



wwPDB EM Validation Summary Report ⓘ

Jul 6, 2026 – 08:26 PM EDT

PDB ID : 9PKB / pdb_00009pkb
EMDB ID : EMD-71690
Title : In situ HHT and CHX treated human hibernating state 80S ribosome
Authors : Wei, Z.; Yong, X.
Deposited on : 2025-07-14
Resolution : 3.05 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

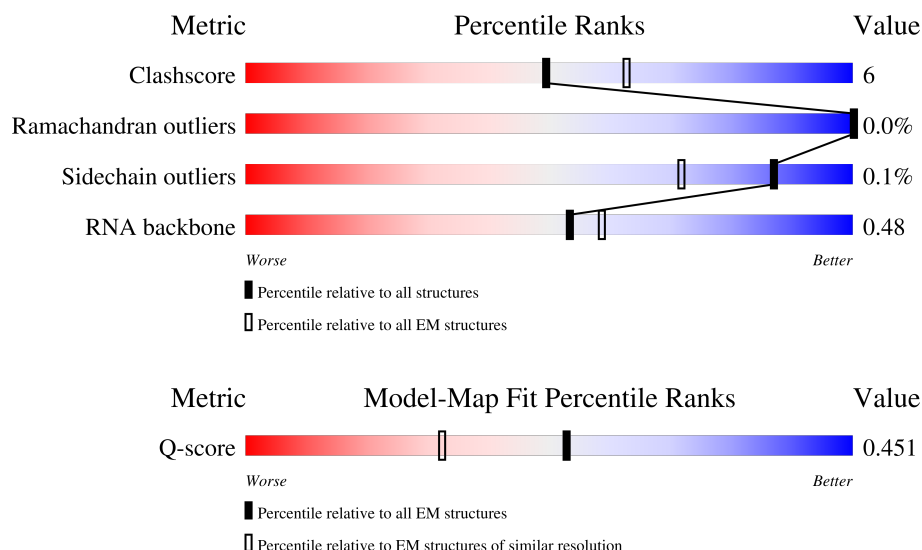
EMDB validation analysis : 0.0.1.dev133
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.50

1 Overall quality at a glance

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

The reported resolution of this entry is 3.05 Å.

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



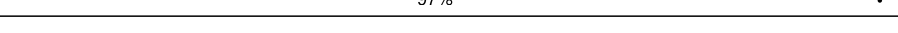
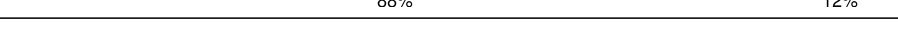
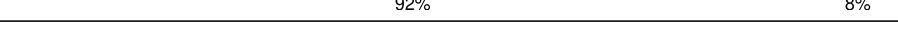
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	13971 (2.55 - 3.55)

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	CD	55	
2	CI	31	
3	L5	3655	

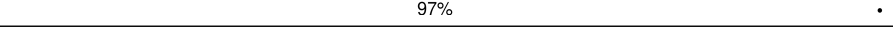
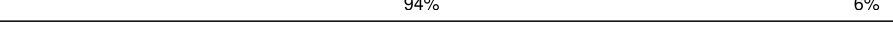
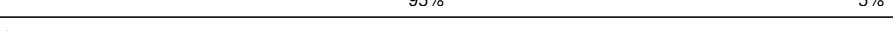
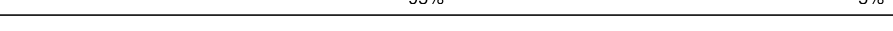
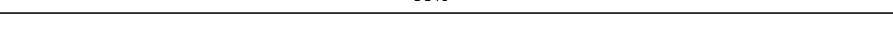
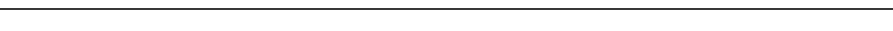
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Mol	Chain	Length	Quality of chain
4	L7	120	 77% 22%
5	L8	156	 62% 37%
6	LA	248	 87% 13%
7	LB	402	 89% 11%
8	LC	368	 91% 9%
9	LD	293	 90% 10%
10	LE	250	 84% 12%
11	LF	225	 94% 6%
12	LG	241	 91% 9%
13	LH	190	 89% 11%
14	LI	213	 87% 9%
15	LJ	176	 85% 11%
16	LL	210	 95% 5%
17	LM	139	 92% 8%
18	LN	203	 97%
19	LO	201	 88% 12%
20	LP	153	 92% 8%
21	LQ	187	 91% 9%
22	LR	187	 91% 9%
23	LS	175	 92% 8%
24	LT	159	 93% 7%
25	LU	101	 88% 12%
26	LV	131	 93% 7%
27	LW	124	 77% 16% 6%
28	LX	120	 95% 5%

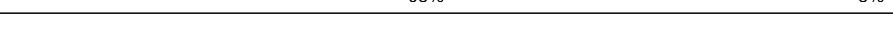
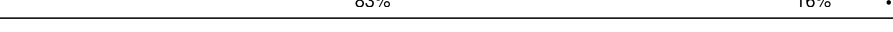
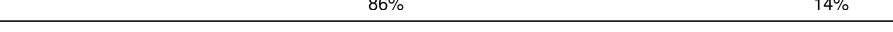
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Mol	Chain	Length	Quality of chain
29	LY	134	 92% 8%
30	LZ	135	 86% 14%
31	La	147	 91% 9%
32	Lb	121	 81% 9% 10%
33	Lc	98	 89% 11%
34	Ld	107	 92% 8%
35	Le	128	 92% 8%
36	Lf	109	 89% 11%
37	Lg	114	 92% 8%
38	Lh	122	 84% 16%
39	Li	102	 97% .
40	Lj	86	 92% 8%
41	Lk	69	 84% 16%
42	Ll	50	 94% 6%
43	Lm	52	 92% 8%
44	Ln	24	 88% 12%
45	Lo	105	 95% 5%
46	Lp	91	 95% 5%
47	Lr	125	 96% .
48	Ls	196	 82% 18%
49	Lt	157	 9% 67% 18% 15%
50	SA	221	 79% 21%
51	SB	214	 73% 27%
52	SC	222	 87% 12% .
53	SE	262	 82% 18%

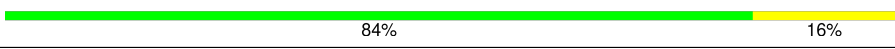
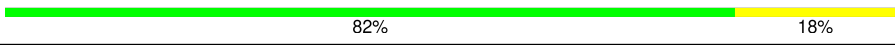
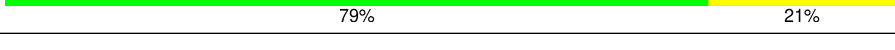
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Mol	Chain	Length	Quality of chain
54	SG	237	
55	SH	189	
56	SI	206	
57	SJ	185	
58	SL	153	
59	SN	150	
60	SO	140	
61	SV	83	
62	SW	129	
63	SX	141	
64	SY	131	
65	Sa	102	
66	Sb	83	
67	Se	58	
68	S2	1740	
69	SR	135	
70	SD	227	
71	SF	189	
72	SK	98	
73	SM	122	
74	SP	121	
75	SQ	144	
76	SS	145	
77	ST	143	
78	SU	104	

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Mol	Chain	Length	Quality of chain
79	SZ	75	 80%20%
80	Sc	64	 78%22%
81	Sd	55	 84%16%
82	Sf	67	 82%18%
83	Sg	313	 80%20%
84	CB	856	 82%17%.
85	CA	356	 33%79%21%.

2 Entry composition

There are 91 unique types of molecules in this entry. The entry contains 226615 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 Isoform 2 of SERPINE1 mRNA-binding protein 1.

Mol	Chain	Residues	Atoms				AltConf	Trace
1	CD	55	Total	C	N	O	0	0
			440	263	87	90		

There are 10 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
CD	183	ASP	-	expression tag	UNP Q8NC51
CD	184	GLY	-	expression tag	UNP Q8NC51
CD	283	LEU	-	insertion	UNP Q8NC51
CD	284	ASP	GLU	conflict	UNP Q8NC51
CD	285	GLU	SER	conflict	UNP Q8NC51
CD	286	TRP	PRO	conflict	UNP Q8NC51
CD	288	ALA	TYR	conflict	UNP Q8NC51
CD	291	ASN	LYS	conflict	UNP Q8NC51
CD	292	LYS	GLN	conflict	UNP Q8NC51
CD	293	ASP	-	expression tag	UNP Q8NC51

- Molecule 2 is a protein called Transcription factor BTF3.

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

- Molecule 3 is a RNA chain called 28S rRNA.

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

- Molecule 4 is a RNA chain called 5S rRNA.

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

- Molecule 5 is a RNA chain called 5.8S rRNA.

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

- Molecule 6 is a protein called 60S ribosomal protein L8.

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

- Molecule 7 is a protein called Large ribosomal subunit protein uL3.

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

- Molecule 8 is a protein called 60S ribosomal protein L4.

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

- Molecule 9 is a protein called Large ribosomal subunit protein uL18.

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

- Molecule 10 is a protein called Large ribosomal subunit protein eL6.

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

- Molecule 11 is a protein called 60S ribosomal protein L7.

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

- Molecule 12 is a protein called 60S ribosomal protein L7a.

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

- Molecule 13 is a protein called 60S ribosomal protein L9.

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

- Molecule 14 is a protein called Ribosomal protein uL16-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	LI	205	Total	C	N	O	S	0	0
			1658	1052	318	274	14		

- Molecule 15 is a protein called 60S ribosomal protein L11.

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

- Molecule 16 is a protein called Large ribosomal subunit protein eL13.

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

- Molecule 17 is a protein called 60S ribosomal protein L14.

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

- Molecule 18 is a protein called 60S ribosomal protein L15.

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

- Molecule 19 is a protein called 60S ribosomal protein L13a.

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

- Molecule 20 is a protein called 60S ribosomal protein L17.

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

- Molecule 21 is a protein called 60S ribosomal protein L18.

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

- Molecule 22 is a protein called 60S ribosomal protein L19.

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

- Molecule 23 is a protein called 60S ribosomal protein L18a.

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

- Molecule 24 is a protein called 60S ribosomal protein L21.

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

- Molecule 25 is a protein called Heparin-binding protein HBp15.

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

- Molecule 26 is a protein called 60S ribosomal protein L23.

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

- Molecule 27 is a protein called Ribosomal protein L24.

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

- Molecule 28 is a protein called 60S ribosomal protein L23a.

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

- Molecule 29 is a protein called 60S ribosomal protein L26.

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

- Molecule 30 is a protein called 60S ribosomal protein L27.

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

- Molecule 31 is a protein called 60S ribosomal protein L27a.

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

- Molecule 32 is a protein called Large ribosomal subunit protein eL29.

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

- Molecule 33 is a protein called 60S ribosomal protein L30.

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

- Molecule 34 is a protein called 60S ribosomal protein L31.

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

- Molecule 35 is a protein called 60S ribosomal protein L32.

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

- Molecule 36 is a protein called 60S ribosomal protein L35a.

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

- Molecule 37 is a protein called 60S ribosomal protein L34.

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

- Molecule 38 is a protein called 60S ribosomal protein L35.

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

- Molecule 39 is a protein called 60S ribosomal protein L36.

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

- Molecule 40 is a protein called 60S ribosomal protein L37.

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

- Molecule 41 is a protein called 60S ribosomal protein L38.

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

- Molecule 42 is a protein called 60S ribosomal protein L39.

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

- Molecule 43 is a protein called Large ribosomal subunit protein eL40.

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

- Molecule 44 is a protein called 60S ribosomal protein L41.

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

- Molecule 45 is a protein called 60S ribosomal protein L36a.

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

- Molecule 46 is a protein called 60S ribosomal protein L37a.

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

- Molecule 47 is a protein called 60S ribosomal protein L28.

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

- Molecule 48 is a protein called 60S acidic ribosomal protein P0.

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

- Molecule 49 is a protein called Large ribosomal subunit protein uL11.

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

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

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

- Molecule 51 is a protein called 40S ribosomal protein S3a.

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

- Molecule 52 is a protein called 40S ribosomal protein S2.

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

- Molecule 53 is a protein called Small ribosomal subunit protein eS4, X isoform.

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

- Molecule 54 is a protein called 40S ribosomal protein S6.

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

- Molecule 55 is a protein called Small ribosomal subunit protein eS7.

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

- Molecule 56 is a protein called 40S ribosomal protein S8.

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

- Molecule 57 is a protein called 40S ribosomal protein S9.

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

- Molecule 58 is a protein called 40S ribosomal protein S11.

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

- Molecule 59 is a protein called 40S ribosomal protein S13.

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

- Molecule 60 is a protein called Small ribosomal subunit protein uS11.

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

- Molecule 61 is a protein called Small ribosomal subunit protein eS21.

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

- Molecule 62 is a protein called 40S ribosomal protein S15a.

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

- Molecule 63 is a protein called 40S ribosomal protein S23.

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

- Molecule 64 is a protein called 40S ribosomal protein S24.

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

- Molecule 65 is a protein called 40S ribosomal protein S26.

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

- Molecule 66 is a protein called Small ribosomal subunit protein eS27.

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

- Molecule 67 is a protein called Small ribosomal subunit protein eS30.

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

- Molecule 68 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	S2	1740	Total	C	N	O	P	0	0
			36952	16508	6600	12105	1739		

- Molecule 69 is a protein called Small ribosomal subunit protein eS17.

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

- Molecule 70 is a protein called Small ribosomal subunit protein uS3.

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

- Molecule 71 is a protein called 40S ribosomal protein S5.

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

- Molecule 72 is a protein called 40S ribosomal protein S10.

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

- Molecule 73 is a protein called Small ribosomal subunit protein eS12.

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

- Molecule 74 is a protein called Small ribosomal subunit protein uS19.

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

- Molecule 75 is a protein called Small ribosomal subunit protein uS9.

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

- Molecule 76 is a protein called 40S ribosomal protein S18.

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

- Molecule 77 is a protein called 40S ribosomal protein S19.

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

- Molecule 78 is a protein called 40S ribosomal protein S20.

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

- Molecule 79 is a protein called Small ribosomal subunit protein eS25.

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

- Molecule 80 is a protein called 40S ribosomal protein S28.

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

- Molecule 81 is a protein called 40S ribosomal protein S29.

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

- Molecule 82 is a protein called Ubiquitin-40S ribosomal protein S27a.

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

- Molecule 83 is a protein called Receptor of activated protein C kinase 1.

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

- Molecule 84 is a protein called Elongation factor 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
84	CB	846	Total	C	N	O	S	0	0
			6605	4193	1136	1232	44		

- Molecule 85 is a protein called Proliferation-associated protein 2G4.

Mol	Chain	Residues	Atoms					AltConf	Trace
85	CA	354	Total	C	N	O	S	4	0
			2764	1744	475	528	17		

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

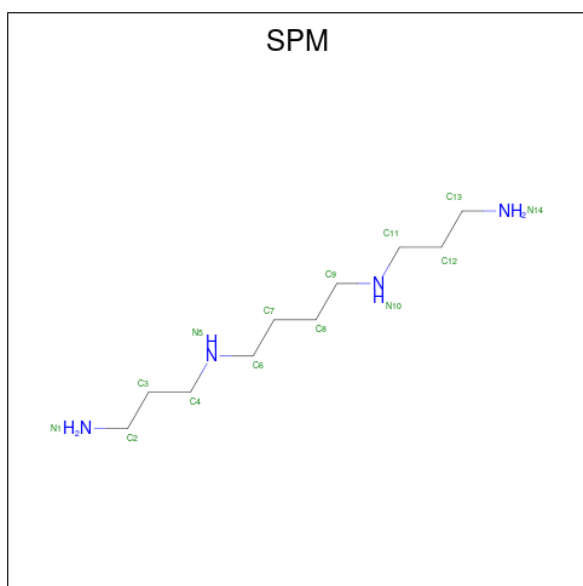
Mol	Chain	Residues	Atoms		AltConf
86	L5	179	Total	Mg	0
			179	179	
86	L7	3	Total	Mg	0
			3	3	
86	L8	4	Total	Mg	0
			4	4	
86	LA	1	Total	Mg	0
			1	1	
86	LP	1	Total	Mg	0
			1	1	
86	LV	1	Total	Mg	0
			1	1	

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Mol	Chain	Residues	Atoms		AltConf
86	Le	1	Total	Mg	0
			1	1	
86	Lj	1	Total	Mg	0
			1	1	
86	S2	27	Total	Mg	0
			27	27	

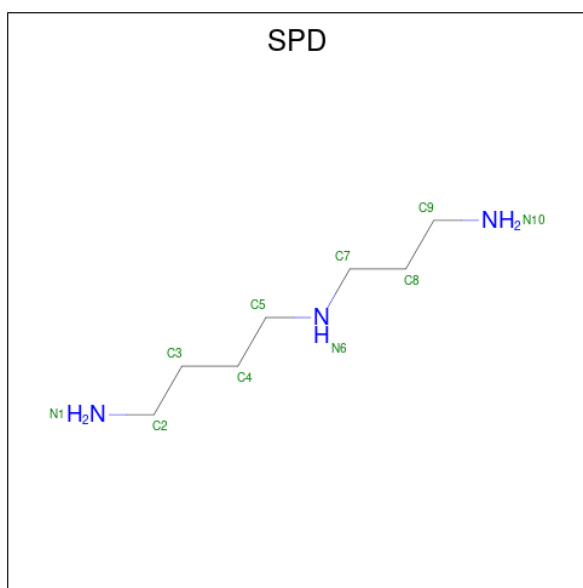
- Molecule 87 is SPERMINE (CCD ID: SPM) (formula: $C_{10}H_{26}N_4$) (labeled as "Ligand of Interest" by depositor).



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	

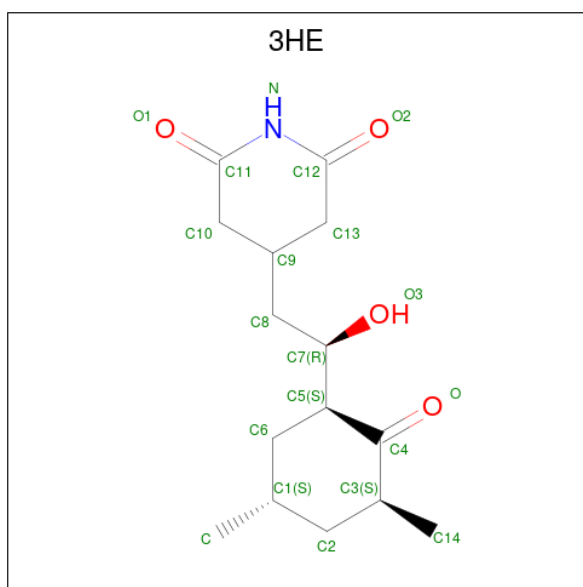
- Molecule 88 is SPERMIDINE (CCD ID: SPD) (formula: $C_7H_{19}N_3$) (labeled as "Ligand of

Interest" by depositor).



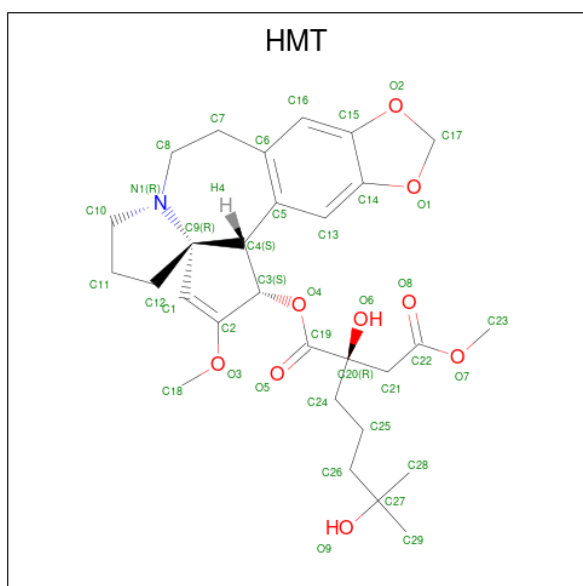
Mol	Chain	Residues	Atoms			AltConf
88	L5	1	Total	C	N	0
			10	7	3	
88	L5	1	Total	C	N	0
			10	7	3	
88	L5	1	Total	C	N	0
			10	7	3	
88	L5	1	Total	C	N	0
			10	7	3	
88	L5	1	Total	C	N	0
			10	7	3	
88	L5	1	Total	C	N	0
			10	7	3	
88	L5	1	Total	C	N	0
			10	7	3	
88	L5	1	Total	C	N	0
			10	7	3	

- Molecule 89 is 4-{(2R)-2-[(1S,3S,5S)-3,5-dimethyl-2-oxocyclohexyl]-2-hydroxyethyl}piperidine-2,6-dione (CCD ID: 3HE) (formula: C₁₅H₂₃NO₄) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				AltConf
89	L5	1	Total	C	N	O	0
			20	15	1	4	

- Molecule 90 is (3beta)-O 3 -[(2R)-2,6-dihydroxy-2-(2-methoxy-2-oxoethyl)-6-methylheptan oyl]cephalotaxine (CCD ID: HMT) (formula: $C_{29}H_{39}NO_9$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				AltConf
90	L5	1	Total	C	N	O	0
			39	29	1	9	

- Molecule 91 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by

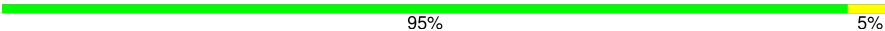
depositor).

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

3 Residue-property plots

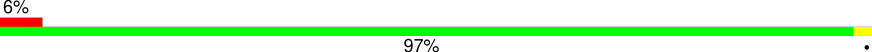
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

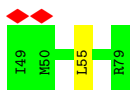
- Molecule 1: Isoform 2 of SERPINE1 mRNA-binding protein 1

Chain CD: 



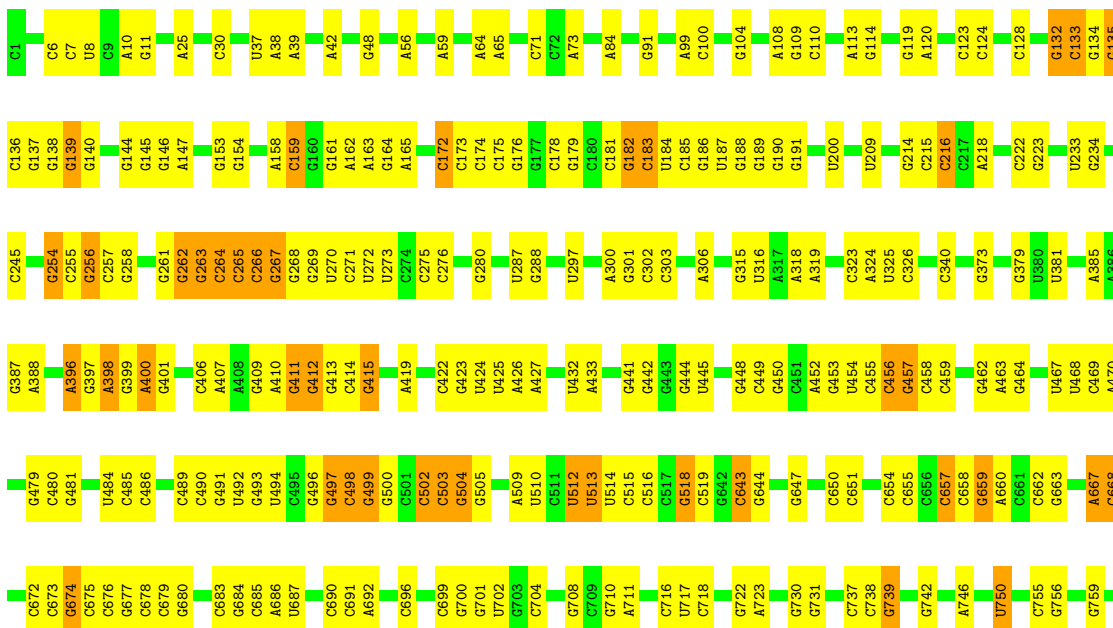
- Molecule 2: Transcription factor BTF3

Chain CI: 



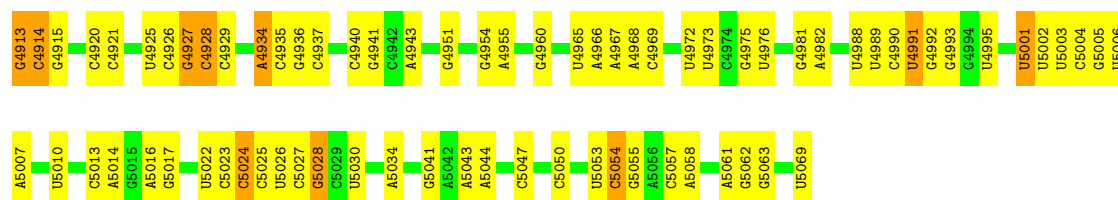
- Molecule 3: 28S rRNA

Chain L5: 



C2558	C2469	C2335	G2079	G1948	G1836	G1741	C1628	C1501	A1397	A1294	U1201	C985	C904
C2559	C2470	G2336	U2080	G1951	A1837	A1742	A1631	G1502	A1398	C1295	C1202	C986	C905
C2560	C2471	C2340	C2081	G1952	G1842	A1743	A1632	G1503	G1404	G1296	C1203	C989	C906
C2563	G2474	G2348	C2084	A1962	G1846	G1750	A1633	C1505	G1405	C1297	G1204	G1066	C907
C2564	G2475	C2351	G2085	U1974	C1847	A1751	A1634	A1508	G1406	C1298	G1205	G1070	G908
C2565	C2476	C2358	G2086	G1975	C1848	G1752	C1640	C1509	G1407	G1299	C1210	C1071	G909
C2568	G2479	U2358	C2091	G1976	G1855	U1757	G1641	U1510	G1408	C1301	G1211	C1072	U913
C2569	G2480	G2359	G2092	C1977	G1858	G1758	C1645	U1511	U1410	C1304	G1214	G1075	U914
C2570	G2481	A2360	A2093	A1979	A1859	G1759	A1646	U1513	U1411	C1305	G1215	G1076	A915
C2571	G2482	G2361	G2094	U1980	U1860	G1760	G1654	U1514	G1414	A1306	G1218	C1077	C916
C2572	G2483	U2362	A2095	G1981	U1862	C1761	G1654	A1515	G1415	A1307	G1219	C1077	C917
A2573	A2484	A2363	G2096	A1982	U1862	C1762	C1661	G1516	G1416	C1308	G1220	C1081	C918
C2583	U2485	G2364	U2097	A1983	U1866	G1763	C1662	G1517	G1417	C1309	G1221	C1082	C919
C2586	G2486	C2374	G2098	A1984	U1866	G1764	C1663	A1524	A1420	G1316	G1222	C1083	C920
A2587	G2487	A2381	G2099	G1985	G1869	A1765	A1669	A1534	G1431	U1317	A1222	U1083	C921
C2588	C2488	A2382	C2101	G1989	C1870	A1766	A1676	U1535	G1432	U1318	C1239	C1085	C922
C2589	U2490	A2383	G2102	A1990	A1871	A1767	U1677	U1536	A1437	A1322	G1242	C1086	C923
C2592	C2491	C2384	G2103	A1991	C1877	G1768	U1683	U1537	U1438	A1323	G1246	C1091	A932
C2606	G2492	U2385	G2104	U1992	U1876	G1769	U1684	U1538	G1439	A1324	U1247	C1092	G933
C2607	G2493	U2386	A2105	C1993	G1877	A1770	A1684	G1539	C1442	A1326	C1248	C1093	C934
C2608	U2494	U2387	G2106	C1994	C1878	U1773	U1685	G1540	U1443	C1327	C1249	C1094	A935
G2609	U2495	G2387	C2107	G1995	C1879	C1774	C1686	C1541	G1444	G1328	G1253	C1096	C936
G2610	G2496	A2388	G2112	U1996	C1893	U1777	U1687	A1547	G1445	C1329	G1254	C1097	U937
A2611	U2500	A2389	G2113	U1997	C1897	U1778	G1688	A1563	U1446	C1332	G1255	C1098	A944
C2612	C2395	A2396	G2252	A2002	A1897	A1780	U1693	A1564	G1447	A1333	G1256	G1168	U945
C2627	C2397	G2398	G2253	G2003	U1906	U1781	C1694	A1565	C1458	A1334	G1257	G1171	C946
U2632	U2399	A2401	C2255	U2004	A1907	U1782	U1695	C1566	C1459	G1337	G1266	G1172	G951
U2633	G2400	C2401	C2257	G2005	A1908	A1787	G1696	U1567	C1460	A1338	C1267	G1173	G952
C2634	C2401	C2401	C2258	C2011	A1912	U1792	G1697	G1574	C1461	C1340	G1268	G1174	A956
U2635	C2412	C2411	G2273	C2016	G1916	U1802	A1699	G1577	A1462	A1344	G1269	A1175	G957
G2638	A2412	A2411	C2274	A2017	A1917	G1803	G1700	U1578	C1463	A1344	G1270	C1176	G958
U2639	G2416	G2416	C2289	U2020	U1918	A1804	A1701	C1579	C1464	G1355	G1271	C1177	G959
G2640	C2417	C2417	C2289	G2021	G1919	A1805	C1702	U1582	C1468	U1356	G1272	U1178	A960
A2641	G2421	G2421	U2293	G2024	G1920	G1806	C1703	U1582	C1469	C1357	G1273	C1179	G961
G2644	C2422	C2422	G2294	A2025	C1921	C1807	G1704	G1586	G1470	G1358	A1274	C1180	C962
A2647	A2423	A2423	C2295	A2026	G1922	G1810	A1706	G1586	U1471	G1359	C1275	C1181	G963
G2648	G2424	G2424	G2296	G2045	G1925	G1811	G1716	U1591	C1472	C1365	C1276	C1182	A964
G2649	U2425	U2425	G2297	G2046	A1931	C1812	C1717	U1596	G1478	G1366	G1277	C1183	G965
C2653	C2429	C2429	G2298	A2047	G1932	U1813	C1718	U1596	C1479	C1366	G1278	C1184	A966
C2654	G2448	G2448	G2299	U2048	C1933	U1820	A1719	G1612	C1480	G1370	C1280	C1186	C967
C2655	A2449	A2449	A2300	G2052	G1934	G1821	C1720	G1612	G1480	G1377	G1281	C1187	C968
U2656	G2450	G2450	G2306	G2055	A1934	U1822	G1721	A1613	C1483	C1378	G1284	C1188	C969
U2661	A2453	A2453	A2313	G2056	C1936	G1824	G1726	A1621	U1494	C1379	U1285	C1189	G970
U2662	C2458	C2458	G2331	G2068	G1940	A1825	C1731	A1621	G1495	U1381	G1287	C1191	C974
C2663	C2464	C2464	A2332	A2069	A1941	G1830	C1732	G1624	A1497	A1387	G1290	G1194	G978
G2664	C2465	C2465	G2333	G2076	A1943	G1835	G1734	G1625	G1498	G1394	C1292	G1195	C979
C2669	G2466	G2466	C2334	G2076	G1835	G1835	G1734	G1627	A1500	G1394	C1293	G1196	U982

A4723	A4611	C4519	G4391	G4291	G4196	G4104	C3919	U3844	G3754	A3648	C2898	U2761	C2670
A4724	A4616	C4520	G4392	A4292	A4203	A4105	U3920	U3848	G3755	G3661	C2899	G2762	C2671
A4727	A4617	U4521	G4393	U4293	A4203	G4106	U3921	A3849	A3756	A3662	U2900	A2763	C2672
U4728	A4618	A4522	A4394	U4294	U4208	G4108	A3923	C3850	G3757	A3663	G2901	A2764	
C4733	G4619	A4523	G4401	U4295	U4209	U4111	C3924	C3851		A3664	G2902	A2765	A2675
A4734	U4620	G4524	C4402	A4296	A4209	C4112	U3925	A3852		G3665	U2904	A2766	
G4735	C4621	U4525	U4403	A4298	A4212	C4113	U3930	U3853	U3764	C3666	G2905		G2677
G4736	A4622	U4526	C4421	U4299	A4220	U4113	C3931	C3854	G3765	C3667	C2906	U2769	U2687
G4737	G4623	U4530	A4422	U4301	A4221	C4114	U3932	C3855	A3766		G2907	G2770	G2688
C4738	U4531	U4532	C4430	U4304	G4222	C4116	G3933	A3856		C3670	U2908	G2773	
G4739	U4431	G4305	U4431	G4305	G4225	C4119	C3937	A3860	C3771	C3673	G3585	U2691	U2692
G4740	C4432	U4306	C4432	U4306	G4226		G3938	A3861	U3772	G3674		G2780	G2693
G4742	G4433	A4311	U4427	G4227	U4227	G4122		A3862	U3773		C3588	G2781	
G4743	U4438	A4312	U4428	G4228	C4228	C4126	A3942	A3867	G3684	G3684	C3589	A2787	A2695
A4744	U4439	A4313	U4429	G4229	A4229	A4127	G3944	C3868	G3776	G3685	C3591	A2788	A2696
G4745	U4442	C4314	U4232	U4232	U4232	G4139	A3945	C3870	G3777	A3692		A2789	
		G4330	A4233	A4233	A4233	G4140	G3946	C3871	U3778		C3594	U2790	G2703
G4754	A4651	G4447	A4448	A4449	A4449	G4141	G3947	A3872	C3782		U3595	A2806	G2704
G4757	C4652	U4448	A4448	A4448	A4448	G4142	A3952	G3873	U3805	U3707	A3596	G2706	G2705
U4758	A4653	U4449	A4449	A4449	A4449	G4143	A3953	C3874	G3806	U3697	C3597	A2815	U2707
G4760	U4654	U4450	A4450	A4450	A4450	G4144	A3954		G3807	G3698	C3598	A2816	U2708
G4761	A4655	U4451	U4451	U4451	U4451	G4145	A3955		G3808	C3699	C3599	G2709	
G4765	A4656	U4452	U4452	U4452	U4452	G4146	A3956		G3809	C3700	G3600	G2710	G2711
G4766	C4657	U4453	U4453	U4453	U4453	G4147	U3957	C3701	U3792		C3605	G2712	G2712
	U4658	U4454	U4454	U4454	U4454	G4148	U3958		U3806	U3707	C3606	U2826	
G4771	A4659	U4455	U4455	U4455	U4455	G4149	U3959		U3807	U3708	U3607	G2827	U2828
C4772	A4660	U4456	U4456	U4456	U4456	G4150	A3960		U3808	U3709	U3608	U2829	U2829
		U4457	U4457	U4457	U4457	G4151	A3961		G3809	U3710	A3609	G2830	U2830
G4775	A4661	U4458	U4458	U4458	U4458	G4152	A3962		G3810	U3711	A3610	G2831	G2831
G4776	A4662	U4459	U4459	U4459	U4459	G4153	A3963		G3811	U3712	A3611	A2832	G2720
C4777	A4663	U4460	U4460	U4460	U4460	G4154	A3964		G3812	U3713	A3612	A2833	G2721
G4778	A4664	U4461	U4461	U4461	U4461	G4155	A3965		G3813	U3714	A3613	A2834	
G4779	A4665	U4462	U4462	U4462	U4462	G4156	A3966		G3814	U3715	A3614	A2835	G2724
G4780	A4666	U4463	U4463	U4463	U4463	G4157	A3967		U3815	U3716	A3615	A2836	A2725
G4781	A4667	U4464	U4464	U4464	U4464	G4158	U3968		U3816	U3717	A3616	G2837	G2726
G4782	A4668	U4465	U4465	U4465	U4465	G4159	U3969		U3817	U3718	A3617	G2838	C2727
G4783	A4669	U4466	U4466	U4466	U4466	G4160	U3970		U3818	U3719	A3618	U2839	U2728
G4784	A4670	U4467	U4467	U4467	U4467	G4161	U3971		U3819	U3720	A3619	A2840	U2729
G4785	A4671	U4468	U4468	U4468	U4468	G4162	U3972		U3820	U3721	A3620	A2841	U2730
G4786	A4672	U4469	U4469	U4469	U4469	G4163	U3973		U3821	U3722	A3621	G2842	G2731
G4787	A4673	U4470	U4470	U4470	U4470	G4164	U3974		U3822	U3723	A3622	G2843	G2732
G4788	A4674	U4471	U4471	U4471	U4471	G4165	U3975		U3823	U3724	A3623	G2844	C2733
		U4472	U4472	U4472	U4472	G4166	U3976		U3824	U3725	A3624	G2845	
G4789	A4675	U4473	U4473	U4473	U4473	G4167	U3977		U3825	U3726	A3625	G2846	C2734
G4790	A4676	U4474	U4474	U4474	U4474	G4168	U3978		U3826	U3727	A3626	A2847	G2741
G4791	A4677	U4475	U4475	U4475	U4475	G4169	U3979		U3827	U3728	A3627	A2848	G2742
G4792	A4678	U4476	U4476	U4476	U4476	G4170	U3980		U3828	U3729	A3628	A2849	A2743
G4793	A4679	U4477	U4477	U4477	U4477	G4171	U3981		U3829	U3730	A3629	A2850	A2744
G4794	A4680	U4478	U4478	U4478	U4478	G4172	U3982		U3830	U3731	A3630	G2851	G2745
G4795	A4681	U4479	U4479	U4479	U4479	G4173	U3983		U3831	U3732	A3631	G2852	A2746
G4796	A4682	U4480	U4480	U4480	U4480	G4174	U3984		U3832	U3733	A3632	G2853	
G4797	A4683	U4481	U4481	U4481	U4481	G4175	U3985		U3833	U3734	A3633	G2854	G2747
G4798	A4684	U4482	U4482	U4482	U4482	G4176	U3986		U3834	U3735	A3634	A2855	G2748
G4799	A4685	U4483	U4483	U4483	U4483	G4177	U3987		U3835	U3736	A3635	G2856	G2749
G4800	A4686	U4484	U4484	U4484	U4484	G4178	U3988		U3836	U3737	A3636	G2857	G2750
G4801	A4687	U4485	U4485	U4485	U4485	G4179	U3989		U3837	U3738	A3637	A2858	
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G4803	A4689	U4487	U4487	U4487	U4487	G4181	U3991		U3839	U3740	A3639	G2860	G2752
G4804	A4690	U4488	U4488	U4488	U4488	G4182	U3992		U3840	U3741	A3640	G2861	C2753
G4805	A4691	U4489	U4489	U4489	U4489	G4183	U3993		U3841	U3742	A3641	A2862	
G4806	A4692	U4490	U4490	U4490	U4490	G4184	U3994		U3842	U3743	A3642	G2863	G2754
G4807	A4693	U4491	U4491	U4491	U4491	G4185	U3995		U3843	U3744	A3643	G2864	G2755
G4808	A4694	U4492	U4492	U4492	U4492	G4186	U3996		U3844	U3745	A3644	A2865	
G4809	A4695	U4493	U4493	U4493	U4493	G4187	U3997		U3845	U3746	A3645	G2866	G2756
G4810	A4696	U4494	U4494	U4494	U4494	G4188	U3998		U3846	U3747	A3646	G2867	
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G4812	A4698	U4496	U4496	U4496	U4496	G4190	U4000		U3848	U3749	A3648	G2869	G2758
G4813	A4699	U4497	U4497	U4497	U4497	G4191	U4001		U3849	U3750	A3649	G2870	
G4814	A4700	U4498	U4498	U4498	U4498	G4192	U4002		U3850	U3751	A3650	A2871	
G4815	A4701	U4499	U4499	U4499	U4499	G4193	U4003		U3851	U3752	A3651	G2872	G2759
G4816	A4702	U4500	U4500	U4500	U4500	G4194	U4004		U3852	U3753	A3652	G2873	
G4817	A4703	U4501	U4501	U4501	U4501	G4195	U4005		U3853	U3754	A3653	A2874	G2760
G4818	A4704	U4502	U4502	U4502	U4502	G4196	U4006		U3854	U3755	A3654	G2875	
G4819	A4705	U4503	U4503	U4503	U4503	G4197	U4007		U3855	U3756	A3655	A2876	
G4820	A4706	U4504	U4504	U4504	U4504	G4198	U4008		U3856	U3757	A3656	G2877	
G4821	A4707	U4505	U4505	U4505	U4505	G4199	U4009		U3857	U3758	A3657	A2878	
G4822	A4708	U4506	U4506	U4506	U4506	G4200	U4010		U3858	U3759	A3658	G2879	G2761
G4823	A4709	U4507	U4507	U4507	U4507	G4201	U4011		U3859	U3760	A3659	G2880	
G4824	A4710	U4508	U4508	U4508	U4508	G4202	U4012		U3860	U3761	A3660	A2881	
G4825	A4711	U4509	U4509	U4509	U4509	G4203	U4013		U3861	U3762	A3661	G2882	G2762
G4826	A4712	U4510	U4510	U4510	U4510	G4204	U4014		U3862	U3763	A3662	A2883	
G4827	A4713	U4511	U4511	U4511	U4511	G4205	U4015		U3863	U3764	A3663	G2884	G2763
G4828	A4714	U4512	U4512	U4512	U4512	G4206	U4016		U3864	U3765	A3664	A2885	
G4829	A4715	U4513	U4513	U4513	U4513	G4207	U4017		U3865	U3766	A3665	G2886	G2764
G4830	A4716	U4514	U4514	U4514	U4514	G4208	U4018		U3866	U3767	A3666	A2887	
G4831	A4717	U4515	U4515	U4515	U4515	G4209	U4019		U3867	U3768	A3667	G2888	G2765
G4832	A4718	U4516	U4516	U4516	U4516	G4210	U4020		U3868	U3769	A3668	A2889	
G4833	A4719	U4517	U4517	U4517	U4517	G4211	U4021		U3869	U3770	A3669	G2890	G2766
G4834	A4720	U4518	U4518	U4518	U4518	G4212	U4022		U3870	U3771	A3670	A2891	
G4835	A4721	U4519	U4519	U4519	U4519	G4213	U4023		U3871	U3772	A3671	G2892	
G4836	A4722	U4520	U4520	U4520	U4520	G4214	U4024		U3872	U3773	A3672	A2893	
G4837	A4723	U4521	U4521	U4521	U4521	G4215	U4025		U3873	U3774	A3673	G2894	G2767
G4838	A4724	U4522	U4522	U4522	U4522	G4216	U4026		U3874	U3775	A3674	A2895	
G4839	A4725	U4523	U4523	U4523	U4523	G4217	U4027		U3875	U3776	A3675	G2896	
G4840	A4726	U4524	U4524	U4524	U4524	G4218	U4028		U				



• Molecule 4: 5S rRNA

Chain L7: 77% 22%



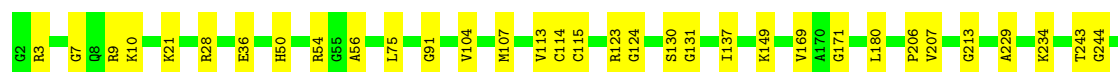
• Molecule 5: 5.8S rRNA

Chain L8: 62% 37%



• Molecule 6: 60S ribosomal protein L8

Chain LA: 87% 13%



• Molecule 7: Large ribosomal subunit protein uL3

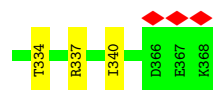
Chain LB: 89% 11%



• Molecule 8: 60S ribosomal protein L4

Chain LC: 91% 9%





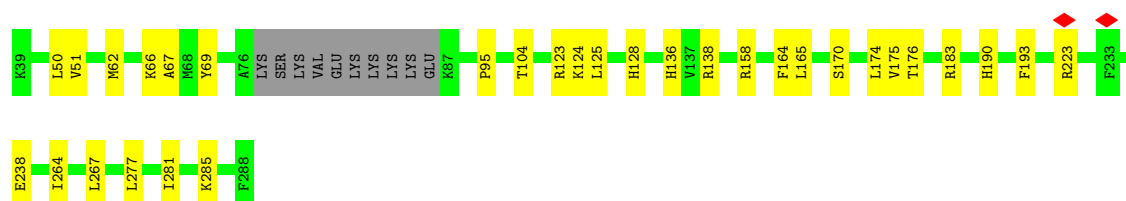
- Molecule 9: Large ribosomal subunit protein uL18

Chain LD: 90% 10%



- Molecule 10: Large ribosomal subunit protein eL6

Chain LE: 84% 12% .



- Molecule 11: 60S ribosomal protein L7

Chain LF: 94% 6%



- Molecule 12: 60S ribosomal protein L7a

Chain LG: 91% 9%



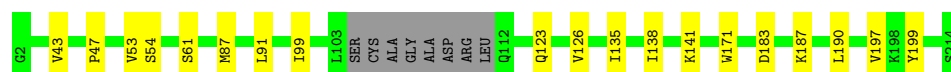
- Molecule 13: 60S ribosomal protein L9

Chain LH: 89% 11%



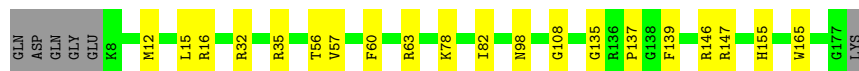
- Molecule 14: Ribosomal protein uL16-like

Chain LI: 87% 9% .

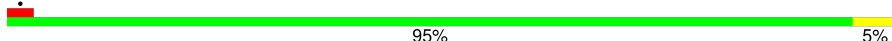


- Molecule 15: 60S ribosomal protein L11

Chain LJ:  85% 11%



- Molecule 16: Large ribosomal subunit protein eL13

Chain LL:  95% 5%

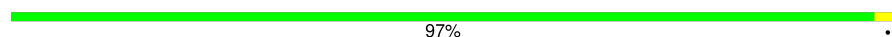


- Molecule 17: 60S ribosomal protein L14

Chain LM:  92% 8%



- Molecule 18: 60S ribosomal protein L15

Chain LN:  97%

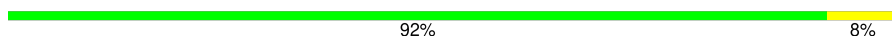


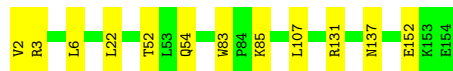
- Molecule 19: 60S ribosomal protein L13a

Chain LO:  88% 12%



- Molecule 20: 60S ribosomal protein L17

Chain LP:  92% 8%

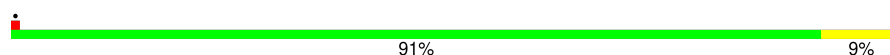


- Molecule 21: 60S ribosomal protein L18

Chain LQ:  91% 9%



- Molecule 22: 60S ribosomal protein L19

Chain LR:  91% 9%

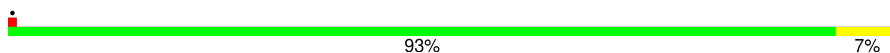


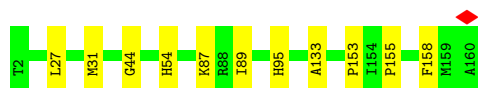
- Molecule 23: 60S ribosomal protein L18a

Chain LS:  92% 8%



- Molecule 24: 60S ribosomal protein L21

Chain LT:  93% 7%

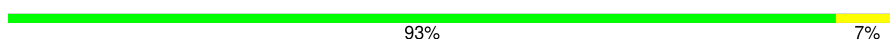


- Molecule 25: Heparin-binding protein HBp15

Chain LU:  88% 12%



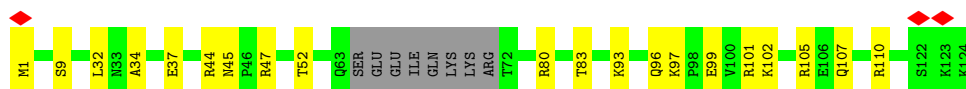
- Molecule 26: 60S ribosomal protein L23

Chain LV:  93% 7%

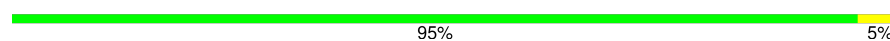


- Molecule 27: Ribosomal protein L24

Chain LW:  77% 16% 6%

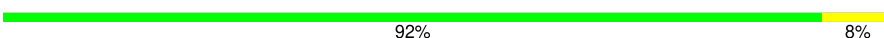


- Molecule 28: 60S ribosomal protein L23a

Chain LX:  95% 5%



- Molecule 29: 60S ribosomal protein L26

Chain LY:  92% 8%



- Molecule 30: 60S ribosomal protein L27

Chain LZ:  86% 14%



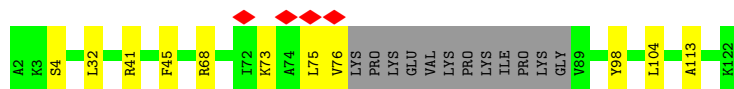
- Molecule 31: 60S ribosomal protein L27a

Chain La:  91% 9%



- Molecule 32: Large ribosomal subunit protein eL29

Chain Lb:  81% 9% 10%

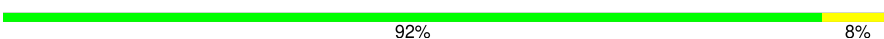


- Molecule 33: 60S ribosomal protein L30

Chain Lc:  89% 11%



- Molecule 34: 60S ribosomal protein L31

Chain Ld:  92% 8%



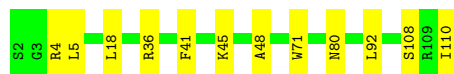
- Molecule 35: 60S ribosomal protein L32

Chain Le:  92% 8%

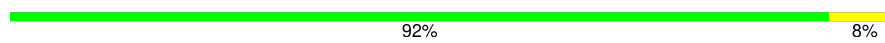


- Molecule 36: 60S ribosomal protein L35a

Chain Lf:  89% 11%



- Molecule 37: 60S ribosomal protein L34

Chain Lg:  92% 8%

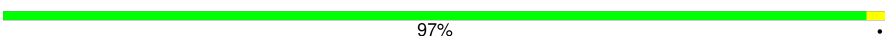


- Molecule 38: 60S ribosomal protein L35

Chain Lh:  84% 16%



- Molecule 39: 60S ribosomal protein L36

Chain Li:  97% 3%



- Molecule 40: 60S ribosomal protein L37

Chain Lj:  92% 8%

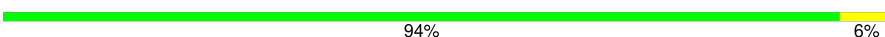


- Molecule 41: 60S ribosomal protein L38

Chain Lk:  84% 16%



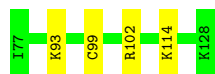
- Molecule 42: 60S ribosomal protein L39

Chain Ll:  94% 6%



- Molecule 43: Large ribosomal subunit protein eL40

Chain Lm:  92% 8%

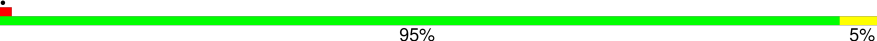


- Molecule 44: 60S ribosomal protein L41

Chain Ln:  88% 12%

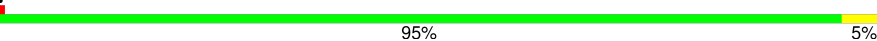


- Molecule 45: 60S ribosomal protein L36a

Chain Lo:  95% 5%

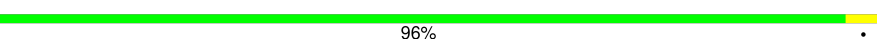


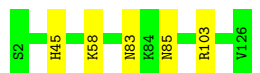
- Molecule 46: 60S ribosomal protein L37a

Chain Lp:  95% 5%



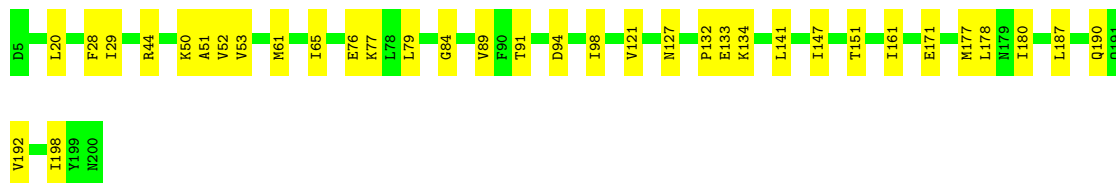
- Molecule 47: 60S ribosomal protein L28

Chain Lr:  96% 4%



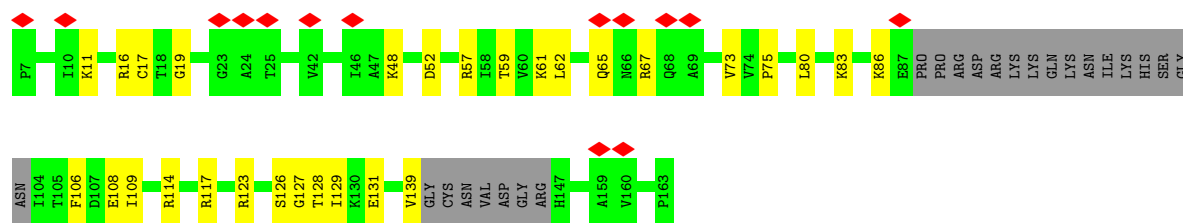
- Molecule 48: 60S acidic ribosomal protein P0

Chain Ls:  82% 18%



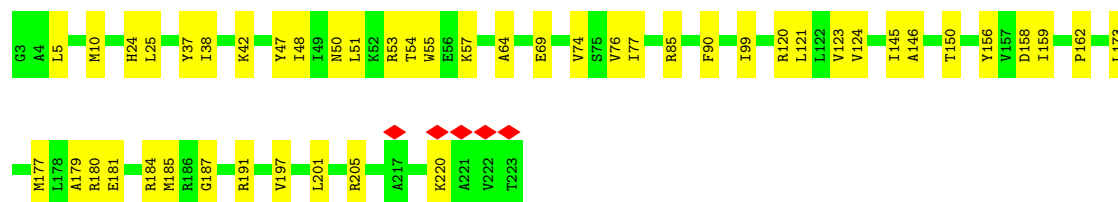
- Molecule 49: Large ribosomal subunit protein uL11

Chain Lt:  9% 67% 18% 15%



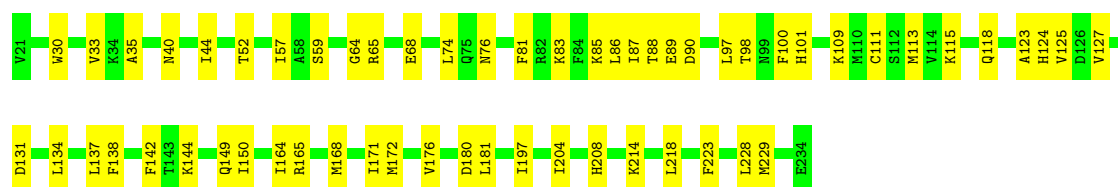
- Molecule 50: 40S ribosomal protein SA

Chain SA: 79% 21%



- Molecule 51: 40S ribosomal protein S3a

Chain SB: 73% 27%



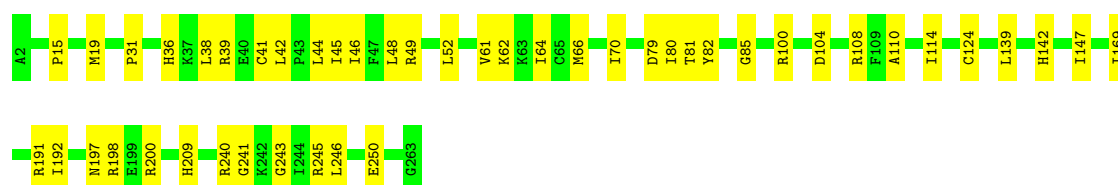
- Molecule 52: 40S ribosomal protein S2

Chain SC: 87% 12%



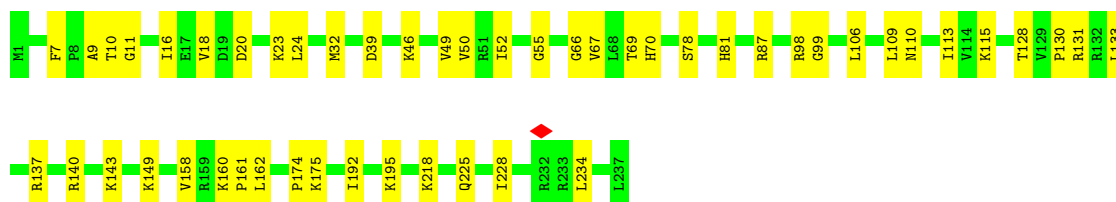
- Molecule 53: Small ribosomal subunit protein eS4, X isoform

Chain SE: 82% 18%



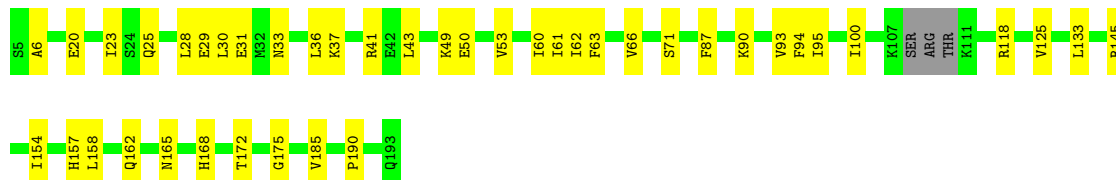
- Molecule 54: 40S ribosomal protein S6

Chain SG: 79% 21%



- Molecule 55: Small ribosomal subunit protein eS7

Chain SH: 76% 22%



- Molecule 56: 40S ribosomal protein S8

Chain SI: 81% 19%



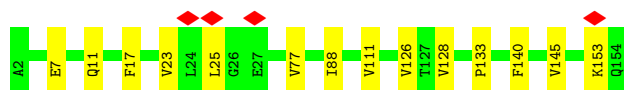
- Molecule 57: 40S ribosomal protein S9

Chain SJ: 86% 14%



- Molecule 58: 40S ribosomal protein S11

Chain SL: 91% 9%

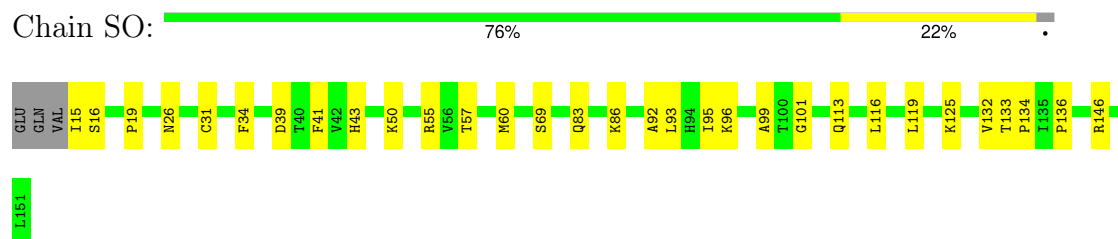


- Molecule 59: 40S ribosomal protein S13

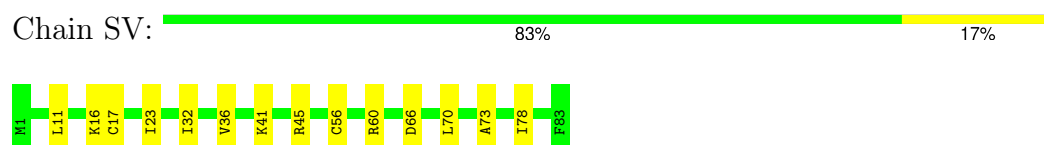
Chain SN: 91% 9%



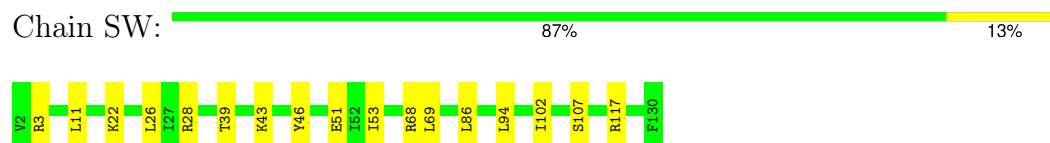
- Molecule 60: Small ribosomal subunit protein uS11



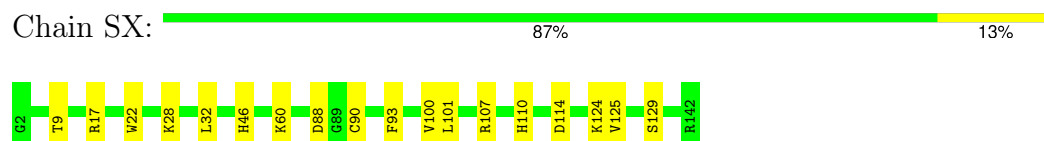
- Molecule 61: Small ribosomal subunit protein eS21



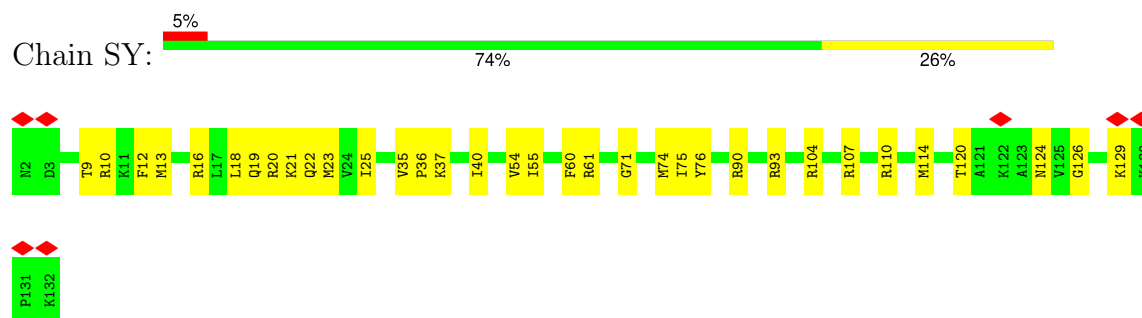
- Molecule 62: 40S ribosomal protein S15a



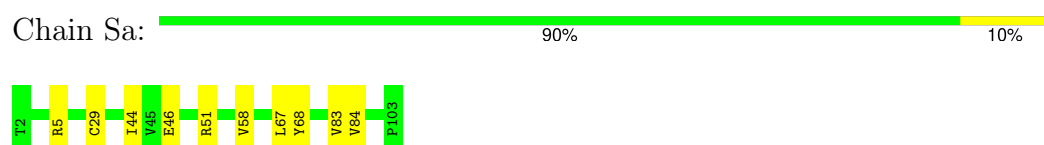
- Molecule 63: 40S ribosomal protein S23



- Molecule 64: 40S ribosomal protein S24



- Molecule 65: 40S ribosomal protein S26

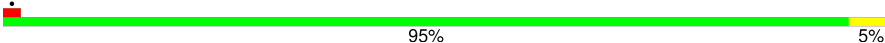


- Molecule 66: Small ribosomal subunit protein eS27

Chain Sb:  70% 30%



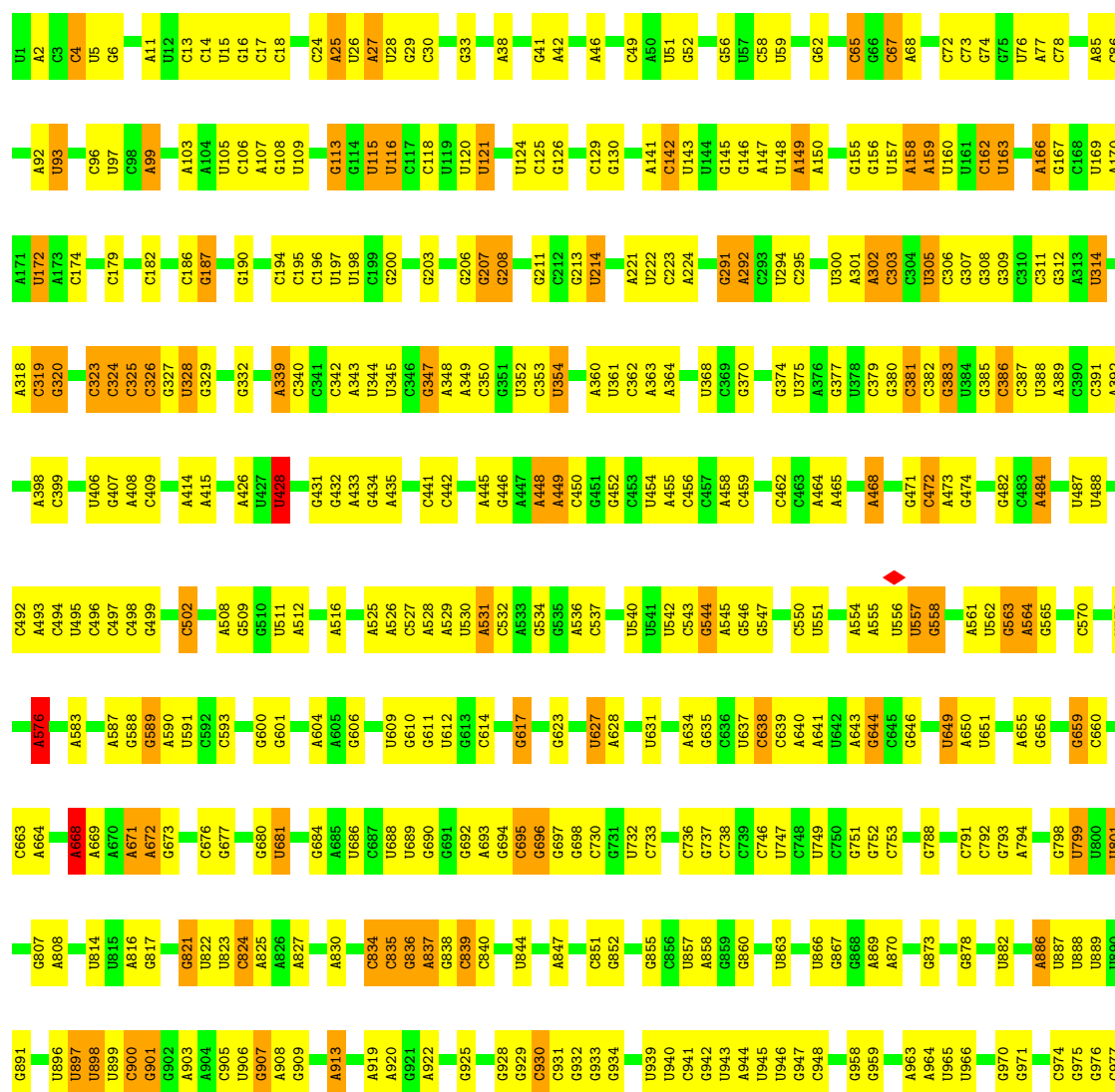
- Molecule 67: Small ribosomal subunit protein eS30

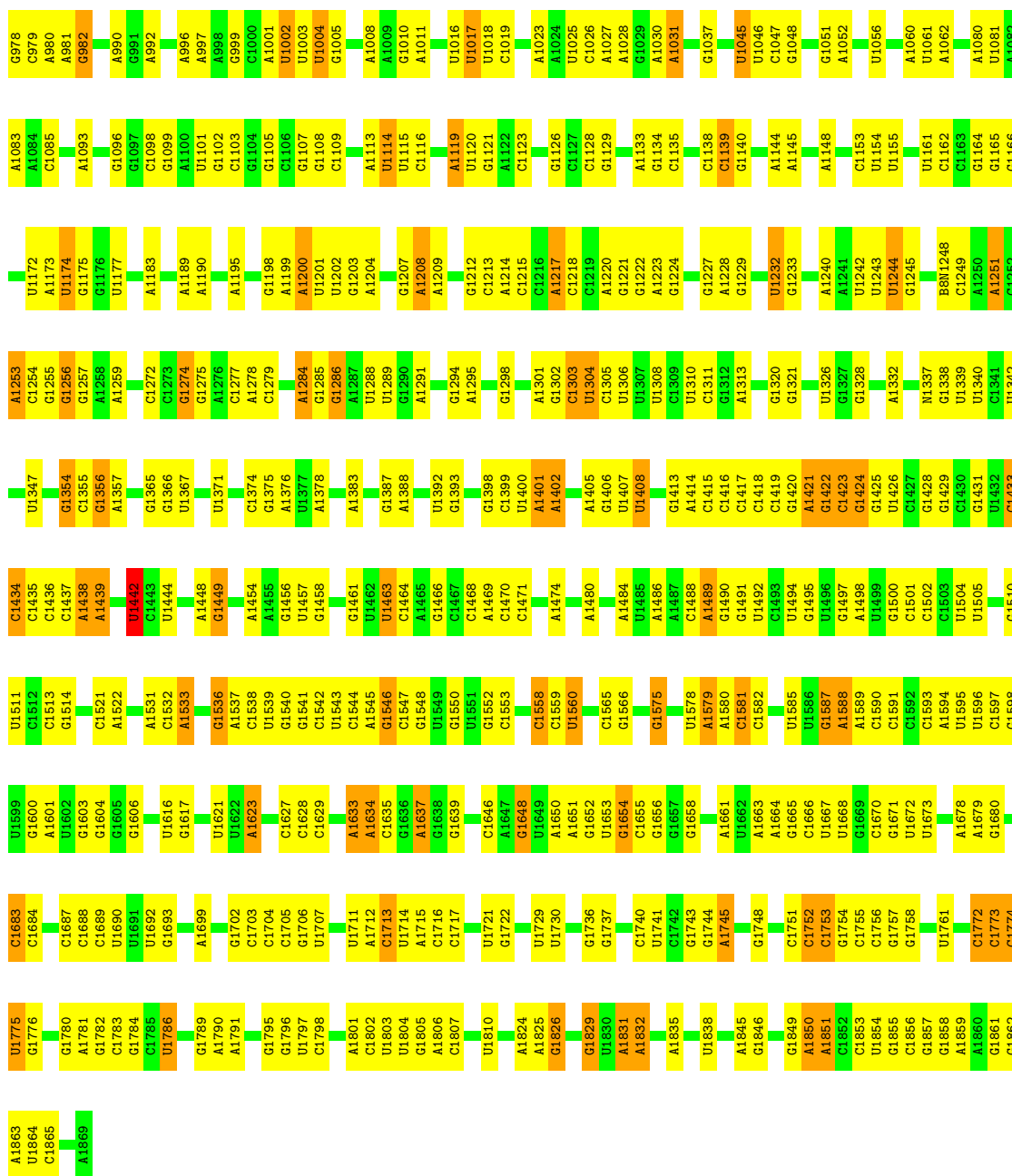
Chain Se:  95% 5%



- Molecule 68: 18S rRNA

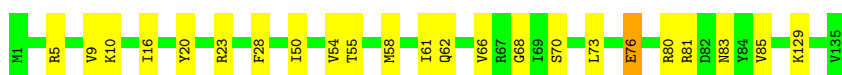
Chain S2:  51% 40% 9%





- Molecule 69: Small ribosomal subunit protein eS17

Chain SR: 83% 16%

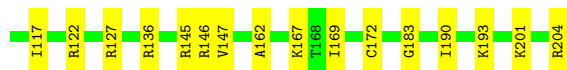


- Molecule 70: Small ribosomal subunit protein uS3

Chain SD: 86% 14%



- Molecule 71: 40S ribosomal protein S5



- Molecule 72: 40S ribosomal protein S10



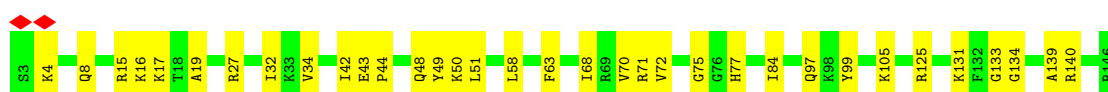
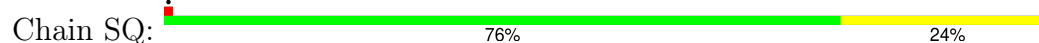
- Molecule 73: Small ribosomal subunit protein eS12



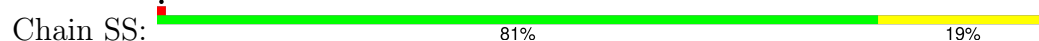
- Molecule 74: Small ribosomal subunit protein uS19



- Molecule 75: Small ribosomal subunit protein uS9



- Molecule 76: 40S ribosomal protein S18



- Molecule 77: 40S ribosomal protein S19

Chain ST:  83% 17%



- Molecule 78: 40S ribosomal protein S20

Chain SU:  81% 19%



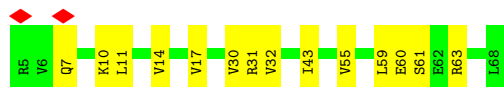
- Molecule 79: Small ribosomal subunit protein eS25

Chain SZ:  80% 20%



- Molecule 80: 40S ribosomal protein S28

Chain Sc:  78% 22%



- Molecule 81: 40S ribosomal protein S29

Chain Sd:  84% 16%



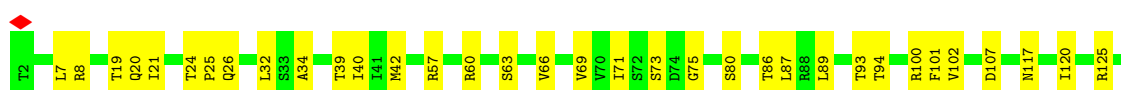
- Molecule 82: Ubiquitin-40S ribosomal protein S27a

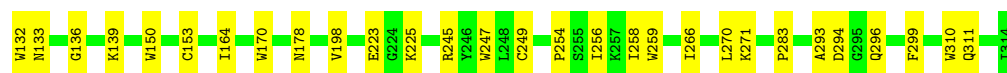
Chain Sf:  82% 18%



- Molecule 83: Receptor of activated protein C kinase 1

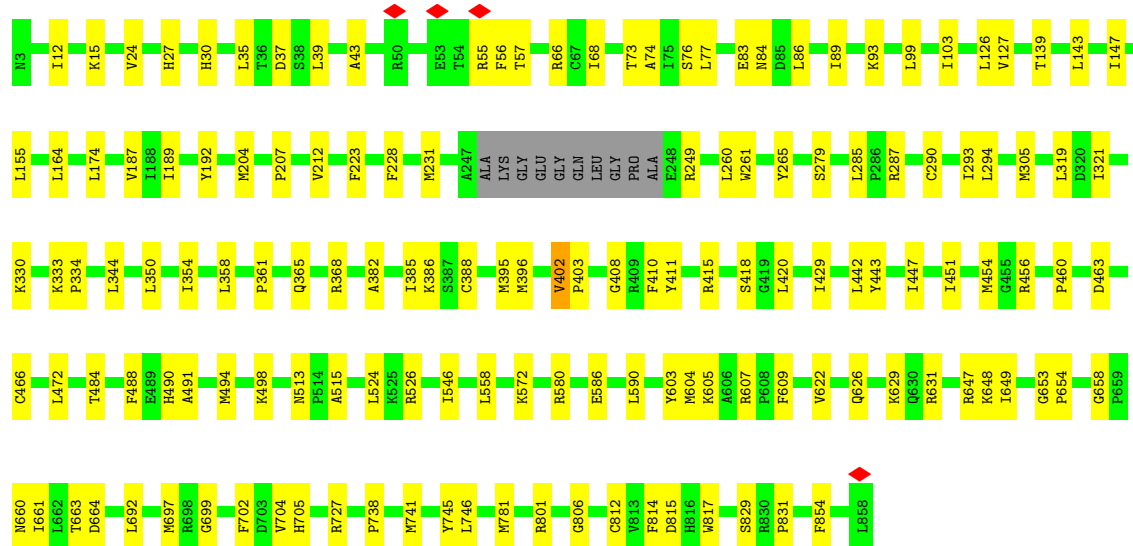
Chain Sg:  80% 20%





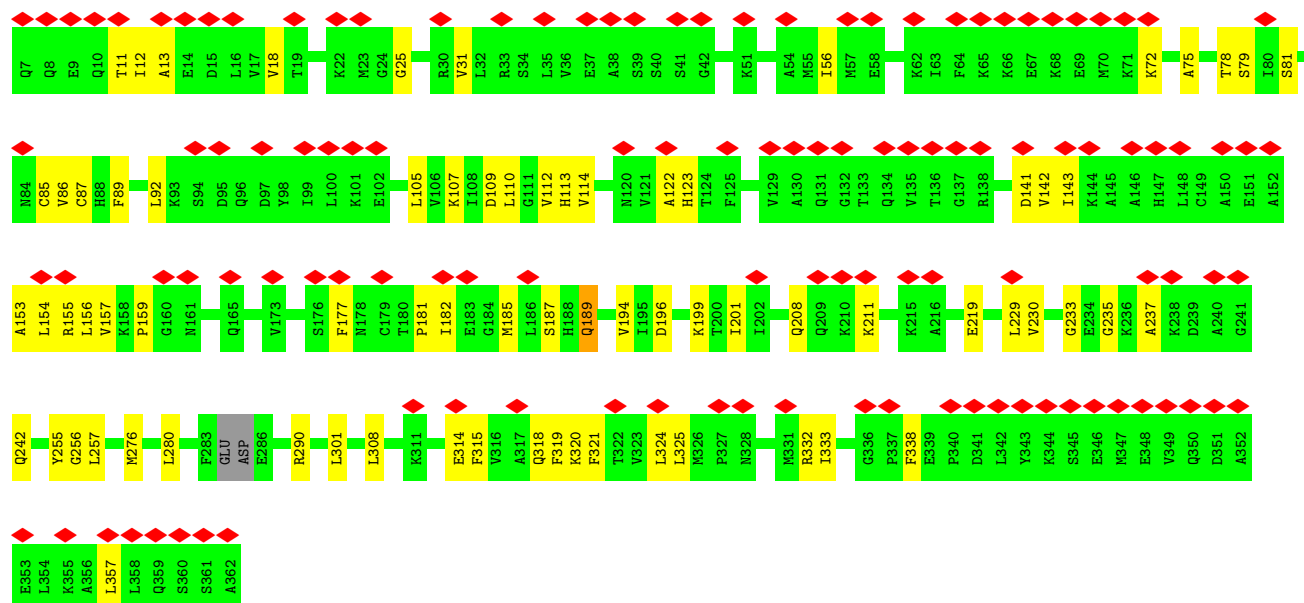
• Molecule 84: Elongation factor 2

Chain CB: 82% 17%



• Molecule 85: Proliferation-associated protein 2G4

Chain CA: 33% 79% 21%



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	52735	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	0.781	Depositor
Minimum map value	-0.311	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.037	Depositor
Recommended contour level	0.0746	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: 6MZ, SPM, OMU, SPD, UR3, MA6, PSU, MG, 4AC, ZN, G7M, B8N, HMT, OMG, A2M, OMC, 1MA, 3HE, 5MC, UY1

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	CD	0.22	0/447	0.34	0/592
2	CI	0.15	0/247	0.31	0/323
3	L5	0.34	0/85098	0.34	1/132762 (0.0%)
4	L7	0.32	0/2861	0.28	0/4459
5	L8	0.33	0/3631	0.30	0/5657
6	LA	0.34	0/1936	0.41	0/2596
7	LB	0.33	0/3306	0.38	0/4424
8	LC	0.34	0/2981	0.41	0/4002
9	LD	0.27	0/2428	0.37	0/3252
10	LE	0.27	0/1973	0.43	0/2645
11	LF	0.34	0/1905	0.35	0/2539
12	LG	0.27	0/1960	0.39	0/2637
13	LH	0.31	0/1537	0.37	0/2066
14	LI	0.30	0/1697	0.35	0/2266
15	LJ	0.25	0/1385	0.37	0/1852
16	LL	0.30	0/1732	0.37	0/2315
17	LM	0.30	0/1161	0.38	0/1554
18	LN	0.35	0/1746	0.37	0/2338
19	LO	0.34	0/1682	0.37	0/2250
20	LP	0.32	0/1268	0.39	0/1701
21	LQ	0.34	0/1537	0.39	0/2052
22	LR	0.27	0/1582	0.32	0/2091
23	LS	0.34	0/1493	0.34	0/2003
24	LT	0.32	0/1326	0.35	0/1770
25	LU	0.23	0/839	0.38	0/1126
26	LV	0.32	0/993	0.39	0/1332
27	LW	0.24	0/959	0.35	0/1270
28	LX	0.29	0/1002	0.33	0/1345
29	LY	0.31	0/1132	0.39	0/1504
30	LZ	0.28	0/1130	0.38	0/1507
31	La	0.34	0/1191	0.36	0/1591

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
32	Lb	0.26	0/889	0.38	0/1175
33	Lc	0.28	0/774	0.37	0/1038
34	Ld	0.30	0/903	0.38	0/1216
35	Le	0.34	0/1071	0.35	0/1429
36	Lf	0.35	0/895	0.41	0/1198
37	Lg	0.29	0/916	0.35	0/1220
38	Lh	0.28	0/1023	0.32	0/1351
39	Li	0.25	0/843	0.34	0/1115
40	Lj	0.36	0/720	0.44	0/952
41	Lk	0.25	0/575	0.33	0/761
42	Ll	0.31	0/454	0.35	0/599
43	Lm	0.30	0/435	0.37	0/575
44	Ln	0.22	0/231	0.25	0/294
45	Lo	0.29	0/876	0.39	0/1156
46	Lp	0.31	0/718	0.35	0/953
47	Lr	0.32	0/1017	0.40	0/1364
48	Ls	0.20	0/1519	0.38	0/2052
49	Lt	0.21	0/1009	0.52	0/1363
50	SA	0.27	0/1778	0.44	0/2416
51	SB	0.18	0/1765	0.35	0/2362
52	SC	0.26	0/1744	0.40	0/2357
53	SE	0.21	0/2118	0.39	0/2849
54	SG	0.17	0/1946	0.34	0/2590
55	SH	0.20	0/1519	0.44	0/2033
56	SI	0.20	0/1715	0.40	0/2287
57	SJ	0.20	0/1550	0.32	0/2069
58	SL	0.23	0/1268	0.34	0/1696
59	SN	0.23	0/1232	0.33	0/1656
60	SO	0.20	0/1037	0.40	0/1391
61	SV	0.27	0/643	0.41	0/860
62	SW	0.27	0/1051	0.41	0/1406
63	SX	0.26	0/1116	0.42	0/1490
64	SY	0.18	0/1083	0.35	0/1438
65	Sa	0.24	0/836	0.37	0/1121
66	Sb	0.23	0/665	0.45	0/891
67	Se	0.19	0/465	0.36	0/612
68	S2	0.27	0/39756	0.32	0/61939
69	SR	0.20	0/1105	0.41	0/1484
70	SD	0.22	0/1793	0.34	0/2414
71	SF	0.19	0/1516	0.37	0/2037
72	SK	0.19	0/851	0.41	0/1147
73	SM	0.16	0/950	0.36	0/1275
74	SP	0.21	0/1003	0.37	0/1342

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
75	SQ	0.31	0/1160	0.52	0/1553
76	SS	0.19	0/1216	0.37	0/1628
77	ST	0.19	0/1131	0.36	0/1515
78	SU	0.28	0/831	0.49	0/1115
79	SZ	0.22	0/604	0.40	0/810
80	Sc	0.17	0/508	0.35	0/680
81	Sd	0.28	0/470	0.52	0/623
82	Sf	0.21	0/560	0.58	0/745
83	Sg	0.17	0/2493	0.37	0/3394
84	CB	0.22	0/6734	0.38	0/9094
85	CA	0.16	0/2810	0.40	0/3780
All	All	0.30	0/238055	0.35	1/347731 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	L5	1703	C	C2'-C3'-O3'	5.29	117.44	109.50

There are no chirality outliers.

There are no planarity outliers.

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	CD	440	0	402	2	0
2	CI	247	0	283	1	0
3	L5	78444	0	39717	741	0
4	L7	2561	0	1295	15	0
5	L8	3315	0	1685	27	0
6	LA	1898	0	1993	24	0
7	LB	3238	0	3376	32	0
8	LC	2927	0	3104	23	0
9	LD	2382	0	2410	18	0
10	LE	1935	0	2096	24	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
11	LF	1870	0	1996	10	0
12	LG	1927	0	2074	13	0
13	LH	1518	0	1601	13	0
14	LI	1658	0	1697	11	0
15	LJ	1362	0	1399	12	0
16	LL	1701	0	1818	8	0
17	LM	1138	0	1204	7	0
18	LN	1701	0	1749	6	0
19	LO	1650	0	1794	15	0
20	LP	1242	0	1269	9	0
21	LQ	1513	0	1628	12	0
22	LR	1566	0	1729	11	0
23	LS	1453	0	1490	11	0
24	LT	1298	0	1366	9	0
25	LU	825	0	850	7	0
26	LV	979	0	1039	5	0
27	LW	945	0	1003	13	0
28	LX	985	0	1066	4	0
29	LY	1115	0	1205	7	0
30	LZ	1107	0	1182	13	0
31	La	1162	0	1213	8	0
32	Lb	876	0	948	8	0
33	Lc	764	0	804	7	0
34	Ld	888	0	930	7	0
35	Le	1053	0	1147	5	0
36	Lf	876	0	912	8	0
37	Lg	906	0	998	6	0
38	Lh	1015	0	1148	16	0
39	Li	832	0	917	3	0
40	Lj	705	0	737	5	0
41	Lk	569	0	637	7	0
42	Ll	444	0	483	3	0
43	Lm	429	0	465	2	0
44	Ln	230	0	276	2	0
45	Lo	862	0	929	4	0
46	Lp	708	0	756	4	0
47	Lr	1002	0	1068	4	0
48	Ls	1496	0	1540	23	0
49	Lt	998	0	1032	19	0
50	SA	1741	0	1744	38	0
51	SB	1738	0	1809	35	0
52	SC	1707	0	1791	20	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
53	SE	2076	0	2177	29	0
54	SG	1923	0	2089	41	0
55	SH	1497	0	1590	25	0
56	SI	1686	0	1772	30	0
57	SJ	1525	0	1640	17	0
58	SL	1247	0	1323	9	0
59	SN	1208	0	1294	9	0
60	SO	1024	0	1050	24	0
61	SV	636	0	637	13	0
62	SW	1034	0	1080	15	0
63	SX	1098	0	1167	14	0
64	SY	1065	0	1142	24	0
65	Sa	821	0	870	8	0
66	Sb	651	0	669	21	0
67	Se	459	0	503	2	0
68	S2	36952	0	18678	482	0
69	SR	1090	0	1149	18	0
70	SD	1765	0	1865	20	0
71	SF	1495	0	1549	40	0
72	SK	827	0	854	7	0
73	SM	940	0	965	7	0
74	SP	985	0	1031	19	0
75	SQ	1142	0	1213	30	0
76	SS	1198	0	1261	21	0
77	ST	1112	0	1146	18	0
78	SU	821	0	883	14	0
79	SZ	598	0	656	12	0
80	Sc	506	0	536	11	0
81	Sd	459	0	449	8	0
82	Sf	548	0	551	9	0
83	Sg	2436	0	2391	40	0
84	CB	6605	0	6679	87	0
85	CA	2764	0	2779	47	0
86	L5	179	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	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	27	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
87	L5	98	0	182	4	0
88	L5	100	0	190	1	0
89	L5	20	0	23	0	0
90	L5	39	0	39	0	0
91	Lg	1	0	0	0	0
91	Lj	1	0	0	0	0
91	Lm	1	0	0	0	0
91	Lo	1	0	0	0	0
91	Lp	1	0	0	0	0
91	Sa	1	0	0	0	0
All	All	226615	0	171876	2251	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 6.

The worst 5 of 2251 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)
60:SO:99:ALA:H	60:SO:133:THR:HG22	1.40	0.85
49:Lt:19:GLY:HA2	49:Lt:48:LYS:HZ3	1.44	0.81
3:L5:1095:A:H2	3:L5:1200:G:H1	1.30	0.79
83:Sg:26:GLN:HE22	83:Sg:75:GLY:HA3	1.48	0.79
68:S2:1337:4AC:H2'	68:S2:1338:G:H8	1.48	0.78

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	CD	51/55 (93%)	51 (100%)	0	0	100	100
2	CI	29/31 (94%)	29 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
6	LA	246/248 (99%)	238 (97%)	8 (3%)	0	100	100
7	LB	400/402 (100%)	385 (96%)	14 (4%)	1 (0%)	36	63
8	LC	366/368 (100%)	351 (96%)	15 (4%)	0	100	100
9	LD	291/293 (99%)	281 (97%)	10 (3%)	0	100	100
10	LE	236/250 (94%)	217 (92%)	19 (8%)	0	100	100
11	LF	223/225 (99%)	216 (97%)	7 (3%)	0	100	100
12	LG	239/241 (99%)	226 (95%)	13 (5%)	0	100	100
13	LH	188/190 (99%)	182 (97%)	6 (3%)	0	100	100
14	LI	201/213 (94%)	199 (99%)	2 (1%)	0	100	100
15	LJ	168/176 (96%)	164 (98%)	4 (2%)	0	100	100
16	LL	208/210 (99%)	201 (97%)	7 (3%)	0	100	100
17	LM	137/139 (99%)	130 (95%)	7 (5%)	0	100	100
18	LN	201/203 (99%)	196 (98%)	5 (2%)	0	100	100
19	LO	199/201 (99%)	194 (98%)	5 (2%)	0	100	100
20	LP	151/153 (99%)	145 (96%)	6 (4%)	0	100	100
21	LQ	185/187 (99%)	181 (98%)	4 (2%)	0	100	100
22	LR	185/187 (99%)	181 (98%)	4 (2%)	0	100	100
23	LS	173/175 (99%)	167 (96%)	6 (4%)	0	100	100
24	LT	157/159 (99%)	152 (97%)	5 (3%)	0	100	100
25	LU	99/101 (98%)	93 (94%)	6 (6%)	0	100	100
26	LV	129/131 (98%)	123 (95%)	6 (5%)	0	100	100
27	LW	112/124 (90%)	110 (98%)	2 (2%)	0	100	100
28	LX	118/120 (98%)	116 (98%)	2 (2%)	0	100	100
29	LY	132/134 (98%)	130 (98%)	2 (2%)	0	100	100
30	LZ	133/135 (98%)	125 (94%)	8 (6%)	0	100	100
31	La	145/147 (99%)	139 (96%)	6 (4%)	0	100	100
32	Lb	105/121 (87%)	98 (93%)	7 (7%)	0	100	100
33	Lc	96/98 (98%)	93 (97%)	3 (3%)	0	100	100
34	Ld	105/107 (98%)	101 (96%)	4 (4%)	0	100	100
35	Le	126/128 (98%)	123 (98%)	3 (2%)	0	100	100
36	Lf	107/109 (98%)	106 (99%)	1 (1%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
37	Lg	112/114 (98%)	112 (100%)	0	0	100	100
38	Lh	120/122 (98%)	117 (98%)	3 (2%)	0	100	100
39	Li	100/102 (98%)	97 (97%)	3 (3%)	0	100	100
40	Lj	84/86 (98%)	81 (96%)	3 (4%)	0	100	100
41	Lk	67/69 (97%)	66 (98%)	1 (2%)	0	100	100
42	Ll	48/50 (96%)	45 (94%)	3 (6%)	0	100	100
43	Lm	50/52 (96%)	50 (100%)	0	0	100	100
44	Ln	22/24 (92%)	22 (100%)	0	0	100	100
45	Lo	103/105 (98%)	97 (94%)	6 (6%)	0	100	100
46	Lp	89/91 (98%)	86 (97%)	3 (3%)	0	100	100
47	Lr	123/125 (98%)	118 (96%)	5 (4%)	0	100	100
48	Ls	194/196 (99%)	181 (93%)	13 (7%)	0	100	100
49	Lt	128/157 (82%)	104 (81%)	24 (19%)	0	100	100
50	SA	219/221 (99%)	208 (95%)	11 (5%)	0	100	100
51	SB	212/214 (99%)	206 (97%)	6 (3%)	0	100	100
52	SC	218/222 (98%)	207 (95%)	11 (5%)	0	100	100
53	SE	260/262 (99%)	249 (96%)	11 (4%)	0	100	100
54	SG	235/237 (99%)	227 (97%)	8 (3%)	0	100	100
55	SH	182/189 (96%)	171 (94%)	11 (6%)	0	100	100
56	SI	204/206 (99%)	193 (95%)	11 (5%)	0	100	100
57	SJ	183/185 (99%)	172 (94%)	11 (6%)	0	100	100
58	SL	151/153 (99%)	142 (94%)	9 (6%)	0	100	100
59	SN	148/150 (99%)	144 (97%)	4 (3%)	0	100	100
60	SO	135/140 (96%)	122 (90%)	13 (10%)	0	100	100
61	SV	81/83 (98%)	78 (96%)	3 (4%)	0	100	100
62	SW	127/129 (98%)	123 (97%)	4 (3%)	0	100	100
63	SX	139/141 (99%)	130 (94%)	9 (6%)	0	100	100
64	SY	129/131 (98%)	126 (98%)	3 (2%)	0	100	100
65	Sa	100/102 (98%)	96 (96%)	4 (4%)	0	100	100
66	Sb	81/83 (98%)	71 (88%)	10 (12%)	0	100	100
67	Se	56/58 (97%)	55 (98%)	1 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
69	SR	133/135 (98%)	128 (96%)	5 (4%)	0	100	100
70	SD	225/227 (99%)	223 (99%)	2 (1%)	0	100	100
71	SF	187/189 (99%)	176 (94%)	11 (6%)	0	100	100
72	SK	96/98 (98%)	91 (95%)	5 (5%)	0	100	100
73	SM	120/122 (98%)	111 (92%)	9 (8%)	0	100	100
74	SP	119/121 (98%)	116 (98%)	3 (2%)	0	100	100
75	SQ	142/144 (99%)	134 (94%)	8 (6%)	0	100	100
76	SS	143/145 (99%)	134 (94%)	9 (6%)	0	100	100
77	ST	141/143 (99%)	139 (99%)	2 (1%)	0	100	100
78	SU	102/104 (98%)	98 (96%)	4 (4%)	0	100	100
79	SZ	73/75 (97%)	65 (89%)	8 (11%)	0	100	100
80	Sc	62/64 (97%)	60 (97%)	2 (3%)	0	100	100
81	Sd	53/55 (96%)	51 (96%)	2 (4%)	0	100	100
82	Sf	65/67 (97%)	54 (83%)	11 (17%)	0	100	100
83	Sg	311/313 (99%)	289 (93%)	22 (7%)	0	100	100
84	CB	842/856 (98%)	814 (97%)	28 (3%)	0	100	100
85	CA	350/356 (98%)	333 (95%)	17 (5%)	0	100	100
All	All	12905/13174 (98%)	12355 (96%)	549 (4%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
7	LB	295	ASP

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	CD	46/46 (100%)	46 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	CI	25/25 (100%)	25 (100%)	0	100	100
6	LA	190/190 (100%)	190 (100%)	0	100	100
7	LB	348/348 (100%)	348 (100%)	0	100	100
8	LC	306/306 (100%)	306 (100%)	0	100	100
9	LD	246/247 (100%)	246 (100%)	0	100	100
10	LE	212/222 (96%)	212 (100%)	0	100	100
11	LF	194/194 (100%)	194 (100%)	0	100	100
12	LG	203/205 (99%)	203 (100%)	0	100	100
13	LH	169/169 (100%)	169 (100%)	0	100	100
14	LI	175/180 (97%)	175 (100%)	0	100	100
15	LJ	143/148 (97%)	143 (100%)	0	100	100
16	LL	176/176 (100%)	175 (99%)	1 (1%)	78	81
17	LM	118/118 (100%)	117 (99%)	1 (1%)	73	79
18	LN	171/171 (100%)	171 (100%)	0	100	100
19	LO	173/173 (100%)	173 (100%)	0	100	100
20	LP	134/134 (100%)	134 (100%)	0	100	100
21	LQ	164/164 (100%)	164 (100%)	0	100	100
22	LR	166/166 (100%)	166 (100%)	0	100	100
23	LS	156/156 (100%)	156 (100%)	0	100	100
24	LT	139/139 (100%)	139 (100%)	0	100	100
25	LU	91/91 (100%)	91 (100%)	0	100	100
26	LV	101/101 (100%)	101 (100%)	0	100	100
27	LW	95/103 (92%)	95 (100%)	0	100	100
28	LX	108/108 (100%)	108 (100%)	0	100	100
29	LY	124/124 (100%)	124 (100%)	0	100	100
30	LZ	117/117 (100%)	117 (100%)	0	100	100
31	La	120/120 (100%)	120 (100%)	0	100	100
32	Lb	88/101 (87%)	88 (100%)	0	100	100
33	Lc	83/83 (100%)	83 (100%)	0	100	100
34	Ld	98/98 (100%)	98 (100%)	0	100	100
35	Le	114/114 (100%)	114 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
36	Lf	88/88 (100%)	88 (100%)	0	100	100
37	Lg	98/98 (100%)	98 (100%)	0	100	100
38	Lh	109/109 (100%)	109 (100%)	0	100	100
39	Li	86/86 (100%)	86 (100%)	0	100	100
40	Lj	73/73 (100%)	73 (100%)	0	100	100
41	Lk	64/64 (100%)	64 (100%)	0	100	100
42	Ll	47/47 (100%)	47 (100%)	0	100	100
43	Lm	48/48 (100%)	48 (100%)	0	100	100
44	Ln	23/23 (100%)	23 (100%)	0	100	100
45	Lo	93/93 (100%)	93 (100%)	0	100	100
46	Lp	74/74 (100%)	74 (100%)	0	100	100
47	Lr	109/109 (100%)	109 (100%)	0	100	100
48	Ls	162/164 (99%)	162 (100%)	0	100	100
49	Lt	107/130 (82%)	107 (100%)	0	100	100
50	SA	183/183 (100%)	183 (100%)	0	100	100
51	SB	195/195 (100%)	195 (100%)	0	100	100
52	SC	186/188 (99%)	186 (100%)	0	100	100
53	SE	224/224 (100%)	224 (100%)	0	100	100
54	SG	207/207 (100%)	206 (100%)	1 (0%)	81	82
55	SH	166/169 (98%)	165 (99%)	1 (1%)	78	81
56	SI	178/178 (100%)	178 (100%)	0	100	100
57	SJ	161/161 (100%)	161 (100%)	0	100	100
58	SL	137/137 (100%)	137 (100%)	0	100	100
59	SN	130/130 (100%)	130 (100%)	0	100	100
60	SO	107/110 (97%)	107 (100%)	0	100	100
61	SV	67/67 (100%)	67 (100%)	0	100	100
62	SW	112/112 (100%)	112 (100%)	0	100	100
63	SX	113/113 (100%)	113 (100%)	0	100	100
64	SY	113/113 (100%)	113 (100%)	0	100	100
65	Sa	89/89 (100%)	89 (100%)	0	100	100
66	Sb	75/75 (100%)	75 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
67	Se	47/47 (100%)	47 (100%)	0	100	100
69	SR	122/122 (100%)	121 (99%)	1 (1%)	73	79
70	SD	190/190 (100%)	190 (100%)	0	100	100
71	SF	159/159 (100%)	159 (100%)	0	100	100
72	SK	89/89 (100%)	89 (100%)	0	100	100
73	SM	102/104 (98%)	102 (100%)	0	100	100
74	SP	107/107 (100%)	107 (100%)	0	100	100
75	SQ	119/119 (100%)	119 (100%)	0	100	100
76	SS	126/126 (100%)	126 (100%)	0	100	100
77	ST	113/113 (100%)	113 (100%)	0	100	100
78	SU	94/94 (100%)	94 (100%)	0	100	100
79	SZ	66/66 (100%)	66 (100%)	0	100	100
80	Sc	57/57 (100%)	57 (100%)	0	100	100
81	Sd	48/48 (100%)	48 (100%)	0	100	100
82	Sf	60/60 (100%)	60 (100%)	0	100	100
83	Sg	272/272 (100%)	272 (100%)	0	100	100
84	CB	722/728 (99%)	721 (100%)	1 (0%)	88	89
85	CA	303/305 (99%)	302 (100%)	1 (0%)	86	85
All	All	11213/11300 (99%)	11206 (100%)	7 (0%)	87	89

5 of 7 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
55	SH	162	GLN
69	SR	76	GLU
85	CA	189	GLN
84	CB	402	VAL
54	SG	158	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 116 such sidechains are listed below:

Mol	Chain	Res	Type
41	Lk	31	ASN
85	CA	113	HIS
54	SG	4	ASN

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Mol	Chain	Res	Type
84	CB	803	ASN
76	SS	11	HIS

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
3	L5	3643/3655 (99%)	743 (20%)	20 (0%)
4	L7	119/120 (99%)	10 (8%)	0
5	L8	155/156 (99%)	25 (16%)	0
68	S2	1715/1740 (98%)	397 (23%)	5 (0%)
All	All	5632/5671 (99%)	1175 (20%)	25 (0%)

5 of 1175 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
3	L5	25	A
3	L5	30	C
3	L5	39	A
3	L5	42	A
3	L5	48	G

5 of 25 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
3	L5	2763	U
3	L5	4600	G
68	S2	1422	G
3	L5	4061	G
3	L5	4699	U

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

178 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
3	OMG	L5	3627	3	23,26,27	0.57	0	32,38,41	0.58	0
68	OMU	S2	116	68	19,22,23	3.33	7 (36%)	25,31,34	1.74	5 (20%)
68	PSU	S2	1177	68	18,21,22	1.11	2 (11%)	21,30,33	1.94	4 (19%)
3	PSU	L5	4403	3	18,21,22	1.10	3 (16%)	21,30,33	2.08	6 (28%)
68	OMC	S2	1703	68	19,22,23	0.59	0	25,31,34	0.67	0
3	OMC	L5	3841	3	19,22,23	0.68	0	25,31,34	0.55	0
3	PSU	L5	1860	3	18,21,22	1.07	2 (11%)	21,30,33	1.88	4 (19%)
3	PSU	L5	4293	3	18,21,22	1.06	2 (11%)	21,30,33	2.01	5 (23%)
68	PSU	S2	109	68	18,21,22	1.06	2 (11%)	21,30,33	1.90	5 (23%)
68	PSU	S2	93	68	18,21,22	1.00	1 (5%)	21,30,33	1.90	4 (19%)
3	PSU	L5	1862	3	18,21,22	1.03	2 (11%)	21,30,33	1.98	4 (19%)
3	OMG	L5	4637	3	23,26,27	0.57	0	32,38,41	0.48	0
3	PSU	L5	4312	3	18,21,22	1.05	2 (11%)	21,30,33	1.92	4 (19%)
3	PSU	L5	3637	3	18,21,22	1.06	1 (5%)	21,30,33	1.98	4 (19%)
3	OMG	L5	4618	3	23,26,27	0.61	0	32,38,41	0.49	0
3	A2M	L5	2401	3	22,25,26	1.20	2 (9%)	30,36,39	1.55	7 (23%)
3	OMU	L5	3925	3	19,22,23	3.15	7 (36%)	25,31,34	1.92	5 (20%)
3	A2M	L5	3785	3,86	22,25,26	1.24	1 (4%)	30,36,39	1.69	9 (30%)
3	OMG	L5	4494	3	23,26,27	0.59	0	32,38,41	0.52	0
3	A2M	L5	2787	3	22,25,26	1.17	2 (9%)	30,36,39	1.48	8 (26%)
3	PSU	L5	4299	3	18,21,22	1.05	2 (11%)	21,30,33	1.90	4 (19%)
3	A2M	L5	1326	3	22,25,26	1.28	2 (9%)	30,36,39	1.48	9 (30%)
3	OMU	L5	4306	3	19,22,23	3.14	7 (36%)	25,31,34	1.78	5 (20%)
3	OMC	L5	2804	3	19,22,23	0.67	0	25,31,34	0.61	0
3	PSU	L5	4471	3	18,21,22	1.09	2 (11%)	21,30,33	2.00	4 (19%)
3	PSU	L5	1792	3	18,21,22	1.03	1 (5%)	21,30,33	1.90	4 (19%)
68	MA6	S2	1850	68	23,26,27	1.31	3 (13%)	33,38,41	3.32	12 (36%)
3	PSU	L5	1683	3	18,21,22	1.09	2 (11%)	21,30,33	1.91	4 (19%)
3	OMG	L5	4196	3	23,26,27	0.57	0	32,38,41	0.46	0
3	5MC	L5	4447	3	19,22,23	0.90	1 (5%)	26,32,35	0.87	0
68	OMC	S2	1391	68	19,22,23	0.60	0	25,31,34	0.70	0
68	OMG	S2	867	68	23,26,27	0.52	0	32,38,41	0.48	0
3	PSU	L5	2632	3	18,21,22	1.05	2 (11%)	21,30,33	2.05	5 (23%)
3	PSU	L5	1582	3	18,21,22	1.10	2 (11%)	21,30,33	2.01	5 (23%)
3	PSU	L5	4296	3	18,21,22	1.10	2 (11%)	21,30,33	2.05	5 (23%)
3	OMG	L5	3899	3	23,26,27	0.62	0	32,38,41	0.51	0
3	PSU	L5	4628	3	18,21,22	1.02	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
3	PSU	L5	4552	3	18,21,22	1.16	2 (11%)	21,30,33	1.94	4 (19%)
68	PSU	S2	866	68	18,21,22	1.11	1 (5%)	21,30,33	1.91	4 (19%)
68	OMU	S2	172	68	19,22,23	3.31	7 (36%)	25,31,34	1.90	4 (16%)
3	6MZ	L5	4220	3	22,25,26	2.96	5 (22%)	29,36,39	2.43	10 (34%)
3	A2M	L5	3718	3	22,25,26	1.22	2 (9%)	30,36,39	1.53	6 (20%)
68	OMG	S2	436	68	23,26,27	0.55	0	32,38,41	0.54	0
68	PSU	S2	1244	68	18,21,22	1.09	1 (5%)	21,30,33	1.88	4 (19%)
3	OMG	L5	4228	3	23,26,27	0.59	0	32,38,41	0.66	0
68	OMU	S2	354	68	19,22,23	3.25	7 (36%)	25,31,34	1.85	5 (20%)
3	OMG	L5	4499	3	23,26,27	0.57	0	32,38,41	0.46	0
3	OMC	L5	3887	3	19,22,23	0.64	0	25,31,34	0.70	0
3	OMC	L5	4536	3	19,22,23	0.68	0	25,31,34	0.61	0
3	OMG	L5	4370	3	23,26,27	0.57	0	32,38,41	0.49	0
68	MA6	S2	1851	68	23,26,27	1.30	2 (8%)	33,38,41	3.38	12 (36%)
68	OMC	S2	462	68	19,22,23	0.57	0	25,31,34	0.54	0
5	PSU	L8	55	5	18,21,22	1.07	2 (11%)	21,30,33	1.86	4 (19%)
68	PSU	S2	651	68	18,21,22	1.06	1 (5%)	21,30,33	1.98	4 (19%)
3	A2M	L5	400	3	22,25,26	1.32	2 (9%)	30,36,39	1.57	9 (30%)
68	PSU	S2	406	68	18,21,22	1.10	2 (11%)	21,30,33	1.89	4 (19%)
3	PSU	L5	1782	3	18,21,22	1.09	2 (11%)	21,30,33	1.91	4 (19%)
3	PSU	L5	4442	3	18,21,22	1.08	3 (16%)	21,30,33	2.04	6 (28%)
3	PSU	L5	4353	3	18,21,22	1.07	2 (11%)	21,30,33	2.02	6 (28%)
68	PSU	S2	1367	68	18,21,22	1.07	1 (5%)	21,30,33	1.93	4 (19%)
3	A2M	L5	4590	3	22,25,26	1.26	2 (9%)	30,36,39	1.56	7 (23%)
3	OMG	L5	1316	3	23,26,27	0.67	0	32,38,41	0.53	0
68	4AC	S2	1842	68	21,24,25	0.40	0	28,34,37	0.45	0
3	PSU	L5	4457	3	18,21,22	1.08	3 (16%)	21,30,33	1.99	5 (23%)
3	A2M	L5	1323	3	22,25,26	1.33	3 (13%)	30,36,39	1.53	9 (30%)
3	OMG	L5	4623	3	23,26,27	0.59	0	32,38,41	0.48	0
3	OMG	L5	1522	3	23,26,27	0.59	0	32,38,41	0.54	0
3	A2M	L5	4523	3,86	22,25,26	1.39	3 (13%)	30,36,39	1.54	9 (30%)
68	PSU	S2	1045	68	18,21,22	1.10	1 (5%)	21,30,33	1.99	4 (19%)
3	OMG	L5	2424	3	23,26,27	0.55	0	32,38,41	0.49	0
68	A2M	S2	159	68	22,25,26	1.10	1 (4%)	30,36,39	1.51	9 (30%)
68	PSU	S2	686	68	18,21,22	1.11	2 (11%)	21,30,33	1.91	4 (19%)
3	OMG	L5	2876	3	23,26,27	0.60	0	32,38,41	0.49	0
68	PSU	S2	814	68	18,21,22	1.11	1 (5%)	21,30,33	1.88	4 (19%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	PSU	L5	1781	3	18,21,22	1.05	1 (5%)	21,30,33	1.91	4 (19%)
3	PSU	L5	3695	3	18,21,22	1.05	2 (11%)	21,30,33	1.94	4 (19%)
68	G7M	S2	1639	68	23,26,27	2.66	9 (39%)	34,39,42	2.49	11 (32%)
68	PSU	S2	1004	68	18,21,22	1.08	1 (5%)	21,30,33	1.95	4 (19%)
3	OMG	L5	3744	3	23,26,27	0.58	0	32,38,41	0.45	0
3	PSU	L5	4579	3	18,21,22	1.01	1 (5%)	21,30,33	1.90	4 (19%)
3	PSU	L5	3822	3	18,21,22	1.08	2 (11%)	21,30,33	2.04	6 (28%)
68	OMU	S2	1326	68	19,22,23	3.28	7 (36%)	25,31,34	1.83	5 (20%)
3	PSU	L5	3853	3,86	18,21,22	1.05	1 (5%)	21,30,33	1.88	4 (19%)
3	PSU	L5	1536	3	18,21,22	1.11	2 (11%)	21,30,33	2.05	4 (19%)
3	PSU	L5	4972	3	18,21,22	1.06	1 (5%)	21,30,33	1.97	4 (19%)
3	OMC	L5	3701	3	19,22,23	0.68	0	25,31,34	1.31	3 (12%)
3	1MA	L5	1322	3,86	21,25,26	0.67	0	30,37,40	0.76	1 (3%)
68	OMG	S2	644	68	23,26,27	0.54	0	32,38,41	0.45	0
3	A2M	L5	398	3	22,25,26	1.24	2 (9%)	30,36,39	1.59	7 (23%)
3	PSU	L5	3920	3,86	18,21,22	1.09	3 (16%)	21,30,33	2.12	6 (28%)
68	OMC	S2	517	68	19,22,23	0.62	0	25,31,34	0.74	0
3	OMG	L5	1625	3	23,26,27	0.61	0	32,38,41	0.52	0
5	PSU	L8	69	5	18,21,22	1.09	2 (11%)	21,30,33	1.92	5 (23%)
3	OMU	L5	4227	3	19,22,23	3.22	7 (36%)	25,31,34	1.88	5 (20%)
3	PSU	L5	4636	3	18,21,22	1.11	3 (16%)	21,30,33	2.18	6 (28%)
3	A2M	L5	1524	3	22,25,26	1.39	3 (13%)	30,36,39	1.52	7 (23%)
68	OMG	S2	601	68	23,26,27	0.58	0	32,38,41	0.45	0
3	A2M	L5	3830	3	22,25,26	1.29	3 (13%)	30,36,39	1.55	5 (16%)
3	A2M	L5	2815	3	22,25,26	1.21	1 (4%)	30,36,39	1.47	7 (23%)
3	PSU	L5	3639	3	18,21,22	1.12	2 (11%)	21,30,33	1.90	4 (19%)
3	A2M	L5	3825	3	22,25,26	1.22	2 (9%)	30,36,39	1.52	8 (26%)
3	OMC	L5	1340	3	19,22,23	0.66	0	25,31,34	0.65	0
68	B8N	S2	1248	68	25,29,30	3.25	6 (24%)	28,42,45	1.94	8 (28%)
68	A2M	S2	1031	68	22,25,26	1.21	1 (4%)	30,36,39	1.53	8 (26%)
3	PSU	L5	3851	3	18,21,22	1.08	1 (5%)	21,30,33	1.89	4 (19%)
68	OMC	S2	174	68	19,22,23	0.56	0	25,31,34	0.65	0
3	OMC	L5	4456	3	19,22,23	0.72	0	25,31,34	0.80	1 (4%)
3	A2M	L5	4571	3	22,25,26	1.33	2 (9%)	30,36,39	1.60	7 (23%)
3	A2M	L5	1871	3,86	22,25,26	1.35	2 (9%)	30,36,39	1.58	7 (23%)
68	OMG	S2	509	68	23,26,27	0.54	0	32,38,41	0.56	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	PSU	L5	4532	3	18,21,22	1.09	2 (11%)	21,30,33	1.92	4 (19%)
3	PSU	L5	2839	3	18,21,22	1.12	2 (11%)	21,30,33	1.97	5 (23%)
68	OMU	S2	428	68	19,22,23	3.33	7 (36%)	25,31,34	1.84	5 (20%)
3	OMU	L5	4498	3	19,22,23	3.16	7 (36%)	25,31,34	1.91	5 (20%)
3	A2M	L5	1534	3,86	22,25,26	1.29	3 (13%)	30,36,39	1.53	8 (26%)
68	A2M	S2	468	68	22,25,26	1.28	1 (4%)	30,36,39	1.62	8 (26%)
68	PSU	S2	1081	68	18,21,22	1.07	2 (11%)	21,30,33	2.02	6 (28%)
68	4AC	S2	1337	68	21,24,25	0.39	0	28,34,37	0.54	0
68	A2M	S2	668	68,86	22,25,26	1.38	2 (9%)	30,36,39	1.63	9 (30%)
3	PSU	L5	3844	3	18,21,22	1.09	2 (11%)	21,30,33	1.90	4 (19%)
3	PSU	L5	5001	3	18,21,22	1.13	2 (11%)	21,30,33	2.08	5 (23%)
3	PSU	L5	4500	3	18,21,22	1.05	2 (11%)	21,30,33	2.01	6 (28%)
68	PSU	S2	801	68	18,21,22	1.15	1 (5%)	21,30,33	1.79	4 (19%)
3	OMG	L5	3792	3	23,26,27	0.59	0	32,38,41	0.53	0
68	A2M	S2	484	68	22,25,26	1.19	1 (4%)	30,36,39	1.51	8 (26%)
68	6MZ	S2	1832	68,86	22,25,26	3.04	5 (22%)	29,36,39	2.27	10 (34%)
68	PSU	S2	1232	68	18,21,22	1.09	1 (5%)	21,30,33	2.02	6 (28%)
68	PSU	S2	1056	68	18,21,22	1.06	1 (5%)	21,30,33	1.89	4 (19%)
3	UR3	L5	4530	3	19,22,23	2.68	7 (36%)	26,32,35	1.55	3 (11%)
3	OMG	L5	4392	3	23,26,27	0.61	0	32,38,41	0.49	0
3	OMC	L5	3808	3,86	19,22,23	0.68	0	25,31,34	0.93	2 (8%)
68	PSU	S2	863	68	18,21,22	1.09	1 (5%)	21,30,33	1.94	5 (23%)
3	PSU	L5	4689	3	18,21,22	1.09	2 (11%)	21,30,33	1.92	4 (19%)
68	PSU	S2	1046	68	18,21,22	1.06	1 (5%)	21,30,33	1.88	4 (19%)
3	OMC	L5	2422	3,86	19,22,23	0.63	0	25,31,34	0.67	0
3	OMC	L5	2861	3	19,22,23	0.62	0	25,31,34	0.79	1 (4%)
3	5MC	L5	3782	3,86	19,22,23	0.74	0	26,32,35	0.86	1 (3%)
68	A2M	S2	166	68	22,25,26	1.29	1 (4%)	30,36,39	1.61	7 (23%)
68	OMU	S2	121	68	19,22,23	3.27	7 (36%)	25,31,34	1.73	4 (16%)
3	OMC	L5	2365	3,86	19,22,23	0.65	0	25,31,34	0.53	0
68	OMU	S2	1442	68	19,22,23	3.33	7 (36%)	25,31,34	1.81	4 (16%)
3	PSU	L5	4673	3	18,21,22	1.07	2 (11%)	21,30,33	1.90	4 (19%)
68	OMU	S2	799	68	19,22,23	3.40	7 (36%)	25,31,34	1.84	5 (20%)
5	OMG	L8	75	5	23,26,27	0.53	0	32,38,41	0.48	0
68	PSU	S2	681	68	18,21,22	1.02	2 (11%)	21,30,33	1.92	4 (19%)
68	A2M	S2	576	68	22,25,26	1.23	1 (4%)	30,36,39	1.53	4 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
68	PSU	S2	1174	68	18,21,22	1.06	2 (11%)	21,30,33	1.87	4 (19%)
3	OMU	L5	4620	3	19,22,23	3.17	7 (36%)	25,31,34	1.84	5 (20%)
68	PSU	S2	966	68,86	18,21,22	1.12	1 (5%)	21,30,33	1.99	6 (28%)
3	A2M	L5	2363	3,86	22,25,26	1.25	3 (13%)	30,36,39	1.48	8 (26%)
68	OMG	S2	683	68	23,26,27	0.57	0	32,38,41	0.54	0
68	A2M	S2	99	68,86	22,25,26	1.25	1 (4%)	30,36,39	1.54	7 (23%)
68	OMU	S2	627	68	19,22,23	3.28	7 (36%)	25,31,34	1.88	5 (20%)
3	PSU	L5	4576	3	18,21,22	1.06	1 (5%)	21,30,33	1.95	4 (19%)
3	OMC	L5	2824	3	19,22,23	0.64	0	25,31,34	0.65	0
3	OMC	L5	3869	3	19,22,23	0.64	0	25,31,34	0.69	0
68	A2M	S2	27	68	22,25,26	1.23	2 (9%)	30,36,39	1.55	8 (26%)
3	OMC	L5	2351	3,86	19,22,23	0.67	0	25,31,34	0.84	1 (4%)
3	PSU	L5	3884	3	18,21,22	1.12	2 (11%)	21,30,33	2.00	5 (23%)
3	PSU	L5	1744	3,86	18,21,22	1.11	2 (11%)	21,30,33	1.91	4 (19%)
3	OMG	L5	2364	3,86	23,26,27	0.61	0	32,38,41	0.43	0
3	OMU	L5	2837	3	19,22,23	3.20	7 (36%)	25,31,34	1.93	5 (20%)
68	OMC	S2	1272	68	19,22,23	0.57	0	25,31,34	0.73	0
3	A2M	L5	3867	3	22,25,26	1.31	2 (9%)	30,36,39	1.61	8 (26%)
68	PSU	S2	105	68	18,21,22	1.08	1 (5%)	21,30,33	2.00	5 (23%)
68	OMU	S2	1288	68	19,22,23	3.32	7 (36%)	25,31,34	1.65	4 (16%)
68	OMG	S2	1328	68	23,26,27	0.55	0	32,38,41	0.43	0
3	PSU	L5	5010	3	18,21,22	1.12	2 (11%)	21,30,33	1.92	4 (19%)
3	PSU	L5	4493	3	18,21,22	1.09	2 (11%)	21,30,33	1.99	5 (23%)
3	PSU	L5	1677	3	18,21,22	1.07	3 (16%)	21,30,33	1.98	6 (28%)
3	PSU	L5	4431	3	18,21,22	1.08	2 (11%)	21,30,33	1.98	4 (19%)
3	UY1	L5	3818	3	19,22,23	4.73	9 (47%)	21,31,34	1.94	5 (23%)
3	PSU	L5	4521	3,86	18,21,22	1.06	2 (11%)	21,30,33	1.99	5 (23%)
3	PSU	L5	4361	3	18,21,22	1.05	1 (5%)	21,30,33	1.87	4 (19%)
68	A2M	S2	1383	68	22,25,26	1.22	1 (4%)	30,36,39	1.70	7 (23%)
3	PSU	L5	4973	3	18,21,22	1.06	2 (11%)	21,30,33	2.00	5 (23%)
68	PSU	S2	649	68	18,21,22	1.16	2 (11%)	21,30,33	1.88	5 (23%)
68	OMG	S2	1490	68	23,26,27	0.52	0	32,38,41	0.49	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
3	OMG	L5	3627	3	-	0/9/27/28	0/3/3/3
68	OMU	S2	116	68	-	1/9/27/28	0/2/2/2
68	PSU	S2	1177	68	-	0/7/25/26	0/2/2/2
3	PSU	L5	4403	3	-	0/7/25/26	0/2/2/2
68	OMC	S2	1703	68	-	1/9/27/28	0/2/2/2
3	OMC	L5	3841	3	-	1/9/27/28	0/2/2/2
3	PSU	L5	1860	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4293	3	-	0/7/25/26	0/2/2/2
68	PSU	S2	109	68	-	0/7/25/26	0/2/2/2
68	PSU	S2	93	68	-	0/7/25/26	0/2/2/2
3	PSU	L5	1862	3	-	0/7/25/26	0/2/2/2
3	OMG	L5	4637	3	-	3/9/27/28	0/3/3/3
3	PSU	L5	4312	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	3637	3	-	0/7/25/26	0/2/2/2
3	OMG	L5	4618	3	-	2/9/27/28	0/3/3/3
3	A2M	L5	2401	3	-	3/9/27/28	0/3/3/3
3	OMU	L5	3925	3	-	1/9/27/28	0/2/2/2
3	A2M	L5	3785	3,86	-	2/9/27/28	0/3/3/3
3	OMG	L5	4494	3	-	0/9/27/28	0/3/3/3
3	A2M	L5	2787	3	-	5/9/27/28	0/3/3/3
3	PSU	L5	4299	3	-	0/7/25/26	0/2/2/2
3	A2M	L5	1326	3	-	4/9/27/28	0/3/3/3
3	OMU	L5	4306	3	-	0/9/27/28	0/2/2/2
3	OMC	L5	2804	3	-	0/9/27/28	0/2/2/2
3	PSU	L5	4471	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	1792	3	-	0/7/25/26	0/2/2/2
68	MA6	S2	1850	68	-	0/11/29/30	0/3/3/3
3	PSU	L5	1683	3	-	0/7/25/26	0/2/2/2
3	OMG	L5	4196	3	-	1/9/27/28	0/3/3/3
3	5MC	L5	4447	3	-	4/7/25/26	0/2/2/2
68	OMC	S2	1391	68	-	0/9/27/28	0/2/2/2
68	OMG	S2	867	68	-	2/9/27/28	0/3/3/3
3	PSU	L5	2632	3	-	2/7/25/26	0/2/2/2
3	PSU	L5	1582	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4296	3	-	0/7/25/26	0/2/2/2
3	OMG	L5	3899	3	-	4/9/27/28	0/3/3/3
3	PSU	L5	4628	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4552	3	-	0/7/25/26	0/2/2/2
68	PSU	S2	866	68	-	0/7/25/26	0/2/2/2
68	OMU	S2	172	68	-	0/9/27/28	0/2/2/2
3	6MZ	L5	4220	3	-	2/9/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	A2M	L5	3718	3	-	0/9/27/28	0/3/3/3
68	OMG	S2	436	68	-	0/9/27/28	0/3/3/3
68	PSU	S2	1244	68	-	1/7/25/26	0/2/2/2
3	OMG	L5	4228	3	-	0/9/27/28	0/3/3/3
68	OMU	S2	354	68	-	1/9/27/28	0/2/2/2
3	OMG	L5	4499	3	-	0/9/27/28	0/3/3/3
3	OMC	L5	3887	3	-	1/9/27/28	0/2/2/2
3	OMC	L5	4536	3	-	0/9/27/28	0/2/2/2
3	OMG	L5	4370	3	-	0/9/27/28	0/3/3/3
68	MA6	S2	1851	68	-	1/11/29/30	0/3/3/3
68	OMC	S2	462	68	-	1/9/27/28	0/2/2/2
5	PSU	L8	55	5	-	0/7/25/26	0/2/2/2
68	PSU	S2	651	68	-	0/7/25/26	0/2/2/2
3	A2M	L5	400	3	-	1/9/27/28	0/3/3/3
68	PSU	S2	406	68	-	0/7/25/26	0/2/2/2
3	PSU	L5	1782	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4442	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4353	3	-	0/7/25/26	0/2/2/2
68	PSU	S2	1367	68	-	0/7/25/26	0/2/2/2
3	A2M	L5	4590	3	-	4/9/27/28	0/3/3/3
3	OMG	L5	1316	3	-	1/9/27/28	0/3/3/3
68	4AC	S2	1842	68	-	0/11/29/30	0/2/2/2
3	PSU	L5	4457	3	-	0/7/25/26	0/2/2/2
3	A2M	L5	1323	3	-	1/9/27/28	0/3/3/3
3	OMG	L5	4623	3	-	2/9/27/28	0/3/3/3
3	OMG	L5	1522	3	-	0/9/27/28	0/3/3/3
3	A2M	L5	4523	3,86	-	0/9/27/28	0/3/3/3
68	PSU	S2	1045	68	-	2/7/25/26	0/2/2/2
3	OMG	L5	2424	3	-	0/9/27/28	0/3/3/3
68	A2M	S2	159	68	-	1/9/27/28	0/3/3/3
68	PSU	S2	686	68	-	0/7/25/26	0/2/2/2
3	OMG	L5	2876	3	-	0/9/27/28	0/3/3/3
68	PSU	S2	814	68	-	0/7/25/26	0/2/2/2
3	PSU	L5	1781	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	3695	3	-	0/7/25/26	0/2/2/2
68	G7M	S2	1639	68	-	0/7/25/26	0/3/3/3
68	PSU	S2	1004	68	-	0/7/25/26	0/2/2/2
3	OMG	L5	3744	3	-	1/9/27/28	0/3/3/3
3	PSU	L5	4579	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	3822	3	-	0/7/25/26	0/2/2/2
68	OMU	S2	1326	68	-	0/9/27/28	0/2/2/2
3	PSU	L5	3853	3,86	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	PSU	L5	1536	3	-	2/7/25/26	0/2/2/2
3	PSU	L5	4972	3	-	0/7/25/26	0/2/2/2
3	OMC	L5	3701	3	-	6/9/27/28	0/2/2/2
3	1MA	L5	1322	3,86	-	2/7/25/26	0/3/3/3
68	OMG	S2	644	68	-	4/9/27/28	0/3/3/3
3	A2M	L5	398	3	-	2/9/27/28	0/3/3/3
3	PSU	L5	3920	3,86	-	0/7/25/26	0/2/2/2
68	OMC	S2	517	68	-	0/9/27/28	0/2/2/2
3	OMG	L5	1625	3	-	2/9/27/28	0/3/3/3
5	PSU	L8	69	5	-	0/7/25/26	0/2/2/2
3	OMU	L5	4227	3	-	0/9/27/28	0/2/2/2
3	PSU	L5	4636	3	-	3/7/25/26	0/2/2/2
3	A2M	L5	1524	3	-	2/9/27/28	0/3/3/3
68	OMG	S2	601	68	-	1/9/27/28	0/3/3/3
3	A2M	L5	3830	3	-	3/9/27/28	0/3/3/3
3	A2M	L5	2815	3	-	2/9/27/28	0/3/3/3
3	PSU	L5	3639	3	-	0/7/25/26	0/2/2/2
3	A2M	L5	3825	3	-	1/9/27/28	0/3/3/3
3	OMC	L5	1340	3	-	1/9/27/28	0/2/2/2
68	B8N	S2	1248	68	-	4/16/34/35	0/2/2/2
68	A2M	S2	1031	68	-	1/9/27/28	0/3/3/3
3	PSU	L5	3851	3	-	0/7/25/26	0/2/2/2
68	OMC	S2	174	68	-	1/9/27/28	0/2/2/2
3	OMC	L5	4456	3	-	0/9/27/28	0/2/2/2
3	A2M	L5	4571	3	-	0/9/27/28	0/3/3/3
3	A2M	L5	1871	3,86	-	0/9/27/28	0/3/3/3
68	OMG	S2	509	68	-	0/9/27/28	0/3/3/3
3	PSU	L5	4532	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	2839	3	-	0/7/25/26	0/2/2/2
68	OMU	S2	428	68	-	6/9/27/28	0/2/2/2
3	OMU	L5	4498	3	-	0/9/27/28	0/2/2/2
3	A2M	L5	1534	3,86	-	2/9/27/28	0/3/3/3
68	A2M	S2	468	68	-	1/9/27/28	0/3/3/3
68	PSU	S2	1081	68	-	1/7/25/26	0/2/2/2
68	4AC	S2	1337	68	-	0/11/29/30	0/2/2/2
68	A2M	S2	668	68,86	-	3/9/27/28	0/3/3/3
3	PSU	L5	3844	3	-	1/7/25/26	0/2/2/2
3	PSU	L5	5001	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4500	3	-	3/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
68	PSU	S2	801	68	-	2/7/25/26	0/2/2/2
3	OMG	L5	3792	3	-	2/9/27/28	0/3/3/3
68	A2M	S2	484	68	-	0/9/27/28	0/3/3/3
68	6MZ	S2	1832	68,86	-	2/9/27/28	0/3/3/3
68	PSU	S2	1232	68	-	0/7/25/26	0/2/2/2
68	PSU	S2	1056	68	-	0/7/25/26	0/2/2/2
3	UR3	L5	4530	3	-	0/7/25/26	0/2/2/2
3	OMG	L5	4392	3	-	1/9/27/28	0/3/3/3
3	OMC	L5	3808	3,86	-	0/9/27/28	0/2/2/2
68	PSU	S2	863	68	-	0/7/25/26	0/2/2/2
3	PSU	L5	4689	3	-	0/7/25/26	0/2/2/2
68	PSU	S2	1046	68	-	1/7/25/26	0/2/2/2
3	OMC	L5	2422	3,86	-	3/9/27/28	0/2/2/2
3	OMC	L5	2861	3	-	1/9/27/28	0/2/2/2
3	5MC	L5	3782	3,86	-	0/7/25/26	0/2/2/2
68	A2M	S2	166	68	-	3/9/27/28	0/3/3/3
68	OMU	S2	121	68	-	0/9/27/28	0/2/2/2
3	OMC	L5	2365	3,86	-	0/9/27/28	0/2/2/2
68	OMU	S2	1442	68	-	2/9/27/28	0/2/2/2
3	PSU	L5	4673	3	-	0/7/25/26	0/2/2/2
68	OMU	S2	799	68	-	2/9/27/28	0/2/2/2
5	OMG	L8	75	5	-	2/9/27/28	0/3/3/3
68	PSU	S2	681	68	-	0/7/25/26	0/2/2/2
68	A2M	S2	576	68	-	3/9/27/28	0/3/3/3
68	PSU	S2	1174	68	-	0/7/25/26	0/2/2/2
3	OMU	L5	4620	3	-	0/9/27/28	0/2/2/2
68	PSU	S2	966	68,86	-	0/7/25/26	0/2/2/2
3	A2M	L5	2363	3,86	-	0/9/27/28	0/3/3/3
68	OMG	S2	683	68	-	1/9/27/28	0/3/3/3
68	A2M	S2	99	68,86	-	2/9/27/28	0/3/3/3
68	OMU	S2	627	68	-	2/9/27/28	0/2/2/2
3	PSU	L5	4576	3	-	0/7/25/26	0/2/2/2
3	OMC	L5	2824	3	-	0/9/27/28	0/2/2/2
3	OMC	L5	3869	3	-	1/9/27/28	0/2/2/2
68	A2M	S2	27	68	-	1/9/27/28	0/3/3/3
3	OMC	L5	2351	3,86	-	1/9/27/28	0/2/2/2
3	PSU	L5	3884	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	1744	3,86	-	0/7/25/26	0/2/2/2
3	OMG	L5	2364	3,86	-	2/9/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	OMU	L5	2837	3	-	0/9/27/28	0/2/2/2
68	OMC	S2	1272	68	-	0/9/27/28	0/2/2/2
3	A2M	L5	3867	3	-	2/9/27/28	0/3/3/3
68	PSU	S2	105	68	-	0/7/25/26	0/2/2/2
68	OMU	S2	1288	68	-	0/9/27/28	0/2/2/2
68	OMG	S2	1328	68	-	1/9/27/28	0/3/3/3
3	PSU	L5	5010	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4493	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	1677	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4431	3	-	0/7/25/26	0/2/2/2
3	UY1	L5	3818	3	-	3/9/27/28	0/2/2/2
3	PSU	L5	4521	3,86	-	0/7/25/26	0/2/2/2
3	PSU	L5	4361	3	-	0/7/25/26	0/2/2/2
68	A2M	S2	1383	68	-	3/9/27/28	0/3/3/3
3	PSU	L5	4973	3	-	0/7/25/26	0/2/2/2
68	PSU	S2	649	68	-	0/7/25/26	0/2/2/2
68	OMG	S2	1490	68	-	1/9/27/28	0/3/3/3

The worst 5 of 338 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
68	S2	1832	6MZ	C6-N6	12.55	1.48	1.34
3	L5	3818	UY1	C6-C5	12.21	1.48	1.35
3	L5	4220	6MZ	C6-N6	11.87	1.47	1.34
3	L5	3818	UY1	C2-N1	11.33	1.51	1.36
68	S2	799	OMU	C2-N1	8.61	1.51	1.38

The worst 5 of 703 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
68	S2	1850	MA6	N1-C6-N6	-11.85	102.42	116.86
68	S2	1851	MA6	N1-C6-N6	-11.74	102.55	116.86
68	S2	1851	MA6	C5-C6-N6	7.81	137.70	125.33
68	S2	1850	MA6	C5-C6-N6	7.79	137.66	125.33
68	S2	1639	G7M	C1'-N9-C8	-7.16	102.57	126.74

There are no chirality outliers.

5 of 154 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	L8	75	OMG	C1'-C2'-O2'-CM2

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Mol	Chain	Res	Type	Atoms
3	L5	398	A2M	C1'-C2'-O2'-CM'
3	L5	400	A2M	C1'-C2'-O2'-CM'
3	L5	1316	OMG	C1'-C2'-O2'-CM2
3	L5	1323	A2M	C1'-C2'-O2'-CM'

There are no ring outliers.

80 monomers are involved in 116 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
68	S2	116	OMU	3	0
68	S2	1703	OMC	2	0
3	L5	3841	OMC	1	0
3	L5	4637	OMG	2	0
3	L5	4312	PSU	2	0
3	L5	2401	A2M	1	0
3	L5	3925	OMU	1	0
3	L5	2787	A2M	1	0
3	L5	4299	PSU	2	0
3	L5	1326	A2M	2	0
68	S2	1850	MA6	2	0
3	L5	1683	PSU	2	0
3	L5	4196	OMG	1	0
3	L5	4447	5MC	1	0
3	L5	4296	PSU	1	0
68	S2	172	OMU	1	0
3	L5	3718	A2M	2	0
68	S2	1244	PSU	1	0
68	S2	354	OMU	1	0
3	L5	4536	OMC	1	0
3	L5	4370	OMG	1	0
68	S2	462	OMC	1	0
3	L5	400	A2M	3	0
3	L5	4590	A2M	1	0
3	L5	1316	OMG	1	0
3	L5	4457	PSU	1	0
3	L5	1323	A2M	3	0
3	L5	4623	OMG	1	0
3	L5	4523	A2M	2	0
3	L5	2424	OMG	1	0
68	S2	159	A2M	2	0
68	S2	1004	PSU	3	0
3	L5	3744	OMG	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	L5	4579	PSU	2	0
68	S2	644	OMG	1	0
3	L5	398	A2M	2	0
3	L5	3920	PSU	1	0
3	L5	4227	OMU	1	0
68	S2	601	OMG	2	0
3	L5	3830	A2M	1	0
3	L5	2815	A2M	2	0
3	L5	3825	A2M	2	0
3	L5	1340	OMC	2	0
68	S2	1031	A2M	2	0
3	L5	3851	PSU	1	0
68	S2	174	OMC	1	0
3	L5	4456	OMC	1	0
3	L5	4571	A2M	1	0
3	L5	1871	A2M	1	0
68	S2	509	OMG	4	0
68	S2	428	OMU	1	0
3	L5	1534	A2M	1	0
68	S2	468	A2M	1	0
68	S2	1337	4AC	2	0
68	S2	668	A2M	1	0
3	L5	5001	PSU	1	0
3	L5	4500	PSU	1	0
68	S2	484	A2M	1	0
68	S2	1832	6MZ	1	0
68	S2	1232	PSU	1	0
3	L5	4530	UR3	1	0
3	L5	4392	OMG	2	0
3	L5	4689	PSU	1	0
3	L5	2422	OMC	1	0
3	L5	2861	OMC	1	0
68	S2	166	A2M	4	0
68	S2	121	OMU	1	0
68	S2	1442	OMU	1	0
68	S2	681	PSU	2	0
68	S2	576	A2M	1	0
68	S2	1174	PSU	2	0
3	L5	4620	OMU	1	0
3	L5	2363	A2M	1	0
68	S2	27	A2M	1	0
3	L5	3884	PSU	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
68	S2	1272	OMC	1	0
3	L5	3867	A2M	3	0
68	S2	1328	OMG	1	0
3	L5	4521	PSU	1	0
68	S2	649	PSU	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 243 ligands modelled in this entry, 224 are monoatomic - leaving 19 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	5268	-	13,13,13	0.36	0	12,12,12	0.97	0
87	SPM	L5	5294	-	13,13,13	0.34	0	12,12,12	0.87	0
87	SPM	L5	5289	-	13,13,13	0.37	0	12,12,12	0.99	0
87	SPM	L5	5264	-	13,13,13	0.37	0	12,12,12	1.01	0
88	SPD	L5	5293	-	9,9,9	0.32	0	8,8,8	0.81	0
89	3HE	L5	5295	-	21,21,21	0.54	0	23,30,30	0.82	1 (4%)
87	SPM	L5	5265	-	13,13,13	0.35	0	12,12,12	1.09	0
88	SPD	L5	5283	-	9,9,9	0.33	0	8,8,8	0.83	0
88	SPD	L5	5285	-	9,9,9	0.31	0	8,8,8	0.88	0
90	HMT	L5	5296	-	41,43,43	0.78	1 (2%)	43,66,66	0.73	1 (2%)
88	SPD	L5	5284	-	9,9,9	0.30	0	8,8,8	0.84	0
87	SPM	L5	5259	-	13,13,13	0.36	0	12,12,12	0.97	0
88	SPD	L5	5290	-	9,9,9	0.32	0	8,8,8	0.86	0
88	SPD	L5	5288	-	9,9,9	0.31	0	8,8,8	0.81	0
88	SPD	L5	5287	-	9,9,9	0.33	0	8,8,8	0.82	0
88	SPD	L5	5291	-	9,9,9	0.33	0	8,8,8	0.82	0
87	SPM	L5	5292	-	13,13,13	0.35	0	12,12,12	0.88	0
88	SPD	L5	5286	-	9,9,9	0.33	0	8,8,8	0.78	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
88	SPD	L5	5262	-	9,9,9	0.32	0	8,8,8	1.06	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	5268	-	-	3/11/11/11	-
87	SPM	L5	5294	-	-	1/11/11/11	-
87	SPM	L5	5289	-	-	5/11/11/11	-
87	SPM	L5	5264	-	-	3/11/11/11	-
88	SPD	L5	5293	-	-	4/7/7/7	-
89	3HE	L5	5295	-	-	2/8/36/36	0/2/2/2
87	SPM	L5	5265	-	-	4/11/11/11	-
88	SPD	L5	5283	-	-	0/7/7/7	-
88	SPD	L5	5285	-	-	1/7/7/7	-
90	HMT	L5	5296	-	-	0/27/74/74	0/5/5/5
88	SPD	L5	5284	-	-	2/7/7/7	-
87	SPM	L5	5259	-	-	3/11/11/11	-
88	SPD	L5	5290	-	-	0/7/7/7	-
88	SPD	L5	5288	-	-	3/7/7/7	-
88	SPD	L5	5287	-	-	1/7/7/7	-
88	SPD	L5	5291	-	-	5/7/7/7	-
87	SPM	L5	5292	-	-	5/11/11/11	-
88	SPD	L5	5286	-	-	0/7/7/7	-
88	SPD	L5	5262	-	-	2/7/7/7	-

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
90	L5	5296	HMT	C20-C19	-3.58	1.49	1.53

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
90	L5	5296	HMT	C25-C24-C20	-2.84	108.72	115.34
89	L5	5295	3HE	C9-C13-C12	-2.41	110.41	114.46

There are no chirality outliers.

5 of 44 torsion outliers are listed below:

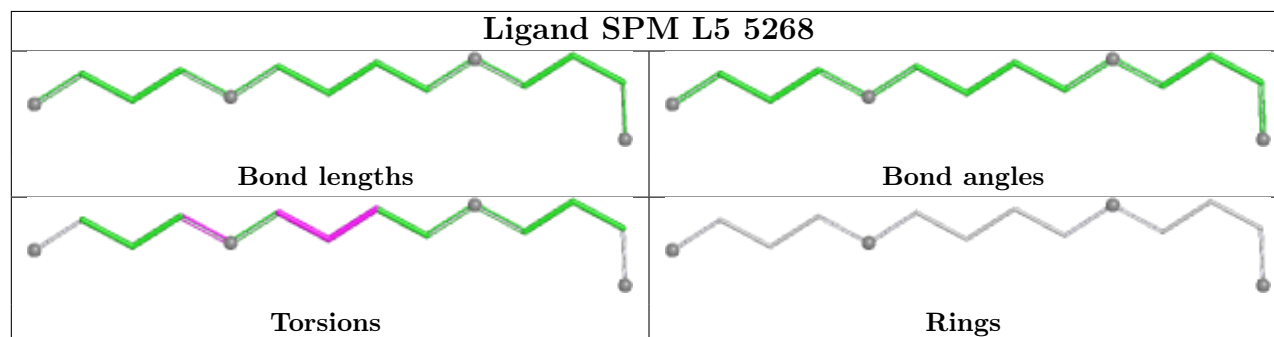
Mol	Chain	Res	Type	Atoms
89	L5	5295	3HE	C7-C8-C9-C13
87	L5	5264	SPM	N10-C11-C12-C13
87	L5	5259	SPM	N5-C6-C7-C8
87	L5	5268	SPM	C7-C8-C9-N10
88	L5	5293	SPD	C3-C4-C5-N6

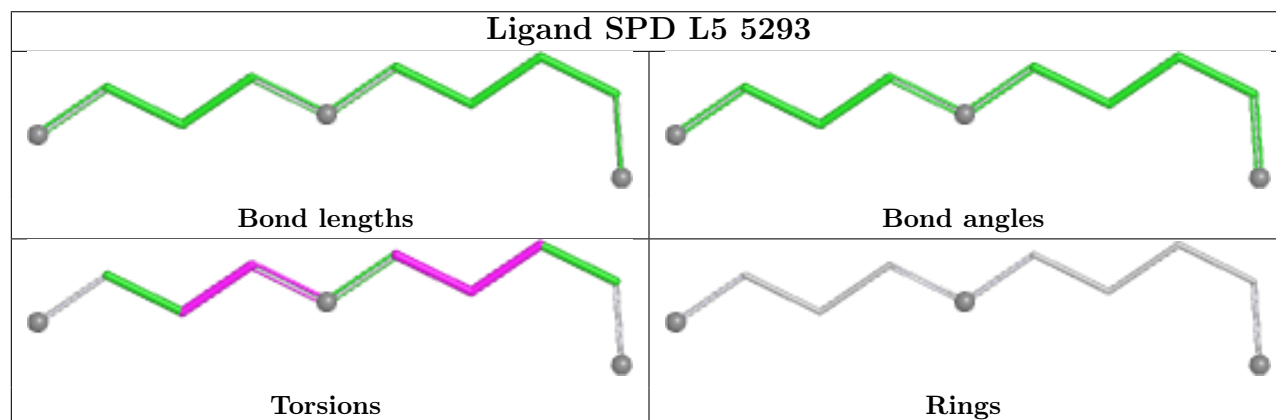
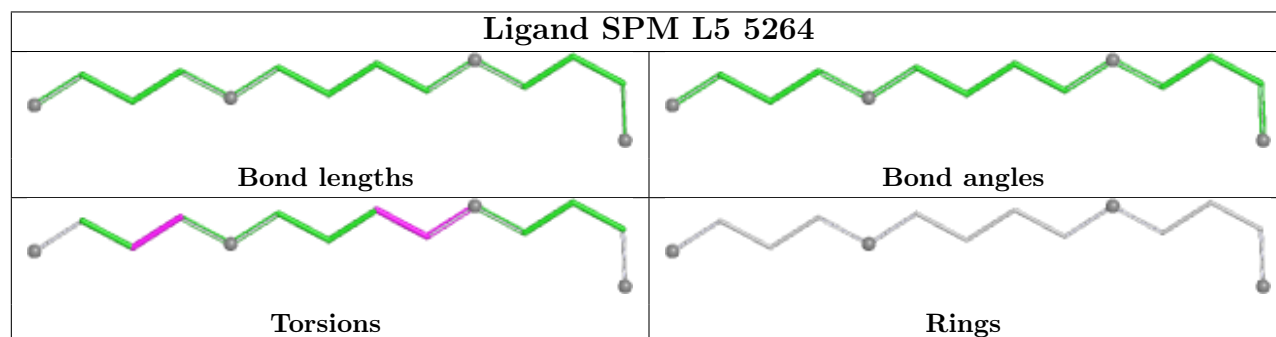
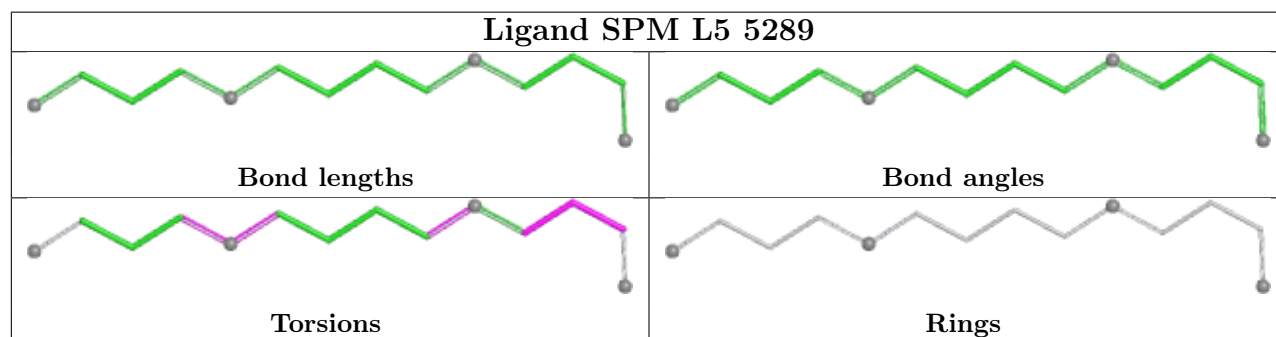
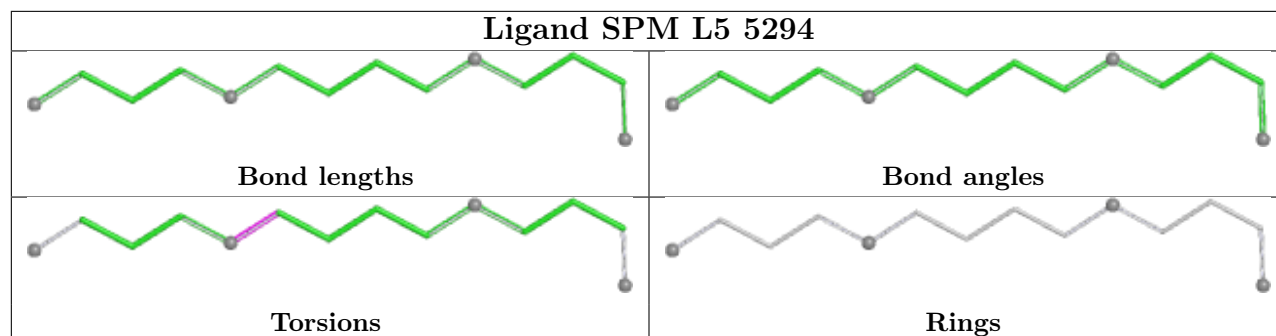
There are no ring outliers.

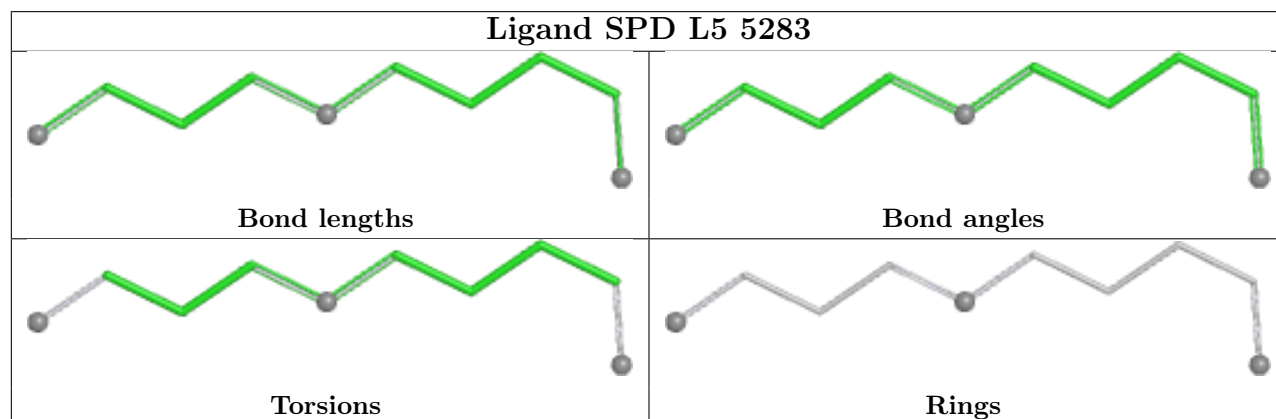
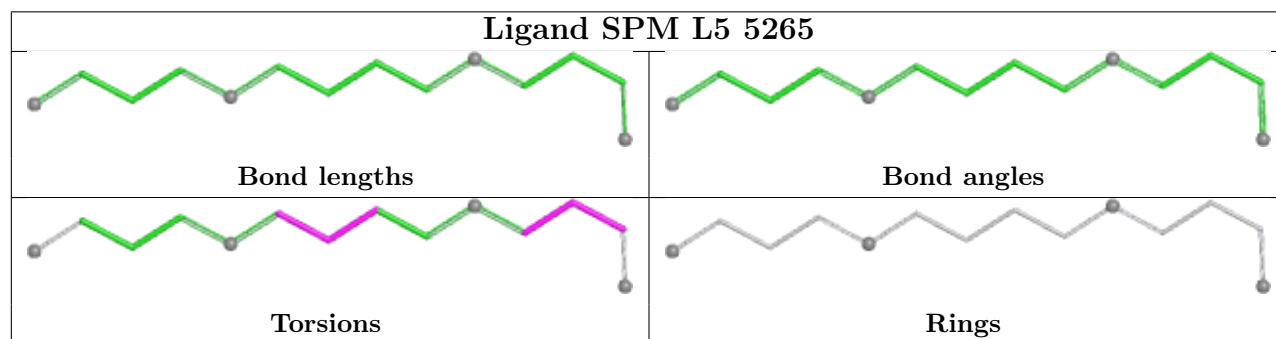
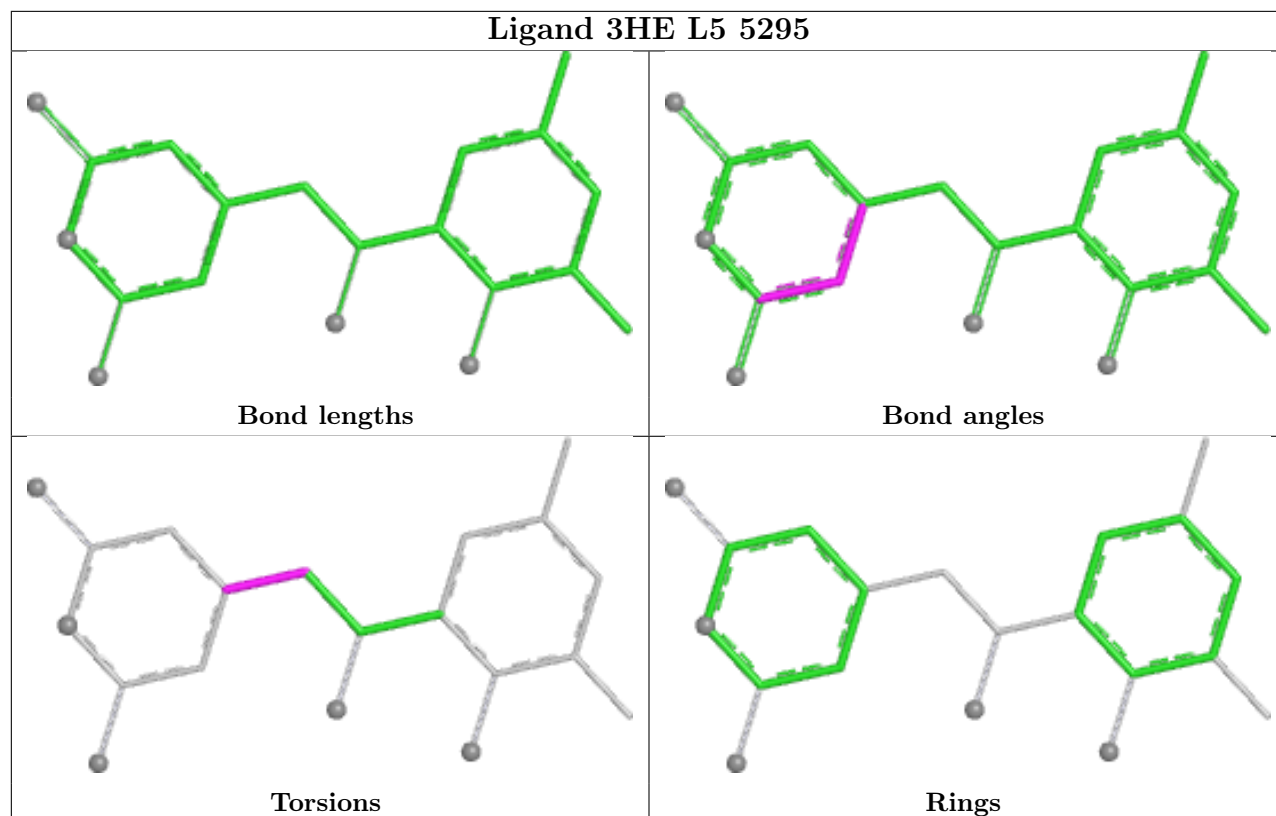
4 monomers are involved in 4 short contacts:

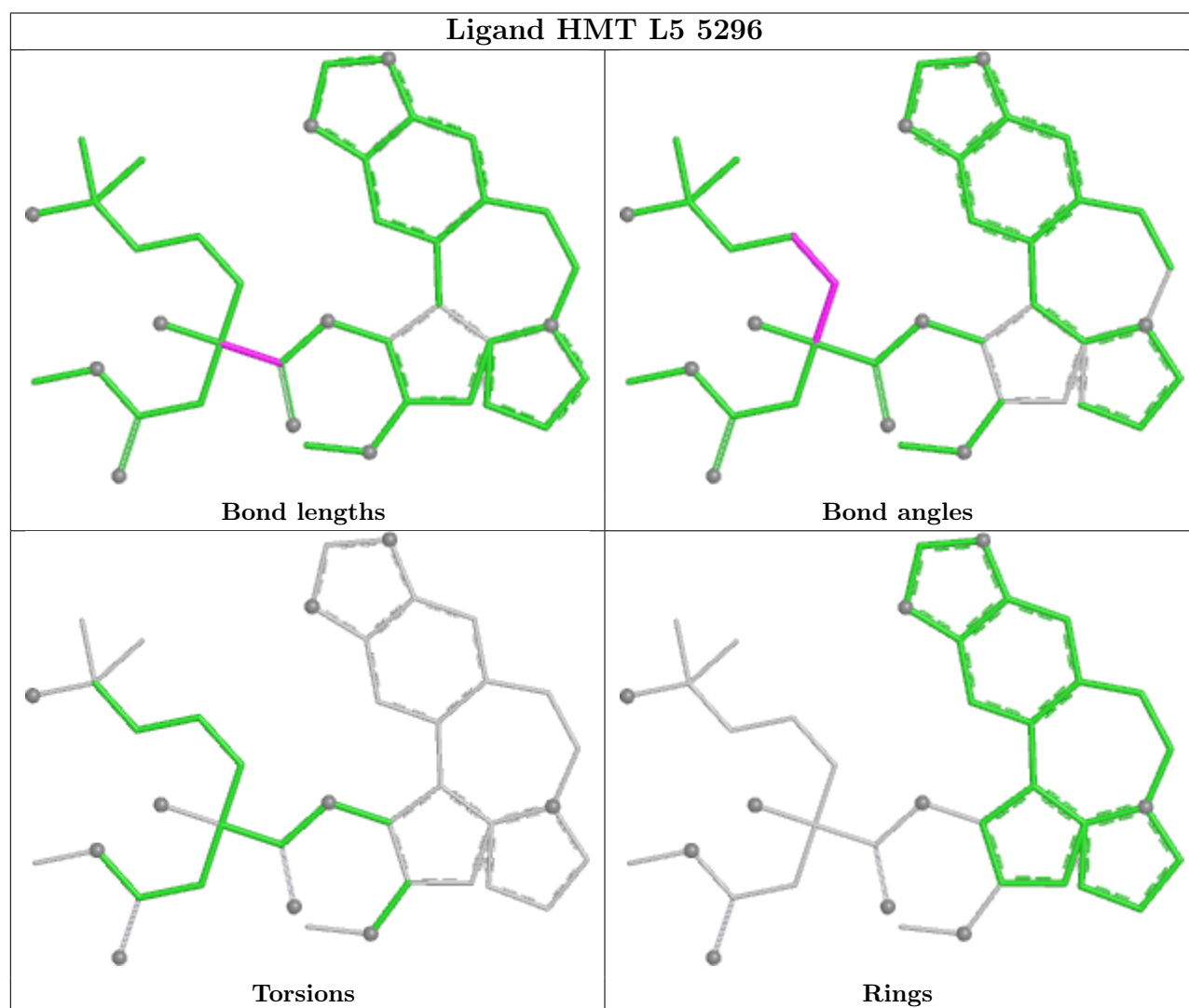
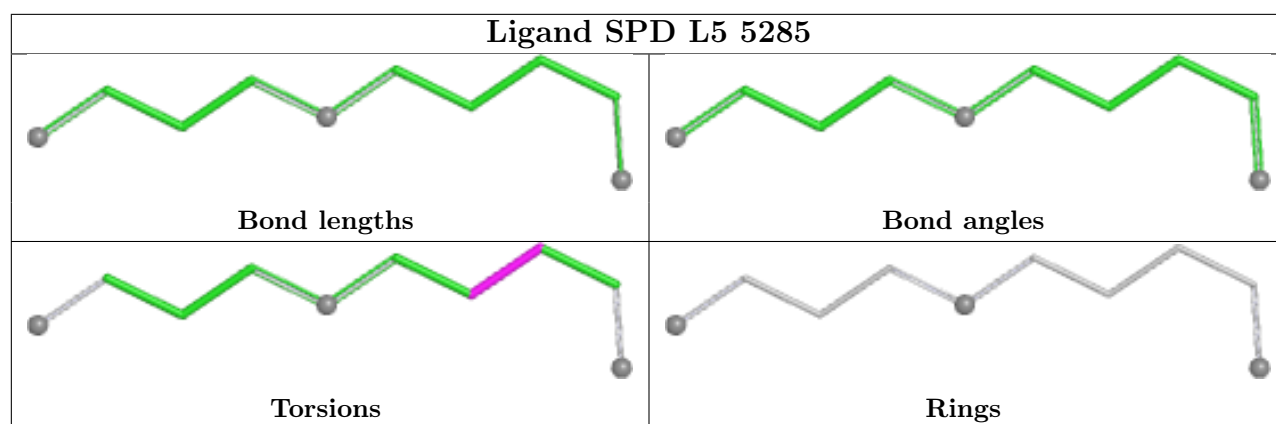
Mol	Chain	Res	Type	Clashes	Symm-Clashes
87	L5	5268	SPM	1	0
87	L5	5294	SPM	2	0
87	L5	5289	SPM	1	0
88	L5	5290	SPD	1	0

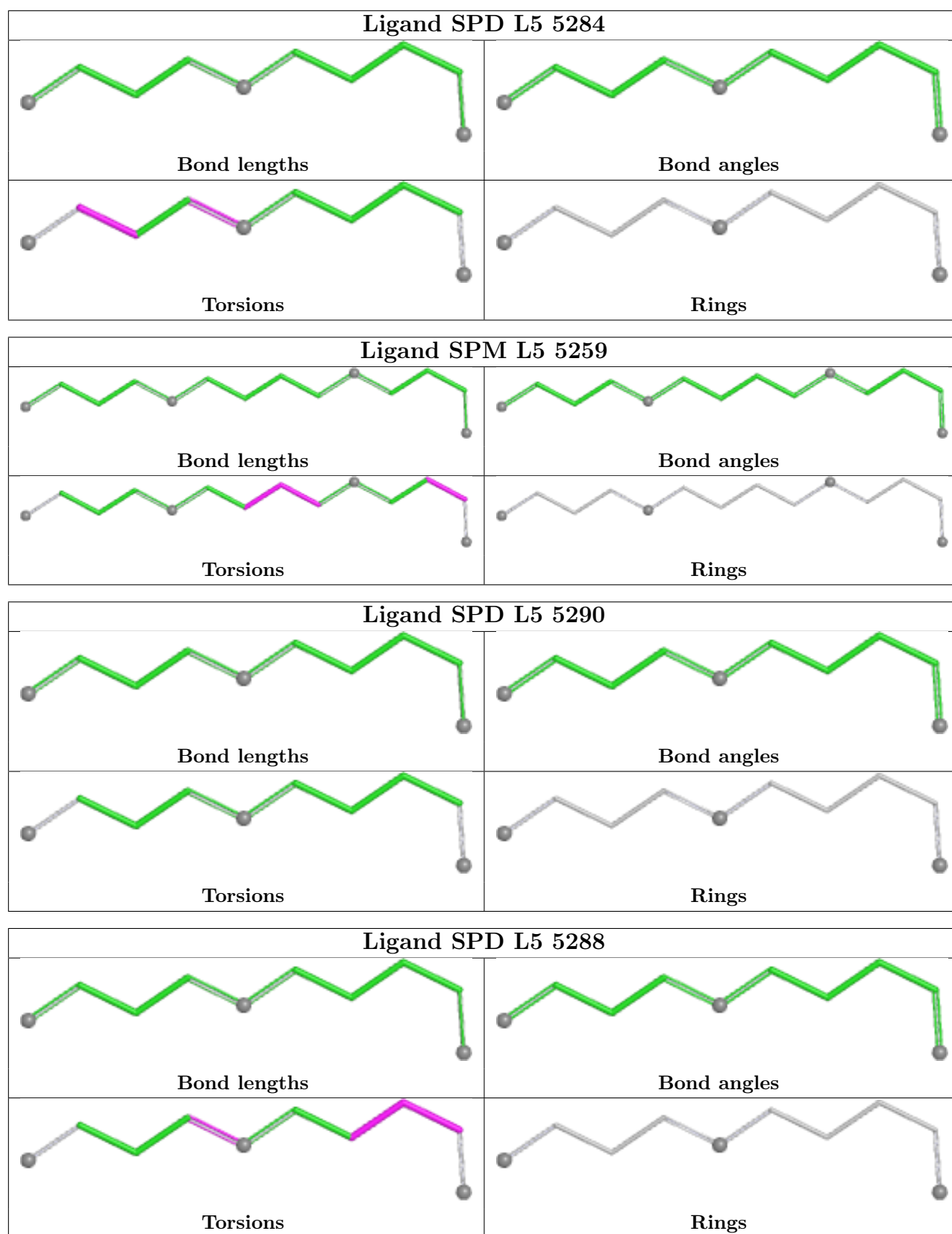
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. 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.

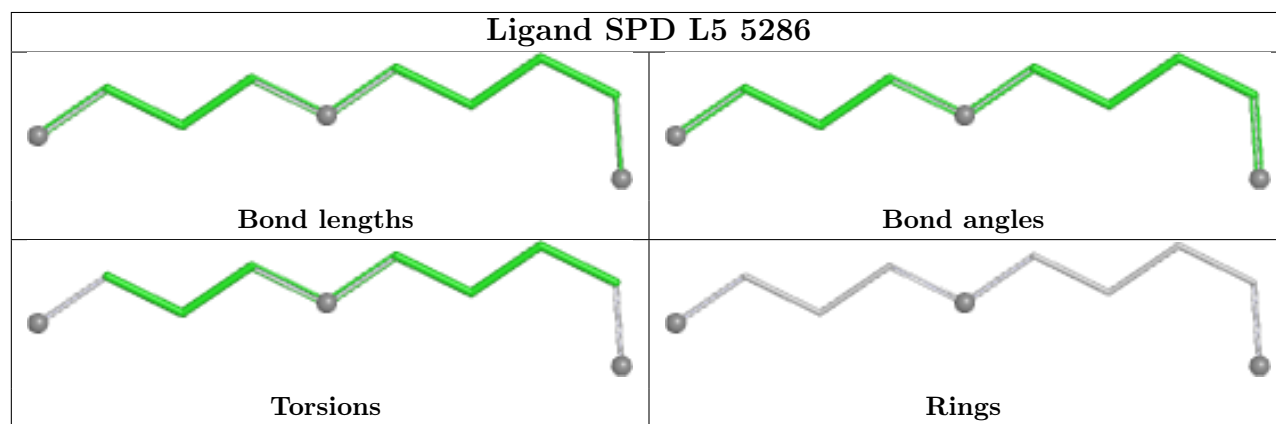
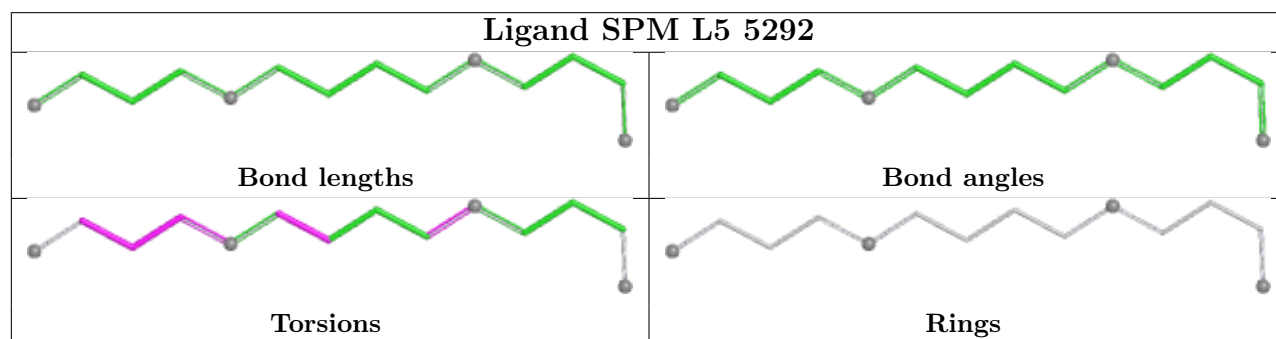
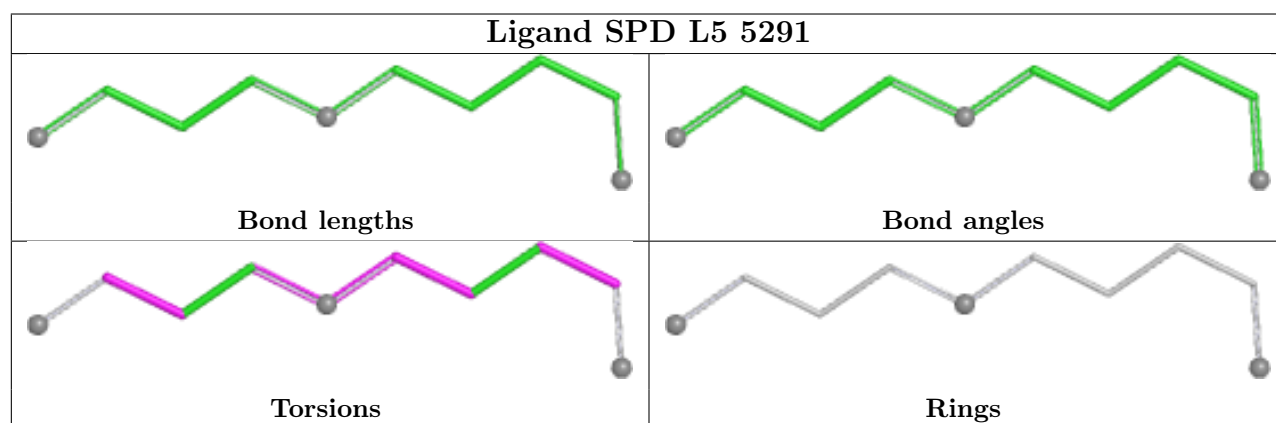
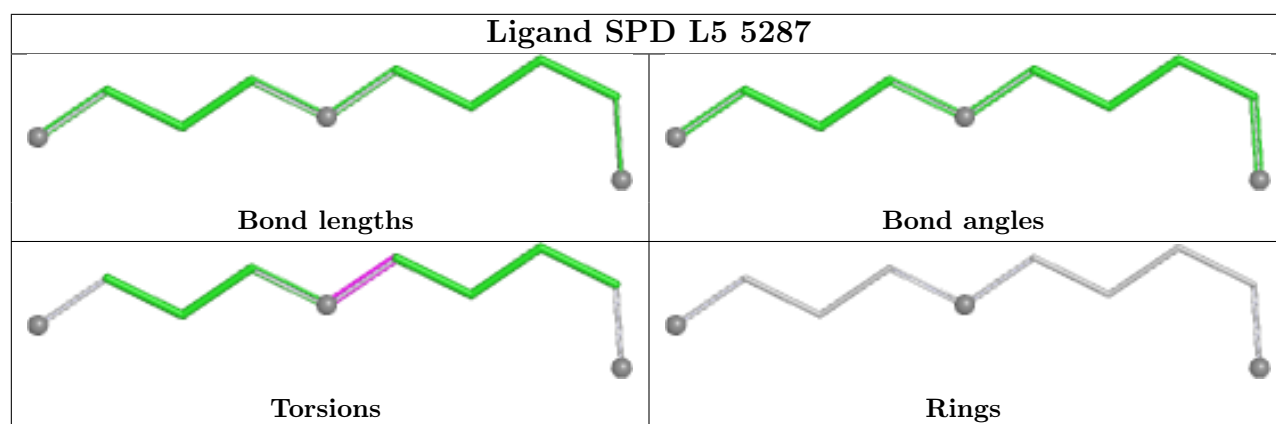


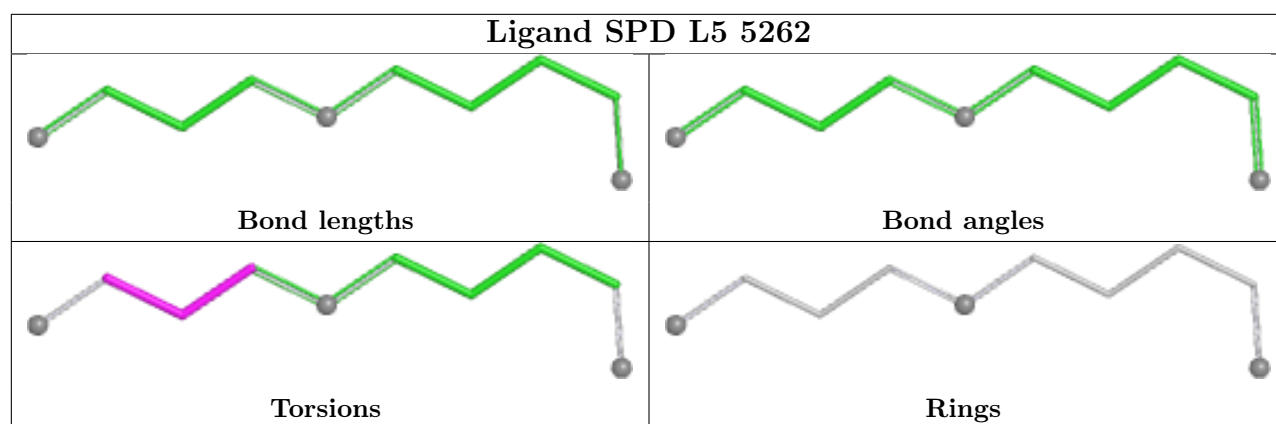












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
3	L5	10
68	S2	4
1	CD	1
84	CB	1

The worst 5 of 16 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	CD	225:LEU	C	282:THR	N	58.36
1	S2	753:C	O3'	785:C	P	28.46
1	L5	1706:A	O3'	1716:G	P	21.63
1	L5	2910:G	O3'	3584:C	P	21.13
1	L5	760:G	O3'	903:C	P	16.94

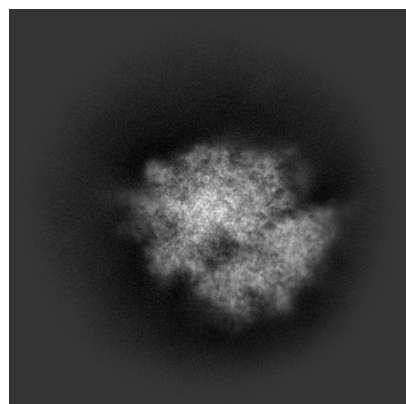
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-71690. These allow visual inspection of the internal detail of the map and identification of artifacts.

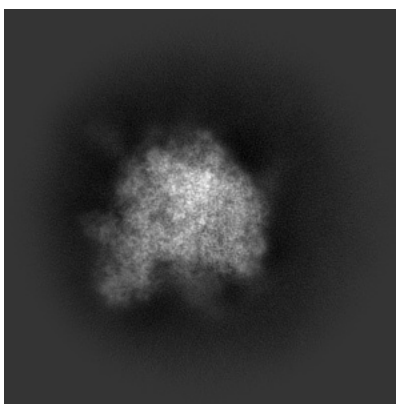
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

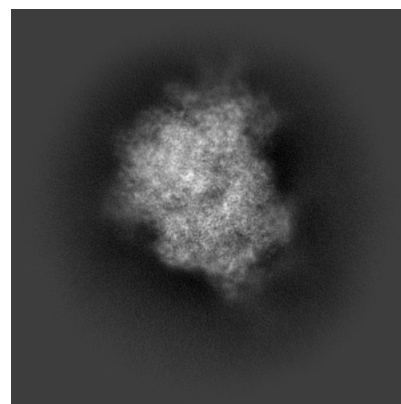
6.1.1 Primary map



X

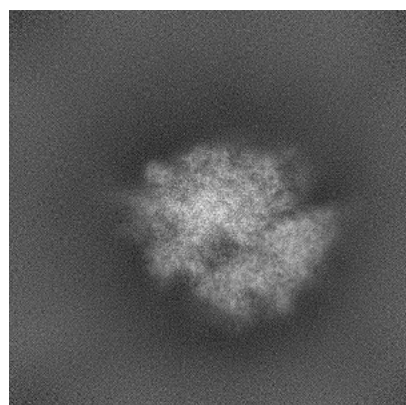


Y

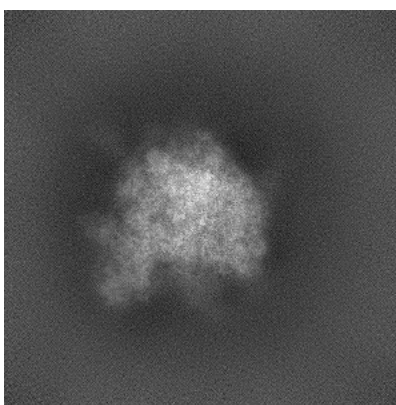


Z

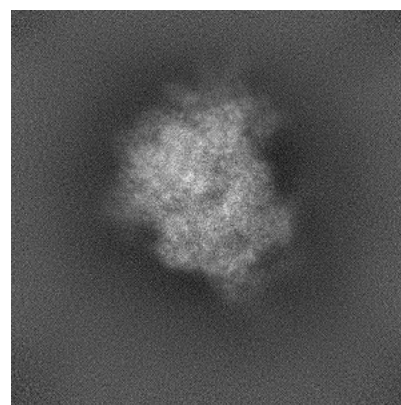
6.1.2 Raw map



X



Y

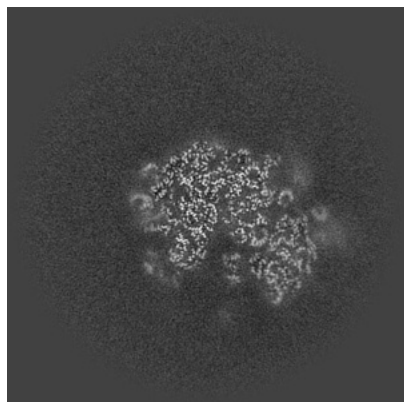


Z

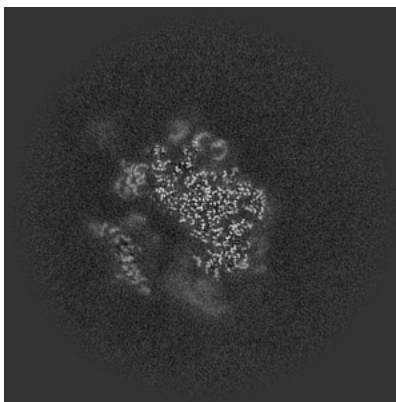
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

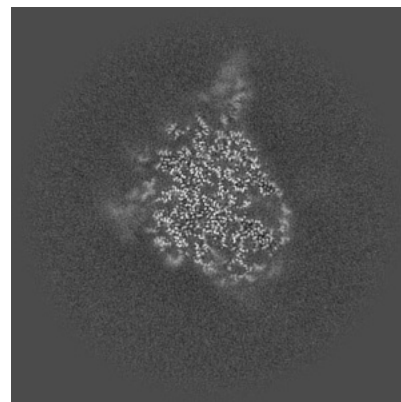
6.2.1 Primary map



X Index: 256

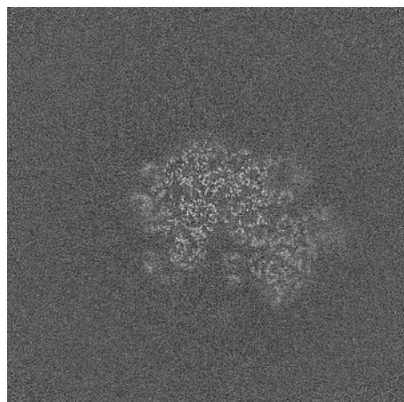


Y Index: 256

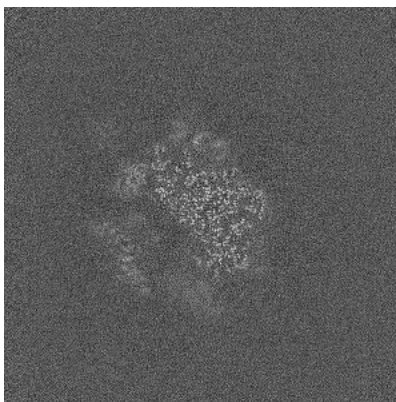


Z Index: 256

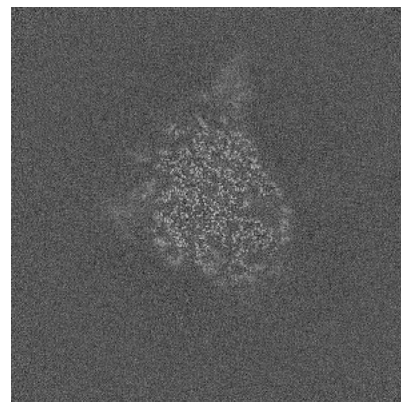
6.2.2 Raw map



X Index: 256



Y Index: 256

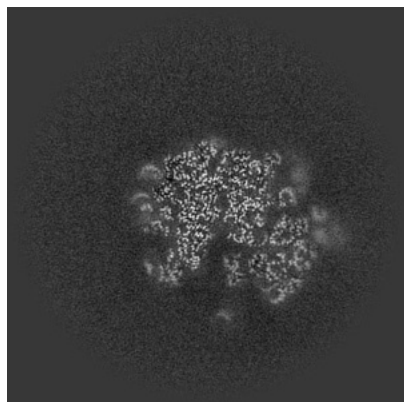


Z Index: 256

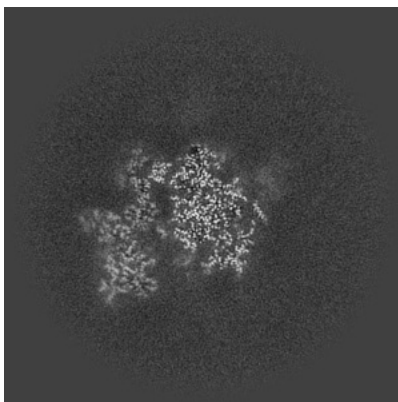
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

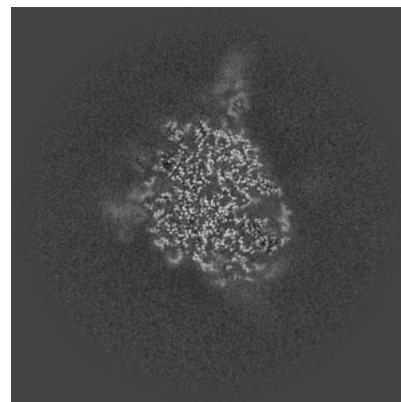
6.3.1 Primary map



X Index: 253

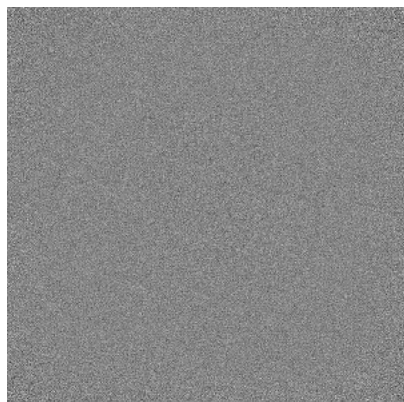


Y Index: 288

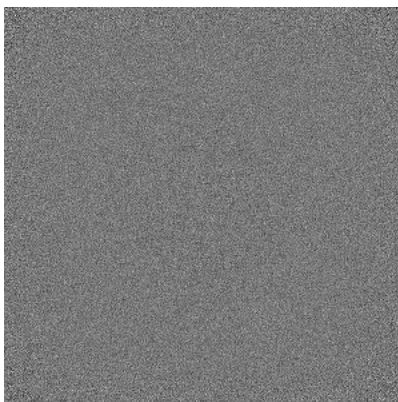


Z Index: 258

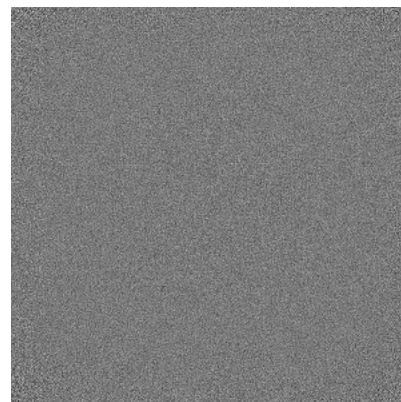
6.3.2 Raw map



X Index: 0



Y Index: 0

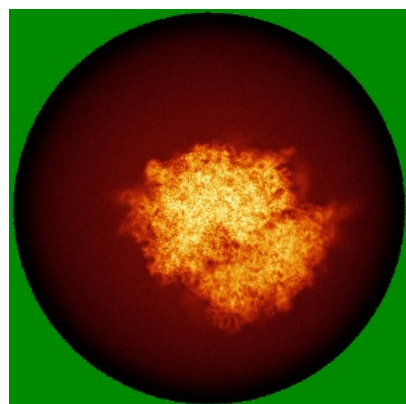


Z Index: 0

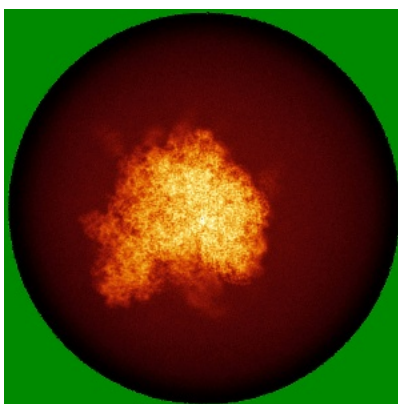
The images above show the largest variance slices of the map in three orthogonal directions.

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

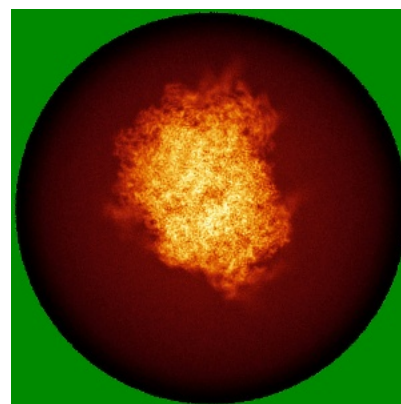
6.4.1 Primary map



X

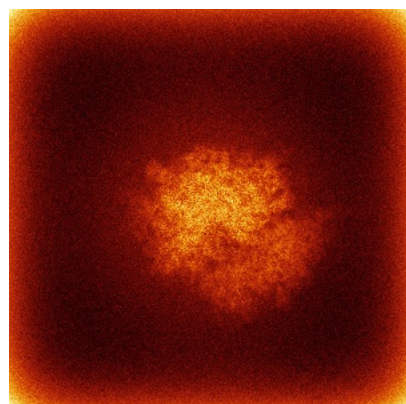


Y

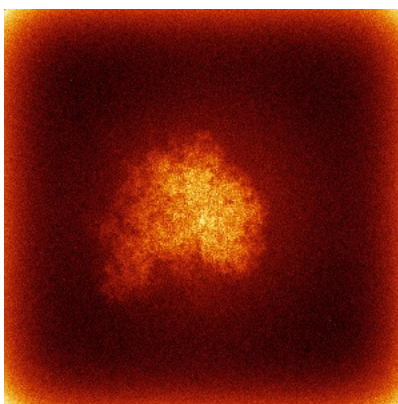


Z

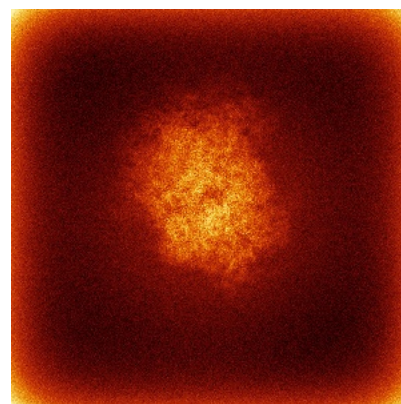
6.4.2 Raw map



X



Y

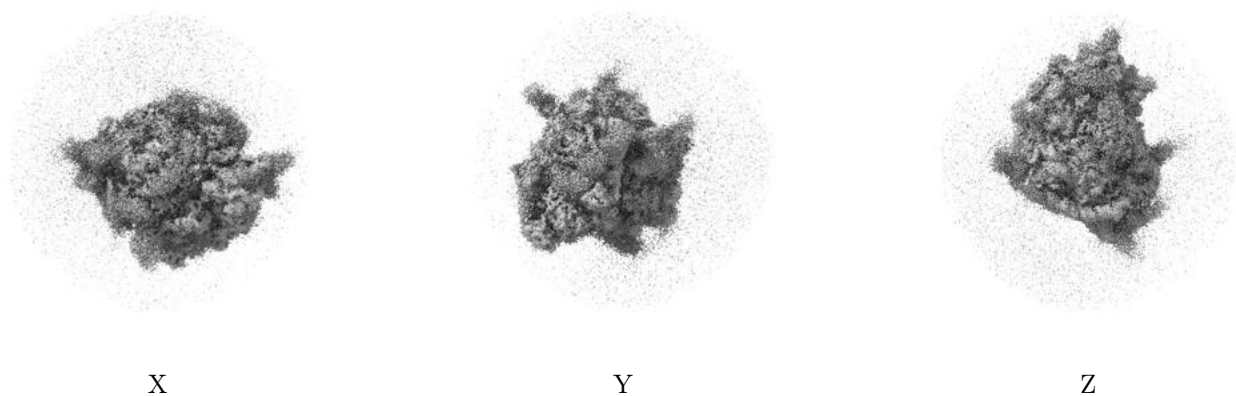


Z

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.

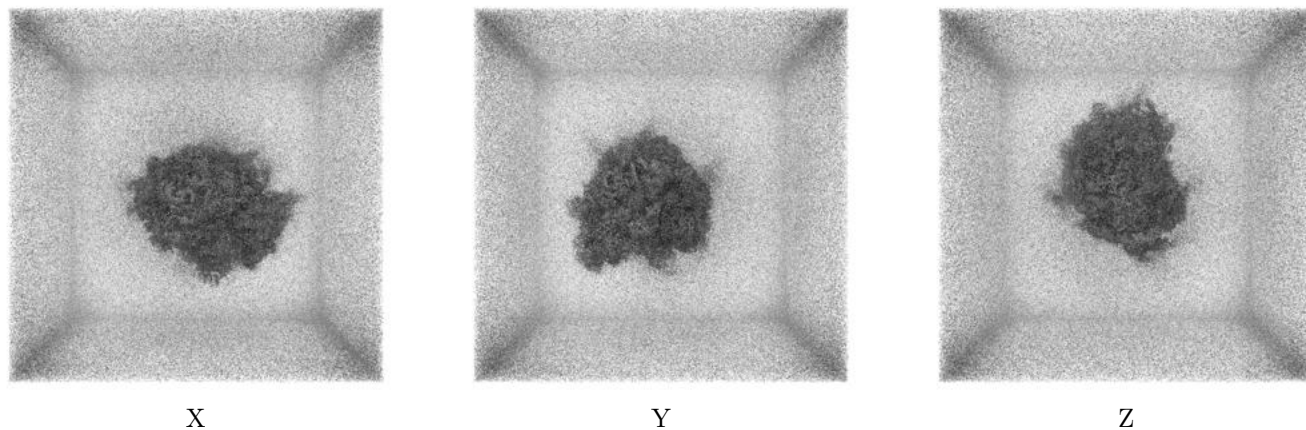
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0746. 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.

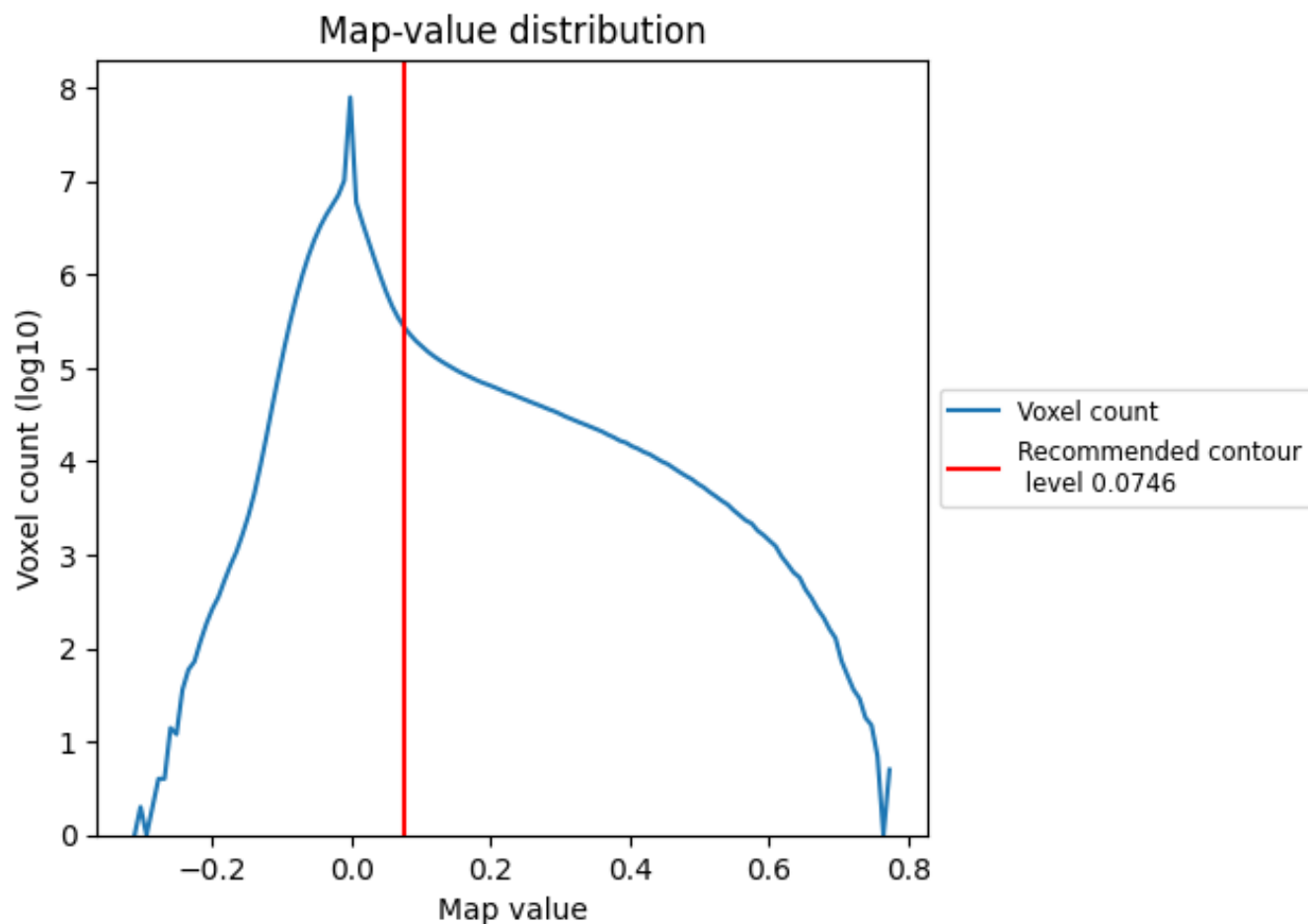
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

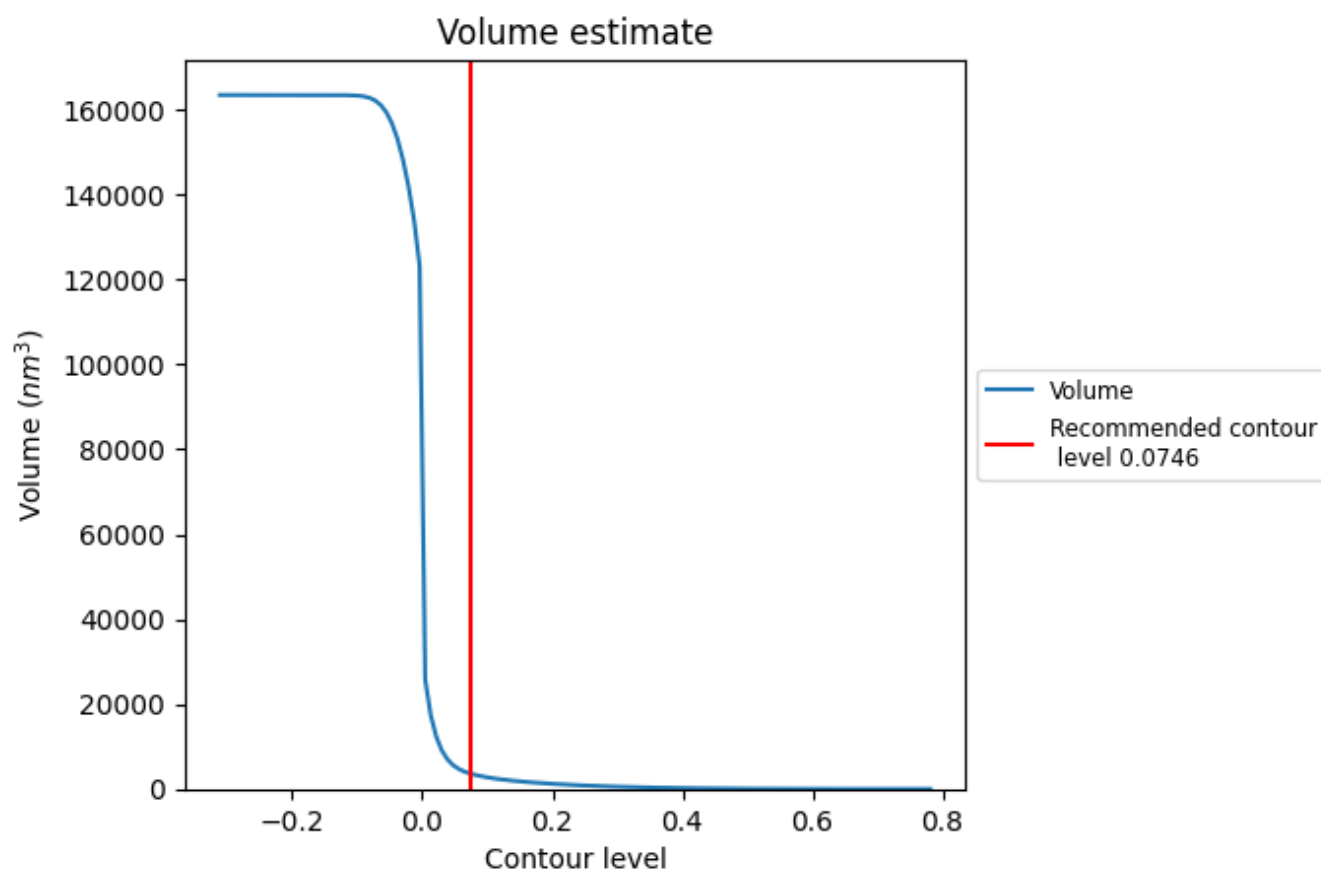
This section contains the results of statistical analysis of the map.

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.

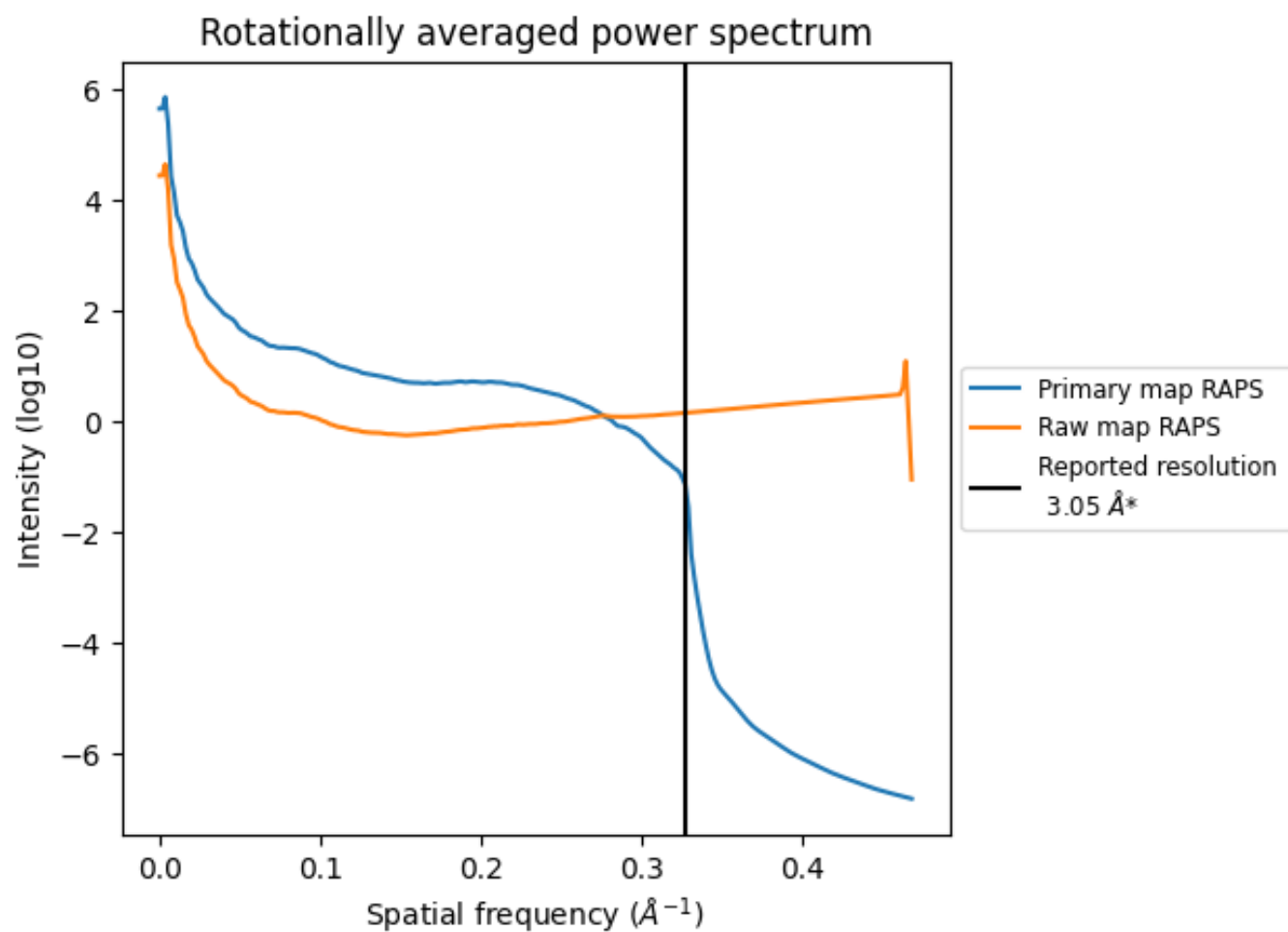
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 3593 nm³; this corresponds to an approximate mass of 3246 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 ⓘ

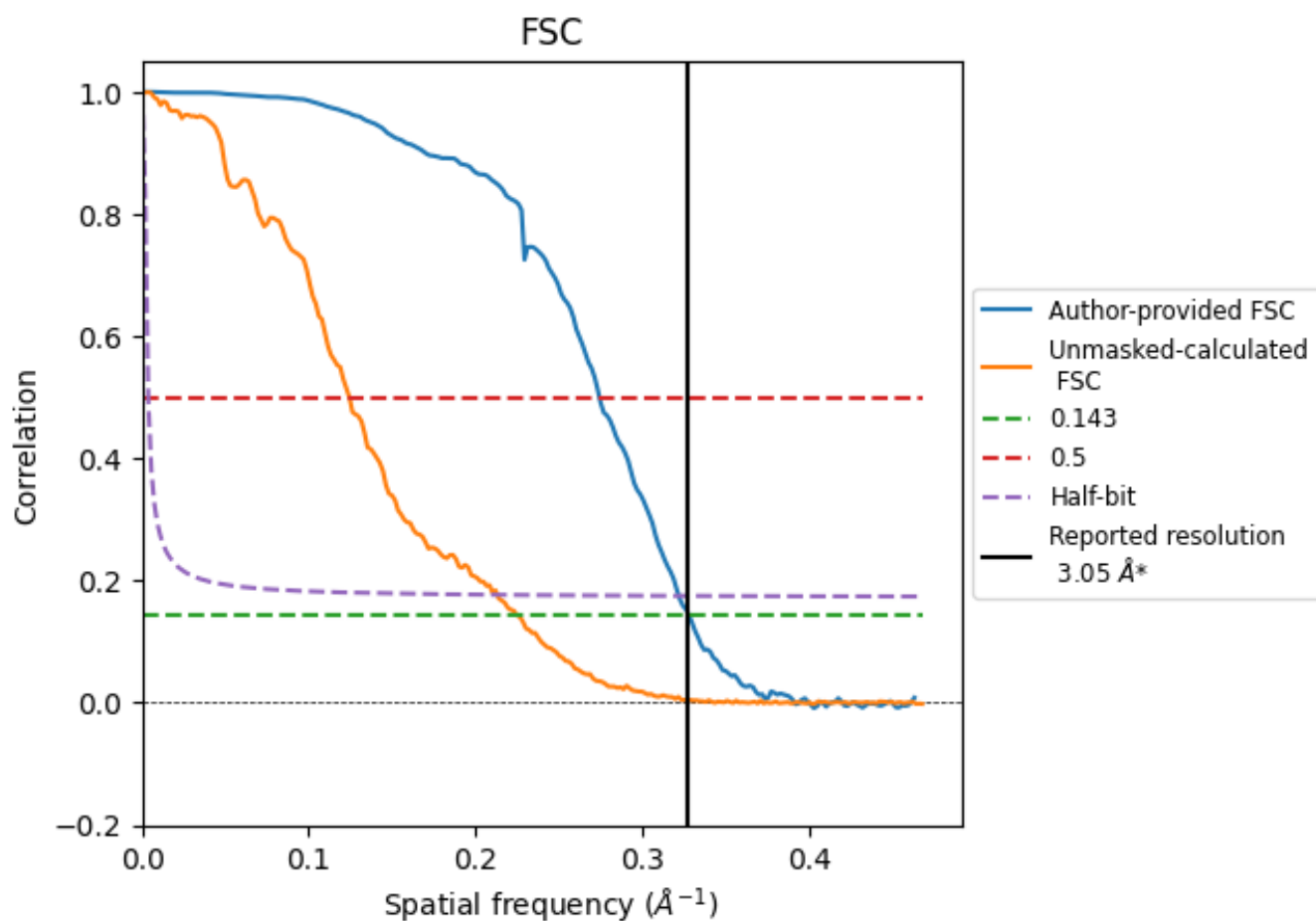


*Reported resolution corresponds to spatial frequency of 0.328 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of $0.328 \text{ \AA}^{-1}$

8.2 Resolution estimates [i](#)

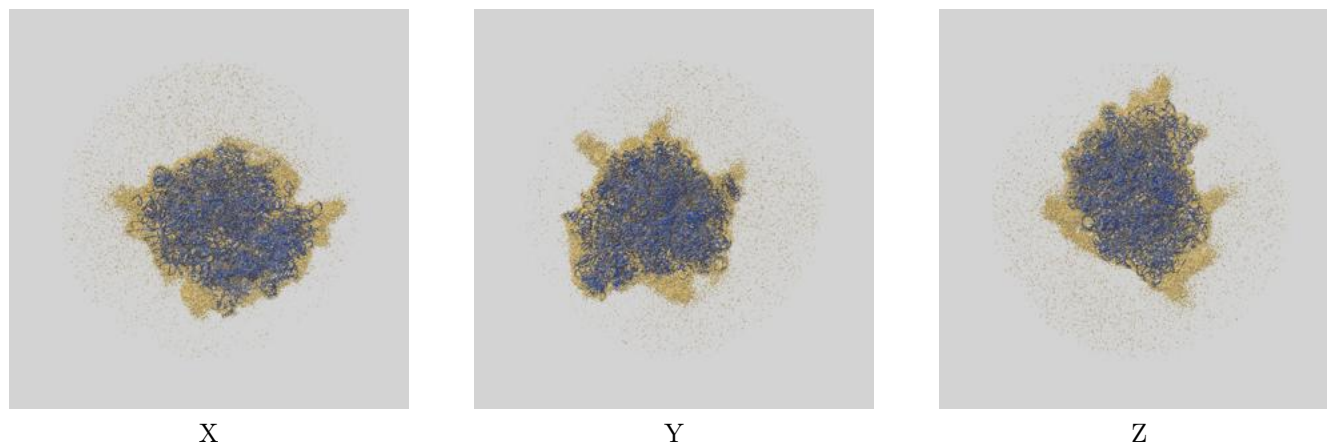
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.05	-	-
Author-provided FSC curve	3.05	3.64	3.10
Unmasked-calculated*	4.44	8.05	4.69

*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 4.44 differs from the reported value 3.05 by more than 10 %

9 Map-model fit [i](#)

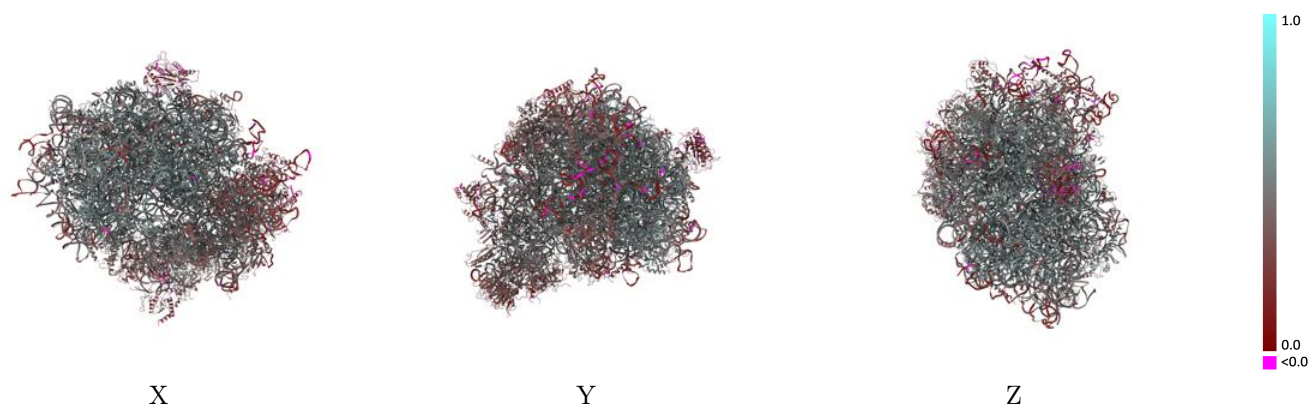
This section contains information regarding the fit between EMDB map EMD-71690 and PDB model 9PKB. Per-residue inclusion information can be found in section [3](#) on page [24](#).

9.1 Map-model overlay [i](#)



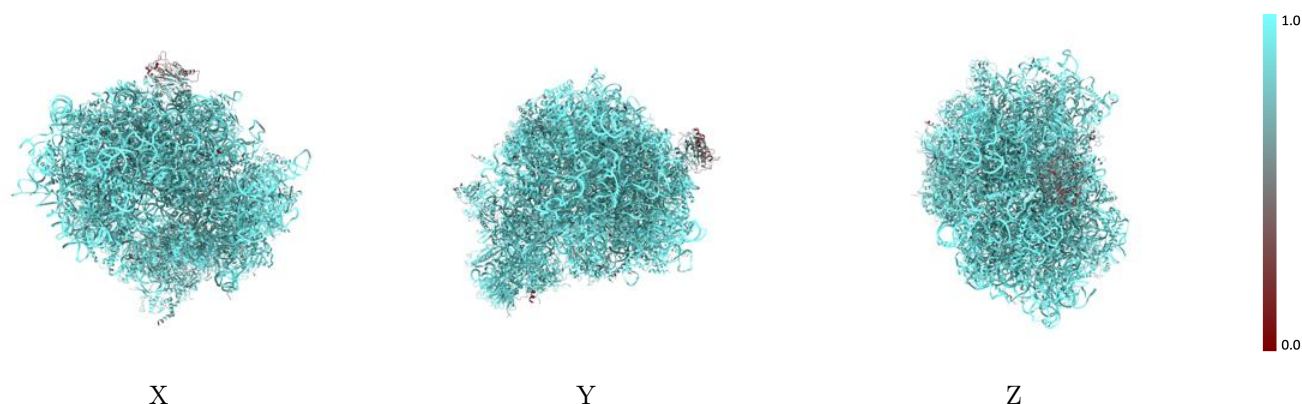
The images above show the 3D surface view of the map at the recommended contour level 0.0746 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



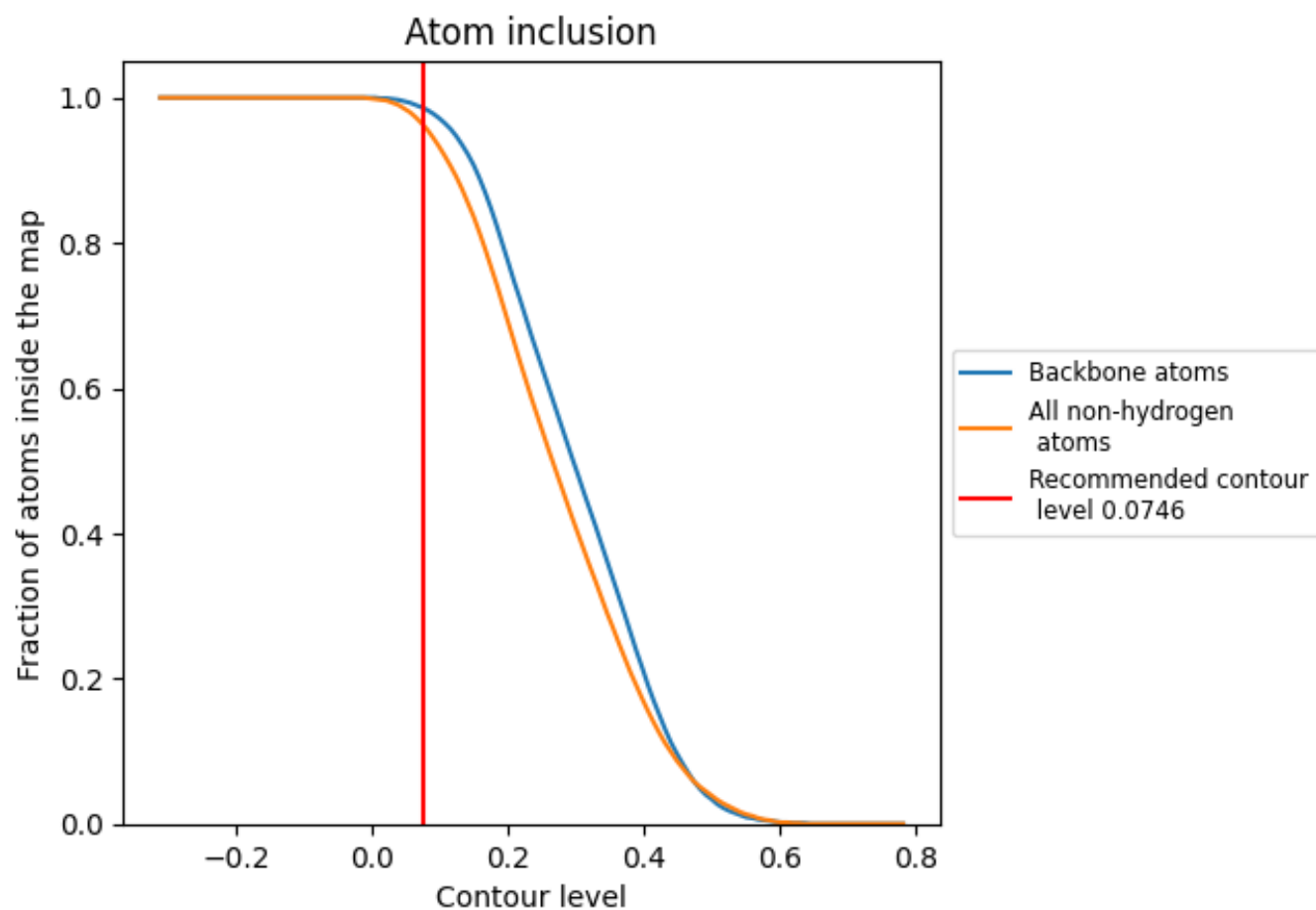
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0746).

9.4 Atom inclusion [i](#)



At the recommended contour level, 99% of all backbone atoms, 96% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.0746) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9630	 0.4510
CA	 0.5340	 0.2320
CB	 0.9040	 0.4200
CD	 0.9460	 0.4210
CI	 0.7950	 0.3940
L5	 0.9890	 0.4690
L7	 0.9990	 0.5010
L8	 0.9930	 0.4840
LA	 0.9840	 0.5430
LB	 0.9640	 0.5250
LC	 0.9700	 0.5300
LD	 0.9590	 0.4840
LE	 0.9520	 0.4770
LF	 0.9760	 0.5210
LG	 0.9480	 0.4790
LH	 0.9610	 0.5170
LI	 0.9680	 0.5270
LJ	 0.9520	 0.4680
LL	 0.9440	 0.5000
LM	 0.9770	 0.5140
LN	 0.9880	 0.5520
LO	 0.9740	 0.5250
LP	 0.9790	 0.5400
LQ	 0.9810	 0.5450
LR	 0.9530	 0.4790
LS	 0.9830	 0.5440
LT	 0.9620	 0.5180
LU	 0.9390	 0.4510
LV	 0.9750	 0.5340
LW	 0.9090	 0.3760
LX	 0.9710	 0.5110
LY	 0.9650	 0.5040
LZ	 0.9750	 0.5030
La	 0.9850	 0.5470
Lb	 0.9300	 0.4670



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Chain	Atom inclusion	Q-score
Lc	 0.9450	 0.4840
Ld	 0.9720	 0.5210
Le	 0.9830	 0.5430
Lf	 0.9830	 0.5470
Lg	 0.9740	 0.5230
Lh	 0.9670	 0.5090
Li	 0.9670	 0.4990
Lj	 0.9910	 0.5450
Lk	 0.9190	 0.4600
Ll	 0.9840	 0.5280
Lm	 0.9710	 0.5330
Ln	 0.9810	 0.5090
Lo	 0.9530	 0.5270
Lp	 0.9620	 0.5150
Lr	 0.9820	 0.5310
Ls	 0.9060	 0.3810
Lt	 0.7830	 0.2250
S2	 0.9930	 0.4130
SA	 0.9080	 0.4140
SB	 0.8940	 0.3620
SC	 0.9580	 0.4710
SD	 0.9260	 0.4110
SE	 0.9480	 0.4140
SF	 0.9190	 0.3640
SG	 0.9110	 0.3090
SH	 0.8930	 0.3480
SI	 0.9270	 0.3800
SJ	 0.9340	 0.4280
SK	 0.9290	 0.3900
SL	 0.9230	 0.4280
SM	 0.8180	 0.2440
SN	 0.9560	 0.4420
SO	 0.9390	 0.3860
SP	 0.9310	 0.4120
SQ	 0.9310	 0.3900
SR	 0.9060	 0.3790
SS	 0.9010	 0.3810
ST	 0.9450	 0.3810
SU	 0.9200	 0.3830
SV	 0.9450	 0.4400
SW	 0.9690	 0.4830
SX	 0.9520	 0.4920

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Chain	Atom inclusion	Q-score
SY	 0.8880	 0.3410
SZ	 0.8850	 0.3190
Sa	 0.9520	 0.4480
Sb	 0.9330	 0.3990
Sc	 0.8910	 0.3580
Sd	 0.9500	 0.4460
Se	 0.9010	 0.3920
Sf	 0.9020	 0.2860
Sg	 0.9120	 0.3190