wwPDB EM Validation Summary Report ⓘ

Nov 1, 2025 – 07:06 am GMT

PDB ID	:	9RTV / pdb_00009rtv
EMDB ID	:	EMD-54254
Title	:	Structure of the 70S-EF-G(P610L)-GDP-Pi ribosome complex with tRNAs in hybrid state 2 (H2-EF-G(P610L)-GDP-Pi)
Authors	:	Ghosh Dastidar, N.; Freyer, N.; Petrychenko, V.; Schwarzer, A.C.; Peng, B.Z.; Samatova, E.; Kothe, C.; Schmidt, M.; Peske, F.; Politi, A.; Urlaub, H.; Fischer, N.; Rodnina, M.V.; Wohlgemuth, I.
Deposited on	:	2025-07-03
Resolution	:	3.60 Å(reported)
Based on initial model	:	7PJW

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

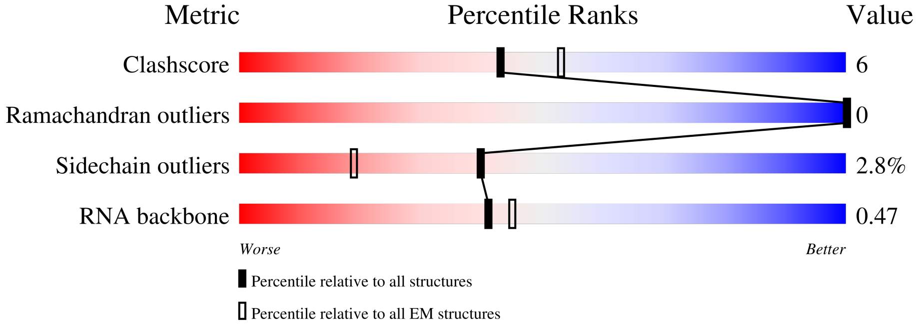
EMDB validation analysis	:	0.0.1.dev129
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)

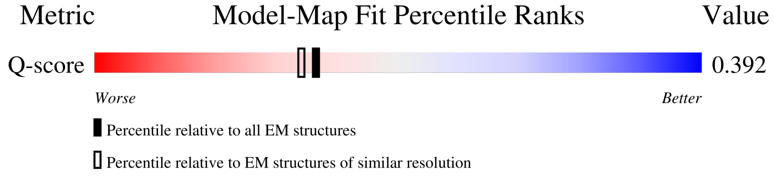
1 Overall quality at a glance

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

The reported resolution of this entry is 3.60 Å.

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





Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	12797 (3.10 - 4.10)

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	57	

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Validation Pipeline (wwPDB-VP) : 2.46

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Mol	Chain	Length	Quality of chain
2	1	55	78% 13% 9%
3	2	46	• 85% 15%
4	3	65	86% 12% •
5	4	38	89% 11%
6	5	165	47% 77% • 21%
7	6	70	• 74% 20% 6%
8	A	2903	59% 34% 7%
9	B	120	56% 40% •
10	C	273	75% 24% •
11	D	209	• 83% 17%
12	E	201	82% 18%
13	F	179	• 77% 21% ••
14	G	177	• 79% 20% •
15	H	149	61% 89% 9% •
16	I	142	22% 94% 5% •
17	J	142	78% 21% •
18	K	123	76% 22% ••
19	L	144	• 83% 13% •••
20	M	136	73% 26% •
21	N	127	80% 15% 6%
22	O	117	86% 13% •
23	P	115	• 78% 20% ••
24	Q	118	• 78% 20% ••
25	R	103	• 78% 22%
26	S	110	78% 22%

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Mol	Chain	Length	Quality of chain
27	T	100	74% 17% • 7%
28	U	104	• 82% 16% •
29	V	94	86% 14%
30	W	85	• 76% 12% 12%
31	X	78	74% 24% •
32	Y	63	• 76% 24%
33	Z	59	• 81% 17% •
34	a	1542	57% 36% 6%
35	b	240	• 69% 21% 9%
36	c	233	70% 18% 12%
37	d	206	79% 20% •
38	e	167	• 66% 26% • 6%
39	f	135	• 56% 16% • 26%
40	g	179	• 67% 16% • 16%
41	h	130	70% 29% •
42	i	130	78% 18% • •
43	j	103	74% 20% • 5%
44	k	129	66% 23% • 10%
45	l	124	• 69% 25% 5% •
46	m	118	74% 22% • •
47	n	102	78% 17% • •
48	o	89	80% 17% • •
49	p	82	• 80% 18% •
50	q	84	77% 18% 5%
51	r	75	61% 23% • 13%

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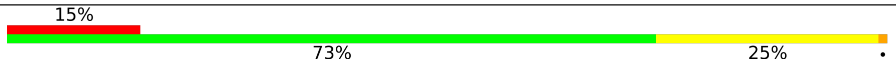
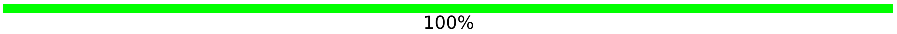
Mol	Chain	Length	Quality of chain
52	s	92	
53	t	87	
54	u	71	
55	v	77	
56	w	76	
57	x	704	
58	y	2	
59	z	33	

2 Entry composition ⓘ

There are 65 unique types of molecules in this entry. The entry contains 153146 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 50S ribosomal protein L32.

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

- Molecule 2 is a protein called Large ribosomal subunit protein bL33.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
2	1	50	409	263	75	71	0	0

- Molecule 3 is a protein called Large ribosomal subunit protein bL34.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	2	46	377	228	90	57	2	0	0

- Molecule 4 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	3	64	504	323	105	74	2	0	0

- Molecule 5 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	4	38	302	185	65	48	4	0	0

- Molecule 6 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
6	5	131	647	385	131	131	0	0

- Molecule 7 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	6	66	522	323	99	94	6	0	0

- Molecule 8 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
8	A	2903	62338	27816	11471	20148	2903	0	0

- Molecule 9 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
9	B	120	2570	1144	468	838	120	0	0

- Molecule 10 is a protein called 50S ribosomal protein L2.

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

- Molecule 11 is a protein called 50S ribosomal protein L3.

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

- Molecule 12 is a protein called 50S ribosomal protein L4.

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

- Molecule 13 is a protein called 50S ribosomal protein L5.

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

- Molecule 14 is a protein called 50S ribosomal protein L6.

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

- Molecule 15 is a protein called 50S ribosomal protein L9.

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

- Molecule 16 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms				AltConf	Trace
16	I	141	Total	C	N	O	0	0
			693	411	141	141		

- Molecule 17 is a protein called 50S ribosomal protein L13.

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

- Molecule 18 is a protein called 50S ribosomal protein L14.

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

- Molecule 19 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	L	143	Total	C	N	O	S	0	0
			1045	649	206	189	1		

- Molecule 20 is a protein called 50S ribosomal protein L16.

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

- Molecule 21 is a protein called 50S ribosomal protein L17.

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

- Molecule 22 is a protein called 50S ribosomal protein L18.

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

- Molecule 23 is a protein called 50S ribosomal protein L19.

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

- Molecule 24 is a protein called 50S ribosomal protein L20.

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

- Molecule 25 is a protein called 50S ribosomal protein L21.

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

- Molecule 26 is a protein called 50S ribosomal protein L22.

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

- Molecule 27 is a protein called 50S ribosomal protein L23.

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

- Molecule 28 is a protein called 50S ribosomal protein L24.

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

- Molecule 29 is a protein called 50S ribosomal protein L25.

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

- Molecule 30 is a protein called Large ribosomal subunit protein bL27.

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

- Molecule 31 is a protein called 50S ribosomal protein L28.

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

- Molecule 32 is a protein called 50S ribosomal protein L29.

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

- Molecule 33 is a protein called 50S ribosomal protein L30.

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

- Molecule 34 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	a	1540	Total 33050	C 14748	N 6057	O 10705	P 1540	0	0

- Molecule 35 is a protein called 30S ribosomal protein S2.

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

- Molecule 36 is a protein called Small ribosomal subunit protein uS3.

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

- Molecule 37 is a protein called Small ribosomal subunit protein uS4.

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

- Molecule 38 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
38	e	157	1141	709	218	208	6	0	0

- Molecule 39 is a protein called 30S ribosomal protein S6.

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

- Molecule 40 is a protein called 30S ribosomal protein S7.

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

- Molecule 41 is a protein called 30S ribosomal protein S8.

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

- Molecule 42 is a protein called 30S ribosomal protein S9.

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

- Molecule 43 is a protein called 30S ribosomal protein S10.

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

- Molecule 44 is a protein called 30S ribosomal protein S11.

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

- Molecule 45 is a protein called 30S ribosomal protein S12.

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

- Molecule 46 is a protein called 30S ribosomal protein S13.

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

- Molecule 47 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	n	101	Total 799	C 498	N 165	O 133	S 3	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
n	35	ALA	-	insertion	UNP P0AG59

- Molecule 48 is a protein called Small ribosomal subunit protein uS15.

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

- Molecule 49 is a protein called 30S ribosomal protein S16.

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

- Molecule 50 is a protein called 30S ribosomal protein S17.

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

- Molecule 51 is a protein called 30S ribosomal protein S18.

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

- Molecule 52 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
52	s	82	658	421	125	110	2	0	0

- Molecule 53 is a protein called 30S ribosomal protein S20.

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

- Molecule 54 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
54	u	65	506	313	105	87	1	0	0

- Molecule 55 is a RNA chain called P/E-site tRNA(fMet).

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	N	O	P	S		
55	v	76	1622	724	295	526	76	1	0	0

- Molecule 56 is a RNA chain called A/P-site tRNA(Phe).

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	N	O	P	S		
56	w	76	1631	731	291	531	76	2	0	0

- Molecule 57 is a protein called Elongation factor G.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
57	x	703	5445	3430	942	1048	25	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
x	609	LEU	PRO	conflict	UNP C4ZUJ5

- Molecule 58 is a protein called Dipeptide (FME-PHE).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
58	y	2	21	15	2	3	1	0	0

- Molecule 59 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
59	z	11	230	103	35	81	11	0	0

- Molecule 60 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
60	0	1	1	1	0
60	A	260	260	260	0
60	B	7	7	7	0

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Mol	Chain	Residues	Atoms	AltConf
60	C	3	Total Mg 3 3	0
60	D	1	Total Mg 1 1	0
60	N	1	Total Mg 1 1	0
60	O	1	Total Mg 1 1	0
60	P	1	Total Mg 1 1	0
60	Q	2	Total Mg 2 2	0
60	Z	1	Total Mg 1 1	0
60	a	86	Total Mg 86 86	0
60	m	1	Total Mg 1 1	0
60	n	1	Total Mg 1 1	0
60	v	1	Total Mg 1 1	0
60	w	1	Total Mg 1 1	0
60	x	1	Total Mg 1 1	0

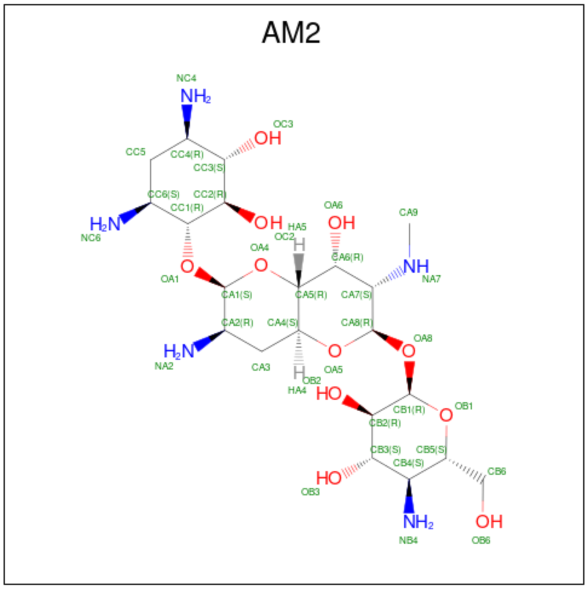
- Molecule 61 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	AltConf
61	4	1	Total Zn 1 1	0
61	6	1	Total Zn 1 1	0

- Molecule 62 is SODIUM ION (CCD ID: NA) (formula: Na).

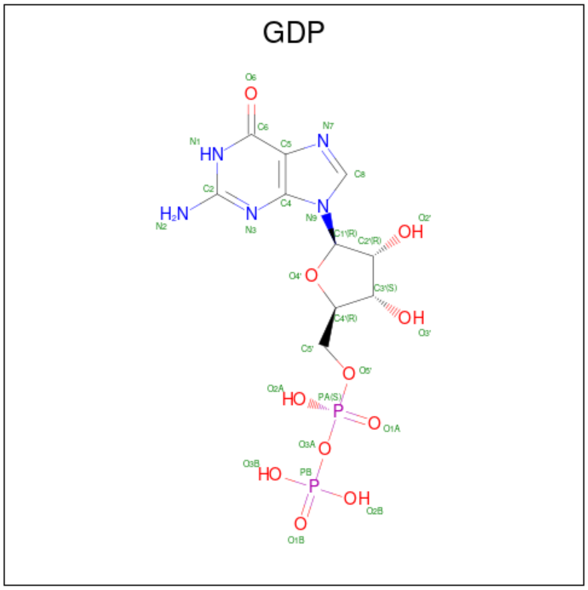
Mol	Chain	Residues	Atoms	AltConf
62	A	1	Total Na 1 1	0
62	B	1	Total Na 1 1	0

- Molecule 63 is APRAMYCIN (CCD ID: AM2) (formula: $C_{21}H_{41}N_5O_{11}$).



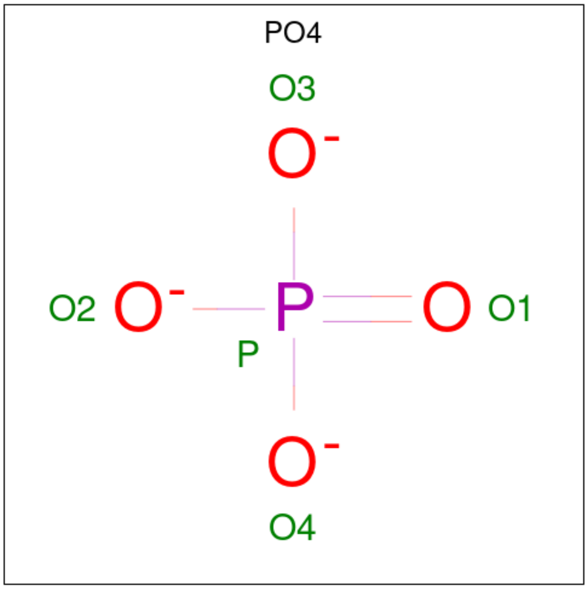
Mol	Chain	Residues	Atoms	AltConf
63	a	1	Total C N O 37 21 5 11	0
63	a	1	Total C N O 37 21 5 11	0
63	a	1	Total C N O 37 21 5 11	0

- Molecule 64 is GUANOSINE-5'-DIPHOSPHATE (CCD ID: GDP) (formula: $C_{10}H_{15}N_5O_{11}P_2$).



Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
64	x	1	28	10	5	11	2	0

- Molecule 65 is PHOSPHATE ION (CCD ID: PO4) (formula: O_4P).



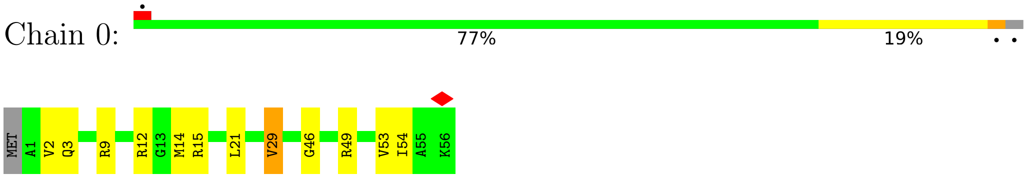
Mol	Chain	Residues	Atoms			AltConf
			Total	O	P	
65	x	1	5	4	1	0

3 Residue-property plots ⓘ

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

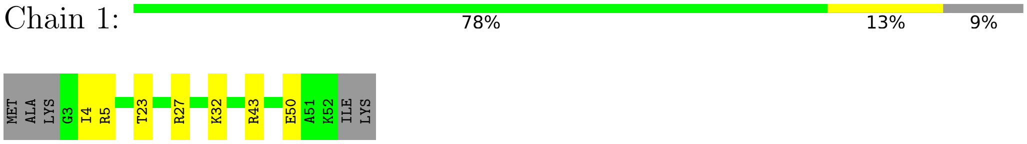
- Molecule 1: 50S ribosomal protein L32

Chain 0:



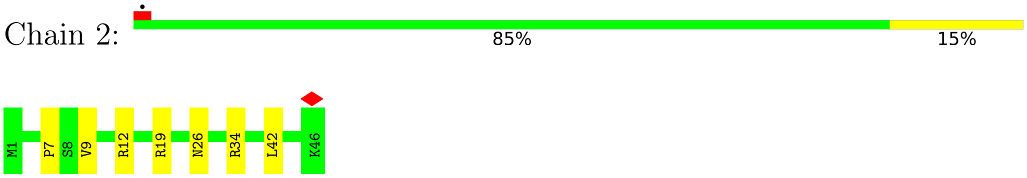
- Molecule 2: Large ribosomal subunit protein bL33

Chain 1:



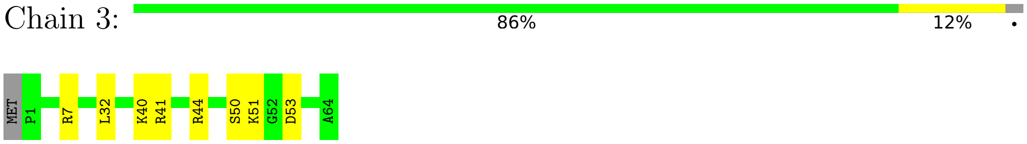
- Molecule 3: Large ribosomal subunit protein bL34

Chain 2:



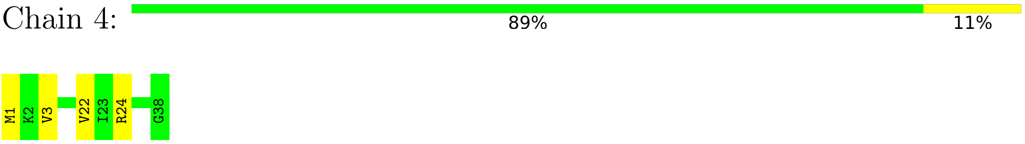
- Molecule 4: 50S ribosomal protein L35

Chain 3:



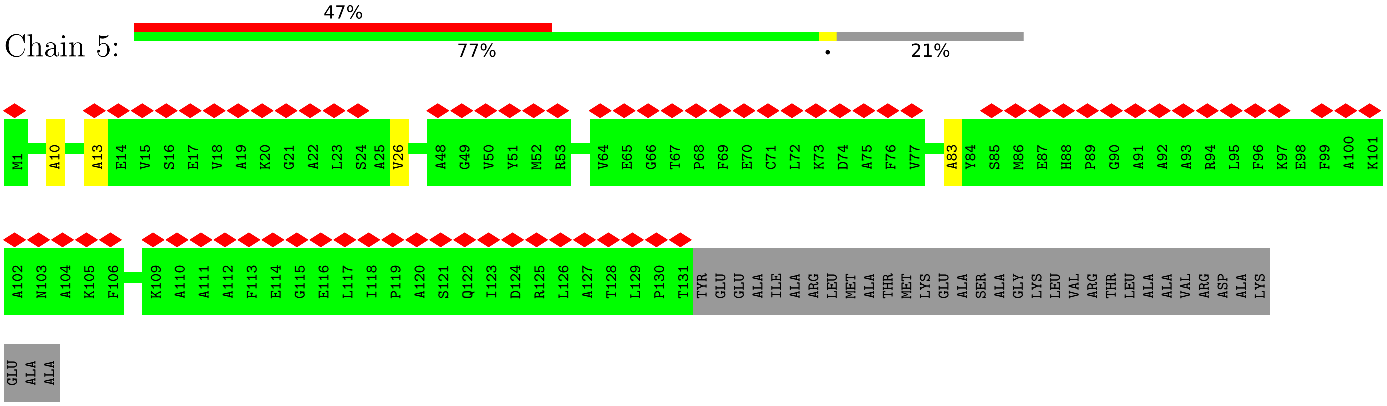
- Molecule 5: 50S ribosomal protein L36

Chain 4:



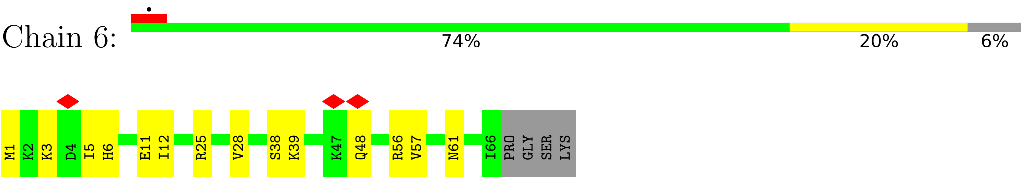
- Molecule 6: 50S ribosomal protein L10

Chain 5:



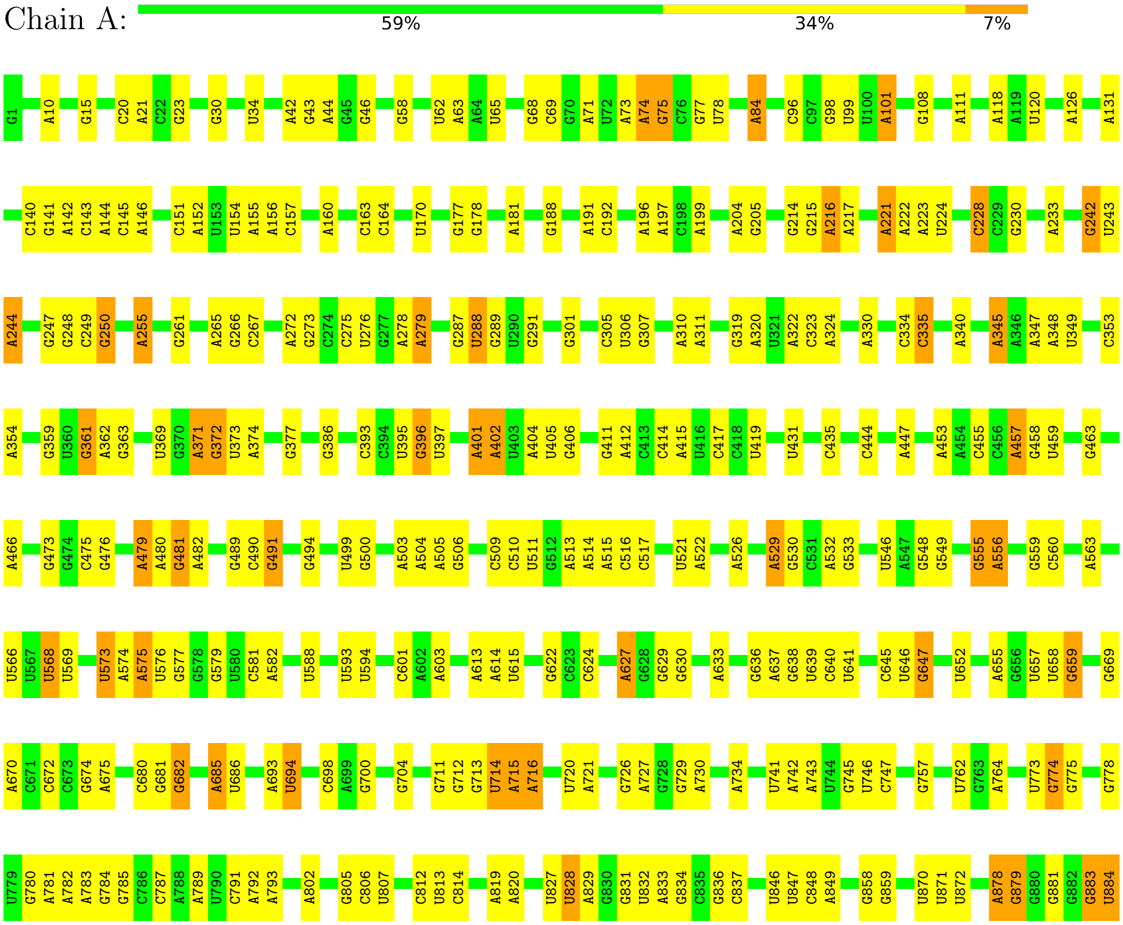
- Molecule 7: 50S ribosomal protein L31

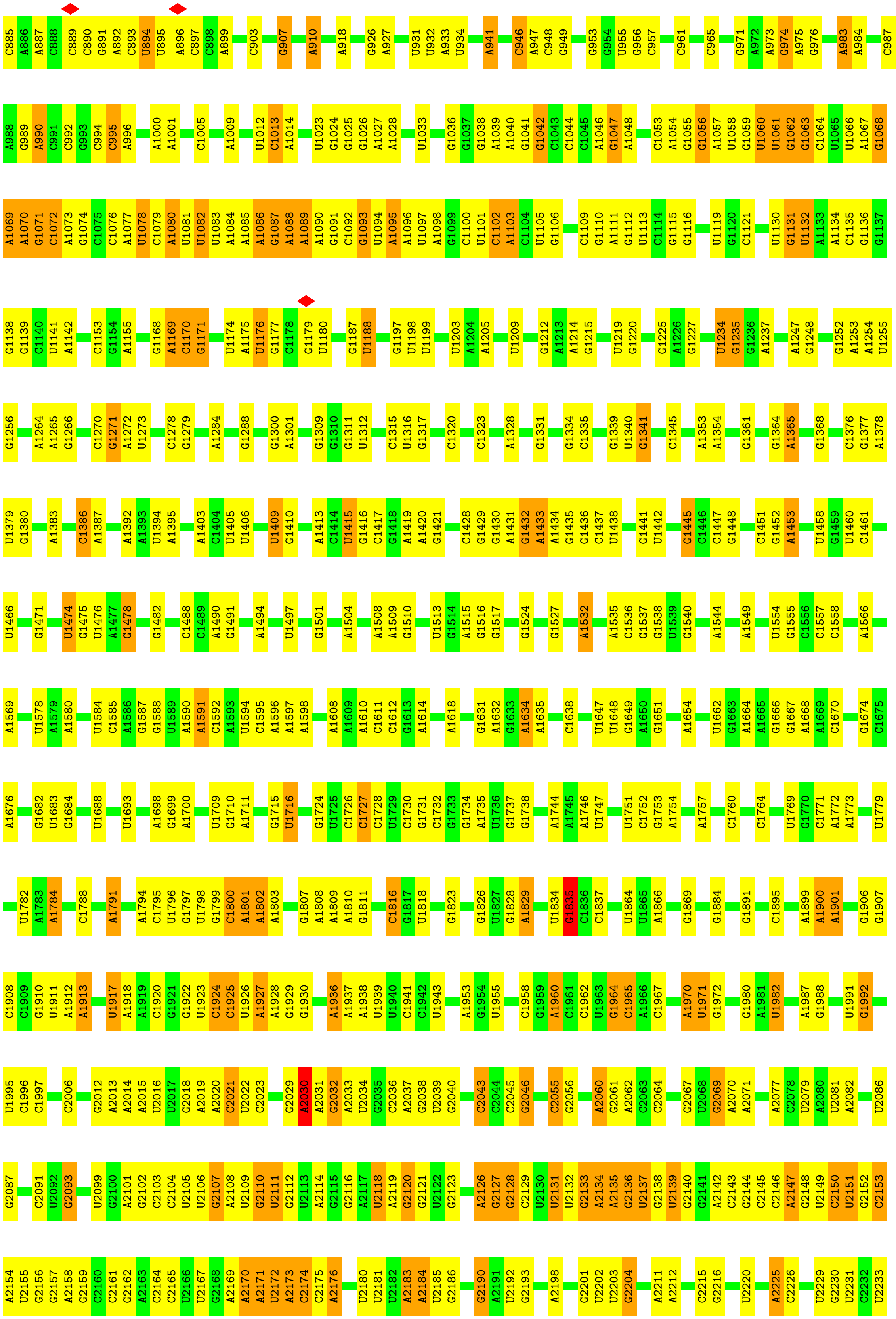
Chain 6:



- Molecule 8: 23S ribosomal RNA

Chain A:

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A988 G989 A990 C991 C992 G993 C994 C995 A996 A1000 A1001 C1005 A1009 U1012 C1013 A1014 U1023 G1024 G1025 G1026 A1027 A1028 U1033 G1036 G1037 G1038 A1039 A1040 G1041 G1042 C1043 C1044 C1045 A1046 G1047 A1048 C1053 A1054 G1055 G1056 A1057 U1058 G1059 U1060 U1061 G1062 G1063 C1064 U1065 U1066 A1067 G1068
A1069 A1070 G1071 C1072 A1073 G1074 C1075 C1076 A1077 U1078 C1079 A1080 U1081 U1082 U1083 A1084 A1085 A1086 G1087 A1088 A1089 A1090 G1091 C1092 G1093 U1094 A1095 A1096 U1097 A1098 G1099 C1100 U1101 C1102 A1103 C1104 U1105 G1106 C1109 G1110 A1111 G1112 U1113 C1114 G1115 G1116 U1119 G1120 C1121 U1130 G1131 U1132 A1133 A1134 C1135 G1136 G1137
G1138 G1139 C1140 U1141 A1142 C1153 G1154 A1155 G1168 A1169 C1170 G1171 U1174 A1175 U1176 G1177 C1178 G1179 U1180 G1187 U1188 G1197 U1198 U1199 U1203 A1204 A1205 U1209 G1212 A1213 A1214 G1215 U1219 G1220 G1225 A1226 G1227 U1234 G1235 G1236 A1237 A1247 G1248 G1252 A1253 A1254 U1255
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U1466 G1471 U1474 G1475 U1476 A1477 G1478 G1482 C1488 C1489 A1490 G1491 A1494 U1497 G1501 A1504 A1508 A1509 G1510 U1513 G1514 A1515 G1516 G1517 G1524 G1527 A1532 A1535 C1536 G1537 G1538 U1539 G1540 A1544 A1549 U1554 G1555 C1556 C1557 C1558 A1566
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C1908 C1909 G1910 U1911 A1912 A1913 U1917 A1918 A1919 C1920 G1921 G1922 U1923 C1924 C1925 U1926 A1927 A1928 G1929 G1930 A1936 A1937 A1938 U1939 U1940 C1941 C1942 U1943 A1953 G1954 U1955 C1958 G1959 A1960 C1961 C1962 U1963 G1964 C1965 A1966 C1967 A1970 U1971 G1972 G1980 A1981 U1982 A1987 G1988 U1991 G1992
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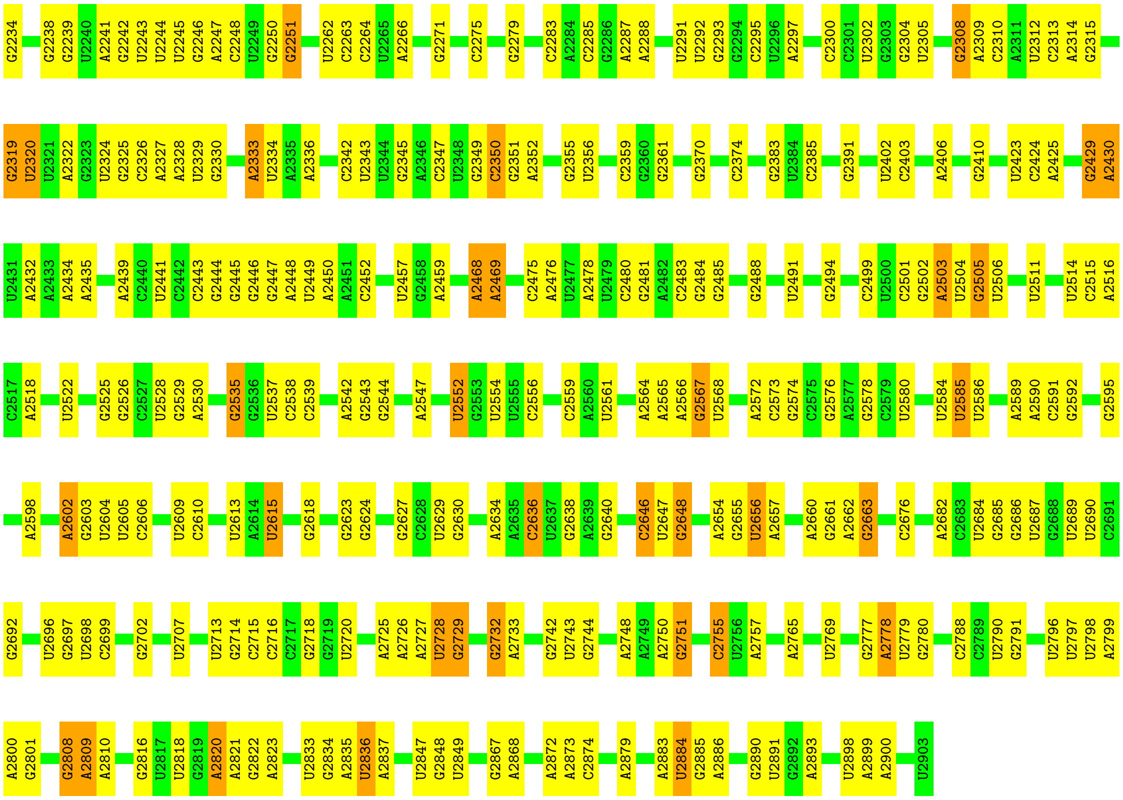
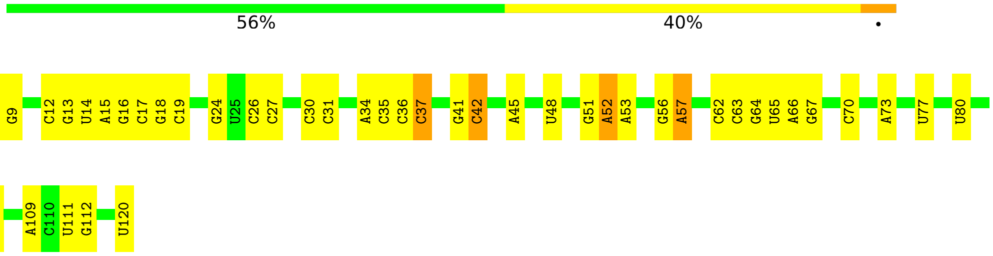
A2154 U2155 G2156 G2157 A2158 G2159 C2160 C2161 G2162 A2163 C2164 C2165 U2166 U2167 G2168 A2169 A2170 A2171 U2172 A2173 C2174 C2175 A2176 U2180 U2181 U2182 A2183 A2184 U2185 G2186 G2190 A2191 U2192 G2193 A2198 G2201 U2202 U2203 G2204 A2211 A2212 C2215 G2216 U2220 A2225 C2226 U2229 G2230 U2231 C2232 U2233



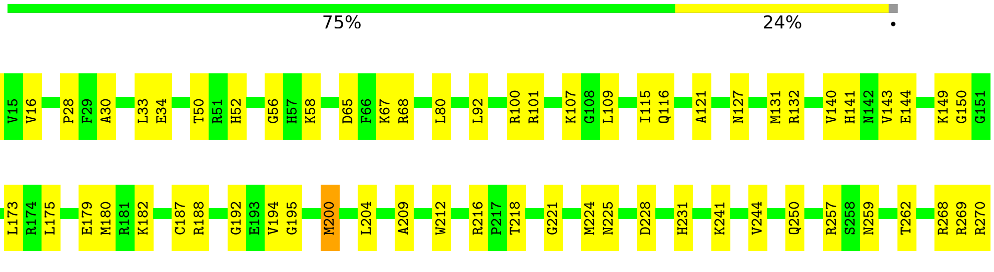
- Molecule 9: 5S ribosomal RNA

Chain B:



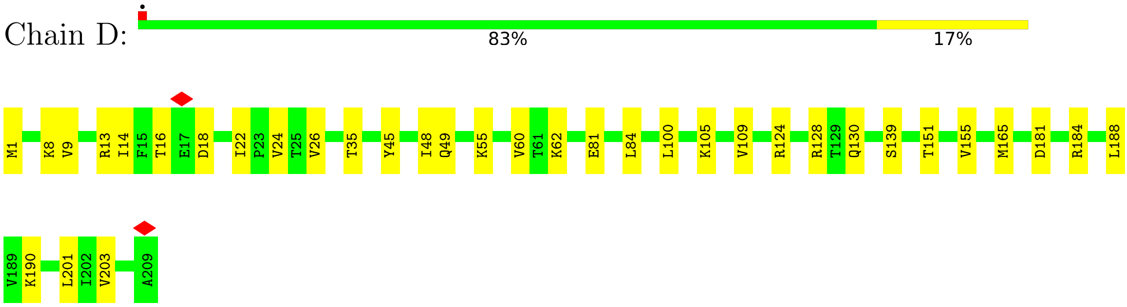
- Molecule 10: 50S ribosomal protein L2

Chain C:



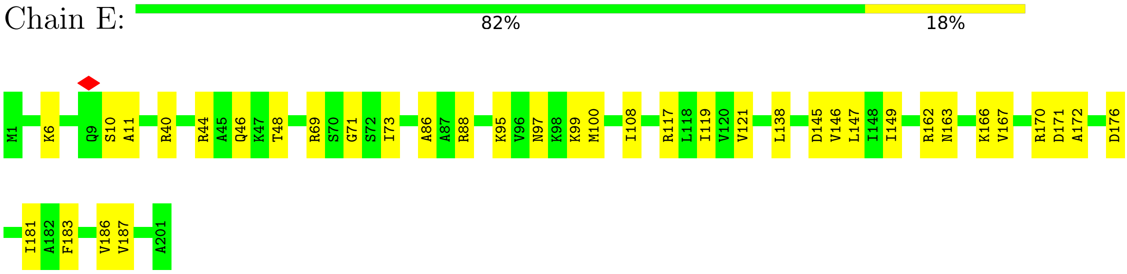
- Molecule 11: 50S ribosomal protein L3

Chain D:



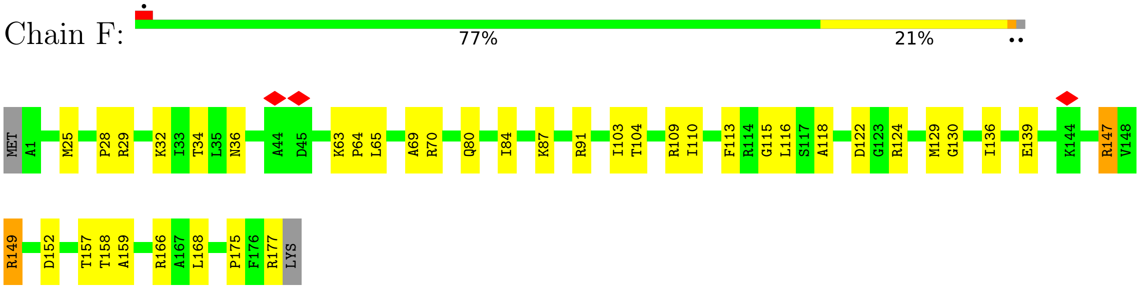
- Molecule 12: 50S ribosomal protein L4

Chain E:



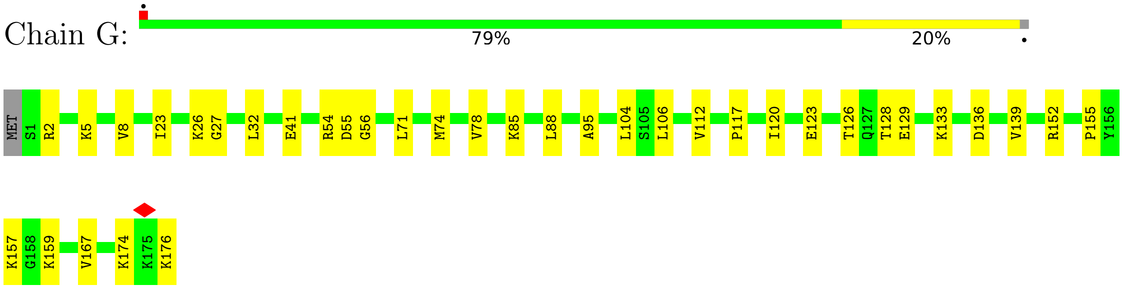
- Molecule 13: 50S ribosomal protein L5

Chain F:



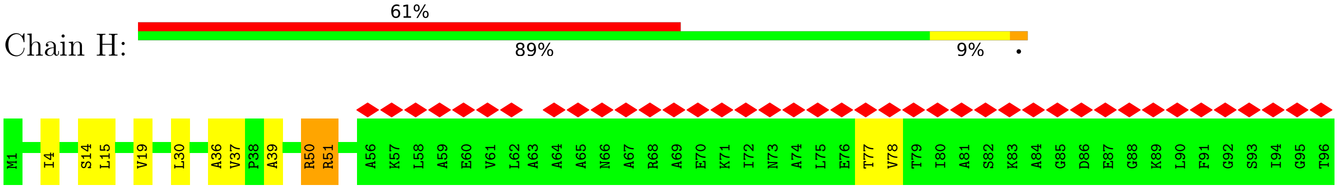
- Molecule 14: 50S ribosomal protein L6

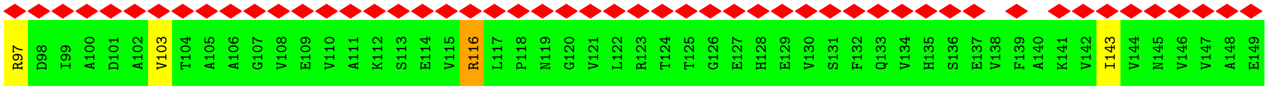
Chain G:



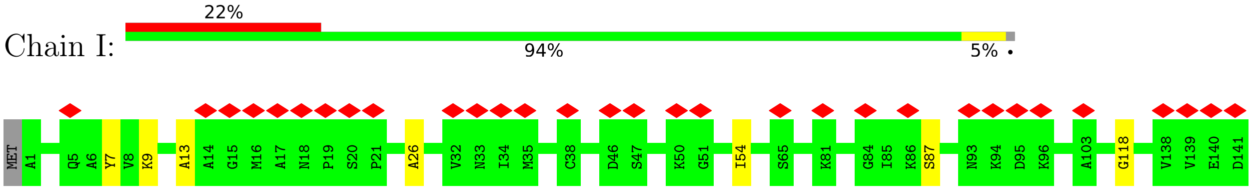
- Molecule 15: 50S ribosomal protein L9

Chain H:

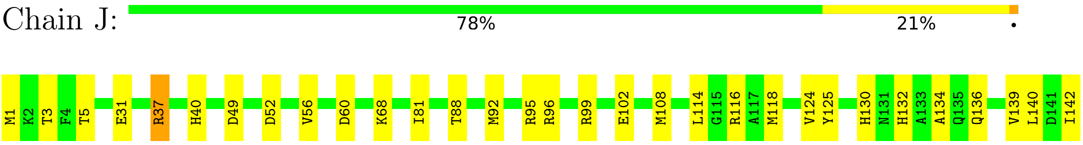




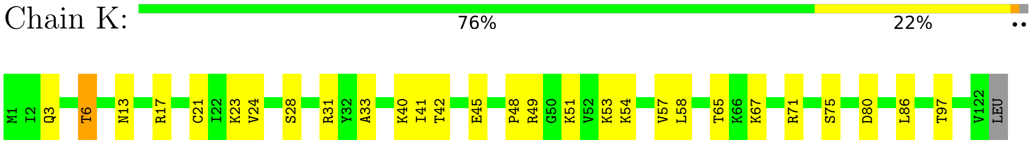
- Molecule 16: 50S ribosomal protein L11



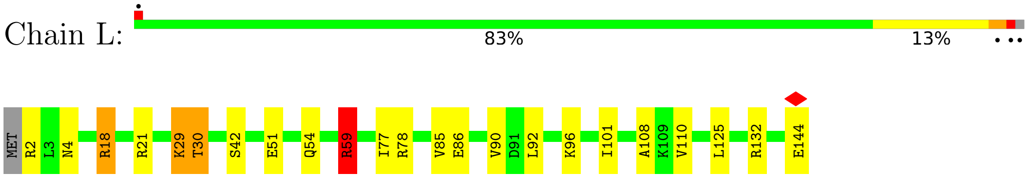
- Molecule 17: 50S ribosomal protein L13



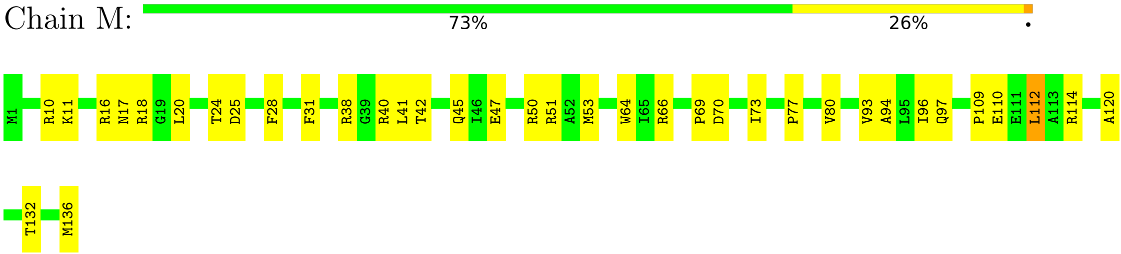
- Molecule 18: 50S ribosomal protein L14



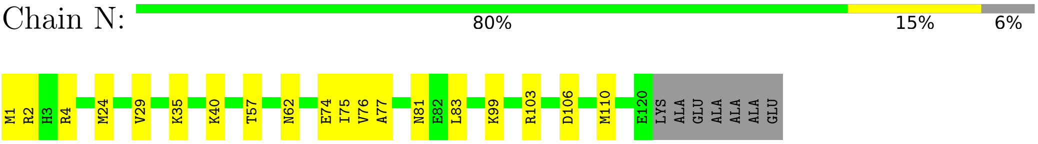
- Molecule 19: 50S ribosomal protein L15



- Molecule 20: 50S ribosomal protein L16

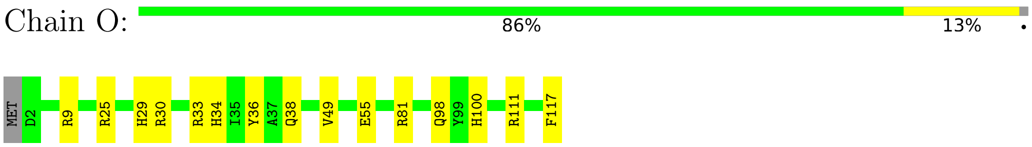


- Molecule 21: 50S ribosomal protein L17



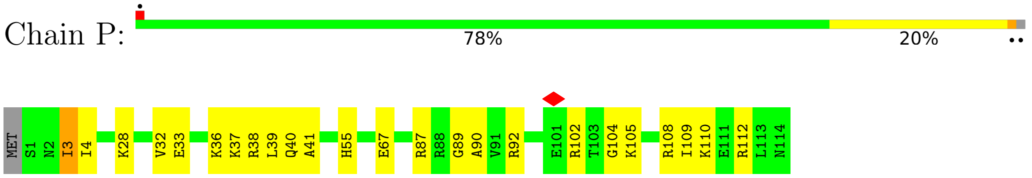
- Molecule 22: 50S ribosomal protein L18

Chain O:



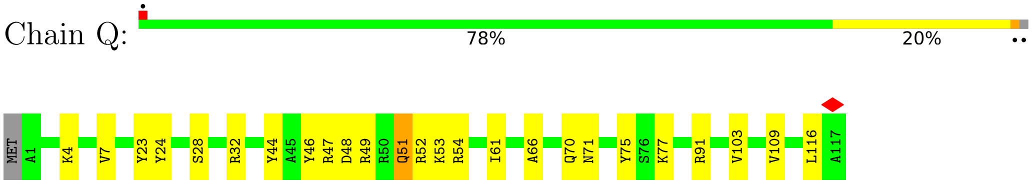
- Molecule 23: 50S ribosomal protein L19

Chain P:



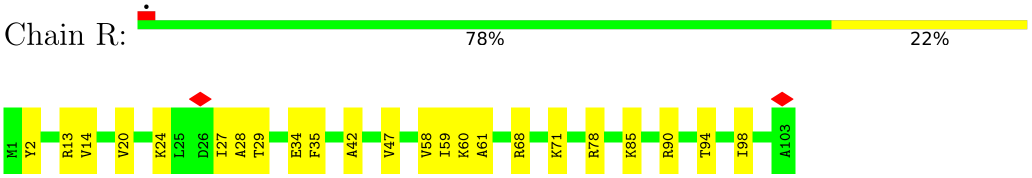
- Molecule 24: 50S ribosomal protein L20

Chain Q:



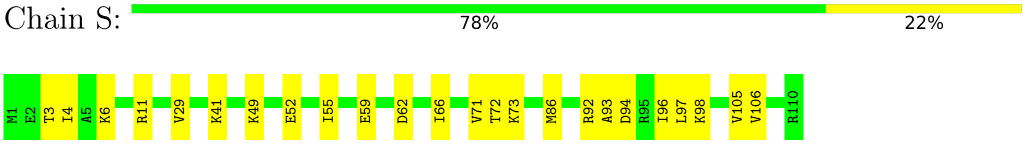
- Molecule 25: 50S ribosomal protein L21

Chain R:



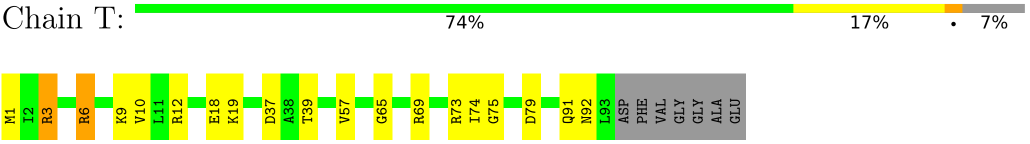
- Molecule 26: 50S ribosomal protein L22

Chain S:



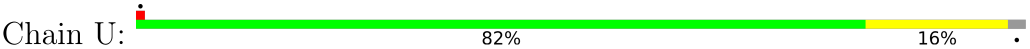
- Molecule 27: 50S ribosomal protein L23

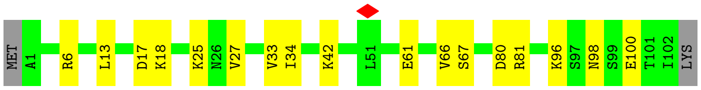
Chain T:



- Molecule 28: 50S ribosomal protein L24

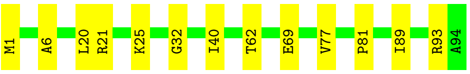
Chain U:





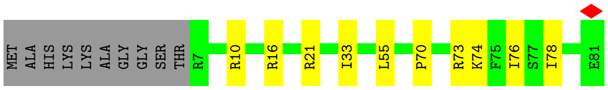
- Molecule 29: 50S ribosomal protein L25

Chain V:



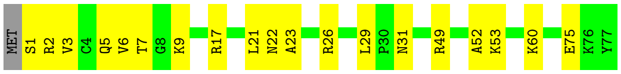
- Molecule 30: Large ribosomal subunit protein bL27

Chain W:



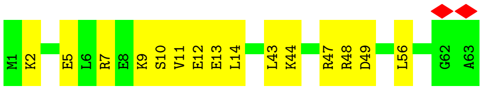
- Molecule 31: 50S ribosomal protein L28

Chain X:



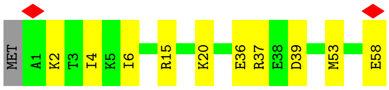
- Molecule 32: 50S ribosomal protein L29

Chain Y:



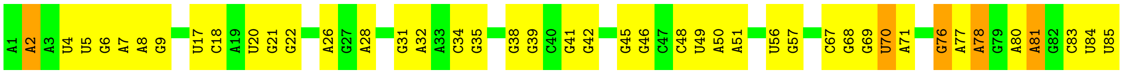
- Molecule 33: 50S ribosomal protein L30

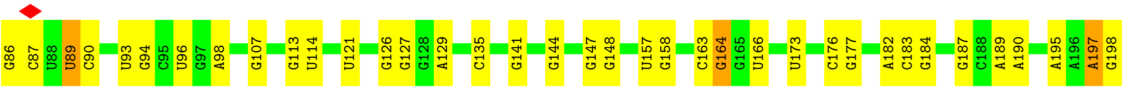
Chain Z:

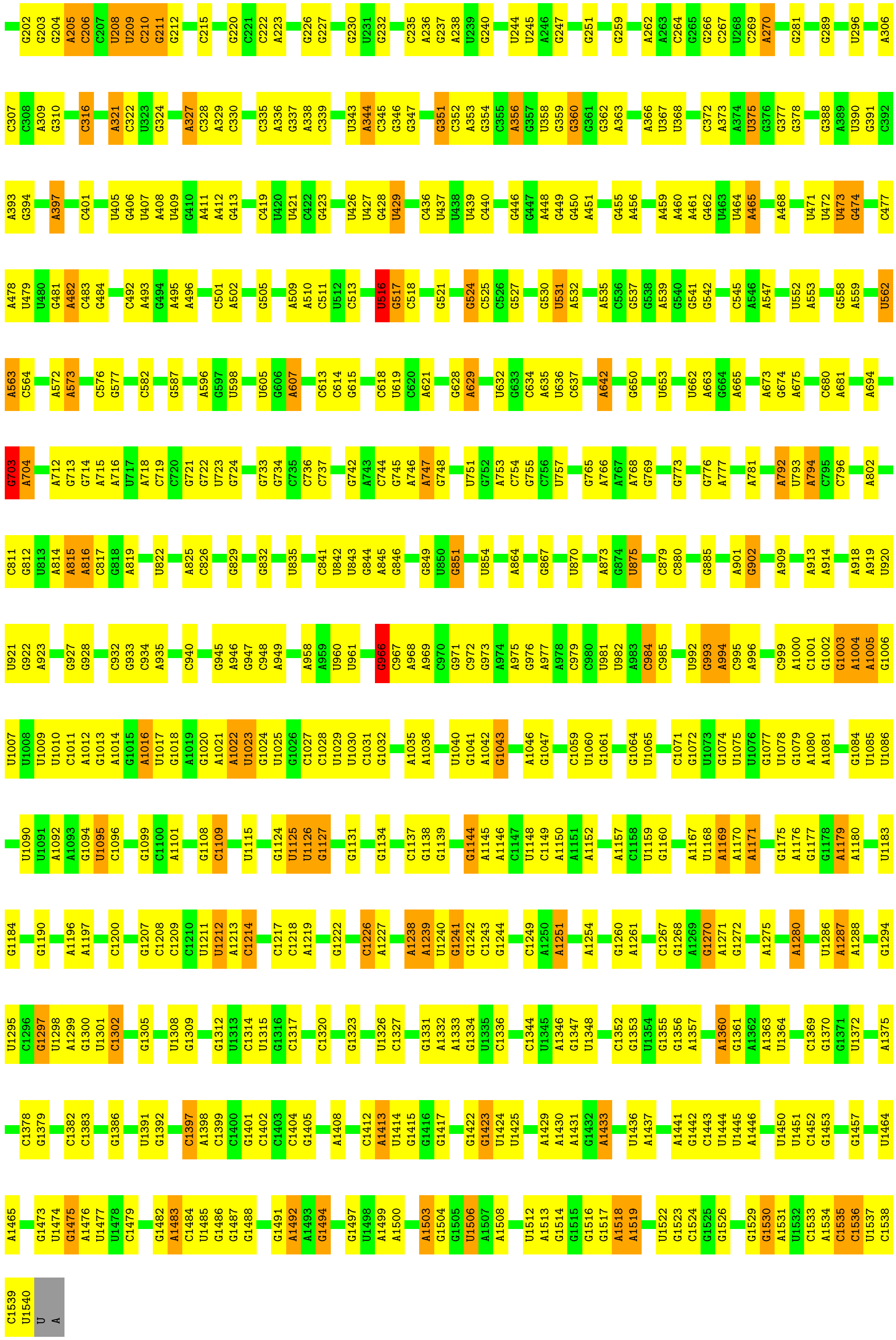


- Molecule 34: 16S ribosomal RNA

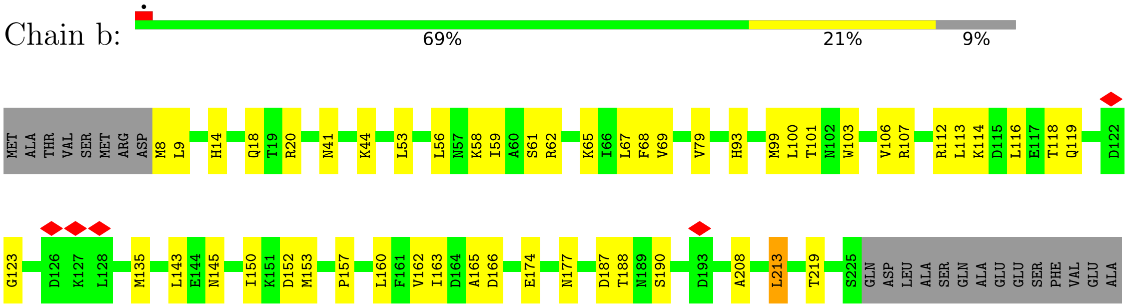
Chain a:



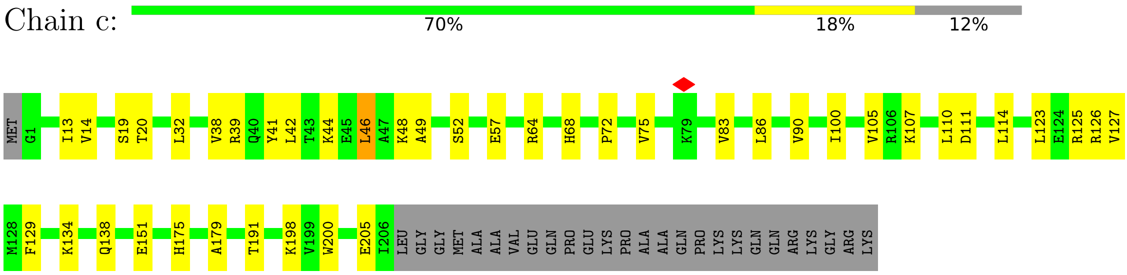




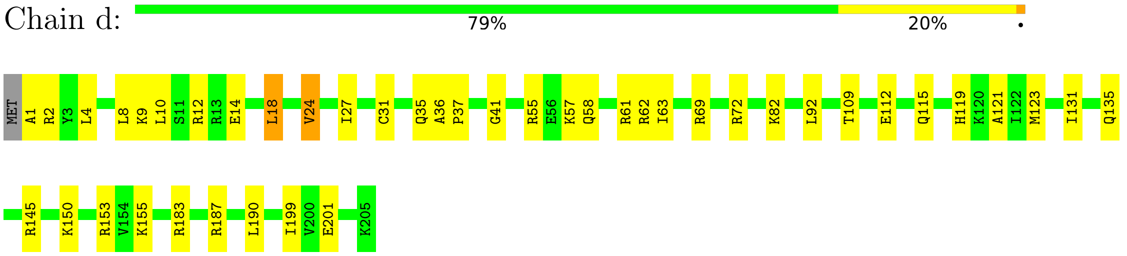
- Molecule 35: 30S ribosomal protein S2



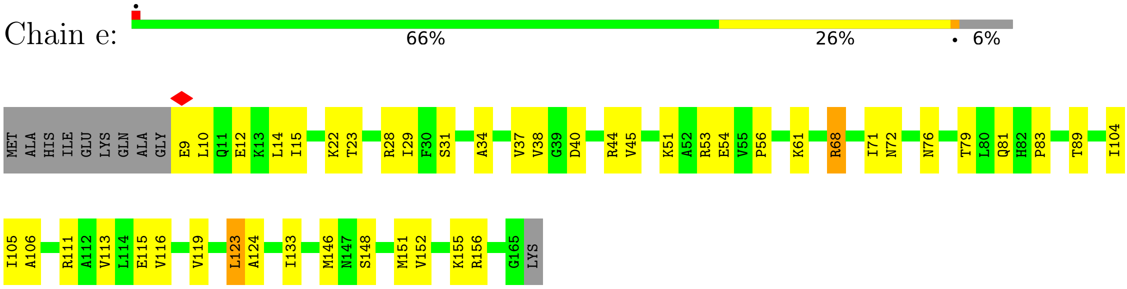
- Molecule 36: Small ribosomal subunit protein uS3



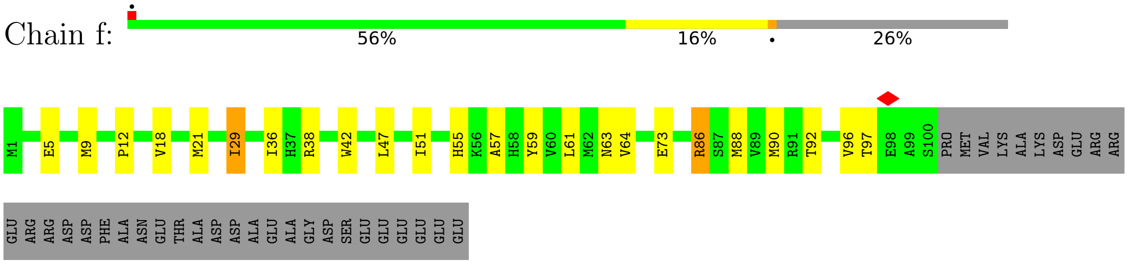
- Molecule 37: Small ribosomal subunit protein uS4



- Molecule 38: 30S ribosomal protein S5

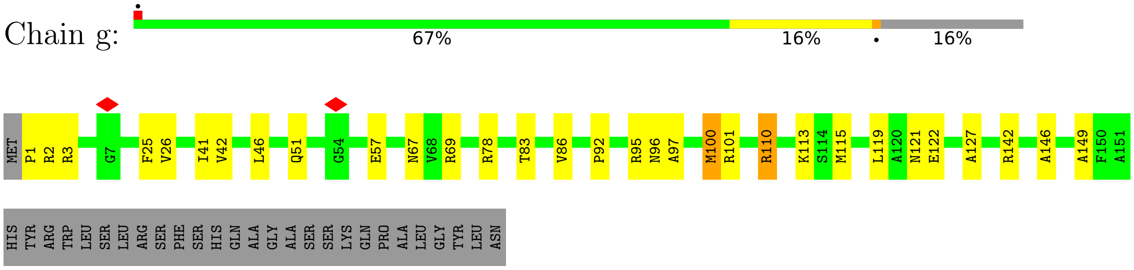


- Molecule 39: 30S ribosomal protein S6



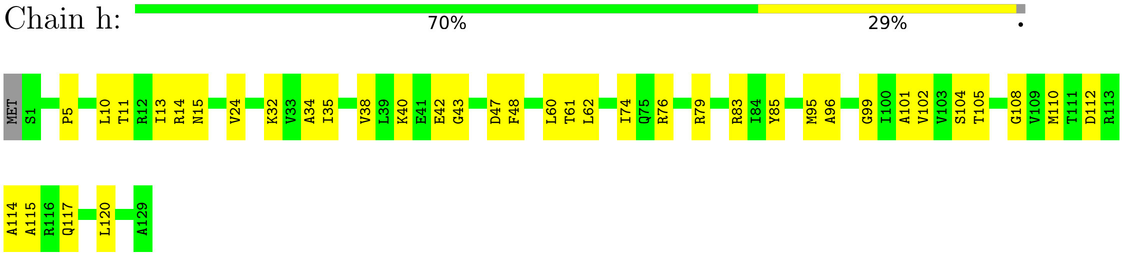
- Molecule 40: 30S ribosomal protein S7

Chain g:



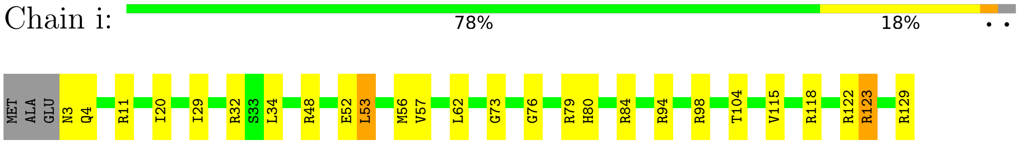
- Molecule 41: 30S ribosomal protein S8

Chain h:



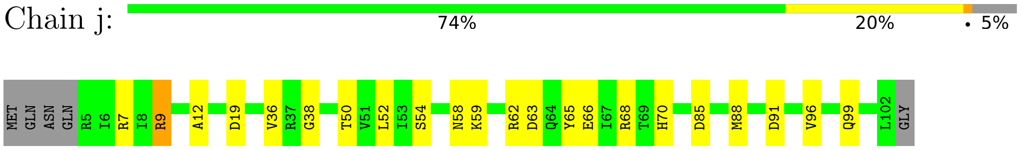
- Molecule 42: 30S ribosomal protein S9

Chain i:



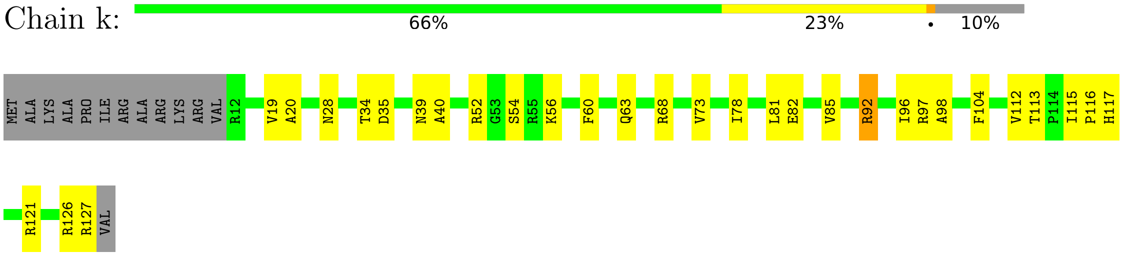
- Molecule 43: 30S ribosomal protein S10

Chain j:



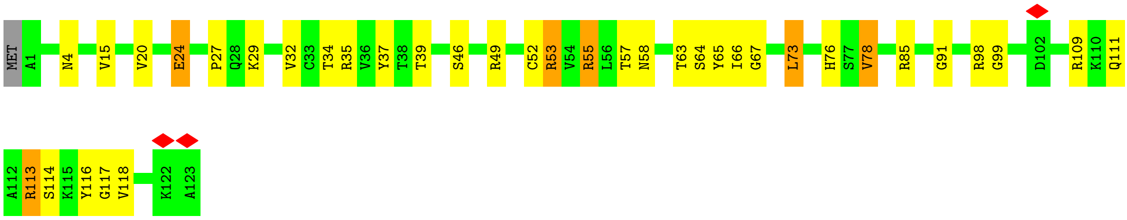
- Molecule 44: 30S ribosomal protein S11

Chain k:



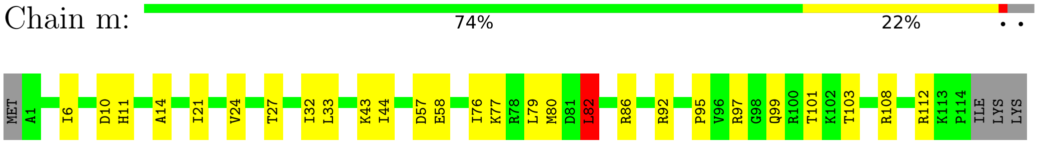
- Molecule 45: 30S ribosomal protein S12

Chain l:



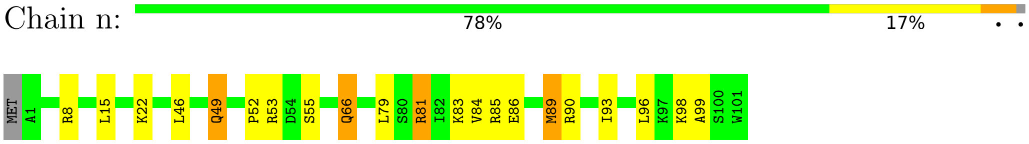
- Molecule 46: 30S ribosomal protein S13

Chain m:



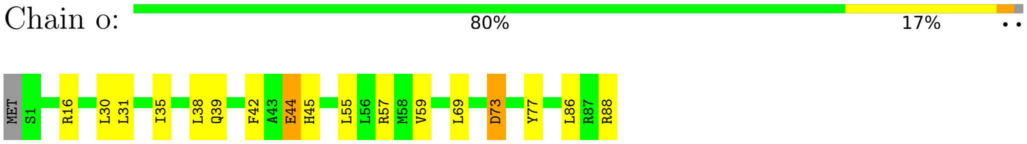
- Molecule 47: 30S ribosomal protein S14

Chain n:



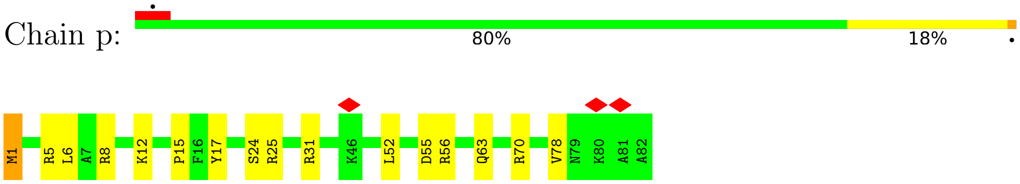
- Molecule 48: Small ribosomal subunit protein uS15

Chain o:



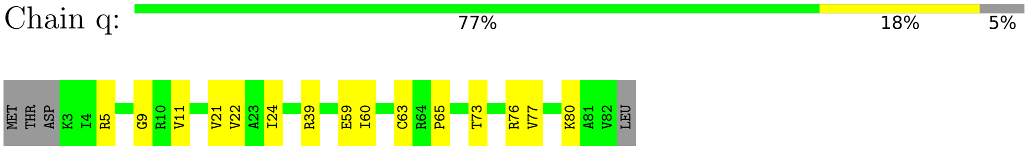
- Molecule 49: 30S ribosomal protein S16

Chain p:



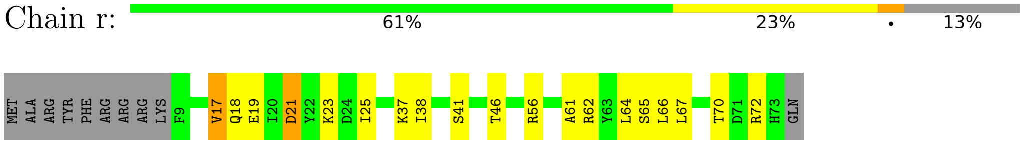
- Molecule 50: 30S ribosomal protein S17

Chain q:

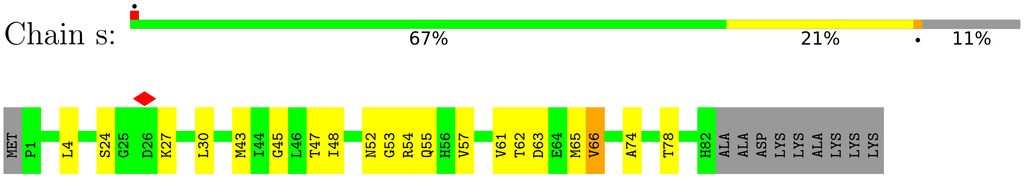


- Molecule 51: 30S ribosomal protein S18

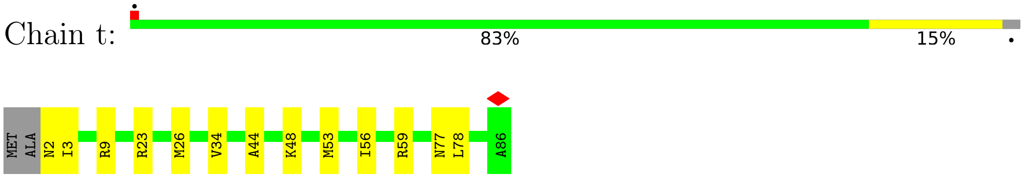
Chain r:



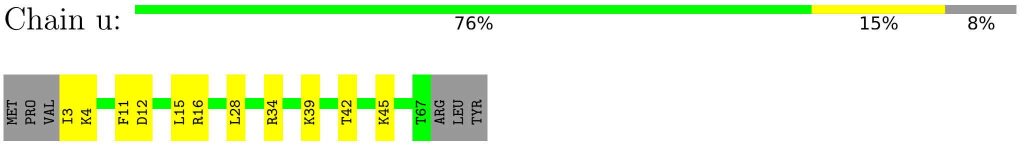
- Molecule 52: 30S ribosomal protein S19



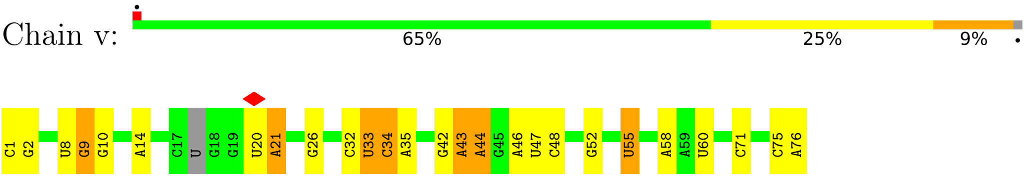
- Molecule 53: 30S ribosomal protein S20



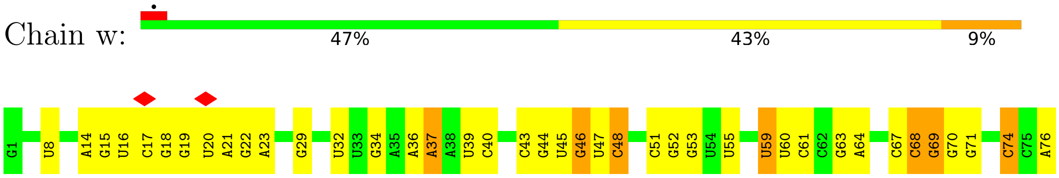
- Molecule 54: 30S ribosomal protein S21



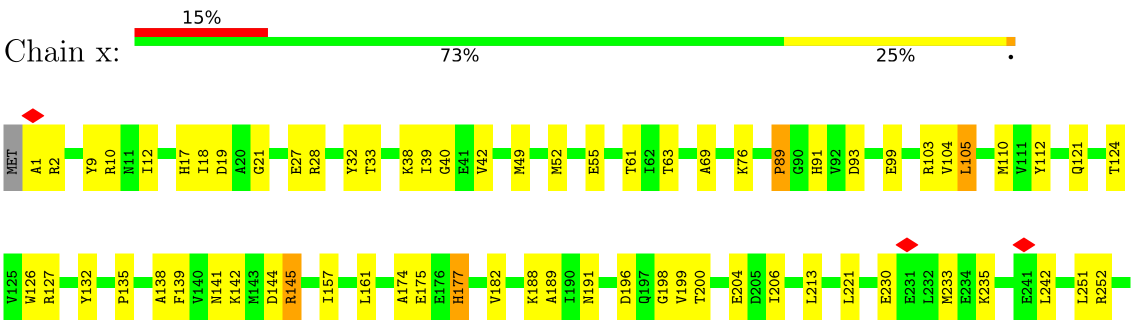
- Molecule 55: P/E-site tRNA(fMet)

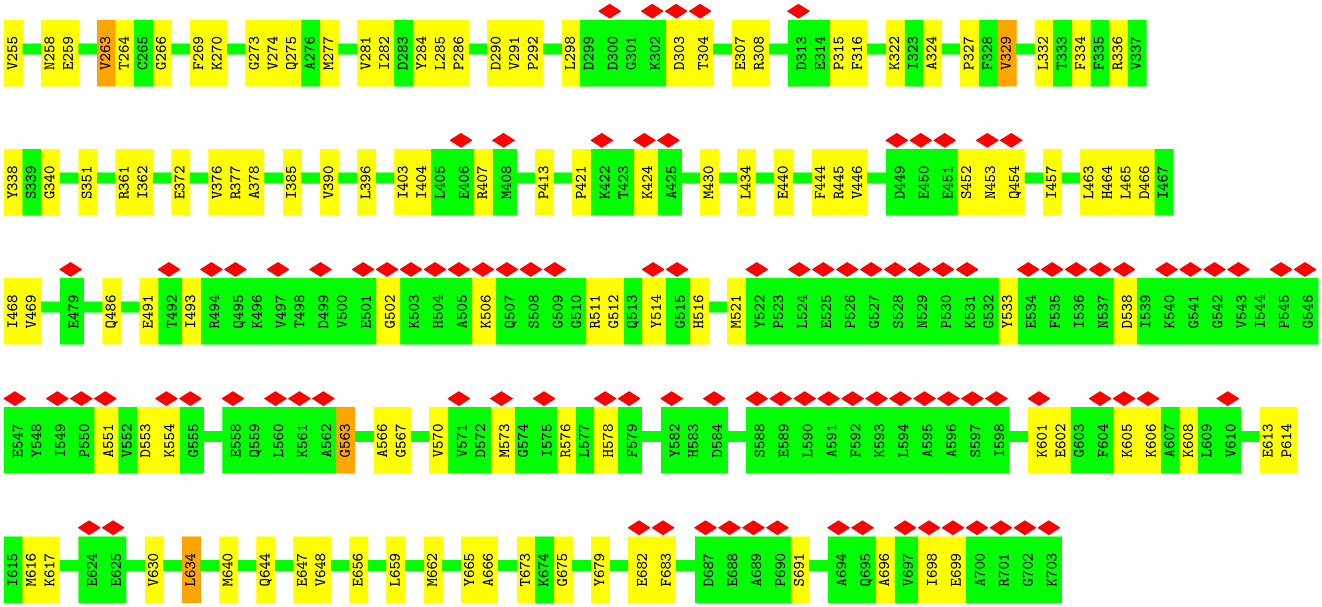


- Molecule 56: A/P-site tRNA(Phe)



- Molecule 57: Elongation factor G





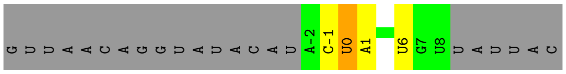
- Molecule 58: Dipeptide (FME-PHE)

Chain y:

There are no outlier residues recorded for this chain.

- Molecule 59: mRNA

Chain z:



4 Experimental information ⓘ

Property	**Value**	**Source**
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	20261	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/\text{Å}^2)$	30	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	1500	Depositor
Magnification	59000	Depositor
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	0.121	Depositor
Minimum map value	-0.030	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.013	Depositor
Recommended contour level	0.02	Depositor
Map size (Å)	334.08, 334.08, 334.08	wwPDB
Map dimensions	288, 288, 288	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.16, 1.16, 1.16	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: MG, G7M, GDP, 2MA, 4SU, 5MU, 5MC, H2U, FME, MA6, PO4, OMU, UR3, ZN, PSU, 3TD, AM2, NA, OMC, MIA, 6MZ, 1MG, 4OC, OMG, 2MG

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	0.23	0/450	0.55	0/599
2	1	0.20	0/416	0.56	0/554
3	2	0.18	0/380	0.54	0/498
4	3	0.21	0/513	0.57	0/676
5	4	0.19	0/303	0.58	0/397
6	5	0.16	0/646	0.57	0/898
7	6	0.25	0/531	0.76	0/709
8	A	0.19	1/69266 (0.0%)	0.41	2/108055 (0.0%)
9	B	0.17	0/2873	0.40	0/4478
10	C	0.28	1/2121 (0.0%)	0.61	1/2852 (0.0%)
11	D	0.23	0/1586	0.58	0/2134
12	E	0.20	0/1571	0.50	0/2113
13	F	0.25	0/1434	0.67	0/1926
14	G	0.18	0/1343	0.50	0/1816
15	H	0.24	0/1122	0.70	1/1515 (0.1%)
16	I	0.17	0/692	0.58	0/960
17	J	0.20	0/1152	0.52	0/1551
18	K	0.27	0/947	0.62	0/1268
19	L	0.24	0/1054	0.63	2/1403 (0.1%)
20	M	0.26	0/1093	0.68	1/1460 (0.1%)
21	N	0.23	0/973	0.61	0/1301
22	O	0.21	0/902	0.59	0/1209
23	P	0.22	0/929	0.57	0/1242
24	Q	0.23	0/960	0.53	0/1278
25	R	0.22	0/829	0.60	0/1107
26	S	0.26	0/864	0.67	1/1156 (0.1%)
27	T	0.25	0/744	0.65	0/994
28	U	0.22	0/787	0.69	0/1051
29	V	0.21	0/766	0.61	0/1025
30	W	0.25	0/582	0.59	0/769
31	X	0.22	0/635	0.53	0/848

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
32	Y	0.26	0/510	0.63	0/677
33	Z	0.23	0/453	0.67	0/605
34	a	0.19	1/36725 (0.0%)	0.40	1/57285 (0.0%)
35	b	0.25	0/1735	0.64	0/2338
36	c	0.21	0/1651	0.55	0/2225
37	d	0.25	0/1665	0.64	0/2227
38	e	0.24	0/1154	0.66	0/1554
39	f	0.29	0/835	0.75	4/1128 (0.4%)
40	g	0.26	0/1195	0.71	4/1602 (0.2%)
41	h	0.26	0/989	0.67	0/1326
42	i	0.24	0/1034	0.66	0/1375
43	j	0.23	0/796	0.65	0/1077
44	k	0.21	0/885	0.59	0/1195
45	l	0.28	0/969	0.77	2/1300 (0.2%)
46	m	0.24	0/892	0.67	1/1193 (0.1%)
47	n	0.26	0/811	0.67	0/1081
48	o	0.25	0/722	0.65	0/964
49	p	0.21	0/659	0.60	0/884
50	q	0.22	0/657	0.66	0/881
51	r	0.22	0/544	0.68	2/731 (0.3%)
52	s	0.25	0/675	0.67	0/908
53	t	0.23	0/671	0.53	0/888
54	u	0.26	0/512	0.66	0/683
55	v	0.22	0/1722	0.43	0/2678
56	w	0.27	1/1650 (0.1%)	0.50	0/2569
57	x	0.34	0/5546	0.74	1/7503 (0.0%)
58	y	0.11	0/11	0.35	0/13
59	z	0.19	0/255	0.37	0/394
All	All	0.21	4/164387 (0.0%)	0.48	23/245126 (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
10	C	0	1
13	F	0	1
15	H	0	2
26	S	0	1
27	T	0	2
30	W	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
37	d	0	1
39	f	0	1
42	i	0	2
45	l	0	2
51	r	0	1
57	x	0	1
All	All	0	16

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
10	C	30	ALA	C-N	5.57	1.40	1.34
34	a	527	G7M	O3'-P	5.32	1.61	1.56
8	A	2069	G7M	O3'-P	5.26	1.61	1.56
56	w	46	G7M	O3'-P	5.02	1.61	1.56

The worst 5 of 23 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
19	L	59	ARG	CG-CD-NE	-7.98	94.44	112.00
57	x	563	GLY	N-CA-C	7.45	127.54	112.34
19	L	86	GLU	CA-CB-CG	6.61	127.33	114.10
45	l	24	GLU	CA-CB-CG	6.09	126.28	114.10
26	S	52	GLU	N-CA-CB	6.07	119.05	110.12

There are no chirality outliers.

5 of 16 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
10	C	132	ARG	Sidechain
13	F	147	ARG	Sidechain
15	H	116	ARG	Sidechain
15	H	51	ARG	Sidechain
26	S	11	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	0	444	0	461	15	0
2	1	409	0	440	4	0
3	2	377	0	418	5	0
4	3	504	0	574	7	0
5	4	302	0	340	3	0
6	5	647	0	336	2	0
7	6	522	0	520	9	0
8	A	62338	0	31367	541	0
9	B	2570	0	1301	22	0
10	C	2082	0	2155	46	0
11	D	1565	0	1616	25	0
12	E	1552	0	1619	24	0
13	F	1410	0	1447	28	0
14	G	1323	0	1374	18	0
15	H	1111	0	1148	9	0
16	I	693	0	347	6	0
17	J	1129	0	1162	23	0
18	K	938	0	1012	20	0
19	L	1045	0	1117	16	0
20	M	1074	0	1157	23	0
21	N	960	0	1000	12	0
22	O	892	0	923	13	0
23	P	917	0	965	17	0
24	Q	947	0	1022	18	0
25	R	816	0	839	14	0
26	S	857	0	921	16	0
27	T	738	0	807	14	0
28	U	779	0	834	10	0
29	V	753	0	780	7	0
30	W	575	0	592	8	0
31	X	625	0	655	15	0
32	Y	509	0	543	10	0
33	Z	449	0	490	7	0
34	a	33050	0	16653	323	0
35	b	1704	0	1732	30	0
36	c	1624	0	1699	22	0
37	d	1643	0	1710	36	0
38	e	1141	0	1170	36	0
39	f	817	0	808	14	0
40	g	1181	0	1240	22	0
41	h	979	0	1034	25	0
42	i	1022	0	1070	17	0
43	j	786	0	828	19	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
44	k	869	0	878	20	0
45	l	955	0	1019	26	0
46	m	883	0	944	16	0
47	n	799	0	841	18	0
48	o	714	0	737	12	0
49	p	649	0	666	11	0
50	q	648	0	691	12	0
51	r	535	0	552	16	0
52	s	658	0	685	13	0
53	t	665	0	714	9	0
54	u	506	0	502	10	0
55	v	1622	0	831	12	0
56	w	1631	0	835	15	0
57	x	5445	0	5420	121	0
58	y	21	0	19	0	0
59	z	230	0	116	2	0
60	0	1	0	0	0	0
60	A	260	0	0	0	0
60	B	7	0	0	0	0
60	C	3	0	0	0	0
60	D	1	0	0	0	0
60	N	1	0	0	0	0
60	O	1	0	0	0	0
60	P	1	0	0	0	0
60	Q	2	0	0	0	0
60	Z	1	0	0	0	0
60	a	86	0	0	0	0
60	m	1	0	0	0	0
60	n	1	0	0	0	0
60	v	1	0	0	0	0
60	w	1	0	0	0	0
60	x	1	0	0	0	0
61	4	1	0	0	0	0
61	6	1	0	0	0	0
62	A	1	0	0	0	0
62	B	1	0	0	0	0
63	a	111	0	123	6	0
64	x	28	0	12	7	0
65	x	5	0	0	0	0
All	All	153146	0	103811	1557	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 6.

The worst 5 of 1557 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)
56:w:15:G:N2	56:w:59:U:H3	1.63	0.97
8:A:1071:G:H21	8:A:1089:A:N6	1.71	0.87
34:a:765:G:H1	34:a:812:G:HO2’	1.29	0.81
57:x:576:ARG:HH12	57:x:578:HIS:HB2	1.45	0.79
39:f:5:GLU:HB3	39:f:90:MET:HB2	1.65	0.79

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	0	54/57 (95%)	52 (96%)	2 (4%)	0	100	100
2	1	48/55 (87%)	48 (100%)	0	0	100	100
3	2	44/46 (96%)	42 (96%)	2 (4%)	0	100	100
4	3	62/65 (95%)	56 (90%)	6 (10%)	0	100	100
5	4	36/38 (95%)	31 (86%)	5 (14%)	0	100	100
6	5	129/165 (78%)	113 (88%)	16 (12%)	0	100	100
7	6	64/70 (91%)	57 (89%)	7 (11%)	0	100	100
10	C	269/273 (98%)	256 (95%)	13 (5%)	0	100	100
11	D	207/209 (99%)	193 (93%)	14 (7%)	0	100	100
12	E	199/201 (99%)	195 (98%)	4 (2%)	0	100	100
13	F	175/179 (98%)	157 (90%)	18 (10%)	0	100	100
14	G	174/177 (98%)	168 (97%)	6 (3%)	0	100	100
15	H	147/149 (99%)	130 (88%)	17 (12%)	0	100	100
16	I	139/142 (98%)	118 (85%)	21 (15%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
17	J	140/142 (99%)	136 (97%)	4 (3%)	0	100	100
18	K	120/123 (98%)	113 (94%)	7 (6%)	0	100	100
19	L	141/144 (98%)	133 (94%)	8 (6%)	0	100	100
20	M	134/136 (98%)	125 (93%)	9 (7%)	0	100	100
21	N	118/127 (93%)	110 (93%)	8 (7%)	0	100	100
22	O	114/117 (97%)	106 (93%)	8 (7%)	0	100	100
23	P	112/115 (97%)	107 (96%)	5 (4%)	0	100	100
24	Q	115/118 (98%)	112 (97%)	3 (3%)	0	100	100
25	R	101/103 (98%)	91 (90%)	10 (10%)	0	100	100
26	S	108/110 (98%)	105 (97%)	3 (3%)	0	100	100
27	T	91/100 (91%)	90 (99%)	1 (1%)	0	100	100
28	U	100/104 (96%)	91 (91%)	9 (9%)	0	100	100
29	V	92/94 (98%)	89 (97%)	3 (3%)	0	100	100
30	W	73/85 (86%)	70 (96%)	3 (4%)	0	100	100
31	X	75/78 (96%)	72 (96%)	3 (4%)	0	100	100
32	Y	61/63 (97%)	60 (98%)	1 (2%)	0	100	100
33	Z	56/59 (95%)	54 (96%)	2 (4%)	0	100	100
35	b	216/240 (90%)	204 (94%)	12 (6%)	0	100	100
36	c	204/233 (88%)	197 (97%)	7 (3%)	0	100	100
37	d	203/206 (98%)	193 (95%)	10 (5%)	0	100	100
38	e	155/167 (93%)	151 (97%)	4 (3%)	0	100	100
39	f	98/135 (73%)	88 (90%)	10 (10%)	0	100	100
40	g	149/179 (83%)	138 (93%)	11 (7%)	0	100	100
41	h	127/130 (98%)	118 (93%)	9 (7%)	0	100	100
42	i	125/130 (96%)	117 (94%)	8 (6%)	0	100	100
43	j	96/103 (93%)	86 (90%)	10 (10%)	0	100	100
44	k	114/129 (88%)	107 (94%)	7 (6%)	0	100	100
45	l	121/124 (98%)	108 (89%)	13 (11%)	0	100	100
46	m	112/118 (95%)	104 (93%)	8 (7%)	0	100	100
47	n	99/102 (97%)	94 (95%)	5 (5%)	0	100	100
48	o	86/89 (97%)	81 (94%)	5 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
49	p	80/82 (98%)	74 (92%)	6 (8%)	0	100	100
50	q	78/84 (93%)	74 (95%)	4 (5%)	0	100	100
51	r	63/75 (84%)	59 (94%)	4 (6%)	0	100	100
52	s	80/92 (87%)	75 (94%)	5 (6%)	0	100	100
53	t	83/87 (95%)	80 (96%)	3 (4%)	0	100	100
54	u	63/71 (89%)	61 (97%)	2 (3%)	0	100	100
57	x	701/704 (100%)	657 (94%)	44 (6%)	0	100	100
All	All	6551/6924 (95%)	6146 (94%)	405 (6%)	0	100	100

There are no Ramachandran outliers to report.

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	0	47/48 (98%)	46 (98%)	1 (2%)	48	71
2	1	45/49 (92%)	43 (96%)	2 (4%)	24	53
3	2	38/38 (100%)	38 (100%)	0	100	100
4	3	51/52 (98%)	51 (100%)	0	100	100
5	4	34/34 (100%)	33 (97%)	1 (3%)	37	63
7	6	59/62 (95%)	57 (97%)	2 (3%)	32	60
10	C	216/218 (99%)	212 (98%)	4 (2%)	52	73
11	D	164/164 (100%)	163 (99%)	1 (1%)	84	92
12	E	165/165 (100%)	163 (99%)	2 (1%)	67	82
13	F	148/150 (99%)	145 (98%)	3 (2%)	50	72
14	G	137/138 (99%)	131 (96%)	6 (4%)	24	53
15	H	114/114 (100%)	110 (96%)	4 (4%)	31	60
17	J	116/116 (100%)	112 (97%)	4 (3%)	32	60
18	K	103/104 (99%)	102 (99%)	1 (1%)	73	85

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
19	L	102/103 (99%)	98 (96%)	4 (4%)	27	57
20	M	109/109 (100%)	106 (97%)	3 (3%)	38	64
21	N	100/103 (97%)	97 (97%)	3 (3%)	36	63
22	O	86/87 (99%)	85 (99%)	1 (1%)	67	82
23	P	99/100 (99%)	98 (99%)	1 (1%)	73	85
24	Q	89/90 (99%)	86 (97%)	3 (3%)	32	60
25	R	84/84 (100%)	82 (98%)	2 (2%)	44	67
26	S	93/93 (100%)	92 (99%)	1 (1%)	70	83
27	T	80/84 (95%)	78 (98%)	2 (2%)	42	66
28	U	83/85 (98%)	79 (95%)	4 (5%)	21	51
29	V	78/78 (100%)	77 (99%)	1 (1%)	65	81
30	W	57/63 (90%)	57 (100%)	0	100	100
31	X	67/68 (98%)	66 (98%)	1 (2%)	60	78
32	Y	55/55 (100%)	53 (96%)	2 (4%)	30	59
33	Z	48/49 (98%)	48 (100%)	0	100	100
35	b	180/198 (91%)	176 (98%)	4 (2%)	47	69
36	c	170/190 (90%)	165 (97%)	5 (3%)	37	63
37	d	172/173 (99%)	167 (97%)	5 (3%)	37	63
38	e	114/126 (90%)	112 (98%)	2 (2%)	54	74
39	f	87/116 (75%)	84 (97%)	3 (3%)	32	60
40	g	124/147 (84%)	123 (99%)	1 (1%)	79	88
41	h	104/105 (99%)	102 (98%)	2 (2%)	52	73
42	i	105/107 (98%)	102 (97%)	3 (3%)	37	63
43	j	86/90 (96%)	82 (95%)	4 (5%)	22	51
44	k	89/99 (90%)	83 (93%)	6 (7%)	13	41
45	l	103/104 (99%)	98 (95%)	5 (5%)	21	50
46	m	92/96 (96%)	86 (94%)	6 (6%)	14	42
47	n	79/84 (94%)	73 (92%)	6 (8%)	11	37
48	o	76/77 (99%)	71 (93%)	5 (7%)	14	42
49	p	65/65 (100%)	64 (98%)	1 (2%)	60	78
50	q	74/78 (95%)	72 (97%)	2 (3%)	40	65

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
51	r	56/65 (86%)	54 (96%)	2 (4%)	30	59
52	s	72/79 (91%)	68 (94%)	4 (6%)	17	47
53	t	65/66 (98%)	65 (100%)	0	100	100
54	u	46/61 (75%)	46 (100%)	0	100	100
57	x	577/578 (100%)	556 (96%)	21 (4%)	30	59
58	y	1/1 (100%)	1 (100%)	0	100	100
All	All	5204/5408 (96%)	5058 (97%)	146 (3%)	40	64

5 of 146 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
48	o	86	LEU
57	x	634	LEU
51	r	21	ASP
57	x	206	ILE
26	S	97	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 48 such sidechains are listed below:

Mol	Chain	Res	Type
32	Y	58	ASN
37	d	53	GLN
35	b	18	GLN
35	b	121	GLN
37	d	88	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
34	a	1539/1542 (99%)	334 (21%)	0
55	v	74/77 (96%)	15 (20%)	0
56	w	75/76 (98%)	24 (32%)	0
59	z	10/33 (30%)	2 (20%)	0
8	A	2902/2903 (99%)	640 (22%)	39 (1%)
9	B	119/120 (99%)	29 (24%)	3 (2%)
All	All	4719/4751 (99%)	1044 (22%)	42 (0%)

5 of 1044 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
8	A	10	A
8	A	15	G
8	A	23	G
8	A	34	U
8	A	42	A

5 of 42 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
8	A	2192	U
8	A	2655	G
8	A	2287	A
8	A	2324	U
8	A	2796	U

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

46 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	$\#\|Z\| > 2$
8	PSU	A	2504	8	18,21,22	1.11	1 (5%)	22,30,33	1.80	4 (18%)
8	1MG	A	745	8	18,26,27	0.90	1 (5%)	19,39,42	0.50	0
8	G7M	A	2069	8	20,26,27	0.52	0	17,39,42	0.61	0
34	2MG	a	1516	34	18,26,27	0.94	1 (5%)	16,38,41	0.68	0
34	4OC	a	1402	34	20,23,24	0.35	0	26,32,35	0.61	0
8	2MA	A	2503	8,60	19,25,26	1.01	2 (10%)	21,37,40	3.07	5 (23%)
56	MIA	w	37	56	24,31,32	0.63	0	26,44,47	1.10	4 (15%)
8	6MZ	A	1618	8	18,25,26	0.74	0	16,36,39	0.80	1 (6%)
34	G7M	a	527	34	20,26,27	0.52	0	17,39,42	0.49	0
8	2MG	A	2445	8	18,26,27	1.01	1 (5%)	16,38,41	0.60	0
8	OMU	A	2552	8	19,22,23	0.36	0	26,31,34	0.58	0
56	5MU	w	54	56	19,22,23	0.29	0	28,32,35	0.35	0
55	PSU	v	55	55	18,21,22	1.08	1 (5%)	22,30,33	1.63	5 (22%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
34	2MG	a	1207	34	18,26,27	0.93	1 (5%)	16,38,41	0.67	0
34	UR3	a	1498	34	19,22,23	0.35	0	26,32,35	0.66	0
8	PSU	A	746	8,60	18,21,22	1.12	1 (5%)	22,30,33	1.72	4 (18%)
8	3TD	A	1915	8	18,22,23	0.38	0	22,32,35	0.62	0
8	2MG	A	1835	8	18,26,27	0.95	1 (5%)	16,38,41	0.64	0
34	2MG	a	966	34	18,26,27	0.94	2 (11%)	16,38,41	0.77	0
8	PSU	A	1911	8	18,21,22	1.07	1 (5%)	22,30,33	1.70	4 (18%)
8	OMG	A	2251	8,60,56	18,26,27	0.94	1 (5%)	19,38,41	0.61	0
56	4SU	w	8	56	18,21,22	0.30	0	26,30,33	0.41	0
34	5MC	a	1407	34	18,22,23	0.35	0	26,32,35	0.50	0
34	PSU	a	516	34,60	18,21,22	0.88	1 (5%)	22,30,33	1.72	4 (18%)
8	5MU	A	1939	8,60	19,22,23	0.29	0	28,32,35	0.54	0
8	PSU	A	955	8	18,21,22	1.06	1 (5%)	22,30,33	1.71	4 (18%)
56	G7M	w	46	56	20,26,27	0.50	0	17,39,42	0.47	0
8	OMC	A	2498	8,60	19,22,23	0.34	0	26,31,34	0.43	0
55	5MU	v	54	55	19,22,23	0.28	0	28,32,35	0.45	0
56	PSU	w	55	56	18,21,22	1.16	1 (5%)	22,30,33	1.65	4 (18%)
8	5MC	A	1962	8	18,22,23	0.29	0	26,32,35	0.48	0
8	PSU	A	1917	8	18,21,22	1.00	1 (5%)	22,30,33	1.77	4 (18%)
55	H2U	v	20	55	18,21,22	0.45	0	21,30,33	0.55	0
56	PSU	w	32	56	18,21,22	1.06	1 (5%)	22,30,33	1.60	4 (18%)
8	PSU	A	2605	8	18,21,22	1.13	1 (5%)	22,30,33	1.72	4 (18%)
56	PSU	w	39	56	18,21,22	1.12	1 (5%)	22,30,33	1.68	5 (22%)
34	5MC	a	967	34	18,22,23	0.29	0	26,32,35	0.45	0
8	PSU	A	2580	8	18,21,22	1.11	2 (11%)	22,30,33	1.83	5 (22%)
55	4SU	v	8	55	18,21,22	0.35	0	26,30,33	0.34	0
34	MA6	a	1518	34	18,26,27	0.78	0	19,38,41	0.84	1 (5%)
8	6MZ	A	2030	8	18,25,26	0.78	0	16,36,39	0.97	1 (6%)
8	PSU	A	2457	8	18,21,22	1.02	1 (5%)	22,30,33	1.83	5 (22%)
8	PSU	A	2604	8	18,21,22	1.03	1 (5%)	22,30,33	1.70	4 (18%)
58	FME	y	101	58	8,9,10	0.95	0	7,9,11	0.94	0
34	MA6	a	1519	34	18,26,27	0.78	0	19,38,41	0.84	1 (5%)
8	5MC	A	747	8	18,22,23	0.32	0	26,32,35	0.46	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
8	PSU	A	2504	8	-	0/7/25/26	0/2/2/2
8	1MG	A	745	8	-	0/3/25/26	0/3/3/3
8	G7M	A	2069	8	-	1/3/25/26	0/3/3/3
34	2MG	a	1516	34	-	0/5/27/28	0/3/3/3
34	4OC	a	1402	34	-	2/9/29/30	0/2/2/2
8	2MA	A	2503	8,60	-	1/3/25/26	0/3/3/3
56	MIA	w	37	56	-	2/11/33/34	0/3/3/3
8	6MZ	A	1618	8	-	0/5/27/28	0/3/3/3
34	G7M	a	527	34	-	2/3/25/26	0/3/3/3
8	2MG	A	2445	8	-	0/5/27/28	0/3/3/3
8	OMU	A	2552	8	-	2/9/27/28	0/2/2/2
56	5MU	w	54	56	-	0/7/25/26	0/2/2/2
55	PSU	v	55	55	-	1/7/25/26	0/2/2/2
34	2MG	a	1207	34	-	0/5/27/28	0/3/3/3
34	UR3	a	1498	34	-	2/7/25/26	0/2/2/2
8	PSU	A	746	8,60	-	4/7/25/26	0/2/2/2
8	3TD	A	1915	8	-	2/7/25/26	0/2/2/2
8	2MG	A	1835	8	-	2/5/27/28	0/3/3/3
34	2MG	a	966	34	-	2/5/27/28	0/3/3/3
8	PSU	A	1911	8	-	0/7/25/26	0/2/2/2
8	OMG	A	2251	8,60,56	-	1/5/27/28	0/3/3/3
56	4SU	w	8	56	-	0/7/25/26	0/2/2/2
34	5MC	a	1407	34	-	0/7/25/26	0/2/2/2
34	PSU	a	516	34,60	-	0/7/25/26	0/2/2/2
8	5MU	A	1939	8,60	-	2/7/25/26	0/2/2/2
8	PSU	A	955	8	-	0/7/25/26	0/2/2/2
56	G7M	w	46	56	-	1/3/25/26	0/3/3/3
8	OMC	A	2498	8,60	-	0/9/27/28	0/2/2/2
55	5MU	v	54	55	-	0/7/25/26	0/2/2/2
56	PSU	w	55	56	-	0/7/25/26	0/2/2/2
8	5MC	A	1962	8	-	0/7/25/26	0/2/2/2
8	PSU	A	1917	8	-	4/7/25/26	0/2/2/2
55	H2U	v	20	55	-	6/7/38/39	0/2/2/2
56	PSU	w	32	56	-	3/7/25/26	0/2/2/2
8	PSU	A	2605	8	-	0/7/25/26	0/2/2/2
56	PSU	w	39	56	-	2/7/25/26	0/2/2/2
34	5MC	a	967	34	-	0/7/25/26	0/2/2/2
8	PSU	A	2580	8	-	0/7/25/26	0/2/2/2
55	4SU	v	8	55	-	0/7/25/26	0/2/2/2
34	MA6	a	1518	34	-	0/7/29/30	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
8	6MZ	A	2030	8	-	2/5/27/28	0/3/3/3
8	PSU	A	2457	8	-	0/7/25/26	0/2/2/2
8	PSU	A	2604	8	-	0/7/25/26	0/2/2/2
58	FME	y	101	58	-	5/7/9/11	-
34	MA6	a	1519	34	-	1/7/29/30	0/3/3/3
8	5MC	A	747	8	-	1/7/25/26	0/2/2/2

The worst 5 of 25 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
56	w	55	PSU	C6-C5	3.99	1.40	1.35
8	A	2605	PSU	C6-C5	3.82	1.39	1.35
55	v	55	PSU	C6-C5	3.73	1.39	1.35
56	w	39	PSU	C6-C5	3.68	1.39	1.35
8	A	2504	PSU	C6-C5	3.58	1.39	1.35

The worst 5 of 73 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
8	A	2503	2MA	C5-C6-N1	-12.35	112.90	121.01
8	A	2504	PSU	N1-C2-N3	4.83	120.60	115.13
8	A	2457	PSU	C4-N3-C2	-4.68	119.59	126.34
8	A	2457	PSU	N1-C2-N3	4.53	120.27	115.13
8	A	746	PSU	C4-N3-C2	-4.52	119.82	126.34

There are no chirality outliers.

5 of 51 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
34	a	1498	UR3	O4'-C1'-N1-C2
55	v	20	H2U	O4'-C4'-C5'-O5'
55	v	20	H2U	O4'-C1'-N1-C6
8	A	746	PSU	C2'-C1'-C5-C4
8	A	746	PSU	C2'-C1'-C5-C6

There are no ring outliers.

12 monomers are involved in 14 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
34	a	1402	4OC	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
56	w	37	MIA	1	0
8	A	2552	OMU	1	0
8	A	1835	2MG	1	0
34	a	966	2MG	1	0
8	A	2251	OMG	2	0
34	a	516	PSU	2	0
8	A	1962	5MC	1	0
34	a	967	5MC	1	0
55	v	8	4SU	1	0
34	a	1518	MA6	1	0
8	A	2030	6MZ	2	0

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 378 ligands modelled in this entry, 373 are monoatomic - leaving 5 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
63	AM2	a	1614	-	40,40,40	0.56	0	53,60,60	1.26	5 (9%)
65	PO4	x	802	60	4,4,4	0.79	0	6,6,6	0.40	0
63	AM2	a	1605	-	40,40,40	0.52	0	53,60,60	1.11	3 (5%)
64	GDP	x	801	60	24,30,30	0.98	2 (8%)	30,47,47	0.69	1 (3%)
63	AM2	a	1663	-	40,40,40	0.61	0	53,60,60	1.12	3 (5%)

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
63	AM2	a	1605	-	-	4/12/84/84	0/4/4/4
64	GDP	x	801	60	-	0/12/32/32	0/3/3/3
63	AM2	a	1614	-	-	5/12/84/84	0/4/4/4
63	AM2	a	1663	-	-	1/12/84/84	0/4/4/4

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
64	x	801	GDP	C5-C6	-2.71	1.41	1.47
64	x	801	GDP	C8-N7	-2.01	1.31	1.35

The worst 5 of 12 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
63	a	1605	AM2	OA4-CA1-CA2	5.04	121.48	110.25
63	a	1614	AM2	CB1-OB1-CB5	4.23	121.99	113.69
63	a	1614	AM2	CB3-CB4-CB5	3.70	118.38	110.67
63	a	1663	AM2	CC6-CC5-CC4	3.67	118.71	111.18
63	a	1663	AM2	OA4-CA1-CA2	3.36	117.73	110.25

There are no chirality outliers.

5 of 10 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
63	a	1614	AM2	CB4-CB5-CB6-OB6
63	a	1614	AM2	OB1-CB5-CB6-OB6
63	a	1614	AM2	OA4-CA1-OA1-CC1
63	a	1614	AM2	OB1-CB1-OA8-CA8
63	a	1614	AM2	CC2-CC1-OA1-CA1

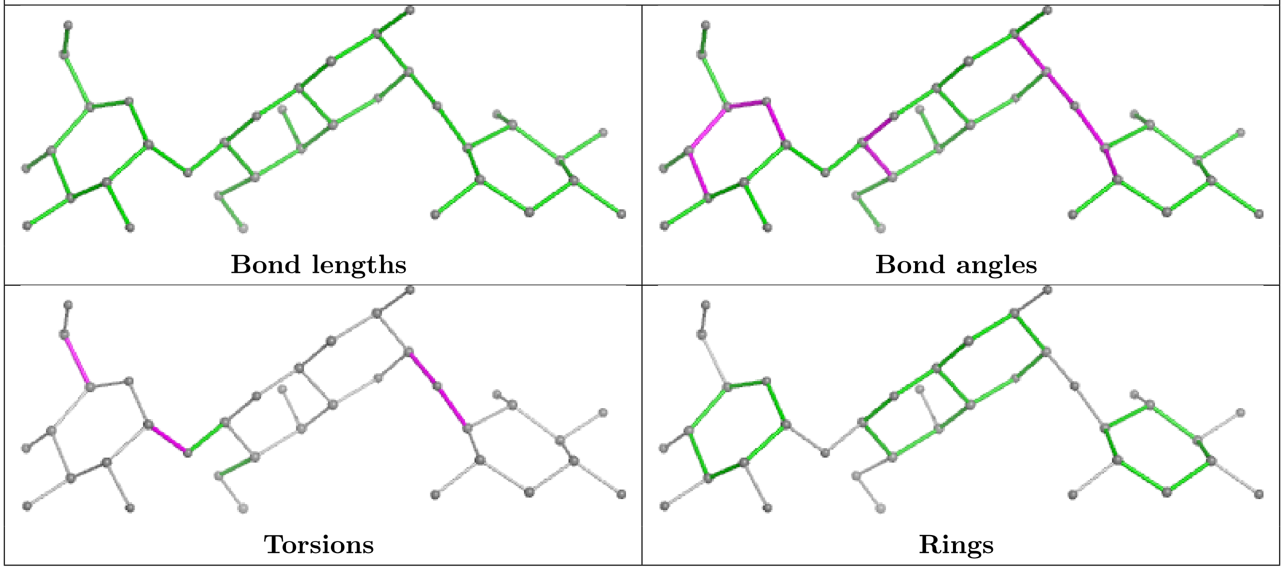
There are no ring outliers.

4 monomers are involved in 13 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
63	a	1614	AM2	2	0
63	a	1605	AM2	1	0
64	x	801	GDP	7	0
63	a	1663	AM2	3	0

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

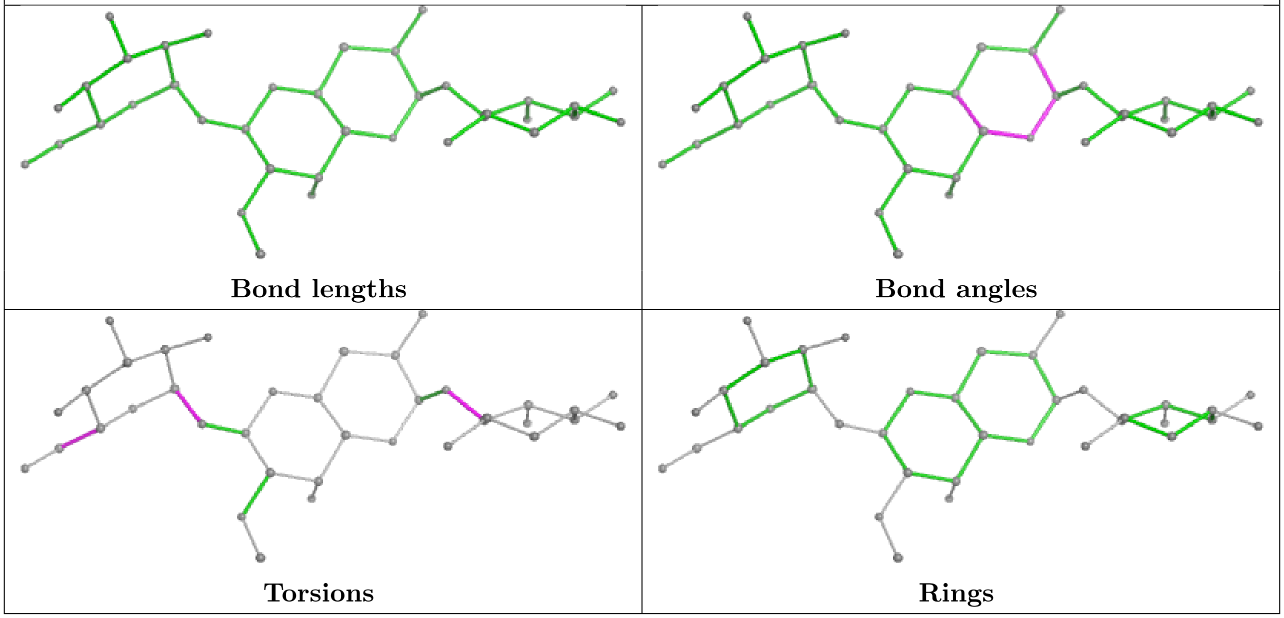
Ligand AM2 a 1614



Bond lengths **Bond angles**

Torsions **Rings**

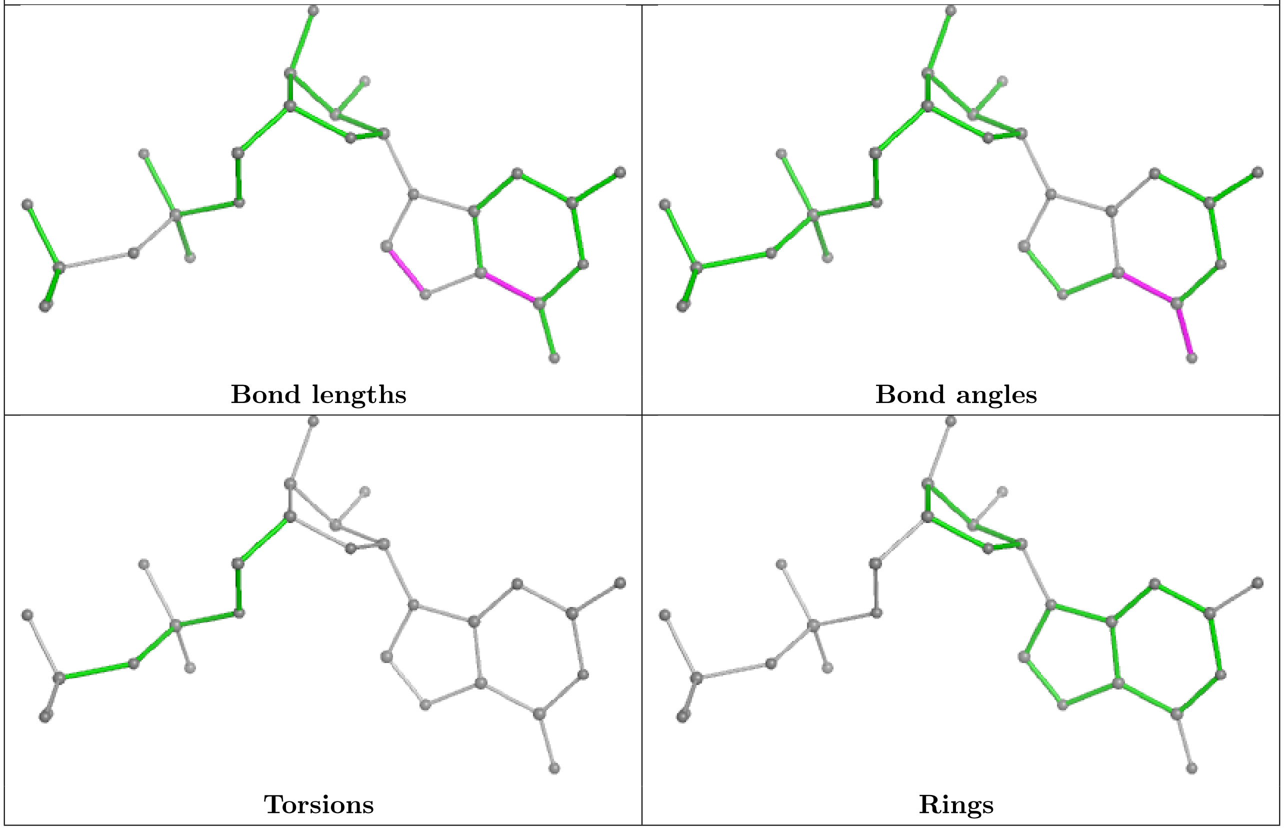
Ligand AM2 a 1605



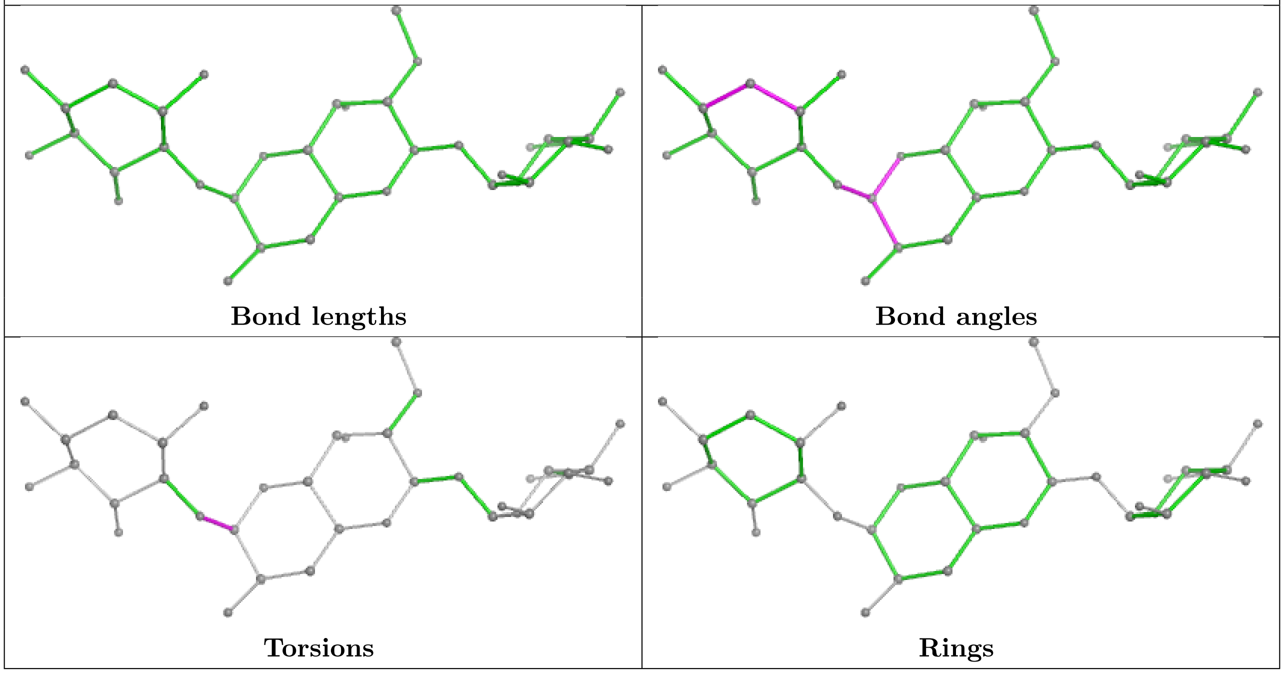
Bond lengths **Bond angles**

Torsions **Rings**

Ligand GDP x 801



Ligand AM2 a 1663



5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

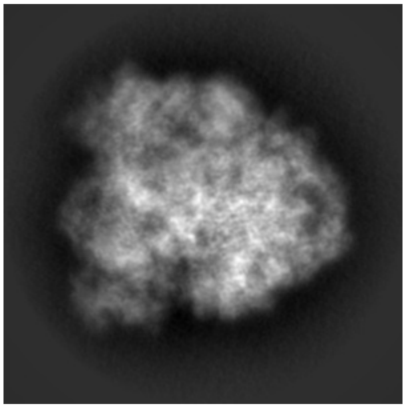
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-54254. 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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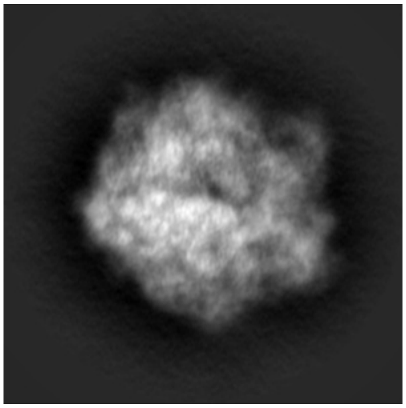
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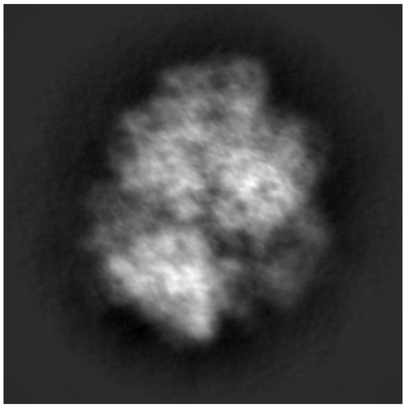
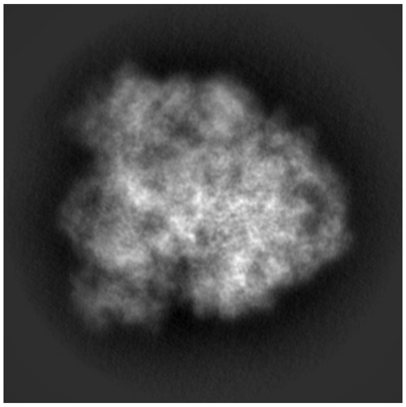
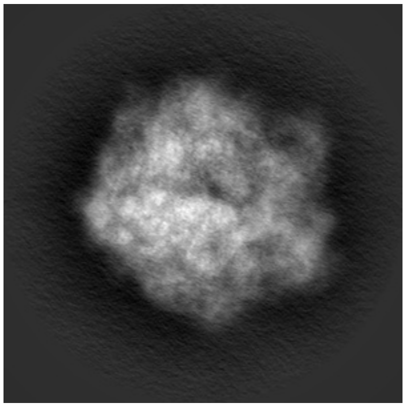
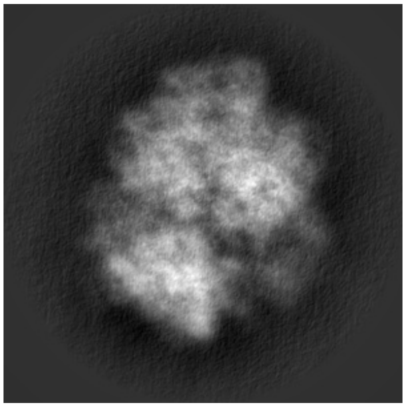

Z

6.1.2 Raw map


X

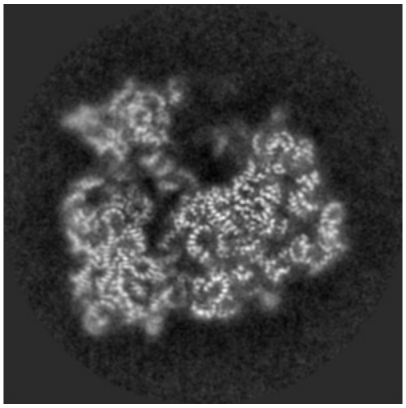

Y


Z

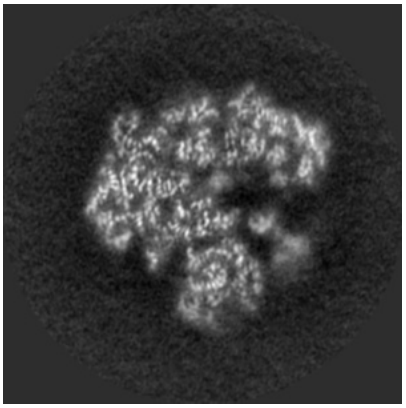
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ

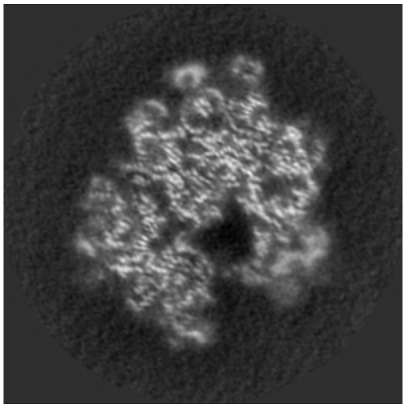
6.2.1 Primary map



X Index: 144

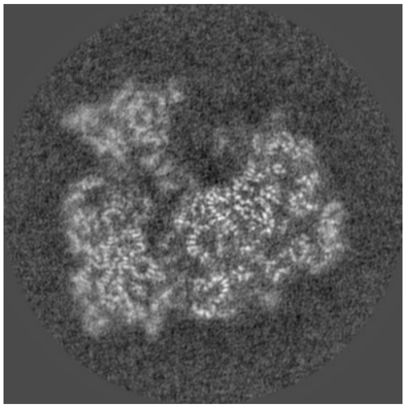


Y Index: 144

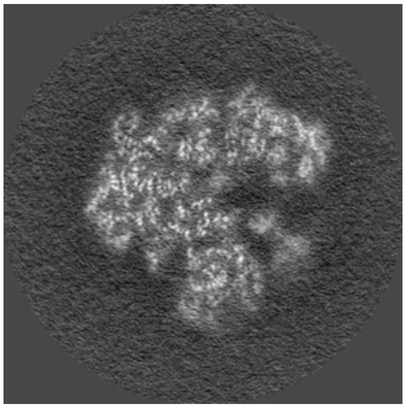


Z Index: 144

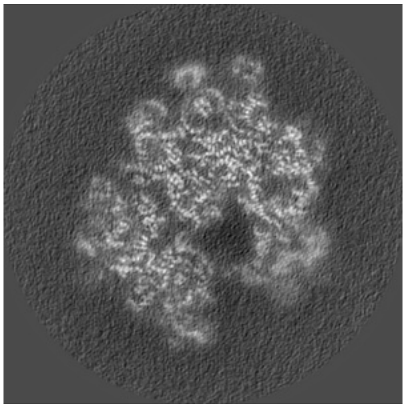
6.2.2 Raw map



X Index: 144



Y Index: 144

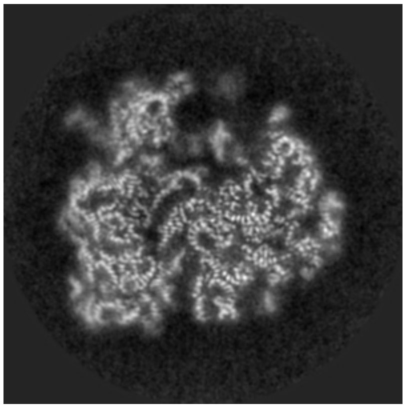


Z Index: 144

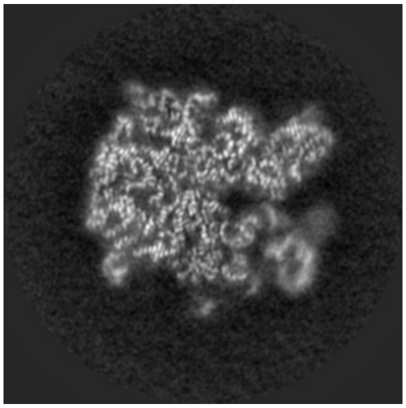
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices

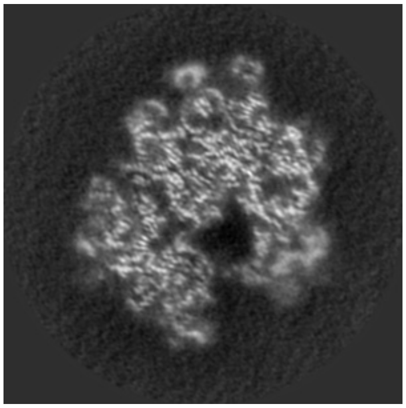
6.3.1 Primary map



X Index: 138

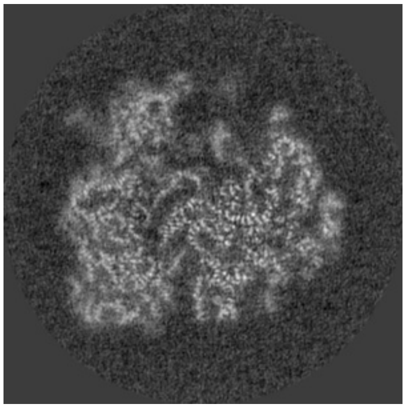


Y Index: 161

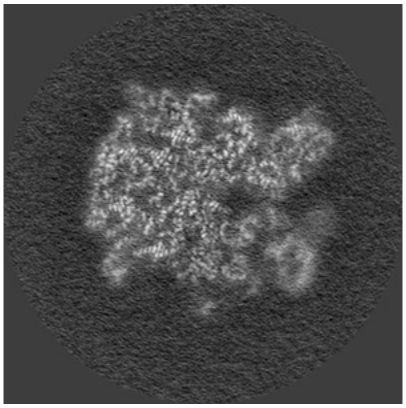


Z Index: 144

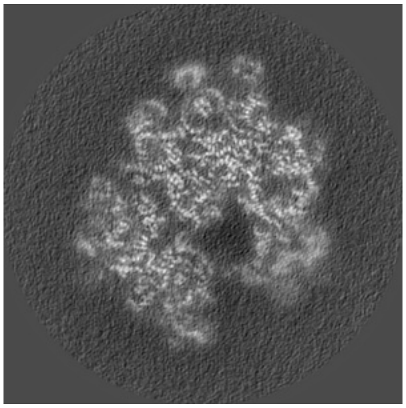
6.3.2 Raw map



X Index: 138



Y Index: 161

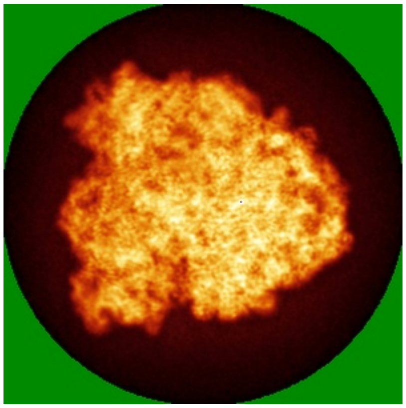


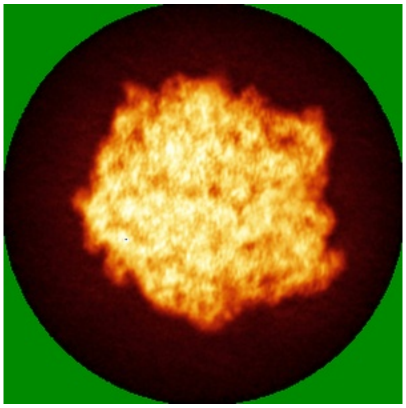
Z Index: 144

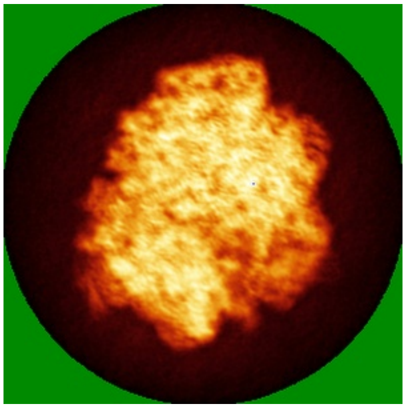
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color)

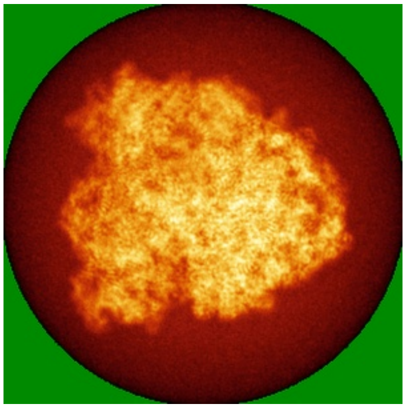
6.4.1 Primary map

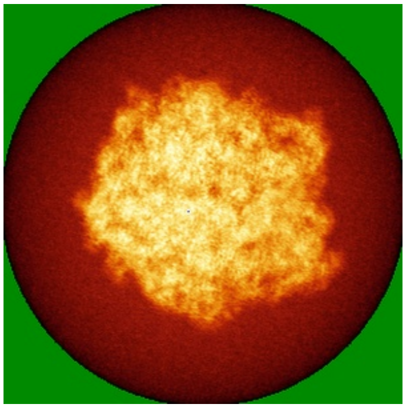

X

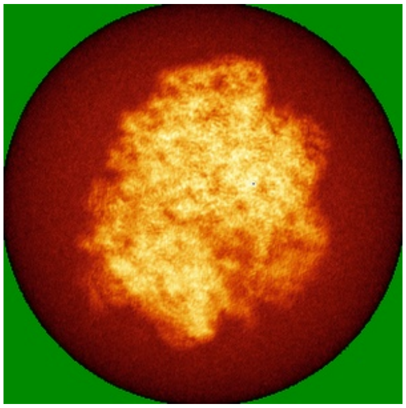

Y


Z

6.4.2 Raw map


X


Y


Z

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

6.5 Orthogonal surface views

6.5.1 Primary map

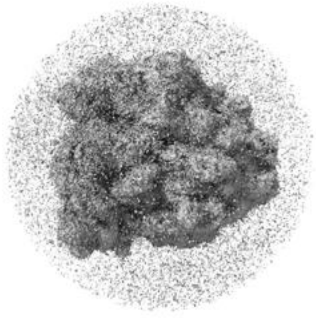

X

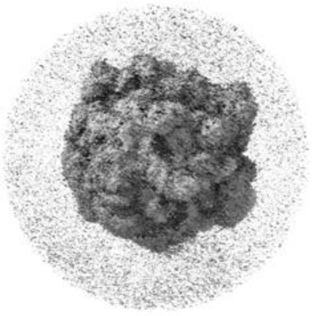

Y

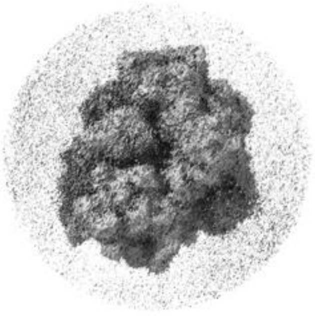

Z

The images above show the 3D surface view of the map at the recommended contour level 0.02. 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.

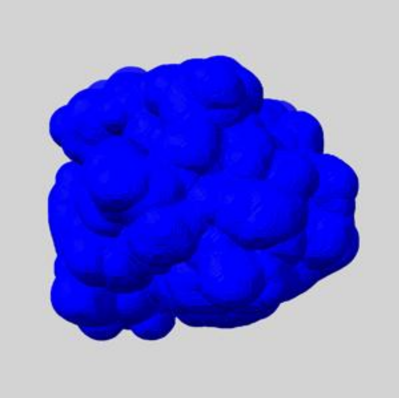
6.6 Mask visualisation ⓘ

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

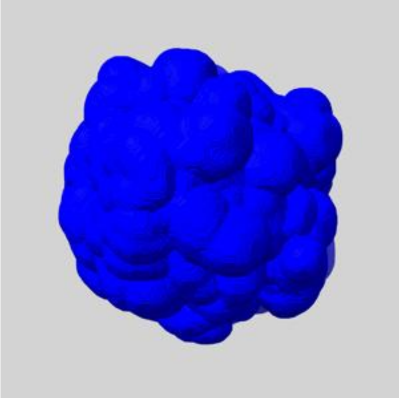
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

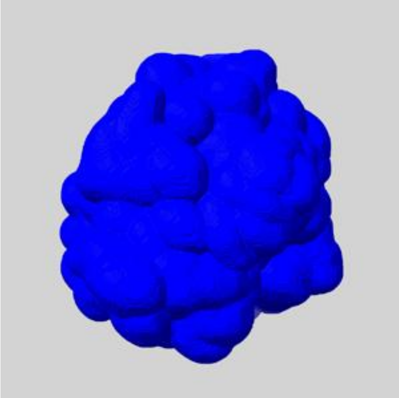
6.6.1 emd_54254_msk_1.map ⓘ



X



Y

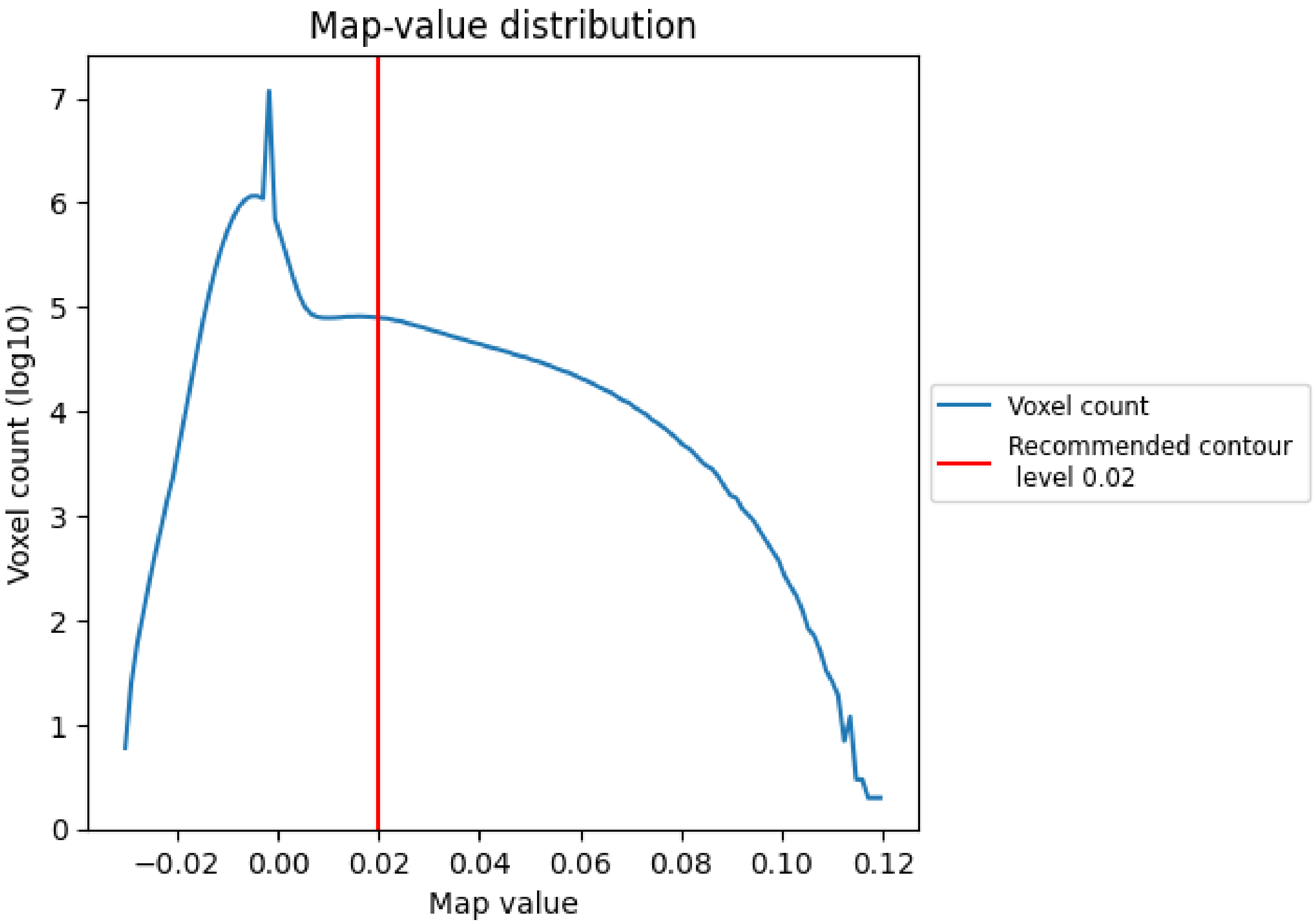


Z

7 Map analysis (i)

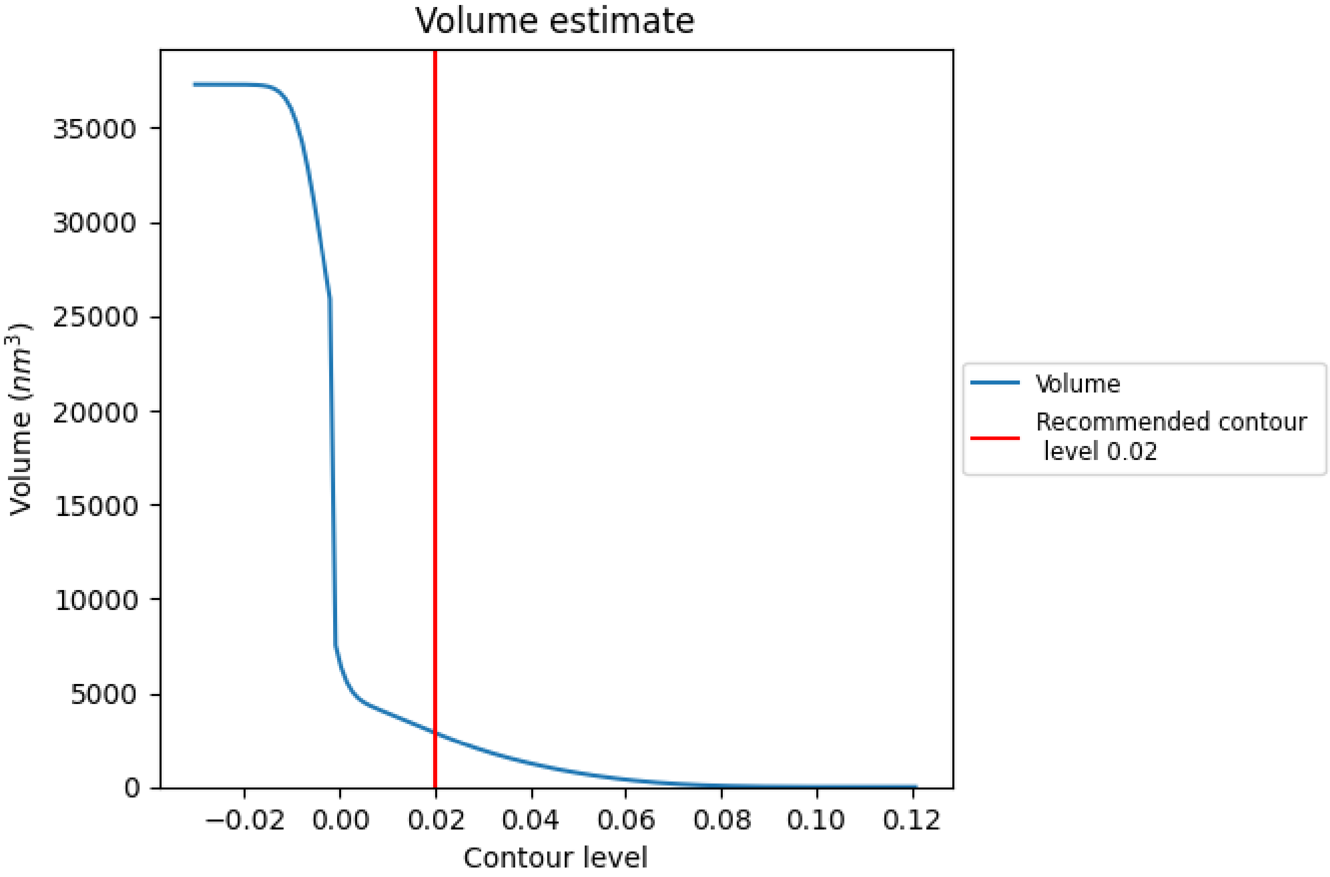
This section contains the results of statistical analysis of the map.

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.

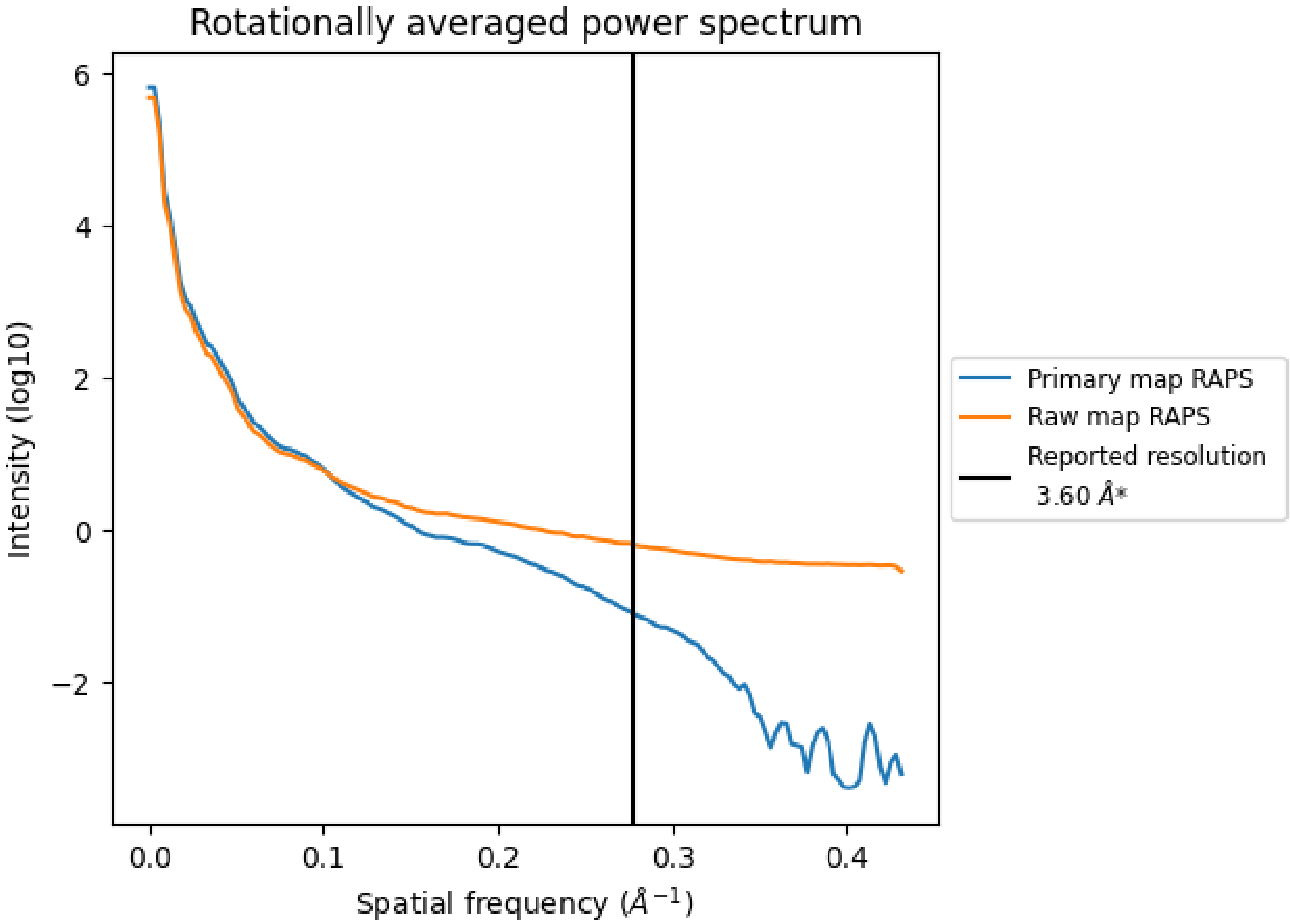
7.2 Volume estimate ⓘ



The volume at the recommended contour level is 2889 nm^3; this corresponds to an approximate mass of 2610 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 ⓘ

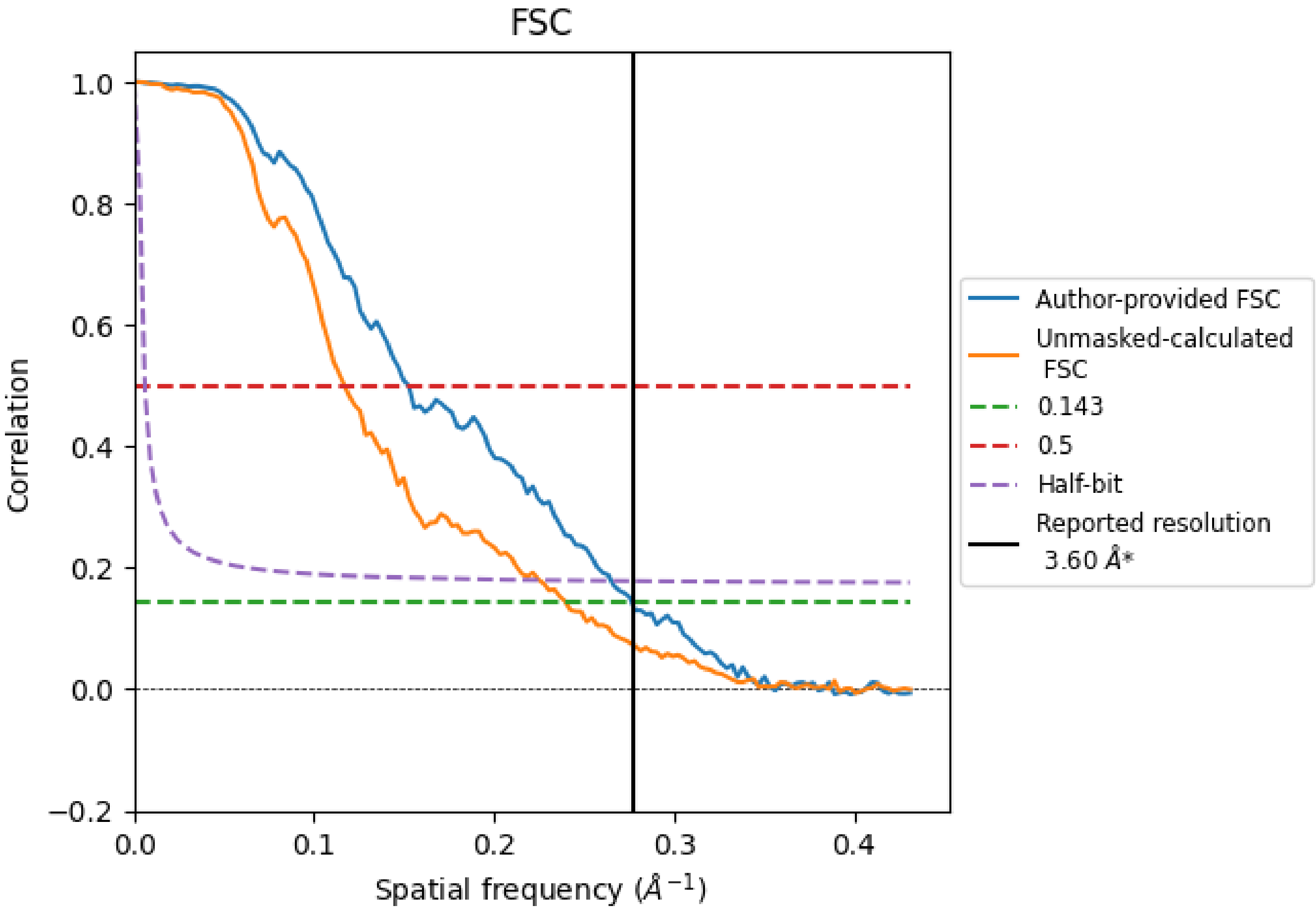


*Reported resolution corresponds to spatial frequency of 0.278 $\AA^{-1}$

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 0.278 Å^{-1}

8.2 Resolution estimates ⓘ

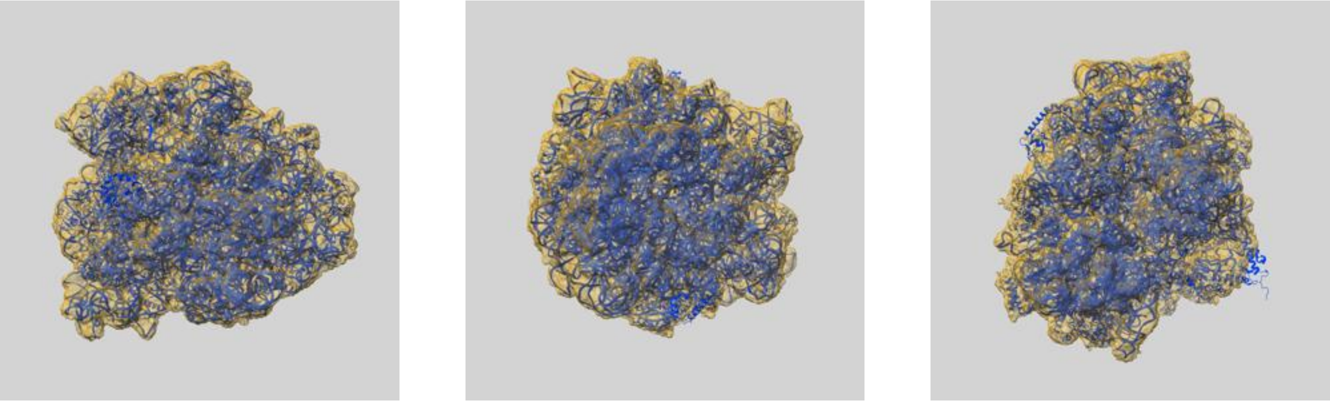
Resolution estimate (Å)	**Estimation criterion (FSC cut-off)**		
	0.143	0.5	Half-bit
Reported by author	3.60	-	-
Author-provided FSC curve	3.62	6.57	3.77
Unmasked-calculated*	4.17	8.55	4.44

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.17 differs from the reported value 3.6 by more than 10 %

9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-54254 and PDB model 9RTV. Per-residue inclusion information can be found in section 3 on page 18.

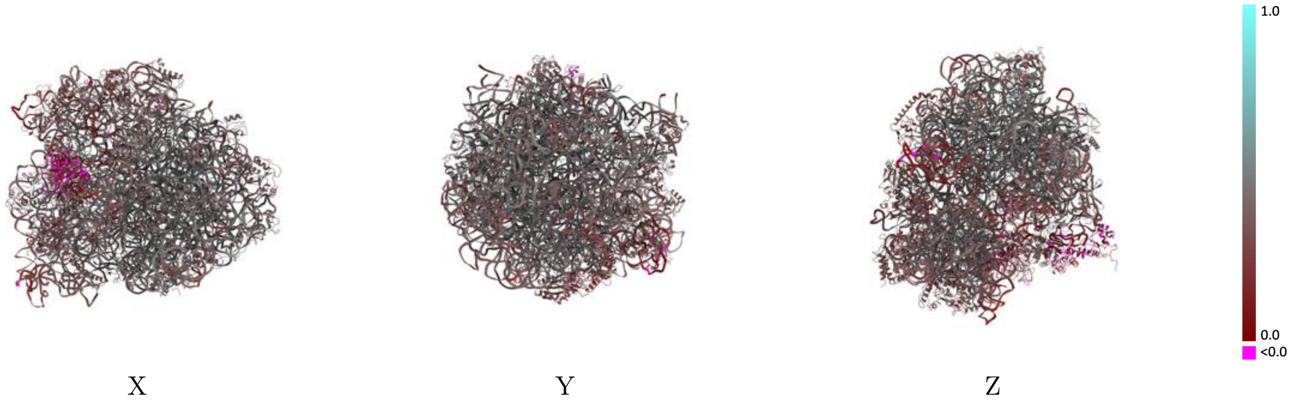
9.1 Map-model overlay ⓘ



X Y Z

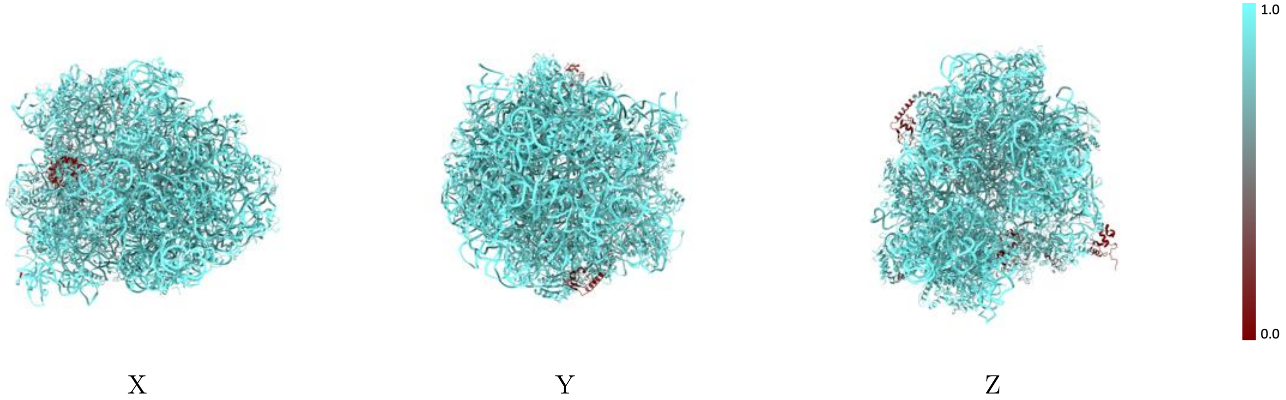
The images above show the 3D surface view of the map at the recommended contour level 0.02 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model ⓘ



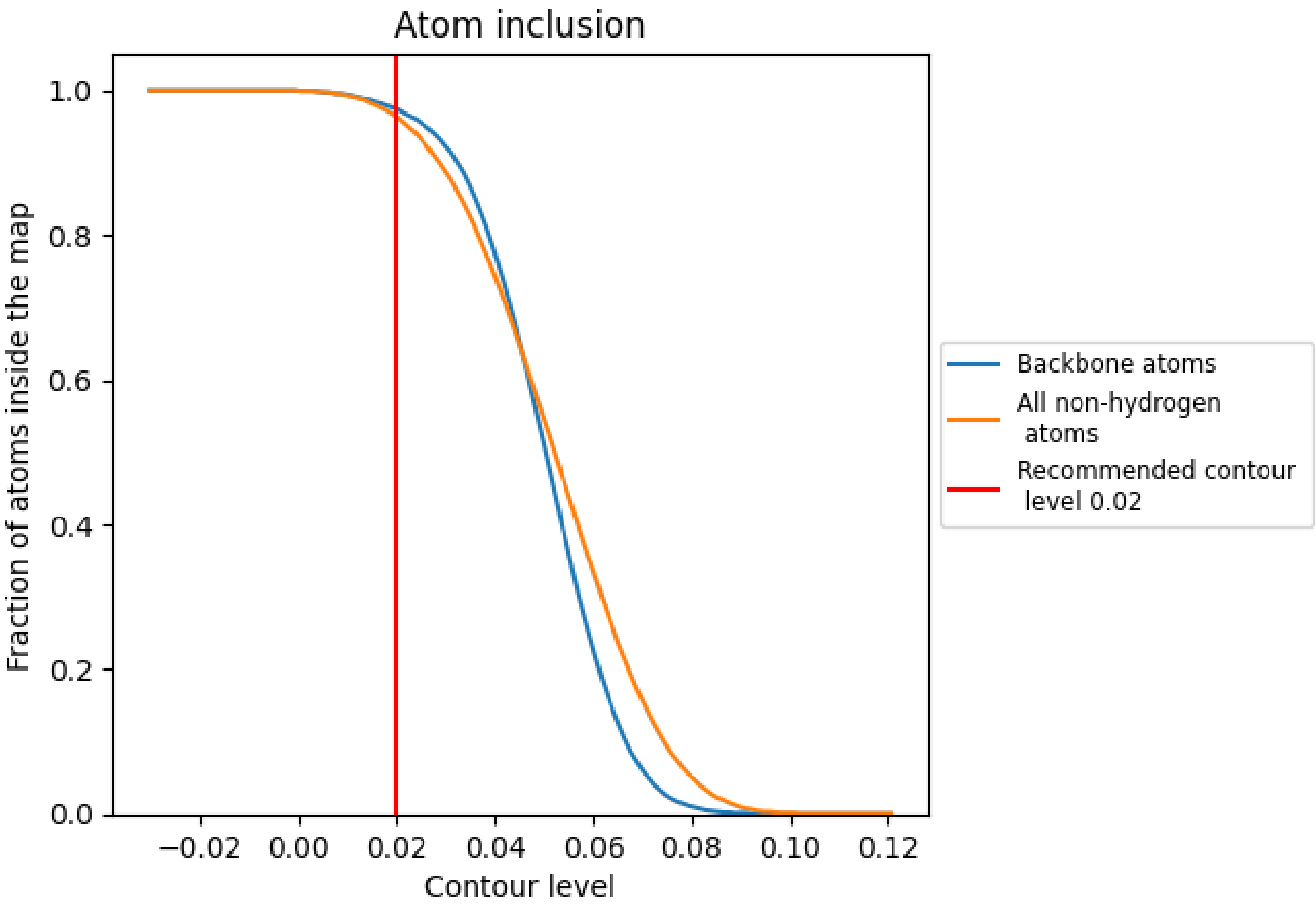
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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



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 (0.02).

9.4 Atom inclusion ⓘ



At the recommended contour level, 97% of all backbone atoms, 96% 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 (0.02) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9630	0.3920
0	0.9490	0.4050
1	0.9750	0.3960
2	0.9720	0.4440
3	0.9490	0.4360
4	0.9900	0.3960
5	0.4190	0.0850
6	0.8910	0.2610
A	0.9960	0.4190
B	0.9960	0.3960
C	0.9500	0.4390
D	0.9440	0.4310
E	0.9380	0.4000
F	0.9210	0.3100
G	0.9360	0.3520
H	0.3470	0.2300
I	0.7600	0.1020
J	0.9740	0.4180
K	0.8590	0.4260
L	0.9580	0.4280
M	0.9370	0.4160
N	0.9840	0.4290
O	0.9910	0.3680
P	0.8930	0.4080
Q	0.9840	0.4100
R	0.9470	0.4110
S	0.9490	0.4130
T	0.9600	0.3770
U	0.9610	0.3700
V	0.9490	0.3950
W	0.9770	0.4280
X	0.9650	0.4120
Y	0.9660	0.3390
Z	0.9220	0.4190
a	0.9960	0.3980

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Chain	Atom inclusion	Q-score
b	🟦 0.8440	🟫 0.3340
c	🟦 0.9370	🟫 0.3620
d	🟦 0.9400	🟫 0.3510
e	🟦 0.9370	🟫 0.3990
f	🟦 0.9220	🟫 0.3290
g	🟦 0.8650	🟫 0.2890
h	🟦 0.9550	🟫 0.4070
i	🟦 0.9690	🟫 0.3390
j	🟦 0.9370	🟫 0.3280
k	🟦 0.9570	🟫 0.3940
l	🟦 0.9000	🟫 0.4210
m	🟦 0.9400	🟫 0.3240
n	🟦 0.9840	🟫 0.3410
o	🟦 0.9620	🟫 0.3720
p	🟦 0.9600	🟫 0.4030
q	🟦 0.9480	🟫 0.3910
r	🟦 0.9730	🟫 0.3520
s	🟦 0.9420	🟫 0.3100
t	🟦 0.9540	🟫 0.3200
u	🟦 0.9400	🟫 0.3530
v	🟦 0.9730	🟫 0.3560
w	🟦 0.9550	🟫 0.2710
x	🟦 0.7660	🟫 0.2850
y	🟦 0.9520	🟫 0.3210
z	🟦 1.0000	🟫 0.3980