



Full wwPDB EM Validation Report ⓘ

Oct 27, 2024 – 12:43 PM EDT

PDB ID : 6N8L
EMDB ID : EMD-0371
Title : Cryo-EM structure of early cytoplasmic-late (ECL) pre-60S ribosomal subunit
Authors : Zhou, Y.; Musalgaonkar, S.; Johnson, A.W.; Taylor, D.W.
Deposited on : 2018-11-29
Resolution : 3.60 Å (reported)
Based on initial model : 3JCT

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:

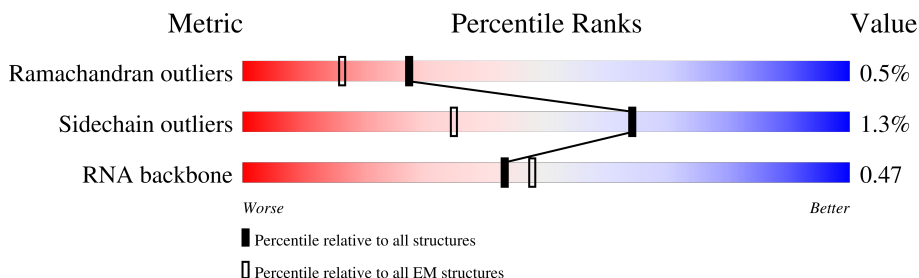
EMDB validation analysis : 0.0.1.dev113
MolProbity : 4.02b-467
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.39

1 Overall quality at a glance i

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

The reported resolution of this entry is 3.60 Å.

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



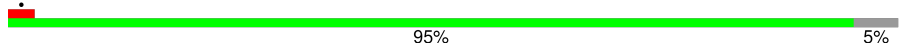

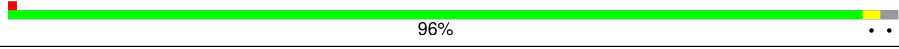

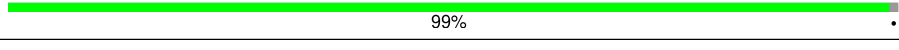

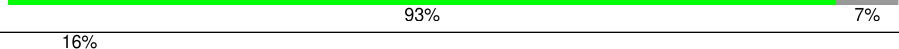
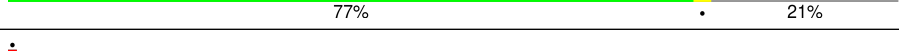
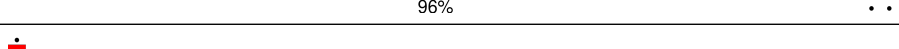
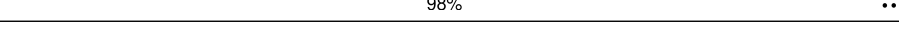
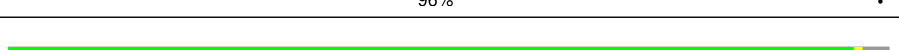
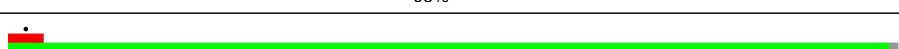
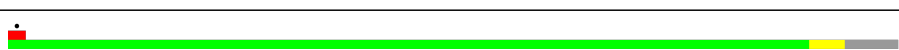
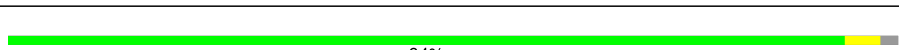
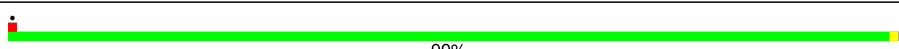
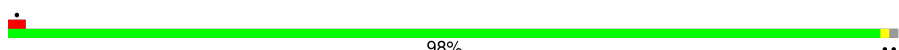
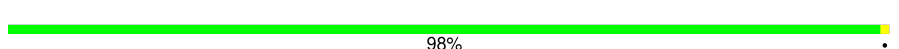

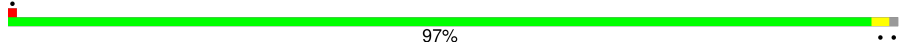
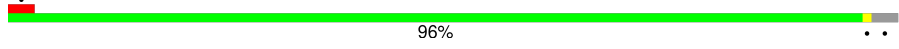
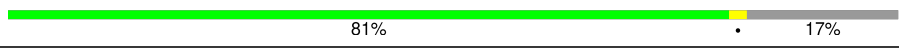
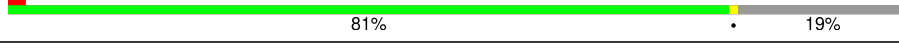
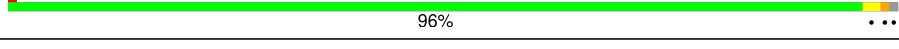


Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

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	v	518	
2	s	217	
3	A	254	
4	a	149	
5	B	387	
6	b	647	
7	C	362	
8	c	105	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
9	d	113	 95% 5%
10	E	176	 89% 9%
11	e	130	 96%
12	F	244	 89% 9%
13	f	107	 99%
14	G	256	 87% 10%
15	g	121	 93% 7%
16	I	166	 77% 21%
17	H	191	 96%
18	h	120	 98%
19	i	100	 96%
20	j	88	 95%
21	k	78	 99%
22	L	199	 90% 6%
23	l	51	 94%
24	M	138	 99%
25	p	92	 98%
26	N	204	 98%
27	u	199	 70% 5% 25%
28	O	199	 97%
29	P	184	 96%
30	Q	186	 81% 17%
31	R	189	 81% 19%
32	S	172	 96%
33	T	160	 36% 62%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
34	U	121	84% 14%
35	V	137	99%
36	W	236	23% 55% 44%
37	X	142	84% 15%
38	Y	127	98%
39	y	245	91% 8%
40	Z	136	99%
41	z	106	24% 52% 48%
42	D	297	81% 15%
43	J	174	90% 6%
44	q	106	47% 78% 12% 8%
45	o	59	7% 88% 8%
46	1	3396	72% 21% 6%
47	2	121	88% 12%
48	3	158	80% 17%

2 Entry composition [i](#)

There are 48 unique types of molecules in this entry. The entry contains 129926 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called 60S ribosomal export protein NMD3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	v	362	2783	1770	472	522	19	0	0

- Molecule 2 is a protein called Ribosomal Protein uL1.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
2	s	210	1050	630	210	210	0	0

- Molecule 3 is a protein called 60S ribosomal protein L2-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	A	245	1863	1162	376	324	1	0	0

- Molecule 4 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	a	94	742	484	131	126	1	0	0

- Molecule 5 is a protein called 60S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	B	386	3081	1956	584	533	8	0	0

- Molecule 6 is a protein called Nucleolar GTP-binding protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	b	248	1989	1222	372	387	8	0	0

- Molecule 7 is a protein called 60S ribosomal protein L4-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	C	361	Total	C	N	O	S	0	0
			2749	1730	522	494	3		

- Molecule 8 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	c	97	Total	C	N	O	S	0	0
			743	479	124	139	1		

- Molecule 9 is a protein called 60S ribosomal protein L31-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	d	107	Total	C	N	O	S	0	0
			873	553	165	154	1		

- Molecule 10 is a protein called 60S ribosomal protein L6-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	E	160	Total	C	N	O	S	0	0
			1270	818	229	222	1		

- Molecule 11 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	e	127	Total	C	N	O	S	0	0
			1020	647	205	167	1		

- Molecule 12 is a protein called 60S ribosomal protein L7-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	F	222	Total	C	N	O	S	0	0
			1784	1151	324	308	1		

- Molecule 13 is a protein called 60S ribosomal protein L33-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	f	106	Total	C	N	O	S	0	0
			850	540	165	144	1		

- Molecule 14 is a protein called 60S ribosomal protein L8-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	G	230	Total	C	N	O	S	0	0
			1798	1149	323	323	3		

- Molecule 15 is a protein called 60S ribosomal protein L34-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	g	112	Total	C	N	O	S	0	0
			881	546	179	152	4		

- Molecule 16 is a protein called Bud site selection protein 20.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	I	131	Total	C	N	O	S	0	0
			1056	660	195	198	3		

- Molecule 17 is a protein called 60S ribosomal protein L9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	H	188	Total	C	N	O	S	0	0
			1493	948	271	270	4		

- Molecule 18 is a protein called 60S ribosomal protein L35-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	h	119	Total	C	N	O	S	0	0
			969	615	186	167	1		

- Molecule 19 is a protein called 60S ribosomal protein L36-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	i	96	Total	C	N	O	S	0	0
			743	465	148	128	2		

- Molecule 20 is a protein called 60S ribosomal protein L37-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	j	85	Total	C	N	O	S	0	0
			670	408	146	111	5		

- Molecule 21 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms				AltConf	Trace
21	k	77	Total	C	N	O	0	0
			612	391	115	106		

- Molecule 22 is a protein called 60S ribosomal protein L13-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
22	L	187	Total	C	N	O	0	0
			1491	929	306	256		

- Molecule 23 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	l	50	Total	C	N	O	S	0	0
			436	272	97	65	2		

- Molecule 24 is a protein called 60S ribosomal protein L14-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	M	137	Total	C	N	O	S	0	0
			1059	678	200	179	2		

- Molecule 25 is a protein called 60S ribosomal protein L43-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	p	91	Total	C	N	O	S	0	0
			694	429	138	121	6		

- Molecule 26 is a protein called 60S ribosomal protein L15-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	N	203	Total	C	N	O	S	0	0
			1720	1077	361	281	1		

- Molecule 27 is a protein called Ribosome biogenesis protein RLP24.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	u	149	Total	C	N	O	S	0	0
			1256	788	252	207	9		

- Molecule 28 is a protein called 60S ribosomal protein L16-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	O	197	Total	C	N	O	S	0	0
			1555	1003	289	262	1		

- Molecule 29 is a protein called 60S ribosomal protein L17-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	P	178	Total	C	N	O		0	0
			1409	876	281	252			

- Molecule 30 is a protein called 60S ribosomal protein L18-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Q	154	Total	C	N	O	S	0	0
			1191	753	231	205	2		

- Molecule 31 is a protein called 60S ribosomal protein L19-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	R	154	Total	C	N	O		0	0
			1241	772	262	207			

- Molecule 32 is a protein called 60S ribosomal protein L20-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	S	170	Total	C	N	O	S	0	0
			1425	916	265	241	3		

- Molecule 33 is a protein called 60S ribosomal protein L21-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	T	61	Total	C	N	O	S	0	0
			476	295	95	85	1		

- Molecule 34 is a protein called 60S ribosomal protein L22-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	U	104	Total	C	N	O		0	0
			826	535	136	155			

- Molecule 35 is a protein called 60S ribosomal protein L23-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
35	V	136	1003	628	189	179	7	0	0

- Molecule 36 is a protein called Ribosome assembly factor MRT4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
36	W	133	1053	660	177	214	2	0	0

- Molecule 37 is a protein called 60S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
37	X	120	959	617	168	172	2	0	0

- Molecule 38 is a protein called 60S ribosomal protein L26-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
38	Y	126	993	625	192	176	0	0

- Molecule 39 is a protein called Eukaryotic translation initiation factor 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
39	y	225	1698	1054	295	343	6	0	0

- Molecule 40 is a protein called 60S ribosomal protein L27-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
40	Z	135	1092	710	202	180	0	0

- Molecule 41 is a protein called UPF0642 protein YBL028C.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
41	z	55	444	273	88	83	0	0

- Molecule 42 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	D	251	1983	1253	353	375	2	0	0

- Molecule 43 is a protein called 60S ribosomal protein L11-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
43	J	164	1304	816	243	242	3	0	0

- Molecule 44 is a protein called 60S ribosomal protein L42-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
44	q	97	783	493	158	127	5	0	0

- Molecule 45 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
45	o	54	433	271	94	68	0	0

- Molecule 46 is a RNA chain called *Saccharomyces cerevisiae* S288C 35S pre-ribosomal RNA (RDN37-1), miscRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
46	1	3201	68471	30584	12345	22341	3201	0	0

- Molecule 47 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
47	2	121	2579	1152	461	845	121	0	0

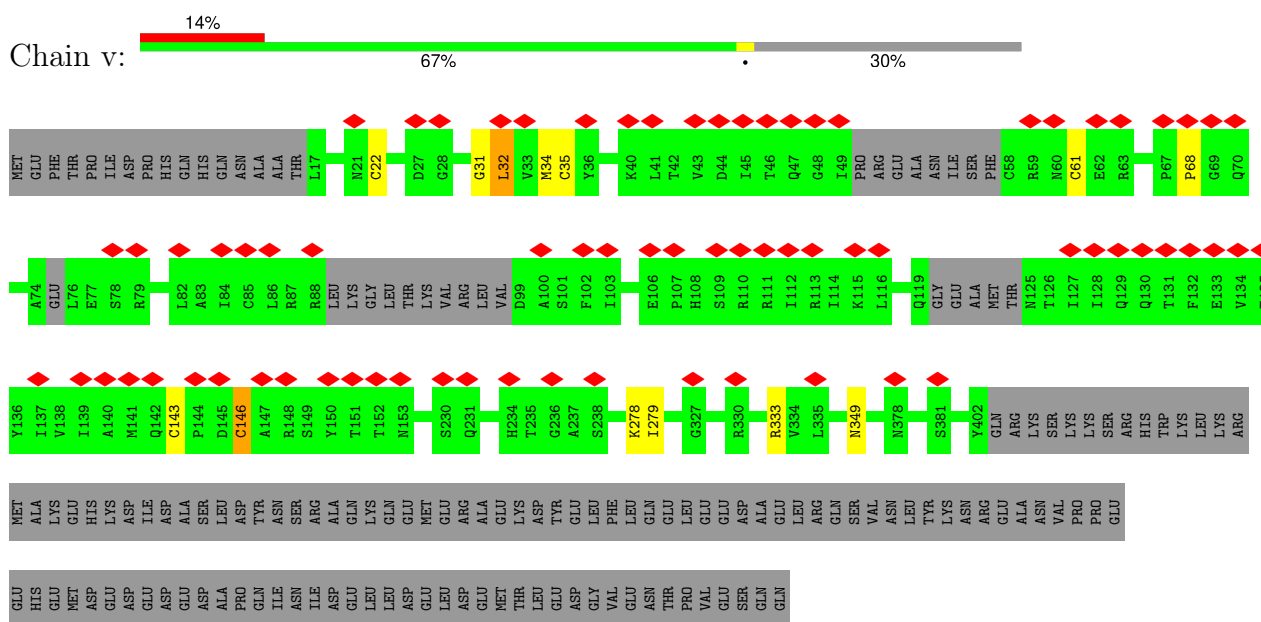
- Molecule 48 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
48	3	157	3333	1491	584	1101	157	0	0

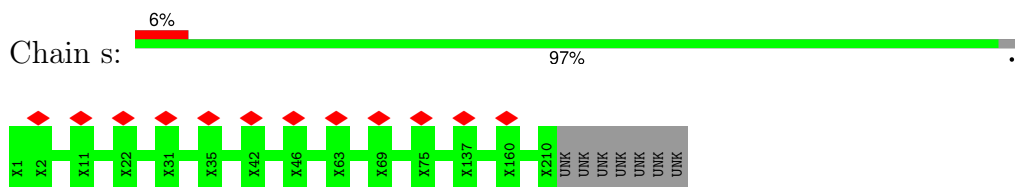
3 Residue-property plots [i](#)

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

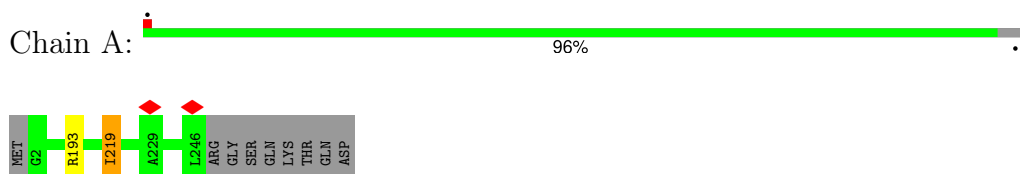
- Molecule 1: 60S ribosomal export protein NMD3



- Molecule 2: Ribosomal Protein uL1



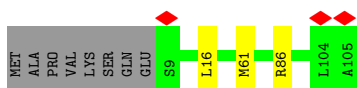
- Molecule 3: 60S ribosomal protein L2-A



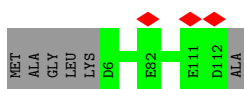
- Molecule 4: 60S ribosomal protein L28



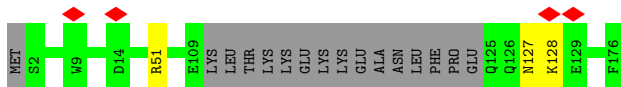
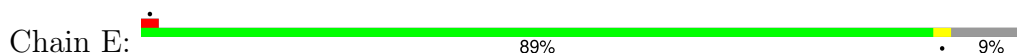
- Molecule 8: 60S ribosomal protein L30



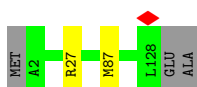
- Molecule 9: 60S ribosomal protein L31-A



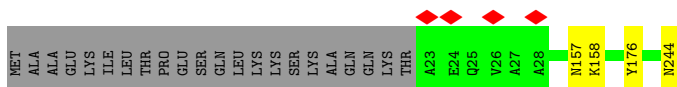
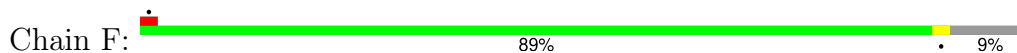
- Molecule 10: 60S ribosomal protein L6-A



- Molecule 11: 60S ribosomal protein L32



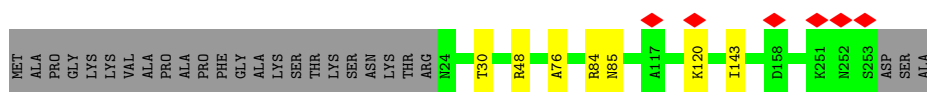
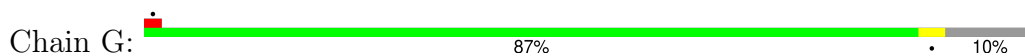
- Molecule 12: 60S ribosomal protein L7-A



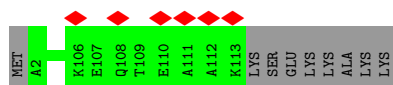
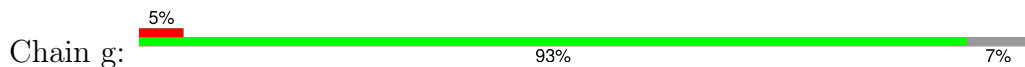
- Molecule 13: 60S ribosomal protein L33-A



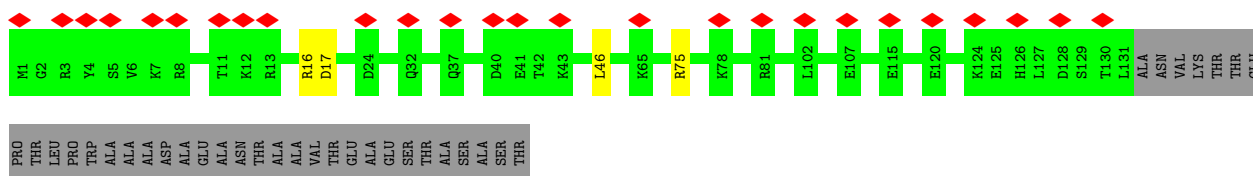
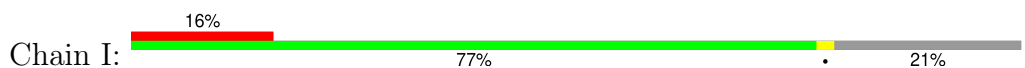
• Molecule 14: 60S ribosomal protein L8-A



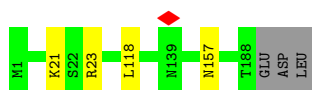
• Molecule 15: 60S ribosomal protein L34-A



• Molecule 16: Bud site selection protein 20



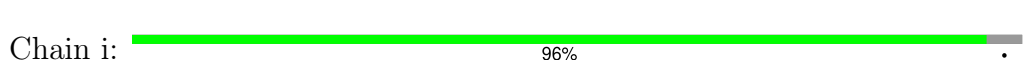
• Molecule 17: 60S ribosomal protein L9-A



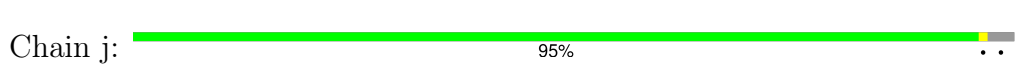
• Molecule 18: 60S ribosomal protein L35-A



• Molecule 19: 60S ribosomal protein L36-A



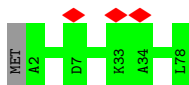
• Molecule 20: 60S ribosomal protein L37-A





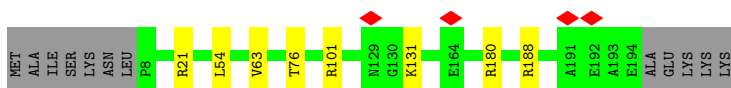
- Molecule 21: 60S ribosomal protein L38

Chain k: 99%



- Molecule 22: 60S ribosomal protein L13-A

Chain L: 90% 6%



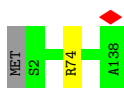
- Molecule 23: 60S ribosomal protein L39

Chain l: 94%



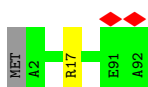
- Molecule 24: 60S ribosomal protein L14-A

Chain M: 99%



- Molecule 25: 60S ribosomal protein L43-A

Chain p: 98%

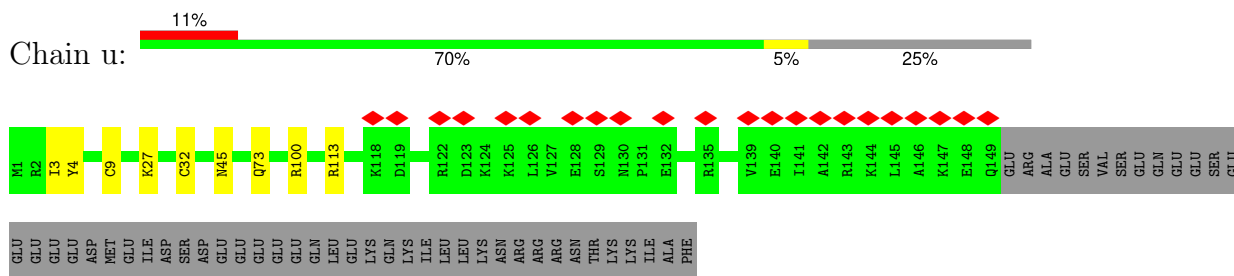


- Molecule 26: 60S ribosomal protein L15-A

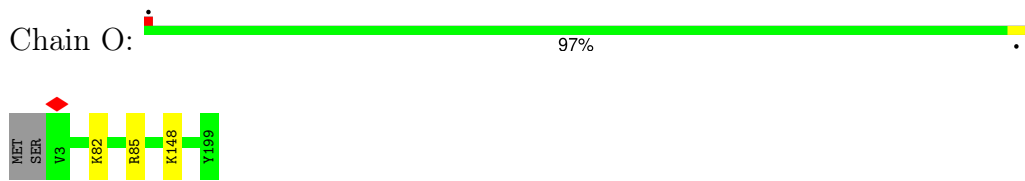
Chain N: 98%



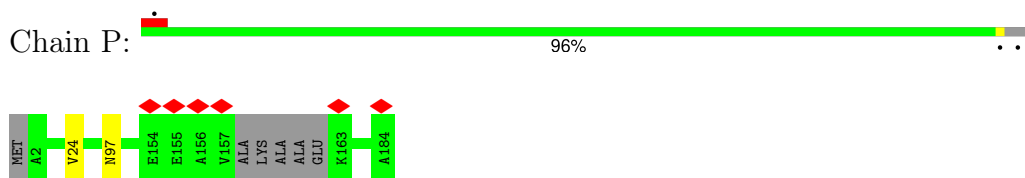
- Molecule 27: Ribosome biogenesis protein RLP24



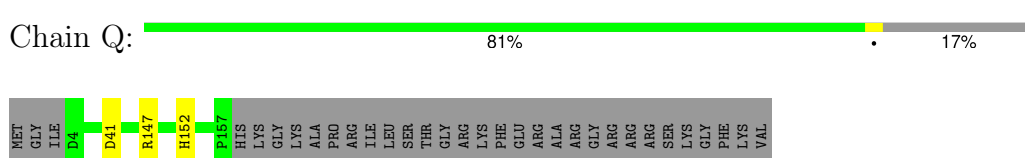
• Molecule 28: 60S ribosomal protein L16-A



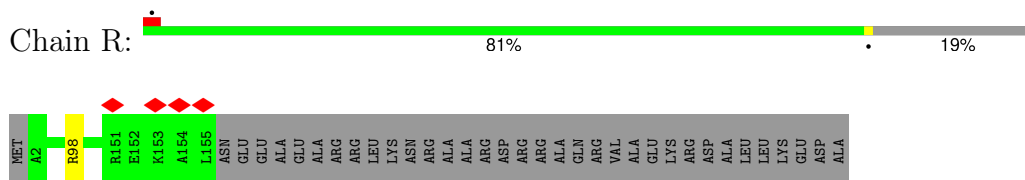
• Molecule 29: 60S ribosomal protein L17-A



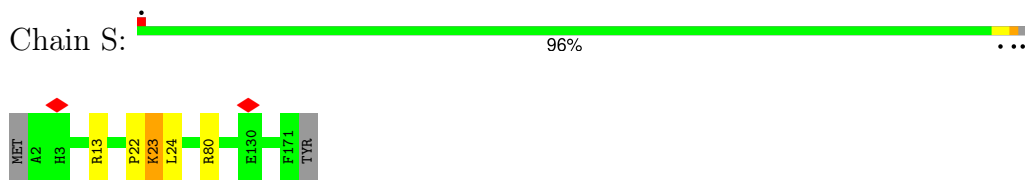
• Molecule 30: 60S ribosomal protein L18-A



• Molecule 31: 60S ribosomal protein L19-A

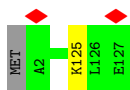


• Molecule 32: 60S ribosomal protein L20-A

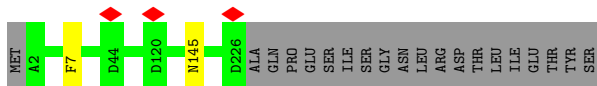
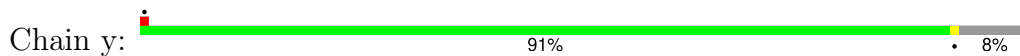


• Molecule 33: 60S ribosomal protein L21-A

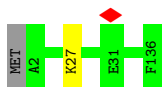




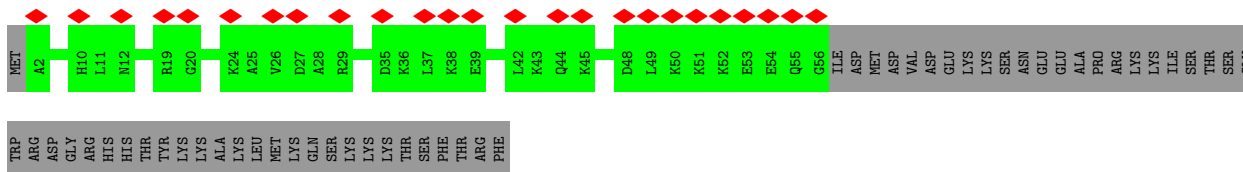
- Molecule 39: Eukaryotic translation initiation factor 6



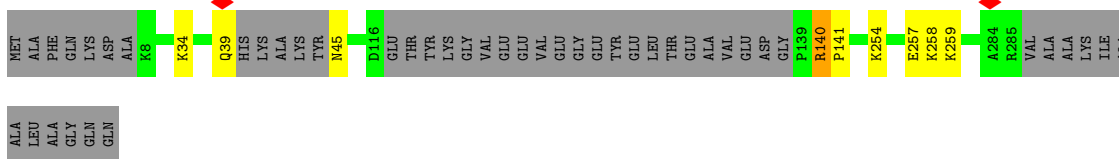
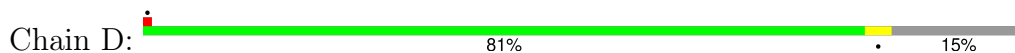
- Molecule 40: 60S ribosomal protein L27-A



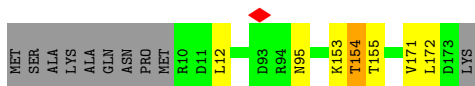
- Molecule 41: UPF0642 protein YBL028C



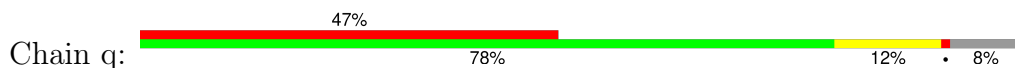
- Molecule 42: 60S ribosomal protein L5

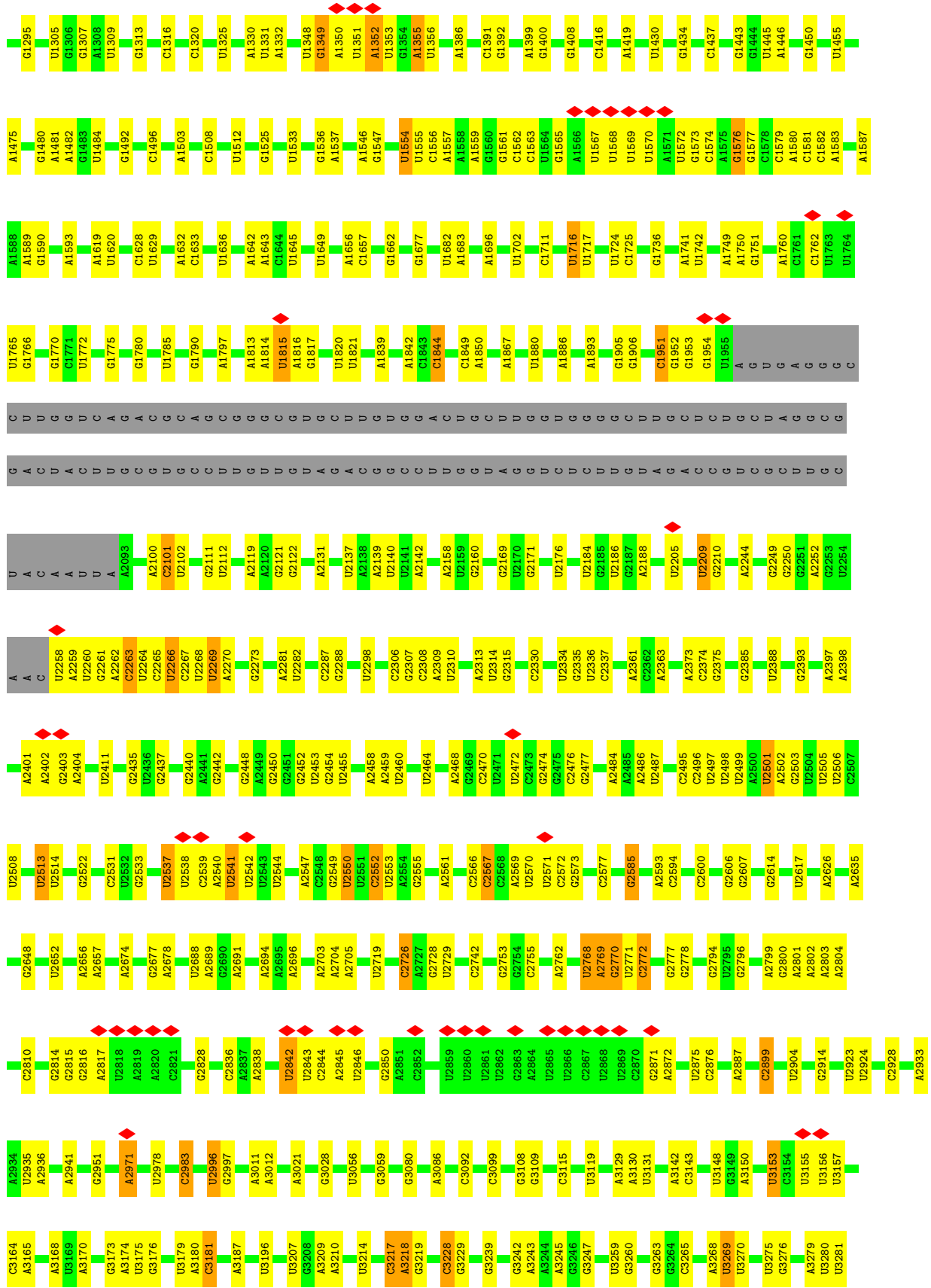


- Molecule 43: 60S ribosomal protein L11-A



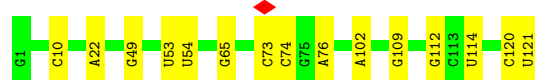
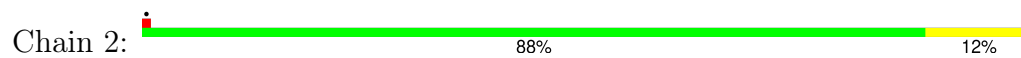
- Molecule 44: 60S ribosomal protein L42-A



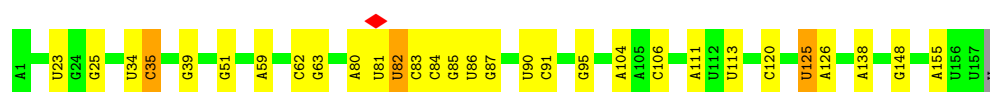
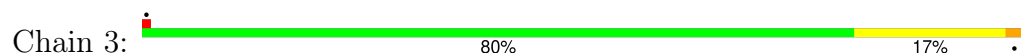




- Molecule 47: 5S rRNA



- Molecule 48: 5.8S rRNA



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	42030	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	40	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	22500	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.145	Depositor
Minimum map value	-0.077	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.007	Depositor
Recommended contour level	0.02	Depositor
Map size (\AA)	422.40002, 422.40002, 422.40002	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.1, 1.1, 1.1	Depositor

5 Model quality i

5.1 Standard geometry i

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	v	0.40	0/2831	0.68	4/3847 (0.1%)
3	A	0.46	0/1897	0.65	0/2550
4	a	0.43	0/758	0.53	0/1023
5	B	0.47	0/3152	0.66	1/4239 (0.0%)
6	b	0.30	0/2016	0.59	0/2692
7	C	0.41	0/2801	0.60	0/3792
8	c	0.41	0/751	0.56	0/1008
9	d	0.44	0/887	0.58	0/1191
10	E	0.37	0/1291	0.57	0/1735
11	e	0.39	0/1041	0.55	0/1394
12	F	0.42	0/1821	0.60	2/2451 (0.1%)
13	f	0.48	0/868	0.53	0/1168
14	G	0.41	0/1830	0.64	1/2469 (0.0%)
15	g	0.44	0/891	0.59	0/1191
16	I	0.31	0/1072	0.58	1/1440 (0.1%)
17	H	0.38	0/1514	0.57	1/2039 (0.0%)
18	h	0.36	0/978	0.56	0/1301
19	i	0.36	0/749	0.58	0/995
20	j	0.45	0/685	0.62	0/908
21	k	0.37	0/618	0.56	0/826
22	L	0.41	0/1516	0.62	0/2037
23	l	0.40	0/443	0.60	0/588
24	M	0.38	0/1074	0.53	0/1446
25	p	0.43	0/701	0.58	0/934
26	N	0.49	0/1757	0.60	1/2354 (0.0%)
27	u	0.39	0/1278	0.62	2/1699 (0.1%)
28	O	0.42	0/1585	0.54	0/2128
29	P	0.43	0/1431	0.56	0/1921
30	Q	0.40	0/1211	0.65	1/1633 (0.1%)
31	R	0.41	0/1258	0.59	0/1679
32	S	0.42	0/1460	0.58	0/1962
33	T	0.33	0/483	0.55	0/650
34	U	0.34	0/843	0.58	0/1143
35	V	0.43	0/1018	0.60	0/1369

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
36	W	0.28	0/1068	0.55	1/1442 (0.1%)
37	X	0.42	0/974	0.57	0/1314
38	Y	0.38	0/1004	0.57	0/1341
39	y	0.34	0/1719	0.57	0/2340
40	Z	0.42	0/1118	0.58	0/1497
41	z	0.25	0/445	0.43	0/585
42	D	0.38	0/2023	0.58	0/2729
43	J	0.31	0/1324	0.60	0/1778
44	q	0.50	1/795 (0.1%)	0.93	4/1050 (0.4%)
45	o	0.38	0/444	0.55	0/592
46	1	0.76	1/76644 (0.0%)	0.97	150/119495 (0.1%)
47	2	0.64	0/2883	0.88	0/4491
48	3	0.80	0/3724	0.94	5/5798 (0.1%)
All	All	0.64	2/138674 (0.0%)	0.85	174/204254 (0.1%)

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	v	0	3
3	A	0	1
5	B	0	3
6	b	0	3
7	C	0	1
12	F	0	1
14	G	0	2
16	I	0	1
17	H	0	1
18	h	0	1
22	L	0	1
30	Q	0	1
32	S	0	2
33	T	0	1
38	Y	0	1
39	y	0	2
42	D	0	3
43	J	0	3
44	q	0	9
45	o	0	1
All	All	0	41

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
46	1	2971	A	N9-C4	5.09	1.41	1.37
44	q	69	VAL	CB-CG1	-5.04	1.42	1.52

All (174) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	1	3217	C	N1-C2-O2	11.81	125.99	118.90
30	Q	41	ASP	CB-CG-OD1	9.70	127.03	118.30
46	1	3217	C	C2-N1-C1'	9.70	129.47	118.80
46	1	3217	C	N3-C2-O2	-9.02	115.59	121.90
1	v	146	CYS	CA-CB-SG	8.84	129.91	114.00
46	1	2768	U	C5-C6-N1	8.58	126.99	122.70
46	1	2770	G	C8-N9-C4	-8.40	103.04	106.40
46	1	1013	G	N3-C4-C5	-8.39	124.41	128.60
46	1	922	U	C2-N1-C1'	8.31	127.67	117.70
46	1	2770	G	N7-C8-N9	8.27	117.23	113.10
46	1	2137	U	C2-N1-C1'	8.13	127.46	117.70
46	1	1034	U	N1-C2-O2	7.94	128.35	122.80
46	1	1034	U	C2-N1-C1'	7.64	126.87	117.70
46	1	1034	U	N3-C2-O2	-7.57	116.90	122.20
46	1	279	U	O5'-P-OP1	-7.51	98.94	105.70
46	1	2541	U	P-O3'-C3'	7.48	128.67	119.70
46	1	1576	G	P-O3'-C3'	7.32	128.48	119.70
46	1	2770	G	O4'-C1'-N9	7.27	114.02	108.20
46	1	1013	G	N3-C4-N9	7.25	130.35	126.00
46	1	1013	G	C2-N3-C4	7.22	115.51	111.90
46	1	1027	A	P-O3'-C3'	7.21	128.35	119.70
46	1	1815	U	P-O3'-C3'	7.17	128.30	119.70
46	1	283	G	N3-C4-N9	7.15	130.29	126.00
46	1	283	G	C4-N9-C1'	7.15	135.79	126.50
46	1	1038	C	P-O3'-C3'	7.13	128.26	119.70
46	1	2263	C	C2-N1-C1'	7.09	126.59	118.80
46	1	1013	G	C4-N9-C1'	7.07	135.69	126.50
46	1	1029	G	P-O3'-C3'	7.04	128.15	119.70
46	1	979	U	P-O3'-C3'	6.99	128.09	119.70
1	v	35	CYS	CA-CB-SG	6.97	126.55	114.00
46	1	3181	C	C2-N1-C1'	6.97	126.47	118.80
46	1	2996	U	N1-C2-O2	6.97	127.68	122.80
46	1	283	G	O5'-P-OP1	-6.96	99.44	105.70
46	1	1279	C	C5-C6-N1	6.91	124.45	121.00
26	N	145	ASP	CB-CG-OD1	6.91	124.52	118.30
46	1	1951	C	N1-C2-O2	6.90	123.04	118.90

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	1	3217	C	C6-N1-C1'	-6.90	112.52	120.80
5	B	171	LEU	CA-CB-CG	6.87	131.09	115.30
46	1	2137	U	N1-C2-O2	6.86	127.60	122.80
46	1	283	G	OP1-P-O3'	6.82	120.20	105.20
46	1	2513	U	OP1-P-O3'	6.81	120.18	105.20
46	1	3181	C	N1-C2-O2	6.73	122.94	118.90
46	1	2768	U	C6-N1-C2	-6.71	116.97	121.00
46	1	2101	C	P-O3'-C3'	6.64	127.67	119.70
46	1	1349	G	N3-C4-C5	-6.60	125.30	128.60
46	1	1064	A	P-O3'-C3'	6.56	127.57	119.70
46	1	2836	C	C2-N1-C1'	6.56	126.01	118.80
1	v	34	MET	CA-CB-CG	6.53	124.39	113.30
46	1	2537	U	P-O3'-C3'	6.48	127.48	119.70
16	I	46	LEU	CA-CB-CG	6.45	130.12	115.30
46	1	1349	G	N3-C4-N9	6.45	129.87	126.00
46	1	288	C	C6-N1-C2	-6.42	117.73	120.30
44	q	85	LEU	CA-CB-CG	6.40	130.02	115.30
46	1	2513	U	P-O3'-C3'	6.37	127.34	119.70
46	1	1103	A	P-O3'-C3'	6.32	127.29	119.70
46	1	2585	G	N3-C4-C5	-6.32	125.44	128.60
46	1	1115	G	C4-N9-C1'	6.31	134.71	126.50
46	1	1352	A	P-O3'-C3'	6.30	127.26	119.70
46	1	3228	C	P-O3'-C3'	6.29	127.25	119.70
46	1	2550	U	C2-N1-C1'	6.28	125.24	117.70
46	1	283	G	C8-N9-C1'	-6.28	118.84	127.00
46	1	283	G	N3-C4-C5	-6.27	125.46	128.60
46	1	2726	C	C2-N1-C1'	6.26	125.69	118.80
46	1	1716	U	P-O3'-C3'	6.23	127.17	119.70
46	1	2836	C	N1-C2-O2	6.22	122.63	118.90
27	u	32	CYS	CA-CB-SG	-6.22	102.81	114.00
46	1	3153	U	N3-C2-O2	-6.21	117.85	122.20
46	1	2585	G	N3-C4-N9	6.21	129.72	126.00
46	1	2137	U	N3-C2-O2	-6.20	117.86	122.20
46	1	1023	C	N1-C2-O2	6.20	122.62	118.90
46	1	2770	G	C5'-C4'-O4'	6.16	116.50	109.10
46	1	1279	C	C6-N1-C2	-6.16	117.84	120.30
46	1	2541	U	C2-N1-C1'	6.14	125.07	117.70
17	H	118	LEU	CA-CB-CG	6.13	129.39	115.30
46	1	3217	C	C6-N1-C2	-6.11	117.86	120.30
46	1	1349	G	C4-N9-C1'	6.10	134.44	126.50
46	1	3217	C	C5-C6-N1	6.10	124.05	121.00
46	1	1097	G	P-O3'-C3'	6.08	127.00	119.70

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	1	15	C	C6-N1-C2	-6.06	117.88	120.30
48	3	82	U	P-O3'-C3'	6.03	126.94	119.70
46	1	2842	U	C2-N1-C1'	6.00	124.90	117.70
46	1	2550	U	N3-C2-O2	-6.00	118.00	122.20
46	1	3153	U	N1-C2-O2	5.99	126.99	122.80
46	1	2137	U	C6-N1-C1'	-5.98	112.83	121.20
36	W	45	LEU	CA-CB-CG	5.95	128.98	115.30
46	1	1525	G	C4-N9-C1'	5.92	134.20	126.50
46	1	3306	U	C2-N1-C1'	5.89	124.77	117.70
46	1	2899	C	N1-C2-O2	5.89	122.43	118.90
46	1	3218	A	P-O3'-C3'	5.87	126.75	119.70
46	1	1190	A	C4-N9-C1'	5.87	136.86	126.30
46	1	1355	A	P-O3'-C3'	5.86	126.73	119.70
46	1	922	U	C6-N1-C1'	-5.83	113.04	121.20
46	1	2899	C	C2-N1-C1'	5.82	125.20	118.80
46	1	1951	C	N3-C2-O2	-5.78	117.85	121.90
46	1	2552	C	C2-N1-C1'	5.77	125.14	118.80
44	q	54	THR	C-N-CA	-5.76	107.29	121.70
46	1	2263	C	N1-C2-O2	5.75	122.35	118.90
46	1	915	A	C4-N9-C1'	5.73	136.61	126.30
46	1	2996	U	N3-C2-O2	-5.72	118.19	122.20
46	1	599	C	P-O3'-C3'	5.71	126.55	119.70
46	1	3214	U	C2-N1-C1'	5.69	124.53	117.70
46	1	1115	G	C8-N9-C1'	-5.68	119.62	127.00
46	1	2209	U	P-O3'-C3'	5.65	126.48	119.70
48	3	125	U	C2-N1-C1'	5.64	124.47	117.70
46	1	1190	A	C2-N3-C4	5.62	113.41	110.60
46	1	2842	U	N1-C2-O2	5.62	126.73	122.80
46	1	979	U	N3-C2-O2	-5.61	118.27	122.20
46	1	1115	G	N3-C4-N9	5.60	129.36	126.00
46	1	915	A	C2-N3-C4	5.59	113.40	110.60
46	1	1021	G	O4'-C1'-N9	5.59	112.67	108.20
46	1	3269	U	P-O3'-C3'	5.53	126.34	119.70
46	1	1554	U	P-O3'-C3'	5.53	126.34	119.70
46	1	2550	U	N1-C2-O2	5.53	126.67	122.80
46	1	979	U	C6-N1-C2	-5.52	117.69	121.00
46	1	3181	C	N3-C2-O2	-5.51	118.04	121.90
46	1	2552	C	N1-C2-O2	5.51	122.21	118.90
46	1	1573	G	N3-C4-N9	5.50	129.30	126.00
46	1	1269	U	C2-N1-C1'	5.50	124.30	117.70
46	1	2836	C	N3-C2-O2	-5.46	118.08	121.90
27	u	9	CYS	CA-CB-SG	-5.45	104.18	114.00

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
48	3	35	C	N1-C2-O2	5.45	122.17	118.90
46	1	2769	A	P-O3'-C3'	5.43	126.22	119.70
44	q	35	LEU	CA-CB-CG	5.43	127.78	115.30
46	1	1525	G	C8-N9-C1'	-5.40	119.98	127.00
46	1	2553	U	N1-C2-O2	5.39	126.57	122.80
46	1	1013	G	C8-N9-C1'	-5.38	120.01	127.00
46	1	922	U	N1-C2-O2	5.38	126.56	122.80
46	1	3354	U	C2-N1-C1'	5.37	124.14	117.70
12	F	157	ASN	C-N-CA	5.36	135.09	121.70
46	1	280	U	C5-C6-N1	5.35	125.37	122.70
46	1	1320	C	C6-N1-C2	-5.34	118.16	120.30
46	1	44	U	N1-C2-O2	5.34	126.54	122.80
48	3	120	C	C6-N1-C2	-5.33	118.17	120.30
46	1	915	A	N3-C4-N9	5.32	131.66	127.40
46	1	2971	A	C2-N3-C4	5.30	113.25	110.60
46	1	1573	G	N3-C4-C5	-5.30	125.95	128.60
46	1	283	G	P-O3'-C3'	5.29	126.05	119.70
48	3	35	C	C6-N1-C2	-5.29	118.18	120.30
46	1	3265	C	N1-C2-O2	5.29	122.08	118.90
46	1	1013	G	C8-N9-C4	-5.28	104.29	106.40
46	1	2585	G	C4-N9-C1'	5.28	133.37	126.50
46	1	1573	G	C4-N9-C1'	5.28	133.36	126.50
46	1	2996	U	C2-N1-C1'	5.28	124.03	117.70
46	1	2983	C	C2-N1-C1'	5.26	124.59	118.80
46	1	663	C	C6-N1-C2	-5.26	118.20	120.30
46	1	1023	C	N3-C2-O2	-5.25	118.22	121.90
46	1	2846	U	C2-N1-C1'	5.25	124.00	117.70
46	1	280	U	C6-N1-C1'	5.24	128.53	121.20
46	1	2567	C	N1-C2-O2	5.24	122.04	118.90
46	1	1349	G	C2-N3-C4	5.23	114.51	111.90
46	1	44	U	N3-C2-O2	-5.22	118.54	122.20
46	1	1844	C	C6-N1-C2	-5.22	118.21	120.30
46	1	860	G	N3-C4-N9	5.21	129.13	126.00
12	F	176	TYR	C-N-CA	-5.21	111.37	122.30
46	1	3306	U	N3-C2-O2	-5.18	118.57	122.20
46	1	2726	C	N3-C2-O2	-5.17	118.28	121.90
46	1	2501	U	P-O3'-C3'	5.16	125.89	119.70
46	1	2553	U	N3-C2-O2	-5.16	118.59	122.20
46	1	45	A	OP1-P-OP2	5.15	127.32	119.60
46	1	280	U	C6-N1-C2	-5.14	117.91	121.00
46	1	2269	U	N1-C2-O2	5.14	126.40	122.80
46	1	1190	A	N3-C4-N9	5.14	131.51	127.40

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	1	2772	C	C2-N1-C1'	5.13	124.44	118.80
46	1	922	U	N3-C2-O2	-5.13	118.61	122.20
46	1	1349	G	C8-N9-C1'	-5.10	120.36	127.00
46	1	421	G	C4-N9-C1'	5.10	133.13	126.50
46	1	2266	U	P-O3'-C3'	5.09	125.81	119.70
46	1	2617	U	N1-C2-O2	5.09	126.36	122.80
46	1	2770	G	O5'-C5'-C4'	5.07	121.33	111.70
14	G	143	ILE	CG1-CB-CG2	-5.06	100.28	111.40
44	q	70	LEU	CA-CB-CG	5.05	126.92	115.30
1	v	61	CYS	CA-CB-SG	5.04	123.07	114.00
46	1	3269	U	OP2-P-O3'	5.02	116.25	105.20
46	1	3181	C	C6-N1-C1'	-5.01	114.78	120.80

There are no chirality outliers.

All (41) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
3	A	219	ILE	Peptide
5	B	221	THR	Peptide
5	B	33	PRO	Peptide
5	B	340	LYS	Peptide
7	C	4	PRO	Peptide
42	D	140	ARG	Peptide
42	D	257	GLU	Peptide
42	D	259	LYS	Peptide
12	F	158	LYS	Peptide
14	G	30	THR	Peptide
14	G	76	ALA	Peptide
17	H	21	LYS	Peptide
16	I	16	ARG	Peptide
43	J	153	LYS	Peptide
43	J	154	THR	Peptide
43	J	171	VAL	Peptide
22	L	131	LYS	Peptide
30	Q	152	HIS	Peptide
32	S	22	PRO	Peptide
32	S	23	LYS	Peptide
33	T	154	VAL	Peptide
38	Y	125	LYS	Peptide
6	b	438	GLY	Peptide
6	b	446	ASP	Peptide
6	b	528	PHE	Peptide

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Group
18	h	83	LYS	Peptide
45	o	25	LYS	Peptide
44	q	34	SER	Peptide
44	q	35	LEU	Peptide
44	q	41	ARG	Peptide
44	q	49	GLY	Peptide
44	q	50	PHE	Peptide
44	q	78	LYS	Peptide
44	q	79	THR	Peptide
44	q	81	ALA	Peptide
44	q	97	LYS	Peptide
1	v	278	LYS	Peptide
1	v	31	GLY	Peptide
1	v	32	LEU	Peptide
39	y	145	ASN	Peptide
39	y	7	PHE	Peptide

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	
1	v	352/518 (68%)	305 (87%)	44 (12%)	3 (1%)	14	48
3	A	243/254 (96%)	217 (89%)	25 (10%)	1 (0%)	30	63
4	a	92/149 (62%)	84 (91%)	6 (6%)	2 (2%)	5	32
5	B	384/387 (99%)	343 (89%)	38 (10%)	3 (1%)	16	51
6	b	242/647 (37%)	226 (93%)	13 (5%)	3 (1%)	11	43
7	C	359/362 (99%)	325 (90%)	31 (9%)	3 (1%)	16	51

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
8	c	95/105 (90%)	91 (96%)	4 (4%)	0	100	100
9	d	105/113 (93%)	100 (95%)	5 (5%)	0	100	100
10	E	156/176 (89%)	148 (95%)	8 (5%)	0	100	100
11	e	125/130 (96%)	118 (94%)	7 (6%)	0	100	100
12	F	220/244 (90%)	197 (90%)	23 (10%)	0	100	100
13	f	104/107 (97%)	100 (96%)	4 (4%)	0	100	100
14	G	228/256 (89%)	209 (92%)	19 (8%)	0	100	100
15	g	110/121 (91%)	106 (96%)	4 (4%)	0	100	100
16	I	129/166 (78%)	116 (90%)	12 (9%)	1 (1%)	16	51
17	H	186/191 (97%)	168 (90%)	18 (10%)	0	100	100
18	h	117/120 (98%)	114 (97%)	3 (3%)	0	100	100
19	i	94/100 (94%)	87 (93%)	7 (7%)	0	100	100
20	j	83/88 (94%)	76 (92%)	7 (8%)	0	100	100
21	k	75/78 (96%)	71 (95%)	4 (5%)	0	100	100
22	L	185/199 (93%)	163 (88%)	21 (11%)	1 (0%)	25	59
23	l	48/51 (94%)	46 (96%)	2 (4%)	0	100	100
24	M	135/138 (98%)	128 (95%)	7 (5%)	0	100	100
25	p	89/92 (97%)	83 (93%)	6 (7%)	0	100	100
26	N	201/204 (98%)	186 (92%)	15 (8%)	0	100	100
27	u	147/199 (74%)	137 (93%)	7 (5%)	3 (2%)	6	34
28	O	195/199 (98%)	190 (97%)	5 (3%)	0	100	100
29	P	174/184 (95%)	169 (97%)	5 (3%)	0	100	100
30	Q	152/186 (82%)	141 (93%)	11 (7%)	0	100	100
31	R	152/189 (80%)	145 (95%)	7 (5%)	0	100	100
32	S	168/172 (98%)	149 (89%)	16 (10%)	3 (2%)	7	35
33	T	59/160 (37%)	54 (92%)	5 (8%)	0	100	100
34	U	102/121 (84%)	94 (92%)	8 (8%)	0	100	100
35	V	134/137 (98%)	129 (96%)	5 (4%)	0	100	100
36	W	129/236 (55%)	126 (98%)	3 (2%)	0	100	100
37	X	118/142 (83%)	114 (97%)	4 (3%)	0	100	100
38	Y	124/127 (98%)	122 (98%)	2 (2%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
39	y	223/245 (91%)	211 (95%)	12 (5%)	0	100	100
40	Z	133/136 (98%)	117 (88%)	16 (12%)	0	100	100
41	z	53/106 (50%)	53 (100%)	0	0	100	100
42	D	245/297 (82%)	225 (92%)	17 (7%)	3 (1%)	11	43
43	J	162/174 (93%)	141 (87%)	17 (10%)	4 (2%)	4	29
44	q	95/106 (90%)	76 (80%)	18 (19%)	1 (1%)	12	45
45	o	52/59 (88%)	48 (92%)	4 (8%)	0	100	100
All	All	6774/8171 (83%)	6248 (92%)	495 (7%)	31 (0%)	27	59

All (31) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
7	C	339	LEU
27	u	3	ILE
43	J	95	ASN
16	I	17	ASP
22	L	63	VAL
42	D	140	ARG
43	J	154	THR
43	J	155	THR
3	A	219	ILE
4	a	78	LEU
5	B	34	LYS
6	b	398	LEU
7	C	4	PRO
27	u	73	GLN
43	J	172	LEU
4	a	77	LYS
27	u	4	TYR
32	S	13	ARG
32	S	24	LEU
1	v	32	LEU
1	v	279	ILE
6	b	397	LYS
6	b	529	GLY
42	D	258	LYS
44	q	35	LEU
7	C	268	ALA
32	S	23	LYS
1	v	68	PRO

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
5	B	188	ILE
5	B	239	PRO
42	D	141	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	
1	v	309/467 (66%)	304 (98%)	5 (2%)	58	76
3	A	188/196 (96%)	187 (100%)	1 (0%)	86	93
4	a	77/119 (65%)	75 (97%)	2 (3%)	41	65
5	B	322/323 (100%)	318 (99%)	4 (1%)	67	82
6	b	211/573 (37%)	205 (97%)	6 (3%)	38	64
7	C	288/289 (100%)	286 (99%)	2 (1%)	81	90
8	c	81/88 (92%)	78 (96%)	3 (4%)	29	58
9	d	94/97 (97%)	94 (100%)	0	100	100
10	E	137/153 (90%)	134 (98%)	3 (2%)	47	69
11	e	109/111 (98%)	107 (98%)	2 (2%)	54	74
12	F	186/205 (91%)	185 (100%)	1 (0%)	86	93
13	f	90/91 (99%)	90 (100%)	0	100	100
14	G	189/208 (91%)	185 (98%)	4 (2%)	48	71
15	g	95/103 (92%)	95 (100%)	0	100	100
16	I	116/141 (82%)	115 (99%)	1 (1%)	75	87
17	H	168/171 (98%)	166 (99%)	2 (1%)	67	82
18	h	104/105 (99%)	104 (100%)	0	100	100
19	i	78/82 (95%)	78 (100%)	0	100	100
20	j	69/71 (97%)	68 (99%)	1 (1%)	62	79
21	k	68/69 (99%)	68 (100%)	0	100	100
22	L	147/159 (92%)	141 (96%)	6 (4%)	26	55

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
23	l	45/46 (98%)	43 (96%)	2 (4%)	24	53
24	M	108/109 (99%)	107 (99%)	1 (1%)	75	87
25	p	71/72 (99%)	70 (99%)	1 (1%)	62	79
26	N	175/176 (99%)	173 (99%)	2 (1%)	70	83
27	u	132/180 (73%)	128 (97%)	4 (3%)	36	63
28	O	160/162 (99%)	157 (98%)	3 (2%)	52	73
29	P	143/146 (98%)	141 (99%)	2 (1%)	62	79
30	Q	126/151 (83%)	125 (99%)	1 (1%)	79	88
31	R	127/154 (82%)	126 (99%)	1 (1%)	79	88
32	S	154/156 (99%)	153 (99%)	1 (1%)	84	92
33	T	50/137 (36%)	47 (94%)	3 (6%)	16	45
34	U	91/107 (85%)	89 (98%)	2 (2%)	47	69
35	V	104/105 (99%)	104 (100%)	0	100	100
36	W	113/213 (53%)	111 (98%)	2 (2%)	54	74
37	X	104/118 (88%)	103 (99%)	1 (1%)	73	85
38	Y	109/110 (99%)	109 (100%)	0	100	100
39	y	192/211 (91%)	192 (100%)	0	100	100
40	Z	115/116 (99%)	114 (99%)	1 (1%)	75	87
41	z	48/95 (50%)	48 (100%)	0	100	100
42	D	203/245 (83%)	199 (98%)	4 (2%)	50	72
43	J	140/150 (93%)	139 (99%)	1 (1%)	81	90
44	q	84/91 (92%)	83 (99%)	1 (1%)	67	82
45	o	43/47 (92%)	42 (98%)	1 (2%)	45	68
All	All	5763/6918 (83%)	5686 (99%)	77 (1%)	64	81

All (77) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	v	22	CYS
1	v	143	CYS
1	v	146	CYS
1	v	333	ARG
1	v	349	ASN
3	A	193	ARG

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
4	a	78	LEU
4	a	120	ASN
5	B	28	ARG
5	B	70	ARG
5	B	332	ARG
5	B	385	LYS
6	b	384	ASN
6	b	413	ASN
6	b	415	ASN
6	b	445	LEU
6	b	470	ASN
6	b	647	ARG
7	C	93	MET
7	C	221	ASN
8	c	16	LEU
8	c	61	MET
8	c	86	ARG
10	E	51	ARG
10	E	127	ASN
10	E	128	LYS
11	e	27	ARG
11	e	87	MET
12	F	244	ASN
14	G	48	ARG
14	G	84	ARG
14	G	85	ASN
14	G	120	LYS
16	I	75	ARG
17	H	23	ARG
17	H	157	ASN
20	j	25	ARG
22	L	21	ARG
22	L	54	LEU
22	L	76	THR
22	L	101	ARG
22	L	180	ARG
22	L	188	ARG
23	l	20	ASN
23	l	43	ASN
24	M	74	ARG
25	p	17	ARG
26	N	183	THR

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
26	N	188	ARG
27	u	27	LYS
27	u	45	ASN
27	u	100	ARG
27	u	113	ARG
28	O	82	LYS
28	O	85	ARG
28	O	148	LYS
29	P	24	VAL
29	P	97	ASN
30	Q	147	ARG
31	R	98	ARG
32	S	80	ARG
33	T	97	LYS
33	T	136	ARG
33	T	139	ARG
34	U	49	ASN
34	U	94	ARG
36	W	22	ASN
36	W	232	ASN
37	X	73	MET
40	Z	27	LYS
42	D	34	LYS
42	D	39	GLN
42	D	45	ASN
42	D	254	LYS
43	J	12	LEU
44	q	88	CYS
45	o	22	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (39) such sidechains are listed below:

Mol	Chain	Res	Type
1	v	349	ASN
4	a	120	ASN
5	B	371	GLN
6	b	384	ASN
6	b	413	ASN
6	b	415	ASN
6	b	470	ASN
6	b	509	ASN
7	C	110	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
7	C	221	ASN
9	d	57	GLN
10	E	125	GLN
12	F	244	ASN
14	G	85	ASN
16	I	99	ASN
18	h	59	ASN
23	l	11	GLN
23	l	20	ASN
26	N	37	HIS
27	u	24	ASN
27	u	45	ASN
29	P	97	ASN
29	P	118	GLN
30	Q	10	HIS
32	S	108	GLN
32	S	122	HIS
32	S	157	GLN
33	T	103	GLN
34	U	49	ASN
35	V	98	ASN
36	W	22	ASN
36	W	232	ASN
39	y	106	ASN
40	Z	57	HIS
42	D	45	ASN
43	J	95	ASN
43	J	109	HIS
44	q	82	GLN
44	q	90	HIS

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
46	1	3198/3396 (94%)	722 (22%)	39 (1%)
47	2	120/121 (99%)	15 (12%)	0
48	3	156/158 (98%)	28 (17%)	2 (1%)
All	All	3474/3675 (94%)	765 (22%)	41 (1%)

All (765) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
46	1	22	G
46	1	40	A
46	1	43	A
46	1	44	U
46	1	45	A
46	1	49	A
46	1	55	G
46	1	59	G
46	1	60	A
46	1	65	A
46	1	66	A
46	1	72	C
46	1	75	G
46	1	76	G
46	1	85	A
46	1	92	G
46	1	109	A
46	1	110	G
46	1	111	C
46	1	116	A
46	1	118	U
46	1	122	A
46	1	132	C
46	1	135	C
46	1	136	G
46	1	148	G
46	1	155	G
46	1	156	G
46	1	157	A
46	1	166	C
46	1	170	G
46	1	172	G
46	1	173	G
46	1	176	G
46	1	182	U
46	1	187	A
46	1	190	U
46	1	191	U
46	1	198	A
46	1	206	G
46	1	210	U
46	1	211	A
46	1	212	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
46	1	213	A
46	1	218	G
46	1	219	A
46	1	230	U
46	1	231	G
46	1	237	G
46	1	240	U
46	1	241	G
46	1	243	G
46	1	246	U
46	1	247	C
46	1	248	U
46	1	250	U
46	1	253	A
46	1	269	G
46	1	277	G
46	1	279	U
46	1	281	G
46	1	283	G
46	1	284	A
46	1	285	A
46	1	286	U
46	1	295	A
46	1	305	U
46	1	323	A
46	1	329	U
46	1	334	A
46	1	338	A
46	1	339	C
46	1	343	U
46	1	349	A
46	1	376	G
46	1	382	U
46	1	385	A
46	1	395	A
46	1	398	A
46	1	399	A
46	1	401	U
46	1	402	A
46	1	403	C
46	1	404	G
46	1	406	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
46	1	420	G
46	1	421	G
46	1	422	A
46	1	429	U
46	1	438	A
46	1	440	A
46	1	495	G
46	1	520	U
46	1	521	A
46	1	535	G
46	1	543	C
46	1	546	C
46	1	547	G
46	1	548	G
46	1	551	A
46	1	552	G
46	1	553	U
46	1	555	U
46	1	557	A
46	1	559	A
46	1	569	A
46	1	578	A
46	1	579	G
46	1	591	G
46	1	592	A
46	1	597	G
46	1	600	G
46	1	604	G
46	1	611	A
46	1	620	U
46	1	621	A
46	1	622	A
46	1	636	C
46	1	649	A
46	1	655	C
46	1	660	A
46	1	677	A
46	1	681	U
46	1	683	U
46	1	689	U
46	1	690	A
46	1	691	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
46	1	705	A
46	1	712	G
46	1	715	A
46	1	716	A
46	1	719	U
46	1	720	A
46	1	725	G
46	1	744	A
46	1	763	G
46	1	765	C
46	1	766	U
46	1	767	U
46	1	776	U
46	1	777	U
46	1	780	A
46	1	781	G
46	1	785	G
46	1	786	A
46	1	801	A
46	1	806	A
46	1	817	A
46	1	823	C
46	1	830	A
46	1	849	C
46	1	851	C
46	1	861	C
46	1	869	G
46	1	874	U
46	1	875	G
46	1	879	U
46	1	880	G
46	1	884	A
46	1	895	A
46	1	897	U
46	1	907	G
46	1	908	G
46	1	911	C
46	1	914	A
46	1	916	G
46	1	917	A
46	1	921	A
46	1	924	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
46	1	926	A
46	1	932	U
46	1	933	A
46	1	937	G
46	1	944	C
46	1	946	U
46	1	953	G
46	1	959	C
46	1	960	U
46	1	961	C
46	1	974	G
46	1	978	G
46	1	979	U
46	1	980	A
46	1	981	U
46	1	982	C
46	1	994	G
46	1	1001	G
46	1	1002	A
46	1	1006	A
46	1	1008	U
46	1	1009	A
46	1	1010	G
46	1	1011	A
46	1	1014	U
46	1	1015	U
46	1	1016	C
46	1	1017	C
46	1	1018	G
46	1	1019	G
46	1	1020	G
46	1	1023	C
46	1	1024	G
46	1	1026	A
46	1	1027	A
46	1	1028	U
46	1	1029	G
46	1	1030	A
46	1	1035	G
46	1	1036	A
46	1	1037	C
46	1	1038	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
46	1	1039	U
46	1	1040	A
46	1	1041	U
46	1	1046	A
46	1	1047	A
46	1	1049	C
46	1	1063	G
46	1	1064	A
46	1	1065	A
46	1	1081	U
46	1	1082	U
46	1	1087	G
46	1	1093	A
46	1	1094	U
46	1	1095	U
46	1	1097	G
46	1	1098	A
46	1	1103	A
46	1	1104	G
46	1	1109	U
46	1	1111	U
46	1	1117	G
46	1	1124	U
46	1	1131	G
46	1	1140	G
46	1	1143	A
46	1	1153	A
46	1	1159	A
46	1	1161	G
46	1	1178	G
46	1	1180	A
46	1	1181	U
46	1	1190	A
46	1	1192	C
46	1	1193	A
46	1	1195	A
46	1	1196	C
46	1	1201	C
46	1	1208	U
46	1	1212	A
46	1	1213	G
46	1	1217	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
46	1	1219	C
46	1	1220	U
46	1	1221	A
46	1	1222	G
46	1	1227	C
46	1	1235	U
46	1	1236	G
46	1	1237	G
46	1	1238	C
46	1	1239	C
46	1	1241	U
46	1	1243	G
46	1	1244	A
46	1	1245	A
46	1	1246	G
46	1	1248	C
46	1	1249	G
46	1	1252	A
46	1	1253	U
46	1	1254	C
46	1	1258	U
46	1	1262	G
46	1	1263	A
46	1	1264	G
46	1	1265	U
46	1	1268	G
46	1	1270	A
46	1	1271	A
46	1	1272	C
46	1	1278	A
46	1	1279	C
46	1	1285	G
46	1	1286	A
46	1	1287	A
46	1	1292	C
46	1	1295	G
46	1	1305	U
46	1	1307	G
46	1	1309	U
46	1	1313	G
46	1	1316	C
46	1	1325	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
46	1	1330	A
46	1	1331	U
46	1	1332	A
46	1	1348	U
46	1	1349	G
46	1	1350	A
46	1	1351	U
46	1	1352	A
46	1	1353	U
46	1	1356	U
46	1	1386	A
46	1	1391	C
46	1	1392	G
46	1	1399	A
46	1	1400	G
46	1	1408	G
46	1	1416	C
46	1	1419	A
46	1	1430	U
46	1	1434	G
46	1	1437	C
46	1	1443	G
46	1	1445	U
46	1	1446	A
46	1	1450	G
46	1	1455	U
46	1	1475	A
46	1	1480	G
46	1	1481	A
46	1	1482	A
46	1	1484	U
46	1	1492	G
46	1	1496	C
46	1	1503	A
46	1	1508	C
46	1	1512	U
46	1	1533	U
46	1	1536	G
46	1	1537	A
46	1	1546	A
46	1	1547	G
46	1	1555	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
46	1	1556	C
46	1	1557	A
46	1	1559	A
46	1	1561	G
46	1	1562	C
46	1	1563	C
46	1	1565	G
46	1	1567	U
46	1	1568	U
46	1	1569	U
46	1	1570	U
46	1	1572	U
46	1	1574	C
46	1	1576	G
46	1	1577	G
46	1	1579	C
46	1	1580	A
46	1	1581	C
46	1	1582	C
46	1	1583	A
46	1	1587	A
46	1	1589	A
46	1	1590	G
46	1	1593	A
46	1	1619	A
46	1	1620	U
46	1	1628	C
46	1	1629	U
46	1	1632	A
46	1	1633	C
46	1	1636	U
46	1	1642	A
46	1	1643	A
46	1	1645	U
46	1	1649	U
46	1	1656	A
46	1	1657	C
46	1	1662	G
46	1	1677	G
46	1	1682	U
46	1	1683	A
46	1	1696	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
46	1	1702	U
46	1	1711	C
46	1	1716	U
46	1	1717	U
46	1	1724	U
46	1	1725	C
46	1	1736	G
46	1	1741	A
46	1	1742	U
46	1	1749	A
46	1	1750	A
46	1	1751	G
46	1	1760	A
46	1	1762	C
46	1	1765	U
46	1	1766	G
46	1	1770	G
46	1	1772	U
46	1	1775	G
46	1	1780	G
46	1	1785	U
46	1	1790	G
46	1	1797	A
46	1	1813	A
46	1	1814	A
46	1	1816	A
46	1	1817	G
46	1	1820	U
46	1	1821	U
46	1	1839	A
46	1	1842	A
46	1	1844	C
46	1	1849	C
46	1	1850	A
46	1	1867	A
46	1	1880	U
46	1	1886	A
46	1	1893	A
46	1	1905	G
46	1	1906	G
46	1	1951	C
46	1	1952	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
46	1	1953	G
46	1	1954	G
46	1	2100	A
46	1	2101	C
46	1	2102	U
46	1	2111	G
46	1	2112	U
46	1	2119	A
46	1	2121	G
46	1	2122	G
46	1	2131	A
46	1	2139	A
46	1	2140	U
46	1	2142	A
46	1	2158	A
46	1	2160	G
46	1	2169	G
46	1	2171	G
46	1	2176	U
46	1	2184	U
46	1	2186	U
46	1	2188	A
46	1	2205	U
46	1	2209	U
46	1	2210	G
46	1	2244	A
46	1	2249	G
46	1	2250	G
46	1	2252	A
46	1	2259	A
46	1	2260	U
46	1	2261	G
46	1	2262	A
46	1	2263	C
46	1	2265	C
46	1	2267	C
46	1	2268	U
46	1	2269	U
46	1	2270	A
46	1	2273	G
46	1	2281	A
46	1	2282	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
46	1	2287	C
46	1	2288	G
46	1	2298	U
46	1	2306	C
46	1	2307	G
46	1	2308	C
46	1	2309	A
46	1	2310	U
46	1	2313	A
46	1	2314	U
46	1	2315	G
46	1	2330	C
46	1	2334	U
46	1	2335	G
46	1	2336	U
46	1	2337	C
46	1	2361	A
46	1	2363	A
46	1	2373	A
46	1	2374	C
46	1	2375	G
46	1	2385	G
46	1	2388	U
46	1	2393	G
46	1	2397	A
46	1	2398	A
46	1	2401	A
46	1	2402	A
46	1	2403	G
46	1	2404	A
46	1	2411	U
46	1	2435	G
46	1	2437	G
46	1	2440	G
46	1	2442	G
46	1	2448	G
46	1	2450	G
46	1	2452	G
46	1	2453	U
46	1	2454	G
46	1	2455	U
46	1	2458	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
46	1	2459	A
46	1	2460	U
46	1	2464	U
46	1	2468	A
46	1	2470	C
46	1	2472	U
46	1	2474	G
46	1	2476	C
46	1	2477	G
46	1	2484	A
46	1	2486	A
46	1	2487	U
46	1	2495	C
46	1	2496	C
46	1	2497	U
46	1	2498	U
46	1	2499	U
46	1	2501	U
46	1	2502	A
46	1	2503	G
46	1	2505	U
46	1	2506	U
46	1	2508	U
46	1	2514	U
46	1	2522	G
46	1	2531	C
46	1	2533	G
46	1	2537	U
46	1	2538	U
46	1	2539	C
46	1	2540	A
46	1	2541	U
46	1	2542	U
46	1	2544	U
46	1	2547	A
46	1	2549	G
46	1	2550	U
46	1	2552	C
46	1	2555	G
46	1	2561	A
46	1	2566	C
46	1	2567	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
46	1	2569	A
46	1	2570	U
46	1	2571	U
46	1	2572	C
46	1	2573	G
46	1	2577	C
46	1	2585	G
46	1	2593	A
46	1	2594	C
46	1	2600	C
46	1	2606	G
46	1	2607	G
46	1	2614	G
46	1	2626	A
46	1	2635	A
46	1	2648	G
46	1	2652	U
46	1	2656	A
46	1	2657	A
46	1	2674	A
46	1	2677	G
46	1	2678	A
46	1	2688	U
46	1	2689	A
46	1	2691	A
46	1	2694	A
46	1	2696	A
46	1	2703	A
46	1	2704	A
46	1	2705	A
46	1	2719	U
46	1	2726	C
46	1	2728	G
46	1	2729	U
46	1	2742	C
46	1	2753	G
46	1	2755	C
46	1	2762	A
46	1	2768	U
46	1	2769	A
46	1	2770	G
46	1	2771	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
46	1	2772	C
46	1	2777	G
46	1	2778	G
46	1	2794	G
46	1	2796	G
46	1	2799	A
46	1	2800	G
46	1	2801	A
46	1	2802	A
46	1	2803	A
46	1	2804	A
46	1	2810	C
46	1	2814	G
46	1	2816	G
46	1	2817	A
46	1	2828	G
46	1	2838	A
46	1	2842	U
46	1	2843	U
46	1	2844	C
46	1	2845	A
46	1	2850	G
46	1	2871	G
46	1	2872	A
46	1	2875	U
46	1	2876	C
46	1	2887	A
46	1	2899	C
46	1	2904	U
46	1	2914	G
46	1	2923	U
46	1	2924	U
46	1	2928	C
46	1	2933	A
46	1	2935	U
46	1	2936	A
46	1	2941	A
46	1	2951	G
46	1	2971	A
46	1	2978	U
46	1	2983	C
46	1	2996	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
46	1	2997	G
46	1	3011	A
46	1	3012	A
46	1	3021	A
46	1	3028	G
46	1	3056	U
46	1	3059	G
46	1	3080	G
46	1	3086	A
46	1	3092	C
46	1	3099	C
46	1	3108	G
46	1	3109	G
46	1	3115	C
46	1	3119	U
46	1	3129	A
46	1	3130	A
46	1	3131	U
46	1	3142	A
46	1	3143	C
46	1	3148	U
46	1	3150	A
46	1	3153	U
46	1	3155	U
46	1	3156	U
46	1	3157	U
46	1	3164	C
46	1	3165	A
46	1	3168	A
46	1	3170	A
46	1	3173	G
46	1	3174	A
46	1	3175	U
46	1	3176	G
46	1	3179	U
46	1	3180	A
46	1	3181	C
46	1	3187	A
46	1	3196	U
46	1	3207	U
46	1	3209	A
46	1	3210	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
46	1	3217	C
46	1	3218	A
46	1	3219	G
46	1	3229	G
46	1	3239	G
46	1	3242	G
46	1	3243	A
46	1	3245	A
46	1	3247	G
46	1	3259	U
46	1	3260	G
46	1	3263	G
46	1	3268	A
46	1	3270	U
46	1	3275	U
46	1	3276	G
46	1	3279	A
46	1	3280	U
46	1	3281	U
46	1	3289	G
46	1	3294	A
46	1	3295	A
46	1	3304	U
46	1	3308	C
46	1	3313	U
46	1	3316	A
46	1	3317	U
46	1	3318	G
46	1	3319	U
46	1	3320	A
46	1	3341	U
46	1	3345	G
46	1	3347	A
46	1	3350	C
46	1	3351	U
46	1	3352	U
46	1	3354	U
46	1	3355	U
46	1	3356	G
46	1	3357	U
46	1	3360	C
46	1	3363	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
46	1	3368	U
46	1	3369	G
46	1	3375	A
46	1	3378	C
46	1	3382	U
46	1	3386	G
46	1	3396	U
47	2	10	C
47	2	22	A
47	2	49	G
47	2	53	U
47	2	54	U
47	2	65	G
47	2	73	C
47	2	74	C
47	2	76	A
47	2	102	A
47	2	109	G
47	2	112	G
47	2	114	U
47	2	120	C
47	2	121	U
48	3	23	U
48	3	25	G
48	3	34	U
48	3	35	C
48	3	39	G
48	3	51	G
48	3	59	A
48	3	62	C
48	3	63	G
48	3	80	A
48	3	81	U
48	3	82	U
48	3	83	C
48	3	84	C
48	3	86	U
48	3	87	G
48	3	90	U
48	3	91	C
48	3	95	G
48	3	104	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
48	3	106	C
48	3	111	A
48	3	113	U
48	3	125	U
48	3	126	A
48	3	138	A
48	3	148	G
48	3	155	A

All (41) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
46	1	239	G
46	1	283	G
46	1	285	A
46	1	547	G
46	1	599	C
46	1	916	G
46	1	979	U
46	1	1027	A
46	1	1029	G
46	1	1038	C
46	1	1064	A
46	1	1097	G
46	1	1103	A
46	1	1352	A
46	1	1355	A
46	1	1554	U
46	1	1576	G
46	1	1716	U
46	1	1815	U
46	1	1816	A
46	1	2101	C
46	1	2209	U
46	1	2249	G
46	1	2258	U
46	1	2264	U
46	1	2266	U
46	1	2454	G
46	1	2501	U
46	1	2513	U
46	1	2537	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
46	1	2541	U
46	1	2593	A
46	1	2769	A
46	1	2770	G
46	1	2815	G
46	1	3218	A
46	1	3228	C
46	1	3269	U
46	1	3353	G
48	3	82	U
48	3	85	G

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 oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

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.

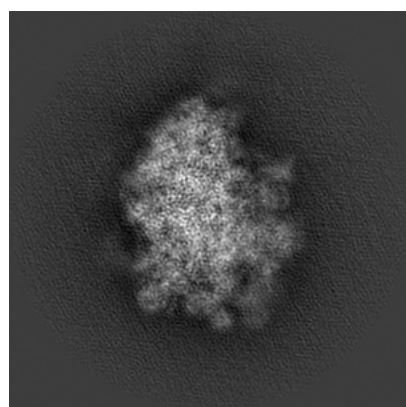
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-0371. These allow visual inspection of the internal detail of the map and identification of artifacts.

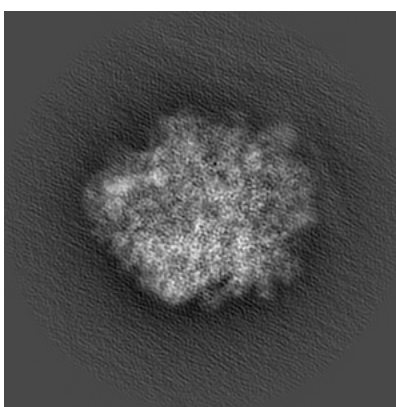
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

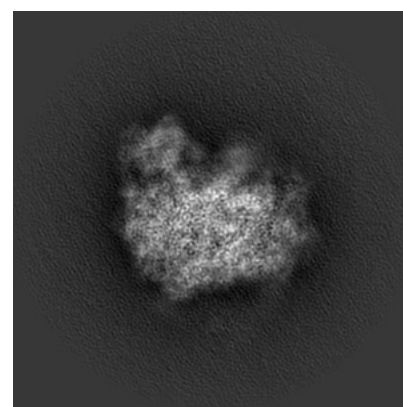
6.1.1 Primary map



X



Y

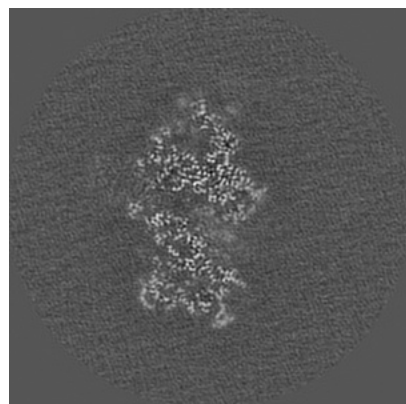


Z

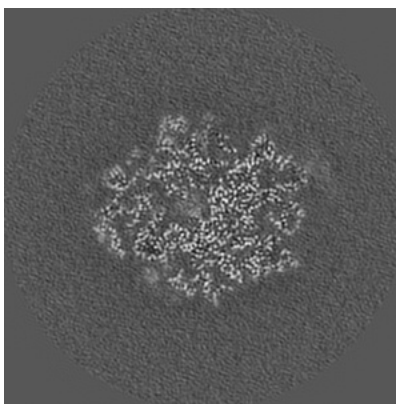
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

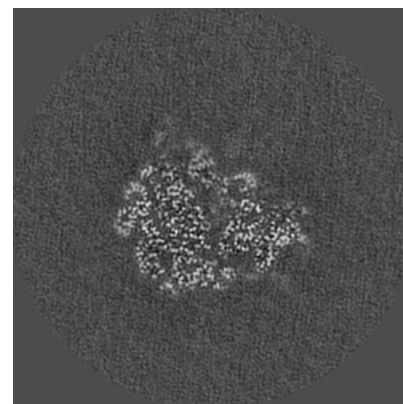
6.2.1 Primary map



X Index: 192



Y Index: 192

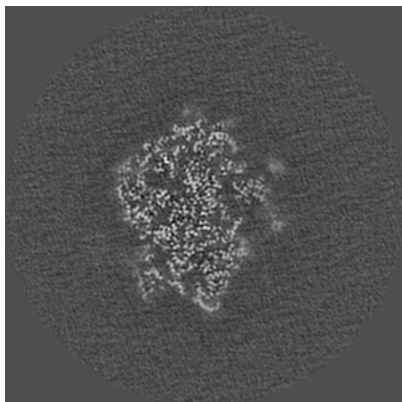


Z Index: 192

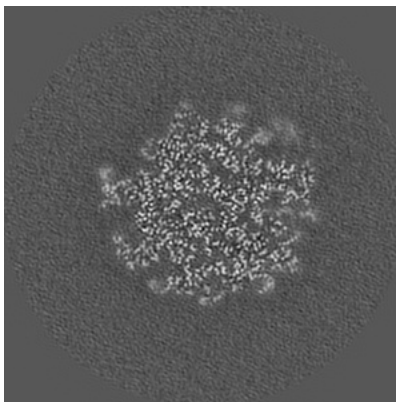
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

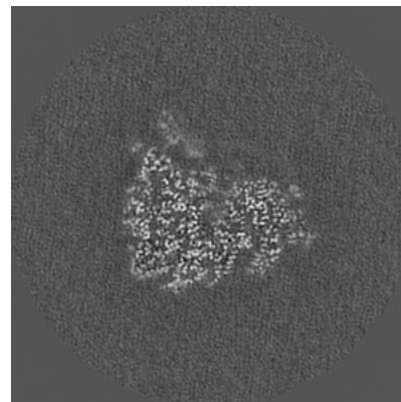
6.3.1 Primary map



X Index: 166



Y Index: 173

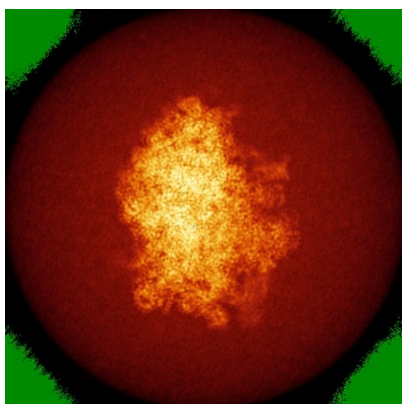


Z Index: 184

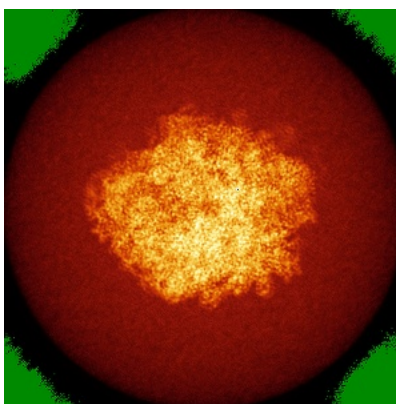
The images above show the largest variance slices of the map in three orthogonal directions.

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

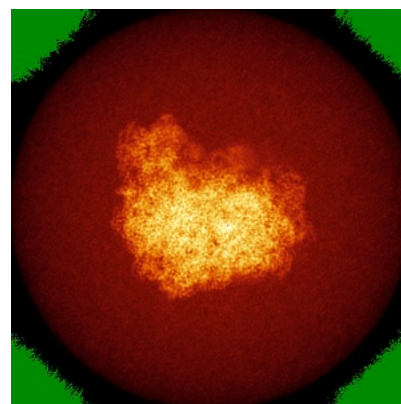
6.4.1 Primary map



X



Y

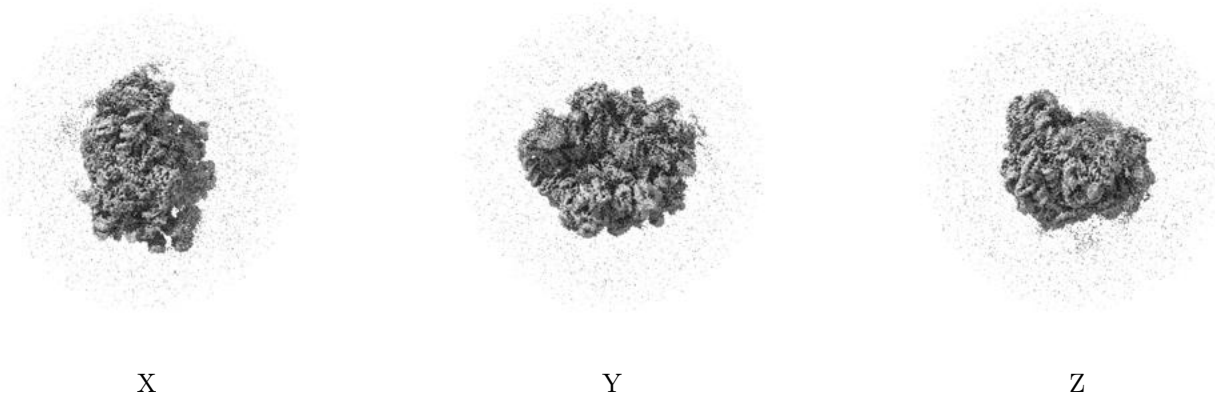


Z

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 0.02. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

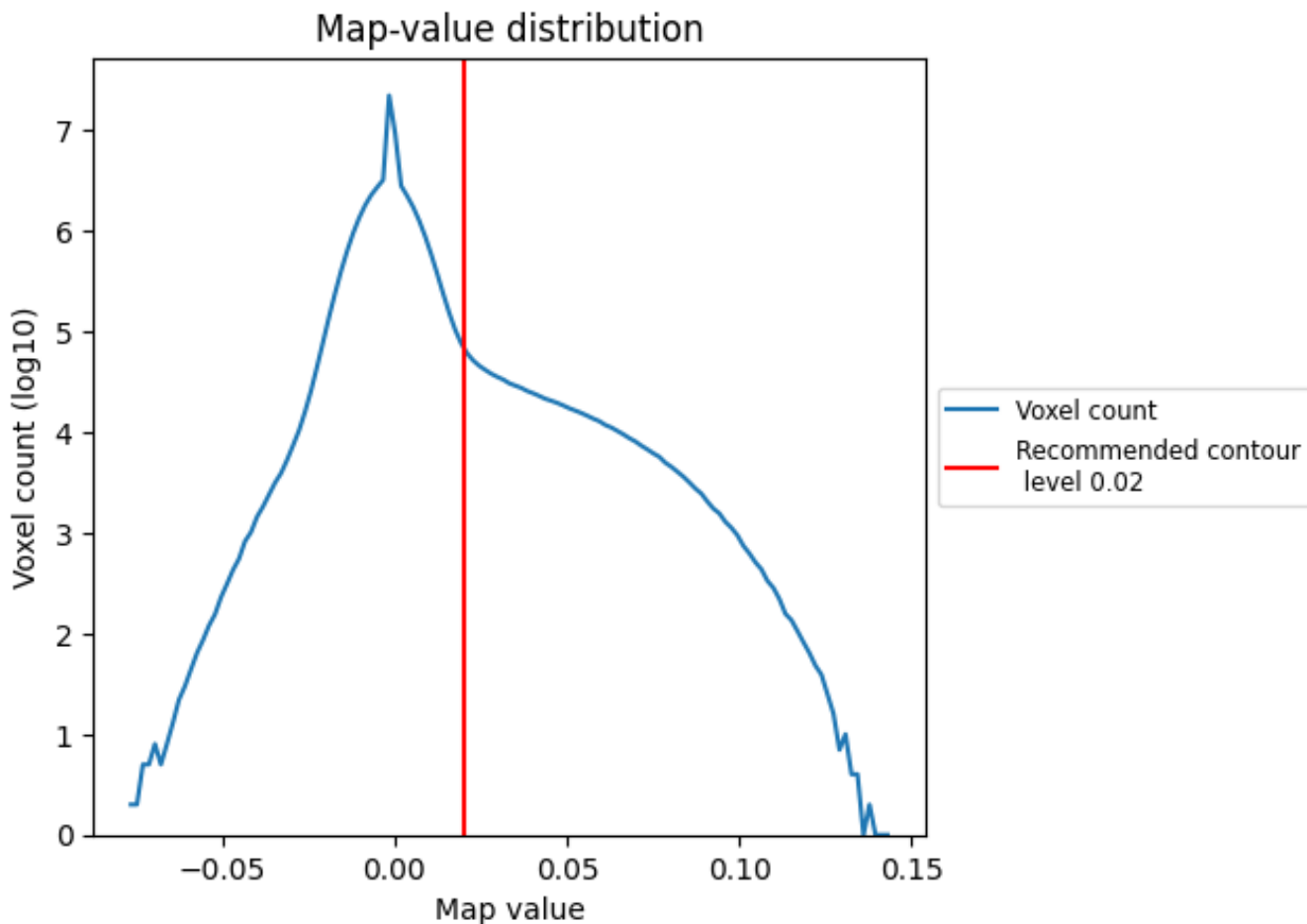
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

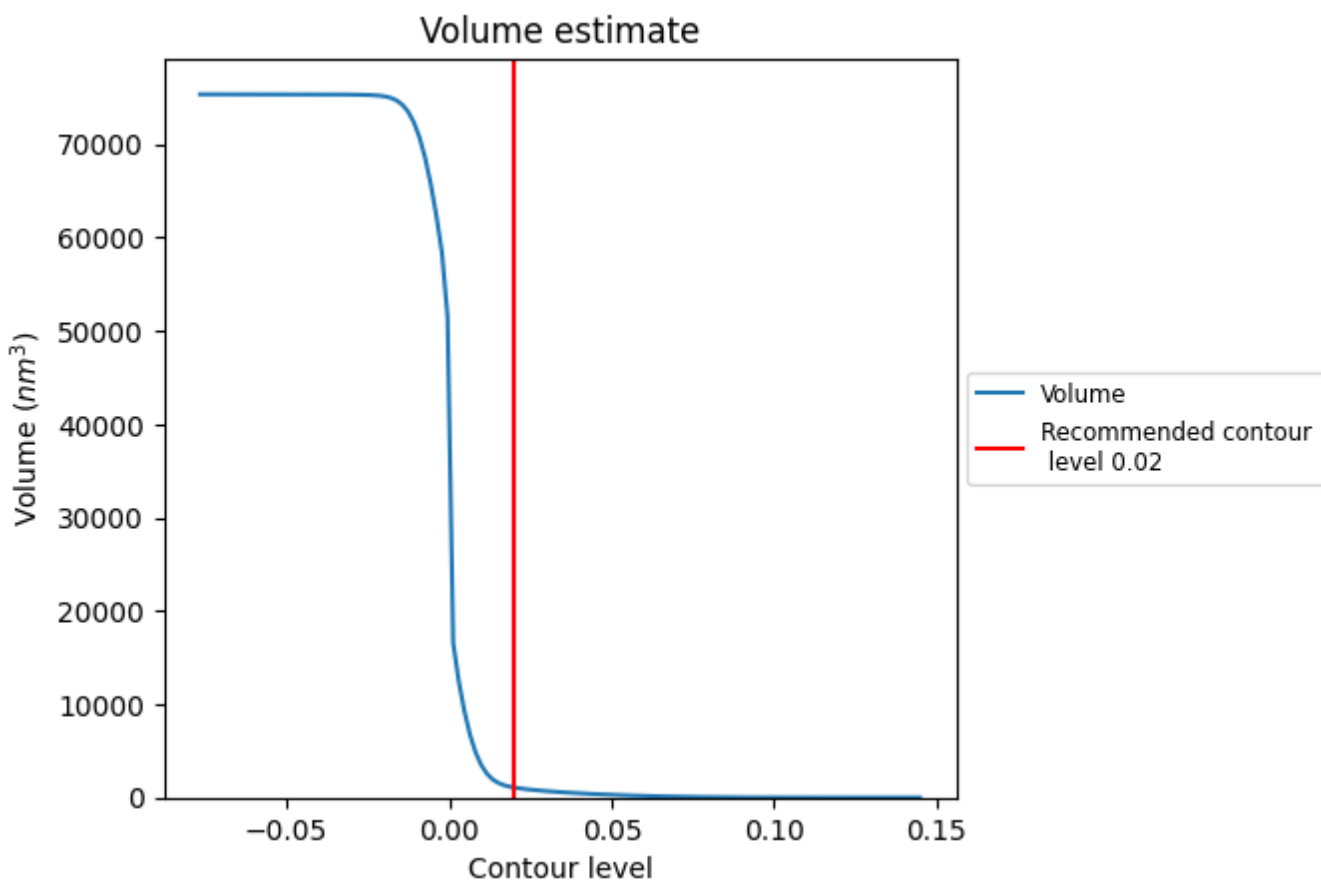
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

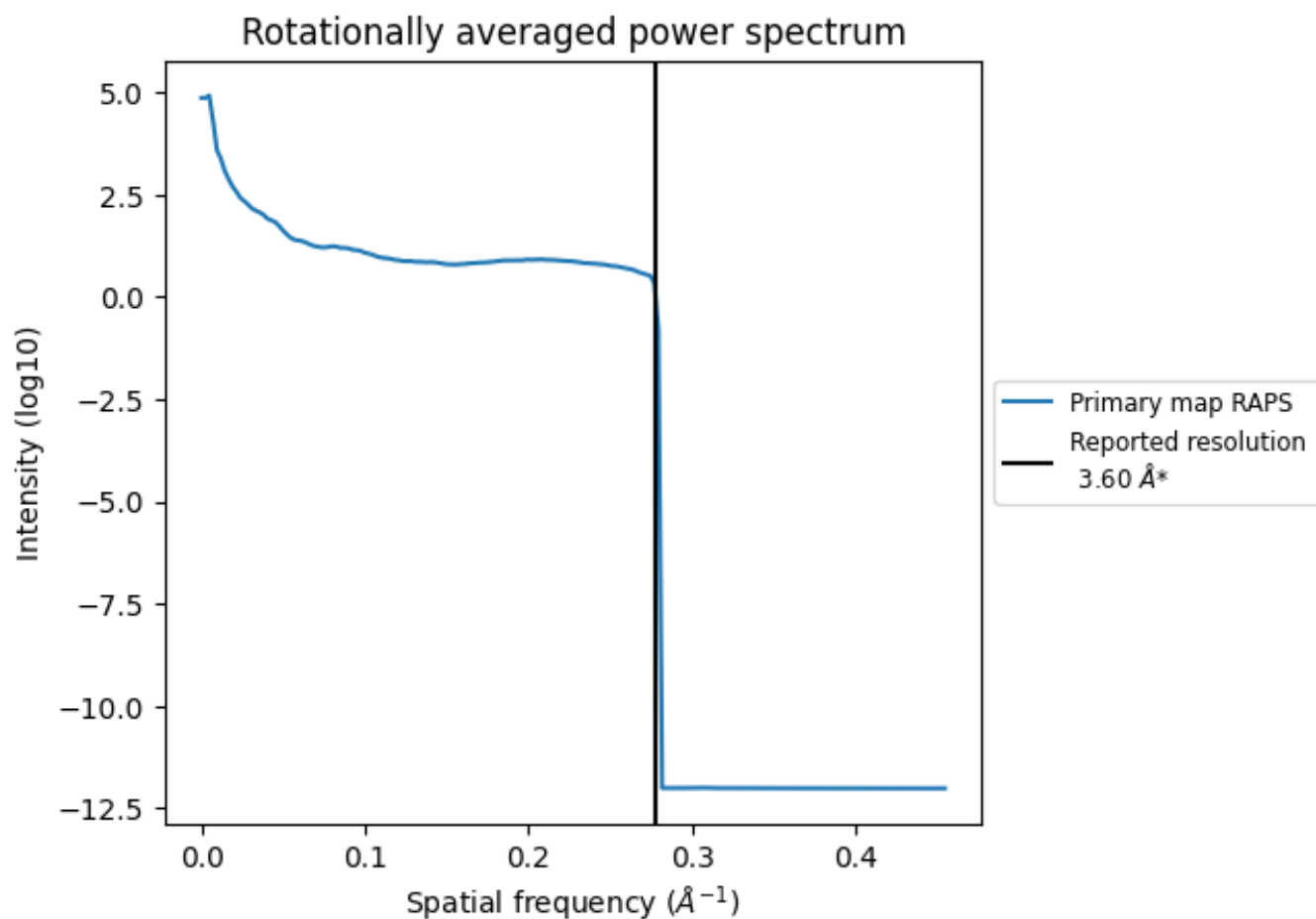
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1076 nm³; this corresponds to an approximate mass of 972 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](#)

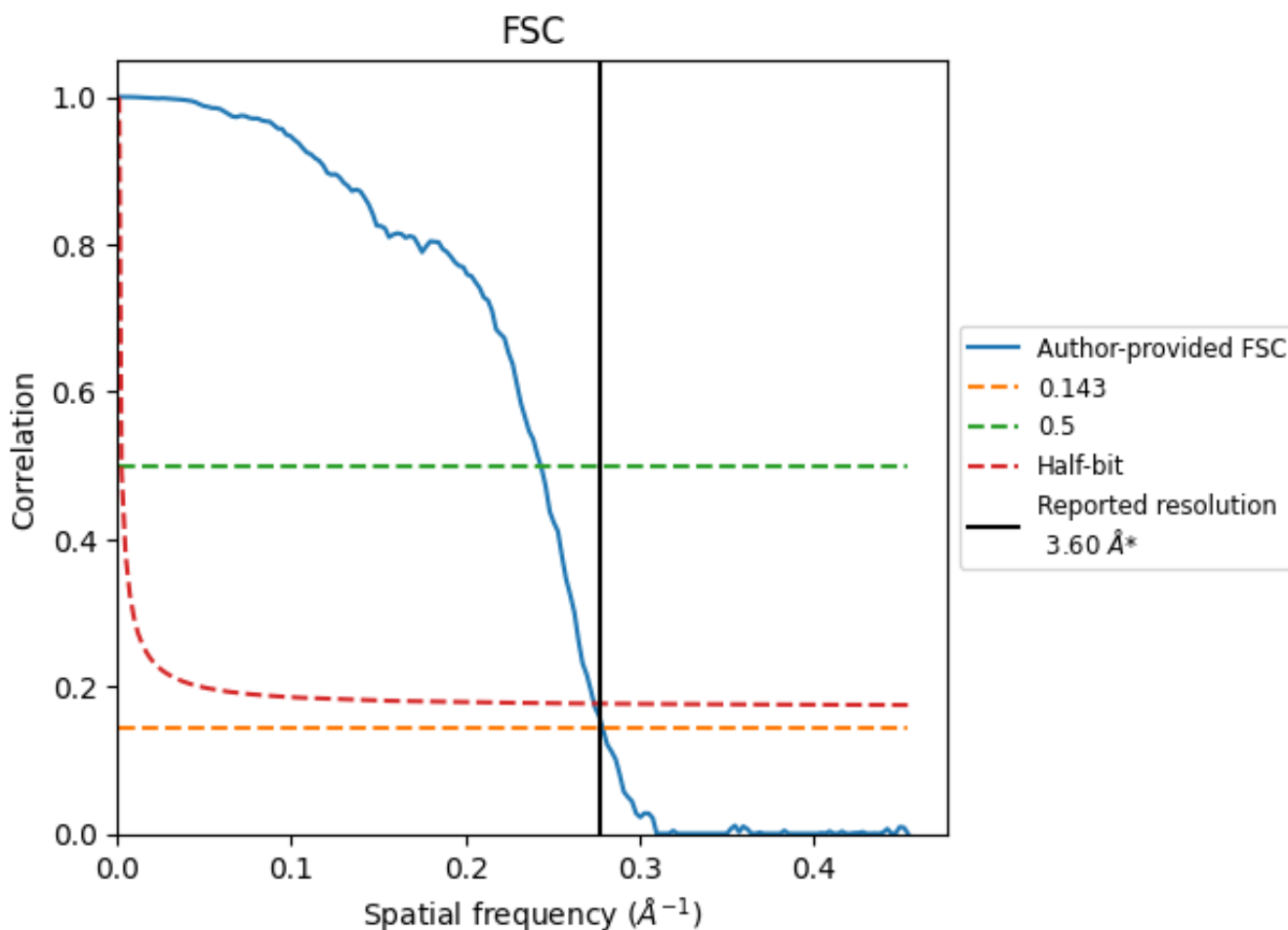


*Reported resolution corresponds to spatial frequency of 0.278 Å⁻¹

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 0.278 Å⁻¹

8.2 Resolution estimates [i](#)

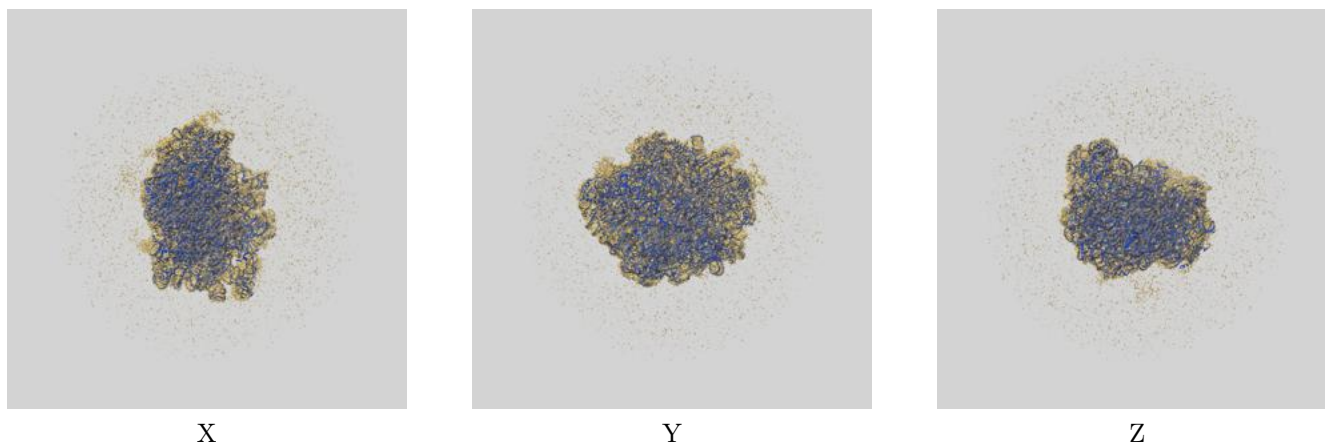
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.60	-	-
Author-provided FSC curve	3.58	4.11	3.65
Unmasked-calculated*	-	-	-

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

9 Map-model fit [i](#)

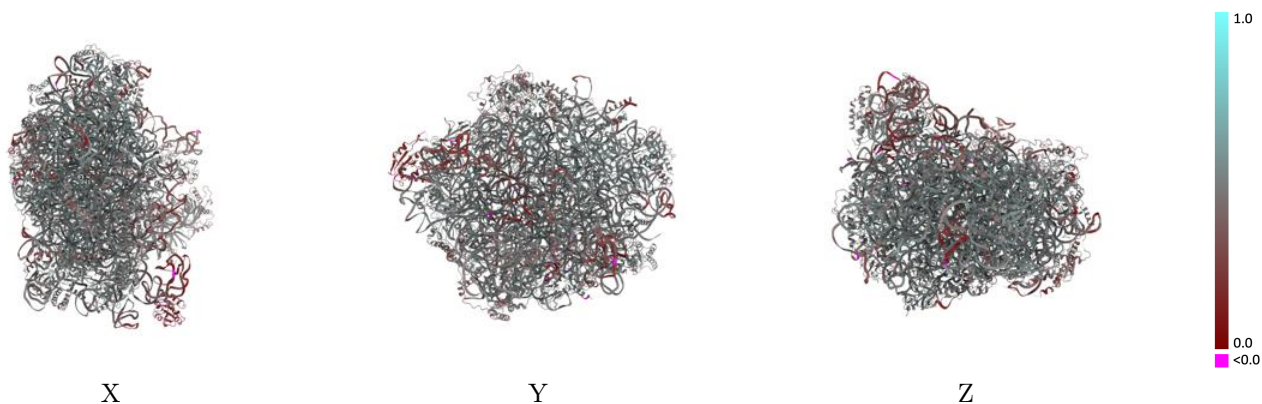
This section contains information regarding the fit between EMDB map EMD-0371 and PDB model 6N8L. Per-residue inclusion information can be found in section 3 on page 12.

9.1 Map-model overlay [i](#)



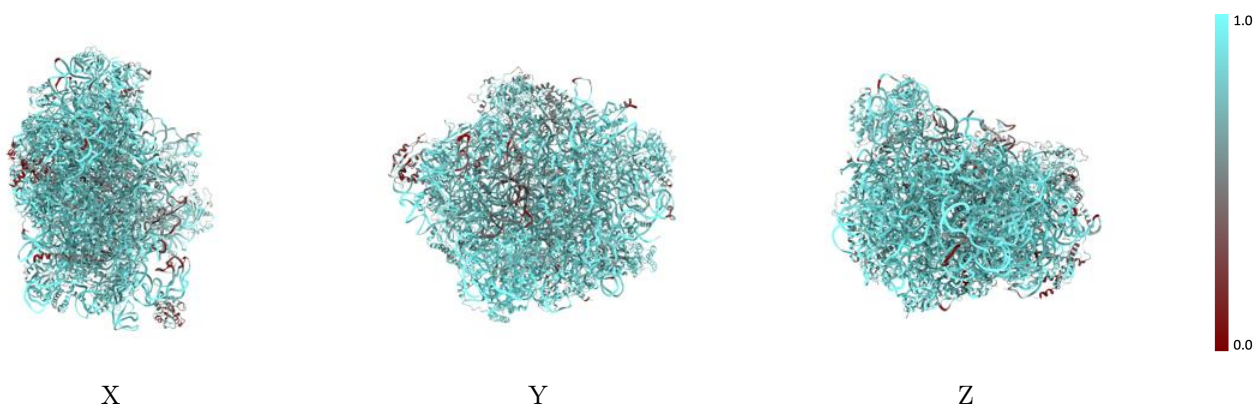
The images above show the 3D surface view of the map at the recommended contour level 0.02 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



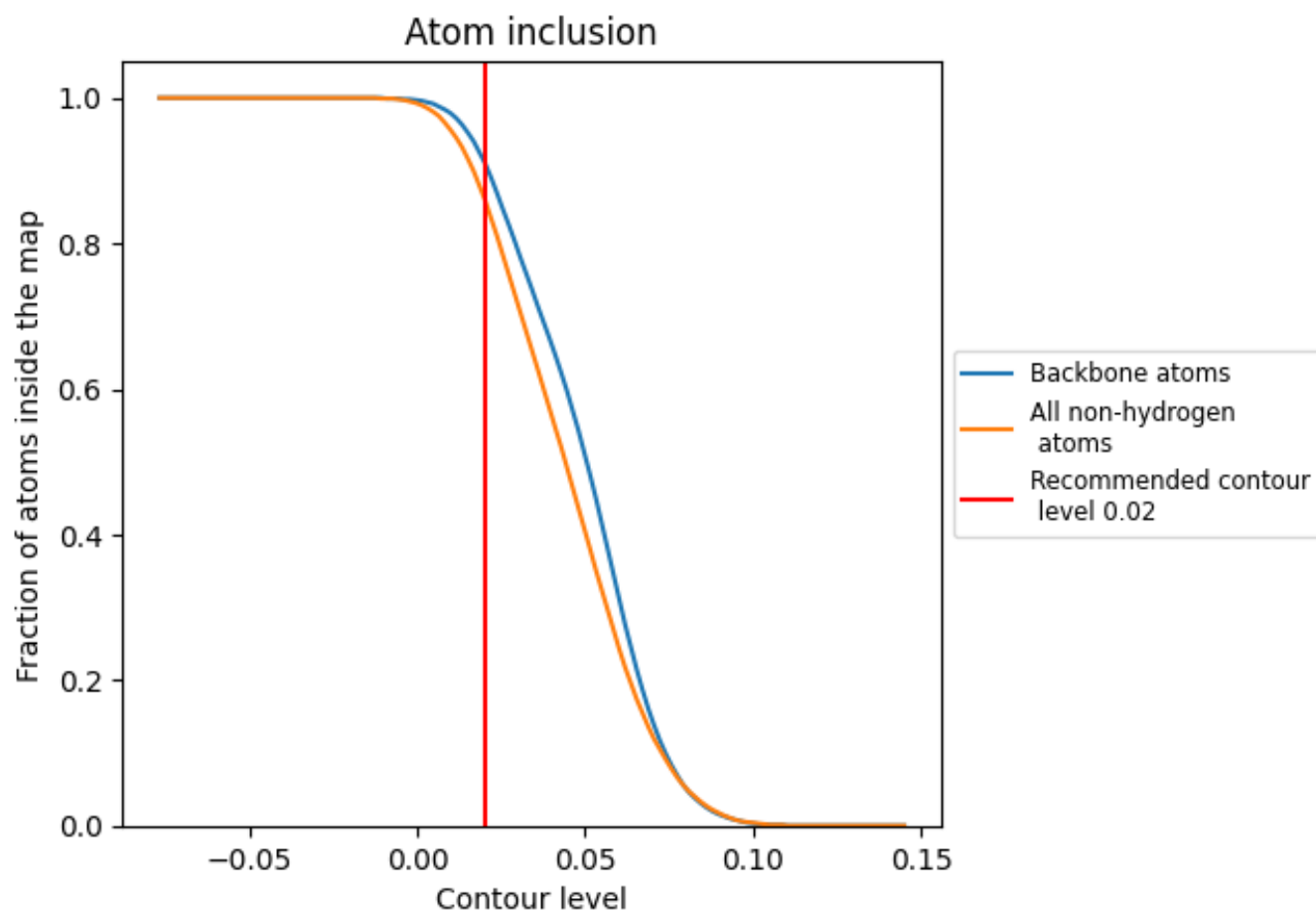
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.02).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 91% of all backbone atoms, 86% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary





























The table lists the average atom inclusion at the recommended contour level (0.02) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8620	 0.4720
1	 0.9180	 0.4740
2	 0.9620	 0.4790
3	 0.9550	 0.4970
A	 0.8590	 0.5240
B	 0.8510	 0.5050
C	 0.8370	 0.5050
D	 0.8250	 0.4450
E	 0.7980	 0.4730
F	 0.8380	 0.4930
G	 0.8300	 0.4780
H	 0.8310	 0.4790
I	 0.5740	 0.4450
J	 0.7510	 0.4120
L	 0.8500	 0.4950
M	 0.8370	 0.4800
N	 0.8690	 0.5260
O	 0.8530	 0.5110
P	 0.8240	 0.5010
Q	 0.8530	 0.5040
R	 0.8390	 0.4980
S	 0.8210	 0.4960
T	 0.7750	 0.4230
U	 0.7800	 0.4170
V	 0.7960	 0.5020
W	 0.4710	 0.2330
X	 0.8360	 0.5020
Y	 0.8450	 0.5010
Z	 0.8270	 0.4950
a	 0.8420	 0.4950
b	 0.3890	 0.3710
c	 0.8250	 0.4680
d	 0.8280	 0.5000
e	 0.8260	 0.5170
f	 0.8540	 0.5260



Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
g	 0.7970	 0.5000
h	 0.8320	 0.4920
i	 0.8430	 0.4850
j	 0.8870	 0.5350
k	 0.7600	 0.4660
l	 0.8530	 0.5220
o	 0.7990	 0.4720
p	 0.8190	 0.5090
q	 0.4150	 0.1540
s	 0.8420	 0.4070
u	 0.6980	 0.4340
v	 0.6310	 0.4180
y	 0.7810	 0.4540
z	 0.4170	 0.3790