wwPDB EM Validation Summary Report ⓘ

Nov 3, 2025 – 04:04 pm GMT

PDB ID	:	9S3G / pdb_00009s3g
EMDB ID	:	EMD-54537
Title	:	State 1 MAP3 RNA Pol II activated elongation complex with SETD2 and upstream hexasome
Authors	:	Walshe, J.L.; Ochmann, M.; Dienemann, C.; Cramer, P.
Deposited on	:	2025-07-24
Resolution	:	6.40 Å(reported)

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

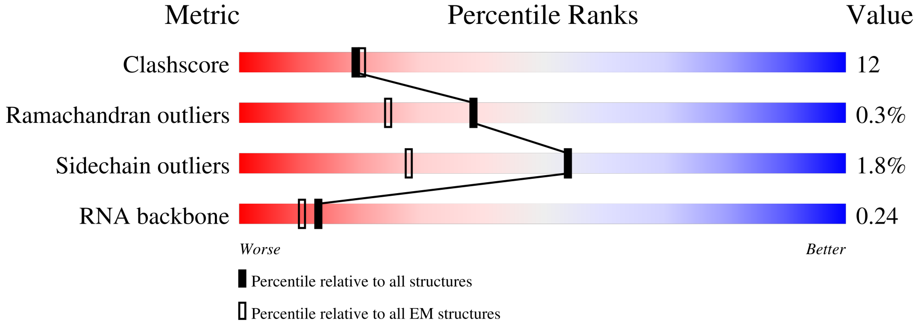
EMDB validation analysis	:	0.0.1.dev129
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.46

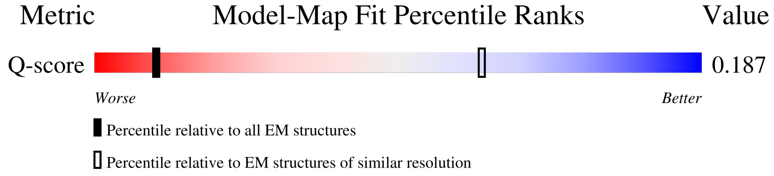
1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 6.40 Å.

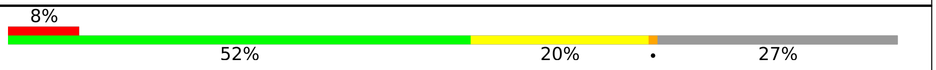
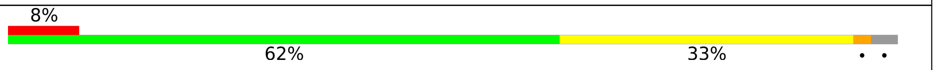
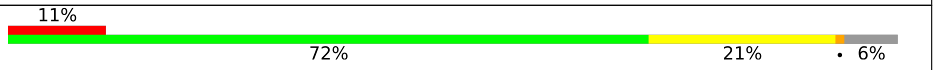
Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.





Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	544 (5.90 - 6.90)

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	A	1970	
2	B	1174	
3	C	275	

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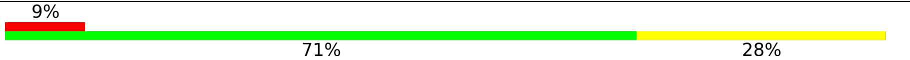
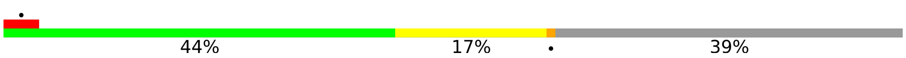
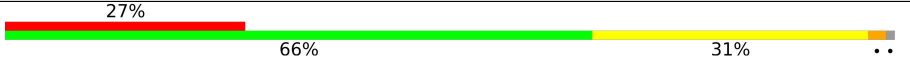
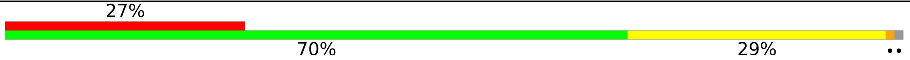
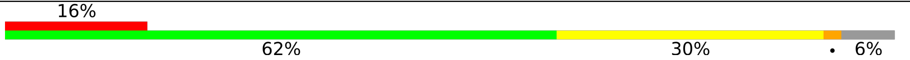
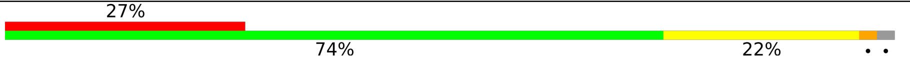
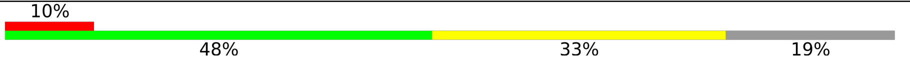
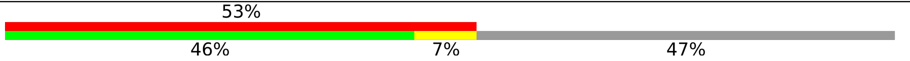
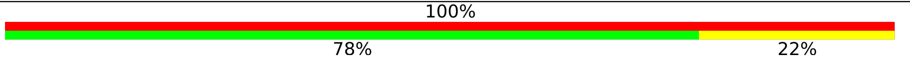
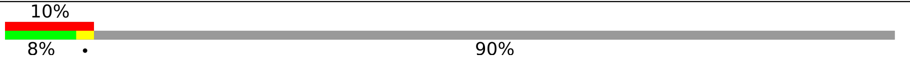
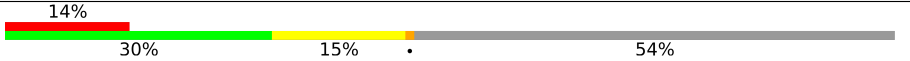
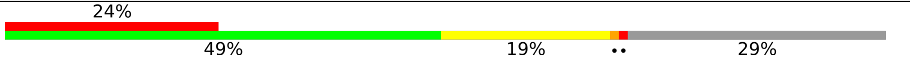
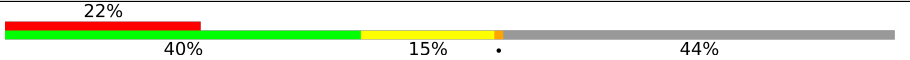
Mol	Chain	Length	Quality of chain
4	D	142	
5	E	210	
6	F	127	
7	G	172	
8	H	150	
9	I	125	
10	J	67	
11	K	117	
12	L	58	
13	M	1729	
14	N	184	
15	O	1133	
16	P	21	
17	Q	1179	
18	R	713	
19	S	304	
20	T	184	
21	U	666	
22	V	531	
23	W	305	
24	X	531	
25	Y	121	
26	Z	1087	
27	a	136	
27	e	136	

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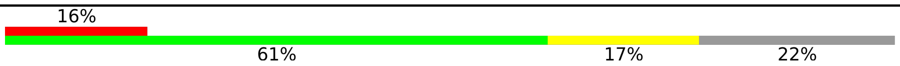
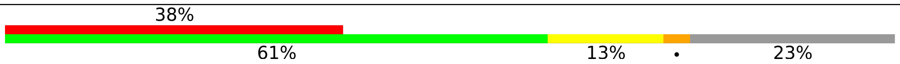
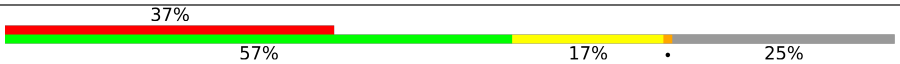
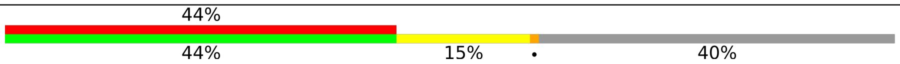
Mol	Chain	Length	Quality of chain
28	b	103	
28	f	103	
29	g	135	
30	h	126	
31	j	1049	
32	k	709	

2 Entry composition

There are 34 unique types of molecules in this entry. The entry contains 75297 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 DNA-directed RNA polymerase subunit.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	1444	11455	7198	2046	2137	74	0	0

- Molecule 2 is a protein called DNA-directed RNA polymerase subunit beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	1136	9088	5745	1597	1682	64	0	0

- Molecule 3 is a protein called DNA-directed RNA polymerase II subunit RPB3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	258	2072	1300	356	410	6	0	0

- Molecule 4 is a protein called RNA polymerase II subunit D.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D	126	1014	634	170	206	4	0	0

- Molecule 5 is a protein called DNA-directed RNA polymerase II subunit E.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	E	209	1721	1089	300	324	8	0	0

- Molecule 6 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	F	78	627	401	106	115	5	0	0

- Molecule 7 is a protein called DNA-directed RNA polymerase II subunit RPB7.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	G	171	Total	C	N	O	S	0	0
			1343	871	217	247	8		

- Molecule 8 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC3.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	H	149	Total	C	N	O	S	0	0
			1198	759	195	239	5		

- Molecule 9 is a protein called DNA-directed RNA polymerase II subunit RPB9.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	I	117	Total	C	N	O	S	0	0
			950	587	169	183	11		

- Molecule 10 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC5.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	J	66	Total	C	N	O	S	0	0
			524	339	88	91	6		

- Molecule 11 is a protein called DNA-directed RNA polymerase II subunit RPB11-a.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	K	115	Total	C	N	O	S	0	0
			920	593	152	173	2		

- Molecule 12 is a protein called RNA polymerase II subunit K.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	L	47	Total	C	N	O	S	0	0
			398	246	77	69	6		

- Molecule 13 is a protein called Transcription elongation factor SPT6.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	M	852	Total	C	N	O	S	0	0
			7001	4440	1219	1308	34		

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
M	-2	SER	-	expression tag	UNP Q7KZ85
M	-1	ASN	-	expression tag	UNP Q7KZ85
M	0	ALA	-	expression tag	UNP Q7KZ85

- Molecule 14 is a DNA chain called Non-template DNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
14	N	55	1130	535	197	343	55	0	0

- Molecule 15 is a protein called Histone-lysine N-methyltransferase SETD2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
15	O	152	1228	772	209	241	6	0	0

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
O	1432	SER	-	expression tag	UNP Q9BYW2
O	1433	ASN	-	expression tag	UNP Q9BYW2
O	1434	ALA	-	expression tag	UNP Q9BYW2
O	1962	LEU	PRO	variant	UNP Q9BYW2

- Molecule 16 is a RNA chain called RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
16	P	21	436	195	66	154	21	0	0

- Molecule 17 is a protein called RNA polymerase-associated protein CTR9 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
17	Q	892	7240	4587	1266	1355	32	0	0

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Q	1174	GLU	-	expression tag	UNP Q6PD62
Q	1175	ASN	-	expression tag	UNP Q6PD62
Q	1176	LEU	-	expression tag	UNP Q6PD62

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Chain	Residue	Modelled	Actual	Comment	Reference
Q	1177	TYR	-	expression tag	UNP Q6PD62
Q	1178	PHE	-	expression tag	UNP Q6PD62
Q	1179	GLN	-	expression tag	UNP Q6PD62

- Molecule 18 is a protein called RNA polymerase-associated protein RTF1 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
18	R	220	1694	1063	312	312	7	0	0

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
R	-262	SER	-	expression tag	UNP Q92541
R	-261	ASN	-	expression tag	UNP Q92541
R	-260	ALA	-	expression tag	UNP Q92541

- Molecule 19 is a protein called Transcription elongation factor A protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
19	S	99	795	484	147	158	6	0	0

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
S	-2	SER	-	expression tag	UNP P23193
S	-1	ASN	-	expression tag	UNP P23193
S	0	ALA	-	expression tag	UNP P23193

- Molecule 20 is a DNA chain called Template DNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
20	T	67	1369	645	273	384	67	0	0

- Molecule 21 is a protein called RNA polymerase-associated protein LEO1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
21	U	179	1469	919	262	282	6	0	0

- Molecule 22 is a protein called RNA polymerase II-associated factor 1 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	V	281	Total 2310	C 1461	N 390	O 447	S 12	0	0

- Molecule 23 is a protein called WD repeat-containing protein 61.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	W	305	Total 2374	C 1507	N 399	O 463	S 5	0	0

- Molecule 24 is a protein called Parafibromin.

Mol	Chain	Residues	Atoms				AltConf	Trace
24	X	53	Total 434	C 268	N 85	O 81	0	0

- Molecule 25 is a protein called Transcription elongation factor SPT4.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Y	116	Total 912	C 570	N 159	O 174	S 9	0	0

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Y	-3	GLY	-	expression tag	UNP Q4R941
Y	-2	PRO	-	expression tag	UNP Q4R941
Y	-1	GLY	-	expression tag	UNP Q4R941
Y	0	SER	-	expression tag	UNP Q4R941

- Molecule 26 is a protein called Transcription elongation factor SPT5.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	Z	498	Total 3976	C 2529	N 702	O 728	S 17	0	0

- Molecule 27 is a protein called Histone H3.2.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	a	96	Total 789	C 497	N 152	O 138	S 2	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	e	76	615	390	115	108	2	0	0

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
a	37	MET	LYS	engineered mutation	UNP Q71DI3
a	111	ALA	CYS	engineered mutation	UNP Q71DI3
e	37	MET	LYS	engineered mutation	UNP Q71DI3
e	111	ALA	CYS	engineered mutation	UNP Q71DI3

- Molecule 28 is a protein called Histone H4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
28	b	80	638	401	125	111	1	0	0
28	f	79	627	395	121	110	1	0	0

- Molecule 29 is a protein called Histone H2A type 1-B/E.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
29	g	91	710	444	141	125	0	0

There are 5 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
g	-4	SER	-	expression tag	UNP P04908
g	-3	ASN	-	expression tag	UNP P04908
g	-2	ALA	-	expression tag	UNP P04908
g	-1	PRO	-	expression tag	UNP P04908
g	0	TRP	-	expression tag	UNP P04908

- Molecule 30 is a protein called Histone H2B type 1-K.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
30	h	94	734	461	132	139	2	0	0

- Molecule 31 is a protein called FACT complex subunit SPT16.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
31	j	497	4050	2560	686	787	17	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
j	-1	SER	-	expression tag	UNP Q9Y5B9
j	0	ASN	-	expression tag	UNP Q9Y5B9

- Molecule 32 is a protein called FACT complex subunit SSRP1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
32	k	423	3446	2206	590	635	15	0	0

- Molecule 33 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
			Total	Zn	
33	A	2	2	2	0
33	B	1	1	1	0
33	C	1	1	1	0
33	I	2	2	2	0
33	J	1	1	1	0
33	L	1	1	1	0
33	Y	1	1	1	0

- Molecule 34 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

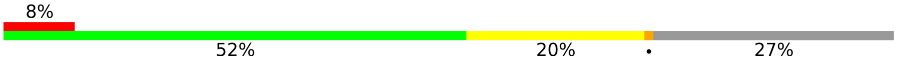
Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
34	A	1	1	1	0

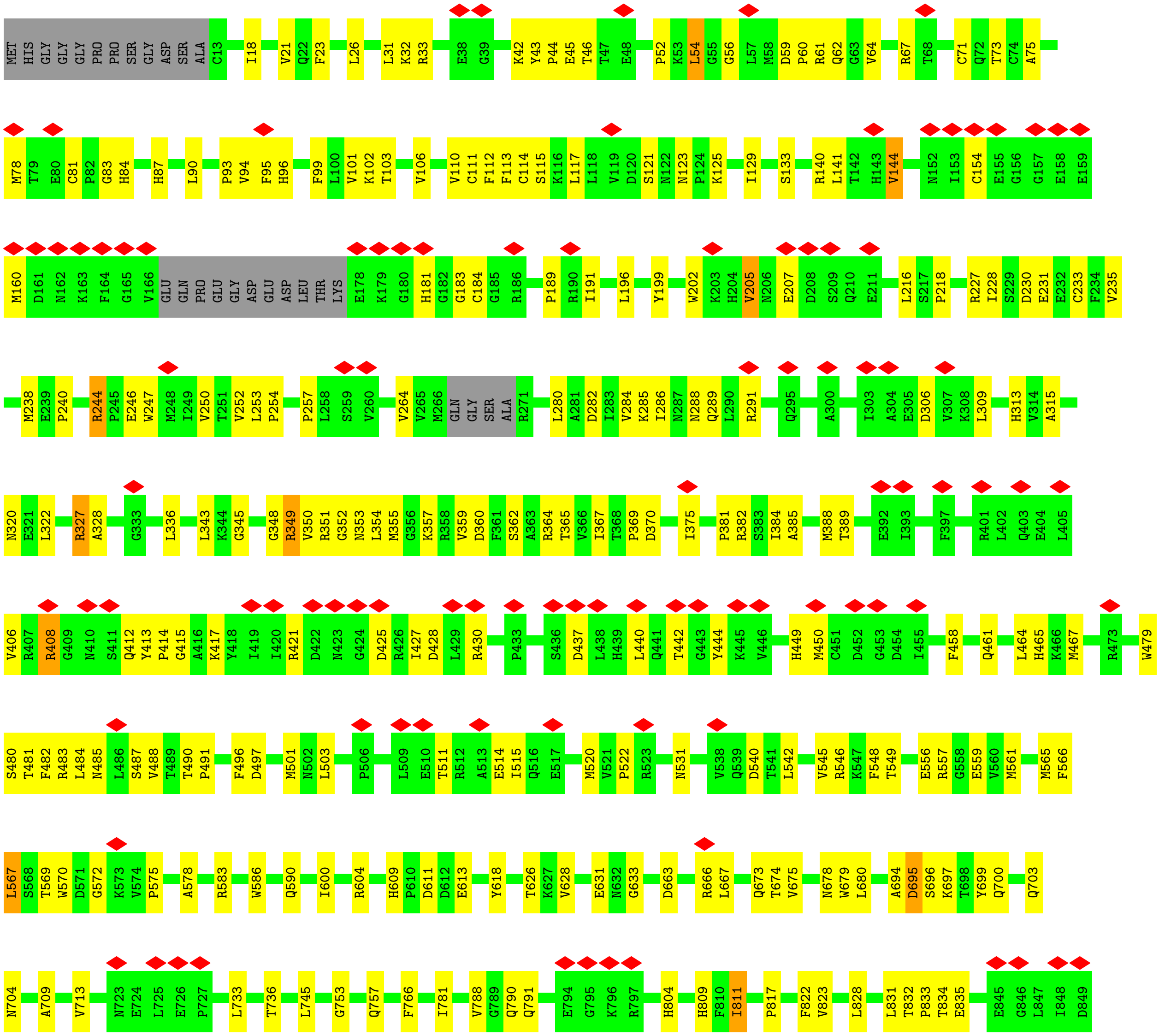
3 Residue-property plots ⓘ

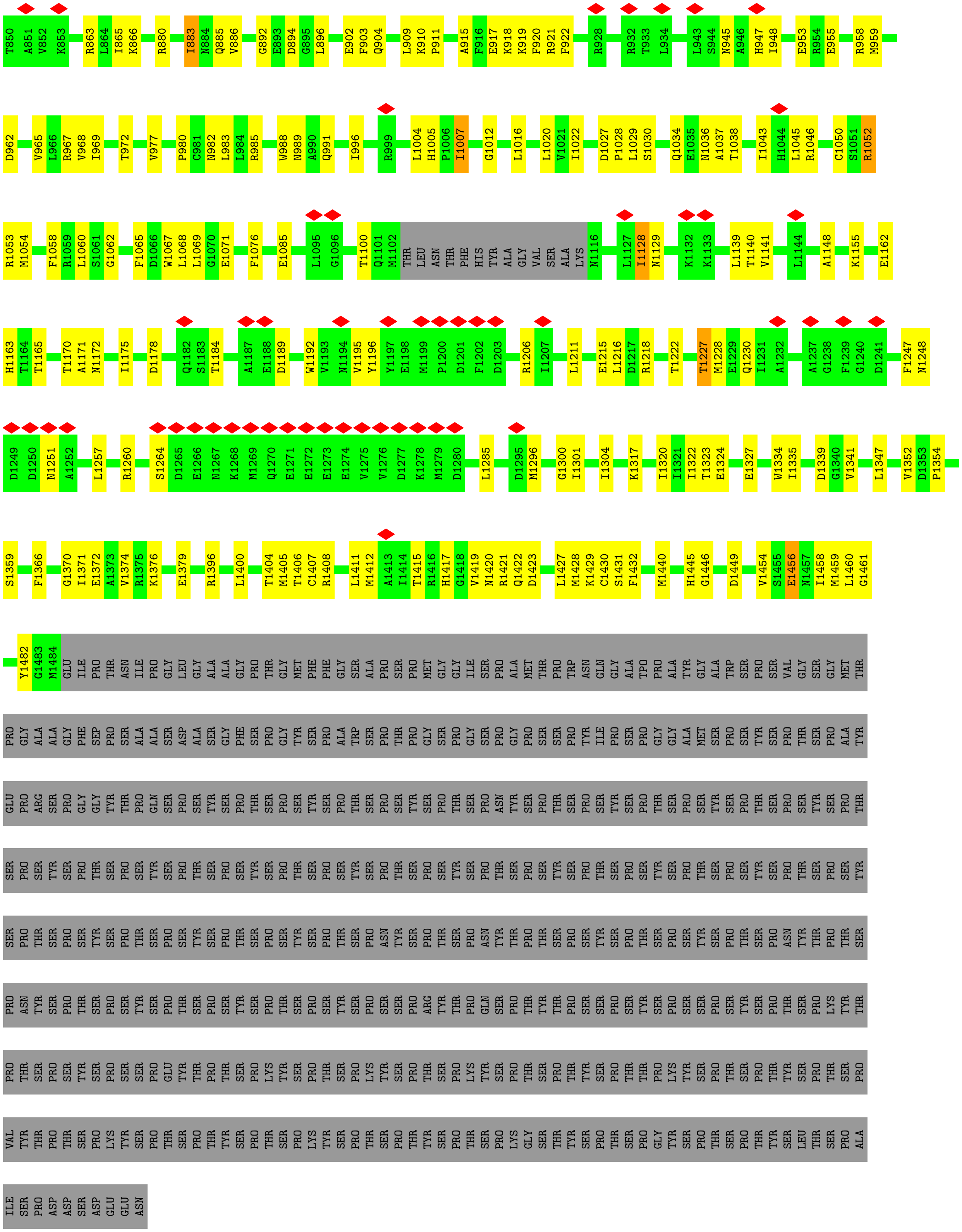
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: DNA-directed RNA polymerase subunit

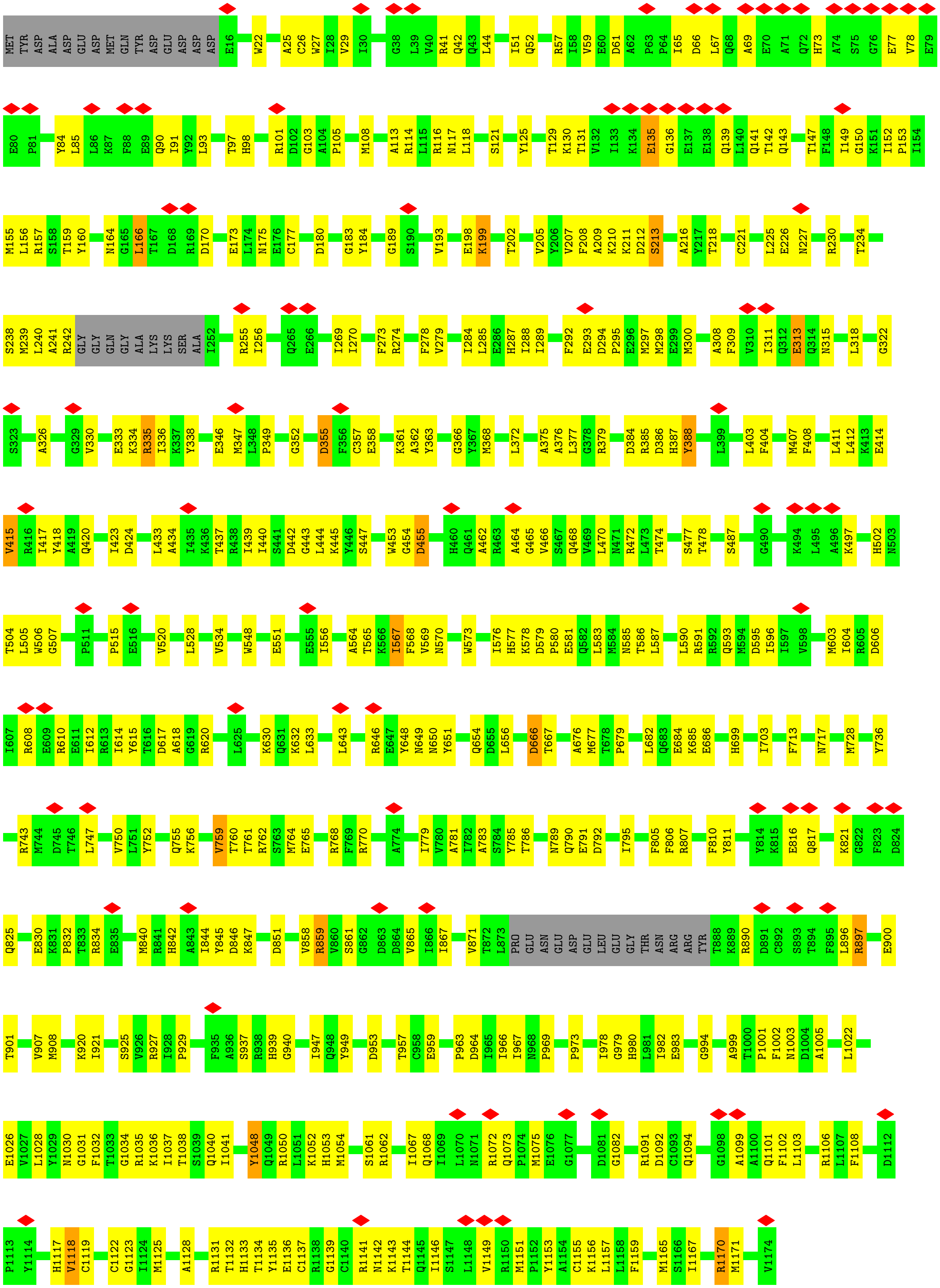
Chain A:





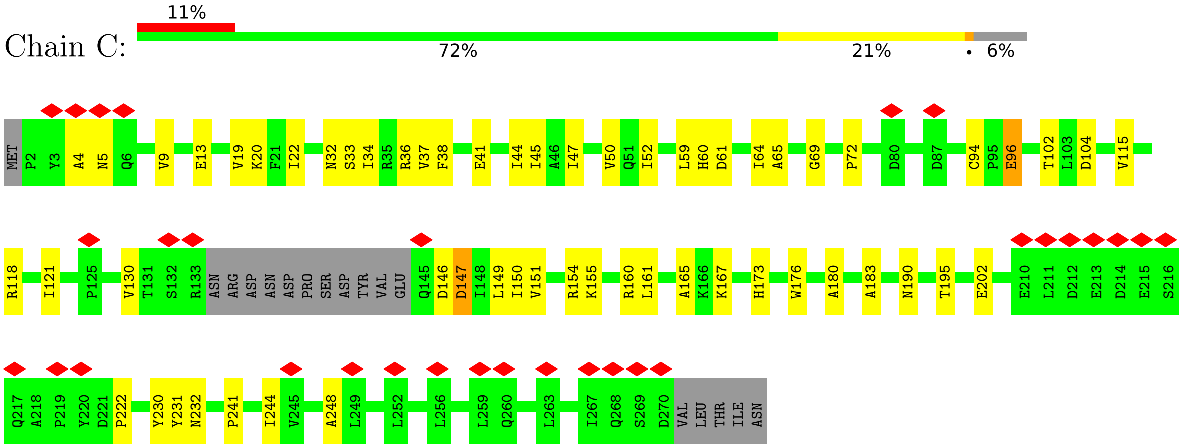


- Molecule 2: DNA-directed RNA polymerase subunit beta



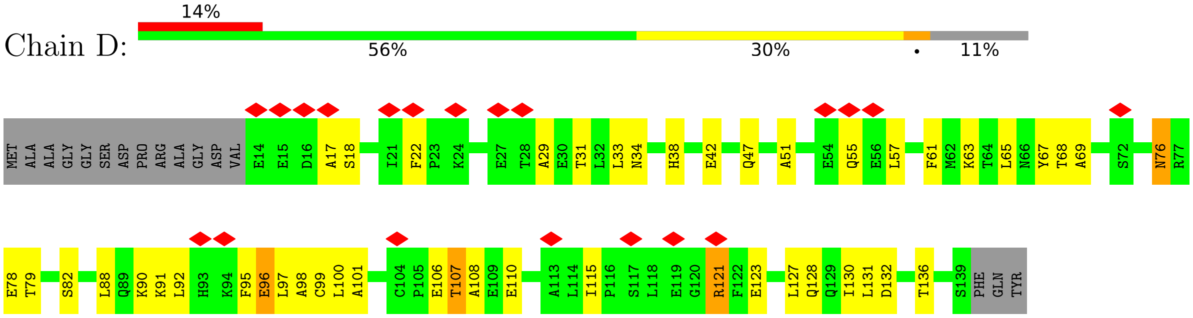
- Molecule 3: DNA-directed RNA polymerase II subunit RPB3

Chain C:



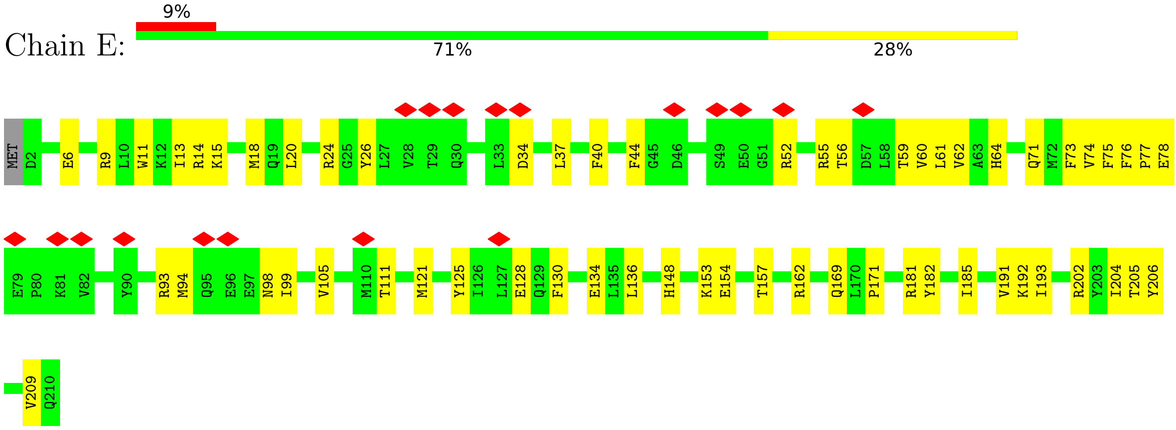
- Molecule 4: RNA polymerase II subunit D

Chain D:



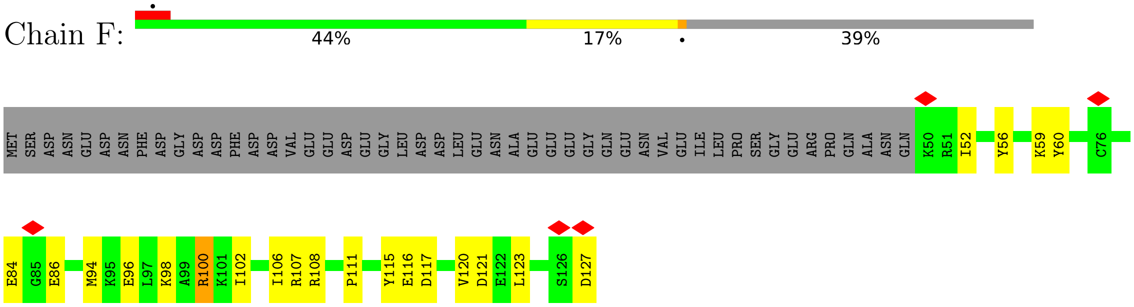
- Molecule 5: DNA-directed RNA polymerase II subunit E

Chain E:

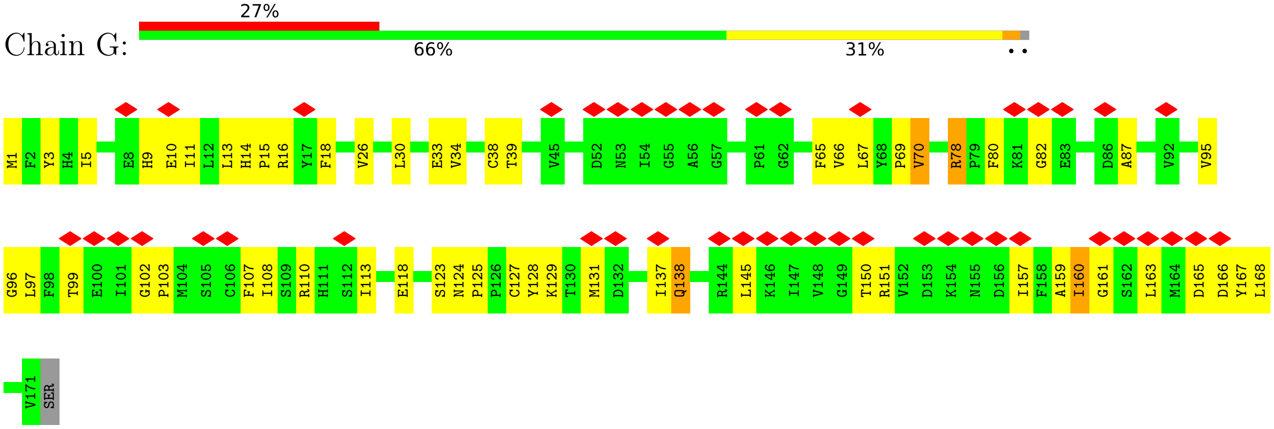


- Molecule 6: DNA-directed RNA polymerases I, II, and III subunit RPABC2

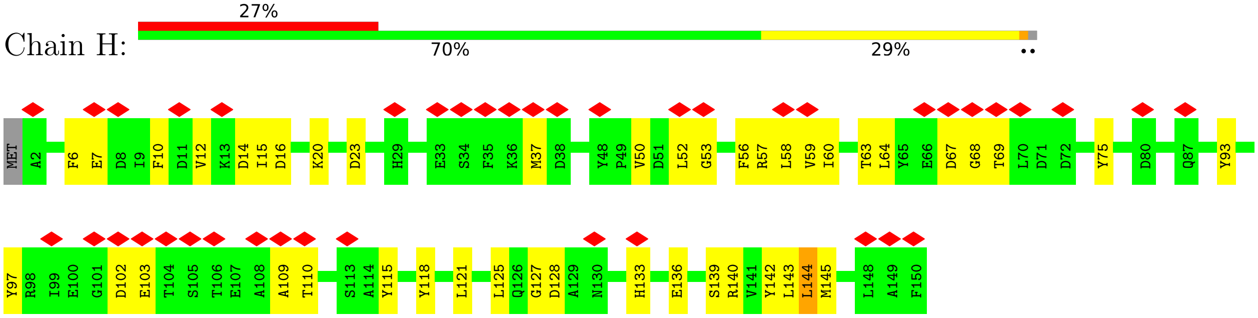
Chain F:



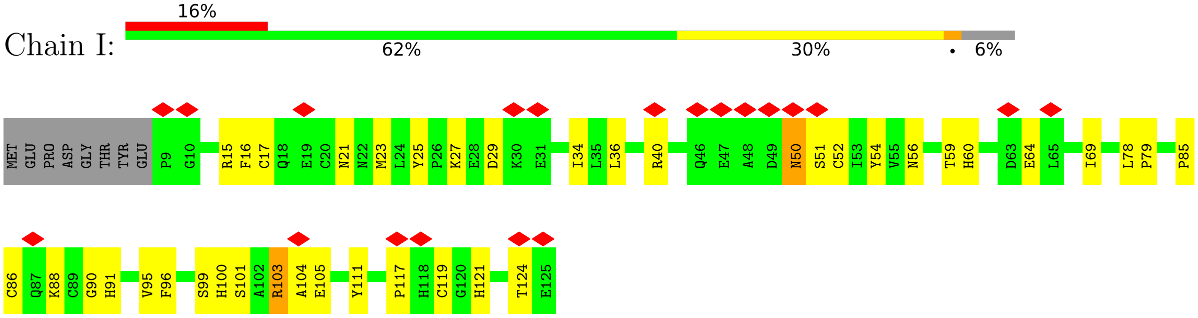
- Molecule 7: DNA-directed RNA polymerase II subunit RPB7



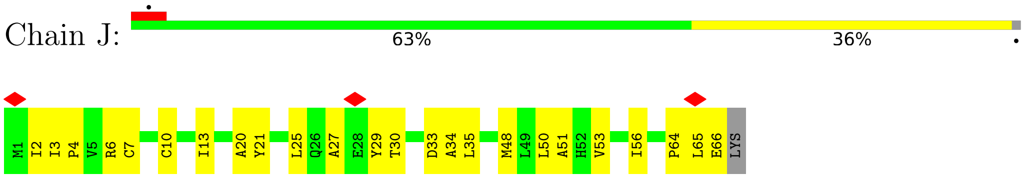
- Molecule 8: DNA-directed RNA polymerases I, II, and III subunit RPABC3



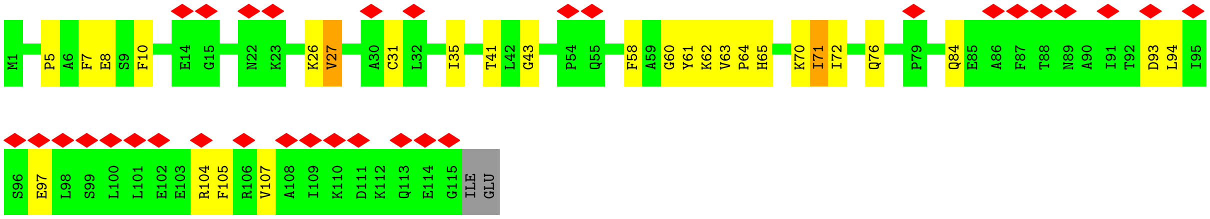
- Molecule 9: DNA-directed RNA polymerase II subunit RPB9



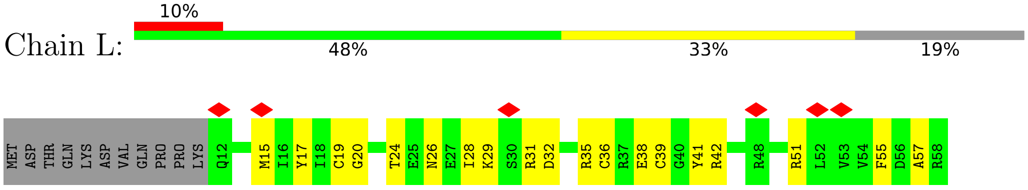
- Molecule 10: DNA-directed RNA polymerases I, II, and III subunit RPABC5



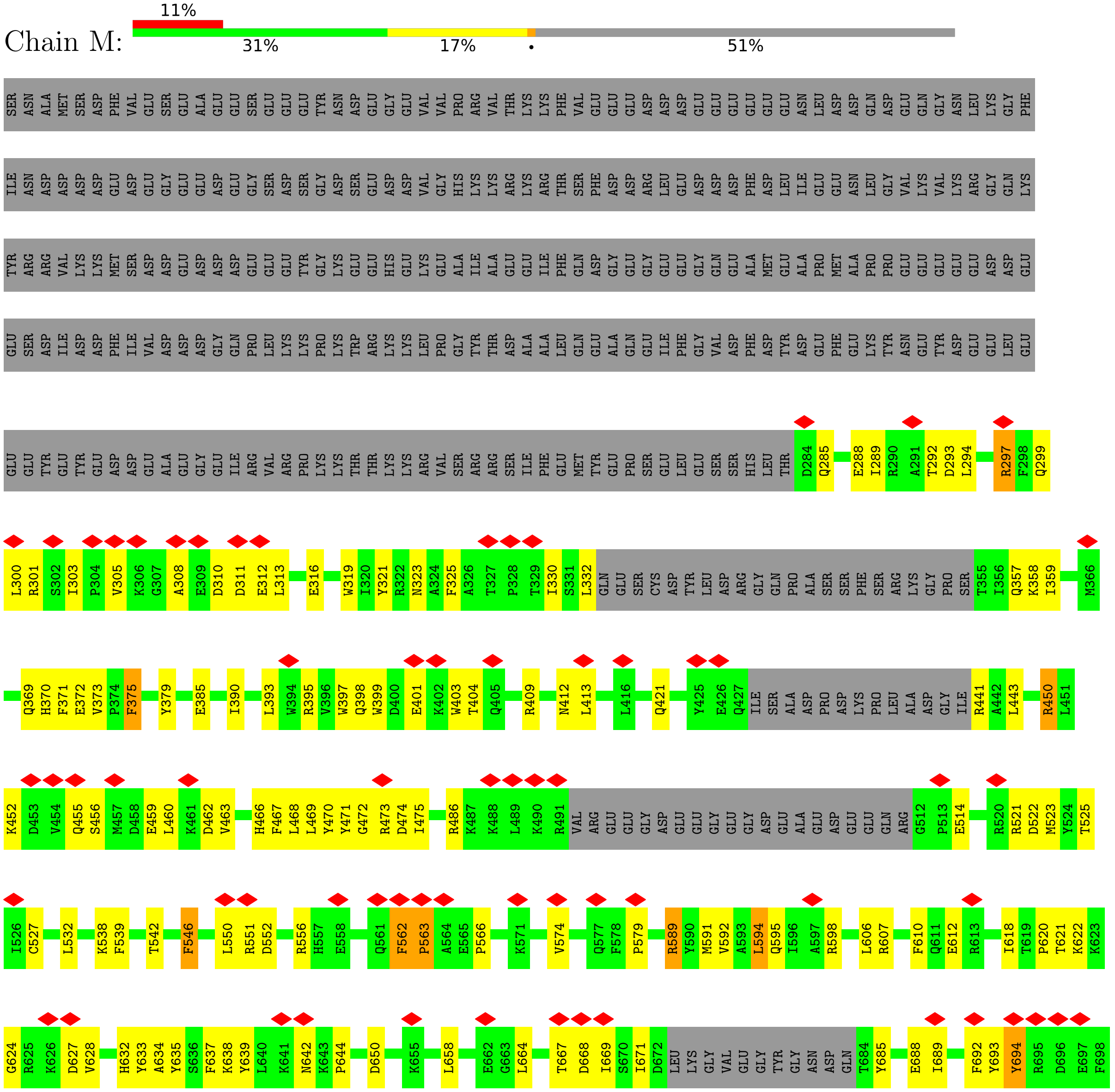
- Molecule 11: DNA-directed RNA polymerase II subunit RPB11-a

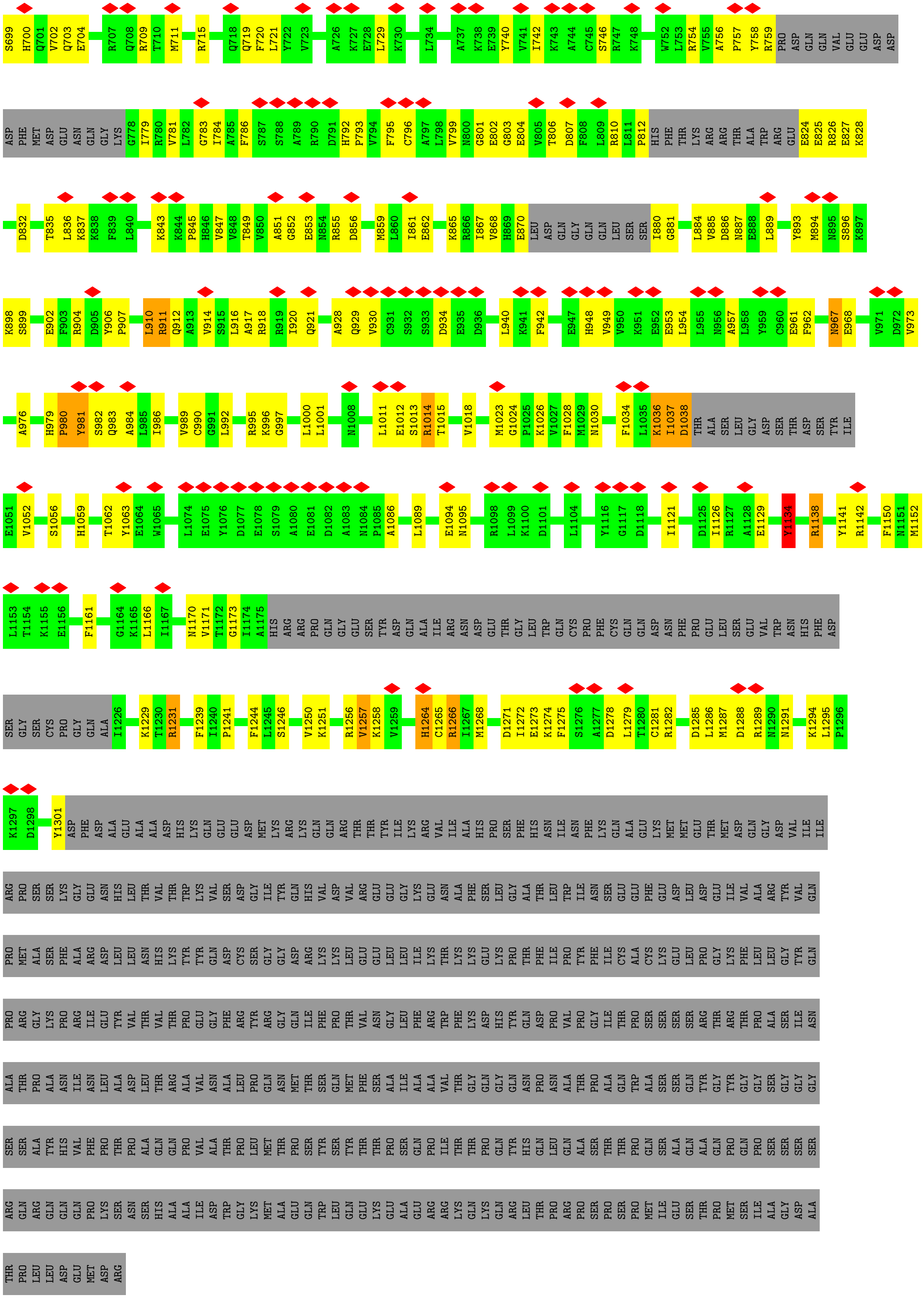


- Molecule 12: RNA polymerase II subunit K



- Molecule 13: Transcription elongation factor SPT6

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ASP PHE MET ASP GLU ASN GLN GLY LYS G778 I779 R780 V781 L782 G783 I784 A785 F786 S787 S788 A789 R790 D791 H792 P793 V794 F795 C796 A797 L798 V799 N800 G801 E802 G803 E804 V805 T806 D807 F808 L809 R810 L811 P812 HIS PHE THR LYS ARG ARG THR ALA TRP ARG GLU E824 E825 R826 E827 K828
D832 T835 L836 K837 K838 F839 L840 K843 K844 P845 H846 V847 V848 T849 V850 A851 G852 E853 N854 R855 D856 M859 L860 I861 E862 K865 R866 I867 V868 H869 E870 LEU ASP GLN GLY GLN GLN LEU SER SER I880 G881 L884 V885 D886 N887 E888 L889 Y893 M894 N895 S896 K897
K898 S899 E902 F903 R904 D905 Y906 P907 L910 R911 Q912 A913 V914 S915 L916 A917 R918 R919 I920 Q921 A928 Q929 V930 C931 S932 S933 D934 E935 D936 L940 K941 F942 E947 H948 V949 V950 K951 E952 E953 L954 L955 N956 A957 L958 Y959 C960 E961 F962 N967 E968 V971 D972 V973
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L1153 T1154 K1155 E1156 F1161 G1164 K1165 L1166 I1167 N1170 V1171 T1172 G1173 I1174 A1175 HIS ARG ARG PRO GLN GLY GLU SER TYR ASP GLN ALA ILE ARG ASN ASP GLU THR GLY LEU TRP GLN CYS PRO PHE CYS GLN GLN ASP ASN PHE PRO GLU LEU SER GLU VAL TRP ASN HIS PHE ASP
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K1297 D1298 Y1301 ASP PHE ASP ALA GLU ALA ALA ASP HIS LYS GLN GLU GLU ASP MET LYS ARG LYS GLN GLN ARG THR THR TYR ILE LYS ARG VAL ILE ALA HIS PRO SER PHE HIS ASN ILE ASN PHE LYS GLN ALA GLU LYS MET MET GLU THR MET ASP GLN GLY ASP VAL ILE ILE
ARG PRO SER SER LYS GLY GLU ASN HIS LEU THR VAL THR TRP LYS VAL SER ASP GLY ILE TYR GLN HIS VAL ASP VAL ARG GLU GLU GLY LYS GLU ASN ALA PHE SER LEU GLY ALA THR LEU TRP ILE ASN SER GLU GLU PHE GLU ASP LEU ASP GLU ILE VAL ALA ARG TYR VAL GLN
PRO MET ALA SER PHE ALA ARG ASP LEU LEU ASN HIS LYS TYR TYR GLN ASP CYS SER GLY GLY ASP ARG LYS LYS LEU GLU GLU LEU LEU ILE LYS THR LYS LYS GLU LYS PRO THR PHE ILE PRO TYR PHE ILE CYS ALA CYS LYS GLU LEU PRO GLY LYS PHE LEU LEU GLY TYR GLN
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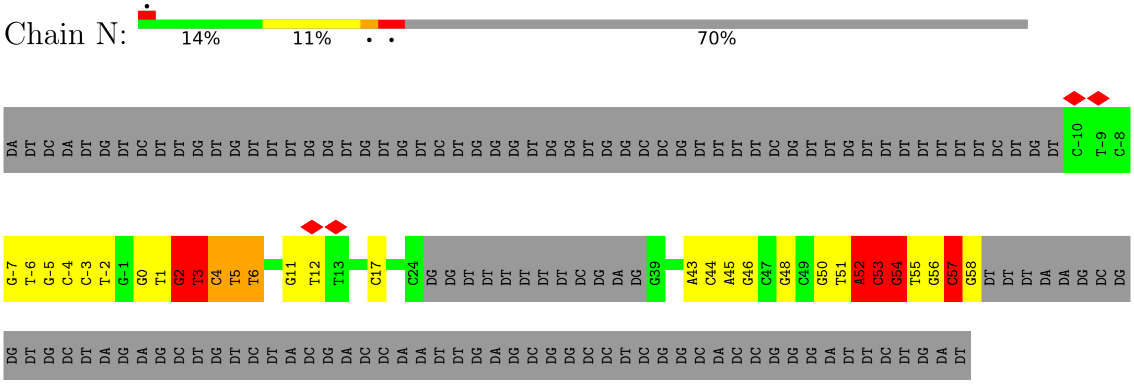
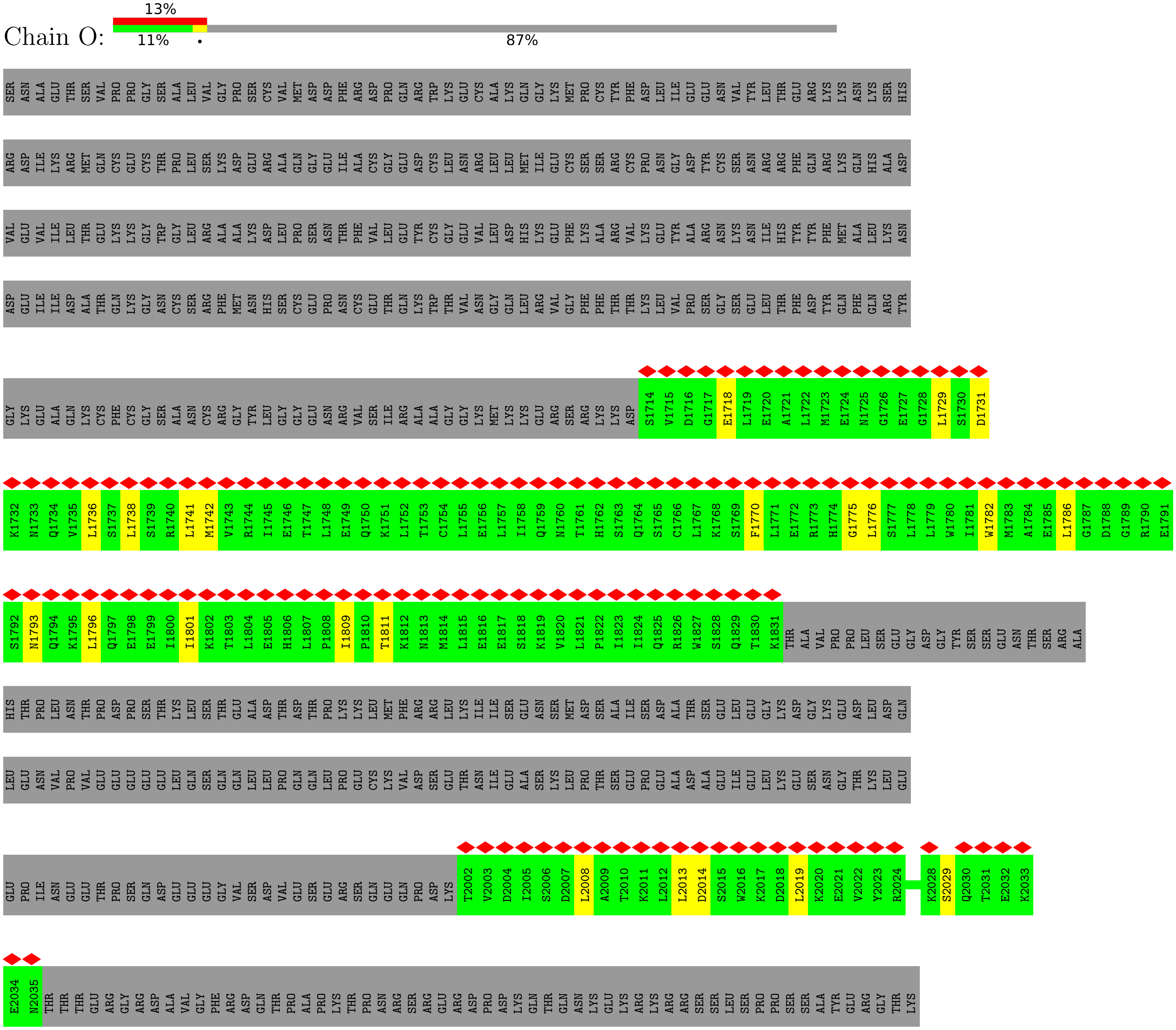
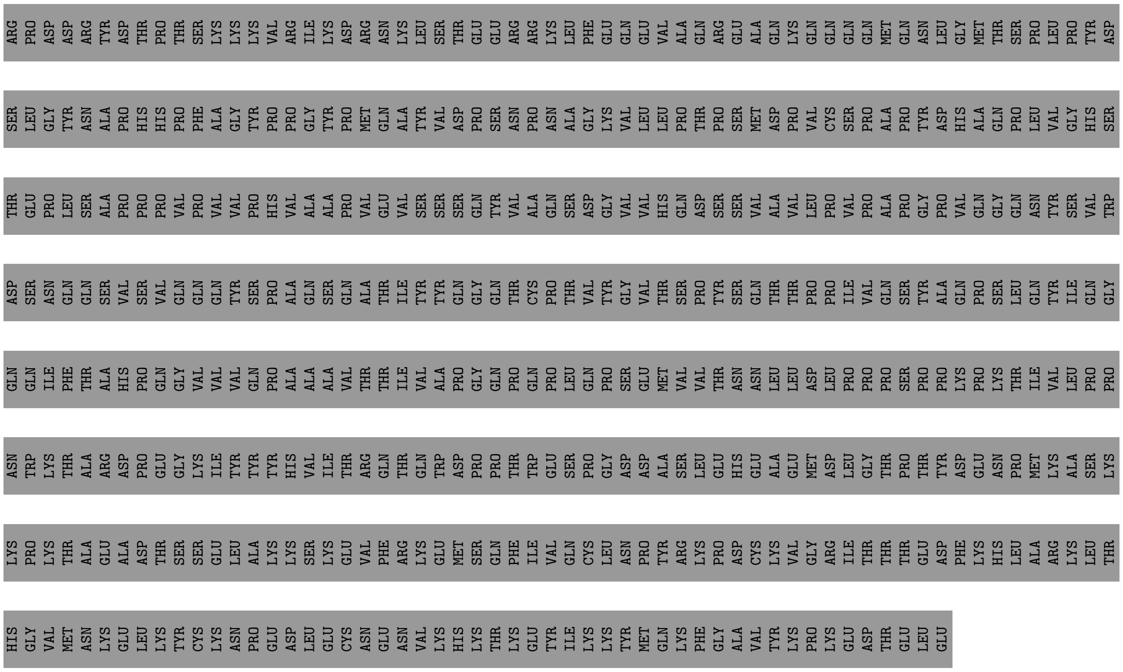
- Molecule 14: Non-template DNA



- Molecule 15: Histone-lysine N-methyltransferase SETD2



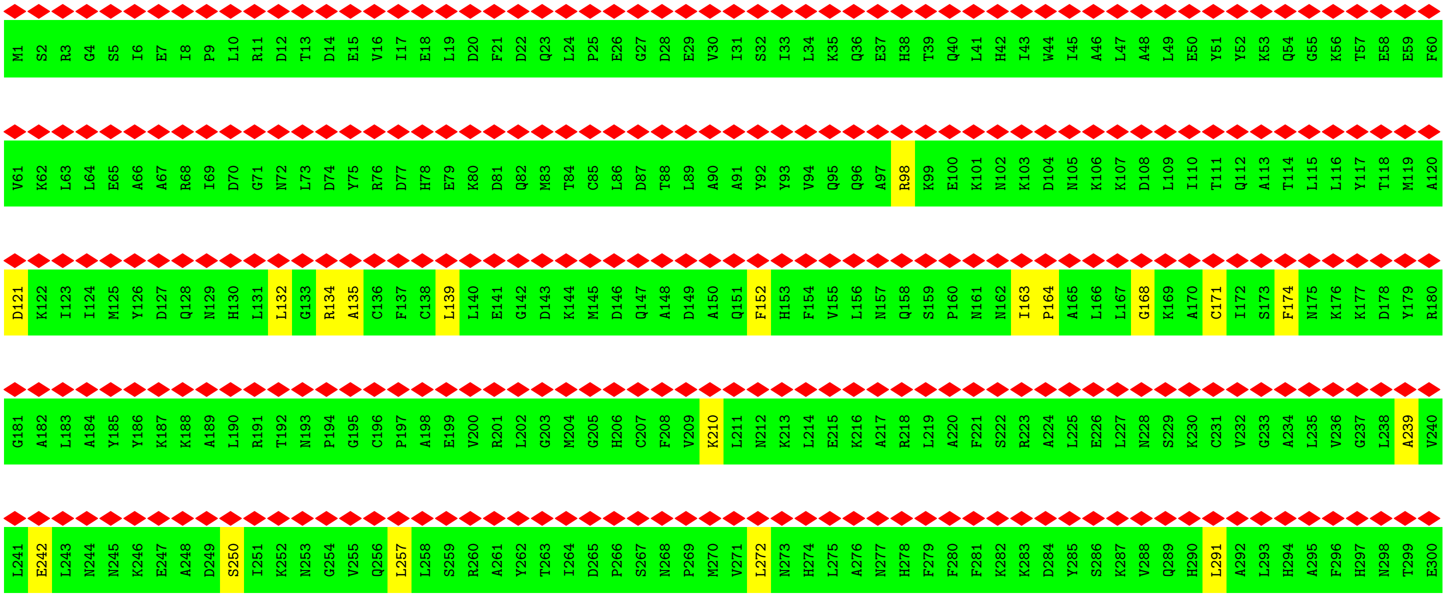


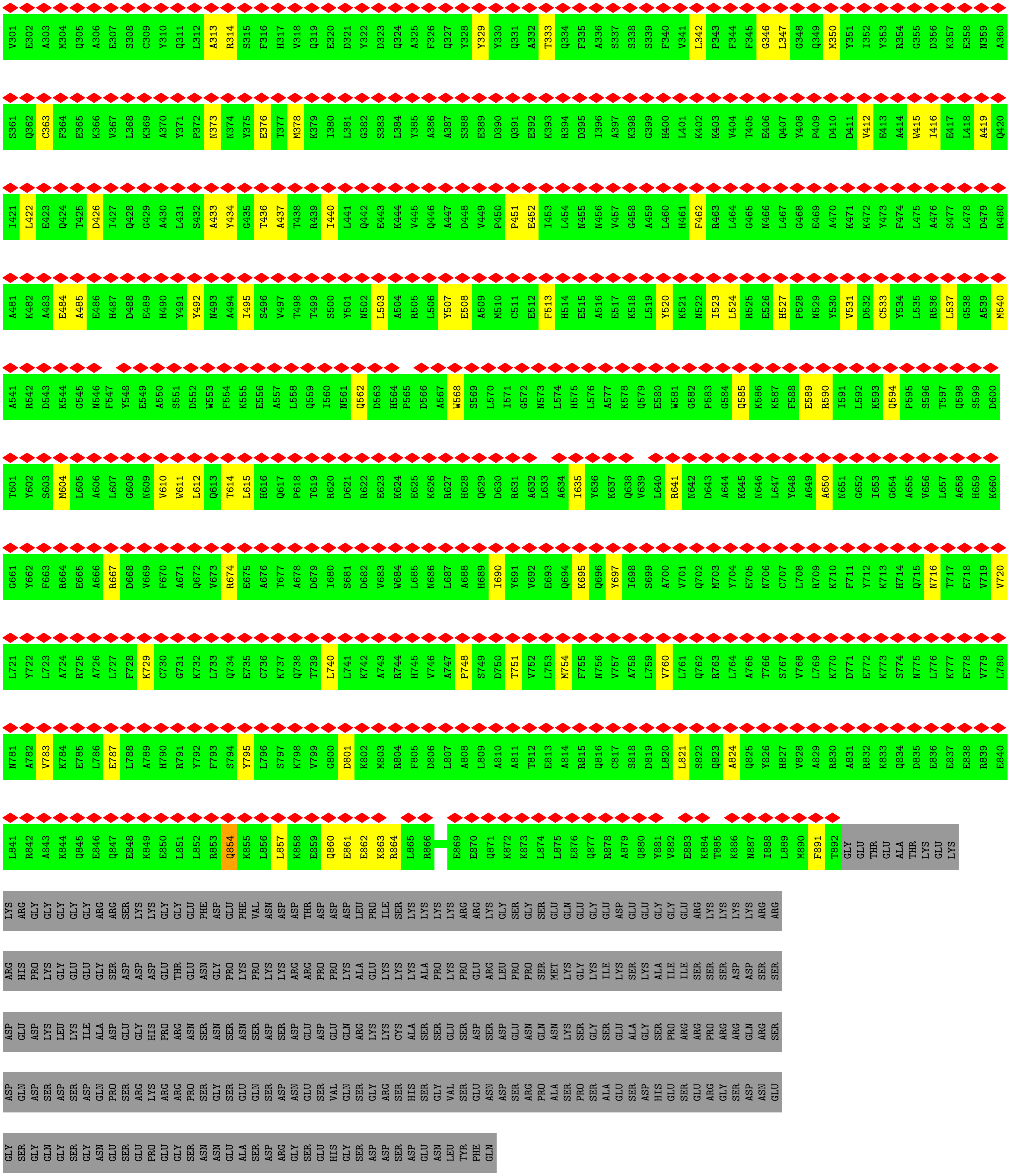
- Molecule 16: RNA

Chain P:

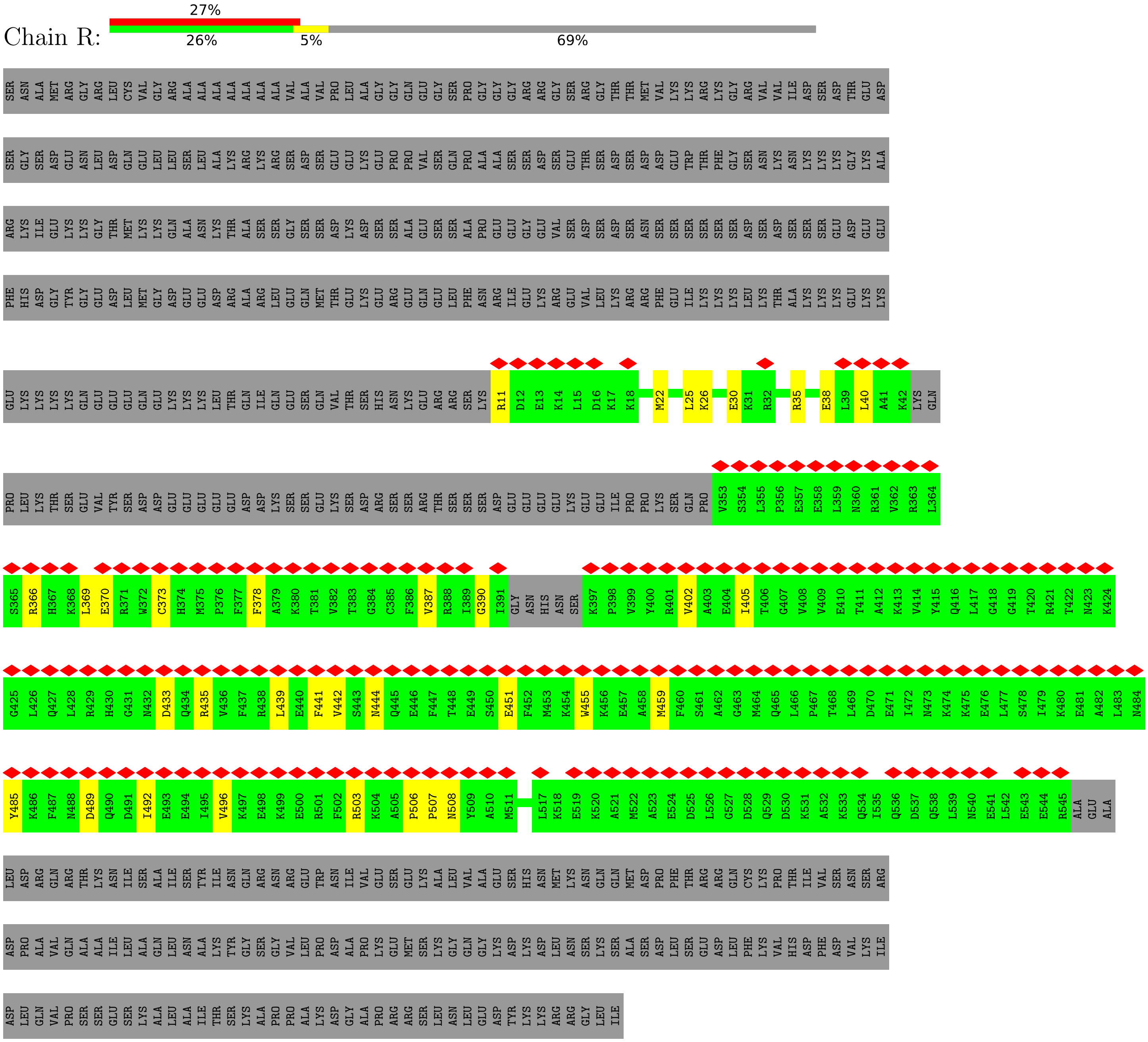
- Molecule 17: RNA polymerase-associated protein CTR9 homolog

Chain Q:

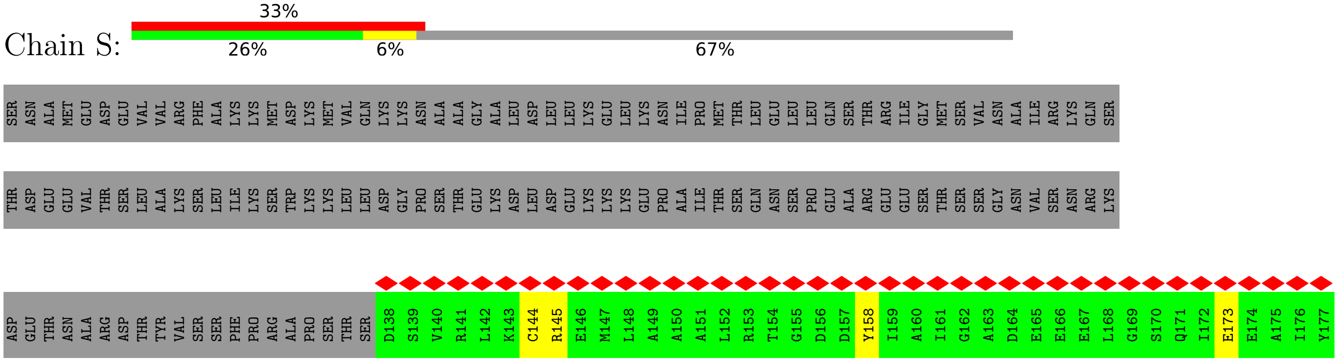


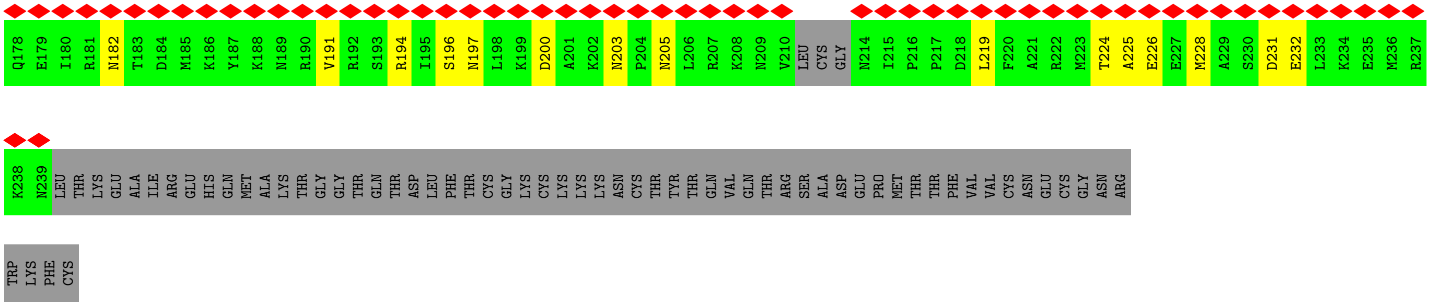


- Molecule 18: RNA polymerase-associated protein RTF1 homolog



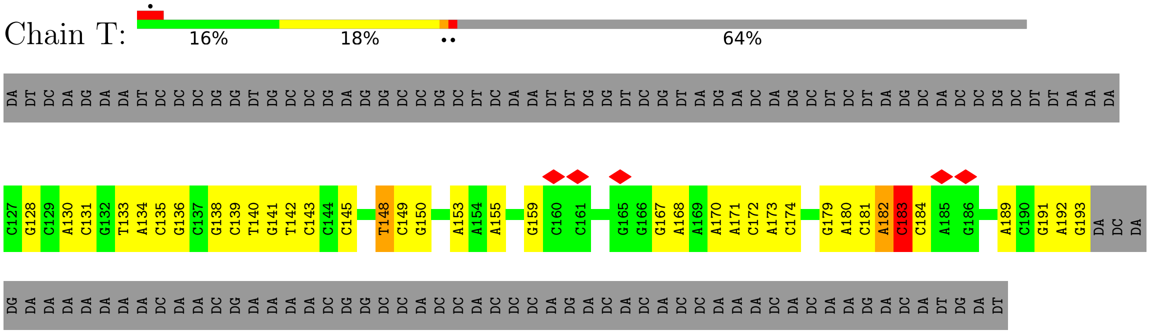
- Molecule 19: Transcription elongation factor A protein 1





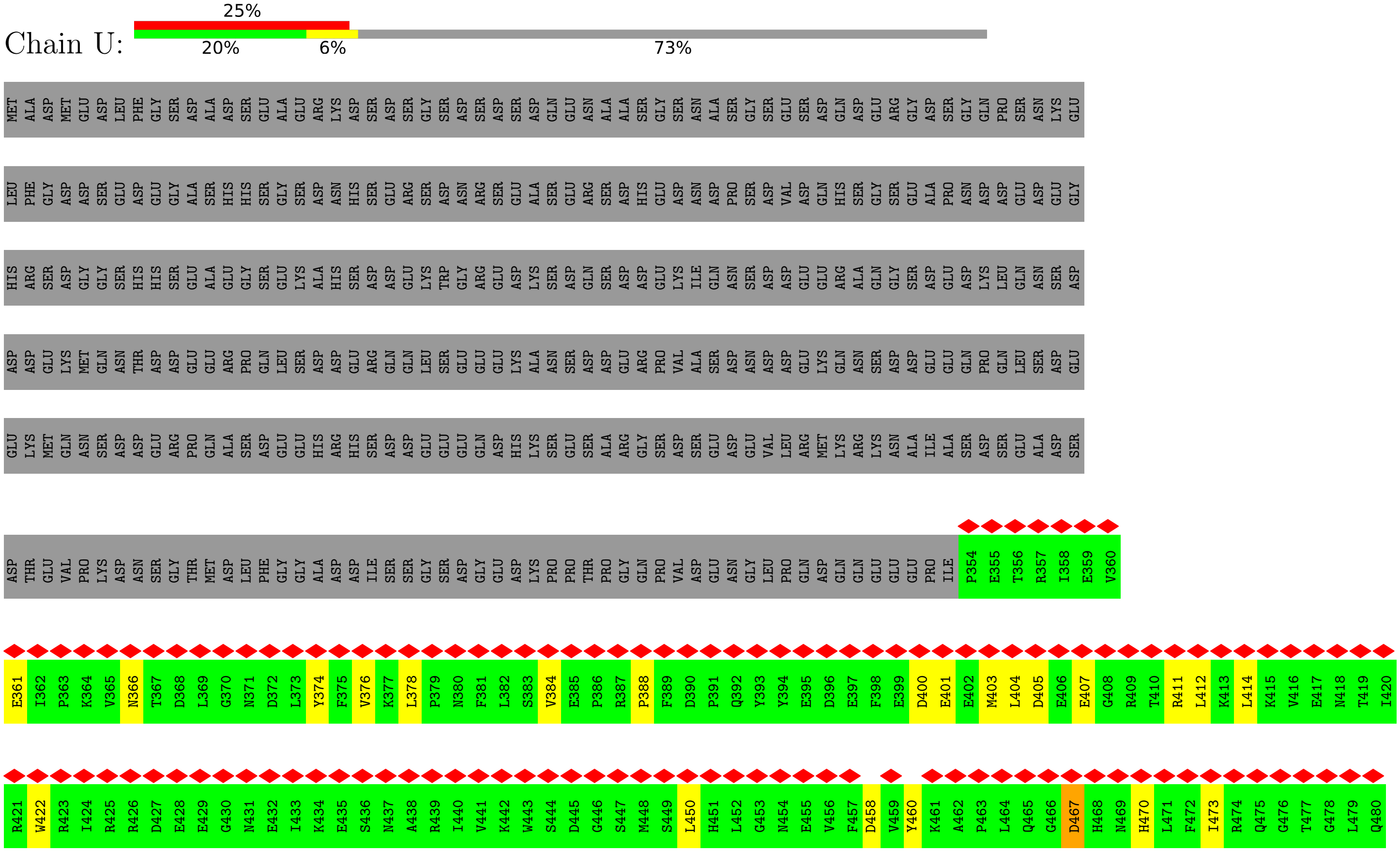
- Molecule 20: Template DNA

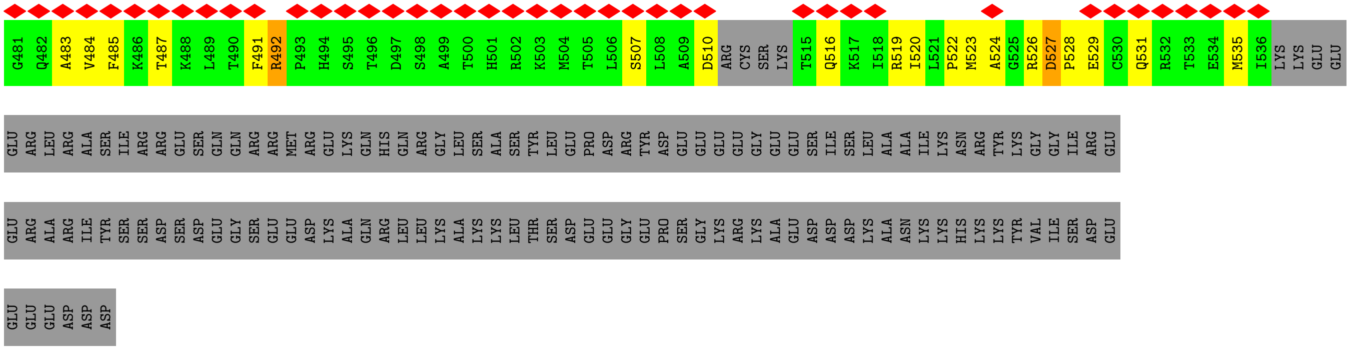
Chain T:



- Molecule 21: RNA polymerase-associated protein LEO1

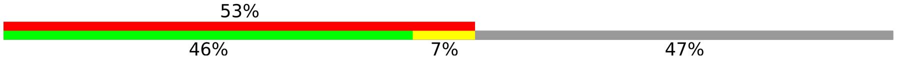
Chain U:

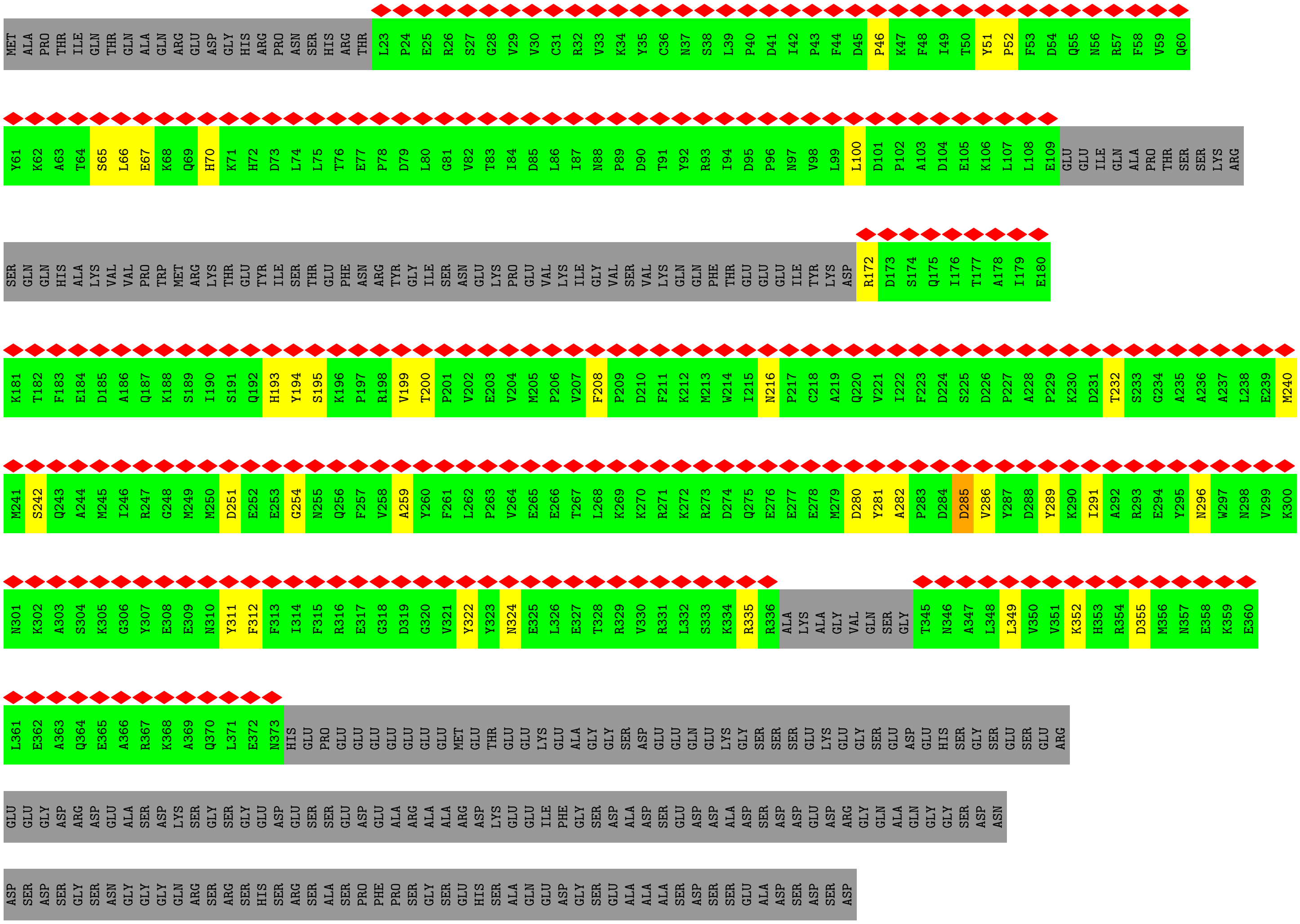




- Molecule 22: RNA polymerase II-associated factor 1 homolog

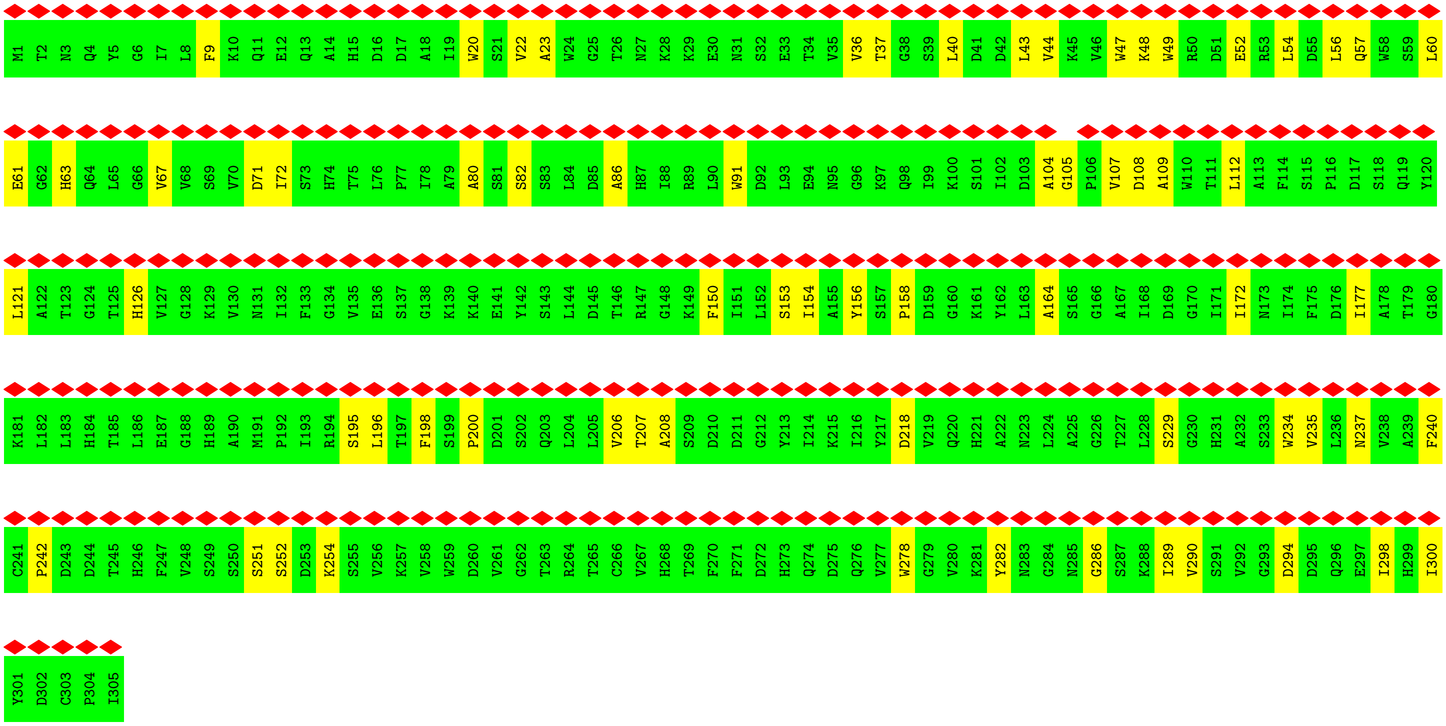
Chain V:





- Molecule 23: WD repeat-containing protein 61

Chain W:



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E61 G62 H63 Q64 L65 G66 V67 V68 S69 V70 D71 I72 S73 H74 T75 L76 P77 I78 A79 A80 S81 S82 S83 L84 D85 A86 H87 I88 R89 L90 W91 D92 L93 E94 N95 G96 K97 Q98 I99 K100 S101 I102 D103 A104 G105 P106 V107 D108 A109 W110 T111 L112 A113 F114 S115 P116 D117 S118 Q119 Y120

L121 A122 T123 G124 T125 H126 V127 G128 K129 V130 N131 I132 F133 G134 V135 E136 S137 G138 K139 K140 E141 Y142 S143 L144 D145 T146 R147 G148 K149 F150 I151 L152 S153 I154 A155 Y156 S157 P158 D159 G160 K161 Y162 L163 A164 S165 G166 A167 I168 D169 G170 I171 I172 N173 I174 F175 D176 I177 A178 T179 G180

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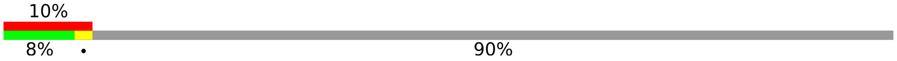
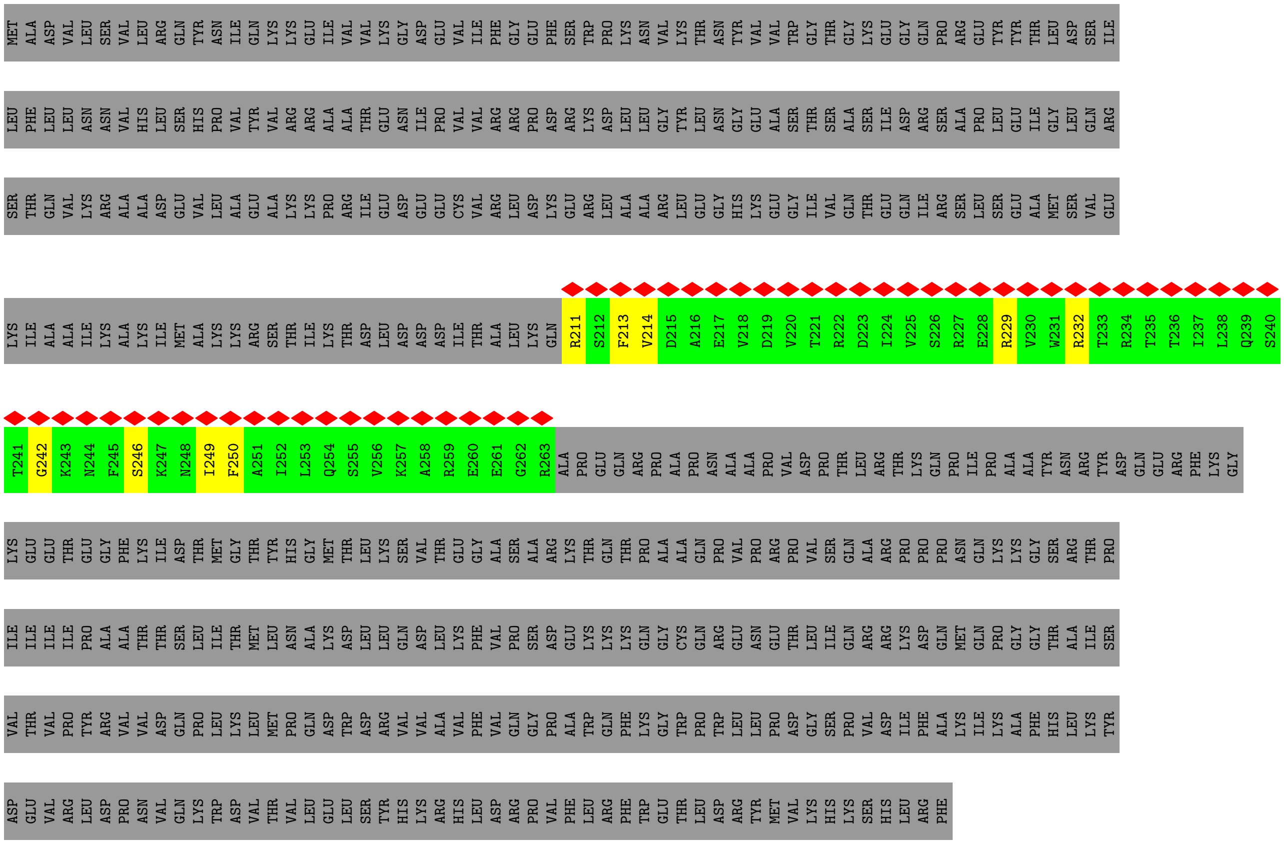
Y301 D302 C303 P304 I305

- Molecule 24: Parafibromin

Chain X:





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

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

LYS ILE ALA ALA ILE LYS ALA LYS ILE MET ALA LYS LYS ARG SER THR ILE LYS THR ASP LEU ASP ASP ASP ILE THR ALA LEU LYS GLN R211 S212 F213 V214 D215 A216 E217 V218 D219 V220 T221 R222 D223 I224 V225 S226 R227 E228 R229 V230 W231 R232 T233 R234 T235 T236 I237 L238 Q239 S240

T241 G242 K243 N244 F245 S246 K247 N248 I249 F250 A251 I252 L253 Q254 S255 V256 K257 A258 R259 E260 E261 G262 R263 ALA PRO GLU GLN ARG PRO ALA PRO ASN ALA ALA PRO VAL ASP PRO THR LEU ARG THR LYS GLN PRO ILE PRO ALA ALA TYR ASN ARG TYR ASP GLN GLU ARG PHE LYS GLY

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

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

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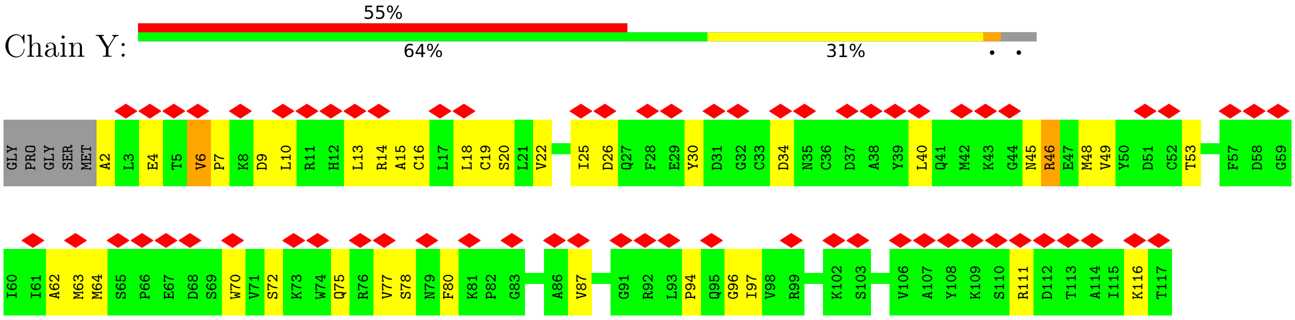
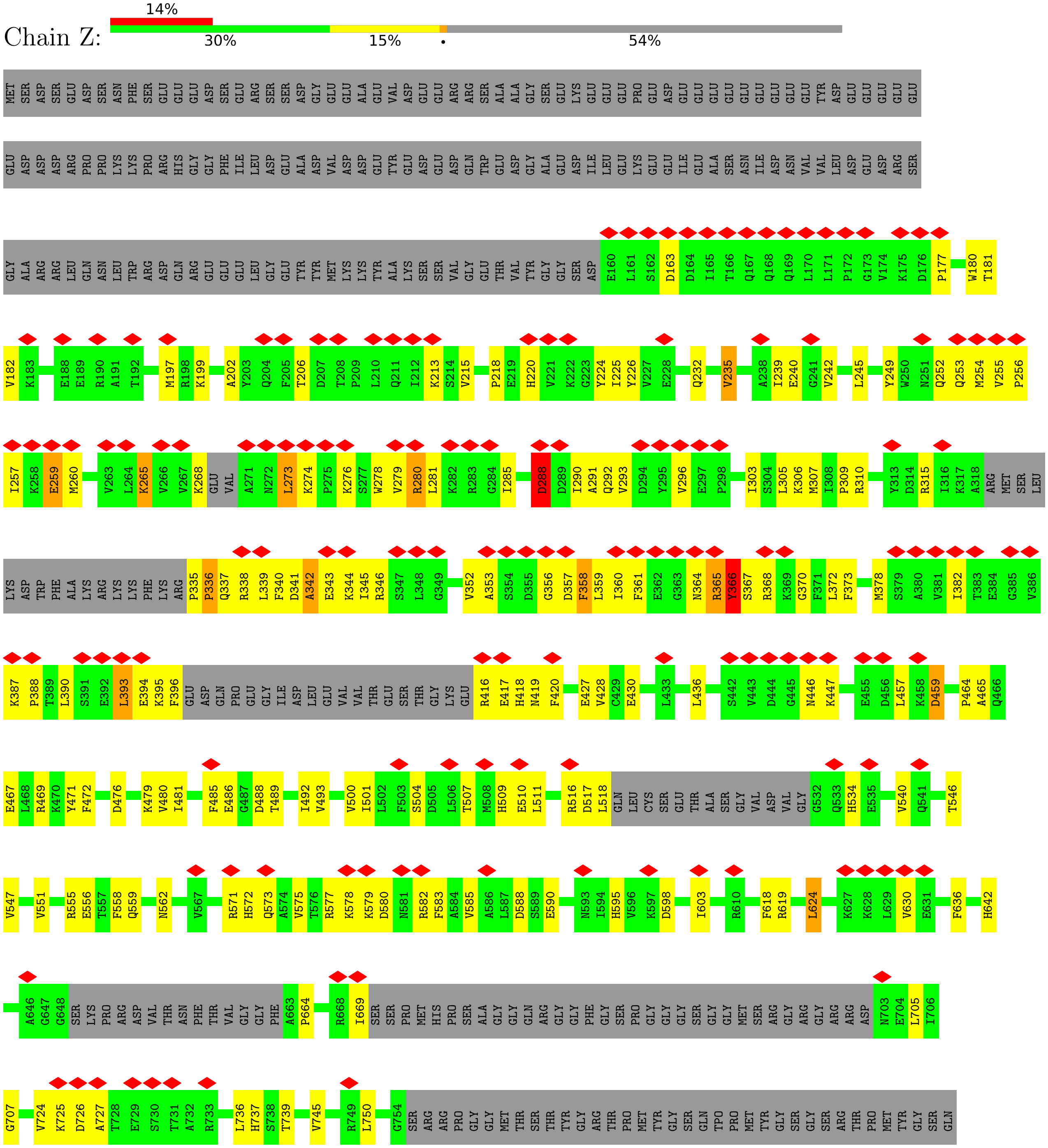
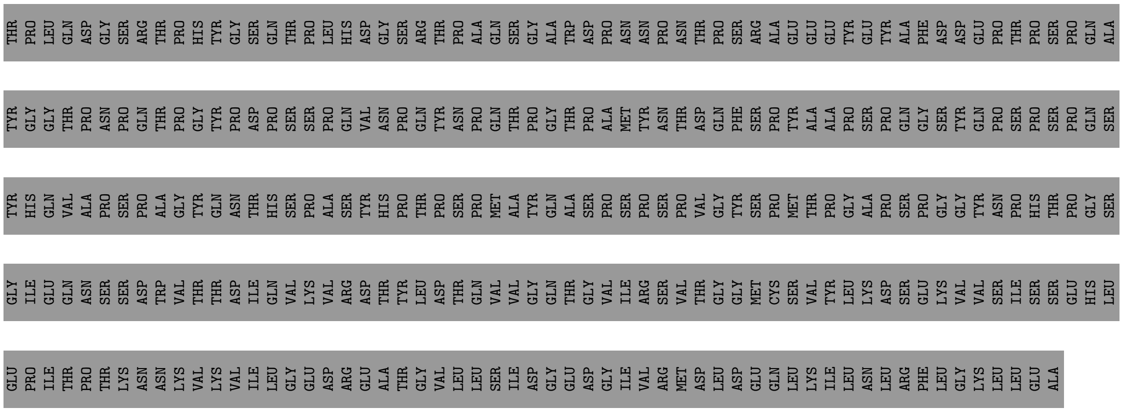
- Molecule 25: Transcription elongation factor SPT4



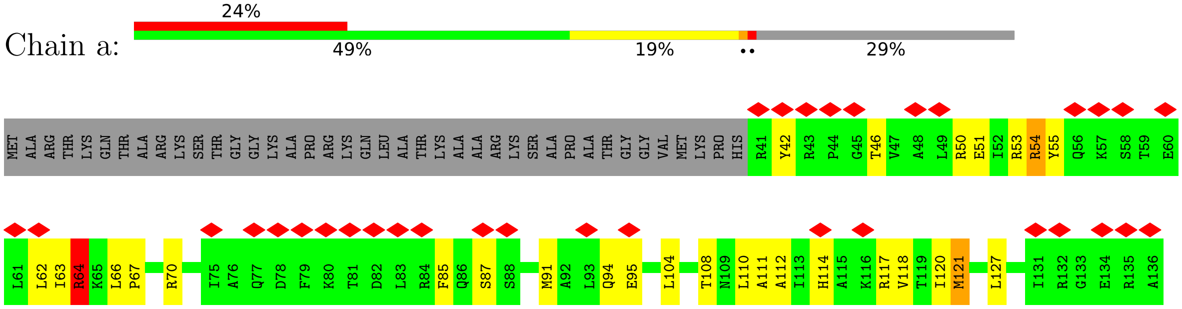
• Molecule 26: Transcription elongation factor SPT5





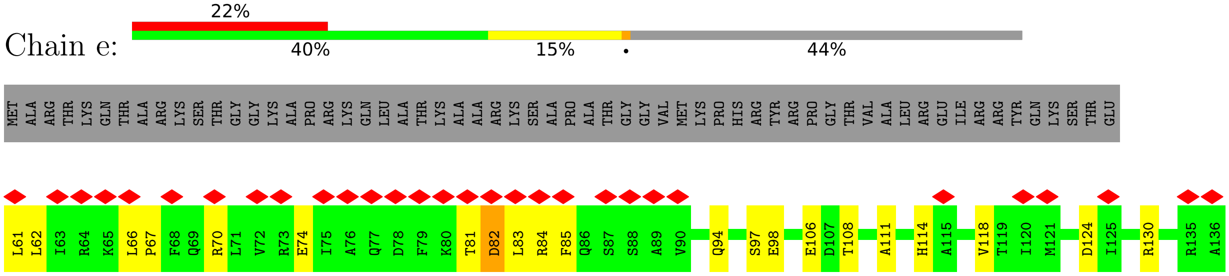
- Molecule 27: Histone H3.2

Chain a:



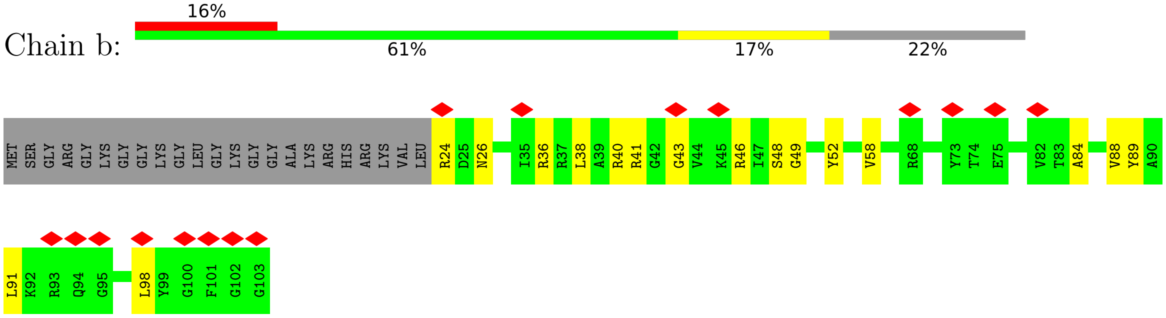
- Molecule 27: Histone H3.2

Chain e:



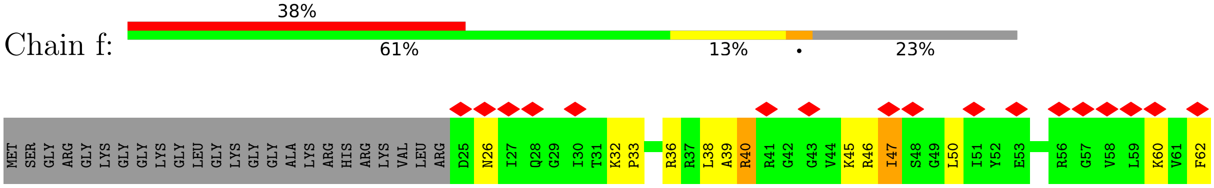
- Molecule 28: Histone H4

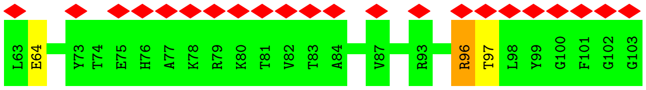
Chain b:



- Molecule 28: Histone H4

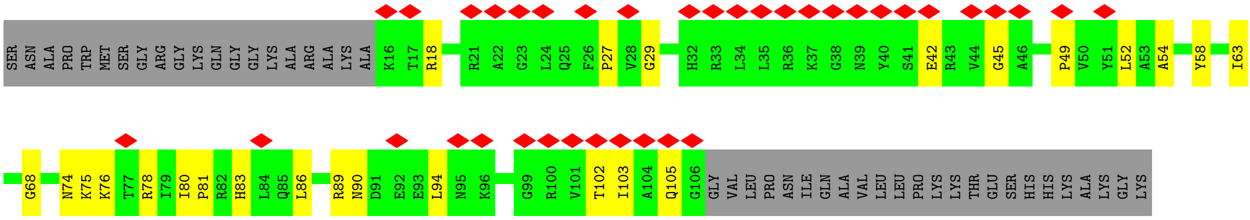
Chain f:





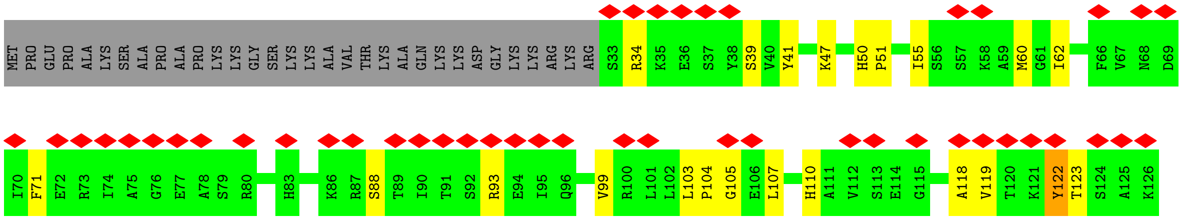
- Molecule 29: Histone H2A type 1-B/E

Chain g:



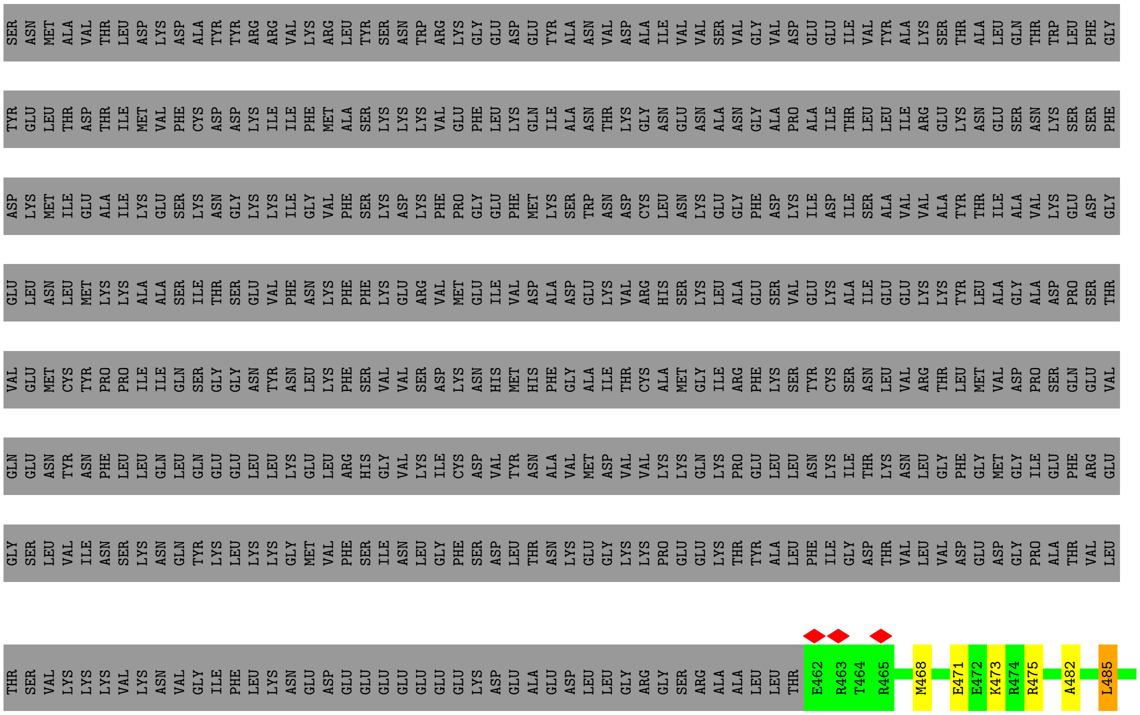
- Molecule 30: Histone H2B type 1-K

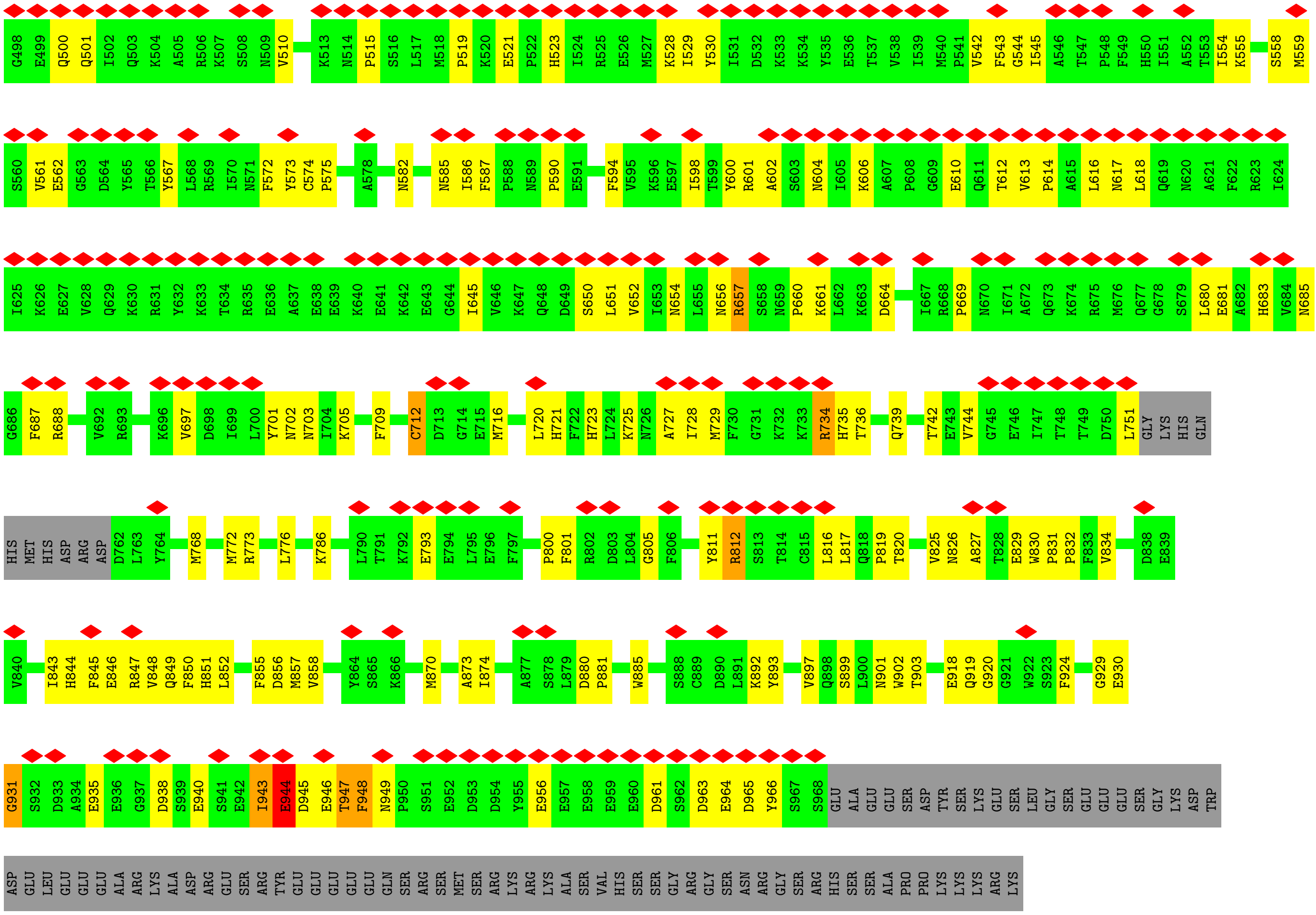
Chain h:



- Molecule 31: FACT complex subunit SPT16

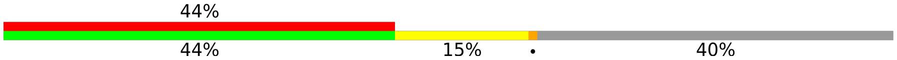
Chain j:

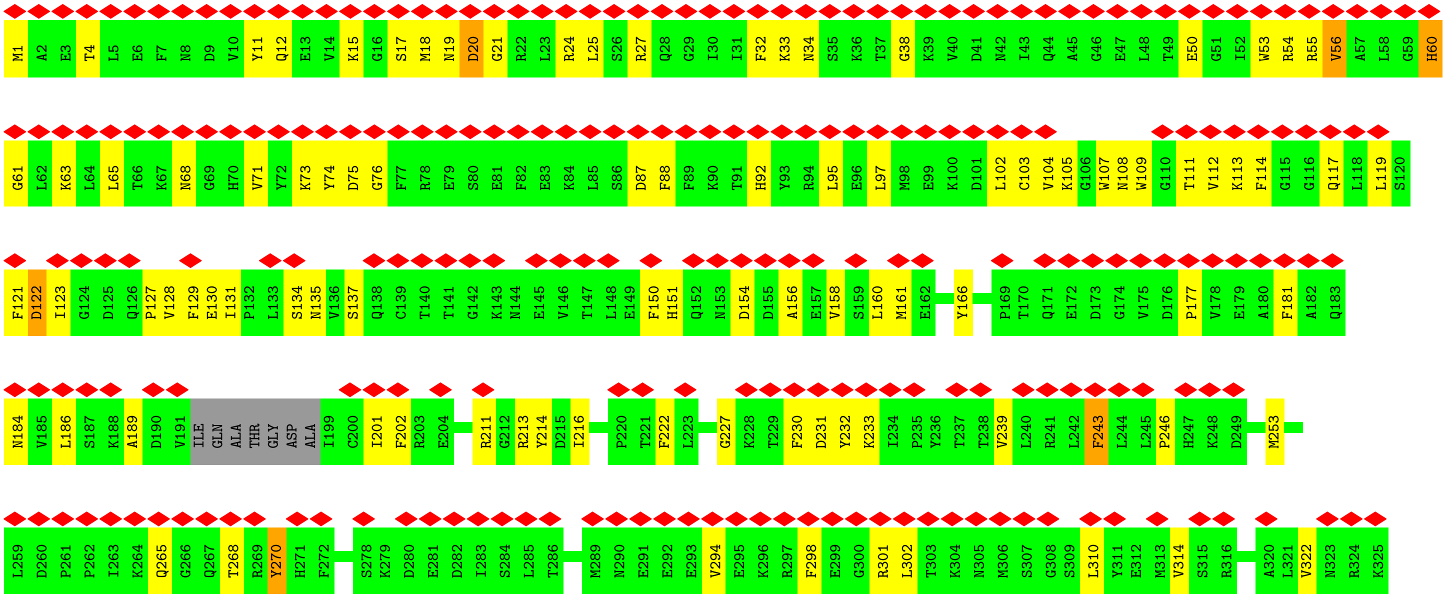


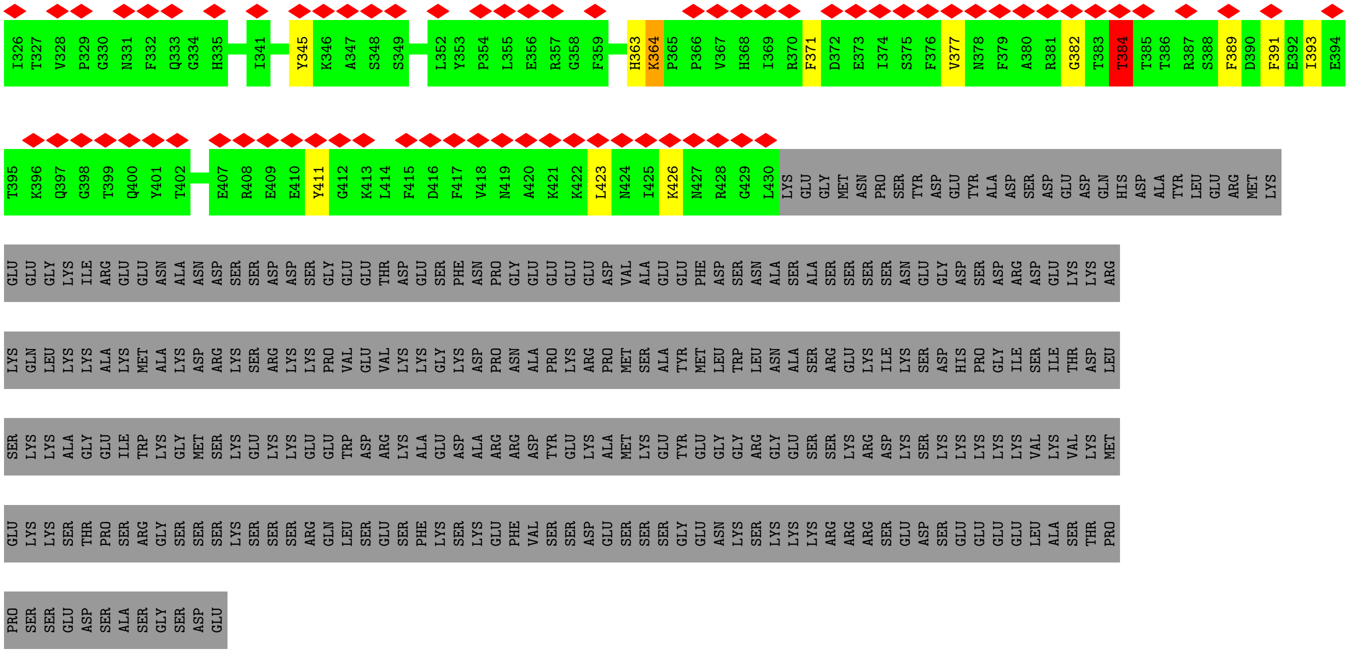


- Molecule 32: FACT complex subunit SSRP1

Chain k:



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I341
Y345 K346 A347 S348 S349
L352 Y353 P354 L355 E356 R357 G358 F359
H363 K364 P365 P366 V367 H368 I369 R370 F371 D372 E373 I374 S375 F376 V377 N378 F379 A380 R381 G382 T383 T384 T385 T386 R387 S388 F389 D390 F391 E392 I393 E394
T395 K396 Q397 G398 T399 Q400 Y401 T402
E407 R408 E409 E410 Y411 G412 K413 L414 F415 D416 F417 V418 N419 A420 K421 K422 L423 N424 I425 K426 N427 R428 G429 L430 LYS GLU GLY MET ASN PRO SER TYR ASP GLU TYR ALA ASP SER ASP GLU ASP GLN HIS ASP ALA TYR LEU GLU ARG MET LYS
GLU GLU GLY LYS ILE ARG GLU GLU ASN ALA ASN ASP SER SER ASP ASP SER GLY GLU GLU THR ASP GLU SER PHE ASN PRO GLY GLU GLU GLU GLU ASP VAL ALA GLU GLU PHE ASP SER ASN ALA SER ALA SER SER SER ASN GLU GLY ASP SER ASP ARG ASP GLU LYS ARG
LYS GLN LEU LYS LYS ALA LYS MET ALA LYS ASP ARG LYS SER ARG LYS LYS PRO VAL GLU VAL LYS LYS GLY LYS ASP PRO ASN ALA PRO LYS ARG PRO MET SER ALA TYR MET LEU TRP LEU ASN ALA SER ARG GLU LYS ILE LYS SER ASP HIS PRO GLY ILE SER ILE THR ASP LEU
SER LYS LYS ALA GLY GLU ILE TRP LYS GLY MET SER LYS GLU LYS LYS GLU GLU TRP ASP ARG LYS ALA GLU ASP ALA ARG ARG ASP TYR GLU LYS ALA MET LYS GLU TYR GLU GLY GLY ARG GLY GLU SER SER LYS ARG ASP LYS SER LYS LYS LYS LYS VAL LYS VAL LYS MET
GLU LYS LYS SER THR PRO SER ARG GLY SER SER SER LYS SER SER SER ARG GLN LEU SER GLU SER PHE LYS SER LYS GLU PHE VAL SER SER ASP GLU SER SER SER GLY GLU ASN LYS SER LYS LYS ARG ARG SER GLU ASP SER GLU GLU GLU LEU ALA SER THR PRO
PRO SER SER GLU ASP SER ALA SER GLY SER ASP GLU

4 Experimental information ⓘ

Property	**Value**	**Source**
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	112302	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 $(e^-/\text{Å}^2)$	39.83	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.025	Depositor
Minimum map value	-0.007	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.0075	Depositor
Map size (Å)	537.6, 537.6, 537.6	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.05, 1.05, 1.05	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

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

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	A	0.44	0/11663	0.96	6/15739 (0.0%)
2	B	0.40	0/9269	0.95	7/12512 (0.1%)
3	C	0.35	0/2115	0.86	0/2873
4	D	0.48	0/1027	1.03	1/1381 (0.1%)
5	E	0.43	0/1752	0.99	0/2366
6	F	0.49	0/637	0.92	0/859
7	G	0.43	0/1374	0.97	3/1865 (0.2%)
8	H	0.37	0/1220	0.80	0/1644
9	I	0.39	0/973	0.92	0/1316
10	J	0.33	0/533	0.88	0/719
11	K	0.38	0/939	0.77	0/1271
12	L	0.42	0/404	0.98	0/536
13	M	0.73	3/7131 (0.0%)	1.20	32/9607 (0.3%)
14	N	0.75	0/1262	1.31	10/1946 (0.5%)
15	O	0.79	0/1243	1.51	5/1672 (0.3%)
16	P	0.94	8/483 (1.7%)	1.08	1/748 (0.1%)
17	Q	0.35	0/7379	0.85	0/9945
18	R	0.34	0/1717	0.96	1/2303 (0.0%)
19	S	0.31	0/800	0.64	0/1068
20	T	0.67	0/1540	1.23	7/2370 (0.3%)
21	U	0.40	0/1498	0.98	3/2018 (0.1%)
22	V	0.38	0/2360	0.94	0/3188
23	W	0.29	0/2433	0.73	0/3311
24	X	0.34	0/438	0.87	0/587
25	Y	0.37	0/928	1.01	0/1250
26	Z	0.43	0/4045	1.15	19/5445 (0.3%)
27	a	0.78	0/799	1.20	1/1070 (0.1%)
27	e	0.37	0/622	0.91	0/833
28	b	0.59	0/645	1.11	0/862
28	f	0.33	0/634	0.99	3/848 (0.4%)
29	g	0.29	0/718	0.89	0/966
30	h	0.39	0/745	0.92	1/1000 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
31	j	0.40	0/4133	0.97	6/5573 (0.1%)
32	k	0.41	0/3523	0.99	3/4746 (0.1%)
All	All	0.47	11/76982 (0.0%)	1.00	109/104437 (0.1%)

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	A	0	7
2	B	0	8
4	D	0	1
6	F	0	1
7	G	0	2
9	I	0	1
10	J	0	1
12	L	0	2
13	M	0	16
14	N	0	9
16	P	0	3
17	Q	0	1
18	R	0	2
20	T	0	10
21	U	0	1
24	X	0	2
25	Y	0	2
26	Z	0	6
27	a	0	1
29	g	0	2
30	h	0	2
31	j	0	4
32	k	0	2
All	All	0	86

The worst 5 of 11 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
16	P	-20	C	C1'-N1	6.79	1.58	1.48
13	M	1037	ILE	CA-C	6.67	1.60	1.52
16	P	-6	U	C1'-N1	6.62	1.58	1.48
16	P	-1	A	P-OP1	6.48	1.61	1.48

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
13	M	1013	SER	CA-C	-5.96	1.45	1.52

The worst 5 of 109 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
13	M	1038	ASP	CA-CB-CG	13.18	125.78	112.60
13	M	685	TYR	N-CA-C	11.09	125.55	111.24
13	M	1036	LYS	CA-C-N	9.22	132.44	122.11
13	M	1036	LYS	C-N-CA	9.22	132.44	122.11
13	M	968	GLU	CB-CA-C	-9.18	95.25	110.85

There are no chirality outliers.

5 of 86 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	244	ARG	Sidechain
1	A	327	ARG	Sidechain
1	A	349	ARG	Sidechain
1	A	408	ARG	Sidechain
1	A	583	ARG	Sidechain

5.2 Too-close contacts ⓘ

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	A	11455	0	11554	347	0
2	B	9088	0	9112	307	0
3	C	2072	0	2020	49	0
4	D	1014	0	988	45	0
5	E	1721	0	1737	46	0
6	F	627	0	657	18	0
7	G	1343	0	1340	50	0
8	H	1198	0	1156	29	0
9	I	950	0	879	33	0
10	J	524	0	540	21	0
11	K	920	0	942	25	0
12	L	398	0	401	13	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
13	M	7001	0	6979	248	0
14	N	1130	0	619	60	0
15	O	1228	0	1260	11	0
16	P	436	0	222	33	0
17	Q	7240	0	7186	67	0
18	R	1694	0	1626	23	0
19	S	795	0	798	29	0
20	T	1369	0	740	84	0
21	U	1469	0	1441	37	0
22	V	2310	0	2247	29	0
23	W	2374	0	2290	46	0
24	X	434	0	444	4	0
25	Y	912	0	904	30	0
26	Z	3976	0	4048	160	0
27	a	789	0	827	35	0
27	e	615	0	646	24	0
28	b	638	0	676	23	0
28	f	627	0	663	28	0
29	g	710	0	750	21	0
30	h	734	0	756	18	0
31	j	4050	0	3970	134	0
32	k	3446	0	3418	87	0
33	A	2	0	0	0	0
33	B	1	0	0	0	0
33	C	1	0	0	0	0
33	I	2	0	0	0	0
33	J	1	0	0	0	0
33	L	1	0	0	0	0
33	Y	1	0	0	0	0
34	A	1	0	0	0	0
All	All	75297	0	73836	1853	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 12.

The worst 5 of 1853 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)
14:N:-6:DT:OP1	27:a:64:ARG:HD2	1.25	1.25
20:T:173:DA:OP1	28:f:45:LYS:NZ	1.68	1.25
14:N:1:DT:OP1	31:j:582:ASN:ND2	1.69	1.24

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1251:ASN:CB	19:S:228:MET:HG3	1.67	1.23
20:T:173:DA:P	28:f:45:LYS:NZ	2.12	1.22

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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	A	1436/1970 (73%)	1368 (95%)	65 (4%)	3 (0%)	44	78
2	B	1130/1174 (96%)	1052 (93%)	77 (7%)	1 (0%)	48	83
3	C	254/275 (92%)	239 (94%)	13 (5%)	2 (1%)	16	55
4	D	124/142 (87%)	123 (99%)	1 (1%)	0	100	100
5	E	207/210 (99%)	202 (98%)	5 (2%)	0	100	100
6	F	76/127 (60%)	75 (99%)	1 (1%)	0	100	100
7	G	169/172 (98%)	159 (94%)	10 (6%)	0	100	100
8	H	147/150 (98%)	136 (92%)	10 (7%)	1 (1%)	19	56
9	I	115/125 (92%)	106 (92%)	9 (8%)	0	100	100
10	J	64/67 (96%)	63 (98%)	1 (2%)	0	100	100
11	K	113/117 (97%)	111 (98%)	2 (2%)	0	100	100
12	L	45/58 (78%)	41 (91%)	4 (9%)	0	100	100
13	M	832/1729 (48%)	792 (95%)	37 (4%)	3 (0%)	30	68
15	O	148/1133 (13%)	140 (95%)	8 (5%)	0	100	100
17	Q	890/1179 (76%)	877 (98%)	13 (2%)	0	100	100
18	R	214/713 (30%)	208 (97%)	6 (3%)	0	100	100
19	S	95/304 (31%)	90 (95%)	5 (5%)	0	100	100
21	U	175/666 (26%)	166 (95%)	8 (5%)	1 (1%)	22	60

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
22	V	275/531 (52%)	264 (96%)	11 (4%)	0	100	100
23	W	303/305 (99%)	295 (97%)	8 (3%)	0	100	100
24	X	51/531 (10%)	50 (98%)	0	1 (2%)	6	31
25	Y	114/121 (94%)	106 (93%)	7 (6%)	1 (1%)	14	51
26	Z	484/1087 (44%)	457 (94%)	24 (5%)	3 (1%)	22	60
27	a	94/136 (69%)	88 (94%)	6 (6%)	0	100	100
27	e	74/136 (54%)	71 (96%)	3 (4%)	0	100	100
28	b	78/103 (76%)	76 (97%)	2 (3%)	0	100	100
28	f	77/103 (75%)	75 (97%)	2 (3%)	0	100	100
29	g	89/135 (66%)	86 (97%)	3 (3%)	0	100	100
30	h	92/126 (73%)	90 (98%)	1 (1%)	1 (1%)	12	47
31	j	493/1049 (47%)	447 (91%)	35 (7%)	11 (2%)	5	29
32	k	419/709 (59%)	392 (94%)	26 (6%)	1 (0%)	44	78
All	All	8877/15383 (58%)	8445 (95%)	403 (4%)	29 (0%)	38	72

5 of 29 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
26	Z	342	ALA
26	Z	393	LEU
30	h	105	GLY
31	j	948	PHE
31	j	963	ASP

5.3.2 Protein sidechains ⓘ

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	A	1274/1747 (73%)	1253 (98%)	21 (2%)	58	73
2	B	996/1027 (97%)	968 (97%)	28 (3%)	38	57
3	C	235/252 (93%)	231 (98%)	4 (2%)	56	72

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	D	112/126 (89%)	109 (97%)	3 (3%)	40	58
5	E	191/192 (100%)	191 (100%)	0	100	100
6	F	68/111 (61%)	65 (96%)	3 (4%)	24	45
7	G	149/153 (97%)	145 (97%)	4 (3%)	40	58
8	H	130/131 (99%)	127 (98%)	3 (2%)	45	64
9	I	105/112 (94%)	102 (97%)	3 (3%)	37	56
10	J	55/56 (98%)	55 (100%)	0	100	100
11	K	104/106 (98%)	102 (98%)	2 (2%)	52	69
12	L	44/55 (80%)	44 (100%)	0	100	100
13	M	758/1524 (50%)	743 (98%)	15 (2%)	50	68
15	O	143/1017 (14%)	142 (99%)	1 (1%)	81	87
17	Q	763/1011 (76%)	758 (99%)	5 (1%)	81	87
18	R	163/625 (26%)	162 (99%)	1 (1%)	84	88
19	S	86/268 (32%)	84 (98%)	2 (2%)	45	64
21	U	163/590 (28%)	162 (99%)	1 (1%)	84	88
22	V	255/462 (55%)	251 (98%)	4 (2%)	58	73
23	W	260/260 (100%)	259 (100%)	1 (0%)	89	91
24	X	48/467 (10%)	47 (98%)	1 (2%)	48	66
25	Y	102/105 (97%)	100 (98%)	2 (2%)	50	68
26	Z	438/939 (47%)	426 (97%)	12 (3%)	40	58
27	a	82/110 (74%)	78 (95%)	4 (5%)	21	42
27	e	64/110 (58%)	63 (98%)	1 (2%)	58	73
28	b	65/79 (82%)	64 (98%)	1 (2%)	60	75
28	f	64/79 (81%)	62 (97%)	2 (3%)	35	54
29	g	72/104 (69%)	71 (99%)	1 (1%)	62	75
30	h	80/105 (76%)	80 (100%)	0	100	100
31	j	446/929 (48%)	438 (98%)	8 (2%)	54	71
32	k	380/631 (60%)	370 (97%)	10 (3%)	41	59
All	All	7895/13483 (59%)	7752 (98%)	143 (2%)	54	71

5 of 143 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
26	Z	624	LEU
27	a	121	MET
31	j	938	ASP
2	B	1157	LEU
2	B	1118	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 64 such sidechains are listed below:

Mol	Chain	Res	Type
31	j	710	GLN
32	k	70	HIS
11	K	29	ASN
9	I	41	ASN
32	k	92	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
16	P	20/21 (95%)	8 (40%)	5 (25%)

5 of 8 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
16	P	-20	C
16	P	-17	C
16	P	-16	U
16	P	-13	G
16	P	-12	C

All (5) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
16	P	-21	U
16	P	-13	G
16	P	-11	G
16	P	-10	G
16	P	-9	U

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 10 ligands modelled in this entry, 10 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

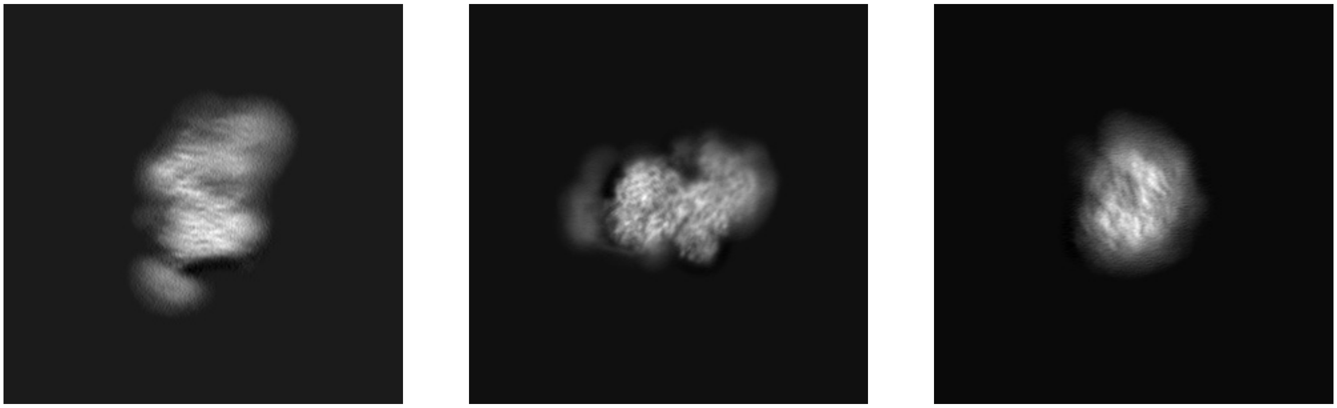
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-54537. 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.

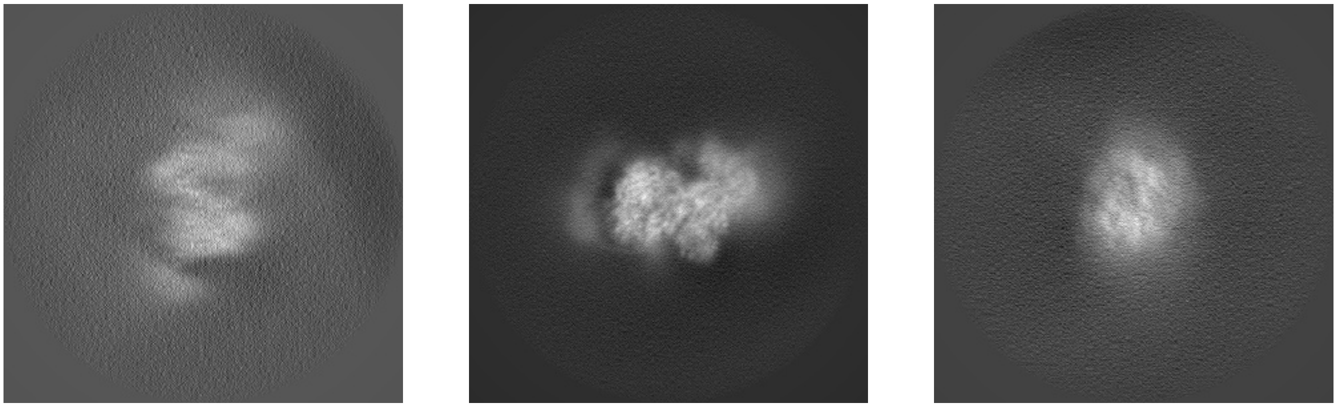
6.1 Orthogonal projections

6.1.1 Primary map



X Y Z

6.1.2 Raw map

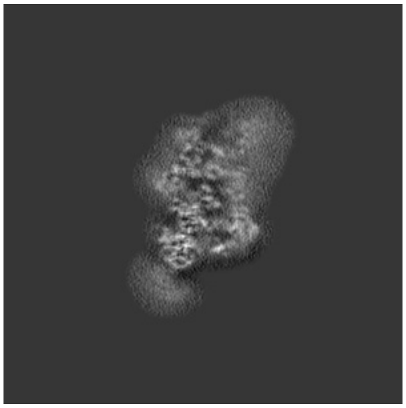


X Y Z

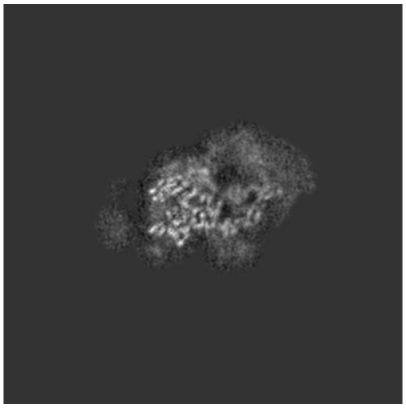
The images above show the map projected in three orthogonal directions.

6.2 Central slices

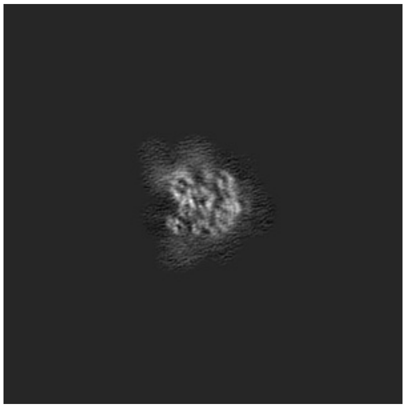
6.2.1 Primary map



X Index: 256

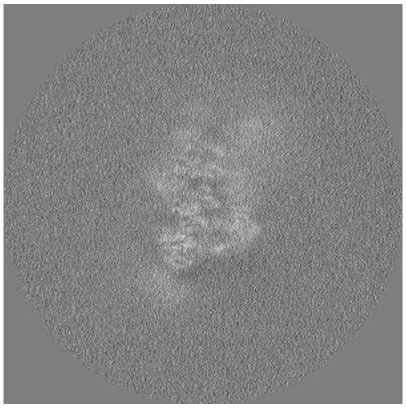


Y Index: 256

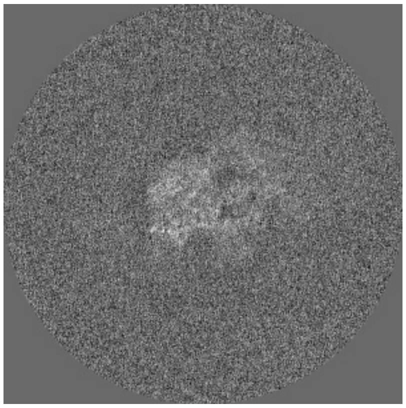


Z Index: 256

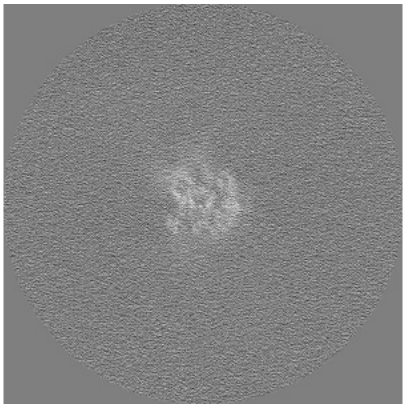
6.2.2 Raw map



X Index: 256



Y Index: 256

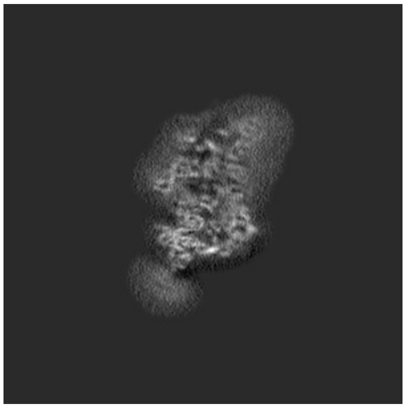


Z Index: 256

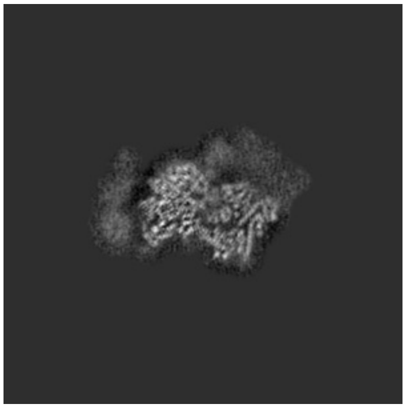
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices ⓘ

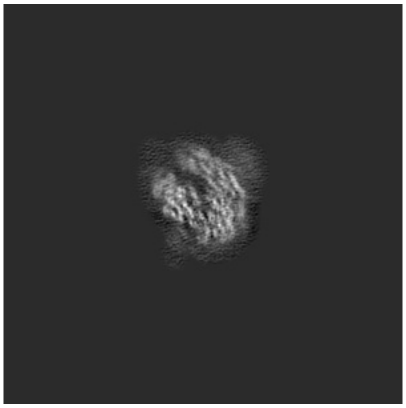
6.3.1 Primary map



X Index: 260

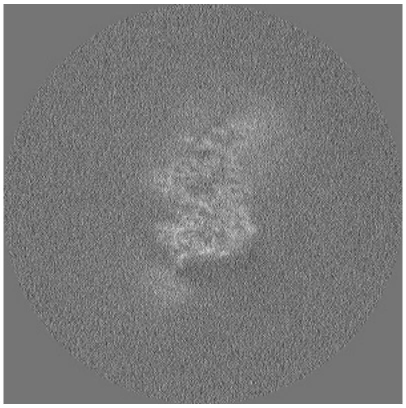


Y Index: 234

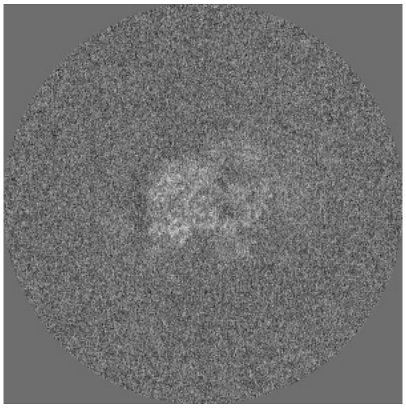


Z Index: 219

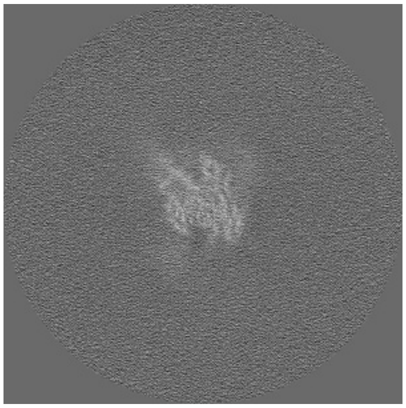
6.3.2 Raw map



X Index: 262



Y Index: 254

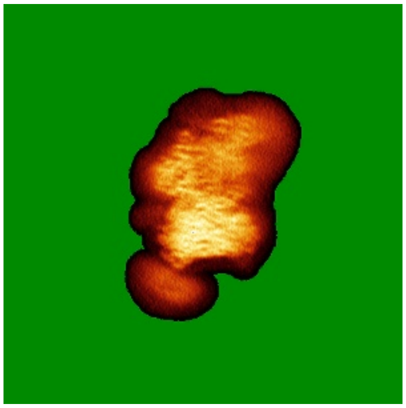


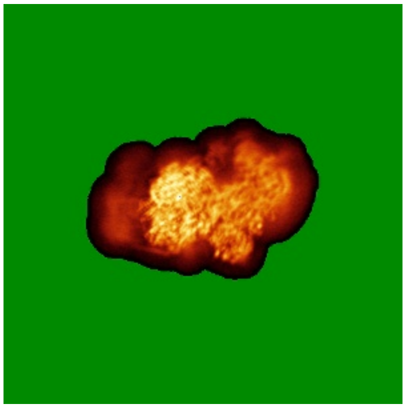
Z Index: 232

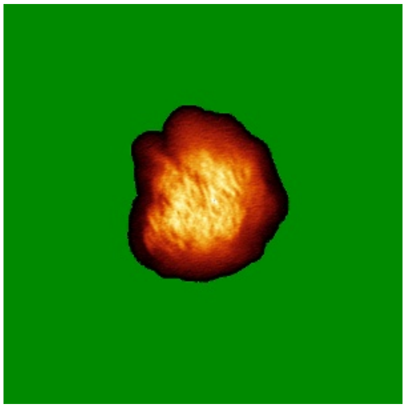
The images above show the largest variance slices of the map in three orthogonal directions.

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

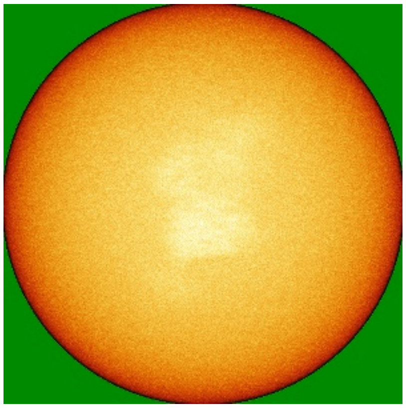
6.4.1 Primary map

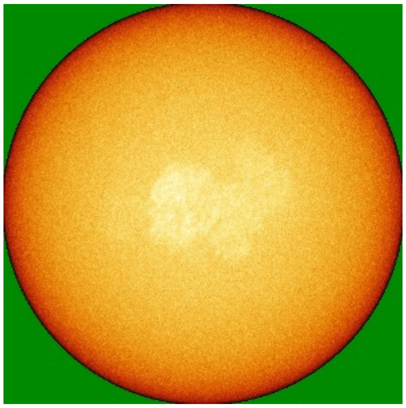

X

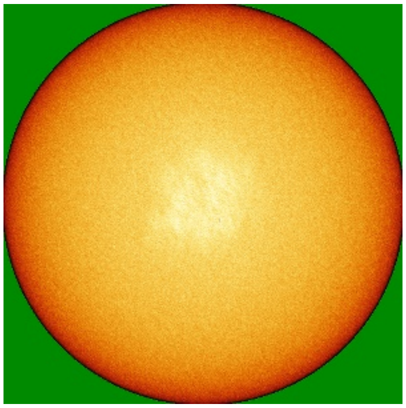

Y


Z

6.4.2 Raw map


X

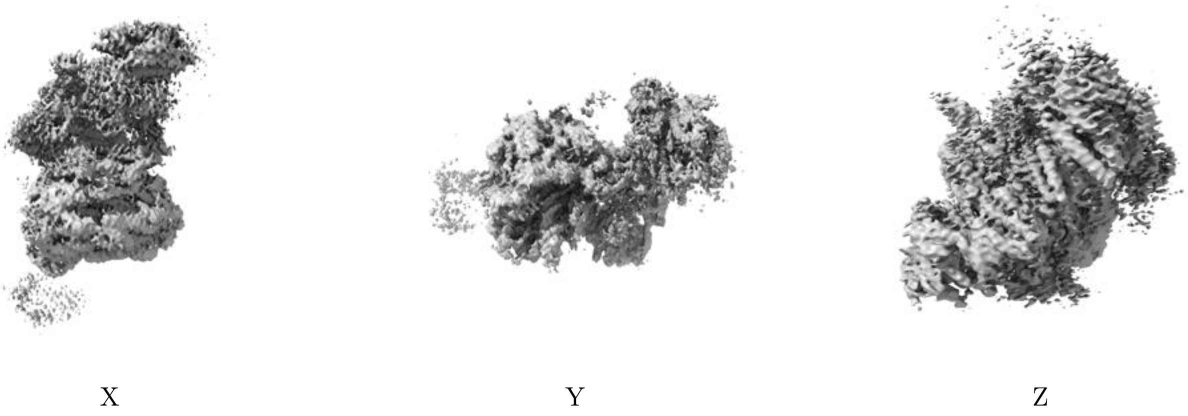

Y


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.

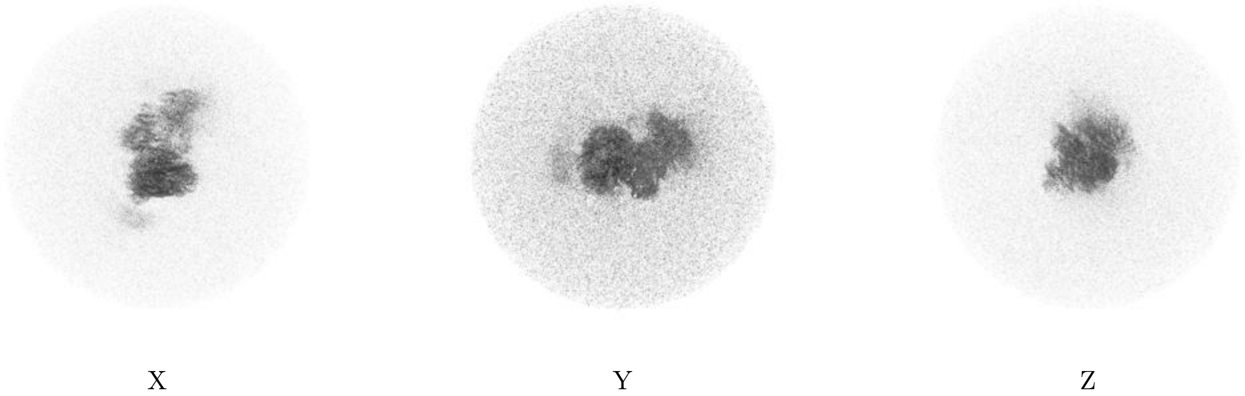
6.5 Orthogonal surface views ⓘ

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0075. 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



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.

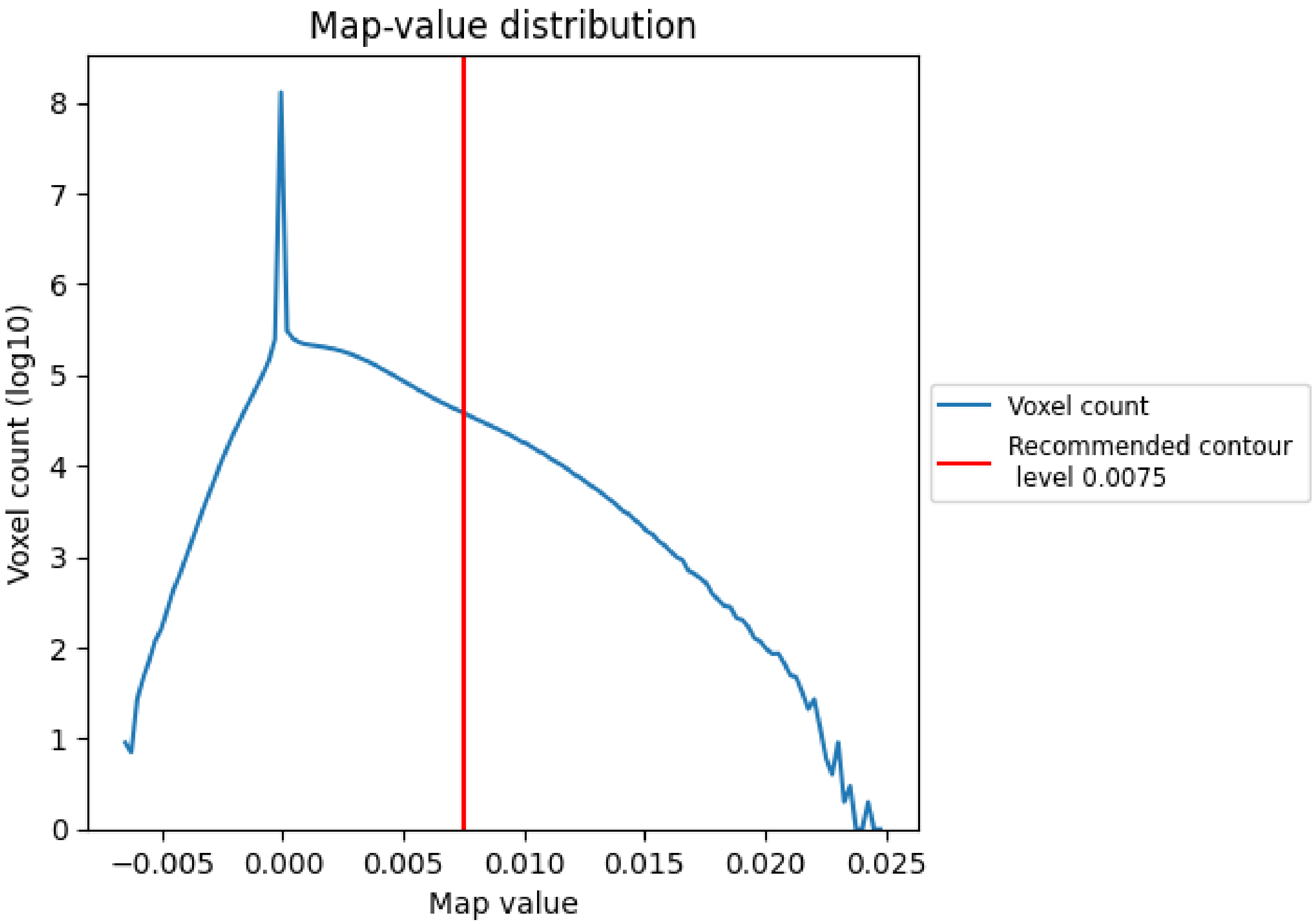
6.6 Mask visualisation ⓘ

This section was not generated. No masks/segmentation were deposited.

7 Map analysis ⓘ

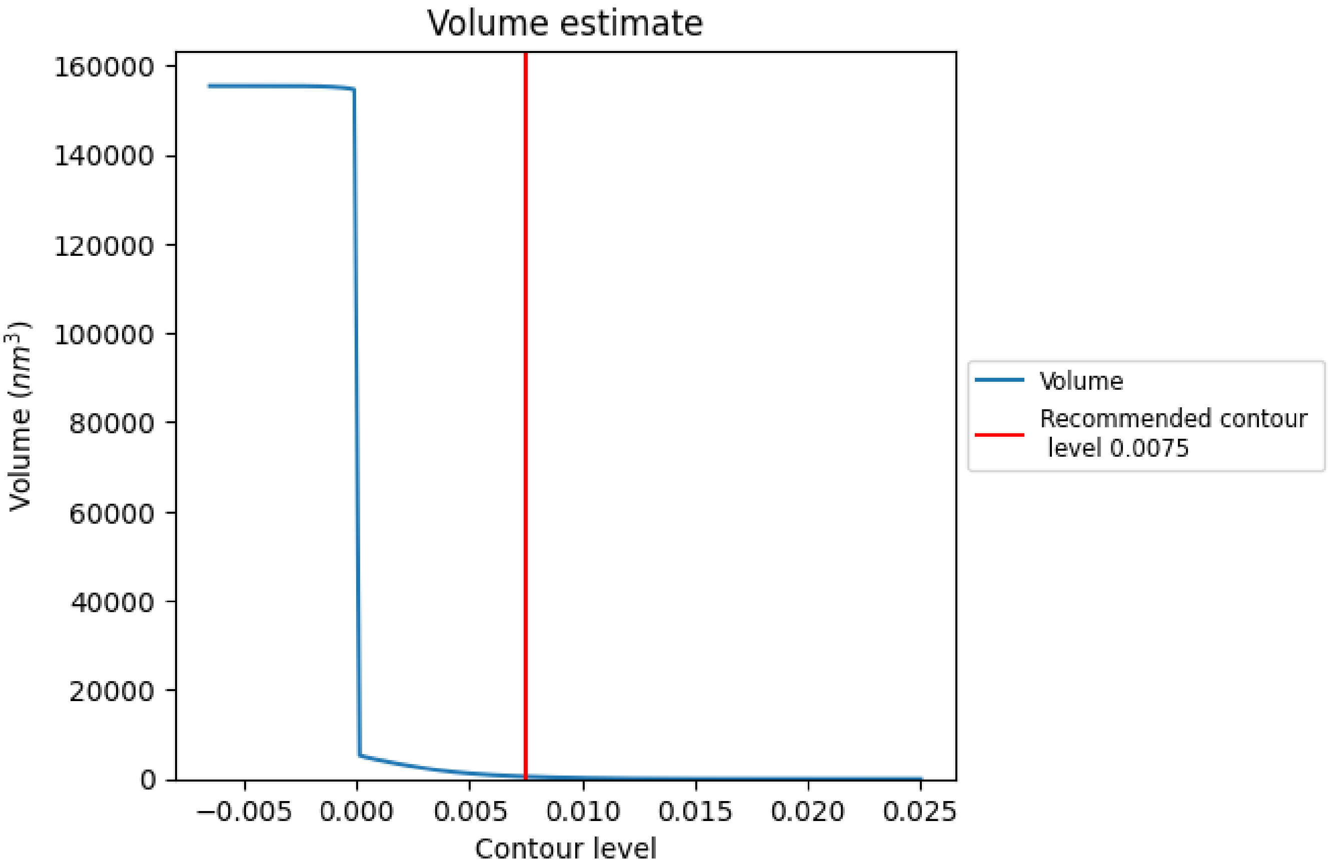
This section contains the results of statistical analysis of the map.

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.

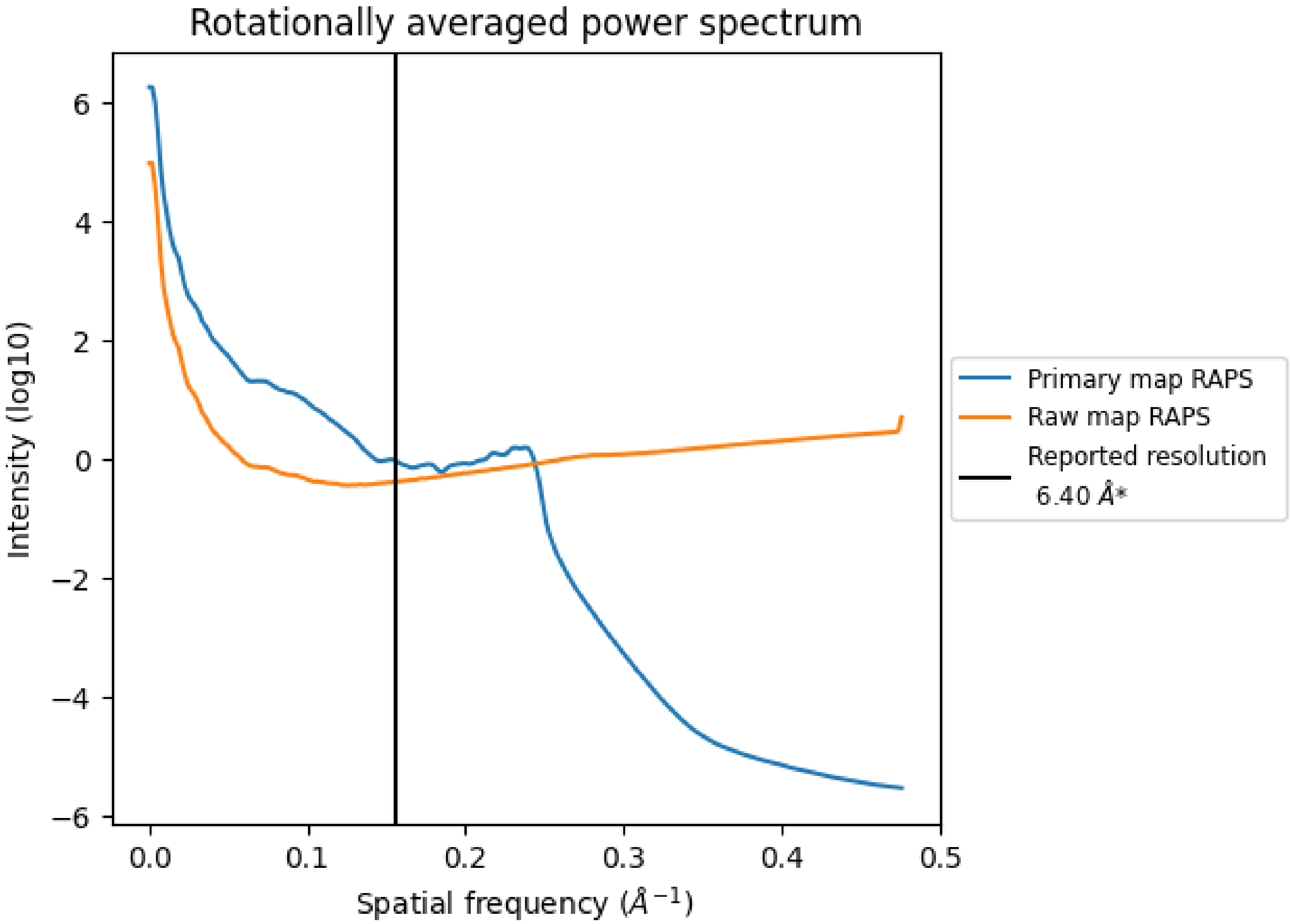
7.2 Volume estimate ⓘ



The volume at the recommended contour level is 539 nm^3; this corresponds to an approximate mass of 487 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 ⓘ

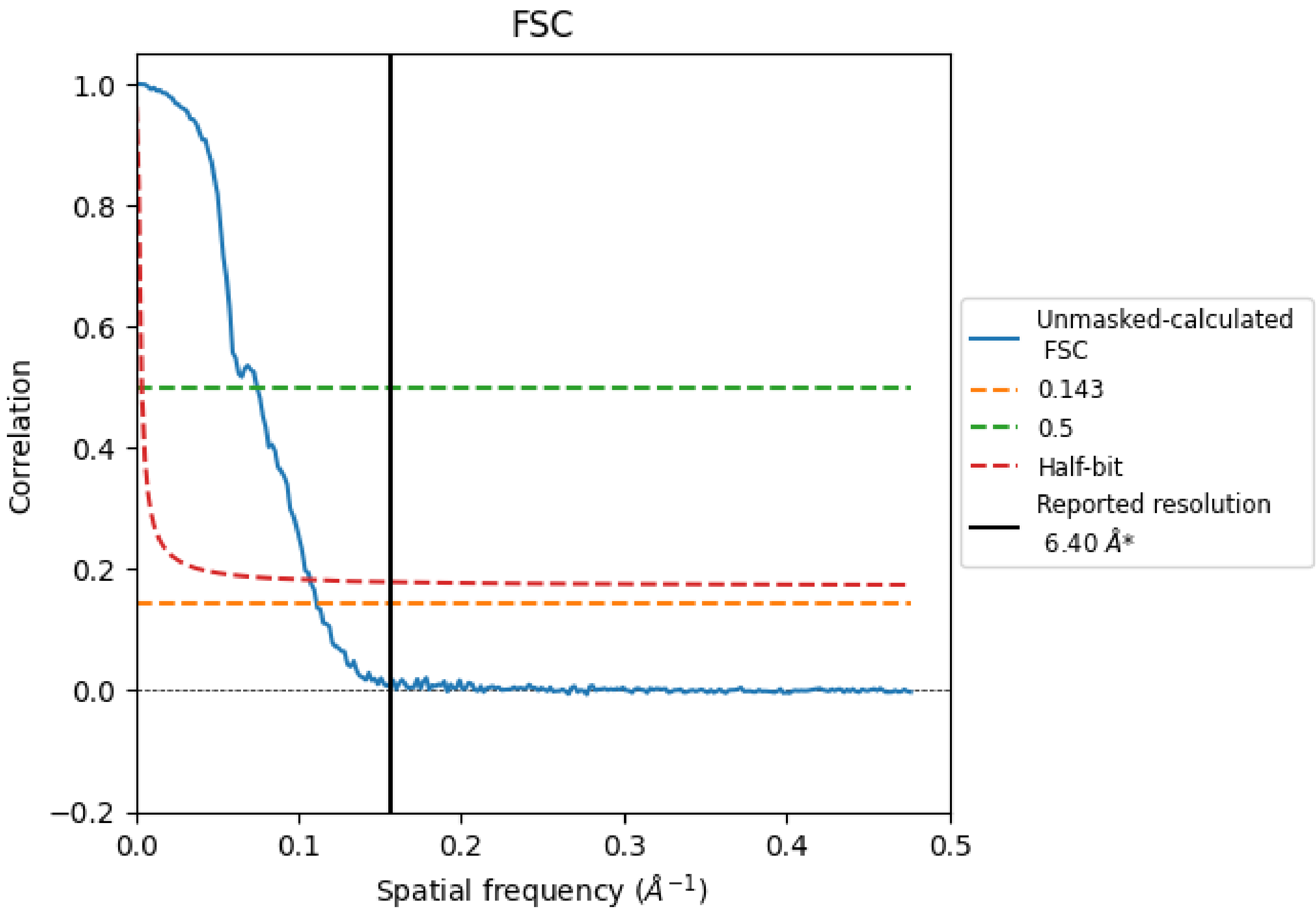


*Reported resolution corresponds to spatial frequency of 0.156 $Å^{-1}$

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 0.156 $Å^{-1}$

8.2 Resolution estimates ⓘ

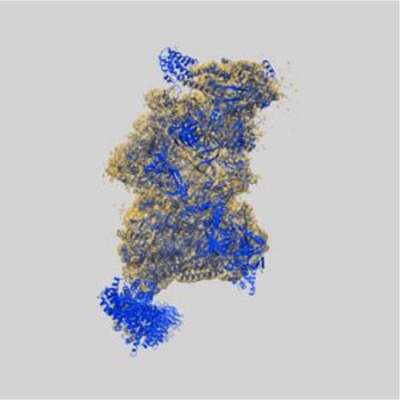
Resolution estimate (Å)	**Estimation criterion (FSC cut-off)**		
	0.143	0.5	Half-bit
Reported by author	6.40	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	9.00	13.42	9.33

*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 9.00 differs from the reported value 6.4 by more than 10 %

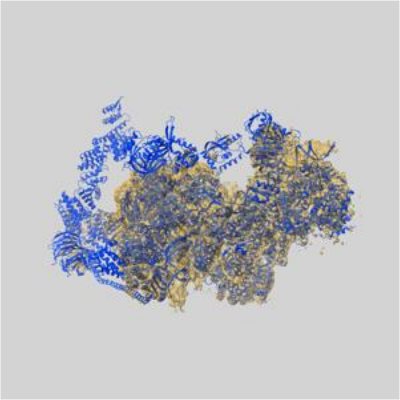
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-54537 and PDB model 9S3G. Per-residue inclusion information can be found in section 3 on page 12.

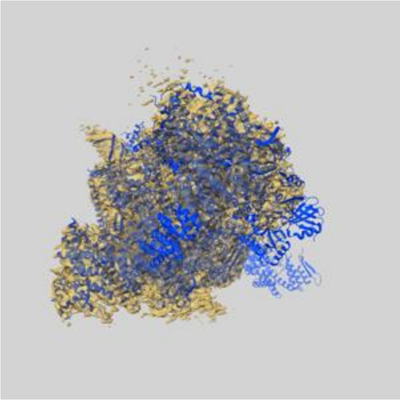
9.1 Map-model overlay



X



Y



Z

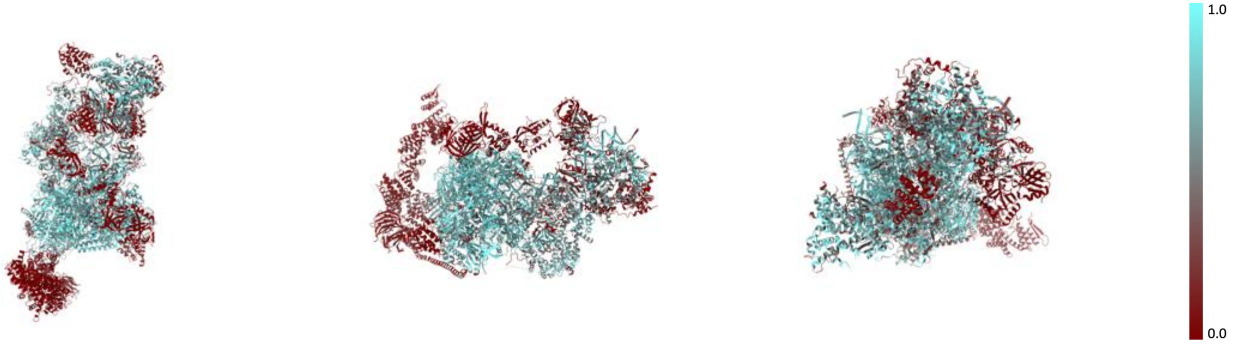
The images above show the 3D surface view of the map at the recommended contour level 0.0075 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model ⓘ

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.

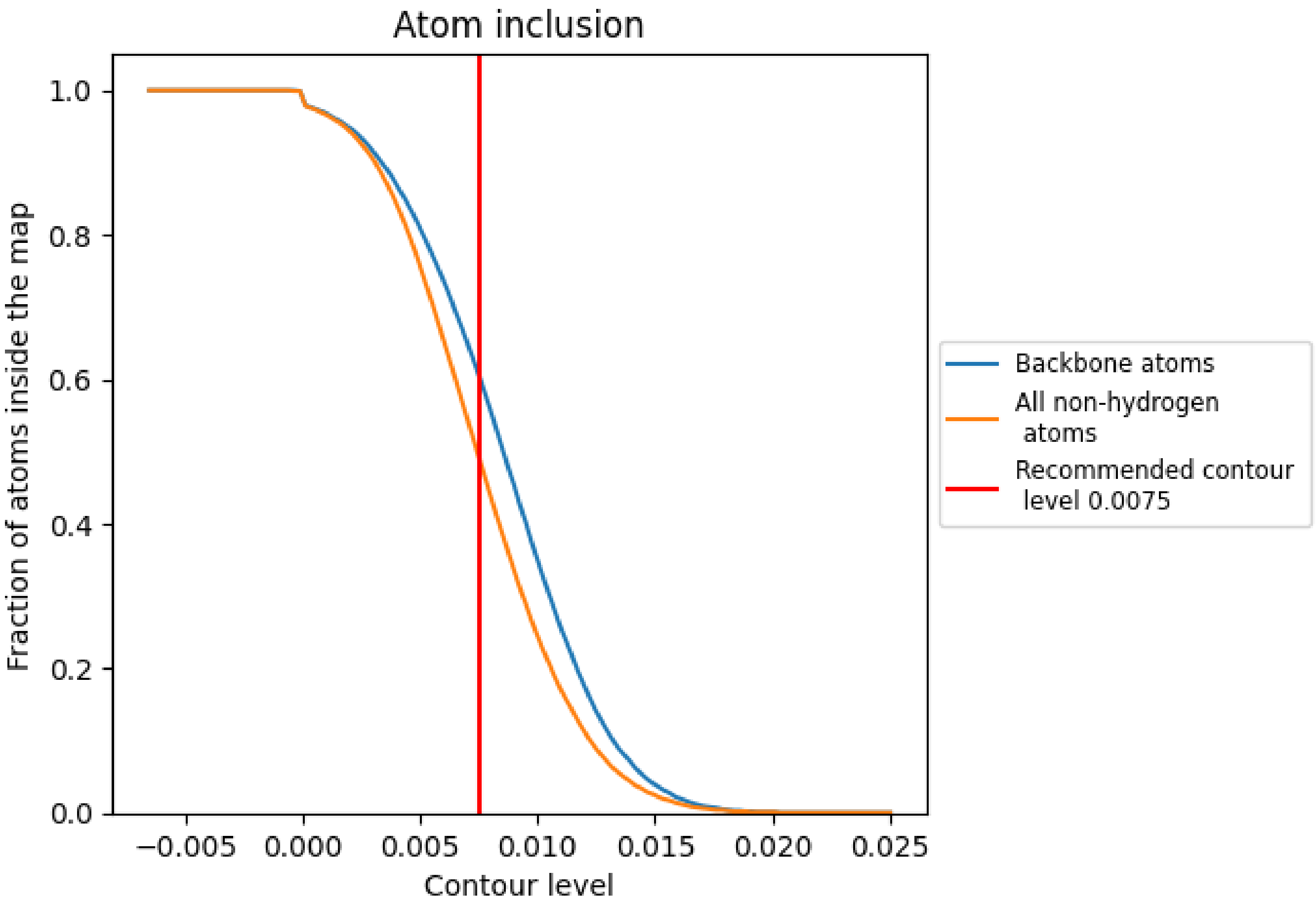
9.3 Atom inclusion mapped to coordinate model ⓘ



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 (0.0075).

9.4 Atom inclusion ⓘ



At the recommended contour level, 61% 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 (0.0075) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.4920	0.1870
A	0.7390	0.2670
B	0.7600	0.2350
C	0.7600	0.2460
D	0.6450	0.2200
E	0.7590	0.2360
F	0.7860	0.2840
G	0.5810	0.2380
H	0.5710	0.2990
I	0.6930	0.2060
J	0.8610	0.2190
K	0.6350	0.2560
L	0.7120	0.1990
M	0.6220	0.2070
N	0.7560	0.1580
O	0.0230	0.0020
P	0.7250	0.2130
Q	0.0240	0.1120
R	0.1120	0.1590
S	0.0050	0.0430
T	0.7810	0.1630
U	0.0480	0.1170
V	0.0060	0.1050
W	0.0130	0.1270
X	0.0190	0.1540
Y	0.3710	0.1640
Z	0.5420	0.2020
a	0.5380	0.1330
b	0.5830	0.1500
e	0.4330	0.1230
f	0.4050	0.1280
g	0.4670	0.1040
h	0.4520	0.1130
j	0.4520	0.1520
k	0.2270	0.1030