



Full wwPDB EM Validation Report ⓘ

Nov 1, 2023 – 11:36 AM EDT

PDB ID : 8FMW
EMDB ID : EMD-29298
Title : The structure of a hibernating ribosome in the Lyme disease pathogen
Authors : Sharma, M.R.; Manjari, S.R.; Agrawal, E.K.; Keshavan, P.; Koripella, R.K.;
Majumdar, S.; Marcinkiewicz, A.L.; Lin, Y.P.; Agrawal, R.K.; Banavali, N.K.
Deposited on : 2022-12-25
Resolution : 2.86 Å(reported)

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

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

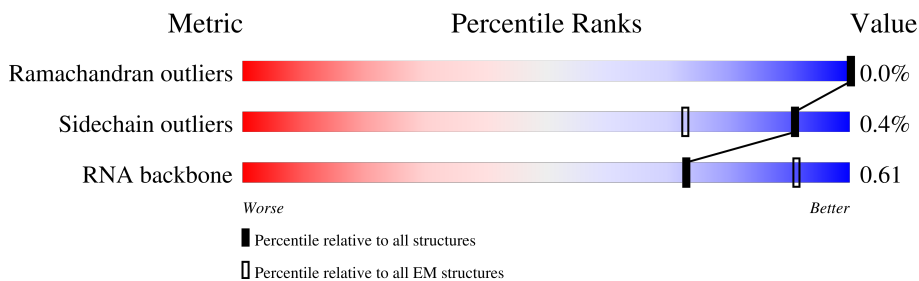
EMDB validation analysis : 0.0.1.dev70
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36

1 Overall quality at a glance

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

The reported resolution of this entry is 2.86 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)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

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

Mol	Chain	Length	Quality of chain
1	A	1529	85% 15%
2	C	206	100%
3	D	208	100%
4	E	158	99% .
5	F	97	98% .
6	G	157	99% .
7	H	132	100%
8	I	131	99% .

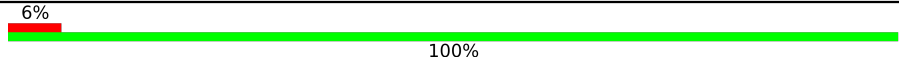
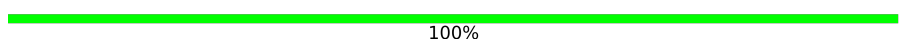
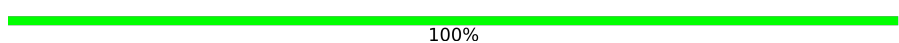
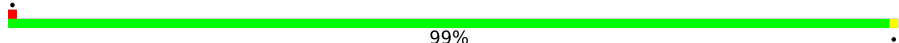
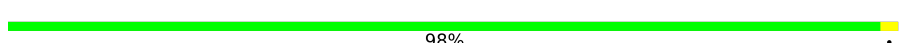
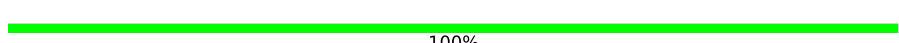
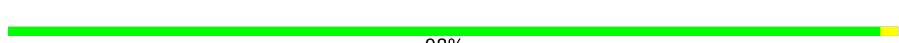

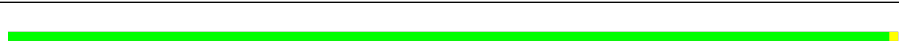

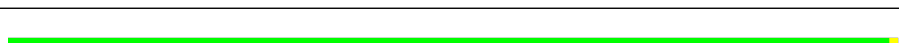

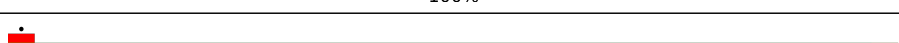
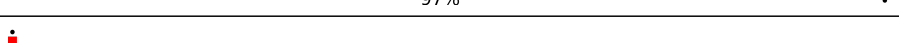
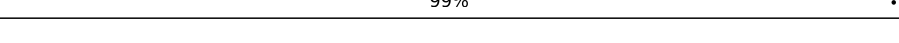
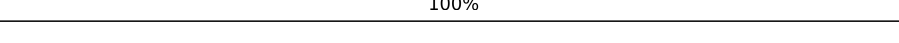
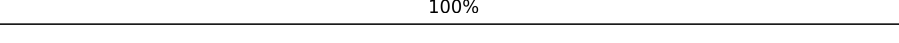
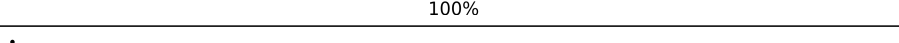
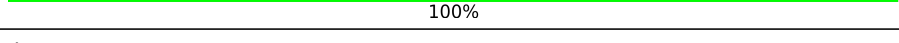
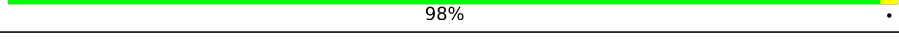
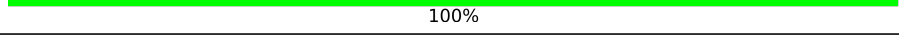
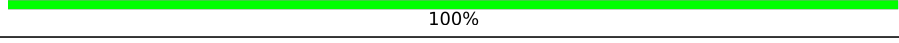
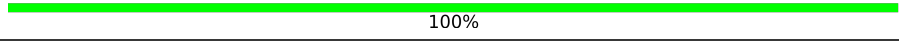
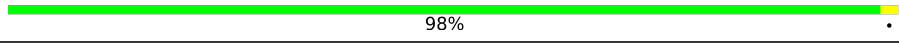
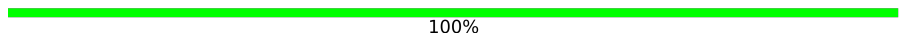
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Mol	Chain	Length	Quality of chain
9	J	102	6% 99%
10	K	117	100%
11	L	124	100%
12	M	114	99%
13	N	60	100%
14	O	88	99%
15	P	83	100%
16	Q	82	99%
17	R	63	100%
18	S	84	96%
19	T	85	99%
20	U	69	96%
21	V	28	96%
22	W	97	99%
23	X	76	5% 75% 25%
24	AA	2929	80% 19%
25	AB	112	72% 28%
26	AC	221	21% 100%
27	AD	277	100%
28	AE	206	100%
29	AF	209	99%
30	AG	182	99%
31	AH	180	99%
32	AI	148	15% 100%
33	AJ	162	14% 100%

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Mol	Chain	Length	Quality of chain
34	AK	139	6%  100%
35	AL	145	 100%
36	AM	122	 100%
37	AN	145	 99%
38	AO	138	 98%
39	AP	121	 100%
40	AQ	119	 98%
41	AR	117	 99%
42	AS	114	 99%
43	AT	103	 100%
44	AU	115	 99%
45	AV	98	 100%
46	AW	101	 97%
47	AX	181	 99%
48	AY	74	 100%
49	AZ	91	 100%
50	Aa	65	 100%
51	Ab	100	 100%
52	Ac	81	 98%
53	Ad	59	 100%
54	Ae	51	 100%
55	Af	50	 100%
56	Ag	66	 98%
57	Ah	37	 100%
58	Ai	46	 85% 13%

2 Entry composition [i](#)

There are 59 unique types of molecules in this entry. The entry contains 147910 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 ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	A	1529	32780	14645	5986	10621	1528	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	C	206	1646	1066	294	284	2	0	0

- Molecule 3 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	D	208	1689	1069	321	296	3	0	0

- Molecule 4 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	E	158	1196	763	222	206	5	0	0

- Molecule 5 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	F	97	814	529	137	144	4	0	0

- Molecule 6 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	G	157	1282	809	235	231	7	0	0

- Molecule 7 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	H	132	1039	662	183	188	6	0	0

- Molecule 8 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	I	131	1043	651	201	188	3	0	0

- Molecule 9 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	J	102	817	524	145	145	3	0	0

- Molecule 10 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	K	117	876	551	163	159	3	0	0

- Molecule 11 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	L	124	968	601	198	165	4	0	0

- Molecule 12 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	M	114	901	554	181	161	5	0	0

- Molecule 13 is a protein called 30S ribosomal protein S14 type Z.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	N	60	491	309	99	76	7	0	0

- Molecule 14 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	O	88	Total	C	N	O	S	0	0
			718	455	135	126	2		

- Molecule 15 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	P	83	Total	C	N	O	S	0	0
			676	425	127	119	5		

- Molecule 16 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	Q	82	Total	C	N	O	S	0	0
			678	436	122	118	2		

- Molecule 17 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	R	63	Total	C	N	O	S	0	0
			521	337	95	86	3		

- Molecule 18 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	S	84	Total	C	N	O	S	0	0
			669	435	114	119	1		

- Molecule 19 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	T	85	Total	C	N	O	S	0	0
			697	439	143	112	3		

- Molecule 20 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	U	69	Total	C	N	O	S	0	0
			603	382	119	100	2		

- Molecule 21 is a protein called 30S ribosomal protein bS22.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	V	27	Total	C	N	O	S	0	0
			240	147	61	31	1		

- Molecule 22 is a protein called Ribosomal subunit interface protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	W	97	Total	C	N	O	S	0	0
			818	528	145	144	1		

- Molecule 23 is a RNA chain called E-site t-RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	X	76	Total	C	N	O	P	0	0
			1618	722	284	536	76		

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
X	?	-	U	deletion	GB AE000783.1
X	74	C	U	conflict	GB AE000783.1
X	75	C	U	conflict	GB AE000783.1

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

Mol	Chain	Residues	Atoms					AltConf	Trace
24	AA	2929	Total	C	N	O	P	0	0
			62816	28077	11503	20307	2929		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
25	AB	112	Total	C	N	O	P	0	0
			2398	1071	434	781	112		

- Molecule 26 is a protein called 50S ribosomal protein L1.

Mol	Chain	Residues	Atoms				AltConf	Trace
26	AC	221	Total	C	N	O	0	0
			884	442	221	221		

- Molecule 27 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	AD	277	Total	C	N	O	S	0	0
			2156	1354	414	383	5		

- Molecule 28 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	AE	206	Total	C	N	O	S	0	0
			1564	995	278	286	5		

- Molecule 29 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	AF	209	Total	C	N	O	S	0	0
			1658	1056	301	299	2		

- Molecule 30 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	AG	182	Total	C	N	O	S	0	0
			1439	930	240	265	4		

- Molecule 31 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	AH	180	Total	C	N	O	S	0	0
			1405	895	249	259	2		

- Molecule 32 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	AI	148	Total	C	N	O	S	0	0
			751	423	161	166	1		

- Molecule 33 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms				AltConf	Trace
33	AJ	162	Total	C	N	O	0	0
			648	324	162	162		

- Molecule 34 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms				AltConf	Trace
34	AK	139	Total	C	N	O	0	0
			556	278	139	139		

- Molecule 35 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	AL	145	Total	C	N	O	S	0	0
			1171	756	211	202	2		

- Molecule 36 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	AM	122	Total	C	N	O	S	0	0
			942	593	174	170	5		

- Molecule 37 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	AN	145	Total	C	N	O	S	0	0
			1129	716	210	201	2		

- Molecule 38 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	AO	138	Total	C	N	O	S	0	0
			1092	693	204	188	7		

- Molecule 39 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	AP	121	Total	C	N	O	S	0	0
			1004	643	193	164	4		

- Molecule 40 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	AQ	119	Total	C	N	O	S	0	0
			968	613	184	170	1		

- Molecule 41 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	AR	117	Total	C	N	O	S	0	0
			951	613	174	161	3		

- Molecule 42 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	AS	114	Total	C	N	O	S	0	0
			943	597	189	155	2		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AS	40	ARG	UNK	conflict	UNP O51206

- Molecule 43 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	AT	103	Total	C	N	O	S	0	0
			859	552	148	157	2		

- Molecule 44 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	AU	115	Total	C	N	O	S	0	0
			918	574	180	158	6		

- Molecule 45 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	AV	98	Total	C	N	O	S	0	0
			784	507	134	140	3		

- Molecule 46 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	AW	101	Total	C	N	O	S	0	0
			800	501	155	140	4		

- Molecule 47 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
47	AX	181	1432	912	245	273	2	0	0

- Molecule 48 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
48	AY	74	571	359	112	100		0	0

- Molecule 49 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
49	AZ	91	705	452	135	115	3	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
50	Aa	65	553	352	102	95	4	0	0

- Molecule 51 is a protein called 50S ribosomal protein uL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
51	Ab	100	814	518	158	133	5	0	0

- Molecule 52 is a protein called 50S ribosomal protein L31 type B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
52	Ac	81	656	419	114	121	2	0	0

- Molecule 53 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
53	Ad	59	484	300	99	80	5	0	0

- Molecule 54 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	Ae	51	Total	C	N	O	S	0	0
			425	266	80	76	3		

- Molecule 55 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	Af	50	Total	C	N	O	S	0	0
			422	260	95	64	3		

- Molecule 56 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	Ag	66	Total	C	N	O	S	0	0
			548	346	111	88	3		

- Molecule 57 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	Ah	37	Total	C	N	O	S	0	0
			305	192	63	46	4		

- Molecule 58 is a protein called 50S ribosomal protein bL38.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	Ai	46	Total	C	N	O	S	0	0
			375	236	72	65	2		

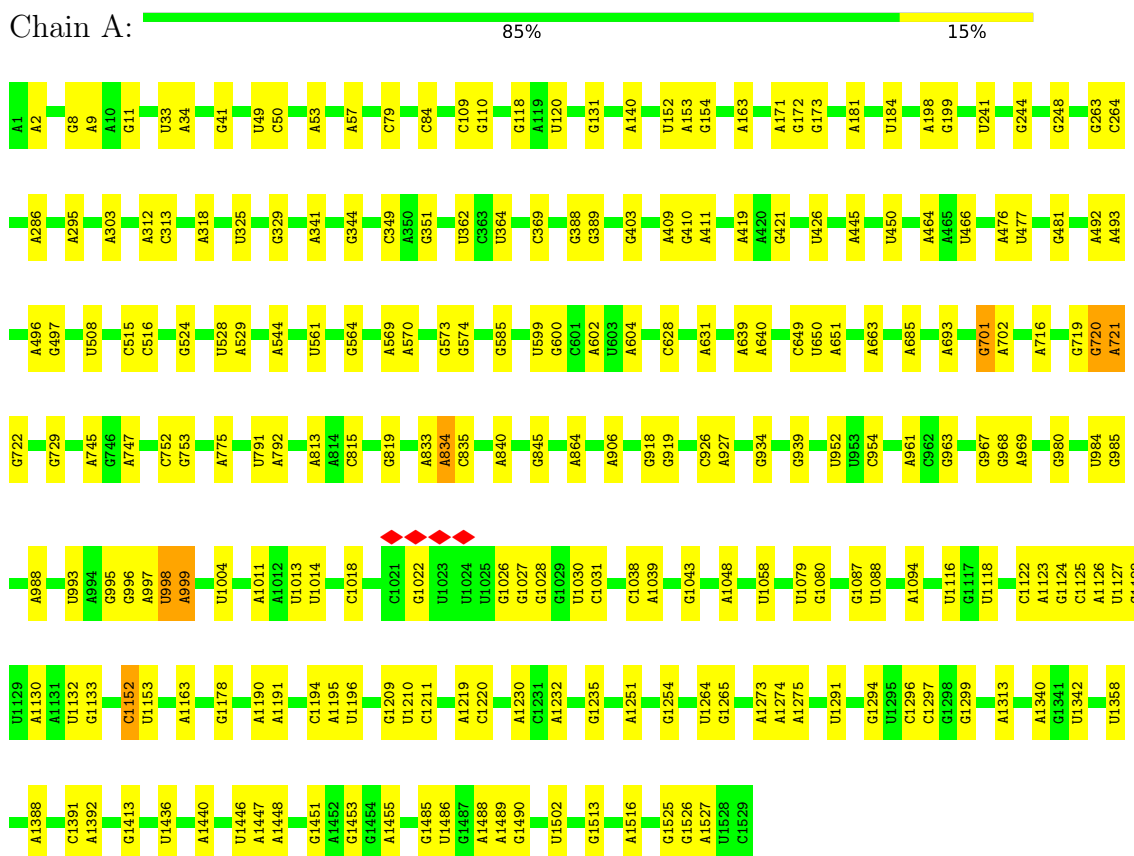
- Molecule 59 is ZINC ION (three-letter code: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
59	N	1	Total	Zn	0
			1	1	
59	R	1	Total	Zn	0
			1	1	
59	Ad	1	Total	Zn	0
			1	1	
59	Ah	1	Total	Zn	0
			1	1	

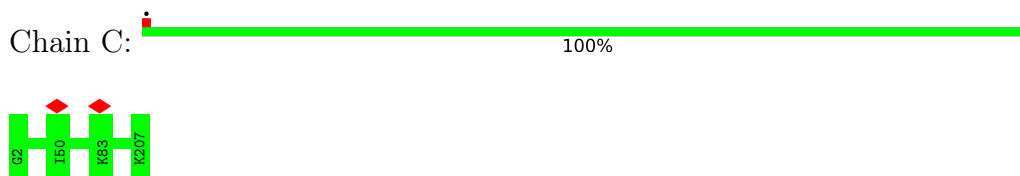
3 Residue-property plots

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: 16S ribosomal RNA



- Molecule 2: 30S ribosomal protein S3



- Molecule 3: 30S ribosomal protein S4

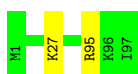




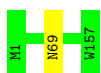
- Molecule 4: 30S ribosomal protein S5



- Molecule 5: 30S ribosomal protein S6



- Molecule 6: 30S ribosomal protein S7



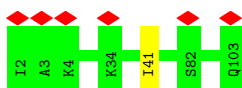
- Molecule 7: 30S ribosomal protein S8



- Molecule 8: 30S ribosomal protein S9



- Molecule 9: 30S ribosomal protein S10



- Molecule 10: 30S ribosomal protein S11



There are no outlier residues recorded for this chain.

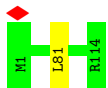
- Molecule 11: 30S ribosomal protein S12

Chain L:  100%

There are no outlier residues recorded for this chain.

- Molecule 12: 30S ribosomal protein S13

Chain M:  99%



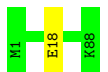
- Molecule 13: 30S ribosomal protein S14 type Z

Chain N:  100%

There are no outlier residues recorded for this chain.

- Molecule 14: 30S ribosomal protein S15

Chain O:  99%



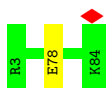
- Molecule 15: 30S ribosomal protein S16

Chain P:  100%



- Molecule 16: 30S ribosomal protein S17

Chain Q:  99%



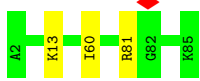
- Molecule 17: 30S ribosomal protein S18

Chain R:  100%

There are no outlier residues recorded for this chain.

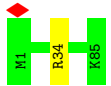
- Molecule 18: 30S ribosomal protein S19

Chain S:  96%



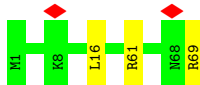
- Molecule 19: 30S ribosomal protein S20

Chain T:  99%



- Molecule 20: 30S ribosomal protein S21

Chain U:  96%



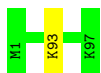
- Molecule 21: 30S ribosomal protein bS22

Chain V:  96%




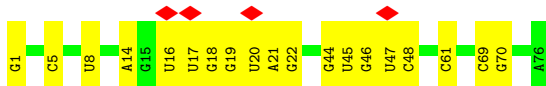
- Molecule 22: Ribosomal subunit interface protein

Chain W:  99%




- Molecule 23: E-site t-RNA

Chain X:  5% 75% 25%



- Molecule 24: 23S ribosomal RNA

Chain AA:  80% 19%



G2791	A2476	A2487	A2805	G2808	G2813	A2825	G2826	G2827	U2831	A2832	U2836	U2838	U2855	G2863	G2864	A2865	U2891	A2897	G2902	A2903	C2904	C2910	A2913	U2914	A2916	C2917	U2921	A2922	U2923	A2932																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
G2236	A2476	U2477	U2487	A2494	G2516	C2521	A2522	G2527	U2531	A2537	G2551	A2564	U2566	C2566	G2575	G2581	U2608	A2612	G2613	A2618	A2648	G2649	U2655	U2659	U2675	G2734	U2736	G2748	G2755	U2756	A2758	G2759	U2760	G2761	C2773	A2780																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
G2110	A2114	G2115	A2116	U2122	G2123	U2130	G2147	G2149	U2152	U2153	G2154	A2158	U2161	A2162	U2163	G2164	A2171	G2174	A2180	U2186	U2186	G2187	C2197	U2198	U2199	C2200	C2201	G2202	G2203	G2211	A2212	G2213	A2217	U2218	C2219	A2223	U2224	A2225	U2226	A2227	C2228	C2232																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
G1912	A1925	U1926	G1927	U1936	G1937	U1941	U1942	G1960	U1966	U1967	C1968	U1971	G1984	U1984	C1984	U1989	U1993	U2009	A2020	C2021	A2024	U2025	G2026	U2045	U2047	A2051	A2073	A2074	G2075	U2076	A2077	G2081	A2084	A2085	G2086	A2087	A2092	U2097	A2106	C2109																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
U1662	G1665	U1677	U1679	U1680	G1681	U1682	U1683	U1684	U1685	U1686	U1687	U1688	U1689	U1690	U1691	U1692	U1693	U1694	U1695	U1696	U1697	U1698	U1699	U1700	U1701	U1702	U1703	U1704	U1705	U1706	U1707	U1708	U1709	U1710	U1711	U1712	U1713	U1714	U1715	U1716	U1717	U1718	U1719	U1720	U1721	U1722	U1723	U1724	U1725	U1726	U1727	U1728	U1729	U1730	U1731	U1732	U1733	U1734	U1735	U1736	U1737	U1738	U1739	U1740	U1741	U1742	U1743	U1744	U1745	U1746	U1747	U1748	U1749	U1750	U1751	U1752	U1753	U1754	U1755	U1756	U1757	U1758	U1759	U1760	U1761	U1762	U1763	U1764	U1765	U1766	U1767	U1768	U1769	U1770	U1771	U1772	U1773	U1774	U1775	U1776	U1777	U1778	U1779	U1780	U1781	U1782	U1783	U1784	U1785	U1786	U1787	U1788	U1789	U1790	U1791	U1792	U1793	U1794	U1795	U1796	U1797	U1798	U1799	U1800	U1801	U1802	U1803	U1804	U1805	U1806	U1807	U1808	U1809	U1810	U1811	U1812	U1813	U1814	U1815	U1816	U1817	U1818	U1819	U1820	U1821	U1822	U1823	U1824	U1825	U1826	U1827	U1828	U1829	U1830	U1831	U1832	U1833	U1834	U1835	U1836	U1837	U1838	U1839	U1840	U1841	U1842	U1843	U1844	U1845	U1846	U1847	U1848	U1849	U1850	U1851	U1852	U1853	U1854	U1855	U1856	U1857	U1858	U1859	U1860	U1861	U1862	U1863	U1864	U1865	U1866	U1867	U1868	U1869	U1870	U1871	U1872	U1873	U1874	U1875	U1876	U1877	U1878	U1879	U1880	U1881	U1882	U1883	U1884	U1885	U1886	U1887	U1888	U1889	U1890	U1891	U1892	U1893	U1894	U1895	U1896	U1897	U1898	U1899	U1900	U1901	U1902	U1903	U1904	U1905	U1906	U1907	U1908	U1909	U1910	U1911	U1912	U1913	U1914	U1915	U1916	U1917	U1918	U1919	U1920	U1921	U1922	U1923	U1924	U1925	U1926	U1927	U1928	U1929	U1930	U1931	U1932	U1933	U1934	U1935	U1936	U1937	U1938	U1939	U1940	U1941	U1942	U1943	U1944	U1945	U1946	U1947	U1948	U1949	U1950	U1951	U1952	U1953	U1954	U1955	U1956	U1957	U1958	U1959	U1960	U1961	U1962	U1963	U1964	U1965	U1966	U1967	U1968	U1969	U1970	U1971	U1972	U1973	U1974	U1975	U1976	U1977	U1978	U1979	U1980	U1981	U1982	U1983	U1984	U1985	U1986	U1987	U1988	U1989	U1990	U1991	U1992	U1993	U1994	U1995	U1996	U1997	U1998	U1999	U2000	U2001	U2002	U2003	U2004	U2005	U2006	U2007	U2008	U2009	U2010	U2011	U2012	U2013	U2014	U2015	U2016	U2017	U2018	U2019	U2020	U2021	U2022	U2023	U2024	U2025	U2026	U2027	U2028	U2029	U2030	U2031	U2032	U2033	U2034	U2035	U2036	U2037	U2038	U2039	U2040	U2041	U2042	U2043	U2044	U2045	U2046	U2047	U2048	U2049	U2050	U2051	U2052	U2053	U2054	U2055	U2056	U2057	U2058	U2059	U2060	U2061	U2062	U2063	U2064	U2065	U2066	U2067	U2068	U2069	U2070	U2071	U2072	U2073	U2074	U2075	U2076	U2077	U2078	U2079	U2080	U2081	U2082	U2083	U2084	U2085	U2086	U2087	U2088	U2089	U2090	U2091	U2092	U2093	U2094	U2095	U2096	U2097	U2098	U2099	U2100	U2101	U2102	U2103	U2104	U2105	U2106	U2107	U2108	U2109	U2110	U2111	U2112	U2113	U2114	U2115	U2116	U2117	U2118	U2119	U2120	U2121	U2122	U2123	U2124	U2125	U2126	U2127	U2128	U2129	U2130	U2131	U2132	U2133	U2134	U2135	U2136	U2137	U2138	U2139	U2140	U2141	U2142	U2143	U2144	U2145	U2146	U2147	U2148	U2149	U2150	U2151	U2152	U2153	U2154	U2155	U2156	U2157	U2158	U2159	U2160	U2161	U2162	U2163	U2164	U2165	U2166	U2167	U2168	U2169	U2170	U2171	U2172	U2173	U2174	U2175	U2176	U2177	U2178	U2179	U2180	U2181	U2182	U2183	U2184	U2185	U2186	U2187	U2188	U2189	U2190	U2191	U2192	U2193	U2194	U2195	U2196	U2197	U2198	U2199	U2200	U2201	U2202	U2203	U2204	U2205	U2206	U2207	U2208	U2209	U2210	U2211	U2212	U2213	U2214	U2215	U2216	U2217	U2218	U2219	U2220	U2221	U2222	U2223	U2224	U2225	U2226	U2227	U2228	U2229	U2230	U2231	U2232	U2233	U2234	U2235	U2236	U2237	U2238	U2239	U2240	U2241	U2242	U2243	U2244	U2245	U2246	U2247	U2248	U2249	U2250	U2251	U2252	U2253	U2254	U2255	U2256	U2257	U2258	U2259	U2260	U2261	U2262	U2263	U2264	U2265	U2266	U2267	U2268	U2269	U2270	U2271	U2272	U2273	U2274	U2275	U2276	U2277	U2278	U2279	U2280	U2281	U2282	U2283	U2284	U2285	U2286	U2287	U2288	U2289	U2290	U2291	U2292	U2293	U2294	U2295	U2296	U2297	U2298	U2299	U2300	U2301	U2302	U2303	U2304	U2305	U2306	U2307	U2308	U2309	U2310	U2311	U2312	U2313	U2314	U2315	U2316	U2317	U2318	U2319	U2320	U2321	U2322	U2323	U2324	U2325	U2326	U2327	U2328	U2329	U2330	U2331	U2332	U2333	U2334	U2335	U2336	U2337	U2338	U2339	U2340	U2341	U2342	U2343	U2344	U2345	U2346	U2347	U2348	U2349	U2350	U2351	U2352	U2353	U2354	U2355	U2356	U2357	U2358	U2359	U2360	U2361	U2362	U2363	U2364	U2365	U2366	U2367	U2368	U2369	U2370	U2371	U2372	U2373	U2374	U2375	U2376	U2377	U2378	U2379	U2380	U2381	U2382	U2383	U2384	U2385	U2386	U2387	U2388	U2389	U2390	U2391	U2392	U2393	U2394	U2395	U2396	U2397	U2398	U2399	U2400	U2401	U2402	U2403	U2404	U2405	U2406	U2407	U2408	U2409	U2410	U2411	U2412	U2413	U2414	U2415	U2416	U2417	U2418	U2419	U2420	U2421	U2422	U2423	U2424	U2425	U2426	U2427	U2428	U2429	U2430	U2431	U2432	U2433	U2434	U2435	U2436	U2437	U2438	U2439	U2440	U2441	U2442	U2443	U2444	U2445	U2446	U2447	U2448	U2449	U2450	U2451	U2452	U2453	U2454	U2455	U2456	U2457	U2458	U2459	U2460	U2461	U2462	U2463	U2464	U2465	U2466	U2467	U2468	U2469	U2470	U2471	U2472	U2473	U2474	U2475	U2476	U2477	U2478	U2479	U2480	U2481	U2482	U2483	U2484	U2485	U2486	U2487	U2488	U2489	U2490	U2491	U2492	U2493	U2494	U2495	U2496	U2497	U2498	U2499	U2500	U2501	U2502	U2503	U2504	U2505	U2506	U2507	U2508	U2509	U2510	U2511	U2512	U2513	U2514	U2515	U2516	U2517	U2518	U2519	U2520	U2521	U2522	U2523	U2524	U2525	U2526	U2527	U2528	U2529	U2530	U2531	U2532	U2533	U2534	U2535	U2536	U2537	U2538	U2539	U2540	U2541	U2542	U2543	U2544	U2545	U2546	U2547	U2548	U2549	U2550	U2551	U2552	U2553	U2554	U2555	U2556	U2557	U2558	U2559	U2560	U2561	U2562	U2563	U2564	U2565	U2566	U2567	U2568	U2569	U2570	U2571	U2572	U2573	U2574	U2575	U2576	U2577	U2578	U2579	U2580	U2581	U2582	U2583	U2584	U2585	U2586	U2587	U2588	U2589	U2590	U2591	U2592	U2593	U2594	U2595	U2596	U2597	U2598	U2599	U2600	U2601	U2602	U2603	U2604	U2605	U2606	U2607	U2608	U2609	U2610	U2611	U2612	U2613	U2614	U2615	U2616	U2617	U2618	U2619	U2620	U2621	U2622	U2623	U2624	U2625	U2626	U2627	U2628	U2629	U2630	U2631	U2632	U2633	U2634	U2635	U2636	U2637	U2638	U2639	U2640	U2641	U2642	U2643	U2644	U2645	U2646	U2647	U2648	U2649	U2650	U2651	U2652	U2653	U2654	U2655	U2656	U2657	U2658	U2659	U2660	U2661	U2662	U2663	U2664	U2665	U2666	U2667	U2668	U2669	U2670	U2671	U2672	U2673	U2674	U2675	U2676	U2677	U2678	U2679	U2680	U2681	U2682	U2683	U2684	U2685	U2686	U2687	U2688	U2689	U2690	U2691	U2692	U2693	U2694	U2695	U2696	U2697	U2698	U2699	U2700	U2701	U2702	U2703	U2704	U2705	U2706	U2707	U2708	U2709	U2710	U2711	U2712	U2713	U2714	U2715	U2716	U2717	U2718	U2719	U2720	U2721	U2722	U2723	U2724	U2725	U2726	U2727	U2728	U2729	U2730	U2731	U2732	U2733	U2734	U2735	U2736	U2737	U2738	U2739	U2740	U2741	U2742	U2743	U2744	U2745	U2746	U2747	U2748	U2749	U2750	U2751	U2752	U2753	U2754</

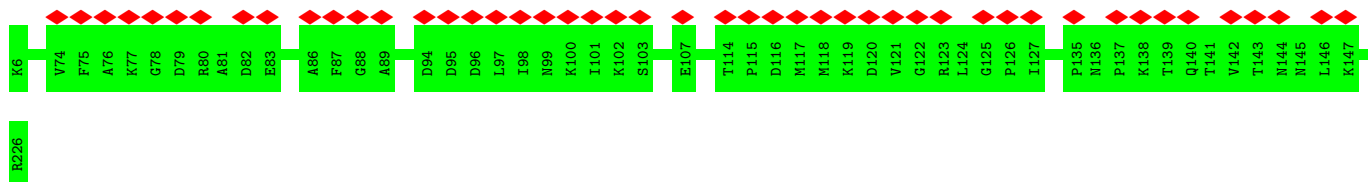
- Molecule 25: 5S ribosomal RNA

Chain AB:  72% 28%



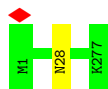
- Molecule 26: 50S ribosomal protein L1

Chain AC:  21% 100%



- Molecule 27: 50S ribosomal protein L2

Chain AD:  100%



- Molecule 28: 50S ribosomal protein L3

Chain AE:  100%

There are no outlier residues recorded for this chain.

- Molecule 29: 50S ribosomal protein L4

Chain AF:  99%



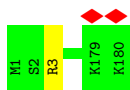
- Molecule 30: 50S ribosomal protein L5

Chain AG:  99%

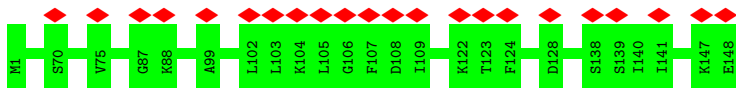


- Molecule 31: 50S ribosomal protein L6

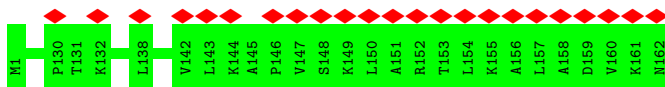
Chain AH:  99%



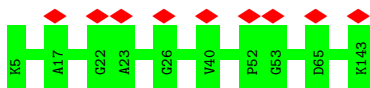
- Molecule 32: 50S ribosomal protein L9



- Molecule 33: 50S ribosomal protein L10



- Molecule 34: 50S ribosomal protein L11



- Molecule 35: 50S ribosomal protein L13



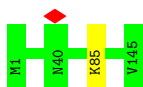
There are no outlier residues recorded for this chain.

- Molecule 36: 50S ribosomal protein L14



There are no outlier residues recorded for this chain.

- Molecule 37: 50S ribosomal protein L15



- Molecule 38: 50S ribosomal protein L16





- Molecule 39: 50S ribosomal protein L17

Chain AP: 100%

There are no outlier residues recorded for this chain.

- Molecule 40: 50S ribosomal protein L18

Chain AQ: 98%



- Molecule 41: 50S ribosomal protein L19

Chain AR: 99%



- Molecule 42: 50S ribosomal protein L20

Chain AS: 99%



- Molecule 43: 50S ribosomal protein L21

Chain AT: 100%

There are no outlier residues recorded for this chain.

- Molecule 44: 50S ribosomal protein L22

Chain AU: 99%



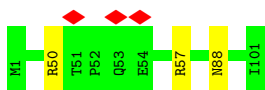
- Molecule 45: 50S ribosomal protein L23

Chain AV: 100%

There are no outlier residues recorded for this chain.

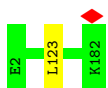
- Molecule 46: 50S ribosomal protein L24

Chain AW:  97%



- Molecule 47: 50S ribosomal protein L25

Chain AX:  99%



- Molecule 48: 50S ribosomal protein L27

Chain AY:  100%

There are no outlier residues recorded for this chain.

- Molecule 49: 50S ribosomal protein L28

Chain AZ:  100%

There are no outlier residues recorded for this chain.

- Molecule 50: 50S ribosomal protein L29

Chain Aa:  100%

There are no outlier residues recorded for this chain.

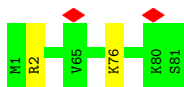
- Molecule 51: 50S ribosomal protein uL30

Chain Ab:  100%



- Molecule 52: 50S ribosomal protein L31 type B

Chain Ac:  98%



- Molecule 53: 50S ribosomal protein L32

Chain Ad:  100%



- Molecule 54: 50S ribosomal protein L33

Chain Ae: 100%

There are no outlier residues recorded for this chain.

- Molecule 55: 50S ribosomal protein L34

Chain Af: 100%

There are no outlier residues recorded for this chain.

- Molecule 56: 50S ribosomal protein L35

Chain Ag: 98%



- Molecule 57: 50S ribosomal protein L36

Chain Ah: 100%

There are no outlier residues recorded for this chain.

- Molecule 58: 50S ribosomal protein bL38

Chain Ai: 85% 13%



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	288776	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	67.527	Depositor
Minimum defocus (nm)	820	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	105000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	1.084	Depositor
Minimum map value	-0.439	Depositor
Average map value	-0.002	Depositor
Map value standard deviation	0.039	Depositor
Recommended contour level	0.07	Depositor
Map size (Å)	493.245, 493.245, 493.245	wwPDB
Map dimensions	450, 450, 450	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.0961, 1.0961, 1.0961	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section:
ZN

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.25	0/36721	0.79	28/57268 (0.0%)
2	C	0.39	0/1673	0.53	0/2240
3	D	0.36	0/1716	0.55	1/2298 (0.0%)
4	E	0.42	0/1215	0.56	0/1626
5	F	0.38	0/826	0.62	0/1098
6	G	0.32	0/1302	0.55	0/1734
7	H	0.46	0/1053	0.58	0/1406
8	I	0.32	0/1056	0.50	0/1405
9	J	0.36	0/828	0.59	1/1108 (0.1%)
10	K	0.42	0/891	0.56	0/1201
11	L	0.39	0/983	0.52	0/1318
12	M	0.33	0/907	0.69	2/1208 (0.2%)
13	N	0.37	0/500	0.55	0/662
14	O	0.40	0/724	0.57	1/956 (0.1%)
15	P	0.36	0/685	0.48	0/913
16	Q	0.52	1/686 (0.1%)	0.61	0/910
17	R	0.39	0/532	0.54	0/705
18	S	0.33	0/683	0.79	5/917 (0.5%)
19	T	0.39	0/700	0.68	1/918 (0.1%)
20	U	0.34	0/609	0.74	3/800 (0.4%)
21	V	0.38	0/242	0.45	0/307
22	W	0.37	0/832	0.58	1/1110 (0.1%)
23	X	0.34	1/1807 (0.1%)	0.77	0/2812
24	AA	0.33	0/70389	0.83	156/109770 (0.1%)
25	AB	0.27	0/2684	0.72	0/4183
26	AC	0.24	0/883	0.45	0/1102
27	AD	0.54	0/2196	0.59	1/2935 (0.0%)
28	AE	0.52	0/1588	0.54	0/2122
29	AF	0.50	0/1682	0.54	1/2249 (0.0%)
30	AG	0.35	0/1460	0.53	1/1955 (0.1%)
31	AH	0.38	0/1422	0.50	0/1903
32	AI	0.30	0/756	0.51	0/973

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	AJ	0.23	0/647	0.43	0/807
34	AK	0.25	0/555	0.46	0/692
35	AL	0.54	0/1197	0.54	0/1612
36	AM	0.56	0/951	0.59	0/1276
37	AN	0.49	0/1142	0.59	0/1515
38	AO	0.51	0/1110	0.68	1/1480 (0.1%)
39	AP	0.52	0/1020	0.54	0/1353
40	AQ	0.38	0/979	0.62	2/1299 (0.2%)
41	AR	0.61	1/962 (0.1%)	0.65	0/1280
42	AS	0.59	0/954	0.60	0/1264
43	AT	0.56	0/872	0.53	0/1163
44	AU	0.53	0/931	0.57	0/1245
45	AV	0.47	0/796	0.54	0/1065
46	AW	0.40	0/803	0.55	0/1059
47	AX	0.38	0/1451	0.52	1/1955 (0.1%)
48	AY	0.53	0/577	0.52	0/760
49	AZ	0.45	0/713	0.53	0/943
50	Aa	0.41	0/559	0.58	0/739
51	Ab	0.47	0/818	0.55	0/1079
52	Ac	0.31	0/669	0.52	0/893
53	Ad	0.55	0/492	0.51	0/654
54	Ae	0.44	0/429	0.68	0/568
55	Af	0.53	0/425	0.57	0/551
56	Ag	0.57	0/554	0.61	2/726 (0.3%)
57	Ah	0.49	0/306	0.54	0/400
58	Ai	0.72	1/381 (0.3%)	1.31	7/502 (1.4%)
All	All	0.35	4/160524 (0.0%)	0.76	215/238992 (0.1%)

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
23	X	1	G	OP3-P	-10.73	1.48	1.61
16	Q	78	GLU	CG-CD	-5.97	1.43	1.51
58	Ai	40	GLU	CD-OE2	-5.81	1.19	1.25
41	AR	33	GLU	CB-CG	-5.18	1.42	1.52

All (215) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	999	A	O5'-P-OP1	-31.82	72.51	110.70
24	AA	1559	G	O5'-P-OP1	-31.12	73.36	110.70
24	AA	1967	A	O5'-P-OP1	-31.07	73.41	110.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	AA	1677	A	O5'-P-OP1	-31.06	73.43	110.70
1	A	1265	G	O5'-P-OP1	-29.81	74.93	110.70
24	AA	1677	A	OP1-P-OP2	-27.76	77.96	119.60
1	A	721	A	OP1-P-OP2	-27.54	78.29	119.60
1	A	721	A	O5'-P-OP1	-27.27	77.97	110.70
24	AA	1967	A	OP1-P-OP2	-27.06	79.01	119.60
1	A	1265	G	OP1-P-OP2	-26.97	79.15	119.60
1	A	999	A	OP1-P-OP2	-26.73	79.50	119.60
24	AA	1559	G	OP1-P-OP2	-26.67	79.59	119.60
1	A	999	A	O5'-P-OP2	20.05	134.77	110.70
24	AA	1677	A	O5'-P-OP2	19.03	133.54	110.70
24	AA	1967	A	O5'-P-OP2	18.36	132.73	110.70
1	A	1265	G	O5'-P-OP2	17.80	132.06	110.70
1	A	720	G	OP1-P-O3'	15.01	138.21	105.20
1	A	720	G	OP2-P-O3'	-14.89	72.43	105.20
24	AA	1559	G	O5'-P-OP2	14.84	128.51	110.70
24	AA	1558	C	OP2-P-O3'	-14.46	73.40	105.20
24	AA	1558	C	OP1-P-O3'	14.03	136.05	105.20
24	AA	1676	A	OP1-P-O3'	13.88	135.73	105.20
1	A	721	A	O5'-P-OP2	13.86	127.33	110.70
1	A	1264	U	OP1-P-O3'	13.80	135.56	105.20
24	AA	1966	A	OP1-P-O3'	13.74	135.44	105.20
1	A	1264	U	OP2-P-O3'	-13.67	75.12	105.20
1	A	998	U	OP1-P-O3'	13.04	133.90	105.20
24	AA	1966	A	OP2-P-O3'	-12.78	77.09	105.20
24	AA	1676	A	OP2-P-O3'	-12.45	77.80	105.20
1	A	998	U	OP2-P-O3'	-11.69	79.49	105.20
24	AA	531	A	OP2-P-O3'	-11.41	80.10	105.20
24	AA	177	G	OP1-P-O3'	-11.26	80.44	105.20
24	AA	272	U	OP1-P-O3'	-11.22	80.53	105.20
24	AA	1736	G	OP1-P-O3'	-11.21	80.55	105.20
24	AA	2836	U	OP2-P-O3'	-11.19	80.58	105.20
24	AA	1610	G	OP2-P-O3'	-11.18	80.59	105.20
24	AA	1586	G	OP2-P-O3'	-11.17	80.62	105.20
24	AA	1519	U	OP1-P-O3'	-11.16	80.64	105.20
24	AA	1609	U	OP1-P-O3'	-11.16	80.65	105.20
24	AA	1619	G	OP1-P-O3'	-11.11	80.76	105.20
24	AA	1286	A	OP1-P-O3'	-11.10	80.77	105.20
24	AA	1560	A	OP2-P-O3'	-11.10	80.78	105.20
24	AA	1576	A	OP1-P-O3'	-11.07	80.84	105.20
24	AA	159	U	OP1-P-O3'	-11.07	80.85	105.20
24	AA	349	G	OP2-P-O3'	-10.99	81.01	105.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	AA	1500	A	OP1-P-O3'	-10.99	81.03	105.20
24	AA	1584	A	OP1-P-O3'	-10.95	81.10	105.20
24	AA	157	A	OP1-P-O3'	-10.93	81.16	105.20
24	AA	1633	A	OP1-P-O3'	-10.93	81.16	105.20
24	AA	1585	A	OP1-P-O3'	-10.92	81.17	105.20
24	AA	2447	U	OP1-P-O3'	-10.91	81.20	105.20
24	AA	1299	U	OP1-P-O3'	-10.90	81.22	105.20
24	AA	1520	A	OP1-P-O3'	-10.89	81.25	105.20
24	AA	1559	G	OP1-P-O3'	-10.88	81.25	105.20
1	A	833	A	OP1-P-O3'	-10.88	81.27	105.20
24	AA	1580	C	OP2-P-O3'	-10.87	81.29	105.20
24	AA	140	C	OP2-P-O3'	-10.87	81.30	105.20
24	AA	1567	U	OP1-P-O3'	-10.86	81.31	105.20
24	AA	1490	G	OP1-P-O3'	-10.85	81.33	105.20
24	AA	1287	G	OP2-P-O3'	-10.83	81.37	105.20
24	AA	324	G	OP1-P-O3'	-10.83	81.37	105.20
24	AA	1552	U	OP1-P-O3'	-10.83	81.37	105.20
24	AA	1300	G	OP1-P-O3'	-10.82	81.39	105.20
24	AA	180	A	OP1-P-O3'	-10.82	81.40	105.20
24	AA	1626	G	OP1-P-O3'	-10.82	81.40	105.20
24	AA	1563	A	OP1-P-O3'	-10.80	81.43	105.20
24	AA	1618	G	OP1-P-O3'	-10.78	81.49	105.20
24	AA	1643	G	OP1-P-O3'	-10.78	81.49	105.20
24	AA	2758	A	OP2-P-O3'	-10.78	81.49	105.20
24	AA	1674	A	OP1-P-O3'	-10.76	81.52	105.20
24	AA	1602	U	OP2-P-O3'	-10.76	81.53	105.20
1	A	476	A	OP1-P-O3'	-10.76	81.53	105.20
24	AA	1697	A	OP1-P-O3'	-10.74	81.58	105.20
24	AA	1681	A	OP2-P-O3'	-10.66	81.74	105.20
24	AA	1587	A	OP2-P-O3'	-10.61	81.86	105.20
24	AA	1587	A	OP1-P-O3'	-10.57	81.95	105.20
24	AA	1681	A	OP1-P-O3'	-10.55	81.98	105.20
24	AA	1580	C	OP1-P-O3'	-10.49	82.12	105.20
24	AA	2758	A	OP1-P-O3'	-10.45	82.22	105.20
24	AA	2734	G	OP2-P-O3'	-10.41	82.30	105.20
24	AA	1697	A	OP2-P-O3'	-10.28	82.59	105.20
24	AA	140	C	OP1-P-O3'	-10.21	82.73	105.20
24	AA	1602	U	OP1-P-O3'	-10.21	82.75	105.20
1	A	476	A	OP2-P-O3'	-10.19	82.78	105.20
24	AA	1674	A	OP2-P-O3'	-10.13	82.92	105.20
24	AA	2734	G	OP1-P-O3'	-10.12	82.92	105.20
24	AA	1559	G	OP2-P-O3'	-10.11	82.95	105.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	AA	1643	G	OP2-P-O3'	-10.01	83.17	105.20
24	AA	1552	U	OP2-P-O3'	-9.98	83.24	105.20
24	AA	1300	G	OP2-P-O3'	-9.97	83.26	105.20
24	AA	324	G	OP2-P-O3'	-9.97	83.27	105.20
24	AA	1618	G	OP2-P-O3'	-9.96	83.29	105.20
24	AA	1563	A	OP2-P-O3'	-9.95	83.30	105.20
24	AA	180	A	OP2-P-O3'	-9.87	83.50	105.20
24	AA	1490	G	OP2-P-O3'	-9.87	83.50	105.20
24	AA	1611	C	OP1-P-OP2	9.83	134.35	119.60
24	AA	1287	G	OP1-P-O3'	-9.80	83.65	105.20
24	AA	1520	A	OP2-P-O3'	-9.77	83.72	105.20
24	AA	1567	U	OP2-P-O3'	-9.76	83.74	105.20
24	AA	2447	U	OP2-P-O3'	-9.74	83.77	105.20
24	AA	157	A	OP2-P-O3'	-9.70	83.85	105.20
24	AA	1633	A	OP2-P-O3'	-9.66	83.95	105.20
24	AA	1584	A	OP2-P-O3'	-9.61	84.06	105.20
1	A	833	A	OP2-P-O3'	-9.59	84.09	105.20
24	AA	1500	A	OP2-P-O3'	-9.58	84.12	105.20
24	AA	1626	G	OP2-P-O3'	-9.55	84.20	105.20
24	AA	1585	A	OP2-P-O3'	-9.53	84.23	105.20
24	AA	1299	U	OP2-P-O3'	-9.52	84.25	105.20
24	AA	1610	G	OP1-P-O3'	-9.49	84.32	105.20
24	AA	1286	A	OP2-P-O3'	-9.26	84.83	105.20
24	AA	1560	A	OP1-P-O3'	-9.21	84.94	105.20
24	AA	1609	U	OP2-P-O3'	-9.14	85.08	105.20
24	AA	159	U	OP2-P-O3'	-9.12	85.13	105.20
24	AA	1576	A	OP2-P-O3'	-9.09	85.21	105.20
24	AA	2836	U	OP1-P-O3'	-8.94	85.54	105.20
24	AA	1736	G	OP2-P-O3'	-8.90	85.62	105.20
24	AA	177	G	OP2-P-O3'	-8.84	85.75	105.20
24	AA	1619	G	OP2-P-O3'	-8.81	85.81	105.20
24	AA	272	U	OP2-P-O3'	-8.78	85.88	105.20
24	AA	349	G	OP1-P-O3'	-8.62	86.23	105.20
20	U	16	LEU	CA-CB-CG	8.58	135.03	115.30
24	AA	531	A	OP1-P-O3'	-8.57	86.35	105.20
24	AA	1519	U	OP2-P-O3'	-8.45	86.61	105.20
40	AQ	64	LEU	CB-CG-CD2	-8.37	96.78	111.00
3	D	167	LEU	CA-CB-CG	8.35	134.50	115.30
18	S	13	LYS	CD-CE-NZ	-8.19	92.86	111.70
9	J	41	ILE	CG1-CB-CG2	-8.04	93.71	111.40
24	AA	1586	G	OP1-P-O3'	-8.00	87.61	105.20
24	AA	1627	A	OP1-P-OP2	7.76	131.24	119.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
58	Ai	52	ARG	NE-CZ-NH2	-7.68	116.46	120.30
24	AA	2735	U	OP1-P-OP2	7.65	131.08	119.60
20	U	69	ARG	CG-CD-NE	7.58	127.72	111.80
18	S	81	ARG	CG-CD-NE	7.53	127.62	111.80
24	AA	1610	G	OP1-P-OP2	7.53	130.89	119.60
1	A	752	C	N1-C2-O2	7.49	123.39	118.90
24	AA	1581	G	OP1-P-OP2	7.44	130.76	119.60
24	AA	1560	A	OP1-P-OP2	7.38	130.68	119.60
24	AA	178	A	OP1-P-OP2	7.38	130.67	119.60
1	A	477	U	OP1-P-OP2	7.38	130.66	119.60
24	AA	1682	C	OP1-P-OP2	7.37	130.66	119.60
24	AA	1577	A	OP1-P-OP2	7.36	130.64	119.60
24	AA	532	G	OP1-P-OP2	7.33	130.59	119.60
24	AA	1698	C	OP1-P-OP2	7.30	130.55	119.60
24	AA	2759	G	OP1-P-OP2	7.28	130.53	119.60
24	AA	141	A	OP1-P-OP2	7.24	130.46	119.60
24	AA	1588	G	OP1-P-OP2	7.23	130.44	119.60
12	M	81	LEU	CB-CG-CD1	7.22	123.27	111.00
24	AA	2448	G	OP1-P-OP2	7.22	130.43	119.60
24	AA	1675	U	OP1-P-OP2	7.21	130.42	119.60
24	AA	1301	G	OP1-P-OP2	7.21	130.41	119.60
24	AA	1603	G	OP1-P-OP2	7.20	130.40	119.60
24	AA	325	G	OP1-P-OP2	7.19	130.39	119.60
24	AA	1521	C	OP1-P-OP2	7.19	130.38	119.60
24	AA	1564	U	OP1-P-OP2	7.18	130.37	119.60
24	AA	1737	A	OP1-P-OP2	7.17	130.36	119.60
24	AA	1619	G	OP1-P-OP2	7.15	130.32	119.60
1	A	834	A	OP1-P-OP2	7.14	130.31	119.60
24	AA	1553	U	OP1-P-OP2	7.13	130.30	119.60
24	AA	1644	G	OP1-P-OP2	7.13	130.29	119.60
24	AA	160	A	OP1-P-OP2	7.12	130.28	119.60
24	AA	1585	A	OP1-P-OP2	7.11	130.27	119.60
24	AA	2837	U	OP1-P-OP2	7.11	130.26	119.60
24	AA	181	C	OP1-P-OP2	7.10	130.25	119.60
24	AA	1586	G	OP1-P-OP2	7.10	130.25	119.60
24	AA	158	U	OP1-P-OP2	7.10	130.25	119.60
24	AA	1501	G	OP1-P-OP2	7.10	130.25	119.60
24	AA	1491	U	OP1-P-OP2	7.09	130.24	119.60
24	AA	1561	U	OP1-P-OP2	7.09	130.24	119.60
24	AA	1300	G	OP1-P-OP2	7.07	130.21	119.60
24	AA	1568	A	OP1-P-OP2	7.07	130.20	119.60
24	AA	1634	G	OP1-P-OP2	7.07	130.20	119.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	AA	1287	G	OP1-P-OP2	7.06	130.20	119.60
24	AA	273	U	OP1-P-OP2	7.05	130.18	119.60
27	AD	28	ASN	C-N-CA	7.05	139.33	121.70
24	AA	1288	A	OP1-P-OP2	7.04	130.15	119.60
58	Ai	52	ARG	NE-CZ-NH1	7.01	123.81	120.30
18	S	81	ARG	CB-CG-CD	6.89	129.50	111.60
24	AA	1620	U	OP1-P-OP2	6.85	129.87	119.60
24	AA	1520	A	OP1-P-OP2	6.67	129.60	119.60
1	A	752	C	C2-N1-C1'	6.62	126.08	118.80
1	A	1152	C	N1-C2-O2	6.59	122.86	118.90
18	S	81	ARG	CA-CB-CG	-6.56	98.96	113.40
30	AG	29	MET	CB-CG-SD	6.45	131.75	112.40
58	Ai	45	LYS	CD-CE-NZ	6.44	126.52	111.70
24	AA	350	U	OP1-P-OP2	6.33	129.10	119.60
24	AA	1587	A	OP1-P-OP2	6.19	128.89	119.60
47	AX	123	LEU	CA-CB-CG	6.04	129.19	115.30
58	Ai	23	LYS	CG-CD-CE	5.98	129.84	111.90
24	AA	1390	U	C2-N1-C1'	5.94	124.83	117.70
58	Ai	49	ARG	CA-CB-CG	5.83	126.22	113.40
1	A	752	C	N3-C2-O2	-5.81	117.83	121.90
58	Ai	23	LYS	CB-CG-CD	5.75	126.55	111.60
58	Ai	23	LYS	CD-CE-NZ	5.75	124.92	111.70
24	AA	647	C	C2-N1-C1'	5.64	125.00	118.80
40	AQ	64	LEU	CB-CG-CD1	5.58	120.48	111.00
24	AA	647	C	N1-C2-O2	5.57	122.24	118.90
12	M	81	LEU	CB-CG-CD2	5.54	120.41	111.00
1	A	1152	C	C2-N1-C1'	5.53	124.88	118.80
29	AF	163	MET	CG-SD-CE	5.43	108.89	100.20
24	AA	1293	U	P-O3'-C3'	5.37	126.14	119.70
18	S	60	ILE	CG1-CB-CG2	-5.34	99.66	111.40
1	A	701	G	OP2-P-O3'	5.33	116.93	105.20
20	U	69	ARG	CB-CG-CD	5.27	125.31	111.60
24	AA	1676	A	P-O3'-C3'	5.27	126.03	119.70
56	Ag	55	GLU	CG-CD-OE2	-5.19	107.93	118.30
24	AA	329	A	OP1-P-O3'	5.15	116.53	105.20
24	AA	1567	U	C2-N1-C1'	5.12	123.85	117.70
14	O	18	GLU	CA-CB-CG	5.11	124.65	113.40
19	T	34	ARG	CB-CG-CD	5.09	124.83	111.60
56	Ag	55	GLU	CG-CD-OE1	5.07	128.43	118.30
24	AA	329	A	P-O3'-C3'	5.06	125.77	119.70
24	AA	1538	U	P-O3'-C3'	5.04	125.74	119.70
22	W	93	LYS	CA-CB-CG	5.02	124.45	113.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	628	C	C2-N1-C1'	5.01	124.31	118.80
38	AO	45	ARG	CA-CB-CG	-5.01	102.38	113.40

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

Due to software issues we are unable to calculate clashes - this section is therefore empty.

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	C	204/206 (99%)	194 (95%)	10 (5%)	0	100	100
3	D	206/208 (99%)	196 (95%)	10 (5%)	0	100	100
4	E	156/158 (99%)	147 (94%)	9 (6%)	0	100	100
5	F	95/97 (98%)	88 (93%)	7 (7%)	0	100	100
6	G	155/157 (99%)	138 (89%)	17 (11%)	0	100	100
7	H	130/132 (98%)	123 (95%)	7 (5%)	0	100	100
8	I	129/131 (98%)	118 (92%)	11 (8%)	0	100	100
9	J	100/102 (98%)	92 (92%)	8 (8%)	0	100	100
10	K	115/117 (98%)	105 (91%)	10 (9%)	0	100	100
11	L	122/124 (98%)	114 (93%)	8 (7%)	0	100	100
12	M	112/114 (98%)	105 (94%)	7 (6%)	0	100	100
13	N	58/60 (97%)	57 (98%)	1 (2%)	0	100	100
14	O	86/88 (98%)	84 (98%)	2 (2%)	0	100	100
15	P	81/83 (98%)	79 (98%)	2 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
16	Q	80/82 (98%)	74 (92%)	6 (8%)	0	100	100
17	R	61/63 (97%)	57 (93%)	4 (7%)	0	100	100
18	S	82/84 (98%)	76 (93%)	6 (7%)	0	100	100
19	T	83/85 (98%)	81 (98%)	2 (2%)	0	100	100
20	U	67/69 (97%)	65 (97%)	2 (3%)	0	100	100
21	V	25/28 (89%)	24 (96%)	1 (4%)	0	100	100
22	W	95/97 (98%)	87 (92%)	8 (8%)	0	100	100
26	AC	219/221 (99%)	211 (96%)	8 (4%)	0	100	100
27	AD	275/277 (99%)	259 (94%)	16 (6%)	0	100	100
28	AE	204/206 (99%)	195 (96%)	9 (4%)	0	100	100
29	AF	207/209 (99%)	198 (96%)	9 (4%)	0	100	100
30	AG	180/182 (99%)	168 (93%)	12 (7%)	0	100	100
31	AH	178/180 (99%)	170 (96%)	8 (4%)	0	100	100
32	AI	146/148 (99%)	134 (92%)	12 (8%)	0	100	100
33	AJ	160/162 (99%)	153 (96%)	7 (4%)	0	100	100
34	AK	137/139 (99%)	131 (96%)	6 (4%)	0	100	100
35	AL	143/145 (99%)	136 (95%)	7 (5%)	0	100	100
36	AM	120/122 (98%)	113 (94%)	7 (6%)	0	100	100
37	AN	143/145 (99%)	116 (81%)	27 (19%)	0	100	100
38	AO	136/138 (99%)	118 (87%)	17 (12%)	1 (1%)	22	50
39	AP	119/121 (98%)	111 (93%)	8 (7%)	0	100	100
40	AQ	117/119 (98%)	111 (95%)	6 (5%)	0	100	100
41	AR	115/117 (98%)	105 (91%)	10 (9%)	0	100	100
42	AS	112/114 (98%)	104 (93%)	8 (7%)	0	100	100
43	AT	101/103 (98%)	94 (93%)	7 (7%)	0	100	100
44	AU	113/115 (98%)	108 (96%)	5 (4%)	0	100	100
45	AV	96/98 (98%)	92 (96%)	4 (4%)	0	100	100
46	AW	99/101 (98%)	90 (91%)	9 (9%)	0	100	100
47	AX	179/181 (99%)	168 (94%)	11 (6%)	0	100	100
48	AY	72/74 (97%)	69 (96%)	3 (4%)	0	100	100
49	AZ	89/91 (98%)	86 (97%)	3 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
50	Aa	63/65 (97%)	61 (97%)	2 (3%)	0	100	100
51	Ab	98/100 (98%)	95 (97%)	3 (3%)	0	100	100
52	Ac	79/81 (98%)	67 (85%)	12 (15%)	0	100	100
53	Ad	57/59 (97%)	52 (91%)	5 (9%)	0	100	100
54	Ae	49/51 (96%)	42 (86%)	7 (14%)	0	100	100
55	Af	48/50 (96%)	42 (88%)	6 (12%)	0	100	100
56	Ag	64/66 (97%)	57 (89%)	7 (11%)	0	100	100
57	Ah	35/37 (95%)	32 (91%)	3 (9%)	0	100	100
58	Ai	44/46 (96%)	39 (89%)	5 (11%)	0	100	100
All	All	6239/6348 (98%)	5831 (94%)	407 (6%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
38	AO	70	PRO

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	C	179/179 (100%)	179 (100%)	0	100	100
3	D	184/184 (100%)	184 (100%)	0	100	100
4	E	125/125 (100%)	124 (99%)	1 (1%)	81	93
5	F	88/88 (100%)	86 (98%)	2 (2%)	50	78
6	G	136/136 (100%)	135 (99%)	1 (1%)	84	94
7	H	115/115 (100%)	115 (100%)	0	100	100
8	I	113/113 (100%)	112 (99%)	1 (1%)	78	92
9	J	93/93 (100%)	93 (100%)	0	100	100
10	K	91/91 (100%)	91 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
11	L	106/106 (100%)	106 (100%)	0	100	100
12	M	99/99 (100%)	99 (100%)	0	100	100
13	N	53/53 (100%)	53 (100%)	0	100	100
14	O	79/79 (100%)	79 (100%)	0	100	100
15	P	75/75 (100%)	75 (100%)	0	100	100
16	Q	79/79 (100%)	79 (100%)	0	100	100
17	R	56/56 (100%)	56 (100%)	0	100	100
18	S	76/76 (100%)	76 (100%)	0	100	100
19	T	75/75 (100%)	75 (100%)	0	100	100
20	U	65/65 (100%)	64 (98%)	1 (2%)	65	86
21	V	26/27 (96%)	26 (100%)	0	100	100
22	W	91/91 (100%)	91 (100%)	0	100	100
27	AD	229/229 (100%)	229 (100%)	0	100	100
28	AE	168/168 (100%)	168 (100%)	0	100	100
29	AF	181/181 (100%)	180 (99%)	1 (1%)	86	95
30	AG	155/155 (100%)	154 (99%)	1 (1%)	86	95
31	AH	156/156 (100%)	155 (99%)	1 (1%)	86	95
32	AI	34/134 (25%)	34 (100%)	0	100	100
35	AL	127/127 (100%)	127 (100%)	0	100	100
36	AM	103/103 (100%)	103 (100%)	0	100	100
37	AN	124/124 (100%)	123 (99%)	1 (1%)	81	93
38	AO	115/115 (100%)	114 (99%)	1 (1%)	78	92
39	AP	110/110 (100%)	110 (100%)	0	100	100
40	AQ	104/104 (100%)	103 (99%)	1 (1%)	76	91
41	AR	103/103 (100%)	103 (100%)	0	100	100
42	AS	99/99 (100%)	98 (99%)	1 (1%)	76	91
43	AT	96/96 (100%)	96 (100%)	0	100	100
44	AU	100/100 (100%)	99 (99%)	1 (1%)	76	91
45	AV	88/88 (100%)	88 (100%)	0	100	100
46	AW	89/89 (100%)	86 (97%)	3 (3%)	37	67
47	AX	163/163 (100%)	163 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
48	AY	60/60 (100%)	60 (100%)	0	100	100
49	AZ	76/76 (100%)	76 (100%)	0	100	100
50	Aa	61/61 (100%)	61 (100%)	0	100	100
51	Ab	93/93 (100%)	93 (100%)	0	100	100
52	Ac	73/73 (100%)	71 (97%)	2 (3%)	44	74
53	Ad	54/54 (100%)	54 (100%)	0	100	100
54	Ae	48/48 (100%)	48 (100%)	0	100	100
55	Af	44/44 (100%)	44 (100%)	0	100	100
56	Ag	61/61 (100%)	61 (100%)	0	100	100
57	Ah	36/36 (100%)	36 (100%)	0	100	100
58	Ai	40/40 (100%)	37 (92%)	3 (8%)	13	34
All	All	4994/5095 (98%)	4972 (100%)	22 (0%)	91	96

All (22) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	E	8	ARG
5	F	27	LYS
5	F	95	ARG
6	G	69	ASN
8	I	133	PHE
20	U	61	ARG
29	AF	21	ARG
30	AG	48	ARG
31	AH	3	ARG
37	AN	85	LYS
38	AO	138	ARG
40	AQ	82	LYS
42	AS	3	ARG
44	AU	6	ARG
46	AW	50	ARG
46	AW	57	ARG
46	AW	88	ASN
52	Ac	2	ARG
52	Ac	76	LYS
58	Ai	23	LYS
58	Ai	29	LYS
58	Ai	46	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (11) such sidechains are listed below:

Mol	Chain	Res	Type
6	G	143	HIS
11	L	46	ASN
12	M	35	ASN
29	AF	170	ASN
36	AM	110	ASN
37	AN	51	GLN
37	AN	113	ASN
39	AP	31	HIS
40	AQ	69	ASN
46	AW	88	ASN
52	Ac	75	ASN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1528/1529 (99%)	217 (14%)	17 (1%)
23	X	75/76 (98%)	18 (24%)	1 (1%)
24	AA	2928/2929 (99%)	524 (17%)	42 (1%)
25	AB	111/112 (99%)	31 (27%)	4 (3%)
All	All	4642/4646 (99%)	790 (17%)	64 (1%)

All (790) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	2	A
1	A	9	A
1	A	11	G
1	A	33	U
1	A	34	A
1	A	41	G
1	A	49	U
1	A	50	C
1	A	53	A
1	A	57	A
1	A	79	C
1	A	84	C
1	A	109	C
1	A	110	G
1	A	118	G
1	A	120	U

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Mol	Chain	Res	Type
1	A	131	G
1	A	140	A
1	A	152	U
1	A	153	A
1	A	154	G
1	A	163	A
1	A	171	A
1	A	172	G
1	A	173	G
1	A	181	A
1	A	184	U
1	A	198	A
1	A	199	G
1	A	241	U
1	A	244	G
1	A	248	G
1	A	263	G
1	A	264	C
1	A	286	A
1	A	295	A
1	A	303	A
1	A	313	C
1	A	318	A
1	A	325	U
1	A	329	G
1	A	341	A
1	A	344	G
1	A	349	C
1	A	351	G
1	A	362	U
1	A	364	U
1	A	369	C
1	A	388	G
1	A	389	G
1	A	403	G
1	A	409	A
1	A	410	G
1	A	411	A
1	A	419	A
1	A	421	G
1	A	426	U
1	A	445	A

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Mol	Chain	Res	Type
1	A	450	U
1	A	464	A
1	A	466	U
1	A	481	G
1	A	493	A
1	A	497	G
1	A	508	U
1	A	515	C
1	A	516	C
1	A	524	G
1	A	528	U
1	A	529	A
1	A	544	A
1	A	561	U
1	A	564	G
1	A	569	A
1	A	570	A
1	A	573	G
1	A	574	G
1	A	585	G
1	A	599	U
1	A	600	G
1	A	602	A
1	A	604	A
1	A	631	A
1	A	640	A
1	A	650	U
1	A	651	A
1	A	663	A
1	A	685	A
1	A	693	A
1	A	701	G
1	A	702	A
1	A	716	A
1	A	719	G
1	A	720	G
1	A	721	A
1	A	722	G
1	A	729	G
1	A	745	A
1	A	747	A
1	A	753	G

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Mol	Chain	Res	Type
1	A	775	A
1	A	791	U
1	A	792	A
1	A	813	A
1	A	815	C
1	A	819	G
1	A	835	C
1	A	840	A
1	A	845	G
1	A	864	A
1	A	906	A
1	A	918	G
1	A	919	G
1	A	926	C
1	A	927	A
1	A	934	G
1	A	939	G
1	A	952	U
1	A	954	C
1	A	961	A
1	A	963	G
1	A	967	G
1	A	968	G
1	A	969	A
1	A	980	G
1	A	984	U
1	A	985	G
1	A	988	A
1	A	993	U
1	A	995	G
1	A	996	G
1	A	997	A
1	A	998	U
1	A	999	A
1	A	1004	U
1	A	1011	A
1	A	1013	U
1	A	1014	U
1	A	1018	C
1	A	1022	G
1	A	1026	G
1	A	1027	G

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Mol	Chain	Res	Type
1	A	1028	G
1	A	1030	U
1	A	1031	C
1	A	1038	C
1	A	1039	A
1	A	1043	G
1	A	1048	A
1	A	1058	U
1	A	1079	U
1	A	1080	G
1	A	1087	G
1	A	1088	U
1	A	1094	A
1	A	1116	U
1	A	1118	U
1	A	1123	A
1	A	1124	G
1	A	1125	C
1	A	1126	A
1	A	1128	G
1	A	1130	A
1	A	1132	U
1	A	1133	G
1	A	1152	C
1	A	1153	U
1	A	1163	A
1	A	1178	G
1	A	1190	A
1	A	1191	A
1	A	1194	C
1	A	1196	U
1	A	1209	G
1	A	1210	U
1	A	1211	C
1	A	1219	A
1	A	1220	C
1	A	1230	A
1	A	1232	A
1	A	1235	G
1	A	1251	A
1	A	1254	G
1	A	1273	A

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Mol	Chain	Res	Type
1	A	1274	A
1	A	1275	A
1	A	1291	U
1	A	1294	G
1	A	1296	C
1	A	1297	C
1	A	1299	G
1	A	1313	A
1	A	1340	A
1	A	1342	U
1	A	1358	U
1	A	1388	A
1	A	1391	C
1	A	1392	A
1	A	1413	G
1	A	1436	U
1	A	1440	A
1	A	1446	U
1	A	1447	A
1	A	1448	A
1	A	1451	G
1	A	1453	G
1	A	1455	A
1	A	1486	U
1	A	1488	A
1	A	1489	A
1	A	1490	G
1	A	1502	U
1	A	1513	G
1	A	1516	A
1	A	1525	G
1	A	1526	G
1	A	1527	A
23	X	5	C
23	X	8	U
23	X	14	A
23	X	16	U
23	X	17	U
23	X	18	G
23	X	19	G
23	X	20	U
23	X	21	A

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Mol	Chain	Res	Type
23	X	22	G
23	X	44	G
23	X	45	U
23	X	46	G
23	X	47	U
23	X	48	C
23	X	61	C
23	X	69	C
23	X	70	G
24	AA	9	A
24	AA	17	A
24	AA	27	G
24	AA	38	A
24	AA	39	G
24	AA	40	G
24	AA	55	G
24	AA	64	G
24	AA	67	A
24	AA	68	A
24	AA	75	A
24	AA	78	A
24	AA	79	G
24	AA	87	G
24	AA	89	G
24	AA	94	A
24	AA	97	C
24	AA	98	A
24	AA	99	U
24	AA	121	A
24	AA	123	U
24	AA	131	U
24	AA	134	A
24	AA	142	A
24	AA	143	G
24	AA	145	U
24	AA	149	A
24	AA	160	A
24	AA	163	U
24	AA	164	A
24	AA	165	A
24	AA	167	U
24	AA	168	A

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Mol	Chain	Res	Type
24	AA	170	U
24	AA	178	A
24	AA	179	U
24	AA	180	A
24	AA	194	A
24	AA	197	A
24	AA	211	A
24	AA	214	A
24	AA	219	A
24	AA	220	A
24	AA	226	A
24	AA	227	G
24	AA	228	A
24	AA	245	G
24	AA	263	G
24	AA	270	C
24	AA	274	A
24	AA	281	U
24	AA	282	C
24	AA	283	A
24	AA	284	A
24	AA	286	C
24	AA	287	U
24	AA	288	G
24	AA	289	C
24	AA	291	G
24	AA	293	G
24	AA	294	C
24	AA	295	G
24	AA	296	U
24	AA	297	U
24	AA	298	G
24	AA	309	G
24	AA	312	G
24	AA	313	U
24	AA	314	A
24	AA	319	G
24	AA	322	U
24	AA	330	G
24	AA	336	A
24	AA	337	A
24	AA	340	A

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Mol	Chain	Res	Type
24	AA	344	A
24	AA	347	A
24	AA	349	G
24	AA	350	U
24	AA	351	U
24	AA	353	C
24	AA	358	U
24	AA	361	U
24	AA	362	U
24	AA	373	A
24	AA	374	U
24	AA	384	A
24	AA	403	A
24	AA	415	U
24	AA	425	A
24	AA	428	A
24	AA	435	U
24	AA	436	A
24	AA	439	A
24	AA	440	U
24	AA	443	U
24	AA	449	G
24	AA	461	A
24	AA	463	G
24	AA	478	A
24	AA	482	U
24	AA	496	U
24	AA	501	G
24	AA	513	G
24	AA	532	G
24	AA	533	A
24	AA	557	G
24	AA	577	A
24	AA	579	U
24	AA	580	A
24	AA	582	A
24	AA	584	C
24	AA	592	G
24	AA	604	G
24	AA	605	C
24	AA	606	A
24	AA	607	G

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Mol	Chain	Res	Type
24	AA	621	U
24	AA	622	U
24	AA	623	A
24	AA	624	U
24	AA	626	G
24	AA	628	G
24	AA	631	G
24	AA	639	G
24	AA	649	U
24	AA	650	A
24	AA	651	A
24	AA	662	A
24	AA	663	G
24	AA	679	A
24	AA	694	A
24	AA	695	G
24	AA	696	U
24	AA	697	G
24	AA	708	A
24	AA	718	A
24	AA	726	A
24	AA	727	A
24	AA	728	G
24	AA	732	G
24	AA	734	U
24	AA	736	U
24	AA	737	A
24	AA	738	G
24	AA	751	G
24	AA	752	A
24	AA	768	U
24	AA	794	G
24	AA	795	G
24	AA	796	U
24	AA	797	A
24	AA	799	A
24	AA	803	A
24	AA	805	G
24	AA	808	G
24	AA	812	G
24	AA	820	C
24	AA	822	A

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Mol	Chain	Res	Type
24	AA	829	U
24	AA	830	U
24	AA	835	A
24	AA	839	A
24	AA	845	G
24	AA	846	A
24	AA	847	G
24	AA	857	G
24	AA	864	A
24	AA	866	G
24	AA	871	A
24	AA	884	A
24	AA	887	G
24	AA	888	C
24	AA	894	C
24	AA	909	U
24	AA	928	A
24	AA	929	G
24	AA	932	U
24	AA	940	G
24	AA	941	U
24	AA	959	A
24	AA	966	G
24	AA	967	U
24	AA	968	C
24	AA	970	A
24	AA	972	G
24	AA	973	G
24	AA	975	U
24	AA	976	A
24	AA	978	C
24	AA	979	A
24	AA	990	A
24	AA	995	C
24	AA	1011	A
24	AA	1025	G
24	AA	1032	G
24	AA	1038	A
24	AA	1040	G
24	AA	1053	G
24	AA	1062	A
24	AA	1069	A

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Mol	Chain	Res	Type
24	AA	1075	A
24	AA	1090	A
24	AA	1092	U
24	AA	1100	G
24	AA	1104	A
24	AA	1111	G
24	AA	1124	A
24	AA	1125	A
24	AA	1127	C
24	AA	1135	A
24	AA	1139	U
24	AA	1142	C
24	AA	1147	A
24	AA	1148	A
24	AA	1149	G
24	AA	1151	A
24	AA	1152	G
24	AA	1156	U
24	AA	1157	A
24	AA	1158	C
24	AA	1162	U
24	AA	1163	A
24	AA	1164	A
24	AA	1166	G
24	AA	1168	G
24	AA	1169	U
24	AA	1174	A
24	AA	1175	A
24	AA	1176	U
24	AA	1186	G
24	AA	1187	U
24	AA	1191	G
24	AA	1193	A
24	AA	1198	A
24	AA	1201	G
24	AA	1208	A
24	AA	1211	U
24	AA	1212	A
24	AA	1214	C
24	AA	1215	G
24	AA	1221	A
24	AA	1230	A

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Mol	Chain	Res	Type
24	AA	1241	G
24	AA	1261	A
24	AA	1286	A
24	AA	1289	G
24	AA	1294	U
24	AA	1304	A
24	AA	1307	U
24	AA	1313	G
24	AA	1315	G
24	AA	1327	G
24	AA	1330	A
24	AA	1333	G
24	AA	1348	G
24	AA	1349	A
24	AA	1350	A
24	AA	1377	A
24	AA	1378	A
24	AA	1398	A
24	AA	1410	C
24	AA	1418	U
24	AA	1427	C
24	AA	1429	U
24	AA	1442	A
24	AA	1455	A
24	AA	1456	U
24	AA	1460	A
24	AA	1469	A
24	AA	1472	A
24	AA	1473	U
24	AA	1484	C
24	AA	1485	U
24	AA	1490	G
24	AA	1491	U
24	AA	1493	U
24	AA	1494	C
24	AA	1497	U
24	AA	1498	G
24	AA	1505	C
24	AA	1520	A
24	AA	1524	C
24	AA	1530	G
24	AA	1531	A

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Mol	Chain	Res	Type
24	AA	1532	U
24	AA	1536	U
24	AA	1538	U
24	AA	1539	C
24	AA	1554	A
24	AA	1559	G
24	AA	1560	A
24	AA	1562	G
24	AA	1563	A
24	AA	1564	U
24	AA	1565	C
24	AA	1568	A
24	AA	1571	A
24	AA	1572	G
24	AA	1577	A
24	AA	1578	U
24	AA	1580	C
24	AA	1581	G
24	AA	1583	U
24	AA	1584	A
24	AA	1588	G
24	AA	1590	G
24	AA	1594	A
24	AA	1603	G
24	AA	1610	G
24	AA	1611	C
24	AA	1613	A
24	AA	1616	U
24	AA	1618	G
24	AA	1620	U
24	AA	1621	A
24	AA	1623	C
24	AA	1627	A
24	AA	1629	A
24	AA	1630	U
24	AA	1631	G
24	AA	1636	U
24	AA	1637	A
24	AA	1638	G
24	AA	1649	A
24	AA	1652	A
24	AA	1655	U

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Mol	Chain	Res	Type
24	AA	1662	U
24	AA	1665	G
24	AA	1666	G
24	AA	1668	U
24	AA	1669	A
24	AA	1670	G
24	AA	1671	G
24	AA	1677	A
24	AA	1679	G
24	AA	1680	G
24	AA	1681	A
24	AA	1682	C
24	AA	1691	A
24	AA	1699	A
24	AA	1704	U
24	AA	1709	G
24	AA	1729	C
24	AA	1730	G
24	AA	1731	C
24	AA	1736	G
24	AA	1737	A
24	AA	1757	G
24	AA	1758	C
24	AA	1799	A
24	AA	1810	U
24	AA	1812	A
24	AA	1818	G
24	AA	1827	A
24	AA	1854	C
24	AA	1870	A
24	AA	1883	A
24	AA	1901	A
24	AA	1903	G
24	AA	1912	G
24	AA	1925	A
24	AA	1927	G
24	AA	1937	G
24	AA	1941	U
24	AA	1942	U
24	AA	1960	G
24	AA	1968	C
24	AA	1971	U

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Mol	Chain	Res	Type
24	AA	1983	G
24	AA	1984	G
24	AA	1992	A
24	AA	1993	U
24	AA	2009	U
24	AA	2020	A
24	AA	2021	C
24	AA	2024	A
24	AA	2025	U
24	AA	2026	G
24	AA	2045	U
24	AA	2047	U
24	AA	2051	A
24	AA	2073	A
24	AA	2074	A
24	AA	2075	G
24	AA	2076	U
24	AA	2077	A
24	AA	2081	G
24	AA	2084	A
24	AA	2085	A
24	AA	2086	G
24	AA	2087	A
24	AA	2097	C
24	AA	2106	A
24	AA	2109	C
24	AA	2110	G
24	AA	2114	A
24	AA	2115	G
24	AA	2116	A
24	AA	2122	U
24	AA	2123	G
24	AA	2130	U
24	AA	2147	G
24	AA	2149	G
24	AA	2153	U
24	AA	2154	G
24	AA	2158	A
24	AA	2161	U
24	AA	2162	A
24	AA	2164	G
24	AA	2171	A

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Mol	Chain	Res	Type
24	AA	2174	G
24	AA	2180	A
24	AA	2185	U
24	AA	2186	U
24	AA	2187	G
24	AA	2197	C
24	AA	2199	U
24	AA	2200	C
24	AA	2201	A
24	AA	2202	G
24	AA	2203	G
24	AA	2211	G
24	AA	2213	G
24	AA	2217	A
24	AA	2218	U
24	AA	2219	C
24	AA	2223	A
24	AA	2225	A
24	AA	2226	U
24	AA	2227	A
24	AA	2228	C
24	AA	2232	C
24	AA	2236	G
24	AA	2244	A
24	AA	2245	G
24	AA	2249	U
24	AA	2250	C
24	AA	2252	A
24	AA	2253	A
24	AA	2256	U
24	AA	2269	G
24	AA	2271	A
24	AA	2284	G
24	AA	2285	G
24	AA	2325	G
24	AA	2329	C
24	AA	2333	A
24	AA	2351	U
24	AA	2352	U
24	AA	2354	G
24	AA	2355	A
24	AA	2371	G

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Mol	Chain	Res	Type
24	AA	2379	A
24	AA	2381	A
24	AA	2382	A
24	AA	2393	C
24	AA	2396	U
24	AA	2429	G
24	AA	2431	C
24	AA	2437	G
24	AA	2452	A
24	AA	2469	U
24	AA	2471	A
24	AA	2472	A
24	AA	2475	A
24	AA	2476	A
24	AA	2477	U
24	AA	2487	U
24	AA	2494	A
24	AA	2516	G
24	AA	2521	C
24	AA	2522	A
24	AA	2527	G
24	AA	2537	U
24	AA	2551	G
24	AA	2564	A
24	AA	2566	C
24	AA	2575	G
24	AA	2581	G
24	AA	2608	U
24	AA	2612	A
24	AA	2613	G
24	AA	2618	A
24	AA	2648	A
24	AA	2649	G
24	AA	2655	U
24	AA	2659	U
24	AA	2675	U
24	AA	2735	U
24	AA	2748	G
24	AA	2756	U
24	AA	2758	A
24	AA	2759	G
24	AA	2761	G

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Mol	Chain	Res	Type
24	AA	2773	C
24	AA	2780	A
24	AA	2791	G
24	AA	2795	A
24	AA	2805	A
24	AA	2808	G
24	AA	2813	G
24	AA	2825	A
24	AA	2827	G
24	AA	2832	A
24	AA	2837	U
24	AA	2838	U
24	AA	2855	U
24	AA	2863	U
24	AA	2864	G
24	AA	2865	A
24	AA	2891	U
24	AA	2897	A
24	AA	2902	G
24	AA	2903	A
24	AA	2904	C
24	AA	2910	C
24	AA	2913	A
24	AA	2914	U
24	AA	2915	U
24	AA	2916	A
24	AA	2917	C
24	AA	2921	U
24	AA	2923	U
25	AB	2	C
25	AB	11	U
25	AB	12	A
25	AB	14	A
25	AB	15	G
25	AB	23	G
25	AB	31	U
25	AB	32	G
25	AB	34	U
25	AB	35	A
25	AB	36	U
25	AB	40	U
25	AB	41	C

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Mol	Chain	Res	Type
25	AB	42	C
25	AB	43	G
25	AB	50	G
25	AB	51	A
25	AB	54	U
25	AB	56	A
25	AB	66	U
25	AB	67	C
25	AB	72	A
25	AB	83	A
25	AB	84	G
25	AB	86	U
25	AB	87	C
25	AB	99	G
25	AB	103	A
25	AB	108	C
25	AB	111	G
25	AB	112	G

All (64) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	8	G
1	A	171	A
1	A	312	A
1	A	492	A
1	A	496	A
1	A	639	A
1	A	649	C
1	A	701	G
1	A	720	G
1	A	834	A
1	A	995	G
1	A	996	G
1	A	1122	C
1	A	1127	U
1	A	1195	A
1	A	1209	G
1	A	1485	G
23	X	18	G
24	AA	8	C
24	AA	142	A

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Mol	Chain	Res	Type
24	AA	179	U
24	AA	225	A
24	AA	329	A
24	AA	350	U
24	AA	372	A
24	AA	532	G
24	AA	578	A
24	AA	733	A
24	AA	928	A
24	AA	940	G
24	AA	967	U
24	AA	1091	A
24	AA	1146	G
24	AA	1155	A
24	AA	1192	U
24	AA	1293	U
24	AA	1426	C
24	AA	1484	C
24	AA	1523	G
24	AA	1538	U
24	AA	1577	A
24	AA	1583	U
24	AA	1617	A
24	AA	1622	G
24	AA	1635	G
24	AA	1636	U
24	AA	1668	U
24	AA	1670	G
24	AA	1676	A
24	AA	1698	C
24	AA	1703	G
24	AA	1936	U
24	AA	2073	A
24	AA	2152	U
24	AA	2249	U
24	AA	2251	U
24	AA	2755	G
24	AA	2831	U
24	AA	2837	U
24	AA	2922	A
25	AB	31	U
25	AB	34	U

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Mol	Chain	Res	Type
25	AB	35	A
25	AB	86	U

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 4 ligands modelled in this entry, 4 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

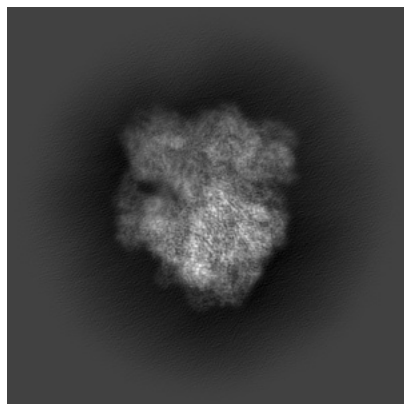
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-29298. These allow visual inspection of the internal detail of the map and identification of artifacts.

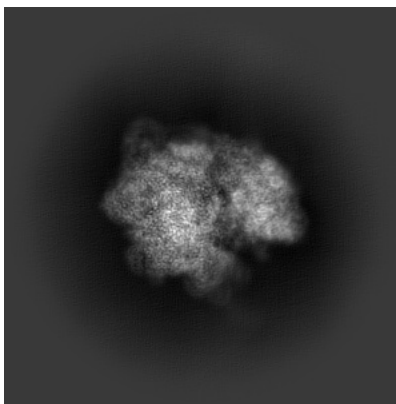
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

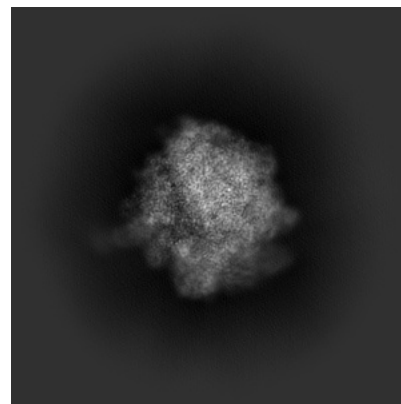
6.1.1 Primary map



X

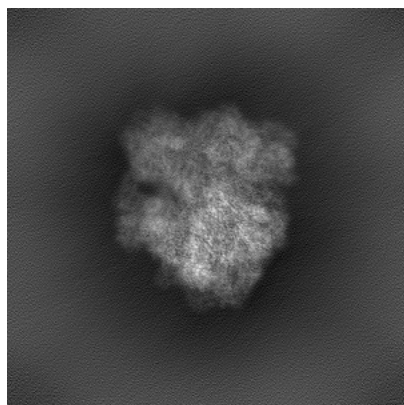


Y

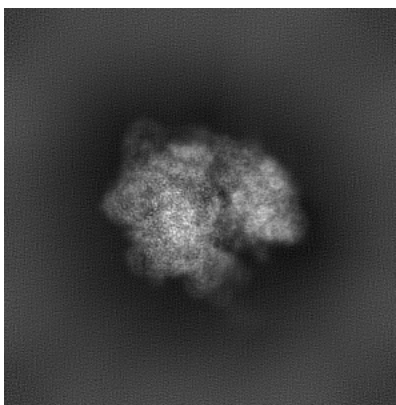


Z

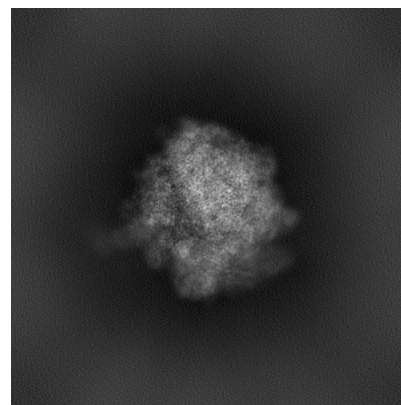
6.1.2 Raw map



X



Y

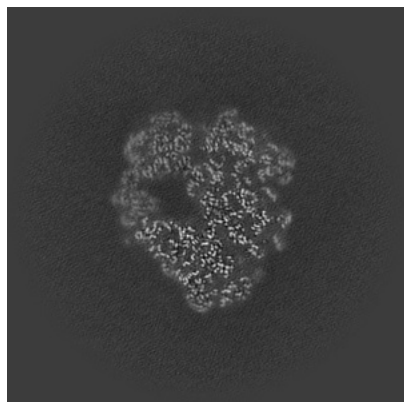


Z

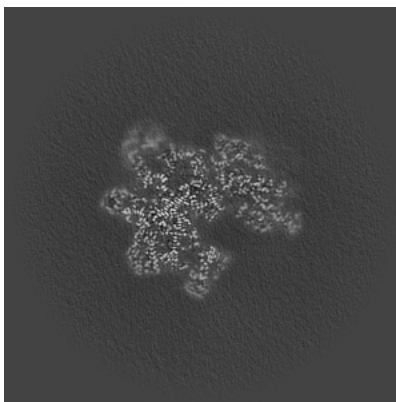
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

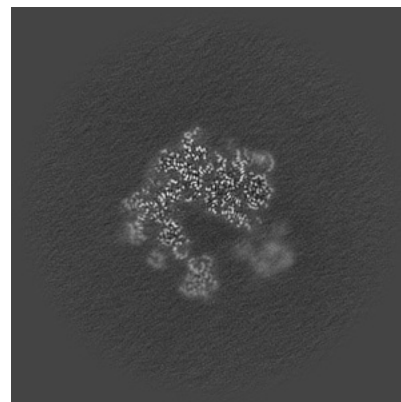
6.2.1 Primary map



X Index: 225

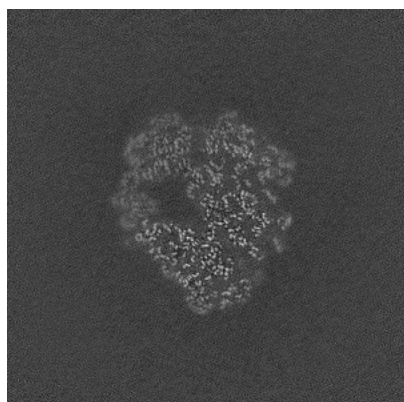


Y Index: 225

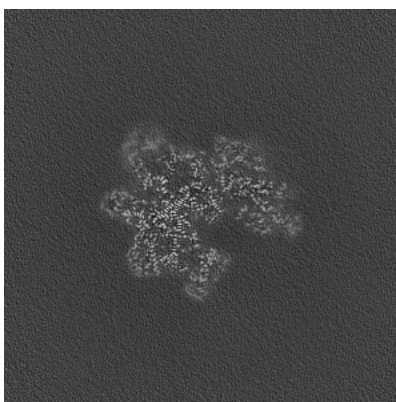


Z Index: 225

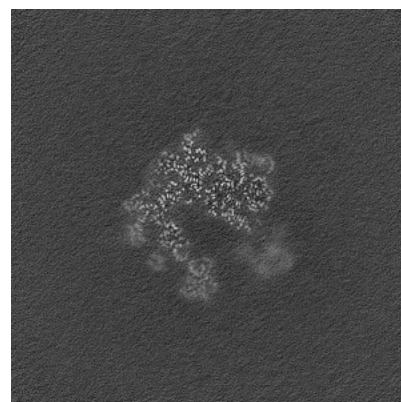
6.2.2 Raw map



X Index: 225



Y Index: 225

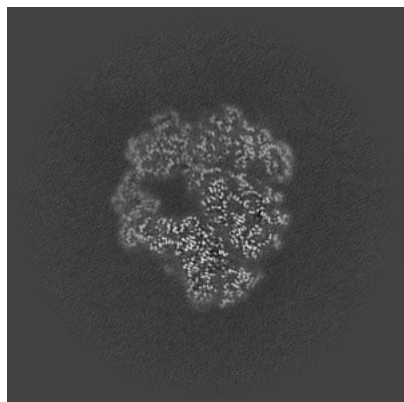


Z Index: 225

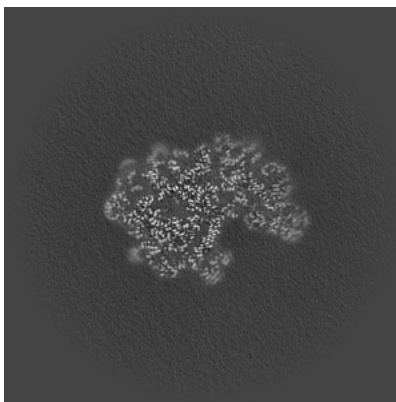
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

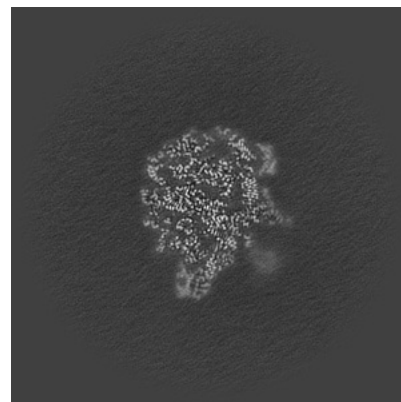
6.3.1 Primary map



X Index: 220

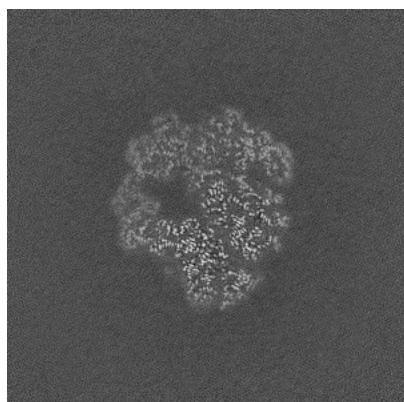


Y Index: 243

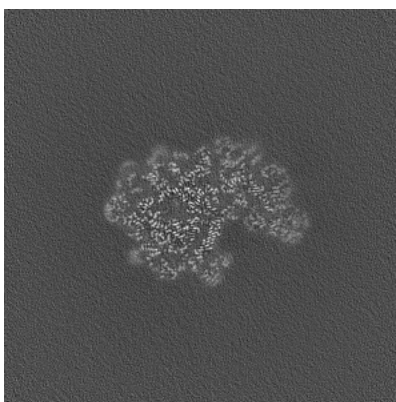


Z Index: 191

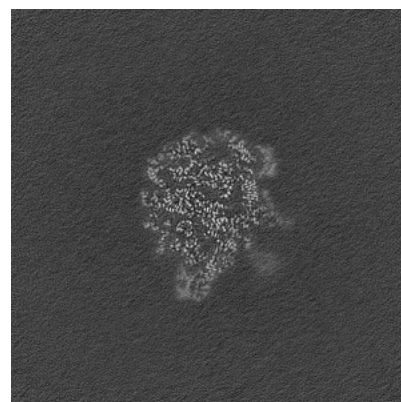
6.3.2 Raw map



X Index: 220



Y Index: 243

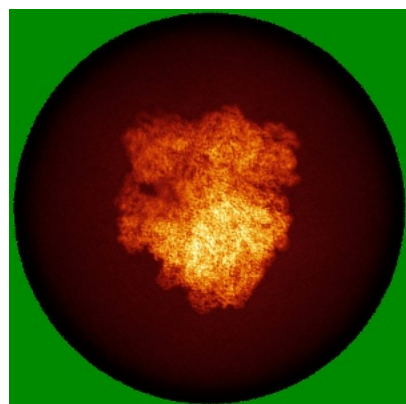


Z Index: 191

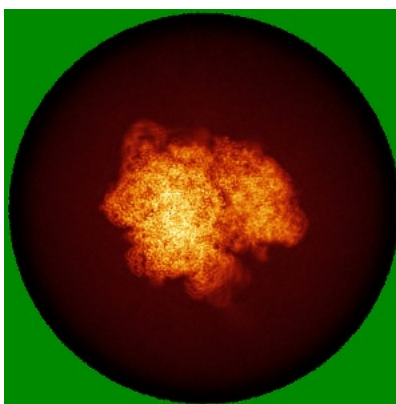
The images above show the largest variance slices of the map in three orthogonal directions.

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

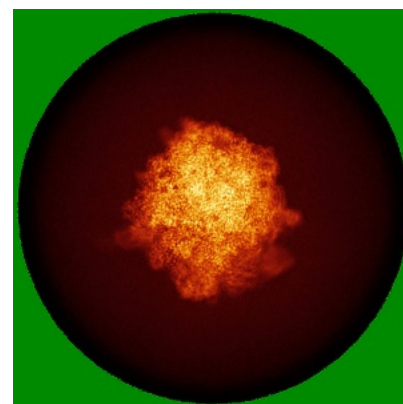
6.4.1 Primary map



X

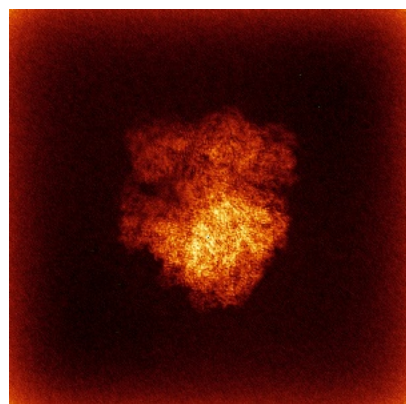


Y

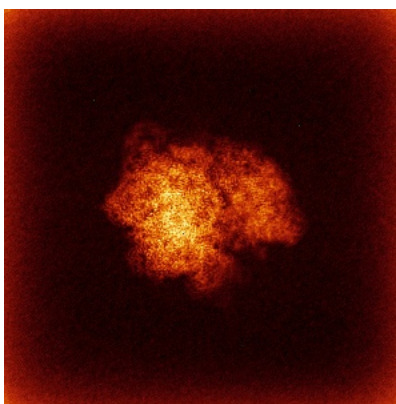


Z

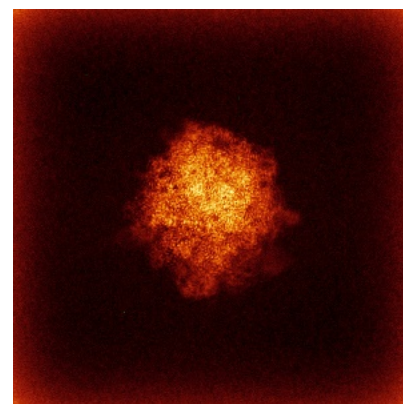
6.4.2 Raw map



X



Y

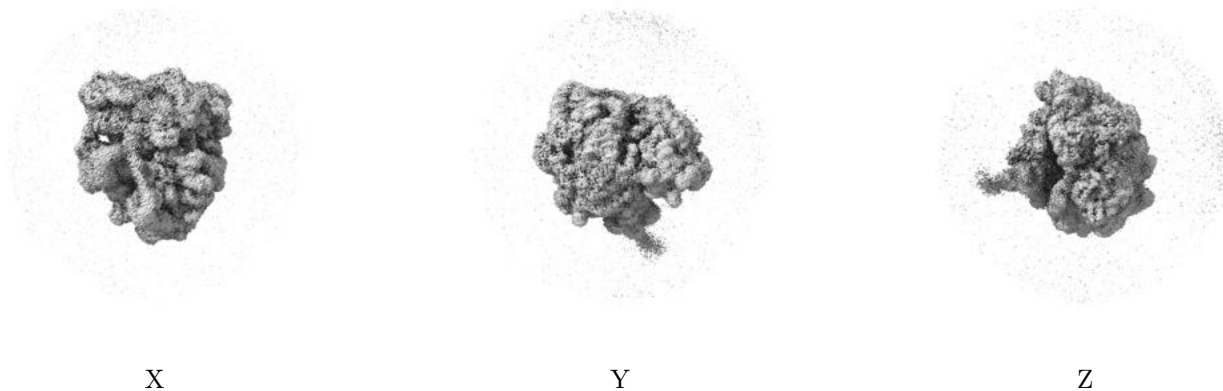


Z

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.

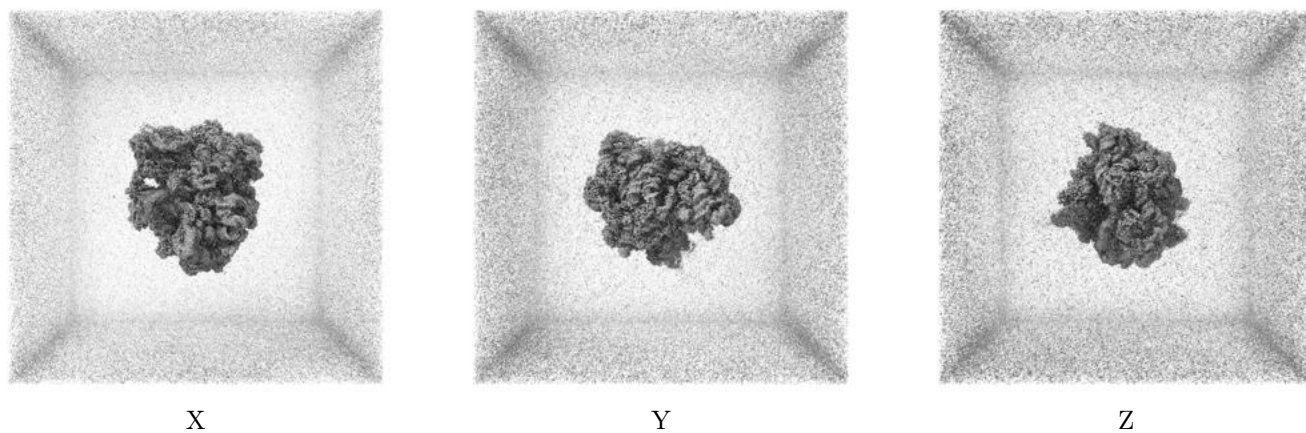
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.07. 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.

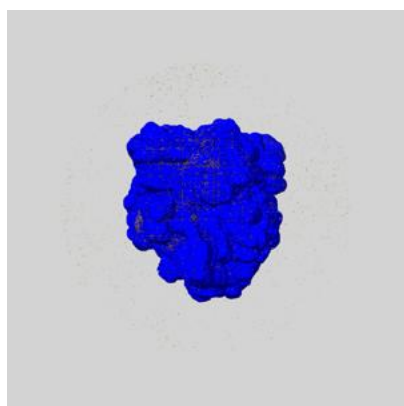
6.6 Mask visualisation [i](#)

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

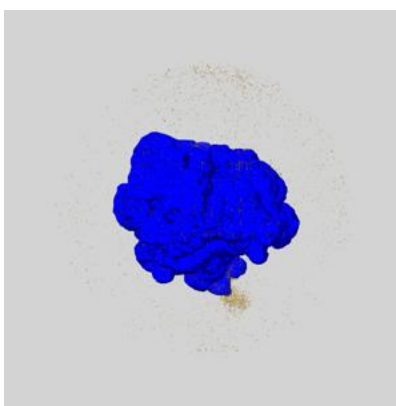
A mask typically either:

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

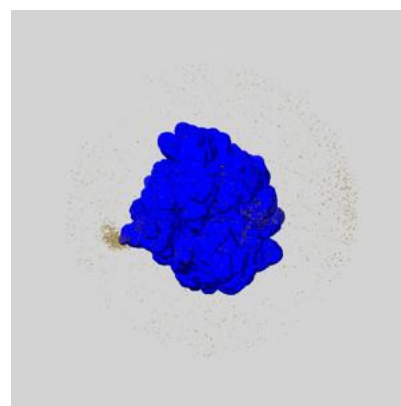
6.6.1 emd_29298_msk_1.map [i](#)



X



Y

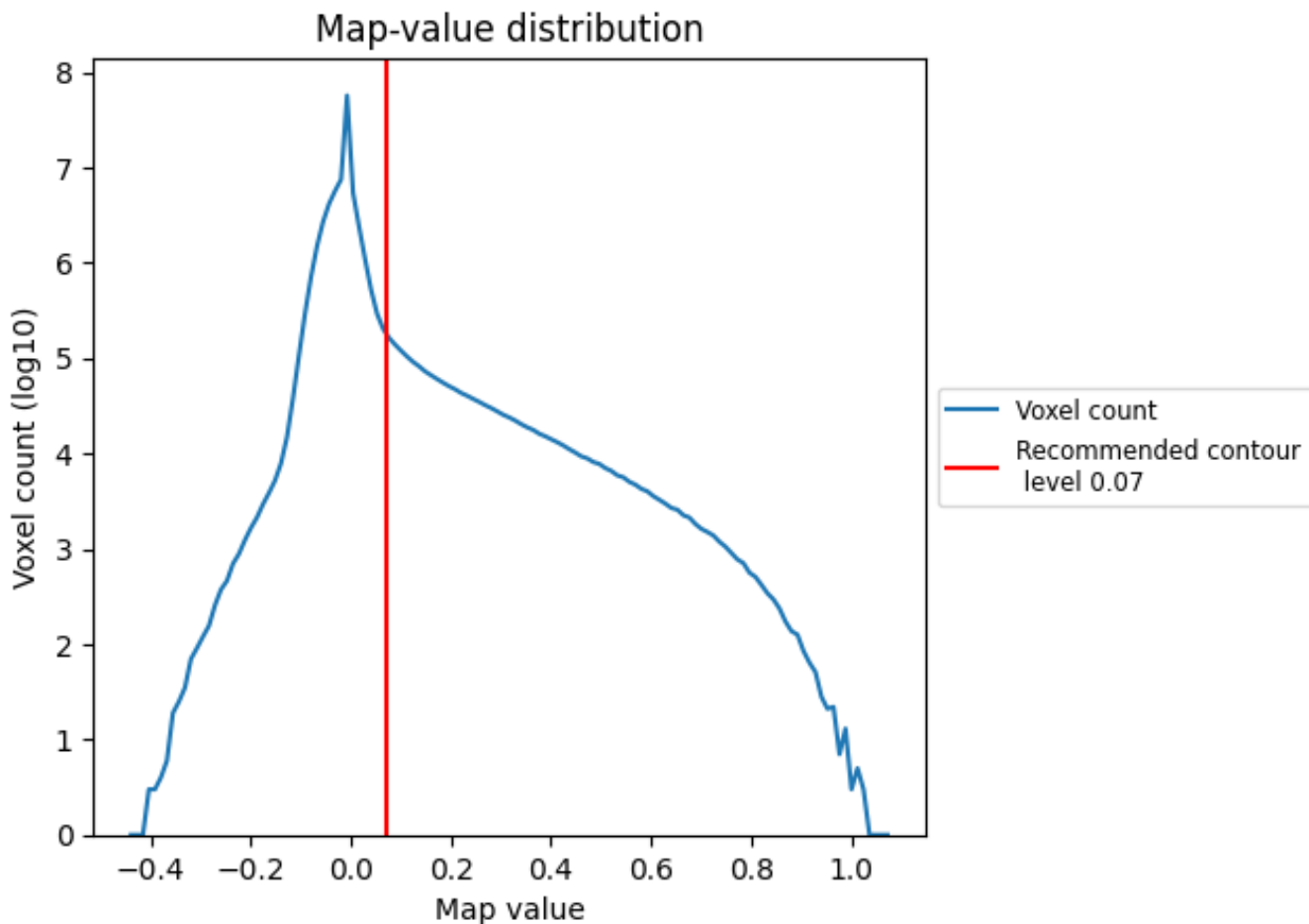


Z

7 Map analysis [i](#)

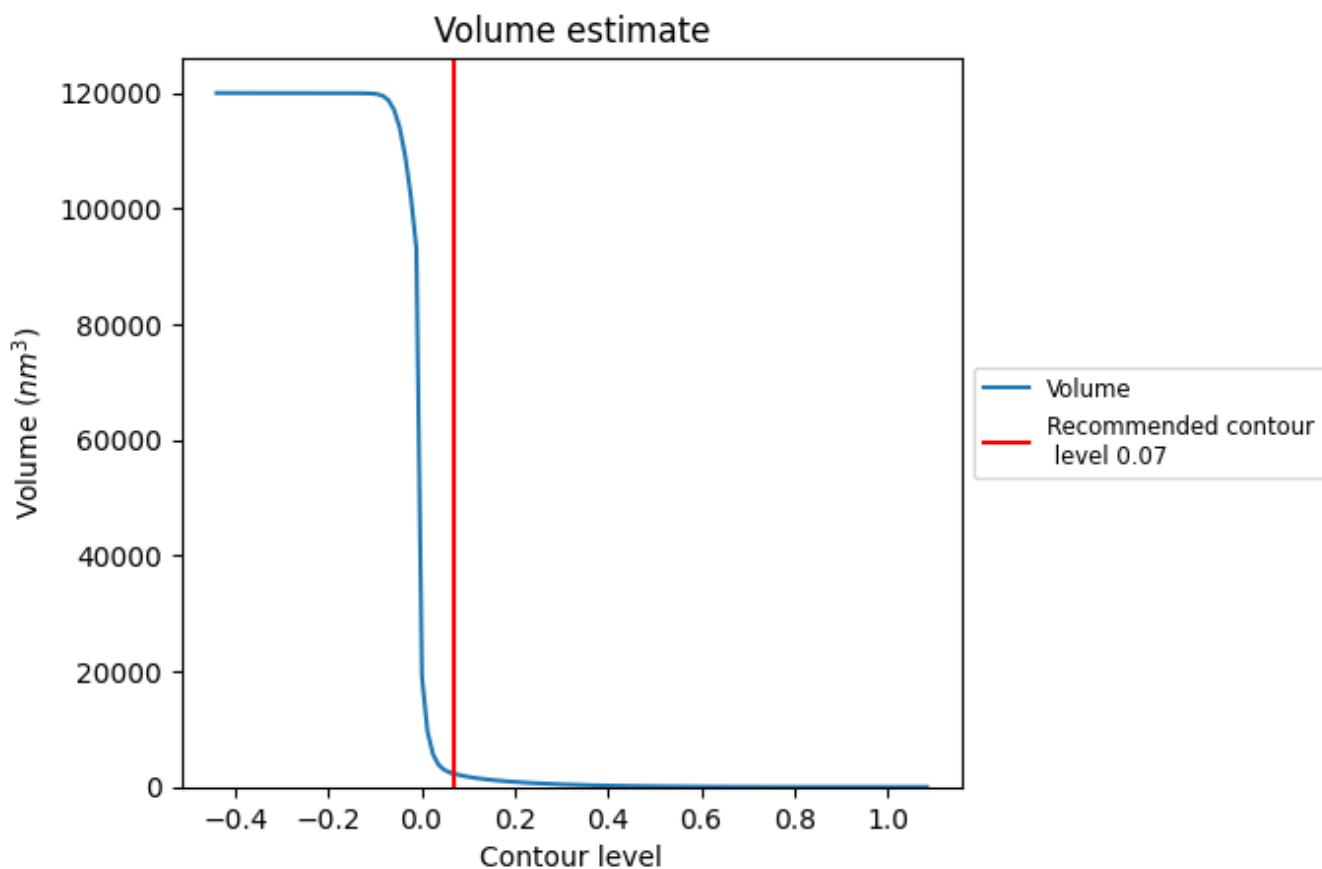
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

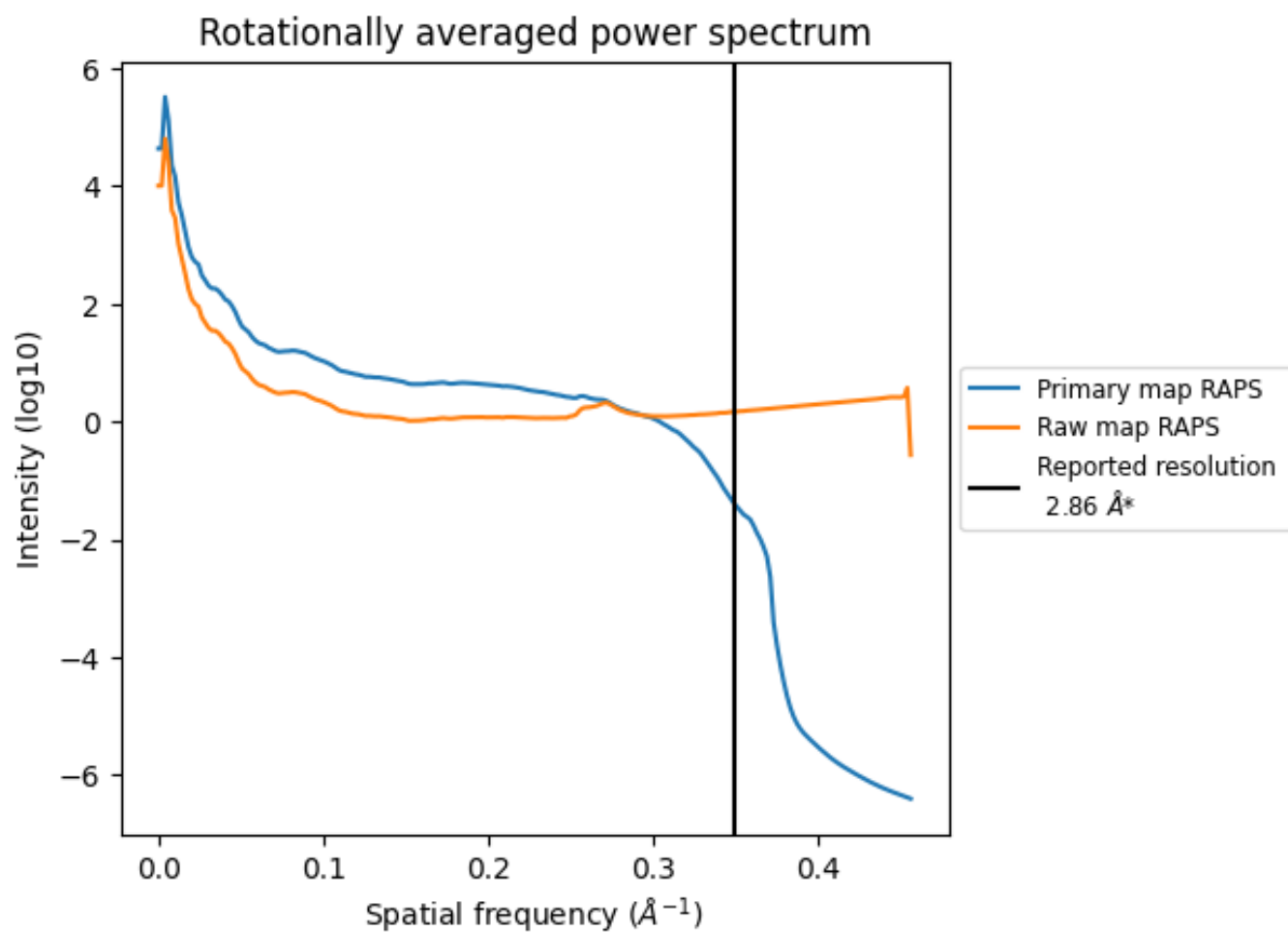
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2290 nm^3 ; this corresponds to an approximate mass of 2069 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

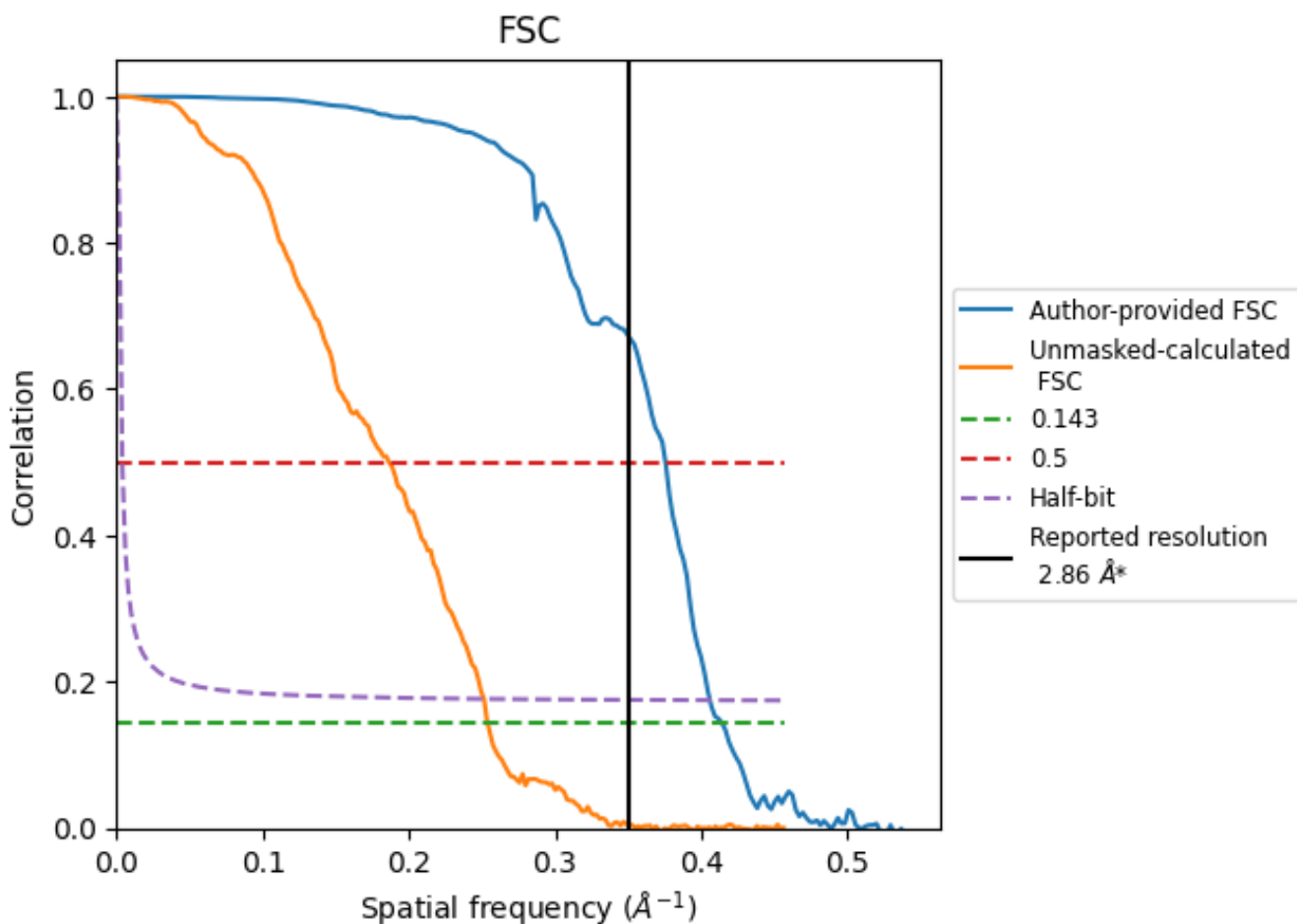


*Reported resolution corresponds to spatial frequency of 0.350 Å⁻¹

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 0.350 Å⁻¹

8.2 Resolution estimates [i](#)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.86	-	-
Author-provided FSC curve	2.41	2.66	2.46
Unmasked-calculated*	3.94	5.36	3.98

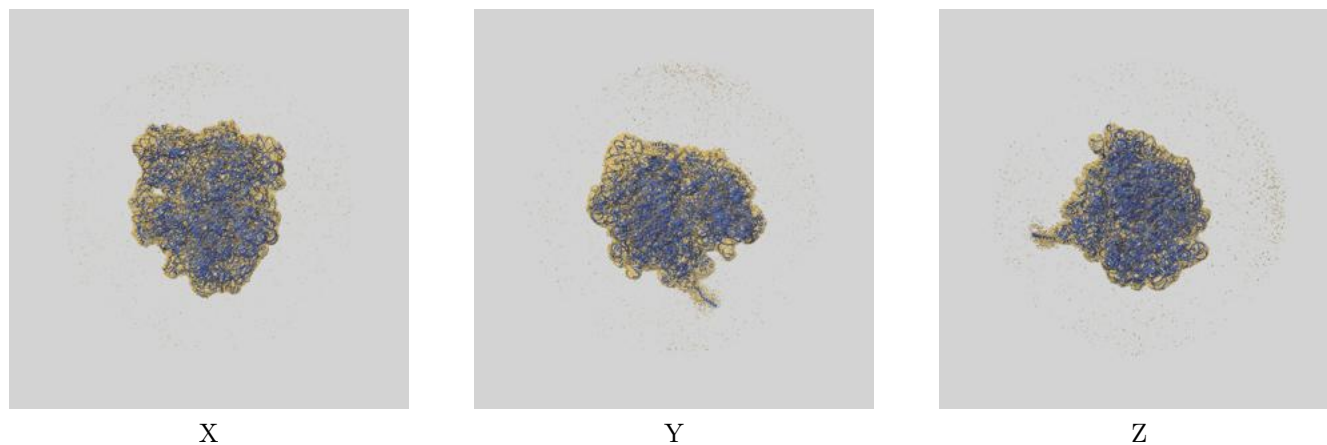
*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from author-provided FSC intersecting FSC 0.143 CUT-OFF 2.41 differs from the reported value 2.86 by more than 10 %

The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.94 differs from the reported value 2.86 by more than 10 %

9 Map-model fit [i](#)

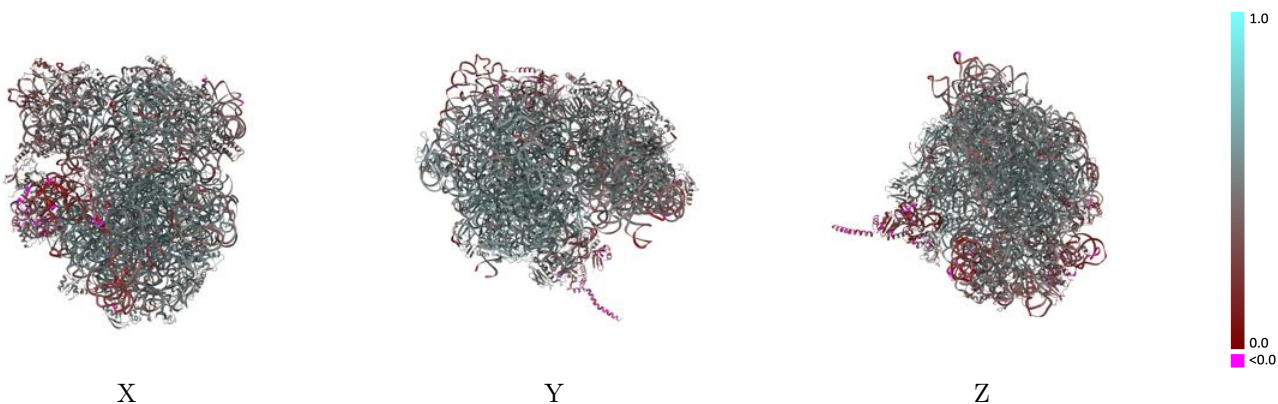
This section contains information regarding the fit between EMDB map EMD-29298 and PDB model 8FMW. Per-residue inclusion information can be found in section 3 on page 14.

9.1 Map-model overlay [i](#)



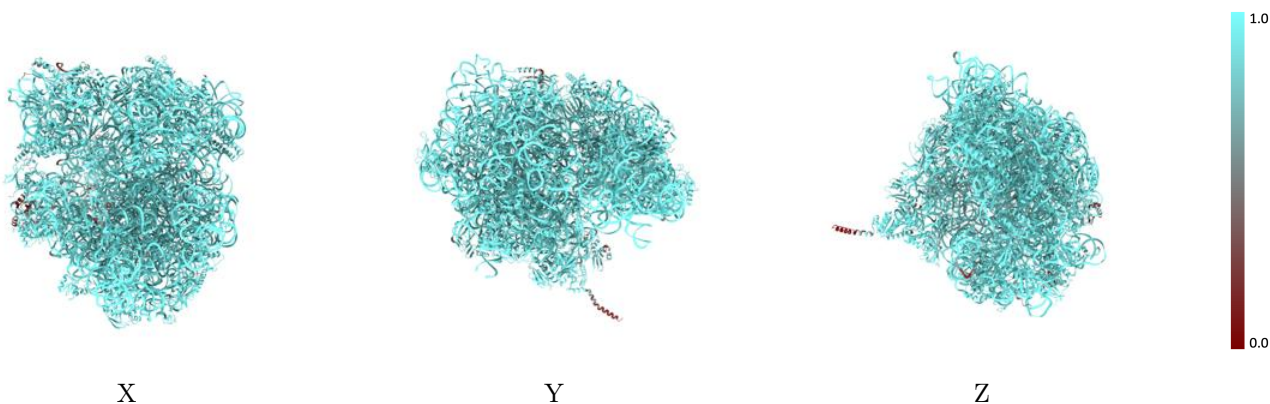
The images above show the 3D surface view of the map at the recommended contour level 0.07 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



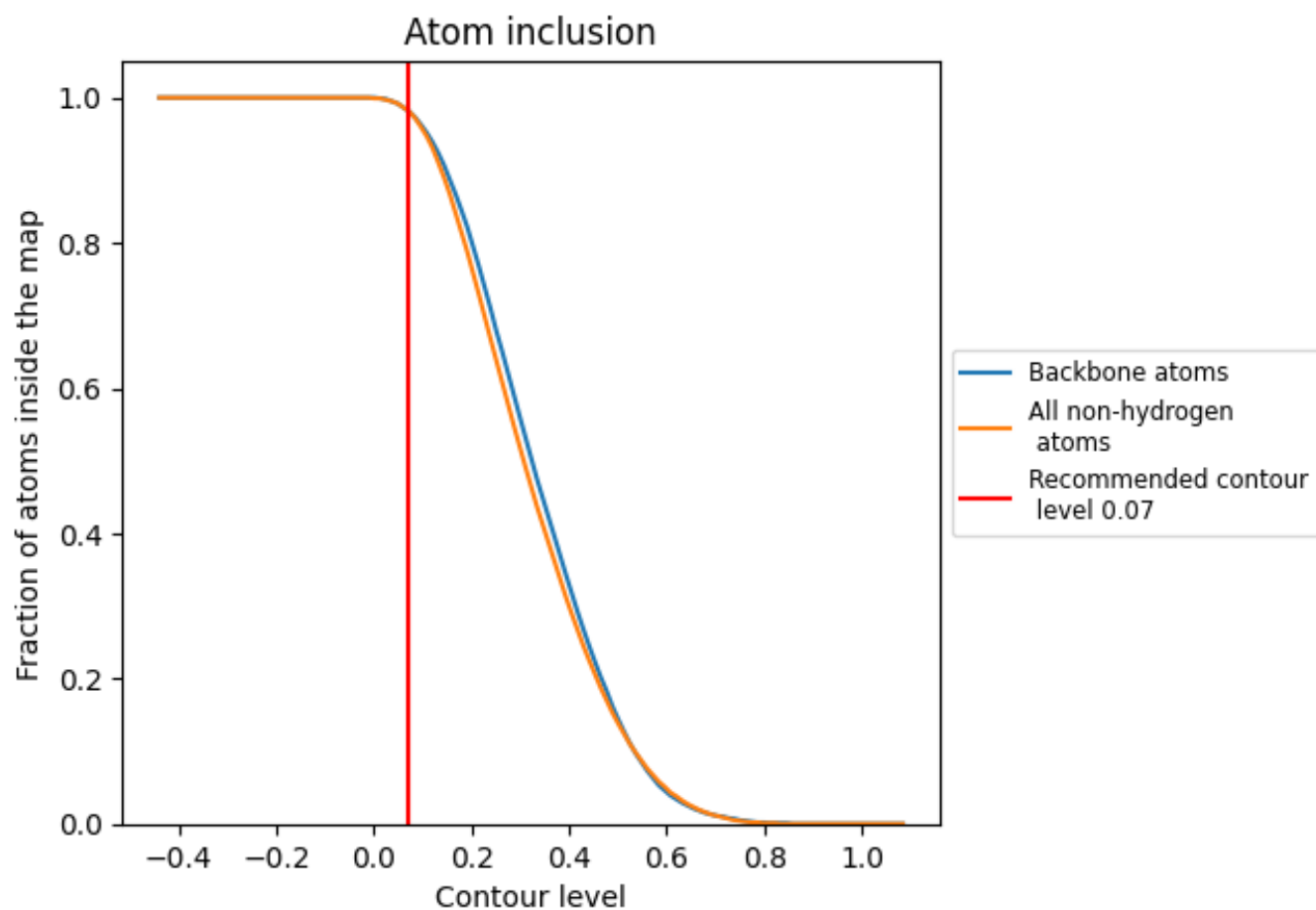
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.07).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 98% of all backbone atoms, 98% 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 (0.07) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9820	 0.4840
A	 0.9910	 0.4700
AA	 0.9930	 0.5000
AB	 0.9970	 0.4510
AC	 0.7340	 0.1960
AD	 0.9880	 0.5780
AE	 0.9940	 0.5670
AF	 0.9970	 0.5480
AG	 0.9860	 0.4340
AH	 0.9800	 0.4740
AI	 0.8320	 0.3580
AJ	 0.8300	 0.2170
AK	 0.8880	 0.2360
AL	 0.9930	 0.5700
AM	 0.9880	 0.5760
AN	 0.9730	 0.5120
AO	 0.9830	 0.5420
AP	 0.9890	 0.5660
AQ	 0.9870	 0.4740
AR	 0.9910	 0.5480
AS	 0.9820	 0.5510
AT	 0.9850	 0.5370
AU	 0.9880	 0.5640
AV	 0.9790	 0.5280
AW	 0.9400	 0.4880
AX	 0.9780	 0.4350
AY	 0.9980	 0.5920
AZ	 0.9860	 0.5530
Aa	 0.9760	 0.4790
Ab	 0.9910	 0.5640
Ac	 0.9290	 0.3210
Ad	 0.9810	 0.5560
Ae	 0.9810	 0.5340
Af	 0.9980	 0.5930
Ag	 0.9910	 0.5820



Continued on next page...

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Chain	Atom inclusion	Q-score
Ah	 0.9770	 0.5590
Ai	 0.9640	 0.3980
C	 0.9450	 0.4380
D	 0.9760	 0.4510
E	 0.9750	 0.5080
F	 0.9750	 0.4180
G	 0.9620	 0.3930
H	 0.9820	 0.4960
I	 0.9670	 0.3780
J	 0.8770	 0.3970
K	 0.9840	 0.4780
L	 0.9820	 0.5340
M	 0.9460	 0.4190
N	 0.9550	 0.4430
O	 0.9870	 0.4820
P	 0.9880	 0.4870
Q	 0.9850	 0.5020
R	 0.9880	 0.4800
S	 0.9620	 0.3940
T	 0.9440	 0.4220
U	 0.8830	 0.3720
V	 0.9830	 0.5760
W	 0.9490	 0.5020
X	 0.8620	 0.2780