



wwPDB EM Validation Summary Report ⓘ

Jul 6, 2026 – 06:51 PM JST

PDB ID : 9VTH / pdb_00009vth
EMDB ID : EMD-65328
Title : cryoEM structure of tobacco mosaic virus tRNA-like structure complexed with tobacco 80S and initiator tRNA
Authors : Lu, G.; Lin, J.
Deposited on : 2025-07-10
Resolution : 4.70 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at
<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

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

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

EMDB validation analysis : 0.0.1.dev133
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4-5-2 with Phenix2.0
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) : 2.50

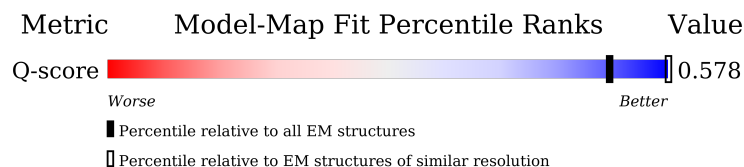
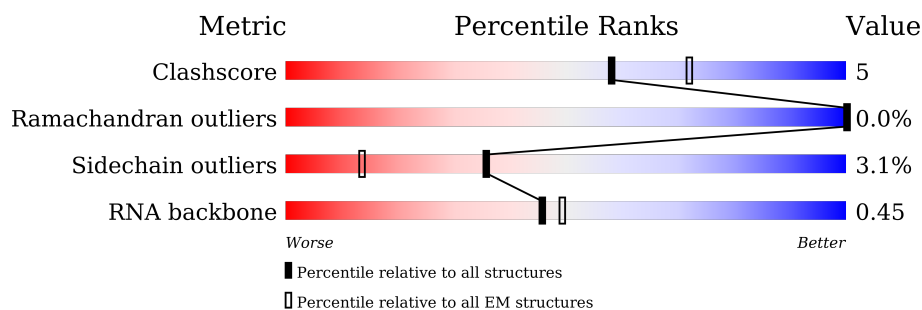
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 4.70 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.



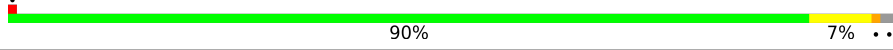
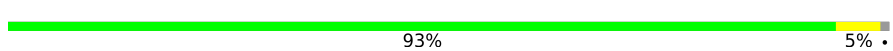
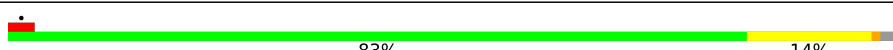
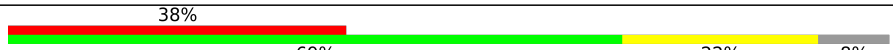
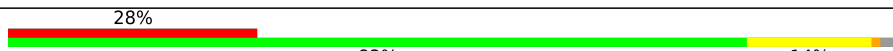
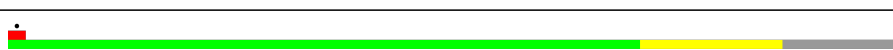
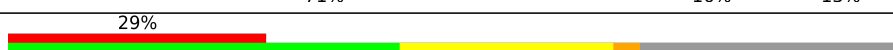
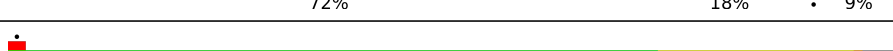
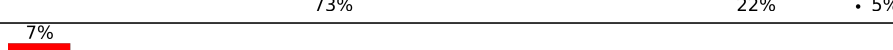
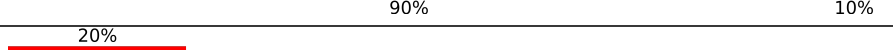
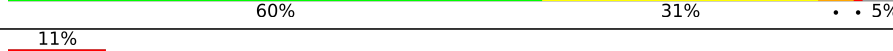
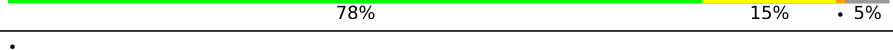
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	1989 (4.20 - 5.20)

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 $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	SA	257	
2	SB	248	
3	SC	187	

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Mol	Chain	Length	Quality of chain
4	SD	280	
5	SE	210	
6	SF	130	
7	SG	147	
8	SH	122	
9	SI	150	
10	SJ	142	
11	SK	141	
12	SL	56	
13	SM	151	
14	SN	159	
15	SO	152	
16	SP	261	
17	SQ	264	
18	SR	249	
19	SS	191	
20	ST	212	
21	SU	118	
22	SV	143	
23	SW	131	
24	SX	143	
25	SY	82	
26	SZ	133	
27	Sa	74	
28	Sb	113	

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Mol	Chain	Length	Quality of chain
29	Sc	85	
30	Sd	65	
31	Se	62	
32	Sf	156	
33	LA	217	
34	LB	260	
35	LC	389	
36	LD	405	
37	LE	181	
38	LF	194	
39	LG	206	
40	LH	140	
41	LI	148	
42	LJ	219	
43	LK	293	
44	LL	175	
45	LM	154	
46	LN	146	
47	LO	123	
48	LP	242	
49	LQ	230	
50	LR	237	
51	LS	200	
52	LT	130	
53	LU	204	

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Mol	Chain	Length	Quality of chain
54	LV	187	
55	LW	211	
56	LX	178	
57	LY	164	
58	LZ	108	
59	La	164	
60	Lb	135	
61	Lc	143	
62	Ld	50	
63	Le	113	
64	Lf	120	
65	Lg	133	
66	Lh	112	
67	Li	120	
68	Lj	110	
69	Lk	95	
70	Ll	69	
71	Lm	51	
72	Ln	128	
73	Lo	25	
74	Lp	105	
75	Lq	77	
76	10	204	
77	11	1808	
78	12	119	

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Mol	Chain	Length	Quality of chain
79	13	163	 70%27%
80	14	3390	 67%22%7%
81	15	6	 83%17%
82	16	75	 45%37%16%

2 Entry composition

There are 82 unique types of molecules in this entry. The entry contains 201638 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 Small ribosomal subunit protein uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	SA	202	Total	C	N	O	S	0	0
			1609	1022	289	288	10		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
SA	214	GLU	GLN	conflict	UNP A0A1U7W513
SA	230	GLY	ALA	conflict	UNP A0A1U7W513

- Molecule 2 is a protein called 30S ribosomal protein S3, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	SB	211	Total	C	N	O	S	0	0
			1661	1052	306	295	8		

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
SB	95	ASN	SER	conflict	UNP A0A1U7WQT4
SB	215	SER	PRO	conflict	UNP A0A1U7WQT4
SB	220	LYS	GLU	conflict	UNP A0A1U7WQT4

- Molecule 3 is a protein called 40S ribosomal protein S9-2-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	SC	183	Total	C	N	O	S	0	0
			1519	961	300	253	5		

- Molecule 4 is a protein called Small ribosomal subunit protein uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	SD	217	Total	C	N	O	S	0	0
			1686	1089	300	289	8		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
SD	268	SER	PRO	conflict	UNP A0A1U7Y544
SD	269	THR	ALA	conflict	UNP A0A1U7Y544

- Molecule 5 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	SE	194	Total	C	N	O	S	0	0
			1532	954	290	280	8		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
SE	16	SER	ASN	conflict	UNP A0A1S4AYA1

- Molecule 6 is a protein called Small ribosomal subunit protein uS8c.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	SF	129	Total	C	N	O	S	0	0
			1032	659	188	180	5		

- Molecule 7 is a protein called 40S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	SG	140	Total	C	N	O	S	0	0
			1130	719	220	187	4		

- Molecule 8 is a protein called 40S ribosomal protein S20-2.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	SH	102	Total	C	N	O	S	0	0
			804	505	151	145	3		

- Molecule 9 is a protein called 40S ribosomal protein S14-2.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	SI	132	Total	C	N	O	S	0	0
			995	610	197	183	5		

- Molecule 10 is a protein called 40S ribosomal protein S23.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	SJ	139	Total	C	N	O	S	0	0
			1082	686	210	183	3		

- Molecule 11 is a protein called 40S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	SK	141	Total	C	N	O	S	0	0
			1147	715	225	201	6		

- Molecule 12 is a protein called 40S ribosomal protein S29.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	SL	54	Total	C	N	O	S	0	0
			437	272	89	70	6		

- Molecule 13 is a protein called 40S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	SM	149	Total	C	N	O	S	0	0
			1189	762	223	202	2		

- Molecule 14 is a protein called 40S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	SN	145	Total	C	N	O	S	0	0
			1155	734	222	194	5		

- Molecule 15 is a protein called 40S ribosomal protein S15-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	SO	125	Total	C	N	O	S	0	0
			1005	644	187	169	5		

- Molecule 16 is a protein called Small ribosomal subunit protein eS1.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	SP	215	Total	C	N	O	S	0	0
			1751	1112	312	319	8		

- Molecule 17 is a protein called 40S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	SQ	259	Total	C	N	O	S	0	0
			2074	1323	387	357	7		

- Molecule 18 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	SR	230	Total	C	N	O	S	0	0
			1840	1150	356	326	8		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
SR	170	THR	ASN	conflict	UNP A0A1S3Z3Y7

- Molecule 19 is a protein called 40S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	SS	188	Total	C	N	O	S	0	0
			1537	978	280	276	3		

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
SS	22	PHE	SER	conflict	UNP A0A1S3Z906
SS	29	ALA	ASP	conflict	UNP A0A1S3Z906
SS	50	MET	VAL	conflict	UNP A0A1S3Z906
SS	63	LEU	ILE	conflict	UNP A0A1S3Z906
SS	144	HIS	ARG	conflict	UNP A0A1S3Z906
SS	183	LEU	VAL	conflict	UNP A0A1S3Z906

- Molecule 20 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	ST	185	Total	C	N	O	S	0	0
			1504	938	298	264	4		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
ST	20	SER	ALA	conflict	UNP A0A1S4CZK3
ST	40	SER	ALA	conflict	UNP A0A1S4CZK3

- Molecule 21 is a protein called 40S ribosomal protein S10-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	SU	83	Total	C	N	O	S	0	0
			716	471	117	124	4		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
SU	12	ARG	TRP	conflict	UNP A0A1S4DHU6

- Molecule 22 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	SV	117	Total	C	N	O	S	0	0
			880	553	155	165	7		

- Molecule 23 is a protein called 40S ribosomal protein S17-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	SW	119	Total	C	N	O	S	0	0
			960	603	178	174	5		

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
SW	93	ILE	THR	conflict	UNP A0A1S3Z9G2
SW	109	MET	LEU	conflict	UNP A0A1S3Z9G2
SW	126	VAL	ALA	conflict	UNP A0A1S3Z9G2
SW	127	MET	ILE	conflict	UNP A0A1S3Z9G2

- Molecule 24 is a protein called 40S ribosomal protein S19-3-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	SX	136	Total	C	N	O	S	0	0
			1081	676	211	190	4		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
SX	142	ALA	SER	conflict	UNP A0A1S4CYT7

- Molecule 25 is a protein called 40S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	SY	82	Total	C	N	O	S	0	0
			651	401	120	126	4		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
SY	67	GLY	ALA	conflict	UNP A0A1S4C2G0

- Molecule 26 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	SZ	127	Total	C	N	O	S	0	0
			1034	657	200	174	3		

- Molecule 27 is a protein called 40S ribosomal protein S25.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	Sa	70	Total	C	N	O	S	0	0
			549	343	103	100	3		

- Molecule 28 is a protein called 40S ribosomal protein S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	Sb	98	Total	C	N	O	S	0	0
			793	493	161	131	8		

- Molecule 29 is a protein called 40S ribosomal protein S27.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	Sc	84	Total	C	N	O	S	0	0
			650	401	122	119	8		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Sc	2	GLY	VAL	conflict	UNP A0A1S4BH20
Sc	9	MET	SER	conflict	UNP A0A1S4BH20

- Molecule 30 is a protein called 40S ribosomal protein S28.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Sd	61	Total	C	N	O	S	0	0
			493	303	102	86	2		

- Molecule 31 is a protein called 40S ribosomal protein S30.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	Se	47	Total	C	N	O	S	0	0
			375	228	86	60	1		

- Molecule 32 is a protein called Ubiquitin-40S ribosomal protein S27a-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	Sf	69	Total	C	N	O	S	0	0
			562	360	103	94	5		

- Molecule 33 is a protein called Ribosomal protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	LA	215	Total	C	N	O	S	0	0
			1712	1095	299	307	11		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LA	2	SER	-	insertion	UNP A0A1S3Y379
LA	216	ILE	VAL	conflict	UNP A0A1S3Y379

- Molecule 34 is a protein called 60S ribosomal protein L8-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	LB	245	Total	C	N	O	S	0	0
			1880	1174	381	315	10		

- Molecule 35 is a protein called 60S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	LC	386	Total	C	N	O	S	0	0
			3107	1983	577	532	15		

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LC	200	SER	GLY	conflict	UNP A0A1S3ZLI9
LC	308	GLU	ASP	conflict	UNP A0A1S3ZLI9
LC	381	GLU	GLN	conflict	UNP A0A1S3ZLI9

- Molecule 36 is a protein called 60S ribosomal protein L4-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	LD	398	Total	C	N	O	S	0	0
			3087	1952	577	548	10		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LD	27	VAL	LEU	conflict	UNP A0A1S4BWA4

- Molecule 37 is a protein called 60S ribosomal protein L11-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	LE	169	Total	C	N	O	S	0	0
			1362	862	254	239	7		

- Molecule 38 is a protein called 60S ribosomal protein L9-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	LF	191	Total	C	N	O	S	0	0
			1520	966	274	275	5		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LF	125	LYS	ARG	conflict	UNP A0A1S4CJ62
LF	191	VAL	ALA	conflict	UNP A0A1S4CJ62

- Molecule 39 is a protein called 60S ribosomal protein L13a-4.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	LG	205	Total	C	N	O	S	0	0
			1644	1046	320	270	8		

- Molecule 40 is a protein called 60S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	LH	131	Total	C	N	O	S	0	0
			985	623	183	170	9		

- Molecule 41 is a protein called 60s ribosomal protein l27a-3.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	LI	147	Total	C	N	O	S	0	0
			1155	735	226	191	3		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LI	94	SER	ASN	conflict	UNP A0A1J6IJF4

- Molecule 42 is a protein called 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	LJ	209	Total	C	N	O	S	0	0
			1671	1058	329	273	11		

- Molecule 43 is a protein called 60S ribosomal protein L5-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	LK	288	Total	C	N	O	S	0	0
			2339	1481	428	425	5		

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LK	85	ARG	GLN	conflict	UNP A0A1S3XE16
LK	126	THR	SER	conflict	UNP A0A1S3XE16
LK	150	VAL	ILE	conflict	UNP A0A1S3XE16
LK	218	PHE	TYR	conflict	UNP A0A1S3XE16

- Molecule 44 is a protein called 60S ribosomal protein L17-1 isoform X2.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	LL	154	Total	C	N	O	S	0	0
			1236	769	245	217	5		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LL	46	LYS	ARG	conflict	UNP A0A1S4DQP0
LL	168	SER	PRO	conflict	UNP A0A1S4DQP0

- Molecule 45 is a protein called Large ribosomal subunit protein uL23.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	LM	117	Total	C	N	O	S	0	0
			950	609	170	169	2		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LM	31	PHE	LEU	conflict	UNP Q07761

- Molecule 46 is a protein called 60S ribosomal protein L26-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	LN	126	Total	C	N	O	S	0	0
			1023	635	209	176	3		

- Molecule 47 is a protein called 60S ribosomal protein L35-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	LO	122	Total	C	N	O	S	0	0
			997	640	191	165	1		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LO	100	ALA	VAL	conflict	UNP A0A1S3WY31

- Molecule 48 is a protein called 60S ribosomal protein L7-4-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	LP	238	Total	C	N	O	S	0	0
			1958	1255	361	338	4		

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LP	7	PRO	LEU	conflict	UNP A0A1U7X2X8
LP	64	ARG	GLN	conflict	UNP A0A1U7X2X8

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Chain	Residue	Modelled	Actual	Comment	Reference
LP	157	ASP	GLU	conflict	UNP A0A1U7X2X8

- Molecule 49 is a protein called 60S ribosomal protein L6-like isoform X1.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	LQ	207	Total	C	N	O	S	0	0
			1600	1040	285	272	3		

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LQ	60	ILE	PHE	conflict	UNP A0A1U7WD54
LQ	97	LYS	ARG	conflict	UNP A0A1U7WD54
LQ	144	VAL	ILE	conflict	UNP A0A1U7WD54
LQ	148	SER	ASN	conflict	UNP A0A1U7WD54
LQ	152	PHE	ILE	conflict	UNP A0A1U7WD54
LQ	187	GLU	GLY	conflict	UNP A0A1U7WD54

- Molecule 50 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	LR	233	Total	C	N	O	S	0	0
			1874	1206	343	318	7		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LR	108	ILE	VAL	conflict	UNP A0A1U7XNI3
LR	110	LYS	ARG	conflict	UNP A0A1U7XNI3

- Molecule 51 is a protein called 60S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	LS	200	Total	C	N	O	S	0	0
			1608	1010	324	270	4		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LS	139	VAL	ALA	conflict	UNP A0A1S4CSN1
LS	163	GLU	ASP	conflict	UNP A0A1S4CSN1

- Molecule 52 is a protein called 60S ribosomal protein L14-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	LT	129	Total	C	N	O	S	0	0
			1046	673	195	175	3		

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LT	82	THR	ASN	conflict	UNP A0A1U7UYX7
LT	86	ASN	SER	conflict	UNP A0A1U7UYX7
LT	101	ALA	SER	conflict	UNP A0A1U7UYX7

- Molecule 53 is a protein called Ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	LU	203	Total	C	N	O	S	0	0
			1701	1072	350	276	3		

- Molecule 54 is a protein called 60S ribosomal protein L18-2.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	LV	186	Total	C	N	O	S	0	0
			1462	931	283	245	3		

- Molecule 55 is a protein called Ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	LW	182	Total	C	N	O	S	0	0
			1519	940	323	247	9		

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LW	190	VAL	ALA	conflict	UNP A0A1S4A7M5
LW	195	SER	PRO	conflict	UNP A0A1S4A7M5
LW	197	THR	ALA	conflict	UNP A0A1S4A7M5
LW	198	PRO	SER	conflict	UNP A0A1S4A7M5

- Molecule 56 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	LX	177	Total	C	N	O	S	0	0
			1505	969	277	251	8		

- Molecule 57 is a protein called 60S ribosomal protein L21-1-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	LY	163	Total	C	N	O	S	0	0
			1306	823	255	224	4		

- Molecule 58 is a protein called Large ribosomal subunit protein eL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	LZ	98	Total	C	N	O	S	0	0
			799	510	140	147	2		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LZ	61	ALA	THR	conflict	UNP A0A1S4BSU3
LZ	63	ALA	THR	conflict	UNP A0A1S4BSU3

- Molecule 59 is a protein called 60S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	La	62	Total	C	N	O	S	0	0
			526	341	101	81	3		

- Molecule 60 is a protein called 60S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	Lb	134	Total	C	N	O	S	0	0
			1097	707	206	182	2		

- Molecule 61 is a protein called 60S ribosomal protein L28-1-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	Lc	142	Total	C	N	O	S	0	0
			1107	700	206	199	2		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Lc	53	TYR	ASN	conflict	UNP A0A1U7WYY1
Lc	98	ALA	THR	conflict	UNP A0A1U7WYY1

- Molecule 62 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	Ld	49	Total	C	N	O	S	0	0
			407	249	87	70	1		

- Molecule 63 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	Le	97	Total	C	N	O	S	0	0
			745	475	130	135	5		

- Molecule 64 is a protein called 60S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	Lf	108	Total	C	N	O	S	0	0
			875	549	168	156	2		

- Molecule 65 is a protein called 60S ribosomal protein L32-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	Lg	126	Total	C	N	O	S	0	0
			1034	653	206	170	5		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Lg	9	THR	LYS	conflict	UNP A0A1U7YAK1

- Molecule 66 is a protein called 60S ribosomal protein L35a-3-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	Lh	103	Total	C	N	O	S	0	0
			836	534	155	142	5		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Lh	57	VAL	ILE	conflict	UNP A0A1S4AHL7

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Chain	Residue	Modelled	Actual	Comment	Reference
Lh	91	LYS	ASN	conflict	UNP A0A1S4AHL7

- Molecule 67 is a protein called Large ribosomal subunit protein eL34.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	Li	114	Total	C	N	O	S	0	0
			926	579	193	153	1		

- Molecule 68 is a protein called 60S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	Lj	98	Total	C	N	O	S	0	0
			784	491	162	129	2		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Lj	45	SER	GLY	conflict	UNP A0A1U7VXX3

- Molecule 69 is a protein called Ribosomal protein L37.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	Lk	86	Total	C	N	O	S	0	0
			701	429	155	112	5		

- Molecule 70 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	Ll	68	Total	C	N	O	S	0	0
			558	358	99	98	3		

- Molecule 71 is a protein called 60S ribosomal protein L39-3.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	Lm	50	Total	C	N	O	S	0	0
			448	286	96	64	2		

- Molecule 72 is a protein called Ubiquitin-60S ribosomal protein L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	Ln	51	Total	C	N	O	S	0	0
			420	261	88	65	6		

- Molecule 73 is a protein called 60s ribosomal protein l41-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	Lo	24	Total	C	N	O	S	0	0
			227	136	63	25	3		

- Molecule 74 is a protein called 60S ribosomal protein L44.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	Lp	98	Total	C	N	O	S	0	0
			785	493	157	131	4		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Lp	17	GLY	CYS	conflict	UNP A0A1U7YPT7

- Molecule 75 is a protein called 60S ribosomal protein L37a.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	Lq	76	Total	C	N	O	S	0	0
			586	371	109	101	5		

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Lq	8	THR	ALA	conflict	UNP A0A1U7XSD1
Lq	35	ASN	SER	conflict	UNP A0A1U7XSD1
Lq	59	TYR	ASP	conflict	UNP A0A1U7XSD1
Lq	62	ASN	LYS	conflict	UNP A0A1U7XSD1
Lq	65	VAL	ALA	conflict	UNP A0A1U7XSD1
Lq	76	ASP	ALA	conflict	UNP A0A1U7XSD1

- Molecule 76 is a RNA chain called RNA (204-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
76	10	158	Total	C	N	O	P	0	0
			3359	1500	590	1111	158		

- Molecule 77 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	11	1626	Total	C	N	O	P	0	0
			34688	15501	6194	11367	1626		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
11	794	U	C	conflict	GB 806909817
11	1134	A	U	conflict	GB 806909817

- Molecule 78 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	12	119	Total	C	N	O	P	0	0
			2538	1133	457	829	119		

- Molecule 79 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	13	163	Total	C	N	O	P	0	0
			3478	1553	628	1134	163		

- Molecule 80 is a RNA chain called 25S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	14	3142	Total	C	N	O	P	0	0
			67280	30009	12243	21886	3142		

- Molecule 81 is a RNA chain called RNA (5'-R(P*AP*CP*AP*AP*UP*G)-3').

Mol	Chain	Residues	Atoms					AltConf	Trace
81	15	6	Total	C	N	O	P	0	0
			129	58	25	40	6		

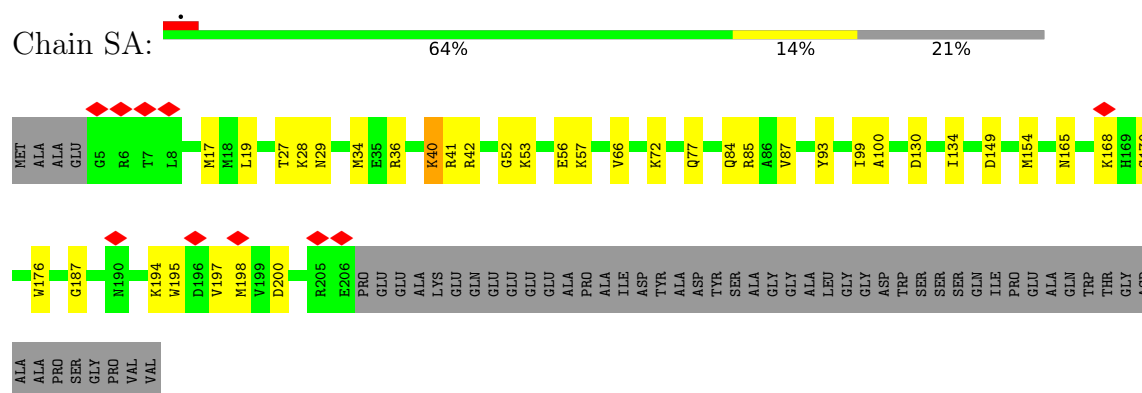
- Molecule 82 is a RNA chain called tRNA(iMet).

Mol	Chain	Residues	Atoms					AltConf	Trace
82	16	75	Total	C	N	O	P	0	0
			1625	729	298	523	75		

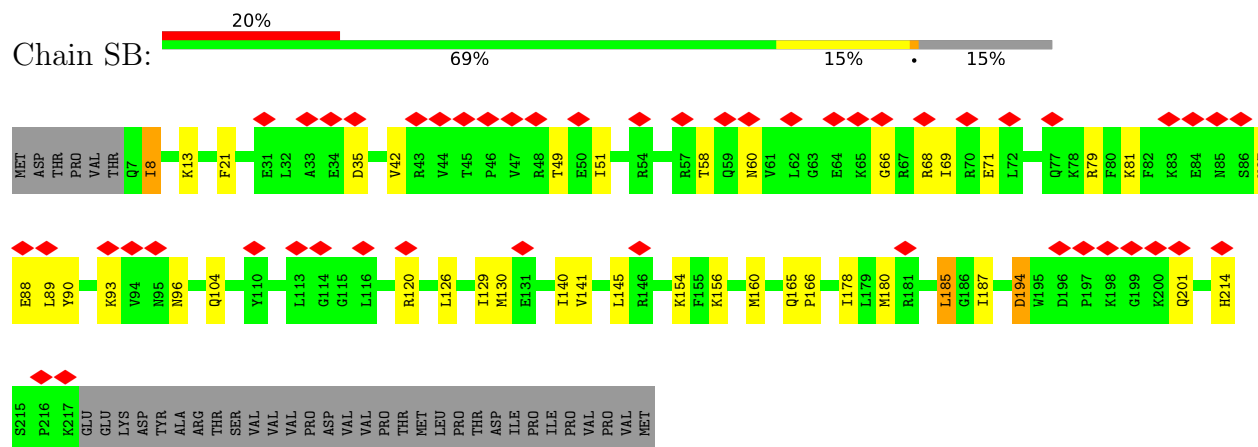
3 Residue-property plots

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

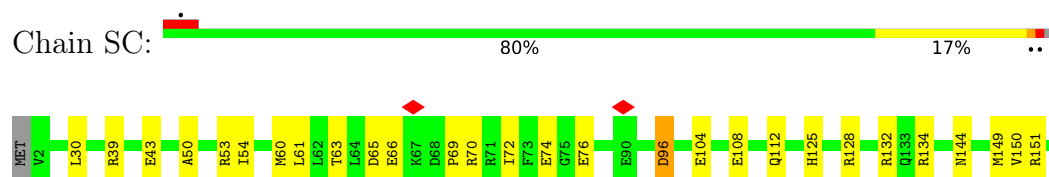
- Molecule 1: Small ribosomal subunit protein uS2

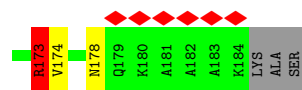


- Molecule 2: 30S ribosomal protein S3, chloroplastic



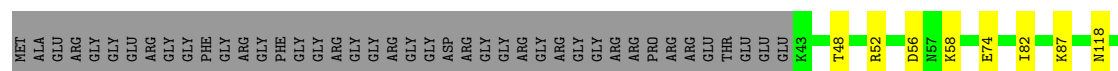
- Molecule 3: 40S ribosomal protein S9-2-like





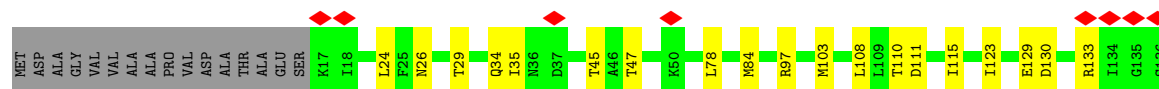
- Molecule 4: Small ribosomal subunit protein uS5

Chain SD: 69% 8% 22%



- Molecule 5: 40S ribosomal protein S5

Chain SE: 6% 78% 14% 8%



- Molecule 6: Small ribosomal subunit protein uS8c

Chain SF: 89% 10%



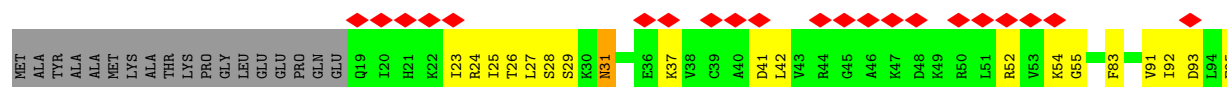
- Molecule 7: 40S ribosomal protein S16

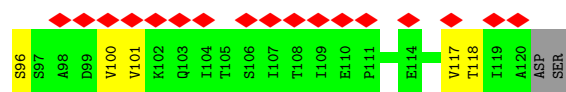
Chain SG: 78% 17% 5%



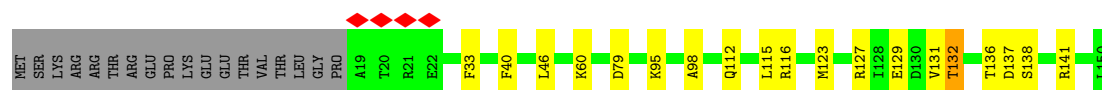
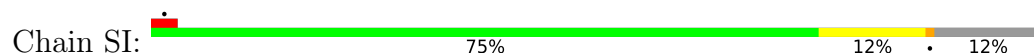
- Molecule 8: 40S ribosomal protein S20-2

Chain SH: 31% 64% 19% 16%

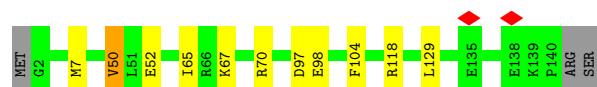




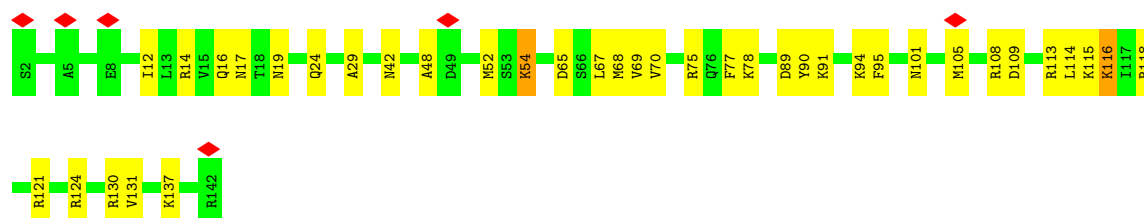
- Molecule 9: 40S ribosomal protein S14-2



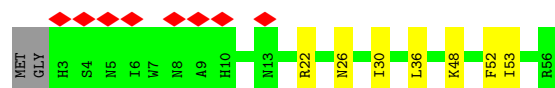
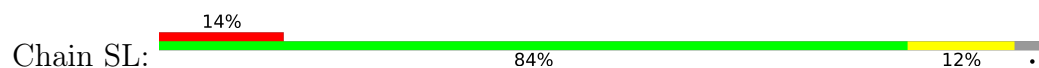
- Molecule 10: 40S ribosomal protein S23



- Molecule 11: 40S ribosomal protein S18



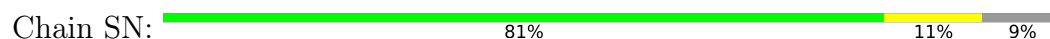
- Molecule 12: 40S ribosomal protein S29



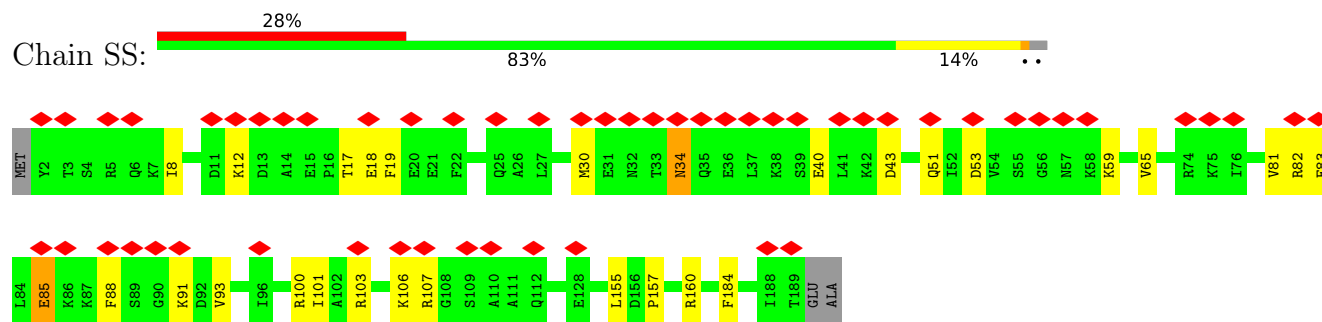
- Molecule 13: 40S ribosomal protein S13



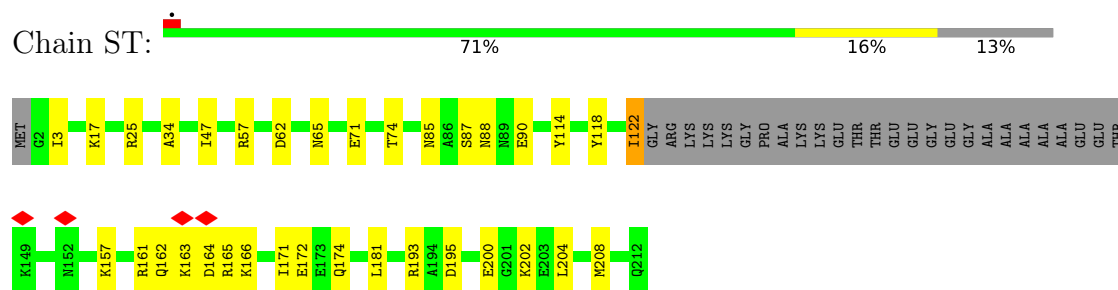
- Molecule 14: 40S ribosomal protein S11



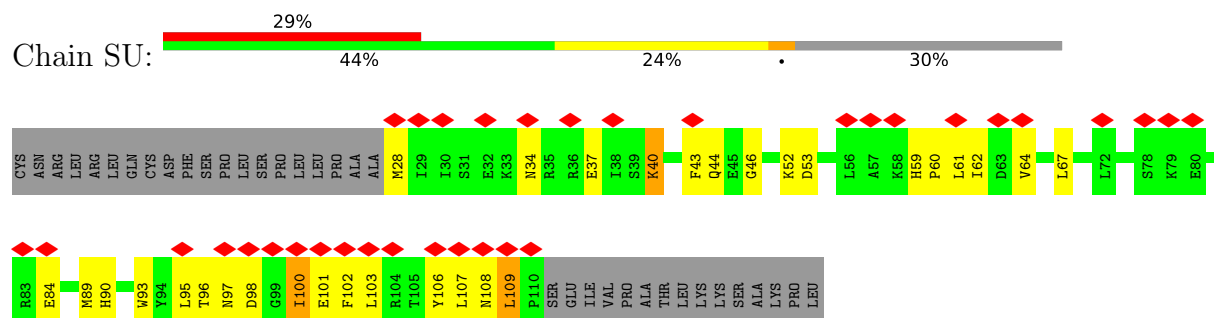
- Molecule 19: 40S ribosomal protein S7



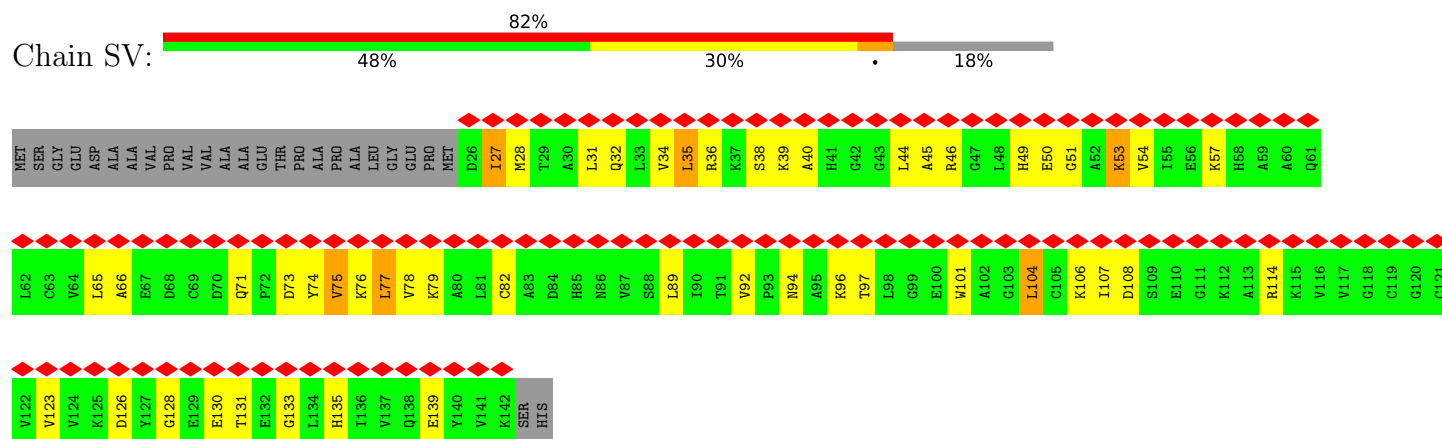
- Molecule 20: 40S ribosomal protein S8



- Molecule 21: 40S ribosomal protein S10-1

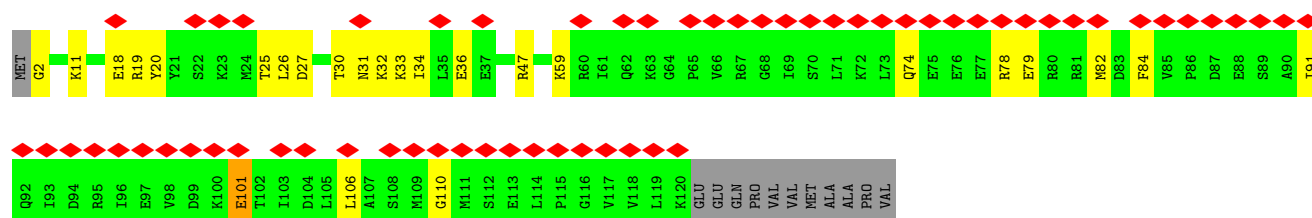


- Molecule 22: 40S ribosomal protein S12



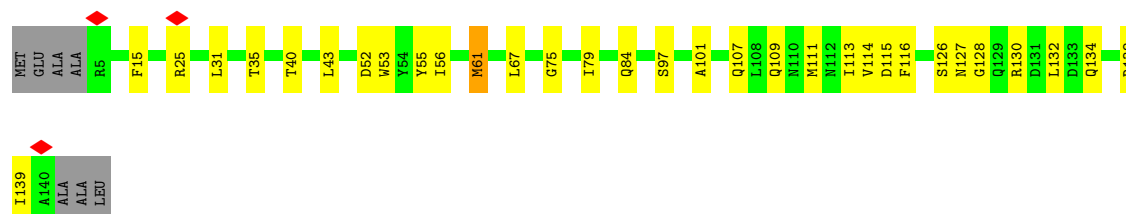
- Molecule 23: 40S ribosomal protein S17-like

Chain SW: 



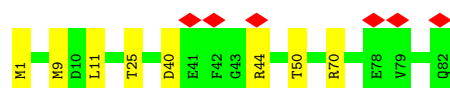
- Molecule 24: 40S ribosomal protein S19-3-like

Chain SX: 



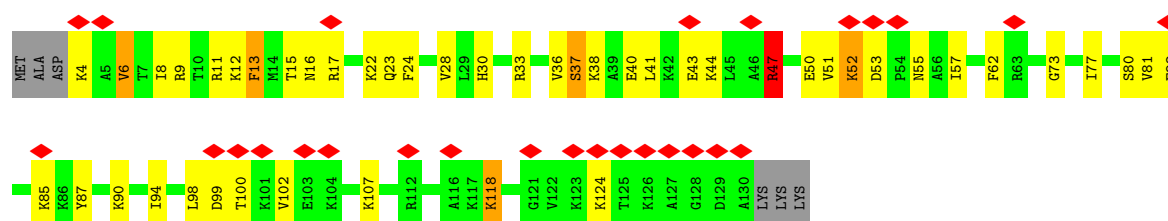
- Molecule 25: 40S ribosomal protein S21

Chain SY: 



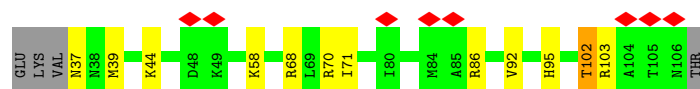
- Molecule 26: 40S ribosomal protein S24

Chain SZ: 



- Molecule 27: 40S ribosomal protein S25

Chain Sa: 



- Molecule 28: 40S ribosomal protein S26

Chain Sb: 



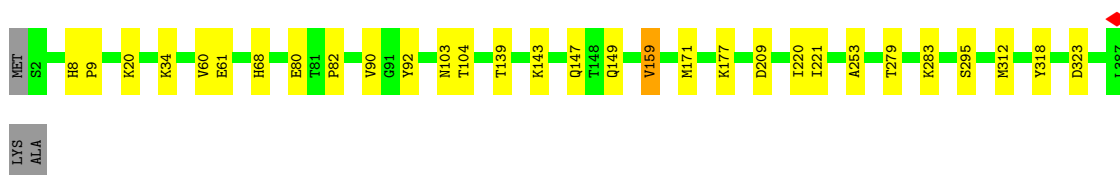
- Molecule 34: 60S ribosomal protein L8-like

Chain LB: 89% 5% 6%



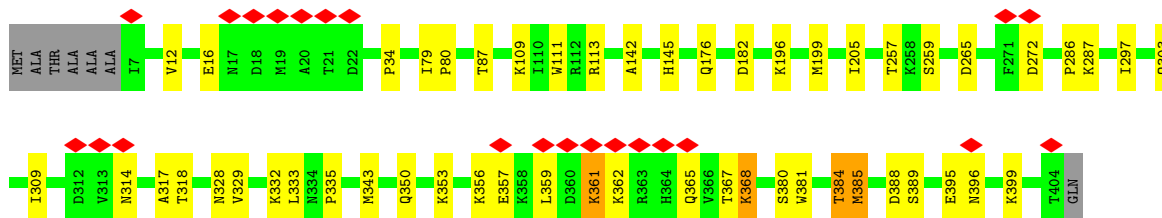
- Molecule 35: 60S ribosomal protein L3

Chain LC: 92% 7%



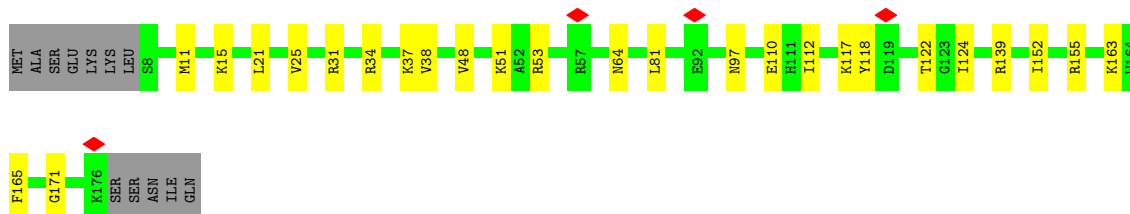
- Molecule 36: 60S ribosomal protein L4-like

Chain LD: 5% 85% 12%



- Molecule 37: 60S ribosomal protein L11-1

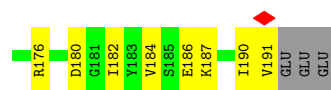
Chain LE: 79% 14% 7%



- Molecule 38: 60S ribosomal protein L9-1

Chain LF: 78% 20%

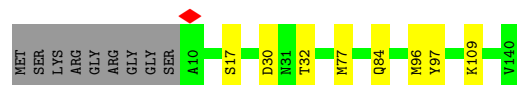




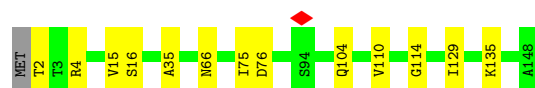
- Molecule 39: 60S ribosomal protein L13a-4



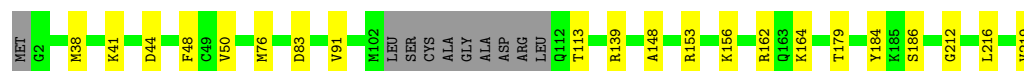
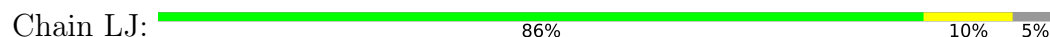
- Molecule 40: 60S ribosomal protein L23



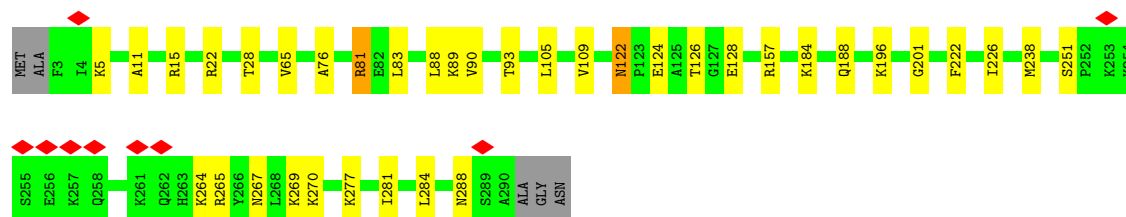
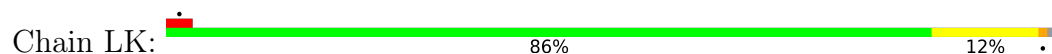
- Molecule 41: 60s ribosomal protein l27a-3



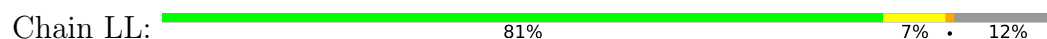
- Molecule 42: 60S ribosomal protein L10



- Molecule 43: 60S ribosomal protein L5-like

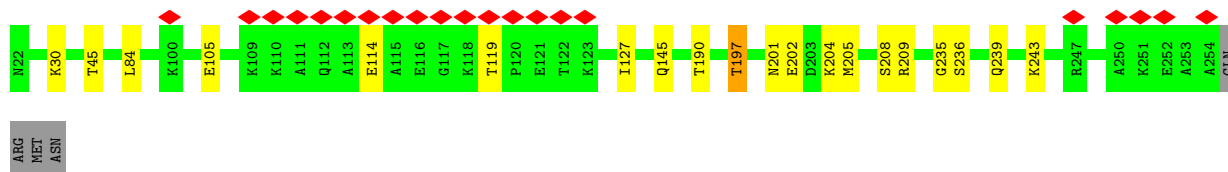


- Molecule 44: 60S ribosomal protein L17-1 isoform X2





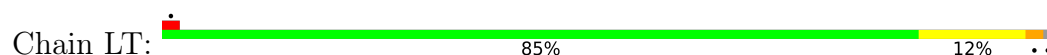
- Molecule 50: 60S ribosomal protein L7a



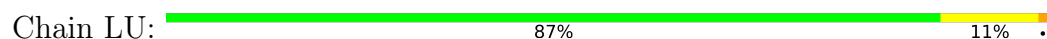
- Molecule 51: 60S ribosomal protein L13



- Molecule 52: 60S ribosomal protein L14-1



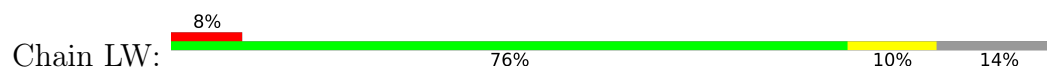
- Molecule 53: Ribosomal protein L15

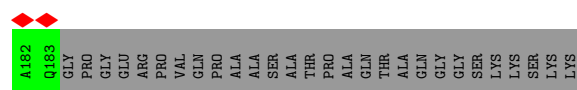


- Molecule 54: 60S ribosomal protein L18-2

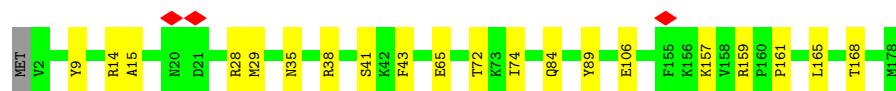
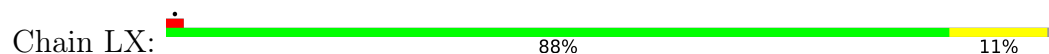


- Molecule 55: Ribosomal protein L19





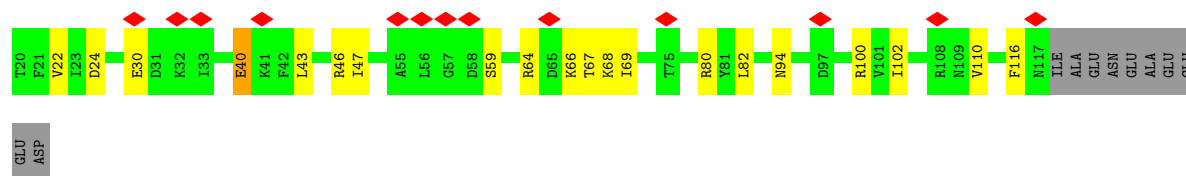
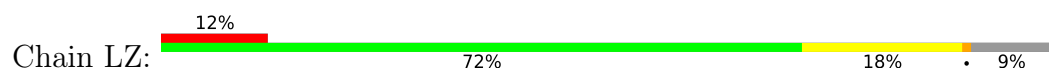
- Molecule 56: 60S ribosomal protein L18a

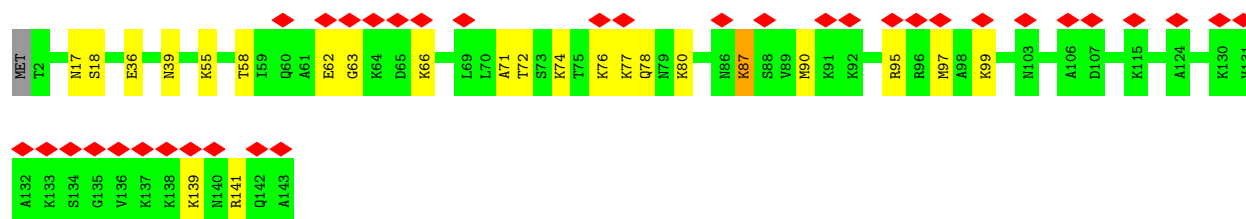


- Molecule 57: 60S ribosomal protein L21-1-like



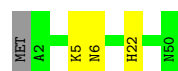
- Molecule 58: Large ribosomal subunit protein eL22





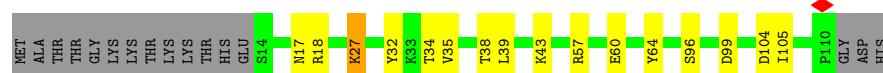
- Molecule 62: 60S ribosomal protein L29

Chain Ld: 92% 6% .



- Molecule 63: 60S ribosomal protein L30

Chain Le: 72% 13% . 14%



- Molecule 64: 60S ribosomal protein L31

Chain Lf: 5% 85% 5% 10%



- Molecule 65: 60S ribosomal protein L32-1

Chain Lg: 86% 8% 5%



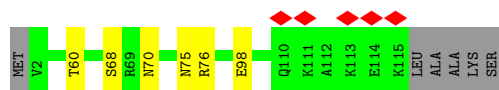
- Molecule 66: 60S ribosomal protein L35a-3-like

Chain Lh: 87% 5% 8%

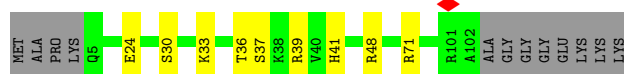
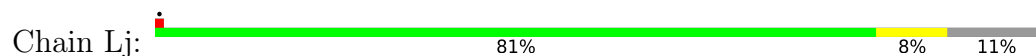


- Molecule 67: Large ribosomal subunit protein eL34

Chain Li: 90% 5% 5%



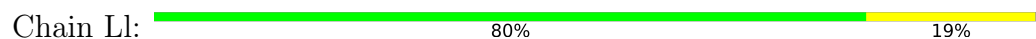
- Molecule 68: 60S ribosomal protein L36



- Molecule 69: Ribosomal protein L37



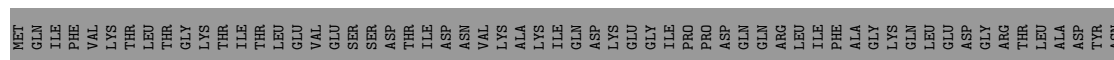
- Molecule 70: 60S ribosomal protein L38



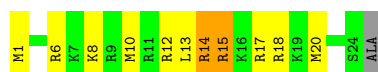
- Molecule 71: 60S ribosomal protein L39-3



- Molecule 72: Ubiquitin-60S ribosomal protein L40



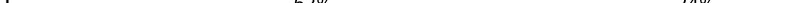
- Molecule 73: 60s ribosomal protein l41-like

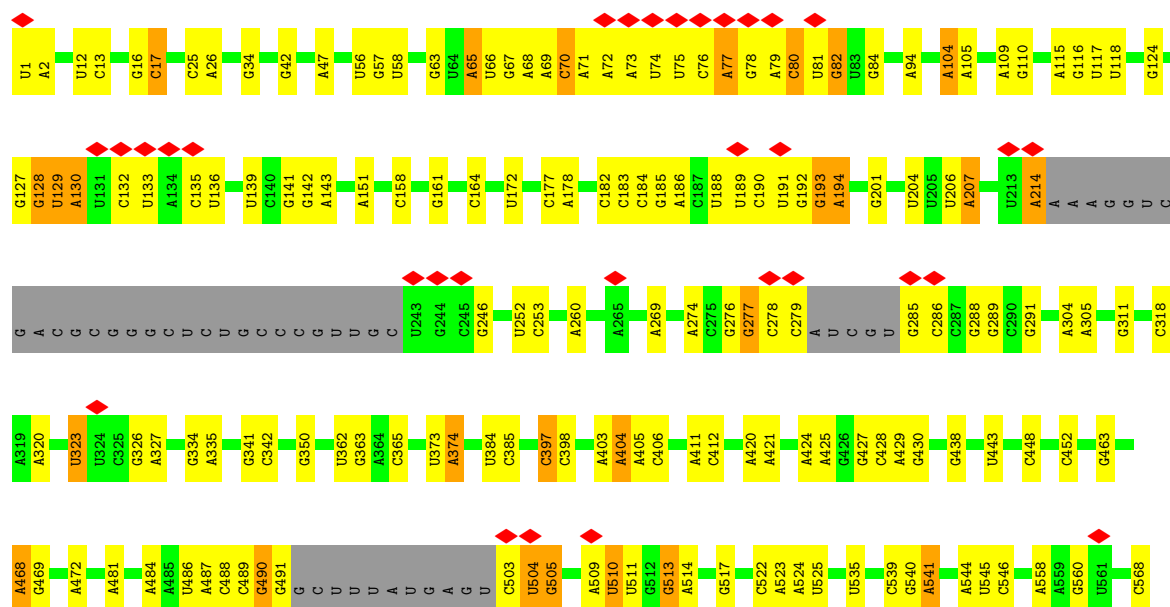


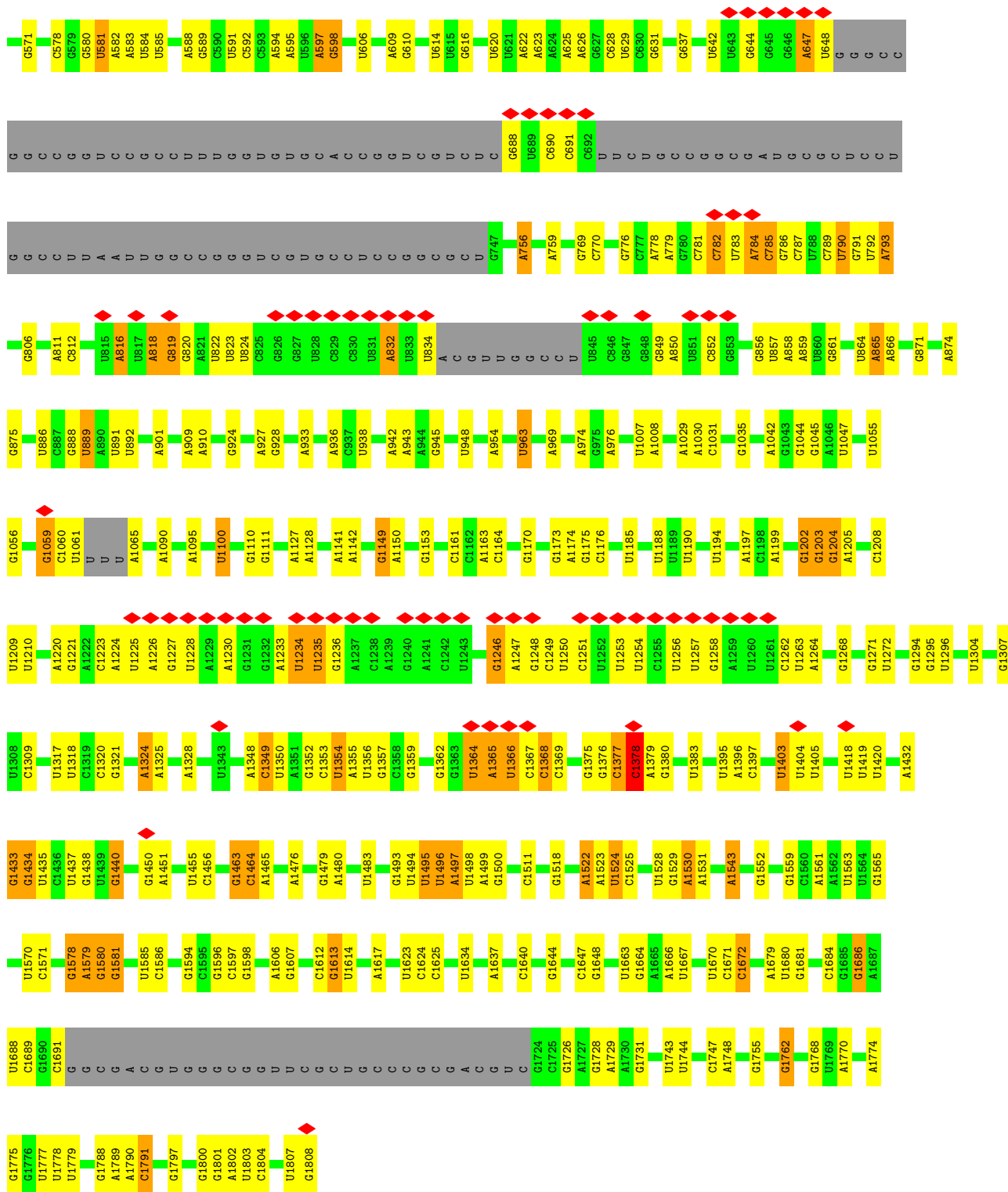
- Molecule 74: 60S ribosomal protein L44

-

- [illegible]

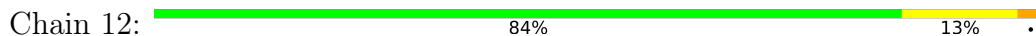
- Chain 11: 





• Molecule 78: 5S rRNA

Chain 12:



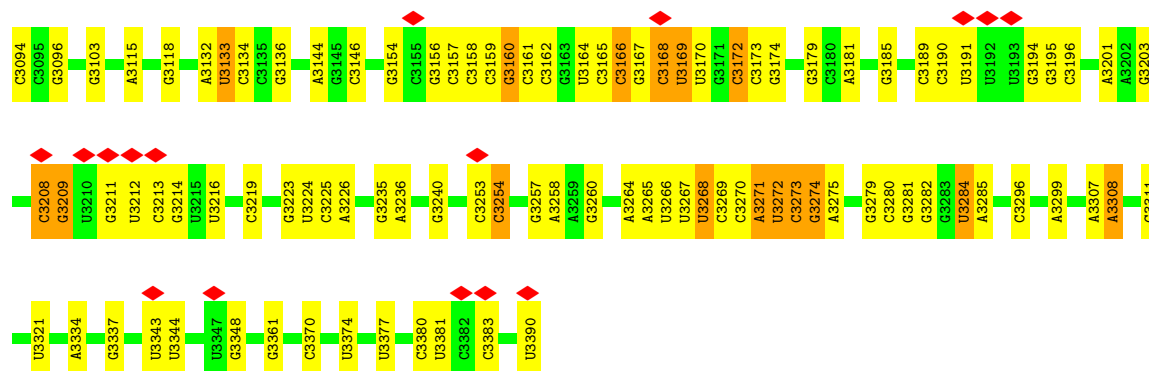
Chain 13:



Chain 14:







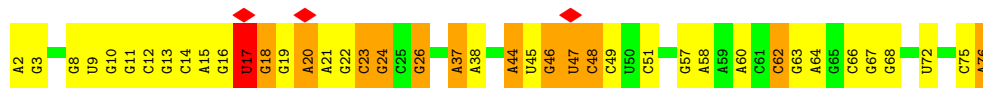
- Molecule 81: RNA (5'-R(P*AP*CP*AP*AP*UP*G)-3')

Chain 15: 83% 17%



- Molecule 82: tRNA(iMet)

Chain 16: 45% 37% 16%



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	32882	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	FEI FALCON I (4k x 4k)	Depositor
Maximum map value	2.236	Depositor
Minimum map value	-0.784	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.061	Depositor
Recommended contour level	0.19	Depositor
Map size (Å)	537.04, 537.04, 537.04	wwPDB
Map dimensions	560, 560, 560	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.95899993, 0.95899993, 0.95899993	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: T6A, 7MG, 1MG, 2MG, H2U, M2G, 1MA, 5MC

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	SA	0.26	0/1643	0.41	0/2221
2	SB	0.23	0/1684	0.43	0/2257
3	SC	0.22	0/1546	0.39	0/2069
4	SD	0.23	0/1721	0.41	0/2320
5	SE	0.20	0/1554	0.35	0/2096
6	SF	0.25	0/1050	0.41	0/1405
7	SG	0.21	0/1149	0.38	0/1535
8	SH	0.20	0/813	0.46	0/1095
9	SI	0.42	0/1007	0.68	2/1348 (0.1%)
10	SJ	0.23	0/1101	0.40	0/1465
11	SK	0.35	0/1164	0.55	0/1554
12	SL	0.18	0/449	0.31	0/600
13	SM	0.24	0/1214	0.34	0/1632
14	SN	0.27	0/1180	0.45	0/1579
15	SO	0.31	0/1027	0.58	0/1377
16	SP	0.30	0/1781	0.44	0/2391
17	SQ	0.26	0/2114	0.43	0/2837
18	SR	0.32	0/1864	0.56	0/2482
19	SS	0.19	0/1565	0.44	0/2103
20	ST	0.27	0/1528	0.43	0/2041
21	SU	0.40	0/736	0.72	0/993
22	SV	0.27	0/891	0.66	2/1201 (0.2%)
23	SW	0.27	0/970	0.53	0/1294
24	SX	0.22	0/1103	0.39	0/1480
25	SY	0.21	0/661	0.39	0/888
26	SZ	0.46	0/1049	0.68	0/1391
27	Sa	0.21	0/555	0.47	0/745
28	Sb	0.34	0/806	0.46	0/1077
29	Sc	0.18	0/661	0.30	0/888
30	Sd	0.18	0/496	0.36	0/661
31	Se	0.24	0/379	0.53	0/498
32	Sf	0.15	0/574	0.40	0/763

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	LA	0.76	0/1737	1.12	3/2319 (0.1%)
34	LB	0.31	0/1924	0.51	0/2585
35	LC	0.29	0/3175	0.47	0/4253
36	LD	0.45	0/3149	0.66	0/4249
37	LE	0.25	0/1384	0.46	0/1852
38	LF	0.27	0/1539	0.47	0/2058
39	LG	0.28	0/1673	0.42	0/2241
40	LH	0.28	0/1001	0.47	0/1345
41	LI	0.39	0/1183	0.61	2/1581 (0.1%)
42	LJ	0.25	0/1707	0.39	0/2283
43	LK	0.35	0/2384	0.49	0/3197
44	LL	0.33	0/1261	0.51	0/1693
45	LM	0.27	0/965	0.45	0/1295
46	LN	0.26	0/1037	0.42	0/1385
47	LO	0.25	0/1007	0.37	0/1340
48	LP	0.30	0/1993	0.49	0/2672
49	LQ	0.20	0/1634	0.38	0/2196
50	LR	0.24	0/1907	0.36	0/2555
51	LS	0.26	0/1638	0.42	0/2198
52	LT	0.25	0/1059	0.40	0/1415
53	LU	0.33	0/1740	0.49	0/2333
54	LV	0.29	0/1487	0.45	0/1989
55	LW	0.28	0/1538	0.45	0/2031
56	LX	0.30	0/1544	0.41	0/2071
57	LY	0.30	0/1331	0.44	0/1784
58	LZ	0.34	0/810	0.56	0/1085
59	La	0.24	0/539	0.40	0/716
60	Lb	0.26	0/1116	0.39	0/1489
61	Lc	0.33	0/1122	0.53	0/1503
62	Ld	0.40	0/417	0.61	0/555
63	Le	0.27	0/757	0.42	0/1018
64	Lf	0.27	0/885	0.38	0/1184
65	Lg	0.30	0/1051	0.49	0/1407
66	Lh	0.28	0/856	0.43	0/1149
67	Li	0.27	0/939	0.42	0/1251
68	Lj	0.24	0/793	0.45	0/1050
69	Lk	0.33	0/714	0.54	0/949
70	Ll	0.22	0/566	0.34	0/752
71	Lm	0.29	0/460	0.42	0/611
72	Ln	0.17	0/426	0.37	0/561
73	Lo	0.73	0/228	1.18	0/292
74	Lp	0.47	0/799	0.61	0/1055
75	Lq	0.33	0/595	0.48	0/791

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
76	10	0.68	0/3752	1.09	9/5844 (0.2%)
77	11	0.32	0/38798	0.44	4/60451 (0.0%)
78	12	0.31	0/2837	0.35	0/4420
79	13	0.37	0/3889	0.44	0/6060
80	14	0.42	0/75291	0.53	2/117423 (0.0%)
81	15	0.25	0/144	0.24	0/222
82	16	0.38	0/1555	0.54	0/2423
All	All	0.36	0/216371	0.51	24/317467 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	SA	0	2
3	SC	0	1
9	SI	0	1
11	SK	0	2
17	SQ	0	1
18	SR	0	1
26	SZ	0	2
33	LA	0	2
37	LE	0	1
38	LF	0	1
73	Lo	0	6
All	All	0	20

There are no bond length outliers.

The worst 5 of 24 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
41	LI	15	VAL	N-CA-C	7.65	118.39	110.36
76	10	68	U	C4'-C3'-C2'	-7.54	95.06	102.60
76	10	134	U	O3'-P-O5'	-6.50	94.26	104.00
9	SI	136	THR	N-CA-C	-6.32	105.52	112.72
9	SI	138	SER	N-CA-C	6.29	118.74	109.69

There are no chirality outliers.

5 of 20 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	SA	41	ARG	Sidechain
1	SA	42	ARG	Sidechain
3	SC	173	ARG	Sidechain
9	SI	141	ARG	Sidechain
11	SK	108	ARG	Sidechain

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	SA	1609	0	1622	24	0
2	SB	1661	0	1754	32	0
3	SC	1519	0	1584	25	0
4	SD	1686	0	1789	16	0
5	SE	1532	0	1575	18	0
6	SF	1032	0	1068	11	0
7	SG	1130	0	1193	14	0
8	SH	804	0	865	15	0
9	SI	995	0	1026	8	0
10	SJ	1082	0	1147	6	0
11	SK	1147	0	1180	22	0
12	SL	437	0	431	5	0
13	SM	1189	0	1278	5	0
14	SN	1155	0	1210	10	0
15	SO	1005	0	1063	20	0
16	SP	1751	0	1804	14	0
17	SQ	2074	0	2181	29	0
18	SR	1840	0	1948	49	0
19	SS	1537	0	1591	23	0
20	ST	1504	0	1557	21	0
21	SU	716	0	715	25	0
22	SV	880	0	905	47	0
23	SW	960	0	1023	18	0
24	SX	1081	0	1091	24	0
25	SY	651	0	630	6	0
26	SZ	1034	0	1110	37	0
27	Sa	549	0	579	9	0
28	Sb	793	0	828	7	0
29	Sc	650	0	649	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
30	Sd	493	0	524	7	0
31	Se	375	0	405	8	0
32	Sf	562	0	584	18	0
33	LA	1712	0	1823	79	0
34	LB	1880	0	1915	9	0
35	LC	3107	0	3232	21	0
36	LD	3087	0	3207	27	0
37	LE	1362	0	1405	17	0
38	LF	1520	0	1614	24	0
39	LG	1644	0	1773	7	0
40	LH	985	0	1046	6	0
41	LI	1155	0	1197	7	0
42	LJ	1671	0	1731	12	0
43	LK	2339	0	2377	21	0
44	LL	1236	0	1262	7	0
45	LM	950	0	1029	12	0
46	LN	1023	0	1105	7	0
47	LO	997	0	1136	8	0
48	LP	1958	0	2057	20	0
49	LQ	1600	0	1731	22	0
50	LR	1874	0	2030	10	0
51	LS	1608	0	1697	13	0
52	LT	1046	0	1144	13	0
53	LU	1701	0	1771	16	0
54	LV	1462	0	1581	6	0
55	LW	1519	0	1630	15	0
56	LX	1505	0	1557	13	0
57	LY	1306	0	1367	8	0
58	LZ	799	0	836	11	0
59	La	526	0	554	9	0
60	Lb	1097	0	1182	7	0
61	Lc	1107	0	1182	14	0
62	Ld	407	0	393	2	0
63	Le	745	0	783	10	0
64	Lf	875	0	934	4	0
65	Lg	1034	0	1110	7	0
66	Lh	836	0	865	4	0
67	Li	926	0	1013	4	0
68	Lj	784	0	871	7	0
69	Lk	701	0	729	13	0
70	Ll	558	0	604	9	0
71	Lm	448	0	480	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
72	Ln	420	0	461	4	0
73	Lo	227	0	262	2	0
74	Lp	785	0	844	4	0
75	Lq	586	0	611	5	0
76	10	3359	0	1699	137	0
77	11	34688	0	17477	252	0
78	12	2538	0	1286	6	0
79	13	3478	0	1761	19	0
80	14	67280	0	33921	291	0
81	15	129	0	66	2	0
82	16	1625	0	843	14	0
All	All	201638	0	150093	1607	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.

The worst 5 of 1607 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)
33:LA:4:LYS:HD2	33:LA:198:TRP:HB3	1.32	1.07
26:SZ:44:LYS:HG3	26:SZ:47:ARG:HH11	1.23	1.03
33:LA:48:ARG:HA	33:LA:159:LEU:HD23	1.50	0.94
21:SU:43:PHE:HB2	21:SU:103:LEU:HD21	1.49	0.93
57:LY:129:LYS:HB3	80:14:1109:A:H5'	1.51	0.91

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	SA	200/257 (78%)	197 (98%)	3 (2%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	SB	209/248 (84%)	200 (96%)	9 (4%)	0	100	100
3	SC	181/187 (97%)	180 (99%)	1 (1%)	0	100	100
4	SD	215/280 (77%)	211 (98%)	4 (2%)	0	100	100
5	SE	192/210 (91%)	184 (96%)	8 (4%)	0	100	100
6	SF	127/130 (98%)	124 (98%)	3 (2%)	0	100	100
7	SG	138/147 (94%)	135 (98%)	3 (2%)	0	100	100
8	SH	100/122 (82%)	97 (97%)	3 (3%)	0	100	100
9	SI	130/150 (87%)	125 (96%)	4 (3%)	1 (1%)	16	53
10	SJ	137/142 (96%)	133 (97%)	4 (3%)	0	100	100
11	SK	139/141 (99%)	133 (96%)	6 (4%)	0	100	100
12	SL	52/56 (93%)	52 (100%)	0	0	100	100
13	SM	147/151 (97%)	146 (99%)	1 (1%)	0	100	100
14	SN	143/159 (90%)	140 (98%)	3 (2%)	0	100	100
15	SO	123/152 (81%)	120 (98%)	3 (2%)	0	100	100
16	SP	213/261 (82%)	210 (99%)	3 (1%)	0	100	100
17	SQ	257/264 (97%)	254 (99%)	3 (1%)	0	100	100
18	SR	228/249 (92%)	219 (96%)	9 (4%)	0	100	100
19	SS	186/191 (97%)	180 (97%)	6 (3%)	0	100	100
20	ST	181/212 (85%)	179 (99%)	2 (1%)	0	100	100
21	SU	81/118 (69%)	79 (98%)	2 (2%)	0	100	100
22	SV	115/143 (80%)	107 (93%)	8 (7%)	0	100	100
23	SW	117/131 (89%)	116 (99%)	1 (1%)	0	100	100
24	SX	134/143 (94%)	133 (99%)	1 (1%)	0	100	100
25	SY	80/82 (98%)	76 (95%)	4 (5%)	0	100	100
26	SZ	125/133 (94%)	122 (98%)	3 (2%)	0	100	100
27	Sa	68/74 (92%)	68 (100%)	0	0	100	100
28	Sb	96/113 (85%)	95 (99%)	1 (1%)	0	100	100
29	Sc	82/85 (96%)	80 (98%)	2 (2%)	0	100	100
30	Sd	59/65 (91%)	59 (100%)	0	0	100	100
31	Se	43/62 (69%)	42 (98%)	1 (2%)	0	100	100
32	Sf	67/156 (43%)	67 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
33	LA	213/217 (98%)	195 (92%)	18 (8%)	0	100	100
34	LB	243/260 (94%)	231 (95%)	12 (5%)	0	100	100
35	LC	384/389 (99%)	372 (97%)	12 (3%)	0	100	100
36	LD	396/405 (98%)	382 (96%)	14 (4%)	0	100	100
37	LE	167/181 (92%)	164 (98%)	3 (2%)	0	100	100
38	LF	189/194 (97%)	183 (97%)	6 (3%)	0	100	100
39	LG	203/206 (98%)	201 (99%)	2 (1%)	0	100	100
40	LH	129/140 (92%)	127 (98%)	2 (2%)	0	100	100
41	LI	145/148 (98%)	139 (96%)	6 (4%)	0	100	100
42	LJ	205/219 (94%)	201 (98%)	4 (2%)	0	100	100
43	LK	286/293 (98%)	278 (97%)	8 (3%)	0	100	100
44	LL	152/175 (87%)	150 (99%)	2 (1%)	0	100	100
45	LM	115/154 (75%)	114 (99%)	1 (1%)	0	100	100
46	LN	124/146 (85%)	122 (98%)	2 (2%)	0	100	100
47	LO	120/123 (98%)	115 (96%)	5 (4%)	0	100	100
48	LP	236/242 (98%)	229 (97%)	7 (3%)	0	100	100
49	LQ	203/230 (88%)	198 (98%)	5 (2%)	0	100	100
50	LR	231/237 (98%)	228 (99%)	3 (1%)	0	100	100
51	LS	198/200 (99%)	192 (97%)	6 (3%)	0	100	100
52	LT	127/130 (98%)	122 (96%)	5 (4%)	0	100	100
53	LU	201/204 (98%)	195 (97%)	6 (3%)	0	100	100
54	LV	184/187 (98%)	180 (98%)	4 (2%)	0	100	100
55	LW	180/211 (85%)	179 (99%)	1 (1%)	0	100	100
56	LX	175/178 (98%)	174 (99%)	1 (1%)	0	100	100
57	LY	161/164 (98%)	157 (98%)	4 (2%)	0	100	100
58	LZ	96/108 (89%)	94 (98%)	2 (2%)	0	100	100
59	La	60/164 (37%)	59 (98%)	1 (2%)	0	100	100
60	Lb	132/135 (98%)	130 (98%)	2 (2%)	0	100	100
61	Lc	140/143 (98%)	138 (99%)	2 (1%)	0	100	100
62	Ld	47/50 (94%)	47 (100%)	0	0	100	100
63	Le	95/113 (84%)	93 (98%)	2 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
64	Lf	106/120 (88%)	105 (99%)	1 (1%)	0	100	100
65	Lg	124/133 (93%)	123 (99%)	1 (1%)	0	100	100
66	Lh	101/112 (90%)	100 (99%)	1 (1%)	0	100	100
67	Li	112/120 (93%)	110 (98%)	2 (2%)	0	100	100
68	Lj	96/110 (87%)	94 (98%)	2 (2%)	0	100	100
69	Lk	84/95 (88%)	83 (99%)	1 (1%)	0	100	100
70	Ll	66/69 (96%)	65 (98%)	1 (2%)	0	100	100
71	Lm	48/51 (94%)	45 (94%)	3 (6%)	0	100	100
72	Ln	49/128 (38%)	49 (100%)	0	0	100	100
73	Lo	22/25 (88%)	22 (100%)	0	0	100	100
74	Lp	96/105 (91%)	93 (97%)	3 (3%)	0	100	100
75	Lq	74/77 (96%)	70 (95%)	4 (5%)	0	100	100
All	All	10880/12105 (90%)	10611 (98%)	268 (2%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
9	SI	137	ASP

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	SA	171/209 (82%)	168 (98%)	3 (2%)	51	67
2	SB	179/215 (83%)	175 (98%)	4 (2%)	45	64
3	SC	160/164 (98%)	157 (98%)	3 (2%)	50	66
4	SD	184/225 (82%)	181 (98%)	3 (2%)	55	69
5	SE	165/175 (94%)	159 (96%)	6 (4%)	31	52
6	SF	111/112 (99%)	110 (99%)	1 (1%)	70	77

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
7	SG	116/120 (97%)	112 (97%)	4 (3%)	32	55
8	SH	93/108 (86%)	89 (96%)	4 (4%)	26	48
9	SI	102/120 (85%)	97 (95%)	5 (5%)	22	44
10	SJ	111/114 (97%)	107 (96%)	4 (4%)	31	52
11	SK	122/122 (100%)	115 (94%)	7 (6%)	18	41
12	SL	46/47 (98%)	46 (100%)	0	100	100
13	SM	130/131 (99%)	129 (99%)	1 (1%)	73	78
14	SN	124/131 (95%)	121 (98%)	3 (2%)	43	63
15	SO	109/130 (84%)	108 (99%)	1 (1%)	70	77
16	SP	194/228 (85%)	190 (98%)	4 (2%)	47	65
17	SQ	225/228 (99%)	219 (97%)	6 (3%)	39	60
18	SR	197/213 (92%)	188 (95%)	9 (5%)	24	46
19	SS	168/170 (99%)	163 (97%)	5 (3%)	36	57
20	ST	159/176 (90%)	152 (96%)	7 (4%)	25	47
21	SU	78/109 (72%)	73 (94%)	5 (6%)	16	38
22	SV	94/112 (84%)	87 (93%)	7 (7%)	13	34
23	SW	108/119 (91%)	105 (97%)	3 (3%)	38	59
24	SX	111/114 (97%)	107 (96%)	4 (4%)	31	52
25	SY	69/69 (100%)	66 (96%)	3 (4%)	26	48
26	SZ	108/113 (96%)	93 (86%)	15 (14%)	3	15
27	Sa	60/64 (94%)	57 (95%)	3 (5%)	22	43
28	Sb	87/100 (87%)	86 (99%)	1 (1%)	65	74
29	Sc	75/76 (99%)	73 (97%)	2 (3%)	39	60
30	Sd	54/57 (95%)	52 (96%)	2 (4%)	30	51
31	Se	38/49 (78%)	37 (97%)	1 (3%)	40	61
32	Sf	60/134 (45%)	57 (95%)	3 (5%)	22	43
33	LA	193/196 (98%)	167 (86%)	26 (14%)	4	16
34	LB	190/197 (96%)	187 (98%)	3 (2%)	55	69
35	LC	331/333 (99%)	328 (99%)	3 (1%)	70	77
36	LD	325/331 (98%)	301 (93%)	24 (7%)	13	34
37	LE	145/157 (92%)	141 (97%)	4 (3%)	38	59

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
38	LF	167/170 (98%)	161 (96%)	6 (4%)	31	52
39	LG	174/175 (99%)	170 (98%)	4 (2%)	44	64
40	LH	103/109 (94%)	101 (98%)	2 (2%)	50	66
41	LI	119/120 (99%)	117 (98%)	2 (2%)	53	68
42	LJ	173/180 (96%)	167 (96%)	6 (4%)	32	54
43	LK	243/246 (99%)	233 (96%)	10 (4%)	27	49
44	LL	133/151 (88%)	131 (98%)	2 (2%)	57	71
45	LM	106/134 (79%)	104 (98%)	2 (2%)	50	66
46	LN	115/132 (87%)	114 (99%)	1 (1%)	70	77
47	LO	108/109 (99%)	106 (98%)	2 (2%)	50	66
48	LP	207/209 (99%)	202 (98%)	5 (2%)	43	63
49	LQ	174/194 (90%)	171 (98%)	3 (2%)	53	68
50	LR	201/205 (98%)	194 (96%)	7 (4%)	32	54
51	LS	166/166 (100%)	166 (100%)	0	100	100
52	LT	112/113 (99%)	109 (97%)	3 (3%)	39	60
53	LU	176/177 (99%)	173 (98%)	3 (2%)	53	68
54	LV	154/155 (99%)	150 (97%)	4 (3%)	40	61
55	LW	158/180 (88%)	152 (96%)	6 (4%)	29	51
56	LX	163/164 (99%)	160 (98%)	3 (2%)	51	67
57	LY	140/141 (99%)	138 (99%)	2 (1%)	59	72
58	LZ	89/97 (92%)	84 (94%)	5 (6%)	19	41
59	La	57/133 (43%)	56 (98%)	1 (2%)	51	67
60	Lb	116/117 (99%)	112 (97%)	4 (3%)	32	55
61	Lc	121/123 (98%)	117 (97%)	4 (3%)	33	55
62	Ld	42/43 (98%)	41 (98%)	1 (2%)	43	63
63	Le	85/98 (87%)	83 (98%)	2 (2%)	43	63
64	Lf	95/106 (90%)	93 (98%)	2 (2%)	47	65
65	Lg	114/121 (94%)	114 (100%)	0	100	100
66	Lh	92/99 (93%)	92 (100%)	0	100	100
67	Li	100/104 (96%)	99 (99%)	1 (1%)	68	76
68	Lj	84/91 (92%)	83 (99%)	1 (1%)	63	74

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
69	Lk	72/77 (94%)	72 (100%)	0	100	100
70	Ll	64/65 (98%)	63 (98%)	1 (2%)	55	69
71	Lm	47/48 (98%)	46 (98%)	1 (2%)	47	65
72	Ln	46/114 (40%)	46 (100%)	0	100	100
73	Lo	21/23 (91%)	16 (76%)	5 (24%)	1	5
74	Lp	85/91 (93%)	82 (96%)	3 (4%)	32	54
75	Lq	60/62 (97%)	59 (98%)	1 (2%)	53	68
All	All	9474/10310 (92%)	9180 (97%)	294 (3%)	36	56

5 of 294 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
49	LQ	135	VAL
73	Lo	10	MET
50	LR	190	THR
57	LY	14	SER
24	SX	107	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 150 such sidechains are listed below:

Mol	Chain	Res	Type
53	LU	87	GLN
69	Lk	48	ASN
54	LV	150	HIS
60	Lb	96	ASN
24	SX	109	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
76	10	157/204 (76%)	105 (66%)	17 (10%)
77	11	1618/1808 (89%)	292 (18%)	15 (0%)
78	12	118/119 (99%)	12 (10%)	0
79	13	162/163 (99%)	33 (20%)	0
80	14	3138/3390 (92%)	574 (18%)	26 (0%)
81	15	5/6 (83%)	0	0
82	16	74/75 (98%)	26 (35%)	3 (4%)

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
All	All	5272/5765 (91%)	1042 (19%)	61 (1%)

5 of 1042 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
76	10	49	U
76	10	50	G
76	10	53	G
76	10	54	C
76	10	59	G

5 of 61 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
77	11	1463	G
80	14	2731	G
80	14	601	C
80	14	2573	U
82	16	18	G

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
82	1MG	16	10	82	22,26,27	1.09	2 (9%)	33,39,42	1.76	5 (15%)
82	7MG	16	46	82	22,26,27	0.93	1 (4%)	29,39,42	0.78	1 (3%)
82	H2U	16	17	82	18,21,22	0.73	0	21,30,33	1.09	2 (9%)
82	2MG	16	11	82	23,26,27	1.29	3 (13%)	32,38,41	2.23	8 (25%)
82	1MA	16	58	82	21,25,26	0.38	0	31,37,40	0.75	0
82	H2U	16	47	82	18,21,22	0.69	1 (5%)	21,30,33	1.55	3 (14%)
82	5MC	16	48	82	18,22,23	0.35	0	26,32,35	0.58	1 (3%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
82	T6A	16	37	82	31,34,35	0.53	0	44,49,52	0.86	1 (2%)
82	5MC	16	49	82	18,22,23	1.00	2 (11%)	26,32,35	1.20	3 (11%)
82	M2G	16	26	82	24,27,28	1.31	4 (16%)	35,40,43	1.85	6 (17%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
82	1MG	16	10	82	-	0/7/25/26	0/3/3/3
82	7MG	16	46	82	-	5/7/37/38	0/3/3/3
82	H2U	16	17	82	-	7/7/38/39	0/2/2/2
82	2MG	16	11	82	-	0/9/27/28	0/3/3/3
82	1MA	16	58	82	-	0/7/25/26	0/3/3/3
82	H2U	16	47	82	-	5/7/38/39	0/2/2/2
82	5MC	16	48	82	-	3/7/25/26	0/2/2/2
82	T6A	16	37	82	-	1/23/41/42	0/3/3/3
82	5MC	16	49	82	-	2/7/25/26	0/2/2/2
82	M2G	16	26	82	-	1/11/29/30	0/3/3/3

The worst 5 of 13 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
82	16	46	7MG	C5-N7	3.63	1.39	1.35
82	16	26	M2G	C5-C4	3.08	1.47	1.38
82	16	10	1MG	C5-C4	3.03	1.47	1.38
82	16	11	2MG	C5-C4	3.02	1.47	1.38
82	16	26	M2G	C6-N1	-2.84	1.33	1.38

The worst 5 of 30 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
82	16	11	2MG	C2-N3-C4	7.05	120.78	112.04
82	16	11	2MG	C5-C4-N3	-6.47	117.96	128.46
82	16	26	M2G	C5-C4-N3	-6.40	118.08	128.46
82	16	47	H2U	C4-N3-C2	-6.19	120.66	125.79
82	16	10	1MG	C5-C4-N3	-5.35	119.78	128.46

There are no chirality outliers.

5 of 24 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
82	16	17	H2U	O4'-C4'-C5'-O5'
82	16	17	H2U	C3'-C4'-C5'-O5'
82	16	17	H2U	O4'-C1'-N1-C6
82	16	17	H2U	C2'-C1'-N1-C2
82	16	17	H2U	C2'-C1'-N1-C6

There are no ring outliers.

3 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
82	16	17	H2U	2	0
82	16	37	T6A	2	0
82	16	26	M2G	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

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.

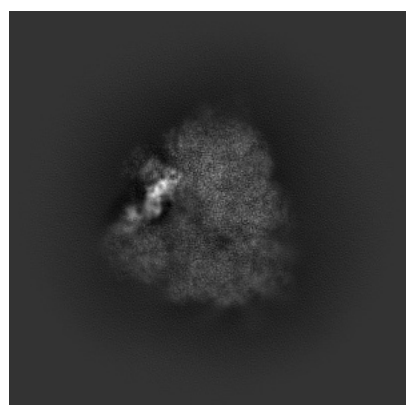
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-65328. These allow visual inspection of the internal detail of the map and identification of artifacts.

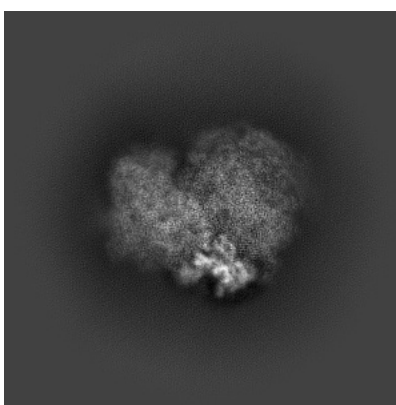
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

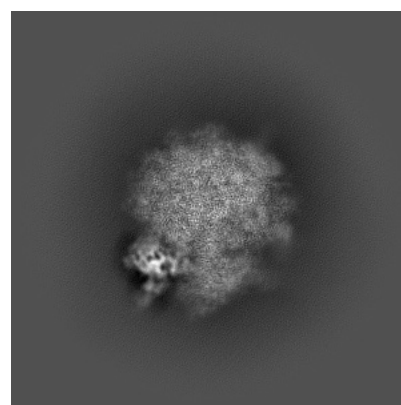
6.1.1 Primary map



X



Y

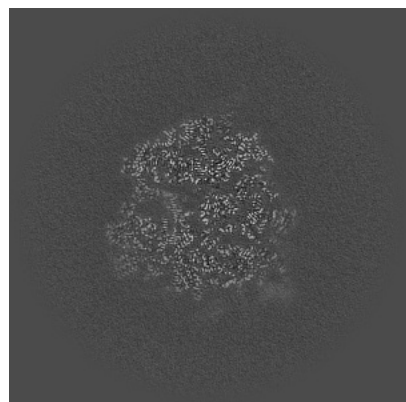


Z

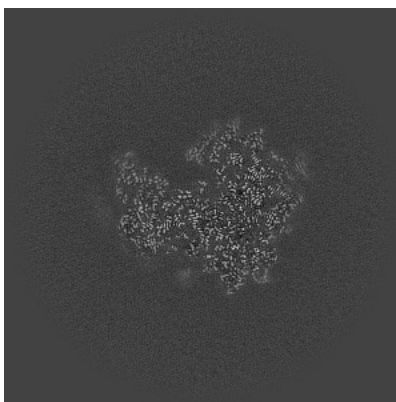
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

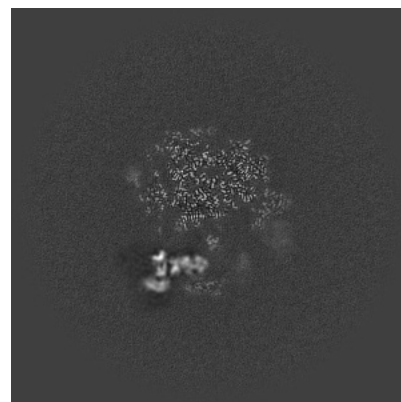
6.2.1 Primary map



X Index: 280



Y Index: 280

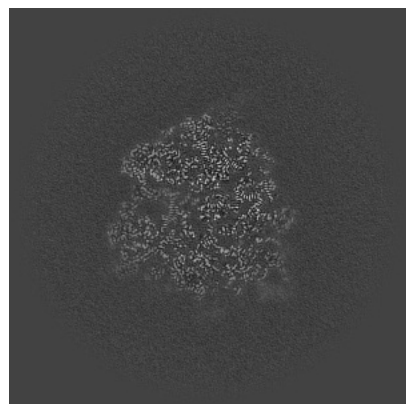


Z Index: 280

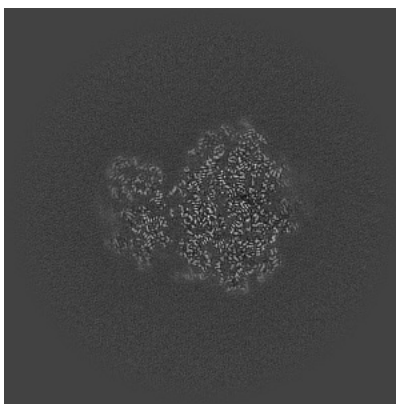
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

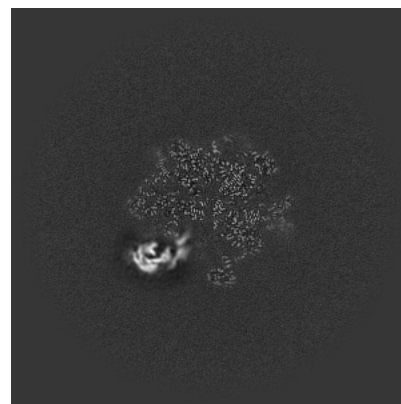
6.3.1 Primary map



X Index: 283



Y Index: 294

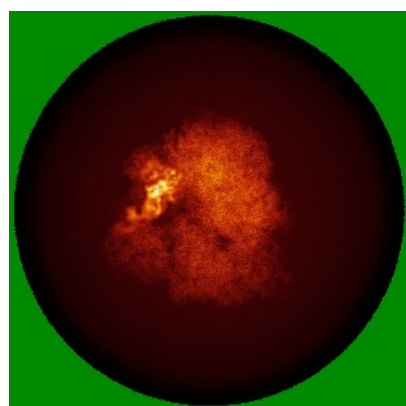


Z Index: 310

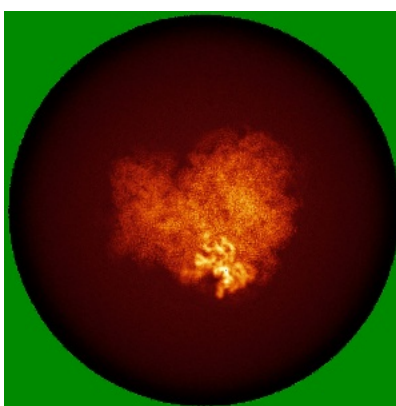
The images above show the largest variance slices of the map in three orthogonal directions.

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

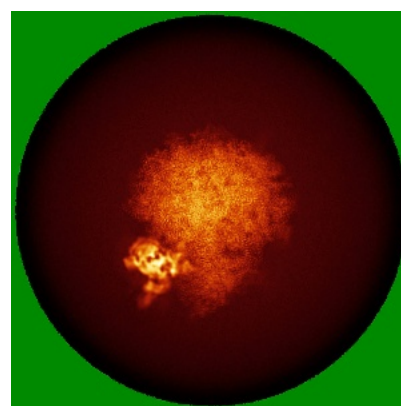
6.4.1 Primary map



X



Y

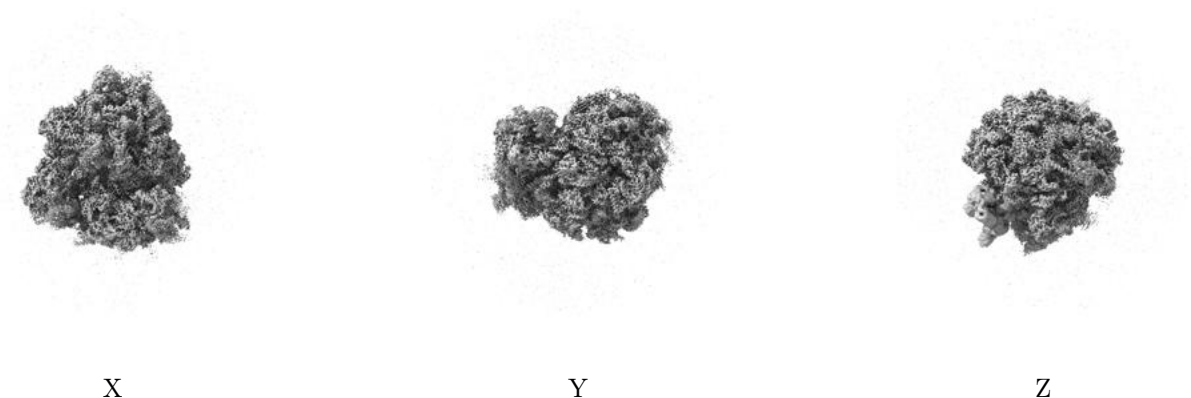


Z

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



The images above show the 3D surface view of the map at the recommended contour level 0.19. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

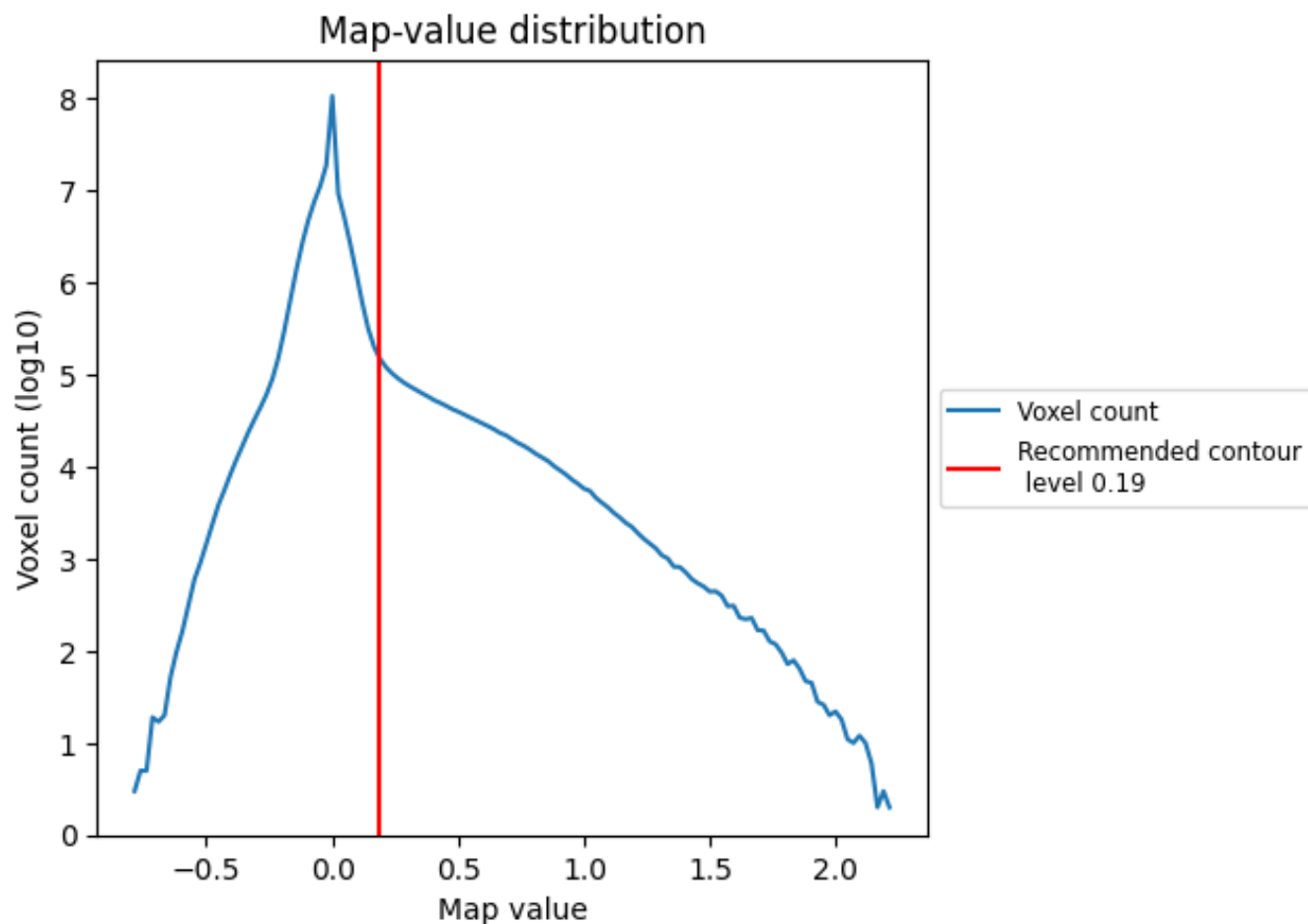
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

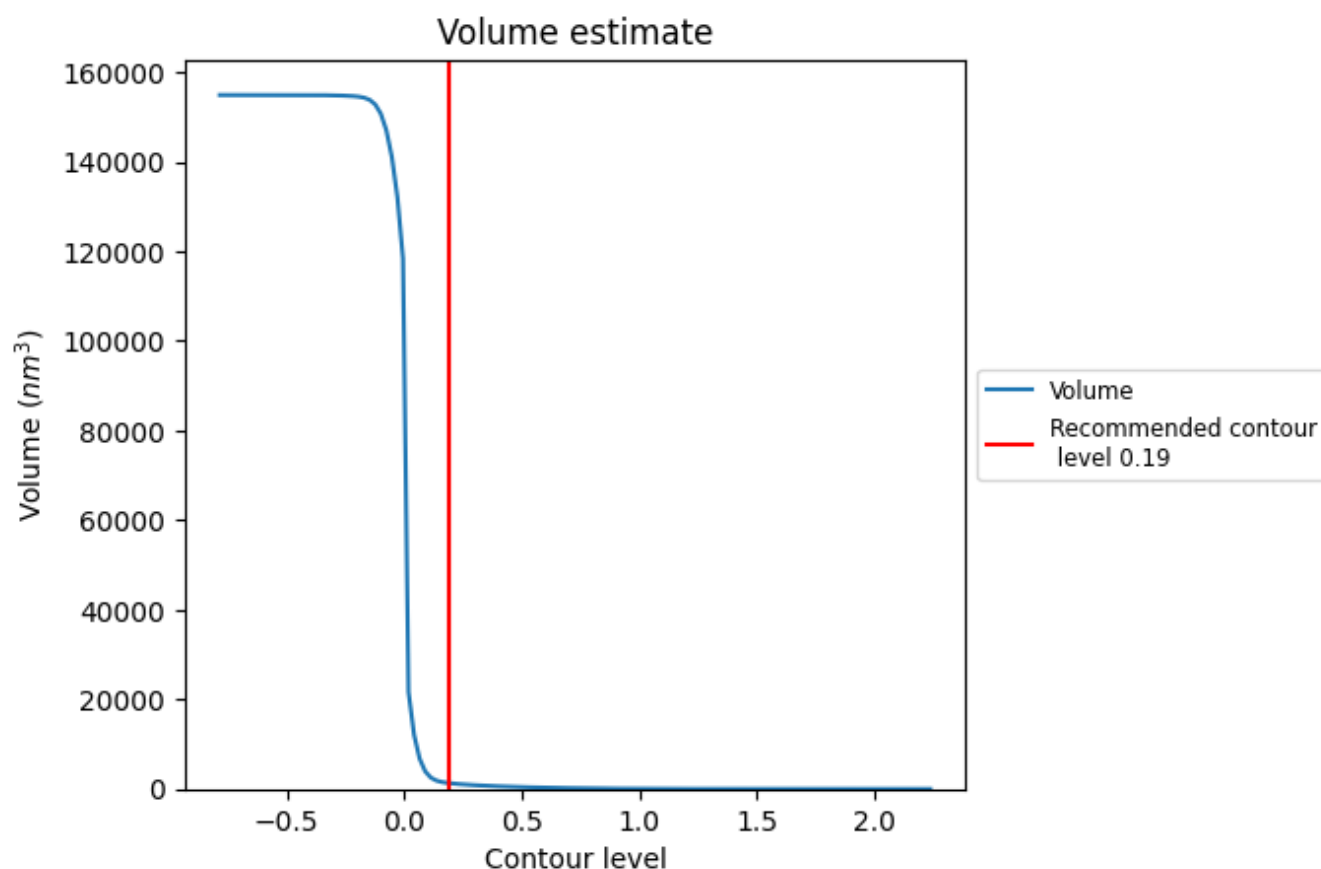
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

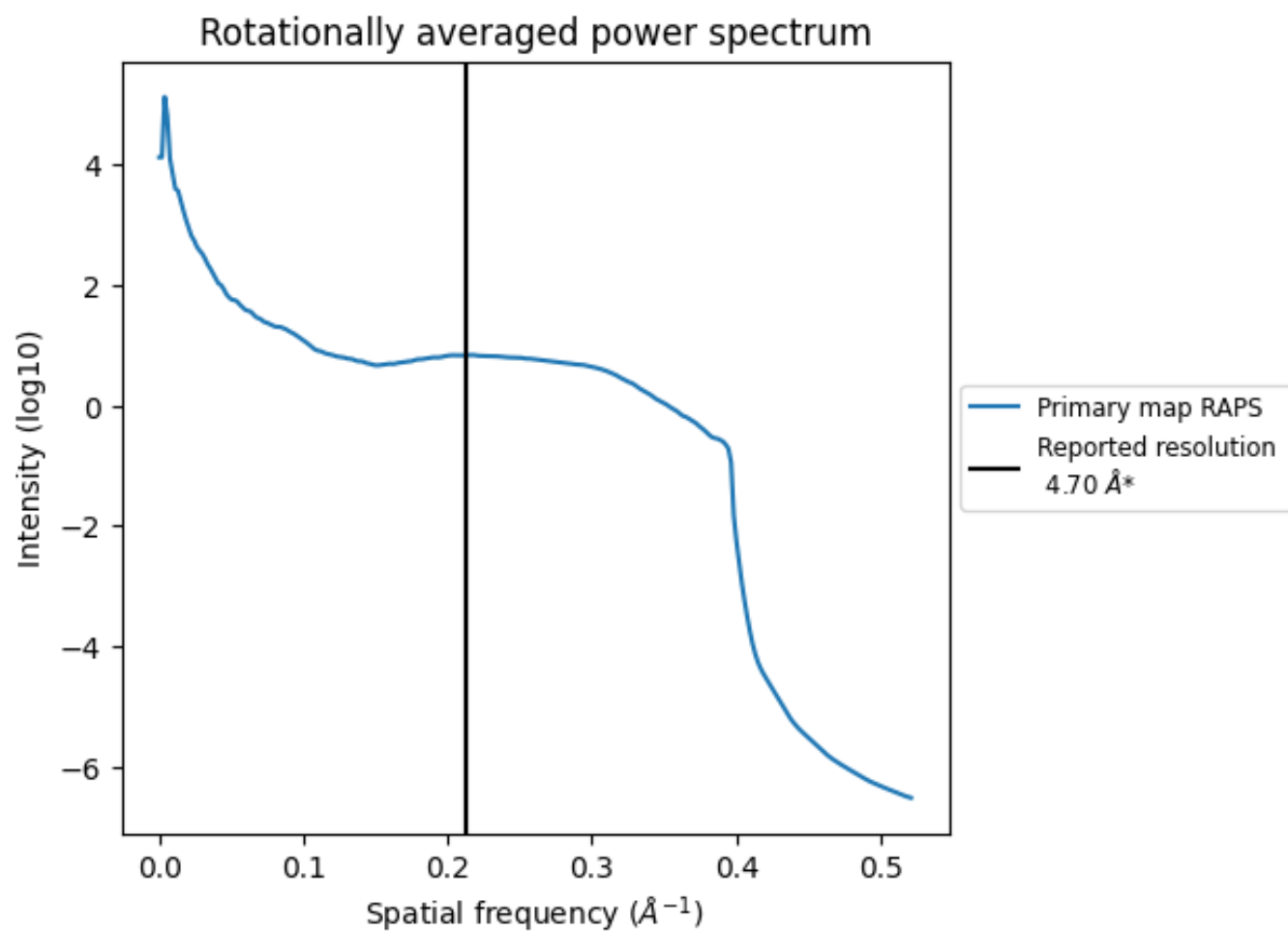
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1306 nm^3 ; this corresponds to an approximate mass of 1179 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ



*Reported resolution corresponds to spatial frequency of 0.213 Å⁻¹

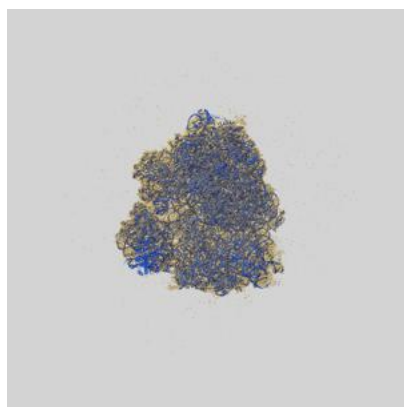
8 Fourier-Shell correlation ⓘ

This section was not generated. No FSC curve or half-maps provided.

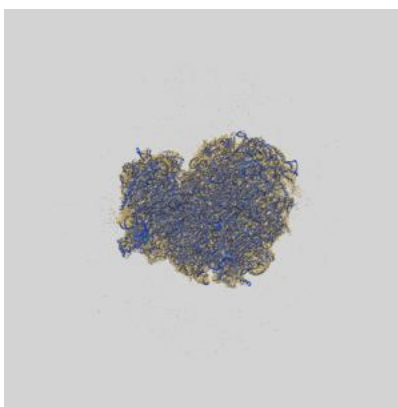
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-65328 and PDB model 9VTH. Per-residue inclusion information can be found in [section 3](#) on [page 24](#).

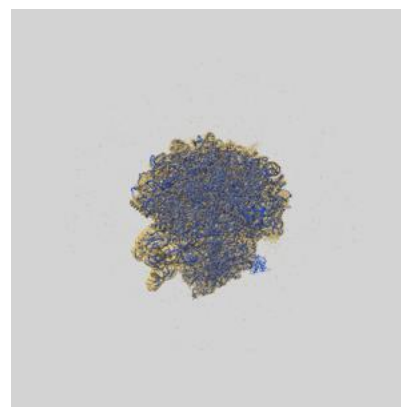
9.1 Map-model overlay [i](#)



X



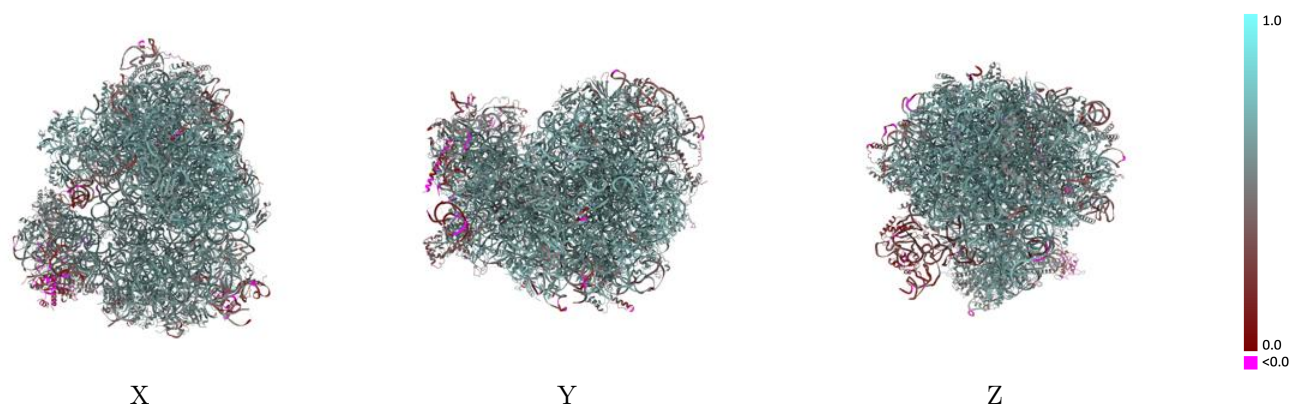
Y



Z

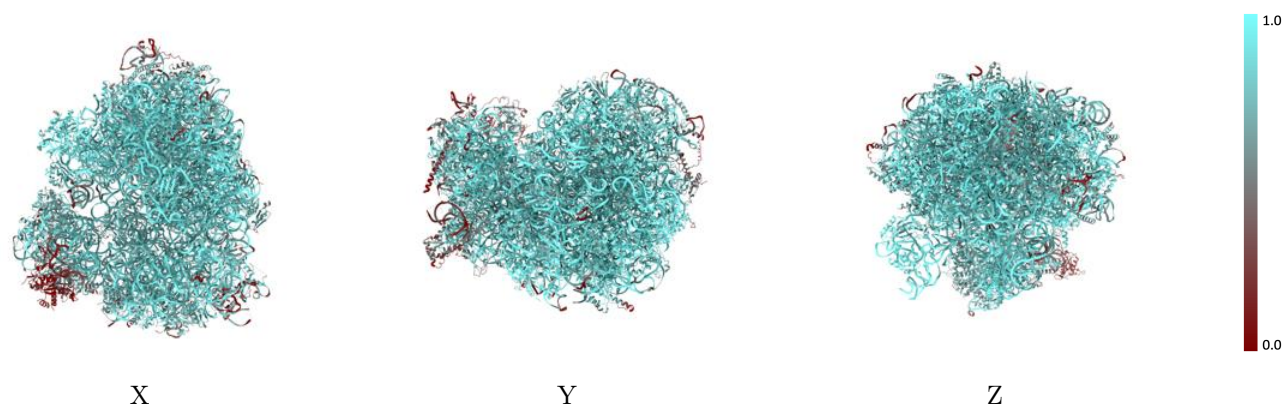
The images above show the 3D surface view of the map at the recommended contour level 0.19 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



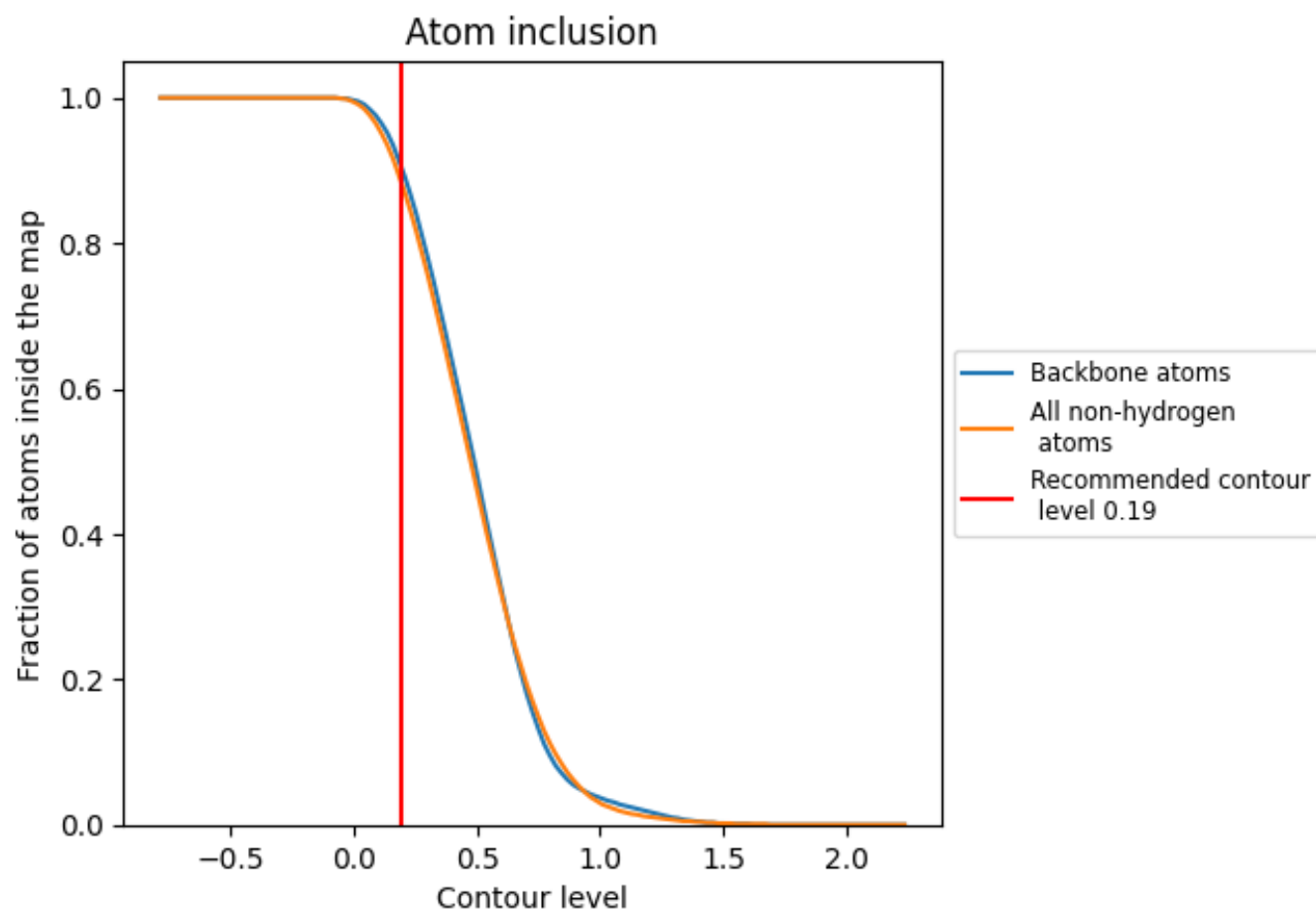
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.19).

9.4 Atom inclusion [i](#)



At the recommended contour level, 91% of all backbone atoms, 89% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.19) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8870	 0.5780
10	 0.9790	 0.2270
11	 0.8960	 0.5710
12	 0.9960	 0.6410
13	 0.9280	 0.6000
14	 0.9460	 0.6090
15	 0.9300	 0.6190
16	 0.8760	 0.5440
LA	 0.9230	 0.2010
LB	 0.9790	 0.6650
LC	 0.9530	 0.6490
LD	 0.8610	 0.6010
LE	 0.8480	 0.5770
LF	 0.8280	 0.5600
LG	 0.9300	 0.6300
LH	 0.9510	 0.6480
LI	 0.9580	 0.6480
LJ	 0.9280	 0.6270
LK	 0.8880	 0.5960
LL	 0.9530	 0.6500
LM	 0.9030	 0.6230
LN	 0.9460	 0.6320
LO	 0.8670	 0.5930
LP	 0.8850	 0.6130
LQ	 0.6500	 0.4780
LR	 0.8220	 0.5580
LS	 0.9230	 0.6240
LT	 0.8780	 0.5930
LU	 0.9870	 0.6650
LV	 0.9730	 0.6540
LW	 0.8390	 0.5940
LX	 0.9340	 0.6350
LY	 0.9210	 0.6320
LZ	 0.6950	 0.5060
La	 0.9210	 0.6420



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Chain	Atom inclusion	Q-score
Lb	 0.9220	 0.6160
Lc	 0.5840	 0.5350
Ld	 0.9220	 0.6110
Le	 0.9290	 0.6200
Lf	 0.8900	 0.6100
Lg	 0.9610	 0.6490
Lh	 0.9670	 0.6540
Li	 0.9080	 0.6140
Lj	 0.9060	 0.6070
Lk	 0.9790	 0.6630
Ll	 0.8300	 0.5710
Lm	 0.9720	 0.6550
Ln	 0.7680	 0.6020
Lo	 0.8770	 0.6070
Lp	 0.9570	 0.6490
Lq	 0.9490	 0.6530
SA	 0.8030	 0.5650
SB	 0.5890	 0.4730
SC	 0.8160	 0.5600
SD	 0.8860	 0.6080
SE	 0.7970	 0.5520
SF	 0.9350	 0.6380
SG	 0.7900	 0.5480
SH	 0.5480	 0.4640
SI	 0.9120	 0.6200
SJ	 0.8880	 0.6140
SK	 0.7630	 0.5470
SL	 0.7600	 0.5540
SM	 0.9020	 0.6200
SN	 0.9170	 0.6290
SO	 0.6150	 0.4720
SP	 0.8840	 0.6050
SQ	 0.8540	 0.5850
SR	 0.5100	 0.3770
SS	 0.5680	 0.4580
ST	 0.8610	 0.5980
SU	 0.4510	 0.3870
SV	 0.0110	 0.0690
SW	 0.4370	 0.4190
SX	 0.8160	 0.5560
SY	 0.7930	 0.5530
SZ	 0.6440	 0.4740

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Chain	Atom inclusion	Q-score
Sa	 0.6790	 0.5070
Sb	 0.9080	 0.6240
Sc	 0.7770	 0.5470
Sd	 0.7650	 0.5490
Se	 0.5920	 0.4170
Sf	 0.0240	 0.0810