



## wwPDB EM Validation Summary Report ⓘ

Jan 30, 2023 – 05:07 PM EST

PDB ID : 4V6P  
EMDB ID : EMD-5364  
Title : Structural characterization of mRNA-tRNA translocation intermediates (class 4b of the six classes)  
Authors : Agirrezabala, X.; Liao, H.; Schreiner, E.; Fu, J.; Ortiz-Meoz, R.F.; Schulten, K.; Green, R.; Frank, J.  
Deposited on : 2011-12-08  
Resolution : 13.50 Å (reported)  
Based on initial model : 2I2U

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

We welcome your comments at [validation@mail.wwpdb.org](mailto: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>.

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

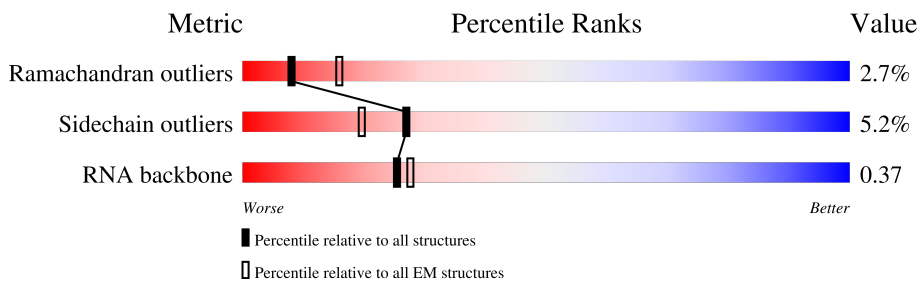
EMDB validation analysis : 0.0.1.dev43  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
MolProbity : 4.02b-467  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.9  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.32.1

# 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 13.50 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.









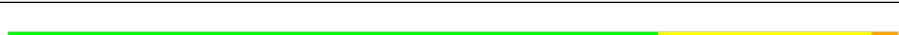
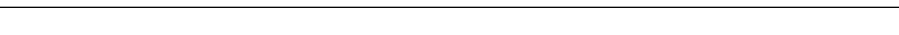
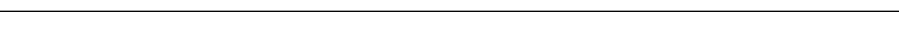
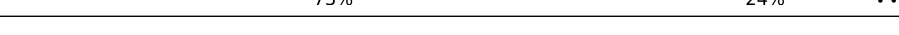
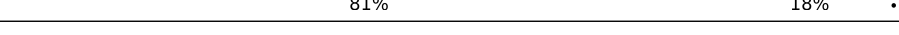
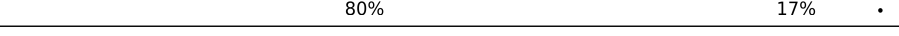













Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

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  $\geq 3$ , 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	AA	1542	
2	AB	76	
3	AC	47	
4	AD	77	
5	AE	240	
6	AF	232	
7	AG	205	
8	AH	166	

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Mol	Chain	Length	Quality of chain
9	AI	135	 71% 27%
10	AJ	178	 80% 18%
11	AK	129	 80% 20%
12	AL	129	 81% 17%
13	AM	103	 72% 23% 5%
14	AN	128	 84% 15%
15	AO	123	 73% 24%
16	AP	117	 80% 18%
17	AQ	100	 73% 24%
18	AR	88	 81% 18%
19	AS	82	 80% 17%
20	AT	83	 75% 20% 5%
21	AU	74	 64% 27% 8%
22	AV	91	 76% 21%
23	AW	86	 83% 15%
24	AX	70	 57% 41%
25	BA	120	 31% 59% 10%
26	BB	2904	 32% 54% 13%
27	BC	234	 9% 83% 16%
28	BD	272	 77% 20%
29	BE	209	 78% 19%
30	BF	201	 77% 18%
31	BG	178	 69% 26% 5%
32	BH	176	 74% 22%
33	BI	149	 5% 83% 16%

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Mol	Chain	Length	Quality of chain
34	BJ	164	5% 82% 15% •
35	BK	141	85% 13% •
36	BL	142	79% 17% ••
37	BM	123	74% 23% •
38	BN	144	78% 21% ••
39	BO	136	79% 16% •
40	BP	127	75% 20% 5%
41	BQ	117	77% 20% •
42	BR	114	69% 28% •
43	BS	117	73% 22% 5%
44	BT	103	80% 17% •
45	BU	110	79% 18% •
46	BV	100	70% 25% 5%
47	BW	103	81% 17% •
48	BX	94	74% 21% •
49	BY	84	69% 25% 6%
50	BZ	77	70% 29% •
51	B0	63	83% 16% •
52	B1	58	83% 17%
53	B2	70	74% 19% 6% •
54	B3	56	73% 23% •
55	B4	54	78% 19% •
56	B5	46	74% 24% •
57	B6	64	80% 19% •
58	B7	38	79% 18% •

## 2 Entry composition

There are 60 unique types of molecules in this entry. The entry contains 152351 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	AA	1542	33089	14767	6064	10717	1541	0	0

- Molecule 2 is a RNA chain called A site tRNA.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	N	O	P	S		
2	AB	76	1627	731	287	532	75	2	0	0

- Molecule 3 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	AC	47	993	445	167	335	46	0	0

- Molecule 4 is a RNA chain called P site tRNA.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	N	O	P	S		
4	AD	77	1641	734	297	533	76	1	0	0

- Molecule 5 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	AE	240	1872	1180	332	352	8	0	0

- Molecule 6 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	AF	232	1822	1149	346	323	4	0	0

- Molecule 7 is a protein called 30S ribosomal protein S4.

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

- Molecule 8 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	AH	166	1225	761	232	226	6	0	0

- Molecule 9 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	AI	135	1101	677	198	219	7	0	0

- Molecule 10 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	AJ	178	1400	874	269	253	4	0	0

- Molecule 11 is a protein called 30S ribosomal protein S8.

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

- Molecule 12 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	AL	129	1036	642	208	183	3	0	0

- Molecule 13 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	AM	103	825	514	158	151	2	0	0

- Molecule 14 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	AN	128	Total	C	N	O	S	0	0
			965	595	196	171	3		

- Molecule 15 is a protein called 30S ribosomal protein S12.

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

- Molecule 16 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	AP	117	Total	C	N	O	S	0	0
			910	564	183	160	3		

- Molecule 17 is a protein called 30S ribosomal protein S14.

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

- Molecule 18 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	AR	88	Total	C	N	O	S	0	0
			716	440	146	129	1		

- Molecule 19 is a protein called 30S ribosomal protein S16.

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

- Molecule 20 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	AT	83	Total	C	N	O	S	0	0
			672	425	124	120	3		

- Molecule 21 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	AU	74	Total	C	N	O	S	0	0
			626	395	123	107	1		

- Molecule 22 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	AV	91	Total	C	N	O	S	0	0
			727	464	139	122	2		

- Molecule 23 is a protein called 30S ribosomal protein S20.

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

- Molecule 24 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	AX	70	Total	C	N	O	S	0	0
			590	366	125	98	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
25	BA	120	Total	C	N	O	P	0	0
			2566	1144	468	835	119		

- Molecule 26 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	BB	2904	Total	C	N	O	P	0	0
			62351	27824	11469	20155	2903		

- Molecule 27 is a protein called 50S ribosomal protein L1.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	BC	234	Total	C	N	O	S	0	0
			1733	1081	315	330	7		

- Molecule 28 is a protein called 50S ribosomal protein L2.



Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
28	BD	272	2092	1294	425	366	7	0	0

- Molecule 29 is a protein called 50S ribosomal protein L3.

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

- Molecule 30 is a protein called 50S ribosomal protein L4.

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

- Molecule 31 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
31	BG	178	1420	905	251	258	6	0	0

- Molecule 32 is a protein called 50S ribosomal protein L6.

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

- Molecule 33 is a protein called 50S ribosomal protein L9.

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

- Molecule 34 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
34	BJ	164	1233	776	220	231	6	0	0

- Molecule 35 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
35	BK	141	1032	651	179	196	6	0	0

- Molecule 36 is a protein called 50S ribosomal protein L13.

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

- Molecule 37 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
37	BM	123	947	593	181	167	6	0	0

- Molecule 38 is a protein called 50S ribosomal protein L15.

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

- Molecule 39 is a protein called 50S ribosomal protein L16.

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

- Molecule 40 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
40	BP	127	1008	621	204	178	5	0	0

- Molecule 41 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	BQ	117	900	557	179	163	1	0	0

- Molecule 42 is a protein called 50S ribosomal protein L19.

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

- Molecule 43 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
43	BS	117	947	604	192	151		0	0

- Molecule 44 is a protein called 50S ribosomal protein L21.

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

- Molecule 45 is a protein called 50S ribosomal protein L22.

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

- Molecule 46 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
46	BV	100	787	496	146	143	2	0	0

- Molecule 47 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
47	BW	103	789	498	148	143		0	0

- Molecule 48 is a protein called 50S ribosomal protein L25.

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

- Molecule 49 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	BY	84	Total	C	N	O	S	0	0
			634	391	129	113	1		

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

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

- Molecule 51 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	B0	63	Total	C	N	O	S	0	0
			509	313	99	95	2		

- Molecule 52 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	B1	58	Total	C	N	O	S	0	0
			449	281	87	79	2		

- Molecule 53 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	B2	70	Total	C	N	O	S	0	0
			549	339	104	100	6		

- Molecule 54 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	B3	56	Total	C	N	O	S	0	0
			444	269	94	80	1		

- Molecule 55 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
55	B4	54	Total	C	N	O	0	0
			441	284	81	76		

- Molecule 56 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
56	B5	46	377	228	90	57	2	0	0

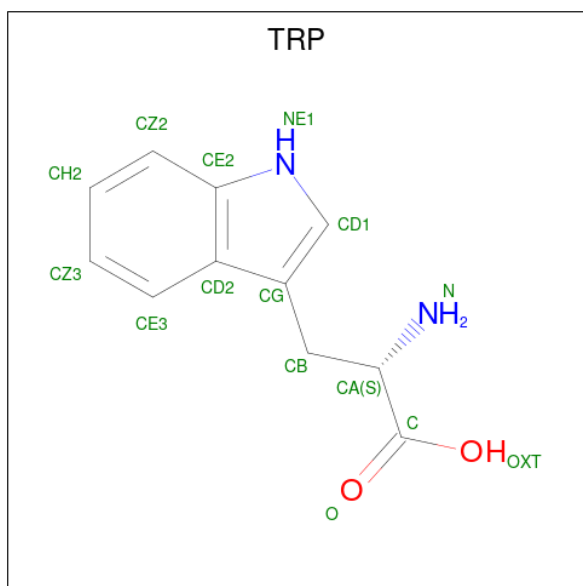
- Molecule 57 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
57	B6	64	504	323	105	74	2	0	0

- Molecule 58 is a protein called 50S ribosomal protein L36.

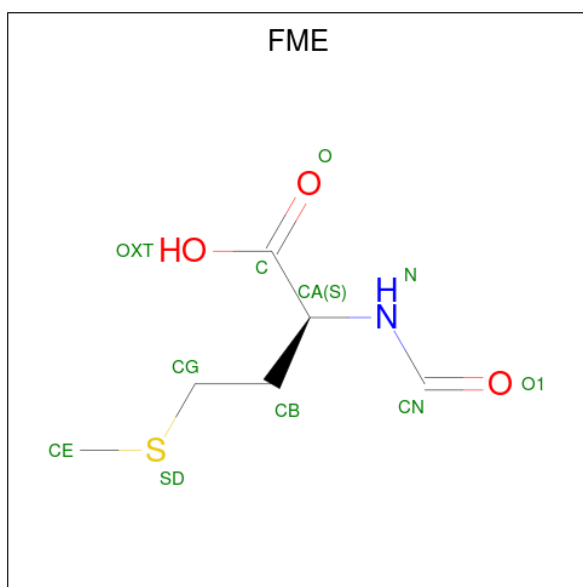
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
58	B7	38	302	185	65	48	4	0	0

- Molecule 59 is TRYPTOPHAN (three-letter code: TRP) (formula:  $C_{11}H_{12}N_2O_2$ ).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
59	AB	1	14	11	2	1	0

- Molecule 60 is N-FORMYLMETHIONINE (three-letter code: FME) (formula:  $C_6H_{11}NO_3S$ ).

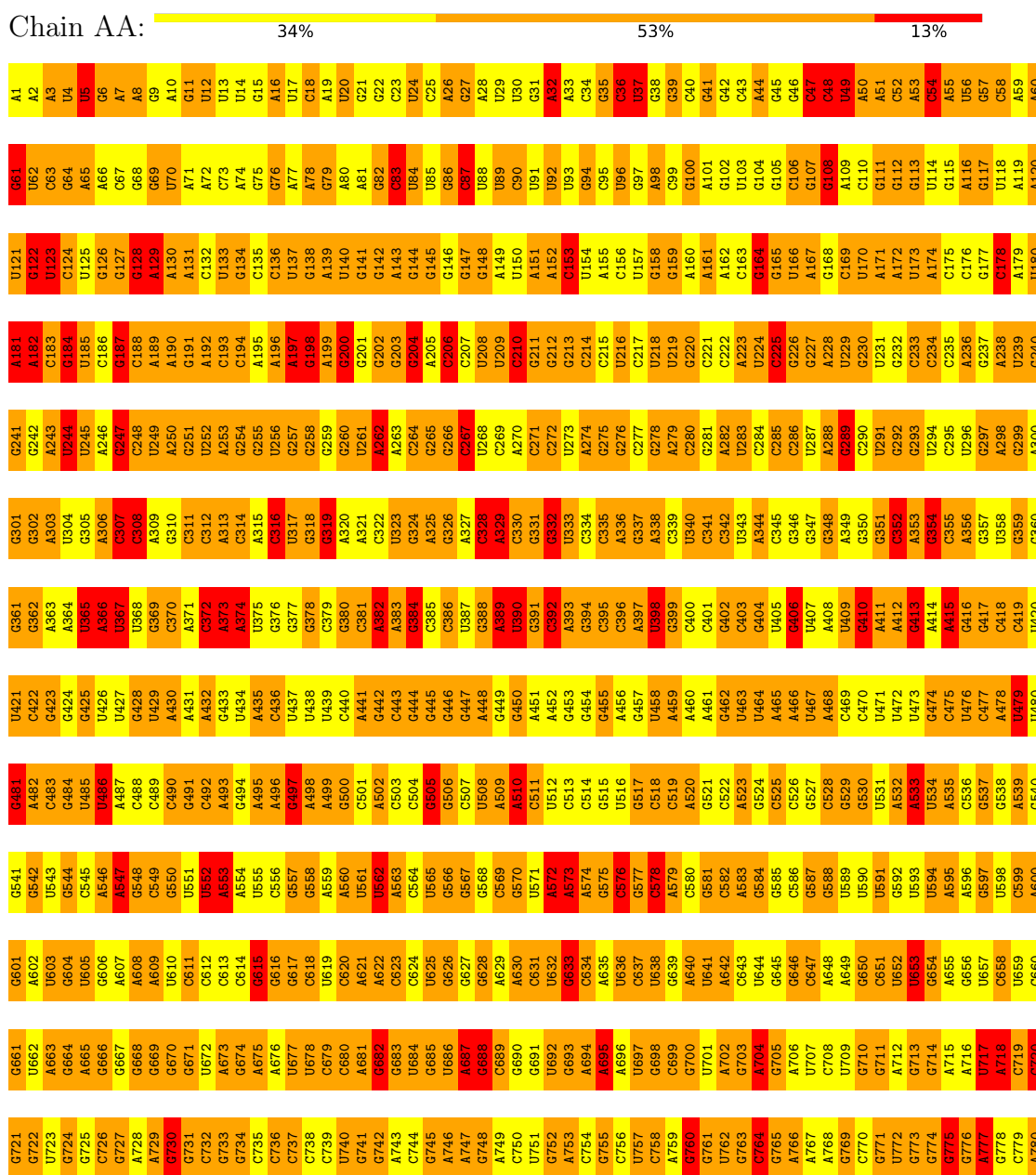


Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	S	
60	BB	1	10	6	1	2	1	0

### 3 Residue-property plots

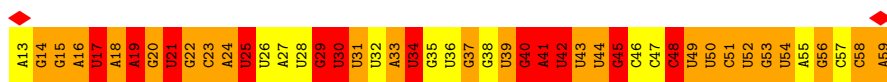
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: 16S ribosomal RNA

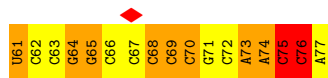




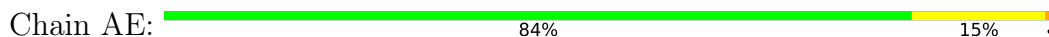




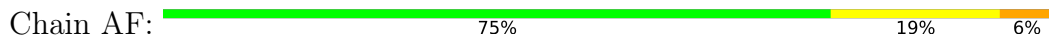
• Molecule 4: P site tRNA



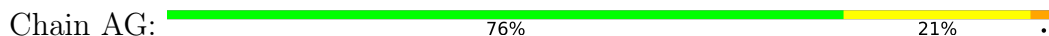
• Molecule 5: 30S ribosomal protein S2



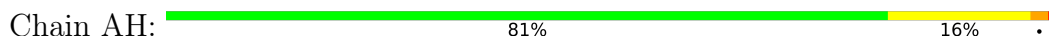
• Molecule 6: 30S ribosomal protein S3



• Molecule 7: 30S ribosomal protein S4

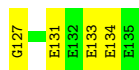


• Molecule 8: 30S ribosomal protein S5

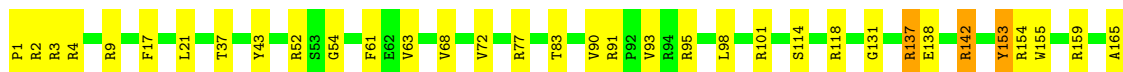
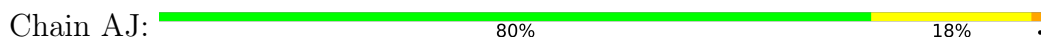




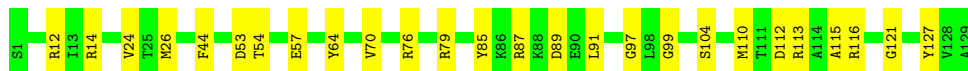
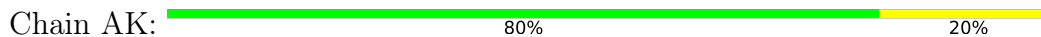
- Molecule 9: 30S ribosomal protein S6



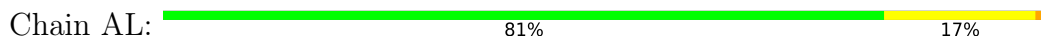
- Molecule 10: 30S ribosomal protein S7



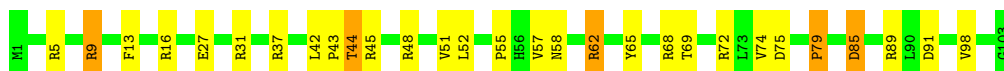
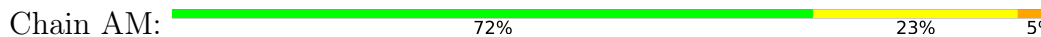
- Molecule 11: 30S ribosomal protein S8



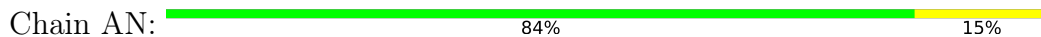
- Molecule 12: 30S ribosomal protein S9



- Molecule 13: 30S ribosomal protein S10



- Molecule 14: 30S ribosomal protein S11

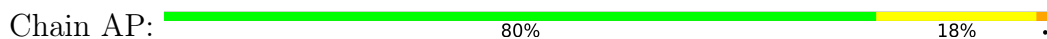




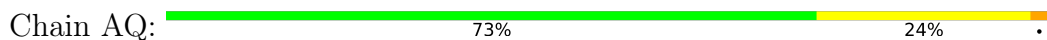
- Molecule 15: 30S ribosomal protein S12



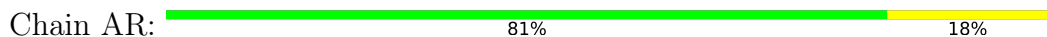
- Molecule 16: 30S ribosomal protein S13



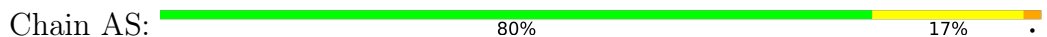
- Molecule 17: 30S ribosomal protein S14



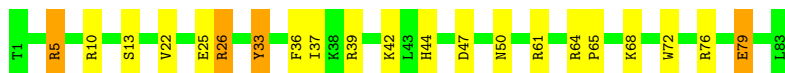
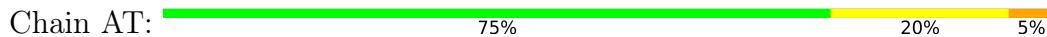
- Molecule 18: 30S ribosomal protein S15



- Molecule 19: 30S ribosomal protein S16



- Molecule 20: 30S ribosomal protein S17

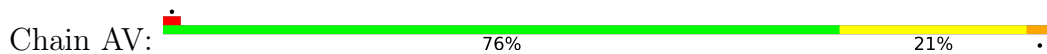


- Molecule 21: 30S ribosomal protein S18

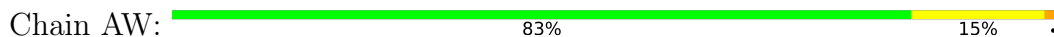




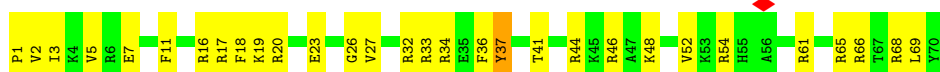
• Molecule 22: 30S ribosomal protein S19



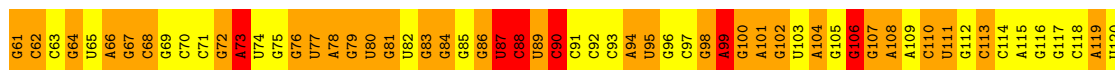
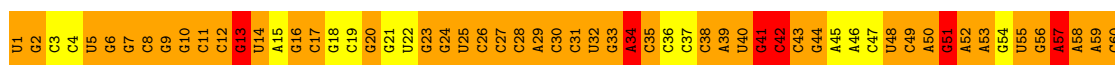
• Molecule 23: 30S ribosomal protein S20



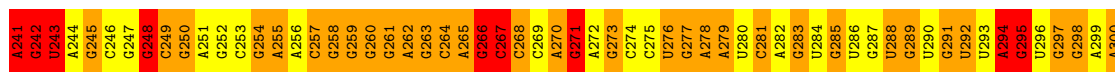
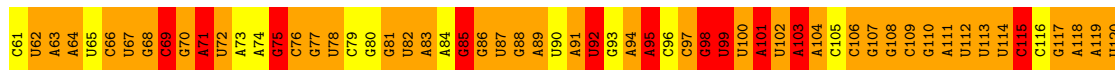
• Molecule 24: 30S ribosomal protein S21



• Molecule 25: 5S ribosomal RNA



• Molecule 26: 23S ribosomal RNA

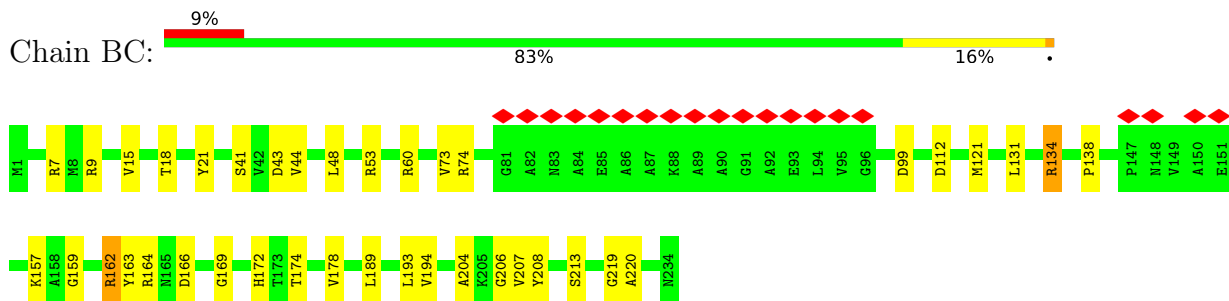


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G1324	A1265	A1265	G1204	A1144	U1084	G1024	G964	C904	A844	G784	U724	G664	A604	G544	C484	G424	G364	U304
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A1327	U1267	A1267	G1206	A1147	G1087	G1026	G966	U906	U846	G786	G726	U666	U606	U546	C486	G426	C366	U306
A1328	U1268	A1268	C1207	U1148	A1088	A1027	U967	G907	U847	C787	A727	U667	U607	A547	C487	U427	G367	G307
U1329	A1269	A1269	C1208	G1149	A1089	A1028	G968	C908	G848	A788	G728	A668	A608	G548	C488	A428	A368	G308
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G1332	A1272	A1272	A1211	A1151	A1091	G1031	G971	A911	C851	C791	C731	G671	C611	C551	A491	U431	A371	A311
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G2375	G2315	G2255	U2195	A2135	U2075	A2015	U1955	C1895	G1835	U1775	G1715	A1655	U1595	A1535	U1475	U1415
A2376	G2316	G2256	C2196	G2136	U2076	U2016	U1956	G1896	U1836	G1776	U1716	C1656	U1596	C1536	U1476	G1416
A2377	A2317	U2257	U2197	U2137	A2077	U2017	C1957	G1897	C1837	U1777	A1717	U1657	U1597	G1537	A1477	G1417
G2378	G2318	C2258	A2198	G2138	C2078	G2018	C1958	U1898	C1838	U1778	G1718	C1658	U1598	G1538	G1478	U1418
G2379	G2319	U2259	A2199	U2139	U2079	A2019	U1959	A1899	G1839	U1779	G1719	G1659	U1599	U1539	G1479	U1419
C2380	C2320	C2260	C2200	G2140	A2080	A2020	A1960	A1900	G1840	U1780	U1720	G1660	U1600	G1540	A1420	A1420
A2381	U2321	G2261	G2201	G2141	U2081	C2021	C1961	A1901	U1841	U1781	G1721	G1661	U1601	C1541	U1481	G1421
G2382	A2322	U2262	U2202	A2142	A2082	U2022	C1962	C1902	G1842	U1782	A1722	G1662	U1602	U1542	G1482	G1422
G2383	G2323	C2263	C2203	C2143	G2083	C2023	U1963	G1903	C1843	A1783	G1723	G1663	U1603	G1543	A1483	G1423
U2384	U2324	C2264	G2204	G2144	C2084	G2024	G1964	G1904	C1844	A1784	G1724	A1664	C1604	A1544	U1484	G1424
G2385	G2325	U2265	A2205	C2145	U2085	C2025	C1965	C1905	G1845	A1785	U1725	A1665	C1605	A1545	U1485	G1425
C2386	C2326	A2266	C2206	C2146	U2086	U2026	A1966	G1906	G1846	A1786	G1726	A1666	U1606	G1546	U1486	G1426
U2387	A2327	G2267	G2207	A2147	G2087	G2027	C1967	G1907	A1847	U1787	C1727	G1667	U1607	C1547	U1487	A1427
A2388	A2328	A2268	C2208	U2148	A2088	U2028	G1968	C1908	U1848	C1788	G1728	A1668	U1608	A1548	C1488	C1428
G2389	U2329	G2269	G2209	U2149	C2089	G2029	A1969	G1909	G1849	U1789	U1729	A1669	A1609	A1549	C1489	G1429
U2390	G2330	A2270	U2210	C2150	A2090	U2030	A1970	G1910	G1850	C1790	C1670	C1550	C1610	C1550	A1490	G1430
G2391	C2331	G2271	A2211	U2151	C2091	A2031	U1971	U1911	U1851	A1791	G1731	U1671	C1611	A1551	G1491	A1431
A2392	G2332	U2272	A2212	G2152	U2092	G2032	G1972	A1912	U1852	U1792	A1672	A1612	C1612	A1552	G1492	G1432
U2393	A2333	C2273	U2213	C2153	G2093	A2033	G1973	A1913	A1853	U1793	G1733	G1673	G1613	A1553	C1493	A1433
C2394	U2334	A2274	C2214	A2154	A2094	U2034	C1974	C1914	A1854	A1794	G1734	A1674	A1614	U1554	A1494	A1434
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G2396	A2336	G2276	G2216	U2156	C2096	C2036	U1976	A1916	U1856	U1796	U1676	A1676	A1616	C1556	A1496	A1436
G2397	G2337	G2277	G2217	A2157	A2097	A2037	A1977	U1917	G1857	G1797	G1737	A1677	C1617	C1557	U1497	G1437
U2398	C2338	A2278	G2218	A2158	U2098	G2038	A1978	A1918	A1858	U1798	A1738	A1678	A1618	U1558	C1498	U1438
C2399	G2339	U2279	U2219	U2099	U2099	U2039	U1979	A1919	U1859	U1799	A1739	A1679	A1619	U1559	C1499	A1439
A2400	G2400	C2100	G2100	C2100	G2100	G2040	G1980	C1920	G1860	C1800	G1740	U1680	C1620	G1560	G1500	U1440

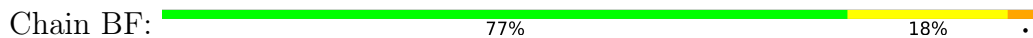
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A2461	C2462	C2463	C2464	C2465	C2466	C2467	A2468	C2469	G2470	A2471	U2472	U2473	U2474	C2475	A2476	U2477	A2478	U2479	C2480	C2481	G2482	C2483	C2484	G2485	C2486	G2487	U2488	U2489	G2490	U2491	U2492	U2493	G2494	C2495	C2496	A2497	C2498	C2499	U2500	C2501	C2502	A2503	U2504	G2505	U2506	C2507	G2508	G2509	C2510	U2511	C2512	A2513	U2514	C2515	G2516	U2517	G2518	A2519	C2520
C2521	U2522	C2523	G2524	C2525	C2526	C2527	U2528	C2529	U2530	A2531	C2532	U2533	A2534	C2535	G2536	U2537	C2538	C2539	C2540	A2541	A2542	C2543	G2544	G2545	U2546	A2547	C2548	G2549	U2550	U2551	C2552	G2553	U2554	C2555	C2556	G2557	C2558	C2559	A2560	U2561	U2562	C2563	U2564	A2565	A2566	C2567	U2568	U2569	C2570	G2571	C2572	C2573	U2574	C2575	G2576	A2577	C2578	U2579	U2580
C2581	C2582	G2583	U2584	C2585	C2586	U2587	C2588	A2589	U2590	C2591	C2592	U2593	C2594	G2595	U2596	U2597	C2598	C2599	A2600	C2601	A2602	G2603	G2604	U2605	C2606	G2607	G2608	U2609	U2610	C2611	C2612	U2613	A2614	U2615	C2616	C2617	C2618	C2619	C2620	U2621	U2622	C2623	G2624	C2625	U2626	U2627	U2628	C2629	U2630	C2631	A2632	C2633	U2634	A2635	C2636	U2637	C2638	U2639	G2640
G2641	G2642	G2643	G2644	C2645	C2646	U2647	C2648	C2649	U2650	C2651	C2652	U2653	A2654	C2655	U2656	A2657	C2658	G2659	A2660	C2661	A2662	G2663	G2664	A2665	C2666	C2667	G2668	C2669	U2670	C2671	U2672	C2673	G2674	A2675	C2676	C2677	C2678	A2679	U2680	C2681	U2682	A2683	C2684	G2685	C2686	U2687	U2688	C2689	U2690	C2691	C2692	G2693	U2694	C2695	U2696	U2697	C2698	U2699	A2700
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A2761	C2762	C2763	A2764	C2765	A2766	C2767	U2768	U2769	C2770	C2771	C2772	C2773	C2774	C2775	A2776	C2777	A2778	U2779	C2780	A2781	C2782	G2783	U2784	C2785	U2786	C2787	C2788	C2789	U2790	C2791	A2792	C2793	C2794	C2795	U2796	U2797	U2798	A2799	A2800	C2801	C2802	C2803	U2804	C2805	U2806	U2807	C2808	A2809	U2810	C2811	G2812	A2813	U2814	C2815	G2816	U2817	U2818	C2819	A2820
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• Molecule 27: 50S ribosomal protein L1

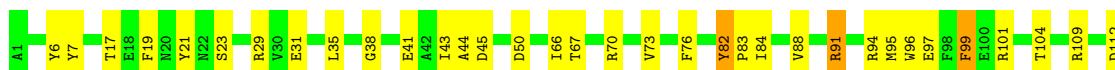




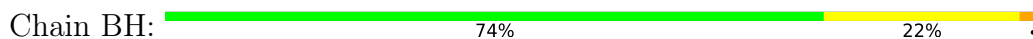
• Molecule 30: 50S ribosomal protein L4



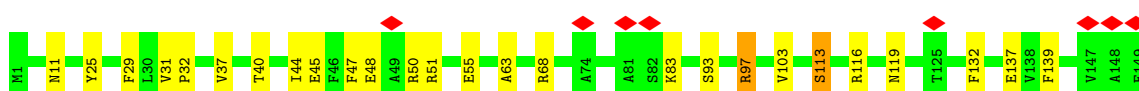
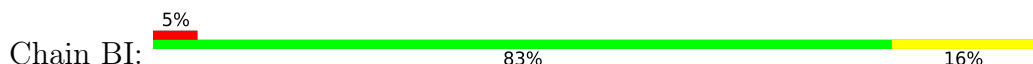
• Molecule 31: 50S ribosomal protein L5



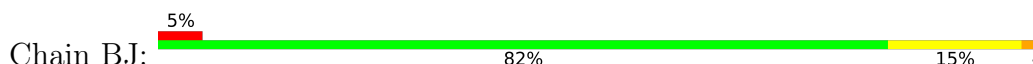
• Molecule 32: 50S ribosomal protein L6



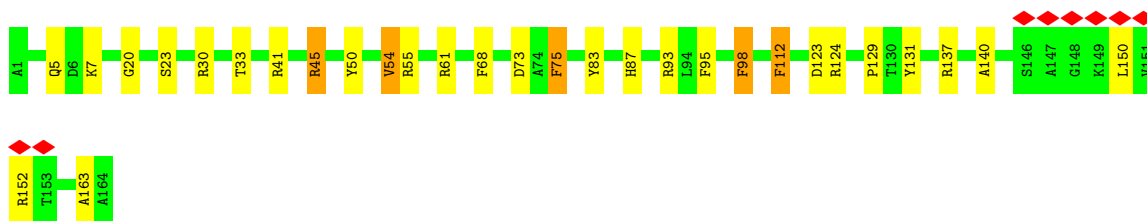
• Molecule 33: 50S ribosomal protein L9



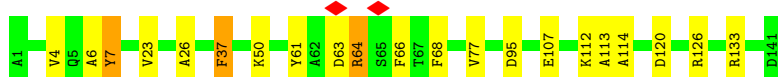
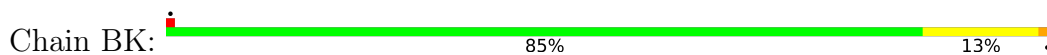
• Molecule 34: 50S ribosomal protein L10



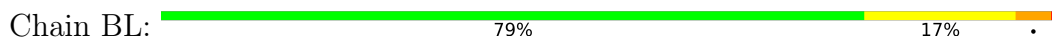




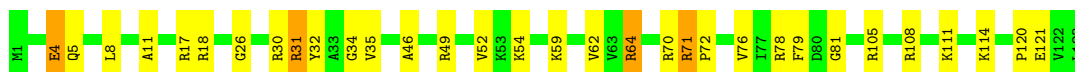
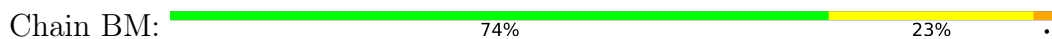
- Molecule 35: 50S ribosomal protein L11



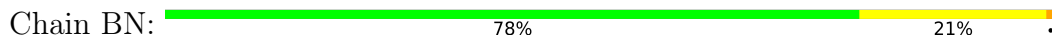
- Molecule 36: 50S ribosomal protein L13



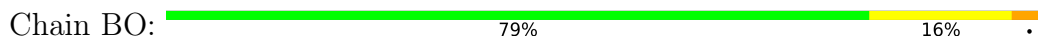
- Molecule 37: 50S ribosomal protein L14



- Molecule 38: 50S ribosomal protein L15

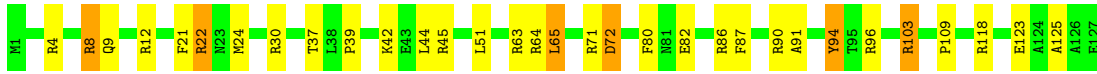


- Molecule 39: 50S ribosomal protein L16

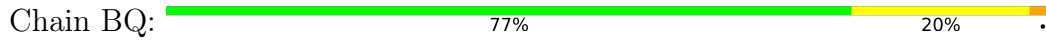


- Molecule 40: 50S ribosomal protein L17





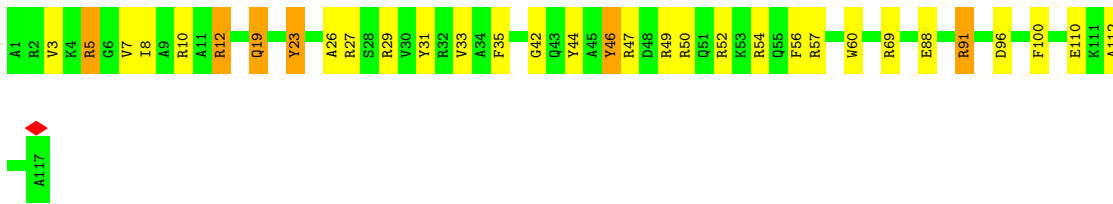
- Molecule 41: 50S ribosomal protein L18



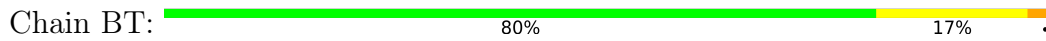
- Molecule 42: 50S ribosomal protein L19



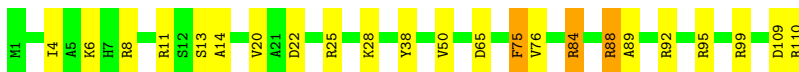
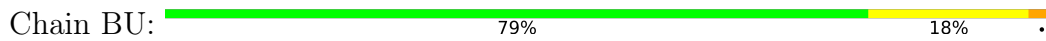
- Molecule 43: 50S ribosomal protein L20



- Molecule 44: 50S ribosomal protein L21

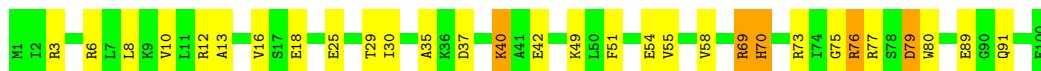


- Molecule 45: 50S ribosomal protein L22

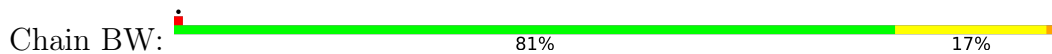


- Molecule 46: 50S ribosomal protein L23

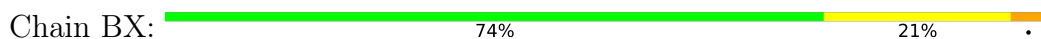




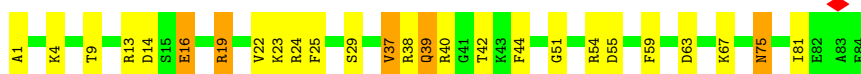
- Molecule 47: 50S ribosomal protein L24



- Molecule 48: 50S ribosomal protein L25



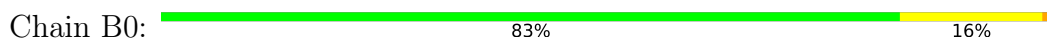
- Molecule 49: 50S ribosomal protein L27



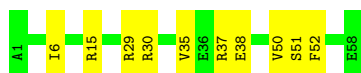
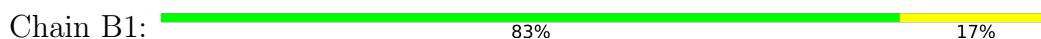
- Molecule 50: 50S ribosomal protein L28



- Molecule 51: 50S ribosomal protein L29

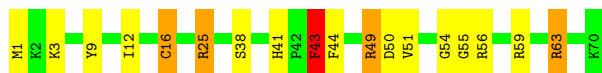


- Molecule 52: 50S ribosomal protein L30

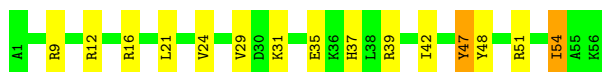


- Molecule 53: 50S ribosomal protein L31

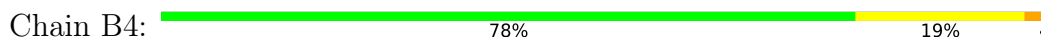




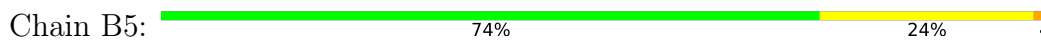
- Molecule 54: 50S ribosomal protein L32



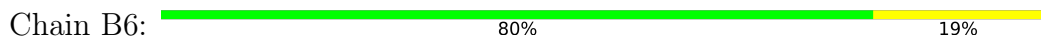
- Molecule 55: 50S ribosomal protein L33



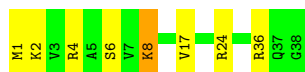
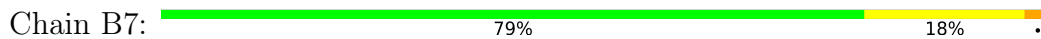
- Molecule 56: 50S ribosomal protein L34



- Molecule 57: 50S ribosomal protein L35



- Molecule 58: 50S ribosomal protein L36



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	21000	Depositor
Resolution determination method	FSC 0.5 CUT-OFF	Depositor
CTF correction method	Volumes were CTF-corrected in defocus groups	Depositor
Microscope	FEI TECNAI F30	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	25	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	4000	Depositor
Magnification	58269	Depositor
Image detector	TVIPS TEMCAM-F415 (4k x 4k)	Depositor
Maximum map value	1.536	Depositor
Minimum map value	-0.480	Depositor
Average map value	0.031	Depositor
Map value standard deviation	0.200	Depositor
Recommended contour level	0.1	Depositor
Map size (Å)	375.0, 375.0, 375.0	wwPDB
Map dimensions	250, 250, 250	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.5, 1.5, 1.5	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: OMU, UR3, 4OC, 7MG, 2MA, OMC, CH, MA6, 3TD, 1MG, 2MG, 5MU, MIA, OMG, H2U, FME, PSU, 5MC, 6MZ, 4SU

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	AA	3.07	3842/36769 (10.4%)	3.54	8339/57354 (14.5%)
2	AB	3.16	182/1600 (11.4%)	3.61	372/2492 (14.9%)
3	AC	3.10	124/1108 (11.2%)	3.72	275/1724 (16.0%)
4	AD	3.15	181/1721 (10.5%)	3.52	392/2683 (14.6%)
5	AE	1.46	6/1904 (0.3%)	1.85	30/2565 (1.2%)
6	AF	1.47	6/1852 (0.3%)	2.14	61/2490 (2.4%)
7	AG	1.54	7/1665 (0.4%)	1.95	47/2227 (2.1%)
8	AH	1.48	3/1239 (0.2%)	1.96	33/1664 (2.0%)
9	AI	1.50	5/1121 (0.4%)	1.99	30/1509 (2.0%)
10	AJ	1.51	5/1422 (0.4%)	1.96	30/1908 (1.6%)
11	AK	1.47	6/989 (0.6%)	1.83	20/1326 (1.5%)
12	AL	1.57	2/1048 (0.2%)	1.98	28/1394 (2.0%)
13	AM	1.46	3/835 (0.4%)	2.17	31/1127 (2.8%)
14	AN	1.51	2/982 (0.2%)	1.85	20/1323 (1.5%)
15	AO	1.51	3/969 (0.3%)	2.08	29/1300 (2.2%)
16	AP	1.55	1/919 (0.1%)	1.88	20/1226 (1.6%)
17	AQ	1.45	4/817 (0.5%)	2.05	21/1088 (1.9%)
18	AR	1.50	2/724 (0.3%)	2.03	16/966 (1.7%)
19	AS	1.50	4/659 (0.6%)	2.09	14/884 (1.6%)
20	AT	1.46	2/681 (0.3%)	2.02	24/913 (2.6%)
21	AU	1.68	6/637 (0.9%)	2.13	28/851 (3.3%)
22	AV	1.44	3/744 (0.4%)	1.80	16/995 (1.6%)
23	AW	1.44	0/676	1.87	16/895 (1.8%)
24	AX	1.54	3/598 (0.5%)	2.37	30/792 (3.8%)
25	BA	2.99	281/2869 (9.8%)	3.51	651/4474 (14.6%)
26	BB	3.08	7353/69257 (10.6%)	3.54	15900/108040 (14.7%)
27	BC	1.44	5/1748 (0.3%)	1.89	32/2355 (1.4%)
28	BD	1.55	11/2131 (0.5%)	1.90	52/2863 (1.8%)
29	BE	1.44	3/1586 (0.2%)	1.91	40/2134 (1.9%)
30	BF	1.46	7/1571 (0.4%)	1.94	37/2113 (1.8%)
31	BG	1.58	11/1444 (0.8%)	2.03	47/1937 (2.4%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
32	BH	1.57	11/1343 (0.8%)	1.89	39/1816 (2.1%)
33	BI	1.56	7/1122 (0.6%)	1.83	20/1515 (1.3%)
34	BJ	1.49	3/1247 (0.2%)	1.95	37/1679 (2.2%)
35	BK	1.46	3/1046 (0.3%)	1.85	17/1410 (1.2%)
36	BL	1.48	6/1152 (0.5%)	1.94	27/1551 (1.7%)
37	BM	1.49	3/956 (0.3%)	2.06	24/1279 (1.9%)
38	BN	1.52	5/1062 (0.5%)	1.88	26/1413 (1.8%)
39	BO	1.49	4/1093 (0.4%)	1.95	25/1460 (1.7%)
40	BP	1.52	4/1021 (0.4%)	2.12	32/1364 (2.3%)
41	BQ	1.54	4/910 (0.4%)	1.99	23/1219 (1.9%)
42	BR	1.55	5/929 (0.5%)	1.93	26/1242 (2.1%)
43	BS	1.57	10/960 (1.0%)	2.05	33/1278 (2.6%)
44	BT	1.50	3/829 (0.4%)	1.84	16/1107 (1.4%)
45	BU	1.49	1/864 (0.1%)	1.95	26/1156 (2.2%)
46	BV	1.54	3/794 (0.4%)	1.91	18/1060 (1.7%)
47	BW	1.53	1/797 (0.1%)	1.83	15/1062 (1.4%)
48	BX	1.46	3/766 (0.4%)	1.89	22/1025 (2.1%)
49	BY	1.57	4/642 (0.6%)	2.03	20/848 (2.4%)
50	BZ	1.58	2/635 (0.3%)	1.97	14/848 (1.7%)
51	B0	1.43	1/510 (0.2%)	2.10	9/677 (1.3%)
52	B1	1.40	0/453	2.08	9/605 (1.5%)
53	B2	1.45	1/559 (0.2%)	2.02	17/745 (2.3%)
54	B3	1.52	4/450 (0.9%)	1.89	10/599 (1.7%)
55	B4	1.48	0/448	1.91	6/594 (1.0%)
56	B5	1.65	1/380 (0.3%)	2.10	13/498 (2.6%)
57	B6	1.47	0/513	1.90	7/676 (1.0%)
58	B7	1.51	2/303 (0.7%)	2.07	8/397 (2.0%)
All	All	2.69	12164/164069 (7.4%)	3.18	27220/244735 (11.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	AA	0	881
2	AB	0	40
3	AC	0	28
4	AD	0	42
5	AE	0	3
6	AF	0	11
7	AG	0	6

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Mol	Chain	#Chirality outliers	#Planarity outliers
8	AH	0	2
9	AI	0	4
10	AJ	0	4
11	AK	0	2
12	AL	0	2
14	AN	0	3
15	AO	0	4
16	AP	0	1
17	AQ	0	4
18	AR	0	1
19	AS	0	2
20	AT	0	1
21	AU	0	3
22	AV	0	2
23	AW	0	1
24	AX	0	2
25	BA	0	75
26	BB	0	1720
27	BC	0	2
28	BD	0	9
29	BE	0	4
30	BF	0	3
31	BG	0	6
32	BH	0	3
33	BI	0	1
34	BJ	0	5
35	BK	0	3
36	BL	0	2
37	BM	0	5
38	BN	0	2
39	BO	0	3
40	BP	0	4
41	BQ	0	6
42	BR	0	4
43	BS	0	6
44	BT	0	4
45	BU	0	5
46	BV	0	2
48	BX	0	4
49	BY	0	5
50	BZ	0	2
51	B0	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
52	B1	0	1
53	B2	0	4
54	B3	0	1
55	B4	0	4
56	B5	0	2
57	B6	0	2
All	All	0	2949

The worst 5 of 12164 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
26	BB	659	G	N7-C5	18.05	1.50	1.39
26	BB	2104	C	P-O5'	17.37	1.77	1.59
26	BB	2168	G	N7-C5	16.73	1.49	1.39
26	BB	268	C	N1-C6	16.25	1.47	1.37
1	AA	1072	G	P-O5'	16.08	1.75	1.59

The worst 5 of 27220 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
51	B0	48	ARG	NE-CZ-NH1	24.22	132.41	120.30
26	BB	2494	G	N3-C4-C5	-22.56	117.32	128.60
51	B0	48	ARG	NE-CZ-NH2	-21.50	109.55	120.30
26	BB	93	G	C2-N3-C4	20.63	122.22	111.90
26	BB	1478	G	N1-C6-O6	-20.46	107.62	119.90

There are no chirality outliers.

5 of 2949 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	AA	11	G	Sidechain
1	AA	3	A	Sidechain
1	AA	4	U	Sidechain
1	AA	5	U	Sidechain
1	AA	6	G	Sidechain

## 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	AA	33089	0	16619	0	0
2	AB	1627	0	844	0	0
3	AC	993	0	501	0	0
4	AD	1641	0	840	0	0
5	AE	1872	0	1885	0	0
6	AF	1822	0	1913	0	0
7	AG	1643	0	1710	0	0
8	AH	1225	0	1273	0	0
9	AI	1101	0	1050	0	0
10	AJ	1400	0	1449	0	0
11	AK	979	0	1034	0	0
12	AL	1036	0	1084	0	0
13	AM	825	0	865	0	0
14	AN	965	0	997	0	0
15	AO	955	0	1019	0	0
16	AP	910	0	981	0	0
17	AQ	805	0	847	0	0
18	AR	716	0	742	0	0
19	AS	649	0	666	0	0
20	AT	672	0	716	0	0
21	AU	626	0	651	0	0
22	AV	727	0	769	0	0
23	AW	670	0	722	0	0
24	AX	590	0	631	0	0
25	BA	2566	0	1296	0	0
26	BB	62351	0	31238	0	0
27	BC	1733	0	1824	0	0
28	BD	2092	0	2170	0	0
29	BE	1565	0	1616	0	0
30	BF	1552	0	1619	0	0
31	BG	1420	0	1460	0	0
32	BH	1323	0	1374	0	0
33	BI	1111	0	1148	0	0
34	BJ	1233	0	1283	0	0
35	BK	1032	0	1088	0	0
36	BL	1129	0	1162	0	0
37	BM	947	0	1023	0	0
38	BN	1053	0	1129	0	0
39	BO	1074	0	1157	0	0
40	BP	1008	0	1045	0	0
41	BQ	900	0	935	0	0
42	BR	917	0	965	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
43	BS	947	0	1022	0	0
44	BT	816	0	839	0	0
45	BU	857	0	922	0	0
46	BV	787	0	846	0	0
47	BW	789	0	847	0	0
48	BX	753	0	780	0	0
49	BY	634	0	656	0	0
50	BZ	625	0	655	0	0
51	B0	509	0	543	0	0
52	B1	449	0	491	0	0
53	B2	549	0	552	0	0
54	B3	444	0	461	0	0
55	B4	441	0	485	0	0
56	B5	377	0	418	0	0
57	B6	504	0	574	0	0
58	B7	302	0	343	0	0
59	AB	14	0	9	0	0
60	BB	10	0	10	0	0
All	All	152351	0	103793	0	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). Clashscore could not be calculated for this entry.

There are no clashes within the asymmetric unit.

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	
5	AE	238/240 (99%)	211 (89%)	24 (10%)	3 (1%)	12	48
6	AF	230/232 (99%)	204 (89%)	20 (9%)	6 (3%)	5	31
7	AG	203/205 (99%)	182 (90%)	17 (8%)	4 (2%)	7	38

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
8	AH	164/166 (99%)	146 (89%)	15 (9%)	3 (2%)	8	40
9	AI	133/135 (98%)	118 (89%)	12 (9%)	3 (2%)	6	34
10	AJ	176/178 (99%)	163 (93%)	11 (6%)	2 (1%)	14	52
11	AK	127/129 (98%)	116 (91%)	9 (7%)	2 (2%)	9	44
12	AL	127/129 (98%)	118 (93%)	7 (6%)	2 (2%)	9	44
13	AM	101/103 (98%)	92 (91%)	5 (5%)	4 (4%)	3	23
14	AN	126/128 (98%)	111 (88%)	15 (12%)	0	100	100
15	AO	121/123 (98%)	103 (85%)	14 (12%)	4 (3%)	4	26
16	AP	115/117 (98%)	101 (88%)	11 (10%)	3 (3%)	5	31
17	AQ	98/100 (98%)	79 (81%)	13 (13%)	6 (6%)	1	17
18	AR	86/88 (98%)	82 (95%)	3 (4%)	1 (1%)	13	50
19	AS	80/82 (98%)	75 (94%)	4 (5%)	1 (1%)	12	48
20	AT	81/83 (98%)	66 (82%)	14 (17%)	1 (1%)	13	50
21	AU	72/74 (97%)	63 (88%)	6 (8%)	3 (4%)	3	22
22	AV	89/91 (98%)	79 (89%)	6 (7%)	4 (4%)	2	22
23	AW	84/86 (98%)	78 (93%)	4 (5%)	2 (2%)	6	33
24	AX	68/70 (97%)	53 (78%)	13 (19%)	2 (3%)	4	29
27	BC	232/234 (99%)	207 (89%)	20 (9%)	5 (2%)	6	35
28	BD	270/272 (99%)	232 (86%)	30 (11%)	8 (3%)	4	28
29	BE	207/209 (99%)	171 (83%)	31 (15%)	5 (2%)	6	33
30	BF	199/201 (99%)	171 (86%)	16 (8%)	12 (6%)	1	17
31	BG	176/178 (99%)	142 (81%)	24 (14%)	10 (6%)	1	18
32	BH	174/176 (99%)	149 (86%)	22 (13%)	3 (2%)	9	42
33	BI	147/149 (99%)	124 (84%)	21 (14%)	2 (1%)	11	46
34	BJ	162/164 (99%)	147 (91%)	13 (8%)	2 (1%)	13	50
35	BK	139/141 (99%)	126 (91%)	12 (9%)	1 (1%)	22	63
36	BL	140/142 (99%)	112 (80%)	21 (15%)	7 (5%)	2	20
37	BM	121/123 (98%)	104 (86%)	13 (11%)	4 (3%)	4	26
38	BN	142/144 (99%)	121 (85%)	17 (12%)	4 (3%)	5	30
39	BO	134/136 (98%)	116 (87%)	14 (10%)	4 (3%)	4	28
40	BP	125/127 (98%)	116 (93%)	8 (6%)	1 (1%)	19	60

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
41	BQ	115/117 (98%)	109 (95%)	4 (4%)	2 (2%)	9	42
42	BR	112/114 (98%)	88 (79%)	22 (20%)	2 (2%)	8	40
43	BS	115/117 (98%)	106 (92%)	7 (6%)	2 (2%)	9	42
44	BT	101/103 (98%)	90 (89%)	8 (8%)	3 (3%)	4	28
45	BU	108/110 (98%)	101 (94%)	4 (4%)	3 (3%)	5	30
46	BV	98/100 (98%)	78 (80%)	14 (14%)	6 (6%)	1	17
47	BW	101/103 (98%)	85 (84%)	13 (13%)	3 (3%)	4	28
48	BX	92/94 (98%)	82 (89%)	9 (10%)	1 (1%)	14	52
49	BY	82/84 (98%)	60 (73%)	18 (22%)	4 (5%)	2	20
50	BZ	75/77 (97%)	65 (87%)	6 (8%)	4 (5%)	2	19
51	B0	61/63 (97%)	55 (90%)	5 (8%)	1 (2%)	9	44
52	B1	56/58 (97%)	50 (89%)	5 (9%)	1 (2%)	8	40
53	B2	68/70 (97%)	45 (66%)	18 (26%)	5 (7%)	1	14
54	B3	54/56 (96%)	44 (82%)	9 (17%)	1 (2%)	8	38
55	B4	52/54 (96%)	45 (86%)	4 (8%)	3 (6%)	1	18
56	B5	44/46 (96%)	40 (91%)	2 (4%)	2 (4%)	2	22
57	B6	62/64 (97%)	54 (87%)	6 (10%)	2 (3%)	4	26
58	B7	36/38 (95%)	31 (86%)	4 (11%)	1 (3%)	5	30
All	All	6319/6423 (98%)	5506 (87%)	643 (10%)	170 (3%)	8	31

5 of 170 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
12	AL	86	LEU
13	AM	42	LEU
13	AM	57	VAL
16	AP	22	TYR
21	AU	11	ARG

### 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	
5	AE	198/198 (100%)	191 (96%)	7 (4%)	36	59
6	AF	189/189 (100%)	176 (93%)	13 (7%)	15	40
7	AG	172/172 (100%)	165 (96%)	7 (4%)	30	55
8	AH	125/125 (100%)	119 (95%)	6 (5%)	25	51
9	AI	116/116 (100%)	109 (94%)	7 (6%)	19	44
10	AJ	146/146 (100%)	139 (95%)	7 (5%)	25	51
11	AK	104/104 (100%)	102 (98%)	2 (2%)	57	75
12	AL	106/106 (100%)	104 (98%)	2 (2%)	57	75
13	AM	90/90 (100%)	82 (91%)	8 (9%)	9	30
14	AN	98/98 (100%)	95 (97%)	3 (3%)	40	62
15	AO	103/103 (100%)	95 (92%)	8 (8%)	12	36
16	AP	95/95 (100%)	90 (95%)	5 (5%)	22	47
17	AQ	83/83 (100%)	82 (99%)	1 (1%)	71	83
18	AR	76/76 (100%)	74 (97%)	2 (3%)	46	66
19	AS	65/65 (100%)	63 (97%)	2 (3%)	40	62
20	AT	77/77 (100%)	71 (92%)	6 (8%)	12	36
21	AU	64/64 (100%)	59 (92%)	5 (8%)	12	36
22	AV	78/78 (100%)	72 (92%)	6 (8%)	13	37
23	AW	65/65 (100%)	62 (95%)	3 (5%)	27	52
24	AX	60/60 (100%)	54 (90%)	6 (10%)	7	26
27	BC	181/181 (100%)	171 (94%)	10 (6%)	21	47
28	BD	217/217 (100%)	208 (96%)	9 (4%)	30	55
29	BE	164/164 (100%)	156 (95%)	8 (5%)	25	50
30	BF	165/165 (100%)	157 (95%)	8 (5%)	25	51
31	BG	149/149 (100%)	141 (95%)	8 (5%)	22	47
32	BH	137/137 (100%)	128 (93%)	9 (7%)	16	41
33	BI	114/114 (100%)	108 (95%)	6 (5%)	22	47
34	BJ	122/122 (100%)	118 (97%)	4 (3%)	38	61
35	BK	109/109 (100%)	106 (97%)	3 (3%)	43	65
36	BL	116/116 (100%)	111 (96%)	5 (4%)	29	53
37	BM	104/104 (100%)	97 (93%)	7 (7%)	16	41

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
38	BN	103/103 (100%)	97 (94%)	6 (6%)	20	45
39	BO	109/109 (100%)	101 (93%)	8 (7%)	14	39
40	BP	103/103 (100%)	97 (94%)	6 (6%)	20	45
41	BQ	87/87 (100%)	83 (95%)	4 (5%)	27	52
42	BR	99/99 (100%)	91 (92%)	8 (8%)	11	35
43	BS	89/89 (100%)	87 (98%)	2 (2%)	52	71
44	BT	84/84 (100%)	79 (94%)	5 (6%)	19	44
45	BU	93/93 (100%)	92 (99%)	1 (1%)	73	84
46	BV	84/84 (100%)	75 (89%)	9 (11%)	6	23
47	BW	84/84 (100%)	79 (94%)	5 (6%)	19	44
48	BX	78/78 (100%)	75 (96%)	3 (4%)	33	57
49	BY	62/62 (100%)	60 (97%)	2 (3%)	39	61
50	BZ	67/67 (100%)	63 (94%)	4 (6%)	19	44
51	B0	55/55 (100%)	53 (96%)	2 (4%)	35	59
52	B1	48/48 (100%)	46 (96%)	2 (4%)	30	54
53	B2	62/62 (100%)	57 (92%)	5 (8%)	11	35
54	B3	47/47 (100%)	42 (89%)	5 (11%)	6	24
55	B4	48/48 (100%)	47 (98%)	1 (2%)	53	72
56	B5	38/38 (100%)	37 (97%)	1 (3%)	46	66
57	B6	51/51 (100%)	45 (88%)	6 (12%)	5	20
58	B7	34/34 (100%)	32 (94%)	2 (6%)	19	45
All	All	5213/5213 (100%)	4943 (95%)	270 (5%)	27	48

5 of 270 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
46	BV	91	GLN
48	BX	35	GLU
55	B4	21	THR
23	AW	7	LYS
22	AV	46	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

### 5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	AA	1538/1542 (99%)	291 (18%)	99 (6%)
2	AB	74/76 (97%)	23 (31%)	6 (8%)
25	BA	119/120 (99%)	16 (13%)	10 (8%)
26	BB	2898/2904 (99%)	544 (18%)	186 (6%)
3	AC	46/47 (97%)	18 (39%)	6 (13%)
4	AD	76/77 (98%)	17 (22%)	4 (5%)
All	All	4751/4766 (99%)	909 (19%)	311 (6%)

5 of 909 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	AA	8	A
1	AA	32	A
1	AA	36	C
1	AA	47	C
1	AA	48	C

5 of 311 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
26	BB	1778	U
26	BB	2602	A
26	BB	1927	A
26	BB	2223	G
26	BB	2791	G

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

49 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
26	6MZ	BB	1618	26	18,25,26	1.78	6 (33%)	16,36,39	1.68	3 (18%)



Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
26	PSU	BB	1917	26	18,21,22	1.98	2 (11%)	22,30,33	1.77	5 (22%)
26	OMU	BB	2552	26	19,22,23	1.35	3 (15%)	26,31,34	2.28	11 (42%)
1	UR3	AA	1498	1	19,22,23	1.26	3 (15%)	26,32,35	1.27	3 (11%)
2	H2U	AB	20	2	18,21,22	1.56	4 (22%)	21,30,33	1.87	7 (33%)
1	4OC	AA	1402	1	20,23,24	1.29	2 (10%)	26,32,35	1.12	2 (7%)
26	2MA	BB	2503	26	17,25,26	1.93	4 (23%)	17,37,40	1.26	2 (11%)
2	OMC	AB	32	2	19,22,23	1.20	2 (10%)	26,31,34	1.31	4 (15%)
2	4SU	AB	8	2	18,21,22	1.37	3 (16%)	26,30,33	1.66	6 (23%)
2	PSU	AB	55	2	18,21,22	1.53	3 (16%)	22,30,33	1.39	4 (18%)
2	7MG	AB	46	2	22,26,27	5.32	4 (18%)	29,39,42	1.92	4 (13%)
2	5MU	AB	54	2	19,22,23	1.56	4 (21%)	28,32,35	1.93	9 (32%)
26	5MU	BB	747	26	19,22,23	1.58	4 (21%)	28,32,35	2.85	8 (28%)
26	PSU	BB	2605	26	18,21,22	1.98	5 (27%)	22,30,33	2.36	7 (31%)
1	2MG	AA	966	1	18,26,27	1.16	1 (5%)	16,38,41	1.00	0
26	PSU	BB	746	26	18,21,22	1.90	6 (33%)	22,30,33	1.28	3 (13%)
26	5MC	BB	1962	26	18,22,23	1.10	2 (11%)	26,32,35	1.52	3 (11%)
1	5MC	AA	1407	1	18,22,23	1.27	1 (5%)	26,32,35	1.67	10 (38%)
1	5MC	AA	967	1	18,22,23	1.39	3 (16%)	26,32,35	1.86	5 (19%)
26	CH	BB	2575	26	16,21,22	1.85	5 (31%)	20,30,33	1.80	5 (25%)
26	7MG	BB	2069	26	22,26,27	3.61	6 (27%)	29,39,42	1.82	4 (13%)
1	MA6	AA	1518	1	19,26,27	1.32	2 (10%)	18,38,41	1.62	5 (27%)
4	4SU	AD	8	4	18,21,22	2.10	5 (27%)	26,30,33	1.68	7 (26%)
1	2MG	AA	1207	1	18,26,27	1.67	5 (27%)	16,38,41	2.04	5 (31%)
26	6MZ	BB	2030	26	18,25,26	1.48	4 (22%)	16,36,39	1.76	3 (18%)
4	5MU	AD	55	4	19,22,23	1.46	2 (10%)	28,32,35	1.88	7 (25%)
4	OMC	AD	33	4	19,22,23	0.91	0	26,31,34	1.83	5 (19%)
26	3TD	BB	1915	26	18,22,23	1.32	2 (11%)	22,32,35	1.20	2 (9%)
26	PSU	BB	2504	26	18,21,22	1.85	4 (22%)	22,30,33	1.65	5 (22%)
26	H2U	BB	2449	26	18,21,22	1.51	2 (11%)	21,30,33	1.85	5 (23%)
2	MIA	AB	37	2	24,31,32	2.36	9 (37%)	26,44,47	2.16	6 (23%)
1	7MG	AA	527	1	22,26,27	4.77	4 (18%)	29,39,42	1.96	7 (24%)
26	PSU	BB	2580	26	18,21,22	2.07	7 (38%)	22,30,33	1.95	6 (27%)
1	PSU	AA	516	1	18,21,22	1.99	7 (38%)	22,30,33	3.00	13 (59%)
26	PSU	BB	955	26	18,21,22	1.78	5 (27%)	22,30,33	1.70	6 (27%)
1	MA6	AA	1519	1	19,26,27	1.52	4 (21%)	18,38,41	1.54	4 (22%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
2	H2U	AB	17	2	18,21,22	1.42	2 (11%)	21,30,33	2.16	5 (23%)
1	2MG	AA	1516	1	18,26,27	2.24	10 (55%)	16,38,41	1.33	3 (18%)
26	PSU	BB	1911	26	18,21,22	1.80	4 (22%)	22,30,33	1.22	2 (9%)
26	OMC	BB	2498	26	19,22,23	1.21	2 (10%)	26,31,34	1.64	5 (19%)
4	PSU	AD	56	4	18,21,22	1.48	3 (16%)	22,30,33	1.31	1 (4%)
4	H2U	AD	21	4	18,21,22	1.57	2 (11%)	21,30,33	1.55	5 (23%)
26	OMG	BB	2251	26	18,26,27	1.70	4 (22%)	19,38,41	1.43	2 (10%)
26	2MG	BB	2445	26	18,26,27	1.92	4 (22%)	16,38,41	1.23	1 (6%)
26	2MG	BB	1835	26	18,26,27	1.45	3 (16%)	16,38,41	1.66	5 (31%)
26	PSU	BB	2457	26	18,21,22	2.10	5 (27%)	22,30,33	1.70	4 (18%)
26	1MG	BB	745	26	18,26,27	1.62	4 (22%)	19,39,42	1.84	6 (31%)
26	5MU	BB	1939	26	19,22,23	1.54	5 (26%)	28,32,35	2.02	8 (28%)
2	H2U	AB	16	2	18,21,22	1.22	2 (11%)	21,30,33	2.19	9 (42%)

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
26	6MZ	BB	1618	26	-	0/5/27/28	0/3/3/3
26	PSU	BB	1917	26	-	1/7/25/26	0/2/2/2
26	OMU	BB	2552	26	-	0/9/27/28	0/2/2/2
1	UR3	AA	1498	1	-	0/7/25/26	0/2/2/2
2	H2U	AB	20	2	-	2/7/38/39	0/2/2/2
1	4OC	AA	1402	1	-	0/9/29/30	0/2/2/2
26	2MA	BB	2503	26	-	0/3/25/26	0/3/3/3
2	OMC	AB	32	2	-	0/9/27/28	0/2/2/2
2	4SU	AB	8	2	-	5/7/25/26	0/2/2/2
2	PSU	AB	55	2	-	2/7/25/26	0/2/2/2
2	7MG	AB	46	2	-	2/7/37/38	0/3/3/3
2	5MU	AB	54	2	-	0/7/25/26	0/2/2/2
26	5MU	BB	747	26	-	0/7/25/26	0/2/2/2
26	PSU	BB	2605	26	-	3/7/25/26	0/2/2/2
1	2MG	AA	966	1	-	0/5/27/28	0/3/3/3
26	PSU	BB	746	26	-	1/7/25/26	0/2/2/2
26	5MC	BB	1962	26	-	1/7/25/26	0/2/2/2
1	5MC	AA	1407	1	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	5MC	AA	967	1	-	0/7/25/26	0/2/2/2
26	CH	BB	2575	26	-	0/5/25/26	0/2/2/2
26	7MG	BB	2069	26	-	0/7/37/38	0/3/3/3
1	MA6	AA	1518	1	-	0/7/29/30	0/3/3/3
4	4SU	AD	8	4	-	0/7/25/26	0/2/2/2
1	2MG	AA	1207	1	-	0/5/27/28	0/3/3/3
26	6MZ	BB	2030	26	-	0/5/27/28	0/3/3/3
4	5MU	AD	55	4	-	0/7/25/26	0/2/2/2
4	OMC	AD	33	4	-	0/9/27/28	0/2/2/2
26	3TD	BB	1915	26	-	0/7/25/26	0/2/2/2
26	PSU	BB	2504	26	-	0/7/25/26	0/2/2/2
26	H2U	BB	2449	26	-	0/7/38/39	0/2/2/2
2	MIA	AB	37	2	-	2/11/33/34	0/3/3/3
1	7MG	AA	527	1	-	1/7/37/38	0/3/3/3
26	PSU	BB	2580	26	-	0/7/25/26	0/2/2/2
1	PSU	AA	516	1	-	4/7/25/26	0/2/2/2
26	PSU	BB	955	26	-	0/7/25/26	0/2/2/2
1	MA6	AA	1519	1	-	0/7/29/30	0/3/3/3
2	H2U	AB	17	2	-	1/7/38/39	0/2/2/2
1	2MG	AA	1516	1	-	0/5/27/28	0/3/3/3
26	PSU	BB	1911	26	-	1/7/25/26	0/2/2/2
26	OMC	BB	2498	26	-	0/9/27/28	0/2/2/2
4	PSU	AD	56	4	-	0/7/25/26	0/2/2/2
4	H2U	AD	21	4	-	3/7/38/39	0/2/2/2
26	OMG	BB	2251	26	-	0/5/27/28	0/3/3/3
26	2MG	BB	2445	26	-	0/5/27/28	0/3/3/3
26	2MG	BB	1835	26	-	0/5/27/28	0/3/3/3
26	PSU	BB	2457	26	-	0/7/25/26	0/2/2/2
26	1MG	BB	745	26	-	0/3/25/26	0/3/3/3
26	5MU	BB	1939	26	-	0/7/25/26	0/2/2/2
2	H2U	AB	16	2	-	0/7/38/39	0/2/2/2

The worst 5 of 185 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	AB	46	7MG	C8-N9	-24.11	1.32	1.46
1	AA	527	7MG	C8-N9	-21.69	1.33	1.46
26	BB	2069	7MG	C8-N9	-15.54	1.37	1.46
2	AB	37	MIA	C2-S10	-8.16	1.68	1.75
26	BB	1917	PSU	C2-N1	7.04	1.46	1.36

The worst 5 of 247 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
26	BB	747	5MU	C6-C5-C4	9.28	125.79	118.03
1	AA	516	PSU	C6-C5-C4	8.98	124.48	118.20
26	BB	2605	PSU	C6-C5-C4	8.50	124.14	118.20
26	BB	2069	7MG	N9-C8-N7	7.05	113.46	103.38
26	BB	747	5MU	C5M-C5-C6	-7.05	113.44	122.85

There are no chirality outliers.

5 of 29 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	AA	516	PSU	C2'-C1'-C5-C4
1	AA	516	PSU	C2'-C1'-C5-C6
2	AB	8	4SU	C2'-C1'-N1-C2
2	AB	8	4SU	C2'-C1'-N1-C6
26	BB	746	PSU	O4'-C1'-C5-C6

There are no ring outliers.

No monomer is involved in short contacts.

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

2 ligands 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
60	FME	BB	3001	59	8,9,10	1.23	2 (25%)	7,9,11	1.40	1 (14%)
59	TRP	AB	101	2,60	14,15,16	1.99	3 (21%)	13,20,22	2.27	5 (38%)

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
60	FME	BB	3001	59	-	2/7/9/11	-
59	TRP	AB	101	2,60	-	0/5/6/8	0/2/2/2

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
59	AB	101	TRP	OXT-C	-5.01	1.21	1.42
59	AB	101	TRP	CH2-CZ2	3.05	1.43	1.36
59	AB	101	TRP	C-CA	2.83	1.57	1.52
60	BB	3001	FME	CB-CG	2.21	1.60	1.51
60	BB	3001	FME	CE-SD	2.14	1.91	1.78

The worst 5 of 6 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
59	AB	101	TRP	CH2-CZ3-CE3	4.81	127.18	120.44
59	AB	101	TRP	CZ3-CH2-CZ2	-3.88	115.00	120.44
59	AB	101	TRP	CE3-CD2-CE2	-2.82	114.43	118.17
59	AB	101	TRP	CZ2-CE2-CD2	2.30	124.96	120.76
59	AB	101	TRP	CD2-CE2-NE1	-2.04	103.39	107.92

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
60	BB	3001	FME	O1-CN-N-CA
60	BB	3001	FME	CB-CA-N-CN

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers

There are no such residues in this entry.

## 5.8 Polymer linkage issues

The following chains have linkage breaks:

Mol	Chain	Number of breaks
26	BB	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	BB	2677:G	O3'	2678:C	P	1.76

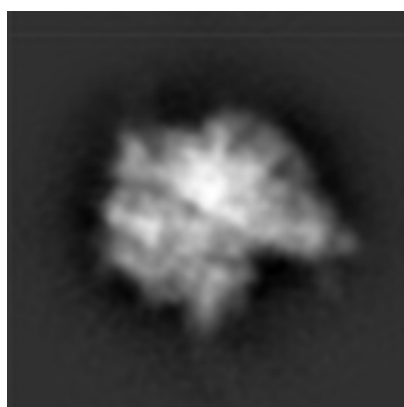
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-5364. These allow visual inspection of the internal detail of the map and identification of artifacts.

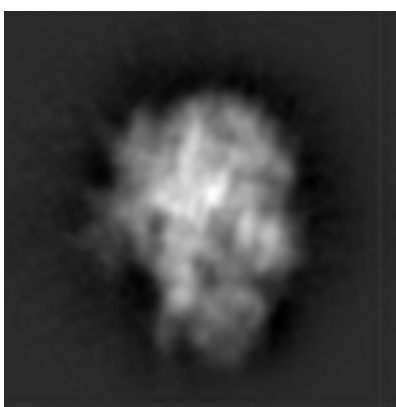
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

### 6.1 Orthogonal projections [i](#)

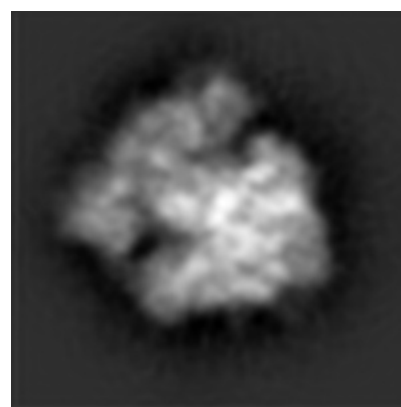
#### 6.1.1 Primary map



X



Y

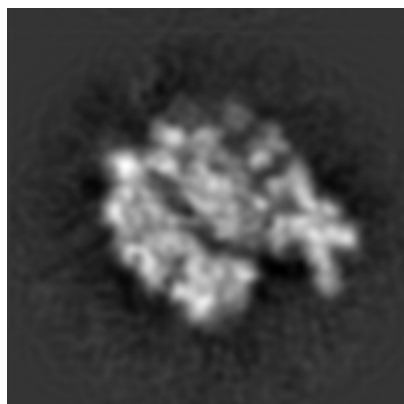


Z

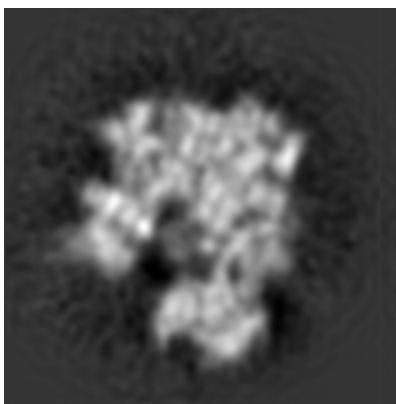
The images above show the map projected in three orthogonal directions.

### 6.2 Central slices [i](#)

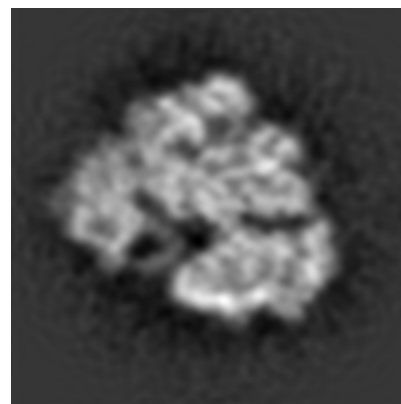
#### 6.2.1 Primary map



X Index: 125



Y Index: 125

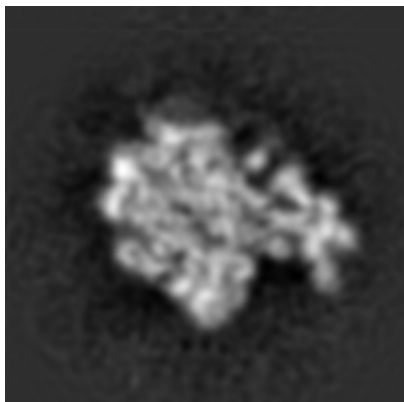


Z Index: 125

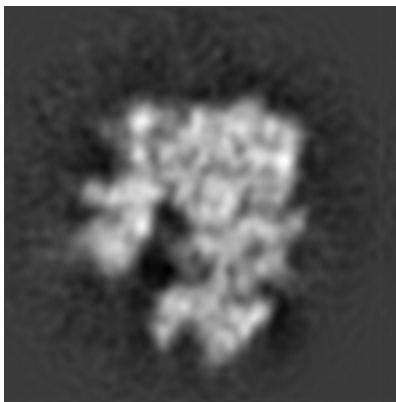
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

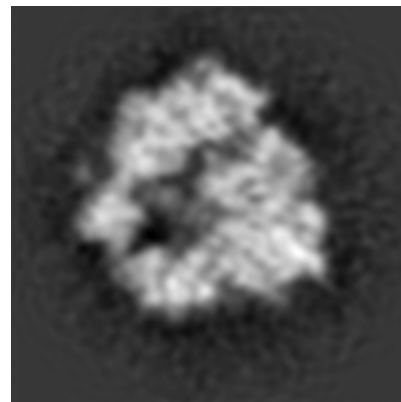
### 6.3.1 Primary map



X Index: 130



Y Index: 130



Z Index: 114

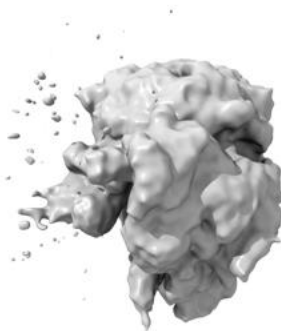
The images above show the largest variance slices of the map in three orthogonal directions.

## 6.4 Orthogonal surface views [i](#)

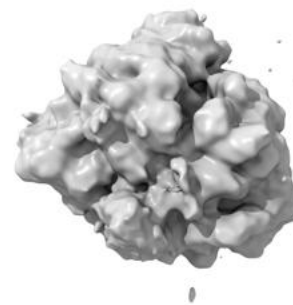
### 6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.1. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.



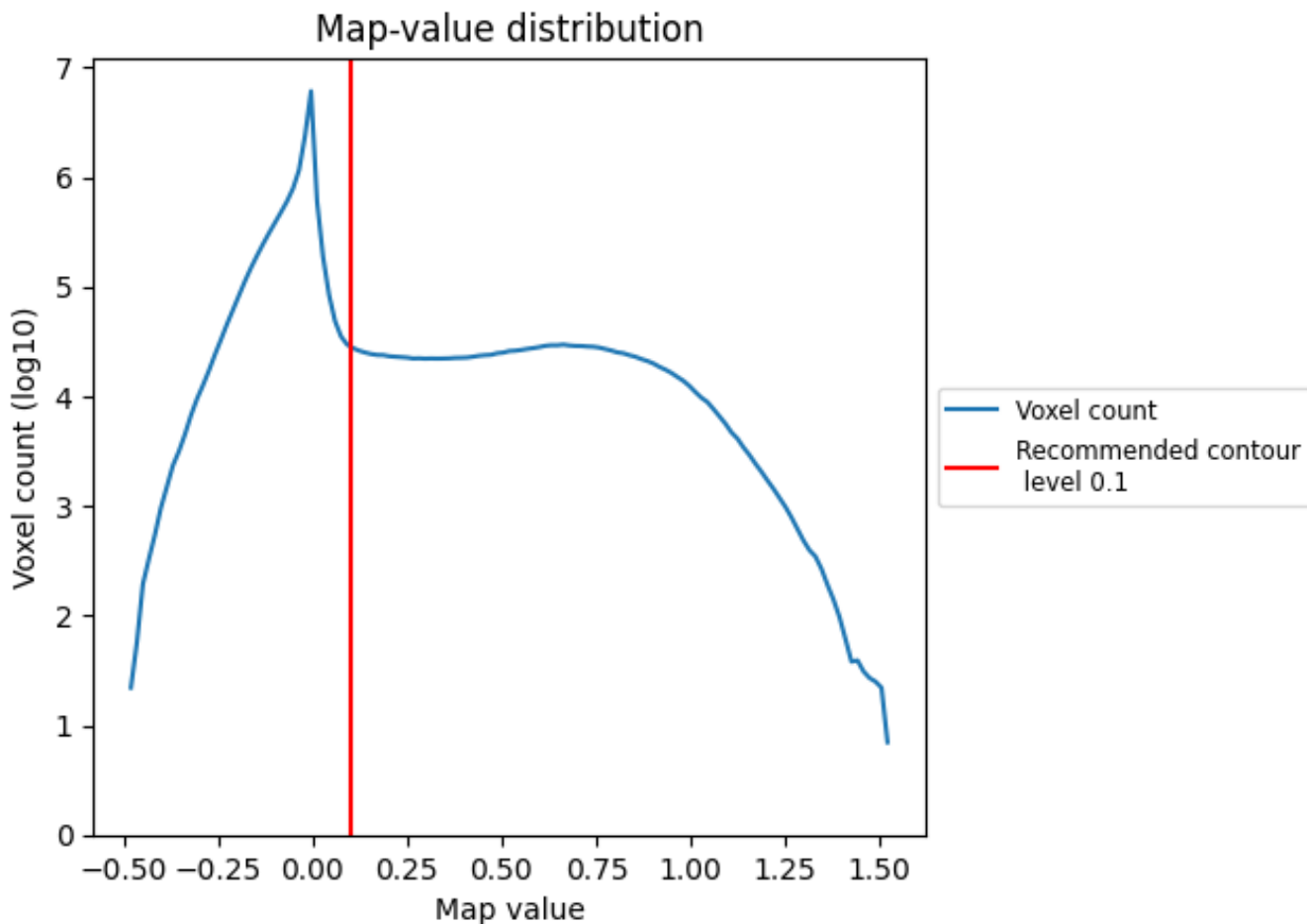
## 6.5 Mask visualisation

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

## 7 Map analysis [i](#)

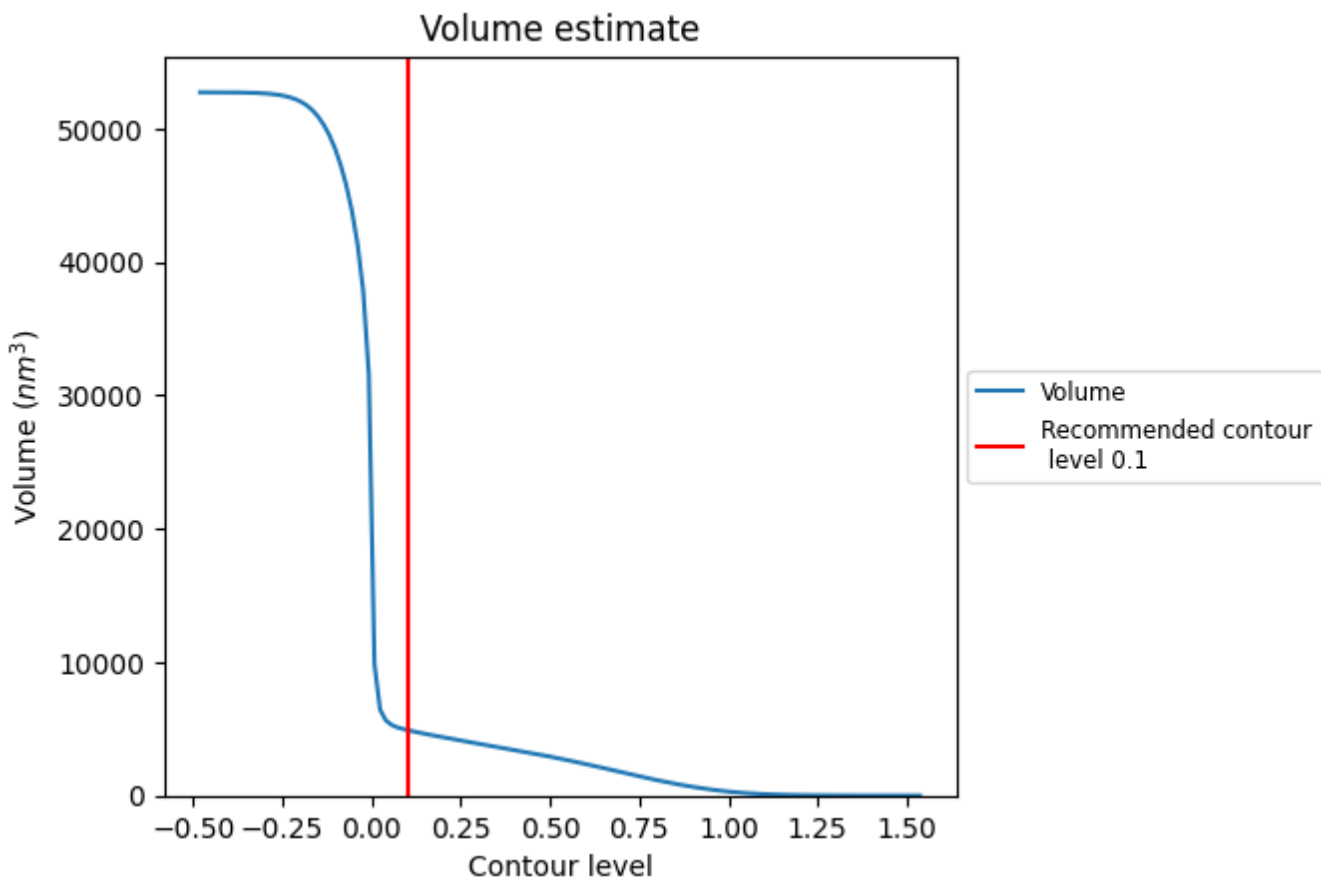
This section contains the results of statistical analysis of the map.

### 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.

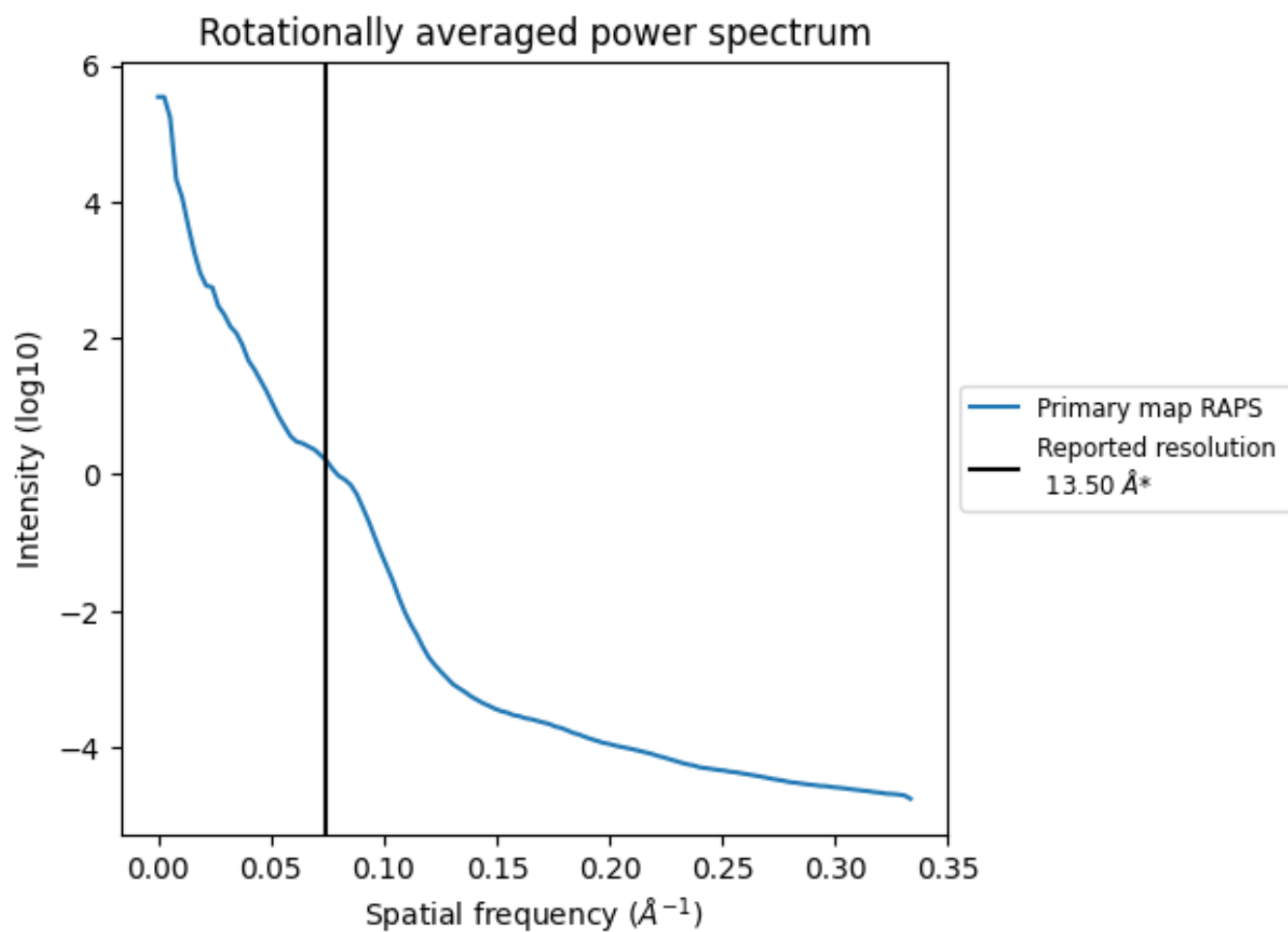
## 7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is  $4913 \text{ nm}^3$ ; this corresponds to an approximate mass of 4438 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 0.074 Å<sup>-1</sup>

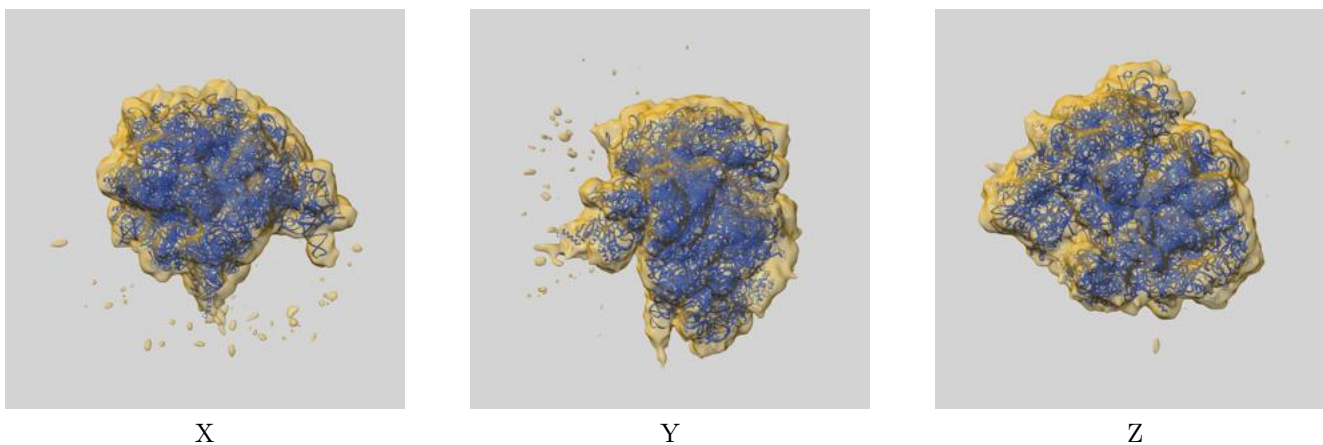
## 8 Fourier-Shell correlation

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

## 9 Map-model fit [i](#)

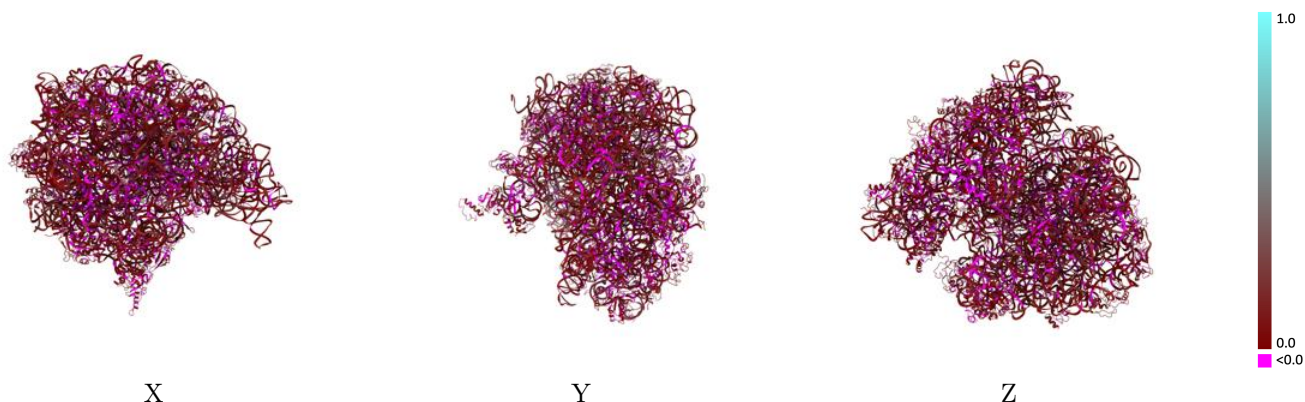
This section contains information regarding the fit between EMDB map EMD-5364 and PDB model 4V6P. Per-residue inclusion information can be found in section 3 on page 15.

### 9.1 Map-model overlay [i](#)



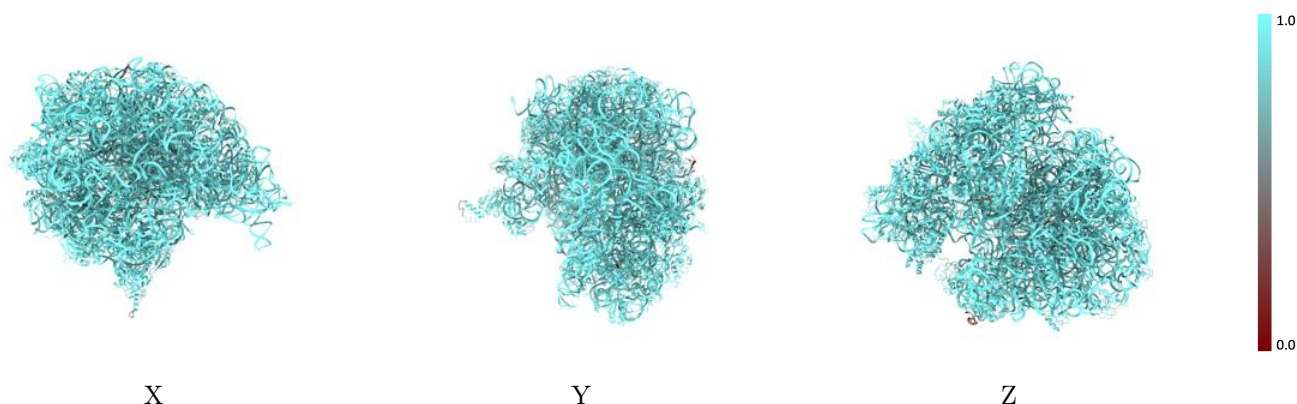
The images above show the 3D surface view of the map at the recommended contour level 0.1 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



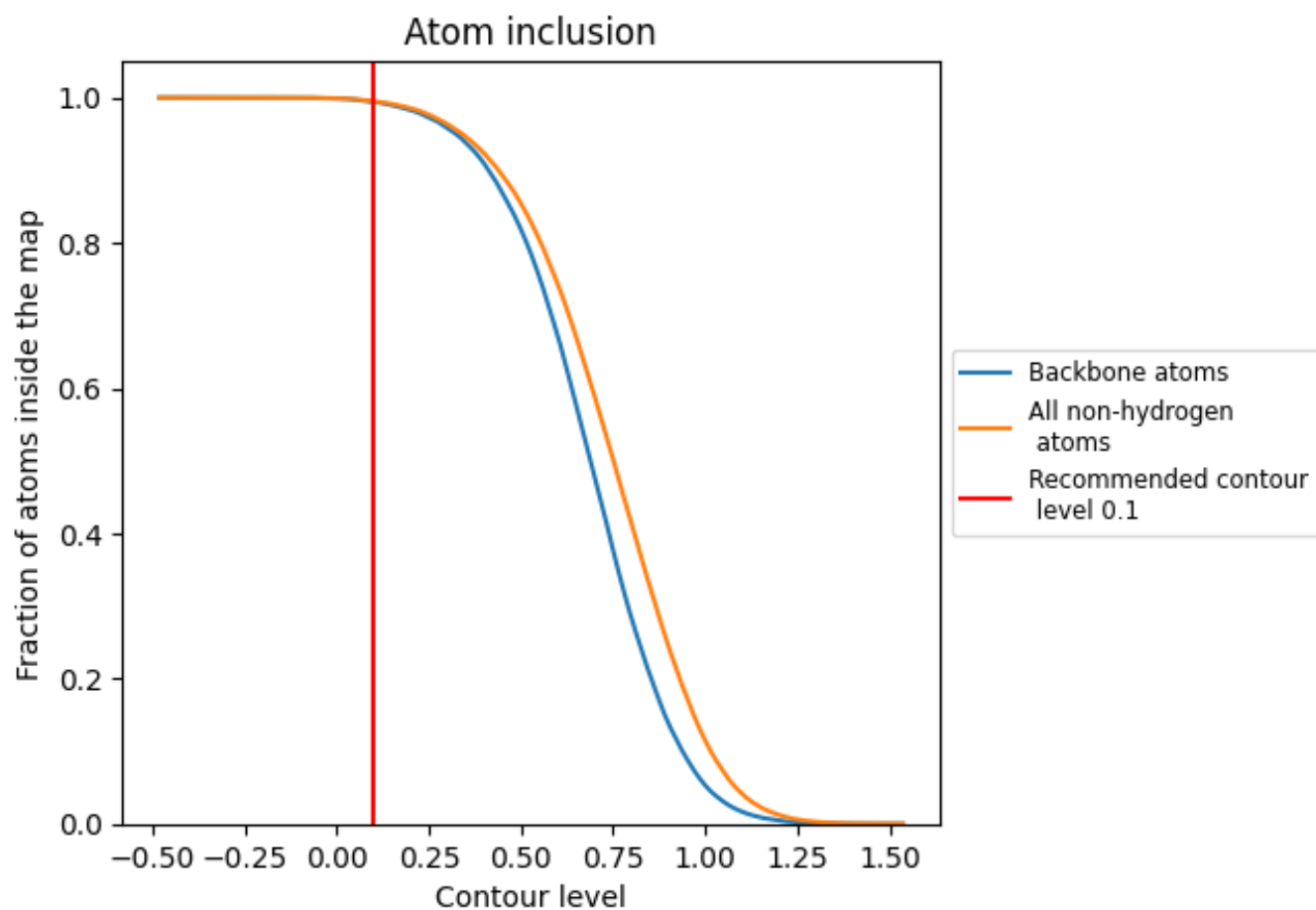
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.1).

## 9.4 Atom inclusion [i](#)



At the recommended contour level, 99% of all backbone atoms, 100% 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 (0.1) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9951	0.0640
AA	0.9993	0.0780
AB	0.9573	0.0490
AC	0.9194	-0.0060
AD	0.9464	0.0460
AE	0.9902	0.0400
AF	0.9989	0.0530
AG	1.0000	0.0350
AH	1.0000	0.0530
AI	0.9776	0.0440
AJ	1.0000	0.0500
AK	0.9958	0.0360
AL	0.9990	0.0480
AM	1.0000	0.0260
AN	1.0000	0.0430
AO	0.9913	0.0130
AP	1.0000	0.0490
AQ	1.0000	0.0080
AR	1.0000	0.0430
AS	1.0000	0.0320
AT	1.0000	0.0420
AU	1.0000	0.0630
AV	0.9564	0.0190
AW	1.0000	0.0310
AX	0.9839	0.0110
B0	1.0000	0.0200
B1	1.0000	0.0440
B2	0.9981	0.0410
B3	1.0000	0.0340
B4	1.0000	0.0440
B5	1.0000	0.0120
B6	1.0000	-0.0200
B7	1.0000	0.0490
BA	1.0000	0.0900
BB	0.9991	0.0820



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Chain	Atom inclusion	Q-score
BC	 0.9239	 0.0270
BD	 1.0000	 0.0120
BE	 1.0000	 0.0220
BF	 1.0000	 0.0580
BG	 1.0000	 0.0490
BH	 1.0000	 0.0260
BI	 0.9261	 0.0230
BJ	 0.9486	 0.0530
BK	 0.9795	 0.0350
BL	 1.0000	 0.0110
BM	 0.9957	 0.0340
BN	 1.0000	 0.0120
BO	 1.0000	 0.0240
BP	 1.0000	 0.0150
BQ	 0.9977	 0.0620
BR	 0.9944	 0.0170
BS	 0.9923	 0.0070
BT	 1.0000	 0.0430
BU	 1.0000	 0.0100
BV	 1.0000	 0.0120
BW	 0.9936	 0.0540
BX	 1.0000	 0.0680
BY	 0.9806	 -0.0030
BZ	 1.0000	 0.0140