



wwPDB EM Validation Summary Report ⓘ

Dec 16, 2025 – 03:55 PM EST

PDB ID : 9P76 / pdb_00009p76
EMDB ID : EMD-71333
Title : In situ human eEF1A-A/T-P state 80S ribosome
Authors : Wei, Z.; Yong, X.
Deposited on : 2025-06-20
Resolution : 2.83 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

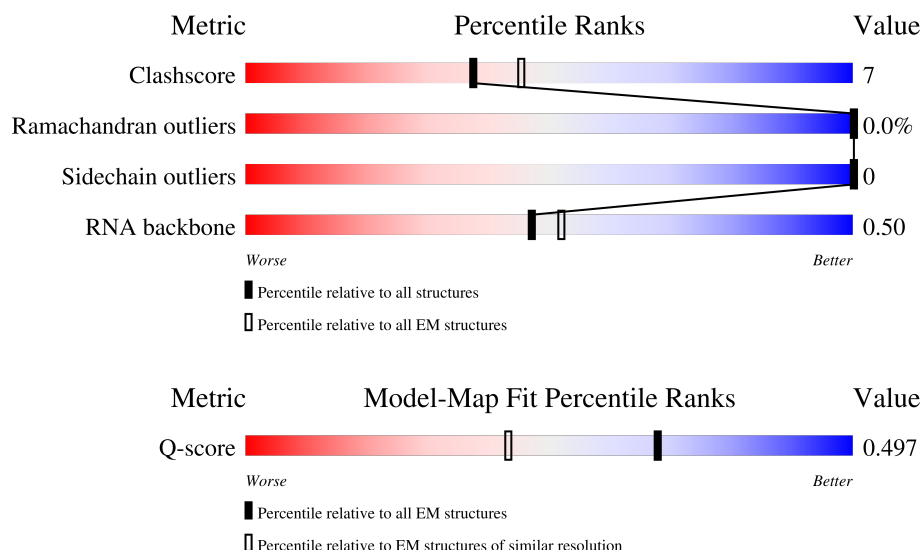
EMDB validation analysis : 0.0.1.dev129
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.47

1 Overall quality at a glance

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

The reported resolution of this entry is 2.83 Å.

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



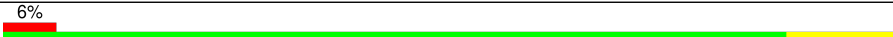
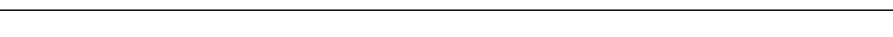
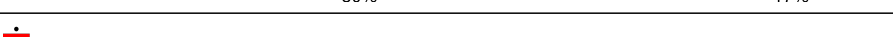
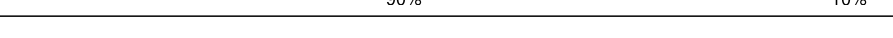
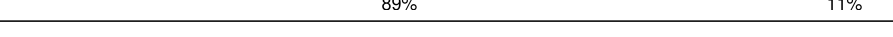
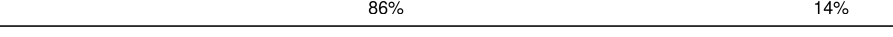
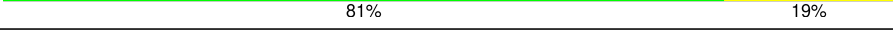
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	11847 (2.33 - 3.33)

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	CI	31	
2	Pt	74	
3	CF	441	

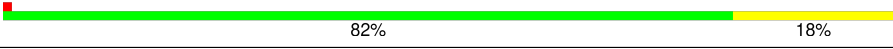
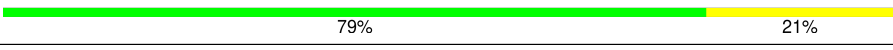
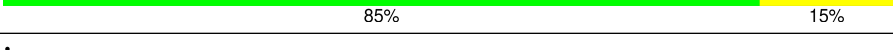
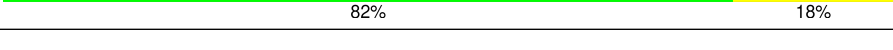
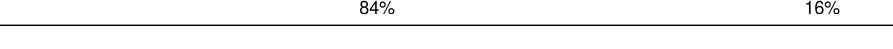
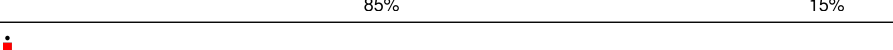
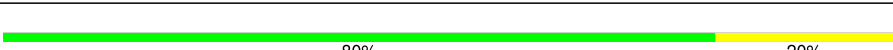
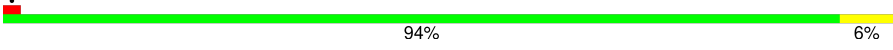
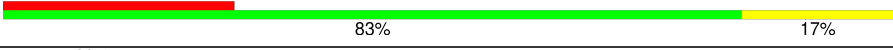
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Mol	Chain	Length	Quality of chain
4	AT	76	
5	L5	3655	
6	L7	120	
7	L8	156	
8	LA	248	
9	LB	402	
10	LC	368	
11	LD	293	
12	LE	250	
13	LF	225	
14	LG	241	
15	LH	190	
16	LI	213	
17	LJ	176	
18	LL	210	
19	LM	139	
20	LN	203	
21	LO	201	
22	LP	153	
23	LQ	187	
24	LR	187	
25	LS	175	
26	LT	159	
27	LU	101	
28	LV	131	

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Mol	Chain	Length	Quality of chain
29	LW	124	
30	LX	120	
31	LY	134	
32	LZ	135	
33	La	147	
34	Lb	121	
35	Lc	98	
36	Ld	107	
37	Le	128	
38	Lf	109	
39	Lg	114	
40	Lh	122	
41	Li	102	
42	Lj	86	
43	Lk	69	
44	Ll	50	
45	Lm	52	
46	Ln	24	
47	Lo	105	
48	Lp	91	
49	Lr	125	
50	Ls	196	
51	Lt	157	
52	SD	227	
53	SF	189	

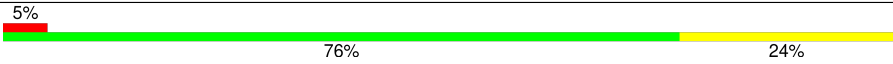
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Mol	Chain	Length	Quality of chain
54	SK	98	
55	SM	122	
56	SP	121	
57	SQ	144	
58	SR	135	
59	SS	145	
60	ST	143	
61	SU	104	
62	SZ	75	
63	Sc	64	
64	Sd	55	
65	Sf	67	
66	Sg	313	
67	SA	221	
68	SB	214	
69	SC	220	
70	SE	262	
71	SG	237	
72	SH	189	
73	SI	206	
74	SJ	185	
75	SL	153	
76	SN	150	
77	SO	137	
78	SV	83	

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Mol	Chain	Length	Quality of chain
79	SW	129	 81%19%
80	SX	141	 82%18%
81	SY	131	 5%76%24%
82	Sa	102	 83%17%
83	Sb	83	 82%18%
84	Se	58	 12%81%19%
85	S2	1740	 49%42%9%

2 Entry composition

There are 89 unique types of molecules in this entry. The entry contains 223377 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 Transcription factor BTF3.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	CI	31	Total	C	N	O	S	0	0
			247	153	55	38	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
2	Pt	74	Total	C	N	O	P	0	0
			1576	705	286	512	73		

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Pt	3	C	U	conflict	GB X64278
Pt	?	-	U	deletion	GB X64278
Pt	?	-	G	deletion	GB X64278
Pt	19	G	U	conflict	GB X64278
Pt	50	U	-	insertion	GB X64278
Pt	74	C	-	insertion	GB X64278

- Molecule 3 is a protein called Elongation factor 1-alpha 1.

Mol	Chain	Residues	Atoms					AltConf	Trace	
3	CF	441	Total	C	N	O	P	S	0	0
			3383	2148	581	636	1	17		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
4	AT	76	Total	C	N	O	P	0	0
			1616	723	291	527	75		

- Molecule 5 is a RNA chain called 28S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	L5	3655	Total	C	N	O	P	1	0
			78444	34968	14346	25475	3655		

- Molecule 6 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	L7	120	Total	C	N	O	P	0	0
			2561	1141	456	844	120		

- Molecule 7 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	L8	156	Total	C	N	O	P	0	0
			3315	1481	585	1094	155		

- Molecule 8 is a protein called 60S ribosomal protein L8.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	LA	248	Total	C	N	O	S	0	0
			1898	1189	389	314	6		

- Molecule 9 is a protein called Large ribosomal subunit protein uL3.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	LB	402	Total	C	N	O	S	0	0
			3238	2060	608	556	14		

- Molecule 10 is a protein called Large ribosomal subunit protein uL4.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	LC	368	Total	C	N	O	S	0	0
			2927	1840	583	489	15		

- Molecule 11 is a protein called Large ribosomal subunit protein uL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	LD	293	Total	C	N	O	S	0	0
			2382	1507	434	427	14		

- Molecule 12 is a protein called Large ribosomal subunit protein eL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	LE	240	Total	C	N	O	S	0	0
			1935	1242	368	321	4		

- Molecule 13 is a protein called 60S ribosomal protein L7.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	LF	225	Total	C	N	O	S	0	0
			1870	1202	358	301	9		

- Molecule 14 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	LG	241	Total	C	N	O	S	0	0
			1927	1228	371	324	4		

- Molecule 15 is a protein called 60S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	LH	190	Total	C	N	O	S	0	0
			1518	956	284	272	6		

- Molecule 16 is a protein called Ribosomal protein uL16-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	LI	213	Total	C	N	O	S	0	0
			1711	1082	329	285	15		

- Molecule 17 is a protein called 60S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	LJ	170	Total	C	N	O	S	0	0
			1362	861	254	241	6		

- Molecule 18 is a protein called Large ribosomal subunit protein eL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	LL	210	Total	C	N	O	S	0	0
			1701	1064	352	281	4		

- Molecule 19 is a protein called 60S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	LM	139	Total	C	N	O	S	0	0
			1138	730	218	183	7		

- Molecule 20 is a protein called 60S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	LN	203	Total	C	N	O	S	0	0
			1701	1072	359	266	4		

- Molecule 21 is a protein called 60S ribosomal protein L13a.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	LO	201	Total	C	N	O	S	0	0
			1650	1063	321	261	5		

- Molecule 22 is a protein called 60S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	LP	153	Total	C	N	O	S	0	0
			1242	776	241	216	9		

- Molecule 23 is a protein called 60S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	LQ	187	Total	C	N	O	S	0	0
			1513	944	314	250	5		

- Molecule 24 is a protein called 60S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	LR	187	Total	C	N	O	S	0	0
			1566	971	336	250	9		

- Molecule 25 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	LS	175	Total	C	N	O	S	0	0
			1453	925	283	235	10		

- Molecule 26 is a protein called 60S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	LT	159	Total	C	N	O	S	0	0
			1298	823	252	217	6		

- Molecule 27 is a protein called Heparin-binding protein HBp15.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	LU	101	Total	C	N	O	S	0	0
			825	529	144	150	2		

- Molecule 28 is a protein called 60S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	LV	131	Total	C	N	O	S	0	0
			979	618	184	172	5		

- Molecule 29 is a protein called Ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	LW	116	Total	C	N	O	S	0	0
			945	592	193	156	4		

- Molecule 30 is a protein called 60S ribosomal protein L23a.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	LX	120	Total	C	N	O	S	0	0
			985	630	185	169	1		

- Molecule 31 is a protein called 60S ribosomal protein L26.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	LY	134	Total	C	N	O	S	0	0
			1115	700	226	186	3		

- Molecule 32 is a protein called 60S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	LZ	135	Total	C	N	O	S	0	0
			1107	714	208	182	3		

- Molecule 33 is a protein called 60S ribosomal protein L27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	La	147	Total	C	N	O	S	0	0
			1162	736	237	186	3		

- Molecule 34 is a protein called Large ribosomal subunit protein eL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	Lb	109	Total	C	N	O	S	0	0
			876	546	189	137	4		

- Molecule 35 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	Lc	98	Total	C	N	O	S	0	0
			764	485	135	138	6		

- Molecule 36 is a protein called 60S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	Ld	107	Total	C	N	O	S	0	0
			888	560	171	155	2		

- Molecule 37 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	Le	128	Total	C	N	O	S	0	0
			1053	667	216	165	5		

- Molecule 38 is a protein called 60S ribosomal protein L35a.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	Lf	109	Total	C	N	O	S	0	0
			876	555	174	144	3		

- Molecule 39 is a protein called 60S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	Lg	114	Total	C	N	O	S	0	0
			906	566	187	147	6		

- Molecule 40 is a protein called 60S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	Lh	122	Total	C	N	O	S	0	0
			1015	641	205	168	1		

- Molecule 41 is a protein called 60S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	Li	102	Total	C	N	O	S	0	0
			832	521	177	129	5		

- Molecule 42 is a protein called 60S ribosomal protein L37.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	Lj	86	Total	C	N	O	S	0	0
			705	434	155	111	5		

- Molecule 43 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	Lk	69	Total	C	N	O	S	0	0
			569	366	103	99	1		

- Molecule 44 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	Ll	50	Total	C	N	O	S	0	0
			444	281	98	64	1		

- Molecule 45 is a protein called Large ribosomal subunit protein eL40.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	Lm	52	Total	C	N	O	S	0	0
			429	266	90	67	6		

- Molecule 46 is a protein called 60S ribosomal protein L41.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	Ln	24	Total	C	N	O	S	0	0
			230	139	62	26	3		

- Molecule 47 is a protein called 60S ribosomal protein L36a.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	Lo	105	Total	C	N	O	S	0	0
			862	542	175	139	6		

- Molecule 48 is a protein called 60S ribosomal protein L37a.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	Lp	91	Total	C	N	O	S	0	0
			708	445	136	120	7		

- Molecule 49 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	Lr	125	Total	C	N	O	S	0	0
			1002	622	207	168	5		

- Molecule 50 is a protein called 60S acidic ribosomal protein P0.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	Ls	196	Total	C	N	O	S	0	0
			1496	952	259	276	9		

- Molecule 51 is a protein called Large ribosomal subunit protein uL11.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	Lt	134	Total	C	N	O	S	0	0
			998	626	180	189	3		

- Molecule 52 is a protein called Small ribosomal subunit protein uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	SD	227	Total	C	N	O	S	0	0
			1765	1125	317	315	8		

- Molecule 53 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	SF	189	Total	C	N	O	S	0	0
			1495	934	284	270	7		

- Molecule 54 is a protein called 40S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	SK	98	Total	C	N	O	S	0	0
			827	539	148	134	6		

- Molecule 55 is a protein called Small ribosomal subunit protein eS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	SM	122	Total	C	N	O	S	0	0
			940	590	164	177	9		

- Molecule 56 is a protein called Small ribosomal subunit protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	SP	121	Total	C	N	O	S	0	0
			985	623	185	170	7		

- Molecule 57 is a protein called Small ribosomal subunit protein uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	SQ	144	Total	C	N	O	S	0	0
			1142	726	216	197	3		

- Molecule 58 is a protein called Small ribosomal subunit protein eS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	SR	135	Total	C	N	O	S	0	0
			1090	685	202	198	5		

- Molecule 59 is a protein called 40S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	SS	145	Total	C	N	O	S	0	0
			1198	751	242	203	2		

- Molecule 60 is a protein called 40S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	ST	143	Total	C	N	O	S	0	0
			1112	697	214	198	3		

- Molecule 61 is a protein called 40S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	SU	104	Total	C	N	O	S	0	0
			821	514	155	148	4		

- Molecule 62 is a protein called Small ribosomal subunit protein eS25.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	SZ	75	Total	C	N	O	S	0	0
			598	382	111	104	1		

- Molecule 63 is a protein called 40S ribosomal protein S28.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	Sc	64	Total	C	N	O	S	0	0
			506	308	102	94	2		

- Molecule 64 is a protein called 40S ribosomal protein S29.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	Sd	55	Total	C	N	O	S	0	0
			459	286	94	74	5		

- Molecule 65 is a protein called Ubiquitin-40S ribosomal protein S27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	Sf	67	Total	C	N	O	S	0	0
			548	346	102	93	7		

- Molecule 66 is a protein called Receptor of activated protein C kinase 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	Sg	313	Total	C	N	O	S	0	0
			2436	1535	424	465	12		

- Molecule 67 is a protein called 40S ribosomal protein SA.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	SA	221	Total	C	N	O	S	0	0
			1741	1106	305	322	8		

- Molecule 68 is a protein called 40S ribosomal protein S3a.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	SB	214	Total	C	N	O	S	0	0
			1738	1103	310	311	14		

- Molecule 69 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	SC	220	Total	C	N	O	S	0	0
			1707	1104	293	300	10		

- Molecule 70 is a protein called Small ribosomal subunit protein eS4, X isoform.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	SE	262	Total	C	N	O	S	0	0
			2076	1324	386	358	8		

- Molecule 71 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	SG	237	Total	C	N	O	S	0	0
			1923	1200	387	329	7		

- Molecule 72 is a protein called Small ribosomal subunit protein eS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	SH	186	Total	C	N	O	S	0	0
			1497	956	274	266	1		

- Molecule 73 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	SI	206	Total	C	N	O	S	0	0
			1686	1058	332	291	5		

- Molecule 74 is a protein called 40S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	SJ	185	Total	C	N	O	S	0	0
			1525	969	306	248	2		

- Molecule 75 is a protein called 40S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	SL	153	Total	C	N	O	S	0	0
			1247	793	234	214	6		

- Molecule 76 is a protein called 40S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	SN	150	Total	C	N	O	S	0	0
			1208	773	229	205	1		

- Molecule 77 is a protein called 40S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	SO	137	Total	C	N	O	S	0	0
			1024	627	200	191	6		

- Molecule 78 is a protein called Small ribosomal subunit protein eS21.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	SV	83	Total	C	N	O	S	0	0
			636	393	117	121	5		

- Molecule 79 is a protein called 40S ribosomal protein S15a.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	SW	129	Total	C	N	O	S	0	0
			1034	659	193	176	6		

- Molecule 80 is a protein called 40S ribosomal protein S23.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	SX	141	Total	C	N	O	S	0	0
			1098	693	219	183	3		

- Molecule 81 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	SY	131	Total	C	N	O	S	0	0
			1065	673	209	178	5		

- Molecule 82 is a protein called 40S ribosomal protein S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	Sa	102	Total	C	N	O	S	0	0
			821	512	171	133	5		

- Molecule 83 is a protein called Small ribosomal subunit protein eS27.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	Sb	83	Total	C	N	O	S	0	0
			651	408	121	115	7		

- Molecule 84 is a protein called Small ribosomal subunit protein eS30.

Mol	Chain	Residues	Atoms					AltConf	Trace
84	Se	58	Total	C	N	O	S	0	0
			459	284	100	74	1		

- Molecule 85 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
85	S2	1740	Total	C	N	O	P	0	0
			36953	16508	6600	12106	1739		

- Molecule 86 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

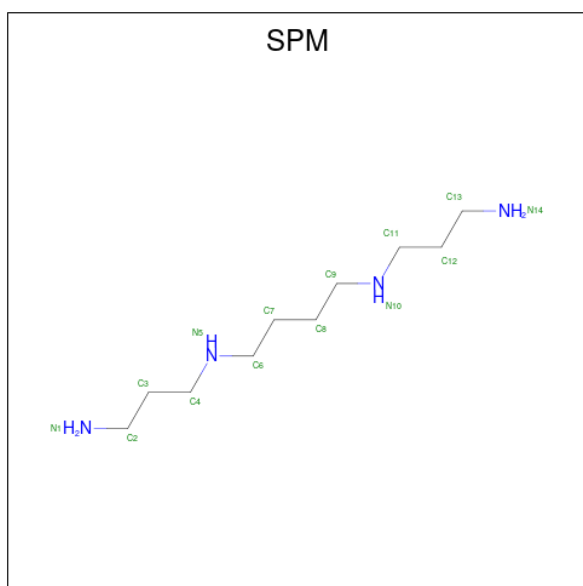
Mol	Chain	Residues	Atoms		AltConf
86	L5	178	Total	Mg	0
			178	178	
86	L7	3	Total	Mg	0
			3	3	
86	L8	4	Total	Mg	0
			4	4	
86	LA	1	Total	Mg	0
			1	1	
86	LB	1	Total	Mg	0
			1	1	
86	LP	1	Total	Mg	0
			1	1	
86	LV	1	Total	Mg	0
			1	1	
86	Le	1	Total	Mg	0
			1	1	
86	Lj	1	Total	Mg	0
			1	1	

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Mol	Chain	Residues	Atoms		AltConf
86	SS	1	Total	Mg	0
			1	1	
86	SG	1	Total	Mg	0
			1	1	
86	S2	26	Total	Mg	0
			26	26	

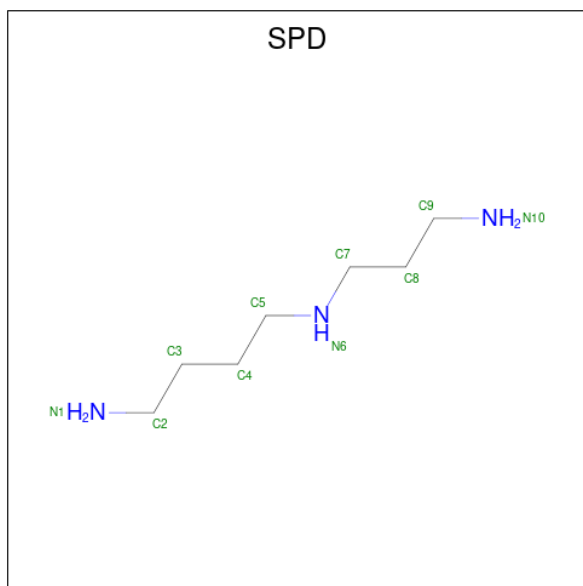
- Molecule 87 is SPERMINE (CCD ID: SPM) (formula: $C_{10}H_{26}N_4$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			AltConf
87	L5	1	Total	C	N	0
			14	10	4	
87	L5	1	Total	C	N	0
			14	10	4	
87	L5	1	Total	C	N	0
			14	10	4	
87	L5	1	Total	C	N	0
			14	10	4	
87	L5	1	Total	C	N	0
			14	10	4	
87	L5	1	Total	C	N	0
			14	10	4	

- Molecule 88 is SPERMIDINE (CCD ID: SPD) (formula: $C_7H_{19}N_3$) (labeled as "Ligand of

Interest" by depositor).



Mol	Chain	Residues	Atoms			AltConf
88	L5	1	Total	C	N	0
			10	7	3	
88	L5	1	Total	C	N	0
			10	7	3	
88	L5	1	Total	C	N	0
			10	7	3	
88	L5	1	Total	C	N	0
			10	7	3	
88	L5	1	Total	C	N	0
			10	7	3	
88	L5	1	Total	C	N	0
			10	7	3	
88	L5	1	Total	C	N	0
			10	7	3	
88	LN	1	Total	C	N	0
			10	7	3	

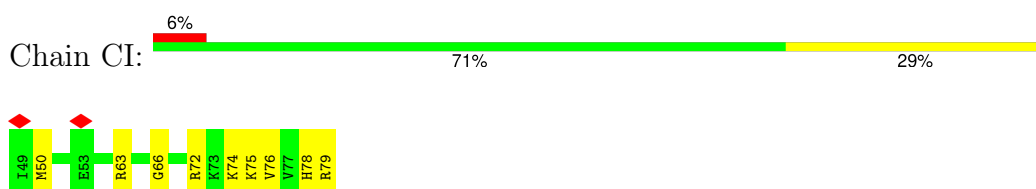
- Molecule 89 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
89	Lg	1	Total 1	Zn 1	0
89	Lj	1	Total 1	Zn 1	0
89	Lm	1	Total 1	Zn 1	0
89	Lo	1	Total 1	Zn 1	0
89	Lp	1	Total 1	Zn 1	0
89	Sa	1	Total 1	Zn 1	0

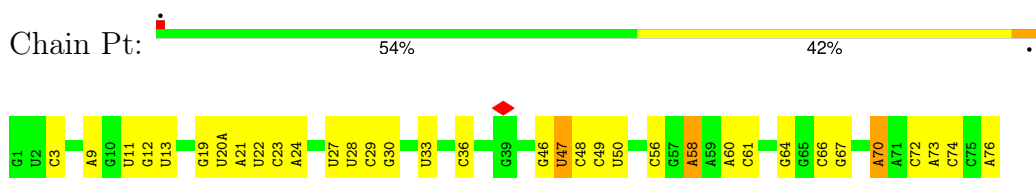
3 Residue-property plots [i](#)

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

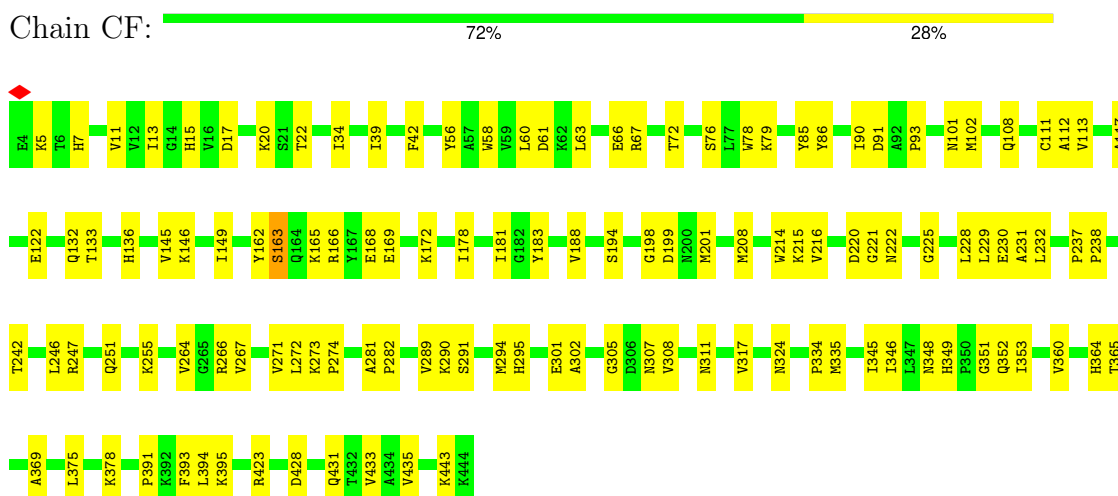
- Molecule 1: Transcription factor BTF3



- Molecule 2: P site tRNA



- Molecule 3: Elongation factor 1-alpha 1

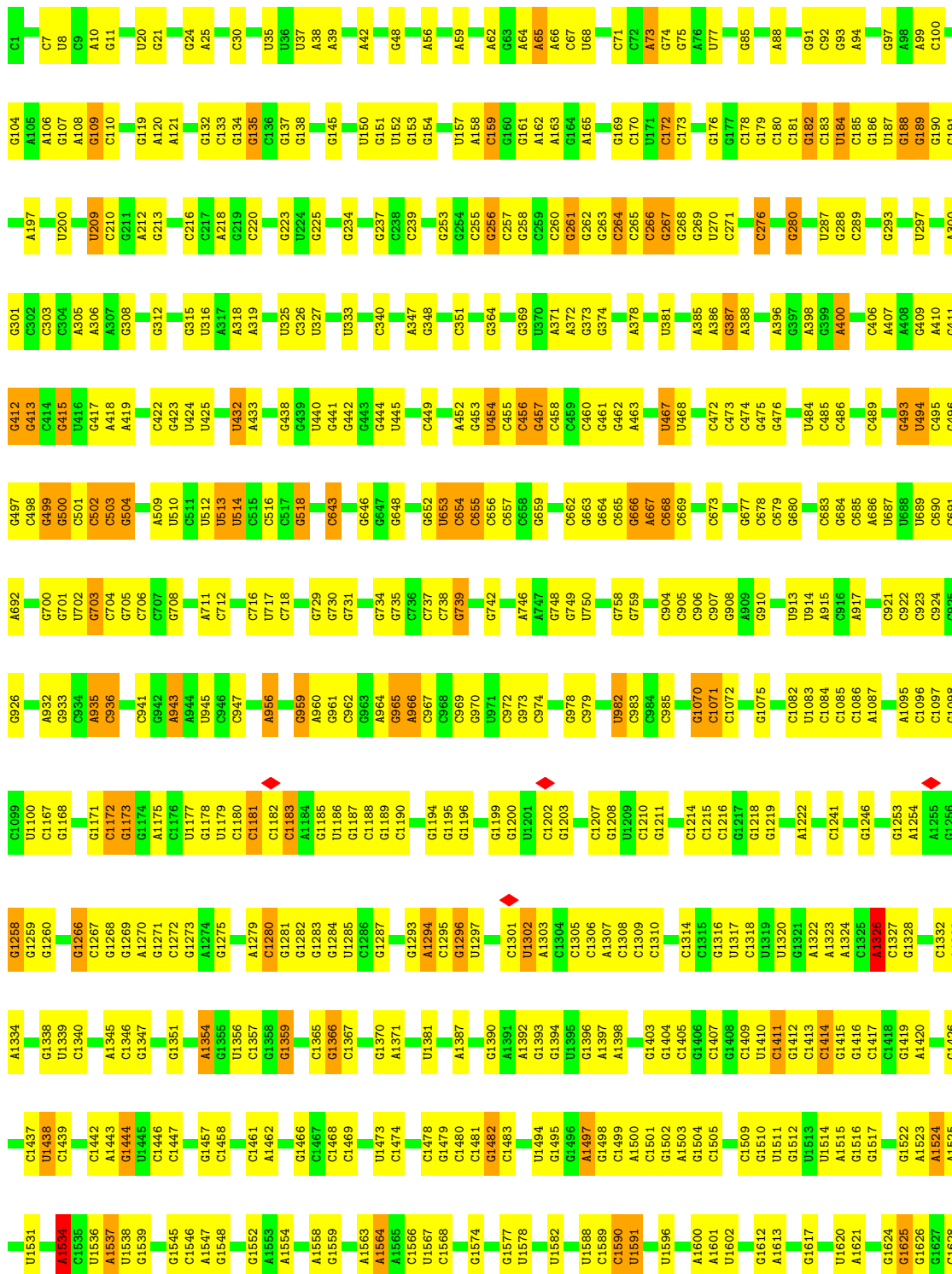


- Molecule 4: AT site tRNA

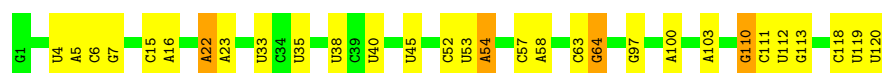




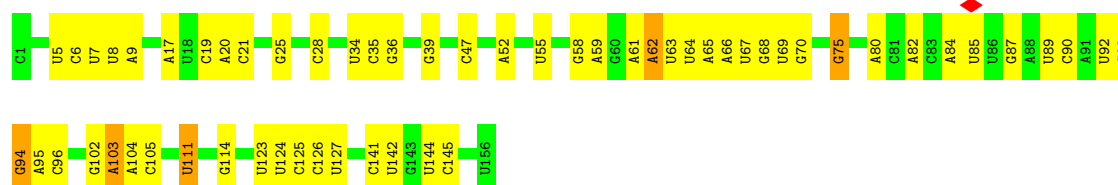
• Molecule 5: 28S rRNA



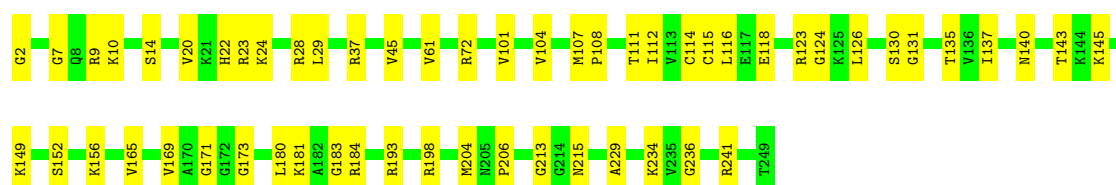
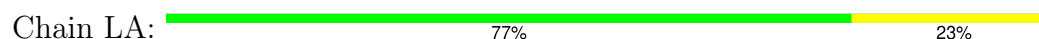
U3657	C3658	C3659	C3660	C3661	C3662	C3663	C3664	C3665	C3666	C3670	C3673	C3674	C3685	C3686	C3687	C3688	C3689	C3690	C3691	C3692	C3693	C3694	C3695	C3696	C3697	C3698	C3701	C3707	C3708	C3709	C3710	C3711	C3712	C3713	C3717	C3718	C3719	C3720	C3721	C3722	C3723	C3726	C3727	C3732	C3733	C3736	C3737	C3744																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
G2907	U2908	C2909	C2910	C3584	C3585	C3588	C3589	C3590	C3591	C3592	C3593	C3594	U3595	C3596	C3597	C3598	C3599	C3600	C3604	C3605	U3606	U3607	A3608	C3609	A3610	A3611	C3615	C3619	A3624	C3625	C3626	C3627	A3630	C3633	C3634	A3635	C3636	U3637	C3638	U3639	U3640	U3641	U3644	U3645	A3646	A3647	A3648	C3654	C3655	C3656																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
A2812	A2813	C2814	A2815	G2816	G2822	C2823	C2824	A2825	U2826	C2827	C2828	U2829	A2832	A2835	A2836	U2837	U2838	U2839	A2844	A2845	G2846	G2847	A2848	G2849	G2850	G2851	G2852	C2853	C2854	C2855	G2858	G2862	C2863	C2864	C2865	C2866	C2867	C2868	C2869	C2870	C2871	C2872	G2875	A2876	G2877	G2878	G2879	G2880	G2881	G2882	G2883	G2884	G2885	G2886	G2887	G2888	G2889	G2890	U2891	A2894	G2898	C2899	U2900	C2901	C2902	C2903	C2904	C2905	C2906																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
G2717	U2718	C2719	C2720	G2721	C2724	A2725	A2726	C2727	G2732	C2733	C2739	C2742	A2743	A2744	A2745	A2746	C2749	C2750	C2756	A2757	C2758	C2759	C2760	C2761	C2762	U2763	A2764	C2765	A2766	C2767	C2768	U2769	C2770	G2773	G2777	G2778	A2783	A2787	U2788	A2789	U2790	U2803	C2804	C2805	A2806	G2809	U2810	C2811																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
A2623	G2624	C2627	U2632	U2633	C2634	U2635	U2636	U2637	U2638	U2639	G2640	A2641	G2648	G2649	G2652	C2653	C2654	C2655	G2658	G2662	C2663	C2664	C2665	C2666	C2667	C2668	C2669	C2670	C2671	C2672	G2675	A2676	G2677	U2687	C2688	G2693	C2694	A2695	A2696	C2702	G2706	U2707	C2804	C2805	C2708	C2710	G2711	C2716																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
A2529	A2537	U2538	C2539	C2540	A2543	U2544	U2545	U2546	U2547	G2550	U2554	U2555	C2556	U2557	C2560	A2565	C2568	C2569	C2570	C2571	C2572	C2573	C2574	C2575	C2576	C2577	C2578	C2579	C2580	A2581	C2582	C2583	C2586	C2587	C2588	C2589	C2590	A2591	A2601	C2602	C2603	C2607	G2610	A2611	G2612	C2613	G2618	A2621	C2622																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
G2424	U2425	U2436	C2437	G2448	A2449	A2453	C2458	C2464	C2465	U2468	C2469	C2470	C2471	G2474	G2475	C2476	C2477	C2478	C2479	G2480	C2481	C2482	C2483	C2484	U2485	C2486	C2487	C2488	C2489	C2490	C2491	C2492	C2493	U2494	U2495	C2496	C2497	C2498	C2499	C2504	C2505	C2506	A2513	C2514	G2515	G2516	A2517	C2518	U2519	C2520	G2521																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
C2325	G2326	U2329	C2330	G2331	A2332	G2333	C2334	C2335	C2336	A2347	G2348	U2349	C2350	C2351	A2360	U2361	U2362	G2364	A2368	A2376	C2377	C2378	C2379	C2380	A2381	U2386	A2395	C2396	U2397	C2398	C2399	G2400	A2401	C2402	A2403	G2407	U2408	U2409	C2410	C2411	U2412	U2413	G2414	U2415	U2416	A2417	G2421																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
G2092	A2093	G2094	A2095	G2096	U2097	C2098	C2101	G2102	G2103	G2104	A2105	G2106	C2107	G2110	G2111	G2112	C2113	C2114	C2115	C2116	C2117	C2118	C2119	C2120	C2121	C2122	C2123	C2124	C2125	C2126	C2127	C2128	C2129	C2130	C2131	C2132	C2133	C2134	C2135	C2136	C2137	C2138	C2139	C2140	C2141	C2142	C2143	C2144	C2145	C2146	C2147	C2148	C2149	C2150	C2151	C2152	C2153	C2154	C2155	C2156	C2157	C2158	C2159	C2160	C2161	C2162	C2163	C2164	C2165	C2166	C2167	C2168	C2169	C2170	C2171	C2172	C2173	C2174	C2175	C2176	C2177	C2178	C2179	C2180	C2181	C2182	C2183	C2184	C2185	C2186	C2187	C2188	C2189	C2190	C2191	C2192	C2193	C2194	C2195	C2196	C2197	C2198	C2199	C2200	C2201	C2202	C2203	C2204	C2205	C2206	C2207	C2208	C2209	C2210	C2211	C2212	C2213	C2214	C2215	C2216	C2217	C2218	C2219	C2220	C2221	C2222	C2223	C2224	C2225	C2226	C2227	C2228	C2229	C2230	C2231	C2232	C2233	C2234	C2235	C2236	C2237	C2238	C2239	C2240	C2241	C2242	C2243	C2244	C2245	C2246	C2247	C2248	C2249	C2250	C2251	C2252	C2253	C2254	C2255	C2256	C2257	C2258	C2259	C2260	C2261	C2262	C2263	C2264	C2265	C2266	C2267	C2268	C2269	C2270	C2271	C2272	C2273	C2274	C2275	C2276	C2277	C2278	C2279	C2280	C2281	C2282	C2283	C2284	C2285	C2286	C2287	C2288	C2289	C2290	C2291	C2292	C2293	C2294	C2295	C2296	C2297	C2298	C2299	C2300	C2301	C2302	C2303	C2304	C2305	C2306	C2307	C2308	C2309	C2310	C2311	C2312	C2313	C2314	C2315	C2316	C2317	C2318	C2319	C2320	C2321	C2322	C2323	C2324	C2325	C2326	C2327	C2328	C2329	C2330	C2331	C2332	C2333	C2334	C2335	C2336	C2337	C2338	C2339	C2340	C2341	C2342	C2343	C2344	C2345	C2346	C2347	C2348	C2349	C2350	C2351	C2352	C2353	C2354	C2355	C2356	C2357	C2358	C2359	C2360	C2361	C2362	C2363	C2364	C2365	C2366	C2367	C2368	C2369	C2370	C2371	C2372	C2373	C2374	C2375	C2376	C2377	C2378	C2379	C2380	C2381	C2382	C2383	C2384	C2385	C2386	C2387	C2388	C2389	C2390	C2391	C2392	C2393	C2394	C2395	C2396	C2397	C2398	C2399	C2400	C2401	C2402	C2403	C2404	C2405	C2406	C2407	C2408	C2409	C2410	C2411	C2412	C2413	C2414	C2415	C2416	C2417	C2418	C2419	C2420	C2421	C2422	C2423	C2424	C2425	C2426	C2427	C2428	C2429	C2430	C2431	C2432	C2433	C2434	C2435	C2436	C2437	C2438	C2439	C2440	C2441	C2442	C2443	C2444	C2445	C2446	C2447	C2448	C2449	C2450	C2451	C2452	C2453	C2454	C2455	C2456	C2457	C2458	C2459	C2460	C2461	C2462	C2463	C2464	C2465	C2466	C2467	C2468	C2469	C2470	C2471	C2472	C2473	C2474	C2475	C2476	C2477	C2478	C2479	C2480	C2481	C2482	C2483	C2484	C2485	C2486	C2487	C2488	C2489	C2490	C2491	C2492	C2493	C2494	C2495	C2496	C2497	C2498	C2499	C2500	C2501	C2502	C2503	C2504	C2505	C2506	C2507	C2508	C2509	C2510	C2511	C2512	C2513	C2514	C2515	C2516	C2517	C2518	C2519	C2520	C2521	C2522	C2523	C2524	C2525	C2526	C2527	C2528	C2529	C2530	C2531	C2532	C2533	C2534	C2535	C2536	C2537	C2538	C2539	C2540	C2541	C2542	C2543	C2544	C2545	C2546	C2547	C2548	C2549	C2550	C2551	C2552	C2553	C2554	C2555	C2556	C2557	C2558	C2559	C2560	C2561	C2562	C2563	C2564	C2565	C2566	C2567	C2568	C2569	C2570	C2571	C2572	C2573	C2574	C2575	C2576	C2577	C2578	C2579	C2580	C2581	C2582	C2583	C2584	C2585	C2586	C2587	C2588	C2589	C2590	C2591	C2592	C2593	C2594	C2595	C2596	C2597	C2598	C2599	C2600	C2601	C2602	C2603	C2604	C2605	C2606	C2607	C2608	C2609	C2610	C2611	C2612	C2613	C2614	C2615	C2616	C2617	C2618	C2619	C2620	C2621	C2622	C2623	C2624	C2625	C2626	C2627	C2628	C2629	C2630	C2631	C2632	C2633	C2634	C2635	C2636	C2637	C2638	C2639	C2640	C2641	C2642	C2643	C2644	C2645	C2646	C2647	C2648	C2649	C2650	C2651	C2652	C2653	C2654	C2655	C2656	C2657	C2658	C2659	C2660	C2661	C2662	C2663	C2664	C2665	C2666	C2667	C2668	C2669	C2670	C2671	C2672	C2673	C2674	C2675	C2676	C2677	C2678	C2679	C2680	C2681	C2682	C2683	C2684	C2685	C2686	C2687	C2688	C2689	C2690	C2691	C2692	C2693	C2694	C2695	C2696	C2697	C2698	C2699	C2700	C2701	C2702	C2703	C2704	C2705	C2706	C2707	C2708	C2709	C2710	C2711	C2712	C2713	C2714	C2715	C2716	C2717	C2718	C2719	C2720	C2721	C2722	C2723	C2724	C2725	C2726	C2727	C2728	C2729	C2730	C2731	C2732	C2733	C2734	C2735	C2736	C2737	C2738	C2739	C2740	C2741	C2742	C2743	C2744	C2745	C2746	C2747	C2748	C2749	C2750	C2751	C2752	C2753	C2754	C2755	C2756	C2757	C2758	C2759	C2760	C2761	C2762	C2763	C2764	C2765	C2766	C2767	C2768	C2769	C2770	C2771	C2772	C2773	C2774	C2775	C2776	C2777	C2778	C2779	C2780	C2781	C2782	C2783	C2784	C2785	C2786	C2787	C2788	C2789	C2790	C2791	C2792	C2793	C2794	C2795	C2796	C2797	C2798	C2799	C2800	C2801	C2802	C2803	C2804	C2805	C2806	C2807	C2808	C2809	C2810	C2811	C2812	C2813	C2814	C2815	C2816	C2817	C2818	C2819	C2820	C2821	C2822	C2823	C2824	C2825	C2826	C2827	C2828	C2829	C2830	C2831	C2832	C2833	C2834	C2835	C2836	C2837	C2838	C2839	C2840	C2841	C2842	C2843	C2844	C2845	C2846	C2847	C2848	C2849	C2850	C2851	C2852	C2853	C2854	C2855	C2856	C2857	C2858	C2859	C2860	C2861	C2862	C2863	C2864	C2865	C2866	C2867	C2868	C2869	C2870	C2871	C2872	C2873	C2874	C2875	C2876	C2877	C2878	C2879	C2880	C2881	C2882	C2883	C2884	C2885	C2886	C2887	C2888	C2889	C2890	C2891	C2892	C2893	C2894	C2895	C2896	C2897	C2898	C2899	C2900	C2901	C2902	C2903	C2904	C2905	C2906	C2907	C2908	C2909	C2910	C2911	C2912	C2913	C2914	C2915	C2916	C2917	C2918	C2919	C2920	C2921	C2922	C2923	C2924	C2925	C2926	C2927	C2928	C2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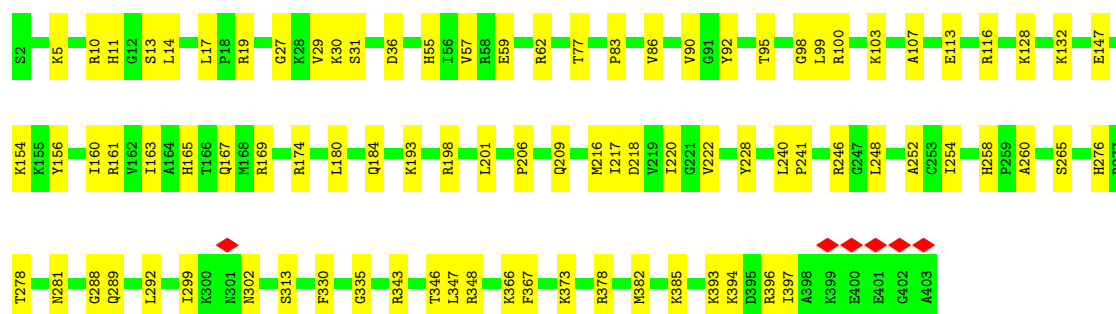
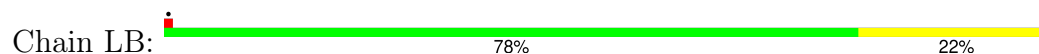
- Molecule 7: 5.8S rRNA



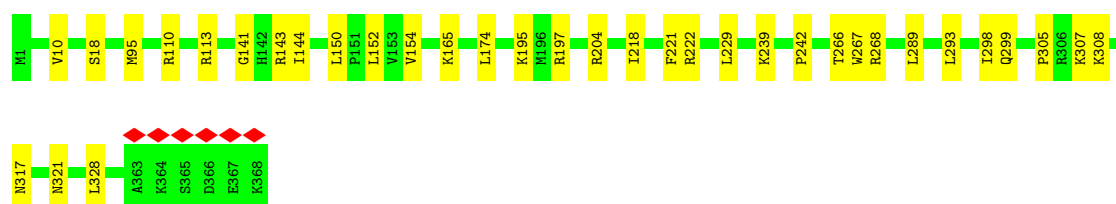
- Molecule 8: 60S ribosomal protein L8



- Molecule 9: Large ribosomal subunit protein uL3

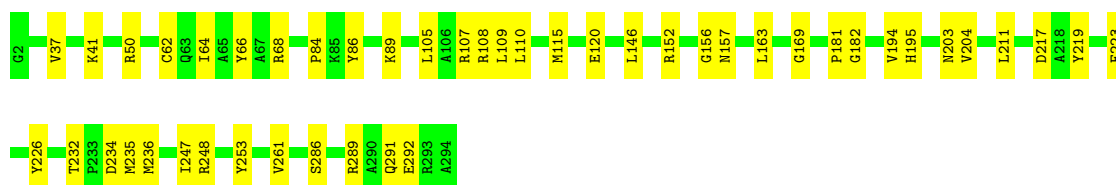


- Molecule 10: Large ribosomal subunit protein uL4



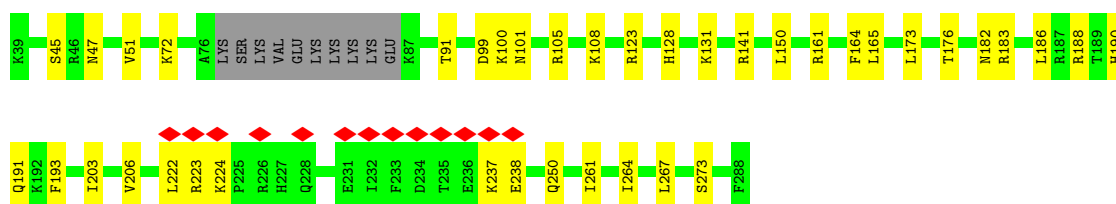
- Molecule 11: Large ribosomal subunit protein uL18

Chain LD:  84% 16%



- Molecule 12: Large ribosomal subunit protein eL6

Chain LE:  5% 80% 16%



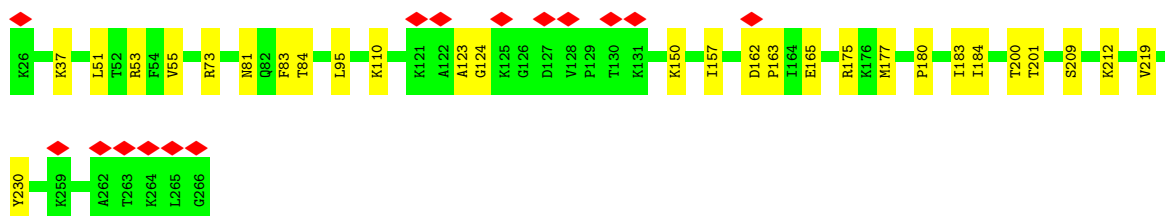
- Molecule 13: 60S ribosomal protein L7

Chain LF:  84% 16%



- Molecule 14: 60S ribosomal protein L7a

Chain LG:  6% 88% 12%



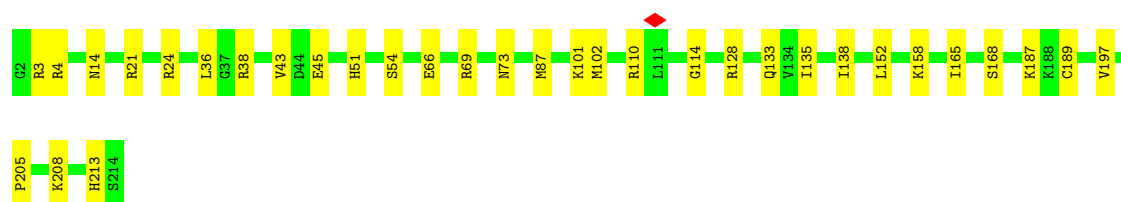
- Molecule 15: 60S ribosomal protein L9

Chain LH:  86% 14%



- Molecule 16: Ribosomal protein uL16-like

Chain LI:  85% 15%



- Molecule 17: 60S ribosomal protein L11

Chain LJ: 80% 17%



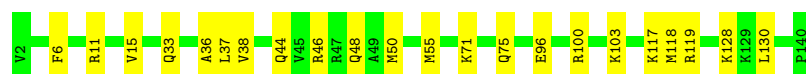
- Molecule 18: Large ribosomal subunit protein eL13

Chain LL: 90% 10%



- Molecule 19: 60S ribosomal protein L14

Chain LM: 84% 16%



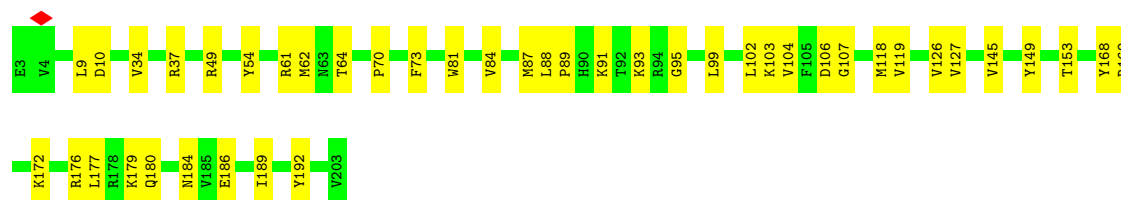
- Molecule 20: 60S ribosomal protein L15

Chain LN: 89% 11%



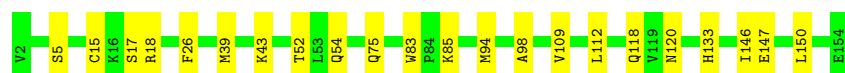
- Molecule 21: 60S ribosomal protein L13a

Chain LO: 79% 21%



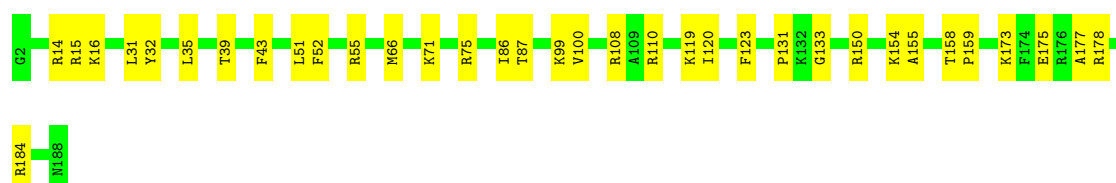
- Molecule 22: 60S ribosomal protein L17

Chain LP:  86% 14%



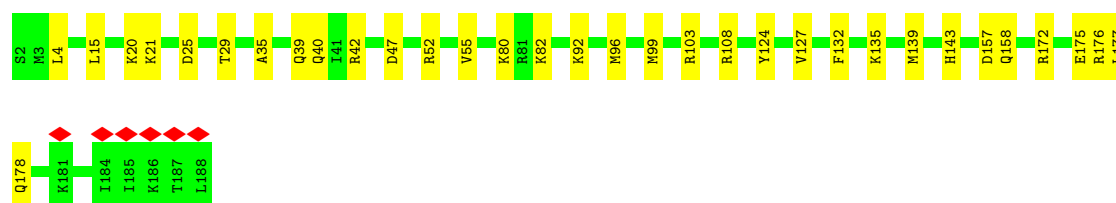
- Molecule 23: 60S ribosomal protein L18

Chain LQ:  81% 19%



- Molecule 24: 60S ribosomal protein L19

Chain LR:  82% 18%



- Molecule 25: 60S ribosomal protein L18a

Chain LS:  83% 17%



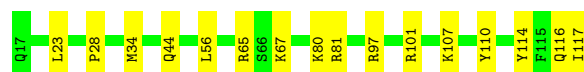
- Molecule 26: 60S ribosomal protein L21

Chain LT:  82% 18%



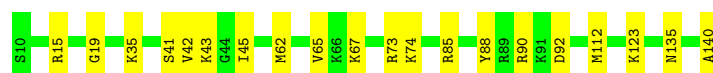
- Molecule 27: Heparin-binding protein HBp15

Chain LU:  84% 16%



- Molecule 28: 60S ribosomal protein L23

Chain LV:  85% 15%



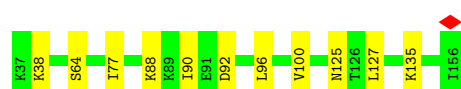
- Molecule 29: Ribosomal protein L24

Chain LW:  77% 17% 6%



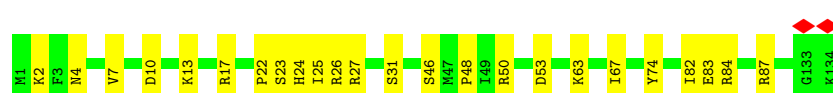
- Molecule 30: 60S ribosomal protein L23a

Chain LX:  91% 9%



- Molecule 31: 60S ribosomal protein L26

Chain LY:  82% 18%



- Molecule 32: 60S ribosomal protein L27

Chain LZ:  79% 21%



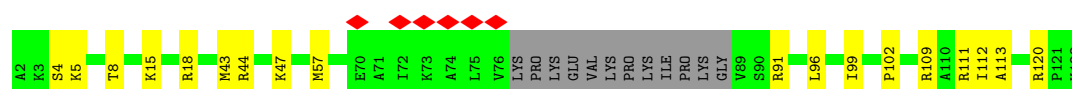
- Molecule 33: 60S ribosomal protein L27a

Chain La:  89% 11%



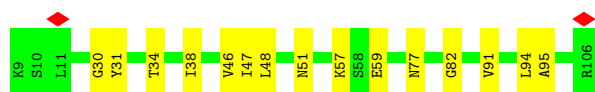
- Molecule 34: Large ribosomal subunit protein eL29

Chain Lb:  5% 75% 15% 10%



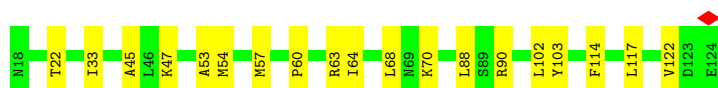
- Molecule 35: 60S ribosomal protein L30

Chain Lc:  85% 15%



- Molecule 36: 60S ribosomal protein L31

Chain Ld:  82% 18%



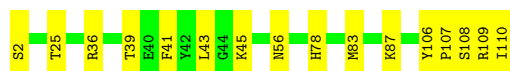
- Molecule 37: 60S ribosomal protein L32

Chain Le:  84% 16%



- Molecule 38: 60S ribosomal protein L35a

Chain Lf:  85% 15%



- Molecule 39: 60S ribosomal protein L34

Chain Lg:  85% 15%



- Molecule 40: 60S ribosomal protein L35

Chain Lh:  83% 17%



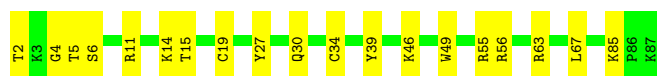
- Molecule 41: 60S ribosomal protein L36

Chain Li:  90% 10%



- Molecule 42: 60S ribosomal protein L37

Chain Lj:  78% 22%



- Molecule 43: 60S ribosomal protein L38

Chain Lk:  75% 25%



- Molecule 44: 60S ribosomal protein L39

Chain Ll:  80% 20%



- Molecule 45: Large ribosomal subunit protein eL40

Chain Lm:  88% 12%



- Molecule 46: 60S ribosomal protein L41

Chain Ln:  79% 21%



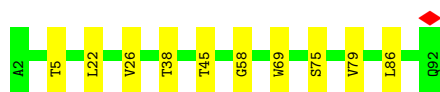
- Molecule 47: 60S ribosomal protein L36a

Chain Lo:  5% 87% 13%



- Molecule 48: 60S ribosomal protein L37a

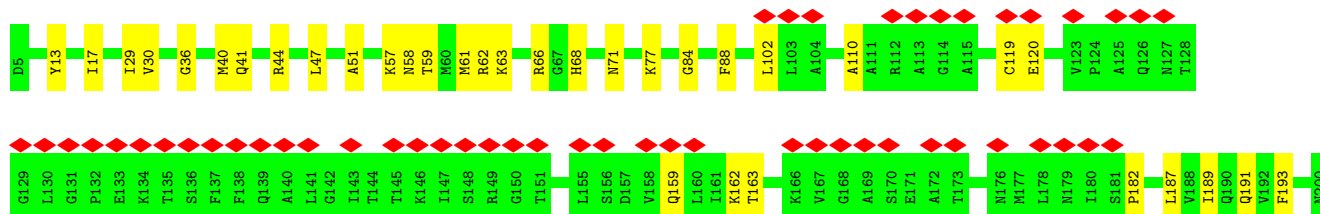
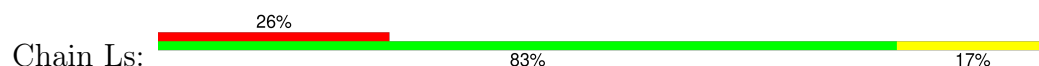
Chain Lp:  89% 11%



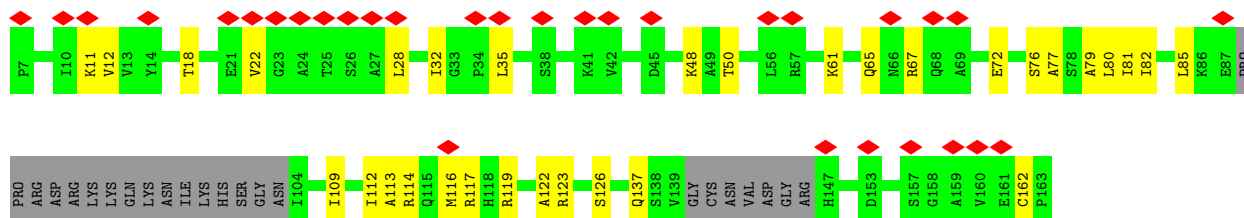
- Molecule 49: 60S ribosomal protein L28



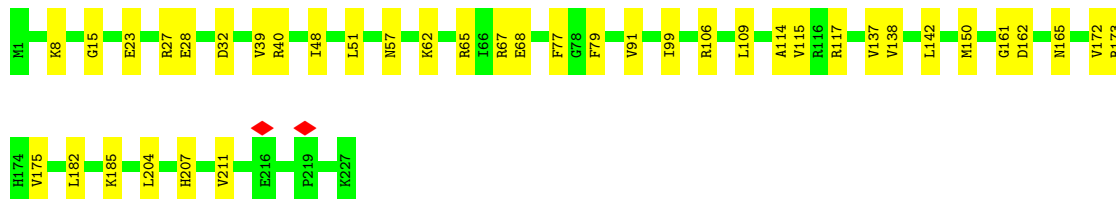
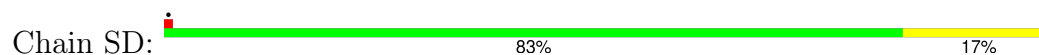
- Molecule 50: 60S acidic ribosomal protein P0



- Molecule 51: Large ribosomal subunit protein uL11

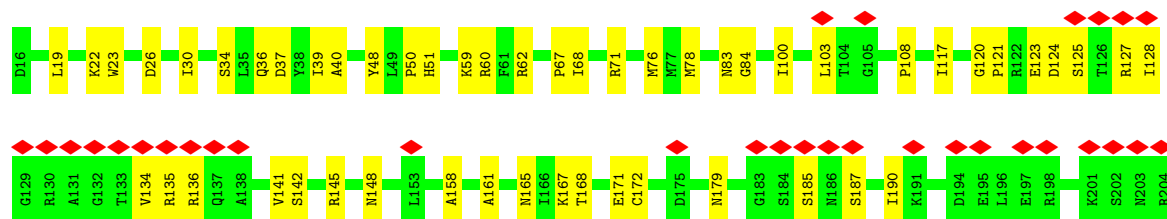


- Molecule 52: Small ribosomal subunit protein uS3



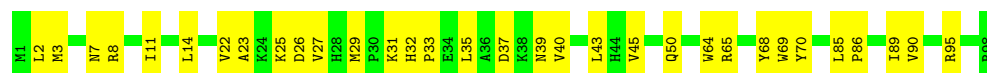
- Molecule 53: 40S ribosomal protein S5





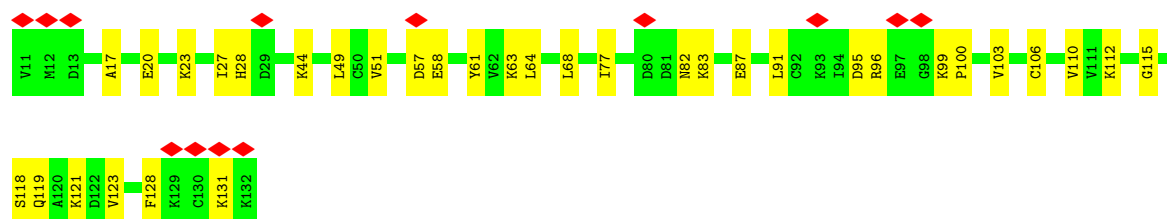
- Molecule 54: 40S ribosomal protein S10

Chain SK: 67% 33%



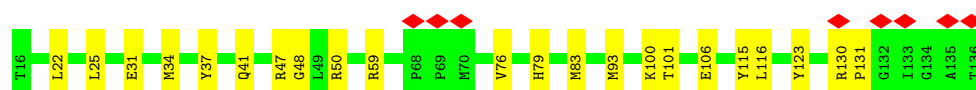
- Molecule 55: Small ribosomal subunit protein eS12

Chain SM: 11% 72% 28%



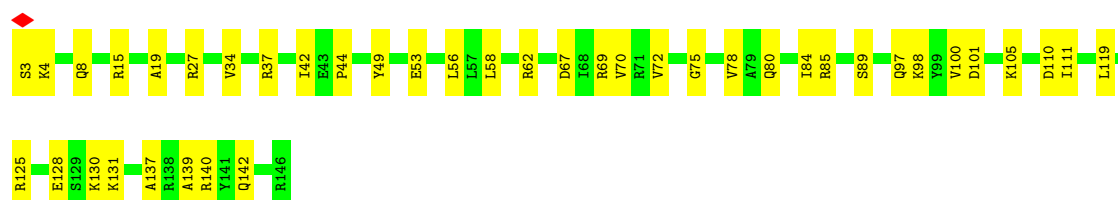
- Molecule 56: Small ribosomal subunit protein uS19

Chain SP: 7% 82% 18%



- Molecule 57: Small ribosomal subunit protein uS9

Chain SQ: 72% 28%

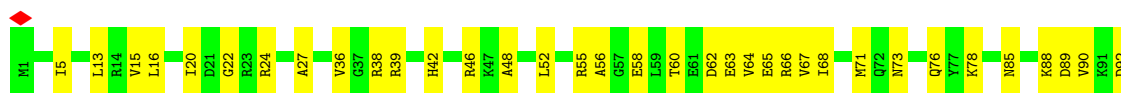


- Molecule 58: Small ribosomal subunit protein eS17

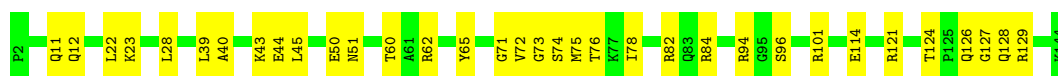
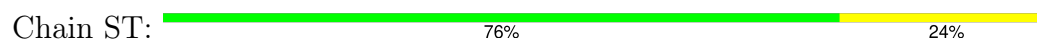
Chain SR: 87% 12%



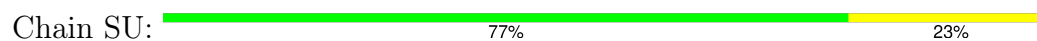
- Molecule 59: 40S ribosomal protein S18



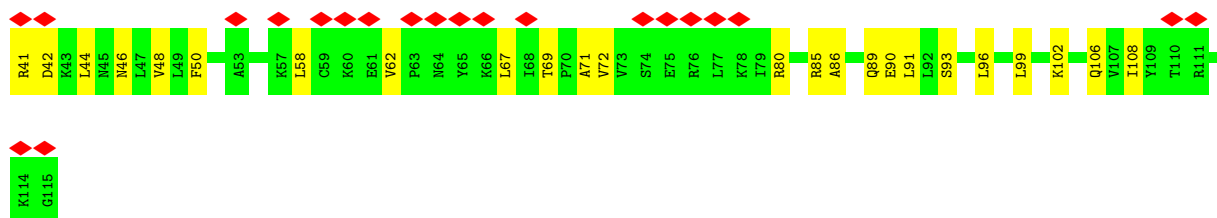
- Molecule 60: 40S ribosomal protein S19



- Molecule 61: 40S ribosomal protein S20



- Molecule 62: Small ribosomal subunit protein eS25



- Molecule 63: 40S ribosomal protein S28



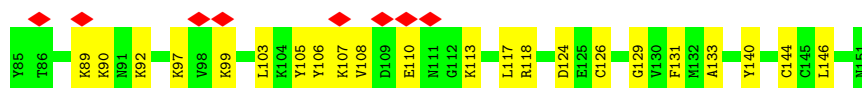
- Molecule 64: 40S ribosomal protein S29

Chain Sd:  82% 18%



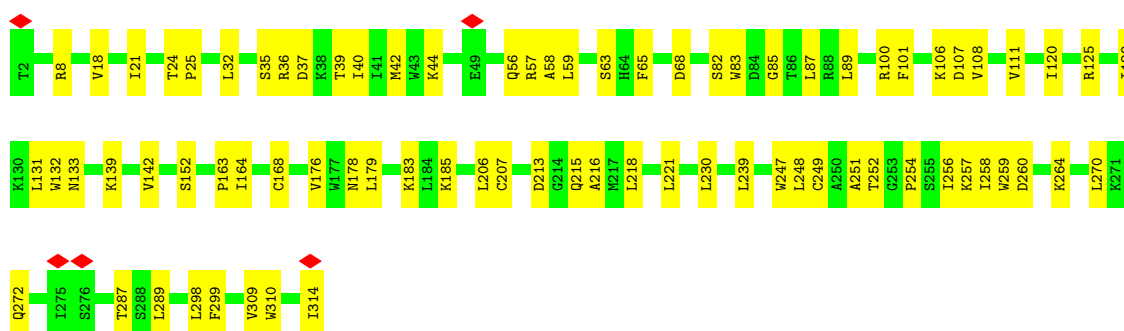
- Molecule 65: Ubiquitin-40S ribosomal protein S27a

Chain Sf:  12% 67% 33%



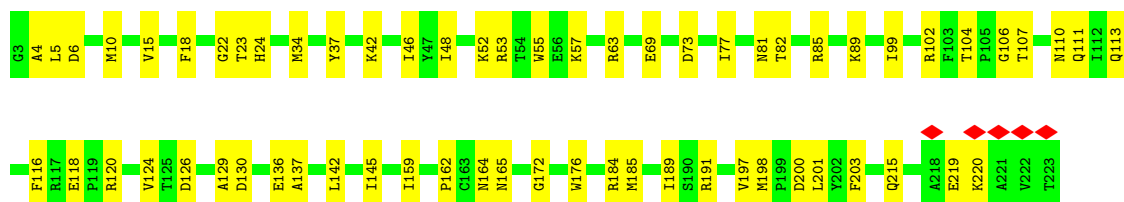
- Molecule 66: Receptor of activated protein C kinase 1

Chain Sg:  75% 25%



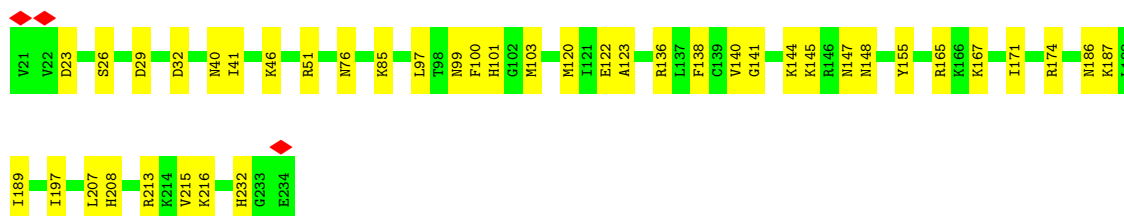
- Molecule 67: 40S ribosomal protein SA

Chain SA:  71% 29%



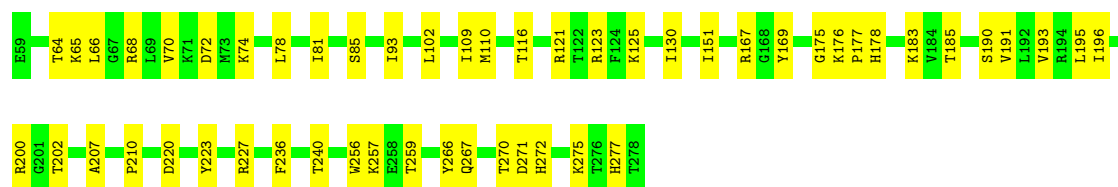
- Molecule 68: 40S ribosomal protein S3a

Chain SB:  81% 19%



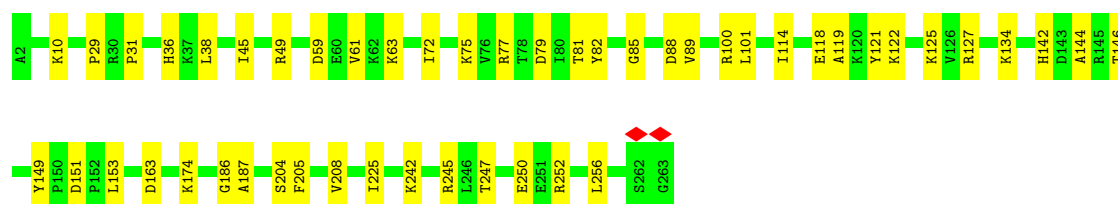
- Molecule 69: 40S ribosomal protein S2

Chain SC:  76% 24%



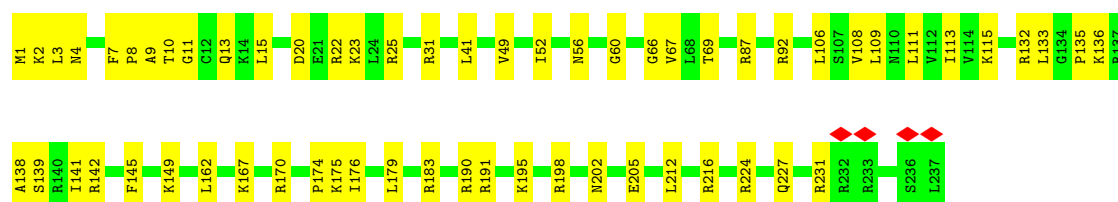
- Molecule 70: Small ribosomal subunit protein eS4, X isoform

Chain SE:  81% 19%



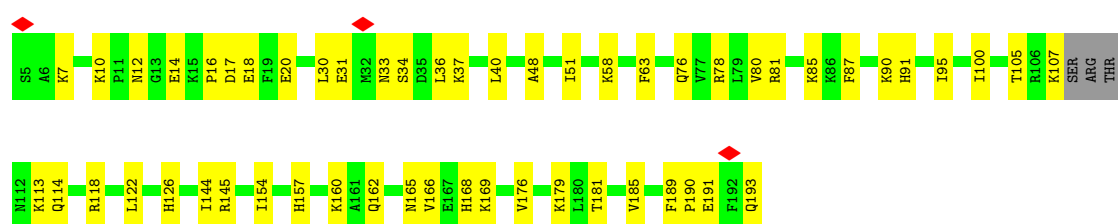
- Molecule 71: 40S ribosomal protein S6

Chain SG:  74% 26%



- Molecule 72: Small ribosomal subunit protein eS7

Chain SH:  69% 29%



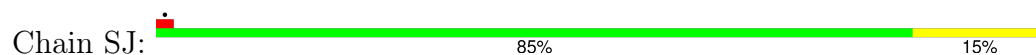
- Molecule 73: 40S ribosomal protein S8

Chain SI:  79% 21%

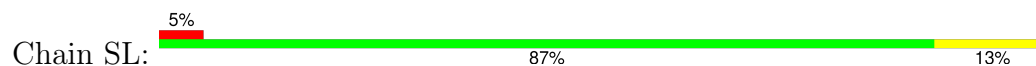




- Molecule 74: 40S ribosomal protein S9



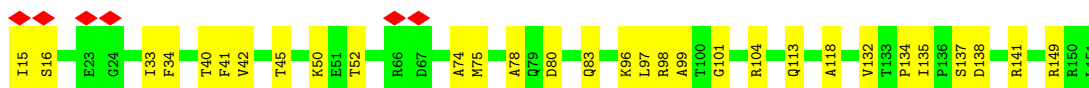
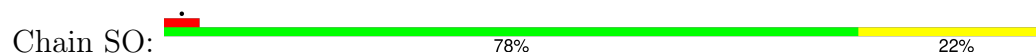
- Molecule 75: 40S ribosomal protein S11



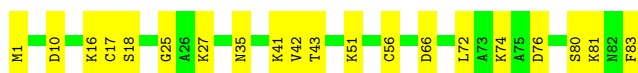
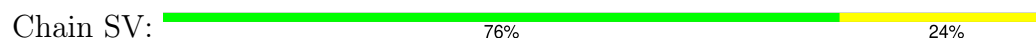
- Molecule 76: 40S ribosomal protein S13



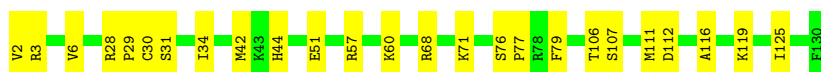
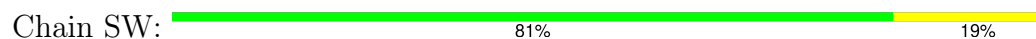
- Molecule 77: 40S ribosomal protein S14



- Molecule 78: Small ribosomal subunit protein eS21



- Molecule 79: 40S ribosomal protein S15a



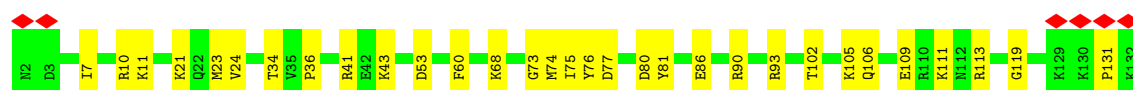
- Molecule 80: 40S ribosomal protein S23

Chain SX:  82% 18%



- Molecule 81: 40S ribosomal protein S24

Chain SY:  5% 76% 24%



- Molecule 82: 40S ribosomal protein S26

Chain Sa:  83% 17%



- Molecule 83: Small ribosomal subunit protein eS27

Chain Sb:  82% 18%



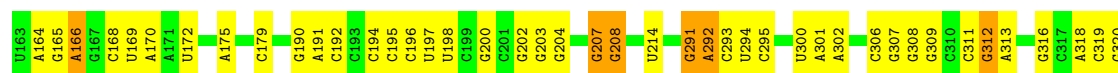
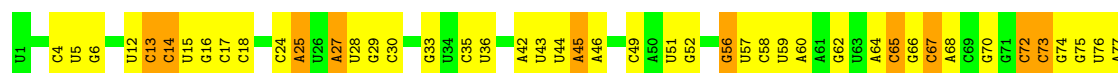
- Molecule 84: Small ribosomal subunit protein eS30

Chain Se:  12% 81% 19%



- Molecule 85: 18S rRNA

Chain S2:  49% 42% 9%



U1551	U1457	U1377	C1216	C1128	A1027	C951	C876	G752	G645	G563	A484	U406	C323
G1552	G1458	A1378	A1217	G1129	A1028	A955	C877	C753	U649	A564	A485	G407	C324
C1553	C1554	A1379	C1218	G1130	G1029	A956	C878	G754	A650	G565	A486	G408	C325
U1555	U1463	A1383	G1221	C1132	A1031	G959	C879	G755	U651	U566	U488	C409	C326
A1556	G1466	C1384	G1222	A1133	G1032	G960	G881	C791	A855	C570	C492	A414	G327
G1557	G1385	G1385	A1223	U1136	G1033	G961	U888	C792	G656	A493	A493	A415	G328
C1558	G1388	G1302	G1224	U1137	G1037	A962	U889	C793	U571	C502	C502	C430	G329
C1559	U1477	C1303	A1227	C1138	A963	A963	U890	C794	U572	G503	G503	G431	A339
U1560	U1478	U1304	A1228	U1045	U1045	A964	U891	A795	A575	C504	C504	G432	C340
A1561	G1479	C1305	G1229	U1046	U1046	U965	U892	A796	A576	A495	A495	A426	G332
C1562	C1391	U1308	C1230	A1142	U1047	U966	U893	C797	U661	C496	C496	U427	G333
G1563	C1482	C1309	G1231	A1144	G1048	U967	U894	C798	G662	C497	C497	U428	C334
		U1310	U1232	A1145	U1049	U968	U895	U799	C663	C505	C505	C429	
		C1311	U1233	A1146	A1055	U969	U896	U800	A664	G504	G504	C430	
		G1312	U1239	C1147	U1056	G970	U897	U801	A587	G505	G505	G431	
		A1313	A1240	A1148	U1057	G971	U898	A809	A508	A508	A508	G432	
		U1314	A1241	A1149	A1060	A972	U899	U814	A509	G609	G609	G433	
		C1317	U1242	A1150	U1061	A981	C901	U815	A510	A510	A510	G434	
		G1318	U1243	C1153	A1062	G982	C902	U816	A511	A511	A511	G435	
		U1323	G1244	U1154	U1081	A983	A903	A816	A512	A512	A512	G436	
		G1324	U1245	U1155	U1082	A984	A904	A817	A513	A513	A513	G437	
		U1325	B801248	U1156	A1083	G985	C905	G821	A514	A514	A514	G438	
		G1326	A1251	G1157	A1084	A986	C906	U822	A515	A515	A515	G439	
		U1327	A1252	U1158	A1085	A987	C907	U823	A516	A516	A516	G440	
		G1328	A1253	G1159	U1086	A988	C908	A825	A517	A517	A517	G441	
		U1329	U1254	U1161	A1087	A989	C909	A826	A518	A518	A518	G442	
		G1330	U1255	U1170	U1088	A990	C910	A827	A519	A519	A519	G443	
		C1336	G1257	G1171	U1089	A991	C911	A828	A520	A520	A520	G444	
		A1337	A1258	U1172	C1090	A992	A913	C834	A521	A521	A521	G445	
		G1338	A1259	U1173	C1091	A993	U917	C835	A522	A522	A522	G446	
		U1342	C1264	G1175	A1092	A994	U918	C836	A523	A523	A523	G447	
		G1345	A1265	U1176	A1093	A995	A919	A837	A524	A524	A524	G448	
		U1346	C1266	U1177	C1094	A996	A920	C838	A525	A525	A525	G449	
		U1347	C1267	U1178	C1095	A997	A921	C839	A526	A526	A526	G450	
		G1348	C1271	G1187	U1096	U1002	G925	G841	A527	A527	A527	G451	
		U1349	C1272	A1188	C1097	U1003	A926	C842	A528	A528	A528	G452	
		U1350	G1273	A1189	C1098	U1004	C927	U844	A529	A529	A529	G453	
		G1354	G1274	A1190	A1009	A1008	G928	A847	A530	A530	A530	G454	
		C1355	G1275	A1191	U1101	A1009	G929	C851	A531	A531	A531	G455	
		U1356	G1276	A1192	G1102	U1010	C930	C852	A532	A532	A532	G456	
		A1357	A1276	U1193	C1109	A1011	G931	G853	A533	A533	A533	G457	
		U1358	A1277	A1194	U1113	U1012	G932	C854	A534	A534	A534	G458	
		C1359	A1278	A1195	U1114	U1013	G933	C855	A535	A535	A535	G459	
		U1360	G1280	U1200	U1115	G1014	U940	U860	A536	A536	A536	G460	
		U1367	C1283	U1201	U1116	U1015	G941	U861	A537	A537	A537	G461	
		G1371	A1284	U1202	C1116	U1016	G942	A864	A538	A538	A538	G462	
		U1372	G1285	G1203	U1117	U1017	U943	A865	A539	A539	A539	G463	
		C1373	G1286	A1204	C1118	U1018	U944	U866	A540	A540	A540	G464	
		A1376	G1287	G1207	C1119	A1019	U945	G867	A541	A541	A541	G465	
		U1457	U1287	A1208	G1121	A1020	U946	A870	A542	A542	A542	G466	
		C1452	U1288	U1209	A1122	A1021	C947	A871	A543	A543	A543	G467	
		G1550	G1290	C1215	C1123	U1022	C948	G874	A544	A544	A544	G468	
			A1291		U1023	A1023	C949	A875	A545	A545	A545	G469	
					C1026	C1026	C950		A546	A546	A546	G470	
									A547	A547	A547	G471	
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									A559	A559	A559	G483	
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									A623	A623	A623	G547	
									A624	A624	A624	G548	
									A625	A625	A625	G549	
									A626	A626	A626	G550	
									A6				



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	119172	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TECNAI F30	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.140	Depositor
Minimum map value	-0.058	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.011	Depositor
Map size ($\text{\AA}$)	546.816, 546.816, 546.816	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	1.068, 1.068, 1.068	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: SPM, MG, G7M, OMC, 5MC, PSU, SEP, A2M, B8N, 4AC, ZN, OMG, OMU, UY1, 6MZ, UR3, 1MA, MA6, SPD

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	CI	0.16	0/247	0.30	0/323
2	Pt	0.13	0/1761	0.26	0/2741
3	CF	0.14	0/3442	0.40	0/4656
4	AT	0.12	0/1805	0.25	0/2809
5	L5	0.21	0/85098	0.30	1/132762 (0.0%)
6	L7	0.19	0/2861	0.25	0/4459
7	L8	0.20	0/3631	0.28	0/5657
8	LA	0.21	0/1936	0.42	0/2596
9	LB	0.20	0/3306	0.37	0/4424
10	LC	0.19	0/2981	0.36	0/4002
11	LD	0.16	0/2428	0.33	0/3252
12	LE	0.17	0/1973	0.41	0/2645
13	LF	0.18	0/1905	0.31	0/2539
14	LG	0.18	0/1960	0.39	0/2637
15	LH	0.18	0/1537	0.35	0/2066
16	LI	0.17	0/1751	0.33	0/2340
17	LJ	0.16	0/1385	0.38	0/1852
18	LL	0.17	0/1732	0.33	0/2315
19	LM	0.18	0/1161	0.37	0/1554
20	LN	0.19	0/1746	0.34	0/2338
21	LO	0.20	0/1682	0.35	0/2250
22	LP	0.20	0/1268	0.40	0/1701
23	LQ	0.20	0/1537	0.37	0/2052
24	LR	0.17	0/1582	0.35	0/2091
25	LS	0.19	0/1493	0.36	0/2003
26	LT	0.18	0/1326	0.33	0/1770
27	LU	0.18	0/839	0.45	0/1126
28	LV	0.18	0/993	0.35	0/1332
29	LW	0.17	0/959	0.38	0/1270
30	LX	0.16	0/1002	0.32	0/1345
31	LY	0.19	0/1132	0.38	0/1504

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
32	LZ	0.17	0/1130	0.35	0/1507
33	La	0.18	0/1191	0.31	0/1591
34	Lb	0.16	0/889	0.41	0/1175
35	Lc	0.18	0/774	0.38	0/1038
36	Ld	0.18	0/903	0.34	0/1216
37	Le	0.21	0/1071	0.38	0/1429
38	Lf	0.20	0/895	0.37	0/1198
39	Lg	0.18	0/916	0.34	0/1220
40	Lh	0.16	0/1023	0.32	0/1351
41	Li	0.16	0/843	0.35	0/1115
42	Lj	0.19	0/720	0.36	0/952
43	Lk	0.19	0/575	0.47	0/761
44	Ll	0.17	0/454	0.29	0/599
45	Lm	0.17	0/435	0.36	0/575
46	Ln	0.16	0/231	0.31	0/294
47	Lo	0.17	0/876	0.35	0/1156
48	Lp	0.17	0/718	0.32	0/953
49	Lr	0.17	0/1017	0.33	0/1364
50	Ls	0.12	0/1519	0.34	0/2052
51	Lt	0.16	0/1009	0.50	0/1363
52	SD	0.13	0/1793	0.30	0/2414
53	SF	0.15	0/1516	0.36	0/2037
54	SK	0.16	0/851	0.43	0/1147
55	SM	0.14	0/950	0.40	0/1275
56	SP	0.17	0/1003	0.40	0/1342
57	SQ	0.15	0/1160	0.39	0/1553
58	SR	0.16	0/1105	0.45	0/1484
59	SS	0.14	0/1216	0.37	0/1628
60	ST	0.15	0/1131	0.40	0/1515
61	SU	0.17	0/831	0.47	0/1115
62	SZ	0.17	0/604	0.48	0/810
63	Sc	0.16	0/508	0.40	0/680
64	Sd	0.14	0/470	0.37	0/623
65	Sf	0.16	0/560	0.48	0/745
66	Sg	0.13	0/2493	0.38	0/3394
67	SA	0.15	0/1778	0.35	0/2416
68	SB	0.14	0/1765	0.37	0/2362
69	SC	0.15	0/1744	0.34	0/2357
70	SE	0.14	0/2118	0.37	0/2849
71	SG	0.15	0/1946	0.37	0/2590
72	SH	0.16	0/1519	0.41	0/2033
73	SI	0.16	0/1715	0.37	0/2287
74	SJ	0.13	0/1550	0.32	0/2069

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
75	SL	0.15	0/1268	0.34	0/1696
76	SN	0.13	0/1232	0.29	0/1656
77	SO	0.17	0/1037	0.39	0/1391
78	SV	0.16	0/643	0.39	0/860
79	SW	0.18	0/1051	0.38	0/1406
80	SX	0.15	0/1116	0.35	0/1490
81	SY	0.15	0/1083	0.40	0/1438
82	Sa	0.15	0/836	0.33	0/1121
83	Sb	0.16	0/665	0.37	0/891
84	Se	0.14	0/465	0.38	0/612
85	S2	0.18	0/39756	0.28	0/61939
All	All	0.19	0/235126	0.32	1/344545 (0.0%)

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
77	SO	0	1

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	L5	1703	C	C2'-C3'-O3'	5.16	117.24	109.50

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
77	SO	137	SER	Peptide

5.2 Too-close contacts

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	CI	247	0	283	14	0
2	Pt	1576	0	803	20	0
3	CF	3383	0	3431	80	0
4	AT	1616	0	824	30	0
5	L5	78444	0	39718	961	0
6	L7	2561	0	1295	16	0
7	L8	3315	0	1685	36	0
8	LA	1898	0	1993	44	0
9	LB	3238	0	3376	67	0
10	LC	2927	0	3104	28	0
11	LD	2382	0	2410	31	0
12	LE	1935	0	2096	29	0
13	LF	1870	0	1996	28	0
14	LG	1927	0	2074	17	0
15	LH	1518	0	1601	19	0
16	LI	1711	0	1749	22	0
17	LJ	1362	0	1399	18	0
18	LL	1701	0	1818	22	0
19	LM	1138	0	1204	16	0
20	LN	1701	0	1749	21	0
21	LO	1650	0	1794	32	0
22	LP	1242	0	1269	16	0
23	LQ	1513	0	1628	26	0
24	LR	1566	0	1729	26	0
25	LS	1453	0	1490	20	0
26	LT	1298	0	1366	23	0
27	LU	825	0	850	14	0
28	LV	979	0	1039	14	0
29	LW	945	0	1003	18	0
30	LX	985	0	1066	8	0
31	LY	1115	0	1205	16	0
32	LZ	1107	0	1182	17	0
33	La	1162	0	1213	12	0
34	Lb	876	0	948	16	0
35	Lc	764	0	804	8	0
36	Ld	888	0	930	11	0
37	Le	1053	0	1147	16	0
38	Lf	876	0	912	10	0
39	Lg	906	0	998	16	0
40	Lh	1015	0	1148	19	0
41	Li	832	0	917	7	0
42	Lj	705	0	737	19	0
43	Lk	569	0	637	14	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
44	Ll	444	0	483	11	0
45	Lm	429	0	465	5	0
46	Ln	230	0	276	4	0
47	Lo	862	0	929	10	0
48	Lp	708	0	756	9	0
49	Lr	1002	0	1068	4	0
50	Ls	1496	0	1540	22	0
51	Lt	998	0	1032	26	0
52	SD	1765	0	1865	27	0
53	SF	1495	0	1549	38	0
54	SK	827	0	854	23	0
55	SM	940	0	965	21	0
56	SP	985	0	1031	17	0
57	SQ	1142	0	1213	31	0
58	SR	1090	0	1149	13	0
59	SS	1198	0	1261	33	0
60	ST	1112	0	1146	24	0
61	SU	821	0	883	17	0
62	SZ	598	0	656	19	0
63	Sc	506	0	536	14	0
64	Sd	459	0	452	10	0
65	Sf	548	0	551	17	0
66	Sg	2436	0	2393	50	0
67	SA	1741	0	1746	48	0
68	SB	1738	0	1809	25	0
69	SC	1707	0	1791	39	0
70	SE	2076	0	2177	33	0
71	SG	1923	0	2089	60	0
72	SH	1497	0	1590	40	0
73	SI	1686	0	1772	34	0
74	SJ	1525	0	1640	22	0
75	SL	1247	0	1323	13	0
76	SN	1208	0	1294	14	0
77	SO	1024	0	1050	19	0
78	SV	636	0	637	16	0
79	SW	1034	0	1080	24	0
80	SX	1098	0	1167	22	0
81	SY	1065	0	1142	22	0
82	Sa	821	0	870	12	0
83	Sb	651	0	672	13	0
84	Se	459	0	503	11	0
85	S2	36953	0	18678	537	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
86	L5	178	0	0	0	0
86	L7	3	0	0	0	0
86	L8	4	0	0	0	0
86	LA	1	0	0	0	0
86	LB	1	0	0	0	0
86	LP	1	0	0	0	0
86	LV	1	0	0	0	0
86	Le	1	0	0	0	0
86	Lj	1	0	0	0	0
86	S2	26	0	0	0	0
86	SG	1	0	0	0	0
86	SS	1	0	0	0	0
87	L5	98	0	182	4	0
88	L5	90	0	171	3	0
88	LN	10	0	19	0	0
89	Lg	1	0	0	0	0
89	Lj	1	0	0	0	0
89	Lm	1	0	0	0	0
89	Lo	1	0	0	0	0
89	Lp	1	0	0	0	0
89	Sa	1	0	0	0	0
All	All	223377	0	167075	2774	0

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

The worst 5 of 2774 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:CI:79:ARG:NH1	5:L5:2708:U:O2'	1.64	1.29
5:L5:1996:C:H42	5:L5:2000:G:H22	1.10	0.98
5:L5:1996:C:H42	5:L5:2000:G:N2	1.66	0.93
5:L5:4946:U:HO2'	38:Lf:2:SER:N	1.67	0.92
1:CI:74:LYS:HA	27:LU:116:GLN:O	1.68	0.91

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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	CI	29/31 (94%)	29 (100%)	0	0	100	100
3	CF	438/441 (99%)	420 (96%)	18 (4%)	0	100	100
8	LA	246/248 (99%)	229 (93%)	17 (7%)	0	100	100
9	LB	400/402 (100%)	383 (96%)	17 (4%)	0	100	100
10	LC	366/368 (100%)	353 (96%)	13 (4%)	0	100	100
11	LD	291/293 (99%)	280 (96%)	11 (4%)	0	100	100
12	LE	236/250 (94%)	221 (94%)	15 (6%)	0	100	100
13	LF	223/225 (99%)	215 (96%)	8 (4%)	0	100	100
14	LG	239/241 (99%)	223 (93%)	16 (7%)	0	100	100
15	LH	188/190 (99%)	182 (97%)	6 (3%)	0	100	100
16	LI	211/213 (99%)	205 (97%)	6 (3%)	0	100	100
17	LJ	168/176 (96%)	161 (96%)	7 (4%)	0	100	100
18	LL	208/210 (99%)	198 (95%)	10 (5%)	0	100	100
19	LM	137/139 (99%)	130 (95%)	7 (5%)	0	100	100
20	LN	201/203 (99%)	198 (98%)	3 (2%)	0	100	100
21	LO	199/201 (99%)	197 (99%)	2 (1%)	0	100	100
22	LP	151/153 (99%)	145 (96%)	6 (4%)	0	100	100
23	LQ	185/187 (99%)	180 (97%)	5 (3%)	0	100	100
24	LR	185/187 (99%)	179 (97%)	6 (3%)	0	100	100
25	LS	173/175 (99%)	163 (94%)	10 (6%)	0	100	100
26	LT	157/159 (99%)	154 (98%)	3 (2%)	0	100	100
27	LU	99/101 (98%)	94 (95%)	5 (5%)	0	100	100
28	LV	129/131 (98%)	125 (97%)	4 (3%)	0	100	100
29	LW	112/124 (90%)	108 (96%)	4 (4%)	0	100	100
30	LX	118/120 (98%)	115 (98%)	3 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
31	LY	132/134 (98%)	129 (98%)	3 (2%)	0	100	100
32	LZ	133/135 (98%)	125 (94%)	8 (6%)	0	100	100
33	La	145/147 (99%)	141 (97%)	4 (3%)	0	100	100
34	Lb	105/121 (87%)	100 (95%)	5 (5%)	0	100	100
35	Lc	96/98 (98%)	93 (97%)	3 (3%)	0	100	100
36	Ld	105/107 (98%)	101 (96%)	4 (4%)	0	100	100
37	Le	126/128 (98%)	124 (98%)	2 (2%)	0	100	100
38	Lf	107/109 (98%)	106 (99%)	1 (1%)	0	100	100
39	Lg	112/114 (98%)	110 (98%)	2 (2%)	0	100	100
40	Lh	120/122 (98%)	117 (98%)	3 (2%)	0	100	100
41	Li	100/102 (98%)	97 (97%)	3 (3%)	0	100	100
42	Lj	84/86 (98%)	82 (98%)	2 (2%)	0	100	100
43	Lk	67/69 (97%)	65 (97%)	2 (3%)	0	100	100
44	Ll	48/50 (96%)	47 (98%)	1 (2%)	0	100	100
45	Lm	50/52 (96%)	49 (98%)	1 (2%)	0	100	100
46	Ln	22/24 (92%)	22 (100%)	0	0	100	100
47	Lo	103/105 (98%)	98 (95%)	5 (5%)	0	100	100
48	Lp	89/91 (98%)	86 (97%)	3 (3%)	0	100	100
49	Lr	123/125 (98%)	119 (97%)	4 (3%)	0	100	100
50	Ls	194/196 (99%)	183 (94%)	11 (6%)	0	100	100
51	Lt	128/157 (82%)	111 (87%)	17 (13%)	0	100	100
52	SD	225/227 (99%)	218 (97%)	7 (3%)	0	100	100
53	SF	187/189 (99%)	176 (94%)	11 (6%)	0	100	100
54	SK	96/98 (98%)	89 (93%)	7 (7%)	0	100	100
55	SM	120/122 (98%)	112 (93%)	8 (7%)	0	100	100
56	SP	119/121 (98%)	114 (96%)	5 (4%)	0	100	100
57	SQ	142/144 (99%)	130 (92%)	12 (8%)	0	100	100
58	SR	133/135 (98%)	125 (94%)	7 (5%)	1 (1%)	16	32
59	SS	143/145 (99%)	134 (94%)	9 (6%)	0	100	100
60	ST	141/143 (99%)	137 (97%)	4 (3%)	0	100	100
61	SU	102/104 (98%)	98 (96%)	4 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
62	SZ	73/75 (97%)	64 (88%)	9 (12%)	0	100	100
63	Sc	62/64 (97%)	61 (98%)	1 (2%)	0	100	100
64	Sd	53/55 (96%)	52 (98%)	1 (2%)	0	100	100
65	Sf	65/67 (97%)	57 (88%)	8 (12%)	0	100	100
66	Sg	311/313 (99%)	293 (94%)	18 (6%)	0	100	100
67	SA	219/221 (99%)	204 (93%)	15 (7%)	0	100	100
68	SB	212/214 (99%)	206 (97%)	6 (3%)	0	100	100
69	SC	218/220 (99%)	206 (94%)	12 (6%)	0	100	100
70	SE	260/262 (99%)	249 (96%)	11 (4%)	0	100	100
71	SG	235/237 (99%)	222 (94%)	13 (6%)	0	100	100
72	SH	182/189 (96%)	168 (92%)	14 (8%)	0	100	100
73	SI	204/206 (99%)	194 (95%)	10 (5%)	0	100	100
74	SJ	183/185 (99%)	175 (96%)	7 (4%)	1 (0%)	25	44
75	SL	151/153 (99%)	144 (95%)	7 (5%)	0	100	100
76	SN	148/150 (99%)	144 (97%)	4 (3%)	0	100	100
77	SO	135/137 (98%)	126 (93%)	9 (7%)	0	100	100
78	SV	81/83 (98%)	75 (93%)	6 (7%)	0	100	100
79	SW	127/129 (98%)	123 (97%)	4 (3%)	0	100	100
80	SX	139/141 (99%)	135 (97%)	4 (3%)	0	100	100
81	SY	129/131 (98%)	124 (96%)	5 (4%)	0	100	100
82	Sa	100/102 (98%)	97 (97%)	3 (3%)	0	100	100
83	Sb	81/83 (98%)	77 (95%)	4 (5%)	0	100	100
84	Se	56/58 (97%)	53 (95%)	3 (5%)	0	100	100
All	All	12110/12343 (98%)	11574 (96%)	534 (4%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
58	SR	129	LYS
74	SJ	138	ARG

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	CI	25/25 (100%)	25 (100%)	0	100	100
3	CF	365/366 (100%)	365 (100%)	0	100	100
8	LA	190/190 (100%)	190 (100%)	0	100	100
9	LB	348/348 (100%)	348 (100%)	0	100	100
10	LC	306/306 (100%)	306 (100%)	0	100	100
11	LD	246/247 (100%)	246 (100%)	0	100	100
12	LE	212/222 (96%)	212 (100%)	0	100	100
13	LF	194/194 (100%)	194 (100%)	0	100	100
14	LG	203/205 (99%)	203 (100%)	0	100	100
15	LH	169/169 (100%)	169 (100%)	0	100	100
16	LI	180/180 (100%)	180 (100%)	0	100	100
17	LJ	143/148 (97%)	143 (100%)	0	100	100
18	LL	176/176 (100%)	176 (100%)	0	100	100
19	LM	118/118 (100%)	118 (100%)	0	100	100
20	LN	171/171 (100%)	171 (100%)	0	100	100
21	LO	173/173 (100%)	173 (100%)	0	100	100
22	LP	134/134 (100%)	134 (100%)	0	100	100
23	LQ	164/164 (100%)	164 (100%)	0	100	100
24	LR	166/166 (100%)	166 (100%)	0	100	100
25	LS	156/156 (100%)	156 (100%)	0	100	100
26	LT	139/139 (100%)	139 (100%)	0	100	100
27	LU	91/91 (100%)	91 (100%)	0	100	100
28	LV	101/101 (100%)	101 (100%)	0	100	100
29	LW	95/103 (92%)	95 (100%)	0	100	100
30	LX	108/108 (100%)	108 (100%)	0	100	100
31	LY	124/124 (100%)	124 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
32	LZ	117/117 (100%)	117 (100%)	0	100	100
33	La	120/120 (100%)	120 (100%)	0	100	100
34	Lb	88/101 (87%)	88 (100%)	0	100	100
35	Lc	83/83 (100%)	83 (100%)	0	100	100
36	Ld	98/98 (100%)	98 (100%)	0	100	100
37	Le	114/114 (100%)	114 (100%)	0	100	100
38	Lf	88/88 (100%)	88 (100%)	0	100	100
39	Lg	98/98 (100%)	98 (100%)	0	100	100
40	Lh	109/109 (100%)	109 (100%)	0	100	100
41	Li	86/86 (100%)	86 (100%)	0	100	100
42	Lj	73/73 (100%)	73 (100%)	0	100	100
43	Lk	64/64 (100%)	64 (100%)	0	100	100
44	Ll	47/47 (100%)	47 (100%)	0	100	100
45	Lm	48/48 (100%)	48 (100%)	0	100	100
46	Ln	23/23 (100%)	23 (100%)	0	100	100
47	Lo	93/93 (100%)	93 (100%)	0	100	100
48	Lp	74/74 (100%)	74 (100%)	0	100	100
49	Lr	109/109 (100%)	109 (100%)	0	100	100
50	Ls	162/164 (99%)	162 (100%)	0	100	100
51	Lt	107/130 (82%)	107 (100%)	0	100	100
52	SD	190/190 (100%)	190 (100%)	0	100	100
53	SF	159/159 (100%)	159 (100%)	0	100	100
54	SK	89/89 (100%)	89 (100%)	0	100	100
55	SM	102/104 (98%)	102 (100%)	0	100	100
56	SP	107/107 (100%)	107 (100%)	0	100	100
57	SQ	119/119 (100%)	119 (100%)	0	100	100
58	SR	122/122 (100%)	122 (100%)	0	100	100
59	SS	126/126 (100%)	126 (100%)	0	100	100
60	ST	113/113 (100%)	113 (100%)	0	100	100
61	SU	94/94 (100%)	94 (100%)	0	100	100
62	SZ	66/66 (100%)	66 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
63	Sc	57/57 (100%)	57 (100%)	0	100	100
64	Sd	48/48 (100%)	48 (100%)	0	100	100
65	Sf	60/60 (100%)	60 (100%)	0	100	100
66	Sg	272/272 (100%)	272 (100%)	0	100	100
67	SA	183/183 (100%)	183 (100%)	0	100	100
68	SB	195/195 (100%)	195 (100%)	0	100	100
69	SC	186/186 (100%)	186 (100%)	0	100	100
70	SE	224/224 (100%)	224 (100%)	0	100	100
71	SG	207/207 (100%)	207 (100%)	0	100	100
72	SH	166/169 (98%)	166 (100%)	0	100	100
73	SI	178/178 (100%)	178 (100%)	0	100	100
74	SJ	161/161 (100%)	161 (100%)	0	100	100
75	SL	137/137 (100%)	137 (100%)	0	100	100
76	SN	130/130 (100%)	130 (100%)	0	100	100
77	SO	107/107 (100%)	107 (100%)	0	100	100
78	SV	67/67 (100%)	67 (100%)	0	100	100
79	SW	112/112 (100%)	112 (100%)	0	100	100
80	SX	113/113 (100%)	113 (100%)	0	100	100
81	SY	113/113 (100%)	113 (100%)	0	100	100
82	Sa	89/89 (100%)	89 (100%)	0	100	100
83	Sb	75/75 (100%)	75 (100%)	0	100	100
84	Se	47/47 (100%)	47 (100%)	0	100	100
All	All	10512/10582 (99%)	10512 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 89 such sidechains are listed below:

Mol	Chain	Res	Type
60	ST	63	HIS
68	SB	118	GLN
62	SZ	89	GLN
66	Sg	272	GLN
69	SC	267	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
2	Pt	72/74 (97%)	15 (20%)	0
4	AT	74/76 (97%)	27 (36%)	0
5	L5	3643/3655 (99%)	731 (20%)	16 (0%)
6	L7	119/120 (99%)	11 (9%)	0
7	L8	155/156 (99%)	21 (13%)	0
85	S2	1714/1740 (98%)	378 (22%)	4 (0%)
All	All	5777/5821 (99%)	1183 (20%)	20 (0%)

5 of 1183 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
2	Pt	9	A
2	Pt	13	U
2	Pt	19	G
2	Pt	21	A
2	Pt	46	G

5 of 20 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
5	L5	4699	U
85	S2	563	G
85	S2	1477	U
85	S2	688	U
5	L5	1703	C

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

179 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	$\# Z > 2$
5	A2M	L5	2363	5,86	18,25,26	1.28	2 (11%)	20,36,39	1.99	7 (35%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
85	PSU	S2	1004	85	18,21,22	1.13	1 (5%)	21,30,33	1.86	4 (19%)
5	OMG	L5	2364	5	19,26,27	1.18	3 (15%)	21,38,41	0.80	1 (4%)
85	OMC	S2	517	85	19,22,23	0.53	0	25,31,34	0.64	0
85	OMU	S2	354	85	19,22,23	3.33	7 (36%)	25,31,34	1.88	5 (20%)
5	OMG	L5	3899	5	19,26,27	1.21	2 (10%)	21,38,41	0.84	1 (4%)
85	PSU	S2	866	85	18,21,22	1.09	1 (5%)	21,30,33	1.81	5 (23%)
85	PSU	S2	651	85	18,21,22	1.10	1 (5%)	21,30,33	1.92	4 (19%)
5	PSU	L5	4493	5	18,21,22	1.05	1 (5%)	21,30,33	1.86	3 (14%)
5	PSU	L5	4532	5	18,21,22	1.10	1 (5%)	21,30,33	1.85	4 (19%)
5	PSU	L5	3853	5,86	18,21,22	1.04	1 (5%)	21,30,33	1.81	4 (19%)
85	PSU	S2	1177	85	18,21,22	1.06	1 (5%)	21,30,33	1.82	4 (19%)
5	A2M	L5	400	5	18,25,26	1.26	1 (5%)	20,36,39	2.03	7 (35%)
5	OMG	L5	3627	5	19,26,27	1.17	3 (15%)	21,38,41	0.88	1 (4%)
5	PSU	L5	4353	5	18,21,22	1.08	1 (5%)	21,30,33	1.91	4 (19%)
5	OMU	L5	4620	5	19,22,23	3.24	7 (36%)	25,31,34	1.75	5 (20%)
5	OMU	L5	2837	5	19,22,23	3.36	7 (36%)	25,31,34	1.86	4 (16%)
5	OMU	L5	4306	5	19,22,23	3.31	7 (36%)	25,31,34	1.82	4 (16%)
5	5MC	L5	4447	5	19,22,23	0.76	0	26,32,35	0.65	0
5	PSU	L5	1536	5	18,21,22	1.07	1 (5%)	21,30,33	1.88	4 (19%)
5	OMG	L5	2876	5	19,26,27	1.21	2 (10%)	21,38,41	0.83	1 (4%)
5	PSU	L5	4689	5	18,21,22	1.06	1 (5%)	21,30,33	1.97	4 (19%)
85	PSU	S2	686	85	18,21,22	1.08	1 (5%)	21,30,33	1.85	4 (19%)
5	PSU	L5	1782	5	18,21,22	1.07	1 (5%)	21,30,33	1.83	4 (19%)
85	PSU	S2	406	85	18,21,22	1.11	1 (5%)	21,30,33	1.98	5 (23%)
5	6MZ	L5	4220	5	17,25,26	3.52	6 (35%)	15,36,39	2.54	4 (26%)
5	A2M	L5	1326	5	18,25,26	1.20	1 (5%)	20,36,39	1.81	7 (35%)
85	OMU	S2	428	85	19,22,23	3.35	7 (36%)	25,31,34	1.85	5 (20%)
85	PSU	S2	681	85	18,21,22	1.06	1 (5%)	21,30,33	1.83	4 (19%)
85	A2M	S2	484	85	18,25,26	1.17	1 (5%)	20,36,39	1.79	5 (25%)
85	MA6	S2	1850	85	19,26,27	1.49	3 (15%)	18,38,41	3.37	3 (16%)
85	PSU	S2	105	85	18,21,22	1.07	1 (5%)	21,30,33	1.84	4 (19%)
5	PSU	L5	4636	5	18,21,22	1.10	1 (5%)	21,30,33	2.05	6 (28%)
5	PSU	L5	4299	5	18,21,22	1.01	1 (5%)	21,30,33	1.81	4 (19%)
5	PSU	L5	1683	5	18,21,22	1.08	1 (5%)	21,30,33	1.87	4 (19%)
85	PSU	S2	1056	85	18,21,22	1.08	1 (5%)	21,30,33	1.91	4 (19%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
5	OMU	L5	4498	5	19,22,23	3.34	7 (36%)	25,31,34	1.86	5 (20%)
5	UR3	L5	4530	5	19,22,23	2.72	7 (36%)	26,32,35	1.60	3 (11%)
85	4AC	S2	1842	85	21,24,25	0.37	0	28,34,37	0.48	0
5	PSU	L5	1677	5	18,21,22	1.06	1 (5%)	21,30,33	1.87	3 (14%)
85	OMU	S2	799	85	19,22,23	3.39	7 (36%)	25,31,34	1.81	5 (20%)
85	PSU	S2	1244	85	18,21,22	1.09	1 (5%)	21,30,33	1.88	4 (19%)
85	PSU	S2	649	85	18,21,22	1.08	1 (5%)	21,30,33	1.93	3 (14%)
5	OMU	L5	4227	5	19,22,23	3.35	7 (36%)	25,31,34	1.82	5 (20%)
5	OMC	L5	4456	5	19,22,23	0.64	0	25,31,34	0.84	1 (4%)
5	PSU	L5	4500	5	18,21,22	1.11	1 (5%)	21,30,33	1.99	5 (23%)
5	PSU	L5	3920	5,86	18,21,22	1.05	1 (5%)	21,30,33	1.85	4 (19%)
5	OMG	L5	4196	5,2	19,26,27	1.17	2 (10%)	21,38,41	0.80	1 (4%)
85	PSU	S2	1046	85	18,21,22	1.12	1 (5%)	21,30,33	1.83	4 (19%)
85	A2M	S2	1031	85	18,25,26	1.24	2 (11%)	20,36,39	2.09	6 (30%)
5	A2M	L5	1534	5,86	18,25,26	1.31	3 (16%)	20,36,39	1.97	7 (35%)
85	PSU	S2	814	85	18,21,22	1.09	1 (5%)	21,30,33	1.79	4 (19%)
5	OMC	L5	3869	5	19,22,23	0.60	0	25,31,34	0.70	0
5	A2M	L5	2401	5	18,25,26	1.23	2 (11%)	20,36,39	2.06	5 (25%)
5	OMC	L5	3808	5	19,22,23	0.64	0	25,31,34	0.78	1 (4%)
5	OMG	L5	1522	5	19,26,27	1.21	3 (15%)	21,38,41	0.87	1 (4%)
5	OMC	L5	2804	5	19,22,23	0.61	0	25,31,34	0.88	1 (4%)
5	PSU	L5	3639	5	18,21,22	1.08	1 (5%)	21,30,33	1.85	4 (19%)
85	PSU	S2	1045	85	18,21,22	1.06	1 (5%)	21,30,33	1.87	4 (19%)
85	OMG	S2	1328	85	19,26,27	1.12	2 (10%)	21,38,41	0.83	1 (4%)
5	PSU	L5	4579	5	18,21,22	1.04	1 (5%)	21,30,33	1.86	4 (19%)
85	PSU	S2	1081	85	18,21,22	1.04	1 (5%)	21,30,33	1.82	5 (23%)
5	OMG	L5	2424	5	19,26,27	1.19	3 (15%)	21,38,41	0.79	1 (4%)
5	UY1	L5	3818	5	19,22,23	4.90	9 (47%)	21,31,34	1.92	5 (23%)
5	OMC	L5	4536	5	19,22,23	0.59	0	25,31,34	0.69	0
85	OMU	S2	172	85	19,22,23	3.37	7 (36%)	25,31,34	1.81	5 (20%)
5	PSU	L5	4521	5,86	18,21,22	1.09	1 (5%)	21,30,33	1.98	5 (23%)
5	PSU	L5	4431	5	18,21,22	1.04	1 (5%)	21,30,33	1.87	4 (19%)
85	OMG	S2	867	85	19,26,27	1.15	2 (10%)	21,38,41	0.83	1 (4%)
85	A2M	S2	166	85	18,25,26	1.30	2 (11%)	20,36,39	2.00	6 (30%)
5	OMG	L5	4618	5	19,26,27	1.17	2 (10%)	21,38,41	0.83	1 (4%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
5	OMC	L5	1340	5	19,22,23	0.59	0	25,31,34	0.83	0
85	OMU	S2	1442	85	19,22,23	3.40	7 (36%)	25,31,34	1.82	5 (20%)
5	PSU	L5	4972	5	18,21,22	1.07	1 (5%)	21,30,33	1.88	4 (19%)
5	OMG	L5	4637	5	19,26,27	1.17	2 (10%)	21,38,41	0.87	1 (4%)
85	PSU	S2	801	85	18,21,22	1.11	1 (5%)	21,30,33	1.86	4 (19%)
5	A2M	L5	1524	5	18,25,26	1.31	2 (11%)	20,36,39	2.31	6 (30%)
5	PSU	L5	4312	5	18,21,22	1.06	1 (5%)	21,30,33	1.90	4 (19%)
85	OMC	S2	1391	85	19,22,23	0.52	0	25,31,34	0.68	0
5	OMG	L5	1316	5	19,26,27	1.23	3 (15%)	21,38,41	0.89	1 (4%)
5	PSU	L5	1744	5,86	18,21,22	1.08	1 (5%)	21,30,33	1.90	4 (19%)
85	A2M	S2	159	85	18,25,26	1.19	1 (5%)	20,36,39	1.85	7 (35%)
5	OMG	L5	4499	5	19,26,27	1.16	2 (10%)	21,38,41	0.82	1 (4%)
85	A2M	S2	576	85	18,25,26	1.23	2 (11%)	20,36,39	1.95	5 (25%)
5	PSU	L5	4552	5	18,21,22	1.09	1 (5%)	21,30,33	1.90	4 (19%)
5	OMG	L5	4370	5	19,26,27	1.16	3 (15%)	21,38,41	0.83	1 (4%)
5	OMG	L5	1625	5	19,26,27	1.23	3 (15%)	21,38,41	0.82	1 (4%)
5	PSU	L5	5001	5	18,21,22	1.08	1 (5%)	21,30,33	1.84	4 (19%)
5	OMC	L5	2861	5	19,22,23	0.56	0	25,31,34	0.80	1 (4%)
5	PSU	L5	3884	5	18,21,22	1.07	1 (5%)	21,30,33	1.89	4 (19%)
7	PSU	L8	69	7	18,21,22	1.08	1 (5%)	21,30,33	1.82	5 (23%)
85	PSU	S2	109	85	18,21,22	1.06	1 (5%)	21,30,33	1.92	4 (19%)
5	A2M	L5	398	5	18,25,26	1.26	2 (11%)	20,36,39	2.10	5 (25%)
5	PSU	L5	4457	5	18,21,22	1.04	1 (5%)	21,30,33	1.96	5 (23%)
5	PSU	L5	3822	5	18,21,22	1.06	1 (5%)	21,30,33	1.82	5 (23%)
5	OMC	L5	3701	5	19,22,23	0.68	0	25,31,34	1.68	4 (16%)
85	OMU	S2	116	85	19,22,23	3.36	7 (36%)	25,31,34	1.77	4 (16%)
85	PSU	S2	1232	85	18,21,22	1.09	1 (5%)	21,30,33	1.85	4 (19%)
85	OMU	S2	1326	85	19,22,23	3.39	7 (36%)	25,31,34	1.83	5 (20%)
5	PSU	L5	3844	5	18,21,22	1.12	1 (5%)	21,30,33	1.84	4 (19%)
85	PSU	S2	966	85,86	18,21,22	1.09	1 (5%)	21,30,33	1.92	4 (19%)
5	PSU	L5	3695	5	18,21,22	1.07	1 (5%)	21,30,33	1.90	5 (23%)
5	A2M	L5	1323	5	18,25,26	1.25	2 (11%)	20,36,39	1.95	7 (35%)
5	OMC	L5	2365	5	19,22,23	0.57	0	25,31,34	0.60	0
5	OMG	L5	4494	5	19,26,27	1.19	3 (15%)	21,38,41	0.87	1 (4%)
5	PSU	L5	2839	5	18,21,22	1.04	1 (5%)	21,30,33	1.82	4 (19%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
5	A2M	L5	3867	5	18,25,26	1.22	1 (5%)	20,36,39	1.79	6 (30%)
5	PSU	L5	2632	5	18,21,22	1.06	1 (5%)	21,30,33	1.82	4 (19%)
5	PSU	L5	1792	5	18,21,22	1.02	1 (5%)	21,30,33	1.89	3 (14%)
85	OMG	S2	509	85	19,26,27	1.14	2 (10%)	21,38,41	0.83	1 (4%)
5	OMC	L5	2824	5	19,22,23	0.55	0	25,31,34	0.63	0
5	A2M	L5	3830	5	18,25,26	1.24	2 (11%)	20,36,39	2.14	5 (25%)
5	A2M	L5	4590	5	18,25,26	1.23	2 (11%)	20,36,39	1.99	7 (35%)
5	PSU	L5	1781	5	18,21,22	1.05	1 (5%)	21,30,33	1.78	4 (19%)
85	OMG	S2	644	85	19,26,27	1.13	2 (10%)	21,38,41	0.86	1 (4%)
5	OMG	L5	3792	5	19,26,27	1.18	2 (10%)	21,38,41	0.83	1 (4%)
5	PSU	L5	4628	5	18,21,22	1.00	1 (5%)	21,30,33	1.82	4 (19%)
5	OMG	L5	3744	5	19,26,27	1.18	3 (15%)	21,38,41	0.81	1 (4%)
85	OMC	S2	174	85	19,22,23	0.53	0	25,31,34	0.65	0
5	1MA	L5	1322	5,86	17,25,26	0.99	2 (11%)	17,37,40	1.16	2 (11%)
5	PSU	L5	4296	5	18,21,22	1.08	1 (5%)	21,30,33	1.88	4 (19%)
5	PSU	L5	4403	5	18,21,22	1.04	1 (5%)	21,30,33	1.95	4 (19%)
5	A2M	L5	4523	5,86	18,25,26	1.33	3 (16%)	20,36,39	2.19	5 (25%)
85	OMU	S2	1288	85	19,22,23	3.39	7 (36%)	25,31,34	1.75	5 (20%)
85	OMG	S2	436	85	19,26,27	1.15	2 (10%)	21,38,41	0.82	1 (4%)
5	A2M	L5	3785	5,86	18,25,26	1.22	2 (11%)	20,36,39	2.32	7 (35%)
5	PSU	L5	1862	5	18,21,22	1.05	1 (5%)	21,30,33	1.91	4 (19%)
5	A2M	L5	1871	5,86	18,25,26	1.31	2 (11%)	20,36,39	2.24	5 (25%)
5	OMG	L5	4228	5	19,26,27	1.19	3 (15%)	21,38,41	0.97	1 (4%)
5	PSU	L5	4576	5	18,21,22	1.08	1 (5%)	21,30,33	1.85	5 (23%)
5	OMG	L5	4623	5	19,26,27	1.19	3 (15%)	21,38,41	0.92	1 (4%)
7	OMG	L8	75	7	19,26,27	1.16	3 (15%)	21,38,41	0.87	1 (4%)
85	OMU	S2	121	85	19,22,23	3.34	7 (36%)	25,31,34	1.85	5 (20%)
5	OMC	L5	2422	5,86	19,22,23	0.58	0	25,31,34	0.69	0
5	A2M	L5	3718	5	18,25,26	1.18	1 (5%)	20,36,39	1.94	5 (25%)
5	5MC	L5	3782	5,86	19,22,23	0.60	0	26,32,35	0.71	0
85	OMG	S2	601	85	19,26,27	1.13	2 (10%)	21,38,41	0.81	1 (4%)
85	OMU	S2	627	85	19,22,23	3.41	7 (36%)	25,31,34	1.82	4 (16%)
85	G7M	S2	1639	85,2	20,26,27	2.45	6 (30%)	16,39,42	1.10	1 (6%)
5	PSU	L5	1582	5	18,21,22	1.09	1 (5%)	21,30,33	1.86	4 (19%)
5	PSU	L5	5010	5	18,21,22	1.08	1 (5%)	21,30,33	1.85	4 (19%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
85	A2M	S2	99	85,86	18,25,26	1.24	2 (11%)	20,36,39	2.02	6 (30%)
5	A2M	L5	4571	5	18,25,26	1.26	1 (5%)	20,36,39	1.96	5 (25%)
5	PSU	L5	4442	5	18,21,22	1.08	1 (5%)	21,30,33	1.90	5 (23%)
85	A2M	S2	468	85	18,25,26	1.25	2 (11%)	20,36,39	2.08	5 (25%)
7	PSU	L8	55	7	18,21,22	1.05	1 (5%)	21,30,33	1.89	4 (19%)
85	6MZ	S2	1832	85,86	21,26,26	1.31	3 (14%)	22,39,39	1.78	2 (9%)
85	OMG	S2	683	85	19,26,27	1.16	2 (10%)	21,38,41	0.81	1 (4%)
85	A2M	S2	668	85,86	18,25,26	1.31	3 (16%)	20,36,39	2.16	6 (30%)
5	A2M	L5	2815	5	18,25,26	1.17	1 (5%)	20,36,39	1.83	7 (35%)
5	OMU	L5	3925	5	19,22,23	3.32	7 (36%)	25,31,34	1.90	5 (20%)
85	OMC	S2	1703	85	19,22,23	0.55	0	25,31,34	0.60	0
85	OMG	S2	1490	85	19,26,27	1.19	2 (10%)	21,38,41	0.71	0
85	MA6	S2	1851	85	19,26,27	1.48	3 (15%)	18,38,41	3.51	3 (16%)
5	OMC	L5	2351	5,86	19,22,23	0.62	0	25,31,34	1.18	2 (8%)
5	OMC	L5	3887	5	19,22,23	0.57	0	25,31,34	0.77	0
85	OMC	S2	1272	85	19,22,23	0.57	0	25,31,34	1.10	2 (8%)
5	A2M	L5	2787	5	18,25,26	1.27	2 (11%)	20,36,39	1.81	6 (30%)
85	4AC	S2	1337	85	21,24,25	0.38	0	28,34,37	0.71	1 (3%)
85	PSU	S2	1174	85	18,21,22	1.10	1 (5%)	21,30,33	1.89	4 (19%)
5	A2M	L5	3825	5	18,25,26	1.24	2 (11%)	20,36,39	2.00	5 (25%)
85	B8N	S2	1248	85	25,29,30	3.28	6 (24%)	28,42,45	2.03	7 (25%)
3	SEP	CF	163	3	8,9,10	1.61	1 (12%)	7,12,14	1.30	1 (14%)
5	PSU	L5	4293	5	18,21,22	1.12	1 (5%)	21,30,33	1.96	4 (19%)
85	OMC	S2	462	85	19,22,23	0.54	0	25,31,34	0.71	0
5	OMC	L5	3841	5	19,22,23	0.56	0	25,31,34	0.69	1 (4%)
5	PSU	L5	4973	5	18,21,22	1.10	1 (5%)	21,30,33	1.94	4 (19%)
5	PSU	L5	4361	5	18,21,22	1.01	1 (5%)	21,30,33	1.80	3 (14%)
5	PSU	L5	3637	5	18,21,22	1.06	1 (5%)	21,30,33	2.02	5 (23%)
5	PSU	L5	4673	5,86	18,21,22	1.05	1 (5%)	21,30,33	1.82	4 (19%)
85	A2M	S2	27	85	18,25,26	1.23	1 (5%)	20,36,39	1.95	6 (30%)
5	PSU	L5	4471	5	18,21,22	1.05	1 (5%)	21,30,33	1.87	4 (19%)
85	PSU	S2	93	85	18,21,22	1.09	1 (5%)	21,30,33	1.78	4 (19%)
85	PSU	S2	863	85	18,21,22	1.11	1 (5%)	21,30,33	1.85	4 (19%)
5	PSU	L5	3851	5	18,21,22	1.02	1 (5%)	21,30,33	1.86	3 (14%)
85	PSU	S2	1367	85	18,21,22	1.10	1 (5%)	21,30,33	1.91	4 (19%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
5	OMG	L5	4392	5	19,26,27	1.18	3 (15%)	21,38,41	0.82	1 (4%)
85	A2M	S2	1383	85	18,25,26	1.22	2 (11%)	20,36,39	2.17	5 (25%)
5	PSU	L5	1860	5	18,21,22	1.03	1 (5%)	21,30,33	1.85	4 (19%)

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
5	A2M	L5	2363	5,86	-	0/5/27/28	0/3/3/3
85	PSU	S2	1004	85	-	0/7/25/26	0/2/2/2
5	OMG	L5	2364	5	-	1/5/27/28	0/3/3/3
85	OMC	S2	517	85	-	2/9/27/28	0/2/2/2
85	OMU	S2	354	85	-	0/9/27/28	0/2/2/2
5	OMG	L5	3899	5	-	2/5/27/28	0/3/3/3
85	PSU	S2	866	85	-	0/7/25/26	0/2/2/2
85	PSU	S2	651	85	-	0/7/25/26	0/2/2/2
5	PSU	L5	4493	5	-	0/7/25/26	0/2/2/2
5	PSU	L5	4532	5	-	0/7/25/26	0/2/2/2
5	PSU	L5	3853	5,86	-	0/7/25/26	0/2/2/2
85	PSU	S2	1177	85	-	0/7/25/26	0/2/2/2
5	A2M	L5	400	5	-	1/5/27/28	0/3/3/3
5	OMG	L5	3627	5	-	0/5/27/28	0/3/3/3
5	PSU	L5	4353	5	-	0/7/25/26	0/2/2/2
5	OMU	L5	4620	5	-	0/9/27/28	0/2/2/2
5	OMU	L5	2837	5	-	0/9/27/28	0/2/2/2
5	OMU	L5	4306	5	-	0/9/27/28	0/2/2/2
5	5MC	L5	4447	5	-	4/7/25/26	0/2/2/2
5	PSU	L5	1536	5	-	2/7/25/26	0/2/2/2
5	OMG	L5	2876	5	-	1/5/27/28	0/3/3/3
5	PSU	L5	4689	5	-	0/7/25/26	0/2/2/2
85	PSU	S2	686	85	-	0/7/25/26	0/2/2/2
5	PSU	L5	1782	5	-	0/7/25/26	0/2/2/2
85	PSU	S2	406	85	-	0/7/25/26	0/2/2/2
5	6MZ	L5	4220	5	-	0/5/27/28	0/3/3/3
5	A2M	L5	1326	5	-	3/5/27/28	0/3/3/3
85	OMU	S2	428	85	-	6/9/27/28	0/2/2/2
85	PSU	S2	681	85	-	0/7/25/26	0/2/2/2
85	A2M	S2	484	85	-	0/5/27/28	0/3/3/3
85	MA6	S2	1850	85	-	0/7/29/30	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
85	PSU	S2	105	85	-	0/7/25/26	0/2/2/2
5	PSU	L5	4636	5	-	1/7/25/26	0/2/2/2
5	PSU	L5	4299	5	-	0/7/25/26	0/2/2/2
5	PSU	L5	1683	5	-	0/7/25/26	0/2/2/2
85	PSU	S2	1056	85	-	0/7/25/26	0/2/2/2
5	OMU	L5	4498	5	-	0/9/27/28	0/2/2/2
5	UR3	L5	4530	5	-	0/7/25/26	0/2/2/2
85	4AC	S2	1842	85	-	0/11/29/30	0/2/2/2
5	PSU	L5	1677	5	-	3/7/25/26	0/2/2/2
85	OMU	S2	799	85	-	2/9/27/28	0/2/2/2
85	PSU	S2	1244	85	-	0/7/25/26	0/2/2/2
85	PSU	S2	649	85	-	0/7/25/26	0/2/2/2
5	OMU	L5	4227	5	-	0/9/27/28	0/2/2/2
5	OMC	L5	4456	5	-	0/9/27/28	0/2/2/2
5	PSU	L5	4500	5	-	3/7/25/26	0/2/2/2
5	PSU	L5	3920	5,86	-	0/7/25/26	0/2/2/2
5	OMG	L5	4196	5,2	-	1/5/27/28	0/3/3/3
85	PSU	S2	1046	85	-	0/7/25/26	0/2/2/2
85	A2M	S2	1031	85	-	0/5/27/28	0/3/3/3
5	A2M	L5	1534	5,86	-	1/5/27/28	0/3/3/3
85	PSU	S2	814	85	-	0/7/25/26	0/2/2/2
5	OMC	L5	3869	5	-	1/9/27/28	0/2/2/2
5	A2M	L5	2401	5	-	2/5/27/28	0/3/3/3
5	OMC	L5	3808	5	-	0/9/27/28	0/2/2/2
5	OMG	L5	1522	5	-	0/5/27/28	0/3/3/3
5	OMC	L5	2804	5	-	0/9/27/28	0/2/2/2
5	PSU	L5	3639	5	-	0/7/25/26	0/2/2/2
85	PSU	S2	1045	85	-	2/7/25/26	0/2/2/2
85	OMG	S2	1328	85	-	1/5/27/28	0/3/3/3
5	PSU	L5	4579	5	-	0/7/25/26	0/2/2/2
85	PSU	S2	1081	85	-	1/7/25/26	0/2/2/2
5	OMG	L5	2424	5	-	0/5/27/28	0/3/3/3
5	UY1	L5	3818	5	-	2/9/27/28	0/2/2/2
5	OMC	L5	4536	5	-	0/9/27/28	0/2/2/2
85	OMU	S2	172	85	-	0/9/27/28	0/2/2/2
5	PSU	L5	4521	5,86	-	0/7/25/26	0/2/2/2
5	PSU	L5	4431	5	-	0/7/25/26	0/2/2/2
85	OMG	S2	867	85	-	2/5/27/28	0/3/3/3
85	A2M	S2	166	85	-	0/5/27/28	0/3/3/3
5	OMG	L5	4618	5	-	2/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	OMC	L5	1340	5	-	1/9/27/28	0/2/2/2
85	OMU	S2	1442	85	-	2/9/27/28	0/2/2/2
5	PSU	L5	4972	5	-	0/7/25/26	0/2/2/2
5	OMG	L5	4637	5	-	3/5/27/28	0/3/3/3
85	PSU	S2	801	85	-	2/7/25/26	0/2/2/2
5	A2M	L5	1524	5	-	2/5/27/28	0/3/3/3
5	PSU	L5	4312	5	-	0/7/25/26	0/2/2/2
85	OMC	S2	1391	85	-	0/9/27/28	0/2/2/2
5	OMG	L5	1316	5	-	0/5/27/28	0/3/3/3
5	PSU	L5	1744	5,86	-	0/7/25/26	0/2/2/2
85	A2M	S2	159	85	-	1/5/27/28	0/3/3/3
5	OMG	L5	4499	5	-	1/5/27/28	0/3/3/3
85	A2M	S2	576	85	-	4/5/27/28	0/3/3/3
5	PSU	L5	4552	5	-	0/7/25/26	0/2/2/2
5	OMG	L5	4370	5	-	1/5/27/28	0/3/3/3
5	OMG	L5	1625	5	-	2/5/27/28	0/3/3/3
5	PSU	L5	5001	5	-	0/7/25/26	0/2/2/2
5	OMC	L5	2861	5	-	1/9/27/28	0/2/2/2
5	PSU	L5	3884	5	-	0/7/25/26	0/2/2/2
7	PSU	L8	69	7	-	0/7/25/26	0/2/2/2
85	PSU	S2	109	85	-	0/7/25/26	0/2/2/2
5	A2M	L5	398	5	-	1/5/27/28	0/3/3/3
5	PSU	L5	4457	5	-	0/7/25/26	0/2/2/2
5	PSU	L5	3822	5	-	0/7/25/26	0/2/2/2
5	OMC	L5	3701	5	-	6/9/27/28	0/2/2/2
85	OMU	S2	116	85	-	0/9/27/28	0/2/2/2
85	PSU	S2	1232	85	-	0/7/25/26	0/2/2/2
85	OMU	S2	1326	85	-	0/9/27/28	0/2/2/2
5	PSU	L5	3844	5	-	1/7/25/26	0/2/2/2
85	PSU	S2	966	85,86	-	0/7/25/26	0/2/2/2
5	PSU	L5	3695	5	-	0/7/25/26	0/2/2/2
5	A2M	L5	1323	5	-	2/5/27/28	0/3/3/3
5	OMC	L5	2365	5	-	0/9/27/28	0/2/2/2
5	OMG	L5	4494	5	-	0/5/27/28	0/3/3/3
5	PSU	L5	2839	5	-	0/7/25/26	0/2/2/2
5	A2M	L5	3867	5	-	3/5/27/28	0/3/3/3
5	PSU	L5	2632	5	-	0/7/25/26	0/2/2/2
5	PSU	L5	1792	5	-	0/7/25/26	0/2/2/2
85	OMG	S2	509	85	-	0/5/27/28	0/3/3/3
5	OMC	L5	2824	5	-	1/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	A2M	L5	3830	5	-	0/5/27/28	0/3/3/3
5	A2M	L5	4590	5	-	3/5/27/28	0/3/3/3
5	PSU	L5	1781	5	-	1/7/25/26	0/2/2/2
85	OMG	S2	644	85	-	4/5/27/28	0/3/3/3
5	OMG	L5	3792	5	-	2/5/27/28	0/3/3/3
5	PSU	L5	4628	5	-	0/7/25/26	0/2/2/2
5	OMG	L5	3744	5	-	0/5/27/28	0/3/3/3
85	OMC	S2	174	85	-	1/9/27/28	0/2/2/2
5	1MA	L5	1322	5,86	-	0/3/25/26	0/3/3/3
5	PSU	L5	4296	5	-	2/7/25/26	0/2/2/2
5	PSU	L5	4403	5	-	0/7/25/26	0/2/2/2
5	A2M	L5	4523	5,86	-	0/5/27/28	0/3/3/3
85	OMU	S2	1288	85	-	2/9/27/28	0/2/2/2
85	OMG	S2	436	85	-	2/5/27/28	0/3/3/3
5	A2M	L5	3785	5,86	-	3/5/27/28	0/3/3/3
5	PSU	L5	1862	5	-	0/7/25/26	0/2/2/2
5	A2M	L5	1871	5,86	-	0/5/27/28	0/3/3/3
5	OMG	L5	4228	5	-	2/5/27/28	0/3/3/3
5	PSU	L5	4576	5	-	0/7/25/26	0/2/2/2
5	OMG	L5	4623	5	-	0/5/27/28	0/3/3/3
7	OMG	L8	75	7	-	1/5/27/28	0/3/3/3
85	OMU	S2	121	85	-	0/9/27/28	0/2/2/2
5	OMC	L5	2422	5,86	-	2/9/27/28	0/2/2/2
5	A2M	L5	3718	5	-	1/5/27/28	0/3/3/3
5	5MC	L5	3782	5,86	-	1/7/25/26	0/2/2/2
85	OMG	S2	601	85	-	1/5/27/28	0/3/3/3
85	OMU	S2	627	85	-	4/9/27/28	0/2/2/2
85	G7M	S2	1639	85,2	-	0/3/25/26	0/3/3/3
5	PSU	L5	1582	5	-	0/7/25/26	0/2/2/2
5	PSU	L5	5010	5	-	0/7/25/26	0/2/2/2
85	A2M	S2	99	85,86	-	3/5/27/28	0/3/3/3
5	A2M	L5	4571	5	-	0/5/27/28	0/3/3/3
5	PSU	L5	4442	5	-	0/7/25/26	0/2/2/2
85	A2M	S2	468	85	-	0/5/27/28	0/3/3/3
7	PSU	L8	55	7	-	0/7/25/26	0/2/2/2
85	6MZ	S2	1832	85,86	-	4/8/28/28	0/3/3/3
85	OMG	S2	683	85	-	0/5/27/28	0/3/3/3
85	A2M	S2	668	85,86	-	2/5/27/28	0/3/3/3
5	A2M	L5	2815	5	-	2/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	OMU	L5	3925	5	-	0/9/27/28	0/2/2/2
85	OMC	S2	1703	85	-	1/9/27/28	0/2/2/2
85	OMG	S2	1490	85	-	1/5/27/28	0/3/3/3
85	MA6	S2	1851	85	-	1/7/29/30	0/3/3/3
5	OMC	L5	2351	5,86	-	3/9/27/28	0/2/2/2
5	OMC	L5	3887	5	-	1/9/27/28	0/2/2/2
85	OMC	S2	1272	85	-	5/9/27/28	0/2/2/2
5	A2M	L5	2787	5	-	3/5/27/28	0/3/3/3
85	4AC	S2	1337	85	-	1/11/29/30	0/2/2/2
85	PSU	S2	1174	85	-	0/7/25/26	0/2/2/2
5	A2M	L5	3825	5	-	0/5/27/28	0/3/3/3
85	B8N	S2	1248	85	-	5/16/34/35	0/2/2/2
3	SEP	CF	163	3	-	6/6/8/10	-
5	PSU	L5	4293	5	-	0/7/25/26	0/2/2/2
85	OMC	S2	462	85	-	0/9/27/28	0/2/2/2
5	OMC	L5	3841	5	-	1/9/27/28	0/2/2/2
5	PSU	L5	4973	5	-	0/7/25/26	0/2/2/2
5	PSU	L5	4361	5	-	0/7/25/26	0/2/2/2
5	PSU	L5	3637	5	-	0/7/25/26	0/2/2/2
5	PSU	L5	4673	5,86	-	0/7/25/26	0/2/2/2
85	A2M	S2	27	85	-	1/5/27/28	0/3/3/3
5	PSU	L5	4471	5	-	1/7/25/26	0/2/2/2
85	PSU	S2	93	85	-	0/7/25/26	0/2/2/2
85	PSU	S2	863	85	-	0/7/25/26	0/2/2/2
5	PSU	L5	3851	5	-	1/7/25/26	0/2/2/2
85	PSU	S2	1367	85	-	0/7/25/26	0/2/2/2
5	OMG	L5	4392	5	-	0/5/27/28	0/3/3/3
85	A2M	S2	1383	85	-	3/5/27/28	0/3/3/3
5	PSU	L5	1860	5	-	0/7/25/26	0/2/2/2

The worst 5 of 351 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	L5	3818	UY1	C6-C5	12.73	1.49	1.35
5	L5	3818	UY1	C2-N1	11.79	1.52	1.36
85	S2	1442	OMU	C2-N1	8.47	1.51	1.38
85	S2	799	OMU	C2-N1	8.45	1.51	1.38
85	S2	627	OMU	C2-N1	8.41	1.51	1.38

The worst 5 of 615 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
85	S2	1851	MA6	N1-C6-N6	-12.81	102.03	116.83
85	S2	1850	MA6	N1-C6-N6	-12.32	102.60	116.83
5	L5	1524	A2M	C4'-O4'-C1'	-6.99	103.52	109.92
5	L5	3785	A2M	C4'-O4'-C1'	-6.66	103.83	109.92
5	L5	4220	6MZ	N3-C2-N1	-6.27	120.16	128.67

There are no chirality outliers.

5 of 157 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	CF	163	SEP	N-CA-CB-OG
3	CF	163	SEP	C-CA-CB-OG
3	CF	163	SEP	CA-CB-OG-P
3	CF	163	SEP	CB-OG-P-O2P
3	CF	163	SEP	CB-OG-P-O3P

There are no ring outliers.

75 monomers are involved in 106 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	L5	2363	A2M	1	0
5	L5	2364	OMG	1	0
85	S2	517	OMC	1	0
85	S2	866	PSU	2	0
85	S2	1177	PSU	1	0
5	L5	400	A2M	1	0
5	L5	3627	OMG	1	0
5	L5	4620	OMU	3	0
5	L5	4306	OMU	1	0
5	L5	2876	OMG	1	0
5	L5	4689	PSU	1	0
85	S2	686	PSU	1	0
5	L5	4220	6MZ	1	0
5	L5	1326	A2M	4	0
85	S2	681	PSU	1	0
85	S2	484	A2M	1	0
85	S2	1850	MA6	2	0
5	L5	1683	PSU	2	0
85	S2	1842	4AC	1	0
5	L5	1677	PSU	1	0
85	S2	1244	PSU	1	0
85	S2	649	PSU	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	L5	4456	OMC	1	0
5	L5	4500	PSU	1	0
85	S2	1031	A2M	1	0
5	L5	1534	A2M	2	0
5	L5	2804	OMC	2	0
5	L5	4579	PSU	2	0
5	L5	2424	OMG	1	0
5	L5	4536	OMC	1	0
5	L5	4431	PSU	1	0
85	S2	867	OMG	2	0
85	S2	166	A2M	2	0
5	L5	4618	OMG	1	0
5	L5	1340	OMC	2	0
5	L5	4637	OMG	1	0
85	S2	1391	OMC	1	0
85	S2	159	A2M	2	0
85	S2	576	A2M	2	0
5	L5	5001	PSU	1	0
5	L5	2861	OMC	1	0
5	L5	3884	PSU	1	0
5	L5	4457	PSU	1	0
5	L5	3822	PSU	2	0
5	L5	3701	OMC	1	0
5	L5	3867	A2M	3	0
85	S2	509	OMG	3	0
5	L5	2824	OMC	1	0
5	L5	4590	A2M	1	0
5	L5	4523	A2M	2	0
85	S2	1288	OMU	1	0
85	S2	436	OMG	1	0
5	L5	3785	A2M	1	0
7	L8	75	OMG	2	0
85	S2	121	OMU	1	0
5	L5	3718	A2M	4	0
85	S2	601	OMG	1	0
85	S2	99	A2M	1	0
5	L5	4571	A2M	2	0
85	S2	468	A2M	2	0
85	S2	1832	6MZ	1	0
5	L5	2815	A2M	1	0
5	L5	3925	OMU	1	0
5	L5	2351	OMC	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
85	S2	1272	OMC	1	0
5	L5	2787	A2M	1	0
85	S2	1337	4AC	4	0
85	S2	1174	PSU	2	0
5	L5	3825	A2M	1	0
3	CF	163	SEP	1	0
85	S2	462	OMC	1	0
5	L5	3841	OMC	1	0
85	S2	27	A2M	1	0
85	S2	863	PSU	1	0
85	S2	1383	A2M	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 242 ligands modelled in this entry, 225 are monoatomic - leaving 17 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
87	SPM	L5	5264	-	13,13,13	0.34	0	12,12,12	0.92	0
87	SPM	L5	5288	-	13,13,13	0.36	0	12,12,12	0.98	0
88	SPD	L5	5289	-	9,9,9	0.33	0	8,8,8	0.86	0
87	SPM	L5	5263	-	13,13,13	0.35	0	12,12,12	1.00	0
88	SPD	LN	301	-	9,9,9	0.32	0	8,8,8	0.84	0
88	SPD	L5	5261	-	9,9,9	0.32	0	8,8,8	0.95	0
88	SPD	L5	5285	-	9,9,9	0.32	0	8,8,8	0.81	0
88	SPD	L5	5282	-	9,9,9	0.34	0	8,8,8	0.84	0
88	SPD	L5	5283	-	9,9,9	0.32	0	8,8,8	0.88	0
88	SPD	L5	5284	-	9,9,9	0.32	0	8,8,8	0.87	0
87	SPM	L5	5267	-	13,13,13	0.35	0	12,12,12	0.99	0
88	SPD	L5	5286	-	9,9,9	0.33	0	8,8,8	0.88	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
88	SPD	L5	5290	-	9,9,9	0.33	0	8,8,8	0.68	0
87	SPM	L5	5291	-	13,13,13	0.36	0	12,12,12	0.88	0
87	SPM	L5	5258	-	13,13,13	0.35	0	12,12,12	0.93	0
87	SPM	L5	5292	-	13,13,13	0.35	0	12,12,12	0.91	0
88	SPD	L5	5287	-	9,9,9	0.32	0	8,8,8	0.84	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
87	SPM	L5	5264	-	-	2/11/11/11	-
87	SPM	L5	5288	-	-	5/11/11/11	-
88	SPD	L5	5289	-	-	2/7/7/7	-
87	SPM	L5	5263	-	-	6/11/11/11	-
88	SPD	LN	301	-	-	1/7/7/7	-
88	SPD	L5	5261	-	-	0/7/7/7	-
88	SPD	L5	5285	-	-	1/7/7/7	-
88	SPD	L5	5282	-	-	1/7/7/7	-
88	SPD	L5	5283	-	-	4/7/7/7	-
88	SPD	L5	5284	-	-	4/7/7/7	-
87	SPM	L5	5267	-	-	4/11/11/11	-
88	SPD	L5	5286	-	-	3/7/7/7	-
88	SPD	L5	5290	-	-	2/7/7/7	-
87	SPM	L5	5291	-	-	3/11/11/11	-
87	SPM	L5	5258	-	-	2/11/11/11	-
87	SPM	L5	5292	-	-	5/11/11/11	-
88	SPD	L5	5287	-	-	1/7/7/7	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

5 of 46 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
87	L5	5264	SPM	N5-C6-C7-C8
87	L5	5291	SPM	C7-C8-C9-N10

Continued on next page...

Continued from previous page...

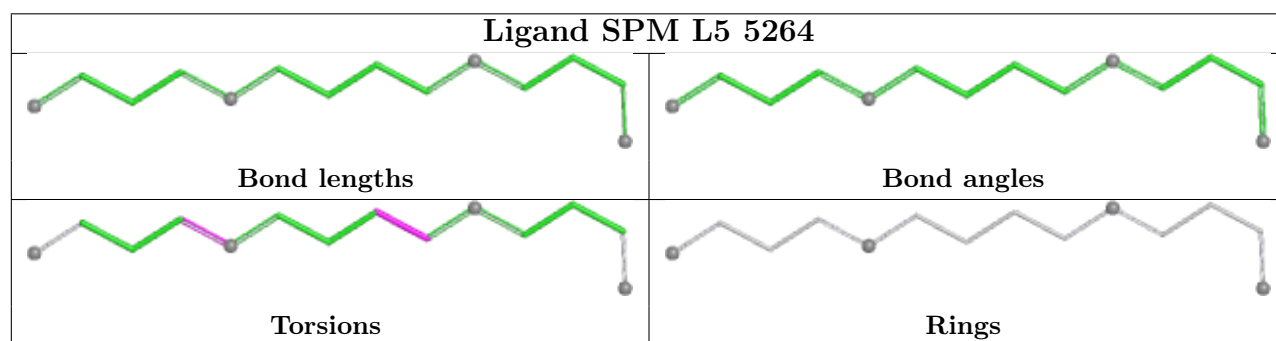
Mol	Chain	Res	Type	Atoms
88	L5	5286	SPD	C3-C4-C5-N6
87	L5	5291	SPM	N5-C6-C7-C8
87	L5	5292	SPM	N10-C11-C12-C13

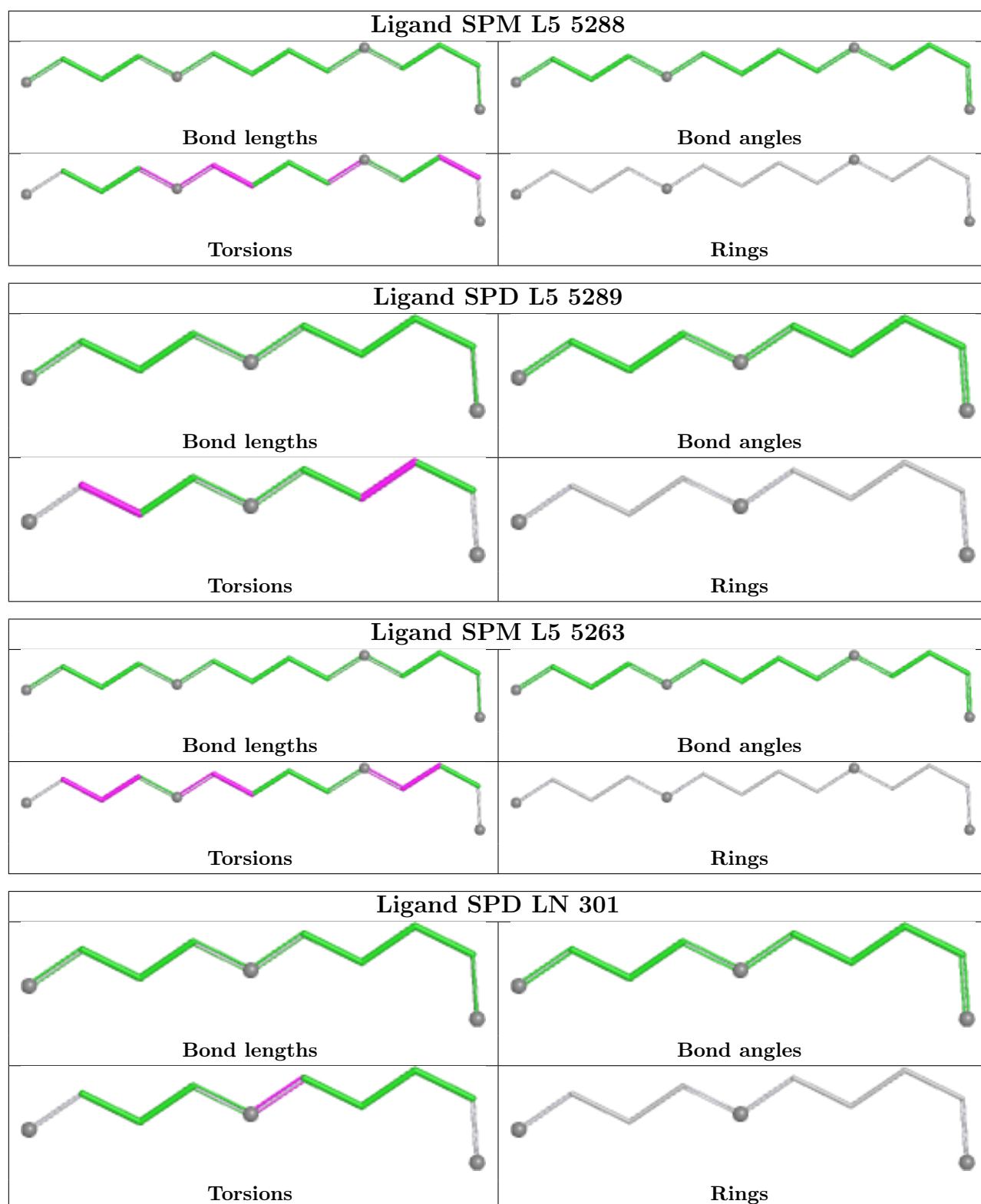
There are no ring outliers.

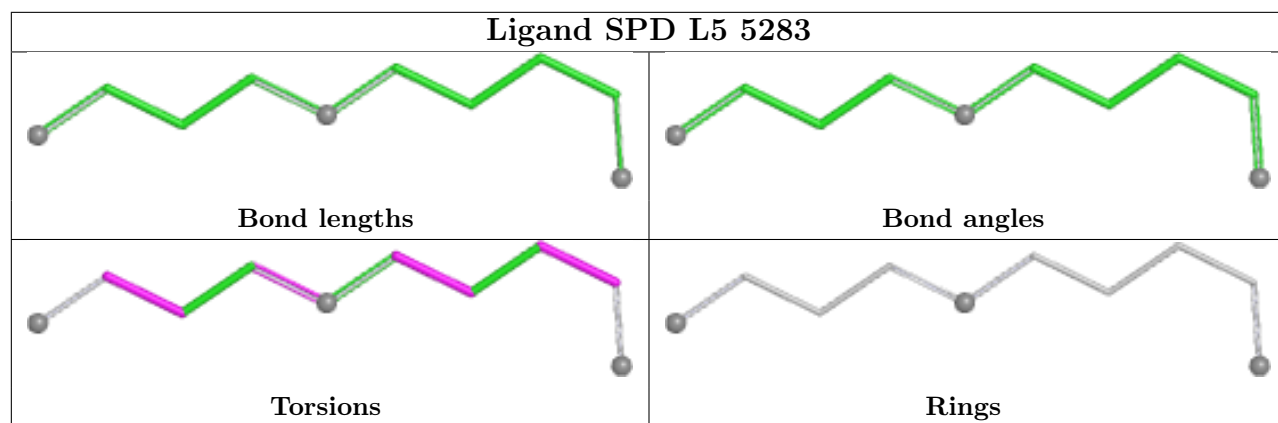
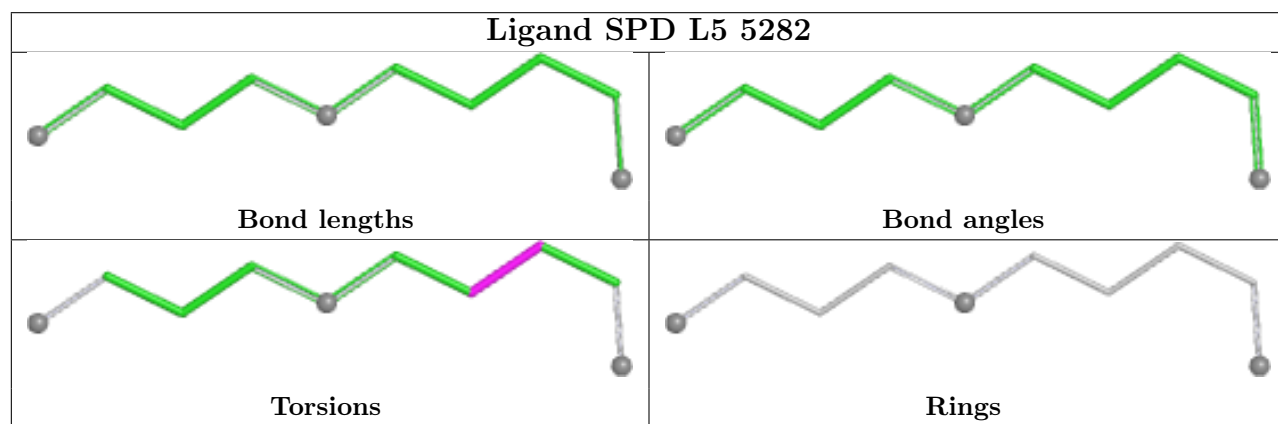
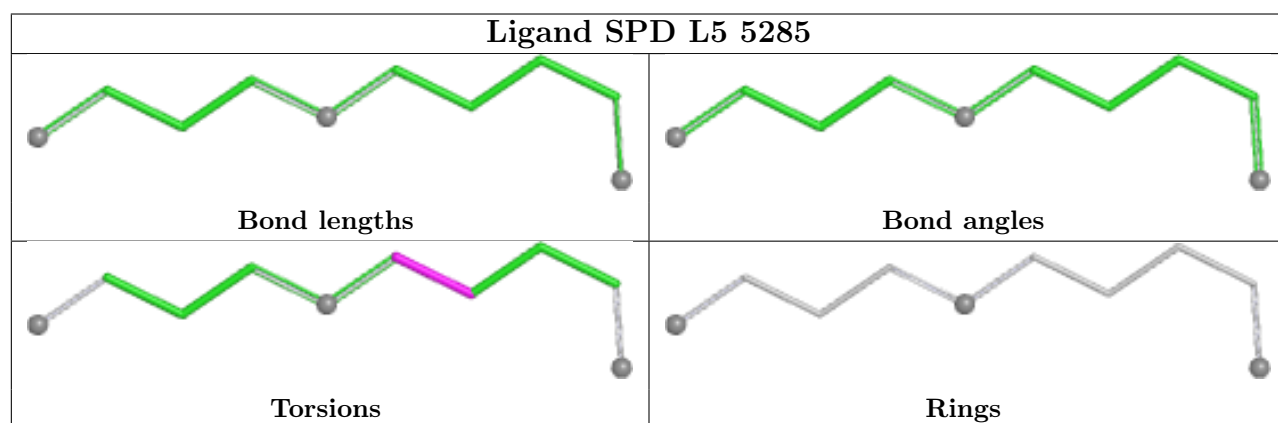
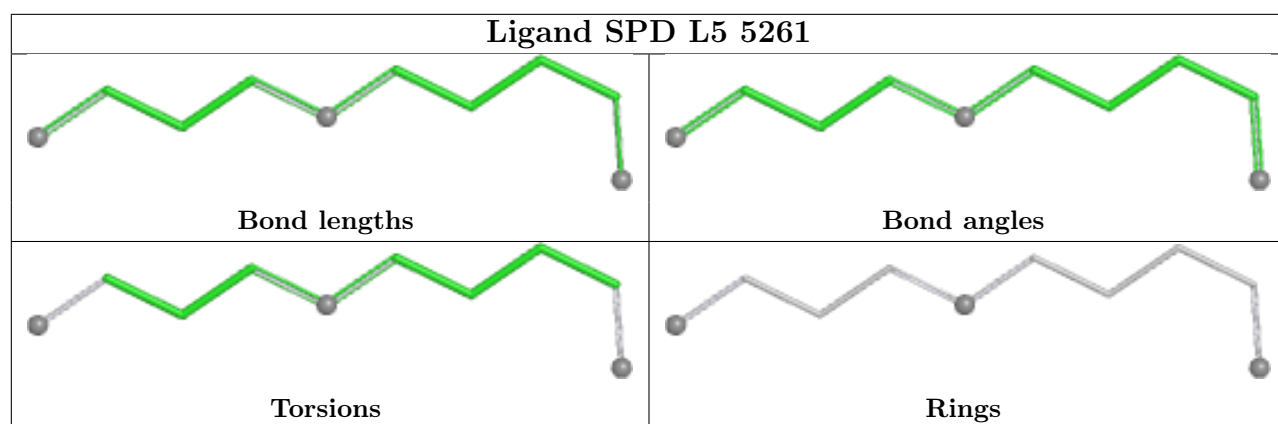
5 monomers are involved in 7 short contacts:

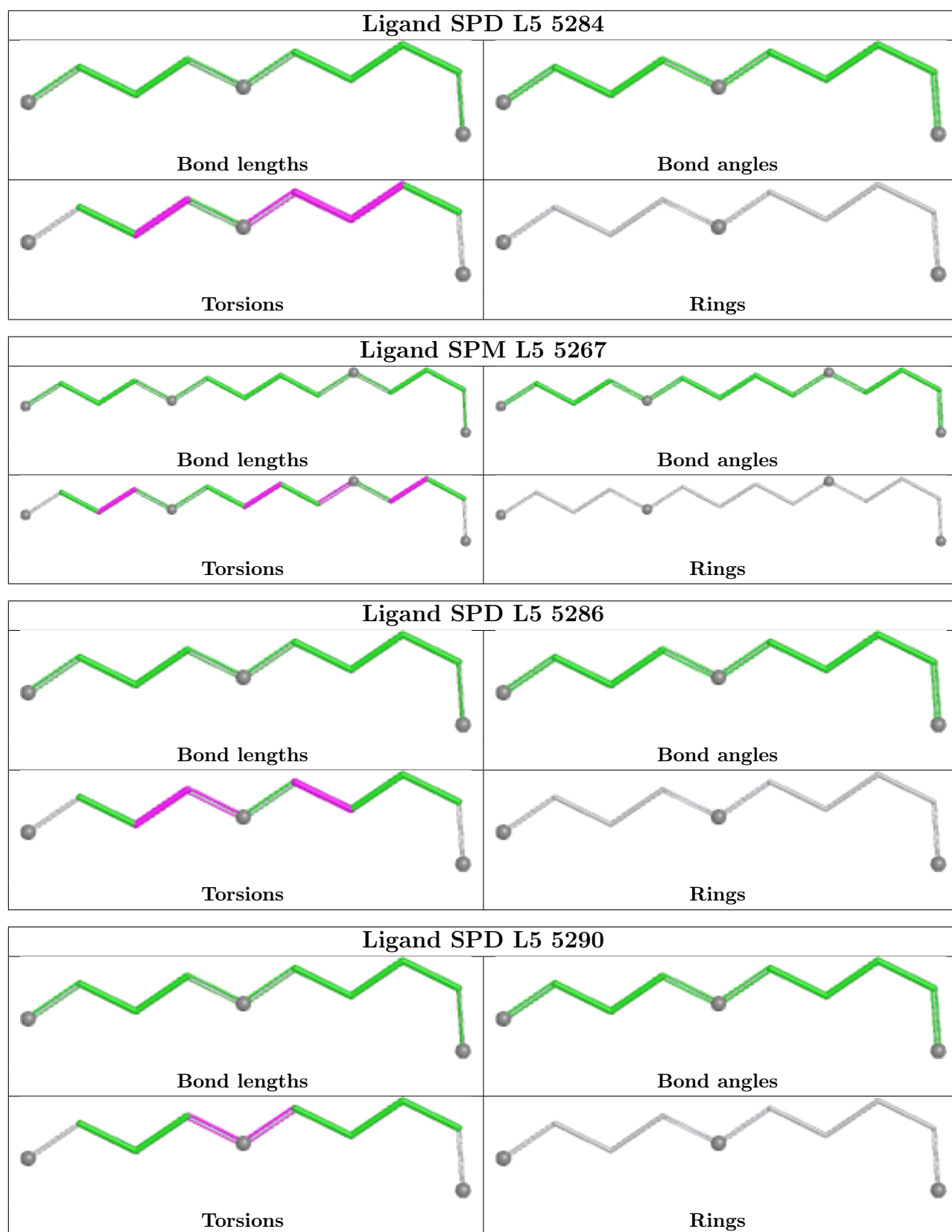
Mol	Chain	Res	Type	Clashes	Symm-Clashes
88	L5	5261	SPD	1	0
88	L5	5285	SPD	1	0
88	L5	5290	SPD	1	0
87	L5	5291	SPM	2	0
87	L5	5292	SPM	2	0

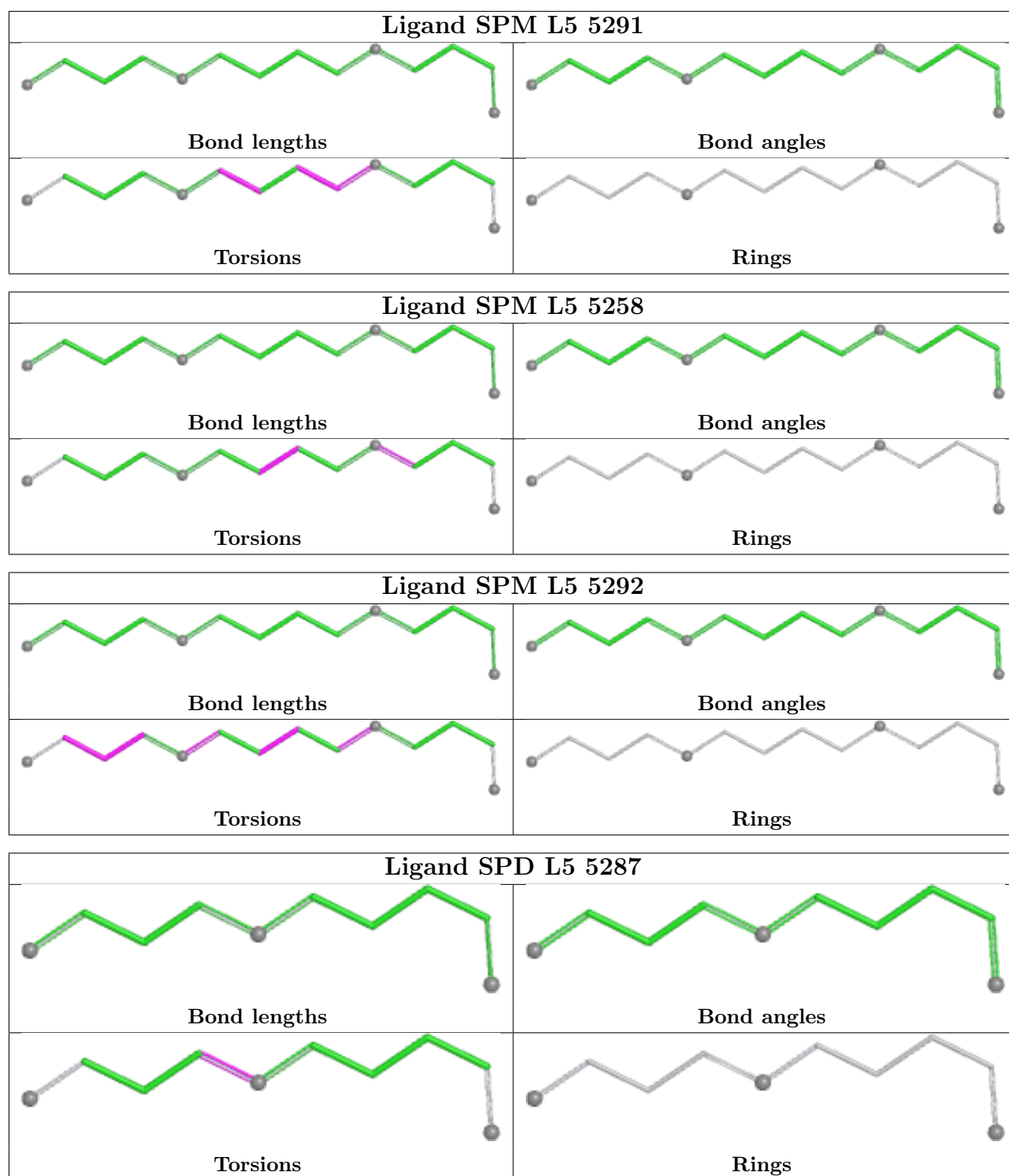
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.











5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

5.8 Polymer linkage issues

The following chains have linkage breaks:

Mol	Chain	Number of breaks
5	L5	10
85	S2	5
2	Pt	1
4	AT	1

The worst 5 of 17 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	S2	753:C	O3'	785:C	P	28.79
1	L5	1706:A	O3'	1716:G	P	21.22
1	L5	2910:G	O3'	3584:C	P	21.08
1	L5	760:G	O3'	903:C	P	16.76
1	L5	519:C	O3'	642:G	P	15.26

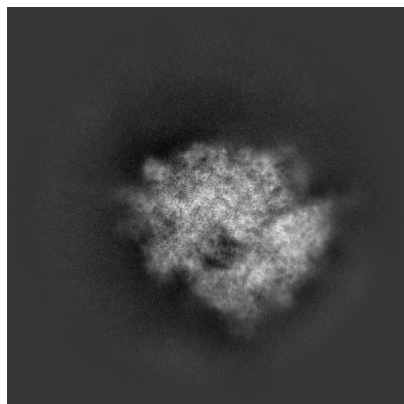
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-71333. These allow visual inspection of the internal detail of the map and identification of artifacts.

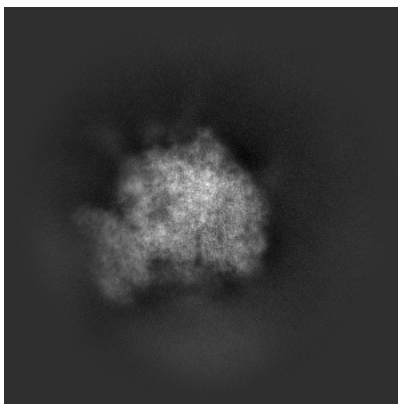
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

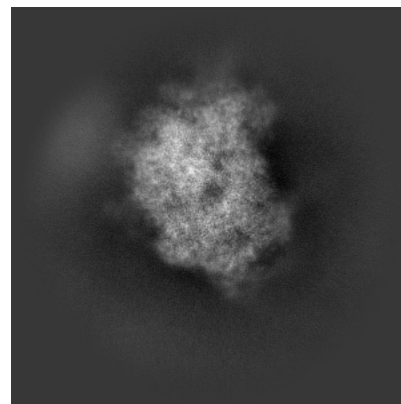
6.1.1 Primary map



X

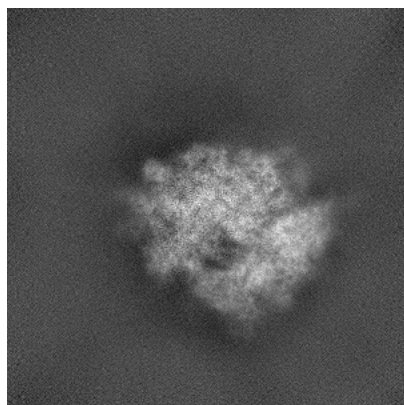


Y

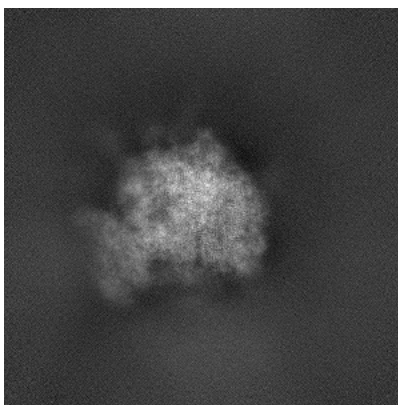


Z

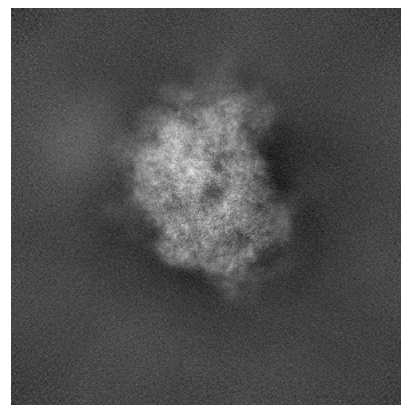
6.1.2 Raw map



X



Y

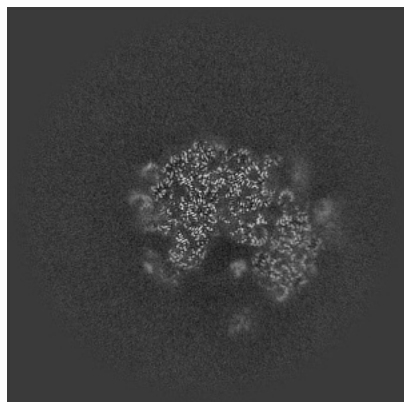


Z

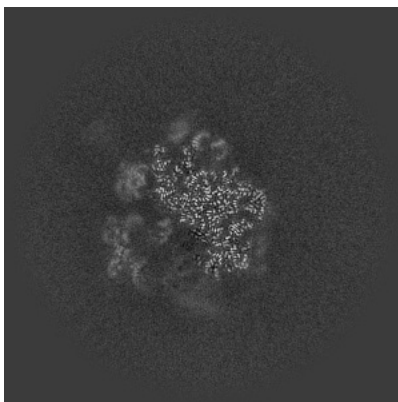
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

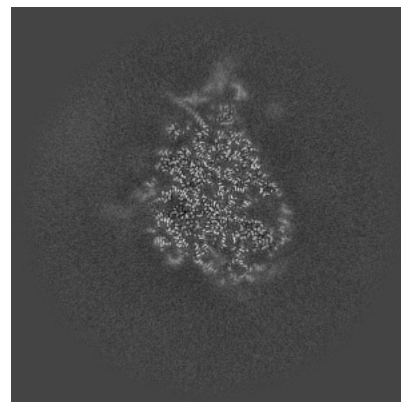
6.2.1 Primary map



X Index: 256

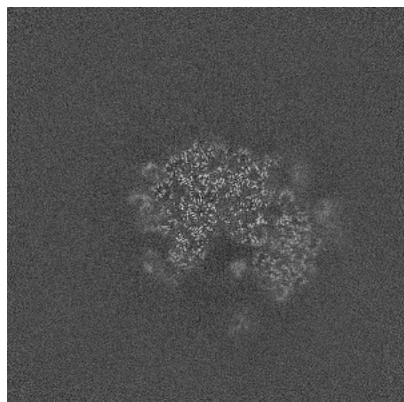


Y Index: 256

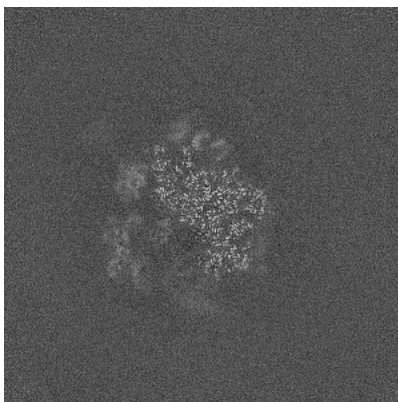


Z Index: 256

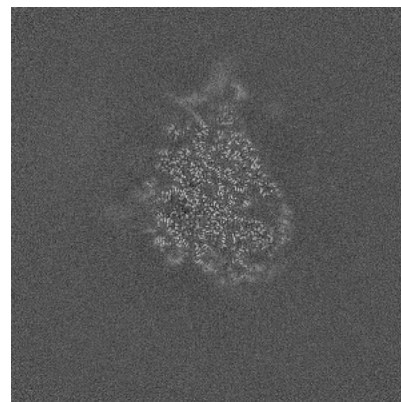
6.2.2 Raw map



X Index: 256



Y Index: 256

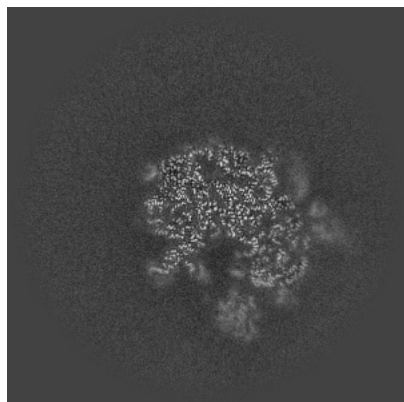


Z Index: 256

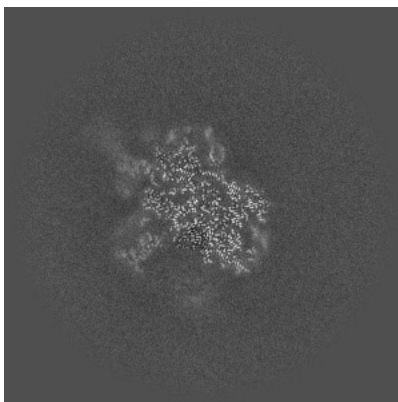
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

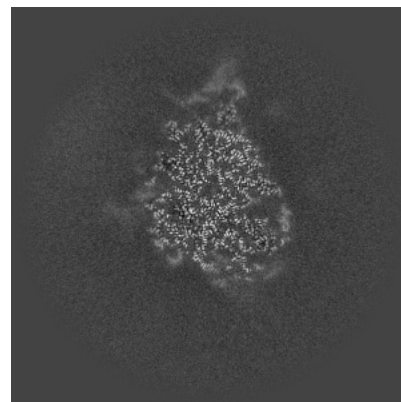
6.3.1 Primary map



X Index: 244

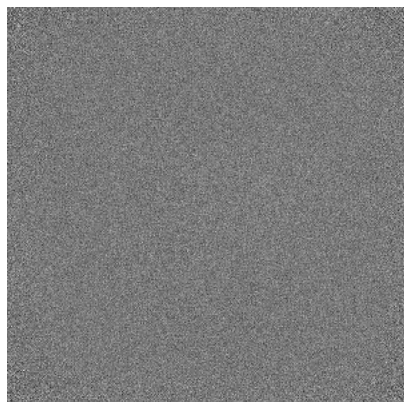


Y Index: 243

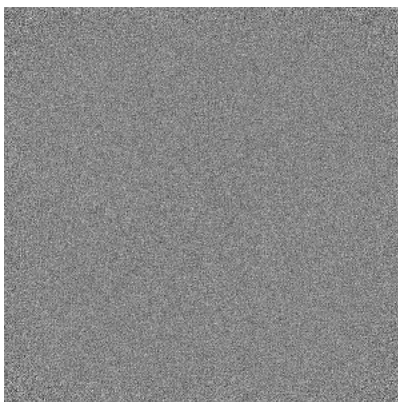


Z Index: 258

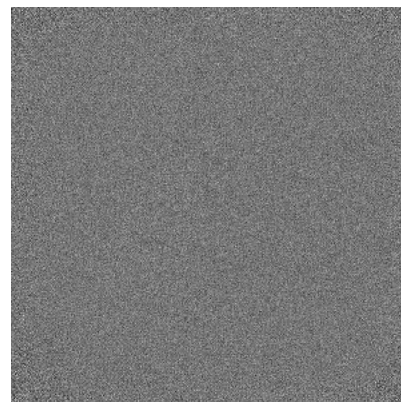
6.3.2 Raw map



X Index: 0



Y Index: 0

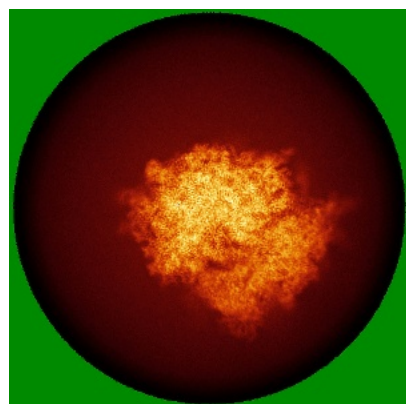


Z Index: 0

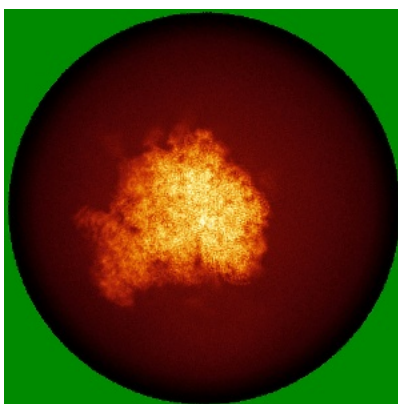
The images above show the largest variance slices of the map in three orthogonal directions.

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

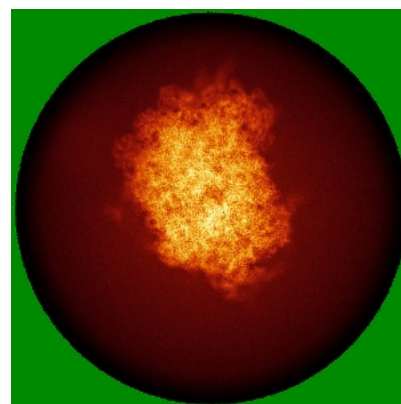
6.4.1 Primary map



X

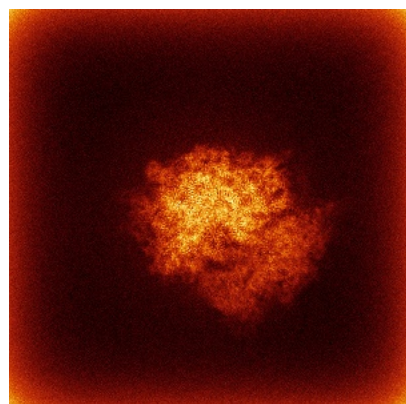


Y

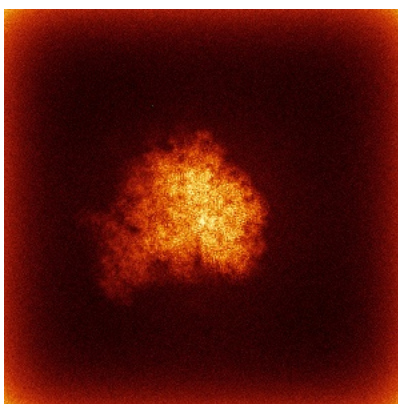


Z

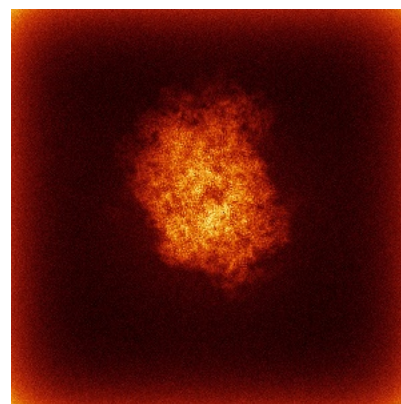
6.4.2 Raw map



X



Y

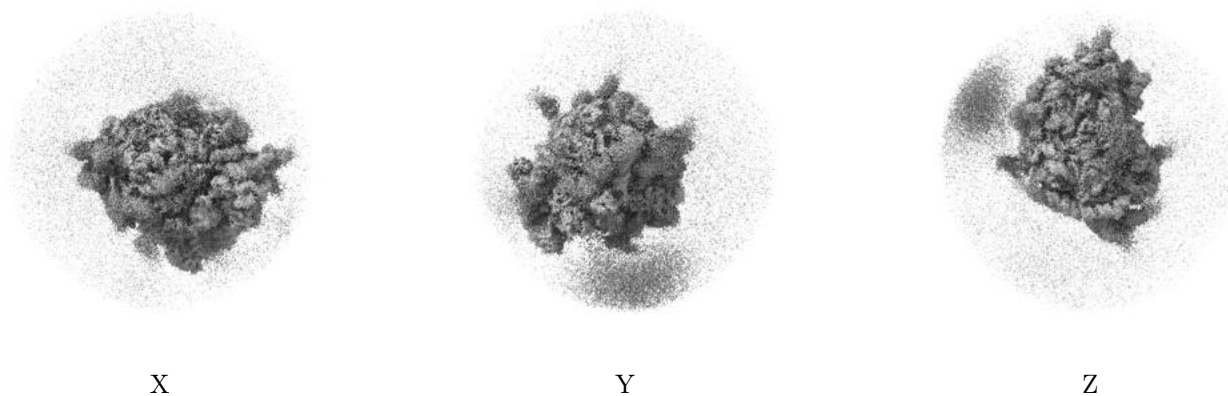


Z

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

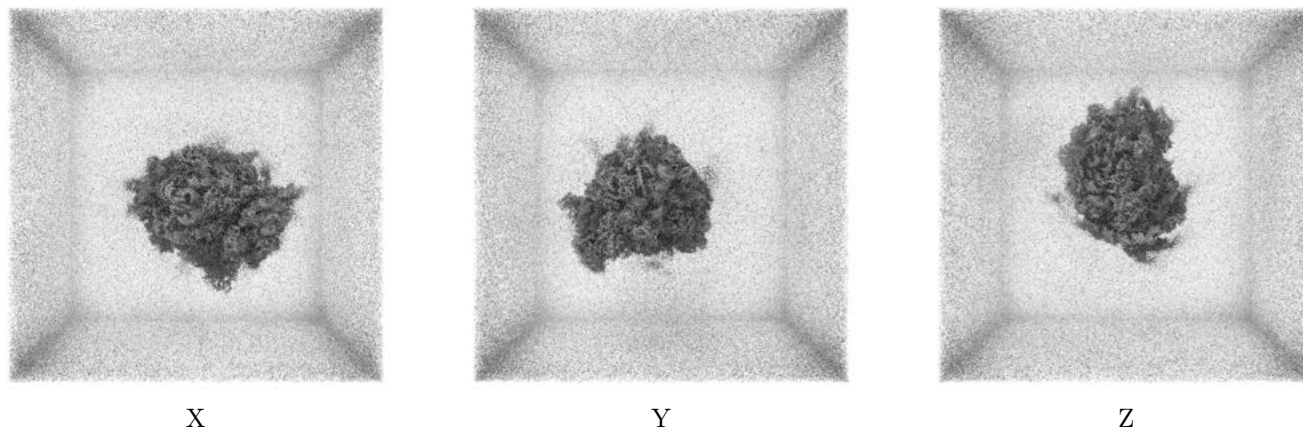
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.011. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

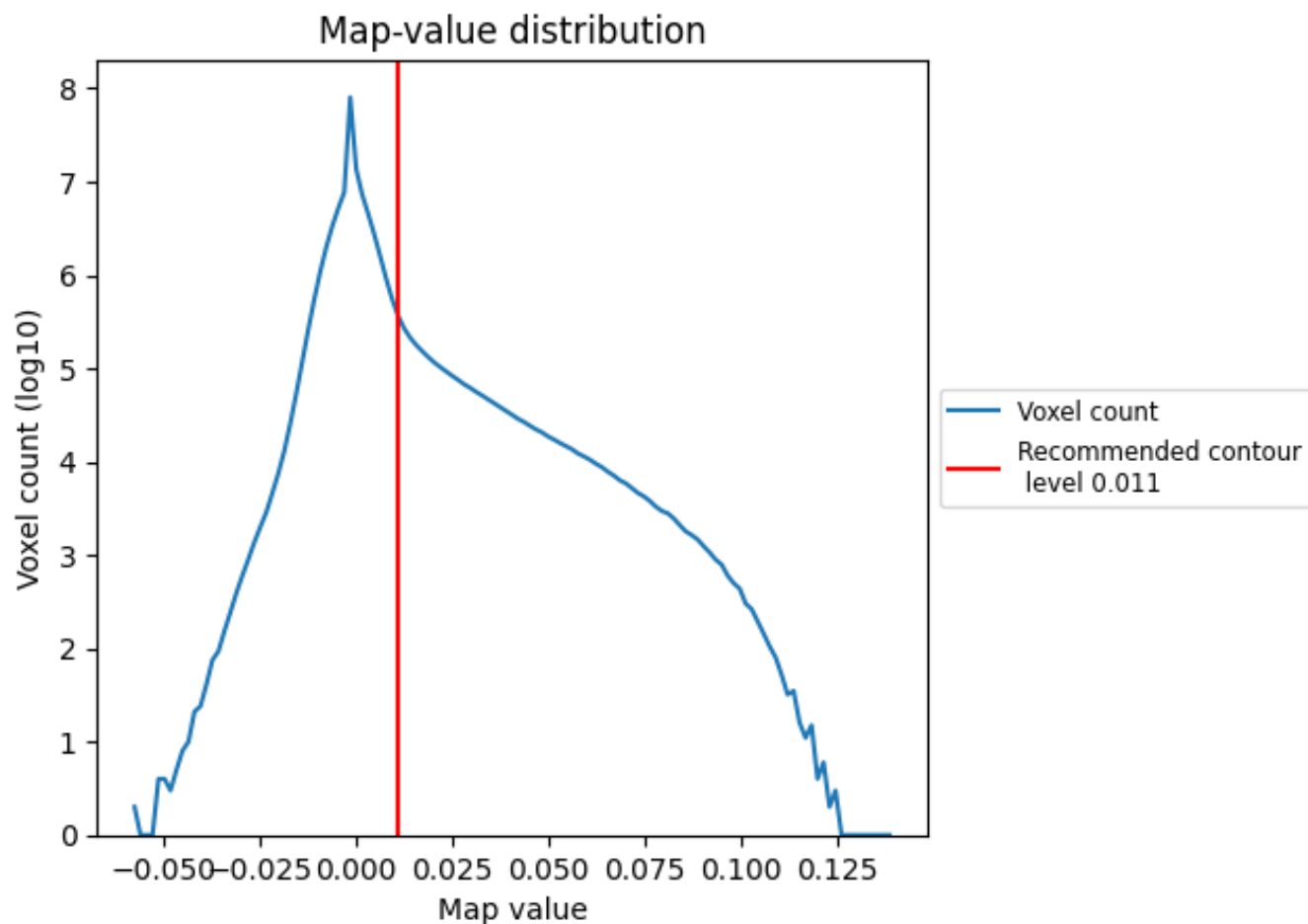
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

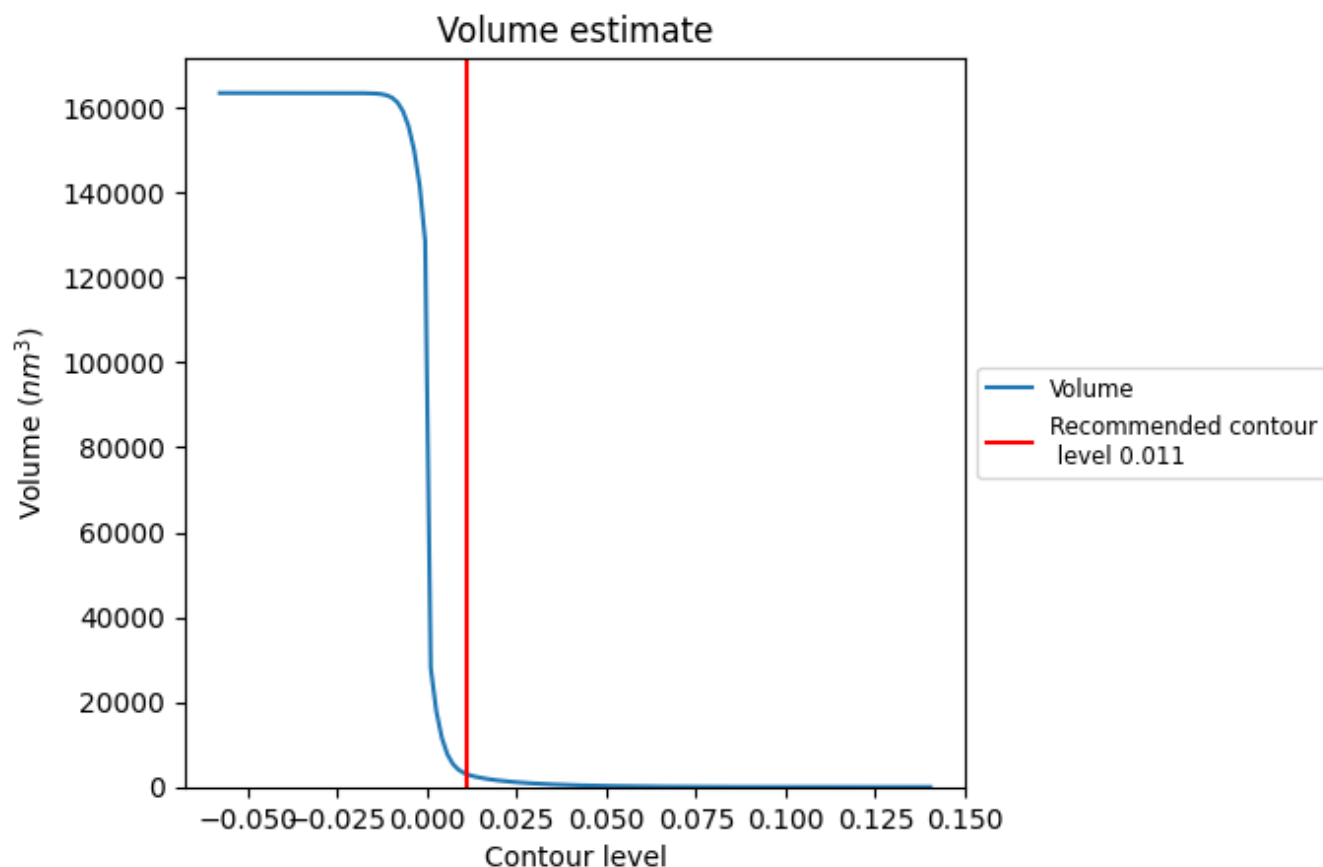
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

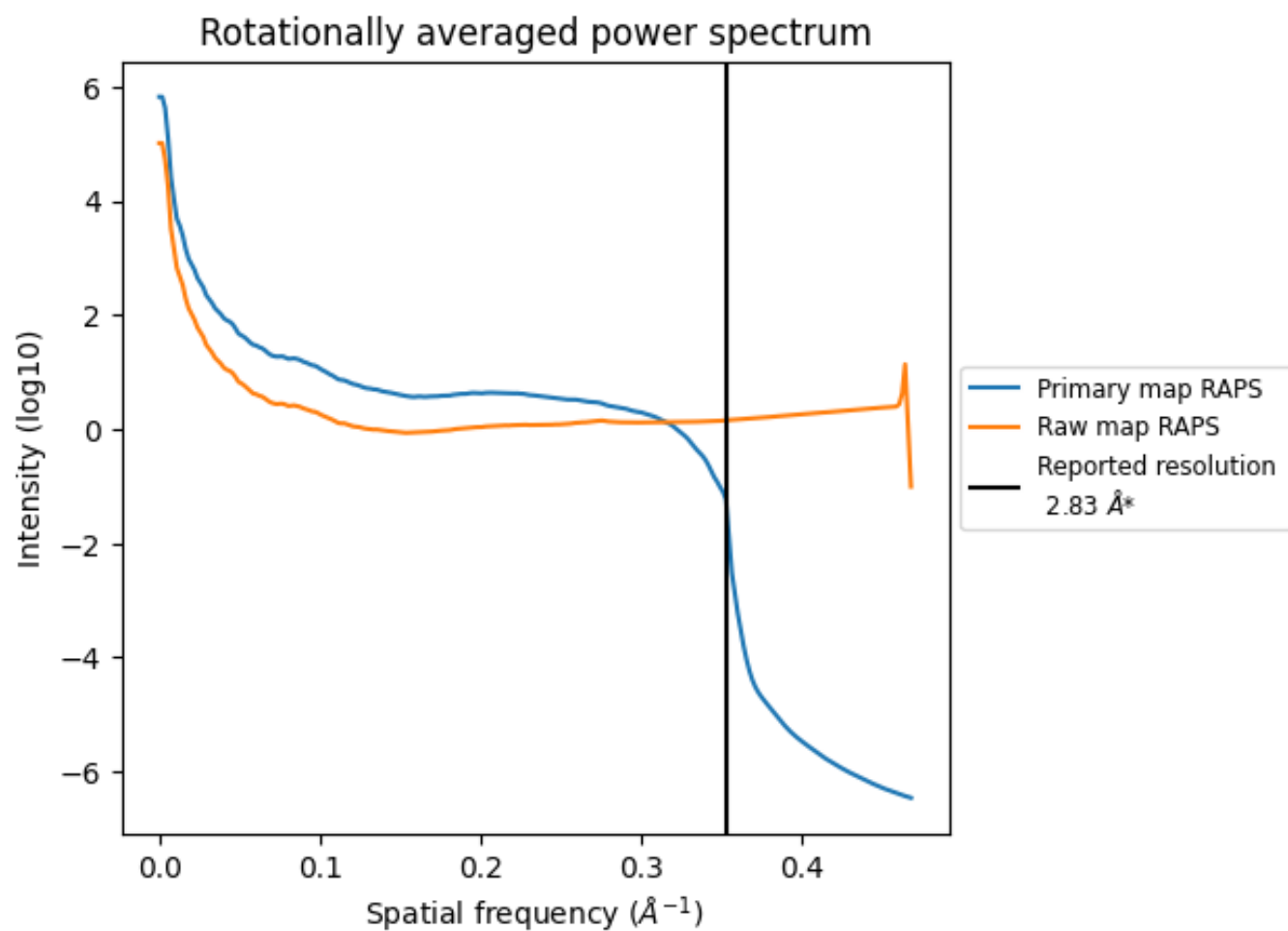
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 3087 nm^3 ; this corresponds to an approximate mass of 2789 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

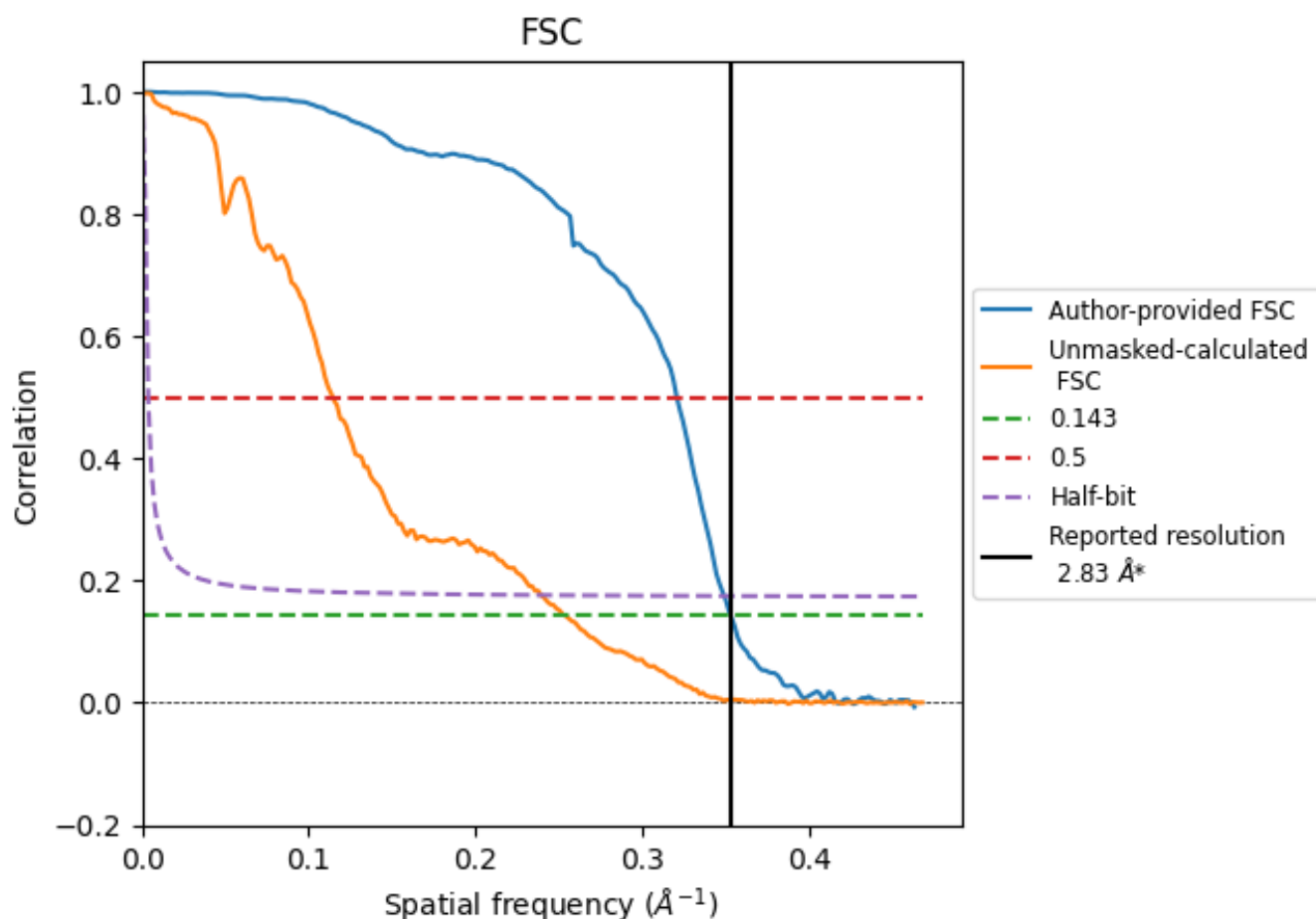


*Reported resolution corresponds to spatial frequency of 0.353 $\text{\AA}^{-1}$

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.353 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

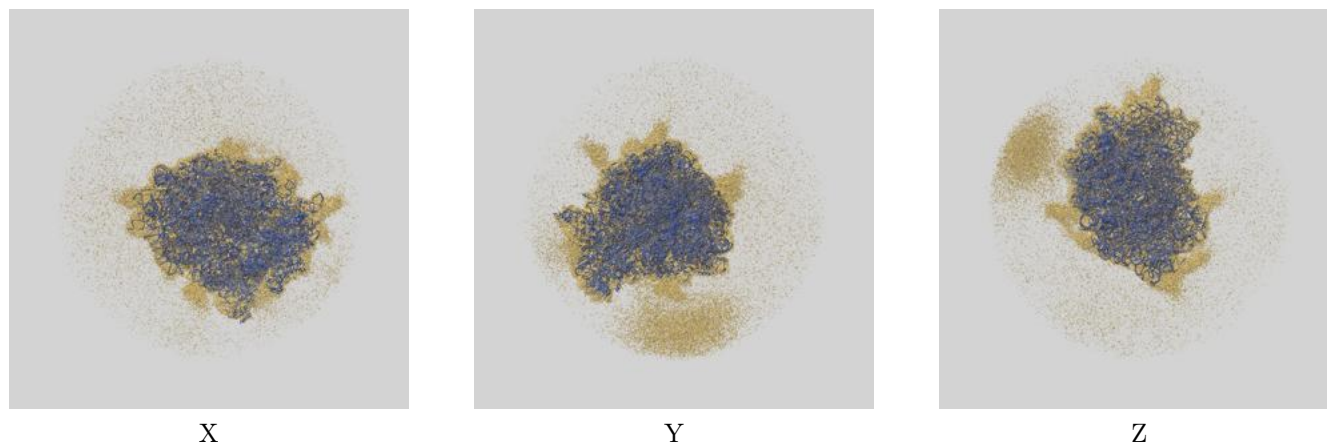
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.83	-	-
Author-provided FSC curve	2.83	3.12	2.86
Unmasked-calculated*	3.94	8.74	4.18

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.94 differs from the reported value 2.83 by more than 10 %

9 Map-model fit [i](#)

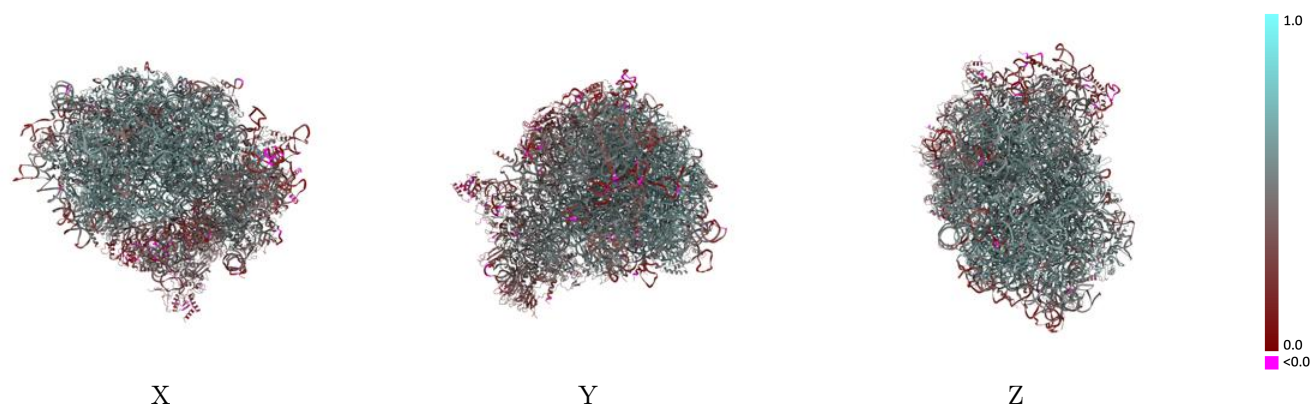
This section contains information regarding the fit between EMDB map EMD-71333 and PDB model 9P76. Per-residue inclusion information can be found in section [3](#) on page [23](#).

9.1 Map-model overlay [i](#)



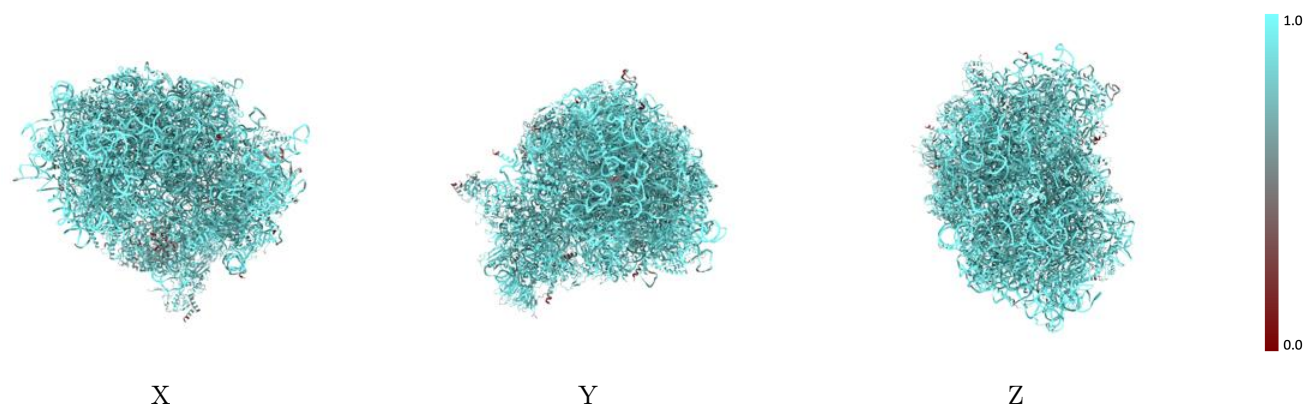
The images above show the 3D surface view of the map at the recommended contour level 0.011 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



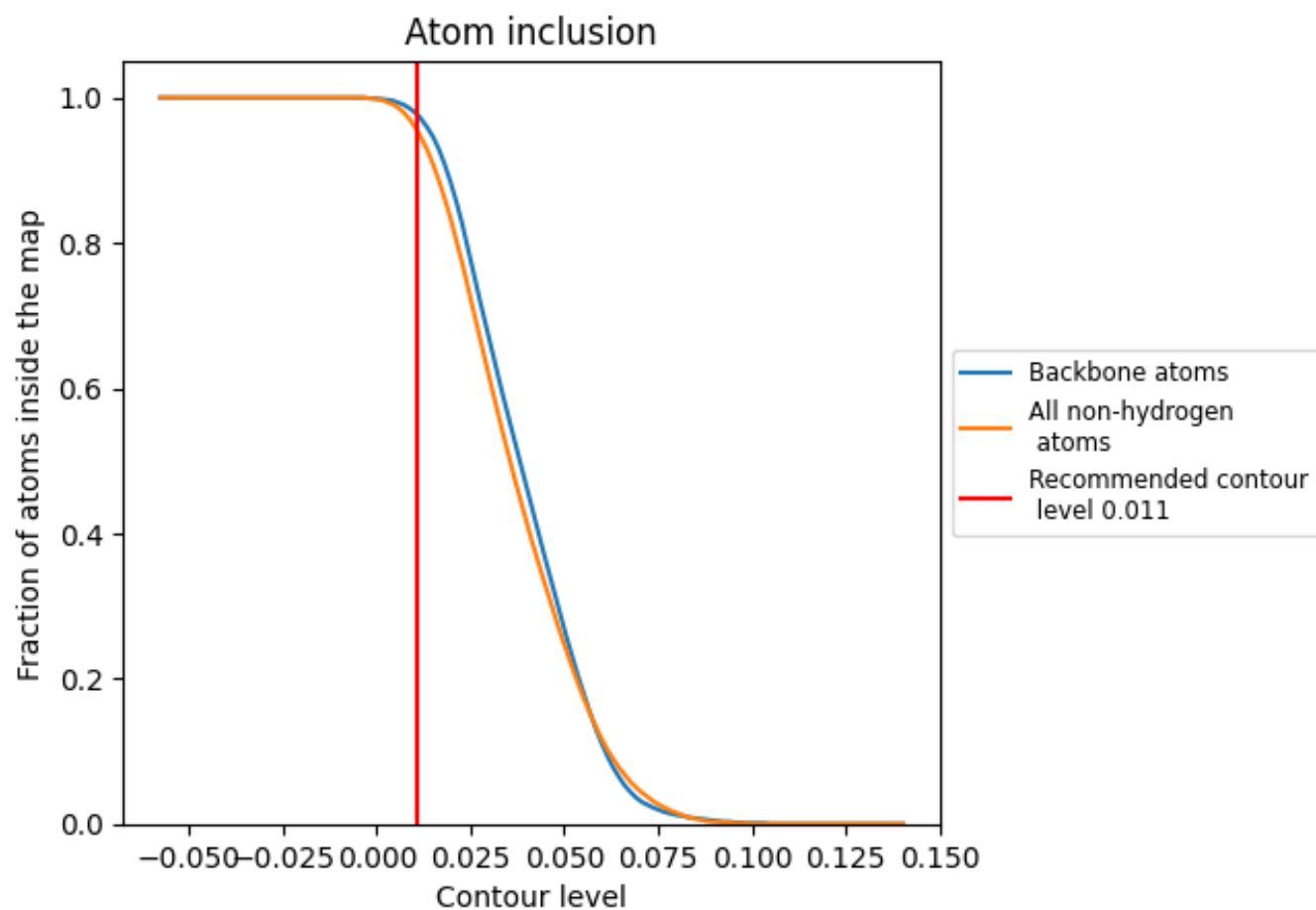
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.011).

9.4 Atom inclusion [i](#)



At the recommended contour level, 98% of all backbone atoms, 95% 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 (0.011) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9530	 0.4970
AT	 0.9730	 0.2490
CF	 0.9150	 0.2820
CI	 0.7280	 0.4080
L5	 0.9810	 0.5300
L7	 0.9970	 0.5750
L8	 0.9880	 0.5580
LA	 0.9800	 0.5910
LB	 0.9500	 0.5700
LC	 0.9570	 0.5720
LD	 0.9520	 0.5310
LE	 0.9030	 0.5020
LF	 0.9730	 0.5730
LG	 0.9080	 0.5060
LH	 0.9560	 0.5580
LI	 0.9480	 0.5660
LJ	 0.9310	 0.5030
LL	 0.9210	 0.5420
LM	 0.9650	 0.5600
LN	 0.9910	 0.6100
LO	 0.9630	 0.5730
LP	 0.9650	 0.5840
LQ	 0.9660	 0.5950
LR	 0.9110	 0.5140
LS	 0.9710	 0.5920
LT	 0.9450	 0.5530
LU	 0.9390	 0.4820
LV	 0.9550	 0.5770
LW	 0.8720	 0.3930
LX	 0.9380	 0.5510
LY	 0.9580	 0.5570
LZ	 0.9730	 0.5440
La	 0.9740	 0.5940
Lb	 0.9050	 0.4940
Lc	 0.9480	 0.5320



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Chain	Atom inclusion	Q-score
Ld	 0.9350	 0.5520
Le	 0.9750	 0.5900
Lf	 0.9830	 0.6020
Lg	 0.9620	 0.5680
Lh	 0.9400	 0.5480
Li	 0.9520	 0.5410
Lj	 0.9790	 0.5970
Lk	 0.8900	 0.4930
Ll	 0.9690	 0.5790
Lm	 0.9380	 0.5730
Ln	 0.9570	 0.5540
Lo	 0.8180	 0.5720
Lp	 0.9420	 0.5640
Lr	 0.9640	 0.5750
Ls	 0.6340	 0.2010
Lt	 0.6340	 0.1710
Pt	 0.9190	 0.4450
S2	 0.9840	 0.4680
SA	 0.9180	 0.4560
SB	 0.9170	 0.4900
SC	 0.9540	 0.4920
SD	 0.9020	 0.3800
SE	 0.9450	 0.4600
SF	 0.7670	 0.4200
SG	 0.8820	 0.3620
SH	 0.8830	 0.3780
SI	 0.9140	 0.4770
SJ	 0.9270	 0.4520
SK	 0.9120	 0.3390
SL	 0.9020	 0.5050
SM	 0.6910	 0.1680
SN	 0.9430	 0.5200
SO	 0.8930	 0.5140
SP	 0.8520	 0.3570
SQ	 0.9190	 0.4040
SR	 0.8860	 0.3890
SS	 0.8840	 0.3950
ST	 0.9310	 0.3990
SU	 0.9040	 0.3540
SV	 0.9500	 0.4620
SW	 0.9630	 0.5230
SX	 0.9260	 0.5080

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Chain	Atom inclusion	Q-score
SY	 0.8980	 0.3880
SZ	 0.6450	 0.3720
Sa	 0.9480	 0.5120
Sb	 0.9220	 0.4580
Sc	 0.8020	 0.3950
Sd	 0.9550	 0.4510
Se	 0.8290	 0.3980
Sf	 0.7860	 0.2150
Sg	 0.8850	 0.3180