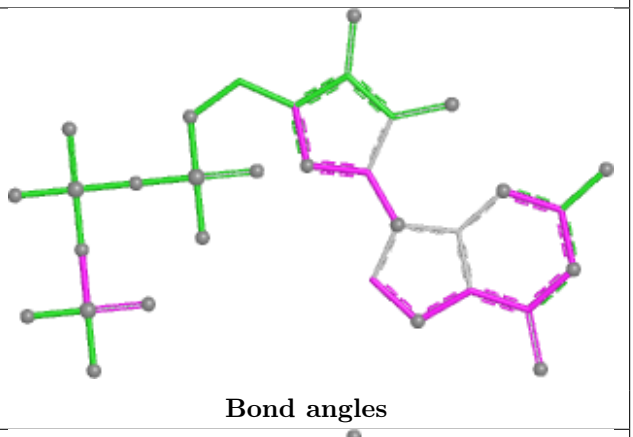

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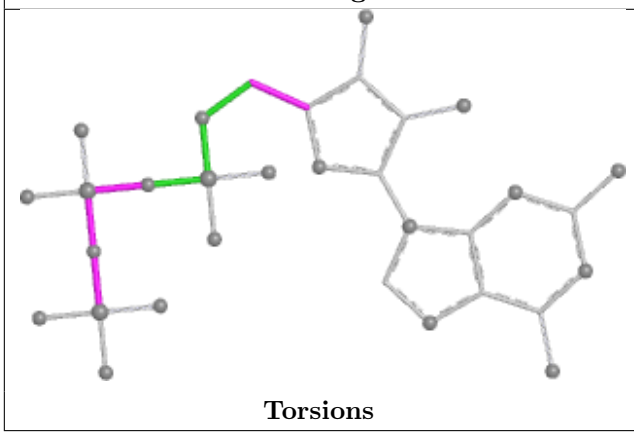

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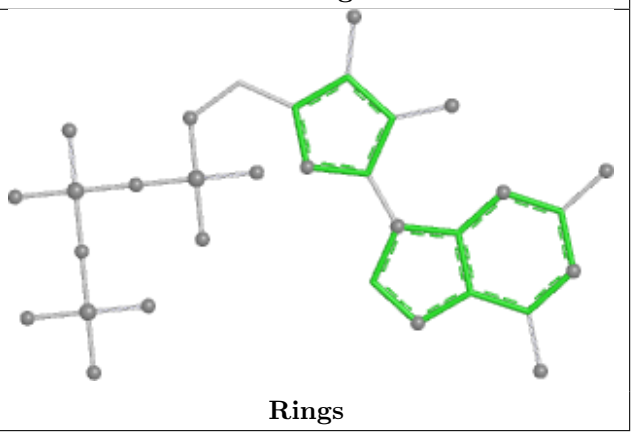
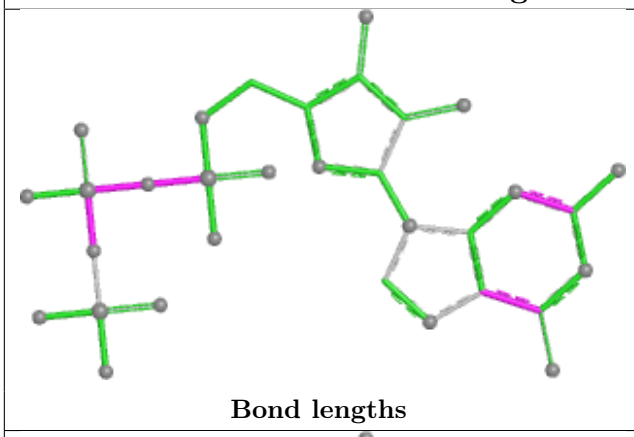


Rings

Ligand GTP HP 501



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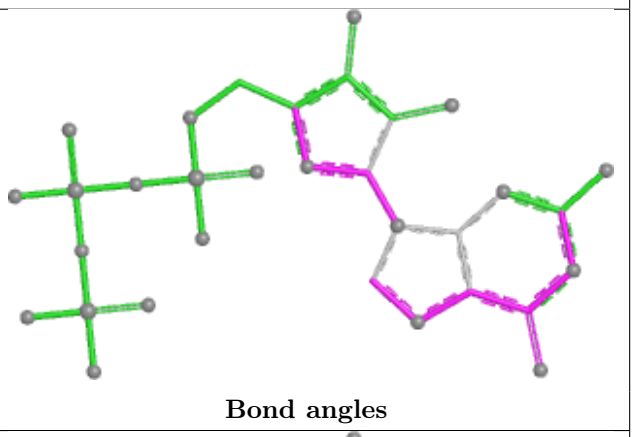

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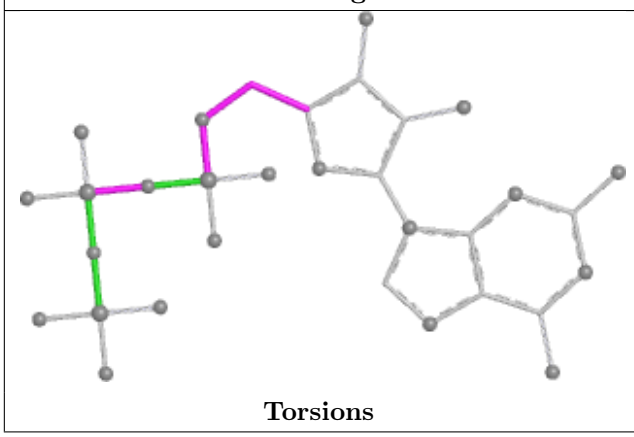

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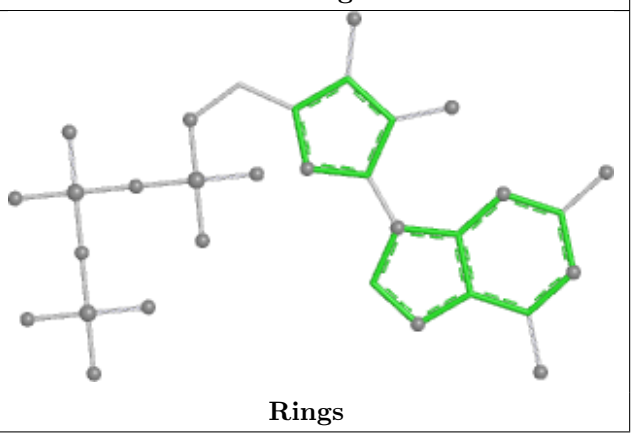

Rings

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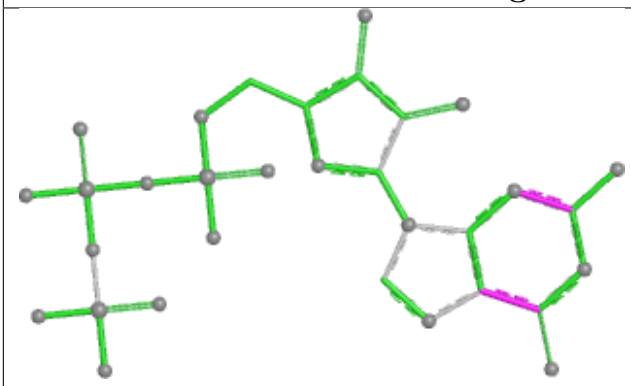

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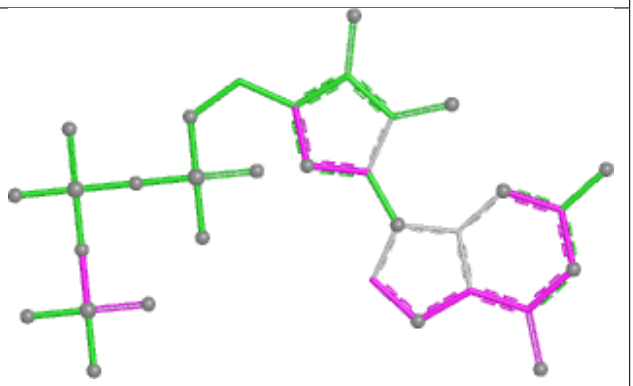

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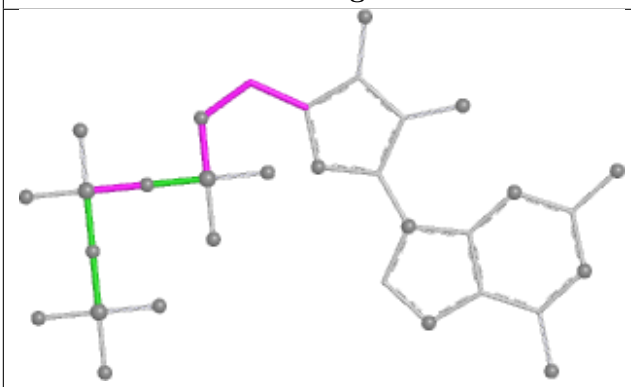

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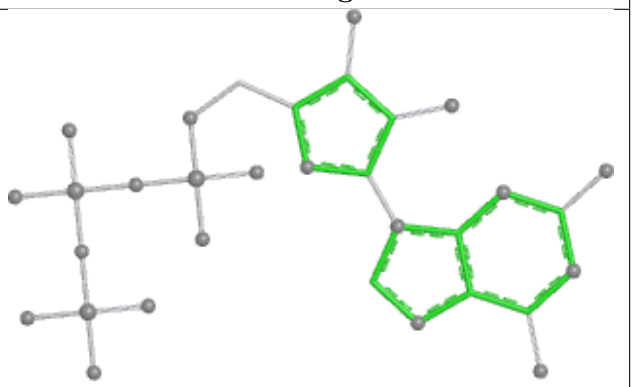

Rings

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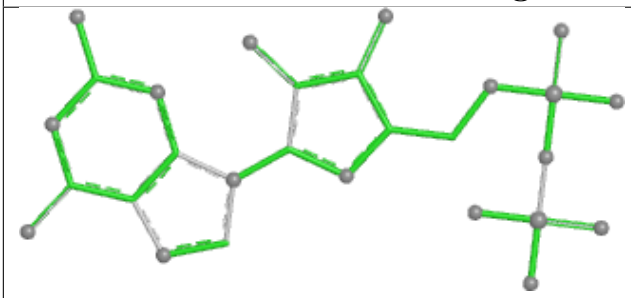

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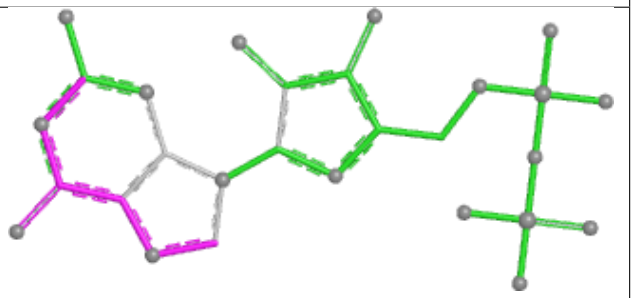

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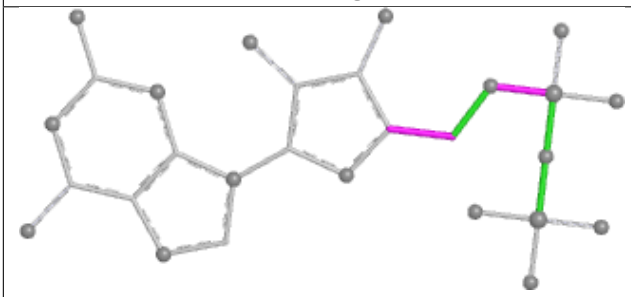

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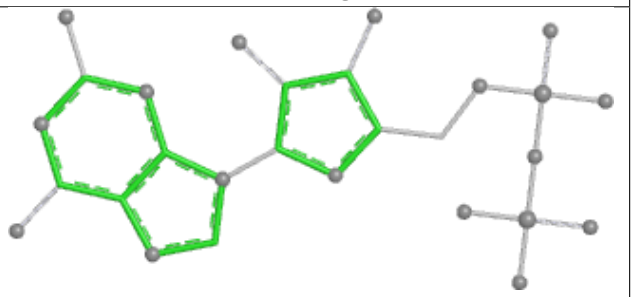

Rings

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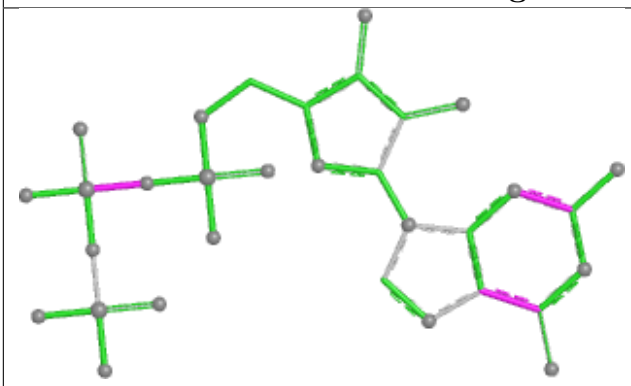

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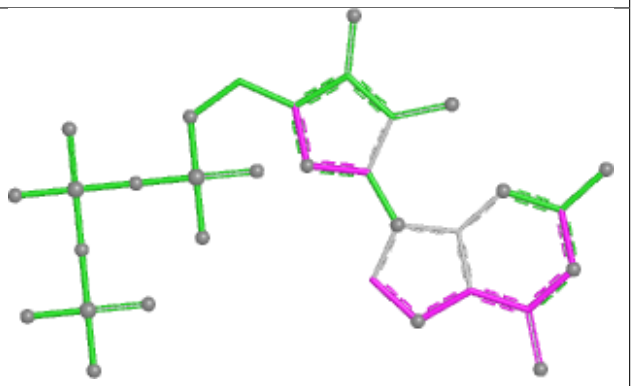

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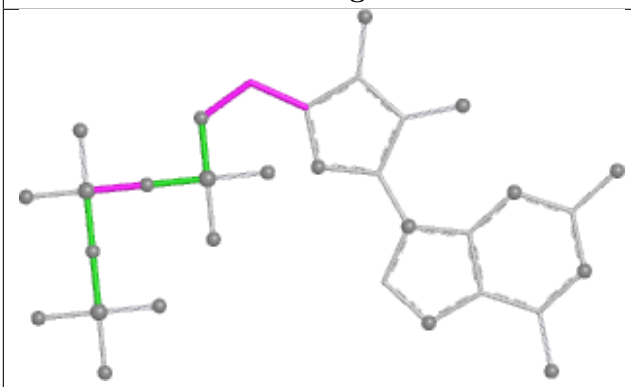

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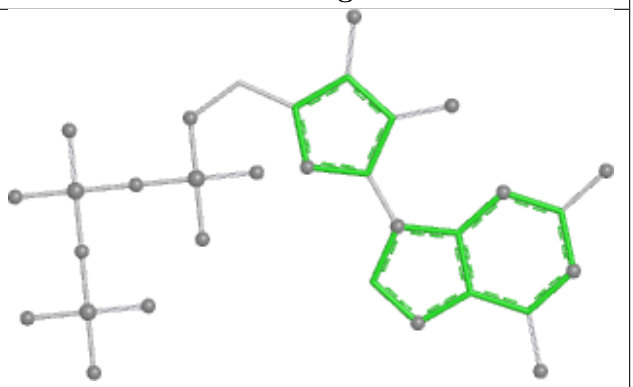
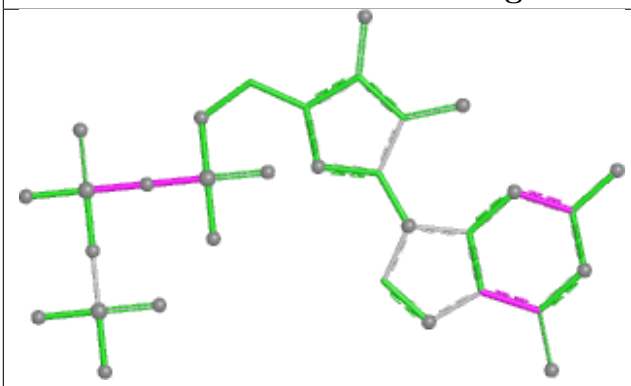


Rings

Ligand GTP MD 501



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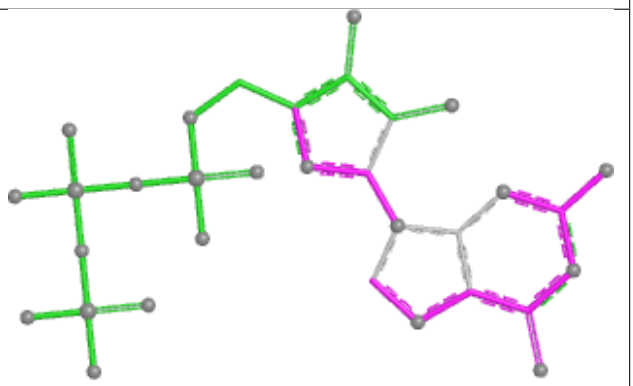

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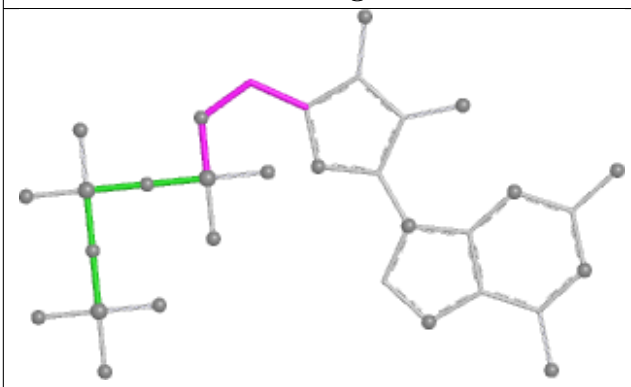

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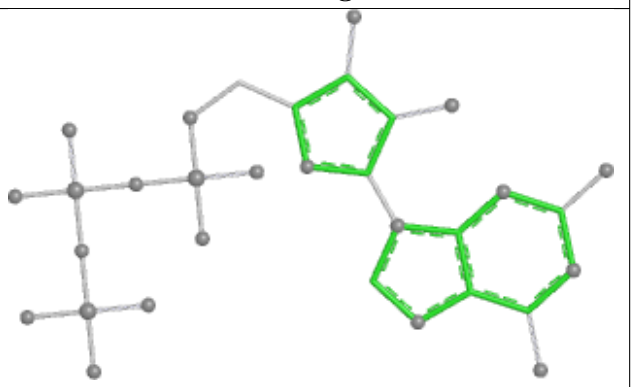

Rings

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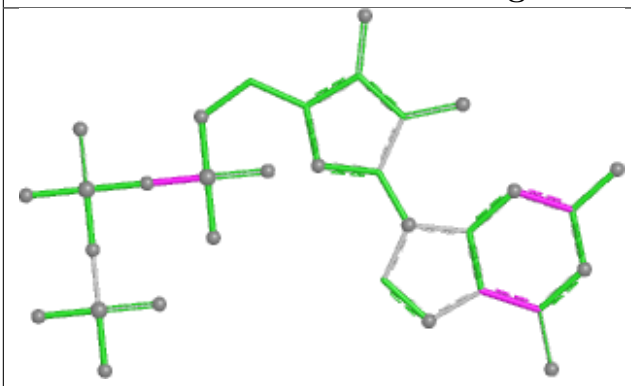

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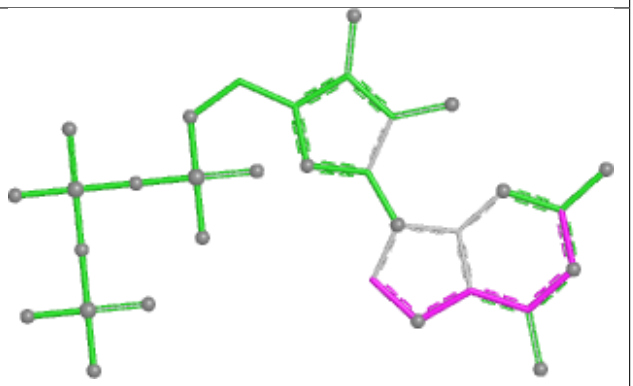

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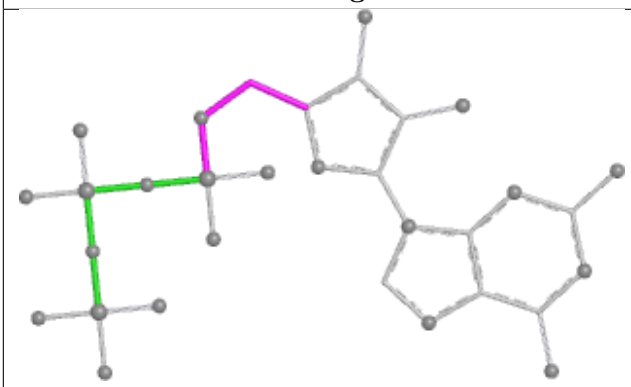

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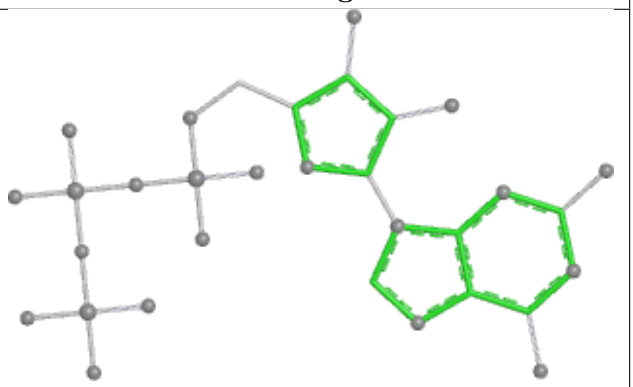
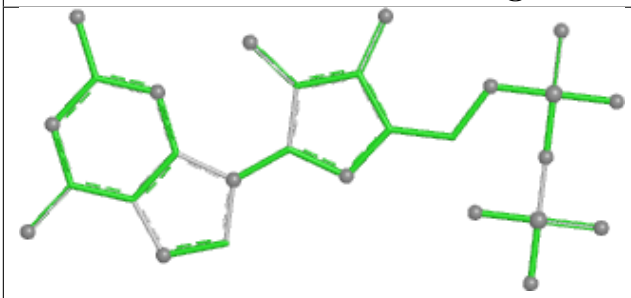


Rings

Ligand GDP VN 502



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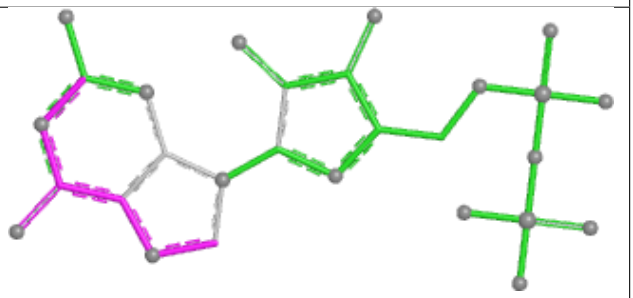

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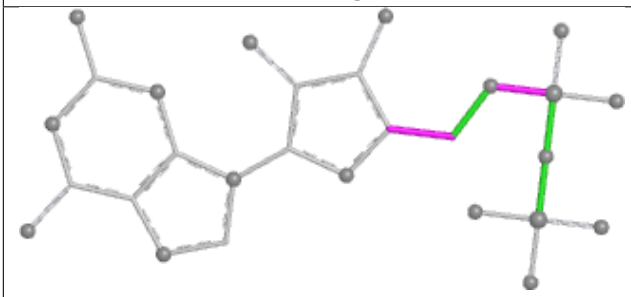

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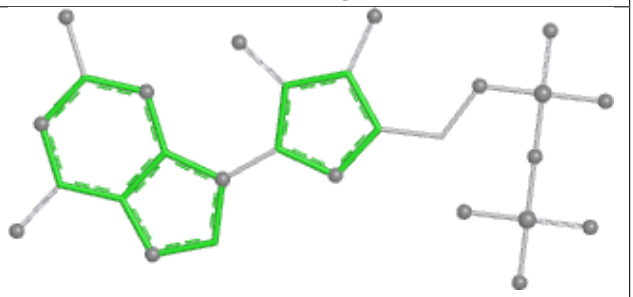
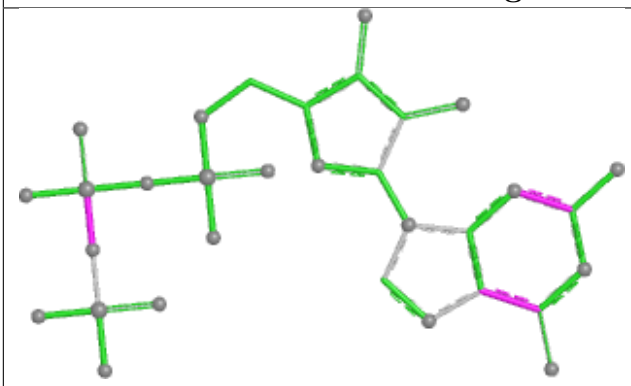


Rings

Ligand GTP HM 501



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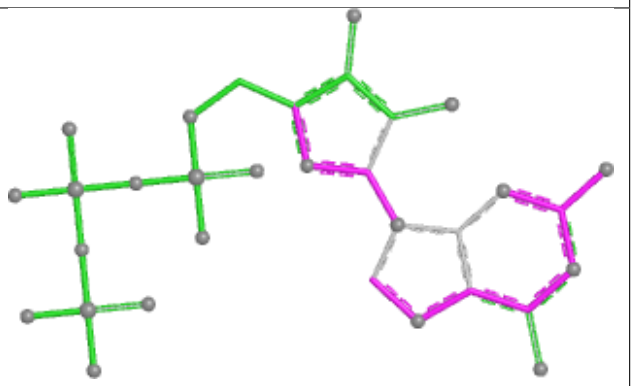

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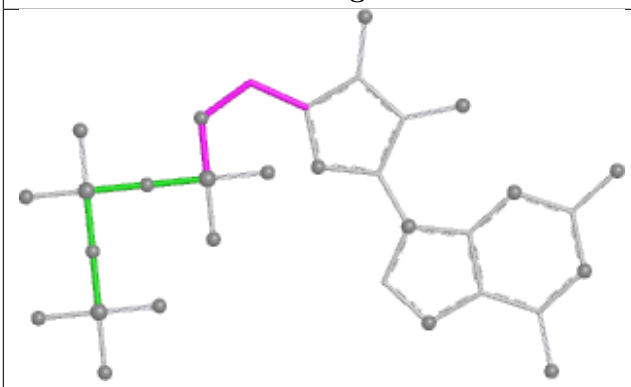

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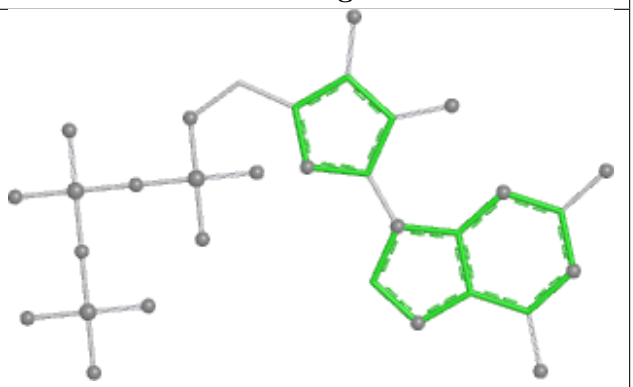
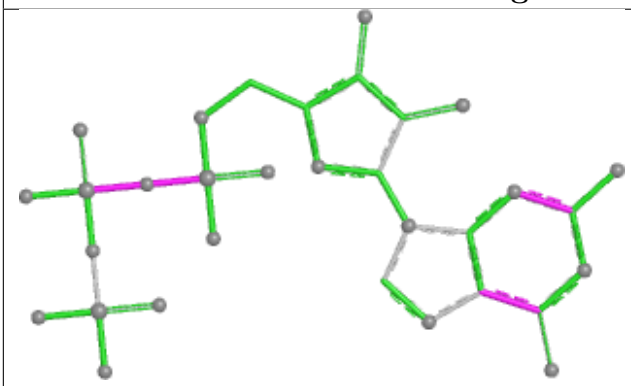


Rings

Ligand GTP QF 501



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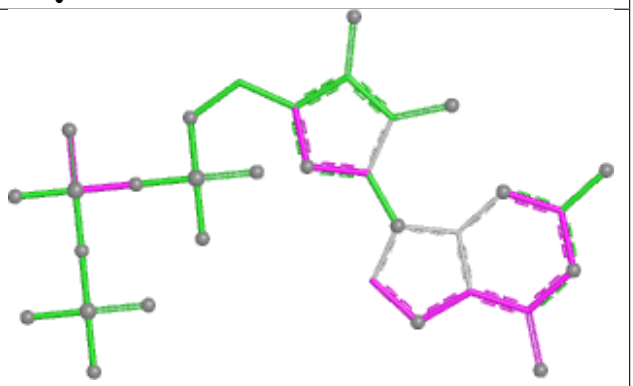

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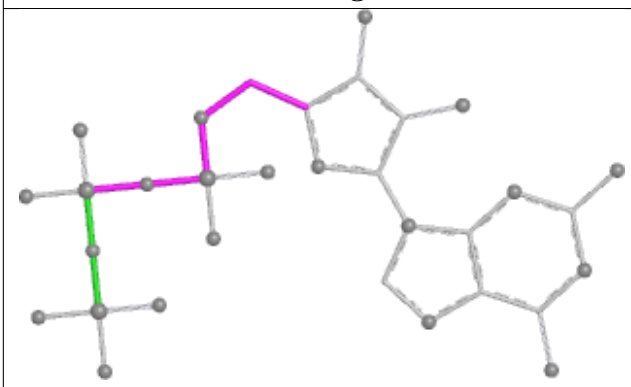

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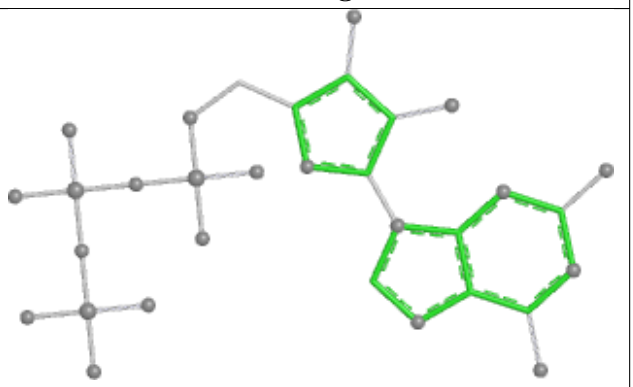
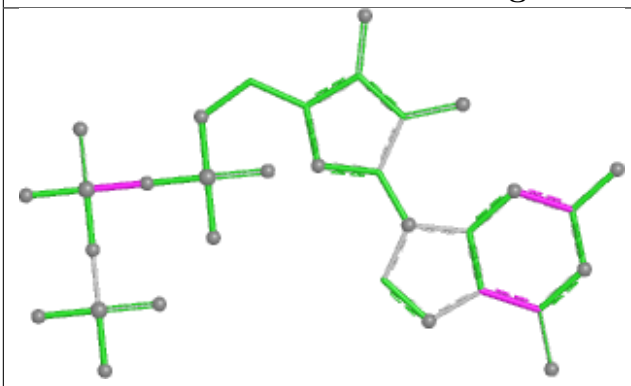


Rings

Ligand GTP VQ 501



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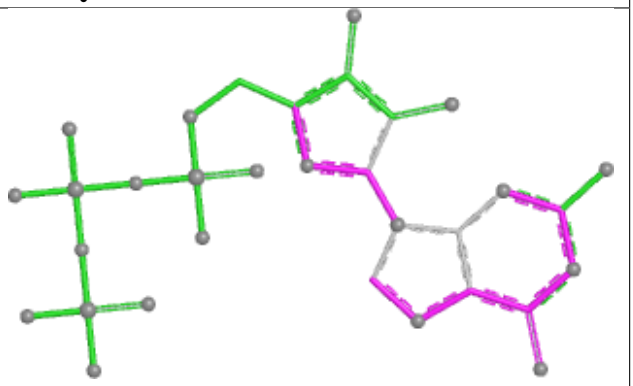
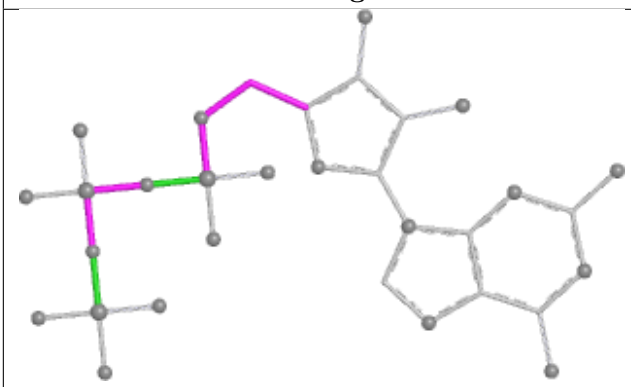


Bond angles



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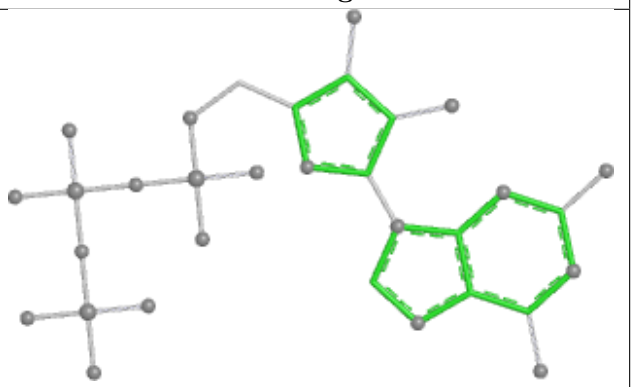
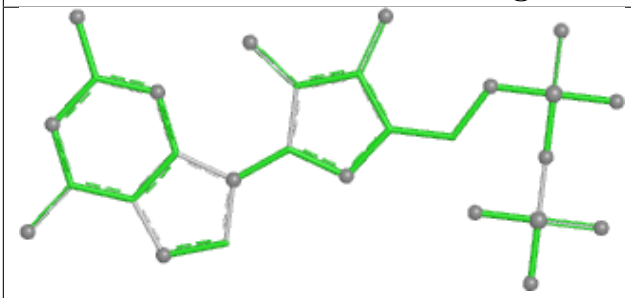


Rings

Ligand GDP JB 501



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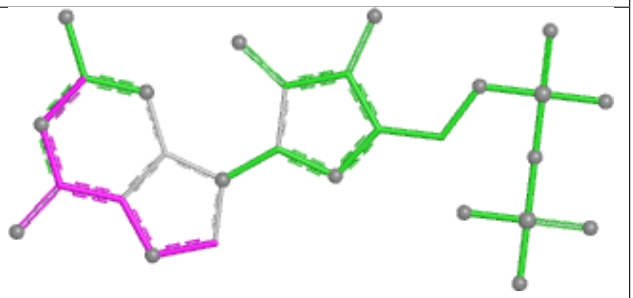

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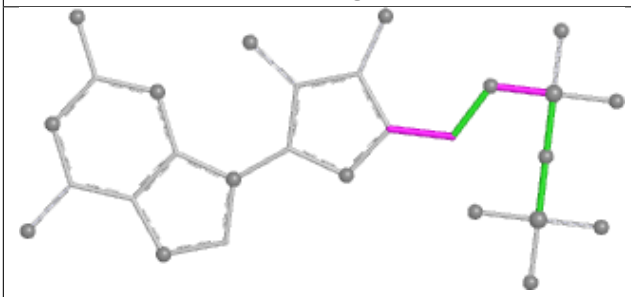
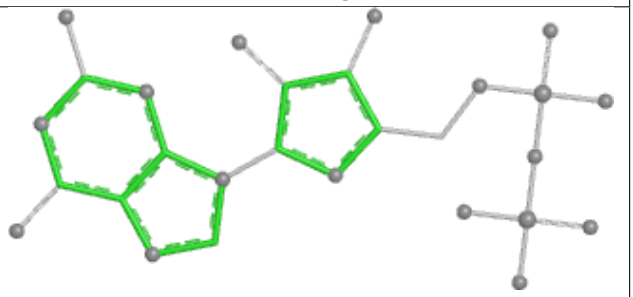
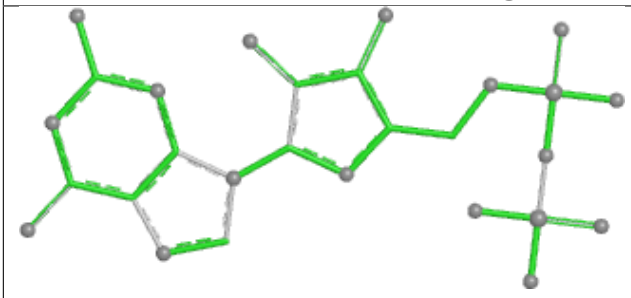


Torsions



Rings

Ligand GDP MM 502



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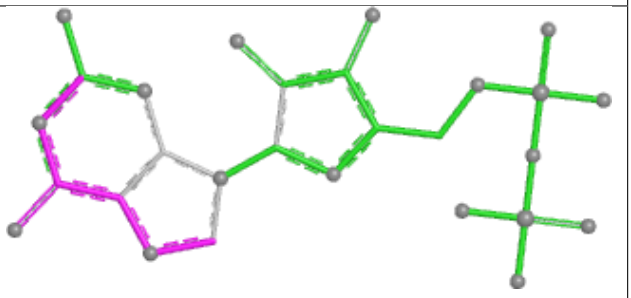

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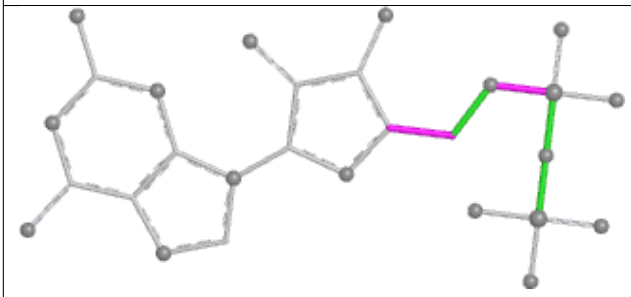

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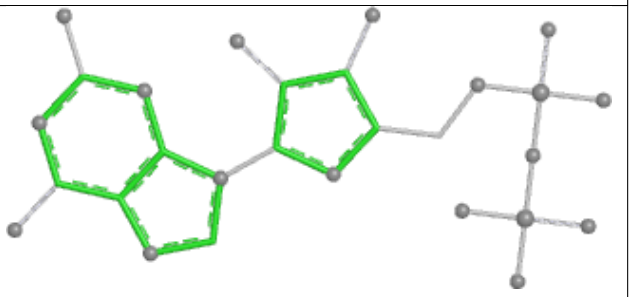
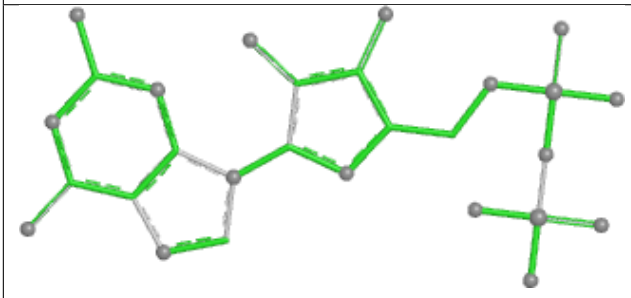


Rings

Ligand GDP QL 502



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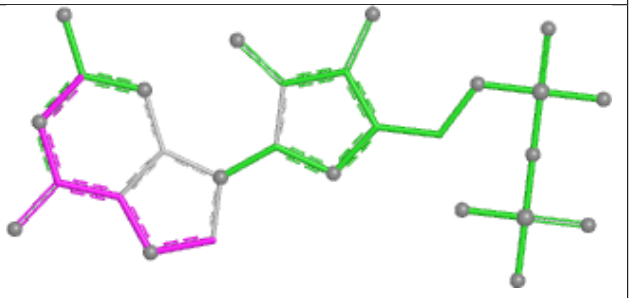

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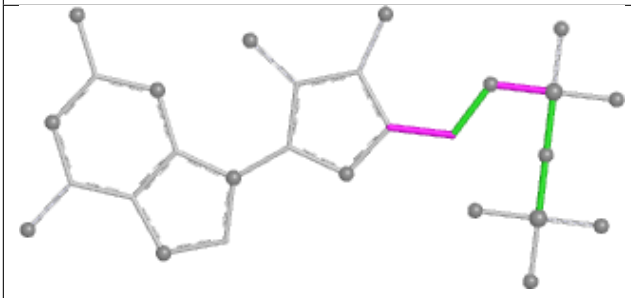

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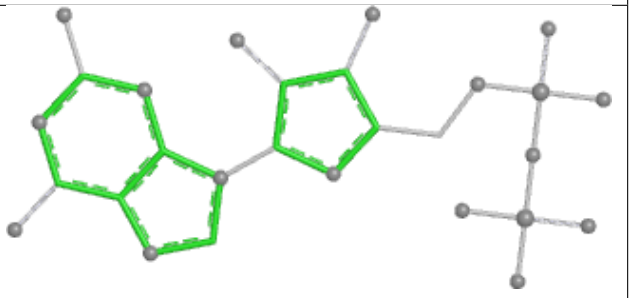
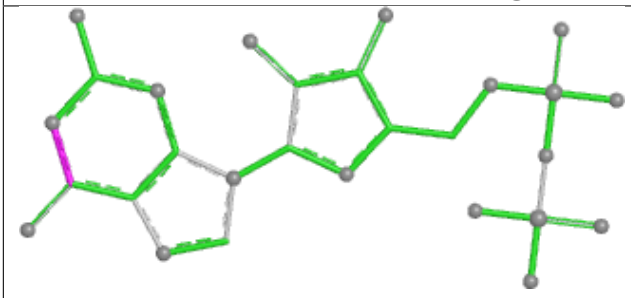


Rings

Ligand GDP TN 502



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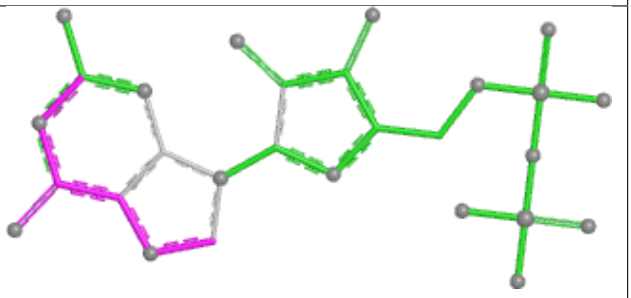

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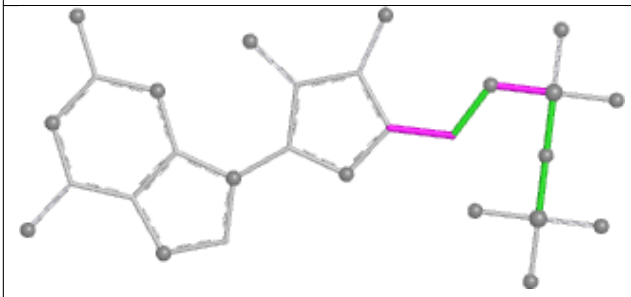

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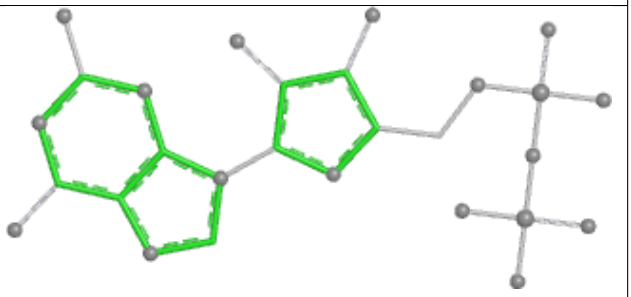
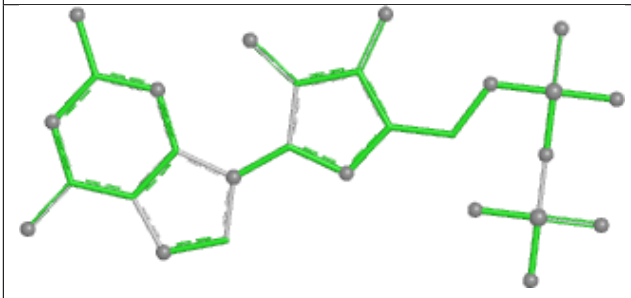


Rings

Ligand GDP TO 501



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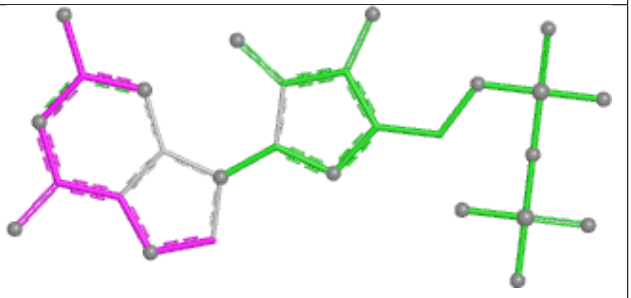

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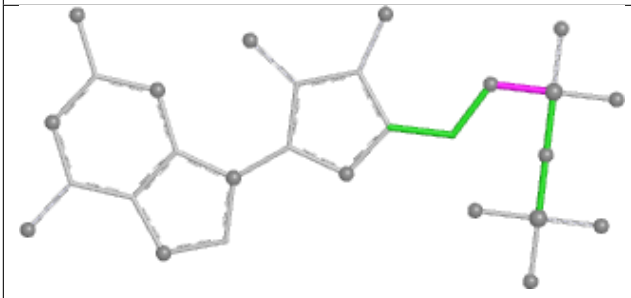

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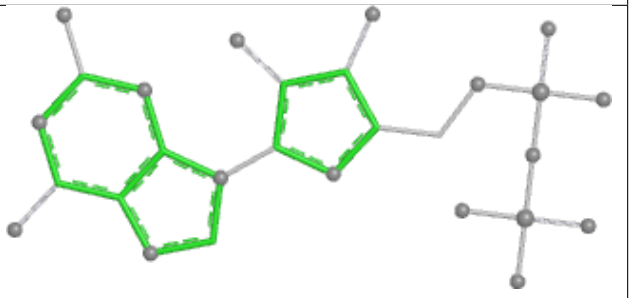
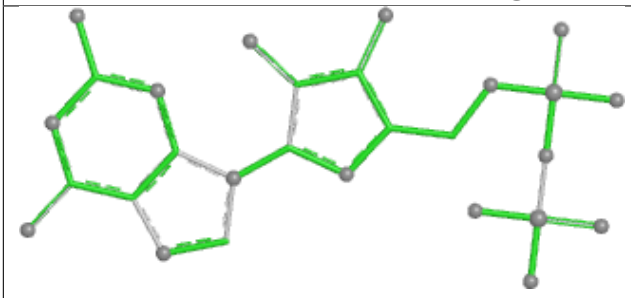


Rings

Ligand GDP KP 501



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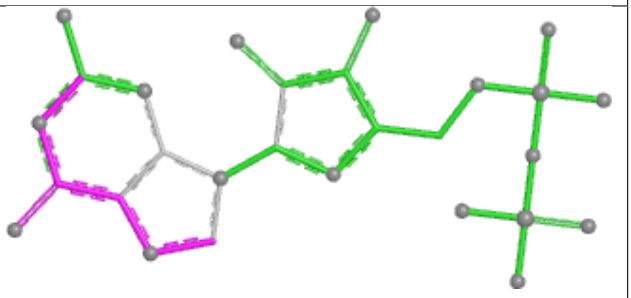

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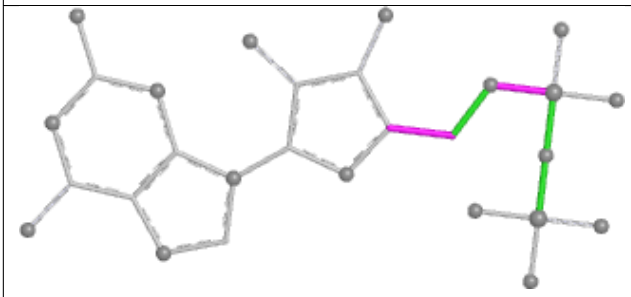

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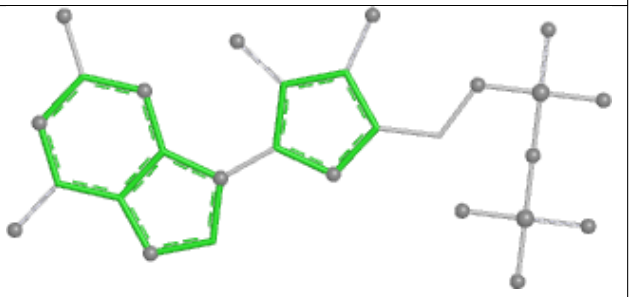
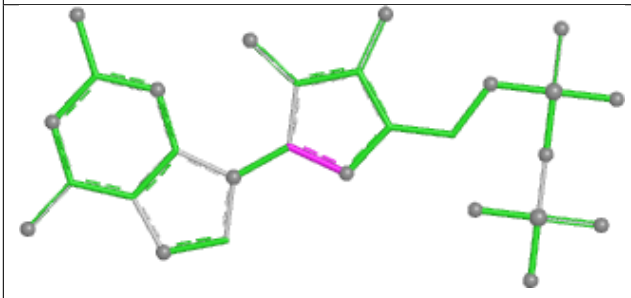


Rings

Ligand GDP GN 501



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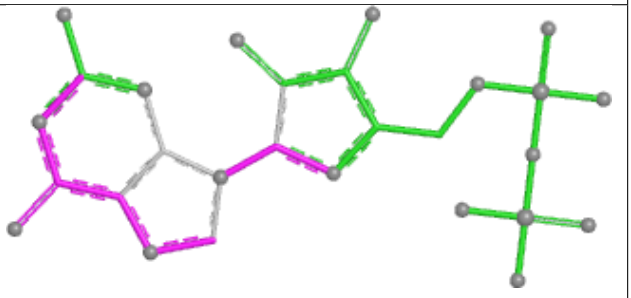

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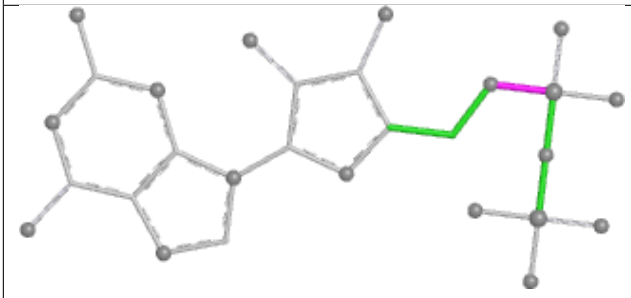

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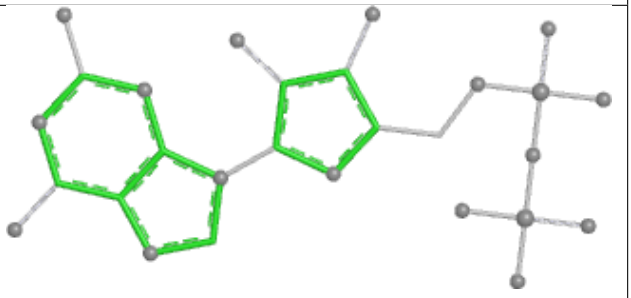
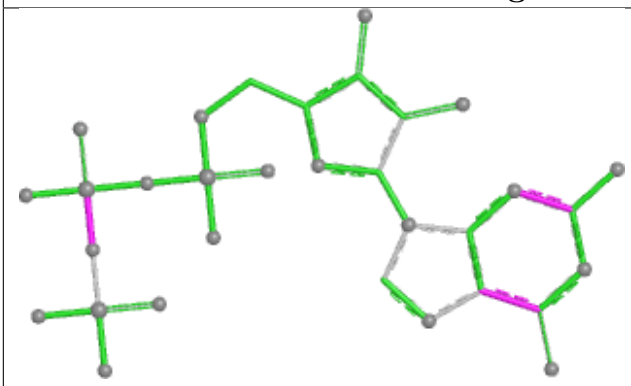


Rings

Ligand GTP QG 501



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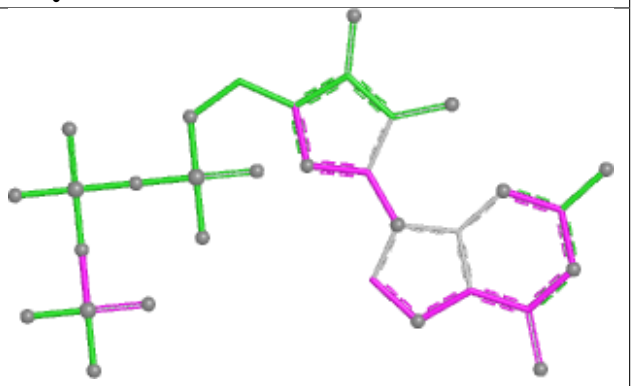

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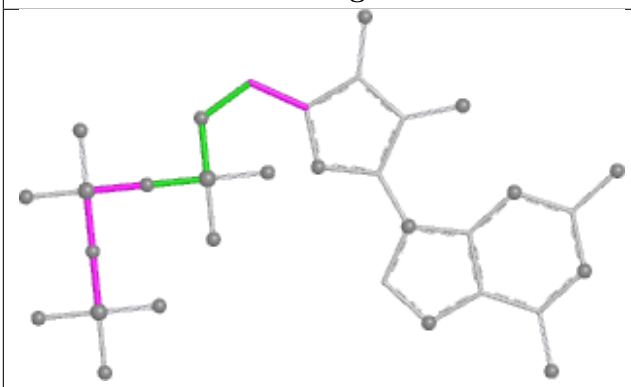

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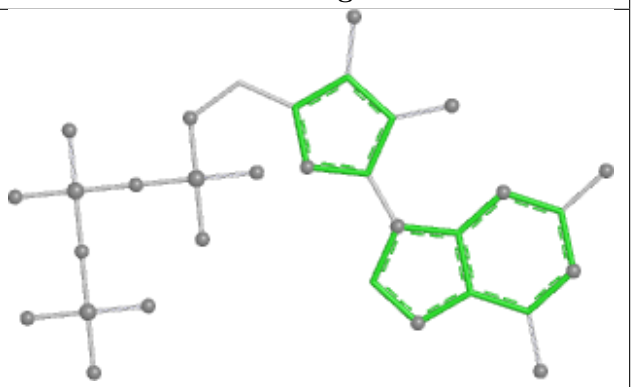
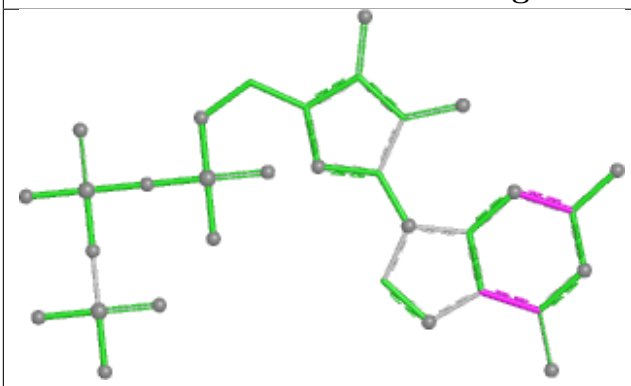


Rings

Ligand GTP BL 501



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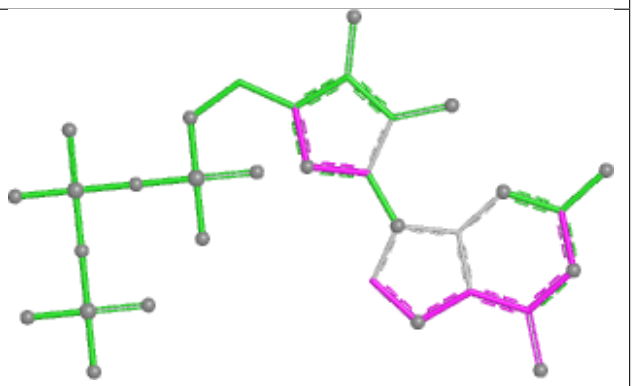

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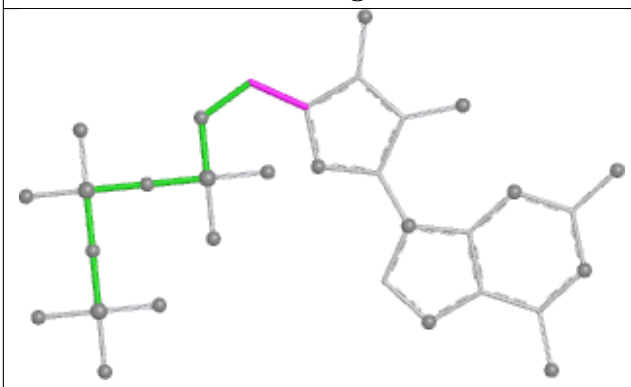

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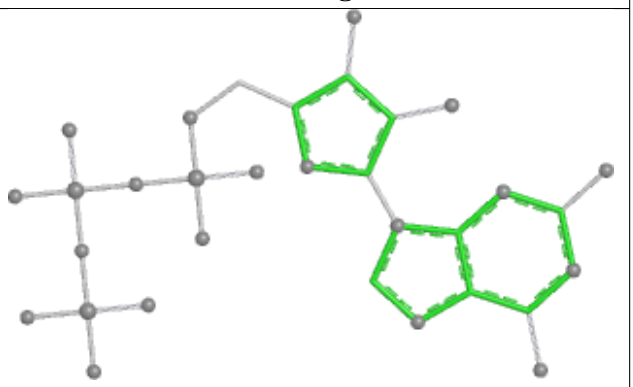
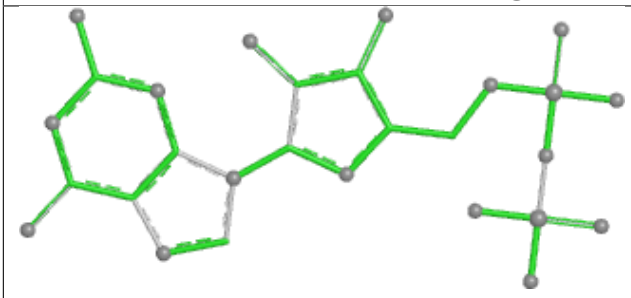


Rings

Ligand GDP UB 501



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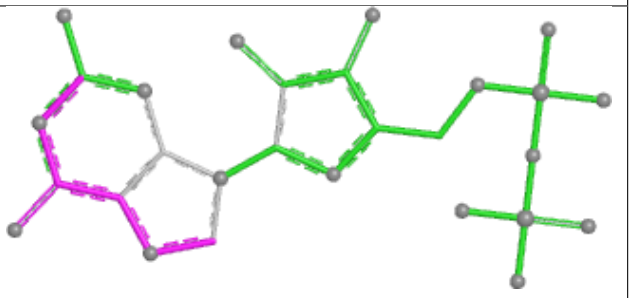

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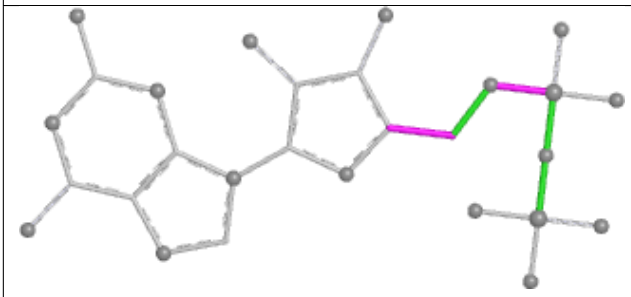

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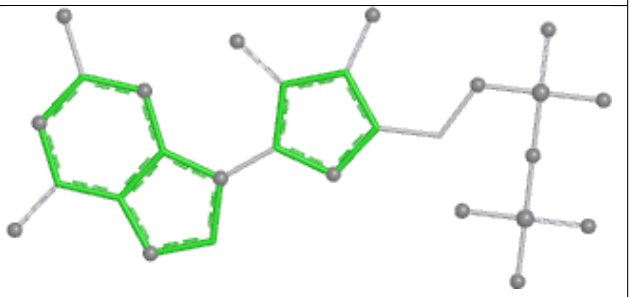
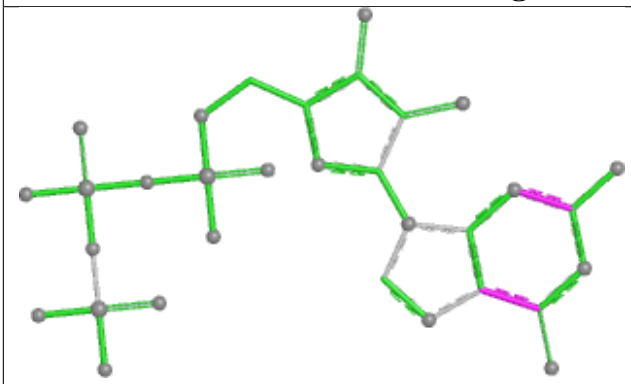


Rings

Ligand GTP WI 501



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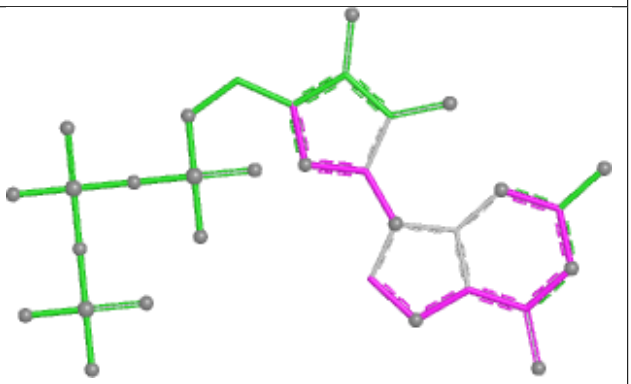

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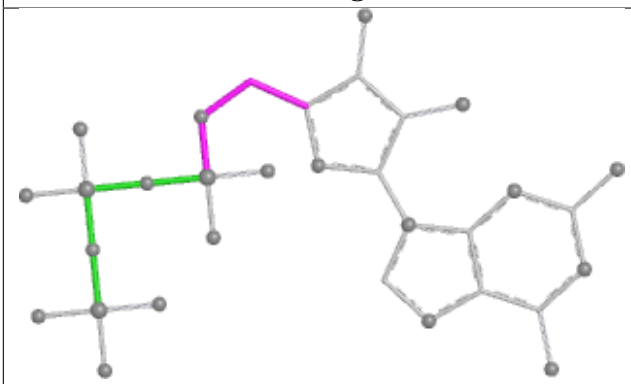

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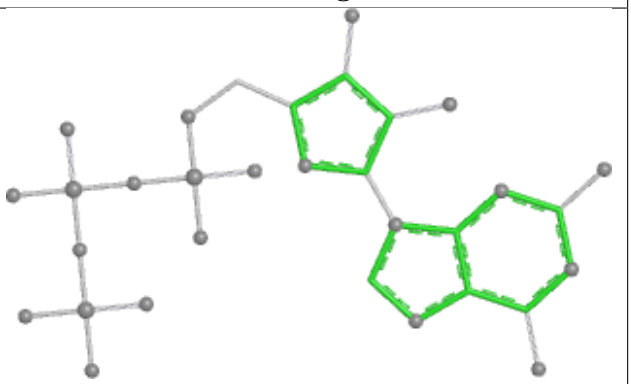
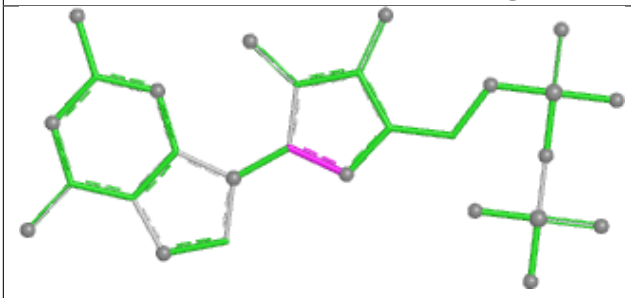


Rings

Ligand GDP AM 501



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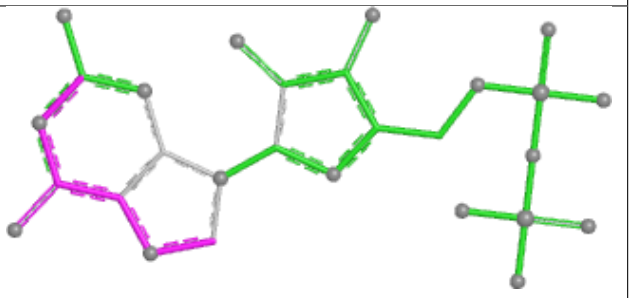

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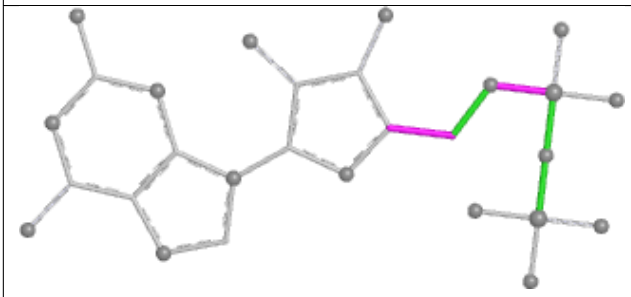

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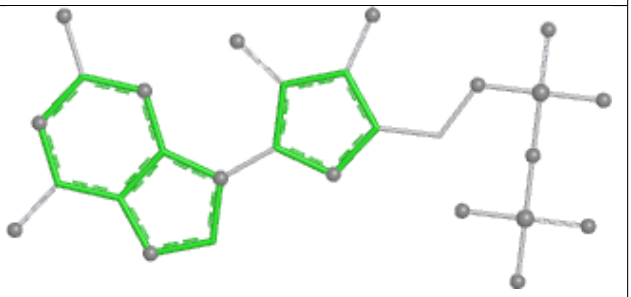
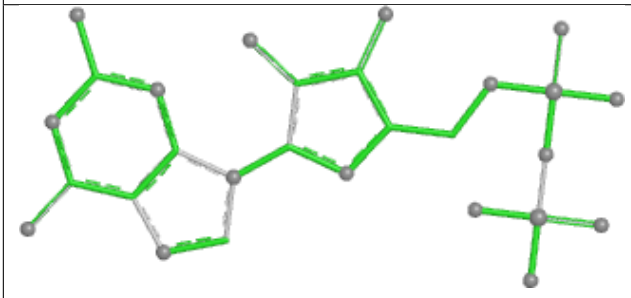


Rings

Ligand GDP HP 502



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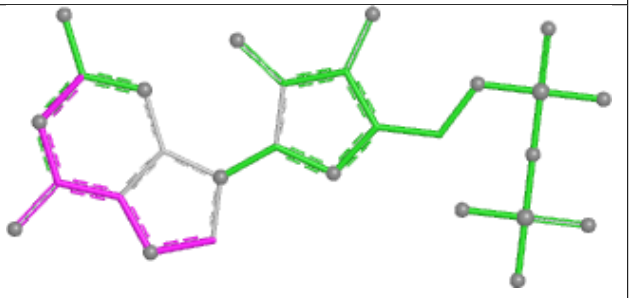

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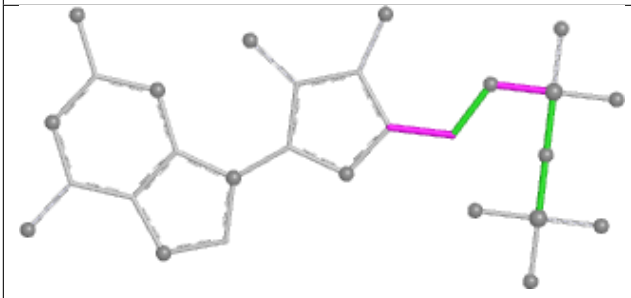

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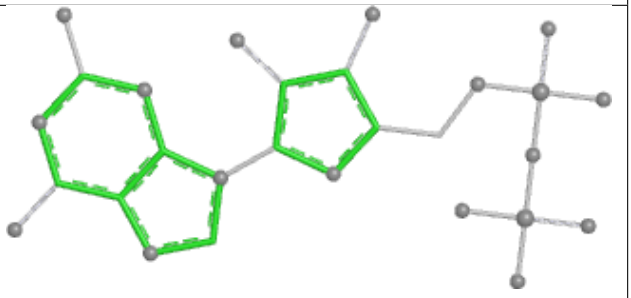
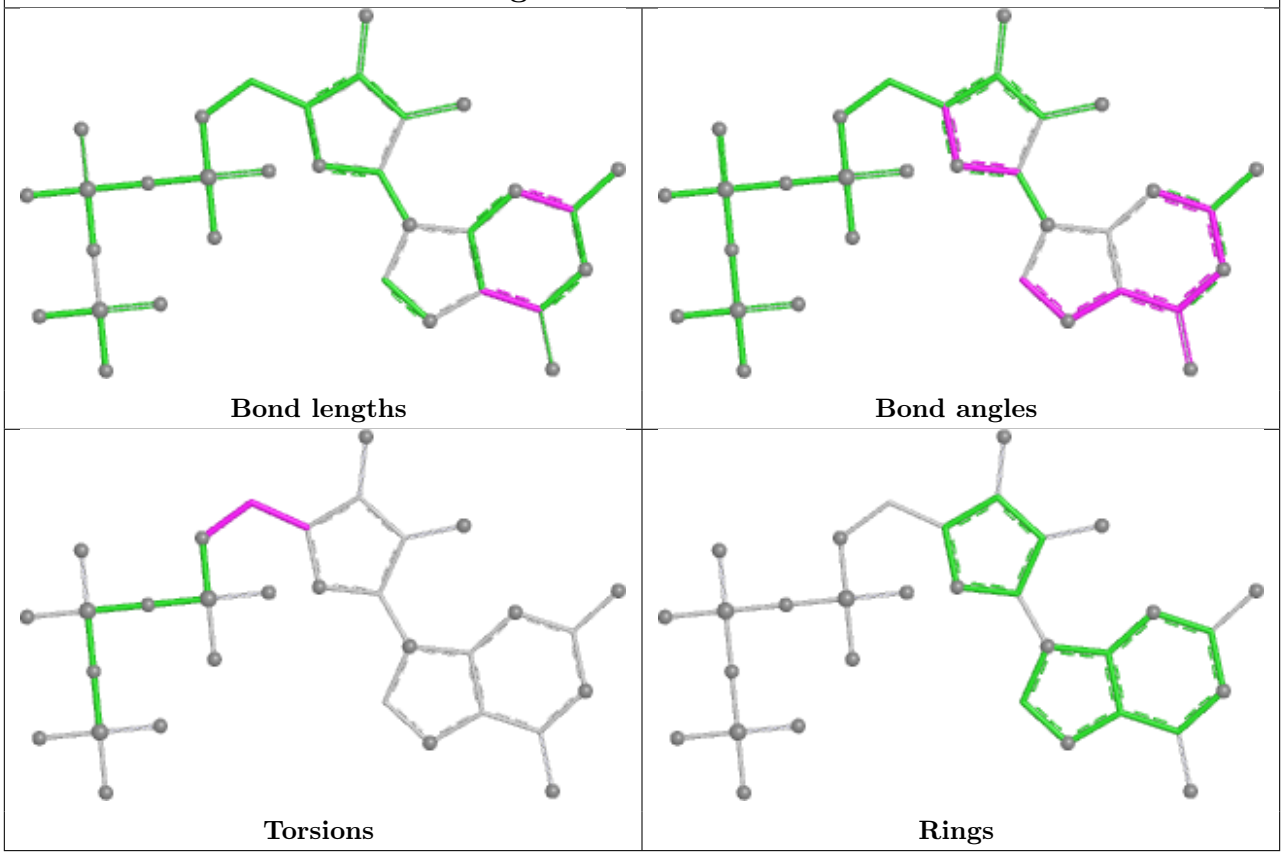


Rings

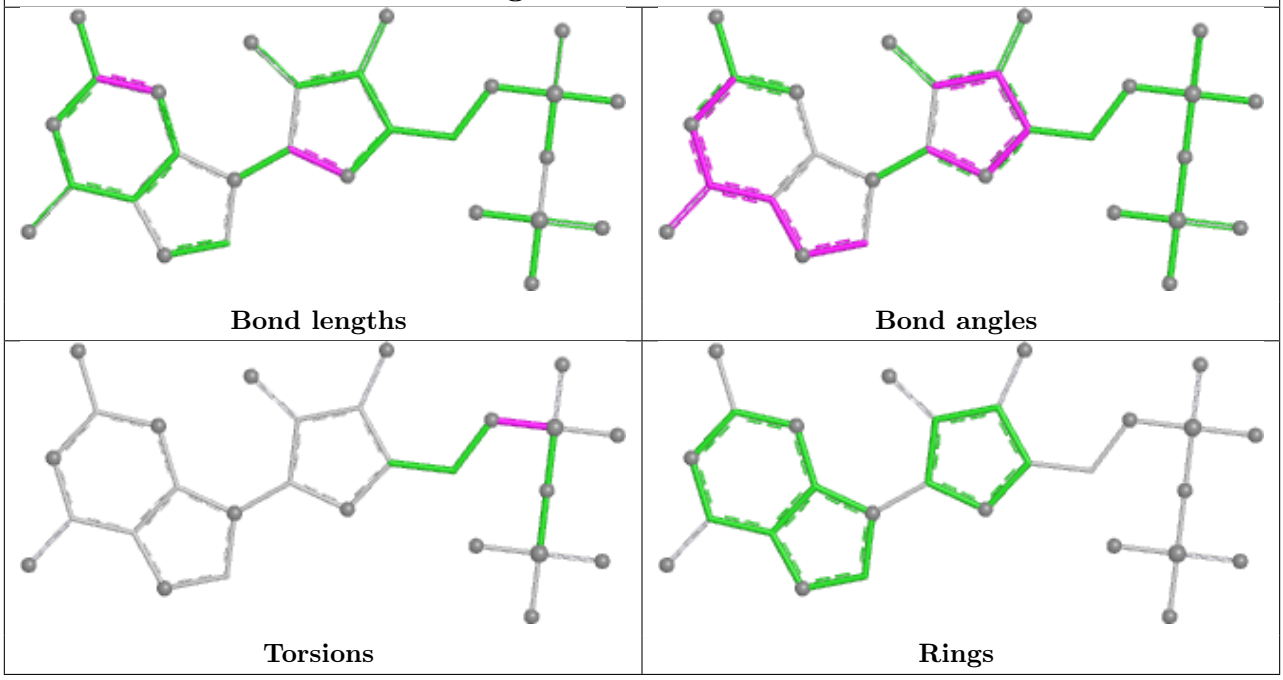
Ligand GTP UB 502



Bond lengths | Bond angles

Torsions | Rings

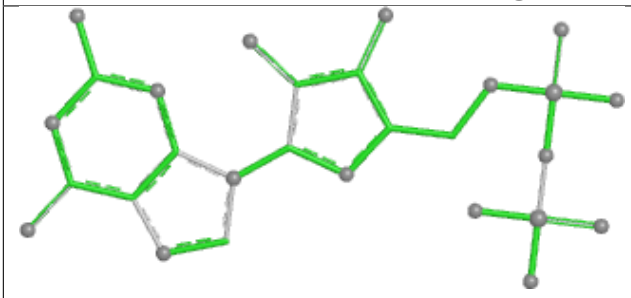
Ligand GDP EM 501



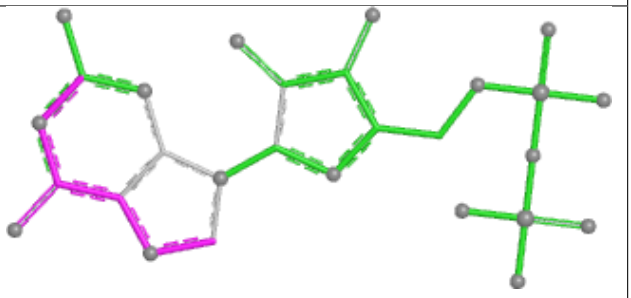
Bond lengths | Bond angles

Torsions | Rings

Ligand GDP FB 501



Bond lengths



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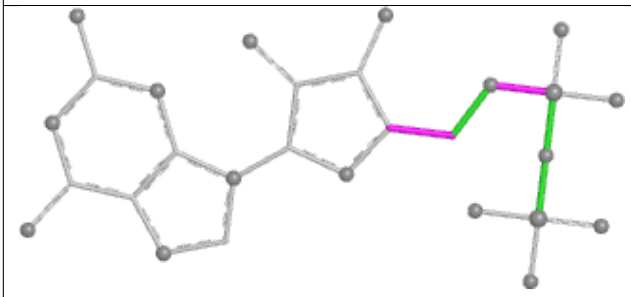
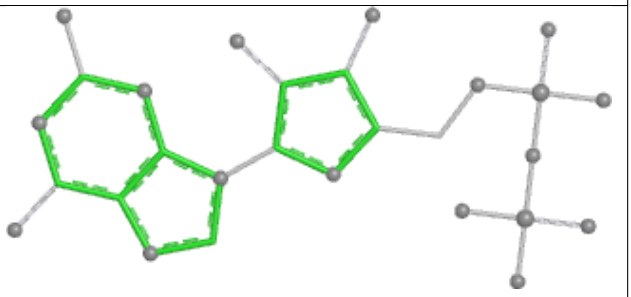
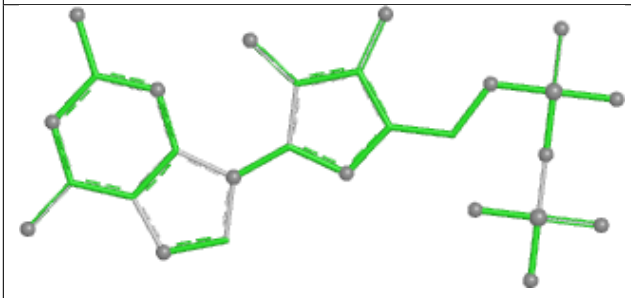


Torsions



Rings

Ligand GDP WB 501



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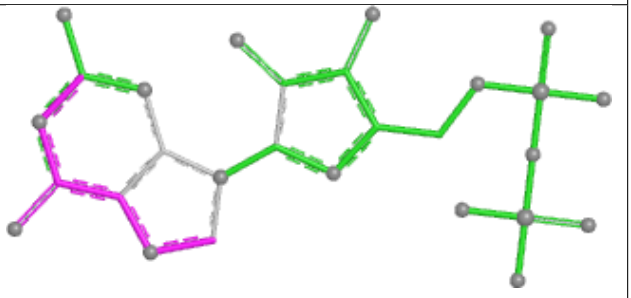

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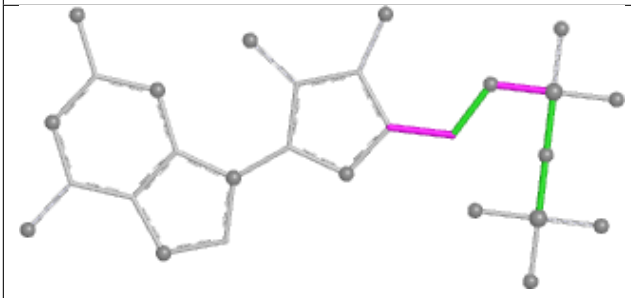

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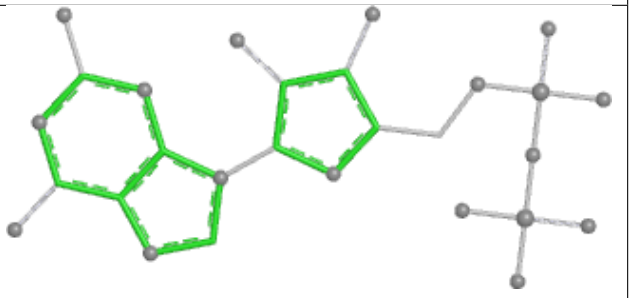
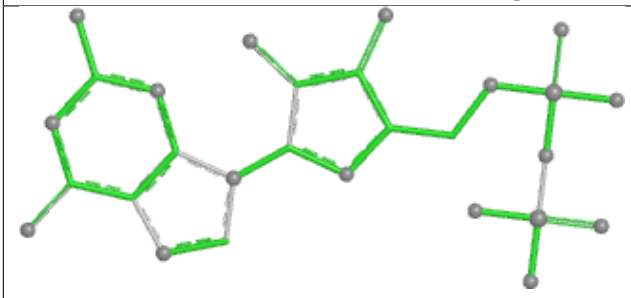


Rings

Ligand GDP DP 501



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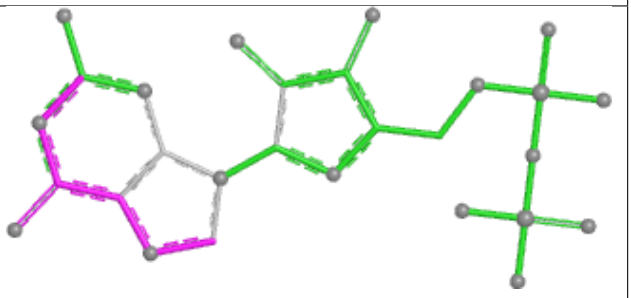

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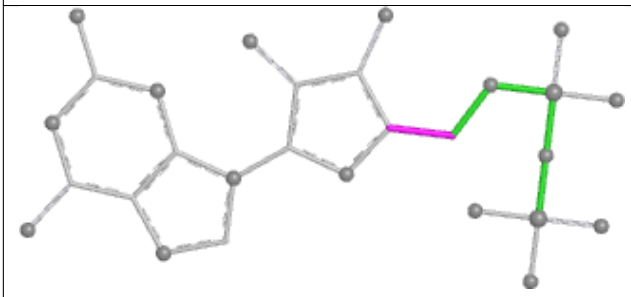

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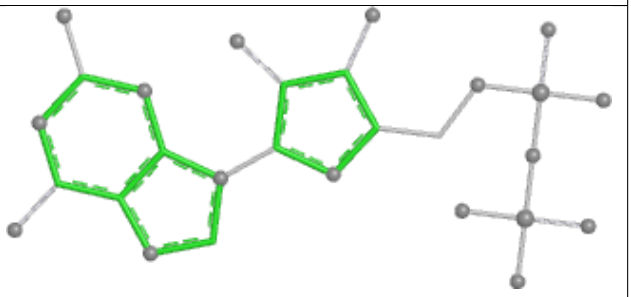
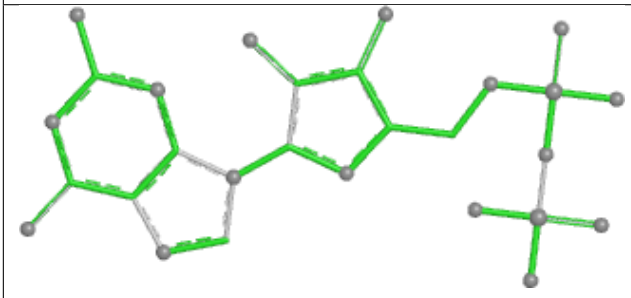


Rings

Ligand GDP VO 501



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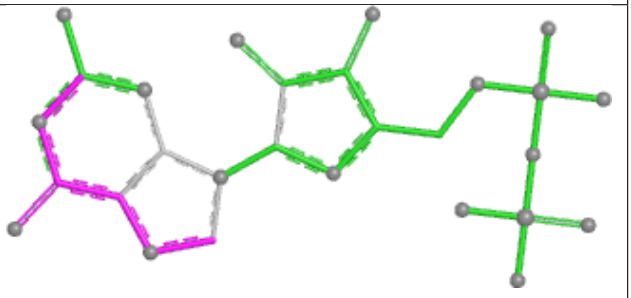

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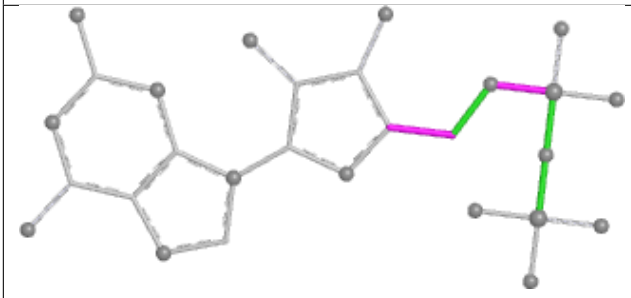

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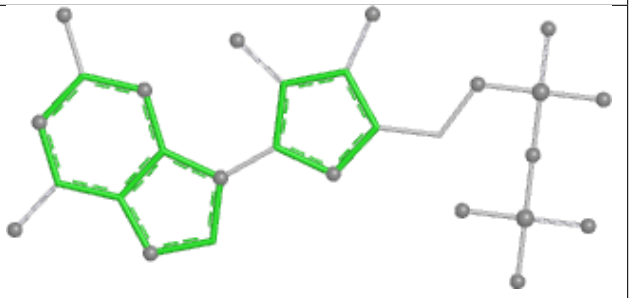
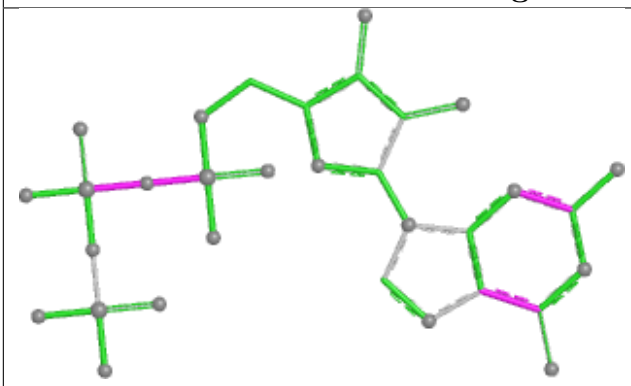


Rings

Ligand GTP CF 501



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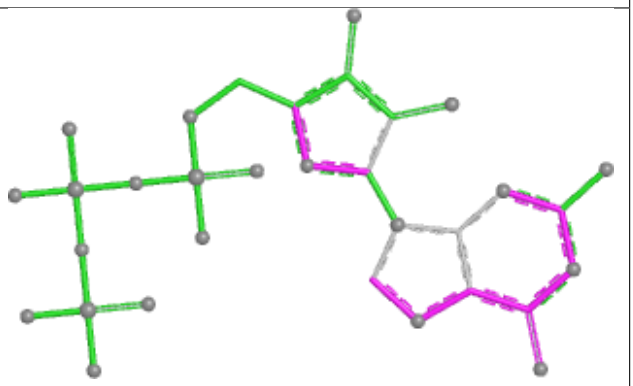

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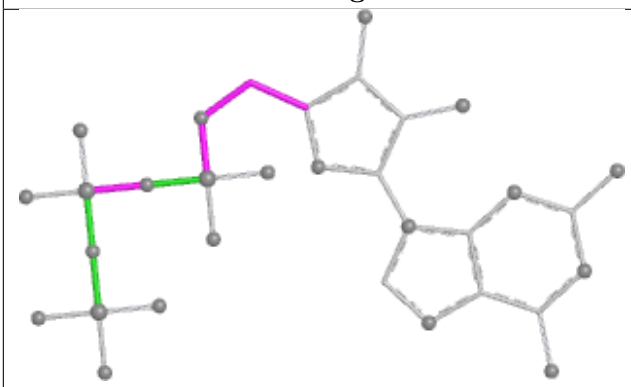

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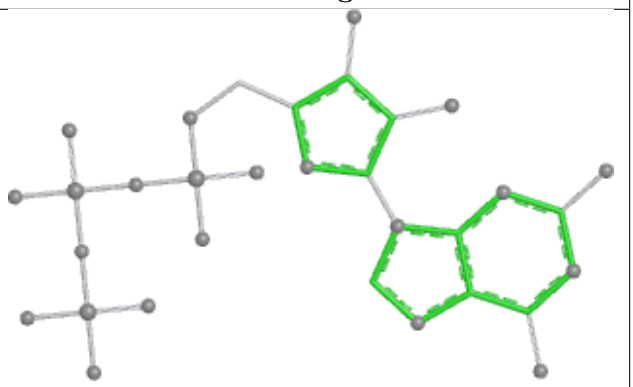
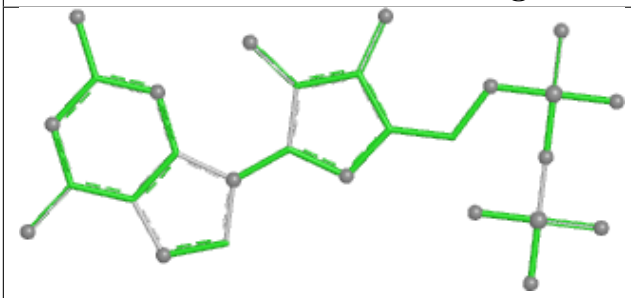


Rings

Ligand GDP LO 502



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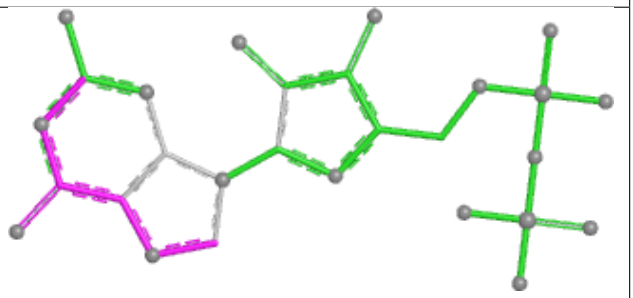

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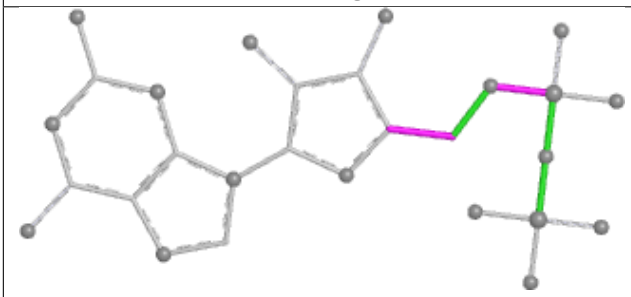

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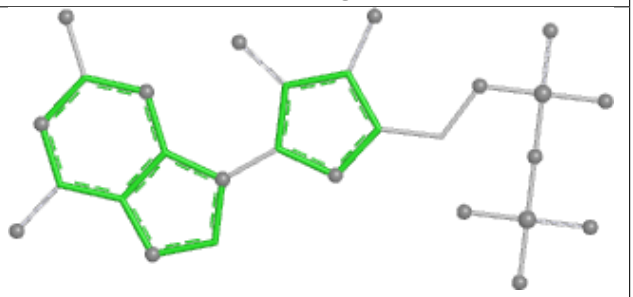

Rings

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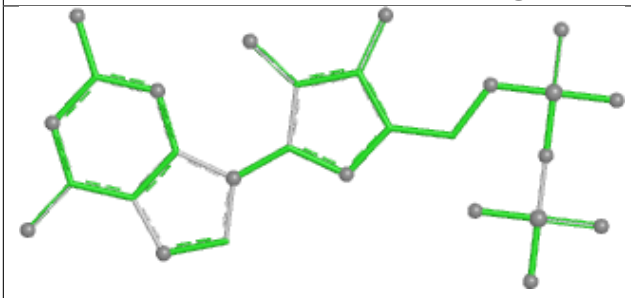

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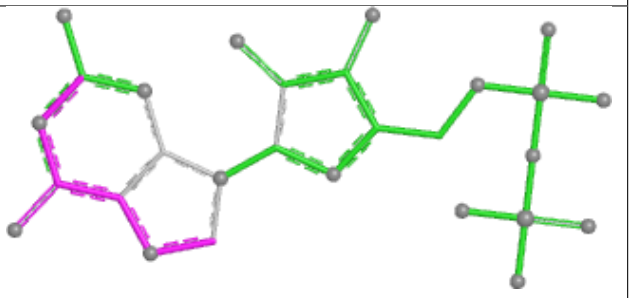

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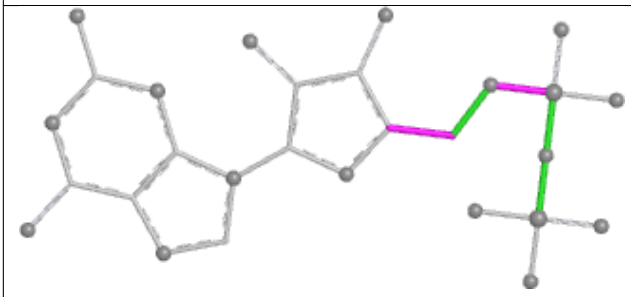

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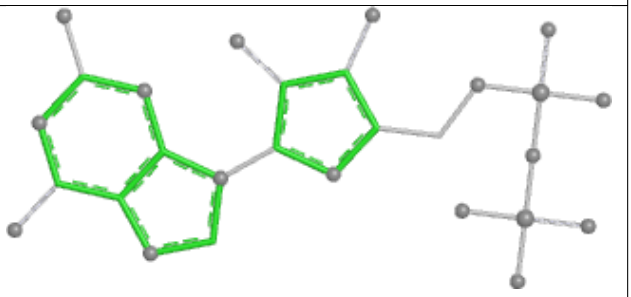
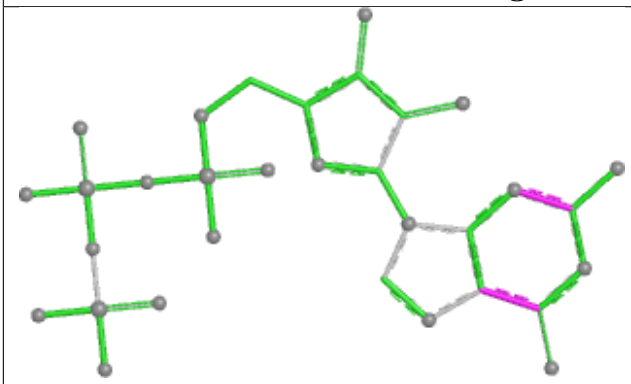


Rings

Ligand GTP UO 501



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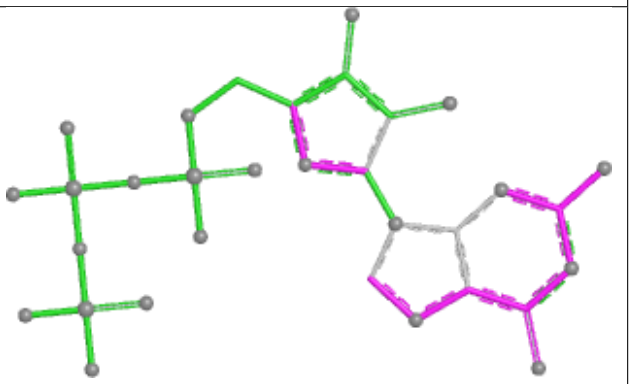

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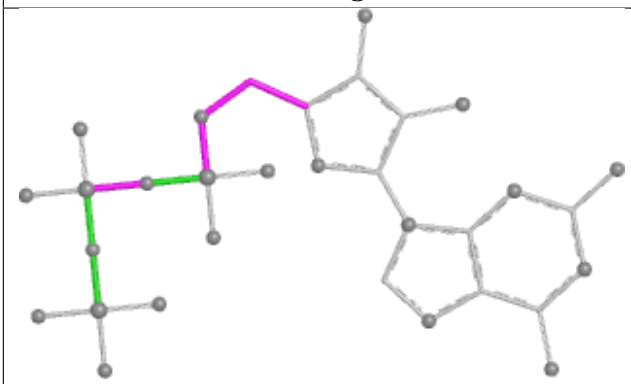

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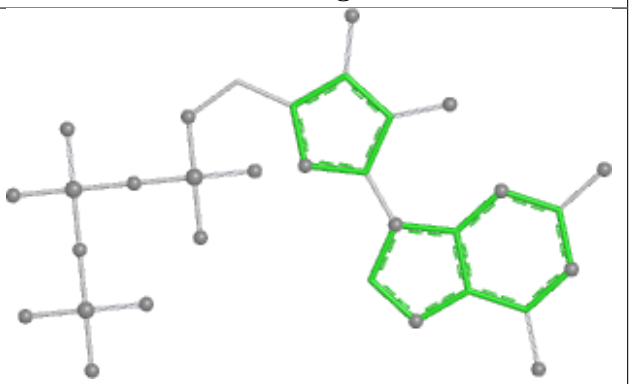

Rings

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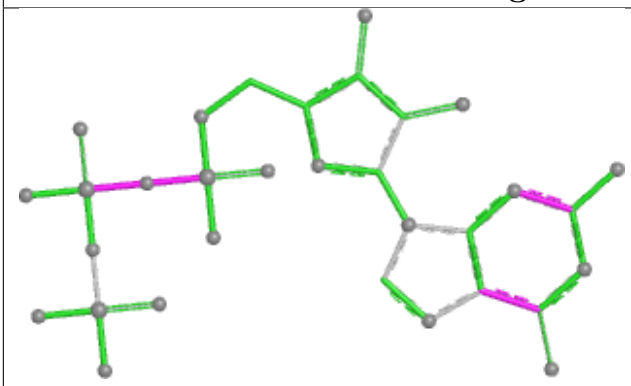

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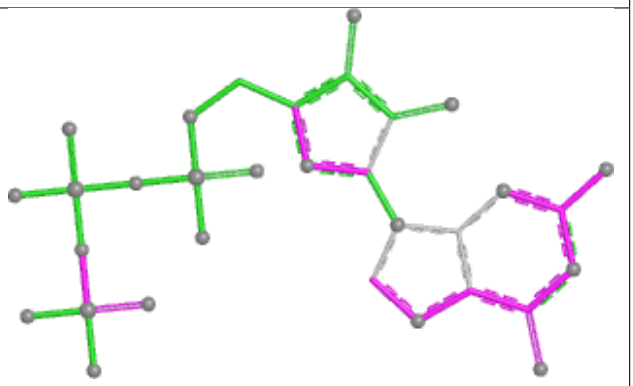

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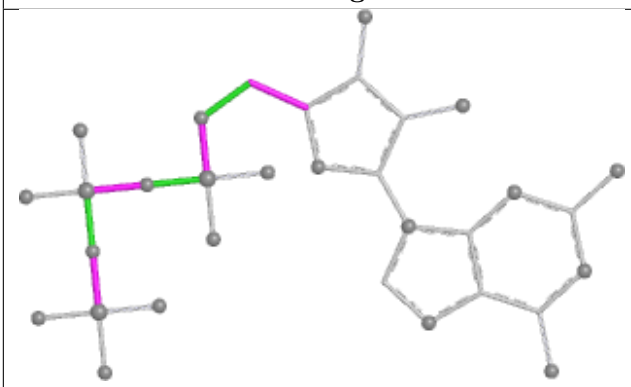

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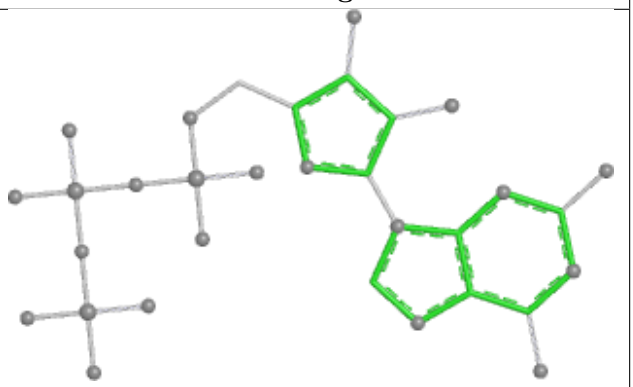

Rings

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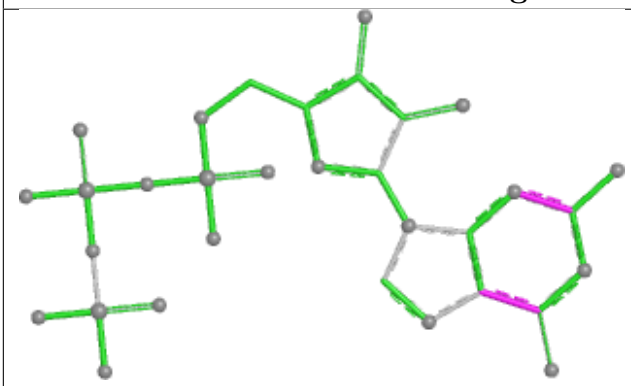

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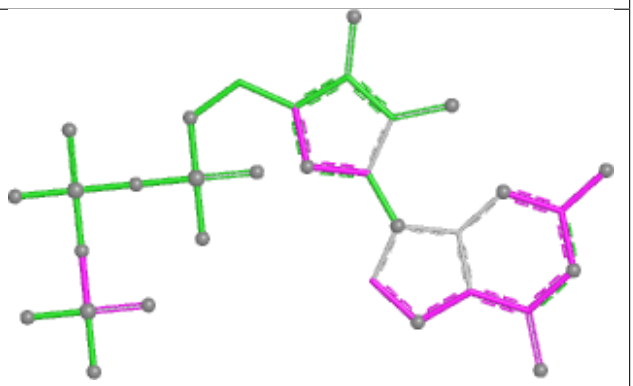

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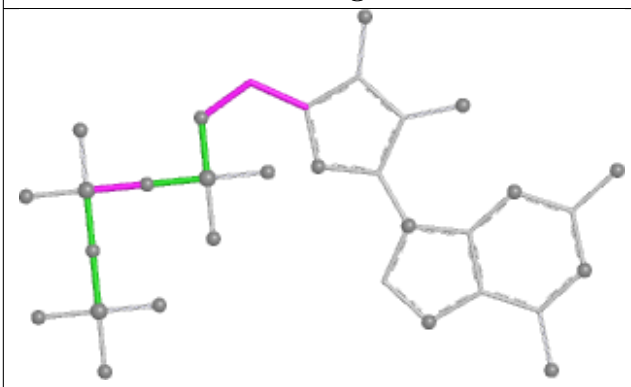

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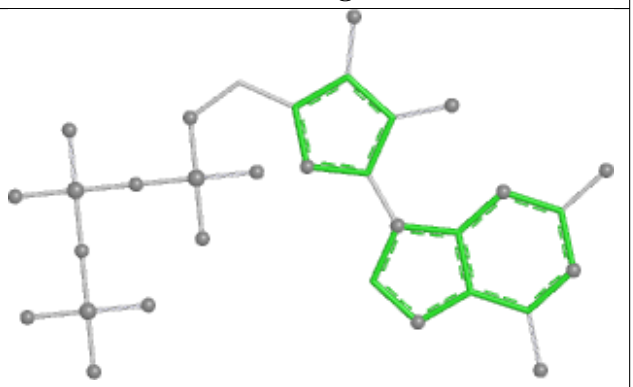
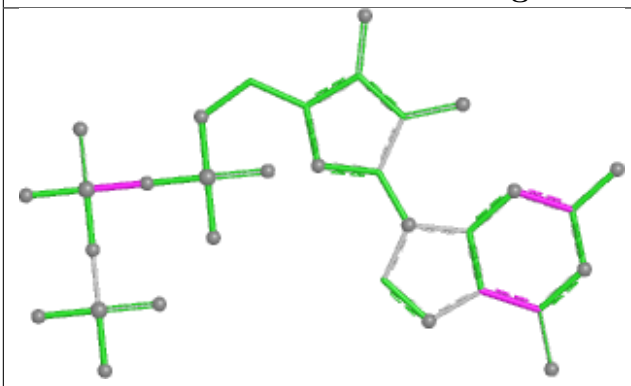


Rings

Ligand GTP LO 501



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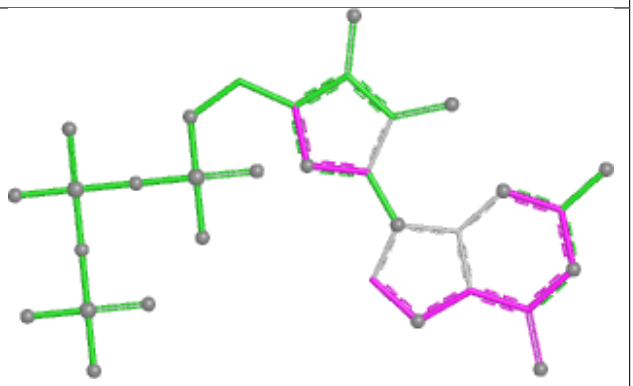

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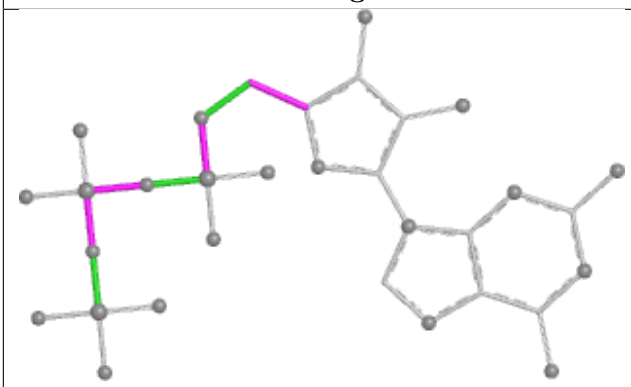

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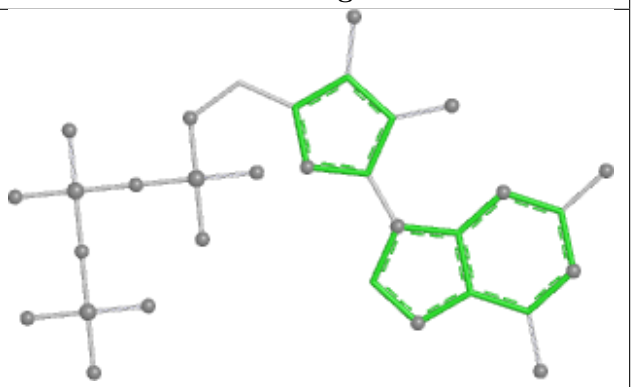
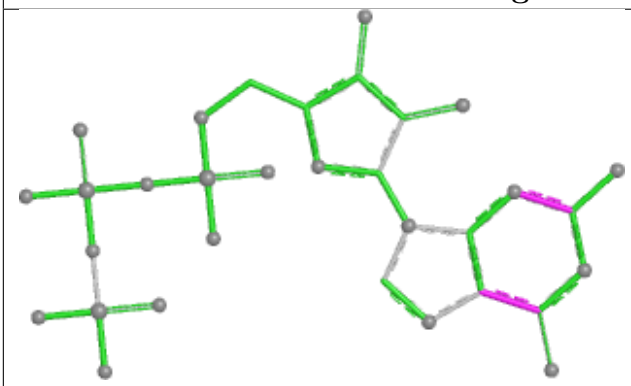


Rings

Ligand GTP SG 501



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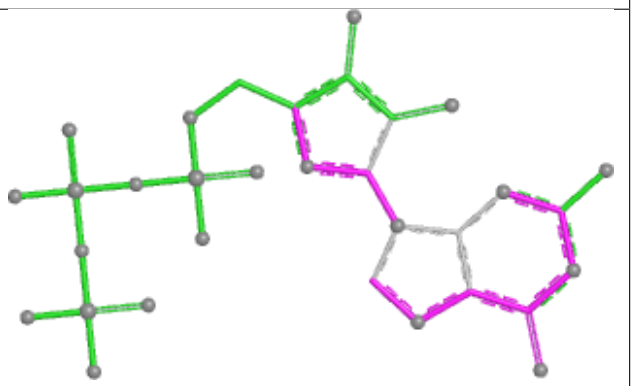

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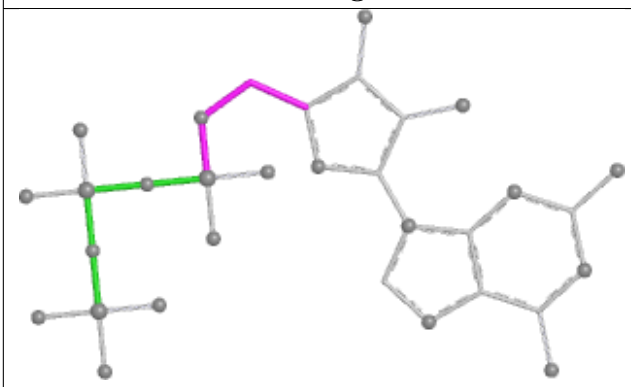

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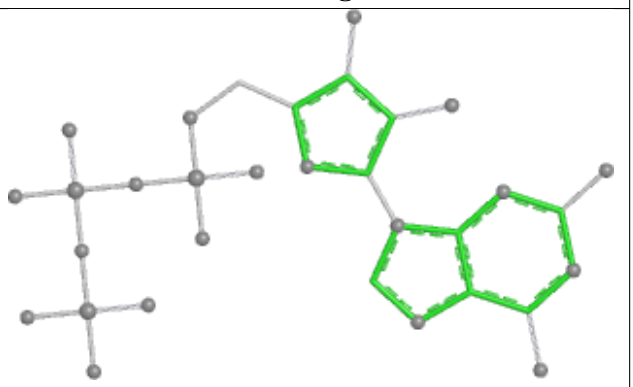
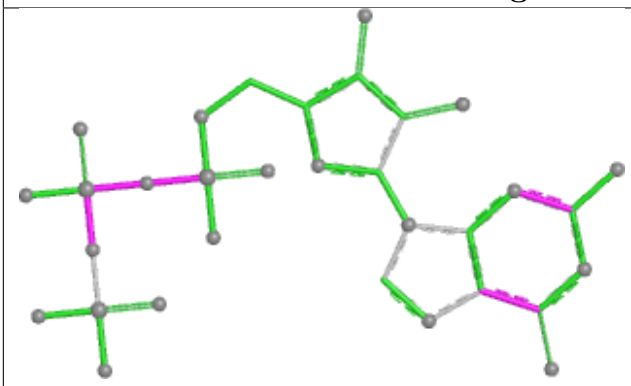


Rings

Ligand GTP UE 501



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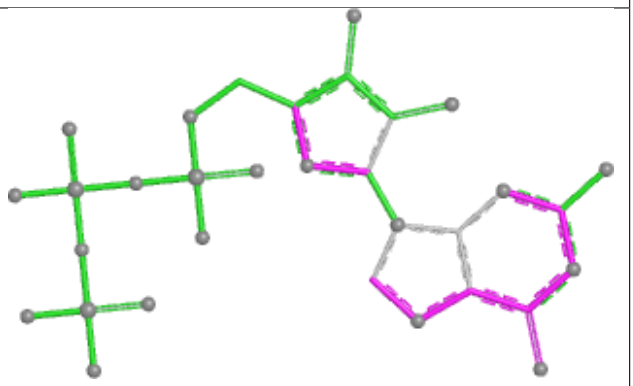

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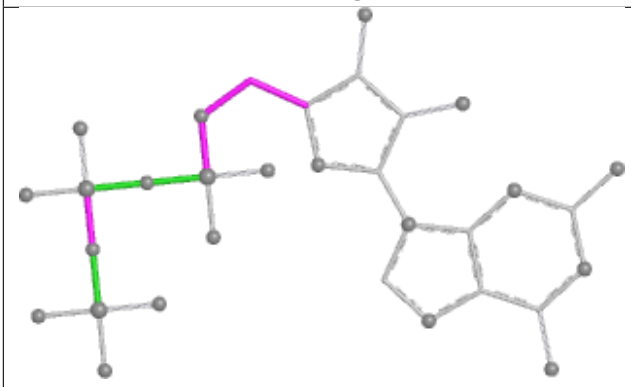

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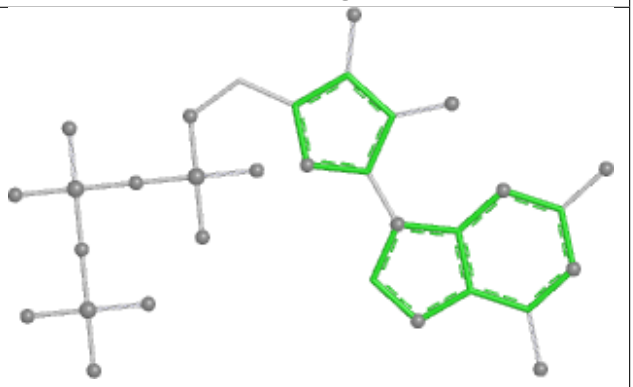
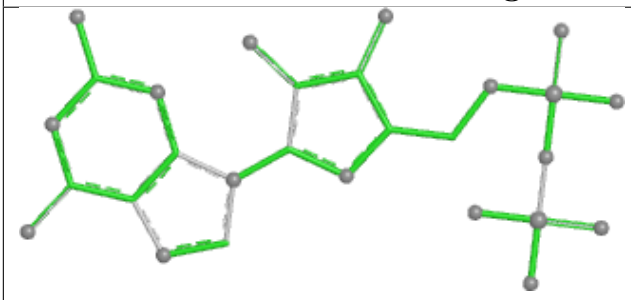


Rings

Ligand GDP WO 502



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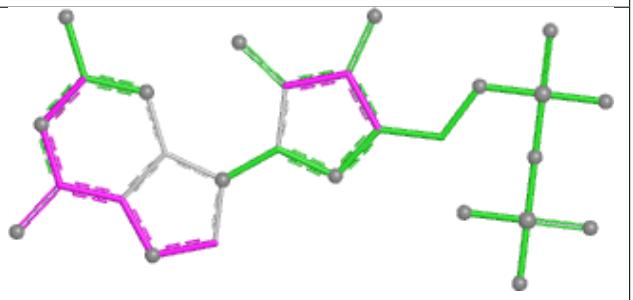

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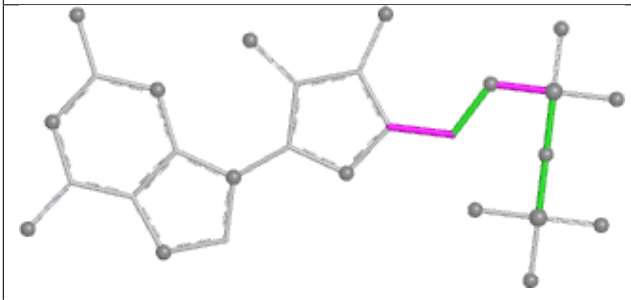

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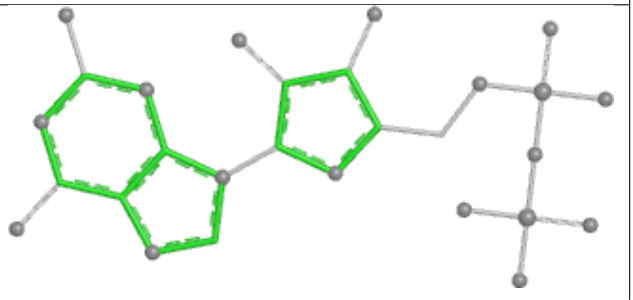
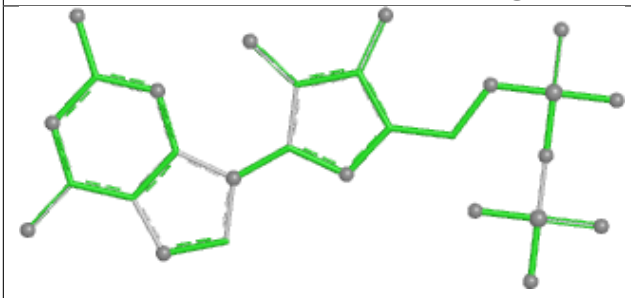


Rings

Ligand GDP UP 501



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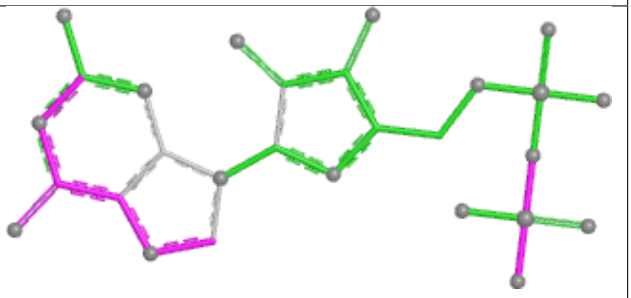

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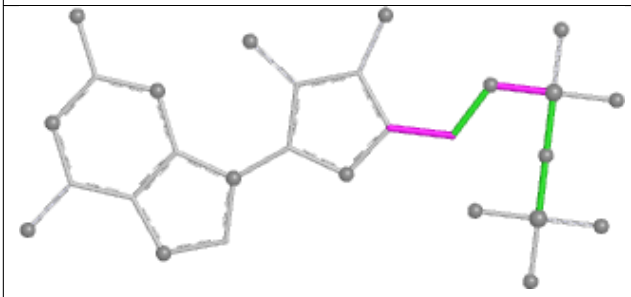
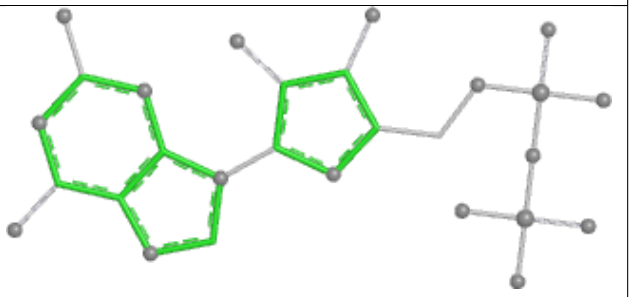
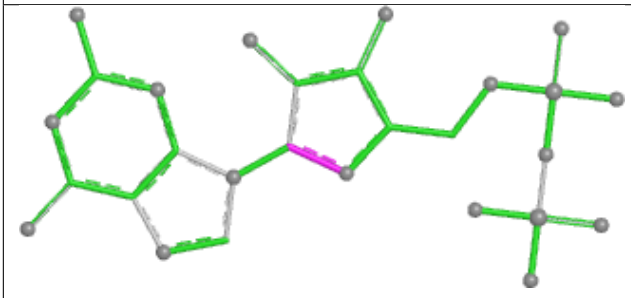


Torsions



Rings

Ligand GDP MB 501



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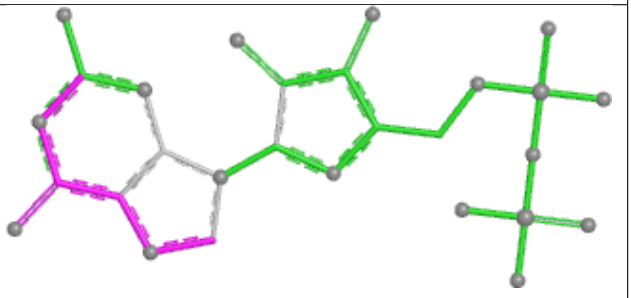

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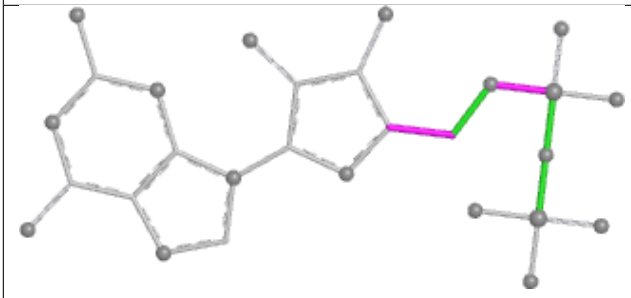

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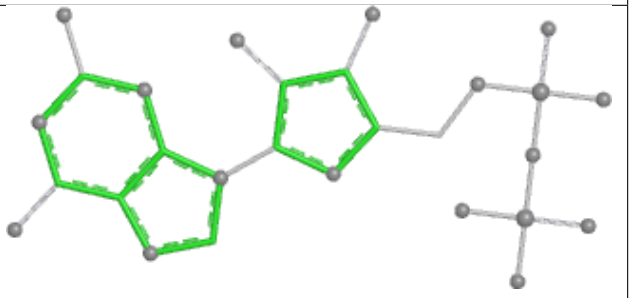
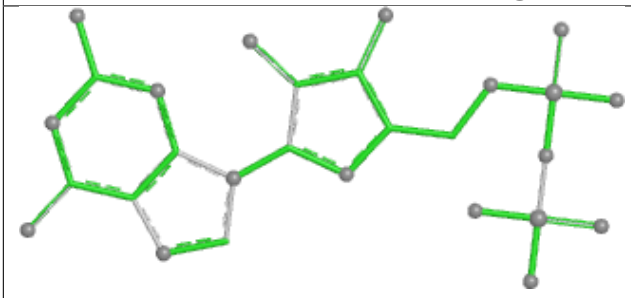


Rings

Ligand GDP SO 501



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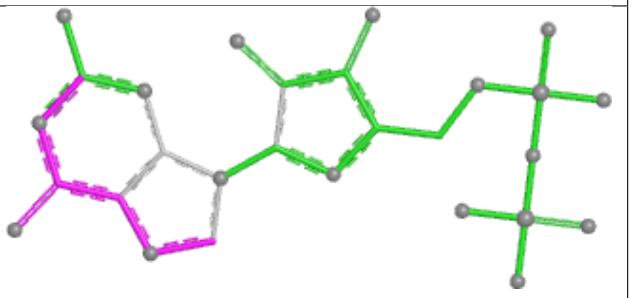

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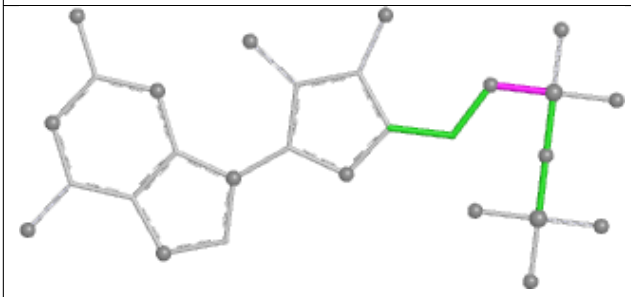

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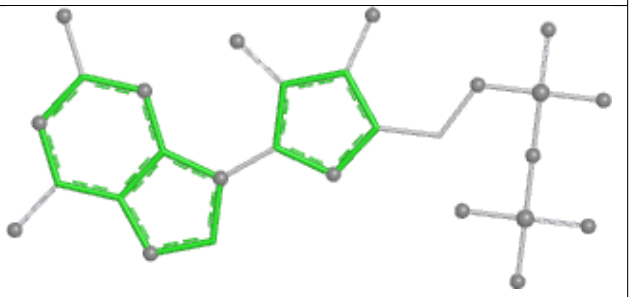
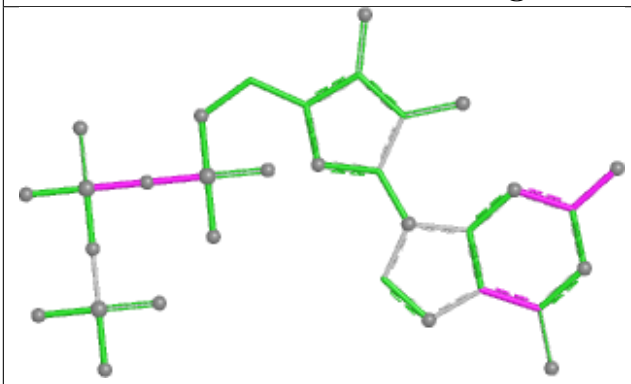


Rings

Ligand GTP KO 501



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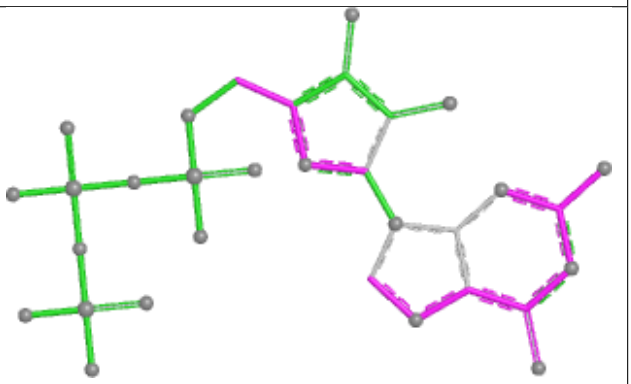

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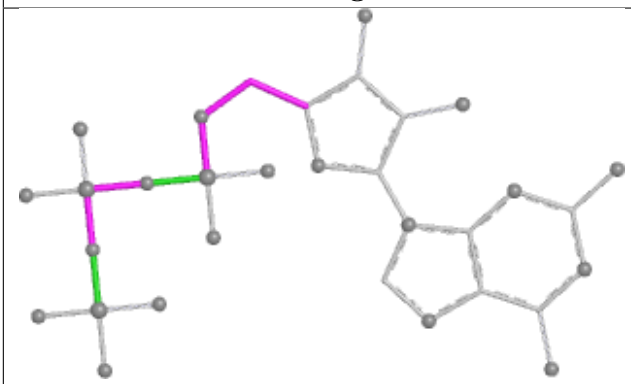

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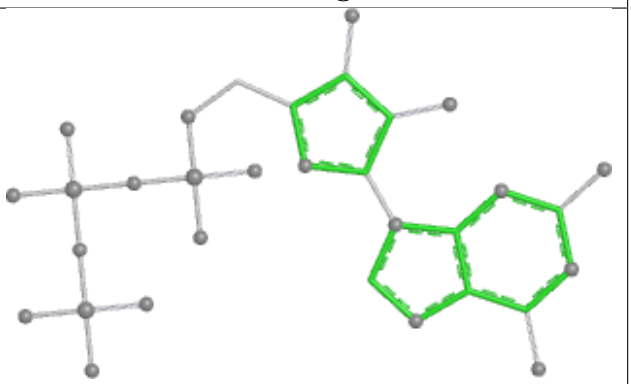

Rings

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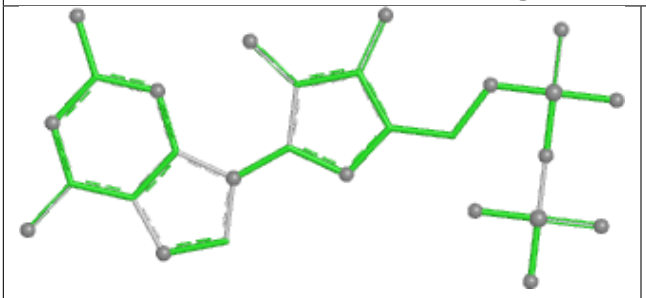

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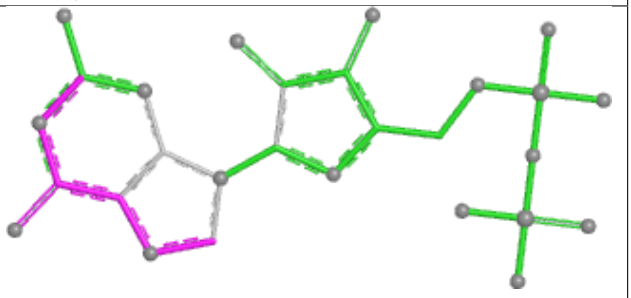

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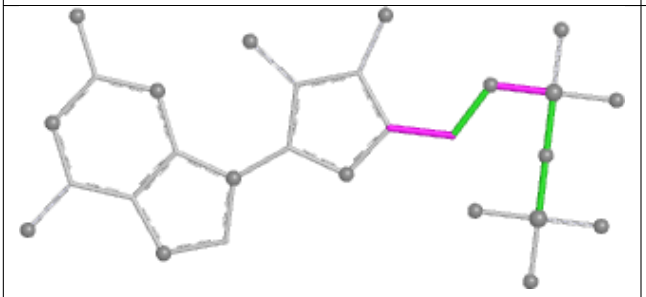

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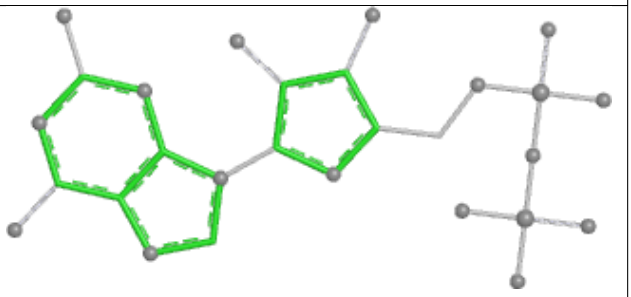

Rings

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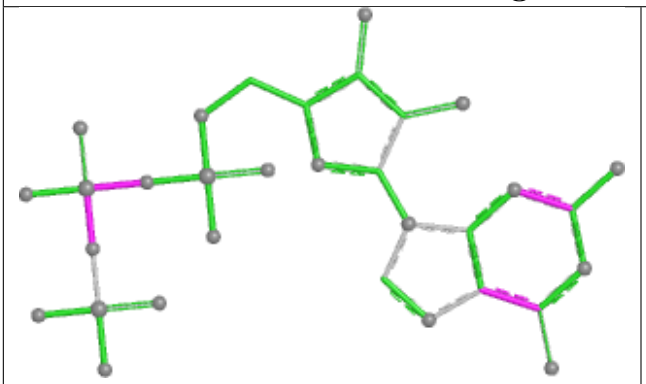

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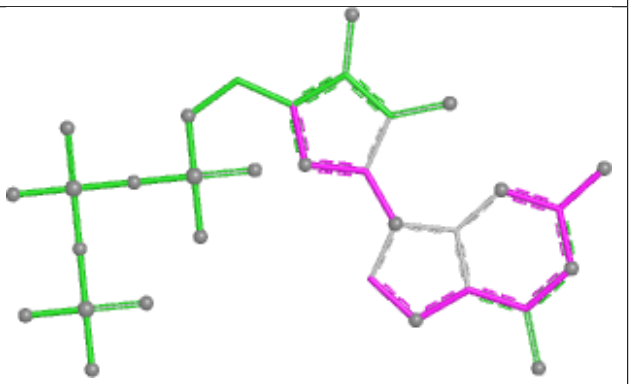

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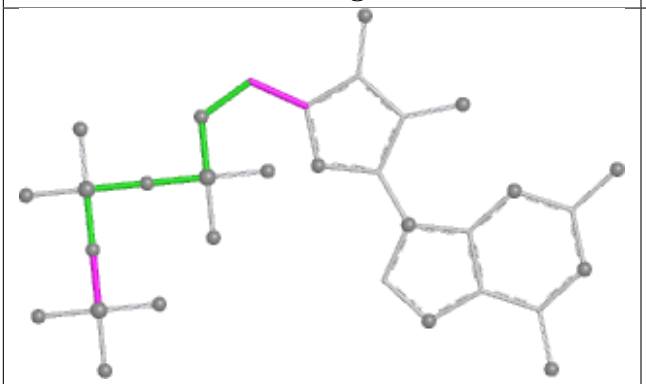

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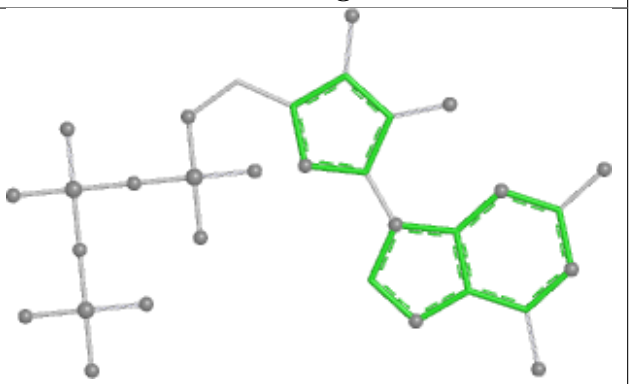
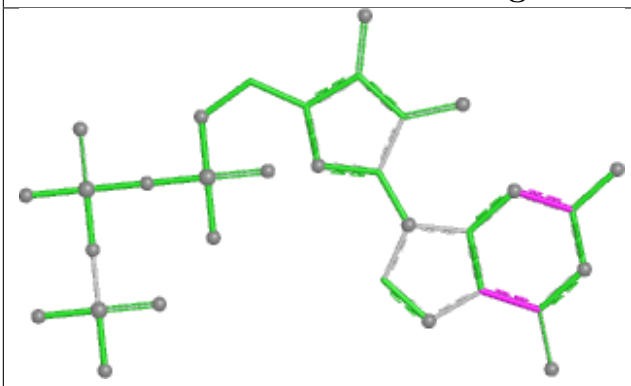


Rings

Ligand GTP QO 501



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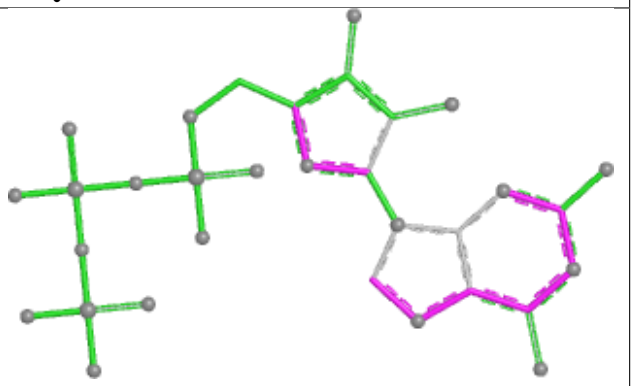

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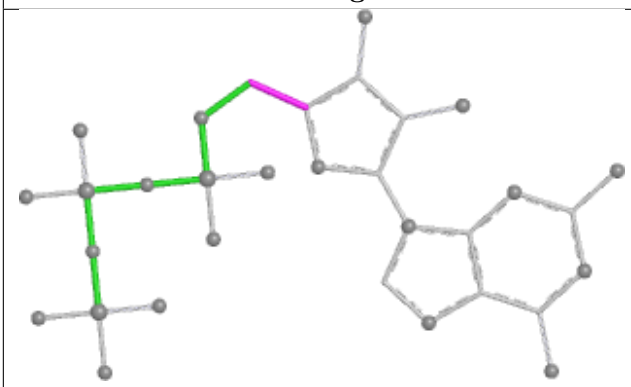

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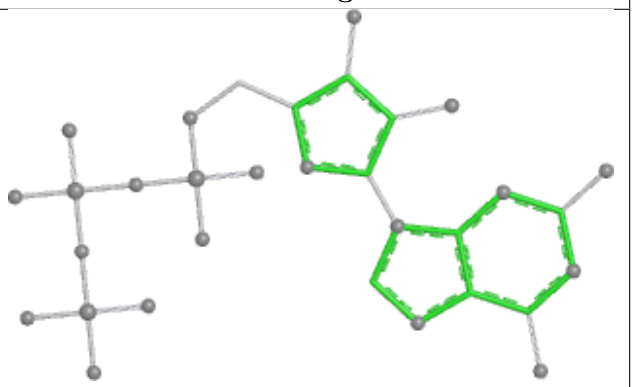

Rings

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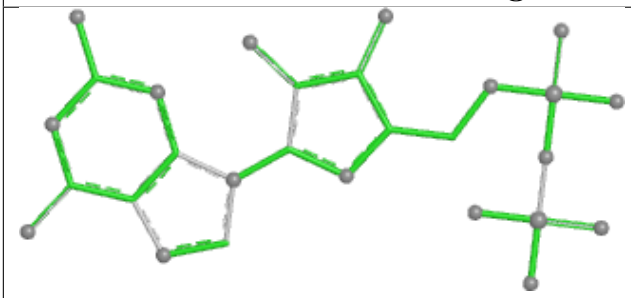

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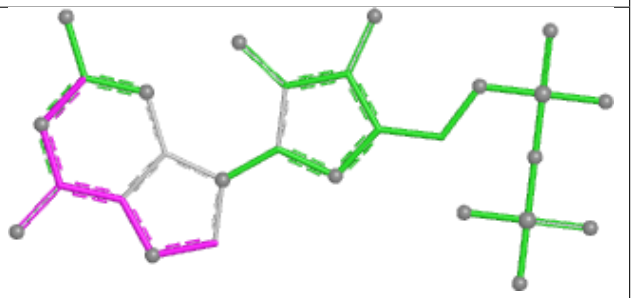

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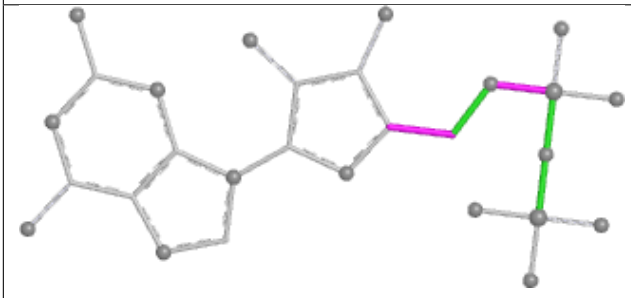

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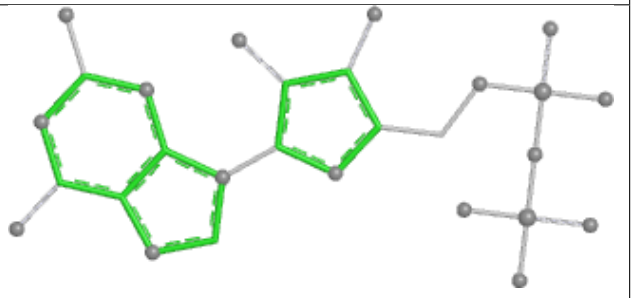

Rings

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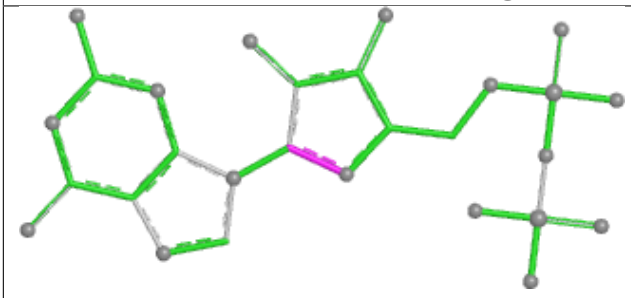

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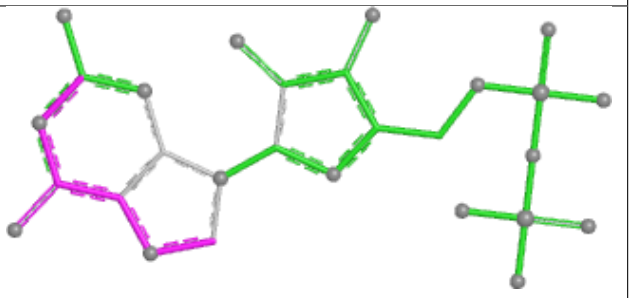

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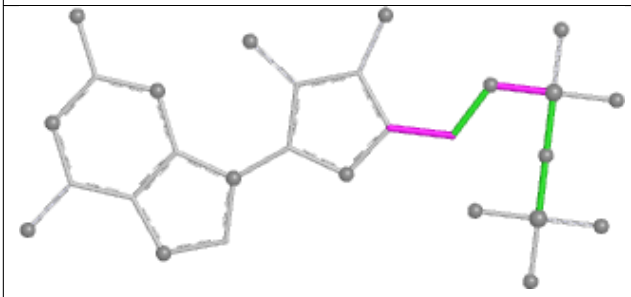

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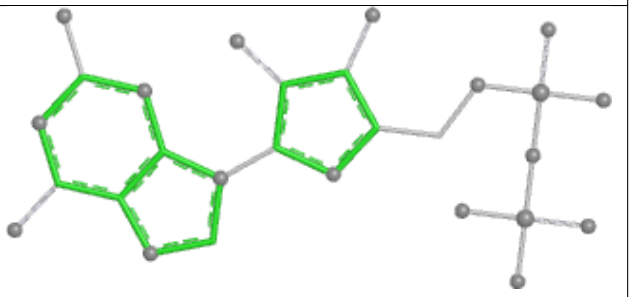

Rings

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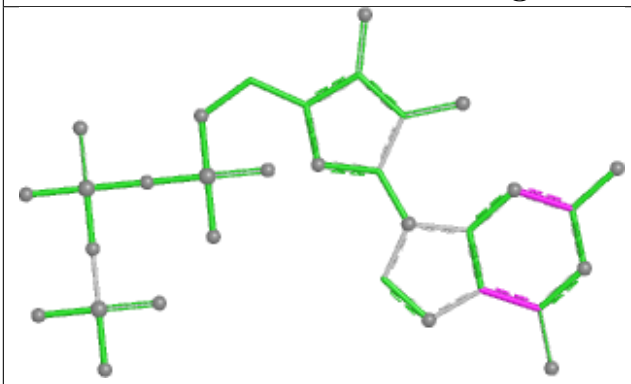

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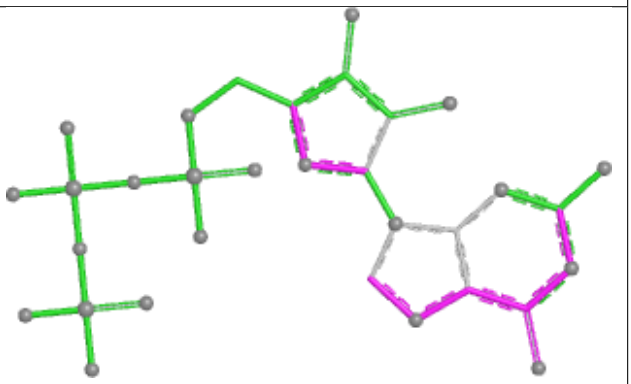

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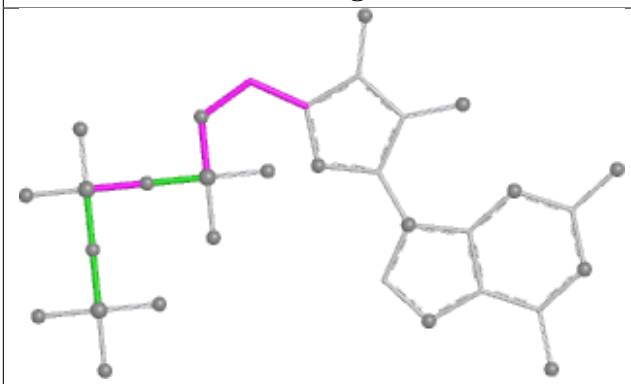

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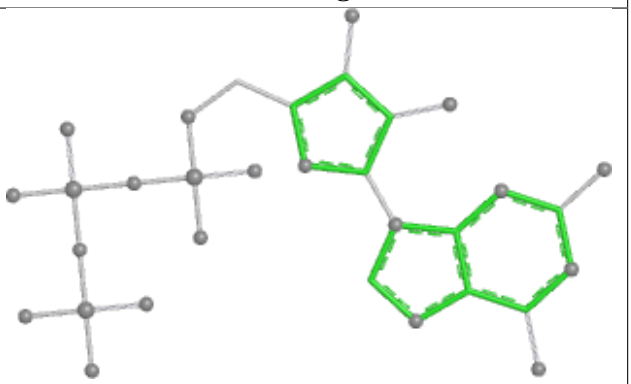

Rings

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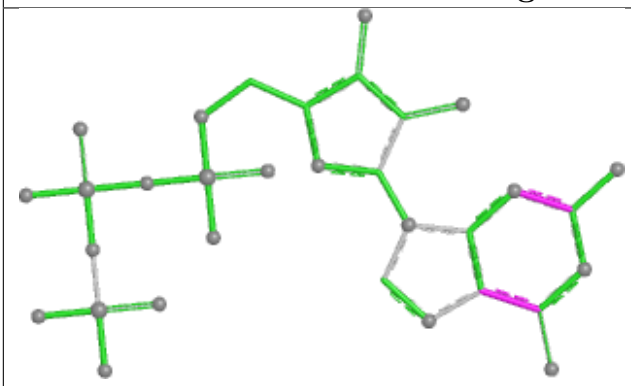

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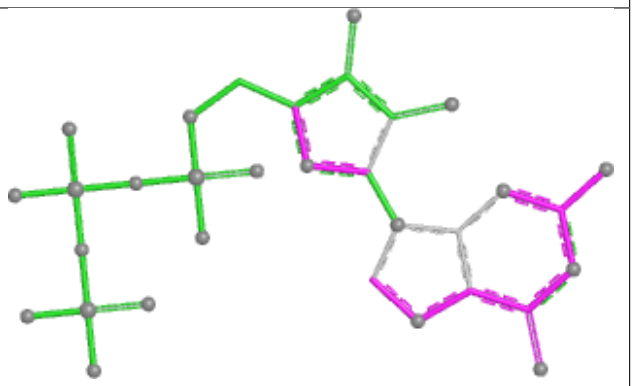

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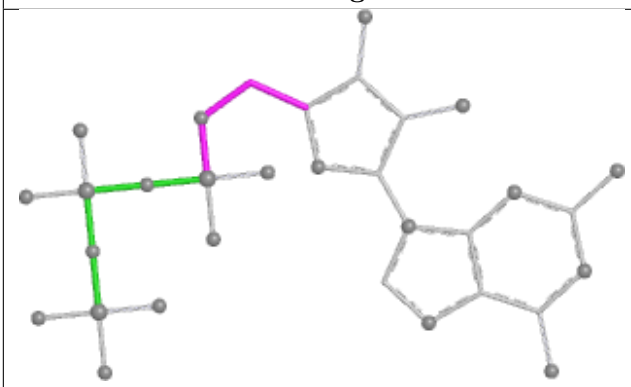

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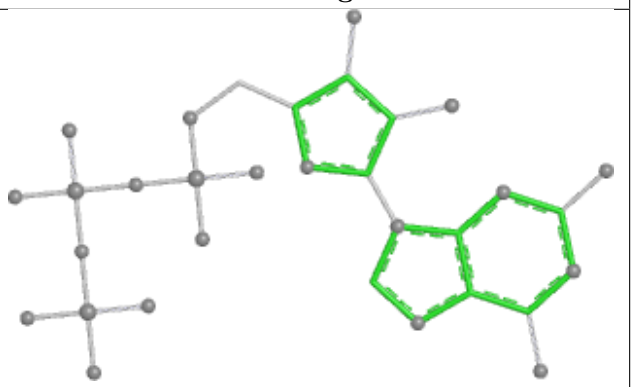

Rings

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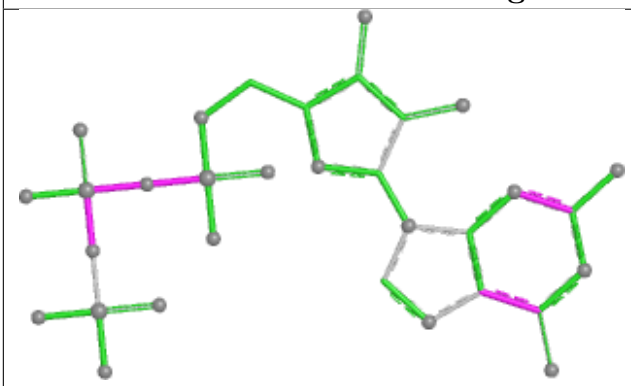

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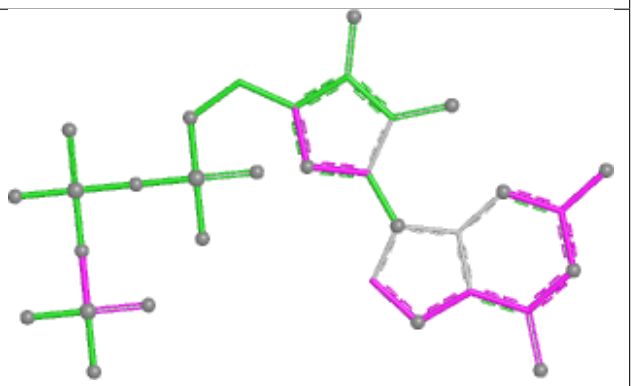

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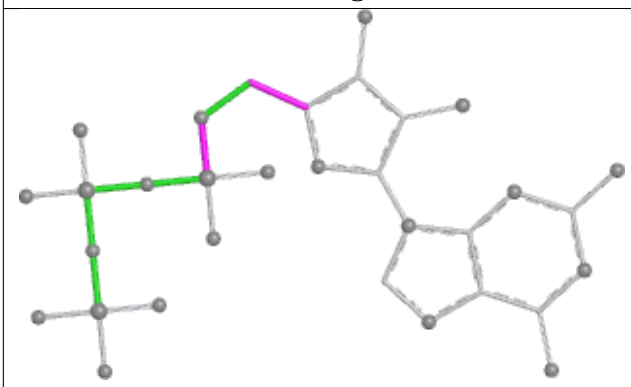

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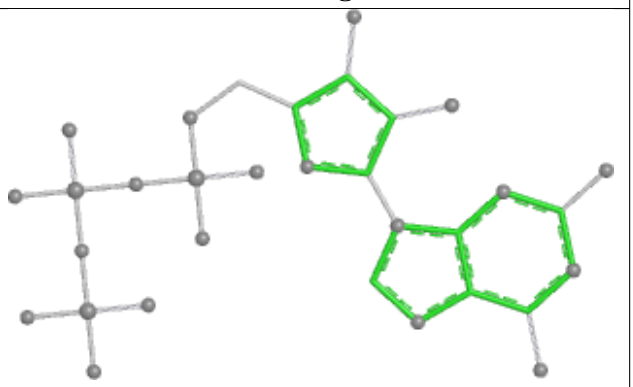
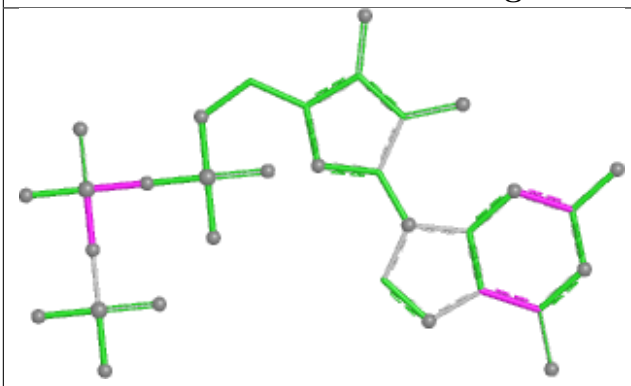


Rings

Ligand GTP MN 501



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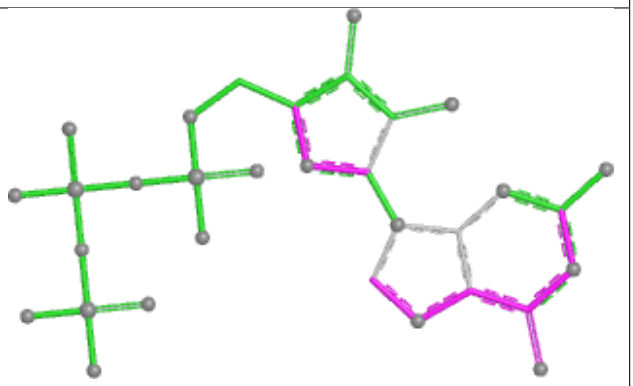

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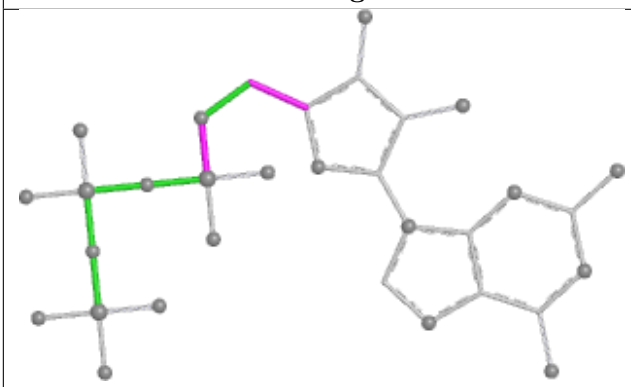

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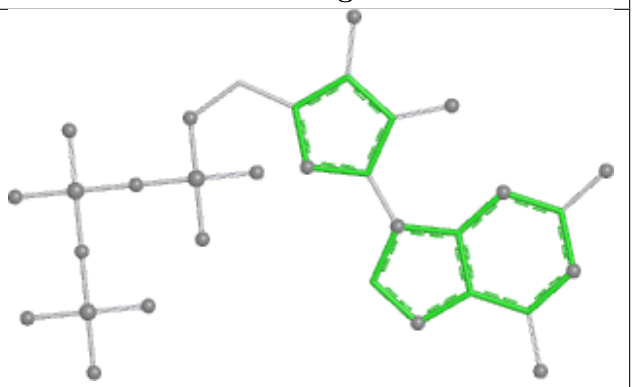
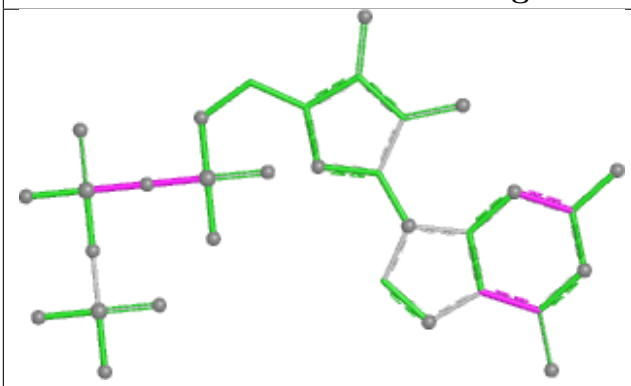


Rings

Ligand GTP SN 501



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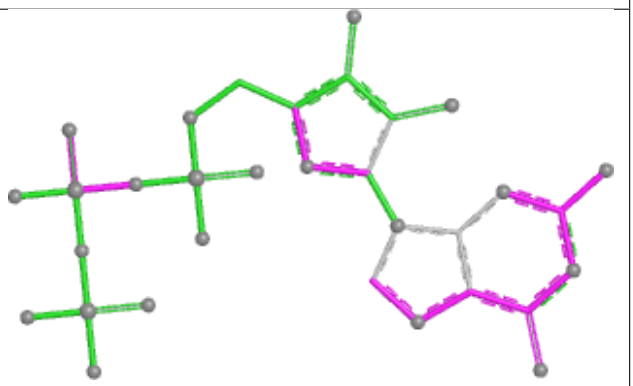

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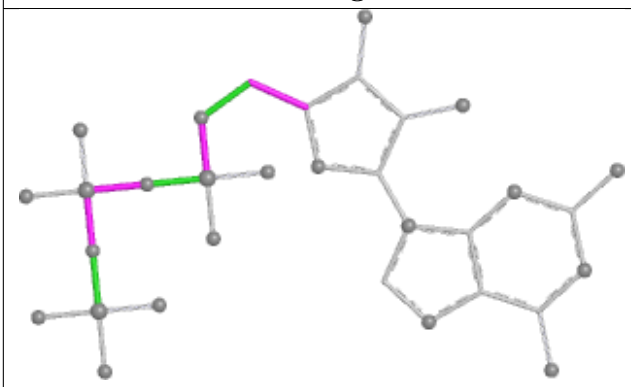

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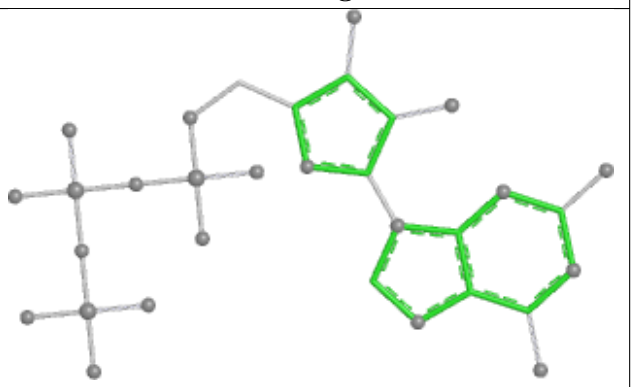
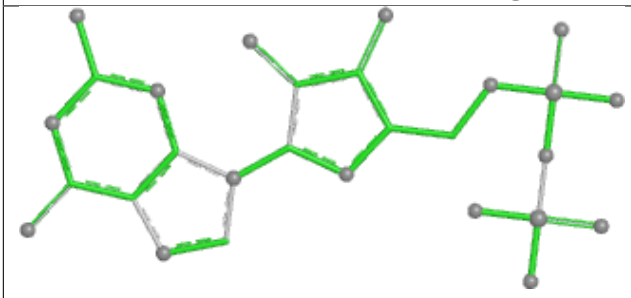


Rings

Ligand GDP UO 502



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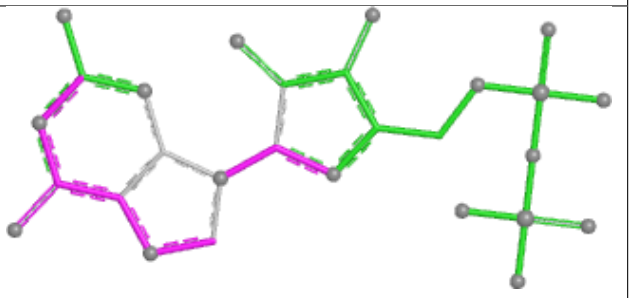

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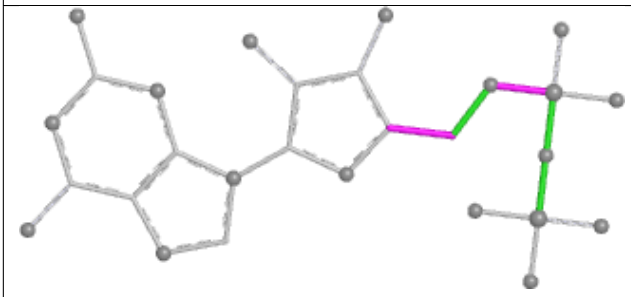
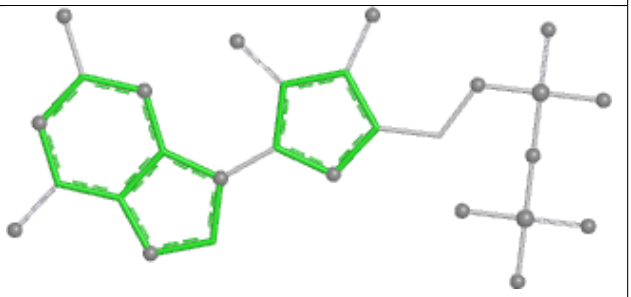
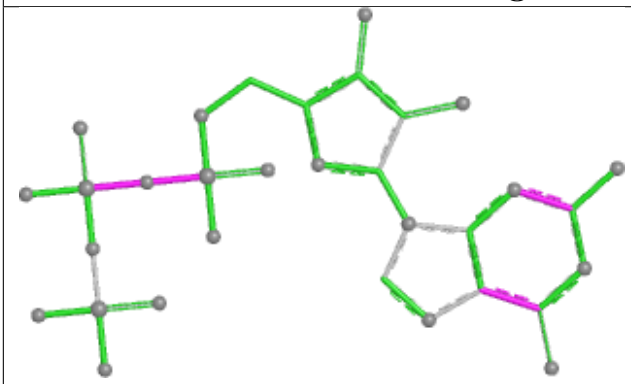


Torsions



Rings

Ligand GTP OD 501



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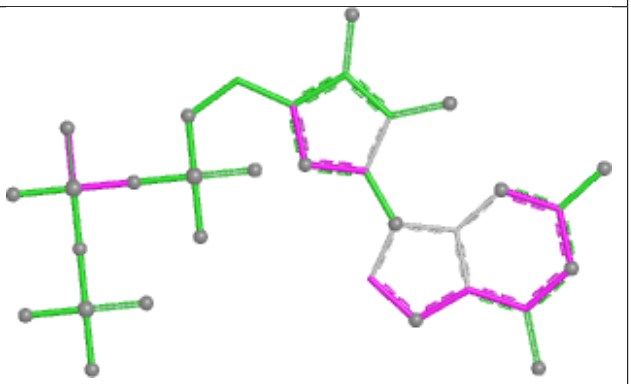

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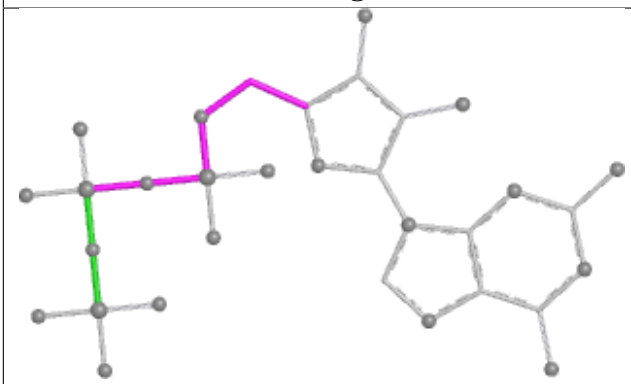

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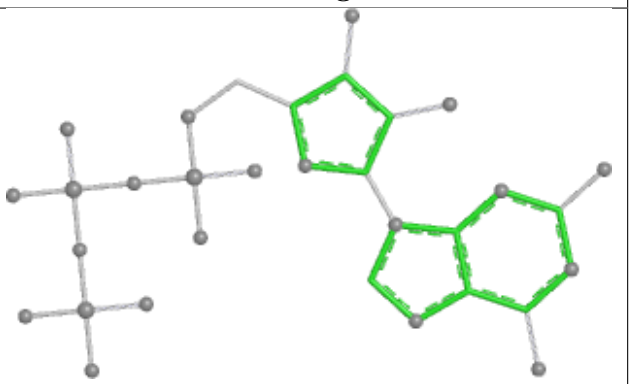
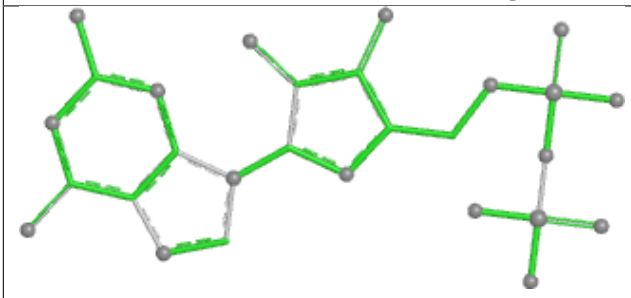


Rings

Ligand GDP OM 502



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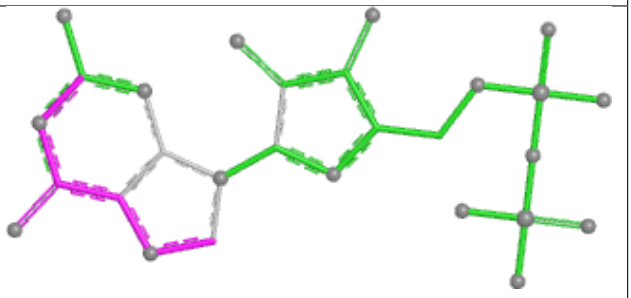

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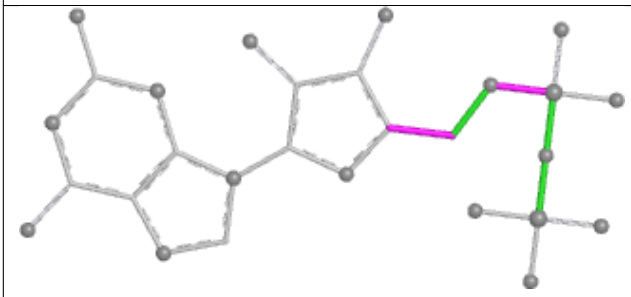

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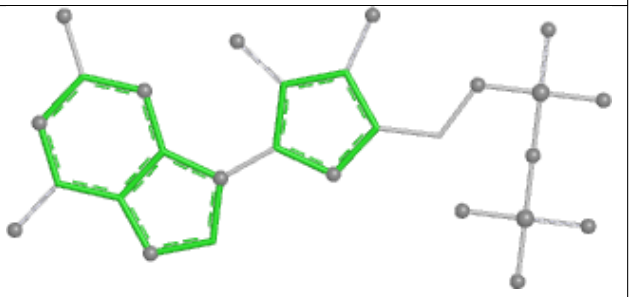

Rings

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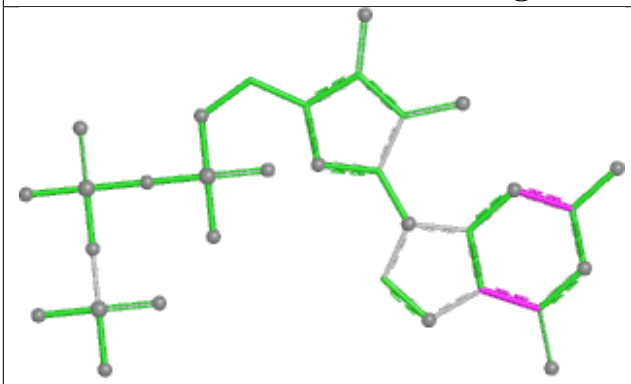

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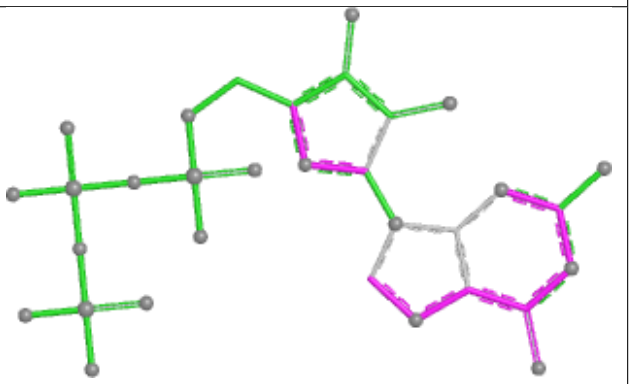

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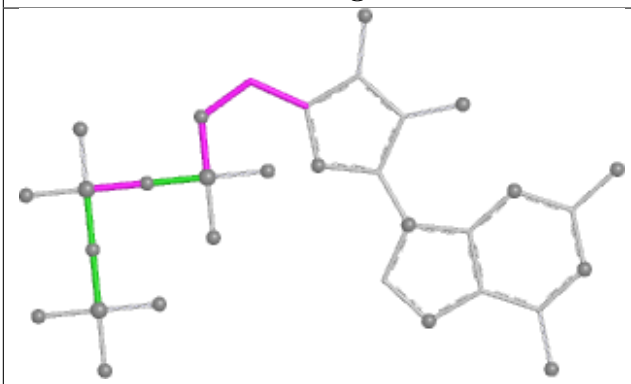

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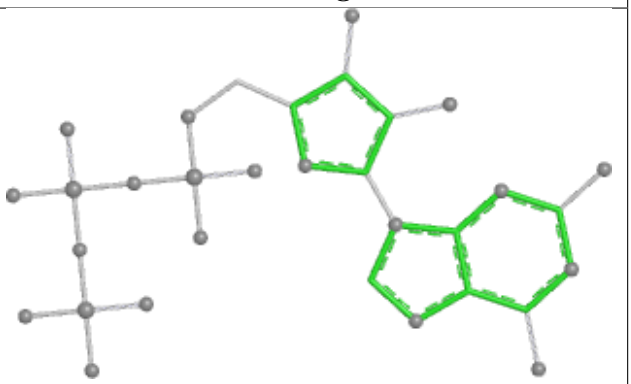
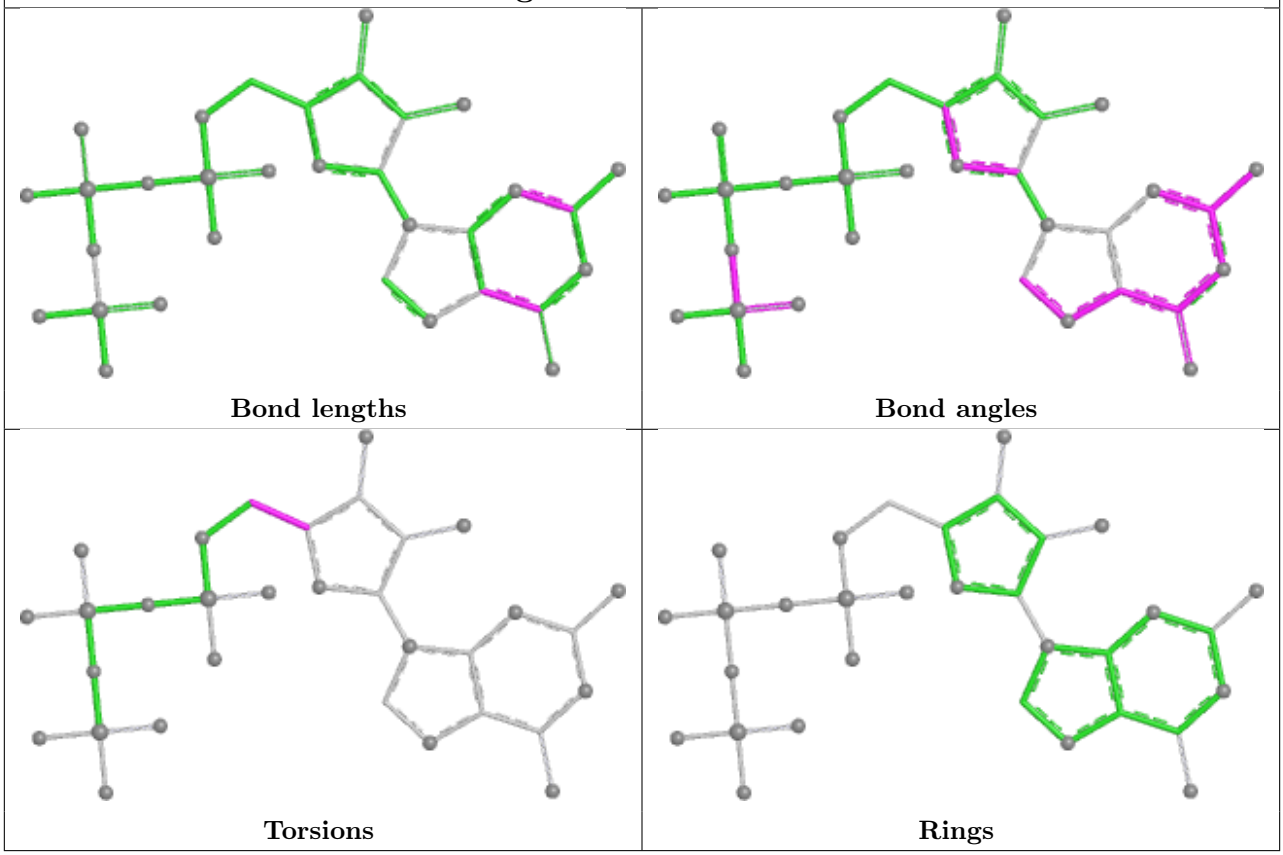


Rings

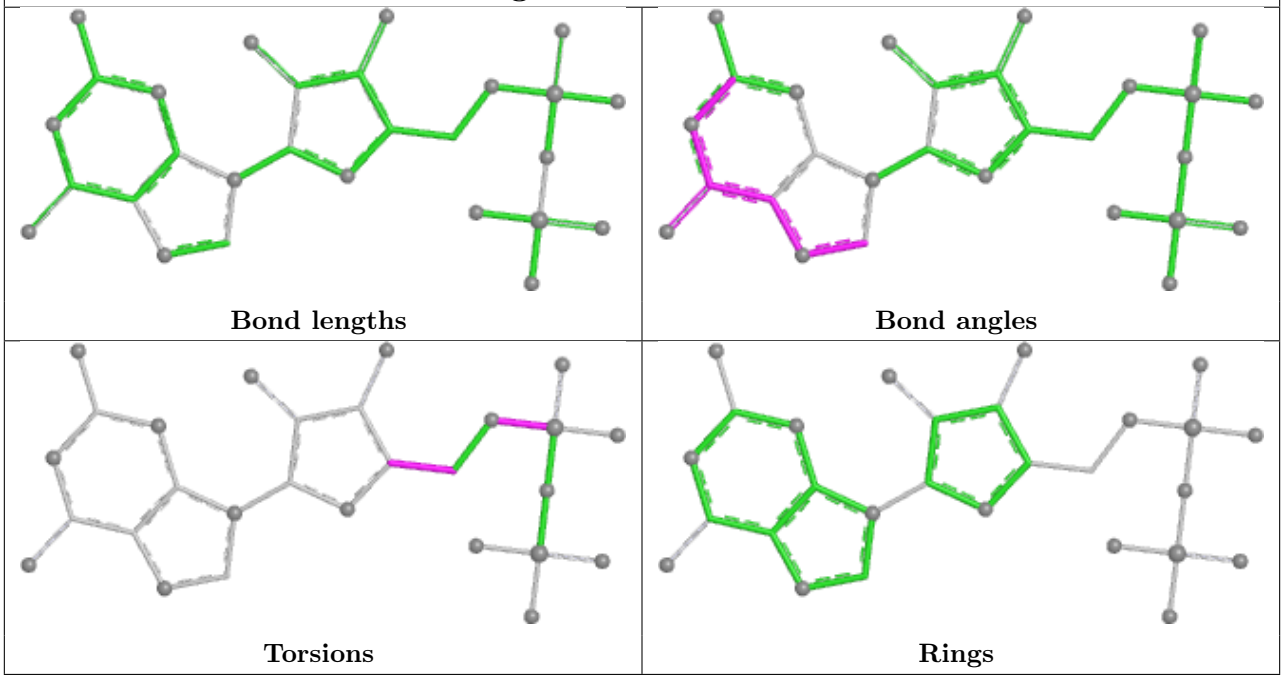
Ligand GTP JF 501



Bond lengths | Bond angles

Torsions | Rings

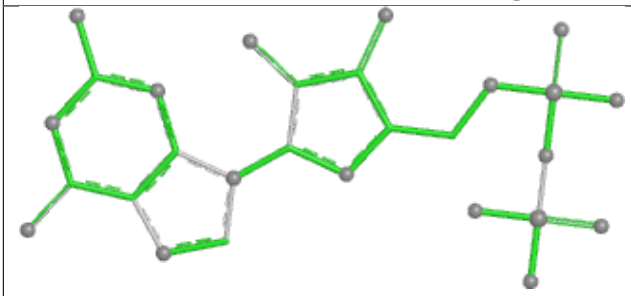
Ligand GDP NL 501



Bond lengths | Bond angles

Torsions | Rings

Ligand GDP VB 501



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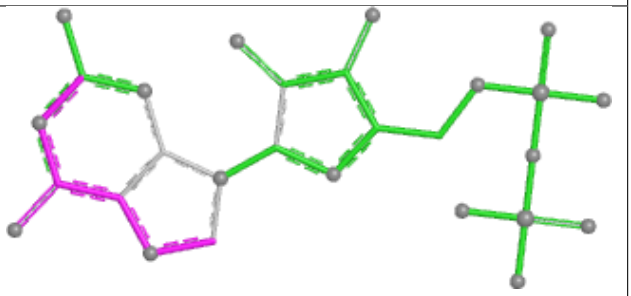

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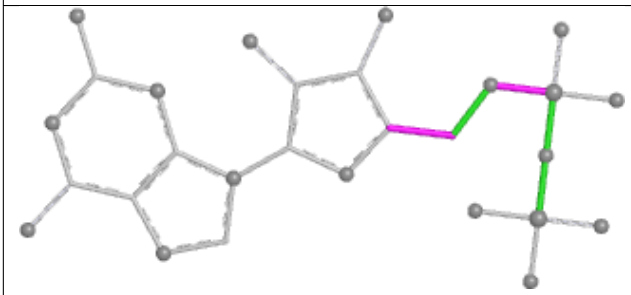

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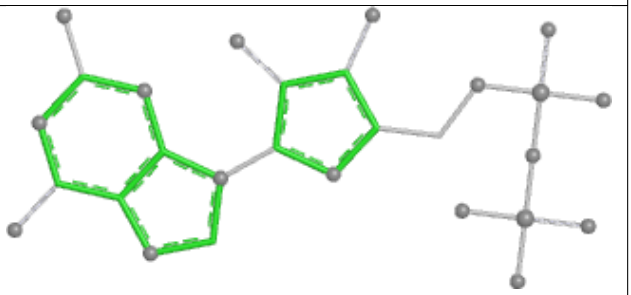

Rings

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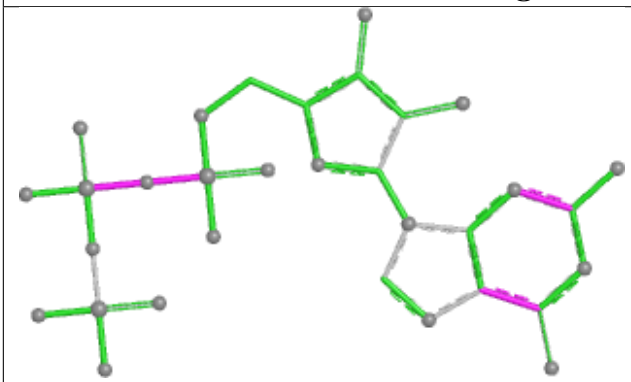

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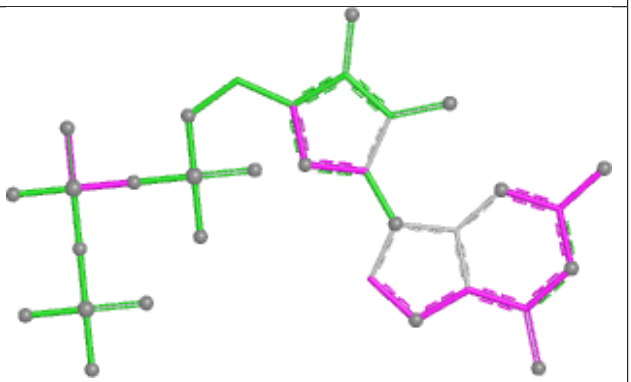

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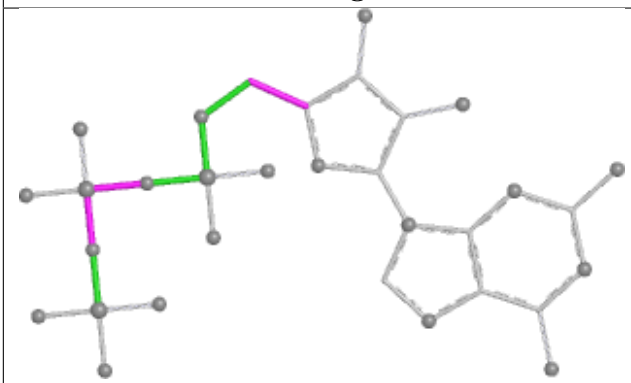

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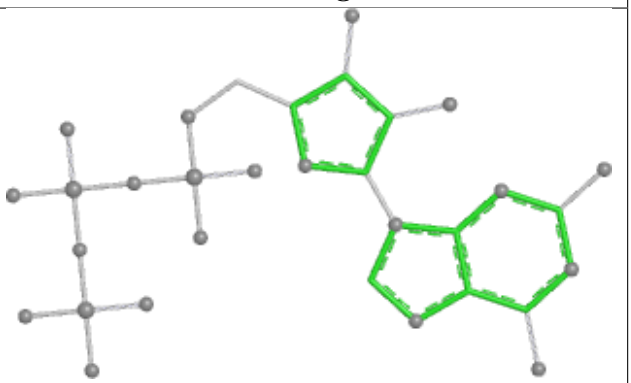
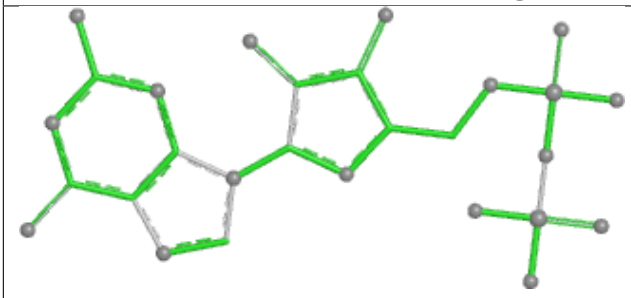


Rings

Ligand GDP JN 501



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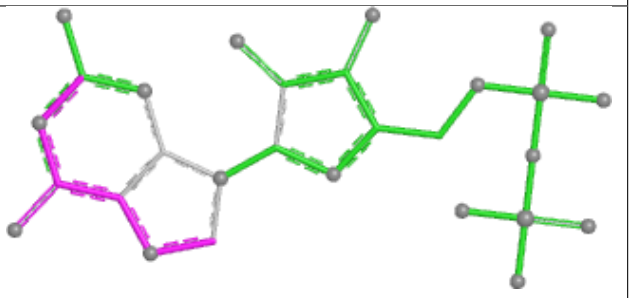

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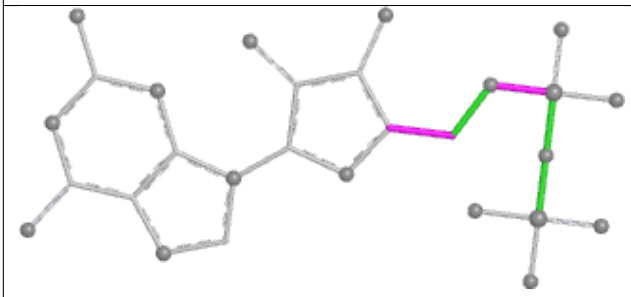

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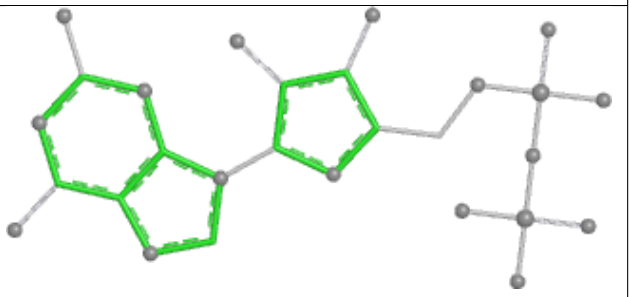
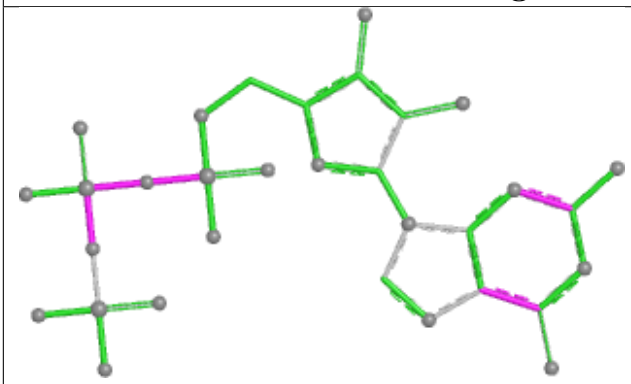


Rings

Ligand GTP FN 501



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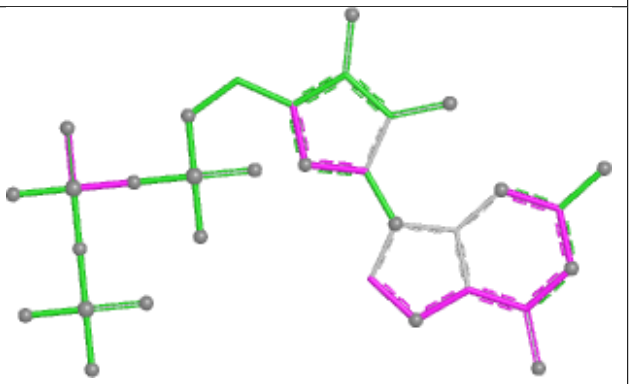

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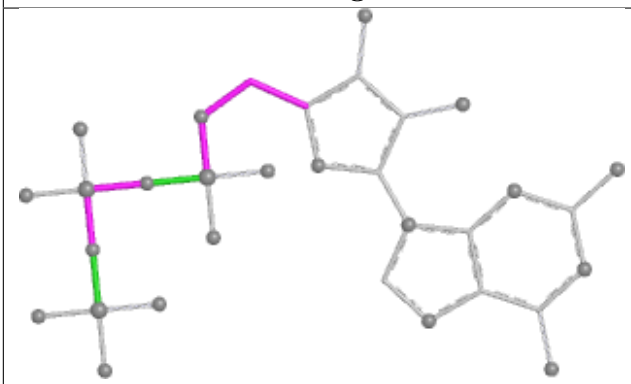

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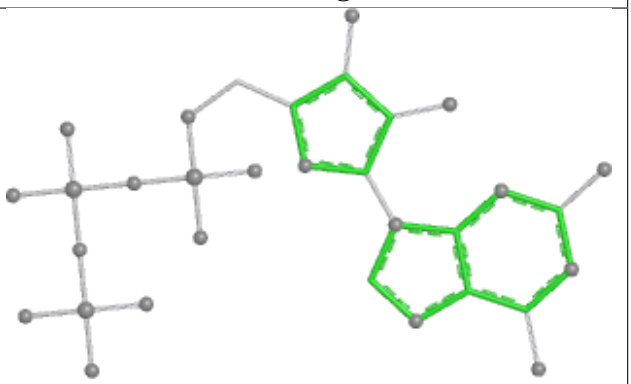

Rings

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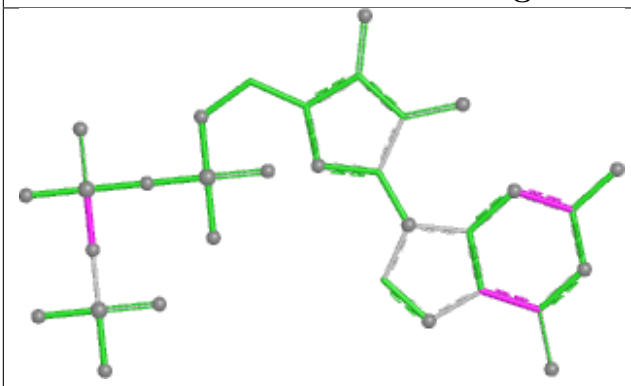

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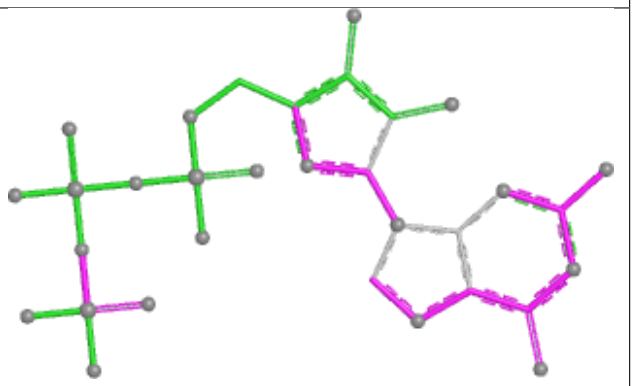

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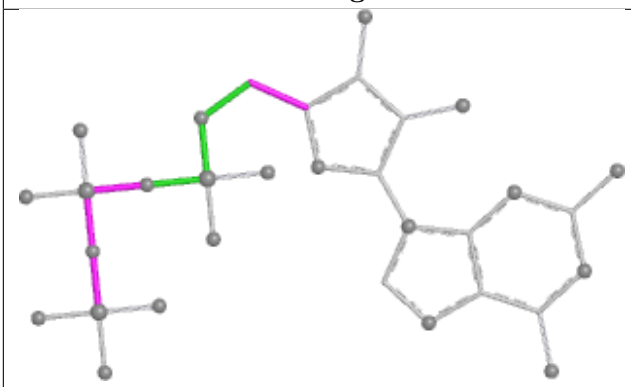

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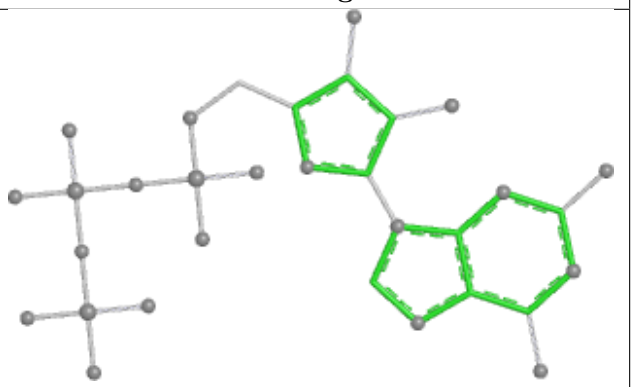

Rings

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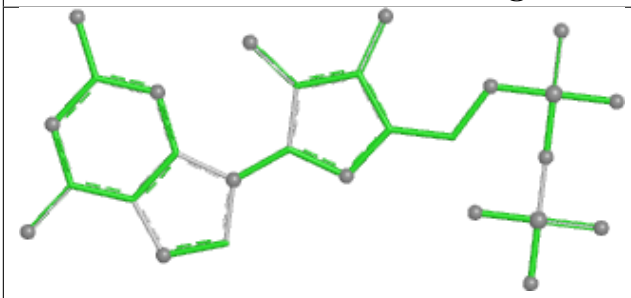

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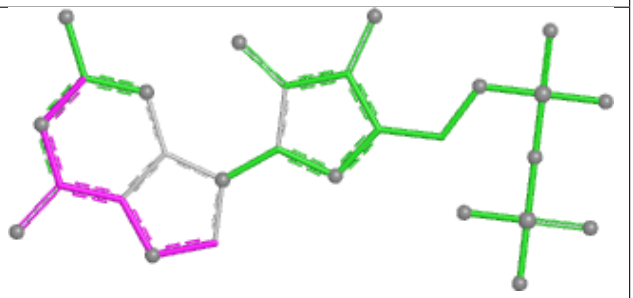

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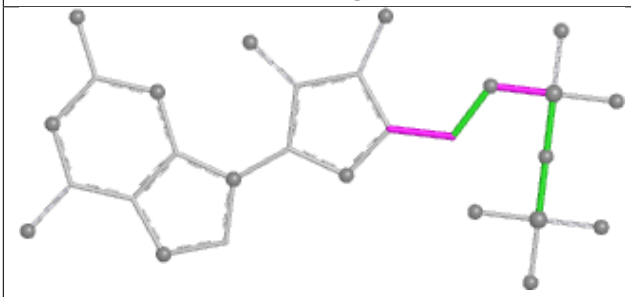

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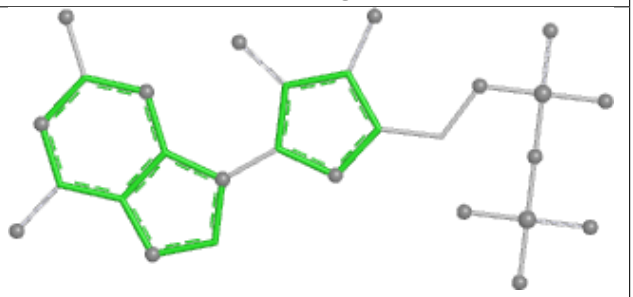

Rings

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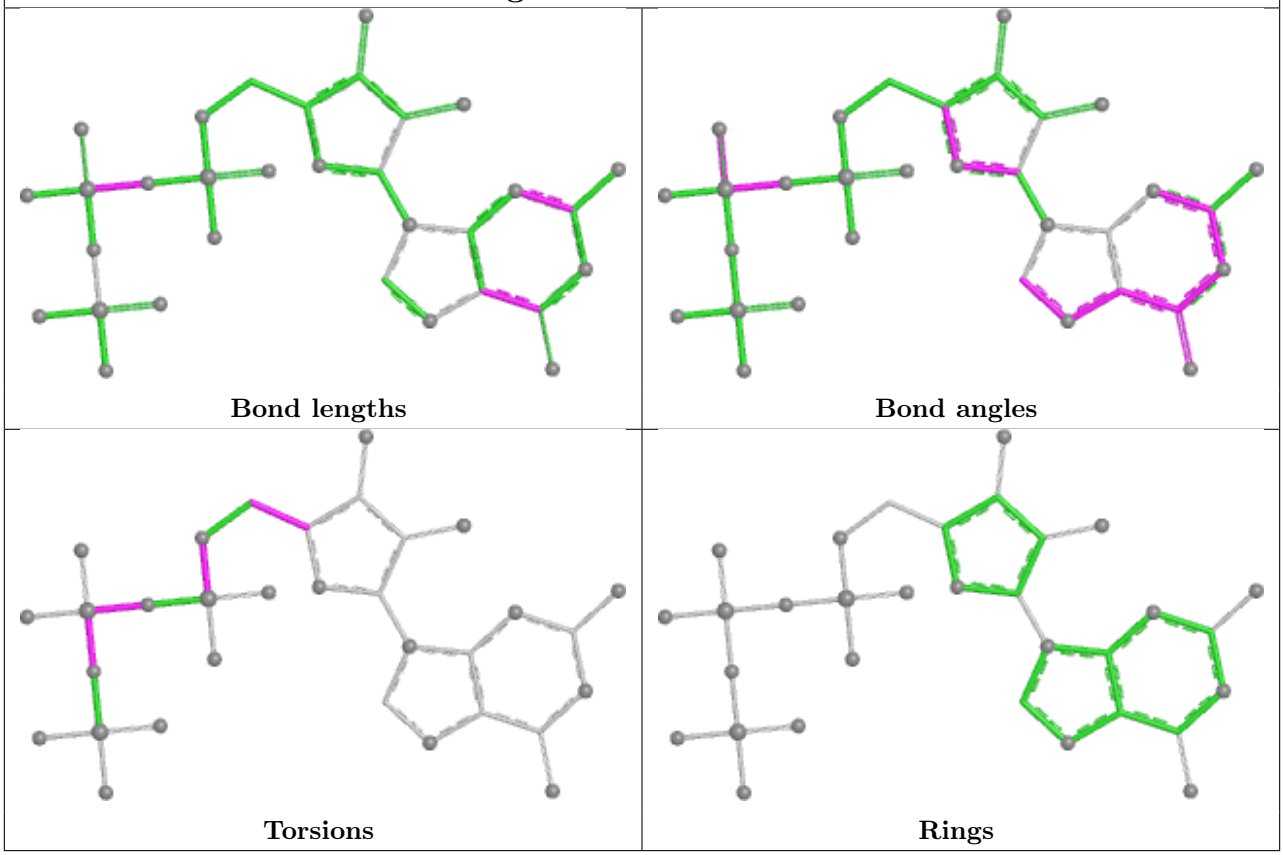

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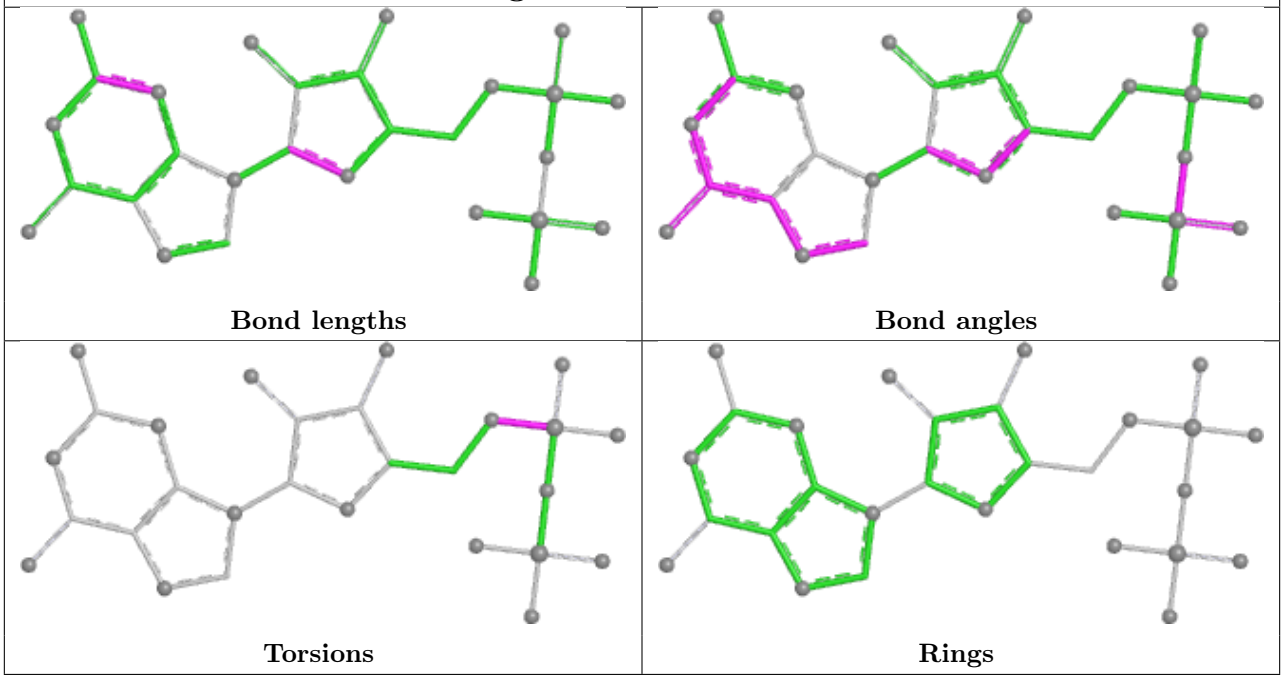

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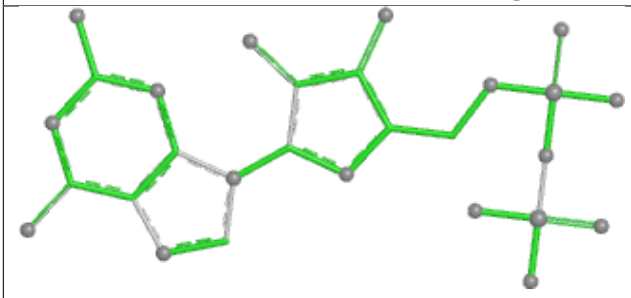

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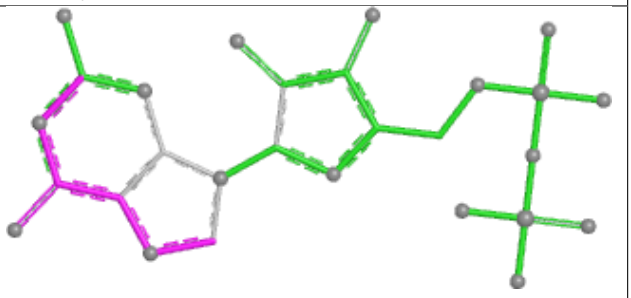

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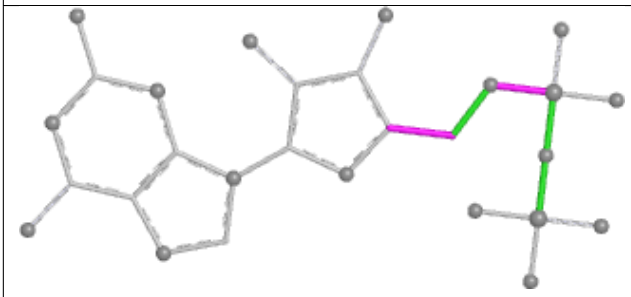

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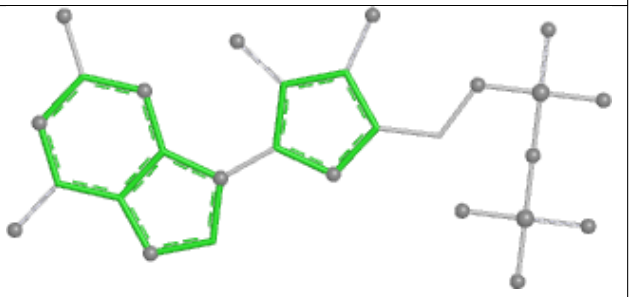

Rings

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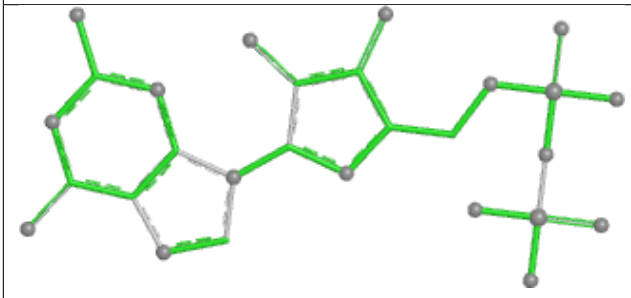

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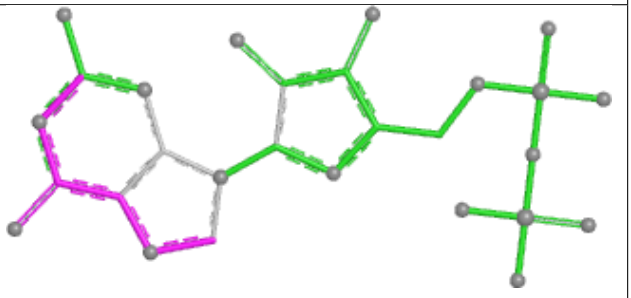

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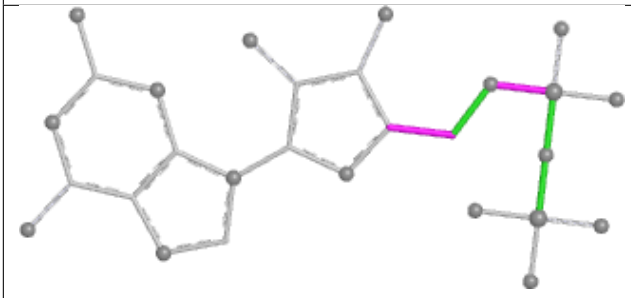

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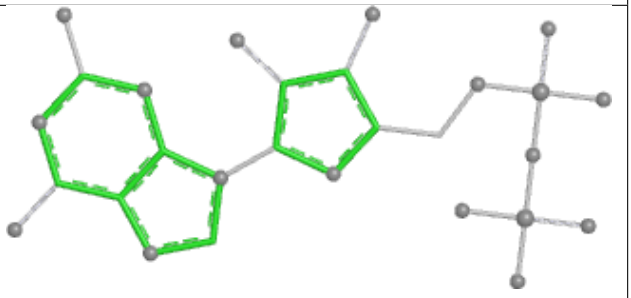

Rings

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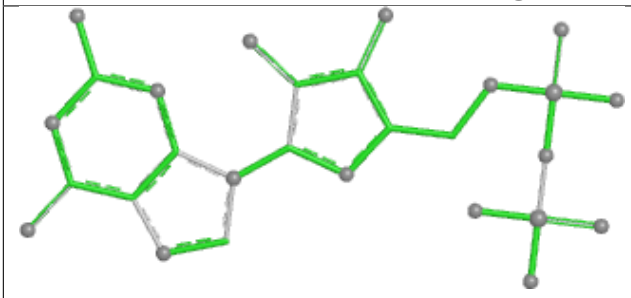

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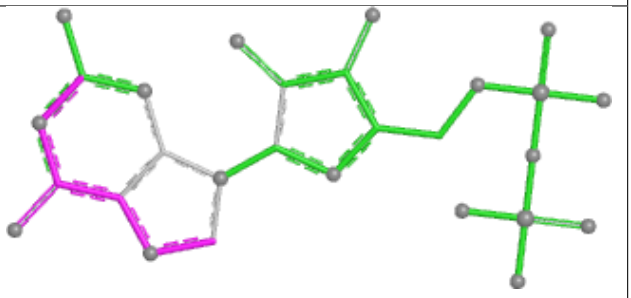

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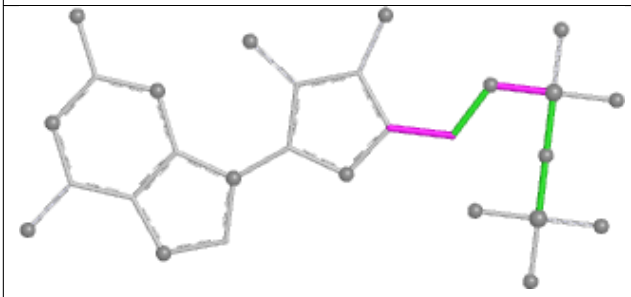
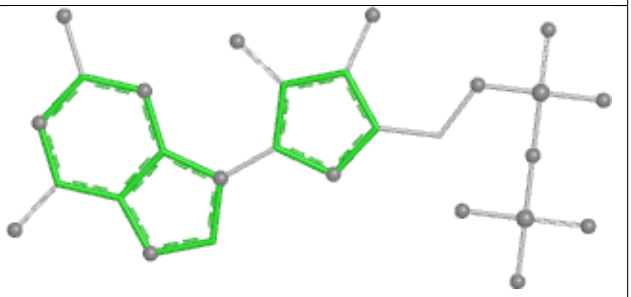
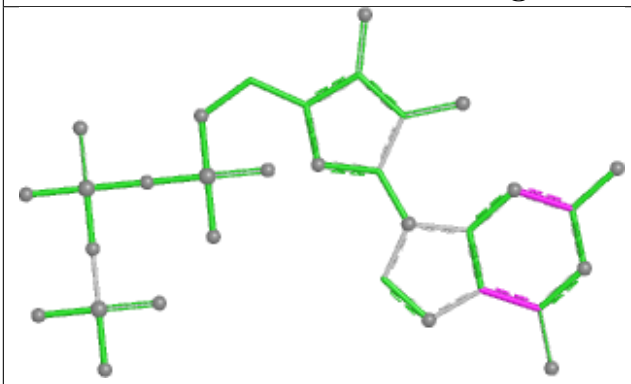


Torsions



Rings

Ligand GTP EH 501



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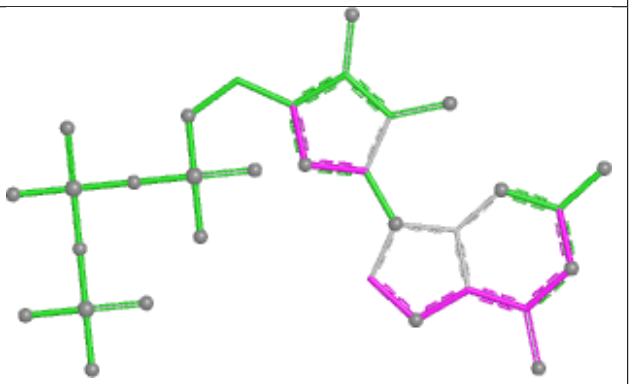

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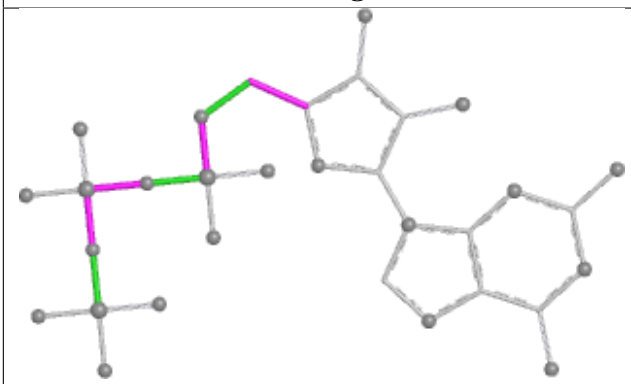

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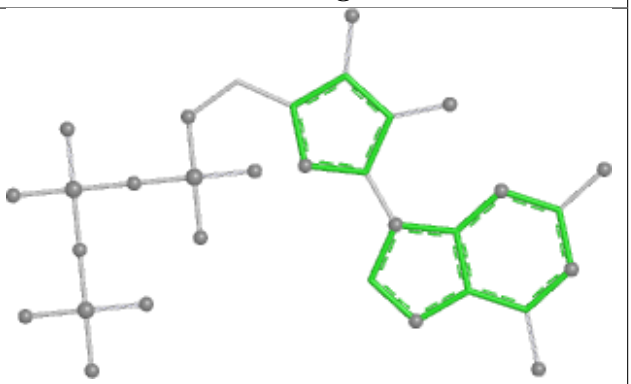
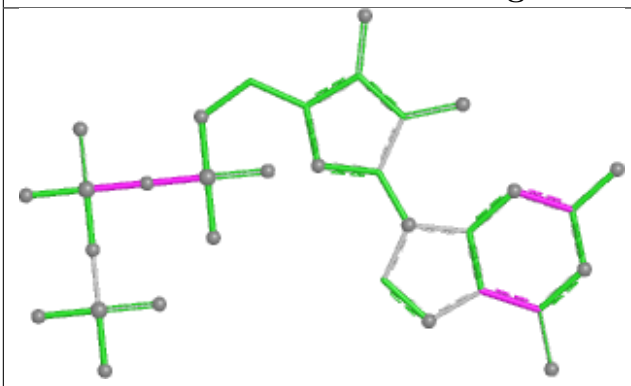


Rings

Ligand GTP FM 501



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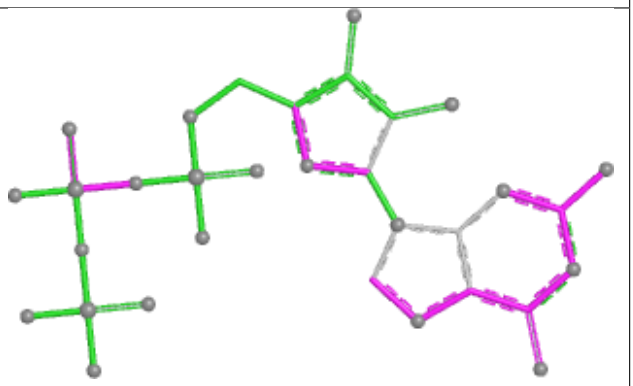

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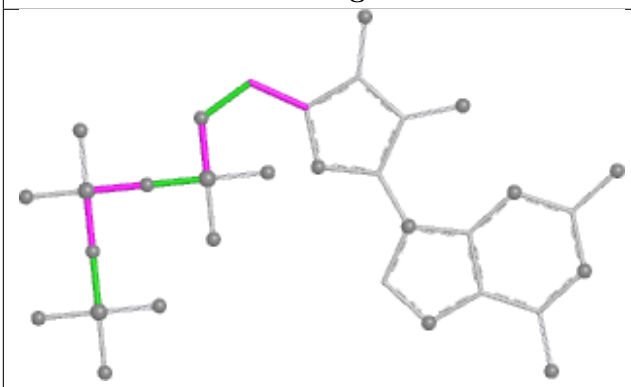

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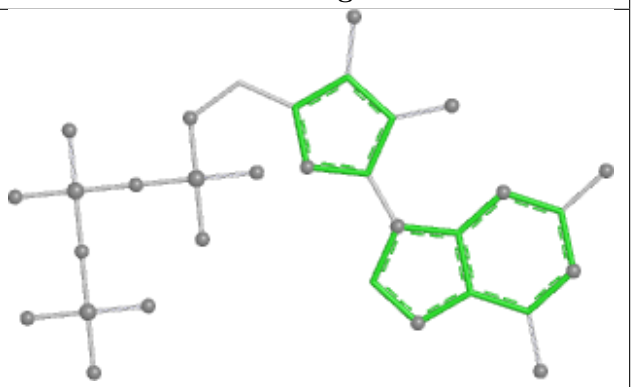
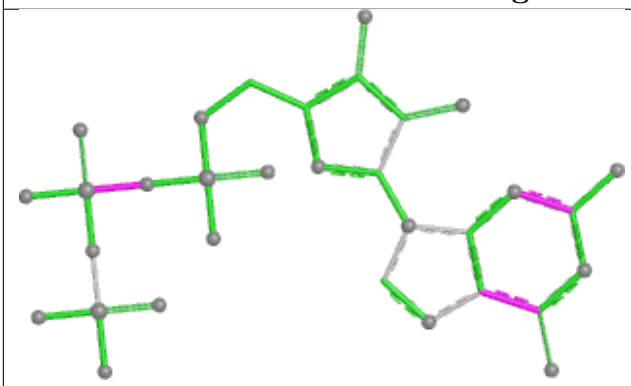


Rings

Ligand GTP BF 501



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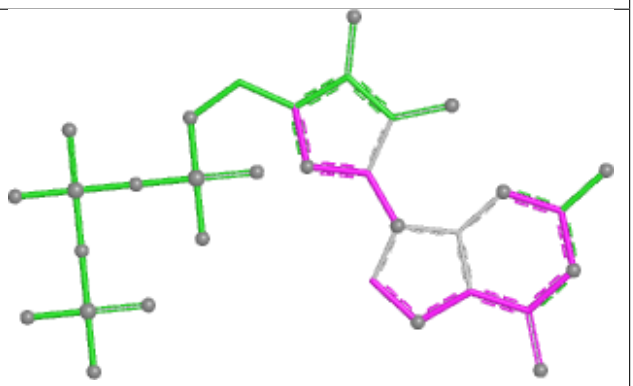

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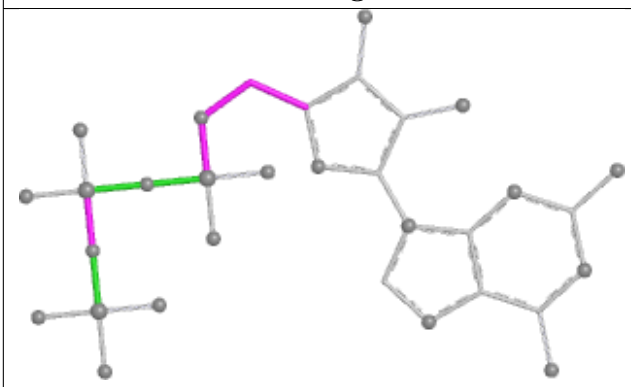

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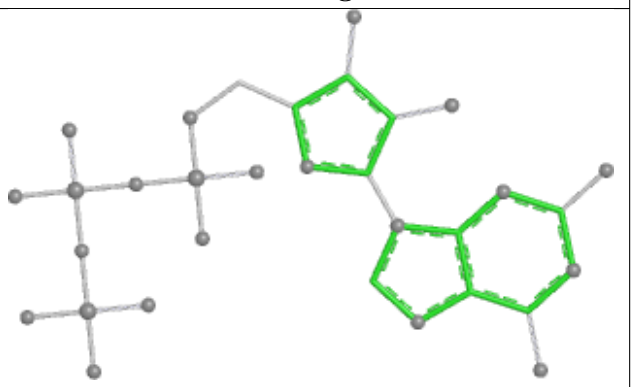

Rings

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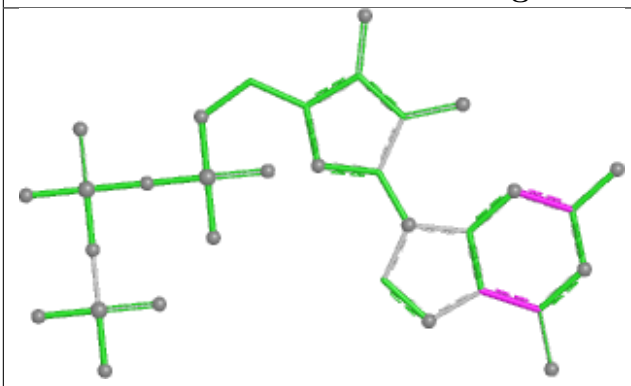

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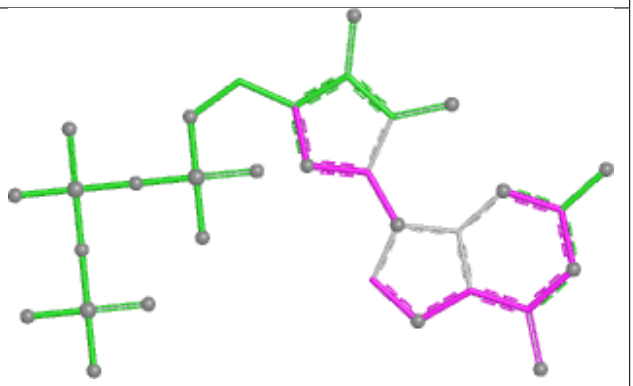

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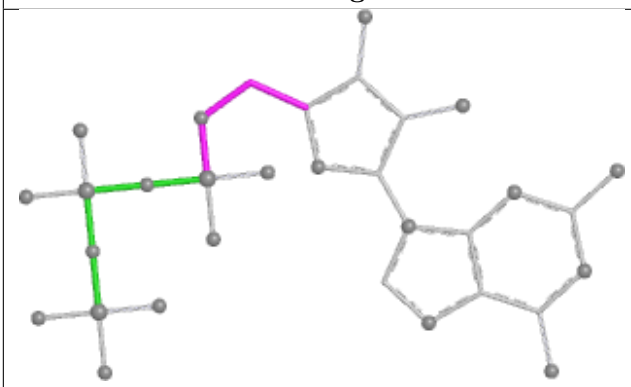

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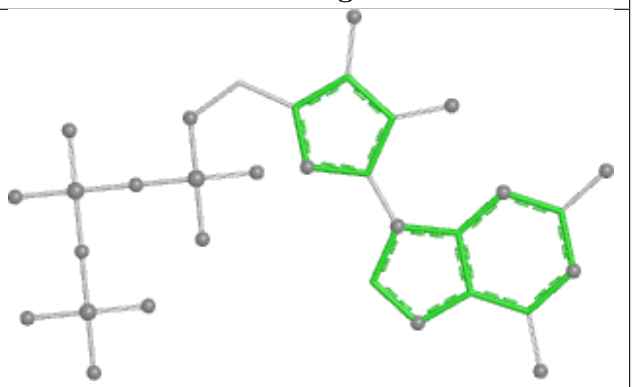
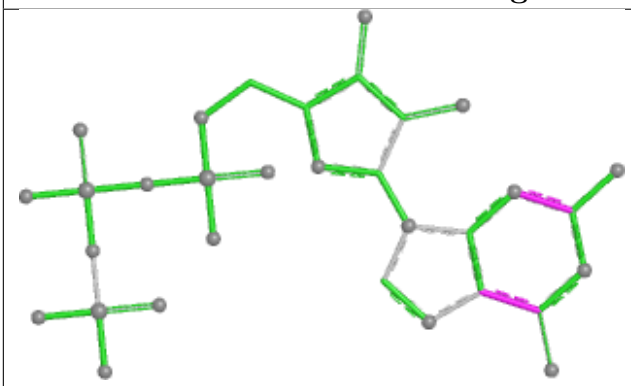


Rings

Ligand GTP AE 501



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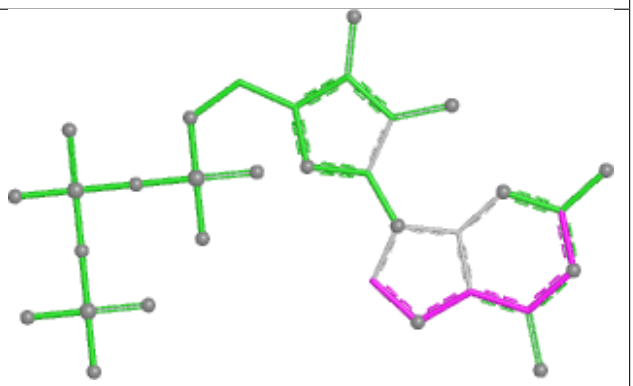

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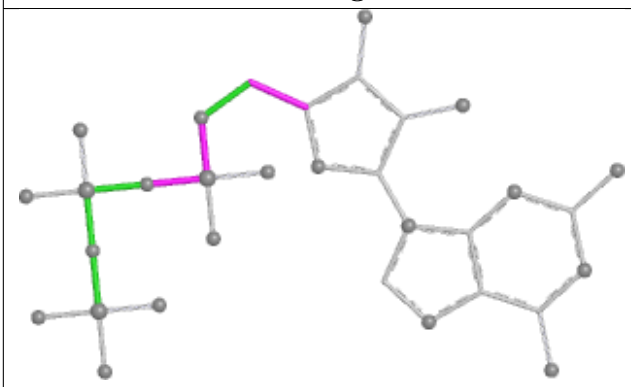

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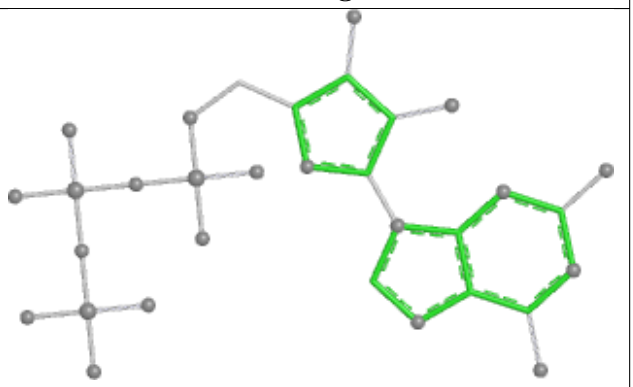

Rings

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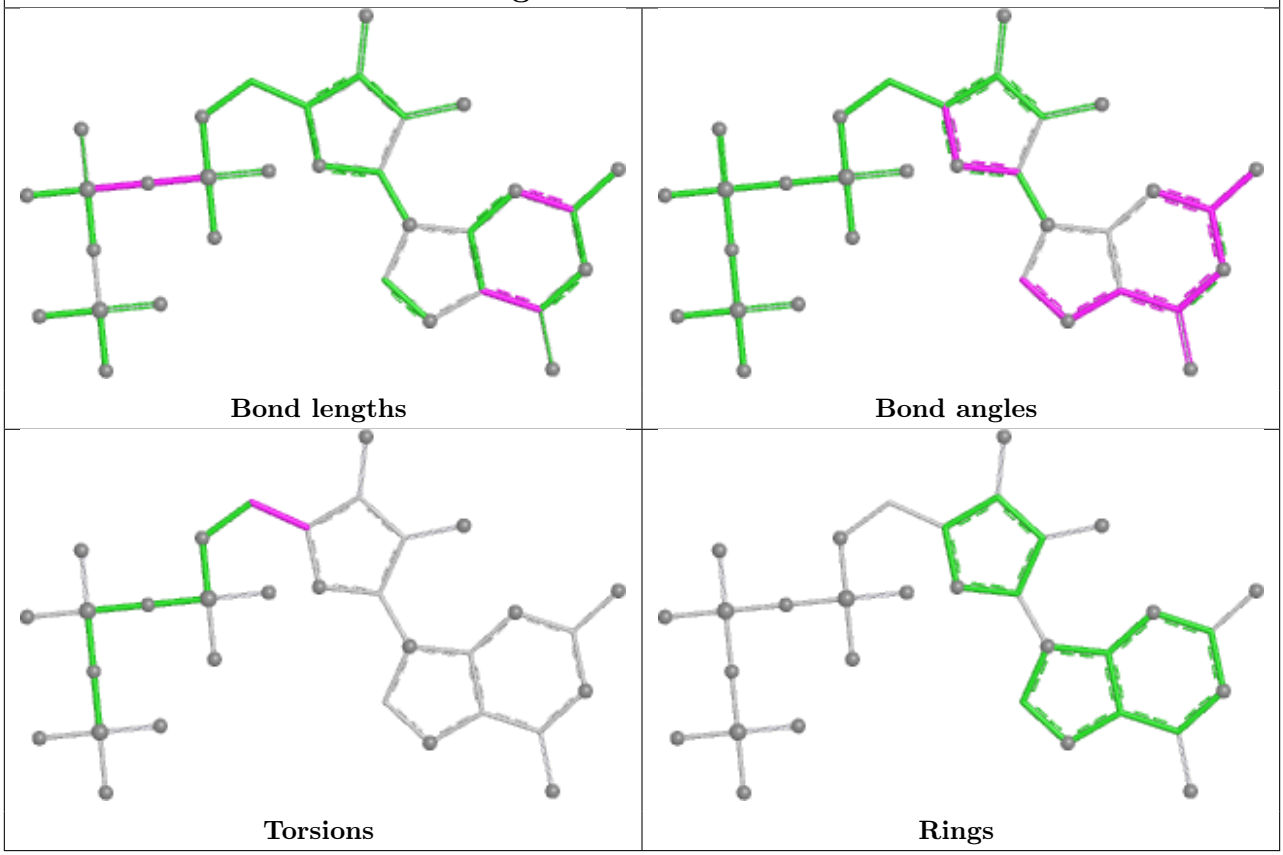

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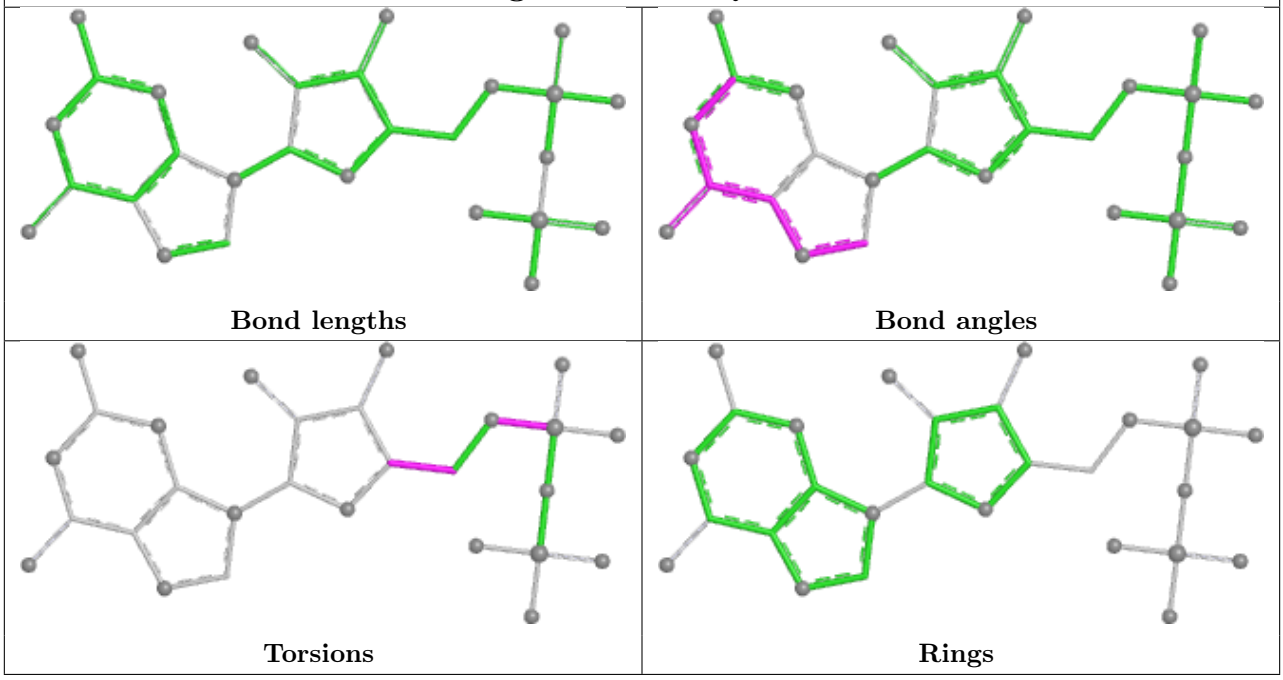

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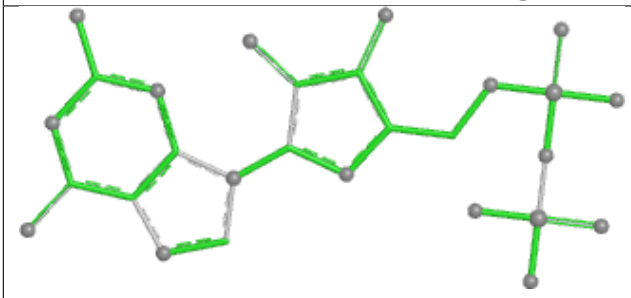
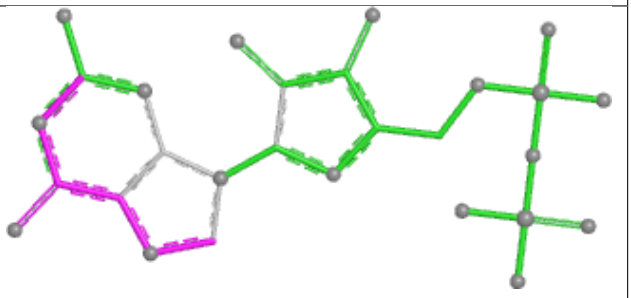
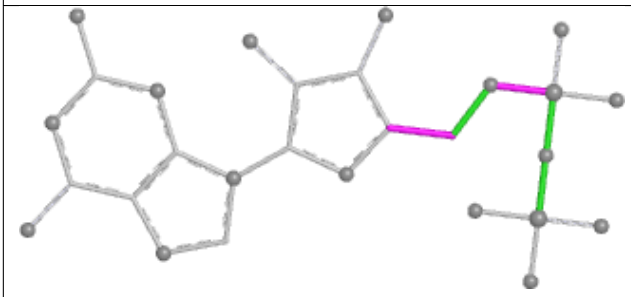
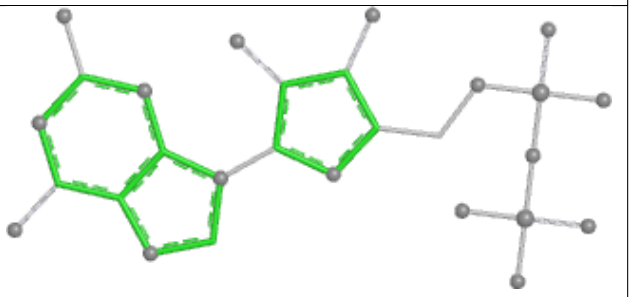
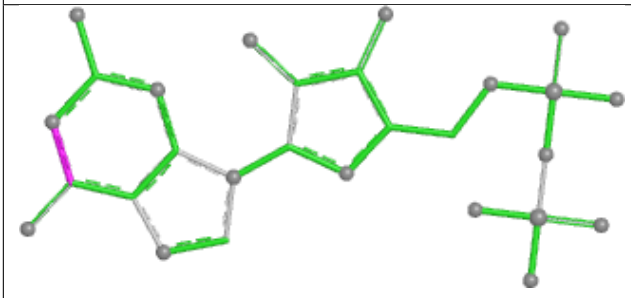
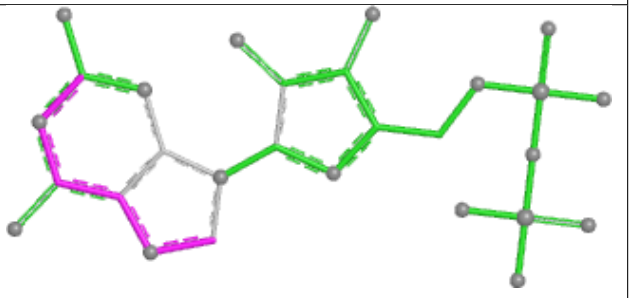
	
Bond lengths	Bond angles
	
Torsions	Rings

Ligand GDP LL 502	
	
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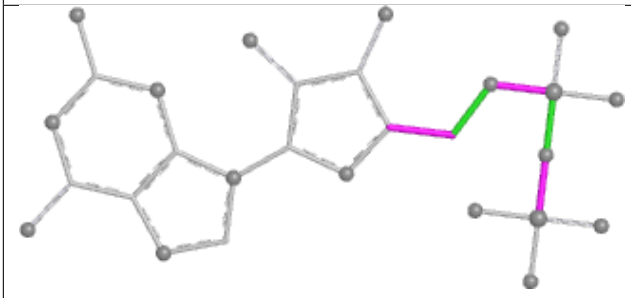
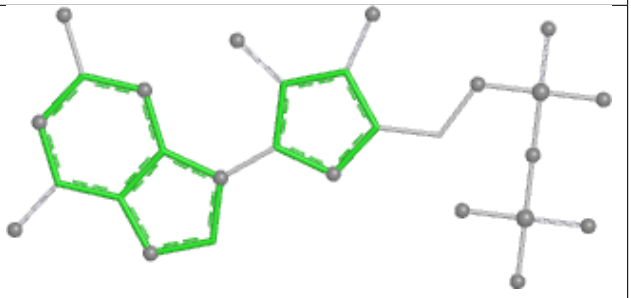
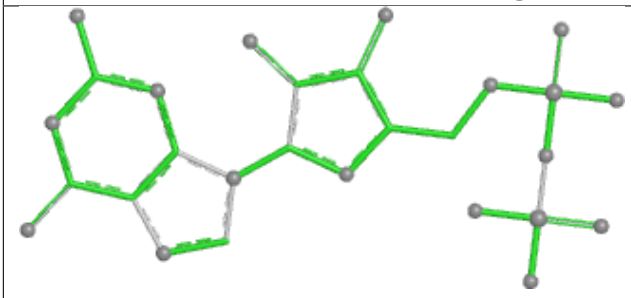
	
Torsions	Rings

Ligand GDP IM 501



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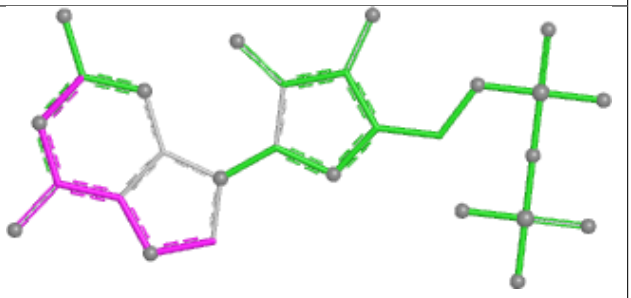

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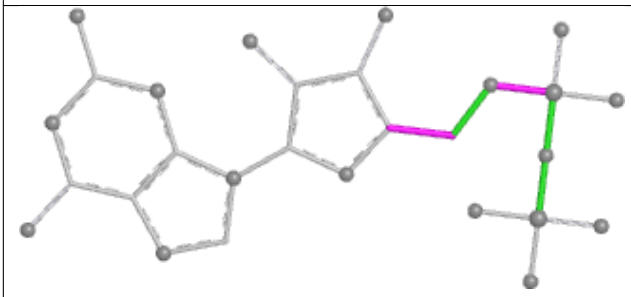

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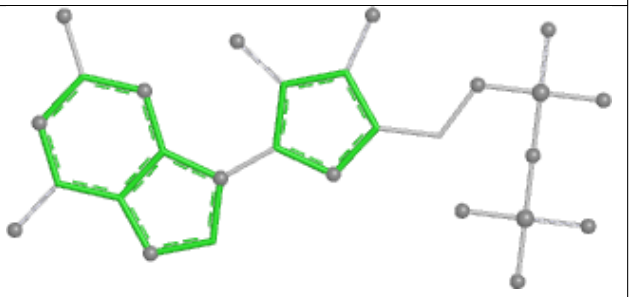
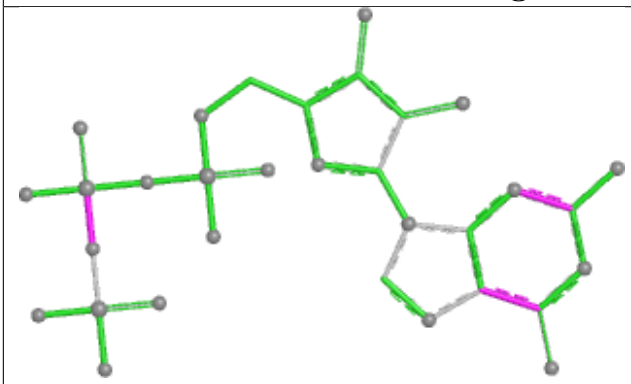


Rings

Ligand GTP VP 501



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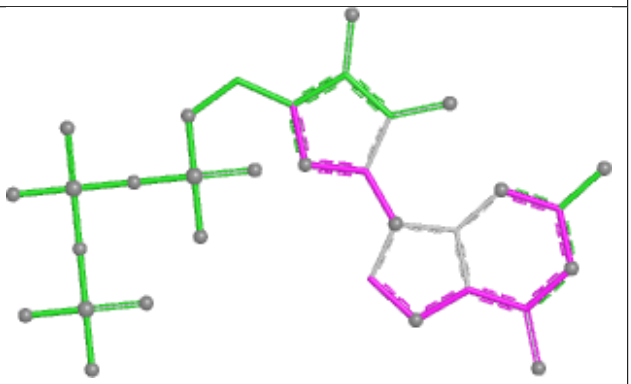

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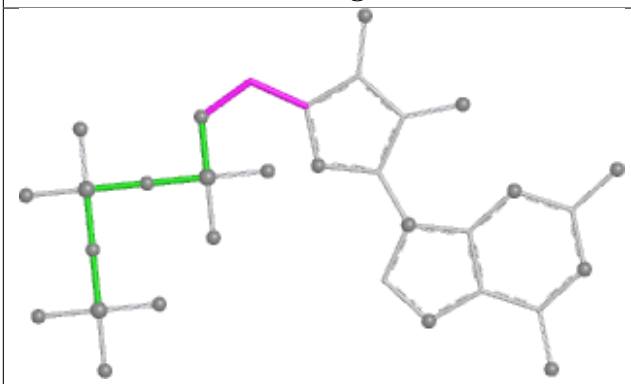

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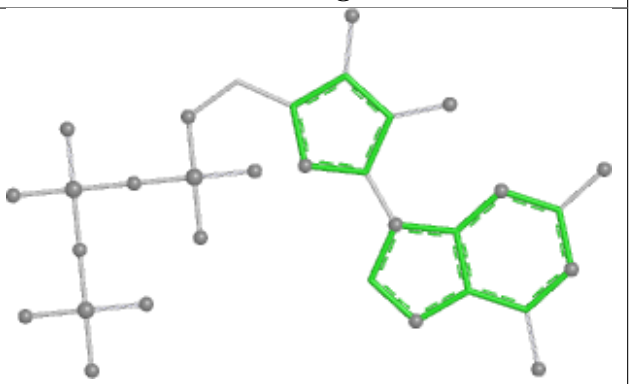

Rings

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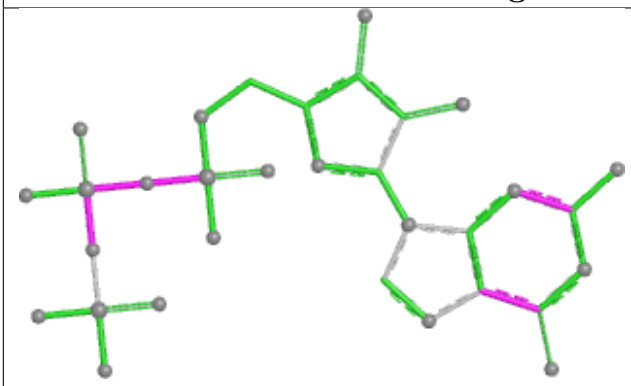

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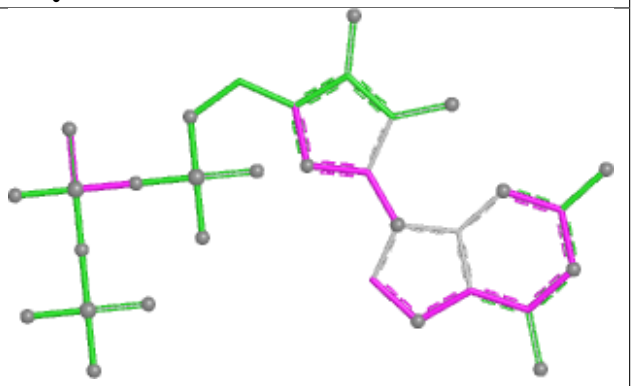

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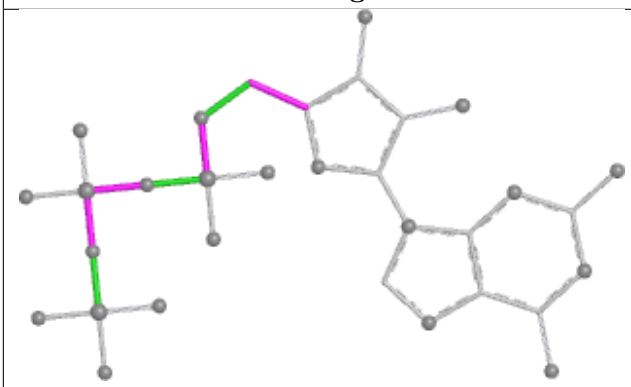

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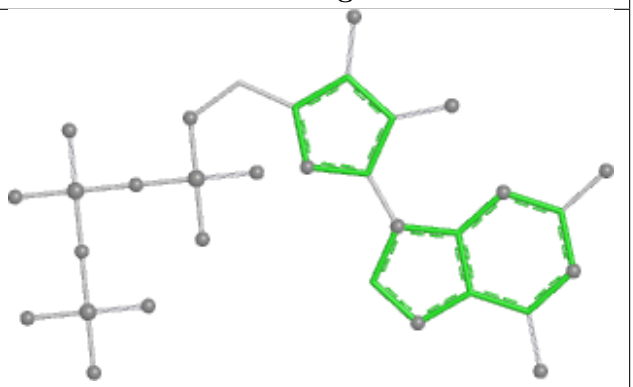
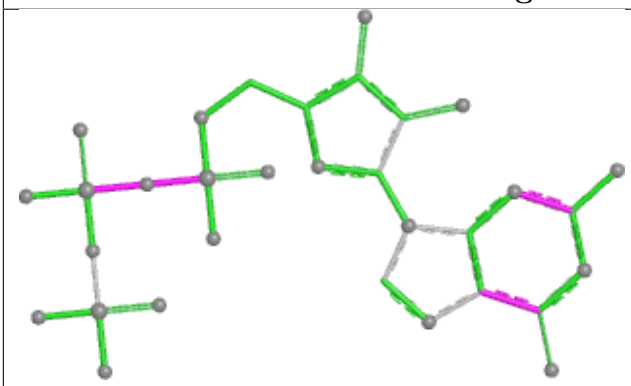


Rings

Ligand GTP UI 501



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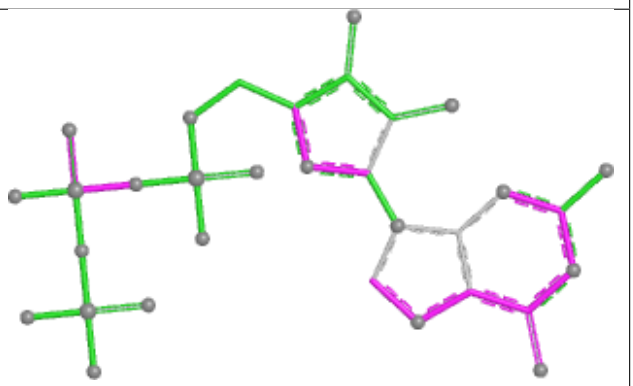
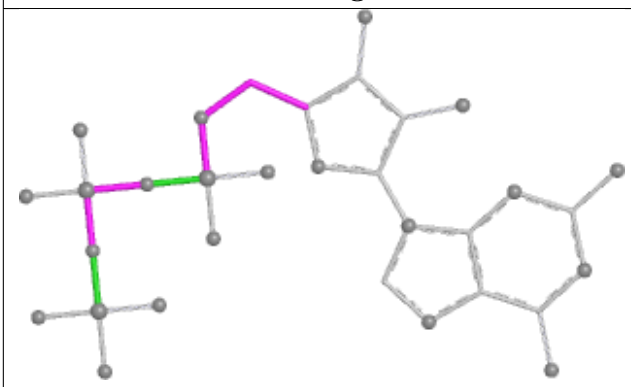


Bond angles



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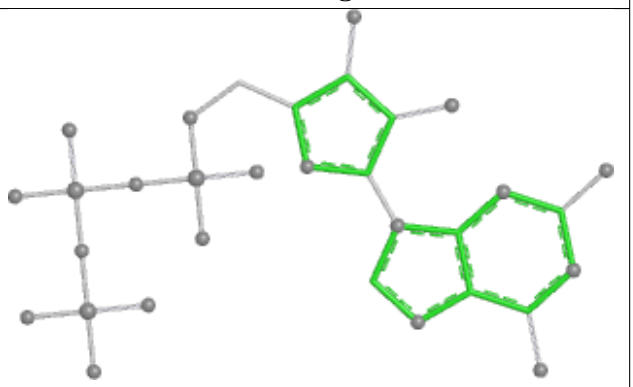

Rings

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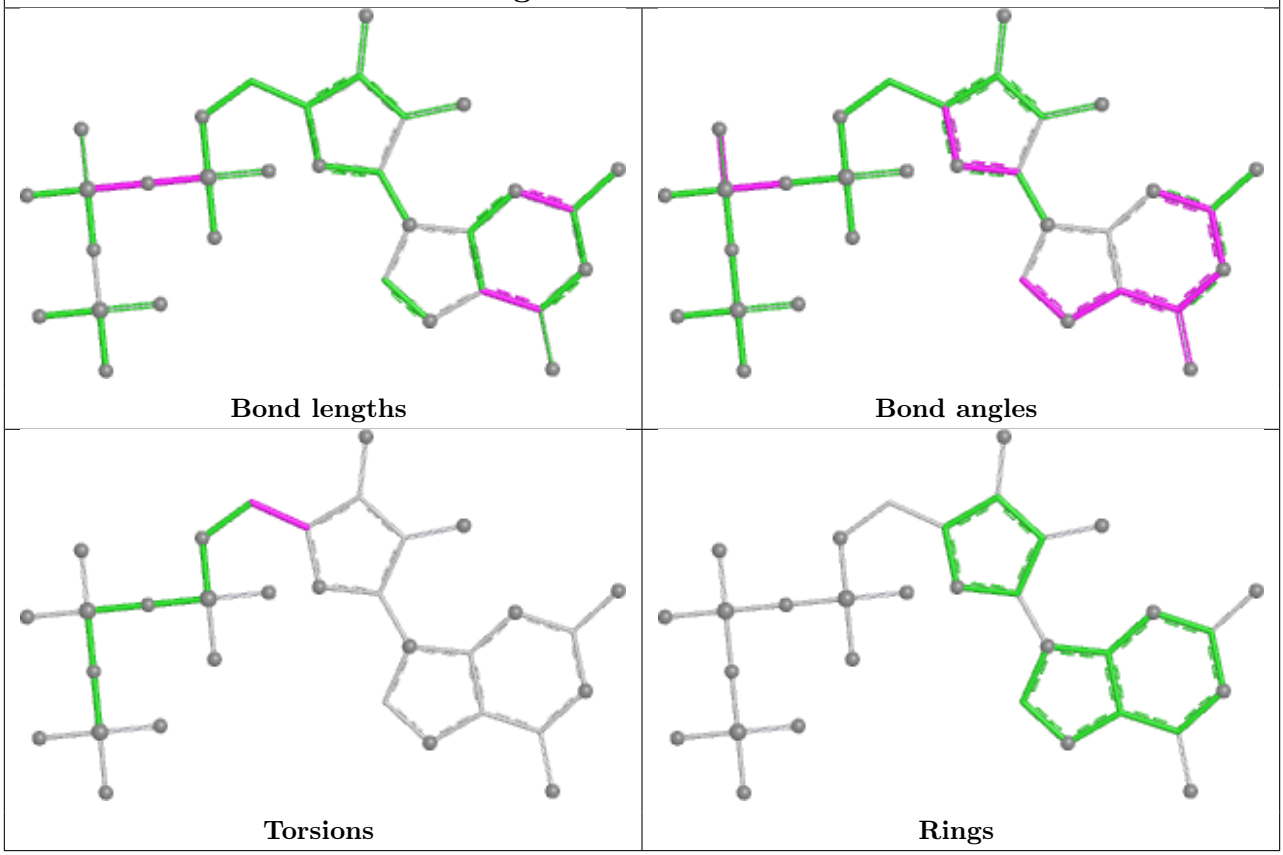

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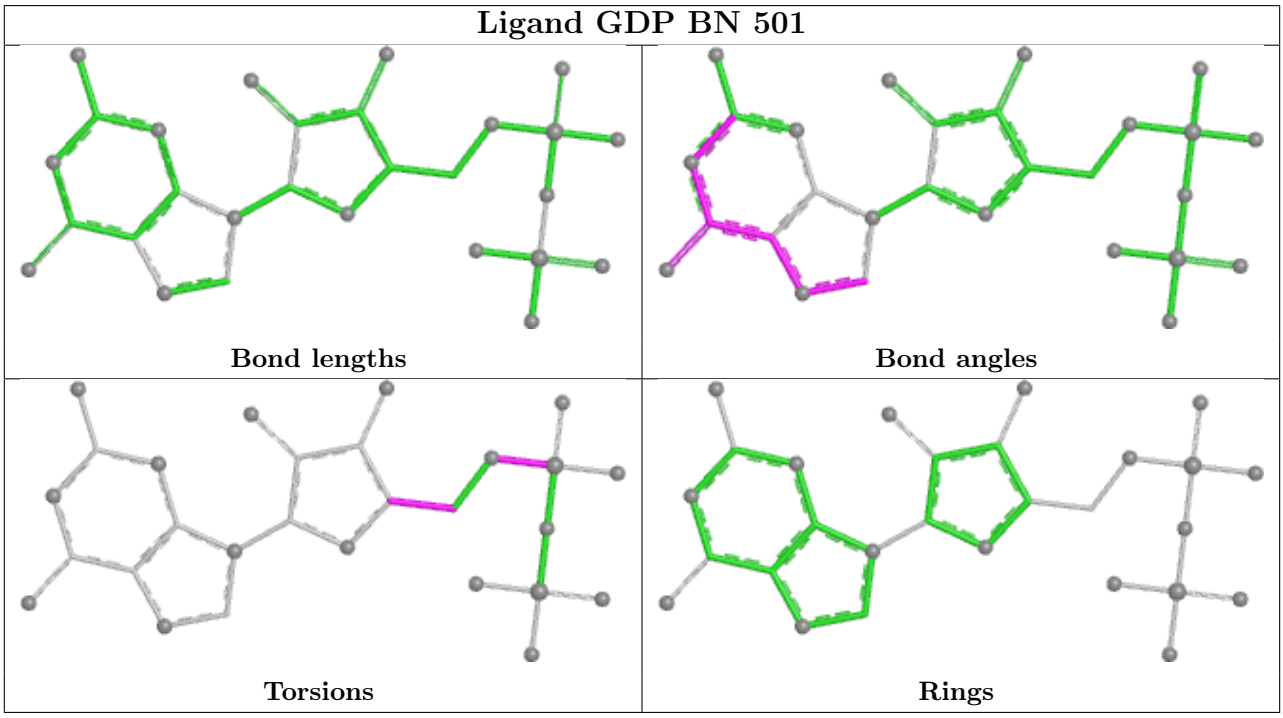

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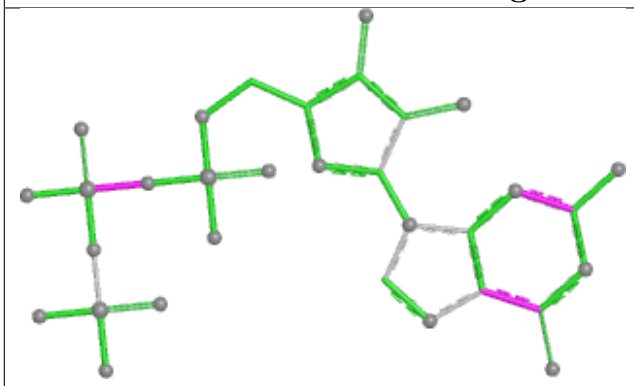

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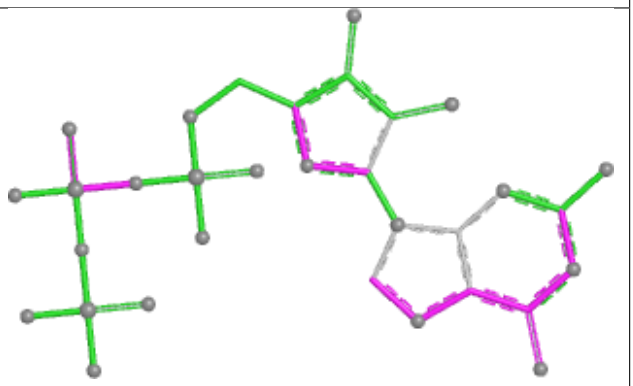
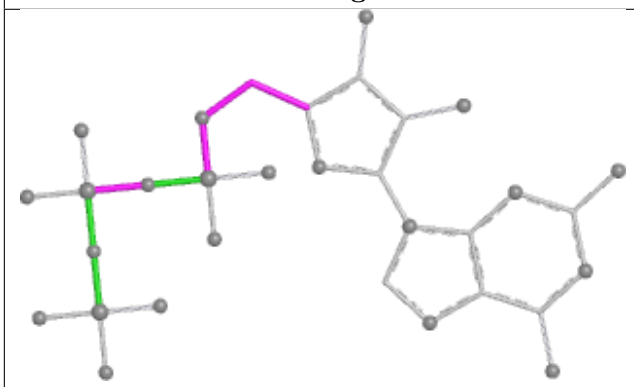


Bond angles



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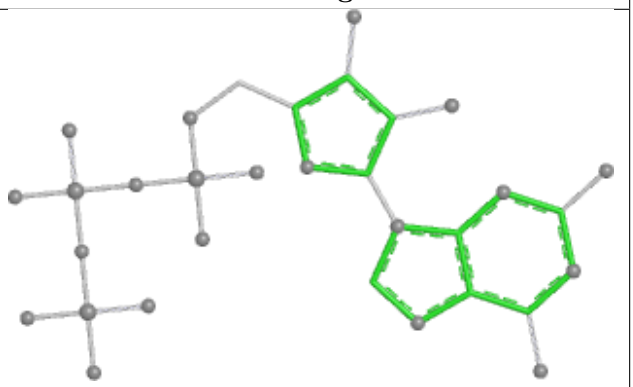

Rings

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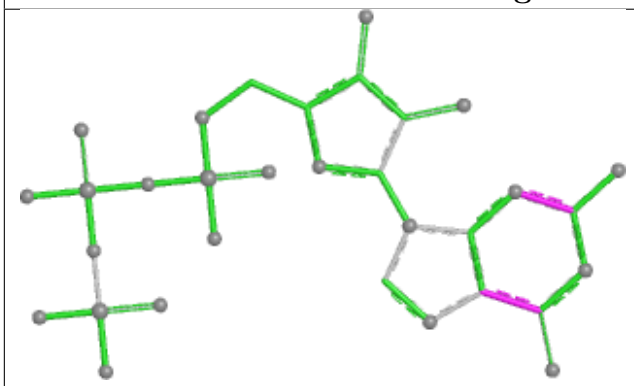

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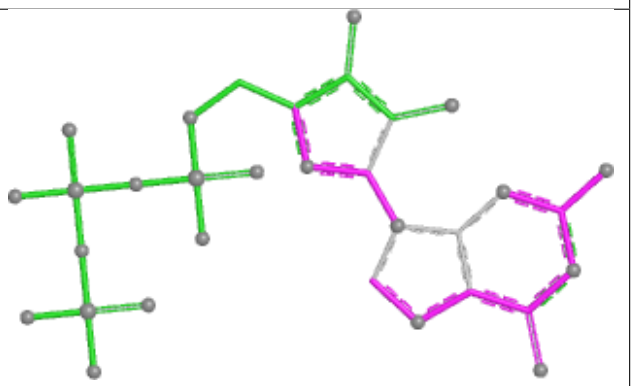
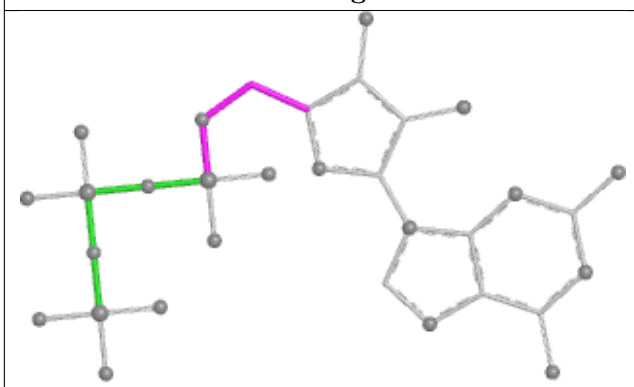
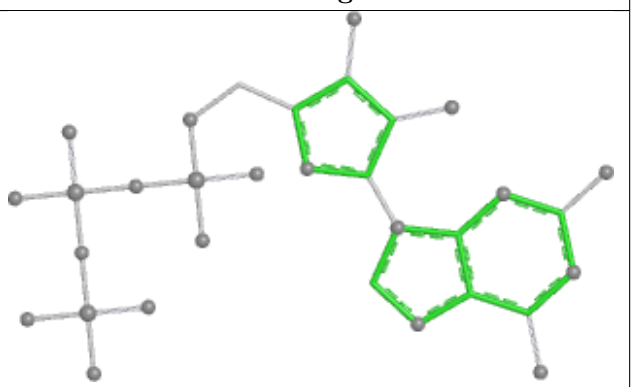


Bond angles

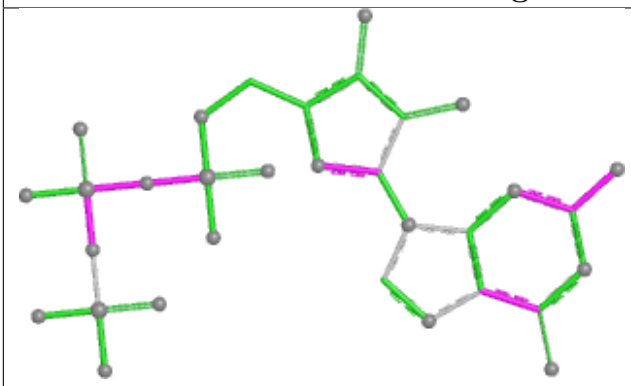


Torsions



Rings

Ligand GTP QL 501



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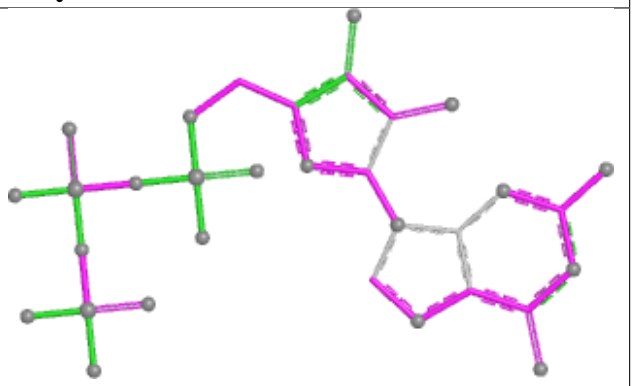

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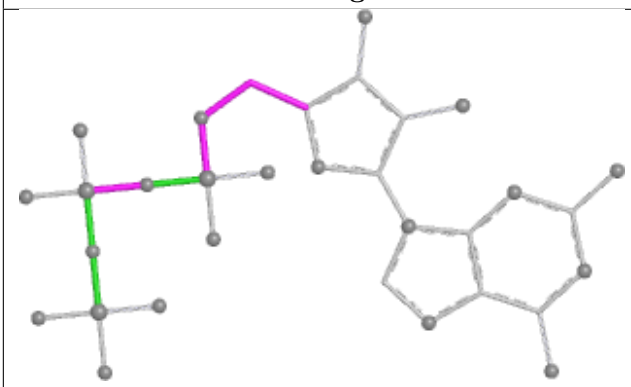

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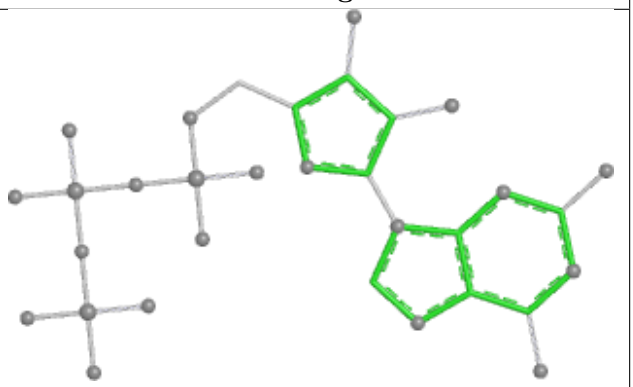
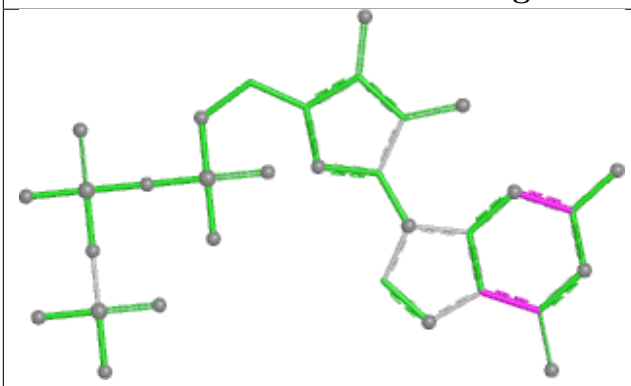


Rings

Ligand GTP FE 501



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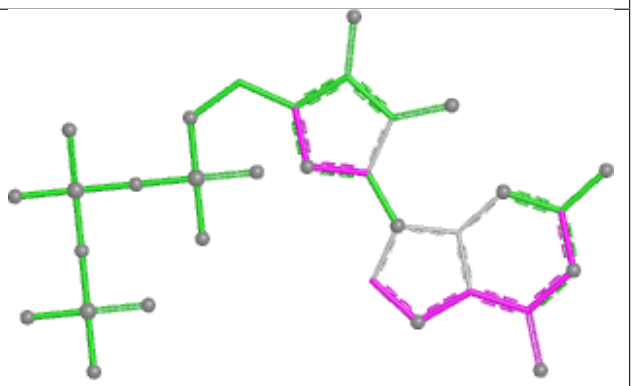

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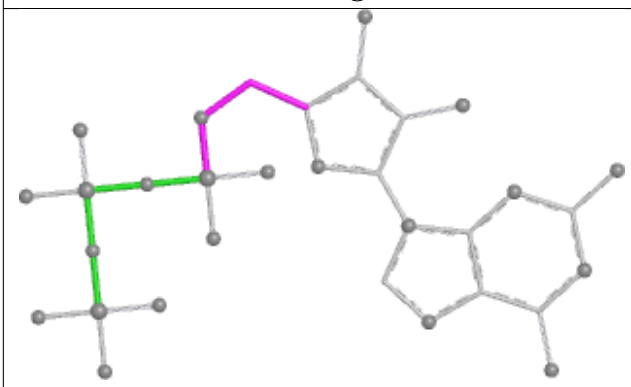

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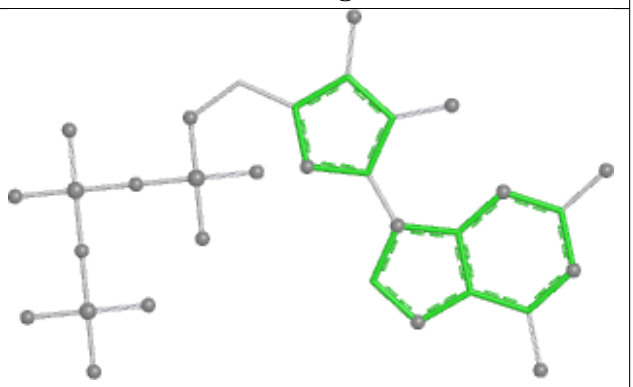
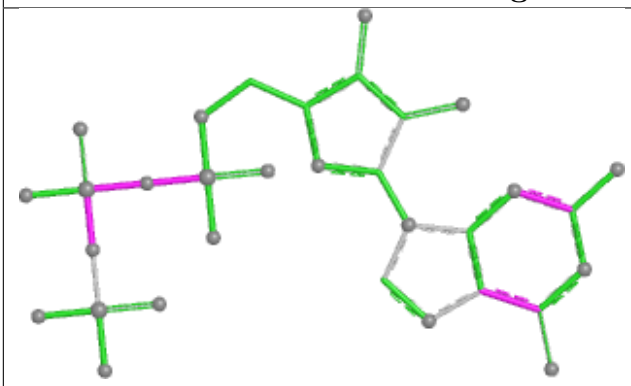


Rings

Ligand GTP GF 501



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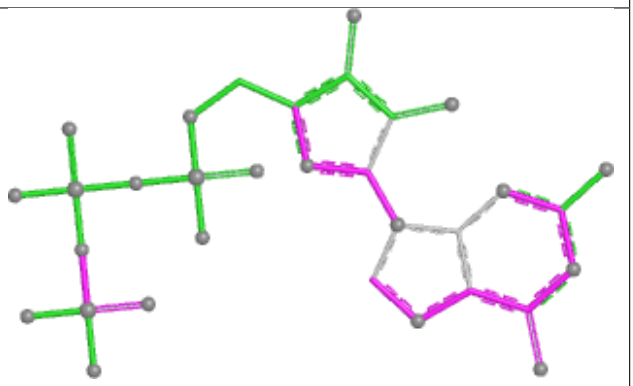

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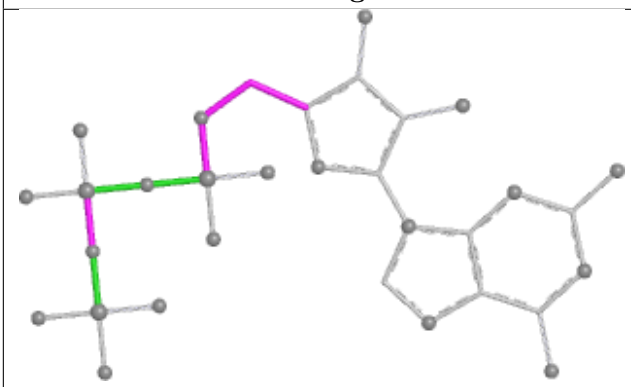

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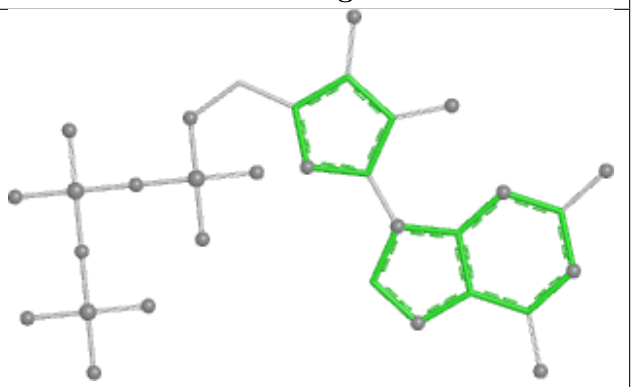
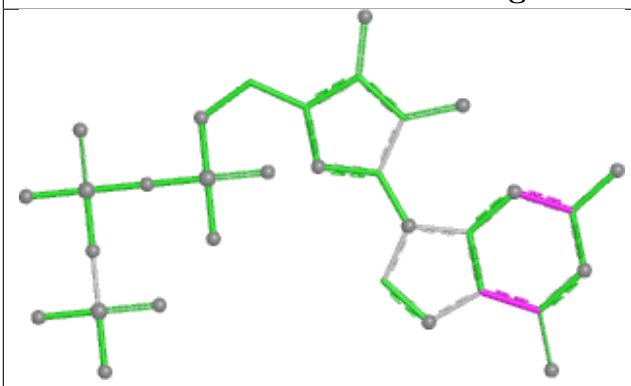


Rings

Ligand GTP BG 501



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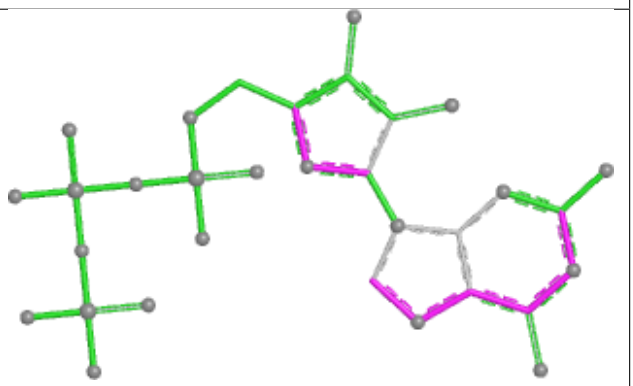

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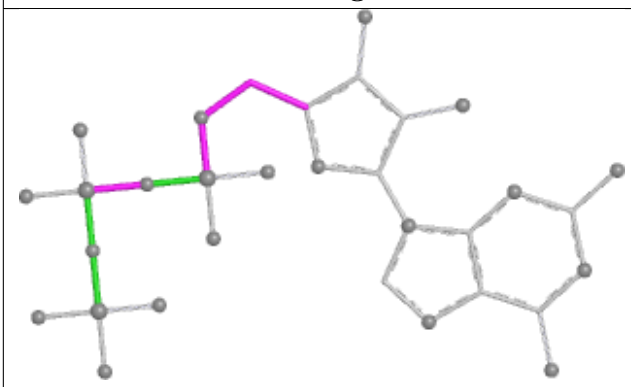

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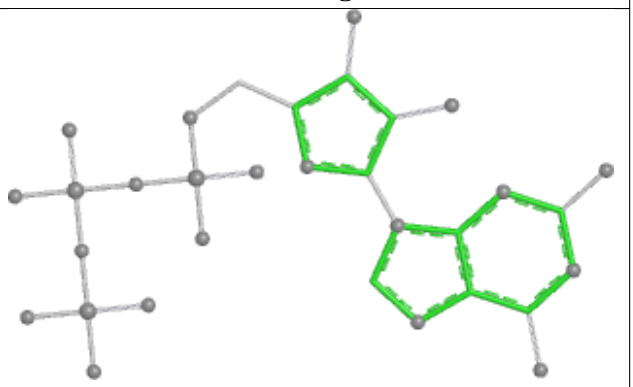
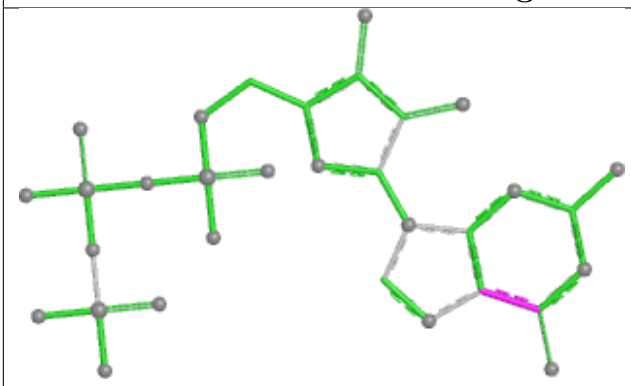


Rings

Ligand GTP CI 501



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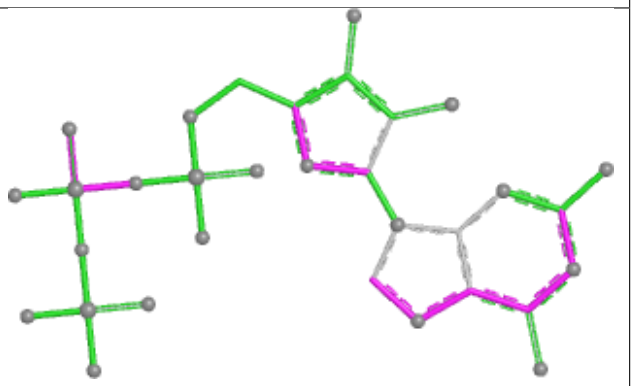

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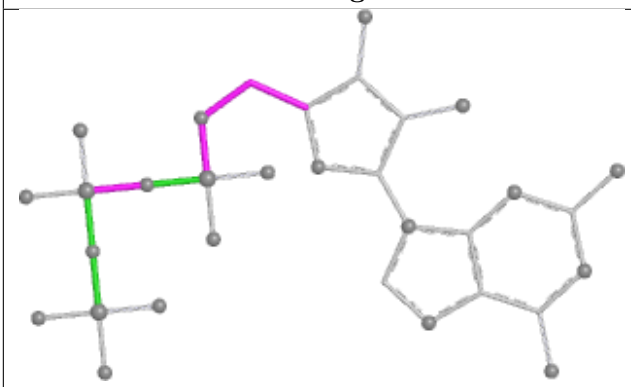

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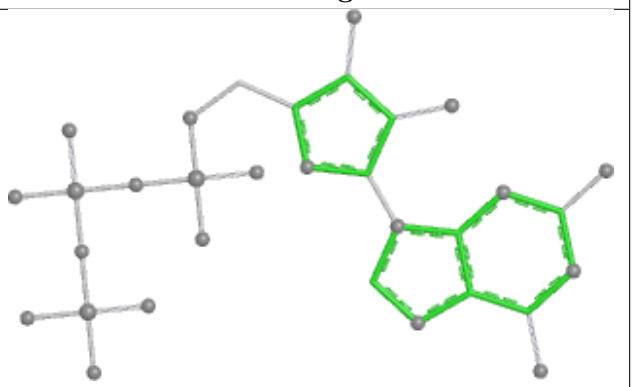

Rings

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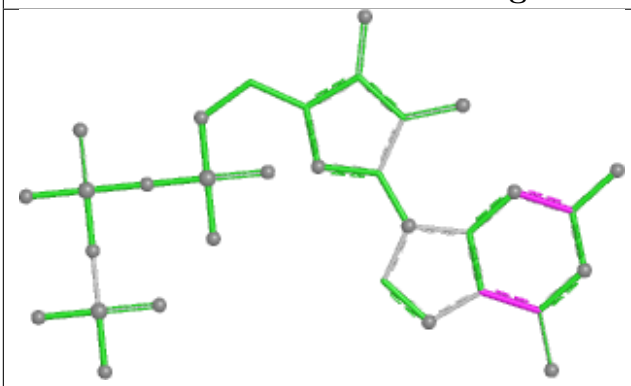

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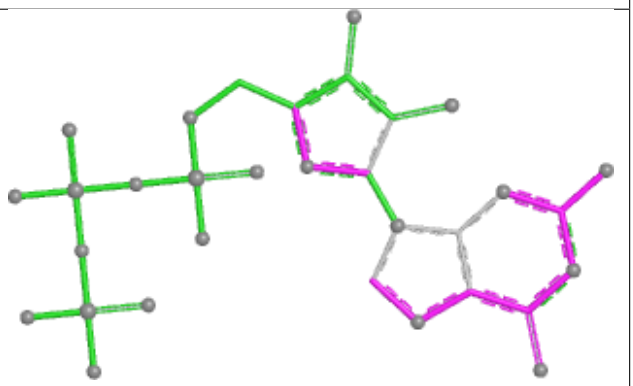

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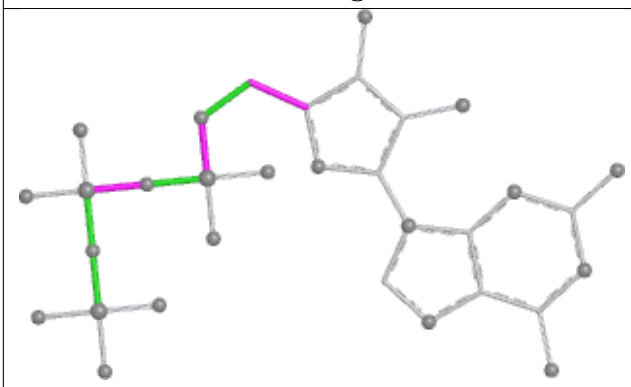

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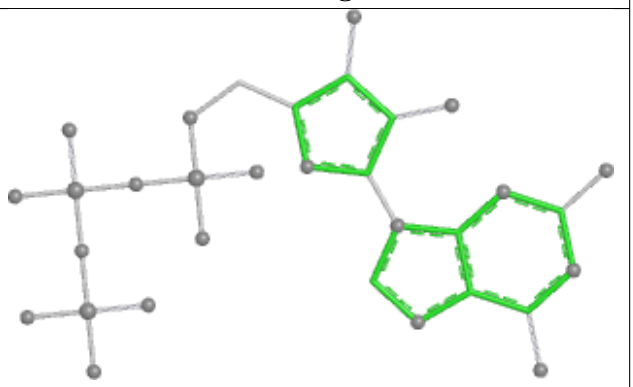
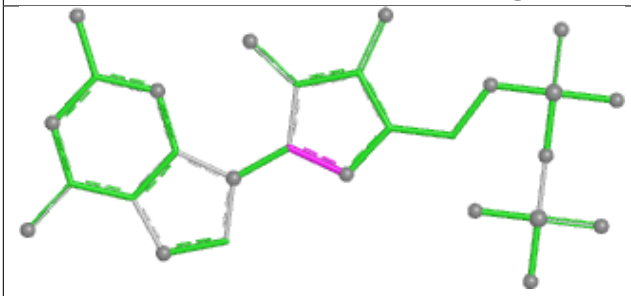


Rings

Ligand GDP BB 501



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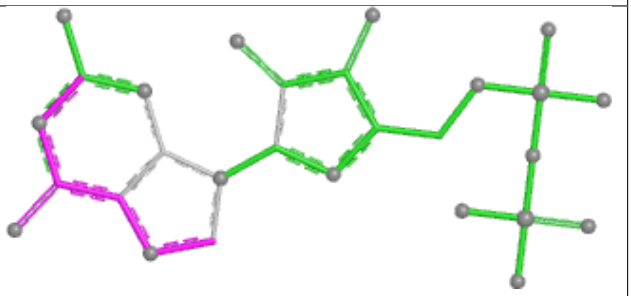

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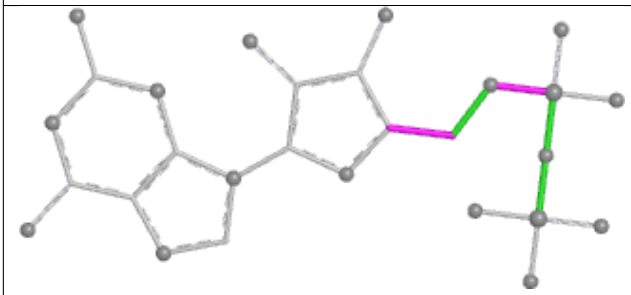

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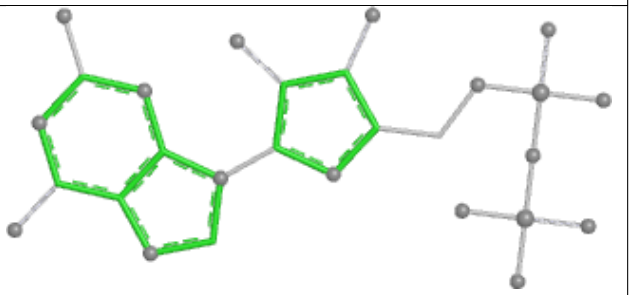
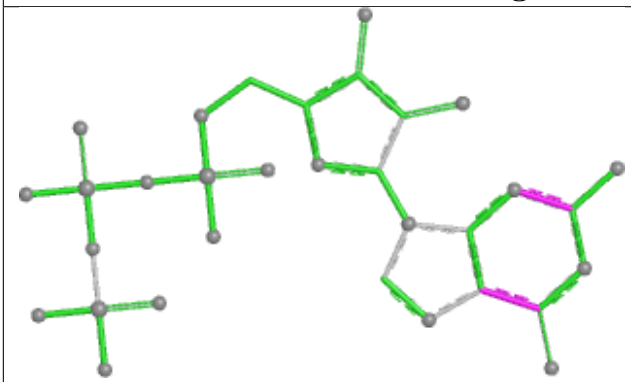


Rings

Ligand GTP RE 501



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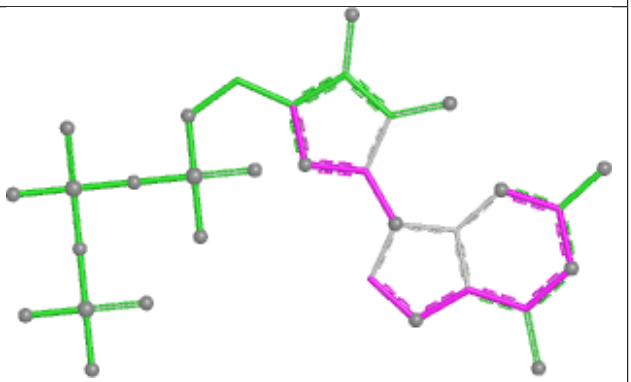

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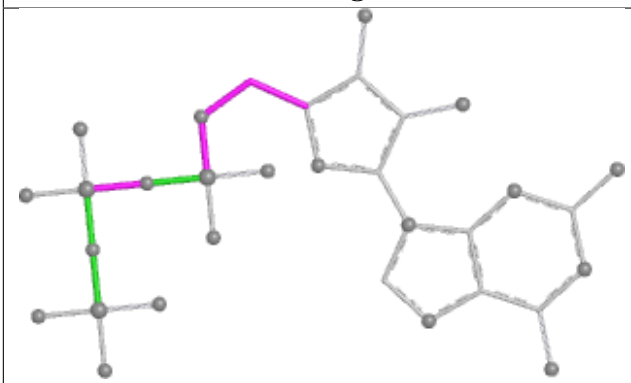

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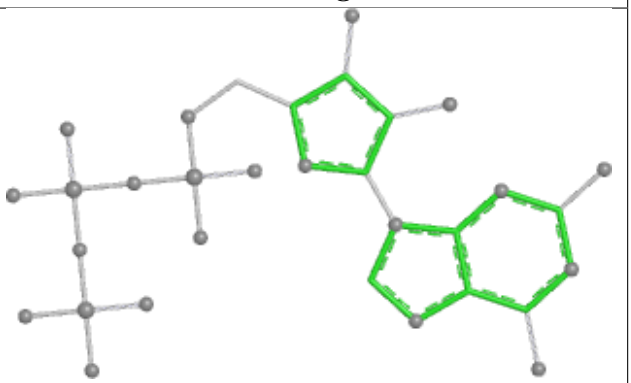
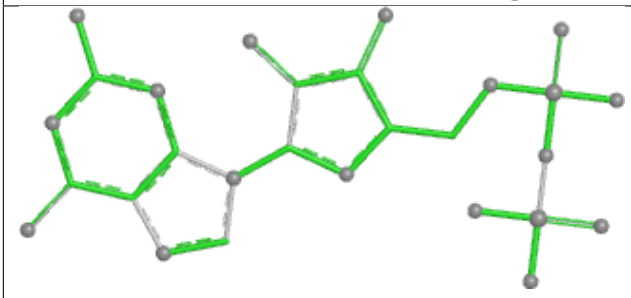


Rings

Ligand GDP FM 502



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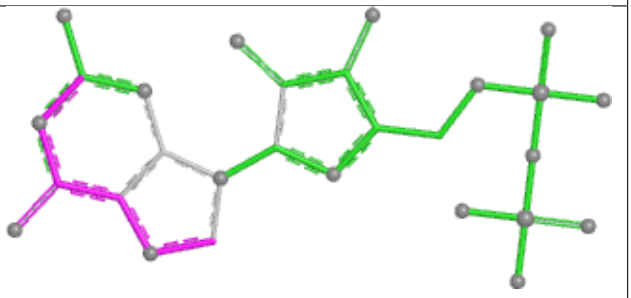

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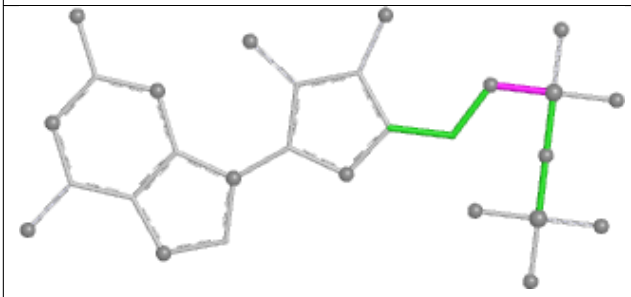

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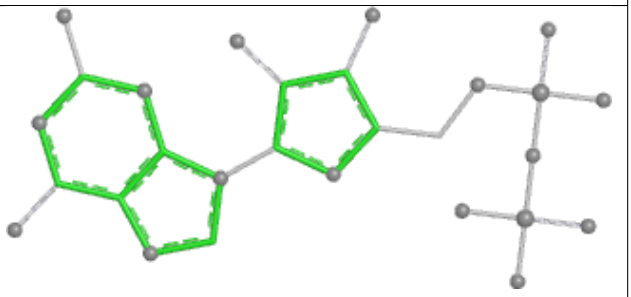
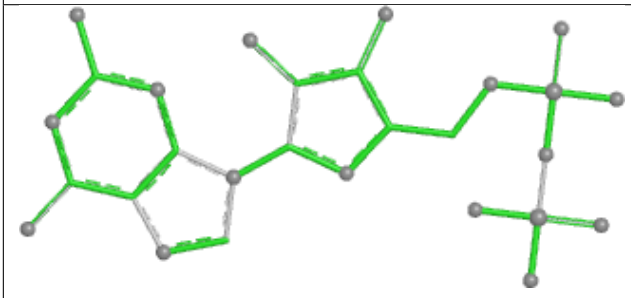


Rings

Ligand GDP FO 502



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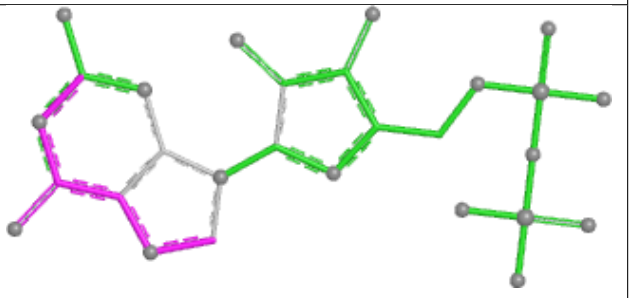

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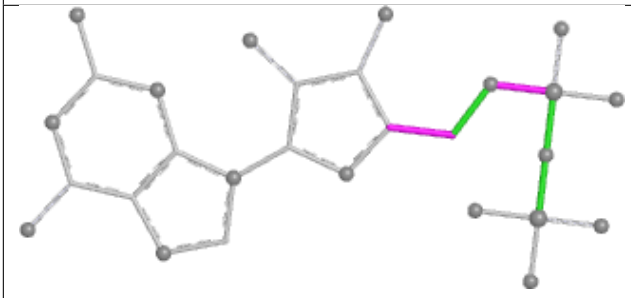

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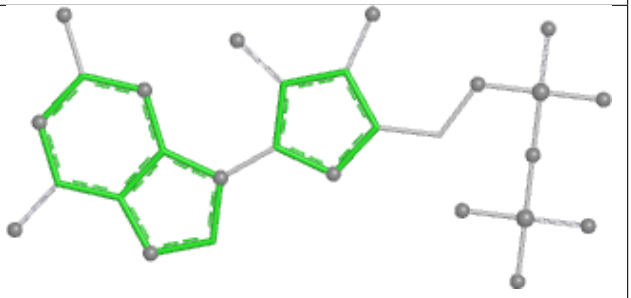
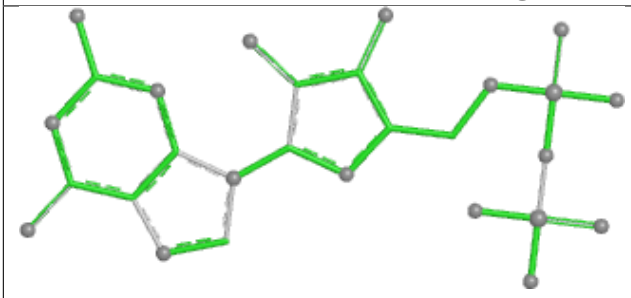


Rings

Ligand GDP IN 501



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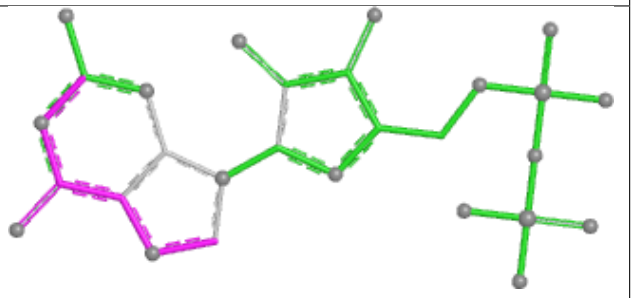

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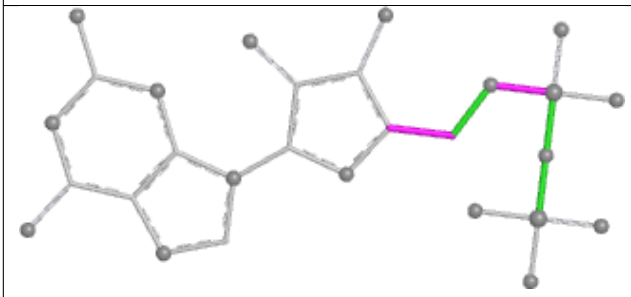

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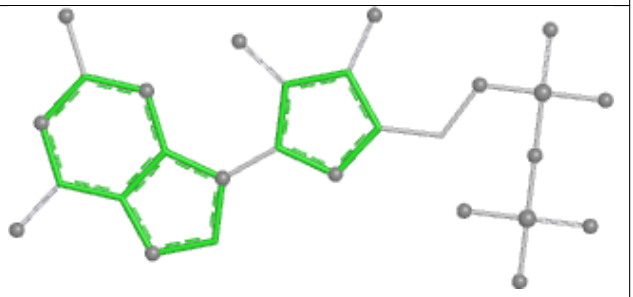
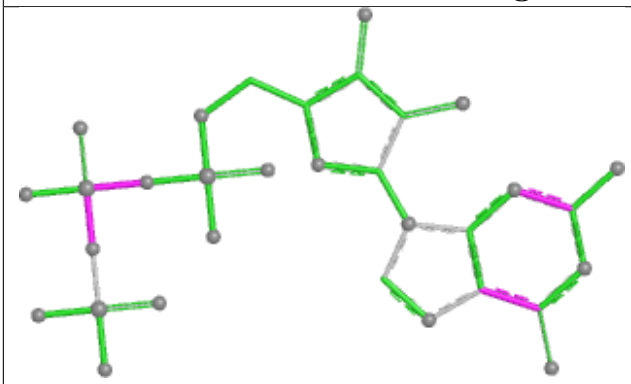


Rings

Ligand GTP JA 501



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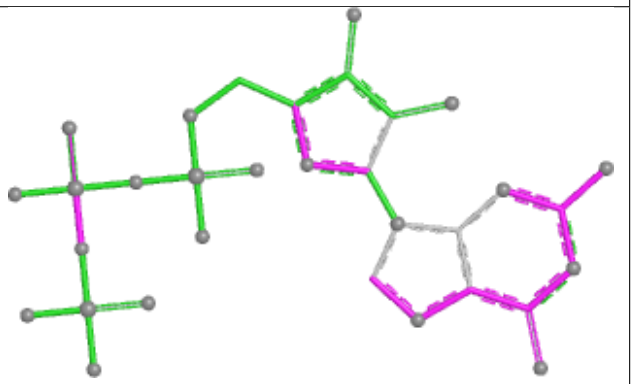

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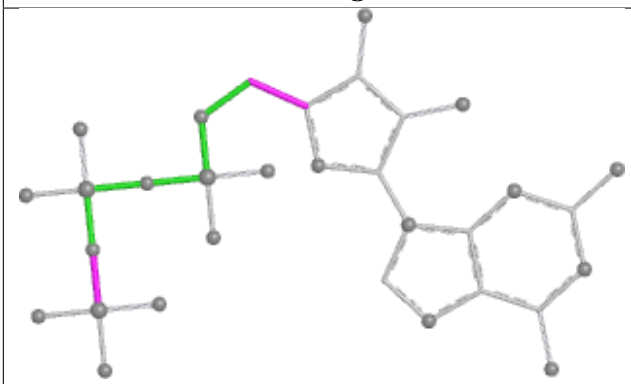

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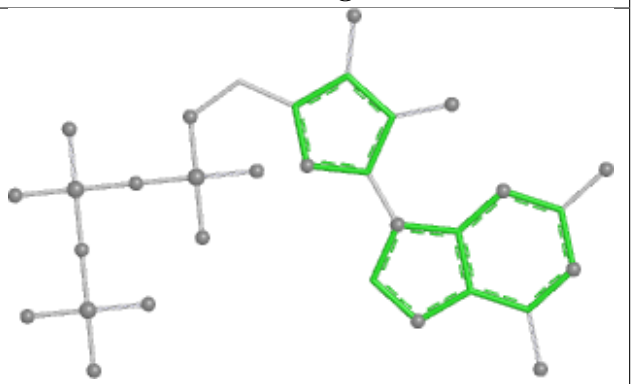
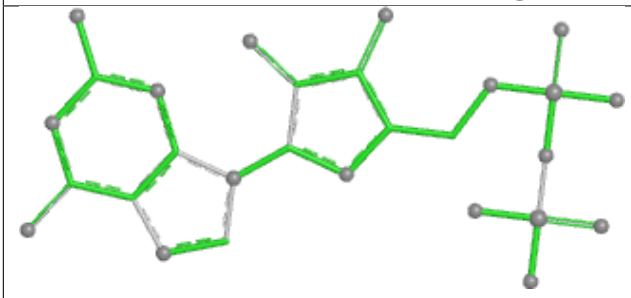


Rings

Ligand GDP LB 501



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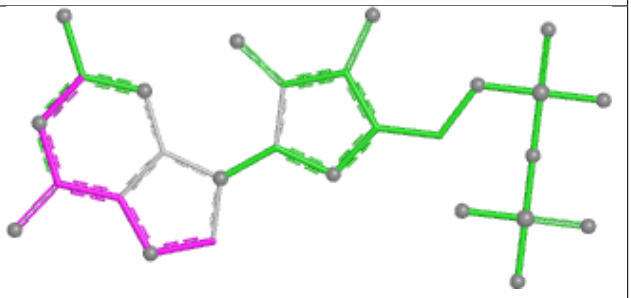

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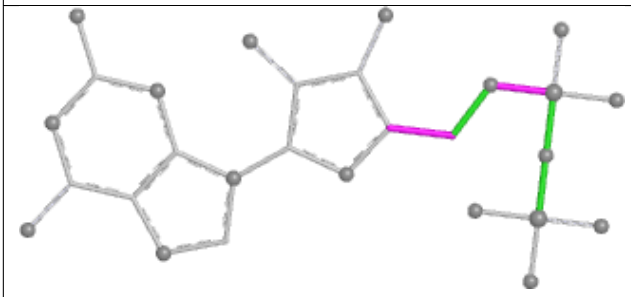

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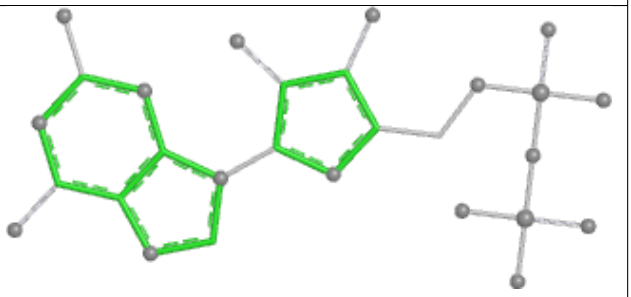
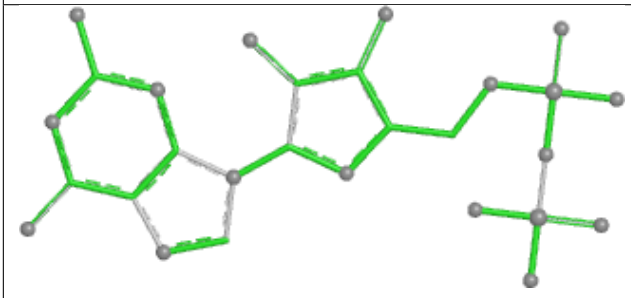


Rings

Ligand GDP PO 502



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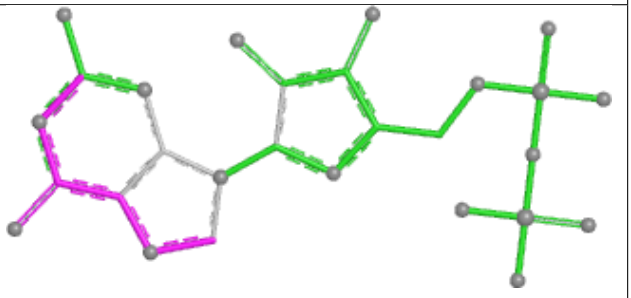

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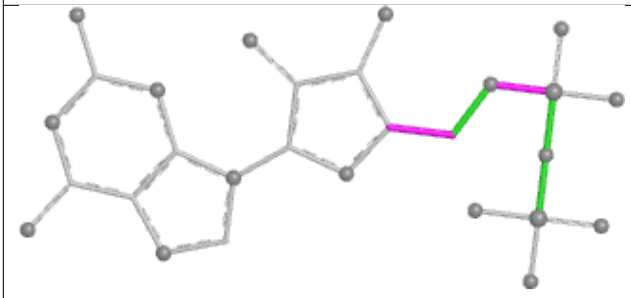
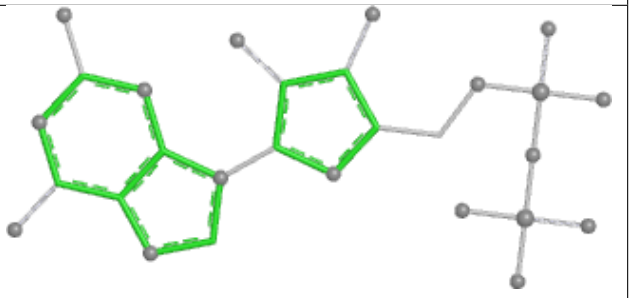
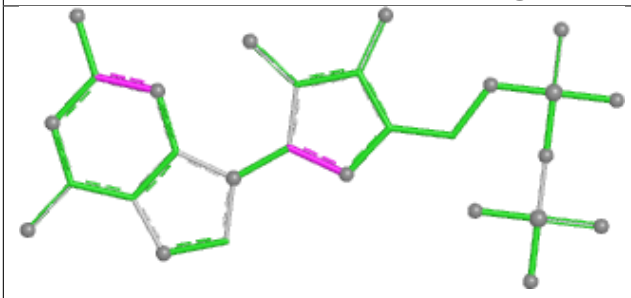


Torsions



Rings

Ligand GDP TL 502



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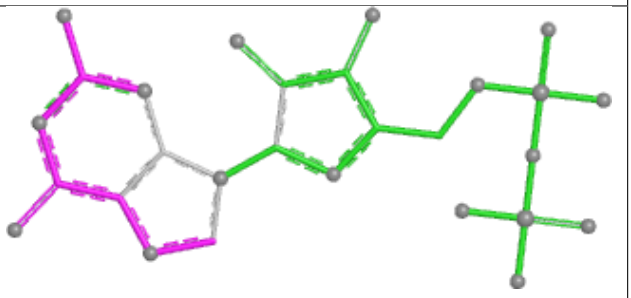

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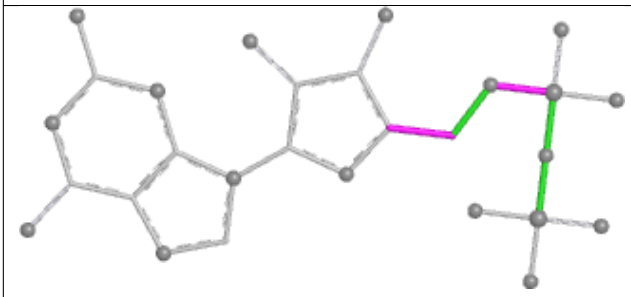

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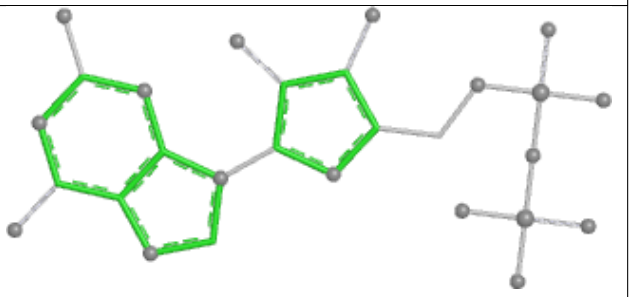
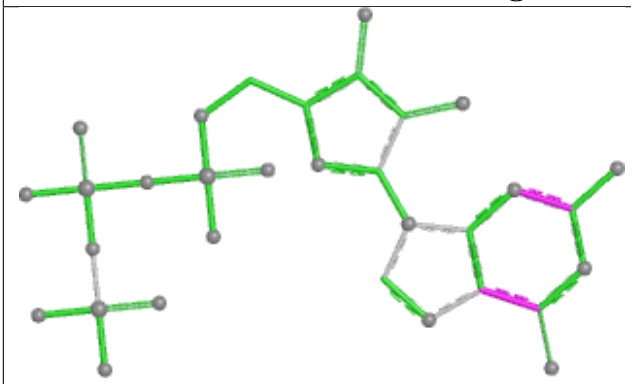


Rings

Ligand GTP NG 501



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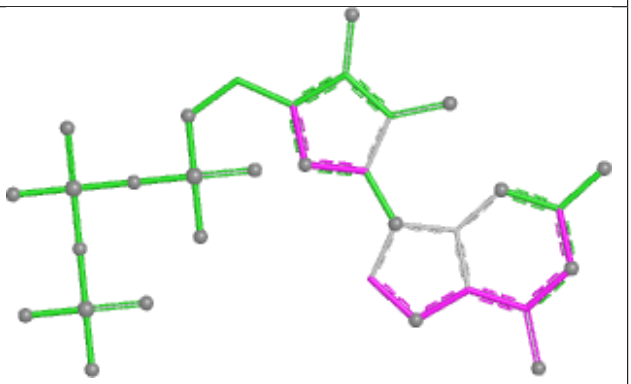

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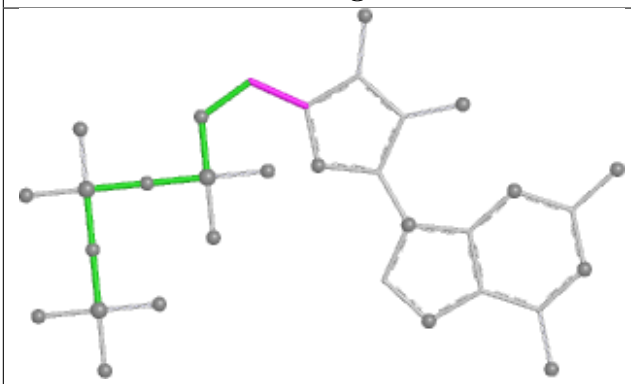

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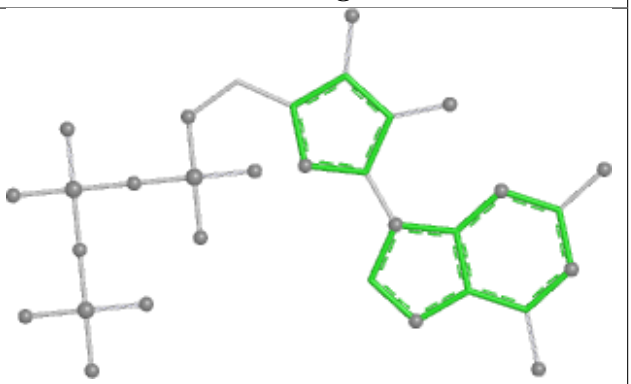

Rings

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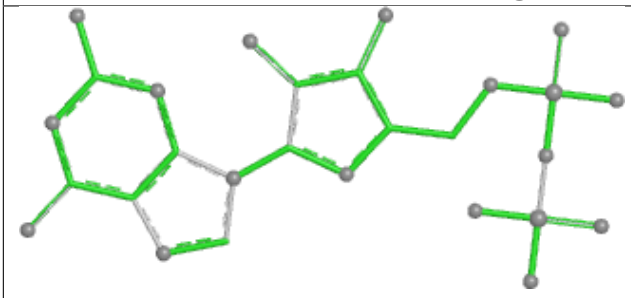

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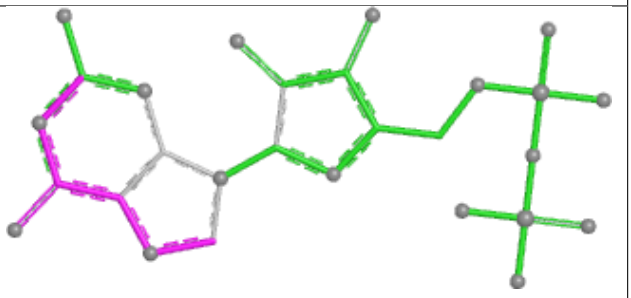

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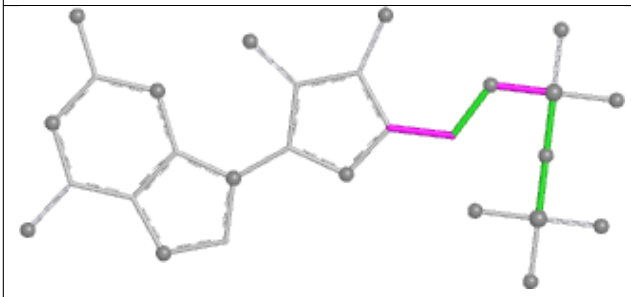

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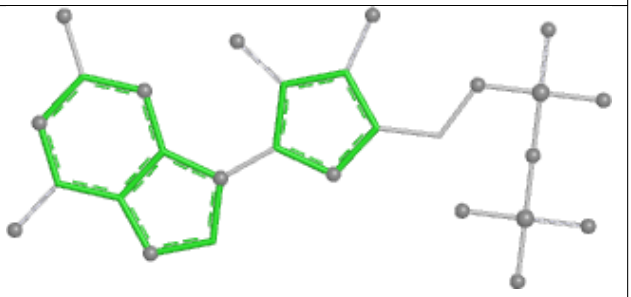

Rings

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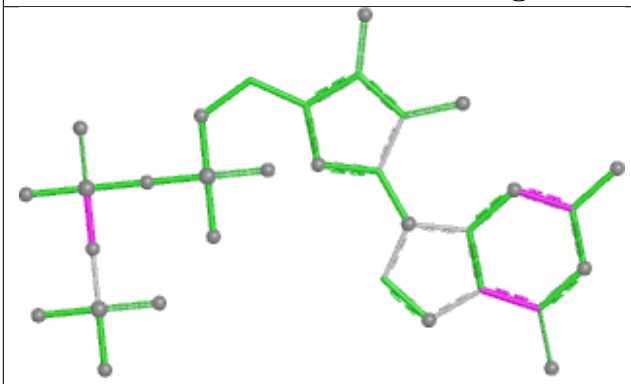

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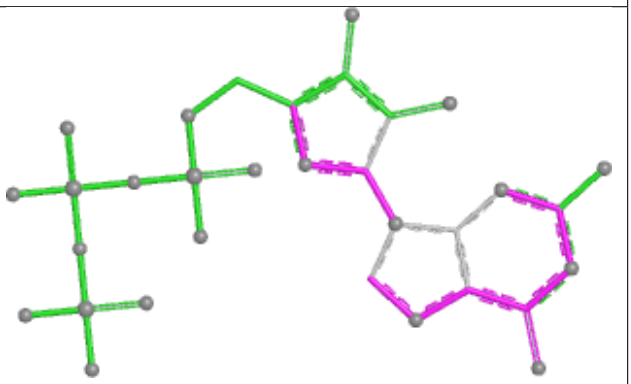

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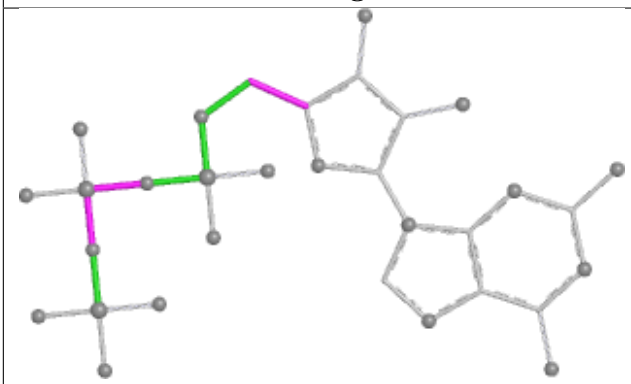

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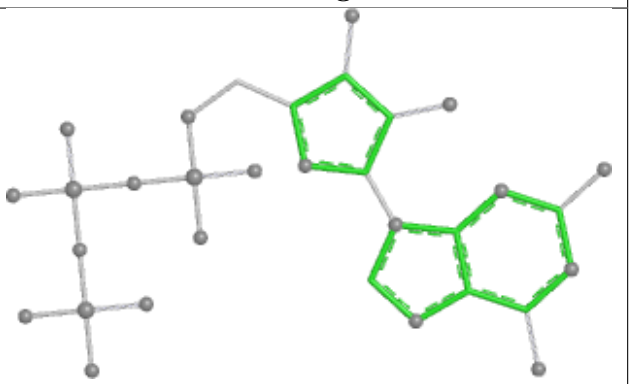

Rings

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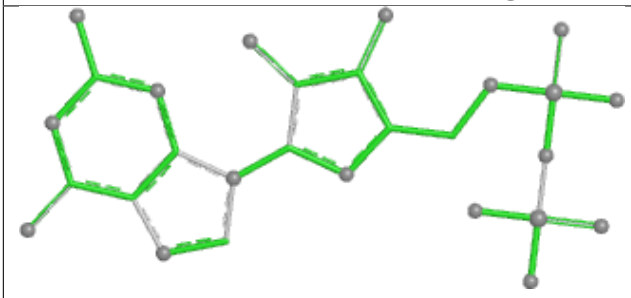

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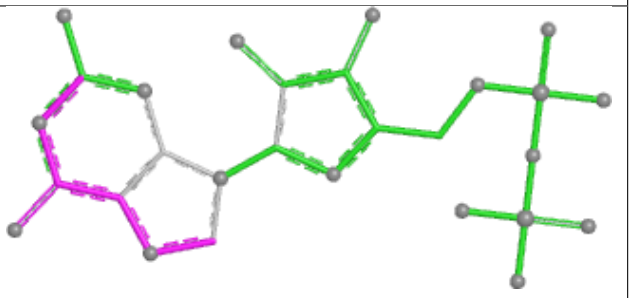

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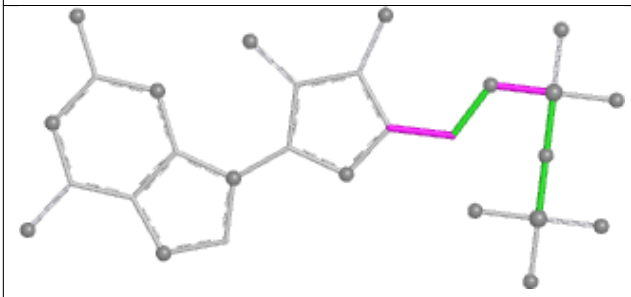

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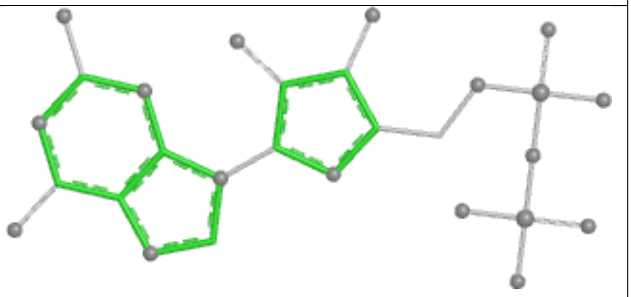
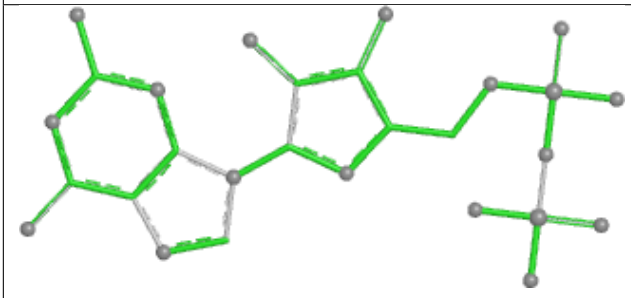


Rings

Ligand GDP KM 502



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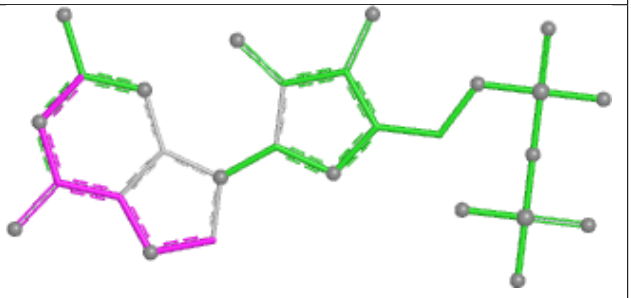

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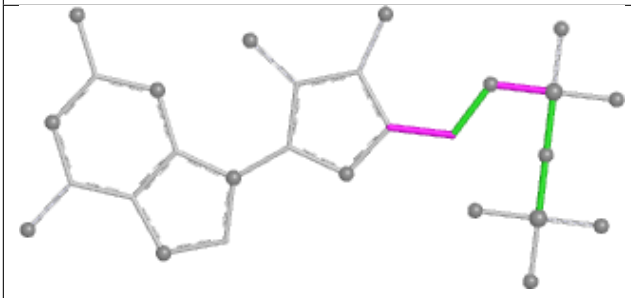

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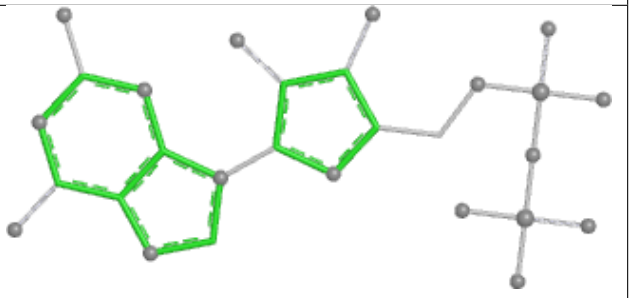
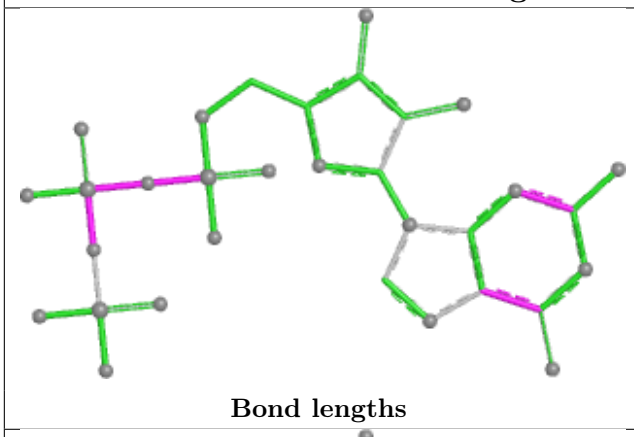


Rings

Ligand GTP AA 501



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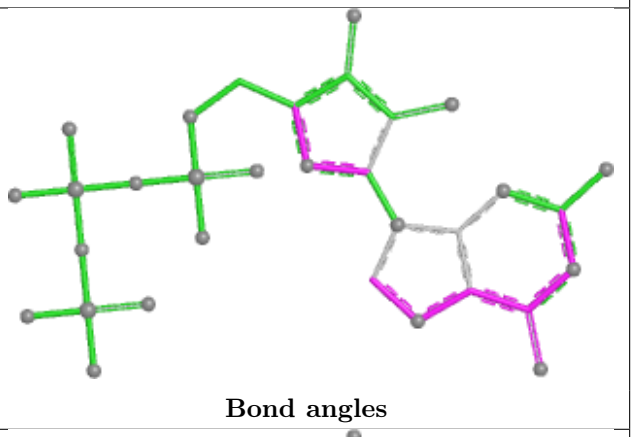

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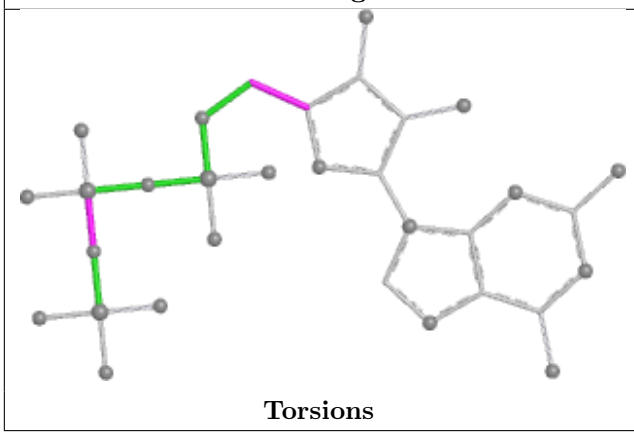

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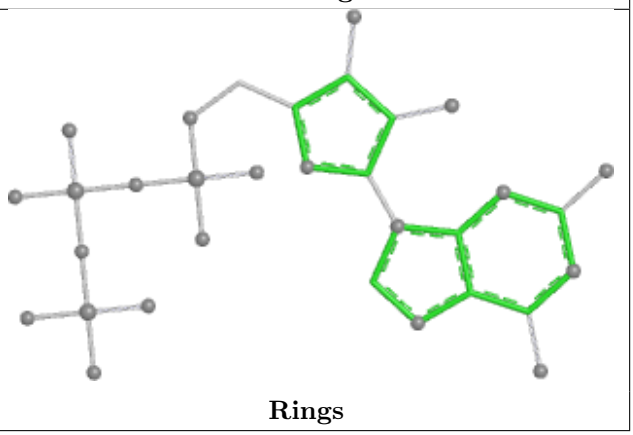
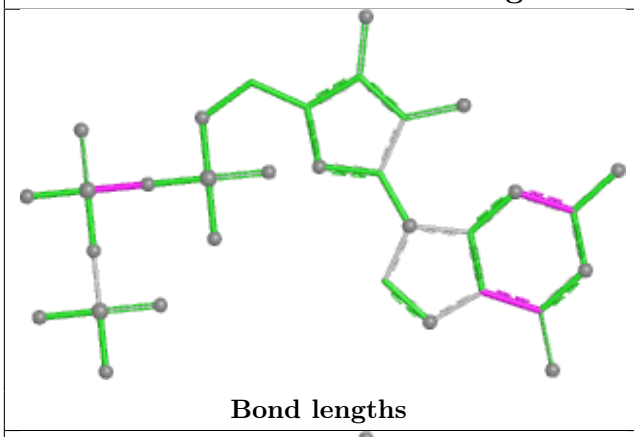


Rings

Ligand GTP KM 501



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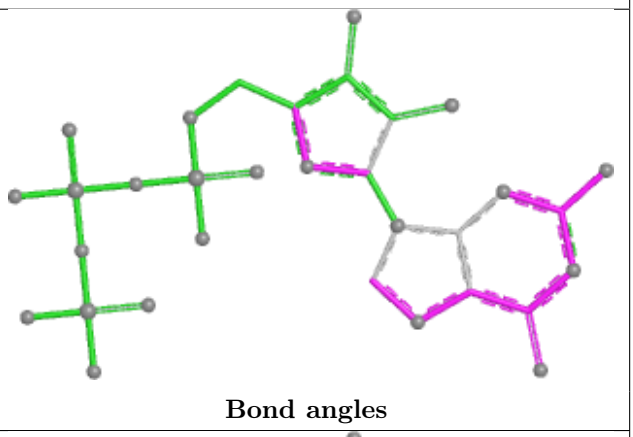

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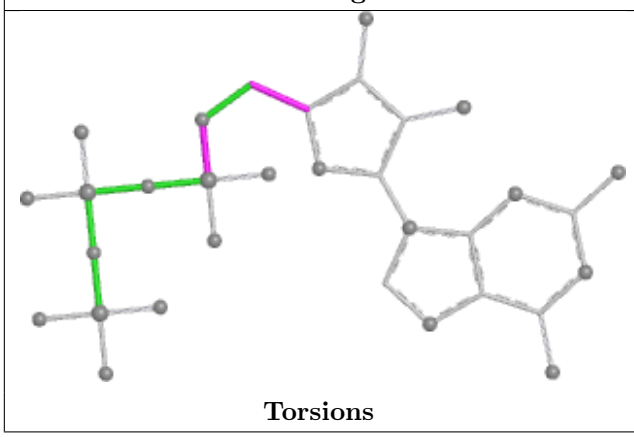

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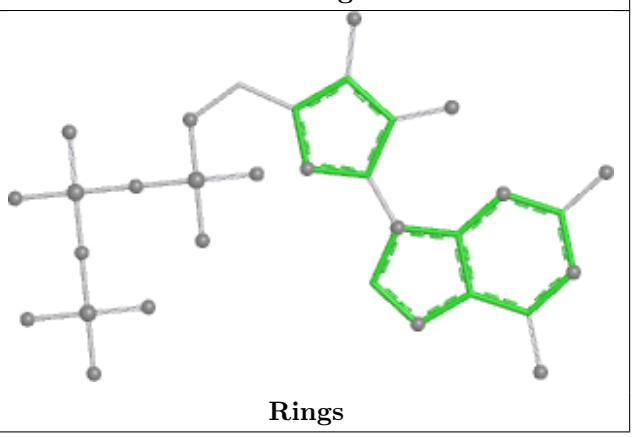

Rings

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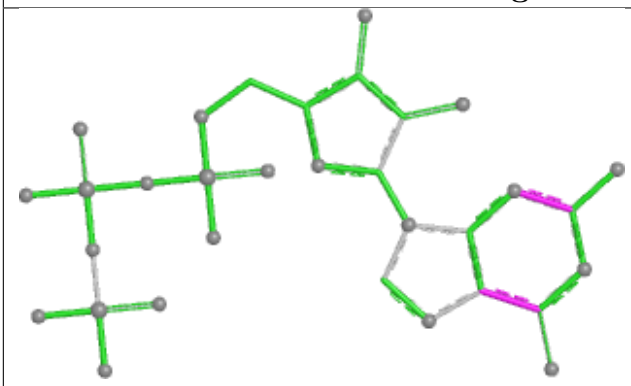

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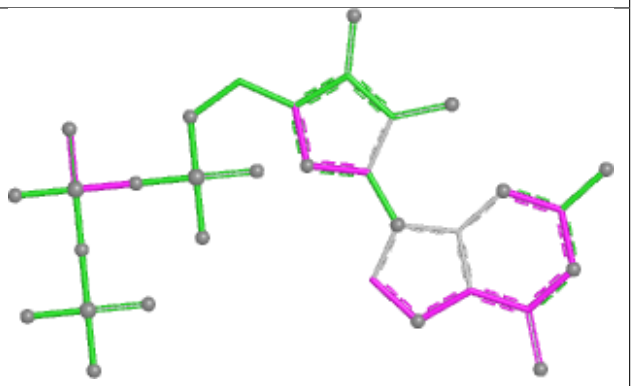

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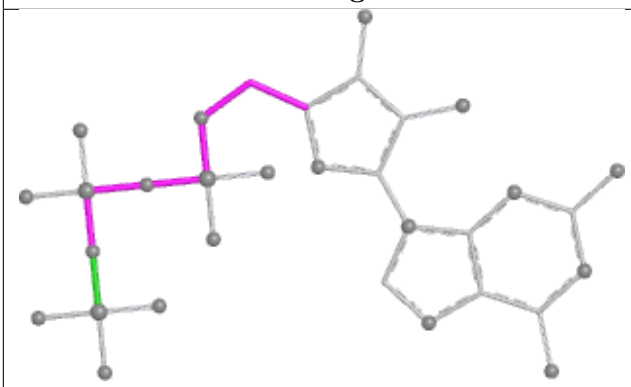

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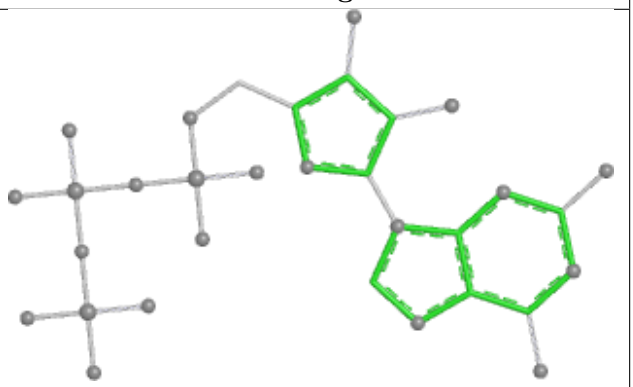

Rings

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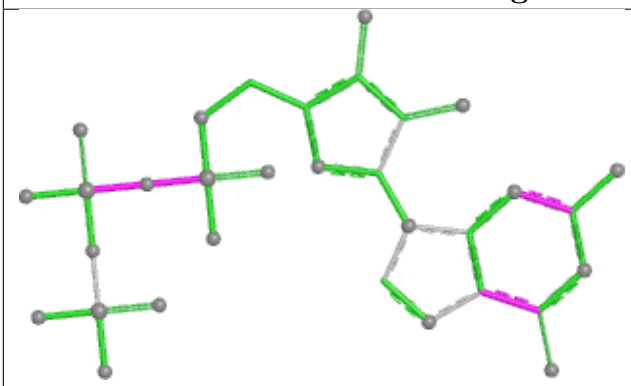

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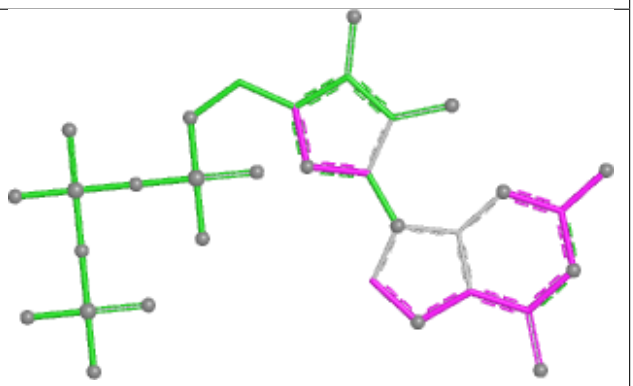

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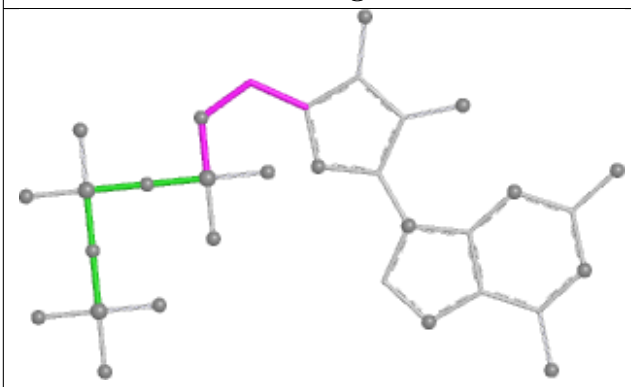

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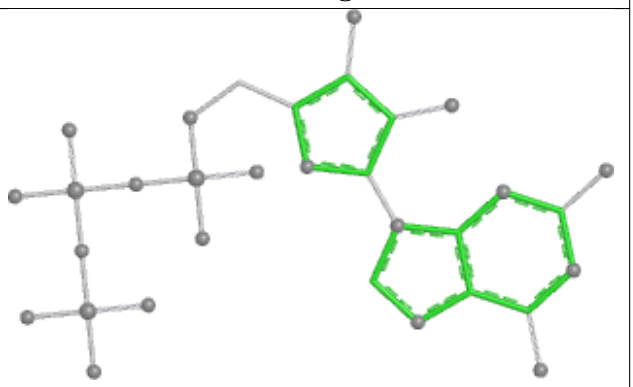
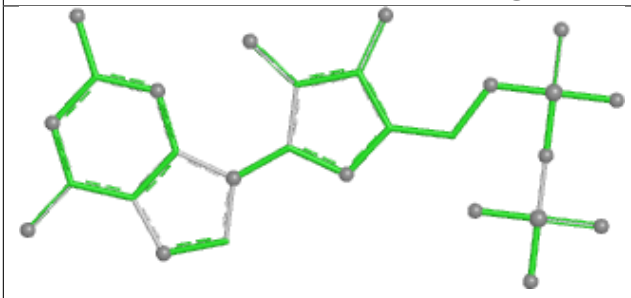


Rings

Ligand GDP RO 502



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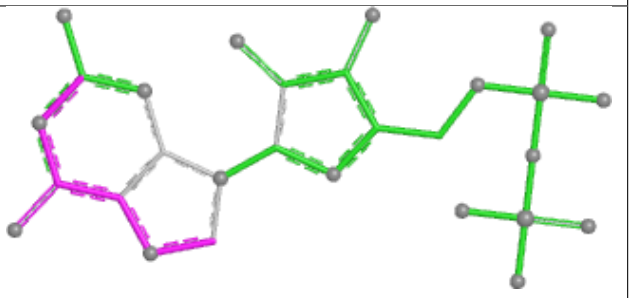

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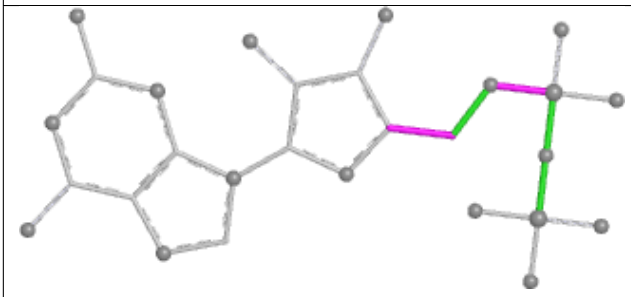

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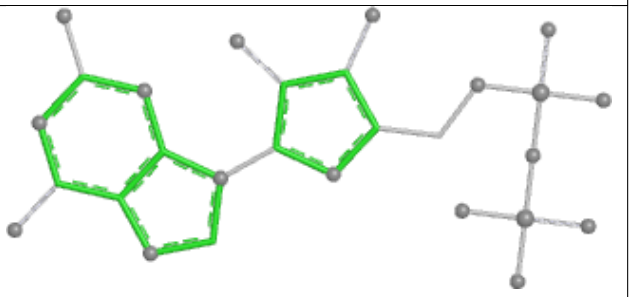
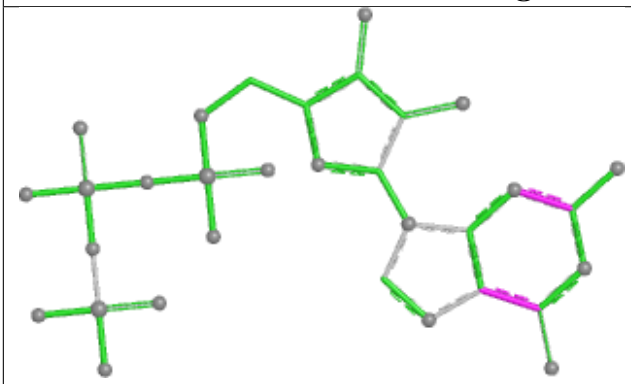


Rings

Ligand GTP IG 501



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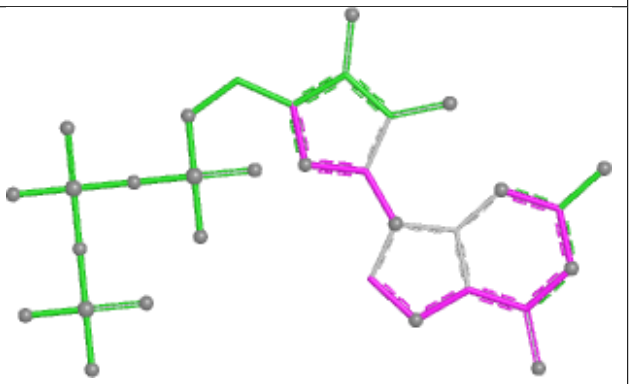

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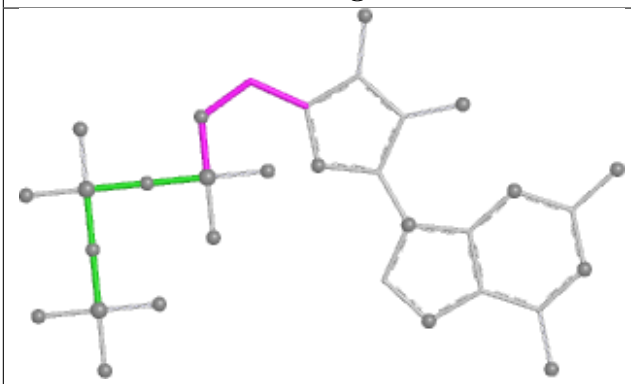

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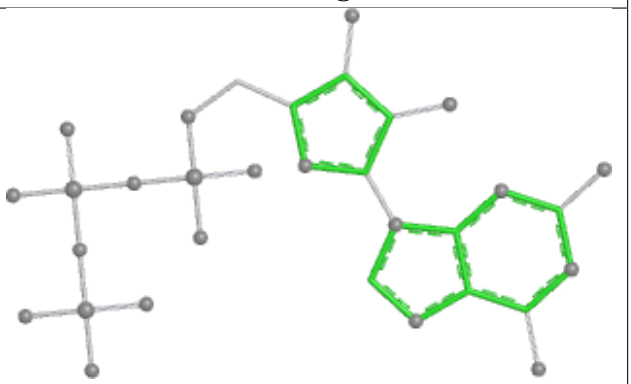
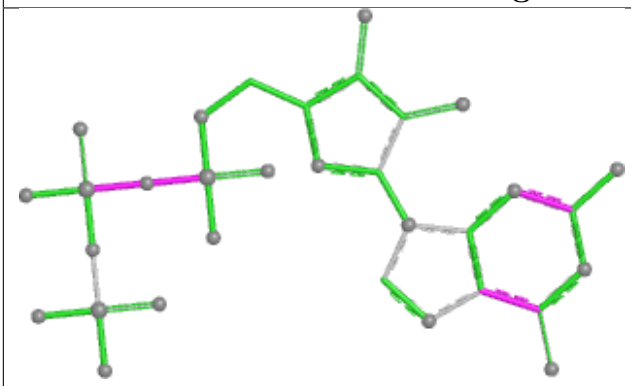


Rings

Ligand GTP JD 501



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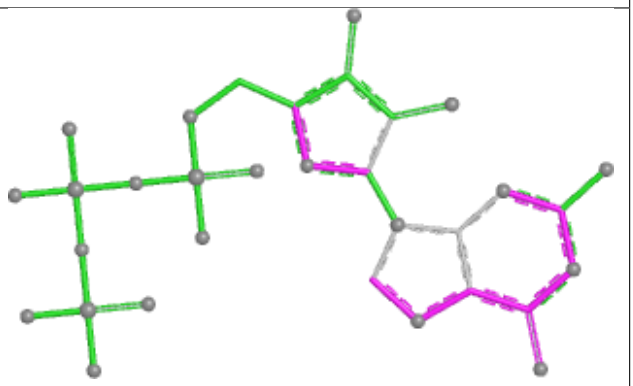

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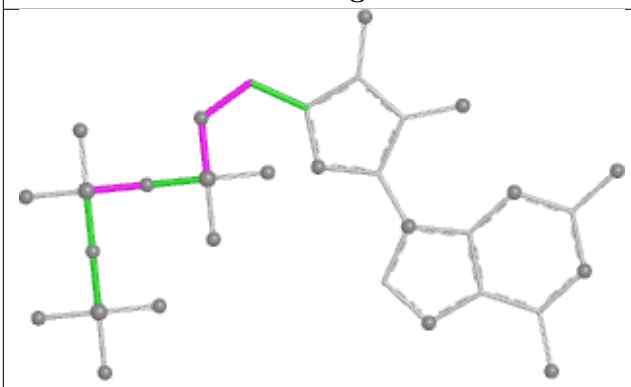

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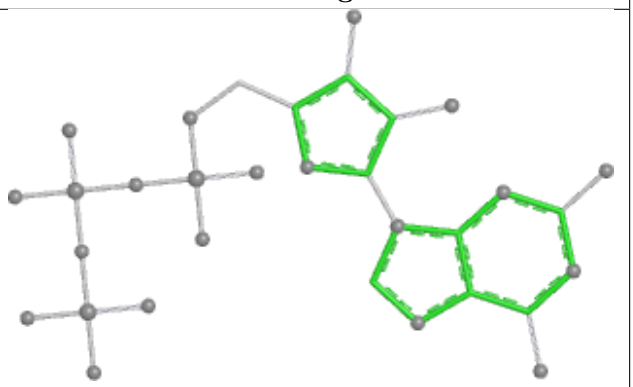
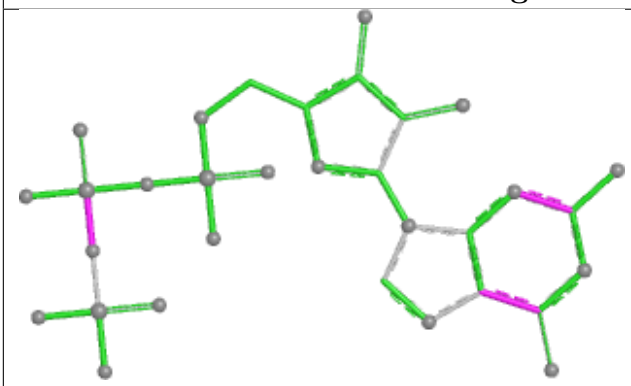


Rings

Ligand GTP VA 501



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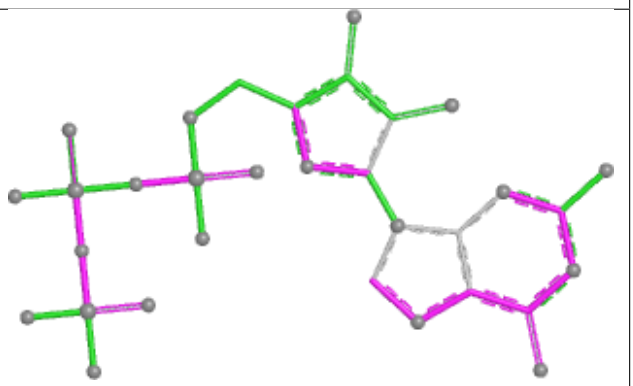

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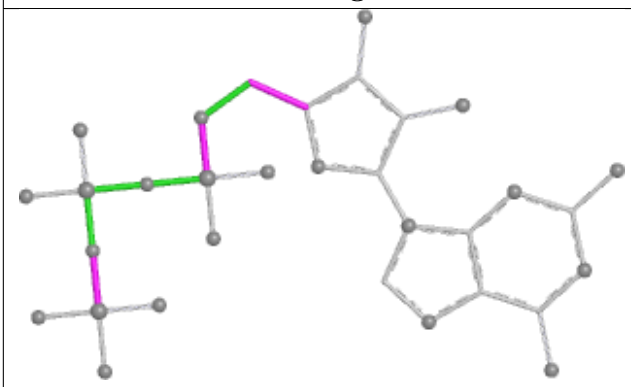
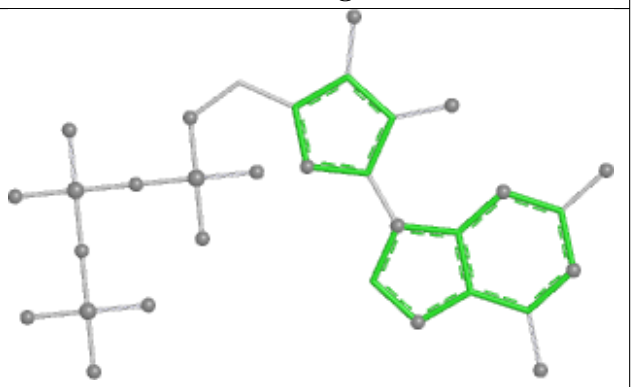
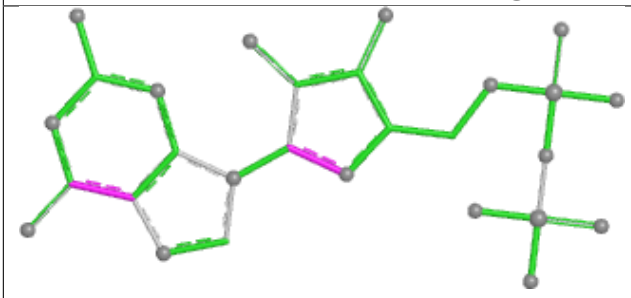


Torsions



Rings

Ligand GDP GP 502



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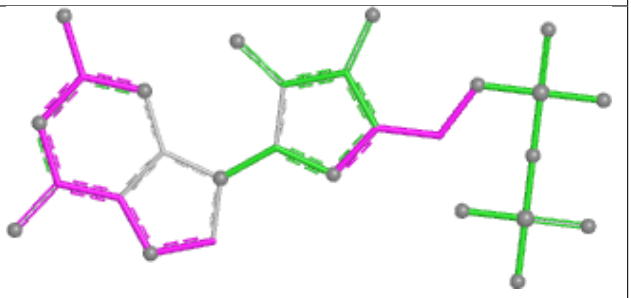

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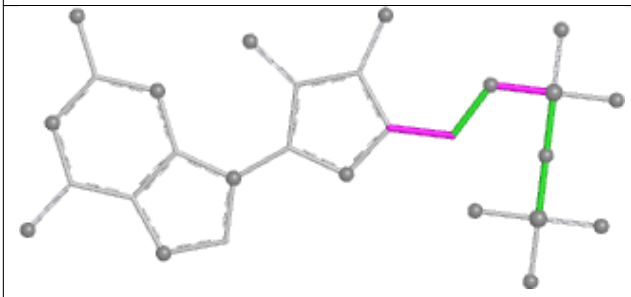

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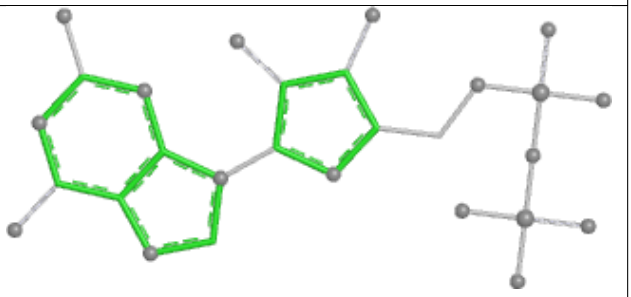
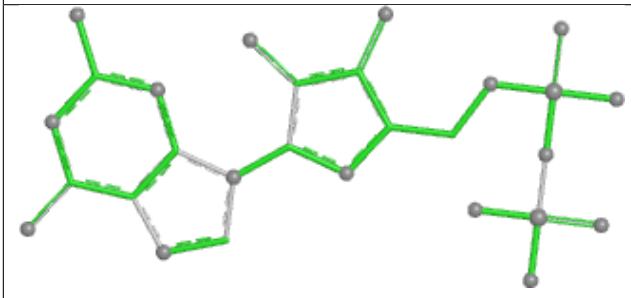


Rings

Ligand GDP GO 501



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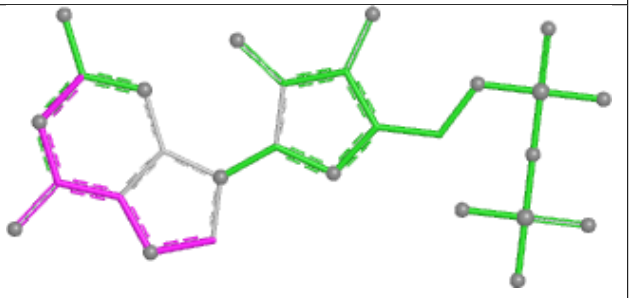

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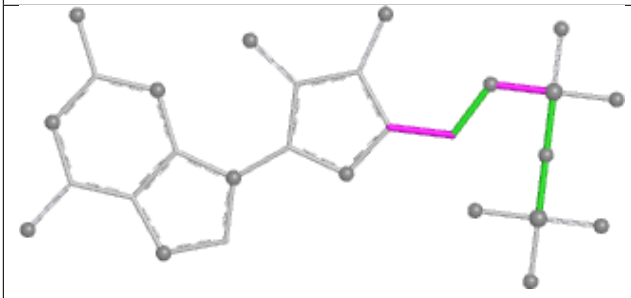

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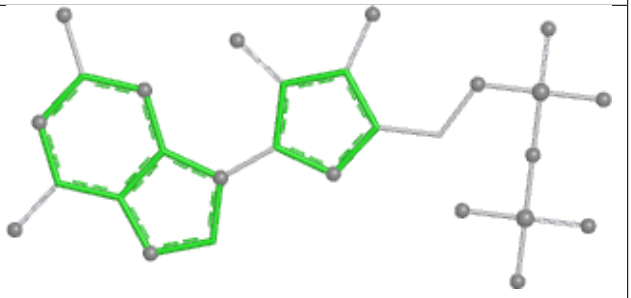

Rings

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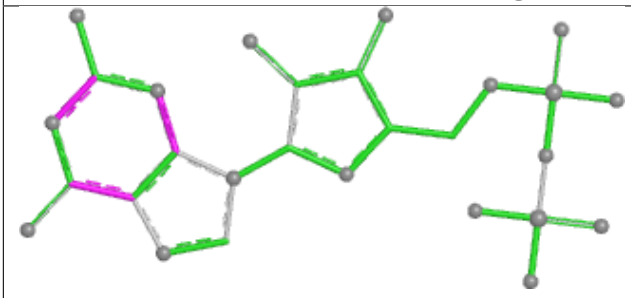

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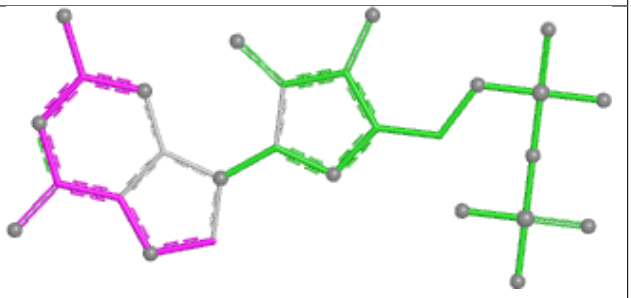

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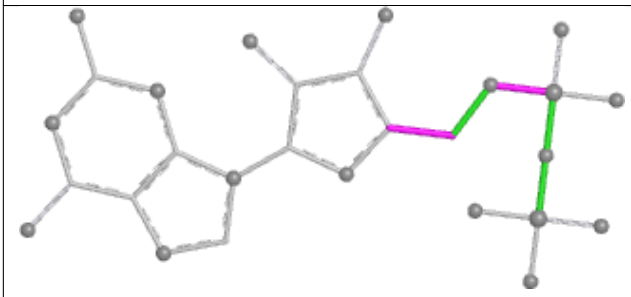

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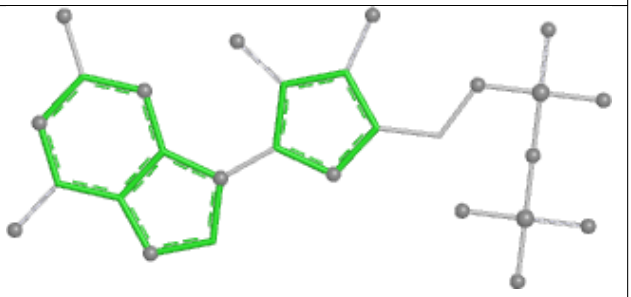

Rings

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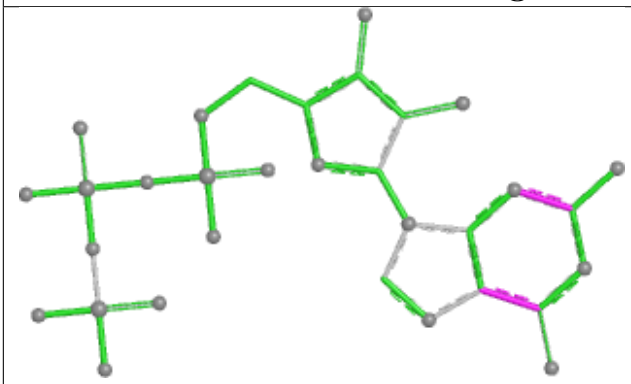

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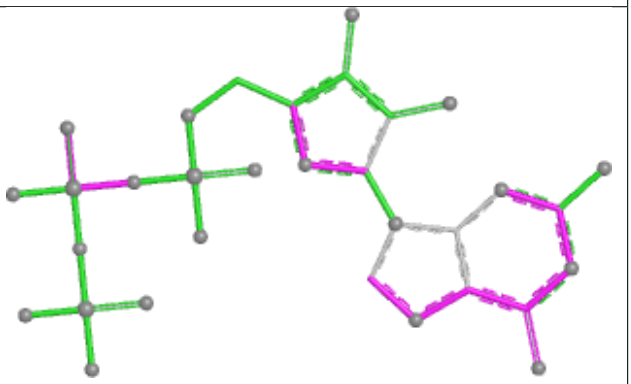

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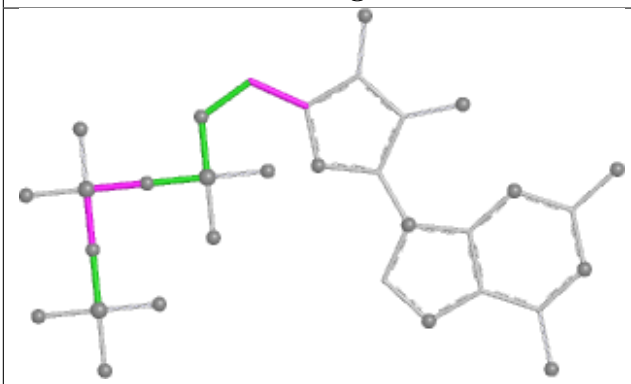

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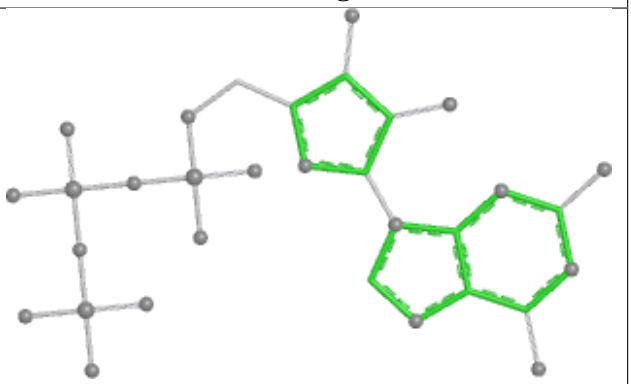

Rings

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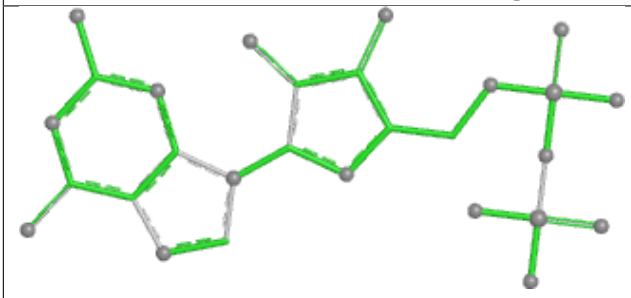

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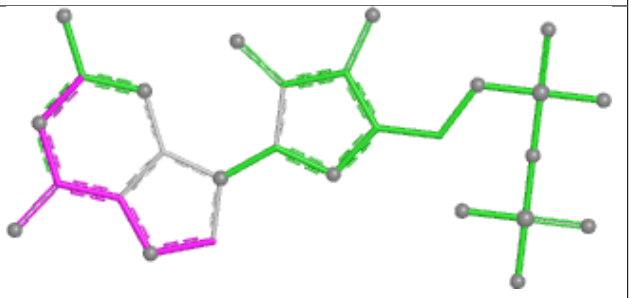

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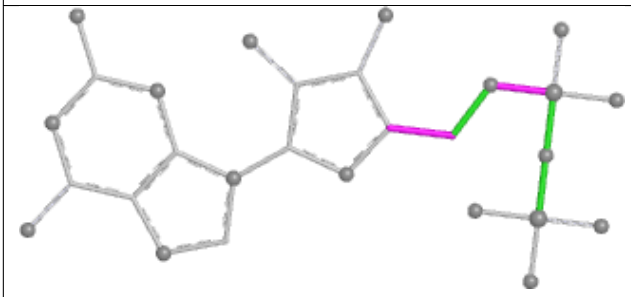

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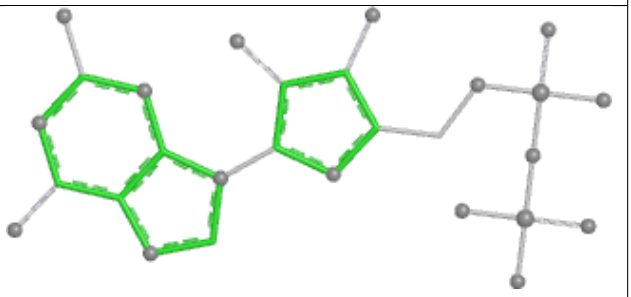

Rings

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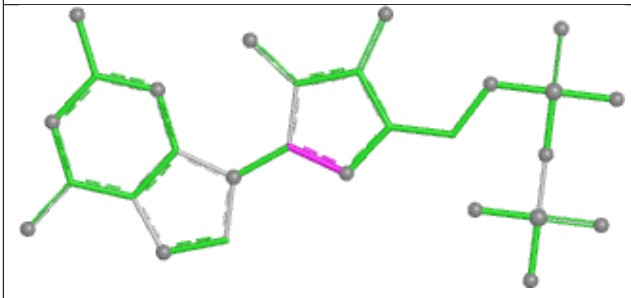

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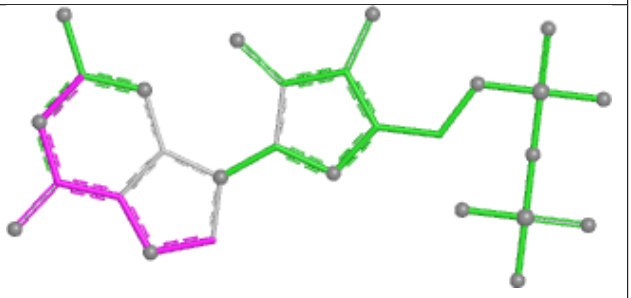

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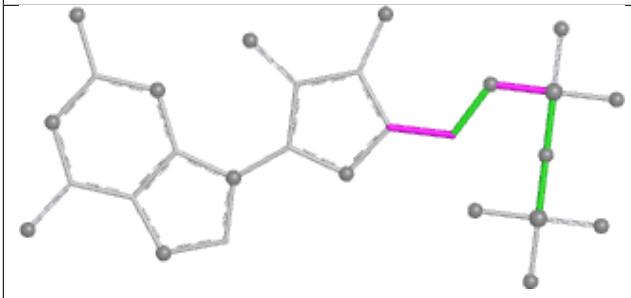

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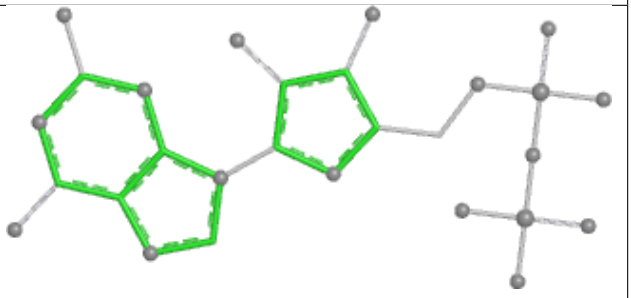

Rings

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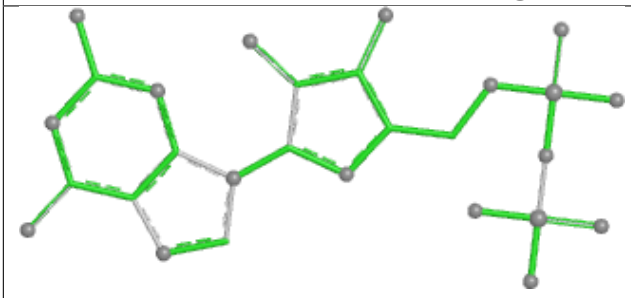

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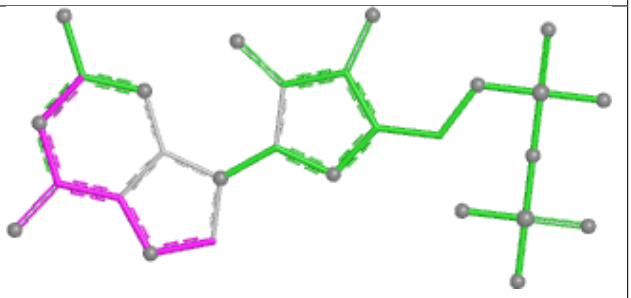

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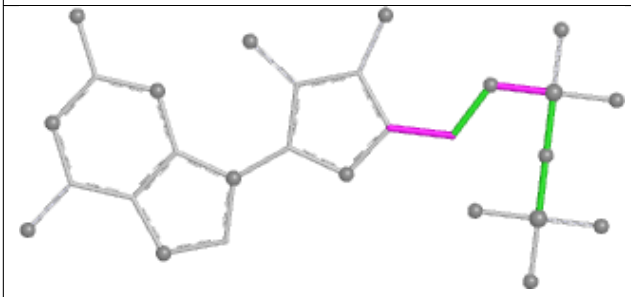

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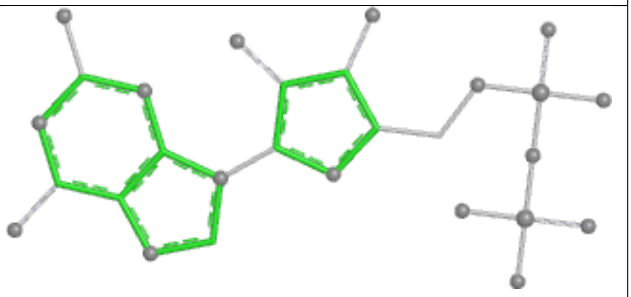

Rings

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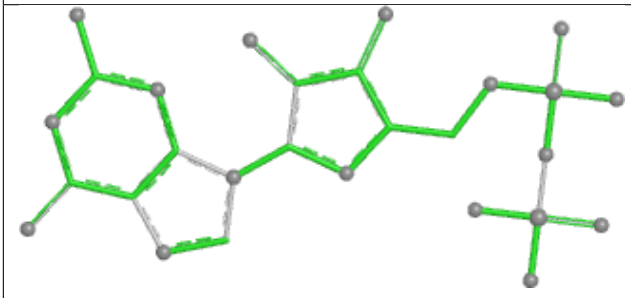

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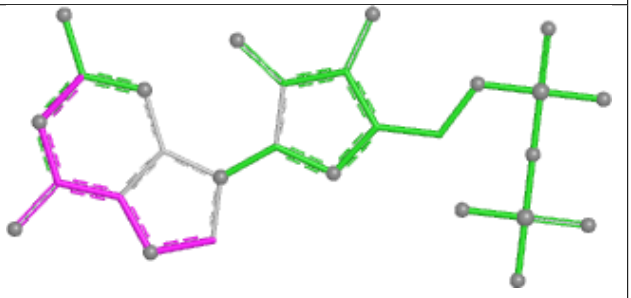

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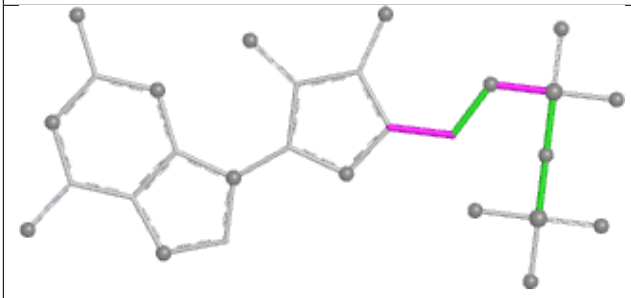

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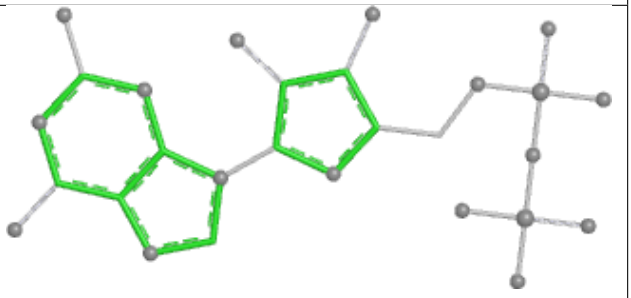

Rings

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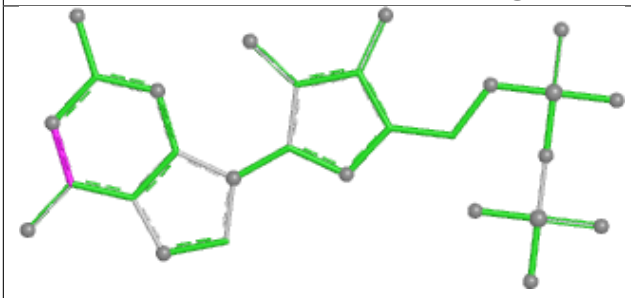

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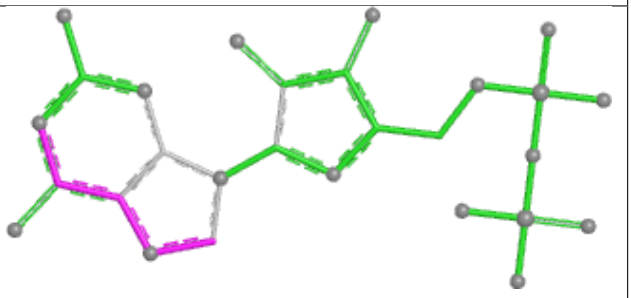

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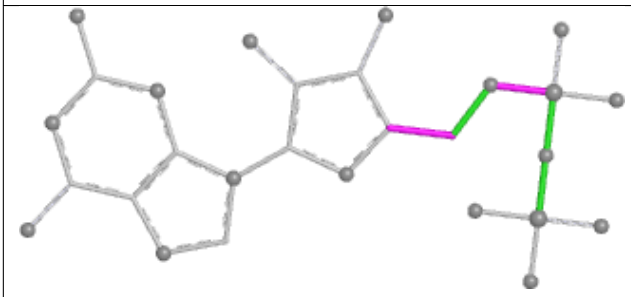

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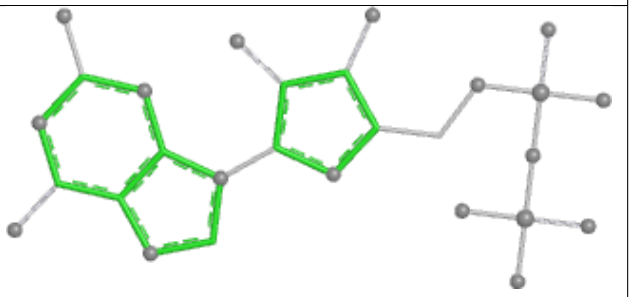

Rings

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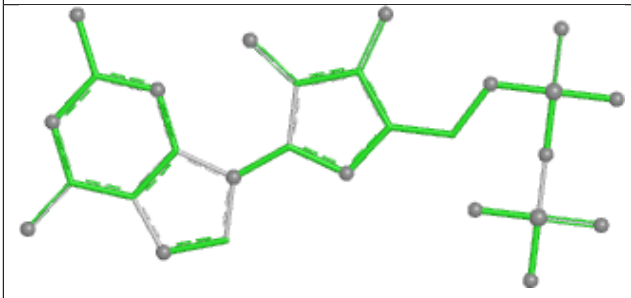

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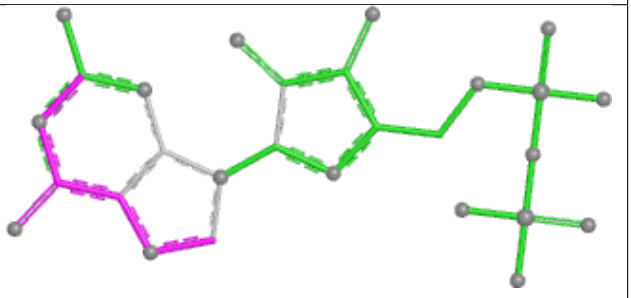

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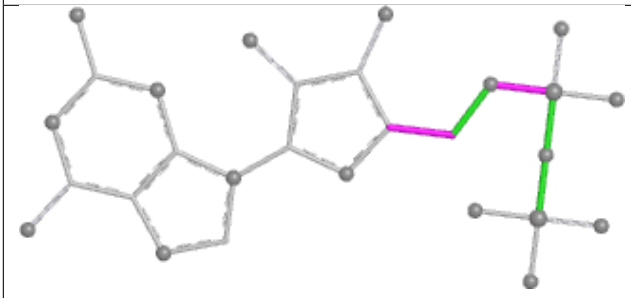

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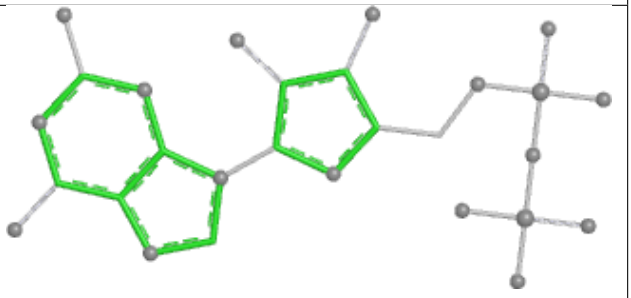
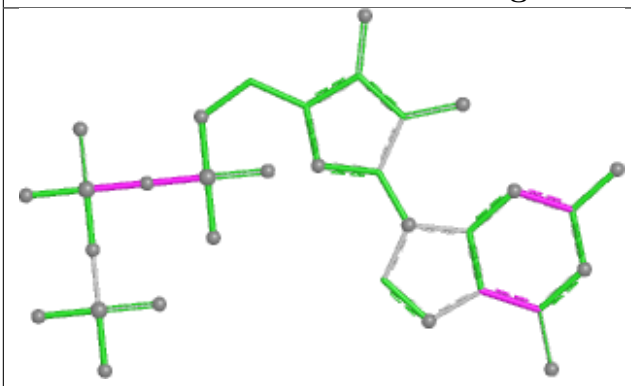


Rings

Ligand GTP KE 501



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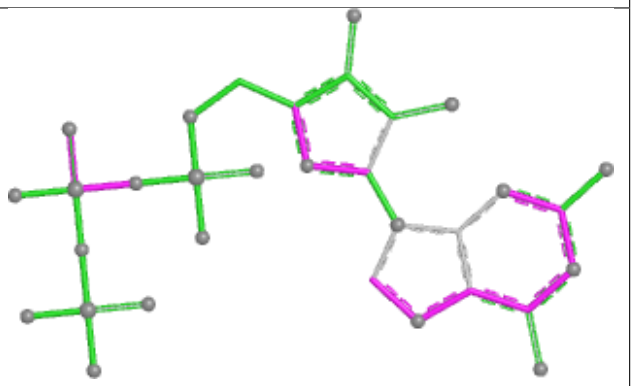

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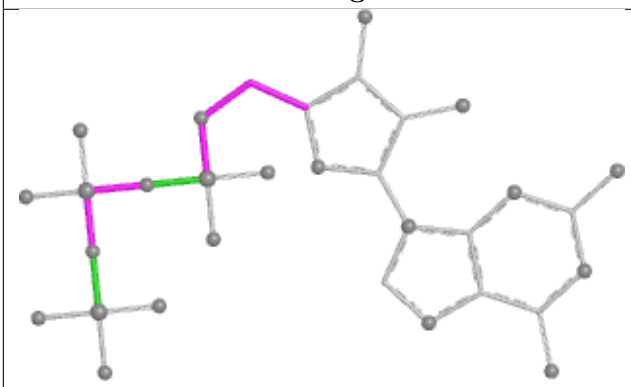

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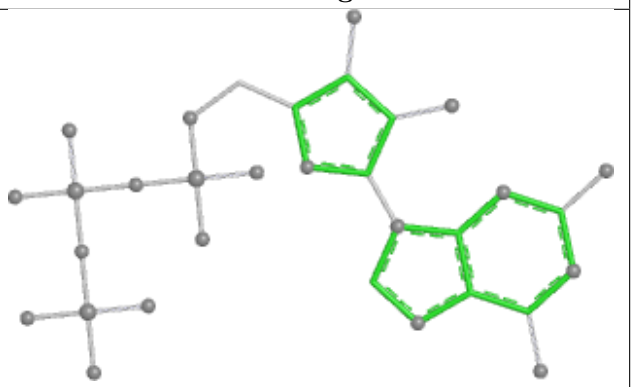
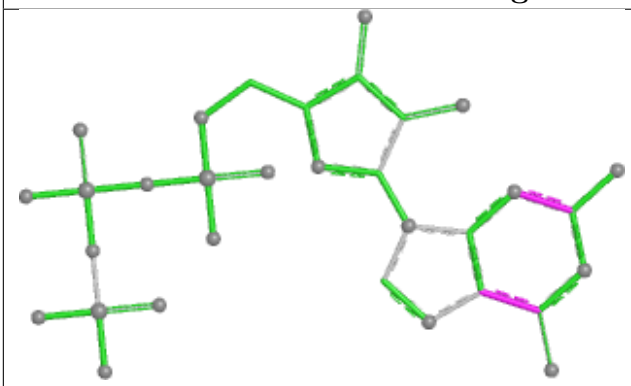


Rings

Ligand GTP RF 501



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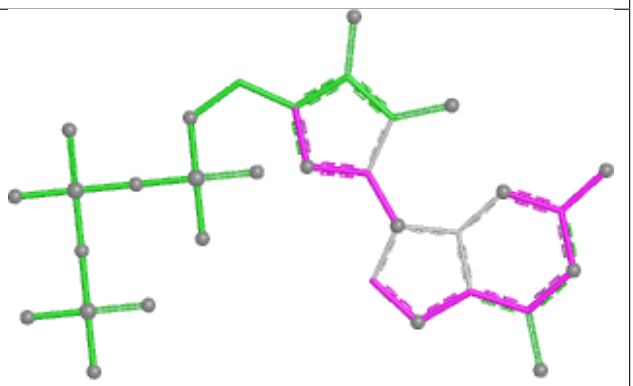

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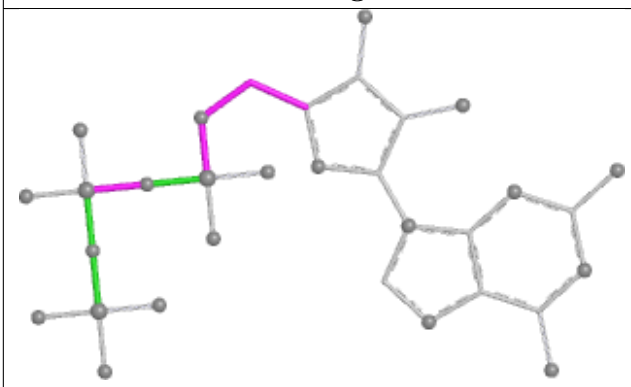

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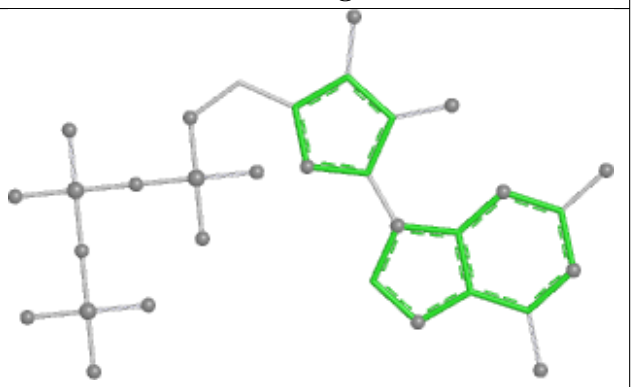
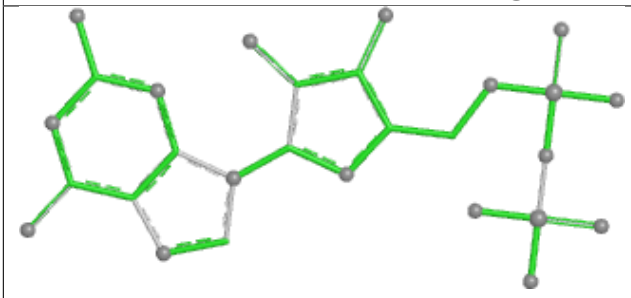


Rings

Ligand GDP NB 501



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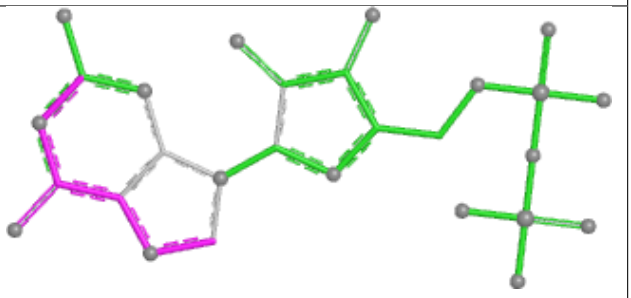

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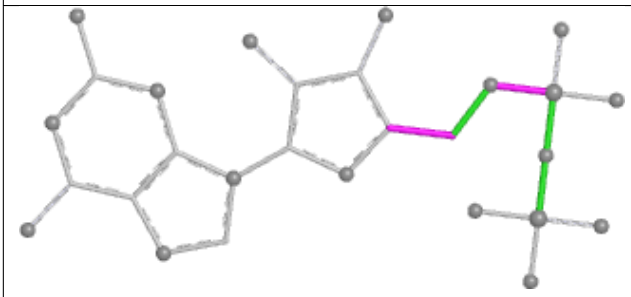

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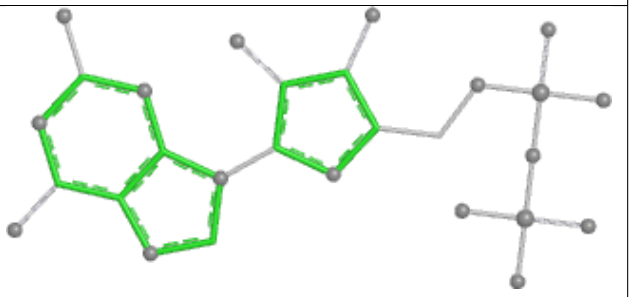
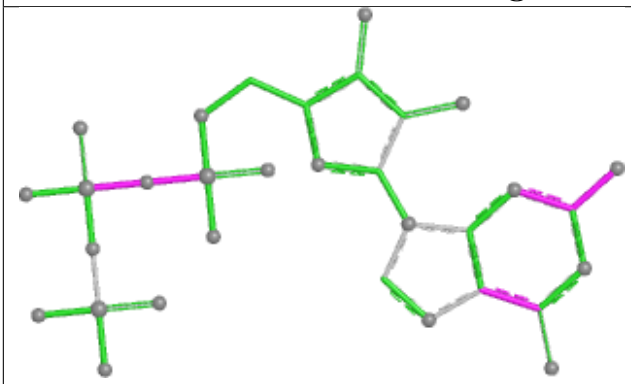


Rings

Ligand GTP DH 501



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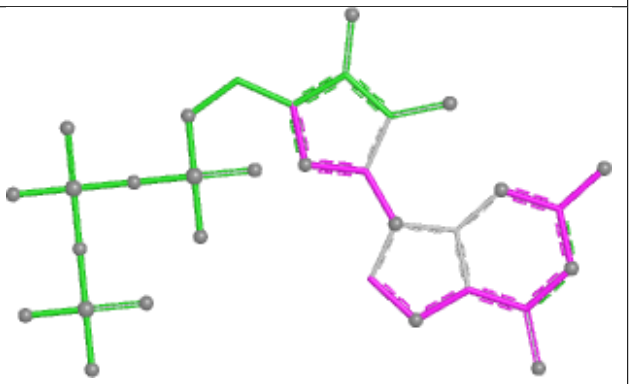

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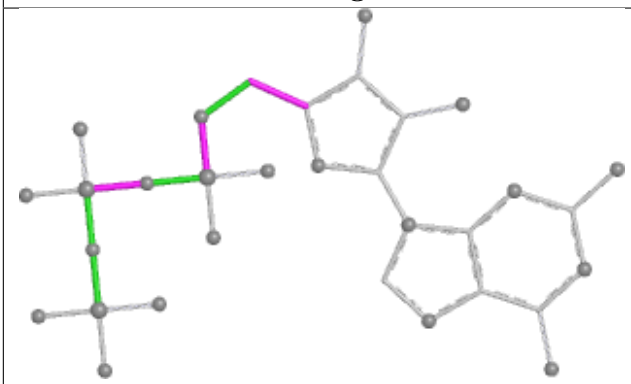
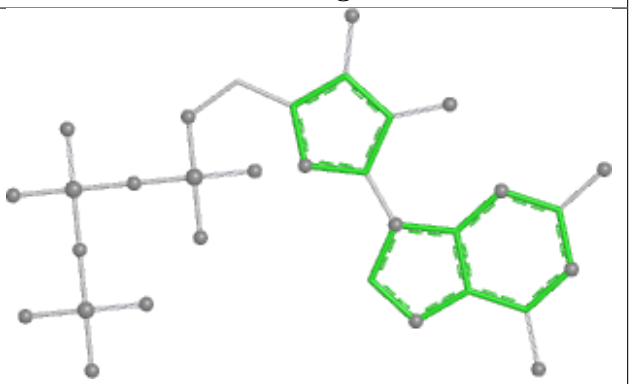
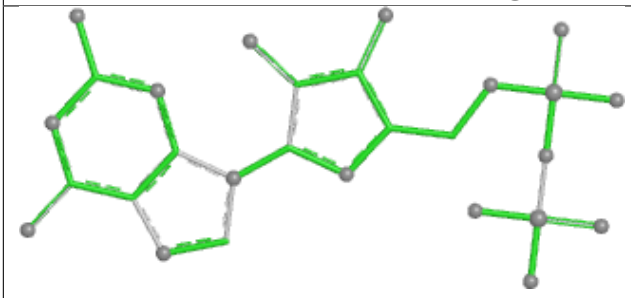


Torsions



Rings

Ligand GDP HN 501



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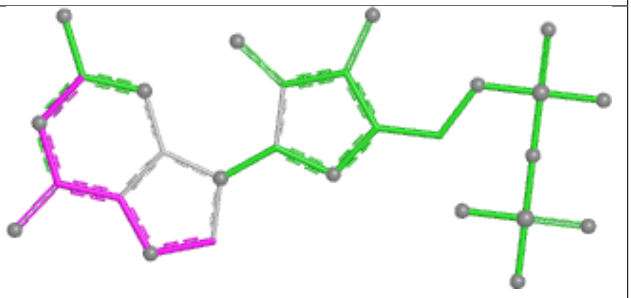

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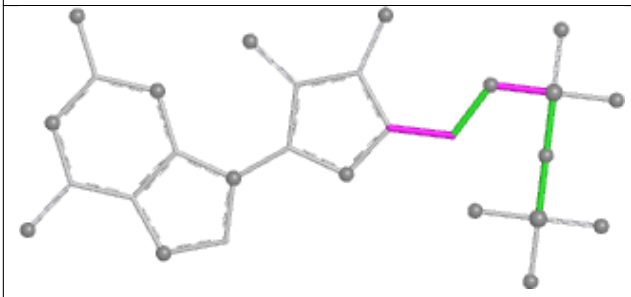

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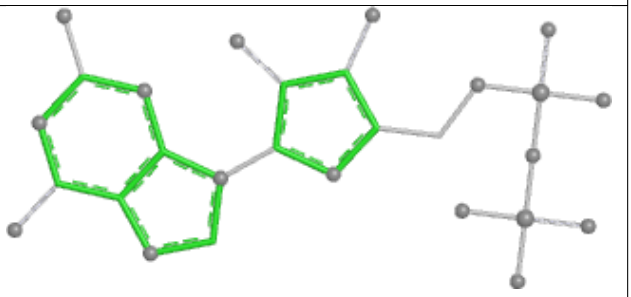

Rings

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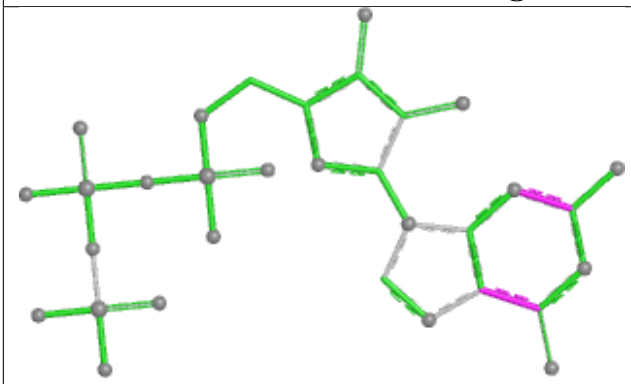

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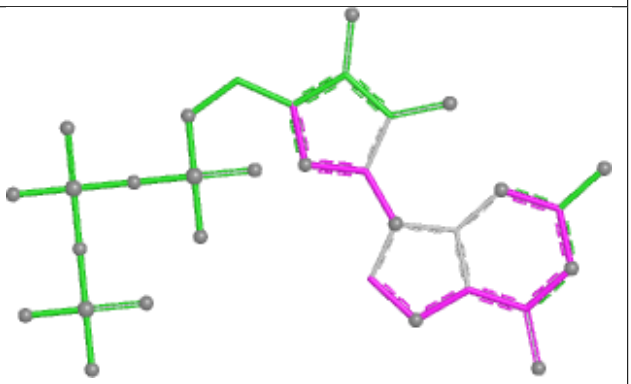

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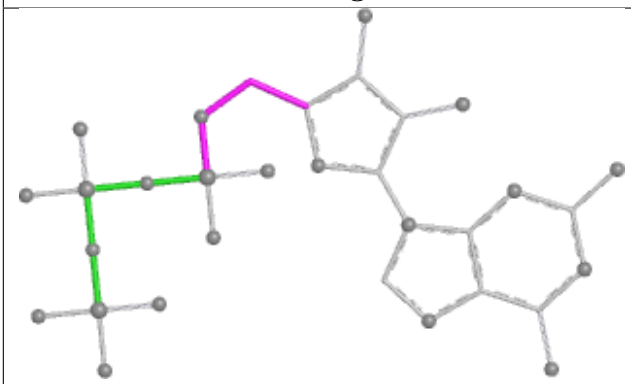

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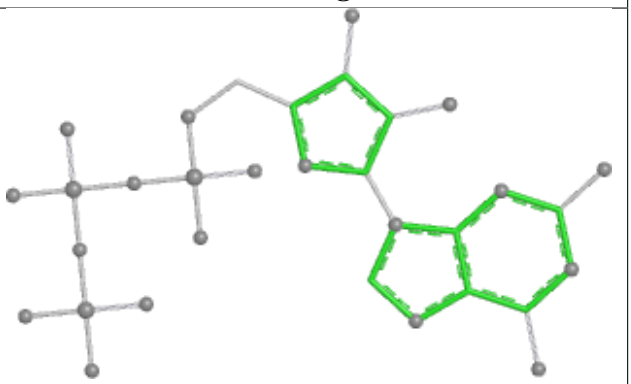

Rings

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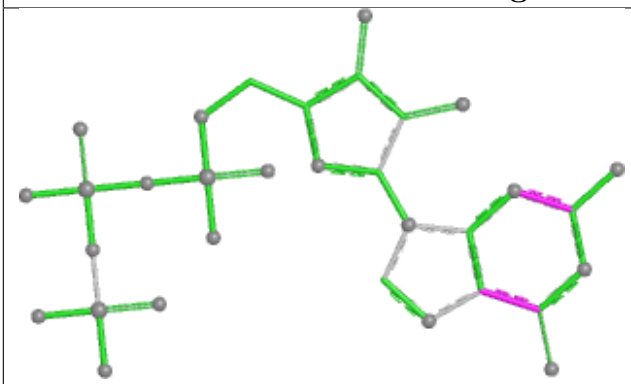

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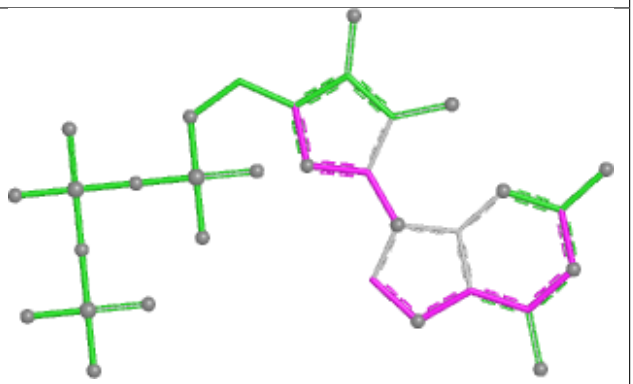

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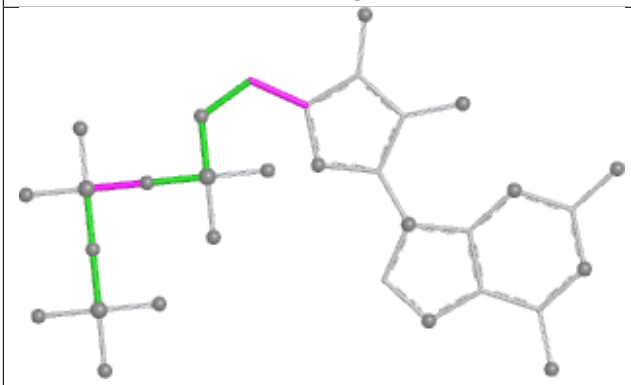

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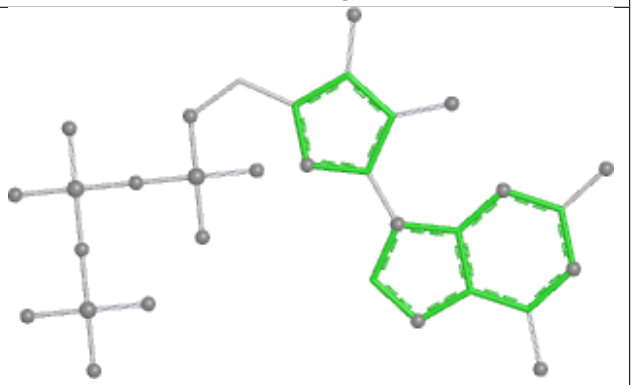
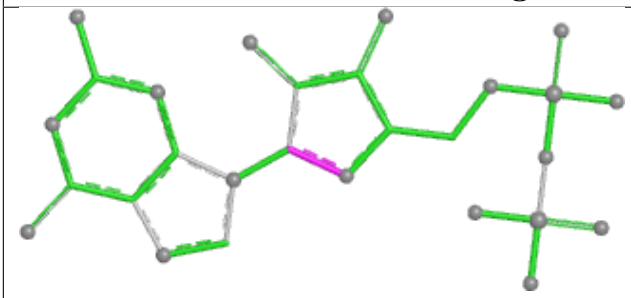


Rings

Ligand GDP FP 501



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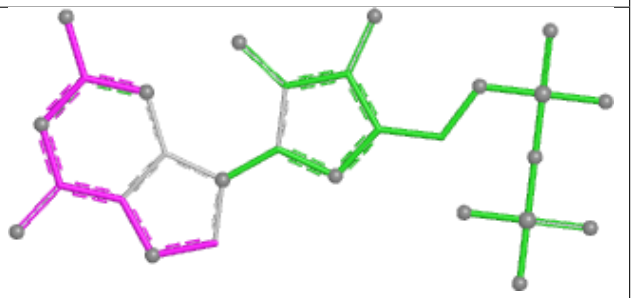

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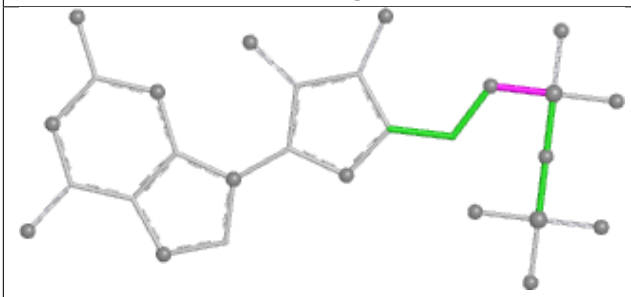

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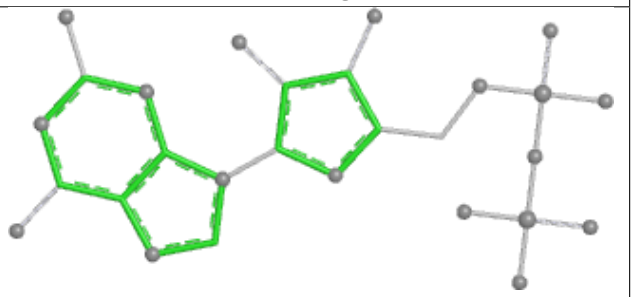

Rings

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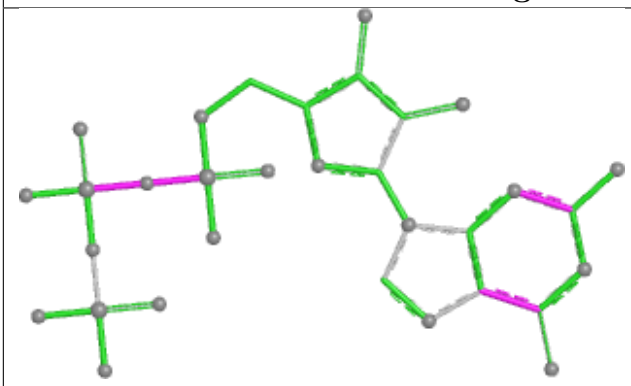

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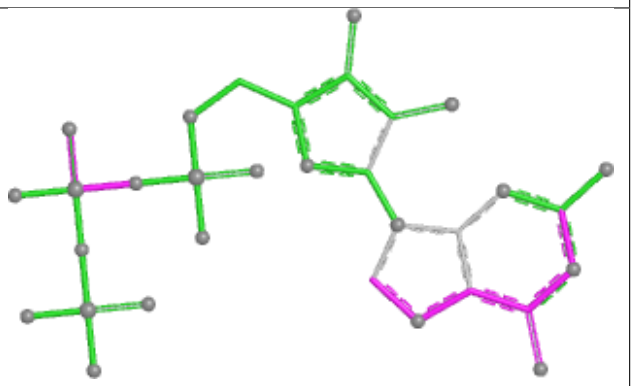

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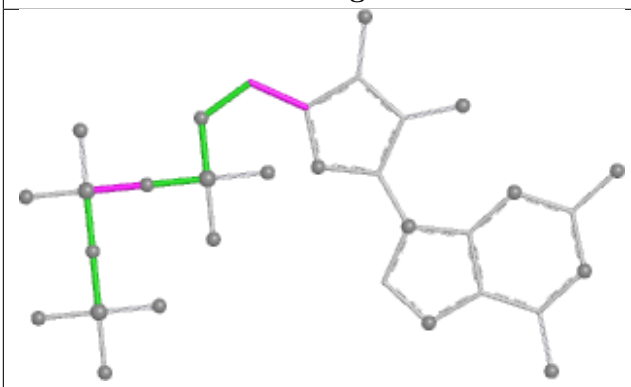

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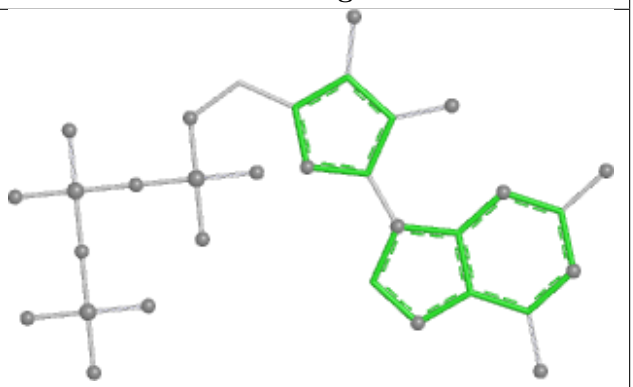

Rings

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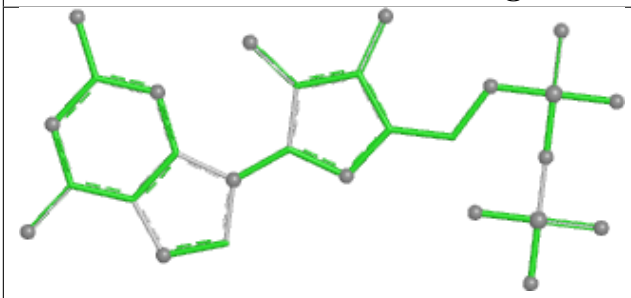

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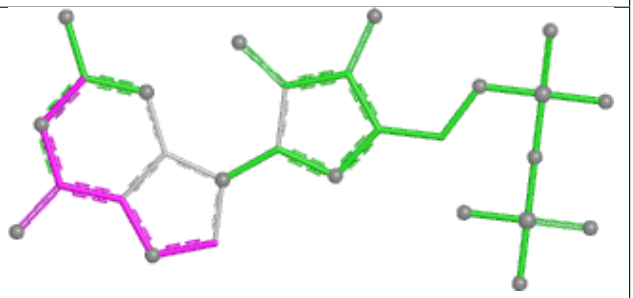

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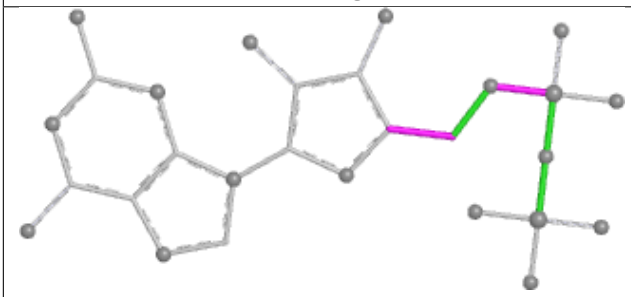

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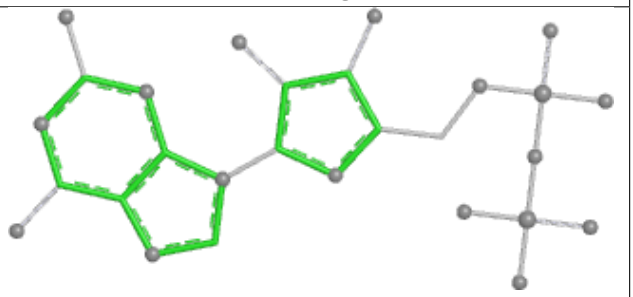

Rings

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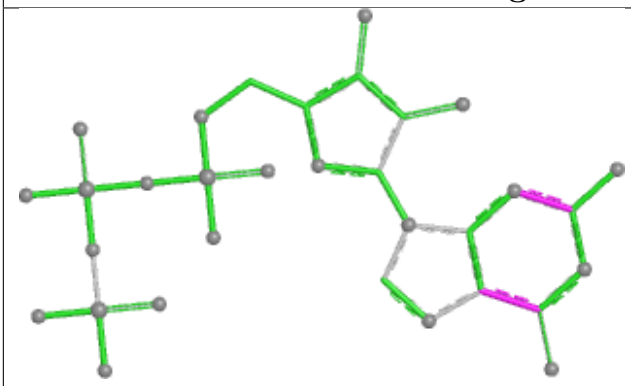

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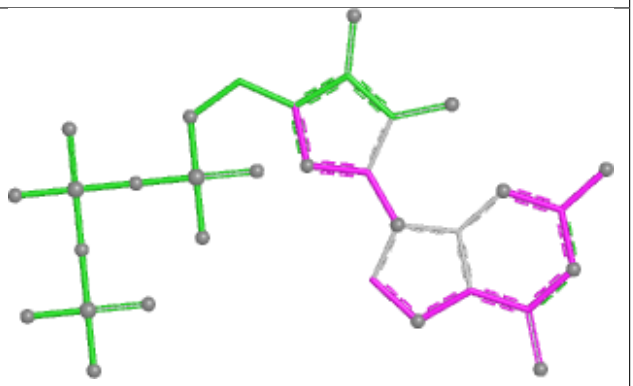

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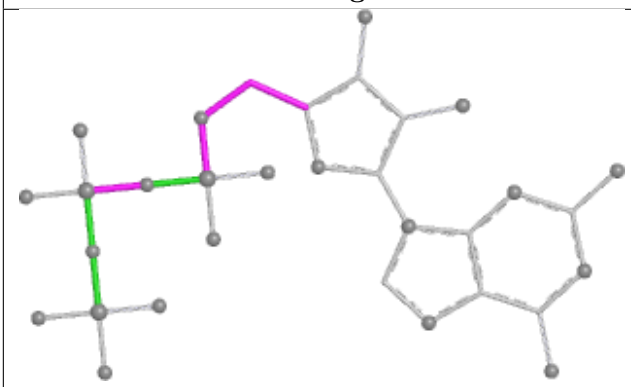

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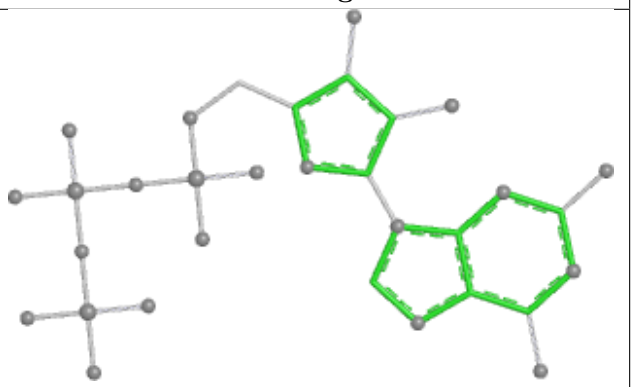
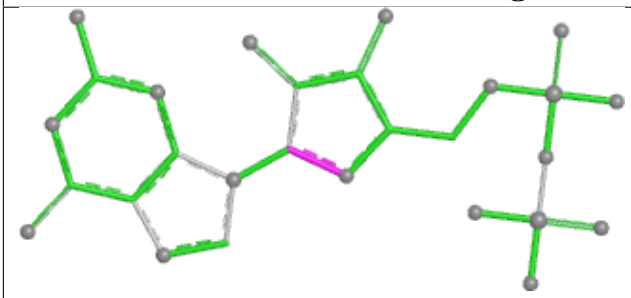


Rings

Ligand GDP BP 501



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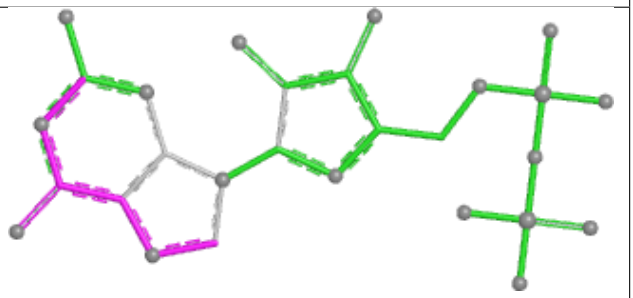

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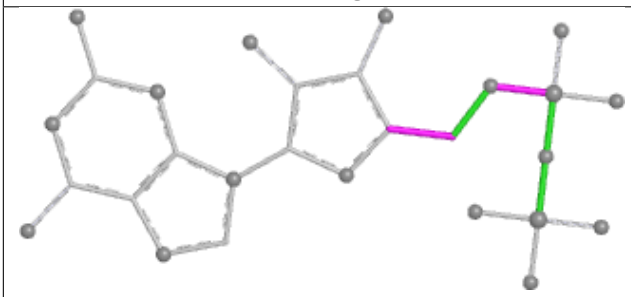

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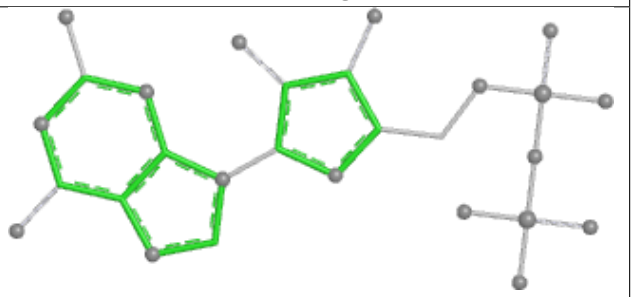

Rings

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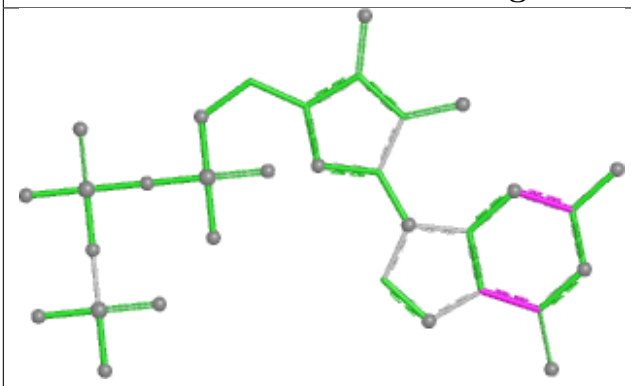

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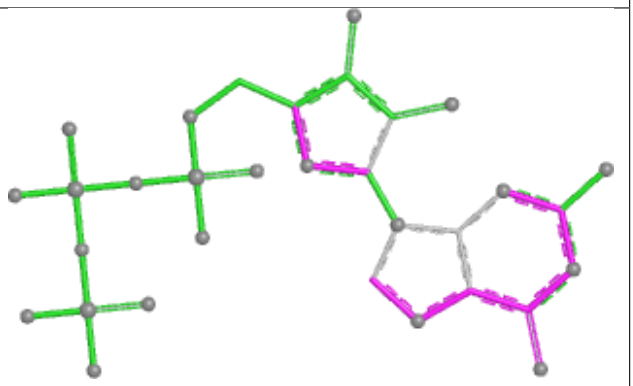

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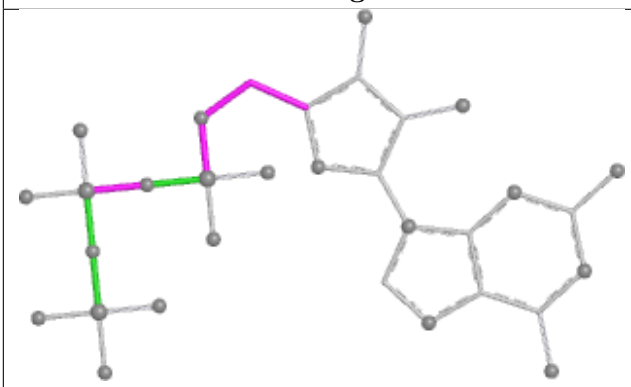

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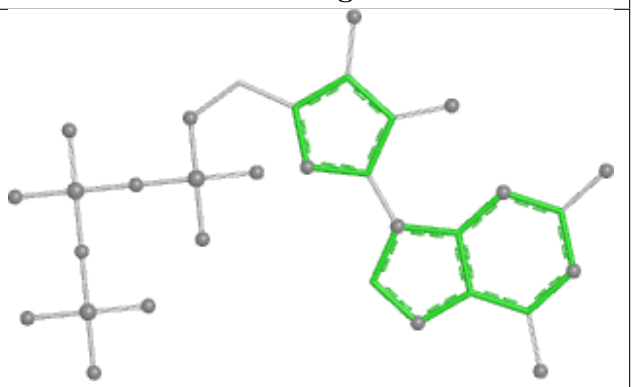
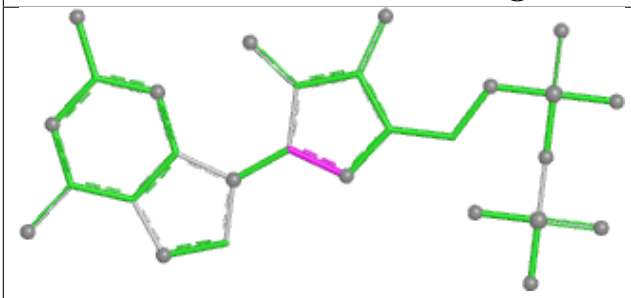


Rings

Ligand GDP QP 501



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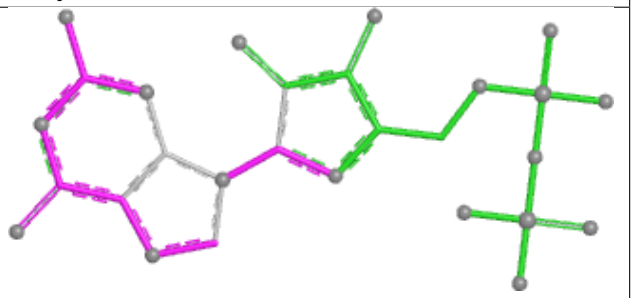

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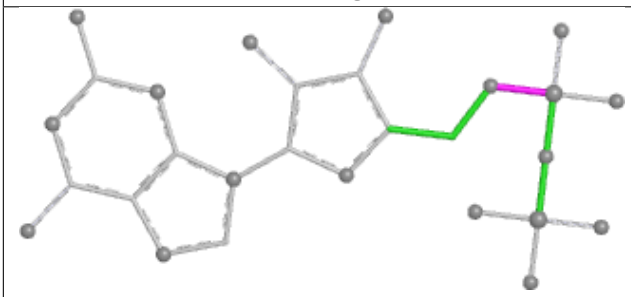

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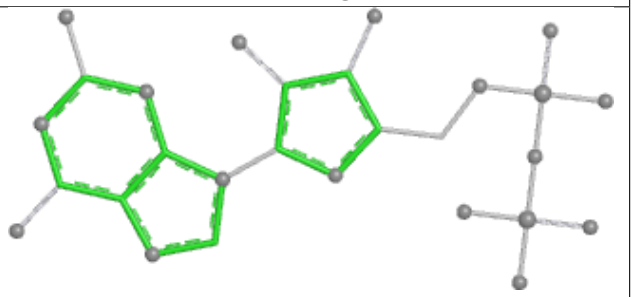
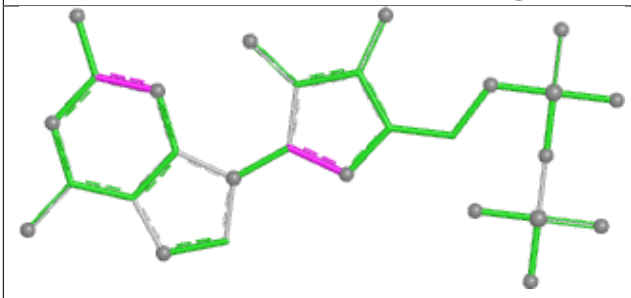


Rings

Ligand GDP SN 502



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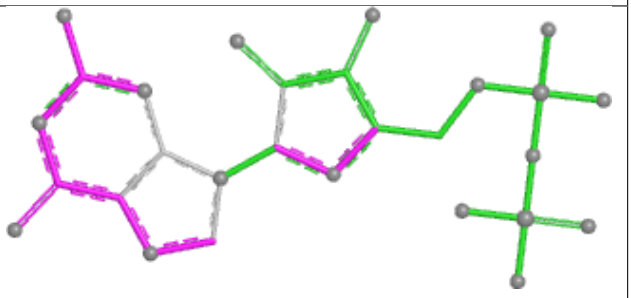
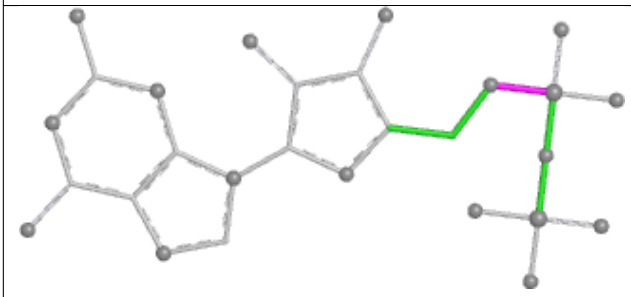


Bond angles



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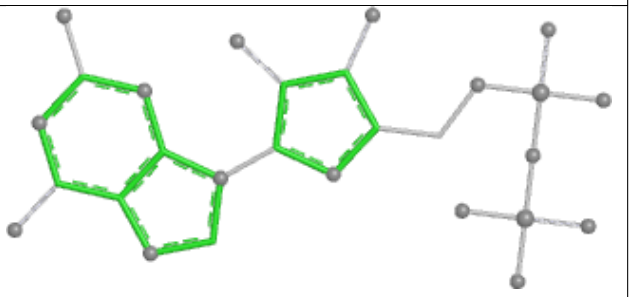
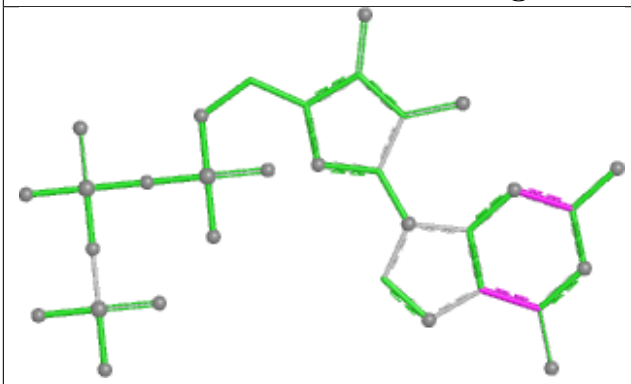


Rings

Ligand GTP NE 501



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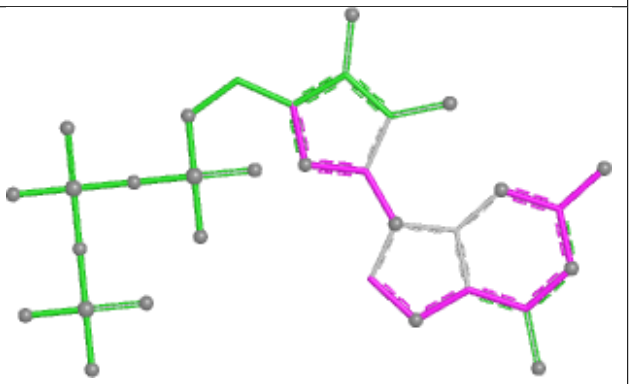

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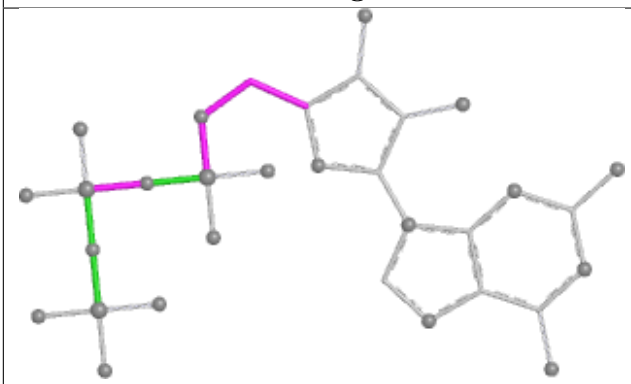

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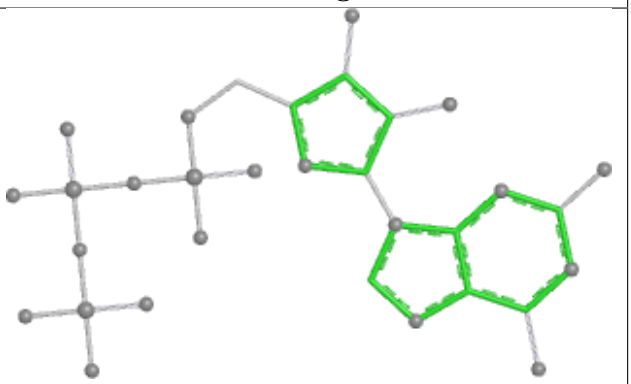
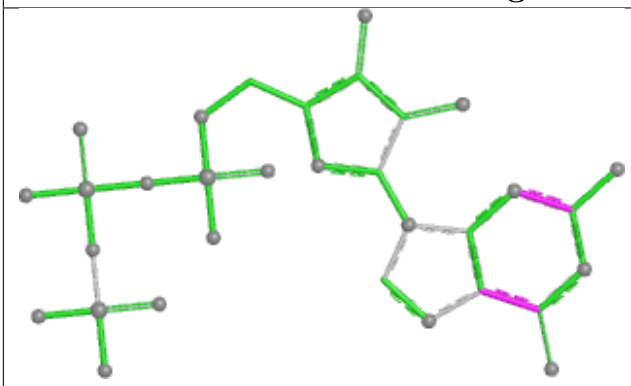


Rings

Ligand GTP NN 501



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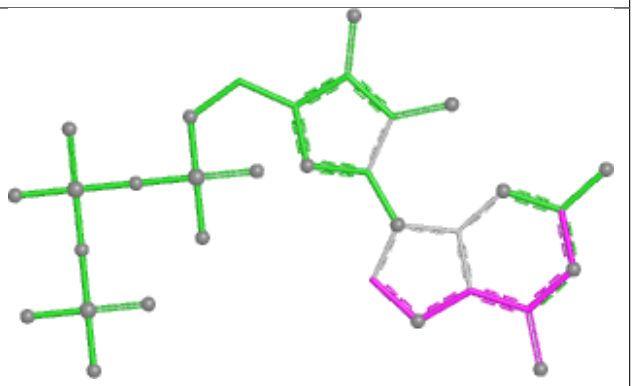
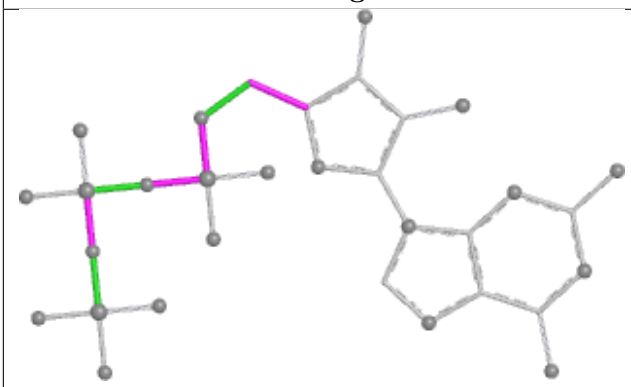
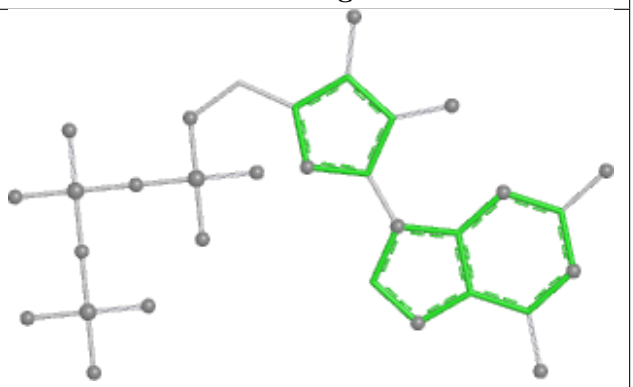


Bond angles

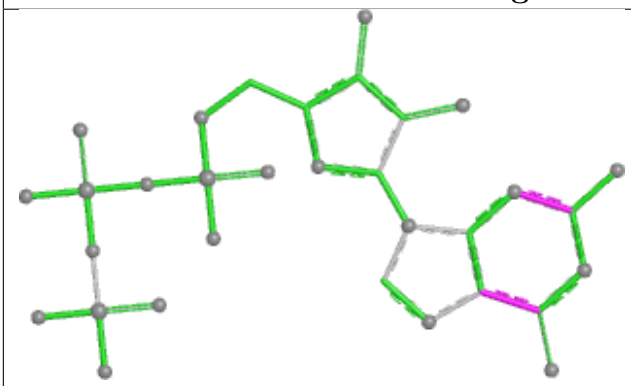


Torsions

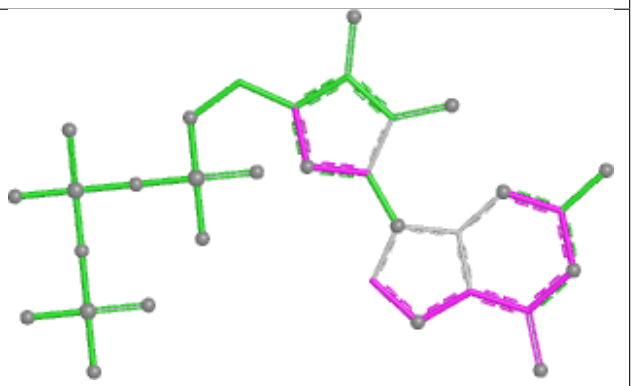


Rings

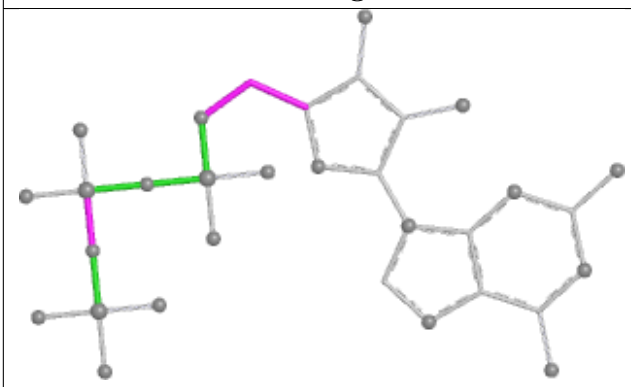
Ligand GTP LA 501



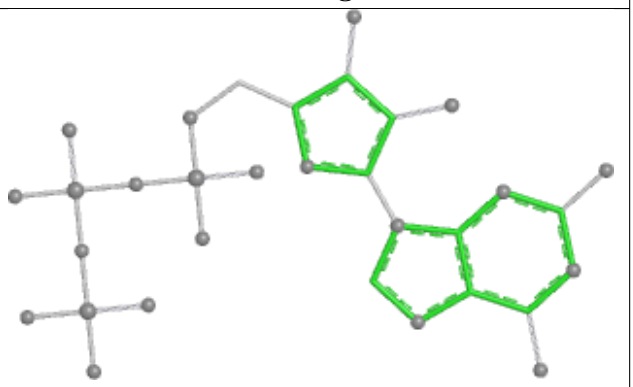
Bond lengths



Bond angles

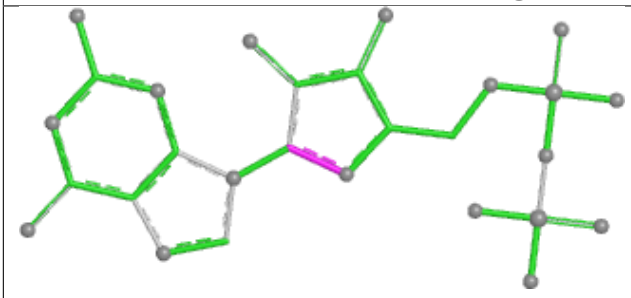


Torsions

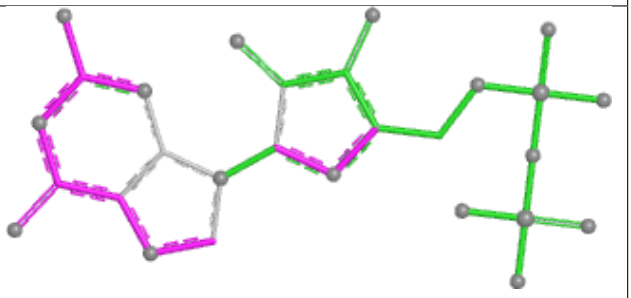


Rings

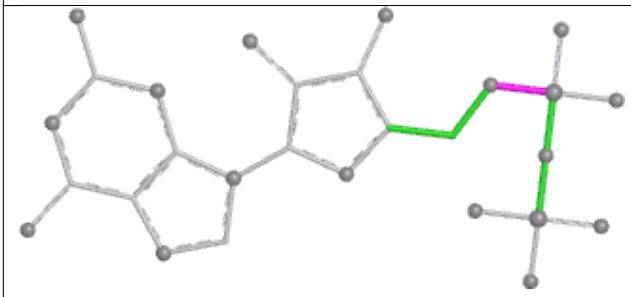
Ligand GDP EP 501



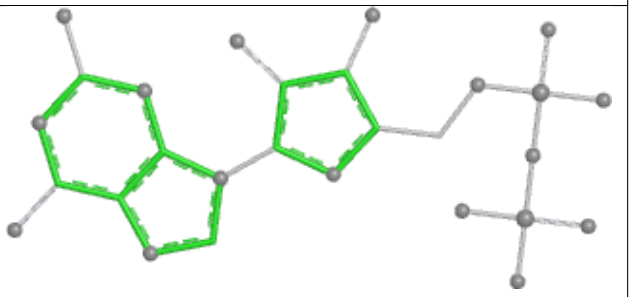
Bond lengths



Bond angles

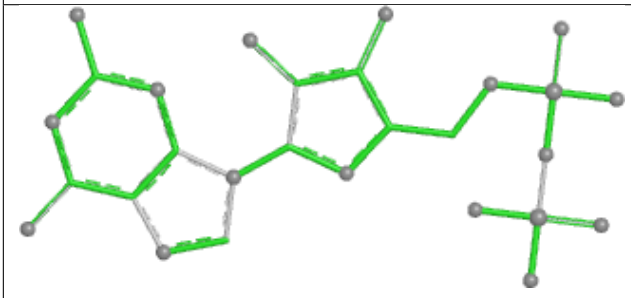


Torsions

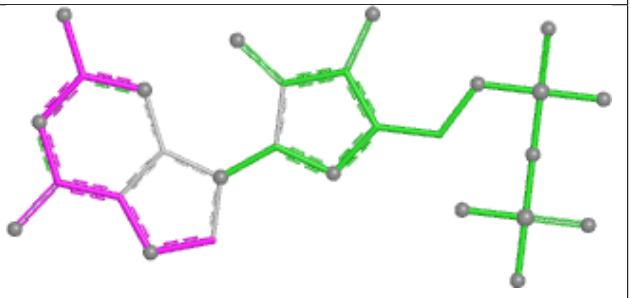


Rings

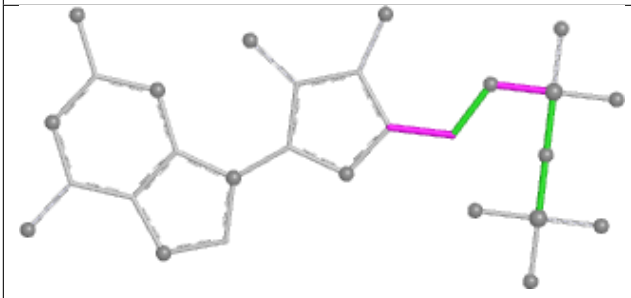
Ligand GDP DB 501



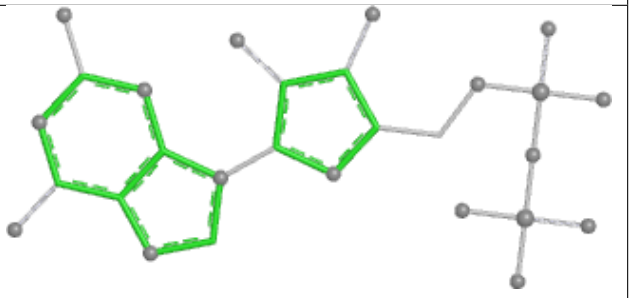
Bond lengths



Bond angles

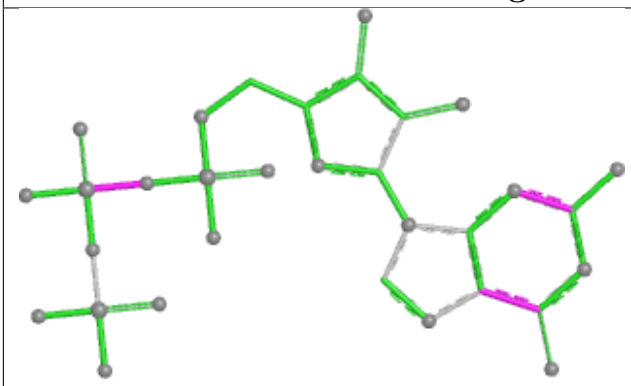


Torsions



Rings

Ligand GTP CG 501



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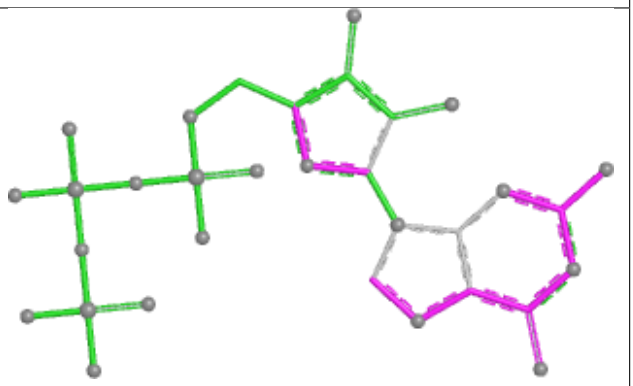
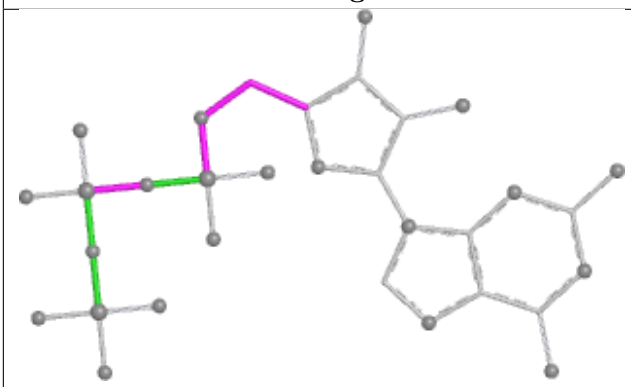
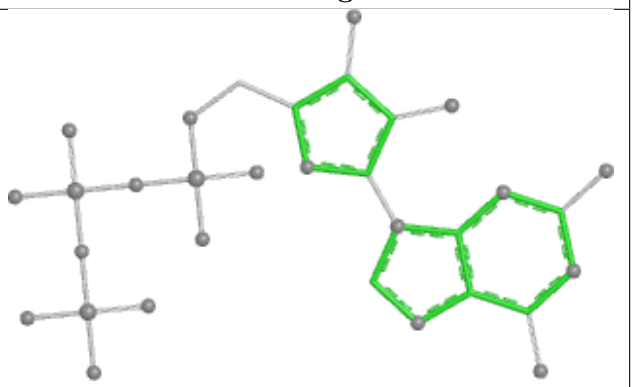


Bond angles

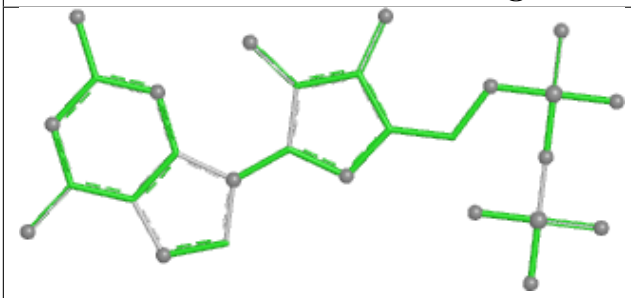


Torsions

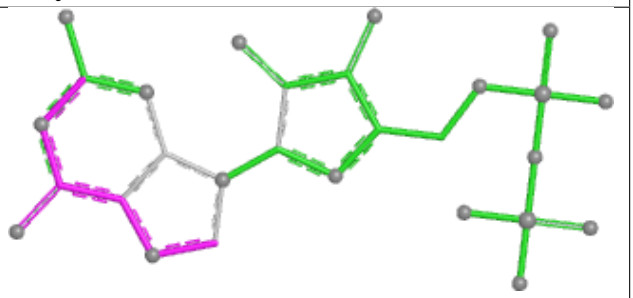


Rings

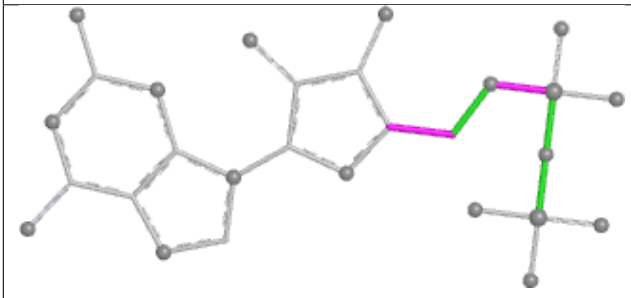
Ligand GDP QO 502



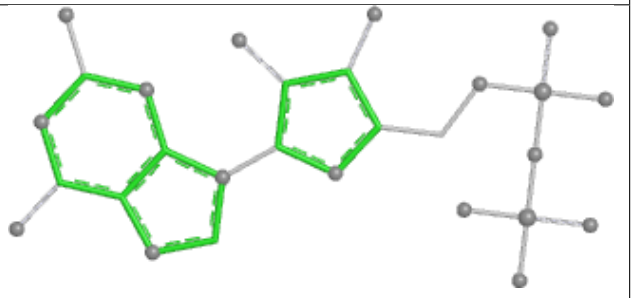
Bond lengths



Bond angles

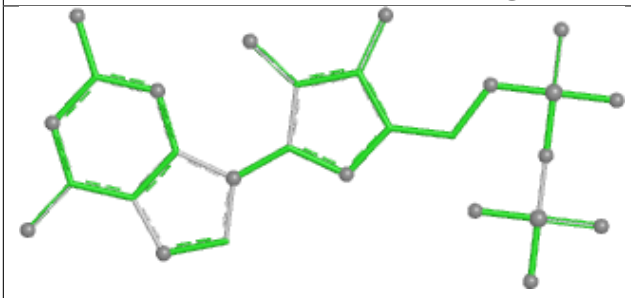


Torsions

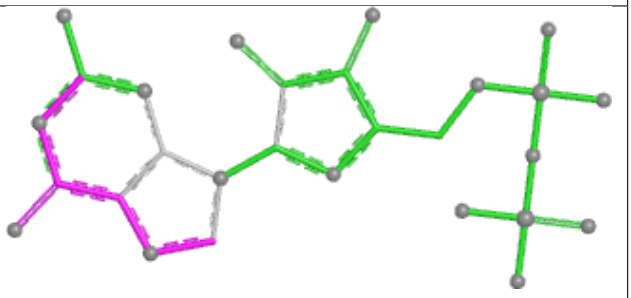


Rings

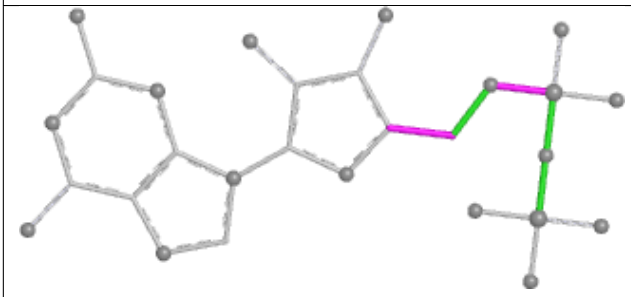
Ligand GDP HM 502



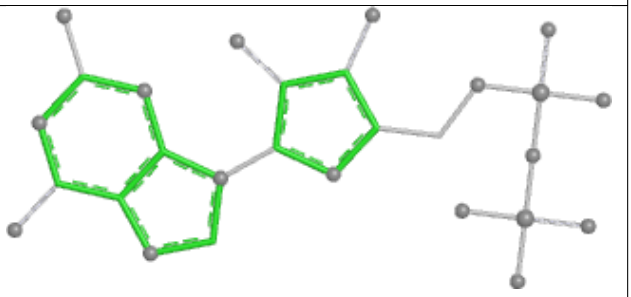
Bond lengths



Bond angles

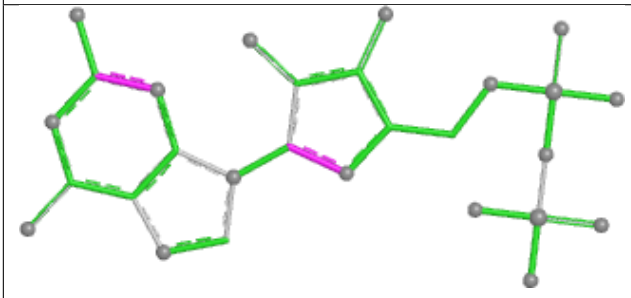


Torsions

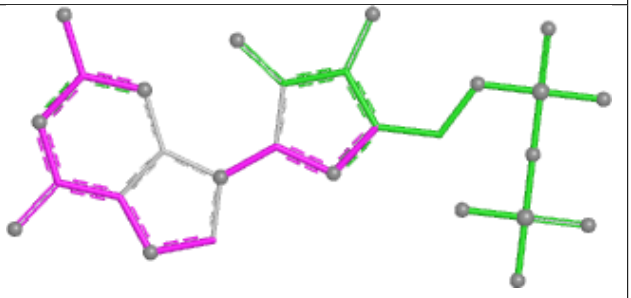


Rings

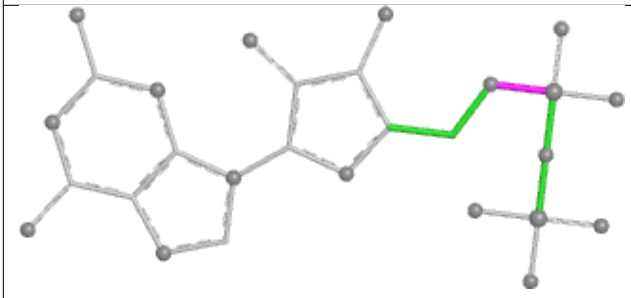
Ligand GDP RP 502



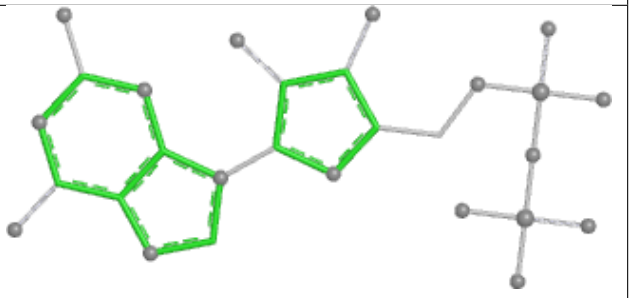
Bond lengths



Bond angles

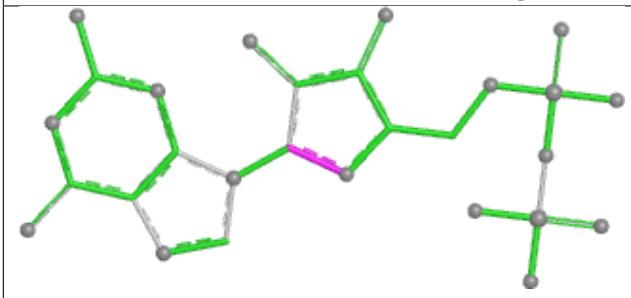


Torsions



Rings

Ligand GDP SP 502



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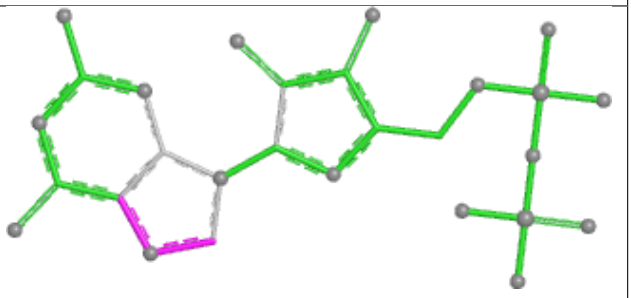
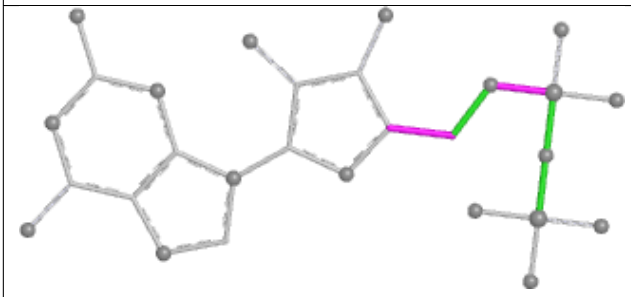
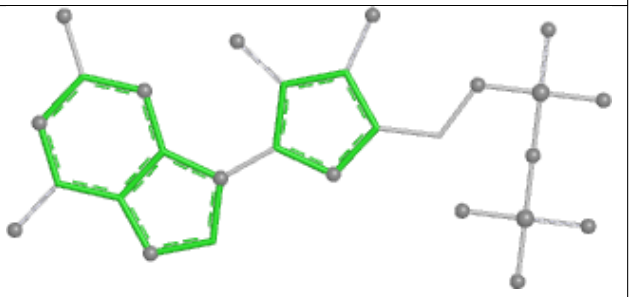


Bond angles

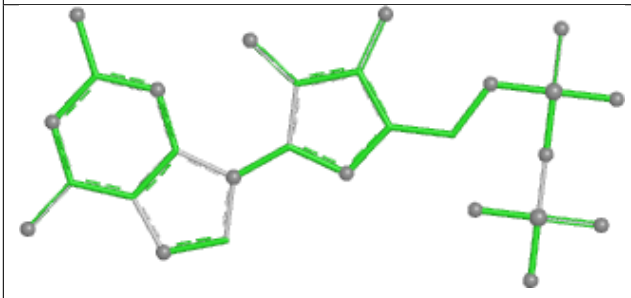


Torsions

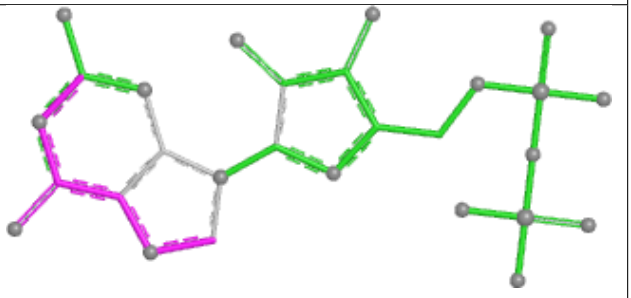


Rings

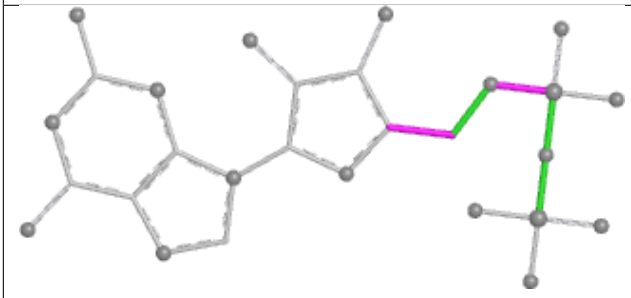
Ligand GDP KN 502



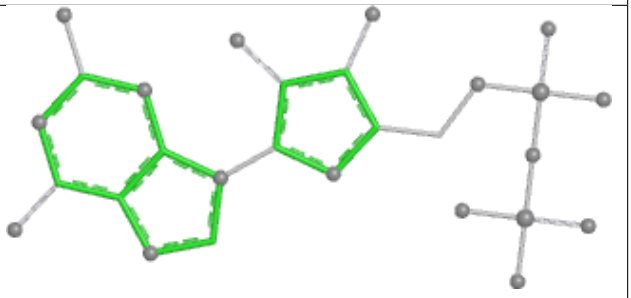
Bond lengths



Bond angles

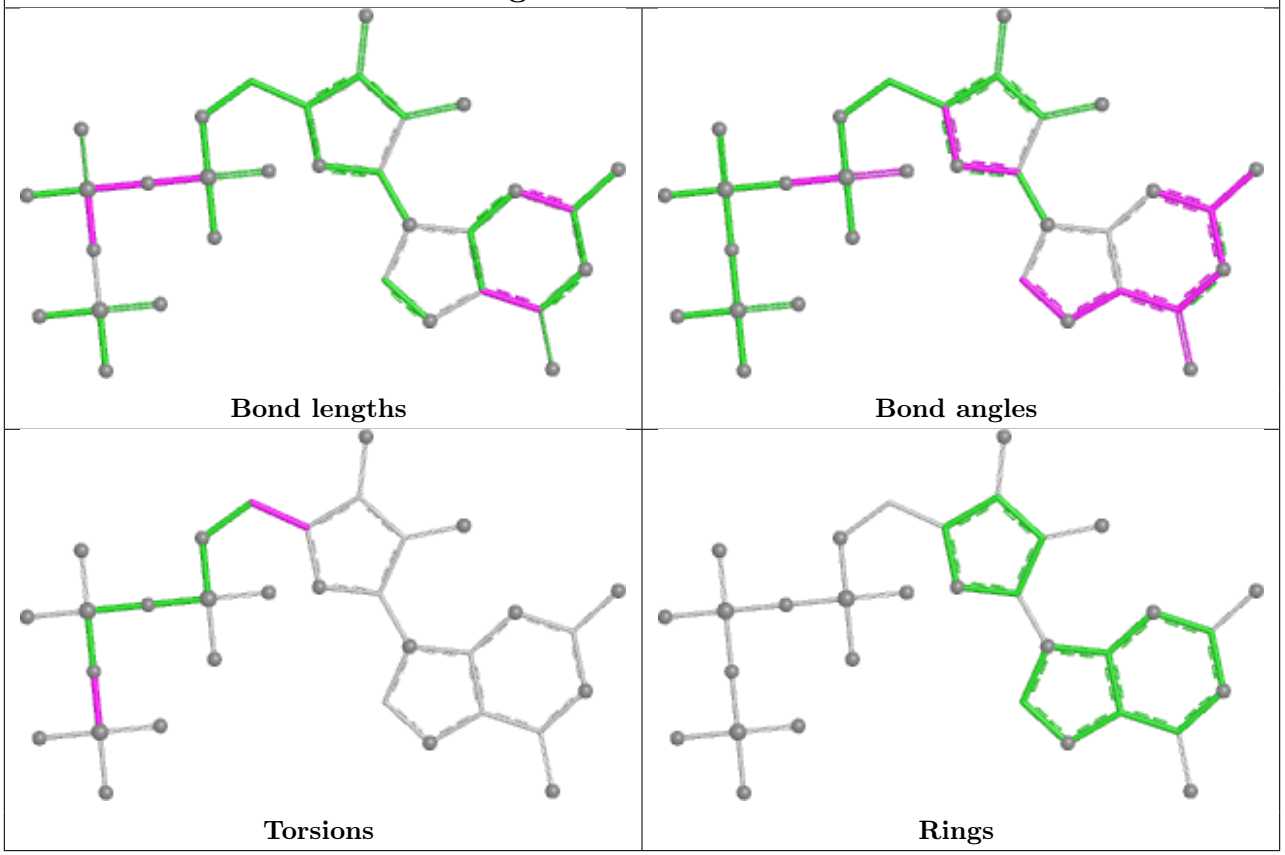


Torsions



Rings

Ligand GTP GA 501



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

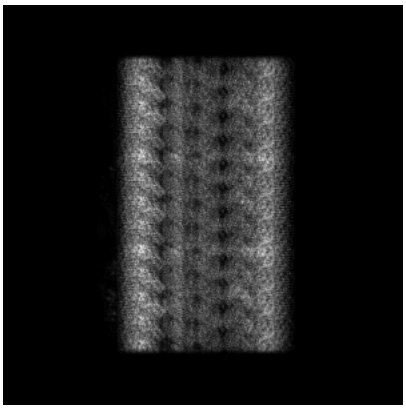
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-45802. These allow visual inspection of the internal detail of the map and identification of artifacts.

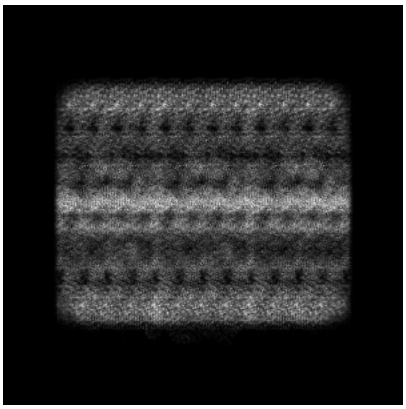
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

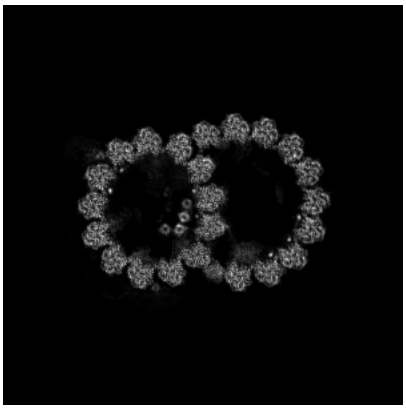
6.1.1 Primary map



X

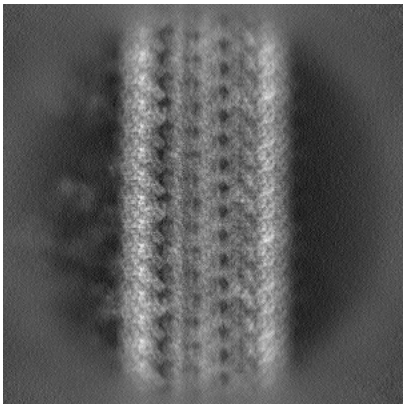


Y

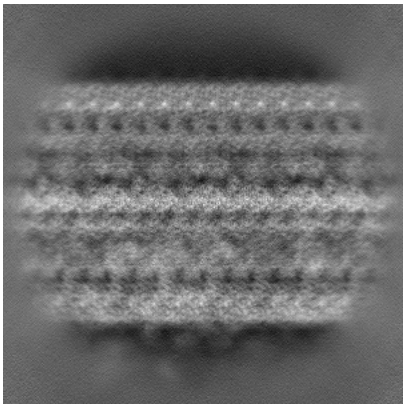


Z

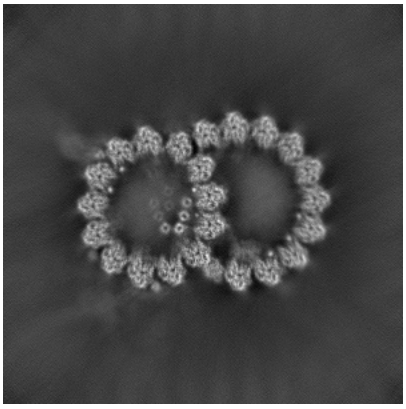
6.1.2 Raw map



X



Y

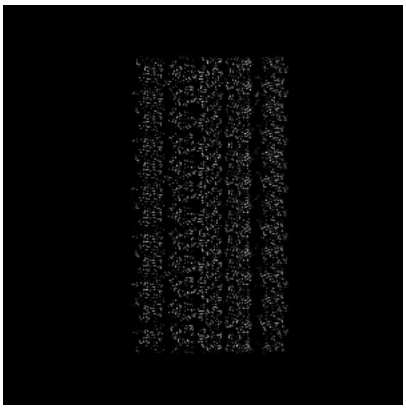


Z

The images above show the map projected in three orthogonal directions.

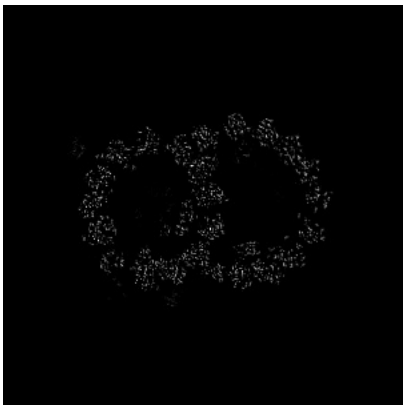
6.2 Central slices (i)

6.2.1 Primary map



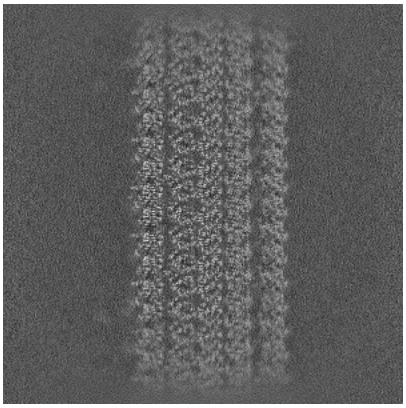
X Index: 256

Y Index: 256

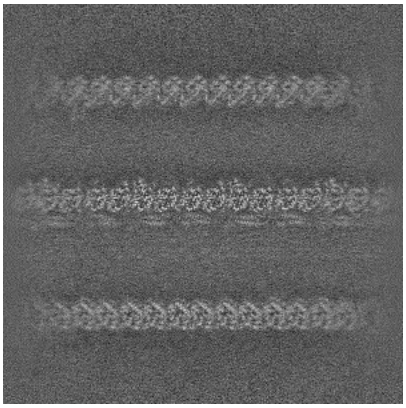


Z Index: 256

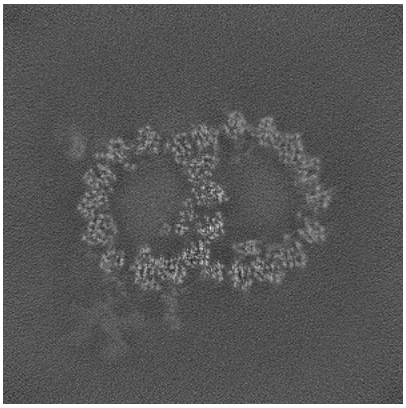
6.2.2 Raw map



X Index: 256



Y Index: 256

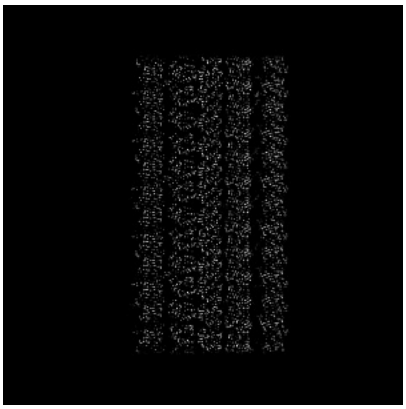


Z Index: 256

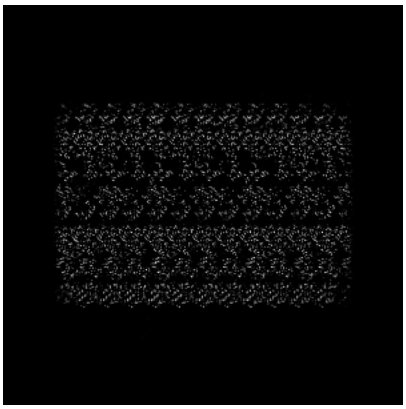
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

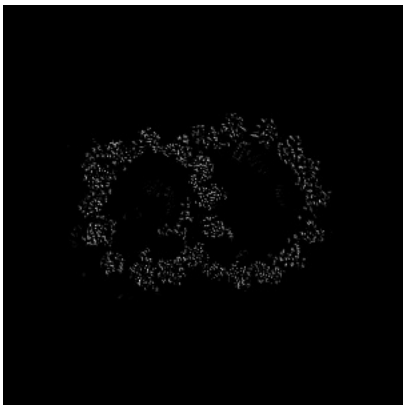
6.3.1 Primary map



X Index: 256

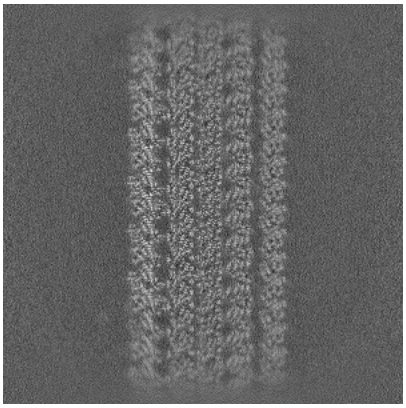


Y Index: 177

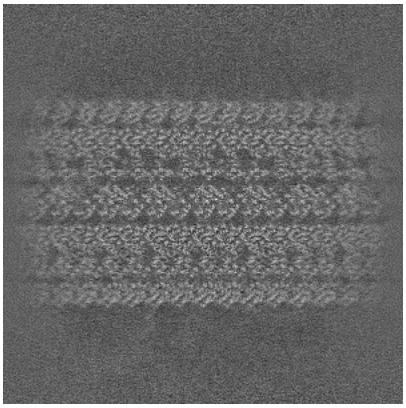


Z Index: 197

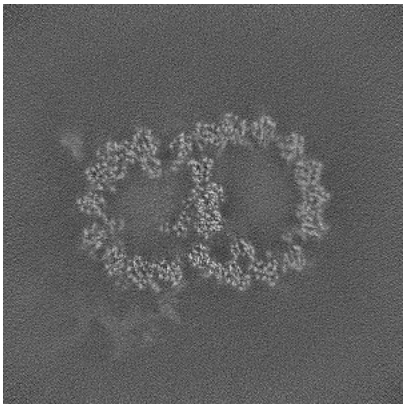
6.3.2 Raw map



X Index: 261



Y Index: 177

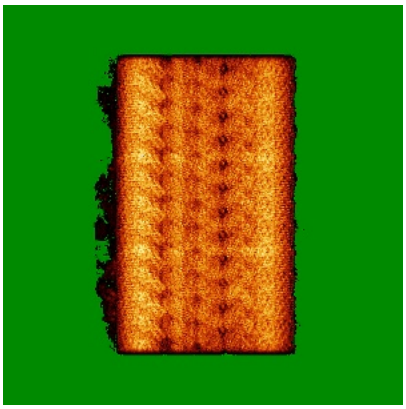


Z Index: 266

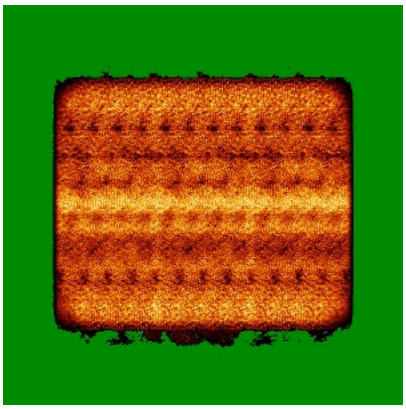
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

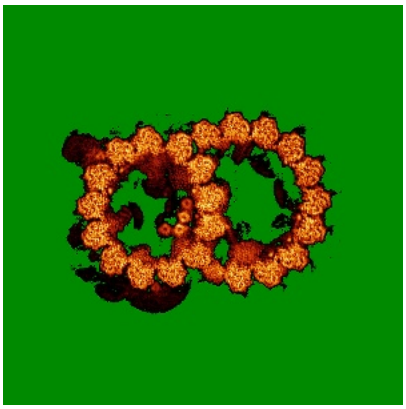
6.4.1 Primary map



X

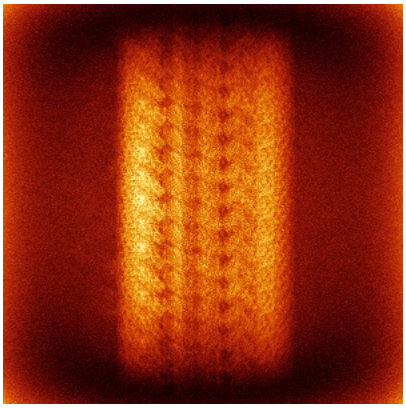


Y

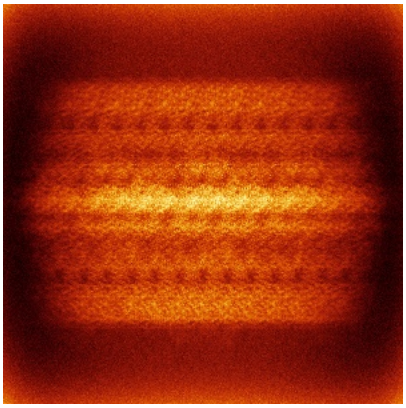


Z

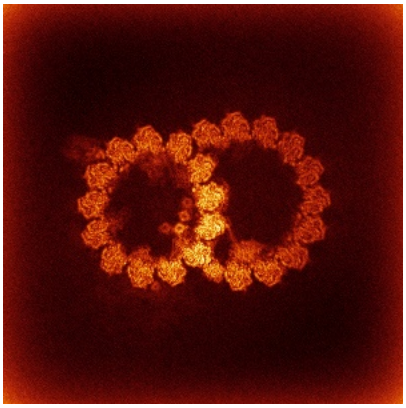
6.4.2 Raw map



X



Y

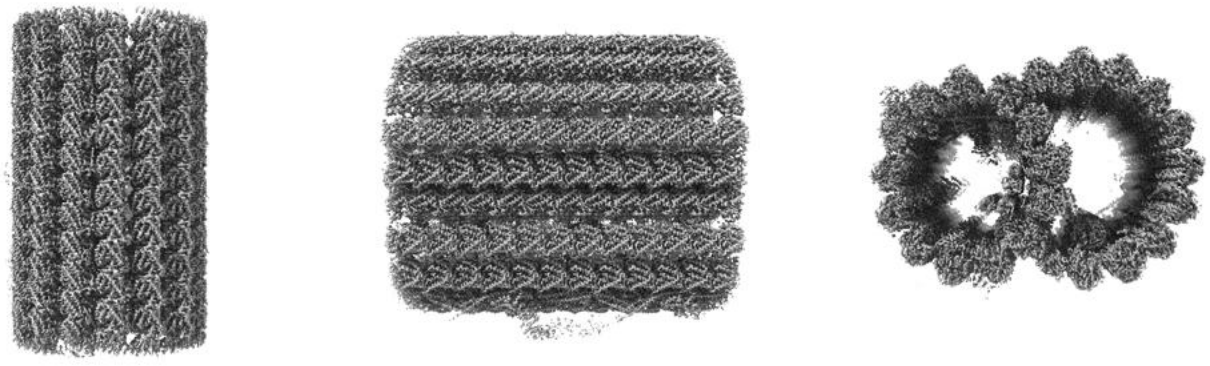


Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views (i)

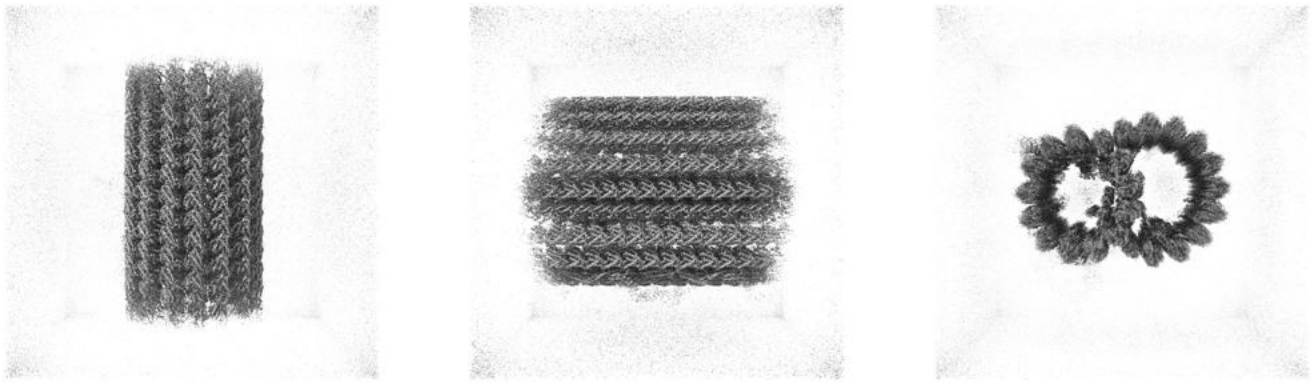
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.35. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

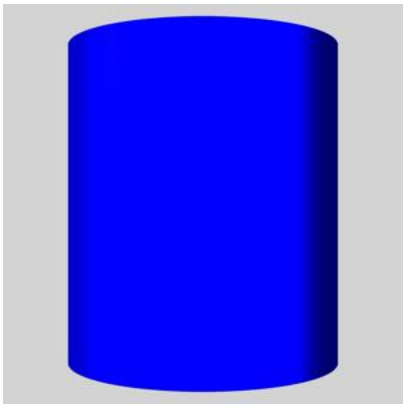
6.6 Mask visualisation

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

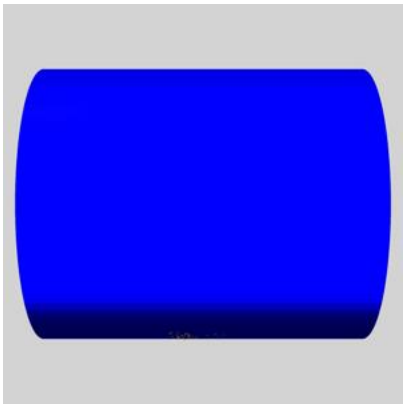
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

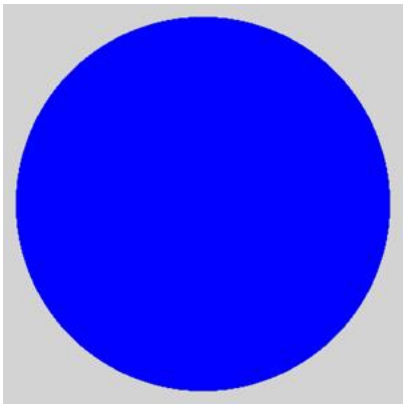
6.6.1 emd_45802_msk_1.map



X



Y

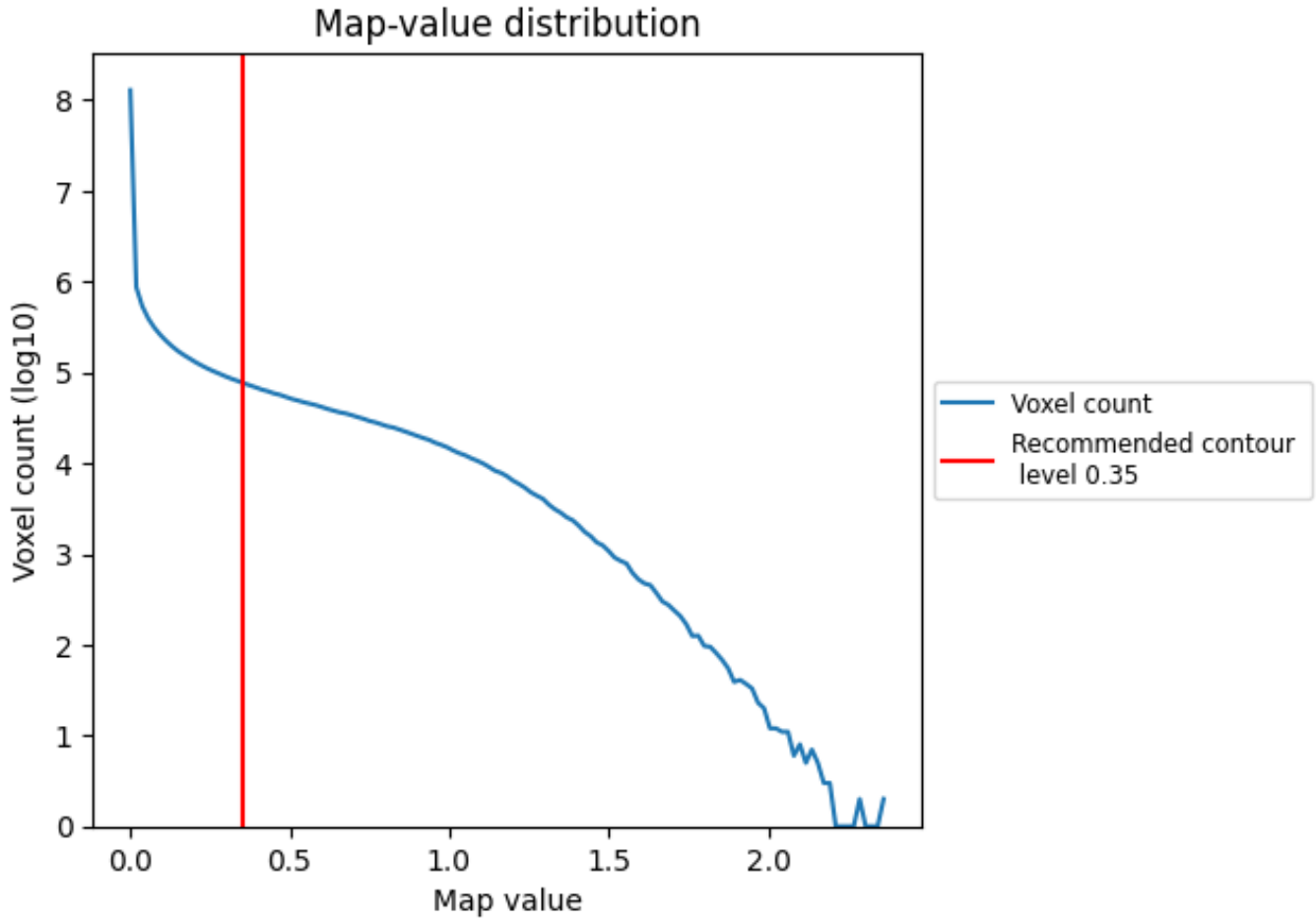


Z

7 Map analysis

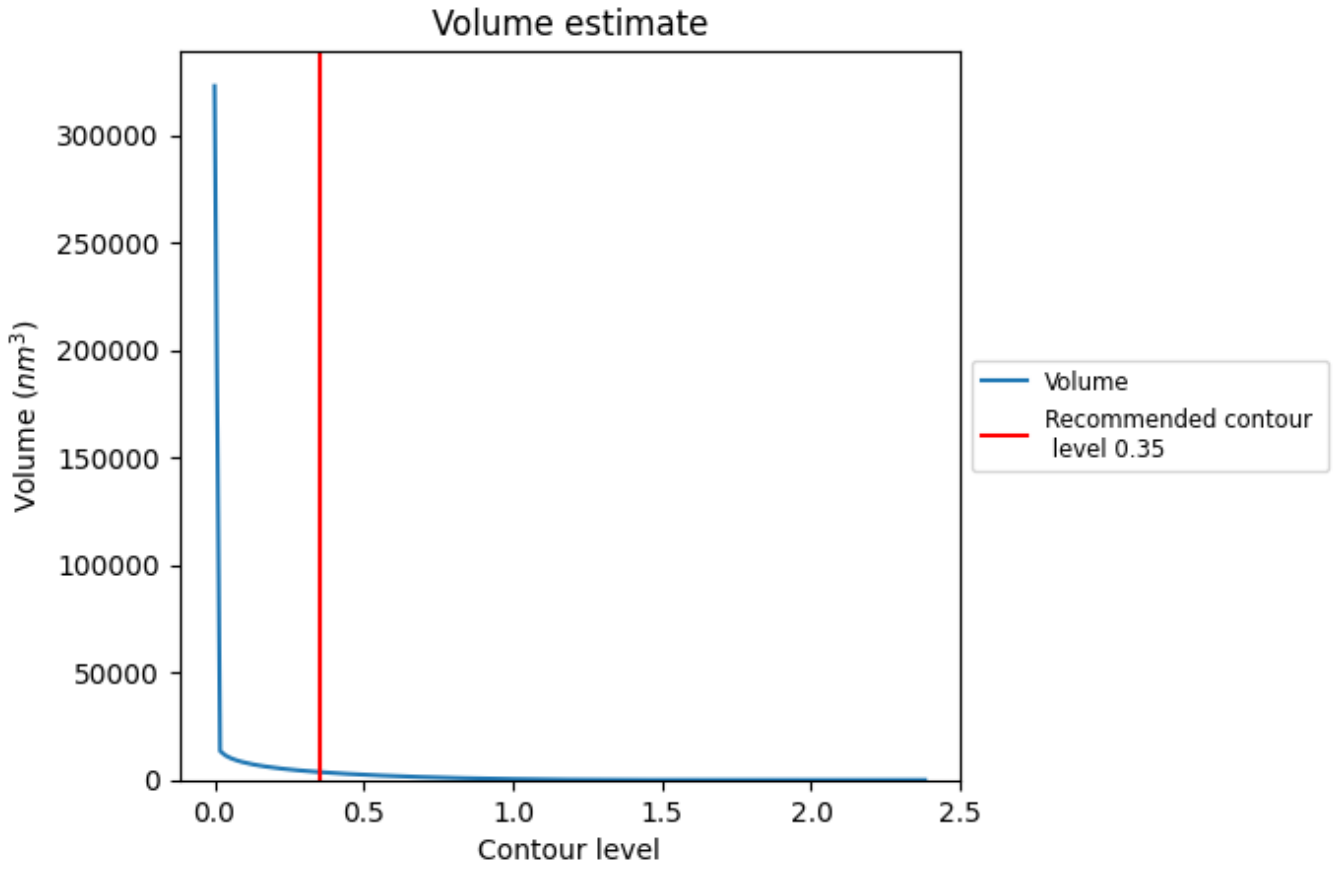
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

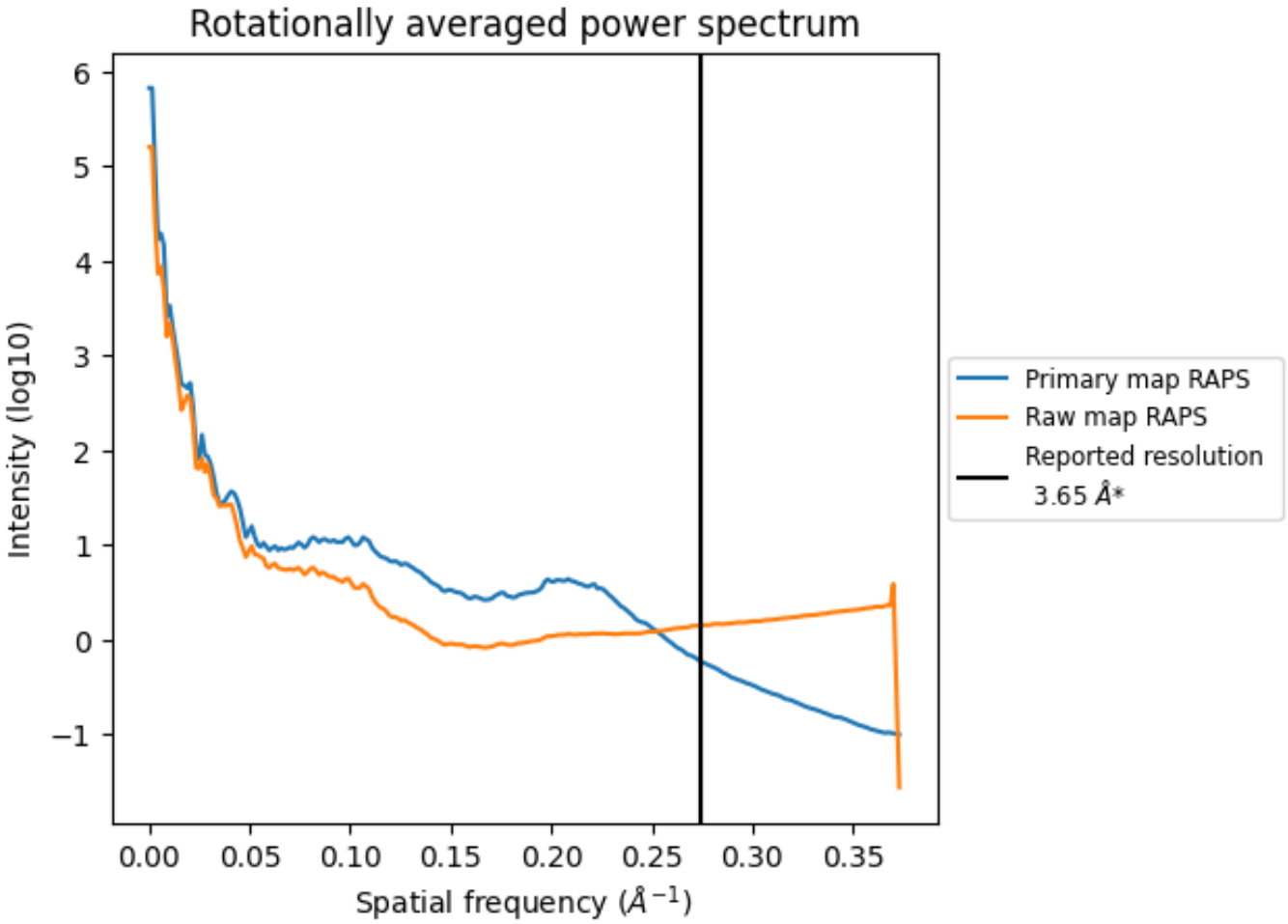
7.2 Volume estimate (i)



The volume at the recommended contour level is 3691 nm^3; this corresponds to an approximate mass of 3334 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum (i)

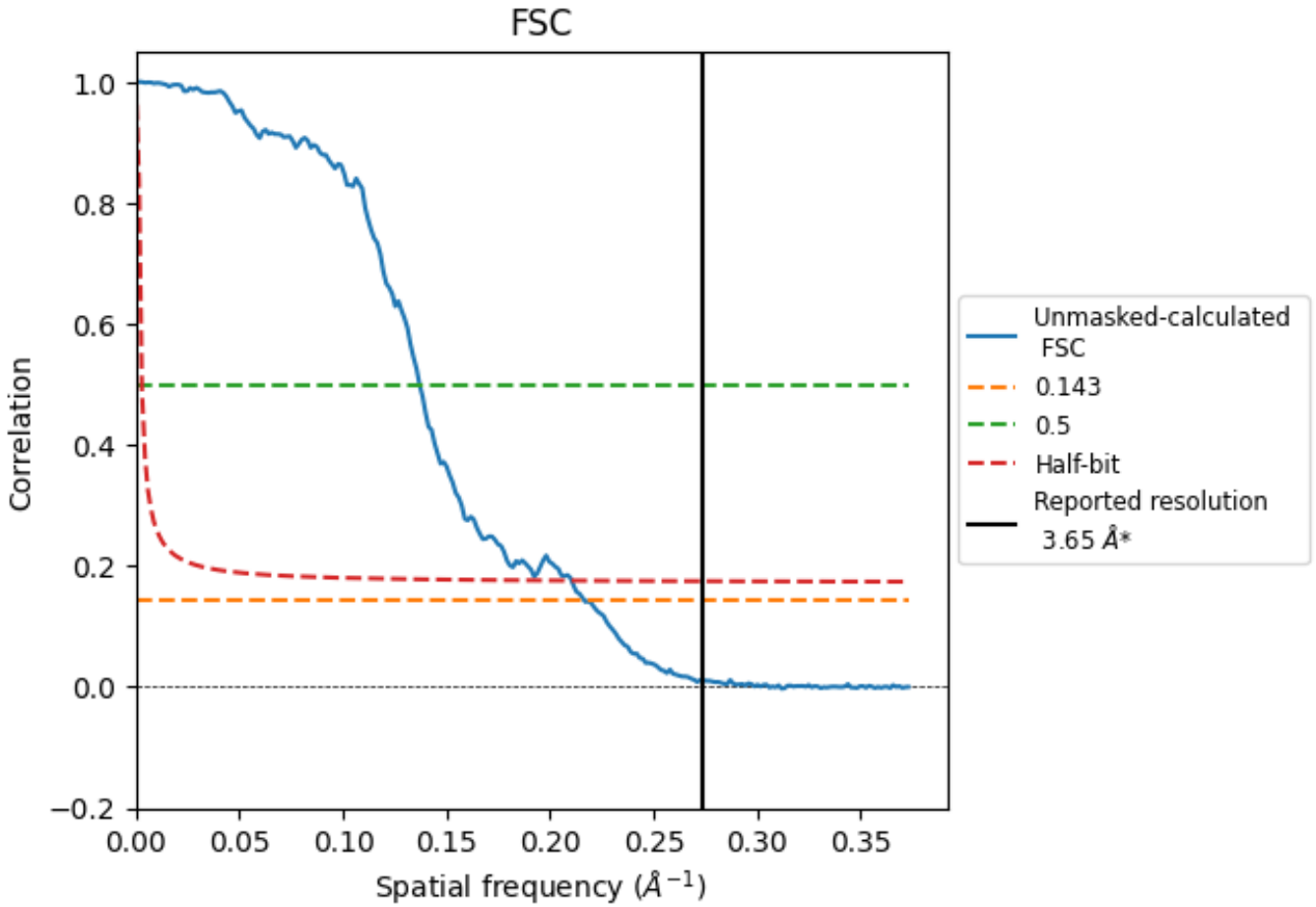


*Reported resolution corresponds to spatial frequency of 0.274 Å^{-1}

8 Fourier-Shell correlation

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.274 Å^{-1}

8.2 Resolution estimates (i)

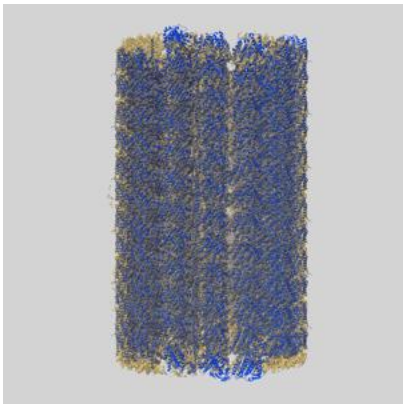
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.65	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.62	7.30	4.75

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.62 differs from the reported value 3.65 by more than 10 %

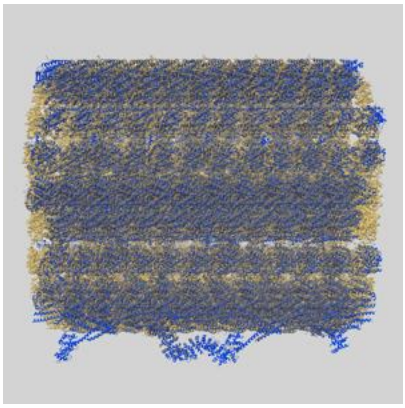
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-45802 and PDB model 9CPC. Per-residue inclusion information can be found in section 3 on page 56.

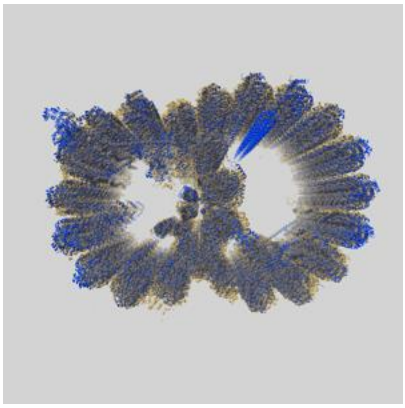
9.1 Map-model overlay



X



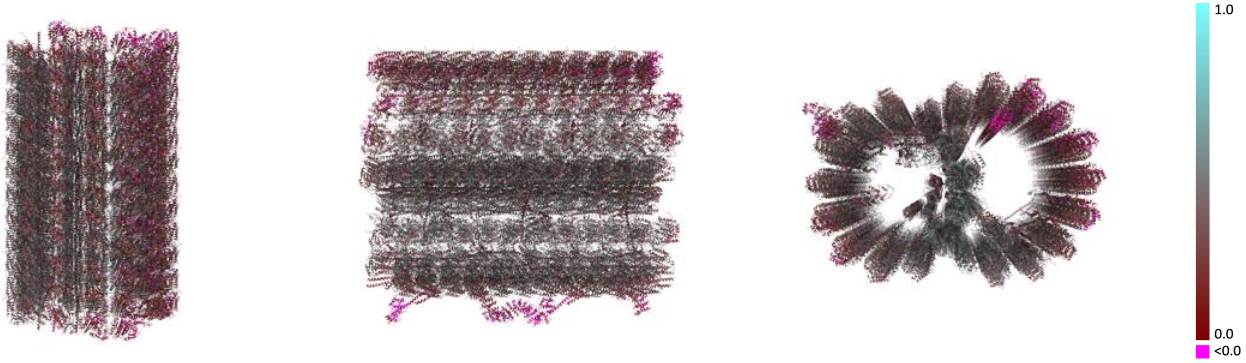
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.35 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

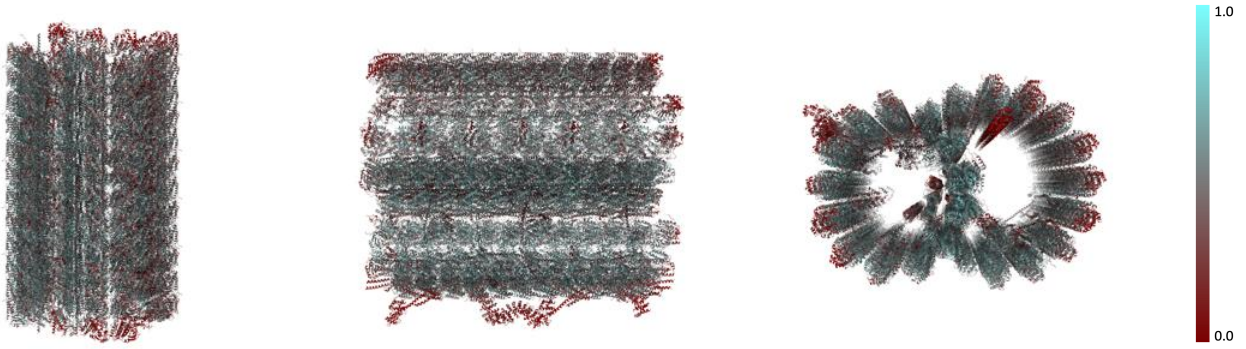
9.2 Q-score mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

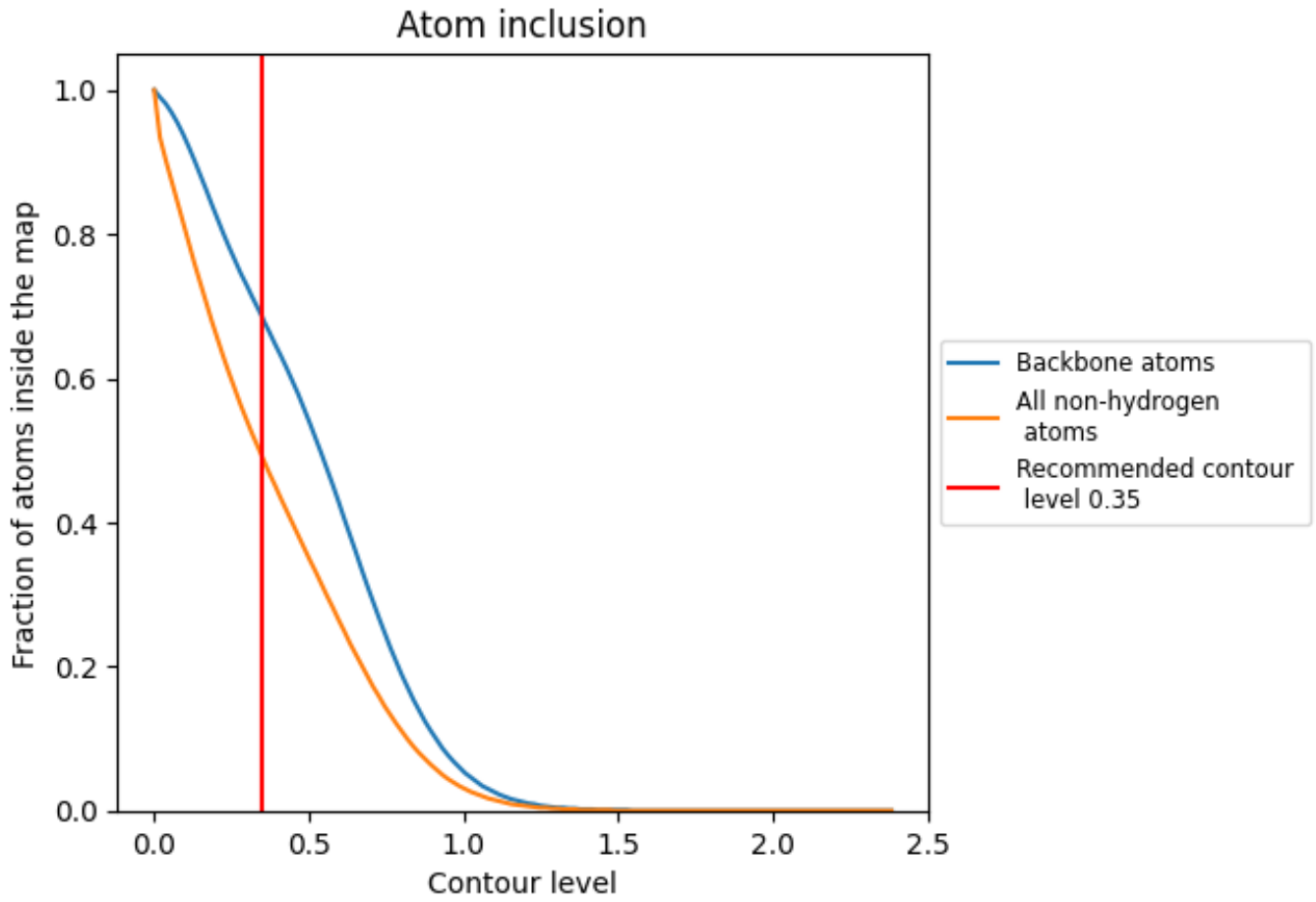
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.35).

9.4 Atom inclusion (i)



At the recommended contour level, 68% of all backbone atoms, 49% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.35) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.4900	0.3780
1A	0.0730	0.0860
1B	0.0630	0.1520
1C	0.2910	0.2880
1D	0.3500	0.2990
1F	0.0070	0.0710
1G	0.0000	-0.0110
1H	0.3100	0.3130
1I	0.1710	0.2420
1J	0.2620	0.2890
1L	0.2220	0.2360
1M	0.2940	0.2650
1N	0.1930	0.2080
1P	0.1300	0.3070
1Q	0.0110	0.1820
1S	0.5180	0.4400
1T	0.5280	0.4460
1U	0.5340	0.4410
1W	0.3090	0.2320
1X	0.2830	0.2480
1Y	0.2890	0.2670
1Z	0.2870	0.2150
2B	0.3750	0.2300
2C	0.4330	0.2440
2E	0.4630	0.3970
2F	0.4240	0.3860
2G	0.4500	0.3830
2I	0.4350	0.3860
2J	0.4120	0.3660
2K	0.4110	0.3890
2M	0.4280	0.4350
2N	0.5240	0.4490
2O	0.5070	0.4500
2P	0.5450	0.4500
2Q	0.5370	0.4550

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Chain	Atom inclusion	Q-score
2R	0.1760	0.3480
2T	0.5600	0.4740
2U	0.5580	0.4550
2V	0.5540	0.4770
2W	0.5730	0.4740
2X	0.5600	0.4710
3A	0.5670	0.4520
3B	0.5620	0.4420
3C	0.5640	0.4650
3E	0.5440	0.4600
3F	0.5360	0.4560
3G	0.4730	0.4520
3H	0.5210	0.4400
3J	0.5240	0.4470
3K	0.5000	0.4260
3L	0.5370	0.4390
3M	0.4660	0.4220
3O	0.3050	0.3780
3P	0.3370	0.3810
3Q	0.3360	0.3640
3R	0.2840	0.3220
3T	0.2770	0.3520
3U	0.2980	0.3680
3V	0.1410	0.2510
3W	0.2030	0.3110
3Y	0.5140	0.4460
3Z	0.4790	0.4300
4A	0.1910	0.3050
4B	0.2790	0.3260
4D	0.4750	0.4210
4E	0.4810	0.3980
4F	0.4660	0.3800
4H	0.3990	0.3710
4I	0.4030	0.3690
4J	0.4010	0.3520
4K	0.0980	0.2030
4M	0.3630	0.3850
4N	0.3990	0.3680
4O	0.2340	0.2680
4P	0.1590	0.2620
4Q	0.1800	0.3250
4R	0.2890	0.3370

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Chain	Atom inclusion	Q-score
4T	0.3790	0.3560
4V	0.4440	0.3870
4W	0.3460	0.3280
4Y	0.4880	0.4110
4Z	0.5130	0.4140
5B	0.3820	0.3630
5D	0.4460	0.3890
5E	0.3090	0.2930
5G	0.0790	0.2220
5I	0.4110	0.3740
5J	0.2560	0.2900
5L	0.4270	0.3700
5N	0.3500	0.2920
5O	0.3890	0.2990
5Q	0.3820	0.3020
5R	0.4030	0.3080
5T	0.0660	0.2300
5U	0.0470	0.1580
5W	0.3770	0.3360
5X	0.3650	0.3300
5Y	0.3720	0.3050
5Z	0.3570	0.3570
6A	0.4110	0.3070
6C	0.3790	0.3170
6D	0.4490	0.3790
6F	0.0740	0.1900
6G	0.0470	0.1490
6H	0.0320	0.1080
6I	0.0790	0.1960
6J	0.0220	0.1330
6K	0.0560	0.1620
6L	0.0110	0.0900
AA	0.5760	0.4780
AB	0.5620	0.4740
AE	0.5820	0.4890
AF	0.6020	0.4800
AG	0.5920	0.4820
AH	0.5860	0.4820
AL	0.5960	0.4760
AM	0.5910	0.4810
AN	0.5810	0.4770
AO	0.5960	0.4970

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Chain	Atom inclusion	Q-score
AP	0.5780	0.4730
BA	0.5610	0.4460
BB	0.5600	0.4630
BE	0.5560	0.4510
BF	0.5780	0.4310
BG	0.5810	0.4390
BH	0.5670	0.4600
BI	0.4730	0.4150
BL	0.5320	0.4160
BM	0.5540	0.4490
BN	0.5470	0.4280
BO	0.5570	0.4580
BP	0.5680	0.4520
CA	0.5370	0.4330
CB	0.5300	0.4050
CE	0.5200	0.3900
CF	0.5390	0.4010
CG	0.5490	0.4120
CH	0.5480	0.4430
CI	0.4540	0.3620
CL	0.5000	0.3930
CM	0.5430	0.4340
CN	0.5610	0.4310
CO	0.5520	0.4350
CP	0.5510	0.4240
DA	0.5230	0.3970
DB	0.5370	0.3940
DE	0.4890	0.3530
DF	0.5150	0.3800
DG	0.5060	0.3590
DH	0.5150	0.3880
DI	0.4360	0.3410
DL	0.3490	0.2960
DM	0.5160	0.3820
DN	0.5440	0.3920
DO	0.5140	0.3600
DP	0.5280	0.3800
EA	0.5410	0.3700
EB	0.5520	0.3760
EE	0.4810	0.3210
EF	0.5380	0.3670
EG	0.5540	0.3800

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Chain	Atom inclusion	Q-score
EH	0.5610	0.4080
EI	0.4740	0.3570
EL	0.2490	0.2560
EM	0.5500	0.4020
EN	0.5480	0.3600
EO	0.5570	0.3730
EP	0.5400	0.3920
FA	0.5460	0.4140
FB	0.5470	0.4050
FE	0.4320	0.3320
FF	0.5290	0.3890
FG	0.5360	0.4010
FH	0.5220	0.3970
FI	0.4700	0.3560
FM	0.5210	0.3820
FN	0.5380	0.3840
FO	0.5550	0.3950
FP	0.5060	0.3800
GA	0.5330	0.3940
GB	0.5620	0.4110
GE	0.4500	0.3690
GF	0.5340	0.4070
GG	0.5520	0.4180
GH	0.5540	0.4280
GI	0.5260	0.4040
GM	0.5310	0.3920
GN	0.5660	0.4160
GO	0.5680	0.3990
GP	0.5380	0.3990
HA	0.5620	0.4040
HB	0.5640	0.4220
HE	0.4660	0.3820
HF	0.5480	0.4160
HG	0.5630	0.4280
HH	0.5550	0.4200
HI	0.5330	0.3960
HM	0.5470	0.4050
HN	0.5620	0.4280
HO	0.5650	0.4160
HP	0.5470	0.4160
HQ	0.4410	0.3480
IA	0.5510	0.4050

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Chain	Atom inclusion	Q-score
IB	0.5530	0.4180
IE	0.4250	0.3490
IF	0.5270	0.4150
IG	0.5460	0.4180
IH	0.5630	0.4260
II	0.5410	0.4160
IM	0.5310	0.4080
IN	0.5330	0.4130
IO	0.5530	0.4190
IP	0.5590	0.4380
IQ	0.5160	0.4010
JA	0.5480	0.4040
JB	0.5690	0.4090
JD	0.5190	0.3820
JE	0.5330	0.4000
JF	0.5510	0.4120
JG	0.5510	0.4200
JH	0.5480	0.4070
JL	0.5400	0.4000
JM	0.5780	0.4280
JN	0.5410	0.4020
JO	0.5660	0.4230
KA	0.5840	0.4490
KB	0.6030	0.4490
KD	0.5780	0.4260
KE	0.5840	0.4430
KF	0.5750	0.4410
KG	0.5810	0.4420
KH	0.5810	0.4430
KL	0.5980	0.4610
KM	0.5950	0.4330
KN	0.5780	0.4450
KO	0.5810	0.4370
KP	0.5080	0.4090
LA	0.5960	0.4730
LB	0.6310	0.4820
LD	0.6100	0.4730
LE	0.5960	0.4710
LF	0.6190	0.5070
LG	0.6170	0.5000
LH	0.6040	0.4730
LL	0.6070	0.4780

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Chain	Atom inclusion	Q-score
LM	0.6080	0.4750
LN	0.6110	0.4880
LO	0.6180	0.4830
LP	0.5880	0.4670
MA	0.6150	0.5070
MB	0.6100	0.4820
MD	0.5980	0.4810
ME	0.6050	0.4790
MF	0.6350	0.5100
MG	0.6300	0.5130
MH	0.6150	0.5060
ML	0.6240	0.4920
MM	0.6040	0.4750
MN	0.6130	0.4920
MO	0.6250	0.5070
MP	0.6050	0.4720
NA	0.5090	0.3890
NB	0.5210	0.3810
ND	0.4920	0.3850
NE	0.4920	0.3830
NF	0.5050	0.3840
NG	0.5000	0.3810
NH	0.4870	0.3700
NL	0.4920	0.3800
NM	0.5140	0.3850
NN	0.4920	0.3810
NO	0.4950	0.3800
NP	0.4230	0.3260
OA	0.5140	0.3740
OB	0.5190	0.3580
OD	0.4180	0.3120
OE	0.5060	0.3710
OF	0.5010	0.3540
OG	0.5050	0.3600
OH	0.5040	0.3830
OL	0.4930	0.3560
OM	0.5100	0.3580
ON	0.5130	0.3730
OO	0.5040	0.3670
OP	0.4400	0.3000
PA	0.4710	0.3240
PB	0.4550	0.3050

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Chain	Atom inclusion	Q-score
PD	0.2750	0.1850
PE	0.4470	0.2930
PF	0.4570	0.2930
PG	0.4600	0.2910
PH	0.4440	0.2930
PL	0.4270	0.2790
PM	0.4440	0.2990
PN	0.4790	0.3150
PO	0.4370	0.2890
PP	0.3980	0.2380
QA	0.4210	0.2830
QB	0.4740	0.3250
QE	0.3910	0.2390
QF	0.4510	0.2710
QG	0.4450	0.2660
QH	0.4010	0.2650
QL	0.3510	0.2060
QM	0.4210	0.2700
QN	0.4300	0.2770
QO	0.4100	0.2730
QP	0.4150	0.2620
RA	0.4340	0.3000
RB	0.4440	0.2870
RE	0.3900	0.2440
RF	0.4510	0.2740
RG	0.4580	0.2840
RH	0.4230	0.2820
RI	0.1670	0.1800
RL	0.3030	0.2020
RM	0.4270	0.2730
RN	0.4430	0.2920
RO	0.4390	0.3000
RP	0.3860	0.2420
SA	0.4680	0.3240
SB	0.4620	0.3120
SE	0.4080	0.2640
SF	0.4500	0.2920
SG	0.4690	0.3070
SH	0.4600	0.3160
SI	0.2480	0.2280
SL	0.2910	0.2130
SM	0.4470	0.2910

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Chain	Atom inclusion	Q-score
SN	0.4660	0.2990
SO	0.5010	0.3430
SP	0.4280	0.2870
TA	0.4800	0.3310
TB	0.4860	0.3400
TE	0.4050	0.2780
TF	0.4680	0.3230
TG	0.4760	0.3270
TH	0.5110	0.3640
TI	0.3740	0.3020
TL	0.2390	0.2220
TM	0.4740	0.3270
TN	0.5090	0.3290
TO	0.5200	0.3530
TP	0.4860	0.3390
UA	0.4940	0.3600
UB	0.5000	0.3570
UE	0.4290	0.3000
UF	0.4930	0.3790
UG	0.4750	0.3500
UH	0.5060	0.3800
UI	0.4810	0.3670
UM	0.4780	0.3390
UN	0.4950	0.3340
UO	0.5300	0.3640
UP	0.5190	0.3870
VA	0.5230	0.4090
VB	0.5440	0.4240
VF	0.5070	0.4030
VG	0.5510	0.4280
VH	0.5380	0.4200
VI	0.5300	0.4260
VJ	0.5150	0.4000
VN	0.5460	0.4230
VO	0.5430	0.4090
VP	0.5310	0.3970
VQ	0.5380	0.4150
WA	0.5270	0.4180
WB	0.5580	0.4260
WE	0.5240	0.4130
WF	0.5610	0.4330
WG	0.5570	0.4360

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Chain	Atom inclusion	Q-score
WH	0.5430	0.4290
WI	0.5440	0.4330
WM	0.5670	0.4560
WN	0.5700	0.4460
WO	0.5420	0.4090
WP	0.5590	0.4400
WQ	0.4940	0.3860