



wwPDB EM Validation Summary Report ⓘ

Aug 3, 2026 – 01:57 pm BST

PDB ID : 9T7H / pdb_00009t7h
EMDB ID : EMD-55636
Title : Cryo-EM structure of P. abyssi 70S ribosome in complex with hibernation factor HibA (L1 stalk conformation)
Authors : Madru, C.M.; Bourgeois, G.B.; Mechulam, Y.M.; Schmitt, E.S.
Deposited on : 2025-11-10
Resolution : 2.10 Å(reported)

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

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

A user guide is available at

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

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

EMDB validation analysis : 0.0.1.dev133
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.50

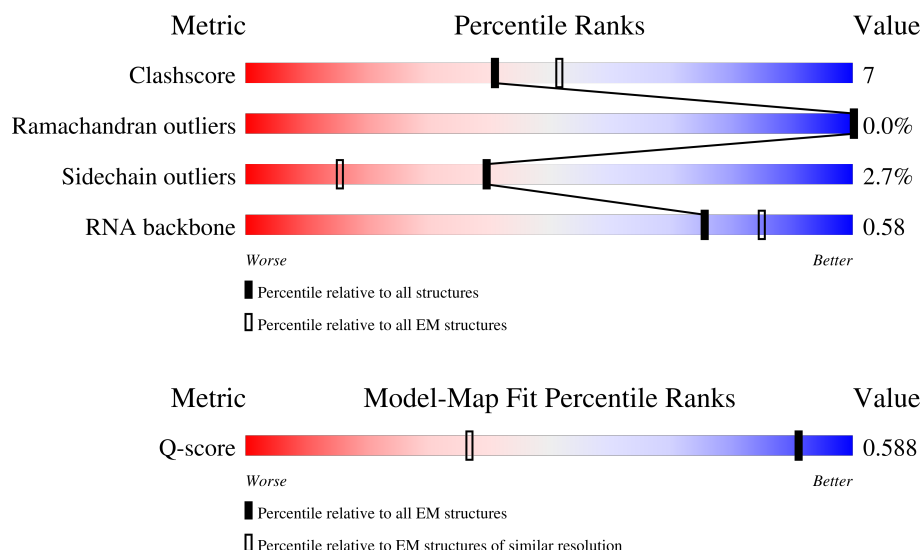
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.10 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	2317 (1.60 - 2.60)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

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1	1	3018	
2	2	1512	
3	3	128	

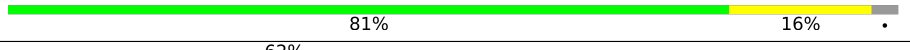
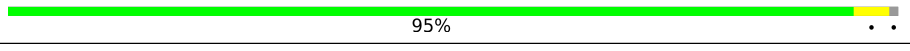
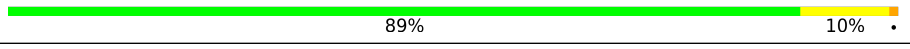
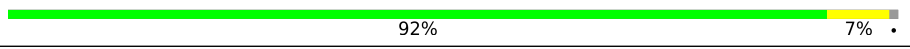
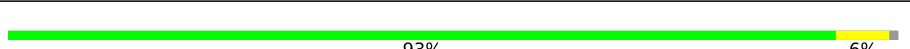
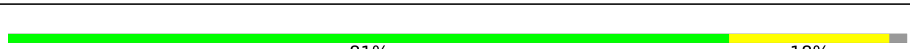
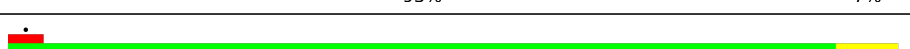
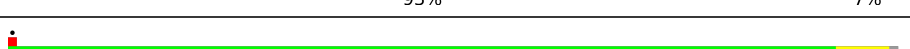
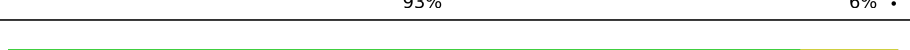
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Mol	Chain	Length	Quality of chain
4	H	392	
5	AA	199	
6	AB	202	
7	AC	63	
8	AD	180	
9	AE	243	
10	AF	236	
11	AG	125	
12	AH	215	
13	AI	130	
14	AJ	127	
15	AK	135	
16	AL	102	
17	AM	137	
18	AN	147	
19	AP	56	
20	AQ	158	
21	AR	113	
22	AS	67	
23	AU	150	
24	AV	99	
24	B6	99	
25	AW	65	
26	AX	71	
27	AY	51	

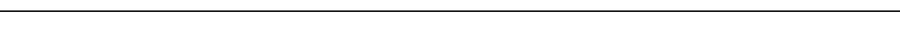
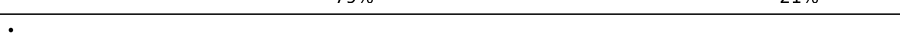
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Mol	Chain	Length	Quality of chain
28	AZ	210	
29	A0	37	
30	A3	123	
30	B4	123	
30	BG	123	
31	AT	132	
32	AO	148	
33	BB	239	
34	BY	155	
35	BO	203	
36	BC	361	
37	B5	82	
37	BK	82	
38	BL	147	
39	Bf	51	
40	BU	121	
41	Bb	130	
42	Be	62	
43	BE	188	
44	Ba	94	
45	BT	86	
46	BW	68	
47	Bi	83	
48	BI	142	
49	BR	97	

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Mol	Chain	Length	Quality of chain
50	BQ	151	 86% 13% .
51	BV	67	 82% 12% 6%
52	Bj	94	 90% 10%
53	BD	255	 85% 13% .
54	BF	184	 82% 16% ..
55	BZ	99	 82% 17% .
56	BP	120	 88% 12%
57	BM	194	 91% 8% .
58	BS	155	 86% 12% ..
59	Bd	91	 91% 8% .
60	BN	181	 80% 17% ..
61	Bg	51	 78% 16% 6%
62	Bc	87	 89% 10% .
63	BJ	141	 91% 8% .
64	Bl	77	 79% 21%
65	Bk	65	 88% 9% .
66	BA	219	 36% 52% 44% ..

2 Entry composition [i](#)

There are 68 unique types of molecules in this entry. The entry contains 171964 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 rRNA 23S.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	1	3018	Total	C	N	O	P	0	0
			65181	29055	12094	21014	3018		

- Molecule 2 is a RNA chain called rRNA 16S.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	2	1496	Total	C	N	O	P	0	0
			32291	14408	5957	10430	1496		

- Molecule 3 is a RNA chain called rRNA 5S.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	3	126	Total	C	N	O	P	0	0
			2703	1203	498	876	126		

- Molecule 4 is a protein called Dehydrogenase.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	H	386	Total	C	N	O	S	0	0
			3074	1962	535	567	10		

- Molecule 5 is a protein called 30S ribosomal protein S3Ae.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	AA	188	Total	C	N	O	S	0	0
			1531	993	268	266	4		

- Molecule 6 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	AB	196	Total	C	N	O	S	0	0
			1571	1017	269	281	4		

- Molecule 7 is a protein called Zn-ribbon RNA-binding protein involved in translation.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	AC	57	Total	C	N	O	S	0	0
			449	285	80	76	8		

- Molecule 8 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	AD	173	Total	C	N	O	S	0	0
			1452	913	280	255	4		

- Molecule 9 is a protein called 30S ribosomal protein S4e.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	AE	242	Total	C	N	O	S	0	0
			1983	1281	358	339	5		

- Molecule 10 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	AF	229	Total	C	N	O	S	0	0
			1808	1147	334	320	7		

- Molecule 11 is a protein called 30S ribosomal protein S6e.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	AG	124	Total	C	N	O	S	0	0
			977	621	178	176	2		

- Molecule 12 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	AH	214	Total	C	N	O	S	0	0
			1725	1095	323	300	7		

- Molecule 13 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	AI	129	Total	C	N	O	S	0	0
			1034	668	184	180	2		

- Molecule 14 is a protein called 30S ribosomal protein S8e.

Mol	Chain	Residues	Atoms				AltConf	Trace
14	AJ	125	Total	C	N	O		
			986	612	205	169	0	0

- Molecule 15 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms				AltConf	Trace
15	AK	135	Total	C	N	O	S	
			1073	673	207	189	4	0

- Molecule 16 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms				AltConf	Trace
16	AL	100	Total	C	N	O	S	
			809	502	157	147	3	0

- Molecule 17 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms				AltConf	Trace
17	AM	127	Total	C	N	O	S	
			955	591	190	172	2	0

- Molecule 18 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms				AltConf	Trace
18	AN	146	Total	C	N	O	S	
			1148	727	224	194	3	0

- Molecule 19 is a protein called 30S ribosomal protein S14 type Z.

Mol	Chain	Residues	Atoms				AltConf	Trace
19	AP	55	Total	C	N	O	S	
			455	288	95	67	5	0

- Molecule 20 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms				AltConf	Trace
20	AQ	157	Total	C	N	O	S	
			1305	833	249	219	4	0

- Molecule 21 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	AR	107	Total	C	N	O	S	0	0
			884	562	172	147	3		

- Molecule 22 is a protein called 30S ribosomal protein S17e.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	AS	64	Total	C	N	O	S	0	0
			541	343	104	93	1		

- Molecule 23 is a protein called 30S ribosomal protein S19e.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	AU	149	Total	C	N	O	S	0	0
			1223	790	221	212			

- Molecule 24 is a protein called 30S ribosomal protein S24e.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	AV	96	Total	C	N	O	S	0	0
			808	528	129	148	3		
24	B6	94	Total	C	N	O	S	0	0
			790	516	125	146	3		

- Molecule 25 is a protein called 30S ribosomal protein S27e.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	AW	61	Total	C	N	O	S	0	0
			470	294	91	80	5		

- Molecule 26 is a protein called 30S ribosomal protein S28e.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	AX	65	Total	C	N	O	S	0	0
			516	316	103	97			

- Molecule 27 is a protein called 30S ribosomal protein S27ae.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	AY	29	Total	C	N	O	S	0	0
			227	141	44	37	5		

- Molecule 28 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	AZ	196	Total	C	N	O	S	0	0
			1541	983	284	270	4		

- Molecule 29 is a protein called Small ribosomal subunit protein eS32.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	A0	36	Total	C	N	O	S	0	0
			343	218	84	39	2		

- Molecule 30 is a protein called 50S ribosomal protein L7Ae.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	A3	122	Total	C	N	O	S	0	0
			933	594	156	180	3		
30	BG	122	Total	C	N	O	S	0	0
			932	594	156	179	3		
30	B4	122	Total	C	N	O	S	0	0
			933	594	156	180	3		

- Molecule 31 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	AT	130	Total	C	N	O	S	0	0
			1057	675	201	174	7		

- Molecule 32 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	AO	138	Total	C	N	O	S	0	0
			1116	700	221	190	5		

- Molecule 33 is a protein called Large ribosomal subunit protein uL2.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	BB	238	Total	C	N	O	S	0	0
			1838	1163	354	317	4		

- Molecule 34 is a protein called Large ribosomal subunit protein uL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	BY	154	Total	C	N	O	S	0	0
			1235	783	234	212	6		

- Molecule 35 is a protein called Large ribosomal subunit protein uL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	BO	198	Total	C	N	O	S	0	0
			1607	1024	302	279	2		

- Molecule 36 is a protein called Large ribosomal subunit protein uL3.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	BC	360	Total	C	N	O	S	0	0
			2870	1843	522	494	11		

- Molecule 37 is a protein called Large ribosomal subunit protein eL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	B5	81	Total	C	N	O	S	0	0
			614	388	116	108	2		
37	BK	80	Total	C	N	O	S	0	0
			607	383	115	107	2		

- Molecule 38 is a protein called Large ribosomal subunit protein uL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	BL	147	Total	C	N	O	S	0	0
			1149	720	224	202	3		

- Molecule 39 is a protein called Large ribosomal subunit protein eL39.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	Bf	50	Total	C	N	O	S	0	0
			435	275	99	60	1		

- Molecule 40 is a protein called Large ribosomal subunit protein uL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	BU	121	Total	C	N	O	S	0	0
			1011	638	198	170	5		

- Molecule 41 is a protein called Large ribosomal subunit protein eL32.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	Bb	129	Total	C	N	O	S	0	0
			1095	702	221	171	1		

- Molecule 42 is a protein called Large ribosomal subunit protein eL37.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	Be	61	Total	C	N	O	S	0	0
			503	312	112	75	4		

- Molecule 43 is a protein called Large ribosomal subunit protein uL5.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	BE	185	Total	C	N	O	S	0	0
			1485	934	277	265	9		

- Molecule 44 is a protein called Large ribosomal subunit protein eL31.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	Ba	94	Total	C	N	O	S	0	0
			778	503	147	127	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
45	BT	86	Total	C	N	O	S	0	0
			696	451	118	126	1		

- Molecule 46 is a protein called Large ribosomal subunit protein uL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	BW	68	Total	C	N	O	S	0	0
			565	349	111	99	6		

- Molecule 47 is a protein called Large ribosomal subunit protein eL43.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	Bi	82	Total	C	N	O	S	0	0
			620	389	129	97	5		

- Molecule 48 is a protein called Large ribosomal subunit protein uL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	BI	142	Total	C	N	O	S	0	0
			1148	734	217	194	3		

- Molecule 49 is a protein called Large ribosomal subunit protein eL21.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	BR	96	Total	C	N	O	S	0	0
			797	507	164	125	1		

- Molecule 50 is a protein called Large ribosomal subunit protein eL19.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	BQ	150	Total	C	N	O	S	0	0
			1265	795	261	203	6		

- Molecule 51 is a protein called Large ribosomal subunit protein eL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	BV	63	Total	C	N	O	S	0	0
			532	339	103	84	6		

- Molecule 52 is a protein called Large ribosomal subunit protein eL42.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	Bj	94	Total	C	N	O	S	0	0
			789	502	163	119	5		

- Molecule 53 is a protein called Large ribosomal subunit protein uL4.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	BD	255	Total	C	N	O	S	0	0
			2026	1290	388	343	5		

- Molecule 54 is a protein called Large ribosomal subunit protein uL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	BF	183	Total	C	N	O	S	0	0
			1456	943	251	261	1		

- Molecule 55 is a protein called Large ribosomal subunit protein eL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	BZ	98	Total	C	N	O		0	0
			749	486	122	141			

- Molecule 56 is a protein called Large ribosomal subunit protein eL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	BP	120	Total	C	N	O	S	0	0
			971	610	188	170	3		

- Molecule 57 is a protein called Large ribosomal subunit protein eL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	BM	193	Total	C	N	O	S	0	0
			1588	1014	318	251	5		

- Molecule 58 is a protein called Large ribosomal subunit protein uL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	BS	154	Total	C	N	O	S	0	0
			1247	786	246	211	4		

- Molecule 59 is a protein called Large ribosomal subunit protein eL34.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	Bd	91	Total	C	N	O	S	0	0
			759	477	163	109	10		

- Molecule 60 is a protein called Large ribosomal subunit protein uL16.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	BN	178	Total	C	N	O	S	0	0
			1452	920	281	246	5		

- Molecule 61 is a protein called Large ribosomal subunit protein eL40.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	Bg	48	Total	C	N	O	S	0	0
			387	243	80	60	4		

- Molecule 62 is a protein called Large ribosomal subunit protein eL33.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	Bc	87	Total	C	N	O	S	0	0
			684	435	132	115	2		

- Molecule 63 is a protein called Large ribosomal subunit protein uL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	BJ	140	Total	C	N	O	S	0	0
			1066	664	214	185	3		

- Molecule 64 is a protein called Large ribosomal subunit protein eL20.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	Bl	77	Total	C	N	O	S	0	0
			659	425	120	113	1		

- Molecule 65 is a protein called C2H2-type domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	Bk	63	Total	C	N	O	S	0	0
			528	339	108	78	3		

- Molecule 66 is a protein called Large ribosomal subunit protein uL1.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	BA	215	Total	C	N	O	S	0	0
			1675	1065	301	304	5		

- Molecule 67 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
67	1	165	Total	Mg	0
			165	165	
67	2	61	Total	Mg	0
			61	61	
67	3	1	Total	Mg	0
			1	1	
67	AD	1	Total	Mg	0
			1	1	
67	AE	1	Total	Mg	0
			1	1	
67	AF	1	Total	Mg	0
			1	1	
67	AK	1	Total	Mg	0
			1	1	
67	AN	1	Total	Mg	0
			1	1	
67	AR	1	Total	Mg	0
			1	1	

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Mol	Chain	Residues	Atoms		AltConf
67	AU	1	Total 1	Mg 1	0
67	AT	1	Total 1	Mg 1	0
67	BB	2	Total 2	Mg 2	0
67	Bb	1	Total 1	Mg 1	0
67	BD	1	Total 1	Mg 1	0
67	BM	1	Total 1	Mg 1	0
67	BS	1	Total 1	Mg 1	0

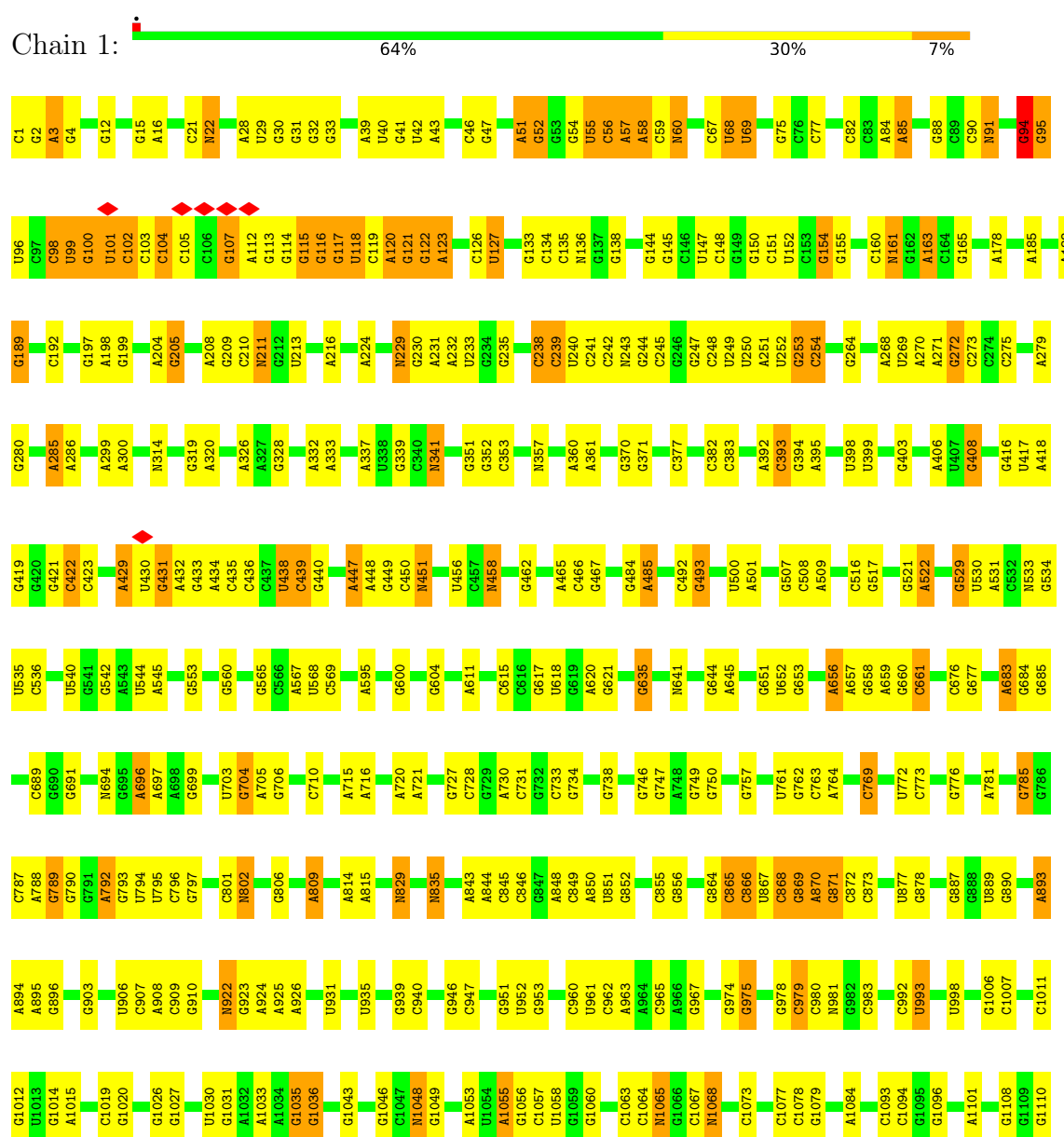
- Molecule 68 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
68	AC	2	Total 2	Zn 2	0
68	AF	1	Total 1	Zn 1	0
68	AP	1	Total 1	Zn 1	0
68	AR	1	Total 1	Zn 1	0
68	AW	1	Total 1	Zn 1	0
68	Be	1	Total 1	Zn 1	0
68	Bi	1	Total 1	Zn 1	0
68	BV	1	Total 1	Zn 1	0
68	Bj	1	Total 1	Zn 1	0
68	Bd	1	Total 1	Zn 1	0
68	Bg	1	Total 1	Zn 1	0
68	Bk	1	Total 1	Zn 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: rRNA 23S

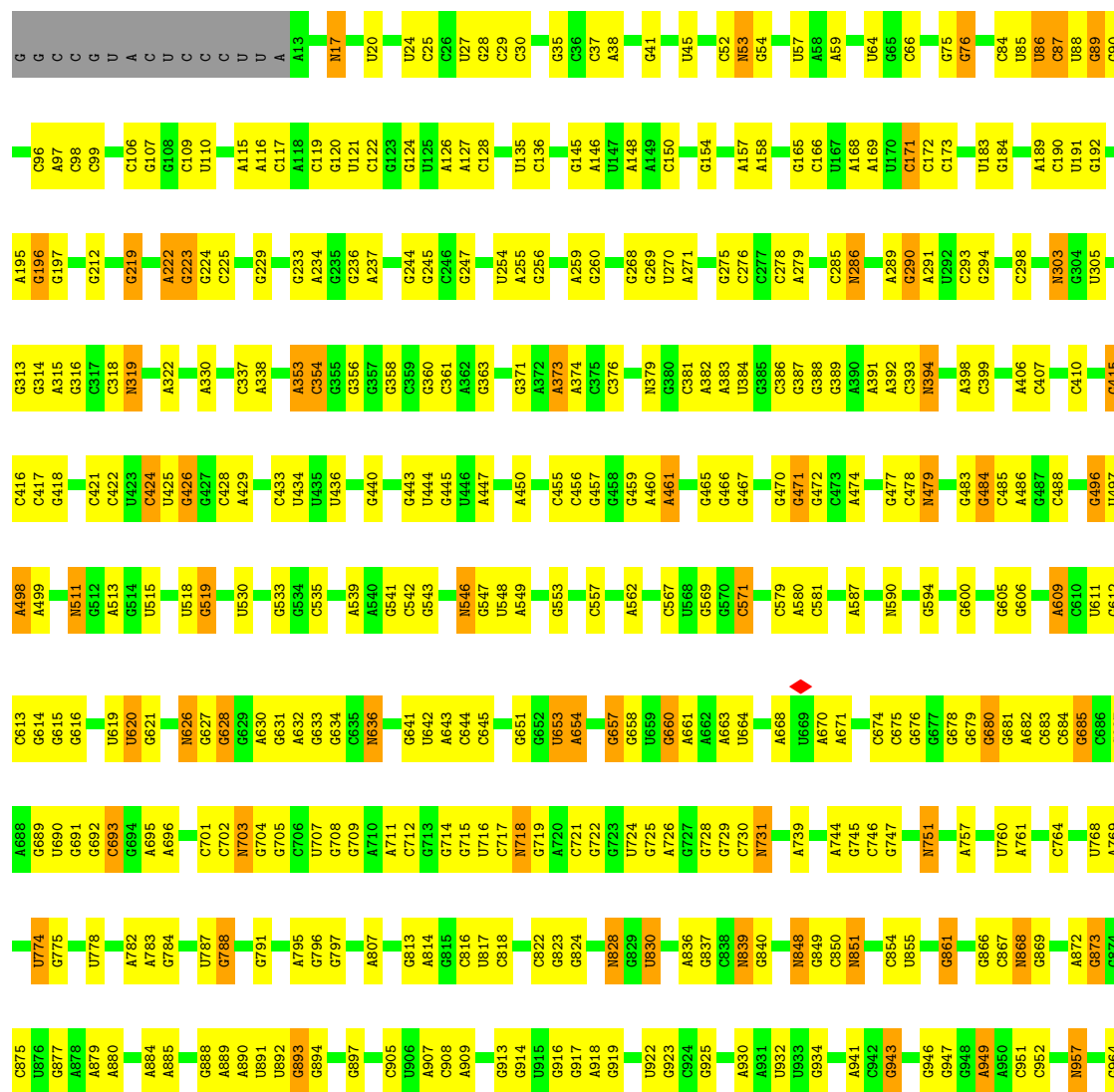


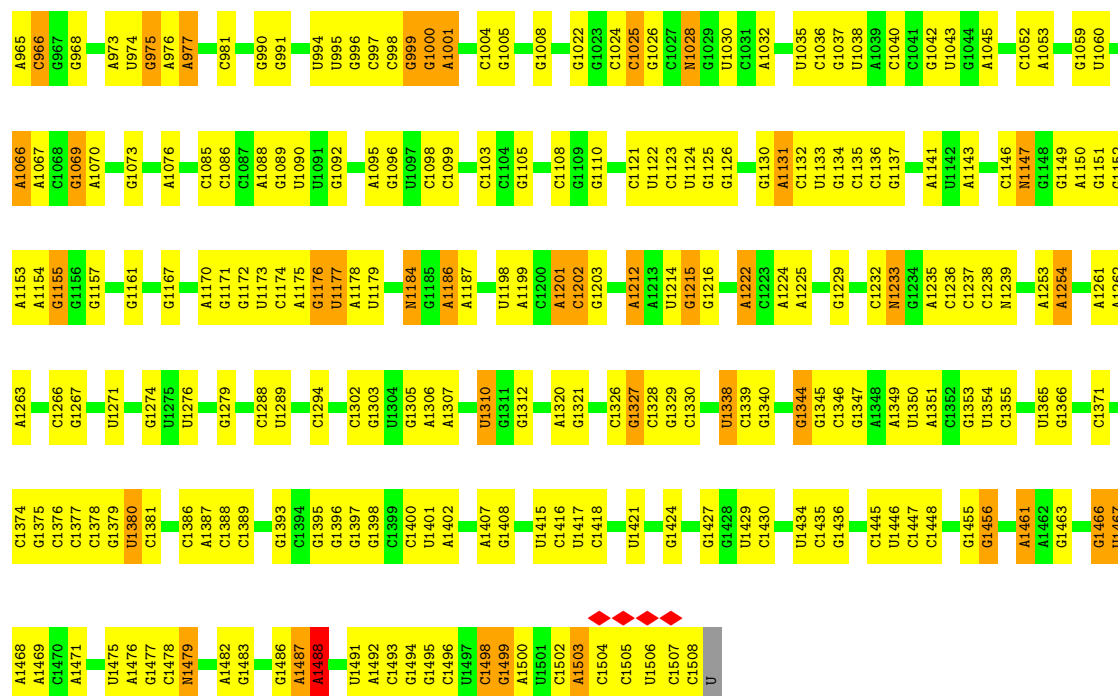
G2531	G2532	G2533	G2534	G2535	G2536	G2537	G2538	G2539	U2543	G2544	N2545	N2546	N2548	G2549	U2550	A2551	G2552	A2553	G2556	G2557	A2558	A2559	G2560	A2564	A2565	A2566	N2570	G2574	A2577	G2584	N2585	A2588	G2592	A2593	G2597	A2603	G2607	N2608	A2611	A2612	G2613	G2617	G2618	G2619	G2620							
A2420	C2421	U2422	C2423	C2424	U2425	C2426	C2427	C2428	G2429	G2430	U2433	G2434	A2438	A2446	A2447	A2448	A2455	C2456	G2468	G2469	U2473	U2474	G2477	G2478	G2480	A2488	N2495	G2496	A2497	A2498	A2499	U2503	A2504	U2505	G2510	G2514	U2517	A2518	A2519	G2522	C2523	G2524	G2525									
G2343	G2344	G2347	G2348	G2351	G2352	A2359	G2360	G2361	G2362	G2363	G2364	G2365	G2366	G2367	G2368	G2369	U2371	C2372	G2373	A2374	A2375	G2380	G2381	G2382	G2383	G2384	G2385	G2388	G2389	U2390	G2391	G2392	G2397	A2398	G2399	C2400	G2401	G2402	C2405	A2406	U2407	G2408	A2409	G2410	A2411	C2412	G2416	G2417	G2418	G2419		
C2248	N2249	A2255	A2256	U2259	U2265	G2266	G2267	G2268	G2269	C2270	G2271	A2272	A2273	C2276	C2277	A2278	G2281	N2287	G2292	A2295	A2300	G2301	A2302	C2303	C2304	C2305	C2306	G2309	G2310	A2311	G2312	G2313	U2314	U2315	U2326	G2327	G2328	N2329	U2332	G2333	A2336	C2337	G2338	G2341	C2342							
A2130	A2131	N2136	G2137	G2138	A2142	C2143	G2144	G2145	G2146	G2147	A2154	C2155	U2156	A2157	C2162	C2163	U2164	C2165	U2166	U2167	G2170	G2171	U2172	A2173	A2177	A2178	A2179	U2180	U2181	C2182	C2183	U2196	G2197	C2198	C2203	U2208	A2211	U2212	G2213	U2232	G2233	U2234	A2236	C2237	G2238	G2241	G2244	C2247				
G2009	G2012	G2020	U2027	G2028	G2029	U2035	A2036	A2040	A2041	A2042	A2043	C2044	A2047	U2050	C2051	C2056	U2057	A2066	G2067	G2081	A2082	N2083	G2084	A2085	C2093	C2094	A2095	G2102	U2103	A2104	G2108	A2109	A2110	G2233	U2118	A2119	C2120	A2121	U2128	G2129												
N1878	A1883	C1884	N1885	C1890	G1895	C1896	G1905	A1908	A1909	G1910	U1920	G1921	U1922	C1923	G1928	A1929	C1932	C1933	N1934	U1938	G1939	G1943	G1950	C1951	A1952	A1953	A1954	N1962	G1972	A1976	C1985	U1986	G1987	G1993	C1994	G1995	U1996	A1997	A1998	C1999	N2001	U2002										
G1756	G1759	A1760	G1761	U1762	G1763	C1764	N1765	A1769	C1773	G1774	A1775	N1780	G1781	G1782	A1787	U1796	G1799	C1805	G1806	U1807	U1808	A1809	G1810	U1816	A1824	C1828	U1829	G1830	G1831	A1840	A1841	A1842	A1843	C1847	U1848	U1856	U1857	U1862	N1867	N1873	C1877											
U1653	A1657	N1662	C1666	C1667	C1668	A1676	G1677	G1678	U1679	G1680	A1685	A1686	C1687	G1692	N1695	G1696	A1698	G1699	G1703	A1704	C1705	G1706	C1707	U1709	C1710	G1711	G1712	G1713	G1714	U1715	G1729	A1730	U1731	G1732	A1733	G1734	G1735	G1739	C1740	U1741	A1742	A1743	A1748	C1754	N1755							
G1310	G1311	A1316	G1317	G1318	C1319	U1320	U1321	A1322	G1323	A1324	A1325	C1326	C1327	A1328	G1329	C1330	C1331	A1332	U1333	U1336	U1337	U1338	A1339	G1342	A1343	G1344	U1345	G1346	C1347	G1348	U1349	A1350	A1351	C1352	A1353	G1354	C1355	U1356	C1359	G1362	U1363	C1364	G1365	A1366	G1367	G1368	U1369	C1370	C1371	C1376	C1379	G1380
G1216	N1222	G1225	A1231	C1232	C1233	A1234	A1235	C1236	G1240	A1241	N1243	A1250	A1251	G1252	C1253	C1254	A1259	A1260	G1261	U1262	G1263	G1266	A1270	A1271	C1272	G1278	U1279	C1280	C1281	A1282	A1283	A1284	G1285	U1288	G1289	N1293	U1300	A1301	G1302	A1303	A1304	A1305	G1306	C1307	G1308	G1309						
G1111	A1115	G1116	C1117	A1118	U1124	G1125	G1131	A1132	A1133	G1134	G1140	A1141	A1142	A1143	A1144	C1145	A1146	C1147	C1148	C1149	U1159	G1160	A1161	A1162	A1163	C1164	U1165	C1166	G1167	G1168	A1169	A1170	C1171	C1172	C1173	A1174	C1175	C1176	G1177	A1198	G1199	G1200	G1201	G1203	G1206	G1207	U1210	A1211	A1212			



• Molecule 2: rRNA 16S

Chain 2: 57% 35% 7% .

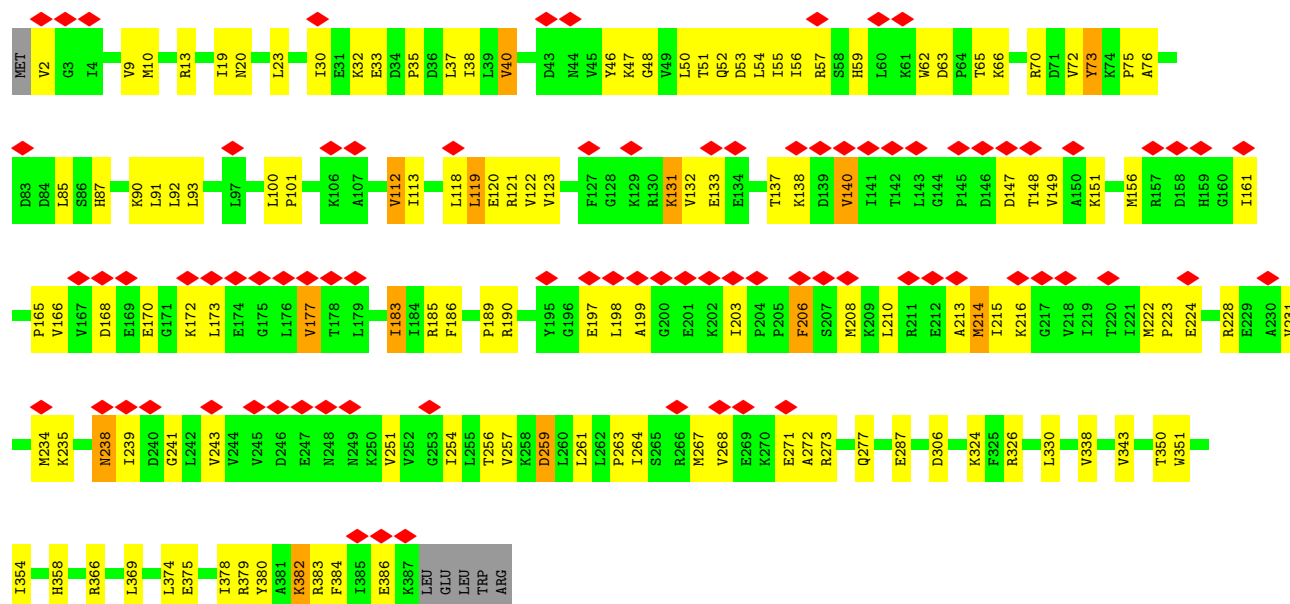




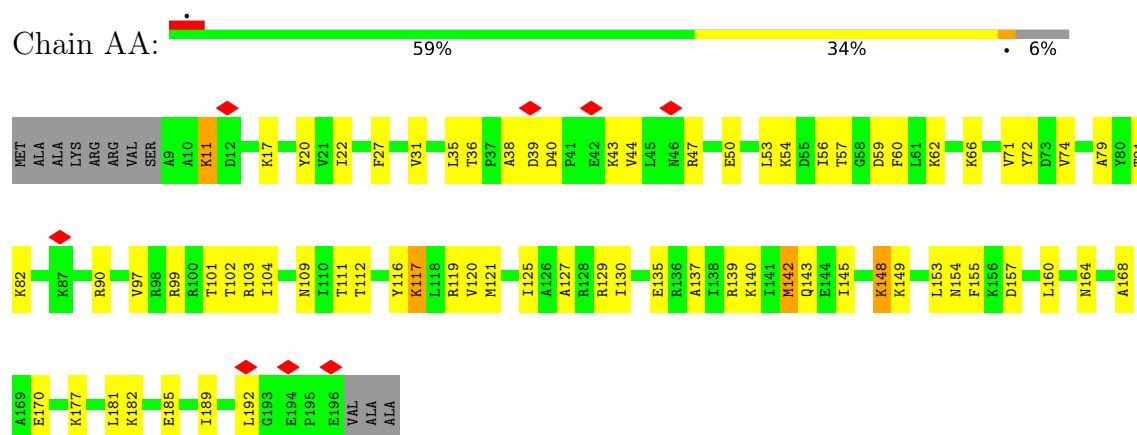
• Molecule 3: rRNA 5S



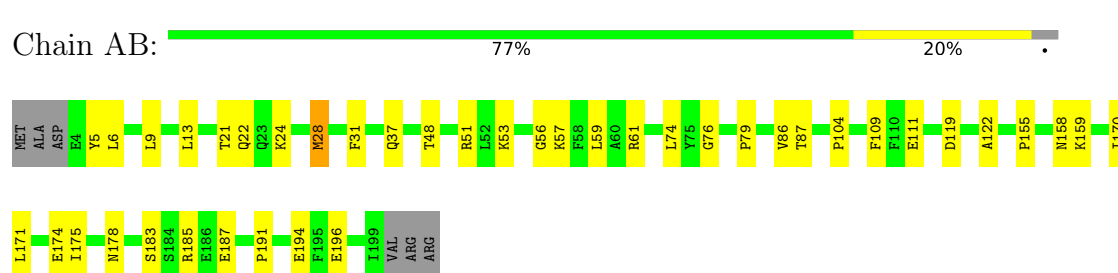
• Molecule 4: Dehydrogenase



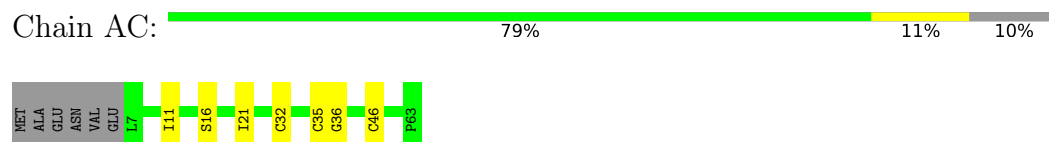
- Molecule 5: 30S ribosomal protein S3Ae



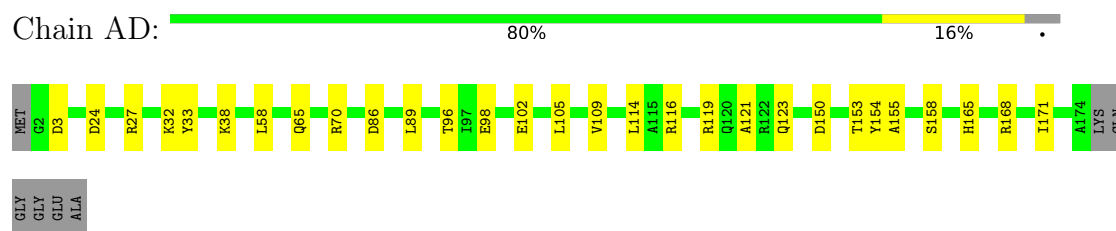
- Molecule 6: 30S ribosomal protein S2



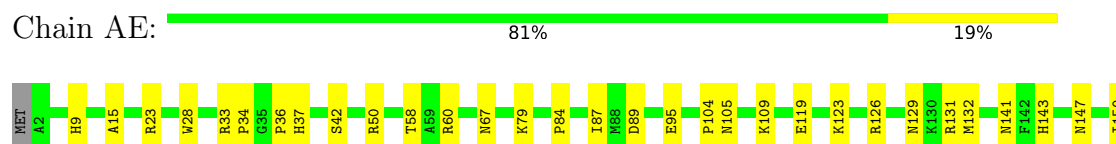
- Molecule 7: Zn-ribbon RNA-binding protein involved in translation



- Molecule 8: 30S ribosomal protein S4



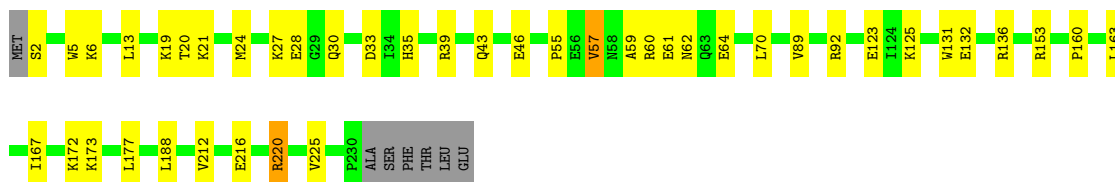
- Molecule 9: 30S ribosomal protein S4e





- Molecule 10: 30S ribosomal protein S5

Chain AF: 79% 17% ..



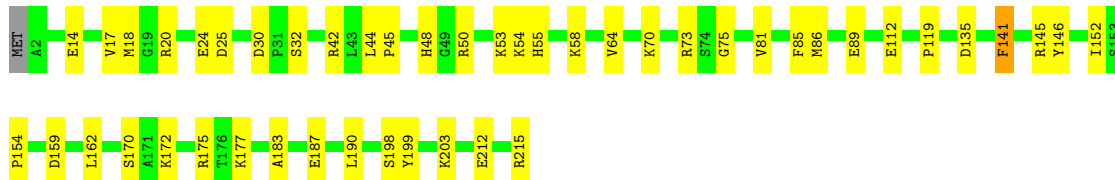
- Molecule 11: 30S ribosomal protein S6e

Chain AG: 74% 23% ..



- Molecule 12: 30S ribosomal protein S7

Chain AH: 78% 21%



- Molecule 13: 30S ribosomal protein S8

Chain AI: 84% 15% ..



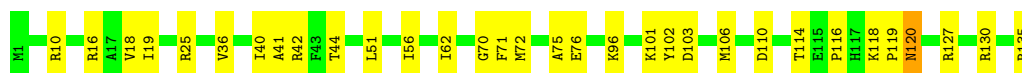
- Molecule 14: 30S ribosomal protein S8e

Chain AJ: 75% 20% ..



- Molecule 15: 30S ribosomal protein S9

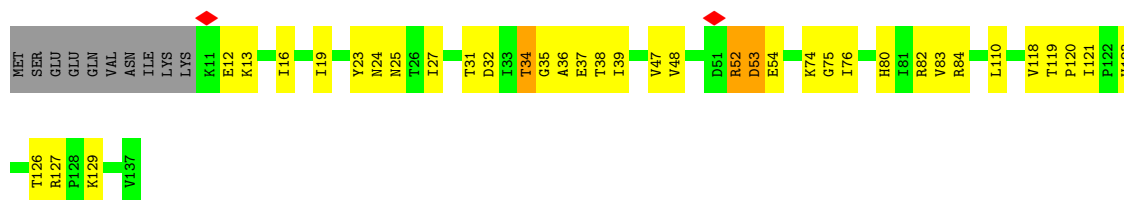
Chain AK: 76% 23%



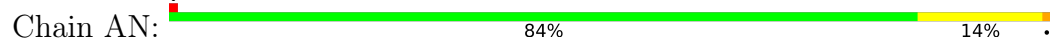
- Molecule 16: 30S ribosomal protein S10



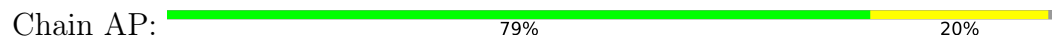
- Molecule 17: 30S ribosomal protein S11



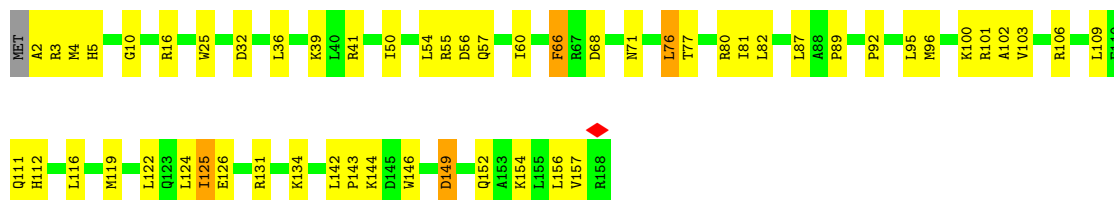
- Molecule 18: 30S ribosomal protein S12



- Molecule 19: 30S ribosomal protein S14 type Z



- Molecule 20: 30S ribosomal protein S15



- Molecule 21: 30S ribosomal protein S17

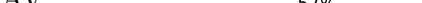
MT	VAL	K15	C16	H24	H30	I37	V38	V39	S40	V49	E50	R66	M74	C77	A80	D84	V102	E107	R108	A109	GIU	ARG	ARG
----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	-----	-----	-----

- Chain AS: 73% 22% .

MET	G2	R5	Q6	K10	L16	E23	F24	T25	R26	D27	F28	E29	H30	K33	K34	S43	K44	M60	K65	TLE	LEU
-----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

- Chain AU:  83% 16%

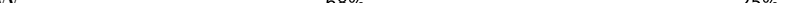
MET	A2	T3	V4	R15	E25	I26	K27	P33	E42	R43	L44	P45	R60	V62	Y63	R72	R83	R119	R126	D130	T134	E135	L136	K137	E141	E142	I143	I144	P145	E146	Y150
-----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------

- Chain AV:  57% 35% 5%

[illegible]

- Chain B6: 77% 18% 5%

M1	E2	I3	K17	I23	Y24	H25	E28	P31	K37	G38	K39	L40	V41	A42	M43	L46	M47	T50	K64	Y71	D74	R77	E94	LYS	LYS	GLU	GLY	GLI
----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

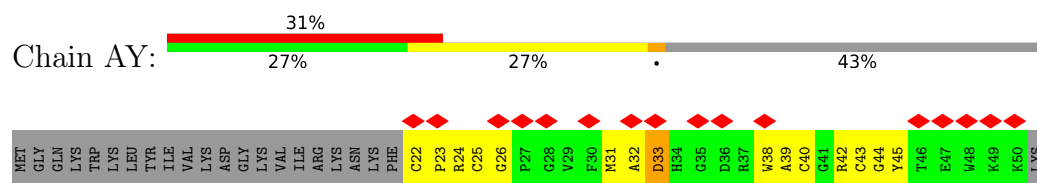
- Chain AW:  68% 25% 6%

MET	ALA	LEU	PRO	R5	K19	Q27	T28	V29	A34	T35	R36	V37	R38	C39	N40	L46	V47	F48	P49	T50	K53	R57	I60	L64	E65
-----	-----	-----	-----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

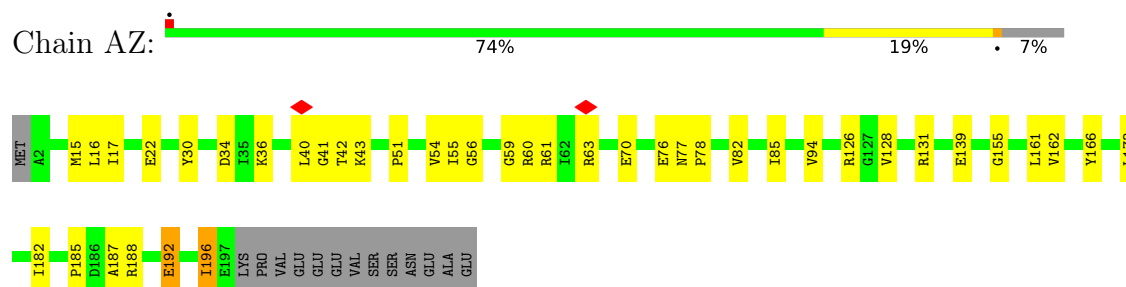
- Chain AX: 59% 30% 8%

ME1	ALA	GLU	D4	P8	A9	E10	V11	I12	E13	I14	I15	T18	G19	K28	V29	L32	D36	R39	R42	V49	D53	I54	L56	R58	E59	R62	R65	K68	SER	ARG	ARG
-----	-----	-----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

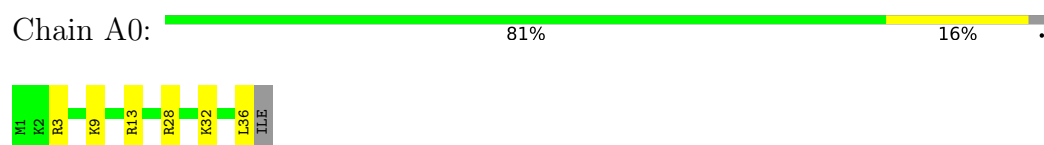
- Molecule 27: 30S ribosomal protein S27ae



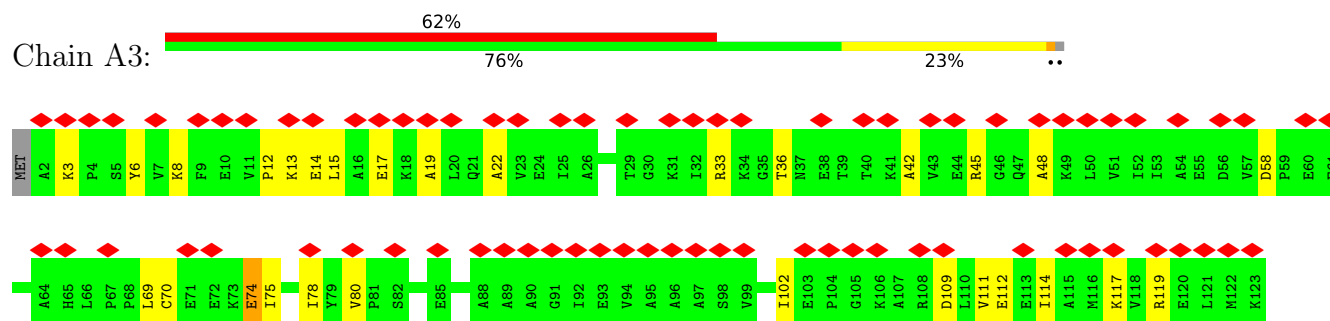
- Molecule 28: 30S ribosomal protein S3



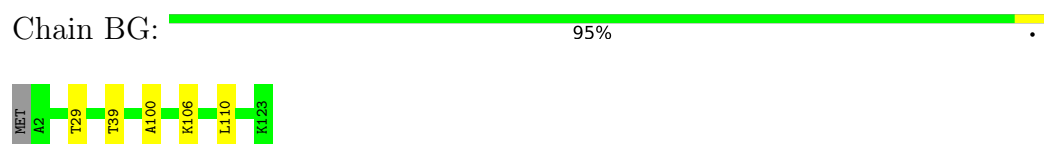
- Molecule 29: Small ribosomal subunit protein eS32



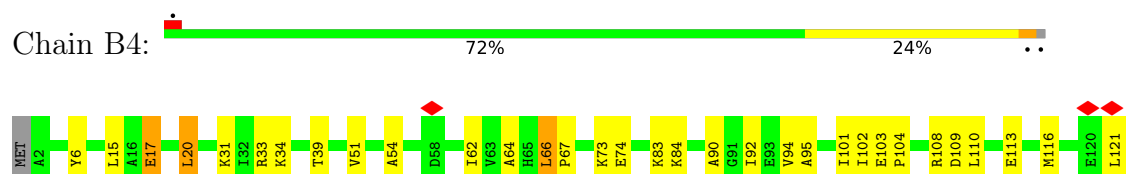
- Molecule 30: 50S ribosomal protein L7Ae



- Molecule 30: 50S ribosomal protein L7Ae



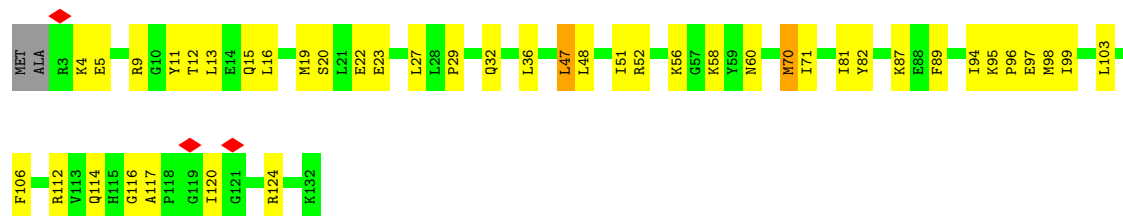
- Molecule 30: 50S ribosomal protein L7Ae



K123

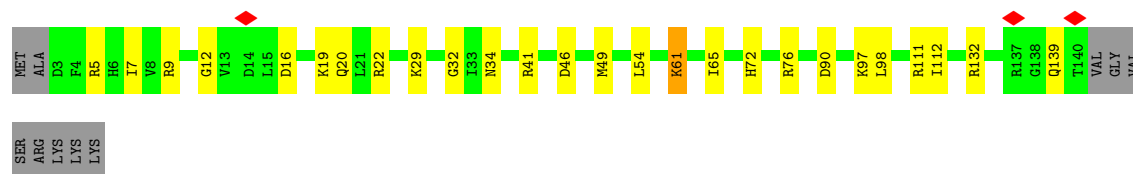
- Molecule 31: 30S ribosomal protein S19

Chain AT:  66% 31% ..



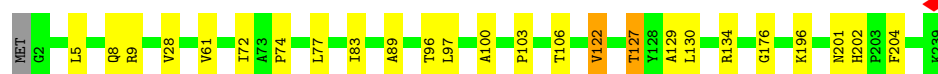
- Molecule 32: 30S ribosomal protein S13

Chain AO:  76% 17% • 7%

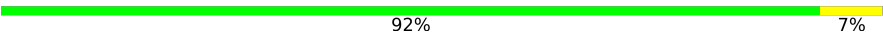


- Molecule 33: Large ribosomal subunit protein uL2

Chain BB:  89% 10% •



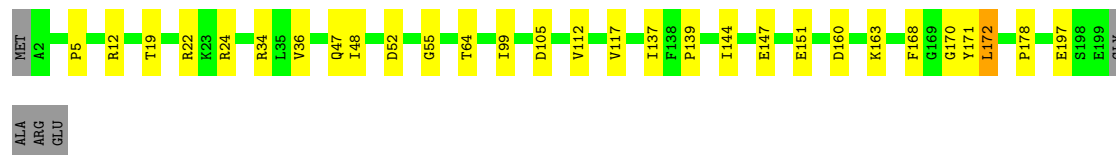
- Molecule 34: Large ribosomal subunit protein uL30

Chain BY:  92% 7% •



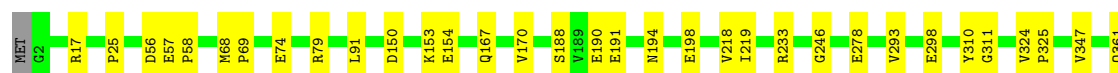
- Molecule 35: Large ribosomal subunit protein uL18

Chain BO:  83% 14% •



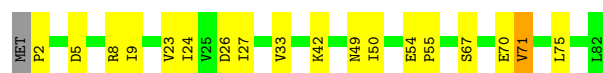
- Molecule 36: Large ribosomal subunit protein uL3

Chain BC:  91% 9%



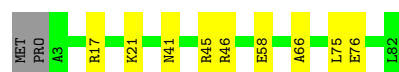
- Molecule 37: Large ribosomal subunit protein eL14

Chain B5:  77% 21% ..



- Molecule 37: Large ribosomal subunit protein eL14

Chain BK:  87% 11% .



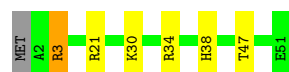
- Molecule 38: Large ribosomal subunit protein uL15

Chain BL:  85% 15%



- Molecule 39: Large ribosomal subunit protein eL39

Chain Bf:  86% 10% ..



- Molecule 40: Large ribosomal subunit protein uL24

Chain BU:  83% 17%



- Molecule 41: Large ribosomal subunit protein eL32

Chain Bb:  93% 6% .



- Molecule 42: Large ribosomal subunit protein eL37

Chain Be:  81% 18% .



- Molecule 43: Large ribosomal subunit protein uL5

Chain BE:  70% 26% ..

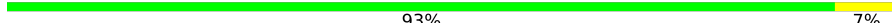


- Molecule 44: Large ribosomal subunit protein eL31

Chain Ba:  86% 14%

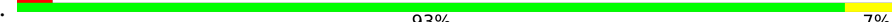


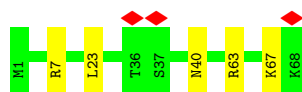
- Molecule 45: Large ribosomal subunit protein uL23

Chain BT:  93% 7%



- Molecule 46: Large ribosomal subunit protein uL29

Chain BW:  93% 7%



- Molecule 47: Large ribosomal subunit protein eL43

Chain Bi:  93% 6% .

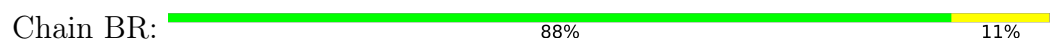


- Molecule 48: Large ribosomal subunit protein uL13

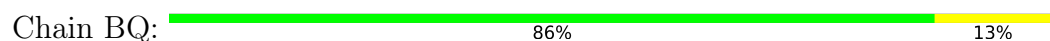
Chain BI:  89% 11%



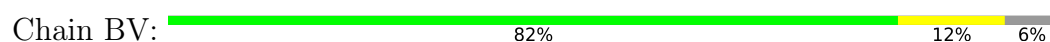
- Molecule 49: Large ribosomal subunit protein eL21



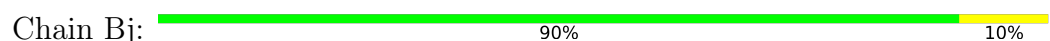
- Molecule 50: Large ribosomal subunit protein eL19



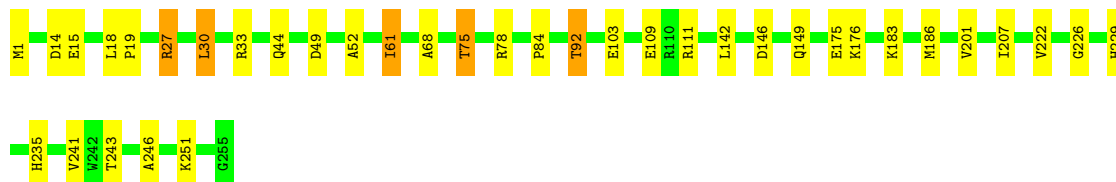
- Molecule 51: Large ribosomal subunit protein eL24



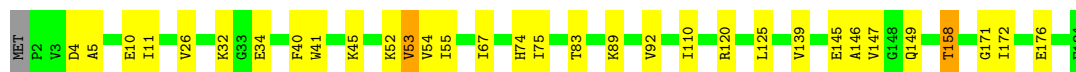
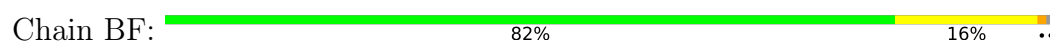
- Molecule 52: Large ribosomal subunit protein eL42



- Molecule 53: Large ribosomal subunit protein uL4



- Molecule 54: Large ribosomal subunit protein uL6



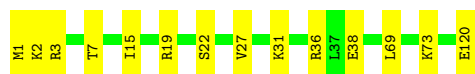
- Molecule 55: Large ribosomal subunit protein eL30

Chain BZ:  82% 17% .



- Molecule 56: Large ribosomal subunit protein eL18

Chain BP:  88% 12%



- Molecule 57: Large ribosomal subunit protein eL15

Chain BM:  91% 8% .



- Molecule 58: Large ribosomal subunit protein uL22

Chain BS:  86% 12% ..



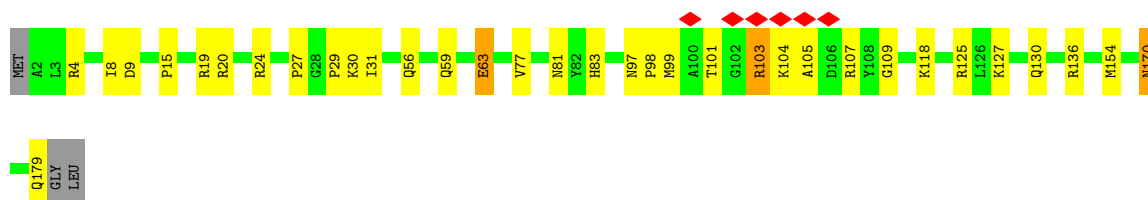
- Molecule 59: Large ribosomal subunit protein eL34

Chain Bd:  91% 8% .



- Molecule 60: Large ribosomal subunit protein uL16

Chain BN:  80% 17% ..



- Molecule 61: Large ribosomal subunit protein eL40

Chain Bg:  78% 16% 6%





- Molecule 62: Large ribosomal subunit protein eL33

Chain Bc: 89% 10%



- Molecule 63: Large ribosomal subunit protein uL14

Chain BJ: 91% 8%



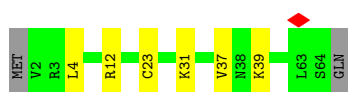
- Molecule 64: Large ribosomal subunit protein eL20

Chain Bl: 79% 21%



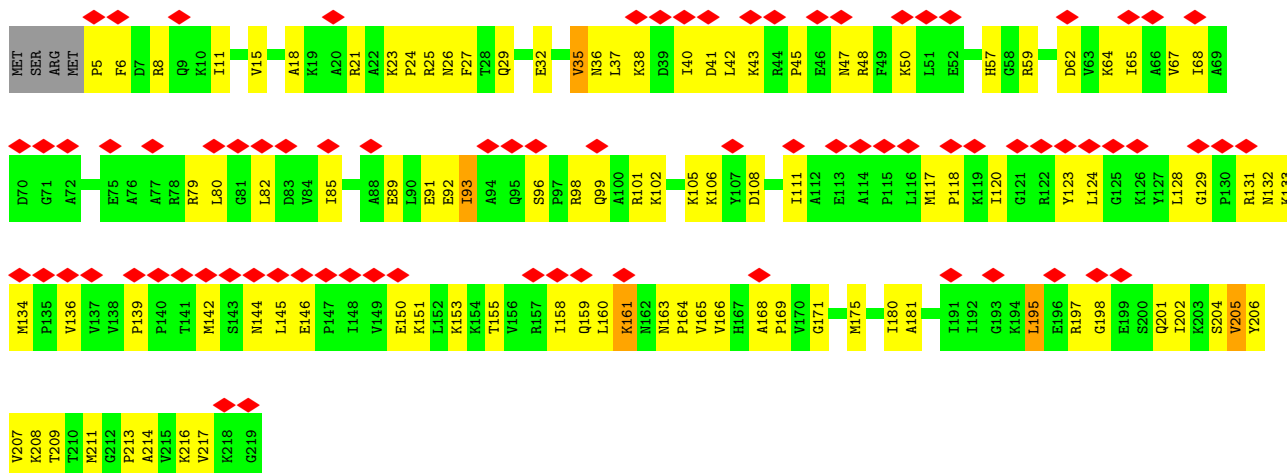
- Molecule 65: C2H2-type domain-containing protein

Chain Bk: 88% 9%



- Molecule 66: Large ribosomal subunit protein uL1

Chain BA: 36% 52% 44%



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	170000	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	40	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.015	Depositor
Minimum map value	-0.005	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.0008	Depositor
Map size ($\text{\AA}$)	302.04, 302.04, 302.04	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	0.83900005, 0.83900005, 0.83900005	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: MA6, OMU, LHH, UR3, 4AC, B8H, OMC, A2M, ZN, MG, 5MC, 6MZ, 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	1	0.23	2/70601 (0.0%)	0.31	0/110066
2	2	0.18	0/34435	0.26	0/53681
3	3	0.18	0/2995	0.25	0/4669
4	H	0.13	0/3120	0.31	0/4209
5	AA	0.11	0/1557	0.27	0/2087
6	AB	0.12	0/1602	0.24	0/2165
7	AC	0.12	0/463	0.27	0/628
8	AD	0.12	0/1476	0.21	0/1980
9	AE	0.14	0/2032	0.27	0/2742
10	AF	0.15	0/1838	0.26	0/2478
11	AG	0.12	0/993	0.30	0/1329
12	AH	0.11	0/1762	0.23	0/2366
13	AI	0.15	0/1055	0.26	0/1415
14	AJ	0.14	0/995	0.24	0/1327
15	AK	0.13	0/1089	0.31	0/1459
16	AL	0.13	0/817	0.30	0/1097
17	AM	0.12	0/973	0.30	0/1311
18	AN	0.15	0/1165	0.29	0/1547
19	AP	0.15	0/465	0.29	0/613
20	AQ	0.11	0/1333	0.28	0/1791
21	AR	0.14	0/907	0.29	0/1225
22	AS	0.12	0/548	0.25	0/725
23	AU	0.11	0/1253	0.22	0/1689
24	AV	0.14	0/826	0.29	0/1108
24	B6	0.10	0/808	0.23	0/1086
25	AW	0.11	0/476	0.24	0/641
26	AX	0.14	0/518	0.28	0/694
27	AY	0.09	0/235	0.27	0/315
28	AZ	0.13	0/1563	0.26	0/2099
29	A0	0.16	0/349	0.25	0/451
30	A3	0.11	0/945	0.31	0/1274
30	B4	0.12	0/945	0.32	0/1274

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
30	BG	0.13	0/944	0.25	0/1274
31	AT	0.12	0/1077	0.26	0/1439
32	AO	0.12	0/1135	0.29	0/1526
33	BB	0.19	0/1882	0.29	0/2538
34	BY	0.16	0/1254	0.26	0/1677
35	BO	0.15	0/1645	0.26	0/2209
36	BC	0.17	0/2933	0.28	0/3943
37	B5	0.14	0/619	0.28	0/830
37	BK	0.14	0/611	0.29	0/819
38	BL	0.17	0/1167	0.31	0/1552
39	Bf	0.18	0/443	0.25	0/589
40	BU	0.15	0/1027	0.25	0/1368
41	Bb	0.17	0/1120	0.26	0/1494
42	Be	0.20	0/514	0.28	0/676
43	BE	0.14	0/1509	0.28	0/2022
44	Ba	0.16	0/793	0.26	0/1064
45	BT	0.17	0/705	0.28	0/945
46	BW	0.13	0/566	0.22	0/747
47	Bi	0.15	0/630	0.28	0/839
48	BI	0.18	0/1166	0.25	0/1559
49	BR	0.17	0/819	0.24	0/1098
50	BQ	0.17	0/1281	0.24	0/1689
51	BV	0.18	0/547	0.28	0/729
52	Bj	0.16	0/807	0.24	0/1070
53	BD	0.17	0/2069	0.28	0/2787
54	BF	0.15	0/1485	0.27	0/2003
55	BZ	0.15	0/759	0.27	0/1023
56	BP	0.16	0/984	0.25	0/1314
57	BM	0.19	0/1627	0.29	0/2170
58	BS	0.19	0/1275	0.30	0/1715
59	Bd	0.21	0/778	0.37	0/1036
60	BN	0.16	0/1483	0.26	0/1992
61	Bg	0.13	0/396	0.23	0/526
62	Bc	0.17	0/693	0.29	0/926
63	BJ	0.17	0/1080	0.27	0/1456
64	Bl	0.15	0/669	0.25	0/886
65	Bk	0.19	0/538	0.27	0/709
66	BA	0.11	0/1700	0.28	0/2288
All	All	0.19	2/180869 (0.0%)	0.28	0/266068

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	94	G	O3'-P	-6.15	1.51	1.61
1	1	96	U	C1'-N1	5.73	1.57	1.48

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.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	1	65181	0	32949	665	0
2	2	32291	0	16340	427	0
3	3	2703	0	1375	23	0
4	H	3074	0	3190	100	0
5	AA	1531	0	1623	50	0
6	AB	1571	0	1630	25	0
7	AC	449	0	435	5	0
8	AD	1452	0	1521	20	0
9	AE	1983	0	2060	30	0
10	AF	1808	0	1879	34	0
11	AG	977	0	1037	19	0
12	AH	1725	0	1780	33	0
13	AI	1034	0	1069	15	0
14	AJ	986	0	1070	22	0
15	AK	1073	0	1133	23	0
16	AL	809	0	859	31	0
17	AM	955	0	981	33	0
18	AN	1148	0	1248	13	0
19	AP	455	0	475	11	0
20	AQ	1305	0	1388	41	0
21	AR	884	0	906	11	0
22	AS	541	0	573	10	0
23	AU	1223	0	1263	19	0
24	AV	808	0	832	26	0
24	B6	790	0	806	12	0
25	AW	470	0	495	13	0
26	AX	516	0	544	14	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
27	AY	227	0	207	11	0
28	AZ	1541	0	1624	26	0
29	A0	343	0	407	4	0
30	A3	933	0	982	19	0
30	B4	933	0	982	21	0
30	BG	932	0	982	3	0
31	AT	1057	0	1131	27	0
32	AO	1116	0	1152	19	0
33	BB	1838	0	1903	17	0
34	BY	1235	0	1314	10	0
35	BO	1607	0	1638	16	0
36	BC	2870	0	3020	18	0
37	B5	614	0	671	12	0
37	BK	607	0	663	7	0
38	BL	1149	0	1218	16	0
39	Bf	435	0	494	4	0
40	BU	1011	0	1078	14	0
41	Bb	1095	0	1190	6	0
42	Be	503	0	533	11	0
43	BE	1485	0	1539	32	0
44	Ba	778	0	851	9	0
45	BT	696	0	758	3	0
46	BW	565	0	628	3	0
47	Bi	620	0	668	2	0
48	BI	1148	0	1237	11	0
49	BR	797	0	835	7	0
50	BQ	1265	0	1391	13	0
51	BV	532	0	523	7	0
52	Bj	789	0	842	7	0
53	BD	2026	0	2131	27	0
54	BF	1456	0	1514	18	0
55	BZ	749	0	796	11	0
56	BP	971	0	1039	10	0
57	BM	1588	0	1683	10	0
58	BS	1247	0	1280	11	0
59	Bd	759	0	825	10	0
60	BN	1452	0	1491	26	0
61	Bg	387	0	397	5	0
62	Bc	684	0	748	7	0
63	BJ	1066	0	1133	7	0
64	Bl	659	0	702	11	0
65	Bk	528	0	575	5	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
66	BA	1675	0	1787	86	0
67	1	165	0	0	0	0
67	2	61	0	0	0	0
67	3	1	0	0	0	0
67	AD	1	0	0	0	0
67	AE	1	0	0	0	0
67	AF	1	0	0	0	0
67	AK	1	0	0	0	0
67	AN	1	0	0	0	0
67	AR	1	0	0	0	0
67	AT	1	0	0	0	0
67	AU	1	0	0	0	0
67	BB	2	0	0	0	0
67	BD	1	0	0	0	0
67	BM	1	0	0	0	0
67	BS	1	0	0	0	0
67	Bb	1	0	0	0	0
68	AC	2	0	0	0	0
68	AF	1	0	0	0	0
68	AP	1	0	0	0	0
68	AR	1	0	0	0	0
68	AW	1	0	0	0	0
68	BV	1	0	0	0	0
68	Bd	1	0	0	0	0
68	Be	1	0	0	0	0
68	Bg	1	0	0	0	0
68	Bi	1	0	0	0	0
68	Bj	1	0	0	0	0
68	Bk	1	0	0	0	0
All	All	171964	0	126023	2034	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 2034 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)
1:1:107:G:N2	1:1:112:A:N7	1.85	1.20
1:1:107:G:N2	1:1:112:A:C8	2.14	1.15
1:1:117:G:O2'	1:1:118:U:OP1	1.67	1.12
1:1:100:G:N2	1:1:119:C:O2	1.82	1.12

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2585:4AC:H5	1:1:2597:G:H1	1.13	1.09

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	
4	H	384/392 (98%)	368 (96%)	15 (4%)	1 (0%)	36	36
5	AA	186/199 (94%)	181 (97%)	5 (3%)	0	100	100
6	AB	194/202 (96%)	191 (98%)	3 (2%)	0	100	100
7	AC	55/63 (87%)	53 (96%)	2 (4%)	0	100	100
8	AD	171/180 (95%)	169 (99%)	2 (1%)	0	100	100
9	AE	240/243 (99%)	234 (98%)	6 (2%)	0	100	100
10	AF	227/236 (96%)	221 (97%)	6 (3%)	0	100	100
11	AG	122/125 (98%)	118 (97%)	4 (3%)	0	100	100
12	AH	212/215 (99%)	205 (97%)	7 (3%)	0	100	100
13	AI	127/130 (98%)	124 (98%)	3 (2%)	0	100	100
14	AJ	123/127 (97%)	121 (98%)	2 (2%)	0	100	100
15	AK	133/135 (98%)	129 (97%)	3 (2%)	1 (1%)	16	12
16	AL	98/102 (96%)	95 (97%)	3 (3%)	0	100	100
17	AM	125/137 (91%)	119 (95%)	6 (5%)	0	100	100
18	AN	144/147 (98%)	143 (99%)	1 (1%)	0	100	100
19	AP	53/56 (95%)	53 (100%)	0	0	100	100
20	AQ	155/158 (98%)	152 (98%)	3 (2%)	0	100	100
21	AR	105/113 (93%)	102 (97%)	3 (3%)	0	100	100
22	AS	62/67 (92%)	60 (97%)	2 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
23	AU	147/150 (98%)	146 (99%)	1 (1%)	0	100	100
24	AV	94/99 (95%)	90 (96%)	4 (4%)	0	100	100
24	B6	92/99 (93%)	91 (99%)	1 (1%)	0	100	100
25	AW	59/65 (91%)	55 (93%)	4 (7%)	0	100	100
26	AX	63/71 (89%)	63 (100%)	0	0	100	100
27	AY	27/51 (53%)	23 (85%)	4 (15%)	0	100	100
28	AZ	194/210 (92%)	186 (96%)	8 (4%)	0	100	100
29	A0	34/37 (92%)	34 (100%)	0	0	100	100
30	A3	120/123 (98%)	111 (92%)	9 (8%)	0	100	100
30	B4	120/123 (98%)	116 (97%)	4 (3%)	0	100	100
30	BG	120/123 (98%)	119 (99%)	1 (1%)	0	100	100
31	AT	128/132 (97%)	128 (100%)	0	0	100	100
32	AO	136/148 (92%)	130 (96%)	6 (4%)	0	100	100
33	BB	236/239 (99%)	229 (97%)	6 (2%)	1 (0%)	30	28
34	BY	152/155 (98%)	150 (99%)	2 (1%)	0	100	100
35	BO	196/203 (97%)	195 (100%)	1 (0%)	0	100	100
36	BC	358/361 (99%)	349 (98%)	8 (2%)	1 (0%)	36	36
37	B5	79/82 (96%)	74 (94%)	5 (6%)	0	100	100
37	BK	78/82 (95%)	75 (96%)	3 (4%)	0	100	100
38	BL	145/147 (99%)	138 (95%)	7 (5%)	0	100	100
39	Bf	48/51 (94%)	47 (98%)	1 (2%)	0	100	100
40	BU	119/121 (98%)	119 (100%)	0	0	100	100
41	Bb	127/130 (98%)	127 (100%)	0	0	100	100
42	Be	59/62 (95%)	58 (98%)	1 (2%)	0	100	100
43	BE	183/188 (97%)	181 (99%)	2 (1%)	0	100	100
44	Ba	92/94 (98%)	92 (100%)	0	0	100	100
45	BT	84/86 (98%)	83 (99%)	1 (1%)	0	100	100
46	BW	66/68 (97%)	66 (100%)	0	0	100	100
47	Bi	80/83 (96%)	77 (96%)	3 (4%)	0	100	100
48	BI	140/142 (99%)	137 (98%)	3 (2%)	0	100	100
49	BR	94/97 (97%)	94 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
50	BQ	148/151 (98%)	146 (99%)	2 (1%)	0	100	100
51	BV	61/67 (91%)	60 (98%)	1 (2%)	0	100	100
52	Bj	92/94 (98%)	92 (100%)	0	0	100	100
53	BD	253/255 (99%)	249 (98%)	4 (2%)	0	100	100
54	BF	181/184 (98%)	180 (99%)	1 (1%)	0	100	100
55	BZ	96/99 (97%)	95 (99%)	1 (1%)	0	100	100
56	BP	118/120 (98%)	118 (100%)	0	0	100	100
57	BM	191/194 (98%)	189 (99%)	2 (1%)	0	100	100
58	BS	152/155 (98%)	149 (98%)	3 (2%)	0	100	100
59	Bd	89/91 (98%)	89 (100%)	0	0	100	100
60	BN	176/181 (97%)	171 (97%)	5 (3%)	0	100	100
61	Bg	46/51 (90%)	46 (100%)	0	0	100	100
62	Bc	85/87 (98%)	84 (99%)	1 (1%)	0	100	100
63	BJ	138/141 (98%)	138 (100%)	0	0	100	100
64	Bl	75/77 (97%)	73 (97%)	2 (3%)	0	100	100
65	Bk	61/65 (94%)	61 (100%)	0	0	100	100
66	BA	213/219 (97%)	207 (97%)	6 (3%)	0	100	100
All	All	8761/9080 (96%)	8568 (98%)	189 (2%)	4 (0%)	100	100

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
15	AK	120	ASN
4	H	268	VAL
36	BC	347	VAL
33	BB	122	VAL

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	
4	H	332/338 (98%)	311 (94%)	21 (6%)	16	14
5	AA	160/167 (96%)	151 (94%)	9 (6%)	19	18
6	AB	168/173 (97%)	163 (97%)	5 (3%)	36	41
7	AC	50/55 (91%)	50 (100%)	0	100	100
8	AD	156/160 (98%)	155 (99%)	1 (1%)	78	86
9	AE	213/214 (100%)	212 (100%)	1 (0%)	81	88
10	AF	192/198 (97%)	190 (99%)	2 (1%)	68	76
11	AG	107/108 (99%)	104 (97%)	3 (3%)	38	43
12	AH	183/184 (100%)	179 (98%)	4 (2%)	45	53
13	AI	106/107 (99%)	104 (98%)	2 (2%)	50	58
14	AJ	101/103 (98%)	94 (93%)	7 (7%)	14	12
15	AK	111/111 (100%)	108 (97%)	3 (3%)	39	45
16	AL	89/91 (98%)	85 (96%)	4 (4%)	24	25
17	AM	94/104 (90%)	88 (94%)	6 (6%)	16	14
18	AN	120/121 (99%)	116 (97%)	4 (3%)	33	37
19	AP	45/46 (98%)	45 (100%)	0	100	100
20	AQ	142/143 (99%)	134 (94%)	8 (6%)	19	18
21	AR	96/102 (94%)	93 (97%)	3 (3%)	35	39
22	AS	58/61 (95%)	56 (97%)	2 (3%)	32	35
23	AU	126/127 (99%)	126 (100%)	0	100	100
24	AV	88/90 (98%)	78 (89%)	10 (11%)	5	3
24	B6	86/90 (96%)	85 (99%)	1 (1%)	63	72
25	AW	53/56 (95%)	51 (96%)	2 (4%)	29	32
26	AX	55/60 (92%)	49 (89%)	6 (11%)	6	4
27	AY	22/42 (52%)	20 (91%)	2 (9%)	9	6
28	AZ	155/168 (92%)	151 (97%)	4 (3%)	40	46
29	A0	34/35 (97%)	33 (97%)	1 (3%)	37	42
30	A3	98/99 (99%)	96 (98%)	2 (2%)	48	56
30	B4	98/99 (99%)	91 (93%)	7 (7%)	13	11
30	BG	98/99 (99%)	98 (100%)	0	100	100
31	AT	113/114 (99%)	109 (96%)	4 (4%)	32	35
32	AO	115/123 (94%)	113 (98%)	2 (2%)	53	62

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
33	BB	188/189 (100%)	185 (98%)	3 (2%)	55	64
34	BY	132/133 (99%)	132 (100%)	0	100	100
35	BO	167/170 (98%)	161 (96%)	6 (4%)	31	34
36	BC	306/307 (100%)	304 (99%)	2 (1%)	76	83
37	B5	65/66 (98%)	62 (95%)	3 (5%)	24	25
37	BK	64/66 (97%)	63 (98%)	1 (2%)	55	64
38	BL	118/118 (100%)	116 (98%)	2 (2%)	53	62
39	Bf	46/47 (98%)	44 (96%)	2 (4%)	26	27
40	BU	109/109 (100%)	108 (99%)	1 (1%)	70	78
41	Bb	117/118 (99%)	116 (99%)	1 (1%)	70	78
42	Be	52/53 (98%)	52 (100%)	0	100	100
43	BE	158/160 (99%)	148 (94%)	10 (6%)	16	14
44	Ba	84/84 (100%)	83 (99%)	1 (1%)	63	72
45	BT	77/77 (100%)	74 (96%)	3 (4%)	28	31
46	BW	63/63 (100%)	61 (97%)	2 (3%)	34	38
47	Bi	61/62 (98%)	60 (98%)	1 (2%)	55	64
48	BI	122/122 (100%)	121 (99%)	1 (1%)	73	81
49	BR	86/87 (99%)	84 (98%)	2 (2%)	44	51
50	BQ	132/133 (99%)	129 (98%)	3 (2%)	44	51
51	BV	54/58 (93%)	54 (100%)	0	100	100
52	Bj	83/84 (99%)	82 (99%)	1 (1%)	63	72
53	BD	212/212 (100%)	206 (97%)	6 (3%)	38	43
54	BF	156/157 (99%)	152 (97%)	4 (3%)	40	46
55	BZ	79/80 (99%)	78 (99%)	1 (1%)	61	69
56	BP	102/102 (100%)	101 (99%)	1 (1%)	68	76
57	BM	160/161 (99%)	159 (99%)	1 (1%)	78	86
58	BS	130/131 (99%)	128 (98%)	2 (2%)	57	65
59	Bd	82/82 (100%)	81 (99%)	1 (1%)	63	72
60	BN	149/151 (99%)	146 (98%)	3 (2%)	48	56
61	Bg	37/39 (95%)	37 (100%)	0	100	100
62	Bc	74/74 (100%)	73 (99%)	1 (1%)	59	67

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
63	BJ	108/109 (99%)	106 (98%)	2 (2%)	50	58
64	Bl	72/72 (100%)	70 (97%)	2 (3%)	38	43
65	Bk	55/57 (96%)	55 (100%)	0	100	100
66	BA	182/186 (98%)	173 (95%)	9 (5%)	22	22
All	All	7546/7707 (98%)	7342 (97%)	204 (3%)	40	45

5 of 204 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
31	AT	70	MET
43	BE	120	HIS
66	BA	136	VAL
33	BB	106	THR
37	B5	71	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 165 such sidechains are listed below:

Mol	Chain	Res	Type
50	BQ	67	HIS
59	Bd	35	HIS
51	BV	57	GLN
54	BF	156	GLN
60	BN	83	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	3016/3018 (99%)	427 (14%)	19 (0%)
2	2	1495/1512 (98%)	175 (11%)	2 (0%)
3	3	125/128 (97%)	13 (10%)	0
All	All	4636/4658 (99%)	615 (13%)	21 (0%)

5 of 615 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	3	A
1	1	12	G
1	1	28	A

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Mol	Chain	Res	Type
1	1	39	A
1	1	51	A

5 of 21 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	1	2397	G
1	1	2986	U
2	2	653	U
1	1	3021	U
1	1	2733	5MC

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

159 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
2	OMU	2	1177	2	19,22,23	1.22	3 (15%)	26,31,34	1.70	5 (19%)
1	4AC	1	641	1	21,24,25	1.03	2 (9%)	29,34,37	1.35	4 (13%)
2	5MC	2	1374	2	18,22,23	0.92	2 (11%)	26,32,35	1.13	2 (7%)
2	5MC	2	535	2	18,22,23	0.93	2 (11%)	26,32,35	1.14	2 (7%)
2	4AC	2	636	2	21,24,25	1.02	1 (4%)	29,34,37	1.40	4 (13%)
2	OMC	2	1040	2	19,22,23	1.08	2 (10%)	26,31,34	0.85	0
1	4AC	1	2570	1	21,24,25	1.02	2 (9%)	29,34,37	1.34	4 (13%)
2	4AC	2	286	2	21,24,25	1.01	2 (9%)	29,34,37	1.34	4 (13%)
2	4AC	2	1147	2	21,24,25	1.01	2 (9%)	29,34,37	1.38	4 (13%)
1	4AC	1	922	1	21,24,25	1.05	2 (9%)	29,34,37	1.44	4 (13%)
2	4AC	2	319	2	21,24,25	1.02	2 (9%)	29,34,37	1.38	4 (13%)
2	4AC	2	848	2	21,24,25	1.01	2 (9%)	29,34,37	1.36	4 (13%)
1	OMG	1	789	1	23,26,27	1.25	3 (13%)	33,38,41	1.92	6 (18%)
2	4AC	2	1184	2	21,24,25	1.03	2 (9%)	29,34,37	1.36	4 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
1	4AC	1	458	1	21,24,25	1.01	2 (9%)	29,34,37	1.37	4 (13%)
1	OMU	1	2784	1	19,22,23	1.22	3 (15%)	26,31,34	1.71	5 (19%)
2	4AC	2	546	67,2	21,24,25	1.01	2 (9%)	29,34,37	1.38	4 (13%)
2	OMC	2	846	2	19,22,23	0.81	0	26,31,34	0.81	0
1	5MC	1	2093	1	18,22,23	0.94	2 (11%)	26,32,35	1.14	2 (7%)
1	OMC	1	1948	1	19,22,23	0.82	0	26,31,34	0.79	0
1	5MC	1	2163	1	18,22,23	0.94	2 (11%)	26,32,35	1.14	3 (11%)
2	4AC	2	479	2	21,24,25	1.01	2 (9%)	29,34,37	1.39	4 (13%)
2	4AC	2	718	2	21,24,25	1.02	2 (9%)	29,34,37	1.33	4 (13%)
1	4AC	1	1695	1	21,24,25	1.01	2 (9%)	29,34,37	1.35	4 (13%)
2	6MZ	2	1469	67,2	22,25,26	1.48	4 (18%)	30,36,39	2.19	9 (30%)
1	4AC	1	2642	1	21,24,25	1.02	2 (9%)	29,34,37	1.32	4 (13%)
1	4AC	1	211	1	21,24,25	1.02	2 (9%)	29,34,37	1.34	4 (13%)
1	5MC	1	2733	1	18,22,23	0.96	2 (11%)	26,32,35	1.26	3 (11%)
1	A2M	1	1055	1	22,25,26	1.45	4 (18%)	31,36,39	2.07	9 (29%)
1	4AC	1	1293	1	21,24,25	1.02	2 (9%)	29,34,37	1.35	4 (13%)
2	4AC	2	53	2	21,24,25	1.00	2 (9%)	29,34,37	1.37	4 (13%)
2	4AC	2	751	2	21,24,25	1.02	2 (9%)	29,34,37	1.35	4 (13%)
2	4AC	2	626	2	21,24,25	1.02	1 (4%)	29,34,37	1.44	4 (13%)
2	OMU	2	774	2	19,22,23	1.21	2 (10%)	26,31,34	1.73	5 (19%)
2	OMC	2	129	2	19,22,23	0.81	0	26,31,34	0.83	0
1	4AC	1	341	1	21,24,25	1.01	2 (9%)	29,34,37	1.34	4 (13%)
1	4AC	1	1222	1,67	21,24,25	1.02	2 (9%)	29,34,37	1.33	4 (13%)
1	4AC	1	2865	1	21,24,25	1.02	2 (9%)	29,34,37	1.33	4 (13%)
1	4AC	1	2937	1,67	21,24,25	1.03	2 (9%)	29,34,37	1.57	4 (13%)
1	4AC	1	1873	1	21,24,25	1.03	2 (9%)	29,34,37	1.31	4 (13%)
1	4AC	1	835	1	21,24,25	1.03	2 (9%)	29,34,37	1.34	4 (13%)
2	OMU	2	20	2	19,22,23	1.25	3 (15%)	26,31,34	1.78	5 (19%)
1	5MC	1	2162	1	18,22,23	0.95	2 (11%)	26,32,35	1.21	3 (11%)
2	4AC	2	868	2	21,24,25	1.01	2 (9%)	29,34,37	1.31	4 (13%)
1	4AC	1	1885	1	21,24,25	1.02	2 (9%)	29,34,37	1.31	4 (13%)
1	4AC	1	829	1	21,24,25	1.03	2 (9%)	29,34,37	1.31	4 (13%)
1	4AC	1	2585	1	21,24,25	1.06	2 (9%)	29,34,37	1.75	5 (17%)
2	5MC	2	1025	2	18,22,23	0.94	2 (11%)	26,32,35	1.16	3 (11%)
1	4AC	1	243	1	21,24,25	1.01	2 (9%)	29,34,37	1.33	4 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
1	4AC	1	1617	1	21,24,25	1.01	2 (9%)	29,34,37	1.38	4 (13%)
1	4AC	1	2608	1	21,24,25	1.06	2 (9%)	29,34,37	1.73	5 (17%)
2	B8H	2	938	2	19,22,23	0.53	0	22,32,35	0.61	0
2	5MC	2	875	2	18,22,23	0.95	2 (11%)	26,32,35	1.18	3 (11%)
2	OMG	2	519	2	23,26,27	1.20	3 (13%)	33,38,41	1.92	6 (18%)
2	OMC	2	773	2	19,22,23	0.82	0	26,31,34	0.83	0
1	4AC	1	2548	1	21,24,25	1.01	2 (9%)	29,34,37	1.33	4 (13%)
1	OMG	1	2144	1	23,26,27	1.21	3 (13%)	33,38,41	1.92	6 (18%)
1	4AC	1	533	1	21,24,25	1.01	2 (9%)	29,34,37	1.33	4 (13%)
1	4AC	1	2329	1	21,24,25	1.02	2 (9%)	29,34,37	1.37	4 (13%)
2	4AC	2	590	2	21,24,25	1.01	2 (9%)	29,34,37	1.33	4 (13%)
2	5MC	2	1202	2	18,22,23	0.96	2 (11%)	26,32,35	1.16	3 (11%)
2	OMG	2	934	2	23,26,27	1.21	3 (13%)	33,38,41	1.97	6 (18%)
1	4AC	1	229	1	21,24,25	1.04	2 (9%)	29,34,37	1.33	4 (13%)
1	5MC	1	2198	1	18,22,23	0.91	2 (11%)	26,32,35	1.15	2 (7%)
1	4AC	1	2966	1	21,24,25	1.02	2 (9%)	29,34,37	1.35	4 (13%)
1	4AC	1	451	1	21,24,25	1.02	2 (9%)	29,34,37	1.34	4 (13%)
2	LHH	2	250	2	22,25,26	0.32	0	29,35,38	0.43	0
2	UR3	2	1467	2	19,22,23	0.94	0	26,32,35	1.43	2 (7%)
1	4AC	1	1243	1	21,24,25	1.03	2 (9%)	29,34,37	1.36	4 (13%)
2	OMG	2	680	2	23,26,27	1.23	3 (13%)	33,38,41	1.99	6 (18%)
2	4AC	2	1233	2	21,24,25	1.02	2 (9%)	29,34,37	1.37	4 (13%)
1	4AC	1	2249	1	21,24,25	1.05	2 (9%)	29,34,37	1.39	4 (13%)
2	5MC	2	1496	2	18,22,23	0.93	2 (11%)	26,32,35	1.17	3 (11%)
1	4AC	1	1557	1	21,24,25	1.03	2 (9%)	29,34,37	1.30	4 (13%)
1	4AC	1	1594	1,67	21,24,25	1.02	2 (9%)	29,34,37	1.36	4 (13%)
2	OMG	2	467	2	23,26,27	1.21	3 (13%)	33,38,41	1.93	6 (18%)
1	4AC	1	802	1	21,24,25	1.01	2 (9%)	29,34,37	1.37	4 (13%)
2	5MC	2	693	2	18,22,23	0.94	2 (11%)	26,32,35	1.17	3 (11%)
2	4AC	2	703	2	21,24,25	1.03	1 (4%)	29,34,37	1.46	4 (13%)
1	4AC	1	1878	1	21,24,25	1.02	2 (9%)	29,34,37	1.46	4 (13%)
1	LHH	1	616	1	22,25,26	0.31	0	29,35,38	0.47	0
1	4AC	1	2001	1	21,24,25	1.06	2 (9%)	29,34,37	1.48	4 (13%)
1	4AC	1	1867	1	21,24,25	1.02	2 (9%)	29,34,37	1.34	4 (13%)
1	4AC	1	2960	1	21,24,25	1.00	2 (9%)	29,34,37	1.32	4 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
1	4AC	1	314	1	21,24,25	1.04	2 (9%)	29,34,37	1.30	4 (13%)
1	5MC	1	2203	1	18,22,23	0.93	2 (11%)	26,32,35	1.14	2 (7%)
2	5MC	2	1505	2	18,22,23	0.98	2 (11%)	26,32,35	1.13	3 (11%)
2	4AC	2	17	2	21,24,25	1.02	2 (9%)	29,34,37	1.38	4 (13%)
1	4AC	1	161	1	21,24,25	1.02	2 (9%)	29,34,37	1.34	4 (13%)
2	LHH	2	1041	2	22,25,26	0.32	0	29,35,38	0.48	0
2	OMU	2	1380	2	19,22,23	1.29	3 (15%)	26,31,34	1.74	4 (15%)
1	4AC	1	1667	1	21,24,25	1.01	2 (9%)	29,34,37	1.33	4 (13%)
1	4AC	1	2718	1	21,24,25	1.02	2 (9%)	29,34,37	1.35	4 (13%)
2	4AC	2	731	2	21,24,25	1.01	2 (9%)	29,34,37	1.46	4 (13%)
1	4AC	1	1550	1	21,24,25	1.01	2 (9%)	29,34,37	1.31	4 (13%)
1	4AC	1	981	1	21,24,25	1.01	2 (9%)	29,34,37	1.29	4 (13%)
1	OMG	1	328	1	23,26,27	1.22	3 (13%)	33,38,41	1.95	6 (18%)
1	4AC	1	1938	1	21,24,25	1.04	2 (9%)	29,34,37	1.35	4 (13%)
2	5MC	2	1498	2	18,22,23	0.94	2 (11%)	26,32,35	1.27	4 (15%)
2	OMG	2	873	2	23,26,27	1.21	3 (13%)	33,38,41	1.93	6 (18%)
2	OMC	2	1376	2	19,22,23	0.80	0	26,31,34	0.77	0
1	4AC	1	91	1	21,24,25	1.01	2 (9%)	29,34,37	1.39	4 (13%)
1	4AC	1	2136	1	21,24,25	1.02	2 (9%)	29,34,37	1.36	4 (13%)
1	5MC	1	2183	1	18,22,23	0.94	2 (11%)	26,32,35	1.15	2 (7%)
1	OMG	1	2147	1	23,26,27	1.22	3 (13%)	33,38,41	1.95	6 (18%)
2	OMU	2	64	2	19,22,23	1.23	3 (15%)	26,31,34	1.71	4 (15%)
1	4AC	1	1662	1	21,24,25	0.99	2 (9%)	29,34,37	1.39	4 (13%)
2	4AC	2	1028	2	21,24,25	1.01	2 (9%)	29,34,37	1.36	4 (13%)
1	OMC	1	615	1	19,22,23	0.80	0	26,31,34	0.83	1 (3%)
2	OMU	2	830	2	19,22,23	1.25	3 (15%)	26,31,34	1.69	4 (15%)
1	4AC	1	1755	1	21,24,25	1.09	2 (9%)	29,34,37	1.63	5 (17%)
1	4AC	1	2027	1	21,24,25	1.01	2 (9%)	29,34,37	1.36	4 (13%)
1	4AC	1	2287	1	21,24,25	1.00	2 (9%)	29,34,37	1.37	4 (13%)
1	4AC	1	1934	1	21,24,25	1.01	2 (9%)	29,34,37	1.38	4 (13%)
2	OMU	2	787	2	19,22,23	1.24	2 (10%)	26,31,34	1.82	5 (19%)
2	OMG	2	657	2	23,26,27	1.23	3 (13%)	33,38,41	1.93	5 (15%)
1	4AC	1	1065	1	21,24,25	1.01	2 (9%)	29,34,37	1.38	4 (13%)
2	4AC	2	828	2	21,24,25	1.00	2 (9%)	29,34,37	1.34	4 (13%)
2	4AC	2	394	2	21,24,25	1.00	2 (9%)	29,34,37	1.39	4 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	MA6	2	1487	2	23,26,27	1.47	4 (17%)	34,38,41	2.10	10 (29%)
1	4AC	1	2062	1	21,24,25	1.01	2 (9%)	29,34,37	1.31	4 (13%)
1	4AC	1	1765	1	21,24,25	1.02	2 (9%)	29,34,37	1.36	4 (13%)
1	A2M	1	2173	1	22,25,26	1.44	4 (18%)	31,36,39	2.05	8 (25%)
1	4AC	1	2925	1	21,24,25	1.02	2 (9%)	29,34,37	1.33	4 (13%)
1	4AC	1	1554	1	21,24,25	1.02	2 (9%)	29,34,37	1.33	4 (13%)
1	4AC	1	1048	1	21,24,25	1.04	2 (9%)	29,34,37	1.37	4 (13%)
1	4AC	1	694	1	21,24,25	1.01	2 (9%)	29,34,37	1.33	4 (13%)
2	MA6	2	1488	2	23,26,27	1.47	4 (17%)	34,38,41	2.10	9 (26%)
1	4AC	1	1780	1	21,24,25	1.04	2 (9%)	29,34,37	1.50	4 (13%)
1	4AC	1	60	1	21,24,25	1.02	2 (9%)	29,34,37	1.39	4 (13%)
2	4AC	2	839	2	21,24,25	1.01	2 (9%)	29,34,37	1.34	4 (13%)
2	4AC	2	1479	2	21,24,25	1.01	2 (9%)	29,34,37	1.33	4 (13%)
1	4AC	1	1460	1	21,24,25	1.00	2 (9%)	29,34,37	1.37	4 (13%)
2	A2M	2	373	2	22,25,26	1.46	4 (18%)	31,36,39	2.08	9 (29%)
2	4AC	2	1239	2	21,24,25	1.01	2 (9%)	29,34,37	1.33	4 (13%)
1	4AC	1	1068	1	21,24,25	1.04	2 (9%)	29,34,37	1.37	4 (13%)
1	4AC	1	2992	1	21,24,25	1.04	2 (9%)	29,34,37	0.86	2 (6%)
1	4AC	1	2083	1	21,24,25	1.04	2 (9%)	29,34,37	1.28	4 (13%)
1	OMG	1	2138	1	23,26,27	1.21	3 (13%)	33,38,41	1.91	6 (18%)
1	4AC	1	2495	1	21,24,25	1.04	2 (9%)	29,34,37	1.32	4 (13%)
2	OMG	2	471	2	23,26,27	1.22	3 (13%)	33,38,41	1.92	6 (18%)
1	4AC	1	136	1	21,24,25	1.01	2 (9%)	29,34,37	1.30	4 (13%)
1	4AC	1	1621	1	21,24,25	1.04	2 (9%)	29,34,37	1.32	4 (13%)
1	OMG	1	923	1,67	23,26,27	1.21	3 (13%)	33,38,41	1.92	6 (18%)
2	4AC	2	957	2	21,24,25	1.01	2 (9%)	29,34,37	1.34	4 (13%)
1	4AC	1	22	1	21,24,25	1.04	2 (9%)	29,34,37	1.33	4 (13%)
1	4AC	1	357	1	21,24,25	1.02	2 (9%)	29,34,37	1.35	4 (13%)
1	4AC	1	2908	1	21,24,25	1.01	2 (9%)	29,34,37	1.32	4 (13%)
3	4AC	3	32	3	21,24,25	1.01	2 (9%)	29,34,37	1.37	4 (13%)
2	4AC	2	511	2	21,24,25	1.03	2 (9%)	29,34,37	1.36	4 (13%)
1	OMG	1	2678	1	23,26,27	1.20	3 (13%)	33,38,41	1.92	6 (18%)
2	OMG	2	913	2	23,26,27	1.21	3 (13%)	33,38,41	1.93	6 (18%)
1	4AC	1	3004	1	21,24,25	1.03	2 (9%)	29,34,37	1.28	4 (13%)
2	4AC	2	303	2	21,24,25	1.01	2 (9%)	29,34,37	1.34	4 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	4AC	2	851	2	21,24,25	1.02	2 (9%)	29,34,37	1.29	4 (13%)
2	OMG	2	1069	2	23,26,27	1.20	3 (13%)	33,38,41	1.93	6 (18%)
1	4AC	1	2545	1	21,24,25	1.01	2 (9%)	29,34,37	1.35	4 (13%)
2	4AC	2	379	2	21,24,25	1.01	2 (9%)	29,34,37	1.37	4 (13%)
1	4AC	1	1962	1	21,24,25	1.01	2 (9%)	29,34,37	1.37	4 (13%)

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
2	OMU	2	1177	2	-	0/9/27/28	0/2/2/2
1	4AC	1	641	1	-	0/11/29/30	0/2/2/2
2	5MC	2	1374	2	-	0/7/25/26	0/2/2/2
2	5MC	2	535	2	-	0/7/25/26	0/2/2/2
2	4AC	2	636	2	-	0/11/29/30	0/2/2/2
2	OMC	2	1040	2	-	0/9/27/28	0/2/2/2
1	4AC	1	2570	1	-	0/11/29/30	0/2/2/2
2	4AC	2	286	2	-	0/11/29/30	0/2/2/2
2	4AC	2	1147	2	-	0/11/29/30	0/2/2/2
1	4AC	1	922	1	-	0/11/29/30	0/2/2/2
2	4AC	2	319	2	-	0/11/29/30	0/2/2/2
2	4AC	2	848	2	-	0/11/29/30	0/2/2/2
1	OMG	1	789	1	-	3/9/27/28	0/3/3/3
2	4AC	2	1184	2	-	0/11/29/30	0/2/2/2
1	4AC	1	458	1	-	0/11/29/30	0/2/2/2
1	OMU	1	2784	1	-	0/9/27/28	0/2/2/2
2	4AC	2	546	67,2	-	0/11/29/30	0/2/2/2
2	OMC	2	846	2	-	0/9/27/28	0/2/2/2
1	5MC	1	2093	1	-	0/7/25/26	0/2/2/2
1	OMC	1	1948	1	-	0/9/27/28	0/2/2/2
1	5MC	1	2163	1	-	0/7/25/26	0/2/2/2
2	4AC	2	479	2	-	0/11/29/30	0/2/2/2
2	4AC	2	718	2	-	0/11/29/30	0/2/2/2
1	4AC	1	1695	1	-	0/11/29/30	0/2/2/2
2	6MZ	2	1469	67,2	-	0/9/27/28	0/3/3/3
1	4AC	1	2642	1	-	0/11/29/30	0/2/2/2
1	4AC	1	211	1	-	0/11/29/30	0/2/2/2
1	5MC	1	2733	1	-	4/7/25/26	0/2/2/2
1	A2M	1	1055	1	-	0/9/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	4AC	1	1293	1	-	0/11/29/30	0/2/2/2
2	4AC	2	53	2	-	0/11/29/30	0/2/2/2
2	4AC	2	751	2	-	0/11/29/30	0/2/2/2
2	4AC	2	626	2	-	0/11/29/30	0/2/2/2
2	OMU	2	774	2	-	0/9/27/28	0/2/2/2
2	OMC	2	129	2	-	0/9/27/28	0/2/2/2
1	4AC	1	341	1	-	0/11/29/30	0/2/2/2
1	4AC	1	1222	1,67	-	0/11/29/30	0/2/2/2
1	4AC	1	2865	1	-	0/11/29/30	0/2/2/2
1	4AC	1	2937	1,67	-	1/11/29/30	0/2/2/2
1	4AC	1	1873	1	-	0/11/29/30	0/2/2/2
1	4AC	1	835	1	-	0/11/29/30	0/2/2/2
2	OMU	2	20	2	-	6/9/27/28	0/2/2/2
1	5MC	1	2162	1	-	0/7/25/26	0/2/2/2
2	4AC	2	868	2	-	0/11/29/30	0/2/2/2
1	4AC	1	1885	1	-	0/11/29/30	0/2/2/2
1	4AC	1	829	1	-	0/11/29/30	0/2/2/2
1	4AC	1	2585	1	-	3/11/29/30	0/2/2/2
2	5MC	2	1025	2	-	0/7/25/26	0/2/2/2
1	4AC	1	243	1	-	0/11/29/30	0/2/2/2
1	4AC	1	1617	1	-	0/11/29/30	0/2/2/2
1	4AC	1	2608	1	-	3/11/29/30	0/2/2/2
2	B8H	2	938	2	-	1/7/25/26	0/2/2/2
2	5MC	2	875	2	-	0/7/25/26	0/2/2/2
2	OMG	2	519	2	-	0/9/27/28	0/3/3/3
2	OMC	2	773	2	-	0/9/27/28	0/2/2/2
1	4AC	1	2548	1	-	0/11/29/30	0/2/2/2
1	OMG	1	2144	1	-	1/9/27/28	0/3/3/3
1	4AC	1	533	1	-	0/11/29/30	0/2/2/2
1	4AC	1	2329	1	-	0/11/29/30	0/2/2/2
2	4AC	2	590	2	-	0/11/29/30	0/2/2/2
2	5MC	2	1202	2	-	0/7/25/26	0/2/2/2
2	OMG	2	934	2	-	2/9/27/28	0/3/3/3
1	4AC	1	229	1	-	0/11/29/30	0/2/2/2
1	5MC	1	2198	1	-	0/7/25/26	0/2/2/2
1	4AC	1	2966	1	-	0/11/29/30	0/2/2/2
1	4AC	1	451	1	-	0/11/29/30	0/2/2/2
2	LHH	2	250	2	-	0/13/31/32	0/2/2/2
2	UR3	2	1467	2	-	0/7/25/26	0/2/2/2
1	4AC	1	1243	1	-	0/11/29/30	0/2/2/2
2	OMG	2	680	2	-	1/9/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	4AC	2	1233	2	-	0/11/29/30	0/2/2/2
1	4AC	1	2249	1	-	0/11/29/30	0/2/2/2
2	5MC	2	1496	2	-	0/7/25/26	0/2/2/2
1	4AC	1	1557	1	-	0/11/29/30	0/2/2/2
1	4AC	1	1594	1,67	-	0/11/29/30	0/2/2/2
2	OMG	2	467	2	-	0/9/27/28	0/3/3/3
1	4AC	1	802	1	-	0/11/29/30	0/2/2/2
2	5MC	2	693	2	-	0/7/25/26	0/2/2/2
2	4AC	2	703	2	-	0/11/29/30	0/2/2/2
1	4AC	1	1878	1	-	0/11/29/30	0/2/2/2
1	LHH	1	616	1	-	0/13/31/32	0/2/2/2
1	4AC	1	2001	1	-	0/11/29/30	0/2/2/2
1	4AC	1	1867	1	-	0/11/29/30	0/2/2/2
1	4AC	1	2960	1	-	0/11/29/30	0/2/2/2
1	4AC	1	314	1	-	0/11/29/30	0/2/2/2
1	5MC	1	2203	1	-	0/7/25/26	0/2/2/2
2	5MC	2	1505	2	-	4/7/25/26	0/2/2/2
2	4AC	2	17	2	-	0/11/29/30	0/2/2/2
1	4AC	1	161	1	-	0/11/29/30	0/2/2/2
2	LHH	2	1041	2	-	0/13/31/32	0/2/2/2
2	OMU	2	1380	2	-	0/9/27/28	0/2/2/2
1	4AC	1	1667	1	-	0/11/29/30	0/2/2/2
1	4AC	1	2718	1	-	0/11/29/30	0/2/2/2
2	4AC	2	731	2	-	0/11/29/30	0/2/2/2
1	4AC	1	1550	1	-	0/11/29/30	0/2/2/2
1	4AC	1	981	1	-	0/11/29/30	0/2/2/2
1	OMG	1	328	1	-	0/9/27/28	0/3/3/3
1	4AC	1	1938	1	-	0/11/29/30	0/2/2/2
2	5MC	2	1498	2	-	4/7/25/26	0/2/2/2
2	OMG	2	873	2	-	1/9/27/28	0/3/3/3
2	OMC	2	1376	2	-	0/9/27/28	0/2/2/2
1	4AC	1	91	1	-	0/11/29/30	0/2/2/2
1	4AC	1	2136	1	-	0/11/29/30	0/2/2/2
1	5MC	1	2183	1	-	0/7/25/26	0/2/2/2
1	OMG	1	2147	1	-	2/9/27/28	0/3/3/3
2	OMU	2	64	2	-	2/9/27/28	0/2/2/2
1	4AC	1	1662	1	-	0/11/29/30	0/2/2/2
2	4AC	2	1028	2	-	0/11/29/30	0/2/2/2
1	OMC	1	615	1	-	0/9/27/28	0/2/2/2
2	OMU	2	830	2	-	0/9/27/28	0/2/2/2
1	4AC	1	1755	1	-	2/11/29/30	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	4AC	1	2027	1	-	0/11/29/30	0/2/2/2
1	4AC	1	2287	1	-	0/11/29/30	0/2/2/2
1	4AC	1	1934	1	-	0/11/29/30	0/2/2/2
2	OMU	2	787	2	-	4/9/27/28	0/2/2/2
2	OMG	2	657	2	-	0/9/27/28	0/3/3/3
1	4AC	1	1065	1	-	0/11/29/30	0/2/2/2
2	4AC	2	828	2	-	0/11/29/30	0/2/2/2
2	4AC	2	394	2	-	0/11/29/30	0/2/2/2
2	MA6	2	1487	2	-	0/11/29/30	0/3/3/3
1	4AC	1	2062	1	-	0/11/29/30	0/2/2/2
1	4AC	1	1765	1	-	0/11/29/30	0/2/2/2
1	A2M	1	2173	1	-	0/9/27/28	0/3/3/3
1	4AC	1	2925	1	-	0/11/29/30	0/2/2/2
1	4AC	1	1554	1	-	0/11/29/30	0/2/2/2
1	4AC	1	1048	1	-	0/11/29/30	0/2/2/2
1	4AC	1	694	1	-	0/11/29/30	0/2/2/2
2	MA6	2	1488	2	-	1/11/29/30	0/3/3/3
1	4AC	1	1780	1	-	0/11/29/30	0/2/2/2
1	4AC	1	60	1	-	0/11/29/30	0/2/2/2
2	4AC	2	839	2	-	0/11/29/30	0/2/2/2
2	4AC	2	1479	2	-	0/11/29/30	0/2/2/2
1	4AC	1	1460	1	-	0/11/29/30	0/2/2/2
2	A2M	2	373	2	-	0/9/27/28	0/3/3/3
2	4AC	2	1239	2	-	0/11/29/30	0/2/2/2
1	4AC	1	1068	1	-	0/11/29/30	0/2/2/2
1	4AC	1	2992	1	-	2/11/29/30	0/2/2/2
1	4AC	1	2083	1	-	0/11/29/30	0/2/2/2
1	OMG	1	2138	1	-	0/9/27/28	0/3/3/3
1	4AC	1	2495	1	-	0/11/29/30	0/2/2/2
2	OMG	2	471	2	-	0/9/27/28	0/3/3/3
1	4AC	1	136	1	-	0/11/29/30	0/2/2/2
1	4AC	1	1621	1	-	0/11/29/30	0/2/2/2
1	OMG	1	923	1,67	-	1/9/27/28	0/3/3/3
2	4AC	2	957	2	-	0/11/29/30	0/2/2/2
1	4AC	1	22	1	-	0/11/29/30	0/2/2/2
1	4AC	1	357	1	-	0/11/29/30	0/2/2/2
1	4AC	1	2908	1	-	0/11/29/30	0/2/2/2
3	4AC	3	32	3	-	0/11/29/30	0/2/2/2
2	4AC	2	511	2	-	0/11/29/30	0/2/2/2
1	OMG	1	2678	1	-	0/9/27/28	0/3/3/3
2	OMG	2	913	2	-	0/9/27/28	0/3/3/3
1	4AC	1	3004	1	-	0/11/29/30	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	4AC	2	303	2	-	0/11/29/30	0/2/2/2
2	4AC	2	851	2	-	0/11/29/30	0/2/2/2
2	OMG	2	1069	2	-	1/9/27/28	0/3/3/3
1	4AC	1	2545	1	-	0/11/29/30	0/2/2/2
2	4AC	2	379	2	-	0/11/29/30	0/2/2/2
1	4AC	1	1962	1	-	0/11/29/30	0/2/2/2

The worst 5 of 327 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	1488	MA6	C5-C4	4.60	1.47	1.39
2	2	1469	6MZ	C5-C4	4.55	1.47	1.39
2	2	373	A2M	C5-C4	4.42	1.47	1.39
2	2	1487	MA6	C5-C4	4.41	1.47	1.39
1	1	1055	A2M	C5-C4	4.28	1.47	1.39

The worst 5 of 637 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	2	680	OMG	C5-C4-N3	-6.70	117.59	128.46
2	2	657	OMG	C5-C4-N3	-6.41	118.06	128.46
2	2	373	A2M	C5-C4-N3	-6.32	118.51	126.75
1	1	2173	A2M	C5-C4-N3	-6.32	118.51	126.75
1	1	1055	A2M	C5-C4-N3	-6.28	118.56	126.75

There are no chirality outliers.

5 of 49 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	2	1505	5MC	C2'-C1'-N1-C2
2	2	1505	5MC	C2'-C1'-N1-C6
1	1	2147	OMG	O4'-C4'-C5'-O5'
1	1	2585	4AC	O4'-C1'-N1-C2
1	1	2585	4AC	O4'-C1'-N1-C6

There are no ring outliers.

89 monomers are involved in 134 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	2	1177	OMU	2	0
2	2	636	4AC	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	2	286	4AC	1	0
2	2	1147	4AC	2	0
1	1	922	4AC	1	0
2	2	319	4AC	2	0
2	2	848	4AC	1	0
1	1	789	OMG	3	0
2	2	1184	4AC	1	0
1	1	458	4AC	1	0
2	2	546	4AC	2	0
1	1	2163	5MC	3	0
2	2	479	4AC	2	0
2	2	718	4AC	2	0
1	1	211	4AC	1	0
1	1	1055	A2M	1	0
2	2	53	4AC	1	0
2	2	751	4AC	1	0
2	2	626	4AC	3	0
2	2	774	OMU	1	0
1	1	341	4AC	1	0
1	1	835	4AC	1	0
1	1	2162	5MC	2	0
2	2	868	4AC	1	0
1	1	1885	4AC	1	0
1	1	829	4AC	1	0
1	1	2585	4AC	3	0
2	2	1025	5MC	1	0
1	1	1617	4AC	3	0
1	1	2608	4AC	3	0
2	2	519	OMG	2	0
1	1	2144	OMG	1	0
2	2	1202	5MC	1	0
1	1	229	4AC	1	0
1	1	2198	5MC	1	0
1	1	451	4AC	3	0
2	2	1467	UR3	1	0
2	2	680	OMG	3	0
2	2	1233	4AC	1	0
1	1	2249	4AC	1	0
1	1	1594	4AC	1	0
1	1	802	4AC	2	0
2	2	693	5MC	1	0
2	2	703	4AC	5	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	1	1878	4AC	2	0
1	1	1867	4AC	1	0
1	1	2960	4AC	1	0
2	2	17	4AC	1	0
1	1	161	4AC	1	0
2	2	1380	OMU	2	0
1	1	1667	4AC	4	0
1	1	2718	4AC	1	0
2	2	731	4AC	2	0
1	1	1550	4AC	1	0
2	2	873	OMG	1	0
2	2	1376	OMC	2	0
1	1	91	4AC	2	0
1	1	2136	4AC	1	0
1	1	1662	4AC	1	0
2	2	1028	4AC	1	0
2	2	830	OMU	1	0
1	1	1755	4AC	3	0
1	1	2287	4AC	2	0
1	1	1934	4AC	2	0
2	2	657	OMG	1	0
1	1	1065	4AC	2	0
2	2	828	4AC	1	0
2	2	394	4AC	2	0
2	2	1487	MA6	2	0
1	1	1765	4AC	1	0
1	1	1048	4AC	1	0
2	2	1488	MA6	1	0
1	1	1780	4AC	1	0
1	1	60	4AC	1	0
2	2	839	4AC	1	0
2	2	1479	4AC	1	0
1	1	1460	4AC	1	0
2	2	373	A2M	2	0
1	1	1068	4AC	1	0
1	1	2992	4AC	1	0
2	2	471	OMG	3	0
2	2	957	4AC	1	0
1	1	22	4AC	1	0
1	1	2908	4AC	1	0
3	3	32	4AC	1	0
2	2	511	4AC	3	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	2	303	4AC	1	0
2	2	851	4AC	1	0
2	2	1069	OMG	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 254 ligands modelled in this entry, 254 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	1	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	1	107:G	O3'	112:A	P	11.57

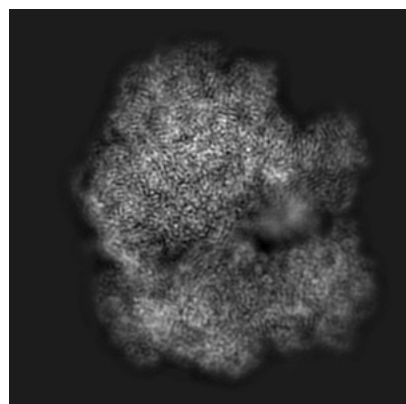
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-55636. These allow visual inspection of the internal detail of the map and identification of artifacts.

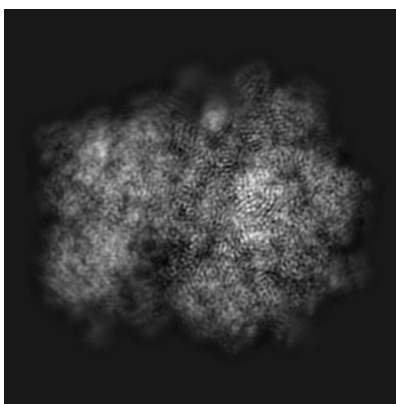
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

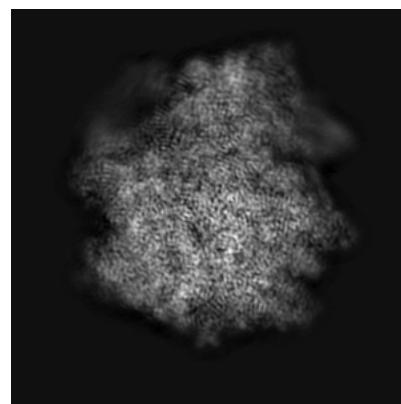
6.1.1 Primary map



X

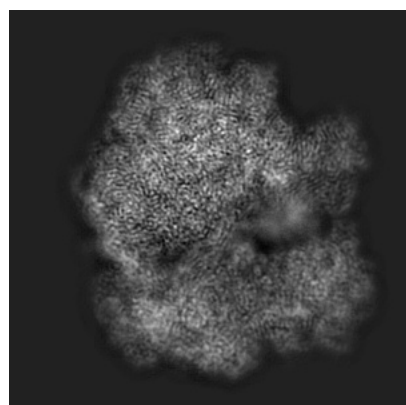


Y

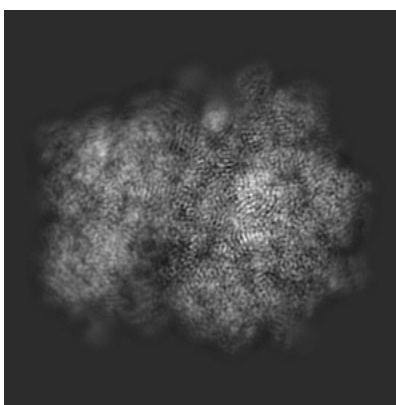


Z

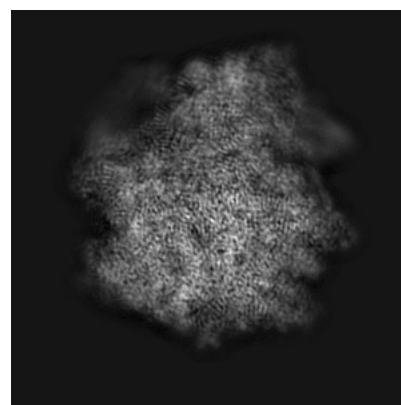
6.1.2 Raw map



X



Y

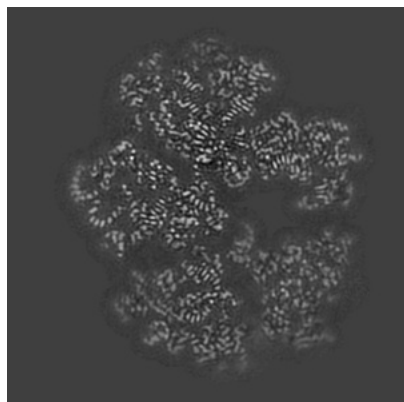


Z

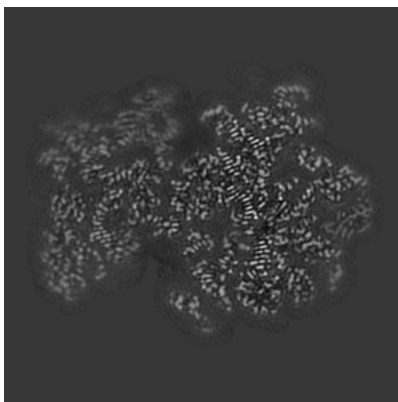
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

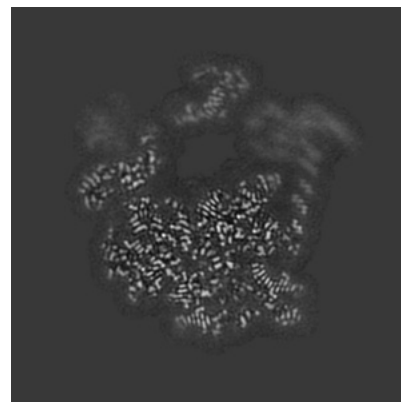
6.2.1 Primary map



X Index: 180

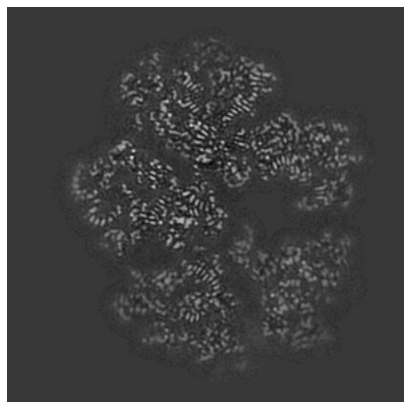


Y Index: 180

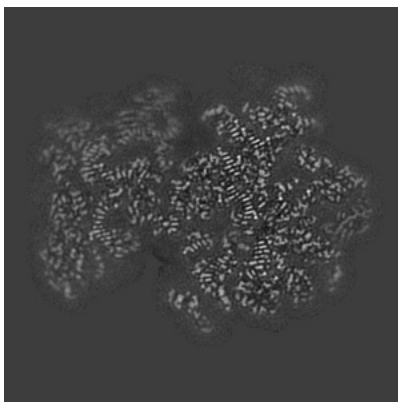


Z Index: 180

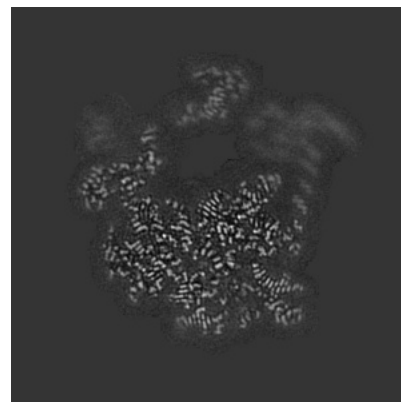
6.2.2 Raw map



X Index: 180



Y Index: 180

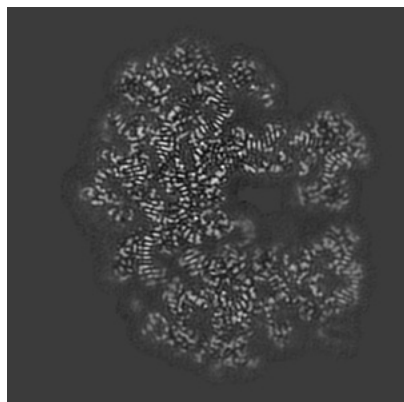


Z Index: 180

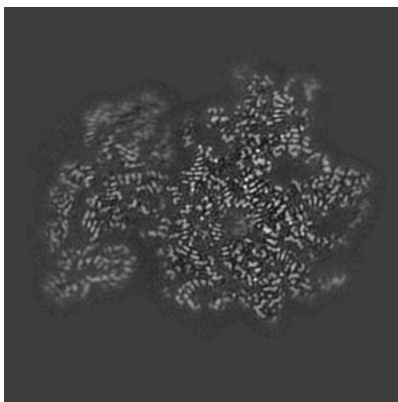
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

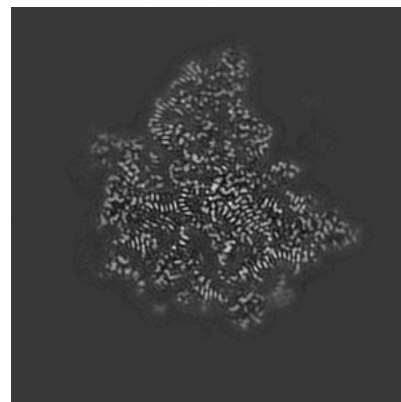
6.3.1 Primary map



X Index: 195

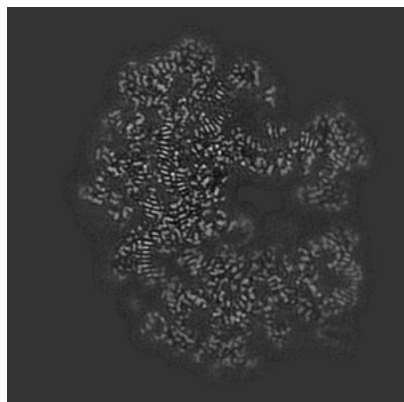


Y Index: 170

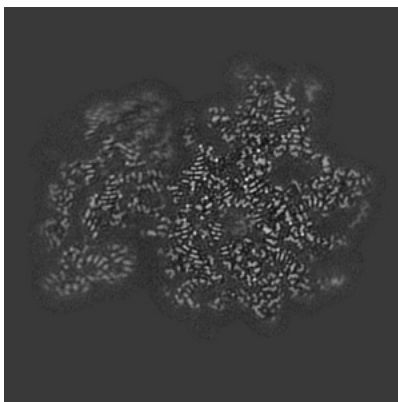


Z Index: 232

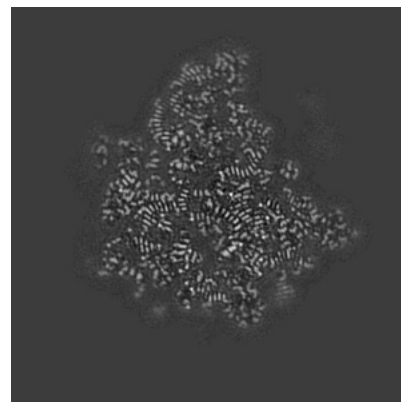
6.3.2 Raw map



X Index: 197



Y Index: 170

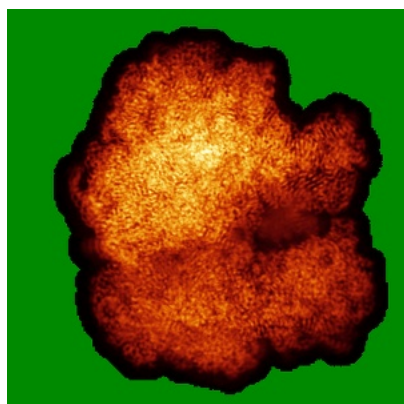


Z Index: 229

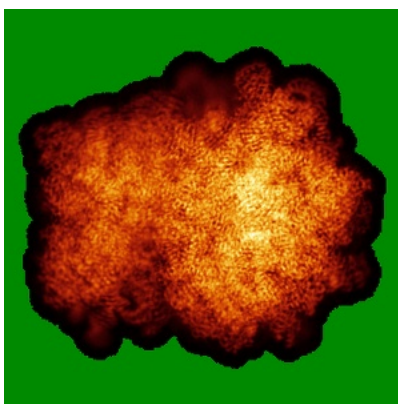
The images above show the largest variance slices of the map in three orthogonal directions.

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

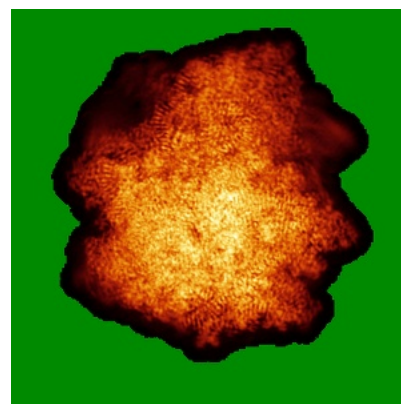
6.4.1 Primary map



X

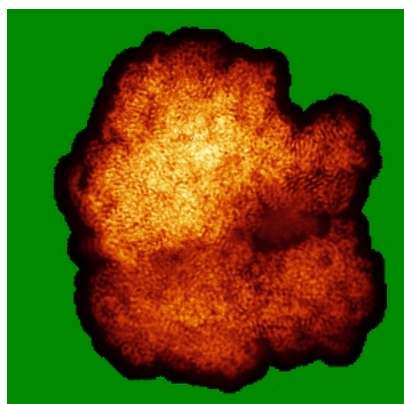


Y

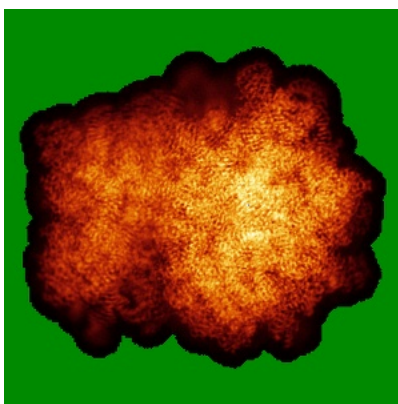


Z

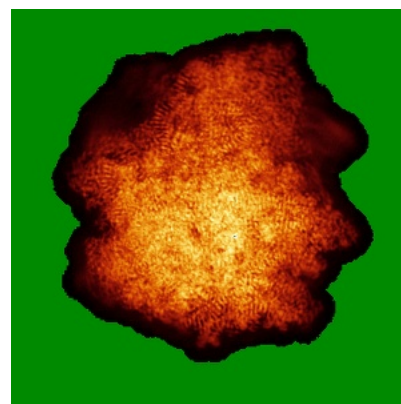
6.4.2 Raw map



X



Y

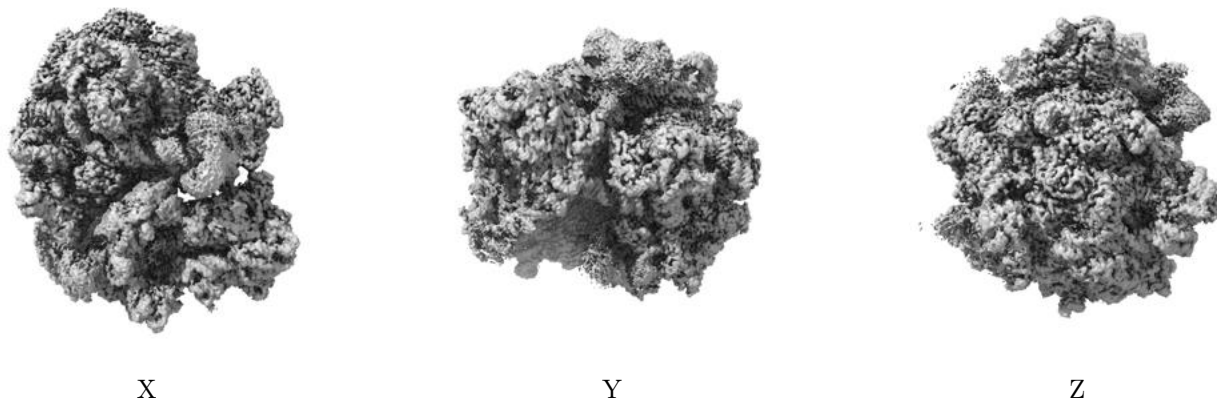


Z

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.

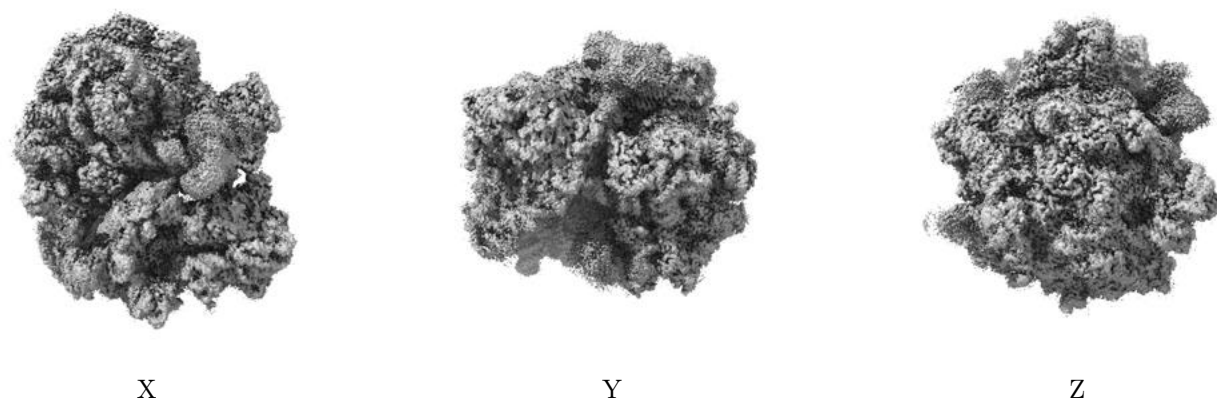
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0008. 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



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.

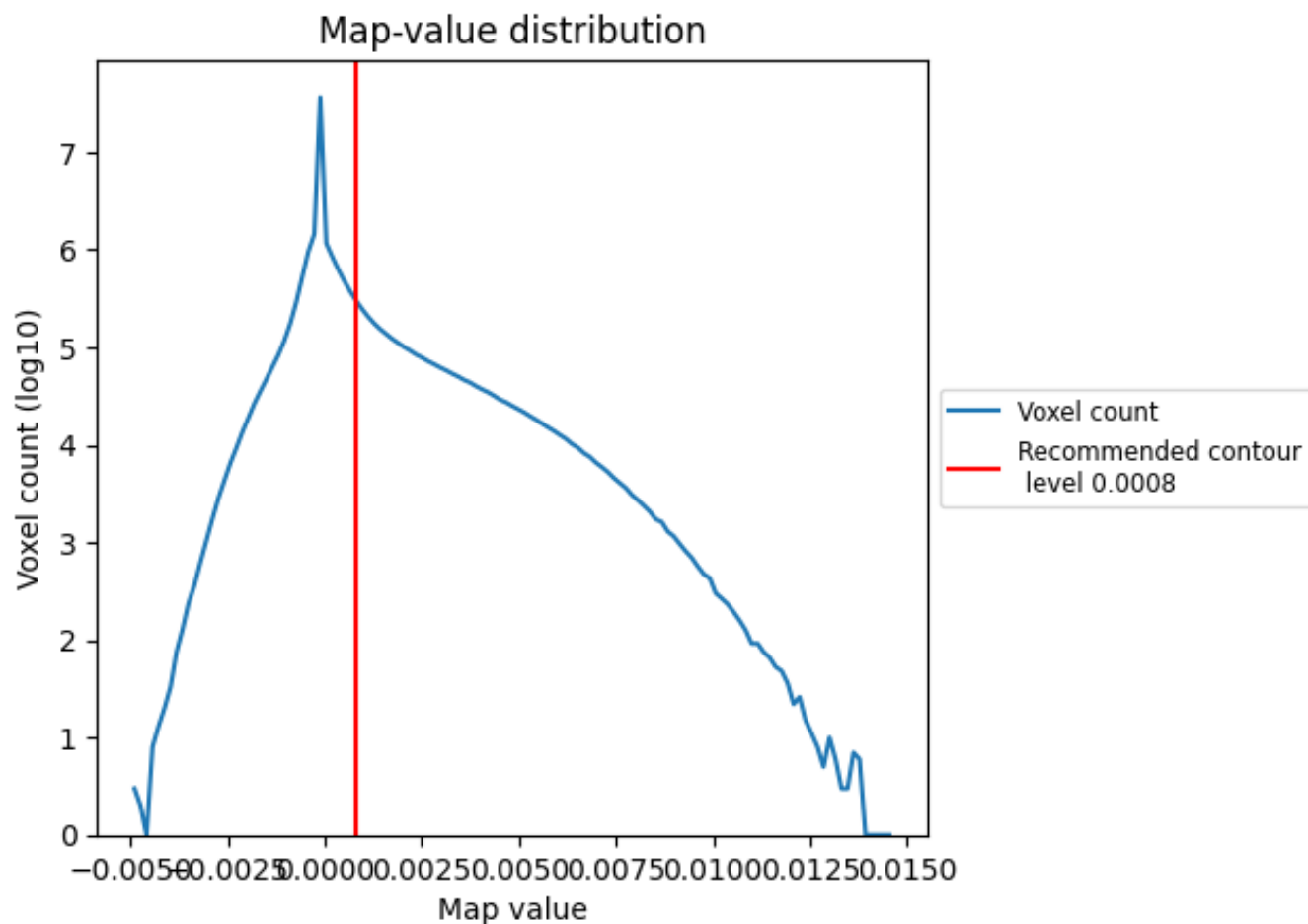
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

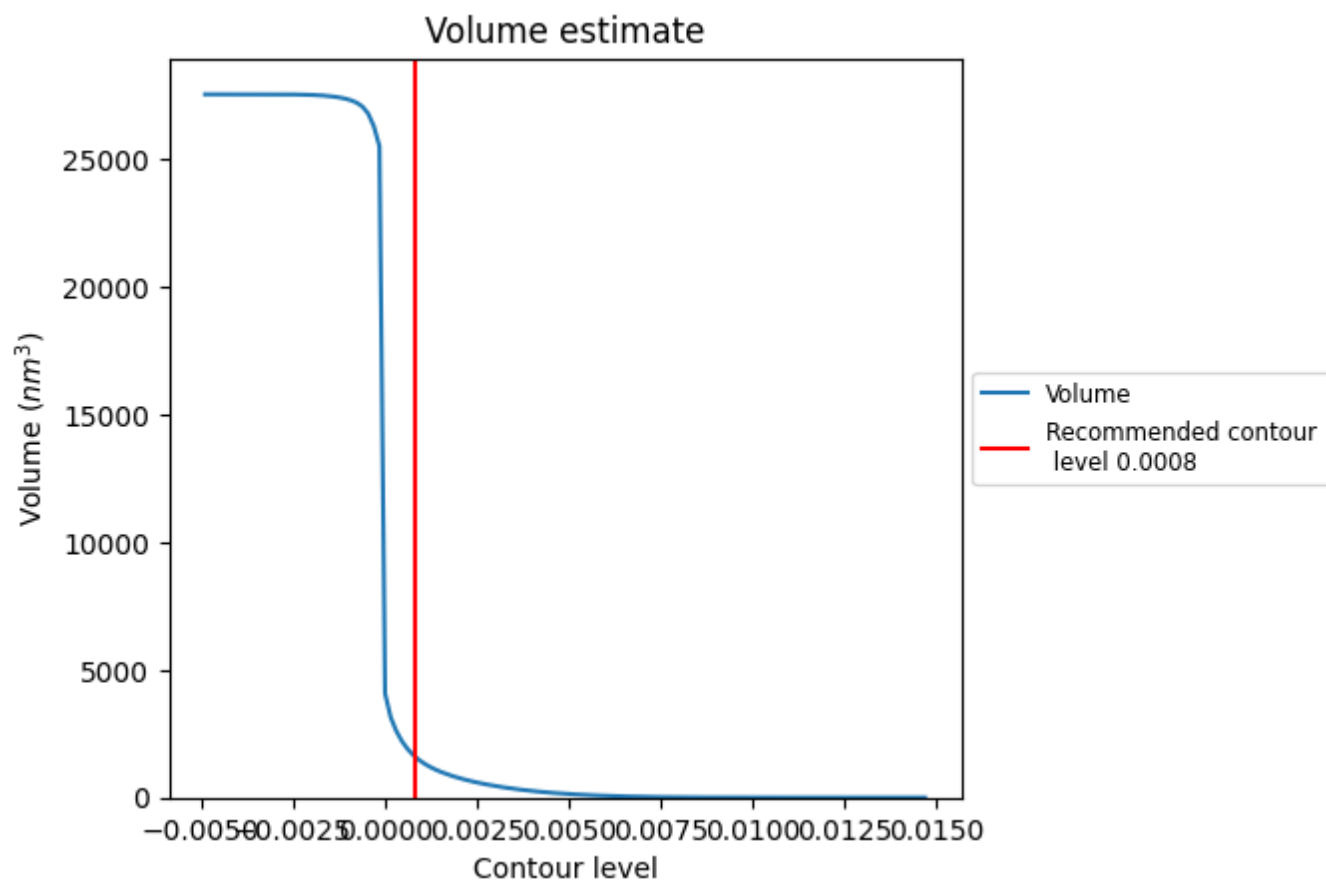
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

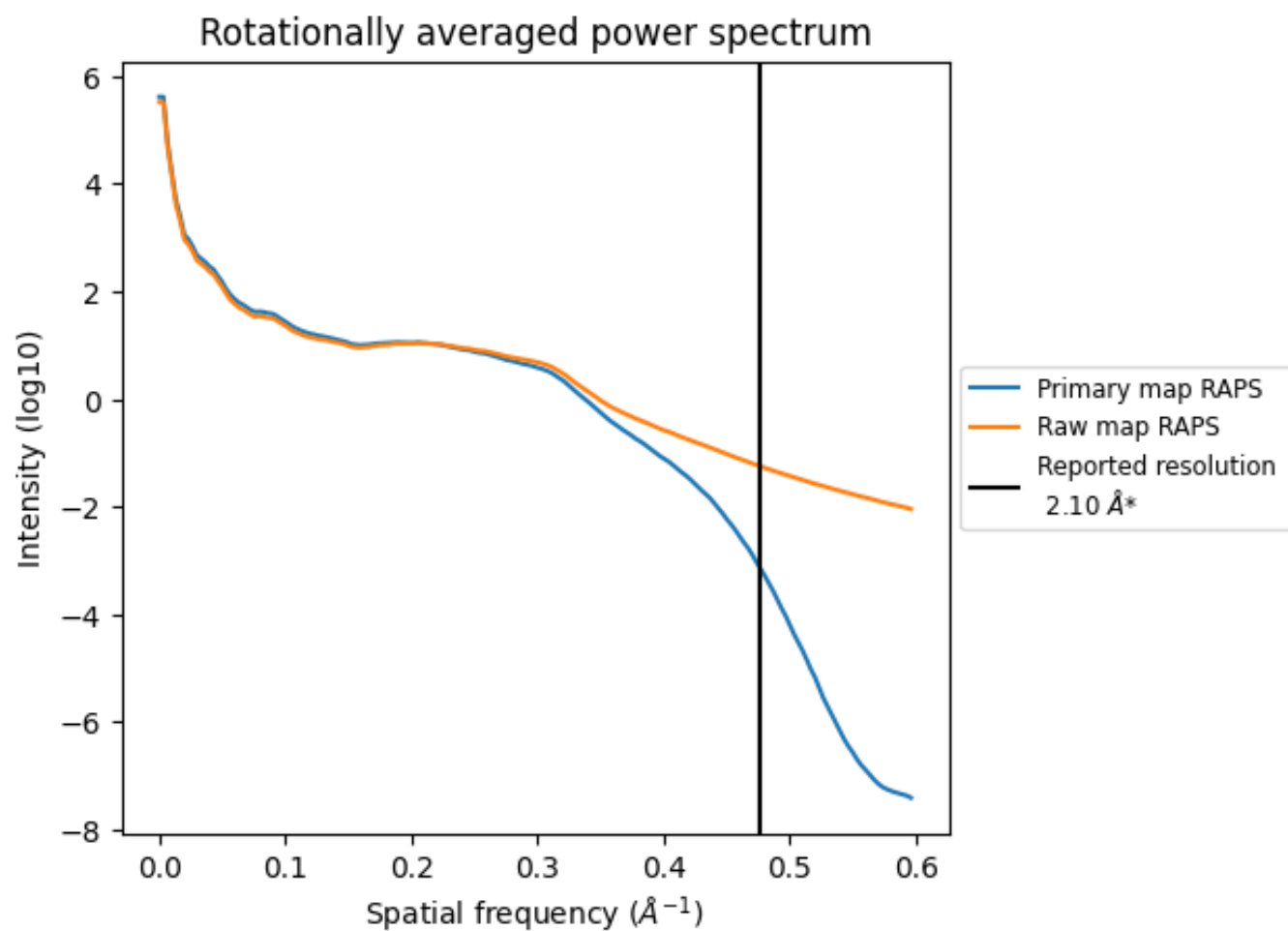
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1631 nm^3 ; this corresponds to an approximate mass of 1474 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 ⓘ

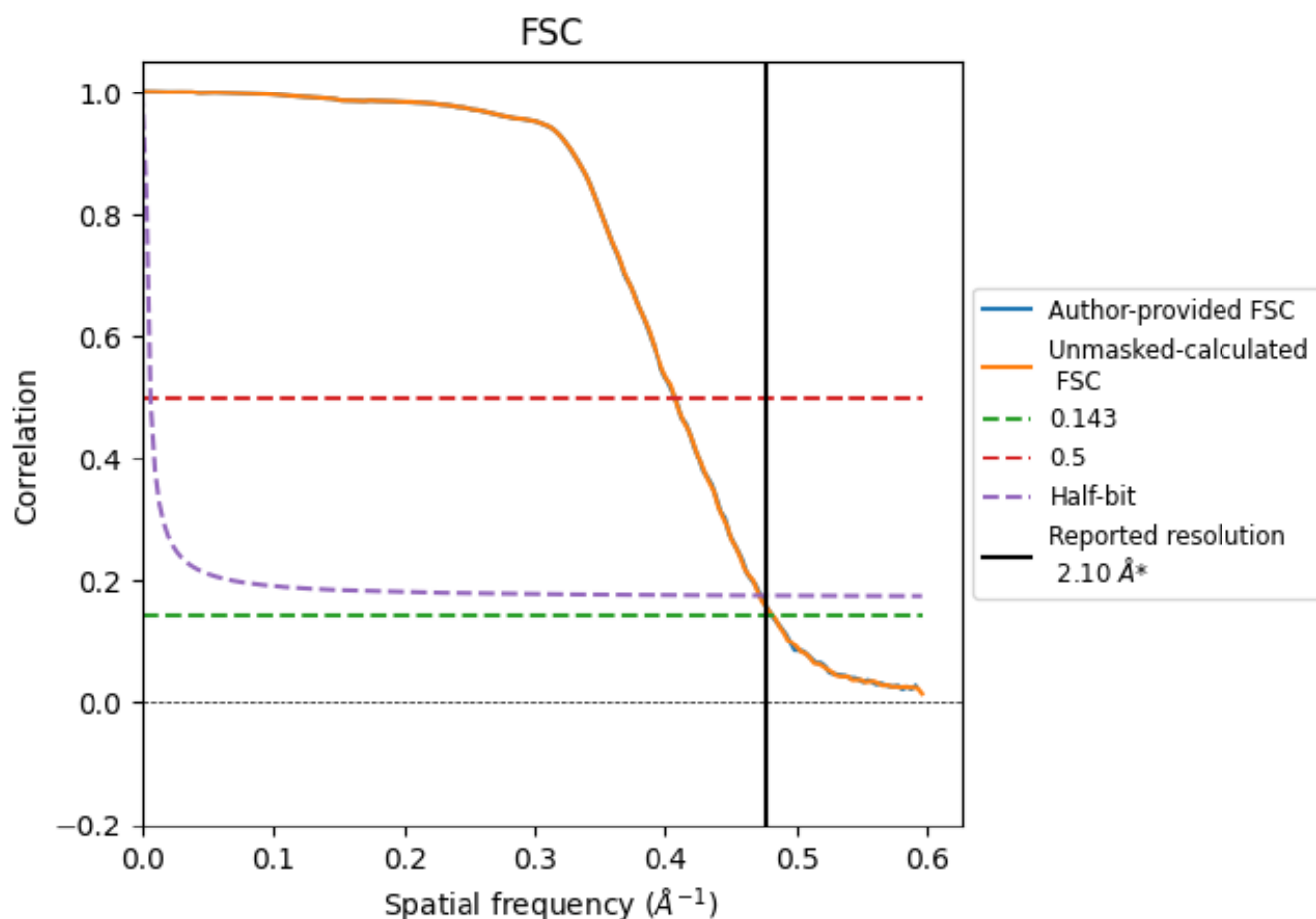


*Reported resolution corresponds to spatial frequency of $0.476 \text{ \AA}^{-1}$

8 Fourier-Shell correlation [i](#)

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 [i](#)



*Reported resolution corresponds to spatial frequency of 0.476 Å⁻¹

8.2 Resolution estimates [i](#)

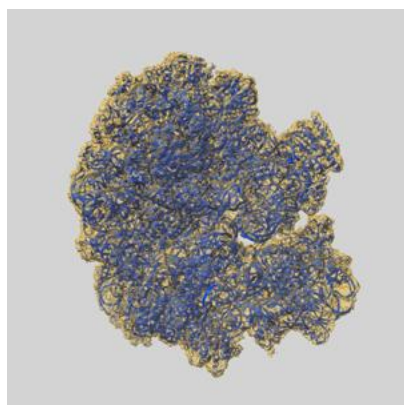
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.10	-	-
Author-provided FSC curve	2.08	2.46	2.12
Unmasked-calculated*	2.08	2.46	2.12

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

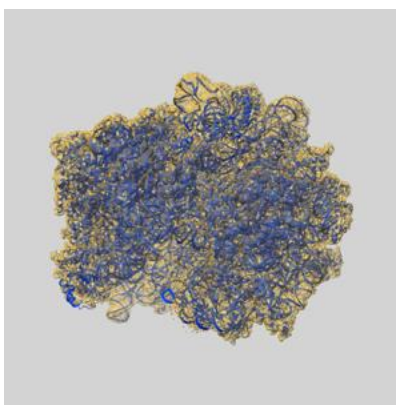
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-55636 and PDB model 9T7H. Per-residue inclusion information can be found in [section 3](#) on [page 17](#).

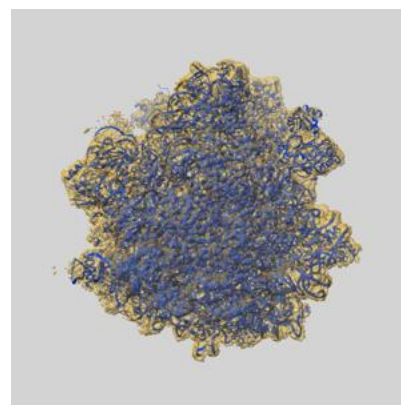
9.1 Map-model overlay [i](#)



X



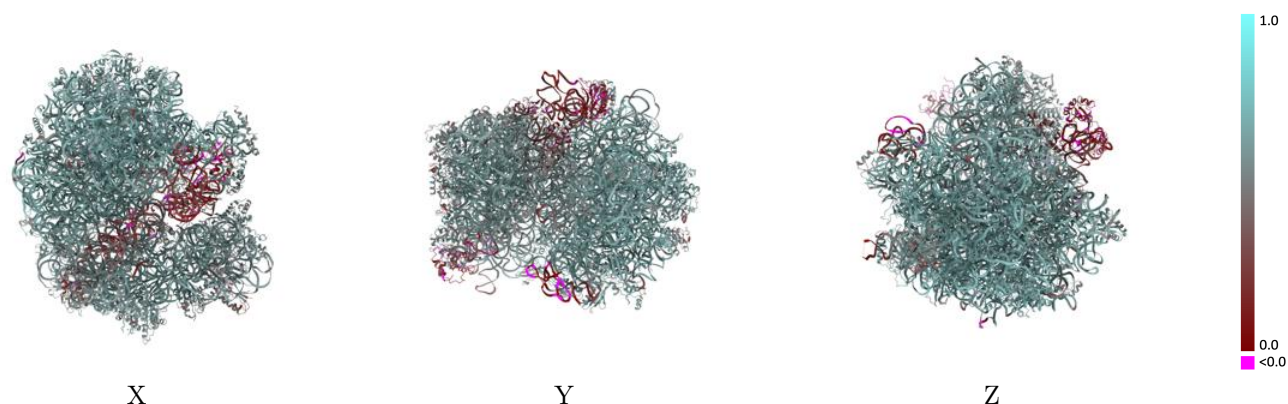
Y



Z

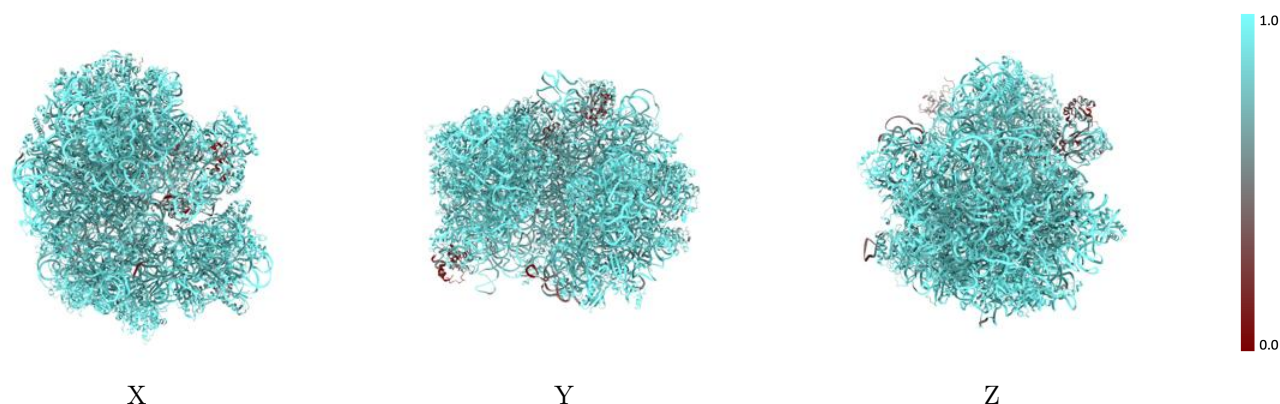
The images above show the 3D surface view of the map at the recommended contour level 0.0008 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



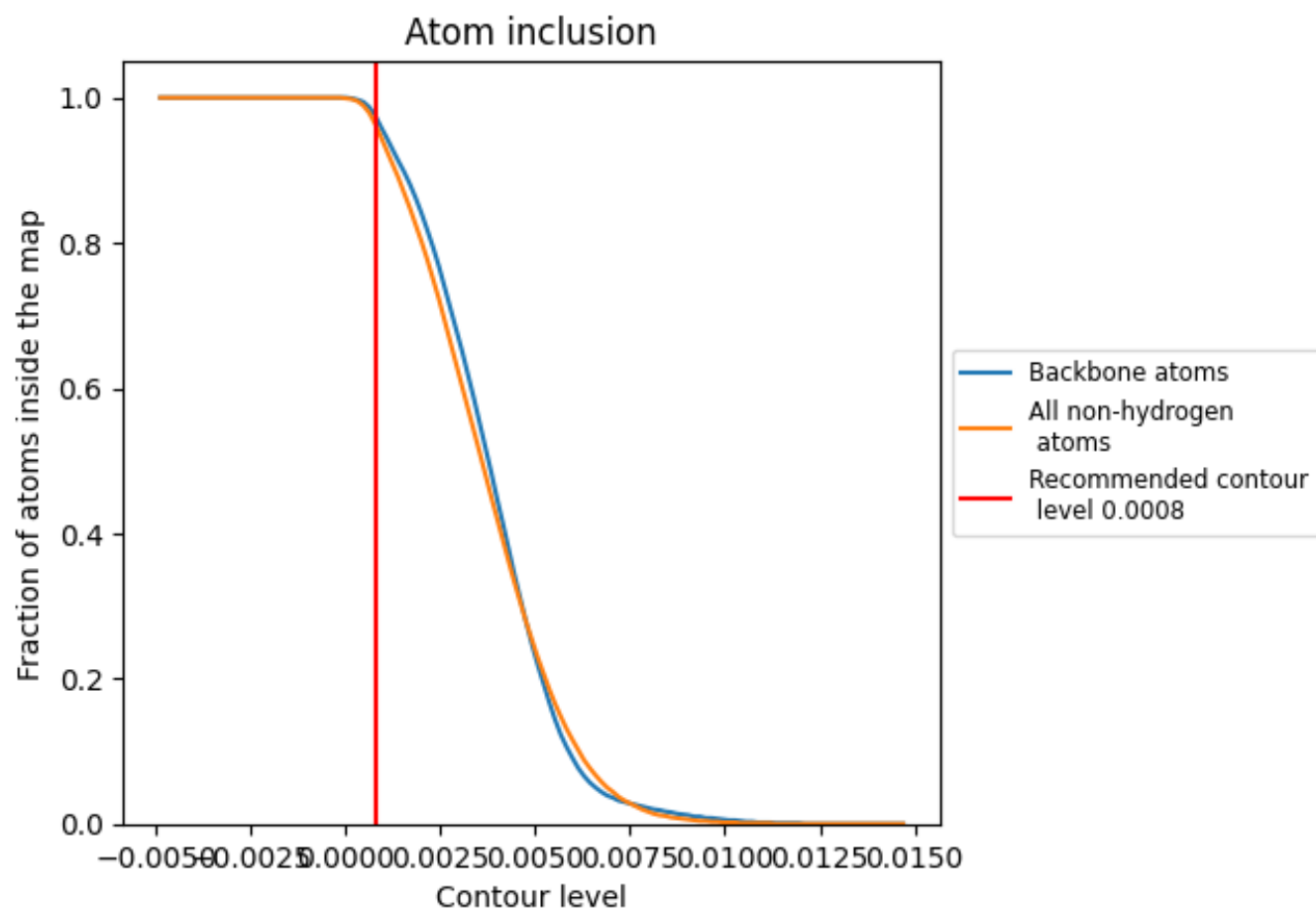
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0008).

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 (0.0008) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9610	 0.5880
1	 0.9810	 0.6170
2	 0.9880	 0.5750
3	 0.9990	 0.6260
A0	 0.9590	 0.6450
A3	 0.3360	 0.1760
AA	 0.8060	 0.3140
AB	 0.9640	 0.5600
AC	 0.9710	 0.5850
AD	 0.9740	 0.5880
AE	 0.9820	 0.5840
AF	 0.9770	 0.6080
AG	 0.9120	 0.5450
AH	 0.9710	 0.5790
AI	 0.9790	 0.6040
AJ	 0.9720	 0.6140
AK	 0.9770	 0.5800
AL	 0.8960	 0.4860
AM	 0.8820	 0.4380
AN	 0.9640	 0.5860
AO	 0.9420	 0.5510
AP	 0.9520	 0.5840
AQ	 0.9170	 0.4170
AR	 0.9710	 0.5930
AS	 0.9700	 0.5350
AT	 0.9390	 0.5330
AU	 0.9790	 0.5740
AV	 0.9680	 0.5040
AW	 0.9540	 0.3650
AX	 0.9590	 0.5500
AY	 0.3810	 0.1020
AZ	 0.9120	 0.5200
B4	 0.8390	 0.4420
B5	 0.9950	 0.6030
B6	 0.8530	 0.6070



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Chain	Atom inclusion	Q-score
BA	 0.5150	 0.1550
BB	 0.9830	 0.6640
BC	 0.9790	 0.6580
BD	 0.9880	 0.6580
BE	 0.9510	 0.5540
BF	 0.9710	 0.6110
BG	 0.9730	 0.6170
BI	 0.9800	 0.6640
BJ	 0.9720	 0.6580
BK	 0.9760	 0.5840
BL	 0.9680	 0.6280
BM	 0.9940	 0.6810
BN	 0.9580	 0.6330
BO	 0.9780	 0.5970
BP	 0.9880	 0.6560
BQ	 0.9740	 0.6450
BR	 0.9840	 0.6600
BS	 0.9880	 0.6700
BT	 0.9770	 0.6450
BU	 0.9890	 0.6390
BV	 0.9710	 0.6570
BW	 0.9260	 0.5940
BY	 0.9880	 0.6560
BZ	 0.9580	 0.5760
Ba	 0.9630	 0.6300
Bb	 0.9770	 0.6580
Bc	 0.9810	 0.6560
Bd	 0.9790	 0.6450
Be	 1.0000	 0.6770
Bf	 0.9950	 0.6650
Bg	 0.9970	 0.6400
Bi	 0.9730	 0.6590
Bj	 0.9680	 0.6540
Bk	 0.9710	 0.6310
Bl	 0.9720	 0.6050
H	 0.6720	 0.3420