



Full wwPDB EM Validation Report ⓘ

Jul 21, 2025 – 09:22 PM EDT

PDB ID : 8VVS / pdb_00008vvs
EMDB ID : EMD-43567
Title : Post-decoding post-hydrolysis state obtained from merged datasets of elongation inhibitor-treated mammalian ribosomes
Authors : Loerch, S.; Petrossian, E.; Smith, P.R.; Campbell, Z.T.
Deposited on : 2024-01-31
Resolution : 3.10 Å(reported)

This is a Full wwPDB EM Validation 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:

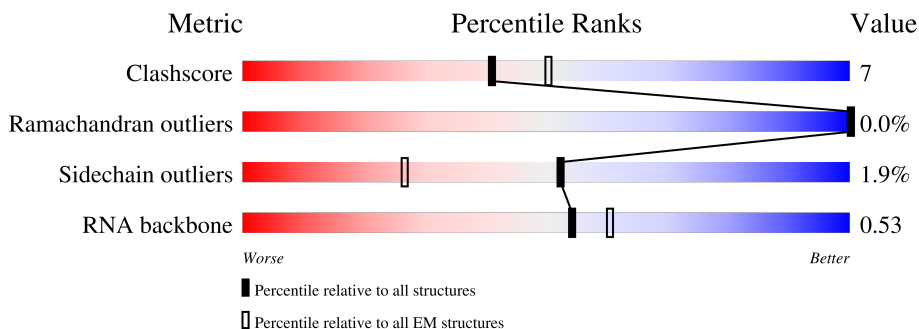
EMDB validation analysis : 0.0.1.dev118
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0rc1
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.44

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 3.10 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
RNA backbone	6643	2191

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 $\leq 5\%$. 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	257	
2	B	403	
3	C	413	
4	D	297	
5	E	291	
6	F	249	
7	G	319	



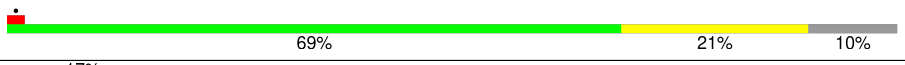
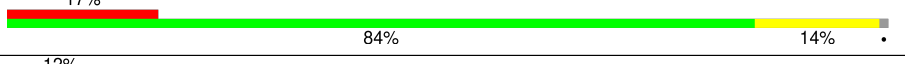





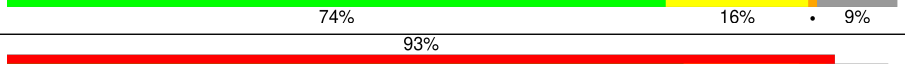
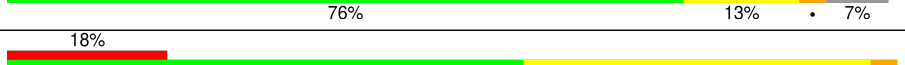
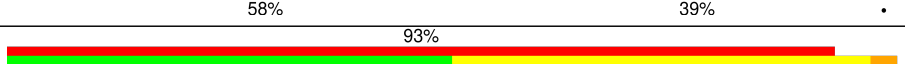

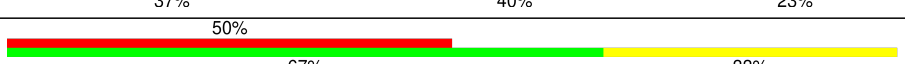
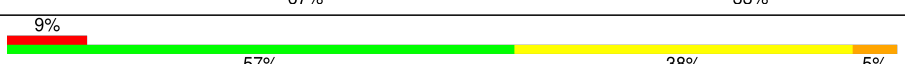
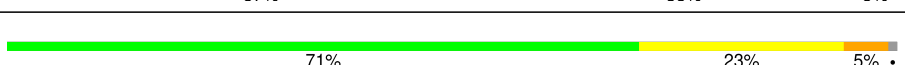





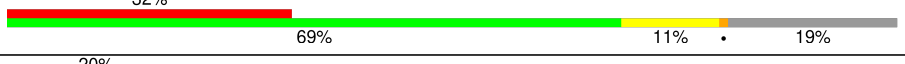

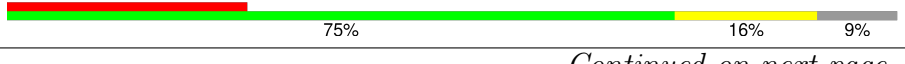

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Mol	Chain	Length	Quality of chain
8	H	192	6% 85% 13% ..
9	I	214	7% 79% 16% .
10	J	178	15% 76% 20% .
11	K	211	9% 85% 14% .
12	L	218	5% 49% 15% 37%
13	M	204	5% 77% 22%
14	N	203	5% 77% 21% .
15	O	213	5% 62% 11% 27%
16	P	188	. 79% 20% ..
17	Q	212	9% 72% 13% 15%
18	R	224	. 65% 13% 21%
19	S	160	12% 83% 16% ..
20	T	128	14% 59% 20% 21%
21	U	140	6% 82% 14% .
22	V	157	31% 59% 10% . 30%
23	W	156	7% 67% 8% . 24%
24	X	145	10% 70% 21% . 8%
25	Y	136	5% 74% 26% .
26	Z	148	. 82% 18% .
27	AA	245	11% 39% 5% 56%
28	BA	115	8% 70% 17% 14%
29	CA	125	9% 66% 20% 14%
30	DA	135	5% 76% 19% .
31	EA	110	5% 88% 11% .
32	FA	129	9% 79% 9% 12%

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Mol	Chain	Length	Quality of chain
33	GA	123	
34	HA	105	
35	IA	97	
36	JA	70	
37	KA	51	
38	LA	128	
39	MA	25	
40	NA	106	
41	OA	92	
42	PA	137	
43	RA	165	
44	SA	76	
45	TA	76	
46	UA	75	
47	VA	12	
48	WA	3584	
49	XA	120	
50	YA	156	
51	ZA	1869	
52	AB	295	
53	BB	264	
54	CB	293	
55	DB	281	
56	EB	263	
57	FB	204	

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Mol	Chain	Length	Quality of chain
58	GB	249	44% 76% 19% 5%
59	HB	432	16% 33% 9% 57%
60	IB	208	23% 84% 15%
61	JB	194	26% 75% 21% 5%
62	KB	165	30% 41% 16% 42%
63	LB	158	13% 79% 12% 9%
64	MB	132	78% 62% 26% 11%
65	NB	151	9% 80% 19%
66	OB	151	13% 73% 17% 10%
67	PB	145	46% 74% 15% 11%
68	QB	172	30% 67% 14% 17%
69	RB	135	29% 80% 17%
70	SB	152	34% 71% 22% 5%
71	TB	145	28% 77% 20%
72	UB	119	45% 71% 15% 14%
73	VB	83	11% 86% 13%
74	WB	130	12% 78% 21%
75	XB	143	14% 83% 16%
76	YB	131	32% 75% 20% 5%
77	ZB	124	35% 59% 10% 31%
78	AC	115	15% 70% 17% 12%
79	BC	84	33% 80% 18%
80	CC	69	25% 67% 23% 10%
81	DC	56	14% 77% 21%
82	EC	133	17% 36% 5% 59%

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Mol	Chain	Length	Quality of chain
83	FC	188	
84	GC	317	
85	IC	4	
86	b	318	
87	c	14	
88	HC	462	

2 Entry composition [i](#)

There are 95 unique types of molecules in this entry. The entry contains 220703 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 uL2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	250	1914	1199	392	317	6	0	0

- Molecule 2 is a protein called uL3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	397	3196	2035	603	545	13	0	0

- Molecule 3 is a protein called uL4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	362	2883	1812	577	480	14	0	0

- Molecule 4 is a protein called uL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D	294	2395	1514	439	428	14	0	0

- Molecule 5 is a protein called L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	E	228	1823	1173	349	298	3	0	0

- Molecule 6 is a protein called uL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	F	227	1897	1217	366	305	9	0	0

- Molecule 7 is a protein called L7A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	G	229	1850	1181	356	309	4	0	0

- Molecule 8 is a protein called L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	H	190	1516	954	284	272	6	0	0

- Molecule 9 is a protein called L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	I	205	1664	1056	321	274	13	0	0

- Molecule 10 is a protein called uL5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	J	171	1372	867	256	243	6	0	0

- Molecule 11 is a protein called eL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	K	210	1702	1065	354	279	4	0	0

There are 9 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
K	46	ILE	-	insertion	UNP G1TPV0
K	47	ALA	-	insertion	UNP G1TPV0
K	48	PRO	-	insertion	UNP G1TPV0
K	49	ARG	-	insertion	UNP G1TPV0
K	50	PRO	-	insertion	UNP G1TPV0
K	51	ALA	-	insertion	UNP G1TPV0
K	52	ALA	-	insertion	UNP G1TPV0
K	53	GLY	-	insertion	UNP G1TPV0
K	54	PRO	-	insertion	UNP G1TPV0

- Molecule 12 is a protein called eL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	L	138	1137	727	221	182	7	0	0

- Molecule 13 is a protein called eL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	M	203	1701	1072	359	266	4	0	0

- Molecule 14 is a protein called uL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
14	N	199	1630	1051	319	255	5	0	0

- Molecule 15 is a protein called uL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
15	O	156	1266	793	245	219	9	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
O	43	SER	ALA	conflict	UNP G1TVT6

- Molecule 16 is a protein called eL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	P	187	1515	946	315	250	4	0	0

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
P	4	ASP	ASN	conflict	UNP G1TFE0
P	14	ARG	TRP	conflict	UNP G1TFE0
P	53	MET	LEU	conflict	UNP G1TFE0
P	58	ARG	TRP	conflict	UNP G1TFE0
P	75	ARG	GLN	conflict	UNP G1TFE0
P	80	ALA	PRO	conflict	UNP G1TFE0
P	86	VAL	ILE	conflict	UNP G1TFE0

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Chain	Residue	Modelled	Actual	Comment	Reference
P	104	ARG	HIS	conflict	UNP G1TFE0
P	110	ARG	CYS	conflict	UNP G1TFE0
P	137	VAL	GLY	conflict	UNP G1TFE0
P	157	GLY	ARG	conflict	UNP G1TFE0
P	181	ARG	TRP	conflict	UNP G1TFE0

- Molecule 17 is a protein called eL19.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
17	Q	180	1508	933	328	238	9	0	0

- Molecule 18 is a protein called eL20.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
18	R	176	1462	930	285	236	11	0	0

- Molecule 19 is a protein called eL21.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
19	S	159	1298	823	252	217	6	0	0

- Molecule 20 is a protein called eL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	T	101	826	530	144	150	2	0	0

There are 11 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
T	18	LEU	VAL	conflict	UNP G1TSG1
T	32	GLY	ARG	conflict	UNP G1TSG1
T	36	ALA	GLU	conflict	UNP G1TSG1
T	39	PHE	SER	conflict	UNP G1TSG1
T	54	GLY	ARG	conflict	UNP G1TSG1
T	60	VAL	ALA	conflict	UNP G1TSG1
T	62	SER	THR	conflict	UNP G1TSG1
T	63	LEU	ILE	conflict	UNP G1TSG1

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Chain	Residue	Modelled	Actual	Comment	Reference
T	97	ARG	HIS	conflict	UNP G1TSG1
T	106	THR	SER	conflict	UNP G1TSG1
T	126	GLU	ASP	conflict	UNP G1TSG1

- Molecule 21 is a protein called L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
21	U	135	1004	631	191	177	5	0	0

- Molecule 22 is a protein called uL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	V	110	887	555	179	149	4	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
V	78	SER	PHE	conflict	UNP G1SE28

- Molecule 23 is a protein called uL23.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
23	W	118	967	618	181	167	1	0	0

- Molecule 24 is a protein called L26.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	X	134	1115	700	226	186	3	0	0

- Molecule 25 is a protein called L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	Y	135	1107	714	208	182	3	0	0

- Molecule 26 is a protein called uL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
26	Z	147	1162	734	239	185	4	0	0

- Molecule 27 is a protein called L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	AA	107	873	542	195	133	3	0	0

- Molecule 28 is a protein called eL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
28	BA	99	769	486	135	141	7	0	0

- Molecule 29 is a protein called L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
29	CA	108	893	563	172	156	2	0	0

- Molecule 30 is a protein called L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
30	DA	129	1064	673	220	166	5	0	0

- Molecule 31 is a protein called eL33.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
31	EA	109	876	555	174	143	4	0	0

- Molecule 32 is a protein called L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
32	FA	114	906	566	187	147	6	0	0

- Molecule 33 is a protein called L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
33	GA	121	1008	637	203	167	1	0	0

- Molecule 34 is a protein called L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
34	HA	102	830	520	176	129	5	0	0

- Molecule 35 is a protein called L37.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
35	IA	87	716	440	159	112	5	0	0

- Molecule 36 is a protein called eL38.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
36	JA	69	569	366	103	99	1	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
JA	24	LYS	ASN	conflict	UNP G1U001

- Molecule 37 is a protein called eL39.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
37	KA	50	447	286	96	64	1	0	0

- Molecule 38 is a protein called eL40.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
38	LA	52	429	266	90	67	6	0	0

- Molecule 39 is a protein called eL41.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	MA	25	Total	C	N	O	S	0	0
			239	145	64	27	3		

- Molecule 40 is a protein called eL42.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	NA	104	Total	C	N	O	S	0	0
			851	533	174	138	6		

- Molecule 41 is a protein called eL43.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	OA	91	Total	C	N	O	S	0	0
			708	445	136	120	7		

- Molecule 42 is a protein called L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	PA	124	Total	C	N	O	S	0	0
			994	616	205	167	6		

- Molecule 43 is a protein called L12.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	RA	153	Total	C	N	O	S	0	0
			1160	722	218	217	3		

- Molecule 44 is a RNA chain called P-site tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	SA	76	Total	C	N	O	P	0	0
			1622	726	300	521	75		

- Molecule 45 is a RNA chain called E-site tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	TA	76	Total	C	N	O	P	0	0
			1615	722	286	532	75		

- Molecule 46 is a RNA chain called A-site tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
46	UA	75	1596	713	285	523	75	0	0

- Molecule 47 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
47	VA	12	251	113	41	85	12	0	0

- Molecule 48 is a RNA chain called 28S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
48	WA	3578	76735	34173	14061	24923	3578	0	0

- Molecule 49 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
49	XA	119	2538	1132	454	834	118	0	0

There are 7 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
XA	2	U	N	conflict	GB X06789.1
XA	36	C	N	conflict	GB X06789.1
XA	102	U	N	conflict	GB X06789.1
XA	112	U	N	conflict	GB X06789.1
XA	114	U	N	conflict	GB X06789.1
XA	119	U	C	conflict	GB X06789.1
XA	120	U	N	conflict	GB X06789.1

- Molecule 50 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
50	YA	156	3314	1480	585	1094	155	0	0

- Molecule 51 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
51	ZA	1716	36623	16347	6572	11989	1715	0	0

- Molecule 52 is a protein called RPSA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
52	AB	217	1710	1086	300	316	8	0	0

- Molecule 53 is a protein called S3A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
53	BB	213	1729	1098	309	308	14	0	0

- Molecule 54 is a protein called eS1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
54	CB	220	1707	1105	293	300	9	0	0

- Molecule 55 is a protein called S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
55	DB	228	1768	1126	318	316	8	0	0

- Molecule 56 is a protein called S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
56	EB	262	2076	1324	386	358	8	0	0

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
EB	25	GLY	SER	conflict	UNP G1TK17
EB	51	ARG	LYS	conflict	UNP G1TK17
EB	78	THR	ALA	conflict	UNP G1TK17
EB	156	VAL	MET	conflict	UNP G1TK17

- Molecule 57 is a protein called S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
57	FB	185	1471	921	277	266	7	0	0

- Molecule 58 is a protein called eS6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
58	GB	237	1923	1200	387	329	7	0	0

- Molecule 59 is a protein called eS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
59	HB	185	1489	952	271	265	1	0	0

- Molecule 60 is a protein called S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
60	IB	206	1686	1058	332	291	5	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
IB	47	ARG	GLY	conflict	UNP G1TJW1

- Molecule 61 is a protein called S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
61	JB	185	1525	969	306	248	2	0	0

- Molecule 62 is a protein called S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
62	KB	96	810	530	143	131	6	0	0

- Molecule 63 is a protein called S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
63	LB	144	1180	752	223	199	6	0	0

- Molecule 64 is a protein called S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	MB	117	Total	C	N	O	S	0	0
			908	570	161	169	8		

- Molecule 65 is a protein called uS15.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	NB	149	Total	C	N	O	S	0	0
			1202	770	228	203	1		

- Molecule 66 is a protein called S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	OB	136	Total	C	N	O	S	0	0
			1016	621	199	190	6		

- Molecule 67 is a protein called S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	PB	129	Total	C	N	O	S	0	0
			1058	670	201	180	7		

- Molecule 68 is a protein called uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	QB	142	Total	C	N	O	S	0	0
			1128	717	213	195	3		

- Molecule 69 is a protein called eS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	RB	132	Total	C	N	O	S	0	0
			1068	670	199	195	4		

- Molecule 70 is a protein called S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	SB	144	Total	C	N	O	S	0	0
			1190	746	241	202	1		

- Molecule 71 is a protein called S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
71	TB	142	1104	693	212	196	3	0	0

- Molecule 72 is a protein called uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
72	UB	102	808	507	154	143	4	0	0

- Molecule 73 is a protein called S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
73	VB	83	636	393	117	121	5	0	0

There are 7 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
VB	3	ASN	SER	conflict	UNP G1TM82
VB	4	ASP	ASN	conflict	UNP G1TM82
VB	33	GLN	PRO	conflict	UNP G1TM82
VB	50	PHE	SER	conflict	UNP G1TM82
VB	75	ALA	SER	conflict	UNP G1TM82
VB	76	ASP	HIS	conflict	UNP G1TM82
VB	81	LYS	GLN	conflict	UNP G1TM82

- Molecule 74 is a protein called S15A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
74	WB	129	1034	659	193	176	6	0	0

- Molecule 75 is a protein called S23.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
75	XB	141	1098	693	219	183	3	0	0

- Molecule 76 is a protein called S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
76	YB	124	1011	640	198	168	5	0	0

- Molecule 77 is a protein called eS25.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
77	ZB	85	683	439	128	115	1	0	0

- Molecule 78 is a protein called S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
78	AC	101	814	507	170	132	5	0	0

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AC	28	ARG	CYS	conflict	UNP G1TFE8
AC	56	ALA	VAL	conflict	UNP G1TFE8
AC	109	ARG	PRO	conflict	UNP G1TFE8

- Molecule 79 is a protein called S27.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
79	BC	83	651	408	121	115	7	0	0

- Molecule 80 is a protein called S28.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
80	CC	62	488	297	97	92	2	0	0

- Molecule 81 is a protein called uS14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
81	DC	55	459	286	94	74	5	0	0

- Molecule 82 is a protein called S30.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	EC	55	Total	C	N	O	S	0	0
			443	274	97	71	1		

- Molecule 83 is a protein called S27A.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	FC	69	Total	C	N	O	S	0	0
			564	357	105	95	7		

- Molecule 84 is a protein called RACK1.

Mol	Chain	Residues	Atoms					AltConf	Trace
84	GC	313	Total	C	N	O	S	0	0
			2436	1535	424	465	12		

- Molecule 85 is a protein called peptide.

Mol	Chain	Residues	Atoms				AltConf	Trace
85	IC	4	Total	C	N	O	0	0
			20	12	4	4		

- Molecule 86 is a protein called RPLP0.

Mol	Chain	Residues	Atoms					AltConf	Trace
86	b	167	Total	C	N	O	S	0	0
			1279	813	228	229	9		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
b	82	LEU	ILE	conflict	UNP G1SPK4

- Molecule 87 is a protein called RPLP peptide.

Mol	Chain	Residues	Atoms					AltConf	Trace
87	c	14	Total	C	N	O	S	0	0
			110	66	14	29	1		

- Molecule 88 is a protein called eukaryotic elongation factor 1 A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
88	HC	223	1664	1048	299	308	9	0	0

- Molecule 89 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
89	A	1	Total 1	Mg 1	0
89	I	1	Total 1	Mg 1	0
89	O	1	Total 1	Mg 1	0
89	P	1	Total 1	Mg 1	0
89	U	1	Total 1	Mg 1	0
89	Z	2	Total 2	Mg 2	0
89	FA	1	Total 1	Mg 1	0
89	IA	1	Total 1	Mg 1	0
89	SA	1	Total 1	Mg 1	0
89	WA	158	Total 158	Mg 158	0
89	XA	3	Total 3	Mg 3	0
89	YA	2	Total 2	Mg 2	0
89	ZA	61	Total 61	Mg 61	0
89	AC	1	Total 1	Mg 1	0
89	HC	1	Total 1	Mg 1	0

- Molecule 90 is ZINC ION (CCD ID: ZN) (formula: Zn).

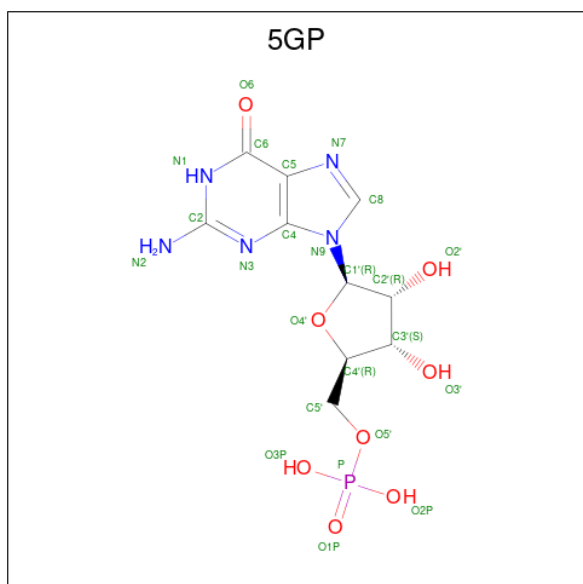
Mol	Chain	Residues	Atoms		AltConf
90	FA	1	Total 1	Zn 1	0
90	IA	1	Total 1	Zn 1	0

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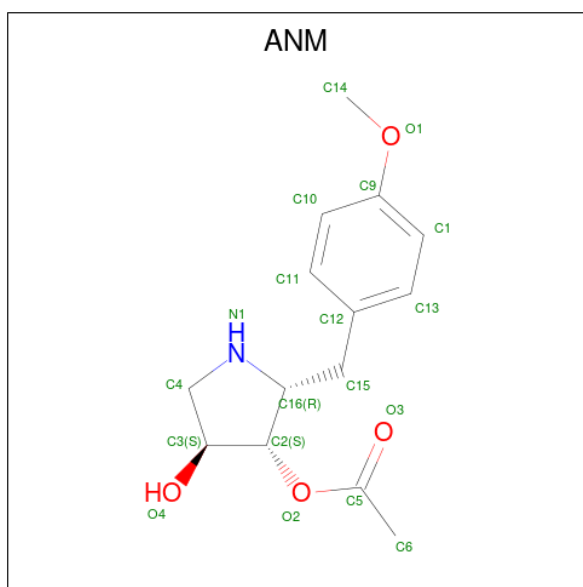
Mol	Chain	Residues	Atoms		AltConf
90	LA	1	Total	Zn	0
			1	1	
90	NA	1	Total	Zn	0
			1	1	
90	OA	1	Total	Zn	0
			1	1	
90	AC	1	Total	Zn	0
			1	1	
90	DC	1	Total	Zn	0
			1	1	
90	FC	1	Total	Zn	0
			1	1	

- Molecule 91 is GUANOSINE-5'-MONOPHOSPHATE (CCD ID: 5GP) (formula: C₁₀H₁₄N₅O₈P).



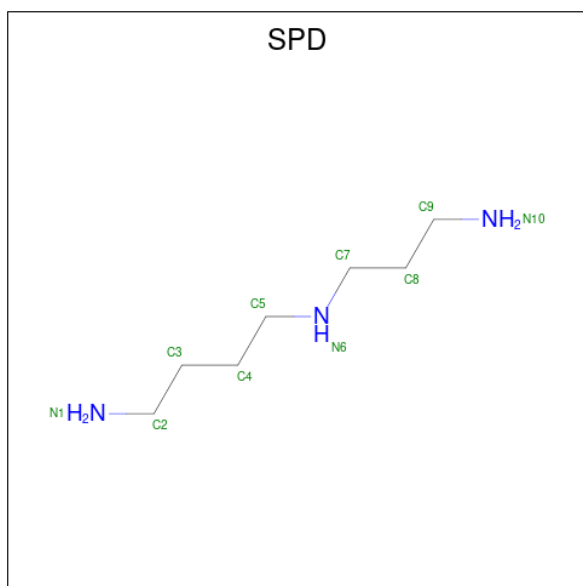
Mol	Chain	Residues	Atoms					AltConf
91	UA	1	Total	C	N	O	P	0
			24	10	5	8	1	

- Molecule 92 is ANISOMYCIN (CCD ID: ANM) (formula: C₁₄H₁₉NO₄).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
92	WA	1	19	14	1	4	0

- Molecule 93 is SPERMIDINE (CCD ID: SPD) (formula: $C_7H_{19}N_3$).



Mol	Chain	Residues	Atoms			AltConf
			Total	C	N	
93	WA	1	10	7	3	0
93	WA	1	10	7	3	0
93	WA	1	10	7	3	0

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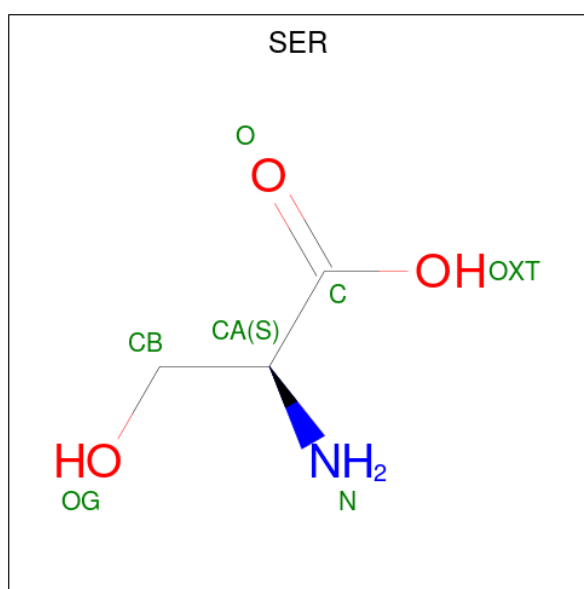
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Mol	Chain	Residues	Atoms			AltConf
			Total	C	N	
93	ZA	1	10	7	3	0

- Molecule 94 is POTASSIUM ION (CCD ID: K) (formula: K).

Mol	Chain	Residues	Atoms		AltConf
			Total	K	
94	WA	1	1	1	0

- Molecule 95 is SERINE (CCD ID: SER) (formula: C₃H₇NO₃).




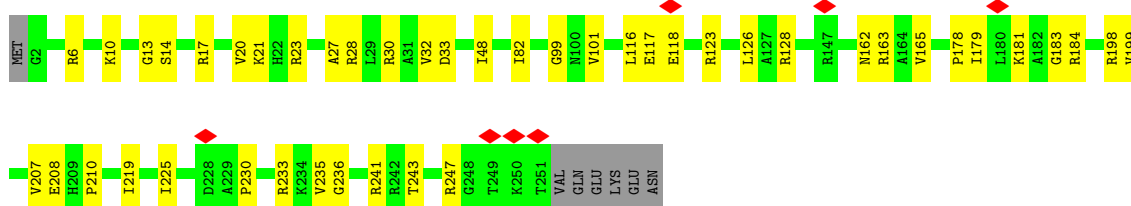
Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
95	HC	1	6	3	1	2	0

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.

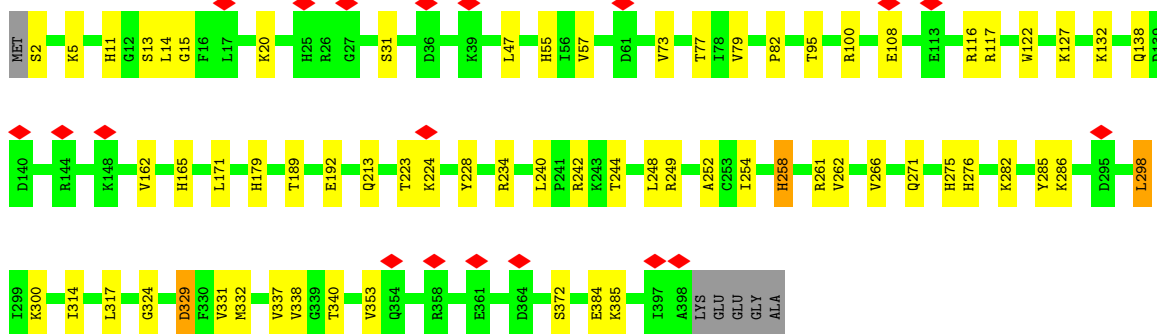
- Molecule 1: uL2

Chain A: 




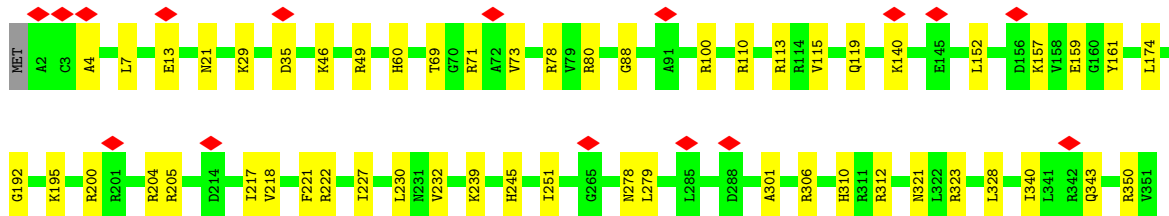
- Molecule 2: uL3

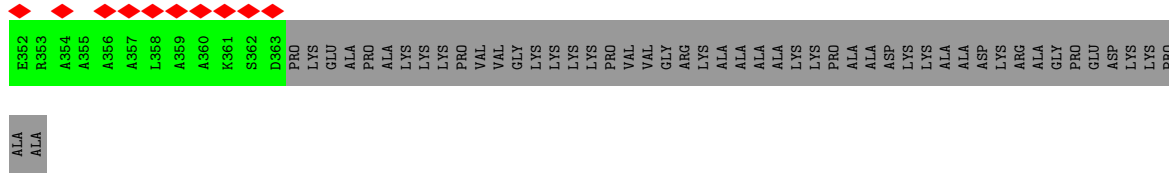
Chain B: 



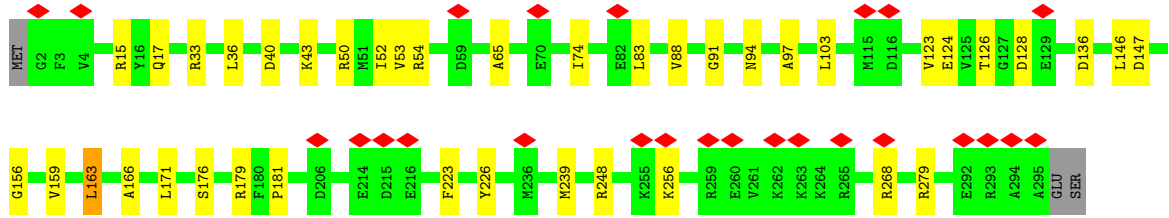
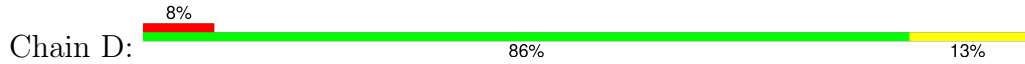
- Molecule 3: uL4

Chain C: 

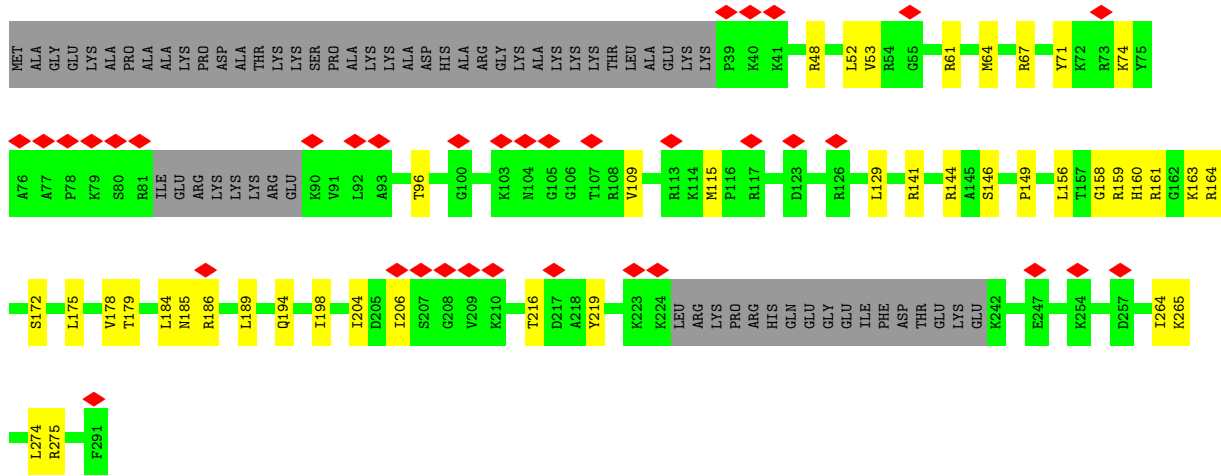




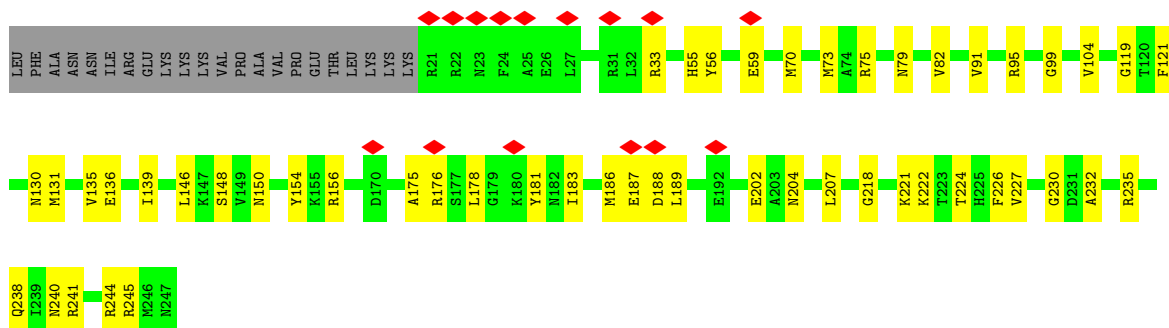
• Molecule 4: uL18



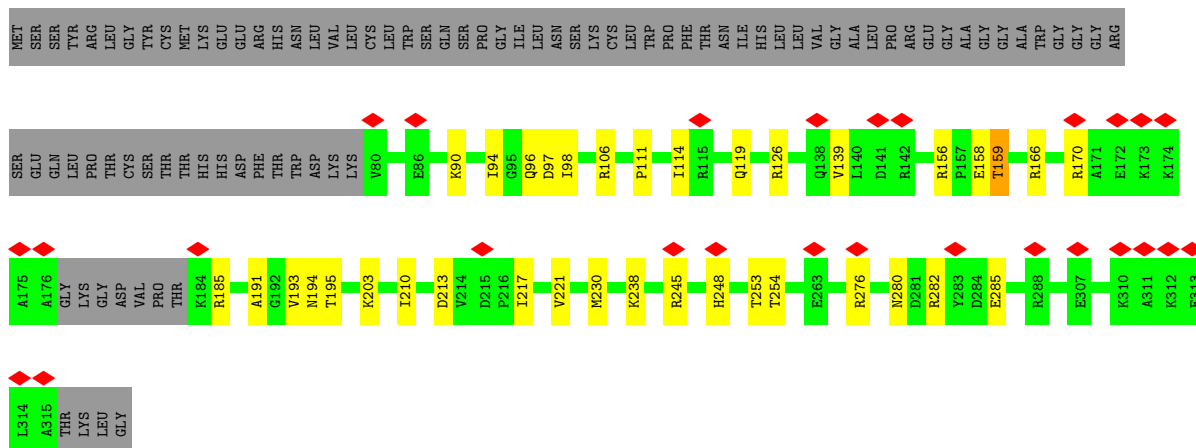
• Molecule 5: L6



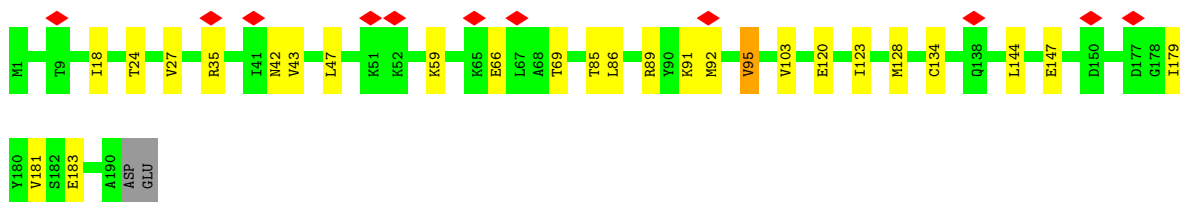
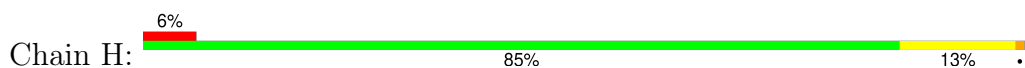
• Molecule 6: uL30



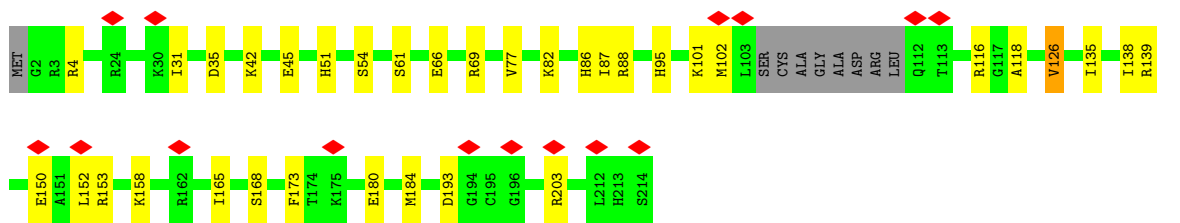
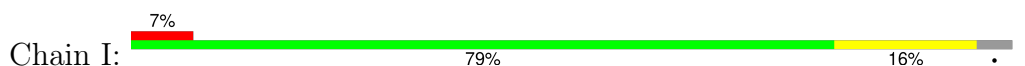
• Molecule 7: L7A



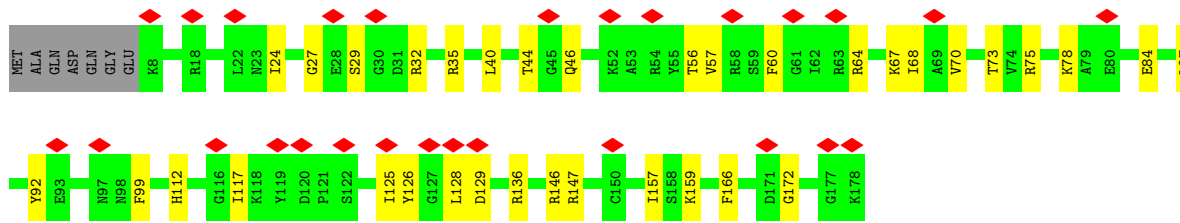
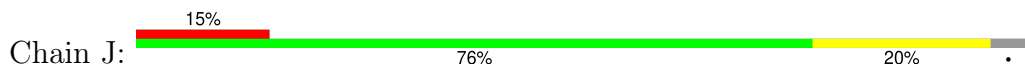
• Molecule 8: L9



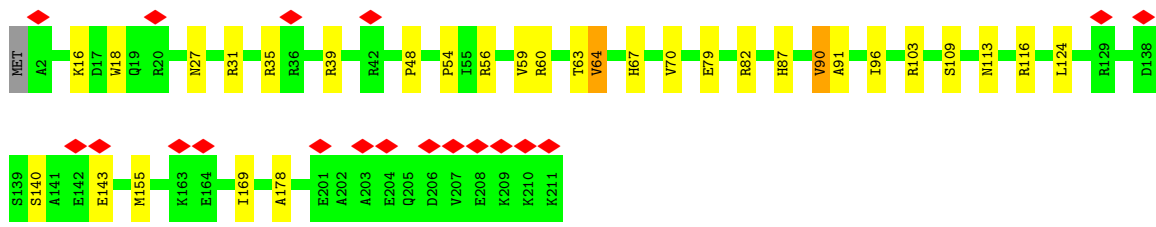
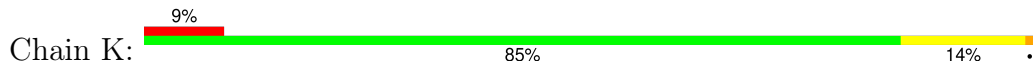
• Molecule 9: L10



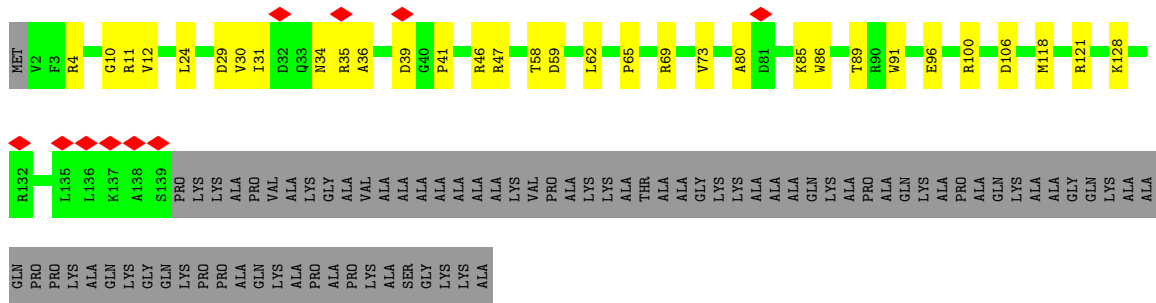
• Molecule 10: uL5



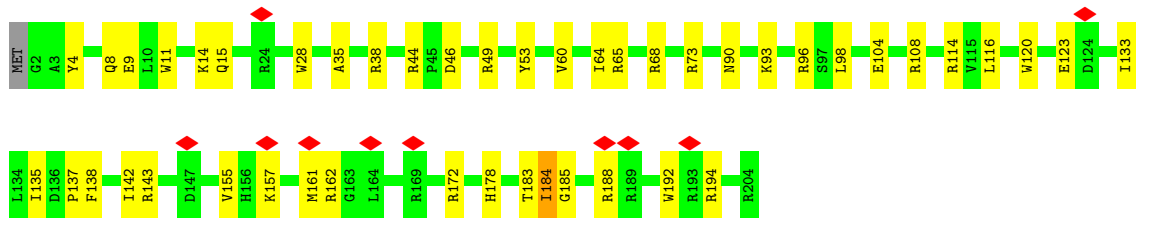
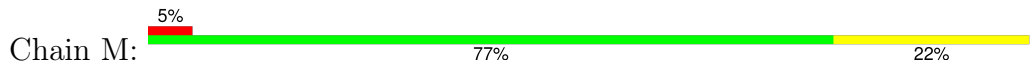
• Molecule 11: eL13



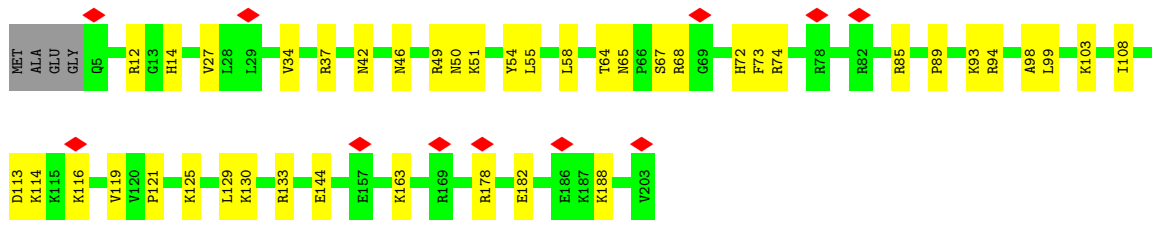
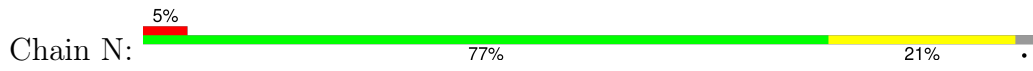
• Molecule 12: eL14



• Molecule 13: eL15

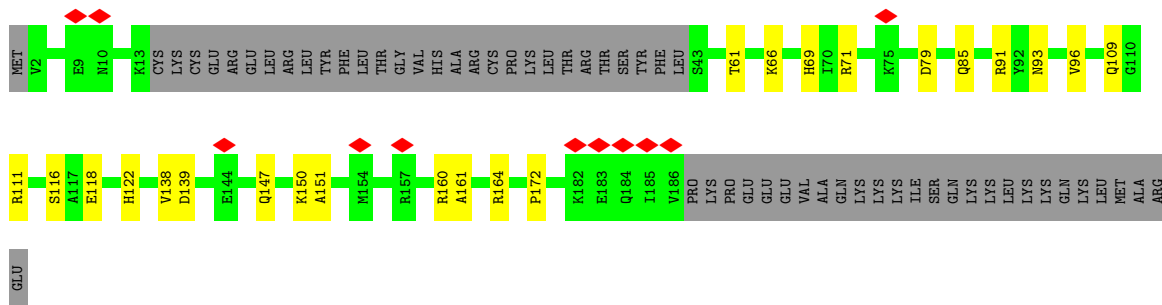


• Molecule 14: uL13

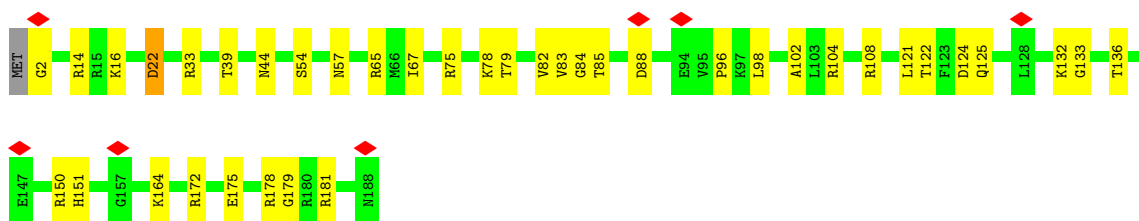
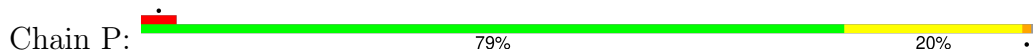


• Molecule 15: uL22

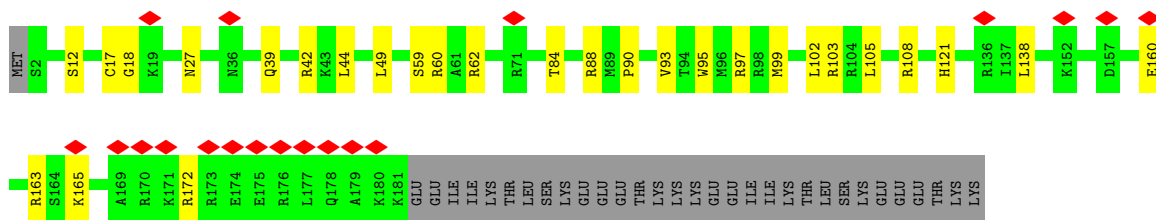




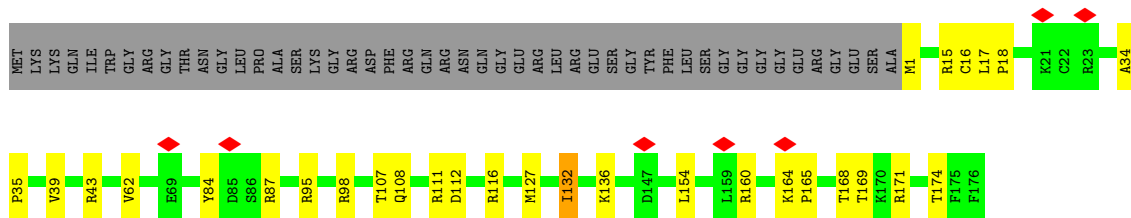
• Molecule 16: eL18



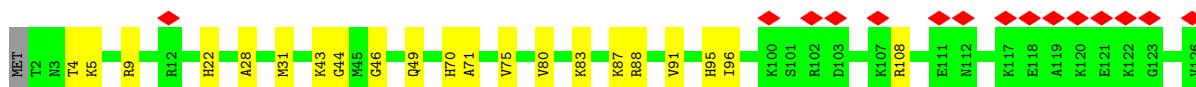
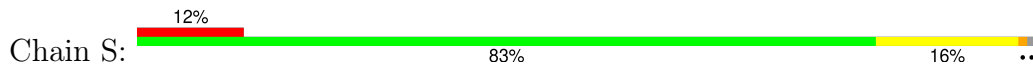
• Molecule 17: eL19

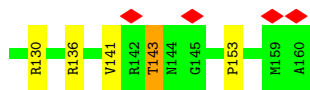


• Molecule 18: eL20

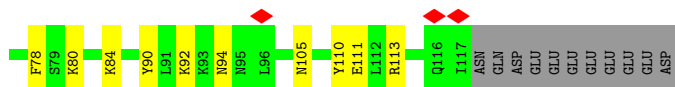
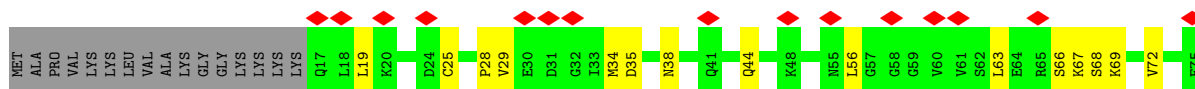


• Molecule 19: eL21

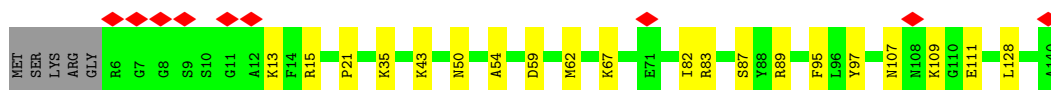
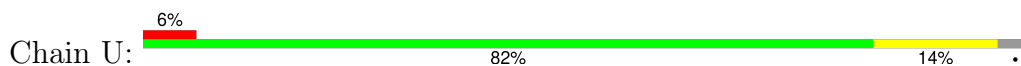




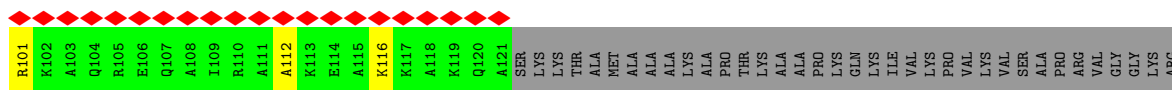
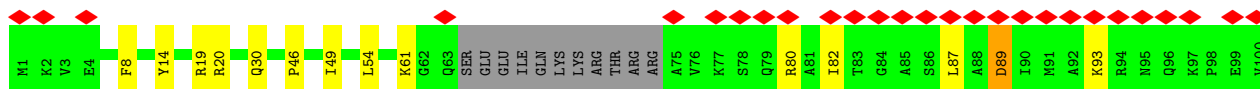
• Molecule 20: eL22



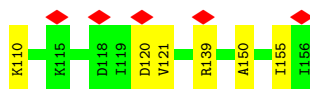
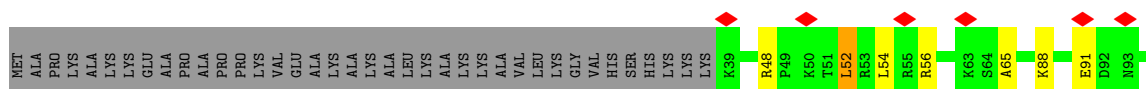
• Molecule 21: L23



• Molecule 22: uL24

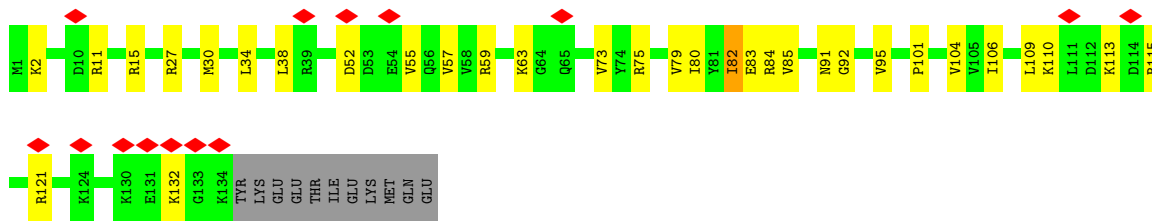


• Molecule 23: uL23

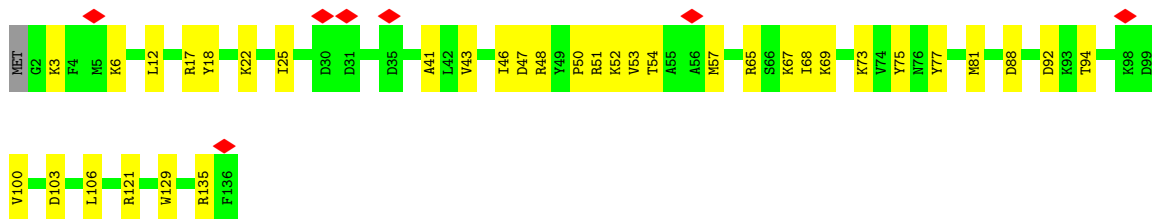


• Molecule 24: L26

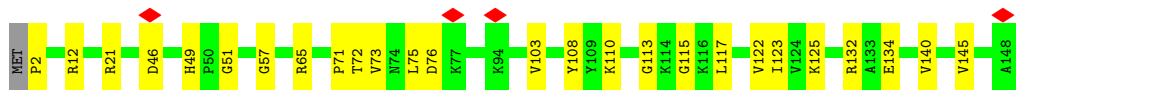
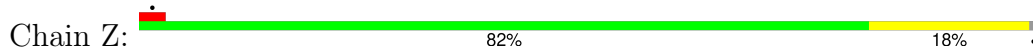




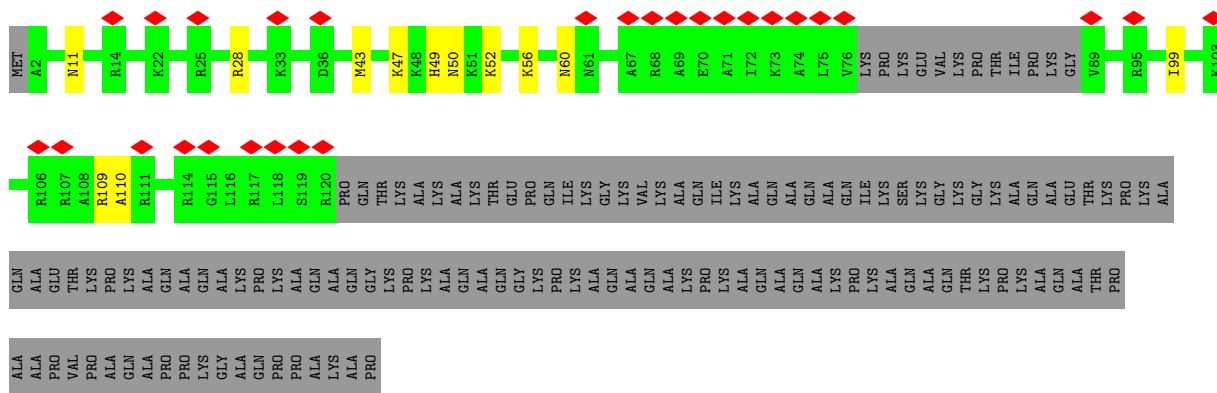
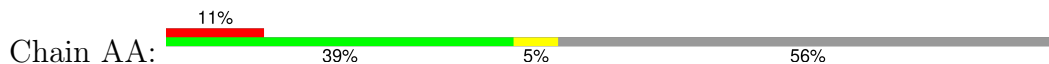
• Molecule 25: L27



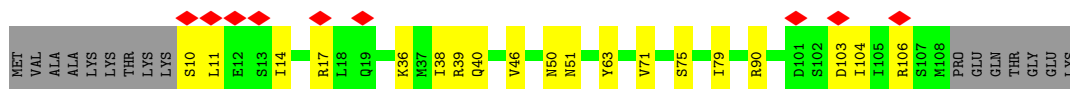
• Molecule 26: uL15



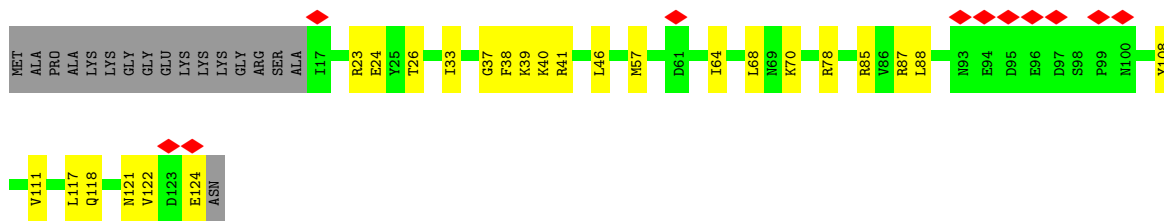
• Molecule 27: L29



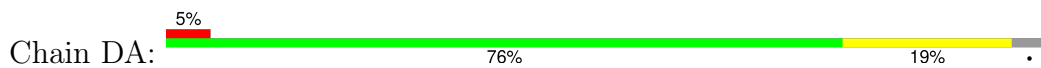
• Molecule 28: eL30



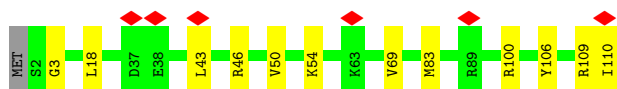
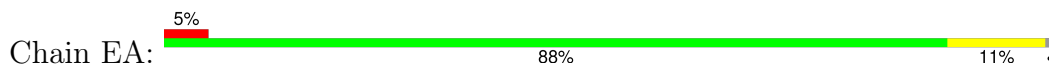
• Molecule 29: L31



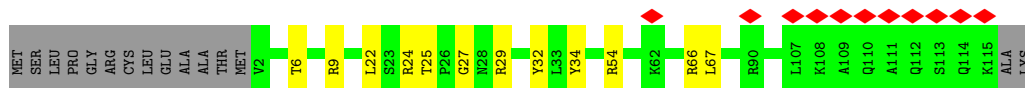
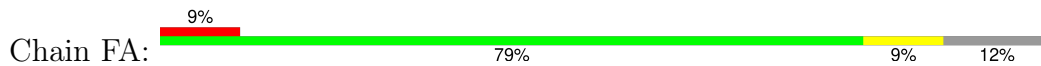
• Molecule 30: L32



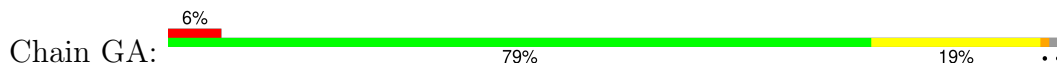
• Molecule 31: eL33



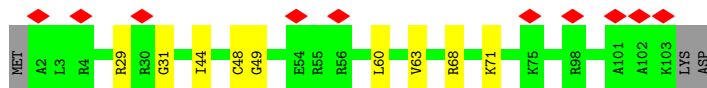
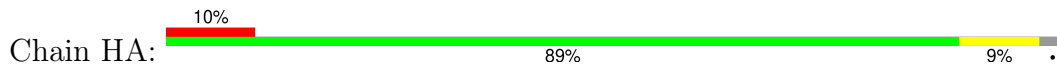
• Molecule 32: L34



• Molecule 33: L35

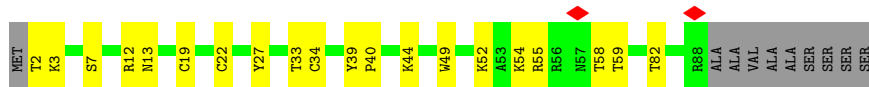


• Molecule 34: L36

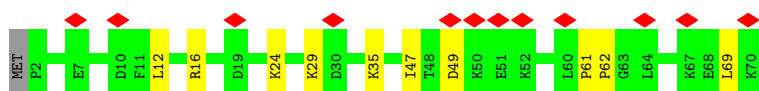
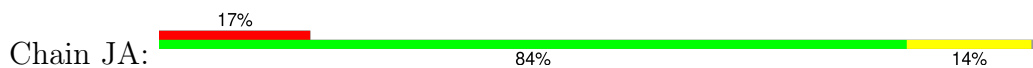


• Molecule 35: L37

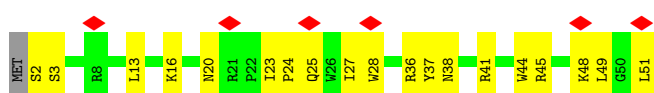




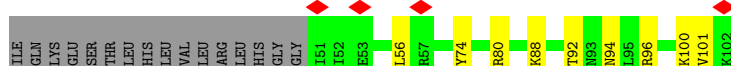
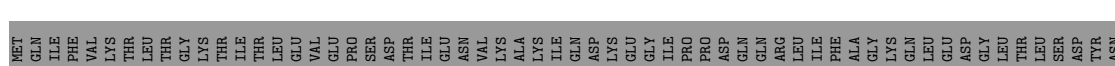
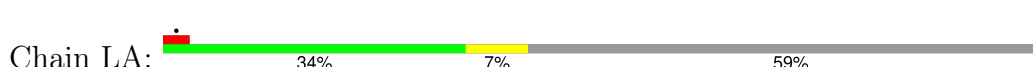
• Molecule 36: eL38



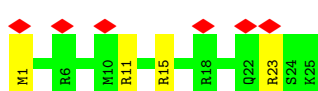
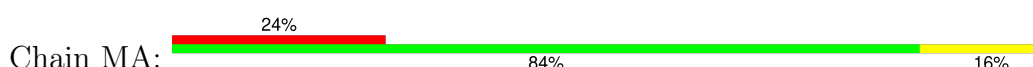
• Molecule 37: eL39



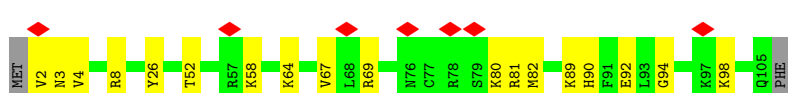
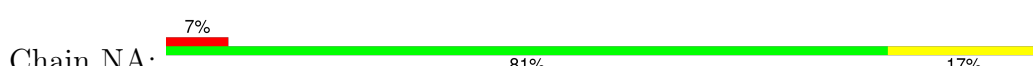
• Molecule 38: eL40



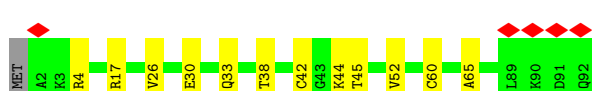
• Molecule 39: eL41



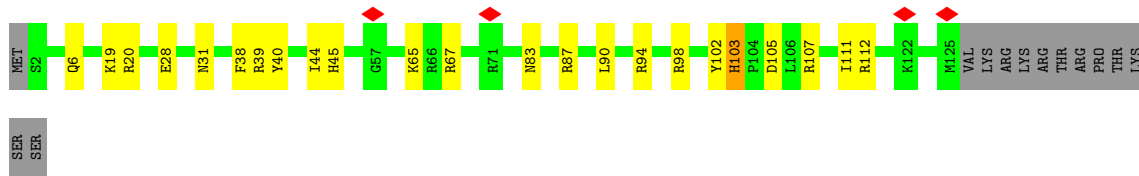
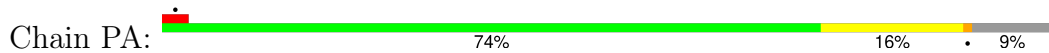
• Molecule 40: eL42



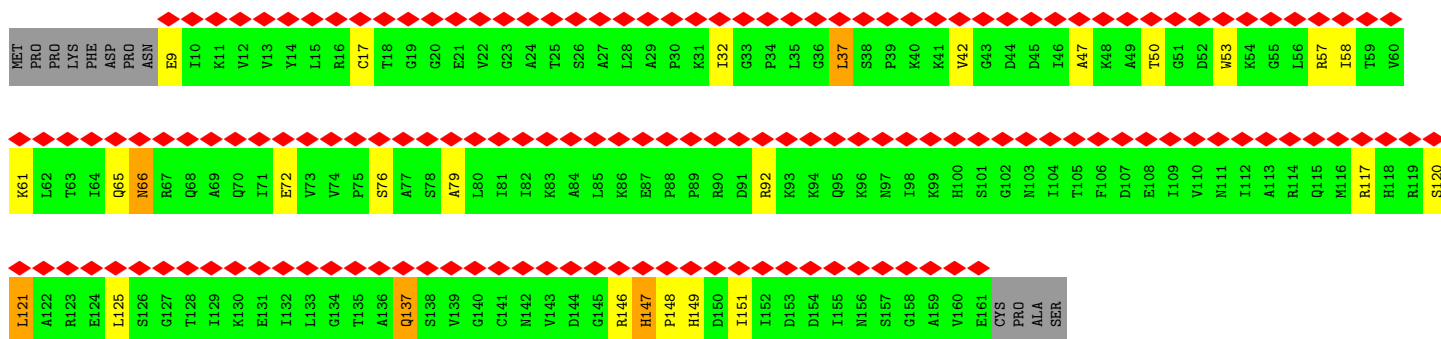
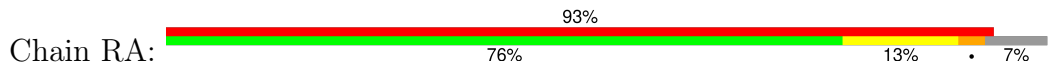
• Molecule 41: eL43



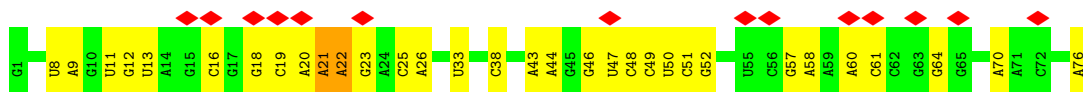
• Molecule 42: L28



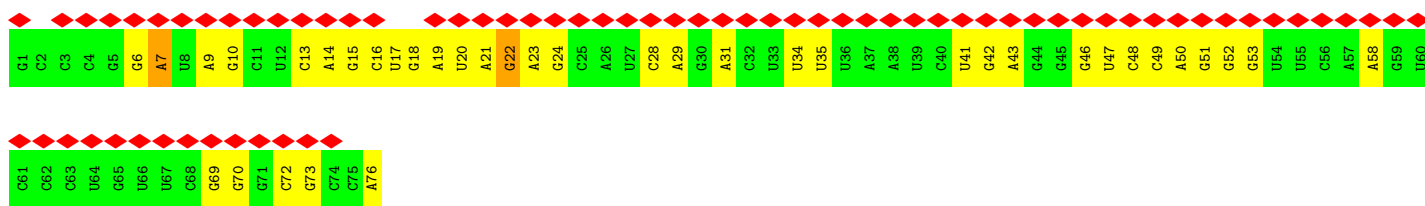
• Molecule 43: L12



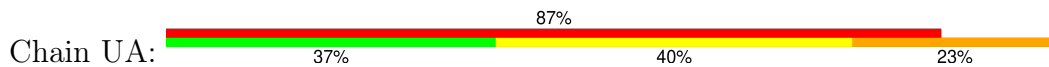
• Molecule 44: P-site tRNA

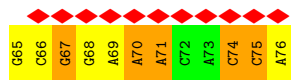


• Molecule 45: E-site tRNA



• Molecule 46: A-site tRNA

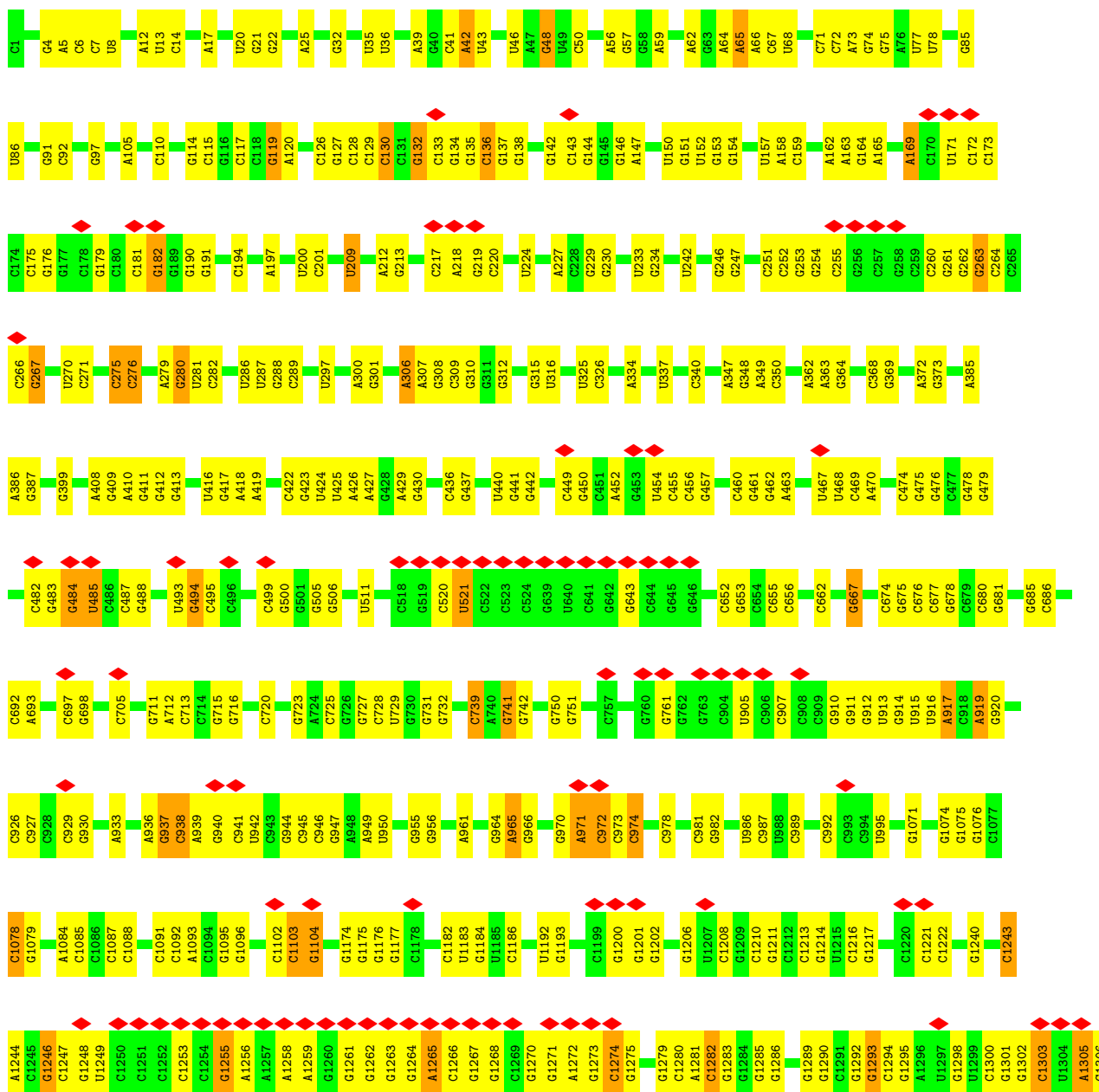


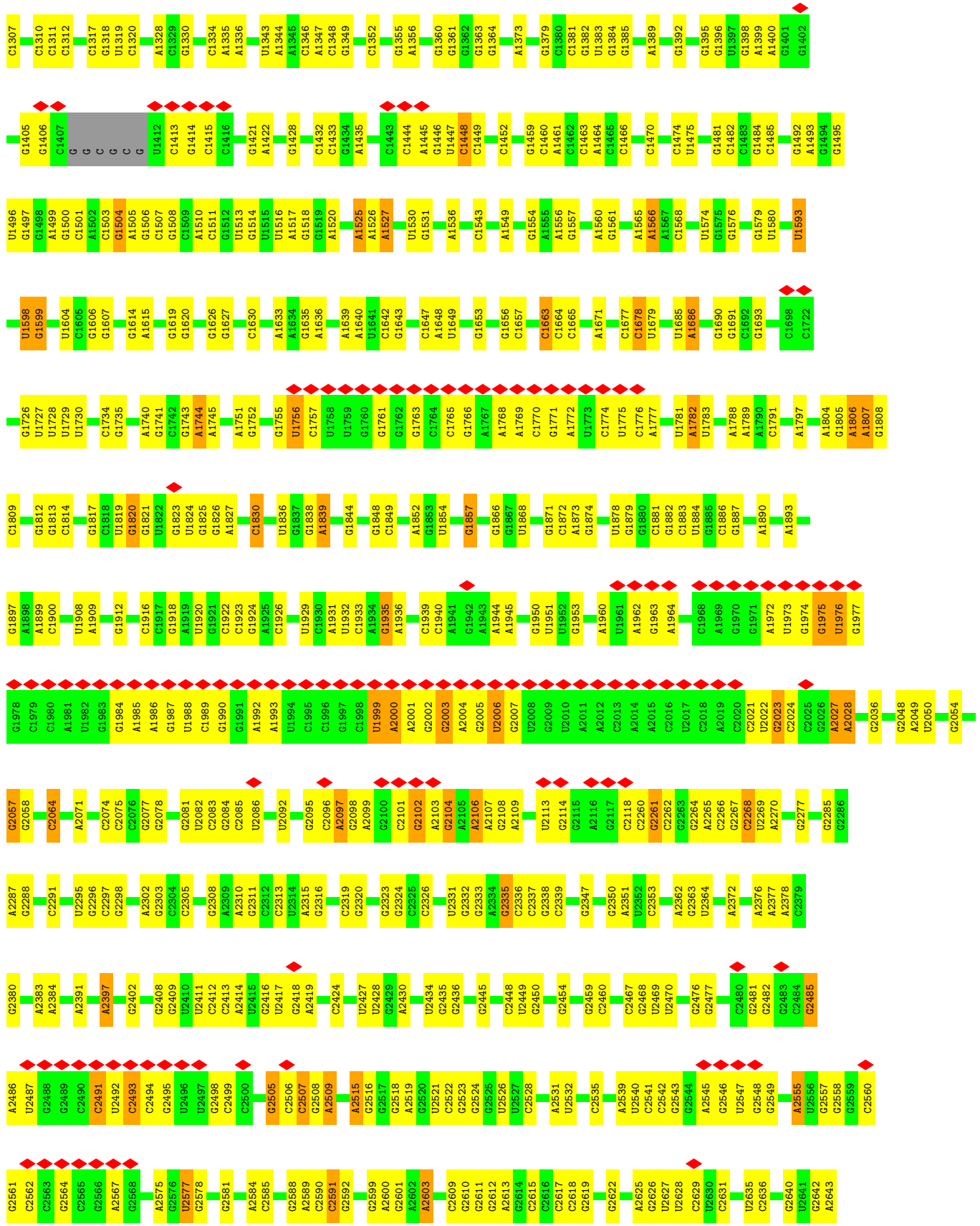


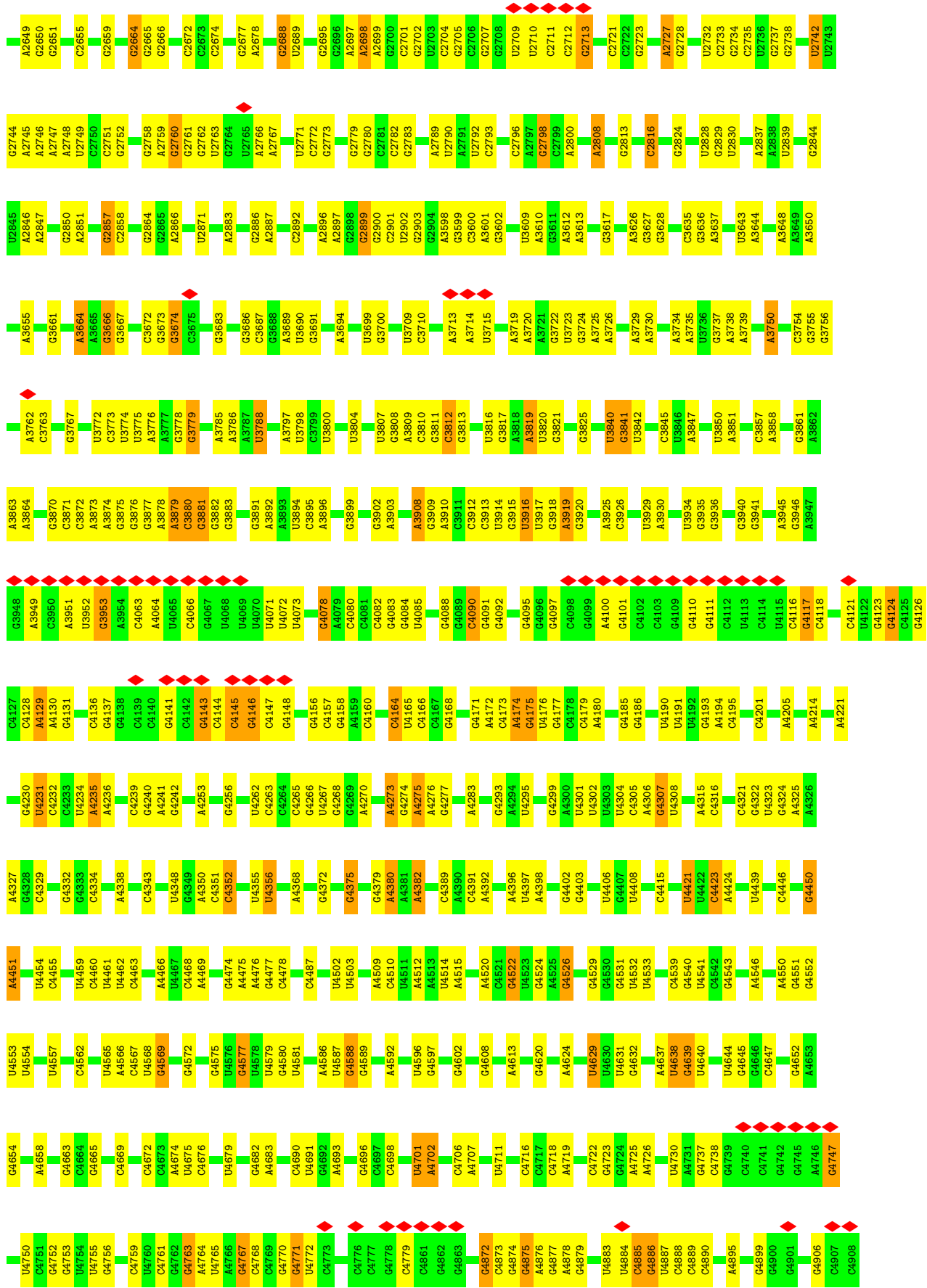
• Molecule 47: mRNA

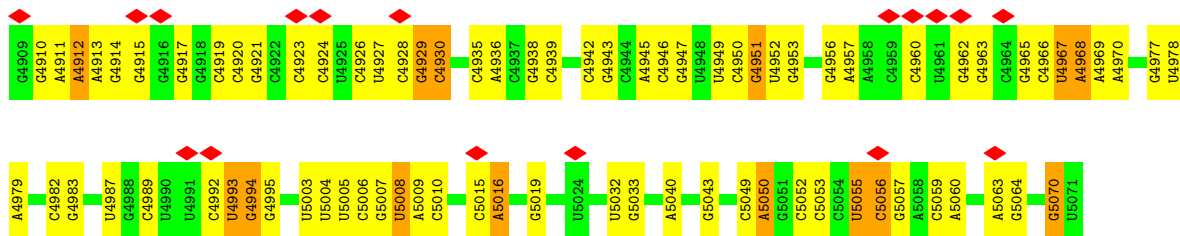


• Molecule 48: 28S rRNA









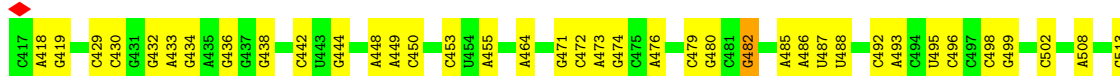
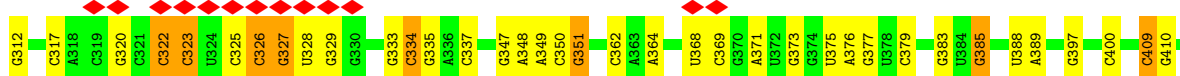
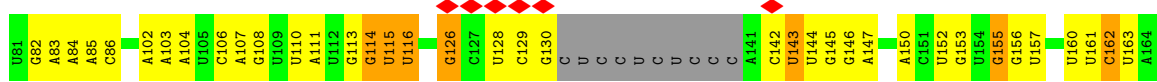
• Molecule 49: 5S rRNA

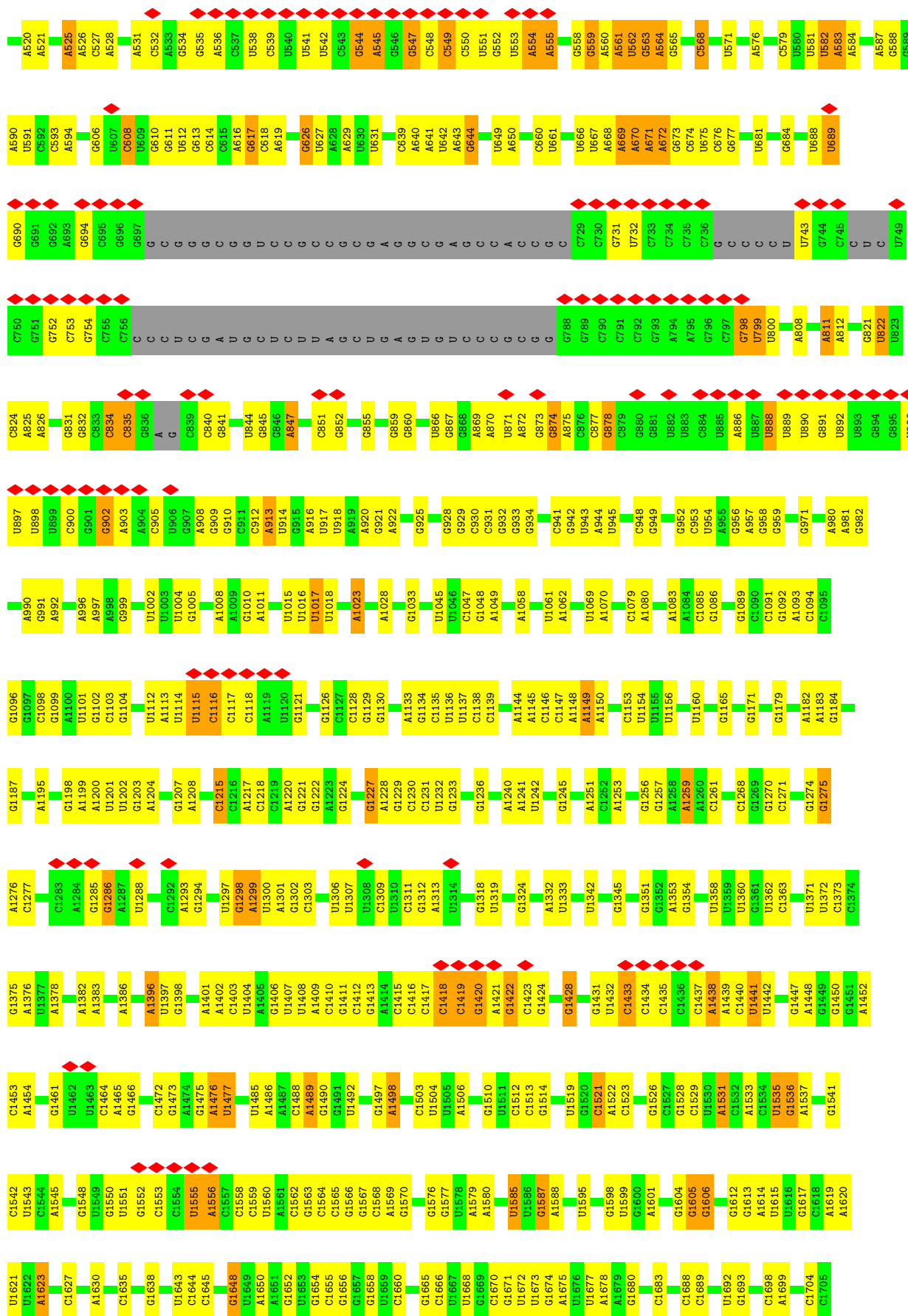


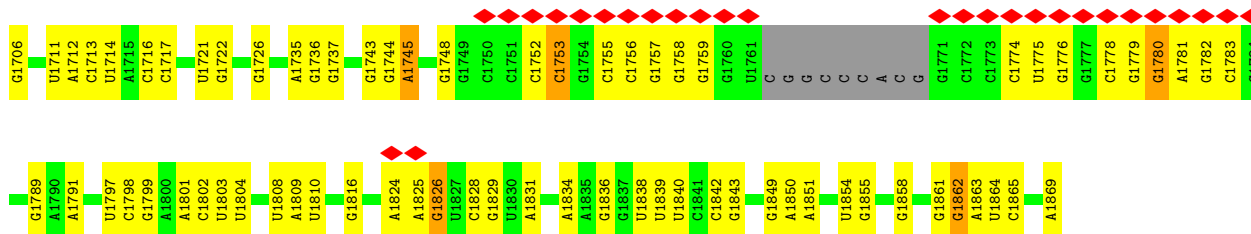
• Molecule 50: 5.8S rRNA



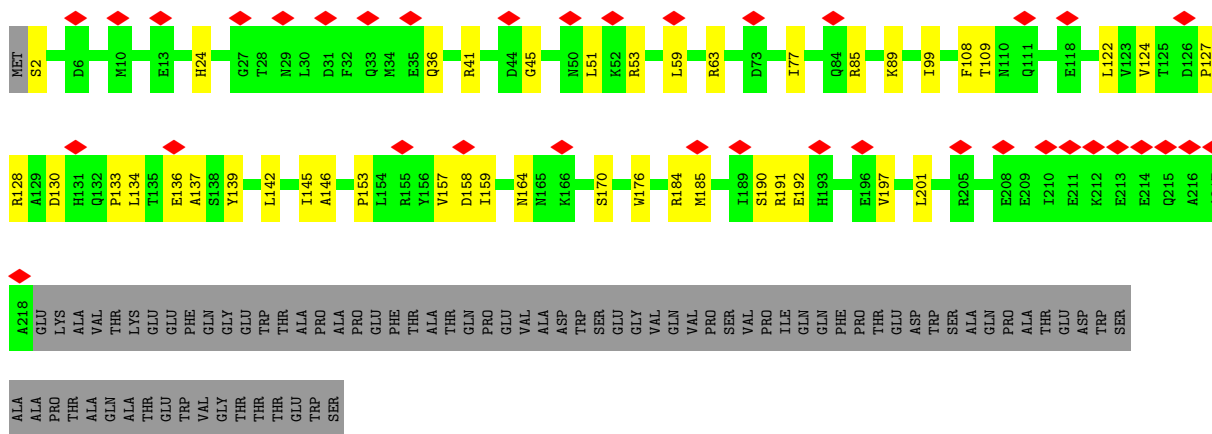
• Molecule 51: 18S rRNA



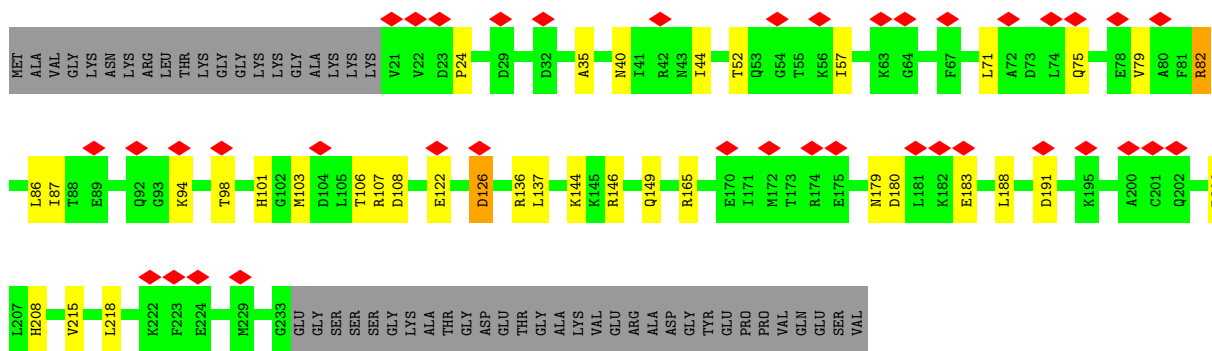




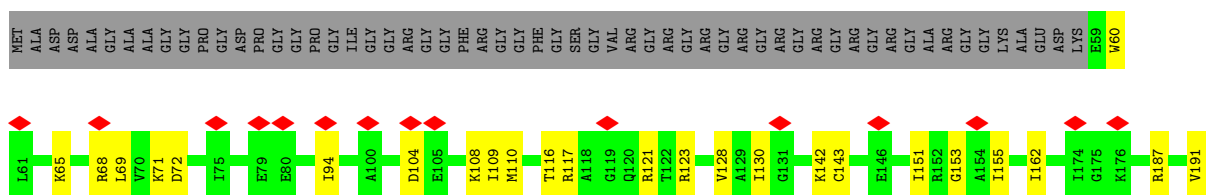
• Molecule 52: RPSA

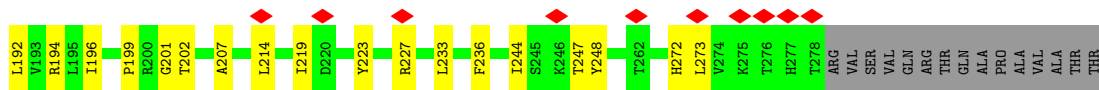


• Molecule 53: S3A

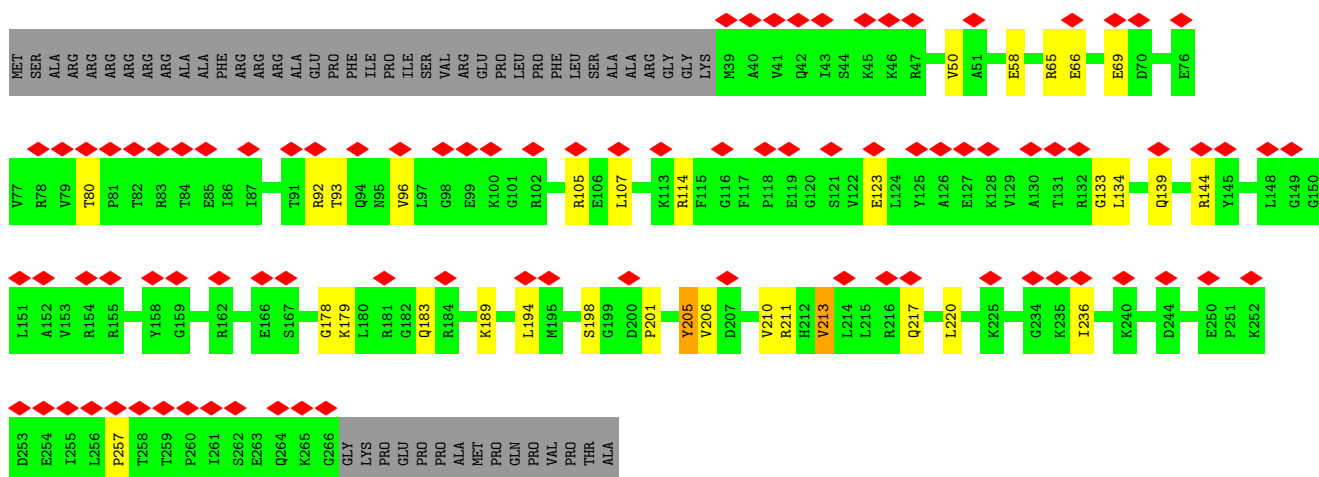


• Molecule 54: eS1

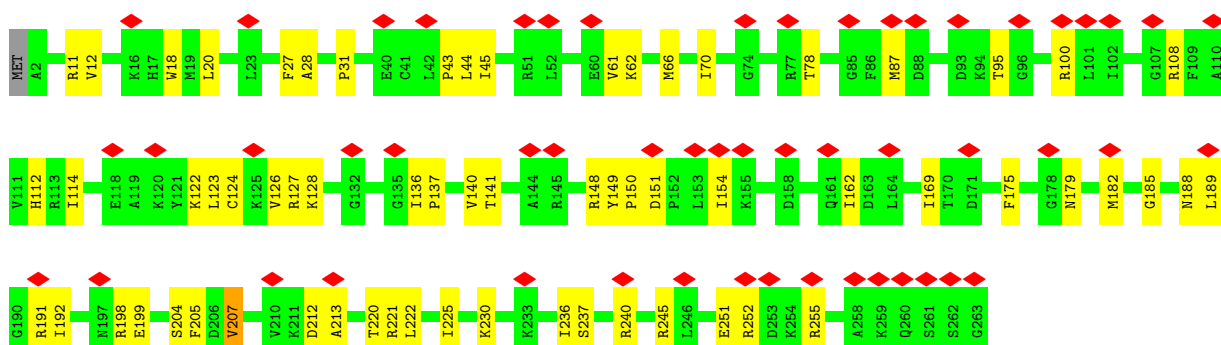
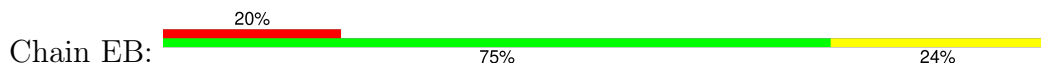




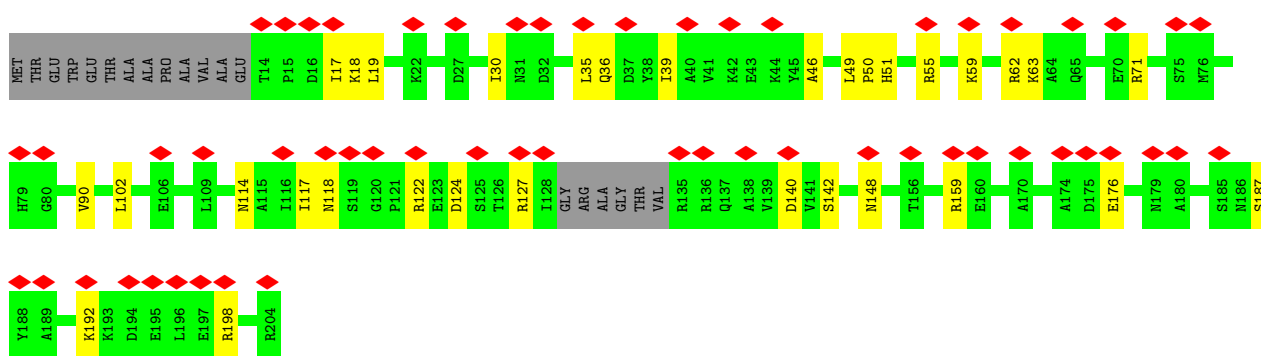
• Molecule 55: S3

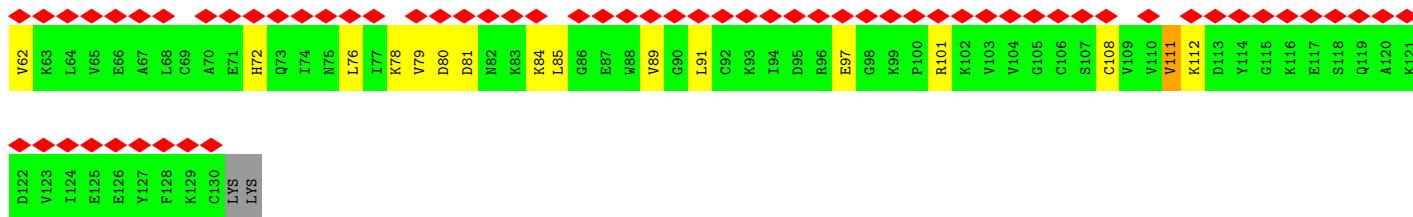


• Molecule 56: S4

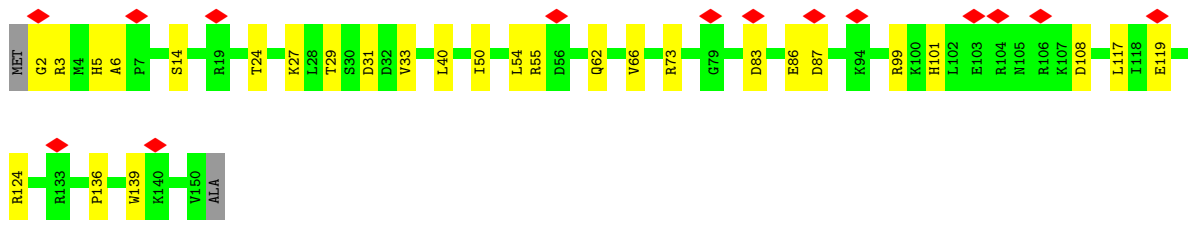
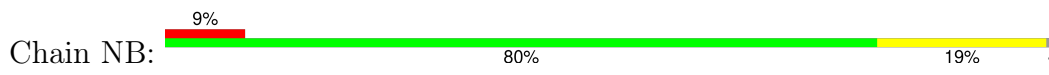


• Molecule 57: S5

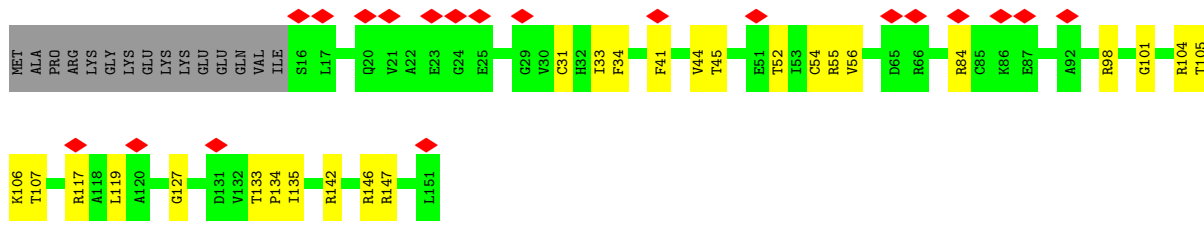
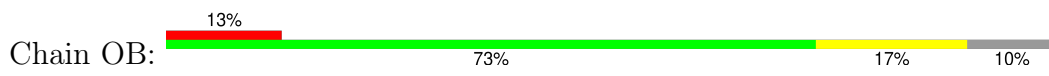




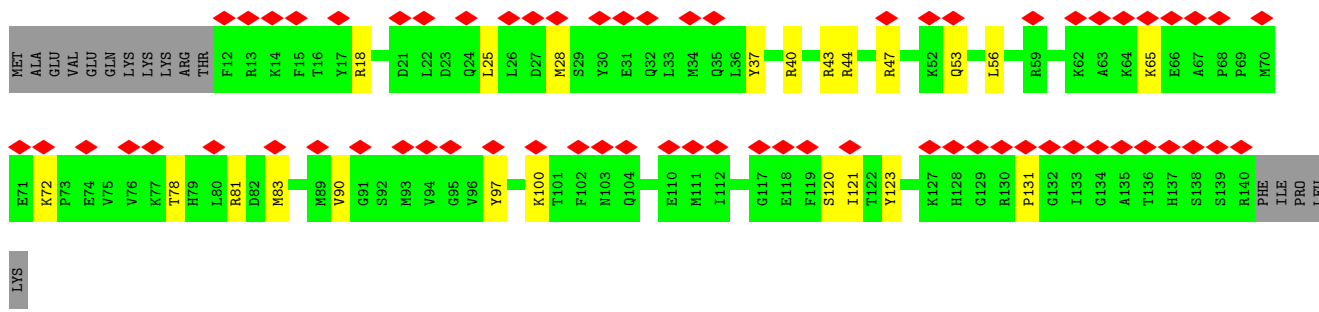
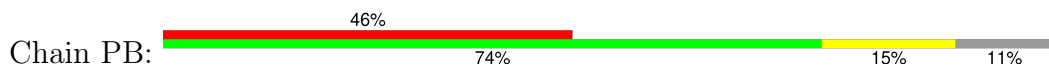
• Molecule 65: uS15



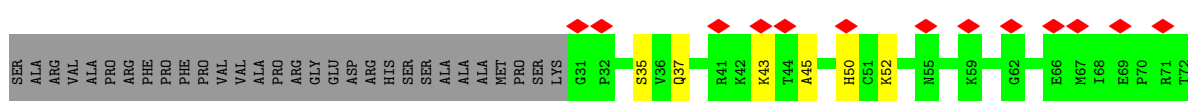
• Molecule 66: S14

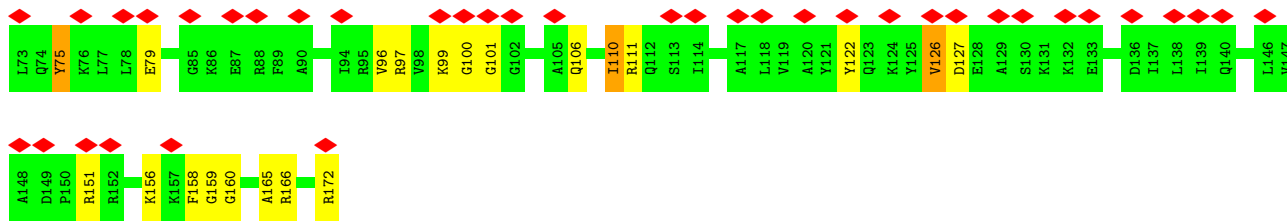


• Molecule 67: S15

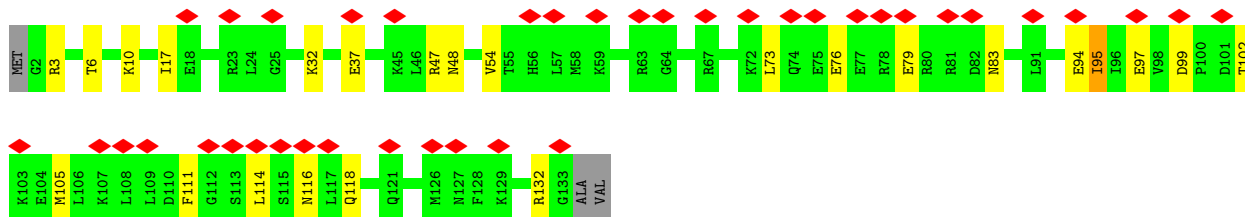
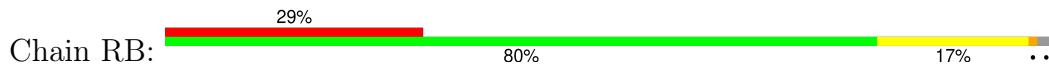


• Molecule 68: uS9

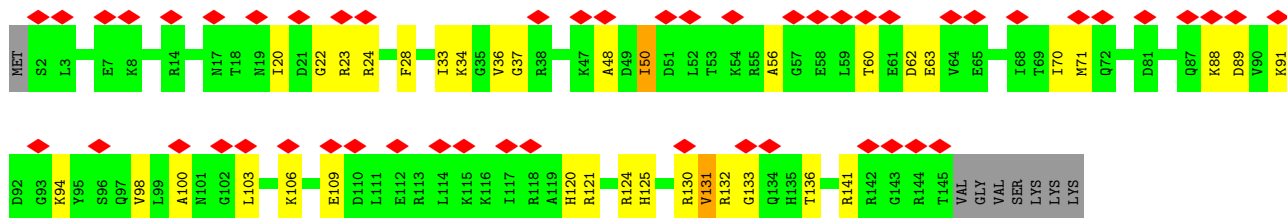
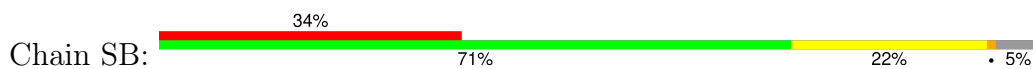




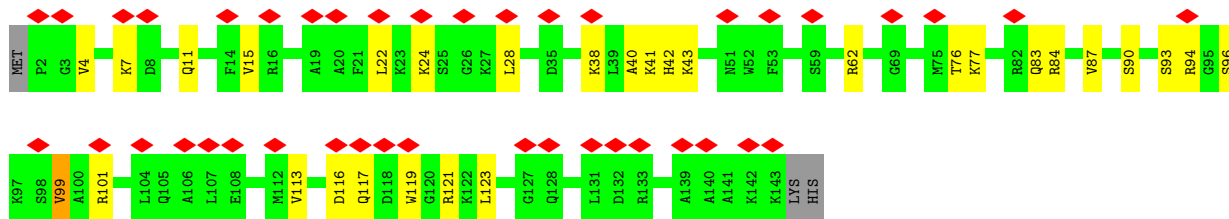
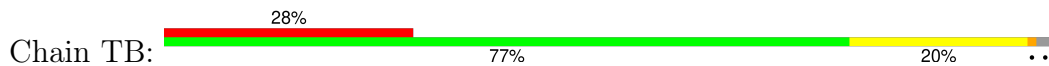
• Molecule 69: eS17



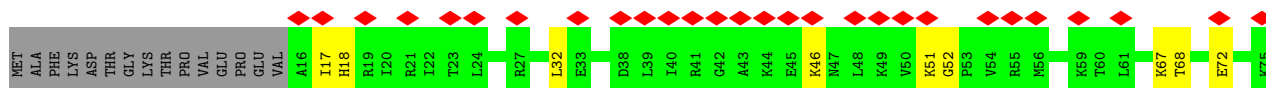
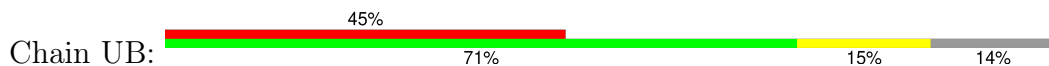
• Molecule 70: S18



• Molecule 71: S19

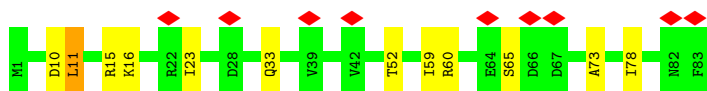
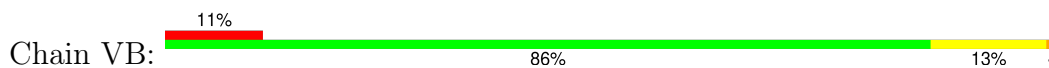


• Molecule 72: uS10

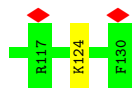
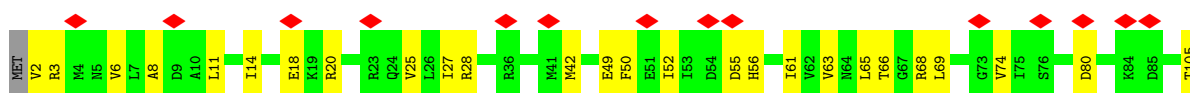
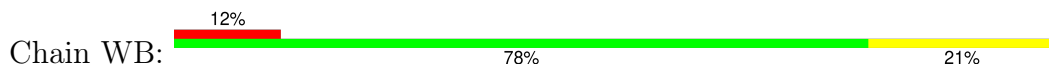




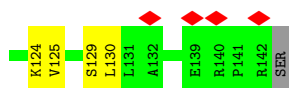
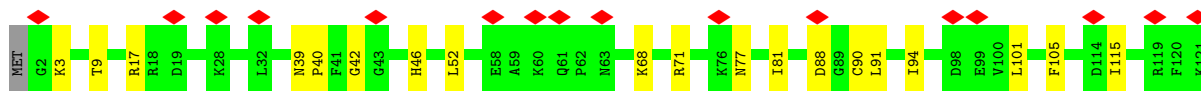
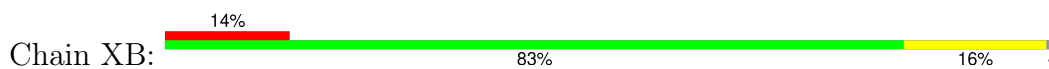
• Molecule 73: S21



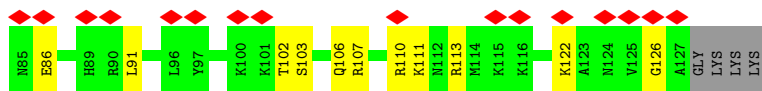
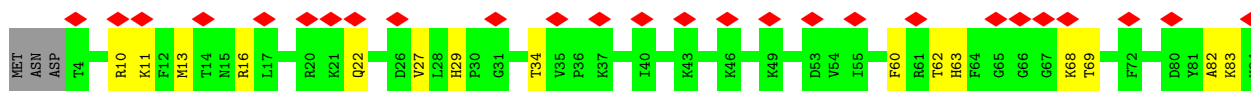
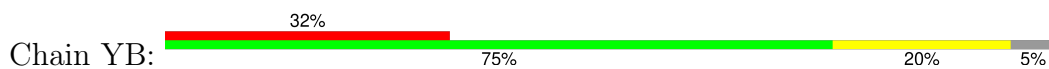
• Molecule 74: S15A



• Molecule 75: S23

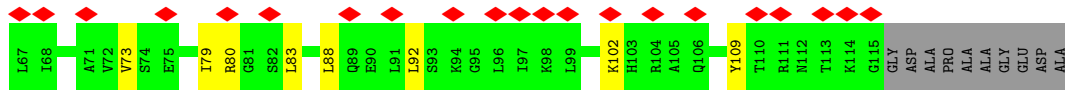


• Molecule 76: S24

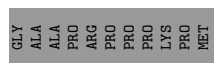
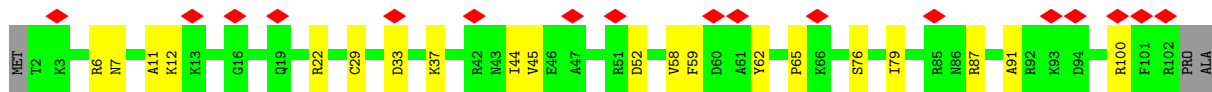
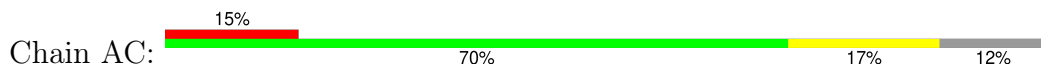


• Molecule 77: eS25

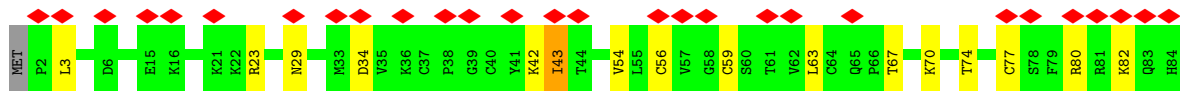
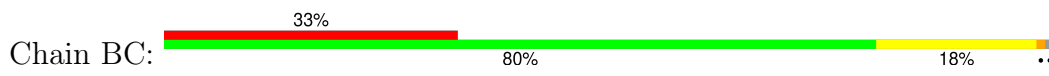




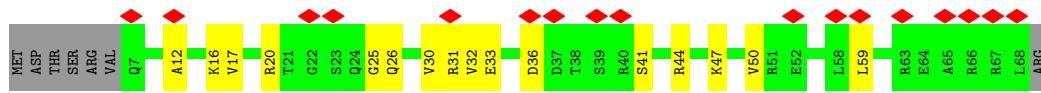
• Molecule 78: S26



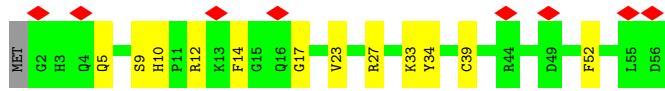
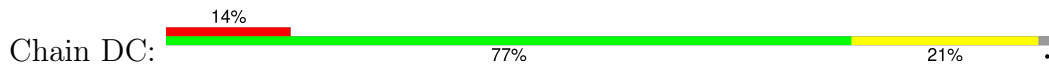
• Molecule 79: S27



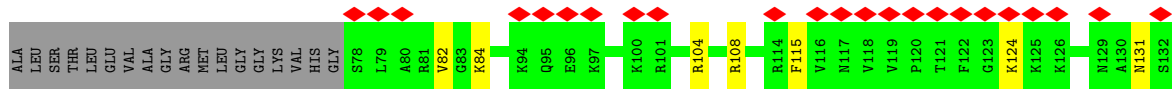
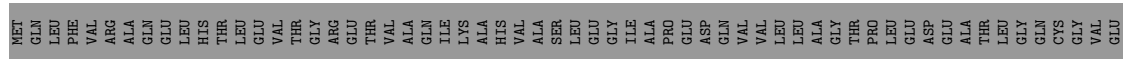
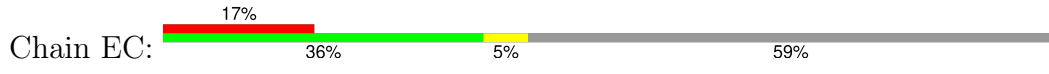
• Molecule 80: S28



• Molecule 81: uS14



• Molecule 82: S30



• Molecule 83: S27A



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

GLU ASP HIS HIS ALA ARG GLY ILE PRO GLN ASP ASP GLN ARG LEU PHE LEU ALA GLY LYS LEU LEU ASP GLY ARG THR THR LEU SER ASP ASP TYR ASN LEU ILE GLN LYS LEU PHE LEU THR HIS LEU VAL SER LEU ARG LEU ARG GLY GLY ALA HIS GLN LYS LYS ARG ARG LYS K82 K83 S84 Y85 Y86 Y87 Y88

K89 K90 N91 K92 H93 K94 R95 K96 K97 V98 K99 L100 A101 V102 L103 K104 Y105 Y106 K107 V108 D109 E110 M111 M112 K113 I114 S115 R116 L117 R118 R119 C121 P122 S123 D124 E125 C126 G127 A128 G129 V130 F131 M132 A133 S134 H135 F136 D137 R138 H139 Y140 C141 G142 K143 C144 C145 T146 Y148

C149 F150 ASN PRO GLU ASP LYS

• Molecule 84: RACK1



MET T2 E3 Q4 M5 T6 L7 R8 G9 T10 L11 K12 G13 V18 T19 Q20 I21 A22 Q26 F27 P28 D29 M30 I31 L32 S33 A34 R36 D37 K38 T39 I40 I41 M42 W43 K44 L45 T46 R47 D48 E49 T50 M51 Y52 G53 I54 R57 R60 G61 H62 S63 S67 D68 V69

V70 I71 S72 D73 D74 G75 F76 F77 A78 L79 S82 W83 D84 G85 T86 L87 R88 L89 W90 D91 L92 T93 T94 G95 T96 T97 T98 R99 R100 F101 V102 G103 H104 T105 K106 M107 V108 L109 S110 A111 A112 F113 S114 S115 D116 M117 R118 Q119 L120 V121 G122 G123 S124 R125 D126 K127 T128 I129 K130

L131 W132 N133 T134 L135 G136 V137 C138 K139 T140 T141 V142 Q143 D144 E145 W150 V151 S152 R155 F156 S157 P158 M159 S160 S161 M162 P163 I164 I165 V166 S167 C168 D171 V174 K175 V176 W177 M178 L179 A180 M181 C182 K183 L184 K185 T186 M187 H188 I189 G190 H191 T192 G193 Y194 L195 M196

T197 V198 T199 V200 S201 P202 D203 G204 S205 L206 C207 A208 S209 G210 D213 G214 Q215 A216 M217 L218 W219 D220 L221 L222 M222 E223 G224 K225 H226 L227 Y228 T229 L230 D231 G232 G233 D234 N237 A238 L239 C240 F241 S242 P243 M244 R245 Y246 W247 L248 A251 T252 G253 P254 S255 I256 K257 I258 W259

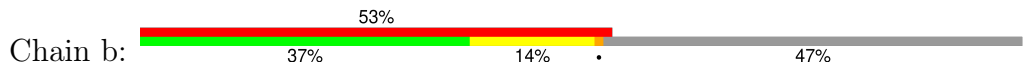
D260 L261 E262 G263 I264 I265 I266 V267 D268 E269 L270 K271 Q272 E273 V274 L275 S276 T277 S278 S279 K280 A281 E282 C286 T287 S288 L289 A290 W291 S292 A293 D294 G295 Q296 T297 L298 F299 A300 G301 Y302 T303 D304 N305 L306 W307 R308 V309 W310 Q311 V312 T313 I314 GLY THR ARG

• Molecule 85: peptide



A195 H196 F197 D198

• Molecule 86: RPLP0



L361	D362	C363	H364	T365	A366	H367	I368	A369	C370	K371	F372	A373	E374	L375	K376	E377	K378	I379	D380	R381	R382	S383	G384	K385	K386	L387	E388	D389	G390	P391	K392	F393	L394	K395	S396	G397	D398	A399	A400	I401	V402	D403	M404	V405	P406	G407	K408	P409	M410	C411	V412	E413	S414	F415	S416	D417	Y418	P419	P420
L421	G422	R423	F424	A425	V426	R427	D428	M429	R430	Q431	T432	V433	A434	V435	G436	V437	I438	K439	A440	V441	D442	K443	K444	A445	A446	G447	A448	G449	K450	V451	T452	K453	S454	A455	Q456	K457	A458	Q459	K460	A461	K462																		

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	6359	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	75	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	33.575	Depositor
Minimum map value	-21.832	Depositor
Average map value	0.004	Depositor
Map value standard deviation	1.513	Depositor
Recommended contour level	6.5	Depositor
Map size (\AA)	686.87994, 686.87994, 686.87994	wwPDB
Map dimensions	648, 648, 648	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.06, 1.06, 1.06	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, SPD, MG, ANM, K, 5GP

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	0.12	0/1952	0.28	0/2617
2	B	0.12	0/3264	0.28	0/4371
3	C	0.11	0/2937	0.25	0/3946
4	D	0.10	0/2441	0.24	0/3269
5	E	0.11	0/1859	0.26	0/2491
6	F	0.12	0/1933	0.26	0/2577
7	G	0.11	0/1881	0.25	0/2532
8	H	0.11	0/1535	0.27	0/2063
9	I	0.11	0/1702	0.24	0/2272
10	J	0.10	0/1395	0.28	0/1863
11	K	0.10	0/1733	0.24	0/2316
12	L	0.11	0/1158	0.25	0/1547
13	M	0.12	0/1746	0.27	0/2338
14	N	0.13	0/1662	0.29	0/2222
15	O	0.12	0/1292	0.28	0/1733
16	P	0.11	0/1539	0.29	0/2054
17	Q	0.11	0/1524	0.25	0/2013
18	R	0.12	0/1501	0.29	0/2012
19	S	0.11	0/1326	0.24	0/1770
20	T	0.11	0/840	0.31	0/1127
21	U	0.12	0/1018	0.28	0/1364
22	V	0.11	0/900	0.26	0/1194
23	W	0.11	0/984	0.26	0/1323
24	X	0.10	0/1132	0.23	0/1504
25	Y	0.11	0/1130	0.23	0/1507
26	Z	0.11	0/1191	0.26	0/1590
27	AA	0.09	0/886	0.20	0/1171
28	BA	0.10	0/779	0.22	0/1044
29	CA	0.12	0/908	0.28	0/1223
30	DA	0.10	0/1082	0.24	0/1443
31	EA	0.12	0/895	0.27	0/1198
32	FA	0.11	0/916	0.26	0/1220

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	GA	0.09	0/1016	0.23	0/1341
34	HA	0.09	0/841	0.23	0/1112
35	IA	0.12	0/731	0.27	0/966
36	JA	0.10	0/575	0.26	0/761
37	KA	0.11	0/459	0.27	0/608
38	LA	0.10	0/435	0.28	0/575
39	MA	0.10	0/240	0.19	0/305
40	NA	0.11	0/864	0.24	0/1140
41	OA	0.12	0/718	0.32	0/953
42	PA	0.12	0/1010	0.29	0/1354
43	RA	0.12	0/1174	0.32	0/1582
44	SA	0.10	0/1815	0.24	0/2828
45	TA	0.09	0/1804	0.22	0/2810
46	UA	0.13	0/1783	0.32	0/2776
47	VA	0.09	0/279	0.21	0/431
48	WA	0.12	0/85839	0.25	0/133881
49	XA	0.11	0/2836	0.20	0/4421
50	YA	0.11	0/3701	0.23	0/5766
51	ZA	0.11	0/40949	0.24	0/63819
52	AB	0.10	0/1747	0.25	0/2374
53	BB	0.10	0/1756	0.25	0/2350
54	CB	0.12	0/1744	0.29	0/2358
55	DB	0.10	0/1796	0.25	0/2417
56	EB	0.11	0/2118	0.30	0/2849
57	FB	0.11	0/1492	0.29	0/2005
58	GB	0.10	0/1946	0.25	0/2590
59	HB	0.11	0/1511	0.28	0/2022
60	IB	0.11	0/1715	0.26	0/2287
61	JB	0.10	0/1550	0.27	0/2069
62	KB	0.11	0/834	0.28	0/1125
63	LB	0.11	0/1200	0.26	0/1604
64	MB	0.10	0/918	0.27	0/1233
65	NB	0.10	0/1226	0.23	0/1649
66	OB	0.11	0/1029	0.27	0/1380
67	PB	0.12	0/1079	0.28	0/1441
68	QB	0.12	0/1146	0.29	0/1534
69	RB	0.10	0/1082	0.25	0/1452
70	SB	0.10	0/1208	0.29	0/1618
71	TB	0.11	0/1123	0.25	0/1504
72	UB	0.11	0/818	0.28	0/1099
73	VB	0.10	0/643	0.25	0/860
74	WB	0.12	0/1051	0.30	0/1406
75	XB	0.10	0/1116	0.24	0/1490

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
76	YB	0.11	0/1028	0.28	0/1366
77	ZB	0.11	0/691	0.32	0/922
78	AC	0.10	0/828	0.27	0/1109
79	BC	0.09	0/665	0.23	0/891
80	CC	0.10	0/490	0.26	0/656
81	DC	0.10	0/470	0.25	0/623
82	EC	0.08	0/447	0.24	0/587
83	FC	0.09	0/576	0.23	0/764
84	GC	0.11	0/2493	0.32	0/3394
85	IC	0.06	0/19	0.14	0/25
86	b	0.14	0/1296	0.31	0/1745
87	c	0.12	0/111	0.29	0/145
88	HC	0.11	0/1694	0.30	0/2287
All	All	0.11	0/236766	0.25	0/347573

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

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	1914	0	2013	35	0
2	B	3196	0	3339	51	0
3	C	2883	0	3053	37	0
4	D	2395	0	2427	30	0
5	E	1823	0	1995	31	0
6	F	1897	0	2021	36	0
7	G	1850	0	1991	23	0
8	H	1516	0	1597	15	0
9	I	1664	0	1712	23	0
10	J	1372	0	1412	21	0
11	K	1702	0	1820	26	0
12	L	1137	0	1211	24	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
13	M	1701	0	1749	34	0
14	N	1630	0	1778	32	0
15	O	1266	0	1302	16	0
16	P	1515	0	1634	30	0
17	Q	1508	0	1664	24	0
18	R	1462	0	1508	24	0
19	S	1298	0	1366	21	0
20	T	826	0	852	17	0
21	U	1004	0	1063	15	0
22	V	887	0	935	11	0
23	W	967	0	1040	10	0
24	X	1115	0	1205	19	0
25	Y	1107	0	1182	22	0
26	Z	1162	0	1209	23	0
27	AA	873	0	949	8	0
28	BA	769	0	803	11	0
29	CA	893	0	932	16	0
30	DA	1064	0	1160	21	0
31	EA	876	0	912	12	0
32	FA	906	0	998	7	0
33	GA	1008	0	1142	18	0
34	HA	830	0	916	6	0
35	IA	716	0	750	17	0
36	JA	569	0	637	8	0
37	KA	447	0	480	13	0
38	LA	429	0	465	6	0
39	MA	239	0	289	4	0
40	NA	851	0	920	13	0
41	OA	708	0	757	9	0
42	PA	994	0	1051	16	0
43	RA	1160	0	1218	15	0
44	SA	1622	0	825	12	0
45	TA	1615	0	820	18	0
46	UA	1596	0	810	17	0
47	VA	251	0	128	1	0
48	WA	76735	0	38762	933	0
49	XA	2538	0	1286	27	0
50	YA	3314	0	1683	35	0
51	ZA	36623	0	18504	464	0
52	AB	1710	0	1711	26	0
53	BB	1729	0	1803	21	0
54	CB	1707	0	1793	29	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
55	DB	1768	0	1863	21	0
56	EB	2076	0	2177	37	0
57	FB	1471	0	1522	23	0
58	GB	1923	0	2089	38	0
59	HB	1489	0	1582	25	0
60	IB	1686	0	1772	21	0
61	JB	1525	0	1640	34	0
62	KB	810	0	836	20	0
63	LB	1180	0	1254	14	0
64	MB	908	0	939	19	0
65	NB	1202	0	1289	19	0
66	OB	1016	0	1039	20	0
67	PB	1058	0	1104	15	0
68	QB	1128	0	1195	20	0
69	RB	1068	0	1121	16	0
70	SB	1190	0	1249	28	0
71	TB	1104	0	1138	21	0
72	UB	808	0	878	14	0
73	VB	636	0	637	8	0
74	WB	1034	0	1080	20	0
75	XB	1098	0	1167	15	0
76	YB	1011	0	1083	18	0
77	ZB	683	0	761	8	0
78	AC	814	0	864	16	0
79	BC	651	0	672	8	0
80	CC	488	0	514	11	0
81	DC	459	0	449	9	0
82	EC	443	0	492	8	0
83	FC	564	0	577	7	0
84	GC	2436	0	2393	47	0
85	IC	20	0	10	0	0
86	b	1279	0	1343	29	0
87	c	110	0	83	4	0
88	HC	1664	0	1721	27	0
89	A	1	0	0	0	0
89	AC	1	0	0	0	0
89	FA	1	0	0	0	0
89	HC	1	0	0	0	0
89	I	1	0	0	0	0
89	IA	1	0	0	0	0
89	O	1	0	0	0	0
89	P	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
89	SA	1	0	0	0	0
89	U	1	0	0	0	0
89	WA	158	0	0	0	0
89	XA	3	0	0	0	0
89	YA	2	0	0	0	0
89	Z	2	0	0	0	0
89	ZA	61	0	0	0	0
90	AC	1	0	0	0	0
90	DC	1	0	0	0	0
90	FA	1	0	0	0	0
90	FC	1	0	0	0	0
90	IA	1	0	0	0	0
90	LA	1	0	0	0	0
90	NA	1	0	0	0	0
90	OA	1	0	0	0	0
91	UA	24	0	11	0	0
92	WA	19	0	18	0	0
93	WA	30	0	57	1	0
93	ZA	10	0	19	0	0
94	WA	1	0	0	0	0
95	HC	6	0	4	0	0
All	All	220703	0	164224	2507	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 7.

All (2507) 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)
46:UA:8:U:H3	46:UA:14:A:H62	1.07	1.03
48:WA:1446:G:H1	48:WA:2113:U:H3	1.02	1.00
48:WA:2847:A:H61	48:WA:3845:C:N4	1.57	1.00
48:WA:1249:U:H3	48:WA:1268:G:H1	1.07	0.99
51:ZA:197:U:H3	51:ZA:202:G:H1	0.98	0.97
51:ZA:1743:G:H21	51:ZA:1791:A:H62	1.03	0.96
48:WA:2847:A:N6	48:WA:3845:C:H42	1.62	0.95
44:SA:50:U:H3	44:SA:64:G:H1	1.01	0.92
55:DB:201:PRO:O	55:DB:205:TYR:HB2	1.72	0.89
51:ZA:1472:C:H42	51:ZA:1476:A:H62	1.21	0.88
46:UA:8:U:H3	46:UA:14:A:N6	1.70	0.88
48:WA:2487:U:H3	48:WA:2495:G:H1	1.22	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:ZA:1743:G:N2	51:ZA:1791:A:H62	1.72	0.88
48:WA:2847:A:H61	48:WA:3845:C:H42	0.88	0.85
51:ZA:1656:G:H1	51:ZA:1668:U:H3	1.21	0.84
48:WA:1761:G:H1	48:WA:1775:U:H3	1.26	0.81
51:ZA:1288:U:H3	51:ZA:1311:C:H42	1.24	0.80
51:ZA:1743:G:H21	51:ZA:1791:A:N6	1.78	0.79
56:EB:185:GLY:H	56:EB:189:LEU:HD13	1.46	0.78
48:WA:3694:A:H62	48:WA:3825:G:H21	1.31	0.77
74:WB:8:ALA:HA	74:WB:74:VAL:HG21	1.67	0.77
51:ZA:677:G:H21	51:ZA:1028:A:H62	1.33	0.75
86:b:55:MET:HG3	86:b:87:GLY:HA3	1.68	0.75
48:WA:2522:C:O2	48:WA:2642:G:N2	2.19	0.75
51:ZA:561:A:H5'	61:JB:171:GLY:HA3	1.69	0.75
48:WA:4995:G:H1	48:WA:5060:A:H2	1.33	0.73
46:UA:10:G:H22	46:UA:25:C:H2'	1.52	0.73
48:WA:4737:G:H1	48:WA:4967:U:H3	1.35	0.73
51:ZA:1396:A:O2'	51:ZA:1398:G:N7	2.21	0.73
35:IA:2:THR:N	48:WA:3644:A:HO2'	1.88	0.72
3:C:78:ARG:HB3	3:C:88:GLY:HA2	1.71	0.72
48:WA:3946:G:H1	48:WA:4071:U:H3	1.38	0.72
48:WA:1975:G:H2'	48:WA:1976:U:H2'	1.71	0.72
86:b:5:ASP:N	86:b:8:THR:HG1	1.87	0.72
48:WA:2575:A:H62	48:WA:2763:U:H3	1.37	0.71
48:WA:3699:U:H5''	48:WA:3700:G:H5'	1.72	0.71
51:ZA:1472:C:N4	51:ZA:1476:A:H62	1.87	0.71
10:J:75:ARG:NH1	49:XA:40:U:O2	2.24	0.71
72:UB:80:PHE:HB3	81:DC:52:PHE:HB3	1.71	0.71
48:WA:4770:G:H2'	48:WA:4771:G:C8	2.26	0.71
58:GB:69:THR:HG22	58:GB:71:GLY:H	1.55	0.71
51:ZA:15:U:O2'	51:ZA:669:A:N6	2.23	0.70
14:N:125:LYS:HG3	14:N:129:LEU:HD12	1.73	0.70
48:WA:1766:G:OP2	48:WA:1766:G:N2	2.24	0.70
48:WA:4355:U:H5''	48:WA:4356:U:H5'	1.73	0.70
51:ZA:1298:G:HO2'	51:ZA:1299:A:H8	1.40	0.69
5:E:48:ARG:HB2	5:E:64:MET:HE1	1.75	0.69
84:GC:256:ILE:HG23	84:GC:270:LEU:HB2	1.75	0.69
48:WA:4874:G:H4'	48:WA:4875:G:H5'	1.75	0.69
2:B:249:ARG:NH1	48:WA:2839:U:OP1	2.26	0.68
11:K:56:ARG:O	11:K:116:ARG:NH1	2.26	0.68
5:E:115:MET:O	42:PA:87:ARG:NH1	2.26	0.68
48:WA:995:U:H3	48:WA:1071:G:H1	1.40	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:ZA:1674:G:OP1	57:FB:51:HIS:NE2	2.25	0.68
11:K:31:ARG:HD3	11:K:35:ARG:HH21	1.59	0.67
58:GB:164:LYS:HG2	58:GB:165:GLU:HG3	1.75	0.67
54:CB:123:ARG:NH1	54:CB:143:CYS:SG	2.67	0.67
68:QB:96:VAL:HG11	68:QB:110:ILE:HG13	1.76	0.67
51:ZA:959:G:OP1	66:OB:104:ARG:NH2	2.28	0.67
51:ZA:1410:C:H2'	51:ZA:1411:G:H8	1.59	0.67
8:H:85:THR:HG23	8:H:86:LEU:HG	1.74	0.67
3:C:340:ILE:HD13	5:E:53:VAL:HG21	1.77	0.67
26:Z:21:ARG:NH2	48:WA:1319:U:OP1	2.28	0.67
48:WA:3643:U:OP2	48:WA:3648:A:N6	2.28	0.67
51:ZA:482:G:N1	51:ZA:485:A:OP2	2.26	0.67
48:WA:4995:G:O6	48:WA:5060:A:N1	2.28	0.66
51:ZA:1658:G:OP2	51:ZA:1660:C:N4	2.28	0.66
16:P:82:VAL:HG12	16:P:84:GLY:H	1.60	0.66
84:GC:31:ILE:HG23	84:GC:43:TRP:HB2	1.77	0.66
88:HC:378:LYS:HD2	88:HC:391:PRO:HB3	1.77	0.66
88:HC:380:ASP:HB3	88:HC:383:SER:HB2	1.78	0.66
53:BB:107:ARG:NH1	66:OB:133:THR:O	2.27	0.66
48:WA:4539:C:H2'	48:WA:4540:G:H8	1.61	0.66
19:S:70:HIS:NE2	48:WA:4329:C:OP1	2.29	0.66
48:WA:3762:A:N6	51:ZA:1826:G:OP2	2.29	0.66
5:E:186:ARG:HH21	48:WA:4938:G:H2'	1.61	0.65
48:WA:2022:U:H2'	48:WA:2023:G:H8	1.61	0.65
51:ZA:1324:G:H1	51:ZA:1504:U:H3	1.44	0.65
38:LA:74:TYR:O	48:WA:4474:G:O2'	2.14	0.65
48:WA:1526:A:H62	48:WA:1653:G:H1	1.44	0.65
48:WA:2460:C:H1'	48:WA:3673:G:H21	1.62	0.65
51:ZA:957:A:H3'	51:ZA:958:G:H21	1.60	0.65
51:ZA:1403:C:N4	51:ZA:1433:C:OP1	2.29	0.65
48:WA:1452:C:HO2'	48:WA:2106:A:HO2'	1.44	0.65
51:ZA:1130:G:N2	51:ZA:1130:G:OP2	2.29	0.65
51:ZA:442:C:H42	51:ZA:449:A:H62	1.44	0.65
51:ZA:888:U:H2'	51:ZA:900:C:H42	1.61	0.65
48:WA:4543:G:N2	48:WA:4546:A:OP2	2.28	0.65
17:Q:172:ARG:HH12	51:ZA:908:A:H5''	1.62	0.65
43:RA:121:LEU:HB2	86:b:49:GLY:HA2	1.79	0.65
51:ZA:1298:G:H4'	67:PB:78:THR:HA	1.79	0.65
6:F:227:VAL:HA	18:R:39:VAL:HG12	1.79	0.65
48:WA:4423:C:H42	48:WA:4477:G:H22	1.44	0.65
51:ZA:114:G:N7	63:LB:69:ARG:NH2	2.45	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:ZA:851:C:H5''	51:ZA:852:G:H5'	1.79	0.65
11:K:54:PRO:HG2	11:K:56:ARG:HH12	1.62	0.65
43:RA:17:CYS:O	43:RA:57:ARG:HA	1.96	0.65
48:WA:1092:C:H2'	48:WA:1093:A:H8	1.62	0.65
51:ZA:377:G:H5'	60:IB:98:LYS:HB3	1.79	0.64
51:ZA:1396:A:N7	51:ZA:1450:G:N2	2.45	0.64
69:RB:111:PHE:HB3	69:RB:114:LEU:HD11	1.78	0.64
1:A:128:ARG:NH1	48:WA:3683:G:OP2	2.30	0.64
11:K:59:VAL:HB	48:WA:74:G:H5'	1.78	0.64
48:WA:916:U:H4'	48:WA:917:A:H5'	1.79	0.64
24:X:15:ARG:NH1	48:WA:230:G:OP1	2.31	0.64
74:WB:42:MET:HE2	74:WB:49:GLU:HA	1.79	0.64
58:GB:2:LYS:HB3	58:GB:15:LEU:HD11	1.80	0.64
45:TA:15:G:N2	45:TA:48:C:C2	2.65	0.64
51:ZA:43:U:OP2	51:ZA:485:A:N6	2.29	0.64
51:ZA:616:A:OP1	75:XB:68:LYS:NZ	2.30	0.64
5:E:159:ARG:NH1	48:WA:4942:C:OP1	2.30	0.64
48:WA:308:G:OP2	48:WA:308:G:N2	2.27	0.64
74:WB:11:LEU:HD12	74:WB:74:VAL:HG22	1.77	0.64
1:A:116:LEU:HB3	1:A:126:LEU:HB2	1.80	0.63
56:EB:87:MET:HE2	56:EB:123:LEU:HB2	1.78	0.63
84:GC:199:THR:HG21	84:GC:240:CYS:HA	1.81	0.63
43:RA:117:ARG:HG3	43:RA:125:LEU:HD11	1.80	0.63
4:D:103:LEU:HD11	4:D:248:ARG:HE	1.63	0.63
35:IA:52:LYS:NZ	48:WA:364:G:O6	2.31	0.63
37:KA:37:TYR:O	48:WA:362:A:N6	2.30	0.63
41:OA:4:ARG:NH2	48:WA:1557:G:O6	2.31	0.63
66:OB:142:ARG:HB3	78:AC:22:ARG:HD3	1.80	0.63
84:GC:39:THR:HG22	84:GC:60:ARG:HG2	1.80	0.63
2:B:249:ARG:NH2	48:WA:3847:A:OP2	2.31	0.63
11:K:103:ARG:NH1	48:WA:73:A:N7	2.47	0.63
48:WA:1334:C:H2'	48:WA:1335:A:H8	1.64	0.63
71:TB:76:THR:HB	71:TB:94:ARG:HB3	1.79	0.63
80:CC:17:VAL:HA	80:CC:30:VAL:HG23	1.80	0.63
4:D:256:LYS:HD2	49:XA:117:G:H5'	1.81	0.63
7:G:185:ARG:NH1	48:WA:119:G:OP1	2.32	0.63
18:R:87:ARG:HH21	48:WA:2036:G:H5'	1.63	0.63
35:IA:33:THR:HG22	35:IA:40:PRO:HG2	1.81	0.63
70:SB:23:ARG:NH2	77:ZB:46:ASN:O	2.31	0.63
29:CA:39:LYS:HG3	29:CA:40:LYS:HG2	1.81	0.63
31:EA:100:ARG:NH1	48:WA:4755:U:OP1	2.32	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:WA:300:A:H2'	48:WA:301:G:H8	1.62	0.63
48:WA:2467:C:H1'	48:WA:3674:G:H1	1.64	0.63
48:WA:1741:G:N3	48:WA:1744:A:N6	2.47	0.63
48:WA:4696:G:OP1	48:WA:4696:G:N2	2.29	0.63
75:XB:68:LYS:HE2	82:EC:82:VAL:HG22	1.79	0.63
15:O:161:ALA:HB2	48:WA:1599:G:H5'	1.81	0.62
48:WA:1554:G:O2'	48:WA:1576:G:N2	2.32	0.62
21:U:43:LYS:HD3	21:U:62:MET:HE2	1.79	0.62
42:PA:6:GLN:HG3	42:PA:44:ILE:HD12	1.81	0.62
48:WA:67:C:OP2	48:WA:312:G:N2	2.31	0.62
48:WA:3879:A:N3	48:WA:4403:G:O2'	2.29	0.62
56:EB:122:LYS:NZ	56:EB:124:CYS:SG	2.69	0.62
84:GC:107:ASP:OD2	84:GC:125:ARG:NH1	2.32	0.62
6:F:218:GLY:O	6:F:245:ARG:NH2	2.33	0.62
16:P:16:LYS:O	16:P:33:ARG:NH2	2.32	0.62
66:OB:105:THR:HG22	66:OB:107:THR:H	1.63	0.62
14:N:116:LYS:HE3	18:R:169:THR:HG21	1.81	0.62
18:R:34:ALA:HB1	18:R:39:VAL:HG23	1.80	0.62
51:ZA:1612:G:OP1	67:PB:18:ARG:NH2	2.32	0.62
7:G:276:ARG:HG3	7:G:280:ASN:HB2	1.81	0.62
51:ZA:581:U:OP1	61:JB:133:ARG:NH2	2.32	0.62
51:ZA:1473:G:N2	51:ZA:1476:A:OP2	2.32	0.62
51:ZA:1521:C:OP2	70:SB:136:THR:OG1	2.18	0.62
9:I:203:ARG:NH1	49:XA:105:C:OP2	2.32	0.62
43:RA:120:SER:HB3	86:b:48:ARG:HH21	1.65	0.62
49:XA:28:C:H1'	49:XA:54:A:H61	1.63	0.62
50:YA:67:U:H2'	50:YA:68:G:H8	1.63	0.62
53:BB:122:GLU:O	53:BB:165:ARG:NH1	2.32	0.62
19:S:87:LYS:NZ	48:WA:4302:U:OP1	2.32	0.62
1:A:179:ILE:HG23	1:A:184:ARG:HB2	1.82	0.62
48:WA:2603:A:N6	48:WA:2746:A:OP2	2.33	0.62
51:ZA:16:G:H5'	51:ZA:669:A:H61	1.63	0.62
61:JB:131:ARG:NH1	61:JB:143:ASN:OD1	2.33	0.62
10:J:99:PHE:O	10:J:159:LYS:NZ	2.32	0.61
28:BA:36:LYS:NZ	48:WA:2659:G:OP2	2.33	0.61
48:WA:970:G:N2	48:WA:2098:G:O2'	2.33	0.61
48:WA:5055:U:OP1	48:WA:5056:C:N4	2.32	0.61
51:ZA:925:G:H1	51:ZA:1017:U:H3	1.47	0.61
51:ZA:1228:A:H2'	51:ZA:1229:G:C8	2.35	0.61
51:ZA:24:C:OP1	61:JB:11:LYS:NZ	2.30	0.61
54:CB:69:LEU:HG	54:CB:273:LEU:HD21	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:T:113:ARG:NH2	48:WA:2704:C:O3'	2.32	0.61
26:Z:65:ARG:NH2	48:WA:86:U:O2'	2.33	0.61
33:GA:66:LYS:HD3	50:YA:96:C:H5''	1.81	0.61
41:OA:4:ARG:NH1	48:WA:1556:A:OP2	2.34	0.61
51:ZA:1270:G:O2'	51:ZA:1299:A:N6	2.34	0.61
51:ZA:1566:G:N7	71:TB:101:ARG:NH2	2.49	0.61
48:WA:961:A:H1'	48:WA:2078:G:H5''	1.81	0.61
48:WA:2505:G:O2'	48:WA:2507:C:N4	2.33	0.61
57:FB:114:ASN:OD1	57:FB:118:ASN:ND2	2.33	0.61
75:XB:91:LEU:HB3	82:EC:82:VAL:HG11	1.82	0.61
84:GC:4:GLN:HB3	84:GC:313:THR:HB	1.83	0.61
2:B:234:ARG:NH2	48:WA:4568:U:O2'	2.33	0.61
9:I:4:ARG:NH1	48:WA:1868:U:OP1	2.34	0.61
14:N:130:LYS:HB2	14:N:133:ARG:HG2	1.82	0.61
51:ZA:1259:A:N6	51:ZA:1519:U:OP1	2.33	0.61
61:JB:136:ARG:NH1	61:JB:159:PHE:O	2.32	0.61
25:Y:48:ARG:NH2	48:WA:2578:G:OP1	2.34	0.61
49:XA:53:U:H4'	49:XA:54:A:H5''	1.83	0.61
30:DA:36:ARG:NH2	48:WA:2324:G:OP1	2.33	0.61
81:DC:17:GLY:O	81:DC:27:ARG:NH1	2.33	0.61
24:X:55:VAL:HG12	24:X:106:ILE:HA	1.83	0.61
48:WA:4276:A:H2'	48:WA:4277:G:H8	1.65	0.61
51:ZA:1004:U:H2'	51:ZA:1005:G:H8	1.66	0.61
51:ZA:1286:G:N2	51:ZA:1312:G:O2'	2.30	0.61
26:Z:125:LYS:HG2	26:Z:145:VAL:HB	1.83	0.61
36:JA:24:LYS:NZ	48:WA:2698:A:N1	2.44	0.61
48:WA:1255:G:H1	48:WA:1262:G:H22	1.49	0.61
48:WA:2522:C:H2'	48:WA:2523:G:H8	1.65	0.61
51:ZA:165:G:N2	51:ZA:165:G:OP2	2.34	0.61
51:ZA:1015:U:O2'	65:NB:55:ARG:NH1	2.34	0.61
51:ZA:1227:G:N2	51:ZA:1635:C:O2'	2.34	0.61
51:ZA:1447:G:OP1	72:UB:85:HIS:ND1	2.34	0.61
25:Y:103:ASP:HB3	25:Y:106:LEU:HB2	1.83	0.60
8:H:43:VAL:HG12	8:H:59:LYS:HD3	1.82	0.60
16:P:65:ARG:NH2	48:WA:1461:A:OP1	2.33	0.60
22:V:61:LYS:NZ	48:WA:5040:A:OP1	2.34	0.60
48:WA:1726:G:N2	48:WA:1878:U:OP1	2.34	0.60
48:WA:2491:C:O2'	48:WA:2493:C:N3	2.34	0.60
51:ZA:649:U:H2'	51:ZA:650:A:H8	1.66	0.60
1:A:117:GLU:OE2	1:A:163:ARG:NH1	2.34	0.60
5:E:164:ARG:NH1	12:L:106:ASP:OD2	2.34	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:265:LYS:NZ	48:WA:4935:C:OP2	2.35	0.60
7:G:194:ASN:ND2	48:WA:151:G:N7	2.49	0.60
11:K:35:ARG:NH1	48:WA:105:A:O2'	2.35	0.60
51:ZA:163:U:OP2	58:GB:87:ARG:NH2	2.30	0.60
51:ZA:1654:G:OP1	71:TB:90:SER:OG	2.19	0.60
30:DA:8:VAL:HG22	30:DA:10:PRO:HD3	1.82	0.60
48:WA:35:U:O2'	48:WA:1527:A:N1	2.33	0.60
48:WA:1857:G:O6	48:WA:1882:G:N2	2.34	0.60
48:WA:4747:G:H1	48:WA:4957:A:H61	1.47	0.60
7:G:210:ILE:HA	7:G:254:THR:HG22	1.84	0.60
22:V:93:LYS:O	22:V:101:ARG:NH2	2.35	0.60
24:X:30:MET:HB3	24:X:101:PRO:HG2	1.83	0.60
48:WA:1745:A:N1	48:WA:1791:C:O2'	2.33	0.60
48:WA:1962:A:H1'	86:b:63:LYS:HG2	1.83	0.60
51:ZA:197:U:O4	51:ZA:202:G:O6	2.20	0.60
51:ZA:617:G:H4'	75:XB:88:ASP:HB2	1.83	0.60
5:E:185:ASN:ND2	5:E:274:LEU:O	2.35	0.60
48:WA:992:C:O2	48:WA:1076:G:N2	2.34	0.60
48:WA:4910:G:O2'	48:WA:4915:G:N2	2.35	0.60
48:WA:4994:G:H2'	48:WA:4995:G:H8	1.67	0.60
6:F:176:ARG:NH1	48:WA:2103:A:N7	2.50	0.60
30:DA:36:ARG:NH1	48:WA:1663:C:OP1	2.35	0.60
31:EA:43:LEU:O	31:EA:109:ARG:NH1	2.35	0.60
51:ZA:1228:A:H2'	51:ZA:1229:G:H8	1.67	0.60
51:ZA:1562:C:H2'	51:ZA:1563:G:H8	1.67	0.60
51:ZA:1587:G:H21	71:TB:77:LYS:HD3	1.66	0.60
70:SB:98:VAL:HG11	70:SB:106:LYS:HG3	1.83	0.60
51:ZA:1091:C:HO2'	74:WB:2:VAL:N	2.00	0.59
51:ZA:1447:G:OP1	72:UB:87:ARG:NH2	2.35	0.59
62:KB:27:VAL:HG13	62:KB:43:LEU:HD13	1.84	0.59
70:SB:50:ILE:HD11	70:SB:63:GLU:HB3	1.84	0.59
5:E:156:LEU:HD11	5:E:198:ILE:HG13	1.84	0.59
42:PA:67:ARG:NH1	48:WA:667:G:OP2	2.35	0.59
44:SA:33:U:OP2	68:QB:172:ARG:NH2	2.34	0.59
48:WA:262:G:H2'	48:WA:263:G:C8	2.37	0.59
51:ZA:1115:U:H1'	51:ZA:1116:C:H2'	1.84	0.59
51:ZA:1418:C:H5'	51:ZA:1420:G:H21	1.65	0.59
88:HC:426:VAL:HB	88:HC:434:ALA:HB3	1.83	0.59
48:WA:2337:C:H2'	48:WA:2338:G:H8	1.66	0.59
51:ZA:1568:C:O2	51:ZA:1627:C:O2'	2.20	0.59
60:IB:4:SER:OG	60:IB:6:ASP:OD2	2.21	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:ZA:486:A:H1'	51:ZA:513:G:H22	1.66	0.59
51:ZA:1240:A:N7	67:PB:100:LYS:HB2	2.18	0.59
51:ZA:1261:C:O2	81:DC:10:HIS:NE2	2.30	0.59
48:WA:20:U:H3'	48:WA:21:G:H8	1.67	0.59
48:WA:2555:A:N6	48:WA:2767:A:OP2	2.35	0.59
48:WA:2649:A:H62	48:WA:2688:G:H8	1.48	0.59
51:ZA:954:U:O2	66:OB:55:ARG:NH2	2.34	0.59
51:ZA:1528:G:O2'	51:ZA:1666:C:OP1	2.20	0.59
11:K:48:PRO:HG3	33:GA:118:LYS:HE3	1.85	0.59
48:WA:419:A:N3	48:WA:1334:C:O2'	2.34	0.59
51:ZA:1677:U:OP1	57:FB:71:ARG:NH2	2.35	0.59
15:O:160:ARG:NH2	48:WA:1599:G:OP1	2.36	0.59
16:P:65:ARG:NH1	48:WA:1504:G:OP1	2.35	0.59
48:WA:2000:A:OP2	86:b:16:LYS:NZ	2.30	0.59
48:WA:4274:G:OP2	48:WA:4274:G:N2	2.36	0.59
16:P:67:ILE:HD12	16:P:96:PRO:HD2	1.83	0.59
48:WA:1804:A:H5''	48:WA:1805:G:H5'	1.83	0.59
48:WA:2737:G:H2'	48:WA:2738:G:H8	1.67	0.59
48:WA:4920:C:H2'	48:WA:4921:G:H8	1.68	0.59
51:ZA:1286:G:OP1	83:FC:99:LYS:NZ	2.36	0.59
51:ZA:1373:C:O2'	69:RB:10:LYS:NZ	2.31	0.59
52:AB:36:GLN:O	52:AB:53:ARG:NH1	2.36	0.59
65:NB:136:PRO:HG2	65:NB:139:TRP:HB2	1.85	0.59
3:C:110:ARG:O	3:C:113:ARG:NH1	2.36	0.59
12:L:11:ARG:NH1	12:L:58:THR:O	2.35	0.59
48:WA:2377:A:H2'	48:WA:2378:A:H8	1.67	0.59
51:ZA:453:C:O2'	58:GB:92:ARG:O	2.20	0.59
51:ZA:1617:G:N1	51:ZA:1620:A:OP2	2.34	0.59
7:G:170:ARG:NH2	48:WA:119:G:O6	2.35	0.59
32:FA:6:THR:HG22	48:WA:2402:G:H21	1.68	0.59
45:TA:15:G:N2	45:TA:48:C:O2	2.36	0.59
51:ZA:106:C:H2'	51:ZA:107:A:H8	1.68	0.59
57:FB:35:LEU:HD22	57:FB:117:ILE:HD13	1.85	0.59
74:WB:52:ILE:HG22	74:WB:61:ILE:HG12	1.84	0.59
12:L:35:ARG:NH2	18:R:108:GLN:OE1	2.37	0.58
48:WA:2779:G:H5''	48:WA:2780:G:H5'	1.85	0.58
48:WA:4718:C:H2'	48:WA:4719:A:H8	1.68	0.58
51:ZA:1017:U:OP1	65:NB:62:GLN:NE2	2.36	0.58
54:CB:60:TRP:O	54:CB:71:LYS:NZ	2.36	0.58
7:G:282:ARG:NH2	7:G:285:GLU:OE1	2.35	0.58
21:U:15:ARG:NH2	48:WA:4675:U:OP2	2.36	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:HA:48:CYS:SG	34:HA:49:GLY:N	2.76	0.58
48:WA:1095:G:H2'	48:WA:1096:G:H8	1.67	0.58
48:WA:2320:G:N2	48:WA:2323:G:OP2	2.29	0.58
51:ZA:1758:G:H2'	51:ZA:1759:G:C8	2.38	0.58
67:PB:121:ILE:HG22	70:SB:120:HIS:HD2	1.68	0.58
7:G:111:PRO:HD2	7:G:114:ILE:HD12	1.84	0.58
2:B:5:LYS:NZ	48:WA:4503:U:OP1	2.37	0.58
14:N:89:PRO:HD3	48:WA:1916:C:H4'	1.84	0.58
16:P:2:GLY:N	48:WA:1900:C:OP1	2.37	0.58
19:S:108:ARG:NH1	48:WA:1839:A:OP1	2.36	0.58
27:AA:99:ILE:O	27:AA:109:ARG:NH1	2.35	0.58
40:NA:2:VAL:N	40:NA:90:HIS:O	2.36	0.58
48:WA:1929:U:OP1	48:WA:1951:U:O2'	2.14	0.58
51:ZA:1513:C:OP1	81:DC:12:ARG:NH1	2.36	0.58
59:HB:268:LEU:O	59:HB:272:SER:CB	2.51	0.58
67:PB:56:LEU:HD23	67:PB:83:MET:HE3	1.84	0.58
26:Z:72:THR:HG22	26:Z:110:LYS:HB3	1.85	0.58
51:ZA:3:C:O2	61:JB:18:ARG:NH1	2.36	0.58
67:PB:123:TYR:OH	70:SB:124:ARG:NH1	2.36	0.58
33:GA:31:LEU:HB3	33:GA:47:ILE:HG22	1.84	0.58
38:LA:88:LYS:NZ	48:WA:4487:C:O2'	2.36	0.58
68:QB:158:PHE:O	68:QB:166:ARG:NH1	2.37	0.58
73:VB:16:LYS:HG2	73:VB:23:ILE:HG22	1.85	0.58
5:E:61:ARG:HB2	48:WA:1243:C:H5''	1.86	0.58
13:M:157:LYS:O	13:M:162:ARG:NH1	2.36	0.58
14:N:72:HIS:N	48:WA:4588:G:OP1	2.37	0.58
51:ZA:429:C:O2'	51:ZA:811:A:N1	2.37	0.58
51:ZA:1351:G:H1	51:ZA:1360:U:H3	1.52	0.58
56:EB:87:MET:HE1	56:EB:236:ILE:HG21	1.85	0.58
61:JB:127:ARG:HD3	82:EC:104:ARG:HD3	1.84	0.58
51:ZA:155:G:H2'	51:ZA:156:G:H8	1.69	0.58
51:ZA:1353:A:OP1	52:AB:139:TYR:OH	2.16	0.58
55:DB:257:PRO:HB2	84:GC:190:GLY:HA2	1.85	0.58
31:EA:54:LYS:HE3	48:WA:4750:U:H5''	1.84	0.58
51:ZA:1623:A:H5''	70:SB:133:GLY:HA3	1.85	0.58
29:CA:64:ILE:HG23	29:CA:68:LEU:HD23	1.86	0.57
32:FA:29:ARG:NH1	48:WA:2524:G:OP1	2.36	0.57
51:ZA:608:C:O4'	82:EC:131:ASN:ND2	2.36	0.57
51:ZA:1139:C:H42	51:ZA:1149:A:H62	1.52	0.57
56:EB:100:ARG:HB2	56:EB:114:ILE:HD13	1.85	0.57
68:QB:156:LYS:NZ	68:QB:160:GLY:O	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:20:LYS:HD3	48:WA:4719:A:H4'	1.87	0.57
6:F:104:VAL:HG13	6:F:135:VAL:HG12	1.86	0.57
46:UA:17:G:H21	46:UA:58:A:H5'	1.68	0.57
51:ZA:928:G:H2'	51:ZA:929:G:C8	2.39	0.57
9:I:152:LEU:HB3	9:I:165:ILE:HD12	1.84	0.57
17:Q:105:LEU:HD23	17:Q:138:LEU:HD23	1.84	0.57
48:WA:1797:A:N3	49:XA:79:U:O2'	2.37	0.57
48:WA:2411:U:H4'	48:WA:2430:A:H4'	1.86	0.57
51:ZA:544:G:H2'	51:ZA:545:A:H8	1.69	0.57
54:CB:94:ILE:HD12	54:CB:162:ILE:HD11	1.86	0.57
65:NB:99:ARG:NH2	65:NB:119:GLU:OE2	2.33	0.57
4:D:88:VAL:HA	4:D:239:MET:HE3	1.86	0.57
48:WA:3850:U:H2'	48:WA:3851:A:H8	1.67	0.57
48:WA:4596:U:H2'	48:WA:4597:G:H8	1.69	0.57
48:WA:4956:G:H2'	48:WA:4957:A:H8	1.69	0.57
51:ZA:1513:C:H2'	51:ZA:1514:G:H8	1.69	0.57
54:CB:187:ARG:HE	54:CB:192:LEU:HD12	1.68	0.57
84:GC:174:VAL:HB	84:GC:188:HIS:HB2	1.86	0.57
2:B:77:THR:HG21	2:B:337:VAL:HG22	1.86	0.57
13:M:96:ARG:NH2	13:M:104:GLU:OE1	2.38	0.57
23:W:110:LYS:HG3	23:W:121:VAL:HB	1.86	0.57
25:Y:3:LYS:O	25:Y:6:LYS:NZ	2.38	0.57
48:WA:1213:C:H2'	48:WA:1214:G:H8	1.68	0.57
51:ZA:1156:U:O4	54:CB:194:ARG:NH1	2.38	0.57
2:B:276:HIS:ND1	48:WA:4718:C:OP1	2.36	0.57
4:D:33:ARG:NE	49:XA:7:G:OP1	2.36	0.57
16:P:22:ASP:OD1	16:P:22:ASP:N	2.36	0.57
18:R:174:THR:HG1	48:WA:4765:U:HO2'	1.48	0.57
27:AA:56:LYS:O	27:AA:60:ASN:ND2	2.37	0.57
38:LA:92:THR:HG22	38:LA:94:ASN:H	1.70	0.57
51:ZA:64:A:H2	51:ZA:83:A:H62	1.52	0.57
51:ZA:1668:U:OP1	68:QB:159:GLY:N	2.38	0.57
9:I:77:VAL:HG23	9:I:82:LYS:HA	1.87	0.57
13:M:65:ARG:NH2	48:WA:2459:G:OP1	2.36	0.57
19:S:43:LYS:NZ	48:WA:1735:G:OP1	2.37	0.57
48:WA:1671:A:N3	48:WA:1854:U:O2'	2.37	0.57
48:WA:2577:U:O2	48:WA:2760:G:N2	2.37	0.57
48:WA:3918:G:H2'	48:WA:3919:A:C8	2.40	0.57
2:B:57:VAL:HG22	2:B:73:VAL:HG22	1.87	0.57
53:BB:82:ARG:NH2	53:BB:191:ASP:OD1	2.37	0.57
58:GB:55:GLY:H	58:GB:63:MET:HE2	1.70	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:MB:51:VAL:O	64:MB:108:CYS:HA	2.05	0.57
65:NB:24:THR:O	65:NB:27:LYS:NZ	2.36	0.57
18:R:127:MET:HA	19:S:153:PRO:HD2	1.87	0.57
51:ZA:183:G:O2'	51:ZA:184:G:O4'	2.23	0.57
51:ZA:941:C:H2'	51:ZA:942:G:H8	1.70	0.57
51:ZA:1245:G:N2	72:UB:72:GLU:OE2	2.37	0.57
51:ZA:1550:G:H3'	51:ZA:1579:A:H61	1.69	0.57
57:FB:49:LEU:HD11	68:QB:75:TYR:HB3	1.85	0.57
88:HC:352:GLN:HB2	88:HC:393:PHE:HB2	1.86	0.57
6:F:95:ARG:NH2	48:WA:1897:G:OP1	2.38	0.56
48:WA:2772:C:H2'	48:WA:2773:G:H8	1.69	0.56
49:XA:92:C:H2'	49:XA:93:G:H8	1.69	0.56
65:NB:33:VAL:HG21	65:NB:66:VAL:HG11	1.87	0.56
74:WB:66:THR:HG21	74:WB:68:ARG:HH11	1.70	0.56
1:A:117:GLU:O	1:A:162:ASN:ND2	2.38	0.56
2:B:317:LEU:HB2	2:B:372:SER:HB2	1.87	0.56
13:M:116:LEU:HD22	13:M:135:ILE:HD11	1.86	0.56
46:UA:30:G:N7	46:UA:41:G:N2	2.53	0.56
46:UA:74:C:H3'	46:UA:75:C:H5''	1.87	0.56
48:WA:62:A:N3	48:WA:77:U:O2'	2.31	0.56
48:WA:2409:G:OP2	48:WA:2409:G:N2	2.34	0.56
48:WA:3863:A:H2'	48:WA:3864:A:H8	1.70	0.56
48:WA:4539:C:H2'	48:WA:4540:G:C8	2.40	0.56
56:EB:66:MET:SD	56:EB:78:THR:OG1	2.63	0.56
3:C:46:LYS:HB3	3:C:49:ARG:HH21	1.70	0.56
3:C:321:ASN:OD1	48:WA:1282:C:O2'	2.23	0.56
8:H:128:MET:HE2	8:H:134:CYS:HB2	1.87	0.56
11:K:140:SER:OG	11:K:143:GLU:OE1	2.22	0.56
13:M:15:GLN:NE2	48:WA:280:G:O6	2.39	0.56
20:T:25:CYS:HB2	20:T:28:PRO:HG2	1.87	0.56
21:U:35:LYS:HB2	21:U:67:LYS:HG3	1.87	0.56
37:KA:13:LEU:HD22	48:WA:2409:G:H2'	1.87	0.56
46:UA:64:G:OP2	46:UA:64:G:N2	2.33	0.56
48:WA:4241:A:H2'	48:WA:4242:G:H8	1.70	0.56
48:WA:4476:A:OP2	48:WA:4478:C:N4	2.39	0.56
48:WA:4701:U:H1'	48:WA:4702:A:H5''	1.87	0.56
51:ZA:1089:G:O6	75:XB:3:LYS:NZ	2.38	0.56
51:ZA:1419:C:OP2	51:ZA:1420:G:N2	2.38	0.56
56:EB:112:HIS:NE2	56:EB:237:SER:O	2.39	0.56
56:EB:151:ASP:HB3	56:EB:154:ILE:HG12	1.87	0.56
70:SB:124:ARG:HB2	70:SB:131:VAL:HG13	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
86:b:53:VAL:HG12	86:b:89:VAL:HG12	1.87	0.56
3:C:204:ARG:NH1	3:C:205:ARG:O	2.39	0.56
5:E:275:ARG:NH2	48:WA:4886:G:N7	2.54	0.56
7:G:96:GLN:O	48:WA:4126:G:N2	2.38	0.56
24:X:34:LEU:HD23	24:X:38:LEU:HB3	1.86	0.56
48:WA:4090:C:H2'	48:WA:4091:G:H8	1.69	0.56
51:ZA:1565:C:OP2	71:TB:101:ARG:NH1	2.38	0.56
83:FC:141:CYS:HB3	83:FC:146:LEU:H	1.69	0.56
2:B:11:HIS:NE2	48:WA:4460:C:OP1	2.38	0.56
2:B:385:LYS:NZ	48:WA:5004:U:OP2	2.36	0.56
4:D:268:ARG:NH1	48:WA:1182:C:OP1	2.39	0.56
13:M:90:ASN:ND2	48:WA:3930:A:OP1	2.38	0.56
26:Z:132:ARG:NH1	48:WA:1470:C:OP1	2.38	0.56
48:WA:4637:A:H2	48:WA:4665:G:H21	1.51	0.56
59:HB:408:VAL:HG13	59:HB:425:PHE:HB2	1.86	0.56
70:SB:89:ASP:OD1	70:SB:94:LYS:N	2.38	0.56
9:I:54:SER:HB2	9:I:135:ILE:HD11	1.88	0.56
11:K:178:ALA:N	26:Z:134:GLU:OE2	2.39	0.56
17:Q:44:LEU:HD22	17:Q:49:LEU:HD12	1.87	0.56
21:U:13:LYS:NZ	21:U:59:ASP:OD1	2.38	0.56
30:DA:109:LYS:NZ	30:DA:128:ARG:O	2.34	0.56
48:WA:2601:G:N2	48:WA:2749:U:O4	2.39	0.56
48:WA:4276:A:H2'	48:WA:4277:G:C8	2.41	0.56
51:ZA:1023:A:OP2	65:NB:124:ARG:NH1	2.37	0.56
56:EB:162:ILE:HG22	56:EB:169:ILE:HA	1.88	0.56
59:HB:245:LYS:NZ	59:HB:269:GLU:OE2	2.33	0.56
77:ZB:58:LEU:HD12	77:ZB:62:VAL:HG21	1.87	0.56
4:D:83:LEU:HB3	4:D:88:VAL:HB	1.86	0.56
35:IA:49:TRP:O	48:WA:1648:A:O2'	2.22	0.56
42:PA:90:LEU:HG	42:PA:111:ILE:HG23	1.88	0.56
51:ZA:612:U:O2'	82:EC:84:LYS:NZ	2.39	0.56
61:JB:137:VAL:HG22	61:JB:157:ILE:HG12	1.87	0.56
76:YB:82:ALA:O	76:YB:86:GLU:HB2	2.06	0.56
81:DC:5:GLN:O	81:DC:9:SER:OG	2.23	0.56
48:WA:3601:A:H2'	48:WA:3602:G:C8	2.41	0.56
51:ZA:1016:U:H5''	65:NB:14:SER:HB2	1.87	0.56
51:ZA:1497:G:N7	62:KB:25:LYS:NZ	2.53	0.56
64:MB:52:LEU:HD23	64:MB:76:LEU:HD11	1.88	0.56
2:B:95:THR:HG22	48:WA:4912:A:H4'	1.88	0.56
13:M:120:TRP:HE1	13:M:123:GLU:HB3	1.71	0.56
48:WA:1935:G:H2'	48:WA:1936:A:C8	2.41	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:WA:3811:G:N2	48:WA:3811:G:OP2	2.38	0.56
88:HC:281:ALA:HB2	88:HC:334:PRO:HB2	1.88	0.56
11:K:116:ARG:NH2	11:K:155:MET:O	2.38	0.56
13:M:183:THR:HG22	13:M:188:ARG:HB3	1.88	0.56
48:WA:181:C:H2'	48:WA:182:G:C8	2.41	0.56
51:ZA:1531:A:OP1	71:TB:84:ARG:NH2	2.38	0.56
84:GC:202:PRO:HG2	84:GC:243:PRO:HA	1.87	0.56
6:F:75:ARG:NE	48:WA:731:G:OP2	2.39	0.55
16:P:88:ASP:OD2	16:P:108:ARG:NH1	2.38	0.55
17:Q:39:GLN:NE2	48:WA:2713:G:OP2	2.39	0.55
48:WA:4110:G:H2'	48:WA:4111:G:H8	1.69	0.55
53:BB:40:ASN:OD1	53:BB:75:GLN:NE2	2.39	0.55
69:RB:95:ILE:HD11	69:RB:118:GLN:HB2	1.88	0.55
17:Q:97:ARG:NH2	48:WA:2727:A:OP2	2.39	0.55
44:SA:38:C:O2'	51:ZA:1058:A:OP1	2.25	0.55
48:WA:1247:C:H2'	48:WA:1248:G:H8	1.72	0.55
51:ZA:1401:A:H4'	72:UB:52:GLY:HA3	1.89	0.55
51:ZA:1432:U:H2'	51:ZA:1438:A:H8	1.71	0.55
51:ZA:1529:C:O2'	71:TB:87:VAL:O	2.25	0.55
51:ZA:1808:U:H2'	51:ZA:1809:A:H8	1.70	0.55
52:AB:145:ILE:HG12	52:AB:159:ILE:HB	1.89	0.55
78:AC:87:ARG:NH2	78:AC:91:ALA:O	2.39	0.55
5:E:129:LEU:O	48:WA:965:A:N6	2.39	0.55
10:J:146:ARG:NH1	49:XA:27:G:OP1	2.39	0.55
20:T:105:ASN:HD21	20:T:111:GLU:HB2	1.70	0.55
23:W:48:ARG:NH2	48:WA:2476:G:OP2	2.38	0.55
37:KA:23:ILE:HG23	37:KA:38:ASN:HB2	1.88	0.55
51:ZA:4:C:H4'	54:CB:207:ALA:HB2	1.89	0.55
51:ZA:527:C:H2'	51:ZA:528:A:H8	1.71	0.55
51:ZA:562:U:H2'	51:ZA:563:G:C8	2.41	0.55
51:ZA:1128:C:H2'	51:ZA:1129:G:C8	2.41	0.55
55:DB:179:LYS:NZ	55:DB:217:GLN:O	2.36	0.55
79:BC:54:VAL:HG13	79:BC:63:LEU:HB2	1.87	0.55
14:N:54:TYR:OH	14:N:73:PHE:O	2.23	0.55
48:WA:115:C:O2'	48:WA:276:C:OP1	2.23	0.55
48:WA:1886:C:H2'	48:WA:1887:G:H8	1.72	0.55
48:WA:2397:A:HO2'	48:WA:2808:A:HO2'	1.55	0.55
48:WA:3892:A:N6	48:WA:4572:G:O2'	2.37	0.55
51:ZA:379:C:O2	60:IB:5:ARG:NH1	2.39	0.55
54:CB:68:ARG:NH1	54:CB:72:ASP:OD1	2.40	0.55
55:DB:69:GLU:O	55:DB:92:ARG:NH2	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:FB:140:ASP:OD2	80:CC:44:ARG:NH1	2.39	0.55
76:YB:34:THR:HG23	76:YB:69:THR:HG21	1.89	0.55
86:b:116:ILE:HG22	86:b:118:PRO:HD2	1.88	0.55
10:J:56:THR:HG22	10:J:64:ARG:H	1.72	0.55
21:U:13:LYS:HD2	21:U:128:LEU:HD11	1.88	0.55
51:ZA:948:C:H2'	51:ZA:949:G:H8	1.72	0.55
68:QB:35:SER:OG	68:QB:50:HIS:NE2	2.37	0.55
2:B:189:THR:HG23	2:B:192:GLU:H	1.72	0.55
28:BA:50:ASN:ND2	28:BA:75:SER:O	2.39	0.55
45:TA:49:C:H2'	45:TA:50:A:H8	1.71	0.55
48:WA:3719:A:N3	48:WA:4180:A:O2'	2.39	0.55
3:C:301:ALA:HB1	16:P:132:LYS:HE3	1.87	0.55
19:S:46:GLY:O	19:S:49:GLN:NE2	2.40	0.55
23:W:110:LYS:NZ	23:W:121:VAL:O	2.39	0.55
44:SA:13:U:O2	44:SA:23:G:N2	2.40	0.55
46:UA:21:A:H2'	46:UA:22:U:H5''	1.87	0.55
48:WA:2000:A:N3	48:WA:2021:C:O2'	2.37	0.55
48:WA:4176:U:H2'	48:WA:4177:G:H8	1.71	0.55
7:G:203:LYS:NZ	7:G:230:MET:O	2.40	0.55
22:V:8:PHE:HZ	22:V:49:ILE:HD12	1.71	0.55
25:Y:100:VAL:HG13	25:Y:106:LEU:HB3	1.89	0.55
48:WA:153:G:H2'	48:WA:154:G:H8	1.72	0.55
51:ZA:1271:C:OP1	83:FC:90:LYS:NZ	2.37	0.55
6:F:91:VAL:O	6:F:119:GLY:HA2	2.07	0.55
6:F:146:LEU:O	6:F:150:ASN:ND2	2.37	0.55
16:P:14:ARG:NH2	48:WA:2085:C:OP2	2.40	0.55
17:Q:108:ARG:NH2	48:WA:2901:C:OP1	2.37	0.55
57:FB:124:ASP:OD2	80:CC:47:LYS:NZ	2.40	0.55
59:HB:355:PRO:HG2	59:HB:358:ARG:HG2	1.89	0.55
86:b:121:VAL:HG13	86:b:221:ASN:HD21	1.72	0.55
48:WA:369:G:N2	48:WA:372:A:OP2	2.33	0.55
48:WA:417:G:H1'	50:YA:17:A:H61	1.72	0.55
48:WA:4423:C:H42	48:WA:4477:G:N2	2.05	0.55
51:ZA:981:A:H2'	51:ZA:982:G:C8	2.42	0.55
51:ZA:1858:G:OP2	66:OB:146:ARG:NH2	2.34	0.55
48:WA:1392:G:N2	48:WA:1395:G:OP2	2.35	0.54
48:WA:3725:A:H2'	48:WA:3726:A:H8	1.72	0.54
49:XA:110:G:H2'	49:XA:111:C:C6	2.42	0.54
51:ZA:866:U:H2'	51:ZA:867:G:C8	2.42	0.54
51:ZA:1477:U:OP2	69:RB:3:ARG:NH2	2.40	0.54
56:EB:31:PRO:HG3	56:EB:43:PRO:HG3	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
76:YB:13:MET:SD	76:YB:22:GLN:NE2	2.78	0.54
76:YB:82:ALA:O	76:YB:86:GLU:CB	2.55	0.54
5:E:144:ARG:NH1	31:EA:110:ILE:OXT	2.38	0.54
10:J:32:ARG:HD2	10:J:35:ARG:HH22	1.72	0.54
25:Y:135:ARG:O	48:WA:4124:G:N2	2.37	0.54
48:WA:1960:A:O2'	48:WA:2027:A:N6	2.39	0.54
50:YA:67:U:H2'	50:YA:68:G:C8	2.41	0.54
51:ZA:1203:G:H2'	51:ZA:1204:A:C8	2.42	0.54
51:ZA:1472:C:H42	51:ZA:1476:A:N6	1.99	0.54
72:UB:46:LYS:NZ	72:UB:97:ILE:O	2.39	0.54
88:HC:360:VAL:HA	88:HC:369:ALA:HA	1.90	0.54
6:F:156:ARG:NH2	48:WA:2075:C:O2'	2.40	0.54
7:G:156:ARG:NH2	7:G:245:ARG:O	2.40	0.54
20:T:66:SER:HB3	20:T:69:LYS:HB3	1.88	0.54
21:U:15:ARG:HB2	48:WA:4620:G:H5''	1.89	0.54
22:V:80:ARG:HH21	58:GB:131:ARG:HG2	1.71	0.54
48:WA:2899:G:H2'	48:WA:2900:G:H8	1.72	0.54
48:WA:4637:A:H8	48:WA:5050:A:H61	1.55	0.54
51:ZA:143:U:H4'	51:ZA:144:U:H5'	1.89	0.54
51:ZA:677:G:N2	51:ZA:1028:A:H62	2.03	0.54
51:ZA:1092:G:OP1	65:NB:2:GLY:N	2.40	0.54
4:D:94:ASN:OD1	4:D:97:ALA:N	2.36	0.54
16:P:121:LEU:HD22	16:P:125:GLN:HG2	1.89	0.54
48:WA:1334:C:H2'	48:WA:1335:A:C8	2.43	0.54
48:WA:2507:C:H4'	48:WA:2508:G:H5'	1.89	0.54
48:WA:4637:A:OP1	48:WA:4638:U:O2'	2.24	0.54
55:DB:144:ARG:HG3	55:DB:213:VAL:HG22	1.89	0.54
2:B:224:LYS:NZ	48:WA:4669:C:OP1	2.40	0.54
6:F:136:GLU:OE1	49:XA:96:U:O2'	2.23	0.54
10:J:87:LEU:HD12	10:J:92:TYR:HA	1.89	0.54
15:O:147:GLN:OE1	48:WA:423:G:N2	2.30	0.54
38:LA:80:ARG:HH21	48:WA:4698:C:H4'	1.72	0.54
40:NA:81:ARG:NH2	48:WA:4295:U:O2'	2.41	0.54
48:WA:126:C:H2'	48:WA:127:G:H8	1.71	0.54
48:WA:1565:A:N6	51:ZA:1028:A:N1	2.54	0.54
51:ZA:317:C:OP2	58:GB:183:ARG:NH2	2.39	0.54
51:ZA:1613:G:OP1	70:SB:88:LYS:NZ	2.40	0.54
59:HB:244:ALA:HB3	59:HB:262:SER:HB2	1.89	0.54
84:GC:18:VAL:HA	84:GC:35:SER:HA	1.90	0.54
86:b:69:LEU:HD21	86:b:76:GLU:HB2	1.89	0.54
7:G:90:LYS:NZ	48:WA:4128:C:OP1	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:52:LYS:O	25:Y:65:ARG:NH2	2.40	0.54
40:NA:4:VAL:O	40:NA:94:GLY:N	2.38	0.54
40:NA:98:LYS:HD2	48:WA:4235:A:H4'	1.88	0.54
41:OA:38:THR:HA	41:OA:45:THR:HA	1.89	0.54
46:UA:59:A:N7	46:UA:60:A:N6	2.55	0.54
48:WA:1852:A:N3	48:WA:2285:G:O2'	2.39	0.54
51:ZA:521:A:OP1	61:JB:45:ARG:NH1	2.37	0.54
51:ZA:688:U:OP1	59:HB:354:ARG:NH2	2.41	0.54
2:B:258:HIS:NE2	48:WA:3880:C:O2	2.41	0.54
39:MA:23:ARG:NH2	48:WA:3809:A:OP1	2.39	0.54
48:WA:1335:A:H2'	48:WA:1336:A:H8	1.73	0.54
48:WA:2000:A:H2'	48:WA:2001:A:C8	2.43	0.54
48:WA:3756:G:O6	48:WA:3773:C:N4	2.41	0.54
57:FB:59:LYS:HB2	57:FB:62:ARG:HB2	1.90	0.54
60:IB:80:ASP:OD1	60:IB:81:VAL:N	2.40	0.54
71:TB:22:LEU:HG	71:TB:28:LEU:HD21	1.90	0.54
79:BC:42:LYS:NZ	79:BC:43:ILE:O	2.41	0.54
1:A:30:ARG:NH1	1:A:33:ASP:OD2	2.41	0.54
9:I:101:LYS:NZ	9:I:102:MET:O	2.37	0.54
47:VA:21:C:OP1	51:ZA:1704:C:N4	2.41	0.54
48:WA:2481:G:H2'	48:WA:2482:G:C8	2.43	0.54
48:WA:4240:G:H2'	48:WA:4241:A:H8	1.73	0.54
51:ZA:1179:G:N2	51:ZA:1182:A:OP2	2.41	0.54
51:ZA:1293:A:N6	51:ZA:1294:G:O6	2.40	0.54
51:ZA:1630:A:H5''	70:SB:37:GLY:H	1.73	0.54
51:ZA:1808:U:H2'	51:ZA:1809:A:C8	2.43	0.54
53:BB:144:LYS:HE2	53:BB:206:PRO:HB2	1.90	0.54
56:EB:199:GLU:HB3	56:EB:207:VAL:HG13	1.88	0.54
83:FC:126:CYS:HB2	83:FC:144:CYS:HB2	1.89	0.54
4:D:123:VAL:HA	4:D:248:ARG:HH12	1.73	0.54
13:M:68:ARG:HA	13:M:98:LEU:HD21	1.90	0.54
13:M:184:ILE:O	13:M:194:ARG:NH2	2.41	0.54
16:P:151:HIS:ND1	16:P:164:LYS:O	2.41	0.54
19:S:71:ALA:HB3	48:WA:4315:A:H4'	1.90	0.54
21:U:21:PRO:HA	21:U:54:ALA:HA	1.89	0.54
48:WA:484:G:H5'	48:WA:485:U:H5''	1.89	0.54
48:WA:4469:A:O2'	48:WA:4512:A:N3	2.35	0.54
48:WA:4706:C:H2'	48:WA:4707:A:H8	1.73	0.54
48:WA:4994:G:H2'	48:WA:4995:G:C8	2.42	0.54
51:ZA:941:C:H2'	51:ZA:942:G:C8	2.42	0.54
61:JB:83:ARG:HD3	61:JB:150:ARG:HD3	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
88:HC:241:PRO:HB3	88:HC:244:LYS:HD2	1.90	0.54
42:PA:98:ARG:NH2	48:WA:2264:G:OP2	2.39	0.54
48:WA:1560:A:H2'	48:WA:1561:G:H8	1.71	0.54
48:WA:4962:G:H2'	48:WA:4963:G:H8	1.73	0.54
51:ZA:980:A:H2'	51:ZA:981:A:C8	2.43	0.54
51:ZA:1711:U:H2'	51:ZA:1712:A:C8	2.43	0.54
57:FB:50:PRO:HG2	57:FB:90:VAL:HG22	1.89	0.54
12:L:128:LYS:NZ	48:WA:4899:G:OP1	2.40	0.53
48:WA:3918:G:H2'	48:WA:3919:A:H8	1.73	0.53
51:ZA:991:G:N7	78:AC:7:ASN:ND2	2.56	0.53
54:CB:65:LYS:HG3	54:CB:273:LEU:HD22	1.90	0.53
66:OB:101:GLY:HA3	66:OB:134:PRO:HG2	1.90	0.53
20:T:44:GLN:HA	20:T:56:LEU:HD21	1.89	0.53
45:TA:9:A:O2'	45:TA:10:G:N7	2.36	0.53
48:WA:1074:G:N2	48:WA:1075:G:O6	2.41	0.53
48:WA:1183:U:H2'	48:WA:1184:G:H8	1.73	0.53
48:WA:2871:U:O2'	48:WA:2883:A:N7	2.35	0.53
48:WA:3807:U:H2'	48:WA:3808:G:H8	1.73	0.53
48:WA:3920:G:OP2	93:WA:5244:SPD:N10	2.41	0.53
61:JB:59:GLU:OE2	61:JB:69:ARG:NH2	2.41	0.53
64:MB:47:ALA:HA	64:MB:112:LYS:HB3	1.89	0.53
13:M:114:ARG:HE	13:M:137:PRO:HG3	1.73	0.53
48:WA:85:G:O2'	48:WA:97:G:O6	2.26	0.53
48:WA:158:A:N1	48:WA:276:C:O2'	2.37	0.53
48:WA:2523:G:H2'	48:WA:2524:G:H8	1.73	0.53
51:ZA:1276:A:H1'	62:KB:50:GLN:HE22	1.74	0.53
59:HB:268:LEU:O	59:HB:272:SER:HB3	2.08	0.53
84:GC:255:SER:OG	84:GC:257:LYS:NZ	2.40	0.53
3:C:195:LYS:HE3	48:WA:2335:G:H5''	1.89	0.53
7:G:253:THR:OG1	48:WA:150:U:OP2	2.25	0.53
14:N:49:ARG:NH1	48:WA:1932:U:OP2	2.31	0.53
48:WA:261:G:H2'	48:WA:262:G:H8	1.72	0.53
48:WA:1973:U:O2	86:b:41:GLN:NE2	2.41	0.53
48:WA:4969:A:H2'	48:WA:4970:A:H8	1.73	0.53
51:ZA:183:G:O2'	51:ZA:184:G:O5'	2.26	0.53
51:ZA:912:C:H3'	51:ZA:913:A:H3'	1.90	0.53
51:ZA:1453:C:OP1	69:RB:48:ASN:ND2	2.42	0.53
52:AB:85:ARG:HH21	52:AB:201:LEU:HD12	1.73	0.53
59:HB:383:ARG:NH1	74:WB:49:GLU:OE2	2.41	0.53
70:SB:34:LYS:HB3	70:SB:100:ALA:HA	1.90	0.53
84:GC:67:SER:H	84:GC:82:SER:HA	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:52:LEU:HG	5:E:53:VAL:HG23	1.89	0.53
30:DA:104:SER:HB2	48:WA:2305:C:H5'	1.91	0.53
42:PA:19:LYS:HB2	48:WA:2339:C:H4'	1.90	0.53
42:PA:107:ARG:NH2	48:WA:2265:A:OP1	2.42	0.53
48:WA:2445:G:OP2	48:WA:2518:G:N2	2.36	0.53
48:WA:2747:A:H2'	48:WA:2748:A:H8	1.73	0.53
48:WA:4241:A:H2'	48:WA:4242:G:C8	2.43	0.53
48:WA:4421:U:OP1	48:WA:4423:C:N4	2.42	0.53
1:A:225:ILE:HD11	1:A:233:ARG:HG3	1.91	0.53
10:J:44:THR:O	10:J:78:LYS:NZ	2.36	0.53
14:N:188:LYS:NZ	48:WA:4895:A:OP1	2.42	0.53
15:O:164:ARG:NH2	48:WA:1598:U:O2'	2.42	0.53
38:LA:96:ARG:NH2	48:WA:4475:A:O2'	2.42	0.53
48:WA:261:G:H2'	48:WA:262:G:C8	2.44	0.53
48:WA:1727:U:H2'	48:WA:1728:U:H6	1.73	0.53
48:WA:2380:G:N2	48:WA:2383:A:OP2	2.38	0.53
51:ZA:107:A:H2'	51:ZA:108:G:C8	2.44	0.53
51:ZA:1652:G:H1	51:ZA:1672:U:H3	1.55	0.53
14:N:93:LYS:NZ	48:WA:1310:C:OP1	2.38	0.53
51:ZA:168:C:OP1	58:GB:131:ARG:NH1	2.41	0.53
51:ZA:375:U:OP2	63:LB:59:LYS:NZ	2.42	0.53
51:ZA:1215:C:O2'	51:ZA:1645:C:OP2	2.26	0.53
62:KB:83:LEU:HB3	62:KB:85:LEU:HD23	1.90	0.53
15:O:79:ASP:OD2	15:O:85:GLN:NE2	2.42	0.53
40:NA:80:LYS:O	48:WA:4348:U:O2'	2.24	0.53
48:WA:1373:A:N1	50:YA:28:C:O2'	2.38	0.53
48:WA:5008:U:H4'	48:WA:5009:A:H5'	1.90	0.53
54:CB:244:ILE:O	54:CB:247:THR:OG1	2.25	0.53
55:DB:210:VAL:O	55:DB:211:ARG:NH1	2.41	0.53
4:D:17:GLN:O	48:WA:4267:U:N3	2.36	0.53
25:Y:50:PRO:HD3	25:Y:68:ILE:HG13	1.91	0.53
48:WA:4:G:H2'	48:WA:5:A:H8	1.73	0.53
48:WA:1826:G:H2'	48:WA:1827:A:C8	2.43	0.53
48:WA:3691:G:O2'	48:WA:3820:U:OP2	2.25	0.53
51:ZA:874:G:N3	59:HB:352:GLN:NE2	2.46	0.53
51:ZA:1086:G:OP2	78:AC:12:LYS:NZ	2.38	0.53
51:ZA:1864:U:H5'	78:AC:79:ILE:HD11	1.90	0.53
16:P:172:ARG:HD2	26:Z:57:GLY:HA3	1.91	0.53
26:Z:75:LEU:HB3	26:Z:117:LEU:HD13	1.91	0.53
51:ZA:153:G:N2	58:GB:13:GLN:OE1	2.39	0.53
57:FB:71:ARG:NH2	57:FB:148:ASN:OD1	2.33	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:135:VAL:HG23	6:F:139:ILE:HD13	1.90	0.52
15:O:150:LYS:O	50:YA:13:G:O2'	2.26	0.52
29:CA:70:LYS:HE2	48:WA:2391:A:H5'	1.91	0.52
36:JA:12:LEU:HD21	36:JA:16:ARG:HH21	1.74	0.52
43:RA:61:LYS:HB2	43:RA:72:GLU:HG2	1.91	0.52
48:WA:2297:C:H2'	48:WA:2298:G:H8	1.73	0.52
48:WA:3724:G:H2'	48:WA:3725:A:H8	1.73	0.52
51:ZA:145:G:H2'	51:ZA:146:G:C8	2.44	0.52
52:AB:108:PHE:HB2	52:AB:136:GLU:HB3	1.92	0.52
70:SB:36:VAL:HG21	70:SB:71:MET:HE3	1.91	0.52
73:VB:15:ARG:NH1	73:VB:33:GLN:OE1	2.38	0.52
1:A:27:ALA:O	1:A:128:ARG:NH2	2.42	0.52
48:WA:1565:A:H2'	48:WA:1566:A:C8	2.45	0.52
48:WA:1897:G:O2'	48:WA:1909:A:N3	2.37	0.52
48:WA:4305:C:H2'	48:WA:4307:G:H8	1.74	0.52
48:WA:5059:C:H2'	48:WA:5060:A:C8	2.44	0.52
52:AB:77:ILE:HG12	52:AB:99:ILE:HB	1.91	0.52
53:BB:86:LEU:HB3	53:BB:98:THR:HB	1.92	0.52
56:EB:252:ARG:NH1	61:JB:75:ASN:OD1	2.42	0.52
60:IB:27:TYR:HB3	60:IB:49:ARG:HH12	1.74	0.52
66:OB:117:ARG:NE	78:AC:52:ASP:OD2	2.43	0.52
78:AC:44:ILE:HG23	78:AC:45:VAL:HG23	1.91	0.52
84:GC:4:GLN:HG3	84:GC:314:ILE:HG22	1.90	0.52
84:GC:77:PHE:HB3	84:GC:89:LEU:HD11	1.91	0.52
84:GC:166:VAL:HG22	84:GC:176:VAL:HG22	1.90	0.52
10:J:29:SER:OG	10:J:67:LYS:O	2.23	0.52
43:RA:37:LEU:HD12	43:RA:42:VAL:HB	1.91	0.52
51:ZA:639:C:H2'	51:ZA:640:A:C8	2.45	0.52
51:ZA:640:A:H2'	51:ZA:641:A:C8	2.44	0.52
71:TB:41:LYS:NZ	71:TB:83:GLN:OE1	2.42	0.52
79:BC:74:THR:OG1	79:BC:77:CYS:SG	2.68	0.52
2:B:261:ARG:HB2	14:N:64:THR:HG21	1.90	0.52
17:Q:60:ARG:HH12	48:WA:2617:C:H5''	1.73	0.52
40:NA:64:LYS:HD2	48:WA:4372:G:H5''	1.91	0.52
51:ZA:126:G:H1'	51:ZA:181:A:H1'	1.91	0.52
51:ZA:571:U:O2'	76:YB:60:PHE:O	2.28	0.52
53:BB:103:MET:HE2	53:BB:188:LEU:HD11	1.92	0.52
84:GC:259:TRP:HD1	84:GC:266:ILE:HA	1.75	0.52
84:GC:261:LEU:O	84:GC:264:LYS:NZ	2.36	0.52
5:E:141:ARG:NH1	5:E:172:SER:O	2.42	0.52
13:M:73:ARG:NH1	48:WA:32:G:OP1	2.43	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:BA:79:ILE:HG12	28:BA:90:ARG:HG2	1.92	0.52
48:WA:425:U:H2'	48:WA:426:A:H8	1.74	0.52
48:WA:3666:G:H2'	48:WA:3667:G:H8	1.75	0.52
50:YA:71:A:H4'	50:YA:72:A:H5'	1.92	0.52
51:ZA:1018:U:O2'	65:NB:86:GLU:OE2	2.28	0.52
51:ZA:1599:U:OP2	77:ZB:46:ASN:ND2	2.43	0.52
53:BB:179:ASN:HB3	53:BB:183:GLU:HB2	1.90	0.52
58:GB:48:TYR:OH	58:GB:119:LYS:O	2.27	0.52
3:C:4:ALA:O	3:C:29:LYS:NZ	2.42	0.52
13:M:49:ARG:HH12	48:WA:152:U:P	2.32	0.52
17:Q:62:ARG:NH1	48:WA:4647:C:OP2	2.41	0.52
42:PA:65:LYS:O	42:PA:102:TYR:OH	2.19	0.52
48:WA:1249:U:O2	48:WA:1268:G:N2	2.37	0.52
48:WA:1505:A:H4'	48:WA:1506:G:H5'	1.92	0.52
48:WA:2460:C:O2'	48:WA:3673:G:N3	2.40	0.52
51:ZA:65:C:OP1	58:GB:136:LYS:NZ	2.42	0.52
51:ZA:210:U:H2'	51:ZA:211:G:H8	1.74	0.52
51:ZA:1781:A:H2'	51:ZA:1782:G:C8	2.44	0.52
61:JB:42:GLU:OE1	61:JB:45:ARG:NH2	2.42	0.52
1:A:101:VAL:HG22	1:A:165:VAL:HG22	1.91	0.52
14:N:12:ARG:O	18:R:171:ARG:NH2	2.40	0.52
42:PA:28:GLU:HB2	42:PA:31:ASN:HB2	1.91	0.52
48:WA:1264:G:H2'	48:WA:1265:A:C8	2.44	0.52
48:WA:3882:G:H2'	48:WA:3883:G:C8	2.44	0.52
48:WA:4323:U:H2'	48:WA:4324:G:C8	2.45	0.52
51:ZA:1079:C:O2'	51:ZA:1182:A:N1	2.42	0.52
51:ZA:1358:U:OP2	54:CB:123:ARG:NH2	2.42	0.52
51:ZA:1617:G:O6	67:PB:43:ARG:NH1	2.42	0.52
80:CC:16:LYS:HD2	80:CC:31:ARG:HH12	1.75	0.52
2:B:13:SER:HB2	48:WA:4624:A:H4'	1.91	0.52
19:S:83:LYS:NZ	48:WA:4307:G:O5'	2.43	0.52
40:NA:26:TYR:HB3	40:NA:67:VAL:HB	1.91	0.52
48:WA:2519:A:N3	48:WA:2541:C:O2'	2.43	0.52
48:WA:3809:A:HO2'	51:ZA:1816:G:HO2'	1.58	0.52
48:WA:4239:C:O2'	48:WA:4323:U:O2	2.27	0.52
51:ZA:110:U:H3	51:ZA:351:G:H1	1.58	0.52
51:ZA:847:A:OP1	56:EB:108:ARG:NH2	2.43	0.52
51:ZA:1375:G:H2'	51:ZA:1376:A:C8	2.44	0.52
56:EB:191:ARG:HH11	56:EB:245:ARG:HH21	1.58	0.52
59:HB:325:PHE:O	59:HB:328:LYS:NZ	2.40	0.52
2:B:108:GLU:OE2	2:B:138:GLN:NE2	2.43	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:R:112:ASP:OD1	18:R:116:ARG:NH1	2.41	0.52
24:X:11:ARG:HG3	48:WA:229:G:H5''	1.91	0.52
48:WA:1507:C:H2'	48:WA:1508:G:H8	1.75	0.52
51:ZA:111:A:O2'	63:LB:69:ARG:NH1	2.43	0.52
51:ZA:1605:G:H2'	51:ZA:1606:G:C4	2.45	0.52
51:ZA:1630:A:H5''	70:SB:37:GLY:N	2.24	0.52
56:EB:251:GLU:OE2	56:EB:255:ARG:NH2	2.43	0.52
74:WB:18:GLU:HG3	74:WB:69:LEU:HD23	1.92	0.52
6:F:178:LEU:HB3	6:F:183:ILE:HB	1.91	0.52
26:Z:75:LEU:HG	26:Z:113:GLY:HA2	1.92	0.52
40:NA:8:ARG:NH2	48:WA:4234:U:O4	2.37	0.52
40:NA:58:LYS:NZ	48:WA:4382:A:OP1	2.39	0.52
48:WA:1183:U:H2'	48:WA:1184:G:C8	2.45	0.52
48:WA:3734:A:H2'	48:WA:3735:A:C8	2.45	0.52
51:ZA:5:U:H2'	51:ZA:6:G:H8	1.75	0.52
51:ZA:520:A:O2'	51:ZA:825:A:N3	2.37	0.52
79:BC:34:ASP:HB2	79:BC:82:LYS:HD2	1.91	0.52
86:b:28:PHE:HB2	86:b:89:VAL:HG22	1.92	0.52
2:B:234:ARG:NH1	2:B:271:GLN:O	2.35	0.51
3:C:312:ARG:NH2	48:WA:2077:G:OP1	2.43	0.51
14:N:94:ARG:HD2	48:WA:1311:C:H5''	1.91	0.51
30:DA:98:GLU:OE1	48:WA:2326:C:O2'	2.28	0.51
48:WA:417:G:OP1	48:WA:2331:U:O2'	2.26	0.51
51:ZA:583:A:H3'	51:ZA:584:A:H8	1.75	0.51
51:ZA:1523:C:H3'	70:SB:141:ARG:HH21	1.76	0.51
59:HB:304:VAL:HG22	59:HB:334:ALA:HB1	1.93	0.51
61:JB:59:GLU:O	61:JB:62:THR:OG1	2.28	0.51
62:KB:20:VAL:HG23	62:KB:70:TYR:HA	1.92	0.51
17:Q:160:GLU:OE1	17:Q:163:ARG:NH2	2.40	0.51
18:R:132:ILE:HG23	18:R:136:LYS:HB2	1.92	0.51
37:KA:48:LYS:NZ	48:WA:2793:C:OP1	2.37	0.51
45:TA:42:G:H2'	45:TA:43:A:H8	1.75	0.51
48:WA:4763:G:N2	48:WA:4768:C:O3'	2.44	0.51
51:ZA:1711:U:H2'	51:ZA:1712:A:H8	1.76	0.51
25:Y:47:ASP:N	25:Y:69:LYS:O	2.43	0.51
48:WA:1413:C:N4	48:WA:1414:G:O6	2.43	0.51
48:WA:1826:G:H2'	48:WA:1827:A:H8	1.74	0.51
48:WA:2761:G:O2'	48:WA:2762:G:O4'	2.24	0.51
48:WA:4969:A:H2'	48:WA:4970:A:C8	2.45	0.51
51:ZA:155:G:H2'	51:ZA:156:G:C8	2.46	0.51
9:I:118:ALA:O	48:WA:1866:G:O2'	2.24	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:GA:45:SER:OG	50:YA:78:G:O2'	2.25	0.51
51:ZA:476:A:N3	51:ZA:488:U:O2'	2.36	0.51
54:CB:65:LYS:HD2	54:CB:273:LEU:HD13	1.92	0.51
56:EB:127:ARG:N	56:EB:140:VAL:O	2.34	0.51
48:WA:1335:A:H2'	48:WA:1336:A:C8	2.45	0.51
48:WA:1639:A:OP1	48:WA:1642:C:N4	2.35	0.51
48:WA:2560:C:H2'	48:WA:2561:G:C8	2.46	0.51
48:WA:3612:A:H2'	48:WA:3613:A:H8	1.75	0.51
48:WA:3809:A:O2'	51:ZA:1816:G:O2'	2.28	0.51
50:YA:64:U:H2'	50:YA:65:A:H8	1.74	0.51
84:GC:237:ASN:ND2	84:GC:286:CYS:O	2.41	0.51
5:E:184:LEU:O	48:WA:4885:C:N4	2.43	0.51
13:M:35:ALA:HA	13:M:65:ARG:HG2	1.92	0.51
46:UA:47:U:O2'	46:UA:50:U:OP1	2.25	0.51
48:WA:1507:C:H2'	48:WA:1508:G:C8	2.45	0.51
48:WA:2523:G:H2'	48:WA:2524:G:C8	2.45	0.51
48:WA:3895:C:H2'	48:WA:3896:A:H8	1.75	0.51
13:M:138:PHE:HA	13:M:143:ARG:HH21	1.75	0.51
35:IA:19:CYS:HB3	35:IA:22:CYS:SG	2.50	0.51
42:PA:39:ARG:NH1	48:WA:2268:C:O2'	2.43	0.51
48:WA:2460:C:O2	48:WA:3673:G:N2	2.43	0.51
51:ZA:432:G:H2'	51:ZA:433:A:C8	2.45	0.51
51:ZA:1004:U:H2'	51:ZA:1005:G:C8	2.46	0.51
56:EB:44:LEU:HD21	56:EB:70:ILE:HG21	1.92	0.51
58:GB:39:ASP:HB3	58:GB:47:GLY:H	1.74	0.51
59:HB:258:GLU:HG3	59:HB:286:ALA:HB3	1.91	0.51
78:AC:59:PHE:HB2	78:AC:62:TYR:HB2	1.93	0.51
84:GC:45:LEU:HB3	84:GC:47:ARG:HD3	1.92	0.51
84:GC:223:GLU:HB2	84:GC:225:LYS:HE3	1.92	0.51
1:A:179:ILE:O	48:WA:3655:A:O2'	2.18	0.51
15:O:66:LYS:NZ	48:WA:425:U:OP1	2.37	0.51
16:P:150:ARG:NH2	48:WA:1501:C:OP1	2.44	0.51
30:DA:29:VAL:HB	48:WA:1334:C:H5''	1.92	0.51
33:GA:27:GLU:OE2	33:GA:46:LYS:NZ	2.41	0.51
34:HA:29:ARG:HH22	48:WA:276:C:H2'	1.75	0.51
48:WA:3850:U:H2'	48:WA:3851:A:C8	2.45	0.51
51:ZA:1288:U:H3	51:ZA:1311:C:N4	2.02	0.51
54:CB:104:ASP:HB3	54:CB:130:ILE:HG13	1.92	0.51
66:OB:45:THR:HG22	66:OB:52:THR:HA	1.92	0.51
88:HC:282:PRO:HG2	88:HC:324:ASN:HA	1.91	0.51
5:E:160:HIS:HB3	5:E:163:LYS:HD2	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:192:TRP:NE1	48:WA:48:G:OP1	2.31	0.51
48:WA:4232:C:H1'	48:WA:4273:A:N1	2.26	0.51
51:ZA:17:C:H2'	51:ZA:18:C:C6	2.46	0.51
51:ZA:1146:C:O2'	51:ZA:1150:A:N1	2.40	0.51
51:ZA:1245:G:O2'	51:ZA:1492:U:OP1	2.29	0.51
51:ZA:1428:G:O6	68:QB:99:LYS:NZ	2.44	0.51
1:A:207:VAL:HG13	1:A:208:GLU:HG3	1.93	0.51
4:D:124:GLU:OE1	4:D:126:THR:OG1	2.27	0.51
33:GA:79:LYS:HE3	48:WA:136:C:H41	1.76	0.51
37:KA:3:SER:O	48:WA:2783:G:O2'	2.29	0.51
48:WA:1944:A:H2'	48:WA:1945:A:C8	2.46	0.51
51:ZA:1406:G:H2'	51:ZA:1407:U:C6	2.46	0.51
51:ZA:1692:U:H2'	51:ZA:1693:G:C8	2.46	0.51
59:HB:289:ILE:HD12	59:HB:417:LYS:HG2	1.93	0.51
70:SB:24:ARG:HH21	70:SB:28:PHE:HB3	1.76	0.51
86:b:35:VAL:HG23	86:b:40:MET:HG2	1.93	0.51
7:G:158:GLU:OE2	7:G:166:ARG:NH2	2.34	0.50
17:Q:88:ARG:O	48:WA:2727:A:N6	2.43	0.50
33:GA:107:GLN:NE2	33:GA:111:GLU:OE2	2.43	0.50
44:SA:22:A:H2'	44:SA:23:G:C8	2.46	0.50
48:WA:181:C:H2'	48:WA:182:G:H8	1.74	0.50
48:WA:1210:C:H2'	48:WA:1211:G:H8	1.75	0.50
51:ZA:432:G:H2'	51:ZA:433:A:H8	1.76	0.50
74:WB:18:GLU:HG2	74:WB:65:LEU:HD13	1.92	0.50
75:XB:40:PRO:O	75:XB:77:ASN:ND2	2.44	0.50
15:O:111:ARG:NH2	48:WA:2364:U:OP1	2.44	0.50
28:BA:17:ARG:HD2	28:BA:104:ILE:HA	1.93	0.50
48:WA:418:A:H4'	48:WA:2313:C:H5'	1.93	0.50
56:EB:95:THR:HG22	76:YB:16:ARG:HB2	1.92	0.50
59:HB:307:LEU:HD22	59:HB:334:ALA:HB2	1.91	0.50
71:TB:38:LYS:NZ	71:TB:40:ALA:O	2.42	0.50
76:YB:27:VAL:HG12	76:YB:29:HIS:HD2	1.76	0.50
84:GC:132:TRP:CD1	84:GC:138:CYS:HA	2.46	0.50
1:A:6:ARG:HH12	1:A:199:VAL:H	1.59	0.50
4:D:52:ILE:HD13	49:XA:6:C:H4'	1.93	0.50
42:PA:94:ARG:HG3	42:PA:107:ARG:HD2	1.92	0.50
48:WA:456:C:H2'	48:WA:457:G:C8	2.47	0.50
48:WA:1317:C:N4	48:WA:1318:G:O6	2.44	0.50
51:ZA:311:C:H5''	51:ZA:312:G:H5''	1.93	0.50
51:ZA:554:A:H1'	51:ZA:555:A:H2'	1.92	0.50
51:ZA:1418:C:OP2	51:ZA:1420:G:N2	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:ZA:1829:G:H1'	51:ZA:1850:A:H2	1.76	0.50
59:HB:338:ILE:HG12	59:HB:363:VAL:HG11	1.93	0.50
60:IB:178:ARG:HE	60:IB:181:GLN:HG3	1.76	0.50
75:XB:91:LEU:HD23	82:EC:82:VAL:HG21	1.94	0.50
84:GC:286:CYS:HA	84:GC:302:TYR:HA	1.92	0.50
3:C:323:ARG:HB2	48:WA:1283:G:H5'	1.93	0.50
7:G:126:ARG:NE	48:WA:4078:G:OP1	2.35	0.50
9:I:193:ASP:OD2	48:WA:1752:G:N2	2.44	0.50
10:J:40:LEU:HD12	10:J:70:VAL:HG22	1.93	0.50
48:WA:1657:C:O2	48:WA:4392:A:O2'	2.29	0.50
48:WA:2498:G:H2'	48:WA:2499:C:C6	2.46	0.50
48:WA:2813:G:N1	48:WA:2816:C:OP2	2.34	0.50
51:ZA:639:C:H2'	51:ZA:640:A:H8	1.76	0.50
51:ZA:642:U:H4'	51:ZA:644:G:H4'	1.93	0.50
16:P:122:THR:OG1	16:P:124:ASP:OD1	2.27	0.50
48:WA:1525:A:N3	48:WA:4391:C:O2'	2.42	0.50
48:WA:2024:C:H5''	86:b:83:ARG:HD2	1.92	0.50
48:WA:3934:U:H2'	48:WA:3935:G:H8	1.76	0.50
88:HC:442:ASP:OD1	88:HC:443:LYS:N	2.44	0.50
48:WA:2416:G:H2'	48:WA:2417:U:H6	1.76	0.50
48:WA:2469:U:H4'	48:WA:2470:U:H5'	1.94	0.50
51:ZA:1147:C:OP1	78:AC:6:ARG:NH1	2.36	0.50
64:MB:97:GLU:O	64:MB:101:ARG:NH2	2.43	0.50
77:ZB:73:VAL:HG21	77:ZB:88:LEU:HD11	1.93	0.50
2:B:329:ASP:OD1	2:B:329:ASP:N	2.34	0.50
5:E:67:ARG:NE	48:WA:1076:G:OP1	2.45	0.50
6:F:241:ARG:NH2	48:WA:945:C:OP1	2.40	0.50
14:N:46:ASN:O	14:N:50:ASN:ND2	2.41	0.50
42:PA:112:ARG:NH1	48:WA:2266:C:OP1	2.44	0.50
48:WA:1776:C:H2'	48:WA:1777:A:H8	1.75	0.50
1:A:118:GLU:OE2	48:WA:3664:A:O2'	2.29	0.50
3:C:343:GLN:HG2	48:WA:725:C:H1'	1.94	0.50
6:F:121:PHE:O	6:F:204:ASN:ND2	2.45	0.50
12:L:41:PRO:HG3	12:L:73:VAL:HG12	1.93	0.50
17:Q:90:PRO:HG2	17:Q:93:VAL:HB	1.93	0.50
48:WA:1095:G:H2'	48:WA:1096:G:C8	2.47	0.50
48:WA:1285:G:N1	48:WA:2078:G:OP1	2.34	0.50
48:WA:1908:U:H2'	48:WA:1909:A:H8	1.77	0.50
51:ZA:1407:U:O2'	68:QB:37:GLN:NE2	2.44	0.50
59:HB:268:LEU:O	59:HB:272:SER:OG	2.24	0.50
63:LB:80:MET:HE2	63:LB:122:ILE:HG13	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:MB:32:ALA:HB1	64:MB:37:GLU:HB3	1.93	0.50
68:QB:45:ALA:HB2	68:QB:101:GLY:HA3	1.94	0.50
5:E:48:ARG:O	5:E:67:ARG:NH1	2.45	0.50
13:M:14:LYS:HE2	48:WA:280:G:H5''	1.93	0.50
33:GA:89:ARG:NH1	50:YA:37:A:OP2	2.39	0.50
35:IA:12:ARG:NH2	48:WA:1619:G:O3'	2.45	0.50
37:KA:45:ARG:HH21	48:WA:2798:G:H5'	1.77	0.50
48:WA:32:G:H21	48:WA:50:C:H5	1.59	0.50
50:YA:47:C:H1'	50:YA:61:A:H2'	1.93	0.50
51:ZA:1010:G:H2'	51:ZA:1011:A:H8	1.75	0.50
51:ZA:1362:U:H5''	51:ZA:1363:C:H5	1.76	0.50
51:ZA:1670:C:H2'	51:ZA:1671:G:H8	1.77	0.50
52:AB:176:TRP:NE1	52:AB:197:VAL:O	2.43	0.50
64:MB:33:ARG:HD3	64:MB:91:LEU:HD22	1.94	0.50
18:R:164:LYS:HB2	18:R:165:PRO:HD3	1.95	0.49
20:T:63:LEU:HG	20:T:72:VAL:HG22	1.93	0.49
23:W:139:ARG:HH12	48:WA:2535:C:H5''	1.77	0.49
31:EA:46:ARG:HD3	31:EA:106:TYR:HD2	1.77	0.49
36:JA:12:LEU:HG	36:JA:16:ARG:HE	1.77	0.49
45:TA:22:G:H2'	45:TA:23:A:H8	1.76	0.49
51:ZA:5:U:H2'	51:ZA:6:G:C8	2.47	0.49
51:ZA:65:C:O2'	51:ZA:67:C:OP2	2.28	0.49
51:ZA:106:C:H2'	51:ZA:107:A:C8	2.45	0.49
51:ZA:553:U:O2'	51:ZA:554:A:O5'	2.26	0.49
51:ZA:1693:G:N2	51:ZA:1834:A:H8	2.10	0.49
55:DB:50:VAL:HG21	81:DC:34:TYR:HB3	1.93	0.49
2:B:324:GLY:HA2	48:WA:5053:C:H4'	1.94	0.49
13:M:9:GLU:HB2	34:HA:44:ILE:HG13	1.94	0.49
14:N:42:ASN:HD22	14:N:125:LYS:HD3	1.77	0.49
46:UA:69:A:H2'	46:UA:70:A:H8	1.78	0.49
48:WA:436:C:H2'	48:WA:437:G:H8	1.77	0.49
48:WA:3719:A:OP2	48:WA:3737:G:N2	2.44	0.49
51:ZA:844:U:OP1	56:EB:240:ARG:NH1	2.40	0.49
51:ZA:1165:G:OP2	51:ZA:1165:G:N2	2.36	0.49
51:ZA:1232:U:H3	51:ZA:1526:G:H1	1.60	0.49
52:AB:2:SER:HB3	52:AB:59:LEU:HG	1.95	0.49
64:MB:26:LEU:HD22	64:MB:33:ARG:HH22	1.77	0.49
79:BC:67:THR:OG1	79:BC:70:LYS:O	2.30	0.49
1:A:21:LYS:HG2	48:WA:1543:C:H5''	1.95	0.49
1:A:28:ARG:HE	1:A:123:ARG:HD3	1.77	0.49
2:B:213:GLN:NE2	2:B:285:TYR:O	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:146:ARG:HG2	10:J:147:ARG:HG3	1.93	0.49
27:AA:11:ASN:ND2	48:WA:1671:A:OP1	2.46	0.49
42:PA:103:HIS:ND1	42:PA:105:ASP:OD1	2.43	0.49
48:WA:1560:A:H2'	48:WA:1561:G:C8	2.47	0.49
48:WA:4090:C:H2'	48:WA:4091:G:C8	2.47	0.49
51:ZA:1332:A:O2'	55:DB:183:GLN:O	2.30	0.49
51:ZA:1401:A:H2'	51:ZA:1402:A:H8	1.77	0.49
51:ZA:1568:C:H2'	51:ZA:1569:A:C8	2.48	0.49
52:AB:51:LEU:HD23	69:RB:105:MET:HE1	1.93	0.49
56:EB:11:ARG:HA	56:EB:28:ALA:HB2	1.95	0.49
84:GC:62:HIS:ND1	84:GC:84:ASP:OD2	2.45	0.49
2:B:15:GLY:O	48:WA:4589:G:N2	2.35	0.49
7:G:97:ASP:OD1	7:G:98:ILE:N	2.45	0.49
11:K:27:ASN:HB3	50:YA:29:G:H5''	1.94	0.49
18:R:15:ARG:HH21	19:S:141:VAL:HG22	1.78	0.49
20:T:56:LEU:HD13	20:T:63:LEU:HD13	1.93	0.49
28:BA:38:ILE:HG21	28:BA:63:TYR:HB3	1.93	0.49
29:CA:24:GLU:OE2	29:CA:87:ARG:NH1	2.45	0.49
35:IA:3:LYS:HB3	48:WA:3644:A:C4	2.48	0.49
35:IA:27:TYR:HA	35:IA:34:CYS:HA	1.93	0.49
48:WA:1808:G:H2'	48:WA:1809:C:H6	1.78	0.49
48:WA:2742:U:O2'	48:WA:2744:G:N2	2.45	0.49
48:WA:4080:C:O2'	48:WA:4174:A:N6	2.45	0.49
51:ZA:65:C:H4'	58:GB:172:LYS:HD3	1.93	0.49
51:ZA:1558:C:H2'	51:ZA:1559:C:C6	2.47	0.49
4:D:91:GLY:O	4:D:94:ASN:ND2	2.45	0.49
11:K:79:GLU:OE1	11:K:82:ARG:NH1	2.45	0.49
13:M:172:ARG:NH1	48:WA:62:A:OP1	2.45	0.49
14:N:74:ARG:N	48:WA:4587:U:OP1	2.38	0.49
24:X:132:LYS:NZ	48:WA:246:G:O3'	2.44	0.49
27:AA:28:ARG:HB3	48:WA:1807:A:C4	2.48	0.49
51:ZA:172:U:N3	51:ZA:337:C:O2'	2.45	0.49
51:ZA:1854:U:H2'	51:ZA:1855:G:H8	1.77	0.49
56:EB:137:PRO:HB2	56:EB:150:PRO:HD2	1.95	0.49
16:P:175:GLU:OE2	26:Z:49:HIS:ND1	2.42	0.49
48:WA:982:G:OP2	48:WA:982:G:N2	2.40	0.49
48:WA:1505:A:H1'	48:WA:1506:G:C8	2.48	0.49
48:WA:2000:A:H62	86:b:55:MET:HE2	1.78	0.49
48:WA:4350:A:O2'	48:WA:4352:C:OP2	2.28	0.49
51:ZA:1485:U:OP1	55:DB:189:LYS:NZ	2.44	0.49
53:BB:137:LEU:HG	53:BB:215:VAL:HG22	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:223:THR:HB	2:B:275:HIS:H	1.78	0.49
5:E:144:ARG:NH2	5:E:194:GLN:O	2.46	0.49
48:WA:275:C:H2'	48:WA:276:C:C6	2.47	0.49
48:WA:4240:G:H2'	48:WA:4241:A:C8	2.46	0.49
48:WA:4262:U:H2'	48:WA:4263:C:H6	1.76	0.49
51:ZA:84:A:N3	51:ZA:150:A:O2'	2.45	0.49
51:ZA:161:U:O2'	58:GB:87:ARG:NH1	2.46	0.49
51:ZA:397:G:OP1	63:LB:106:HIS:NE2	2.46	0.49
51:ZA:931:C:H2'	51:ZA:932:G:C8	2.47	0.49
59:HB:356:ARG:HD3	59:HB:359:THR:HG21	1.94	0.49
2:B:117:ARG:NH2	48:WA:4987:U:OP1	2.36	0.49
21:U:50:ASN:ND2	48:WA:4459:U:OP1	2.45	0.49
48:WA:711:G:H2'	48:WA:712:A:H8	1.78	0.49
48:WA:1256:A:N1	48:WA:1261:G:O6	2.45	0.49
48:WA:1343:U:H2'	48:WA:1344:A:H8	1.77	0.49
51:ZA:1615:U:O4	67:PB:40:ARG:NH2	2.45	0.49
51:ZA:1650:A:H5''	68:QB:165:ALA:HB2	1.95	0.49
60:IB:64:ASN:O	60:IB:186:ASP:HA	2.12	0.49
67:PB:44:ARG:NH2	67:PB:53:GLN:OE1	2.39	0.49
6:F:55:HIS:NE2	6:F:59:GLU:OE2	2.45	0.49
6:F:82:VAL:HG22	18:R:62:VAL:HA	1.95	0.49
48:WA:162:A:H2'	48:WA:163:A:H8	1.77	0.49
48:WA:246:G:H2'	48:WA:247:G:H8	1.77	0.49
48:WA:1751:A:H2'	48:WA:1752:G:C8	2.48	0.49
51:ZA:1745:A:H62	51:ZA:1789:G:H21	1.61	0.49
52:AB:190:SER:OG	52:AB:192:GLU:OE1	2.29	0.49
60:IB:81:VAL:HG22	60:IB:102:VAL:HG12	1.95	0.49
84:GC:294:ASP:OD2	84:GC:296:GLN:NE2	2.41	0.49
2:B:79:VAL:HB	2:B:331:VAL:HG23	1.94	0.49
3:C:328:LEU:HD13	6:F:186:MET:HE2	1.95	0.49
8:H:92:MET:HG2	8:H:181:VAL:HG22	1.95	0.49
12:L:121:ARG:NH2	48:WA:4883:U:OP1	2.38	0.49
36:JA:35:LYS:NZ	48:WA:2695:G:OP1	2.30	0.49
48:WA:3612:A:H2'	48:WA:3613:A:C8	2.48	0.49
68:QB:79:GLU:OE1	68:QB:111:ARG:NH1	2.46	0.49
3:C:35:ASP:OD1	3:C:35:ASP:N	2.46	0.48
20:T:35:ASP:HB2	20:T:38:ASN:HB3	1.95	0.48
42:PA:31:ASN:ND2	42:PA:40:TYR:O	2.46	0.48
48:WA:132:G:O6	48:WA:137:G:N1	2.41	0.48
48:WA:2418:G:N2	48:WA:2428:U:O4	2.46	0.48
48:WA:3598:A:H61	63:LB:2:ALA:HA	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:WA:4190:U:H2'	48:WA:4191:U:C6	2.48	0.48
48:WA:4763:G:H2'	48:WA:4764:A:H8	1.77	0.48
51:ZA:436:G:OP2	51:ZA:471:G:O2'	2.30	0.48
51:ZA:498:C:H2'	51:ZA:499:G:C8	2.48	0.48
51:ZA:1101:U:H2'	51:ZA:1102:G:C8	2.48	0.48
60:IB:67:TRP:NE1	60:IB:191:GLU:OE2	2.40	0.48
74:WB:80:ASP:OD1	74:WB:124:LYS:NZ	2.41	0.48
1:A:247:ARG:HB3	51:ZA:1069:U:H4'	1.95	0.48
6:F:244:ARG:NH1	48:WA:947:G:OP1	2.40	0.48
9:I:158:LYS:NZ	48:WA:4415:C:O2	2.45	0.48
25:Y:17:ARG:NH2	25:Y:18:TYR:OH	2.46	0.48
51:ZA:333:G:H2'	51:ZA:334:C:O4'	2.13	0.48
51:ZA:1115:U:O2	51:ZA:1116:C:O2'	2.30	0.48
51:ZA:1271:C:N4	51:ZA:1512:C:N3	2.60	0.48
51:ZA:1545:A:OP1	68:QB:100:GLY:N	2.42	0.48
51:ZA:1758:G:H2'	51:ZA:1759:G:H8	1.76	0.48
69:RB:32:LYS:HG3	69:RB:47:ARG:HD3	1.95	0.48
84:GC:38:LYS:NZ	84:GC:63:SER:O	2.46	0.48
15:O:118:GLU:O	15:O:122:HIS:ND1	2.36	0.48
45:TA:23:A:H2'	45:TA:24:G:C8	2.47	0.48
51:ZA:1309:C:H5'	83:FC:105:TYR:HE1	1.79	0.48
51:ZA:1536:G:H2'	51:ZA:1537:A:C8	2.48	0.48
67:PB:43:ARG:HH12	67:PB:47:ARG:HH11	1.61	0.48
74:WB:11:LEU:HA	74:WB:14:ILE:HG12	1.94	0.48
12:L:24:LEU:HD11	12:L:86:TRP:CG	2.48	0.48
13:M:93:LYS:NZ	48:WA:4179:C:OP1	2.37	0.48
20:T:19:LEU:HD22	20:T:78:PHE:H	1.78	0.48
24:X:59:ARG:HD2	48:WA:209:U:H5'	1.94	0.48
48:WA:164:G:H2'	48:WA:165:A:H8	1.79	0.48
48:WA:3601:A:H2'	48:WA:3602:G:H8	1.78	0.48
48:WA:3872:C:H2'	48:WA:3873:A:H8	1.79	0.48
48:WA:3952:U:H2'	48:WA:3953:G:C8	2.48	0.48
48:WA:4950:C:OP2	48:WA:4951:G:O2'	2.24	0.48
51:ZA:564:A:H2'	51:ZA:565:G:O4'	2.13	0.48
51:ZA:1203:G:H2'	51:ZA:1204:A:H8	1.74	0.48
51:ZA:1275:G:N2	51:ZA:1506:A:OP2	2.46	0.48
52:AB:41:ARG:HE	52:AB:45:GLY:HA2	1.78	0.48
62:KB:16:PHE:HE2	62:KB:89:ILE:HG22	1.79	0.48
84:GC:234:ASP:HB2	84:GC:252:THR:HB	1.94	0.48
4:D:53:VAL:HG11	4:D:159:VAL:HA	1.96	0.48
10:J:35:ARG:NH1	10:J:126:TYR:OH	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:163:LYS:NZ	48:WA:4911:A:OP1	2.42	0.48
26:Z:103:VAL:HG12	26:Z:108:TYR:HB2	1.95	0.48
32:FA:66:ARG:NH2	48:WA:2519:A:O2'	2.46	0.48
48:WA:1974:G:H2'	48:WA:1975:G:O4'	2.13	0.48
48:WA:2485:G:H2'	48:WA:2486:A:H8	1.79	0.48
48:WA:4631:U:H2'	48:WA:4632:G:H8	1.79	0.48
48:WA:4706:C:H2'	48:WA:4707:A:C8	2.49	0.48
51:ZA:373:G:OP1	63:LB:137:THR:OG1	2.27	0.48
51:ZA:582:U:H2'	51:ZA:583:A:H5''	1.95	0.48
51:ZA:1220:A:N3	51:ZA:1677:U:O2'	2.38	0.48
51:ZA:1277:C:OP1	62:KB:51:SER:OG	2.28	0.48
54:CB:201:GLY:O	61:JB:54:ARG:NH1	2.47	0.48
56:EB:18:TRP:HB3	56:EB:20:LEU:HD13	1.94	0.48
88:HC:266:ARG:NH1	88:HC:268:GLU:OE2	2.46	0.48
8:H:24:THR:HG21	8:H:35:ARG:HE	1.79	0.48
39:MA:15:ARG:NH2	51:ZA:1183:A:OP1	2.46	0.48
40:NA:69:ARG:HG3	40:NA:82:MET:HE1	1.95	0.48
46:UA:69:A:H2'	46:UA:70:A:C8	2.48	0.48
48:WA:1263:G:H2'	48:WA:1264:G:C8	2.48	0.48
48:WA:2896:A:H2'	48:WA:2897:A:C8	2.49	0.48
48:WA:3635:C:H2'	48:WA:3636:G:C8	2.49	0.48
49:XA:57:C:H2'	49:XA:58:A:H8	1.78	0.48
51:ZA:128:U:H3'	51:ZA:129:C:H6	1.78	0.48
51:ZA:916:A:C5	65:NB:73:ARG:HD3	2.48	0.48
54:CB:192:LEU:HB3	54:CB:227:ARG:HB3	1.96	0.48
4:D:15:ARG:HH11	48:WA:1745:A:H1'	1.77	0.48
7:G:191:ALA:O	7:G:195:THR:OG1	2.28	0.48
10:J:46:GLN:NE2	10:J:73:THR:O	2.43	0.48
18:R:98:ARG:NH2	48:WA:750:G:O6	2.46	0.48
25:Y:51:ARG:HB2	25:Y:65:ARG:HE	1.78	0.48
44:SA:51:C:H2'	44:SA:52:G:H8	1.79	0.48
48:WA:739:C:O2'	48:WA:742:G:OP1	2.29	0.48
48:WA:4116:C:H2'	48:WA:4117:G:C8	2.49	0.48
48:WA:4529:G:OP2	48:WA:4529:G:N2	2.44	0.48
51:ZA:326:C:O2	51:ZA:327:G:N1	2.47	0.48
51:ZA:1798:C:H2'	51:ZA:1799:G:O4'	2.14	0.48
2:B:14:LEU:O	48:WA:4589:G:O2'	2.26	0.48
13:M:44:ARG:NH1	48:WA:280:G:OP2	2.42	0.48
19:S:130:ARG:HH21	48:WA:1730:U:H1'	1.78	0.48
35:IA:52:LYS:HG2	35:IA:55:ARG:HH22	1.78	0.48
48:WA:408:A:O2'	48:WA:411:G:OP2	2.26	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:WA:2081:G:H2'	48:WA:2082:U:C6	2.49	0.48
48:WA:2541:C:H2'	48:WA:2542:C:C6	2.48	0.48
48:WA:3719:A:H2'	48:WA:3720:A:C8	2.49	0.48
48:WA:4275:A:H2'	48:WA:4276:A:C8	2.49	0.48
50:YA:9:A:H2'	50:YA:10:G:H8	1.78	0.48
51:ZA:562:U:OP1	61:JB:134:HIS:NE2	2.46	0.48
51:ZA:1670:C:H2'	51:ZA:1671:G:C8	2.49	0.48
64:MB:49:LEU:HB3	64:MB:111:VAL:HG13	1.95	0.48
79:BC:23:ARG:NH2	79:BC:29:ASN:OD1	2.40	0.48
15:O:71:ARG:HH21	15:O:138:VAL:HG23	1.78	0.48
19:S:91:VAL:HB	19:S:96:ILE:HD11	1.96	0.48
21:U:43:LYS:HD2	48:WA:4510:C:H5''	1.96	0.48
35:IA:13:ASN:ND2	48:WA:1620:G:OP1	2.42	0.48
48:WA:287:U:H2'	48:WA:288:G:C8	2.48	0.48
48:WA:4194:A:H2'	48:WA:4195:C:H6	1.79	0.48
51:ZA:1528:G:H2'	51:ZA:1529:C:C6	2.49	0.48
51:ZA:1541:G:H4'	71:TB:15:VAL:HG11	1.96	0.48
64:MB:42:LEU:O	64:MB:72:HIS:ND1	2.47	0.48
4:D:166:ALA:HB1	4:D:171:LEU:HD12	1.96	0.48
5:E:71:TYR:HA	5:E:74:LYS:HE2	1.96	0.48
6:F:154:TYR:OH	6:F:187:GLU:OE2	2.32	0.48
7:G:106:ARG:NH1	48:WA:4165:U:OP1	2.45	0.48
7:G:126:ARG:NH2	48:WA:4164:C:O2	2.38	0.48
9:I:95:HIS:HB3	9:I:126:VAL:HG12	1.95	0.48
11:K:54:PRO:HG2	11:K:56:ARG:NH1	2.29	0.48
13:M:38:ARG:NH2	50:YA:142:U:OP1	2.43	0.48
20:T:90:TYR:O	20:T:94:ASN:ND2	2.39	0.48
26:Z:71:PRO:HG2	26:Z:108:TYR:HA	1.96	0.48
48:WA:711:G:H2'	48:WA:712:A:C8	2.49	0.48
48:WA:1516:U:H2'	48:WA:1517:A:C8	2.49	0.48
48:WA:1944:A:H2'	48:WA:1945:A:H8	1.79	0.48
51:ZA:1139:C:O2'	74:WB:20:ARG:NH1	2.46	0.48
51:ZA:1781:A:H2'	51:ZA:1782:G:H8	1.79	0.48
52:AB:164:ASN:O	52:AB:170:SER:OG	2.22	0.48
74:WB:27:ILE:HG13	74:WB:61:ILE:HB	1.96	0.48
15:O:96:VAL:HB	15:O:109:GLN:HE21	1.78	0.47
48:WA:1606:G:H2'	48:WA:1607:G:C8	2.49	0.47
48:WA:3699:U:O2'	48:WA:3819:A:OP2	2.28	0.47
48:WA:4406:U:O2'	48:WA:4408:U:O4	2.31	0.47
51:ZA:952:G:H2'	51:ZA:953:C:C6	2.49	0.47
71:TB:96:SER:HB3	71:TB:99:VAL:HG22	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:136:ARG:HG3	10:J:157:ILE:HD11	1.95	0.47
14:N:130:LYS:NZ	48:WA:2057:G:O5'	2.48	0.47
17:Q:42:ARG:NH2	48:WA:2526:U:OP1	2.47	0.47
17:Q:59:SER:HA	48:WA:2636:C:H5'	1.94	0.47
17:Q:121:HIS:ND1	48:WA:2666:G:OP2	2.47	0.47
37:KA:20:ASN:O	37:KA:41:ARG:NH1	2.46	0.47
37:KA:25:GLN:O	37:KA:28:TRP:NE1	2.46	0.47
48:WA:1872:C:H2'	48:WA:1873:A:H8	1.79	0.47
49:XA:64:G:H2'	49:XA:65:G:H8	1.79	0.47
51:ZA:1309:C:H5'	83:FC:105:TYR:CE1	2.49	0.47
53:BB:87:ILE:HG22	53:BB:101:HIS:HB2	1.96	0.47
80:CC:20:ARG:NH2	80:CC:25:GLY:O	2.46	0.47
86:b:60:MET:N	86:b:60:MET:SD	2.87	0.47
87:c:248:MET:HB3	87:c:250:PHE:HD2	1.79	0.47
2:B:228:TYR:O	48:WA:2837:A:O2'	2.31	0.47
5:E:96:THR:HG22	5:E:109:VAL:HG22	1.95	0.47
13:M:155:VAL:O	13:M:162:ARG:NH2	2.47	0.47
13:M:178:HIS:ND1	48:WA:68:U:OP1	2.38	0.47
14:N:85:ARG:HG3	14:N:99:LEU:HD11	1.95	0.47
48:WA:146:G:H2'	48:WA:147:A:H8	1.79	0.47
48:WA:955:G:H2'	48:WA:956:G:H8	1.79	0.47
48:WA:1292:G:H2'	48:WA:1293:G:H8	1.79	0.47
51:ZA:4:C:O2'	61:JB:18:ARG:NH2	2.46	0.47
51:ZA:1447:G:H2'	51:ZA:1448:A:C8	2.49	0.47
58:GB:198:ARG:O	58:GB:202:ASN:ND2	2.35	0.47
63:LB:59:LYS:HD3	63:LB:134:LEU:HB3	1.96	0.47
66:OB:146:ARG:HG3	78:AC:29:CYS:HB2	1.96	0.47
76:YB:102:THR:OG1	76:YB:107:ARG:NH2	2.47	0.47
2:B:254:ILE:HG21	2:B:262:VAL:HG22	1.96	0.47
3:C:306:ARG:HG2	48:WA:2101:C:H3'	1.95	0.47
48:WA:128:C:H2'	48:WA:129:C:C6	2.49	0.47
48:WA:1452:C:O2'	48:WA:2106:A:O2'	2.19	0.47
48:WA:1881:C:O2'	48:WA:1893:A:N3	2.43	0.47
48:WA:2745:A:H2'	48:WA:2746:A:C8	2.50	0.47
48:WA:3879:A:O2'	48:WA:4402:G:N2	2.47	0.47
48:WA:4423:C:N4	48:WA:4477:G:H22	2.09	0.47
56:EB:188:ASN:OD1	56:EB:245:ARG:NH2	2.48	0.47
58:GB:32:MET:HB2	58:GB:100:CYS:HB2	1.95	0.47
84:GC:91:ASP:OD2	84:GC:93:THR:OG1	2.25	0.47
1:A:236:GLY:N	48:WA:3689:A:O2'	2.47	0.47
13:M:184:ILE:HG23	13:M:194:ARG:HH22	1.77	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:12:LEU:HB2	25:Y:81:MET:HB3	1.95	0.47
25:Y:88:ASP:O	25:Y:121:ARG:NH1	2.40	0.47
28:BA:39:ARG:NH2	28:BA:63:TYR:OH	2.47	0.47
30:DA:100:ALA:O	30:DA:108:ARG:NH2	2.48	0.47
44:SA:21:A:O2'	44:SA:22:A:O5'	2.25	0.47
48:WA:692:C:H2'	48:WA:693:A:C8	2.50	0.47
48:WA:2542:C:H2'	48:WA:2543:G:H8	1.80	0.47
48:WA:2557:G:H2'	48:WA:2558:G:H8	1.79	0.47
48:WA:2591:C:N3	48:WA:2759:A:N6	2.62	0.47
48:WA:2892:C:H42	48:WA:3613:A:H61	1.62	0.47
48:WA:4968:A:H2'	48:WA:4969:A:C8	2.50	0.47
50:YA:84:A:H1'	50:YA:85:U:H4'	1.97	0.47
51:ZA:547:G:H2'	51:ZA:549:C:H6	1.79	0.47
51:ZA:1275:G:H22	51:ZA:1506:A:P	2.38	0.47
52:AB:122:LEU:HB2	52:AB:142:LEU:HD21	1.96	0.47
64:MB:33:ARG:NH2	64:MB:89:VAL:O	2.47	0.47
87:c:250:PHE:HA	87:c:253:PHE:HD2	1.80	0.47
4:D:156:GLY:HA2	4:D:181:PRO:HD3	1.95	0.47
14:N:65:ASN:ND2	48:WA:4567:C:OP1	2.38	0.47
23:W:150:ALA:HB1	23:W:155:ILE:HG13	1.97	0.47
41:OA:17:ARG:NH2	48:WA:1579:G:OP1	2.42	0.47
48:WA:1176:G:H2'	48:WA:1177:G:C8	2.50	0.47
48:WA:1384:G:H2'	48:WA:1385:G:H8	1.79	0.47
51:ZA:107:A:H2'	51:ZA:108:G:H8	1.79	0.47
51:ZA:1418:C:N4	51:ZA:1422:G:OP1	2.48	0.47
72:UB:67:LYS:NZ	72:UB:78:ASP:OD1	2.35	0.47
76:YB:102:THR:O	76:YB:107:ARG:NH2	2.48	0.47
84:GC:257:LYS:HG2	84:GC:269:GLU:HG3	1.96	0.47
1:A:241:ARG:NH1	48:WA:3661:G:OP1	2.48	0.47
4:D:33:ARG:HH21	49:XA:7:G:H4'	1.80	0.47
4:D:126:THR:HG22	4:D:128:ASP:H	1.79	0.47
6:F:33:ARG:NH1	48:WA:1274:C:OP2	2.48	0.47
6:F:222:LYS:HE3	48:WA:1909:A:H4'	1.97	0.47
9:I:61:SER:HA	9:I:126:VAL:HG23	1.96	0.47
10:J:112:HIS:HE1	10:J:125:ILE:HA	1.79	0.47
11:K:31:ARG:NH1	48:WA:337:U:OP1	2.42	0.47
11:K:35:ARG:NH2	48:WA:337:U:OP1	2.48	0.47
23:W:120:ASP:OD1	23:W:120:ASP:N	2.46	0.47
24:X:82:ILE:HD12	24:X:85:VAL:HG21	1.95	0.47
29:CA:118:GLN:OE1	48:WA:5057:G:N2	2.47	0.47
30:DA:64:LYS:NZ	48:WA:2081:G:OP2	2.35	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:WA:1496:U:H2'	48:WA:1497:G:C8	2.50	0.47
48:WA:1813:G:H2'	48:WA:1814:C:H6	1.80	0.47
48:WA:2082:U:H2'	48:WA:2083:C:C6	2.50	0.47
48:WA:2260:C:H5''	48:WA:2261:G:C8	2.50	0.47
48:WA:2363:G:O2'	48:WA:3861:G:O6	2.28	0.47
48:WA:2377:A:H2'	48:WA:2378:A:C8	2.47	0.47
48:WA:3719:A:H2'	48:WA:3720:A:H8	1.79	0.47
48:WA:3725:A:H2'	48:WA:3726:A:C8	2.50	0.47
51:ZA:322:C:H2'	51:ZA:323:C:H5''	1.96	0.47
51:ZA:918:U:O2'	74:WB:56:HIS:O	2.33	0.47
51:ZA:1098:C:H2'	51:ZA:1099:G:C8	2.49	0.47
51:ZA:1139:C:N4	51:ZA:1149:A:H62	2.13	0.47
51:ZA:1217:A:H2'	51:ZA:1218:C:C6	2.50	0.47
54:CB:191:VAL:HG11	54:CB:236:PHE:HA	1.96	0.47
61:JB:133:ARG:HB3	61:JB:143:ASN:HD22	1.80	0.47
68:QB:126:VAL:HG12	68:QB:127:ASP:H	1.79	0.47
71:TB:42:HIS:HB3	71:TB:93:SER:HB3	1.97	0.47
1:A:14:SER:OG	48:WA:1630:C:OP1	2.33	0.47
4:D:17:GLN:NE2	19:S:22:HIS:O	2.45	0.47
4:D:223:PHE:HB3	4:D:226:TYR:HB2	1.96	0.47
8:H:95:VAL:HB	38:LA:56:LEU:HB3	1.96	0.47
9:I:31:ILE:HB	9:I:66:GLU:HB2	1.97	0.47
24:X:83:GLU:HG3	24:X:84:ARG:HG3	1.96	0.47
39:MA:11:ARG:NH2	51:ZA:1184:G:OP1	2.48	0.47
48:WA:2522:C:H2'	48:WA:2523:G:C8	2.48	0.47
51:ZA:544:G:H2'	51:ZA:545:A:C8	2.50	0.47
51:ZA:1755:C:H2'	51:ZA:1756:C:C6	2.49	0.47
52:AB:24:HIS:HB3	52:AB:51:LEU:HD21	1.97	0.47
55:DB:114:ARG:HB2	62:KB:22:VAL:HG11	1.97	0.47
2:B:252:ALA:HB1	48:WA:4526:G:N3	2.30	0.47
8:H:91:LYS:HB2	8:H:183:GLU:HB3	1.97	0.47
23:W:65:ALA:HB2	33:GA:69:LEU:HD11	1.97	0.47
25:Y:46:ILE:HG23	25:Y:68:ILE:HG23	1.96	0.47
29:CA:33:ILE:HD11	29:CA:41:ARG:HB3	1.97	0.47
36:JA:47:ILE:HG22	36:JA:49:ASP:H	1.79	0.47
48:WA:4450:G:H5''	48:WA:4451:A:H5'	1.96	0.47
50:YA:153:C:H2'	50:YA:154:G:C8	2.50	0.47
51:ZA:613:G:N1	51:ZA:629:A:OP2	2.48	0.47
51:ZA:1345:G:OP1	51:ZA:1688:C:O2'	2.32	0.47
52:AB:128:ARG:HG2	52:AB:153:PRO:HD2	1.96	0.47
73:VB:11:LEU:HD23	73:VB:11:LEU:H	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:59:ASP:OD1	12:L:59:ASP:N	2.47	0.47
29:CA:26:THR:OG1	29:CA:85:ARG:NH1	2.42	0.47
30:DA:89:LEU:HD13	30:DA:118:LEU:HD22	1.96	0.47
45:TA:7:A:O2'	45:TA:49:C:OP2	2.32	0.47
48:WA:1446:G:N2	48:WA:2113:U:O2	2.31	0.47
48:WA:1972:A:H5'	86:b:37:SER:HB3	1.97	0.47
48:WA:2002:G:O2'	48:WA:2003:G:N7	2.46	0.47
48:WA:3723:U:H2'	48:WA:3724:G:H8	1.80	0.47
48:WA:3788:U:OP1	48:WA:4552:G:O2'	2.26	0.47
51:ZA:348:A:H2'	51:ZA:349:A:C8	2.50	0.47
55:DB:66:GLU:HG2	55:DB:107:LEU:HD21	1.97	0.47
60:IB:162:LEU:HD11	60:IB:191:GLU:HG2	1.97	0.47
62:KB:11:ILE:HD11	62:KB:45:VAL:HG22	1.96	0.47
66:OB:106:LYS:HD2	66:OB:135:ILE:HG22	1.97	0.47
2:B:55:HIS:CD2	48:WA:4629:U:HO2'	2.32	0.46
5:E:216:THR:HG23	5:E:219:TYR:H	1.80	0.46
14:N:55:LEU:HD23	14:N:58:LEU:HD12	1.97	0.46
25:Y:67:LYS:NZ	48:WA:2575:A:OP1	2.42	0.46
48:WA:164:G:H2'	48:WA:165:A:C8	2.50	0.46
48:WA:169:A:N1	48:WA:267:G:C6	2.83	0.46
48:WA:1819:U:H2'	48:WA:1820:G:O4'	2.15	0.46
48:WA:2581:G:N2	48:WA:2584:A:OP2	2.31	0.46
50:YA:45:C:H2'	50:YA:46:G:H8	1.80	0.46
51:ZA:626:G:N2	51:ZA:626:G:OP2	2.48	0.46
51:ZA:694:G:N1	51:ZA:732:U:O4	2.48	0.46
51:ZA:1113:A:H2'	51:ZA:1114:U:C6	2.50	0.46
57:FB:127:ARG:O	80:CC:26:GLN:NE2	2.49	0.46
84:GC:61:GLY:HA3	84:GC:90:TRP:HZ2	1.80	0.46
2:B:254:ILE:HG23	2:B:266:VAL:HG11	1.97	0.46
12:L:29:ASP:OD1	12:L:30:VAL:N	2.47	0.46
14:N:68:ARG:NH2	48:WA:4566:A:OP1	2.48	0.46
41:OA:30:GLU:HA	41:OA:33:GLN:HG2	1.96	0.46
45:TA:49:C:H2'	45:TA:50:A:C8	2.49	0.46
48:WA:478:G:H2'	48:WA:479:G:H8	1.80	0.46
48:WA:2449:U:H1'	48:WA:2746:A:H2	1.80	0.46
51:ZA:1386:A:OP2	55:DB:198:SER:OG	2.30	0.46
58:GB:165:GLU:OE1	58:GB:167:LYS:NZ	2.39	0.46
2:B:298:LEU:HD13	2:B:300:LYS:HE3	1.97	0.46
3:C:49:ARG:HD3	48:WA:349:A:C8	2.50	0.46
14:N:178:ARG:NH1	14:N:182:GLU:OE2	2.48	0.46
15:O:93:ASN:O	15:O:109:GLN:NE2	2.40	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:92:ASP:OD2	25:Y:94:THR:OG1	2.23	0.46
30:DA:46:ARG:NH1	48:WA:1884:U:OP2	2.48	0.46
48:WA:262:G:H2'	48:WA:263:G:H8	1.77	0.46
48:WA:270:U:H2'	48:WA:271:C:C6	2.50	0.46
48:WA:3913:C:H2'	48:WA:3914:U:H6	1.80	0.46
48:WA:4460:C:H2'	48:WA:4461:U:C6	2.51	0.46
50:YA:60:G:O6	50:YA:96:C:O2'	2.32	0.46
55:DB:58:GLU:OE2	55:DB:114:ARG:NE	2.48	0.46
75:XB:46:HIS:HB3	75:XB:101:LEU:HD11	1.97	0.46
76:YB:103:SER:HB3	76:YB:106:GLN:HG2	1.97	0.46
11:K:18:TRP:NE1	48:WA:1518:G:O2'	2.48	0.46
11:K:60:ARG:NH2	11:K:67:HIS:O	2.47	0.46
31:EA:43:LEU:HB2	31:EA:109:ARG:HH12	1.81	0.46
48:WA:1330:G:O2'	48:WA:2351:A:OP1	2.34	0.46
48:WA:2413:C:H2'	48:WA:2414:A:C8	2.51	0.46
48:WA:2850:G:O2'	48:WA:3840:U:O4	2.30	0.46
48:WA:3895:C:H2'	48:WA:3896:A:C8	2.51	0.46
48:WA:4509:A:H2'	48:WA:4510:C:C6	2.51	0.46
55:DB:133:GLY:HA2	55:DB:139:GLN:HE21	1.79	0.46
65:NB:5:HIS:HB3	65:NB:117:LEU:HD13	1.98	0.46
65:NB:87:ASP:OD1	65:NB:87:ASP:N	2.48	0.46
71:TB:116:ASP:OD1	71:TB:117:GLN:N	2.49	0.46
14:N:113:ASP:OD1	14:N:114:LYS:N	2.49	0.46
27:AA:47:LYS:NZ	48:WA:1466:C:O3'	2.48	0.46
48:WA:2626:G:H2'	48:WA:2627:U:C6	2.51	0.46
48:WA:4262:U:H2'	48:WA:4263:C:C6	2.50	0.46
48:WA:4690:C:H2'	48:WA:4691:U:C6	2.51	0.46
49:XA:62:U:O2'	49:XA:64:G:O4'	2.33	0.46
51:ZA:1797:U:H2'	51:ZA:1798:C:C6	2.50	0.46
58:GB:74:ARG:HG2	58:GB:96:SER:HB3	1.98	0.46
84:GC:107:ASP:N	84:GC:107:ASP:OD1	2.48	0.46
4:D:40:ASP:HB2	4:D:43:LYS:HG2	1.96	0.46
4:D:146:LEU:HD21	4:D:159:VAL:HG22	1.98	0.46
17:Q:84:THR:HG22	48:WA:2866:A:H5''	1.97	0.46
18:R:1:MET:HE2	18:R:43:ARG:HG3	1.97	0.46
33:GA:96:ASN:N	33:GA:96:ASN:OD1	2.47	0.46
34:HA:60:LEU:HA	34:HA:63:VAL:HG22	1.97	0.46
48:WA:1292:G:H2'	48:WA:1293:G:C8	2.51	0.46
48:WA:1405:G:H2'	48:WA:1406:G:C8	2.50	0.46
48:WA:2599:G:H2'	48:WA:2600:A:C8	2.51	0.46
48:WA:4929:G:H5''	48:WA:4930:C:H5	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:ZA:527:C:H2'	51:ZA:528:A:C8	2.49	0.46
51:ZA:1324:G:O2'	51:ZA:1510:G:O2'	2.31	0.46
80:CC:36:ASP:OD1	80:CC:36:ASP:N	2.46	0.46
4:D:54:ARG:NH2	4:D:147:ASP:OD2	2.47	0.46
7:G:139:VAL:HG11	7:G:238:LYS:HG3	1.98	0.46
10:J:57:VAL:HG12	10:J:60:PHE:H	1.81	0.46
12:L:39:ASP:HB2	12:L:47:ARG:HE	1.80	0.46
14:N:12:ARG:HD3	14:N:37:ARG:HH11	1.79	0.46
14:N:34:VAL:HG22	14:N:103:LYS:HB3	1.97	0.46
18:R:111:ARG:NH2	48:WA:2064:C:O2'	2.49	0.46
48:WA:715:G:H2'	48:WA:716:G:H8	1.80	0.46
48:WA:2575:A:N7	48:WA:2763:U:O4	2.49	0.46
48:WA:2745:A:H2'	48:WA:2746:A:H8	1.80	0.46
48:WA:4110:G:H2'	48:WA:4111:G:C8	2.48	0.46
56:EB:204:SER:OG	56:EB:205:PHE:N	2.48	0.46
64:MB:22:LEU:HD13	64:MB:89:VAL:HA	1.98	0.46
88:HC:272:LEU:HB3	88:HC:302:ALA:HB3	1.98	0.46
3:C:110:ARG:NH1	48:WA:1510:A:OP1	2.46	0.46
4:D:146:LEU:HD22	4:D:163:LEU:HD13	1.97	0.46
22:V:82:ILE:HG12	58:GB:131:ARG:HB2	1.97	0.46
45:TA:23:A:H2'	45:TA:24:G:H8	1.81	0.46
48:WA:655:C:H2'	48:WA:656:C:H6	1.81	0.46
48:WA:1825:G:H2'	48:WA:1826:G:C8	2.51	0.46
48:WA:1881:C:H2'	48:WA:1882:G:O4'	2.16	0.46
48:WA:2413:C:O2'	48:WA:2528:C:O2	2.24	0.46
48:WA:2494:C:H2'	48:WA:2495:G:C8	2.51	0.46
51:ZA:196:C:H2'	51:ZA:197:U:C6	2.51	0.46
51:ZA:209:A:H2'	51:ZA:210:U:O4'	2.16	0.46
51:ZA:293:C:H5''	63:LB:38:LYS:HD2	1.98	0.46
61:JB:114:VAL:HG21	61:JB:135:ILE:HD13	1.97	0.46
86:b:52:VAL:HB	86:b:90:PHE:HB2	1.98	0.46
9:I:42:LYS:HB2	9:I:45:GLU:HG3	1.98	0.46
9:I:51:HIS:CD2	9:I:168:SER:HB2	2.51	0.46
13:M:49:ARG:HH21	48:WA:114:G:P	2.39	0.46
25:Y:54:THR:H	25:Y:57:MET:HE2	1.81	0.46
35:IA:82:THR:OG1	50:YA:94:G:N2	2.44	0.46
48:WA:169:A:C2	48:WA:267:G:C2	3.04	0.46
48:WA:1300:C:H2'	48:WA:1301:G:H8	1.81	0.46
48:WA:4143:G:N2	48:WA:4146:G:OP2	2.34	0.46
48:WA:4725:A:H2'	48:WA:4726:A:C8	2.51	0.46
51:ZA:551:U:H2'	51:ZA:552:G:C8	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:ZA:582:U:OP1	61:JB:162:ARG:NH1	2.48	0.46
51:ZA:1535:U:O4	57:FB:159:ARG:NE	2.49	0.46
68:QB:122:TYR:HA	68:QB:126:VAL:HG23	1.97	0.46
76:YB:62:THR:HA	76:YB:69:THR:HG22	1.98	0.46
84:GC:104:HIS:NE2	84:GC:122:SER:OG	2.47	0.46
88:HC:364:HIS:CD2	88:HC:421:LEU:HG	2.51	0.46
16:P:178:ARG:N	26:Z:51:GLY:HA2	2.31	0.46
32:FA:24:ARG:NH2	48:WA:2615:C:OP1	2.49	0.46
48:WA:1543:C:H1'	48:WA:2450:G:H21	1.81	0.46
48:WA:1593:U:H3	48:WA:4557:U:H5''	1.81	0.46
48:WA:3609:U:H2'	48:WA:3610:A:C8	2.51	0.46
48:WA:4165:U:H5'	48:WA:4166:C:H5''	1.97	0.46
51:ZA:1406:G:H2'	51:ZA:1407:U:H6	1.81	0.46
51:ZA:1828:C:H2'	51:ZA:1829:G:C8	2.50	0.46
56:EB:151:ASP:OD1	58:GB:216:ARG:NH1	2.49	0.46
80:CC:12:ALA:HB1	80:CC:32:VAL:HB	1.98	0.46
2:B:116:ARG:NH2	48:WA:4989:C:OP1	2.49	0.45
10:J:24:ILE:HG12	10:J:128:LEU:HB3	1.98	0.45
48:WA:674:C:H2'	48:WA:675:G:H8	1.81	0.45
48:WA:986:U:H2'	48:WA:987:C:C6	2.51	0.45
48:WA:1307:C:OP1	50:YA:7:U:O2'	2.34	0.45
48:WA:1448:C:H2'	48:WA:1449:C:C6	2.51	0.45
48:WA:2027:A:H8	48:WA:2028:A:H1'	1.81	0.45
48:WA:4588:G:O6	48:WA:4719:A:N6	2.49	0.45
48:WA:4929:G:H5''	48:WA:4930:C:C5	2.51	0.45
51:ZA:1431:G:H2'	51:ZA:1432:U:C6	2.50	0.45
57:FB:122:ARG:HE	80:CC:59:LEU:HD21	1.81	0.45
14:N:27:VAL:HG13	14:N:98:ALA:HB1	1.98	0.45
16:P:133:GLY:O	16:P:136:THR:OG1	2.25	0.45
48:WA:462:G:H2'	48:WA:463:A:C8	2.52	0.45
48:WA:2642:G:H2'	48:WA:2643:A:C8	2.51	0.45
48:WA:3925:A:H2'	48:WA:3926:C:C6	2.51	0.45
48:WA:4321:C:H2'	48:WA:4322:G:H8	1.81	0.45
51:ZA:996:A:H2'	51:ZA:997:A:C8	2.51	0.45
51:ZA:1010:G:H2'	51:ZA:1011:A:C8	2.51	0.45
51:ZA:1801:A:H2'	51:ZA:1802:C:C6	2.51	0.45
53:BB:136:ARG:HB2	53:BB:218:LEU:HD11	1.99	0.45
63:LB:13:GLN:HB2	63:LB:16:ILE:HG12	1.97	0.45
72:UB:46:LYS:HD2	72:UB:101:ILE:HD13	1.98	0.45
87:c:247:ASP:HB2	88:HC:383:SER:N	2.32	0.45
88:HC:346:ILE:O	88:HC:397:GLY:N	2.47	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:65:ALA:HB2	4:D:74:ILE:HD13	1.98	0.45
8:H:120:GLU:HG2	48:WA:4613:A:H2	1.81	0.45
15:O:69:HIS:NE2	15:O:139:ASP:O	2.38	0.45
48:WA:36:U:OP1	48:WA:1653:G:N2	2.42	0.45
48:WA:1806:A:H4'	48:WA:1807:A:O5'	2.16	0.45
48:WA:4147:C:H2'	48:WA:4148:G:H8	1.81	0.45
51:ZA:1221:G:H2'	51:ZA:1222:G:H8	1.81	0.45
65:NB:29:THR:OG1	65:NB:31:ASP:OD1	2.31	0.45
66:OB:54:CYS:HB2	66:OB:84:ARG:HG2	1.98	0.45
69:RB:102:THR:O	69:RB:105:MET:HG3	2.17	0.45
86:b:16:LYS:HB3	86:b:16:LYS:HE2	1.66	0.45
6:F:235:ARG:HB2	6:F:238:GLN:HB2	1.98	0.45
14:N:37:ARG:HH21	14:N:108:ILE:HD11	1.82	0.45
30:DA:99:ILE:HG21	30:DA:108:ARG:HG2	1.98	0.45
37:KA:24:PRO:HG2	37:KA:27:ILE:HB	1.99	0.45
48:WA:162:A:H2'	48:WA:163:A:C8	2.52	0.45
48:WA:1247:C:H2'	48:WA:1248:G:C8	2.50	0.45
48:WA:1295:G:OP2	48:WA:1295:G:N2	2.36	0.45
48:WA:2413:C:H2'	48:WA:2414:A:H8	1.80	0.45
50:YA:110:U:O2'	50:YA:111:U:O4'	2.34	0.45
51:ZA:1093:A:H2'	51:ZA:1094:C:C6	2.51	0.45
58:GB:7:PHE:HB3	58:GB:10:THR:HG22	1.99	0.45
63:LB:45:LYS:HE2	63:LB:45:LYS:HB2	1.79	0.45
73:VB:59:ILE:HD12	79:BC:3:LEU:HD11	1.97	0.45
1:A:183:GLY:HA2	48:WA:1615:A:H5'	1.99	0.45
3:C:7:LEU:HB3	3:C:21:ASN:HB3	1.98	0.45
3:C:152:LEU:HD23	3:C:251:ILE:HG12	1.98	0.45
10:J:27:GLY:HA2	10:J:68:ILE:HG23	1.97	0.45
29:CA:23:ARG:HG2	29:CA:121:ASN:HA	1.99	0.45
30:DA:78:LEU:HD11	48:WA:2326:C:H4'	1.98	0.45
42:PA:38:PHE:O	42:PA:45:HIS:NE2	2.31	0.45
43:RA:66:ASN:OD1	43:RA:66:ASN:N	2.50	0.45
45:TA:21:A:N1	45:TA:46:G:O2'	2.47	0.45
48:WA:1306:C:H2'	48:WA:1307:C:C6	2.52	0.45
48:WA:2083:C:H2'	48:WA:2084:G:C8	2.51	0.45
51:ZA:671:A:H4'	51:ZA:672:A:H5''	1.99	0.45
51:ZA:917:U:H2'	51:ZA:918:U:C6	2.51	0.45
51:ZA:1486:A:O3'	54:CB:121:ARG:NH2	2.50	0.45
58:GB:39:ASP:N	58:GB:39:ASP:OD1	2.49	0.45
81:DC:33:LYS:HE2	81:DC:34:TYR:CZ	2.51	0.45
83:FC:100:LEU:HD23	83:FC:103:LEU:HD23	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
84:GC:152:SER:N	84:GC:168:CYS:O	2.49	0.45
84:GC:226:HIS:NE2	84:GC:229:THR:OG1	2.48	0.45
2:B:224:LYS:HG2	2:B:340:THR:HB	1.99	0.45
6:F:130:ASN:ND2	48:WA:1729:U:OP1	2.49	0.45
9:I:87:ILE:HG12	9:I:138:ILE:HG12	1.98	0.45
12:L:47:ARG:HH22	12:L:69:ARG:HA	1.81	0.45
19:S:44:GLY:HA2	19:S:95:HIS:HB3	1.99	0.45
48:WA:1685:U:H2'	48:WA:1686:A:C8	2.52	0.45
48:WA:2516:G:O2'	48:WA:2745:A:N6	2.49	0.45
48:WA:3912:C:H2'	48:WA:3913:C:C6	2.52	0.45
48:WA:4637:A:O2'	48:WA:4639:G:OP1	2.33	0.45
64:MB:40:LYS:HG2	64:MB:45:ARG:HD2	1.99	0.45
72:UB:32:LEU:HD21	72:UB:87:ARG:HG2	1.98	0.45
1:A:13:GLY:O	1:A:17:ARG:NE	2.35	0.45
48:WA:229:G:H2'	48:WA:230:G:H8	1.82	0.45
48:WA:680:C:H2'	48:WA:681:G:C8	2.51	0.45
48:WA:910:G:H2'	48:WA:911:G:H8	1.82	0.45
48:WA:1474:C:H2'	48:WA:1475:U:C6	2.52	0.45
48:WA:4682:G:H2'	48:WA:4683:A:C8	2.51	0.45
51:ZA:991:G:C6	51:ZA:1134:G:H4'	2.52	0.45
51:ZA:1103:C:H2'	51:ZA:1104:G:C8	2.51	0.45
51:ZA:1716:C:H2'	51:ZA:1717:C:H6	1.81	0.45
69:RB:132:ARG:H	69:RB:132:ARG:HD2	1.81	0.45
74:WB:55:ASP:OD1	74:WB:56:HIS:N	2.47	0.45
84:GC:87:LEU:HD22	84:GC:120:ILE:HD11	1.98	0.45
84:GC:163:PRO:HB2	84:GC:179:LEU:HB3	1.98	0.45
1:A:28:ARG:HB3	1:A:123:ARG:HB3	1.99	0.45
1:A:181:LYS:HB2	48:WA:1579:G:C5	2.52	0.45
1:A:198:ARG:NH2	48:WA:3690:U:OP2	2.50	0.45
48:WA:65:A:N6	48:WA:75:G:H1'	2.32	0.45
48:WA:254:G:H2'	48:WA:255:C:C6	2.51	0.45
48:WA:422:C:H2'	48:WA:423:G:H8	1.81	0.45
48:WA:727:G:H2'	48:WA:728:C:C6	2.52	0.45
48:WA:1848:G:H2'	48:WA:1849:C:H6	1.82	0.45
48:WA:1999:U:O2'	86:b:44:ARG:NH2	2.50	0.45
48:WA:3612:A:O2'	60:IB:92:ARG:NH2	2.50	0.45
48:WA:3875:G:H2'	48:WA:3876:G:C8	2.52	0.45
48:WA:3912:C:H2'	48:WA:3913:C:H6	1.81	0.45
48:WA:4461:U:H2'	48:WA:4462:U:C6	2.52	0.45
48:WA:4663:G:N2	48:WA:5006:C:O3'	2.50	0.45
48:WA:4747:G:H1	48:WA:4957:A:N6	2.15	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:XA:63:C:H5'	49:XA:64:G:H5''	1.98	0.45
51:ZA:1144:A:H2'	51:ZA:1145:A:C8	2.52	0.45
51:ZA:1712:A:H2'	51:ZA:1713:C:C6	2.52	0.45
59:HB:258:GLU:N	59:HB:258:GLU:OE1	2.46	0.45
74:WB:50:PHE:HB3	74:WB:63:VAL:HG13	1.98	0.45
78:AC:11:ALA:HB3	78:AC:33:ASP:HB2	1.98	0.45
3:C:230:LEU:HD21	3:C:239:LYS:HD2	1.99	0.45
11:K:124:LEU:HD11	33:GA:119:TYR:HB2	1.98	0.45
13:M:4:TYR:OH	48:WA:151:G:OP2	2.27	0.45
14:N:65:ASN:OD1	14:N:67:SER:OG	2.25	0.45
19:S:4:THR:O	19:S:9:ARG:NE	2.50	0.45
23:W:52:LEU:HD22	23:W:54:LEU:HD12	1.99	0.45
27:AA:110:ALA:HB1	48:WA:1273:G:H5'	1.98	0.45
30:DA:124:ASN:OD1	30:DA:124:ASN:N	2.49	0.45
43:RA:47:ALA:O	43:RA:50:THR:OG1	2.35	0.45
48:WA:212:A:H2'	48:WA:213:G:H8	1.82	0.45
48:WA:260:C:H2'	48:WA:261:G:C8	2.52	0.45
48:WA:1808:G:H2'	48:WA:1809:C:C6	2.52	0.45
48:WA:3709:U:H2'	48:WA:3710:C:C6	2.52	0.45
51:ZA:128:U:H3'	51:ZA:129:C:C6	2.51	0.45
51:ZA:155:G:H4'	58:GB:15:LEU:HD22	1.98	0.45
53:BB:106:THR:HG22	53:BB:108:ASP:H	1.80	0.45
54:CB:199:PRO:O	54:CB:202:THR:OG1	2.34	0.45
70:SB:120:HIS:CE1	70:SB:124:ARG:HD2	2.52	0.45
88:HC:267:VAL:O	88:HC:305:GLY:N	2.37	0.45
5:E:161:ARG:NH2	48:WA:4947:G:O2'	2.50	0.45
5:E:179:THR:O	5:E:179:THR:OG1	2.35	0.45
13:M:53:TYR:HB2	13:M:133:ILE:HD13	1.99	0.45
13:M:185:GLY:HA2	48:WA:78:U:H5''	1.99	0.45
14:N:121:PRO:HD3	18:R:168:THR:HG22	1.99	0.45
18:R:17:LEU:HD11	19:S:136:ARG:HH21	1.83	0.45
26:Z:117:LEU:HB3	26:Z:140:VAL:HG21	1.99	0.45
44:SA:11:U:H2'	44:SA:12:G:C8	2.52	0.45
48:WA:129:C:H2'	48:WA:130:C:C6	2.52	0.45
48:WA:652:C:H2'	48:WA:653:G:C8	2.52	0.45
48:WA:2001:A:H2'	48:WA:2002:G:C5	2.52	0.45
48:WA:2902:U:H2'	48:WA:2903:G:C8	2.52	0.45
49:XA:11:A:N1	49:XA:66:G:O2'	2.47	0.45
51:ZA:15:U:H2'	51:ZA:16:G:O4'	2.17	0.45
51:ZA:1595:U:OP1	77:ZB:102:LYS:NZ	2.45	0.45
51:ZA:1614:A:H2'	51:ZA:1615:U:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:MB:41:ALA:HA	64:MB:45:ARG:HB2	1.99	0.45
69:RB:73:LEU:O	69:RB:76:GLU:HG3	2.16	0.45
75:XB:52:LEU:HD11	75:XB:71:ARG:HD3	1.99	0.45
84:GC:124:SER:OG	84:GC:125:ARG:N	2.50	0.45
3:C:192:GLY:O	3:C:195:LYS:NZ	2.50	0.44
7:G:159:THR:HG22	7:G:248:HIS:NE2	2.33	0.44
24:X:91:ASN:OD1	24:X:92:GLY:N	2.50	0.44
46:UA:12:G:H2'	46:UA:13:U:O4'	2.16	0.44
46:UA:43:A:H3'	46:UA:44:A:C8	2.52	0.44
48:WA:251:C:H2'	48:WA:252:C:C6	2.52	0.44
48:WA:520:C:H2'	48:WA:521:U:C5	2.52	0.44
48:WA:2609:C:H2'	48:WA:2610:G:H8	1.83	0.44
48:WA:3857:C:H2'	48:WA:3858:A:H8	1.81	0.44
48:WA:4962:G:H2'	48:WA:4963:G:C8	2.51	0.44
49:XA:12:U:OP2	49:XA:67:C:O2'	2.35	0.44
51:ZA:568:C:H42	51:ZA:582:U:H3	1.63	0.44
51:ZA:743:U:H3	51:ZA:798:G:N2	2.14	0.44
52:AB:157:VAL:O	73:VB:65:SER:OG	2.33	0.44
52:AB:158:ASP:OD1	73:VB:60:ARG:NH1	2.43	0.44
54:CB:108:LYS:HB2	54:CB:233:LEU:HD22	1.98	0.44
56:EB:175:PHE:HE1	56:EB:198:ARG:HD2	1.82	0.44
69:RB:17:ILE:HD11	69:RB:54:VAL:HA	1.99	0.44
86:b:128:THR:OG1	86:b:129:GLY:N	2.44	0.44
48:WA:2610:G:H2'	48:WA:2611:G:H8	1.82	0.44
48:WA:2760:G:H2'	48:WA:2761:G:C8	2.52	0.44
48:WA:4565:U:C2	48:WA:4566:A:C8	3.05	0.44
48:WA:4752:G:H2'	48:WA:4753:G:H8	1.81	0.44
50:YA:153:C:H2'	50:YA:154:G:H8	1.83	0.44
51:ZA:1230:C:H2'	51:ZA:1231:C:H6	1.82	0.44
51:ZA:1440:C:O2'	51:ZA:1441:U:O4'	2.35	0.44
51:ZA:1576:G:H2'	51:ZA:1577:G:C8	2.53	0.44
53:BB:180:ASP:OD1	53:BB:180:ASP:N	2.49	0.44
57:FB:142:SER:HB2	80:CC:50:VAL:HG22	1.98	0.44
60:IB:26:LYS:O	60:IB:29:LEU:HB2	2.17	0.44
2:B:282:LYS:NZ	48:WA:4676:C:O2'	2.49	0.44
48:WA:1174:G:H2'	48:WA:1175:G:C8	2.53	0.44
48:WA:3724:G:H2'	48:WA:3725:A:C8	2.52	0.44
48:WA:3870:G:H22	48:WA:3902:G:H1'	1.83	0.44
51:ZA:1198:G:H2'	51:ZA:1199:A:C8	2.52	0.44
51:ZA:1383:A:H4'	55:DB:194:LEU:HG	1.99	0.44
51:ZA:1419:C:H4'	51:ZA:1420:G:C2	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:ZA:1780:G:H2'	51:ZA:1781:A:C8	2.52	0.44
51:ZA:1802:C:H2'	51:ZA:1803:U:C6	2.53	0.44
62:KB:60:GLU:OE1	62:KB:69:TRP:NE1	2.42	0.44
68:QB:106:GLN:O	68:QB:110:ILE:HG22	2.17	0.44
70:SB:125:HIS:CE1	70:SB:131:VAL:HG21	2.52	0.44
15:O:151:ALA:HB3	15:O:172:PRO:HG2	2.00	0.44
35:IA:44:LYS:N	48:WA:22:G:OP1	2.42	0.44
48:WA:1781:U:H2'	48:WA:1782:A:C8	2.53	0.44
48:WA:2851:A:O2'	48:WA:2857:G:N7	2.46	0.44
51:ZA:495:U:O2'	56:EB:27:PHE:O	2.32	0.44
51:ZA:1643:U:H2'	51:ZA:1644:C:C6	2.52	0.44
51:ZA:1778:C:H2'	51:ZA:1779:G:C8	2.52	0.44
54:CB:196:ILE:HB	54:CB:223:TYR:HB2	2.00	0.44
54:CB:214:LEU:HD22	54:CB:219:ILE:HD12	1.99	0.44
56:EB:128:LYS:HG2	56:EB:140:VAL:HB	1.99	0.44
59:HB:274:LEU:HD21	59:HB:316:ARG:HD2	1.99	0.44
66:OB:34:PHE:HB3	66:OB:41:PHE:HB2	1.99	0.44
86:b:59:THR:OG1	86:b:60:MET:SD	2.75	0.44
88:HC:286:THR:O	88:HC:452:THR:OG1	2.33	0.44
88:HC:363:CYS:HB3	88:HC:424:PHE:HB3	1.98	0.44
2:B:286:LYS:HB3	2:B:332:MET:HB3	2.00	0.44
11:K:64:VAL:HG12	48:WA:71:C:H4'	1.99	0.44
13:M:8:GLN:NE2	48:WA:279:A:OP2	2.49	0.44
25:Y:22:LYS:NZ	25:Y:129:TRP:O	2.49	0.44
25:Y:41:ALA:HB2	25:Y:77:TYR:HE1	1.83	0.44
30:DA:82:VAL:HG13	30:DA:114:ARG:HG2	1.99	0.44
37:KA:36:ARG:NH2	48:WA:413:G:O4'	2.51	0.44
43:RA:137:GLN:HE21	43:RA:137:GLN:HB3	1.59	0.44
48:WA:56:A:H2'	48:WA:57:G:C8	2.53	0.44
48:WA:677:C:H2'	48:WA:678:G:H8	1.83	0.44
48:WA:961:A:N6	48:WA:1285:G:H1'	2.33	0.44
48:WA:3738:A:H2'	48:WA:3739:A:C8	2.52	0.44
48:WA:3877:G:N1	48:WA:3881:G:OP1	2.45	0.44
48:WA:4230:G:O2'	48:WA:4375:G:O6	2.33	0.44
48:WA:4644:U:H2'	48:WA:4645:G:H8	1.82	0.44
51:ZA:152:U:O4'	58:GB:132:ARG:NH1	2.51	0.44
51:ZA:527:C:H4'	61:JB:121:LYS:HD2	1.98	0.44
51:ZA:1656:G:O6	51:ZA:1668:U:O4	2.35	0.44
62:KB:37:ASP:OD1	62:KB:37:ASP:N	2.51	0.44
72:UB:46:LYS:HD3	72:UB:97:ILE:HG22	1.99	0.44
21:U:107:ASN:HD21	21:U:111:GLU:HB2	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:X:109:LEU:HD22	24:X:115:ARG:HH12	1.83	0.44
25:Y:25:ILE:HA	25:Y:43:VAL:HG12	1.98	0.44
33:GA:109:ARG:HH22	48:WA:267:G:P	2.41	0.44
34:HA:68:ARG:NH2	34:HA:71:LYS:HD2	2.33	0.44
48:WA:7:C:H2'	48:WA:8:U:C6	2.53	0.44
48:WA:190:G:H2'	48:WA:191:G:H8	1.82	0.44
48:WA:971:A:H5'	48:WA:972:C:H2'	1.98	0.44
48:WA:1263:G:H2'	48:WA:1264:G:H8	1.83	0.44
48:WA:1311:C:H2'	48:WA:1312:C:C6	2.52	0.44
48:WA:1444:C:N3	48:WA:1445:A:N6	2.65	0.44
48:WA:1506:G:H2'	48:WA:1507:C:C6	2.52	0.44
48:WA:1848:G:H2'	48:WA:1849:C:C6	2.53	0.44
48:WA:4942:C:H5'	48:WA:4943:G:H5''	1.99	0.44
49:XA:92:C:H2'	49:XA:93:G:C8	2.50	0.44
50:YA:102:G:OP2	50:YA:104:A:O2'	2.26	0.44
51:ZA:219:U:H2'	51:ZA:220:U:C6	2.53	0.44
51:ZA:1112:U:H2'	51:ZA:1113:A:C8	2.53	0.44
51:ZA:1688:C:H2'	51:ZA:1689:C:H6	1.83	0.44
57:FB:55:ARG:HG2	68:QB:151:ARG:HD3	1.99	0.44
58:GB:2:LYS:HD3	58:GB:15:LEU:HD21	1.99	0.44
61:JB:29:LEU:HB3	82:EC:115:PHE:HE2	1.83	0.44
5:E:48:ARG:HG2	48:WA:986:U:OP1	2.17	0.44
6:F:148:SER:OG	6:F:244:ARG:NH2	2.46	0.44
6:F:221:LYS:HB3	6:F:230:GLY:HA2	1.99	0.44
9:I:88:ARG:HH21	9:I:173:PHE:HD2	1.64	0.44
12:L:12:VAL:O	12:L:58:THR:OG1	2.25	0.44
29:CA:68:LEU:HA	29:CA:108:TYR:HB2	2.00	0.44
48:WA:6:C:H2'	48:WA:7:C:H6	1.83	0.44
48:WA:65:A:H61	48:WA:75:G:H1'	1.82	0.44
48:WA:424:U:H2'	48:WA:425:U:C6	2.53	0.44
48:WA:1300:C:H2'	48:WA:1301:G:C8	2.53	0.44
48:WA:1678:C:N4	48:WA:4380:A:H2'	2.32	0.44
48:WA:1874:G:O2'	48:WA:4221:A:N3	2.48	0.44
48:WA:2092:U:OP1	48:WA:2268:C:N4	2.51	0.44
48:WA:3873:A:H2'	48:WA:3874:A:C8	2.52	0.44
48:WA:4738:C:H42	48:WA:4966:C:H42	1.66	0.44
48:WA:4977:G:O2'	48:WA:4979:A:N6	2.47	0.44
51:ZA:12:U:H2'	51:ZA:13:C:H6	1.83	0.44
56:EB:126:VAL:HA	56:EB:141:THR:HA	1.99	0.44
73:VB:73:ALA:HB1	73:VB:78:ILE:HB	1.99	0.44
1:A:230:PRO:HG2	1:A:233:ARG:HB3	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:82:PRO:HG3	2:B:171:LEU:HD21	2.00	0.44
9:I:66:GLU:OE1	9:I:69:ARG:NH1	2.50	0.44
9:I:116:ARG:HH12	48:WA:4201:C:H42	1.66	0.44
16:P:181:ARG:NH2	48:WA:4368:A:OP1	2.50	0.44
46:UA:64:G:H2'	46:UA:65:G:H8	1.82	0.44
48:WA:1302:G:H2'	48:WA:1303:C:C6	2.52	0.44
48:WA:1496:U:H2'	48:WA:1497:G:H8	1.83	0.44
48:WA:1727:U:H2'	48:WA:1728:U:C6	2.52	0.44
48:WA:2560:C:H2'	48:WA:2561:G:H8	1.81	0.44
48:WA:2589:A:O2'	48:WA:2590:C:O4'	2.33	0.44
48:WA:2640:G:H1	48:WA:2699:A:H61	1.66	0.44
48:WA:5032:U:H2'	48:WA:5033:G:H8	1.83	0.44
51:ZA:77:A:H2	58:GB:175:LYS:HG3	1.83	0.44
51:ZA:929:G:H2'	51:ZA:930:C:O4'	2.18	0.44
52:AB:124:VAL:HG21	52:AB:134:LEU:HD21	1.99	0.44
53:BB:126:ASP:N	53:BB:126:ASP:OD1	2.51	0.44
54:CB:128:VAL:HG11	54:CB:155:ILE:HG12	1.99	0.44
55:DB:134:LEU:HD12	55:DB:236:ILE:HG12	2.00	0.44
59:HB:318:VAL:HG23	59:HB:330:VAL:HG13	2.00	0.44
67:PB:81:ARG:NH1	67:PB:120:SER:OG	2.51	0.44
75:XB:39:ASN:OD1	75:XB:42:GLY:N	2.50	0.44
88:HC:382:ARG:HD3	88:HC:382:ARG:HA	1.76	0.44
1:A:82:ILE:HD11	1:A:99:GLY:HA3	2.00	0.44
2:B:384:GLU:OE2	22:V:14:TYR:OH	2.30	0.44
12:L:86:TRP:O	12:L:89:THR:OG1	2.34	0.44
16:P:79:THR:HB	16:P:136:THR:HG22	1.99	0.44
19:S:5:LYS:HD2	48:WA:4304:U:H4'	2.00	0.44
48:WA:325:U:H2'	48:WA:326:C:C6	2.53	0.44
48:WA:460:C:H2'	48:WA:461:G:H8	1.83	0.44
48:WA:677:C:H2'	48:WA:678:G:C8	2.52	0.44
48:WA:1678:C:H41	48:WA:4380:A:H2'	1.82	0.44
48:WA:2664:G:H2'	48:WA:2665:G:H8	1.83	0.44
51:ZA:375:U:H2'	51:ZA:376:A:C8	2.53	0.44
51:ZA:1236:G:O2'	67:PB:131:PRO:O	2.26	0.44
54:CB:199:PRO:HG3	61:JB:58:ARG:HD3	1.99	0.44
4:D:176:SER:HB3	48:WA:4325:A:H4'	2.00	0.43
22:V:46:PRO:HB2	22:V:54:LEU:HD12	1.99	0.43
28:BA:50:ASN:OD1	28:BA:51:ASN:N	2.51	0.43
45:TA:41:U:H4'	57:FB:198:ARG:HD3	2.00	0.43
48:WA:1414:G:H2'	48:WA:1415:C:C6	2.53	0.43
48:WA:2297:C:H2'	48:WA:2298:G:C8	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:WA:4391:C:H2'	48:WA:4392:A:C8	2.53	0.43
48:WA:4920:C:H2'	48:WA:4921:G:C8	2.50	0.43
51:ZA:921:G:C5	74:WB:28:ARG:HD3	2.53	0.43
60:IB:89:GLU:O	60:IB:93:THR:HG22	2.18	0.43
77:ZB:79:ILE:HB	77:ZB:83:LEU:HD23	2.00	0.43
88:HC:392:LYS:HG3	88:HC:393:PHE:CD2	2.53	0.43
6:F:189:LEU:HD21	6:F:207:LEU:HD21	2.00	0.43
6:F:240:ASN:O	6:F:244:ARG:HG2	2.17	0.43
8:H:103:VAL:HG11	8:H:144:LEU:HD21	1.99	0.43
10:J:84:GLU:OE2	10:J:92:TYR:OH	2.27	0.43
11:K:87:HIS:HB3	11:K:90:VAL:HG23	2.00	0.43
20:T:80:LYS:HG2	20:T:110:TYR:CE2	2.53	0.43
20:T:84:LYS:HB2	20:T:110:TYR:CE2	2.53	0.43
30:DA:67:LYS:HG2	30:DA:68:HIS:CD2	2.54	0.43
40:NA:52:THR:HG22	48:WA:43:U:H4'	2.00	0.43
48:WA:475:G:H2'	48:WA:476:G:C8	2.53	0.43
48:WA:1087:C:H2'	48:WA:1088:C:C6	2.54	0.43
48:WA:4072:U:H2'	48:WA:4073:U:C6	2.53	0.43
51:ZA:3:C:O2	61:JB:17:ARG:NH2	2.49	0.43
51:ZA:202:G:H2'	51:ZA:203:G:C8	2.53	0.43
59:HB:336:ARG:HD2	59:HB:363:VAL:HG23	2.00	0.43
2:B:252:ALA:HB1	48:WA:4526:G:C2	2.52	0.43
3:C:13:GLU:OE1	3:C:161:TYR:OH	2.27	0.43
4:D:136:ASP:OD1	4:D:136:ASP:N	2.47	0.43
9:I:86:HIS:HB3	9:I:139:ARG:HG2	2.00	0.43
10:J:112:HIS:HD1	10:J:126:TYR:H	1.66	0.43
17:Q:99:MET:HB3	17:Q:103:ARG:NH1	2.33	0.43
18:R:95:ARG:NH2	48:WA:1953:G:O2'	2.51	0.43
34:HA:31:GLY:HA3	48:WA:310:G:C4	2.53	0.43
48:WA:2628:U:H1'	48:WA:2631:C:H41	1.83	0.43
48:WA:2650:G:H2'	48:WA:2651:G:H8	1.83	0.43
48:WA:4128:C:H5''	48:WA:4129:A:H5''	2.00	0.43
48:WA:4652:G:H4'	48:WA:5010:C:H4'	2.00	0.43
51:ZA:65:C:C2	58:GB:133:LEU:HD22	2.53	0.43
51:ZA:1093:A:O3'	74:WB:28:ARG:NH2	2.51	0.43
51:ZA:1671:G:H2'	51:ZA:1672:U:C6	2.53	0.43
51:ZA:1803:U:H2'	51:ZA:1804:U:C6	2.54	0.43
57:FB:18:LYS:HE3	57:FB:46:ALA:HB3	2.01	0.43
59:HB:285:ALA:HB3	59:HB:301:PHE:HB2	2.01	0.43
66:OB:142:ARG:O	78:AC:22:ARG:NH1	2.51	0.43
75:XB:94:ILE:HG12	75:XB:125:VAL:HG21	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
84:GC:164:ILE:HG23	84:GC:176:VAL:HG13	2.00	0.43
6:F:181:TYR:CZ	6:F:202:GLU:HG2	2.52	0.43
9:I:51:HIS:HD2	9:I:168:SER:HB2	1.84	0.43
17:Q:95:TRP:CE2	48:WA:1574:U:H4'	2.54	0.43
22:V:20:ARG:HD3	22:V:30:GLN:HG3	2.01	0.43
30:DA:33:ARG:NE	48:WA:1305:A:N3	2.67	0.43
36:JA:29:LYS:HB2	36:JA:29:LYS:HE3	1.85	0.43
45:TA:50:A:H2'	45:TA:51:G:H8	1.83	0.43
48:WA:425:U:H2'	48:WA:426:A:C8	2.53	0.43
48:WA:469:C:H2'	48:WA:470:A:C8	2.54	0.43
48:WA:1266:C:H2'	48:WA:1267:G:C8	2.53	0.43
48:WA:1398:G:O2'	48:WA:1470:C:O2'	2.31	0.43
48:WA:2287:A:H2'	48:WA:2288:G:H8	1.83	0.43
48:WA:4580:G:H2'	48:WA:4581:U:C6	2.53	0.43
51:ZA:419:G:N2	51:ZA:661:U:O2	2.51	0.43
51:ZA:1408:U:H2'	51:ZA:1409:A:C8	2.54	0.43
73:VB:10:ASP:N	73:VB:10:ASP:OD1	2.51	0.43
86:b:69:LEU:HD22	86:b:73:PRO:HA	1.99	0.43
2:B:31:SER:OG	48:WA:4716:C:OP1	2.30	0.43
3:C:140:LYS:HE3	3:C:245:HIS:HB2	2.00	0.43
16:P:75:ARG:HA	16:P:78:LYS:HD3	2.00	0.43
20:T:29:VAL:HG21	20:T:68:SER:HB2	1.99	0.43
48:WA:416:U:H4'	48:WA:2332:G:H4'	2.01	0.43
48:WA:1734:C:H2'	48:WA:1735:G:C8	2.54	0.43
48:WA:1812:G:H1	48:WA:1830:C:H42	1.65	0.43
48:WA:2664:G:H2'	48:WA:2665:G:C8	2.54	0.43
51:ZA:610:G:H2'	51:ZA:611:G:H8	1.82	0.43
51:ZA:1809:A:H2'	51:ZA:1810:U:C6	2.54	0.43
51:ZA:1855:G:OP2	66:OB:147:ARG:NH1	2.51	0.43
53:BB:146:ARG:HB2	53:BB:149:GLN:HB2	2.01	0.43
55:DB:178:GLY:HA3	55:DB:220:LEU:HD12	2.01	0.43
57:FB:30:ILE:HB	57:FB:36:GLN:HG2	2.01	0.43
64:MB:81:ASP:HB3	64:MB:84:LYS:HB2	2.01	0.43
74:WB:14:ILE:HG22	74:WB:25:VAL:HG11	1.99	0.43
77:ZB:92:LEU:HD22	77:ZB:109:TYR:HE1	1.84	0.43
8:H:59:LYS:HE2	8:H:66:GLU:HB3	2.00	0.43
12:L:46:ARG:HH11	48:WA:942:U:H5	1.66	0.43
14:N:14:HIS:CE1	14:N:119:VAL:HG13	2.53	0.43
14:N:51:LYS:NZ	14:N:144:GLU:OE1	2.37	0.43
16:P:54:SER:OG	16:P:57:ASN:OD1	2.28	0.43
16:P:104:ARG:NH2	48:WA:1355:G:N7	2.65	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:P:179:GLY:H	26:Z:51:GLY:HA2	1.84	0.43
17:Q:102:LEU:HD22	17:Q:138:LEU:HD22	2.00	0.43
30:DA:107:ASN:OD1	30:DA:107:ASN:N	2.52	0.43
31:EA:3:GLY:O	48:WA:4947:G:N1	2.50	0.43
48:WA:1346:C:H2'	48:WA:1347:A:C8	2.53	0.43
48:WA:1619:G:H1'	48:WA:2515:A:N6	2.33	0.43
48:WA:4171:G:H4'	48:WA:4173:C:C2	2.53	0.43
48:WA:4770:G:H2'	48:WA:4771:G:H8	1.75	0.43
51:ZA:14:C:H2'	51:ZA:15:U:C6	2.53	0.43
51:ZA:618:C:H2'	51:ZA:619:A:O4'	2.19	0.43
51:ZA:649:U:H2'	51:ZA:650:A:C8	2.50	0.43
51:ZA:1221:G:H2'	51:ZA:1222:G:C8	2.53	0.43
52:AB:127:PRO:HG3	52:AB:146:ALA:HB1	1.99	0.43
58:GB:50:VAL:HG11	58:GB:111:LEU:HD13	2.01	0.43
80:CC:33:GLU:HG2	80:CC:41:SER:HB3	2.01	0.43
1:A:243:THR:HB	48:WA:3750:A:H5''	2.00	0.43
2:B:240:LEU:HB3	2:B:244:THR:HG21	2.00	0.43
12:L:10:GLY:O	12:L:62:LEU:N	2.39	0.43
25:Y:25:ILE:HG12	25:Y:43:VAL:HG12	2.00	0.43
35:IA:34:CYS:HB3	35:IA:39:TYR:H	1.84	0.43
44:SA:25:C:H2'	44:SA:26:A:H8	1.84	0.43
48:WA:325:U:H2'	48:WA:326:C:H6	1.84	0.43
48:WA:2732:U:H2'	48:WA:2733:C:C6	2.54	0.43
48:WA:3913:C:H2'	48:WA:3914:U:C6	2.53	0.43
49:XA:3:C:H2'	49:XA:4:U:C6	2.54	0.43
49:XA:3:C:H2'	49:XA:4:U:H6	1.84	0.43
50:YA:141:C:H2'	50:YA:142:U:C6	2.54	0.43
51:ZA:674:C:H2'	51:ZA:675:U:C6	2.54	0.43
51:ZA:909:G:H2'	51:ZA:910:G:H8	1.83	0.43
51:ZA:1617:G:N2	51:ZA:1619:A:H3'	2.34	0.43
51:ZA:1862:G:N2	78:AC:76:SER:OG	2.52	0.43
54:CB:116:THR:OG1	54:CB:117:ARG:N	2.52	0.43
60:IB:157:LYS:NZ	60:IB:158:ILE:O	2.48	0.43
61:JB:111:GLN:HE21	61:JB:123:ILE:HG22	1.84	0.43
62:KB:22:VAL:HG22	62:KB:68:TYR:HD1	1.83	0.43
70:SB:60:THR:OG1	70:SB:62:ASP:OD1	2.30	0.43
71:TB:113:VAL:HG12	71:TB:123:LEU:HD23	2.01	0.43
86:b:47:LEU:HD13	86:b:51:ALA:HB3	2.01	0.43
1:A:30:ARG:O	1:A:163:ARG:NH2	2.50	0.43
41:OA:44:LYS:NZ	48:WA:2674:C:OP1	2.38	0.43
48:WA:1492:G:H2'	48:WA:1493:A:H8	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:WA:2097:A:H2'	48:WA:2098:G:C8	2.54	0.43
48:WA:2449:U:H2'	48:WA:2450:G:H8	1.83	0.43
48:WA:2609:C:H2'	48:WA:2610:G:C8	2.54	0.43
48:WA:3935:G:H2'	48:WA:3936:G:H8	1.83	0.43
48:WA:4265:C:H2'	48:WA:4266:G:O4'	2.19	0.43
51:ZA:28:U:H2'	51:ZA:29:G:H8	1.84	0.43
51:ZA:54:A:OP1	76:YB:111:LYS:NZ	2.34	0.43
51:ZA:681:U:H4'	75:XB:9:THR:HG22	1.99	0.43
51:ZA:1048:G:H21	51:ZA:1070:A:H62	1.66	0.43
51:ZA:1201:U:H2'	51:ZA:1202:U:C6	2.54	0.43
51:ZA:1513:C:H2'	51:ZA:1514:G:C8	2.52	0.43
51:ZA:1654:G:H2'	51:ZA:1655:C:C6	2.54	0.43
54:CB:72:ASP:OD2	54:CB:272:HIS:NE2	2.48	0.43
58:GB:58:LYS:HA	58:GB:107:SER:HB2	2.00	0.43
78:AC:44:ILE:HG21	78:AC:65:PRO:HG2	2.01	0.43
11:K:169:ILE:HG12	26:Z:123:ILE:HD11	2.01	0.43
15:O:91:ARG:NH1	48:WA:423:G:OP1	2.49	0.43
32:FA:9:ARG:HG2	32:FA:34:TYR:CZ	2.54	0.43
33:GA:89:ARG:O	33:GA:93:ARG:HG2	2.18	0.43
35:IA:55:ARG:NH2	48:WA:364:G:O6	2.48	0.43
40:NA:3:ASN:HA	40:NA:92:GLU:HG3	1.99	0.43
48:WA:92:C:OP2	48:WA:4343:C:O2'	2.33	0.43
48:WA:229:G:H2'	48:WA:230:G:C8	2.53	0.43
48:WA:1249:U:O4	48:WA:1268:G:O6	2.37	0.43
48:WA:1255:G:H1	48:WA:1262:G:N2	2.17	0.43
48:WA:2310:A:H4'	48:WA:2336:C:H4'	2.01	0.43
48:WA:2618:C:H2'	48:WA:2619:G:H8	1.84	0.43
48:WA:4993:U:H2'	48:WA:4994:G:C8	2.53	0.43
50:YA:66:A:H2'	50:YA:67:U:C6	2.54	0.43
51:ZA:12:U:H2'	51:ZA:13:C:C6	2.54	0.43
51:ZA:495:U:H2'	51:ZA:496:C:O4'	2.19	0.43
51:ZA:527:C:O2'	61:JB:121:LYS:NZ	2.40	0.43
51:ZA:1461:G:O2'	51:ZA:1465:A:N6	2.51	0.43
51:ZA:1488:C:H3'	51:ZA:1489:A:H4'	2.00	0.43
51:ZA:1498:A:OP2	55:DB:65:ARG:NH2	2.47	0.43
51:ZA:1563:G:H5''	71:TB:121:ARG:NH1	2.34	0.43
55:DB:80:THR:HG21	72:UB:106:ILE:HD12	2.01	0.43
62:KB:1:MET:HG3	62:KB:47:LYS:HG3	2.01	0.43
64:MB:33:ARG:HH11	64:MB:91:LEU:HD13	1.82	0.43
72:UB:98:VAL:HG23	72:UB:101:ILE:HD11	2.00	0.43
1:A:10:LYS:NZ	48:WA:3689:A:OP2	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:132:LYS:NZ	48:WA:4730:U:OP1	2.44	0.43
7:G:119:GLN:HG3	13:M:28:TRP:CH2	2.54	0.43
23:W:88:LYS:HA	23:W:91:GLU:HG2	2.01	0.43
25:Y:73:LYS:HD3	25:Y:75:TYR:CZ	2.54	0.43
28:BA:38:ILE:HD11	28:BA:46:VAL:HG21	2.00	0.43
28:BA:103:ASP:HB3	28:BA:106:ARG:HH21	1.83	0.43
43:RA:146:ARG:O	43:RA:149:HIS:ND1	2.36	0.43
48:WA:478:G:H2'	48:WA:479:G:C8	2.54	0.43
48:WA:1246:G:H2'	48:WA:1247:C:C6	2.54	0.43
48:WA:1428:G:N1	48:WA:1460:C:OP2	2.35	0.43
48:WA:2751:C:H2'	48:WA:2752:G:H8	1.83	0.43
48:WA:3738:A:H2'	48:WA:3739:A:H8	1.84	0.43
48:WA:3863:A:H2'	48:WA:3864:A:C8	2.53	0.43
48:WA:4577:G:N3	48:WA:5070:G:O2'	2.52	0.43
51:ZA:877:C:H2'	51:ZA:878:G:C8	2.54	0.43
58:GB:160:LYS:HD2	58:GB:161:PRO:HD2	2.01	0.43
61:JB:119:LEU:HB2	61:JB:159:PHE:CZ	2.54	0.43
66:OB:31:CYS:HB3	66:OB:44:VAL:HG22	2.01	0.43
13:M:108:ARG:HB2	13:M:161:MET:HE1	2.01	0.42
16:P:67:ILE:HD13	16:P:98:LEU:HD11	2.01	0.42
19:S:28:ALA:HA	19:S:31:MET:HG2	2.00	0.42
26:Z:2:PRO:HG3	48:WA:1511:C:H5''	2.01	0.42
29:CA:39:LYS:HE2	29:CA:40:LYS:HD3	2.01	0.42
48:WA:1343:U:H2'	48:WA:1344:A:C8	2.54	0.42
48:WA:1939:C:OP2	48:WA:1940:C:O2'	2.26	0.42
48:WA:2081:G:H2'	48:WA:2082:U:H6	1.83	0.42
48:WA:2592:G:H1'	48:WA:2758:G:N2	2.34	0.42
48:WA:2665:G:N2	48:WA:2678:A:O2'	2.48	0.42
48:WA:4956:G:H2'	48:WA:4957:A:C8	2.53	0.42
51:ZA:35:C:H5''	51:ZA:579:C:H5''	2.01	0.42
51:ZA:916:A:C6	65:NB:73:ARG:HD3	2.54	0.42
51:ZA:1556:A:H61	81:DC:14:PHE:HB3	1.84	0.42
51:ZA:1585:U:O2'	51:ZA:1587:G:OP2	2.30	0.42
54:CB:109:ILE:HD11	54:CB:151:ILE:HD11	2.01	0.42
56:EB:112:HIS:NE2	56:EB:237:SER:OG	2.46	0.42
57:FB:17:ILE:HG23	57:FB:19:LEU:HD11	2.00	0.42
61:JB:97:ILE:HA	61:JB:100:LEU:HD13	2.01	0.42
75:XB:124:LYS:HG2	75:XB:129:SER:HA	2.01	0.42
2:B:100:ARG:NE	48:WA:4913:A:OP2	2.49	0.42
3:C:71:ARG:HB2	3:C:73:VAL:HG22	2.01	0.42
6:F:99:GLY:HA2	48:WA:1879:G:H4'	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:224:THR:HB	6:F:230:GLY:HA3	2.02	0.42
8:H:66:GLU:O	8:H:69:THR:OG1	2.35	0.42
18:R:35:PRO:HD2	18:R:39:VAL:HG21	2.01	0.42
24:X:2:LYS:HE3	24:X:2:LYS:HB3	1.89	0.42
41:OA:42:CYS:HB3	41:OA:60:CYS:HB2	2.01	0.42
48:WA:741:G:H2'	48:WA:742:G:H8	1.84	0.42
48:WA:2612:G:H2'	48:WA:2613:A:H8	1.84	0.42
48:WA:2626:G:H2'	48:WA:2627:U:H6	1.82	0.42
48:WA:4095:G:H22	48:WA:4117:G:H1	1.66	0.42
49:XA:4:U:H2'	49:XA:5:A:C8	2.54	0.42
51:ZA:1103:C:H2'	51:ZA:1104:G:H8	1.84	0.42
51:ZA:1617:G:N7	67:PB:47:ARG:NH1	2.67	0.42
65:NB:3:ARG:HB2	65:NB:6:ALA:HB3	2.01	0.42
86:b:112:ARG:NE	86:b:121:VAL:HG11	2.34	0.42
1:A:210:PRO:HG2	1:A:235:VAL:HG11	2.01	0.42
2:B:2:SER:N	48:WA:4522:G:H5'	2.33	0.42
5:E:146:SER:OG	31:EA:110:ILE:O	2.30	0.42
24:X:57:VAL:HB	24:X:63:LYS:HA	2.00	0.42
48:WA:127:G:H2'	48:WA:128:C:C6	2.55	0.42
48:WA:306:A:H2'	48:WA:307:A:C8	2.54	0.42
48:WA:1310:C:H2'	48:WA:1311:C:C6	2.54	0.42
48:WA:1647:C:H2'	48:WA:1648:A:C8	2.53	0.42
48:WA:2000:A:H1'	48:WA:2021:C:O2'	2.20	0.42
48:WA:2266:C:H2'	48:WA:2267:G:O4'	2.18	0.42
48:WA:2376:A:H2'	48:WA:2377:A:C8	2.55	0.42
48:WA:3709:U:H2'	48:WA:3710:C:H6	1.84	0.42
48:WA:4063:C:H2'	48:WA:4064:A:C8	2.54	0.42
48:WA:4091:G:H2'	48:WA:4092:G:H8	1.84	0.42
48:WA:4322:G:H2'	48:WA:4323:U:C6	2.55	0.42
48:WA:4454:U:H3	48:WA:4533:U:H3	1.67	0.42
51:ZA:1407:U:H2'	51:ZA:1408:U:C6	2.54	0.42
51:ZA:1842:C:H2'	51:ZA:1843:G:C8	2.54	0.42
52:AB:130:ASP:C	52:AB:133:PRO:HD2	2.44	0.42
53:BB:144:LYS:HD3	53:BB:208:HIS:HB3	2.01	0.42
55:DB:93:THR:HA	55:DB:96:VAL:HG12	2.01	0.42
84:GC:5:MET:HE3	84:GC:310:TRP:HB3	2.00	0.42
2:B:317:LEU:HB3	48:WA:5003:U:H4'	2.01	0.42
3:C:13:GLU:OE2	3:C:157:LYS:NZ	2.45	0.42
10:J:166:PHE:CE2	10:J:172:GLY:HA3	2.54	0.42
18:R:15:ARG:HH12	18:R:18:PRO:HG3	1.84	0.42
22:V:89:ASP:N	22:V:89:ASP:OD1	2.51	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:X:121:ARG:NH1	48:WA:194:C:O2'	2.41	0.42
32:FA:25:THR:HG23	32:FA:27:GLY:H	1.84	0.42
48:WA:913:U:H2'	48:WA:914:G:O4'	2.19	0.42
48:WA:2000:A:O2'	48:WA:2001:A:O4'	2.32	0.42
48:WA:2311:G:O2'	50:YA:18:U:O2	2.37	0.42
48:WA:2751:C:H2'	48:WA:2752:G:C8	2.55	0.42
48:WA:3672:C:H2'	48:WA:3673:G:C8	2.55	0.42
48:WA:4568:U:H2'	48:WA:4569:G:O4'	2.20	0.42
51:ZA:21:U:O2'	61:JB:17:ARG:O	2.37	0.42
51:ZA:162:C:H5''	58:GB:87:ARG:HH22	1.84	0.42
51:ZA:309:G:OP2	60:IB:55:TYR:OH	2.36	0.42
51:ZA:1202:U:H2'	51:ZA:1203:G:H8	1.84	0.42
51:ZA:1268:C:O2	67:PB:97:TYR:OH	2.37	0.42
51:ZA:1403:C:H42	51:ZA:1432:U:P	2.41	0.42
52:AB:89:LYS:NZ	69:RB:83:ASN:OD1	2.44	0.42
52:AB:109:THR:OG1	52:AB:136:GLU:OE1	2.31	0.42
54:CB:108:LYS:HD2	54:CB:233:LEU:HD13	2.01	0.42
71:TB:42:HIS:NE2	71:TB:43:LYS:HE3	2.35	0.42
1:A:219:ILE:HD11	48:WA:3691:G:H5'	2.01	0.42
3:C:159:GLU:HA	3:C:217:ILE:HB	2.02	0.42
4:D:36:LEU:HG	4:D:50:ARG:HD2	2.01	0.42
7:G:213:ASP:OD1	7:G:213:ASP:N	2.48	0.42
12:L:80:ALA:O	12:L:85:LYS:NZ	2.37	0.42
22:V:112:ALA:O	22:V:116:LYS:HG2	2.20	0.42
33:GA:84:ARG:NH2	48:WA:17:A:OP1	2.34	0.42
48:WA:2335:G:OP1	50:YA:20:A:O2'	2.38	0.42
51:ZA:85:A:H2'	51:ZA:86:C:H6	1.84	0.42
51:ZA:525:A:H2'	51:ZA:526:A:H8	1.85	0.42
52:AB:137:ALA:HA	52:AB:142:LEU:HB3	2.00	0.42
70:SB:22:GLY:HA2	70:SB:56:ALA:HB3	2.01	0.42
71:TB:7:LYS:HA	71:TB:11:GLN:HE22	1.85	0.42
84:GC:300:ALA:HB3	84:GC:310:TRP:HZ3	1.84	0.42
88:HC:240:ARG:HA	88:HC:241:PRO:HD3	1.91	0.42
88:HC:410:MET:HE2	88:HC:410:MET:HB3	1.93	0.42
3:C:218:VAL:O	3:C:222:ARG:HB3	2.19	0.42
5:E:175:LEU:HD21	48:WA:4943:G:C5	2.55	0.42
8:H:18:ILE:HG12	8:H:27:VAL:HG22	2.01	0.42
19:S:75:VAL:HG22	19:S:88:ARG:HG2	2.01	0.42
24:X:27:ARG:HB2	24:X:75:ARG:CZ	2.48	0.42
36:JA:24:LYS:HE2	36:JA:69:LEU:HD11	2.02	0.42
43:RA:76:SER:OG	48:WA:1976:U:OP1	2.37	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:WA:494:G:H2'	48:WA:495:C:C6	2.54	0.42
48:WA:712:A:H2'	48:WA:713:C:C6	2.55	0.42
48:WA:1348:C:H2'	48:WA:1349:G:C8	2.54	0.42
48:WA:1664:C:H2'	48:WA:1665:C:H6	1.84	0.42
48:WA:2561:G:H2'	48:WA:2562:C:C6	2.54	0.42
48:WA:3767:G:OP1	48:WA:3812:C:N4	2.53	0.42
48:WA:4156:G:H2'	48:WA:4157:C:C6	2.54	0.42
48:WA:4910:G:H1'	48:WA:4915:G:H22	1.85	0.42
48:WA:5015:C:H4'	48:WA:5016:A:H5''	2.01	0.42
51:ZA:21:U:H2'	51:ZA:22:A:C8	2.55	0.42
51:ZA:388:U:H2'	51:ZA:389:A:C8	2.55	0.42
51:ZA:1318:G:H2'	51:ZA:1319:U:C6	2.54	0.42
66:OB:33:ILE:HD11	66:OB:119:LEU:HD21	2.02	0.42
69:RB:37:GLU:HG3	84:GC:150:TRP:HE1	1.83	0.42
70:SB:20:ILE:HD11	70:SB:33:ILE:HG13	2.01	0.42
2:B:122:TRP:CH2	2:B:127:LYS:HG2	2.54	0.42
8:H:89:ARG:NH1	8:H:147:GLU:OE2	2.53	0.42
11:K:60:ARG:NH2	48:WA:72:C:N3	2.67	0.42
43:RA:9:GLU:O	43:RA:65:GLN:NE2	2.53	0.42
46:UA:70:A:H2'	46:UA:71:A:O4'	2.20	0.42
48:WA:281:U:H2'	48:WA:282:C:H6	1.84	0.42
48:WA:1690:G:H2'	48:WA:1691:G:C8	2.54	0.42
48:WA:2701:C:H2'	48:WA:2702:G:H8	1.83	0.42
51:ZA:193:C:H2'	51:ZA:194:C:H6	1.85	0.42
51:ZA:1648:G:H22	51:ZA:1675:A:P	2.42	0.42
53:BB:94:LYS:HD2	53:BB:94:LYS:HA	1.90	0.42
58:GB:148:SER:OG	58:GB:151:ASP:OD2	2.33	0.42
70:SB:89:ASP:OD1	70:SB:89:ASP:N	2.51	0.42
75:XB:90:CYS:HB3	75:XB:130:LEU:HD11	2.02	0.42
84:GC:73:SER:OG	84:GC:117:ASN:ND2	2.39	0.42
86:b:112:ARG:HE	86:b:121:VAL:HG11	1.84	0.42
86:b:125:ALA:HA	86:b:218:GLY:HA2	2.02	0.42
2:B:252:ALA:HB3	48:WA:4459:U:O2	2.20	0.42
9:I:150:GLU:OE2	9:I:153:ARG:NH2	2.45	0.42
12:L:34:ASN:ND2	48:WA:1926:C:OP1	2.53	0.42
13:M:11:TRP:O	13:M:14:LYS:NZ	2.42	0.42
17:Q:165:LYS:HE2	17:Q:165:LYS:HB3	1.94	0.42
31:EA:83:MET:HE3	31:EA:83:MET:HB3	1.95	0.42
33:GA:34:ALA:HA	33:GA:37:THR:HG22	2.01	0.42
37:KA:2:SER:N	48:WA:2408:G:N7	2.68	0.42
39:MA:1:MET:HB2	51:ZA:1706:G:H5'	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:WA:475:G:H2'	48:WA:476:G:H8	1.83	0.42
48:WA:1755:G:H2'	48:WA:1756:U:C2	2.54	0.42
48:WA:3666:G:H2'	48:WA:3667:G:C8	2.53	0.42
51:ZA:1402:A:H5'	72:UB:51:LYS:HD2	2.00	0.42
51:ZA:1536:G:H2'	51:ZA:1537:A:H8	1.83	0.42
53:BB:35:ALA:HB2	53:BB:44:ILE:HD11	2.02	0.42
58:GB:5:ILE:HD12	58:GB:16:ILE:HD13	2.02	0.42
62:KB:53:LYS:HE2	62:KB:53:LYS:HB3	1.94	0.42
86:b:23:ASP:HB2	86:b:90:PHE:HB3	2.00	0.42
3:C:60:HIS:NE2	3:C:100:ARG:HD3	2.35	0.42
14:N:12:ARG:HB2	14:N:37:ARG:HD2	2.01	0.42
20:T:28:PRO:HB2	20:T:34:MET:HG2	2.01	0.42
23:W:56:ARG:HE	48:WA:14:C:P	2.43	0.42
29:CA:39:LYS:HE3	48:WA:2372:A:H5'	2.00	0.42
35:IA:2:THR:O	35:IA:7:SER:OG	2.27	0.42
48:WA:312:G:H1	48:WA:325:U:H3	1.68	0.42
48:WA:440:U:H2'	48:WA:441:G:C8	2.55	0.42
48:WA:1506:G:H2'	48:WA:1507:C:H6	1.84	0.42
48:WA:1788:A:H2'	48:WA:1791:C:C5	2.55	0.42
48:WA:2521:U:O2'	48:WA:2532:U:O2	2.34	0.42
48:WA:4194:A:H2'	48:WA:4195:C:C6	2.55	0.42
51:ZA:444:G:O6	60:IB:26:LYS:HE3	2.20	0.42
51:ZA:479:C:H2'	51:ZA:480:G:C8	2.55	0.42
51:ZA:561:A:H5''	61:JB:173:VAL:HG12	2.02	0.42
51:ZA:913:A:N6	59:HB:357:SER:O	2.53	0.42
51:ZA:1160:U:O4	75:XB:3:LYS:NZ	2.53	0.42
61:JB:149:VAL:HG11	61:JB:157:ILE:HD11	2.02	0.42
62:KB:64:TRP:CD2	81:DC:23:VAL:HG22	2.55	0.42
66:OB:127:GLY:HA2	78:AC:58:VAL:HG22	2.01	0.42
3:C:221:PHE:HB3	3:C:227:ILE:HG21	2.01	0.42
3:C:310:HIS:NE2	48:WA:2102:G:H2'	2.35	0.42
5:E:204:ILE:HD12	5:E:264:ILE:HG22	2.02	0.42
6:F:56:TYR:OH	6:F:188:ASP:OD1	2.29	0.42
6:F:70:MET:HA	6:F:73:MET:HG2	2.02	0.42
12:L:96:GLU:OE2	12:L:100:ARG:NH2	2.52	0.42
18:R:127:MET:HG2	19:S:153:PRO:HB2	2.02	0.42
21:U:87:SER:HA	21:U:97:TYR:HB3	2.02	0.42
30:DA:78:LEU:HB2	42:PA:20:ARG:HD2	2.02	0.42
43:RA:147:HIS:CD2	43:RA:148:PRO:HD3	2.55	0.42
50:YA:5:U:H2'	50:YA:6:C:H6	1.85	0.42
51:ZA:385:G:O2'	60:IB:10:LYS:NZ	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:ZA:442:C:N4	51:ZA:449:A:H62	2.16	0.42
51:ZA:666:U:H2'	51:ZA:667:U:C6	2.54	0.42
51:ZA:799:U:H2'	51:ZA:800:U:C6	2.55	0.42
51:ZA:808:A:H2	51:ZA:855:G:H22	1.67	0.42
51:ZA:1398:G:O3'	84:GC:88:ARG:NH2	2.53	0.42
51:ZA:1568:C:OP1	71:TB:96:SER:OG	2.33	0.42
56:EB:45:ILE:HA	56:EB:61:VAL:HG11	2.02	0.42
65:NB:83:ASP:OD1	65:NB:83:ASP:N	2.53	0.42
70:SB:48:ALA:HB2	70:SB:70:ILE:HG13	2.02	0.42
84:GC:90:TRP:NE1	84:GC:97:THR:OG1	2.53	0.42
87:c:245:ASP:HA	88:HC:382:ARG:HD2	2.02	0.42
4:D:279:ARG:HD2	48:WA:1183:U:H4'	2.01	0.41
12:L:4:ARG:NH2	48:WA:4767:G:O6	2.35	0.41
24:X:106:ILE:HG21	24:X:109:LEU:HD23	2.02	0.41
48:WA:175:C:H2'	48:WA:176:G:H8	1.85	0.41
48:WA:912:G:H2'	48:WA:913:U:H6	1.84	0.41
48:WA:981:C:H41	48:WA:1283:G:H21	1.68	0.41
48:WA:1192:U:H2'	48:WA:1193:G:N3	2.35	0.41
48:WA:1346:C:H2'	48:WA:1347:A:H8	1.85	0.41
48:WA:1481:G:H2'	48:WA:1482:C:C6	2.54	0.41
48:WA:1492:G:H2'	48:WA:1493:A:C8	2.54	0.41
48:WA:2635:U:H2'	48:WA:2636:C:C6	2.55	0.41
48:WA:2737:G:H2'	48:WA:2738:G:C8	2.52	0.41
48:WA:3713:A:O2'	48:WA:3715:U:OP2	2.27	0.41
48:WA:4993:U:O2'	48:WA:4994:G:H5'	2.20	0.41
51:ZA:388:U:H2'	51:ZA:389:A:H8	1.85	0.41
51:ZA:1673:U:H2'	51:ZA:1674:G:O4'	2.20	0.41
51:ZA:1736:G:H2'	51:ZA:1737:G:C8	2.55	0.41
51:ZA:1839:U:H2'	51:ZA:1840:U:C6	2.55	0.41
63:LB:12:LYS:HA	63:LB:56:ILE:HD13	2.01	0.41
76:YB:63:HIS:CE1	76:YB:68:LYS:HD2	2.55	0.41
3:C:278:ASN:OD1	3:C:279:LEU:N	2.54	0.41
5:E:149:PRO:HB2	5:E:206:ILE:HG21	2.02	0.41
12:L:31:ILE:H	12:L:36:ALA:HA	1.85	0.41
12:L:118:MET:HE1	48:WA:4930:C:O2	2.20	0.41
16:P:2:GLY:N	48:WA:2074:C:OP1	2.53	0.41
16:P:178:ARG:NH2	26:Z:46:ASP:OD1	2.52	0.41
21:U:87:SER:HB3	22:V:19:ARG:HH21	1.85	0.41
48:WA:2319:C:H2'	48:WA:2320:G:C8	2.55	0.41
48:WA:2561:G:H2'	48:WA:2562:C:H6	1.85	0.41
48:WA:2589:A:OP2	48:WA:2590:C:N4	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:WA:3722:G:H22	48:WA:3735:A:H2	1.66	0.41
51:ZA:1858:G:N7	66:OB:146:ARG:NH1	2.68	0.41
54:CB:142:LYS:HG2	54:CB:153:GLY:HA3	2.01	0.41
55:DB:105:ARG:NE	62:KB:93:THR:O	2.43	0.41
76:YB:83:LYS:HD2	76:YB:91:LEU:HD22	2.02	0.41
76:YB:110:ARG:HA	76:YB:113:ARG:HD2	2.02	0.41
88:HC:338:ALA:HB2	88:HC:444:LYS:HD3	2.01	0.41
2:B:165:HIS:HA	2:B:179:HIS:O	2.21	0.41
2:B:242:ARG:NH2	48:WA:2858:C:O2	2.46	0.41
3:C:350:ARG:HD2	48:WA:725:C:OP1	2.20	0.41
5:E:158:GLY:O	5:E:161:ARG:HG3	2.19	0.41
11:K:91:ALA:HB1	11:K:96:ILE:HB	2.01	0.41
24:X:52:ASP:OD2	24:X:110:LYS:NZ	2.52	0.41
31:EA:50:VAL:HG22	31:EA:69:VAL:HG22	2.01	0.41
33:GA:109:ARG:NH2	48:WA:267:G:OP1	2.48	0.41
37:KA:44:TRP:CZ3	37:KA:45:ARG:HD3	2.54	0.41
45:TA:28:C:H2'	45:TA:29:A:C8	2.55	0.41
48:WA:440:U:H2'	48:WA:441:G:H8	1.84	0.41
48:WA:2540:U:H2'	48:WA:2541:C:C6	2.55	0.41
48:WA:2734:G:H2'	48:WA:2735:C:C6	2.55	0.41
48:WA:3779:G:O2'	48:WA:3817:G:O6	2.34	0.41
49:XA:58:A:H2'	49:XA:59:G:H8	1.85	0.41
51:ZA:558:G:H2'	51:ZA:559:G:C8	2.55	0.41
51:ZA:1096:G:H1	51:ZA:1136:U:H3	1.68	0.41
53:BB:71:LEU:HD23	53:BB:79:VAL:HG22	2.02	0.41
84:GC:79:LEU:HD11	84:GC:87:LEU:HD23	2.02	0.41
9:I:180:GLU:H	9:I:180:GLU:HG3	1.75	0.41
29:CA:37:GLY:O	29:CA:41:ARG:HG3	2.20	0.41
33:GA:87:LYS:HD3	33:GA:91:MET:HB3	2.02	0.41
44:SA:8:U:O2'	44:SA:21:A:N1	2.47	0.41
48:WA:675:G:H2'	48:WA:676:C:C6	2.55	0.41
48:WA:926:C:H2'	48:WA:927:C:C6	2.55	0.41
48:WA:4091:G:H2'	48:WA:4092:G:C8	2.55	0.41
48:WA:4131:G:O6	48:WA:4158:G:N2	2.53	0.41
48:WA:4239:C:OP1	48:WA:4329:C:O2'	2.35	0.41
51:ZA:1199:A:H2'	51:ZA:1200:A:C8	2.55	0.41
51:ZA:1406:G:N2	51:ZA:1441:U:O2	2.53	0.41
52:AB:184:ARG:HD3	52:AB:191:ARG:HG2	2.03	0.41
61:JB:124:HIS:CD2	82:EC:108:ARG:HE	2.38	0.41
63:LB:144:LYS:HB2	63:LB:144:LYS:HE3	1.84	0.41
67:PB:25:LEU:O	67:PB:28:MET:HB2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
76:YB:110:ARG:NH1	76:YB:126:GLY:O	2.53	0.41
16:P:82:VAL:O	16:P:102:ALA:HA	2.20	0.41
28:BA:10:SER:OG	28:BA:11:LEU:N	2.53	0.41
29:CA:122:VAL:HG12	29:CA:124:GLU:H	1.84	0.41
36:JA:61:PRO:HA	36:JA:62:PRO:HD3	1.97	0.41
48:WA:474:C:H2'	48:WA:475:G:C8	2.56	0.41
48:WA:2564:G:N2	48:WA:2567:A:OP2	2.38	0.41
48:WA:2762:G:H4'	48:WA:2763:U:H5'	2.02	0.41
48:WA:3873:A:H2'	48:WA:3874:A:H8	1.86	0.41
48:WA:3929:U:H2'	48:WA:3930:A:C8	2.54	0.41
48:WA:4175:G:H2'	48:WA:4176:U:C6	2.55	0.41
49:XA:15:C:H2'	49:XA:16:A:C8	2.55	0.41
51:ZA:1543:U:P	71:TB:62:ARG:HH22	2.43	0.41
56:EB:221:ARG:O	56:EB:225:ILE:HG12	2.19	0.41
58:GB:167:LYS:HE2	58:GB:167:LYS:HB2	1.88	0.41
74:WB:3:ARG:HD3	74:WB:6:VAL:HG12	2.01	0.41
84:GC:265:ILE:HD12	84:GC:265:ILE:HA	1.97	0.41
3:C:119:GLN:NE2	48:WA:1352:C:O2	2.48	0.41
8:H:92:MET:HE2	8:H:179:ILE:HG22	2.03	0.41
17:Q:108:ARG:NH1	48:WA:2901:C:OP2	2.46	0.41
20:T:92:LYS:HD2	20:T:92:LYS:HA	1.87	0.41
24:X:113:LYS:NZ	50:YA:84:A:N1	2.68	0.41
48:WA:368:C:H2'	48:WA:369:G:C8	2.55	0.41
48:WA:441:G:H2'	48:WA:442:G:H8	1.85	0.41
48:WA:655:C:H2'	48:WA:656:C:C6	2.55	0.41
48:WA:1664:C:H2'	48:WA:1665:C:C6	2.55	0.41
48:WA:1740:A:H2'	48:WA:1741:G:H8	1.86	0.41
48:WA:2448:C:H2'	48:WA:2449:U:C6	2.55	0.41
48:WA:2591:C:H2'	48:WA:2592:G:O4'	2.20	0.41
48:WA:4143:G:N2	48:WA:4145:C:O2'	2.53	0.41
48:WA:4639:G:H2'	48:WA:4640:U:C6	2.56	0.41
48:WA:4889:C:H2'	48:WA:4890:C:C6	2.55	0.41
51:ZA:156:G:H2'	51:ZA:157:U:C6	2.55	0.41
51:ZA:220:U:H2'	51:ZA:221:A:H8	1.85	0.41
51:ZA:902:G:H2'	51:ZA:903:A:H8	1.86	0.41
51:ZA:953:C:H5''	53:BB:24:PRO:HB2	2.02	0.41
51:ZA:1049:A:O2'	51:ZA:1854:U:O2	2.35	0.41
51:ZA:1415:C:H2'	51:ZA:1416:C:C6	2.55	0.41
51:ZA:1745:A:H62	51:ZA:1789:G:N2	2.18	0.41
58:GB:121:ILE:N	58:GB:125:THR:OG1	2.51	0.41
63:LB:55:TYR:CD1	63:LB:115:PRO:HG2	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:152:LEU:HD21	3:C:174:LEU:HD13	2.02	0.41
6:F:131:MET:O	6:F:135:VAL:HG22	2.21	0.41
21:U:82:ILE:HG22	21:U:83:ARG:HG3	2.02	0.41
30:DA:103:VAL:O	30:DA:128:ARG:NH1	2.54	0.41
33:GA:52:LYS:NZ	50:YA:63:U:O2'	2.36	0.41
37:KA:16:LYS:HG3	37:KA:49:LEU:HD21	2.02	0.41
46:UA:67:G:H2'	46:UA:68:G:H8	1.86	0.41
48:WA:288:G:H2'	48:WA:289:C:C6	2.56	0.41
48:WA:1363:G:H2'	48:WA:1364:G:H8	1.84	0.41
48:WA:1648:A:H2'	48:WA:1649:U:C6	2.56	0.41
48:WA:2545:A:H5'	50:YA:127:U:H1'	2.03	0.41
48:WA:3686:G:H2'	48:WA:3687:C:C6	2.56	0.41
50:YA:30:U:H2'	50:YA:31:G:C8	2.56	0.41
50:YA:106:G:H4'	50:YA:137:A:H5'	2.01	0.41
51:ZA:16:G:H5'	51:ZA:669:A:N6	2.34	0.41
51:ZA:520:A:H5''	61:JB:12:THR:HG23	2.03	0.41
51:ZA:1407:U:H4'	68:QB:97:ARG:NH2	2.36	0.41
57:FB:176:GLU:OE2	57:FB:187:SER:OG	2.38	0.41
62:KB:15:LEU:HD13	62:KB:21:MET:HB2	2.03	0.41
84:GC:5:MET:HB2	84:GC:270:LEU:HD21	2.03	0.41
12:L:91:TRP:CZ2	48:WA:4872:G:H2'	2.55	0.41
17:Q:12:SER:OG	17:Q:17:CYS:O	2.29	0.41
26:Z:21:ARG:HB2	48:WA:1320:C:OP1	2.21	0.41
27:AA:43:MET:HG2	27:AA:47:LYS:HE2	2.03	0.41
29:CA:111:VAL:HG21	29:CA:117:LEU:HD21	2.03	0.41
48:WA:1280:C:H2'	48:WA:1281:A:O4'	2.20	0.41
48:WA:1347:A:H2'	48:WA:1348:C:C6	2.56	0.41
48:WA:2599:G:H2'	48:WA:2600:A:H8	1.86	0.41
48:WA:2846:A:N6	48:WA:3841:G:O2'	2.54	0.41
51:ZA:669:A:H2'	51:ZA:670:A:C4	2.56	0.41
51:ZA:834:C:H2'	51:ZA:835:C:C5	2.55	0.41
51:ZA:943:U:H2'	51:ZA:944:A:H8	1.85	0.41
51:ZA:1678:A:OP2	57:FB:63:LYS:NZ	2.54	0.41
53:BB:52:THR:HG23	53:BB:57:ILE:HG22	2.03	0.41
59:HB:311:GLN:HA	59:HB:314:GLN:HB2	2.03	0.41
60:IB:131:PRO:HD2	60:IB:134:GLU:HB2	2.03	0.41
62:KB:11:ILE:HD13	62:KB:11:ILE:HA	1.88	0.41
64:MB:35:ILE:HG12	64:MB:61:TYR:CZ	2.55	0.41
66:OB:98:ARG:HH21	66:OB:134:PRO:HG3	1.86	0.41
70:SB:121:ARG:HG3	70:SB:131:VAL:HG11	2.03	0.41
86:b:99:ARG:HD2	86:b:103:LEU:HD23	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:47:LEU:HD12	2:B:47:LEU:HA	1.87	0.41
3:C:80:ARG:NH2	48:WA:1647:C:OP1	2.37	0.41
6:F:79:ASN:HA	19:S:143:THR:HG22	2.02	0.41
6:F:226:PHE:N	6:F:232:ALA:O	2.49	0.41
8:H:42:ASN:O	8:H:59:LYS:NZ	2.39	0.41
16:P:85:THR:HG22	16:P:104:ARG:HB2	2.01	0.41
18:R:16:CYS:SG	18:R:17:LEU:N	2.94	0.41
19:S:87:LYS:HE3	48:WA:4302:U:H5''	2.03	0.41
26:Z:73:VAL:HB	26:Z:108:TYR:CG	2.56	0.41
35:IA:52:LYS:HG2	35:IA:55:ARG:NH2	2.36	0.41
43:RA:53:TRP:HZ3	43:RA:79:ALA:HB1	1.86	0.41
44:SA:43:A:H2'	44:SA:44:A:C8	2.56	0.41
48:WA:126:C:H2'	48:WA:127:G:C8	2.53	0.41
48:WA:227:A:N6	48:WA:242:U:O4'	2.53	0.41
48:WA:470:A:H62	48:WA:685:G:H21	1.68	0.41
48:WA:1078:C:H2'	48:WA:1079:G:O4'	2.20	0.41
48:WA:1348:C:H2'	48:WA:1349:G:H8	1.86	0.41
48:WA:1463:C:H2'	48:WA:1464:A:C8	2.55	0.41
48:WA:1482:C:O2'	48:WA:1484:G:OP2	2.39	0.41
48:WA:1872:C:H2'	48:WA:1873:A:C8	2.56	0.41
48:WA:2416:G:H2'	48:WA:2417:U:C6	2.55	0.41
48:WA:2467:C:H2'	48:WA:2468:G:O4'	2.21	0.41
48:WA:2864:G:N3	48:WA:3626:A:H2'	2.36	0.41
48:WA:4462:U:H2'	48:WA:4463:C:C6	2.56	0.41
51:ZA:26:U:H2'	51:ZA:27:A:H8	1.85	0.41
51:ZA:29:G:H2'	51:ZA:30:C:C6	2.56	0.41
51:ZA:84:A:H5''	76:YB:122:LYS:HD2	2.01	0.41
51:ZA:115:U:H2'	51:ZA:116:U:C6	2.56	0.41
51:ZA:675:U:H2'	51:ZA:676:C:H6	1.84	0.41
51:ZA:689:U:H2'	51:ZA:690:G:C8	2.56	0.41
51:ZA:822:U:H3	51:ZA:826:A:H62	1.69	0.41
51:ZA:1047:C:H2'	51:ZA:1048:G:O4'	2.21	0.41
51:ZA:1542:C:H5''	71:TB:62:ARG:NH1	2.36	0.41
51:ZA:1555:U:H2'	51:ZA:1556:A:C8	2.55	0.41
51:ZA:1648:G:N7	68:QB:43:LYS:HE2	2.36	0.41
56:EB:148:ARG:NH2	58:GB:202:ASN:OD1	2.47	0.41
56:EB:182:MET:HE2	56:EB:192:ILE:HD11	2.03	0.41
57:FB:35:LEU:HD23	57:FB:39:ILE:HD11	2.03	0.41
57:FB:192:LYS:HA	57:FB:192:LYS:HD3	1.87	0.41
58:GB:21:GLU:O	58:GB:25:ARG:HG3	2.21	0.41
59:HB:284:THR:HG23	59:HB:303:PRO:HG3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:IB:62:VAL:HG12	60:IB:77:ARG:HA	2.03	0.41
62:KB:6:LYS:HE3	62:KB:6:LYS:HB3	1.81	0.41
65:NB:40:LEU:HD12	65:NB:50:ILE:HG23	2.03	0.41
69:RB:76:GLU:HA	69:RB:79:GLU:HG3	2.03	0.41
88:HC:341:THR:HB	88:HC:440:ALA:HB3	2.02	0.41
88:HC:343:GLN:HA	88:HC:401:ILE:HA	2.02	0.41
1:A:48:ILE:HD13	41:OA:65:ALA:HB2	2.01	0.41
12:L:46:ARG:NH2	48:WA:937:G:O2'	2.50	0.41
20:T:105:ASN:ND2	20:T:111:GLU:HB2	2.35	0.41
29:CA:38:PHE:HB3	29:CA:78:ARG:HG2	2.02	0.41
45:TA:69:G:H2'	45:TA:70:G:H8	1.86	0.41
48:WA:347:A:H2'	48:WA:348:G:C8	2.56	0.41
48:WA:973:C:O2'	48:WA:974:C:H5''	2.21	0.41
48:WA:1474:C:N4	48:WA:1495:G:O6	2.54	0.41
48:WA:2542:C:H2'	48:WA:2543:G:C8	2.55	0.41
48:WA:3797:A:H2'	48:WA:3798:U:C6	2.56	0.41
48:WA:4553:U:H2'	48:WA:4554:U:C6	2.56	0.41
48:WA:4608:G:O2'	88:HC:430:ARG:NH2	2.53	0.41
49:XA:28:C:O2'	49:XA:54:A:N1	2.51	0.41
51:ZA:102:A:H4'	51:ZA:104:A:C8	2.56	0.41
51:ZA:944:A:H2'	51:ZA:945:U:H6	1.86	0.41
51:ZA:1298:G:O2'	51:ZA:1299:A:H8	2.02	0.41
51:ZA:1598:G:H3'	77:ZB:80:ARG:HD2	2.02	0.41
51:ZA:1752:C:H2'	51:ZA:1753:C:C6	2.56	0.41
56:EB:136:ILE:HG23	56:EB:149:TYR:CE1	2.56	0.41
56:EB:212:ASP:OD1	56:EB:213:ALA:N	2.54	0.41
62:KB:26:ASP:HB3	62:KB:29:MET:HE3	2.01	0.41
64:MB:79:VAL:HG21	64:MB:85:LEU:HD13	2.03	0.41
65:NB:101:HIS:NE2	65:NB:108:ASP:OD2	2.46	0.41
70:SB:124:ARG:NE	70:SB:130:ARG:O	2.38	0.41
10:J:112:HIS:HD2	10:J:117:ILE:HD11	1.86	0.40
17:Q:27:ASN:OD1	17:Q:27:ASN:N	2.54	0.40
25:Y:3:LYS:NZ	28:BA:40:GLN:O	2.44	0.40
32:FA:54:ARG:H	32:FA:54:ARG:HG2	1.75	0.40
40:NA:89:LYS:HE3	48:WA:4231:U:H4'	2.03	0.40
45:TA:14:A:H3'	45:TA:15:G:H8	1.86	0.40
48:WA:260:C:N4	48:WA:261:G:O6	2.54	0.40
48:WA:680:C:H2'	48:WA:681:G:H8	1.86	0.40
48:WA:727:G:H2'	48:WA:728:C:H6	1.85	0.40
48:WA:728:C:H2'	48:WA:729:U:C6	2.56	0.40
48:WA:1103:C:H2'	48:WA:1104:G:C8	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:WA:1432:C:H2'	48:WA:1433:C:H6	1.86	0.40
48:WA:2886:G:H2'	48:WA:2887:A:H8	1.86	0.40
48:WA:4084:G:H2'	48:WA:4085:U:C6	2.55	0.40
48:WA:4324:G:N2	48:WA:4327:A:OP2	2.38	0.40
48:WA:4770:G:O2'	48:WA:4875:G:O6	2.39	0.40
50:YA:26:C:H2'	50:YA:27:U:C6	2.56	0.40
50:YA:79:G:H3'	50:YA:80:A:H4'	2.03	0.40
51:ZA:433:A:H2'	51:ZA:434:G:C8	2.56	0.40
51:ZA:824:C:C2	61:JB:144:ILE:HG12	2.56	0.40
51:ZA:1135:C:H2'	51:ZA:1136:U:C6	2.56	0.40
51:ZA:1183:A:H2'	51:ZA:1184:G:H8	1.85	0.40
51:ZA:1688:C:H2'	51:ZA:1689:C:C6	2.57	0.40
52:AB:51:LEU:HD13	52:AB:51:LEU:HA	1.89	0.40
52:AB:63:ARG:HG3	52:AB:185:MET:HE1	2.02	0.40
70:SB:34:LYS:HE2	70:SB:103:LEU:HD22	2.01	0.40
78:AC:37:LYS:HB2	78:AC:37:LYS:HE3	1.83	0.40
1:A:20:VAL:HA	1:A:23:ARG:HG3	2.04	0.40
3:C:195:LYS:HA	3:C:200:ARG:HA	2.03	0.40
9:I:35:ASP:HA	9:I:87:ILE:O	2.21	0.40
11:K:109:SER:O	11:K:113:ASN:ND2	2.53	0.40
15:O:61:THR:HG21	15:O:116:SER:HB3	2.03	0.40
31:EA:100:ARG:HG2	48:WA:4755:U:OP2	2.22	0.40
43:RA:32:ILE:H	43:RA:32:ILE:HG13	1.75	0.40
45:TA:72:C:H2'	45:TA:73:G:C8	2.56	0.40
48:WA:429:A:H2'	48:WA:430:G:C8	2.56	0.40
48:WA:1513:U:H2'	48:WA:1514:G:H8	1.87	0.40
48:WA:1813:G:H2'	48:WA:1814:C:C6	2.56	0.40
48:WA:2454:G:H21	48:WA:2509:A:H62	1.68	0.40
48:WA:3729:A:H2'	48:WA:3730:A:C8	2.57	0.40
48:WA:4982:C:H3'	48:WA:4983:G:H21	1.85	0.40
51:ZA:429:C:H2'	51:ZA:430:C:C6	2.56	0.40
51:ZA:1671:G:H2'	51:ZA:1672:U:H6	1.85	0.40
51:ZA:1713:C:H2'	51:ZA:1714:U:C6	2.56	0.40
64:MB:80:ASP:N	64:MB:80:ASP:OD1	2.52	0.40
1:A:21:LYS:HE3	48:WA:2745:A:H1'	2.04	0.40
3:C:69:THR:HG21	48:WA:3908:A:H2'	2.03	0.40
11:K:16:LYS:HG2	48:WA:46:U:H5''	2.03	0.40
12:L:65:PRO:HG3	48:WA:919:A:N3	2.37	0.40
13:M:46:ASP:OD1	13:M:46:ASP:N	2.54	0.40
16:P:39:THR:OG1	16:P:44:ASN:ND2	2.48	0.40
21:U:89:ARG:HB2	21:U:95:PHE:CE1	2.55	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:EA:18:LEU:HB2	48:WA:1918:G:O6	2.22	0.40
35:IA:54:LYS:O	35:IA:58:THR:HB	2.21	0.40
48:WA:723:G:OP1	48:WA:938:C:N4	2.54	0.40
48:WA:2260:C:H5'	48:WA:2261:G:H8	1.86	0.40
48:WA:2295:U:H2'	48:WA:2296:G:C8	2.57	0.40
48:WA:2541:C:H2'	48:WA:2542:C:H6	1.86	0.40
48:WA:2782:C:H2'	48:WA:2783:G:H8	1.85	0.40
48:WA:3754:C:H2'	48:WA:3779:G:H5''	2.03	0.40
48:WA:3915:G:H3'	48:WA:3916:U:H4'	2.02	0.40
48:WA:4301:U:H2'	48:WA:4302:U:H6	1.86	0.40
48:WA:4540:G:H2'	48:WA:4541:U:C6	2.56	0.40
48:WA:5004:U:H2'	48:WA:5005:U:H6	1.86	0.40
48:WA:5006:C:H2'	48:WA:5007:G:O4'	2.21	0.40
51:ZA:409:C:H2'	51:ZA:410:G:C8	2.56	0.40
51:ZA:455:A:O2'	51:ZA:1735:A:N3	2.45	0.40
51:ZA:1033:G:N1	51:ZA:1080:A:O2'	2.43	0.40
51:ZA:1503:C:H2'	51:ZA:1504:U:C6	2.57	0.40
51:ZA:1623:A:C6	70:SB:132:ARG:HD3	2.57	0.40
56:EB:179:ASN:HD22	56:EB:230:LYS:HA	1.85	0.40
76:YB:10:ARG:HG2	76:YB:11:LYS:HG3	2.03	0.40
84:GC:35:SER:OG	84:GC:36:ARG:N	2.54	0.40
88:HC:279:THR:HB	88:HC:286:THR:HG23	2.02	0.40
4:D:179:ARG:HD3	4:D:179:ARG:HA	1.82	0.40
6:F:175:ALA:HB1	48:WA:2104:G:C8	2.56	0.40
7:G:217:ILE:O	7:G:221:VAL:HG23	2.22	0.40
20:T:66:SER:OG	20:T:67:LYS:N	2.54	0.40
24:X:73:VAL:HG13	24:X:80:ILE:HG22	2.04	0.40
26:Z:76:ASP:OD1	26:Z:115:GLY:HA3	2.22	0.40
45:TA:52:G:H2'	45:TA:53:G:H8	1.87	0.40
48:WA:41:C:O2'	48:WA:42:A:H5'	2.21	0.40
48:WA:287:U:H2'	48:WA:288:G:H8	1.86	0.40
48:WA:426:A:H2'	48:WA:427:A:C8	2.57	0.40
48:WA:426:A:H2'	48:WA:427:A:H8	1.87	0.40
48:WA:1444:C:H2'	48:WA:1445:A:C8	2.57	0.40
48:WA:1530:U:H2'	48:WA:1531:G:C8	2.57	0.40
48:WA:2287:A:H2'	48:WA:2288:G:C8	2.56	0.40
48:WA:3772:U:H2'	48:WA:3773:C:C6	2.56	0.40
49:XA:58:A:H2'	49:XA:59:G:C8	2.57	0.40
51:ZA:26:U:H2'	51:ZA:27:A:C8	2.55	0.40
51:ZA:371:A:OP2	60:IB:10:LYS:HB2	2.21	0.40
51:ZA:1134:G:H2'	51:ZA:1135:C:C6	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:ZA:1306:U:H2'	51:ZA:1307:U:O4'	2.21	0.40
51:ZA:1412:C:H2'	51:ZA:1413:G:C8	2.56	0.40
64:MB:52:LEU:HD11	64:MB:78:LYS:HE3	2.02	0.40
69:RB:94:GLU:O	69:RB:116:ASN:ND2	2.52	0.40
72:UB:99:LYS:HE3	72:UB:99:LYS:HB3	1.93	0.40
79:BC:56:CYS:HB3	79:BC:59:CYS:HB3	2.04	0.40
1:A:178:PRO:HD2	41:OA:26:VAL:HG22	2.02	0.40
11:K:39:ARG:NH2	48:WA:1364:G:OP1	2.54	0.40
17:Q:18:GLY:HA3	48:WA:2824:G:H5''	2.03	0.40
17:Q:93:VAL:HG21	48:WA:2727:A:H1'	2.04	0.40
18:R:107:THR:O	18:R:111:ARG:HG2	2.21	0.40
21:U:43:LYS:HE3	21:U:43:LYS:HB3	1.93	0.40
26:Z:12:ARG:NH1	48:WA:2347:G:OP2	2.55	0.40
26:Z:12:ARG:HD3	26:Z:12:ARG:HA	1.88	0.40
27:AA:49:HIS:HB3	27:AA:52:LYS:HE2	2.04	0.40
29:CA:57:MET:HG2	29:CA:88:LEU:HD23	2.02	0.40
30:DA:44:ARG:NH2	30:DA:52:GLN:OE1	2.52	0.40
44:SA:50:U:O4	44:SA:64:G:O6	2.39	0.40
48:WA:263:G:H2'	48:WA:264:C:C6	2.57	0.40
48:WA:286:U:H2'	48:WA:287:U:C6	2.56	0.40
48:WA:1091:C:H2'	48:WA:1092:C:C6	2.57	0.40
48:WA:2006:U:H2'	48:WA:2007:G:H8	1.86	0.40
48:WA:2902:U:H2'	48:WA:2903:G:H8	1.85	0.40
48:WA:4082:C:H2'	48:WA:4083:G:H8	1.86	0.40
48:WA:4718:C:H2'	48:WA:4719:A:C8	2.53	0.40
51:ZA:12:U:H5''	54:CB:110:MET:HE2	2.03	0.40
51:ZA:349:A:H2'	51:ZA:350:C:C6	2.57	0.40
51:ZA:375:U:H2'	51:ZA:376:A:H8	1.87	0.40
51:ZA:831:G:H2'	51:ZA:832:G:C8	2.55	0.40
51:ZA:945:U:O2	51:ZA:1045:U:O2'	2.39	0.40
51:ZA:1171:G:O2'	51:ZA:1187:G:O6	2.35	0.40
60:IB:17:LYS:HD3	60:IB:17:LYS:HA	1.95	0.40
68:QB:50:HIS:HE1	68:QB:52:LYS:HD3	1.86	0.40
69:RB:97:GLU:HG2	69:RB:118:GLN:HB3	2.04	0.40
70:SB:91:LYS:NZ	70:SB:109:GLU:OE1	2.52	0.40

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	248/257 (96%)	236 (95%)	12 (5%)	0	100	100
2	B	395/403 (98%)	385 (98%)	10 (2%)	0	100	100
3	C	360/413 (87%)	348 (97%)	12 (3%)	0	100	100
4	D	292/297 (98%)	286 (98%)	6 (2%)	0	100	100
5	E	222/291 (76%)	217 (98%)	5 (2%)	0	100	100
6	F	225/249 (90%)	219 (97%)	6 (3%)	0	100	100
7	G	225/319 (70%)	220 (98%)	5 (2%)	0	100	100
8	H	188/192 (98%)	183 (97%)	5 (3%)	0	100	100
9	I	201/214 (94%)	196 (98%)	5 (2%)	0	100	100
10	J	169/178 (95%)	168 (99%)	1 (1%)	0	100	100
11	K	208/211 (99%)	202 (97%)	6 (3%)	0	100	100
12	L	136/218 (62%)	132 (97%)	4 (3%)	0	100	100
13	M	201/204 (98%)	196 (98%)	5 (2%)	0	100	100
14	N	197/203 (97%)	195 (99%)	2 (1%)	0	100	100
15	O	154/213 (72%)	151 (98%)	3 (2%)	0	100	100
16	P	185/188 (98%)	180 (97%)	5 (3%)	0	100	100
17	Q	178/212 (84%)	175 (98%)	3 (2%)	0	100	100
18	R	174/224 (78%)	166 (95%)	8 (5%)	0	100	100
19	S	157/160 (98%)	152 (97%)	5 (3%)	0	100	100
20	T	99/128 (77%)	95 (96%)	4 (4%)	0	100	100
21	U	133/140 (95%)	128 (96%)	5 (4%)	0	100	100
22	V	106/157 (68%)	103 (97%)	3 (3%)	0	100	100
23	W	116/156 (74%)	114 (98%)	2 (2%)	0	100	100
24	X	132/145 (91%)	128 (97%)	4 (3%)	0	100	100
25	Y	133/136 (98%)	131 (98%)	2 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
26	Z	145/148 (98%)	143 (99%)	2 (1%)	0	100	100
27	AA	103/245 (42%)	101 (98%)	2 (2%)	0	100	100
28	BA	97/115 (84%)	96 (99%)	1 (1%)	0	100	100
29	CA	106/125 (85%)	104 (98%)	2 (2%)	0	100	100
30	DA	127/135 (94%)	122 (96%)	5 (4%)	0	100	100
31	EA	107/110 (97%)	106 (99%)	1 (1%)	0	100	100
32	FA	112/129 (87%)	111 (99%)	1 (1%)	0	100	100
33	GA	119/123 (97%)	117 (98%)	2 (2%)	0	100	100
34	HA	100/105 (95%)	95 (95%)	5 (5%)	0	100	100
35	IA	85/97 (88%)	83 (98%)	2 (2%)	0	100	100
36	JA	67/70 (96%)	65 (97%)	2 (3%)	0	100	100
37	KA	48/51 (94%)	46 (96%)	2 (4%)	0	100	100
38	LA	50/128 (39%)	50 (100%)	0	0	100	100
39	MA	23/25 (92%)	23 (100%)	0	0	100	100
40	NA	102/106 (96%)	98 (96%)	4 (4%)	0	100	100
41	OA	89/92 (97%)	85 (96%)	4 (4%)	0	100	100
42	PA	122/137 (89%)	119 (98%)	3 (2%)	0	100	100
43	RA	151/165 (92%)	140 (93%)	11 (7%)	0	100	100
52	AB	215/295 (73%)	211 (98%)	4 (2%)	0	100	100
53	BB	211/264 (80%)	207 (98%)	4 (2%)	0	100	100
54	CB	218/293 (74%)	214 (98%)	4 (2%)	0	100	100
55	DB	226/281 (80%)	225 (100%)	1 (0%)	0	100	100
56	EB	260/263 (99%)	251 (96%)	9 (4%)	0	100	100
57	FB	181/204 (89%)	174 (96%)	7 (4%)	0	100	100
58	GB	235/249 (94%)	233 (99%)	2 (1%)	0	100	100
59	HB	181/432 (42%)	175 (97%)	6 (3%)	0	100	100
60	IB	204/208 (98%)	201 (98%)	3 (2%)	0	100	100
61	JB	183/194 (94%)	180 (98%)	3 (2%)	0	100	100
62	KB	94/165 (57%)	92 (98%)	2 (2%)	0	100	100
63	LB	140/158 (89%)	138 (99%)	2 (1%)	0	100	100
64	MB	115/132 (87%)	109 (95%)	6 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
65	NB	147/151 (97%)	146 (99%)	1 (1%)	0	100	100
66	OB	134/151 (89%)	128 (96%)	6 (4%)	0	100	100
67	PB	127/145 (88%)	123 (97%)	4 (3%)	0	100	100
68	QB	140/172 (81%)	135 (96%)	5 (4%)	0	100	100
69	RB	130/135 (96%)	126 (97%)	4 (3%)	0	100	100
70	SB	142/152 (93%)	139 (98%)	3 (2%)	0	100	100
71	TB	140/145 (97%)	135 (96%)	4 (3%)	1 (1%)	19	51
72	UB	100/119 (84%)	96 (96%)	4 (4%)	0	100	100
73	VB	81/83 (98%)	79 (98%)	2 (2%)	0	100	100
74	WB	127/130 (98%)	123 (97%)	4 (3%)	0	100	100
75	XB	139/143 (97%)	136 (98%)	3 (2%)	0	100	100
76	YB	122/131 (93%)	119 (98%)	3 (2%)	0	100	100
77	ZB	83/124 (67%)	83 (100%)	0	0	100	100
78	AC	99/115 (86%)	96 (97%)	3 (3%)	0	100	100
79	BC	81/84 (96%)	80 (99%)	1 (1%)	0	100	100
80	CC	60/69 (87%)	60 (100%)	0	0	100	100
81	DC	53/56 (95%)	53 (100%)	0	0	100	100
82	EC	53/133 (40%)	51 (96%)	2 (4%)	0	100	100
83	FC	67/188 (36%)	63 (94%)	4 (6%)	0	100	100
84	GC	311/317 (98%)	301 (97%)	10 (3%)	0	100	100
85	IC	2/4 (50%)	2 (100%)	0	0	100	100
86	b	162/318 (51%)	150 (93%)	11 (7%)	1 (1%)	22	53
87	c	12/14 (86%)	11 (92%)	1 (8%)	0	100	100
88	HC	221/462 (48%)	209 (95%)	12 (5%)	0	100	100
All	All	11783/14293 (82%)	11464 (97%)	317 (3%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
71	TB	119	TRP
86	b	225	VAL

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	A	192/199 (96%)	191 (100%)	1 (0%)	86	92
2	B	344/348 (99%)	336 (98%)	8 (2%)	45	70
3	C	302/337 (90%)	300 (99%)	2 (1%)	81	90
4	D	247/250 (99%)	246 (100%)	1 (0%)	89	94
5	E	201/251 (80%)	199 (99%)	2 (1%)	73	86
6	F	198/218 (91%)	198 (100%)	0	100	100
7	G	197/273 (72%)	194 (98%)	3 (2%)	60	80
8	H	169/171 (99%)	166 (98%)	3 (2%)	54	76
9	I	175/181 (97%)	173 (99%)	2 (1%)	70	84
10	J	144/149 (97%)	143 (99%)	1 (1%)	81	90
11	K	175/176 (99%)	171 (98%)	4 (2%)	45	70
12	L	117/161 (73%)	117 (100%)	0	100	100
13	M	171/172 (99%)	167 (98%)	4 (2%)	45	70
14	N	171/173 (99%)	171 (100%)	0	100	100
15	O	137/190 (72%)	137 (100%)	0	100	100
16	P	164/165 (99%)	162 (99%)	2 (1%)	67	83
17	Q	159/191 (83%)	159 (100%)	0	100	100
18	R	157/192 (82%)	153 (98%)	4 (2%)	42	69
19	S	139/140 (99%)	137 (99%)	2 (1%)	62	81
20	T	91/114 (80%)	91 (100%)	0	100	100
21	U	103/107 (96%)	102 (99%)	1 (1%)	73	86
22	V	89/126 (71%)	87 (98%)	2 (2%)	47	71
23	W	106/134 (79%)	105 (99%)	1 (1%)	75	88
24	X	124/135 (92%)	120 (97%)	4 (3%)	34	63
25	Y	117/118 (99%)	116 (99%)	1 (1%)	75	88
26	Z	119/120 (99%)	118 (99%)	1 (1%)	79	89

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
27	AA	87/184 (47%)	86 (99%)	1 (1%)	70	84
28	BA	85/98 (87%)	83 (98%)	2 (2%)	44	70
29	CA	98/110 (89%)	97 (99%)	1 (1%)	73	86
30	DA	115/121 (95%)	115 (100%)	0	100	100
31	EA	88/89 (99%)	88 (100%)	0	100	100
32	FA	98/109 (90%)	95 (97%)	3 (3%)	35	63
33	GA	109/110 (99%)	106 (97%)	3 (3%)	38	66
34	HA	86/89 (97%)	86 (100%)	0	100	100
35	IA	74/80 (92%)	73 (99%)	1 (1%)	62	81
36	JA	64/65 (98%)	64 (100%)	0	100	100
37	KA	47/48 (98%)	46 (98%)	1 (2%)	48	72
38	LA	48/116 (41%)	46 (96%)	2 (4%)	25	56
39	MA	24/24 (100%)	24 (100%)	0	100	100
40	NA	92/94 (98%)	92 (100%)	0	100	100
41	OA	74/75 (99%)	73 (99%)	1 (1%)	62	81
42	PA	108/121 (89%)	106 (98%)	2 (2%)	52	75
43	RA	126/137 (92%)	118 (94%)	8 (6%)	15	42
52	AB	180/244 (74%)	180 (100%)	0	100	100
53	BB	194/231 (84%)	192 (99%)	2 (1%)	73	86
54	CB	186/225 (83%)	185 (100%)	1 (0%)	86	92
55	DB	190/232 (82%)	186 (98%)	4 (2%)	48	72
56	EB	224/225 (100%)	219 (98%)	5 (2%)	47	71
57	FB	158/170 (93%)	157 (99%)	1 (1%)	84	91
58	GB	207/218 (95%)	203 (98%)	4 (2%)	52	75
59	HB	165/360 (46%)	161 (98%)	4 (2%)	44	70
60	IB	178/180 (99%)	176 (99%)	2 (1%)	70	84
61	JB	161/168 (96%)	159 (99%)	2 (1%)	67	83
62	KB	87/136 (64%)	86 (99%)	1 (1%)	70	84
63	LB	130/142 (92%)	128 (98%)	2 (2%)	60	80
64	MB	99/108 (92%)	93 (94%)	6 (6%)	15	43
65	NB	130/131 (99%)	129 (99%)	1 (1%)	79	89

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
66	OB	106/119 (89%)	105 (99%)	1 (1%)	75	88
67	PB	115/130 (88%)	111 (96%)	4 (4%)	31	61
68	QB	117/140 (84%)	114 (97%)	3 (3%)	41	68
69	RB	119/121 (98%)	116 (98%)	3 (2%)	42	69
70	SB	125/132 (95%)	123 (98%)	2 (2%)	58	79
71	TB	112/116 (97%)	109 (97%)	3 (3%)	40	67
72	UB	93/107 (87%)	90 (97%)	3 (3%)	34	63
73	VB	67/67 (100%)	65 (97%)	2 (3%)	36	64
74	WB	112/113 (99%)	111 (99%)	1 (1%)	75	88
75	XB	113/115 (98%)	109 (96%)	4 (4%)	31	61
76	YB	107/113 (95%)	107 (100%)	0	100	100
77	ZB	75/102 (74%)	74 (99%)	1 (1%)	65	82
78	AC	88/98 (90%)	87 (99%)	1 (1%)	70	84
79	BC	75/76 (99%)	73 (97%)	2 (3%)	40	67
80	CC	55/62 (89%)	55 (100%)	0	100	100
81	DC	48/49 (98%)	47 (98%)	1 (2%)	48	72
82	EC	46/106 (43%)	45 (98%)	1 (2%)	47	71
83	FC	62/154 (40%)	59 (95%)	3 (5%)	21	51
84	GC	272/275 (99%)	250 (92%)	22 (8%)	9	33
86	b	138/258 (54%)	126 (91%)	12 (9%)	8	31
87	c	12/12 (100%)	12 (100%)	0	100	100
88	HC	179/379 (47%)	164 (92%)	15 (8%)	9	32
All	All	10256/12075 (85%)	10063 (98%)	193 (2%)	52	75

All (193) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	32	VAL
2	B	162	VAL
2	B	248	LEU
2	B	258	HIS
2	B	298	LEU
2	B	314	ILE
2	B	329	ASP

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Mol	Chain	Res	Type
2	B	338	VAL
2	B	353	VAL
3	C	115	VAL
3	C	232	VAL
4	D	163	LEU
5	E	178	VAL
5	E	189	LEU
7	G	94	ILE
7	G	159	THR
7	G	193	VAL
8	H	47	LEU
8	H	95	VAL
8	H	123	ILE
9	I	126	VAL
9	I	184	MET
10	J	129	ASP
11	K	63	THR
11	K	64	VAL
11	K	70	VAL
11	K	90	VAL
13	M	60	VAL
13	M	64	ILE
13	M	142	ILE
13	M	184	ILE
16	P	22	ASP
16	P	83	VAL
18	R	84	TYR
18	R	132	ILE
18	R	154	LEU
18	R	160	ARG
19	S	80	VAL
19	S	143	THR
21	U	109	LYS
22	V	87	LEU
22	V	89	ASP
23	W	52	LEU
24	X	79	VAL
24	X	82	ILE
24	X	95	VAL
24	X	104	VAL
25	Y	53	VAL
26	Z	122	VAL

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Mol	Chain	Res	Type
27	AA	50	ASN
28	BA	14	ILE
28	BA	71	VAL
29	CA	46	LEU
32	FA	22	LEU
32	FA	32	TYR
32	FA	67	LEU
33	GA	17	LEU
33	GA	96	ASN
33	GA	116	LEU
35	IA	59	THR
37	KA	51	LEU
38	LA	100	LYS
38	LA	101	VAL
41	OA	52	VAL
42	PA	83	ASN
42	PA	103	HIS
43	RA	37	LEU
43	RA	58	ILE
43	RA	66	ASN
43	RA	92	ARG
43	RA	121	LEU
43	RA	137	GLN
43	RA	147	HIS
43	RA	151	ILE
53	BB	82	ARG
53	BB	126	ASP
54	CB	248	TYR
55	DB	123	GLU
55	DB	205	TYR
55	DB	206	VAL
55	DB	213	VAL
56	EB	12	VAL
56	EB	62	LYS
56	EB	207	VAL
56	EB	220	THR
56	EB	222	LEU
57	FB	102	LEU
58	GB	50	VAL
58	GB	153	VAL
58	GB	157	VAL
58	GB	213	LEU

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Mol	Chain	Res	Type
59	HB	284	THR
59	HB	313	ILE
59	HB	372	VAL
59	HB	405	GLU
60	IB	107	THR
60	IB	125	LYS
61	JB	66	LYS
61	JB	117	LEU
62	KB	47	LYS
63	LB	48	LYS
63	LB	52	GLU
64	MB	27	ILE
64	MB	28	HIS
64	MB	31	LEU
64	MB	57	ASP
64	MB	62	VAL
64	MB	111	VAL
65	NB	54	LEU
66	OB	56	VAL
67	PB	37	TYR
67	PB	65	LYS
67	PB	72	LYS
67	PB	90	VAL
68	QB	75	TYR
68	QB	110	ILE
68	QB	126	VAL
69	RB	6	THR
69	RB	95	ILE
69	RB	99	ASP
70	SB	50	ILE
70	SB	131	VAL
71	TB	4	VAL
71	TB	24	LYS
71	TB	99	VAL
72	UB	17	ILE
72	UB	18	HIS
72	UB	68	THR
73	VB	11	LEU
73	VB	52	THR
74	WB	105	THR
75	XB	17	ARG
75	XB	81	ILE

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Mol	Chain	Res	Type
75	XB	105	PHE
75	XB	115	ILE
77	ZB	32	LYS
78	AC	100	ARG
79	BC	43	ILE
79	BC	80	ARG
81	DC	39	CYS
82	EC	124	LYS
83	FC	85	TYR
83	FC	108	VAL
83	FC	135	HIS
84	GC	8	ARG
84	GC	11	LEU
84	GC	18	VAL
84	GC	31	ILE
84	GC	37	ASP
84	GC	38	LYS
84	GC	54	ILE
84	GC	68	ASP
84	GC	113	PHE
84	GC	120	ILE
84	GC	141	THR
84	GC	142	VAL
84	GC	164	ILE
84	GC	177	TRP
84	GC	185	LYS
84	GC	186	THR
84	GC	198	VAL
84	GC	256	ILE
84	GC	274	VAL
84	GC	275	ILE
84	GC	280	LYS
84	GC	297	THR
86	b	21	LEU
86	b	30	VAL
86	b	53	VAL
86	b	54	LEU
86	b	69	LEU
86	b	75	LEU
86	b	105	ASN
86	b	116	ILE
86	b	135	THR

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Mol	Chain	Res	Type
86	b	149	ARG
86	b	219	VAL
86	b	222	VAL
88	HC	240	ARG
88	HC	248	LEU
88	HC	290	LYS
88	HC	313	LYS
88	HC	347	LEU
88	HC	360	VAL
88	HC	368	ILE
88	HC	371	LYS
88	HC	387	LEU
88	HC	408	LYS
88	HC	429	MET
88	HC	432	THR
88	HC	438	ILE
88	HC	439	LYS
88	HC	444	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (80) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	205	ASN
2	B	175	GLN
2	B	179	HIS
3	C	21	ASN
3	C	41	HIS
3	C	329	ASN
3	C	347	HIS
4	D	131	ASN
4	D	282	GLN
6	F	98	ASN
9	I	59	GLN
9	I	73	ASN
9	I	166	HIS
10	J	23	ASN
11	K	159	ASN
12	L	48	GLN
13	M	86	HIS
13	M	182	HIS
15	O	63	GLN
15	O	93	ASN

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Mol	Chain	Res	Type
15	O	149	ASN
17	Q	34	ASN
17	Q	58	HIS
17	Q	118	HIS
18	R	163	HIS
19	S	127	GLN
19	S	139	HIS
20	T	38	ASN
20	T	105	ASN
23	W	107	HIS
27	AA	6	ASN
28	BA	15	ASN
28	BA	72	HIS
29	CA	116	ASN
31	EA	55	ASN
40	NA	25	GLN
42	PA	21	ASN
42	PA	31	ASN
43	RA	137	GLN
52	AB	141	ASN
53	BB	101	HIS
53	BB	186	ASN
54	CB	136	HIS
54	CB	172	ASN
55	DB	95	ASN
55	DB	245	HIS
56	EB	50	ASN
56	EB	142	HIS
57	FB	83	ASN
58	GB	110	ASN
59	HB	271	ASN
60	IB	22	HIS
60	IB	35	ASN
61	JB	124	HIS
61	JB	140	GLN
63	LB	11	GLN
64	MB	46	GLN
64	MB	75	ASN
66	OB	32	HIS
68	QB	37	GLN
68	QB	55	ASN
69	RB	116	ASN

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Mol	Chain	Res	Type
71	TB	51	ASN
71	TB	126	GLN
74	WB	91	ASN
75	XB	61	GLN
75	XB	77	ASN
76	YB	29	HIS
76	YB	63	HIS
76	YB	112	ASN
78	AC	7	ASN
78	AC	72	HIS
80	CC	29	GLN
80	CC	45	ASN
81	DC	16	GLN
84	GC	222	ASN
84	GC	305	ASN
86	b	42	GLN
88	HC	348	ASN
88	HC	352	GLN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
44	SA	75/76 (98%)	16 (21%)	3 (4%)
45	TA	75/76 (98%)	15 (20%)	0
46	UA	74/75 (98%)	37 (50%)	1 (1%)
47	VA	11/12 (91%)	3 (27%)	0
48	WA	3556/3584 (99%)	603 (16%)	20 (0%)
49	XA	118/120 (98%)	9 (7%)	0
50	YA	155/156 (99%)	33 (21%)	0
51	ZA	1707/1869 (91%)	326 (19%)	8 (0%)
All	All	5771/5968 (96%)	1042 (18%)	32 (0%)

All (1042) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
44	SA	9	A
44	SA	16	C
44	SA	18	G
44	SA	19	C
44	SA	20	A
44	SA	21	A

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Mol	Chain	Res	Type
44	SA	22	A
44	SA	46	G
44	SA	47	U
44	SA	48	C
44	SA	49	C
44	SA	58	A
44	SA	60	A
44	SA	61	C
44	SA	70	A
44	SA	76	A
45	TA	6	G
45	TA	7	A
45	TA	13	C
45	TA	16	C
45	TA	17	U
45	TA	18	G
45	TA	19	A
45	TA	20	U
45	TA	22	G
45	TA	31	A
45	TA	34	U
45	TA	35	U
45	TA	47	U
45	TA	58	A
45	TA	76	A
46	UA	8	U
46	UA	16	C
46	UA	17	G
46	UA	18	G
46	UA	19	U
46	UA	20	U
46	UA	21	A
46	UA	22	U
46	UA	24	A
46	UA	25	C
46	UA	26	G
46	UA	30	G
46	UA	31	C
46	UA	32	C
46	UA	33	U
46	UA	34	U
46	UA	38	C

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Mol	Chain	Res	Type
46	UA	40	C
46	UA	41	G
46	UA	42	A
46	UA	43	A
46	UA	44	A
46	UA	46	G
46	UA	48	C
46	UA	49	C
46	UA	52	G
46	UA	58	A
46	UA	59	A
46	UA	60	A
46	UA	61	C
46	UA	66	C
46	UA	67	G
46	UA	70	A
46	UA	71	A
46	UA	74	C
46	UA	75	C
46	UA	76	A
47	VA	22	U
47	VA	24	A
47	VA	26	A
48	WA	12	A
48	WA	13	U
48	WA	25	A
48	WA	39	A
48	WA	42	A
48	WA	48	G
48	WA	59	A
48	WA	64	A
48	WA	65	A
48	WA	66	A
48	WA	91	G
48	WA	110	C
48	WA	117	C
48	WA	119	G
48	WA	120	A
48	WA	130	C
48	WA	132	G
48	WA	133	C
48	WA	134	G

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Mol	Chain	Res	Type
48	WA	135	G
48	WA	136	C
48	WA	138	G
48	WA	142	G
48	WA	143	C
48	WA	144	G
48	WA	157	U
48	WA	159	C
48	WA	169	A
48	WA	171	U
48	WA	172	C
48	WA	173	C
48	WA	179	G
48	WA	182	G
48	WA	197	A
48	WA	200	U
48	WA	201	C
48	WA	209	U
48	WA	217	C
48	WA	218	A
48	WA	219	G
48	WA	220	C
48	WA	224	U
48	WA	233	U
48	WA	234	G
48	WA	253	G
48	WA	263	G
48	WA	266	C
48	WA	267	G
48	WA	276	C
48	WA	280	G
48	WA	297	U
48	WA	306	A
48	WA	309	C
48	WA	315	G
48	WA	316	U
48	WA	334	A
48	WA	340	C
48	WA	350	C
48	WA	363	A
48	WA	373	G
48	WA	386	A

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Mol	Chain	Res	Type
48	WA	387	G
48	WA	399	G
48	WA	409	G
48	WA	410	A
48	WA	412	G
48	WA	449	C
48	WA	450	G
48	WA	452	A
48	WA	454	U
48	WA	455	C
48	WA	467	U
48	WA	468	U
48	WA	482	C
48	WA	483	G
48	WA	484	G
48	WA	485	U
48	WA	487	C
48	WA	488	G
48	WA	493	U
48	WA	494	G
48	WA	499	C
48	WA	500	G
48	WA	506	G
48	WA	511	U
48	WA	521	U
48	WA	643	G
48	WA	662	C
48	WA	667	G
48	WA	686	C
48	WA	697	C
48	WA	698	G
48	WA	705	C
48	WA	720	C
48	WA	732	G
48	WA	739	C
48	WA	741	G
48	WA	751	G
48	WA	761	G
48	WA	905	U
48	WA	907	C
48	WA	915	U
48	WA	917	A

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Mol	Chain	Res	Type
48	WA	919	A
48	WA	920	G
48	WA	929	C
48	WA	930	G
48	WA	933	A
48	WA	936	A
48	WA	937	G
48	WA	938	C
48	WA	939	A
48	WA	940	G
48	WA	941	C
48	WA	944	G
48	WA	946	C
48	WA	949	A
48	WA	950	U
48	WA	964	G
48	WA	965	A
48	WA	966	G
48	WA	971	A
48	WA	972	C
48	WA	974	C
48	WA	978	C
48	WA	989	C
48	WA	1078	C
48	WA	1084	A
48	WA	1085	C
48	WA	1102	C
48	WA	1103	C
48	WA	1104	G
48	WA	1186	C
48	WA	1200	G
48	WA	1201	G
48	WA	1202	G
48	WA	1206	G
48	WA	1208	C
48	WA	1216	C
48	WA	1217	G
48	WA	1221	C
48	WA	1222	C
48	WA	1240	G
48	WA	1243	C
48	WA	1244	A

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Mol	Chain	Res	Type
48	WA	1246	G
48	WA	1253	C
48	WA	1255	G
48	WA	1258	A
48	WA	1259	A
48	WA	1265	A
48	WA	1270	G
48	WA	1271	G
48	WA	1272	A
48	WA	1274	C
48	WA	1275	G
48	WA	1279	G
48	WA	1282	C
48	WA	1286	G
48	WA	1289	G
48	WA	1290	G
48	WA	1294	C
48	WA	1298	G
48	WA	1303	C
48	WA	1305	A
48	WA	1328	A
48	WA	1356	A
48	WA	1360	G
48	WA	1361	G
48	WA	1379	G
48	WA	1381	C
48	WA	1382	G
48	WA	1383	U
48	WA	1389	A
48	WA	1396	G
48	WA	1399	A
48	WA	1400	A
48	WA	1421	G
48	WA	1422	A
48	WA	1435	A
48	WA	1447	U
48	WA	1448	C
48	WA	1459	G
48	WA	1485	C
48	WA	1499	A
48	WA	1500	G
48	WA	1503	C

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Mol	Chain	Res	Type
48	WA	1504	G
48	WA	1520	A
48	WA	1525	A
48	WA	1527	A
48	WA	1536	A
48	WA	1549	A
48	WA	1566	A
48	WA	1568	C
48	WA	1580	U
48	WA	1593	U
48	WA	1598	U
48	WA	1599	G
48	WA	1604	U
48	WA	1614	G
48	WA	1626	G
48	WA	1627	G
48	WA	1633	A
48	WA	1635	G
48	WA	1636	A
48	WA	1640	A
48	WA	1643	G
48	WA	1656	G
48	WA	1663	C
48	WA	1678	C
48	WA	1679	U
48	WA	1686	A
48	WA	1693	G
48	WA	1743	G
48	WA	1744	A
48	WA	1756	U
48	WA	1757	C
48	WA	1763	G
48	WA	1765	C
48	WA	1768	A
48	WA	1769	A
48	WA	1770	C
48	WA	1771	G
48	WA	1772	A
48	WA	1774	C
48	WA	1782	A
48	WA	1783	U
48	WA	1789	A

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Mol	Chain	Res	Type
48	WA	1806	A
48	WA	1807	A
48	WA	1817	G
48	WA	1821	G
48	WA	1823	G
48	WA	1824	U
48	WA	1830	C
48	WA	1836	U
48	WA	1838	G
48	WA	1839	A
48	WA	1844	G
48	WA	1857	G
48	WA	1871	G
48	WA	1883	C
48	WA	1890	A
48	WA	1899	A
48	WA	1912	G
48	WA	1920	U
48	WA	1922	C
48	WA	1923	C
48	WA	1924	G
48	WA	1931	A
48	WA	1933	C
48	WA	1935	G
48	WA	1950	G
48	WA	1963	G
48	WA	1964	A
48	WA	1975	G
48	WA	1976	U
48	WA	1977	G
48	WA	1984	G
48	WA	1985	A
48	WA	1986	A
48	WA	1987	G
48	WA	1988	U
48	WA	1989	C
48	WA	1990	G
48	WA	1992	A
48	WA	1993	A
48	WA	1999	U
48	WA	2000	A
48	WA	2003	G

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Mol	Chain	Res	Type
48	WA	2004	A
48	WA	2005	G
48	WA	2006	U
48	WA	2023	G
48	WA	2027	A
48	WA	2028	A
48	WA	2048	G
48	WA	2049	A
48	WA	2050	U
48	WA	2054	G
48	WA	2057	G
48	WA	2058	G
48	WA	2064	C
48	WA	2071	A
48	WA	2086	U
48	WA	2095	G
48	WA	2096	C
48	WA	2097	A
48	WA	2099	A
48	WA	2102	G
48	WA	2104	G
48	WA	2106	A
48	WA	2107	A
48	WA	2108	G
48	WA	2109	A
48	WA	2114	G
48	WA	2118	C
48	WA	2261	G
48	WA	2262	C
48	WA	2269	U
48	WA	2270	A
48	WA	2277	G
48	WA	2291	C
48	WA	2302	A
48	WA	2303	G
48	WA	2308	G
48	WA	2315	A
48	WA	2316	G
48	WA	2333	G
48	WA	2335	G
48	WA	2350	G
48	WA	2353	C

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Mol	Chain	Res	Type
48	WA	2362	A
48	WA	2384	A
48	WA	2397	A
48	WA	2412	C
48	WA	2419	A
48	WA	2424	C
48	WA	2427	U
48	WA	2434	U
48	WA	2435	G
48	WA	2436	G
48	WA	2477	G
48	WA	2485	G
48	WA	2491	C
48	WA	2492	U
48	WA	2493	C
48	WA	2505	G
48	WA	2506	C
48	WA	2507	C
48	WA	2509	A
48	WA	2515	A
48	WA	2531	A
48	WA	2539	A
48	WA	2546	G
48	WA	2547	U
48	WA	2548	G
48	WA	2549	G
48	WA	2555	A
48	WA	2577	U
48	WA	2585	C
48	WA	2588	G
48	WA	2591	C
48	WA	2603	A
48	WA	2622	G
48	WA	2625	A
48	WA	2629	C
48	WA	2655	C
48	WA	2664	G
48	WA	2672	C
48	WA	2677	G
48	WA	2688	G
48	WA	2689	U
48	WA	2697	A

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Mol	Chain	Res	Type
48	WA	2698	A
48	WA	2705	G
48	WA	2707	G
48	WA	2709	U
48	WA	2710	U
48	WA	2711	C
48	WA	2712	C
48	WA	2713	G
48	WA	2721	C
48	WA	2723	G
48	WA	2727	A
48	WA	2728	G
48	WA	2742	U
48	WA	2760	G
48	WA	2766	A
48	WA	2771	U
48	WA	2789	A
48	WA	2790	U
48	WA	2792	U
48	WA	2796	C
48	WA	2798	G
48	WA	2800	A
48	WA	2808	A
48	WA	2816	C
48	WA	2828	U
48	WA	2829	G
48	WA	2830	U
48	WA	2844	G
48	WA	2857	G
48	WA	2899	G
48	WA	3599	G
48	WA	3600	C
48	WA	3617	G
48	WA	3627	G
48	WA	3628	G
48	WA	3637	A
48	WA	3650	A
48	WA	3664	A
48	WA	3666	G
48	WA	3674	G
48	WA	3714	A
48	WA	3750	A

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Mol	Chain	Res	Type
48	WA	3755	G
48	WA	3763	C
48	WA	3774	U
48	WA	3775	U
48	WA	3776	A
48	WA	3778	G
48	WA	3779	G
48	WA	3785	A
48	WA	3786	A
48	WA	3788	U
48	WA	3800	U
48	WA	3804	U
48	WA	3810	C
48	WA	3812	C
48	WA	3813	G
48	WA	3816	U
48	WA	3819	A
48	WA	3821	G
48	WA	3840	U
48	WA	3841	G
48	WA	3842	U
48	WA	3871	C
48	WA	3878	A
48	WA	3879	A
48	WA	3880	C
48	WA	3881	G
48	WA	3891	G
48	WA	3894	U
48	WA	3899	G
48	WA	3903	A
48	WA	3908	A
48	WA	3909	G
48	WA	3910	A
48	WA	3916	U
48	WA	3917	U
48	WA	3919	A
48	WA	3940	G
48	WA	3941	G
48	WA	3945	A
48	WA	3949	A
48	WA	3951	A
48	WA	3953	G

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Mol	Chain	Res	Type
48	WA	4066	C
48	WA	4078	G
48	WA	4088	G
48	WA	4090	C
48	WA	4097	G
48	WA	4100	A
48	WA	4101	G
48	WA	4118	C
48	WA	4121	C
48	WA	4123	G
48	WA	4124	G
48	WA	4129	A
48	WA	4130	A
48	WA	4136	C
48	WA	4137	G
48	WA	4141	G
48	WA	4143	G
48	WA	4144	C
48	WA	4145	C
48	WA	4146	G
48	WA	4160	C
48	WA	4164	C
48	WA	4168	G
48	WA	4172	A
48	WA	4174	A
48	WA	4175	G
48	WA	4185	G
48	WA	4186	G
48	WA	4193	G
48	WA	4205	A
48	WA	4214	A
48	WA	4231	U
48	WA	4235	A
48	WA	4236	A
48	WA	4253	A
48	WA	4256	G
48	WA	4268	G
48	WA	4270	A
48	WA	4273	A
48	WA	4275	A
48	WA	4283	A
48	WA	4293	G

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Mol	Chain	Res	Type
48	WA	4299	G
48	WA	4306	A
48	WA	4307	G
48	WA	4308	U
48	WA	4316	C
48	WA	4332	G
48	WA	4334	C
48	WA	4338	A
48	WA	4351	C
48	WA	4352	C
48	WA	4356	U
48	WA	4375	G
48	WA	4379	G
48	WA	4380	A
48	WA	4382	A
48	WA	4389	C
48	WA	4396	A
48	WA	4397	U
48	WA	4398	A
48	WA	4421	U
48	WA	4423	C
48	WA	4424	A
48	WA	4439	U
48	WA	4446	C
48	WA	4450	G
48	WA	4451	A
48	WA	4455	C
48	WA	4466	A
48	WA	4468	C
48	WA	4502	U
48	WA	4514	U
48	WA	4515	A
48	WA	4520	A
48	WA	4522	G
48	WA	4524	G
48	WA	4526	G
48	WA	4531	G
48	WA	4532	U
48	WA	4550	A
48	WA	4551	G
48	WA	4562	C
48	WA	4569	G

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Mol	Chain	Res	Type
48	WA	4575	G
48	WA	4577	G
48	WA	4579	U
48	WA	4586	A
48	WA	4588	G
48	WA	4592	A
48	WA	4602	G
48	WA	4629	U
48	WA	4638	U
48	WA	4639	G
48	WA	4654	G
48	WA	4658	A
48	WA	4672	C
48	WA	4674	A
48	WA	4679	U
48	WA	4693	A
48	WA	4702	A
48	WA	4711	U
48	WA	4722	C
48	WA	4723	G
48	WA	4747	G
48	WA	4756	G
48	WA	4759	C
48	WA	4761	C
48	WA	4763	G
48	WA	4767	G
48	WA	4771	G
48	WA	4772	U
48	WA	4779	C
48	WA	4872	G
48	WA	4873	C
48	WA	4875	G
48	WA	4876	A
48	WA	4877	G
48	WA	4878	A
48	WA	4879	G
48	WA	4884	U
48	WA	4885	C
48	WA	4887	U
48	WA	4888	C
48	WA	4906	G
48	WA	4912	A

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Mol	Chain	Res	Type
48	WA	4914	G
48	WA	4917	G
48	WA	4919	C
48	WA	4923	C
48	WA	4924	C
48	WA	4926	C
48	WA	4927	U
48	WA	4928	C
48	WA	4929	G
48	WA	4930	C
48	WA	4936	A
48	WA	4939	C
48	WA	4945	A
48	WA	4946	C
48	WA	4949	U
48	WA	4951	G
48	WA	4952	U
48	WA	4953	G
48	WA	4960	C
48	WA	4965	G
48	WA	4967	U
48	WA	4968	A
48	WA	4978	U
48	WA	4992	C
48	WA	4993	U
48	WA	4994	G
48	WA	5008	U
48	WA	5016	A
48	WA	5019	G
48	WA	5043	G
48	WA	5049	C
48	WA	5050	A
48	WA	5052	C
48	WA	5055	U
48	WA	5056	C
48	WA	5063	A
48	WA	5064	G
48	WA	5070	G
49	XA	7	G
49	XA	11	A
49	XA	33	U
49	XA	41	G

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Mol	Chain	Res	Type
49	XA	54	A
49	XA	63	C
49	XA	64	G
49	XA	100	A
49	XA	110	G
50	YA	16	G
50	YA	34	U
50	YA	35	C
50	YA	39	G
50	YA	59	A
50	YA	62	A
50	YA	63	U
50	YA	72	A
50	YA	75	G
50	YA	79	G
50	YA	80	A
50	YA	81	C
50	YA	82	A
50	YA	83	C
50	YA	84	A
50	YA	85	U
50	YA	86	U
50	YA	87	G
50	YA	90	C
50	YA	94	G
50	YA	95	A
50	YA	103	A
50	YA	105	C
50	YA	110	U
50	YA	111	U
50	YA	114	G
50	YA	123	U
50	YA	124	U
50	YA	125	C
50	YA	126	C
50	YA	127	U
50	YA	150	C
50	YA	155	C
51	ZA	3	C
51	ZA	25	A
51	ZA	33	G
51	ZA	41	G

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Mol	Chain	Res	Type
51	ZA	42	A
51	ZA	46	A
51	ZA	56	G
51	ZA	58	C
51	ZA	62	G
51	ZA	65	C
51	ZA	67	C
51	ZA	68	A
51	ZA	71	G
51	ZA	73	C
51	ZA	75	G
51	ZA	76	U
51	ZA	79	A
51	ZA	82	G
51	ZA	103	A
51	ZA	113	G
51	ZA	114	G
51	ZA	115	U
51	ZA	116	U
51	ZA	126	G
51	ZA	130	G
51	ZA	142	C
51	ZA	143	U
51	ZA	147	A
51	ZA	155	G
51	ZA	160	U
51	ZA	162	C
51	ZA	173	A
51	ZA	178	C
51	ZA	181	A
51	ZA	182	C
51	ZA	183	G
51	ZA	184	G
51	ZA	187	G
51	ZA	188	C
51	ZA	192	C
51	ZA	199	C
51	ZA	200	G
51	ZA	201	C
51	ZA	204	G
51	ZA	209	A
51	ZA	291	G

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Mol	Chain	Res	Type
51	ZA	306	C
51	ZA	307	G
51	ZA	308	G
51	ZA	309	G
51	ZA	320	G
51	ZA	322	C
51	ZA	323	C
51	ZA	325	C
51	ZA	326	C
51	ZA	327	G
51	ZA	328	U
51	ZA	329	G
51	ZA	334	C
51	ZA	335	G
51	ZA	347	G
51	ZA	351	G
51	ZA	362	C
51	ZA	364	A
51	ZA	368	U
51	ZA	369	C
51	ZA	383	G
51	ZA	385	G
51	ZA	400	C
51	ZA	409	C
51	ZA	418	A
51	ZA	438	G
51	ZA	448	A
51	ZA	450	C
51	ZA	464	A
51	ZA	472	C
51	ZA	473	A
51	ZA	474	G
51	ZA	482	G
51	ZA	487	U
51	ZA	492	C
51	ZA	493	A
51	ZA	502	C
51	ZA	508	A
51	ZA	525	A
51	ZA	531	A
51	ZA	532	C
51	ZA	534	G

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Mol	Chain	Res	Type
51	ZA	535	G
51	ZA	536	A
51	ZA	538	U
51	ZA	539	C
51	ZA	541	U
51	ZA	542	U
51	ZA	544	G
51	ZA	545	A
51	ZA	547	G
51	ZA	548	C
51	ZA	549	C
51	ZA	550	C
51	ZA	554	A
51	ZA	555	A
51	ZA	559	G
51	ZA	560	A
51	ZA	561	A
51	ZA	562	U
51	ZA	563	G
51	ZA	564	A
51	ZA	568	C
51	ZA	576	A
51	ZA	582	U
51	ZA	583	A
51	ZA	587	A
51	ZA	588	G
51	ZA	590	A
51	ZA	591	U
51	ZA	593	C
51	ZA	594	A
51	ZA	606	G
51	ZA	608	C
51	ZA	614	C
51	ZA	617	G
51	ZA	626	G
51	ZA	627	U
51	ZA	631	U
51	ZA	643	A
51	ZA	644	G
51	ZA	660	C
51	ZA	668	A
51	ZA	669	A

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Mol	Chain	Res	Type
51	ZA	670	A
51	ZA	671	A
51	ZA	672	A
51	ZA	673	G
51	ZA	684	G
51	ZA	689	U
51	ZA	731	G
51	ZA	752	G
51	ZA	753	C
51	ZA	754	G
51	ZA	798	G
51	ZA	799	U
51	ZA	811	A
51	ZA	812	A
51	ZA	821	G
51	ZA	822	U
51	ZA	834	C
51	ZA	835	C
51	ZA	840	C
51	ZA	841	G
51	ZA	845	G
51	ZA	847	A
51	ZA	859	G
51	ZA	860	G
51	ZA	869	A
51	ZA	870	A
51	ZA	871	U
51	ZA	872	A
51	ZA	873	G
51	ZA	874	G
51	ZA	875	A
51	ZA	878	G
51	ZA	886	A
51	ZA	888	U
51	ZA	889	U
51	ZA	890	U
51	ZA	891	G
51	ZA	892	U
51	ZA	896	U
51	ZA	897	U
51	ZA	898	U
51	ZA	902	G

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Mol	Chain	Res	Type
51	ZA	905	C
51	ZA	913	A
51	ZA	914	U
51	ZA	920	A
51	ZA	922	A
51	ZA	933	G
51	ZA	934	G
51	ZA	956	G
51	ZA	971	G
51	ZA	990	A
51	ZA	992	A
51	ZA	999	G
51	ZA	1002	U
51	ZA	1008	A
51	ZA	1017	U
51	ZA	1023	A
51	ZA	1061	U
51	ZA	1062	A
51	ZA	1083	A
51	ZA	1085	C
51	ZA	1115	U
51	ZA	1116	C
51	ZA	1117	C
51	ZA	1118	C
51	ZA	1121	G
51	ZA	1126	G
51	ZA	1133	A
51	ZA	1138	C
51	ZA	1148	A
51	ZA	1149	A
51	ZA	1153	C
51	ZA	1154	U
51	ZA	1195	A
51	ZA	1207	G
51	ZA	1208	A
51	ZA	1215	C
51	ZA	1224	G
51	ZA	1227	G
51	ZA	1233	G
51	ZA	1241	A
51	ZA	1242	U
51	ZA	1251	A

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Mol	Chain	Res	Type
51	ZA	1253	A
51	ZA	1256	G
51	ZA	1257	G
51	ZA	1259	A
51	ZA	1274	G
51	ZA	1275	G
51	ZA	1285	G
51	ZA	1286	G
51	ZA	1297	U
51	ZA	1298	G
51	ZA	1299	A
51	ZA	1300	U
51	ZA	1301	A
51	ZA	1302	G
51	ZA	1303	C
51	ZA	1313	A
51	ZA	1333	U
51	ZA	1342	U
51	ZA	1354	G
51	ZA	1371	U
51	ZA	1372	U
51	ZA	1378	A
51	ZA	1382	A
51	ZA	1396	A
51	ZA	1397	U
51	ZA	1404	U
51	ZA	1417	C
51	ZA	1418	C
51	ZA	1419	C
51	ZA	1420	G
51	ZA	1421	A
51	ZA	1422	G
51	ZA	1423	C
51	ZA	1424	G
51	ZA	1428	G
51	ZA	1433	C
51	ZA	1434	C
51	ZA	1435	C
51	ZA	1437	C
51	ZA	1438	A
51	ZA	1439	A
51	ZA	1441	U

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Mol	Chain	Res	Type
51	ZA	1442	U
51	ZA	1452	A
51	ZA	1454	A
51	ZA	1464	C
51	ZA	1466	G
51	ZA	1475	G
51	ZA	1476	A
51	ZA	1477	U
51	ZA	1489	A
51	ZA	1490	G
51	ZA	1498	A
51	ZA	1521	C
51	ZA	1522	A
51	ZA	1531	A
51	ZA	1533	A
51	ZA	1535	U
51	ZA	1536	G
51	ZA	1548	G
51	ZA	1551	U
51	ZA	1552	G
51	ZA	1553	C
51	ZA	1555	U
51	ZA	1556	A
51	ZA	1560	U
51	ZA	1564	C
51	ZA	1567	G
51	ZA	1570	G
51	ZA	1580	A
51	ZA	1585	U
51	ZA	1587	G
51	ZA	1588	A
51	ZA	1601	A
51	ZA	1604	G
51	ZA	1605	G
51	ZA	1606	G
51	ZA	1621	U
51	ZA	1623	A
51	ZA	1638	G
51	ZA	1648	G
51	ZA	1665	G
51	ZA	1680	G
51	ZA	1683	C

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Mol	Chain	Res	Type
51	ZA	1698	C
51	ZA	1699	A
51	ZA	1721	U
51	ZA	1722	G
51	ZA	1726	G
51	ZA	1744	G
51	ZA	1745	A
51	ZA	1748	G
51	ZA	1753	C
51	ZA	1757	G
51	ZA	1774	C
51	ZA	1775	U
51	ZA	1776	G
51	ZA	1780	G
51	ZA	1783	C
51	ZA	1824	A
51	ZA	1825	A
51	ZA	1826	G
51	ZA	1831	A
51	ZA	1836	G
51	ZA	1838	U
51	ZA	1849	G
51	ZA	1851	A
51	ZA	1861	G
51	ZA	1862	G
51	ZA	1863	A
51	ZA	1865	C
51	ZA	1869	A

All (32) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
44	SA	20	A
44	SA	21	A
44	SA	57	G
46	UA	19	U
48	WA	12	A
48	WA	275	C
48	WA	385	A
48	WA	505	G
48	WA	971	A
48	WA	1293	G

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Mol	Chain	Res	Type
48	WA	1635	G
48	WA	1677	C
48	WA	1806	A
48	WA	1820	G
48	WA	2048	G
48	WA	2095	G
48	WA	2268	C
48	WA	2697	A
48	WA	3627	G
48	WA	4117	G
48	WA	4450	G
48	WA	4701	U
48	WA	4886	G
48	WA	4951	G
51	ZA	24	C
51	ZA	541	U
51	ZA	561	A
51	ZA	752	G
51	ZA	870	A
51	ZA	890	U
51	ZA	1137	U
51	ZA	1433	C

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](#)

Of 252 ligands modelled in this entry, 245 are monoatomic - leaving 7 for Mogul analysis.

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$
93	SPD	WA	5246	-	9,9,9	0.26	0	8,8,8	0.29	0
91	5GP	UA	101	46	22,26,26	1.23	2 (9%)	24,40,40	1.28	4 (16%)
93	SPD	ZA	1944	-	9,9,9	0.26	0	8,8,8	0.29	0
93	SPD	WA	5244	-	9,9,9	0.27	0	8,8,8	0.34	0
92	ANM	WA	5243	94	20,20,20	4.07	7 (35%)	24,27,27	1.40	2 (8%)
93	SPD	WA	5245	-	9,9,9	0.28	0	8,8,8	0.30	0
95	SER	HC	502	-	4,5,6	0.59	0	1,5,7	0.54	0

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
93	SPD	WA	5246	-	-	1/7/7/7	-
91	5GP	UA	101	46	-	5/6/26/26	0/3/3/3
93	SPD	ZA	1944	-	-	1/7/7/7	-
93	SPD	WA	5244	-	-	1/7/7/7	-
92	ANM	WA	5243	94	-	6/10/23/23	0/2/2/2
93	SPD	WA	5245	-	-	1/7/7/7	-
95	SER	HC	502	-	-	1/2/4/6	-

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
92	WA	5243	ANM	C3-C2	-11.78	1.32	1.53
92	WA	5243	ANM	C16-N1	-8.84	1.30	1.47
92	WA	5243	ANM	C2-C16	7.40	1.68	1.53
91	UA	101	5GP	C5-C6	-4.12	1.39	1.47
92	WA	5243	ANM	C4-C3	4.00	1.58	1.53
92	WA	5243	ANM	C4-N1	3.87	1.60	1.47
92	WA	5243	ANM	O2-C5	3.52	1.43	1.35
92	WA	5243	ANM	C6-C5	2.44	1.57	1.49
91	UA	101	5GP	C6-N1	-2.37	1.34	1.37

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
92	WA	5243	ANM	O2-C5-C6	5.19	120.35	111.09
91	UA	101	5GP	C8-N7-C5	2.89	107.48	102.55
91	UA	101	5GP	C5-C6-N1	2.88	119.56	114.07
91	UA	101	5GP	C2-N1-C6	-2.34	120.83	125.11
92	WA	5243	ANM	C2-O2-C5	-2.12	114.43	117.72
91	UA	101	5GP	O6-C6-C5	-2.01	120.33	124.32

There are no chirality outliers.

All (16) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
91	UA	101	5GP	C5'-O5'-P-O1P
92	WA	5243	ANM	C6-C5-O2-C2
92	WA	5243	ANM	O3-C5-O2-C2
92	WA	5243	ANM	C10-C9-O1-C14
92	WA	5243	ANM	C1-C9-O1-C14
91	UA	101	5GP	O4'-C4'-C5'-O5'
91	UA	101	5GP	C3'-C4'-C5'-O5'
93	WA	5245	SPD	C8-C7-N6-C5
93	ZA	1944	SPD	C2-C3-C4-C5
93	WA	5244	SPD	C2-C3-C4-C5
92	WA	5243	ANM	C11-C12-C15-C16
92	WA	5243	ANM	C13-C12-C15-C16
91	UA	101	5GP	C4'-C5'-O5'-P
95	HC	502	SER	N-CA-CB-OG
91	UA	101	5GP	C5'-O5'-P-O3P
93	WA	5246	SPD	C8-C7-N6-C5

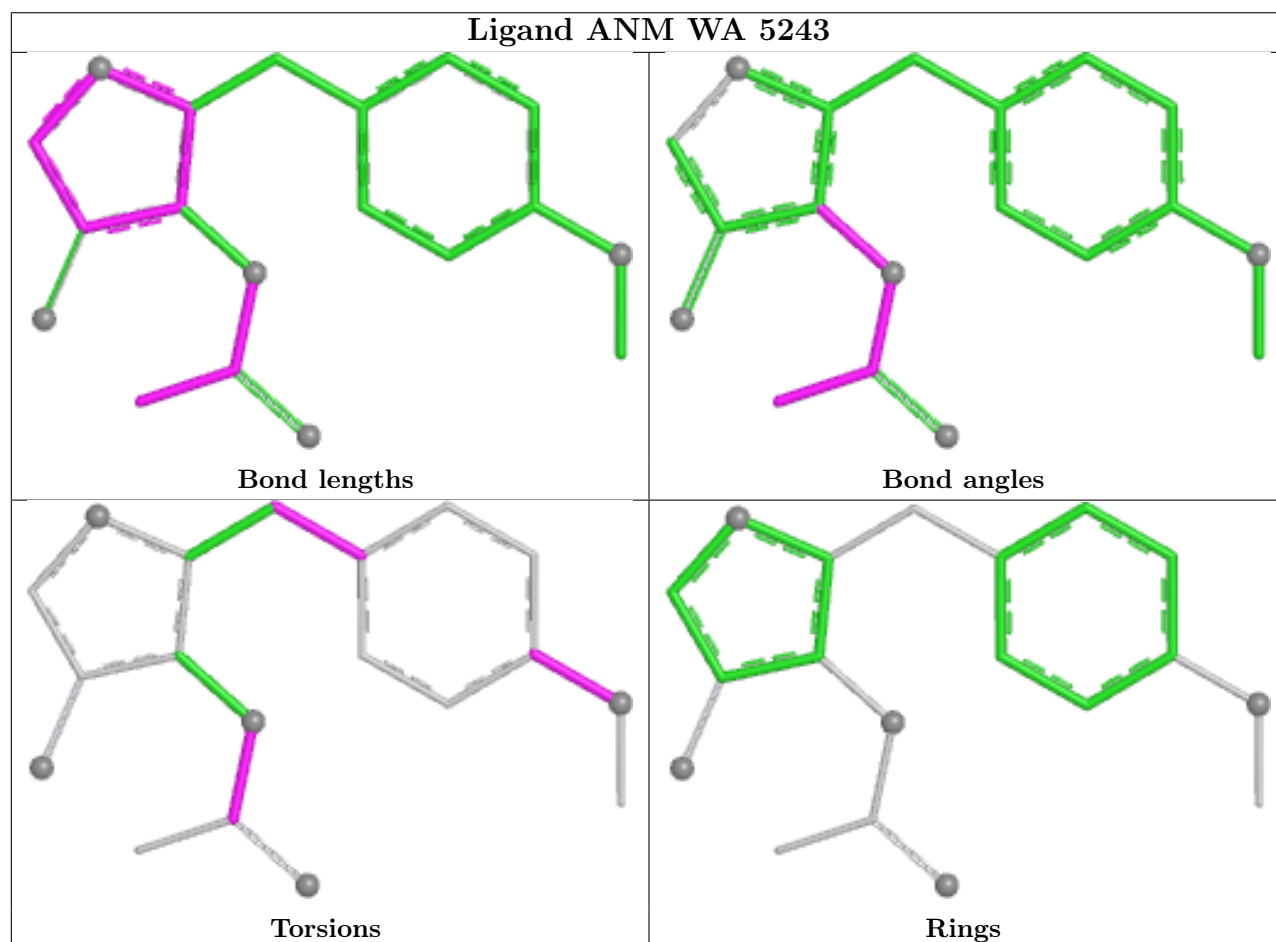
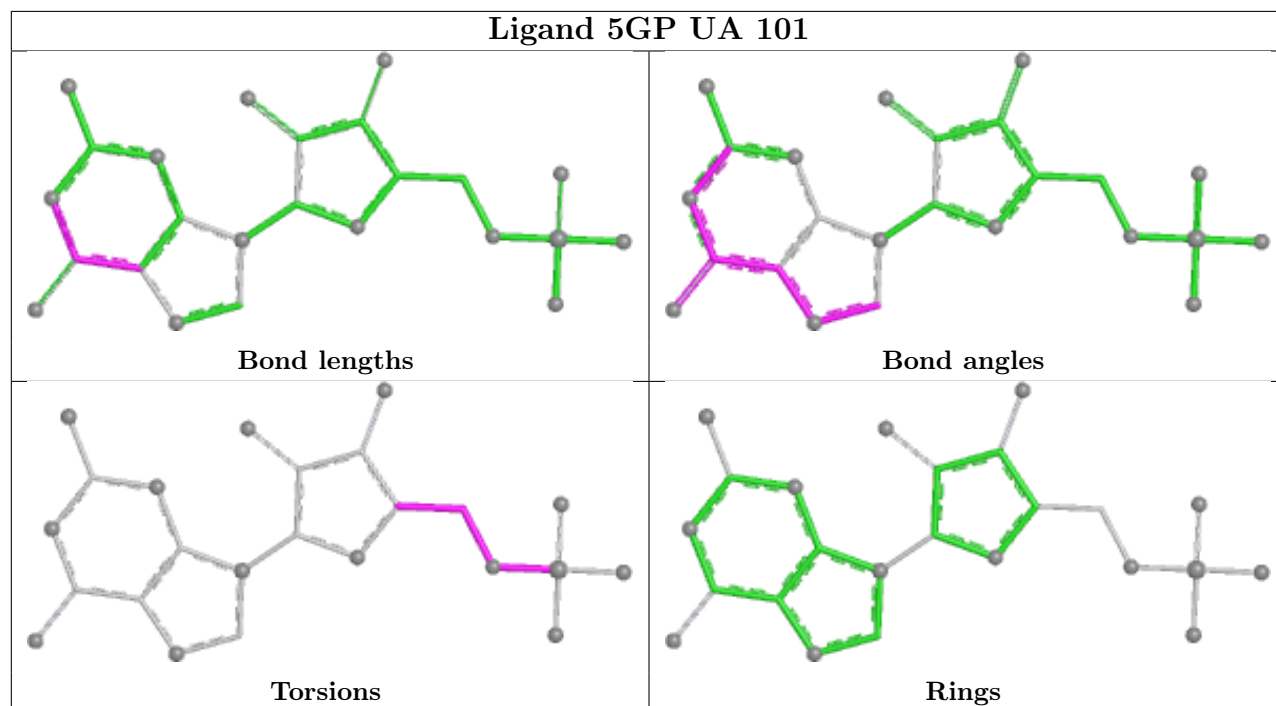
There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
93	WA	5244	SPD	1	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 than 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.



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
48	WA	21
86	b	2

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	WA	2118:C	O3'	2260:C	P	37.06
1	WA	1225:G	O3'	1239:G	P	20.73
1	WA	996:C	O3'	1070:G	P	17.80
1	WA	4779:C	O3'	4861:C	P	17.50
1	WA	763:G	O3'	904:C	P	16.92
1	WA	524:C	O3'	639:G	P	16.84
1	WA	4103:C	O3'	4109:G	P	16.47
1	WA	1698:C	O3'	1722:C	P	14.93
1	WA	5024:U	O3'	5030:G	P	13.96
1	WA	1366:U	O3'	1370:A	P	13.55
1	WA	2904:G	O3'	3598:A	P	12.94
1	b	106:LYS	C	107:VAL	N	11.94
1	WA	4731:A	O3'	4737:G	P	10.50
1	WA	3954:A	O3'	4063:C	P	9.86
1	WA	1186:C	O3'	1189:C	P	9.83
1	WA	182:G	O3'	189:G	P	9.44
1	b	107:VAL	C	108:PRO	N	8.69
1	WA	4742:G	O3'	4745:G	P	5.84
1	WA	513:U	O3'	516:C	P	5.54
1	WA	501:G	O3'	505:G	P	4.87
1	WA	1106:U	O3'	1174:G	P	4.49
1	WA	4901:G	O3'	4904:C	P	4.35
1	WA	2030:C	O3'	2031:A	P	3.57

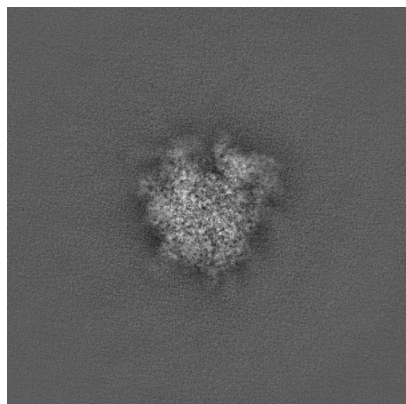
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-43567. These allow visual inspection of the internal detail of the map and identification of artifacts.

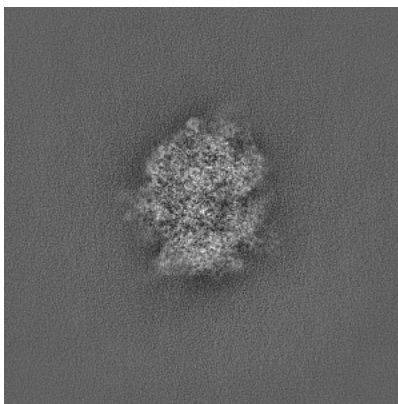
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

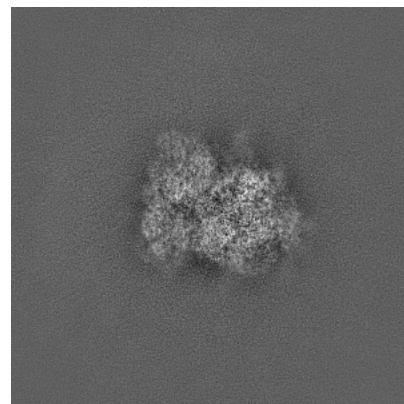
6.1.1 Primary map



X

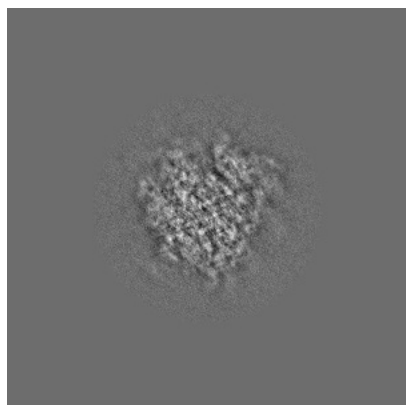


Y

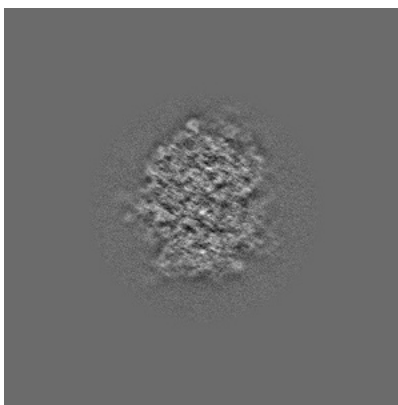


Z

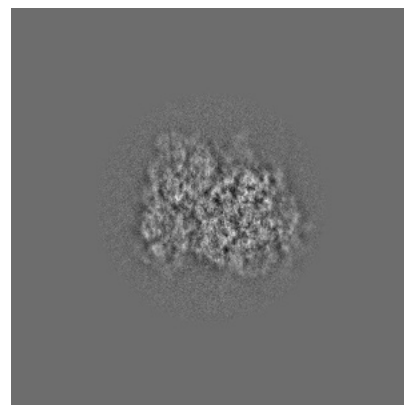
6.1.2 Raw map



X



Y

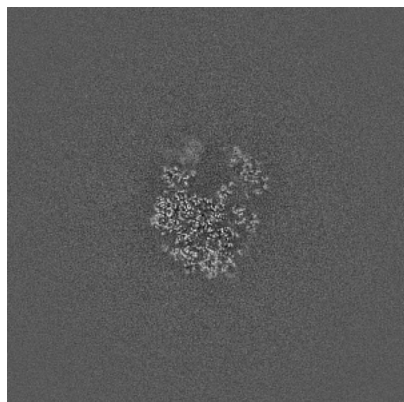


Z

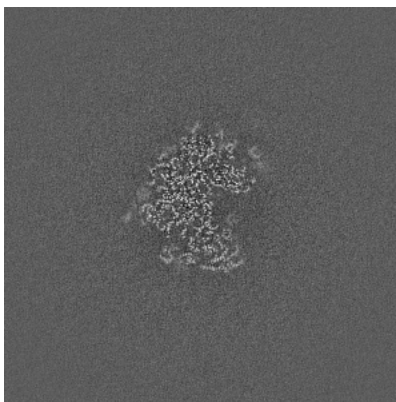
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

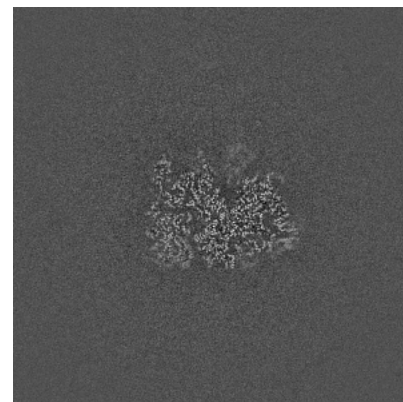
6.2.1 Primary map



X Index: 324

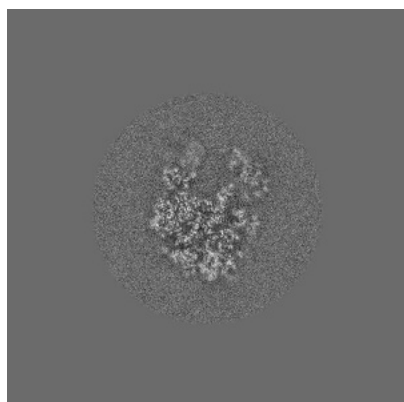


Y Index: 324

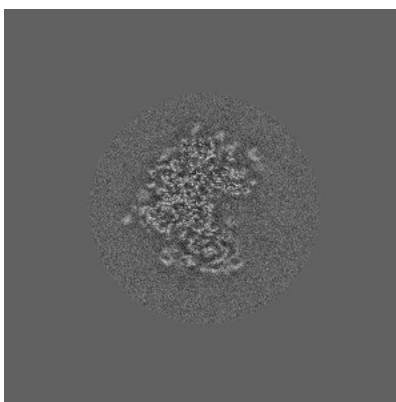


Z Index: 324

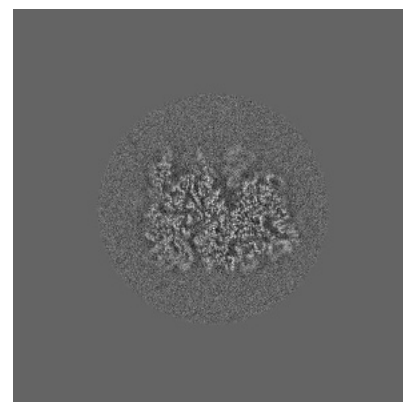
6.2.2 Raw map



X Index: 324



Y Index: 324

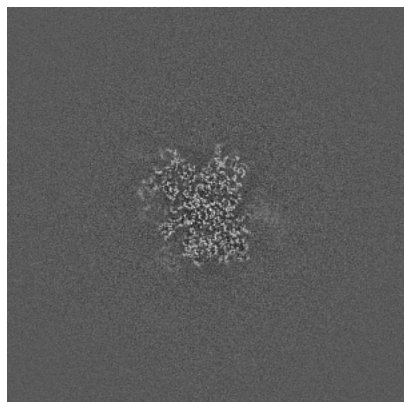


Z Index: 324

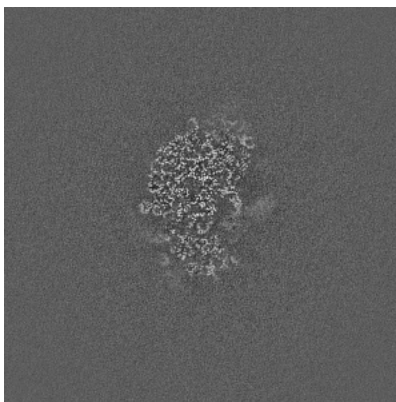
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

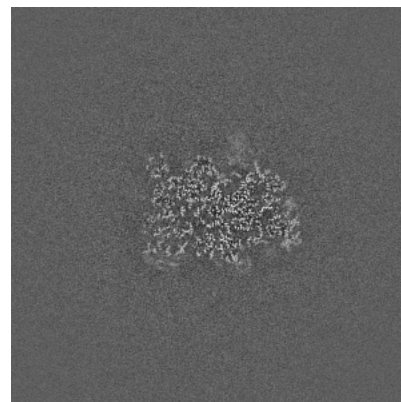
6.3.1 Primary map



X Index: 377

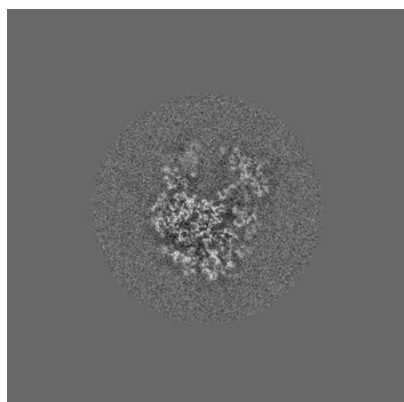


Y Index: 301

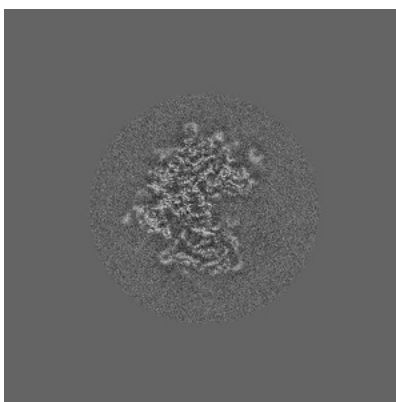


Z Index: 311

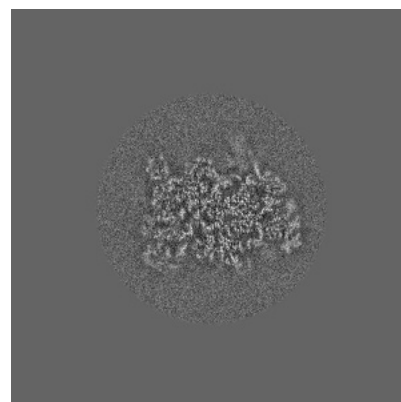
6.3.2 Raw map



X Index: 322



Y Index: 327

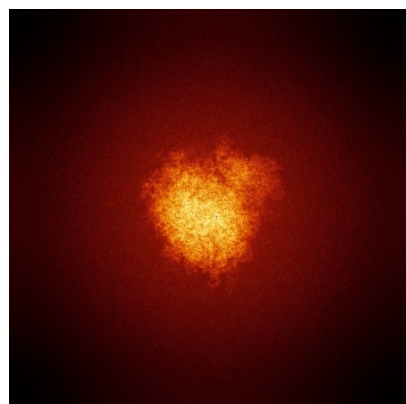


Z Index: 311

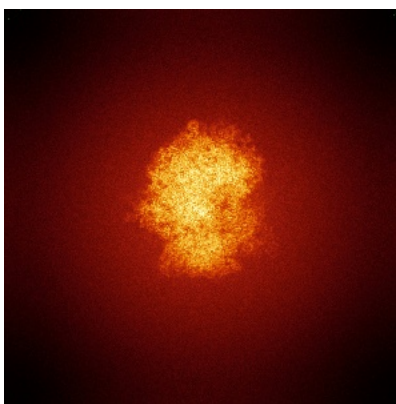
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

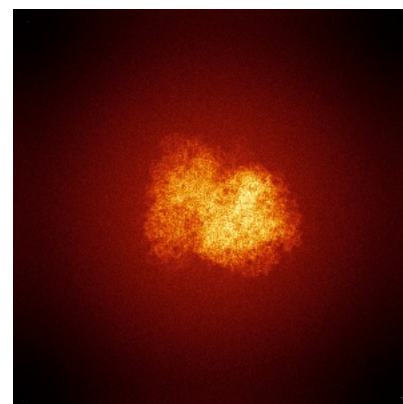
6.4.1 Primary map



X

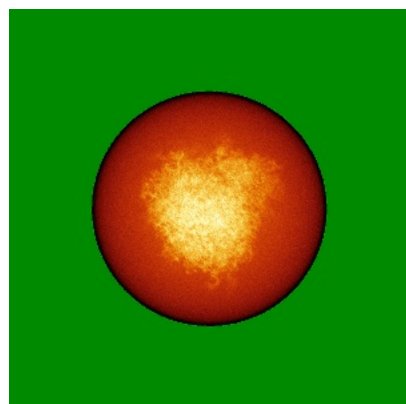


Y

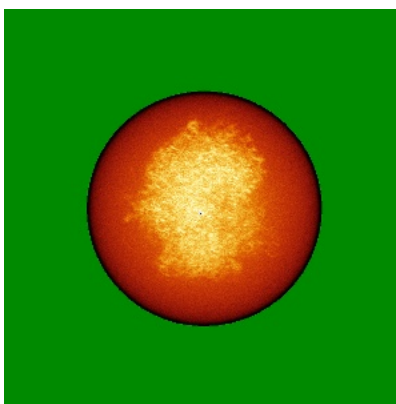


Z

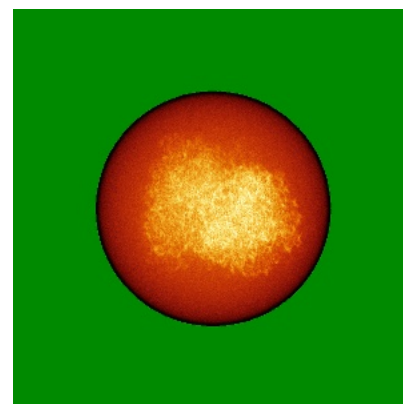
6.4.2 Raw map



X



Y



Z

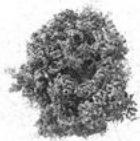
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

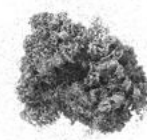
6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 6.5. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

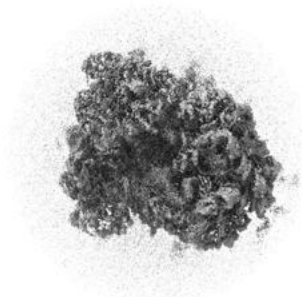
6.5.2 Raw map



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.

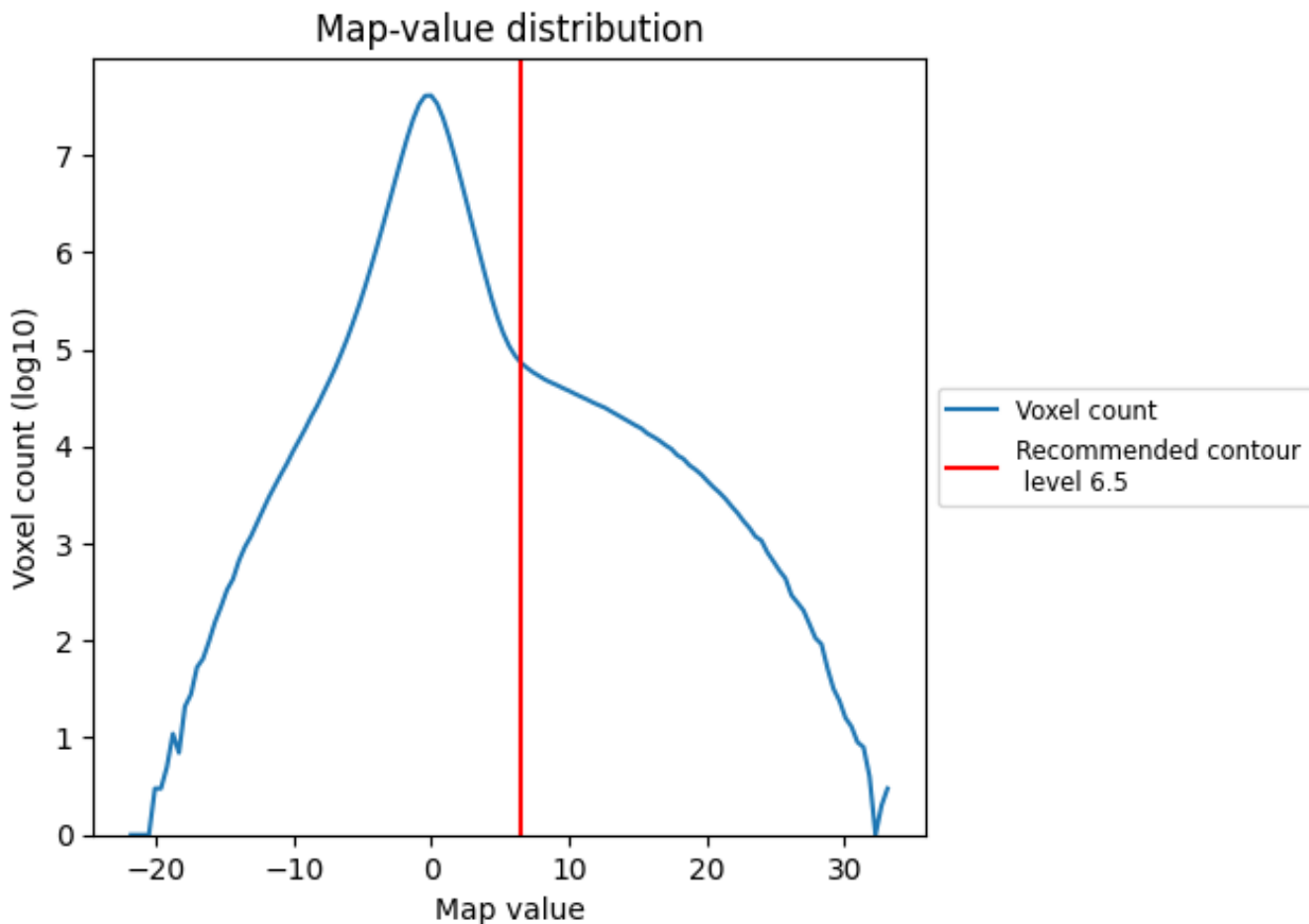
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

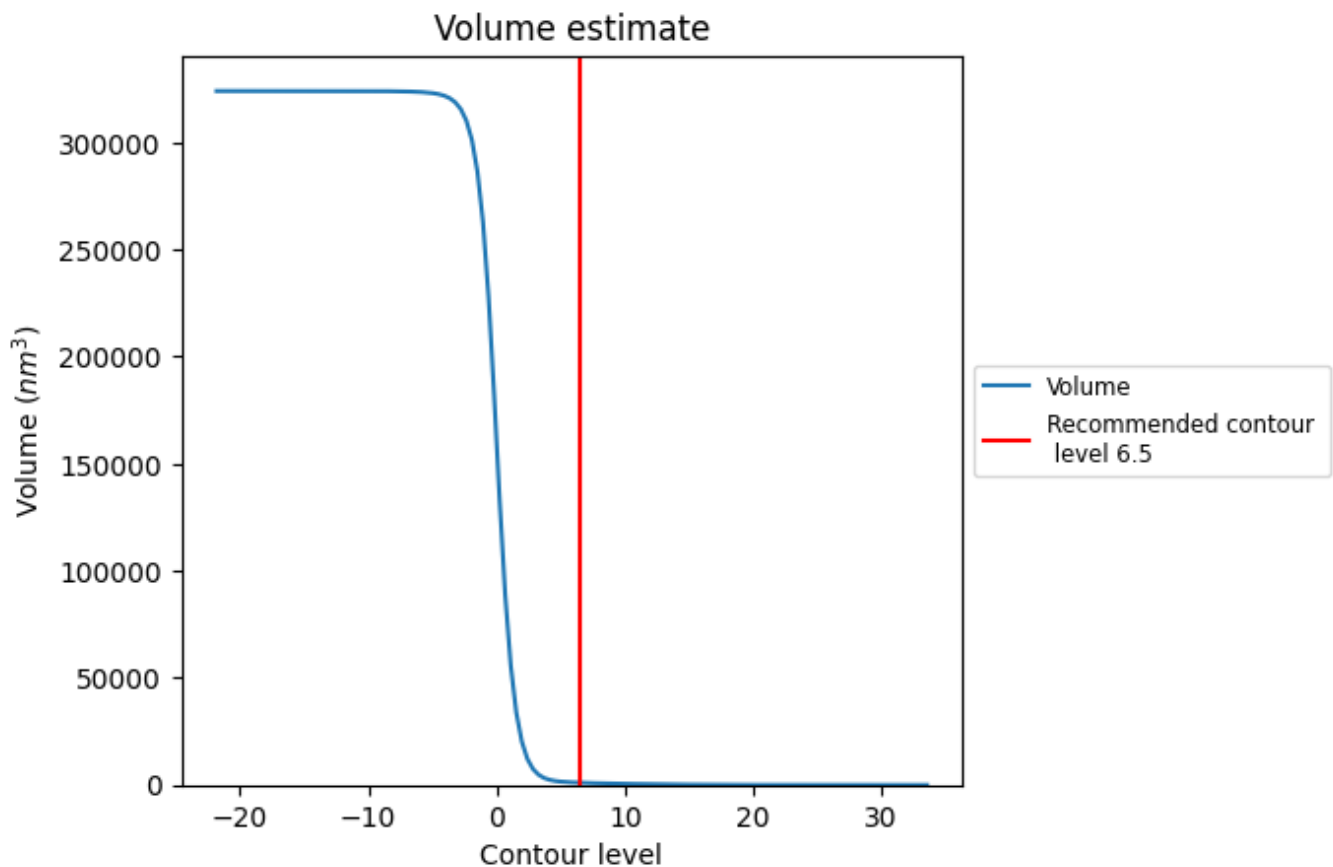
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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.

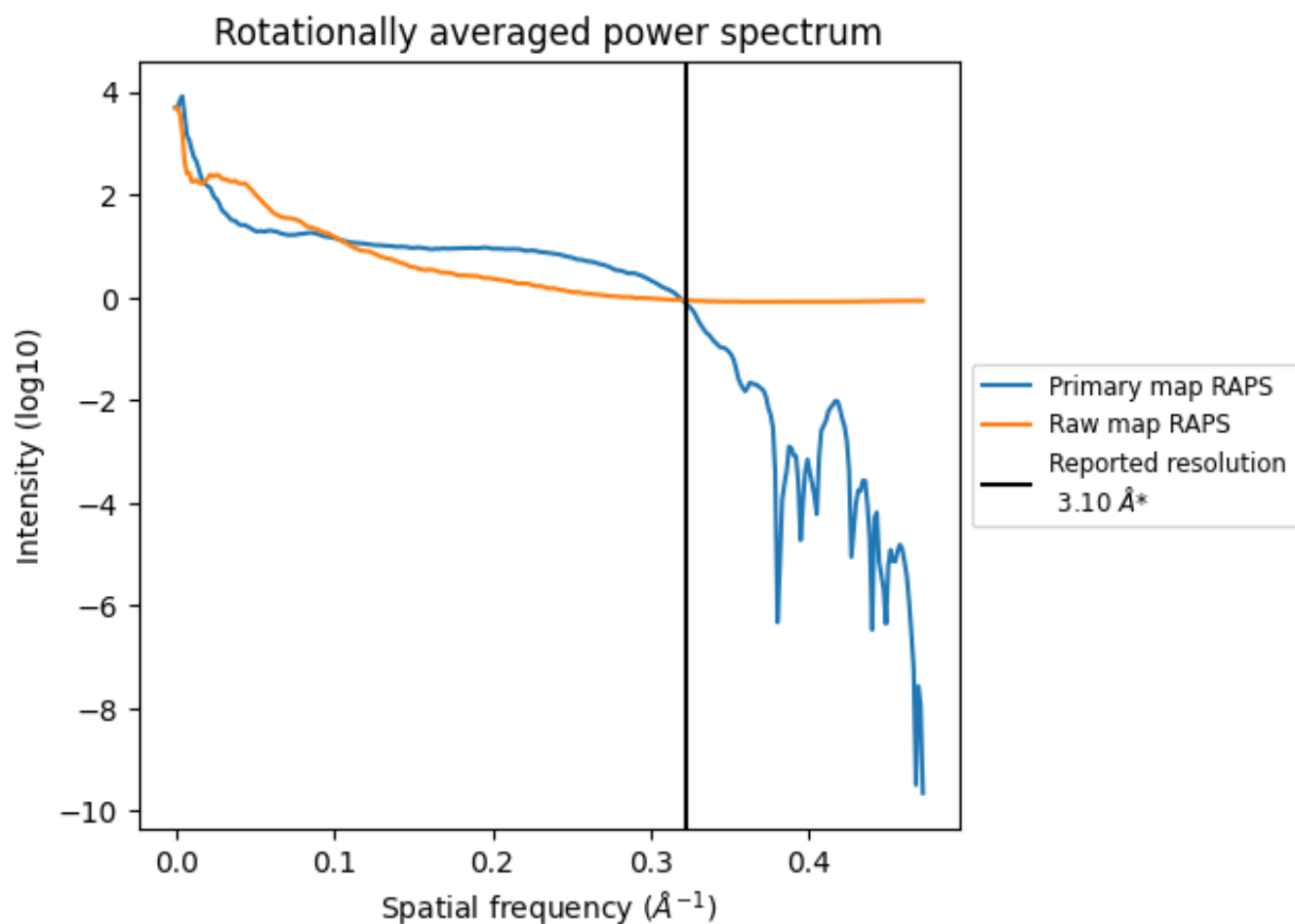
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1042 nm^3 ; this corresponds to an approximate mass of 941 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

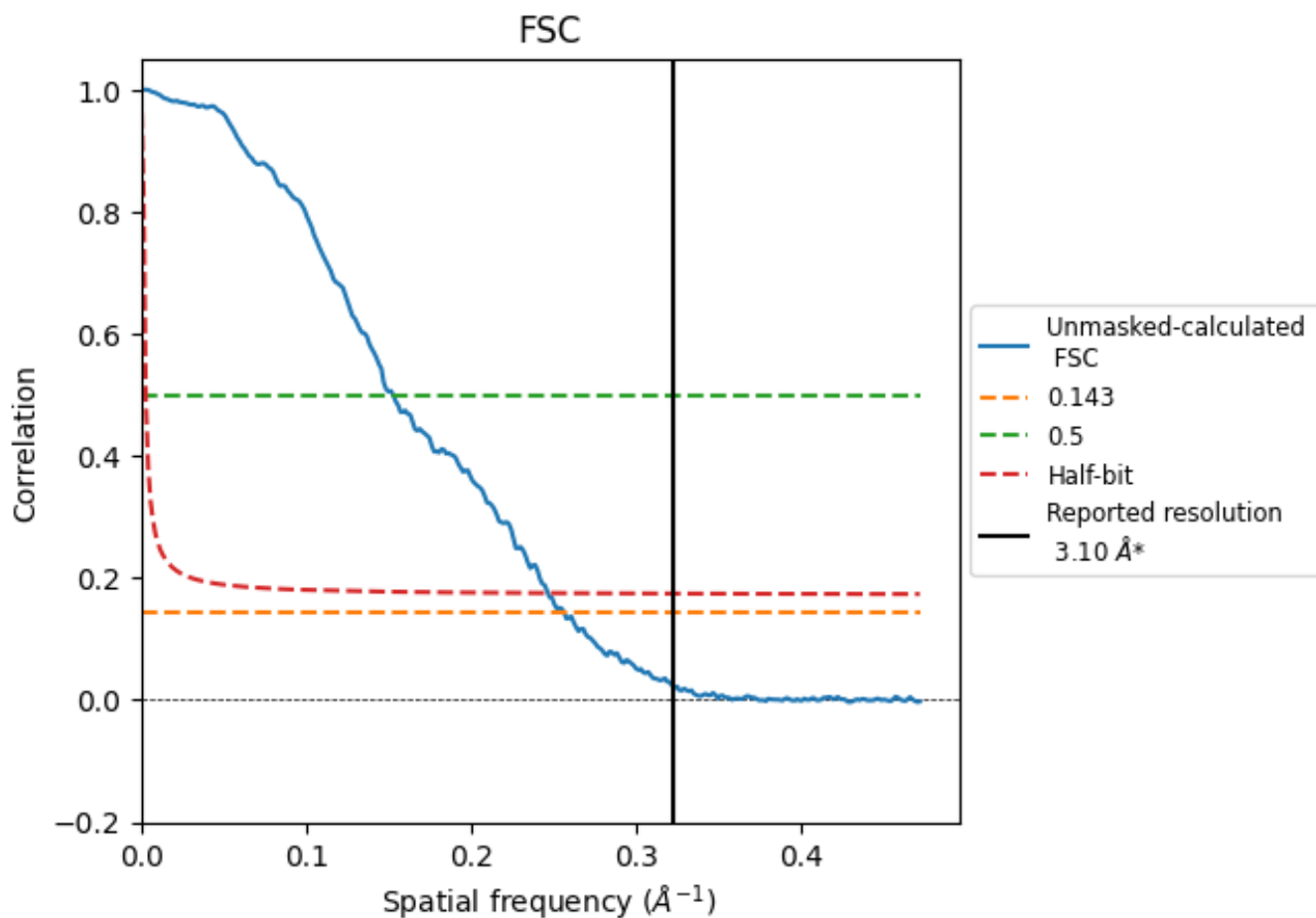


*Reported resolution corresponds to spatial frequency of 0.323 Å⁻¹

8 Fourier-Shell correlation [i](#)

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 [i](#)



*Reported resolution corresponds to spatial frequency of 0.323 Å⁻¹

8.2 Resolution estimates [i](#)

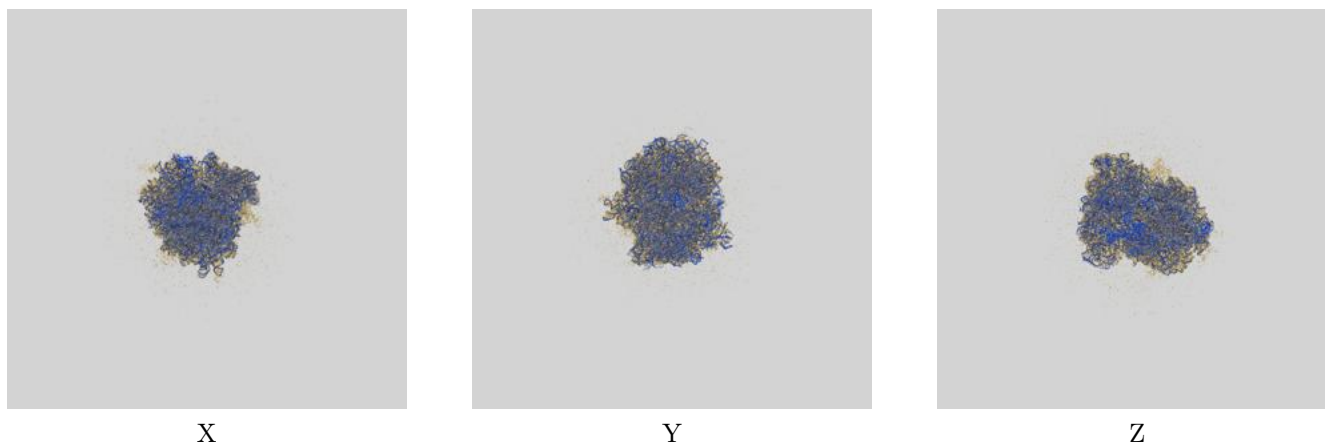
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.10	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.90	6.55	4.06

*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 3.90 differs from the reported value 3.1 by more than 10 %

9 Map-model fit [i](#)

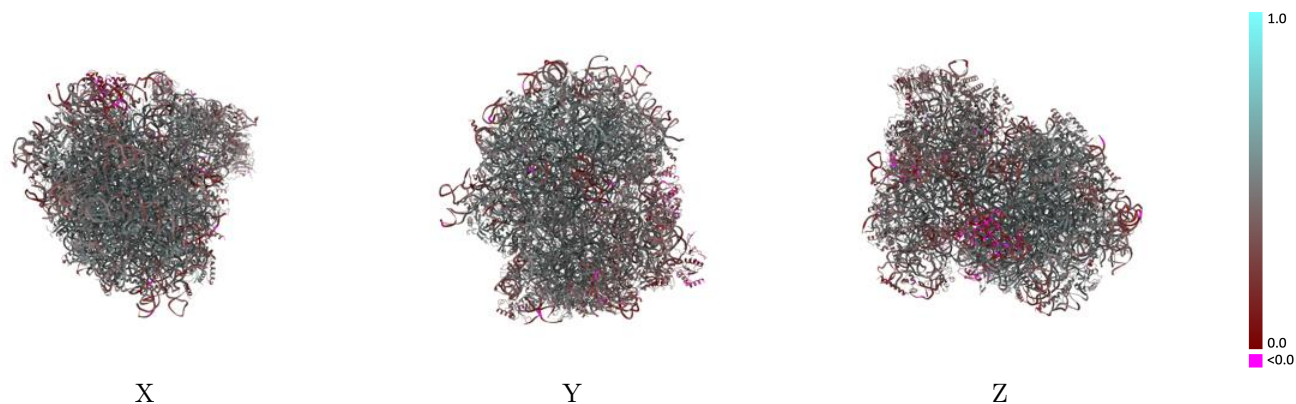
This section contains information regarding the fit between EMDB map EMD-43567 and PDB model 8VVS. Per-residue inclusion information can be found in section 3 on page 26.

9.1 Map-model overlay [i](#)



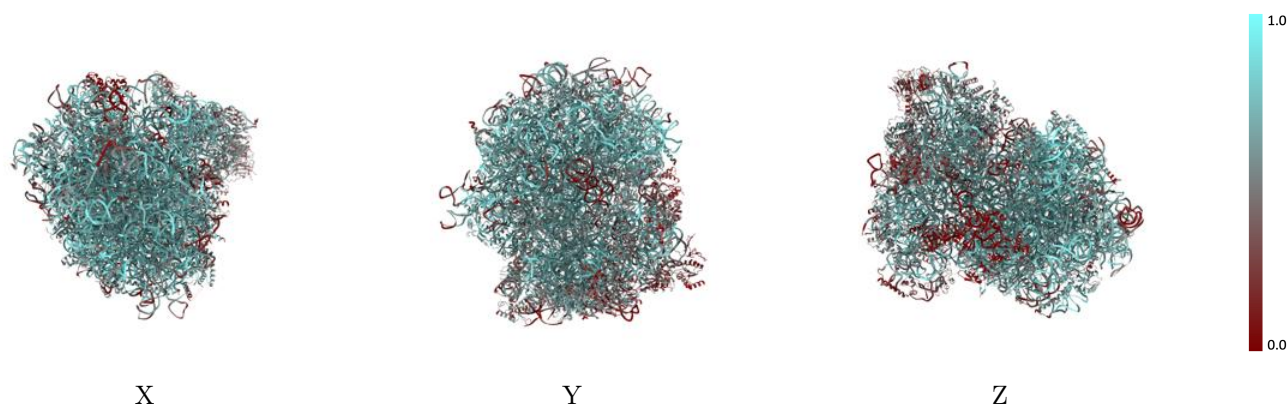
The images above show the 3D surface view of the map at the recommended contour level 6.5 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [i](#)



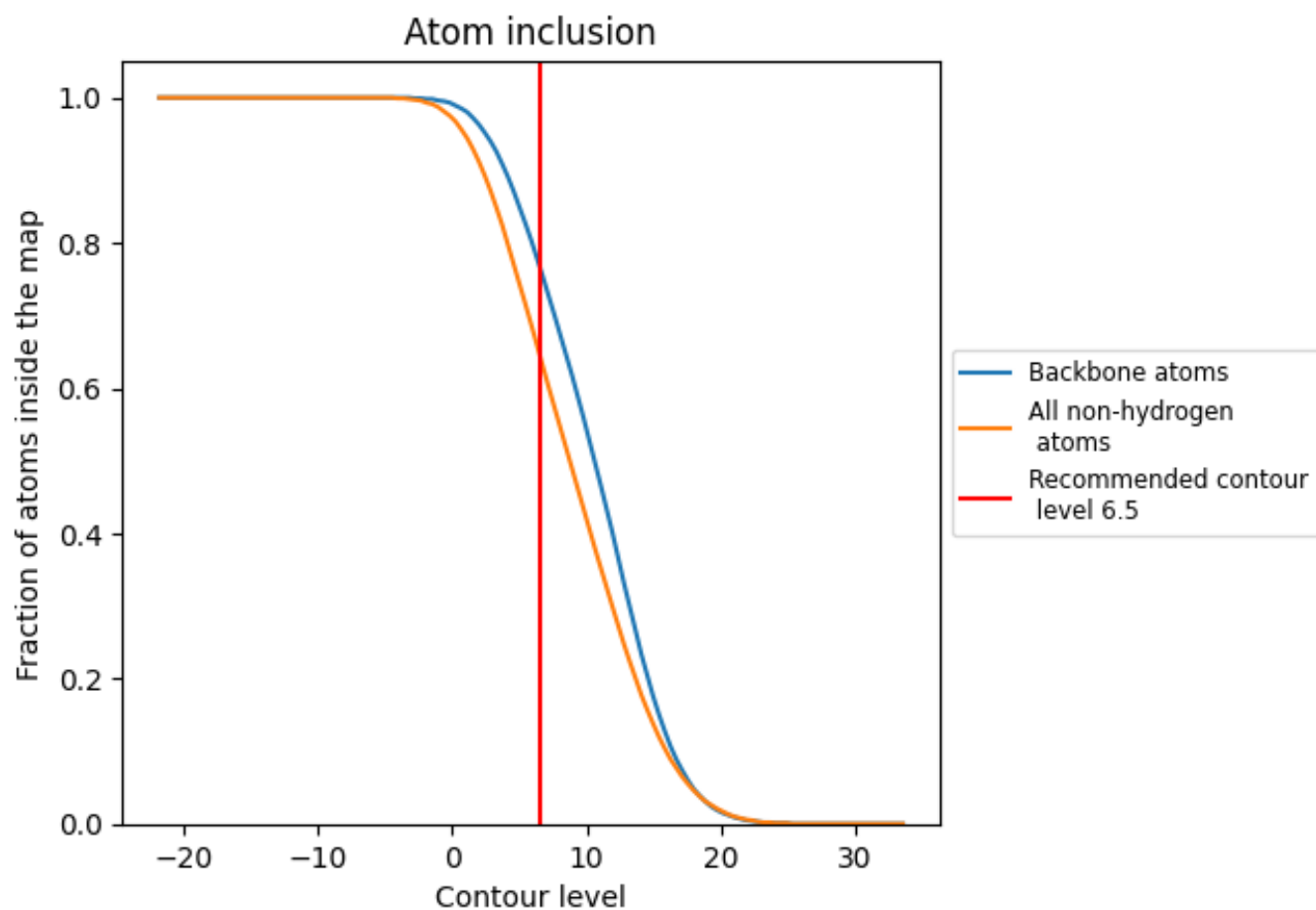
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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](#)



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 (6.5).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 77% of all backbone atoms, 65% 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 (6.5) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6460	 0.4470
A	 0.6850	 0.5250
AA	 0.5240	 0.4290
AB	 0.5640	 0.4480
AC	 0.5950	 0.4800
B	 0.6640	 0.5000
BA	 0.6370	 0.4740
BB	 0.5470	 0.4620
BC	 0.4960	 0.4430
C	 0.6580	 0.5050
CA	 0.6370	 0.4870
CB	 0.5790	 0.4700
CC	 0.4830	 0.4270
D	 0.6490	 0.4570
DA	 0.6690	 0.5140
DB	 0.4440	 0.4000
DC	 0.5360	 0.4510
E	 0.5860	 0.4560
EA	 0.6590	 0.5230
EB	 0.5430	 0.4600
EC	 0.4440	 0.3890
F	 0.6400	 0.4970
FA	 0.6370	 0.4940
FB	 0.4920	 0.4150
FC	 0.1510	 0.2610
G	 0.5960	 0.4450
GA	 0.6280	 0.4750
GB	 0.4160	 0.3710
GC	 0.3270	 0.3460
H	 0.6140	 0.4700
HA	 0.6240	 0.4600
HB	 0.4550	 0.3990
HC	 0.0940	 0.2990
I	 0.6600	 0.5050
IA	 0.6960	 0.5230



























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Chain	Atom inclusion	Q-score
IB	0.5400	0.4470
IC	0.4500	0.4450
J	0.5850	0.4410
JA	0.5550	0.4330
JB	0.5490	0.4390
K	0.6270	0.4870
KA	0.6230	0.4920
KB	0.4160	0.3740
L	0.6270	0.4650
LA	0.6710	0.5040
LB	0.5980	0.4910
M	0.6990	0.5240
MA	0.6190	0.4880
MB	0.1710	0.2180
N	0.6630	0.4960
NA	0.6490	0.5150
NB	0.6130	0.4650
O	0.6530	0.5080
OA	0.6490	0.5070
OB	0.5720	0.4590
P	0.6760	0.5120
PA	0.6630	0.5020
PB	0.4030	0.3730
Q	0.6320	0.4700
QB	0.4780	0.4160
R	0.6550	0.4970
RA	0.0190	0.1040
RB	0.4910	0.4190
S	0.6370	0.4920
SA	0.5680	0.4020
SB	0.4790	0.4040
T	0.5610	0.4300
TA	0.1550	0.2340
TB	0.4980	0.4050
U	0.6480	0.5110
UA	0.1610	0.2630
UB	0.4050	0.3770
V	0.4820	0.3960
VA	0.4820	0.4170
VB	0.5850	0.4520
W	0.6310	0.4740
WA	0.7500	0.4610

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Chain	Atom inclusion	Q-score
WB	 0.6060	 0.4800
X	 0.6350	 0.4820
XA	 0.8460	 0.4940
XB	 0.5810	 0.4850
Y	 0.6570	 0.4800
YA	 0.7580	 0.4690
YB	 0.4740	 0.4100
Z	 0.7070	 0.5150
ZA	 0.6920	 0.4370
ZB	 0.3880	 0.3790
b	 0.0410	 0.1270
c	 0.0090	 0.1480