wwPDB EM Validation Summary Report

Apr 6, 2026 – 02:28 AM UTC

PDB ID	:	8QK7 / pdb_00008qk7
EMDB ID	:	EMD-18458
Title	:	E167K RF2 on E. coli 70S release complex with UAA
Authors	:	Pundir, S.; Larsson, D.S.D.; Selmer, M.; Sanyal, S.
Deposited on	:	2023-09-14
Resolution	:	2.77 Å(reported)
Based on initial models	:	8B0X, 1GQE, 7K00, 5MDV

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:

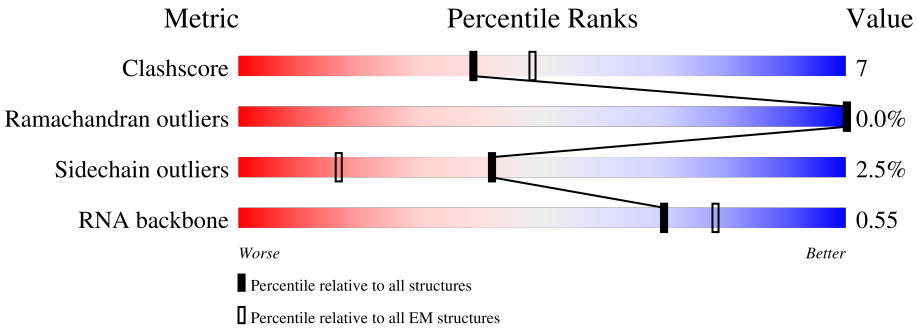
EMDB validation analysis	:	0.0.1.dev132
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

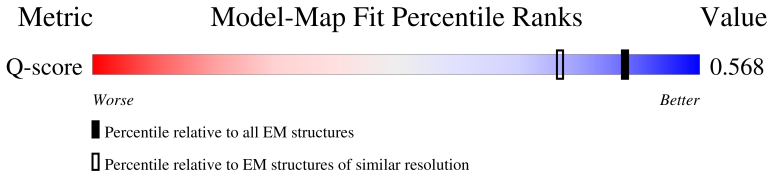
1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.77 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	10695 (2.27 - 3.27)

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	2	1542	54% 39% 6%
2	g	241	75% 17% 7%
3	h	233	79% 10% 10%

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Mol	Chain	Length	Quality of chain
4	i	206	
5	j	167	
6	k	135	
7	l	179	
8	m	130	
9	n	130	
10	o	103	
11	p	129	
12	q	124	
13	r	118	
14	s	101	
15	t	89	
16	u	82	
17	v	84	
18	w	75	
19	x	92	
20	y	87	
21	z	71	
22	4	49	
23	5	76	
24	1	2904	
25	3	120	
26	B	273	
27	C	209	
28	D	201	

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Mol	Chain	Length	Quality of chain
29	E	179	73% 25%
30	F	177	75% 23%
31	J	142	87% 12%
32	K	123	84% 16%
33	L	144	90% 10%
34	M	136	72% 27%
35	N	127	89% 7%
36	O	117	86% 12%
37	P	115	86% 13%
38	Q	118	91% 8%
39	R	103	87% 12%
40	S	110	90% 9%
41	T	100	83% 10% 7%
42	U	104	81% 17%
43	V	94	69% 29%
44	W	85	84% 6% 11%
45	X	78	81% 17%
46	Y	63	84% 14%
47	Z	59	83% 15%
48	b	57	89% 9%
49	c	55	82% 11% 7%
50	d	46	78% 20%
51	e	65	82% 17%
52	f	38	89% 11%
53	a	70	61% 21% 14%

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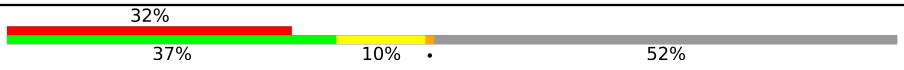
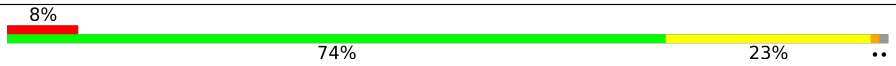
Mol	Chain	Length	Quality of chain
54	I	142	
55	6	365	
56	G	149	

2 Entry composition (i)

There are 62 unique types of molecules in this entry. The entry contains 148642 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 RNA chain called 16S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	2	1536	32966	14711	6044	10675	1536	0	0

- Molecule 2 is a protein called Small ribosomal subunit protein uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	g	224	1753	1109	315	321	8	0	0

- Molecule 3 is a protein called Small ribosomal subunit protein uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	h	210	1648	1043	309	292	4	0	0

- Molecule 4 is a protein called Small ribosomal subunit protein uS4.

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

- Molecule 5 is a protein called Small ribosomal subunit protein uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	j	156	1152	717	217	212	6	0	0

- Molecule 6 is a protein called Small ribosomal subunit protein bS6, fully modified isoform.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	k	103	839	530	151	151	7	0	0

- Molecule 7 is a protein called Small ribosomal subunit protein uS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	l	154	Total	C	N	O	S	0	0
			1214	756	235	219	4		

- Molecule 8 is a protein called Small ribosomal subunit protein uS8.

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

- Molecule 9 is a protein called Small ribosomal subunit protein uS9.

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

- Molecule 10 is a protein called Small ribosomal subunit protein uS10.

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

- Molecule 11 is a protein called Small ribosomal subunit protein uS11.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	p	117	Total	C	N	O	S	0	0
			877	540	173	161	3		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
p	119	IAS	ASN	variant	UNP P0A7R9

- Molecule 12 is a protein called Small ribosomal subunit protein uS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	q	123	Total	C	N	O	S	0	0
			957	591	196	165	5		

- Molecule 13 is a protein called Small ribosomal subunit protein uS13.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	r	115	Total	C	N	O	S	0	0
			891	552	179	157	3		

- Molecule 14 is a protein called Small ribosomal subunit protein uS14.

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

- Molecule 15 is a protein called Small ribosomal subunit protein uS15.

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

- Molecule 16 is a protein called Small ribosomal subunit protein bS16.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	u	81	Total	C	N	O	S	0	0
			643	403	127	112	1		

- Molecule 17 is a protein called Small ribosomal subunit protein uS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	v	79	Total	C	N	O	S	0	0
			641	406	120	112	3		

- Molecule 18 is a protein called Small ribosomal subunit protein bS18.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	w	66	Total	C	N	O	S	0	0
			544	345	102	96	1		

- Molecule 19 is a protein called Small ribosomal subunit protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	x	84	Total	C	N	O	S	0	0
			668	427	127	112	2		

- Molecule 20 is a protein called Small ribosomal subunit protein bS20.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	y	86	Total	C	N	O	S	0	0
			670	414	138	115	3		

- Molecule 21 is a protein called Small ribosomal subunit protein bS21.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	z	70	Total	C	N	O	S	0	0
			589	366	125	97	1		

- Molecule 22 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	4	26	Total	C	N	O	P	0	0
			560	251	104	179	26		

- Molecule 23 is a RNA chain called tRNA(fMet).

Mol	Chain	Residues	Atoms					AltConf	Trace
23	5	76	Total	C	N	O	P	2	0
			1665	742	302	543	78		

- Molecule 24 is a RNA chain called 23S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	1	2899	Total	C	N	O	P	0	0
			62252	27778	11456	20119	2899		

- Molecule 25 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	3	119	Total	C	N	O	P	0	0
			2549	1135	466	829	119		

- Molecule 26 is a protein called Large ribosomal subunit protein uL2.

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

- Molecule 27 is a protein called Large ribosomal subunit protein uL3.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	C	209	Total	C	N	O	S	0	0
			1566	980	288	294	4		

- Molecule 28 is a protein called Large ribosomal subunit protein uL4.

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

- Molecule 29 is a protein called Large ribosomal subunit protein uL5.

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

- Molecule 30 is a protein called Large ribosomal subunit protein uL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	F	175	Total	C	N	O	S	0	0
			1313	826	241	244	2		

- Molecule 31 is a protein called Large ribosomal subunit protein uL13.

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

- Molecule 32 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	K	123	Total	C	N	O	S	0	0
			946	593	181	166	6		

- Molecule 33 is a protein called 50S ribosomal protein L15.

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

- Molecule 34 is a protein called Large ribosomal subunit protein uL16.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	M	136	Total	C	N	O	S	0	0
			1075	686	205	177	7		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
M	82	MS6	MET	variant	UNP P0ADY7

- Molecule 35 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	N	118	Total	C	N	O	S	0	0
			945	585	194	161	5		

- Molecule 36 is a protein called 50S ribosomal protein L18.

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

- Molecule 37 is a protein called 50S ribosomal protein L19.

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

- Molecule 38 is a protein called 50S ribosomal protein L20.

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

- Molecule 39 is a protein called 50S ribosomal protein L21.

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

- Molecule 40 is a protein called 50S ribosomal protein L22.

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

- Molecule 41 is a protein called 50S ribosomal protein L23.

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

- Molecule 42 is a protein called 50S ribosomal protein L24.

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

- Molecule 43 is a protein called 50S ribosomal protein L25.

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

- Molecule 44 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	W	76	Total	C	N	O	S	0	0
			582	360	117	104	1		

- Molecule 45 is a protein called 50S ribosomal protein L28.

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

- Molecule 46 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	Y	62	Total	C	N	O	S	0	0
			501	308	98	94	1		

- Molecule 47 is a protein called 50S ribosomal protein L30.

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

- Molecule 48 is a protein called 50S ribosomal protein L32.

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

- Molecule 49 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
49	c	51	Total	C	N	O	0	0
			417	269	76	72		

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

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

- Molecule 51 is a protein called 50S ribosomal protein L35.

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

- Molecule 52 is a protein called 50S ribosomal protein L36.

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

- Molecule 53 is a protein called Large ribosomal subunit protein bL31A.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	a	60	Total	C	N	O	S	0	0
			480	299	90	85	6		

- Molecule 54 is a protein called Large ribosomal subunit protein uL11.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	I	68	Total 484	C 298	N 89	O 94	S 3	0	0

- Molecule 55 is a protein called Peptide chain release factor RF2.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	6	361	Total 2855	C 1757	N 501	O 587	S 10	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
6	167	LYS	GLU	engineered mutation	UNP P07012

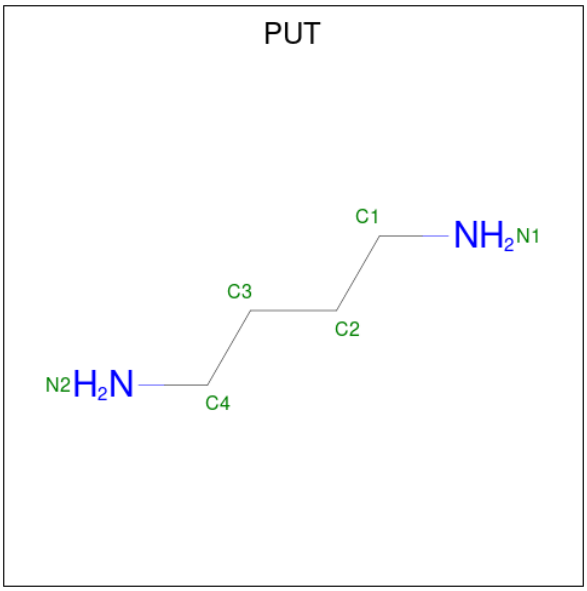
- Molecule 56 is a protein called Large ribosomal subunit protein bL9.

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

- Molecule 57 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
57	2	90	Total 90	Mg 90	0
57	5	2	Total 2	Mg 2	0
57	1	232	Total 232	Mg 232	0
57	3	5	Total 5	Mg 5	0
57	C	1	Total 1	Mg 1	0
57	Q	1	Total 1	Mg 1	0
57	b	1	Total 1	Mg 1	0

- Molecule 58 is 1,4-DIAMINOBUTANE (CCD ID: PUT) (formula: $C_4H_{12}N_2$).



Mol	Chain	Residues	Atoms	AltConf
58	2	1	Total C N 6 4 2	0
58	2	1	Total C N 6 4 2	0
58	2	1	Total C N 6 4 2	0
58	2	1	Total C N 6 4 2	0
58	2	1	Total C N 6 4 2	0
58	1	1	Total C N 6 4 2	0
58	1	1	Total C N 6 4 2	0
58	1	1	Total C N 6 4 2	0
58	1	1	Total C N 6 4 2	0
58	1	1	Total C N 6 4 2	0
58	1	1	Total C N 6 4 2	0
58	1	1	Total C N 6 4 2	0
58	1	1	Total C N 6 4 2	0
58	1	1	Total C N 6 4 2	0

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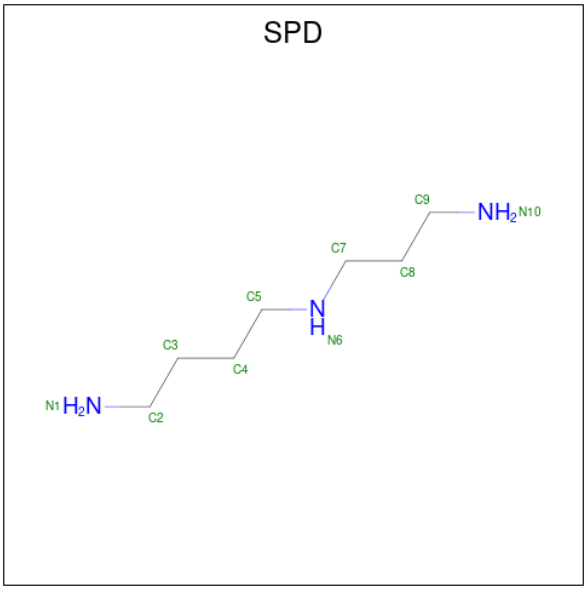
Mol	Chain	Residues	Atoms	AltConf
58	1	1	Total C N 6 4 2	0
58	1	1	Total C N 6 4 2	0
58	1	1	Total C N 6 4 2	0
58	1	1	Total C N 6 4 2	0
58	1	1	Total C N 6 4 2	0
58	1	1	Total C N 6 4 2	0
58	C	1	Total C N 6 4 2	0

- Molecule 59 is POTASSIUM ION (CCD ID: K) (formula: K).

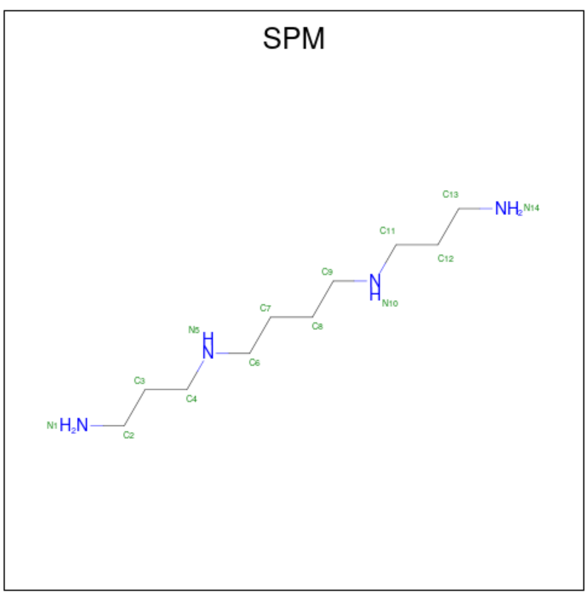
Mol	Chain	Residues	Atoms	AltConf
59	2	34	Total K 34 34	0
59	1	92	Total K 92 92	0

- Molecule 60 is SPERMIDINE (CCD ID: SPD) (formula: $C_7H_{19}N_3$).



Mol	Chain	Residues	Atoms			AltConf
60	1	1	Total 10	C 7	N 3	0
60	1	1	Total 10	C 7	N 3	0
60	1	1	Total 10	C 7	N 3	0
60	1	1	Total 10	C 7	N 3	0
60	1	1	Total 10	C 7	N 3	0
60	1	1	Total 10	C 7	N 3	0
60	1	1	Total 10	C 7	N 3	0
60	1	1	Total 10	C 7	N 3	0
60	1	1	Total 10	C 7	N 3	0
60	1	1	Total 10	C 7	N 3	0

- Molecule 61 is SPERMINE (CCD ID: SPM) (formula: $C_{10}H_{26}N_4$).



Mol	Chain	Residues	Atoms			AltConf
61	1	1	Total 14	C 10	N 4	0
61	1	1	Total 14	C 10	N 4	0

- Molecule 62 is ZINC ION (CCD ID: ZN) (formula: Zn).

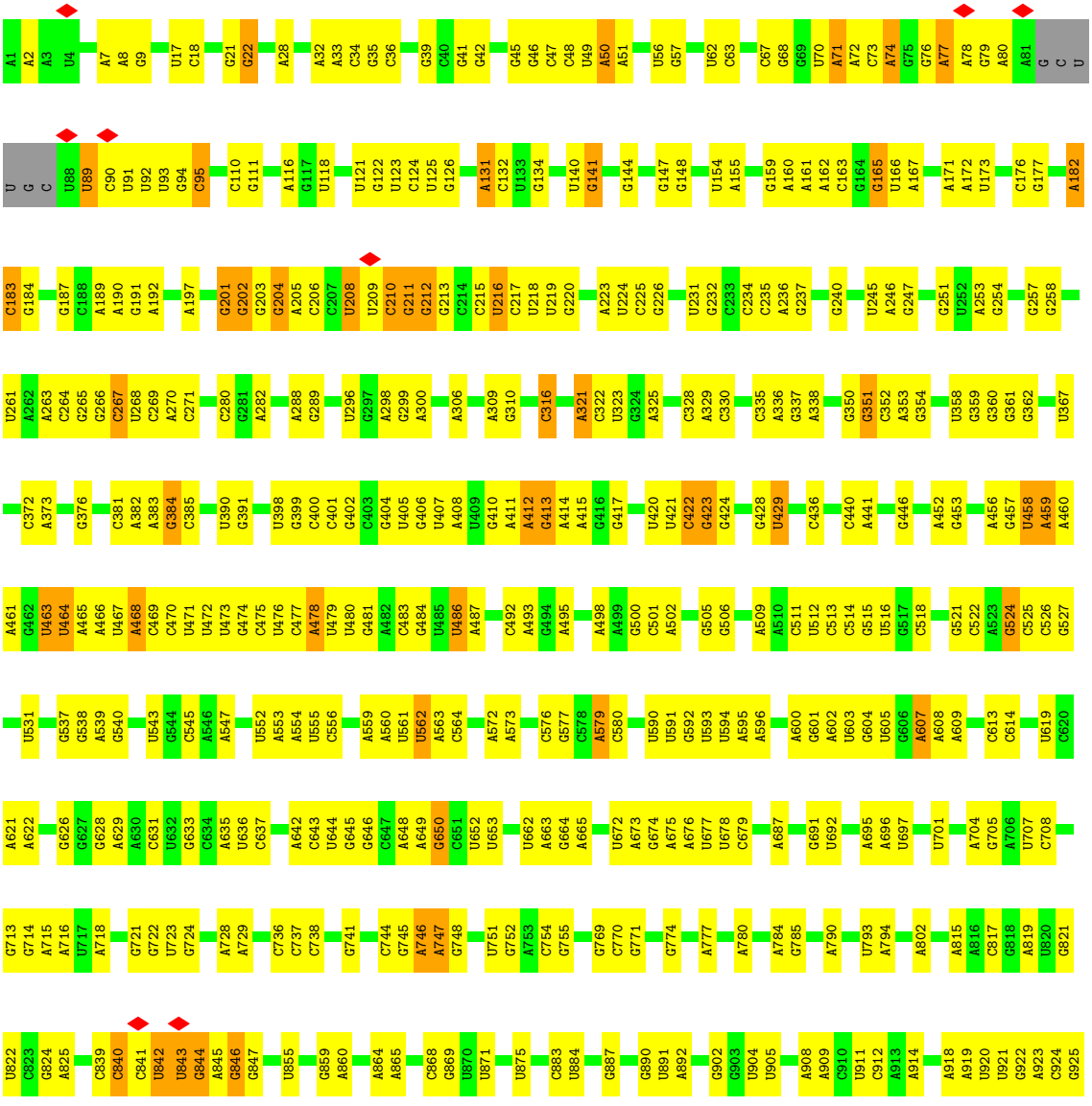
Mol	Chain	Residues	Atoms	AltConf
62	f	1	Total Zn 1 1	0
62	a	1	Total Zn 1 1	0

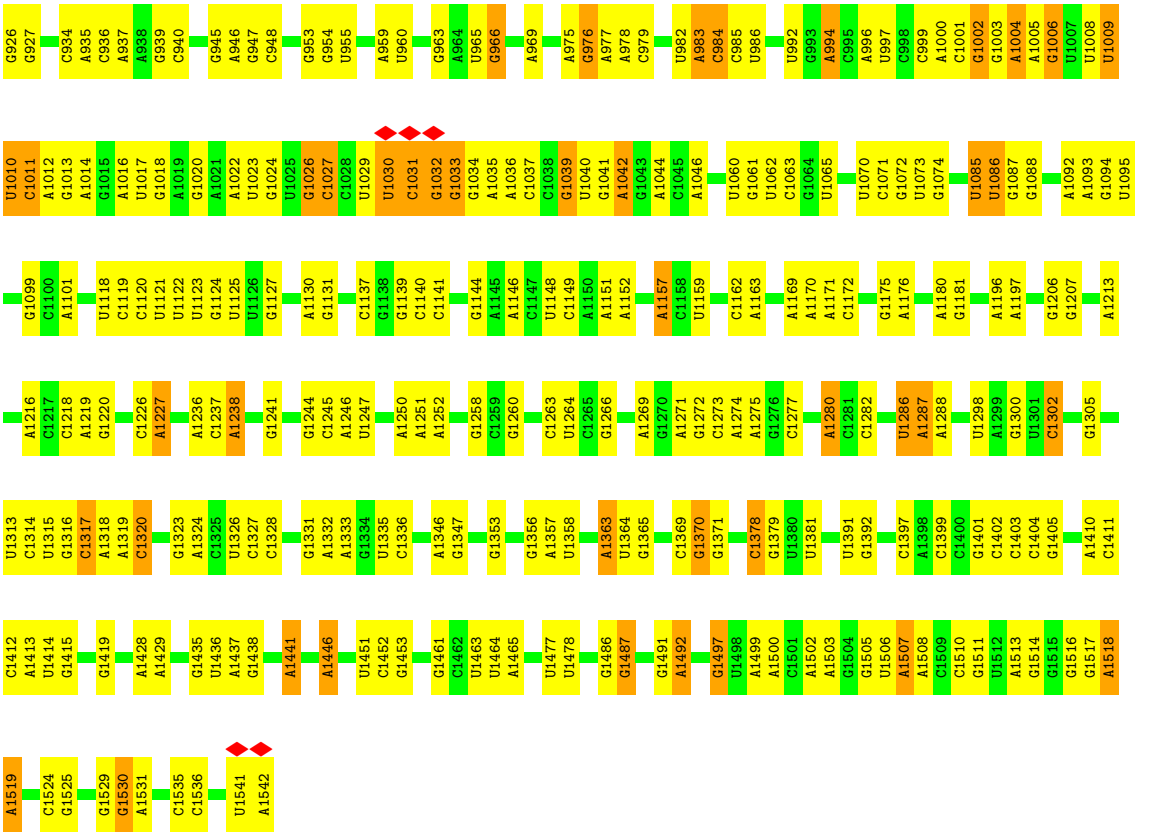
3 Residue-property plots (i)

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

- Molecule 1: 16S rRNA

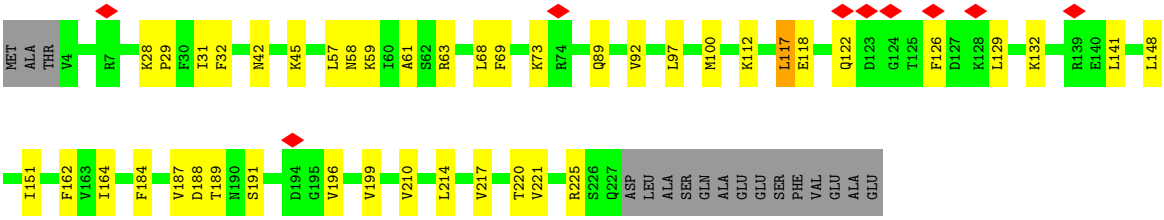
Chain 2:





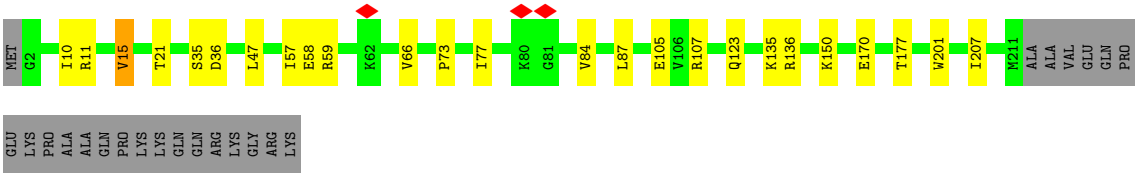
• Molecule 2: Small ribosomal subunit protein uS2

Chain g:



• Molecule 3: Small ribosomal subunit protein uS3

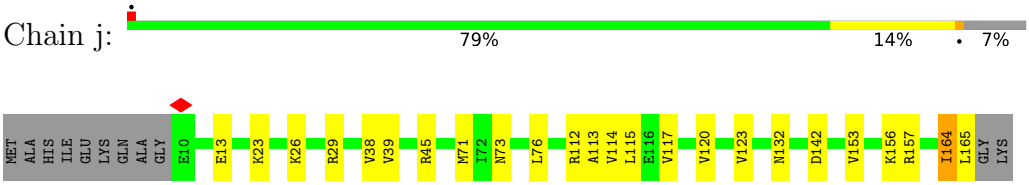
Chain h:



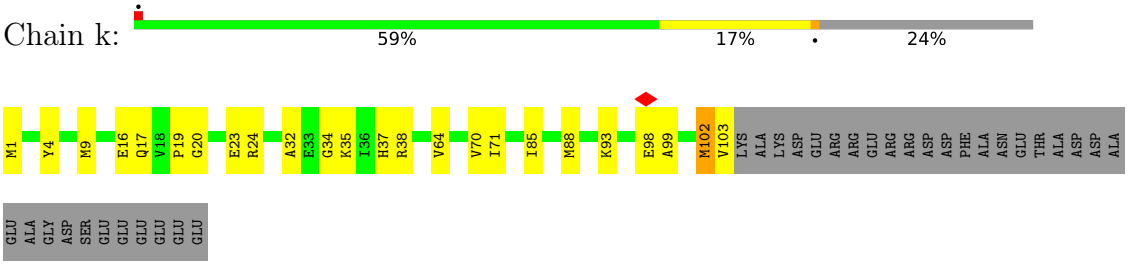
• Molecule 4: Small ribosomal subunit protein uS4

Chain i:

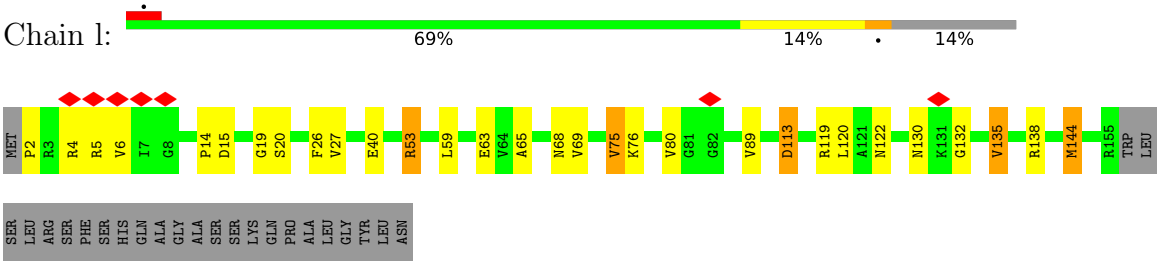
• Molecule 5: Small ribosomal subunit protein uS5



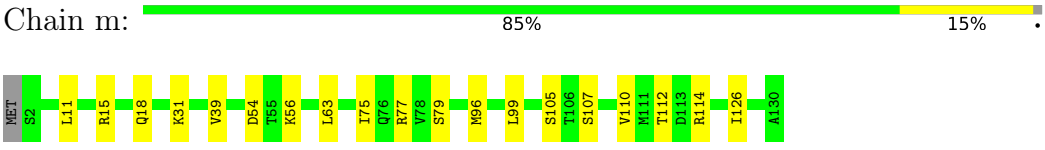
• Molecule 6: Small ribosomal subunit protein bS6, fully modified isoform



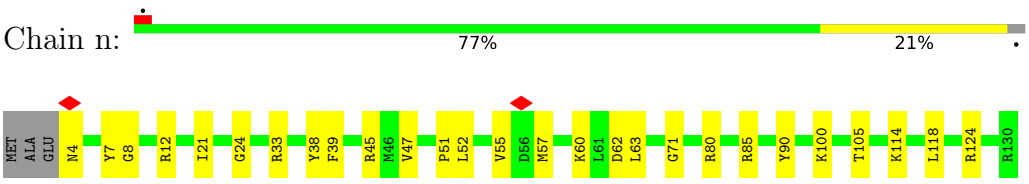
• Molecule 7: Small ribosomal subunit protein uS7



• Molecule 8: Small ribosomal subunit protein uS8

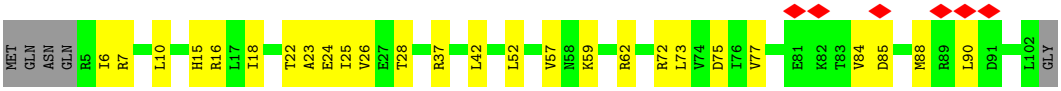


• Molecule 9: Small ribosomal subunit protein uS9



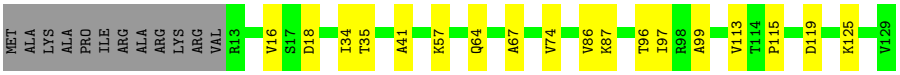
• Molecule 10: Small ribosomal subunit protein uS10

Chain o:



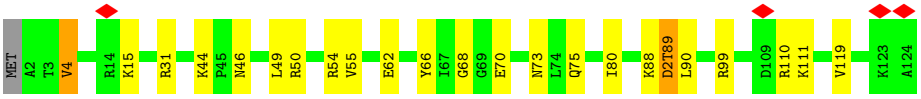
• Molecule 11: Small ribosomal subunit protein uS11

Chain p:



• Molecule 12: Small ribosomal subunit protein uS12

Chain q:

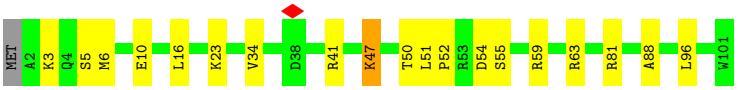


• Molecule 13: Small ribosomal subunit protein uS13

Chain r:

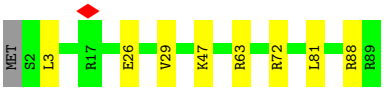
• Molecule 14: Small ribosomal subunit protein uS14

Chain s:



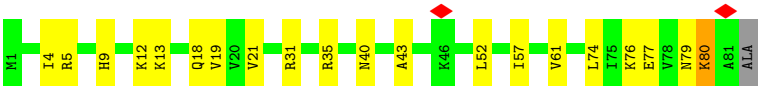
• Molecule 15: Small ribosomal subunit protein uS15

Chain t:



• Molecule 16: Small ribosomal subunit protein bS16

Chain u:

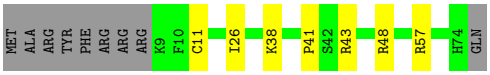


• Molecule 17: Small ribosomal subunit protein uS17

Chain v:

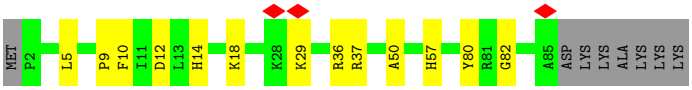
• Molecule 18: Small ribosomal subunit protein bS18

Chain w:



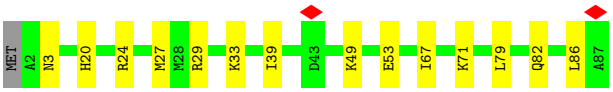
• Molecule 19: Small ribosomal subunit protein uS19

Chain x:



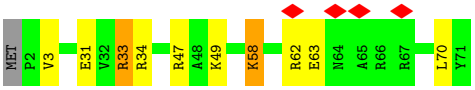
• Molecule 20: Small ribosomal subunit protein bS20

Chain y:



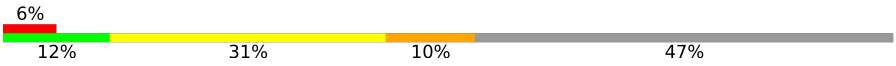
• Molecule 21: Small ribosomal subunit protein bS21

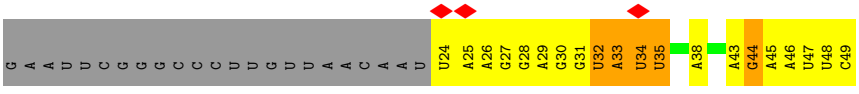
Chain z:



• Molecule 22: mRNA

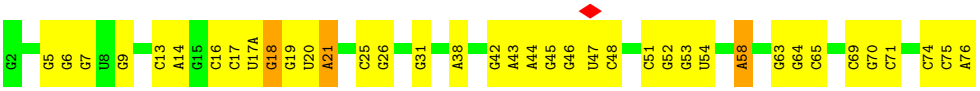
Chain 4:





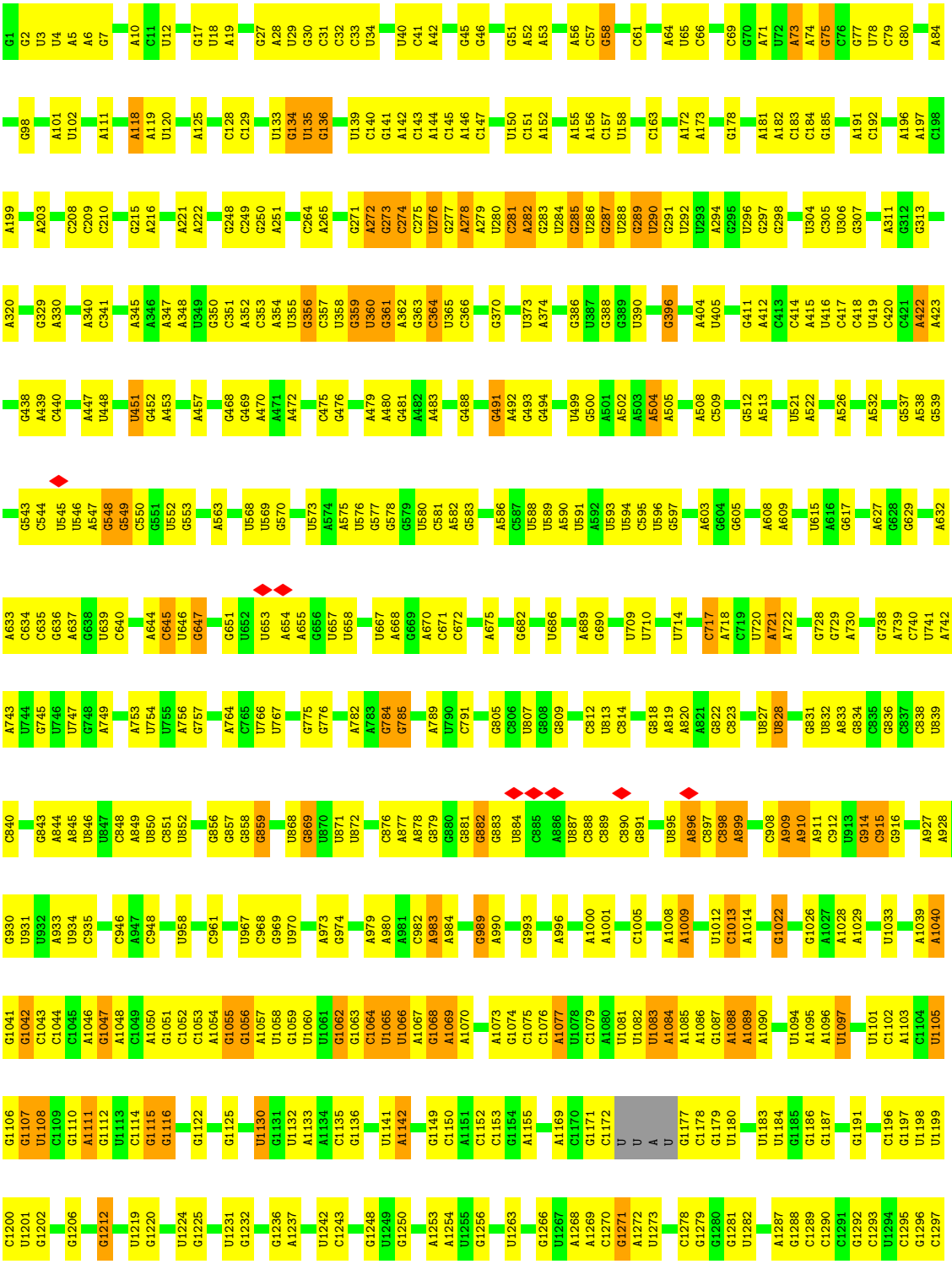
• Molecule 23: tRNA(fMet)

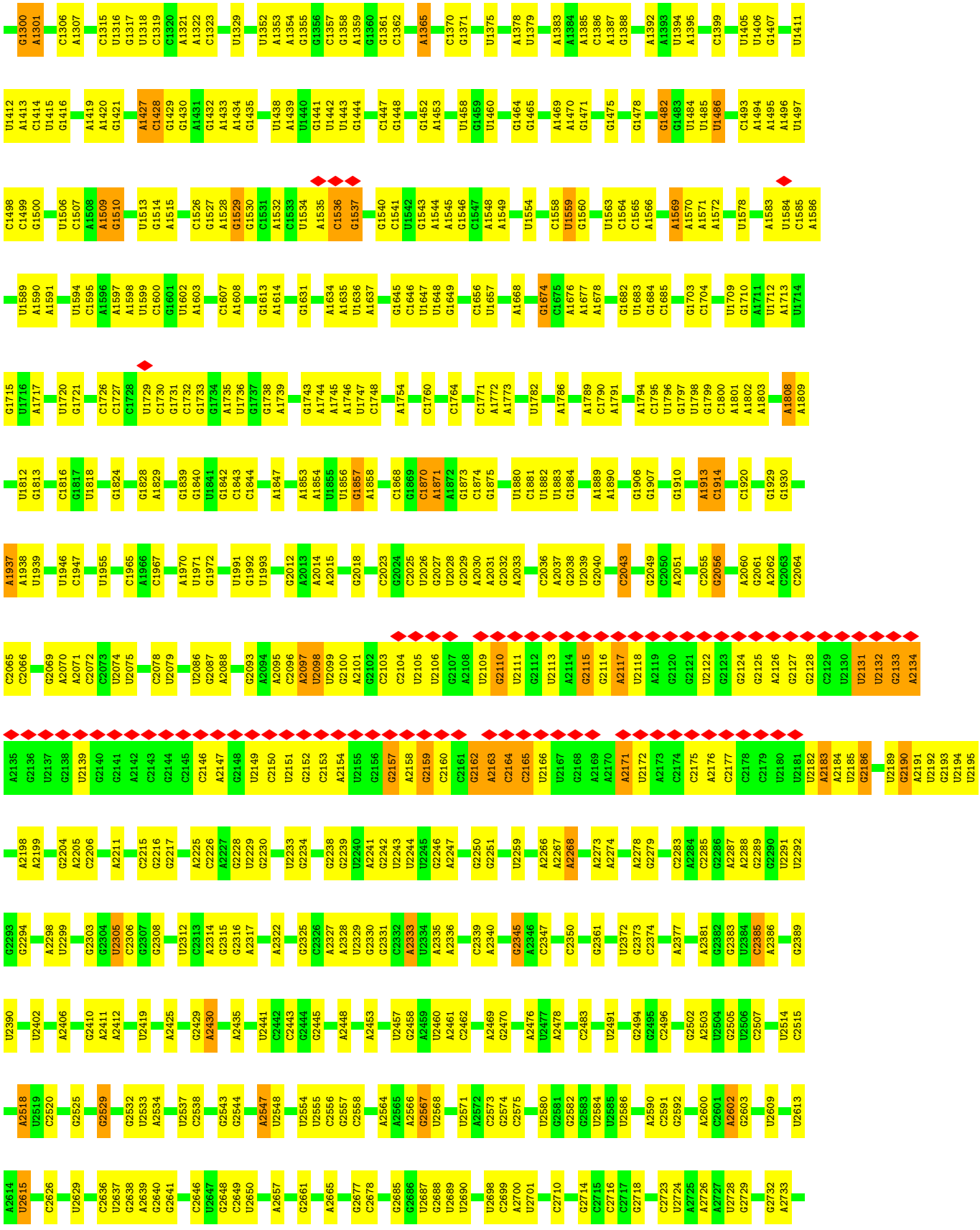
Chain 5:

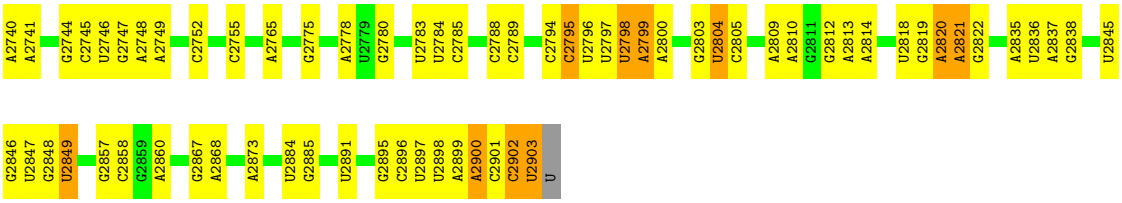


• Molecule 24: 23S rRNA

Chain 1:

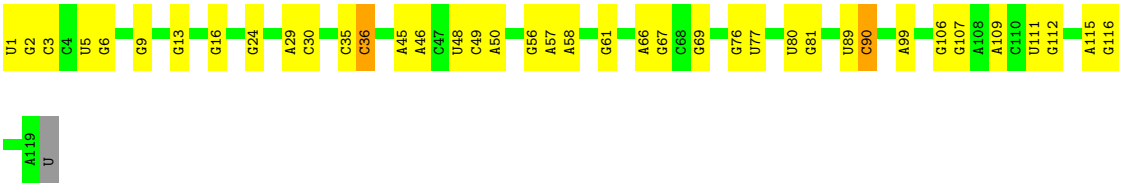



G1300 A1301 C1306 A1307 C1315 U1316 G1317 U1318 C1319 C1320 A1321 A1322 C1323 U1329 U1352 A1353 A1354 G1355 G1356 C1357 G1358 A1359 G1360 G1361 C1362 A1365 C1370 G1371 U1375 A1378 U1379 A1383 A1384 A1385 C1386 A1387 G1388 A1392 A1393 U1394 A1395 C1399 U1405 U1406 G1407 U1411
U1412 A1413 C1414 U1415 G1416 A1419 A1420 G1421 A1427 C1428 G1429 G1430 A1431 A1433 A1434 G1435 U1438 A1439 U1440 G1441 U1442 U1443 G1444 C1447 G1448 G1452 A1453 U1458 G1459 U1460 G1464 G1465 A1469 A1470 G1471 G1475 G1478 G1482 G1483 U1484 U1485 U1486 C1493 A1494 A1495 A1496 U1497
C1498 C1499 G1500 U1506 C1507 A1508 A1509 G1510 U1513 G1514 A1515 C1526 G1527 A1528 G1529 G1530 C1531 A1532 C1533 U1534 A1535 C1536 G1537 G1540 C1541 U1542 G1543 A1544 A1545 G1546 C1547 A1548 A1549 U1554 C1558 U1559 G1560 U1563 C1564 C1565 A1566 A1569 A1570 A1571 A1572 U1578 A1583 U1584 C1585 A1586
U1589 A1590 A1591 U1594 C1595 A1596 A1597 A1598 U1599 C1600 G1601 U1602 A1603 C1607 A1608 G1613 A1614 G1631 A1634 A1635 U1636 A1637 G1645 C1646 U1647 U1648 G1649 C1656 U1657 A1668 G1674 C1675 A1676 A1677 A1678 G1682 U1683 G1684 C1685 G1703 C1704 U1709 G1710 A1711 U1712 A1713 U1714
G1715 U1716 A1717 U1720 G1721 C1726 C1727 C1728 U1729 C1730 G1731 C1732 G1733 G1734 A1735 U1736 G1737 G1738 A1739 G1743 A1744 A1745 A1746 U1747 C1748 A1764 C1760 C1764 C1771 A1772 A1773 U1782 A1786 A1789 C1790 A1791 A1794 C1795 U1796 G1797 U1798 G1799 C1800 A1801 A1802 A1803 A1808 A1809
U1812 G1813 C1816 G1817 U1818 G1824 G1828 A1829 G1839 C1840 U1841 G1842 C1843 C1844 A1847 A1853 A1854 U1855 U1856 G1857 A1858 C1868 G1869 C1870 A1871 A1872 G1873 C1874 G1875 U1880 C1881 U1882 U1883 G1884 A1889 A1890 G1906 G1907 G1910 A1913 C1914 C1920 G1929 G1930
A1937 A1938 U1939 U1946 C1947 U1955 C1965 A1966 C1967 A1970 U1971 G1972 U1991 G1992 U1993 G2012 A2013 A2014 A2015 G2018 C2023 G2024 C2025 U2026 G2027 U2028 G2029 A2030 A2031 G2032 A2033 C2036 A2037 G2038 U2039 G2040 C2043 G2049 C2050 A2051 C2055 G2056 A2060 G2061 A2062 C2063 C2064
C2065 C2066 G2069 A2070 A2071 C2072 C2073 U2074 U2075 C2078 U2079 U2086 G2087 A2088 G2093 A2094 A2095 C2096 A2097 U2098 U2099 G2100 A2101 G2102 C2103 C2104 U2105 U2106 G2107 A2108 U2109 G2110 U2111 G2112 U2113 A2114 G2115 G2116 A2117 U2118 A2119 G2120 G2121 U2122 G2123 G2124 G2125 A2126 G2127 G2128 C2129 U2130 U2131 U2132 G2133 A2134
A2135 G2136 U2137 G2138 U2139 G2140 G2141 A2142 C2143 G2144 C2145 C2146 A2147 G2148 U2149 C2150 U2151 G2152 C2153 A2154 U2155 G2156 G2157 A2158 G2159 C2160 C2161 G2162 A2163 C2164 C2165 U2166 U2167 G2168 A2169 A2170 A2171 U2172 A2173 C2174 C2175 A2176 C2177 C2178 C2179 U2180 U2181 U2182 A2183 A2184 U2185 G2186 U2189 G2190 A2191 U2192 G2193 U2194 U2195
A2198 A2199 G2204 A2205 C2206 A2211 C2215 G2216 G2217 A2225 C2226 A2227 G2228 U2229 G2230 U2233 G2234 G2238 G2239 U2240 A2241 G2242 U2243 U2244 U2245 G2246 A2247 G2250 G2251 U2259 A2266 A2267 A2268 A2273 A2274 A2278 G2279 C2283 A2284 C2285 G2286 A2287 A2288 C2289 G2290 U2291 U2292
G2293 G2294 A2298 U2299 G2303 G2304 U2305 C2306 G2307 G2308 U2312 C2313 A2314 G2315 G2316 A2317 A2322 G2325 C2326 A2327 A2328 U2329 G2330 G2331 C2332 A2333 U2334 A2335 A2336 C2339 A2340 G2345 A2346 C2347 C2350 G2361 U2372 G2373 C2374 A2377 A2381 G2382 G2383 U2384 C2385 A2386 G2389
U2390 U2402 A2406 G2410 A2411 A2412 U2419 A2425 G2429 A2430 A2435 U2441 C2442 C2443 G2444 G2445 A2448 A2453 U2457 G2458 A2459 U2460 A2461 C2462 A2469 G2470 A2476 U2477 A2478 C2483 U2491 G2494 G2495 C2496 G2502 A2503 U2504 G2505 U2506 C2507 U2514 C2515
A2518 U2519 C2520 G2525 G2529 G2532 U2533 A2534 U2537 C2538 G2543 G2544 A2547 U2548 U2554 U2555 C2556 C2557 C2558 A2564 A2565 A2566 G2567 U2568 U2571 A2572 C2573 C2574 C2575 U2580 G2581 G2582 G2583 U2584 U2585 U2586 A2590 C2591 G2592 A2600 C2601 A2602 G2603 U2609 U2613
A2614 U2615 C2626 U2629 C2636 U2637 G2638 A2639 G2640 G2641 C2646 U2647 G2648 C2649 U2650 A2657 G2661 A2665 G2677 C2678 G2685 G2686 U2687 G2688 U2689 U2690 U2698 C2699 A2700 U2701 C2710 G2714 G2715 C2716 C2717 G2718 C2723 U2724 A2725 A2726 A2727 U2728 G2729 G2732 A2733



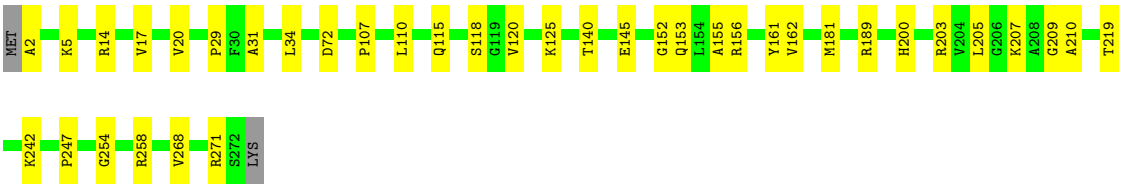
• Molecule 25: 5S rRNA

Chain 3:



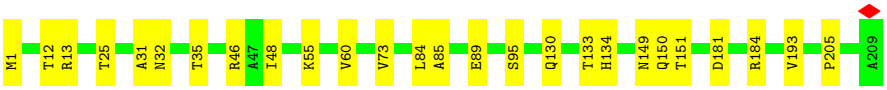
• Molecule 26: Large ribosomal subunit protein uL2

Chain B:



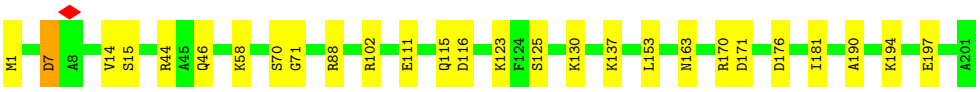
• Molecule 27: Large ribosomal subunit protein uL3

Chain C:



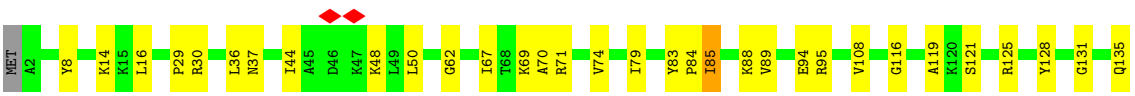
• Molecule 28: Large ribosomal subunit protein uL4

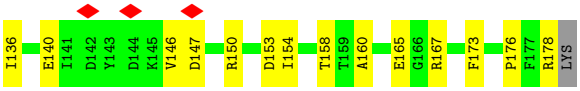
Chain D:



• Molecule 29: Large ribosomal subunit protein uL5

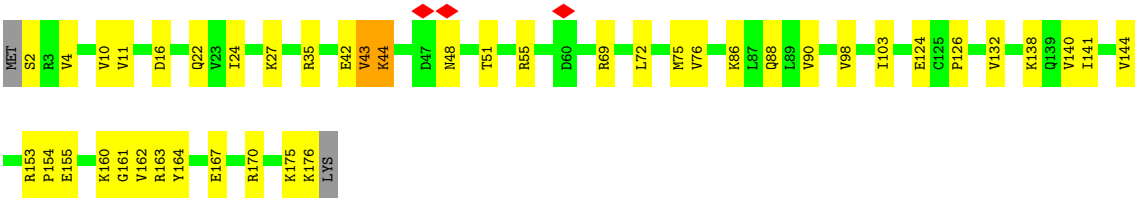
Chain E:





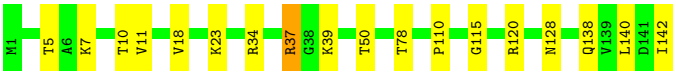
• Molecule 30: Large ribosomal subunit protein uL6

Chain F:



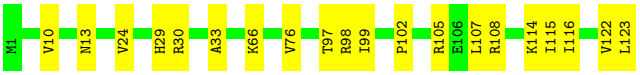
• Molecule 31: Large ribosomal subunit protein uL13

Chain J:



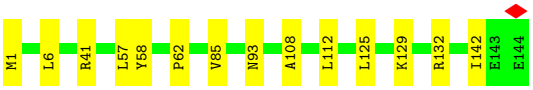
• Molecule 32: 50S ribosomal protein L14

Chain K:



• Molecule 33: 50S ribosomal protein L15

Chain L:

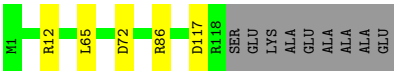


• Molecule 34: Large ribosomal subunit protein uL16

Chain M:

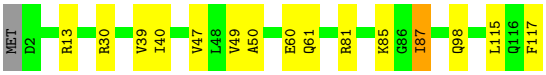
• Molecule 35: 50S ribosomal protein L17

Chain N:



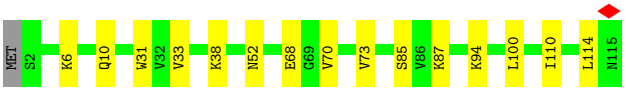
• Molecule 36: 50S ribosomal protein L18

Chain O:



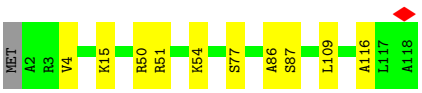
• Molecule 37: 50S ribosomal protein L19

Chain P:



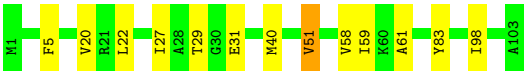
• Molecule 38: 50S ribosomal protein L20

Chain Q:



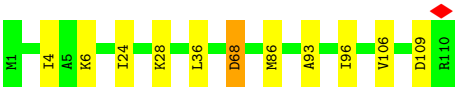
• Molecule 39: 50S ribosomal protein L21

Chain R:



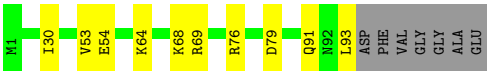
• Molecule 40: 50S ribosomal protein L22

Chain S:



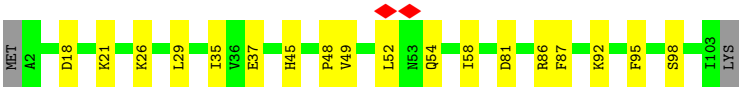
• Molecule 41: 50S ribosomal protein L23

Chain T:



• Molecule 42: 50S ribosomal protein L24

Chain U:

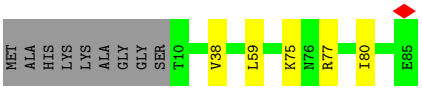


• Molecule 43: 50S ribosomal protein L25

Chain V:

• Molecule 44: 50S ribosomal protein L27

Chain W:

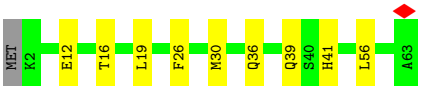


• Molecule 45: 50S ribosomal protein L28

Chain X:

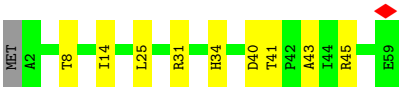
• Molecule 46: 50S ribosomal protein L29

Chain Y:



• Molecule 47: 50S ribosomal protein L30

Chain Z:

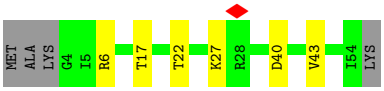


• Molecule 48: 50S ribosomal protein L32

Chain b:

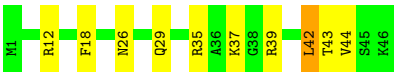
• Molecule 49: 50S ribosomal protein L33

Chain c:



• Molecule 50: 50S ribosomal protein L34

Chain d:

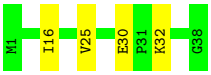


• Molecule 51: 50S ribosomal protein L35

Chain e:

• Molecule 52: 50S ribosomal protein L36

Chain f:

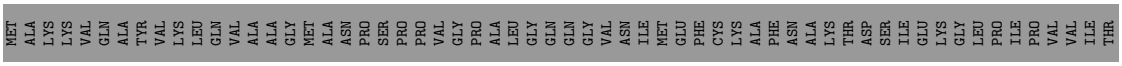


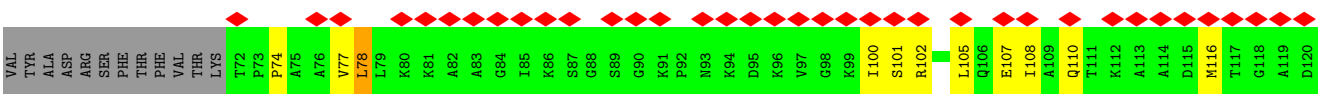
• Molecule 53: Large ribosomal subunit protein bL31A

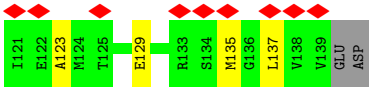
Chain a:

• Molecule 54: Large ribosomal subunit protein uL11

Chain I:

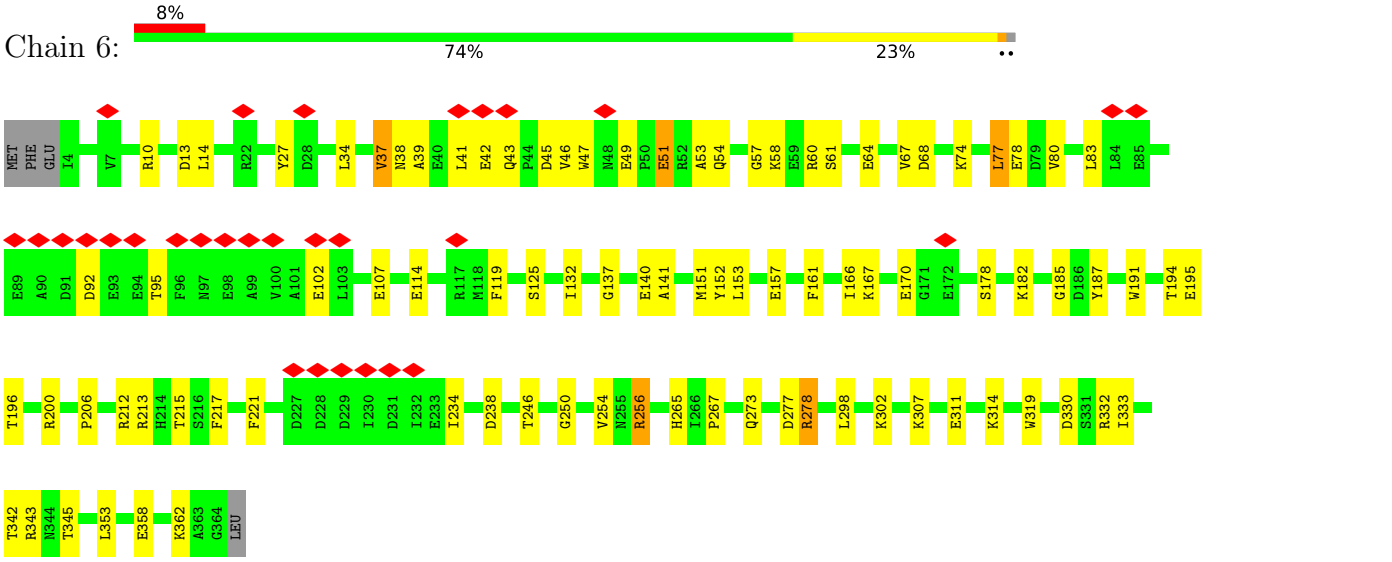






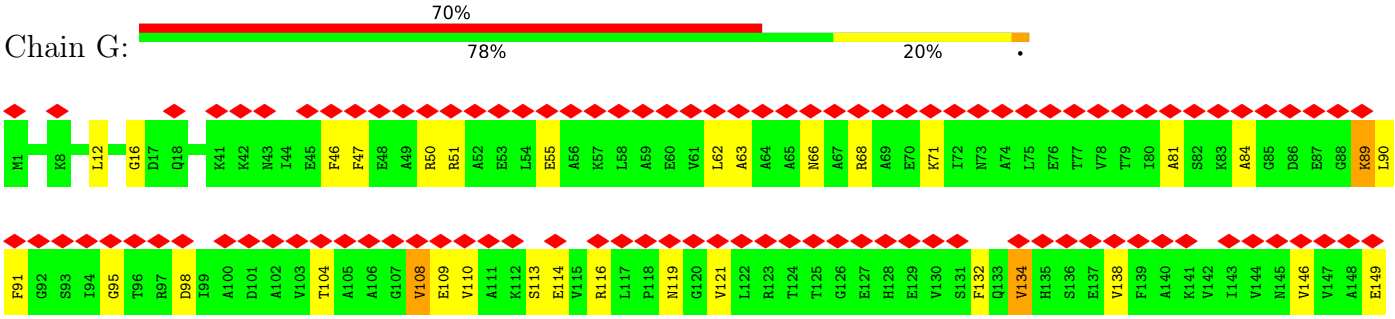
• Molecule 55: Peptide chain release factor RF2

Chain 6:



• Molecule 56: Large ribosomal subunit protein bL9

Chain G:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	100479	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	40.56	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	1300	Depositor
Magnification	105000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.900	Depositor
Minimum map value	-0.259	Depositor
Average map value	0.003	Depositor
Map value standard deviation	0.039	Depositor
Recommended contour level	0.15	Depositor
Map size (Å)	427.856, 427.856, 427.856	wwPDB
Map dimensions	520, 520, 520	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.8228, 0.8228, 0.8228	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 3TD, 2MG, 6MZ, OMC, SPD, 5MC, PUT, UR3, K, H2U, D2T, 5MU, PSU, SPM, ZN, 2MA, MG, IAS, MA6, OMU, MEQ, 4OC, 1MG, 4D4, MS6, G7M, OMG

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	2	0.19	0/36631	0.30	0/57136
2	g	0.16	0/1784	0.36	0/2403
3	h	0.17	0/1675	0.32	0/2256
4	i	0.15	0/1665	0.30	0/2227
5	j	0.18	0/1165	0.38	0/1568
6	k	0.16	0/858	0.31	0/1160
7	l	0.16	0/1230	0.35	0/1649
8	m	0.17	0/989	0.33	0/1326
9	n	0.14	0/1034	0.33	0/1375
10	o	0.18	0/796	0.37	0/1077
11	p	0.18	0/884	0.34	0/1191
12	q	0.17	0/960	0.37	0/1286
13	r	0.15	0/900	0.37	0/1204
14	s	0.17	0/817	0.29	0/1088
15	t	0.16	0/722	0.33	0/964
16	u	0.16	0/653	0.35	0/877
17	v	0.13	0/650	0.32	0/871
18	w	0.16	0/553	0.30	0/742
19	x	0.14	0/685	0.30	0/922
20	y	0.19	0/676	0.29	0/895
21	z	0.16	0/597	0.30	0/792
22	4	0.18	0/628	0.39	0/977
23	5	0.17	0/1859	0.29	0/2894
24	1	0.21	0/69147	0.30	0/107869
25	3	0.16	0/2850	0.26	0/4444
26	B	0.19	0/2121	0.37	0/2852
27	C	0.18	0/1576	0.33	0/2119
28	D	0.19	0/1571	0.33	0/2113
29	E	0.16	0/1434	0.37	0/1926
30	F	0.17	0/1333	0.41	0/1805
31	J	0.17	0/1152	0.29	0/1551

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\|>5$	RMSZ	$\#\|Z\|>5$
32	K	0.20	0/955	0.36	0/1279
33	L	0.19	0/1062	0.38	0/1413
34	M	0.18	0/1073	0.35	0/1433
35	N	0.21	0/958	0.40	0/1281
36	O	0.15	0/902	0.30	0/1209
37	P	0.19	0/929	0.33	0/1242
38	Q	0.19	0/960	0.32	0/1278
39	R	0.20	0/829	0.40	0/1107
40	S	0.20	0/864	0.33	0/1156
41	T	0.17	0/744	0.40	0/994
42	U	0.14	0/787	0.30	0/1051
43	V	0.17	0/766	0.35	0/1025
44	W	0.19	0/589	0.37	0/779
45	X	0.19	0/635	0.31	0/848
46	Y	0.16	0/502	0.27	0/667
47	Z	0.19	0/453	0.38	0/605
48	b	0.18	0/450	0.32	0/599
49	c	0.16	0/424	0.33	0/565
50	d	0.21	0/380	0.41	0/498
51	e	0.18	0/513	0.35	0/676
52	f	0.20	0/303	0.34	0/397
53	a	0.15	0/488	0.33	0/649
54	I	0.12	0/486	0.32	0/650
55	6	0.19	0/2884	0.36	0/3885
56	G	0.11	0/1122	0.26	0/1515
All	All	0.19	0/159653	0.31	0/238360

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	2	32966	0	16605	478	0
2	g	1753	0	1780	28	0
3	h	1648	0	1722	14	0
4	i	1643	0	1707	29	0
5	j	1152	0	1196	17	0
6	k	839	0	833	15	0
7	l	1214	0	1267	18	0
8	m	979	0	1031	14	0
9	n	1022	0	1070	19	0
10	o	786	0	828	14	0
11	p	877	0	884	10	0
12	q	957	0	1017	16	0
13	r	891	0	952	14	0
14	s	805	0	844	11	0
15	t	714	0	734	4	0
16	u	643	0	661	11	0
17	v	641	0	682	15	0
18	w	544	0	565	5	0
19	x	668	0	693	15	0
20	y	670	0	719	9	0
21	z	589	0	629	4	0
22	4	560	0	279	19	0
23	5	1665	0	848	10	0
24	1	62252	0	31316	723	0
25	3	2549	0	1291	22	0
26	B	2082	0	2154	27	0
27	C	1566	0	1617	18	0
28	D	1552	0	1619	18	0
29	E	1410	0	1444	32	0
30	F	1313	0	1358	26	0
31	J	1129	0	1162	13	0
32	K	946	0	1023	14	0
33	L	1053	0	1129	9	0
34	M	1075	0	1145	24	0
35	N	945	0	989	2	0
36	O	892	0	923	10	0
37	P	917	0	962	11	0
38	Q	947	0	1019	8	0
39	R	816	0	839	6	0
40	S	857	0	922	7	0
41	T	738	0	807	5	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
42	U	779	0	830	11	0
43	V	753	0	780	20	0
44	W	582	0	599	5	0
45	X	625	0	652	12	0
46	Y	501	0	531	6	0
47	Z	449	0	488	6	0
48	b	444	0	458	5	0
49	c	417	0	451	4	0
50	d	377	0	418	10	0
51	e	504	0	572	7	0
52	f	302	0	340	2	0
53	a	480	0	478	15	0
54	I	484	0	521	9	0
55	6	2855	0	2756	63	0
56	G	1111	0	1148	18	0
57	1	232	0	0	0	0
57	2	90	0	0	0	0
57	3	5	0	0	0	0
57	5	2	0	0	0	0
57	C	1	0	0	0	0
57	Q	1	0	0	0	0
57	b	1	0	0	0	0
58	1	90	0	180	6	0
58	2	30	0	60	5	0
58	C	6	0	12	0	0
59	1	92	0	0	0	0
59	2	34	0	0	0	0
60	1	100	0	190	2	0
61	1	28	0	52	2	0
62	a	1	0	0	0	0
62	f	1	0	0	0	0
All	All	148642	0	100781	1788	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 7.

The worst 5 of 1788 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)
24:1:2100:G:H1	24:1:2189:U:H3	1.19	0.88
1:2:673:A:H2'	1:2:674:G:C8	2.17	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:1:568:U:H1'	24:1:2030:6MZ:H9C1	1.63	0.78
1:2:946:A:H2'	1:2:947:G:C8	2.19	0.77
1:2:73:C:HO2'	1:2:74:A:H8	1.33	0.77

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	
2	g	222/241 (92%)	213 (96%)	9 (4%)	0	100	100
3	h	208/233 (89%)	202 (97%)	6 (3%)	0	100	100
4	i	203/206 (98%)	201 (99%)	2 (1%)	0	100	100
5	j	154/167 (92%)	147 (96%)	7 (4%)	0	100	100
6	k	101/135 (75%)	99 (98%)	2 (2%)	0	100	100
7	l	152/179 (85%)	148 (97%)	4 (3%)	0	100	100
8	m	127/130 (98%)	124 (98%)	3 (2%)	0	100	100
9	n	125/130 (96%)	123 (98%)	2 (2%)	0	100	100
10	o	96/103 (93%)	93 (97%)	2 (2%)	1 (1%)	12	35
11	p	113/129 (88%)	109 (96%)	4 (4%)	0	100	100
12	q	120/124 (97%)	115 (96%)	5 (4%)	0	100	100
13	r	113/118 (96%)	110 (97%)	3 (3%)	0	100	100
14	s	98/101 (97%)	98 (100%)	0	0	100	100
15	t	86/89 (97%)	84 (98%)	2 (2%)	0	100	100
16	u	79/82 (96%)	75 (95%)	3 (4%)	1 (1%)	9	28
17	v	77/84 (92%)	74 (96%)	3 (4%)	0	100	100
18	w	64/75 (85%)	64 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
19	x	82/92 (89%)	82 (100%)	0	0	100	100
20	y	84/87 (97%)	83 (99%)	1 (1%)	0	100	100
21	z	68/71 (96%)	67 (98%)	1 (2%)	0	100	100
26	B	269/273 (98%)	266 (99%)	3 (1%)	0	100	100
27	C	206/209 (99%)	201 (98%)	5 (2%)	0	100	100
28	D	199/201 (99%)	198 (100%)	1 (0%)	0	100	100
29	E	175/179 (98%)	169 (97%)	6 (3%)	0	100	100
30	F	173/177 (98%)	169 (98%)	4 (2%)	0	100	100
31	J	140/142 (99%)	140 (100%)	0	0	100	100
32	K	121/123 (98%)	120 (99%)	1 (1%)	0	100	100
33	L	142/144 (99%)	138 (97%)	4 (3%)	0	100	100
34	M	132/136 (97%)	131 (99%)	1 (1%)	0	100	100
35	N	116/127 (91%)	112 (97%)	4 (3%)	0	100	100
36	O	114/117 (97%)	112 (98%)	2 (2%)	0	100	100
37	P	112/115 (97%)	109 (97%)	3 (3%)	0	100	100
38	Q	115/118 (98%)	115 (100%)	0	0	100	100
39	R	101/103 (98%)	99 (98%)	2 (2%)	0	100	100
40	S	108/110 (98%)	106 (98%)	2 (2%)	0	100	100
41	T	91/100 (91%)	89 (98%)	2 (2%)	0	100	100
42	U	100/104 (96%)	97 (97%)	3 (3%)	0	100	100
43	V	92/94 (98%)	91 (99%)	1 (1%)	0	100	100
44	W	74/85 (87%)	71 (96%)	3 (4%)	0	100	100
45	X	75/78 (96%)	74 (99%)	1 (1%)	0	100	100
46	Y	60/63 (95%)	60 (100%)	0	0	100	100
47	Z	56/59 (95%)	54 (96%)	2 (4%)	0	100	100
48	b	54/57 (95%)	53 (98%)	1 (2%)	0	100	100
49	c	49/55 (89%)	49 (100%)	0	0	100	100
50	d	44/46 (96%)	42 (96%)	2 (4%)	0	100	100
51	e	62/65 (95%)	59 (95%)	3 (5%)	0	100	100
52	f	36/38 (95%)	35 (97%)	1 (3%)	0	100	100
53	a	56/70 (80%)	55 (98%)	1 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
54	I	66/142 (46%)	64 (97%)	2 (3%)	0	100	100
55	6	358/365 (98%)	352 (98%)	6 (2%)	0	100	100
56	G	147/149 (99%)	139 (95%)	8 (5%)	0	100	100
All	All	6015/6420 (94%)	5880 (98%)	133 (2%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
10	o	57	VAL
16	u	80	LYS

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	g	186/199 (94%)	184 (99%)	2 (1%)	65	85
3	h	172/190 (90%)	169 (98%)	3 (2%)	53	80
4	i	172/173 (99%)	168 (98%)	4 (2%)	44	75
5	j	119/126 (94%)	116 (98%)	3 (2%)	42	73
6	k	90/116 (78%)	87 (97%)	3 (3%)	33	66
7	l	127/147 (86%)	119 (94%)	8 (6%)	16	41
8	m	104/105 (99%)	103 (99%)	1 (1%)	68	86
9	n	105/107 (98%)	104 (99%)	1 (1%)	68	86
10	o	86/90 (96%)	83 (96%)	3 (4%)	32	64
11	p	89/98 (91%)	89 (100%)	0	100	100
12	q	102/103 (99%)	100 (98%)	2 (2%)	48	77
13	r	93/96 (97%)	90 (97%)	3 (3%)	34	67
14	s	83/84 (99%)	82 (99%)	1 (1%)	63	84
15	t	76/77 (99%)	74 (97%)	2 (3%)	40	72
16	u	65/65 (100%)	64 (98%)	1 (2%)	57	81

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
17	v	73/78 (94%)	71 (97%)	2 (3%)	39 71
18	w	57/65 (88%)	57 (100%)	0	100 100
19	x	72/79 (91%)	72 (100%)	0	100 100
20	y	65/66 (98%)	61 (94%)	4 (6%)	16 42
21	z	60/61 (98%)	54 (90%)	6 (10%)	7 21
26	B	216/218 (99%)	216 (100%)	0	100 100
27	C	163/163 (100%)	162 (99%)	1 (1%)	78 91
28	D	165/165 (100%)	161 (98%)	4 (2%)	43 74
29	E	148/150 (99%)	145 (98%)	3 (2%)	48 77
30	F	136/138 (99%)	131 (96%)	5 (4%)	30 62
31	J	116/116 (100%)	114 (98%)	2 (2%)	53 80
32	K	104/104 (100%)	102 (98%)	2 (2%)	50 78
33	L	103/103 (100%)	100 (97%)	3 (3%)	37 70
34	M	107/107 (100%)	103 (96%)	4 (4%)	30 62
35	N	98/103 (95%)	96 (98%)	2 (2%)	48 77
36	O	86/87 (99%)	83 (96%)	3 (4%)	32 64
37	P	99/100 (99%)	99 (100%)	0	100 100
38	Q	89/90 (99%)	89 (100%)	0	100 100
39	R	84/84 (100%)	79 (94%)	5 (6%)	17 43
40	S	93/93 (100%)	91 (98%)	2 (2%)	45 75
41	T	80/84 (95%)	78 (98%)	2 (2%)	42 73
42	U	83/85 (98%)	83 (100%)	0	100 100
43	V	78/78 (100%)	75 (96%)	3 (4%)	29 61
44	W	58/63 (92%)	58 (100%)	0	100 100
45	X	67/68 (98%)	66 (98%)	1 (2%)	57 81
46	Y	54/55 (98%)	53 (98%)	1 (2%)	50 78
47	Z	48/49 (98%)	48 (100%)	0	100 100
48	b	47/48 (98%)	47 (100%)	0	100 100
49	c	46/49 (94%)	45 (98%)	1 (2%)	45 75
50	d	38/38 (100%)	37 (97%)	1 (3%)	40 72
51	e	51/52 (98%)	49 (96%)	2 (4%)	28 60

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
52	f	34/34 (100%)	34 (100%)	0	100 100
53	a	55/62 (89%)	52 (94%)	3 (6%)	19 47
54	I	50/110 (46%)	48 (96%)	2 (4%)	28 60
55	6	305/310 (98%)	290 (95%)	15 (5%)	22 52
56	G	114/114 (100%)	107 (94%)	7 (6%)	17 43
All	All	5011/5245 (96%)	4888 (98%)	123 (2%)	42 73

5 of 123 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
30	F	10	VAL
55	6	234	ILE
34	M	14	LYS
55	6	200	ARG
56	G	108	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 78 such sidechains are listed below:

Mol	Chain	Res	Type
40	S	40	ASN
53	a	61	ASN
42	U	74	ASN
46	Y	27	ASN
55	6	290	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	2	1534/1542 (99%)	230 (14%)	6 (0%)
22	4	25/49 (51%)	8 (32%)	1 (4%)
23	5	73/76 (96%)	28 (38%)	0
24	1	2897/2904 (99%)	439 (15%)	8 (0%)
25	3	118/120 (98%)	13 (11%)	0
All	All	4647/4691 (99%)	718 (15%)	15 (0%)

5 of 718 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	2	2	A
1	2	7	A
1	2	9	G
1	2	22	G
1	2	32	A

5 of 15 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
24	1	277	G
24	1	2162	G
24	1	404	A
24	1	2884	U
24	1	784	G

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

41 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	$\#\|Z\| > 2$
24	6MZ	1	1618	24	22,25,26	0.26	0	29,36,39	0.41	0
24	OMC	1	2498	57,24	19,22,23	0.28	0	25,31,34	0.44	0
34	MS6	M	82	34	5,7,8	0.29	0	2,7,9	0.11	0
1	5MC	2	1407	1	19,22,23	0.35	0	26,32,35	0.44	0
27	MEQ	C	150	27	8,9,10	0.86	0	5,10,12	0.17	0
1	MA6	2	1518	1	23,26,27	0.25	0	33,38,41	0.62	1 (3%)
24	3TD	1	1915	57,24	19,22,23	0.49	0	23,32,35	0.64	0
1	4OC	2	1402	1,57	20,23,24	0.26	0	25,32,35	0.47	0
24	PSU	1	2580	24	18,21,22	0.57	1 (5%)	21,30,33	0.69	1 (4%)
1	G7M	2	527	1,59	23,26,27	0.30	0	34,39,42	0.51	0
1	MA6	2	1519	1	23,26,27	0.26	0	33,38,41	0.63	1 (3%)
24	5MU	1	747	24	19,22,23	0.26	0	27,32,35	0.31	0
24	PSU	1	1911	24	18,21,22	0.47	0	21,30,33	0.57	0
24	2MG	1	2445	24	23,26,27	0.30	0	33,38,41	0.30	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
24	OMU	1	2552	57,24	19,22,23	0.24	0	25,31,34	0.42	0
1	2MG	2	1516	1	23,26,27	0.28	0	33,38,41	0.44	0
24	G7M	1	2069	59,24	23,26,27	0.29	0	34,39,42	0.49	0
24	2MA	1	2503	59,57,24	22,25,26	0.98	1 (4%)	32,37,40	1.36	3 (9%)
24	5MU	1	1939	59,24	19,22,23	0.27	0	27,32,35	0.40	0
1	UR3	2	1498	1	19,22,23	0.26	0	26,32,35	0.33	0
24	PSU	1	2504	59,24	18,21,22	0.50	0	21,30,33	0.63	0
34	4D4	M	81	34	9,11,12	0.77	0	7,13,15	2.16	3 (42%)
24	2MG	1	1835	24	23,26,27	0.26	0	33,38,41	0.31	0
24	PSU	1	1917	24	18,21,22	0.49	0	21,30,33	0.58	0
55	MEQ	6	252	55	8,9,10	0.94	0	5,10,12	0.49	0
24	OMG	1	2251	59,23,24	23,26,27	0.27	0	32,38,41	0.33	0
11	IAS	p	119	11	6,7,8	0.96	0	3,8,10	1.46	1 (33%)
1	PSU	2	516	1,57	18,21,22	0.50	0	21,30,33	0.62	1 (4%)
24	PSU	1	955	24	18,21,22	0.52	0	21,30,33	0.58	0
24	PSU	1	746	57,24	18,21,22	0.58	0	21,30,33	0.35	0
1	2MG	2	966	1	23,26,27	0.27	0	33,38,41	0.34	0
24	PSU	1	2604	24	18,21,22	0.46	0	21,30,33	0.63	0
24	6MZ	1	2030	24	22,25,26	0.27	0	29,36,39	0.43	0
24	H2U	1	2449	24	18,21,22	0.25	0	19,30,33	0.43	0
24	1MG	1	745	24	23,26,27	0.30	0	33,39,42	0.72	2 (6%)
24	5MC	1	1962	59,24	19,22,23	0.32	0	26,32,35	0.40	0
24	PSU	1	2605	24	18,21,22	0.47	0	21,30,33	0.65	0
12	D2T	q	89	12	8,9,10	0.87	0	6,11,13	1.78	2 (33%)
24	PSU	1	2457	24	18,21,22	0.52	0	21,30,33	0.60	1 (4%)
1	5MC	2	967	1	19,22,23	0.33	0	26,32,35	0.40	0
1	2MG	2	1207	1,59	23,26,27	0.26	0	33,38,41	0.34	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
24	6MZ	1	1618	24	-	0/9/27/28	0/3/3/3
24	OMC	1	2498	57,24	-	0/9/27/28	0/2/2/2
34	MS6	M	82	34	-	1/4/6/8	-
1	5MC	2	1407	1	-	0/7/25/26	0/2/2/2
27	MEQ	C	150	27	-	3/8/9/11	-
1	MA6	2	1518	1	-	0/11/29/30	0/3/3/3
24	3TD	1	1915	57,24	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	4OC	2	1402	1,57	-	1/9/29/30	0/2/2/2
24	PSU	1	2580	24	-	0/7/25/26	0/2/2/2
1	G7M	2	527	1,59	-	3/7/25/26	0/3/3/3
1	MA6	2	1519	1	-	1/11/29/30	0/3/3/3
24	5MU	1	747	24	-	0/7/25/26	0/2/2/2
24	PSU	1	1911	24	-	0/7/25/26	0/2/2/2
24	2MG	1	2445	24	-	2/9/27/28	0/3/3/3
24	OMU	1	2552	57,24	-	0/9/27/28	0/2/2/2
1	2MG	2	1516	1	-	0/9/27/28	0/3/3/3
24	G7M	1	2069	59,24	-	1/7/25/26	0/3/3/3
24	2MA	1	2503	59,57,24	-	1/7/25/26	0/3/3/3
24	5MU	1	1939	59,24	-	0/7/25/26	0/2/2/2
1	UR3	2	1498	1	-	0/7/25/26	0/2/2/2
24	PSU	1	2504	59,24	-	0/7/25/26	0/2/2/2
34	4D4	M	81	34	-	1/11/12/14	-
24	2MG	1	1835	24	-	0/9/27/28	0/3/3/3
24	PSU	1	1917	24	-	0/7/25/26	0/2/2/2
55	MEQ	6	252	55	-	3/8/9/11	-
24	OMG	1	2251	59,23,24	-	1/9/27/28	0/3/3/3
11	IAS	p	119	11	-	1/7/7/8	-
1	PSU	2	516	1,57	-	0/7/25/26	0/2/2/2
24	PSU	1	955	24	-	0/7/25/26	0/2/2/2
24	PSU	1	746	57,24	-	2/7/25/26	0/2/2/2
1	2MG	2	966	1	-	2/9/27/28	0/3/3/3
24	PSU	1	2604	24	-	0/7/25/26	0/2/2/2
24	6MZ	1	2030	24	-	2/9/27/28	0/3/3/3
24	H2U	1	2449	24	-	0/7/38/39	0/2/2/2
24	1MG	1	745	24	-	0/7/25/26	0/3/3/3
24	5MC	1	1962	59,24	-	0/7/25/26	0/2/2/2
24	PSU	1	2605	24	-	0/7/25/26	0/2/2/2
12	D2T	q	89	12	-	4/7/12/14	-
24	PSU	1	2457	24	-	0/7/25/26	0/2/2/2
1	5MC	2	967	1	-	0/7/25/26	0/2/2/2
1	2MG	2	1207	1,59	-	0/9/27/28	0/3/3/3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
24	1	2503	2MA	C6-N6	-3.35	1.25	1.34
24	1	2580	PSU	O4'-C1'	-2.09	1.41	1.43

The worst 5 of 16 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
24	1	2503	2MA	N6-C6-N1	4.79	123.49	117.03
34	M	81	4D4	NE-CZ-NH2	3.93	127.42	120.67
24	1	2503	2MA	C2-N1-C6	3.83	124.00	118.10
24	1	2503	2MA	C5-C6-N1	-3.78	113.03	118.90
34	M	81	4D4	O-C-CA	-3.09	116.82	124.77

There are no chirality outliers.

5 of 29 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
12	q	89	D2T	CA-CB-CG-OD1
12	q	89	D2T	CA-CB-CG-OD2
27	C	150	MEQ	N-CA-CB-CG
27	C	150	MEQ	C-CA-CB-CG
27	C	150	MEQ	O-C-CA-CB

There are no ring outliers.

11 monomers are involved in 14 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
27	C	150	MEQ	2	0
1	2	1518	MA6	1	0
1	2	1402	4OC	2	0
1	2	1519	MA6	2	0
1	2	1516	2MG	2	0
24	1	1939	5MU	1	0
24	1	2251	OMG	1	0
1	2	966	2MG	1	0
24	1	2030	6MZ	2	0
12	q	89	D2T	1	0
1	2	1207	2MG	1	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 493 ligands modelled in this entry, 460 are monoatomic - leaving 33 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	$\#\|Z\| > 2$
58	PUT	1	3328	-	5,5,5	0.08	0	4,4,4	0.16	0
60	SPD	1	3213	-	9,9,9	0.07	0	8,8,8	0.12	0
58	PUT	1	3332	-	5,5,5	0.10	0	4,4,4	0.13	0
60	SPD	1	3208	-	9,9,9	0.11	0	8,8,8	0.10	0
61	SPM	1	3349	-	13,13,13	0.35	0	12,12,12	0.86	0
58	PUT	1	3330	-	5,5,5	0.09	0	4,4,4	0.14	0
58	PUT	2	1728	-	5,5,5	0.09	0	4,4,4	0.17	0
60	SPD	1	3210	-	9,9,9	0.08	0	8,8,8	0.11	0
60	SPD	1	3207	-	9,9,9	0.08	0	8,8,8	0.18	0
58	PUT	1	3326	-	5,5,5	0.07	0	4,4,4	0.17	0
58	PUT	1	3329	-	5,5,5	0.08	0	4,4,4	0.13	0
58	PUT	1	3212	-	5,5,5	0.09	0	4,4,4	0.14	0
58	PUT	1	3327	-	5,5,5	0.09	0	4,4,4	0.14	0
60	SPD	1	3215	-	9,9,9	0.10	0	8,8,8	0.07	0
60	SPD	1	3209	-	9,9,9	0.08	0	8,8,8	0.14	0
58	PUT	C	301	-	5,5,5	0.10	0	4,4,4	0.14	0
58	PUT	2	1726	-	5,5,5	0.11	0	4,4,4	0.13	0
60	SPD	1	3206	-	9,9,9	0.08	0	8,8,8	0.10	0
58	PUT	1	3351	-	5,5,5	0.08	0	4,4,4	0.15	0
61	SPM	1	3216	-	13,13,13	0.35	0	12,12,12	0.85	0
58	PUT	1	3333	-	5,5,5	0.10	0	4,4,4	0.14	0
58	PUT	1	3338	-	5,5,5	0.09	0	4,4,4	0.17	0
60	SPD	1	3214	-	9,9,9	0.07	0	8,8,8	0.14	0
60	SPD	1	3211	-	9,9,9	0.08	0	8,8,8	0.15	0
58	PUT	1	3337	-	5,5,5	0.07	0	4,4,4	0.14	0
58	PUT	2	1725	-	5,5,5	0.10	0	4,4,4	0.13	0
58	PUT	1	3344	-	5,5,5	0.11	0	4,4,4	0.12	0
60	SPD	1	3335	-	9,9,9	0.10	0	8,8,8	0.11	0
58	PUT	2	1685	-	5,5,5	0.11	0	4,4,4	0.13	0
58	PUT	1	3331	-	5,5,5	0.10	0	4,4,4	0.17	0
58	PUT	1	3339	-	5,5,5	0.08	0	4,4,4	0.11	0
58	PUT	2	1686	-	5,5,5	0.10	0	4,4,4	0.15	0
58	PUT	1	3334	-	5,5,5	0.10	0	4,4,4	0.13	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
58	PUT	1	3328	-	-	2/3/3/3	-
60	SPD	1	3213	-	-	3/7/7/7	-
58	PUT	1	3332	-	-	1/3/3/3	-
60	SPD	1	3208	-	-	4/7/7/7	-
61	SPM	1	3349	-	-	6/11/11/11	-
58	PUT	1	3330	-	-	0/3/3/3	-
58	PUT	2	1728	-	-	1/3/3/3	-
60	SPD	1	3210	-	-	5/7/7/7	-
60	SPD	1	3207	-	-	3/7/7/7	-
58	PUT	1	3326	-	-	1/3/3/3	-
58	PUT	1	3329	-	-	1/3/3/3	-
58	PUT	1	3212	-	-	1/3/3/3	-
58	PUT	1	3327	-	-	3/3/3/3	-
60	SPD	1	3215	-	-	5/7/7/7	-
60	SPD	1	3209	-	-	2/7/7/7	-
58	PUT	C	301	-	-	1/3/3/3	-
58	PUT	2	1726	-	-	3/3/3/3	-
60	SPD	1	3206	-	-	1/7/7/7	-
58	PUT	1	3351	-	-	3/3/3/3	-
61	SPM	1	3216	-	-	7/11/11/11	-
58	PUT	1	3333	-	-	0/3/3/3	-
58	PUT	1	3338	-	-	1/3/3/3	-
60	SPD	1	3214	-	-	0/7/7/7	-
60	SPD	1	3211	-	-	2/7/7/7	-
58	PUT	1	3337	-	-	0/3/3/3	-
58	PUT	2	1725	-	-	0/3/3/3	-
58	PUT	1	3344	-	-	0/3/3/3	-
60	SPD	1	3335	-	-	3/7/7/7	-
58	PUT	2	1685	-	-	2/3/3/3	-
58	PUT	1	3331	-	-	1/3/3/3	-
58	PUT	1	3339	-	-	1/3/3/3	-
58	PUT	2	1686	-	-	1/3/3/3	-
58	PUT	1	3334	-	-	2/3/3/3	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

5 of 66 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
58	C	301	PUT	C1-C2-C3-C4
61	1	3349	SPM	N5-C6-C7-C8
60	1	3211	SPD	N6-C7-C8-C9
60	1	3215	SPD	C3-C4-C5-N6
61	1	3216	SPM	C7-C8-C9-N10

There are no ring outliers.

12 monomers are involved in 15 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
61	1	3349	SPM	2	0
58	1	3330	PUT	1	0
58	2	1728	PUT	1	0
58	1	3212	PUT	2	0
58	2	1726	PUT	2	0
60	1	3211	SPD	1	0
60	1	3335	SPD	1	0
58	2	1685	PUT	1	0
58	1	3331	PUT	1	0
58	1	3339	PUT	1	0
58	2	1686	PUT	1	0
58	1	3334	PUT	1	0

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.

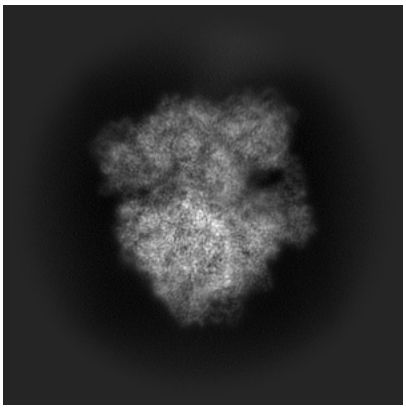
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-18458. These allow visual inspection of the internal detail of the map and identification of artifacts.

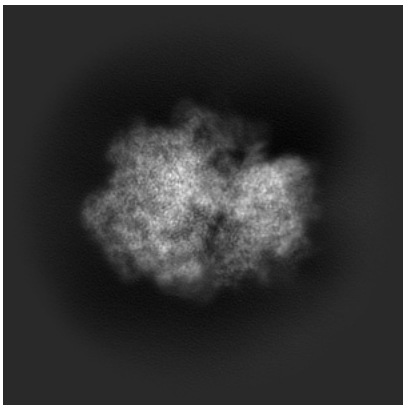
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

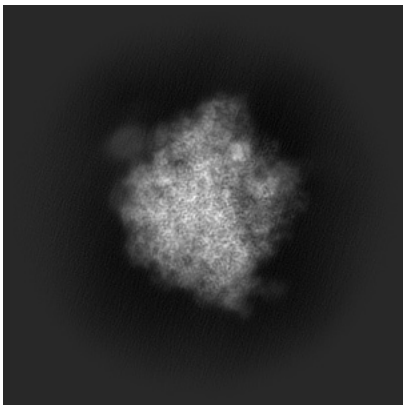
6.1.1 Primary map



X

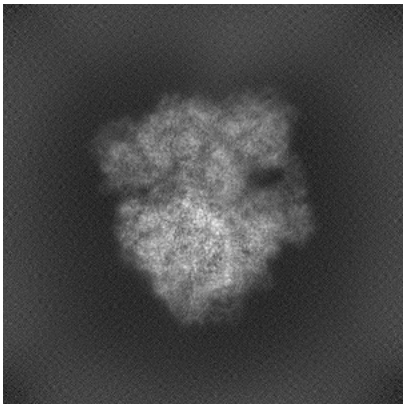


Y

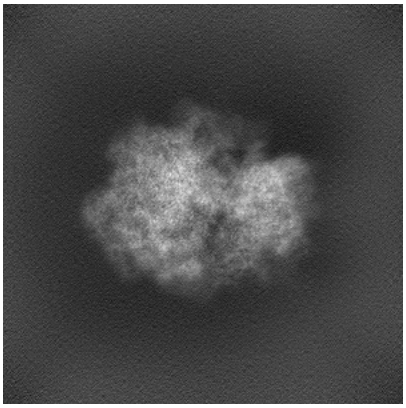


Z

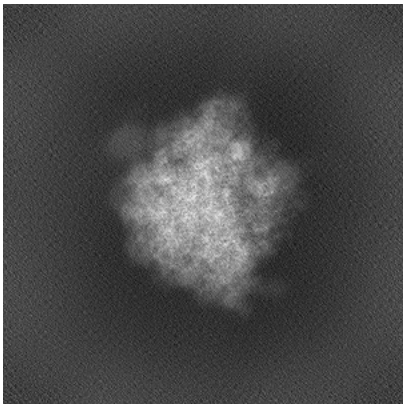
6.1.2 Raw map



X



Y

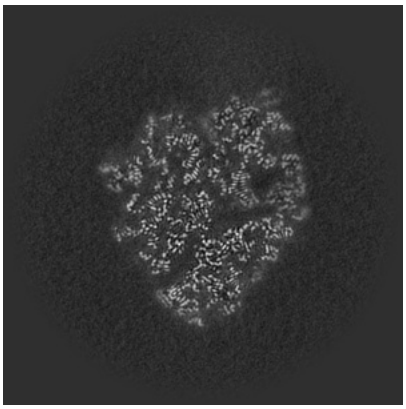


Z

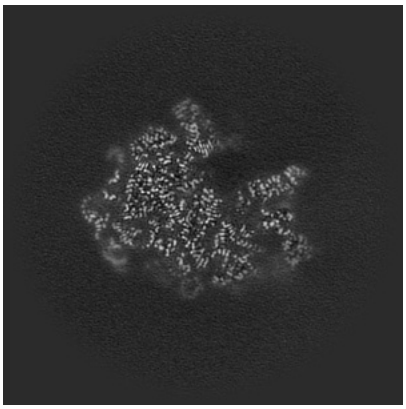
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

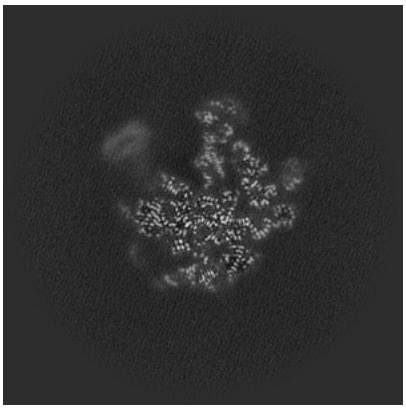
6.2.1 Primary map



X Index: 260

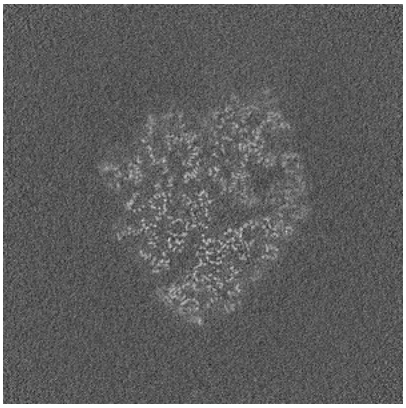


Y Index: 260

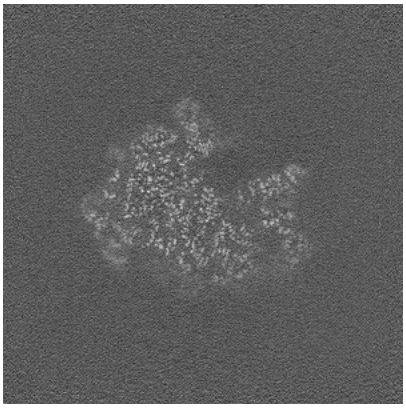


Z Index: 260

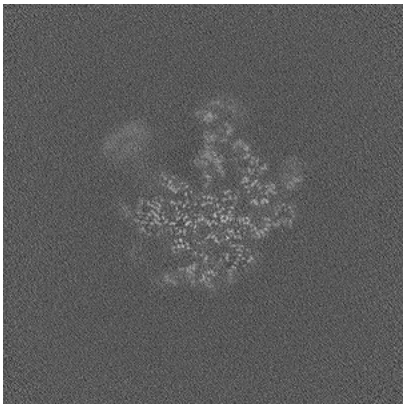
6.2.2 Raw map



X Index: 260



Y Index: 260

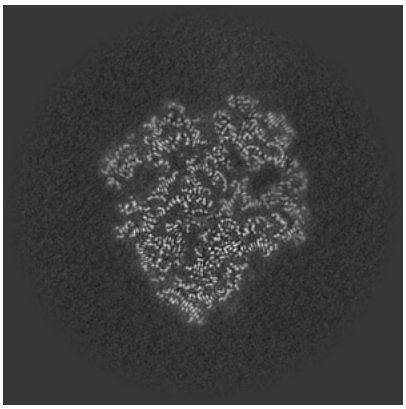


Z Index: 260

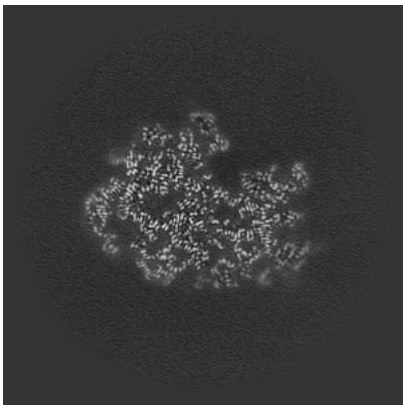
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

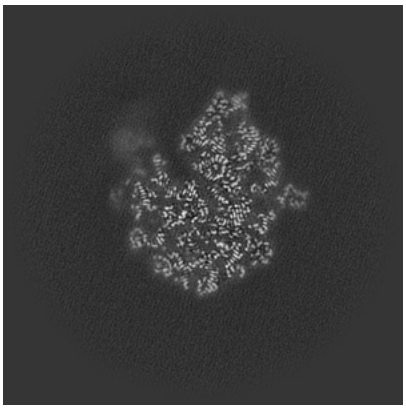
6.3.1 Primary map



X Index: 267

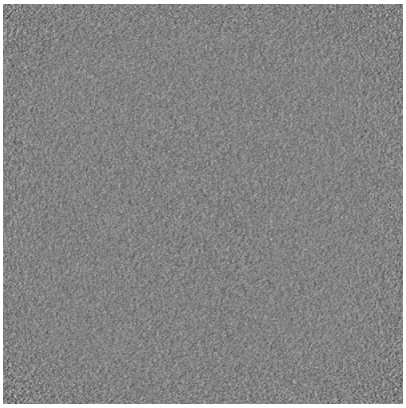


Y Index: 246

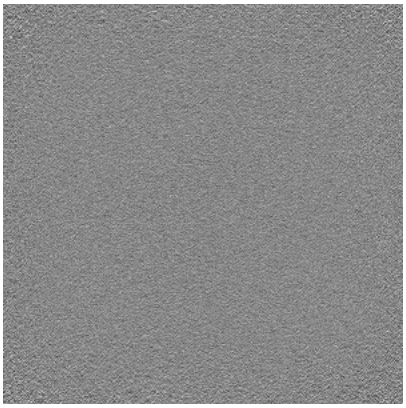


Z Index: 230

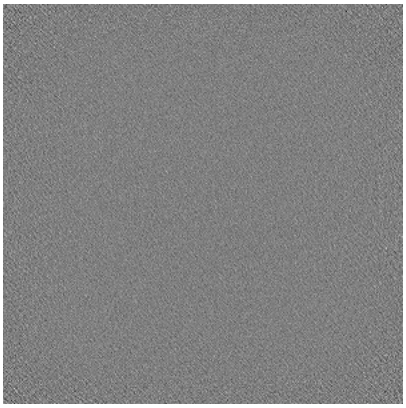
6.3.2 Raw map



X Index: 0



Y Index: 0

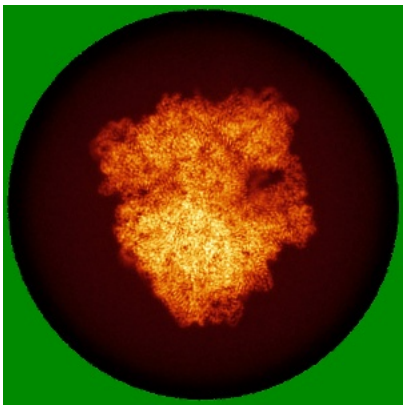


Z Index: 0

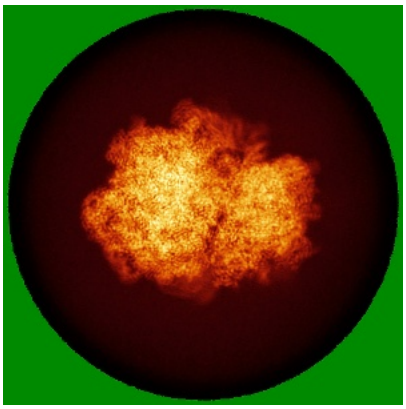
The images above show the largest variance slices of the map in three orthogonal directions.

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

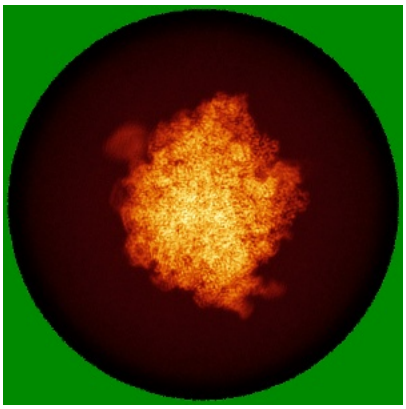
6.4.1 Primary map



X

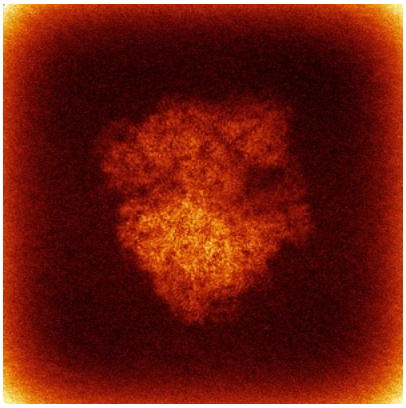


Y

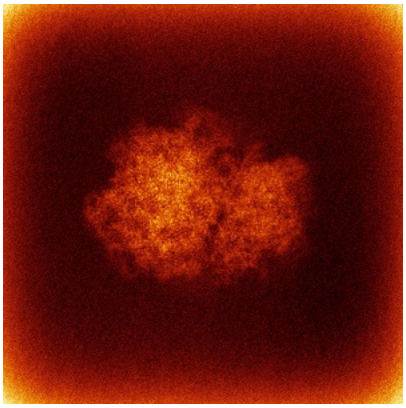


Z

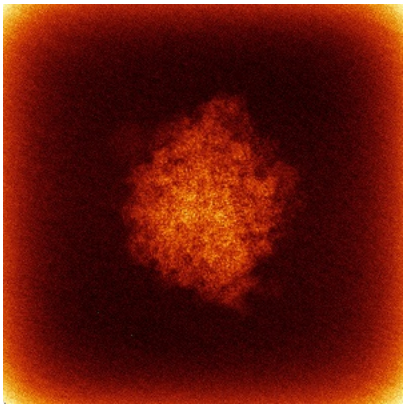
6.4.2 Raw map



X



Y



Z

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

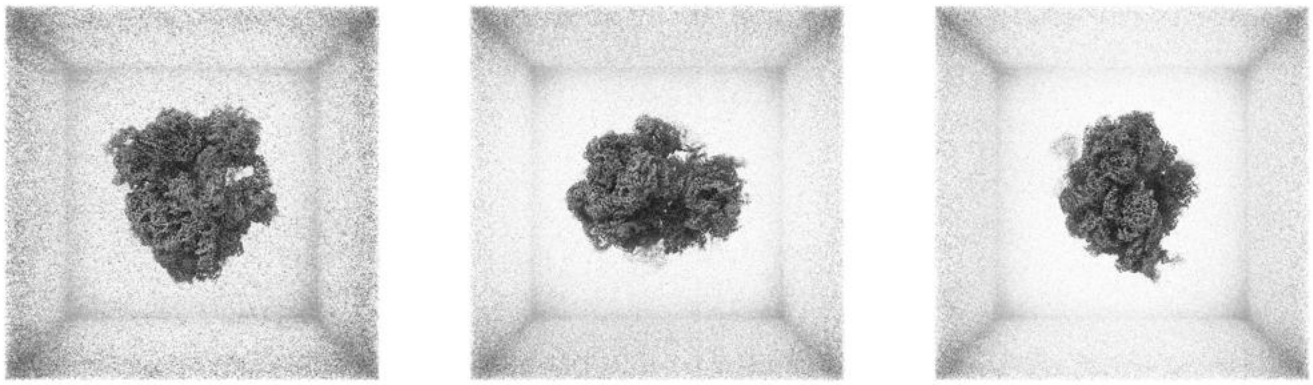
6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.15. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

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

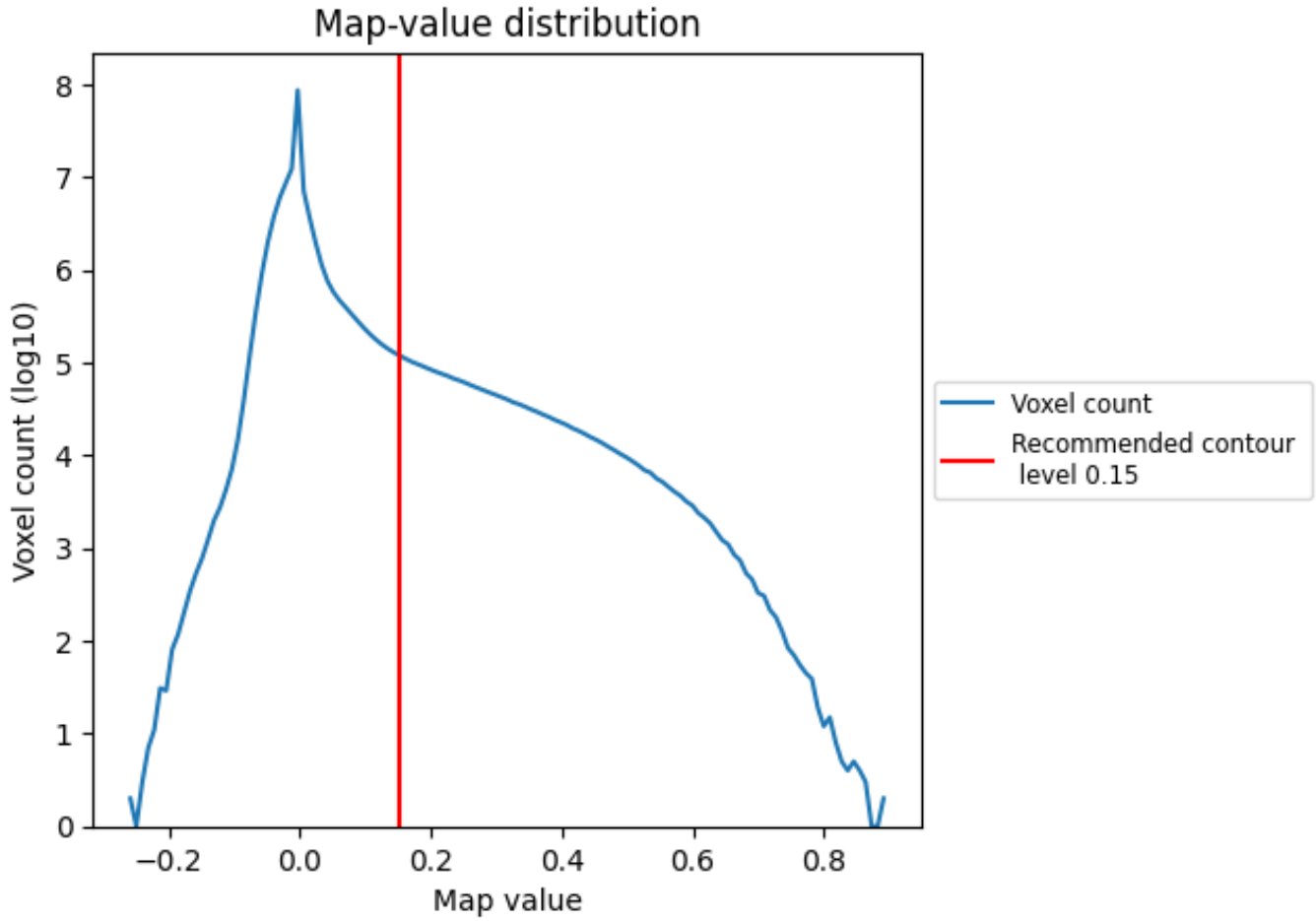
6.6 Mask visualisation (i)

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

7 Map analysis

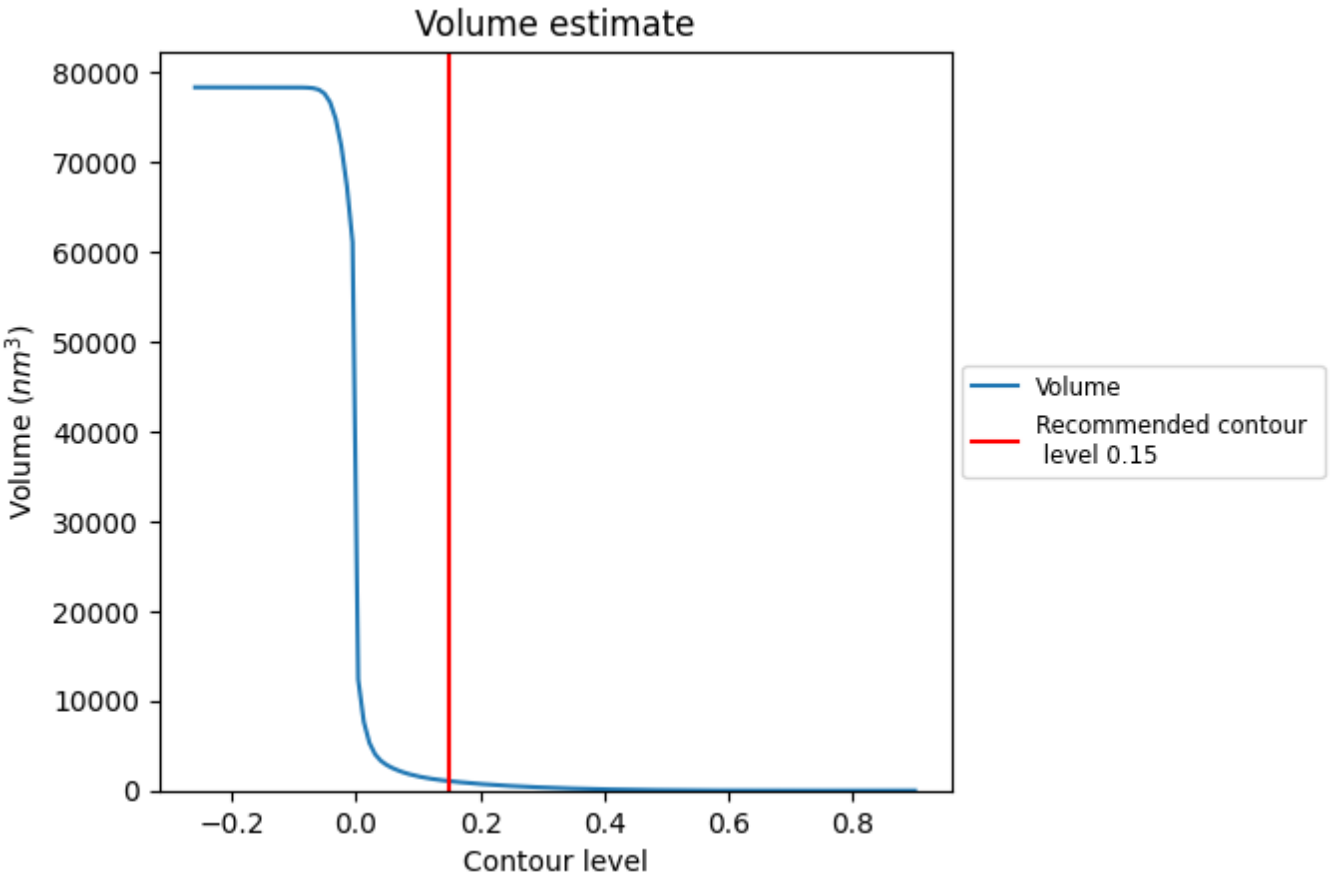
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

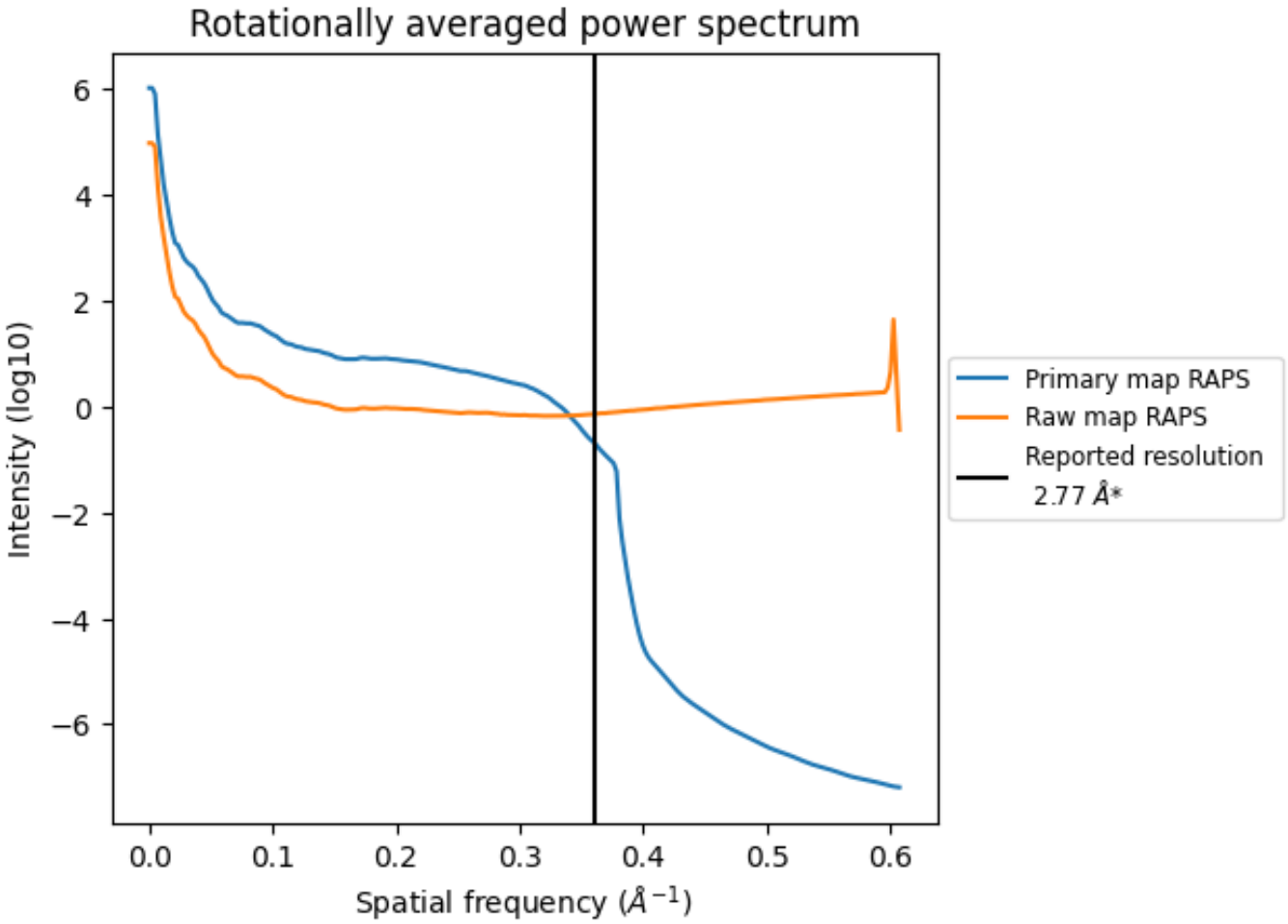
7.2 Volume estimate (i)



The volume at the recommended contour level is 1055 nm^3; this corresponds to an approximate mass of 953 kDa.

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

7.3 Rotationally averaged power spectrum (i)

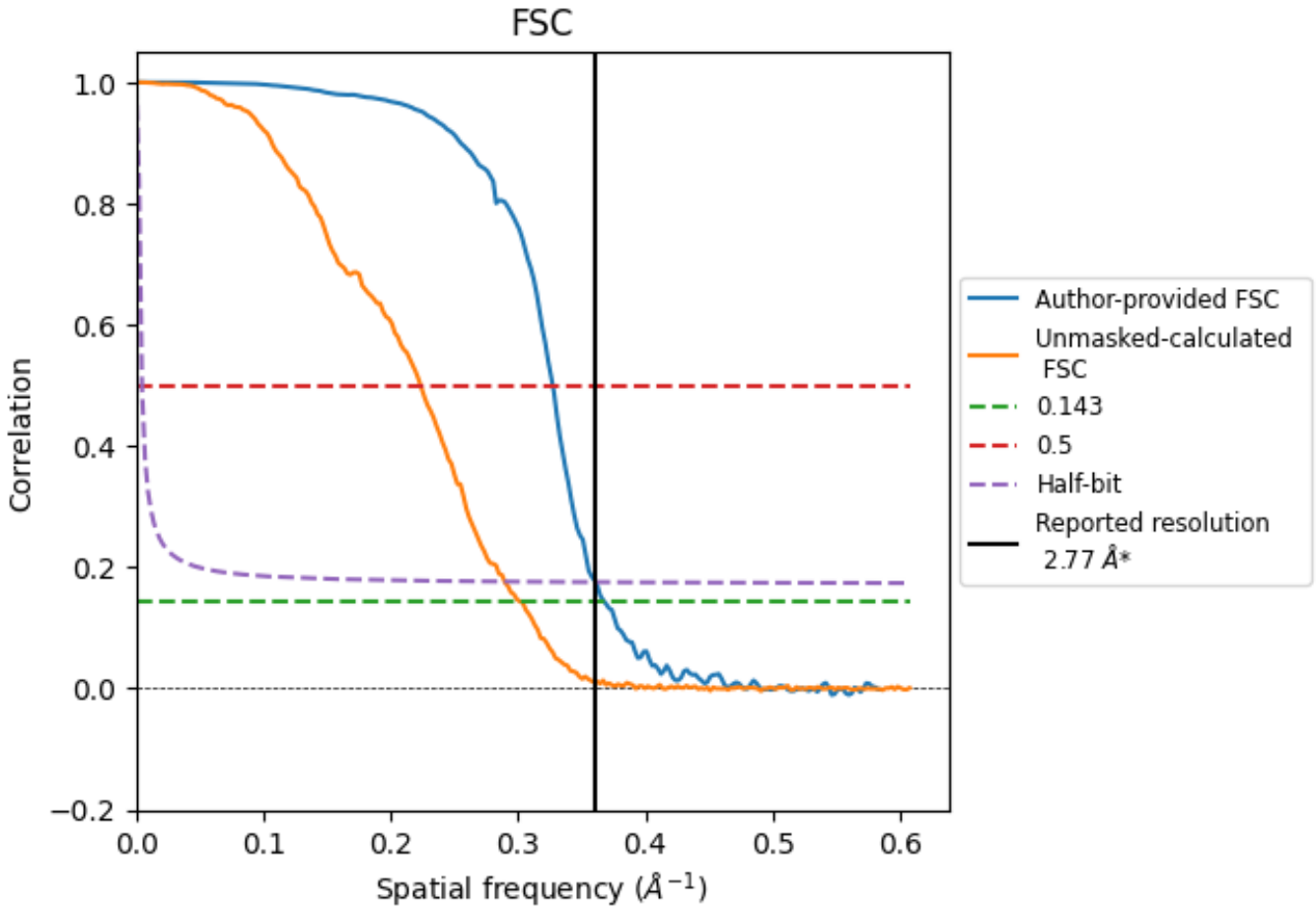


*Reported resolution corresponds to spatial frequency of 0.361 Å^{-1}

8 Fourier-Shell correlation

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

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.361 Å^{-1}

8.2 Resolution estimates (i)

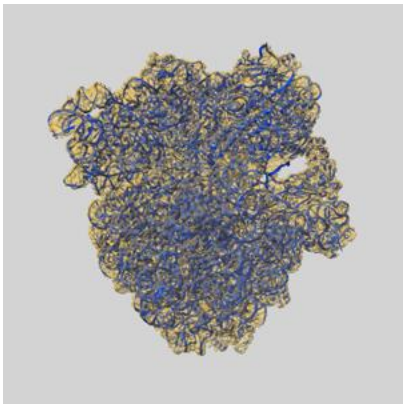
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.77	-	-
Author-provided FSC curve	2.72	3.06	2.77
Unmasked-calculated*	3.31	4.47	3.45

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.31 differs from the reported value 2.77 by more than 10 %

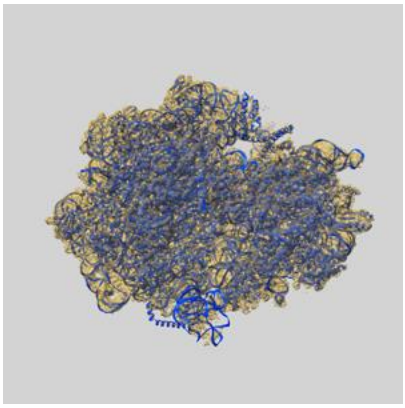
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-18458 and PDB model 8QK7. Per-residue inclusion information can be found in section 3 on page 19.

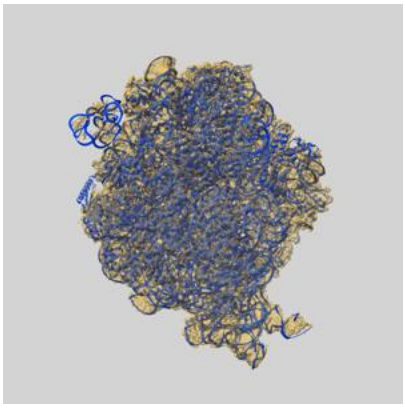
9.1 Map-model overlay



X



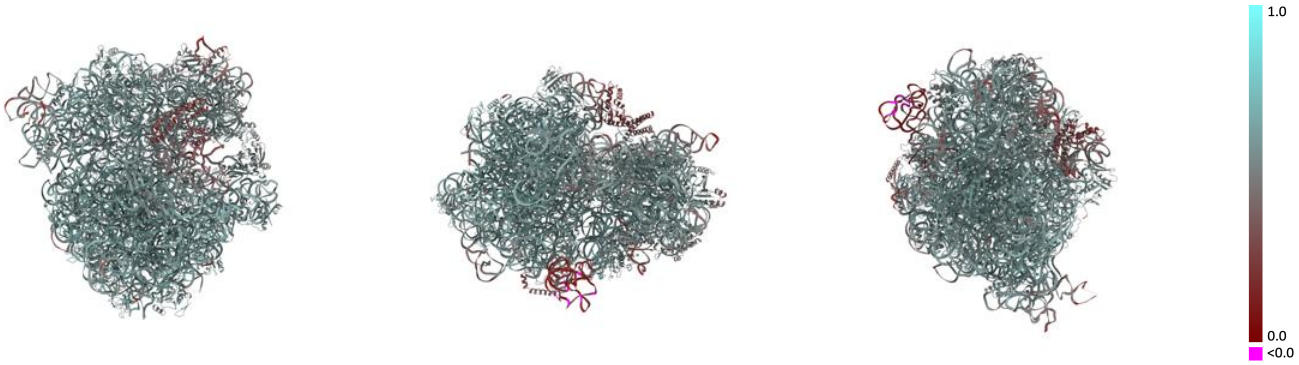
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.15 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

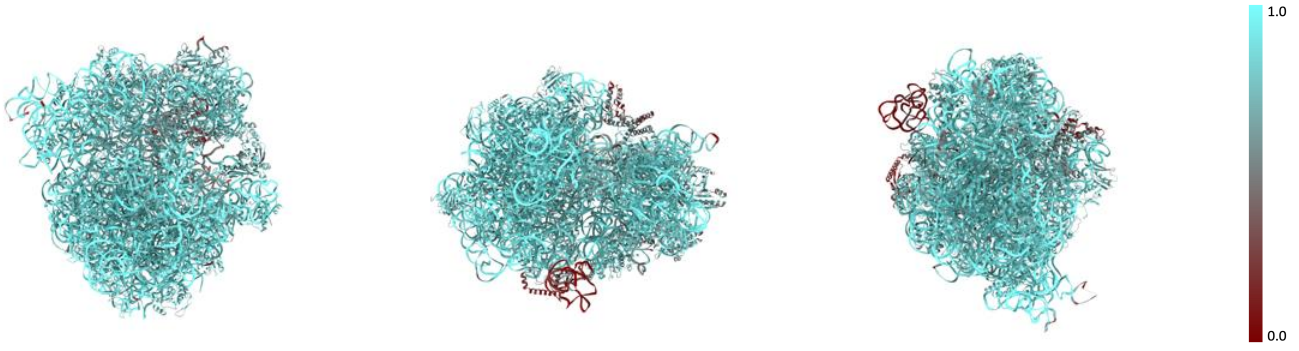
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

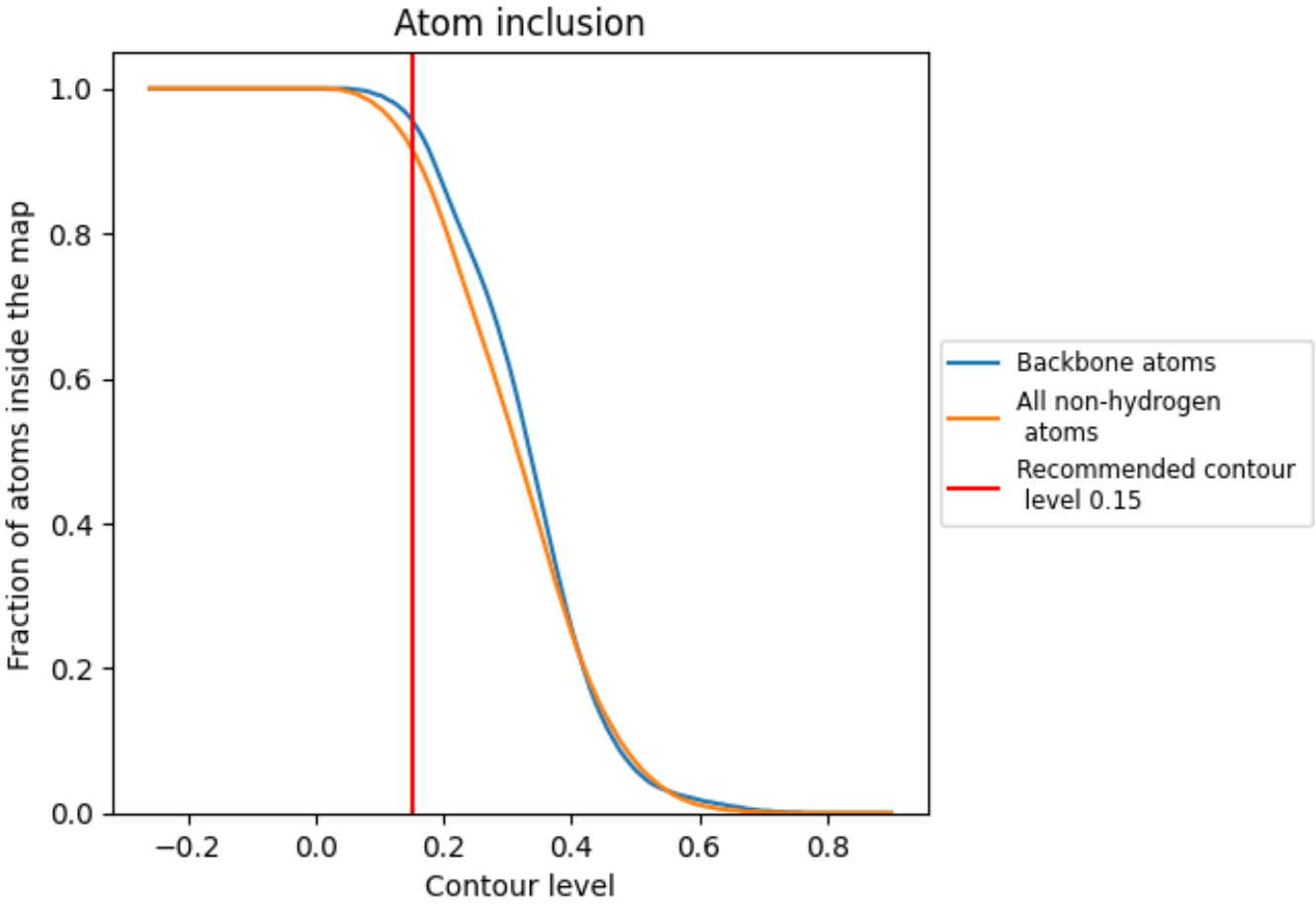
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.15).

9.4 Atom inclusion (i)



At the recommended contour level, 96% of all backbone atoms, 92% 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 (0.15) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9170	0.5680
1	0.9550	0.5780
2	0.9690	0.5680
3	0.9740	0.5710
4	0.7380	0.4030
5	0.9320	0.5630
6	0.6980	0.4670
B	0.9200	0.6110
C	0.9230	0.6090
D	0.8850	0.5790
E	0.7550	0.5190
F	0.7730	0.5230
G	0.2900	0.3970
I	0.2640	0.2390
J	0.9340	0.6000
K	0.8880	0.6040
L	0.9180	0.5970
M	0.8810	0.6000
N	0.9590	0.6120
O	0.8790	0.5650
P	0.8870	0.6050
Q	0.9460	0.6090
R	0.8910	0.5940
S	0.9090	0.6000
T	0.8530	0.5720
U	0.8530	0.5520
V	0.8330	0.5690
W	0.9050	0.5970
X	0.9080	0.6010
Y	0.8260	0.5330
Z	0.8900	0.5910
a	0.7310	0.4970
b	0.9160	0.5980
c	0.8340	0.5770
d	0.9610	0.6210

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Chain	Atom inclusion	Q-score
e	0.9530	0.6220
f	0.9280	0.6000
g	0.7320	0.4980
h	0.8360	0.5520
i	0.8480	0.5590
j	0.8840	0.5790
k	0.8180	0.5450
l	0.7630	0.5250
m	0.8780	0.5750
n	0.8340	0.5480
o	0.7460	0.5120
p	0.8640	0.5720
q	0.8750	0.5920
r	0.8100	0.5420
s	0.8610	0.5500
t	0.8520	0.5630
u	0.8810	0.5770
v	0.8160	0.5550
w	0.8510	0.5630
x	0.7930	0.5320
y	0.8750	0.5560
z	0.7250	0.5210