



wwPDB EM Validation Summary Report ⓘ

Dec 15, 2025 – 04:35 PM EST

PDB ID : 9P8I / pdb_00009p8i
EMDB ID : EMD-71378
Title : In situ HHT and CHX treated human P-Z state 80S ribosome
Authors : Wei, Z.; Yong, X.
Deposited on : 2025-06-23
Resolution : 3.89 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

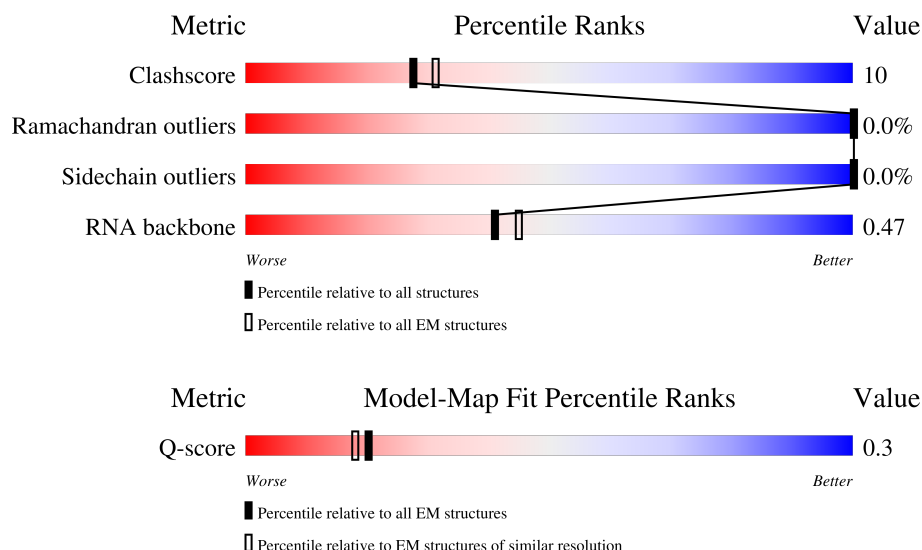
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.89 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.



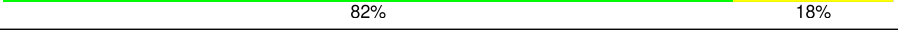
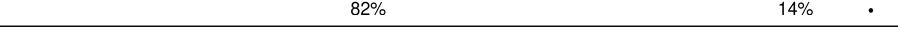
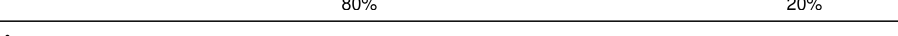
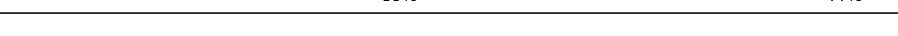
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	8712 (3.39 - 4.39)

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	

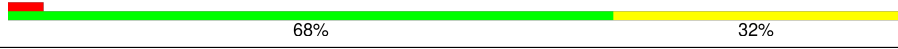
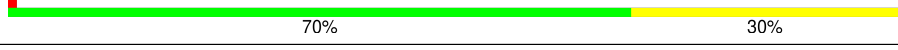
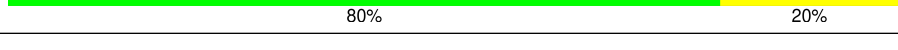
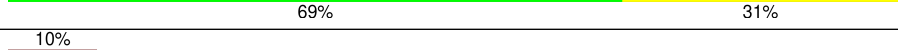
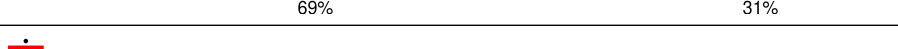
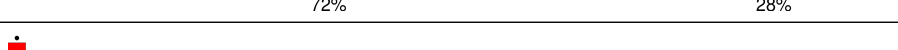
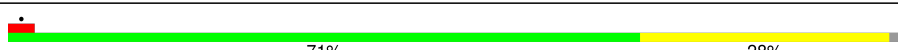
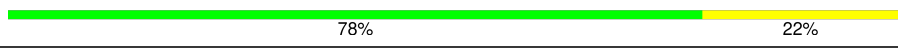
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Mol	Chain	Length	Quality of chain
29	LZ	135	
30	La	147	
31	Lb	121	
32	Lc	98	
33	Ld	107	
34	Le	128	
35	Lf	109	
36	Lg	114	
37	Lh	122	
38	Li	102	
39	Lj	86	
40	Lk	69	
41	Ll	50	
42	Lm	52	
43	Ln	24	
44	Lo	105	
45	Lp	91	
46	Lr	125	
47	Ls	196	
48	Lt	157	
49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

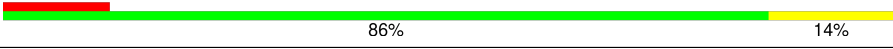
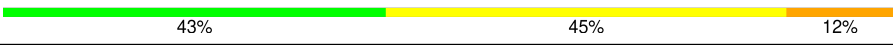
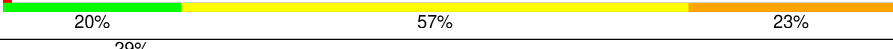
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Mol	Chain	Length	Quality of chain
54	SQ	144	
55	SR	135	
56	SS	145	
57	ST	143	
58	SU	104	
59	SZ	75	
60	Sc	64	
61	Sd	55	
62	Sf	67	
63	Sg	313	
64	SA	221	
65	SB	214	
66	SC	222	
67	SE	262	
68	SG	237	
69	SH	189	
70	SI	206	
71	SJ	185	
72	SL	153	
73	SN	150	
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	 85% 15%
80	Sb	83	 76% 24%
81	Se	58	 12% 86% 14%
82	S2	1740	 43% 45% 12%
83	Zt	75	 20% 57% 23%
84	CI	31	 29% 68% 32%

2 Entry composition

There are 90 unique types of molecules in this entry. The entry contains 220030 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 RNA chain called Z site tRNA [Homo sapiens].

Mol	Chain	Residues	Atoms					AltConf	Trace
83	Zt	75	Total	C	N	O	P	0	0
			1593	712	281	526	74		

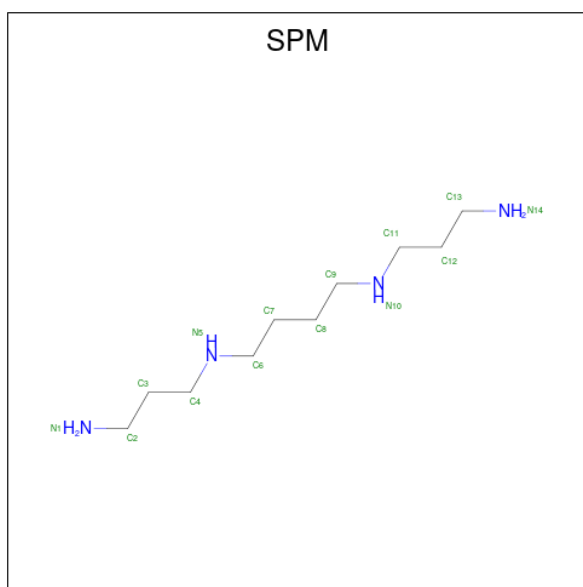
- Molecule 84 is a protein called Transcription factor BTF3.

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

- Molecule 85 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
85	L5	179	Total	Mg	0
			179	179	
85	L7	3	Total	Mg	0
			3	3	
85	L8	4	Total	Mg	0
			4	4	
85	LA	1	Total	Mg	0
			1	1	
85	LP	1	Total	Mg	0
			1	1	
85	LV	1	Total	Mg	0
			1	1	
85	Le	1	Total	Mg	0
			1	1	
85	Lj	1	Total	Mg	0
			1	1	
85	SS	1	Total	Mg	0
			1	1	
85	S2	27	Total	Mg	0
			27	27	

- Molecule 86 is SPERMINE (CCD ID: SPM) (formula: C₁₀H₂₆N₄) (labeled as "Ligand of Interest" by depositor).



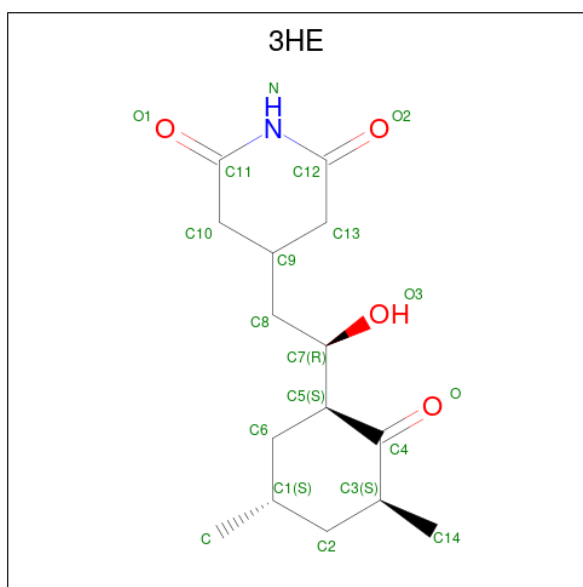
Mol	Chain	Residues	Atoms			AltConf
86	L5	1	Total	C	N	0
			14	10	4	
86	L5	1	Total	C	N	0
			14	10	4	
86	L5	1	Total	C	N	0
			14	10	4	
86	L5	1	Total	C	N	0
			14	10	4	
86	L5	1	Total	C	N	0
			14	10	4	
86	L5	1	Total	C	N	0
			14	10	4	

- Molecule 87 is SPERMIDINE (CCD ID: SPD) (formula: $C_7H_{19}N_3$) (labeled as "Ligand of Interest" by depositor).



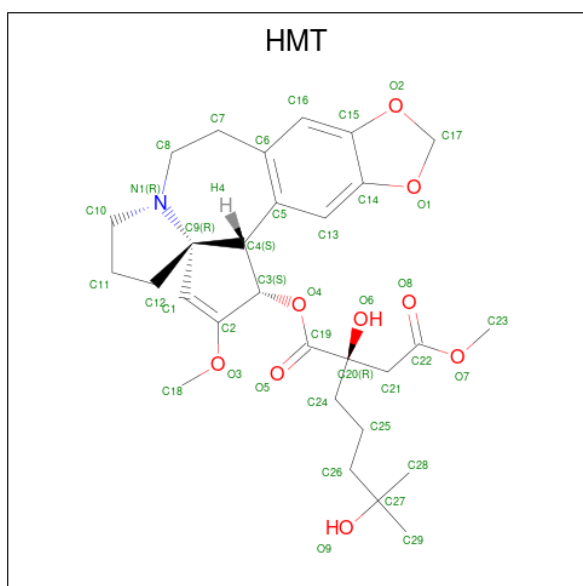
Mol	Chain	Residues	Atoms			AltConf
87	L5	1	Total	C	N	0
			10	7	3	
87	L5	1	Total	C	N	0
			10	7	3	
87	L5	1	Total	C	N	0
			10	7	3	
87	L5	1	Total	C	N	0
			10	7	3	
87	L5	1	Total	C	N	0
			10	7	3	
87	L5	1	Total	C	N	0
			10	7	3	
87	L5	1	Total	C	N	0
			10	7	3	
87	LN	1	Total	C	N	0
			10	7	3	

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



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

- Molecule 90 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by

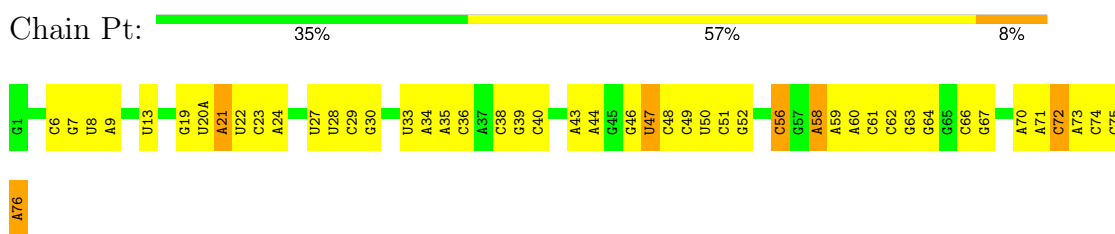
depositor).

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

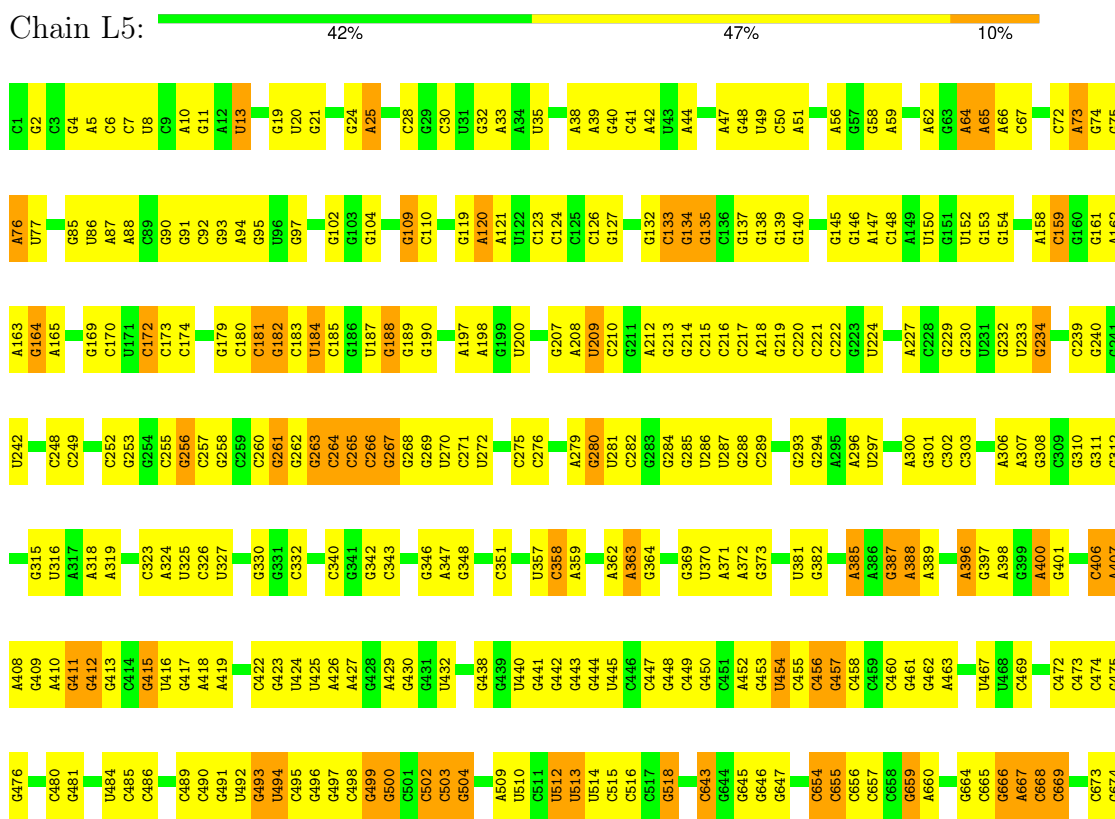
3 Residue-property plots

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

- Molecule 1: P site tRNA [Homo sapiens]

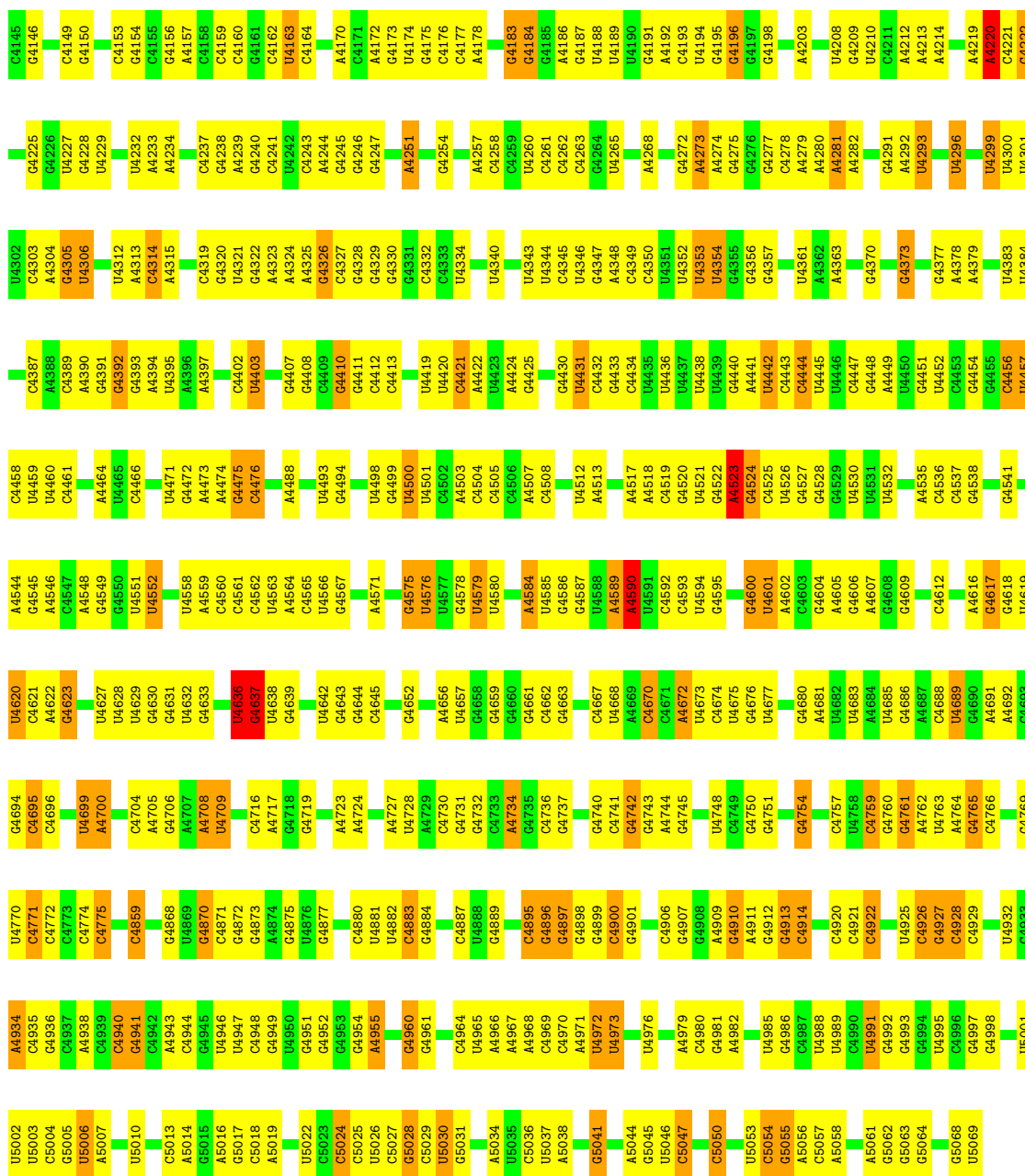


- Molecule 2: 28S rRNA [Homo sapiens]



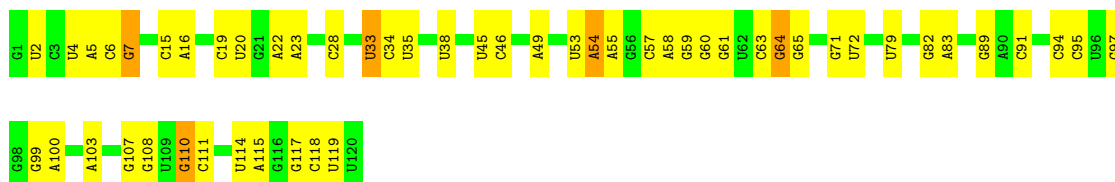
A1991	C1914	G1836	G1760	C1676	C1589	U1513	C1417	A1343	C1278	C1183	G748	C675
U1992	C1915	A1837	G1761	U1677	C1590	U1514	C1418	C1344	A1279	A1184	G749	C676
C1993	G1916	G1842	C1762	C1678	U1591	A1515	A1419	A1345	C1280	U1185	U750	C677
C1994	C1917	G1843	C1763	A1679	C1594	G1517	A1420	A1346	G1281	U1186	G751	C678
G1995	U1918	A1844	G1764	G1680	C1595	A1518	G1425	G1347	G1282	C1187	G752	C679
G1996	U1919	A1765	A1765	U1683	G1596	C1519	G1426	G1348	G1283	C1188	G755	G680
U1997	C1920	U1845	A1766	A1684	G1597	C1520	G1426	G1349	G1284	C1189	G756	G684
U1998	C1921	G1847	C1768	U1687	G1599	C1521	C1431	G1350	U1285	C1190	G685	G688
A1999	G1922	U1848	C1769	U1688	A1601	C1522	G1432	G1352	G1286	C1191	U687	A686
G2000	G1925	U1849	A1770	G1688	A1612	A1523	G1437	G1353	U971	G970	G759	U688
G2001	C1926	U1850	U1771	G1691	A1613	A1524	U1438	A1354	C972	C973	C904	C905
A2002	U1927	U1852	C1772	G1691	C1614	A1525	C1439	U1355	G974	C974	C905	C906
G2003	C1931	G1855	U1773	G1697	C1615	G1532	C1442	C1357	C977	C977	C907	C908
G2004	A1932	C1856	U1779	C1698	A1616	U1533	C1443	G1358	G978	G978	C909	C910
U2005	G1933	C1857	A1780	A1699	G1617	A1534	A1443	G1359	G979	G979	C910	C911
U2006	A1934	A1857	U1761	G1700	G1618	C1535	G1444	G1360	U980	U980	G912	G913
G2007	U1782	C1858	U1782	A1701	G1618	U1536	U1445	U1361	C981	C981	G914	G915
U2008	C1785	U1859	C1785	C1702	A1621	A1537	C1446	C1362	U982	U982	C916	C917
A2009	U1786	U1860	A1786	G1705	A1622	U1538	C1447	C1363	U983	U983	C918	C919
A2010	A1787	U1861	A1787	G1706	A1623	G1539	G1457	A1367	C984	C984	C920	C921
C2011	A1788	U1862	A1788	G1707	G1624	C1540	G1458	A1368	C985	C985	C922	C923
A2012	C1789	C1867	C1789	G1715	G1625	C1541	A1459	C1369	G1070	G1070	C924	C925
A2017	C1789	A1868	C1789	G1716	G1626	G1542	C1459	C1370	C1071	C1071	C926	C927
U2018	U1949	G1869	U1792	C1717	G1627	G1543	C1460	C1371	C1072	C1072	C928	C929
G2019	U1950	G1870	U1792	C1718	C1628	A1546	C1461	C1372	C1073	C1073	C930	C931
U2020	G1951	C1871	U1792	A1719	C1629	A1547	A1462	C1373	C1074	C1074	C932	C933
U2021	G1952	A1871	A1795	C1720	A1631	G1548	C1463	C1374	C1075	C1075	C934	C935
G2022	U1953	C1872	A1795	G1721	A1632	G1549	C1464	C1375	C1076	C1076	C936	C937
G2023	U1954	C1873	A1796	G1722	A1633	G1550	C1465	C1376	C1077	C1077	C938	C939
A2024	U1955	C1874	A1797	C1723	A1634	G1551	C1466	C1377	C1078	C1078	C940	C941
A2025	U1956	U1875	A1801	U1725	A1635	A1552	C1467	C1378	C1079	C1079	C942	C943
A2026	U1957	G1876	A1802	U1726	A1636	A1553	C1468	C1379	C1080	C1080	C944	C945
U2027	A1960	G1877	G1803	U1727	A1637	G1554	C1469	C1380	C1081	C1081	C946	C947
G2028	G1961	G1878	A1804	U1728	A1638	A1555	U1473	C1381	C1082	C1082	C948	C949
A2029	A1962	C1879	A1805	U1729	U1639	A1556	C1474	C1382	C1083	C1083	C950	C951
G2030	U1963	G1880	G1806	U1730	C1640	G1557	C1475	C1383	C1084	C1084	C952	C953
A2031	G1964	C1881	C1807	C1731	C1641	A1558	C1476	C1384	C1085	C1085	C954	C955
G2032	U1965	U1882	G1808	G1732	C1642	G1559	C1477	C1385	C1086	C1086	C956	C957
G2033	G1966	G1883	G1810	G1733	C1643	G1560	C1478	C1386	C1087	C1087	C958	C959
G2034	A1967	C1884	G1811	G1734	U1647	A1561	G1479	C1387	C1088	C1088	C960	C961
G2035	U1968	G1885	C1812	G1735	U1648	A1562	C1480	C1388	C1089	C1089	C962	C963
A2040	C1971	A1888	U1813	G1736	G1654	A1563	C1481	C1389	C1090	C1090	C964	C965
A2041	G1972	U1889	C1814	G1740	C1655	A1564	C1482	C1390	C1091	C1091	C966	C967
G2046	G1973	G1890	G1815	G1741	U1656	A1565	C1483	C1391	C1092	C1092	C968	C969
A2047	U1974	C1891	C1816	A1742	G1657	U1567	C1484	C1392	C1093	C1093	C970	C971
U2048	G1975	G1892	U1817	A1743	G1658	C1568	G1490	C1393	C1094	C1094	C972	C973
G2055	C1976	C1893	U1818	U1744	C1661	G1570	A1491	C1394	C1095	C1095	C974	C975
G2056	U1977	G1894	G1819	U1745	C1662	G1571	U1494	C1395	C1096	C1096	C976	C977
G2057	C1978	G1895	C1820	U1746	C1663	G1572	G1495	C1396	C1097	C1097	C978	C979
C2059	A1979	A1896	G1821	A1749	C1664	U1573	G1496	C1397	C1098	C1098	C980	C981
G2060	U1980	A1897	U1822	G1750	C1665	C1574	A1497	C1398	C1099	C1099	C982	C983
G2061	G1981	G1903	G1823	A1751	C1666	C1575	G1498	C1399	C1100	C1100	C984	C985
G2062	U1982	U1906	G1824	G1752	A1668	C1580	C1499	C1400	C1101	C1101	C986	C987
G2063	A1983	A1907	A1825	G1753	A1669	G1581	G1502	C1401	C1102	C1102	C988	C989
G2064	U1984	G1908	G1826	U1756	G1670	U1582	G1503	C1402	C1103	C1103	C990	C991
A2069	G1985	G1909	G1830	U1757	U1672	C1583	G1504	C1403	C1104	C1104	C992	C993
G2076	C1987	G1988	G1831	G1758	U1673	C1584	U1511	C1404	C1105	C1105	C994	C995
				G1759	U1674	C1585	G1512	C1405	C1106	C1106	C996	C997

U4070	A3746	G3664	A2845	C2770	A2537	G2457	C2365	G2283	C2077
U4071	A3747	G3665	G2846	G2771	G2699	C2458	G2368	G2284	C2078
C4072	A3748	G3666	G2847	G2772	C2699	G2459	A2368	C2289	G2079
		G3667	G2848	G2773	G2700	G2460			U2080
	G3753	G3668	A2849		G2701	G2461	A2374	C2295	C2081
	G3754	G3669	G2855	G2777	G2702	G2462	A2375	C2296	G2082
		G3670	G2856	G2778	G2703	G2463	A2376	C2297	C2083
	U3758	G3671	C2857	G2779	G2706	G2464	A2377	U2298	C2084
	A3759	G3672	A2858	G2780	U2707	G2465	G2377		
	A3760	G3673	G2859	G2781	C2708	G2466	G2378		
		G3674			G2709	G2467			
			G2861	G2784	G2710	G2469	A2381		C2087
	G3765	G3684	G2862	G2785	G2711	G2470	A2386	U2090	
	A3766	G3685	G2863	G2786		G2471	U2386	C2301	C2091
	C3767	G3686	G2864	G2787	G2715	G2472	G2387	G2092	
		A3687	U2865	G2788		G2473	A2388	A2093	
	U3770	G3688	G2866	G2789	U2718	G2474	G2389	G2306	
	A3771	G3689	C2867	U2790	G2719	G2475	G2390	A2307	A2095
			G2868	U2791	C2790	G2476		A2308	G2096
			U2869	G2794	G2721	G2479	G2394	U2097	
	A3774	U36895	A2870		G2722		A2395	G2311	G2098
	A3775	G3696		G2799	G2723	G2483	A2396	U2312	G2099
	A3776	U3697	C2875	G2800	U2724	A2484	U2397	A2313	
	G3777	G3698	G2876	G2801	G2725	U2485	U2398	C2101	
	U3778	C3700	G2877	U2802	A2726	G2486	G2399	G2316	G2102
			G2878	U2803	G2727	G2487	G2400	G2317	G2103
	C3782	C3701		U2804		G2488	A2401	G2318	G2104
	A3783	A3702	G3615	G2805	U2728	G2489	G2402		A2105
	A3784		U3616	G2806	G2729	G2490	A2403	G2321	G2106
	A3785		G3617	A2807	U2730	G2491	A2404	G2322	C2107
	A3786	C3707	A3624	A2808	G2731	G2492	G2405	G2323	G2108
	A3787	C3708	G3625	G2809		G2493	G2406	G2324	G2109
	G3787	U3709	G3626	G2809	C2739	G2494	G2407	G2325	G2110
	G3788	G3710	G3627	U2810		G2495		G2326	G2111
	G3789	A3711	A2885	G2811	G2742	G2496	C2410	G2327	G2112
				A2812			C2411	G2328	C2249
	G3792	A3712	C2890	G2813	G2743	G2503	A2412	U2329	C2250
	U3793	G3714	U2891	G2814	A2744	G2504	U2413	G2330	G2251
	C3794	U3715	C2892	G2814	A2745	G2505	G2414	G2331	G2252
	A3795	C3716	U2893	A2815	A2746	G2506	U2415	A2332	
	U3796	A3717	A2894		U2747	G2507	G2416	C2333	C2256
	C3797		A2895	U2819	C2748	G2508	A2417	G2334	C2257
				G2823	G2749	G2509		G2335	C2258
	U3805	G3720	G2896	G2824	C2750	A2517	C2422	G2336	G2259
	G3806	U3721	C2898	A2825	G2751		A2423		G2262
	A3807	G3722	G2899	G2826	G2752	G2517	G2424	A2347	G2263
	C3808	A3723	U2900	U2826	G2753	G2518	U2425	A2349	
	G3809	A3724	G2902	G2827	A2754	G2519	C2430	G2350	A2268
	C3810	G3725	G2903	U2829	G2755	G2520	A2431	C2351	
	G3811	A3726	U2904	G2830	A2756	G2521		U2352	C2272
	C3812	A3727	C2905	G2831	G2758	G2522	U2436	U2353	G2273
	A3813	A3728	G2906	A2832	G2759		C2437	G2354	G2274
	U3814		G2907		G2760	G2526	A2438		A2276
	G3815	A3732	U2908	A2835	U2761	G2527		G2358	G2277
	A3816	A3733	C2909	G2836	G2762	G2528	U2444	U2359	G2278
	U4063	U3734	G2910	U2837	G2763	G2529		A2360	G2279
	G3896	G3735	G2913	G2838	A2764	G2530	G2448	G2361	
	G3897	A3736	G3584	G2839	A2765			A2362	G2280
	G3898	A3737	G3585	U2839		G2533		A2363	U2281
	A3821		C3588	U2843	C2768	G2534		G2364	A2282
	G3744		C3589	A2844	U2769				
	U3745								
A3824									
A3825									
C3826									
A3830									
U3831									
U3832									
C3833									
C3834									
U3838									
G3839									
A3840									
G3841									
C3842									
U3820									
U3921									
C3922									
A3844									
C3923									
C3924									
U3925									
G3926									
U3927									
A3928									
U3932									
C3933									
G3934									
C3935									
A3936									
C3937									
G3938									
C3939									
A3942									
G3943									
A3944									
A3945									
C3946									
A3947									
C3948									
A3949									
U3950									
G3951									
A3952									
C3953									
A3954									
A4056									
C4057									
U4058									
C4059									
U4060									
C4061									
A4062									
U4063									
C4064									
G4065									
G3897									
U4066									
C4067									
U4068									
C4143									
C4144									



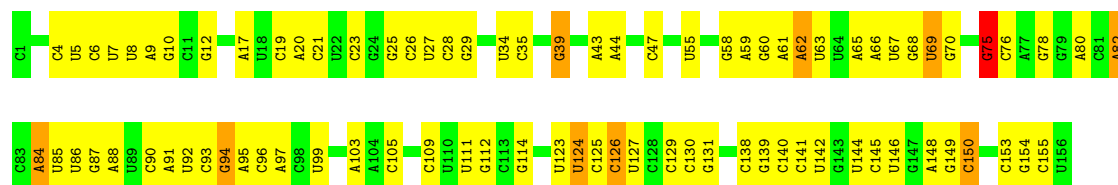
• Molecule 3: 5S rRNA [Homo sapiens]

Chain L7: 57% 39%



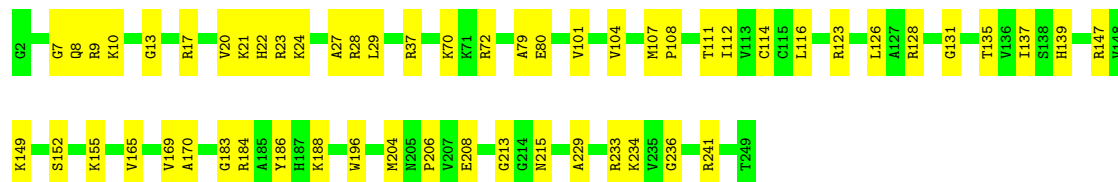
• Molecule 4: 5.8S rRNA [Homo sapiens]

Chain L8: 46% 47% 6%



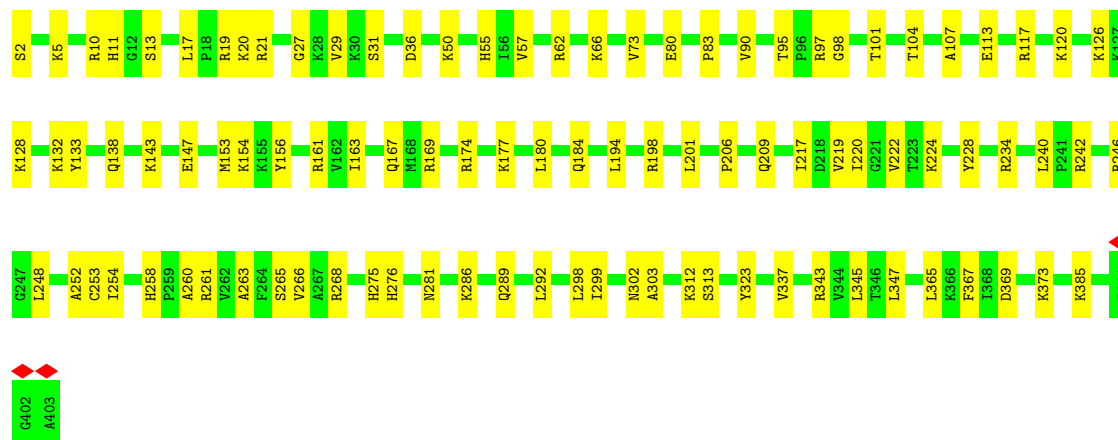
• Molecule 5: 60S ribosomal protein L8

Chain LA: 77% 23%



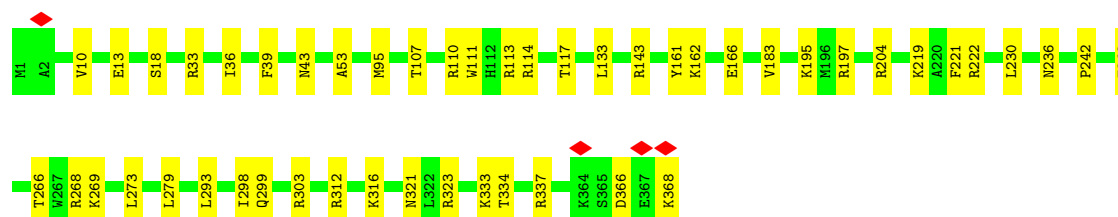
• Molecule 6: Large ribosomal subunit protein uL3

Chain LB: 76% 24%



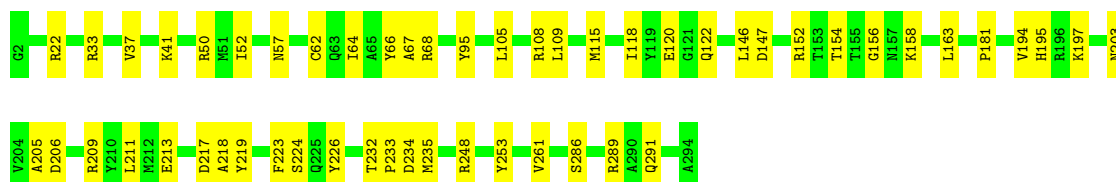
• Molecule 7: 60S ribosomal protein L4

Chain LC: 87% 13%



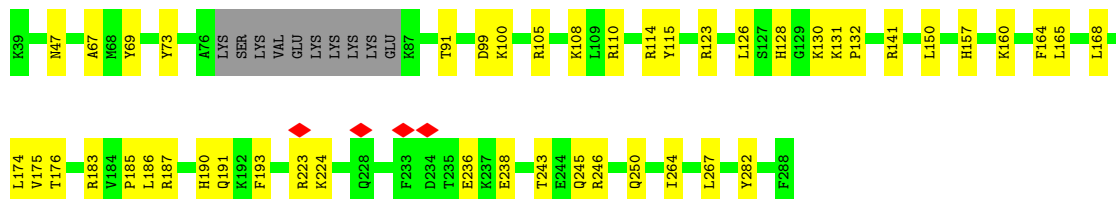
• Molecule 8: Large ribosomal subunit protein uL18

Chain LD: 82% 18%



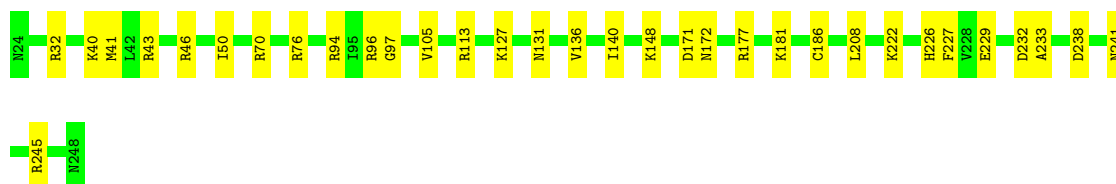
- Molecule 9: Large ribosomal subunit protein eL6

Chain LE: 78% 18%



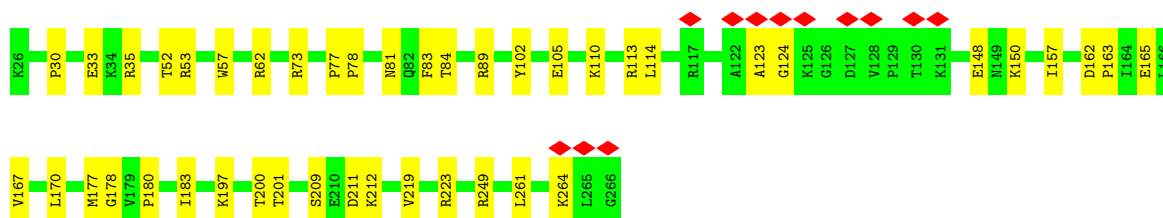
- Molecule 10: 60S ribosomal protein L7

Chain LF: 85% 15%



- Molecule 11: 60S ribosomal protein L7a

Chain LG: 5% 82% 18%

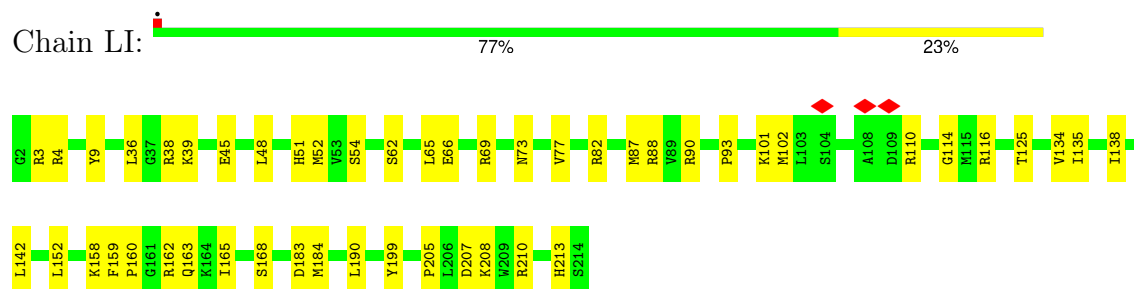


- Molecule 12: 60S ribosomal protein L9

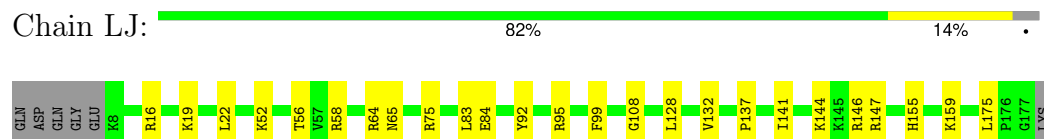
Chain LH: 82% 18%



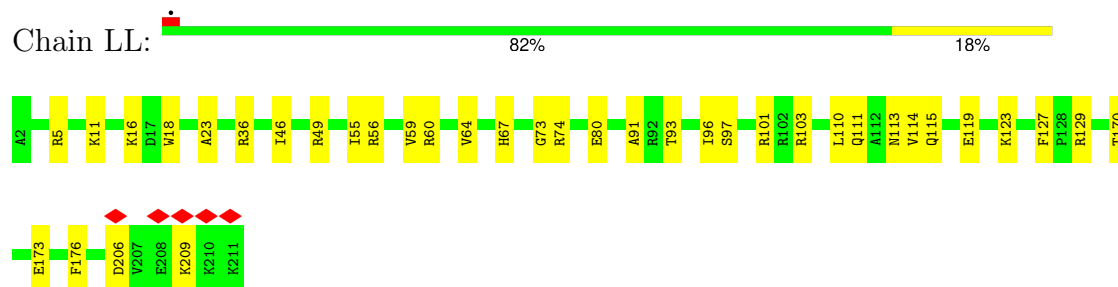
- Molecule 13: Ribosomal protein uL16-like



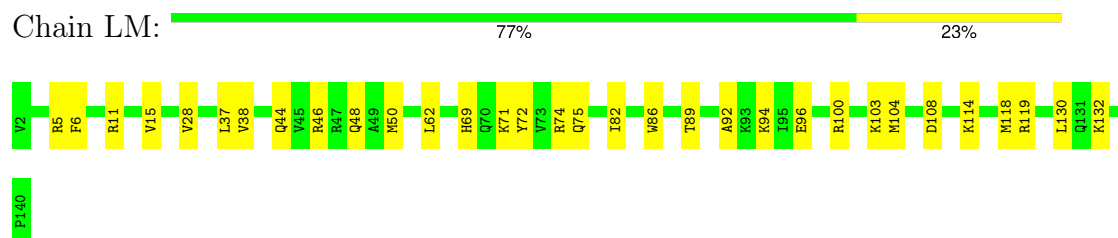
- Molecule 14: 60S ribosomal protein L11



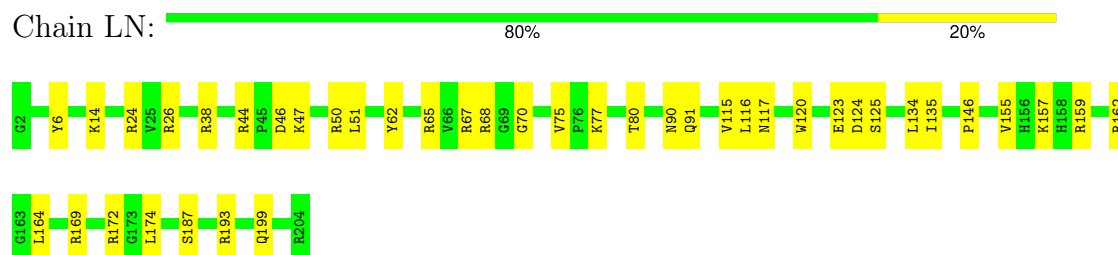
- Molecule 15: Large ribosomal subunit protein eL13



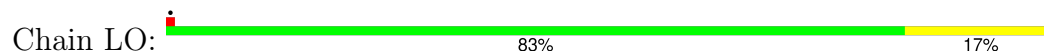
- Molecule 16: 60S ribosomal protein L14

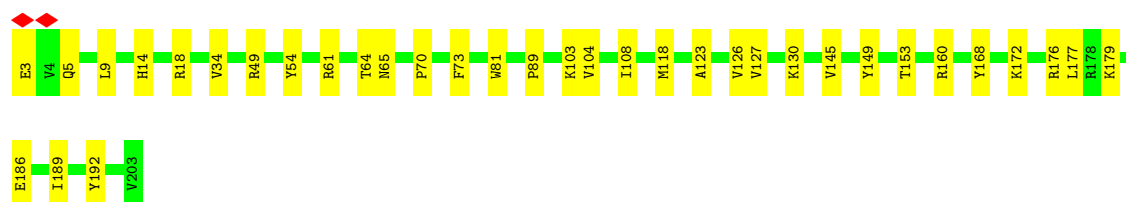


- Molecule 17: 60S ribosomal protein L15



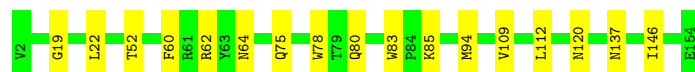
- Molecule 18: 60S ribosomal protein L13a





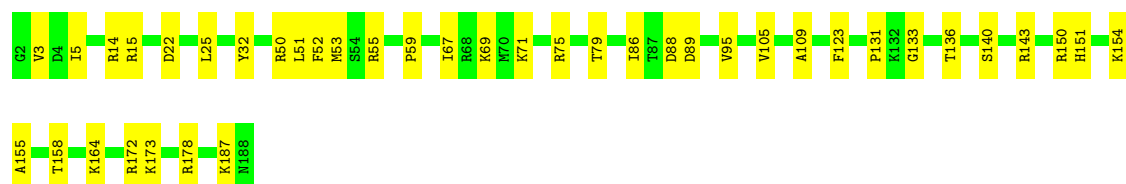
- Molecule 19: 60S ribosomal protein L17

Chain LP: 89% 11%



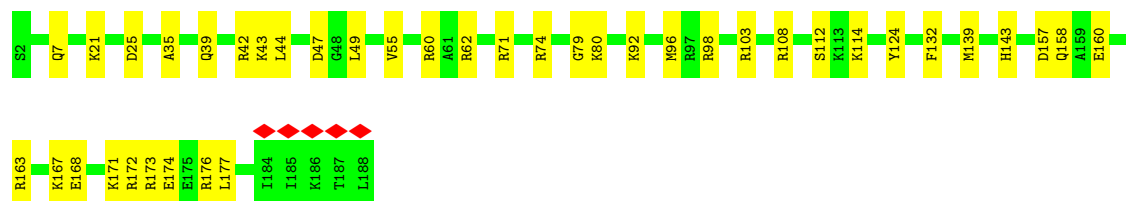
- Molecule 20: 60S ribosomal protein L18

Chain LQ: 79% 21%



- Molecule 21: 60S ribosomal protein L19

Chain LR: 79% 21%



- Molecule 22: 60S ribosomal protein L18a

Chain LS: 89% 11%



- Molecule 23: 60S ribosomal protein L21

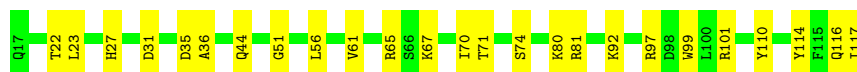
Chain LT: 78% 22%





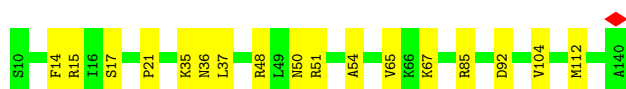
- Molecule 24: Heparin-binding protein HBp15

Chain LU: 75% 25%



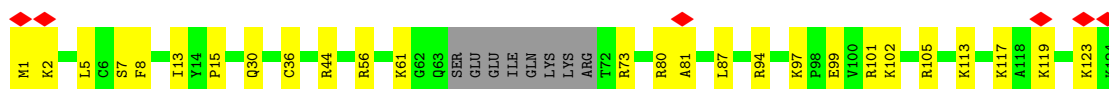
- Molecule 25: 60S ribosomal protein L23

Chain LV: 87% 13%



- Molecule 26: Ribosomal protein L24

Chain LW: 5% 73% 21% 6%



- Molecule 27: 60S ribosomal protein L23a

Chain LX: 84% 16%



- Molecule 28: 60S ribosomal protein L26

Chain LY: 90% 10%



- Molecule 29: 60S ribosomal protein L27

Chain LZ: 82% 18%

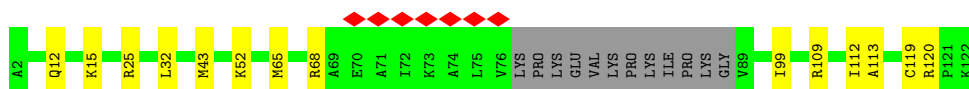
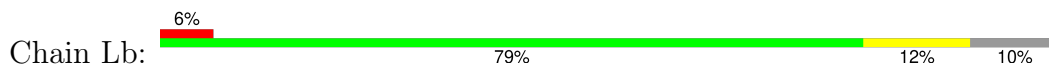


- Molecule 30: 60S ribosomal protein L27a

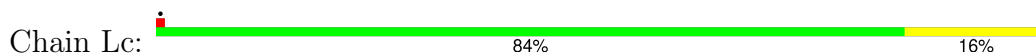
Chain La: 87% 13%



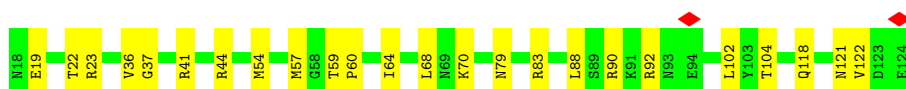
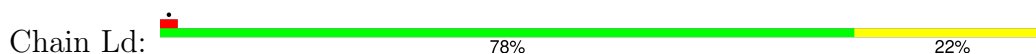
- Molecule 31: Large ribosomal subunit protein eL29



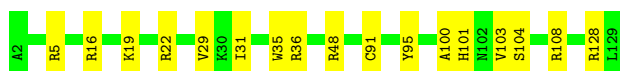
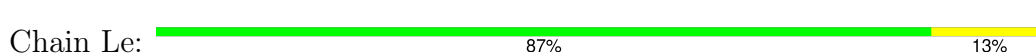
- Molecule 32: 60S ribosomal protein L30



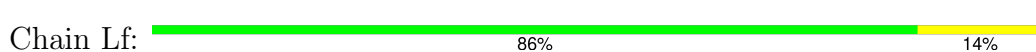
- Molecule 33: 60S ribosomal protein L31



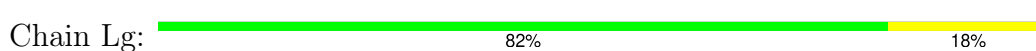
- Molecule 34: 60S ribosomal protein L32



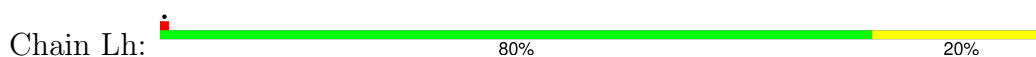
- Molecule 35: 60S ribosomal protein L35a



- Molecule 36: 60S ribosomal protein L34



- Molecule 37: 60S ribosomal protein L35





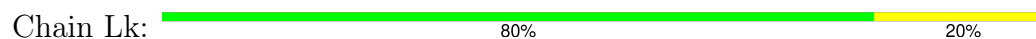
- Molecule 38: 60S ribosomal protein L36



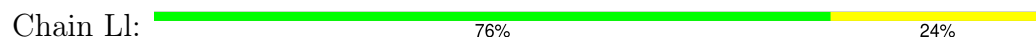
- Molecule 39: 60S ribosomal protein L37



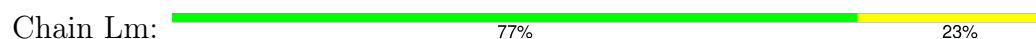
- Molecule 40: 60S ribosomal protein L38



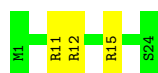
- Molecule 41: 60S ribosomal protein L39



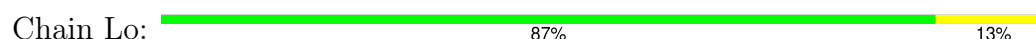
- Molecule 42: Large ribosomal subunit protein eL40



- Molecule 43: 60S ribosomal protein L41

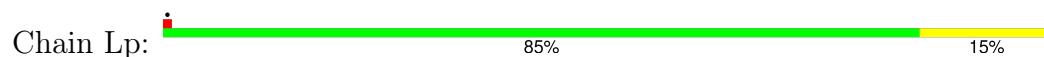


- Molecule 44: 60S ribosomal protein L36a

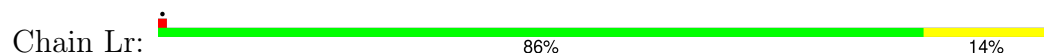




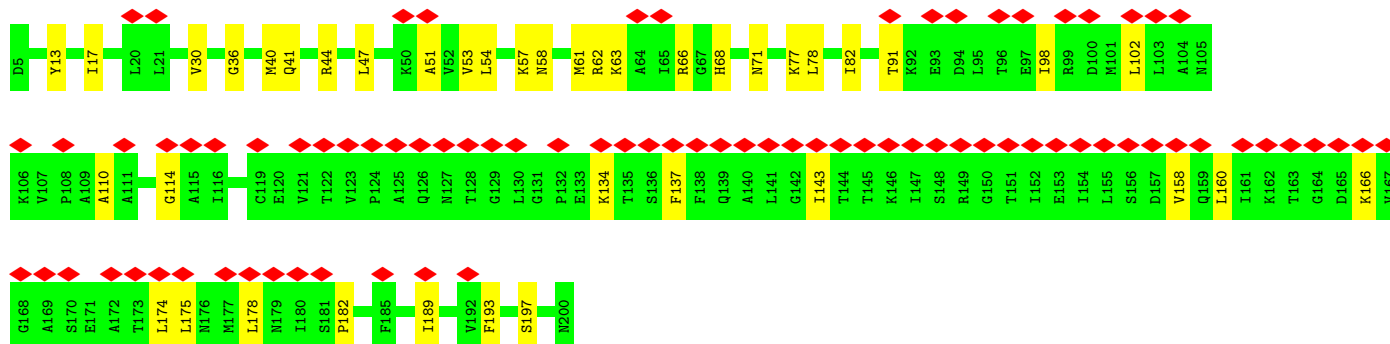
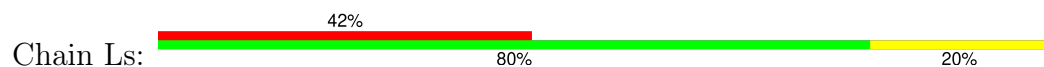
- Molecule 45: 60S ribosomal protein L37a



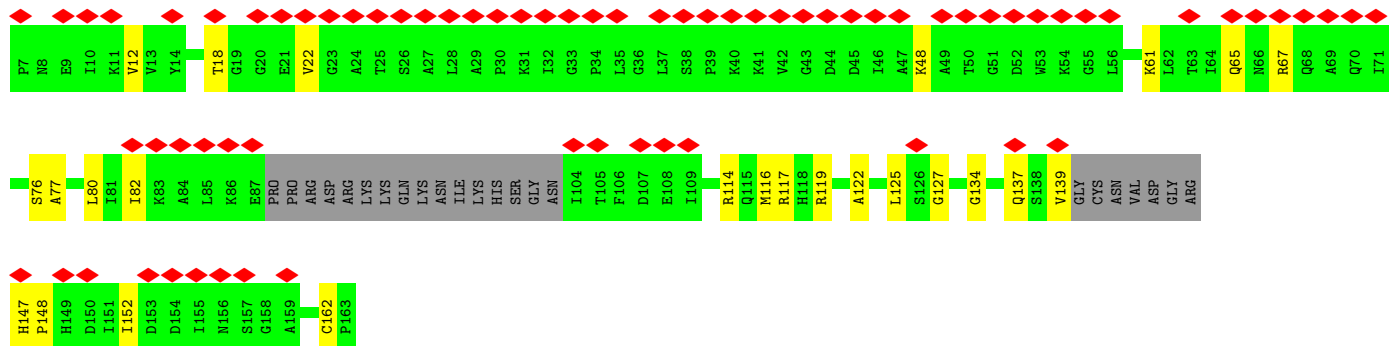
- Molecule 46: 60S ribosomal protein L28



- Molecule 47: 60S acidic ribosomal protein P0



- Molecule 48: Large ribosomal subunit protein uL11



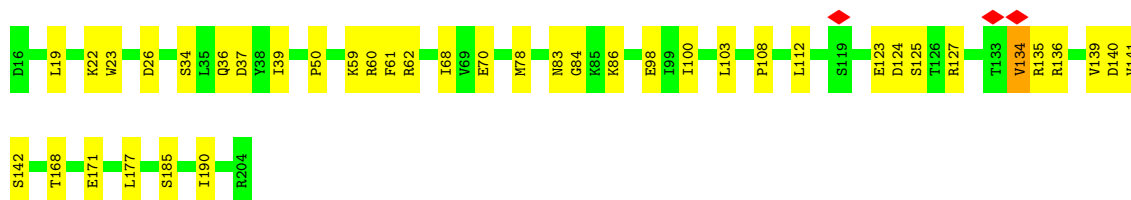
- Molecule 49: Small ribosomal subunit protein uS3

Chain SD:  81% 19%



- Molecule 50: 40S ribosomal protein S5

Chain SF:  79% 21%



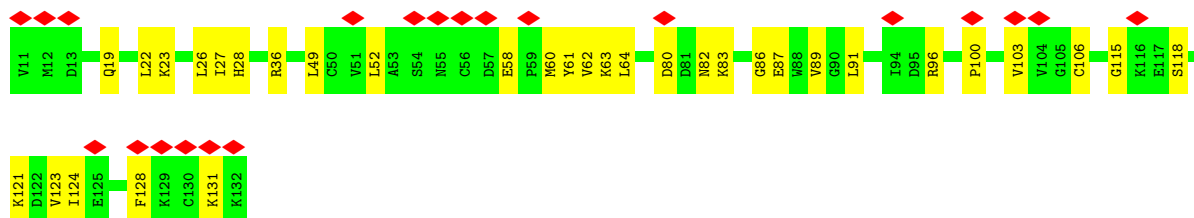
- Molecule 51: 40S ribosomal protein S10

Chain SK:  68% 32%



- Molecule 52: Small ribosomal subunit protein eS12

Chain SM:  17% 73% 27%



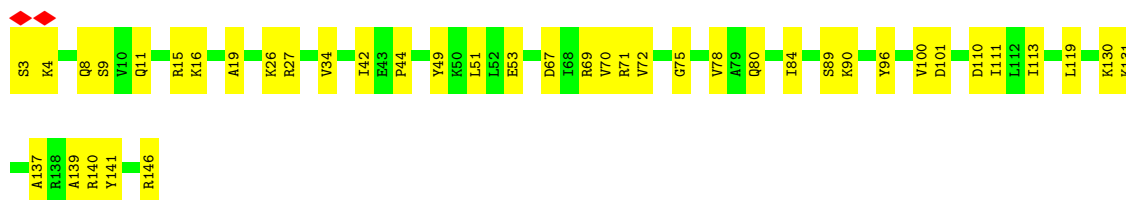
- Molecule 53: Small ribosomal subunit protein uS19

Chain SP:  6% 79% 21%

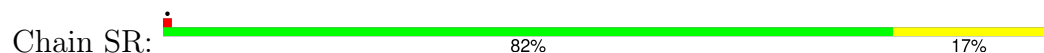


- Molecule 54: Small ribosomal subunit protein uS9

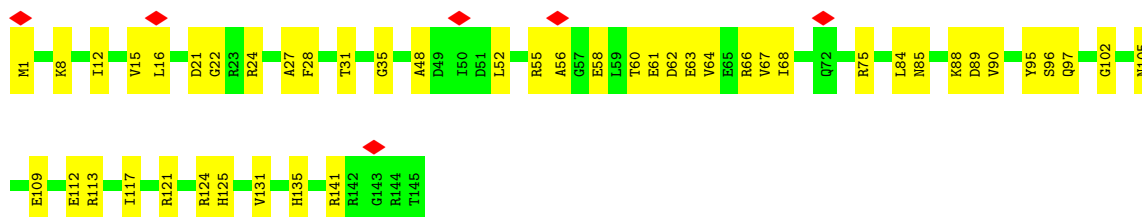
Chain SQ:  72% 28%



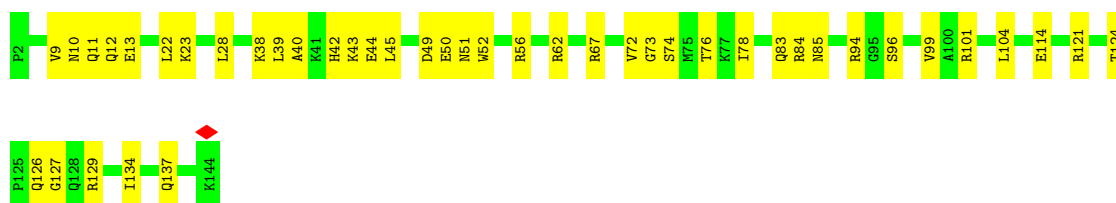
- Molecule 55: Small ribosomal subunit protein eS17



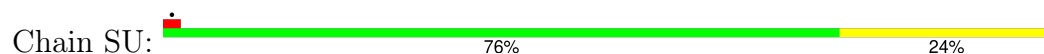
- Molecule 56: 40S ribosomal protein S18



- Molecule 57: 40S ribosomal protein S19

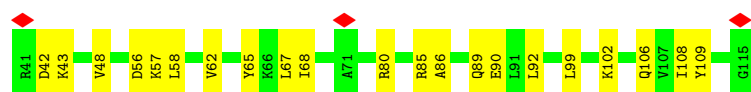


- Molecule 58: 40S ribosomal protein S20

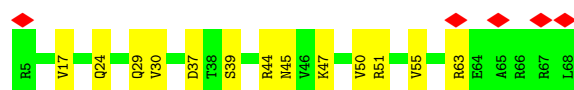
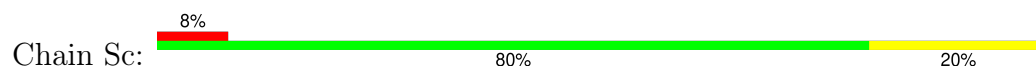


- Molecule 59: Small ribosomal subunit protein eS25





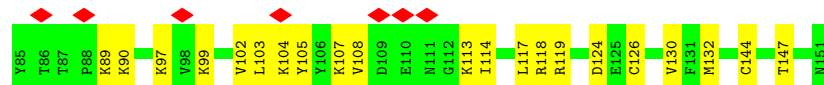
- Molecule 60: 40S ribosomal protein S28



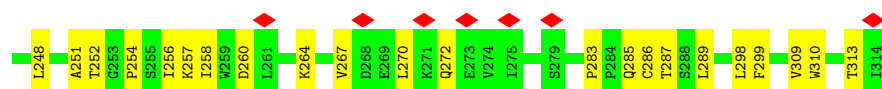
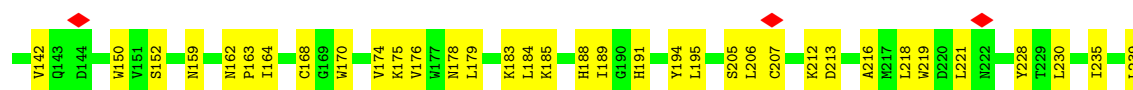
- Molecule 61: 40S ribosomal protein S29



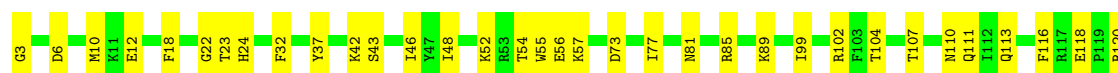
- Molecule 62: Ubiquitin-40S ribosomal protein S27a



- Molecule 63: Receptor of activated protein C kinase 1

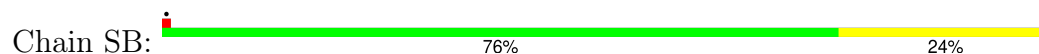


- Molecule 64: 40S ribosomal protein SA

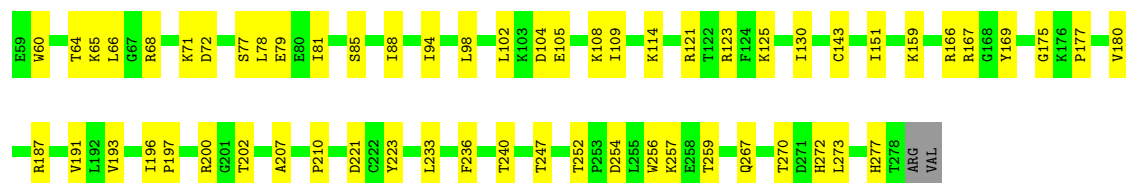




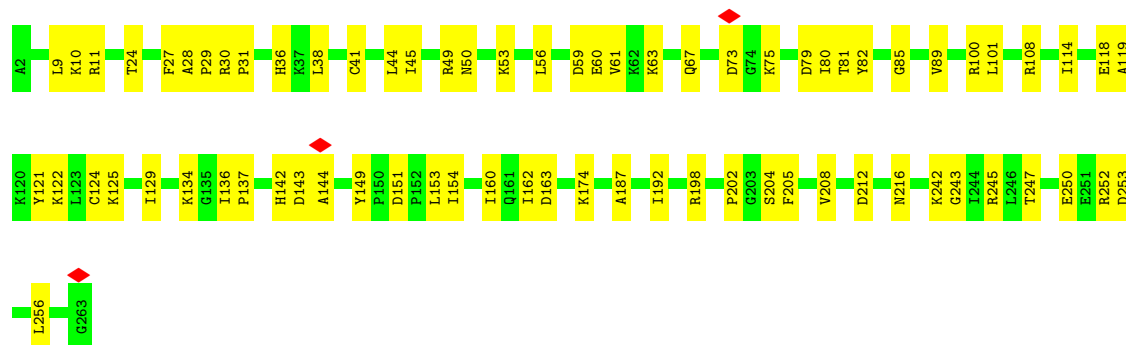
- Molecule 65: 40S ribosomal protein S3a



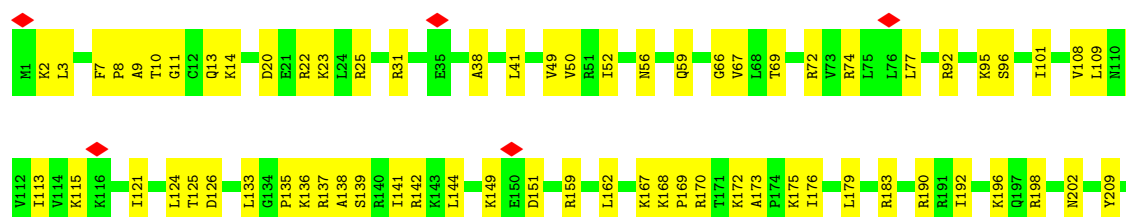
- Molecule 66: 40S ribosomal protein S2



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



- Molecule 68: 40S ribosomal protein S6





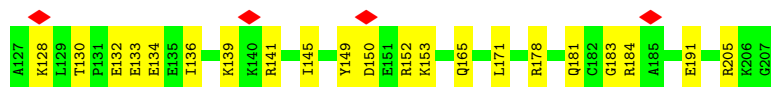
- Molecule 69: Small ribosomal subunit protein eS7

Chain SH: 71% 28%



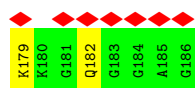
- Molecule 70: 40S ribosomal protein S8

Chain SI: 73% 27%



- Molecule 71: 40S ribosomal protein S9

Chain SJ: 5% 83% 17%



- Molecule 72: 40S ribosomal protein S11

Chain SL: 5% 79% 21%

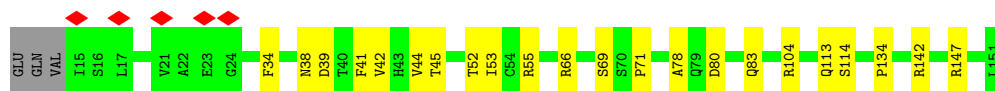
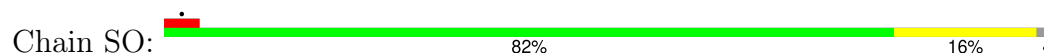


- Molecule 73: 40S ribosomal protein S13

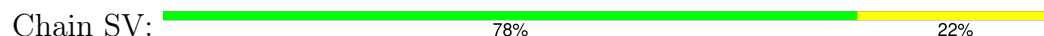
Chain SN: 88% 12%



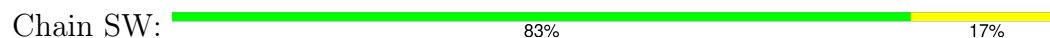
- Molecule 74: Small ribosomal subunit protein uS11



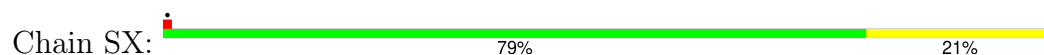
- Molecule 75: Small ribosomal subunit protein eS21



- Molecule 76: 40S ribosomal protein S15a



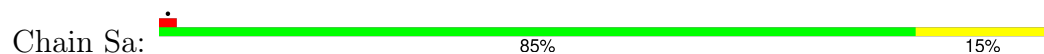
- Molecule 77: 40S ribosomal protein S23

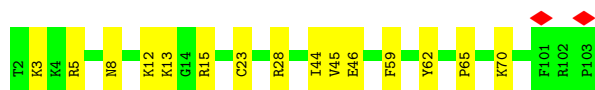


- Molecule 78: 40S ribosomal protein S24

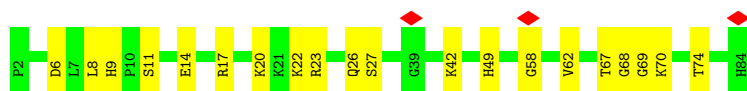
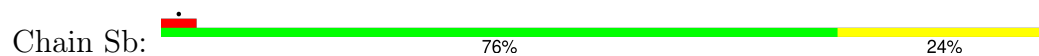


- Molecule 79: 40S ribosomal protein S26

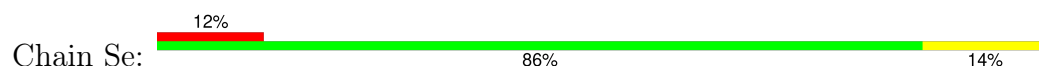




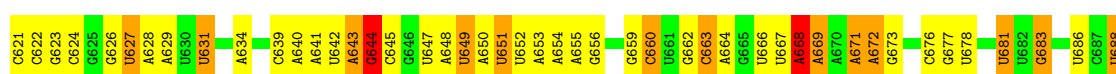
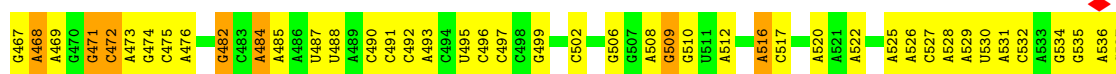
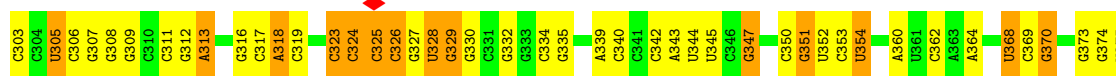
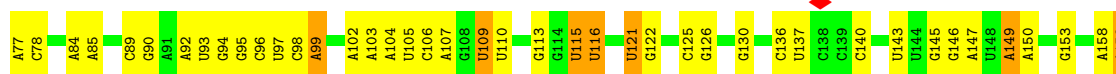
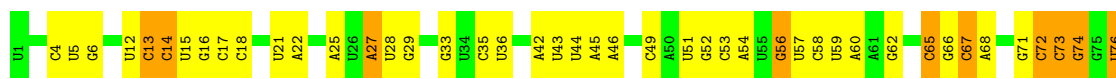
- Molecule 80: Small ribosomal subunit protein eS27



- Molecule 81: Small ribosomal subunit protein eS30



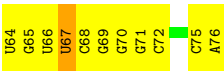
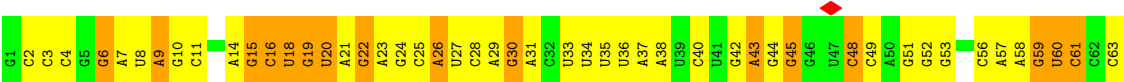
- Molecule 82: 18S rRNA [Homo sapiens]



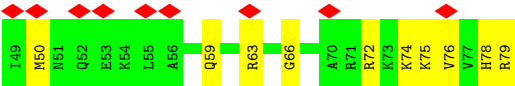




● Molecule 83: Z site tRNA [Homo sapiens]



● Molecule 84: Transcription factor BTF3



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	7312	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	0.519	Depositor
Minimum map value	-0.244	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.033	Depositor
Recommended contour level	0.0717	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: 3HE, UR3, HMT, MA6, UY1, SPM, 1MA, OMU, 5MC, B8N, MG, ZN, A2M, OMC, 6MZ, 4AC, G7M, OMG, PSU, SPD

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	Pt	0.12	0/1761	0.27	0/2741
2	L5	0.17	0/85098	0.28	0/132762
3	L7	0.14	0/2861	0.23	0/4459
4	L8	0.16	0/3631	0.29	0/5657
5	LA	0.16	0/1936	0.36	0/2596
6	LB	0.15	0/3306	0.35	0/4424
7	LC	0.15	0/2981	0.34	0/4002
8	LD	0.14	0/2428	0.32	0/3252
9	LE	0.15	0/1973	0.39	0/2645
10	LF	0.15	0/1905	0.30	0/2539
11	LG	0.16	0/1960	0.34	0/2637
12	LH	0.14	0/1537	0.30	0/2066
13	LI	0.14	0/1751	0.34	0/2340
14	LJ	0.14	0/1385	0.35	0/1852
15	LL	0.14	0/1732	0.30	0/2315
16	LM	0.16	0/1161	0.34	0/1554
17	LN	0.15	0/1746	0.30	0/2338
18	LO	0.15	0/1682	0.32	0/2250
19	LP	0.15	0/1268	0.35	0/1701
20	LQ	0.15	0/1537	0.32	0/2052
21	LR	0.15	0/1582	0.36	0/2091
22	LS	0.15	0/1493	0.33	0/2003
23	LT	0.14	0/1326	0.29	0/1770
24	LU	0.17	0/839	0.42	0/1126
25	LV	0.15	0/993	0.34	0/1332
26	LW	0.21	0/959	0.41	0/1270
27	LX	0.14	0/1002	0.32	0/1345
28	LY	0.14	0/1132	0.35	0/1504
29	LZ	0.15	0/1130	0.34	0/1507
30	La	0.14	0/1191	0.31	0/1591
31	Lb	0.14	0/889	0.35	0/1175

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
32	Lc	0.14	0/774	0.32	0/1038
33	Ld	0.15	0/903	0.33	0/1216
34	Le	0.15	0/1071	0.30	0/1429
35	Lf	0.15	0/895	0.30	0/1198
36	Lg	0.14	0/916	0.32	0/1220
37	Lh	0.13	0/1023	0.30	0/1351
38	Li	0.14	0/843	0.29	0/1115
39	Lj	0.14	0/720	0.32	0/952
40	Lk	0.14	0/575	0.32	0/761
41	Ll	0.13	0/454	0.26	0/599
42	Lm	0.14	0/435	0.37	0/575
43	Ln	0.14	0/231	0.32	0/294
44	Lo	0.15	0/876	0.33	0/1156
45	Lp	0.15	0/718	0.31	0/953
46	Lr	0.15	0/1017	0.34	0/1364
47	Ls	0.13	0/1519	0.34	0/2052
48	Lt	0.16	0/1009	0.50	0/1363
49	SD	0.12	0/1793	0.30	0/2414
50	SF	0.14	0/1516	0.37	1/2037 (0.0%)
51	SK	0.16	0/851	0.44	0/1147
52	SM	0.13	0/950	0.38	0/1275
53	SP	0.13	0/1003	0.37	0/1342
54	SQ	0.19	0/1160	0.42	0/1553
55	SR	0.16	0/1105	0.43	0/1484
56	SS	0.14	0/1216	0.36	0/1628
57	ST	0.15	0/1131	0.41	0/1515
58	SU	0.16	0/831	0.43	0/1115
59	SZ	0.16	0/604	0.48	0/810
60	Sc	0.14	0/508	0.33	0/680
61	Sd	0.13	0/470	0.32	0/623
62	Sf	0.15	0/560	0.45	0/745
63	Sg	0.16	0/2493	0.36	0/3394
64	SA	0.15	0/1778	0.36	0/2416
65	SB	0.15	0/1765	0.36	0/2362
66	SC	0.15	0/1744	0.35	0/2357
67	SE	0.14	0/2118	0.36	0/2849
68	SG	0.14	0/1946	0.36	0/2590
69	SH	0.17	0/1519	0.42	0/2033
70	SI	0.14	0/1715	0.35	0/2287
71	SJ	0.13	0/1550	0.32	0/2069
72	SL	0.14	0/1268	0.34	0/1696
73	SN	0.13	0/1232	0.31	0/1656
74	SO	0.17	0/1037	0.38	0/1391

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
75	SV	0.14	0/643	0.35	0/860
76	SW	0.16	0/1051	0.34	0/1406
77	SX	0.13	0/1116	0.34	0/1490
78	SY	0.14	0/1083	0.35	0/1438
79	Sa	0.15	0/836	0.36	0/1121
80	Sb	0.15	0/665	0.33	0/891
81	Se	0.14	0/465	0.39	0/612
82	S2	0.18	2/39756 (0.0%)	0.28	0/61939
83	Zt	0.14	0/1779	0.35	0/2771
84	CI	0.16	0/247	0.30	0/323
All	All	0.16	2/231658 (0.0%)	0.31	1/339851 (0.0%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
82	S2	668	A2M	O3'-P	5.01	1.61	1.56
82	S2	99	A2M	O3'-P	5.00	1.61	1.56

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
50	SF	134	VAL	N-CA-C	-5.36	107.39	111.62

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	Pt	1576	0	803	30	0
2	L5	78444	0	39714	1490	0
3	L7	2561	0	1295	38	0
4	L8	3315	0	1685	68	0
5	LA	1898	0	1993	45	0
6	LB	3238	0	3376	76	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
7	LC	2927	0	3104	36	0
8	LD	2382	0	2410	38	0
9	LE	1935	0	2096	37	0
10	LF	1870	0	1996	24	0
11	LG	1927	0	2074	29	0
12	LH	1518	0	1601	21	0
13	LI	1711	0	1749	31	0
14	LJ	1362	0	1399	15	0
15	LL	1701	0	1818	31	0
16	LM	1138	0	1204	25	0
17	LN	1701	0	1749	34	0
18	LO	1650	0	1794	28	0
19	LP	1242	0	1269	12	0
20	LQ	1513	0	1628	31	0
21	LR	1566	0	1729	29	0
22	LS	1453	0	1490	15	0
23	LT	1298	0	1366	30	0
24	LU	825	0	850	23	0
25	LV	979	0	1039	13	0
26	LW	945	0	1003	19	0
27	LX	985	0	1066	13	0
28	LY	1115	0	1205	11	0
29	LZ	1107	0	1182	18	0
30	La	1162	0	1213	14	0
31	Lb	876	0	948	12	0
32	Lc	764	0	804	11	0
33	Ld	888	0	930	17	0
34	Le	1053	0	1147	15	0
35	Lf	876	0	912	12	0
36	Lg	906	0	998	17	0
37	Lh	1015	0	1148	22	0
38	Li	832	0	917	9	0
39	Lj	705	0	737	21	0
40	Lk	569	0	637	11	0
41	Ll	444	0	483	10	0
42	Lm	429	0	465	10	0
43	Ln	230	0	276	2	0
44	Lo	862	0	929	11	0
45	Lp	708	0	756	12	0
46	Lr	1002	0	1068	12	0
47	Ls	1496	0	1540	28	0
48	Lt	998	0	1032	17	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
49	SD	1765	0	1865	28	0
50	SF	1495	0	1549	31	0
51	SK	827	0	854	25	0
52	SM	940	0	965	20	0
53	SP	985	0	1031	20	0
54	SQ	1142	0	1213	37	0
55	SR	1090	0	1149	20	0
56	SS	1198	0	1261	32	0
57	ST	1112	0	1146	31	0
58	SU	821	0	883	20	0
59	SZ	598	0	656	16	0
60	Sc	506	0	536	10	0
61	Sd	459	0	452	15	0
62	Sf	548	0	551	16	0
63	Sg	2436	0	2393	55	0
64	SA	1741	0	1746	41	0
65	SB	1738	0	1809	34	0
66	SC	1707	0	1791	41	0
67	SE	2076	0	2177	50	0
68	SG	1923	0	2089	61	0
69	SH	1497	0	1590	37	0
70	SI	1686	0	1772	40	0
71	SJ	1525	0	1640	25	0
72	SL	1247	0	1323	23	0
73	SN	1208	0	1294	12	0
74	SO	1024	0	1050	17	0
75	SV	636	0	637	14	0
76	SW	1034	0	1080	19	0
77	SX	1098	0	1167	24	0
78	SY	1065	0	1142	32	0
79	Sa	821	0	870	14	0
80	Sb	651	0	672	15	0
81	Se	459	0	503	9	0
82	S2	36953	0	18679	697	0
83	Zt	1593	0	809	37	0
84	CI	247	0	282	23	0
85	L5	179	0	0	0	0
85	L7	3	0	0	0	0
85	L8	4	0	0	0	0
85	LA	1	0	0	0	0
85	LP	1	0	0	0	0
85	LV	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
85	Le	1	0	0	0	0
85	Lj	1	0	0	0	0
85	S2	27	0	0	0	0
85	SS	1	0	0	0	0
86	L5	98	0	182	8	0
87	L5	90	0	171	10	0
87	LN	10	0	19	2	0
88	L5	20	0	23	2	0
89	L5	39	0	36	8	0
90	Lg	1	0	0	0	0
90	Lj	1	0	0	0	0
90	Lm	1	0	0	0	0
90	Lo	1	0	0	0	0
90	Lp	1	0	0	0	0
90	Sa	1	0	0	0	0
All	All	220030	0	163684	3540	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 10.

The worst 5 of 3540 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)
89:L5:5297:HMT:C6	89:L5:5297:HMT:C7	1.77	1.60
89:L5:5297:HMT:C7	89:L5:5297:HMT:C8	1.79	1.58
2:L5:2706:G:N7	84:CI:78:HIS:NE2	1.64	1.38
24:LU:117:ILE:C	84:CI:75:LYS:H	1.36	1.32
2:L5:2706:G:N7	84:CI:78:HIS:CD2	2.10	1.19

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	LA	246/248 (99%)	232 (94%)	14 (6%)	0	100	100
6	LB	400/402 (100%)	380 (95%)	20 (5%)	0	100	100
7	LC	366/368 (100%)	353 (96%)	13 (4%)	0	100	100
8	LD	291/293 (99%)	281 (97%)	10 (3%)	0	100	100
9	LE	236/250 (94%)	223 (94%)	13 (6%)	0	100	100
10	LF	223/225 (99%)	214 (96%)	9 (4%)	0	100	100
11	LG	239/241 (99%)	225 (94%)	14 (6%)	0	100	100
12	LH	188/190 (99%)	182 (97%)	6 (3%)	0	100	100
13	LI	211/213 (99%)	202 (96%)	9 (4%)	0	100	100
14	LJ	168/176 (96%)	162 (96%)	6 (4%)	0	100	100
15	LL	208/210 (99%)	199 (96%)	9 (4%)	0	100	100
16	LM	137/139 (99%)	132 (96%)	5 (4%)	0	100	100
17	LN	201/203 (99%)	197 (98%)	4 (2%)	0	100	100
18	LO	199/201 (99%)	195 (98%)	4 (2%)	0	100	100
19	LP	151/153 (99%)	145 (96%)	6 (4%)	0	100	100
20	LQ	185/187 (99%)	182 (98%)	3 (2%)	0	100	100
21	LR	185/187 (99%)	181 (98%)	4 (2%)	0	100	100
22	LS	173/175 (99%)	168 (97%)	5 (3%)	0	100	100
23	LT	157/159 (99%)	155 (99%)	2 (1%)	0	100	100
24	LU	99/101 (98%)	94 (95%)	5 (5%)	0	100	100
25	LV	129/131 (98%)	127 (98%)	2 (2%)	0	100	100
26	LW	112/124 (90%)	109 (97%)	3 (3%)	0	100	100
27	LX	118/120 (98%)	117 (99%)	1 (1%)	0	100	100
28	LY	132/134 (98%)	127 (96%)	5 (4%)	0	100	100
29	LZ	133/135 (98%)	126 (95%)	7 (5%)	0	100	100
30	La	145/147 (99%)	141 (97%)	4 (3%)	0	100	100
31	Lb	105/121 (87%)	97 (92%)	8 (8%)	0	100	100
32	Lc	96/98 (98%)	94 (98%)	2 (2%)	0	100	100
33	Ld	105/107 (98%)	103 (98%)	2 (2%)	0	100	100
34	Le	126/128 (98%)	125 (99%)	1 (1%)	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

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
37	Lh	120/122 (98%)	117 (98%)	3 (2%)	0	100	100
38	Li	100/102 (98%)	97 (97%)	3 (3%)	0	100	100
39	Lj	84/86 (98%)	83 (99%)	1 (1%)	0	100	100
40	Lk	67/69 (97%)	66 (98%)	1 (2%)	0	100	100
41	Ll	48/50 (96%)	46 (96%)	2 (4%)	0	100	100
42	Lm	50/52 (96%)	49 (98%)	1 (2%)	0	100	100
43	Ln	22/24 (92%)	22 (100%)	0	0	100	100
44	Lo	103/105 (98%)	98 (95%)	5 (5%)	0	100	100
45	Lp	89/91 (98%)	86 (97%)	3 (3%)	0	100	100
46	Lr	123/125 (98%)	119 (97%)	4 (3%)	0	100	100
47	Ls	194/196 (99%)	182 (94%)	12 (6%)	0	100	100
48	Lt	128/157 (82%)	113 (88%)	15 (12%)	0	100	100
49	SD	225/227 (99%)	219 (97%)	6 (3%)	0	100	100
50	SF	187/189 (99%)	176 (94%)	11 (6%)	0	100	100
51	SK	96/98 (98%)	90 (94%)	6 (6%)	0	100	100
52	SM	120/122 (98%)	110 (92%)	10 (8%)	0	100	100
53	SP	119/121 (98%)	117 (98%)	2 (2%)	0	100	100
54	SQ	142/144 (99%)	134 (94%)	8 (6%)	0	100	100
55	SR	133/135 (98%)	124 (93%)	8 (6%)	1 (1%)	16	51
56	SS	143/145 (99%)	135 (94%)	8 (6%)	0	100	100
57	ST	141/143 (99%)	138 (98%)	3 (2%)	0	100	100
58	SU	102/104 (98%)	99 (97%)	3 (3%)	0	100	100
59	SZ	73/75 (97%)	67 (92%)	6 (8%)	0	100	100
60	Sc	62/64 (97%)	60 (97%)	2 (3%)	0	100	100
61	Sd	53/55 (96%)	53 (100%)	0	0	100	100
62	Sf	65/67 (97%)	58 (89%)	7 (11%)	0	100	100
63	Sg	311/313 (99%)	295 (95%)	16 (5%)	0	100	100
64	SA	219/221 (99%)	208 (95%)	11 (5%)	0	100	100
65	SB	212/214 (99%)	204 (96%)	8 (4%)	0	100	100
66	SC	218/222 (98%)	204 (94%)	14 (6%)	0	100	100
67	SE	260/262 (99%)	252 (97%)	8 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
68	SG	235/237 (99%)	223 (95%)	12 (5%)	0	100	100
69	SH	182/189 (96%)	167 (92%)	15 (8%)	0	100	100
70	SI	204/206 (99%)	193 (95%)	11 (5%)	0	100	100
71	SJ	183/185 (99%)	175 (96%)	7 (4%)	1 (0%)	25	60
72	SL	151/153 (99%)	145 (96%)	6 (4%)	0	100	100
73	SN	148/150 (99%)	145 (98%)	3 (2%)	0	100	100
74	SO	135/140 (96%)	127 (94%)	8 (6%)	0	100	100
75	SV	81/83 (98%)	76 (94%)	5 (6%)	0	100	100
76	SW	127/129 (98%)	122 (96%)	5 (4%)	0	100	100
77	SX	139/141 (99%)	136 (98%)	3 (2%)	0	100	100
78	SY	129/131 (98%)	124 (96%)	5 (4%)	0	100	100
79	Sa	100/102 (98%)	99 (99%)	1 (1%)	0	100	100
80	Sb	81/83 (98%)	76 (94%)	5 (6%)	0	100	100
81	Se	56/58 (97%)	52 (93%)	4 (7%)	0	100	100
84	CI	29/31 (94%)	29 (100%)	0	0	100	100
All	All	11672/11907 (98%)	11192 (96%)	478 (4%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
71	SJ	138	ARG
55	SR	129	LYS

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

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
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
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

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
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
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%)	165 (99%)	1 (1%)	84	88

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
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
84	CI	25/25 (100%)	25 (100%)	0	100	100
All	All	10147/10221 (99%)	10146 (100%)	1 (0%)	100	100

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
69	SH	162	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 82 such sidechains are listed below:

Mol	Chain	Res	Type
60	Sc	24	GLN
70	SI	35	ASN
64	SA	9	GLN
66	SC	267	GLN
75	SV	35	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	Pt	72/74 (97%)	19 (26%)	0
2	L5	3643/3655 (99%)	762 (20%)	15 (0%)
3	L7	119/120 (99%)	12 (10%)	0

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
4	L8	155/156 (99%)	26 (16%)	0
82	S2	1714/1740 (98%)	391 (22%)	3 (0%)
83	Zt	74/75 (98%)	43 (58%)	0
All	All	5777/5820 (99%)	1253 (21%)	18 (0%)

5 of 1253 RNA backbone outliers are listed below:

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

5 of 18 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
2	L5	4913	G
82	S2	688	U
82	S2	563	G
2	L5	2675	G
2	L5	4699	U

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

178 non-standard protein/DNA/RNA residues are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
2	OMG	L5	2364	85,2	19,26,27	1.15	2 (10%)	21,38,41	0.81	1 (4%)
2	OMU	L5	4498	2	19,22,23	3.37	7 (36%)	25,31,34	1.81	5 (20%)
2	A2M	L5	2815	2	18,25,26	1.18	1 (5%)	20,36,39	1.80	7 (35%)
82	PSU	S2	105	82	18,21,22	1.07	1 (5%)	21,30,33	1.86	4 (19%)
82	OMU	S2	354	82	19,22,23	3.35	7 (36%)	25,31,34	1.82	5 (20%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	PSU	L5	1781	2	18,21,22	1.07	1 (5%)	21,30,33	1.81	4 (19%)
82	OMU	S2	1326	82	19,22,23	3.37	7 (36%)	25,31,34	1.81	5 (20%)
2	PSU	L5	1677	2	18,21,22	1.09	2 (11%)	21,30,33	1.95	5 (23%)
82	A2M	S2	159	82	18,25,26	1.29	1 (5%)	20,36,39	1.91	7 (35%)
82	PSU	S2	966	82,85	18,21,22	1.05	1 (5%)	21,30,33	1.85	4 (19%)
82	OMG	S2	1490	82	19,26,27	1.20	2 (10%)	21,38,41	0.73	0
2	A2M	L5	4571	2	18,25,26	1.29	2 (11%)	20,36,39	2.00	6 (30%)
2	PSU	L5	4431	2	18,21,22	1.10	1 (5%)	21,30,33	1.94	5 (23%)
82	PSU	S2	866	82	18,21,22	1.13	1 (5%)	21,30,33	1.92	5 (23%)
2	PSU	L5	4636	2	18,21,22	1.11	1 (5%)	21,30,33	2.04	6 (28%)
82	PSU	S2	651	82	18,21,22	1.14	1 (5%)	21,30,33	1.89	4 (19%)
2	PSU	L5	3637	2	18,21,22	1.11	1 (5%)	21,30,33	2.04	5 (23%)
82	PSU	S2	649	82	18,21,22	1.07	1 (5%)	21,30,33	1.90	4 (19%)
2	PSU	L5	4457	2	18,21,22	1.10	1 (5%)	21,30,33	1.91	5 (23%)
82	A2M	S2	1383	82	18,25,26	1.34	2 (11%)	20,36,39	2.27	5 (25%)
2	A2M	L5	2401	2	18,25,26	1.22	2 (11%)	20,36,39	1.97	6 (30%)
82	PSU	S2	109	82	18,21,22	1.11	1 (5%)	21,30,33	1.89	4 (19%)
82	OMG	S2	683	82	19,26,27	1.16	2 (10%)	21,38,41	0.80	1 (4%)
2	A2M	L5	1326	85,2	18,25,26	1.20	1 (5%)	20,36,39	1.90	8 (40%)
2	OMC	L5	2861	2	19,22,23	0.56	0	25,31,34	1.00	2 (8%)
2	PSU	L5	3844	2	18,21,22	1.10	1 (5%)	21,30,33	1.91	4 (19%)
2	PSU	L5	1862	2	18,21,22	1.12	1 (5%)	21,30,33	1.89	4 (19%)
82	OMC	S2	517	82	19,22,23	0.54	0	25,31,34	0.64	0
82	A2M	S2	668	82,85	18,25,26	1.29	3 (16%)	20,36,39	1.98	6 (30%)
2	PSU	L5	3884	2	18,21,22	1.11	1 (5%)	21,30,33	1.89	4 (19%)
2	OMC	L5	1340	2	19,22,23	0.53	0	25,31,34	0.74	0
2	PSU	L5	4552	2	18,21,22	1.06	1 (5%)	21,30,33	1.86	4 (19%)
82	PSU	S2	1081	82	18,21,22	1.13	1 (5%)	21,30,33	1.91	5 (23%)
2	OMC	L5	4536	2	19,22,23	0.58	0	25,31,34	0.79	0
2	OMG	L5	4637	2	19,26,27	1.14	2 (10%)	21,38,41	0.86	1 (4%)
82	MA6	S2	1850	82	19,26,27	1.51	3 (15%)	18,38,41	3.39	3 (16%)
82	PSU	S2	686	82	18,21,22	1.11	1 (5%)	21,30,33	1.90	5 (23%)
2	PSU	L5	4972	2	18,21,22	1.09	1 (5%)	21,30,33	1.90	6 (28%)
2	OMG	L5	4370	2	19,26,27	1.13	2 (10%)	21,38,41	0.81	1 (4%)
2	PSU	L5	4521	85,2	18,21,22	1.11	1 (5%)	21,30,33	1.88	4 (19%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	OMG	L5	4228	2	19,26,27	1.18	3 (15%)	21,38,41	0.95	1 (4%)
2	PSU	L5	1683	2	18,21,22	1.10	1 (5%)	21,30,33	1.88	4 (19%)
2	PSU	L5	4493	2	18,21,22	1.08	1 (5%)	21,30,33	1.92	5 (23%)
82	PSU	S2	1367	82	18,21,22	1.12	1 (5%)	21,30,33	1.90	4 (19%)
2	OMC	L5	3887	2	19,22,23	0.54	0	25,31,34	0.78	0
82	PSU	S2	93	82	18,21,22	1.10	1 (5%)	21,30,33	1.83	4 (19%)
2	PSU	L5	1782	2	18,21,22	1.15	1 (5%)	21,30,33	1.91	4 (19%)
2	A2M	L5	3785	85,2	18,25,26	1.34	2 (11%)	20,36,39	2.71	6 (30%)
82	MA6	S2	1851	82	19,26,27	1.51	3 (15%)	18,38,41	3.40	3 (16%)
2	A2M	L5	1534	85,2	18,25,26	1.27	2 (11%)	20,36,39	2.01	6 (30%)
2	OMC	L5	2824	2	19,22,23	0.54	0	25,31,34	0.81	1 (4%)
82	OMU	S2	799	82	19,22,23	3.43	7 (36%)	25,31,34	1.78	5 (20%)
2	PSU	L5	1582	2	18,21,22	1.12	1 (5%)	21,30,33	1.75	4 (19%)
2	A2M	L5	400	2	18,25,26	1.29	2 (11%)	20,36,39	1.95	7 (35%)
2	PSU	L5	3695	2	18,21,22	1.09	1 (5%)	21,30,33	1.88	5 (23%)
2	A2M	L5	3718	2	18,25,26	1.25	2 (11%)	20,36,39	2.00	5 (25%)
2	OMG	L5	3627	2	19,26,27	1.15	2 (10%)	21,38,41	0.87	1 (4%)
2	PSU	L5	3851	85,2	18,21,22	1.08	1 (5%)	21,30,33	1.80	4 (19%)
82	OMC	S2	1703	82	19,22,23	0.53	0	25,31,34	0.70	1 (4%)
82	A2M	S2	166	82	18,25,26	1.33	2 (11%)	20,36,39	2.17	7 (35%)
82	PSU	S2	1046	82	18,21,22	1.11	1 (5%)	21,30,33	1.80	4 (19%)
2	OMG	L5	2424	2	19,26,27	1.16	2 (10%)	21,38,41	0.81	1 (4%)
82	OMG	S2	1328	82	19,26,27	1.12	2 (10%)	21,38,41	0.81	1 (4%)
2	OMG	L5	2876	2	19,26,27	1.15	2 (10%)	21,38,41	0.81	1 (4%)
2	OMG	L5	4499	2	19,26,27	1.13	2 (10%)	21,38,41	0.83	1 (4%)
82	PSU	S2	1004	82	18,21,22	1.09	1 (5%)	21,30,33	1.84	4 (19%)
82	PSU	S2	1174	82	18,21,22	1.10	1 (5%)	21,30,33	1.86	4 (19%)
2	PSU	L5	4293	2	18,21,22	1.13	2 (11%)	21,30,33	1.93	4 (19%)
2	OMG	L5	4196	1,2	19,26,27	1.14	2 (10%)	21,38,41	0.84	1 (4%)
2	OMG	L5	3899	2	19,26,27	1.16	2 (10%)	21,38,41	0.79	1 (4%)
2	PSU	L5	4296	2	18,21,22	1.10	1 (5%)	21,30,33	1.96	5 (23%)
82	OMC	S2	174	82	19,22,23	0.51	0	25,31,34	0.70	0
82	PSU	S2	406	82	18,21,22	1.12	1 (5%)	21,30,33	1.84	4 (19%)
2	6MZ	L5	4220	2	17,25,26	3.50	7 (41%)	15,36,39	2.64	4 (26%)
82	B8N	S2	1248	82	25,29,30	3.29	6 (24%)	28,42,45	1.98	8 (28%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	OMU	L5	4306	2	19,22,23	3.34	7 (36%)	25,31,34	1.77	4 (16%)
2	OMU	L5	3925	2	19,22,23	3.32	7 (36%)	25,31,34	1.87	5 (20%)
2	OMC	L5	2365	85,2	19,22,23	0.53	0	25,31,34	0.63	0
2	OMG	L5	1522	2	19,26,27	1.15	2 (10%)	21,38,41	0.90	1 (4%)
2	UY1	L5	3818	2	19,22,23	4.96	9 (47%)	21,31,34	2.02	6 (28%)
2	PSU	L5	5001	2	18,21,22	1.10	1 (5%)	21,30,33	1.82	4 (19%)
2	UR3	L5	4530	2	19,22,23	2.78	7 (36%)	26,32,35	1.58	3 (11%)
2	PSU	L5	1536	2	18,21,22	1.11	1 (5%)	21,30,33	1.99	4 (19%)
82	PSU	S2	801	82	18,21,22	1.11	1 (5%)	21,30,33	1.85	4 (19%)
2	OMC	L5	3701	2	19,22,23	0.56	0	25,31,34	0.82	1 (4%)
2	PSU	L5	4579	2	18,21,22	1.07	1 (5%)	21,30,33	1.81	4 (19%)
2	PSU	L5	4353	2	18,21,22	1.10	1 (5%)	21,30,33	1.91	5 (23%)
82	A2M	S2	484	82	18,25,26	1.20	1 (5%)	20,36,39	1.81	6 (30%)
2	PSU	L5	4403	2	18,21,22	1.02	1 (5%)	21,30,33	1.84	5 (23%)
2	A2M	L5	4590	2	18,25,26	1.26	2 (11%)	20,36,39	2.12	7 (35%)
82	PSU	S2	681	82	18,21,22	1.07	1 (5%)	21,30,33	1.88	4 (19%)
82	A2M	S2	576	82	18,25,26	1.21	2 (11%)	20,36,39	1.97	5 (25%)
2	PSU	L5	4973	2	18,21,22	1.08	1 (5%)	21,30,33	1.87	4 (19%)
2	PSU	L5	4673	2	18,21,22	1.08	1 (5%)	21,30,33	1.87	4 (19%)
2	A2M	L5	1871	85,2	18,25,26	1.32	2 (11%)	20,36,39	2.02	6 (30%)
2	PSU	L5	3639	2	18,21,22	1.12	1 (5%)	21,30,33	1.91	4 (19%)
2	A2M	L5	4523	85,2	18,25,26	1.35	2 (11%)	20,36,39	2.23	6 (30%)
2	A2M	L5	2787	2	18,25,26	1.24	2 (11%)	20,36,39	1.76	5 (25%)
82	OMU	S2	1288	82	19,22,23	3.38	7 (36%)	25,31,34	1.80	5 (20%)
4	OMG	L8	75	4	19,26,27	1.12	2 (10%)	21,38,41	0.84	1 (4%)
2	PSU	L5	1744	85,2	18,21,22	1.08	1 (5%)	21,30,33	1.90	6 (28%)
2	PSU	L5	4471	2	18,21,22	1.06	1 (5%)	21,30,33	1.83	4 (19%)
82	OMU	S2	627	82	19,22,23	3.37	7 (36%)	25,31,34	1.80	5 (20%)
82	OMC	S2	1272	82	19,22,23	0.53	0	25,31,34	0.82	1 (4%)
2	PSU	L5	1792	2	18,21,22	1.06	1 (5%)	21,30,33	1.86	4 (19%)
82	OMG	S2	601	82	19,26,27	1.14	2 (10%)	21,38,41	0.92	1 (4%)
2	PSU	L5	3822	2	18,21,22	1.13	2 (11%)	21,30,33	1.99	6 (28%)
2	OMG	L5	4494	2	19,26,27	1.15	2 (10%)	21,38,41	0.81	1 (4%)
2	PSU	L5	4532	2	18,21,22	1.11	1 (5%)	21,30,33	1.89	4 (19%)
82	OMG	S2	644	82	19,26,27	1.13	2 (10%)	21,38,41	0.84	1 (4%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	A2M	L5	1323	2	18,25,26	1.26	3 (16%)	20,36,39	2.02	7 (35%)
82	4AC	S2	1337	82	21,24,25	0.37	0	28,34,37	0.64	1 (3%)
82	OMC	S2	1391	82	19,22,23	0.51	0	25,31,34	0.67	0
2	A2M	L5	3867	2	18,25,26	1.28	3 (16%)	20,36,39	1.86	7 (35%)
82	PSU	S2	1045	82	18,21,22	1.10	1 (5%)	21,30,33	1.89	4 (19%)
82	A2M	S2	468	82	18,25,26	1.25	2 (11%)	20,36,39	1.96	6 (30%)
2	A2M	L5	398	2	18,25,26	1.29	2 (11%)	20,36,39	2.10	6 (30%)
2	OMU	L5	2837	2	19,22,23	3.35	7 (36%)	25,31,34	1.85	5 (20%)
82	OMG	S2	867	82	19,26,27	1.13	2 (10%)	21,38,41	0.87	1 (4%)
2	OMG	L5	4392	2	19,26,27	1.14	2 (10%)	21,38,41	0.82	1 (4%)
82	PSU	S2	1177	82	18,21,22	1.11	1 (5%)	21,30,33	1.87	4 (19%)
2	OMG	L5	1316	2	19,26,27	1.19	2 (10%)	21,38,41	0.80	1 (4%)
2	PSU	L5	3853	85,2	18,21,22	1.07	1 (5%)	21,30,33	1.78	4 (19%)
82	OMU	S2	1442	82	19,22,23	3.40	7 (36%)	25,31,34	1.80	5 (20%)
82	OMU	S2	116	82	19,22,23	3.33	7 (36%)	25,31,34	1.69	5 (20%)
2	OMC	L5	2351	85,2	19,22,23	0.54	0	25,31,34	0.83	1 (4%)
2	PSU	L5	1860	2	18,21,22	1.13	1 (5%)	21,30,33	1.90	4 (19%)
2	OMU	L5	4620	2	19,22,23	3.34	7 (36%)	25,31,34	1.77	4 (16%)
2	PSU	L5	2632	2	18,21,22	1.09	1 (5%)	21,30,33	1.99	5 (23%)
82	G7M	S2	1639	1,82	20,26,27	2.45	6 (30%)	16,39,42	1.11	1 (6%)
82	PSU	S2	863	82	18,21,22	1.10	1 (5%)	21,30,33	1.87	4 (19%)
82	6MZ	S2	1832	82,85	21,26,26	1.32	2 (9%)	22,39,39	1.78	2 (9%)
2	1MA	L5	1322	85,2	17,25,26	0.93	2 (11%)	17,37,40	1.10	2 (11%)
2	A2M	L5	3830	2	18,25,26	1.30	2 (11%)	20,36,39	2.10	6 (30%)
2	OMC	L5	3869	2	19,22,23	0.51	0	25,31,34	0.64	0
82	A2M	S2	27	82	18,25,26	1.33	2 (11%)	20,36,39	2.00	6 (30%)
2	OMC	L5	3808	2	19,22,23	0.59	0	25,31,34	0.95	2 (8%)
82	OMG	S2	436	82	19,26,27	1.12	2 (10%)	21,38,41	0.83	1 (4%)
2	OMG	L5	4623	2	19,26,27	1.15	2 (10%)	21,38,41	0.82	1 (4%)
2	PSU	L5	4576	2	18,21,22	1.08	1 (5%)	21,30,33	1.86	5 (23%)
2	OMC	L5	2422	85,2	19,22,23	0.54	0	25,31,34	0.69	0
2	PSU	L5	4312	2	18,21,22	1.08	1 (5%)	21,30,33	1.89	4 (19%)
2	OMG	L5	4618	2	19,26,27	1.15	2 (10%)	21,38,41	0.82	1 (4%)
2	PSU	L5	4500	2	18,21,22	1.13	1 (5%)	21,30,33	1.95	5 (23%)
2	PSU	L5	5010	2	18,21,22	1.13	1 (5%)	21,30,33	1.91	4 (19%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
82	OMG	S2	509	82	19,26,27	1.14	2 (10%)	21,38,41	0.83	1 (4%)
2	5MC	L5	4447	2	19,22,23	0.63	0	26,32,35	0.54	0
2	5MC	L5	3782	85,2	19,22,23	0.52	0	26,32,35	0.80	1 (3%)
82	PSU	S2	1056	82	18,21,22	1.07	1 (5%)	21,30,33	1.88	5 (23%)
4	PSU	L8	55	4	18,21,22	1.13	1 (5%)	21,30,33	1.90	4 (19%)
2	OMG	L5	1625	2	19,26,27	1.19	2 (10%)	21,38,41	0.83	1 (4%)
2	A2M	L5	2363	85,2	18,25,26	1.29	2 (11%)	20,36,39	1.98	6 (30%)
82	PSU	S2	814	82	18,21,22	1.12	1 (5%)	21,30,33	1.88	4 (19%)
2	OMC	L5	2804	2	19,22,23	0.53	0	25,31,34	0.65	0
2	A2M	L5	1524	2	18,25,26	1.29	2 (11%)	20,36,39	2.13	6 (30%)
2	PSU	L5	4689	2	18,21,22	1.04	1 (5%)	21,30,33	1.88	4 (19%)
4	PSU	L8	69	4	18,21,22	1.09	1 (5%)	21,30,33	1.82	5 (23%)
2	PSU	L5	4442	2	18,21,22	1.13	1 (5%)	21,30,33	2.06	6 (28%)
82	PSU	S2	1232	82	18,21,22	1.13	1 (5%)	21,30,33	1.87	4 (19%)
2	OMC	L5	4456	2	19,22,23	0.56	0	25,31,34	0.79	1 (4%)
82	OMU	S2	121	82	19,22,23	3.39	7 (36%)	25,31,34	1.79	5 (20%)
2	A2M	L5	3825	2	18,25,26	1.28	2 (11%)	20,36,39	1.98	6 (30%)
82	OMC	S2	462	82	19,22,23	0.52	0	25,31,34	0.78	1 (4%)
2	PSU	L5	2839	2	18,21,22	1.08	1 (5%)	21,30,33	1.93	5 (23%)
82	OMU	S2	172	82	19,22,23	3.38	7 (36%)	25,31,34	1.82	5 (20%)
2	OMG	L5	3792	2	19,26,27	1.15	2 (10%)	21,38,41	0.81	1 (4%)
2	OMG	L5	3744	2	19,26,27	1.14	2 (10%)	21,38,41	0.80	1 (4%)
2	OMC	L5	3841	2	19,22,23	0.51	0	25,31,34	0.70	1 (4%)
82	OMU	S2	428	82	19,22,23	3.37	7 (36%)	25,31,34	1.83	5 (20%)
2	PSU	L5	3920	85,2	18,21,22	1.08	1 (5%)	21,30,33	1.89	5 (23%)
2	OMU	L5	4227	2	19,22,23	3.36	7 (36%)	25,31,34	1.83	5 (20%)
82	A2M	S2	1031	82	18,25,26	1.24	2 (11%)	20,36,39	2.02	6 (30%)
2	PSU	L5	4299	2	18,21,22	1.10	1 (5%)	21,30,33	1.93	4 (19%)
82	PSU	S2	1244	82	18,21,22	1.14	1 (5%)	21,30,33	1.88	4 (19%)
82	4AC	S2	1842	82	21,24,25	0.38	0	28,34,37	0.45	0
2	PSU	L5	4628	2	18,21,22	1.00	1 (5%)	21,30,33	1.85	4 (19%)
2	PSU	L5	4361	2	18,21,22	1.07	1 (5%)	21,30,33	1.83	4 (19%)
82	A2M	S2	99	82,85	18,25,26	1.25	2 (11%)	20,36,39	1.98	5 (25%)

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	OMG	L5	2364	85,2	-	2/5/27/28	0/3/3/3
2	OMU	L5	4498	2	-	0/9/27/28	0/2/2/2
2	A2M	L5	2815	2	-	2/5/27/28	0/3/3/3
82	PSU	S2	105	82	-	0/7/25/26	0/2/2/2
82	OMU	S2	354	82	-	1/9/27/28	0/2/2/2
2	PSU	L5	1781	2	-	1/7/25/26	0/2/2/2
82	OMU	S2	1326	82	-	0/9/27/28	0/2/2/2
2	PSU	L5	1677	2	-	2/7/25/26	0/2/2/2
82	A2M	S2	159	82	-	2/5/27/28	0/3/3/3
82	PSU	S2	966	82,85	-	0/7/25/26	0/2/2/2
82	OMG	S2	1490	82	-	1/5/27/28	0/3/3/3
2	A2M	L5	4571	2	-	0/5/27/28	0/3/3/3
2	PSU	L5	4431	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	4636	2	-	1/7/25/26	0/2/2/2
82	PSU	S2	651	82	-	0/7/25/26	0/2/2/2
2	PSU	L5	3637	2	-	0/7/25/26	0/2/2/2
82	PSU	S2	649	82	-	0/7/25/26	0/2/2/2
2	PSU	L5	4457	2	-	0/7/25/26	0/2/2/2
82	A2M	S2	1383	82	-	3/5/27/28	0/3/3/3
2	A2M	L5	2401	2	-	0/5/27/28	0/3/3/3
82	PSU	S2	109	82	-	0/7/25/26	0/2/2/2
82	OMG	S2	683	82	-	2/5/27/28	0/3/3/3
2	A2M	L5	1326	85,2	-	3/5/27/28	0/3/3/3
2	OMC	L5	2861	2	-	3/9/27/28	0/2/2/2
2	PSU	L5	3844	2	-	1/7/25/26	0/2/2/2
2	PSU	L5	1862	2	-	0/7/25/26	0/2/2/2
82	OMC	S2	517	82	-	3/9/27/28	0/2/2/2
82	A2M	S2	668	82,85	-	3/5/27/28	0/3/3/3
2	PSU	L5	3884	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	4552	2	-	0/7/25/26	0/2/2/2
82	PSU	S2	1081	82	-	1/7/25/26	0/2/2/2
2	OMC	L5	4536	2	-	0/9/27/28	0/2/2/2
2	OMG	L5	4637	2	-	1/5/27/28	0/3/3/3
82	MA6	S2	1850	82	-	1/7/29/30	0/3/3/3
82	PSU	S2	686	82	-	0/7/25/26	0/2/2/2
2	PSU	L5	4972	2	-	0/7/25/26	0/2/2/2
2	OMG	L5	4370	2	-	0/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	PSU	L5	4521	85,2	-	2/7/25/26	0/2/2/2
2	OMG	L5	4228	2	-	0/5/27/28	0/3/3/3
2	PSU	L5	1683	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	4493	2	-	0/7/25/26	0/2/2/2
82	PSU	S2	1367	82	-	0/7/25/26	0/2/2/2
2	OMC	L5	3887	2	-	2/9/27/28	0/2/2/2
82	PSU	S2	93	82	-	0/7/25/26	0/2/2/2
2	PSU	L5	1782	2	-	0/7/25/26	0/2/2/2
2	A2M	L5	3785	85,2	-	0/5/27/28	0/3/3/3
82	MA6	S2	1851	82	-	2/7/29/30	0/3/3/3
2	A2M	L5	1534	85,2	-	2/5/27/28	0/3/3/3
2	OMC	L5	2824	2	-	1/9/27/28	0/2/2/2
82	OMU	S2	799	82	-	2/9/27/28	0/2/2/2
2	PSU	L5	1582	2	-	0/7/25/26	0/2/2/2
2	A2M	L5	400	2	-	1/5/27/28	0/3/3/3
2	PSU	L5	3695	2	-	0/7/25/26	0/2/2/2
2	A2M	L5	3718	2	-	1/5/27/28	0/3/3/3
2	OMG	L5	3627	2	-	0/5/27/28	0/3/3/3
2	PSU	L5	3851	85,2	-	1/7/25/26	0/2/2/2
82	OMC	S2	1703	82	-	0/9/27/28	0/2/2/2
82	A2M	S2	166	82	-	0/5/27/28	0/3/3/3
82	PSU	S2	1046	82	-	0/7/25/26	0/2/2/2
2	OMG	L5	2424	2	-	0/5/27/28	0/3/3/3
82	OMG	S2	1328	82	-	0/5/27/28	0/3/3/3
2	OMG	L5	2876	2	-	0/5/27/28	0/3/3/3
2	OMG	L5	4499	2	-	0/5/27/28	0/3/3/3
82	PSU	S2	1004	82	-	0/7/25/26	0/2/2/2
82	PSU	S2	1174	82	-	0/7/25/26	0/2/2/2
2	PSU	L5	4293	2	-	1/7/25/26	0/2/2/2
2	OMG	L5	4196	1,2	-	1/5/27/28	0/3/3/3
2	OMG	L5	3899	2	-	2/5/27/28	0/3/3/3
2	PSU	L5	4296	2	-	2/7/25/26	0/2/2/2
82	OMC	S2	174	82	-	0/9/27/28	0/2/2/2
82	PSU	S2	406	82	-	0/7/25/26	0/2/2/2
2	6MZ	L5	4220	2	-	4/5/27/28	0/3/3/3
82	B8N	S2	1248	82	-	4/16/34/35	0/2/2/2
2	OMU	L5	4306	2	-	0/9/27/28	0/2/2/2
2	OMU	L5	3925	2	-	0/9/27/28	0/2/2/2
2	OMC	L5	2365	85,2	-	0/9/27/28	0/2/2/2
2	OMG	L5	1522	2	-	0/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	UY1	L5	3818	2	-	1/9/27/28	0/2/2/2
2	PSU	L5	5001	2	-	0/7/25/26	0/2/2/2
2	UR3	L5	4530	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	1536	2	-	2/7/25/26	0/2/2/2
82	PSU	S2	801	82	-	2/7/25/26	0/2/2/2
2	OMC	L5	3701	2	-	4/9/27/28	0/2/2/2
2	PSU	L5	4579	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	4353	2	-	0/7/25/26	0/2/2/2
82	A2M	S2	484	82	-	1/5/27/28	0/3/3/3
2	PSU	L5	4403	2	-	0/7/25/26	0/2/2/2
2	A2M	L5	4590	2	-	4/5/27/28	0/3/3/3
82	PSU	S2	681	82	-	0/7/25/26	0/2/2/2
82	A2M	S2	576	82	-	4/5/27/28	0/3/3/3
2	PSU	L5	4973	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	4673	2	-	0/7/25/26	0/2/2/2
2	A2M	L5	1871	85,2	-	0/5/27/28	0/3/3/3
2	PSU	L5	3639	2	-	0/7/25/26	0/2/2/2
2	A2M	L5	4523	85,2	-	1/5/27/28	0/3/3/3
2	A2M	L5	2787	2	-	3/5/27/28	0/3/3/3
82	OMU	S2	1288	82	-	2/9/27/28	0/2/2/2
4	OMG	L8	75	4	-	1/5/27/28	0/3/3/3
2	PSU	L5	1744	85,2	-	0/7/25/26	0/2/2/2
2	PSU	L5	4471	2	-	0/7/25/26	0/2/2/2
82	OMU	S2	627	82	-	5/9/27/28	0/2/2/2
82	OMC	S2	1272	82	-	2/9/27/28	0/2/2/2
2	PSU	L5	1792	2	-	0/7/25/26	0/2/2/2
82	OMG	S2	601	82	-	0/5/27/28	0/3/3/3
2	PSU	L5	3822	2	-	2/7/25/26	0/2/2/2
2	OMG	L5	4494	2	-	0/5/27/28	0/3/3/3
2	PSU	L5	4532	2	-	0/7/25/26	0/2/2/2
82	OMG	S2	644	82	-	4/5/27/28	0/3/3/3
2	A2M	L5	1323	2	-	3/5/27/28	0/3/3/3
82	4AC	S2	1337	82	-	1/11/29/30	0/2/2/2
82	OMC	S2	1391	82	-	0/9/27/28	0/2/2/2
2	A2M	L5	3867	2	-	1/5/27/28	0/3/3/3
82	PSU	S2	1045	82	-	2/7/25/26	0/2/2/2
82	A2M	S2	468	82	-	1/5/27/28	0/3/3/3
2	A2M	L5	398	2	-	0/5/27/28	0/3/3/3
2	OMU	L5	2837	2	-	0/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
82	OMG	S2	867	82	-	1/5/27/28	0/3/3/3
2	OMG	L5	4392	2	-	0/5/27/28	0/3/3/3
82	PSU	S2	1177	82	-	0/7/25/26	0/2/2/2
2	OMG	L5	1316	2	-	1/5/27/28	0/3/3/3
2	PSU	L5	3853	85,2	-	0/7/25/26	0/2/2/2
82	OMU	S2	1442	82	-	2/9/27/28	0/2/2/2
82	OMU	S2	116	82	-	1/9/27/28	0/2/2/2
2	OMC	L5	2351	85,2	-	2/9/27/28	0/2/2/2
2	PSU	L5	1860	2	-	0/7/25/26	0/2/2/2
2	OMU	L5	4620	2	-	0/9/27/28	0/2/2/2
2	PSU	L5	2632	2	-	0/7/25/26	0/2/2/2
82	G7M	S2	1639	1,82	-	0/3/25/26	0/3/3/3
82	PSU	S2	863	82	-	0/7/25/26	0/2/2/2
82	6MZ	S2	1832	82,85	-	7/8/28/28	0/3/3/3
2	1MA	L5	1322	85,2	-	0/3/25/26	0/3/3/3
2	A2M	L5	3830	2	-	1/5/27/28	0/3/3/3
2	OMC	L5	3869	2	-	0/9/27/28	0/2/2/2
82	A2M	S2	27	82	-	1/5/27/28	0/3/3/3
2	OMC	L5	3808	2	-	0/9/27/28	0/2/2/2
82	OMG	S2	436	82	-	0/5/27/28	0/3/3/3
2	OMG	L5	4623	2	-	1/5/27/28	0/3/3/3
2	PSU	L5	4576	2	-	0/7/25/26	0/2/2/2
2	OMC	L5	2422	85,2	-	2/9/27/28	0/2/2/2
2	PSU	L5	4312	2	-	0/7/25/26	0/2/2/2
2	OMG	L5	4618	2	-	2/5/27/28	0/3/3/3
2	PSU	L5	4500	2	-	3/7/25/26	0/2/2/2
2	PSU	L5	5010	2	-	2/7/25/26	0/2/2/2
82	OMG	S2	509	82	-	1/5/27/28	0/3/3/3
2	5MC	L5	4447	2	-	5/7/25/26	0/2/2/2
2	5MC	L5	3782	85,2	-	0/7/25/26	0/2/2/2
82	PSU	S2	1056	82	-	0/7/25/26	0/2/2/2
4	PSU	L8	55	4	-	0/7/25/26	0/2/2/2
2	OMG	L5	1625	2	-	2/5/27/28	0/3/3/3
2	A2M	L5	2363	85,2	-	0/5/27/28	0/3/3/3
82	PSU	S2	814	82	-	0/7/25/26	0/2/2/2
2	OMC	L5	2804	2	-	0/9/27/28	0/2/2/2
2	A2M	L5	1524	2	-	3/5/27/28	0/3/3/3
2	PSU	L5	4689	2	-	0/7/25/26	0/2/2/2
4	PSU	L8	69	4	-	0/7/25/26	0/2/2/2
2	PSU	L5	4442	2	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
82	PSU	S2	1232	82	-	0/7/25/26	0/2/2/2
2	OMC	L5	4456	2	-	0/9/27/28	0/2/2/2
82	OMU	S2	121	82	-	0/9/27/28	0/2/2/2
2	A2M	L5	3825	2	-	1/5/27/28	0/3/3/3
82	OMC	S2	462	82	-	0/9/27/28	0/2/2/2
2	PSU	L5	2839	2	-	0/7/25/26	0/2/2/2
82	OMU	S2	172	82	-	0/9/27/28	0/2/2/2
2	OMG	L5	3792	2	-	2/5/27/28	0/3/3/3
2	OMG	L5	3744	2	-	1/5/27/28	0/3/3/3
2	OMC	L5	3841	2	-	1/9/27/28	0/2/2/2
82	OMU	S2	428	82	-	3/9/27/28	0/2/2/2
2	PSU	L5	3920	85,2	-	0/7/25/26	0/2/2/2
2	OMU	L5	4227	2	-	0/9/27/28	0/2/2/2
82	A2M	S2	1031	82	-	0/5/27/28	0/3/3/3
2	PSU	L5	4299	2	-	0/7/25/26	0/2/2/2
82	PSU	S2	1244	82	-	0/7/25/26	0/2/2/2
82	4AC	S2	1842	82	-	0/11/29/30	0/2/2/2
2	PSU	L5	4628	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	4361	2	-	0/7/25/26	0/2/2/2
82	A2M	S2	99	82,85	-	2/5/27/28	0/3/3/3

The worst 5 of 346 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L5	3818	UY1	C6-C5	12.90	1.49	1.35
2	L5	3818	UY1	C2-N1	12.00	1.52	1.36
82	S2	1442	OMU	C2-N1	8.53	1.51	1.38
82	S2	799	OMU	C2-N1	8.51	1.51	1.38
2	L5	4220	6MZ	C3'-C2'	-8.35	1.30	1.53

The worst 5 of 646 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
82	S2	1851	MA6	N1-C6-N6	-12.35	102.56	116.83
82	S2	1850	MA6	N1-C6-N6	-12.32	102.59	116.83
2	L5	3785	A2M	C4'-O4'-C1'	-8.80	101.87	109.92
82	S2	1832	6MZ	N3-C2-N1	-6.27	120.17	128.67
82	S2	1850	MA6	N3-C2-N1	-6.26	120.17	128.67

There are no chirality outliers.

5 of 155 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.

99 monomers are involved in 163 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	L5	2364	OMG	1	0
82	S2	354	OMU	2	0
2	L5	1677	PSU	1	0
82	S2	159	A2M	1	0
2	L5	4431	PSU	1	0
2	L5	4636	PSU	1	0
82	S2	651	PSU	1	0
82	S2	649	PSU	2	0
2	L5	4457	PSU	1	0
82	S2	109	PSU	1	0
2	L5	1326	A2M	2	0
2	L5	2861	OMC	1	0
2	L5	3844	PSU	1	0
82	S2	668	A2M	2	0
2	L5	1340	OMC	2	0
2	L5	4552	PSU	2	0
2	L5	4536	OMC	1	0
2	L5	4637	OMG	1	0
82	S2	1850	MA6	2	0
2	L5	4972	PSU	1	0
2	L5	1683	PSU	3	0
2	L5	3785	A2M	1	0
2	L5	1534	A2M	1	0
2	L5	2824	OMC	3	0
2	L5	400	A2M	2	0
2	L5	3695	PSU	1	0
2	L5	3718	A2M	4	0
2	L5	3627	OMG	1	0
82	S2	166	A2M	1	0
82	S2	1328	OMG	1	0
82	S2	1004	PSU	2	0
82	S2	1174	PSU	2	0
2	L5	4293	PSU	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	L5	4196	OMG	1	0
82	S2	174	OMC	1	0
2	L5	4220	6MZ	2	0
2	L5	2365	OMC	1	0
2	L5	3818	UY1	2	0
2	L5	3701	OMC	1	0
2	L5	4579	PSU	3	0
2	L5	4353	PSU	1	0
82	S2	484	A2M	2	0
2	L5	4403	PSU	2	0
2	L5	4590	A2M	1	0
82	S2	681	PSU	1	0
82	S2	576	A2M	2	0
2	L5	4973	PSU	1	0
2	L5	1871	A2M	1	0
2	L5	4523	A2M	3	0
2	L5	2787	A2M	1	0
82	S2	1288	OMU	2	0
4	L8	75	OMG	2	0
82	S2	627	OMU	1	0
82	S2	601	OMG	3	0
82	S2	644	OMG	2	0
2	L5	1323	A2M	1	0
82	S2	1337	4AC	3	0
82	S2	1391	OMC	2	0
2	L5	3867	A2M	4	0
82	S2	468	A2M	4	0
2	L5	2837	OMU	1	0
82	S2	867	OMG	1	0
2	L5	4392	OMG	1	0
82	S2	1177	PSU	1	0
2	L5	1316	OMG	2	0
2	L5	3853	PSU	1	0
82	S2	116	OMU	3	0
2	L5	2351	OMC	3	0
2	L5	4620	OMU	3	0
2	L5	2632	PSU	2	0
82	S2	1639	G7M	1	0
82	S2	1832	6MZ	2	0
2	L5	3830	A2M	1	0
2	L5	3869	OMC	1	0
82	S2	27	A2M	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
82	S2	436	OMG	1	0
2	L5	4623	OMG	2	0
2	L5	4576	PSU	1	0
2	L5	2422	OMC	1	0
82	S2	509	OMG	3	0
2	L5	1625	OMG	1	0
2	L5	2363	A2M	1	0
82	S2	814	PSU	1	0
2	L5	2804	OMC	2	0
2	L5	4689	PSU	2	0
4	L8	69	PSU	1	0
2	L5	4442	PSU	1	0
82	S2	1232	PSU	2	0
2	L5	4456	OMC	1	0
82	S2	121	OMU	1	0
2	L5	3825	A2M	5	0
82	S2	462	OMC	1	0
2	L5	3744	OMG	1	0
2	L5	3841	OMC	1	0
2	L5	3920	PSU	1	0
82	S2	1031	A2M	3	0
2	L5	4299	PSU	2	0
82	S2	1244	PSU	2	0
82	S2	1842	4AC	3	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
86	SPM	L5	5264	-	13,13,13	0.35	0	12,12,12	0.95	0
87	SPD	L5	5284	-	9,9,9	0.33	0	8,8,8	0.85	0
87	SPD	L5	5262	-	9,9,9	0.33	0	8,8,8	0.95	0
87	SPD	L5	5288	-	9,9,9	0.32	0	8,8,8	0.86	0
86	SPM	L5	5292	-	13,13,13	0.35	0	12,12,12	0.95	0
86	SPM	L5	5265	-	13,13,13	0.35	0	12,12,12	0.99	0
86	SPM	L5	5289	-	13,13,13	0.36	0	12,12,12	0.91	0
87	SPD	L5	5285	-	9,9,9	0.33	0	8,8,8	0.83	0
87	SPD	L5	5286	-	9,9,9	0.33	0	8,8,8	0.82	0
87	SPD	LN	301	-	9,9,9	0.32	0	8,8,8	0.87	0
88	3HE	L5	5296	-	21,21,21	0.41	0	23,30,30	0.93	1 (4%)
87	SPD	L5	5283	-	9,9,9	0.33	0	8,8,8	0.84	0
89	HMT	L5	5297	-	41,43,43	4.55	15 (36%)	43,66,66	2.01	14 (32%)
86	SPM	L5	5268	-	13,13,13	0.35	0	12,12,12	1.01	0
86	SPM	L5	5293	-	13,13,13	0.35	0	12,12,12	0.90	0
87	SPD	L5	5291	-	9,9,9	0.32	0	8,8,8	0.80	0
87	SPD	L5	5287	-	9,9,9	0.32	0	8,8,8	0.87	0
87	SPD	L5	5290	-	9,9,9	0.32	0	8,8,8	0.92	0
86	SPM	L5	5259	-	13,13,13	0.35	0	12,12,12	0.98	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
86	SPM	L5	5264	-	-	3/11/11/11	-
87	SPD	L5	5284	-	-	3/7/7/7	-
87	SPD	L5	5262	-	-	1/7/7/7	-
87	SPD	L5	5288	-	-	2/7/7/7	-
86	SPM	L5	5292	-	-	3/11/11/11	-
86	SPM	L5	5265	-	-	5/11/11/11	-
86	SPM	L5	5289	-	-	5/11/11/11	-
87	SPD	L5	5285	-	-	2/7/7/7	-
87	SPD	L5	5286	-	-	0/7/7/7	-
87	SPD	LN	301	-	-	1/7/7/7	-
88	3HE	L5	5296	-	-	1/8/36/36	0/2/2/2
87	SPD	L5	5283	-	-	1/7/7/7	-
89	HMT	L5	5297	-	-	8/27/74/74	0/5/5/5
86	SPM	L5	5268	-	-	3/11/11/11	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
86	SPM	L5	5293	-	-	1/11/11/11	-
87	SPD	L5	5291	-	-	2/7/7/7	-
87	SPD	L5	5287	-	-	3/7/7/7	-
87	SPD	L5	5290	-	-	2/7/7/7	-
86	SPM	L5	5259	-	-	2/11/11/11	-

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

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
89	L5	5297	HMT	C8-C7	18.29	1.79	1.52
89	L5	5297	HMT	C7-C6	12.08	1.77	1.51
89	L5	5297	HMT	C5-C4	-10.08	1.36	1.51
89	L5	5297	HMT	C10-N1	7.58	1.57	1.47
89	L5	5297	HMT	C1-C2	7.05	1.43	1.32

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

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
89	L5	5297	HMT	O4-C19-C20	5.73	121.75	111.24
89	L5	5297	HMT	O7-C22-C21	5.06	120.05	111.16
89	L5	5297	HMT	C3-O4-C19	-3.88	111.14	117.24
89	L5	5297	HMT	O1-C14-C13	3.29	132.23	127.86
89	L5	5297	HMT	O2-C15-C16	3.04	131.90	127.86

There are no chirality outliers.

5 of 48 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
89	L5	5297	HMT	C1-C2-O3-C18
89	L5	5297	HMT	C3-C2-O3-C18
89	L5	5297	HMT	C25-C26-C27-O9
86	L5	5292	SPM	C7-C8-C9-N10
89	L5	5297	HMT	C21-C22-O7-C23

There are no ring outliers.

16 monomers are involved in 29 short contacts:

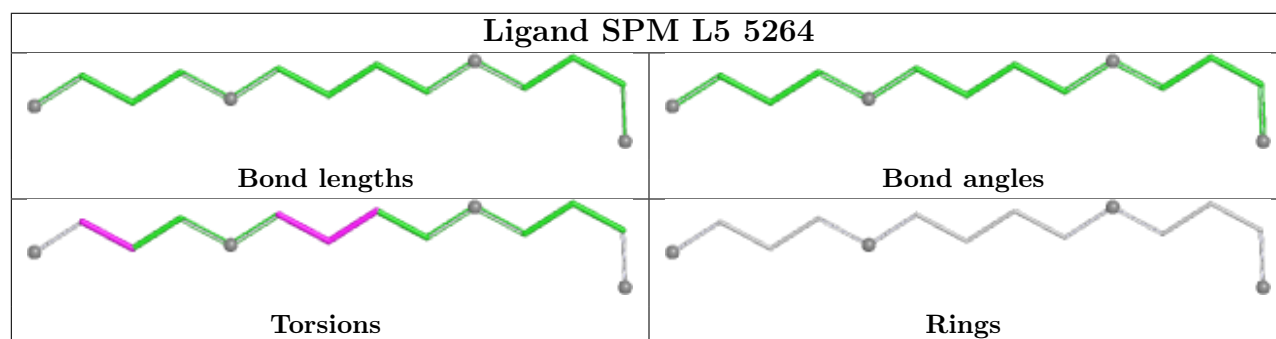
Mol	Chain	Res	Type	Clashes	Symm-Clashes
87	L5	5284	SPD	2	0
87	L5	5262	SPD	1	0

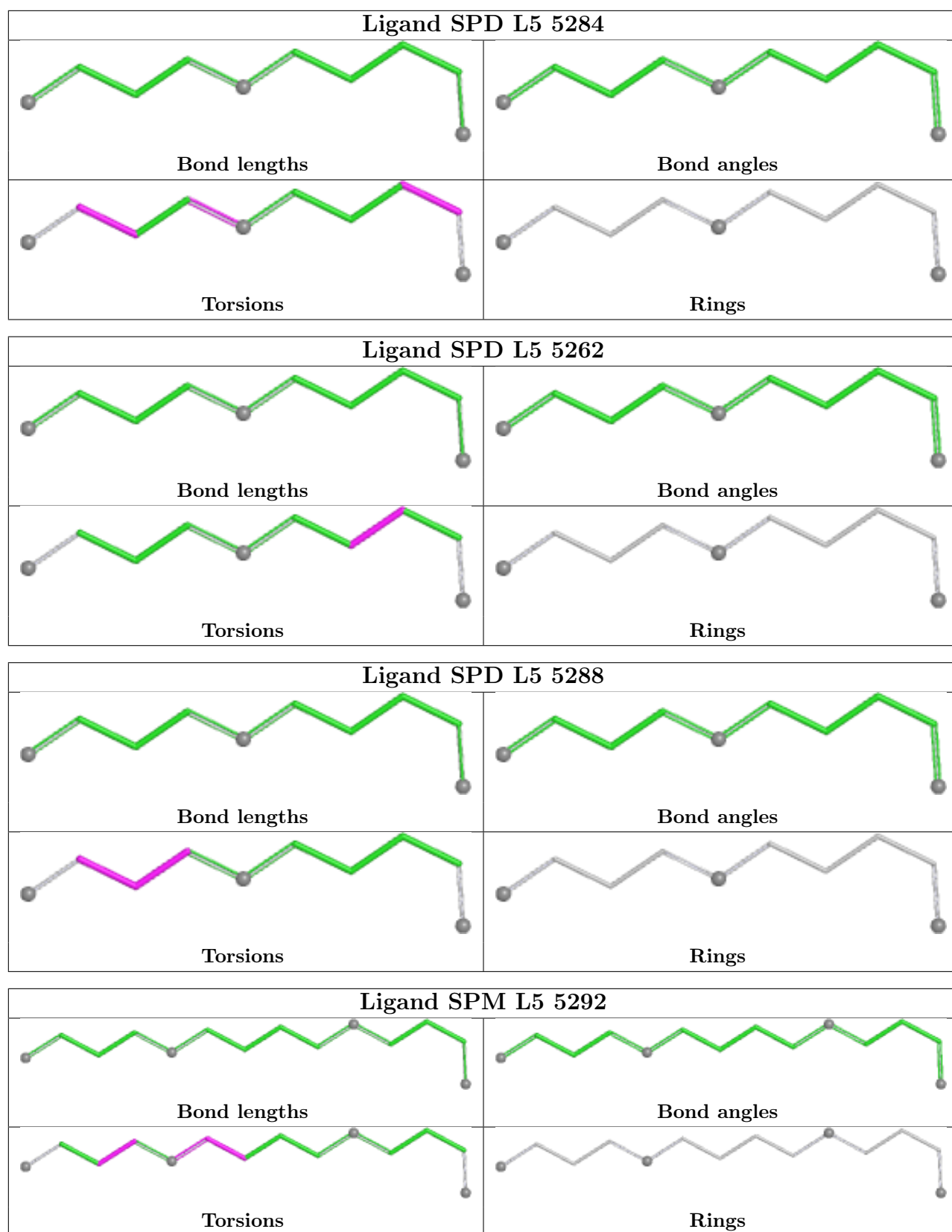
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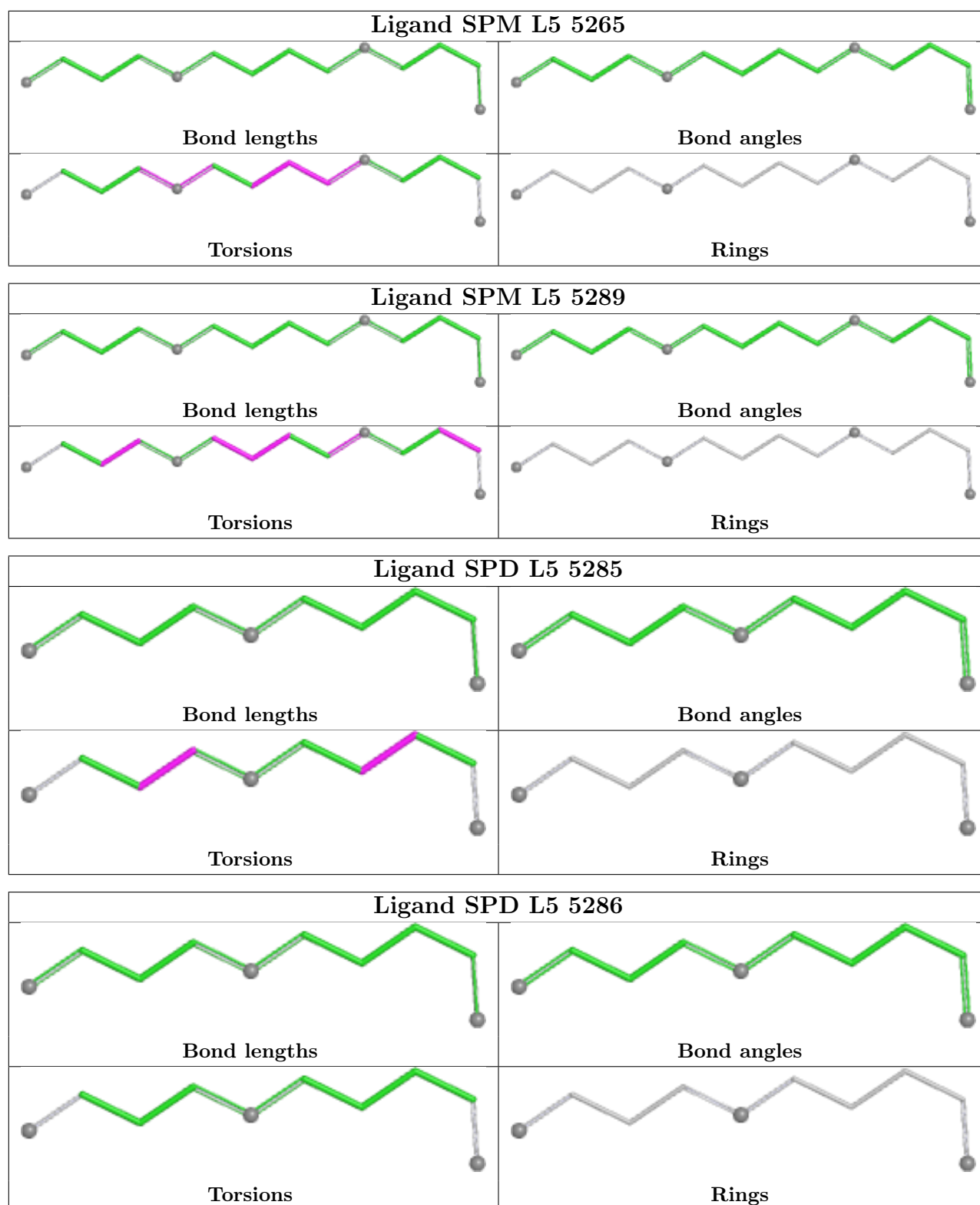
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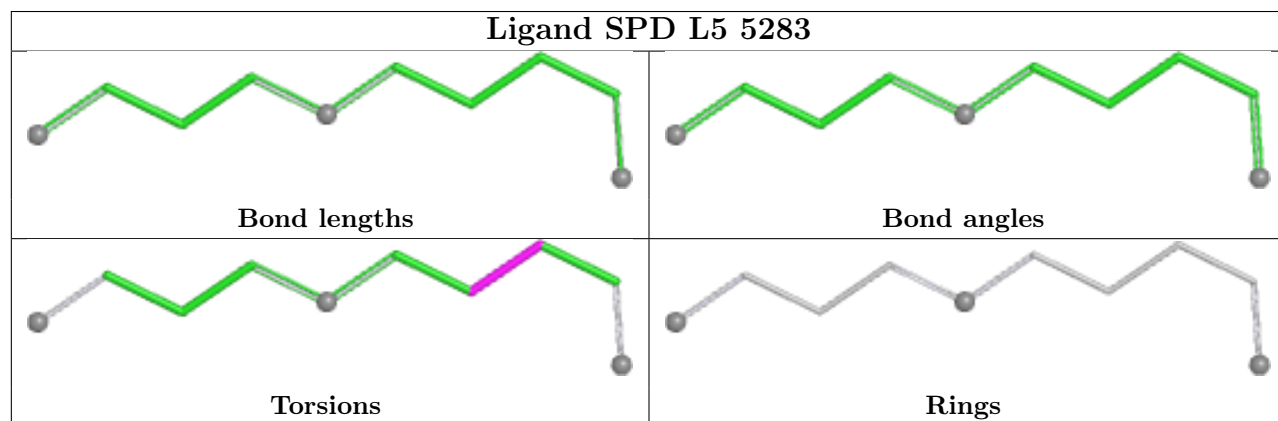
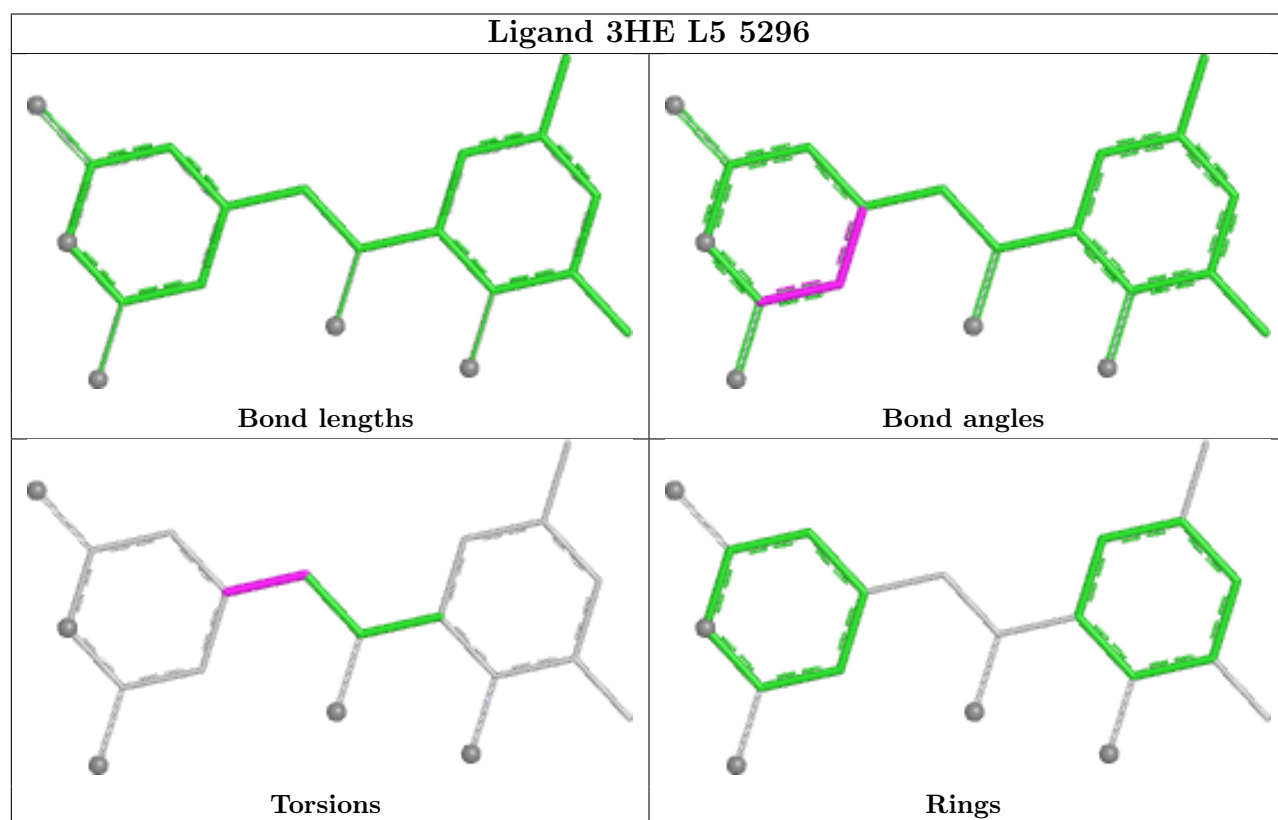
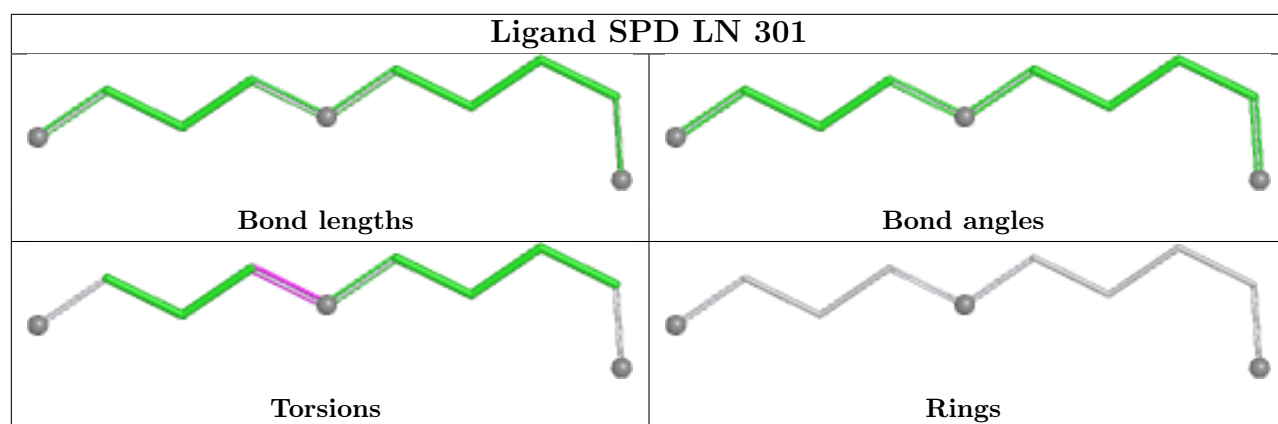
Mol	Chain	Res	Type	Clashes	Symm-Clashes
87	L5	5288	SPD	1	0
86	L5	5292	SPM	1	0
86	L5	5265	SPM	2	0
86	L5	5289	SPM	1	0
87	L5	5285	SPD	2	0
87	LN	301	SPD	2	0
88	L5	5296	3HE	2	0
89	L5	5297	HMT	8	0
86	L5	5268	SPM	1	0
86	L5	5293	SPM	2	0
87	L5	5291	SPD	1	0
87	L5	5287	SPD	1	0
87	L5	5290	SPD	2	0
86	L5	5259	SPM	1	0

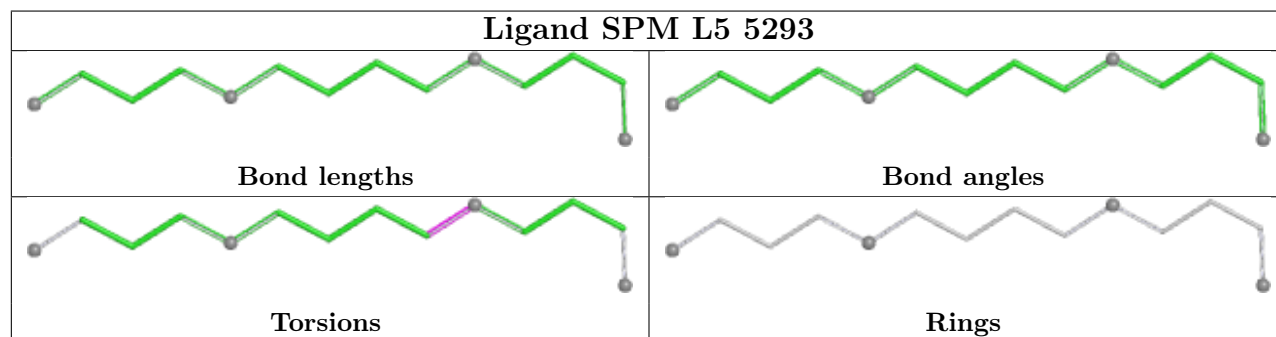
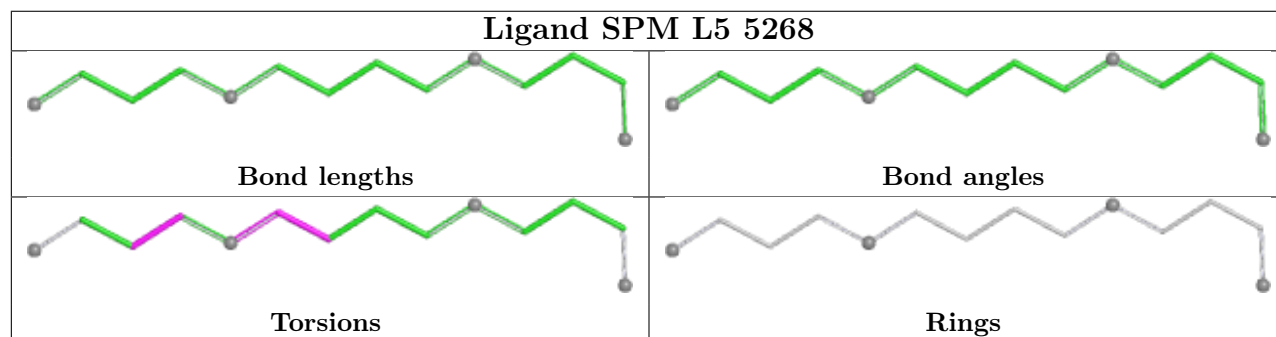
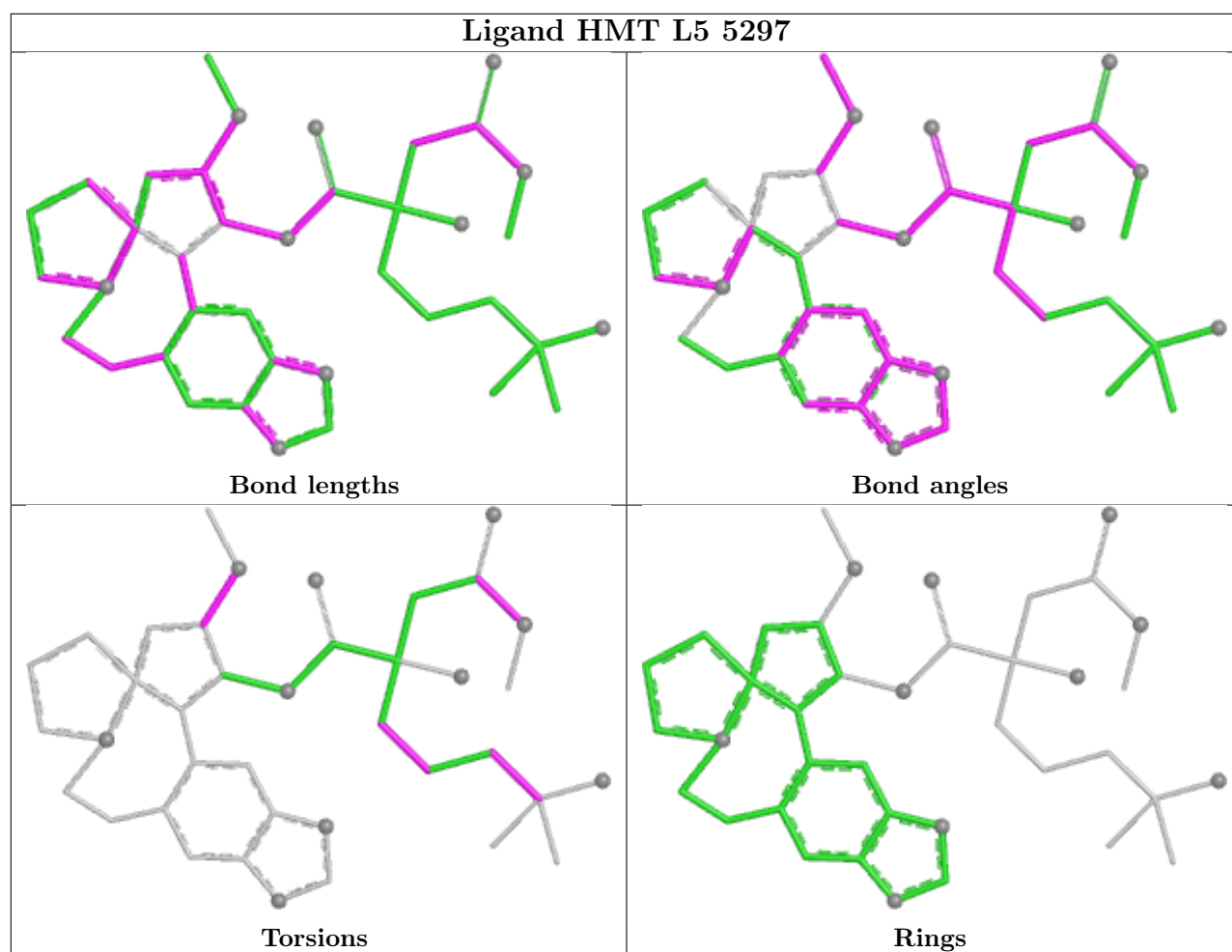
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

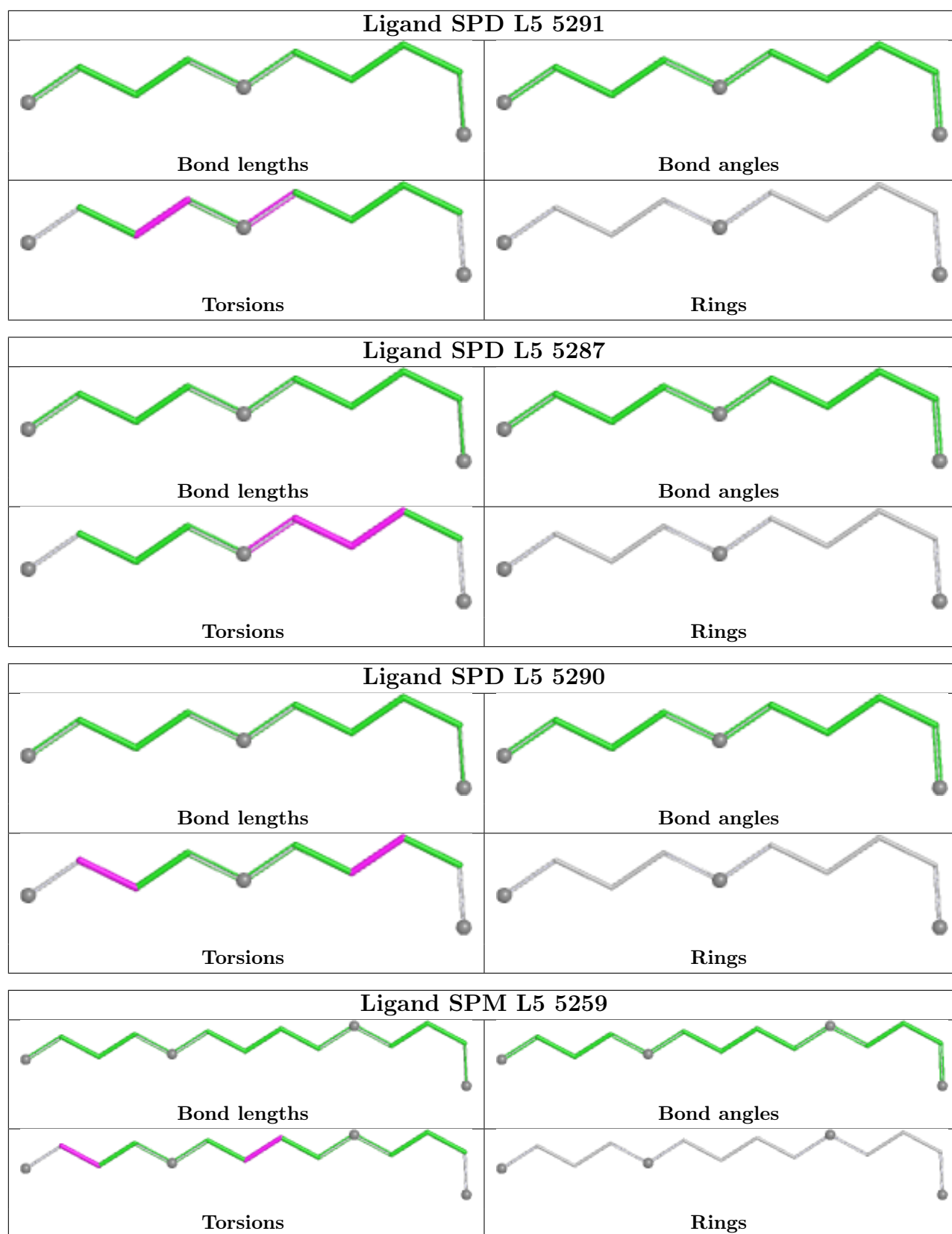












5.7 Other polymers [i](#)

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	29.10
1	L5	1706:A	O3'	1716:G	P	22.00
1	L5	2910:G	O3'	3584:C	P	21.10
1	L5	760:G	O3'	903:C	P	17.10
1	L5	519:C	O3'	642:G	P	15.85

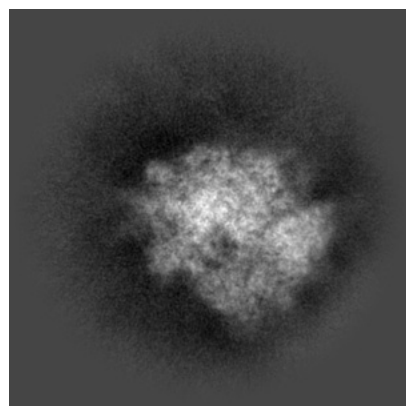
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-71378. These allow visual inspection of the internal detail of the map and identification of artifacts.

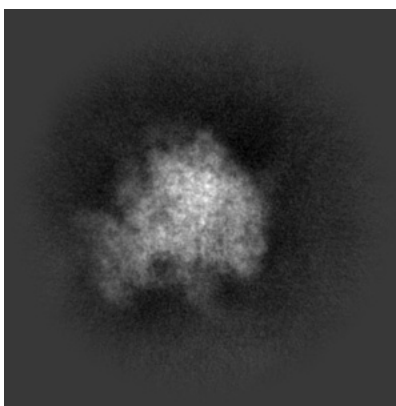
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

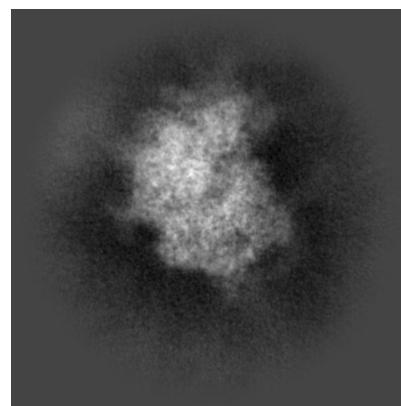
6.1.1 Primary map



X

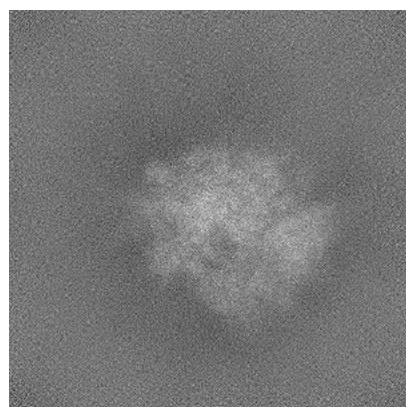


Y

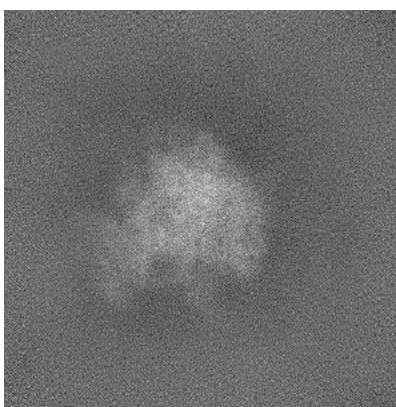


Z

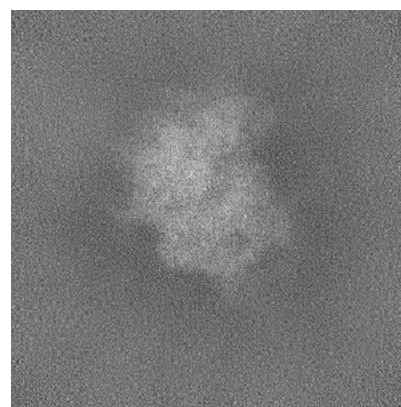
6.1.2 Raw map



X



Y

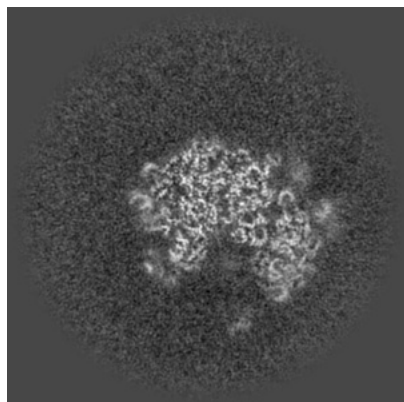


Z

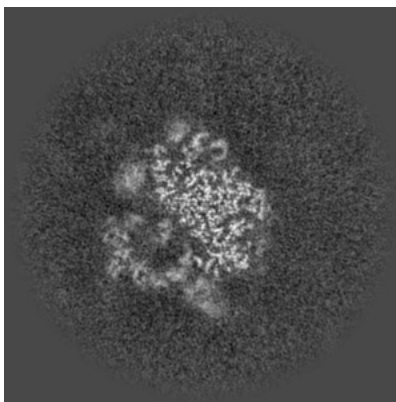
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

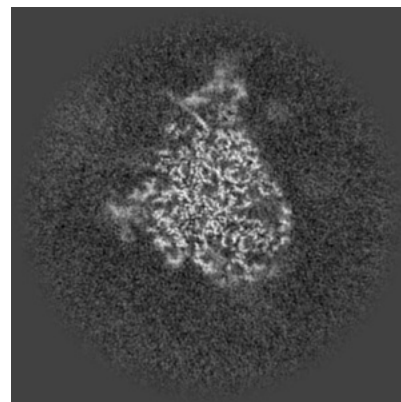
6.2.1 Primary map



X Index: 256

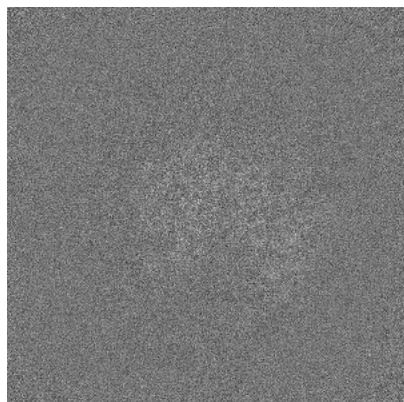


Y Index: 256

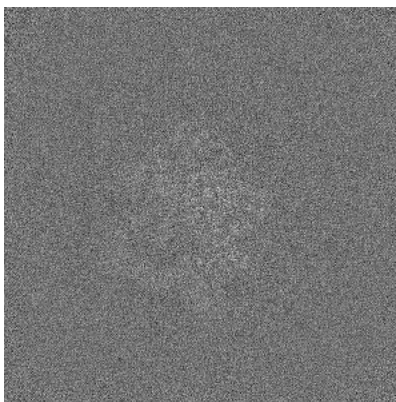


Z Index: 256

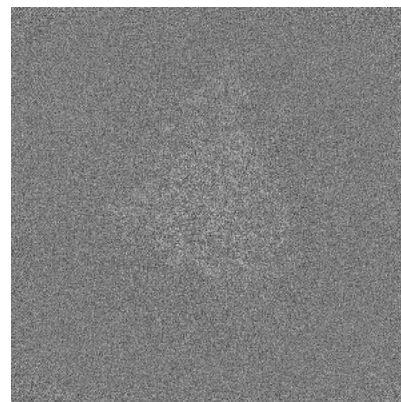
6.2.2 Raw map



X Index: 256



Y Index: 256

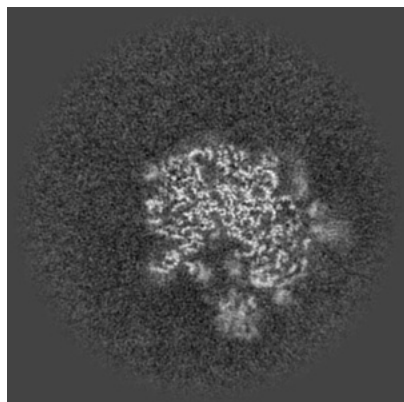


Z Index: 256

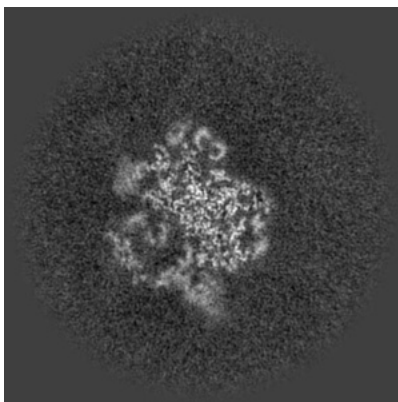
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

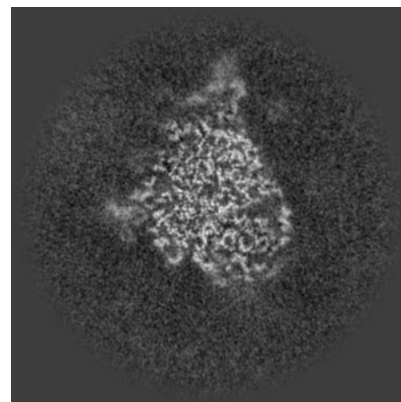
6.3.1 Primary map



X Index: 243

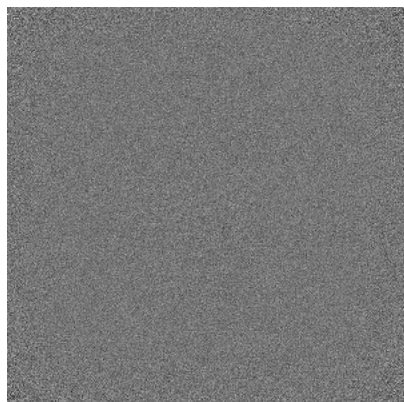


Y Index: 251

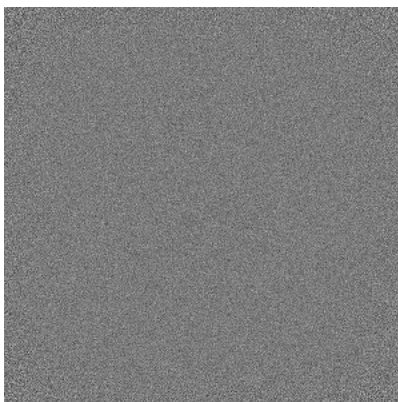


Z Index: 258

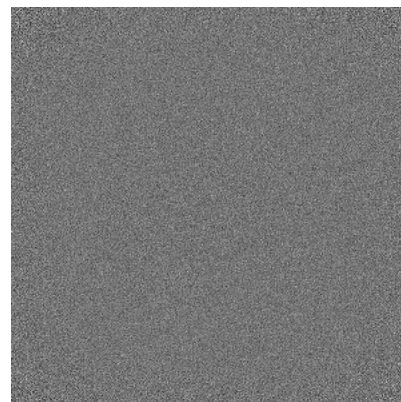
6.3.2 Raw map



X Index: 0



Y Index: 0

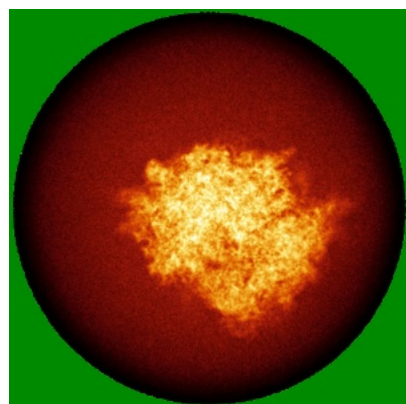


Z Index: 0

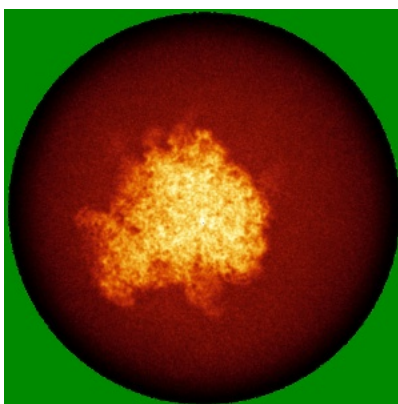
The images above show the largest variance slices of the map in three orthogonal directions.

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

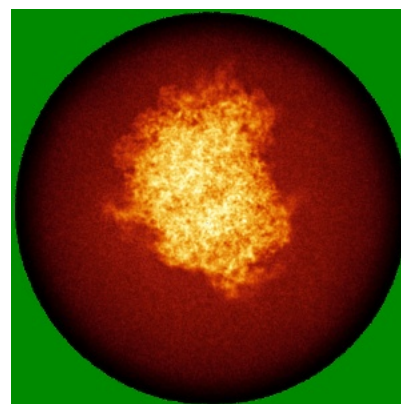
6.4.1 Primary map



X

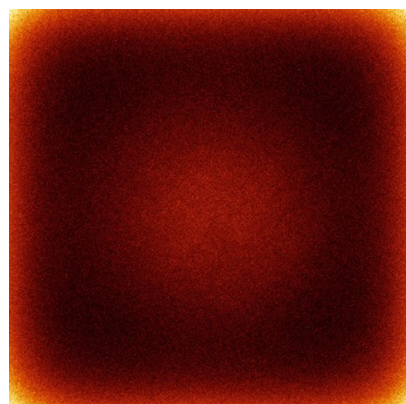


Y

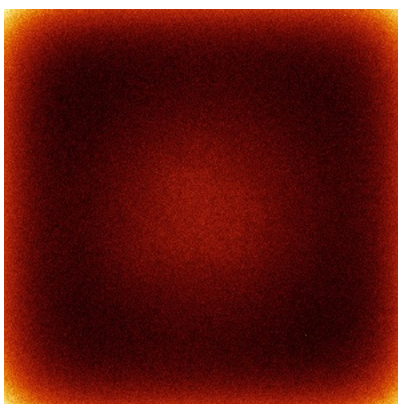


Z

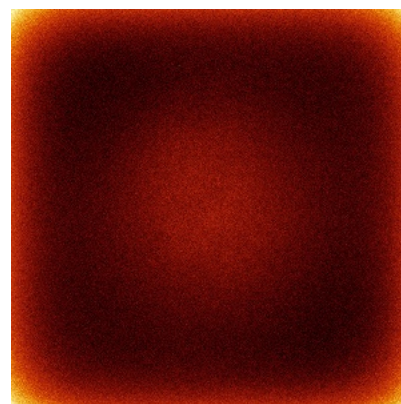
6.4.2 Raw map



X



Y

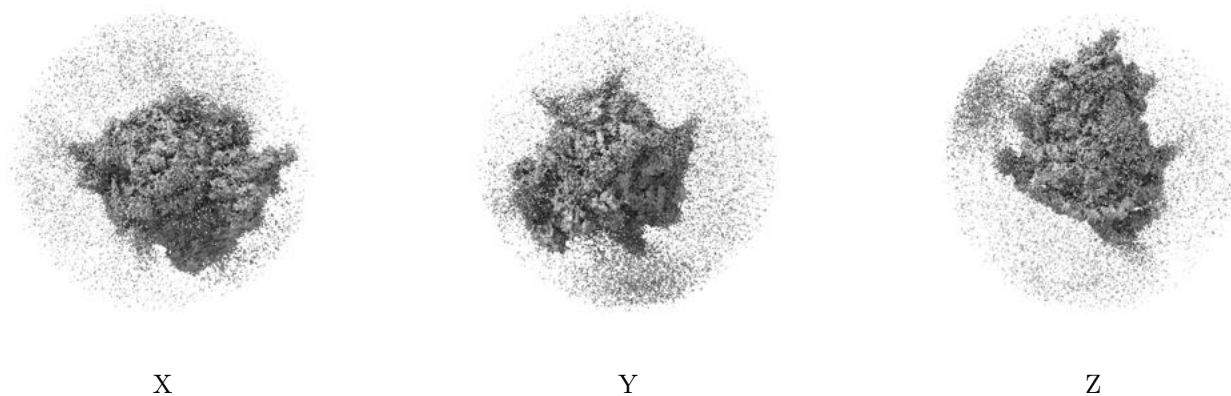


Z

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

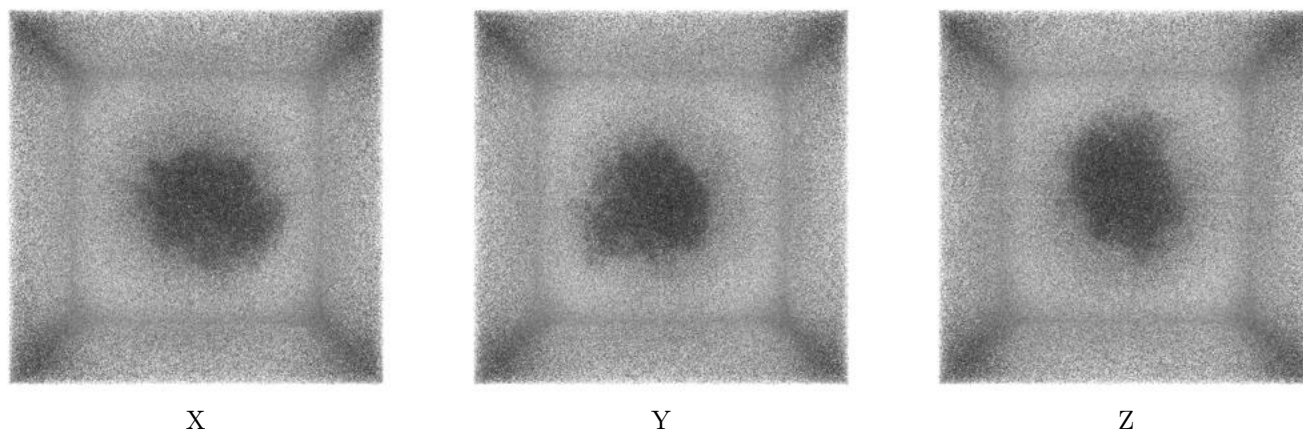
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0717. 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.

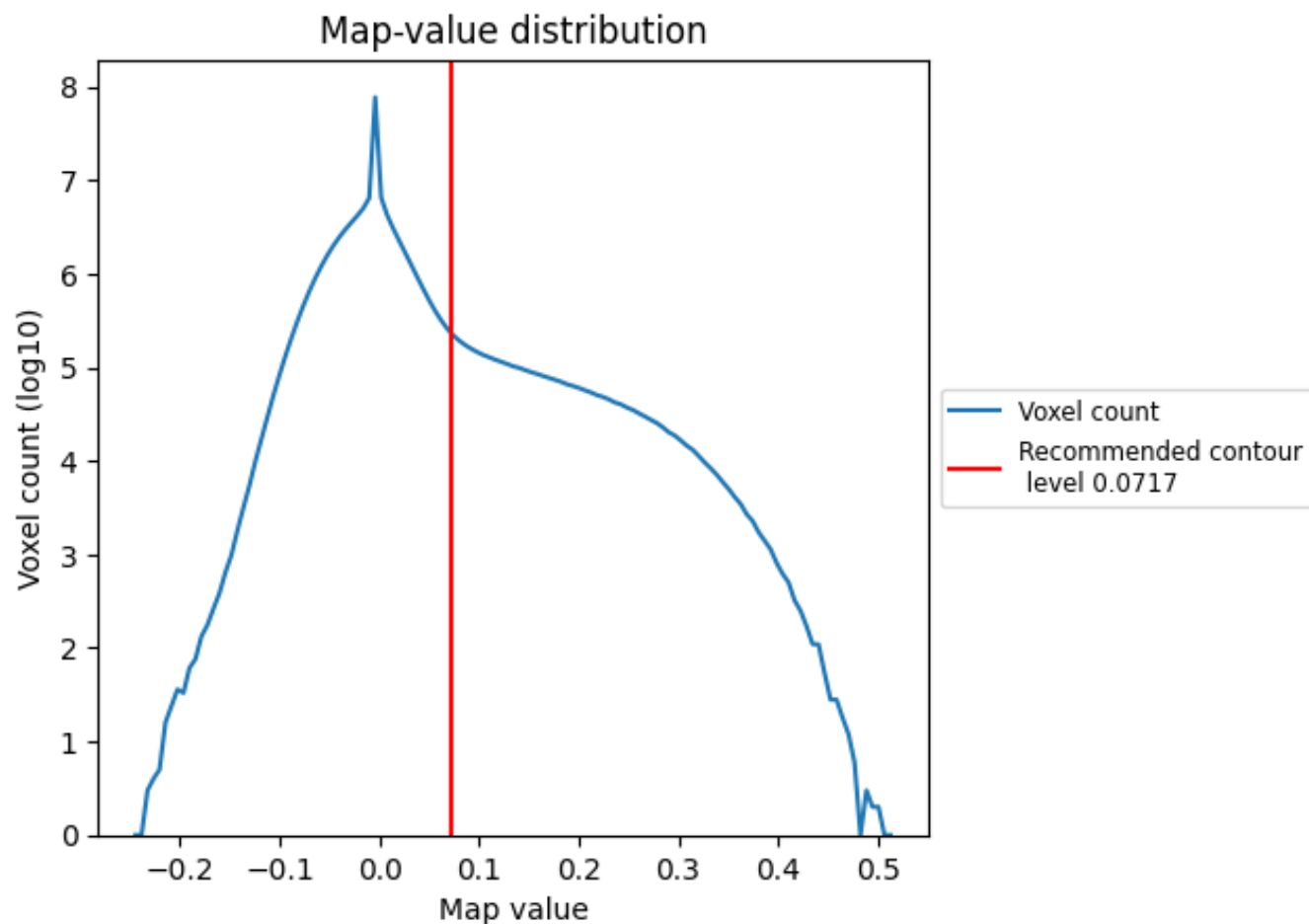
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

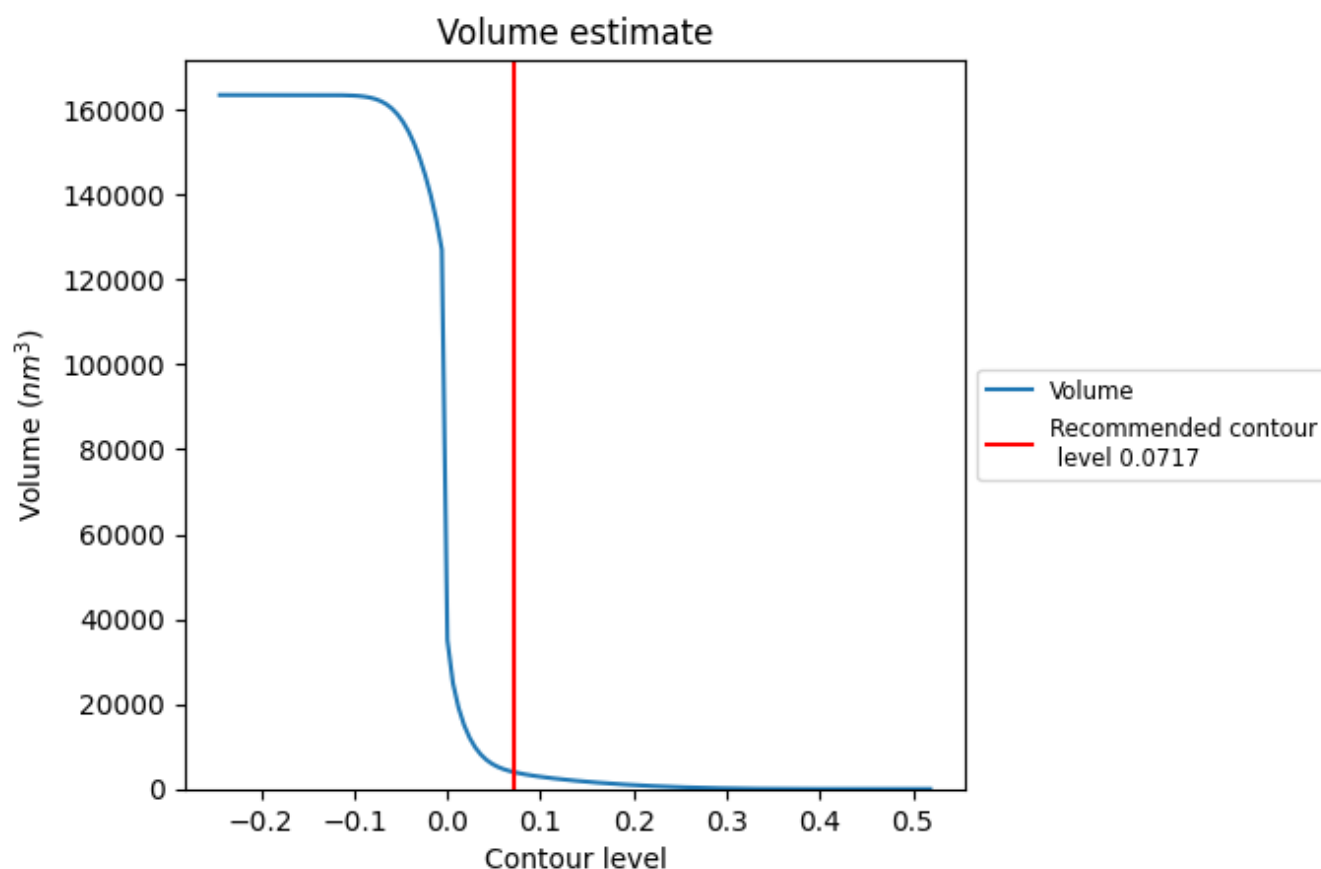
This section contains the results of statistical analysis of the map.

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.

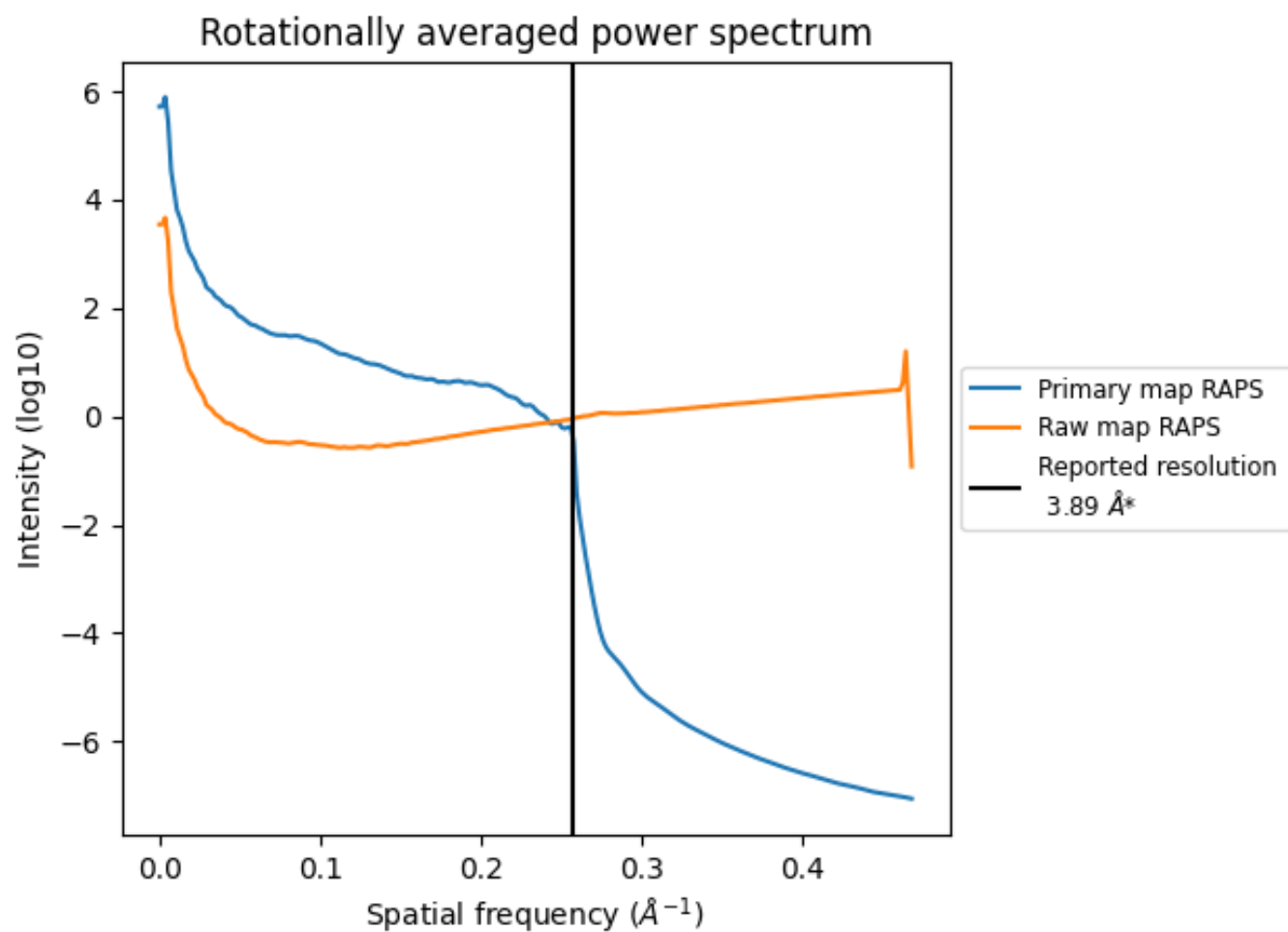
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 3963 nm³; this corresponds to an approximate mass of 3580 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 ⓘ

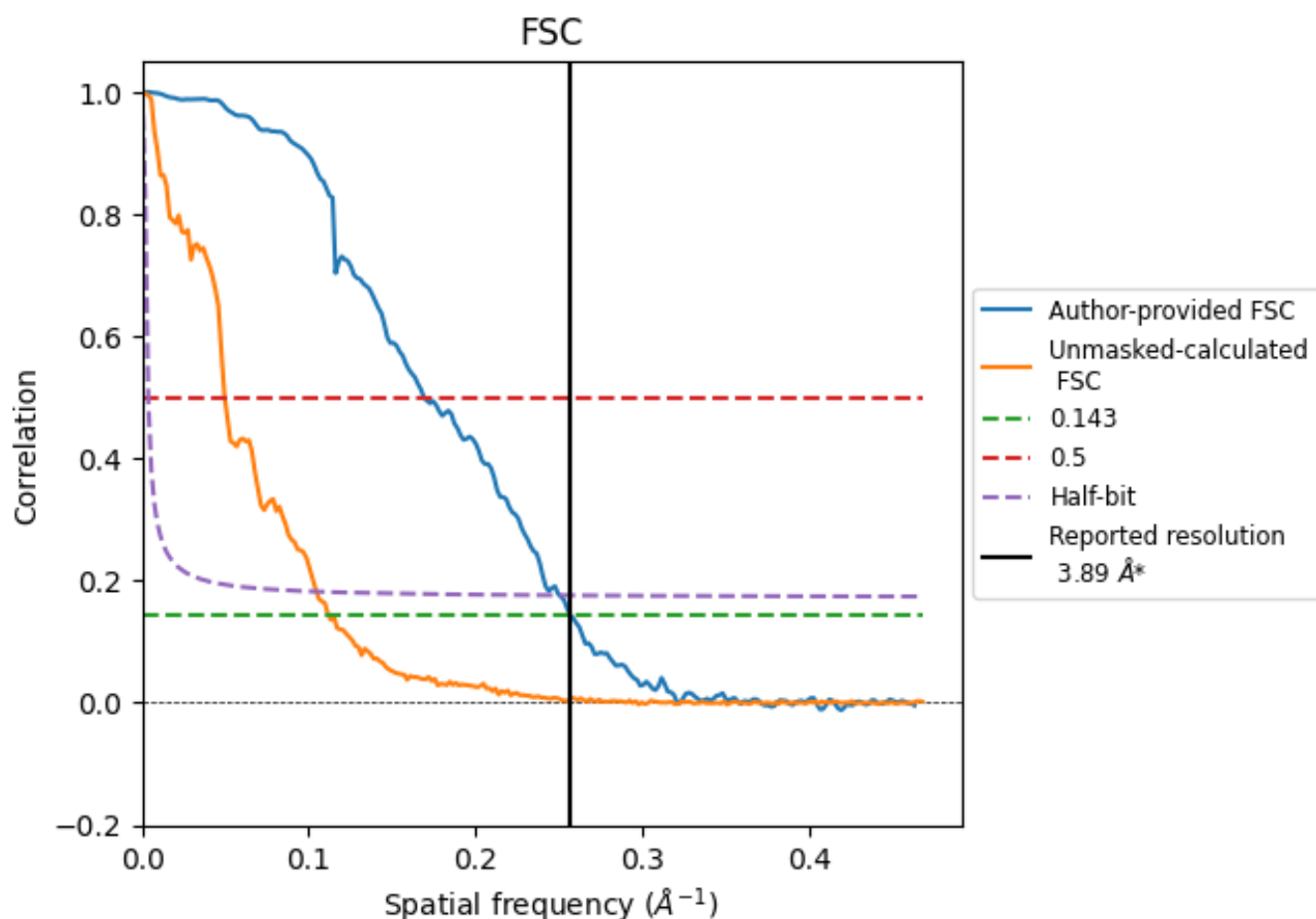


*Reported resolution corresponds to spatial frequency of 0.257 $\text{\AA}^{-1}$

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 $0.257 \text{ \AA}^{-1}$

8.2 Resolution estimates [i](#)

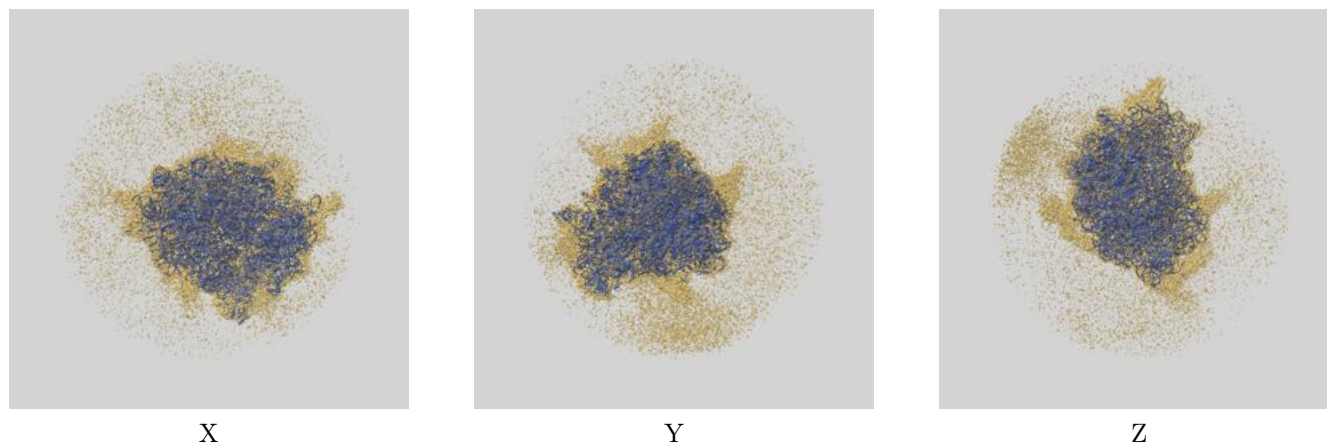
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.89	-	-
Author-provided FSC curve	3.89	5.92	3.99
Unmasked-calculated*	8.95	20.20	9.56

*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 8.95 differs from the reported value 3.89 by more than 10 %

9 Map-model fit [i](#)

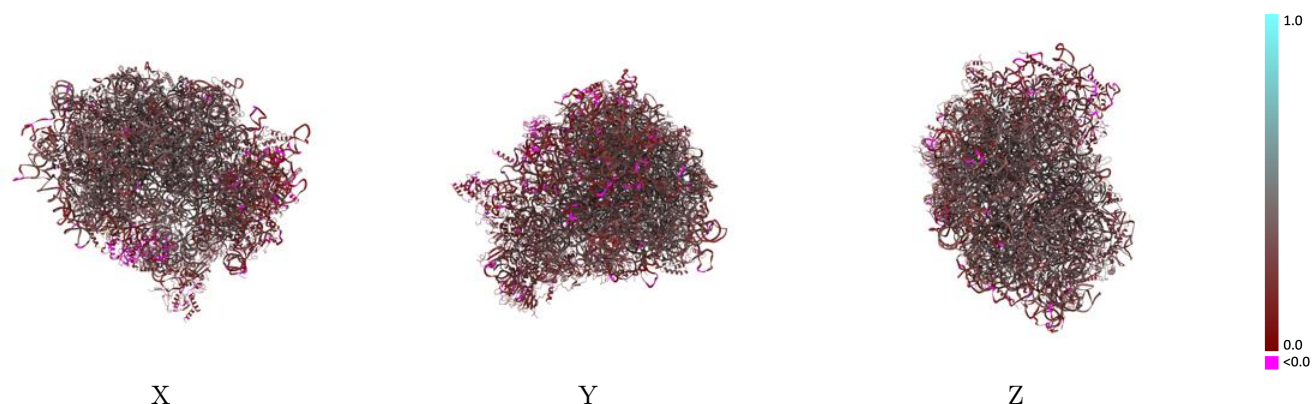
This section contains information regarding the fit between EMDB map EMD-71378 and PDB model 9P8I. Per-residue inclusion information can be found in [section 3](#) on [page 24](#).

9.1 Map-model overlay [i](#)



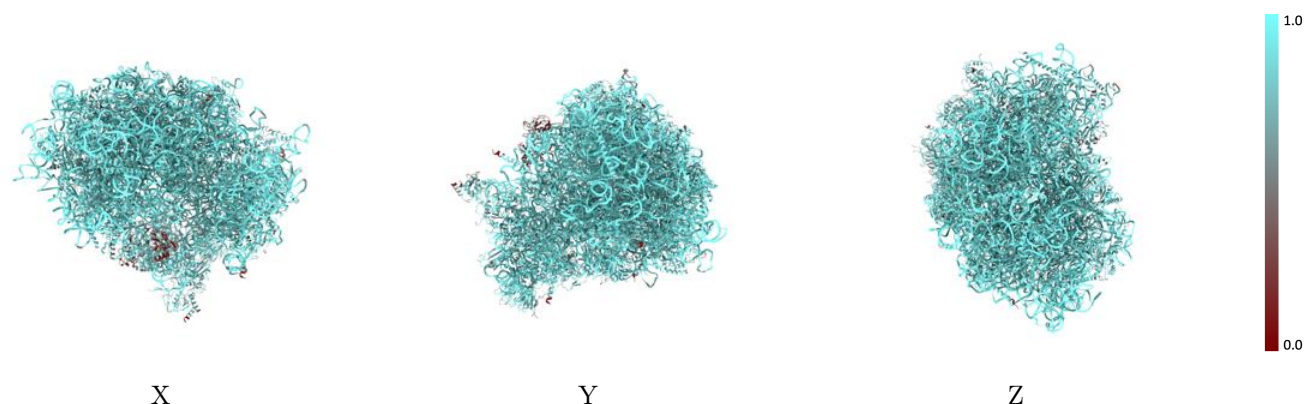
The images above show the 3D surface view of the map at the recommended contour level 0.0717 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



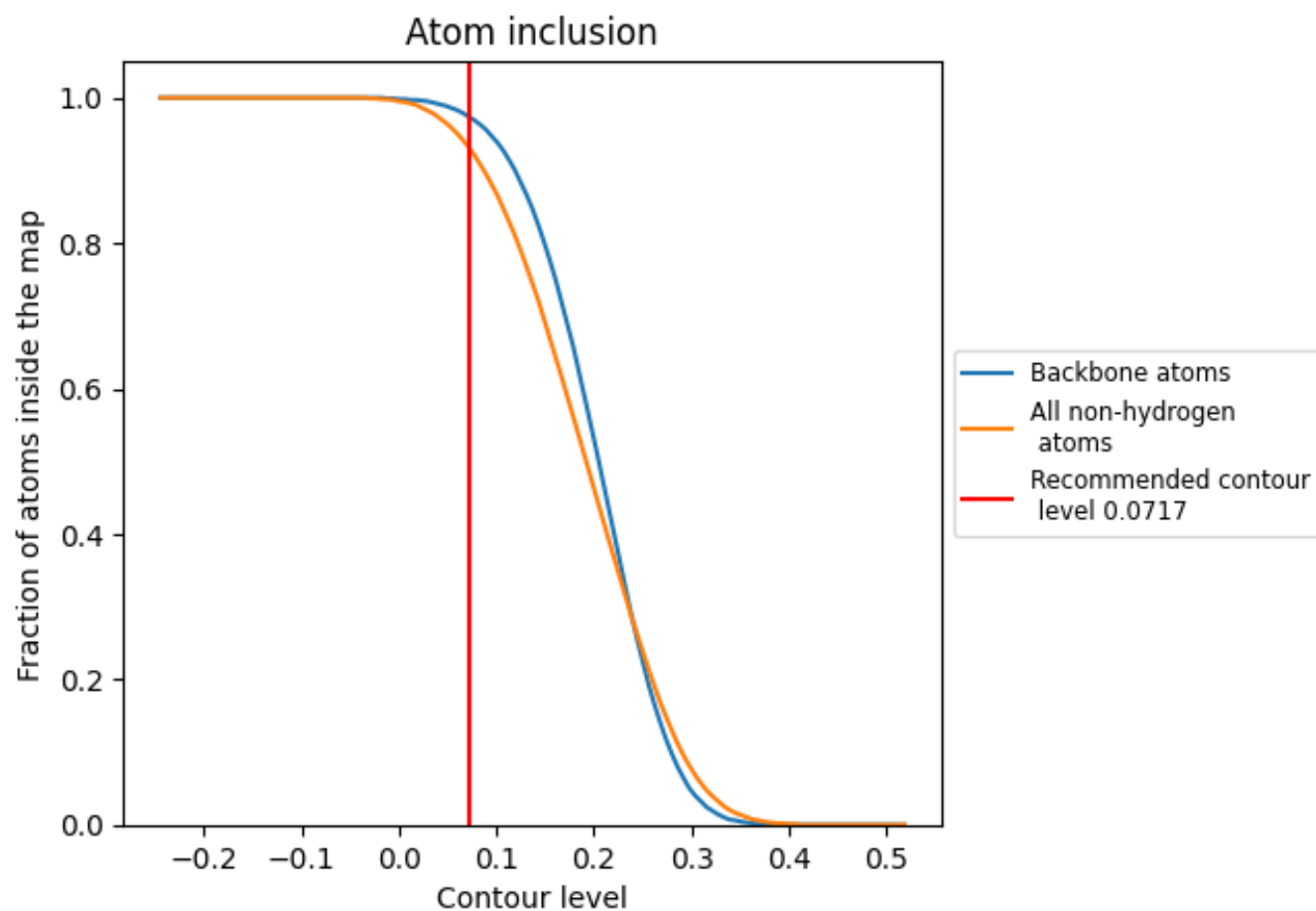
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0717).

9.4 Atom inclusion [i](#)



At the recommended contour level, 97% of all backbone atoms, 93% 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 (0.0717) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9320	 0.3000
CI	 0.5610	 0.1690
L5	 0.9850	 0.3310
L7	 0.9960	 0.3520
L8	 0.9920	 0.3450
LA	 0.9150	 0.3640
LB	 0.8940	 0.3380
LC	 0.8930	 0.3360
LD	 0.8840	 0.2910
LE	 0.8750	 0.2820
LF	 0.8780	 0.3160
LG	 0.8490	 0.2960
LH	 0.8700	 0.3270
LI	 0.8840	 0.3280
LJ	 0.8620	 0.2790
LL	 0.8860	 0.3170
LM	 0.8860	 0.3100
LN	 0.9230	 0.3540
LO	 0.8880	 0.3320
LP	 0.8810	 0.3320
LQ	 0.8920	 0.3490
LR	 0.8790	 0.2960
LS	 0.9130	 0.3500
LT	 0.9170	 0.3460
LU	 0.8960	 0.2820
LV	 0.8820	 0.3510
LW	 0.8140	 0.2150
LX	 0.9070	 0.3330
LY	 0.9140	 0.3160
LZ	 0.9140	 0.3210
La	 0.9170	 0.3530
Lb	 0.8490	 0.2750
Lc	 0.8730	 0.3220
Ld	 0.9050	 0.3330
Le	 0.8880	 0.3500



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Chain	Atom inclusion	Q-score
Lf	 0.9170	 0.3650
Lg	 0.9240	 0.3480
Lh	 0.8860	 0.3080
Li	 0.8760	 0.3150
Lj	 0.9480	 0.3490
Lk	 0.9010	 0.2920
Ll	 0.9030	 0.3170
Lm	 0.8990	 0.3480
Ln	 0.9230	 0.2810
Lo	 0.8920	 0.3410
Lp	 0.9100	 0.3360
Lr	 0.9090	 0.3410
Ls	 0.5250	 0.0480
Lt	 0.4110	 0.0230
Pt	 0.9520	 0.2660
S2	 0.9830	 0.2870
SA	 0.8740	 0.2910
SB	 0.8600	 0.2960
SC	 0.8750	 0.2940
SD	 0.8760	 0.2390
SE	 0.8780	 0.2050
SF	 0.8320	 0.2320
SG	 0.8670	 0.1770
SH	 0.8250	 0.2380
SI	 0.8520	 0.2450
SJ	 0.8240	 0.1990
SK	 0.8670	 0.1880
SL	 0.8450	 0.2660
SM	 0.6690	 0.0910
SN	 0.8590	 0.3120
SO	 0.8500	 0.3030
SP	 0.8390	 0.2160
SQ	 0.8490	 0.2170
SR	 0.8390	 0.2390
SS	 0.8300	 0.2180
ST	 0.8710	 0.2240
SU	 0.8610	 0.2160
SV	 0.8750	 0.2880
SW	 0.8950	 0.3200
SX	 0.8390	 0.2580
SY	 0.8250	 0.1620
SZ	 0.7980	 0.2200

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Chain	Atom inclusion	Q-score
Sa	 0.8870	 0.3040
Sb	 0.8590	 0.2800
Sc	 0.7920	 0.2430
Sd	 0.9270	 0.2370
Se	 0.8150	 0.1870
Sf	 0.7970	 0.1640
Sg	 0.8430	 0.1890
Zt	 0.9260	 0.1430