



wwPDB EM Validation Summary Report ⓘ

Dec 15, 2025 – 04:56 PM EST

PDB ID : 9P7J / pdb_00009p7j
EMDB ID : EMD-71344
Title : In situ HHT and CHX treated human P state 80S ribosome
Authors : Wei, Z.; Yong, X.
Deposited on : 2025-06-20
Resolution : 3.91 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

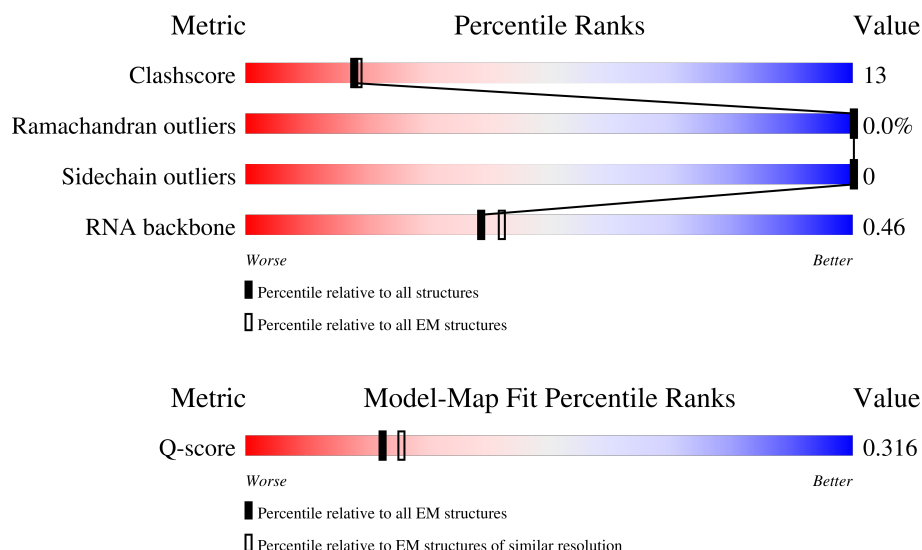
EMDB validation analysis : 0.0.1.dev129
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive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

1 Overall quality at a glance

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

The reported resolution of this entry is 3.91 Å.

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



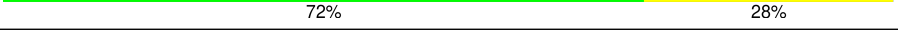
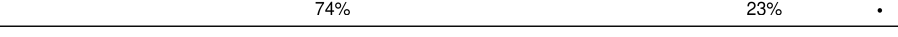
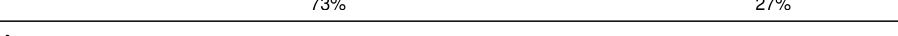
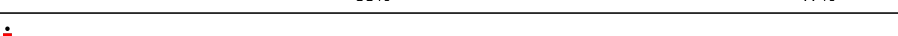
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	7920 (3.41 - 4.41)

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	Pt	74	
2	L5	3655	
3	L7	120	

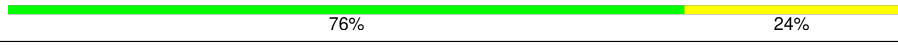
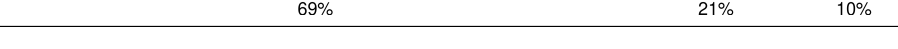
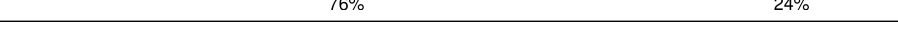
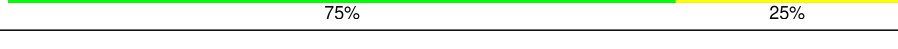
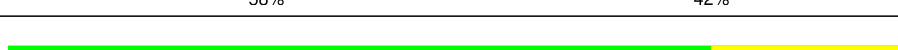
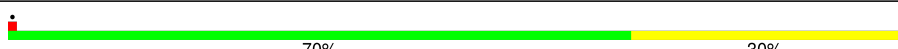
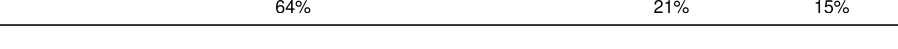
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Mol	Chain	Length	Quality of chain
4	L8	156	
5	LA	248	
6	LB	402	
7	LC	368	
8	LD	293	
9	LE	250	
10	LF	225	
11	LG	241	
12	LH	190	
13	LI	213	
14	LJ	176	
15	LL	210	
16	LM	139	
17	LN	203	
18	LO	201	
19	LP	153	
20	LQ	187	
21	LR	187	
22	LS	175	
23	LT	159	
24	LU	101	
25	LV	131	
26	LW	124	
27	LX	120	
28	LY	134	

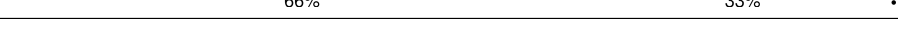
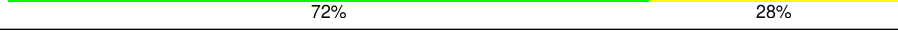
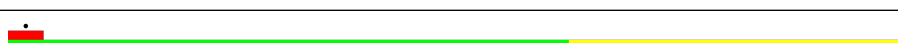
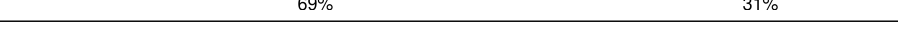
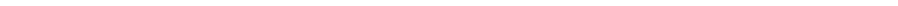
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Mol	Chain	Length	Quality of chain
29	LZ	135	
30	La	147	
31	Lb	121	
32	Lc	98	
33	Ld	107	
34	Le	128	
35	Lf	109	
36	Lg	114	
37	Lh	122	
38	Li	102	
39	Lj	86	
40	Lk	69	
41	Ll	50	
42	Lm	52	
43	Ln	24	
44	Lo	105	
45	Lp	91	
46	Lr	125	
47	Ls	196	
48	Lt	157	
49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

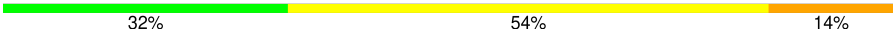
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Mol	Chain	Length	Quality of chain
54	SQ	144	
55	SR	135	
56	SS	145	
57	ST	143	
58	SU	104	
59	SZ	75	
60	Sc	64	
61	Sd	55	
62	Sf	67	
63	Sg	313	
64	SA	221	
65	SB	214	
66	SC	222	
67	SE	262	
68	SG	237	
69	SH	189	
70	SI	206	
71	SJ	185	
72	SL	153	
73	SN	150	
74	SO	140	
75	SV	83	
76	SW	129	
77	SX	141	
78	SY	131	

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Mol	Chain	Length	Quality of chain
79	Sa	102	 78% 22%
80	Sb	83	 80% 20%
81	Se	58	 12% 64% 36%
82	S2	1740	 32% 54% 14%
83	CI	31	 29% 71% 29%

2 Entry composition

There are 89 unique types of molecules in this entry. The entry contains 218437 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called P site tRNA [Homo sapiens].

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

- Molecule 2 is a RNA chain called 28S rRNA [Homo sapiens].

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

- Molecule 3 is a RNA chain called 5S rRNA [Homo sapiens].

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

- Molecule 4 is a RNA chain called 5.8S rRNA [Homo sapiens].

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

- Molecule 5 is a protein called 60S ribosomal protein L8.

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

- Molecule 6 is a protein called Large ribosomal subunit protein uL3.

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

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

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

- Molecule 8 is a protein called Large ribosomal subunit protein uL18.

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

- Molecule 9 is a protein called Large ribosomal subunit protein eL6.

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

- Molecule 10 is a protein called 60S ribosomal protein L7.

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

- Molecule 11 is a protein called 60S ribosomal protein L7a.

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

- Molecule 12 is a protein called 60S ribosomal protein L9.

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

- Molecule 13 is a protein called Ribosomal protein uL16-like.

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

- Molecule 14 is a protein called 60S ribosomal protein L11.

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

- Molecule 15 is a protein called Large ribosomal subunit protein eL13.

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

- Molecule 16 is a protein called 60S ribosomal protein L14.

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

- Molecule 17 is a protein called 60S ribosomal protein L15.

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

- Molecule 18 is a protein called 60S ribosomal protein L13a.

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

- Molecule 19 is a protein called 60S ribosomal protein L17.

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

- Molecule 20 is a protein called 60S ribosomal protein L18.

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

- Molecule 21 is a protein called 60S ribosomal protein L19.

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

- Molecule 22 is a protein called 60S ribosomal protein L18a.

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

- Molecule 23 is a protein called 60S ribosomal protein L21.

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

- Molecule 24 is a protein called Heparin-binding protein HBp15.

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

- Molecule 25 is a protein called 60S ribosomal protein L23.

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

- Molecule 26 is a protein called Ribosomal protein L24.

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

- Molecule 27 is a protein called 60S ribosomal protein L23a.

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

- Molecule 28 is a protein called 60S ribosomal protein L26.

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

- Molecule 29 is a protein called 60S ribosomal protein L27.

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

- Molecule 30 is a protein called 60S ribosomal protein L27a.

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

- Molecule 31 is a protein called Large ribosomal subunit protein eL29.

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

- Molecule 32 is a protein called 60S ribosomal protein L30.

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

- Molecule 33 is a protein called 60S ribosomal protein L31.

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

- Molecule 34 is a protein called 60S ribosomal protein L32.

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

- Molecule 35 is a protein called 60S ribosomal protein L35a.

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

- Molecule 36 is a protein called 60S ribosomal protein L34.

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

- Molecule 37 is a protein called 60S ribosomal protein L35.

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

- Molecule 38 is a protein called 60S ribosomal protein L36.

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

- Molecule 39 is a protein called 60S ribosomal protein L37.

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

- Molecule 40 is a protein called 60S ribosomal protein L38.

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

- Molecule 41 is a protein called 60S ribosomal protein L39.

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

- Molecule 42 is a protein called Large ribosomal subunit protein eL40.

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

- Molecule 43 is a protein called 60S ribosomal protein L41.

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

- Molecule 44 is a protein called 60S ribosomal protein L36a.

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

- Molecule 45 is a protein called 60S ribosomal protein L37a.

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

- Molecule 46 is a protein called 60S ribosomal protein L28.

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

- Molecule 47 is a protein called 60S acidic ribosomal protein P0.

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

- Molecule 48 is a protein called Large ribosomal subunit protein uL11.

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

- Molecule 49 is a protein called Small ribosomal subunit protein uS3.

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

- Molecule 50 is a protein called 40S ribosomal protein S5.

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

- Molecule 51 is a protein called 40S ribosomal protein S10.

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

- Molecule 52 is a protein called Small ribosomal subunit protein eS12.

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

- Molecule 53 is a protein called Small ribosomal subunit protein uS19.

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

- Molecule 54 is a protein called Small ribosomal subunit protein uS9.

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

- Molecule 55 is a protein called Small ribosomal subunit protein eS17.

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

- Molecule 56 is a protein called 40S ribosomal protein S18.

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

- Molecule 57 is a protein called 40S ribosomal protein S19.

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

- Molecule 58 is a protein called 40S ribosomal protein S20.

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

- Molecule 59 is a protein called Small ribosomal subunit protein eS25.

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

- Molecule 60 is a protein called 40S ribosomal protein S28.

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

- Molecule 61 is a protein called 40S ribosomal protein S29.

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

- Molecule 62 is a protein called Ubiquitin-40S ribosomal protein S27a.

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

- Molecule 63 is a protein called Receptor of activated protein C kinase 1.

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

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

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

- Molecule 65 is a protein called 40S ribosomal protein S3a.

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

- Molecule 66 is a protein called 40S ribosomal protein S2.

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

- Molecule 67 is a protein called Small ribosomal subunit protein eS4, X isoform.

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

- Molecule 68 is a protein called 40S ribosomal protein S6.

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

- Molecule 69 is a protein called Small ribosomal subunit protein eS7.

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

- Molecule 70 is a protein called 40S ribosomal protein S8.

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

- Molecule 71 is a protein called 40S ribosomal protein S9.

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

- Molecule 72 is a protein called 40S ribosomal protein S11.

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

- Molecule 73 is a protein called 40S ribosomal protein S13.

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

- Molecule 74 is a protein called Small ribosomal subunit protein uS11.

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

- Molecule 75 is a protein called Small ribosomal subunit protein eS21.

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

- Molecule 76 is a protein called 40S ribosomal protein S15a.

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

- Molecule 77 is a protein called 40S ribosomal protein S23.

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

- Molecule 78 is a protein called 40S ribosomal protein S24.

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

- Molecule 79 is a protein called 40S ribosomal protein S26.

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

- Molecule 80 is a protein called Small ribosomal subunit protein eS27.

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

- Molecule 81 is a protein called Small ribosomal subunit protein eS30.

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

- Molecule 82 is a RNA chain called 18S rRNA [Homo sapiens].

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

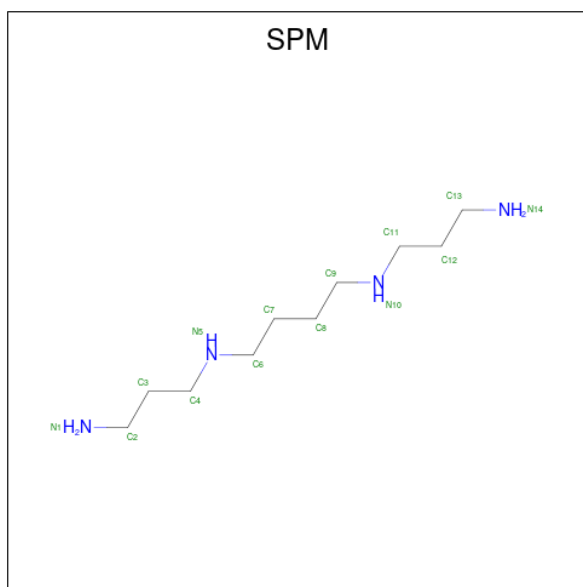
- Molecule 83 is a protein called Transcription factor BTF3.

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

- Molecule 84 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

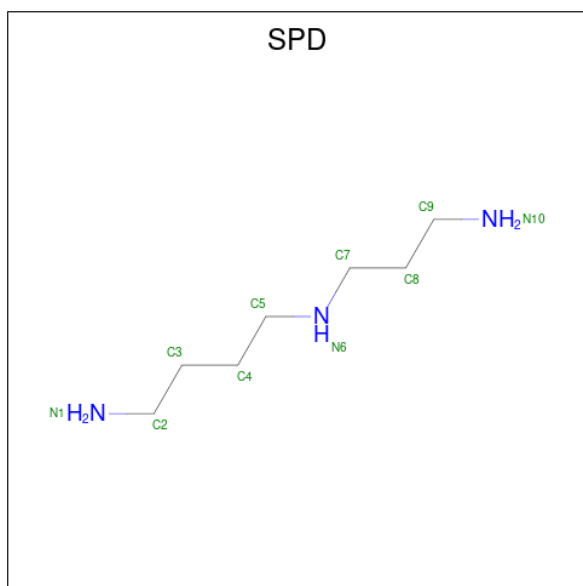
Mol	Chain	Residues	Atoms		AltConf
84	L5	177	Total 177	Mg 177	0
84	L7	3	Total 3	Mg 3	0
84	L8	6	Total 6	Mg 6	0
84	LA	1	Total 1	Mg 1	0
84	LC	1	Total 1	Mg 1	0
84	LP	1	Total 1	Mg 1	0
84	LV	1	Total 1	Mg 1	0
84	Le	1	Total 1	Mg 1	0
84	SS	1	Total 1	Mg 1	0
84	Sa	1	Total 1	Mg 1	0
84	S2	26	Total 26	Mg 26	0

- Molecule 85 is SPERMINE (CCD ID: SPM) (formula: $C_{10}H_{26}N_4$) (labeled as "Ligand of Interest" by depositor).



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

- Molecule 86 is SPERMIDINE (CCD ID: SPD) (formula: $C_7H_{19}N_3$) (labeled as "Ligand of Interest" by depositor).



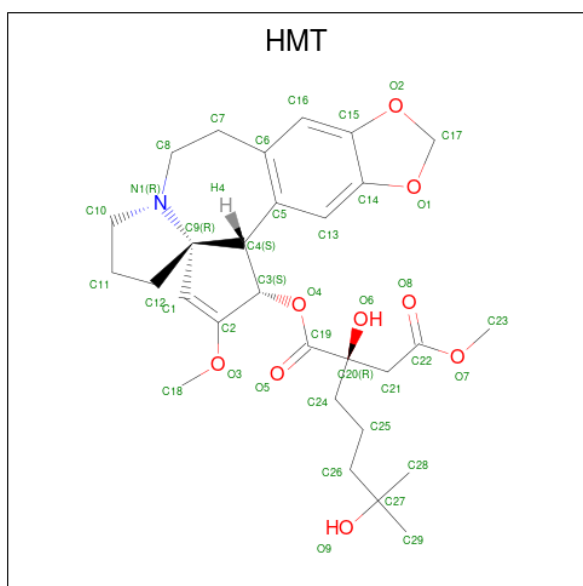
Mol	Chain	Residues	Atoms			AltConf
86	L5	1	Total	C	N	0
			10	7	3	
86	L5	1	Total	C	N	0
			10	7	3	
86	L5	1	Total	C	N	0
			10	7	3	
86	L5	1	Total	C	N	0
			10	7	3	

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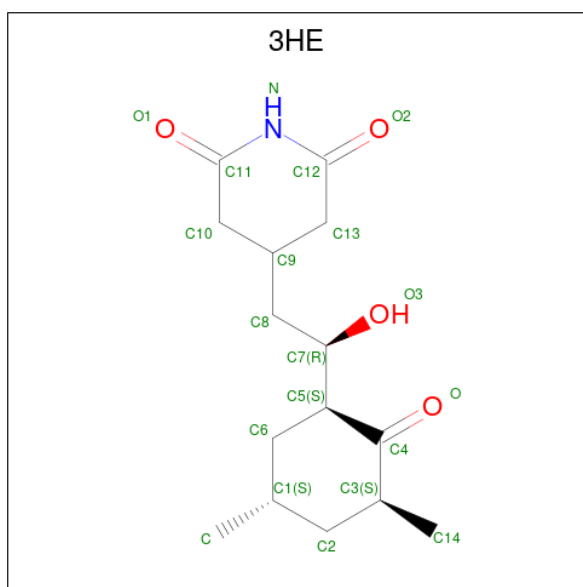
Mol	Chain	Residues	Atoms			AltConf
86	L5	1	Total	C	N	0
			10	7	3	
86	L5	1	Total	C	N	0
			10	7	3	
86	L5	1	Total	C	N	0
			10	7	3	
86	L5	1	Total	C	N	0
			10	7	3	
86	L5	1	Total	C	N	0
			10	7	3	
86	L8	1	Total	C	N	0
			10	7	3	

- Molecule 87 is (3beta)-O 3 -[(2R)-2,6-dihydroxy-2-(2-methoxy-2-oxoethyl)-6-methylheptanoyl]cephalotaxine (CCD ID: HMT) (formula: C₂₉H₃₉NO₉) (labeled as "Ligand of Interest" by depositor).



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

- Molecule 88 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
88	L5	1	Total	C	N	O	0
			20	15	1	4	

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

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

A1907	G1833	G1761	G1811	G1539	U1473	C1402	A1334	G1266	U1186	C979	G912	U689
A1908	U1834	C1762	G1612	C1540	C1474	G1403	G1335	C1267	G1187	U980	U913	C690
G1909	G1835	U1683	A1613	U1542	G1475	G1404	G1336	G1268	G1188	G1268	U914	C691
G1910	G1836	C1763	C1614	U1543	U1542	G1475	A1337	G1269	G1189	U982	A915	A692
C1914	A1837	G1764	G1615	G1544	C1478	C1407	U1339	G1270	C1191	C984	C916	C696
C1915	A1838	A1765	U1616	G1545	G1479	G1408	U1340	G1271	C983	C985	G917	G697
C1916	G1839	A1766	G1617	G1546	C1480	C1409	U1341	G1272	C984	C986	G918	G698
G1917	G1840	U1687	G1618	A1547	G1481	U1410	U1342	G1273	C919	C920	C921	G699
U1918	C1841	G1768	G1619	G1548	C1482	C1411	A1343	G1274	C922	G1064	C923	G701
G1919	G1842	G1769	U1620	G1549	C1483	G1412	C1344	G1275	U989	C990	C924	C704
C1920	A1843	A1770	A1621	U1554	U1489	C1413	A1345	U1278	G1194	G1068	C928	G710
C1921	G1844	U1771	U1622	A1554	G1490	C1414	A1346	A1279	G1195	G1069	A929	A711
G1922	U1845	G1697	G1624	G1555	A1491	G1415	G1347	C1280	C1197	G1070	G930	C712
G1925	G1846	C1698	G1625	C1556	G1492	G1416	G1347	G1281	G1198	G1071	C931	C713
G1926	C1847	A1775	G1626	G1557	G1493	C1417	G1349	G1282	G1199	C1072	G932	G714
G1927	U1849	A1776	G1627	A1558	U1494	G1418	G1350	G1283	G1200	G1073	G933	G715
G1931	A1850	G1700	G1628	U1559	G1495	A1420	G1351	G1284	G1201	U1088	C934	G716
A1932	U1851	C1701	G1629	G1562	G1496	G1425	A1354	U1285	G1202	G1089	A935	G717
G1933	G1852	C1702	G1630	A1563	A1497	G1426	G1355	C1286	G1203	G1090	C936	C718
A1934	U1853	C1703	A1631	U1564	G1498	G1427	U1359	G1287	U1204	C1081	U937	G726
G1937	G1854	G1705	G1632	A1565	C1499	G1428	G1363	C1291	G1205	G1082	C938	C727
C1938	C1855	A1706	G1633	U1566	U1502	G1430	U1364	C1292	G1206	U1083	U942	U728
G1939	G1856	G1716	A1634	C1567	A1503	G1431	U1365	G1293	G1207	C1084	G943	G729
A1940	A1857	C1718	U1635	C1568	G1504	A1433	G1366	C1294	C1215	G1085	A943	G730
A1941	U1859	A1787	A1637	U1569	C1505	G1434	G1367	G1295	G1216	G1086	A944	G731
A1942	G1860	C1720	G1638	G1570	G1506	G1435	C1367	G1296	G1217	A1087	U945	G735
A1943	U1861	G1721	U1639	U1573	C1507	C1436	G1368	G1297	G1218	G1088	C946	C736
G1948	C1862	C1722	G1640	G1574	A1508	G1437	C1369	G1298	G1219	G1089	C947	C737
U1949	U1863	U1727	A1642	U1577	G1510	C1438	G1370	U1300	A1222	G1091	C948	C738
U1950	G1864	U1728	A1643	U1578	U1511	U1440	A1372	C1301	U1238	G1092	G949	G739
G1951	C1865	A1729	G1644	U1579	G1512	C1441	A1373	C1302	C1239	G1093	G950	G740
G1952	U1866	U1730	C1645	C1580	U1513	A1442	G1377	C1303	G1240	G1094	G951	C741
U1953	A1867	C1731	A1646	G1581	U1514	A1443	C1378	C1304	C1241	A1095	G952	G742
G1957	G1868	G1732	U1647	U1582	G1515	U1444	C1379	C1305	G1242	C1096	A956	A746
A1958	C1869	G1733	C1648	A1583	U1516	U1445	C1380	C1306	G1243	G1097	G957	A747
U1959	U1870	U1734	U1649	G1584	G1517	C1446	G1381	C1307	G1244	G1098	G958	G748
A1960	G1871	G1735	G1654	U1585	A1518	C1447	U1382	C1308	C1245	G1168	G959	G749
G1961	C1872	U1736	C1655	G1586	C1519	G1448	G1383	G1309	G1246	G1169	A960	U750
A1962	U1873	U1737	C1656	U1587	G1520	C1449	C1384	C1310	U1247	G1170	G961	G751
G1965	G1874	G1742	C1661	U1591	U1522	G1450	A1387	C1311	C1248	C1172	G962	G752
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C1971	G1877	U1745	G1666	U1597	U1526	C1458	G1390	G1321	A1255	A1175	A966	G755
G1972	U1878	G1751	A1669	A1600	G1528	C1460	A1391	A1322	G1256	A1176	C967	G756
G1973	C1879	G1752	G1670	A1601	U1529	C1461	A1392	A1323	A1257	C1177	C968	C903
U1974	U1880	U1753	U1671	U1602	G1530	A1462	G1393	A1324	G1258	U1178	C969	C904
C1975	G1881	G1754	U1672	G1603	U1531	C1463	U1394	C1325	G1259	U1179	G970	C905
G1976	U1882	U1755	G1673	G1604	G1532	C1464	U1395	A1326	G1260	C1180	C974	C906
C1977	C1883	U1756	C1674	G1605	A1533	G1465	A1396	G1327	G1261	C1181	C975	G907
C1978	U1884	C1675	U1675	G1606	A1534	G1466	A1397	G1328	G1262	C1182	G976	G908
U1980	G1885	U1676	C1676	G1607	C1535	C1468	A1398	G1329	A1263	C1183	C977	G909
		U1677	U1677	U1609	U1536	U1471	G1400	G1332	G1264	A1184	G978	U911
		G1759	C1678	C1610	U1538	C1472	C1401	A1333	G1265	G1185		

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G3722	A3652	U2908	C2834	A2764	U2701	U2632	G2559	C2491	C2331	C2059	A1983
A3723	A3653	G3585	A2835	A2765	G2702	U2633	C2560	C2492	A2264	G2060	A1984
A3724	G3654	G3586	A2836	U2766	G2703	U2634	C2561	U2493	G2265	G1985	G1985
G3725	G3655	G3587	U2837	C2767	G2704	U2635	C2562	U2494	A2266	U1986	U1986
A3726	G3656	G3588	G2838	U2768	U2705	U2636	C2563	U2495	G2267	C2067	
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A3736	G3665	G3597	U2780	U2781	G2714	G2645	C2572	A2507	G2278	G2076	U1999
A3737	G3666	A3598	U2782	U2783	G2715	G2646	A2573	G2510	G2279	C2077	A1998
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A3748	G3673	G3605	U2794	U2795	G2722	G2653	C2580	G2517	G2286	G2085	U2008
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	G3684	G3616	U2816	U2817	G2733	G2664	C2591	G2528	G2297	U2097	G2021
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A3774	G3686	G3618	U2820	U2821	G2735	G2666	C2593	G2530	G2299	G2099	G2025
A3775	G3687	G3619	U2822	U2823	G2736	G2667	C2594	G2531	A2100	A2026	A2026
G3776	G3688	G3620	U2824	U2825	G2737	G2668	C2595	G2532	C2101	U2027	U2027
G3777	G3689	G3621	U2826	U2827	G2738	G2669	C2596	G2533	G2102	C2028	C2028
U3778	G3690	G3622	U2828	U2829	G2739	G2670	C2597	G2534	G2103	A2029	A2029
A3779	G3691	G3623	U2830	U2831	G2740	G2671	C2598	G2535	G2104		
G3780	G3692	G3624	U2832	U2833	G2741	G2672	C2599	G2536	C2311	A2033	A2033
C3781	G3693	G3625	U2834	U2835	A2742	G2673	C2600	G2537	U2312	G2106	G2034
C3782	G3694	G3626	U2836	U2837	A2743	G2674	C2601	G2538	A2313	C2107	
A3783	G3695	G3627	U2838	U2839	A2744	G2675	C2602	G2539	G2314	C2110	C2037
A3784	G3696	G3628	U2840	U2841	A2745	G2676	C2603	G2540	G2315	G2111	U2038
A3785	G3697	G3629	U2842	U2843	A2746	G2677	C2604	G2541	G2316	G2112	G2039
U3786	G3698	G3630	U2844	U2845	A2747	G2678	C2605	G2542	G2317	A2040	A2040
G3787	G3699	G3631	U2846	U2847	A2748	G2679	C2606	G2543	G2318		
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C3789	G3701	G3633	U2850	U2851	G2750	G2681	C2608	G2545	G2320	C2250	U2044
A3789	G3702	G3634	U2852	U2853	G2751	G2682	C2609	G2546	G2321	G2251	G2045
A3790	G3703	G3635	U2854	U2855	G2752	G2683	C2610	G2547	G2322	G2252	G2046
	G3704	G3636	U2856	U2857	G2753	G2684	C2611		G2323	C2256	A2047
U3797	G3705	G3637	U2858	U2859	G2754	G2685	C2612	G2474	G2324	C2257	U2048
A3798	G3706	G3638	U2860	U2861	G2755	G2686	C2613	G2475	G2325	C2258	G2049
A3799	G3707	G3639	U2862	U2863	G2756	G2687	C2614	G2476	G2326		
	G3708	U3640	U2864	U2865	G2757	G2688	C2615	G2477	G2327	G2261	G2052
U3799	G3709	U3641	U2866	U2867	G2758	G2689	C2616	G2478	G2328		
A3799	G3710	G3642	U2868	U2869	G2759	G2690	C2617	G2479			
G3799	G3711	A3643	U2870	U2871	G2760	G2691	C2618	G2480			
A3799	G3712	U3644	U2872	U2873	G2761	G2692	C2619	G2481			
	U3713	U3645	U2874	U2875	G2762	G2693	C2620	G2482			
C3791	G3714	A3646	U2876	U2877	G2763	G2694	C2621	G2483			
G3792	A3717	A3647	U2878	U2879	G2764	G2695	C2622	G2484			
A3794	G3718	A3648	U2880	U2881	G2765	G2696	C2623	G2485			
C3794	G3719	A3649	U2882	U2883	G2766	G2697	C2624	G2486			
			U2884	U2885	G2767	G2698	C2625	G2487			
			U2886	U2887	G2768	G2699	C2626	G2488			
			U2888	U2889	G2769	G2700	C2627				
			U2890	U2891	G2770	G2701	C2628				
			U2892	U2893	G2771	G2702	C2629				
			U2894	U2895	G2772	G2703	C2630				
			U2896	U2897	G2773	G2704	C2631				
			U2898	U2899	G2774	G2705	C2632				
			U2900	U2901	G2775	G2706	C2633				
			U2902	U2903	G2776	G2707	C2634				
			U2904	U2905	G2777	G2708	C2635				
			U2906	U2907	G2778	G2709	C2636				
			U2908	U2909	G2779	G2710	C2637				
			U2910	U2911	G2780	G2711	C2638				
			U2912	U2913	G2781	G2712	C2639				
			U2914	U2915	G2782	G2713	C2640				
			U2916	U2917	G2783	G2714	C2641				
			U2918	U2919	G2784	G2715	C2642				
			U2920	U2921	G2785	G2716	C2643				
			U2922	U2923	G2786	G2717	C2644				
			U2924	U2925	G2787	G2718	C2645				
			U2926	U2927	G2788	G2719	C2646				
			U2928	U2929	G2789	G2720	C2647				
			U2930	U2931	G2790	G2721	C2648				
			U2932	U2933	G2791	G2722	C2649				
			U2934	U2935	G2792	G2723	C2650				
			U2936	U2937	G2793	G2724	C2651				
			U2938	U2939	G2794	G2725	C2652				
			U2940	U2941	G2795	G2726	C2653				
			U2942	U2943	G2796	G2727	C2654				
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			U2946	U2947	G2798	G2729	C2656				
			U2948	U2949	G2799	G2730	C2657				
			U2950	U2951	G2800	G2731	C2658				
			U2952	U2953	G2801	G2732	C2659				
			U2954	U2955	G2802	G2733	C2660				
			U2956	U2957	G2803	G2734	C2661				
			U2958	U2959	G2804	G2735	C2662				
			U2960	U2961	G2805	G2736	C2663				
			U2962	U2963	G2806	G2737	C2664				
			U2964	U2965	G2807	G2738	C2665				
			U2966	U2967	G2808	G2739	C2666				
			U2968	U2969	G2809	G2740	C2667				
			U2970	U2971	G2810	G2741	C2668				
			U2972	U2973	G2811	G2742	C2669				
			U2974	U2975	G2812	G2743	C2670				
			U2976	U2977	G2813	G2744	C2671				
			U2978	U2979	G2814	G2745	C2672				
			U2980	U2981	G2815	G2746	C2673				
			U2982	U2983	G2816	G2747	C2674				
			U2984	U2985	G2817	G2748	C2675				
			U2986	U2987	G2818	G2749	C2676				
			U2988	U2989	G2819	G2750	C2677				
			U2990	U2991	G2820	G2751	C2678				
			U2992	U2993	G2821	G2752	C2679				
			U2994	U2995	G2822	G2753	C2680				
			U2996	U2997	G2823	G2754	C2681				
			U2998	U2999	G2824	G2755	C2682				
			U3000	U3001	G2825	G2756	C2683				

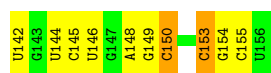




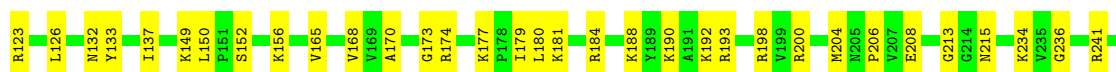
• Molecule 3: 5S rRNA [Homo sapiens]



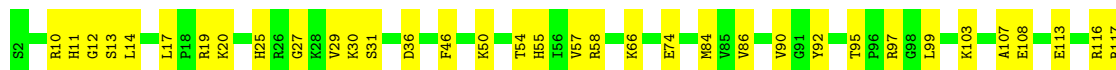
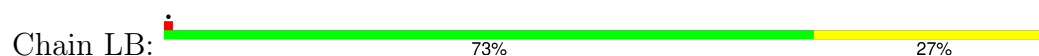
• Molecule 4: 5.8S rRNA [Homo sapiens]



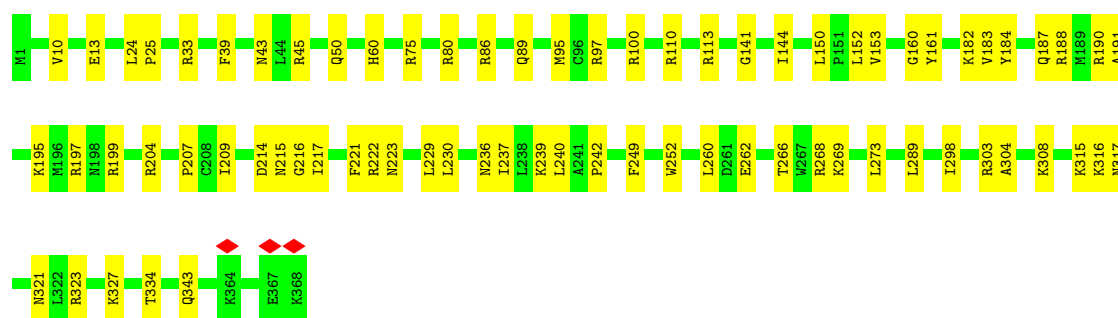
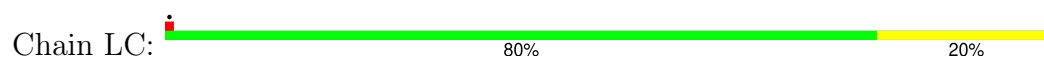
• Molecule 5: 60S ribosomal protein L8



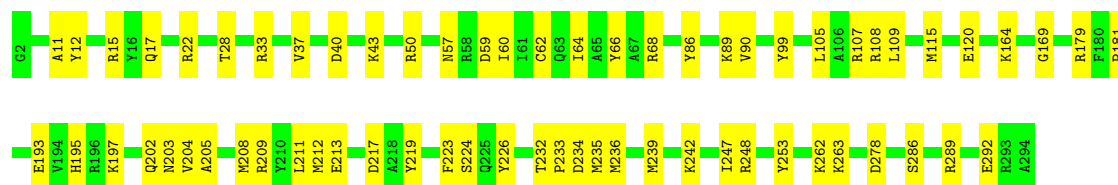
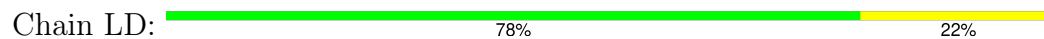
• Molecule 6: Large ribosomal subunit protein uL3



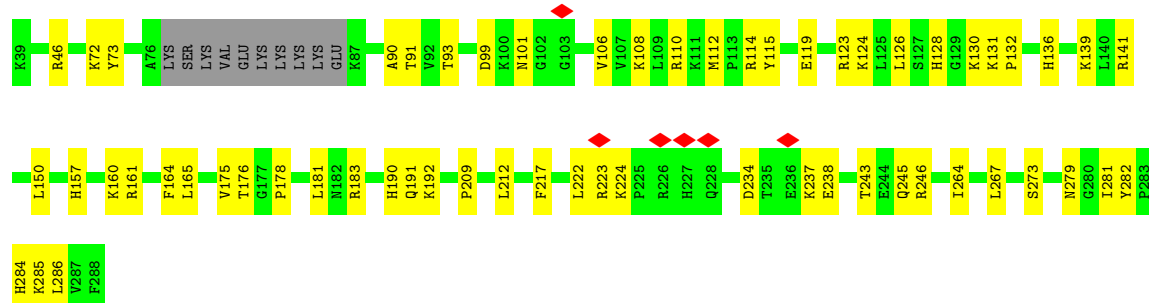
- Molecule 7: 60S ribosomal protein L4



- Molecule 8: Large ribosomal subunit protein uL18

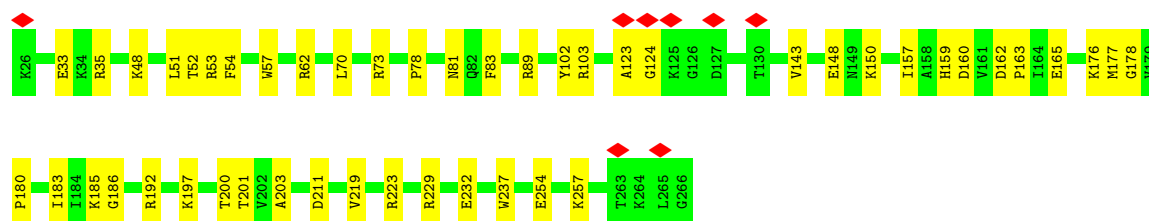


- Molecule 9: Large ribosomal subunit protein eL6

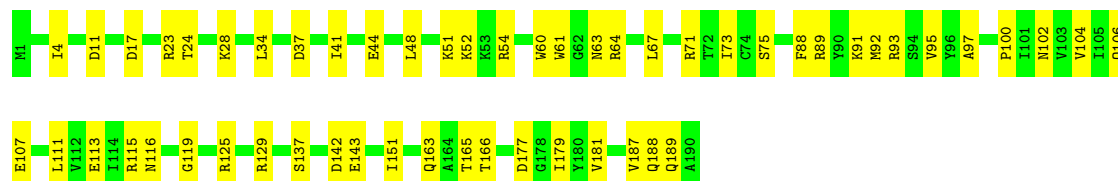


- Molecule 10: 60S ribosomal protein L7

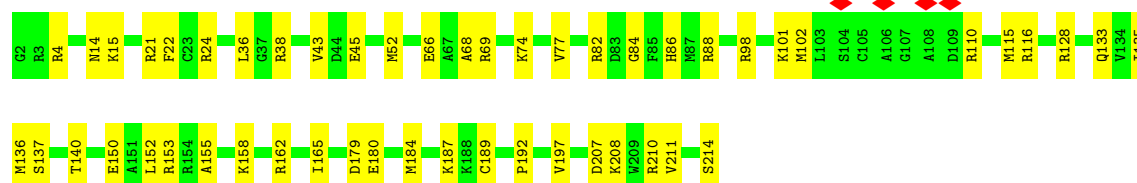
- Molecule 11: 60S ribosomal protein L7a



- Molecule 12: 60S ribosomal protein L9



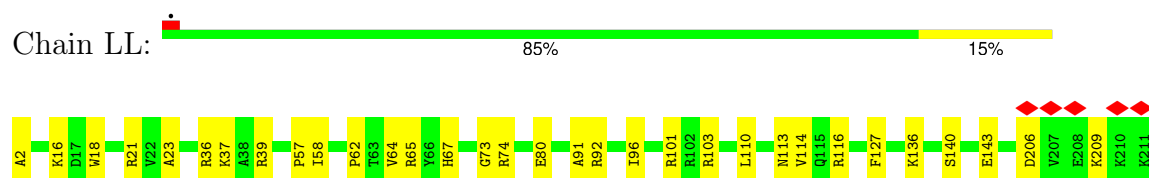
- Molecule 13: Ribosomal protein uL16-like



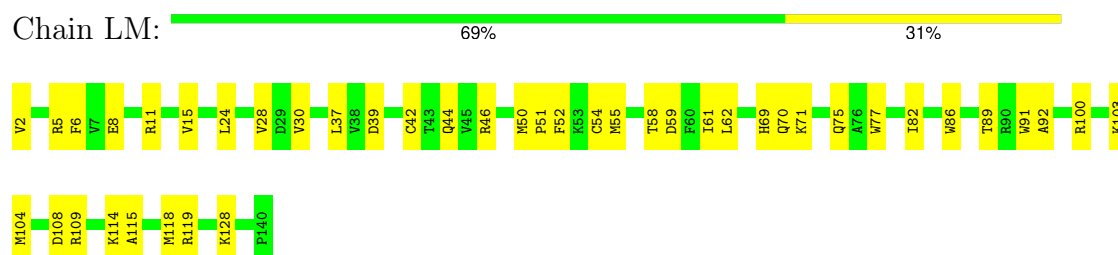
- Molecule 14: 60S ribosomal protein L11



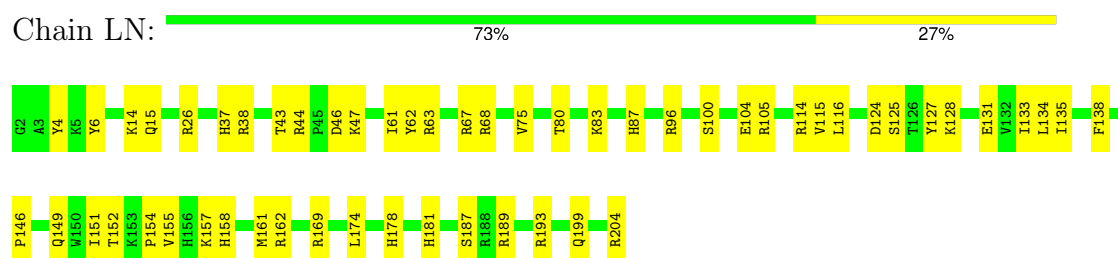
- Molecule 15: Large ribosomal subunit protein eL13



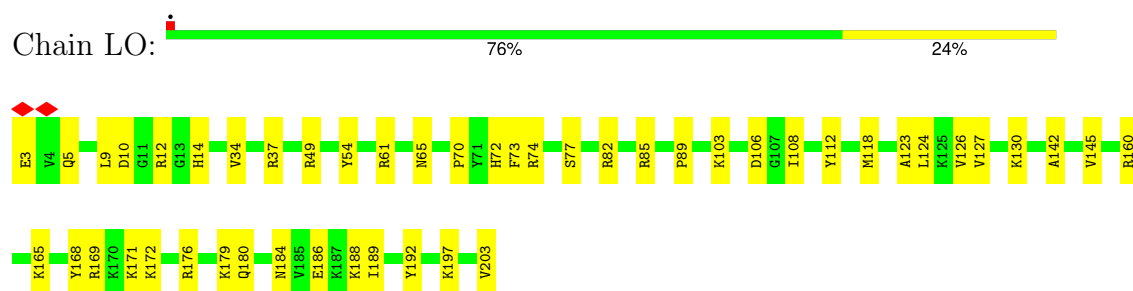
- Molecule 16: 60S ribosomal protein L14



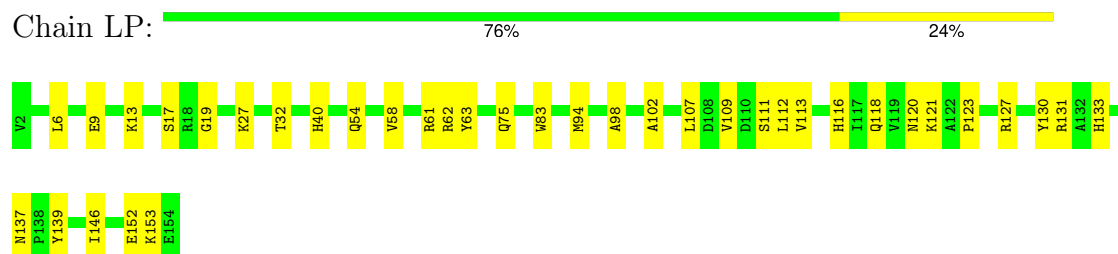
- Molecule 17: 60S ribosomal protein L15



- Molecule 18: 60S ribosomal protein L13a

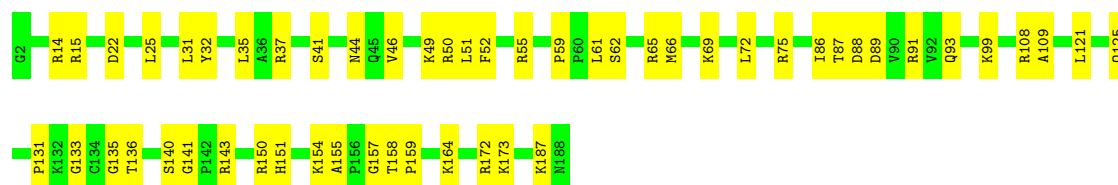


- Molecule 19: 60S ribosomal protein L17



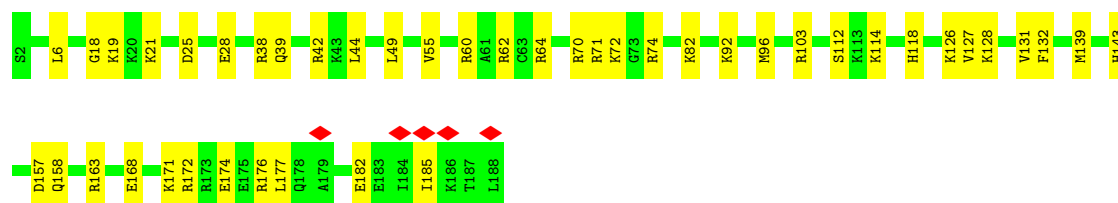
- Molecule 20: 60S ribosomal protein L18

Chain LQ:  72% 28%



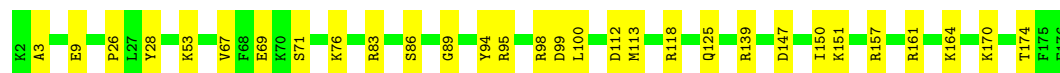
- Molecule 21: 60S ribosomal protein L19

Chain LR:  76% 24%



- Molecule 22: 60S ribosomal protein L18a

Chain LS:  83% 17%



- Molecule 23: 60S ribosomal protein L21

Chain LT:  77% 23%



- Molecule 24: Heparin-binding protein HBp15

Chain LU:  78% 22%

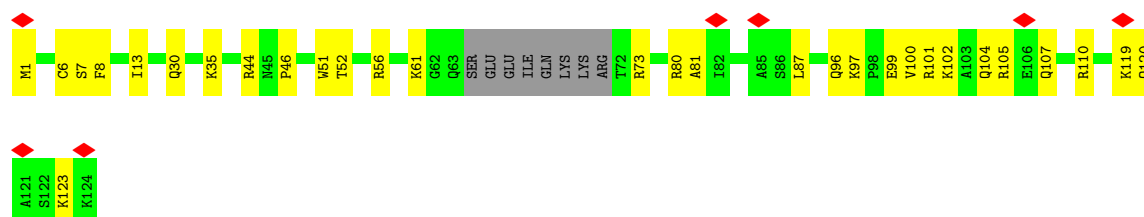


- Molecule 25: 60S ribosomal protein L23

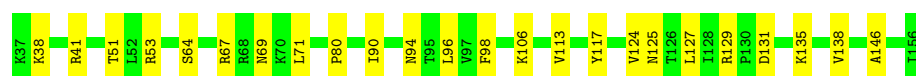
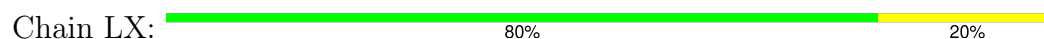
Chain LV:  79% 21%



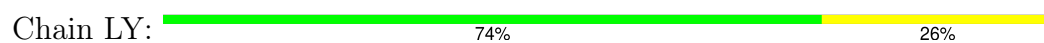
- Molecule 26: Ribosomal protein L24



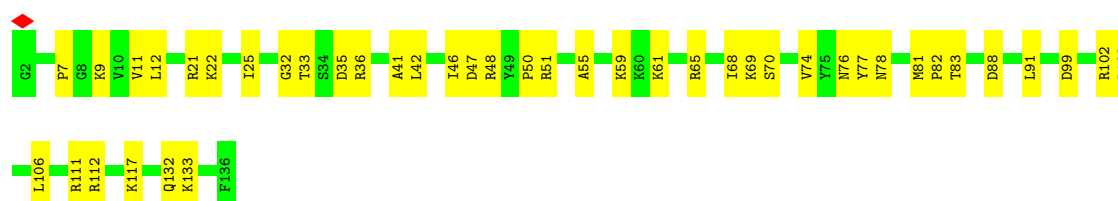
- Molecule 27: 60S ribosomal protein L23a



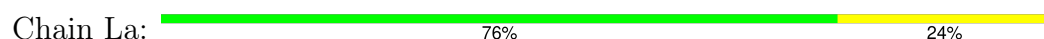
- Molecule 28: 60S ribosomal protein L26



- Molecule 29: 60S ribosomal protein L27

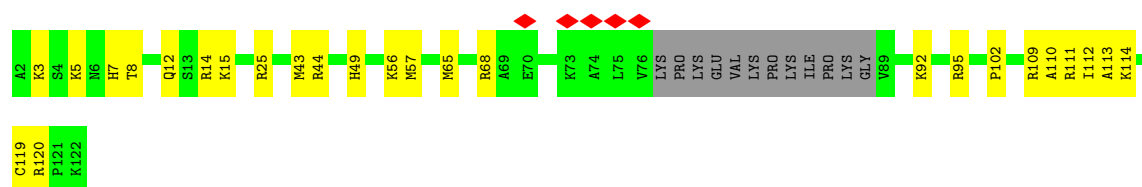


- Molecule 30: 60S ribosomal protein L27a



- Molecule 31: Large ribosomal subunit protein eL29

Chain Lb:  69% 21% 10%



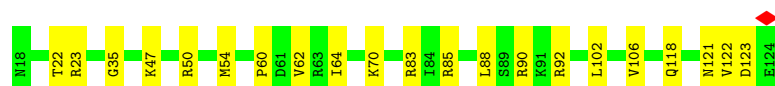
- Molecule 32: 60S ribosomal protein L30

Chain Lc:  79% 21%



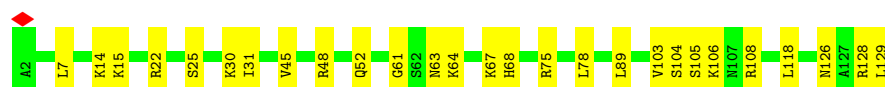
- Molecule 33: 60S ribosomal protein L31

Chain Ld:  80% 20%



- Molecule 34: 60S ribosomal protein L32

Chain Le:  79% 21%



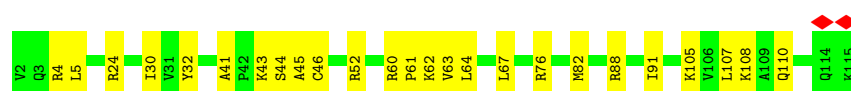
- Molecule 35: 60S ribosomal protein L35a

Chain Lf:  79% 21%



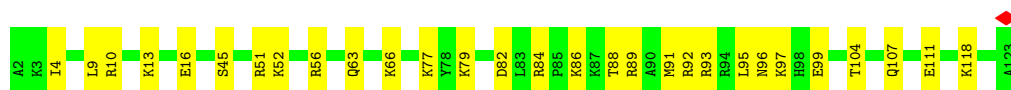
- Molecule 36: 60S ribosomal protein L34

Chain Lg:  78% 22%



- Molecule 37: 60S ribosomal protein L35

Chain Lh:  76% 24%



- Molecule 38: 60S ribosomal protein L36

Chain Li: 84% 16%



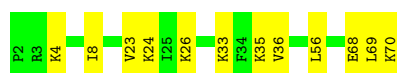
- Molecule 39: 60S ribosomal protein L37

Chain Lj: 69% 31%



- Molecule 40: 60S ribosomal protein L38

Chain Lk: 83% 17%



- Molecule 41: 60S ribosomal protein L39

Chain Ll: 72% 28%



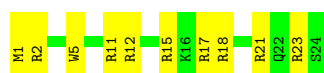
- Molecule 42: Large ribosomal subunit protein eL40

Chain Lm: 75% 25%



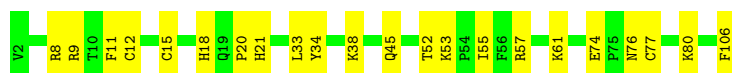
- Molecule 43: 60S ribosomal protein L41

Chain Ln: 58% 42%



- Molecule 44: 60S ribosomal protein L36a

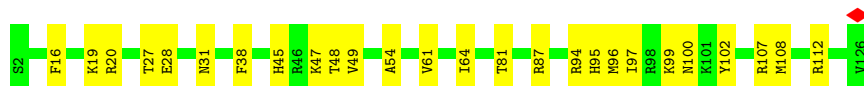
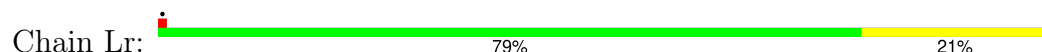
Chain Lo: 79% 21%



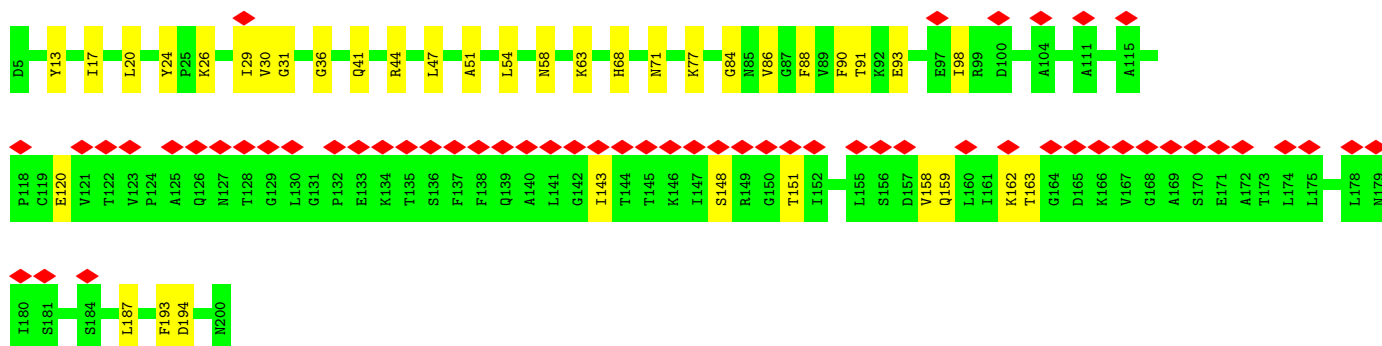
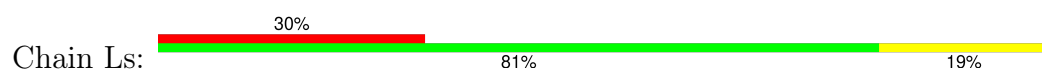
- Molecule 45: 60S ribosomal protein L37a



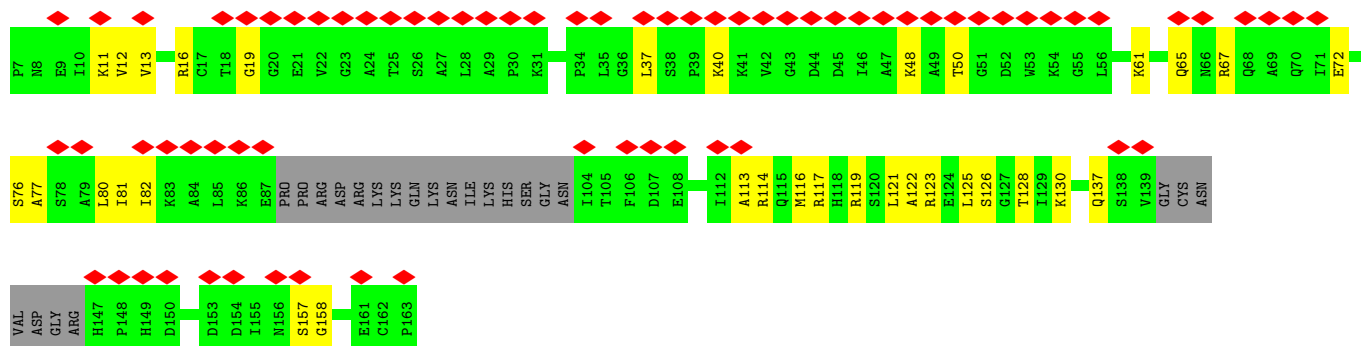
- Molecule 46: 60S ribosomal protein L28



- Molecule 47: 60S acidic ribosomal protein P0

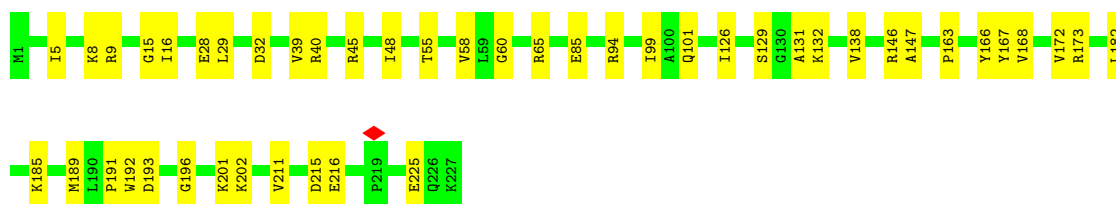


- Molecule 48: Large ribosomal subunit protein uL11



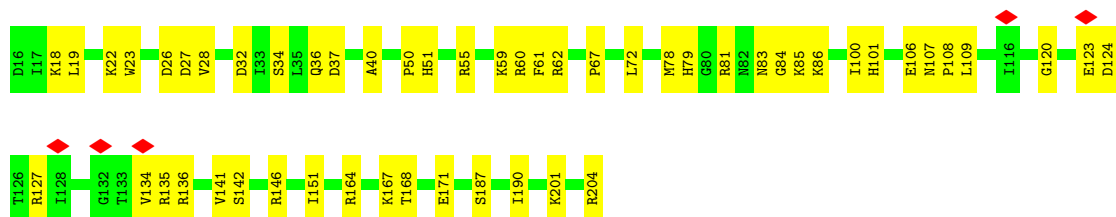
- Molecule 49: Small ribosomal subunit protein uS3

Chain SD:  80% 20%



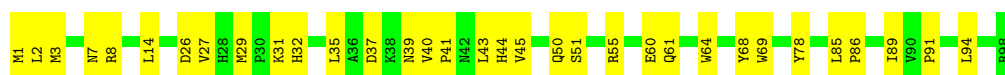
- Molecule 50: 40S ribosomal protein S5

Chain SF:  71% 29%



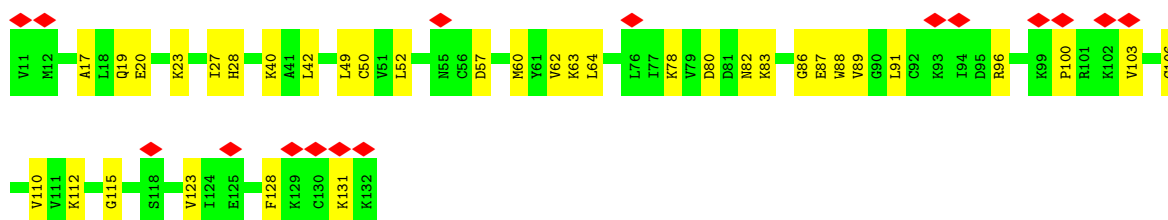
- Molecule 51: 40S ribosomal protein S10

Chain SK:  66% 34%



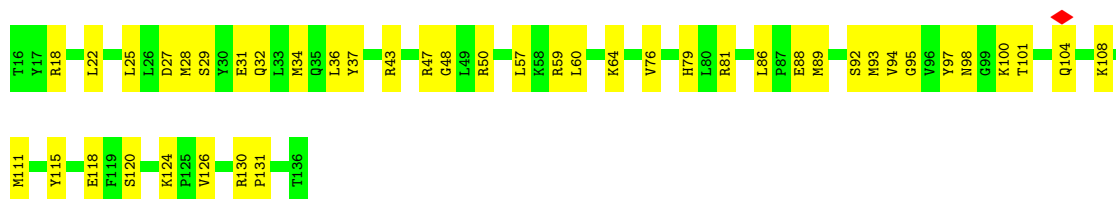
- Molecule 52: Small ribosomal subunit protein eS12

Chain SM:  13% 71% 29%



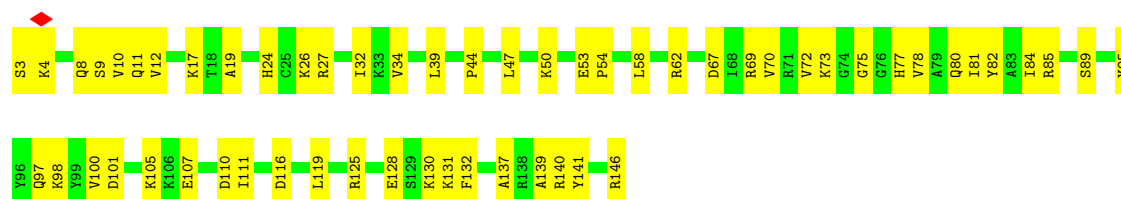
- Molecule 53: Small ribosomal subunit protein uS19

Chain SP:  64% 36%



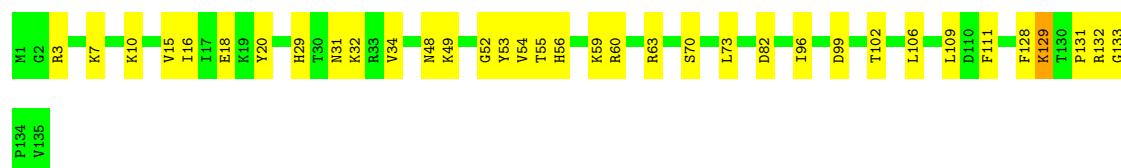
- Molecule 54: Small ribosomal subunit protein uS9

Chain SQ:  60% 40%



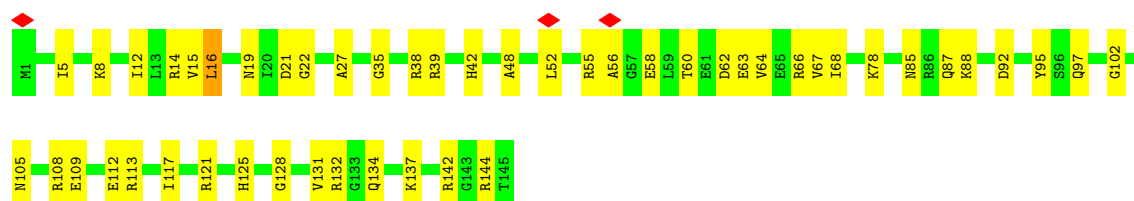
- Molecule 55: Small ribosomal subunit protein eS17

Chain SR:  74% 25%



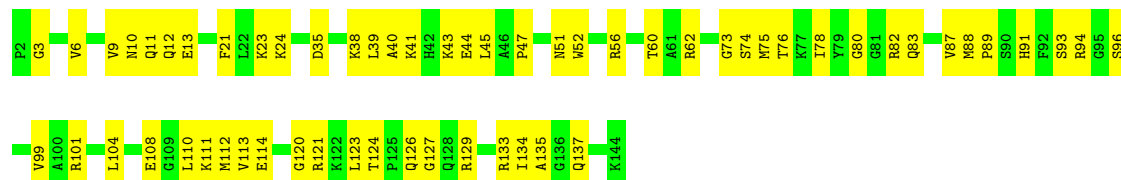
- Molecule 56: 40S ribosomal protein S18

Chain SS:  66% 33%



- Molecule 57: 40S ribosomal protein S19

Chain ST:  59% 41%



- Molecule 58: 40S ribosomal protein S20

Chain SU:  56% 43%



- Molecule 59: Small ribosomal subunit protein eS25

Chain SZ:  81% 19%



- Molecule 60: 40S ribosomal protein S28

Chain Sc:  72% 28%



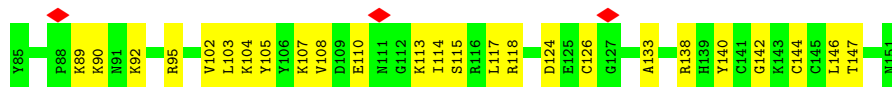
- Molecule 61: 40S ribosomal protein S29

Chain Sd:  67% 33%



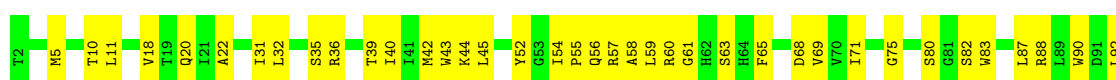
- Molecule 62: Ubiquitin-40S ribosomal protein S27a

Chain Sf:  63% 37%



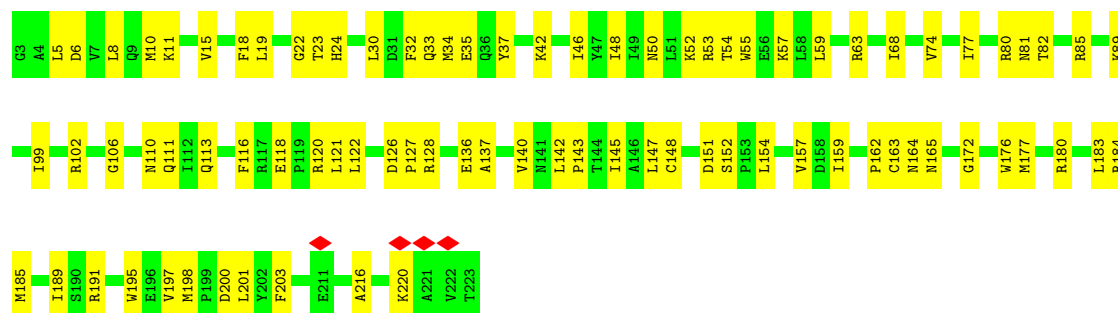
- Molecule 63: Receptor of activated protein C kinase 1

Chain Sg:  65% 35%



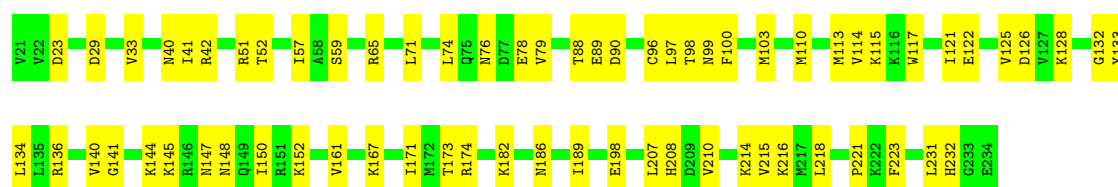
- Molecule 64: 40S ribosomal protein SA

Chain SA:  62% 38%



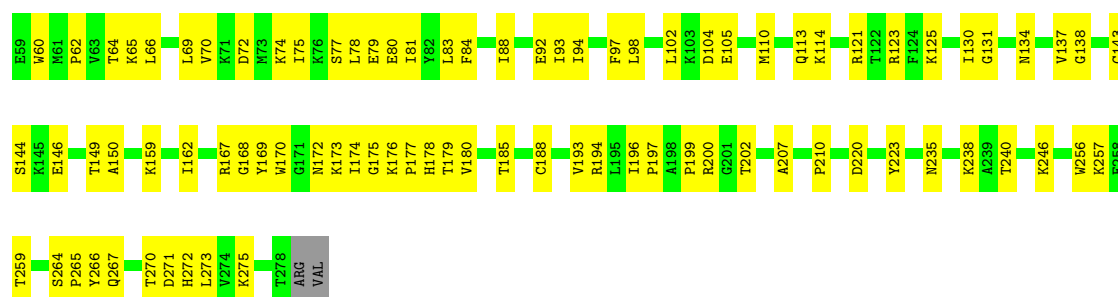
- Molecule 65: 40S ribosomal protein S3a

Chain SB: 69% 31%



- Molecule 66: 40S ribosomal protein S2

Chain SC: 60% 39%



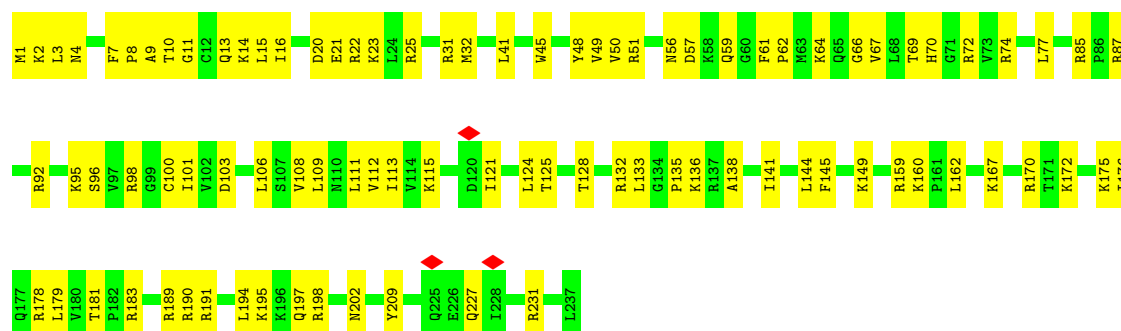
- Molecule 67: Small ribosomal subunit protein eS4, X isoform

Chain SE: 70% 30%



- Molecule 68: 40S ribosomal protein S6

Chain SG:  62% 38%



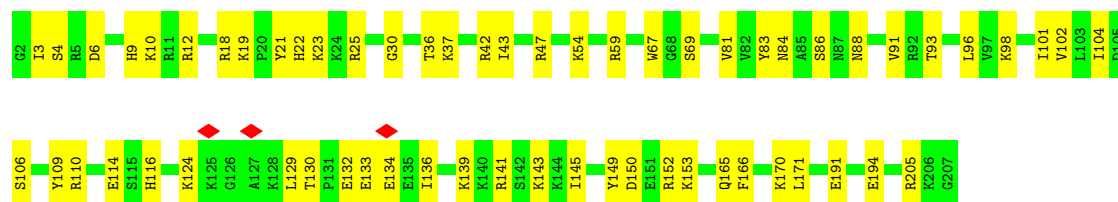
- Molecule 69: Small ribosomal subunit protein eS7

Chain SH:  64% 34%



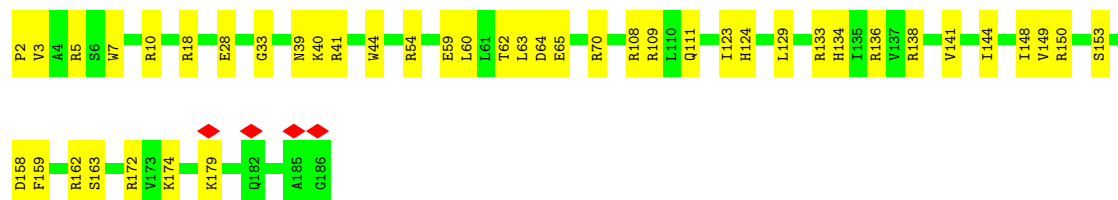
- Molecule 70: 40S ribosomal protein S8

Chain SI:  70% 30%



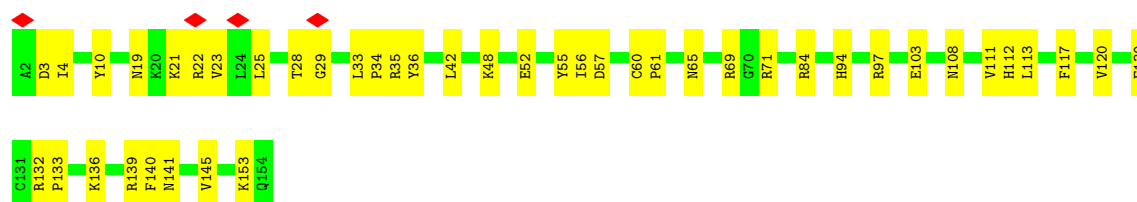
- Molecule 71: 40S ribosomal protein S9

Chain SJ:  77% 23%

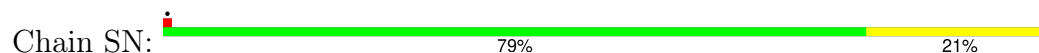


- Molecule 72: 40S ribosomal protein S11

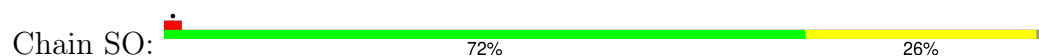
Chain SL:  71% 29%



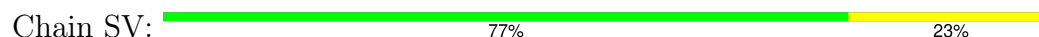
- Molecule 73: 40S ribosomal protein S13



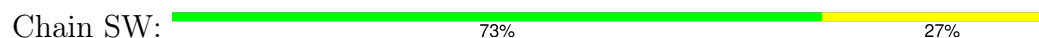
- Molecule 74: Small ribosomal subunit protein uS11



- Molecule 75: Small ribosomal subunit protein eS21



- Molecule 76: 40S ribosomal protein S15a

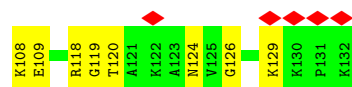
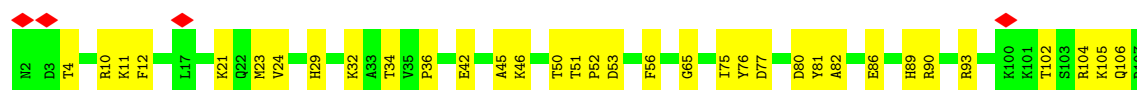


- Molecule 77: 40S ribosomal protein S23

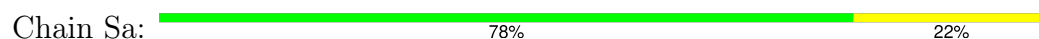




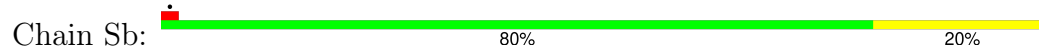
- Molecule 78: 40S ribosomal protein S24



- Molecule 79: 40S ribosomal protein S26



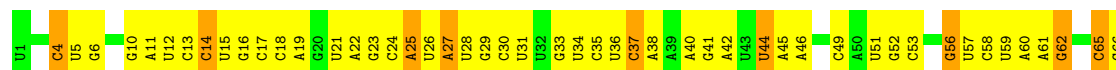
- Molecule 80: Small ribosomal subunit protein eS27



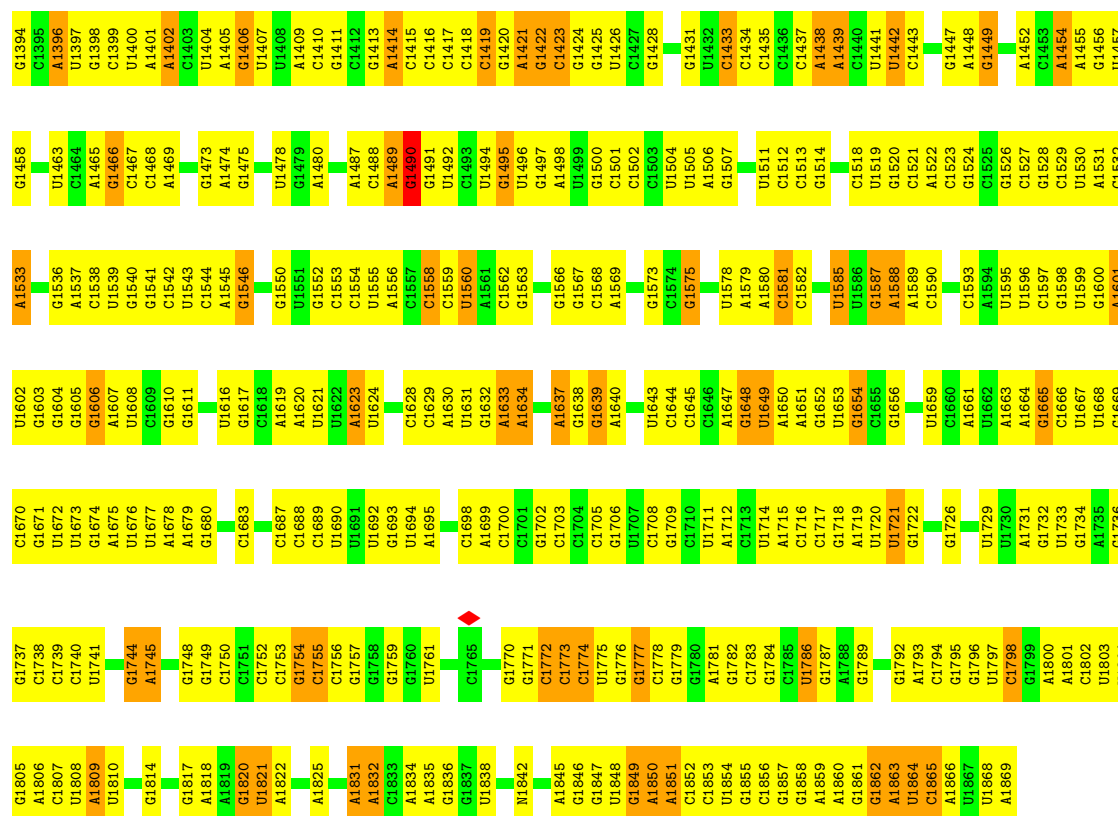
- Molecule 81: Small ribosomal subunit protein eS30



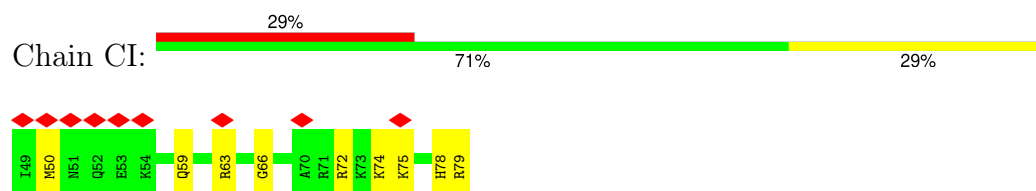
- Molecule 82: 18S rRNA [Homo sapiens]







● Molecule 83: Transcription factor BTF3



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	7052	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	0.487	Depositor
Minimum map value	-0.199	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.032	Depositor
Recommended contour level	0.0714	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, A2M, 4AC, OMU, 1MA, B8N, SPM, PSU, MG, 3HE, HMT, UR3, SPD, MA6, 5MC, OMC, UY1, ZN, OMG, G7M

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	Pt	0.15	0/1761	0.29	0/2741
2	L5	0.23	0/85098	0.31	0/132762
3	L7	0.22	0/2861	0.28	0/4459
4	L8	0.22	0/3631	0.32	0/5657
5	LA	0.22	0/1936	0.41	0/2596
6	LB	0.21	0/3306	0.38	0/4424
7	LC	0.21	0/2981	0.39	0/4002
8	LD	0.18	0/2428	0.36	0/3252
9	LE	0.20	0/1973	0.44	0/2645
10	LF	0.21	0/1905	0.36	0/2539
11	LG	0.20	0/1960	0.41	0/2637
12	LH	0.20	0/1537	0.35	0/2066
13	LI	0.20	0/1751	0.36	0/2340
14	LJ	0.30	0/1385	0.48	0/1852
15	LL	0.19	0/1732	0.36	0/2315
16	LM	0.21	0/1161	0.39	0/1554
17	LN	0.21	0/1746	0.36	0/2338
18	LO	0.21	0/1682	0.39	0/2250
19	LP	0.21	0/1268	0.38	0/1701
20	LQ	0.21	0/1537	0.36	0/2052
21	LR	0.20	0/1582	0.37	0/2091
22	LS	0.20	0/1493	0.36	0/2003
23	LT	0.21	0/1326	0.37	0/1770
24	LU	0.21	0/839	0.44	0/1126
25	LV	0.20	0/993	0.39	0/1332
26	LW	0.19	0/959	0.39	0/1270
27	LX	0.20	0/1002	0.36	0/1345
28	LY	0.22	0/1132	0.39	0/1504
29	LZ	0.19	0/1130	0.40	0/1507
30	La	0.20	0/1191	0.38	0/1591
31	Lb	0.18	0/889	0.40	0/1175

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
32	Lc	0.21	0/774	0.35	0/1038
33	Ld	0.20	0/903	0.37	0/1216
34	Le	0.43	0/1071	0.53	0/1429
35	Lf	0.21	0/895	0.36	0/1198
36	Lg	0.20	0/916	0.35	0/1220
37	Lh	0.18	0/1023	0.34	0/1351
38	Li	0.18	0/843	0.34	0/1115
39	Lj	0.19	0/720	0.39	0/952
40	Lk	0.20	0/575	0.43	0/761
41	Ll	0.20	0/454	0.32	0/599
42	Lm	0.19	0/435	0.40	0/575
43	Ln	0.20	0/231	0.31	0/294
44	Lo	0.20	0/876	0.35	0/1156
45	Lp	0.20	0/718	0.36	0/953
46	Lr	0.20	0/1017	0.37	0/1364
47	Ls	0.16	0/1519	0.38	0/2052
48	Lt	0.19	0/1009	0.52	0/1363
49	SD	0.16	0/1793	0.34	0/2414
50	SF	0.17	0/1516	0.36	0/2037
51	SK	0.18	0/851	0.46	0/1147
52	SM	0.16	0/950	0.42	0/1275
53	SP	0.18	0/1003	0.41	0/1342
54	SQ	0.17	0/1160	0.43	0/1553
55	SR	0.20	0/1105	0.47	0/1484
56	SS	0.17	0/1216	0.38	0/1628
57	ST	0.19	0/1131	0.41	0/1515
58	SU	0.33	0/831	0.57	0/1115
59	SZ	0.19	0/604	0.48	0/810
60	Sc	0.18	0/508	0.43	0/680
61	Sd	0.17	0/470	0.37	0/623
62	Sf	0.19	0/560	0.48	0/745
63	Sg	0.17	0/2493	0.39	0/3394
64	SA	0.20	0/1778	0.38	0/2416
65	SB	0.18	0/1765	0.39	0/2362
66	SC	0.20	0/1744	0.39	0/2357
67	SE	0.19	0/2118	0.39	0/2849
68	SG	0.19	0/1946	0.42	0/2590
69	SH	0.20	0/1519	0.45	0/2033
70	SI	0.19	0/1715	0.39	0/2287
71	SJ	0.16	0/1550	0.38	0/2069
72	SL	0.19	0/1268	0.37	0/1696
73	SN	0.19	0/1232	0.34	0/1656
74	SO	0.21	0/1037	0.40	0/1391

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
75	SV	0.21	0/643	0.39	0/860
76	SW	0.21	0/1051	0.40	0/1406
77	SX	0.18	0/1116	0.40	0/1490
78	SY	0.17	0/1083	0.42	0/1438
79	Sa	0.19	0/836	0.36	0/1121
80	Sb	0.21	0/665	0.39	0/891
81	Se	0.18	0/465	0.44	0/612
82	S2	0.22	1/39756 (0.0%)	0.31	0/61939
83	CI	0.16	0/247	0.30	0/323
All	All	0.22	1/229879 (0.0%)	0.34	0/337080

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

Mol	Chain	#Chirality outliers	#Planarity outliers
54	SQ	0	1
58	SU	0	1
All	All	0	2

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
82	S2	172	OMU	O3'-P	5.15	1.61	1.56

There are no bond angle outliers.

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
54	SQ	107	GLU	Peptide
58	SU	96	GLU	Peptide

5.2 Too-close contacts ⓘ

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	Pt	1576	0	803	30	0
2	L5	78444	0	39717	2020	0
3	L7	2561	0	1295	59	0
4	L8	3315	0	1685	96	0
5	LA	1898	0	1993	58	0
6	LB	3238	0	3376	89	0
7	LC	2927	0	3104	57	0
8	LD	2382	0	2410	49	0
9	LE	1935	0	2096	50	0
10	LF	1870	0	1996	46	0
11	LG	1927	0	2074	37	0
12	LH	1518	0	1601	41	0
13	LI	1711	0	1749	37	0
14	LJ	1362	0	1399	28	0
15	LL	1701	0	1818	29	0
16	LM	1138	0	1204	34	0
17	LN	1701	0	1749	47	0
18	LO	1650	0	1794	43	0
19	LP	1242	0	1269	26	0
20	LQ	1513	0	1628	43	0
21	LR	1566	0	1729	37	0
22	LS	1453	0	1490	24	0
23	LT	1298	0	1366	30	0
24	LU	825	0	850	18	0
25	LV	979	0	1039	18	0
26	LW	945	0	1003	26	0
27	LX	985	0	1066	18	0
28	LY	1115	0	1205	27	0
29	LZ	1107	0	1182	29	0
30	La	1162	0	1213	29	0
31	Lb	876	0	948	24	0
32	Lc	764	0	804	14	0
33	Ld	888	0	930	18	0
34	Le	1053	0	1147	19	0
35	Lf	876	0	912	19	0
36	Lg	906	0	998	17	0
37	Lh	1015	0	1148	24	0
38	Li	832	0	917	14	0
39	Lj	705	0	737	25	0
40	Lk	569	0	637	12	0
41	Ll	444	0	483	14	0
42	Lm	429	0	465	11	0
43	Ln	230	0	276	12	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
44	Lo	862	0	929	14	0
45	Lp	708	0	756	21	0
46	Lr	1002	0	1068	18	0
47	Ls	1496	0	1540	26	0
48	Lt	998	0	1032	21	0
49	SD	1765	0	1865	31	0
50	SF	1495	0	1549	42	0
51	SK	827	0	854	25	0
52	SM	940	0	965	24	0
53	SP	985	0	1031	33	0
54	SQ	1142	0	1213	45	0
55	SR	1090	0	1149	26	0
56	SS	1198	0	1261	34	0
57	ST	1112	0	1146	49	0
58	SU	821	0	883	36	0
59	SZ	598	0	656	11	0
60	Sc	506	0	536	13	0
61	Sd	459	0	452	17	0
62	Sf	548	0	551	20	0
63	Sg	2436	0	2393	79	0
64	SA	1741	0	1746	61	0
65	SB	1738	0	1809	46	0
66	SC	1707	0	1791	60	0
67	SE	2076	0	2177	58	0
68	SG	1923	0	2089	83	0
69	SH	1497	0	1590	49	0
70	SI	1686	0	1772	49	0
71	SJ	1525	0	1640	39	0
72	SL	1247	0	1323	33	0
73	SN	1208	0	1294	22	0
74	SO	1024	0	1050	25	0
75	SV	636	0	637	14	0
76	SW	1034	0	1080	31	0
77	SX	1098	0	1167	34	0
78	SY	1065	0	1142	31	0
79	Sa	821	0	870	17	0
80	Sb	651	0	672	14	0
81	Se	459	0	503	23	0
82	S2	36953	0	18679	1030	0
83	CI	247	0	282	17	0
84	L5	177	0	0	0	0
84	L7	3	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
84	L8	6	0	0	0	0
84	LA	1	0	0	0	0
84	LC	1	0	0	0	0
84	LP	1	0	0	0	0
84	LV	1	0	0	0	0
84	Le	1	0	0	0	0
84	S2	26	0	0	0	0
84	SS	1	0	0	0	0
84	Sa	1	0	0	0	0
85	L5	98	0	182	8	0
86	L5	90	0	171	18	0
86	L8	10	0	19	1	0
87	L5	39	0	36	10	0
88	L5	20	0	23	1	0
89	Lg	1	0	0	0	0
89	Lj	1	0	0	0	0
89	Lm	1	0	0	0	0
89	Lo	1	0	0	0	0
89	Lp	1	0	0	0	0
89	Sa	1	0	0	0	0
All	All	218437	0	162878	4831	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 13.

The worst 5 of 4831 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)
87:L5:5294:HMT:C7	87:L5:5294:HMT:C8	1.79	1.61
87:L5:5294:HMT:C7	87:L5:5294:HMT:C6	1.77	1.56
2:L5:1996:C:H42	2:L5:2000:G:N2	1.58	1.01
76:SW:2:VAL:N	82:S2:1091:C:HO2'	1.57	1.01
82:S2:1324:G:H1	82:S2:1504:U:H3	1.05	1.00

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	LA	246/248 (99%)	227 (92%)	19 (8%)	0	100	100
6	LB	400/402 (100%)	379 (95%)	21 (5%)	0	100	100
7	LC	366/368 (100%)	352 (96%)	14 (4%)	0	100	100
8	LD	291/293 (99%)	280 (96%)	11 (4%)	0	100	100
9	LE	236/250 (94%)	222 (94%)	14 (6%)	0	100	100
10	LF	223/225 (99%)	214 (96%)	9 (4%)	0	100	100
11	LG	239/241 (99%)	222 (93%)	17 (7%)	0	100	100
12	LH	188/190 (99%)	179 (95%)	9 (5%)	0	100	100
13	LI	211/213 (99%)	202 (96%)	9 (4%)	0	100	100
14	LJ	168/176 (96%)	158 (94%)	10 (6%)	0	100	100
15	LL	208/210 (99%)	200 (96%)	8 (4%)	0	100	100
16	LM	137/139 (99%)	129 (94%)	8 (6%)	0	100	100
17	LN	201/203 (99%)	196 (98%)	5 (2%)	0	100	100
18	LO	199/201 (99%)	195 (98%)	4 (2%)	0	100	100
19	LP	151/153 (99%)	146 (97%)	5 (3%)	0	100	100
20	LQ	185/187 (99%)	179 (97%)	6 (3%)	0	100	100
21	LR	185/187 (99%)	180 (97%)	5 (3%)	0	100	100
22	LS	173/175 (99%)	164 (95%)	9 (5%)	0	100	100
23	LT	157/159 (99%)	150 (96%)	7 (4%)	0	100	100
24	LU	99/101 (98%)	92 (93%)	7 (7%)	0	100	100
25	LV	129/131 (98%)	126 (98%)	3 (2%)	0	100	100
26	LW	112/124 (90%)	108 (96%)	4 (4%)	0	100	100
27	LX	118/120 (98%)	115 (98%)	3 (2%)	0	100	100
28	LY	132/134 (98%)	127 (96%)	5 (4%)	0	100	100
29	LZ	133/135 (98%)	124 (93%)	9 (7%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
30	La	145/147 (99%)	141 (97%)	4 (3%)	0	100	100
31	Lb	105/121 (87%)	101 (96%)	4 (4%)	0	100	100
32	Lc	96/98 (98%)	93 (97%)	3 (3%)	0	100	100
33	Ld	105/107 (98%)	101 (96%)	4 (4%)	0	100	100
34	Le	126/128 (98%)	124 (98%)	2 (2%)	0	100	100
35	Lf	107/109 (98%)	105 (98%)	2 (2%)	0	100	100
36	Lg	112/114 (98%)	109 (97%)	3 (3%)	0	100	100
37	Lh	120/122 (98%)	116 (97%)	4 (3%)	0	100	100
38	Li	100/102 (98%)	98 (98%)	2 (2%)	0	100	100
39	Lj	84/86 (98%)	81 (96%)	3 (4%)	0	100	100
40	Lk	67/69 (97%)	64 (96%)	3 (4%)	0	100	100
41	Ll	48/50 (96%)	47 (98%)	1 (2%)	0	100	100
42	Lm	50/52 (96%)	50 (100%)	0	0	100	100
43	Ln	22/24 (92%)	22 (100%)	0	0	100	100
44	Lo	103/105 (98%)	99 (96%)	4 (4%)	0	100	100
45	Lp	89/91 (98%)	87 (98%)	2 (2%)	0	100	100
46	Lr	123/125 (98%)	121 (98%)	2 (2%)	0	100	100
47	Ls	194/196 (99%)	179 (92%)	15 (8%)	0	100	100
48	Lt	128/157 (82%)	110 (86%)	18 (14%)	0	100	100
49	SD	225/227 (99%)	217 (96%)	8 (4%)	0	100	100
50	SF	187/189 (99%)	175 (94%)	12 (6%)	0	100	100
51	SK	96/98 (98%)	88 (92%)	8 (8%)	0	100	100
52	SM	120/122 (98%)	108 (90%)	12 (10%)	0	100	100
53	SP	119/121 (98%)	116 (98%)	3 (2%)	0	100	100
54	SQ	142/144 (99%)	135 (95%)	7 (5%)	0	100	100
55	SR	133/135 (98%)	121 (91%)	11 (8%)	1 (1%)	16	51
56	SS	143/145 (99%)	136 (95%)	6 (4%)	1 (1%)	19	54
57	ST	141/143 (99%)	134 (95%)	7 (5%)	0	100	100
58	SU	102/104 (98%)	98 (96%)	4 (4%)	0	100	100
59	SZ	73/75 (97%)	69 (94%)	4 (6%)	0	100	100
60	Sc	62/64 (97%)	60 (97%)	2 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
61	Sd	53/55 (96%)	52 (98%)	1 (2%)	0	100	100
62	Sf	65/67 (97%)	57 (88%)	8 (12%)	0	100	100
63	Sg	311/313 (99%)	296 (95%)	15 (5%)	0	100	100
64	SA	219/221 (99%)	207 (94%)	12 (6%)	0	100	100
65	SB	212/214 (99%)	207 (98%)	5 (2%)	0	100	100
66	SC	218/222 (98%)	202 (93%)	16 (7%)	0	100	100
67	SE	260/262 (99%)	246 (95%)	14 (5%)	0	100	100
68	SG	235/237 (99%)	219 (93%)	16 (7%)	0	100	100
69	SH	182/189 (96%)	167 (92%)	15 (8%)	0	100	100
70	SI	204/206 (99%)	195 (96%)	9 (4%)	0	100	100
71	SJ	183/185 (99%)	172 (94%)	10 (6%)	1 (0%)	25	60
72	SL	151/153 (99%)	142 (94%)	9 (6%)	0	100	100
73	SN	148/150 (99%)	145 (98%)	3 (2%)	0	100	100
74	SO	135/140 (96%)	124 (92%)	11 (8%)	0	100	100
75	SV	81/83 (98%)	77 (95%)	4 (5%)	0	100	100
76	SW	127/129 (98%)	120 (94%)	7 (6%)	0	100	100
77	SX	139/141 (99%)	131 (94%)	8 (6%)	0	100	100
78	SY	129/131 (98%)	123 (95%)	6 (5%)	0	100	100
79	Sa	100/102 (98%)	97 (97%)	3 (3%)	0	100	100
80	Sb	81/83 (98%)	76 (94%)	5 (6%)	0	100	100
81	Se	56/58 (97%)	51 (91%)	5 (9%)	0	100	100
83	CI	29/31 (94%)	29 (100%)	0	0	100	100
All	All	11672/11907 (98%)	11106 (95%)	563 (5%)	3 (0%)	100	100

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
55	SR	129	LYS
56	SS	16	LEU
71	SJ	138	ARG

5.3.2 Protein sidechains ⓘ

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

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

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

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

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
62	Sf	60/60 (100%)	60 (100%)	0	100	100
63	Sg	272/272 (100%)	272 (100%)	0	100	100
64	SA	183/183 (100%)	183 (100%)	0	100	100
65	SB	195/195 (100%)	195 (100%)	0	100	100
66	SC	186/188 (99%)	186 (100%)	0	100	100
67	SE	224/224 (100%)	224 (100%)	0	100	100
68	SG	207/207 (100%)	207 (100%)	0	100	100
69	SH	166/169 (98%)	166 (100%)	0	100	100
70	SI	178/178 (100%)	178 (100%)	0	100	100
71	SJ	161/161 (100%)	161 (100%)	0	100	100
72	SL	137/137 (100%)	137 (100%)	0	100	100
73	SN	130/130 (100%)	130 (100%)	0	100	100
74	SO	107/110 (97%)	107 (100%)	0	100	100
75	SV	67/67 (100%)	67 (100%)	0	100	100
76	SW	112/112 (100%)	112 (100%)	0	100	100
77	SX	113/113 (100%)	113 (100%)	0	100	100
78	SY	113/113 (100%)	113 (100%)	0	100	100
79	Sa	89/89 (100%)	89 (100%)	0	100	100
80	Sb	75/75 (100%)	75 (100%)	0	100	100
81	Se	47/47 (100%)	47 (100%)	0	100	100
83	CI	25/25 (100%)	25 (100%)	0	100	100
All	All	10147/10221 (99%)	10147 (100%)	0	100	100

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

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 78 such sidechains are listed below:

Mol	Chain	Res	Type
64	SA	84	GLN
73	SN	105	ASN
65	SB	76	ASN
67	SE	188	ASN
78	SY	89	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	Pt	72/74 (97%)	16 (22%)	0
2	L5	3643/3655 (99%)	804 (22%)	15 (0%)
3	L7	119/120 (99%)	13 (10%)	0
4	L8	155/156 (99%)	25 (16%)	0
82	S2	1714/1740 (98%)	405 (23%)	4 (0%)
All	All	5703/5745 (99%)	1263 (22%)	19 (0%)

5 of 1263 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	Pt	9	A
1	Pt	19	G
1	Pt	21	A
1	Pt	46	G
1	Pt	47	U

5 of 19 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
2	L5	4913	G
82	S2	688	U
82	S2	1781	A
82	S2	563	G
2	L5	2675	G

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

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	$\# Z > 2$
2	PSU	L5	4493	2	18,21,22	1.08	1 (5%)	21,30,33	1.91	4 (19%)
2	OMC	L5	2351	84,2	19,22,23	0.66	0	25,31,34	1.38	4 (16%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
82	PSU	S2	1244	82	18,21,22	1.12	2 (11%)	21,30,33	1.94	4 (19%)
2	A2M	L5	1524	2	18,25,26	1.26	1 (5%)	20,36,39	2.16	6 (30%)
2	OMC	L5	2824	2	19,22,23	0.57	0	25,31,34	0.70	1 (4%)
2	OMG	L5	3899	2	19,26,27	1.21	2 (10%)	21,38,41	0.81	1 (4%)
2	6MZ	L5	4220	2	17,25,26	3.59	7 (41%)	15,36,39	2.87	4 (26%)
82	OMG	S2	683	82	19,26,27	1.22	2 (10%)	21,38,41	0.78	1 (4%)
82	PSU	S2	1081	82	18,21,22	1.08	2 (11%)	21,30,33	2.02	6 (28%)
2	PSU	L5	1862	2	18,21,22	1.11	1 (5%)	21,30,33	2.00	4 (19%)
2	OMG	L5	4618	2	19,26,27	1.23	2 (10%)	21,38,41	0.77	0
2	OMC	L5	2861	2	19,22,23	0.61	0	25,31,34	0.91	1 (4%)
82	A2M	S2	1383	82	18,25,26	1.38	3 (16%)	20,36,39	2.33	8 (40%)
82	A2M	S2	468	82	18,25,26	1.28	2 (11%)	20,36,39	2.14	5 (25%)
2	PSU	L5	1860	2	18,21,22	1.09	1 (5%)	21,30,33	1.94	4 (19%)
2	OMG	L5	2424	2	19,26,27	1.20	2 (10%)	21,38,41	0.81	1 (4%)
2	OMG	L5	2364	84,2	19,26,27	1.18	2 (10%)	21,38,41	0.80	1 (4%)
2	PSU	L5	4576	2	18,21,22	1.09	1 (5%)	21,30,33	1.93	5 (23%)
82	PSU	S2	1174	82	18,21,22	1.07	2 (11%)	21,30,33	2.06	5 (23%)
82	PSU	S2	966	82,84	18,21,22	1.09	1 (5%)	21,30,33	1.99	5 (23%)
82	PSU	S2	801	82	18,21,22	1.08	1 (5%)	21,30,33	1.92	4 (19%)
4	OMG	L8	75	4	19,26,27	1.15	2 (10%)	21,38,41	0.84	1 (4%)
2	PSU	L5	1792	2	18,21,22	1.06	1 (5%)	21,30,33	1.96	4 (19%)
2	OMG	L5	4370	2	19,26,27	1.21	2 (10%)	21,38,41	0.77	1 (4%)
2	PSU	L5	4552	2	18,21,22	1.03	1 (5%)	21,30,33	1.99	4 (19%)
82	OMC	S2	517	82	19,22,23	0.52	0	25,31,34	0.61	0
2	A2M	L5	2363	84,2	18,25,26	1.42	2 (11%)	20,36,39	1.90	6 (30%)
2	PSU	L5	4296	2	18,21,22	1.13	2 (11%)	21,30,33	2.08	5 (23%)
2	OMG	L5	1522	2	19,26,27	1.19	2 (10%)	21,38,41	0.80	1 (4%)
2	OMG	L5	1625	2	19,26,27	1.23	2 (10%)	21,38,41	0.82	1 (4%)
2	PSU	L5	4312	2	18,21,22	1.08	1 (5%)	21,30,33	2.00	5 (23%)
82	PSU	S2	1046	82	18,21,22	1.07	1 (5%)	21,30,33	1.96	4 (19%)
82	OMU	S2	627	82	19,22,23	3.33	7 (36%)	25,31,34	1.86	5 (20%)
82	OMG	S2	867	82	19,26,27	1.24	2 (10%)	21,38,41	0.79	1 (4%)
82	A2M	S2	99	82,84	18,25,26	1.32	2 (11%)	20,36,39	1.92	6 (30%)
2	OMG	L5	4499	2	19,26,27	1.18	2 (10%)	21,38,41	0.84	1 (4%)
2	PSU	L5	4579	2	18,21,22	1.07	1 (5%)	21,30,33	2.05	5 (23%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	OMG	L5	1316	2	19,26,27	1.24	2 (10%)	21,38,41	0.77	1 (4%)
82	PSU	S2	93	82	18,21,22	1.12	1 (5%)	21,30,33	1.88	4 (19%)
2	OMC	L5	3869	2	19,22,23	0.57	0	25,31,34	0.68	0
82	PSU	S2	109	82	18,21,22	1.10	1 (5%)	21,30,33	2.04	5 (23%)
2	PSU	L5	3637	2	18,21,22	1.09	1 (5%)	21,30,33	1.91	4 (19%)
82	OMU	S2	1326	82	19,22,23	3.33	7 (36%)	25,31,34	1.83	5 (20%)
2	PSU	L5	4299	2	18,21,22	1.05	1 (5%)	21,30,33	1.94	4 (19%)
82	OMG	S2	1490	82	19,26,27	1.20	2 (10%)	21,38,41	0.69	0
2	OMC	L5	4456	2	19,22,23	0.63	0	25,31,34	0.76	1 (4%)
2	A2M	L5	2787	2	18,25,26	1.22	2 (11%)	20,36,39	1.77	6 (30%)
82	PSU	S2	814	82	18,21,22	1.13	1 (5%)	21,30,33	1.97	4 (19%)
2	A2M	L5	1871	84,2	18,25,26	1.42	2 (11%)	20,36,39	2.24	5 (25%)
82	PSU	S2	681	82	18,21,22	1.08	1 (5%)	21,30,33	1.93	4 (19%)
82	OMC	S2	1391	82	19,22,23	0.55	0	25,31,34	0.69	0
82	PSU	S2	686	82	18,21,22	1.12	2 (11%)	21,30,33	2.01	5 (23%)
2	PSU	L5	4431	2	18,21,22	1.06	1 (5%)	21,30,33	2.07	5 (23%)
2	PSU	L5	2632	2	18,21,22	1.09	1 (5%)	21,30,33	1.84	4 (19%)
82	A2M	S2	27	82	18,25,26	1.32	2 (11%)	20,36,39	1.93	6 (30%)
2	OMU	L5	2837	2	19,22,23	3.33	7 (36%)	25,31,34	1.79	4 (16%)
2	PSU	L5	1781	2	18,21,22	1.05	1 (5%)	21,30,33	1.96	4 (19%)
2	OMC	L5	1340	2	19,22,23	0.57	0	25,31,34	0.75	1 (4%)
2	PSU	L5	5010	2	18,21,22	1.08	1 (5%)	21,30,33	2.05	4 (19%)
2	PSU	L5	3695	2	18,21,22	1.09	2 (11%)	21,30,33	1.96	6 (28%)
82	OMU	S2	428	82	19,22,23	3.38	7 (36%)	25,31,34	1.85	5 (20%)
82	A2M	S2	1031	82	18,25,26	1.33	2 (11%)	20,36,39	1.96	6 (30%)
2	5MC	L5	4447	2	19,22,23	0.76	0	26,32,35	0.58	0
2	OMC	L5	3701	2	19,22,23	0.62	0	25,31,34	0.92	1 (4%)
82	PSU	S2	863	82	18,21,22	1.08	1 (5%)	21,30,33	1.96	4 (19%)
82	OMG	S2	601	82	19,26,27	1.16	2 (10%)	21,38,41	0.87	1 (4%)
2	PSU	L5	4973	2	18,21,22	1.14	1 (5%)	21,30,33	1.90	5 (23%)
2	PSU	L5	4972	2	18,21,22	1.09	1 (5%)	21,30,33	2.05	5 (23%)
2	OMG	L5	4392	2	19,26,27	1.20	2 (10%)	21,38,41	0.76	1 (4%)
2	PSU	L5	3853	84,2	18,21,22	1.04	1 (5%)	21,30,33	1.79	4 (19%)
2	PSU	L5	3844	2	18,21,22	1.08	1 (5%)	21,30,33	1.82	4 (19%)
2	PSU	L5	4636	2	18,21,22	1.13	1 (5%)	21,30,33	2.05	6 (28%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	OMU	L5	3925	2	19,22,23	3.32	7 (36%)	25,31,34	1.91	5 (20%)
82	OMG	S2	509	82	19,26,27	1.17	2 (10%)	21,38,41	0.81	1 (4%)
82	OMU	S2	172	82,84	19,22,23	3.39	7 (36%)	25,31,34	1.84	5 (20%)
2	PSU	L5	3822	2	18,21,22	1.10	3 (16%)	21,30,33	2.06	6 (28%)
2	OMG	L5	2876	2	19,26,27	1.27	3 (15%)	21,38,41	0.75	0
2	PSU	L5	4532	2	18,21,22	1.07	1 (5%)	21,30,33	1.86	4 (19%)
2	PSU	L5	4293	2	18,21,22	1.10	2 (11%)	21,30,33	1.98	5 (23%)
2	OMC	L5	2804	2	19,22,23	0.61	0	25,31,34	0.94	2 (8%)
2	UR3	L5	4530	2	19,22,23	2.72	7 (36%)	26,32,35	1.59	3 (11%)
2	PSU	L5	1782	2	18,21,22	1.10	1 (5%)	21,30,33	2.00	5 (23%)
82	PSU	S2	866	82	18,21,22	1.13	1 (5%)	21,30,33	1.96	6 (28%)
2	PSU	L5	3639	2	18,21,22	1.05	1 (5%)	21,30,33	1.99	4 (19%)
2	OMC	L5	2422	84,2	19,22,23	0.59	0	25,31,34	0.71	1 (4%)
82	6MZ	S2	1832	82,84	21,26,26	1.31	2 (9%)	22,39,39	1.83	2 (9%)
2	A2M	L5	3825	2	18,25,26	1.27	2 (11%)	20,36,39	2.00	5 (25%)
2	OMG	L5	3627	2	19,26,27	1.21	3 (15%)	21,38,41	0.89	1 (4%)
2	PSU	L5	4628	2	18,21,22	1.07	1 (5%)	21,30,33	1.98	5 (23%)
2	OMG	L5	3744	2	19,26,27	1.17	2 (10%)	21,38,41	0.79	1 (4%)
2	A2M	L5	3867	2	18,25,26	1.29	2 (11%)	20,36,39	1.92	7 (35%)
82	OMG	S2	436	82	19,26,27	1.20	2 (10%)	21,38,41	0.78	1 (4%)
2	PSU	L5	1677	2	18,21,22	1.08	2 (11%)	21,30,33	1.95	5 (23%)
2	PSU	L5	5001	2	18,21,22	1.10	2 (11%)	21,30,33	1.95	6 (28%)
82	OMU	S2	354	82	19,22,23	3.31	7 (36%)	25,31,34	1.79	5 (20%)
82	PSU	S2	1232	82	18,21,22	1.08	1 (5%)	21,30,33	1.80	4 (19%)
82	OMC	S2	174	82	19,22,23	0.50	0	25,31,34	0.73	0
82	PSU	S2	1004	82	18,21,22	1.09	1 (5%)	21,30,33	2.02	4 (19%)
2	PSU	L5	4403	2	18,21,22	1.00	1 (5%)	21,30,33	2.10	6 (28%)
82	OMU	S2	116	82	19,22,23	3.26	7 (36%)	25,31,34	1.64	4 (16%)
82	A2M	S2	159	82	18,25,26	1.23	1 (5%)	20,36,39	1.80	8 (40%)
2	UY1	L5	3818	2	19,22,23	4.93	10 (52%)	21,31,34	2.01	6 (28%)
2	PSU	L5	4353	2	18,21,22	1.07	1 (5%)	21,30,33	2.05	6 (28%)
2	OMC	L5	2365	84,2	19,22,23	0.58	0	25,31,34	0.71	0
2	A2M	L5	4590	2	18,25,26	1.22	2 (11%)	20,36,39	2.05	7 (35%)
82	OMU	S2	1288	82	19,22,23	3.40	7 (36%)	25,31,34	1.85	5 (20%)
2	PSU	L5	4457	2	18,21,22	1.07	2 (11%)	21,30,33	2.11	6 (28%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
82	OMC	S2	1703	82	19,22,23	0.57	0	25,31,34	0.77	1 (4%)
2	OMU	L5	4620	2	19,22,23	3.29	7 (36%)	25,31,34	1.70	4 (16%)
2	A2M	L5	2401	2	18,25,26	1.41	2 (11%)	20,36,39	2.05	6 (30%)
82	OMU	S2	1442	82	19,22,23	3.39	7 (36%)	25,31,34	1.84	5 (20%)
2	PSU	L5	4521	84,2	18,21,22	1.10	2 (11%)	21,30,33	2.03	6 (28%)
82	MA6	S2	1850	82	19,26,27	1.54	3 (15%)	18,38,41	3.48	3 (16%)
2	OMG	L5	4637	2	19,26,27	1.19	2 (10%)	21,38,41	0.80	1 (4%)
2	A2M	L5	400	2	18,25,26	1.26	2 (11%)	20,36,39	1.97	7 (35%)
2	A2M	L5	398	2	18,25,26	1.30	2 (11%)	20,36,39	2.20	6 (30%)
82	PSU	S2	1177	82	18,21,22	1.11	2 (11%)	21,30,33	1.94	4 (19%)
82	OMG	S2	644	82	19,26,27	1.17	2 (10%)	21,38,41	0.84	1 (4%)
82	OMU	S2	799	82	19,22,23	3.36	7 (36%)	25,31,34	1.82	5 (20%)
2	PSU	L5	1744	84,2	18,21,22	1.09	1 (5%)	21,30,33	1.99	6 (28%)
82	4AC	S2	1842	82	21,24,25	0.39	0	28,34,37	0.47	0
2	OMU	L5	4498	2	19,22,23	3.29	7 (36%)	25,31,34	1.86	5 (20%)
82	PSU	S2	1045	82	18,21,22	1.07	1 (5%)	21,30,33	2.07	5 (23%)
2	OMG	L5	4494	2	19,26,27	1.20	2 (10%)	21,38,41	0.82	1 (4%)
82	OMG	S2	1328	82	19,26,27	1.10	2 (10%)	21,38,41	0.80	1 (4%)
82	A2M	S2	576	82	18,25,26	1.30	2 (11%)	20,36,39	2.00	5 (25%)
2	A2M	L5	1326	2	18,25,26	1.23	2 (11%)	20,36,39	1.85	7 (35%)
82	PSU	S2	1056	82	18,21,22	1.08	1 (5%)	21,30,33	1.99	5 (23%)
2	PSU	L5	3851	84,2	18,21,22	1.04	1 (5%)	21,30,33	1.88	4 (19%)
82	MA6	S2	1851	82	19,26,27	1.52	3 (15%)	18,38,41	3.39	3 (16%)
2	OMC	L5	3841	2	19,22,23	0.58	0	25,31,34	0.62	0
82	G7M	S2	1639	82,1	20,26,27	2.44	7 (35%)	16,39,42	1.12	1 (6%)
4	PSU	L8	55	4	18,21,22	1.05	1 (5%)	21,30,33	2.00	4 (19%)
82	4AC	S2	1337	82	21,24,25	0.40	0	28,34,37	0.76	2 (7%)
82	PSU	S2	649	82	18,21,22	1.09	1 (5%)	21,30,33	1.95	5 (23%)
2	PSU	L5	3920	84,2	18,21,22	1.08	1 (5%)	21,30,33	2.01	6 (28%)
2	PSU	L5	4500	2	18,21,22	1.11	2 (11%)	21,30,33	1.98	4 (19%)
2	A2M	L5	3830	2	18,25,26	1.33	2 (11%)	20,36,39	2.02	6 (30%)
2	A2M	L5	4523	84,2	18,25,26	1.37	2 (11%)	20,36,39	2.14	6 (30%)
82	PSU	S2	1367	82	18,21,22	1.12	1 (5%)	21,30,33	2.00	5 (23%)
82	A2M	S2	668	82,84	18,25,26	1.30	3 (16%)	20,36,39	2.02	6 (30%)
2	PSU	L5	4673	2	18,21,22	1.10	1 (5%)	21,30,33	2.03	6 (28%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	OMG	L5	4228	2	19,26,27	1.18	3 (15%)	21,38,41	0.99	1 (4%)
82	A2M	S2	166	82	18,25,26	1.34	2 (11%)	20,36,39	2.25	8 (40%)
2	OMC	L5	4536	2	19,22,23	0.61	0	25,31,34	0.67	0
2	PSU	L5	2839	2	18,21,22	1.08	1 (5%)	21,30,33	1.96	6 (28%)
2	1MA	L5	1322	84,2	17,25,26	0.97	2 (11%)	17,37,40	1.11	2 (11%)
2	A2M	L5	3785	84,2	18,25,26	1.26	2 (11%)	20,36,39	2.49	6 (30%)
2	PSU	L5	1536	2	18,21,22	1.05	1 (5%)	21,30,33	2.13	5 (23%)
2	PSU	L5	1683	2	18,21,22	1.06	1 (5%)	21,30,33	2.02	4 (19%)
2	OMC	L5	3808	2	19,22,23	0.61	0	25,31,34	0.81	2 (8%)
2	A2M	L5	1534	84,2	18,25,26	1.37	4 (22%)	20,36,39	2.11	8 (40%)
82	B8N	S2	1248	82	25,29,30	3.29	6 (24%)	28,42,45	1.97	8 (28%)
2	A2M	L5	4571	2	18,25,26	1.34	2 (11%)	20,36,39	2.06	6 (30%)
2	PSU	L5	4442	2	18,21,22	1.07	1 (5%)	21,30,33	2.04	5 (23%)
2	PSU	L5	4689	2	18,21,22	1.03	1 (5%)	21,30,33	1.92	4 (19%)
82	PSU	S2	105	82	18,21,22	1.08	1 (5%)	21,30,33	1.96	4 (19%)
82	OMC	S2	1272	82	19,22,23	0.61	0	25,31,34	1.19	2 (8%)
82	OMC	S2	462	82	19,22,23	0.54	0	25,31,34	0.83	1 (4%)
82	A2M	S2	484	82	18,25,26	1.17	1 (5%)	20,36,39	1.90	7 (35%)
4	PSU	L8	69	4	18,21,22	1.08	1 (5%)	21,30,33	2.01	4 (19%)
2	OMG	L5	4196	1,2	19,26,27	1.22	2 (10%)	21,38,41	0.76	1 (4%)
82	PSU	S2	651	82	18,21,22	1.11	1 (5%)	21,30,33	1.93	4 (19%)
2	A2M	L5	2815	2	18,25,26	1.28	2 (11%)	20,36,39	1.77	6 (30%)
82	OMU	S2	121	82	19,22,23	3.33	7 (36%)	25,31,34	1.79	4 (16%)
2	OMU	L5	4227	2	19,22,23	3.29	7 (36%)	25,31,34	1.86	5 (20%)
2	OMU	L5	4306	2	19,22,23	3.23	7 (36%)	25,31,34	1.76	4 (16%)
2	5MC	L5	3782	84,2	19,22,23	0.66	0	26,32,35	0.72	0
2	OMG	L5	4623	2	19,26,27	1.20	2 (10%)	21,38,41	0.77	1 (4%)
2	PSU	L5	4471	2	18,21,22	1.10	2 (11%)	21,30,33	2.12	5 (23%)
2	OMC	L5	3887	2	19,22,23	0.61	0	25,31,34	0.69	0
2	OMG	L5	3792	2	19,26,27	1.25	3 (15%)	21,38,41	0.75	1 (4%)
2	PSU	L5	4361	2	18,21,22	1.06	1 (5%)	21,30,33	2.00	5 (23%)
2	PSU	L5	3884	2	18,21,22	1.06	1 (5%)	21,30,33	2.01	4 (19%)
2	PSU	L5	1582	2	18,21,22	1.12	2 (11%)	21,30,33	1.99	5 (23%)
2	A2M	L5	1323	2	18,25,26	1.24	2 (11%)	20,36,39	1.96	8 (40%)
82	PSU	S2	406	82	18,21,22	1.07	1 (5%)	21,30,33	2.00	4 (19%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	A2M	L5	3718	2	18,25,26	1.27	2 (11%)	20,36,39	2.09	6 (30%)

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
2	PSU	L5	4493	2	-	0/7/25/26	0/2/2/2
2	OMC	L5	2351	84,2	-	3/9/27/28	0/2/2/2
82	PSU	S2	1244	82	-	0/7/25/26	0/2/2/2
2	A2M	L5	1524	2	-	2/5/27/28	0/3/3/3
2	OMC	L5	2824	2	-	1/9/27/28	0/2/2/2
2	OMG	L5	3899	2	-	3/5/27/28	0/3/3/3
2	6MZ	L5	4220	2	-	4/5/27/28	0/3/3/3
82	OMG	S2	683	82	-	2/5/27/28	0/3/3/3
82	PSU	S2	1081	82	-	0/7/25/26	0/2/2/2
2	PSU	L5	1862	2	-	0/7/25/26	0/2/2/2
2	OMG	L5	4618	2	-	3/5/27/28	0/3/3/3
2	OMC	L5	2861	2	-	2/9/27/28	0/2/2/2
82	A2M	S2	1383	82	-	1/5/27/28	0/3/3/3
82	A2M	S2	468	82	-	1/5/27/28	0/3/3/3
2	PSU	L5	1860	2	-	0/7/25/26	0/2/2/2
2	OMG	L5	2424	2	-	0/5/27/28	0/3/3/3
2	OMG	L5	2364	84,2	-	2/5/27/28	0/3/3/3
2	PSU	L5	4576	2	-	0/7/25/26	0/2/2/2
82	PSU	S2	1174	82	-	0/7/25/26	0/2/2/2
82	PSU	S2	966	82,84	-	0/7/25/26	0/2/2/2
82	PSU	S2	801	82	-	2/7/25/26	0/2/2/2
4	OMG	L8	75	4	-	2/5/27/28	0/3/3/3
2	PSU	L5	1792	2	-	0/7/25/26	0/2/2/2
2	OMG	L5	4370	2	-	0/5/27/28	0/3/3/3
2	PSU	L5	4552	2	-	0/7/25/26	0/2/2/2
82	OMC	S2	517	82	-	3/9/27/28	0/2/2/2
2	A2M	L5	2363	84,2	-	0/5/27/28	0/3/3/3
2	PSU	L5	4296	2	-	2/7/25/26	0/2/2/2
2	OMG	L5	1522	2	-	0/5/27/28	0/3/3/3
2	OMG	L5	1625	2	-	2/5/27/28	0/3/3/3
2	PSU	L5	4312	2	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
82	PSU	S2	1046	82	-	0/7/25/26	0/2/2/2
82	OMU	S2	627	82	-	5/9/27/28	0/2/2/2
82	OMG	S2	867	82	-	2/5/27/28	0/3/3/3
82	A2M	S2	99	82,84	-	2/5/27/28	0/3/3/3
2	OMG	L5	4499	2	-	1/5/27/28	0/3/3/3
2	PSU	L5	4579	2	-	0/7/25/26	0/2/2/2
2	OMG	L5	1316	2	-	1/5/27/28	0/3/3/3
82	PSU	S2	93	82	-	0/7/25/26	0/2/2/2
2	OMC	L5	3869	2	-	1/9/27/28	0/2/2/2
82	PSU	S2	109	82	-	0/7/25/26	0/2/2/2
2	PSU	L5	3637	2	-	0/7/25/26	0/2/2/2
82	OMU	S2	1326	82	-	1/9/27/28	0/2/2/2
2	PSU	L5	4299	2	-	0/7/25/26	0/2/2/2
82	OMG	S2	1490	82	-	1/5/27/28	0/3/3/3
2	OMC	L5	4456	2	-	0/9/27/28	0/2/2/2
2	A2M	L5	2787	2	-	3/5/27/28	0/3/3/3
82	PSU	S2	814	82	-	0/7/25/26	0/2/2/2
2	A2M	L5	1871	84,2	-	0/5/27/28	0/3/3/3
82	PSU	S2	681	82	-	0/7/25/26	0/2/2/2
82	OMC	S2	1391	82	-	1/9/27/28	0/2/2/2
82	PSU	S2	686	82	-	0/7/25/26	0/2/2/2
2	PSU	L5	4431	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	2632	2	-	1/7/25/26	0/2/2/2
82	A2M	S2	27	82	-	1/5/27/28	0/3/3/3
2	OMU	L5	2837	2	-	0/9/27/28	0/2/2/2
2	PSU	L5	1781	2	-	0/7/25/26	0/2/2/2
2	OMC	L5	1340	2	-	1/9/27/28	0/2/2/2
2	PSU	L5	5010	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	3695	2	-	0/7/25/26	0/2/2/2
82	OMU	S2	428	82	-	6/9/27/28	0/2/2/2
82	A2M	S2	1031	82	-	1/5/27/28	0/3/3/3
2	5MC	L5	4447	2	-	4/7/25/26	0/2/2/2
2	OMC	L5	3701	2	-	5/9/27/28	0/2/2/2
82	PSU	S2	863	82	-	0/7/25/26	0/2/2/2
82	OMG	S2	601	82	-	0/5/27/28	0/3/3/3
2	PSU	L5	4973	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	4972	2	-	0/7/25/26	0/2/2/2
2	OMG	L5	4392	2	-	0/5/27/28	0/3/3/3
2	PSU	L5	3853	84,2	-	0/7/25/26	0/2/2/2
2	PSU	L5	3844	2	-	1/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	PSU	L5	4636	2	-	2/7/25/26	0/2/2/2
2	OMU	L5	3925	2	-	1/9/27/28	0/2/2/2
82	OMG	S2	509	82	-	1/5/27/28	0/3/3/3
82	OMU	S2	172	82,84	-	0/9/27/28	0/2/2/2
2	PSU	L5	3822	2	-	2/7/25/26	0/2/2/2
2	OMG	L5	2876	2	-	1/5/27/28	0/3/3/3
2	PSU	L5	4532	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	4293	2	-	0/7/25/26	0/2/2/2
2	OMC	L5	2804	2	-	3/9/27/28	0/2/2/2
2	UR3	L5	4530	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	1782	2	-	0/7/25/26	0/2/2/2
82	PSU	S2	866	82	-	0/7/25/26	0/2/2/2
2	PSU	L5	3639	2	-	0/7/25/26	0/2/2/2
2	OMC	L5	2422	84,2	-	2/9/27/28	0/2/2/2
82	6MZ	S2	1832	82,84	-	8/8/28/28	0/3/3/3
2	A2M	L5	3825	2	-	3/5/27/28	0/3/3/3
2	OMG	L5	3627	2	-	0/5/27/28	0/3/3/3
2	PSU	L5	4628	2	-	0/7/25/26	0/2/2/2
2	OMG	L5	3744	2	-	1/5/27/28	0/3/3/3
2	A2M	L5	3867	2	-	3/5/27/28	0/3/3/3
82	OMG	S2	436	82	-	0/5/27/28	0/3/3/3
2	PSU	L5	1677	2	-	3/7/25/26	0/2/2/2
2	PSU	L5	5001	2	-	0/7/25/26	0/2/2/2
82	OMU	S2	354	82	-	1/9/27/28	0/2/2/2
82	PSU	S2	1232	82	-	0/7/25/26	0/2/2/2
82	OMC	S2	174	82	-	0/9/27/28	0/2/2/2
82	PSU	S2	1004	82	-	0/7/25/26	0/2/2/2
2	PSU	L5	4403	2	-	0/7/25/26	0/2/2/2
82	OMU	S2	116	82	-	1/9/27/28	0/2/2/2
82	A2M	S2	159	82	-	1/5/27/28	0/3/3/3
2	UY1	L5	3818	2	-	4/9/27/28	0/2/2/2
2	PSU	L5	4353	2	-	0/7/25/26	0/2/2/2
2	OMC	L5	2365	84,2	-	1/9/27/28	0/2/2/2
2	A2M	L5	4590	2	-	4/5/27/28	0/3/3/3
82	OMU	S2	1288	82	-	2/9/27/28	0/2/2/2
2	PSU	L5	4457	2	-	0/7/25/26	0/2/2/2
82	OMC	S2	1703	82	-	0/9/27/28	0/2/2/2
2	OMU	L5	4620	2	-	0/9/27/28	0/2/2/2
2	A2M	L5	2401	2	-	0/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
82	OMU	S2	1442	82	-	2/9/27/28	0/2/2/2
2	PSU	L5	4521	84,2	-	0/7/25/26	0/2/2/2
82	MA6	S2	1850	82	-	1/7/29/30	0/3/3/3
2	OMG	L5	4637	2	-	3/5/27/28	0/3/3/3
2	A2M	L5	400	2	-	1/5/27/28	0/3/3/3
2	A2M	L5	398	2	-	3/5/27/28	0/3/3/3
82	PSU	S2	1177	82	-	0/7/25/26	0/2/2/2
82	OMG	S2	644	82	-	4/5/27/28	0/3/3/3
82	OMU	S2	799	82	-	2/9/27/28	0/2/2/2
2	PSU	L5	1744	84,2	-	0/7/25/26	0/2/2/2
82	4AC	S2	1842	82	-	0/11/29/30	0/2/2/2
2	OMU	L5	4498	2	-	0/9/27/28	0/2/2/2
82	PSU	S2	1045	82	-	2/7/25/26	0/2/2/2
2	OMG	L5	4494	2	-	1/5/27/28	0/3/3/3
82	OMG	S2	1328	82	-	1/5/27/28	0/3/3/3
82	A2M	S2	576	82	-	4/5/27/28	0/3/3/3
2	A2M	L5	1326	2	-	4/5/27/28	0/3/3/3
82	PSU	S2	1056	82	-	0/7/25/26	0/2/2/2
2	PSU	L5	3851	84,2	-	0/7/25/26	0/2/2/2
82	MA6	S2	1851	82	-	2/7/29/30	0/3/3/3
2	OMC	L5	3841	2	-	1/9/27/28	0/2/2/2
82	G7M	S2	1639	82,1	-	0/3/25/26	0/3/3/3
4	PSU	L8	55	4	-	0/7/25/26	0/2/2/2
82	4AC	S2	1337	82	-	1/11/29/30	0/2/2/2
82	PSU	S2	649	82	-	0/7/25/26	0/2/2/2
2	PSU	L5	3920	84,2	-	0/7/25/26	0/2/2/2
2	PSU	L5	4500	2	-	3/7/25/26	0/2/2/2
2	A2M	L5	3830	2	-	1/5/27/28	0/3/3/3
2	A2M	L5	4523	84,2	-	1/5/27/28	0/3/3/3
82	PSU	S2	1367	82	-	0/7/25/26	0/2/2/2
82	A2M	S2	668	82,84	-	2/5/27/28	0/3/3/3
2	PSU	L5	4673	2	-	0/7/25/26	0/2/2/2
2	OMG	L5	4228	2	-	0/5/27/28	0/3/3/3
82	A2M	S2	166	82	-	0/5/27/28	0/3/3/3
2	OMC	L5	4536	2	-	0/9/27/28	0/2/2/2
2	PSU	L5	2839	2	-	0/7/25/26	0/2/2/2
2	1MA	L5	1322	84,2	-	0/3/25/26	0/3/3/3
2	A2M	L5	3785	84,2	-	1/5/27/28	0/3/3/3
2	PSU	L5	1536	2	-	2/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	PSU	L5	1683	2	-	0/7/25/26	0/2/2/2
2	OMC	L5	3808	2	-	0/9/27/28	0/2/2/2
2	A2M	L5	1534	84,2	-	2/5/27/28	0/3/3/3
82	B8N	S2	1248	82	-	6/16/34/35	0/2/2/2
2	A2M	L5	4571	2	-	1/5/27/28	0/3/3/3
2	PSU	L5	4442	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	4689	2	-	0/7/25/26	0/2/2/2
82	PSU	S2	105	82	-	0/7/25/26	0/2/2/2
82	OMC	S2	1272	82	-	6/9/27/28	0/2/2/2
82	OMC	S2	462	82	-	0/9/27/28	0/2/2/2
82	A2M	S2	484	82	-	1/5/27/28	0/3/3/3
4	PSU	L8	69	4	-	0/7/25/26	0/2/2/2
2	OMG	L5	4196	1,2	-	3/5/27/28	0/3/3/3
82	PSU	S2	651	82	-	0/7/25/26	0/2/2/2
2	A2M	L5	2815	2	-	0/5/27/28	0/3/3/3
82	OMU	S2	121	82	-	0/9/27/28	0/2/2/2
2	OMU	L5	4227	2	-	0/9/27/28	0/2/2/2
2	OMU	L5	4306	2	-	0/9/27/28	0/2/2/2
2	5MC	L5	3782	84,2	-	2/7/25/26	0/2/2/2
2	OMG	L5	4623	2	-	0/5/27/28	0/3/3/3
2	PSU	L5	4471	2	-	0/7/25/26	0/2/2/2
2	OMC	L5	3887	2	-	3/9/27/28	0/2/2/2
2	OMG	L5	3792	2	-	3/5/27/28	0/3/3/3
2	PSU	L5	4361	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	3884	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	1582	2	-	2/7/25/26	0/2/2/2
2	A2M	L5	1323	2	-	1/5/27/28	0/3/3/3
82	PSU	S2	406	82	-	0/7/25/26	0/2/2/2
2	A2M	L5	3718	2	-	0/5/27/28	0/3/3/3

The worst 5 of 367 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L5	3818	UY1	C6-C5	12.78	1.49	1.35
2	L5	3818	UY1	C2-N1	11.84	1.52	1.36
82	S2	1442	OMU	C2-N1	8.41	1.51	1.38
2	L5	4220	6MZ	C3'-C2'	-8.38	1.30	1.53
82	S2	1288	OMU	C2-N1	8.36	1.51	1.38

The worst 5 of 677 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
82	S2	1850	MA6	N1-C6-N6	-12.52	102.36	116.83
82	S2	1851	MA6	N1-C6-N6	-12.23	102.70	116.83
2	L5	3785	A2M	C4'-O4'-C1'	-7.96	102.64	109.92
82	S2	1850	MA6	N3-C2-N1	-6.51	119.84	128.67
82	S2	1851	MA6	N3-C2-N1	-6.47	119.90	128.67

There are no chirality outliers.

5 of 189 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	L8	75	OMG	C1'-C2'-O2'-CM2
2	L5	400	A2M	C1'-C2'-O2'-CM'
2	L5	1316	OMG	C1'-C2'-O2'-CM2
2	L5	1323	A2M	C1'-C2'-O2'-CM'
2	L5	1326	A2M	O4'-C4'-C5'-O5'

There are no ring outliers.

122 monomers are involved in 226 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	L5	4493	PSU	1	0
2	L5	2351	OMC	3	0
82	S2	1244	PSU	1	0
2	L5	2824	OMC	2	0
2	L5	3899	OMG	3	0
2	L5	4220	6MZ	1	0
2	L5	1862	PSU	1	0
2	L5	4618	OMG	1	0
2	L5	2861	OMC	2	0
82	S2	1383	A2M	2	0
82	S2	468	A2M	4	0
2	L5	2424	OMG	1	0
2	L5	2364	OMG	2	0
2	L5	4576	PSU	1	0
82	S2	1174	PSU	1	0
4	L8	75	OMG	3	0
2	L5	4370	OMG	2	0
2	L5	4552	PSU	2	0
82	S2	517	OMC	1	0
2	L5	2363	A2M	3	0
2	L5	4312	PSU	2	0
82	S2	627	OMU	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
82	S2	867	OMG	1	0
2	L5	4499	OMG	1	0
2	L5	4579	PSU	2	0
2	L5	1316	OMG	4	0
82	S2	93	PSU	2	0
82	S2	109	PSU	1	0
2	L5	4299	PSU	2	0
82	S2	1490	OMG	2	0
2	L5	2787	A2M	1	0
2	L5	1871	A2M	1	0
82	S2	681	PSU	2	0
2	L5	2632	PSU	2	0
82	S2	27	A2M	4	0
2	L5	2837	OMU	1	0
2	L5	1340	OMC	6	0
2	L5	5010	PSU	2	0
2	L5	3695	PSU	1	0
82	S2	428	OMU	2	0
82	S2	1031	A2M	3	0
2	L5	4447	5MC	1	0
82	S2	601	OMG	4	0
2	L5	4392	OMG	1	0
2	L5	3853	PSU	1	0
2	L5	3844	PSU	2	0
2	L5	4636	PSU	1	0
2	L5	3925	OMU	1	0
82	S2	509	OMG	5	0
82	S2	172	OMU	1	0
2	L5	3822	PSU	1	0
2	L5	2876	OMG	1	0
2	L5	4532	PSU	1	0
2	L5	4293	PSU	1	0
2	L5	2804	OMC	2	0
2	L5	4530	UR3	1	0
82	S2	866	PSU	1	0
2	L5	2422	OMC	2	0
82	S2	1832	6MZ	2	0
2	L5	3825	A2M	3	0
2	L5	3744	OMG	1	0
2	L5	3867	A2M	6	0
82	S2	436	OMG	1	0
82	S2	354	OMU	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
82	S2	1232	PSU	2	0
82	S2	1004	PSU	1	0
2	L5	4403	PSU	1	0
82	S2	116	OMU	4	0
82	S2	159	A2M	5	0
2	L5	3818	UY1	1	0
2	L5	4353	PSU	1	0
2	L5	2365	OMC	1	0
2	L5	4590	A2M	1	0
82	S2	1288	OMU	1	0
2	L5	4457	PSU	1	0
2	L5	4620	OMU	4	0
82	S2	1850	MA6	3	0
2	L5	4637	OMG	2	0
2	L5	400	A2M	3	0
2	L5	398	A2M	1	0
82	S2	1177	PSU	3	0
82	S2	1842	4AC	5	0
82	S2	1328	OMG	2	0
82	S2	576	A2M	3	0
2	L5	1326	A2M	4	0
2	L5	3851	PSU	1	0
2	L5	3841	OMC	1	0
82	S2	1639	G7M	2	0
4	L8	55	PSU	1	0
82	S2	1337	4AC	2	0
82	S2	649	PSU	2	0
2	L5	3920	PSU	2	0
2	L5	4500	PSU	1	0
2	L5	4523	A2M	3	0
82	S2	1367	PSU	1	0
2	L5	4673	PSU	1	0
2	L5	4228	OMG	1	0
82	S2	166	A2M	2	0
2	L5	2839	PSU	1	0
2	L5	1683	PSU	3	0
2	L5	3808	OMC	2	0
2	L5	1534	A2M	1	0
82	S2	1248	B8N	1	0
2	L5	4442	PSU	1	0
2	L5	4689	PSU	2	0
82	S2	1272	OMC	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
82	S2	462	OMC	1	0
82	S2	484	A2M	2	0
4	L8	69	PSU	1	0
2	L5	4196	OMG	1	0
82	S2	651	PSU	2	0
2	L5	2815	A2M	2	0
82	S2	121	OMU	2	0
2	L5	3782	5MC	1	0
2	L5	4623	OMG	3	0
2	L5	4471	PSU	1	0
2	L5	3887	OMC	1	0
2	L5	3792	OMG	2	0
2	L5	3884	PSU	2	0
2	L5	1582	PSU	1	0
2	L5	1323	A2M	2	0
2	L5	3718	A2M	4	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 244 ligands modelled in this entry, 225 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	$\# Z > 2$
85	SPM	L5	5292	-	13,13,13	0.35	0	12,12,12	0.89	0
86	SPD	L5	5260	-	9,9,9	0.31	0	8,8,8	0.93	0
85	SPM	L5	5263	-	13,13,13	0.35	0	12,12,12	0.99	0
86	SPD	L5	5282	-	9,9,9	0.32	0	8,8,8	0.86	0
87	HMT	L5	5294	-	41,43,43	4.51	15 (36%)	43,66,66	1.89	12 (27%)
86	SPD	L5	5286	-	9,9,9	0.31	0	8,8,8	0.80	0
85	SPM	L5	5257	-	13,13,13	0.36	0	12,12,12	1.00	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
86	SPD	L5	5289	-	9,9,9	0.32	0	8,8,8	0.85	0
86	SPD	L5	5288	-	9,9,9	0.30	0	8,8,8	0.84	0
88	3HE	L5	5295	-	21,21,21	0.41	0	23,30,30	0.86	0
85	SPM	L5	5290	-	13,13,13	0.36	0	12,12,12	0.87	0
86	SPD	L8	202	-	9,9,9	0.36	0	8,8,8	0.81	0
86	SPD	L5	5284	-	9,9,9	0.33	0	8,8,8	0.86	0
85	SPM	L5	5262	-	13,13,13	0.34	0	12,12,12	0.90	0
86	SPD	L5	5283	-	9,9,9	0.34	0	8,8,8	0.80	0
85	SPM	L5	5287	84	13,13,13	0.35	0	12,12,12	1.04	0
85	SPM	L5	5266	-	13,13,13	0.35	0	12,12,12	0.95	0
86	SPD	L5	5291	-	9,9,9	0.33	0	8,8,8	0.89	0
86	SPD	L5	5285	-	9,9,9	0.32	0	8,8,8	0.83	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
85	SPM	L5	5292	-	-	3/11/11/11	-
86	SPD	L5	5260	-	-	2/7/7/7	-
85	SPM	L5	5263	-	-	1/11/11/11	-
86	SPD	L5	5282	-	-	1/7/7/7	-
87	HMT	L5	5294	-	-	11/27/74/74	0/5/5/5
86	SPD	L5	5286	-	-	0/7/7/7	-
85	SPM	L5	5257	-	-	3/11/11/11	-
86	SPD	L5	5289	-	-	5/7/7/7	-
86	SPD	L5	5288	-	-	2/7/7/7	-
88	3HE	L5	5295	-	-	0/8/36/36	0/2/2/2
85	SPM	L5	5290	-	-	6/11/11/11	-
86	SPD	L8	202	-	-	3/7/7/7	-
86	SPD	L5	5284	-	-	4/7/7/7	-
85	SPM	L5	5262	-	-	3/11/11/11	-
86	SPD	L5	5283	-	-	0/7/7/7	-
85	SPM	L5	5287	84	-	5/11/11/11	-
85	SPM	L5	5266	-	-	5/11/11/11	-
86	SPD	L5	5291	-	-	2/7/7/7	-
86	SPD	L5	5285	-	-	2/7/7/7	-

The worst 5 of 15 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
87	L5	5294	HMT	C8-C7	18.07	1.79	1.52
87	L5	5294	HMT	C7-C6	11.93	1.77	1.51
87	L5	5294	HMT	C5-C4	-10.35	1.35	1.51
87	L5	5294	HMT	C10-N1	7.36	1.57	1.47
87	L5	5294	HMT	C1-C2	6.85	1.42	1.32

The worst 5 of 12 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
87	L5	5294	HMT	O4-C19-C20	5.05	120.50	111.24
87	L5	5294	HMT	O7-C22-C21	4.90	119.77	111.16
87	L5	5294	HMT	C3-O4-C19	-3.76	111.32	117.24
87	L5	5294	HMT	O2-C15-C16	3.18	132.09	127.86
87	L5	5294	HMT	O1-C14-C13	2.76	131.53	127.86

There are no chirality outliers.

5 of 58 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
87	L5	5294	HMT	C1-C2-O3-C18
87	L5	5294	HMT	C3-C2-O3-C18
87	L5	5294	HMT	C21-C22-O7-C23
87	L5	5294	HMT	O8-C22-O7-C23
85	L5	5262	SPM	N5-C6-C7-C8

There are no ring outliers.

17 monomers are involved in 38 short contacts:

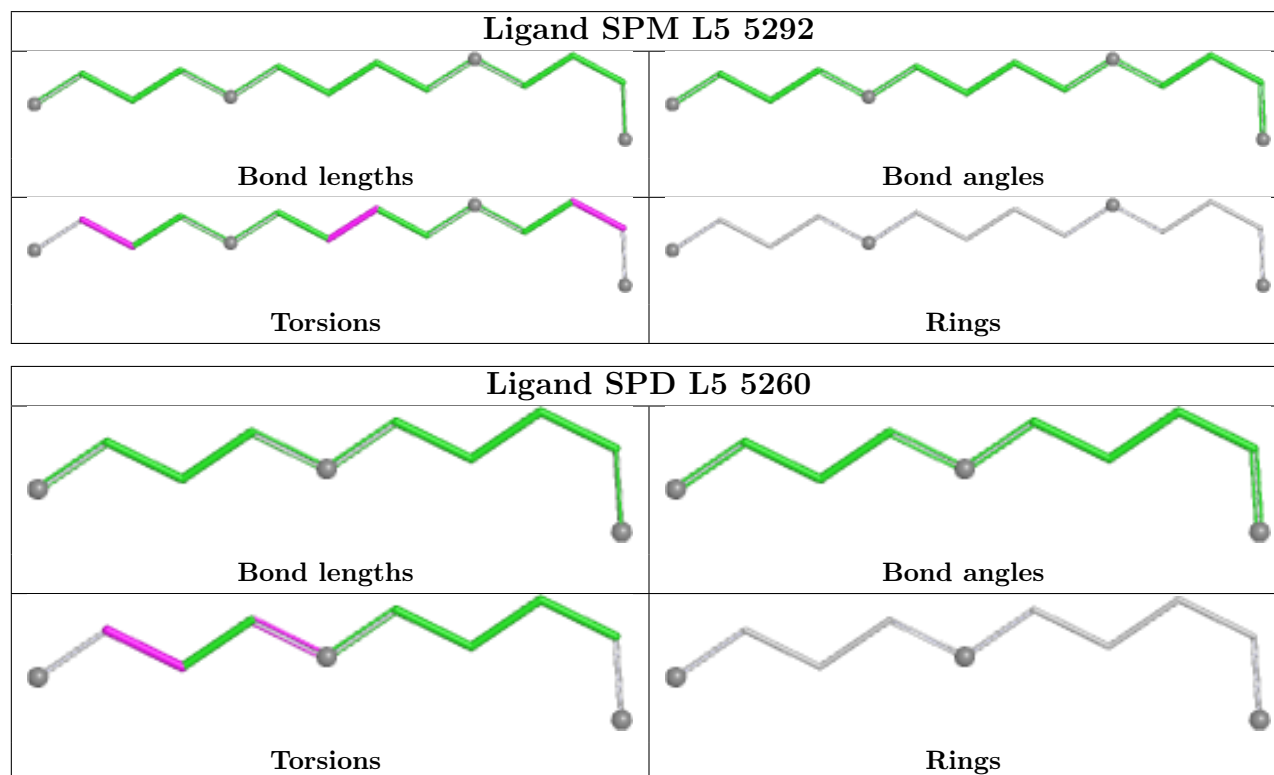
Mol	Chain	Res	Type	Clashes	Symm-Clashes
85	L5	5292	SPM	1	0
86	L5	5260	SPD	4	0
85	L5	5263	SPM	1	0
86	L5	5282	SPD	2	0
87	L5	5294	HMT	10	0
86	L5	5286	SPD	1	0
85	L5	5257	SPM	3	0
86	L5	5289	SPD	2	0
86	L5	5288	SPD	1	0
88	L5	5295	3HE	1	0
85	L5	5290	SPM	2	0

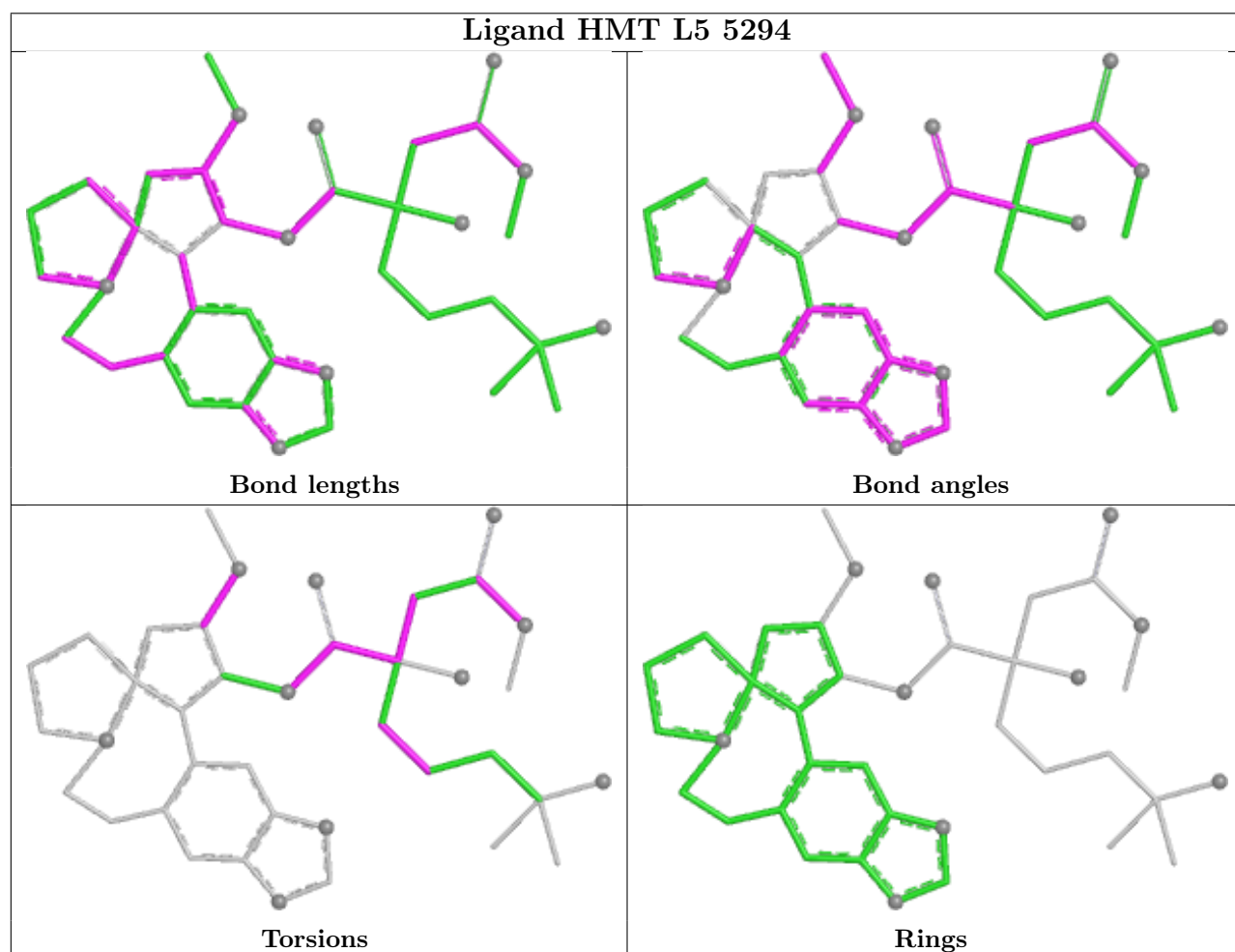
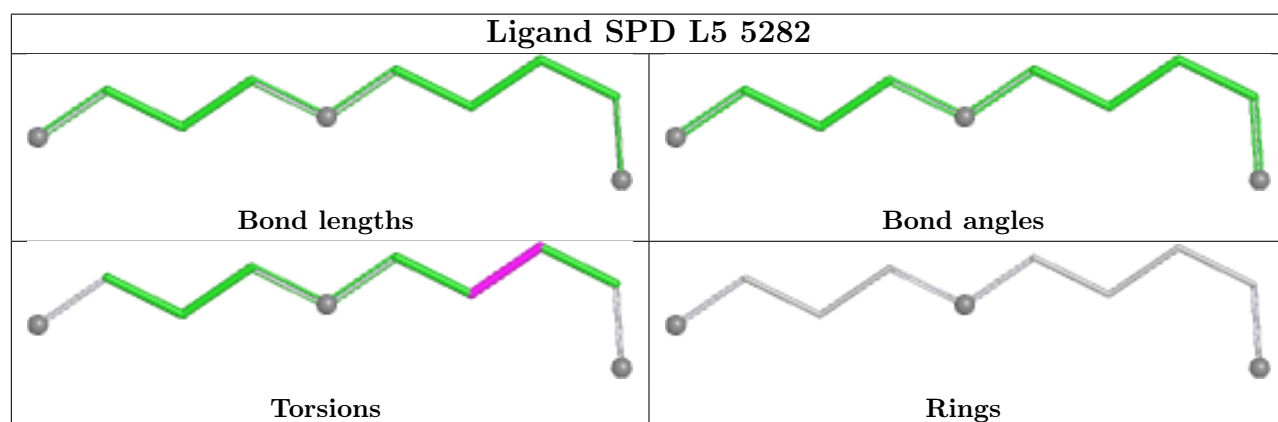
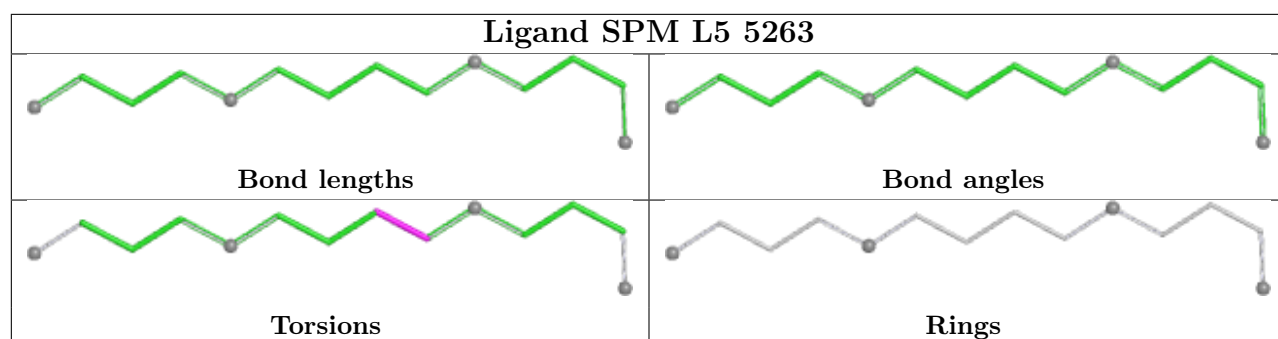
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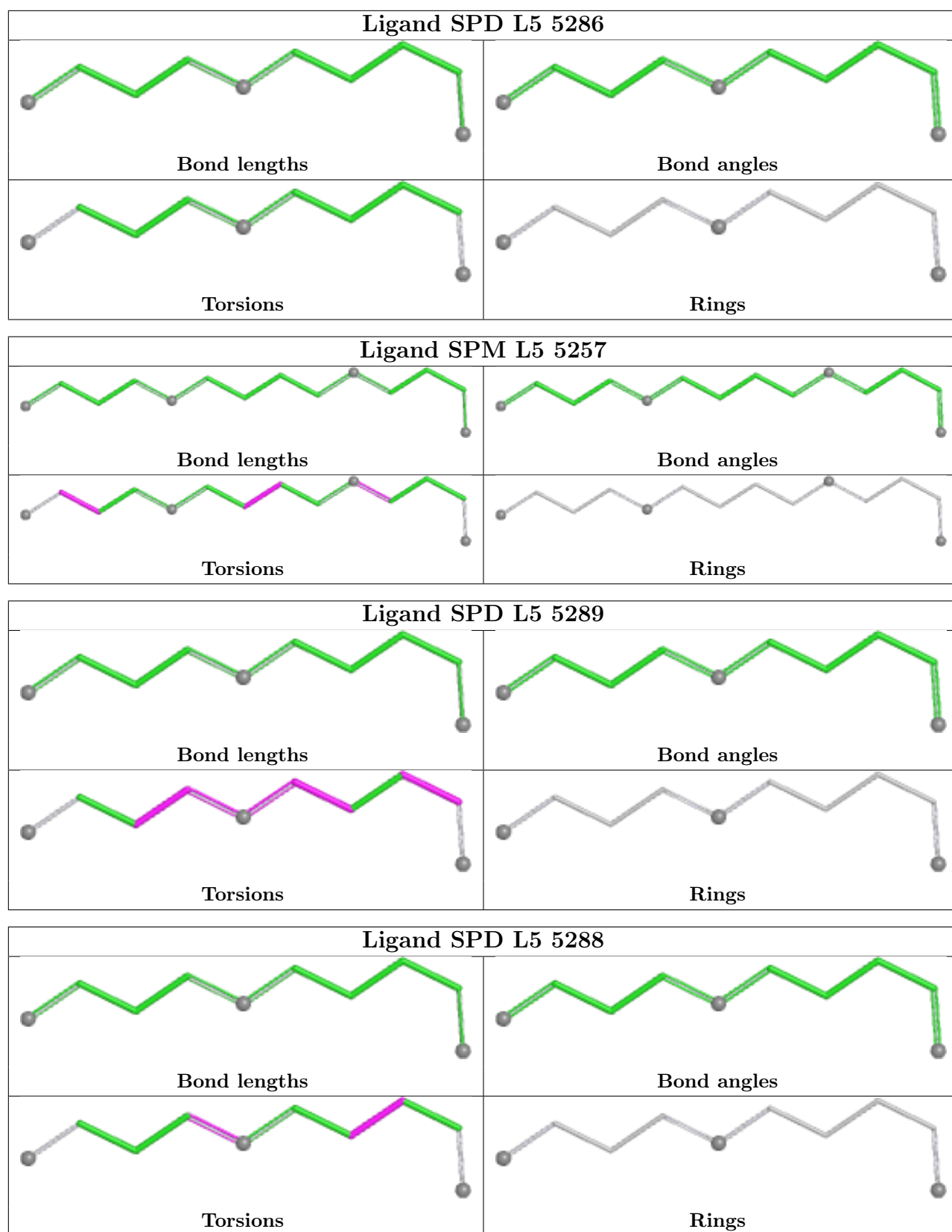
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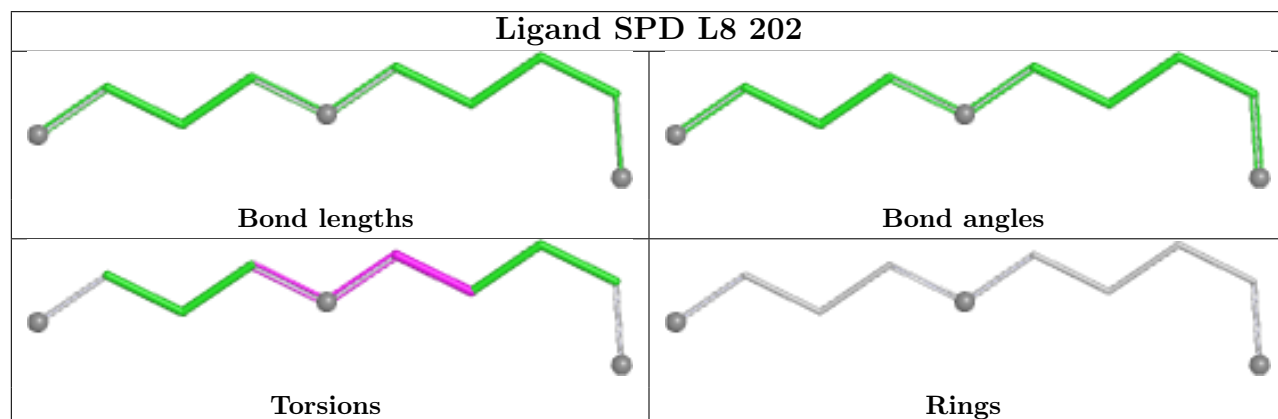
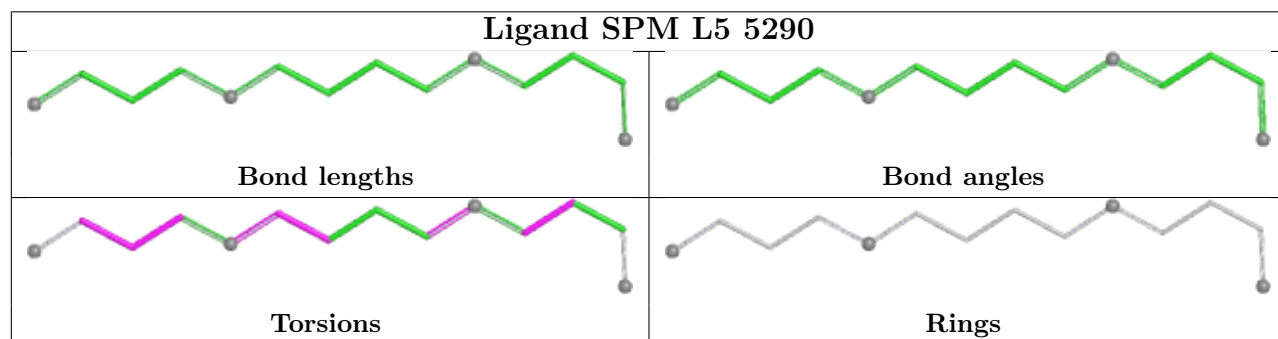
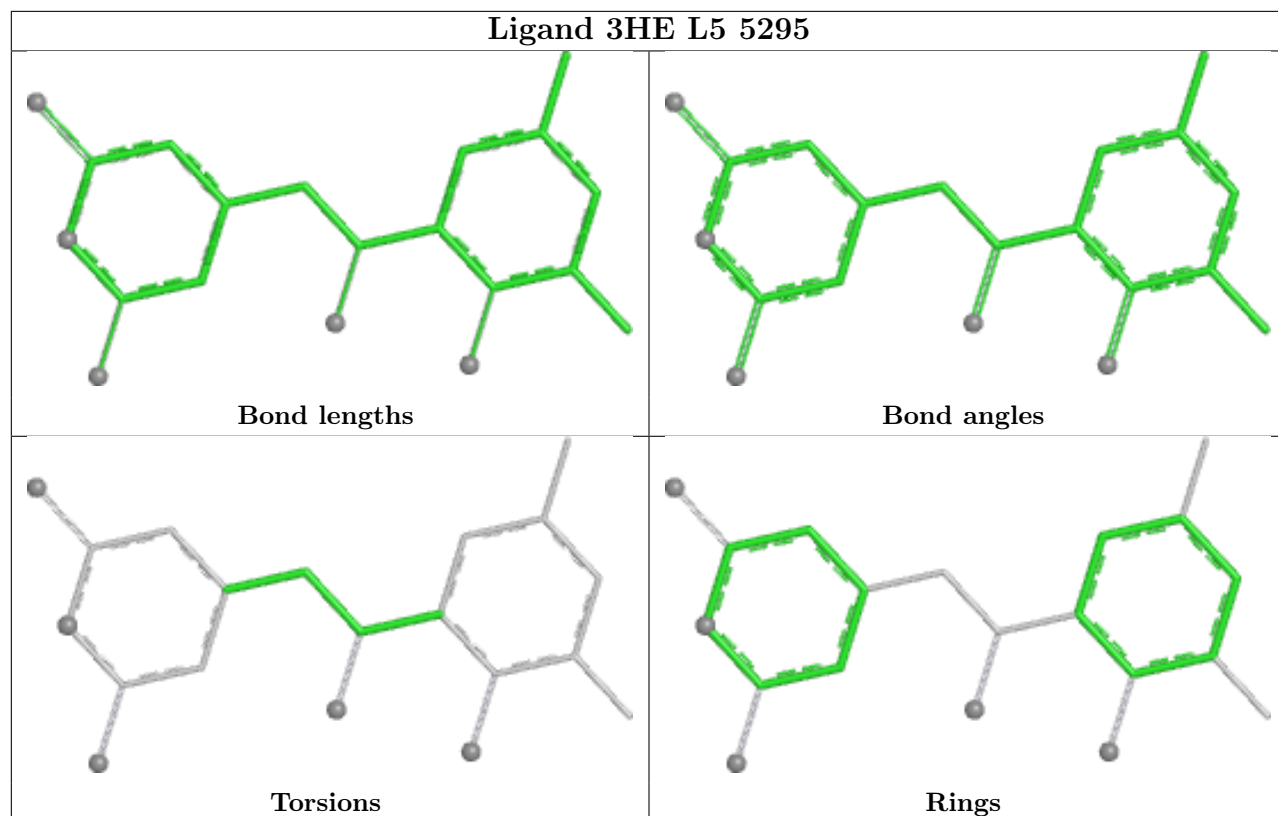
Mol	Chain	Res	Type	Clashes	Symm-Clashes
86	L8	202	SPD	1	0
86	L5	5284	SPD	3	0
86	L5	5283	SPD	3	0
85	L5	5287	SPM	1	0
86	L5	5291	SPD	1	0
86	L5	5285	SPD	1	0

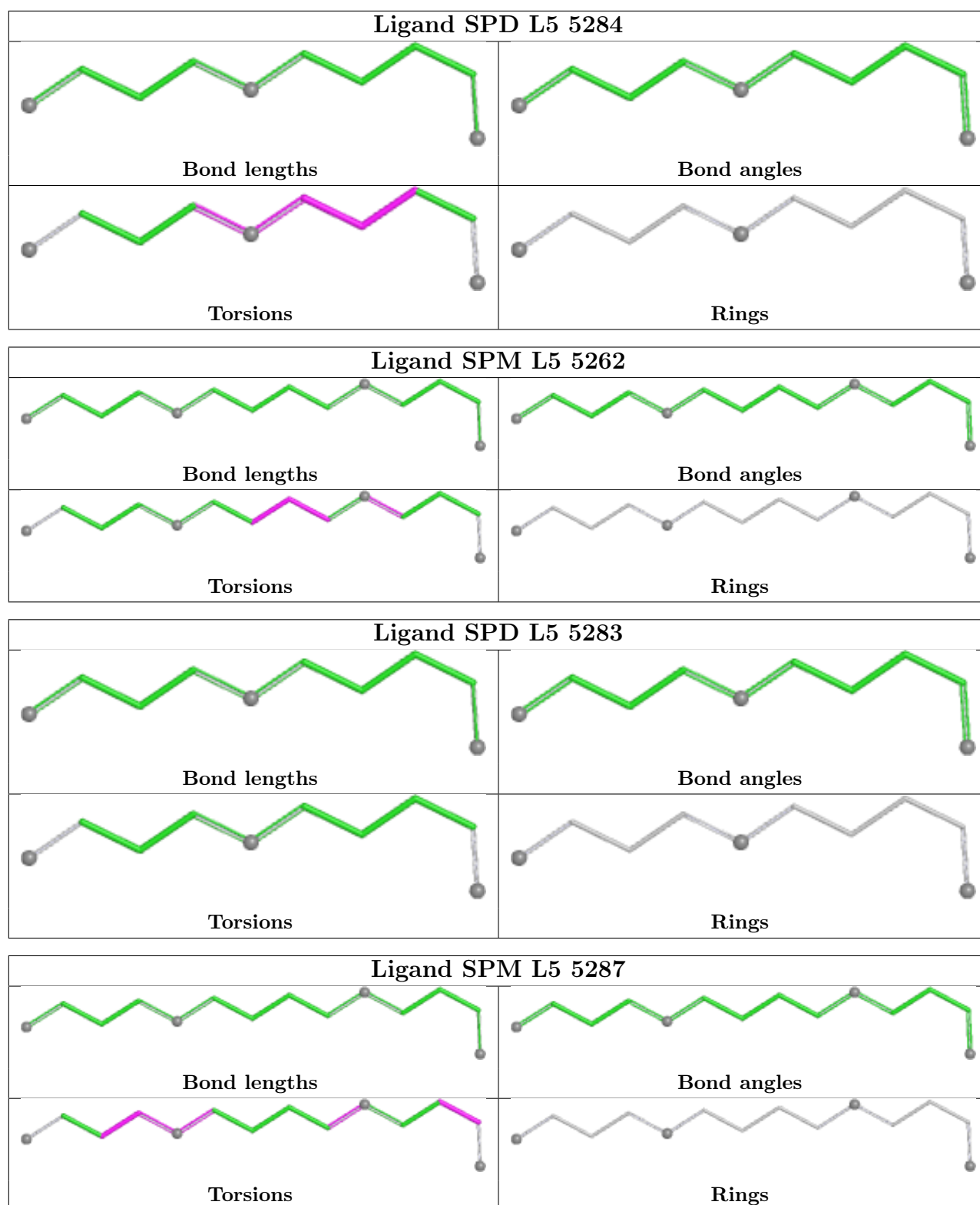
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

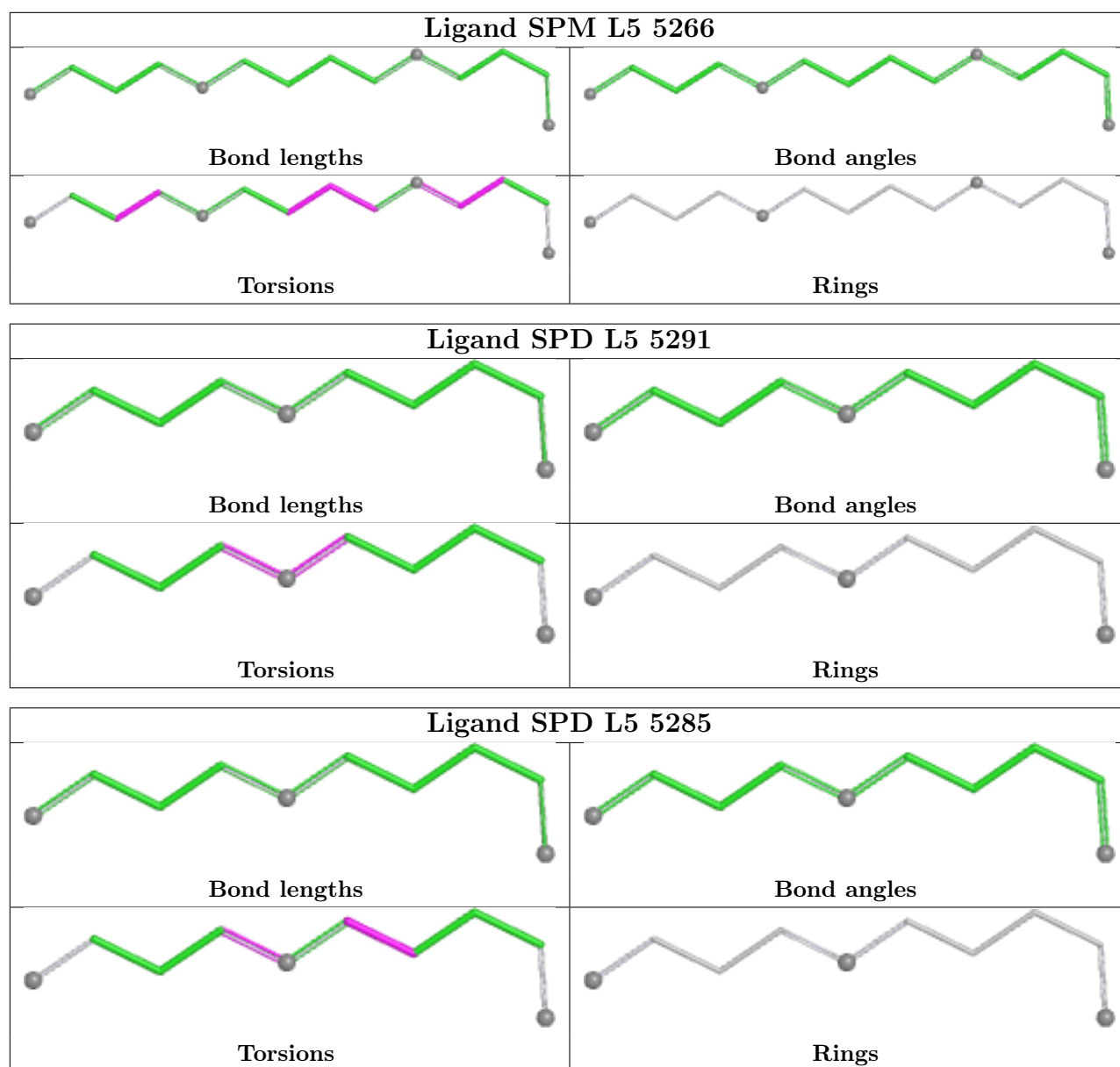












5.7 Other polymers [i](#)

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
2	L5	10
82	S2	5
1	Pt	1

The worst 5 of 16 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	S2	753:C	O3'	785:C	P	29.42
1	L5	1706:A	O3'	1716:G	P	21.48
1	L5	2910:G	O3'	3584:C	P	20.84
1	L5	760:G	O3'	903:C	P	16.51
1	L5	519:C	O3'	642:G	P	15.03

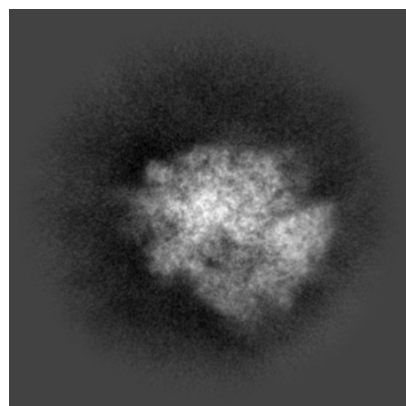
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-71344. These allow visual inspection of the internal detail of the map and identification of artifacts.

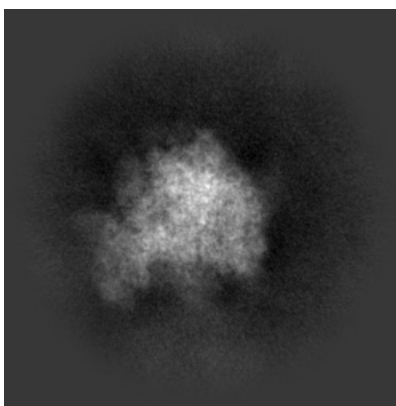
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

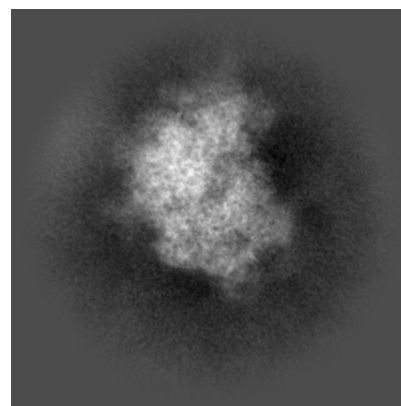
6.1.1 Primary map



X

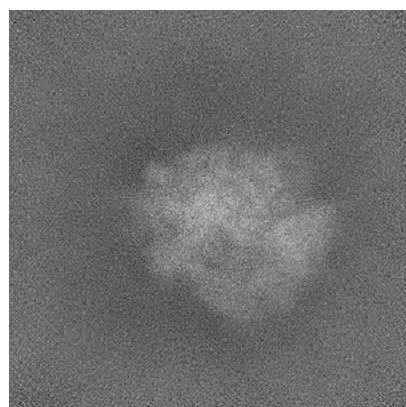


Y

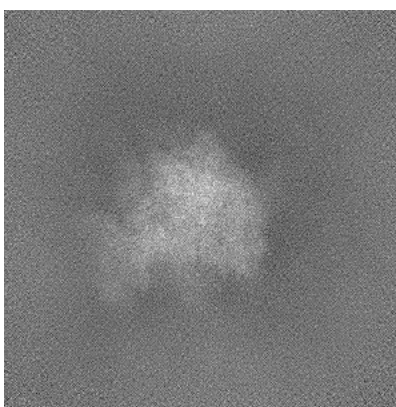


Z

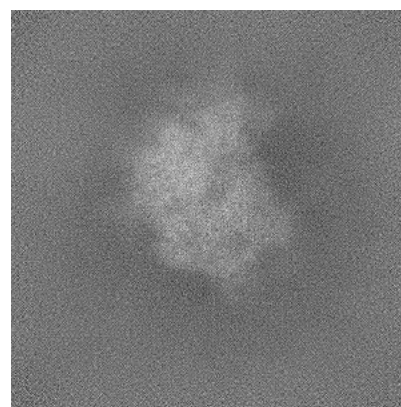
6.1.2 Raw map



X



Y

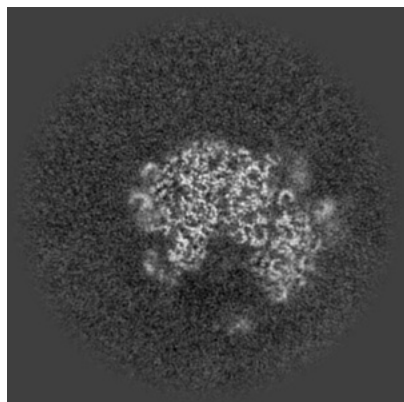


Z

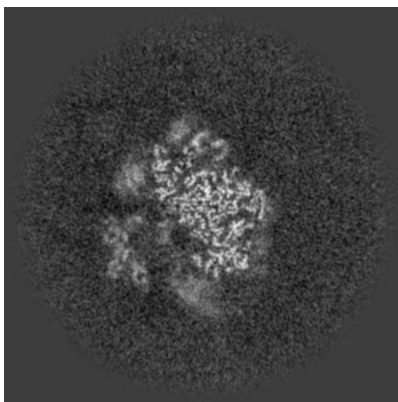
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

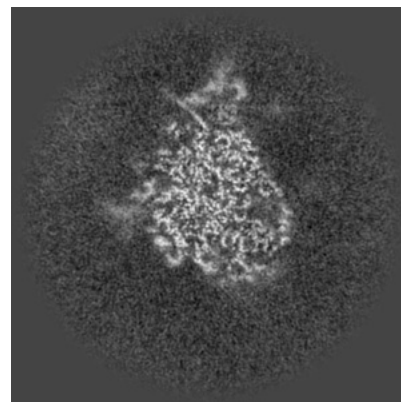
6.2.1 Primary map



X Index: 256

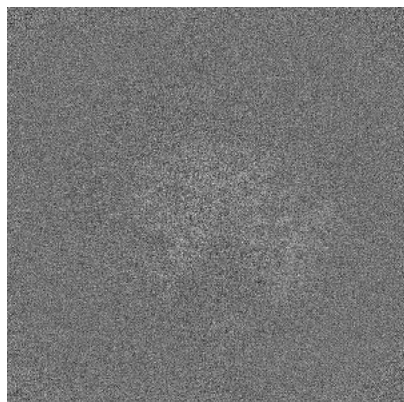


Y Index: 256

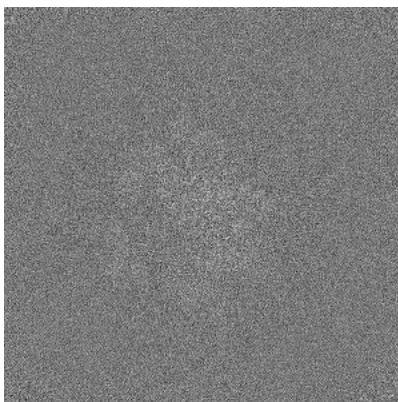


Z Index: 256

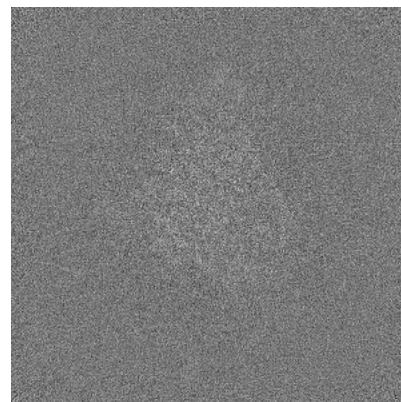
6.2.2 Raw map



X Index: 256



Y Index: 256

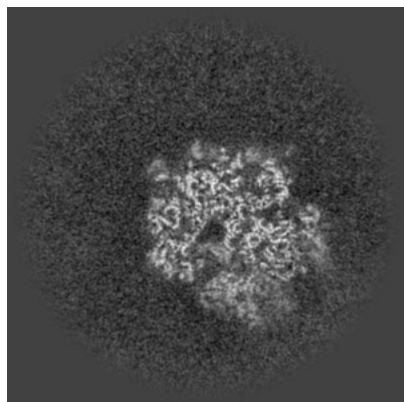


Z Index: 256

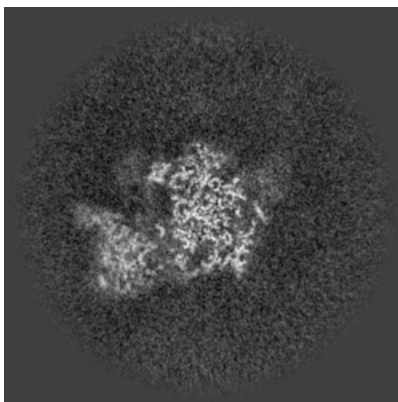
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

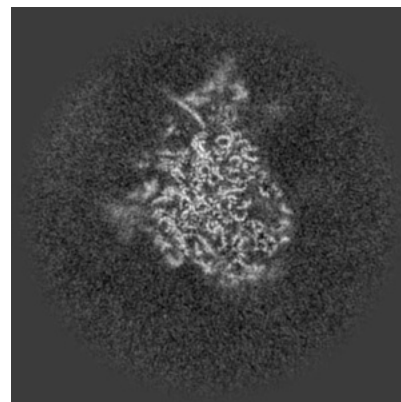
6.3.1 Primary map



X Index: 219

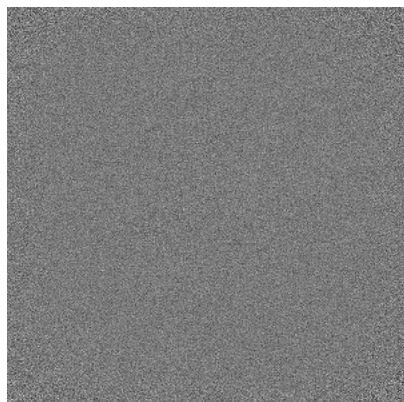


Y Index: 288

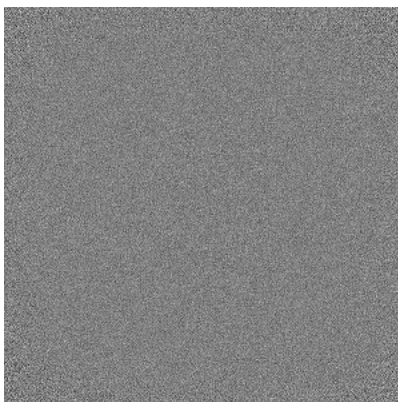


Z Index: 254

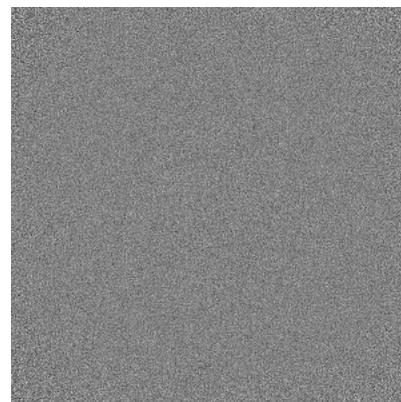
6.3.2 Raw map



X Index: 0



Y Index: 0

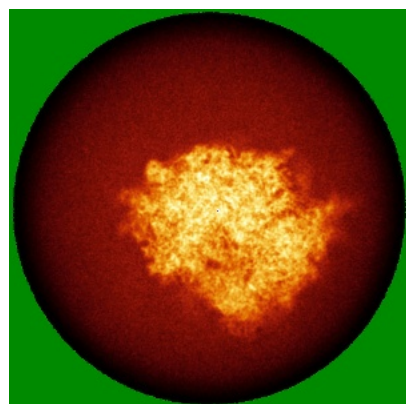


Z Index: 0

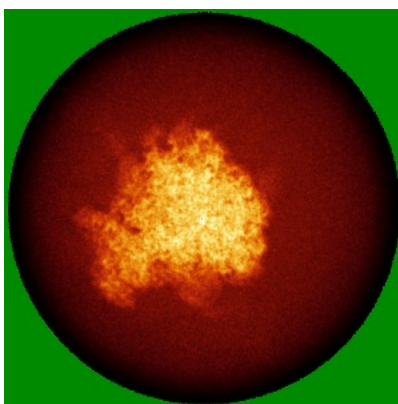
The images above show the largest variance slices of the map in three orthogonal directions.

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

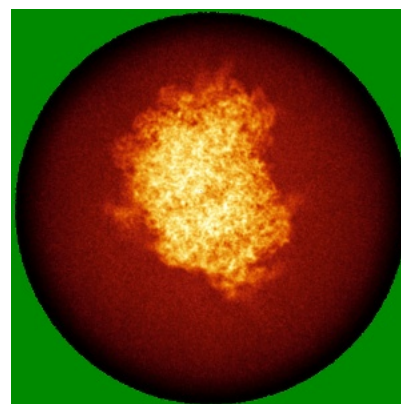
6.4.1 Primary map



X

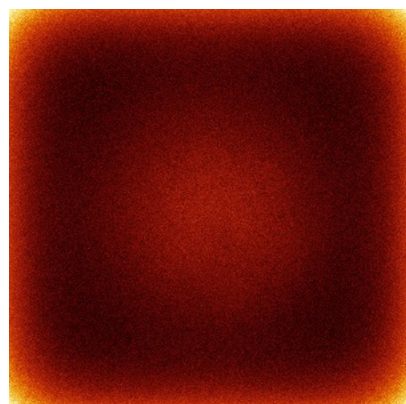


Y

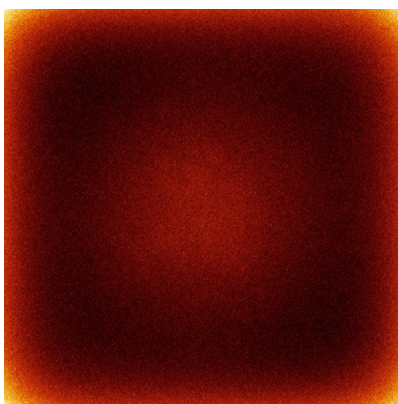


Z

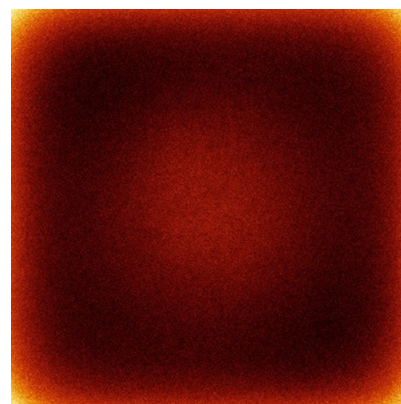
6.4.2 Raw map



X



Y

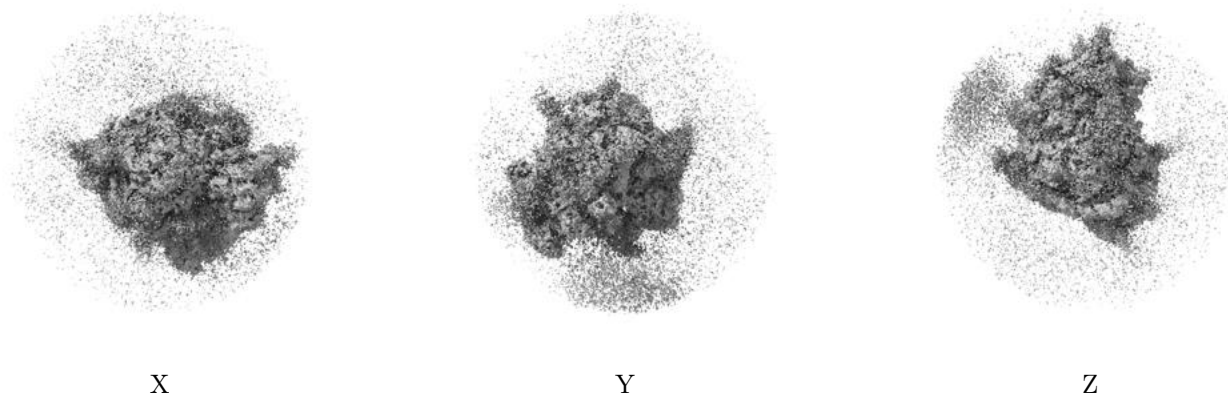


Z

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.

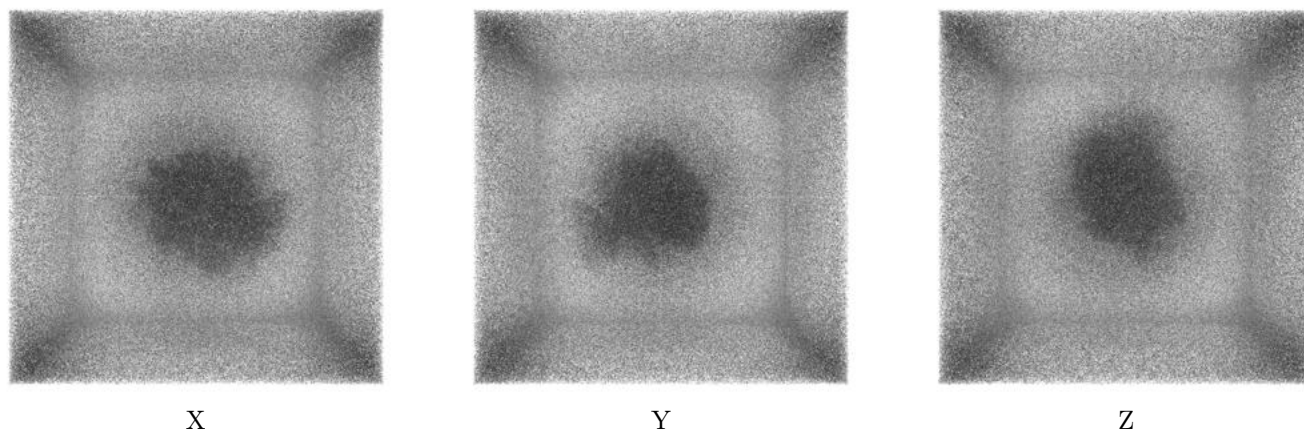
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0714. 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.

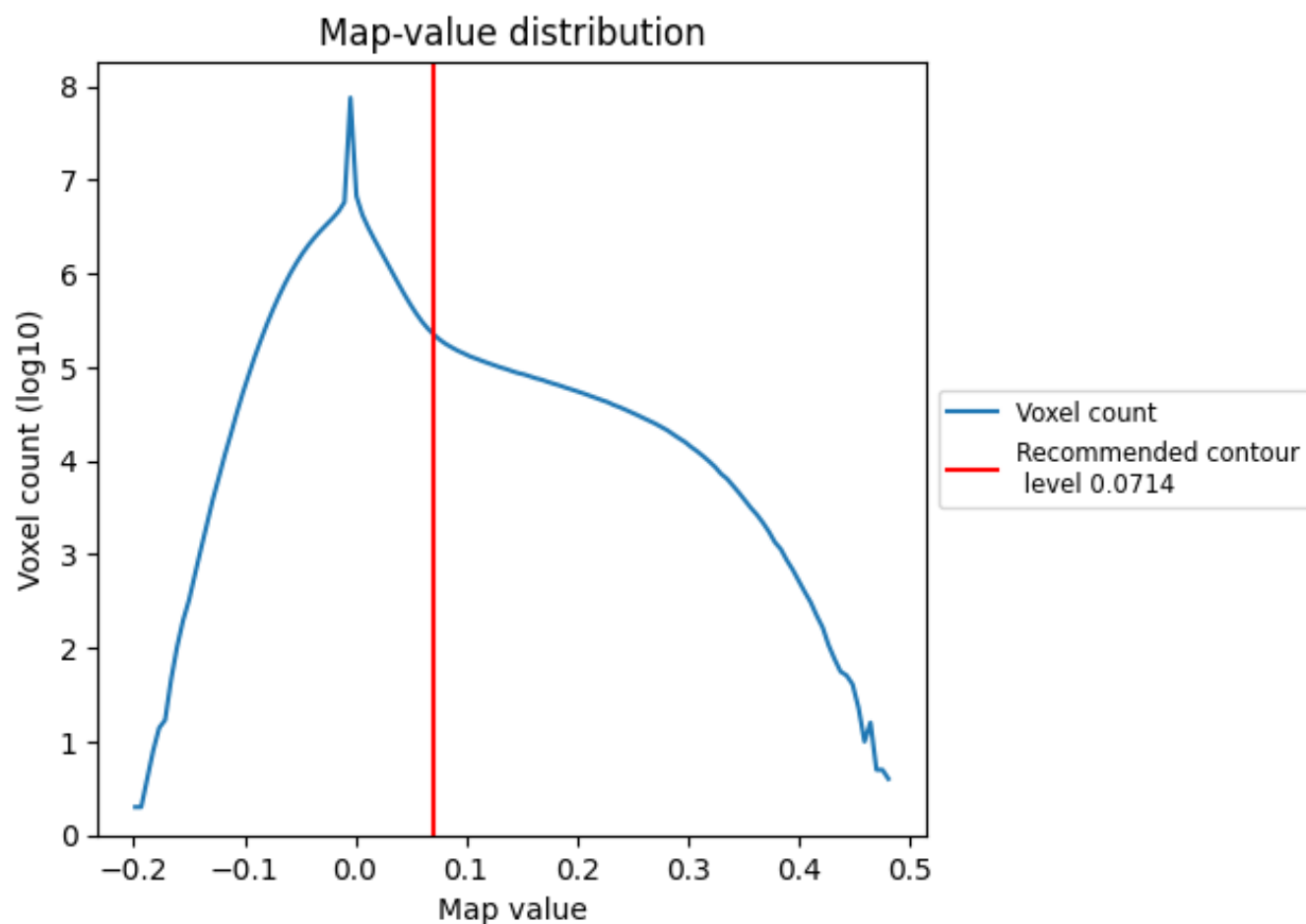
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

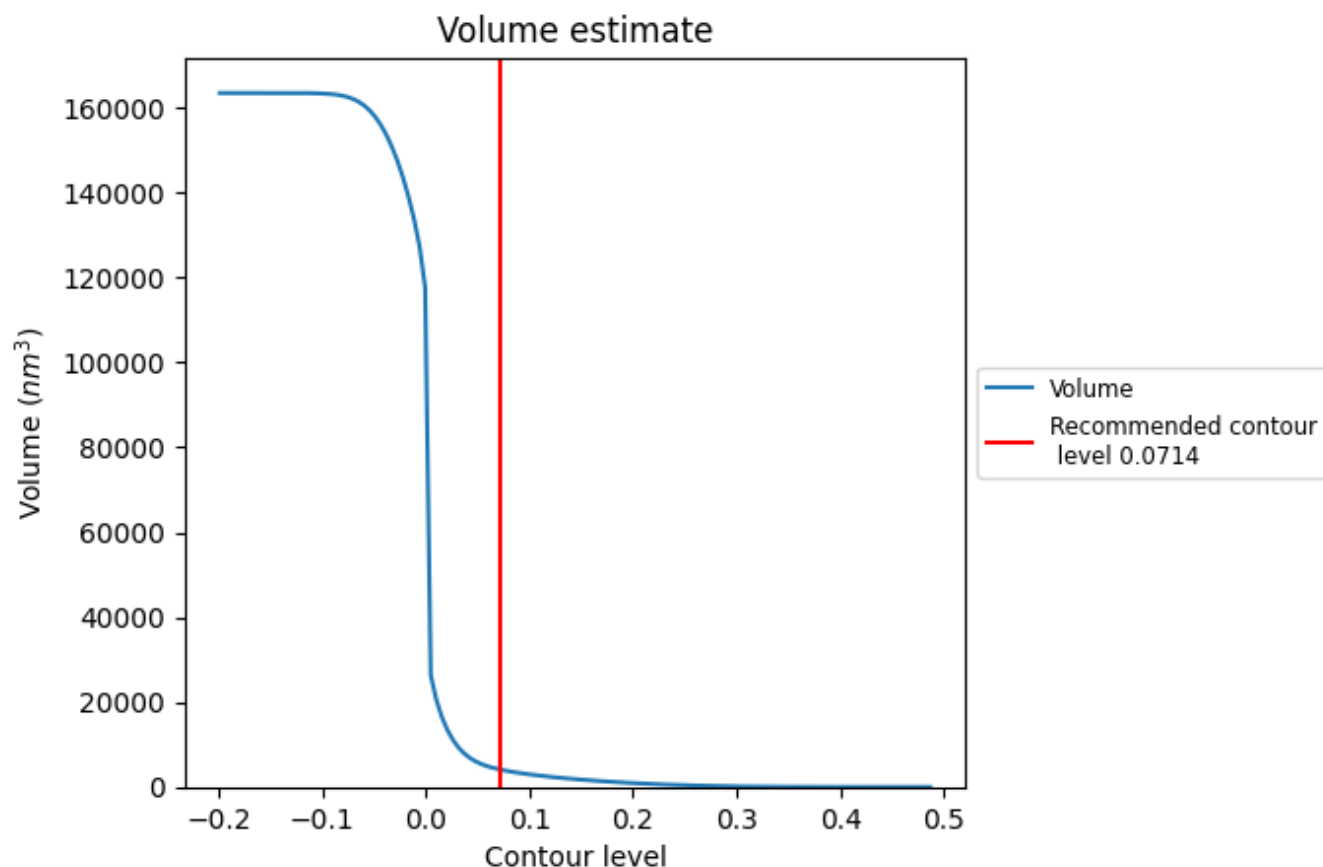
This section contains the results of statistical analysis of the map.

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.

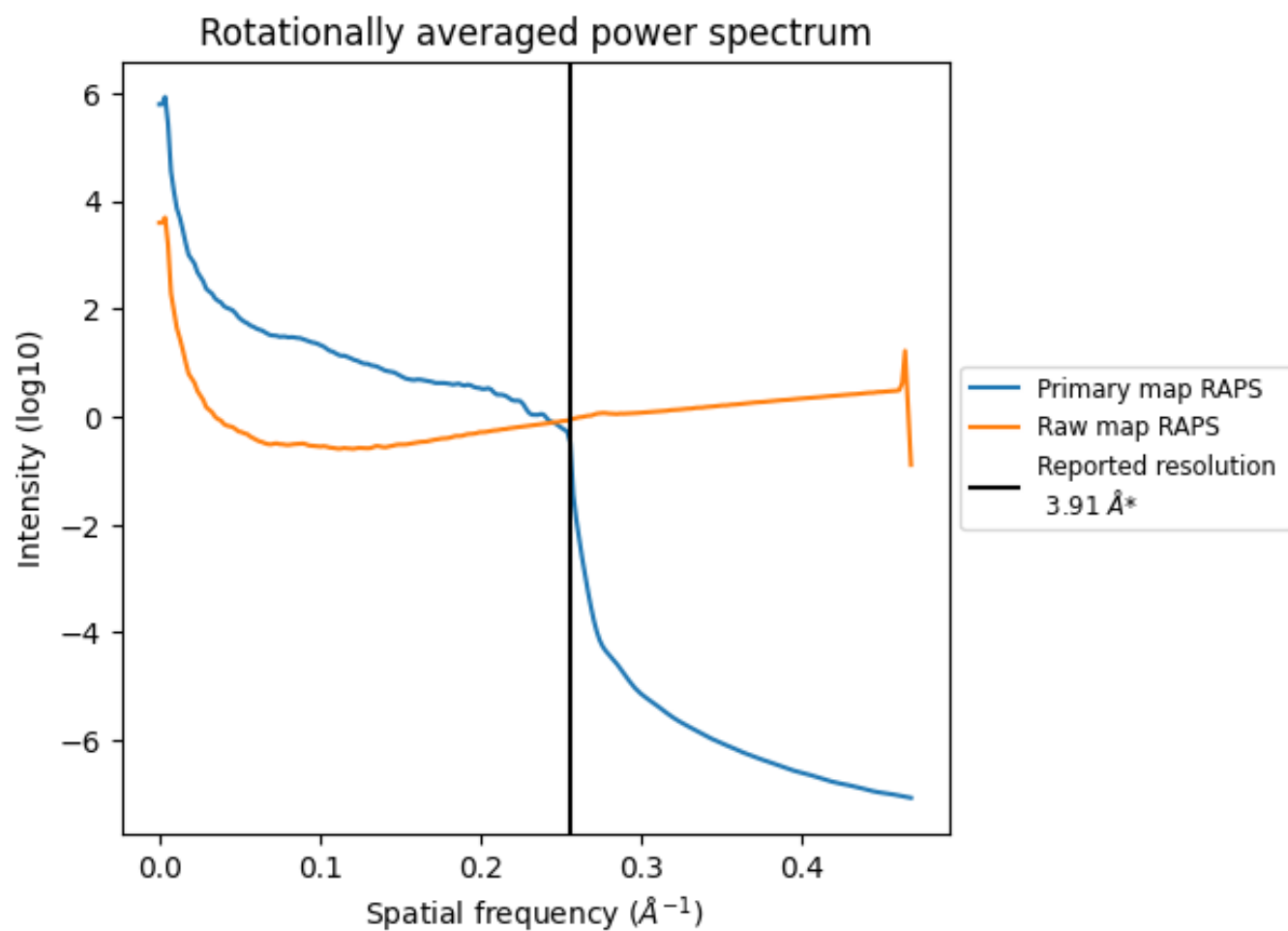
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 4121 nm³; this corresponds to an approximate mass of 3722 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 ⓘ

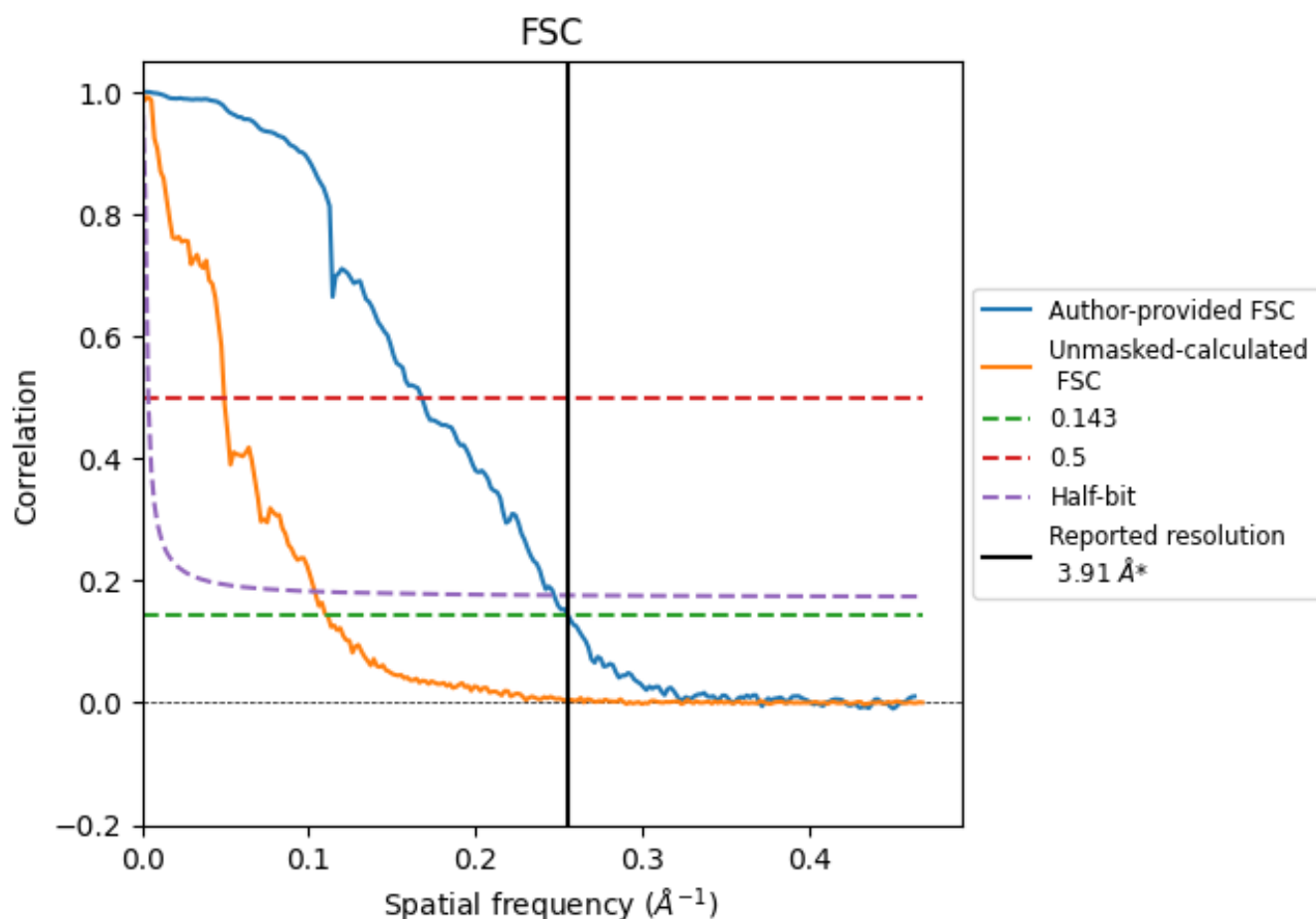


*Reported resolution corresponds to spatial frequency of $0.256 \text{ \AA}^{-1}$

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.256 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

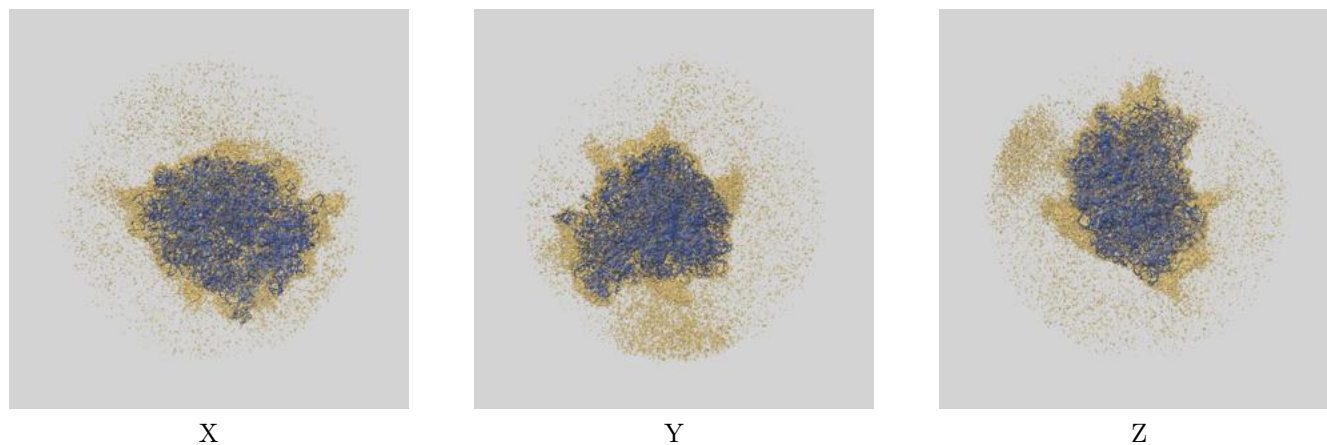
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.91	-	-
Author-provided FSC curve	3.91	5.96	4.05
Unmasked-calculated*	9.03	20.33	9.66

*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 9.03 differs from the reported value 3.91 by more than 10 %

9 Map-model fit [i](#)

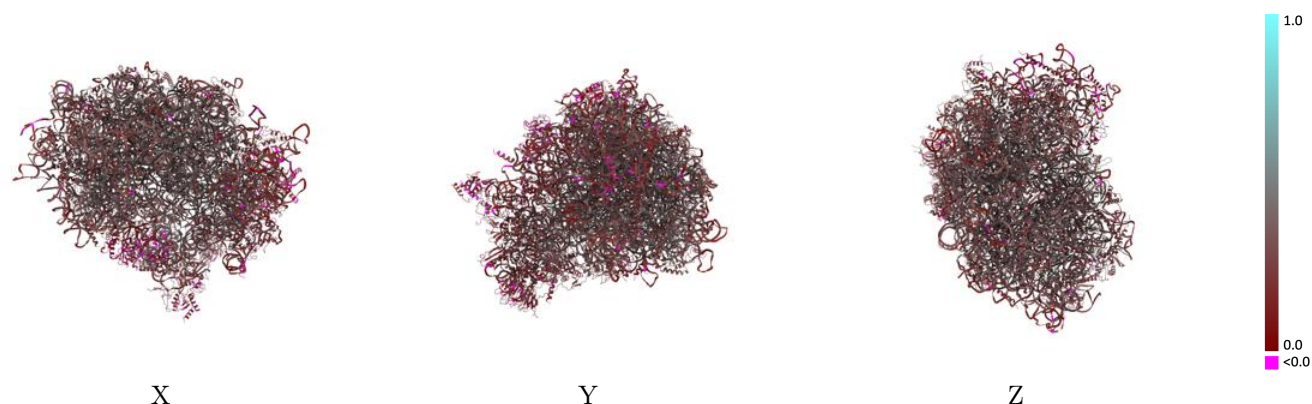
This section contains information regarding the fit between EMDB map EMD-71344 and PDB model 9P7J. Per-residue inclusion information can be found in section [3](#) on page [23](#).

9.1 Map-model overlay [i](#)



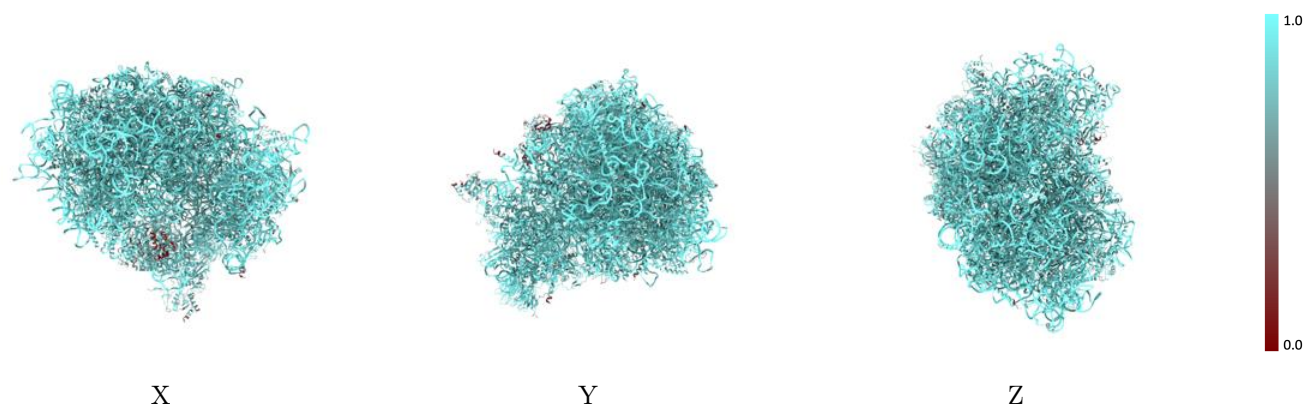
The images above show the 3D surface view of the map at the recommended contour level 0.0714 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



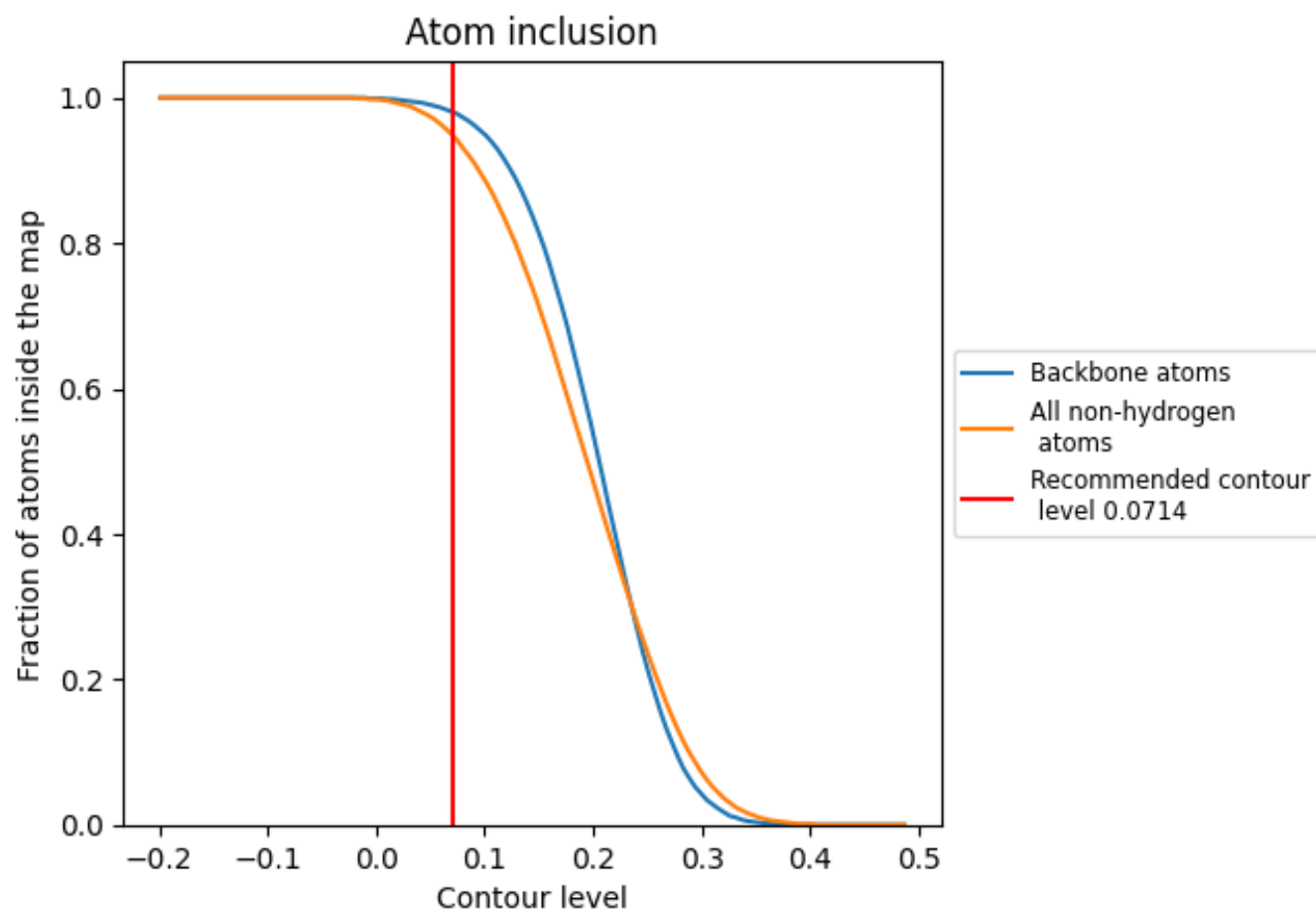
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0714).

9.4 Atom inclusion [i](#)



At the recommended contour level, 98% of all backbone atoms, 95% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.0714) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9470	 0.3160
CI	 0.5360	 0.1590
L5	 0.9870	 0.3420
L7	 1.0000	 0.3620
L8	 0.9910	 0.3520
LA	 0.9470	 0.3730
LB	 0.9000	 0.3530
LC	 0.9140	 0.3470
LD	 0.9160	 0.3070
LE	 0.9020	 0.3040
LF	 0.9040	 0.3300
LG	 0.8840	 0.3030
LH	 0.8900	 0.3300
LI	 0.8860	 0.3450
LJ	 0.9110	 0.2930
LL	 0.9150	 0.3260
LM	 0.9350	 0.3260
LN	 0.9550	 0.3630
LO	 0.8990	 0.3340
LP	 0.9120	 0.3630
LQ	 0.9230	 0.3610
LR	 0.8910	 0.3120
LS	 0.9290	 0.3680
LT	 0.9030	 0.3520
LU	 0.8880	 0.2970
LV	 0.8910	 0.3750
LW	 0.8580	 0.2390
LX	 0.9550	 0.3450
LY	 0.9280	 0.3260
LZ	 0.9240	 0.3420
La	 0.9470	 0.3650
Lb	 0.8830	 0.2900
Lc	 0.8850	 0.3240
Ld	 0.9160	 0.3540
Le	 0.9260	 0.3630



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Chain	Atom inclusion	Q-score
Lf	 0.9290	 0.3690
Lg	 0.9260	 0.3560
Lh	 0.9050	 0.3100
Li	 0.9400	 0.3250
Lj	 0.9730	 0.3620
Lk	 0.8740	 0.2930
Ll	 0.9360	 0.3450
Lm	 0.9250	 0.3440
Ln	 0.9040	 0.2980
Lo	 0.9210	 0.3620
Lp	 0.9380	 0.3490
Lr	 0.9270	 0.3510
Ls	 0.6440	 0.1260
Lt	 0.4100	 0.0790
Pt	 0.9520	 0.2780
S2	 0.9910	 0.3050
SA	 0.8910	 0.2920
SB	 0.8970	 0.3070
SC	 0.9210	 0.3160
SD	 0.8990	 0.2490
SE	 0.9290	 0.2500
SF	 0.8430	 0.2470
SG	 0.8810	 0.2130
SH	 0.8630	 0.2690
SI	 0.9060	 0.2810
SJ	 0.8630	 0.2470
SK	 0.8930	 0.1770
SL	 0.9050	 0.3060
SM	 0.6930	 0.1260
SN	 0.8870	 0.3200
SO	 0.8920	 0.3060
SP	 0.8560	 0.2200
SQ	 0.9170	 0.2430
SR	 0.8890	 0.2560
SS	 0.8500	 0.2300
ST	 0.8960	 0.2200
SU	 0.9100	 0.2070
SV	 0.9210	 0.3240
SW	 0.9390	 0.3300
SX	 0.8740	 0.2850
SY	 0.8340	 0.1810
SZ	 0.8200	 0.2420

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Chain	Atom inclusion	Q-score
Sa	 0.9470	 0.3290
Sb	 0.8870	 0.3200
Sc	 0.8520	 0.2570
Sd	 0.9570	 0.2560
Se	 0.8130	 0.2070
Sf	 0.8180	 0.1660
Sg	 0.9040	 0.1960