Full wwPDB EM Validation Report ⓘ

Nov 9, 2026 – 11:10 AM EST

PDB ID	:	37KM / pdb_000037km
EMDB ID	:	EMD-78242
Title	:	5MP1(eIF1S) 48S complex - open head conformation
Authors	:	Zottig, X.; Huang, C.-Y.; Seraj, Z.; Grigorieff, N.; Korostelev, A.A.
Deposited on	:	2026-07-24
Resolution	:	2.70 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:

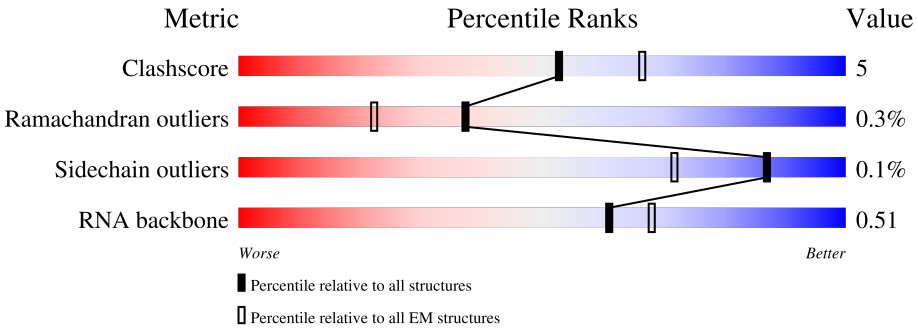
EMDB validation analysis	:	0.0.1.dev133
MolProbity	:	4-5-2 with Phenix2.2
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.51

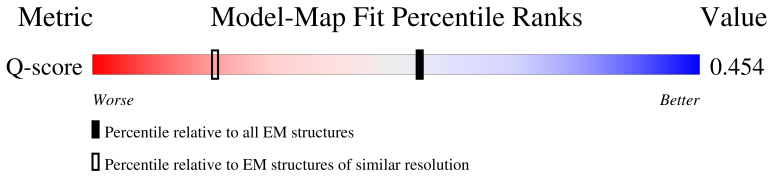
1 Overall quality at a glance

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

The reported resolution of this entry is 2.70 Å.

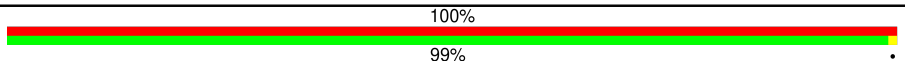
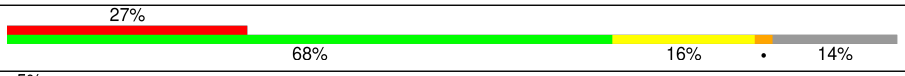
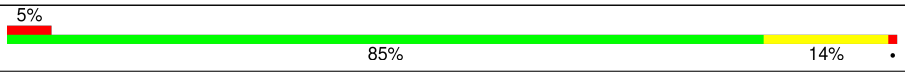
Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.





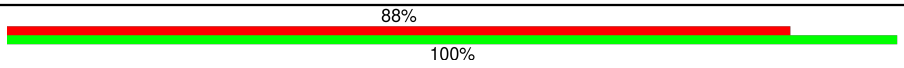
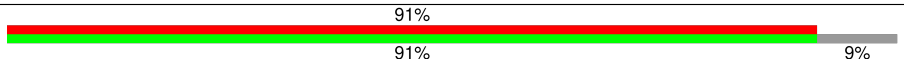
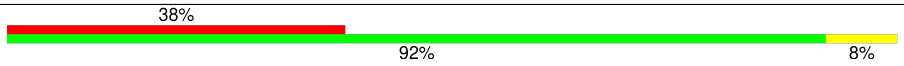
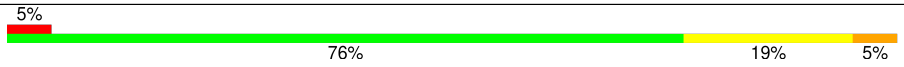
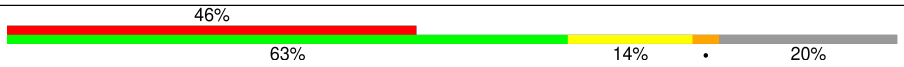
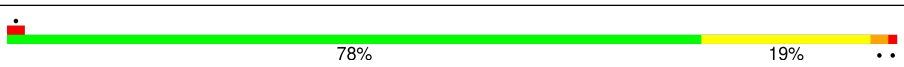
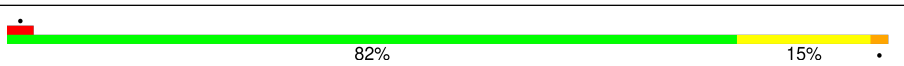
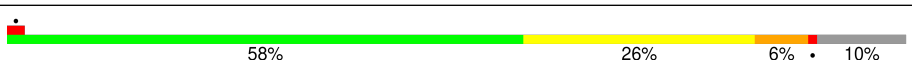
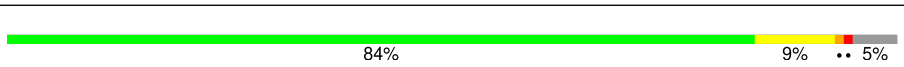
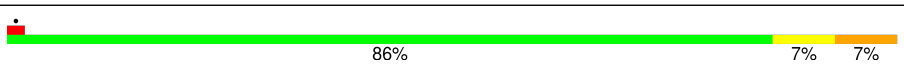
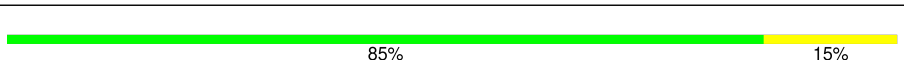
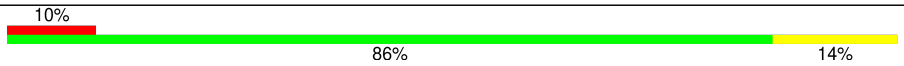
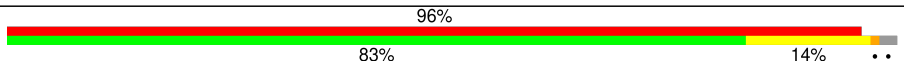
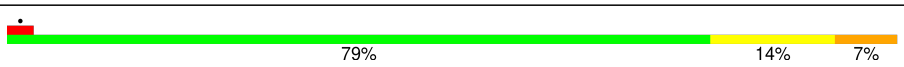
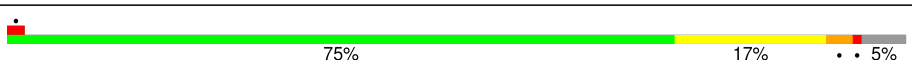
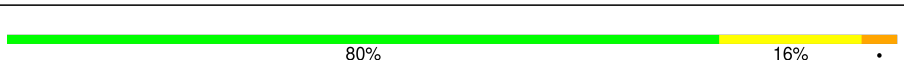
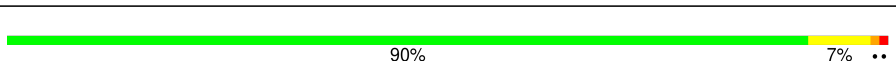
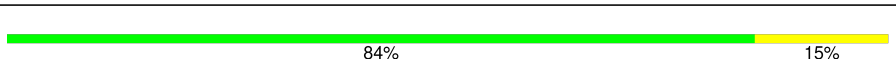
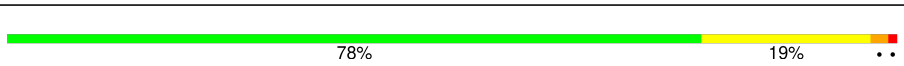
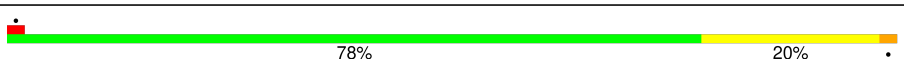
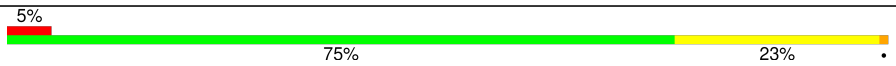
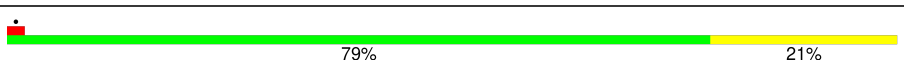
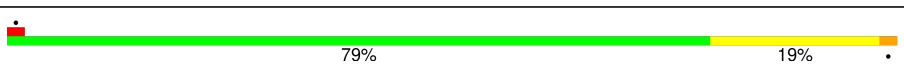
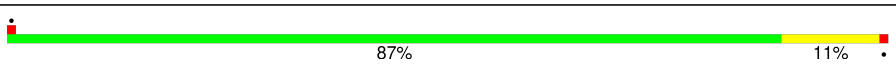
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	10327 (2.20 - 3.20)

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	0	156	
2	1	835	
3	3	110	

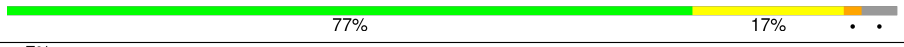
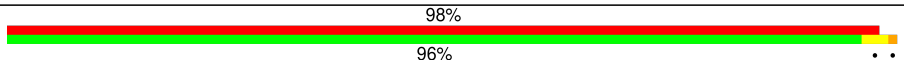
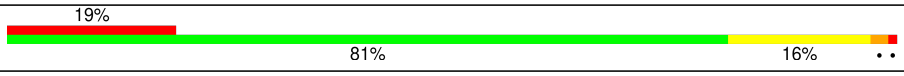
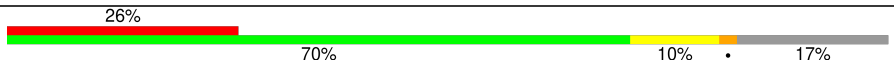
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Mol	Chain	Length	Quality of chain
4	5	420	
5	6	55	
6	7	77	
7	8	119	
8	9	21	
9	A	716	
10	B	158	
11	C	405	
12	D	1869	
13	E	150	
14	F	59	
15	G	86	
16	H	29	
17	I	442	
18	J	102	
19	L	187	
20	M	81	
21	N	81	
22	O	220	
23	P	211	
24	Q	214	
25	S	230	
26	T	127	
27	U	131	
28	V	150	

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Mol	Chain	Length	Quality of chain
29	W	206	
30	Y	256	
31	Z	177	
32	a	140	
33	b	128	
34	c	129	
35	e	125	
36	f	189	
37	g	141	
38	h	227	
39	i	99	
40	j	56	
41	k	313	
42	l	142	
43	m	73	
44	n	142	
45	o	595	
46	q	122	
47	r	271	
48	s	76	
49	t	440	
50	w	103	
51	x	509	
52	y	61	
53	z	75	

2 Entry composition (i)

There are 54 unique types of molecules in this entry. The entry contains 114380 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 Eukaryotic translation initiation factor 3 subunit M.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	0	156	1171	736	208	220	7	0	0

- Molecule 2 is a protein called Eukaryotic translation initiation factor 3 subunit C.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	1	718	5879	3694	1059	1089	37	0	0

- Molecule 3 is a protein called SUI1 domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	3	110	830	524	150	154	2	0	0

- Molecule 4 is a protein called Eukaryotic translation initiation factor 3 subunit E.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
4	5	420	2091	1250	420	421	0	0

- Molecule 5 is a protein called Eukaryotic translation initiation factor 3 subunit F.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
5	6	50	250	149	50	51	0	0

- Molecule 6 is a protein called Eukaryotic translation initiation factor 3 subunit G.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
6	7	77	617	389	111	117	0	0

- Molecule 7 is a protein called Eukaryotic translation initiation factor 3 subunit H.

Mol	Chain	Residues	Atoms				AltConf	Trace
7	8	80	Total	C	N	O	0	0
			398	237	80	81		

- Molecule 8 is a protein called Small ribosomal subunit protein eS32.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	9	21	Total	C	N	O	S	0	0
			205	125	55	22	3		

- Molecule 9 is a protein called Eukaryotic translation initiation factor 3 subunit A.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	A	575	Total	C	N	O	S	0	0
			4568	2880	819	847	22		

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	96	MET	LEU	conflict	UNP G1SMZ5
A	433	ASN	SER	conflict	UNP G1SMZ5
A	444	SER	ALA	conflict	UNP G1SMZ5

- Molecule 10 is a protein called Eukaryotic translation initiation factor 2 subunit 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	B	158	Total	C	N	O	S	0	0
			1281	809	237	226	9		

- Molecule 11 is a protein called eIF5-mimic protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	C	405	Total	C	N	O	S	0	0
			3283	2107	555	608	13		

- Molecule 12 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	D	1691	Total	C	N	O	P	0	0
			36103	16115	6485	11813	1690		

- Molecule 13 is a protein called Small ribosomal subunit protein uS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	E	142	Total	C	N	O	S	0	0
			1167	743	218	200	6		

- Molecule 14 is a protein called Small ribosomal subunit protein eS30.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	F	59	Total	C	N	O	S	0	0
			473	293	104	75	1		

- Molecule 15 is a protein called Eukaryotic translation initiation factor 4C.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	G	86	Total	C	N	O	S	0	0
			701	445	125	127	4		

- Molecule 16 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	H	29	Total	C	N	O	P	0	0
			437	195	34	179	29		

- Molecule 17 is a protein called Eukaryotic translation initiation factor 3 subunit B.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	I	435	Total	C	N	O	S	0	0
			3536	2272	615	632	17		

- Molecule 18 is a protein called Small ribosomal subunit protein eS26.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	J	102	Total	C	N	O	S	0	0
			819	511	168	133	7		

- Molecule 19 is a protein called Small ribosomal subunit protein eS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	L	178	Total	C	N	O	S	0	0
			1440	923	262	254	1		

- Molecule 20 is a protein called Small ribosomal subunit protein eS27.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	M	81	Total	C	N	O	S	0	0
			632	397	116	112	7		

- Molecule 21 is a protein called Small ribosomal subunit protein eS21.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	N	81	Total	C	N	O	S	0	0
			619	379	114	121	5		

- Molecule 22 is a protein called Small ribosomal subunit protein uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	O	220	Total	C	N	O	S	0	0
			1704	1100	293	301	10		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
O	190	SER	-	insertion	UNP G1SWM1

- Molecule 23 is a protein called 40S ribosomal protein S3a.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	P	211	Total	C	N	O	S	0	0
			1716	1088	307	307	14		

- Molecule 24 is a protein called Small ribosomal subunit protein uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	Q	214	Total	C	N	O	S	0	0
			1696	1077	297	314	8		

- Molecule 25 is a protein called Small ribosomal subunit protein eS6.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	S	230	Total	C	N	O	S	0	0
			1863	1164	371	321	7		

- Molecule 26 is a protein called Small ribosomal subunit protein uS11.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	T	127	Total	C	N	O	S	0	0
			957	585	189	177	6		

- Molecule 27 is a protein called Small ribosomal subunit protein eS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	U	131	Total	C	N	O	S	0	0
			1065	668	198	195	4		

- Molecule 28 is a protein called Small ribosomal subunit protein uS15.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	V	150	Total	C	N	O	S	0	0
			1208	773	229	205	1		

- Molecule 29 is a protein called Small ribosomal subunit protein eS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	W	198	Total	C	N	O	S	0	0
			1622	1017	319	281	5		

- Molecule 30 is a protein called Small ribosomal subunit protein eS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Y	256	Total	C	N	O	S	0	0
			2034	1300	376	349	9		

- Molecule 31 is a protein called Small ribosomal subunit protein uS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	Z	177	Total	C	N	O	S	0	0
			1478	941	295	240	2		

- Molecule 32 is a protein called Small ribosomal subunit protein uS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	a	140	Total	C	N	O	S	0	0
			1088	687	215	183	3		

- Molecule 33 is a protein called Small ribosomal subunit protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	b	128	Total	C	N	O	S	0	0
			1048	664	197	180	7		

- Molecule 34 is a protein called 40S ribosomal protein S15a.

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

- Molecule 35 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	e	125	Total	C	N	O	S	0	0
			1016	642	199	170	5		

- Molecule 36 is a protein called Small ribosomal subunit protein uS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	f	184	Total	C	N	O	S	0	0
			1461	914	276	264	7		

- Molecule 37 is a protein called Small ribosomal subunit protein uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	g	141	Total	C	N	O	S	0	0
			1124	715	212	194	3		

- Molecule 38 is a protein called Small ribosomal subunit protein uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	h	227	Total	C	N	O	S	0	0
			1765	1124	317	316	8		

- Molecule 39 is a protein called Small ribosomal subunit protein eS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	i	99	Total	C	N	O	S	0	0
			835	544	149	136	6		

- Molecule 40 is a protein called uS14.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	j	56	Total	C	N	O	S	0	0
			467	291	95	75	6		

- Molecule 41 is a protein called Receptor of activated protein C kinase 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	k	313	Total	C	N	O	S	0	0
			2437	1535	424	466	12		

- Molecule 42 is a protein called Small ribosomal subunit protein eS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	l	142	Total	C	N	O	S	0	0
			1117	703	214	197	3		

- Molecule 43 is a protein called Small ribosomal subunit protein eS25.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	m	73	Total	C	N	O	S	0	0
			586	374	108	103	1		

- Molecule 44 is a protein called Small ribosomal subunit protein uS13.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	n	142	Total	C	N	O	S	0	0
			1177	737	239	200	1		

- Molecule 45 is a protein called ATP-binding cassette sub-family E member 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	o	595	Total	C	N	O	S	0	0
			4693	2995	802	865	31		

- Molecule 46 is a protein called Small ribosomal subunit protein eS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	q	122	Total	C	N	O	S	0	0
			950	596	168	177	9		

- Molecule 47 is a protein called Eukaryotic translation initiation factor 2 subunit 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	r	271	Total	C	N	O	S	0	0
			2018	1269	360	381	8		

- Molecule 48 is a protein called Ubiquitin-ribosomal protein eS31 fusion protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	s	76	Total	C	N	O	S	0	0
			620	390	119	104	7		

- Molecule 49 is a protein called Eukaryotic translation initiation factor 2 subunit 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	t	440	Total	C	N	O	S	0	0
			3353	2131	588	617	17		

- Molecule 50 is a protein called Small ribosomal subunit protein uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	w	103	Total	C	N	O	S	0	0
			817	511	155	147	4		

- Molecule 51 is a protein called Eukaryotic translation initiation factor 3 subunit D.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	x	423	Total	C	N	O	S	0	0
			2847	1756	523	558	10		

- Molecule 52 is a protein called Small ribosomal subunit protein eS28.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	y	61	Total	C	N	O	S	0	0
			477	290	93	92	2		

- Molecule 53 is a RNA chain called Initiator methionyl-tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	z	75	Total	C	N	O	P	0	0
			1604	717	298	515	74		

- Molecule 54 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms	AltConf
54	J	1	Total Zn 1 1	0
54	j	1	Total Zn 1 1	0
54	s	1	Total Zn 1 1	0

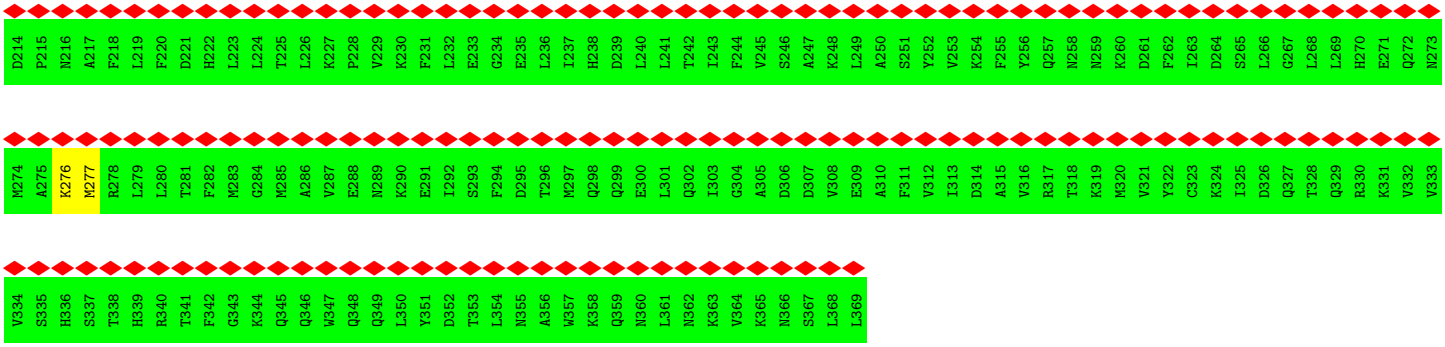
3 Residue-property plots (i)

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

• Molecule 1: Eukaryotic translation initiation factor 3 subunit M

Chain 0:

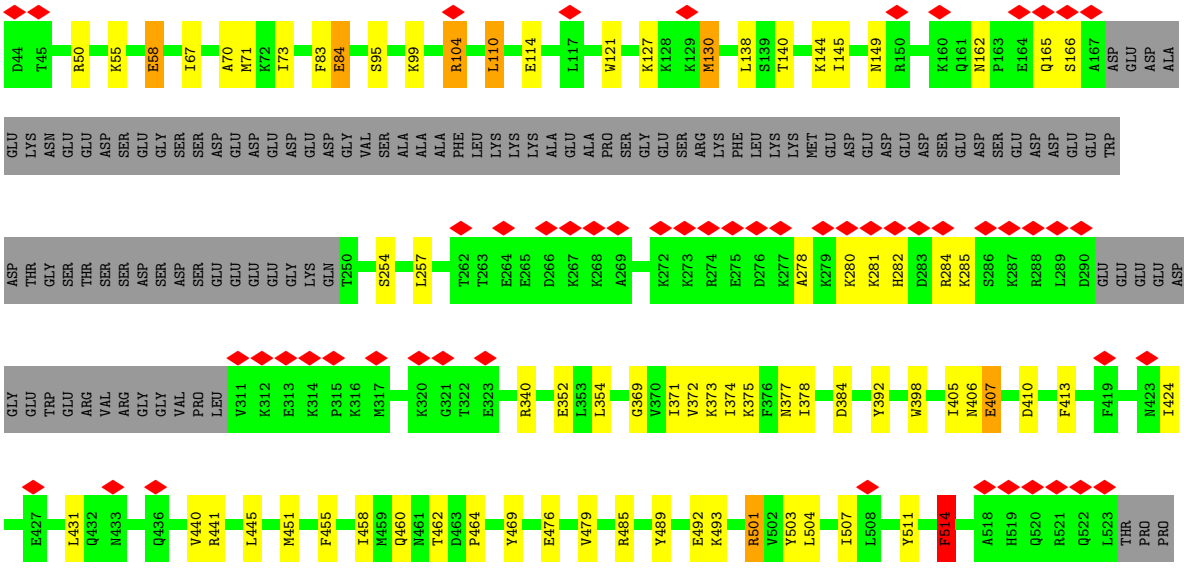


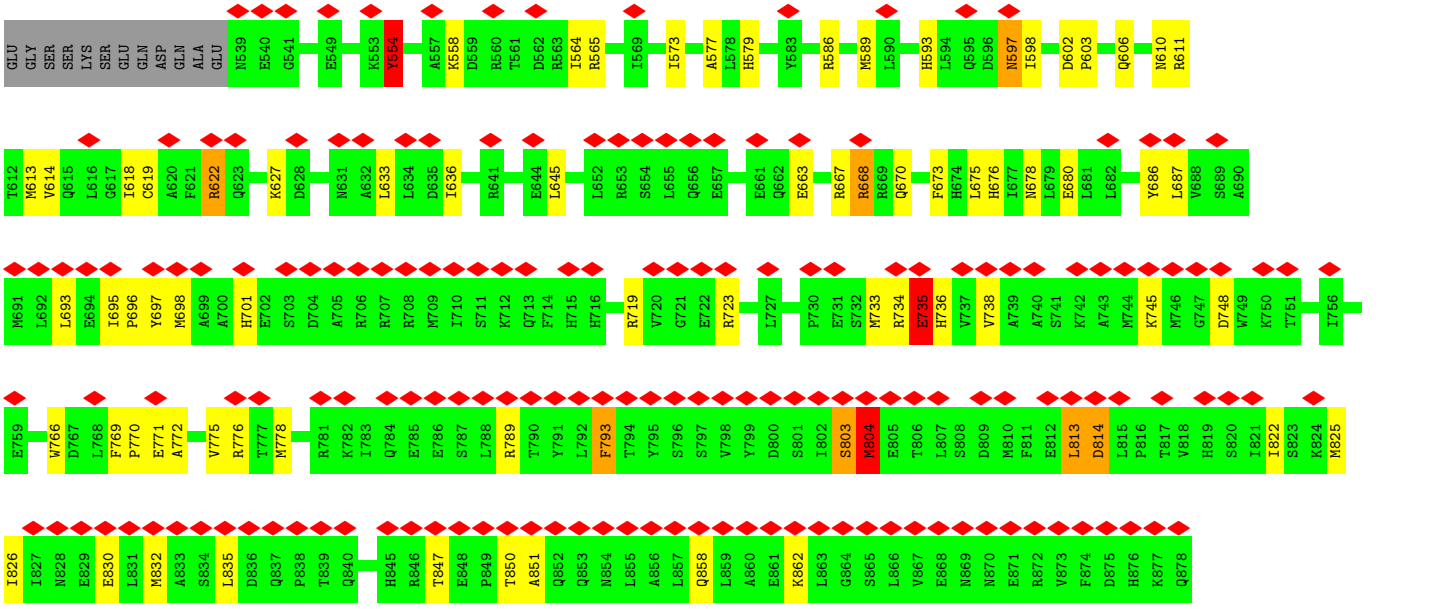


• Molecule 2: Eukaryotic translation initiation factor 3 subunit C

Chain 1:



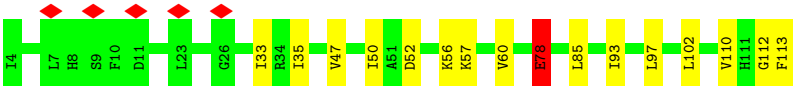




• Molecule 3: SUI1 domain-containing protein

Chain 3:

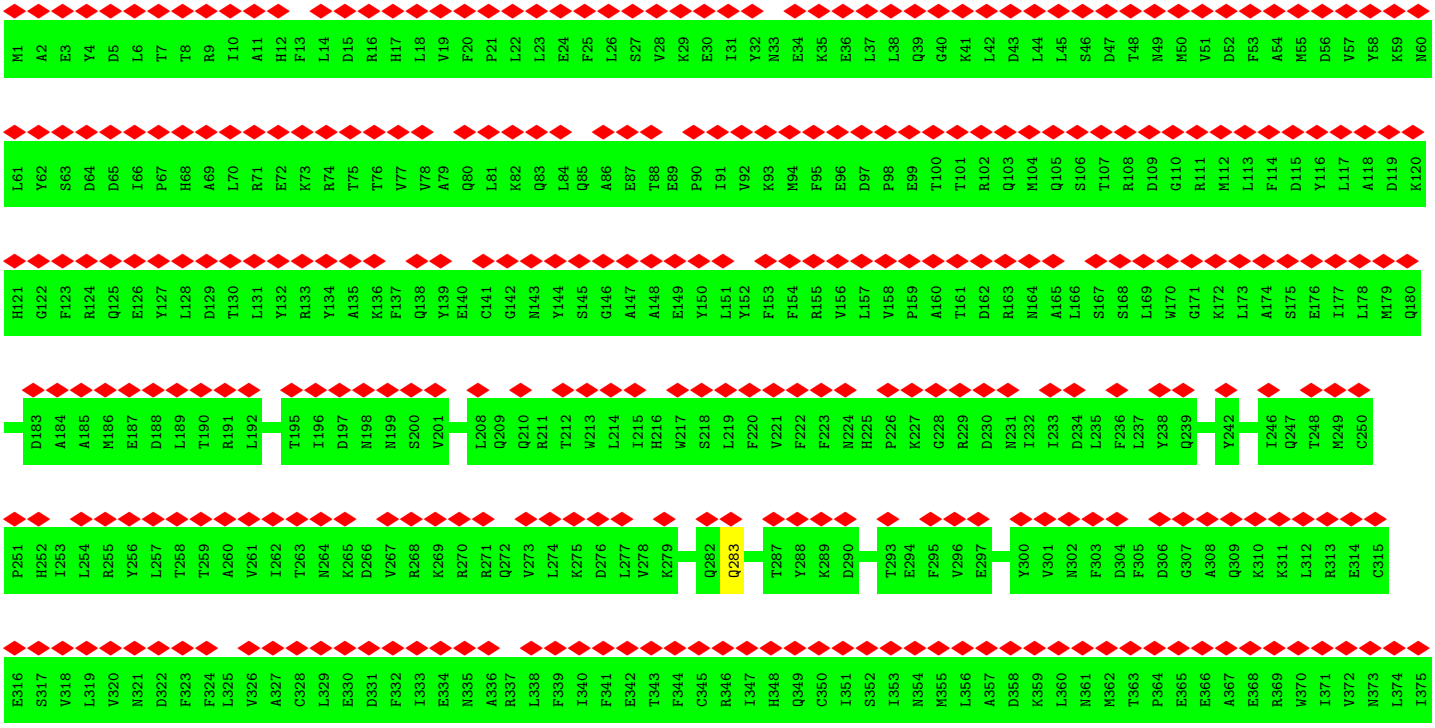


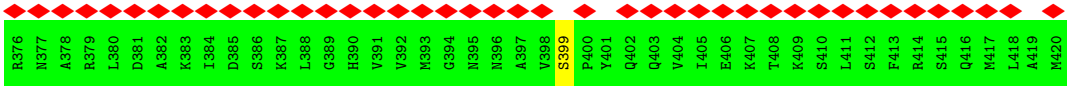


• Molecule 4: Eukaryotic translation initiation factor 3 subunit E

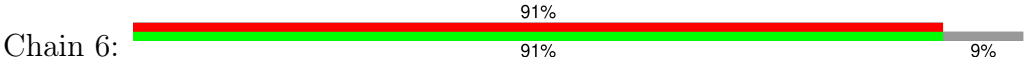
Chain 5:

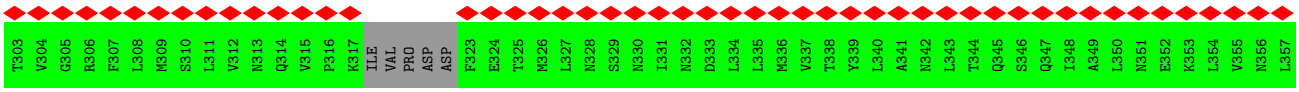




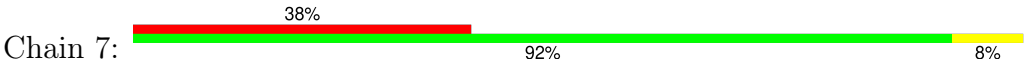


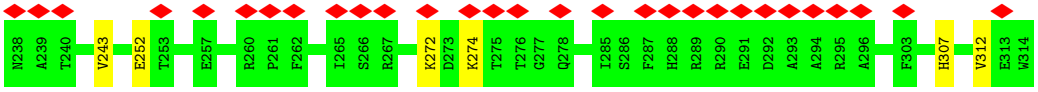
• Molecule 5: Eukaryotic translation initiation factor 3 subunit F





• Molecule 6: Eukaryotic translation initiation factor 3 subunit G





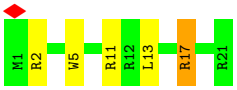
• Molecule 7: Eukaryotic translation initiation factor 3 subunit H





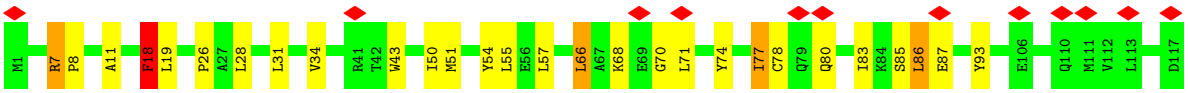
• Molecule 8: Small ribosomal subunit protein eS32

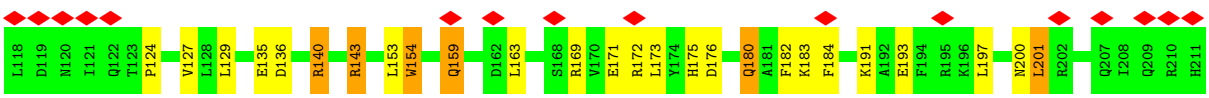


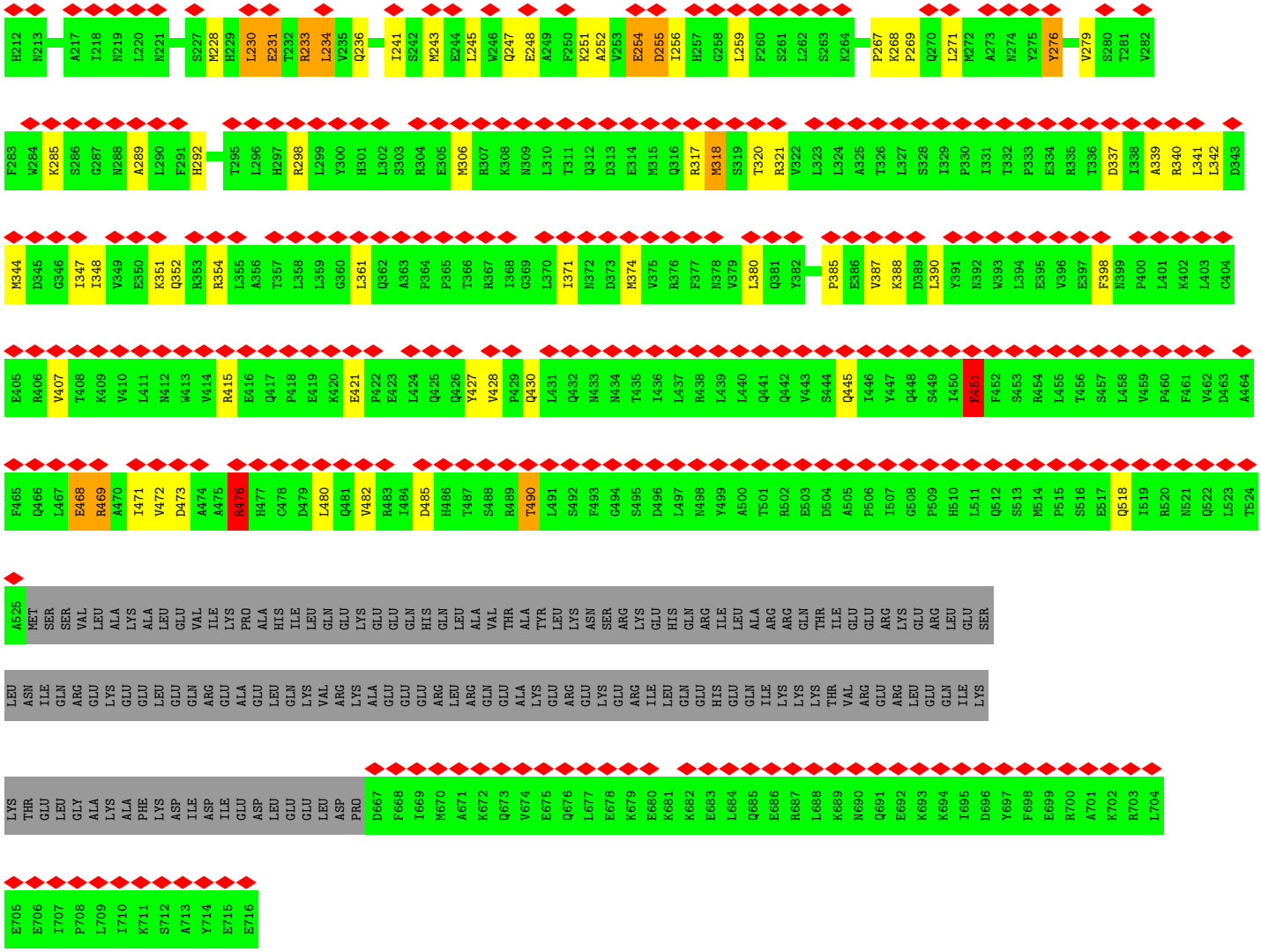


• Molecule 9: Eukaryotic translation initiation factor 3 subunit A





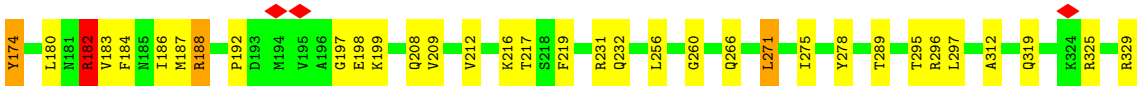




• Molecule 10: Eukaryotic translation initiation factor 2 subunit 2

Chain B:

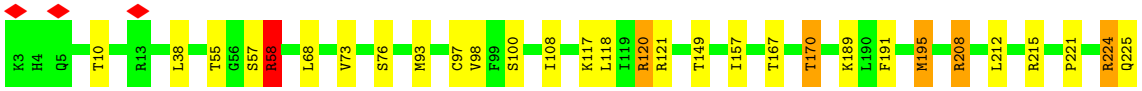


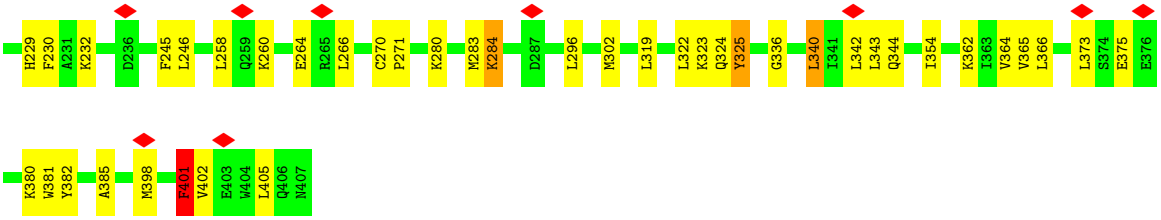


• Molecule 11: eIF5-mimic protein 1

Chain C:



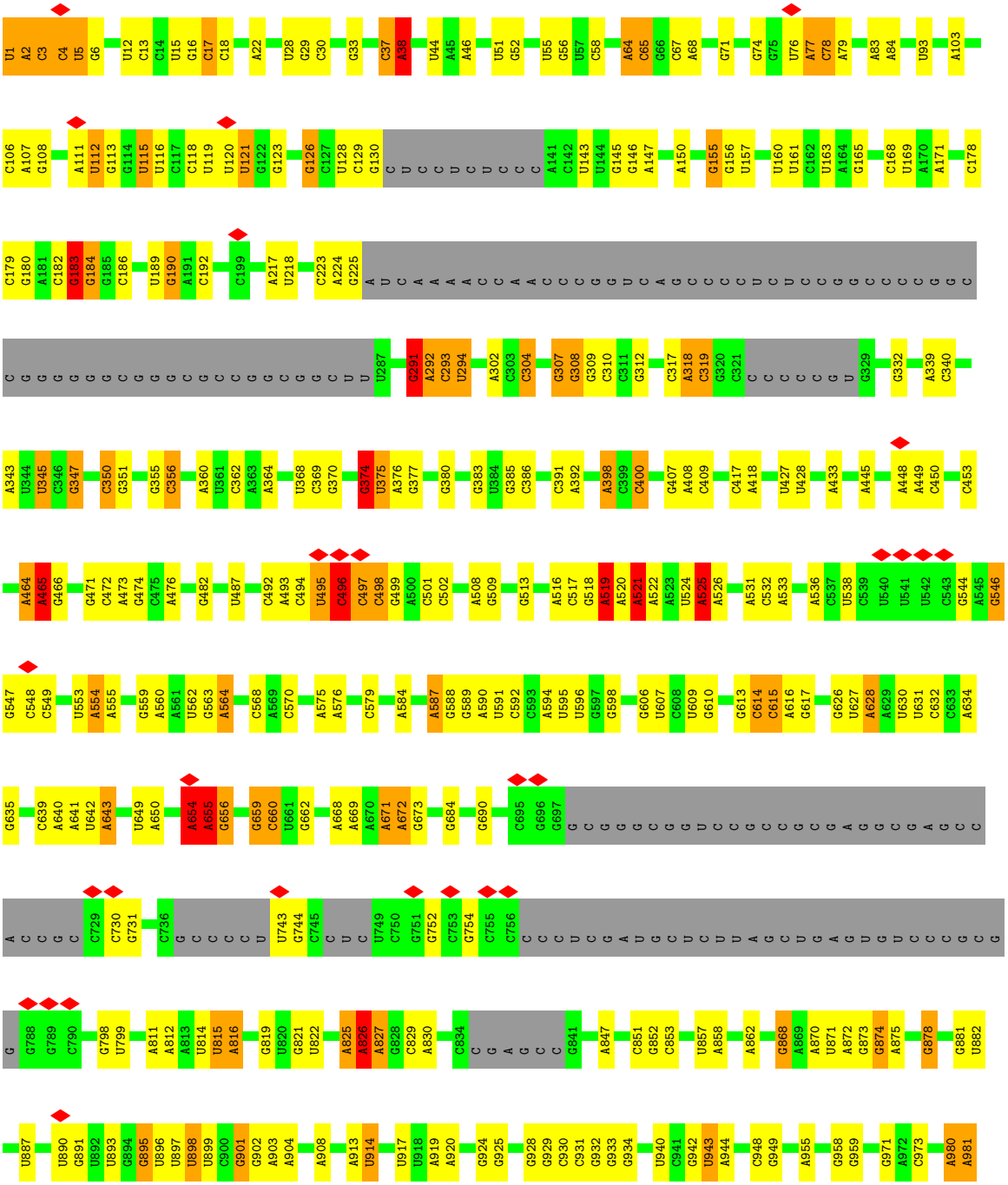


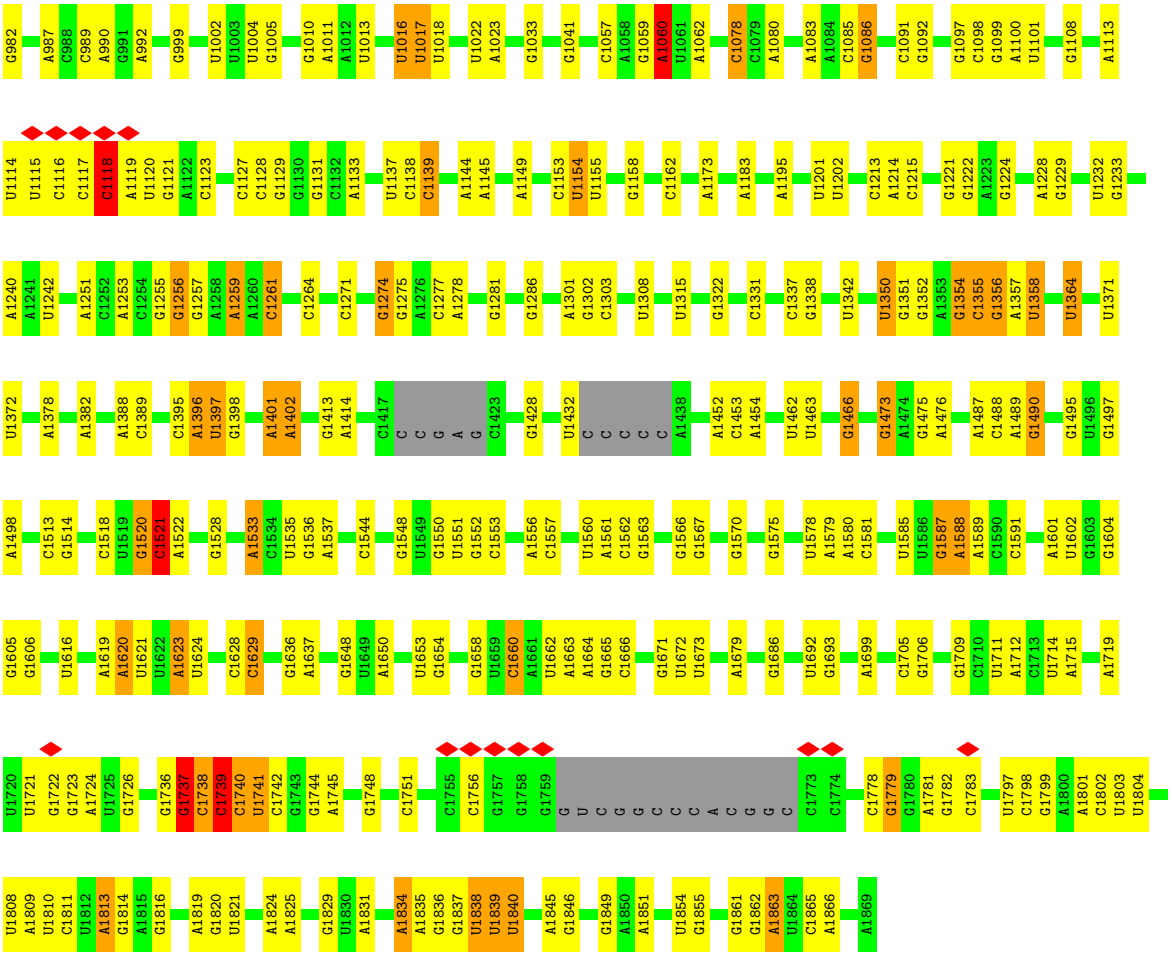


• Molecule 12: 18S ribosomal RNA

Chain D:







• Molecule 13: Small ribosomal subunit protein uS17

Chain E:





• Molecule 14: Small ribosomal subunit protein eS30

Chain F:





• Molecule 15: Eukaryotic translation initiation factor 4C

Chain G:

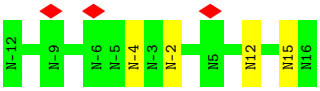




• Molecule 16: mRNA

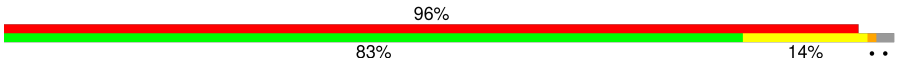
Chain H:

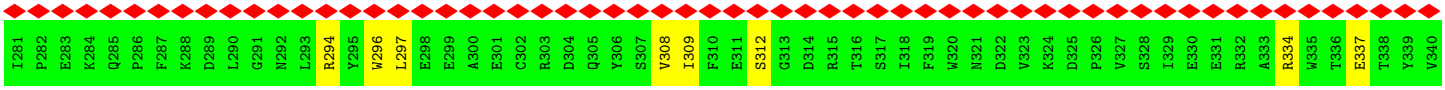


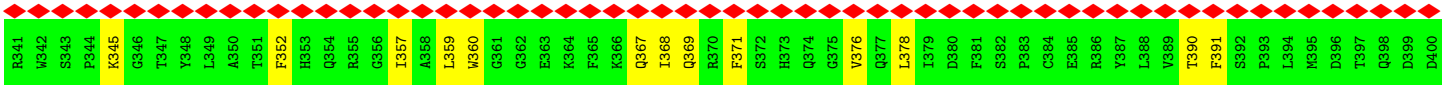


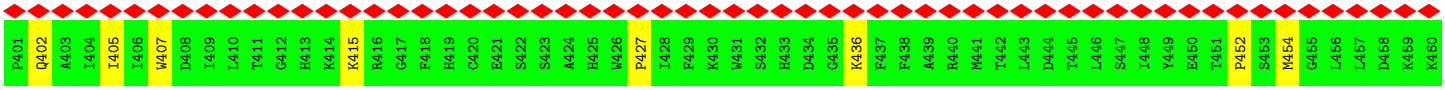
• Molecule 17: Eukaryotic translation initiation factor 3 subunit B

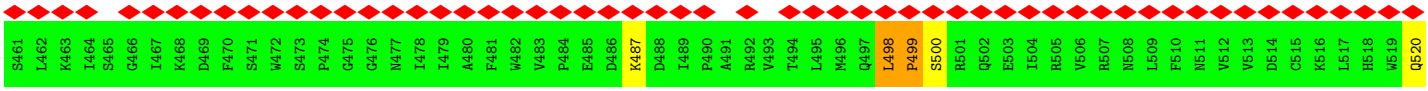
Chain I:

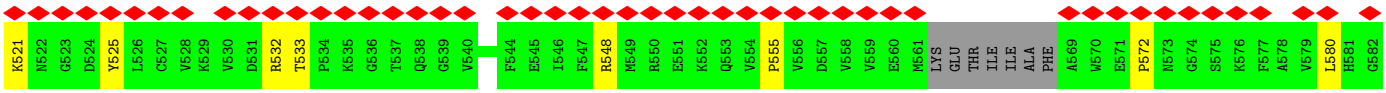


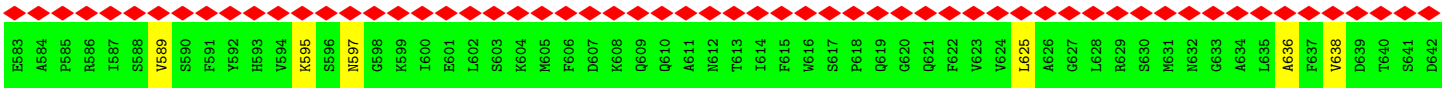


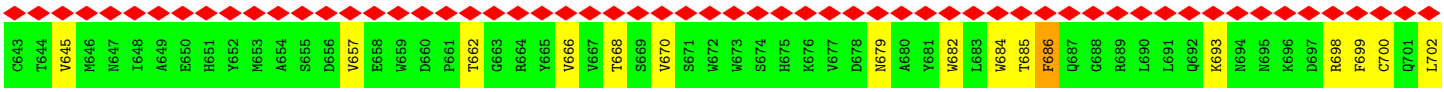


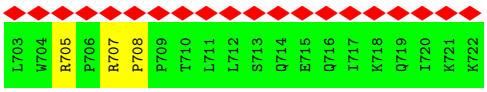








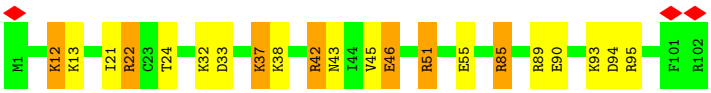




• Molecule 18: Small ribosomal subunit protein eS26

Chain J:

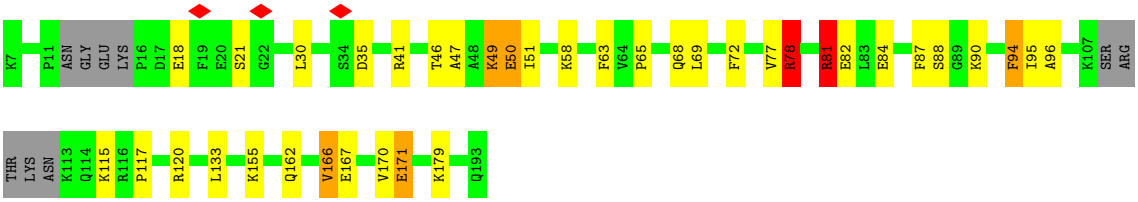




• Molecule 19: Small ribosomal subunit protein eS7

Chain L:





• Molecule 20: Small ribosomal subunit protein eS27

Chain M:





• Molecule 21: Small ribosomal subunit protein eS21

Chain N:

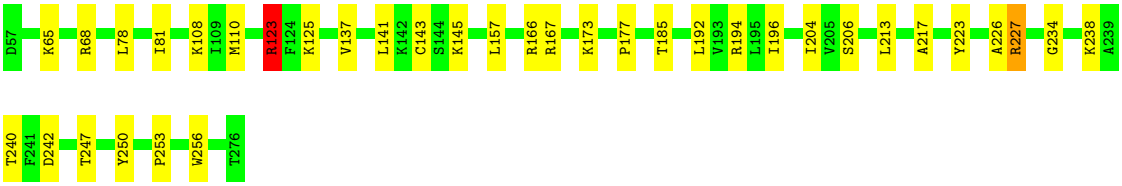




• Molecule 22: Small ribosomal subunit protein uS5

Chain O:

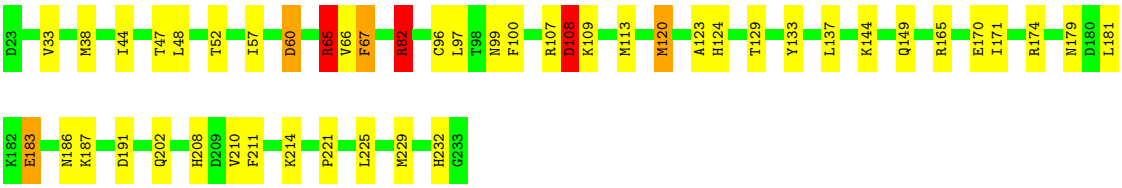




• Molecule 23: 40S ribosomal protein S3a

Chain P:

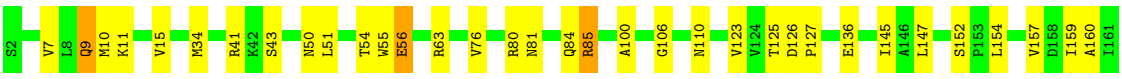


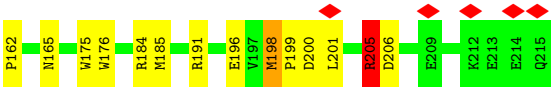


• Molecule 24: Small ribosomal subunit protein uS2

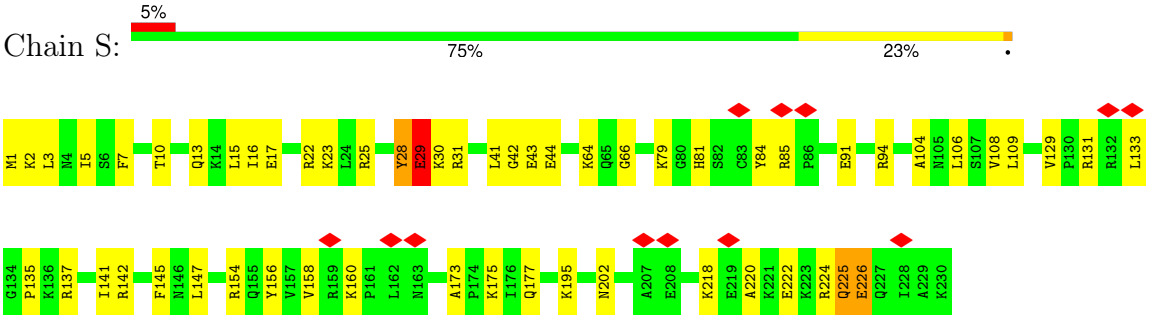
Chain Q:



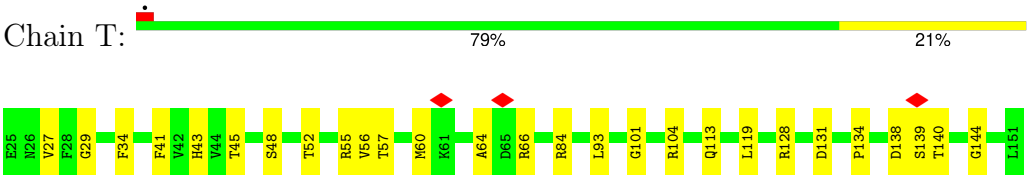




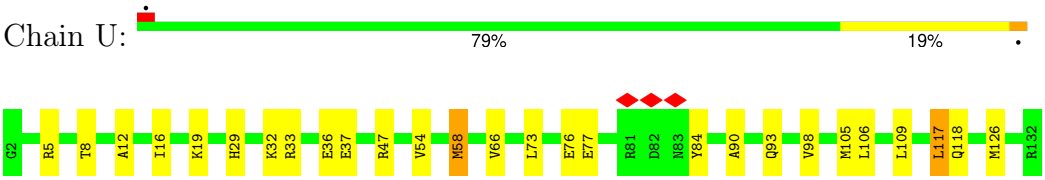
• Molecule 25: Small ribosomal subunit protein eS6



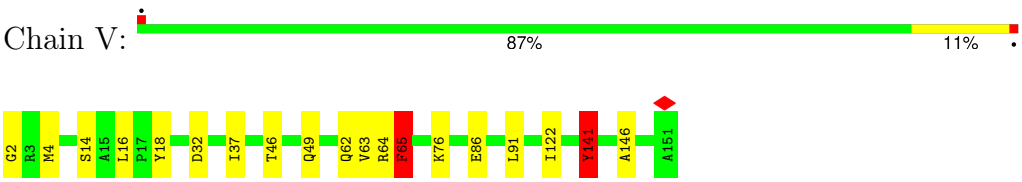
• Molecule 26: Small ribosomal subunit protein uS11



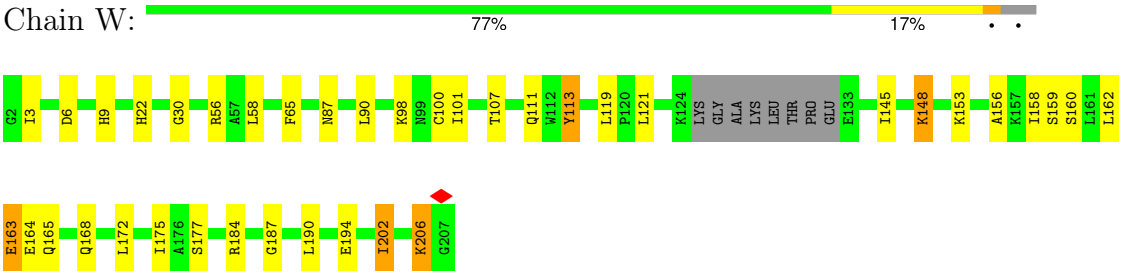
• Molecule 27: Small ribosomal subunit protein eS17



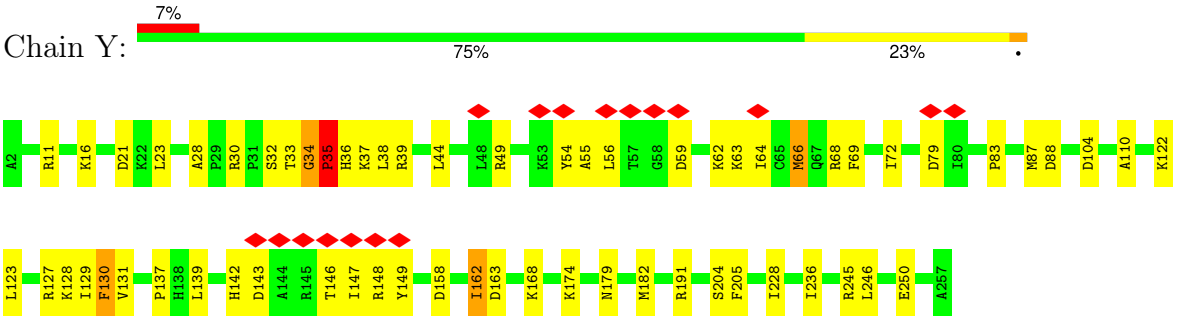
• Molecule 28: Small ribosomal subunit protein uS15



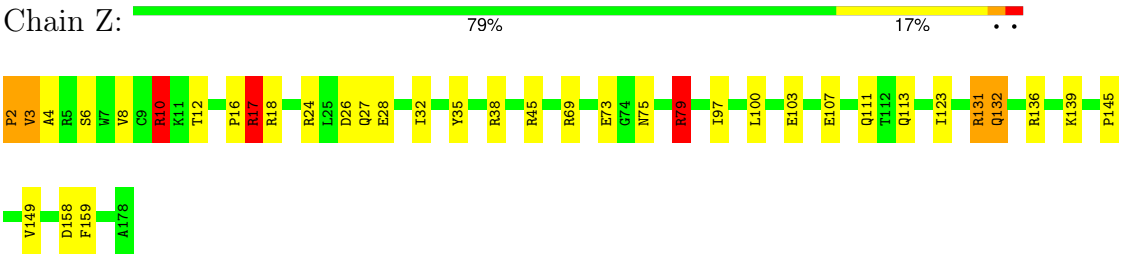
• Molecule 29: Small ribosomal subunit protein eS8



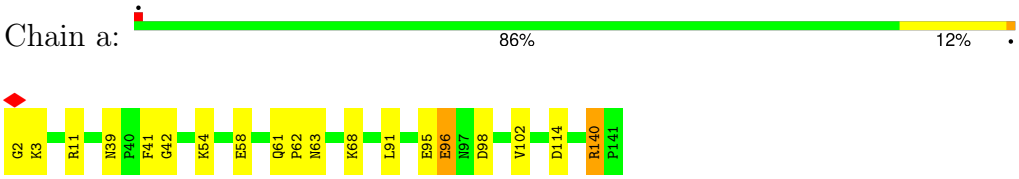
• Molecule 30: Small ribosomal subunit protein eS4



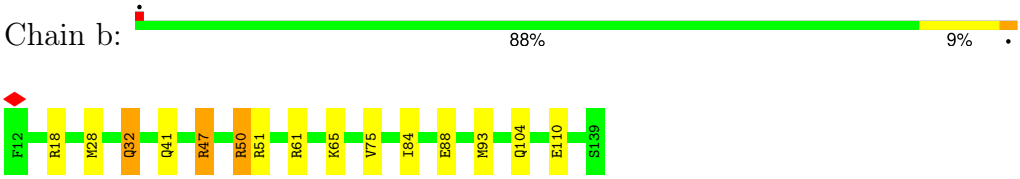
• Molecule 31: Small ribosomal subunit protein uS4



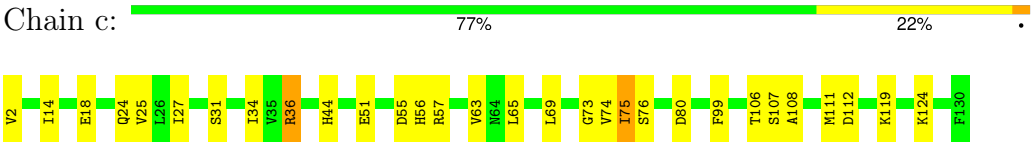
• Molecule 32: Small ribosomal subunit protein uS12



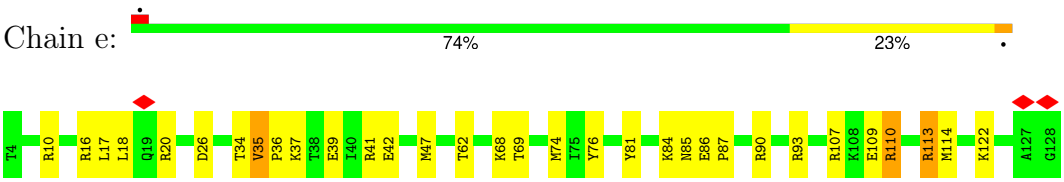
• Molecule 33: Small ribosomal subunit protein uS19



• Molecule 34: 40S ribosomal protein S15a

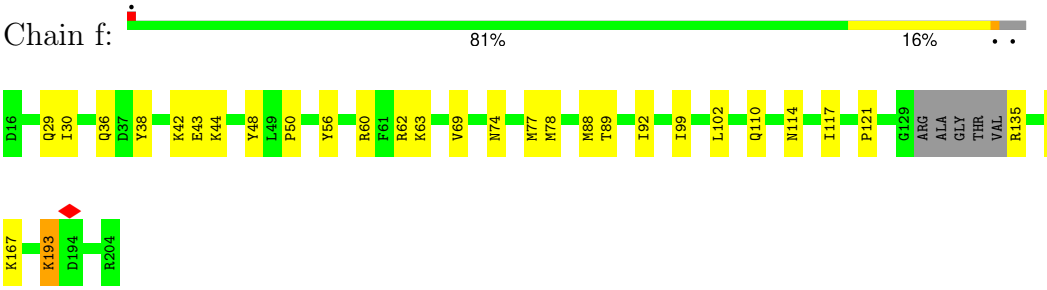


• Molecule 35: 40S ribosomal protein S24



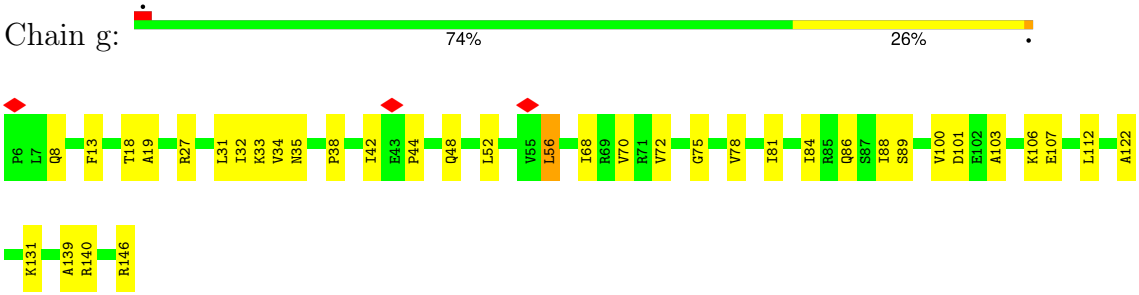
• Molecule 36: Small ribosomal subunit protein uS7

Chain f:



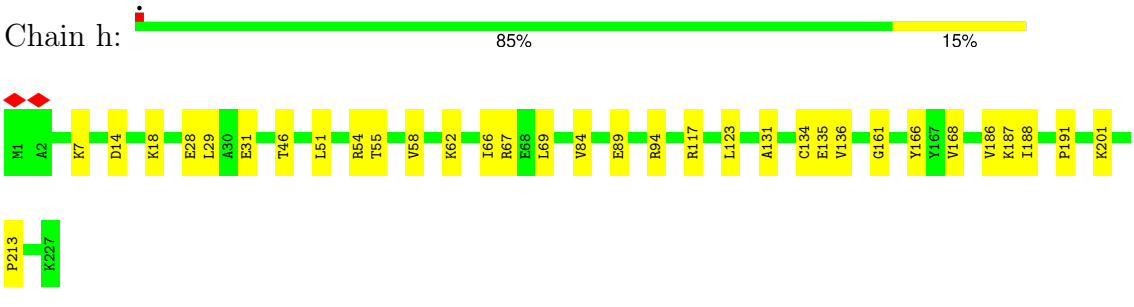
• Molecule 37: Small ribosomal subunit protein uS9

Chain g:



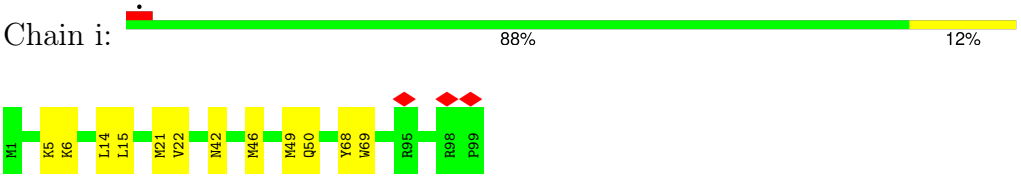
• Molecule 38: Small ribosomal subunit protein uS3

Chain h:



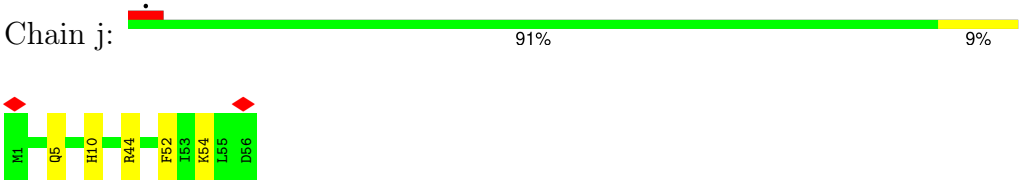
• Molecule 39: Small ribosomal subunit protein eS10

Chain i:



• Molecule 40: uS14

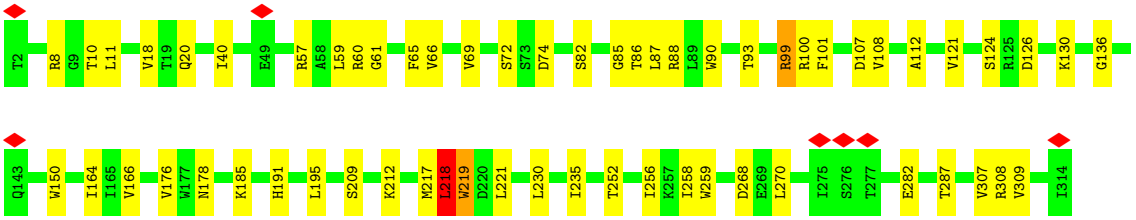
Chain j:



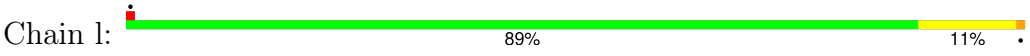
• Molecule 41: Receptor of activated protein C kinase 1

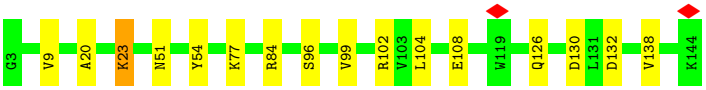
Chain k:



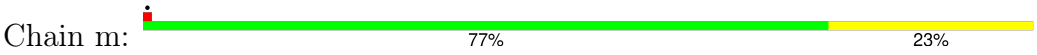


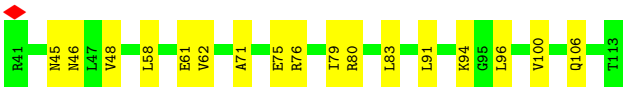
• Molecule 42: Small ribosomal subunit protein eS19



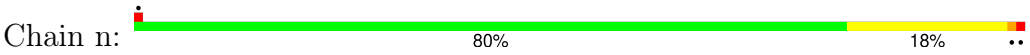


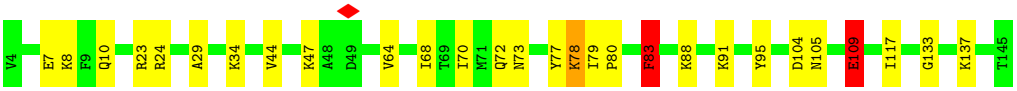
• Molecule 43: Small ribosomal subunit protein eS25





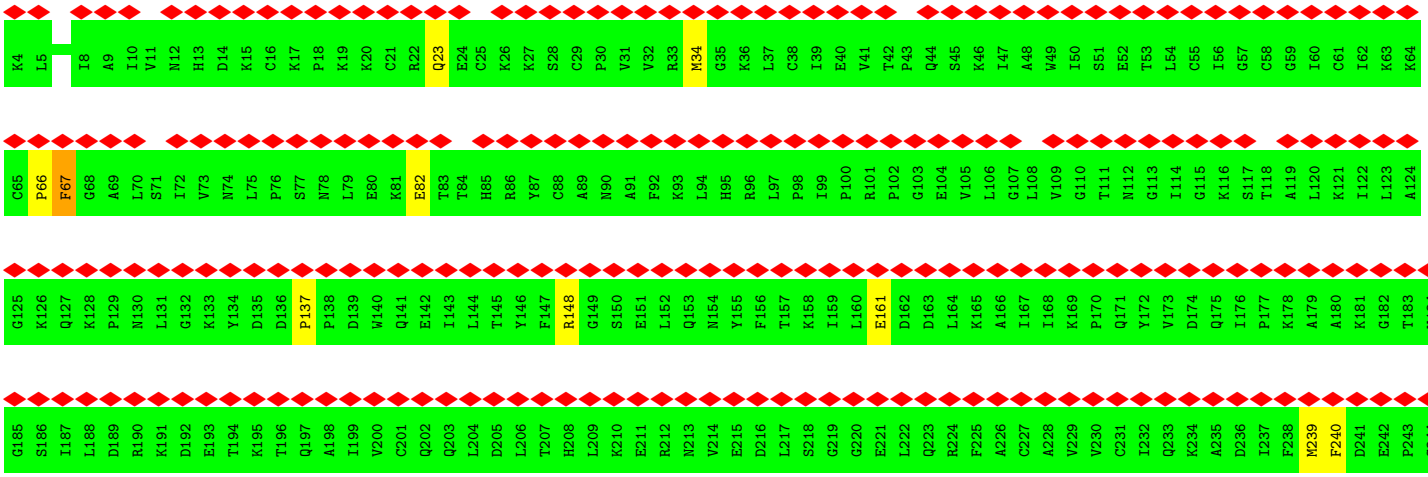
• Molecule 44: Small ribosomal subunit protein uS13

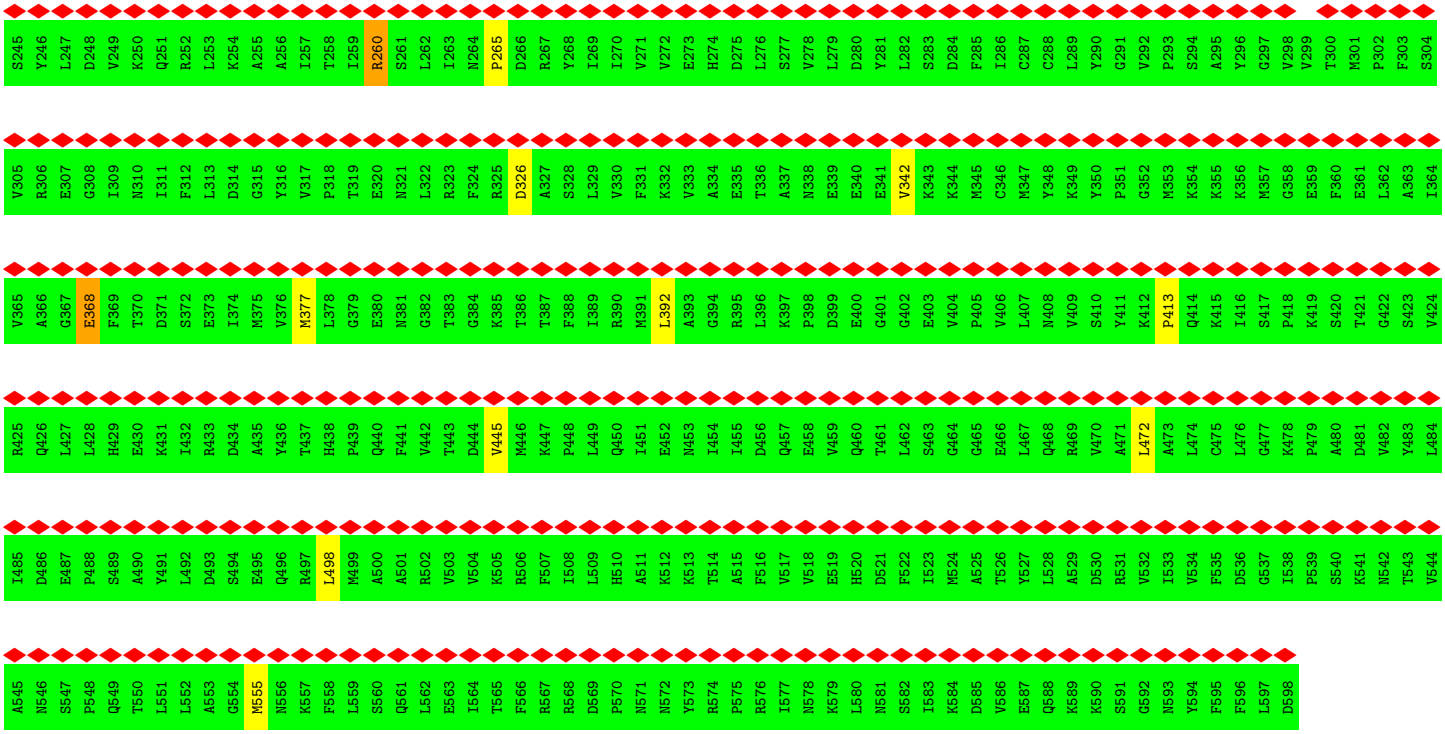




• Molecule 45: ATP-binding cassette sub-family E member 1



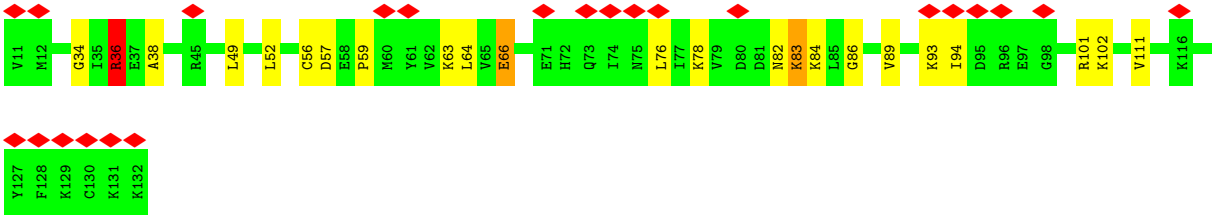




• Molecule 46: Small ribosomal subunit protein eS12

Chain q:

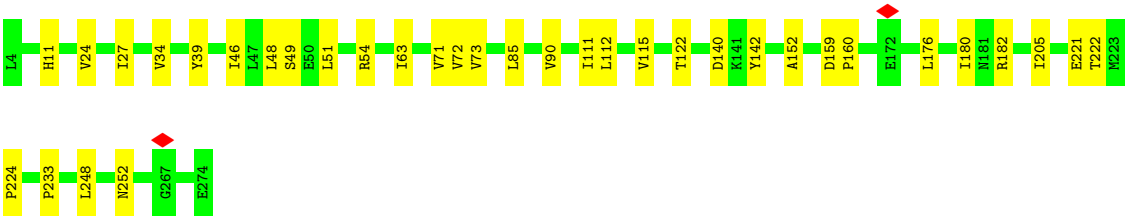




• Molecule 47: Eukaryotic translation initiation factor 2 subunit 1

Chain r:

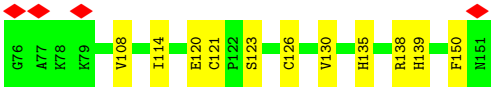




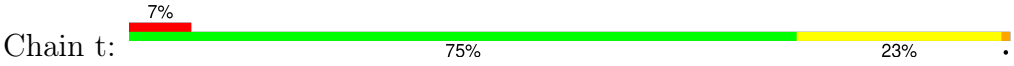
• Molecule 48: Ubiquitin-ribosomal protein eS31 fusion protein

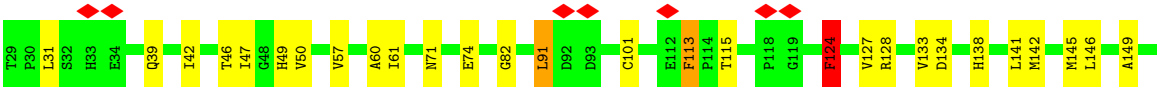
Chain s:



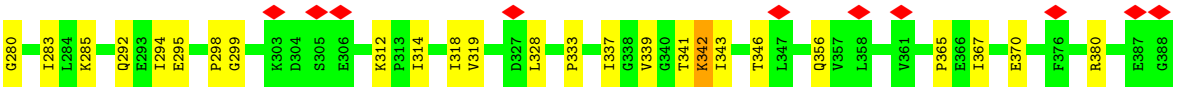


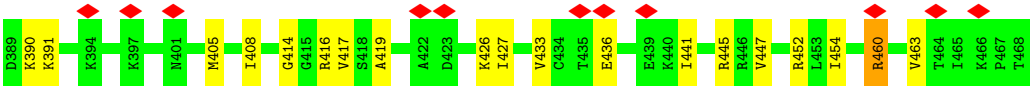
• Molecule 49: Eukaryotic translation initiation factor 2 subunit 3



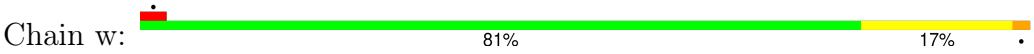


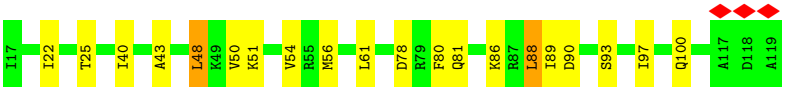






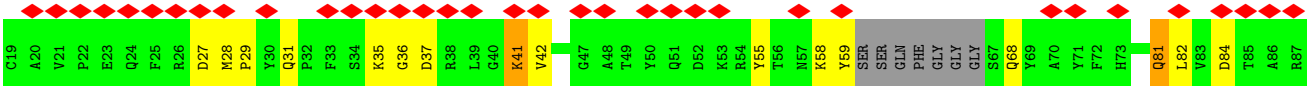
• Molecule 50: Small ribosomal subunit protein uS10

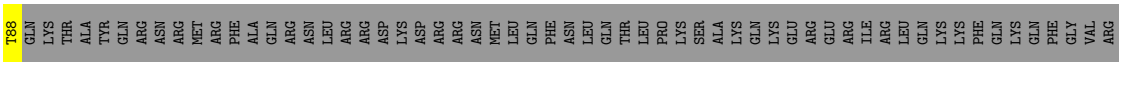


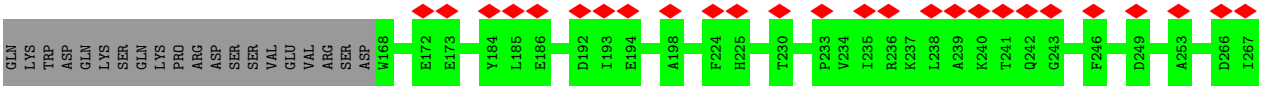


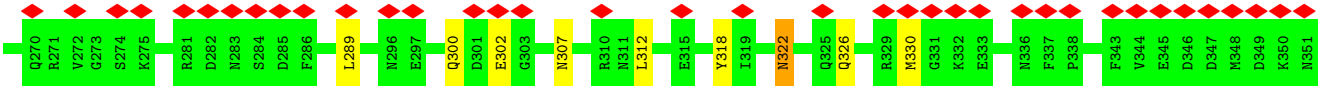
• Molecule 51: Eukaryotic translation initiation factor 3 subunit D

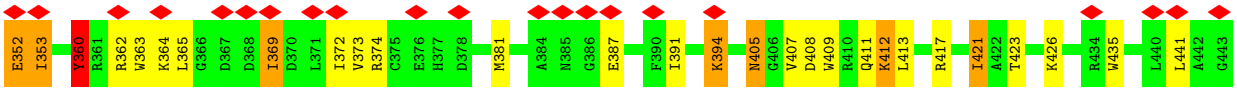


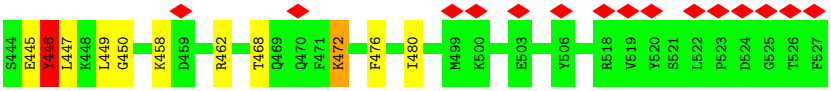








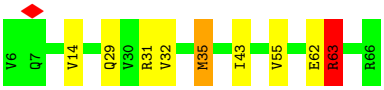




• Molecule 52: Small ribosomal subunit protein eS28

Chain y:





• Molecule 53: Initiator methionyl-tRNA

Chain z:





4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	112959	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	30	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	1500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	15.276	Depositor
Minimum map value	-7.409	Depositor
Average map value	0.006	Depositor
Map value standard deviation	0.446	Depositor
Recommended contour level	1.35	Depositor
Map size (Å)	464.8, 464.8, 464.8	wwPDB
Map dimensions	560, 560, 560	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.83, 0.83, 0.83	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: ZN

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	0	0.26	0/1187	0.71	8/1602 (0.5%)
2	1	0.47	5/5972 (0.1%)	0.90	42/8021 (0.5%)
3	3	0.65	2/843 (0.2%)	0.88	5/1134 (0.4%)
4	5	0.10	0/2090	0.28	0/2917
5	6	0.13	0/248	0.23	0/342
6	7	0.18	0/629	0.52	0/846
7	8	0.15	0/396	0.27	0/548
8	9	0.40	0/206	1.02	2/260 (0.8%)
9	A	0.41	4/4651 (0.1%)	0.99	55/6301 (0.9%)
10	B	0.46	1/1302 (0.1%)	1.08	12/1746 (0.7%)
11	C	0.42	2/3342 (0.1%)	0.86	19/4493 (0.4%)
12	D	0.61	0/40369	0.98	179/62910 (0.3%)
13	E	0.54	1/1187 (0.1%)	0.74	4/1585 (0.3%)
14	F	0.46	1/478 (0.2%)	1.11	8/628 (1.3%)
15	G	0.48	0/710	0.73	0/947
17	I	0.25	0/3640	0.52	2/4937 (0.0%)
18	J	0.86	4/833 (0.5%)	1.96	27/1116 (2.4%)
19	L	0.51	0/1461	1.24	25/1953 (1.3%)
20	M	0.69	2/645 (0.3%)	1.09	5/864 (0.6%)
21	N	0.51	0/625	0.80	5/835 (0.6%)
22	O	0.49	0/1738	0.60	2/2345 (0.1%)
23	P	0.47	1/1743 (0.1%)	0.89	13/2330 (0.6%)
24	Q	0.54	1/1733 (0.1%)	0.86	10/2353 (0.4%)
25	S	0.47	1/1886 (0.1%)	1.21	26/2510 (1.0%)
26	T	0.41	1/969 (0.1%)	0.88	4/1298 (0.3%)
27	U	0.43	0/1079	1.04	10/1447 (0.7%)
28	V	0.46	1/1232 (0.1%)	0.63	4/1656 (0.2%)
29	W	0.56	0/1649	0.95	14/2196 (0.6%)
30	Y	0.41	0/2075	0.76	6/2790 (0.2%)
31	Z	0.51	4/1503 (0.3%)	1.04	16/2008 (0.8%)
32	a	0.40	0/1106	0.74	3/1476 (0.2%)
33	b	0.45	0/1069	0.87	6/1427 (0.4%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
34	c	0.48	0/1051	0.74	0/1406
35	e	0.50	1/1033 (0.1%)	1.01	7/1371 (0.5%)
36	f	0.37	0/1481	0.57	2/1988 (0.1%)
37	g	0.50	1/1142 (0.1%)	0.71	1/1528 (0.1%)
38	h	0.33	0/1793	0.52	3/2412 (0.1%)
39	i	0.52	0/860	0.75	5/1159 (0.4%)
40	j	0.50	0/478	0.53	0/633
41	k	0.43	0/2494	0.87	15/3394 (0.4%)
42	l	0.39	0/1137	0.54	1/1522 (0.1%)
43	m	0.57	0/592	0.96	5/794 (0.6%)
44	n	0.54	1/1195 (0.1%)	1.23	15/1599 (0.9%)
45	o	0.33	0/4780	0.77	19/6452 (0.3%)
46	q	0.50	1/960 (0.1%)	1.19	9/1286 (0.7%)
47	r	0.39	0/2047	0.55	1/2775 (0.0%)
48	s	0.51	0/632	0.64	1/834 (0.1%)
49	t	0.38	1/3409 (0.0%)	0.92	22/4609 (0.5%)
50	w	0.32	0/827	0.92	6/1110 (0.5%)
51	x	0.55	5/2890 (0.2%)	1.16	38/3946 (1.0%)
52	y	0.63	1/479 (0.2%)	1.55	10/641 (1.6%)
53	z	0.53	0/1795	0.95	5/2798 (0.2%)
All	All	0.51	42/119671 (0.0%)	0.92	677/170078 (0.4%)

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
2	1	0	14
3	3	0	1
8	9	0	1
9	A	0	8
10	B	0	2
11	C	0	6
13	E	0	2
14	F	0	2
17	I	0	2
18	J	0	6
19	L	0	6
20	M	0	2
21	N	0	2
22	O	0	4

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Mol	Chain	#Chirality outliers	#Planarity outliers
23	P	0	6
24	Q	0	3
25	S	0	5
26	T	0	2
28	V	0	3
29	W	0	1
30	Y	0	4
31	Z	0	4
32	a	0	2
33	b	0	3
34	c	0	1
35	e	0	3
36	f	0	1
37	g	0	1
41	k	0	1
42	l	0	1
43	m	0	2
44	n	0	3
45	o	0	5
46	q	0	1
49	t	0	5
51	x	0	4
52	y	0	2
All	All	0	121

All (42) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	1	407	GLU	CG-CD	-8.80	1.30	1.52
2	1	804	MET	CB-CG	-8.54	1.26	1.52
18	J	85	ARG	CB-CG	-7.46	1.30	1.52
11	C	58	ARG	CB-CG	-7.10	1.31	1.52
25	S	17	GLU	CG-CD	-6.91	1.34	1.52
9	A	518	GLN	CG-CD	-6.90	1.34	1.52
18	J	90	GLU	CG-CD	-6.84	1.34	1.52
52	y	63	ARG	CB-CG	-6.72	1.32	1.52
20	M	74	THR	CB-CG2	-6.51	1.31	1.52
2	1	804	MET	SD-CE	-6.31	1.63	1.79
9	A	451	GLU	CG-CD	-6.06	1.36	1.52
37	g	56	LEU	CG-CD1	-6.01	1.32	1.52
23	P	170	GLU	CD-OE1	-5.93	1.14	1.25
51	x	441	LEU	CG-CD2	-5.76	1.33	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
26	T	119	LEU	CG-CD1	-5.74	1.33	1.52
31	Z	131	ARG	CB-CG	-5.72	1.35	1.52
11	C	170	THR	CB-CG2	-5.67	1.33	1.52
2	1	140	THR	CB-CG2	-5.65	1.33	1.52
31	Z	10	ARG	CB-CG	-5.62	1.35	1.52
14	F	49	PHE	CB-CG	-5.55	1.37	1.50
3	3	52	ASP	CG-OD1	-5.50	1.15	1.25
51	x	447	LEU	CG-CD2	-5.43	1.34	1.52
35	e	35	VAL	CB-CG1	-5.40	1.34	1.52
49	t	91	LEU	CG-CD1	-5.40	1.34	1.52
18	J	46	GLU	CD-OE1	-5.38	1.15	1.25
10	B	209	VAL	CB-CG1	-5.37	1.34	1.52
51	x	322	ASN	CG-ND2	-5.37	1.22	1.33
20	M	62	VAL	CB-CG1	-5.26	1.35	1.52
24	Q	198	MET	SD-CE	-5.25	1.66	1.79
9	A	234	LEU	CG-CD1	-5.22	1.35	1.52
3	3	78	GLU	CD-OE1	-5.18	1.15	1.25
2	1	514	PHE	CG-CD1	-5.12	1.28	1.38
31	Z	10	ARG	CD-NE	-5.11	1.39	1.46
44	n	83	PHE	CG-CD1	-5.10	1.28	1.38
13	E	52	GLU	CG-CD	-5.09	1.39	1.52
51	x	447	LEU	CG-CD1	-5.09	1.35	1.52
9	A	518	GLN	CD-OE1	-5.08	1.13	1.23
46	q	57	ASP	CB-CG	-5.08	1.39	1.52
31	Z	10	ARG	CG-CD	-5.06	1.37	1.52
18	J	42	ARG	CB-CG	-5.06	1.37	1.52
28	V	141	TYR	CG-CD1	-5.05	1.28	1.39
51	x	387	GLU	CG-CD	-5.02	1.39	1.52

All (677) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
52	y	63	ARG	CB-CG-CD	22.05	162.03	111.30
51	x	462	ARG	CA-CB-CG	20.88	155.86	114.10
41	k	99	ARG	CG-CD-NE	20.58	157.27	112.00
2	1	407	GLU	CA-CB-CG	18.32	150.73	114.10
12	D	1839	U	O4'-C1'-N1	18.25	121.28	108.50
44	n	109	GLU	CA-CB-CG	17.88	149.87	114.10
18	J	21	ILE	CG1-CB-CG2	-17.58	57.95	110.70
46	q	84	LYS	CG-CD-CE	16.36	148.93	111.30
31	Z	10	ARG	CG-CD-NE	15.96	147.12	112.00
44	n	78	LYS	CB-CG-CD	14.75	145.23	111.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
25	S	44	GLU	CA-CB-CG	14.71	143.52	114.10
18	J	46	GLU	CA-CB-CG	14.61	143.32	114.10
25	S	222	GLU	CB-CA-C	-14.40	86.89	110.79
9	A	469	ARG	CB-CG-CD	14.24	144.06	111.30
52	y	63	ARG	N-CA-CB	14.22	132.75	110.85
25	S	222	GLU	CA-CB-CG	13.76	141.61	114.10
19	L	81	ARG	CG-CD-NE	13.57	141.86	112.00
10	B	271	LEU	CB-CG-CD2	-13.41	70.48	110.70
10	B	271	LEU	CB-CG-CD1	13.27	150.50	110.70
18	J	42	ARG	CG-CD-NE	13.21	141.06	112.00
19	L	171	GLU	CA-CB-CG	13.14	140.38	114.10
49	t	205	GLU	CA-C-N	-13.13	102.12	122.60
49	t	205	GLU	C-N-CA	-13.13	102.12	122.60
27	U	118	GLN	CB-CG-CD	12.80	134.37	112.60
12	D	496	C	O4'-C1'-N1	12.60	117.32	108.50
2	1	407	GLU	N-CA-CB	12.51	130.79	110.40
19	L	78	ARG	CG-CD-NE	12.50	139.50	112.00
2	1	84	GLU	CA-CB-CG	12.47	139.04	114.10
51	x	302	GLU	CA-CB-CG	12.43	138.95	114.10
51	x	462	ARG	CD-NE-CZ	12.35	141.69	124.40
29	W	163	GLU	CA-CB-CG	12.26	138.62	114.10
9	A	154	TRP	CB-CA-C	-12.24	91.98	110.95
44	n	78	LYS	CB-CA-C	-12.08	97.87	109.83
18	J	85	ARG	CG-CD-NE	12.07	138.55	112.00
18	J	21	ILE	CA-CB-CG1	12.02	130.83	110.40
25	S	226	GLU	CA-CB-CG	11.93	137.96	114.10
10	B	271	LEU	CD1-CG-CD2	-11.90	84.62	110.80
25	S	17	GLU	CB-CG-CD	11.88	132.79	112.60
1	0	277	MET	N-CA-CB	11.84	129.60	110.42
51	x	441	LEU	CB-CG-CD2	11.79	146.06	110.70
19	L	81	ARG	CB-CA-C	-11.77	92.30	110.90
50	w	88	LEU	CB-CG-CD2	-11.71	75.58	110.70
46	q	84	LYS	CB-CG-CD	11.65	138.10	111.30
49	t	206	GLN	CA-CB-CG	11.55	137.20	114.10
18	J	51	ARG	CB-CG-CD	11.48	137.70	111.30
14	F	49	PHE	CA-CB-CG	11.47	125.27	113.80
18	J	55	GLU	CA-CB-CG	11.45	137.00	114.10
14	F	49	PHE	N-CA-CB	-11.28	91.71	110.65
18	J	90	GLU	CB-CG-CD	11.21	131.66	112.60
9	A	451	GLU	CA-CB-CG	11.13	136.36	114.10
11	C	224	ARG	CG-CD-NE	11.13	136.48	112.00
9	A	154	TRP	N-CA-C	-11.04	98.77	111.03

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
50	w	88	LEU	CD1-CG-CD2	-11.02	86.56	110.80
18	J	93	LYS	CG-CD-CE	11.01	136.63	111.30
23	P	170	GLU	CA-CB-CG	10.88	135.87	114.10
44	n	91	LYS	CB-CG-CD	10.82	136.19	111.30
46	q	83	LYS	CA-C-N	-10.82	104.69	122.54
46	q	83	LYS	C-N-CA	-10.82	104.69	122.54
12	D	501	C	N1-C2-O2	10.81	125.39	118.90
12	D	501	C	C2-N1-C1'	10.77	130.65	118.80
44	n	10	GLN	CB-CG-CD	10.75	130.88	112.60
45	o	368	GLU	CA-CB-CG	10.72	135.54	114.10
25	S	43	GLU	CA-CB-CG	10.67	135.45	114.10
29	W	164	GLU	CA-CB-CG	10.61	135.32	114.10
27	U	118	GLN	CA-CB-CG	10.54	135.18	114.10
10	B	271	LEU	CA-CB-CG	10.53	153.14	116.30
9	A	234	LEU	CD1-CG-CD2	-10.51	87.68	110.80
50	w	88	LEU	CB-CG-CD1	10.46	142.07	110.70
9	A	159	GLN	CA-CB-CG	10.42	134.93	114.10
31	Z	27	GLN	CB-CG-CD	10.37	130.23	112.60
33	b	104	GLN	CA-CB-CG	10.37	134.84	114.10
25	S	17	GLU	N-CA-CB	10.36	125.28	109.85
51	x	302	GLU	CB-CA-C	-10.36	92.00	109.50
52	y	63	ARG	CB-CA-C	-10.35	91.09	109.71
49	t	206	GLN	CB-CG-CD	10.33	130.17	112.60
2	1	804	MET	CG-SD-CE	-10.31	78.21	100.90
12	D	356	C	N1-C2-O2	10.26	125.05	118.90
9	A	180	GLN	CA-CB-CG	10.23	134.56	114.10
2	1	407	GLU	CB-CA-C	-10.20	88.66	109.99
51	x	312	LEU	CD1-CG-CD2	-10.16	88.45	110.80
12	D	1453	C	N1-C2-O2	10.12	124.97	118.90
35	e	47	MET	CB-CG-SD	10.10	142.99	112.70
51	x	352	GLU	CA-CB-CG	10.08	134.27	114.10
31	Z	27	GLN	N-CA-CB	10.08	126.17	110.44
31	Z	27	GLN	CA-CB-CG	10.07	134.24	114.10
35	e	35	VAL	CG1-CB-CG2	-10.04	88.71	110.80
51	x	364	LYS	CB-CG-CD	-10.01	88.28	111.30
46	q	57	ASP	CB-CA-C	-9.98	94.41	110.08
18	J	51	ARG	CB-CA-C	9.98	129.80	109.55
27	U	117	LEU	CA-C-N	-9.90	107.05	122.59
27	U	117	LEU	C-N-CA	-9.90	107.05	122.59
11	C	58	ARG	CG-CD-NE	9.87	133.70	112.00
12	D	1453	C	C2-N1-C1'	9.84	129.63	118.80
12	D	1358	U	C2-N1-C1'	9.83	129.49	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
18	J	42	ARG	CB-CG-CD	9.83	133.90	111.30
18	J	51	ARG	CA-CB-CG	9.82	133.74	114.10
18	J	55	GLU	CB-CG-CD	9.81	129.28	112.60
25	S	42	GLY	CA-C-N	-9.77	107.35	122.60
25	S	42	GLY	C-N-CA	-9.77	107.35	122.60
11	C	58	ARG	CB-CG-CD	9.68	133.56	111.30
12	D	356	C	C2-N1-C1'	9.67	129.43	118.80
32	a	96	GLU	CA-CB-CG	9.66	133.43	114.10
9	A	469	ARG	CA-CB-CG	9.63	133.37	114.10
26	T	119	LEU	CD1-CG-CD2	-9.61	89.65	110.80
18	J	85	ARG	CB-CG-CD	9.58	133.34	111.30
41	k	219	TRP	CB-CG-CD2	-9.56	113.41	126.80
2	1	281	LYS	CB-CA-C	-9.55	95.89	110.88
9	A	80	GLN	CA-CB-CG	9.54	133.18	114.10
12	D	1303	C	N1-C2-O2	9.54	124.62	118.90
44	n	109	GLU	N-CA-CB	-9.54	95.99	110.20
25	S	17	GLU	N-CA-C	9.49	124.19	109.96
41	k	60	ARG	CB-CG-CD	9.45	133.04	111.30
14	F	49	PHE	N-CA-C	-9.44	94.92	109.65
29	W	206	LYS	CB-CG-CD	-9.31	89.90	111.30
2	1	406	ASN	CA-C-N	-9.24	104.98	121.14
2	1	406	ASN	C-N-CA	-9.24	104.98	121.14
2	1	804	MET	CB-CA-C	9.24	124.90	109.38
10	B	209	VAL	CG1-CB-CG2	-9.20	90.55	110.80
23	P	120	MET	CB-CG-SD	9.20	140.31	112.70
11	C	55	THR	OG1-CB-CG2	-9.14	91.02	109.30
49	t	239	ILE	CG1-CB-CG2	-9.11	83.37	110.70
9	A	472	VAL	CG1-CB-CG2	-9.08	90.81	110.80
33	b	104	GLN	CB-CA-C	9.07	125.34	110.74
18	J	90	GLU	N-CA-C	9.01	121.10	111.28
51	x	364	LYS	CA-CB-CG	8.95	131.99	114.10
44	n	78	LYS	CD-CE-NZ	-8.94	83.29	111.90
12	D	1520	G	N3-C4-C5	-8.92	124.14	128.60
10	B	188	ARG	CA-CB-CG	8.91	131.93	114.10
31	Z	17	ARG	CG-CD-NE	8.91	131.61	112.00
2	1	84	GLU	CB-CG-CD	-8.87	97.52	112.60
51	x	41	LYS	CA-CB-CG	8.86	131.82	114.10
18	J	55	GLU	CB-CA-C	8.84	126.11	110.37
45	o	23	GLN	N-CA-C	8.83	123.31	111.30
20	M	62	VAL	CG1-CB-CG2	-8.83	91.38	110.80
19	L	167	GLU	CA-CB-CG	8.82	131.74	114.10
44	n	73	ASN	CB-CA-C	-8.75	101.40	110.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
19	L	50	GLU	CA-CB-CG	8.71	131.53	114.10
2	1	144	LYS	CA-CB-CG	8.70	131.50	114.10
19	L	77	VAL	CA-C-N	-8.70	107.40	122.36
19	L	77	VAL	C-N-CA	-8.70	107.40	122.36
31	Z	10	ARG	CD-NE-CZ	-8.70	112.22	124.40
9	A	476	ARG	CB-CG-CD	-8.67	91.37	111.30
45	o	23	GLN	CB-CG-CD	8.66	127.32	112.60
8	9	13	LEU	CD1-CG-CD2	-8.63	91.81	110.80
27	U	118	GLN	N-CA-CB	8.60	126.52	111.55
2	1	735	GLU	CA-CB-CG	8.60	131.29	114.10
49	t	152	MET	CB-CG-SD	8.55	138.35	112.70
19	L	81	ARG	CD-NE-CZ	-8.55	112.44	124.40
2	1	803	SER	CA-C-N	-8.48	108.92	122.23
2	1	803	SER	C-N-CA	-8.48	108.92	122.23
51	x	472	LYS	CG-CD-CE	8.46	130.76	111.30
12	D	4	C	C2-N1-C1'	8.41	128.05	118.80
10	B	182	ARG	CD-NE-CZ	8.40	136.16	124.40
13	E	84	ARG	CB-CG-CD	8.39	130.60	111.30
12	D	501	C	N3-C2-O2	-8.36	116.05	121.90
20	M	43	ILE	CG1-CB-CG2	-8.35	85.66	110.70
12	D	1838	U	N3-C2-O2	-8.34	116.36	122.20
49	t	390	LYS	CB-CG-CD	-8.33	92.14	111.30
12	D	1520	G	C2-N3-C4	8.31	116.06	111.90
12	D	853	C	C2-N1-C1'	8.31	127.94	118.80
3	3	78	GLU	CB-CG-CD	8.31	126.72	112.60
12	D	1863	A	O4'-C1'-N9	8.28	114.82	108.20
46	q	66	GLU	CA-CB-CG	8.28	130.66	114.10
2	1	771	GLU	CB-CA-C	8.25	126.83	110.42
18	J	85	ARG	CD-NE-CZ	-8.23	112.88	124.40
24	Q	56	GLU	CA-CB-CG	8.20	130.50	114.10
51	x	312	LEU	CB-CG-CD2	-8.18	86.17	110.70
12	D	1303	C	N3-C2-O2	-8.17	116.18	121.90
26	T	119	LEU	CA-CB-CG	8.15	144.84	116.30
2	1	771	GLU	CB-CG-CD	8.14	126.44	112.60
1	0	277	MET	CA-CB-CG	8.13	130.36	114.10
44	n	83	PHE	CB-CG-CD2	-8.13	106.88	120.70
21	N	7	GLU	CA-CB-CG	8.12	130.34	114.10
12	D	517	C	N1-C2-O2	8.10	123.76	118.90
45	o	555	MET	CB-CG-SD	8.04	136.82	112.70
10	B	208	GLN	CA-CB-CG	8.02	130.13	114.10
12	D	517	C	C2-N1-C1'	7.98	127.58	118.80
25	S	222	GLU	N-CA-CB	7.98	121.85	110.12

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
51	x	447	LEU	CD1-CG-CD2	-7.96	93.30	110.80
31	Z	26	ASP	CA-C-N	-7.93	107.70	121.66
31	Z	26	ASP	C-N-CA	-7.93	107.70	121.66
12	D	356	C	N3-C2-O2	-7.93	116.35	121.90
9	A	468	GLU	CA-C-N	-7.91	107.35	122.06
9	A	468	GLU	C-N-CA	-7.91	107.35	122.06
12	D	853	C	N1-C2-O2	7.90	123.64	118.90
12	D	1453	C	N3-C2-O2	-7.88	116.39	121.90
2	1	144	LYS	CB-CG-CD	-7.88	93.19	111.30
26	T	66	ARG	CA-C-N	7.83	136.91	123.91
26	T	66	ARG	C-N-CA	7.83	136.91	123.91
9	A	201	LEU	CB-CG-CD1	-7.82	87.23	110.70
12	D	1303	C	C2-N1-C1'	7.82	127.40	118.80
52	y	35	MET	CA-CB-CG	7.82	129.73	114.10
9	A	234	LEU	CB-CG-CD2	-7.76	87.41	110.70
29	W	206	LYS	CG-CD-CE	7.76	129.15	111.30
9	A	154	TRP	CB-CG-CD1	-7.75	115.28	126.90
9	A	159	GLN	CB-CG-CD	-7.75	99.43	112.60
19	L	171	GLU	N-CA-CB	-7.74	97.33	110.33
44	n	83	PHE	CB-CA-C	7.72	123.60	110.56
51	x	364	LYS	CD-CE-NZ	7.70	136.53	111.90
2	1	84	GLU	N-CA-CB	7.69	122.44	110.44
25	S	43	GLU	CA-C-N	-7.66	107.00	122.55
25	S	43	GLU	C-N-CA	-7.66	107.00	122.55
25	S	225	GLN	CA-C-N	-7.66	109.91	122.54
25	S	225	GLN	C-N-CA	-7.66	109.91	122.54
2	1	58	GLU	CA-CB-CG	7.65	129.41	114.10
11	C	340	LEU	CD1-CG-CD2	-7.65	93.97	110.80
12	D	826	A	O4'-C1'-N9	7.64	114.31	108.20
45	o	472	LEU	CA-CB-CG	7.64	143.03	116.30
49	t	91	LEU	CD1-CG-CD2	-7.62	94.03	110.80
32	a	96	GLU	CB-CA-C	7.61	122.89	109.72
41	k	218	LEU	CA-C-N	7.60	135.12	121.89
41	k	218	LEU	C-N-CA	7.60	135.12	121.89
9	A	201	LEU	CA-CB-CG	7.59	142.88	116.30
27	U	8	THR	OG1-CB-CG2	-7.58	94.13	109.30
41	k	219	TRP	CD1-CG-CD2	-7.58	94.18	106.30
18	J	12	LYS	CG-CD-CE	7.57	128.71	111.30
53	z	68	C	C2-N1-C1'	7.55	127.10	118.80
49	t	115	THR	OG1-CB-CG2	-7.54	94.21	109.30
9	A	7	ARG	CG-CD-NE	7.53	128.56	112.00
44	n	83	PHE	CD1-CG-CD2	-7.53	107.31	118.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
49	t	460	ARG	CB-CG-CD	7.52	128.59	111.30
12	D	501	C	C6-N1-C1'	-7.50	111.79	120.80
9	A	234	LEU	CB-CG-CD1	7.50	133.20	110.70
9	A	254	GLU	CA-CB-CG	7.49	129.07	114.10
12	D	4	C	O4'-C1'-N1	7.48	113.73	108.50
9	A	231	GLU	CA-CB-CG	7.46	129.03	114.10
11	C	208	ARG	CD-NE-CZ	7.46	134.85	124.40
52	y	35	MET	CB-CG-SD	7.46	135.07	112.70
12	D	1139	C	N1-C2-O2	7.46	123.37	118.90
12	D	1358	U	N1-C2-O2	7.44	128.01	122.80
13	E	52	GLU	CA-CB-CG	7.44	128.97	114.10
51	x	412	LYS	CG-CD-CE	7.43	128.40	111.30
45	o	392	LEU	CA-CB-CG	7.42	142.29	116.30
12	D	1624	U	C2-N1-C1'	7.42	126.61	117.70
45	o	377	MET	CB-CG-SD	7.41	134.92	112.70
44	n	10	GLN	N-CA-C	7.40	120.33	108.41
49	t	342	LYS	CG-CD-CE	7.39	128.29	111.30
9	A	318	MET	CB-CG-SD	7.38	134.84	112.70
12	D	93	U	C2-N1-C1'	7.37	126.54	117.70
2	1	281	LYS	CA-CB-CG	7.36	128.81	114.10
2	1	83	PHE	CA-C-N	-7.35	108.73	121.66
2	1	83	PHE	C-N-CA	-7.35	108.73	121.66
51	x	330	MET	CB-CG-SD	7.35	134.74	112.70
12	D	654	A	P-O3'-C3'	7.34	128.51	119.70
12	D	1520	G	C8-N9-C4	-7.33	103.47	106.40
12	D	1117	C	C2-N3-C4	7.32	123.56	119.90
12	D	183	G	C2-N3-C4	7.30	115.55	111.90
12	D	853	C	N3-C2-O2	-7.28	116.80	121.90
19	L	81	ARG	N-CA-C	-7.28	103.28	111.14
12	D	1139	C	C2-N1-C1'	7.25	126.77	118.80
12	D	1838	U	N1-C2-O2	7.25	127.87	122.80
49	t	390	LYS	CG-CD-CE	7.24	127.95	111.30
12	D	37	C	O4'-C1'-N1	7.23	113.98	108.20
30	Y	162	ILE	CA-C-N	-7.22	110.37	122.64
30	Y	162	ILE	C-N-CA	-7.22	110.37	122.64
52	y	29	GLN	CA-CB-CG	7.21	128.51	114.10
12	D	517	C	N3-C2-O2	-7.20	116.86	121.90
12	D	293	C	N1-C2-O2	7.19	123.21	118.90
25	S	44	GLU	N-CA-CB	7.16	120.95	110.57
2	1	734	ARG	CA-C-N	-7.16	111.44	122.60
2	1	734	ARG	C-N-CA	-7.16	111.44	122.60
1	0	277	MET	CB-CG-SD	-7.15	91.25	112.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
12	D	1364	U	N3-C2-O2	-7.10	117.23	122.20
9	A	469	ARG	N-CA-CB	7.10	121.61	110.46
12	D	1139	C	N3-C2-O2	-7.10	116.93	121.90
51	x	387	GLU	CB-CG-CD	7.09	124.66	112.60
12	D	1351	G	O5'-C5'-C4'	7.08	115.06	109.40
51	x	447	LEU	CA-CB-CG	7.08	141.07	116.30
18	J	38	LYS	CG-CD-CE	7.07	127.56	111.30
42	l	23	LYS	CB-CG-CD	7.06	127.53	111.30
12	D	356	C	C6-N1-C1'	-7.04	112.36	120.80
25	S	17	GLU	CA-CB-CG	7.02	128.14	114.10
12	D	1315	U	N3-C2-O2	-7.01	117.29	122.20
25	S	91	GLU	CA-CB-CG	7.00	128.09	114.10
12	D	1518	C	C2-N1-C1'	6.99	126.49	118.80
11	C	58	ARG	CD-NE-CZ	-6.99	114.62	124.40
2	1	144	LYS	CG-CD-CE	6.97	127.33	111.30
47	r	122	THR	OG1-CB-CG2	-6.96	95.38	109.30
51	x	394	LYS	CB-CG-CD	-6.96	95.30	111.30
12	D	501	C	C6-N1-C2	-6.95	117.52	120.30
51	x	369	ILE	N-CA-C	-6.93	104.54	111.88
41	k	60	ARG	CA-CB-CG	-6.92	100.27	114.10
12	D	1535	U	C2-N1-C1'	6.91	125.99	117.70
9	A	66	LEU	CD1-CG-CD2	-6.90	95.63	110.80
9	A	159	GLN	CB-CA-C	6.88	121.62	109.65
12	D	93	U	N3-C2-O2	-6.84	117.41	122.20
9	A	234	LEU	CA-CB-CG	6.84	140.24	116.30
52	y	63	ARG	N-CA-C	6.84	120.74	110.14
51	x	458	LYS	CA-CB-CG	6.83	127.77	114.10
12	D	374	G	O5'-C5'-C4'	6.83	114.87	109.40
18	J	21	ILE	CA-CB-CG2	-6.81	98.92	110.50
24	Q	56	GLU	N-CA-CB	-6.81	100.12	110.33
12	D	1453	C	C6-N1-C1'	-6.81	112.63	120.80
24	Q	9	GLN	CA-CB-CG	6.80	127.70	114.10
12	D	374	G	C4-N9-C1'	6.80	135.34	126.50
12	D	1551	U	C2-N1-C1'	6.78	125.83	117.70
23	P	48	LEU	CD1-CG-CD2	-6.78	95.89	110.80
12	D	1624	U	N3-C2-O2	-6.75	117.48	122.20
17	I	686	PHE	N-CA-CB	-6.75	99.09	110.49
2	1	352	GLU	N-CA-CB	6.74	120.73	110.28
2	1	804	MET	N-CA-CB	-6.74	101.58	110.88
23	P	65	ARG	CG-CD-NE	6.74	126.83	112.00
49	t	205	GLU	N-CA-CB	6.73	120.58	110.22
41	k	282	GLU	CA-CB-CG	6.71	127.52	114.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
12	D	1261	C	N1-C2-O2	6.69	122.92	118.90
12	D	1315	U	N1-C2-O2	6.69	127.49	122.80
1	0	277	MET	CG-SD-CE	-6.68	86.20	100.90
39	i	6	LYS	CD-CE-NZ	6.67	133.24	111.90
12	D	1057	C	C2-N1-C1'	6.65	126.12	118.80
12	D	1358	U	C5-C6-N1	6.65	126.02	122.70
12	D	630	U	C2-N1-C1'	6.65	125.68	117.70
39	i	14	LEU	CD1-CG-CD2	-6.63	96.21	110.80
19	L	171	GLU	N-CA-C	-6.63	103.86	112.68
29	W	168	GLN	CA-CB-CG	6.60	127.31	114.10
10	B	174	TYR	N-CA-C	-6.60	92.52	111.00
12	D	1352	G	O5'-C5'-C4'	6.59	114.67	109.40
12	D	1350	U	N3-C2-O2	-6.59	117.59	122.20
14	F	1	LYS	CA-CB-CG	6.59	127.27	114.10
10	B	319	GLN	CA-CB-CG	6.57	127.24	114.10
12	D	1520	G	C4-N9-C1'	6.57	135.03	126.50
12	D	1274	G	N1-C6-O6	-6.55	115.97	119.90
12	D	1389	C	C2-N1-C1'	6.54	126.00	118.80
2	1	814	ASP	N-CA-CB	-6.54	100.91	110.84
11	C	284	LYS	CB-CG-CD	-6.53	96.28	111.30
49	t	206	GLN	N-CA-CB	6.53	120.85	110.73
43	m	61	GLU	CA-CB-CG	6.53	127.15	114.10
8	9	13	LEU	CB-CG-CD2	-6.52	91.15	110.70
12	D	1840	U	N3-C2-O2	-6.51	117.64	122.20
12	D	1518	C	N1-C2-O2	6.51	122.80	118.90
29	W	168	GLN	N-CA-CB	6.50	119.68	110.12
12	D	1358	U	C6-N1-C1'	-6.50	112.10	121.20
9	A	68	LYS	CA-CB-CG	6.50	127.10	114.10
12	D	815	U	C2-N1-C1'	6.49	125.49	117.70
22	O	123	ARG	CD-NE-CZ	6.48	133.47	124.40
31	Z	12	THR	CA-C-N	6.48	133.91	121.54
31	Z	12	THR	C-N-CA	6.48	133.91	121.54
2	1	144	LYS	CB-CA-C	-6.45	100.08	110.79
46	q	36	ARG	CB-CG-CD	-6.45	96.47	111.30
50	w	48	LEU	CD1-CG-CD2	-6.43	96.65	110.80
1	0	276	LYS	CA-C-N	-6.41	109.12	121.94
1	0	276	LYS	C-N-CA	-6.41	109.12	121.94
12	D	1453	C	C6-N1-C2	-6.40	117.74	120.30
48	s	120	GLU	CA-CB-CG	6.40	126.89	114.10
12	D	655	A	P-O3'-C3'	6.39	127.37	119.70
11	C	246	LEU	CA-CB-CG	6.39	138.65	116.30
12	D	1518	C	N3-C2-O2	-6.39	117.43	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
12	D	93	U	N1-C2-O2	6.36	127.25	122.80
50	w	48	LEU	CB-CG-CD2	-6.35	91.64	110.70
2	1	144	LYS	N-CA-CB	6.34	119.44	110.12
44	n	91	LYS	CB-CA-C	6.34	121.39	110.23
9	A	80	GLN	CB-CA-C	-6.33	99.19	111.03
33	b	65	LYS	CA-CB-CG	6.32	126.73	114.10
30	Y	163	ASP	N-CA-CB	6.31	120.92	110.63
12	D	1117	C	N1-C2-O2	6.31	122.69	118.90
12	D	1271	C	N1-C2-O2	6.31	122.69	118.90
51	x	364	LYS	N-CA-C	-6.30	96.92	107.32
12	D	345	U	N1-C2-O2	6.30	127.21	122.80
25	S	17	GLU	CB-CA-C	-6.28	99.85	109.89
51	x	312	LEU	CB-CG-CD1	6.27	129.51	110.70
12	D	1022	U	C2-N1-C1'	6.27	125.22	117.70
9	A	201	LEU	CB-CG-CD2	6.26	129.49	110.70
45	o	67	PHE	CD1-CG-CD2	-6.26	109.21	118.60
12	D	630	U	N3-C2-O2	-6.25	117.82	122.20
12	D	501	C	C5-C6-N1	6.24	124.12	121.00
12	D	291	G	P-O3'-C3'	6.23	127.17	119.70
45	o	66	PRO	CA-C-N	-6.23	111.61	123.32
45	o	66	PRO	C-N-CA	-6.23	111.61	123.32
25	S	218	LYS	CD-CE-NZ	6.23	131.82	111.90
28	V	76	LYS	CG-CD-CE	6.22	125.61	111.30
12	D	1551	U	N1-C2-O2	6.21	127.15	122.80
19	L	166	VAL	CA-C-N	-6.21	110.51	122.06
19	L	166	VAL	C-N-CA	-6.21	110.51	122.06
12	D	1629	C	O5'-C5'-C4'	6.21	114.37	109.40
2	1	668	ARG	CG-CD-NE	6.20	125.64	112.00
9	A	201	LEU	N-CA-C	-6.20	105.54	113.23
44	n	109	GLU	CB-CA-C	6.19	122.03	110.70
9	A	154	TRP	N-CA-CB	6.19	118.95	109.98
12	D	630	U	N1-C2-O2	6.19	127.13	122.80
12	D	4	C	C6-N1-C1'	-6.18	113.38	120.80
3	3	78	GLU	CB-CA-C	6.18	122.71	110.42
24	Q	56	GLU	CB-CA-C	6.17	122.08	109.67
32	a	96	GLU	N-CA-CB	-6.17	100.88	110.57
2	1	281	LYS	N-CA-CB	6.17	118.96	110.01
45	o	413	PRO	CA-N-CD	-6.16	103.38	112.00
12	D	168	C	N1-C2-O2	6.15	122.59	118.90
12	D	293	C	C2-N1-C1'	6.14	125.56	118.80
12	D	1016	U	N3-C2-O2	-6.14	117.90	122.20
12	D	1315	U	C2-N1-C1'	6.14	125.07	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
18	J	85	ARG	CA-CB-CG	-6.14	101.82	114.10
9	A	518	GLN	N-CA-CB	6.13	119.78	110.28
12	D	183	G	N3-C4-C5	-6.13	125.53	128.60
1	0	277	MET	CB-CA-C	-6.13	98.47	110.11
19	L	94	PHE	CD1-CG-CD2	-6.13	109.41	118.60
12	D	1358	U	N3-C2-O2	-6.12	117.92	122.20
12	D	1016	U	N1-C2-O2	6.12	127.08	122.80
12	D	1060	A	O4'-C1'-N9	6.11	113.08	108.20
23	P	210	VAL	CA-C-N	-6.11	112.56	122.82
23	P	210	VAL	C-N-CA	-6.11	112.56	122.82
51	x	352	GLU	N-CA-CB	-6.10	101.56	110.40
11	C	324	GLN	CB-CG-CD	6.10	122.97	112.60
27	U	58	MET	CB-CG-SD	6.09	130.98	112.70
9	A	200	ASN	CA-C-N	-6.09	110.94	121.66
9	A	200	ASN	C-N-CA	-6.09	110.94	121.66
12	D	427	U	C2-N1-C1'	6.09	125.00	117.70
3	3	52	ASP	N-CA-CB	6.08	121.13	110.18
41	k	99	ARG	CD-NE-CZ	6.08	132.92	124.40
53	z	65	C	C2-N1-C1'	6.07	125.48	118.80
2	1	58	GLU	CB-CA-C	-6.07	100.77	110.84
12	D	1551	U	N3-C2-O2	-6.07	117.95	122.20
19	L	78	ARG	CD-NE-CZ	-6.06	115.92	124.40
23	P	183	GLU	CA-CB-CG	6.06	126.21	114.10
44	n	78	LYS	CA-CB-CG	6.05	126.21	114.10
12	D	1261	C	N3-C2-O2	-6.05	117.66	121.90
12	D	1636	G	C4-N9-C1'	6.05	134.37	126.50
14	F	49	PHE	CB-CA-C	6.05	124.96	112.44
12	D	1838	U	P-O3'-C3'	6.04	126.95	119.70
13	E	109	MET	CG-SD-CE	6.04	114.19	100.90
19	L	171	GLU	CB-CA-C	6.04	120.32	110.24
12	D	853	C	C6-N1-C2	-6.03	117.89	120.30
25	S	218	LYS	CA-CB-CG	6.03	126.17	114.10
43	m	91	LEU	CB-CG-CD2	6.03	128.79	110.70
11	C	224	ARG	CD-NE-CZ	-6.01	115.98	124.40
31	Z	2	PRO	CA-C-N	6.01	132.79	121.97
31	Z	2	PRO	C-N-CA	6.01	132.79	121.97
12	D	1086	G	O4'-C1'-N9	6.01	113.00	108.20
12	D	345	U	N3-C2-O2	-5.99	118.00	122.20
11	C	264	GLU	CA-C-N	-5.98	111.13	121.66
11	C	264	GLU	C-N-CA	-5.98	111.13	121.66
25	S	225	GLN	CA-CB-CG	5.98	126.05	114.10
12	D	1453	C	C5-C6-N1	5.98	123.99	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
9	A	171	GLU	CA-CB-CG	5.97	126.05	114.10
9	A	476	ARG	CG-CD-NE	5.97	125.13	112.00
49	t	91	LEU	CB-CG-CD2	-5.96	92.82	110.70
24	Q	196	GLU	CB-CG-CD	5.95	122.72	112.60
12	D	1261	C	C2-N1-C1'	5.95	125.34	118.80
46	q	84	LYS	CB-CA-C	5.95	120.03	110.09
35	e	109	GLU	CA-CB-CG	5.95	126.00	114.10
3	3	78	GLU	CA-CB-CG	5.94	125.97	114.10
29	W	206	LYS	CA-CB-CG	5.92	125.95	114.10
12	D	517	C	C6-N1-C2	-5.92	117.93	120.30
19	L	78	ARG	N-CA-CB	5.90	118.44	110.59
29	W	148	LYS	CB-CG-CD	5.90	124.87	111.30
31	Z	79	ARG	CB-CG-CD	5.90	124.86	111.30
12	D	1016	U	C2-N1-C1'	5.89	124.77	117.70
12	D	1840	U	C2-N1-C1'	5.89	124.77	117.70
51	x	446	TYR	CA-C-N	-5.89	112.66	122.21
51	x	446	TYR	C-N-CA	-5.89	112.66	122.21
36	f	44	LYS	CA-CB-CG	5.89	125.88	114.10
21	N	8	PHE	CD1-CG-CD2	-5.88	109.78	118.60
12	D	1624	U	N1-C2-O2	5.88	126.92	122.80
12	D	659	G	C4-N9-C1'	5.87	134.13	126.50
51	x	302	GLU	CB-CG-CD	5.87	122.58	112.60
11	C	401	PHE	CB-CA-C	-5.86	101.68	110.88
14	F	1	LYS	CD-CE-NZ	5.85	130.63	111.90
2	1	514	PHE	CD1-CG-CD2	-5.85	109.83	118.60
11	C	195	MET	CB-CG-SD	5.84	130.23	112.70
38	h	201	LYS	CB-CG-CD	5.83	124.70	111.30
9	A	68	LYS	CB-CG-CD	5.82	124.69	111.30
51	x	472	LYS	CD-CE-NZ	5.82	130.54	111.90
9	A	276	TYR	CA-C-N	-5.81	111.25	122.06
9	A	276	TYR	C-N-CA	-5.81	111.25	122.06
33	b	50	ARG	CB-CG-CD	5.81	124.66	111.30
9	A	143	ARG	CB-CG-CD	5.80	124.65	111.30
39	i	5	LYS	CB-CG-CD	5.80	124.63	111.30
12	D	1591	C	N1-C2-O2	5.78	122.37	118.90
30	Y	129	ILE	CA-C-N	-5.77	114.85	122.99
30	Y	129	ILE	C-N-CA	-5.77	114.85	122.99
35	e	109	GLU	N-CA-CB	5.77	119.22	110.28
49	t	71	ASN	CB-CA-C	5.77	122.15	110.38
13	E	52	GLU	CB-CA-C	-5.76	99.60	110.67
45	o	67	PHE	N-CA-CB	5.75	119.56	110.87
9	A	318	MET	CA-CB-CG	5.75	125.60	114.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
9	A	318	MET	N-CA-CB	5.75	119.76	110.40
9	A	18	PHE	N-CA-CB	-5.73	101.67	110.16
12	D	1057	C	N1-C2-O2	5.73	122.34	118.90
35	e	47	MET	CA-CB-CG	-5.73	102.64	114.10
29	W	206	LYS	N-CA-CB	5.73	118.80	109.69
19	L	81	ARG	N-CA-CB	5.72	118.37	110.07
45	o	260	ARG	CA-CB-CG	5.72	125.54	114.10
12	D	1520	G	N3-C4-N9	5.71	129.43	126.00
12	D	308	G	P-O3'-C3'	5.71	126.55	119.70
41	k	99	ARG	CB-CA-C	5.71	119.64	109.65
19	L	49	LYS	CA-C-N	5.70	130.80	122.77
19	L	49	LYS	C-N-CA	5.70	130.80	122.77
9	A	86	LEU	CA-CB-CG	5.69	136.23	116.30
2	1	668	ARG	CB-CG-CD	-5.69	98.22	111.30
11	C	58	ARG	CA-CB-CG	-5.69	102.73	114.10
45	o	498	LEU	CA-CB-CG	5.69	136.20	116.30
12	D	1660	C	C2-N1-C1'	5.67	125.04	118.80
52	y	63	ARG	CA-CB-CG	5.66	125.43	114.10
28	V	141	TYR	N-CA-C	5.66	117.91	109.25
12	D	183	G	C8-N9-C4	-5.65	104.14	106.40
29	W	194	GLU	CA-CB-CG	5.65	125.39	114.10
9	A	352	GLN	CB-CG-CD	5.64	122.20	112.60
9	A	154	TRP	CD1-CG-CD2	-5.64	97.28	106.30
19	L	41	ARG	CA-CB-CG	5.64	125.38	114.10
1	0	277	MET	N-CA-C	5.63	120.02	113.20
12	D	304	C	C2-N1-C1'	5.63	125.00	118.80
12	D	531	A	P-O3'-C3'	5.63	126.46	119.70
2	1	130	MET	CB-CG-SD	-5.62	95.82	112.70
2	1	352	GLU	CA-CB-CG	5.62	125.34	114.10
18	J	45	VAL	CA-C-N	-5.62	110.73	122.03
18	J	45	VAL	C-N-CA	-5.62	110.73	122.03
12	D	427	U	N3-C2-O2	-5.62	118.27	122.20
12	D	374	G	N3-C4-N9	5.61	129.37	126.00
22	O	173	LYS	CG-CD-CE	-5.59	98.44	111.30
12	D	38	A	O5'-C5'-C4'	5.59	113.87	109.40
51	x	394	LYS	CA-CB-CG	5.58	125.26	114.10
23	P	108	ASP	OD1-CG-OD2	-5.58	109.51	122.90
41	k	99	ARG	CB-CG-CD	5.57	124.12	111.30
51	x	37	ASP	N-CA-CB	-5.57	101.64	111.39
29	W	168	GLN	CB-CA-C	-5.57	101.55	110.79
12	D	1139	C	C6-N1-C2	-5.56	118.08	120.30
12	D	317	C	C2-N1-C1'	5.56	124.92	118.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
12	D	1364	U	N1-C2-O2	5.56	126.69	122.80
18	J	37	LYS	CD-CE-NZ	5.56	129.70	111.90
27	U	76	GLU	CA-C-N	-5.55	111.42	121.14
27	U	76	GLU	C-N-CA	-5.55	111.42	121.14
12	D	521	A	O5'-C5'-C4'	5.54	113.83	109.40
12	D	632	C	C2-N1-C1'	5.54	124.89	118.80
12	D	112	U	P-O3'-C3'	5.54	126.34	119.70
11	C	208	ARG	N-CA-C	5.53	117.75	111.11
12	D	853	C	C6-N1-C1'	-5.52	114.17	120.80
12	D	1350	U	N1-C2-O2	5.52	126.67	122.80
52	y	63	ARG	CD-NE-CZ	-5.52	116.67	124.40
12	D	1303	C	C6-N1-C1'	-5.52	114.18	120.80
43	m	61	GLU	N-CA-C	5.51	120.71	112.94
36	f	193	LYS	CB-CG-CD	5.51	123.98	111.30
2	1	554	TYR	CD1-CG-CD2	-5.51	109.83	118.10
38	h	166	TYR	CA-C-N	-5.51	113.08	122.11
38	h	166	TYR	C-N-CA	-5.51	113.08	122.11
39	i	50	GLN	CA-CB-CG	5.50	125.09	114.10
39	i	50	GLN	CB-CA-C	5.49	121.22	110.67
25	S	29	GLU	CB-CG-CD	5.49	121.93	112.60
12	D	579	C	N1-C2-O2	5.49	122.19	118.90
49	t	241	LYS	CA-CB-CG	5.49	125.08	114.10
12	D	914	U	N1-C2-O2	5.48	126.64	122.80
29	W	162	LEU	CA-C-N	5.48	127.90	120.44
29	W	162	LEU	C-N-CA	5.48	127.90	120.44
14	F	49	PHE	CB-CG-CD1	-5.48	111.39	120.70
12	D	1535	U	N1-C2-O2	5.48	126.63	122.80
23	P	60	ASP	CB-CA-C	5.48	120.67	109.55
33	b	104	GLN	N-CA-CB	-5.46	102.02	110.65
12	D	374	G	C8-N9-C1'	-5.46	119.90	127.00
12	D	1057	C	N3-C2-O2	-5.46	118.08	121.90
14	F	1	LYS	CG-CD-CE	5.46	123.85	111.30
28	V	65	PHE	N-CA-CB	-5.46	101.88	110.06
12	D	1838	U	C2-N1-C1'	5.45	124.24	117.70
12	D	815	U	N1-C2-O2	5.44	126.61	122.80
12	D	374	G	N3-C4-C5	-5.43	125.88	128.60
12	D	1636	G	N3-C4-C5	-5.43	125.88	128.60
12	D	1261	C	C6-N1-C2	-5.43	118.13	120.30
51	x	41	LYS	CG-CD-CE	5.42	123.77	111.30
12	D	293	C	N3-C2-O2	-5.42	118.11	121.90
24	Q	7	VAL	N-CA-C	-5.41	101.60	109.29
11	C	224	ARG	CB-CG-CD	5.41	123.74	111.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
18	J	24	THR	CA-CB-CG2	5.41	119.70	110.50
51	x	41	LYS	CB-CG-CD	5.41	123.74	111.30
3	3	52	ASP	CB-CA-C	-5.41	98.07	110.18
45	o	161	GLU	CA-C-N	5.41	131.87	121.54
45	o	161	GLU	C-N-CA	5.41	131.87	121.54
12	D	465	A	P-O3'-C3'	5.40	126.19	119.70
23	P	82	ARG	CG-CD-NE	-5.40	100.12	112.00
12	D	1521	C	O5'-C5'-C4'	5.40	113.72	109.40
10	B	187	MET	CA-C-N	-5.39	113.29	122.56
10	B	187	MET	C-N-CA	-5.39	113.29	122.56
53	z	68	C	C6-N1-C1'	-5.39	114.33	120.80
12	D	914	U	N3-C2-O2	-5.39	118.43	122.20
37	g	107	GLU	N-CA-CB	5.38	118.62	110.28
12	D	525	A	P-O3'-C3'	5.38	126.15	119.70
9	A	243	MET	CA-CB-CG	5.37	124.84	114.10
52	y	63	ARG	CG-CD-NE	-5.37	100.19	112.00
49	t	261	SER	CA-C-N	-5.36	111.30	121.54
49	t	261	SER	C-N-CA	-5.36	111.30	121.54
31	Z	16	PRO	CA-C-N	-5.36	112.91	122.07
31	Z	16	PRO	C-N-CA	-5.36	112.91	122.07
12	D	345	U	C2-N1-C1'	5.34	124.11	117.70
24	Q	41	ARG	CA-C-N	-5.34	111.92	122.02
24	Q	41	ARG	C-N-CA	-5.34	111.92	122.02
25	S	25	ARG	CB-CG-CD	5.34	123.59	111.30
49	t	271	VAL	CG1-CB-CG2	-5.34	99.06	110.80
12	D	356	C	C6-N1-C2	-5.33	118.17	120.30
18	J	90	GLU	N-CA-CB	5.33	117.95	110.12
25	S	29	GLU	CA-CB-CG	5.32	124.75	114.10
12	D	55	U	C2-N1-C1'	5.32	124.08	117.70
12	D	1271	C	N3-C2-O2	-5.32	118.18	121.90
12	D	517	C	C6-N1-C1'	-5.31	114.42	120.80
24	Q	34	MET	CB-CG-SD	5.31	128.64	112.70
12	D	521	A	O4'-C1'-N9	5.31	112.22	108.50
2	1	110	LEU	CB-CG-CD2	5.31	126.63	110.70
12	D	815	U	N3-C2-O2	-5.30	118.49	122.20
12	D	1834	A	N7-C8-N9	5.30	116.45	113.80
51	x	353	ILE	CA-CB-CG1	5.29	119.40	110.40
12	D	1118	C	C2-N1-C1'	5.29	124.62	118.80
12	D	1636	G	N3-C4-N9	5.29	129.17	126.00
12	D	1078	C	C2-N1-C1'	5.28	124.61	118.80
41	k	99	ARG	CA-CB-CG	-5.28	103.54	114.10
31	Z	17	ARG	N-CA-CB	5.27	119.00	110.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
12	D	2	A	P-O3'-C3'	5.27	126.02	119.70
12	D	1620	A	O5'-C5'-C4'	5.27	113.61	109.40
30	Y	163	ASP	CA-CB-CG	5.27	117.87	112.60
2	1	771	GLU	CA-C-N	5.26	127.76	120.29
2	1	771	GLU	C-N-CA	5.26	127.76	120.29
53	z	3	C	C2-N1-C1'	5.26	124.58	118.80
12	D	1624	U	O4'-C1'-N1	5.25	112.18	108.50
49	t	71	ASN	N-CA-CB	-5.25	102.22	110.30
41	k	252	THR	OG1-CB-CG2	-5.24	98.81	109.30
33	b	32	GLN	CA-CB-CG	5.23	124.57	114.10
29	W	206	LYS	N-CA-C	5.23	117.62	110.24
9	A	476	ARG	N-CA-C	-5.23	106.05	112.90
12	D	1078	C	C6-N1-C2	-5.23	118.21	120.30
17	I	436	LYS	CB-CG-CD	5.23	123.32	111.30
51	x	421	ILE	CA-CB-CG1	5.23	119.28	110.40
12	D	1737	G	P-O3'-C3'	5.22	125.97	119.70
51	x	412	LYS	CB-CA-C	5.22	120.33	111.35
35	e	42	GLU	CA-CB-CG	5.22	124.53	114.10
46	q	36	ARG	CG-CD-NE	5.22	123.48	112.00
51	x	360	TYR	CD1-CG-CD2	-5.21	110.28	118.10
23	P	66	VAL	CA-C-N	-5.21	115.12	122.94
23	P	66	VAL	C-N-CA	-5.21	115.12	122.94
12	D	1751	C	N1-C2-O2	5.20	122.02	118.90
18	J	89	ARG	CG-CD-NE	5.20	123.43	112.00
21	N	7	GLU	CB-CA-C	5.20	118.10	109.53
35	e	42	GLU	CB-CG-CD	5.19	121.43	112.60
43	m	75	GLU	CA-CB-CG	5.19	124.48	114.10
9	A	230	LEU	CA-C-N	-5.18	112.42	122.06
9	A	230	LEU	C-N-CA	-5.18	112.42	122.06
28	V	141	TYR	CD1-CG-CD2	-5.18	110.32	118.10
12	D	1840	U	O5'-C5'-C4'	5.18	113.54	109.40
12	D	1739	C	O5'-C5'-C4'	5.18	113.54	109.40
53	z	67	U	N3-C2-O2	-5.18	118.58	122.20
25	S	29	GLU	CB-CA-C	-5.17	102.61	110.06
9	A	176	ASP	N-CA-CB	5.17	117.72	110.12
20	M	81	ARG	CG-CD-NE	5.17	123.38	112.00
21	N	7	GLU	CA-C-N	-5.17	114.90	122.19
21	N	7	GLU	C-N-CA	-5.17	114.90	122.19
11	C	324	GLN	N-CA-C	-5.17	106.48	112.89
12	D	615	C	P-O3'-C3'	5.17	125.91	119.70
20	M	17	ARG	CA-CB-CG	5.17	124.44	114.10
9	A	451	GLU	CB-CA-C	5.17	122.83	111.09

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
41	k	219	TRP	N-CA-CB	-5.16	102.14	110.71
41	k	99	ARG	N-CA-C	5.16	117.82	108.69
9	A	490	THR	OG1-CB-CG2	-5.15	98.99	109.30
20	M	62	VAL	N-CA-C	5.13	116.03	109.30
50	w	48	LEU	CB-CG-CD1	5.13	126.08	110.70
27	U	77	GLU	CA-CB-CG	5.12	124.34	114.10
12	D	1863	A	O5'-C5'-C4'	5.11	113.49	109.40
12	D	519	A	O5'-C5'-C4'	5.11	113.49	109.40
12	D	659	G	C8-N9-C1'	-5.11	120.36	127.00
12	D	1660	C	N3-C2-O2	-5.11	118.33	121.90
45	o	377	MET	CA-CB-CG	5.10	124.31	114.10
12	D	958	G	O4'-C1'-N9	5.10	112.07	108.50
19	L	166	VAL	N-CA-C	5.10	117.28	111.88
12	D	310	C	C2-N1-C1'	5.09	124.40	118.80
12	D	307	G	P-O3'-C3'	5.08	125.80	119.70
12	D	1240	A	N9-C1'-C2'	5.08	117.59	112.00
12	D	496	C	N1-C2-O2	-5.07	115.86	118.90
12	D	1813	A	P-O3'-C3'	5.07	125.79	119.70
12	D	1117	C	C2-N1-C1'	5.07	124.38	118.80
43	m	46	ASN	N-CA-C	-5.07	100.98	109.24
45	o	239	MET	CA-C-N	5.07	131.68	123.37
45	o	239	MET	C-N-CA	5.07	131.68	123.37
19	L	41	ARG	CD-NE-CZ	5.06	131.49	124.40
9	A	77	ILE	CG1-CB-CG2	-5.05	95.54	110.70
12	D	1389	C	N1-C2-O2	5.05	121.93	118.90
49	t	124	PHE	N-CA-CB	-5.04	101.33	109.60
24	Q	205	ARG	CG-CD-NE	5.04	123.09	112.00
12	D	1840	U	N1-C2-O2	5.04	126.33	122.80
12	D	1397	U	N3-C2-O2	-5.03	118.68	122.20
23	P	120	MET	CB-CA-C	5.03	118.52	110.16
2	1	735	GLU	N-CA-CB	5.03	118.52	110.73
12	D	1518	C	C6-N1-C1'	-5.03	114.77	120.80
51	x	302	GLU	N-CA-CB	5.02	118.82	110.63
12	D	1331	C	C2-N1-C1'	5.01	124.31	118.80
12	D	453	C	C2-N1-C1'	5.01	124.31	118.80
51	x	373	VAL	CG1-CB-CG2	-5.01	99.79	110.80
19	L	94	PHE	CB-CG-CD2	-5.00	112.19	120.70

There are no chirality outliers.

All (121) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	1	104	ARG	Sidechain
2	1	407	GLU	Sidechain
2	1	501	ARG	Sidechain
2	1	514	PHE	Sidechain
2	1	554	TYR	Sidechain
2	1	622	ARG	Sidechain
2	1	668	ARG	Sidechain
2	1	735	GLU	Peptide
2	1	789	ARG	Sidechain
2	1	793	PHE	Sidechain
2	1	803	SER	Peptide
2	1	804	MET	Peptide
2	1	813	LEU	Peptide
2	1	84	GLU	Sidechain
3	3	78	GLU	Peptide
8	9	17	ARG	Sidechain
9	A	140	ARG	Sidechain
9	A	143	ARG	Sidechain
9	A	159	GLN	Sidechain
9	A	18	PHE	Sidechain
9	A	233	ARG	Sidechain
9	A	255	ASP	Sidechain
9	A	451	GLU	Sidechain
9	A	476	ARG	Sidechain
10	B	174	TYR	Sidechain
10	B	182	ARG	Sidechain
11	C	120	ARG	Sidechain
11	C	208	ARG	Sidechain
11	C	260	LYS	Peptide
11	C	325	TYR	Sidechain
11	C	401	PHE	Sidechain
11	C	58	ARG	Sidechain
13	E	52	GLU	Peptide
13	E	84	ARG	Sidechain
14	F	48	THR	Peptide
14	F	49	PHE	Sidechain
17	I	498	LEU	Peptide
17	I	685	THR	Peptide
18	J	22	ARG	Sidechain
18	J	51	ARG	Mainchain,Sidechain
18	J	85	ARG	Sidechain
18	J	94	ASP	Sidechain
18	J	95	ARG	Sidechain

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Mol	Chain	Res	Type	Group
19	L	170	VAL	Peptide
19	L	171	GLU	Sidechain
19	L	72	PHE	Sidechain
19	L	78	ARG	Sidechain
19	L	81	ARG	Sidechain
19	L	94	PHE	Sidechain
20	M	31	TYR	Sidechain
20	M	81	ARG	Sidechain
21	N	7	GLU	Peptide
21	N	8	PHE	Sidechain
22	O	123	ARG	Sidechain
22	O	227	ARG	Sidechain
22	O	242	ASP	Sidechain
22	O	250	TYR	Sidechain
23	P	108	ASP	Sidechain
23	P	211	PHE	Sidechain
23	P	60	ASP	Sidechain
23	P	65	ARG	Sidechain
23	P	67	PHE	Sidechain
23	P	82	ARG	Sidechain
24	Q	205	ARG	Sidechain
24	Q	85	ARG	Sidechain
24	Q	9	GLN	Sidechain
25	S	16	ILE	Peptide
25	S	22	ARG	Sidechain
25	S	226	GLU	Sidechain
25	S	28	TYR	Sidechain
25	S	29	GLU	Peptide
26	T	128	ARG	Sidechain
26	T	84	ARG	Sidechain
28	V	141	TYR	Sidechain
28	V	18	TYR	Sidechain
28	V	65	PHE	Sidechain
29	W	113	TYR	Sidechain
30	Y	130	PHE	Sidechain
30	Y	143	ASP	Peptide
30	Y	34	GLY	Peptide
30	Y	35	PRO	Peptide
31	Z	10	ARG	Sidechain
31	Z	132	GLN	Peptide
31	Z	17	ARG	Sidechain
31	Z	79	ARG	Sidechain

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Mol	Chain	Res	Type	Group
32	a	140	ARG	Sidechain
32	a	95	GLU	Peptide
33	b	47	ARG	Sidechain
33	b	50	ARG	Sidechain
33	b	51	ARG	Sidechain
34	c	36	ARG	Sidechain
35	e	107	ARG	Sidechain
35	e	110	ARG	Sidechain
35	e	113	ARG	Sidechain
36	f	38	TYR	Sidechain
37	g	13	PHE	Sidechain
41	k	218	LEU	Peptide
42	l	132	ASP	Sidechain
43	m	45	ASN	Peptide
43	m	76	ARG	Sidechain
44	n	109	GLU	Sidechain
44	n	83	PHE	Sidechain
44	n	95	TYR	Sidechain
45	o	240	PHE	Sidechain
45	o	260	ARG	Sidechain
45	o	368	GLU	Sidechain
45	o	445	VAL	Peptide
45	o	67	PHE	Sidechain
46	q	36	ARG	Sidechain
49	t	113	PHE	Sidechain
49	t	124	PHE	Sidechain
49	t	206	GLN	Peptide
49	t	262	PHE	Sidechain
49	t	460	ARG	Sidechain
51	x	352	GLU	Peptide
51	x	360	TYR	Sidechain
51	x	363	TRP	Peptide
51	x	446	TYR	Sidechain
52	y	62	GLU	Peptide
52	y	63	ARG	Sidechain

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	1171	0	1079	0	0
2	1	5879	0	5975	89	0
3	3	830	0	793	7	0
4	5	2091	0	918	1	0
5	6	250	0	104	0	0
6	7	617	0	600	4	0
7	8	398	0	176	0	0
8	9	205	0	250	3	0
9	A	4568	0	4470	73	0
10	B	1281	0	1329	20	0
11	C	3283	0	3346	43	0
12	D	36103	0	18234	268	0
13	E	1167	0	1233	12	0
14	F	473	0	527	8	0
15	G	701	0	719	9	0
16	H	437	0	222	3	0
17	I	3536	0	3404	35	0
18	J	819	0	871	9	0
19	L	1440	0	1533	19	0
20	M	632	0	657	12	0
21	N	619	0	617	6	0
22	O	1704	0	1798	22	0
23	P	1716	0	1785	29	0
24	Q	1696	0	1696	30	0
25	S	1863	0	2018	29	0
26	T	957	0	982	15	0
27	U	1065	0	1118	17	0
28	V	1208	0	1294	18	0
29	W	1622	0	1696	25	0
30	Y	2034	0	2132	50	0
31	Z	1478	0	1589	24	0
32	a	1088	0	1154	14	0
33	b	1048	0	1091	7	0
34	c	1034	0	1080	20	0
35	e	1016	0	1086	24	0
36	f	1461	0	1511	23	0
37	g	1124	0	1193	23	0
38	h	1765	0	1863	19	0
39	i	835	0	861	5	0
40	j	467	0	460	5	0
41	k	2437	0	2393	37	0
42	l	1117	0	1152	9	0
43	m	586	0	640	9	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
44	n	1177	0	1233	18	0
45	o	4693	0	4826	3	0
46	q	950	0	987	15	0
47	r	2018	0	1884	25	0
48	s	620	0	642	7	0
49	t	3353	0	3505	64	0
50	w	817	0	882	14	0
51	x	2847	0	2220	44	0
52	y	477	0	499	7	0
53	z	1604	0	816	9	0
54	J	1	0	0	0	0
54	j	1	0	0	0	0
54	s	1	0	0	0	0
All	All	114380	0	95143	1108	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 5.

All (1108) 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)
2:1:804:MET:HE1	2:1:822:ILE:HD13	1.43	0.99
12:D:925:G:H1	12:D:1017:U:H3	1.14	0.94
47:r:221:GLU:O	47:r:222:THR:HG22	1.67	0.92
12:D:1033:G:H1	12:D:1080:A:HO2'	1.24	0.85
32:a:98:ASP:OD2	32:a:140:ARG:NH2	2.09	0.84
51:x:41:LYS:HE3	51:x:55:TYR:HB2	1.60	0.83
20:M:14:GLU:HA	20:M:17:ARG:HB3	1.63	0.81
36:f:99:ILE:HD11	43:m:106:GLN:HE22	1.43	0.81
9:A:175:HIS:HB2	9:A:228:MET:HE2	1.63	0.80
12:D:868:G:H1'	19:L:115:LYS:HG3	1.64	0.80
11:C:344:GLN:NE2	11:C:385:ALA:O	2.16	0.79
35:e:110:ARG:NH1	35:e:114:MET:SD	2.56	0.77
9:A:180:GLN:HB2	9:A:183:LYS:HE3	1.66	0.77
19:L:35:ASP:OD2	19:L:78:ARG:NH1	2.18	0.77
29:W:202:ILE:HD13	29:W:202:ILE:O	1.86	0.76
12:D:350:C:HO2'	12:D:383:G:H1	1.31	0.75
11:C:340:LEU:HD21	11:C:380:LYS:HE2	1.69	0.75
2:1:619:CYS:HA	2:1:622:ARG:HE	1.53	0.73
23:P:65:ARG:HG3	23:P:67:PHE:HE1	1.52	0.73
10:B:184:PHE:HB3	10:B:188:ARG:HH12	1.54	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:W:87:ASN:HB3	29:W:90:LEU:HD23	1.71	0.72
43:m:48:VAL:HG22	43:m:80:ARG:HE	1.53	0.72
35:e:81:TYR:O	35:e:85:ASN:HB2	1.90	0.71
12:D:1679:A:H2'	36:f:60:ARG:HD2	1.72	0.71
33:b:41:GLN:HG3	33:b:84:ILE:HD12	1.71	0.71
49:t:204:TYR:HE1	49:t:221:ILE:HG13	1.55	0.70
2:1:597:ASN:C	2:1:597:ASN:HD22	1.98	0.70
51:x:31:GLN:HB2	51:x:68:GLN:HE22	1.56	0.70
49:t:46:THR:HG23	49:t:134:ASP:HA	1.73	0.70
12:D:1:U:O5'	31:Z:17:ARG:NH1	2.23	0.70
21:N:79:VAL:HG23	24:Q:56:GLU:HG3	1.74	0.70
9:A:172:ARG:HA	9:A:228:MET:HE1	1.74	0.69
41:k:87:LEU:HB2	41:k:101:PHE:HB2	1.74	0.68
34:c:25:VAL:HG23	34:c:65:LEU:HD21	1.76	0.67
2:1:278:ALA:O	2:1:282:HIS:ND1	2.21	0.67
9:A:28:LEU:HD21	9:A:66:LEU:HD23	1.77	0.67
47:r:248:LEU:O	47:r:252:ASN:ND2	2.27	0.67
30:Y:64:ILE:HB	35:e:18:LEU:HD22	1.77	0.67
12:D:1222:G:H5"	36:f:78:MET:HE1	1.77	0.66
24:Q:54:THR:HG22	24:Q:162:PRO:HG2	1.76	0.66
39:i:15:LEU:HD13	39:i:21:MET:HG2	1.78	0.66
30:Y:137:PRO:HB2	30:Y:149:TYR:HA	1.77	0.66
37:g:34:VAL:HG12	37:g:70:VAL:HB	1.77	0.66
12:D:587:A:H5'	12:D:592:C:H41	1.59	0.66
20:M:34:ASP:HB3	20:M:43:ILE:HD12	1.77	0.66
25:S:2:LYS:HB2	25:S:108:VAL:HG22	1.78	0.65
3:3:57:LYS:HA	3:3:60:VAL:HG12	1.77	0.65
24:Q:154:LEU:HD23	24:Q:157:VAL:HB	1.78	0.65
2:1:554:TYR:HE1	2:1:558:LYS:HG3	1.62	0.65
17:I:312:SER:HB3	17:I:698:ARG:HD2	1.78	0.65
2:1:586:ARG:NH1	51:x:35:LYS:O	2.30	0.65
2:1:611:ARG:NH1	2:1:675:LEU:O	2.30	0.65
12:D:1357:A:O3'	22:O:123:ARG:NH2	2.30	0.65
12:D:1396:A:O2'	12:D:1398:G:N7	2.30	0.64
30:Y:127:ARG:HD2	30:Y:142:HIS:HB3	1.79	0.64
11:C:117:LYS:HG2	11:C:120:ARG:HH21	1.62	0.64
9:A:339:ALA:HA	9:A:344:MET:HE2	1.79	0.64
26:T:34:PHE:HB3	26:T:41:PHE:HB2	1.79	0.64
12:D:374:G:H5"	13:E:84:ARG:HD2	1.80	0.64
52:y:63:ARG:HG2	52:y:63:ARG:NH1	2.13	0.63
9:A:298:ARG:HH22	9:A:361:LEU:HG	1.63	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:D:940:U:H3	12:D:1002:U:H3	1.45	0.63
18:J:32:LYS:O	18:J:37:LYS:NZ	2.31	0.63
47:r:72:VAL:HG23	47:r:90:VAL:HG22	1.80	0.63
2:1:340:ARG:NH2	2:1:384:ASP:OD2	2.32	0.63
47:r:221:GLU:O	47:r:222:THR:CG2	2.45	0.63
40:j:54:LYS:NZ	50:w:78:ASP:OD1	2.31	0.63
2:1:405:ILE:HG21	2:1:451:MET:HE1	1.80	0.63
12:D:495:U:H1'	30:Y:32:SER:HB2	1.81	0.63
12:D:1550:G:H3'	12:D:1579:A:H61	1.63	0.63
37:g:31:LEU:HD21	37:g:33:LYS:HE2	1.79	0.63
49:t:280:GLY:HA2	49:t:337:ILE:O	1.99	0.63
37:g:32:ILE:HD11	37:g:88:ILE:HD13	1.81	0.63
20:M:75:GLU:HG3	51:x:81:GLN:HE22	1.62	0.62
23:P:129:THR:OG1	23:P:179:ASN:O	2.17	0.62
2:1:775:VAL:HA	2:1:778:MET:HE2	1.80	0.62
12:D:654:A:H62	12:D:1154:U:H3	1.47	0.62
13:E:90:ARG:HD2	13:E:109:MET:HE3	1.81	0.62
2:1:424:ILE:O	2:1:441:ARG:NH1	2.32	0.62
29:W:160:SER:O	29:W:163:GLU:HB3	2.00	0.62
19:L:63:PHE:HA	19:L:95:ILE:O	1.98	0.62
29:W:101:ILE:HD12	29:W:190:LEU:HD11	1.82	0.62
40:j:52:PHE:HB3	50:w:80:PHE:HB3	1.80	0.62
11:C:342:LEU:HD22	11:C:373:LEU:HD21	1.82	0.61
12:D:496:C:H1'	30:Y:34:GLY:HA3	1.80	0.61
30:Y:63:LYS:NZ	35:e:84:LYS:O	2.33	0.61
12:D:433:A:H5"	29:W:22:HIS:HB3	1.83	0.61
12:D:1658:G:OP2	12:D:1660:C:N4	2.33	0.61
43:m:48:VAL:HG21	44:n:23:ARG:HB2	1.82	0.61
29:W:6:ASP:OD2	29:W:9:HIS:ND1	2.34	0.61
12:D:1086:G:OP2	18:J:12:LYS:NZ	2.33	0.61
30:Y:147:ILE:HD11	30:Y:162:ILE:HG23	1.82	0.61
33:b:61:ARG:NH1	33:b:88:GLU:OE1	2.33	0.61
42:l:9:VAL:HG21	42:l:138:VAL:HG13	1.81	0.61
49:t:160:ALA:O	49:t:203:GLN:NE2	2.33	0.61
12:D:121:U:H1'	30:Y:35:PRO:HB2	1.81	0.61
12:D:816:A:OP2	31:Z:10:ARG:NH1	2.34	0.61
24:Q:206:ASP:OD1	27:U:84:TYR:OH	2.12	0.61
10:B:212:VAL:O	10:B:216:LYS:HB2	2.01	0.60
51:x:381:MET:HG2	51:x:391:ILE:HG21	1.83	0.60
12:D:1488:C:O2'	12:D:1490:G:OP2	2.18	0.60
38:h:62:LYS:O	38:h:67:ARG:NH2	2.35	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:D:1692:U:H2'	12:D:1693:G:C8	2.37	0.60
20:M:72:ARG:NH2	51:x:84:ASP:OD2	2.35	0.60
21:N:2:GLN:HG2	21:N:8:PHE:HD1	1.67	0.60
41:k:124:SER:OG	41:k:126:ASP:OD1	2.19	0.60
17:I:595:LYS:HG3	17:I:597:ASN:H	1.67	0.60
12:D:1281:G:OP2	46:q:102:LYS:NZ	2.33	0.60
16:H:12:N:H5'	38:h:117:ARG:HH12	1.67	0.60
2:1:373:LYS:O	2:1:377:ASN:ND2	2.34	0.60
12:D:1091:C:HO2'	34:c:2:VAL:N	1.99	0.59
2:1:127:LYS:HA	2:1:130:MET:HE2	1.85	0.59
11:C:323:LYS:HD3	11:C:366:LEU:HD11	1.84	0.59
12:D:64:A:H2	12:D:83:A:H62	1.49	0.59
47:r:24:VAL:HA	47:r:34:VAL:HG12	1.84	0.59
16:H:-4:N:O2'	16:H:-2:N:N7	2.36	0.59
2:1:445:LEU:HD21	2:1:501:ARG:HB2	1.84	0.59
37:g:146:ARG:NH2	53:z:33:C:OP2	2.34	0.59
41:k:10:THR:HG22	41:k:308:ARG:HG2	1.85	0.59
49:t:204:TYR:HA	49:t:207:ILE:HG12	1.82	0.59
4:5:283:GLN:HA	51:x:36:GLY:HA3	1.84	0.59
9:A:19:LEU:HD21	9:A:57:LEU:HD21	1.84	0.59
49:t:187:ILE:HB	49:t:221:ILE:HD13	1.84	0.59
2:1:577:ALA:O	2:1:622:ARG:NH2	2.36	0.59
9:A:318:MET:HA	9:A:321:ARG:HG2	1.83	0.59
12:D:1127:C:O3'	20:M:17:ARG:NH1	2.35	0.59
9:A:385:PRO:HA	9:A:388:LYS:HB3	1.85	0.59
12:D:77:A:H5'	25:S:154:ARG:HB3	1.85	0.59
51:x:381:MET:HG2	51:x:391:ILE:HD13	1.85	0.59
52:y:63:ARG:HG2	52:y:63:ARG:HH11	1.67	0.59
27:U:98:VAL:HG21	27:U:117:LEU:HD22	1.85	0.59
34:c:111:MET:HE1	34:c:119:LYS:HD2	1.85	0.58
25:S:1:MET:HE3	25:S:106:LEU:HB2	1.85	0.58
25:S:7:PHE:HD2	25:S:10:THR:HG22	1.68	0.58
28:V:16:LEU:HD21	28:V:62:GLN:HE21	1.69	0.58
35:e:10:ARG:NH1	35:e:26:ASP:OD2	2.36	0.58
35:e:16:ARG:HG2	35:e:17:LEU:H	1.67	0.58
27:U:36:GLU:OE2	27:U:47:ARG:NH1	2.36	0.58
28:V:141:TYR:HE1	28:V:146:ALA:HB2	1.69	0.58
37:g:86:GLN:HE22	37:g:122:ALA:HA	1.68	0.58
43:m:58:LEU:HD12	43:m:62:VAL:HG21	1.85	0.58
49:t:416:ARG:NH1	49:t:417:VAL:O	2.35	0.58
46:q:52:LEU:HD23	46:q:78:LYS:HE3	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:Y:139:LEU:O	30:Y:146:THR:OG1	2.21	0.58
41:k:99:ARG:HD3	41:k:100:ARG:H	1.67	0.58
12:D:508:A:H3'	12:D:509:G:H8	1.69	0.58
12:D:902:G:H2'	12:D:903:A:H8	1.68	0.58
50:w:54:VAL:HB	50:w:88:LEU:HB2	1.85	0.58
12:D:1228:A:H2'	12:D:1229:G:C8	2.39	0.58
12:D:155:G:H4'	25:S:15:LEU:HD11	1.86	0.58
38:h:51:LEU:HD13	38:h:89:GLU:HB3	1.85	0.58
12:D:874:G:H2'	12:D:875:A:H8	1.68	0.58
41:k:99:ARG:HD3	41:k:100:ARG:N	2.19	0.58
12:D:1623:A:H5"	44:n:133:GLY:HA3	1.86	0.57
12:D:1473:G:H2'	12:D:1475:G:H22	1.69	0.57
13:E:104:LYS:O	32:a:11:ARG:NH2	2.37	0.57
12:D:377:G:H5'	29:W:98:LYS:HB3	1.86	0.57
19:L:46:THR:HG23	19:L:65:PRO:HD3	1.86	0.57
2:1:697:TYR:O	2:1:701:HIS:ND1	2.37	0.57
51:x:409:TRP:O	51:x:413:LEU:HB2	2.03	0.57
23:P:107:ARG:HG2	26:T:131:ASP:HB3	1.86	0.57
29:W:145:ILE:HG22	29:W:148:LYS:HD3	1.85	0.57
34:c:55:ASP:OD1	34:c:56:HIS:N	2.37	0.57
2:1:695:ILE:HD11	2:1:745:LYS:HB2	1.87	0.57
12:D:161:U:O2	25:S:85:ARG:NH1	2.37	0.57
19:L:58:LYS:HB2	19:L:90:LYS:HG2	1.86	0.57
49:t:188:LEU:HD12	49:t:224:ILE:HB	1.86	0.57
49:t:283:ILE:HB	49:t:333:PRO:HA	1.87	0.57
52:y:31:ARG:HE	52:y:43:ILE:HD11	1.69	0.57
10:B:184:PHE:HB3	10:B:188:ARG:NH1	2.20	0.57
12:D:65:C:N4	12:D:169:U:O2'	2.34	0.57
30:Y:88:ASP:OD1	30:Y:122:LYS:NZ	2.38	0.57
41:k:217:MET:HB3	41:k:219:TRP:HE1	1.69	0.57
47:r:233:PRO:HG3	49:t:346:THR:HG23	1.87	0.57
49:t:113:PHE:O	49:t:124:PHE:HB2	2.04	0.57
47:r:112:LEU:HA	47:r:115:VAL:HG22	1.86	0.56
49:t:408:ILE:HG12	49:t:441:ILE:HG22	1.86	0.56
25:S:133:LEU:HD21	25:S:160:LYS:HA	1.87	0.56
29:W:113:TYR:HE1	29:W:158:ILE:HG13	1.69	0.56
50:w:56:MET:HB2	50:w:86:LYS:HB3	1.87	0.56
9:A:371:ILE:HA	9:A:374:MET:HE3	1.87	0.56
11:C:364:VAL:HG11	11:C:398:MET:HE1	1.87	0.56
12:D:1128:C:P	20:M:17:ARG:HH12	2.28	0.56
23:P:47:THR:OG1	23:P:65:ARG:NH1	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:k:8:ARG:HB3	41:k:309:VAL:HG23	1.87	0.56
2:1:613:MET:HG2	51:x:42:VAL:HG12	1.88	0.56
12:D:498:C:OP1	30:Y:32:SER:OG	2.23	0.56
12:D:1452:A:H61	12:D:1473:G:H21	1.52	0.56
17:I:359:LEU:HB3	17:I:369:GLN:HB2	1.86	0.56
34:c:44:HIS:NE2	34:c:112:ASP:OD2	2.37	0.56
35:e:20:ARG:HD3	35:e:76:TYR:CZ	2.41	0.56
51:x:289:LEU:HD22	51:x:435:TRP:HZ2	1.71	0.56
11:C:258:LEU:HD12	11:C:296:LEU:HB2	1.87	0.56
12:D:1354:G:O2'	12:D:1356:G:OP2	2.23	0.56
17:I:308:VAL:HB	17:I:699:PHE:HE1	1.71	0.56
51:x:365:LEU:HD22	51:x:369:ILE:HG21	1.88	0.56
12:D:812:A:H5'	30:Y:16:LYS:HD2	1.87	0.56
12:D:1108:G:H1	27:U:126:MET:HE1	1.69	0.56
29:W:202:ILE:HD13	29:W:202:ILE:C	2.29	0.56
36:f:29:GLN:HB3	51:x:472:LYS:NZ	2.21	0.56
41:k:18:VAL:O	41:k:287:THR:OG1	2.21	0.56
2:1:410:ASP:OD1	2:1:485:ARG:NH2	2.36	0.56
28:V:32:ASP:N	28:V:32:ASP:OD1	2.38	0.56
37:g:131:LYS:HB2	37:g:140:ARG:HH22	1.71	0.56
30:Y:34:GLY:HA2	30:Y:83:PRO:HG3	1.88	0.55
11:C:149:THR:HG23	11:C:189:LYS:HD2	1.88	0.55
23:P:144:LYS:HD2	23:P:208:HIS:HB3	1.88	0.55
12:D:374:G:H4'	13:E:59:LYS:HD2	1.87	0.55
19:L:84:GLU:O	19:L:88:SER:HA	2.06	0.55
22:O:123:ARG:HB2	22:O:145:LYS:HA	1.88	0.55
30:Y:38:LEU:HD23	30:Y:39:ARG:HG3	1.88	0.55
43:m:79:ILE:HB	43:m:83:LEU:HD23	1.88	0.55
11:C:343:LEU:HD12	11:C:373:LEU:HD13	1.88	0.55
12:D:538:U:O2	12:D:546:G:N2	2.40	0.55
24:Q:51:LEU:HD23	27:U:105:MET:HE1	1.89	0.55
41:k:61:GLY:O	41:k:88:ARG:NH1	2.40	0.55
12:D:1616:U:H3	12:D:1620:A:H2	1.55	0.55
13:E:120:VAL:HG12	13:E:145:VAL:HG11	1.88	0.55
30:Y:66:MET:O	30:Y:68:ARG:NH1	2.40	0.55
52:y:14:VAL:HG12	52:y:32:VAL:HG12	1.87	0.55
2:1:633:LEU:HD13	2:1:636:ILE:HD11	1.89	0.55
9:A:427:TYR:HA	9:A:430:GLN:HE22	1.71	0.55
32:a:68:LYS:HB3	32:a:91:LEU:HD22	1.89	0.55
49:t:295:GLU:HA	49:t:314:ILE:O	2.07	0.55
12:D:928:G:H2'	12:D:929:G:C8	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:G:58:LEU:HB3	15:G:88:LYS:HG2	1.88	0.55
17:I:368:ILE:HG22	17:I:369:GLN:HG3	1.88	0.55
49:t:419:ALA:HB3	49:t:426:LYS:HE2	1.88	0.55
19:L:69:LEU:HD12	19:L:96:ALA:HB2	1.87	0.55
51:x:394:LYS:HB3	51:x:449:LEU:HD22	1.87	0.55
23:P:179:ASN:HB3	23:P:183:GLU:HG2	1.89	0.55
41:k:191:HIS:NE2	41:k:209:SER:OG	2.36	0.55
12:D:1533:A:H62	12:D:1602:U:H3	1.55	0.54
47:r:142:TYR:HE2	47:r:152:ALA:HB2	1.72	0.54
51:x:411:GLN:HG3	51:x:412:LYS:HB2	1.88	0.54
9:A:54:TYR:HE2	9:A:70:GLY:HA3	1.71	0.54
12:D:981:A:H2'	12:D:982:G:C8	2.42	0.54
41:k:101:PHE:HE1	41:k:136:GLY:HA2	1.71	0.54
50:w:22:ILE:HB	50:w:89:ILE:HB	1.89	0.54
38:h:168:VAL:HA	38:h:188:ILE:O	2.06	0.54
41:k:164:ILE:HG22	41:k:178:ASN:HA	1.89	0.54
9:A:476:ARG:HA	9:A:476:ARG:NE	2.23	0.54
10:B:188:ARG:HB2	10:B:192:PRO:HA	1.88	0.54
46:q:49:LEU:HB3	46:q:111:VAL:HB	1.90	0.54
46:q:56:CYS:HB2	46:q:59:PRO:HG3	1.90	0.54
48:s:108:VAL:HG13	48:s:114:ILE:HG12	1.90	0.54
2:1:371:ILE:HA	2:1:374:ILE:HG12	1.90	0.54
11:C:381:TRP:HZ3	11:C:398:MET:HG3	1.72	0.54
12:D:1466:G:OP2	27:U:5:ARG:NH1	2.41	0.54
42:l:126:GLN:NE2	42:l:130:ASP:OD2	2.40	0.54
51:x:360:TYR:CE1	51:x:374:ARG:HG3	2.42	0.54
51:x:407:VAL:HG22	51:x:423:THR:HG21	1.88	0.54
12:D:1277:C:H2'	12:D:1278:A:H8	1.73	0.54
34:c:14:ILE:HG13	34:c:27:ILE:HD11	1.90	0.54
36:f:110:GLN:NE2	36:f:114:ASN:OD1	2.40	0.54
12:D:1018:U:O2'	28:V:86:GLU:OE2	2.26	0.54
12:D:1705:C:H2'	12:D:1706:G:C8	2.42	0.54
41:k:166:VAL:HG23	41:k:176:VAL:HG22	1.90	0.54
9:A:18:PHE:CD2	9:A:26:PRO:HB2	2.43	0.54
12:D:640:A:H2'	12:D:641:A:C8	2.43	0.54
15:G:83:ASP:OD1	15:G:84:TYR:N	2.41	0.54
17:I:334:ARG:HH21	17:I:337:GLU:HG2	1.73	0.54
9:A:31:LEU:HD22	9:A:50:ILE:HG23	1.88	0.53
12:D:826:A:O2'	12:D:827:A:O5'	2.26	0.53
12:D:1562:C:H2'	12:D:1563:G:H8	1.72	0.53
28:V:16:LEU:HB2	34:c:57:ARG:HH22	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:P:109:LYS:HG3	23:P:113:MET:HE2	1.89	0.53
12:D:1619:A:OP2	33:b:47:ARG:NH1	2.40	0.53
31:Z:35:TYR:O	31:Z:111:GLN:NE2	2.42	0.53
9:A:231:GLU:HA	9:A:234:LEU:HD23	1.89	0.53
9:A:267:PRO:HB2	9:A:271:LEU:HD11	1.90	0.53
17:I:371:PHE:HB3	17:I:407:TRP:HZ3	1.73	0.53
19:L:155:LYS:NZ	34:c:51:GLU:OE2	2.42	0.53
30:Y:174:LYS:O	30:Y:179:ASN:ND2	2.42	0.53
36:f:99:ILE:HD11	43:m:106:GLN:NE2	2.20	0.53
12:D:1123:C:H4'	23:P:149:GLN:HE21	1.74	0.53
12:D:570:C:H4'	35:e:36:PRO:HG3	1.91	0.53
41:k:256:ILE:HB	41:k:270:LEU:HB2	1.89	0.53
51:x:362:ARG:HB3	51:x:372:ILE:HD13	1.91	0.53
9:A:233:ARG:HB3	9:A:256:ILE:HD11	1.91	0.53
29:W:3:ILE:O	29:W:30:GLY:N	2.40	0.53
34:c:106:THR:HG22	34:c:108:ALA:H	1.72	0.53
38:h:31:GLU:O	38:h:54:ARG:NH2	2.42	0.53
9:A:71:LEU:HB3	9:A:163:LEU:HD22	1.91	0.53
9:A:124:PRO:HA	9:A:127:VAL:HG12	1.90	0.53
17:I:294:ARG:HH22	17:I:708:PRO:HG3	1.73	0.53
30:Y:128:LYS:HD3	30:Y:130:PHE:CE2	2.44	0.53
37:g:35:ASN:HD21	37:g:72:VAL:H	1.54	0.53
51:x:409:TRP:O	51:x:413:LEU:CB	2.57	0.53
2:1:50:ARG:NH1	2:1:58:GLU:OE2	2.42	0.53
20:M:55:LEU:HD22	20:M:61:THR:HB	1.91	0.53
38:h:46:THR:HB	38:h:84:VAL:HG12	1.90	0.53
10:B:271:LEU:O	10:B:275:ILE:HG12	2.09	0.52
23:P:179:ASN:OD1	23:P:187:LYS:NZ	2.37	0.52
2:1:698:MET:HE2	9:A:341:LEU:HD13	1.90	0.52
12:D:1536:G:H2'	12:D:1537:A:C8	2.44	0.52
37:g:89:SER:HB3	37:g:112:LEU:HD13	1.91	0.52
49:t:299:GLY:HA3	49:t:312:LYS:O	2.09	0.52
12:D:1162:C:H41	32:a:2:GLY:HA2	1.73	0.52
27:U:33:ARG:NE	41:k:107:ASP:OD2	2.38	0.52
30:Y:191:ARG:HD2	30:Y:245:ARG:HE	1.74	0.52
31:Z:3:VAL:HG12	31:Z:4:ALA:H	1.73	0.52
36:f:30:ILE:HD13	36:f:36:GLN:HE22	1.75	0.52
12:D:959:G:OP1	26:T:104:ARG:NH1	2.43	0.52
19:L:78:ARG:O	19:L:81:ARG:N	2.37	0.52
44:n:105:ASN:O	44:n:109:GLU:HB2	2.09	0.52
2:1:733:MET:HA	2:1:736:HIS:HB2	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:C:336:GLY:O	11:C:340:LEU:HD23	2.09	0.52
12:D:165:G:OP2	12:D:165:G:N2	2.34	0.52
8:9:17:ARG:NH2	12:D:1173:A:OP1	2.42	0.52
2:1:55:LYS:O	2:1:58:GLU:HB2	2.09	0.52
51:x:394:LYS:O	51:x:449:LEU:HA	2.09	0.52
51:x:391:ILE:HG22	51:x:446:TYR:HB2	1.92	0.52
2:1:374:ILE:O	2:1:378:ILE:HG12	2.10	0.52
12:D:217:A:H61	12:D:304:C:H5	1.57	0.52
22:O:213:LEU:HD23	22:O:240:THR:HG23	1.92	0.52
30:Y:204:SER:OG	30:Y:205:PHE:N	2.41	0.52
12:D:1740:C:H3'	29:W:58:LEU:HD13	1.92	0.52
17:I:498:LEU:HB3	17:I:499:PRO:HD2	1.92	0.52
17:I:638:VAL:HG22	17:I:645:VAL:HB	1.91	0.52
27:U:37:GLU:HG3	41:k:150:TRP:HE1	1.74	0.52
41:k:11:LEU:HB2	41:k:307:VAL:HB	1.91	0.52
2:1:554:TYR:CE1	2:1:558:LYS:HG3	2.45	0.51
2:1:610:ASN:ND2	2:1:645:LEU:O	2.43	0.51
12:D:826:A:O2'	12:D:827:A:O4'	2.27	0.51
12:D:1158:G:H5"	34:c:76:SER:HB3	1.92	0.51
24:Q:184:ARG:HD2	24:Q:191:ARG:HD3	1.92	0.51
12:D:1709:G:H21	15:G:43:GLY:HA3	1.75	0.51
28:V:46:THR:OG1	28:V:86:GLU:OE1	2.26	0.51
49:t:47:ILE:HD12	49:t:173:HIS:HB3	1.92	0.51
12:D:1155:U:OP1	22:O:185:THR:OG1	2.25	0.51
3:3:33:ILE:HG12	3:3:47:VAL:HG22	1.93	0.51
9:A:337:ASP:HA	9:A:340:ARG:HG2	1.93	0.51
11:C:382:TYR:HD2	11:C:402:VAL:HG11	1.76	0.51
24:Q:145:ILE:HG12	24:Q:159:ILE:HB	1.91	0.51
2:1:673:PHE:HA	2:1:676:HIS:CD2	2.46	0.51
12:D:1536:G:H2'	12:D:1537:A:H8	1.75	0.51
12:D:1736:G:H2'	12:D:1737:G:H8	1.75	0.51
30:Y:139:LEU:HG	30:Y:147:ILE:HB	1.92	0.51
19:L:95:ILE:HD11	19:L:133:LEU:HD13	1.93	0.51
30:Y:246:LEU:HB3	30:Y:250:GLU:HG3	1.92	0.51
11:C:57:SER:HB3	14:F:1:LYS:HZ2	1.76	0.51
29:W:119:LEU:HD21	29:W:153:LYS:HG2	1.91	0.51
44:n:47:LYS:HE3	44:n:78:LYS:HG3	1.93	0.51
17:I:376:VAL:HG21	17:I:390:THR:HB	1.93	0.51
36:f:56:TYR:HB3	36:f:63:LYS:HA	1.93	0.51
41:k:178:ASN:HB3	41:k:185:LYS:HE3	1.92	0.51
49:t:204:TYR:HD1	49:t:207:ILE:HD11	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:D:639:C:H2'	12:D:640:A:H8	1.76	0.51
49:t:204:TYR:CE1	49:t:221:ILE:HG13	2.42	0.51
11:C:319:LEU:HD21	11:C:362:LYS:HB3	1.91	0.51
12:D:928:G:H1	12:D:1013:U:H3	1.57	0.51
12:D:1413:G:H2'	12:D:1414:A:H8	1.76	0.50
35:e:113:ARG:NH2	45:o:265:PRO:HB3	2.27	0.50
12:D:126:G:OP2	25:S:195:LYS:NZ	2.38	0.50
12:D:919:A:OP2	28:V:64:ARG:NH2	2.41	0.50
13:E:111:VAL:HG12	13:E:140:PHE:HB2	1.93	0.50
52:y:35:MET:HE1	52:y:55:VAL:HG13	1.93	0.50
9:A:289:ALA:HA	9:A:292:HIS:HB3	1.92	0.50
9:A:390:LEU:HD22	9:A:407:VAL:HG22	1.92	0.50
12:D:497:C:H5'	30:Y:30:ARG:HE	1.77	0.50
11:C:381:TRP:HA	11:C:385:ALA:HB3	1.92	0.50
26:T:101:GLY:HA3	26:T:134:PRO:HG2	1.92	0.50
49:t:278:VAL:HA	49:t:339:VAL:O	2.11	0.50
2:1:458:ILE:O	2:1:462:THR:OG1	2.28	0.50
12:D:1228:A:H2'	12:D:1229:G:H8	1.77	0.50
19:L:30:LEU:HD11	19:L:82:GLU:HG2	1.92	0.50
2:1:772:ALA:HA	2:1:775:VAL:HG12	1.92	0.50
11:C:191:PHE:O	11:C:195:MET:HG2	2.11	0.50
12:D:28:U:H2'	12:D:29:G:H8	1.75	0.50
25:S:79:LYS:HA	25:S:84:TYR:HE1	1.76	0.50
9:A:87:GLU:HA	9:A:173:LEU:HD22	1.94	0.50
17:I:309:ILE:HG13	17:I:700:CYS:HB2	1.94	0.50
27:U:106:LEU:HA	27:U:109:LEU:HB3	1.93	0.50
33:b:110:GLU:HB2	44:n:117:ILE:HD13	1.93	0.50
41:k:20:GLN:HG2	41:k:69:VAL:H	1.75	0.50
41:k:101:PHE:CE1	41:k:136:GLY:HA2	2.47	0.50
49:t:186:LEU:HD13	49:t:220:PRO:HG2	1.94	0.50
11:C:375:GLU:HG3	11:C:405:LEU:HD21	1.93	0.50
17:I:378:LEU:HB2	17:I:391:PHE:HD2	1.76	0.50
36:f:29:GLN:HB3	51:x:472:LYS:HZ2	1.77	0.50
2:1:67:ILE:O	2:1:71:MET:HG3	2.12	0.49
12:D:980:A:H2'	12:D:981:A:C8	2.47	0.49
12:D:1588:A:H2'	12:D:1589:A:C8	2.47	0.49
37:g:78:VAL:HA	37:g:81:ILE:HG12	1.94	0.49
49:t:380:ARG:HE	49:t:391:LYS:HE3	1.77	0.49
2:1:832:MET:SD	2:1:847:THR:OG1	2.70	0.49
10:B:232:GLN:HG2	11:C:354:ILE:HD11	1.93	0.49
27:U:12:ALA:O	27:U:16:ILE:HG13	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:r:48:LEU:HA	47:r:51:LEU:HD23	1.94	0.49
12:D:743:U:H3	12:D:798:G:H1	1.59	0.49
24:Q:205:ARG:O	24:Q:205:ARG:HD3	2.13	0.49
30:Y:44:LEU:HD11	30:Y:72:ILE:HD11	1.94	0.49
15:G:46:ARG:HH21	32:a:58:GLU:CD	2.20	0.49
25:S:202:ASN:OD1	30:Y:148:ARG:NH1	2.44	0.49
28:V:46:THR:HG22	28:V:49:GLN:OE1	2.12	0.49
50:w:51:LYS:HB2	50:w:90:ASP:HB2	1.94	0.49
51:x:405:ASN:C	51:x:405:ASN:HD22	2.21	0.49
9:A:231:GLU:HA	9:A:234:LEU:HB3	1.94	0.49
22:O:253:PRO:HA	22:O:256:TRP:CG	2.47	0.49
30:Y:87:MET:HE1	30:Y:236:ILE:HD13	1.94	0.49
31:Z:24:ARG:NH1	31:Z:28:GLU:OE2	2.42	0.49
41:k:57:ARG:NH2	41:k:93:THR:O	2.45	0.49
41:k:212:LYS:HA	41:k:235:ILE:HG23	1.95	0.49
42:l:51:ASN:HB3	42:l:54:TYR:HD2	1.77	0.49
2:1:695:ILE:HA	2:1:698:MET:HG3	1.94	0.49
13:E:83:GLN:C	13:E:84:ARG:HG2	2.38	0.49
36:f:89:THR:HA	36:f:92:ILE:HG12	1.93	0.49
37:g:19:ALA:HB2	37:g:75:GLY:HA3	1.95	0.49
12:D:1711:U:H2'	12:D:1712:A:C8	2.47	0.49
27:U:54:VAL:O	27:U:58:MET:HG2	2.13	0.49
47:r:46:ILE:HG12	47:r:85:LEU:HB2	1.94	0.49
2:1:504:LEU:HD12	2:1:564:ILE:HG23	1.93	0.49
11:C:280:LYS:HG2	11:C:283:MET:HE2	1.94	0.49
12:D:522:A:H5"	31:Z:145:PRO:HD2	1.94	0.49
12:D:1737:G:OP1	25:S:94:ARG:NH2	2.45	0.49
13:E:11:GLN:HB3	13:E:56:ILE:HG21	1.95	0.49
25:S:142:ARG:HA	25:S:147:LEU:HB2	1.95	0.49
50:w:97:ILE:HA	50:w:100:GLN:HG2	1.93	0.49
35:e:81:TYR:O	35:e:85:ASN:CB	2.61	0.49
2:1:825:MET:HB2	2:1:830:GLU:HG3	1.93	0.49
9:A:74:TYR:HH	9:A:85:SER:HG	1.61	0.49
12:D:1566:G:O3'	12:D:1567:G:N2	2.45	0.49
19:L:18:GLU:HA	19:L:21:SER:HB2	1.95	0.49
24:Q:147:LEU:O	24:Q:165:ASN:ND2	2.42	0.49
38:h:14:ASP:OD1	38:h:18:LYS:NZ	2.42	0.49
47:r:51:LEU:HD11	47:r:63:ILE:HD11	1.95	0.49
12:D:654:A:O2'	12:D:655:A:OP2	2.30	0.48
12:D:1845:A:H2'	12:D:1846:G:C8	2.48	0.48
18:J:22:ARG:NH1	26:T:144:GLY:O	2.44	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:V:62:GLN:HB2	28:V:65:PHE:HD1	1.78	0.48
32:a:41:PHE:HZ	32:a:102:VAL:HG12	1.78	0.48
9:A:469:ARG:NH1	9:A:473:ASP:OD2	2.46	0.48
19:L:87:PHE:HB3	19:L:90:LYS:HE3	1.94	0.48
24:Q:81:ASN:HA	24:Q:84:GLN:OE1	2.13	0.48
29:W:113:TYR:HD1	29:W:121:LEU:HD22	1.77	0.48
51:x:426:LYS:HD3	52:y:35:MET:HA	1.95	0.48
12:D:106:C:H2'	12:D:107:A:H8	1.78	0.48
12:D:496:C:O5'	30:Y:32:SER:N	2.30	0.48
12:D:1401:A:H2'	12:D:1402:A:C8	2.48	0.48
22:O:166:ARG:HB3	22:O:247:THR:HB	1.95	0.48
49:t:235:VAL:O	49:t:239:ILE:HB	2.13	0.48
2:1:371:ILE:HB	2:1:375:LYS:HZ3	1.78	0.48
10:B:180:LEU:HD12	49:t:223:PRO:HG3	1.95	0.48
37:g:103:ALA:O	37:g:106:LYS:HB3	2.13	0.48
6:7:252:GLU:HG2	6:7:272:LYS:HZ3	1.79	0.48
49:t:127:VAL:HG12	49:t:128:ARG:HD2	1.95	0.48
2:1:372:VAL:HG13	2:1:440:VAL:HG11	1.95	0.48
2:1:695:ILE:HD11	2:1:745:LYS:HE2	1.96	0.48
10:B:295:THR:OG1	10:B:296:ARG:N	2.47	0.48
11:C:117:LYS:HG2	11:C:120:ARG:NH2	2.28	0.48
11:C:221:PRO:O	11:C:225:GLN:HB2	2.13	0.48
12:D:51:U:H2'	12:D:52:G:H8	1.79	0.48
12:D:1221:G:H2'	12:D:1222:G:C8	2.48	0.48
53:z:33:C:O2'	53:z:35:A:OP2	2.30	0.48
9:A:129:LEU:HD13	9:A:140:ARG:HH22	1.77	0.48
23:P:123:ALA:HB2	23:P:165:ARG:HG3	1.96	0.48
41:k:86:THR:HG21	41:k:100:ARG:HH22	1.79	0.48
49:t:370:GLU:HG3	49:t:463:VAL:HG22	1.95	0.48
51:x:417:ARG:O	51:x:421:ILE:HG12	2.14	0.48
9:A:485:ASP:HB2	9:A:490:THR:HG22	1.95	0.48
11:C:121:ARG:HH21	14:F:1:LYS:HZ3	1.61	0.48
21:N:2:GLN:HG2	21:N:8:PHE:CD1	2.47	0.48
24:Q:76:VAL:HG12	24:Q:123:VAL:HB	1.94	0.48
34:c:18:GLU:HG2	34:c:69:LEU:HB3	1.96	0.48
48:s:139:HIS:HD1	48:s:150:PHE:HE1	1.62	0.48
2:1:622:ARG:HD2	2:1:769:PHE:HE1	1.78	0.48
11:C:319:LEU:HD11	11:C:362:LYS:HD3	1.95	0.48
41:k:40:ILE:HB	41:k:59:LEU:HB2	1.95	0.48
9:A:269:PRO:HB3	9:A:306:MET:HG2	1.95	0.48
10:B:325:ARG:NH2	12:D:1059:G:OP1	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:D:898:U:H2'	12:D:899:U:H6	1.78	0.48
12:D:987:A:C6	23:P:120:MET:HE1	2.48	0.48
12:D:1714:U:H2'	12:D:1715:A:C8	2.49	0.48
17:I:625:LEU:HB2	17:I:636:ALA:HB3	1.96	0.48
25:S:135:PRO:HB3	25:S:158:VAL:H	1.79	0.48
28:V:62:GLN:HB2	28:V:65:PHE:CD1	2.49	0.48
40:j:44:ARG:NH1	50:w:78:ASP:OD2	2.47	0.48
12:D:730:C:H2'	12:D:731:G:C8	2.49	0.47
12:D:1201:U:H2'	12:D:1202:U:C6	2.48	0.47
17:I:294:ARG:HB3	17:I:297:LEU:HD12	1.95	0.47
28:V:16:LEU:HD21	28:V:62:GLN:NE2	2.28	0.47
30:Y:147:ILE:HD12	30:Y:168:LYS:C	2.39	0.47
47:r:221:GLU:C	47:r:222:THR:HG22	2.36	0.47
51:x:476:PHE:O	51:x:480:ILE:HG12	2.14	0.47
11:C:382:TYR:CE2	11:C:402:VAL:HG21	2.49	0.47
12:D:562:U:H2'	12:D:563:G:C8	2.49	0.47
13:E:83:GLN:HG3	13:E:84:ARG:HE	1.79	0.47
23:P:33:VAL:HG23	23:P:44:ILE:HB	1.95	0.47
23:P:52:THR:HG23	23:P:57:ILE:HA	1.95	0.47
29:W:206:LYS:HA	29:W:206:LYS:HD3	1.80	0.47
30:Y:37:LYS:HD2	30:Y:37:LYS:HA	1.60	0.47
2:1:622:ARG:HD2	2:1:769:PHE:CE1	2.49	0.47
2:1:822:ILE:HA	2:1:825:MET:HG2	1.96	0.47
12:D:1013:U:OP1	12:D:1129:G:O2'	2.32	0.47
49:t:206:GLN:HB2	49:t:209:ALA:HB3	1.97	0.47
51:x:445:GLU:HG3	51:x:446:TYR:CE2	2.50	0.47
2:1:70:ALA:HA	2:1:73:ILE:HG22	1.96	0.47
2:1:598:ILE:HG22	2:1:606:GLN:HG2	1.95	0.47
9:A:154:TRP:NE1	9:A:193:GLU:HB3	2.29	0.47
10:B:329:ARG:O	47:r:54:ARG:NH1	2.46	0.47
12:D:943:U:OP1	23:P:214:LYS:NZ	2.44	0.47
15:G:61:ILE:HA	15:G:91:VAL:HG12	1.97	0.47
21:N:66:ASP:OD1	24:Q:160:ALA:N	2.42	0.47
3:3:97:LEU:HD22	3:3:102:LEU:HD23	1.97	0.47
12:D:218:U:O2	29:W:184:ARG:NH2	2.48	0.47
2:1:398:TRP:CH2	2:1:455:PHE:HB2	2.50	0.47
9:A:182:PHE:CZ	9:A:197:LEU:HD21	2.50	0.47
9:A:388:LYS:O	9:A:388:LYS:NZ	2.42	0.47
22:O:108:LYS:HE3	22:O:110:MET:HB3	1.95	0.47
42:l:20:ALA:O	42:l:23:LYS:HB3	2.14	0.47
47:r:140:ASP:OD1	47:r:140:ASP:N	2.46	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:t:367:ILE:HA	49:t:433:VAL:O	2.15	0.47
2:1:627:LYS:HD2	2:1:693:LEU:HD11	1.97	0.47
11:C:57:SER:HB3	14:F:1:LYS:NZ	2.30	0.47
12:D:924:G:H5'	28:V:4:MET:HE3	1.97	0.47
16:H:15:N:H1'2	38:h:94:ARG:HH22	1.80	0.47
17:I:662:THR:HG22	17:I:707:ARG:HD2	1.97	0.47
19:L:65:PRO:HG2	19:L:68:GLN:HB2	1.97	0.47
22:O:192:LEU:HB3	22:O:227:ARG:HB3	1.96	0.47
49:t:91:LEU:HD23	49:t:101:CYS:HA	1.95	0.47
53:z:20:A:H61	53:z:57:G:H2'	1.79	0.47
11:C:224:ARG:HH11	11:C:224:ARG:HD3	1.54	0.47
31:Z:113:GLN:HG3	31:Z:149:VAL:HG21	1.97	0.47
46:q:52:LEU:O	46:q:78:LYS:HA	2.15	0.47
2:1:593:HIS:CE1	51:x:59:TYR:HB2	2.50	0.47
37:g:42:ILE:HG22	37:g:44:PRO:HD2	1.97	0.47
41:k:66:VAL:HG12	41:k:82:SER:HB2	1.97	0.47
48:s:139:HIS:ND1	48:s:150:PHE:HE1	2.13	0.47
2:1:766:TRP:HB2	2:1:776:ARG:HH21	1.80	0.47
12:D:37:C:O2'	12:D:38:A:H8	1.97	0.47
12:D:878:G:H1	12:D:908:A:H61	1.62	0.47
17:I:415:LYS:HD2	17:I:454:MET:HG3	1.96	0.47
25:S:220:ALA:O	25:S:224:ARG:NE	2.47	0.47
26:T:138:ASP:OD2	26:T:140:THR:OG1	2.31	0.47
28:V:91:LEU:HB3	28:V:122:ILE:HG12	1.96	0.47
30:Y:104:ASP:HB3	30:Y:110:ALA:HB2	1.97	0.47
46:q:36:ARG:HD2	46:q:36:ARG:HA	1.52	0.47
49:t:447:VAL:HG21	49:t:452:ARG:HB2	1.97	0.47
2:1:162:ASN:HD21	2:1:165:GLN:HB2	1.80	0.46
12:D:1452:A:N6	12:D:1473:G:H21	2.11	0.46
15:G:65:LEU:HG	15:G:69:VAL:HB	1.96	0.46
17:I:657:VAL:HG12	17:I:668:THR:HG22	1.96	0.46
35:e:110:ARG:HA	35:e:113:ARG:NH2	2.30	0.46
36:f:102:LEU:HD21	43:m:100:VAL:HG21	1.98	0.46
2:1:597:ASN:C	2:1:597:ASN:ND2	2.71	0.46
9:A:268:LYS:HB2	9:A:271:LEU:HG	1.97	0.46
10:B:183:VAL:HG11	49:t:192:ILE:HD11	1.98	0.46
10:B:325:ARG:HB3	10:B:329:ARG:HH12	1.80	0.46
11:C:167:THR:O	11:C:170:THR:HG22	2.15	0.46
23:P:33:VAL:HG12	23:P:96:CYS:HB2	1.97	0.46
2:1:476:GLU:HA	2:1:479:VAL:HG12	1.96	0.46
24:Q:85:ARG:HD3	24:Q:205:ARG:H	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:S:64:LYS:NZ	25:S:81:HIS:O	2.48	0.46
50:w:43:ALA:HB1	50:w:50:VAL:HG11	1.96	0.46
6:7:307:HIS:HB3	38:h:66:ILE:HD13	1.98	0.46
9:A:201:LEU:HD11	9:A:233:ARG:NH1	2.30	0.46
12:D:496:C:O2	30:Y:36:HIS:N	2.43	0.46
20:M:43:ILE:HD13	20:M:43:ILE:HG21	1.72	0.46
24:Q:80:ARG:HH21	24:Q:126:ASP:HB2	1.81	0.46
41:k:191:HIS:CG	41:k:195:LEU:HD21	2.50	0.46
47:r:182:ARG:HD2	53:z:55:U:H4'	1.98	0.46
10:B:219:PHE:HB3	10:B:256:LEU:HB3	1.96	0.46
11:C:266:LEU:HD12	11:C:325:TYR:HE2	1.80	0.46
12:D:178:C:H2'	12:D:179:C:H6	1.81	0.46
12:D:1350:U:O2	24:Q:110:ASN:ND2	2.48	0.46
17:I:670:VAL:HB	17:I:679:ASN:HA	1.96	0.46
31:Z:158:ASP:OD1	31:Z:159:PHE:N	2.47	0.46
36:f:50:PRO:HB3	36:f:69:VAL:HG23	1.98	0.46
2:1:280:LYS:HB3	2:1:284:ARG:CZ	2.46	0.46
2:1:695:ILE:HG23	2:1:696:PRO:HD3	1.97	0.46
2:1:850:THR:HG22	2:1:851:ALA:H	1.80	0.46
9:A:451:GLU:HB3	9:A:490:THR:HA	1.98	0.46
12:D:525:A:O2'	14:F:31:ARG:NH2	2.49	0.46
12:D:570:C:O2'	35:e:34:THR:O	2.20	0.46
12:D:1144:A:H2'	12:D:1145:A:C8	2.50	0.46
23:P:133:TYR:HD2	23:P:181:LEU:HB2	1.80	0.46
27:U:29:HIS:HA	27:U:32:LYS:HE2	1.98	0.46
30:Y:87:MET:HE3	30:Y:123:LEU:HB2	1.96	0.46
30:Y:148:ARG:O	30:Y:168:LYS:NZ	2.47	0.46
38:h:123:LEU:HD12	38:h:134:CYS:SG	2.55	0.46
44:n:47:LYS:HB3	44:n:70:ILE:HD11	1.98	0.46
49:t:255:ARG:HD2	49:t:285:LYS:HE2	1.98	0.46
12:D:639:C:H2'	12:D:640:A:C8	2.51	0.46
12:D:649:U:H2'	12:D:650:A:H8	1.81	0.46
33:b:18:ARG:HD3	44:n:88:LYS:HG2	1.98	0.46
9:A:380:LEU:HB3	9:A:388:LYS:HE2	1.98	0.46
12:D:1060:A:O2'	12:D:1062:A:N7	2.45	0.46
23:P:171:ILE:HG12	23:P:174:ARG:NH2	2.31	0.46
33:b:28:MET:HB3	33:b:32:GLN:HB2	1.98	0.46
12:D:78:C:H1'	25:S:175:LYS:HG3	1.98	0.46
12:D:1745:A:O3'	25:S:31:ARG:NH1	2.49	0.46
47:r:111:ILE:HG22	47:r:112:LEU:HD12	1.98	0.46
51:x:408:ASP:HB3	51:x:411:GLN:HG2	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:514:PHE:CD2	2:1:770:PRO:HG2	2.51	0.46
12:D:609:U:H2'	12:D:610:G:H8	1.81	0.46
12:D:829:C:OP1	30:Y:21:ASP:HB2	2.16	0.46
22:O:125:LYS:HG3	22:O:143:CYS:HB2	1.96	0.46
23:P:33:VAL:HG11	23:P:67:PHE:CE2	2.50	0.46
9:A:230:LEU:HD21	9:A:259:LEU:HD21	1.98	0.45
12:D:145:G:H2'	12:D:146:G:C8	2.51	0.45
12:D:575:A:OP2	35:e:93:ARG:NH2	2.48	0.45
12:D:643:A:OP2	31:Z:38:ARG:NH1	2.34	0.45
12:D:942:G:H2'	12:D:943:U:C6	2.51	0.45
12:D:1650:A:H5"	37:g:139:ALA:HB2	1.96	0.45
12:D:1808:U:H2'	12:D:1809:A:H8	1.81	0.45
17:I:360:TRP:CD1	17:I:367:GLN:HA	2.51	0.45
24:Q:176:TRP:CD2	24:Q:199:PRO:HB3	2.51	0.45
49:t:39:GLN:HB3	49:t:328:LEU:HD21	1.97	0.45
2:1:392:TYR:HB2	2:1:458:ILE:HG12	1.97	0.45
2:1:514:PHE:HD2	2:1:770:PRO:HG2	1.81	0.45
9:A:380:LEU:HD22	9:A:388:LYS:HE2	1.97	0.45
11:C:68:LEU:HD21	11:C:118:LEU:HD21	1.98	0.45
12:D:496:C:P	30:Y:32:SER:H	2.40	0.45
12:D:989:C:O2	18:J:32:LYS:NZ	2.49	0.45
12:D:1521:C:N4	44:n:137:LYS:HG3	2.31	0.45
37:g:33:LYS:HG2	37:g:38:PRO:HA	1.97	0.45
49:t:445:ARG:HB2	49:t:454:ILE:HD13	1.98	0.45
51:x:322:ASN:O	51:x:326:GLN:CB	2.64	0.45
2:1:514:PHE:HD1	2:1:579:HIS:CD2	2.34	0.45
9:A:415:ARG:HD3	9:A:428:VAL:HG11	1.98	0.45
12:D:106:C:H2'	12:D:107:A:C8	2.52	0.45
12:D:183:G:O2'	12:D:184:G:O4'	2.31	0.45
12:D:1808:U:H2'	12:D:1809:A:C8	2.52	0.45
30:Y:11:ARG:HA	30:Y:28:ALA:HB2	1.97	0.45
32:a:96:GLU:OE2	45:o:34:MET:HE2	2.17	0.45
39:i:15:LEU:HD22	39:i:49:MET:HE1	1.99	0.45
18:J:12:LYS:HB2	18:J:33:ASP:OD2	2.16	0.45
35:e:36:PRO:HD2	35:e:39:GLU:OE2	2.16	0.45
49:t:225:SER:HB3	49:t:230:TYR:HB2	1.98	0.45
8:9:11:ARG:HD3	12:D:1183:A:H5'	1.97	0.45
9:A:480:LEU:HD11	9:A:482:VAL:HB	1.98	0.45
12:D:3:C:O2'	12:D:5:U:O5'	2.35	0.45
12:D:28:U:H2'	12:D:29:G:C8	2.52	0.45
12:D:825:A:H2'	12:D:826:A:C8	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:D:928:G:N2	20:M:68:GLY:O	2.48	0.45
12:D:1098:C:H2'	12:D:1099:G:C8	2.51	0.45
12:D:1736:G:H2'	12:D:1737:G:C8	2.52	0.45
19:L:117:PRO:HG2	19:L:120:ARG:HD2	1.99	0.45
36:f:121:PRO:HA	36:f:193:LYS:HD2	1.97	0.45
53:z:20:A:H8	53:z:60:A:H62	1.65	0.45
9:A:241:ILE:HD11	9:A:285:LYS:HD2	1.99	0.45
12:D:1781:A:H2'	12:D:1782:G:C8	2.51	0.45
17:I:666:VAL:HB	17:I:684:TRP:HB2	1.99	0.45
22:O:204:ILE:HG22	22:O:206:SER:HB3	1.99	0.45
41:k:112:ALA:HB3	41:k:121:VAL:HG12	1.99	0.45
9:A:348:ILE:O	9:A:351:LYS:HG3	2.17	0.45
11:C:230:PHE:CE2	11:C:245:PHE:HD2	2.35	0.45
12:D:851:C:O2'	12:D:852:G:N2	2.49	0.45
12:D:1010:G:H2'	12:D:1011:A:C8	2.51	0.45
12:D:1452:A:H61	12:D:1473:G:N2	2.14	0.45
24:Q:125:THR:HG22	24:Q:175:TRP:HE1	1.80	0.45
49:t:57:VAL:O	49:t:61:ILE:HG12	2.17	0.45
12:D:902:G:H2'	12:D:903:A:C8	2.51	0.45
12:D:948:C:H2'	12:D:949:G:H8	1.81	0.45
12:D:1010:G:H2'	12:D:1011:A:H8	1.81	0.45
12:D:1587:G:H5"	42:l:77:LYS:HE2	1.99	0.45
22:O:234:GLY:O	22:O:238:LYS:HG3	2.17	0.45
24:Q:84:GLN:HG2	24:Q:100:ALA:HB1	1.99	0.45
32:a:39:ASN:ND2	32:a:42:GLY:O	2.50	0.45
49:t:82:GLY:O	49:t:133:VAL:HA	2.17	0.45
12:D:15:U:H2'	12:D:16:G:O4'	2.16	0.45
12:D:903:A:H2'	12:D:904:A:C8	2.52	0.45
12:D:1473:G:H2'	12:D:1475:G:N2	2.31	0.45
12:D:1673:U:H5"	37:g:78:VAL:HG22	1.99	0.45
18:J:42:ARG:HG2	18:J:43:ASN:N	2.32	0.45
24:Q:43:SER:O	27:U:126:MET:HG2	2.16	0.45
25:S:23:LYS:HD3	25:S:41:LEU:HA	1.99	0.45
26:T:29:GLY:O	26:T:93:LEU:HA	2.17	0.45
34:c:31:SER:HB3	34:c:34:ILE:HG13	1.99	0.45
36:f:30:ILE:HG23	36:f:117:ILE:HD11	1.99	0.45
39:i:21:MET:HB2	39:i:69:TRP:HB2	1.99	0.45
12:D:116:U:H3	12:D:347:G:H1	1.65	0.45
12:D:464:A:H3'	12:D:465:A:H8	1.82	0.45
17:I:520:GLN:HB2	17:I:525:TYR:HB2	1.99	0.45
25:S:106:LEU:HD22	25:S:109:LEU:HD12	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:Y:128:LYS:HD3	30:Y:130:PHE:HE2	1.80	0.45
37:g:32:ILE:HG13	37:g:68:ILE:HB	1.98	0.45
44:n:68:ILE:O	44:n:72:GLN:HG2	2.17	0.45
51:x:450:GLY:HA2	51:x:468:THR:HA	1.99	0.45
12:D:825:A:O2'	12:D:826:A:O5'	2.22	0.44
12:D:1723:G:H2'	12:D:1724:A:H8	1.83	0.44
38:h:7:LYS:HE2	50:w:25:THR:HG21	1.98	0.44
47:r:73:VAL:HA	47:r:85:LEU:HD23	1.99	0.44
49:t:276:GLY:HA3	49:t:341:THR:O	2.18	0.44
2:1:793:PHE:HE1	2:1:830:GLU:HB2	1.81	0.44
3:3:113:PHE:HB2	10:B:266:GLN:HB3	1.99	0.44
6:7:274:LYS:HE3	6:7:274:LYS:HB2	1.81	0.44
24:Q:154:LEU:HD21	24:Q:160:ALA:HB2	1.98	0.44
37:g:48:GLN:HG2	37:g:52:LEU:HD13	1.99	0.44
43:m:94:LYS:HB3	43:m:96:LEU:HD23	2.00	0.44
9:A:83:ILE:HD13	9:A:169:ARG:HH22	1.82	0.44
12:D:1672:U:OP1	37:g:18:THR:OG1	2.34	0.44
12:D:1834:A:H2	12:D:1837:G:H1	1.64	0.44
22:O:167:ARG:HB3	22:O:177:PRO:HB2	1.99	0.44
3:3:35:ILE:HG22	3:3:112:GLY:HA3	1.98	0.44
9:A:129:LEU:HD13	9:A:140:ARG:NH2	2.32	0.44
37:g:42:ILE:HD13	37:g:42:ILE:HA	1.85	0.44
46:q:86:GLY:HA2	46:q:89:VAL:HG12	2.00	0.44
47:r:71:VAL:HG21	47:r:85:LEU:HD13	1.98	0.44
47:r:159:ASP:HA	47:r:160:PRO:HD3	1.87	0.44
48:s:121:CYS:SG	48:s:123:SER:OG	2.71	0.44
49:t:254:PRO:HG3	49:t:292:GLN:HE22	1.81	0.44
51:x:322:ASN:O	51:x:326:GLN:HB2	2.17	0.44
2:1:663:GLU:O	2:1:667:ARG:HG2	2.18	0.44
12:D:1213:C:H2'	12:D:1214:A:C8	2.53	0.44
12:D:1738:C:H2'	12:D:1739:C:H6	1.81	0.44
12:D:1854:U:H2'	12:D:1855:G:H8	1.83	0.44
36:f:143:PRO:HA	36:f:146:ARG:HG2	1.99	0.44
38:h:136:VAL:HG22	38:h:186:VAL:HG22	1.98	0.44
2:1:573:ILE:HD13	2:1:589:MET:SD	2.58	0.44
12:D:1232:U:H2'	12:D:1233:G:C8	2.53	0.44
12:D:1388:A:H61	38:h:161:GLY:HA3	1.83	0.44
12:D:1579:A:O2'	12:D:1581:C:OP2	2.33	0.44
12:D:1605:G:P	42:l:84:ARG:HH22	2.41	0.44
12:D:1629:C:H4'	44:n:83:PHE:CD1	2.53	0.44
26:T:43:HIS:CD2	26:T:55:ARG:HB3	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:Z:75:ASN:O	31:Z:79:ARG:HB2	2.17	0.44
36:f:88:MET:HE3	36:f:88:MET:HB2	1.86	0.44
48:s:135:HIS:CG	48:s:138:ARG:NH1	2.86	0.44
49:t:127:VAL:HG12	49:t:128:ARG:CD	2.48	0.44
49:t:193:ASP:OD1	49:t:193:ASP:N	2.49	0.44
2:1:110:LEU:HD23	2:1:145:ILE:HD11	2.00	0.44
2:1:369:GLY:O	2:1:373:LYS:HG2	2.17	0.44
6:7:243:VAL:HG22	6:7:312:VAL:HG12	2.00	0.44
12:D:1221:G:H2'	12:D:1222:G:H8	1.80	0.44
26:T:138:ASP:OD1	26:T:139:SER:N	2.51	0.44
27:U:66:VAL:H	27:U:73:LEU:HD11	1.82	0.44
36:f:48:TYR:CZ	37:g:56:LEU:HD12	2.53	0.44
46:q:66:GLU:HG3	46:q:76:LEU:HD21	1.99	0.44
12:D:17:C:H2'	12:D:18:C:C6	2.53	0.44
12:D:973:C:N3	26:T:55:ARG:NH2	2.66	0.44
12:D:1004:U:H2'	12:D:1005:G:H8	1.81	0.44
12:D:1092:G:OP1	28:V:2:GLY:N	2.51	0.44
12:D:1662:U:O4	12:D:1663:A:N6	2.50	0.44
15:G:84:TYR:HB2	32:a:54:LYS:HB2	1.99	0.44
38:h:28:GLU:HG2	38:h:69:LEU:HD21	2.00	0.44
49:t:365:PRO:HB3	49:t:436:GLU:HG3	1.99	0.44
2:1:503:TYR:HE2	2:1:554:TYR:HD2	1.65	0.44
12:D:84:A:N3	12:D:150:A:O2'	2.48	0.44
25:S:29:GLU:HB2	25:S:30:LYS:HG3	1.99	0.44
29:W:65:PHE:HA	29:W:187:GLY:O	2.18	0.44
30:Y:59:ASP:O	30:Y:63:LYS:HB3	2.18	0.44
44:n:24:ARG:HG3	44:n:29:ALA:HB2	1.99	0.44
44:n:44:VAL:HG13	44:n:70:ILE:HG23	2.00	0.44
50:w:48:LEU:HD23	50:w:93:SER:HB3	2.00	0.44
9:A:83:ILE:O	9:A:86:LEU:HB2	2.18	0.43
12:D:51:U:H2'	12:D:52:G:C8	2.52	0.43
12:D:1653:U:H2'	12:D:1654:G:C8	2.53	0.43
46:q:94:ILE:HD12	46:q:101:ARG:HH12	1.82	0.43
47:r:176:LEU:O	47:r:180:ILE:HG12	2.18	0.43
9:A:43:TRP:CD1	9:A:78:CYS:HG	2.36	0.43
9:A:351:LYS:HA	9:A:354:ARG:HG2	2.00	0.43
12:D:496:C:O2'	30:Y:33:THR:O	2.27	0.43
12:D:502:C:H4'	30:Y:62:LYS:HE2	2.01	0.43
12:D:1016:U:H5"	28:V:14:SER:HB3	2.00	0.43
12:D:1337:C:H2'	12:D:1338:G:H8	1.84	0.43
17:I:682:TRP:HD1	17:I:693:LYS:HG2	1.81	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:Q:176:TRP:CG	24:Q:199:PRO:HB3	2.53	0.43
28:V:16:LEU:HB2	34:c:57:ARG:NH2	2.32	0.43
41:k:218:LEU:C	41:k:219:TRP:CD1	2.96	0.43
42:l:96:SER:HB2	42:l:99:VAL:HG22	1.99	0.43
46:q:64:LEU:HB2	48:s:114:ILE:HD11	2.00	0.43
46:q:93:LYS:H	46:q:93:LYS:HG2	1.56	0.43
51:x:394:LYS:HE3	51:x:435:TRP:CE2	2.53	0.43
2:1:507:ILE:O	2:1:511:TYR:HB3	2.17	0.43
12:D:562:U:H1'	31:Z:132:GLN:OE1	2.18	0.43
12:D:874:G:H2'	12:D:875:A:C8	2.52	0.43
12:D:1133:A:H4'	18:J:13:LYS:HD3	2.00	0.43
50:w:40:ILE:HD11	50:w:89:ILE:HD12	2.01	0.43
2:1:858:GLN:O	2:1:862:LYS:HB3	2.18	0.43
12:D:5:U:H2'	12:D:6:G:C8	2.53	0.43
22:O:196:ILE:HB	22:O:223:TYR:HB2	2.01	0.43
34:c:18:GLU:OE1	34:c:65:LEU:HD12	2.16	0.43
49:t:142:MET:HB2	49:t:452:ARG:HH21	1.83	0.43
49:t:162:ASN:HD22	49:t:194:LEU:HD22	1.84	0.43
12:D:819:G:H5"	31:Z:79:ARG:NH2	2.34	0.43
12:D:1628:C:H2'	12:D:1629:C:C6	2.53	0.43
23:P:97:LEU:HD12	23:P:232:HIS:CG	2.53	0.43
30:Y:69:PHE:HZ	35:e:17:LEU:HA	1.84	0.43
36:f:135:ARG:HB2	47:r:49:SER:HB3	2.00	0.43
37:g:84:ILE:O	37:g:88:ILE:HG13	2.19	0.43
38:h:135:GLU:HB3	38:h:187:LYS:HG3	2.01	0.43
49:t:299:GLY:HA2	49:t:314:ILE:HD12	2.00	0.43
9:A:236:GLN:HE22	9:A:252:ALA:HB2	1.83	0.43
9:A:269:PRO:HG3	9:A:306:MET:HE2	2.00	0.43
11:C:401:PHE:HE1	11:C:405:LEU:HD12	1.82	0.43
12:D:115:U:H2'	12:D:116:U:C6	2.53	0.43
12:D:520:A:O2'	12:D:521:A:H8	2.02	0.43
12:D:862:A:C8	34:c:107:SER:HA	2.54	0.43
22:O:253:PRO:HG2	34:c:99:PHE:HB2	1.99	0.43
31:Z:28:GLU:O	31:Z:32:ILE:HG12	2.18	0.43
39:i:22:VAL:HG22	39:i:68:TYR:HD2	1.83	0.43
47:r:27:ILE:HD11	47:r:63:ILE:HG21	2.00	0.43
2:1:464:PRO:HB3	2:1:673:PHE:CG	2.54	0.43
12:D:391:C:H2'	12:D:392:A:H8	1.82	0.43
12:D:522:A:OP2	31:Z:45:ARG:NH2	2.52	0.43
12:D:553:U:H2'	12:D:554:A:C8	2.54	0.43
12:D:614:C:H2'	12:D:626:G:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:D:1723:G:H2'	12:D:1724:A:C8	2.53	0.43
17:I:580:LEU:HG	17:I:589:VAL:HG12	1.99	0.43
44:n:7:GLU:HG3	44:n:8:LYS:HD3	2.00	0.43
44:n:70:ILE:HG13	44:n:77:TYR:CD2	2.53	0.43
49:t:142:MET:O	49:t:146:LEU:HG	2.17	0.43
50:w:93:SER:HB2	50:w:97:ILE:HD11	2.00	0.43
2:1:254:SER:HA	2:1:257:LEU:HD23	2.00	0.43
2:1:460:GLN:NE2	2:1:670:GLN:O	2.51	0.43
12:D:189:U:H3'	12:D:190:G:C8	2.53	0.43
12:D:1413:G:H2'	12:D:1414:A:C8	2.53	0.43
12:D:1801:A:H2'	12:D:1802:C:H6	1.83	0.43
46:q:82:ASN:OD1	46:q:83:LYS:N	2.52	0.43
51:x:318:TYR:O	51:x:322:ASN:ND2	2.49	0.43
12:D:1261:C:O2	40:j:10:HIS:NE2	2.36	0.43
23:P:171:ILE:HG12	23:P:174:ARG:HH21	1.82	0.43
38:h:55:THR:HA	38:h:58:VAL:HG12	2.01	0.43
41:k:85:GLY:HA2	41:k:108:VAL:HG23	2.01	0.43
48:s:126:CYS:HB3	48:s:130:VAL:HG21	1.99	0.43
49:t:262:PHE:HE2	53:z:76:A:C8	2.36	0.43
51:x:58:LYS:HE2	51:x:59:TYR:CZ	2.54	0.43
2:1:565:ARG:NH2	51:x:29:PRO:HG2	2.34	0.43
9:A:11:ALA:HB2	9:A:34:VAL:HG21	2.00	0.43
9:A:51:MET:HE2	9:A:71:LEU:HD23	2.00	0.43
9:A:191:LYS:HE2	9:A:191:LYS:HB2	1.93	0.43
9:A:320:THR:HG23	9:A:387:VAL:HG21	2.01	0.43
11:C:270:CYS:HA	11:C:271:PRO:HD3	1.91	0.43
12:D:22:A:H5'	31:Z:18:ARG:H	1.83	0.43
12:D:375:U:H2'	12:D:376:A:C8	2.54	0.43
12:D:525:A:H61	14:F:26:LYS:HE2	1.84	0.43
12:D:730:C:H2'	12:D:731:G:H8	1.83	0.43
12:D:1255:G:OP1	12:D:1256:G:O2'	2.29	0.43
36:f:42:LYS:HG2	36:f:43:GLU:H	1.84	0.43
2:1:413:PHE:HE1	2:1:489:TYR:HB2	1.84	0.42
2:1:602:ASP:HA	2:1:603:PRO:HD3	1.79	0.42
9:A:233:ARG:NH2	9:A:255:ASP:OD1	2.52	0.42
9:A:344:MET:HG3	9:A:347:ILE:HD12	1.99	0.42
11:C:365:VAL:HG12	11:C:401:PHE:CE2	2.54	0.42
12:D:183:G:O2'	12:D:184:G:O5'	2.34	0.42
24:Q:11:LYS:O	24:Q:15:VAL:HG23	2.19	0.42
51:x:27:ASP:OD1	51:x:28:MET:N	2.52	0.42
23:P:225:LEU:O	23:P:229:MET:HG2	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:S:129:VAL:HG13	25:S:131:ARG:HG3	2.01	0.42
26:T:57:THR:H	26:T:60:MET:HE3	1.85	0.42
44:n:105:ASN:O	44:n:109:GLU:CB	2.66	0.42
12:D:84:A:H5"	35:e:122:LYS:HD2	2.01	0.42
12:D:107:A:H2'	12:D:108:G:C8	2.54	0.42
12:D:128:U:H3'	12:D:129:C:H6	1.84	0.42
12:D:901:G:H2'	12:D:902:G:H8	1.85	0.42
18:J:46:GLU:OE1	26:T:113:GLN:HG3	2.19	0.42
19:L:162:GLN:O	19:L:166:VAL:HG22	2.20	0.42
30:Y:158:ASP:OD2	30:Y:174:LYS:HD3	2.20	0.42
31:Z:69:ARG:NH1	31:Z:73:GLU:OE1	2.52	0.42
44:n:34:LYS:NZ	44:n:104:ASP:OD1	2.52	0.42
46:q:59:PRO:HB2	46:q:63:LYS:NZ	2.34	0.42
12:D:1004:U:H2'	12:D:1005:G:C8	2.55	0.42
12:D:1738:C:H2'	12:D:1739:C:C6	2.55	0.42
23:P:38:MET:HG3	23:P:186:ASN:HD21	1.84	0.42
30:Y:56:LEU:HB3	35:e:90:ARG:NH2	2.35	0.42
34:c:73:GLY:O	34:c:75:ILE:N	2.43	0.42
37:g:100:VAL:HG12	37:g:101:ASP:H	1.85	0.42
2:1:735:GLU:HA	2:1:738:VAL:HB	2.02	0.42
9:A:398:PHE:HZ	9:A:445:GLN:HE22	1.67	0.42
10:B:231:ARG:NH2	10:B:289:THR:OG1	2.50	0.42
10:B:278:TYR:OH	10:B:312:ALA:O	2.28	0.42
11:C:108:ILE:HG22	11:C:157:ILE:HD12	2.02	0.42
12:D:223:C:H2'	12:D:224:A:C8	2.54	0.42
12:D:1528:G:O2'	12:D:1666:C:OP1	2.34	0.42
22:O:65:LYS:HA	22:O:68:ARG:HE	1.83	0.42
23:P:67:PHE:CE1	26:T:48:SER:HB3	2.55	0.42
38:h:29:LEU:HD22	38:h:58:VAL:HG23	2.02	0.42
49:t:42:ILE:HD12	49:t:246:PRO:HD3	2.00	0.42
2:1:469:TYR:CZ	2:1:673:PHE:HB3	2.55	0.42
9:A:201:LEU:C	9:A:201:LEU:HD12	2.44	0.42
12:D:30:C:O2'	12:D:596:U:OP1	2.38	0.42
25:S:145:PHE:CD2	25:S:156:TYR:HB3	2.55	0.42
41:k:230:LEU:HD13	41:k:259:TRP:CG	2.55	0.42
49:t:49:HIS:CE1	49:t:50:VAL:HG22	2.53	0.42
49:t:405:MET:HA	49:t:414:GLY:HA2	2.01	0.42
2:1:354:LEU:HB3	2:1:378:ILE:HD13	2.01	0.42
3:3:50:ILE:HB	3:3:56:LYS:HE3	2.01	0.42
3:3:85:LEU:HD12	3:3:93:ILE:HD11	2.02	0.42
12:D:294:U:C4	13:E:65:ASN:HB3	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:D:660:C:OP2	32:a:3:LYS:NZ	2.48	0.42
12:D:1778:C:H2'	12:D:1779:G:C8	2.54	0.42
19:L:51:ILE:HG21	19:L:179:LYS:HG2	2.01	0.42
29:W:100:CYS:SG	29:W:175:ILE:HD12	2.59	0.42
30:Y:49:ARG:HG3	30:Y:55:ALA:HB3	2.00	0.42
33:b:75:VAL:HG22	33:b:93:MET:HB3	2.02	0.42
35:e:87:PRO:HG2	35:e:90:ARG:HE	1.84	0.42
38:h:131:ALA:HA	38:h:191:PRO:HD3	2.00	0.42
49:t:145:MET:HE3	49:t:173:HIS:CG	2.54	0.42
2:1:114:GLU:OE1	2:1:149:ASN:ND2	2.53	0.42
9:A:136:ASP:O	9:A:140:ARG:HG2	2.19	0.42
12:D:12:U:H2'	12:D:13:C:C6	2.55	0.42
12:D:522:A:H4'	31:Z:131:ARG:NH1	2.35	0.42
12:D:1259:A:H1'	12:D:1264:C:H42	1.85	0.42
12:D:1824:A:C2	32:a:62:PRO:HB3	2.55	0.42
20:M:21:LYS:HD3	20:M:26:GLN:HE21	1.84	0.42
49:t:60:ALA:HB1	49:t:229:LYS:HG2	2.02	0.42
9:A:468:GLU:HA	9:A:471:ILE:HG12	2.01	0.42
12:D:496:C:H3'	30:Y:38:LEU:HD12	2.01	0.42
12:D:513:G:O3'	45:o:148:ARG:NH2	2.53	0.42
12:D:518:G:O2'	12:D:519:A:H8	2.02	0.42
12:D:563:G:O2'	12:D:564:A:H8	2.03	0.42
12:D:671:A:H4'	12:D:672:A:H5"	2.00	0.42
12:D:1118:C:H6	51:x:82:LEU:HD22	1.85	0.42
17:I:532:ARG:NH1	17:I:533:THR:O	2.53	0.42
30:Y:131:VAL:HG12	30:Y:137:PRO:HA	2.01	0.42
35:e:16:ARG:C	35:e:18:LEU:H	2.28	0.42
36:f:77:MET:HG3	36:f:89:THR:HG21	2.02	0.42
44:n:79:ILE:HA	44:n:80:PRO:HD3	1.90	0.42
47:r:27:ILE:HD11	47:r:63:ILE:HG13	2.02	0.42
49:t:314:ILE:HG21	49:t:343:ILE:HG12	2.02	0.42
49:t:370:GLU:HA	49:t:427:ILE:O	2.19	0.42
53:z:63:A:H2'	53:z:64:U:C6	2.55	0.42
2:1:719:ARG:HD3	2:1:723:ARG:HH22	1.85	0.42
2:1:826:ILE:HD13	2:1:835:LEU:HD13	2.02	0.42
12:D:896:U:H2'	12:D:897:U:C6	2.54	0.42
12:D:1810:U:H2'	12:D:1811:C:C6	2.55	0.42
34:c:36:ARG:HA	34:c:36:ARG:HD3	1.86	0.42
49:t:319:VAL:HG21	49:t:342:LYS:HD3	2.01	0.42
2:1:686:TYR:HD2	2:1:687:LEU:HD22	1.85	0.41
9:A:135:GLU:CD	9:A:140:ARG:HE	2.25	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:251:LYS:O	9:A:254:GLU:HB2	2.20	0.41
20:M:75:GLU:HA	51:x:81:GLN:HE22	1.83	0.41
22:O:125:LYS:HD3	22:O:141:LEU:HD12	2.02	0.41
22:O:137:VAL:HB	22:O:217:ALA:HA	2.00	0.41
23:P:133:TYR:CD2	23:P:181:LEU:HB2	2.54	0.41
24:Q:127:PRO:HG2	24:Q:152:SER:HB3	2.02	0.41
25:S:5:ILE:O	25:S:13:GLN:HA	2.20	0.41
29:W:107:THR:O	29:W:111:GLN:HG3	2.19	0.41
39:i:42:ASN:O	39:i:46:MET:HG3	2.20	0.41
46:q:94:ILE:HB	46:q:101:ARG:HH12	1.85	0.41
49:t:294:ILE:HG21	49:t:318:ILE:HD11	2.00	0.41
9:A:153:LEU:HD22	9:A:184:PHE:CZ	2.55	0.41
9:A:342:LEU:HB2	9:A:344:MET:HE1	2.01	0.41
10:B:217:THR:OG1	10:B:260:GLY:O	2.31	0.41
11:C:38:LEU:HD23	11:C:38:LEU:HA	1.92	0.41
11:C:97:CYS:H	11:C:100:SER:HB2	1.85	0.41
12:D:634:A:H2'	12:D:635:G:H8	1.85	0.41
12:D:656:G:H5'	12:D:662:G:N2	2.35	0.41
12:D:819:G:OP1	31:Z:79:ARG:NH2	2.44	0.41
12:D:901:G:H2'	12:D:902:G:C8	2.55	0.41
12:D:1845:A:H2'	12:D:1846:G:H8	1.85	0.41
13:E:111:VAL:HG11	13:E:128:VAL:HG11	2.02	0.41
17:I:352:PHE:HA	17:I:357:ILE:HG12	2.02	0.41
23:P:133:TYR:CD1	23:P:221:PRO:HD2	2.55	0.41
25:S:137:ARG:HG3	25:S:177:GLN:H	1.85	0.41
35:e:35:VAL:HA	35:e:36:PRO:HD3	1.76	0.41
9:A:298:ARG:NH2	9:A:361:LEU:HG	2.31	0.41
10:B:297:LEU:HD11	49:t:74:GLU:HG3	2.01	0.41
12:D:37:C:O2'	12:D:38:A:O5'	2.37	0.41
12:D:1798:C:H2'	12:D:1799:G:O4'	2.20	0.41
26:T:45:THR:HG1	26:T:52:THR:HA	1.85	0.41
30:Y:122:LYS:HB2	30:Y:122:LYS:HE3	1.91	0.41
34:c:24:GLN:HA	34:c:63:VAL:O	2.20	0.41
41:k:258:ILE:HD13	41:k:268:ASP:HB3	2.01	0.41
49:t:60:ALA:O	49:t:229:LYS:NZ	2.52	0.41
49:t:192:ILE:HD13	49:t:223:PRO:HB2	2.01	0.41
49:t:246:PRO:HA	49:t:247:PRO:HD3	1.91	0.41
2:1:282:HIS:HA	2:1:285:LYS:HG2	2.02	0.41
12:D:613:G:H22	12:D:628:A:HO2'	1.68	0.41
12:D:1797:U:H2'	12:D:1798:C:C6	2.55	0.41
21:N:51:LYS:HA	21:N:51:LYS:HD3	1.91	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:Z:111:GLN:HE21	31:Z:123:ILE:HG13	1.86	0.41
41:k:59:LEU:HB3	41:k:90:TRP:CE3	2.56	0.41
42:l:102:ARG:HA	42:l:102:ARG:HD3	1.86	0.41
2:1:748:ASP:OD1	2:1:748:ASP:N	2.47	0.41
9:A:77:ILE:HG21	9:A:77:ILE:HD13	1.86	0.41
12:D:29:G:H2'	12:D:30:C:C6	2.56	0.41
12:D:291:G:H4'	12:D:292:A:OP1	2.21	0.41
12:D:1745:A:H1'	25:S:66:GLY:HA2	2.02	0.41
17:I:521:LYS:HB2	17:I:572:PRO:HA	2.03	0.41
17:I:699:PHE:HZ	17:I:702:LEU:HB3	1.84	0.41
22:O:194:ARG:HD3	22:O:196:ILE:HD11	2.02	0.41
24:Q:50:ASN:O	24:Q:54:THR:HG23	2.20	0.41
35:e:37:LYS:O	35:e:41:ARG:HG3	2.20	0.41
35:e:68:LYS:HE2	35:e:68:LYS:HB3	1.82	0.41
36:f:74:ASN:HA	36:f:77:MET:HE2	2.01	0.41
2:1:678:ASN:HD21	2:1:680:GLU:HB3	1.85	0.41
12:D:380:G:OP1	29:W:56:ARG:NH2	2.40	0.41
12:D:895:G:H2'	12:D:896:U:C6	2.55	0.41
12:D:1693:G:H21	12:D:1834:A:H8	1.68	0.41
12:D:1820:G:H2'	12:D:1821:U:C6	2.55	0.41
17:I:402:GLN:HB3	17:I:405:ILE:HG12	2.03	0.41
17:I:548:ARG:HB2	17:I:555:PRO:HG2	2.02	0.41
19:L:47:ALA:HB3	19:L:63:PHE:HB2	2.02	0.41
23:P:82:ARG:HH12	23:P:191:ASP:CG	2.29	0.41
25:S:3:LEU:HD12	25:S:41:LEU:HD21	2.03	0.41
25:S:145:PHE:HD2	25:S:156:TYR:HB3	1.85	0.41
29:W:177:SER:OG	29:W:184:ARG:O	2.32	0.41
31:Z:2:PRO:HB2	31:Z:3:VAL:H	1.64	0.41
41:k:87:LEU:O	41:k:100:ARG:HA	2.20	0.41
2:1:121:TRP:HE3	2:1:138:LEU:HD22	1.86	0.41
9:A:276:TYR:HA	9:A:279:VAL:HG12	2.02	0.41
12:D:919:A:H5"	28:V:16:LEU:HD12	2.03	0.41
12:D:1232:U:H2'	12:D:1233:G:H8	1.86	0.41
24:Q:85:ARG:NH2	24:Q:201:LEU:O	2.35	0.41
24:Q:198:MET:HE2	24:Q:200:ASP:HB3	2.02	0.41
25:S:137:ARG:O	25:S:141:ILE:HG12	2.20	0.41
30:Y:56:LEU:HD12	35:e:74:MET:HE3	2.02	0.41
34:c:80:ASP:OD1	34:c:124:LYS:NZ	2.42	0.41
35:e:62:THR:HA	35:e:69:THR:HA	2.02	0.41
2:1:104:ARG:NH2	2:1:166:SER:O	2.52	0.41
10:B:182:ARG:O	10:B:186:ILE:HG12	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:D:1513:C:H2'	12:D:1514:G:H8	1.85	0.41
12:D:1628:C:H2'	12:D:1629:C:H6	1.86	0.41
17:I:679:ASN:HB3	17:I:699:PHE:HB3	2.01	0.41
25:S:28:TYR:CE1	25:S:104:ALA:HA	2.55	0.41
27:U:19:LYS:HD3	38:h:213:PRO:HD3	2.02	0.41
28:V:37:ILE:HD11	28:V:63:VAL:HG21	2.02	0.41
29:W:153:LYS:HA	29:W:156:ALA:HB2	2.03	0.41
31:Z:97:ILE:HA	31:Z:100:LEU:HG	2.02	0.41
32:a:63:ASN:HD22	32:a:114:ASP:HB3	1.86	0.41
36:f:56:TYR:HA	36:f:62:ARG:HG2	2.03	0.41
51:x:426:LYS:HD3	52:y:35:MET:HB2	2.03	0.41
2:1:95:SER:O	2:1:99:LYS:NZ	2.54	0.41
2:1:369:GLY:HA3	2:1:431:LEU:HB2	2.02	0.41
8:9:2:ARG:HB3	8:9:5:TRP:CD1	2.56	0.41
9:A:55:LEU:HB3	9:A:93:TYR:HD1	1.86	0.41
9:A:247:GLN:O	9:A:251:LYS:HG2	2.21	0.41
10:B:197:GLY:O	10:B:199:LYS:N	2.50	0.41
12:D:190:G:H5"	29:W:145:ILE:HD12	2.02	0.41
12:D:318:A:H3'	12:D:319:C:H5"	2.01	0.41
12:D:649:U:H2'	12:D:650:A:C8	2.56	0.41
12:D:931:C:H2'	12:D:932:G:C8	2.56	0.41
12:D:1803:U:H2'	12:D:1804:U:C6	2.56	0.41
15:G:42:LEU:HD12	15:G:42:LEU:HA	1.88	0.41
17:I:487:LYS:HE3	17:I:487:LYS:HB2	1.90	0.41
21:N:3:ASN:OD1	21:N:4:ASP:N	2.50	0.41
22:O:157:LEU:HD23	22:O:157:LEU:HA	1.87	0.41
24:Q:63:ARG:HG2	24:Q:185:MET:HE1	2.03	0.41
30:Y:23:LEU:HD21	31:Z:6:SER:HB3	2.02	0.41
41:k:164:ILE:HD11	41:k:221:LEU:HD12	2.03	0.41
50:w:61:LEU:O	50:w:81:GLN:HA	2.21	0.41
51:x:58:LYS:HG3	51:x:59:TYR:CD1	2.56	0.41
53:z:43:G:H2'	53:z:44:A:C8	2.56	0.41
11:C:302:MET:SD	11:C:322:LEU:HD21	2.61	0.41
12:D:1801:A:H2'	12:D:1802:C:C6	2.56	0.41
17:I:296:TRP:HE1	17:I:705:ARG:HH21	1.69	0.41
18:J:42:ARG:HH11	18:J:42:ARG:HD2	1.46	0.41
22:O:192:LEU:O	22:O:226:ALA:HA	2.21	0.41
24:Q:10:MET:HG2	24:Q:55:TRP:CG	2.56	0.41
26:T:56:VAL:HA	26:T:60:MET:HE3	2.03	0.41
31:Z:136:ARG:HD2	31:Z:139:LYS:HA	2.02	0.41
41:k:130:LYS:HB3	41:k:130:LYS:HE2	1.89	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:813:LEU:HB3	2:1:814:ASP:H	1.67	0.40
9:A:317:ARG:HH21	9:A:421:GLU:HG3	1.87	0.40
11:C:73:VAL:HA	11:C:98:VAL:HG12	2.03	0.40
12:D:398:A:H5"	12:D:400:C:H5'	2.03	0.40
12:D:659:G:HO2'	12:D:662:G:HO2'	1.60	0.40
12:D:929:G:H2'	12:D:930:C:O4'	2.21	0.40
13:E:73:LEU:HD12	13:E:109:MET:HE1	2.03	0.40
22:O:78:LEU:HD23	22:O:81:ILE:HD12	2.04	0.40
31:Z:103:GLU:O	31:Z:107:GLU:HG2	2.22	0.40
42:l:104:LEU:O	42:l:108:GLU:HG3	2.21	0.40
47:r:11:HIS:NE2	47:r:39:TYR:OH	2.49	0.40
49:t:298:PRO:HG2	49:t:356:GLN:HG2	2.03	0.40
11:C:58:ARG:H	11:C:58:ARG:HG2	1.76	0.40
11:C:76:SER:HB3	11:C:93:MET:HG2	2.03	0.40
12:D:1589:A:N3	12:D:1653:U:O2'	2.47	0.40
15:G:92:ILE:O	15:G:93:LEU:HD23	2.21	0.40
19:L:49:LYS:HG2	19:L:50:GLU:H	1.86	0.40
20:M:79:PHE:HE1	51:x:81:GLN:HB3	1.86	0.40
23:P:99:ASN:OD1	23:P:100:PHE:N	2.53	0.40
46:q:34:GLY:O	46:q:38:ALA:HB2	2.21	0.40
9:A:7:ARG:HA	9:A:8:PRO:HD3	1.87	0.40
12:D:118:C:H1'	12:D:445:A:C5	2.56	0.40
14:F:46:VAL:O	14:F:48:THR:N	2.55	0.40
23:P:108:ASP:OD2	23:P:109:LYS:N	2.55	0.40
27:U:90:ALA:C	27:U:93:GLN:HE22	2.29	0.40
36:f:167:LYS:HA	43:m:71:ALA:HB1	2.04	0.40
41:k:72:SER:OG	41:k:74:ASP:OD1	2.27	0.40
2:1:492:GLU:HG2	2:1:493:LYS:HG3	2.02	0.40
2:1:614:VAL:O	2:1:618:ILE:HG12	2.22	0.40
11:C:212:LEU:O	11:C:215:ARG:N	2.42	0.40
11:C:229:HIS:HA	11:C:232:LYS:HD3	2.03	0.40
12:D:1113:A:C8	51:x:88:THR:HG21	2.57	0.40
12:D:1560:U:H2'	12:D:1561:A:H8	1.87	0.40
14:F:9:VAL:HG22	32:a:68:LYS:HE2	2.03	0.40
17:I:498:LEU:O	17:I:500:SER:N	2.54	0.40
22:O:65:LYS:HB3	22:O:68:ARG:HH21	1.86	0.40
29:W:159:SER:O	29:W:163:GLU:HB2	2.21	0.40
30:Y:182:MET:HB2	30:Y:228:ILE:HD13	2.03	0.40
32:a:114:ASP:OD1	32:a:114:ASP:N	2.50	0.40
40:j:5:GLN:OE1	40:j:5:GLN:N	2.55	0.40
41:k:65:PHE:C	41:k:82:SER:HG	2.25	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:n:64:VAL:O	44:n:68:ILE:HG12	2.21	0.40
49:t:31:LEU:HD11	49:t:245:VAL:HG21	2.03	0.40
49:t:138:HIS:HB3	49:t:141:LEU:HD23	2.03	0.40
49:t:146:LEU:HA	49:t:149:ALA:HB3	2.03	0.40
9:A:245:LEU:HB3	9:A:248:GLU:OE1	2.22	0.40
11:C:284:LYS:HA	11:C:284:LYS:HD2	1.85	0.40
12:D:12:U:O2'	12:D:1355:C:O2'	2.32	0.40
12:D:496:C:N4	30:Y:37:LYS:HD2	2.37	0.40
12:D:640:A:P	14:F:41:ARG:HH22	2.44	0.40
12:D:857:U:H2'	12:D:858:A:C8	2.56	0.40
12:D:943:U:H2'	12:D:944:A:H8	1.86	0.40
12:D:1693:G:N2	12:D:1834:A:H8	2.19	0.40
12:D:1741:U:H2'	12:D:1742:C:O4'	2.22	0.40
17:I:345:LYS:HE3	17:I:708:PRO:HA	2.03	0.40
23:P:124:HIS:HA	23:P:137:LEU:O	2.21	0.40
24:Q:106:GLY:N	24:Q:136:GLU:OE2	2.49	0.40
24:Q:200:ASP:OD2	27:U:90:ALA:N	2.45	0.40
29:W:165:GLN:HE22	29:W:172:LEU:H	1.69	0.40
37:g:8:GLN:HG3	37:g:27:ARG:NH1	2.36	0.40
47:r:205:ILE:HG21	49:t:276:GLY:HA2	2.03	0.40
51:x:300:GLN:HE21	51:x:307:ASN:HB2	1.86	0.40
53:z:62:C:H2'	53:z:63:A:C8	2.56	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	0	154/156 (99%)	149 (97%)	5 (3%)	0	100	100
2	1	710/835 (85%)	696 (98%)	14 (2%)	0	100	100
3	3	108/110 (98%)	93 (86%)	13 (12%)	2 (2%)	6	17

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
4	5	418/420 (100%)	406 (97%)	11 (3%)	1 (0%)	43 68
5	6	46/55 (84%)	45 (98%)	1 (2%)	0	100 100
6	7	75/77 (97%)	71 (95%)	4 (5%)	0	100 100
7	8	76/119 (64%)	75 (99%)	1 (1%)	0	100 100
8	9	19/21 (90%)	19 (100%)	0	0	100 100
9	A	571/716 (80%)	554 (97%)	17 (3%)	0	100 100
10	B	156/158 (99%)	151 (97%)	4 (3%)	1 (1%)	21 44
11	C	403/405 (100%)	391 (97%)	11 (3%)	1 (0%)	43 68
13	E	138/150 (92%)	131 (95%)	7 (5%)	0	100 100
14	F	57/59 (97%)	50 (88%)	6 (10%)	1 (2%)	6 18
15	G	84/86 (98%)	74 (88%)	10 (12%)	0	100 100
17	I	431/442 (98%)	397 (92%)	30 (7%)	4 (1%)	14 35
18	J	100/102 (98%)	97 (97%)	3 (3%)	0	100 100
19	L	172/187 (92%)	164 (95%)	8 (5%)	0	100 100
20	M	79/81 (98%)	74 (94%)	5 (6%)	0	100 100
21	N	79/81 (98%)	76 (96%)	3 (4%)	0	100 100
22	O	218/220 (99%)	213 (98%)	5 (2%)	0	100 100
23	P	209/211 (99%)	201 (96%)	8 (4%)	0	100 100
24	Q	212/214 (99%)	204 (96%)	8 (4%)	0	100 100
25	S	228/230 (99%)	206 (90%)	21 (9%)	1 (0%)	30 54
26	T	125/127 (98%)	109 (87%)	14 (11%)	2 (2%)	7 20
27	U	129/131 (98%)	121 (94%)	8 (6%)	0	100 100
28	V	148/150 (99%)	145 (98%)	3 (2%)	0	100 100
29	W	194/206 (94%)	188 (97%)	6 (3%)	0	100 100
30	Y	254/256 (99%)	217 (85%)	33 (13%)	4 (2%)	7 20
31	Z	175/177 (99%)	164 (94%)	9 (5%)	2 (1%)	11 29
32	a	138/140 (99%)	129 (94%)	8 (6%)	1 (1%)	18 41
33	b	126/128 (98%)	123 (98%)	3 (2%)	0	100 100
34	c	127/129 (98%)	116 (91%)	9 (7%)	2 (2%)	7 20
35	e	123/125 (98%)	113 (92%)	9 (7%)	1 (1%)	16 37
36	f	180/189 (95%)	174 (97%)	6 (3%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
37	g	139/141 (99%)	129 (93%)	10 (7%)	0	100	100
38	h	225/227 (99%)	223 (99%)	2 (1%)	0	100	100
39	i	97/99 (98%)	96 (99%)	1 (1%)	0	100	100
40	j	54/56 (96%)	53 (98%)	1 (2%)	0	100	100
41	k	311/313 (99%)	296 (95%)	15 (5%)	0	100	100
42	l	140/142 (99%)	136 (97%)	4 (3%)	0	100	100
43	m	71/73 (97%)	70 (99%)	1 (1%)	0	100	100
44	n	140/142 (99%)	133 (95%)	7 (5%)	0	100	100
45	o	593/595 (100%)	522 (88%)	67 (11%)	4 (1%)	18	41
46	q	120/122 (98%)	113 (94%)	7 (6%)	0	100	100
47	r	269/271 (99%)	260 (97%)	8 (3%)	1 (0%)	30	54
48	s	74/76 (97%)	72 (97%)	2 (3%)	0	100	100
49	t	438/440 (100%)	419 (96%)	19 (4%)	0	100	100
50	w	101/103 (98%)	95 (94%)	6 (6%)	0	100	100
51	x	417/509 (82%)	384 (92%)	31 (7%)	2 (0%)	24	48
52	y	59/61 (97%)	51 (86%)	8 (14%)	0	100	100
All	All	9710/10263 (95%)	9188 (95%)	492 (5%)	30 (0%)	37	60

All (30) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	3	78	GLU
10	B	198	GLU
17	I	427	PRO
17	I	452	PRO
17	I	499	PRO
26	T	27	VAL
30	Y	35	PRO
30	Y	79	ASP
32	a	61	GLN
47	r	224	PRO
51	x	353	ILE
14	F	9	VAL
31	Z	3	VAL
51	x	81	GLN
17	I	686	PHE

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Mol	Chain	Res	Type
25	S	173	ALA
26	T	64	ALA
30	Y	66	MET
45	o	82	GLU
34	c	74	VAL
34	c	75	ILE
35	e	86	GLU
30	Y	54	TYR
3	3	110	VAL
11	C	10	THR
45	o	137	PRO
45	o	326	ASP
31	Z	8	VAL
4	5	399	SER
45	o	342	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	0	111/142 (78%)	111 (100%)	0	100 100
2	1	647/747 (87%)	646 (100%)	1 (0%)	87 95
3	3	79/94 (84%)	79 (100%)	0	100 100
6	7	64/64 (100%)	64 (100%)	0	100 100
8	9	20/20 (100%)	20 (100%)	0	100 100
9	A	484/660 (73%)	484 (100%)	0	100 100
10	B	143/143 (100%)	143 (100%)	0	100 100
11	C	356/356 (100%)	356 (100%)	0	100 100
13	E	129/135 (96%)	129 (100%)	0	100 100
14	F	49/49 (100%)	49 (100%)	0	100 100
15	G	73/73 (100%)	73 (100%)	0	100 100
17	I	377/397 (95%)	377 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
18	J	90/90 (100%)	90 (100%)	0	100	100
19	L	160/168 (95%)	160 (100%)	0	100	100
20	M	73/73 (100%)	73 (100%)	0	100	100
21	N	66/66 (100%)	66 (100%)	0	100	100
22	O	185/185 (100%)	185 (100%)	0	100	100
23	P	192/192 (100%)	191 (100%)	1 (0%)	81	92
24	Q	180/180 (100%)	180 (100%)	0	100	100
25	S	200/200 (100%)	199 (100%)	1 (0%)	81	92
26	T	100/100 (100%)	100 (100%)	0	100	100
27	U	119/119 (100%)	119 (100%)	0	100	100
28	V	130/130 (100%)	130 (100%)	0	100	100
29	W	171/177 (97%)	170 (99%)	1 (1%)	78	91
30	Y	219/220 (100%)	219 (100%)	0	100	100
31	Z	158/158 (100%)	158 (100%)	0	100	100
32	a	112/112 (100%)	112 (100%)	0	100	100
33	b	114/114 (100%)	114 (100%)	0	100	100
34	c	112/112 (100%)	112 (100%)	0	100	100
35	e	107/107 (100%)	107 (100%)	0	100	100
36	f	156/159 (98%)	156 (100%)	0	100	100
37	g	117/117 (100%)	117 (100%)	0	100	100
38	h	190/190 (100%)	190 (100%)	0	100	100
39	i	90/90 (100%)	90 (100%)	0	100	100
40	j	49/49 (100%)	49 (100%)	0	100	100
41	k	272/272 (100%)	272 (100%)	0	100	100
42	l	113/113 (100%)	113 (100%)	0	100	100
43	m	65/65 (100%)	65 (100%)	0	100	100
44	n	123/123 (100%)	123 (100%)	0	100	100
45	o	523/523 (100%)	523 (100%)	0	100	100
46	q	104/104 (100%)	104 (100%)	0	100	100
47	r	192/243 (79%)	192 (100%)	0	100	100
48	s	67/67 (100%)	67 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
49	t	371/371 (100%)	371 (100%)	0	100 100
50	w	94/94 (100%)	94 (100%)	0	100 100
51	x	208/458 (45%)	207 (100%)	1 (0%)	81 92
52	y	54/54 (100%)	54 (100%)	0	100 100
All	All	7808/8475 (92%)	7803 (100%)	5 (0%)	87 96

All (5) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	1	597	ASN
23	P	202	GLN
25	S	225	GLN
29	W	202	ILE
51	x	405	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (71) such sidechains are listed below:

Mol	Chain	Res	Type
1	0	272	GLN
1	0	273	ASN
1	0	298	GLN
2	1	432	GLN
2	1	461	ASN
2	1	478	GLN
2	1	519	HIS
2	1	575	HIS
2	1	579	HIS
2	1	593	HIS
2	1	597	ASN
2	1	659	ASN
2	1	676	HIS
9	A	10	ASN
9	A	16	ASN
9	A	25	GLN
9	A	166	ASN
9	A	187	GLN
9	A	247	GLN
9	A	445	GLN
9	A	466	GLN
11	C	12	GLN

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Mol	Chain	Res	Type
11	C	96	HIS
11	C	161	ASN
11	C	355	HIS
11	C	406	GLN
11	C	407	ASN
17	I	508	ASN
17	I	609	GLN
17	I	692	GLN
18	J	25	ASN
18	J	43	ASN
21	N	35	ASN
22	O	267	GLN
22	O	271	ASN
23	P	53	GLN
23	P	177	GLN
24	Q	36	GLN
24	Q	164	ASN
25	S	13	GLN
25	S	155	GLN
25	S	177	GLN
25	S	225	GLN
27	U	62	GLN
27	U	83	ASN
28	V	62	GLN
28	V	69	ASN
29	W	167	GLN
30	Y	50	ASN
30	Y	157	ASN
32	a	73	GLN
32	a	92	ASN
34	c	5	ASN
35	e	85	ASN
36	f	79	HIS
39	i	61	GLN
39	i	77	GLN
41	k	159	ASN
45	o	44	GLN
45	o	112	ASN
45	o	197	GLN
45	o	223	GLN
47	r	40	ASN
47	r	41	ASN

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Mol	Chain	Res	Type
49	t	65	HIS
49	t	401	ASN
51	x	81	GLN
51	x	397	ASN
51	x	405	ASN
51	x	470	GLN
52	y	29	GLN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
12	D	1680/1869 (89%)	323 (19%)	30 (1%)
16	H	0/29	-	-
53	z	74/75 (98%)	20 (27%)	0
All	All	1754/1973 (88%)	343 (19%)	30 (1%)

All (343) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
12	D	2	A
12	D	3	C
12	D	4	C
12	D	5	U
12	D	17	C
12	D	33	G
12	D	38	A
12	D	44	U
12	D	46	A
12	D	56	G
12	D	58	C
12	D	64	A
12	D	65	C
12	D	67	C
12	D	68	A
12	D	71	G
12	D	74	G
12	D	76	U
12	D	77	A
12	D	78	C
12	D	79	A
12	D	103	A

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Mol	Chain	Res	Type
12	D	111	A
12	D	112	U
12	D	113	G
12	D	115	U
12	D	119	U
12	D	120	U
12	D	121	U
12	D	123	G
12	D	126	G
12	D	130	G
12	D	143	U
12	D	147	A
12	D	155	G
12	D	157	U
12	D	160	U
12	D	163	U
12	D	171	A
12	D	180	G
12	D	182	C
12	D	183	G
12	D	184	G
12	D	186	C
12	D	190	G
12	D	192	C
12	D	225	G
12	D	291	G
12	D	292	A
12	D	293	C
12	D	294	U
12	D	302	A
12	D	307	G
12	D	308	G
12	D	309	G
12	D	312	G
12	D	318	A
12	D	319	C
12	D	332	G
12	D	339	A
12	D	340	C
12	D	343	A
12	D	345	U
12	D	347	G

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Mol	Chain	Res	Type
12	D	350	C
12	D	351	G
12	D	356	C
12	D	360	A
12	D	362	C
12	D	364	A
12	D	368	U
12	D	369	C
12	D	370	G
12	D	374	G
12	D	375	U
12	D	385	G
12	D	386	C
12	D	398	A
12	D	400	C
12	D	407	G
12	D	408	A
12	D	409	C
12	D	418	A
12	D	428	U
12	D	448	A
12	D	449	A
12	D	450	C
12	D	464	A
12	D	465	A
12	D	466	G
12	D	471	G
12	D	472	C
12	D	473	A
12	D	474	G
12	D	476	A
12	D	482	G
12	D	487	U
12	D	492	C
12	D	493	A
12	D	494	C
12	D	495	U
12	D	496	C
12	D	497	C
12	D	498	C
12	D	499	G
12	D	516	A

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Mol	Chain	Res	Type
12	D	519	A
12	D	521	A
12	D	525	A
12	D	526	A
12	D	532	C
12	D	533	A
12	D	536	A
12	D	544	G
12	D	546	G
12	D	547	G
12	D	548	C
12	D	549	C
12	D	554	A
12	D	555	A
12	D	559	G
12	D	560	A
12	D	564	A
12	D	568	C
12	D	576	A
12	D	584	A
12	D	587	A
12	D	588	G
12	D	589	G
12	D	590	A
12	D	591	U
12	D	594	A
12	D	595	U
12	D	598	G
12	D	606	G
12	D	607	U
12	D	614	C
12	D	616	A
12	D	617	G
12	D	627	U
12	D	628	A
12	D	631	U
12	D	643	A
12	D	654	A
12	D	655	A
12	D	656	G
12	D	660	C
12	D	668	A

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Mol	Chain	Res	Type
12	D	669	A
12	D	671	A
12	D	672	A
12	D	673	G
12	D	684	G
12	D	690	G
12	D	744	G
12	D	752	G
12	D	754	G
12	D	799	U
12	D	811	A
12	D	814	U
12	D	815	U
12	D	816	A
12	D	821	G
12	D	822	U
12	D	826	A
12	D	827	A
12	D	830	A
12	D	847	A
12	D	868	G
12	D	870	A
12	D	871	U
12	D	872	A
12	D	873	G
12	D	874	G
12	D	878	G
12	D	881	G
12	D	882	U
12	D	887	U
12	D	890	U
12	D	891	G
12	D	893	U
12	D	895	G
12	D	898	U
12	D	901	G
12	D	913	A
12	D	914	U
12	D	917	U
12	D	920	A
12	D	933	G
12	D	934	G

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Mol	Chain	Res	Type
12	D	943	U
12	D	955	A
12	D	971	G
12	D	981	A
12	D	990	A
12	D	992	A
12	D	999	G
12	D	1017	U
12	D	1023	A
12	D	1041	G
12	D	1060	A
12	D	1078	C
12	D	1083	A
12	D	1085	C
12	D	1097	G
12	D	1100	A
12	D	1101	U
12	D	1114	U
12	D	1115	U
12	D	1116	C
12	D	1118	C
12	D	1119	A
12	D	1120	U
12	D	1121	G
12	D	1131	G
12	D	1138	C
12	D	1139	C
12	D	1149	A
12	D	1153	C
12	D	1154	U
12	D	1195	A
12	D	1215	C
12	D	1224	G
12	D	1242	U
12	D	1251	A
12	D	1253	A
12	D	1256	G
12	D	1257	G
12	D	1259	A
12	D	1274	G
12	D	1275	G
12	D	1286	G

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Mol	Chain	Res	Type
12	D	1301	A
12	D	1302	G
12	D	1308	U
12	D	1322	G
12	D	1342	U
12	D	1354	G
12	D	1355	C
12	D	1356	G
12	D	1358	U
12	D	1364	U
12	D	1371	U
12	D	1372	U
12	D	1378	A
12	D	1382	A
12	D	1396	A
12	D	1397	U
12	D	1401	A
12	D	1402	A
12	D	1428	G
12	D	1432	U
12	D	1454	A
12	D	1462	U
12	D	1463	U
12	D	1466	G
12	D	1473	G
12	D	1476	A
12	D	1487	A
12	D	1489	A
12	D	1490	G
12	D	1495	G
12	D	1497	G
12	D	1498	A
12	D	1521	C
12	D	1522	A
12	D	1533	A
12	D	1544	C
12	D	1548	G
12	D	1552	G
12	D	1553	C
12	D	1556	A
12	D	1557	C
12	D	1570	G

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Mol	Chain	Res	Type
12	D	1575	G
12	D	1578	U
12	D	1580	A
12	D	1585	U
12	D	1587	G
12	D	1588	A
12	D	1601	A
12	D	1604	G
12	D	1606	G
12	D	1621	U
12	D	1623	A
12	D	1637	A
12	D	1648	G
12	D	1664	A
12	D	1665	G
12	D	1671	G
12	D	1686	G
12	D	1699	A
12	D	1719	A
12	D	1721	U
12	D	1722	G
12	D	1726	G
12	D	1738	C
12	D	1739	C
12	D	1740	C
12	D	1741	U
12	D	1744	G
12	D	1748	G
12	D	1756	C
12	D	1779	G
12	D	1783	C
12	D	1814	G
12	D	1816	G
12	D	1819	A
12	D	1825	A
12	D	1829	G
12	D	1831	A
12	D	1835	A
12	D	1836	G
12	D	1838	U
12	D	1839	U
12	D	1840	U

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Mol	Chain	Res	Type
12	D	1849	G
12	D	1851	A
12	D	1861	G
12	D	1862	G
12	D	1863	A
12	D	1865	C
12	D	1866	A
53	z	4	A
53	z	16	C
53	z	18	G
53	z	19	G
53	z	20	A
53	z	21	A
53	z	22	G
53	z	33	C
53	z	34	C
53	z	47	U
53	z	48	C
53	z	52	G
53	z	59	A
53	z	61	C
53	z	65	C
53	z	68	C
53	z	69	U
53	z	70	G
53	z	72	U
53	z	76	A

All (30) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
12	D	1	U
12	D	2	A
12	D	112	U
12	D	120	U
12	D	156	G
12	D	291	G
12	D	307	G
12	D	308	G
12	D	355	G
12	D	417	C
12	D	465	A

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Mol	Chain	Res	Type
12	D	524	U
12	D	525	A
12	D	532	C
12	D	615	C
12	D	642	U
12	D	654	A
12	D	655	A
12	D	825	A
12	D	980	A
12	D	1137	U
12	D	1395	C
12	D	1520	G
12	D	1556	A
12	D	1737	G
12	D	1738	C
12	D	1739	C
12	D	1813	A
12	D	1838	U
12	D	1839	U

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

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

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry

Of 3 ligands modelled in this entry, 3 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

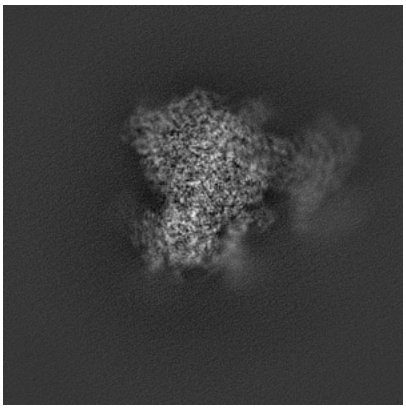
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-78242. These allow visual inspection of the internal detail of the map and identification of artifacts.

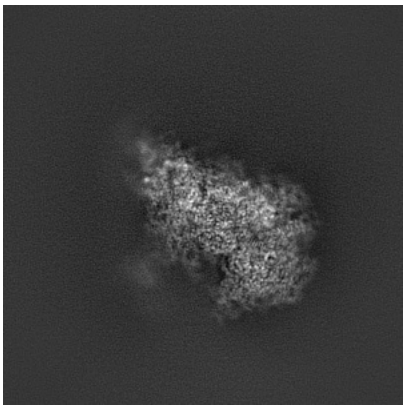
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

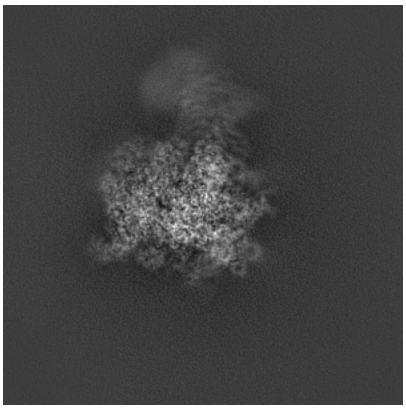
6.1.1 Primary map



X

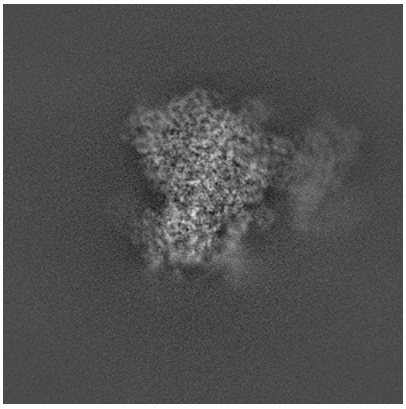


Y

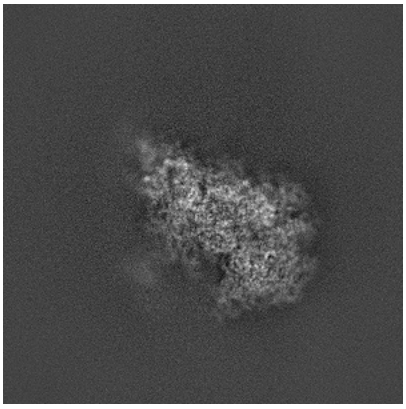


Z

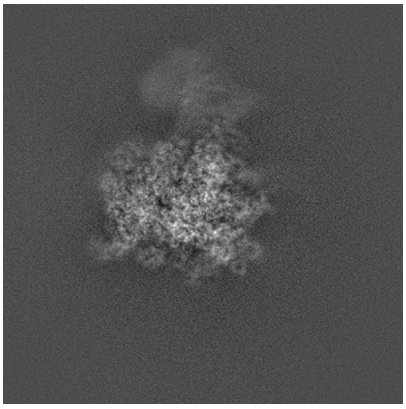
6.1.2 Raw map



X



Y

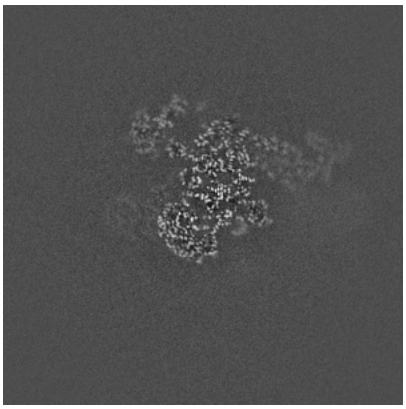


Z

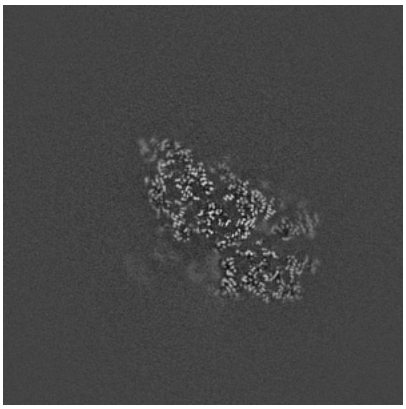
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

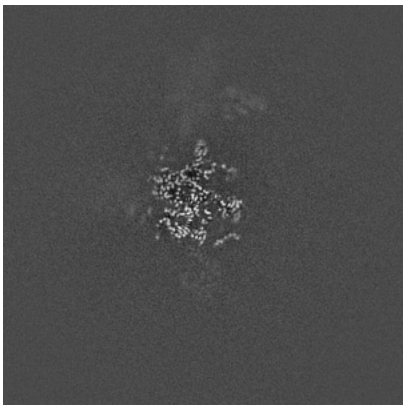
6.2.1 Primary map



X Index: 280

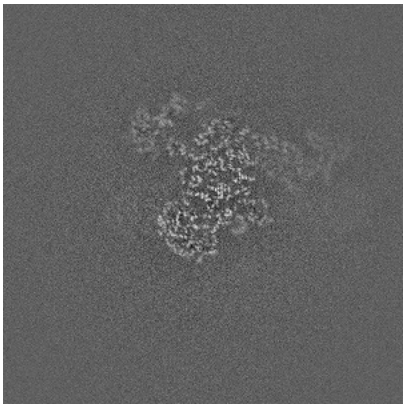


Y Index: 280

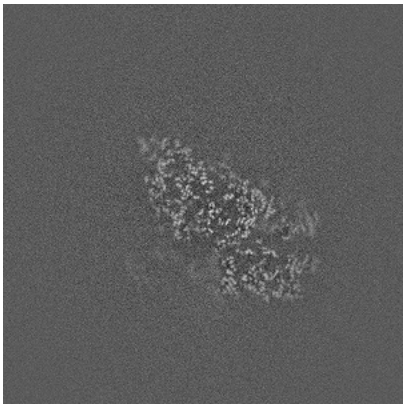


Z Index: 280

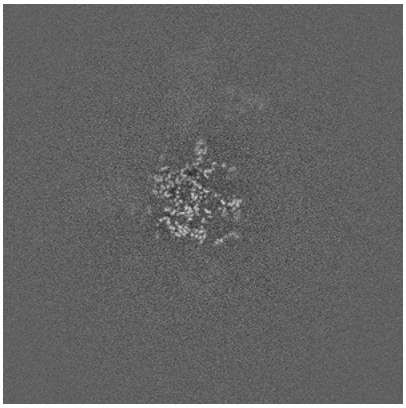
6.2.2 Raw map



X Index: 280



Y Index: 280

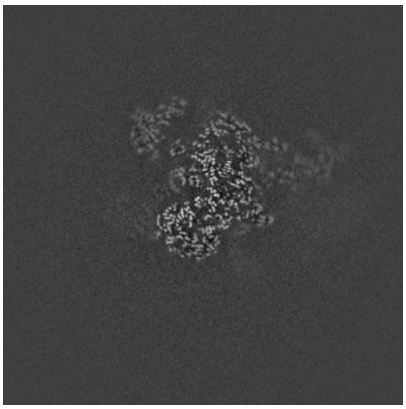


Z Index: 280

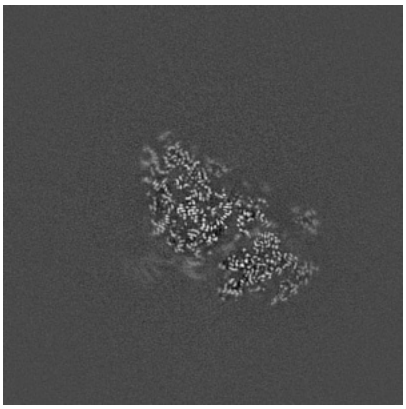
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

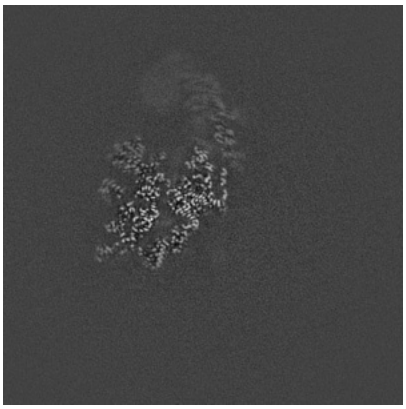
6.3.1 Primary map



X Index: 284

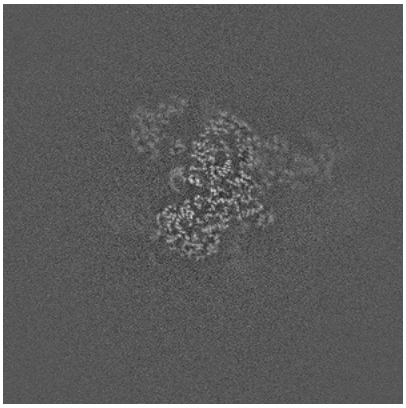


Y Index: 267

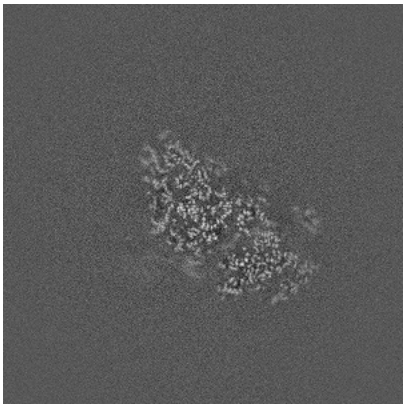


Z Index: 336

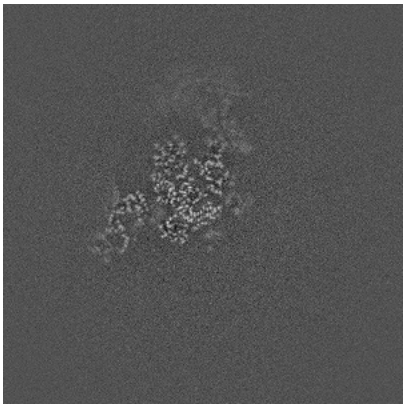
6.3.2 Raw map



X Index: 285



Y Index: 267

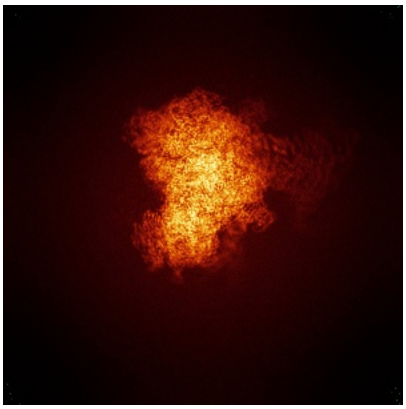


Z Index: 311

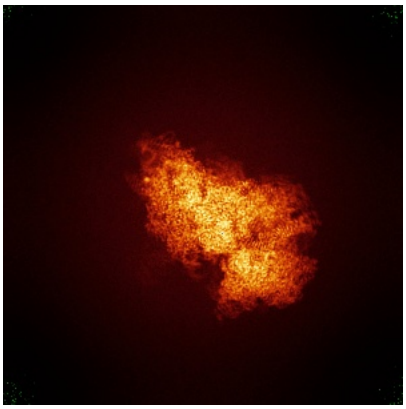
The images above show the largest variance slices of the map in three orthogonal directions.

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

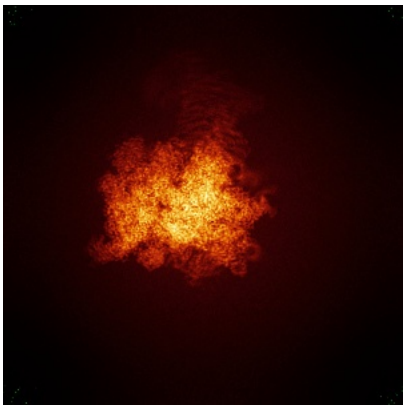
6.4.1 Primary map



X

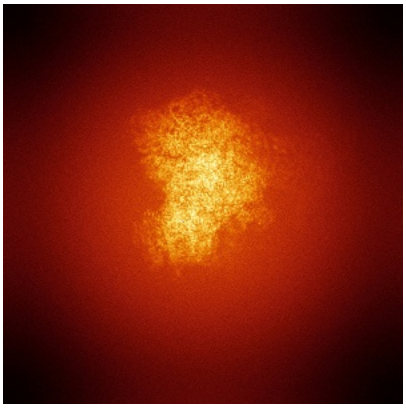


Y

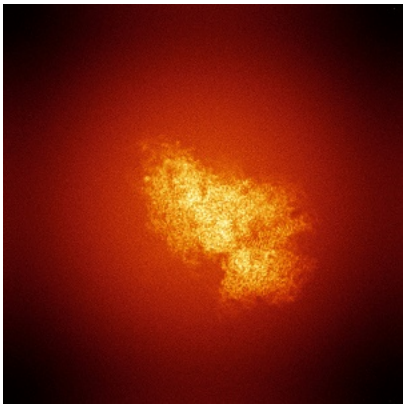


Z

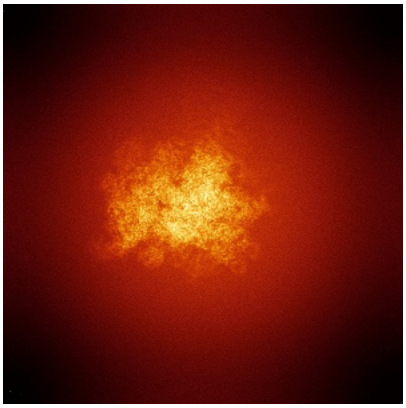
6.4.2 Raw map



X



Y

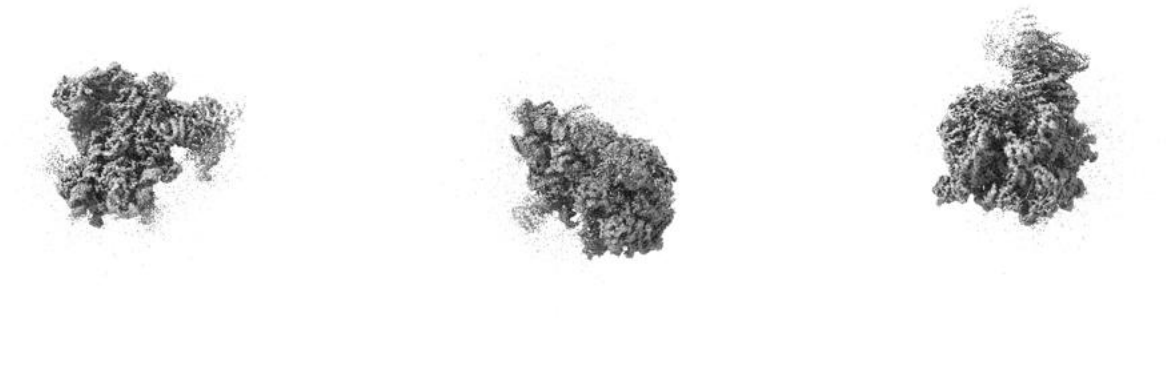


Z

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

6.5 Orthogonal surface views (i)

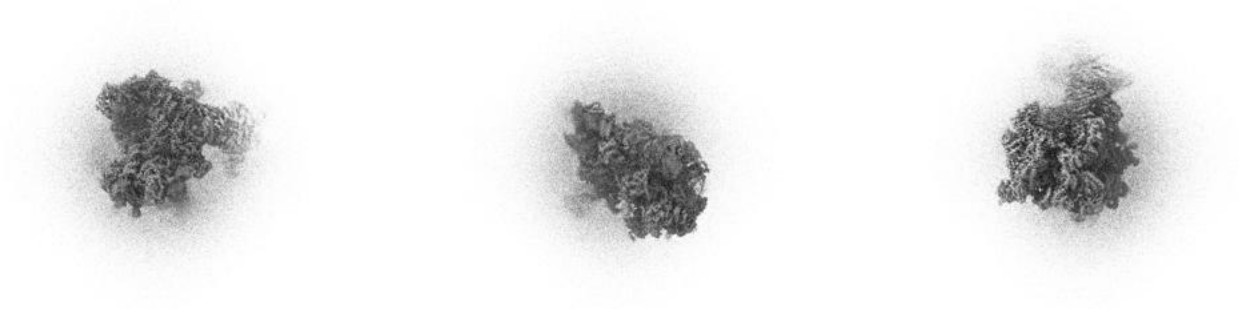
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 1.35. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

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

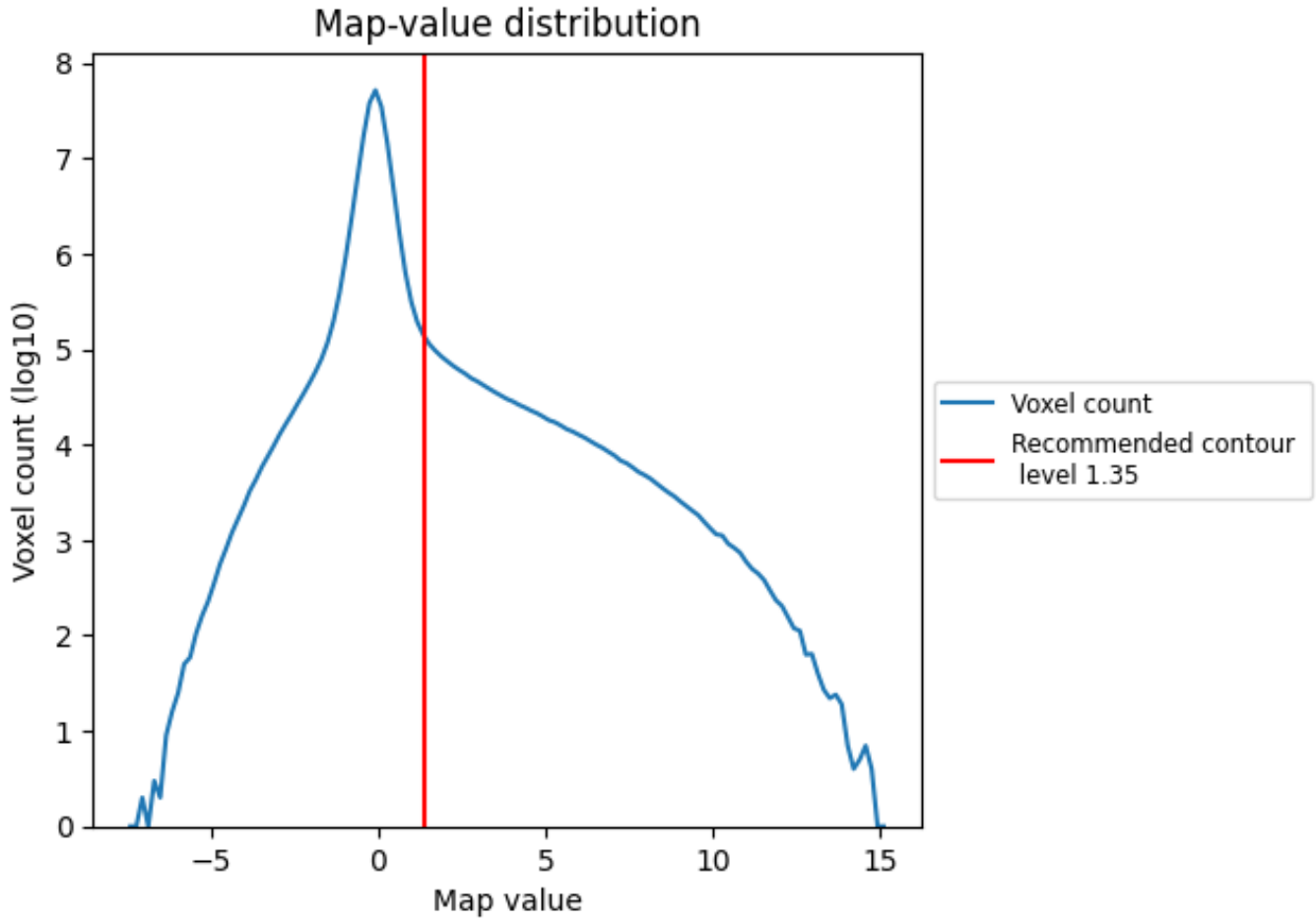
6.6 Mask visualisation (i)

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

7 Map analysis

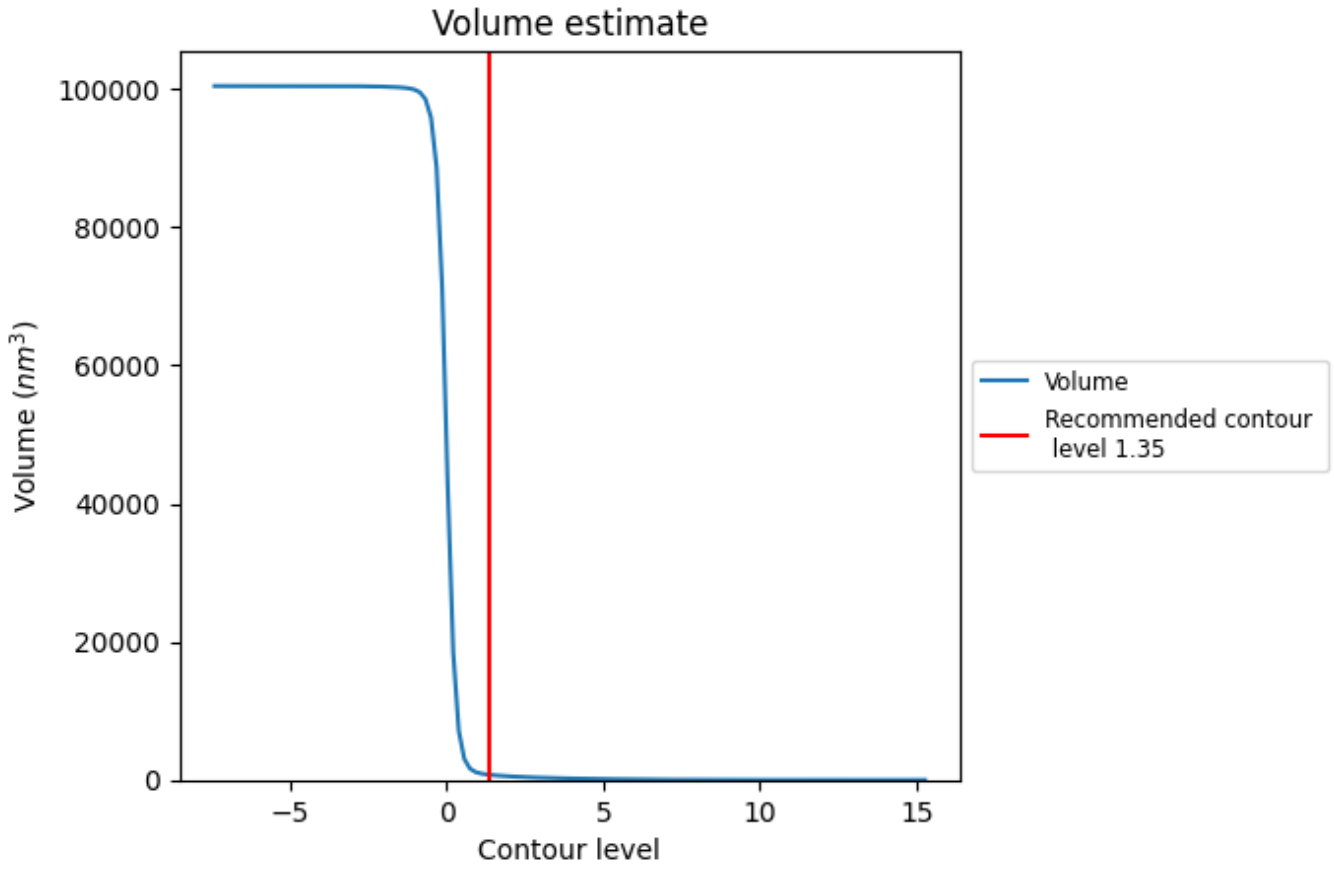
This section contains the results of statistical analysis of the map.

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.

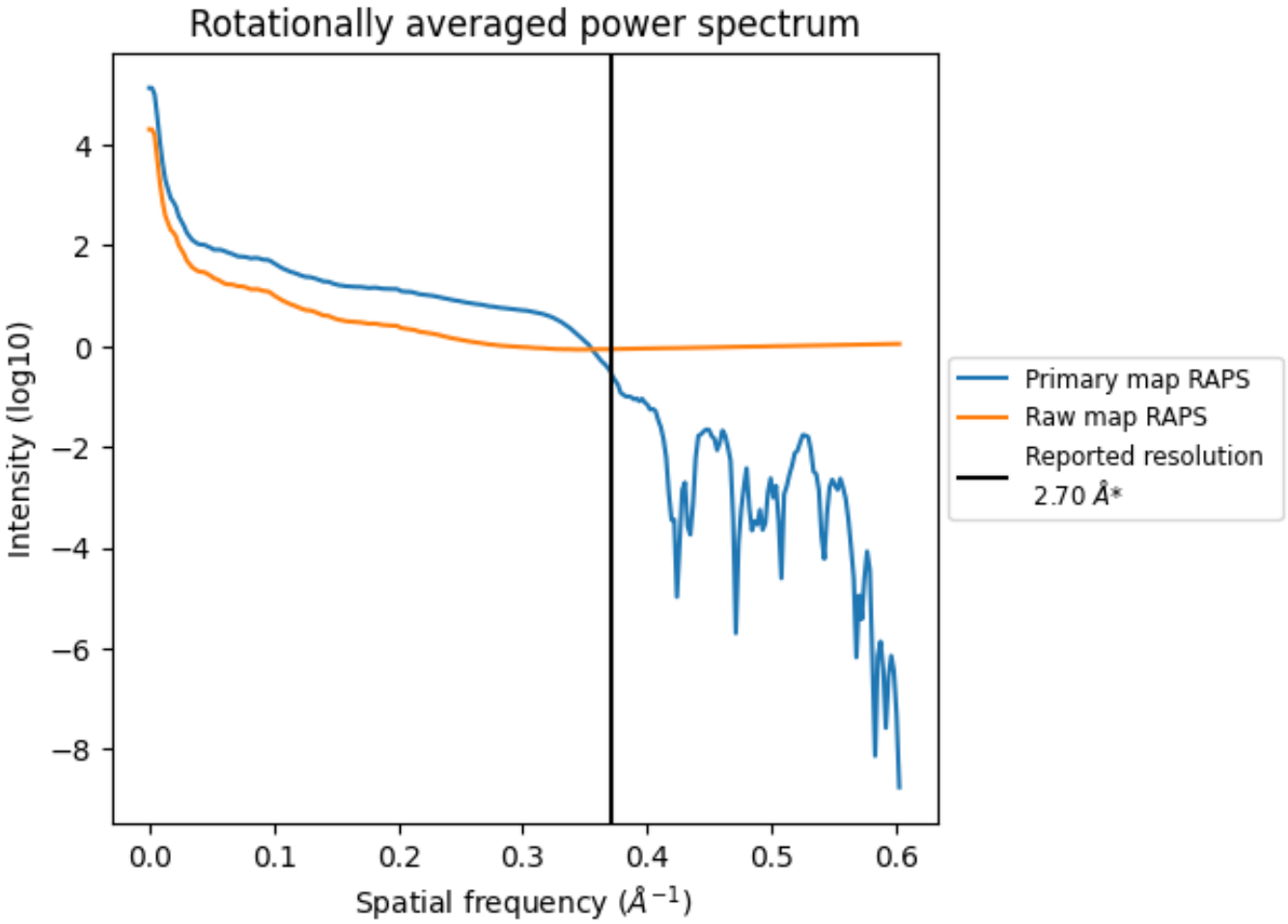
7.2 Volume estimate



The volume at the recommended contour level is 759 nm^3; this corresponds to an approximate mass of 686 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)

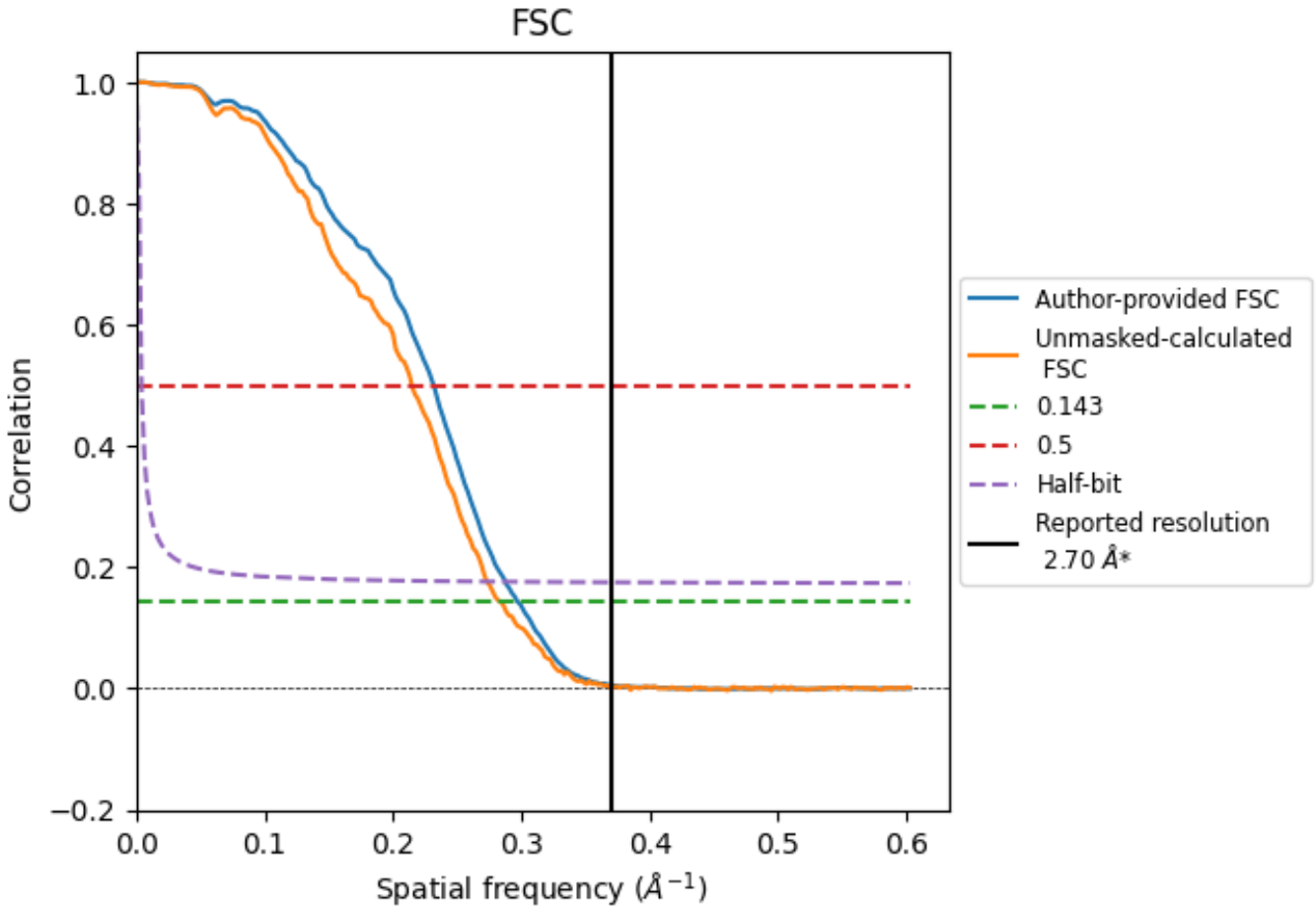


*Reported resolution corresponds to spatial frequency of 0.370 Å^{-1}

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 0.370 Å^{-1}

8.2 Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.70	-	-
Author-provided FSC curve	3.36	4.32	3.48
Unmasked-calculated*	3.52	4.66	3.66

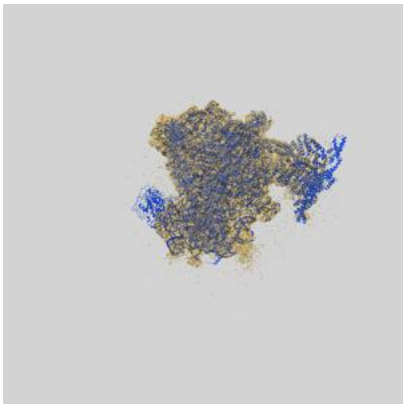
*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from author-provided FSC intersecting FSC 0.143 CUT-OFF 3.36 differs from the reported value 2.7 by more than 10 %

The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.52 differs from the reported value 2.7 by more than 10 %

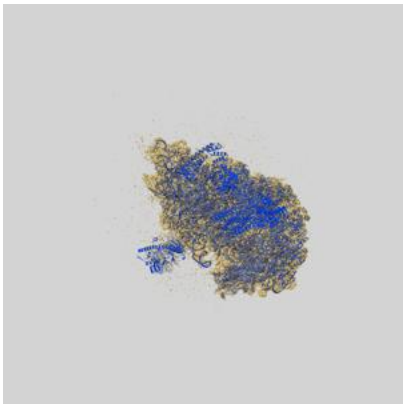
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-78242 and PDB model 37KM. Per-residue inclusion information can be found in section 3 on page 14.

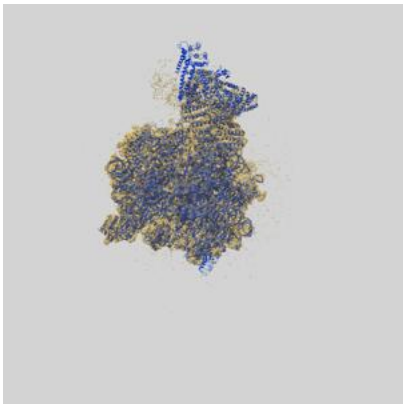
9.1 Map-model overlay



X



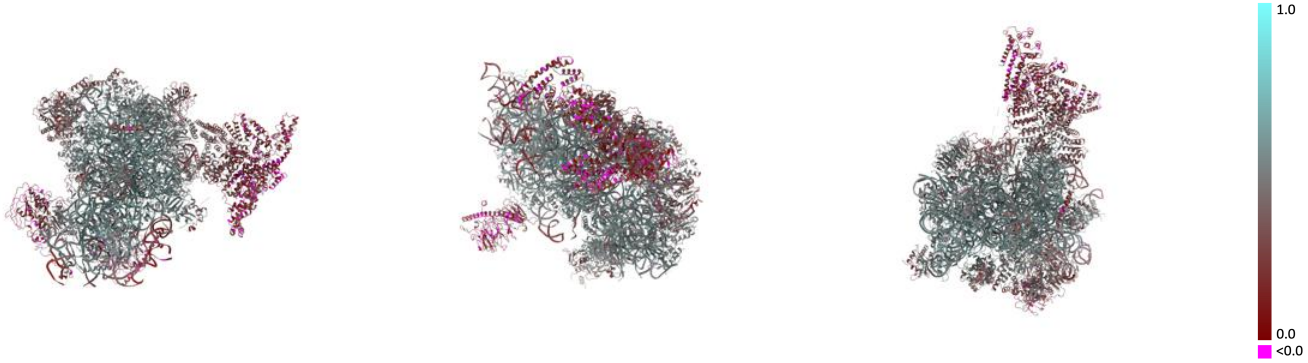
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 1.35 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

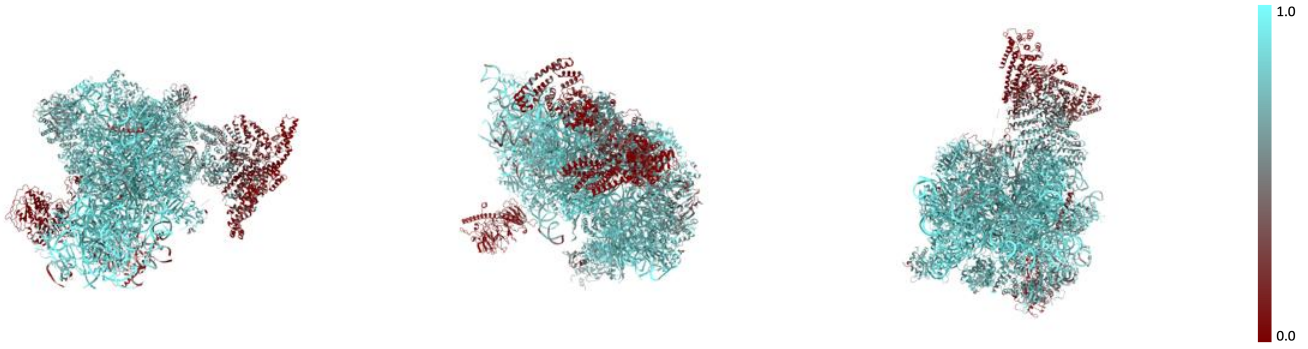
9.2 Q-score mapped to coordinate model



X Y Z

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

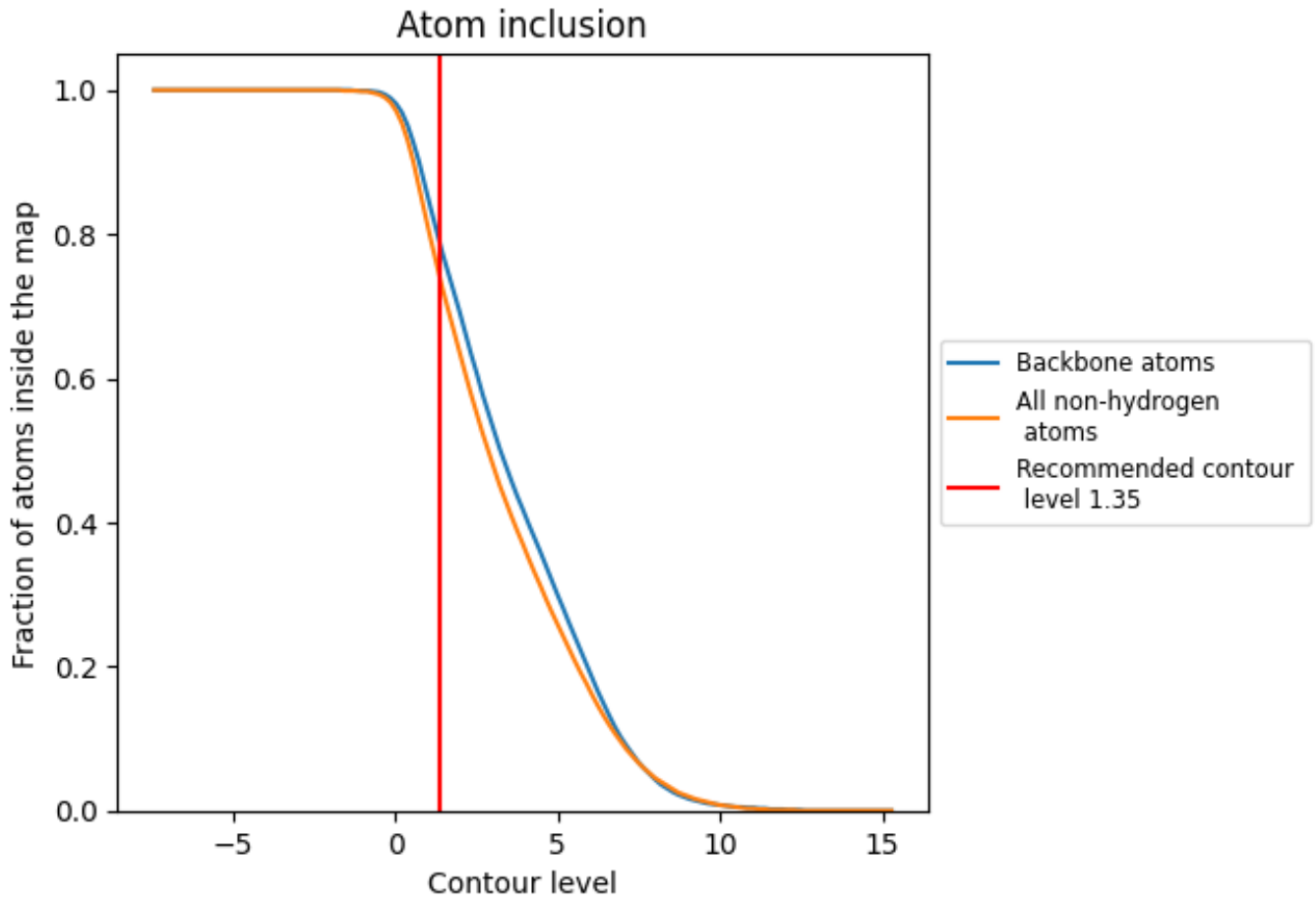
9.3 Atom inclusion mapped to coordinate model



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (1.35).

9.4 Atom inclusion (i)



At the recommended contour level, 79% of all backbone atoms, 74% 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 (1.35) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7450	0.4540
0	0.0150	0.1710
1	0.5200	0.3290
3	0.8430	0.5130
5	0.1780	0.2070
6	0.0360	0.1760
7	0.5020	0.3620
8	0.0650	0.1100
9	0.9030	0.5440
A	0.3650	0.2680
B	0.8440	0.4910
C	0.7650	0.4490
D	0.9440	0.5300
E	0.9230	0.5600
F	0.8510	0.5210
G	0.8960	0.5420
H	0.6590	0.3360
I	0.0480	0.1440
J	0.8590	0.5280
L	0.8360	0.4830
M	0.8840	0.5240
N	0.9020	0.5460
O	0.9200	0.5570
P	0.8600	0.5220
Q	0.8720	0.5210
S	0.7990	0.4270
T	0.8570	0.5100
U	0.8400	0.4960
V	0.9010	0.5470
W	0.8960	0.5300
Y	0.8160	0.4590
Z	0.8960	0.5340
a	0.9380	0.5790
b	0.8660	0.5370
c	0.9420	0.5740



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Chain	Atom inclusion	Q-score
e	0.8470	0.4740
f	0.8610	0.5460
g	0.8520	0.5280
h	0.8730	0.5370
i	0.8760	0.5420
j	0.9330	0.5900
k	0.8000	0.4840
l	0.8440	0.5270
m	0.7760	0.4980
n	0.8400	0.5220
o	0.0480	0.2450
q	0.5910	0.3630
r	0.7930	0.4550
s	0.7380	0.4720
t	0.6720	0.3800
w	0.8050	0.5090
x	0.5400	0.3380
y	0.8130	0.4940
z	0.9680	0.5380