Full wwPDB EM Validation Report ⓘ

Mar 24, 2025 – 02:24 PM EDT

PDB ID	:	9NL6
EMDB ID	:	EMD-40927
Title	:	E. coli initiation complex with EQ2-YbiT in Non-hydrolytic 1/PtIM(a) conformation
Authors	:	Singh, S.; Hunt, J.F.
Deposited on	:	2025-03-02
Resolution	:	3.20 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:

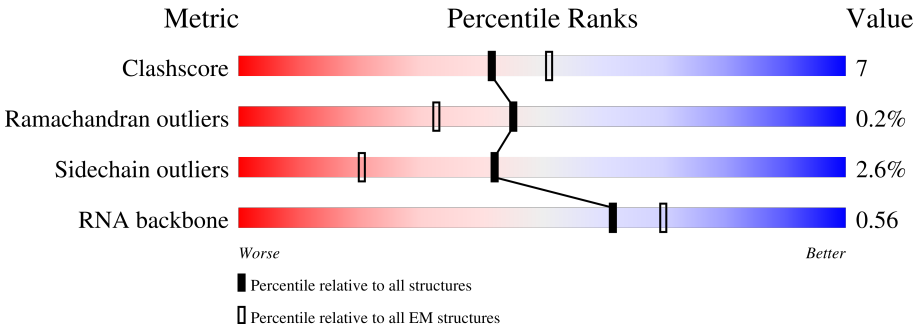
EMDB validation analysis	:	0.0.1.dev117
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA,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

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.20 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 <=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	1	220	64% 83% 15%
2	13	142	87% 13%
3	14	122	79% 21%
4	15	144	80% 19%
5	16	136	71% 28%
6	17	120	76% 22%
7	18	116	9% 71% 28%

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Mol	Chain	Length	Quality of chain
8	19	114	78% 21%
9	2	271	78% 21%
10	20	117	85% 15%
11	21	103	81% 19%
12	22	110	79% 20%
13	23	93	78% 20%
14	24	102	8% 80% 19%
15	25	94	7% 71% 27%
16	27	75	83% 16%
17	28	77	88% 12%
18	29	63	8% 76% 24%
19	3	209	82% 18%
20	30	58	5% 84% 14%
21	31	66	85% 68% 29%
22	32	56	68% 32%
23	34	46	83% 17%
24	35	64	83% 17%
25	36	38	76% 21%
26	4	201	5% 80% 20%
27	5	177	46% 68% 32%
28	6	176	15% 77% 22%
29	9	149	72% 73% 23%
30	R1	2903	6% 67% 27% 6%
31	R2	119	65% 31%
32	R3	1539	6% 68% 27% 5%

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Mol	Chain	Length	Quality of chain
33	T	77	9% 56% 27% 12% 5%
34	Y	530	28% 68% 31%
35	M	9	11% 89% 11%
36	sb	218	17% 97%
37	sc	206	6% 98%
38	sd	205	5% 96%
39	se	157	97%
40	sf	100	11% 98%
41	sg	151	15% 97%
42	sh	129	100%
43	si	127	9% 97%
44	sj	98	39% 96%
45	sk	116	99%
46	sl	123	9% 98%
47	sm	114	18% 99%
48	sn	100	16% 96%
49	so	88	99%
50	sp	82	7% 94% 6%
51	sq	80	5% 96%
52	sr	65	8% 97%
53	ss	79	9% 99%
54	st	85	9% 99%
55	su	70	17% 96%

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
33	H2U	T	20	X	-	-	-
33	4OC	T	32	X	-	-	-
33	5MU	T	54	X	-	-	-
33	PSU	T	55	X	-	-	-
33	4SU	T	8	X	-	-	-

2 Entry composition

There are 59 unique types of molecules in this entry. The entry contains 149664 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 Large ribosomal subunit protein uL1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	1	220	1353	804	270	277	2	0	0

- Molecule 2 is a protein called Large ribosomal subunit protein uL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	13	142	1129	714	212	199	4	0	0

- Molecule 3 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	14	122	938	587	180	165	6	0	0

- Molecule 4 is a protein called Large ribosomal subunit protein uL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	15	144	1053	654	207	190	2	0	0

- Molecule 5 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	16	136	1074	686	205	177	6	0	0

- Molecule 6 is a protein called Large ribosomal subunit protein bL17.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	17	120	960	593	196	166	5	0	0

- Molecule 7 is a protein called Large ribosomal subunit protein uL18.

Mol	Chain	Residues	Atoms				AltConf	Trace
7	18	116	Total	C	N	O	0	0
			892	552	178	162		

- Molecule 8 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	19	114	Total	C	N	O	S	0	0
			917	574	179	163	1		

- Molecule 9 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	2	271	Total	C	N	O	S	0	0
			2082	1288	423	364	7		

- Molecule 10 is a protein called Large ribosomal subunit protein bL20.

Mol	Chain	Residues	Atoms				AltConf	Trace
10	20	117	Total	C	N	O	0	0
			947	604	192	151		

- Molecule 11 is a protein called Large ribosomal subunit protein bL21.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	21	103	Total	C	N	O	S	0	0
			816	516	153	145	2		

- Molecule 12 is a protein called Large ribosomal subunit protein uL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	22	110	Total	C	N	O	S	0	0
			857	532	166	156	3		

- Molecule 13 is a protein called Large ribosomal subunit protein uL23.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	23	93	Total	C	N	O	S	0	0
			738	466	139	131	2		

- Molecule 14 is a protein called Large ribosomal subunit protein uL24.

Mol	Chain	Residues	Atoms				AltConf	Trace
14	24	102	Total 779	C 492	N 146	O 141	0	0

- Molecule 15 is a protein called Large ribosomal subunit protein bL25.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	25	94	Total 753	C 479	N 137	O 134	S 3	0	0

- Molecule 16 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	27	75	Total 575	C 356	N 116	O 102	S 1	0	0

- Molecule 17 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	28	77	Total 625	C 388	N 129	O 106	S 2	0	0

- Molecule 18 is a protein called Large ribosomal subunit protein uL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	29	63	Total 509	C 313	N 99	O 95	S 2	0	0

- Molecule 19 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	3	209	Total 1565	C 979	N 288	O 294	S 4	0	0

- Molecule 20 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	30	58	Total 449	C 281	N 87	O 79	S 2	0	0

- Molecule 21 is a protein called Large ribosomal subunit protein bL31.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	31	66	Total	C	N	O	S	0	0
			522	323	99	94	6		

- Molecule 22 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	32	56	Total	C	N	O	S	0	0
			444	269	94	80	1		

- Molecule 23 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	34	46	Total	C	N	O	S	0	0
			377	228	90	57	2		

- Molecule 24 is a protein called Large ribosomal subunit protein bL35.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	35	64	Total	C	N	O	S	0	0
			504	323	105	74	2		

- Molecule 25 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	36	38	Total	C	N	O	S	0	0
			302	185	65	48	4		

- Molecule 26 is a protein called Large ribosomal subunit protein uL4.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	4	201	Total	C	N	O	S	0	0
			1552	974	283	290	5		

- Molecule 27 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	5	177	Total	C	N	O	S	0	0
			1410	899	249	256	6		

- Molecule 28 is a protein called Large ribosomal subunit protein uL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	6	176	Total	C	N	O	S	0	0
			1323	832	243	246	2		

- Molecule 29 is a protein called Large ribosomal subunit protein bL9.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	9	149	Total	C	N	O	S	0	0
			1111	699	197	214	1		

- Molecule 30 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	R1	2903	Total	C	N	O	P	0	0
			62318	27801	11467	20148	2902		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
R1	1847	G	A	conflict	GB 2019144442

- Molecule 31 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	R2	119	Total	C	N	O	P	0	0
			2546	1135	466	827	118		

- Molecule 32 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	R3	1539	Total	C	N	O	P	0	0
			33012	14725	6052	10697	1538		

- Molecule 33 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms						AltConf	Trace
33	T	77	Total	C	N	O	P	S	0	0
			1639	734	294	534	76	1		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
T	8	4SU	G	conflict	GB 932857508

- Molecule 34 is a protein called Probable ATP-binding protein YbiT.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	Y	530	Total	C	N	O	S	0	0
			4210	2659	718	814	19		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Y	181	GLN	GLU	conflict	UNP P0A9U3
Y	464	GLN	GLU	conflict	UNP P0A9U3

- Molecule 35 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	M	9	Total	C	N	O	P	0	0
			195	88	40	58	9		

- Molecule 36 is a protein called Small ribosomal subunit protein uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	sb	218	Total	C	N	O	S	0	0
			1704	1081	305	311	7		

- Molecule 37 is a protein called Small ribosomal subunit protein uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	sc	206	Total	C	N	O	S	0	0
			1624	1028	305	288	3		

- Molecule 38 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	sd	205	Total	C	N	O	S	0	0
			1643	1026	315	298	4		

- Molecule 39 is a protein called Small ribosomal subunit protein uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	se	157	Total	C	N	O	S	0	0
			1156	719	218	213	6		

- Molecule 40 is a protein called 30S ribosomal protein S6, non-modified isoform.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	sf	100	Total	C	N	O	S	0	0
			817	515	148	148	6		

- Molecule 41 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	sg	151	Total	C	N	O	S	0	0
			1181	735	227	215	4		

- Molecule 42 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	sh	129	Total	C	N	O	S	0	0
			979	616	173	184	6		

- Molecule 43 is a protein called Small ribosomal subunit protein uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	si	127	Total	C	N	O	S	0	0
			1022	634	206	179	3		

- Molecule 44 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	sj	98	Total	C	N	O	S	0	0
			786	493	150	142	1		

- Molecule 45 is a protein called Small ribosomal subunit protein uS11.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	sk	116	Total	C	N	O	S	0	0
			869	535	173	158	3		

- Molecule 46 is a protein called Small ribosomal subunit protein uS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	sl	123	Total	C	N	O	S	0	0
			955	590	196	165	4		

- Molecule 47 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	sm	114	Total	C	N	O	S	0	0
			883	546	178	156	3		

- Molecule 48 is a protein called Small ribosomal subunit protein uS14.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	sn	100	Total	C	N	O	S	0	0
			805	499	164	139	3		

- Molecule 49 is a protein called Small ribosomal subunit protein uS15.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	so	88	Total	C	N	O	S	0	0
			714	439	144	130	1		

- Molecule 50 is a protein called Small ribosomal subunit protein bS16.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	sp	82	Total	C	N	O	S	0	0
			649	406	128	114	1		

- Molecule 51 is a protein called Small ribosomal subunit protein uS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	sq	80	Total	C	N	O	S	0	0
			648	411	121	113	3		

- Molecule 52 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	sr	65	Total	C	N	O	S	0	0
			535	339	100	95	1		

- Molecule 53 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	ss	79	Total	C	N	O	S	0	0
			637	408	120	107	2		

- Molecule 54 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	st	85	Total	C	N	O	S	0	0
			665	411	137	114	3		

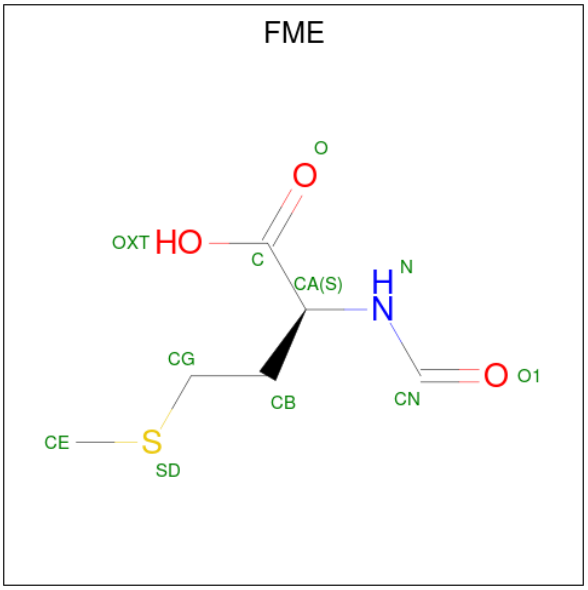
- Molecule 55 is a protein called Small ribosomal subunit protein bS21.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	su	70	Total	C	N	O	S	0	0
			590	366	125	98	1		

- Molecule 56 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

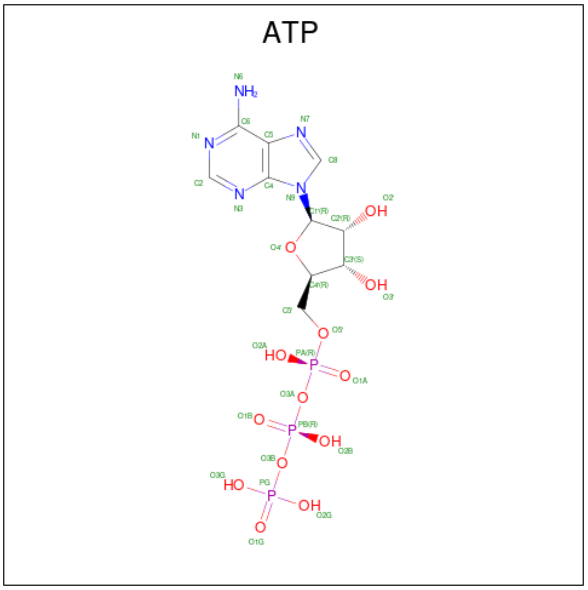
Mol	Chain	Residues	Atoms		AltConf
56	17	1	Total	Mg	0
			1	1	
56	32	1	Total	Mg	0
			1	1	
56	R1	185	Total	Mg	0
			185	185	
56	R3	64	Total	Mg	0
			64	64	
56	M	1	Total	Mg	0
			1	1	

- Molecule 57 is N-FORMYLMETHIONINE (three-letter code: FME) (formula: $C_6H_{11}NO_3S$).



Mol	Chain	Residues	Atoms					AltConf
57	T	1	Total	C	N	O	S	0
			10	6	1	2	1	

- Molecule 58 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
58	Y	1	Total	C	N	O	P	0
			31	10	5	13	3	
58	Y	1	Total	C	N	O	P	0
			31	10	5	13	3	

- Molecule 59 is SODIUM ION (three-letter code: NA) (formula: Na).

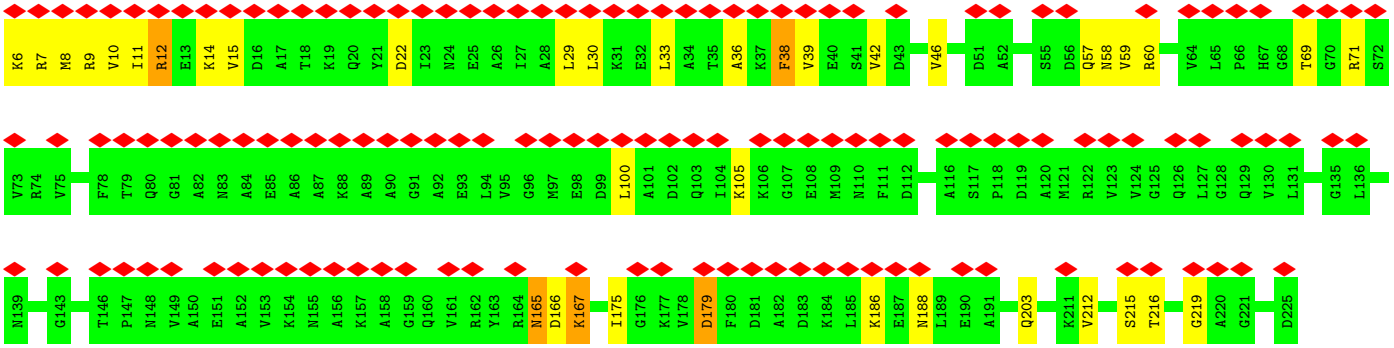
Mol	Chain	Residues	Atoms		AltConf
59	Y	2	Total	Na	0
			2	2	

3 Residue-property plots (i)

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

• Molecule 1: Large ribosomal subunit protein uL1

Chain 1:

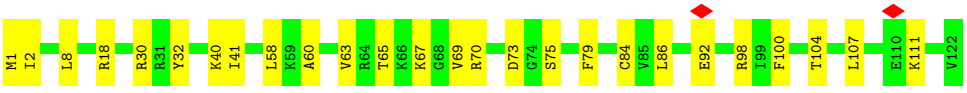


• Molecule 2: Large ribosomal subunit protein uL13

Chain 13:

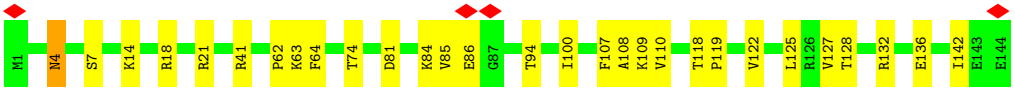
• Molecule 3: 50S ribosomal protein L14

Chain 14:



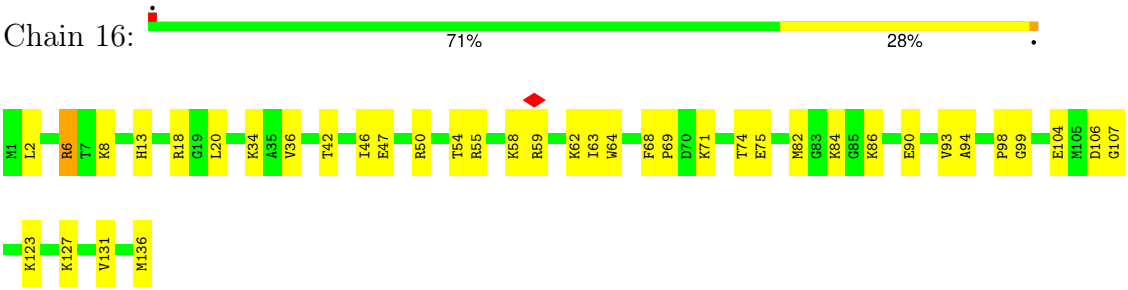
• Molecule 4: Large ribosomal subunit protein uL15

Chain 15:



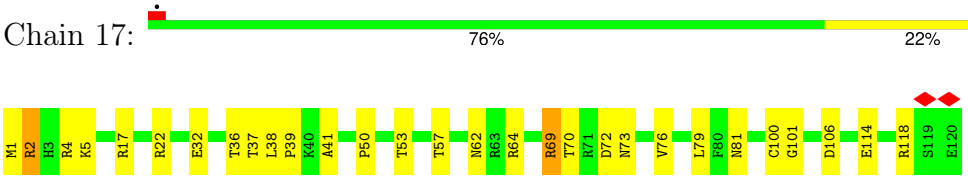
• Molecule 5: 50S ribosomal protein L16

Chain 16:



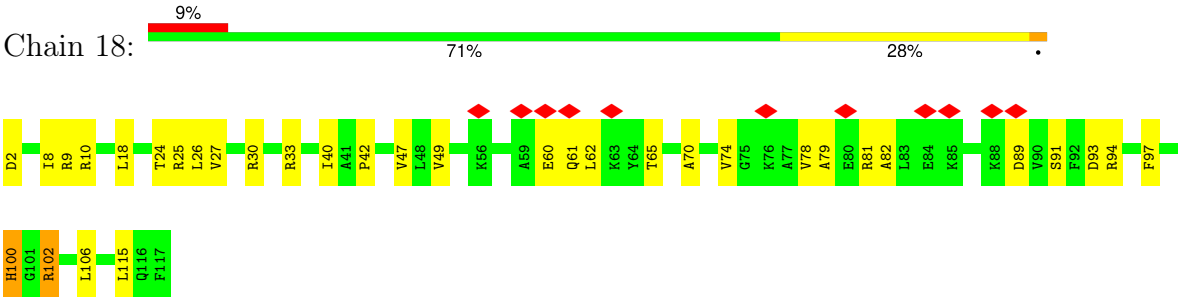
• Molecule 6: Large ribosomal subunit protein bL17

Chain 17:



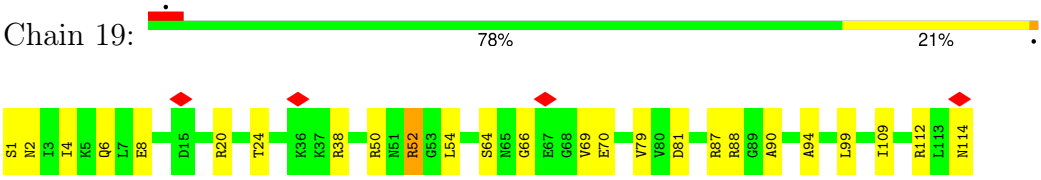
• Molecule 7: Large ribosomal subunit protein uL18

Chain 18:



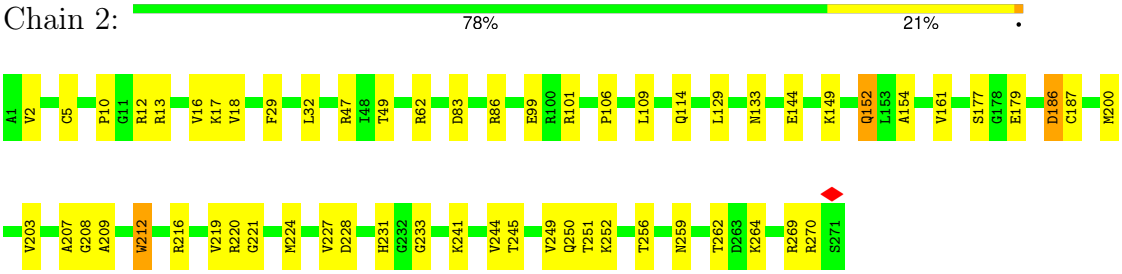
• Molecule 8: 50S ribosomal protein L19

Chain 19:



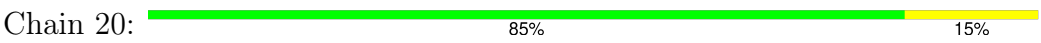
• Molecule 9: 50S ribosomal protein L2

Chain 2:



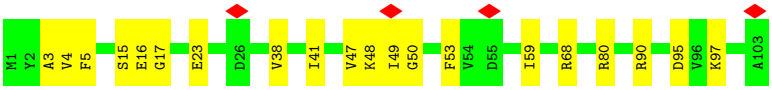
• Molecule 10: Large ribosomal subunit protein bL20

Chain 20:



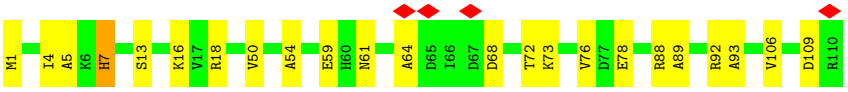
• Molecule 11: Large ribosomal subunit protein bL21

Chain 21:



• Molecule 12: Large ribosomal subunit protein uL22

Chain 22:



• Molecule 13: Large ribosomal subunit protein uL23

Chain 23:

• Molecule 14: Large ribosomal subunit protein uL24

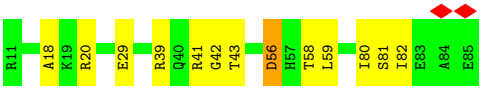
Chain 24:

• Molecule 15: Large ribosomal subunit protein bL25

Chain 25:

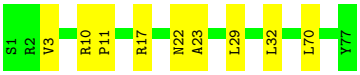
• Molecule 16: 50S ribosomal protein L27

Chain 27:



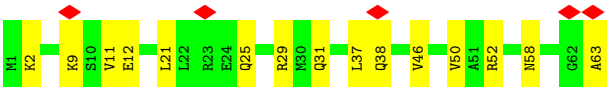
• Molecule 17: 50S ribosomal protein L28

Chain 28:



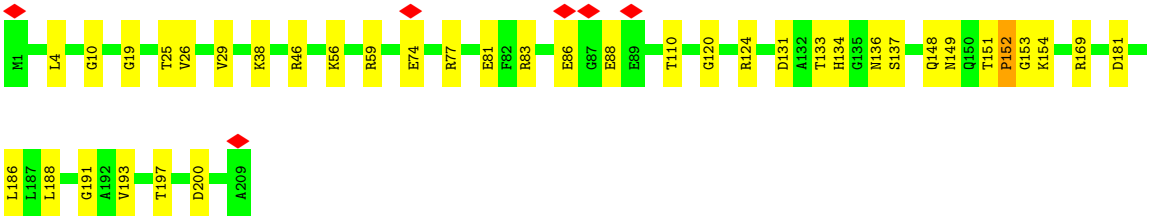
• Molecule 18: Large ribosomal subunit protein uL29

Chain 29:



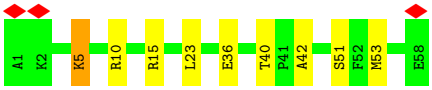
• Molecule 19: 50S ribosomal protein L3

Chain 3:



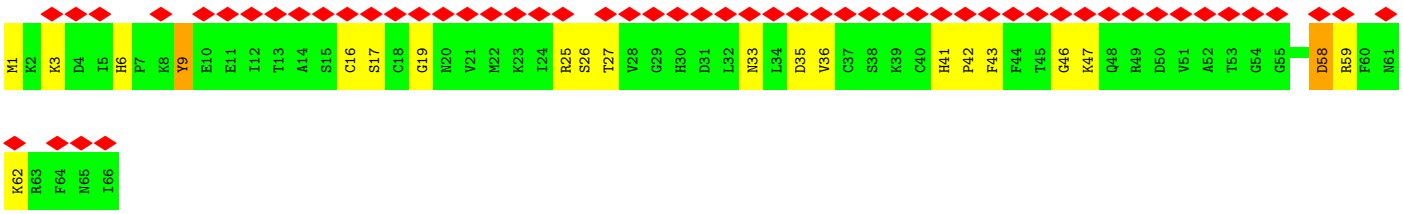
• Molecule 20: 50S ribosomal protein L30

Chain 30:



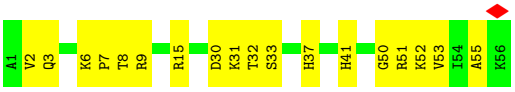
• Molecule 21: Large ribosomal subunit protein bL31

Chain 31:



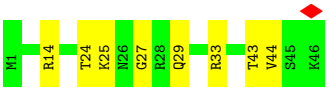
• Molecule 22: 50S ribosomal protein L32

Chain 32:



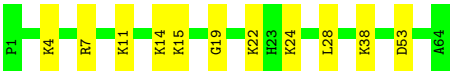
• Molecule 23: 50S ribosomal protein L34

Chain 34:



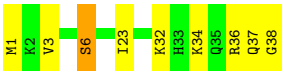
• Molecule 24: Large ribosomal subunit protein bL35

Chain 35:



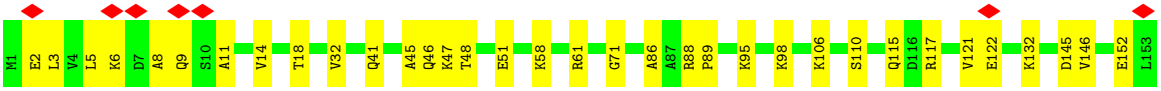
• Molecule 25: 50S ribosomal protein L36

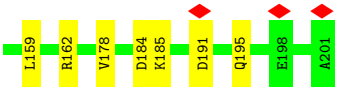
Chain 36:



• Molecule 26: Large ribosomal subunit protein uL4

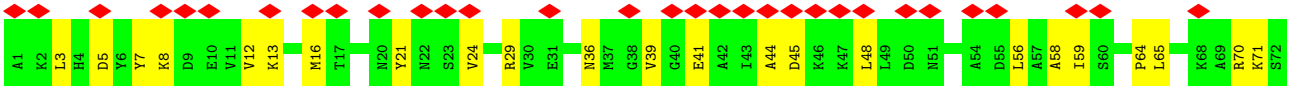
Chain 4:

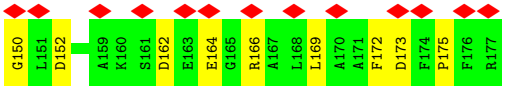




• Molecule 27: 50S ribosomal protein L5

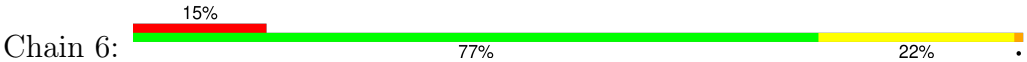
Chain 5:

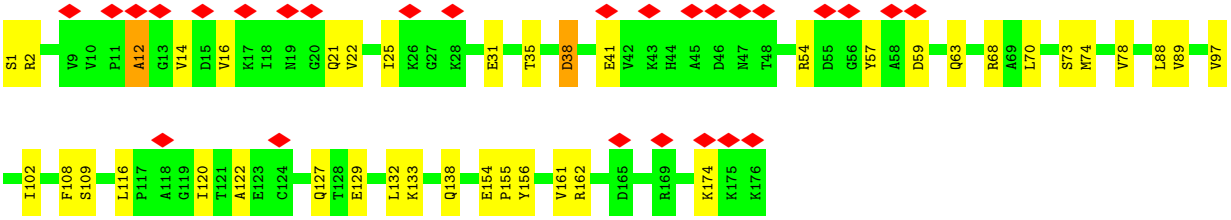




• Molecule 28: Large ribosomal subunit protein uL6

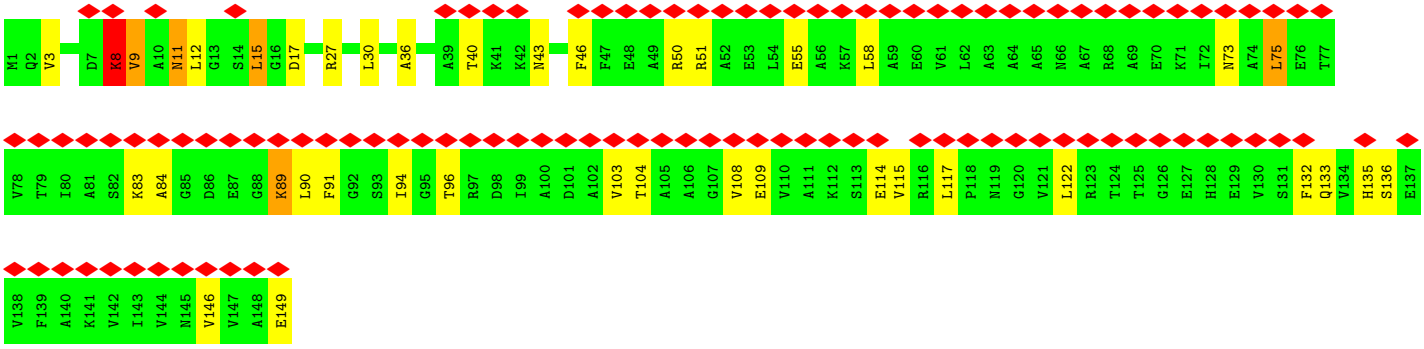
Chain 6:





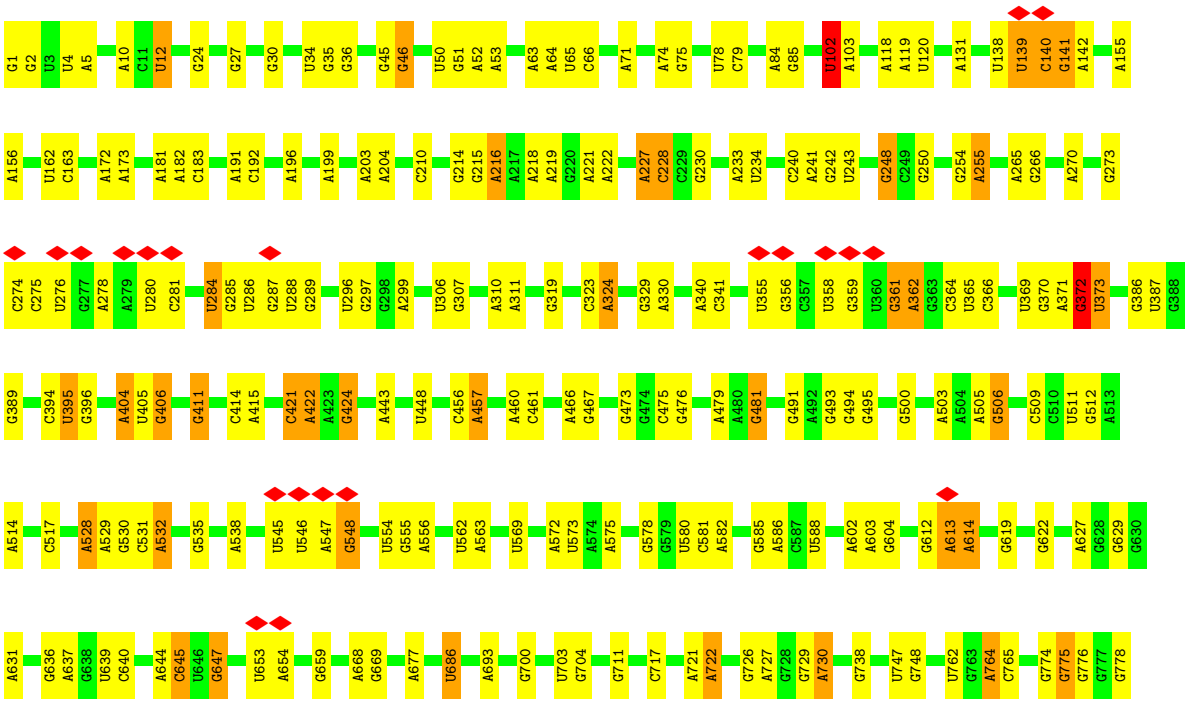
• Molecule 29: Large ribosomal subunit protein bL9

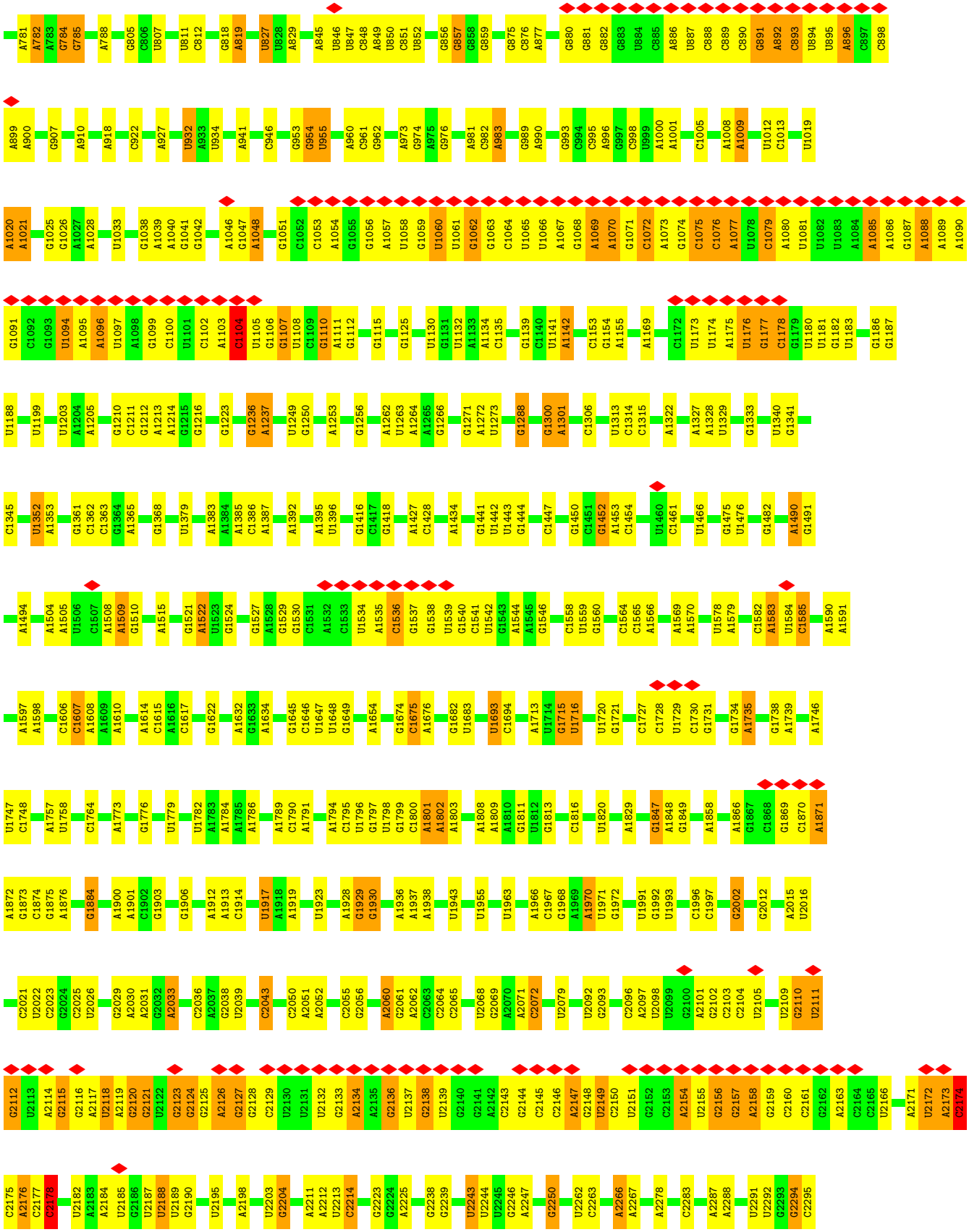
Chain 9:



• Molecule 30: 23S ribosomal RNA

Chain R1:

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A899 A900 G907 A910 A918 C922 A927 U932 A933 U934 A941 C946 G953 G954 U955 A960 C961 G962 A973 G974 A975 G976 A981 C982 A983 G989 A990 G993 C994 C995 A996 G997 C998 U999 A1000 A1001 C1005 A1008 A1009 U1012 C1013 U1019
A1020 A1021 G1025 G1026 A1027 A1028 U1033 G1038 A1039 A1040 G1041 G1042 A1046 G1047 A1048 G1051 C1052 C1053 A1054 G1055 G1056 A1057 U1058 G1059 U1060 U1061 G1062 G1063 C1064 U1065 U1066 A1067 G1068 A1069 A1070 G1071 C1072 A1073 G1074 C1075 C1076 A1077 U1078 C1079 A1080 U1081 U1082 U1083 A1084 A1085 A1086 G1087 A1088 A1089 A1090
G1091 C1092 G1093 U1094 A1095 A1096 U1097 A1098 G1099 C1100 U1101 C1102 A1103 C1104 U1105 G1106 G1107 U1108 C1109 G1110 A1111 G1112 G1115 G1125 U1130 G1131 U1132 A1133 A1134 C1135 G1139 C1140 U1141 A1142 C1153 G1154 A1155 A1169 C1172 U1173 U1174 A1175 U1176 G1177 C1178 G1179 U1180 U1181 G1182 U1183 G1186 G1187
U1188 U1199 U1203 A1204 A1205 G1210 C1211 G1212 A1213 A1214 G1215 G1216 G1223 G1236 A1237 U1249 G1250 A1253 G1256 A1262 U1263 A1264 A1265 G1266 G1271 A1272 U1273 G1288 G1300 A1301 C1306 U1313 C1314 C1315 A1322 A1327 A1328 U1329 G1333 U1340 G1341
C1345 U1352 A1353 G1361 C1362 C1363 G1364 A1365 G1368 U1379 A1383 A1384 A1385 C1386 A1387 A1392 A1395 U1396 G1416 C1417 G1418 A1427 C1428 A1434 G1441 U1442 U1443 G1444 C1447 G1450 C1451 G1452 A1453 C1454 U1460 C1461 U1466 G1475 U1476 G1482 A1490 G1491
A1494 A1504 A1505 U1506 C1507 A1508 A1509 G1510 A1515 G1521 A1522 U1523 G1524 G1527 A1528 G1529 G1530 C1531 A1532 C1533 U1534 A1535 C1536 G1537 G1538 U1539 G1540 C1541 U1542 G1543 A1544 A1545 G1546 C1558 U1559 G1560 C1564 C1565 A1566 A1569 A1570 U1578 A1579 C1582 A1583 U1584 C1585 A1590 A1591
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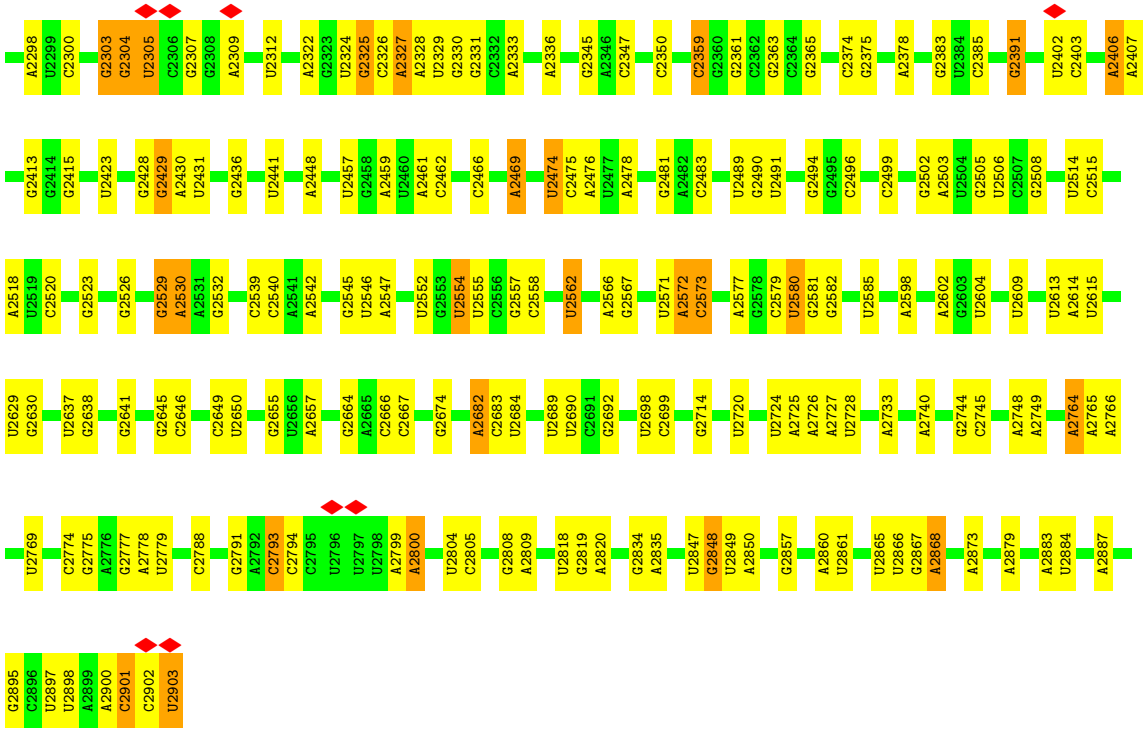
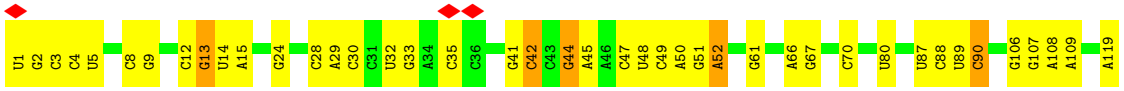
A1872 G1873 C1874 G1875 A1876 G1884 A1900 A1901 C1902 G1903 G1906 A1912 A1913 C1914 U1917 A1918 A1919 U1923 A1928 G1929 G1930 A1936 A1937 A1938 U1943 U1955 U1963 A1966 C1967 G1968 A1969 A1970 U1971 G1972 U1991 G1992 U1993 C1996 C1997 G2002 G2012 A2015 U2016
C2021 U2022 C2023 G2024 C2025 U2026 G2029 A2030 A2031 G2032 A2033 C2036 A2037 G2038 U2039 C2043 C2050 A2051 A2052 C2055 G2056 A2060 G2061 A2062 C2063 C2064 C2065 U2068 G2069 A2070 A2071 C2072 U2079 U2092 G2093 C2096 A2097 U2098 U2099 G2100 A2101 G2102 C2103 C2104 U2105 U2109 G2110 U2111
G2112 U2113 A2114 G2115 G2116 A2117 U2118 A2119 G2120 G2121 U2122 G2123 G2124 G2125 A2126 C2127 G2128 C2129 U2130 U2131 U2132 G2133 A2134 A2135 C2136 U2137 G2138 U2139 G2140 G2141 A2142 C2143 G2144 C2145 C2146 A2147 G2148 U2149 C2150 U2151 G2152 C2153 A2154 U2155 G2156 C2157 A2158 G2159 C2160 C2161 G2162 A2163 C2164 C2165 U2166 A2171 U2172 A2173 C2174
C2175 A2176 C2177 C2178 U2182 A2183 A2184 U2185 G2186 U2187 U2188 U2189 G2190 U2195 A2198 U2203 G2204 A2211 A2212 U2213 C2214 G2223 G2224 A2225 C2238 G2239 U2243 U2244 U2245 C2246 A2247 G2250 U2262 C2263 A2266 A2267 A2278 C2283 A2287 A2288 U2291 U2292 G2293 G2294 C2295



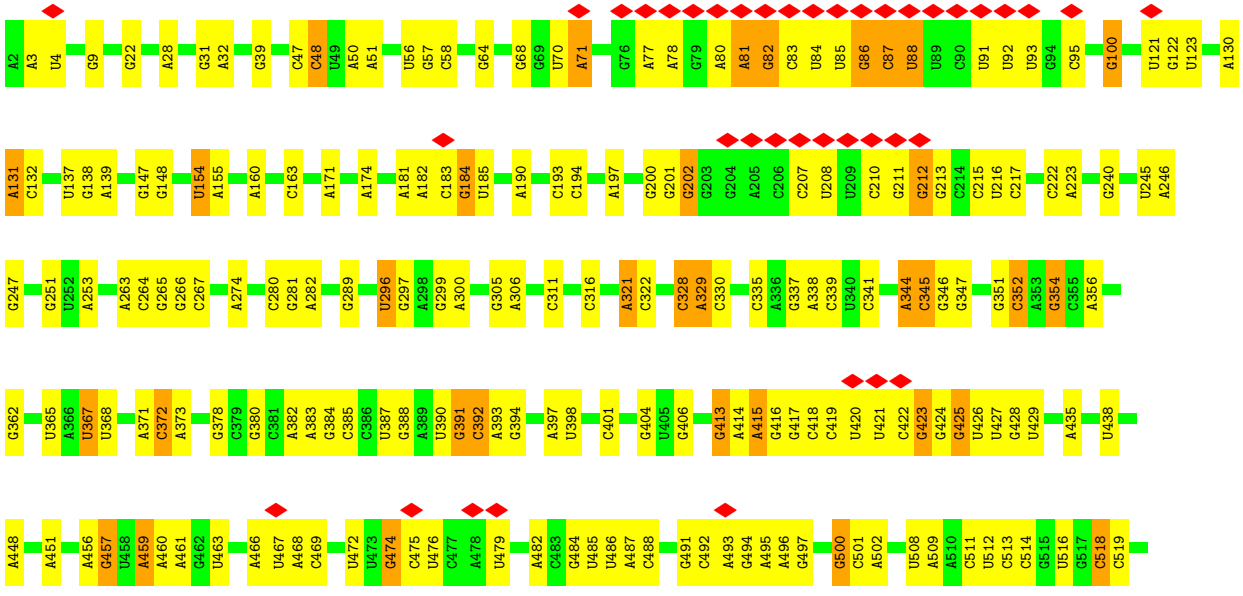
• Molecule 31: 5S ribosomal RNA

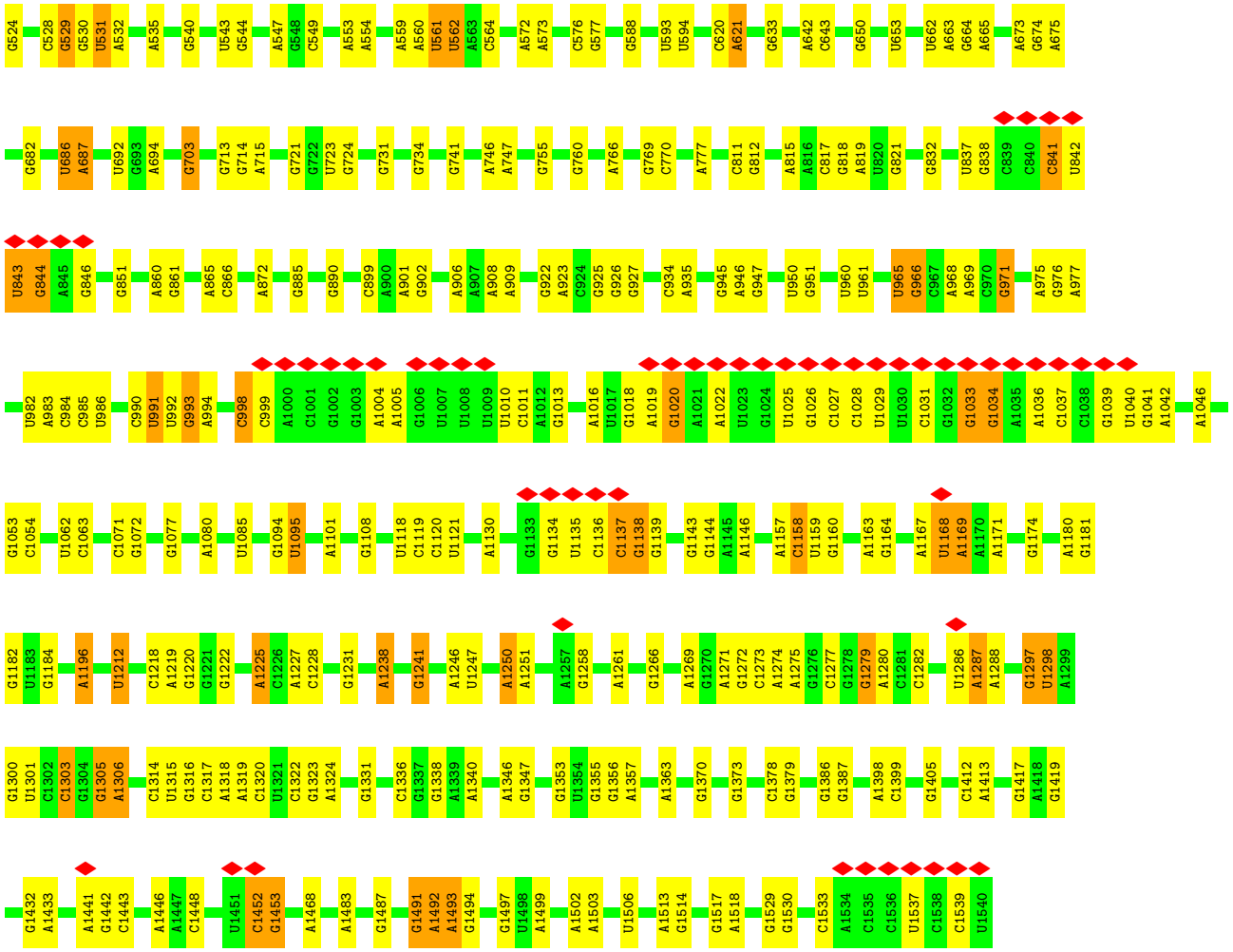
Chain R2:



• Molecule 32: 16S ribosomal RNA

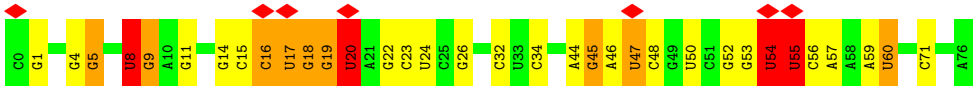
Chain R3:





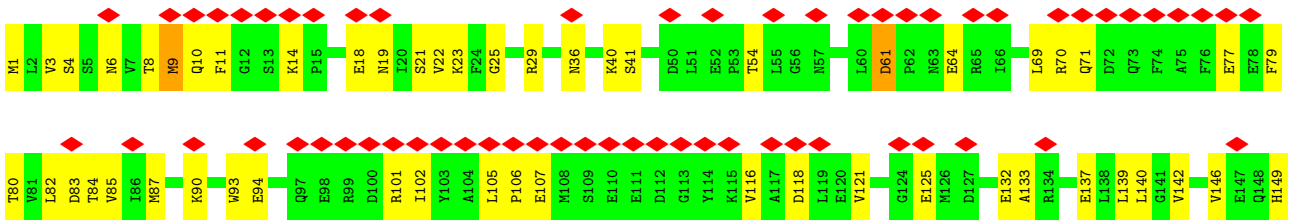
• Molecule 33: tRNA

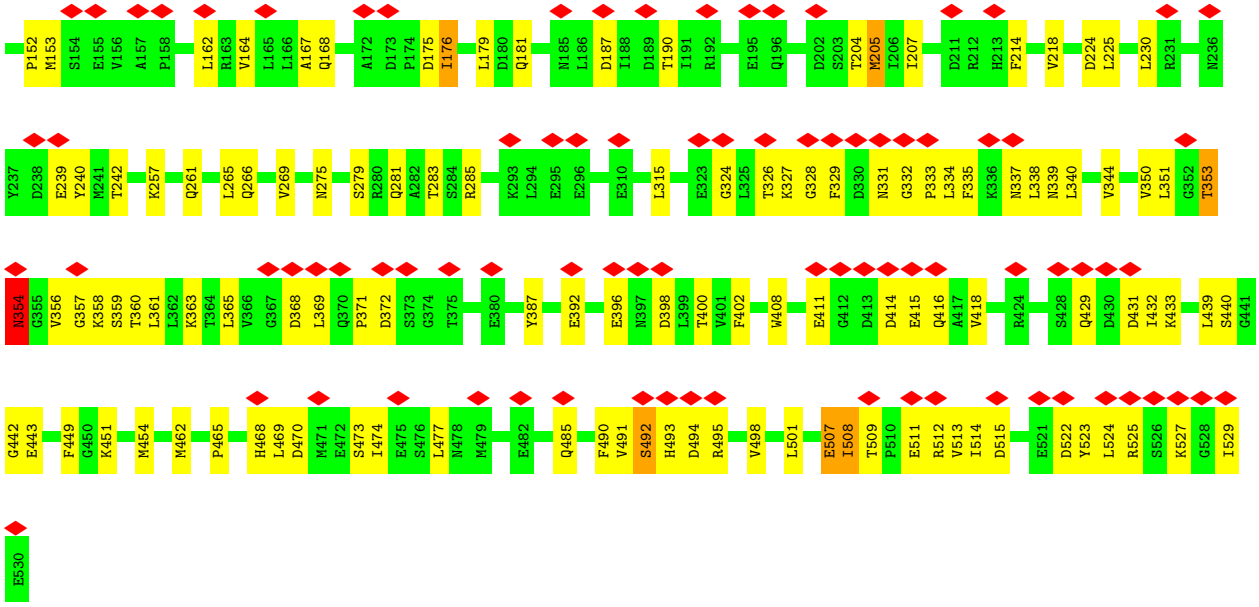
Chain T:



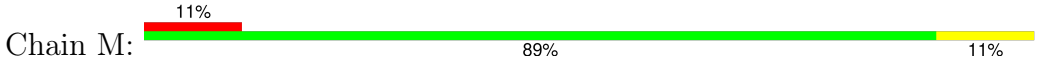
• Molecule 34: Probable ATP-binding protein YbiT

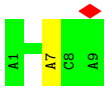
Chain Y:



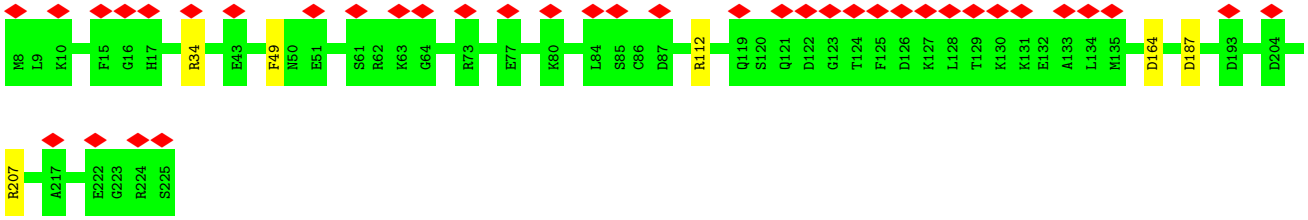


• Molecule 35: mRNA

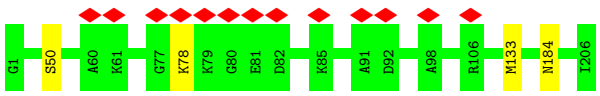




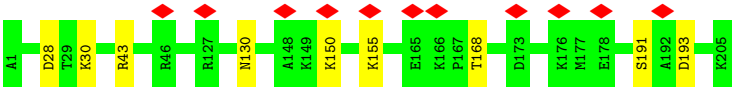
• Molecule 36: Small ribosomal subunit protein uS2



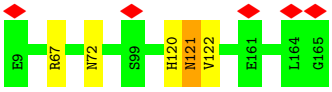
• Molecule 37: Small ribosomal subunit protein uS3



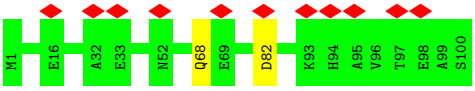
• Molecule 38: 30S ribosomal protein S4



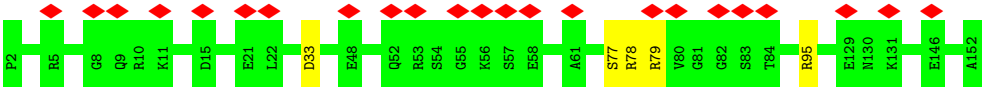
• Molecule 39: Small ribosomal subunit protein uS5



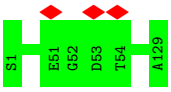
• Molecule 40: 30S ribosomal protein S6, non-modified isoform



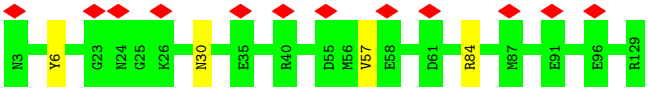
• Molecule 41: 30S ribosomal protein S7



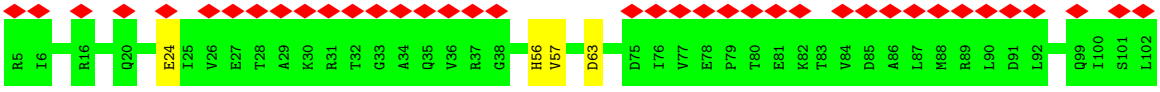
• Molecule 42: 30S ribosomal protein S8



• Molecule 43: Small ribosomal subunit protein uS9

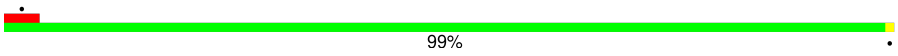


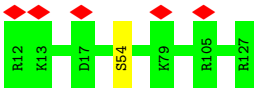
• Molecule 44: 30S ribosomal protein S10



• Molecule 45: Small ribosomal subunit protein uS11

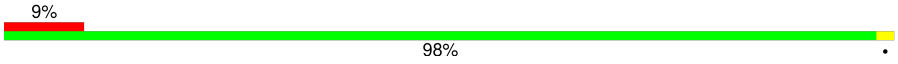
Chain sk:

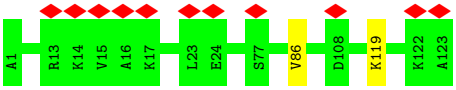




• Molecule 46: Small ribosomal subunit protein uS12

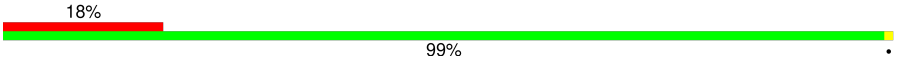
Chain sl:

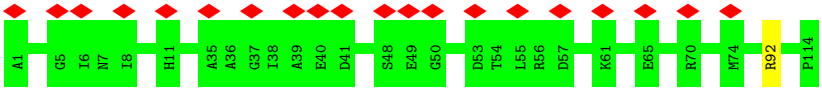




• Molecule 47: 30S ribosomal protein S13

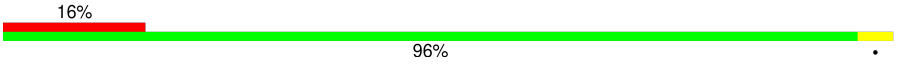
Chain sm:

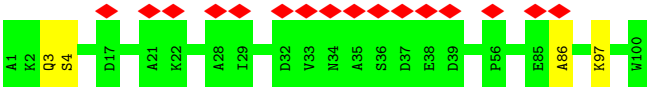




• Molecule 48: Small ribosomal subunit protein uS14

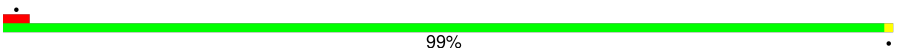
Chain sn:

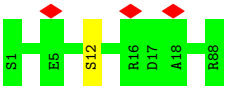




• Molecule 49: Small ribosomal subunit protein uS15

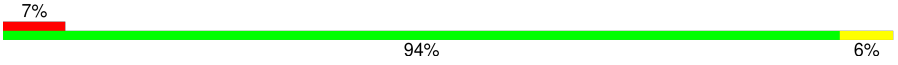
Chain so:

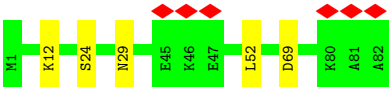




• Molecule 50: Small ribosomal subunit protein bS16

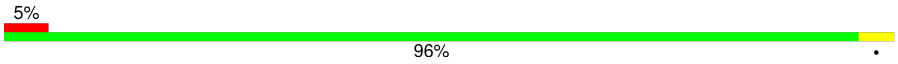
Chain sp:

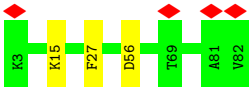




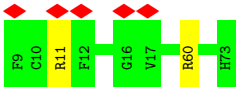
• Molecule 51: Small ribosomal subunit protein uS17

Chain sq:

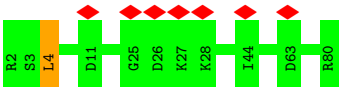




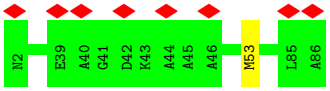
• Molecule 52: 30S ribosomal protein S18



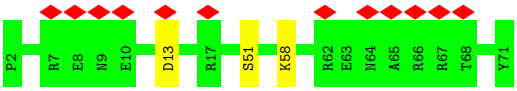
• Molecule 53: 30S ribosomal protein S19



• Molecule 54: 30S ribosomal protein S20



• Molecule 55: Small ribosomal subunit protein bS21



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	78136	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI POLARA 300	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	56.8	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	8.260	Depositor
Minimum map value	-5.124	Depositor
Average map value	0.016	Depositor
Map value standard deviation	0.295	Depositor
Recommended contour level	1	Depositor
Map size (Å)	423.99997, 423.99997, 423.99997	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.06, 1.06, 1.06	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: MG, H2U, ATP, NA, PSU, 4OC, FME, 5MU, 4SU

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	1	0.25	0/1361	0.50	0/1796
2	13	0.38	0/1152	0.52	0/1551
3	14	0.36	0/947	0.60	0/1268
4	15	0.36	0/1062	0.61	0/1413
5	16	0.36	0/1093	0.59	0/1460
6	17	0.37	0/973	0.60	0/1301
7	18	0.31	0/902	0.59	0/1209
8	19	0.39	0/929	0.57	0/1242
9	2	0.41	0/2121	0.60	0/2852
10	20	0.44	0/960	0.54	0/1278
11	21	0.39	0/829	0.56	0/1107
12	22	0.36	0/864	0.54	0/1156
13	23	0.34	0/744	0.57	0/994
14	24	0.32	0/787	0.53	0/1051
15	25	0.33	0/766	0.53	0/1025
16	27	0.37	0/582	0.58	0/769
17	28	0.37	0/635	0.57	0/848
18	29	0.28	0/510	0.54	0/677
19	3	0.40	0/1586	0.58	0/2134
20	30	0.32	0/453	0.58	0/605
21	31	0.25	0/531	0.53	0/709
22	32	0.38	0/450	0.60	0/599
23	34	0.38	0/380	0.67	0/498
24	35	0.36	0/513	0.57	0/676
25	36	0.36	0/303	0.58	0/397
26	4	0.36	0/1571	0.55	0/2113
27	5	0.27	0/1434	0.53	0/1926
28	6	0.31	0/1343	0.55	0/1816
29	9	0.29	0/1122	0.58	1/1515 (0.1%)
30	R1	0.69	0/69797	0.83	20/108890 (0.0%)
31	R2	0.49	0/2847	0.82	0/4440
32	R3	0.56	0/36961	0.80	4/57654 (0.0%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	T	0.47	0/1716	0.81	0/2672
34	Y	0.29	0/4285	0.55	1/5774 (0.0%)
35	M	0.42	0/219	0.68	0/339
36	sb	0.29	0/1735	0.51	0/2338
37	sc	0.30	0/1651	0.53	0/2225
38	sd	0.32	0/1665	0.58	1/2227 (0.0%)
39	se	0.33	0/1169	0.62	0/1573
40	sf	0.32	0/835	0.59	0/1128
41	sg	0.28	0/1195	0.53	0/1602
42	sh	0.34	0/989	0.52	0/1326
43	si	0.32	0/1034	0.63	0/1375
44	sj	0.29	0/796	0.60	0/1077
45	sk	0.32	0/885	0.56	0/1195
46	sl	0.35	0/969	0.63	0/1300
47	sm	0.27	0/892	0.57	0/1193
48	sn	0.29	0/817	0.61	0/1088
49	so	0.30	0/722	0.58	0/964
50	sp	0.32	0/659	0.57	0/884
51	sq	0.32	0/657	0.54	0/881
52	sr	0.35	0/544	0.56	0/731
53	ss	0.30	0/652	0.57	0/877
54	st	0.29	0/671	0.48	0/888
55	su	0.29	0/598	0.57	0/792
All	All	0.56	0/161863	0.76	27/241418 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
13	23	0	1
19	3	0	2
28	6	0	1
29	9	0	1
33	T	9	0
34	Y	0	1
39	se	0	1
46	sl	0	1
48	sn	0	1
All	All	9	9

There are no bond length outliers.

All (27) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
30	R1	2178	C	N3-C2-O2	-8.63	115.86	121.90
34	Y	508	ILE	C-N-CA	7.61	140.72	121.70
30	R1	1313	U	C2-N1-C1'	6.91	125.99	117.70
30	R1	102	U	C2-N1-C1'	6.68	125.72	117.70
30	R1	102	U	N1-C2-O2	6.26	127.18	122.80
30	R1	12	U	C2-N1-C1'	6.23	125.18	117.70
30	R1	1104	C	N3-C2-O2	-6.22	117.54	121.90
30	R1	1104	C	N1-C2-O2	6.10	122.56	118.90
30	R1	2174	C	N3-C2-O2	-6.04	117.67	121.90
30	R1	12	U	N3-C2-O2	-5.99	118.01	122.20
30	R1	2178	C	N1-C2-O2	5.97	122.48	118.90
30	R1	1917	U	N3-C2-O2	-5.83	118.11	122.20
29	9	15	LEU	CA-CB-CG	5.72	128.45	115.30
30	R1	955	U	N3-C2-O2	-5.66	118.24	122.20
30	R1	2580	U	N3-C2-O2	-5.53	118.33	122.20
30	R1	2573	C	C2-N1-C1'	5.46	124.81	118.80
30	R1	102	U	N3-C2-O2	-5.39	118.43	122.20
32	R3	998	C	C2-N1-C1'	5.36	124.69	118.80
30	R1	1314	C	C2-N1-C1'	5.20	124.52	118.80
32	R3	998	C	N1-C2-O2	5.20	122.02	118.90
32	R3	154	U	C2-N1-C1'	5.19	123.93	117.70
38	sd	193	ASP	CB-CG-OD2	5.15	122.94	118.30
30	R1	528	A	C2-N3-C4	-5.11	108.05	110.60
30	R1	1963	U	C2-N1-C1'	5.10	123.82	117.70
30	R1	372	G	P-O3'-C3'	5.03	125.73	119.70
30	R1	1313	U	N1-C2-O2	5.02	126.31	122.80
32	R3	215	C	N3-C2-O2	-5.02	118.39	121.90

All (9) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
33	T	8	4SU	C1',C2'
33	T	20	H2U	C2'
33	T	32	4OC	C2'
33	T	54	5MU	C2',C4',C3'
33	T	55	PSU	C2',C4'

All (9) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
13	23	37	ASP	Peptide

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Mol	Chain	Res	Type	Group
19	3	151	THR	Peptide
19	3	152	PRO	Peptide
28	6	12	ALA	Peptide
29	9	8	LYS	Peptide
34	Y	353	THR	Peptide
39	se	121	ASN	Peptide
46	sl	86	VAL	Peptide
48	sn	86	ALA	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	1	1353	0	1159	25	0
2	13	1129	0	1162	14	0
3	14	938	0	1012	18	0
4	15	1053	0	1129	21	0
5	16	1074	0	1157	28	0
6	17	960	0	1000	20	0
7	18	892	0	923	23	0
8	19	917	0	965	17	0
9	2	2082	0	2157	41	0
10	20	947	0	1022	18	0
11	21	816	0	839	17	0
12	22	857	0	922	16	0
13	23	738	0	807	13	0
14	24	779	0	834	14	0
15	25	753	0	780	17	0
16	27	575	0	592	10	0
17	28	625	0	655	6	0
18	29	509	0	543	11	0
19	3	1565	0	1616	25	0
20	30	449	0	491	6	0
21	31	522	0	524	17	0
22	32	444	0	461	15	0
23	34	377	0	418	4	0
24	35	504	0	574	9	0
25	36	302	0	343	8	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
26	4	1552	0	1619	22	0
27	5	1410	0	1447	42	0
28	6	1323	0	1374	27	0
29	9	1111	0	1148	32	0
30	R1	62318	0	31345	483	0
31	R2	2546	0	1292	27	0
32	R3	33012	0	16620	196	0
33	T	1639	0	843	18	0
34	Y	4210	0	4175	116	0
35	M	195	0	99	0	0
36	sb	1704	0	1732	0	0
37	sc	1624	0	1699	0	0
38	sd	1643	0	1710	0	0
39	se	1156	0	1199	0	0
40	sf	817	0	808	0	0
41	sg	1181	0	1238	0	0
42	sh	979	0	1034	0	0
43	si	1022	0	1070	0	0
44	sj	786	0	828	0	0
45	sk	869	0	878	0	0
46	sl	955	0	1019	0	0
47	sm	883	0	944	0	0
48	sn	805	0	847	0	0
49	so	714	0	737	0	0
50	sp	649	0	666	0	0
51	sq	648	0	691	0	0
52	sr	535	0	552	0	0
53	ss	637	0	665	0	0
54	st	665	0	714	0	0
55	su	590	0	629	0	0
56	17	1	0	0	0	0
56	32	1	0	0	0	0
56	M	1	0	0	0	0
56	R1	185	0	0	0	0
56	R3	64	0	0	0	0
57	T	10	0	10	1	0
58	Y	62	0	24	5	0
59	Y	2	0	0	0	0
All	All	149664	0	101741	1224	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 (1224) 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)
30:R1:1847:G:HO2'	30:R1:1848:A:H8	1.06	0.97
19:3:148:GLN:HB2	19:3:152:PRO:HG3	1.59	0.85
30:R1:1450:G:N2	30:R1:1452:G:O6	2.13	0.82
32:R3:419:C:O2	32:R3:425:G:N2	2.13	0.81
7:18:24:THR:HG22	7:18:42:PRO:HD3	1.63	0.80
30:R1:1054:A:H61	30:R1:1105:U:H3	1.29	0.78
28:6:41:GLU:OE2	28:6:54:ARG:NH1	2.18	0.77
34:Y:10:GLN:NE2	34:Y:14:LYS:O	2.18	0.77
4:15:127:VAL:HG21	4:15:142:ILE:HD13	1.66	0.77
30:R1:1070:A:OP2	30:R1:1075:C:N4	2.17	0.77
2:13:125:TYR:OH	2:13:132:HIS:NE2	2.19	0.76
24:35:4:LYS:NZ	30:R1:254:G:N7	2.34	0.76
30:R1:2469:A:N6	30:R1:2481:G:O2'	2.19	0.76
30:R1:547:A:H5"	30:R1:548:G:H5'	1.68	0.75
8:19:2:ASN:O	8:19:6:GLN:NE2	2.20	0.75
10:20:57:ARG:NH1	30:R1:1154:G:OP2	2.19	0.75
30:R1:2391:G:O2'	30:R1:2429:G:N2	2.20	0.74
30:R1:306:U:H3	30:R1:310:A:H62	1.36	0.74
30:R1:1779:U:OP2	30:R1:1784:A:N6	2.21	0.74
6:17:22:ARG:HG3	6:17:70:THR:HA	1.69	0.74
23:34:24:THR:HG23	23:34:27:GLY:H	1.53	0.74
30:R1:1053:C:N3	30:R1:1106:G:N1	2.28	0.73
30:R1:2136:G:H22	30:R1:2156:G:H21	1.36	0.73
32:R3:1306:A:N6	32:R3:1331:G:O2'	2.21	0.73
14:24:47:PRO:HB3	14:24:53:GLN:HE21	1.52	0.73
8:19:50:ARG:NH2	30:R1:2683:C:OP1	2.22	0.73
34:Y:387:TYR:HB3	34:Y:462:MET:HG2	1.69	0.73
11:21:80:ARG:NH2	30:R1:572:A:OP2	2.22	0.72
30:R1:1068:G:N2	30:R1:1096:A:OP1	2.22	0.72
5:16:75:GLU:HB2	5:16:90:GLU:HG3	1.72	0.72
7:18:30:ARG:NH2	31:R2:48:U:OP1	2.22	0.72
30:R1:2116:G:O6	30:R1:2171:A:N6	2.21	0.71
13:23:61:LEU:HD13	30:R1:1341:G:H5'	1.72	0.71
9:2:270:ARG:NH2	30:R1:1798:U:OP2	2.24	0.71
34:Y:187:ASP:OD2	34:Y:354:ASN:ND2	2.24	0.71
9:2:216:ARG:NH2	30:R1:781:A:OP1	2.23	0.70
30:R1:976:G:HO2'	30:R1:1155:A:HO2'	1.36	0.70
30:R1:1847:G:N2	30:R1:1849:G:O6	2.23	0.70
30:R1:1534:U:H2'	30:R1:1536:C:H1'	1.74	0.70
30:R1:284:U:H3	30:R1:356:G:H1	0.80	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:16:123:LYS:NZ	30:R1:2483:C:N3	2.38	0.70
19:3:133:THR:HG22	19:3:134:HIS:H	1.54	0.70
30:R1:2136:G:H1	30:R1:2156:G:N2	1.88	0.70
32:R3:971:G:OP2	32:R3:1231:G:N2	2.18	0.70
4:15:18:ARG:NH2	30:R1:1250:G:N7	2.34	0.70
32:R3:673:A:H2'	32:R3:674:G:C8	2.26	0.70
15:25:43:ASP:OD2	15:25:44:HIS:N	2.24	0.70
30:R1:2111:U:O4'	30:R1:2118:U:O2'	2.10	0.70
30:R1:481:G:O2'	30:R1:506:G:N2	2.25	0.70
27:5:107:VAL:HG11	27:5:175:PRO:HG2	1.74	0.69
28:6:22:VAL:HG22	28:6:35:THR:HG22	1.74	0.69
34:Y:142:VAL:HG21	34:Y:167:ALA:HB2	1.74	0.69
30:R1:1645:G:H5"	30:R1:1646:C:H5'	1.75	0.69
30:R1:2143:C:N4	30:R1:2144:G:O6	2.26	0.69
19:3:181:ASP:HB2	19:3:186:LEU:HB2	1.75	0.68
15:25:51:GLN:OE1	15:25:57:TYR:OH	2.09	0.68
22:32:15:ARG:NH1	30:R1:1266:G:OP2	2.26	0.68
2:13:39:LYS:NZ	30:R1:1009:A:OP1	2.26	0.68
30:R1:2136:G:H1	30:R1:2156:G:H22	1.42	0.68
33:T:47:U:O2'	33:T:50:U:OP1	2.12	0.68
32:R3:1137:C:O2'	32:R3:1138:G:N2	2.26	0.68
10:20:5:ARG:NH2	30:R1:585:G:N7	2.40	0.68
10:20:49:ARG:O	10:20:53:LYS:NZ	2.27	0.68
27:5:104:THR:HG23	27:5:105:ILE:HG23	1.75	0.68
30:R1:1912:A:HO2'	32:R3:1494:G:HO2'	1.41	0.68
30:R1:1936:A:H2	30:R1:1943:U:H3	1.42	0.68
27:5:59:ILE:O	27:5:101:ARG:NH2	2.26	0.67
30:R1:284:U:O2	30:R1:356:G:N2	2.23	0.67
30:R1:1536:C:O2'	30:R1:1537:G:N2	2.27	0.67
28:6:21:GLN:HE22	28:6:38:ASP:HA	1.57	0.67
34:Y:140:LEU:HD11	34:Y:146:VAL:HG22	1.77	0.67
9:2:264:LYS:NZ	30:R1:2223:G:O2'	2.28	0.67
1:1:7:ARG:HH12	1:1:36:ALA:HB2	1.59	0.67
27:5:48:LEU:HD22	27:5:149:ARG:HH22	1.60	0.67
30:R1:1869:G:N2	30:R1:1872:A:OP2	2.26	0.67
30:R1:2682:A:H61	30:R1:2728:U:H1'	1.60	0.66
8:19:52:ARG:NH2	30:R1:2720:U:OP1	2.28	0.66
30:R1:1053:C:O2	30:R1:1106:G:N2	2.18	0.66
34:Y:492:SER:OG	34:Y:494:ASP:OD1	2.13	0.66
34:Y:508:ILE:HG22	34:Y:513:VAL:HG13	1.78	0.66
14:24:39:ASN:HB3	14:24:62:ALA:HB3	1.76	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:R1:613:A:H4'	30:R1:614:A:H8	1.61	0.66
2:13:19:ASP:OD2	2:13:58:ASN:ND2	2.27	0.66
30:R1:1527:G:N1	30:R1:1544:A:OP2	2.23	0.66
28:6:138:GLN:NE2	30:R1:2745:C:O2	2.28	0.66
32:R3:687:A:N6	32:R3:703:G:O2'	2.28	0.66
30:R1:475:C:O2	30:R1:479:A:N6	2.28	0.66
29:9:40:THR:OG1	29:9:43:ASN:OD1	2.14	0.65
29:9:73:ASN:HB2	29:9:108:VAL:HG11	1.77	0.65
33:T:20:H2U:O2	33:T:20:H2U:OP2	2.14	0.65
30:R1:2304:G:H22	30:R1:2312:U:H3	1.44	0.65
32:R3:946:A:H2'	32:R3:947:G:C8	2.30	0.65
34:Y:469:LEU:HD13	34:Y:473:SER:HB3	1.79	0.65
19:3:38:LYS:NZ	19:3:81:GLU:OE1	2.29	0.65
30:R1:1923:U:OP1	33:T:24:U:O2'	2.15	0.65
34:Y:77:GLU:HA	34:Y:153:MET:HB3	1.77	0.65
9:2:5:CYS:SG	9:2:12:ARG:NH2	2.70	0.65
29:9:109:GLU:OE1	29:9:109:GLU:N	2.30	0.65
13:23:11:LEU:O	18:29:29:ARG:NH1	2.29	0.65
30:R1:2155:U:H3'	30:R1:2156:G:H8	1.62	0.64
16:27:43:THR:HG21	30:R1:2336:A:H61	1.61	0.64
32:R3:147:G:H2'	32:R3:148:G:C8	2.32	0.64
32:R3:418:C:OP1	32:R3:513:C:O2'	2.15	0.64
34:Y:36:ASN:ND2	34:Y:468:HIS:O	2.31	0.64
5:16:47:GLU:OE2	5:16:50:ARG:NH2	2.23	0.64
5:16:84:LYS:NZ	30:R1:2250:G:OP1	2.31	0.64
2:13:125:TYR:HH	2:13:132:HIS:CD2	2.15	0.64
12:22:5:ALA:O	30:R1:494:G:O2'	2.14	0.64
19:3:25:THR:OG1	19:3:191:GLY:O	2.15	0.64
6:17:4:ARG:O	30:R1:2873:A:O2'	2.17	0.63
9:2:231:HIS:HA	9:2:241:LYS:HE3	1.79	0.63
6:17:17:ARG:NH2	30:R1:2002:G:OP1	2.31	0.63
9:2:177:SER:OG	30:R1:1799:G:N7	2.30	0.63
15:25:2:PHE:HE1	15:25:50:MET:HG3	1.64	0.63
22:32:32:THR:HG22	22:32:50:GLY:HA2	1.79	0.63
32:R3:946:A:H2'	32:R3:947:G:H8	1.63	0.63
29:9:27:ARG:NH1	30:R1:2092:U:OP2	2.32	0.63
30:R1:299:A:N3	30:R1:319:G:O2'	2.29	0.63
30:R1:932:U:O2'	30:R1:934:U:O4	2.16	0.62
30:R1:45:G:H5"	30:R1:46:G:H5'	1.80	0.62
32:R3:1356:G:H2'	32:R3:1357:A:C8	2.34	0.62
16:27:56:ASP:HB3	16:27:58:THR:HG23	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:R1:286:U:H2'	30:R1:287:G:H8	1.64	0.62
30:R1:476:G:N1	30:R1:479:A:OP2	2.32	0.62
1:1:12:ARG:NH2	30:R1:2176:A:OP1	2.28	0.62
34:Y:41:SER:OG	58:Y:601:ATP:O2G	2.17	0.62
5:16:42:THR:HG22	5:16:93:VAL:HG12	1.81	0.62
27:5:118:ALA:O	27:5:166:ARG:NH1	2.28	0.62
30:R1:1521:G:H3'	30:R1:1522:A:H5"	1.82	0.62
1:1:59:VAL:H	1:1:165:ASN:HD21	1.46	0.62
30:R1:219:A:N3	30:R1:234:U:O2'	2.27	0.62
32:R3:1013:G:N2	32:R3:1016:A:OP2	2.31	0.62
30:R1:602:A:HO2'	30:R1:604:G:HO2'	1.45	0.61
30:R1:827:U:O2'	30:R1:2068:U:N3	2.32	0.61
32:R3:1040:U:H2'	32:R3:1041:G:H8	1.65	0.61
32:R3:1452:C:H4'	32:R3:1453:G:C2	2.35	0.61
30:R1:288:U:H2'	30:R1:289:G:H8	1.65	0.61
32:R3:71:A:N6	32:R3:100:G:N3	2.48	0.61
4:15:63:LYS:HE3	24:35:11:LYS:HD3	1.82	0.61
32:R3:841:C:O2'	32:R3:843:U:O4'	2.17	0.61
9:2:16:VAL:HB	9:2:203:VAL:HG22	1.82	0.61
32:R3:337:G:H2'	32:R3:338:A:C8	2.35	0.61
1:1:219:GLY:O	30:R1:2175:C:O2'	2.17	0.61
9:2:179:GLU:OE2	9:2:269:ARG:NH1	2.33	0.61
22:32:7:PRO:HD2	30:R1:1263:U:O2'	2.01	0.61
30:R1:1063:G:N2	30:R1:1070:A:OP1	2.34	0.61
32:R3:335:C:O2'	32:R3:1433:A:N3	2.32	0.61
4:15:110:VAL:HB	4:15:127:VAL:HG12	1.83	0.61
29:9:83:LYS:HA	29:9:149:GLU:HB2	1.82	0.61
30:R1:631:A:N3	30:R1:2415:G:O2'	2.29	0.61
30:R1:1086:A:H5"	30:R1:1087:G:H5'	1.83	0.60
30:R1:1475:G:HO2'	30:R1:1476:U:H6	1.49	0.60
30:R1:2804:U:H2'	30:R1:2805:C:C6	2.36	0.60
30:R1:2111:U:O2	30:R1:2115:G:O6	2.19	0.60
4:15:4:ASN:HB3	30:R1:1203:U:H1'	1.83	0.60
26:4:58:LYS:HG2	26:4:71:GLY:HA2	1.83	0.60
34:Y:9:MET:SD	34:Y:10:GLN:N	2.75	0.60
26:4:98:LYS:NZ	30:R1:619:G:O6	2.33	0.60
32:R3:1266:G:N2	32:R3:1269:A:OP2	2.24	0.60
32:R3:1323:G:H2'	32:R3:1324:A:C8	2.36	0.60
34:Y:80:THR:O	34:Y:84:THR:OG1	2.17	0.60
6:17:32:GLU:HB2	6:17:118:ARG:HD2	1.83	0.60
16:27:42:GLY:HA2	30:R1:2330:G:H21	1.66	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:3:148:GLN:HB2	19:3:152:PRO:CG	2.30	0.60
12:22:18:ARG:HG3	12:22:76:VAL:HG22	1.83	0.60
32:R3:1356:G:H2'	32:R3:1357:A:H8	1.66	0.60
34:Y:358:LYS:NZ	58:Y:602:ATP:O1G	2.33	0.60
7:18:49:VAL:HG21	7:18:82:ALA:HA	1.82	0.60
27:5:70:ARG:NH1	30:R1:2298:A:OP1	2.30	0.60
30:R1:1176:U:O4	30:R1:1178:C:N4	2.35	0.60
30:R1:2328:A:H2'	30:R1:2329:U:C6	2.37	0.60
2:13:17:VAL:HG23	2:13:137:PRO:HB2	1.83	0.60
30:R1:270:A:N1	30:R1:369:U:O2'	2.34	0.59
1:1:14:LYS:HG3	1:1:15:VAL:HG13	1.84	0.59
1:1:15:VAL:HG12	1:1:29:LEU:HD21	1.84	0.59
30:R1:1236:G:O2'	30:R1:1237:A:O5'	2.20	0.59
9:2:106:PRO:HD2	9:2:109:LEU:HD22	1.84	0.59
30:R1:1009:A:N3	30:R1:1153:C:O2'	2.30	0.59
30:R1:2857:G:N2	30:R1:2860:A:OP2	2.32	0.59
32:R3:82:G:N2	32:R3:85:U:OP2	2.33	0.59
3:14:70:ARG:NH1	30:R1:2684:U:O4'	2.35	0.59
25:36:36:ARG:HG2	25:36:37:GLN:N	2.18	0.59
30:R1:2134:A:H62	30:R1:2136:G:N2	2.00	0.59
30:R1:774:G:O2'	30:R1:775:G:H5"	2.02	0.59
32:R3:1040:U:H2'	32:R3:1041:G:C8	2.36	0.59
30:R1:155:A:H2'	30:R1:156:A:H8	1.68	0.59
34:Y:327:LYS:HD2	34:Y:371:PRO:HA	1.85	0.59
28:6:116:LEU:HD12	28:6:120:ILE:HB	1.85	0.58
21:31:16:CYS:SG	21:31:17:SER:N	2.76	0.58
12:22:5:ALA:HB2	12:22:54:ALA:HB2	1.86	0.58
21:31:42:PRO:O	21:31:46:GLY:N	2.23	0.58
32:R3:415:A:H61	32:R3:427:U:H3	1.50	0.58
32:R3:1054:C:O2	32:R3:1196:A:N6	2.35	0.58
32:R3:1297:G:H4'	32:R3:1298:U:O5'	2.02	0.58
34:Y:4:SER:O	34:Y:21:SER:HA	2.03	0.58
27:5:44:ALA:HA	34:Y:414:ASP:OD1	2.03	0.58
30:R1:880:G:H2'	30:R1:881:G:H8	1.68	0.58
34:Y:175:ASP:OD1	34:Y:175:ASP:N	2.35	0.58
32:R3:1222:G:OP2	32:R3:1322:C:N4	2.34	0.58
28:6:12:ALA:O	28:6:14:VAL:N	2.36	0.58
30:R1:1087:G:N2	30:R1:1102:C:H42	2.01	0.58
30:R1:1693:U:H5"	30:R1:1694:C:H5	1.68	0.58
30:R1:2532:G:O2'	30:R1:2657:A:N1	2.37	0.58
3:14:2:ILE:HD13	3:14:8:LEU:HD21	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:15:81:ASP:HB3	4:15:100:ILE:HD13	1.86	0.58
30:R1:704:G:H2'	30:R1:726:G:H22	1.69	0.58
34:Y:485:GLN:N	34:Y:485:GLN:OE1	2.37	0.58
30:R1:1187:G:HO2'	30:R1:1188:U:H6	1.52	0.57
32:R3:516:U:HO2'	32:R3:519:C:H5	1.52	0.57
7:18:9:ARG:NH2	30:R1:2295:C:OP2	2.37	0.57
20:30:40:THR:HG22	20:30:42:ALA:H	1.69	0.57
28:6:31:GLU:OE2	28:6:31:GLU:N	2.37	0.57
32:R3:766:A:OP2	32:R3:812:G:N2	2.36	0.57
11:21:23:GLU:OE2	30:R1:993:G:N2	2.37	0.57
30:R1:554:U:H2'	30:R1:555:G:O4'	2.05	0.57
32:R3:1271:A:N6	32:R3:1272:G:O6	2.38	0.57
19:3:46:ARG:HH22	19:3:88:GLU:HB2	1.70	0.57
24:35:7:ARG:NH1	30:R1:243:U:OP2	2.38	0.57
30:R1:2112:G:N7	34:Y:140:LEU:HD23	2.20	0.57
30:R1:2155:U:H3'	30:R1:2156:G:C8	2.39	0.57
5:16:74:THR:HG21	5:16:86:LYS:HE3	1.86	0.57
28:6:154:GLU:OE2	28:6:155:PRO:HD2	2.04	0.57
32:R3:181:A:H2'	32:R3:182:A:C8	2.40	0.57
32:R3:1405:G:H21	32:R3:1518:A:H8	1.52	0.57
27:5:150:GLY:O	30:R1:2305:U:N3	2.38	0.57
30:R1:2172:U:O2'	30:R1:2174:C:OP1	2.16	0.57
31:R2:5:U:OP1	31:R2:61:G:O2'	2.19	0.57
32:R3:212:G:H2'	32:R3:213:G:H8	1.70	0.57
32:R3:620:C:O2'	32:R3:621:A:O4'	2.22	0.57
34:Y:440:SER:OG	58:Y:601:ATP:O1B	2.22	0.57
10:20:51:GLN:HA	10:20:54:ARG:HG2	1.86	0.57
30:R1:155:A:H2'	30:R1:156:A:C8	2.40	0.57
7:18:94:ARG:HG2	7:18:97:PHE:O	2.04	0.57
25:36:6:SER:O	25:36:6:SER:OG	2.23	0.57
6:17:1:MET:N	30:R1:1654:A:OP2	2.30	0.56
7:18:10:ARG:HD3	30:R1:2294:G:H5"	1.87	0.56
26:4:3:LEU:HD12	26:4:14:VAL:HG21	1.87	0.56
1:1:175:ILE:O	1:1:188:ASN:ND2	2.38	0.56
30:R1:1583:A:O2'	30:R1:1585:C:N4	2.36	0.56
5:16:18:ARG:NH1	31:R2:90:C:OP2	2.39	0.56
7:18:33:ARG:HD3	31:R2:52:A:H62	1.69	0.56
8:19:87:ARG:NH2	8:19:109:ILE:O	2.38	0.56
13:23:64:LYS:HA	13:23:79:ASP:HB2	1.88	0.56
17:28:22:ASN:OD1	30:R1:2079:U:O2'	2.23	0.56
28:6:108:PHE:O	30:R1:2666:C:N4	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:9:89:LYS:HD2	29:9:90:LEU:N	2.19	0.56
30:R1:1048:A:OP2	30:R1:1110:G:N2	2.37	0.56
30:R1:1779:U:H5	30:R1:1784:A:N7	2.04	0.56
34:Y:8:THR:HG23	34:Y:19:ASN:H	1.70	0.56
34:Y:224:ASP:OD1	34:Y:225:LEU:N	2.39	0.56
34:Y:266:GLN:O	34:Y:266:GLN:NE2	2.39	0.56
15:25:32:GLY:HA3	15:25:93:ARG:HB2	1.87	0.56
30:R1:1900:A:H1'	30:R1:1970:A:H2'	1.88	0.56
30:R1:2120:G:H2'	30:R1:2121:G:C8	2.40	0.56
30:R1:2184:A:H2'	30:R1:2185:U:C6	2.40	0.56
24:35:53:ASP:OD2	30:R1:2359:C:O2'	2.21	0.56
3:14:92:GLU:HG3	3:14:111:LYS:NZ	2.20	0.56
16:27:29:GLU:OE2	30:R1:922:C:O2'	2.18	0.56
19:3:148:GLN:NE2	30:R1:2571:U:O2	2.37	0.56
30:R1:324:A:OP2	30:R1:1205:A:N6	2.39	0.56
30:R1:2126:A:H1'	30:R1:2173:A:H61	1.70	0.56
30:R1:2577:A:H2'	30:R1:2614:A:N6	2.21	0.56
9:2:200:MET:HG3	30:R1:1820:U:C2	2.41	0.56
16:27:18:ALA:O	16:27:20:ARG:NH1	2.39	0.56
30:R1:389:G:C8	30:R1:2413:G:H4'	2.40	0.56
32:R3:588:G:N2	32:R3:653:U:O4	2.34	0.56
30:R1:370:G:O2'	30:R1:424:G:OP1	2.22	0.55
30:R1:569:U:O2'	30:R1:983:A:N1	2.35	0.55
30:R1:807:U:O2'	30:R1:2060:A:N1	2.38	0.55
5:16:59:ARG:HA	5:16:59:ARG:NE	2.21	0.55
30:R1:141:G:OP2	30:R1:141:G:N2	2.40	0.55
30:R1:2848:G:O2'	30:R1:2868:A:N6	2.38	0.55
29:9:3:VAL:HG13	29:9:36:ALA:HB1	1.87	0.55
32:R3:337:G:H2'	32:R3:338:A:H8	1.71	0.55
34:Y:439:LEU:HD22	34:Y:443:GLU:HG2	1.87	0.55
19:3:83:ARG:NH1	30:R1:2637:U:H5"	2.21	0.55
23:34:43:THR:OG1	23:34:44:VAL:N	2.39	0.55
30:R1:848:C:H2'	30:R1:849:A:H8	1.71	0.55
30:R1:613:A:H4'	30:R1:614:A:C8	2.42	0.55
30:R1:2637:U:H2'	30:R1:2638:G:O4'	2.07	0.55
32:R3:561:U:O2'	32:R3:562:U:OP2	2.19	0.55
11:21:15:SER:OG	11:21:16:GLU:N	2.38	0.55
30:R1:1085:A:H2'	30:R1:1086:A:N3	2.22	0.55
32:R3:344:A:H5"	32:R3:345:C:H5	1.72	0.55
34:Y:40:LYS:N	58:Y:601:ATP:O1A	2.40	0.55
28:6:74:MET:O	28:6:78:VAL:HG22	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:R1:227:A:O2'	30:R1:228:C:O5'	2.24	0.55
30:R1:414:C:H2'	30:R1:415:A:H8	1.71	0.55
1:1:100:LEU:O	1:1:105:LYS:N	2.40	0.55
5:16:55:ARG:HD2	30:R1:2469:A:H4'	1.89	0.55
13:23:54:GLU:HB3	13:23:88:LYS:HD2	1.89	0.55
13:23:58:VAL:HG22	13:23:85:VAL:HG13	1.88	0.55
22:32:52:LYS:HZ2	22:32:55:ALA:HA	1.72	0.55
32:R3:945:G:C2	32:R3:946:A:C8	2.94	0.55
3:14:98:ARG:HE	3:14:100:PHE:HE2	1.54	0.55
12:22:4:ILE:HD12	12:22:4:ILE:H	1.72	0.55
30:R1:1607:C:N4	30:R1:1622:G:OP2	2.34	0.55
15:25:77:VAL:HG12	15:25:89:ILE:HG12	1.89	0.54
25:36:3:VAL:HG11	30:R1:2539:C:H5'	1.88	0.54
32:R3:518:C:H4'	32:R3:519:C:O2	2.06	0.54
34:Y:507:GLU:HG3	34:Y:514:ILE:HG23	1.89	0.54
8:19:94:ALA:HB2	30:R1:2848:G:C8	2.41	0.54
29:9:90:LEU:HD11	29:9:146:VAL:HG21	1.89	0.54
31:R2:14:U:OP2	31:R2:70:C:O2'	2.24	0.54
34:Y:358:LYS:HZ2	58:Y:602:ATP:PB	2.31	0.54
9:2:47:ARG:HD3	30:R1:778:G:H5"	1.90	0.54
1:1:60:ARG:HH21	34:Y:125:GLU:HG2	1.71	0.54
30:R1:1053:C:N4	30:R1:1106:G:O6	2.27	0.54
32:R3:1120:C:H2'	32:R3:1121:U:H6	1.73	0.54
25:36:23:ILE:HB	25:36:38:GLY:HA3	1.89	0.54
28:6:54:ARG:HD2	28:6:57:TYR:HE2	1.72	0.54
30:R1:856:G:H2'	30:R1:857:G:C8	2.43	0.54
34:Y:363:LYS:HE3	34:Y:368:ASP:OD2	2.07	0.54
4:15:85:VAL:HB	4:15:94:THR:HG22	1.89	0.54
30:R1:721:A:H2'	30:R1:722:A:C8	2.43	0.54
30:R1:1597:A:H5"	30:R1:1598:A:H5'	1.88	0.54
30:R1:1720:U:H2'	30:R1:1721:G:O4'	2.07	0.54
21:31:26:SER:OG	27:5:139:GLU:OE2	2.24	0.54
32:R3:999:C:N3	32:R3:1042:A:N6	2.55	0.54
30:R1:1582:C:O2'	30:R1:1585:C:N3	2.32	0.54
30:R1:2137:U:H2'	30:R1:2138:G:H8	1.71	0.54
5:16:62:LYS:HG2	5:16:64:TRP:CZ2	2.43	0.54
18:29:58:ASN:ND2	18:29:63:ALA:OXT	2.38	0.54
30:R1:2788:C:O2'	30:R1:2809:A:N3	2.39	0.54
34:Y:493:HIS:O	34:Y:495:ARG:NH1	2.38	0.54
13:23:37:ASP:OD1	13:23:37:ASP:N	2.38	0.54
28:6:88:LEU:HG	28:6:161:VAL:HG22	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:5:59:ILE:HA	27:5:139:GLU:HG3	1.89	0.53
30:R1:284:U:O4	30:R1:356:G:O6	2.26	0.53
30:R1:2327:A:H2'	30:R1:2328:A:C8	2.42	0.53
6:17:64:ARG:NH1	30:R1:1454:C:O2	2.41	0.53
11:21:49:ILE:HG12	11:21:53:PHE:O	2.08	0.53
30:R1:394:C:H2'	30:R1:395:U:O4'	2.08	0.53
30:R1:880:G:H2'	30:R1:881:G:C8	2.43	0.53
1:1:57:GLN:NE2	1:1:203:GLN:O	2.35	0.53
7:18:27:VAL:HA	7:18:93:ASP:HB3	1.90	0.53
28:6:174:LYS:HG3	30:R1:2529:G:H4'	1.91	0.53
30:R1:286:U:H2'	30:R1:287:G:C8	2.44	0.53
6:17:106:ASP:OD1	6:17:106:ASP:N	2.39	0.53
9:2:144:GLU:HB2	9:2:187:CYS:HB3	1.89	0.53
30:R1:1266:G:O2'	30:R1:2012:G:O6	2.22	0.53
30:R1:2725:A:O2'	30:R1:2726:A:O5'	2.26	0.53
34:Y:431:ASP:N	34:Y:431:ASP:OD1	2.40	0.53
30:R1:1386:C:H2'	30:R1:1387:A:C8	2.43	0.53
30:R1:1504:A:H2'	30:R1:1505:A:C8	2.43	0.53
4:15:132:ARG:O	4:15:136:GLU:HG3	2.09	0.53
18:29:2:LYS:HG3	18:29:52:ARG:HD3	1.89	0.53
19:3:110:THR:HG21	19:3:169:ARG:HE	1.73	0.53
27:5:45:ASP:HB3	27:5:48:LEU:HD12	1.89	0.53
30:R1:30:G:O2'	30:R1:1214:A:N3	2.37	0.53
30:R1:955:U:H5	30:R1:962:G:H1	1.55	0.53
31:R2:1:U:H2'	31:R2:2:G:H8	1.73	0.53
9:2:244:VAL:HG12	9:2:250:GLN:HA	1.91	0.53
14:24:82:VAL:HG13	14:24:93:ARG:HB3	1.90	0.53
21:31:58:ASP:OD1	21:31:59:ARG:N	2.42	0.53
34:Y:187:ASP:OD1	34:Y:190:THR:N	2.30	0.53
2:13:98:GLU:O	2:13:102:GLU:HG3	2.09	0.53
29:9:94:ILE:HG22	29:9:122:LEU:HB2	1.91	0.53
30:R1:1:G:H2'	30:R1:2:G:H8	1.74	0.53
30:R1:1363:C:O2'	30:R1:1809:A:N3	2.35	0.53
29:9:103:VAL:HG21	29:9:132:PHE:HZ	1.74	0.53
32:R3:1071:C:H2'	32:R3:1072:G:H8	1.73	0.53
8:19:94:ALA:HB2	30:R1:2848:G:H8	1.74	0.53
30:R1:528:A:C2	30:R1:2043:C:H4'	2.44	0.53
30:R1:65:U:H2'	30:R1:66:C:H6	1.74	0.52
30:R1:358:U:H2'	30:R1:359:G:C8	2.44	0.52
27:5:21:TYR:OH	27:5:164:GLU:OE1	2.22	0.52
30:R1:2655:G:O2'	30:R1:2664:G:O6	2.18	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:R3:77:A:H2'	32:R3:78:A:C8	2.43	0.52
32:R3:416:G:H2'	32:R3:417:G:C8	2.44	0.52
32:R3:1305:G:O2'	32:R3:1306:A:H8	1.91	0.52
32:R3:1412:C:H2'	32:R3:1413:A:C8	2.43	0.52
3:14:1:MET:HG3	3:14:67:LYS:HD2	1.92	0.52
16:27:81:SER:OG	16:27:82:ILE:N	2.40	0.52
18:29:9:LYS:HE2	18:29:12:GLU:HG2	1.92	0.52
30:R1:2175:C:H2'	30:R1:2176:A:O4'	2.10	0.52
32:R3:1492:A:H5'	32:R3:1493:A:OP2	2.10	0.52
34:Y:470:ASP:O	34:Y:474:ILE:HG12	2.09	0.52
26:4:46:GLN:O	26:4:88:ARG:NH2	2.42	0.52
30:R1:1056:G:N1	30:R1:1102:C:OP2	2.39	0.52
30:R1:1085:A:H2'	30:R1:1086:A:C4	2.44	0.52
34:Y:1:MET:HB2	34:Y:25:GLY:HA3	1.91	0.52
27:5:150:GLY:N	30:R1:2305:U:O2	2.41	0.52
30:R1:1054:A:N6	30:R1:1106:G:O6	2.43	0.52
32:R3:692:U:O2'	32:R3:694:A:N7	2.36	0.52
32:R3:1305:G:HO2'	32:R3:1306:A:H8	1.56	0.52
34:Y:359:SER:O	34:Y:360:THR:OG1	2.24	0.52
15:25:64:VAL:HG22	15:25:69:GLU:HG2	1.91	0.52
30:R1:514:A:N3	30:R1:581:C:O2'	2.38	0.52
33:T:54:5MU:O2'	33:T:55:PSU:O4'	2.28	0.52
1:1:58:ASN:OD1	1:1:165:ASN:ND2	2.41	0.52
8:19:20:ARG:NH2	30:R1:2849:U:O4	2.42	0.52
28:6:1:SER:N	30:R1:2749:A:OP1	2.40	0.52
30:R1:1:G:N2	30:R1:2903:U:HO2'	2.07	0.52
30:R1:310:A:O2'	30:R1:311:A:H2'	2.09	0.52
30:R1:1038:G:H2'	30:R1:1039:A:C8	2.44	0.52
9:2:2:VAL:HG12	9:2:18:VAL:HG22	1.92	0.52
12:22:4:ILE:HG13	12:22:106:VAL:HG22	1.91	0.52
30:R1:2136:G:H2'	30:R1:2137:U:O4'	2.08	0.52
30:R1:2138:G:H2'	30:R1:2139:U:C6	2.45	0.52
32:R3:77:A:H2'	32:R3:78:A:H8	1.74	0.52
32:R3:401:C:O2'	32:R3:621:A:N3	2.34	0.52
33:T:18:G:O2'	33:T:19:G:H5"	2.10	0.52
30:R1:895:U:O2'	30:R1:896:A:N7	2.43	0.52
9:2:149:LYS:HD3	30:R1:2204:G:H4'	1.91	0.52
26:4:159:LEU:HD22	26:4:162:ARG:HH21	1.74	0.52
30:R1:1715:G:HO2'	30:R1:1716:U:H6	1.58	0.52
31:R2:32:U:N3	31:R2:51:G:N2	2.58	0.52
32:R3:1405:G:N2	32:R3:1518:A:H8	2.07	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:14:70:ARG:NH2	30:R1:2683:C:O2	2.43	0.51
15:25:9:ARG:HG2	15:25:41:GLU:HB3	1.92	0.51
18:29:31:GLN:HG2	18:29:37:LEU:HB2	1.92	0.51
19:3:46:ARG:NH1	19:3:86:GLU:O	2.40	0.51
28:6:154:GLU:HG3	28:6:156:TYR:H	1.74	0.51
30:R1:242:G:N2	30:R1:255:A:OP2	2.26	0.51
31:R2:33:G:C2	31:R2:50:A:C2	2.98	0.51
1:1:7:ARG:HA	1:1:10:VAL:HG22	1.91	0.51
15:25:6:ALA:HB3	15:25:40:ILE:HD11	1.93	0.51
26:4:6:LYS:HB3	26:4:121:VAL:HG12	1.92	0.51
30:R1:12:U:H2'	30:R1:12:U:O2	2.10	0.51
30:R1:414:C:H2'	30:R1:415:A:C8	2.46	0.51
30:R1:1177:G:H2'	30:R1:1178:C:O4'	2.10	0.51
34:Y:512:ARG:NH2	34:Y:514:ILE:HB	2.26	0.51
13:23:7:LEU:HD23	13:23:49:LYS:HD3	1.91	0.51
31:R2:13:G:O2'	31:R2:15:A:H2'	2.11	0.51
32:R3:746:A:H2'	32:R3:747:A:C8	2.44	0.51
12:22:89:ALA:HB1	30:R1:748:G:C8	2.45	0.51
30:R1:1746:A:H2'	30:R1:1747:U:C6	2.45	0.51
30:R1:411:G:OP2	30:R1:2406:A:O2'	2.27	0.51
30:R1:2540:C:O2'	30:R1:2740:A:N3	2.37	0.51
29:9:30:LEU:HB3	29:9:36:ALA:HB3	1.92	0.51
30:R1:1047:G:HO2'	30:R1:1048:A:H8	1.56	0.51
30:R1:1858:A:N6	30:R1:1884:G:O2'	2.43	0.51
30:R1:2581:G:OP2	30:R1:2581:G:N2	2.40	0.51
21:31:1:MET:HB3	21:31:6:HIS:CD2	2.45	0.51
30:R1:500:G:N1	30:R1:503:A:OP2	2.42	0.51
30:R1:1236:G:HO2'	30:R1:1237:A:P	2.34	0.51
3:14:69:VAL:HG11	3:14:104:THR:HG21	1.92	0.51
4:15:21:ARG:HA	30:R1:811:U:H2'	1.93	0.51
15:25:71:LYS:HB3	15:25:71:LYS:HZ2	1.76	0.51
30:R1:1059:G:H5"	30:R1:1060:U:H2'	1.92	0.51
14:24:71:ILE:HD12	14:24:95:PHE:CE1	2.46	0.51
30:R1:4:U:H2'	30:R1:5:A:C8	2.46	0.51
30:R1:228:C:N4	30:R1:2407:A:N3	2.58	0.51
32:R3:991:U:O4	32:R3:1212:U:O2'	2.23	0.51
32:R3:1062:U:H2'	32:R3:1063:C:C6	2.46	0.51
30:R1:288:U:H2'	30:R1:289:G:C8	2.45	0.51
30:R1:307:G:N1	30:R1:310:A:OP2	2.39	0.51
30:R1:1802:A:H2'	30:R1:1803:A:C8	2.45	0.51
30:R1:2144:G:N2	30:R1:2146:C:O2'	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:R3:56:U:H2'	32:R3:57:G:C8	2.46	0.51
32:R3:56:U:H2'	32:R3:57:G:H8	1.75	0.51
12:22:59:GLU:HA	12:22:64:ALA:HA	1.92	0.50
29:9:55:GLU:HA	29:9:58:LEU:HB3	1.92	0.50
22:32:30:ASP:OD1	22:32:31:LYS:N	2.44	0.50
30:R1:4:U:H2'	30:R1:5:A:H8	1.76	0.50
30:R1:2457:U:H5	30:R1:2494:G:H1	1.58	0.50
32:R3:1095:U:P	32:R3:1108:G:H1	2.34	0.50
27:5:56:LEU:HD23	27:5:64:PRO:HB3	1.93	0.50
29:9:11:ASN:O	29:9:11:ASN:ND2	2.42	0.50
30:R1:2436:G:O2'	34:Y:281:GLN:NE2	2.44	0.50
10:20:108:LEU:HG	11:21:48:LYS:NZ	2.26	0.50
30:R1:2850:A:N7	30:R1:2868:A:O2'	2.36	0.50
32:R3:508:U:H1'	32:R3:509:A:H2	1.77	0.50
8:19:79:VAL:HG23	19:3:19:GLY:HA3	1.91	0.50
8:19:90:ALA:HB2	8:19:112:ARG:HA	1.92	0.50
30:R1:703:U:H2'	30:R1:704:G:O4'	2.12	0.50
32:R3:201:G:O2'	32:R3:469:C:O2'	2.29	0.50
2:13:78:THR:HB	30:R1:2641:G:H5"	1.92	0.50
2:13:110:PRO:O	2:13:115:GLY:HA3	2.11	0.50
17:28:11:PRO:HB3	17:28:29:LEU:HD23	1.92	0.50
19:3:149:ASN:HB3	30:R1:2572:A:OP2	2.12	0.50
30:R1:532:A:N7	30:R1:2021:C:O2'	2.39	0.50
16:27:43:THR:CG2	30:R1:2336:A:H61	2.24	0.50
27:5:65:LEU:HD13	31:R2:42:C:C5	2.47	0.50
32:R3:321:A:H2'	32:R3:322:C:C6	2.47	0.50
13:23:3:ARG:C	13:23:5:GLU:H	2.15	0.50
30:R1:1386:C:H2'	30:R1:1387:A:H8	1.76	0.50
30:R1:2158:A:H4'	30:R1:2159:G:O4'	2.11	0.50
32:R3:423:G:H21	32:R3:424:G:H21	1.60	0.50
34:Y:327:LYS:HA	34:Y:372:ASP:HB2	1.94	0.50
34:Y:361:LEU:O	34:Y:365:LEU:HG	2.12	0.50
34:Y:415:GLU:HA	34:Y:418:VAL:HB	1.94	0.50
1:1:14:LYS:HD3	1:1:33:LEU:HD21	1.92	0.49
9:2:259:ASN:OD1	9:2:262:THR:OG1	2.19	0.49
30:R1:639:U:H2'	30:R1:640:C:C6	2.46	0.49
30:R1:1537:G:C5	30:R1:1538:G:H1'	2.47	0.49
18:29:9:LYS:HG2	18:29:12:GLU:HG2	1.94	0.49
32:R3:890:G:O2'	32:R3:906:A:N6	2.44	0.49
1:1:38:PHE:HD1	1:1:39:VAL:H	1.61	0.49
22:32:52:LYS:NZ	22:32:55:ALA:HA	2.26	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:35:15:LYS:HE3	24:35:19:GLY:HA2	1.93	0.49
26:4:115:GLN:OE1	26:4:117:ARG:NH1	2.45	0.49
26:4:146:VAL:HG12	26:4:185:LYS:HB2	1.93	0.49
29:9:8:LYS:HA	29:9:15:LEU:HB3	1.94	0.49
4:15:122:VAL:HG13	4:15:125:LEU:HD12	1.93	0.49
30:R1:704:G:O2'	30:R1:727:A:N6	2.46	0.49
30:R1:1522:A:H8	30:R1:1522:A:OP1	1.95	0.49
30:R1:2109:U:OP1	30:R1:2149:U:O2'	2.27	0.49
30:R1:2213:U:H5"	30:R1:2214:C:OP2	2.12	0.49
32:R3:1491:G:H2'	32:R3:1492:A:C8	2.48	0.49
30:R1:547:A:H4'	30:R1:548:G:C8	2.47	0.49
30:R1:1509:A:H2'	30:R1:1510:G:C8	2.47	0.49
30:R1:2125:G:H22	30:R1:2174:C:H42	1.61	0.49
32:R3:380:G:N2	32:R3:383:A:OP2	2.43	0.49
32:R3:560:A:H4'	32:R3:561:U:H5"	1.93	0.49
34:Y:338:LEU:HD11	34:Y:340:LEU:HD23	1.95	0.49
2:13:65:THR:OG1	30:R1:1141:U:OP2	2.28	0.49
30:R1:881:G:O6	30:R1:895:U:O2	2.31	0.49
30:R1:918:A:N3	31:R2:80:U:O2'	2.44	0.49
30:R1:2324:U:H3'	30:R1:2325:G:H5'	1.94	0.49
30:R1:2900:A:H2'	30:R1:2901:C:C6	2.48	0.49
33:T:16:C:H4'	33:T:17:U:O4'	2.12	0.49
9:2:219:VAL:HG21	30:R1:782:A:N7	2.27	0.49
28:6:21:GLN:NE2	28:6:38:ASP:HA	2.26	0.49
30:R1:296:U:H2'	30:R1:297:G:H8	1.77	0.49
30:R1:851:C:H2'	30:R1:852:U:C6	2.47	0.49
30:R1:1796:U:H2'	30:R1:1797:G:H8	1.77	0.49
34:Y:6:ASN:HA	34:Y:19:ASN:HA	1.95	0.49
5:16:34:LYS:HD2	5:16:99:GLY:HA2	1.95	0.49
9:2:154:ALA:HB2	9:2:161:VAL:HG23	1.94	0.49
30:R1:2246:G:H2'	30:R1:2247:A:C8	2.47	0.49
30:R1:2246:G:H2'	30:R1:2247:A:H8	1.77	0.49
32:R3:367:U:H3	32:R3:393:A:H62	1.60	0.49
33:T:9:G:N2	33:T:26:G:H1'	2.28	0.49
7:18:30:ARG:HH22	31:R2:48:U:P	2.34	0.49
34:Y:80:THR:HA	34:Y:152:PRO:HA	1.95	0.49
1:1:6:LYS:HD2	1:1:8:MET:HG2	1.95	0.48
20:30:23:LEU:HD11	20:30:53:MET:SD	2.53	0.48
25:36:34:LYS:NZ	30:R1:2526:G:O2'	2.43	0.48
30:R1:2127:G:O2'	30:R1:2128:G:O4'	2.29	0.48
32:R3:1323:G:H2'	32:R3:1324:A:H8	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:R1:2187:U:H2'	30:R1:2188:U:C6	2.48	0.48
1:1:60:ARG:NH2	34:Y:125:GLU:HG2	2.27	0.48
28:6:16:VAL:HG22	28:6:25:ILE:HD13	1.96	0.48
31:R2:44:G:H1'	31:R2:47:C:H42	1.76	0.48
34:Y:449:PHE:CE2	34:Y:477:LEU:HD13	2.48	0.48
7:18:25:ARG:NH2	31:R2:8:C:O3'	2.47	0.48
16:27:39:ARG:HH21	30:R1:2363:G:H21	1.62	0.48
30:R1:1094:U:N3	30:R1:1097:U:OP2	2.36	0.48
32:R3:1033:G:H2'	32:R3:1034:G:C8	2.48	0.48
27:5:140:ILE:HG21	27:5:145:VAL:HG13	1.94	0.48
30:R1:1441:G:H2'	30:R1:1442:U:C6	2.47	0.48
3:14:8:LEU:HD22	3:14:84:CYS:HB3	1.96	0.48
12:22:61:ASN:HD21	30:R1:495:G:H21	1.60	0.48
12:22:68:ASP:O	12:22:109:ASP:HB3	2.13	0.48
14:24:86:PHE:HA	14:24:91:LYS:HA	1.95	0.48
30:R1:1539:U:H2'	30:R1:1540:G:H8	1.78	0.48
30:R1:1874:C:H2'	30:R1:1875:G:O4'	2.13	0.48
30:R1:2834:G:H2'	30:R1:2879:A:N6	2.29	0.48
6:17:38:LEU:HB3	6:17:39:PRO:HD3	1.96	0.48
12:22:88:ARG:HB2	12:22:92:ARG:HG3	1.95	0.48
30:R1:1061:U:O2'	30:R1:1070:A:O3'	2.25	0.48
30:R1:2324:U:H3'	30:R1:2325:G:C5'	2.44	0.48
32:R3:460:A:H2'	32:R3:461:A:H8	1.79	0.48
32:R3:1168:U:H5'	32:R3:1169:A:OP2	2.14	0.48
32:R3:1218:C:H2'	32:R3:1219:A:C8	2.48	0.48
34:Y:8:THR:CG2	34:Y:19:ASN:H	2.27	0.48
34:Y:8:THR:O	34:Y:54:THR:HB	2.14	0.48
15:25:42:LEU:HD13	15:25:47:VAL:HG21	1.96	0.48
19:3:137:SER:O	19:3:137:SER:OG	2.31	0.48
30:R1:1288:G:OP2	30:R1:1288:G:N2	2.44	0.48
30:R1:2134:A:H62	30:R1:2136:G:H21	1.61	0.48
32:R3:908:A:H2'	32:R3:909:A:C8	2.49	0.48
30:R1:1912:A:H62	30:R1:1917:U:H5	1.60	0.48
30:R1:2025:C:H2'	30:R1:2026:U:C6	2.48	0.48
30:R1:2250:G:O2'	30:R1:2496:C:OP1	2.28	0.48
32:R3:28:A:H1'	32:R3:296:U:H5'	1.96	0.48
3:14:92:GLU:HG3	3:14:111:LYS:HZ1	1.79	0.48
18:29:9:LYS:HG3	18:29:11:VAL:H	1.79	0.48
29:9:75:LEU:HD23	29:9:75:LEU:H	1.78	0.48
30:R1:78:U:H2'	30:R1:79:C:C6	2.49	0.48
30:R1:355:U:H2'	30:R1:356:G:C8	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:R1:827:U:O2'	30:R1:2068:U:C2	2.67	0.48
30:R1:1306:C:H41	30:R1:1606:C:H2'	1.78	0.48
30:R1:1306:C:N4	30:R1:1606:C:H2'	2.29	0.48
31:R2:51:G:H2'	31:R2:52:A:O4'	2.13	0.48
7:18:26:LEU:HD11	7:18:78:VAL:HG11	1.96	0.47
32:R3:137:U:H2'	32:R3:138:G:H8	1.78	0.47
4:15:62:PRO:HG2	24:35:24:LYS:HB3	1.95	0.47
6:17:100:CYS:SG	6:17:101:GLY:N	2.87	0.47
30:R1:1079:C:N4	30:R1:1088:A:O4'	2.47	0.47
30:R1:2523:G:HO2'	30:R1:2764:A:HO2'	1.60	0.47
32:R3:201:G:HO2'	32:R3:469:C:HO2'	1.61	0.47
33:T:14:G:H2'	33:T:59:A:H61	1.79	0.47
3:14:73:ASP:OD2	3:14:75:SER:OG	2.30	0.47
5:16:64:TRP:HB2	5:16:104:GLU:HG3	1.97	0.47
6:17:114:GLU:OE1	6:17:118:ARG:NE	2.46	0.47
8:19:8:GLU:HB2	8:19:54:LEU:HD22	1.95	0.47
8:19:64:SER:C	8:19:66:GLY:H	2.16	0.47
15:25:55:GLU:N	15:25:55:GLU:OE1	2.46	0.47
30:R1:355:U:H2'	30:R1:356:G:H8	1.80	0.47
30:R1:2123:G:N2	30:R1:2124:G:O6	2.47	0.47
30:R1:2514:U:H2'	30:R1:2515:C:C6	2.49	0.47
32:R3:1238:A:H2	32:R3:1241:G:N3	2.12	0.47
8:19:24:THR:HB	8:19:87:ARG:HB2	1.95	0.47
10:20:86:SER:OG	11:21:50:GLY:O	2.31	0.47
13:23:47:VAL:HG13	13:23:51:PHE:HD2	1.78	0.47
32:R3:714:G:H2'	32:R3:715:A:C8	2.49	0.47
34:Y:179:LEU:HD12	34:Y:207:ILE:HG12	1.96	0.47
4:15:85:VAL:HG23	4:15:86:GLU:N	2.29	0.47
9:2:208:GLY:HA3	30:R1:764:A:H5"	1.96	0.47
21:31:41:HIS:ND1	21:31:42:PRO:HD2	2.30	0.47
21:31:41:HIS:HD2	21:31:43:PHE:HB3	1.79	0.47
22:32:9:ARG:NH1	30:R1:517:C:OP2	2.47	0.47
28:6:89:VAL:HG11	28:6:162:ARG:HH11	1.79	0.47
30:R1:296:U:H2'	30:R1:297:G:C8	2.49	0.47
30:R1:1352:U:O2'	30:R1:1570:A:N3	2.37	0.47
30:R1:1721:G:O2'	30:R1:1739:A:N6	2.46	0.47
30:R1:2101:A:H2'	30:R1:2102:G:H8	1.80	0.47
30:R1:2557:G:H2'	30:R1:2558:C:C6	2.49	0.47
32:R3:200:G:H2'	32:R3:201:G:H8	1.79	0.47
32:R3:664:G:H22	32:R3:741:G:H1	1.63	0.47
34:Y:369:LEU:HD23	34:Y:369:LEU:HA	1.76	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:2:13:ARG:NH2	30:R1:1693:U:O2'	2.44	0.47
22:32:15:ARG:NH2	30:R1:1264:A:OP1	2.40	0.47
30:R1:2029:G:N1	30:R1:2033:A:OP2	2.41	0.47
33:T:53:G:H2'	33:T:54:5MU:C6	2.50	0.47
34:Y:176:ILE:HA	34:Y:204:THR:O	2.15	0.47
34:Y:418:VAL:HG22	34:Y:454:MET:CE	2.44	0.47
5:16:71:LYS:HB3	5:16:93:VAL:O	2.15	0.47
9:2:10:PRO:O	30:R1:729:G:N2	2.48	0.47
12:22:7:HIS:HB2	12:22:50:VAL:CG2	2.45	0.47
15:25:80:HIS:CE1	15:25:83:LYS:HD2	2.50	0.47
21:31:27:THR:OG1	27:5:58:ALA:O	2.24	0.47
21:31:47:LYS:HE3	27:5:114:ARG:HD2	1.96	0.47
26:4:45:ALA:HB2	26:4:89:PRO:HD3	1.96	0.47
29:9:9:VAL:HG12	29:9:11:ASN:H	1.80	0.47
30:R1:172:A:H2'	30:R1:173:A:H8	1.80	0.47
30:R1:456:C:H5"	30:R1:457:A:OP1	2.15	0.47
30:R1:1028:A:N6	30:R1:1125:G:H2'	2.30	0.47
30:R1:2328:A:H2'	30:R1:2329:U:H6	1.79	0.47
32:R3:80:A:H2'	32:R3:81:A:H4'	1.96	0.47
32:R3:501:C:H2'	32:R3:502:A:H8	1.80	0.47
32:R3:1347:G:O2'	32:R3:1373:G:O6	2.29	0.47
34:Y:392:GLU:O	34:Y:396:GLU:HG2	2.14	0.47
34:Y:408:TRP:CD1	34:Y:451:LYS:HG3	2.49	0.47
34:Y:490:PHE:CE2	34:Y:498:VAL:HG12	2.50	0.47
34:Y:522:ASP:O	34:Y:525:ARG:HG2	2.14	0.47
28:6:1:SER:H1	30:R1:2749:A:H5"	1.80	0.47
30:R1:27:G:N2	30:R1:512:G:H1'	2.30	0.47
30:R1:693:A:O2'	30:R1:1353:A:N3	2.36	0.47
30:R1:890:C:H3'	30:R1:891:G:H4'	1.97	0.47
30:R1:2725:A:O2'	30:R1:2726:A:C8	2.66	0.47
32:R3:413:G:H1'	32:R3:428:G:H22	1.79	0.47
34:Y:350:VAL:HG13	34:Y:491:VAL:HB	1.96	0.47
3:14:41:ILE:HD13	3:14:60:ALA:HB2	1.97	0.47
7:18:40:ILE:HG12	7:18:47:VAL:HG12	1.97	0.47
19:3:120:GLY:O	19:3:124:ARG:HB2	2.15	0.47
29:9:3:VAL:CG1	29:9:36:ALA:HB1	2.44	0.47
30:R1:1747:U:H2'	30:R1:1748:C:C6	2.50	0.47
30:R1:1873:G:H2'	30:R1:1874:C:C6	2.50	0.47
30:R1:2071:A:H2'	30:R1:2072:C:C6	2.49	0.47
34:Y:90:LYS:O	34:Y:94:GLU:HG2	2.14	0.47
34:Y:279:SER:O	34:Y:283:THR:HG23	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:19:88:ARG:NH2	8:19:114:ASN:O	2.46	0.47
10:20:108:LEU:HG	11:21:48:LYS:HZ2	1.79	0.47
26:4:8:ALA:O	26:4:9:GLN:HG3	2.16	0.47
32:R3:91:U:H2'	32:R3:92:U:C6	2.50	0.47
34:Y:181:GLN:OE1	34:Y:468:HIS:ND1	2.46	0.47
34:Y:239:GLU:HA	34:Y:242:THR:HG22	1.96	0.47
34:Y:351:LEU:HB2	34:Y:507:GLU:HB3	1.96	0.47
12:22:4:ILE:HD12	12:22:4:ILE:N	2.30	0.46
21:31:3:LYS:HA	21:31:3:LYS:HD3	1.70	0.46
29:9:133:GLN:NE2	29:9:135:HIS:O	2.48	0.46
30:R1:242:G:O2'	30:R1:254:G:O6	2.32	0.46
30:R1:1181:U:H2'	30:R1:1182:G:C8	2.51	0.46
32:R3:1120:C:H2'	32:R3:1121:U:C6	2.50	0.46
32:R3:1272:G:H2'	32:R3:1273:C:C6	2.51	0.46
30:R1:1263:U:H2'	30:R1:1264:A:C8	2.49	0.46
30:R1:2109:U:H2'	30:R1:2110:G:C8	2.50	0.46
32:R3:662:U:H2'	32:R3:663:A:C8	2.50	0.46
9:2:186:ASP:N	9:2:186:ASP:OD1	2.48	0.46
10:20:81:GLY:HA2	10:20:116:LEU:HD13	1.97	0.46
26:4:47:LYS:HG2	26:4:51:GLU:HB2	1.96	0.46
30:R1:784:G:H5'	30:R1:785:G:OP1	2.16	0.46
30:R1:875:G:H2'	30:R1:876:C:C6	2.51	0.46
30:R1:1076:C:H2'	30:R1:1077:A:C8	2.50	0.46
30:R1:1080:A:O2'	30:R1:1081:U:O4'	2.33	0.46
30:R1:1447:C:O2'	30:R1:1544:A:N3	2.38	0.46
30:R1:1794:A:H2'	30:R1:1795:C:C6	2.50	0.46
32:R3:1157:A:N7	32:R3:1180:A:N6	2.63	0.46
34:Y:3:VAL:HG22	34:Y:23:LYS:HG2	1.97	0.46
34:Y:82:LEU:HD21	34:Y:132:GLU:HB3	1.96	0.46
7:18:18:LEU:HD21	7:18:91:SER:HB2	1.97	0.46
11:21:68:ARG:NH1	30:R1:1223:G:OP1	2.48	0.46
19:3:25:THR:HG21	19:3:193:VAL:HG22	1.98	0.46
28:6:70:LEU:O	28:6:74:MET:HG3	2.15	0.46
30:R1:555:G:HO2'	30:R1:556:A:H8	1.63	0.46
30:R1:848:C:H2'	30:R1:849:A:C8	2.51	0.46
30:R1:1715:G:O2'	30:R1:1716:U:H6	1.99	0.46
30:R1:2125:G:N2	30:R1:2174:C:H42	2.12	0.46
30:R1:2266:A:H4'	30:R1:2267:A:O5'	2.15	0.46
32:R3:391:G:H2'	32:R3:392:C:O4'	2.16	0.46
32:R3:1316:G:N1	32:R3:1319:A:OP2	2.46	0.46
34:Y:265:LEU:O	34:Y:269:VAL:HG23	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:3:133:THR:HG22	30:R1:1675:C:O2	2.16	0.46
23:34:25:LYS:HE3	30:R1:210:C:H5"	1.96	0.46
27:5:65:LEU:HD12	31:R2:41:G:H2'	1.97	0.46
30:R1:1186:G:H2'	30:R1:1187:G:O4'	2.16	0.46
30:R1:2804:U:H2'	30:R1:2805:C:H6	1.80	0.46
33:T:17:U:O2'	33:T:18:G:OP1	2.30	0.46
7:18:2:ASP:N	7:18:2:ASP:OD1	2.48	0.46
29:9:114:GLU:HB2	29:9:133:GLN:O	2.16	0.46
30:R1:686:U:H2'	30:R1:788:A:N1	2.31	0.46
30:R1:1866:A:C6	30:R1:1876:A:N7	2.83	0.46
31:R2:48:U:H2'	31:R2:49:C:C6	2.50	0.46
32:R3:494:G:O2'	32:R3:496:A:H1'	2.15	0.46
32:R3:1134:G:H2'	32:R3:1135:U:O4'	2.16	0.46
4:15:64:PHE:HB3	24:35:24:LYS:HD2	1.98	0.46
14:24:53:GLN:NE2	14:24:55:GLY:HA3	2.31	0.46
32:R3:922:G:H2'	32:R3:923:A:C8	2.51	0.46
4:15:110:VAL:O	4:15:128:THR:HG23	2.15	0.46
9:2:224:MET:SD	30:R1:782:A:C2	3.09	0.46
9:2:256:THR:HG1	30:R1:1797:G:HO2'	1.64	0.46
25:36:34:LYS:NZ	30:R1:2526:G:HO2'	2.14	0.46
26:4:191:ASP:O	26:4:195:GLN:HG3	2.16	0.46
30:R1:1105:U:H2'	30:R1:1106:G:C8	2.50	0.46
30:R1:2243:U:H2'	30:R1:2244:U:C6	2.51	0.46
32:R3:131:A:H2'	32:R3:132:C:C6	2.51	0.46
34:Y:85:VAL:HG23	34:Y:168:GLN:HA	1.97	0.46
27:5:73:VAL:HG22	27:5:75:GLY:H	1.80	0.46
32:R3:382:A:H2'	32:R3:383:A:C8	2.51	0.46
32:R3:1077:G:N2	32:R3:1080:A:OP2	2.41	0.46
1:1:69:THR:HG23	1:1:71:ARG:H	1.80	0.46
5:16:106:ASP:OD2	5:16:107:GLY:N	2.49	0.46
6:17:2:ARG:HA	6:17:5:LYS:HD2	1.98	0.46
7:18:33:ARG:HH11	31:R2:52:A:H62	1.63	0.46
22:32:2:VAL:HG13	30:R1:2015:A:C2	2.51	0.46
30:R1:2291:U:H2'	30:R1:2292:U:C6	2.51	0.46
33:T:54:5MU:H4'	33:T:55:PSU:OP2	2.15	0.46
2:13:49:ASP:OD1	2:13:121:LYS:NZ	2.44	0.45
5:16:69:PRO:HA	5:16:94:ALA:HB2	1.98	0.45
9:2:209:ALA:HA	9:2:212:TRP:CE2	2.51	0.45
17:28:17:ARG:CZ	17:28:23:ALA:HB2	2.46	0.45
29:9:133:GLN:HE22	29:9:136:SER:HA	1.81	0.45
30:R1:581:C:H2'	30:R1:582:A:C8	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:R1:1103:A:OP2	30:R1:1104:C:H5	1.99	0.45
32:R3:246:A:C2	32:R3:282:A:C5	3.03	0.45
32:R3:966:G:C2	33:T:34:C:H5'	2.52	0.45
32:R3:1225:A:H2'	32:R3:1225:A:N3	2.31	0.45
33:T:59:A:O2'	33:T:60:U:O5'	2.34	0.45
34:Y:36:ASN:ND2	34:Y:442:GLY:HA3	2.30	0.45
34:Y:214:PHE:O	34:Y:218:VAL:HG22	2.16	0.45
4:15:41:ARG:NH2	30:R1:807:U:OP2	2.48	0.45
30:R1:899:A:HO2'	30:R1:900:A:H8	1.61	0.45
30:R1:1087:G:H22	30:R1:1102:C:H42	1.63	0.45
30:R1:1615:C:OP2	30:R1:1617:C:N4	2.29	0.45
30:R1:2774:C:H2'	30:R1:2775:G:O4'	2.16	0.45
32:R3:528:C:H3'	32:R3:529:G:H5"	1.97	0.45
32:R3:1250:A:H2'	32:R3:1251:A:C8	2.51	0.45
32:R3:1273:C:H2'	32:R3:1274:A:O4'	2.16	0.45
5:16:6:ARG:HH12	5:16:8:LYS:HA	1.81	0.45
6:17:73:ASN:OD1	6:17:73:ASN:N	2.37	0.45
25:36:32:LYS:HD3	30:R1:2478:A:H5'	1.98	0.45
27:5:12:VAL:O	27:5:16:MET:HG3	2.16	0.45
27:5:128:SER:HB3	30:R1:2303:G:O2'	2.17	0.45
29:9:83:LYS:HD2	29:9:149:GLU:HB2	1.97	0.45
29:9:96:THR:HG23	29:9:117:LEU:HD11	1.98	0.45
32:R3:459:A:H2'	32:R3:460:A:H8	1.80	0.45
32:R3:1071:C:H2'	32:R3:1072:G:C8	2.51	0.45
6:17:50:PRO:HA	6:17:53:THR:HG22	1.98	0.45
10:20:49:ARG:HD2	30:R1:993:G:OP1	2.16	0.45
19:3:56:LYS:HB2	19:3:59:ARG:HB2	1.97	0.45
22:32:51:ARG:CZ	22:32:53:VAL:HG12	2.46	0.45
30:R1:1182:G:H2'	30:R1:1183:U:O4'	2.16	0.45
32:R3:530:G:O2'	32:R3:531:U:OP1	2.32	0.45
32:R3:983:A:H5'	32:R3:984:C:OP2	2.16	0.45
34:Y:411:GLU:N	34:Y:411:GLU:OE1	2.49	0.45
11:21:5:PHE:HB3	11:21:59:ILE:HD12	1.98	0.45
19:3:77:ARG:NH1	19:3:200:ASP:OD1	2.49	0.45
32:R3:811:C:O2'	32:R3:901:A:N1	2.49	0.45
3:14:65:THR:HG22	3:14:67:LYS:H	1.82	0.45
11:21:41:ILE:HB	11:21:47:VAL:HB	1.98	0.45
27:5:169:LEU:HD23	27:5:169:LEU:HA	1.83	0.45
30:R1:65:U:O2'	30:R1:456:C:O2	2.31	0.45
32:R3:494:G:H2'	32:R3:496:A:H8	1.80	0.45
3:14:79:PHE:CD1	8:19:69:VAL:HG12	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:R1:191:A:H2'	30:R1:192:C:C6	2.52	0.45
30:R1:1490:A:H5'	30:R1:1491:G:OP2	2.16	0.45
32:R3:908:A:H2'	32:R3:909:A:H8	1.81	0.45
32:R3:985:C:H2'	32:R3:986:U:C6	2.52	0.45
2:13:114:LEU:O	2:13:118:MET:HG3	2.17	0.45
4:15:81:ASP:HA	4:15:84:LYS:HD2	1.99	0.45
14:24:71:ILE:HD12	14:24:95:PHE:HE1	1.82	0.45
19:3:10:GLY:H	19:3:197:THR:HG23	1.81	0.45
30:R1:2291:U:O2'	30:R1:2374:C:O2	2.33	0.45
30:R1:2818:U:H2'	30:R1:2819:G:H8	1.82	0.45
32:R3:264:C:H2'	32:R3:265:G:O4'	2.17	0.45
32:R3:328:C:H4'	32:R3:329:A:H5"	1.99	0.45
32:R3:423:G:N2	32:R3:424:G:N3	2.65	0.45
32:R3:1143:G:H2'	32:R3:1144:G:H8	1.81	0.45
32:R3:1355:G:H2'	32:R3:1356:G:H8	1.80	0.45
34:Y:80:THR:HG23	34:Y:83:ASP:H	1.82	0.45
5:16:20:LEU:HD23	5:16:98:PRO:HG2	1.98	0.45
6:17:69:ARG:O	6:17:70:THR:OG1	2.24	0.45
12:22:93:ALA:HB2	30:R1:1614:A:C2	2.52	0.45
18:29:21:LEU:HA	18:29:25:GLN:HB2	1.98	0.45
19:3:152:PRO:O	19:3:154:LYS:N	2.47	0.45
30:R1:1509:A:H2'	30:R1:1510:G:H8	1.81	0.45
30:R1:2064:C:H2'	30:R1:2065:C:C6	2.51	0.45
32:R3:1417:G:O2'	32:R3:1483:A:N6	2.48	0.45
34:Y:400:THR:HG22	34:Y:402:PHE:H	1.81	0.45
7:18:79:ALA:HA	7:18:115:LEU:HD13	1.98	0.45
12:22:72:THR:HG22	12:22:73:LYS:HG3	1.98	0.45
21:31:33:ASN:OD1	21:31:33:ASN:N	2.50	0.45
27:5:12:VAL:HG11	27:5:24:VAL:HG23	1.99	0.45
1:1:11:ILE:O	1:1:15:VAL:HG22	2.17	0.44
5:16:54:THR:HG22	5:16:63:ILE:HD12	1.98	0.44
7:18:102:ARG:HG2	31:R2:49:C:OP1	2.16	0.44
29:9:104:THR:HG22	29:9:109:GLU:HA	1.99	0.44
30:R1:612:G:N2	30:R1:614:A:HO2'	2.16	0.44
30:R1:1000:A:H2'	30:R1:1001:A:C8	2.52	0.44
30:R1:2124:G:H2'	30:R1:2125:G:O4'	2.17	0.44
34:Y:87:MET:HB3	34:Y:93:TRP:CD2	2.51	0.44
34:Y:414:ASP:HB3	34:Y:416:GLN:H	1.81	0.44
11:21:3:ALA:HB3	11:21:59:ILE:HD11	1.98	0.44
12:22:13:SER:HB3	12:22:16:LYS:HD3	2.00	0.44
14:24:36:GLU:O	14:24:36:GLU:HG3	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:30:51:SER:O	20:30:51:SER:OG	2.30	0.44
6:17:57:THR:HG23	6:17:62:ASN:ND2	2.32	0.44
17:28:32:LEU:HD23	17:28:32:LEU:HA	1.80	0.44
21:31:16:CYS:N	21:31:19:GLY:O	2.44	0.44
26:4:145:ASP:HB3	26:4:184:ASP:HB2	1.98	0.44
27:5:39:VAL:HG22	27:5:84:ILE:O	2.18	0.44
30:R1:1327:A:H2'	30:R1:1328:A:O4'	2.17	0.44
30:R1:2508:G:H1	30:R1:2580:U:H5	1.66	0.44
31:R2:50:A:H2'	31:R2:51:G:O4'	2.17	0.44
32:R3:193:C:H2'	32:R3:194:C:C6	2.52	0.44
32:R3:769:G:H4'	32:R3:1513:A:H4'	1.98	0.44
32:R3:923:A:O2'	32:R3:1399:C:OP2	2.28	0.44
34:Y:523:TYR:CZ	34:Y:527:LYS:HE2	2.52	0.44
4:15:109:LYS:HE2	30:R1:636:G:N7	2.32	0.44
9:2:152:GLN:HE21	9:2:152:GLN:N	2.14	0.44
11:21:48:LYS:HB2	11:21:48:LYS:HE3	1.46	0.44
14:24:37:GLY:N	14:24:61:GLU:OE2	2.29	0.44
16:27:41:ARG:HD3	16:27:41:ARG:HA	1.48	0.44
20:30:5:LYS:HG3	20:30:36:GLU:HG2	1.98	0.44
26:4:32:VAL:HG13	26:4:178:VAL:HG22	1.99	0.44
30:R1:819:A:OP2	30:R1:1187:G:N2	2.24	0.44
30:R1:1213:A:H62	30:R1:1236:G:H1'	1.82	0.44
30:R1:1300:G:H4'	30:R1:1301:A:H5"	2.00	0.44
30:R1:1466:U:O2'	30:R1:1546:G:O2'	2.17	0.44
3:14:63:VAL:HG12	3:14:107:LEU:HD21	2.00	0.44
7:18:60:GLU:HG2	7:18:61:GLN:OE1	2.17	0.44
12:22:78:GLU:O	30:R1:24:G:O2'	2.31	0.44
21:31:62:LYS:HB3	21:31:62:LYS:HE2	1.74	0.44
26:4:61:ARG:HH11	26:4:61:ARG:HB2	1.82	0.44
28:6:127:GLN:HA	28:6:127:GLN:OE1	2.17	0.44
34:Y:327:LYS:O	34:Y:334:LEU:HB2	2.17	0.44
1:1:179:ASP:N	1:1:179:ASP:OD1	2.51	0.44
7:18:62:LEU:HD22	7:18:70:ALA:HA	2.00	0.44
7:18:74:VAL:HG13	7:18:106:LEU:HD13	1.99	0.44
28:6:25:ILE:HG22	28:6:78:VAL:HG21	1.98	0.44
30:R1:365:U:H2'	30:R1:366:C:C6	2.53	0.44
30:R1:547:A:H5'	30:R1:548:G:C4	2.53	0.44
30:R1:849:A:H2'	30:R1:850:U:H6	1.83	0.44
30:R1:1475:G:O2'	30:R1:1476:U:H6	2.00	0.44
32:R3:1314:C:H2'	32:R3:1315:U:H6	1.83	0.44
6:17:72:ASP:O	6:17:76:VAL:HG23	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:24:53:GLN:HE21	14:24:55:GLY:HA3	1.83	0.44
30:R1:274:C:H2'	30:R1:275:C:O4'	2.18	0.44
34:Y:102:ILE:HG21	34:Y:116:VAL:CG2	2.48	0.44
4:15:74:THR:HA	4:15:107:PHE:O	2.18	0.44
14:24:94:PHE:HA	14:24:101:THR:HA	2.00	0.44
22:32:8:THR:HG22	22:32:9:ARG:N	2.33	0.44
28:6:97:VAL:HG22	28:6:102:ILE:HD13	1.99	0.44
30:R1:2030:A:C2	30:R1:2499:C:H5"	2.52	0.44
32:R3:593:U:H2'	32:R3:594:U:H6	1.82	0.44
34:Y:61:ASP:HB2	34:Y:64:GLU:HG3	1.99	0.44
9:2:221:GLY:HA2	9:2:224:MET:HG3	2.00	0.44
9:2:227:VAL:HG13	9:2:228:ASP:OD1	2.18	0.44
20:30:10:ARG:HB2	20:30:53:MET:HB2	1.98	0.44
27:5:36:ASN:OD1	27:5:152:ASP:HB2	2.18	0.44
30:R1:1:G:N2	30:R1:2903:U:O2'	2.51	0.44
30:R1:851:C:H2'	30:R1:852:U:H6	1.82	0.44
30:R1:1923:U:O2'	33:T:11:G:H1'	2.17	0.44
30:R1:2897:U:H2'	30:R1:2898:U:C6	2.53	0.44
31:R2:44:G:H1'	31:R2:47:C:N4	2.32	0.44
32:R3:123:U:OP1	32:R3:311:C:O2'	2.26	0.44
32:R3:202:G:N2	32:R3:216:U:O2	2.51	0.44
34:Y:524:LEU:HD22	34:Y:529:ILE:HG13	2.00	0.44
10:20:3:VAL:HG21	30:R1:1249:U:H4'	1.99	0.43
13:23:82:LYS:NZ	30:R1:1340:U:OP2	2.45	0.43
27:5:102:LEU:HD12	27:5:106:ALA:HB3	1.99	0.43
30:R1:818:G:N1	30:R1:1188:U:OP2	2.28	0.43
9:2:129:LEU:HD12	9:2:133:ASN:HB2	1.99	0.43
9:2:251:THR:OG1	9:2:252:LYS:N	2.50	0.43
22:32:3:GLN:NE2	30:R1:2016:U:O2	2.50	0.43
30:R1:139:U:H2'	30:R1:140:C:H5	1.83	0.43
30:R1:372:G:O2'	30:R1:373:U:P	2.76	0.43
30:R1:1871:A:H8	30:R1:1872:A:C8	2.36	0.43
30:R1:2177:C:H2'	30:R1:2178:C:O4'	2.18	0.43
32:R3:202:G:N2	32:R3:466:A:H61	2.17	0.43
33:T:59:A:O2'	33:T:60:U:O4'	2.35	0.43
1:1:46:VAL:HG12	1:1:212:VAL:HG22	1.99	0.43
9:2:99:GLU:OE2	9:2:101:ARG:NE	2.48	0.43
30:R1:729:G:H5'	30:R1:730:A:H5"	2.00	0.43
31:R2:28:C:H2'	31:R2:29:A:C8	2.53	0.43
32:R3:511:C:O2'	32:R3:512:U:O4'	2.37	0.43
32:R3:1018:G:H2'	32:R3:1019:A:H8	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:16:13:HIS:CG	30:R1:954:G:H5'	2.54	0.43
15:25:80:HIS:ND1	15:25:83:LYS:HB2	2.32	0.43
26:4:2:GLU:HB3	26:4:11:ALA:HB1	2.00	0.43
30:R1:280:U:O4	30:R1:361:G:N2	2.52	0.43
9:2:2:VAL:HA	9:2:17:LYS:O	2.18	0.43
9:2:10:PRO:HA	9:2:13:ARG:HG3	2.00	0.43
30:R1:278:A:H2	30:R1:361:G:C2	2.36	0.43
30:R1:700:G:O2'	30:R1:1632:A:N3	2.34	0.43
30:R1:981:A:OP2	30:R1:982:C:N4	2.37	0.43
30:R1:2800:A:C2	30:R1:2895:G:H1'	2.54	0.43
31:R2:29:A:H2'	31:R2:30:C:C6	2.54	0.43
21:31:35:ASP:OD1	21:31:35:ASP:N	2.52	0.43
24:35:38:LYS:NZ	30:R1:2365:G:N7	2.48	0.43
26:4:5:LEU:HD21	26:4:122:GLU:HB2	2.01	0.43
29:9:46:PHE:CE1	29:9:51:ARG:HD2	2.53	0.43
30:R1:629:G:N3	30:R1:639:U:O2'	2.51	0.43
30:R1:1069:A:H1'	30:R1:1096:A:H4'	2.01	0.43
32:R3:253:A:N6	32:R3:274:A:N1	2.67	0.43
32:R3:642:A:H2'	32:R3:643:C:H6	1.82	0.43
16:27:59:LEU:HD12	16:27:80:ILE:HD12	2.00	0.43
28:6:59:ASP:OD1	28:6:63:GLN:NE2	2.50	0.43
30:R1:1930:G:O2'	30:R1:1968:G:O6	2.23	0.43
32:R3:87:C:H2'	32:R3:88:U:C6	2.53	0.43
32:R3:362:G:N1	32:R3:365:U:OP2	2.49	0.43
32:R3:419:C:H1'	32:R3:425:G:N2	2.33	0.43
32:R3:686:U:O4	32:R3:703:G:H2'	2.18	0.43
32:R3:993:G:O2'	32:R3:994:A:N7	2.50	0.43
32:R3:1355:G:H2'	32:R3:1356:G:C8	2.54	0.43
34:Y:102:ILE:HD13	34:Y:105:LEU:HD21	1.99	0.43
1:1:42:VAL:HG12	1:1:216:THR:HG22	2.01	0.43
3:14:58:LEU:HD11	3:14:86:LEU:HD12	1.99	0.43
9:2:208:GLY:CA	30:R1:764:A:H5"	2.49	0.43
11:21:95:ASP:OD1	11:21:95:ASP:N	2.52	0.43
18:29:2:LYS:HE2	30:R1:102:U:C4	2.54	0.43
24:35:14:LYS:HB2	24:35:22:LYS:HE2	2.00	0.43
26:4:48:THR:HG23	26:4:86:ALA:HB3	2.01	0.43
27:5:59:ILE:HD13	27:5:139:GLU:HB2	1.99	0.43
30:R1:1020:A:H4'	30:R1:1021:A:O5'	2.19	0.43
30:R1:1794:A:H2'	30:R1:1795:C:H6	1.83	0.43
33:T:55:PSU:H3'	33:T:57:A:OP2	2.19	0.43
34:Y:118:ASP:HA	34:Y:121:VAL:HG12	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:Y:324:GLY:N	34:Y:339:ASN:OD1	2.40	0.43
34:Y:357:GLY:C	34:Y:508:ILE:HD11	2.39	0.43
4:15:14:LYS:HE2	4:15:14:LYS:HB3	1.90	0.43
10:20:116:LEU:HD12	10:20:116:LEU:HA	1.84	0.43
22:32:6:LYS:HE3	30:R1:1262:A:N3	2.33	0.43
26:4:95:LYS:O	30:R1:659:G:O2'	2.34	0.43
29:9:9:VAL:HB	29:9:12:LEU:O	2.18	0.43
30:R1:581:C:H2'	30:R1:582:A:H8	1.83	0.43
30:R1:2552:U:C5	30:R1:2554:U:H5'	2.54	0.43
30:R1:2793:C:H2'	30:R1:2794:C:C6	2.53	0.43
32:R3:950:U:H2'	32:R3:951:G:C8	2.54	0.43
34:Y:328:GLY:HA3	34:Y:332:GLY:O	2.18	0.43
14:24:6:ARG:HB2	30:R1:85:G:OP2	2.19	0.43
18:29:46:VAL:O	18:29:50:VAL:HG13	2.19	0.43
27:5:114:ARG:O	27:5:114:ARG:NE	2.52	0.43
30:R1:580:U:H2'	30:R1:581:C:C6	2.54	0.43
30:R1:2104:C:H2'	30:R1:2105:U:C6	2.54	0.43
30:R1:2461:A:H2'	30:R1:2462:C:C6	2.54	0.43
32:R3:297:G:N2	32:R3:300:A:OP2	2.49	0.43
32:R3:356:A:N3	32:R3:368:U:O2'	2.47	0.43
32:R3:922:G:N3	32:R3:1398:A:H2	2.16	0.43
32:R3:1316:G:HO2'	32:R3:1318:A:H62	1.65	0.43
34:Y:8:THR:HG22	34:Y:18:GLU:OE1	2.19	0.43
34:Y:18:GLU:HA	34:Y:18:GLU:OE1	2.19	0.43
34:Y:261:GLN:O	34:Y:265:LEU:HD12	2.19	0.43
11:21:38:VAL:HG21	11:21:41:ILE:HD11	2.01	0.42
14:24:23:LYS:HB2	14:24:23:LYS:HE2	1.85	0.42
21:31:16:CYS:SG	21:31:36:VAL:HA	2.60	0.42
22:32:37:HIS:ND1	22:32:41:HIS:O	2.52	0.42
27:5:135:ILE:HD13	27:5:135:ILE:HA	1.88	0.42
30:R1:882:G:N2	30:R1:894:U:O2	2.46	0.42
30:R1:1072:C:OP2	30:R1:1075:C:N4	2.51	0.42
34:Y:326:THR:HG22	34:Y:337:ASN:H	1.84	0.42
9:2:220:ARG:NH1	30:R1:1789:A:OP2	2.53	0.42
30:R1:1315:C:O2'	30:R1:1392:A:N3	2.40	0.42
32:R3:509:A:C8	32:R3:543:U:O2'	2.67	0.42
34:Y:449:PHE:HE2	34:Y:469:LEU:HD11	1.84	0.42
5:16:50:ARG:O	5:16:54:THR:HG23	2.20	0.42
7:18:100:HIS:ND1	31:R2:48:U:H4'	2.34	0.42
19:3:136:ASN:OD1	30:R1:2579:C:O2'	2.36	0.42
22:32:2:VAL:O	22:32:3:GLN:HB3	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:4:152:GLU:OE1	26:4:152:GLU:N	2.53	0.42
27:5:136:ILE:H	27:5:136:ILE:HG13	1.61	0.42
30:R1:1682:G:H2'	30:R1:1683:U:C6	2.53	0.42
30:R1:1796:U:H2'	30:R1:1797:G:C8	2.54	0.42
30:R1:1801:A:H5"	30:R1:2203:U:O2'	2.19	0.42
30:R1:2554:U:H2'	30:R1:2555:U:C6	2.54	0.42
32:R3:387:U:H5'	32:R3:388:G:OP1	2.19	0.42
32:R3:860:A:H2'	32:R3:861:G:O4'	2.19	0.42
32:R3:1039:G:H2'	32:R3:1040:U:C6	2.55	0.42
34:Y:357:GLY:O	34:Y:508:ILE:HD11	2.20	0.42
9:2:233:GLY:HA3	30:R1:2598:A:H5"	2.01	0.42
10:20:57:ARG:NH2	30:R1:998:C:OP2	2.52	0.42
13:23:36:LYS:HE2	13:23:79:ASP:OD2	2.18	0.42
19:3:26:VAL:HG22	19:3:188:LEU:HD22	2.01	0.42
28:6:109:SER:HB3	30:R1:2667:C:N3	2.35	0.42
30:R1:404:A:H1'	30:R1:406:G:C4	2.54	0.42
30:R1:849:A:H2'	30:R1:850:U:C6	2.54	0.42
30:R1:1676:A:O5'	30:R1:1676:A:H8	2.03	0.42
34:Y:507:GLU:HG2	34:Y:523:TYR:OH	2.19	0.42
5:16:2:LEU:HD12	5:16:46:ILE:HG21	2.01	0.42
5:16:136:MET:HG2	15:25:79:ARG:HH12	1.84	0.42
9:2:245:THR:HG23	9:2:249:VAL:O	2.19	0.42
14:24:96:LYS:NZ	30:R1:299:A:OP1	2.46	0.42
29:9:84:ALA:HA	29:9:91:PHE:H	1.85	0.42
29:9:104:THR:HA	29:9:109:GLU:HA	2.02	0.42
30:R1:64:A:H2'	30:R1:65:U:C6	2.55	0.42
30:R1:1060:U:O4'	30:R1:1062:G:H5'	2.19	0.42
30:R1:1443:U:H2'	30:R1:1444:G:H8	1.85	0.42
30:R1:1538:G:OP2	30:R1:1538:G:H8	2.03	0.42
30:R1:1734:G:H2'	30:R1:1735:A:H8	1.84	0.42
30:R1:2545:G:H2'	30:R1:2546:U:O4'	2.20	0.42
32:R3:184:G:H2'	32:R3:185:U:H6	1.85	0.42
32:R3:371:A:H2'	32:R3:372:C:O4'	2.20	0.42
7:18:62:LEU:HD12	7:18:65:THR:HG22	2.00	0.42
21:31:25:ARG:HD3	27:5:97:GLU:OE1	2.19	0.42
27:5:107:VAL:O	27:5:110:ILE:HG22	2.20	0.42
27:5:147:ARG:HG3	27:5:148:VAL:H	1.85	0.42
29:9:114:GLU:N	29:9:114:GLU:OE1	2.51	0.42
30:R1:214:G:N2	30:R1:216:A:N3	2.65	0.42
30:R1:2154:A:C4	30:R1:2156:G:O6	2.73	0.42
32:R3:222:C:H2'	32:R3:223:A:H8	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:R3:299:G:H2'	32:R3:300:A:C8	2.54	0.42
32:R3:460:A:H2'	32:R3:461:A:C8	2.55	0.42
32:R3:1277:C:H2'	32:R3:1279:G:H21	1.85	0.42
32:R3:1432:G:H1'	32:R3:1468:A:N6	2.33	0.42
1:1:186:LYS:HD3	1:1:186:LYS:HA	1.76	0.42
32:R3:321:A:H2'	32:R3:322:C:H6	1.82	0.42
32:R3:770:C:O2'	32:R3:899:C:N3	2.44	0.42
34:Y:102:ILE:HG21	34:Y:116:VAL:HG21	2.01	0.42
34:Y:275:ASN:O	34:Y:279:SER:HB3	2.20	0.42
34:Y:485:GLN:O	34:Y:485:GLN:HG2	2.19	0.42
19:3:4:LEU:HD13	19:3:29:VAL:HG11	2.02	0.42
26:4:18:THR:HA	26:4:106:LYS:HG2	2.02	0.42
30:R1:364:C:H2'	30:R1:365:U:C6	2.55	0.42
30:R1:1361:G:H2'	30:R1:1362:C:C6	2.54	0.42
30:R1:2103:C:H2'	30:R1:2104:C:H6	1.85	0.42
32:R3:202:G:H21	32:R3:466:A:H61	1.66	0.42
32:R3:1144:G:N2	32:R3:1146:A:H62	2.17	0.42
32:R3:1157:A:C2	32:R3:1181:G:C4	3.08	0.42
33:T:4:G:H2'	33:T:5:G:O4'	2.20	0.42
34:Y:106:PRO:HA	34:Y:107:GLU:HA	1.79	0.42
3:14:30:ARG:HD2	30:R1:2674:G:H4'	2.02	0.42
28:6:97:VAL:HG11	28:6:122:ALA:O	2.19	0.42
32:R3:865:A:H2'	32:R3:866:C:C6	2.54	0.42
3:14:40:LYS:NZ	30:R1:2562:U:OP1	2.53	0.42
7:18:8:ILE:HD13	7:18:8:ILE:HA	1.81	0.42
9:2:29:PHE:HD2	9:2:32:LEU:HD12	1.85	0.42
9:2:207:ALA:HB2	30:R1:1790:C:O2'	2.19	0.42
10:20:10:ARG:NH2	30:R1:1216:G:OP1	2.44	0.42
11:21:17:GLY:HA2	11:21:97:LYS:HZ3	1.84	0.42
13:23:2:ILE:O	13:23:4:GLU:N	2.52	0.42
30:R1:1590:A:H2'	30:R1:1591:A:C8	2.55	0.42
30:R1:2115:G:N3	30:R1:2117:A:N6	2.67	0.42
30:R1:2818:U:H2'	30:R1:2819:G:C8	2.55	0.42
32:R3:384:G:H2'	32:R3:385:C:C6	2.54	0.42
32:R3:426:U:H2'	32:R3:427:U:C6	2.55	0.42
32:R3:1118:U:H2'	32:R3:1119:C:H6	1.84	0.42
34:Y:70:ARG:HG3	34:Y:71:GLN:H	1.85	0.42
34:Y:265:LEU:HD23	34:Y:285:ARG:HG3	2.01	0.42
10:20:52:ARG:HG3	30:R1:535:G:O2'	2.20	0.41
27:5:135:ILE:HD11	27:5:145:VAL:HG11	2.02	0.41
30:R1:2097:A:H2'	30:R1:2098:U:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:R1:2585:U:C5	57:T:101:FME:HA	2.55	0.41
32:R3:1005:A:H4'	32:R3:1037:C:H1'	2.01	0.41
34:Y:356:VAL:O	34:Y:358:LYS:N	2.49	0.41
5:16:34:LYS:HE2	5:16:131:VAL:HG11	2.02	0.41
8:19:38:ARG:NH2	32:R3:346:G:OP1	2.48	0.41
8:19:99:LEU:HD11	8:19:109:ILE:HD11	2.01	0.41
15:25:2:PHE:CE1	15:25:50:MET:HG3	2.49	0.41
18:29:38:GLN:OE1	18:29:38:GLN:HA	2.20	0.41
23:34:29:GLN:O	23:34:33:ARG:HG3	2.20	0.41
30:R1:892:A:H2'	30:R1:893:C:O4'	2.20	0.41
30:R1:2329:U:H2'	30:R1:2330:G:C8	2.55	0.41
30:R1:2645:G:OP2	30:R1:2645:G:N2	2.31	0.41
32:R3:417:G:H2'	32:R3:418:C:C6	2.55	0.41
32:R3:843:U:H5'	32:R3:844:G:N7	2.34	0.41
34:Y:29:ARG:HB3	34:Y:205:MET:HG3	2.02	0.41
34:Y:139:LEU:HD11	34:Y:164:VAL:HG22	2.02	0.41
5:16:2:LEU:O	5:16:69:PRO:HG2	2.20	0.41
5:16:58:LYS:O	5:16:59:ARG:HG2	2.20	0.41
27:5:5:ASP:HA	27:5:8:LYS:HG2	2.03	0.41
29:9:96:THR:HA	29:9:115:VAL:HG11	2.02	0.41
29:9:103:VAL:HG21	29:9:132:PHE:CZ	2.54	0.41
30:R1:340:A:H2'	30:R1:341:C:O4'	2.20	0.41
30:R1:460:A:H2'	30:R1:461:C:O4'	2.20	0.41
30:R1:2692:G:H1'	30:R1:2847:U:H1'	2.02	0.41
31:R2:3:C:H2'	31:R2:4:C:C6	2.55	0.41
31:R2:106:G:H2'	31:R2:107:G:O4'	2.21	0.41
32:R3:509:A:H8	32:R3:543:U:HO2'	1.54	0.41
32:R3:509:A:H8	32:R3:544:G:H5'	1.85	0.41
32:R3:1238:A:C8	32:R3:1303:C:H1'	2.54	0.41
32:R3:1287:A:H2'	32:R3:1288:A:C8	2.55	0.41
5:16:82:MET:HE1	30:R1:960:A:H61	1.85	0.41
6:17:2:ARG:HA	6:17:5:LYS:CD	2.50	0.41
28:6:155:PRO:HG3	30:R1:2530:A:N6	2.35	0.41
30:R1:52:A:H2'	30:R1:53:A:C8	2.55	0.41
32:R3:184:G:H2'	32:R3:185:U:C6	2.55	0.41
32:R3:456:A:H2'	32:R3:457:G:O4'	2.21	0.41
32:R3:501:C:O2	32:R3:549:C:O2'	2.39	0.41
32:R3:1158:C:C4	32:R3:1160:G:C8	3.08	0.41
34:Y:429:GLN:HA	34:Y:432:ILE:HD11	2.01	0.41
34:Y:462:MET:HB3	34:Y:465:PRO:HG3	2.03	0.41
1:1:38:PHE:HD1	1:1:39:VAL:N	2.17	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:13:78:THR:H	2:13:78:THR:HG23	1.61	0.41
17:28:3:VAL:HG22	17:28:10:ARG:HG2	2.03	0.41
26:4:132:LYS:NZ	30:R1:319:G:OP1	2.53	0.41
30:R1:172:A:H2'	30:R1:173:A:C8	2.55	0.41
32:R3:1010:U:H2'	32:R3:1011:C:C6	2.56	0.41
34:Y:509:THR:O	34:Y:511:GLU:N	2.54	0.41
1:1:166:ASP:OD1	1:1:167:LYS:N	2.53	0.41
9:2:62:ARG:HD3	9:2:83:ASP:OD1	2.20	0.41
30:R1:2038:G:H2'	30:R1:2039:U:O4'	2.20	0.41
30:R1:2542:A:H5"	30:R1:2766:A:O2'	2.21	0.41
32:R3:1219:A:H2'	32:R3:1220:G:C8	2.55	0.41
34:Y:140:LEU:HD13	34:Y:149:HIS:CE1	2.55	0.41
6:17:79:LEU:C	6:17:81:ASN:H	2.24	0.41
10:20:51:GLN:O	10:20:55:GLN:HB3	2.20	0.41
11:21:68:ARG:HB2	11:21:90:ARG:HE	1.85	0.41
30:R1:65:U:H2'	30:R1:66:C:C6	2.55	0.41
30:R1:421:C:HO2'	30:R1:422:A:P	2.44	0.41
30:R1:1727:C:H2'	30:R1:1728:C:O4'	2.20	0.41
30:R1:2262:U:H2'	30:R1:2263:C:H6	1.86	0.41
30:R1:2834:G:H2'	30:R1:2879:A:H61	1.85	0.41
30:R1:2865:U:OP2	30:R1:2866:U:O2'	2.30	0.41
30:R1:2902:C:H2'	30:R1:2903:U:H4'	2.02	0.41
32:R3:28:A:O2'	32:R3:296:U:OP1	2.35	0.41
32:R3:950:U:H2'	32:R3:951:G:H8	1.86	0.41
34:Y:353:THR:O	34:Y:354:ASN:HB2	2.21	0.41
34:Y:433:LYS:HE3	34:Y:433:LYS:HB2	1.73	0.41
5:16:2:LEU:HD22	5:16:68:PHE:CE1	2.56	0.41
29:9:17:ASP:OD1	29:9:17:ASP:N	2.51	0.41
29:9:84:ALA:HA	29:9:91:PHE:N	2.36	0.41
30:R1:1541:C:H2'	30:R1:1542:U:C6	2.56	0.41
30:R1:1564:C:H2'	30:R1:1565:C:C6	2.56	0.41
30:R1:2489:U:H2'	30:R1:2490:G:O4'	2.20	0.41
32:R3:837:U:H2'	32:R3:838:G:H8	1.86	0.41
32:R3:1513:A:H2'	32:R3:1514:G:C8	2.56	0.41
34:Y:360:THR:HA	34:Y:363:LYS:HG3	2.02	0.41
4:15:108:ALA:HB3	4:15:125:LEU:HD22	2.02	0.41
4:15:118:THR:HA	4:15:119:PRO:HD3	1.94	0.41
5:16:36:VAL:HG13	15:25:82:TYR:CD2	2.55	0.41
10:20:3:VAL:HG12	30:R1:1199:U:H1'	2.03	0.41
13:23:9:LYS:HE3	13:23:9:LYS:HB2	1.69	0.41
17:28:70:LEU:HD23	17:28:70:LEU:HA	1.94	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:31:9:TYR:OH	27:5:101:ARG:NH1	2.54	0.41
27:5:7:TYR:HB2	27:5:172:PHE:CZ	2.56	0.41
30:R1:227:A:O2'	30:R1:228:C:O4'	2.36	0.41
30:R1:645:C:H2'	30:R1:647:G:C8	2.56	0.41
30:R1:677:A:O2'	30:R1:2071:A:H5'	2.21	0.41
30:R1:1019:U:H3	30:R1:1142:A:H62	1.68	0.41
30:R1:1107:G:H2'	30:R1:1108:U:C6	2.56	0.41
30:R1:1385:A:O2'	30:R1:1396:U:O2	2.38	0.41
30:R1:1928:A:H2'	30:R1:1929:G:O4'	2.21	0.41
30:R1:2698:U:H2'	30:R1:2699:C:C6	2.56	0.41
32:R3:31:G:O2'	32:R3:48:C:N4	2.54	0.41
32:R3:352:C:O2'	32:R3:354:G:OP1	2.26	0.41
32:R3:553:A:H2'	32:R3:554:A:C8	2.56	0.41
32:R3:674:G:H2'	32:R3:675:A:H8	1.84	0.41
32:R3:925:G:C6	32:R3:927:G:N7	2.89	0.41
34:Y:315:LEU:O	34:Y:344:VAL:HG21	2.20	0.41
34:Y:414:ASP:O	34:Y:418:VAL:HG23	2.21	0.41
34:Y:494:ASP:OD1	34:Y:494:ASP:N	2.54	0.41
34:Y:508:ILE:HG22	34:Y:513:VAL:HG22	2.03	0.41
9:2:49:THR:OG1	30:R1:1813:G:H1'	2.20	0.41
30:R1:1041:G:C2	30:R1:1042:G:N7	2.89	0.41
32:R3:990:C:H2'	32:R3:991:U:C6	2.56	0.41
32:R3:1163:A:H2'	32:R3:1164:G:H8	1.86	0.41
32:R3:1386:G:H2'	32:R3:1387:G:H8	1.86	0.41
34:Y:351:LEU:HB2	34:Y:507:GLU:CB	2.51	0.41
10:20:93:ILE:HG21	11:21:4:VAL:CG1	2.52	0.40
15:25:90:ASP:N	15:25:90:ASP:OD1	2.53	0.40
27:5:3:LEU:HA	27:5:3:LEU:HD23	1.79	0.40
27:5:41:GLU:HB2	27:5:44:ALA:HB3	2.02	0.40
30:R1:287:G:H2'	30:R1:288:U:H6	1.86	0.40
30:R1:704:G:H2'	30:R1:726:G:N2	2.34	0.40
32:R3:263:A:H2'	32:R3:264:C:C5	2.56	0.40
34:Y:22:VAL:HG21	34:Y:230:LEU:HD22	2.03	0.40
34:Y:133:ALA:O	34:Y:137:GLU:HG2	2.20	0.40
34:Y:257:LYS:HB3	34:Y:257:LYS:HE2	1.71	0.40
2:13:7:LYS:HE2	30:R1:538:A:H5"	2.03	0.40
2:13:15:TRP:HB3	2:13:137:PRO:HB3	2.03	0.40
3:14:98:ARG:NH1	32:R3:339:C:OP2	2.54	0.40
6:17:36:THR:OG1	6:17:37:THR:N	2.54	0.40
30:R1:612:G:N2	30:R1:614:A:O2'	2.54	0.40
30:R1:2150:C:H2'	30:R1:2151:U:C6	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:R1:2375:G:N2	30:R1:2378:A:OP2	2.41	0.40
32:R3:1019:A:H2'	32:R3:1020:G:O4'	2.21	0.40
34:Y:331:ASN:O	34:Y:333:PRO:HD2	2.21	0.40
8:19:1:SER:HA	8:19:4:ILE:HG22	2.03	0.40
10:20:15:LYS:O	10:20:19:GLN:HG3	2.21	0.40
19:3:149:ASN:O	19:3:152:PRO:HD2	2.22	0.40
27:5:13:LYS:H	27:5:13:LYS:HG2	1.56	0.40
30:R1:248:G:H5'	30:R1:250:G:N7	2.37	0.40
30:R1:362:A:OP2	30:R1:362:A:H8	2.04	0.40
30:R1:898:C:H2'	30:R1:899:A:O4'	2.21	0.40
30:R1:1536:C:H4'	30:R1:1537:G:C2	2.57	0.40
30:R1:2134:A:C5	30:R1:2157:G:H4'	2.57	0.40
30:R1:2146:C:H4'	30:R1:2147:A:C4	2.57	0.40
30:R1:2649:C:H2'	30:R1:2650:U:H6	1.85	0.40
32:R3:1246:A:H2'	32:R3:1247:U:C6	2.57	0.40
1:1:30:LEU:HD21	1:1:215:SER:HA	2.03	0.40
27:5:71:LYS:HE3	27:5:71:LYS:HB3	1.79	0.40
30:R1:182:A:H2'	30:R1:183:C:H6	1.87	0.40
30:R1:511:U:O4	30:R1:512:G:N1	2.55	0.40
30:R1:1322:A:N1	30:R1:1333:G:O2'	2.49	0.40
30:R1:1418:G:N2	30:R1:1579:A:C8	2.90	0.40
30:R1:2474:U:OP2	30:R1:2475:C:N4	2.52	0.40
31:R2:2:G:H2'	31:R2:3:C:C6	2.56	0.40
32:R3:500:G:H2'	32:R3:501:C:C6	2.56	0.40
32:R3:965:U:H5"	32:R3:966:G:OP1	2.21	0.40
34:Y:522:ASP:OD1	34:Y:525:ARG:NH1	2.54	0.40
6:17:36:THR:HG23	6:17:41:ALA:HB2	2.04	0.40
20:30:15:ARG:HA	20:30:15:ARG:HD3	1.88	0.40
25:36:6:SER:HB3	30:R1:2466:C:H5"	2.03	0.40
30:R1:240:C:OP2	30:R1:241:A:O2'	2.32	0.40
30:R1:2050:C:H2'	30:R1:2051:A:O4'	2.22	0.40
30:R1:2514:U:H2'	30:R1:2515:C:H6	1.87	0.40
30:R1:2646:C:O5'	30:R1:2646:C:H6	2.05	0.40
32:R3:86:G:H1'	32:R3:87:C:C4	2.57	0.40
32:R3:474:G:H2'	32:R3:474:G:N3	2.36	0.40
33:T:44:A:C2'	33:T:45:G:H5'	2.52	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	1	218/220 (99%)	205 (94%)	13 (6%)	0	100	100
2	13	140/142 (99%)	137 (98%)	3 (2%)	0	100	100
3	14	120/122 (98%)	104 (87%)	16 (13%)	0	100	100
4	15	142/144 (99%)	124 (87%)	18 (13%)	0	100	100
5	16	134/136 (98%)	123 (92%)	11 (8%)	0	100	100
6	17	118/120 (98%)	105 (89%)	13 (11%)	0	100	100
7	18	114/116 (98%)	110 (96%)	4 (4%)	0	100	100
8	19	112/114 (98%)	107 (96%)	5 (4%)	0	100	100
9	2	269/271 (99%)	251 (93%)	18 (7%)	0	100	100
10	20	115/117 (98%)	111 (96%)	4 (4%)	0	100	100
11	21	101/103 (98%)	88 (87%)	13 (13%)	0	100	100
12	22	108/110 (98%)	101 (94%)	7 (6%)	0	100	100
13	23	91/93 (98%)	80 (88%)	11 (12%)	0	100	100
14	24	100/102 (98%)	89 (89%)	11 (11%)	0	100	100
15	25	92/94 (98%)	90 (98%)	2 (2%)	0	100	100
16	27	73/75 (97%)	67 (92%)	6 (8%)	0	100	100
17	28	75/77 (97%)	71 (95%)	4 (5%)	0	100	100
18	29	61/63 (97%)	61 (100%)	0	0	100	100
19	3	207/209 (99%)	186 (90%)	20 (10%)	1 (0%)	25	60
20	30	56/58 (97%)	52 (93%)	4 (7%)	0	100	100
21	31	64/66 (97%)	56 (88%)	8 (12%)	0	100	100
22	32	54/56 (96%)	50 (93%)	4 (7%)	0	100	100
23	34	44/46 (96%)	40 (91%)	4 (9%)	0	100	100
24	35	62/64 (97%)	59 (95%)	3 (5%)	0	100	100
25	36	36/38 (95%)	34 (94%)	2 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
26	4	199/201 (99%)	185 (93%)	14 (7%)	0	100	100
27	5	175/177 (99%)	166 (95%)	9 (5%)	0	100	100
28	6	174/176 (99%)	163 (94%)	11 (6%)	0	100	100
29	9	147/149 (99%)	131 (89%)	14 (10%)	2 (1%)	9	40
34	Y	528/530 (100%)	473 (90%)	53 (10%)	2 (0%)	30	64
36	sb	216/218 (99%)	191 (88%)	25 (12%)	0	100	100
37	sc	204/206 (99%)	185 (91%)	19 (9%)	0	100	100
38	sd	203/205 (99%)	182 (90%)	20 (10%)	1 (0%)	25	60
39	se	155/157 (99%)	131 (84%)	22 (14%)	2 (1%)	10	41
40	sf	98/100 (98%)	87 (89%)	11 (11%)	0	100	100
41	sg	149/151 (99%)	143 (96%)	6 (4%)	0	100	100
42	sh	127/129 (98%)	120 (94%)	7 (6%)	0	100	100
43	si	125/127 (98%)	110 (88%)	14 (11%)	1 (1%)	16	51
44	sj	96/98 (98%)	86 (90%)	9 (9%)	1 (1%)	13	47
45	sk	114/116 (98%)	108 (95%)	6 (5%)	0	100	100
46	sl	121/123 (98%)	94 (78%)	27 (22%)	0	100	100
47	sm	112/114 (98%)	99 (88%)	13 (12%)	0	100	100
48	sn	98/100 (98%)	76 (78%)	20 (20%)	2 (2%)	6	32
49	so	86/88 (98%)	82 (95%)	4 (5%)	0	100	100
50	sp	80/82 (98%)	71 (89%)	9 (11%)	0	100	100
51	sq	78/80 (98%)	68 (87%)	10 (13%)	0	100	100
52	sr	63/65 (97%)	59 (94%)	4 (6%)	0	100	100
53	ss	77/79 (98%)	69 (90%)	7 (9%)	1 (1%)	10	41
54	st	83/85 (98%)	82 (99%)	1 (1%)	0	100	100
55	su	68/70 (97%)	65 (96%)	3 (4%)	0	100	100
All	All	6282/6382 (98%)	5727 (91%)	542 (9%)	13 (0%)	45	75

All (13) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
39	se	122	VAL
43	si	57	VAL
53	ss	4	LEU

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Mol	Chain	Res	Type
19	3	153	GLY
29	9	9	VAL
29	9	8	LYS
34	Y	354	ASN
38	sd	30	LYS
39	se	121	ASN
34	Y	176	ILE
48	sn	97	LYS
48	sn	3	GLN
44	sj	57	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	1	106/171 (62%)	99 (93%)	7 (7%)	14 45
2	13	116/116 (100%)	115 (99%)	1 (1%)	75 89
3	14	103/103 (100%)	101 (98%)	2 (2%)	52 76
4	15	103/103 (100%)	101 (98%)	2 (2%)	52 76
5	16	109/109 (100%)	107 (98%)	2 (2%)	54 77
6	17	100/100 (100%)	98 (98%)	2 (2%)	50 75
7	18	86/86 (100%)	82 (95%)	4 (5%)	22 55
8	19	99/99 (100%)	96 (97%)	3 (3%)	36 66
9	2	216/216 (100%)	211 (98%)	5 (2%)	45 72
10	20	89/89 (100%)	89 (100%)	0	100 100
11	21	84/84 (100%)	84 (100%)	0	100 100
12	22	93/93 (100%)	91 (98%)	2 (2%)	47 73
13	23	80/80 (100%)	79 (99%)	1 (1%)	65 83
14	24	83/83 (100%)	81 (98%)	2 (2%)	44 71
15	25	78/78 (100%)	74 (95%)	4 (5%)	20 53
16	27	57/57 (100%)	56 (98%)	1 (2%)	54 77

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
17	28	67/67 (100%)	67 (100%)	0	100	100
18	29	55/55 (100%)	55 (100%)	0	100	100
19	3	164/164 (100%)	162 (99%)	2 (1%)	67	85
20	30	48/48 (100%)	47 (98%)	1 (2%)	48	74
21	31	59/59 (100%)	57 (97%)	2 (3%)	32	63
22	32	47/47 (100%)	46 (98%)	1 (2%)	48	74
23	34	38/38 (100%)	37 (97%)	1 (3%)	41	70
24	35	51/51 (100%)	50 (98%)	1 (2%)	50	75
25	36	34/34 (100%)	32 (94%)	2 (6%)	16	48
26	4	165/165 (100%)	163 (99%)	2 (1%)	67	85
27	5	148/148 (100%)	143 (97%)	5 (3%)	32	63
28	6	137/137 (100%)	130 (95%)	7 (5%)	20	53
29	9	114/114 (100%)	110 (96%)	4 (4%)	31	63
34	Y	456/456 (100%)	439 (96%)	17 (4%)	29	62
36	sb	180/180 (100%)	174 (97%)	6 (3%)	33	64
37	sc	170/170 (100%)	166 (98%)	4 (2%)	44	71
38	sd	172/172 (100%)	165 (96%)	7 (4%)	26	59
39	se	119/119 (100%)	116 (98%)	3 (2%)	42	71
40	sf	87/87 (100%)	85 (98%)	2 (2%)	45	72
41	sg	124/124 (100%)	119 (96%)	5 (4%)	27	59
42	sh	104/104 (100%)	104 (100%)	0	100	100
43	si	105/105 (100%)	102 (97%)	3 (3%)	37	67
44	sj	86/86 (100%)	83 (96%)	3 (4%)	31	63
45	sk	89/89 (100%)	88 (99%)	1 (1%)	70	86
46	sl	103/103 (100%)	102 (99%)	1 (1%)	73	87
47	sm	92/92 (100%)	91 (99%)	1 (1%)	70	86
48	sn	83/83 (100%)	82 (99%)	1 (1%)	67	85
49	so	76/76 (100%)	75 (99%)	1 (1%)	65	83
50	sp	65/65 (100%)	60 (92%)	5 (8%)	10	39
51	sq	74/74 (100%)	71 (96%)	3 (4%)	26	59
52	sr	56/56 (100%)	54 (96%)	2 (4%)	30	62

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
53	ss	70/70 (100%)	69 (99%)	1 (1%)	62 82
54	st	65/65 (100%)	64 (98%)	1 (2%)	60 81
55	su	60/60 (100%)	57 (95%)	3 (5%)	20 54
All	All	5165/5230 (99%)	5029 (97%)	136 (3%)	42 70

All (136) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	1	9	ARG
1	1	12	ARG
1	1	22	ASP
1	1	38	PHE
1	1	165	ASN
1	1	167	LYS
1	1	179	ASP
2	13	49	ASP
3	14	18	ARG
3	14	32	TYR
4	15	4	ASN
4	15	7	SER
5	16	6	ARG
5	16	127	LYS
6	17	2	ARG
6	17	69	ARG
7	18	81	ARG
7	18	89	ASP
7	18	100	HIS
7	18	102	ARG
8	19	52	ARG
8	19	70	GLU
8	19	81	ASP
9	2	86	ARG
9	2	114	GLN
9	2	152	GLN
9	2	186	ASP
9	2	212	TRP
12	22	1	MET
12	22	7	HIS
13	23	37	ASP
14	24	73	ASN
14	24	96	LYS

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Mol	Chain	Res	Type
15	25	2	PHE
15	25	5	ASN
15	25	58	SER
15	25	90	ASP
16	27	56	ASP
19	3	74	GLU
19	3	131	ASP
20	30	5	LYS
21	31	9	TYR
21	31	58	ASP
22	32	33	SER
23	34	14	ARG
24	35	28	LEU
25	36	1	MET
25	36	6	SER
26	4	41	GLN
26	4	110	SER
27	5	29	ARG
27	5	111	ARG
27	5	113	PHE
27	5	162	ASP
27	5	173	ASP
28	6	2	ARG
28	6	38	ASP
28	6	68	ARG
28	6	73	SER
28	6	129	GLU
28	6	132	LEU
28	6	133	LYS
29	9	11	ASN
29	9	50	ARG
29	9	75	LEU
29	9	89	LYS
34	Y	9	MET
34	Y	11	PHE
34	Y	61	ASP
34	Y	69	LEU
34	Y	79	PHE
34	Y	101	ARG
34	Y	162	LEU
34	Y	205	MET
34	Y	240	TYR

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Mol	Chain	Res	Type
34	Y	329	PHE
34	Y	335	PHE
34	Y	354	ASN
34	Y	398	ASP
34	Y	492	SER
34	Y	501	LEU
34	Y	507	GLU
34	Y	515	ASP
36	sb	34	ARG
36	sb	49	PHE
36	sb	112	ARG
36	sb	164	ASP
36	sb	187	ASP
36	sb	207	ARG
37	sc	50	SER
37	sc	78	LYS
37	sc	133	MET
37	sc	184	ASN
38	sd	28	ASP
38	sd	43	ARG
38	sd	130	ASN
38	sd	150	LYS
38	sd	155	LYS
38	sd	168	THR
38	sd	191	SER
39	se	67	ARG
39	se	72	ASN
39	se	120	HIS
40	sf	68	GLN
40	sf	82	ASP
41	sg	33	ASP
41	sg	77	SER
41	sg	78	ARG
41	sg	79	ARG
41	sg	95	ARG
43	si	6	TYR
43	si	30	ASN
43	si	84	ARG
44	sj	24	GLU
44	sj	56	HIS
44	sj	63	ASP
45	sk	54	SER

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Mol	Chain	Res	Type
46	sl	119	LYS
47	sm	92	ARG
48	sn	4	SER
49	so	12	SER
50	sp	12	LYS
50	sp	24	SER
50	sp	29	ASN
50	sp	52	LEU
50	sp	69	ASP
51	sq	15	LYS
51	sq	27	PHE
51	sq	56	ASP
52	sr	11	ARG
52	sr	60	ARG
53	ss	4	LEU
54	st	53	MET
55	su	13	ASP
55	su	51	SER
55	su	58	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (9) such sidechains are listed below:

Mol	Chain	Res	Type
1	1	58	ASN
1	1	165	ASN
14	24	53	GLN
28	6	21	GLN
29	9	133	GLN
34	Y	354	ASN
36	sb	17	HIS
39	se	147	ASN
43	si	49	GLN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
30	R1	2902/2903 (99%)	483 (16%)	10 (0%)
31	R2	118/119 (99%)	17 (14%)	1 (0%)
32	R3	1536/1539 (99%)	270 (17%)	5 (0%)
33	T	75/77 (97%)	22 (29%)	3 (4%)

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
35	M	8/9 (88%)	1 (12%)	0
All	All	4639/4647 (99%)	793 (17%)	19 (0%)

All (793) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
30	R1	10	A
30	R1	34	U
30	R1	35	G
30	R1	36	G
30	R1	46	G
30	R1	50	U
30	R1	51	G
30	R1	63	A
30	R1	71	A
30	R1	74	A
30	R1	75	G
30	R1	84	A
30	R1	102	U
30	R1	103	A
30	R1	118	A
30	R1	119	A
30	R1	120	U
30	R1	131	A
30	R1	138	U
30	R1	139	U
30	R1	140	C
30	R1	141	G
30	R1	142	A
30	R1	162	U
30	R1	163	C
30	R1	181	A
30	R1	196	A
30	R1	199	A
30	R1	203	A
30	R1	204	A
30	R1	215	G
30	R1	216	A
30	R1	218	A
30	R1	221	A
30	R1	222	A
30	R1	228	C

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Mol	Chain	Res	Type
30	R1	230	G
30	R1	233	A
30	R1	248	G
30	R1	255	A
30	R1	265	A
30	R1	266	G
30	R1	273	G
30	R1	276	U
30	R1	281	C
30	R1	284	U
30	R1	285	G
30	R1	323	C
30	R1	324	A
30	R1	329	G
30	R1	330	A
30	R1	361	G
30	R1	362	A
30	R1	371	A
30	R1	372	G
30	R1	373	U
30	R1	386	G
30	R1	387	U
30	R1	395	U
30	R1	396	G
30	R1	404	A
30	R1	405	U
30	R1	406	G
30	R1	411	G
30	R1	422	A
30	R1	424	G
30	R1	443	A
30	R1	448	U
30	R1	457	A
30	R1	466	A
30	R1	467	G
30	R1	473	G
30	R1	481	G
30	R1	491	G
30	R1	493	G
30	R1	505	A
30	R1	506	G
30	R1	509	C

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Mol	Chain	Res	Type
30	R1	529	A
30	R1	530	G
30	R1	531	C
30	R1	532	A
30	R1	545	U
30	R1	546	U
30	R1	548	G
30	R1	562	U
30	R1	563	A
30	R1	573	U
30	R1	575	A
30	R1	578	G
30	R1	586	A
30	R1	588	U
30	R1	603	A
30	R1	613	A
30	R1	614	A
30	R1	622	G
30	R1	627	A
30	R1	637	A
30	R1	644	A
30	R1	645	C
30	R1	647	G
30	R1	653	U
30	R1	654	A
30	R1	668	A
30	R1	669	G
30	R1	686	U
30	R1	711	G
30	R1	717	C
30	R1	722	A
30	R1	730	A
30	R1	738	G
30	R1	747	U
30	R1	762	U
30	R1	764	A
30	R1	765	C
30	R1	775	G
30	R1	776	G
30	R1	782	A
30	R1	784	G
30	R1	785	G

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Mol	Chain	Res	Type
30	R1	805	G
30	R1	812	C
30	R1	819	A
30	R1	827	U
30	R1	829	A
30	R1	845	A
30	R1	846	U
30	R1	847	U
30	R1	857	G
30	R1	859	G
30	R1	877	A
30	R1	886	A
30	R1	887	U
30	R1	888	C
30	R1	889	C
30	R1	891	G
30	R1	892	A
30	R1	893	C
30	R1	896	A
30	R1	907	G
30	R1	910	A
30	R1	927	A
30	R1	932	U
30	R1	941	A
30	R1	946	C
30	R1	953	G
30	R1	954	G
30	R1	961	C
30	R1	973	A
30	R1	974	G
30	R1	983	A
30	R1	989	G
30	R1	990	A
30	R1	995	C
30	R1	996	A
30	R1	1005	C
30	R1	1008	A
30	R1	1009	A
30	R1	1012	U
30	R1	1013	C
30	R1	1021	A
30	R1	1025	G

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Mol	Chain	Res	Type
30	R1	1026	G
30	R1	1033	U
30	R1	1040	A
30	R1	1046	A
30	R1	1048	A
30	R1	1051	G
30	R1	1057	A
30	R1	1058	U
30	R1	1060	U
30	R1	1062	G
30	R1	1064	C
30	R1	1065	U
30	R1	1066	U
30	R1	1067	A
30	R1	1069	A
30	R1	1070	A
30	R1	1071	G
30	R1	1072	C
30	R1	1073	A
30	R1	1074	G
30	R1	1075	C
30	R1	1076	C
30	R1	1077	A
30	R1	1079	C
30	R1	1085	A
30	R1	1088	A
30	R1	1089	A
30	R1	1090	A
30	R1	1091	G
30	R1	1094	U
30	R1	1095	A
30	R1	1096	A
30	R1	1099	G
30	R1	1100	C
30	R1	1104	C
30	R1	1107	G
30	R1	1110	G
30	R1	1111	A
30	R1	1112	G
30	R1	1115	G
30	R1	1130	U
30	R1	1132	U

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Mol	Chain	Res	Type
30	R1	1134	A
30	R1	1135	C
30	R1	1139	G
30	R1	1142	A
30	R1	1169	A
30	R1	1173	U
30	R1	1174	U
30	R1	1175	A
30	R1	1176	U
30	R1	1177	G
30	R1	1178	C
30	R1	1180	U
30	R1	1210	G
30	R1	1212	G
30	R1	1237	A
30	R1	1253	A
30	R1	1256	G
30	R1	1271	G
30	R1	1272	A
30	R1	1273	U
30	R1	1288	G
30	R1	1300	G
30	R1	1301	A
30	R1	1329	U
30	R1	1345	C
30	R1	1352	U
30	R1	1365	A
30	R1	1368	G
30	R1	1379	U
30	R1	1383	A
30	R1	1395	A
30	R1	1416	G
30	R1	1427	A
30	R1	1428	C
30	R1	1434	A
30	R1	1452	G
30	R1	1453	A
30	R1	1461	C
30	R1	1482	G
30	R1	1490	A
30	R1	1494	A
30	R1	1508	A

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Mol	Chain	Res	Type
30	R1	1509	A
30	R1	1515	A
30	R1	1522	A
30	R1	1524	G
30	R1	1529	G
30	R1	1530	G
30	R1	1535	A
30	R1	1536	C
30	R1	1558	C
30	R1	1559	U
30	R1	1560	G
30	R1	1566	A
30	R1	1569	A
30	R1	1578	U
30	R1	1583	A
30	R1	1584	U
30	R1	1585	C
30	R1	1607	C
30	R1	1608	A
30	R1	1610	A
30	R1	1634	A
30	R1	1647	U
30	R1	1648	U
30	R1	1649	G
30	R1	1674	G
30	R1	1675	C
30	R1	1693	U
30	R1	1713	A
30	R1	1715	G
30	R1	1716	U
30	R1	1729	U
30	R1	1730	C
30	R1	1731	G
30	R1	1735	A
30	R1	1738	G
30	R1	1757	A
30	R1	1758	U
30	R1	1764	C
30	R1	1773	A
30	R1	1776	G
30	R1	1782	U
30	R1	1786	A

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Mol	Chain	Res	Type
30	R1	1791	A
30	R1	1800	C
30	R1	1801	A
30	R1	1802	A
30	R1	1808	A
30	R1	1811	G
30	R1	1816	C
30	R1	1829	A
30	R1	1847	G
30	R1	1870	C
30	R1	1871	A
30	R1	1884	G
30	R1	1901	A
30	R1	1903	G
30	R1	1906	G
30	R1	1913	A
30	R1	1914	C
30	R1	1919	A
30	R1	1929	G
30	R1	1930	G
30	R1	1937	A
30	R1	1938	A
30	R1	1955	U
30	R1	1966	A
30	R1	1967	C
30	R1	1970	A
30	R1	1971	U
30	R1	1972	G
30	R1	1991	U
30	R1	1992	G
30	R1	1993	U
30	R1	1996	C
30	R1	1997	C
30	R1	2002	G
30	R1	2022	U
30	R1	2023	C
30	R1	2031	A
30	R1	2033	A
30	R1	2036	C
30	R1	2043	C
30	R1	2052	A
30	R1	2055	C

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Mol	Chain	Res	Type
30	R1	2056	G
30	R1	2060	A
30	R1	2061	G
30	R1	2062	A
30	R1	2069	G
30	R1	2072	C
30	R1	2093	G
30	R1	2096	C
30	R1	2110	G
30	R1	2111	U
30	R1	2112	G
30	R1	2114	A
30	R1	2115	G
30	R1	2118	U
30	R1	2119	A
30	R1	2120	G
30	R1	2121	G
30	R1	2123	G
30	R1	2124	G
30	R1	2126	A
30	R1	2127	G
30	R1	2129	C
30	R1	2132	U
30	R1	2133	G
30	R1	2134	A
30	R1	2136	G
30	R1	2138	G
30	R1	2145	C
30	R1	2147	A
30	R1	2148	G
30	R1	2149	U
30	R1	2154	A
30	R1	2156	G
30	R1	2157	G
30	R1	2158	A
30	R1	2160	C
30	R1	2161	C
30	R1	2163	A
30	R1	2166	U
30	R1	2172	U
30	R1	2173	A
30	R1	2174	C

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Mol	Chain	Res	Type
30	R1	2176	A
30	R1	2178	C
30	R1	2182	U
30	R1	2188	U
30	R1	2189	U
30	R1	2190	G
30	R1	2195	U
30	R1	2198	A
30	R1	2204	G
30	R1	2211	A
30	R1	2212	A
30	R1	2214	C
30	R1	2225	A
30	R1	2238	G
30	R1	2239	G
30	R1	2243	U
30	R1	2250	G
30	R1	2266	A
30	R1	2278	A
30	R1	2283	C
30	R1	2287	A
30	R1	2288	A
30	R1	2294	G
30	R1	2300	C
30	R1	2303	G
30	R1	2304	G
30	R1	2305	U
30	R1	2307	G
30	R1	2309	A
30	R1	2322	A
30	R1	2325	G
30	R1	2327	A
30	R1	2331	G
30	R1	2333	A
30	R1	2345	G
30	R1	2347	C
30	R1	2350	C
30	R1	2359	C
30	R1	2361	G
30	R1	2383	G
30	R1	2385	C
30	R1	2391	G

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Mol	Chain	Res	Type
30	R1	2402	U
30	R1	2403	C
30	R1	2406	A
30	R1	2423	U
30	R1	2428	G
30	R1	2429	G
30	R1	2430	A
30	R1	2431	U
30	R1	2441	U
30	R1	2448	A
30	R1	2459	A
30	R1	2469	A
30	R1	2474	U
30	R1	2476	A
30	R1	2491	U
30	R1	2502	G
30	R1	2503	A
30	R1	2505	G
30	R1	2506	U
30	R1	2518	A
30	R1	2520	C
30	R1	2529	G
30	R1	2530	A
30	R1	2547	A
30	R1	2554	U
30	R1	2562	U
30	R1	2566	A
30	R1	2567	G
30	R1	2572	A
30	R1	2573	C
30	R1	2582	G
30	R1	2602	A
30	R1	2604	U
30	R1	2609	U
30	R1	2613	U
30	R1	2615	U
30	R1	2629	U
30	R1	2630	G
30	R1	2682	A
30	R1	2689	U
30	R1	2690	U
30	R1	2714	G

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Mol	Chain	Res	Type
30	R1	2724	U
30	R1	2727	A
30	R1	2733	A
30	R1	2744	G
30	R1	2748	A
30	R1	2764	A
30	R1	2765	A
30	R1	2769	U
30	R1	2777	G
30	R1	2778	A
30	R1	2779	U
30	R1	2791	G
30	R1	2793	C
30	R1	2799	A
30	R1	2800	A
30	R1	2808	G
30	R1	2820	A
30	R1	2835	A
30	R1	2848	G
30	R1	2861	U
30	R1	2867	G
30	R1	2868	A
30	R1	2883	A
30	R1	2884	U
30	R1	2887	A
30	R1	2901	C
30	R1	2903	U
31	R2	9	G
31	R2	12	C
31	R2	13	G
31	R2	24	G
31	R2	35	C
31	R2	42	C
31	R2	44	G
31	R2	45	A
31	R2	52	A
31	R2	67	G
31	R2	87	U
31	R2	88	C
31	R2	89	U
31	R2	90	C
31	R2	108	A

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Mol	Chain	Res	Type
31	R2	109	A
31	R2	119	A
32	R3	3	A
32	R3	4	U
32	R3	9	G
32	R3	22	G
32	R3	32	A
32	R3	39	G
32	R3	47	C
32	R3	48	C
32	R3	50	A
32	R3	51	A
32	R3	58	C
32	R3	64	G
32	R3	68	G
32	R3	70	U
32	R3	71	A
32	R3	81	A
32	R3	82	G
32	R3	83	C
32	R3	84	U
32	R3	86	G
32	R3	87	C
32	R3	88	U
32	R3	93	U
32	R3	95	C
32	R3	100	G
32	R3	121	U
32	R3	122	G
32	R3	130	A
32	R3	131	A
32	R3	139	A
32	R3	154	U
32	R3	155	A
32	R3	160	A
32	R3	163	C
32	R3	171	A
32	R3	174	A
32	R3	183	C
32	R3	184	G
32	R3	190	A
32	R3	197	A

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Mol	Chain	Res	Type
32	R3	202	G
32	R3	207	C
32	R3	208	U
32	R3	210	C
32	R3	211	G
32	R3	212	G
32	R3	217	C
32	R3	240	G
32	R3	245	U
32	R3	247	G
32	R3	251	G
32	R3	266	G
32	R3	267	C
32	R3	280	C
32	R3	281	G
32	R3	289	G
32	R3	296	U
32	R3	305	G
32	R3	306	A
32	R3	316	C
32	R3	321	A
32	R3	328	C
32	R3	329	A
32	R3	330	C
32	R3	341	C
32	R3	344	A
32	R3	345	C
32	R3	347	G
32	R3	351	G
32	R3	352	C
32	R3	354	G
32	R3	367	U
32	R3	372	C
32	R3	373	A
32	R3	378	G
32	R3	390	U
32	R3	391	G
32	R3	392	C
32	R3	394	G
32	R3	397	A
32	R3	398	U
32	R3	404	G

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Mol	Chain	Res	Type
32	R3	406	G
32	R3	413	G
32	R3	414	A
32	R3	415	A
32	R3	420	U
32	R3	421	U
32	R3	422	C
32	R3	423	G
32	R3	425	G
32	R3	429	U
32	R3	435	A
32	R3	438	U
32	R3	448	A
32	R3	451	A
32	R3	457	G
32	R3	459	A
32	R3	463	U
32	R3	467	U
32	R3	468	A
32	R3	472	U
32	R3	474	G
32	R3	475	C
32	R3	476	U
32	R3	479	U
32	R3	482	A
32	R3	484	G
32	R3	485	U
32	R3	486	U
32	R3	487	A
32	R3	488	C
32	R3	491	G
32	R3	492	C
32	R3	493	A
32	R3	495	A
32	R3	497	G
32	R3	500	G
32	R3	514	C
32	R3	518	C
32	R3	524	G
32	R3	529	G
32	R3	531	U
32	R3	532	A

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Mol	Chain	Res	Type
32	R3	535	A
32	R3	540	G
32	R3	547	A
32	R3	559	A
32	R3	562	U
32	R3	564	C
32	R3	572	A
32	R3	573	A
32	R3	576	C
32	R3	577	G
32	R3	621	A
32	R3	633	G
32	R3	650	G
32	R3	665	A
32	R3	682	G
32	R3	686	U
32	R3	687	A
32	R3	703	G
32	R3	713	G
32	R3	721	G
32	R3	723	U
32	R3	724	G
32	R3	731	G
32	R3	734	G
32	R3	755	G
32	R3	760	G
32	R3	777	A
32	R3	815	A
32	R3	817	C
32	R3	818	G
32	R3	819	A
32	R3	821	G
32	R3	832	G
32	R3	841	C
32	R3	842	U
32	R3	843	U
32	R3	844	G
32	R3	846	G
32	R3	851	G
32	R3	872	A
32	R3	885	G
32	R3	902	G

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Mol	Chain	Res	Type
32	R3	926	G
32	R3	934	C
32	R3	935	A
32	R3	960	U
32	R3	961	U
32	R3	965	U
32	R3	966	G
32	R3	968	A
32	R3	969	A
32	R3	971	G
32	R3	975	A
32	R3	976	G
32	R3	977	A
32	R3	982	U
32	R3	992	U
32	R3	993	G
32	R3	998	C
32	R3	1004	A
32	R3	1020	G
32	R3	1022	A
32	R3	1025	U
32	R3	1026	G
32	R3	1027	C
32	R3	1028	C
32	R3	1029	U
32	R3	1031	C
32	R3	1033	G
32	R3	1034	G
32	R3	1036	A
32	R3	1046	A
32	R3	1053	G
32	R3	1085	U
32	R3	1094	G
32	R3	1095	U
32	R3	1101	A
32	R3	1130	A
32	R3	1136	C
32	R3	1137	C
32	R3	1138	G
32	R3	1139	G
32	R3	1158	C
32	R3	1159	U

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Mol	Chain	Res	Type
32	R3	1167	A
32	R3	1168	U
32	R3	1169	A
32	R3	1171	A
32	R3	1174	G
32	R3	1182	G
32	R3	1184	G
32	R3	1196	A
32	R3	1212	U
32	R3	1225	A
32	R3	1227	A
32	R3	1228	C
32	R3	1238	A
32	R3	1241	G
32	R3	1250	A
32	R3	1258	G
32	R3	1261	A
32	R3	1275	A
32	R3	1279	G
32	R3	1280	A
32	R3	1282	C
32	R3	1286	U
32	R3	1287	A
32	R3	1298	U
32	R3	1300	G
32	R3	1301	U
32	R3	1303	C
32	R3	1306	A
32	R3	1317	C
32	R3	1320	C
32	R3	1336	C
32	R3	1338	G
32	R3	1340	A
32	R3	1346	A
32	R3	1353	G
32	R3	1363	A
32	R3	1370	G
32	R3	1378	C
32	R3	1379	G
32	R3	1419	G
32	R3	1441	A
32	R3	1442	G

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Mol	Chain	Res	Type
32	R3	1443	C
32	R3	1446	A
32	R3	1448	C
32	R3	1452	C
32	R3	1453	G
32	R3	1487	G
32	R3	1491	G
32	R3	1492	A
32	R3	1493	A
32	R3	1497	G
32	R3	1499	A
32	R3	1502	A
32	R3	1503	A
32	R3	1506	U
32	R3	1517	G
32	R3	1529	G
32	R3	1530	G
32	R3	1533	C
32	R3	1537	U
32	R3	1539	C
33	T	1	G
33	T	5	G
33	T	8	4SU
33	T	9	G
33	T	15	C
33	T	16	C
33	T	17	U
33	T	18	G
33	T	19	G
33	T	20	H2U
33	T	22	G
33	T	23	C
33	T	45	G
33	T	46	A
33	T	47	U
33	T	48	C
33	T	52	G
33	T	54	5MU
33	T	55	PSU
33	T	56	C
33	T	60	U
33	T	71	C

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Mol	Chain	Res	Type
35	M	7	A

All (19) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
30	R1	227	A
30	R1	372	G
30	R1	421	C
30	R1	784	G
30	R1	1020	A
30	R1	1211	C
30	R1	1236	G
30	R1	1715	G
30	R1	2156	G
30	R1	2326	C
31	R2	66	A
32	R3	391	G
32	R3	561	U
32	R3	991	U
32	R3	1297	G
32	R3	1305	G
33	T	8	4SU
33	T	17	U
33	T	55	PSU

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

5 non-standard protein/DNA/RNA residues are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
33	H2U	T	20	33	18,21,22	4.51	5 (27%)	19,30,33	4.18	6 (31%)
33	PSU	T	55	33	18,21,22	2.14	7 (38%)	21,30,33	2.27	6 (28%)
33	5MU	T	54	33	19,22,23	2.08	9 (47%)	27,32,35	2.32	6 (22%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
33	4OC	T	32	33	20,23,24	2.53	5 (25%)	25,32,35	1.12	2 (8%)
33	4SU	T	8	33	18,21,22	3.60	8 (44%)	25,30,33	2.47	5 (20%)

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
33	H2U	T	20	33	1/1/8/9	5/7/38/39	0/2/2/2
33	PSU	T	55	33	2/2/5/5	3/7/25/26	0/2/2/2
33	5MU	T	54	33	3/3/5/5	3/7/25/26	0/2/2/2
33	4OC	T	32	33	1/1/5/6	1/9/29/30	0/2/2/2
33	4SU	T	8	33	2/2/5/5	2/7/25/26	0/2/2/2

All (34) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
33	T	20	H2U	O4-C4	11.03	1.45	1.23
33	T	20	H2U	C2-N1	8.97	1.48	1.35
33	T	32	4OC	O2-C2	8.60	1.39	1.23
33	T	20	H2U	O2-C2	8.21	1.37	1.23
33	T	8	4SU	C4-S4	7.88	1.82	1.68
33	T	20	H2U	C2-N3	7.32	1.50	1.38
33	T	8	4SU	C4-N3	-7.17	1.30	1.37
33	T	8	4SU	O2-C2	6.51	1.34	1.23
33	T	20	H2U	C4-N3	6.34	1.48	1.37
33	T	8	4SU	C5-C4	-4.81	1.36	1.42
33	T	8	4SU	C2-N1	-4.50	1.31	1.38
33	T	32	4OC	C4-N4	4.38	1.45	1.36
33	T	55	PSU	C1'-C5	-4.27	1.40	1.50
33	T	8	4SU	C6-N1	-4.11	1.28	1.38
33	T	32	4OC	C2-N1	-4.00	1.31	1.40
33	T	54	5MU	C2-N1	-3.94	1.32	1.38
33	T	55	PSU	C6-C5	3.67	1.39	1.35
33	T	54	5MU	C4-C5	-3.53	1.39	1.44
33	T	55	PSU	C2-N1	-3.49	1.32	1.36
33	T	54	5MU	C4-N3	-3.40	1.32	1.38
33	T	55	PSU	C4-N3	-3.32	1.32	1.38
33	T	54	5MU	C2-N3	-3.00	1.32	1.38
33	T	54	5MU	C6-N1	-2.98	1.32	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
33	T	55	PSU	C2-N3	-2.88	1.32	1.37
33	T	8	4SU	C6-C5	2.76	1.41	1.35
33	T	54	5MU	C6-C5	2.62	1.38	1.34
33	T	8	4SU	C2-N3	-2.61	1.33	1.38
33	T	54	5MU	O4-C4	-2.58	1.18	1.23
33	T	32	4OC	C6-N1	-2.54	1.32	1.38
33	T	32	4OC	C2-N3	-2.41	1.31	1.36
33	T	54	5MU	O2-C2	-2.35	1.18	1.23
33	T	54	5MU	C5M-C5	2.29	1.56	1.50
33	T	55	PSU	O4-C4	-2.12	1.19	1.23
33	T	55	PSU	C6-N1	-2.08	1.32	1.36

All (25) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
33	T	20	H2U	O2-C2-N1	-12.36	108.23	123.10
33	T	20	H2U	O2-C2-N3	-7.73	107.23	121.49
33	T	8	4SU	C4-N3-C2	-7.54	120.09	127.31
33	T	20	H2U	O4-C4-N3	-7.24	109.14	120.30
33	T	55	PSU	N1-C2-N3	6.79	122.33	115.17
33	T	20	H2U	O4-C4-C5	-6.25	109.42	122.20
33	T	8	4SU	N3-C2-N1	6.01	122.72	114.89
33	T	54	5MU	C4-N3-C2	-5.27	120.43	127.34
33	T	54	5MU	N3-C2-N1	5.12	121.55	114.89
33	T	8	4SU	C5-C4-N3	4.88	119.28	114.75
33	T	54	5MU	C5-C4-N3	4.78	119.48	115.32
33	T	55	PSU	C4-N3-C2	-4.64	119.97	126.37
33	T	54	5MU	C5-C6-N1	-4.43	118.50	123.31
33	T	54	5MU	O4-C4-C5	-4.17	120.14	124.92
33	T	55	PSU	O2-C2-N1	-3.85	118.82	122.79
33	T	20	H2U	N3-C2-N1	-3.80	112.83	116.65
33	T	8	4SU	C5-C4-S4	-3.40	120.42	124.31
33	T	20	H2U	C5-C4-N3	-3.23	113.25	116.69
33	T	8	4SU	O2-C2-N1	-3.17	118.67	122.80
33	T	54	5MU	O2-C2-N1	-2.85	119.09	122.80
33	T	32	4OC	O2-C2-N3	-2.65	118.15	122.33
33	T	32	4OC	C5-C4-N3	-2.30	119.00	122.60
33	T	55	PSU	C5-C6-N1	-2.21	119.07	122.14
33	T	55	PSU	C6-N1-C2	-2.19	120.66	122.69
33	T	55	PSU	O4'-C1'-C2'	2.13	108.09	105.15

All (9) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
33	T	20	H2U	C2’
33	T	32	4OC	C2’
33	T	54	5MU	C2’
33	T	54	5MU	C4’
33	T	54	5MU	C3’
33	T	55	PSU	C2’
33	T	55	PSU	C4’
33	T	8	4SU	C1’
33	T	8	4SU	C2’

All (14) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
33	T	20	H2U	O4’-C4’-C5’-O5’
33	T	20	H2U	O4’-C1’-N1-C2
33	T	20	H2U	O4’-C1’-N1-C6
33	T	54	5MU	C4’-C5’-O5’-P
33	T	55	PSU	C4’-C5’-O5’-P
33	T	8	4SU	O4’-C4’-C5’-O5’
33	T	20	H2U	C3’-C4’-C5’-O5’
33	T	8	4SU	C3’-C4’-C5’-O5’
33	T	54	5MU	C3’-C4’-C5’-O5’
33	T	54	5MU	O4’-C4’-C5’-O5’
33	T	55	PSU	C3’-C4’-C5’-O5’
33	T	32	4OC	C3’-C2’-O2’-CM2
33	T	55	PSU	O4’-C4’-C5’-O5’
33	T	20	H2U	C2’-C1’-N1-C6

There are no ring outliers.

3 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
33	T	20	H2U	1	0
33	T	55	PSU	3	0
33	T	54	5MU	3	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 257 ligands modelled in this entry, 254 are monoatomic - leaving 3 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	$\#\|Z\| > 2$
57	FME	T	101	33	8,9,10	0.96	0	8,9,11	0.97	0
58	ATP	Y	602	59	28,33,33	0.67	0	34,52,52	0.59	1 (2%)
58	ATP	Y	601	59	28,33,33	0.66	0	34,52,52	0.59	1 (2%)

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
57	FME	T	101	33	-	3/7/9/11	-
58	ATP	Y	602	59	-	7/18/38/38	0/3/3/3
58	ATP	Y	601	59	-	3/18/38/38	0/3/3/3

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
58	Y	601	ATP	C5-C6-N6	2.32	123.85	120.31
58	Y	602	ATP	C5-C6-N6	2.30	123.82	120.31

There are no chirality outliers.

All (13) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
57	T	101	FME	O1-CN-N-CA
58	Y	601	ATP	C5'-O5'-PA-O1A
58	Y	601	ATP	C5'-O5'-PA-O3A
58	Y	602	ATP	C5'-O5'-PA-O1A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
58	Y	602	ATP	C5'-O5'-PA-O2A
58	Y	602	ATP	C5'-O5'-PA-O3A
58	Y	602	ATP	O4'-C4'-C5'-O5'
58	Y	602	ATP	C3'-C4'-C5'-O5'
57	T	101	FME	CB-CG-SD-CE
58	Y	601	ATP	PA-O3A-PB-O1B
57	T	101	FME	CB-CA-N-CN
58	Y	602	ATP	PA-O3A-PB-O1B
58	Y	602	ATP	PA-O3A-PB-O2B

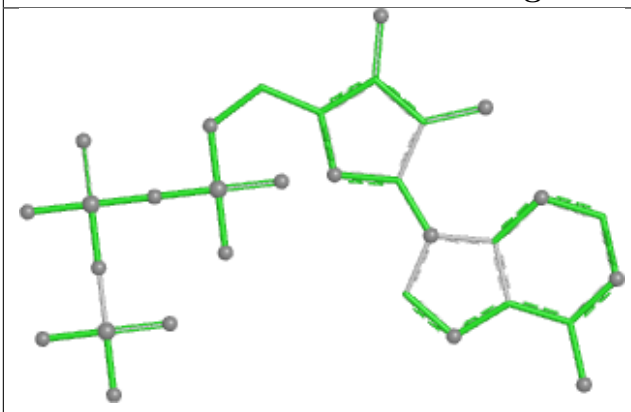
There are no ring outliers.

3 monomers are involved in 6 short contacts:

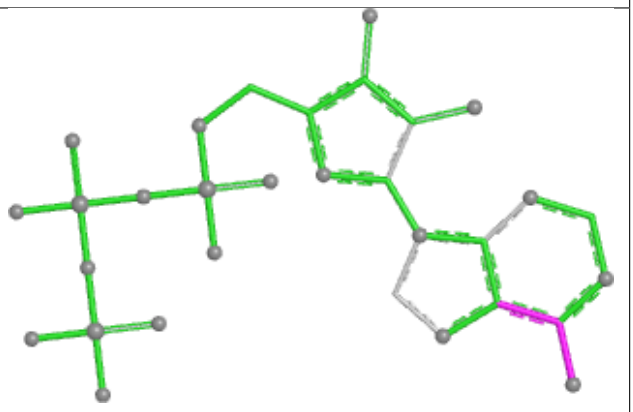
Mol	Chain	Res	Type	Clashes	Symm-Clashes
57	T	101	FME	1	0
58	Y	602	ATP	2	0
58	Y	601	ATP	3	0

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

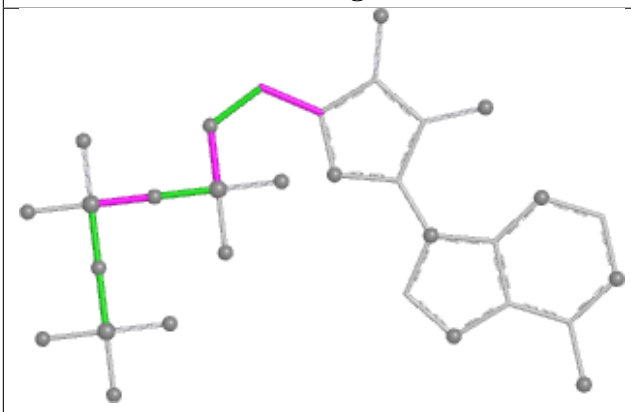
Ligand ATP Y 602



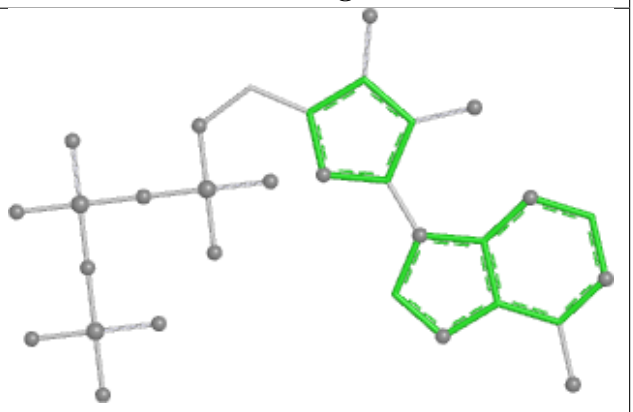
Bond lengths



Bond angles

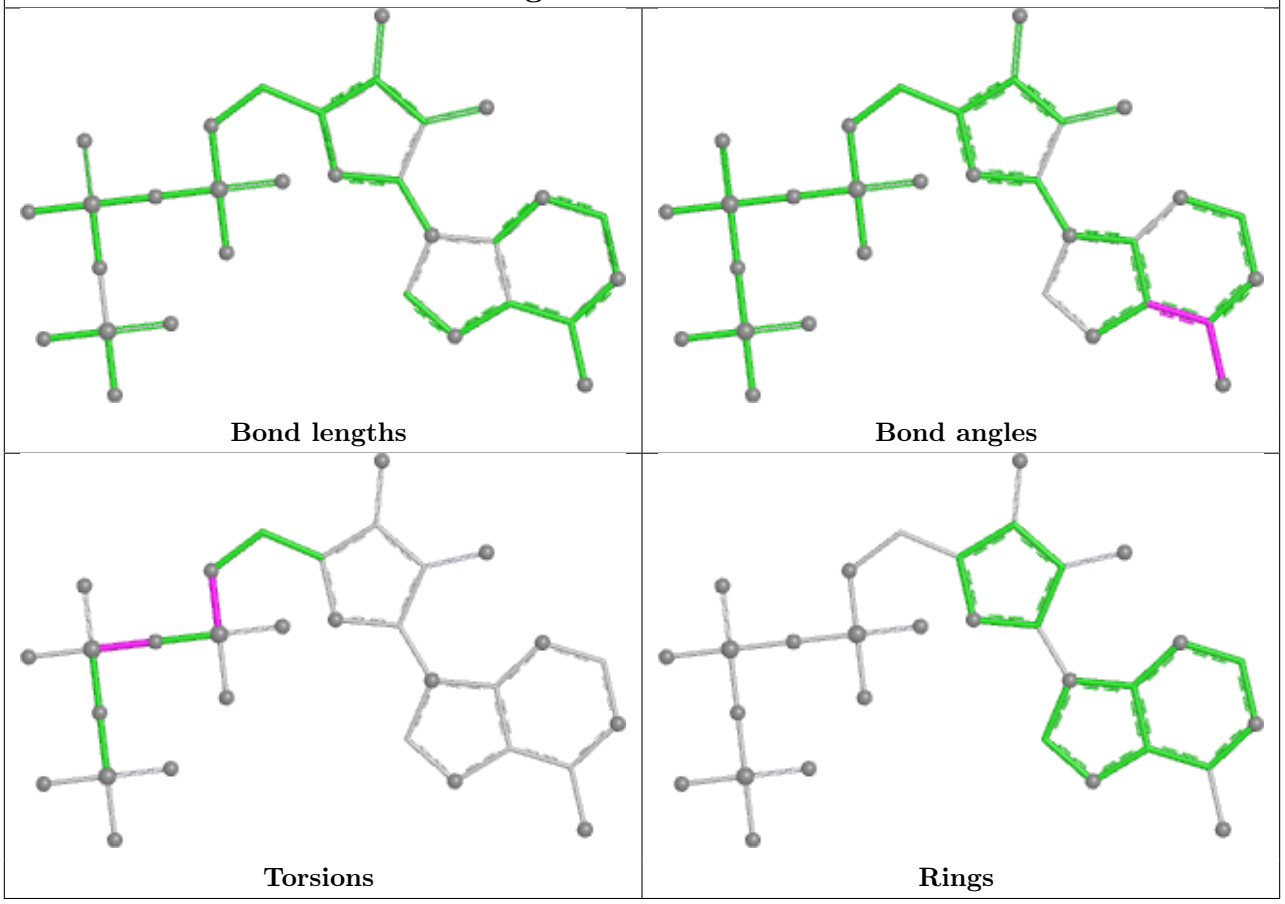


Torsions



Rings

Ligand ATP Y 601



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
32	R3	2

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	R3	1533:C	O3'	1534:A	P	3.68
1	R3	1301:U	O3'	1302:C	P	3.67

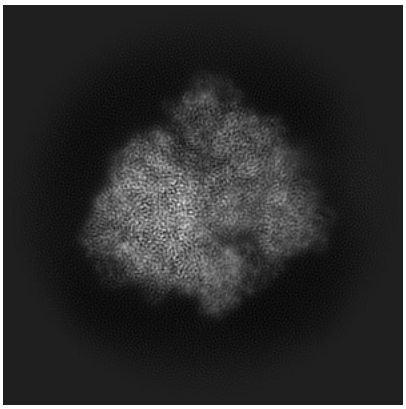
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-40927. These allow visual inspection of the internal detail of the map and identification of artifacts.

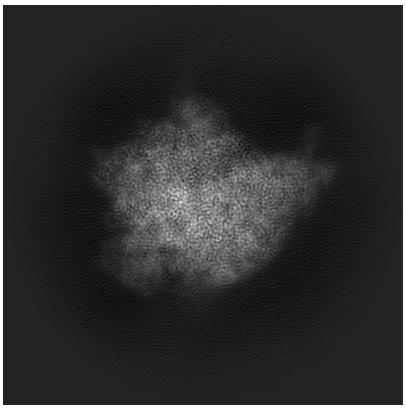
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

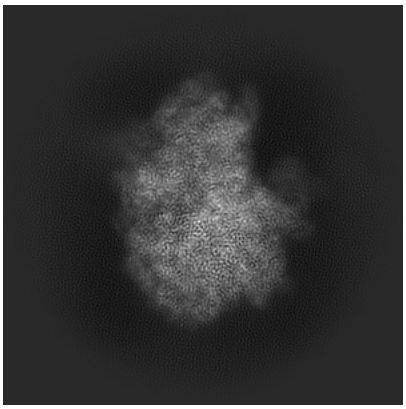
6.1.1 Primary map



X

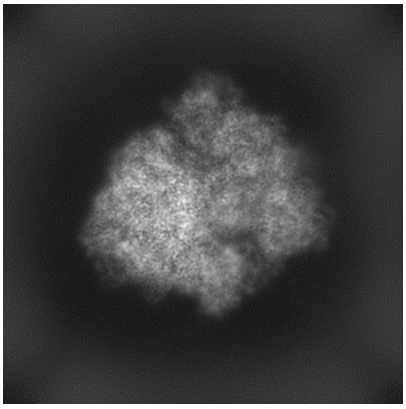


Y

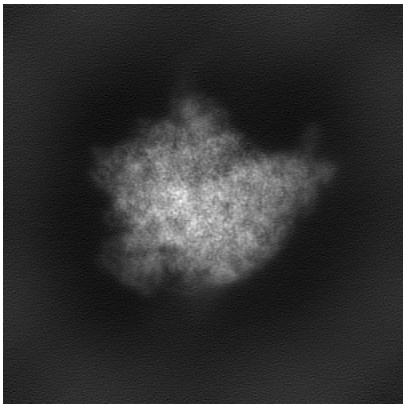


Z

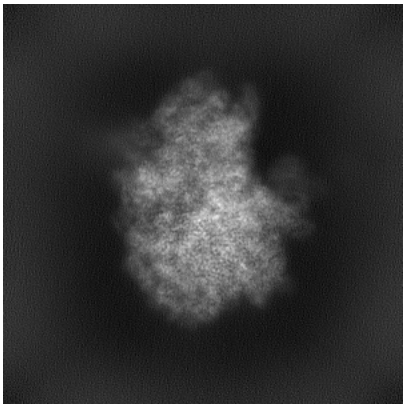
6.1.2 Raw map



X



Y

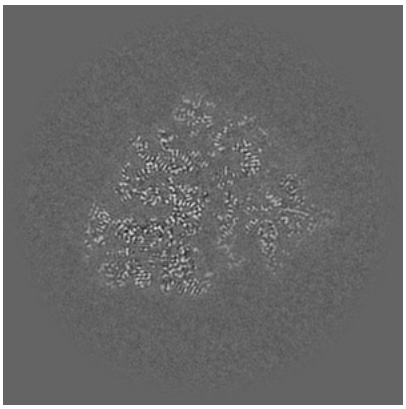


Z

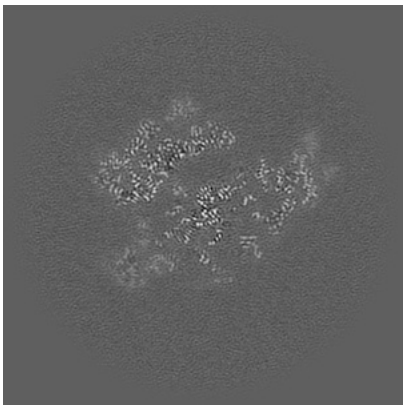
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

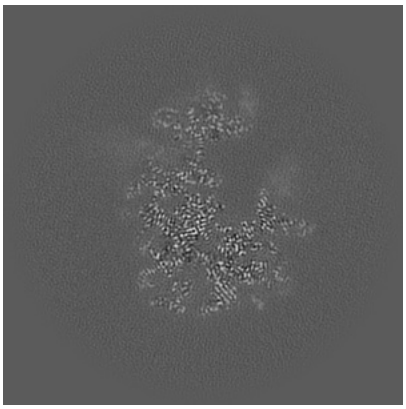
6.2.1 Primary map



X Index: 200

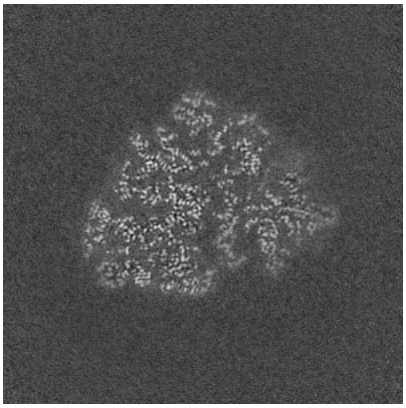


Y Index: 200

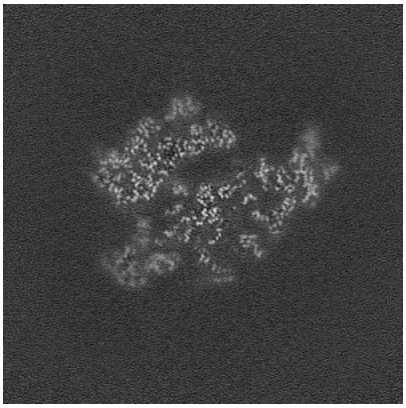


Z Index: 200

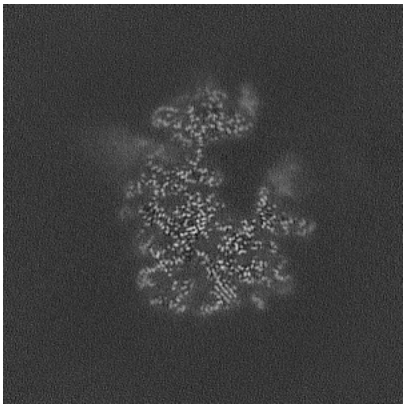
6.2.2 Raw map



X Index: 200



Y Index: 200

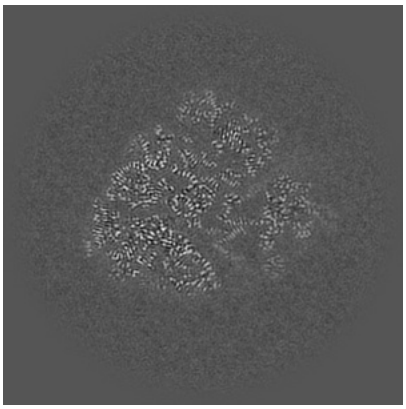


Z Index: 200

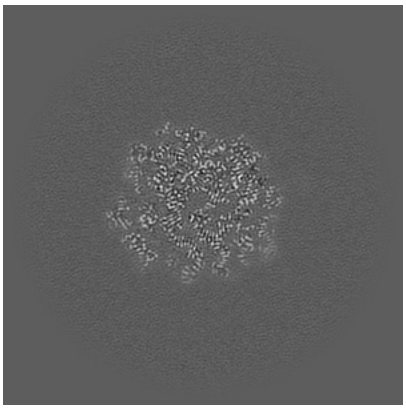
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

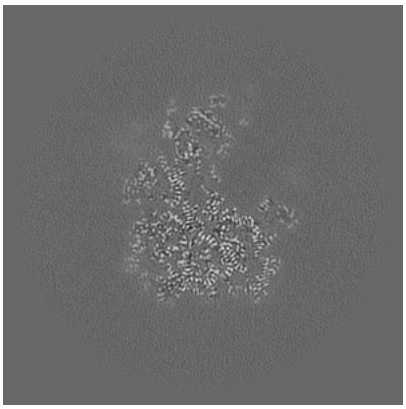
6.3.1 Primary map



X Index: 206

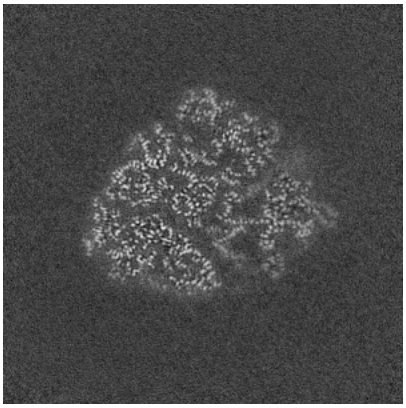


Y Index: 157

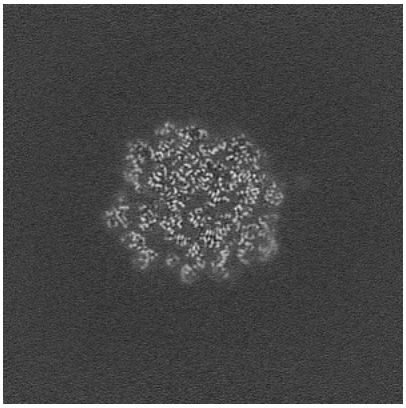


Z Index: 217

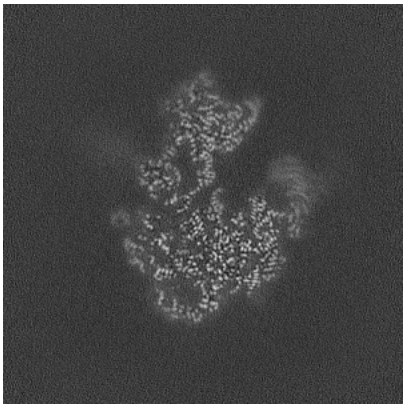
6.3.2 Raw map



X Index: 206



Y Index: 156

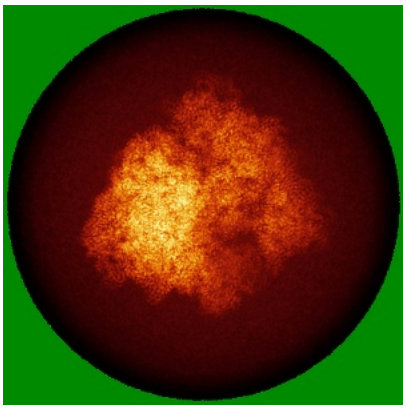


Z Index: 182

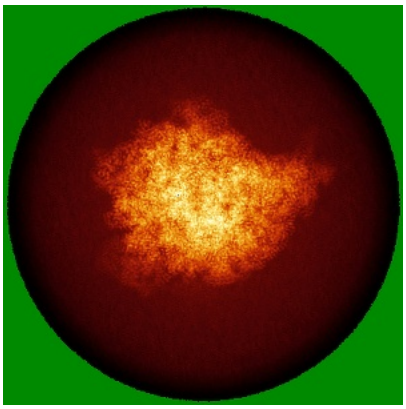
The images above show the largest variance slices of the map in three orthogonal directions.

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

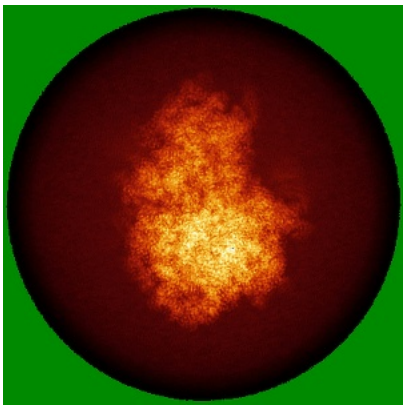
6.4.1 Primary map



X

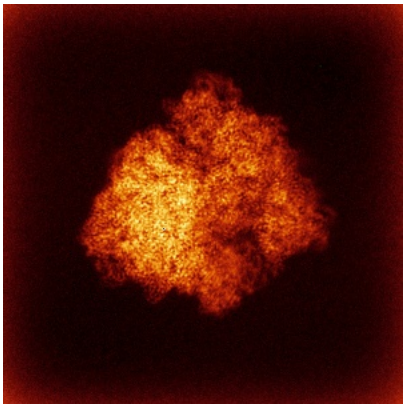


Y

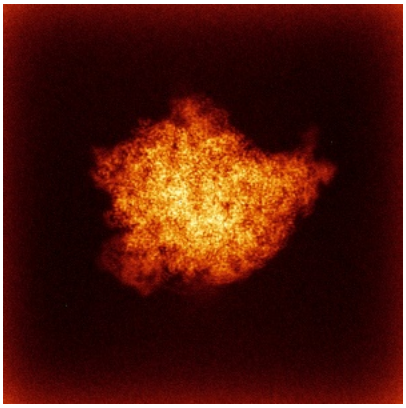


Z

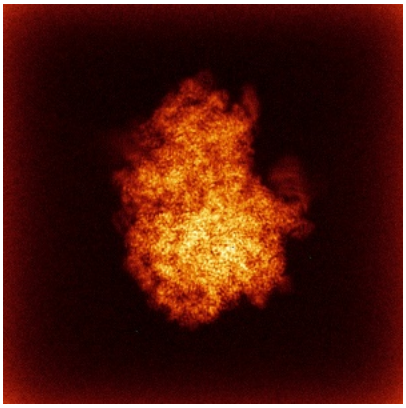
6.4.2 Raw map



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 1.0. 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.

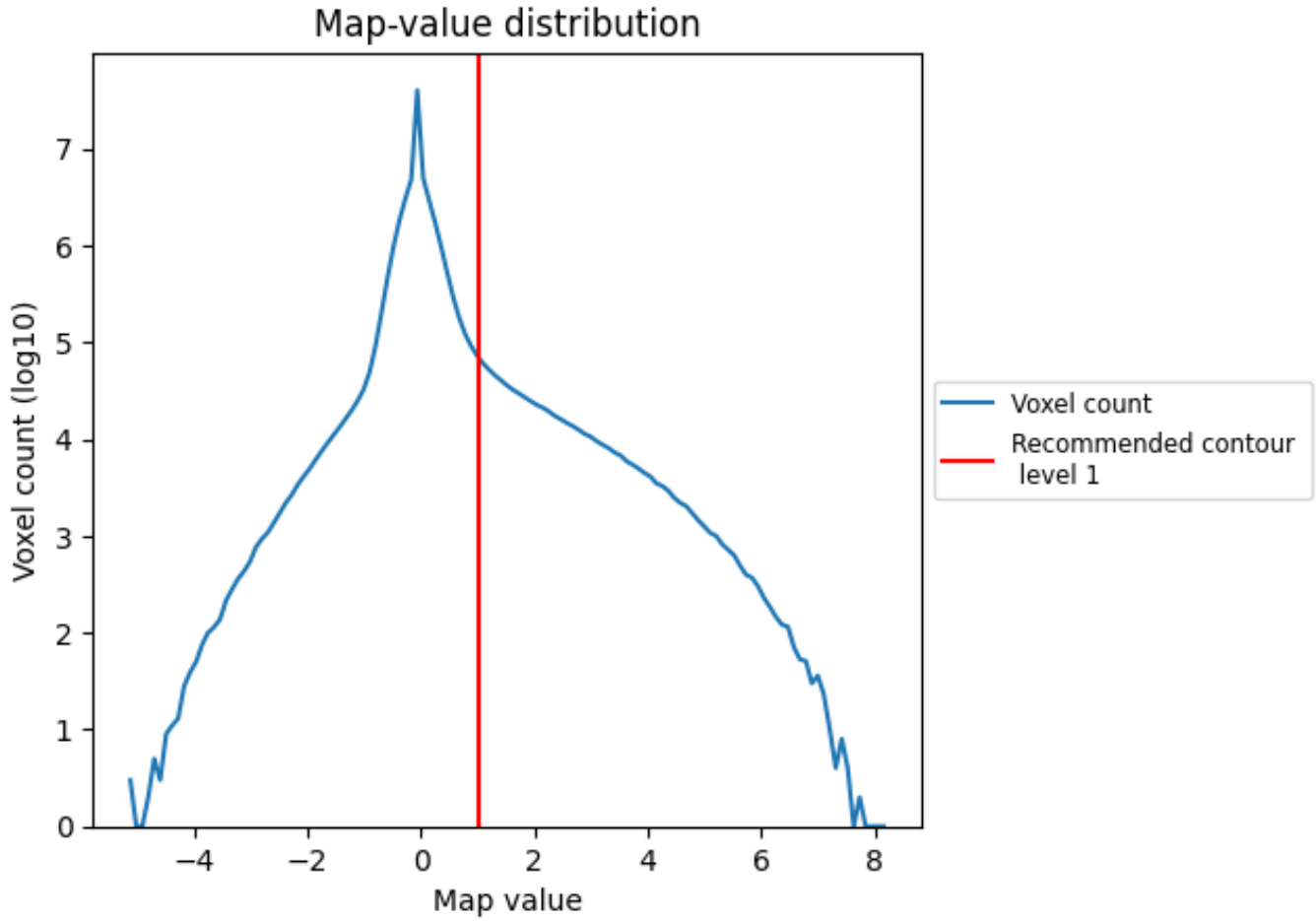
6.6 Mask visualisation (i)

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

7 Map analysis

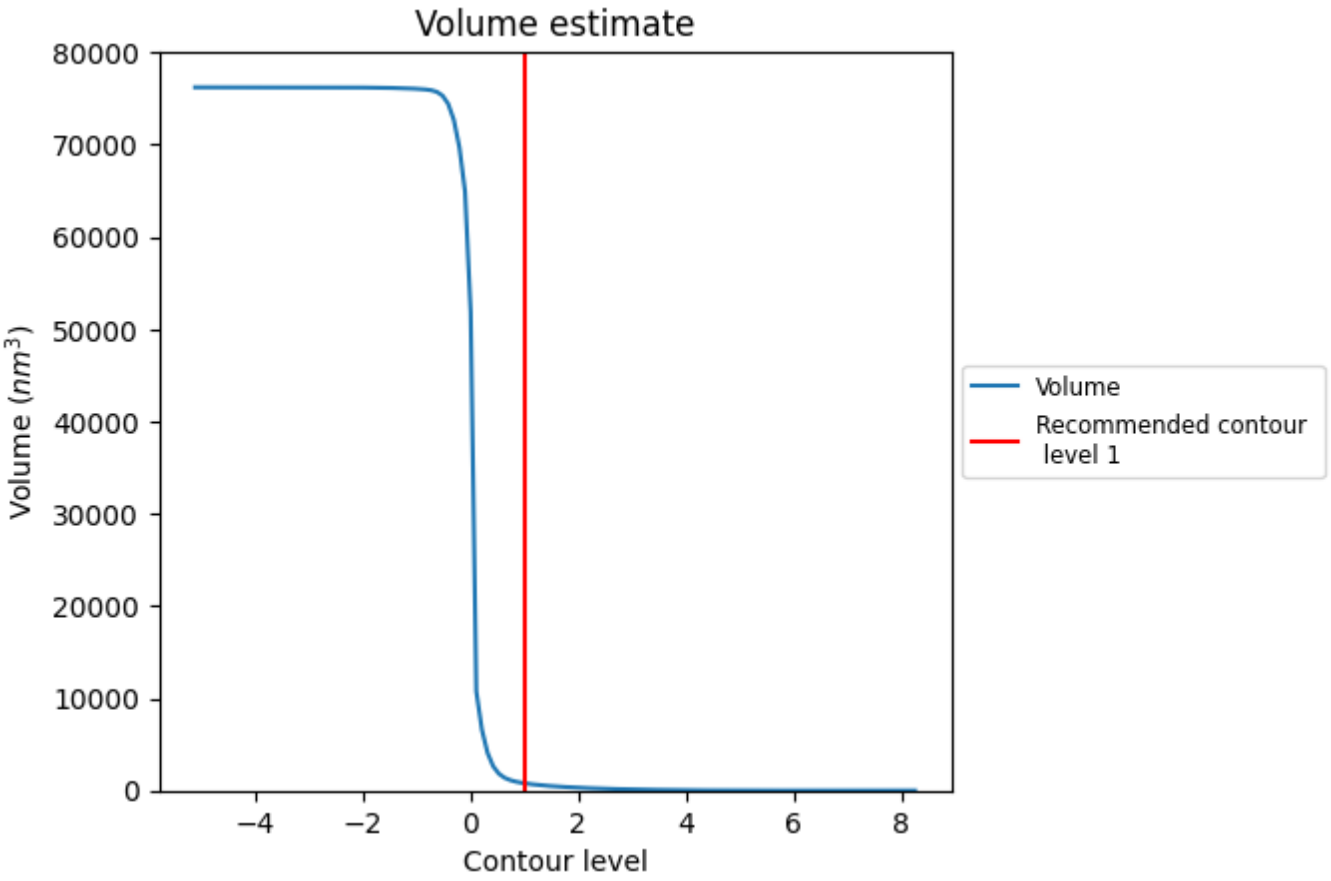
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

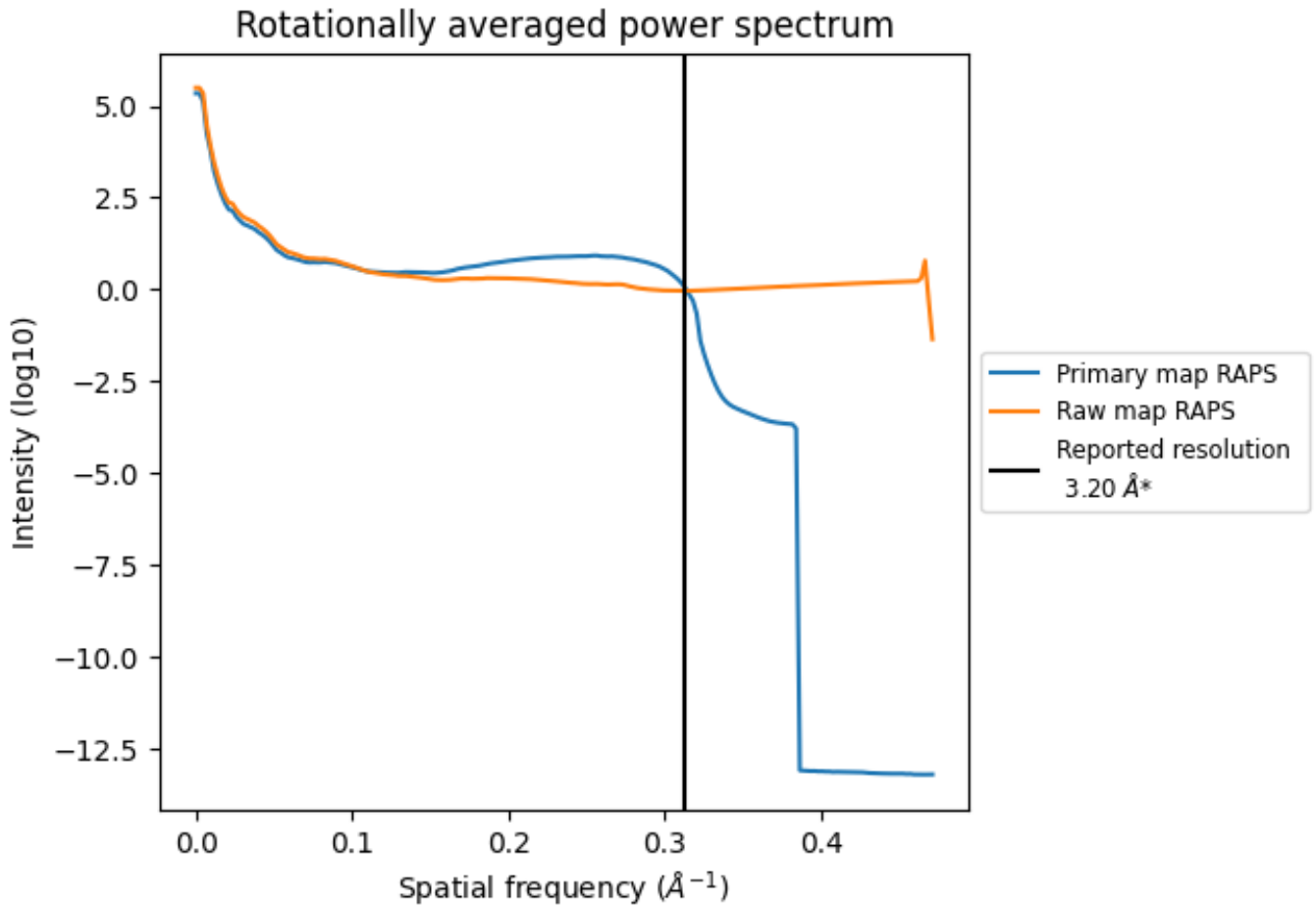
7.2 Volume estimate



The volume at the recommended contour level is 792 nm^3; this corresponds to an approximate mass of 716 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)

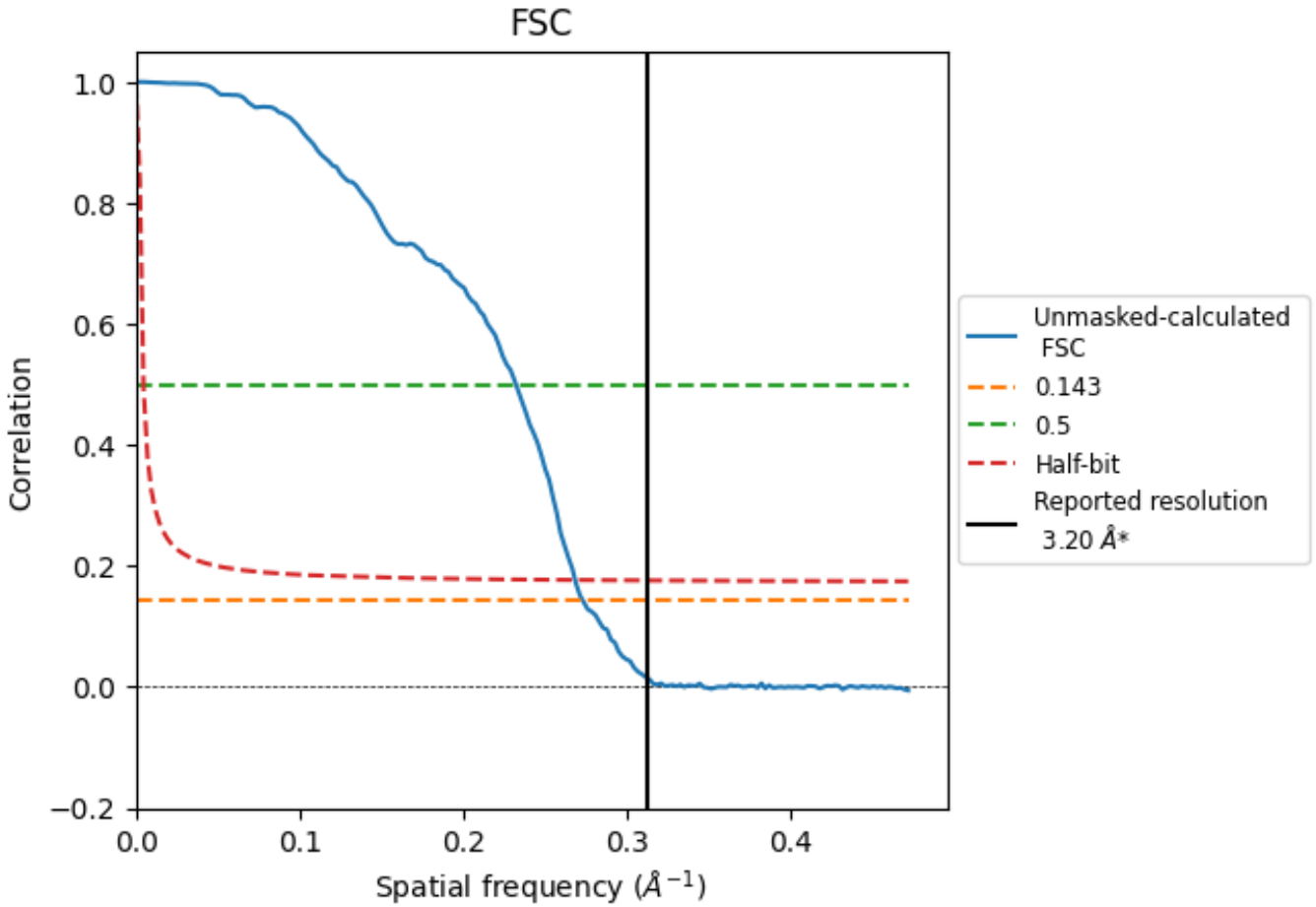


*Reported resolution corresponds to spatial frequency of 0.312 $Å^{-1}$

8 Fourier-Shell correlation

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

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.312 Å^{-1}

8.2 Resolution estimates (i)

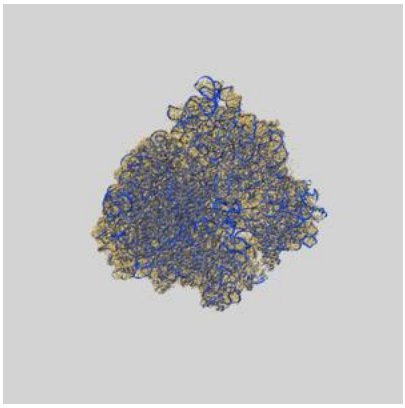
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.20	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.66	4.31	3.73

*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 3.66 differs from the reported value 3.2 by more than 10 %

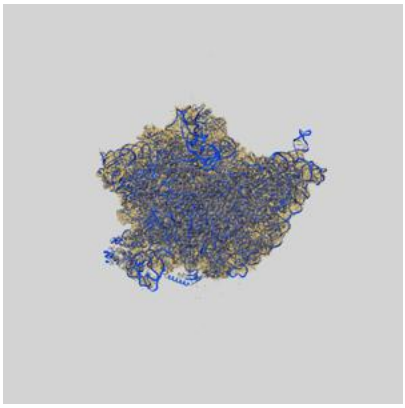
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-40927 and PDB model 9NL6. Per-residue inclusion information can be found in section 3 on page 16.

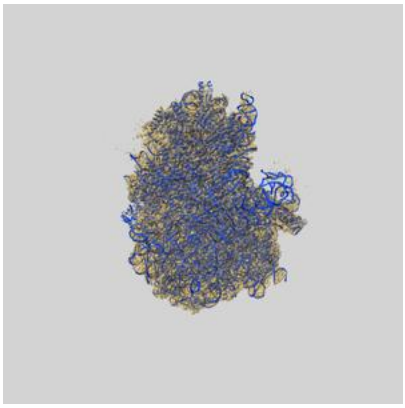
9.1 Map-model overlay



X



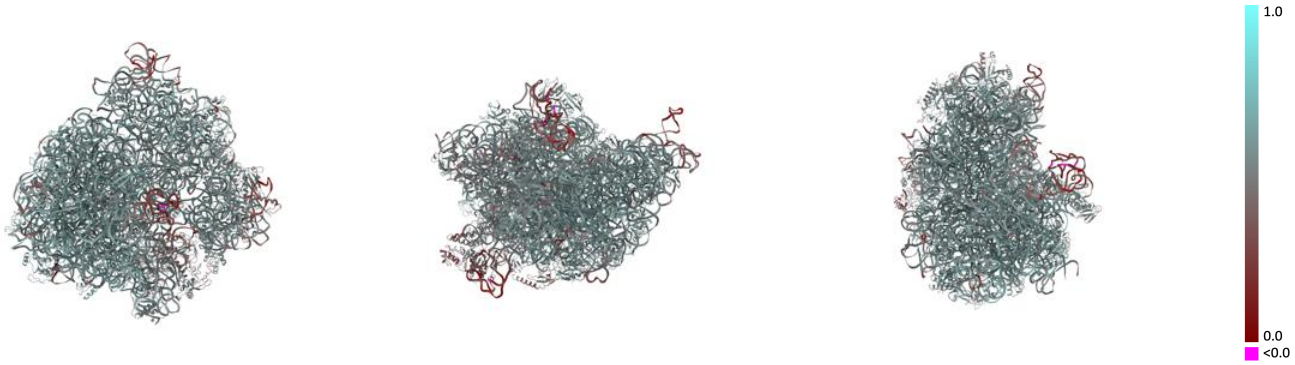
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 1.0 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

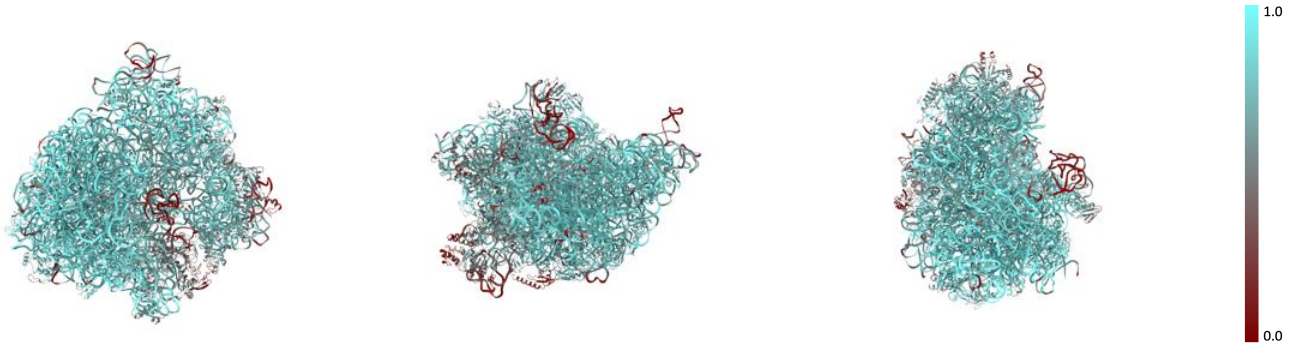
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

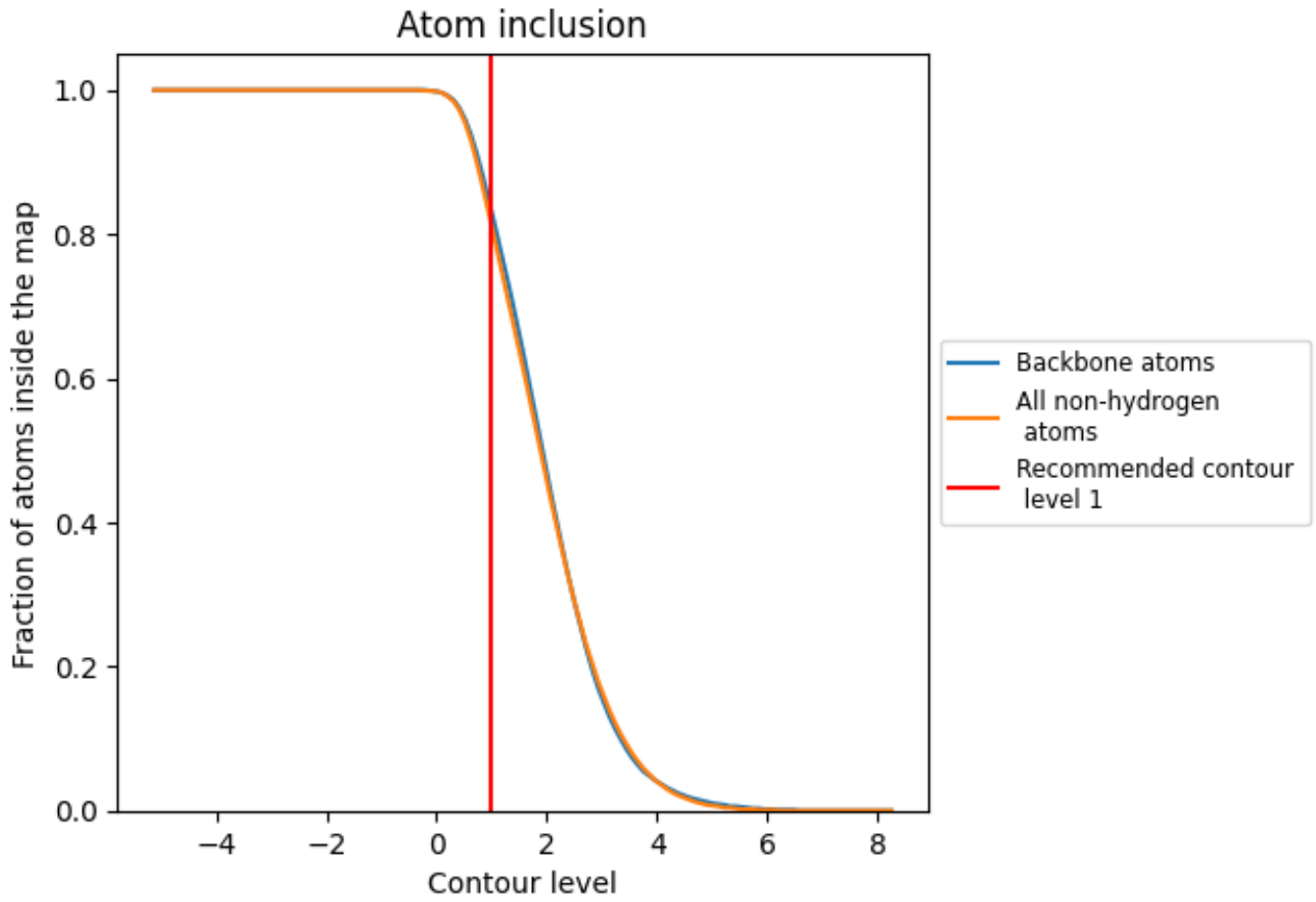
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (1).

9.4 Atom inclusion (i)



At the recommended contour level, 83% of all backbone atoms, 81% 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 (1) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8130	0.5510
1	0.3450	0.4260
13	0.8640	0.5970
14	0.8410	0.5920
15	0.8530	0.5880
16	0.8530	0.5880
17	0.8920	0.5950
18	0.7210	0.5540
19	0.8370	0.5930
2	0.8840	0.5990
20	0.8990	0.6010
21	0.8170	0.5770
22	0.8510	0.5880
23	0.8050	0.5770
24	0.7380	0.5430
25	0.7330	0.5650
27	0.8890	0.6030
28	0.8450	0.6000
29	0.7060	0.5480
3	0.8560	0.5840
30	0.8240	0.5870
31	0.1840	0.3870
32	0.8580	0.5850
34	0.8960	0.6070
35	0.9040	0.6090
36	0.8560	0.5940
4	0.7930	0.5760
5	0.4350	0.4600
6	0.6310	0.5270
9	0.2720	0.4160
M	0.7250	0.5410
R1	0.8760	0.5600
R2	0.8300	0.5350
R3	0.8410	0.5410
T	0.7660	0.5110

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Chain	Atom inclusion	Q-score
Y	0.5480	0.5080
sb	0.6360	0.5070
sc	0.7180	0.5590
sd	0.7280	0.5570
se	0.7710	0.5530
sf	0.7110	0.5400
sg	0.6530	0.5480
sh	0.7920	0.5760
si	0.6940	0.5480
sj	0.5190	0.4820
sk	0.7770	0.5690
sl	0.7730	0.5630
sm	0.6570	0.5260
sn	0.7050	0.5210
so	0.7750	0.5680
sp	0.7770	0.5590
sq	0.7310	0.5550
sr	0.7530	0.5560
ss	0.6670	0.5320
st	0.7630	0.5640
su	0.6620	0.5510