



wwPDB EM Validation Summary Report ⓘ

Dec 15, 2025 – 04:41 PM EST

PDB ID : 9P7I / pdb_00009p7i
EMDB ID : EMD-71343
Title : In situ HHT and CHX treated human eEF1A-A/T-P-Z state 80S ribosome
Authors : Wei, Z.; Yong, X.
Deposited on : 2025-06-20
Resolution : 3.69 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:

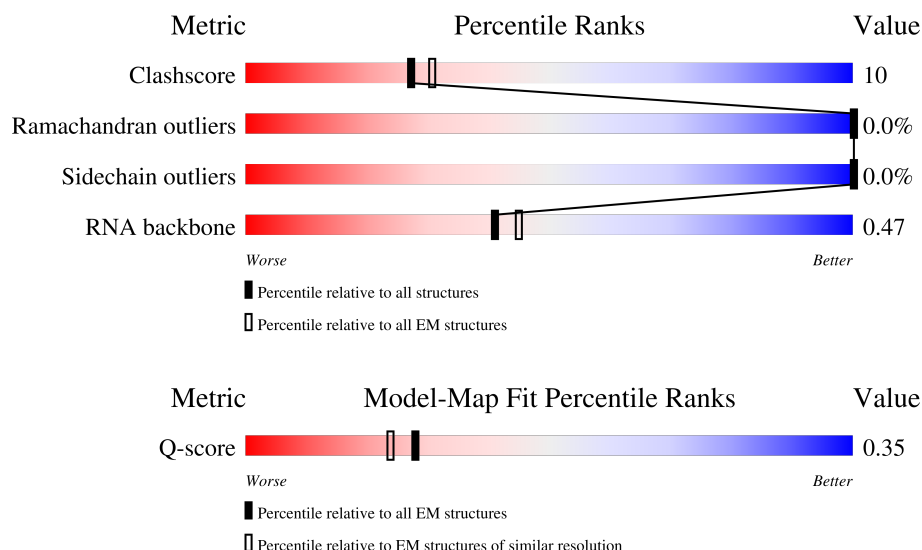
EMDB validation analysis : 0.0.1.dev129
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive 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 3.69 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.



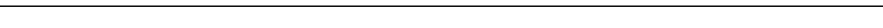
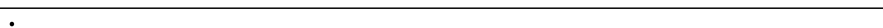
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	11284 (3.19 - 4.18)

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	CF	441	
3	AT	76	

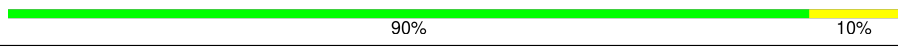
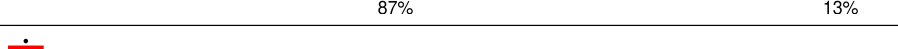
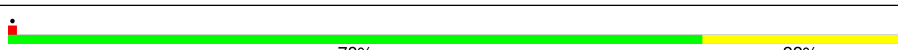
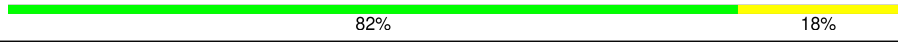
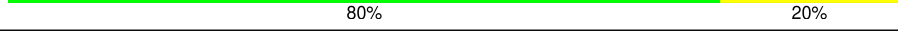
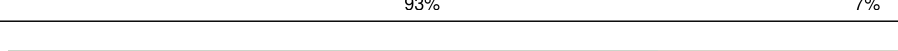
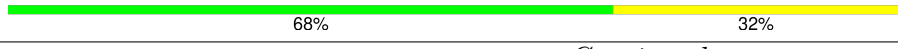
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Mol	Chain	Length	Quality of chain
4	L5	3655	
5	L7	120	
6	L8	156	
7	LA	248	
8	LB	402	
9	LC	368	
10	LD	293	
11	LE	250	
12	LF	225	
13	LG	241	
14	LH	190	
15	LI	213	
16	LJ	176	
17	LL	210	
18	LM	139	
19	LN	203	
20	LO	201	
21	LP	153	
22	LQ	187	
23	LR	187	
24	LS	175	
25	LT	159	
26	LU	101	
27	LV	131	
28	LW	124	

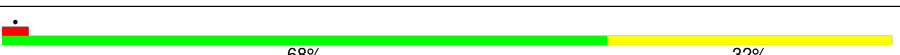
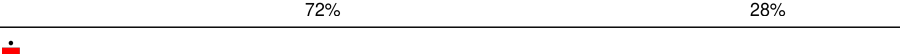
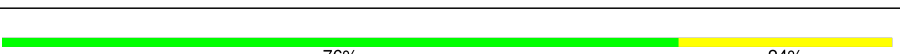
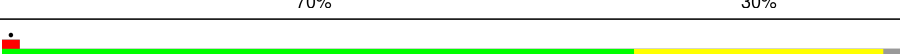
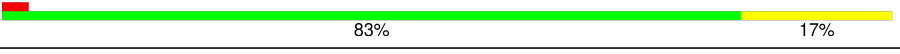
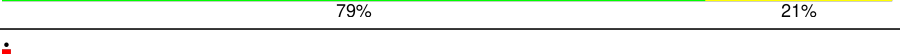
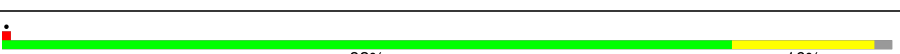
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Mol	Chain	Length	Quality of chain
29	LX	120	
30	LY	134	
31	LZ	135	
32	La	147	
33	Lb	121	
34	Lc	98	
35	Ld	107	
36	Le	128	
37	Lf	109	
38	Lg	114	
39	Lh	122	
40	Li	102	
41	Lj	86	
42	Lk	69	
43	Ll	50	
44	Lm	52	
45	Ln	24	
46	Lo	105	
47	Lp	91	
48	Lr	125	
49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

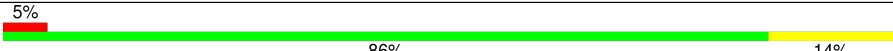
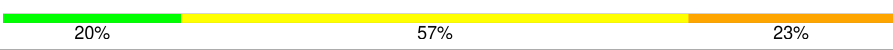
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Mol	Chain	Length	Quality of chain
54	SM	122	 7%73%27%
55	SP	121	 79%21%
56	SQ	144	 72%28%
57	SR	135	 82%17%
58	SS	145	 68%32%
59	ST	143	 70%30%
60	SU	104	 76%24%
61	SZ	75	 72%28%
62	Sc	64	 80%20%
63	Sd	55	 69%31%
64	Sf	67	 7%69%31%
65	Sg	313	 72%28%
66	SA	221	 74%26%
67	SB	214	 76%24%
68	SC	222	 73%27%
69	SE	262	 72%28%
70	SG	237	 70%30%
71	SH	189	 71%28%
72	SI	206	 73%27%
73	SJ	185	 83%17%
74	SL	153	 79%21%
75	SN	150	 88%12%
76	SO	140	 82%16%
77	SV	83	78%22%
78	SW	129	83%17%

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Mol	Chain	Length	Quality of chain
79	SX	141	 79%21%
80	SY	131	 5%69%31%
81	Sa	102	 85%15%
82	Sb	83	 76%24%
83	Se	58	 5%86%14%
84	S2	1740	 43%45%12%
85	Zt	75	 20%57%23%
86	CI	31	 10%68%32%

2 Entry composition

There are 92 unique types of molecules in this entry. The entry contains 225029 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 protein called Elongation factor 1-alpha 1.

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

- Molecule 3 is a RNA chain called A/T site tRNA [Homo sapiens].

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

- Molecule 4 is a RNA chain called 28S rRNA [Homo sapiens].

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

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

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

- Molecule 6 is a RNA chain called 5.8S rRNA [Homo sapiens].

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

- Molecule 7 is a protein called 60S ribosomal protein L8.

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

- Molecule 8 is a protein called Large ribosomal subunit protein uL3.

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

- Molecule 9 is a protein called 60S ribosomal protein L4.

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

- Molecule 10 is a protein called Large ribosomal subunit protein uL18.

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

- Molecule 11 is a protein called Large ribosomal subunit protein eL6.

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

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

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

- Molecule 13 is a protein called 60S ribosomal protein L7a.

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

- Molecule 14 is a protein called 60S ribosomal protein L9.

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

- Molecule 15 is a protein called Ribosomal protein uL16-like.

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

- Molecule 16 is a protein called 60S ribosomal protein L11.

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

- Molecule 17 is a protein called Large ribosomal subunit protein eL13.

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

- Molecule 18 is a protein called 60S ribosomal protein L14.

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

- Molecule 19 is a protein called 60S ribosomal protein L15.

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

- Molecule 20 is a protein called 60S ribosomal protein L13a.

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

- Molecule 21 is a protein called 60S ribosomal protein L17.

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

- Molecule 22 is a protein called 60S ribosomal protein L18.

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

- Molecule 23 is a protein called 60S ribosomal protein L19.

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

- Molecule 24 is a protein called 60S ribosomal protein L18a.

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

- Molecule 25 is a protein called 60S ribosomal protein L21.

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

- Molecule 26 is a protein called Heparin-binding protein HBp15.

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

- Molecule 27 is a protein called 60S ribosomal protein L23.

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

- Molecule 28 is a protein called Ribosomal protein L24.

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

- Molecule 29 is a protein called 60S ribosomal protein L23a.

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

- Molecule 30 is a protein called 60S ribosomal protein L26.

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

- Molecule 31 is a protein called 60S ribosomal protein L27.

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

- Molecule 32 is a protein called 60S ribosomal protein L27a.

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

- Molecule 33 is a protein called Large ribosomal subunit protein eL29.

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

- Molecule 34 is a protein called 60S ribosomal protein L30.

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

- Molecule 35 is a protein called 60S ribosomal protein L31.

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

- Molecule 36 is a protein called 60S ribosomal protein L32.

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

- Molecule 37 is a protein called 60S ribosomal protein L35a.

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

- Molecule 38 is a protein called 60S ribosomal protein L34.

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

- Molecule 39 is a protein called 60S ribosomal protein L35.

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

- Molecule 40 is a protein called 60S ribosomal protein L36.

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

- Molecule 41 is a protein called 60S ribosomal protein L37.

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

- Molecule 42 is a protein called 60S ribosomal protein L38.

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

- Molecule 43 is a protein called 60S ribosomal protein L39.

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

- Molecule 44 is a protein called Large ribosomal subunit protein eL40.

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

- Molecule 45 is a protein called 60S ribosomal protein L41.

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

- Molecule 46 is a protein called 60S ribosomal protein L36a.

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

- Molecule 47 is a protein called 60S ribosomal protein L37a.

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

- Molecule 48 is a protein called 60S ribosomal protein L28.

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

- Molecule 49 is a protein called 60S acidic ribosomal protein P0.

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

- Molecule 50 is a protein called Large ribosomal subunit protein uL11.

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

- Molecule 51 is a protein called Small ribosomal subunit protein uS3.

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

- Molecule 52 is a protein called 40S ribosomal protein S5.

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

- Molecule 53 is a protein called 40S ribosomal protein S10.

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

- Molecule 54 is a protein called Small ribosomal subunit protein eS12.

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

- Molecule 55 is a protein called Small ribosomal subunit protein uS19.

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

- Molecule 56 is a protein called Small ribosomal subunit protein uS9.

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

- Molecule 57 is a protein called Small ribosomal subunit protein eS17.

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

- Molecule 58 is a protein called 40S ribosomal protein S18.

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

- Molecule 59 is a protein called 40S ribosomal protein S19.

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

- Molecule 60 is a protein called 40S ribosomal protein S20.

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

- Molecule 61 is a protein called Small ribosomal subunit protein eS25.

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

- Molecule 62 is a protein called 40S ribosomal protein S28.

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

- Molecule 63 is a protein called 40S ribosomal protein S29.

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

- Molecule 64 is a protein called Ubiquitin-40S ribosomal protein S27a.

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

- Molecule 65 is a protein called Receptor of activated protein C kinase 1.

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

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

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

- Molecule 67 is a protein called 40S ribosomal protein S3a.

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

- Molecule 68 is a protein called 40S ribosomal protein S2.

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

- Molecule 69 is a protein called Small ribosomal subunit protein eS4, X isoform.

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

- Molecule 70 is a protein called 40S ribosomal protein S6.

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

- Molecule 71 is a protein called Small ribosomal subunit protein eS7.

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

- Molecule 72 is a protein called 40S ribosomal protein S8.

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

- Molecule 73 is a protein called 40S ribosomal protein S9.

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

- Molecule 74 is a protein called 40S ribosomal protein S11.

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

- Molecule 75 is a protein called 40S ribosomal protein S13.

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

- Molecule 76 is a protein called Small ribosomal subunit protein uS11.

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

- Molecule 77 is a protein called Small ribosomal subunit protein eS21.

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

- Molecule 78 is a protein called 40S ribosomal protein S15a.

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

- Molecule 79 is a protein called 40S ribosomal protein S23.

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

- Molecule 80 is a protein called 40S ribosomal protein S24.

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

- Molecule 81 is a protein called 40S ribosomal protein S26.

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

- Molecule 82 is a protein called Small ribosomal subunit protein eS27.

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

- Molecule 83 is a protein called Small ribosomal subunit protein eS30.

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

- Molecule 84 is a RNA chain called 18S rRNA [Homo sapiens].

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

- Molecule 85 is a RNA chain called Z site tRNA [Homo sapiens].

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

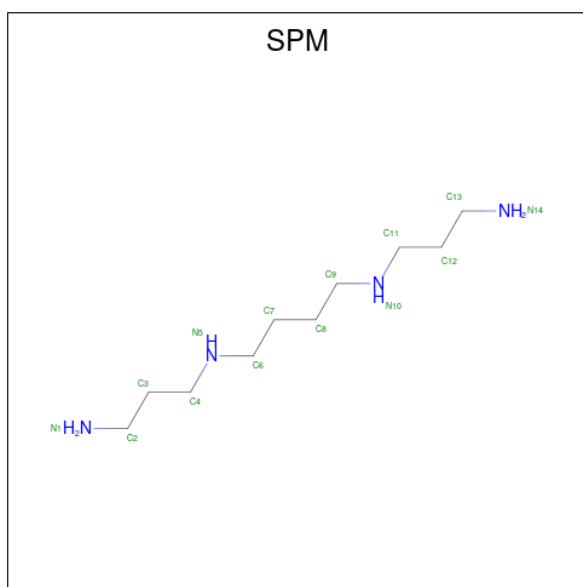
- Molecule 86 is a protein called Transcription factor BTF3.

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

- Molecule 87 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

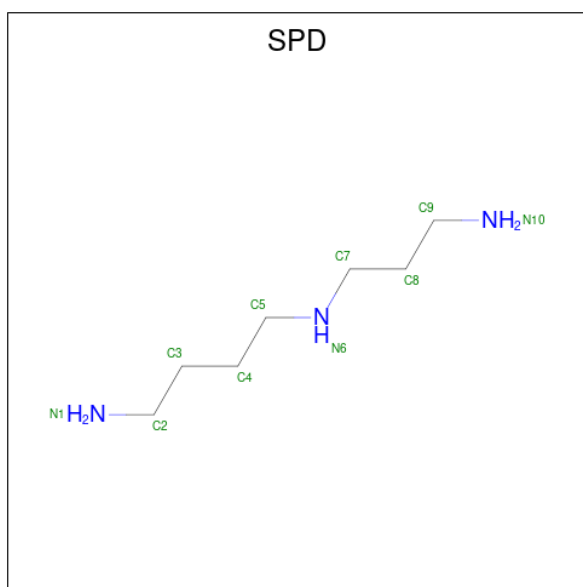
Mol	Chain	Residues	Atoms		AltConf
87	L5	179	Total	Mg	0
			179	179	
87	L7	3	Total	Mg	0
			3	3	
87	L8	4	Total	Mg	0
			4	4	
87	LA	1	Total	Mg	0
			1	1	
87	LP	1	Total	Mg	0
			1	1	
87	LV	1	Total	Mg	0
			1	1	
87	Le	1	Total	Mg	0
			1	1	
87	Lj	1	Total	Mg	0
			1	1	
87	SS	1	Total	Mg	0
			1	1	
87	S2	27	Total	Mg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

- Molecule 88 is SPERMINE (CCD ID: SPM) (formula: C₁₀H₂₆N₄) (labeled as "Ligand of Interest" by depositor).



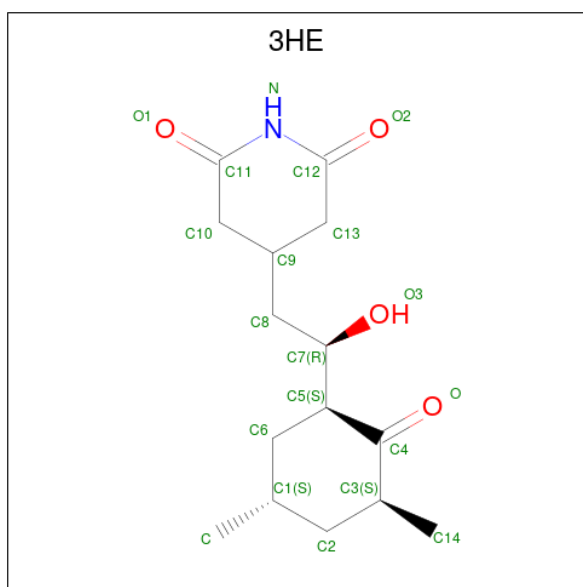
Mol	Chain	Residues	Atoms			AltConf
88	L5	1	Total	C	N	0
			14	10	4	
88	L5	1	Total	C	N	0
			14	10	4	
88	L5	1	Total	C	N	0
			14	10	4	
88	L5	1	Total	C	N	0
			14	10	4	
88	L5	1	Total	C	N	0
			14	10	4	
88	L5	1	Total	C	N	0
			14	10	4	

- Molecule 89 is SPERMIDINE (CCD ID: SPD) (formula: C₇H₁₉N₃) (labeled as "Ligand of Interest" by depositor).



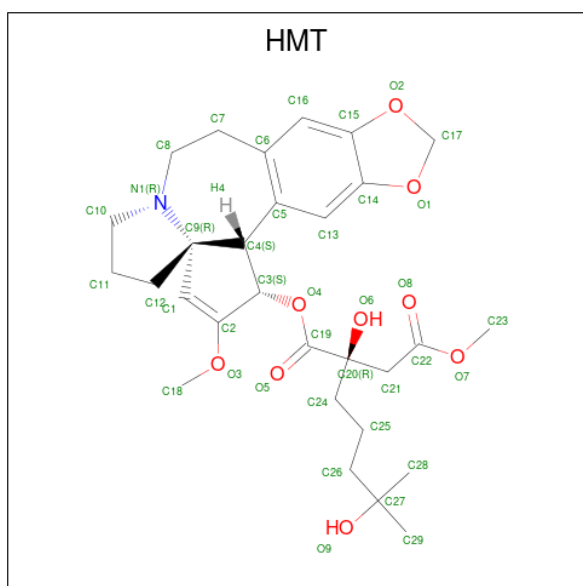
Mol	Chain	Residues	Atoms			AltConf
89	L5	1	Total	C	N	0
			10	7	3	
89	L5	1	Total	C	N	0
			10	7	3	
89	L5	1	Total	C	N	0
			10	7	3	
89	L5	1	Total	C	N	0
			10	7	3	
89	L5	1	Total	C	N	0
			10	7	3	
89	L5	1	Total	C	N	0
			10	7	3	
89	L5	1	Total	C	N	0
			10	7	3	
89	LN	1	Total	C	N	0
			10	7	3	

- Molecule 90 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
90	L5	1	Total	C	N	O	0
			20	15	1	4	

- Molecule 91 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
91	L5	1	Total	C	N	O	0
			39	29	1	9	

- Molecule 92 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by

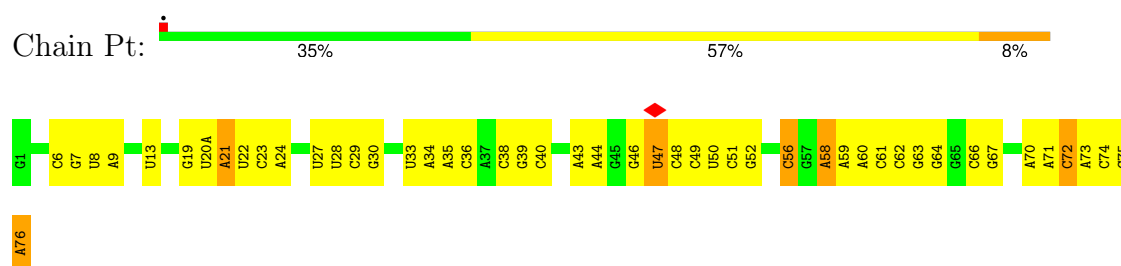
depositor).

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

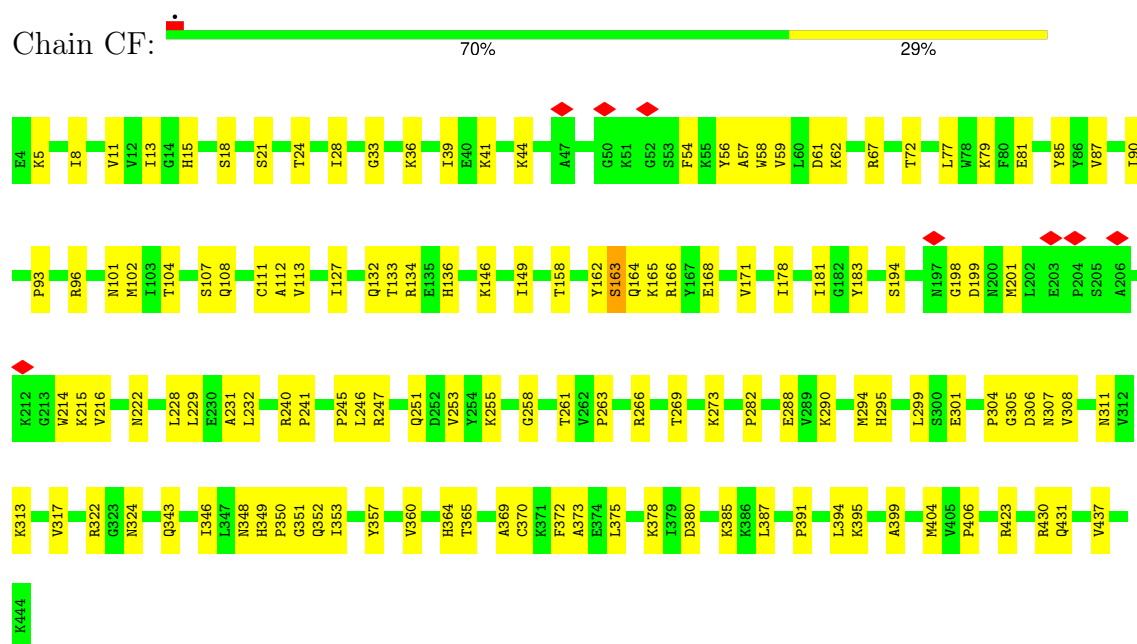
3 Residue-property plots

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.

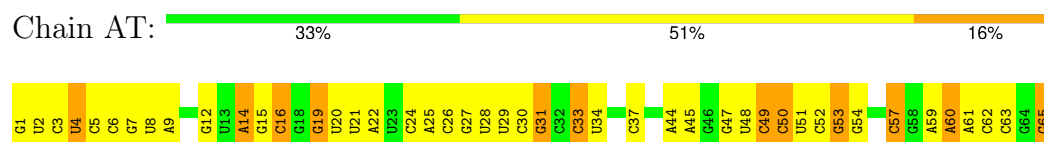
- Molecule 1: P site tRNA [Homo sapiens]

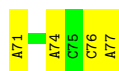


- Molecule 2: Elongation factor 1-alpha 1



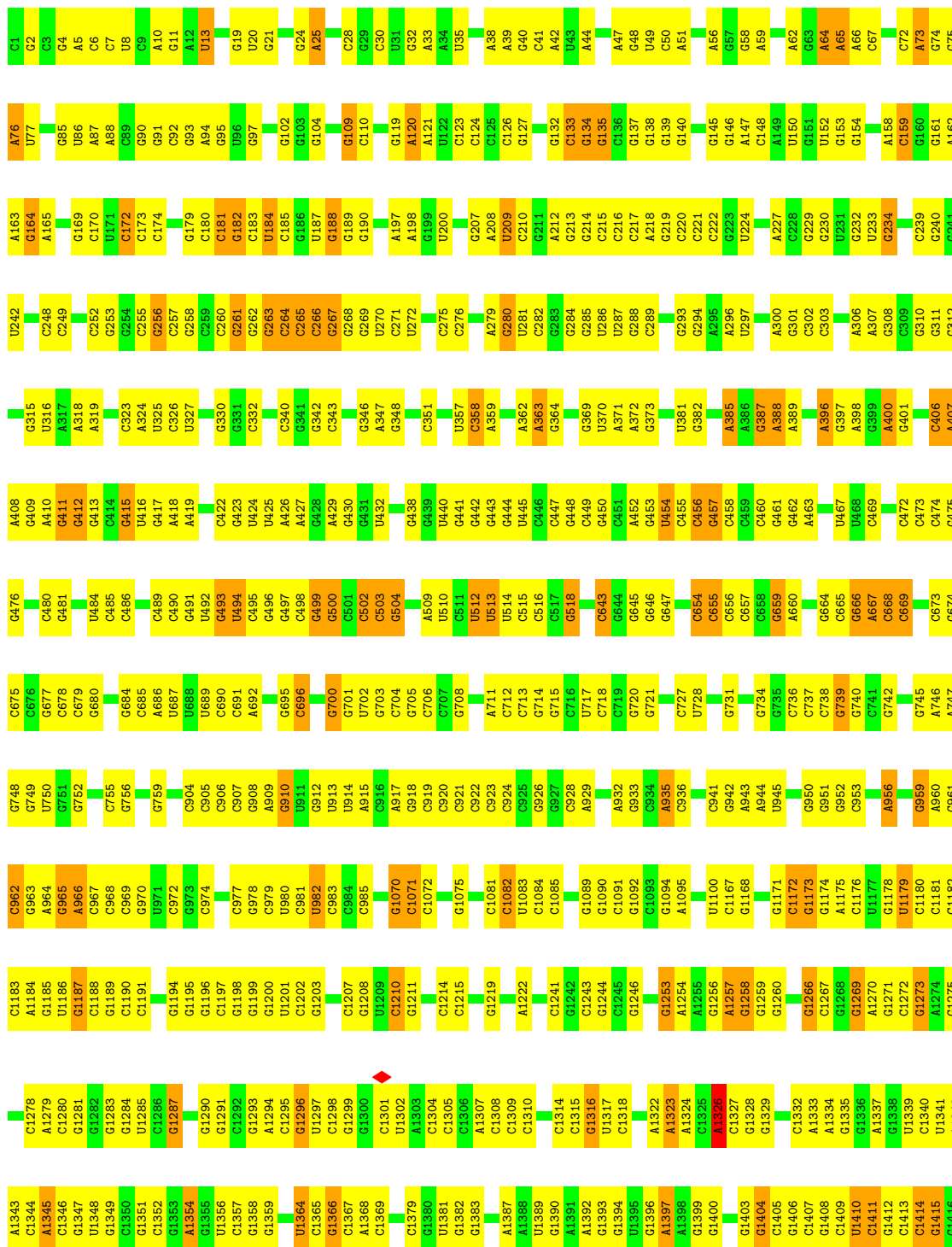
- Molecule 3: A/T site tRNA [Homo sapiens]





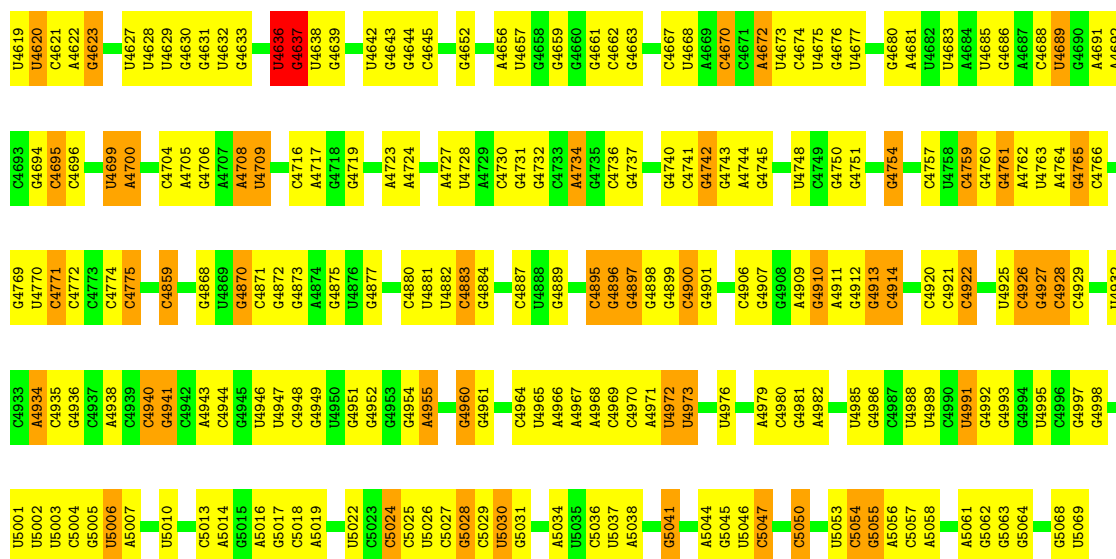
● Molecule 4: 28S rRNA [Homo sapiens]

Chain L5: 42% 47% 10%



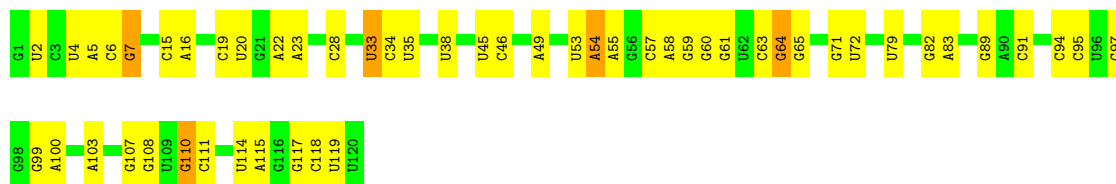
G2620	A2537	G2457	A2282	G2076	G1988	C1914	G1836	G1759	C1676	C1589	U1513	C1417
A2621	U2538	G2458	G2283	C2077	A1991	C1915	A1837	G1760	U1677	C1590	U1514	C1418
G2622	C2539	G2459	G2284	G2078	A1992	G1916	C1837	C1762	C1678	U1591	U1515	G1419
A2623	G2540	A2460	C2289	U2080	C1993	A1917	G1842	C1763	A1679	U1590	G1516	A1420
G2624	G2541	G2461	G2290	C2081	C1994	U1918	A1843	C1764	G1680	C1594	G1517	G1425
C2627	G2542	C2462	G2291	G2082	G1995	G1919	G1844	U1765	U1683	G1595	A1518	G1426
U2631	A2543	G2463	G2292	C2083	C1996	C1920	U1845	A1766	A1684	U1596	C1519	C1431
G2632	U2544	C2464	U2298	C2084	A1998	C1921	C1847	A1767	U1687	G1597	G1522	G1432
C2633	G2545	G2465	G2299	C2087	A1999	G1922	C1848	U1768	G1688	A1601	A1523	U1437
U2634	G2546	C2466	A2300	U2090	G2001	G1925	U1849	G1769	U1689	G1612	A1524	C1438
G2635	G2547	G2471	G2301	C2091	A2002	C1926	A1850	A1770	G1691	A1613	U1525	C1439
U2636	U2554	U2386	C2302	G2092	A2003	U1927	G1851	U1771	C1697	C1614	G1532	U1437
G2637	G2555	G2387	G2303	C2093	U2004	C1931	U1852	U1772	G1697	C1615	C1442	C1442
G2638	G2556	G2388	G2304	A2093	U2005	C1932	G1853	U1779	C1698	A1533	A1443	A1443
U2639	G2557	G2389	G2305	G2094	G2006	G1933	C1856	A1780	G1699	U1534	G1444	G1444
G2640	C2558	G2390	G2306	A2095	U2007	A1934	C1857	U1781	G1700	G1616	C1535	U1445
A2641	G2559	G2391	G2307	G2096	U2008	C1940	A1858	U1782	A1701	G1618	U1536	U1446
G2642	C2560	G2479	G2308	U2097	A2009	U1940	C1859	U1783	C1702	A1621	U1537	C1447
U2643	G2561	G2480	G2311	G2098	A2010	A1941	U1860	C1785	C1703	U1622	U1538	G1457
G2644	G2562	G2481	U2312	G2099	C2011	A1942	U1861	A1786	G1704	A1623	G1539	G1458
A2645	G2563	G2482	A2313	A2100	A1943	A1943	U1862	A1787	G1705	G1624	C1540	C1459
G2646	G2564	G2483	G2314	G2101	A2012	G1948	U1863	U1788	A1706	G1625	G1541	C1460
U2647	G2565	G2484	C2315	G2102	A2017	U1949	A1867	C1789	G1716	G1626	C1461	C1461
G2648	G2566	A2485	G2316	G2103	C2018	U1950	A1868	C1790	C1717	G1627	C1546	A1462
G2649	G2567	G2486	G2317	A2105	C2019	U1951	A1869	U1792	C1718	G1628	U1547	C1463
G2650	C2568	G2487	G2318	G2106	U2020	G1951	C1870	U1793	A1719	C1629	G1548	C1464
U2651	G2569	G2488	G2319	G2107	C2021	G1952	A1871	A1795	G1721	A1631	C1549	C1464
C2653	U2570	C2489	G2320	G2108	A2022	U1953	G1872	C1800	C1722	G1633	U1552	C1467
G2654	G2571	G2490	G2321	G2109	A2025	A1956	C1875	U1801	U1725	A1634	A1553	C1468
C2655	A2572	G2491	G2322	G2110	U2026	U1957	U1876	A1802	U1726	C1637	A1554	C1469
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G2657	C2574	G2493	G2324	G2250	A2029	G1961	C1878	A1804	U1728	U1639	U1558	U1473
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G2659	G2576	G2495	G2326	G2252	G2034	G1965	C1881	G1806	U1731	C1645	G1562	C1478
C2661	G2577	G2496	G2327	G2253	G2035	U1969	U1882	C1807	C1732	A1646	A1563	C1479
U2662	U2578	G2497	G2328	G2254	G2039	G1970	G1883	G1810	G1733	U1647	C1564	C1480
G2663	G2579	G2498	G2329	G2255	A2040	C1971	G1884	G1811	G1734	C1655	A1565	G1481
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U2665	C2581	G2500	G2331	G2257	G2046	G1973	A1886	U1813	C1740	C1657	U1567	C1483
G2666	G2582	G2501	G2332	G2258	G2047	U1974	U1889	C1814	G1741	U1656	C1568	G1490
C2667	A2583	G2502	G2333	G2259	U2048	G1975	G1890	G1815	A1742	U1657	U1569	A1491
G2668	G2584	G2503	G2334	G2260	G2049	G1976	C1893	C1816	U1743	C1661	G1570	U1494
U2669	U2585	G2504	G2335	G2261	G2050	C1977	C1894	U1817	U1744	C1662	G1574	U1495
C2670	G2586	G2505	G2336	G2262	G2051	C1978	G1895	G1818	U1748	C1663	G1496	G1496
G2671	G2587	G2506	A2347	G2263	G2052	A1979	G1896	C1819	A1749	C1666	U1577	A1497
C2672	U2588	G2507	G2348	G2264	G2053	A1980	A1897	C1820	U1750	G1667	U1578	G1498
G2673	G2589	G2508	A2349	G2265	G2054	G1981	G1898	U1821	G1750	C1668	C1579	C1499
U2674	C2590	G2509	G2350	G2266	G2055	G1982	G1903	G1822	G1752	A1668	C1580	G1502
G2675	G2591	G2510	C2351	G2267	G2056	A1983	U1906	G1823	G1753	A1669	G1581	A1503
A2676	G2592	G2511	G2352	G2268	G2057	A1984	A1907	G1824	U1756	G1670	U1582	G1504
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G2678	C2594	G2513	G2354	G2270	G2059	U1986	G1909	G1826	G1758	U1672	G1584	U1511
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C4551	C4466	A4393	A4313	G4239	G4153	G4086	U3912	U3833	U3758	C3670	A3597	G2856	G2779	G2706	
A4552	U4471	U4394	A4314	A4234	G4154	G4087	U3913	C3834	A3759	G3671	C3598	G2857	U2707	U2707	
U4553	C4472	U4395	A4315	U4235	G4155	G4088	U3914	C3835	A3760	G3672	C3599	G2858	G2708	U2708	
A4554	A4473	A4396	U4319	C4237	C4156	U4089	G3916	U3836	U3761	G3673	G3600	G2859	G2709	C2709	
U4555	A4474	A4397	C4320	G4238	G4157	G4090	A3917	U3837	U3762	G3674	C3601	G2861	C2710	C2710	
C4556	U4475	U4402	U4321	G4239	C4158	A4086	G3918	U3838	G3765	G3684	A3604	G2862	C2785	G2711	
A4557	C4476	U4403	A4322	G4240	G4159	G4087	C3919	C3841	A3766	G3685	A3605	G2863	A2786	G2715	
U4558	U4477	U4404	U4323	G4241	G4160	G4088	U3920	C3842	C3767	G3686	C3606	A2864	A2787	C2716	
A4559	A4478	G4405	A4324	U4242	G4161	G4089	U3921	C3843	U3770	G3687	U3607	G2865	U2788	U2718	
C4560	U4479	U4406	U4325	U4243	U4162	G4090	G3922	U3844	C3771	G3688	A3608	G2866	A2789	A2719	
U4561	A4488	G4407	A4326	C4243	C4163	G4091	A3923	A3845	U3772	G3689	C3609	G2867	U2790	C2720	
U4562	U4493	C4408	G4327	A4244	C4164	G4092	C3924	U3848	A3774	U3695	A3610	G2868	C2794	G2721	
G4563	G4494	G4411	U4328	G4245	A4170	G4093	U3925	U3849	A3775	C3696	A3611	U2869	C2799	G2722	
A4564	U4495	C4412	G4329	G4246	C4171	G4094	C3926	A3850	G3776	U3697	A3612	A2870	G2799	U2723	
U4565	C4496	U4413	U4330	U4247	A4172	G4095	U3927	U3851	G3777	G3698	G3615	G2875	G2800	G2724	
A4566	U4497	G4414	C4331	A4251	U4173	C4096	A3928	A3852	U3778	C3699	G3616	G2876	U2801	A2725	
U4567	U4498	U4415	U4332	G4254	C4174	G4097	U3832	U3853	C3782	C3700	G3617	G2877	C2802	G2726	
A4571	U4499	C4416	C4333	U4255	C4175	A4098	U3833	C3854	A3783	C3701	C3618	G2878	U2803	C2727	
G4575	U4500	U4417	U4334	G4256	C4176	G4099	G3934	C3855	A3784	A3702	G3619	A2879	C2804	U2728	
U4576	U4501	U4418	C4335	U4257	U4177	C4100	G3935	A3856	A3785	G3703	G3620	G2880	C2805	C2729	
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A4578	U4503	U4420	U4337	U4259	C4179	C4102	G3937	A3858	U3787	C3708	G3625	A2882	A2807	C2731	
U4579	C4504	C4421	C4338	A4261	U4180	G4103	G3938	A3859	C3788	U3709	G3626	G2883	G2808	C2732	
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A4584	U4506	U4423	U4340	U4263	C4182	G4105	A3942	A3861	G3792	A3712	C2890	G2886	A2812	G2742	
U4507	C4507	U4424	U4341	C4264	U4183	C4106	A3943	A3862	U3793	G3713	C3633	U2891	A2813	A2743	
A4508	U4508	U4425	U4342	U4265	C4184	G4107	G3944	C3863	C3794	G3714	G3634	C2892	C2814	A2745	
U4512	U4509	U4426	U4343	U4266	U4185	U4108	A3945	A3864	A3795	C3715	A3635	U2893	A2815	A2746	
A4513	U4510	U4427	U4344	A4267	U4186	C4109	G3946	A3865	U3796	A3716	C3636	A2894	U2819	U2747	
U4517	U4511	U4428	C4345	U4268	U4187	G4110	A3947	C3866	C3797	A3717	U3637	A2895	C2748	C2749	
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U4538	U4532	U4449	U4366	U4293	U4208	C4131	U4070	C3888							
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C4543	U4537	U4454	U4371	U4298	U4213	G4136	U4075	C3893							
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A4545	U4539	U4456	U4373	U4300	U4215	C4138	U4077	C3895							
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A4548	U4542	U4459	U4376		U4218	C4141	U4080	C3898							
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A4557	U4551	U4468	U4385		U4227	G4150	U4089								
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A4563	U4557	U4474	U4391		U4233	G4156	U4095								
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U4567	U4561	U4478	U4395		U4237	G4160	U4099								
A4568	U4562	U4479	U4396		U4238	G4161	U4100								
C4569	U4563	U4480	U4397		U4239	G4162	U4101								
U4570	U4564	U4481	U4398		U4240	G4163	U4102								
A4571	U4565	U4482	U4399		U4241	G4164	U4103								
G4575	U4566	U4483	U4400		U4242	G4165	U4104								
U4576	U4567	U4484	U4401		U4243	G4166	U4105								
U4577	U4568	U4485	U4402		U4244	G4167	U4106		</						



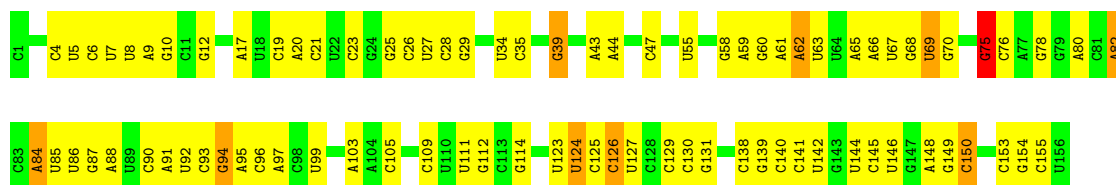
• Molecule 5: 5S rRNA [Homo sapiens]

Chain L7: 57% 39%



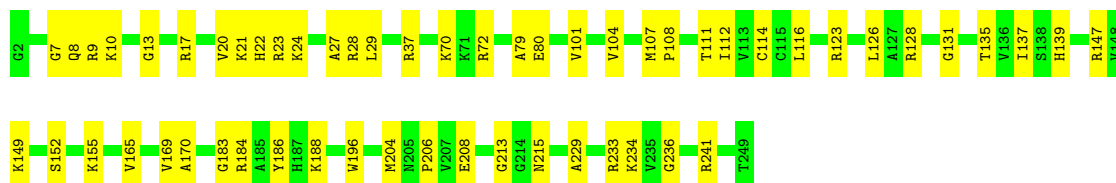
• Molecule 6: 5.8S rRNA [Homo sapiens]

Chain L8: 46% 47% 6%

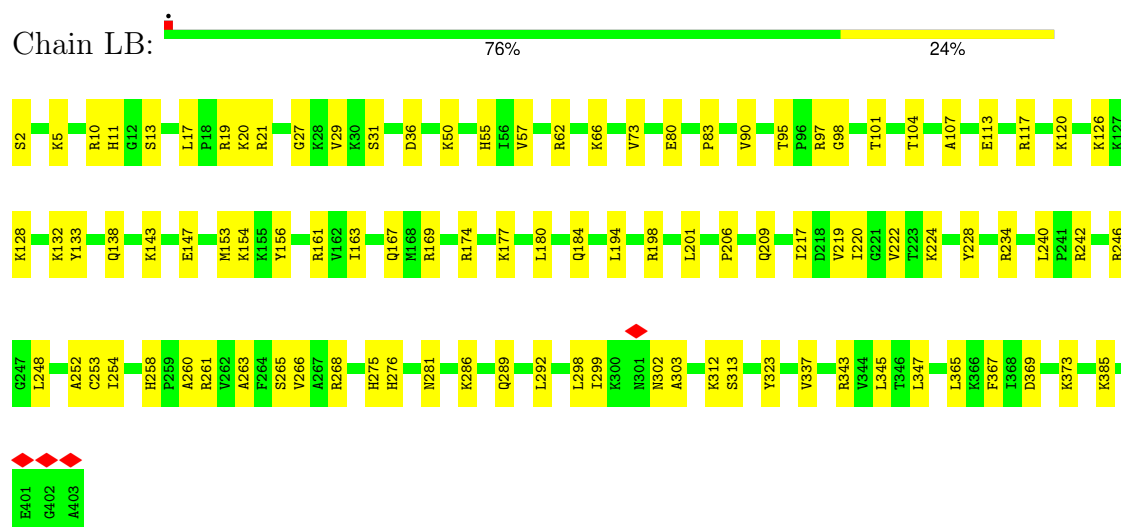


• Molecule 7: 60S ribosomal protein L8

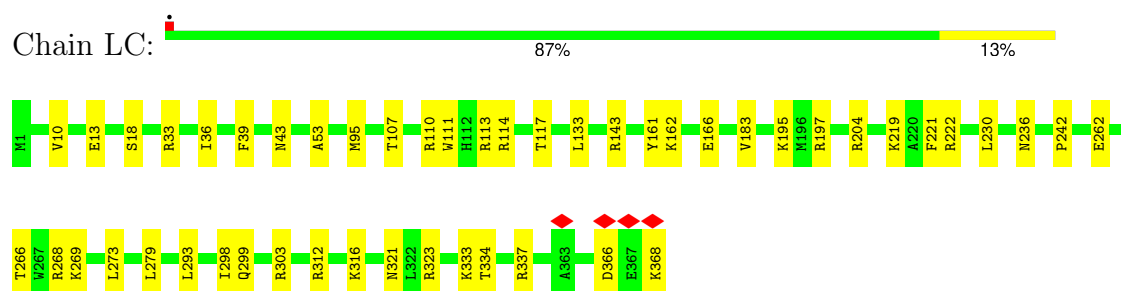
Chain LA: 77% 23%



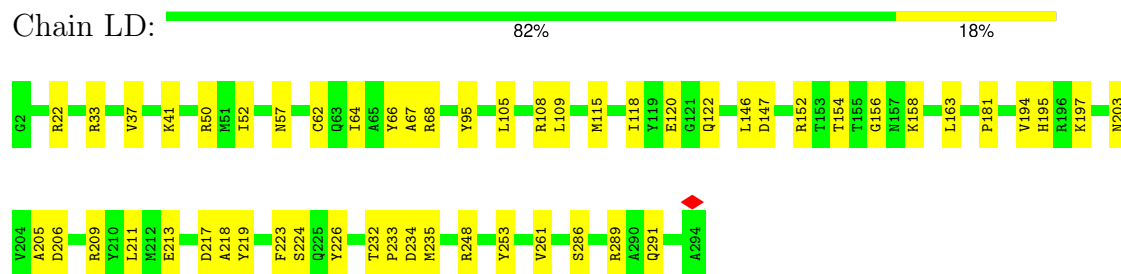
• Molecule 8: Large ribosomal subunit protein uL3



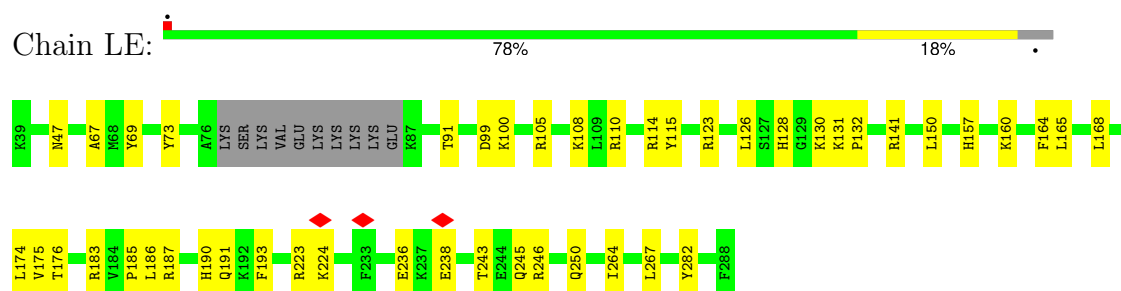
- Molecule 9: 60S ribosomal protein L4



- Molecule 10: Large ribosomal subunit protein uL18

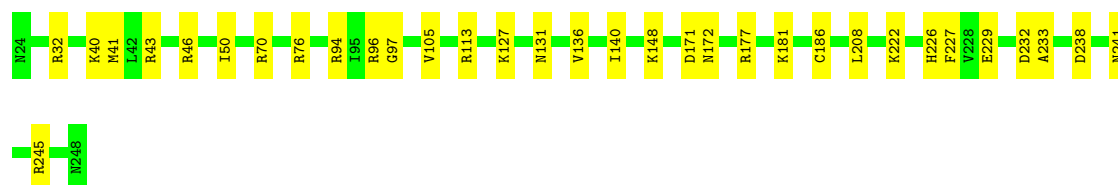


- Molecule 11: Large ribosomal subunit protein eL6



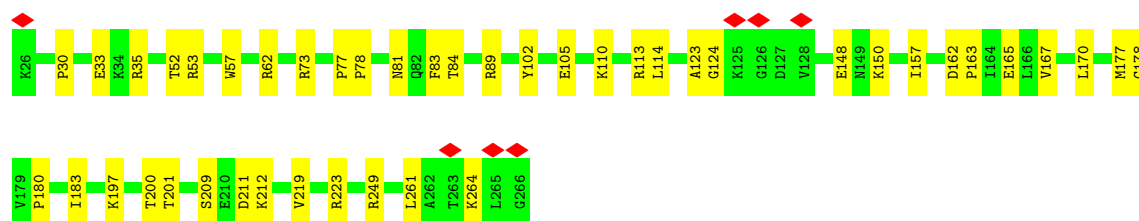
- Molecule 12: 60S ribosomal protein L7

Chain LF:  85% 15%



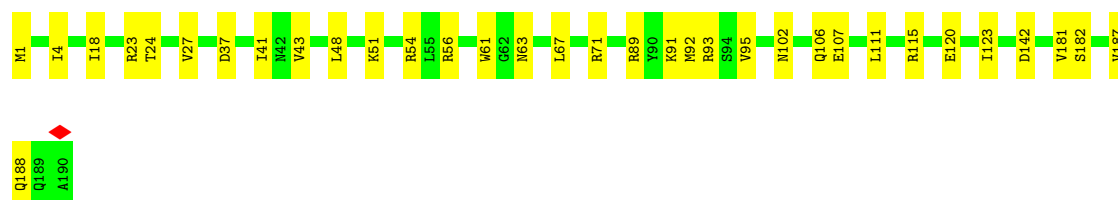
- Molecule 13: 60S ribosomal protein L7a

Chain LG:  82% 18%



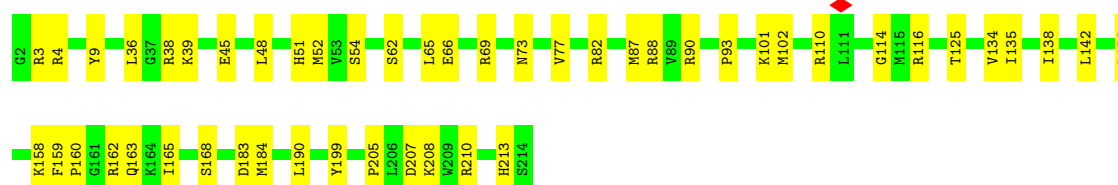
- Molecule 14: 60S ribosomal protein L9

Chain LH:  82% 18%



- Molecule 15: Ribosomal protein uL16-like

Chain LI:  77% 23%



- Molecule 16: 60S ribosomal protein L11

Chain LJ:  82% 14%



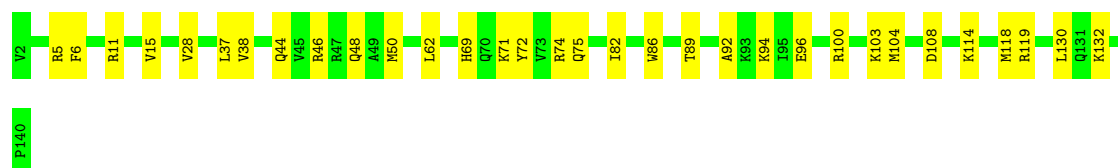
- Molecule 17: Large ribosomal subunit protein eL13

Chain LL:  82% 18%



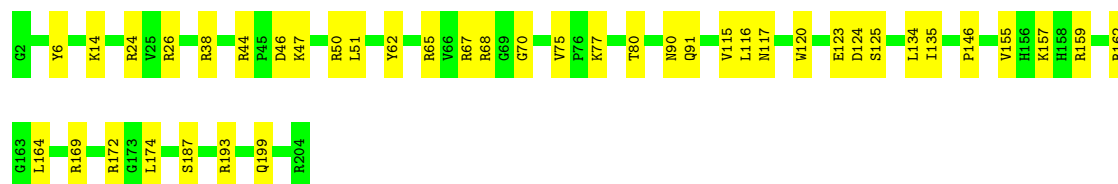
- Molecule 18: 60S ribosomal protein L14

Chain LM:  77% 23%



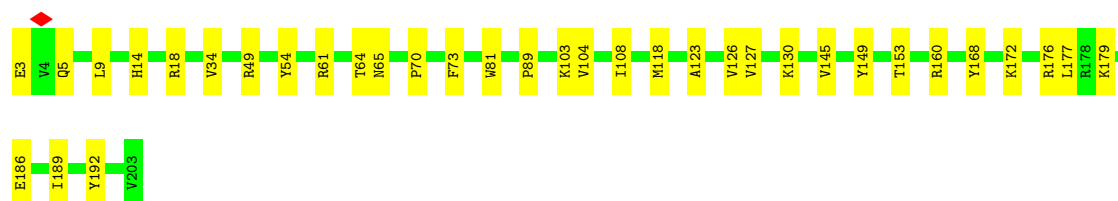
- Molecule 19: 60S ribosomal protein L15

Chain LN:  80% 20%



- Molecule 20: 60S ribosomal protein L13a

Chain LO:  83% 17%



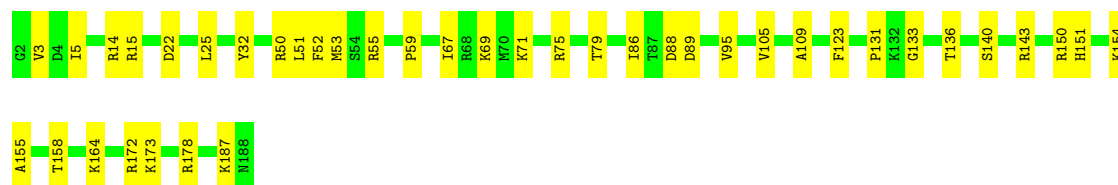
- Molecule 21: 60S ribosomal protein L17

Chain LP:  89% 11%

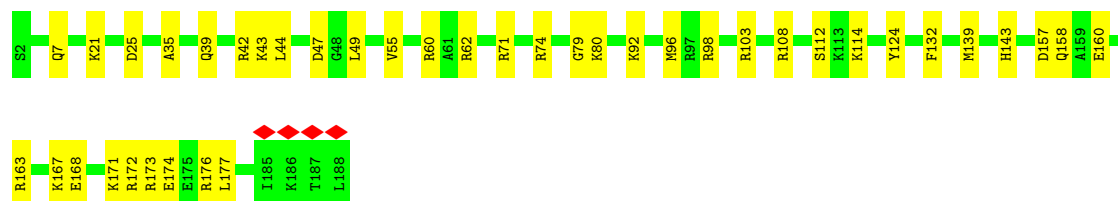
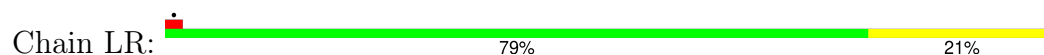


- Molecule 22: 60S ribosomal protein L18

Chain LQ:  79% 21%



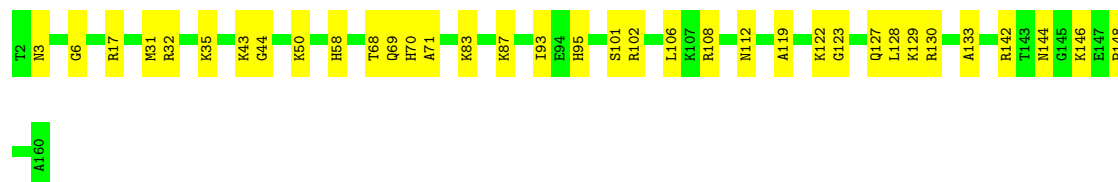
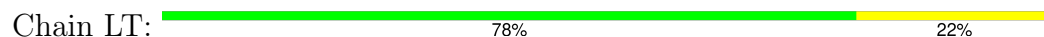
- Molecule 23: 60S ribosomal protein L19



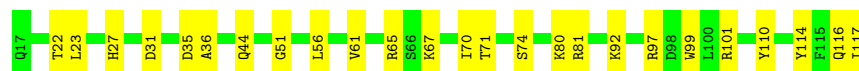
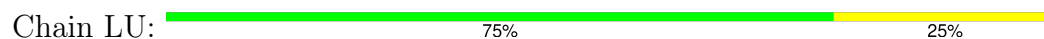
- Molecule 24: 60S ribosomal protein L18a



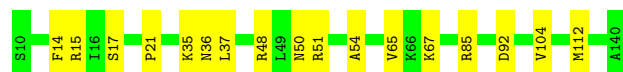
- Molecule 25: 60S ribosomal protein L21



- Molecule 26: Heparin-binding protein HBp15

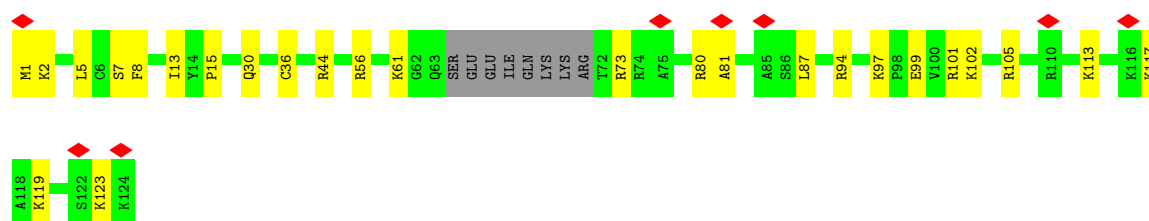


- Molecule 27: 60S ribosomal protein L23



- Molecule 28: Ribosomal protein L24

Chain LW: 



- Molecule 29: 60S ribosomal protein L23a

Chain LX: 



- Molecule 30: 60S ribosomal protein L26

Chain LY: 



- Molecule 31: 60S ribosomal protein L27

Chain LZ: 



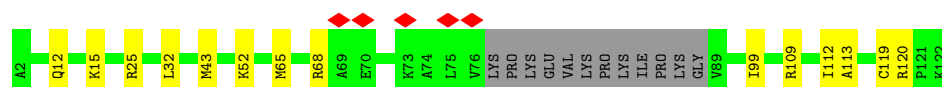
- Molecule 32: 60S ribosomal protein L27a

Chain La: 



- Molecule 33: Large ribosomal subunit protein eL29

Chain Lb: 

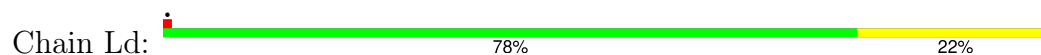


- Molecule 34: 60S ribosomal protein L30

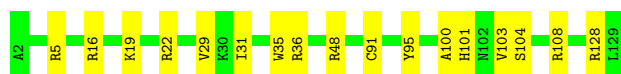
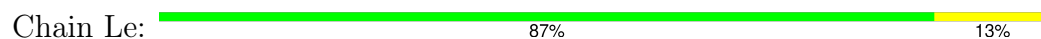
Chain Lc: 



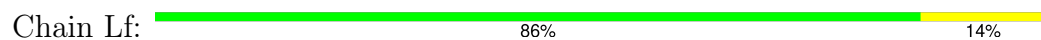
- Molecule 35: 60S ribosomal protein L31



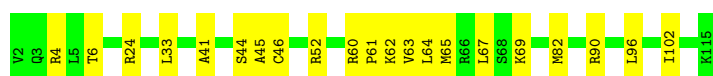
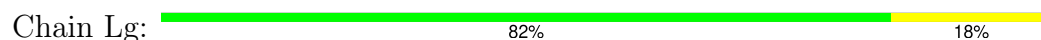
- Molecule 36: 60S ribosomal protein L32



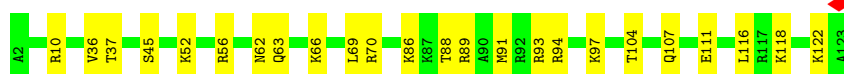
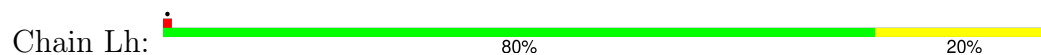
- Molecule 37: 60S ribosomal protein L35a



- Molecule 38: 60S ribosomal protein L34



- Molecule 39: 60S ribosomal protein L35



- Molecule 40: 60S ribosomal protein L36

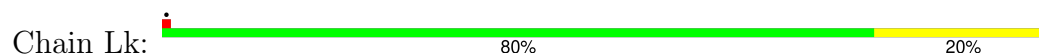


- Molecule 41: 60S ribosomal protein L37





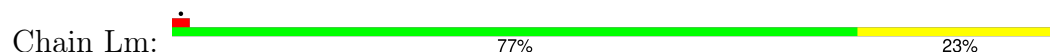
- Molecule 42: 60S ribosomal protein L38



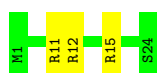
- Molecule 43: 60S ribosomal protein L39



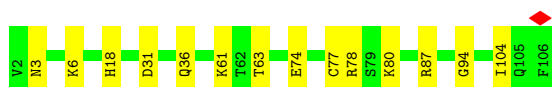
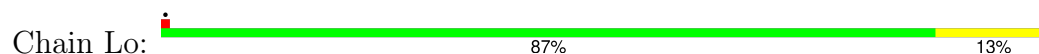
- Molecule 44: Large ribosomal subunit protein eL40



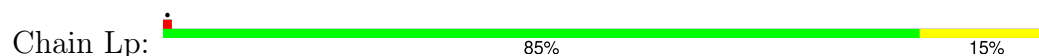
- Molecule 45: 60S ribosomal protein L41



- Molecule 46: 60S ribosomal protein L36a



- Molecule 47: 60S ribosomal protein L37a



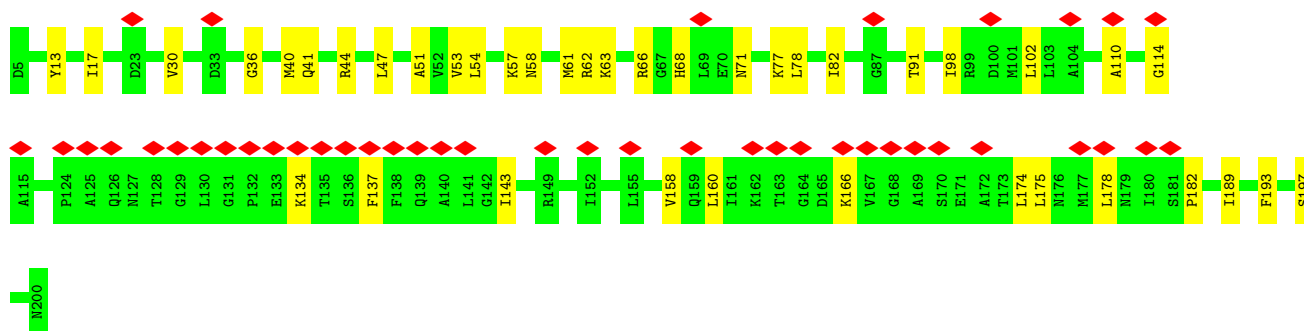
- Molecule 48: 60S ribosomal protein L28

Chain Lr:  86% 14%



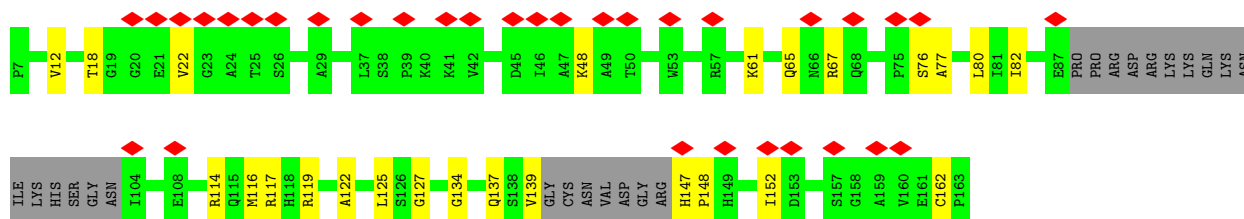
- Molecule 49: 60S acidic ribosomal protein P0

Chain Ls:  22% 80% 20%



- Molecule 50: Large ribosomal subunit protein uL11

Chain Lt:  21% 69% 16% 15%



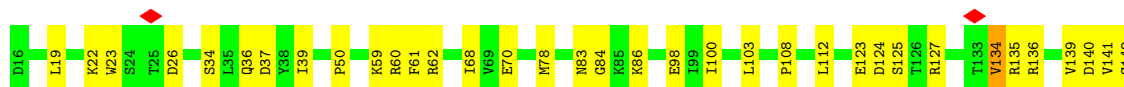
- Molecule 51: Small ribosomal subunit protein uS3

Chain SD:  81% 19%



- Molecule 52: 40S ribosomal protein S5

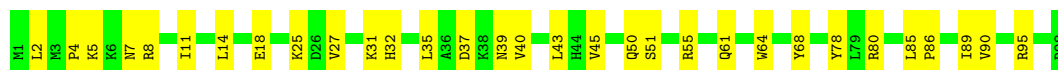
Chain SF:  79% 21%





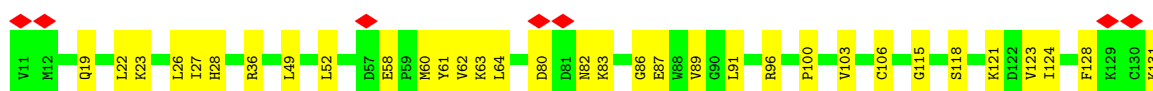
- Molecule 53: 40S ribosomal protein S10

Chain SK: 68% 32%



- Molecule 54: Small ribosomal subunit protein eS12

Chain SM: 7% 73% 27%



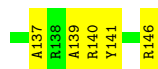
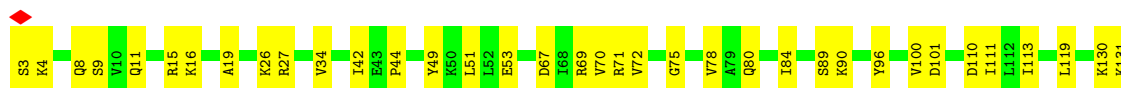
- Molecule 55: Small ribosomal subunit protein uS19

Chain SP: 79% 21%



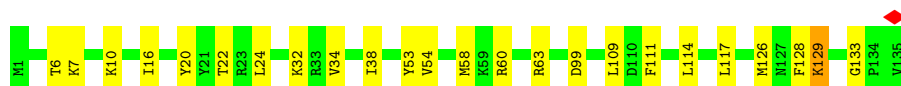
- Molecule 56: Small ribosomal subunit protein uS9

Chain SQ: 72% 28%



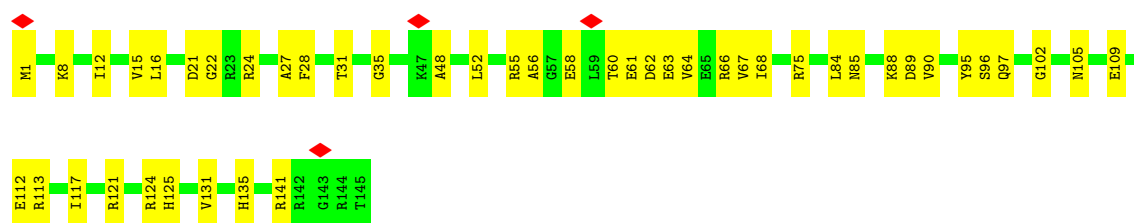
- Molecule 57: Small ribosomal subunit protein eS17

Chain SR: 82% 17%



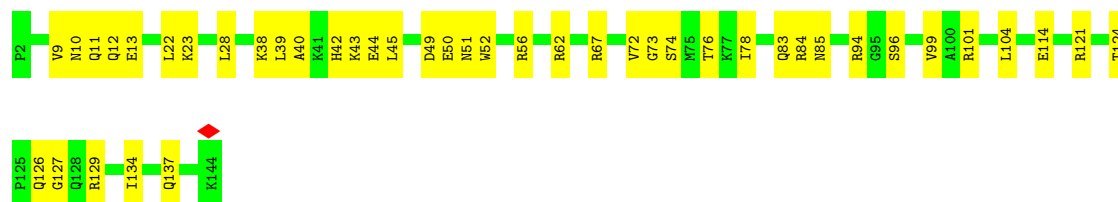
- Molecule 58: 40S ribosomal protein S18

Chain SS:  68% 32%



- Molecule 59: 40S ribosomal protein S19

Chain ST:  70% 30%



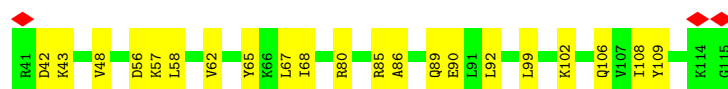
- Molecule 60: 40S ribosomal protein S20

Chain SU:  76% 24%



- Molecule 61: Small ribosomal subunit protein eS25

Chain SZ:  72% 28%



- Molecule 62: 40S ribosomal protein S28

Chain Sc:  80% 20%

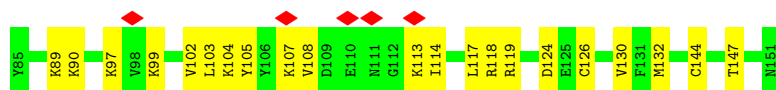


- Molecule 63: 40S ribosomal protein S29

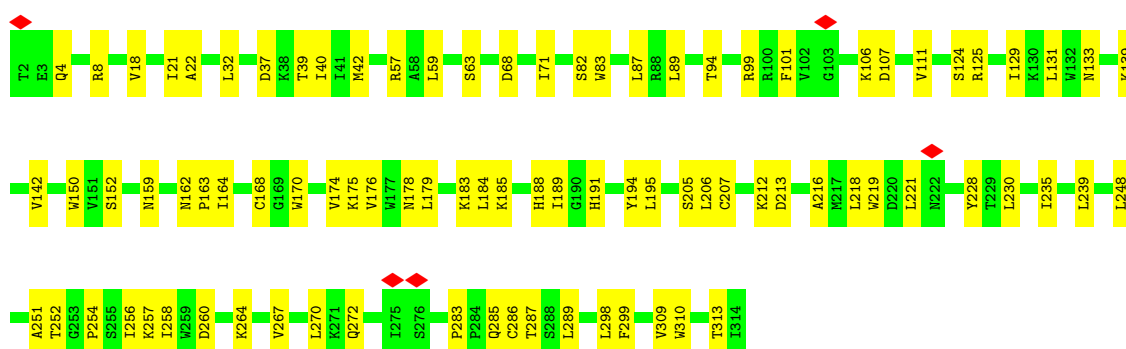
Chain Sd:  69% 31%



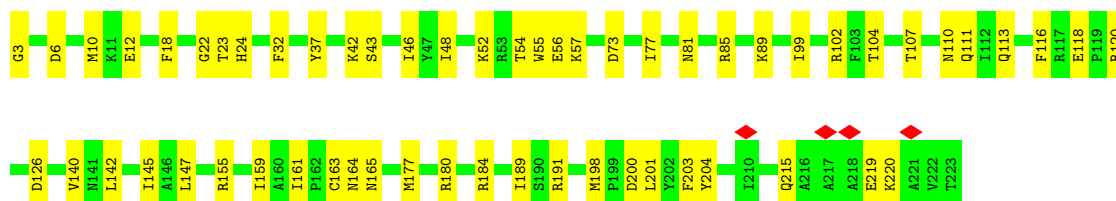
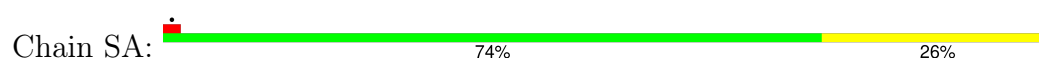
- Molecule 64: Ubiquitin-40S ribosomal protein S27a



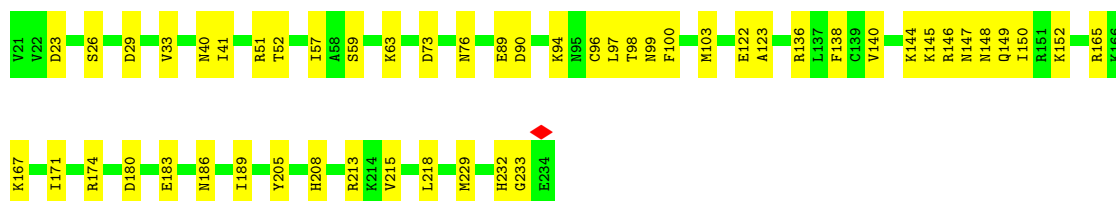
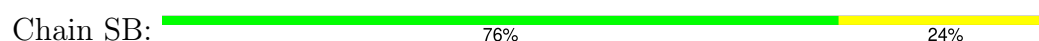
- Molecule 65: Receptor of activated protein C kinase 1



- Molecule 66: 40S ribosomal protein SA



- Molecule 67: 40S ribosomal protein S3a



- Molecule 68: 40S ribosomal protein S2





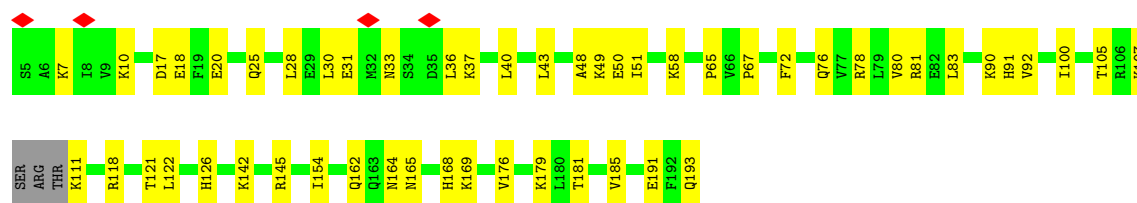
- Molecule 69: Small ribosomal subunit protein eS4, X isoform



- Molecule 70: 40S ribosomal protein S6



- Molecule 71: Small ribosomal subunit protein eS7

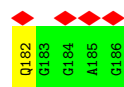
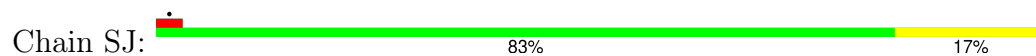


- Molecule 72: 40S ribosomal protein S8

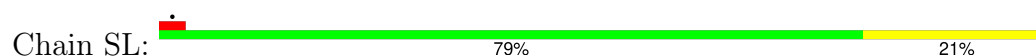




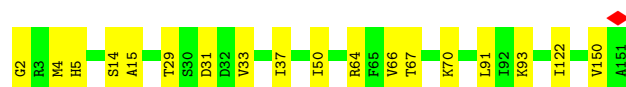
- Molecule 73: 40S ribosomal protein S9



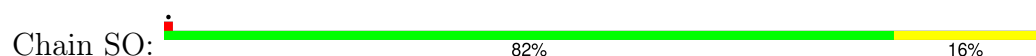
- Molecule 74: 40S ribosomal protein S11



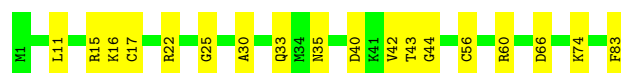
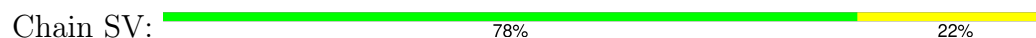
- Molecule 75: 40S ribosomal protein S13



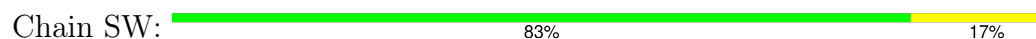
- Molecule 76: Small ribosomal subunit protein uS11



- Molecule 77: Small ribosomal subunit protein eS21



- Molecule 78: 40S ribosomal protein S15a





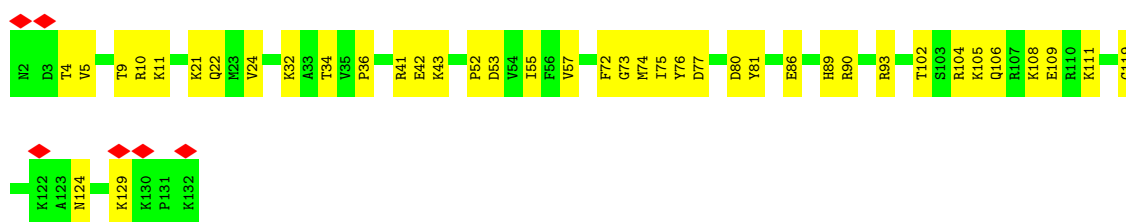
- Molecule 79: 40S ribosomal protein S23

Chain SX: 79% 21%



- Molecule 80: 40S ribosomal protein S24

Chain SY: 5% 69% 31%



- Molecule 81: 40S ribosomal protein S26

Chain Sa: 5% 85% 15%



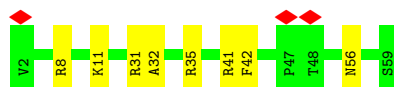
- Molecule 82: Small ribosomal subunit protein eS27

Chain Sb: 76% 24%



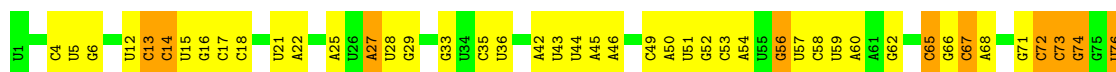
- Molecule 83: Small ribosomal subunit protein eS30

Chain Se: 5% 86% 14%

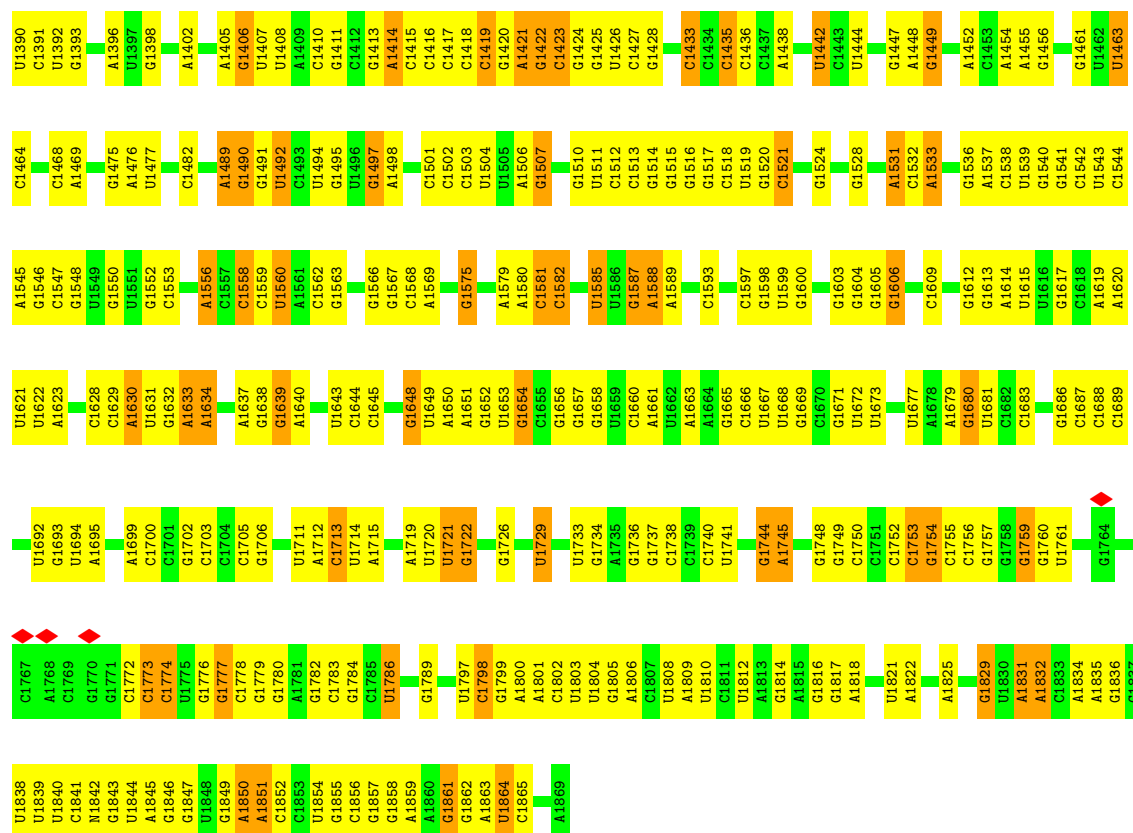


- Molecule 84: 18S rRNA [Homo sapiens]

Chain S2: 43% 45% 12%

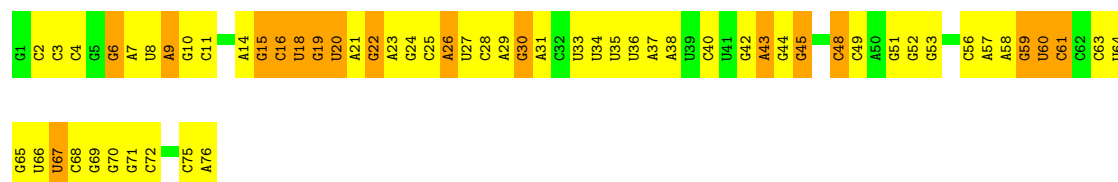


U1308	G1236	U1156	A1084	G836	U689	C621	U538	A468	G377	C304	U161	A77
G1309	U1239	U1160	C1085	A837	G692	C622	C539	A469	U378	U305	C162	C78
U1310	A1240	U1160	U1004	C838	G692	G623	U540	G470	G379	G306	G165	A84
C1311	A1241	G1165	G1086	G839	G692	G624	U541	G471	G380	G307	G166	A85
U1314	U1242	G1165	G1091	C840	G696	G625	U542	A473	C381	G308	A167	C89
G1320	U1243	A1170	G1092	G841	G696	G626	C543	A474	C382	G309	C168	G90
G1321	U1244	G1171	A1009	C842	G697	U627	G544	C475	C383	C310	U169	A91
G1322	U1245	U1172	G1010	C843	G698	A628	U545	C476	U384	C311	U170	A92
U1323	B8N1248	A1173	A1011	U844	G732	A629	G546	A477	C386	A313	A171	U93
G1324	G1174	U1174	A1012	G845	U732	U630	G547	G477	C387	G316	U172	U94
G1325	G1175	G1175	G1013	G846	C733	U631	U551		U388	C317	C173	G94
G1326	G1176	G1176	G1014	A847	C736	A634			A389	C317	A174	G95
G1327	U1177	U1177	C941	C851	C737		U556	A484	U406	A318	A175	C96
G1328	U1178	U1178	G942	G852	C738	C639	U557	A485	G407	C319	A181	C98
U1329	G1179	A944	U943	C853	C738	A640	G558	A486	U408		C182	A99
G1330	U1180	U945	U946	G855	U747	A641	G559	U487	C409	C323	A191	A102
C1331	A1182	U946	G947	G860	U748	U642	G563	U488	G420	C324	G190	A103
A1332	G1187	G948	C948	U863	U749	A643	A564	A489		C325	A191	U105
U1333	A1188	G949	G949	A864	C750	G644		C490		C326		U106
U1337	A1189	G952	G952	A865	G751	C645	C570	C492	A426	U328	C196	U197
G1338	A1190	C953	C953	U866	G752	U647	U573	A493	U427	G329	U197	C106
U1342	A1195	U954	U954	G867	G753	U648		A494	U428	G330	U198	A107
G1345	G1198	G959	G959	A870	G754	A649	A576	U495	C429	C331	G199	G108
U1346	A1199	U960	U960	G871	G755	A650		C496	C430	G332	G200	U109
U1347	A1200	G961	G961	G874	G756	U651	C579	C497	G431	G333		U110
G1348	U1201	A962	A962	A875	G757	A653	C579	C498	A432	G334	G203	G113
G1349	U1202	A963	A963	A876	G758	A654	U582	G499	A433	G335	G204	G114
U1350	G1203	A964	A964	C877	G759	A655	A583	C502	A434		G205	U115
G1351	A1204	U965	U965	C878	G760	A656	A587	G506	A435	A339	G206	U116
U1355	C1205	G970	G970	G880	G761		G587	G507	G436	C340	G207	U121
U1359	G1206	G971	G971	U888	G762		G588	G508	G437	C341	G208	U122
U1360	G1207	A972	A972	U889	G763		G589	G509	G438	C342	A209	U121
U1367	A1282	G976	G976	G891	G764		G600	A516		A343	U210	G125
U1368	C1216	C977	C977	G894	G765		G601	C517	A445	A344	G211	G126
A1369	A1217	G978	G978	G895	G766		G602	C517	A446	C350	U218	G130
A1370	C1218	C979	C979	U896	G767		G603	A520	A447	G351	U219	C136
U1371	A1220	A981	A981	U897	A669		A604	A521	A448	U352	U220	U137
U1372	G1221	G982	G982	U898	A670		A605	A522	A449	C353	U221	C140
C1373	G1222	G983	G983	G900	A671		G606		A451	U354	U222	
G1374	A1291	G985	G985	G901	A672		G607	A525	G452	A360	A224	U143
G1375	C1223	C988	C988	G902	G673		G608	A526	C453	U361	U144	G145
A1376	U1225	C989	C989	A903	G674		U609	C527	U454	C362	G291	G146
U1377	G1226	G990	G990	G907	G675		G610	A528	A455	A363	A292	U147
A1378	G1227	A991	A991	G908	G676		G611	A529	A458	U364	C293	U148
A1379	U1228	A992	A992	A908	G677		G612	U530	C459	U368	U294	A149
C1380	G1229	A993	A993	G909	U678		G613	A531		C369	C295	A150
G1381	A1150	G996	G996	G910	U681		G614	C532		G370	G298	G153
A1382	C1230	A997	A997	A913	U682		C615	A533	C463		U299	
A1383	U1232	G998	G998	A919	G683		A616	G534	A464	G373	U300	A158
C1384	G1233	A999	A999	U919	U686		G617	A535	A465	G374	A301	U159
G1385	U1234	G999	G999	A919	C687		G620	A536	A466	U368	A302	A160
	U1307	G1235	C1000	A920	U688			C537	G467	A376	C303	



• Molecule 85: Z site tRNA [Homo sapiens]

Chain Zt: 20% 57% 23%



• Molecule 86: Transcription factor BTF3

Chain CI: 10% 68% 32%



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	9091	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	0.588	Depositor
Minimum map value	-0.226	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.036	Depositor
Recommended contour level	0.0792	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: A2M, OMC, SPD, HMT, 3HE, 5MC, MA6, SEP, B8N, G7M, OMG, 6MZ, ZN, 1MA, 4AC, OMU, UY1, UR3, MG, PSU, SPM

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	CF	0.14	0/3442	0.37	0/4656
3	AT	0.11	0/1805	0.25	0/2809
4	L5	0.17	0/85098	0.28	0/132762
5	L7	0.14	0/2861	0.23	0/4459
6	L8	0.16	0/3631	0.29	0/5657
7	LA	0.16	0/1936	0.36	0/2596
8	LB	0.15	0/3306	0.35	0/4424
9	LC	0.15	0/2981	0.34	0/4002
10	LD	0.14	0/2428	0.32	0/3252
11	LE	0.15	0/1973	0.39	0/2645
12	LF	0.15	0/1905	0.30	0/2539
13	LG	0.16	0/1960	0.34	0/2637
14	LH	0.14	0/1537	0.30	0/2066
15	LI	0.14	0/1751	0.34	0/2340
16	LJ	0.14	0/1385	0.35	0/1852
17	LL	0.14	0/1732	0.30	0/2315
18	LM	0.16	0/1161	0.34	0/1554
19	LN	0.15	0/1746	0.30	0/2338
20	LO	0.15	0/1682	0.32	0/2250
21	LP	0.15	0/1268	0.35	0/1701
22	LQ	0.15	0/1537	0.32	0/2052
23	LR	0.15	0/1582	0.36	0/2091
24	LS	0.15	0/1493	0.33	0/2003
25	LT	0.14	0/1326	0.29	0/1770
26	LU	0.17	0/839	0.42	0/1126
27	LV	0.15	0/993	0.34	0/1332
28	LW	0.21	0/959	0.41	0/1270
29	LX	0.14	0/1002	0.32	0/1345
30	LY	0.14	0/1132	0.35	0/1504
31	LZ	0.15	0/1130	0.34	0/1507

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
32	La	0.14	0/1191	0.31	0/1591
33	Lb	0.14	0/889	0.35	0/1175
34	Lc	0.14	0/774	0.32	0/1038
35	Ld	0.15	0/903	0.33	0/1216
36	Le	0.15	0/1071	0.30	0/1429
37	Lf	0.15	0/895	0.30	0/1198
38	Lg	0.14	0/916	0.32	0/1220
39	Lh	0.13	0/1023	0.30	0/1351
40	Li	0.14	0/843	0.29	0/1115
41	Lj	0.14	0/720	0.32	0/952
42	Lk	0.14	0/575	0.32	0/761
43	Ll	0.13	0/454	0.26	0/599
44	Lm	0.14	0/435	0.37	0/575
45	Ln	0.14	0/231	0.32	0/294
46	Lo	0.15	0/876	0.33	0/1156
47	Lp	0.15	0/718	0.31	0/953
48	Lr	0.15	0/1017	0.34	0/1364
49	Ls	0.13	0/1519	0.34	0/2052
50	Lt	0.16	0/1009	0.50	0/1363
51	SD	0.12	0/1793	0.30	0/2414
52	SF	0.14	0/1516	0.37	1/2037 (0.0%)
53	SK	0.16	0/851	0.44	0/1147
54	SM	0.13	0/950	0.38	0/1275
55	SP	0.13	0/1003	0.37	0/1342
56	SQ	0.19	0/1160	0.42	0/1553
57	SR	0.16	0/1105	0.43	0/1484
58	SS	0.14	0/1216	0.36	0/1628
59	ST	0.15	0/1131	0.41	0/1515
60	SU	0.16	0/831	0.43	0/1115
61	SZ	0.16	0/604	0.48	0/810
62	Sc	0.14	0/508	0.33	0/680
63	Sd	0.13	0/470	0.32	0/623
64	Sf	0.15	0/560	0.45	0/745
65	Sg	0.16	0/2493	0.36	0/3394
66	SA	0.15	0/1778	0.36	0/2416
67	SB	0.15	0/1765	0.36	0/2362
68	SC	0.15	0/1744	0.35	0/2357
69	SE	0.14	0/2118	0.36	0/2849
70	SG	0.14	0/1946	0.36	0/2590
71	SH	0.17	0/1519	0.42	0/2033
72	SI	0.14	0/1715	0.35	0/2287
73	SJ	0.13	0/1550	0.32	0/2069
74	SL	0.14	0/1268	0.34	0/1696

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
75	SN	0.13	0/1232	0.31	0/1656
76	SO	0.17	0/1037	0.38	0/1391
77	SV	0.14	0/643	0.35	0/860
78	SW	0.16	0/1051	0.34	0/1406
79	SX	0.13	0/1116	0.34	0/1490
80	SY	0.14	0/1083	0.35	0/1438
81	Sa	0.15	0/836	0.36	0/1121
82	Sb	0.15	0/665	0.33	0/891
83	Se	0.14	0/465	0.39	0/612
84	S2	0.18	2/39756 (0.0%)	0.28	0/61939
85	Zt	0.14	0/1779	0.35	0/2771
86	CI	0.16	0/247	0.30	0/323
All	All	0.16	2/236905 (0.0%)	0.31	1/347316 (0.0%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
84	S2	668	A2M	O3'-P	5.01	1.61	1.56
84	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(°)
52	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	CF	3383	0	3432	90	0
3	AT	1616	0	824	35	0
4	L5	78444	0	39714	1492	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	L7	2561	0	1295	38	0
6	L8	3315	0	1685	68	0
7	LA	1898	0	1993	45	0
8	LB	3238	0	3376	76	0
9	LC	2927	0	3104	36	0
10	LD	2382	0	2410	38	0
11	LE	1935	0	2096	37	0
12	LF	1870	0	1996	24	0
13	LG	1927	0	2074	29	0
14	LH	1518	0	1601	21	0
15	LI	1711	0	1749	31	0
16	LJ	1362	0	1399	15	0
17	LL	1701	0	1818	31	0
18	LM	1138	0	1204	25	0
19	LN	1701	0	1749	34	0
20	LO	1650	0	1794	28	0
21	LP	1242	0	1269	12	0
22	LQ	1513	0	1628	31	0
23	LR	1566	0	1729	29	0
24	LS	1453	0	1490	15	0
25	LT	1298	0	1366	30	0
26	LU	825	0	850	23	0
27	LV	979	0	1039	13	0
28	LW	945	0	1003	19	0
29	LX	985	0	1066	13	0
30	LY	1115	0	1205	11	0
31	LZ	1107	0	1182	18	0
32	La	1162	0	1213	14	0
33	Lb	876	0	948	12	0
34	Lc	764	0	804	11	0
35	Ld	888	0	930	17	0
36	Le	1053	0	1147	15	0
37	Lf	876	0	912	12	0
38	Lg	906	0	998	17	0
39	Lh	1015	0	1148	22	0
40	Li	832	0	917	9	0
41	Lj	705	0	737	21	0
42	Lk	569	0	637	11	0
43	Ll	444	0	483	10	0
44	Lm	429	0	465	10	0
45	Ln	230	0	276	2	0
46	Lo	862	0	929	11	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
47	Lp	708	0	756	12	0
48	Lr	1002	0	1068	12	0
49	Ls	1496	0	1540	28	0
50	Lt	998	0	1032	17	0
51	SD	1765	0	1865	28	0
52	SF	1495	0	1549	31	0
53	SK	827	0	854	25	0
54	SM	940	0	965	20	0
55	SP	985	0	1031	20	0
56	SQ	1142	0	1213	37	0
57	SR	1090	0	1149	20	0
58	SS	1198	0	1261	32	0
59	ST	1112	0	1146	31	0
60	SU	821	0	883	20	0
61	SZ	598	0	656	16	0
62	Sc	506	0	536	10	0
63	Sd	459	0	452	15	0
64	Sf	548	0	551	16	0
65	Sg	2436	0	2393	55	0
66	SA	1741	0	1746	41	0
67	SB	1738	0	1809	34	0
68	SC	1707	0	1791	41	0
69	SE	2076	0	2177	50	0
70	SG	1923	0	2089	61	0
71	SH	1497	0	1590	37	0
72	SI	1686	0	1772	40	0
73	SJ	1525	0	1640	25	0
74	SL	1247	0	1323	23	0
75	SN	1208	0	1294	12	0
76	SO	1024	0	1050	17	0
77	SV	636	0	637	14	0
78	SW	1034	0	1080	19	0
79	SX	1098	0	1167	24	0
80	SY	1065	0	1142	32	0
81	Sa	821	0	870	14	0
82	Sb	651	0	672	15	0
83	Se	459	0	503	9	0
84	S2	36953	0	18679	700	0
85	Zt	1593	0	809	37	0
86	CI	247	0	282	23	0
87	L5	179	0	0	0	0
87	L7	3	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
87	L8	4	0	0	0	0
87	LA	1	0	0	0	0
87	LP	1	0	0	0	0
87	LV	1	0	0	0	0
87	Le	1	0	0	0	0
87	Lj	1	0	0	0	0
87	S2	27	0	0	0	0
87	SS	1	0	0	0	0
88	L5	98	0	182	8	0
89	L5	90	0	171	10	0
89	LN	10	0	19	2	0
90	L5	20	0	23	2	0
91	L5	39	0	36	8	0
92	Lg	1	0	0	0	0
92	Lj	1	0	0	0	0
92	Lm	1	0	0	0	0
92	Lo	1	0	0	0	0
92	Lp	1	0	0	0	0
92	Sa	1	0	0	0	0
All	All	225029	0	167940	3663	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 3663 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)
91:L5:5297:HMT:C6	91:L5:5297:HMT:C7	1.77	1.60
91:L5:5297:HMT:C7	91:L5:5297:HMT:C8	1.79	1.58
4:L5:2706:G:N7	86:CI:78:HIS:NE2	1.64	1.38
26:LU:117:ILE:C	86:CI:75:LYS:H	1.36	1.32
4:L5:2706:G:N7	86:CI:78:HIS:CD2	2.10	1.19

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	CF	438/441 (99%)	421 (96%)	17 (4%)	0	100	100
7	LA	246/248 (99%)	232 (94%)	14 (6%)	0	100	100
8	LB	400/402 (100%)	380 (95%)	20 (5%)	0	100	100
9	LC	366/368 (100%)	353 (96%)	13 (4%)	0	100	100
10	LD	291/293 (99%)	281 (97%)	10 (3%)	0	100	100
11	LE	236/250 (94%)	223 (94%)	13 (6%)	0	100	100
12	LF	223/225 (99%)	214 (96%)	9 (4%)	0	100	100
13	LG	239/241 (99%)	225 (94%)	14 (6%)	0	100	100
14	LH	188/190 (99%)	182 (97%)	6 (3%)	0	100	100
15	LI	211/213 (99%)	202 (96%)	9 (4%)	0	100	100
16	LJ	168/176 (96%)	162 (96%)	6 (4%)	0	100	100
17	LL	208/210 (99%)	199 (96%)	9 (4%)	0	100	100
18	LM	137/139 (99%)	132 (96%)	5 (4%)	0	100	100
19	LN	201/203 (99%)	197 (98%)	4 (2%)	0	100	100
20	LO	199/201 (99%)	195 (98%)	4 (2%)	0	100	100
21	LP	151/153 (99%)	145 (96%)	6 (4%)	0	100	100
22	LQ	185/187 (99%)	182 (98%)	3 (2%)	0	100	100
23	LR	185/187 (99%)	181 (98%)	4 (2%)	0	100	100
24	LS	173/175 (99%)	168 (97%)	5 (3%)	0	100	100
25	LT	157/159 (99%)	155 (99%)	2 (1%)	0	100	100
26	LU	99/101 (98%)	94 (95%)	5 (5%)	0	100	100
27	LV	129/131 (98%)	127 (98%)	2 (2%)	0	100	100
28	LW	112/124 (90%)	109 (97%)	3 (3%)	0	100	100
29	LX	118/120 (98%)	117 (99%)	1 (1%)	0	100	100
30	LY	132/134 (98%)	127 (96%)	5 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
31	LZ	133/135 (98%)	126 (95%)	7 (5%)	0	100	100
32	La	145/147 (99%)	141 (97%)	4 (3%)	0	100	100
33	Lb	105/121 (87%)	97 (92%)	8 (8%)	0	100	100
34	Lc	96/98 (98%)	94 (98%)	2 (2%)	0	100	100
35	Ld	105/107 (98%)	103 (98%)	2 (2%)	0	100	100
36	Le	126/128 (98%)	125 (99%)	1 (1%)	0	100	100
37	Lf	107/109 (98%)	105 (98%)	2 (2%)	0	100	100
38	Lg	112/114 (98%)	109 (97%)	3 (3%)	0	100	100
39	Lh	120/122 (98%)	117 (98%)	3 (2%)	0	100	100
40	Li	100/102 (98%)	97 (97%)	3 (3%)	0	100	100
41	Lj	84/86 (98%)	83 (99%)	1 (1%)	0	100	100
42	Lk	67/69 (97%)	66 (98%)	1 (2%)	0	100	100
43	Ll	48/50 (96%)	46 (96%)	2 (4%)	0	100	100
44	Lm	50/52 (96%)	49 (98%)	1 (2%)	0	100	100
45	Ln	22/24 (92%)	22 (100%)	0	0	100	100
46	Lo	103/105 (98%)	98 (95%)	5 (5%)	0	100	100
47	Lp	89/91 (98%)	86 (97%)	3 (3%)	0	100	100
48	Lr	123/125 (98%)	119 (97%)	4 (3%)	0	100	100
49	Ls	194/196 (99%)	182 (94%)	12 (6%)	0	100	100
50	Lt	128/157 (82%)	113 (88%)	15 (12%)	0	100	100
51	SD	225/227 (99%)	219 (97%)	6 (3%)	0	100	100
52	SF	187/189 (99%)	176 (94%)	11 (6%)	0	100	100
53	SK	96/98 (98%)	90 (94%)	6 (6%)	0	100	100
54	SM	120/122 (98%)	110 (92%)	10 (8%)	0	100	100
55	SP	119/121 (98%)	117 (98%)	2 (2%)	0	100	100
56	SQ	142/144 (99%)	134 (94%)	8 (6%)	0	100	100
57	SR	133/135 (98%)	124 (93%)	8 (6%)	1 (1%)	16	49
58	SS	143/145 (99%)	135 (94%)	8 (6%)	0	100	100
59	ST	141/143 (99%)	138 (98%)	3 (2%)	0	100	100
60	SU	102/104 (98%)	99 (97%)	3 (3%)	0	100	100
61	SZ	73/75 (97%)	67 (92%)	6 (8%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
62	Sc	62/64 (97%)	60 (97%)	2 (3%)	0	100	100
63	Sd	53/55 (96%)	53 (100%)	0	0	100	100
64	Sf	65/67 (97%)	58 (89%)	7 (11%)	0	100	100
65	Sg	311/313 (99%)	295 (95%)	16 (5%)	0	100	100
66	SA	219/221 (99%)	208 (95%)	11 (5%)	0	100	100
67	SB	212/214 (99%)	204 (96%)	8 (4%)	0	100	100
68	SC	218/222 (98%)	204 (94%)	14 (6%)	0	100	100
69	SE	260/262 (99%)	252 (97%)	8 (3%)	0	100	100
70	SG	235/237 (99%)	223 (95%)	12 (5%)	0	100	100
71	SH	182/189 (96%)	167 (92%)	15 (8%)	0	100	100
72	SI	204/206 (99%)	193 (95%)	11 (5%)	0	100	100
73	SJ	183/185 (99%)	175 (96%)	7 (4%)	1 (0%)	25	57
74	SL	151/153 (99%)	145 (96%)	6 (4%)	0	100	100
75	SN	148/150 (99%)	145 (98%)	3 (2%)	0	100	100
76	SO	135/140 (96%)	127 (94%)	8 (6%)	0	100	100
77	SV	81/83 (98%)	76 (94%)	5 (6%)	0	100	100
78	SW	127/129 (98%)	122 (96%)	5 (4%)	0	100	100
79	SX	139/141 (99%)	136 (98%)	3 (2%)	0	100	100
80	SY	129/131 (98%)	124 (96%)	5 (4%)	0	100	100
81	Sa	100/102 (98%)	99 (99%)	1 (1%)	0	100	100
82	Sb	81/83 (98%)	76 (94%)	5 (6%)	0	100	100
83	Se	56/58 (97%)	52 (93%)	4 (7%)	0	100	100
86	CI	29/31 (94%)	29 (100%)	0	0	100	100
All	All	12110/12348 (98%)	11613 (96%)	495 (4%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
73	SJ	138	ARG
57	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	
2	CF	365/366 (100%)	365 (100%)	0	100	100
7	LA	190/190 (100%)	190 (100%)	0	100	100
8	LB	348/348 (100%)	348 (100%)	0	100	100
9	LC	306/306 (100%)	306 (100%)	0	100	100
10	LD	246/247 (100%)	246 (100%)	0	100	100
11	LE	212/222 (96%)	212 (100%)	0	100	100
12	LF	194/194 (100%)	194 (100%)	0	100	100
13	LG	203/205 (99%)	203 (100%)	0	100	100
14	LH	169/169 (100%)	169 (100%)	0	100	100
15	LI	180/180 (100%)	180 (100%)	0	100	100
16	LJ	143/148 (97%)	143 (100%)	0	100	100
17	LL	176/176 (100%)	176 (100%)	0	100	100
18	LM	118/118 (100%)	118 (100%)	0	100	100
19	LN	171/171 (100%)	171 (100%)	0	100	100
20	LO	173/173 (100%)	173 (100%)	0	100	100
21	LP	134/134 (100%)	134 (100%)	0	100	100
22	LQ	164/164 (100%)	164 (100%)	0	100	100
23	LR	166/166 (100%)	166 (100%)	0	100	100
24	LS	156/156 (100%)	156 (100%)	0	100	100
25	LT	139/139 (100%)	139 (100%)	0	100	100
26	LU	91/91 (100%)	91 (100%)	0	100	100
27	LV	101/101 (100%)	101 (100%)	0	100	100
28	LW	95/103 (92%)	95 (100%)	0	100	100
29	LX	108/108 (100%)	108 (100%)	0	100	100
30	LY	124/124 (100%)	124 (100%)	0	100	100
31	LZ	117/117 (100%)	117 (100%)	0	100	100

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

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
63	Sd	48/48 (100%)	48 (100%)	0	100	100
64	Sf	60/60 (100%)	60 (100%)	0	100	100
65	Sg	272/272 (100%)	272 (100%)	0	100	100
66	SA	183/183 (100%)	183 (100%)	0	100	100
67	SB	195/195 (100%)	195 (100%)	0	100	100
68	SC	186/188 (99%)	186 (100%)	0	100	100
69	SE	224/224 (100%)	224 (100%)	0	100	100
70	SG	207/207 (100%)	207 (100%)	0	100	100
71	SH	166/169 (98%)	165 (99%)	1 (1%)	84	90
72	SI	178/178 (100%)	178 (100%)	0	100	100
73	SJ	161/161 (100%)	161 (100%)	0	100	100
74	SL	137/137 (100%)	137 (100%)	0	100	100
75	SN	130/130 (100%)	130 (100%)	0	100	100
76	SO	107/110 (97%)	107 (100%)	0	100	100
77	SV	67/67 (100%)	67 (100%)	0	100	100
78	SW	112/112 (100%)	112 (100%)	0	100	100
79	SX	113/113 (100%)	113 (100%)	0	100	100
80	SY	113/113 (100%)	113 (100%)	0	100	100
81	Sa	89/89 (100%)	89 (100%)	0	100	100
82	Sb	75/75 (100%)	75 (100%)	0	100	100
83	Se	47/47 (100%)	47 (100%)	0	100	100
86	CI	25/25 (100%)	25 (100%)	0	100	100
All	All	10512/10587 (99%)	10511 (100%)	1 (0%)	100	100

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

Mol	Chain	Res	Type
71	SH	162	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 85 such sidechains are listed below:

Mol	Chain	Res	Type
58	SS	11	HIS

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Mol	Chain	Res	Type
70	SG	56	ASN
61	SZ	89	GLN
67	SB	53	GLN
74	SL	19	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	Pt	72/74 (97%)	19 (26%)	0
3	AT	74/76 (97%)	28 (37%)	0
4	L5	3643/3655 (99%)	762 (20%)	15 (0%)
5	L7	119/120 (99%)	12 (10%)	0
6	L8	155/156 (99%)	26 (16%)	0
84	S2	1714/1740 (98%)	391 (22%)	3 (0%)
85	Zt	74/75 (98%)	43 (58%)	0
All	All	5851/5896 (99%)	1281 (21%)	18 (0%)

5 of 1281 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
4	L5	4913	G
84	S2	688	U
84	S2	563	G
4	L5	2675	G
4	L5	4699	U

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

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

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
84	PSU	S2	686	84	18,21,22	1.11	1 (5%)	21,30,33	1.90	5 (23%)
4	PSU	L5	1782	4	18,21,22	1.15	1 (5%)	21,30,33	1.91	4 (19%)
84	A2M	S2	1031	84	18,25,26	1.24	2 (11%)	20,36,39	2.02	6 (30%)
4	OMU	L5	2837	4	19,22,23	3.35	7 (36%)	25,31,34	1.85	5 (20%)
4	OMC	L5	1340	4	19,22,23	0.53	0	25,31,34	0.74	0
84	MA6	S2	1851	84	19,26,27	1.51	3 (15%)	18,38,41	3.40	3 (16%)
84	OMU	S2	627	84	19,22,23	3.37	7 (36%)	25,31,34	1.80	5 (20%)
4	PSU	L5	4500	4	18,21,22	1.13	1 (5%)	21,30,33	1.95	5 (23%)
4	PSU	L5	4471	4	18,21,22	1.06	1 (5%)	21,30,33	1.83	4 (19%)
84	A2M	S2	27	84	18,25,26	1.33	2 (11%)	20,36,39	2.00	6 (30%)
84	OMC	S2	517	84	19,22,23	0.54	0	25,31,34	0.64	0
84	PSU	S2	651	84	18,21,22	1.14	1 (5%)	21,30,33	1.89	4 (19%)
4	A2M	L5	2363	4,87	18,25,26	1.29	2 (11%)	20,36,39	1.98	6 (30%)
4	UR3	L5	4530	4	19,22,23	2.78	7 (36%)	26,32,35	1.58	3 (11%)
4	PSU	L5	4552	4	18,21,22	1.06	1 (5%)	21,30,33	1.86	4 (19%)
4	PSU	L5	4431	4	18,21,22	1.10	1 (5%)	21,30,33	1.94	5 (23%)
84	OMU	S2	799	84	19,22,23	3.43	7 (36%)	25,31,34	1.78	5 (20%)
6	OMG	L8	75	6	19,26,27	1.12	2 (10%)	21,38,41	0.84	1 (4%)
4	PSU	L5	3822	4	18,21,22	1.13	2 (11%)	21,30,33	1.99	6 (28%)
4	PSU	L5	4628	4	18,21,22	1.00	1 (5%)	21,30,33	1.85	4 (19%)
84	PSU	S2	1056	84	18,21,22	1.07	1 (5%)	21,30,33	1.88	5 (23%)
4	OMG	L5	2424	4	19,26,27	1.16	2 (10%)	21,38,41	0.81	1 (4%)
4	OMC	L5	4456	4	19,22,23	0.56	0	25,31,34	0.79	1 (4%)
4	OMC	L5	3808	4	19,22,23	0.59	0	25,31,34	0.95	2 (8%)
84	OMU	S2	1442	84	19,22,23	3.40	7 (36%)	25,31,34	1.80	5 (20%)
4	PSU	L5	4689	4	18,21,22	1.04	1 (5%)	21,30,33	1.88	4 (19%)
4	PSU	L5	4403	4	18,21,22	1.02	1 (5%)	21,30,33	1.84	5 (23%)
84	A2M	S2	668	87,84	18,25,26	1.29	3 (16%)	20,36,39	1.98	6 (30%)
84	PSU	S2	93	84	18,21,22	1.10	1 (5%)	21,30,33	1.83	4 (19%)
4	OMC	L5	3841	4	19,22,23	0.51	0	25,31,34	0.70	1 (4%)
4	A2M	L5	2401	4	18,25,26	1.22	2 (11%)	20,36,39	1.97	6 (30%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	OMC	L5	2365	4,87	19,22,23	0.53	0	25,31,34	0.63	0
4	5MC	L5	3782	4,87	19,22,23	0.52	0	26,32,35	0.80	1 (3%)
4	OMC	L5	2824	4	19,22,23	0.54	0	25,31,34	0.81	1 (4%)
4	OMG	L5	3627	4	19,26,27	1.15	2 (10%)	21,38,41	0.87	1 (4%)
4	A2M	L5	3830	4	18,25,26	1.30	2 (11%)	20,36,39	2.10	6 (30%)
4	PSU	L5	4521	4,87	18,21,22	1.11	1 (5%)	21,30,33	1.88	4 (19%)
84	PSU	S2	1367	84	18,21,22	1.12	1 (5%)	21,30,33	1.90	4 (19%)
84	4AC	S2	1842	84	21,24,25	0.38	0	28,34,37	0.45	0
84	OMG	S2	683	84	19,26,27	1.16	2 (10%)	21,38,41	0.80	1 (4%)
4	A2M	L5	1871	4,87	18,25,26	1.32	2 (11%)	20,36,39	2.02	6 (30%)
4	PSU	L5	1781	4	18,21,22	1.07	1 (5%)	21,30,33	1.81	4 (19%)
4	A2M	L5	3867	4	18,25,26	1.28	3 (16%)	20,36,39	1.86	7 (35%)
84	OMU	S2	354	84	19,22,23	3.35	7 (36%)	25,31,34	1.82	5 (20%)
4	OMC	L5	2422	4,87	19,22,23	0.54	0	25,31,34	0.69	0
6	PSU	L8	69	6	18,21,22	1.09	1 (5%)	21,30,33	1.82	5 (23%)
4	OMG	L5	1522	4	19,26,27	1.15	2 (10%)	21,38,41	0.90	1 (4%)
84	PSU	S2	1174	84	18,21,22	1.10	1 (5%)	21,30,33	1.86	4 (19%)
4	OMC	L5	3869	4	19,22,23	0.51	0	25,31,34	0.64	0
4	PSU	L5	1862	4	18,21,22	1.12	1 (5%)	21,30,33	1.89	4 (19%)
84	OMU	S2	116	84	19,22,23	3.33	7 (36%)	25,31,34	1.69	5 (20%)
4	PSU	L5	2632	4	18,21,22	1.09	1 (5%)	21,30,33	1.99	5 (23%)
4	PSU	L5	4532	4	18,21,22	1.11	1 (5%)	21,30,33	1.89	4 (19%)
84	PSU	S2	1081	84	18,21,22	1.13	1 (5%)	21,30,33	1.91	5 (23%)
84	A2M	S2	166	84	18,25,26	1.33	2 (11%)	20,36,39	2.17	7 (35%)
84	PSU	S2	1045	84	18,21,22	1.10	1 (5%)	21,30,33	1.89	4 (19%)
4	PSU	L5	3851	4,87	18,21,22	1.08	1 (5%)	21,30,33	1.80	4 (19%)
84	OMU	S2	121	84	19,22,23	3.39	7 (36%)	25,31,34	1.79	5 (20%)
4	OMG	L5	3744	4	19,26,27	1.14	2 (10%)	21,38,41	0.80	1 (4%)
84	PSU	S2	1046	84	18,21,22	1.11	1 (5%)	21,30,33	1.80	4 (19%)
4	PSU	L5	1860	4	18,21,22	1.13	1 (5%)	21,30,33	1.90	4 (19%)
4	A2M	L5	4590	4	18,25,26	1.26	2 (11%)	20,36,39	2.12	7 (35%)
84	OMG	S2	1490	84	19,26,27	1.20	2 (10%)	21,38,41	0.73	0
84	PSU	S2	1004	84	18,21,22	1.09	1 (5%)	21,30,33	1.84	4 (19%)
84	OMC	S2	1391	84	19,22,23	0.51	0	25,31,34	0.67	0
6	PSU	L8	55	6	18,21,22	1.13	1 (5%)	21,30,33	1.90	4 (19%)
4	OMU	L5	4620	4	19,22,23	3.34	7 (36%)	25,31,34	1.77	4 (16%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
84	PSU	S2	863	84	18,21,22	1.10	1 (5%)	21,30,33	1.87	4 (19%)
84	PSU	S2	105	84	18,21,22	1.07	1 (5%)	21,30,33	1.86	4 (19%)
4	A2M	L5	1534	4,87	18,25,26	1.27	2 (11%)	20,36,39	2.01	6 (30%)
4	PSU	L5	3695	4	18,21,22	1.09	1 (5%)	21,30,33	1.88	5 (23%)
84	PSU	S2	681	84	18,21,22	1.07	1 (5%)	21,30,33	1.88	4 (19%)
84	A2M	S2	159	84	18,25,26	1.29	1 (5%)	20,36,39	1.91	7 (35%)
4	PSU	L5	1744	4,87	18,21,22	1.08	1 (5%)	21,30,33	1.90	6 (28%)
4	OMG	L5	1316	4	19,26,27	1.19	2 (10%)	21,38,41	0.80	1 (4%)
84	PSU	S2	649	84	18,21,22	1.07	1 (5%)	21,30,33	1.90	4 (19%)
4	A2M	L5	400	4	18,25,26	1.29	2 (11%)	20,36,39	1.95	7 (35%)
4	OMG	L5	3899	4	19,26,27	1.16	2 (10%)	21,38,41	0.79	1 (4%)
4	A2M	L5	3825	4	18,25,26	1.28	2 (11%)	20,36,39	1.98	6 (30%)
4	OMC	L5	2351	4,87	19,22,23	0.54	0	25,31,34	0.83	1 (4%)
84	A2M	S2	99	87,84	18,25,26	1.25	2 (11%)	20,36,39	1.98	5 (25%)
84	OMC	S2	174	84	19,22,23	0.51	0	25,31,34	0.70	0
4	PSU	L5	4636	4	18,21,22	1.11	1 (5%)	21,30,33	2.04	6 (28%)
4	A2M	L5	3785	4,87	18,25,26	1.34	2 (11%)	20,36,39	2.71	6 (30%)
84	OMU	S2	428	84	19,22,23	3.37	7 (36%)	25,31,34	1.83	5 (20%)
4	PSU	L5	4972	4	18,21,22	1.09	1 (5%)	21,30,33	1.90	6 (28%)
84	A2M	S2	576	84	18,25,26	1.21	2 (11%)	20,36,39	1.97	5 (25%)
4	PSU	L5	3884	4	18,21,22	1.11	1 (5%)	21,30,33	1.89	4 (19%)
84	A2M	S2	1383	84	18,25,26	1.34	2 (11%)	20,36,39	2.27	5 (25%)
84	OMG	S2	509	84	19,26,27	1.14	2 (10%)	21,38,41	0.83	1 (4%)
4	A2M	L5	2787	4	18,25,26	1.24	2 (11%)	20,36,39	1.76	5 (25%)
4	PSU	L5	3844	4	18,21,22	1.10	1 (5%)	21,30,33	1.91	4 (19%)
4	PSU	L5	4312	4	18,21,22	1.08	1 (5%)	21,30,33	1.89	4 (19%)
4	PSU	L5	2839	4	18,21,22	1.08	1 (5%)	21,30,33	1.93	5 (23%)
4	PSU	L5	4442	4	18,21,22	1.13	1 (5%)	21,30,33	2.06	6 (28%)
4	OMG	L5	3792	4	19,26,27	1.15	2 (10%)	21,38,41	0.81	1 (4%)
4	OMG	L5	4623	4	19,26,27	1.15	2 (10%)	21,38,41	0.82	1 (4%)
4	PSU	L5	4296	4	18,21,22	1.10	1 (5%)	21,30,33	1.96	5 (23%)
84	MA6	S2	1850	84	19,26,27	1.51	3 (15%)	18,38,41	3.39	3 (16%)
84	6MZ	S2	1832	87,84	21,26,26	1.32	2 (9%)	22,39,39	1.78	2 (9%)
4	A2M	L5	4571	4	18,25,26	1.29	2 (11%)	20,36,39	2.00	6 (30%)
4	PSU	L5	4299	4	18,21,22	1.10	1 (5%)	21,30,33	1.93	4 (19%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	PSU	L5	4361	4	18,21,22	1.07	1 (5%)	21,30,33	1.83	4 (19%)
4	OMG	L5	4494	4	19,26,27	1.15	2 (10%)	21,38,41	0.81	1 (4%)
4	PSU	L5	4673	4	18,21,22	1.08	1 (5%)	21,30,33	1.87	4 (19%)
84	OMU	S2	1288	84	19,22,23	3.38	7 (36%)	25,31,34	1.80	5 (20%)
4	PSU	L5	4579	4	18,21,22	1.07	1 (5%)	21,30,33	1.81	4 (19%)
4	OMC	L5	3701	4	19,22,23	0.56	0	25,31,34	0.82	1 (4%)
4	OMG	L5	2364	4,87	19,26,27	1.15	2 (10%)	21,38,41	0.81	1 (4%)
4	A2M	L5	2815	4	18,25,26	1.18	1 (5%)	20,36,39	1.80	7 (35%)
84	OMU	S2	1326	84	19,22,23	3.37	7 (36%)	25,31,34	1.81	5 (20%)
84	OMG	S2	644	84	19,26,27	1.13	2 (10%)	21,38,41	0.84	1 (4%)
4	PSU	L5	4457	4	18,21,22	1.10	1 (5%)	21,30,33	1.91	5 (23%)
84	OMC	S2	462	84	19,22,23	0.52	0	25,31,34	0.78	1 (4%)
4	OMU	L5	4306	4	19,22,23	3.34	7 (36%)	25,31,34	1.77	4 (16%)
4	OMG	L5	4228	4	19,26,27	1.18	3 (15%)	21,38,41	0.95	1 (4%)
4	OMC	L5	3887	4	19,22,23	0.54	0	25,31,34	0.78	0
2	SEP	CF	163	2	8,9,10	1.61	1 (12%)	7,12,14	1.21	1 (14%)
4	A2M	L5	4523	4,87	18,25,26	1.35	2 (11%)	20,36,39	2.23	6 (30%)
4	PSU	L5	4493	4	18,21,22	1.08	1 (5%)	21,30,33	1.92	5 (23%)
4	A2M	L5	1326	4,87	18,25,26	1.20	1 (5%)	20,36,39	1.90	8 (40%)
4	PSU	L5	4353	4	18,21,22	1.10	1 (5%)	21,30,33	1.91	5 (23%)
84	OMG	S2	867	84	19,26,27	1.13	2 (10%)	21,38,41	0.87	1 (4%)
4	A2M	L5	1323	4	18,25,26	1.26	3 (16%)	20,36,39	2.02	7 (35%)
4	OMG	L5	4637	4	19,26,27	1.14	2 (10%)	21,38,41	0.86	1 (4%)
4	PSU	L5	4973	4	18,21,22	1.08	1 (5%)	21,30,33	1.87	4 (19%)
4	PSU	L5	1582	4	18,21,22	1.12	1 (5%)	21,30,33	1.75	4 (19%)
4	OMG	L5	2876	4	19,26,27	1.15	2 (10%)	21,38,41	0.81	1 (4%)
84	OMG	S2	1328	84	19,26,27	1.12	2 (10%)	21,38,41	0.81	1 (4%)
4	A2M	L5	398	4	18,25,26	1.29	2 (11%)	20,36,39	2.10	6 (30%)
4	PSU	L5	1683	4	18,21,22	1.10	1 (5%)	21,30,33	1.88	4 (19%)
4	PSU	L5	3637	4	18,21,22	1.11	1 (5%)	21,30,33	2.04	5 (23%)
84	4AC	S2	1337	84	21,24,25	0.37	0	28,34,37	0.64	1 (3%)
84	PSU	S2	406	84	18,21,22	1.12	1 (5%)	21,30,33	1.84	4 (19%)
84	B8N	S2	1248	84	25,29,30	3.29	6 (24%)	28,42,45	1.98	8 (28%)
84	PSU	S2	866	84	18,21,22	1.13	1 (5%)	21,30,33	1.92	5 (23%)
4	OMC	L5	2804	4	19,22,23	0.53	0	25,31,34	0.65	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	OMU	L5	4498	4	19,22,23	3.37	7 (36%)	25,31,34	1.81	5 (20%)
4	OMC	L5	4536	4	19,22,23	0.58	0	25,31,34	0.79	0
84	PSU	S2	814	84	18,21,22	1.12	1 (5%)	21,30,33	1.88	4 (19%)
4	OMC	L5	2861	4	19,22,23	0.56	0	25,31,34	1.00	2 (8%)
84	PSU	S2	966	87,84	18,21,22	1.05	1 (5%)	21,30,33	1.85	4 (19%)
84	OMG	S2	436	84	19,26,27	1.12	2 (10%)	21,38,41	0.83	1 (4%)
4	A2M	L5	1524	4	18,25,26	1.29	2 (11%)	20,36,39	2.13	6 (30%)
4	OMU	L5	4227	4	19,22,23	3.36	7 (36%)	25,31,34	1.83	5 (20%)
4	PSU	L5	3920	4,87	18,21,22	1.08	1 (5%)	21,30,33	1.89	5 (23%)
4	PSU	L5	5001	4	18,21,22	1.10	1 (5%)	21,30,33	1.82	4 (19%)
84	PSU	S2	1177	84	18,21,22	1.11	1 (5%)	21,30,33	1.87	4 (19%)
4	6MZ	L5	4220	4	17,25,26	3.50	7 (41%)	15,36,39	2.64	4 (26%)
4	A2M	L5	3718	4	18,25,26	1.25	2 (11%)	20,36,39	2.00	5 (25%)
4	OMG	L5	4618	4	19,26,27	1.15	2 (10%)	21,38,41	0.82	1 (4%)
4	PSU	L5	4576	4	18,21,22	1.08	1 (5%)	21,30,33	1.86	5 (23%)
4	PSU	L5	5010	4	18,21,22	1.13	1 (5%)	21,30,33	1.91	4 (19%)
84	PSU	S2	1232	84	18,21,22	1.13	1 (5%)	21,30,33	1.87	4 (19%)
4	5MC	L5	4447	4	19,22,23	0.63	0	26,32,35	0.54	0
84	OMG	S2	601	84	19,26,27	1.14	2 (10%)	21,38,41	0.92	1 (4%)
84	OMC	S2	1703	84	19,22,23	0.53	0	25,31,34	0.70	1 (4%)
4	OMG	L5	4499	4	19,26,27	1.13	2 (10%)	21,38,41	0.83	1 (4%)
84	A2M	S2	468	84	18,25,26	1.25	2 (11%)	20,36,39	1.96	6 (30%)
4	PSU	L5	3853	4,87	18,21,22	1.07	1 (5%)	21,30,33	1.78	4 (19%)
84	PSU	S2	109	84	18,21,22	1.11	1 (5%)	21,30,33	1.89	4 (19%)
4	OMG	L5	4196	4,1	19,26,27	1.14	2 (10%)	21,38,41	0.84	1 (4%)
4	PSU	L5	3639	4	18,21,22	1.12	1 (5%)	21,30,33	1.91	4 (19%)
4	OMU	L5	3925	4	19,22,23	3.32	7 (36%)	25,31,34	1.87	5 (20%)
84	A2M	S2	484	84	18,25,26	1.20	1 (5%)	20,36,39	1.81	6 (30%)
4	PSU	L5	1792	4	18,21,22	1.06	1 (5%)	21,30,33	1.86	4 (19%)
4	PSU	L5	4293	4	18,21,22	1.13	2 (11%)	21,30,33	1.93	4 (19%)
84	OMU	S2	172	84	19,22,23	3.38	7 (36%)	25,31,34	1.82	5 (20%)
4	PSU	L5	1536	4	18,21,22	1.11	1 (5%)	21,30,33	1.99	4 (19%)
84	PSU	S2	1244	84	18,21,22	1.14	1 (5%)	21,30,33	1.88	4 (19%)
84	G7M	S2	1639	1,84	20,26,27	2.45	6 (30%)	16,39,42	1.11	1 (6%)
4	OMG	L5	4370	4	19,26,27	1.13	2 (10%)	21,38,41	0.81	1 (4%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	OMG	L5	4392	4	19,26,27	1.14	2 (10%)	21,38,41	0.82	1 (4%)
84	PSU	S2	801	84	18,21,22	1.11	1 (5%)	21,30,33	1.85	4 (19%)
4	1MA	L5	1322	4,87	17,25,26	0.93	2 (11%)	17,37,40	1.10	2 (11%)
4	UY1	L5	3818	4	19,22,23	4.96	9 (47%)	21,31,34	2.02	6 (28%)
84	OMC	S2	1272	84	19,22,23	0.53	0	25,31,34	0.82	1 (4%)
4	OMG	L5	1625	4	19,26,27	1.19	2 (10%)	21,38,41	0.83	1 (4%)
4	PSU	L5	1677	4	18,21,22	1.09	2 (11%)	21,30,33	1.95	5 (23%)

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
84	PSU	S2	686	84	-	0/7/25/26	0/2/2/2
4	PSU	L5	1782	4	-	0/7/25/26	0/2/2/2
84	A2M	S2	1031	84	-	0/5/27/28	0/3/3/3
4	OMU	L5	2837	4	-	0/9/27/28	0/2/2/2
4	OMC	L5	1340	4	-	1/9/27/28	0/2/2/2
84	MA6	S2	1851	84	-	2/7/29/30	0/3/3/3
84	OMU	S2	627	84	-	5/9/27/28	0/2/2/2
4	PSU	L5	4500	4	-	3/7/25/26	0/2/2/2
4	PSU	L5	4471	4	-	0/7/25/26	0/2/2/2
84	A2M	S2	27	84	-	1/5/27/28	0/3/3/3
84	OMC	S2	517	84	-	3/9/27/28	0/2/2/2
84	PSU	S2	651	84	-	0/7/25/26	0/2/2/2
4	A2M	L5	2363	4,87	-	0/5/27/28	0/3/3/3
4	UR3	L5	4530	4	-	0/7/25/26	0/2/2/2
4	PSU	L5	4552	4	-	0/7/25/26	0/2/2/2
4	PSU	L5	4431	4	-	0/7/25/26	0/2/2/2
84	OMU	S2	799	84	-	2/9/27/28	0/2/2/2
6	OMG	L8	75	6	-	1/5/27/28	0/3/3/3
4	PSU	L5	3822	4	-	2/7/25/26	0/2/2/2
4	PSU	L5	4628	4	-	0/7/25/26	0/2/2/2
84	PSU	S2	1056	84	-	0/7/25/26	0/2/2/2
4	OMG	L5	2424	4	-	0/5/27/28	0/3/3/3
4	OMC	L5	4456	4	-	0/9/27/28	0/2/2/2
4	OMC	L5	3808	4	-	0/9/27/28	0/2/2/2
84	OMU	S2	1442	84	-	2/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	PSU	L5	4689	4	-	0/7/25/26	0/2/2/2
4	PSU	L5	4403	4	-	0/7/25/26	0/2/2/2
84	A2M	S2	668	87,84	-	3/5/27/28	0/3/3/3
84	PSU	S2	93	84	-	0/7/25/26	0/2/2/2
4	OMC	L5	3841	4	-	1/9/27/28	0/2/2/2
4	A2M	L5	2401	4	-	0/5/27/28	0/3/3/3
4	OMC	L5	2365	4,87	-	0/9/27/28	0/2/2/2
4	5MC	L5	3782	4,87	-	0/7/25/26	0/2/2/2
4	OMC	L5	2824	4	-	1/9/27/28	0/2/2/2
4	OMG	L5	3627	4	-	0/5/27/28	0/3/3/3
4	A2M	L5	3830	4	-	1/5/27/28	0/3/3/3
4	PSU	L5	4521	4,87	-	2/7/25/26	0/2/2/2
84	PSU	S2	1367	84	-	0/7/25/26	0/2/2/2
84	4AC	S2	1842	84	-	0/11/29/30	0/2/2/2
84	OMG	S2	683	84	-	2/5/27/28	0/3/3/3
4	A2M	L5	1871	4,87	-	0/5/27/28	0/3/3/3
4	PSU	L5	1781	4	-	1/7/25/26	0/2/2/2
4	A2M	L5	3867	4	-	1/5/27/28	0/3/3/3
84	OMU	S2	354	84	-	1/9/27/28	0/2/2/2
4	OMC	L5	2422	4,87	-	2/9/27/28	0/2/2/2
6	PSU	L8	69	6	-	0/7/25/26	0/2/2/2
4	OMG	L5	1522	4	-	0/5/27/28	0/3/3/3
84	PSU	S2	1174	84	-	0/7/25/26	0/2/2/2
4	OMC	L5	3869	4	-	0/9/27/28	0/2/2/2
4	PSU	L5	1862	4	-	0/7/25/26	0/2/2/2
84	OMU	S2	116	84	-	1/9/27/28	0/2/2/2
4	PSU	L5	2632	4	-	0/7/25/26	0/2/2/2
4	PSU	L5	4532	4	-	0/7/25/26	0/2/2/2
84	PSU	S2	1081	84	-	1/7/25/26	0/2/2/2
84	A2M	S2	166	84	-	0/5/27/28	0/3/3/3
84	PSU	S2	1045	84	-	2/7/25/26	0/2/2/2
4	PSU	L5	3851	4,87	-	1/7/25/26	0/2/2/2
84	OMU	S2	121	84	-	0/9/27/28	0/2/2/2
4	OMG	L5	3744	4	-	1/5/27/28	0/3/3/3
84	PSU	S2	1046	84	-	0/7/25/26	0/2/2/2
4	PSU	L5	1860	4	-	0/7/25/26	0/2/2/2
4	A2M	L5	4590	4	-	4/5/27/28	0/3/3/3
84	OMG	S2	1490	84	-	1/5/27/28	0/3/3/3
84	PSU	S2	1004	84	-	0/7/25/26	0/2/2/2
84	OMC	S2	1391	84	-	0/9/27/28	0/2/2/2
6	PSU	L8	55	6	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	OMU	L5	4620	4	-	0/9/27/28	0/2/2/2
84	PSU	S2	863	84	-	0/7/25/26	0/2/2/2
84	PSU	S2	105	84	-	0/7/25/26	0/2/2/2
4	A2M	L5	1534	4,87	-	2/5/27/28	0/3/3/3
4	PSU	L5	3695	4	-	0/7/25/26	0/2/2/2
84	PSU	S2	681	84	-	0/7/25/26	0/2/2/2
84	A2M	S2	159	84	-	2/5/27/28	0/3/3/3
4	PSU	L5	1744	4,87	-	0/7/25/26	0/2/2/2
4	OMG	L5	1316	4	-	1/5/27/28	0/3/3/3
84	PSU	S2	649	84	-	0/7/25/26	0/2/2/2
4	A2M	L5	400	4	-	1/5/27/28	0/3/3/3
4	OMG	L5	3899	4	-	2/5/27/28	0/3/3/3
4	A2M	L5	3825	4	-	1/5/27/28	0/3/3/3
4	OMC	L5	2351	4,87	-	2/9/27/28	0/2/2/2
84	A2M	S2	99	87,84	-	2/5/27/28	0/3/3/3
84	OMC	S2	174	84	-	0/9/27/28	0/2/2/2
4	PSU	L5	4636	4	-	1/7/25/26	0/2/2/2
4	A2M	L5	3785	4,87	-	0/5/27/28	0/3/3/3
84	OMU	S2	428	84	-	3/9/27/28	0/2/2/2
4	PSU	L5	4972	4	-	0/7/25/26	0/2/2/2
84	A2M	S2	576	84	-	4/5/27/28	0/3/3/3
4	PSU	L5	3884	4	-	0/7/25/26	0/2/2/2
84	A2M	S2	1383	84	-	3/5/27/28	0/3/3/3
84	OMG	S2	509	84	-	1/5/27/28	0/3/3/3
4	A2M	L5	2787	4	-	3/5/27/28	0/3/3/3
4	PSU	L5	3844	4	-	1/7/25/26	0/2/2/2
4	PSU	L5	4312	4	-	0/7/25/26	0/2/2/2
4	PSU	L5	2839	4	-	0/7/25/26	0/2/2/2
4	PSU	L5	4442	4	-	0/7/25/26	0/2/2/2
4	OMG	L5	3792	4	-	2/5/27/28	0/3/3/3
4	OMG	L5	4623	4	-	1/5/27/28	0/3/3/3
4	PSU	L5	4296	4	-	2/7/25/26	0/2/2/2
84	MA6	S2	1850	84	-	1/7/29/30	0/3/3/3
84	6MZ	S2	1832	87,84	-	7/8/28/28	0/3/3/3
4	A2M	L5	4571	4	-	0/5/27/28	0/3/3/3
4	PSU	L5	4299	4	-	0/7/25/26	0/2/2/2
4	PSU	L5	4361	4	-	0/7/25/26	0/2/2/2
4	OMG	L5	4494	4	-	0/5/27/28	0/3/3/3
4	PSU	L5	4673	4	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
84	OMU	S2	1288	84	-	2/9/27/28	0/2/2/2
4	PSU	L5	4579	4	-	0/7/25/26	0/2/2/2
4	OMC	L5	3701	4	-	4/9/27/28	0/2/2/2
4	OMG	L5	2364	4,87	-	2/5/27/28	0/3/3/3
4	A2M	L5	2815	4	-	2/5/27/28	0/3/3/3
84	OMU	S2	1326	84	-	0/9/27/28	0/2/2/2
84	OMG	S2	644	84	-	4/5/27/28	0/3/3/3
4	PSU	L5	4457	4	-	0/7/25/26	0/2/2/2
84	OMC	S2	462	84	-	0/9/27/28	0/2/2/2
4	OMU	L5	4306	4	-	0/9/27/28	0/2/2/2
4	OMG	L5	4228	4	-	0/5/27/28	0/3/3/3
4	OMC	L5	3887	4	-	2/9/27/28	0/2/2/2
2	SEP	CF	163	2	-	6/6/8/10	-
4	A2M	L5	4523	4,87	-	1/5/27/28	0/3/3/3
4	PSU	L5	4493	4	-	0/7/25/26	0/2/2/2
4	A2M	L5	1326	4,87	-	3/5/27/28	0/3/3/3
4	PSU	L5	4353	4	-	0/7/25/26	0/2/2/2
84	OMG	S2	867	84	-	1/5/27/28	0/3/3/3
4	A2M	L5	1323	4	-	3/5/27/28	0/3/3/3
4	OMG	L5	4637	4	-	1/5/27/28	0/3/3/3
4	PSU	L5	4973	4	-	0/7/25/26	0/2/2/2
4	PSU	L5	1582	4	-	0/7/25/26	0/2/2/2
4	OMG	L5	2876	4	-	0/5/27/28	0/3/3/3
84	OMG	S2	1328	84	-	0/5/27/28	0/3/3/3
4	A2M	L5	398	4	-	0/5/27/28	0/3/3/3
4	PSU	L5	1683	4	-	0/7/25/26	0/2/2/2
4	PSU	L5	3637	4	-	0/7/25/26	0/2/2/2
84	4AC	S2	1337	84	-	1/11/29/30	0/2/2/2
84	PSU	S2	406	84	-	0/7/25/26	0/2/2/2
84	B8N	S2	1248	84	-	4/16/34/35	0/2/2/2
84	PSU	S2	866	84	-	0/7/25/26	0/2/2/2
4	OMC	L5	2804	4	-	0/9/27/28	0/2/2/2
4	OMU	L5	4498	4	-	0/9/27/28	0/2/2/2
4	OMC	L5	4536	4	-	0/9/27/28	0/2/2/2
84	PSU	S2	814	84	-	0/7/25/26	0/2/2/2
4	OMC	L5	2861	4	-	3/9/27/28	0/2/2/2
84	PSU	S2	966	87,84	-	0/7/25/26	0/2/2/2
84	OMG	S2	436	84	-	0/5/27/28	0/3/3/3
4	A2M	L5	1524	4	-	3/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	OMU	L5	4227	4	-	0/9/27/28	0/2/2/2
4	PSU	L5	3920	4,87	-	0/7/25/26	0/2/2/2
4	PSU	L5	5001	4	-	0/7/25/26	0/2/2/2
84	PSU	S2	1177	84	-	0/7/25/26	0/2/2/2
4	6MZ	L5	4220	4	-	4/5/27/28	0/3/3/3
4	A2M	L5	3718	4	-	1/5/27/28	0/3/3/3
4	OMG	L5	4618	4	-	2/5/27/28	0/3/3/3
4	PSU	L5	4576	4	-	0/7/25/26	0/2/2/2
4	PSU	L5	5010	4	-	2/7/25/26	0/2/2/2
84	PSU	S2	1232	84	-	0/7/25/26	0/2/2/2
4	5MC	L5	4447	4	-	5/7/25/26	0/2/2/2
84	OMG	S2	601	84	-	0/5/27/28	0/3/3/3
84	OMC	S2	1703	84	-	0/9/27/28	0/2/2/2
4	OMG	L5	4499	4	-	0/5/27/28	0/3/3/3
84	A2M	S2	468	84	-	1/5/27/28	0/3/3/3
4	PSU	L5	3853	4,87	-	0/7/25/26	0/2/2/2
84	PSU	S2	109	84	-	0/7/25/26	0/2/2/2
4	OMG	L5	4196	4,1	-	1/5/27/28	0/3/3/3
4	PSU	L5	3639	4	-	0/7/25/26	0/2/2/2
4	OMU	L5	3925	4	-	0/9/27/28	0/2/2/2
84	A2M	S2	484	84	-	1/5/27/28	0/3/3/3
4	PSU	L5	1792	4	-	0/7/25/26	0/2/2/2
4	PSU	L5	4293	4	-	1/7/25/26	0/2/2/2
84	OMU	S2	172	84	-	0/9/27/28	0/2/2/2
4	PSU	L5	1536	4	-	2/7/25/26	0/2/2/2
84	PSU	S2	1244	84	-	0/7/25/26	0/2/2/2
84	G7M	S2	1639	1,84	-	0/3/25/26	0/3/3/3
4	OMG	L5	4370	4	-	0/5/27/28	0/3/3/3
4	OMG	L5	4392	4	-	0/5/27/28	0/3/3/3
84	PSU	S2	801	84	-	2/7/25/26	0/2/2/2
4	1MA	L5	1322	4,87	-	0/3/25/26	0/3/3/3
4	UY1	L5	3818	4	-	1/9/27/28	0/2/2/2
84	OMC	S2	1272	84	-	2/9/27/28	0/2/2/2
4	OMG	L5	1625	4	-	2/5/27/28	0/3/3/3
4	PSU	L5	1677	4	-	2/7/25/26	0/2/2/2

The worst 5 of 347 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	L5	3818	UY1	C6-C5	12.90	1.49	1.35

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

The worst 5 of 647 bond angle outliers are listed below:

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

There are no chirality outliers.

5 of 161 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	CF	163	SEP	C-CA-CB-OG
2	CF	163	SEP	CA-CB-OG-P
2	CF	163	SEP	CB-OG-P-O2P
2	CF	163	SEP	CB-OG-P-O3P
6	L8	75	OMG	C1'-C2'-O2'-CM2

There are no ring outliers.

100 monomers are involved in 164 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
84	S2	1031	A2M	3	0
4	L5	2837	OMU	1	0
4	L5	1340	OMC	2	0
84	S2	627	OMU	1	0
84	S2	27	A2M	1	0
84	S2	651	PSU	1	0
4	L5	2363	A2M	1	0
4	L5	4552	PSU	2	0
4	L5	4431	PSU	1	0
6	L8	75	OMG	2	0
4	L5	4456	OMC	1	0
4	L5	4689	PSU	2	0
4	L5	4403	PSU	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
84	S2	668	A2M	2	0
4	L5	3841	OMC	1	0
4	L5	2365	OMC	1	0
4	L5	2824	OMC	3	0
4	L5	3627	OMG	1	0
4	L5	3830	A2M	1	0
84	S2	1842	4AC	3	0
4	L5	1871	A2M	1	0
4	L5	3867	A2M	4	0
84	S2	354	OMU	2	0
4	L5	2422	OMC	1	0
6	L8	69	PSU	1	0
84	S2	1174	PSU	2	0
4	L5	3869	OMC	1	0
84	S2	116	OMU	3	0
4	L5	2632	PSU	2	0
84	S2	166	A2M	1	0
84	S2	121	OMU	1	0
4	L5	3744	OMG	1	0
4	L5	4590	A2M	1	0
84	S2	1004	PSU	2	0
84	S2	1391	OMC	2	0
4	L5	4620	OMU	3	0
4	L5	1534	A2M	1	0
4	L5	3695	PSU	1	0
84	S2	681	PSU	1	0
84	S2	159	A2M	1	0
4	L5	1316	OMG	2	0
84	S2	649	PSU	2	0
4	L5	400	A2M	2	0
4	L5	3825	A2M	5	0
4	L5	2351	OMC	3	0
84	S2	174	OMC	1	0
4	L5	4636	PSU	1	0
4	L5	3785	A2M	1	0
4	L5	4972	PSU	1	0
84	S2	576	A2M	2	0
84	S2	509	OMG	3	0
4	L5	2787	A2M	1	0
4	L5	3844	PSU	1	0
4	L5	4442	PSU	1	0
4	L5	4623	OMG	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
84	S2	1850	MA6	2	0
84	S2	1832	6MZ	2	0
4	L5	4299	PSU	2	0
84	S2	1288	OMU	2	0
4	L5	4579	PSU	3	0
4	L5	3701	OMC	1	0
4	L5	2364	OMG	1	0
84	S2	644	OMG	2	0
4	L5	4457	PSU	1	0
84	S2	462	OMC	1	0
2	CF	163	SEP	1	0
4	L5	4523	A2M	3	0
4	L5	1326	A2M	2	0
4	L5	4353	PSU	1	0
84	S2	867	OMG	1	0
4	L5	1323	A2M	1	0
4	L5	4637	OMG	1	0
4	L5	4973	PSU	1	0
84	S2	1328	OMG	1	0
4	L5	1683	PSU	3	0
84	S2	1337	4AC	3	0
4	L5	2804	OMC	2	0
4	L5	4536	OMC	1	0
84	S2	814	PSU	1	0
4	L5	2861	OMC	1	0
84	S2	436	OMG	1	0
4	L5	3920	PSU	1	0
84	S2	1177	PSU	1	0
4	L5	4220	6MZ	2	0
4	L5	3718	A2M	4	0
4	L5	4576	PSU	1	0
84	S2	1232	PSU	2	0
84	S2	601	OMG	3	0
84	S2	468	A2M	4	0
4	L5	3853	PSU	1	0
84	S2	109	PSU	1	0
4	L5	4196	OMG	1	0
84	S2	484	A2M	2	0
4	L5	4293	PSU	1	0
84	S2	1244	PSU	2	0
84	S2	1639	G7M	1	0
4	L5	4392	OMG	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	L5	3818	UY1	2	0
4	L5	1625	OMG	1	0
4	L5	1677	PSU	1	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	$\# Z > 2$
88	SPM	L5	5259	-	13,13,13	0.35	0	12,12,12	0.98	0
91	HMT	L5	5297	-	41,43,43	4.55	15 (36%)	43,66,66	2.01	14 (32%)
89	SPD	L5	5287	-	9,9,9	0.32	0	8,8,8	0.87	0
88	SPM	L5	5292	-	13,13,13	0.35	0	12,12,12	0.95	0
88	SPM	L5	5264	-	13,13,13	0.35	0	12,12,12	0.95	0
89	SPD	L5	5285	-	9,9,9	0.33	0	8,8,8	0.83	0
89	SPD	L5	5290	-	9,9,9	0.32	0	8,8,8	0.92	0
89	SPD	L5	5288	-	9,9,9	0.32	0	8,8,8	0.86	0
88	SPM	L5	5265	-	13,13,13	0.35	0	12,12,12	0.99	0
89	SPD	L5	5283	-	9,9,9	0.33	0	8,8,8	0.84	0
89	SPD	L5	5284	-	9,9,9	0.33	0	8,8,8	0.85	0
89	SPD	LN	301	-	9,9,9	0.32	0	8,8,8	0.87	0
90	3HE	L5	5296	-	21,21,21	0.41	0	23,30,30	0.93	1 (4%)
88	SPM	L5	5289	-	13,13,13	0.36	0	12,12,12	0.91	0
89	SPD	L5	5286	-	9,9,9	0.33	0	8,8,8	0.82	0
89	SPD	L5	5291	-	9,9,9	0.32	0	8,8,8	0.80	0
88	SPM	L5	5268	-	13,13,13	0.35	0	12,12,12	1.01	0
88	SPM	L5	5293	-	13,13,13	0.35	0	12,12,12	0.90	0
89	SPD	L5	5262	-	9,9,9	0.33	0	8,8,8	0.95	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
88	SPM	L5	5259	-	-	2/11/11/11	-
91	HMT	L5	5297	-	-	8/27/74/74	0/5/5/5
89	SPD	L5	5287	-	-	3/7/7/7	-
88	SPM	L5	5292	-	-	3/11/11/11	-
88	SPM	L5	5264	-	-	3/11/11/11	-
89	SPD	L5	5285	-	-	2/7/7/7	-
89	SPD	L5	5290	-	-	2/7/7/7	-
89	SPD	L5	5288	-	-	2/7/7/7	-
88	SPM	L5	5265	-	-	5/11/11/11	-
89	SPD	L5	5283	-	-	1/7/7/7	-
89	SPD	L5	5284	-	-	3/7/7/7	-
89	SPD	LN	301	-	-	1/7/7/7	-
90	3HE	L5	5296	-	-	1/8/36/36	0/2/2/2
88	SPM	L5	5289	-	-	5/11/11/11	-
89	SPD	L5	5286	-	-	0/7/7/7	-
89	SPD	L5	5291	-	-	2/7/7/7	-
88	SPM	L5	5268	-	-	3/11/11/11	-
88	SPM	L5	5293	-	-	1/11/11/11	-
89	SPD	L5	5262	-	-	1/7/7/7	-

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

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
91	L5	5297	HMT	C8-C7	18.29	1.79	1.52
91	L5	5297	HMT	C7-C6	12.08	1.77	1.51
91	L5	5297	HMT	C5-C4	-10.08	1.36	1.51
91	L5	5297	HMT	C10-N1	7.58	1.57	1.47
91	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(°)
91	L5	5297	HMT	O4-C19-C20	5.73	121.75	111.24
91	L5	5297	HMT	O7-C22-C21	5.06	120.05	111.16
91	L5	5297	HMT	C3-O4-C19	-3.88	111.14	117.24
91	L5	5297	HMT	O1-C14-C13	3.29	132.23	127.86

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
91	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
91	L5	5297	HMT	C1-C2-O3-C18
91	L5	5297	HMT	C3-C2-O3-C18
91	L5	5297	HMT	C25-C26-C27-O9
88	L5	5292	SPM	C7-C8-C9-N10
91	L5	5297	HMT	C21-C22-O7-C23

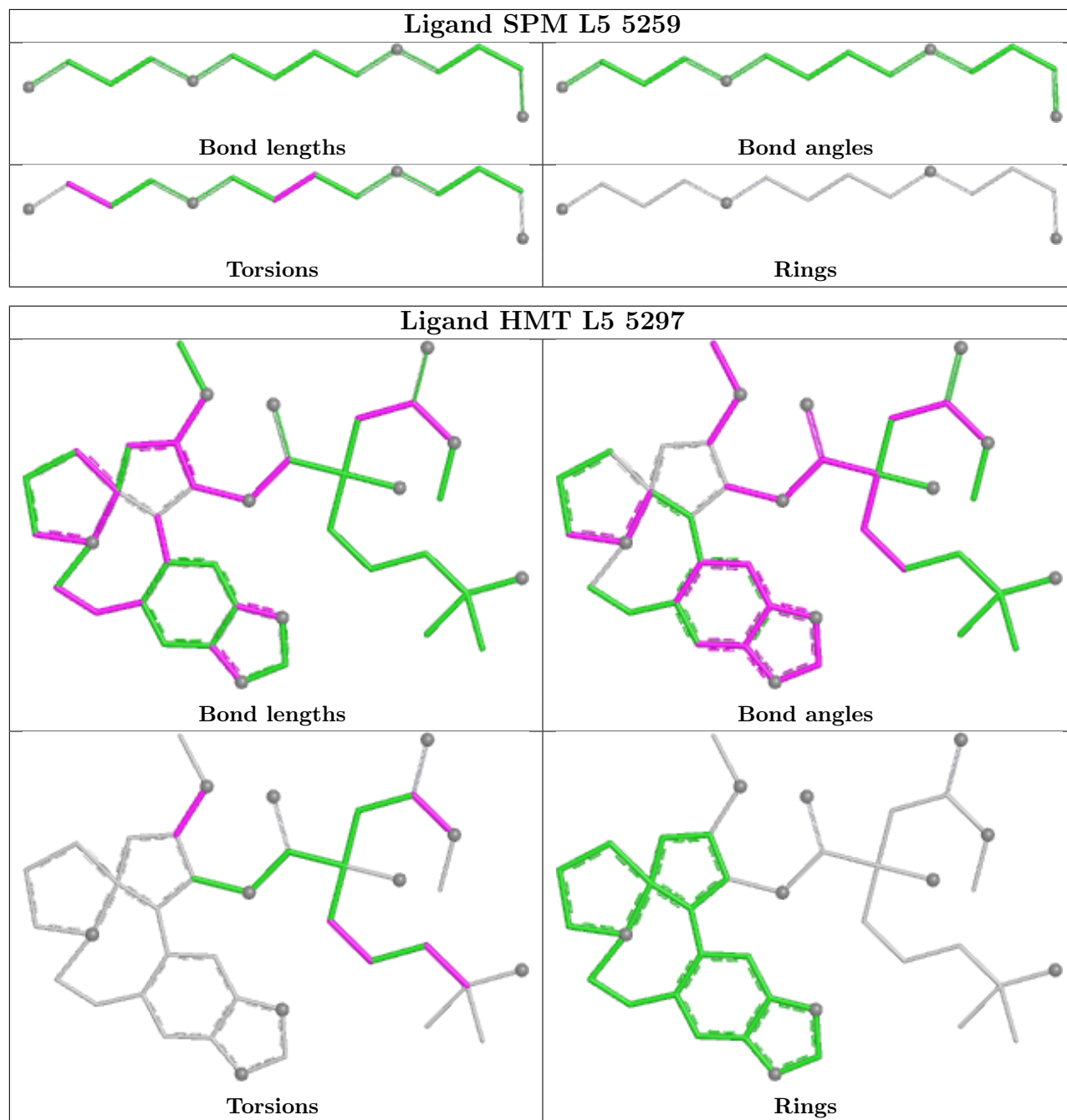
There are no ring outliers.

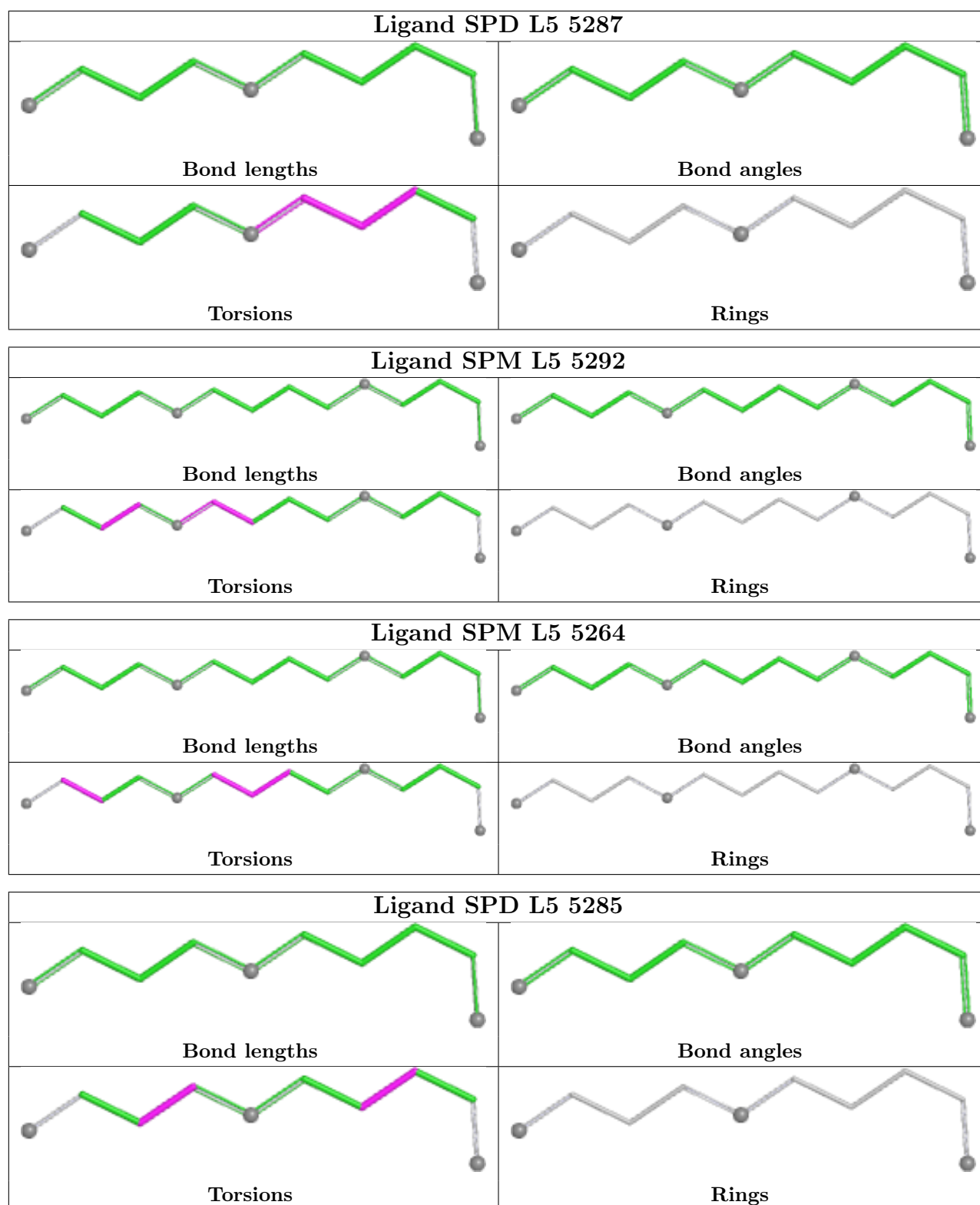
16 monomers are involved in 29 short contacts:

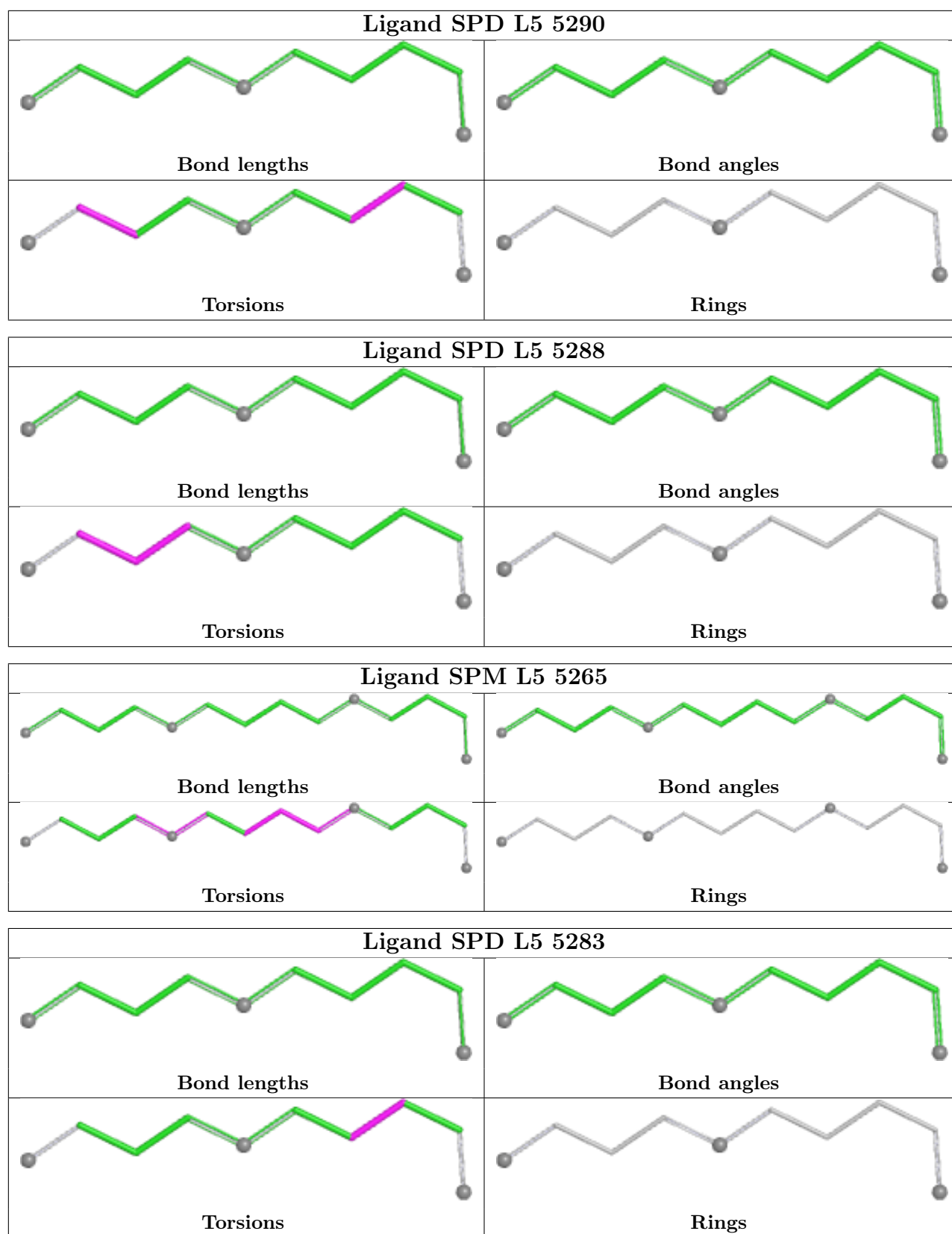
Mol	Chain	Res	Type	Clashes	Symm-Clashes
88	L5	5259	SPM	1	0
91	L5	5297	HMT	8	0
89	L5	5287	SPD	1	0
88	L5	5292	SPM	1	0
89	L5	5285	SPD	2	0
89	L5	5290	SPD	2	0
89	L5	5288	SPD	1	0
88	L5	5265	SPM	2	0
89	L5	5284	SPD	2	0
89	LN	301	SPD	2	0
90	L5	5296	3HE	2	0
88	L5	5289	SPM	1	0
89	L5	5291	SPD	1	0
88	L5	5268	SPM	1	0
88	L5	5293	SPM	2	0
89	L5	5262	SPD	1	0

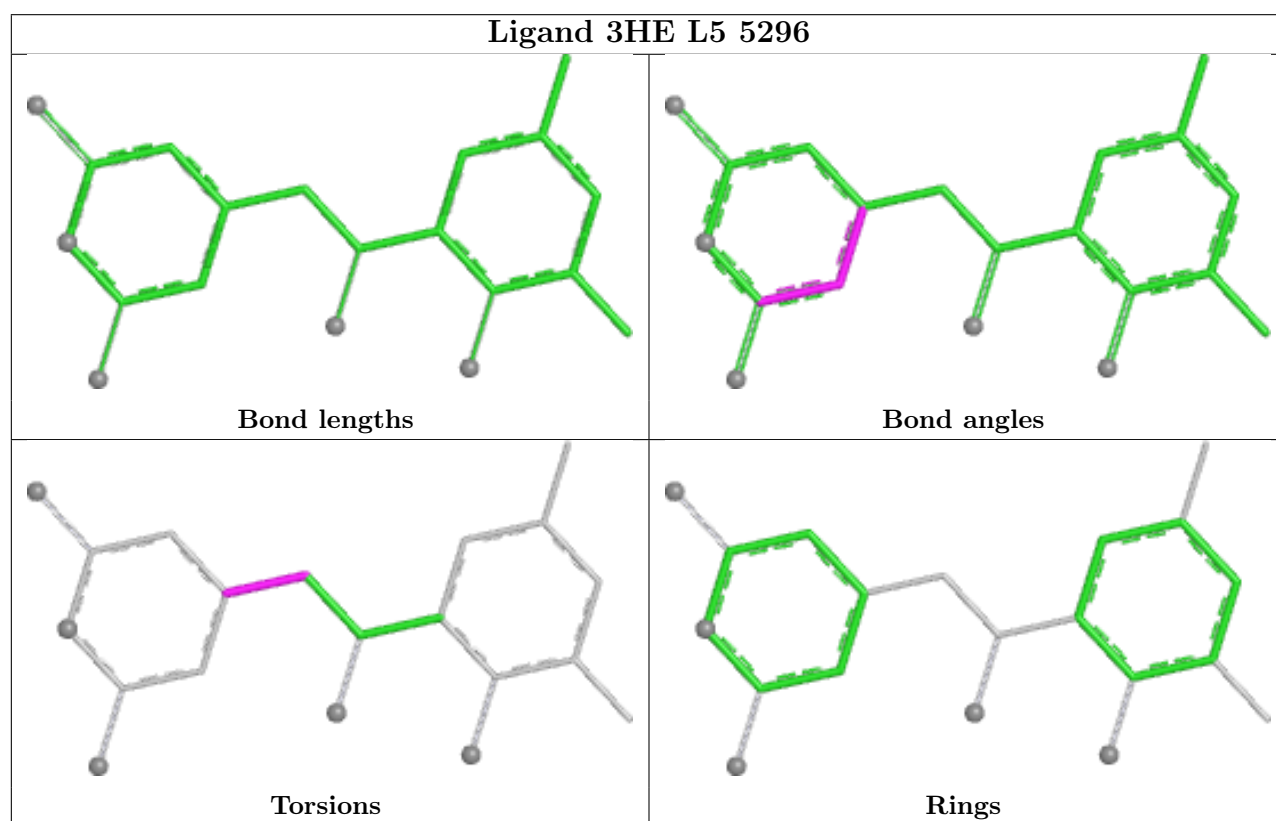
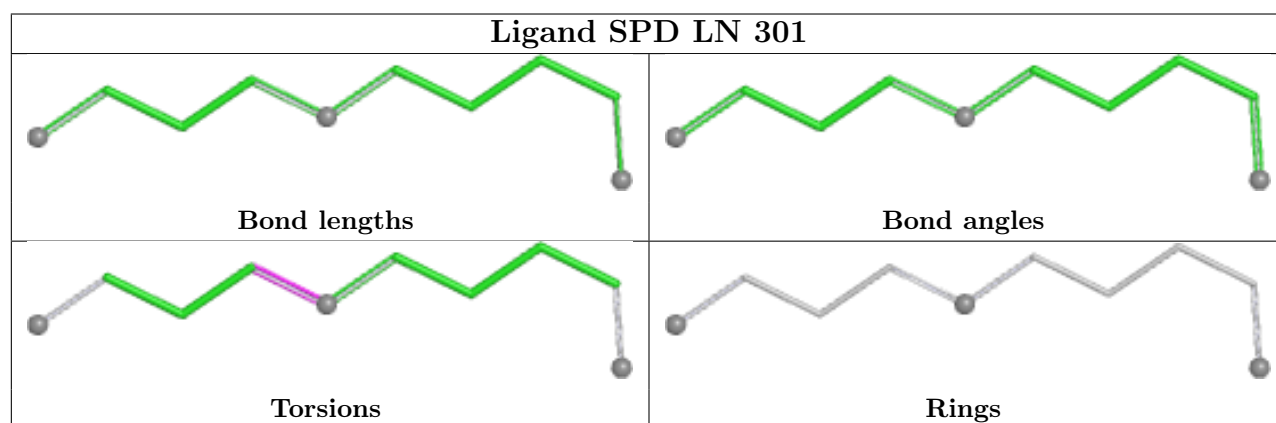
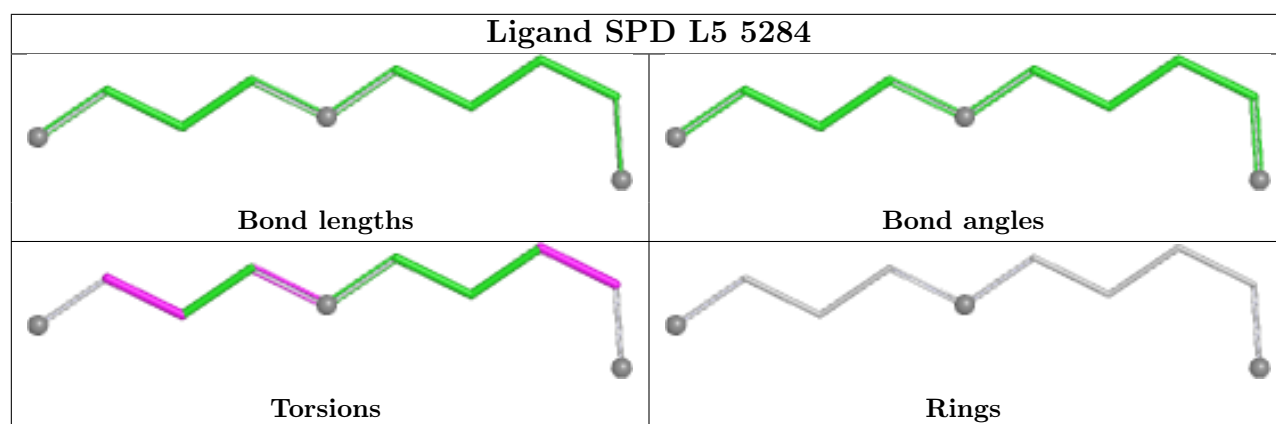
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and

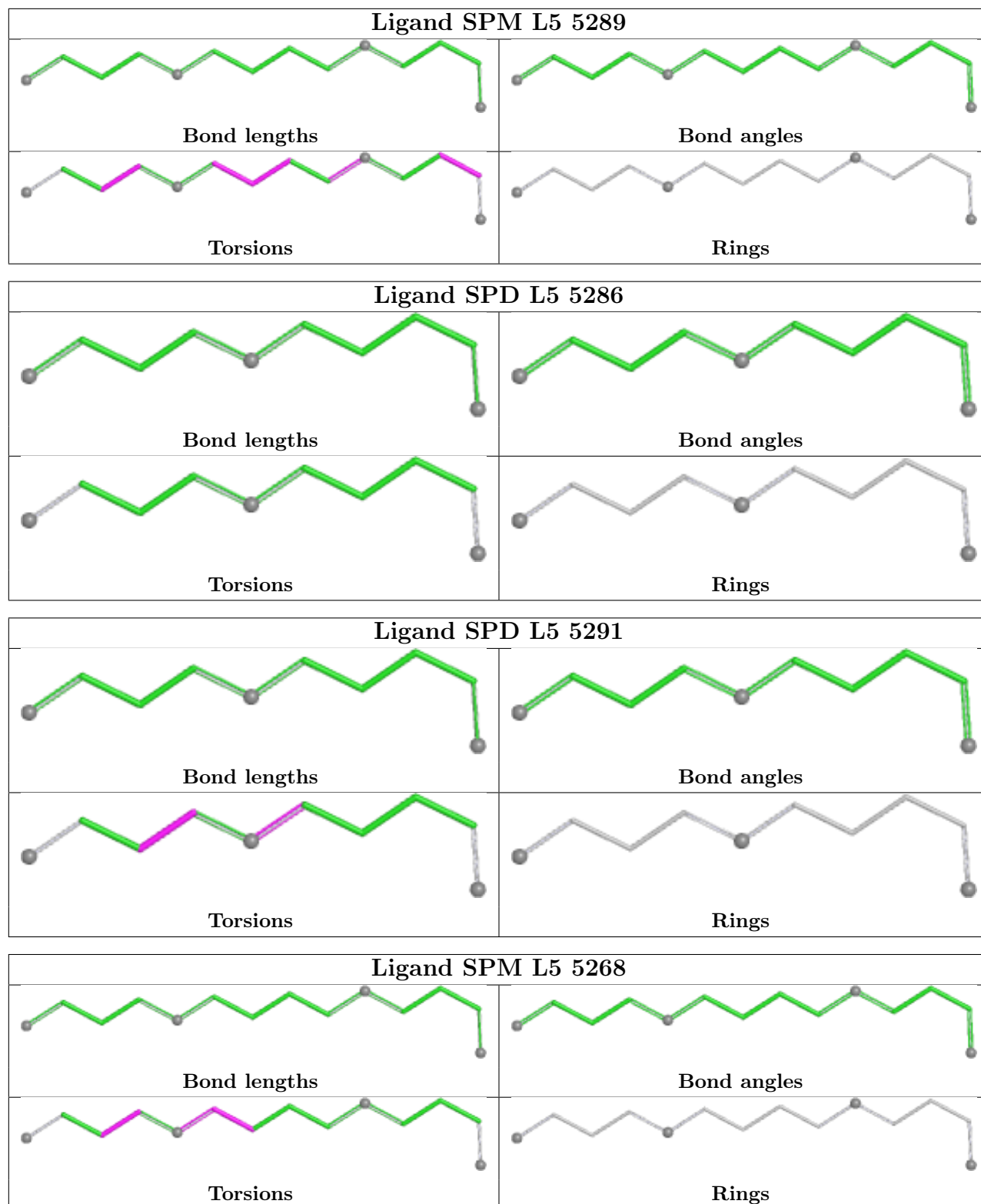
any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

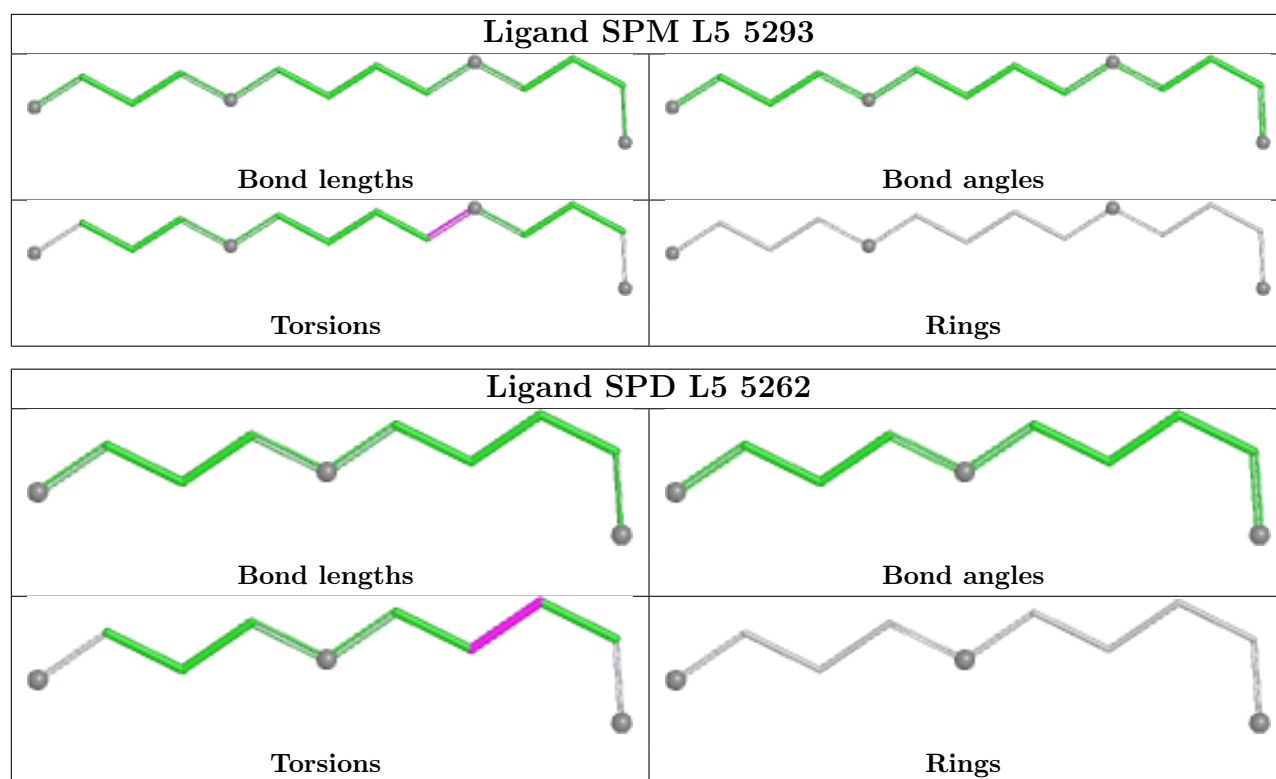












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
4	L5	10
84	S2	5
1	Pt	1
3	AT	1

The worst 5 of 17 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	S2	753:C	O3'	785:C	P	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

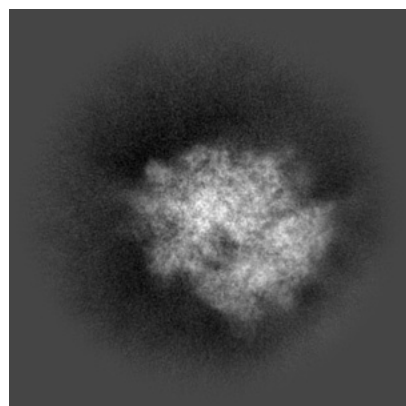
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-71343. These allow visual inspection of the internal detail of the map and identification of artifacts.

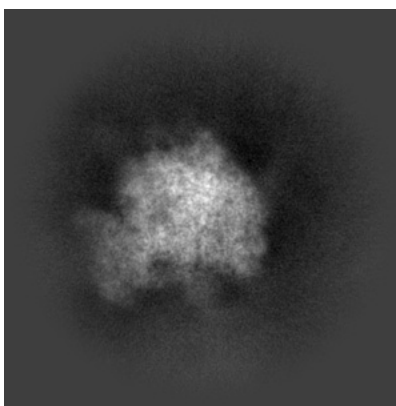
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

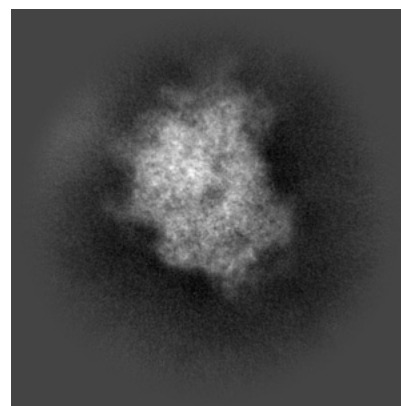
6.1.1 Primary map



X

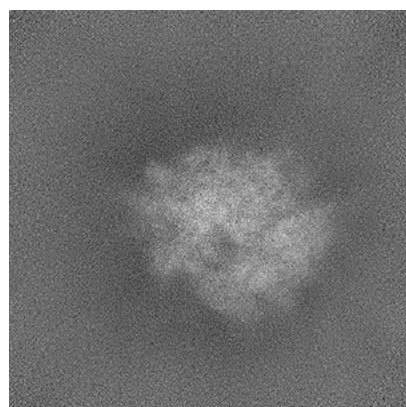


Y

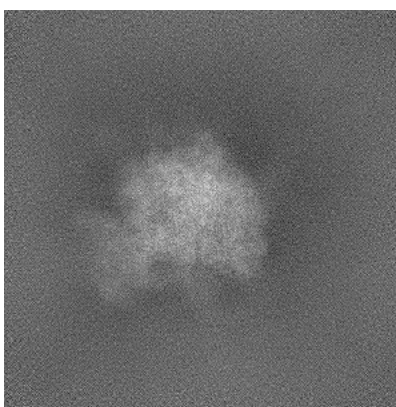


Z

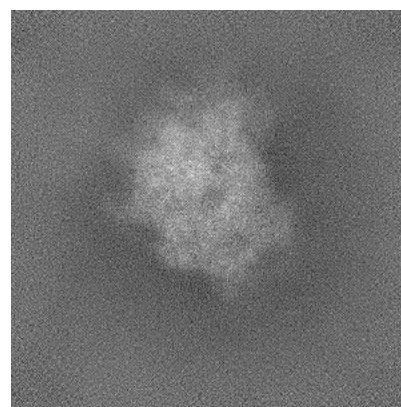
6.1.2 Raw map



X



Y

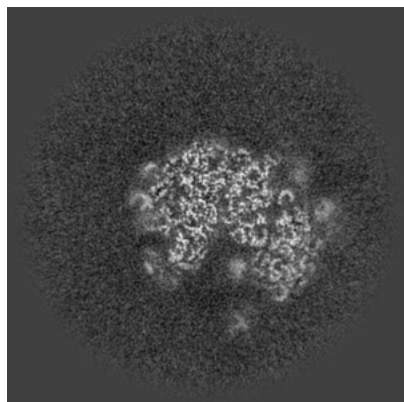


Z

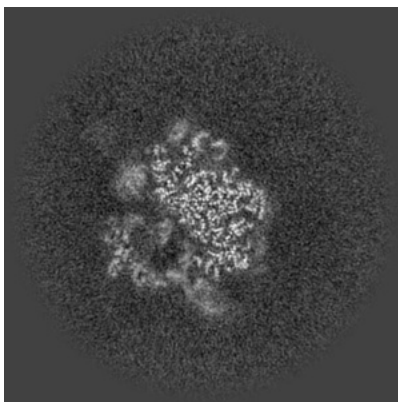
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

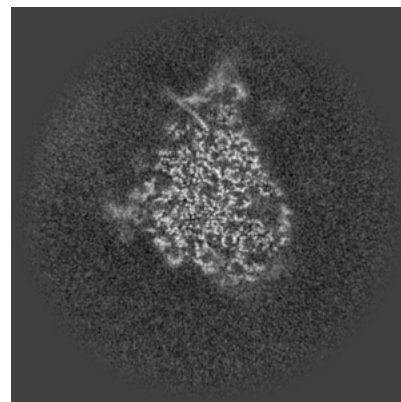
6.2.1 Primary map



X Index: 256

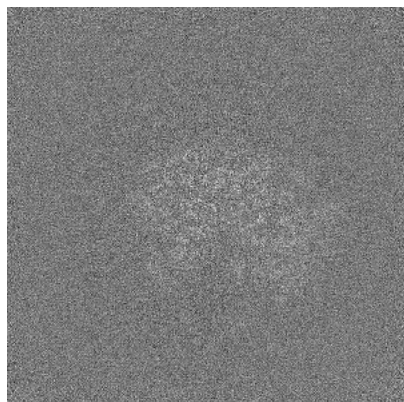


Y Index: 256

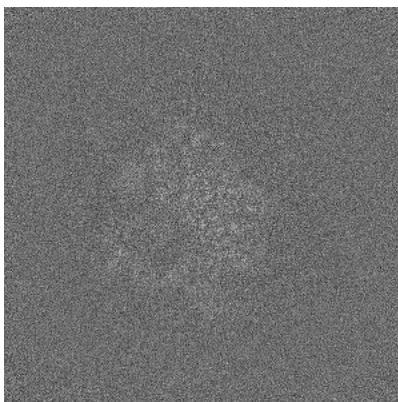


Z Index: 256

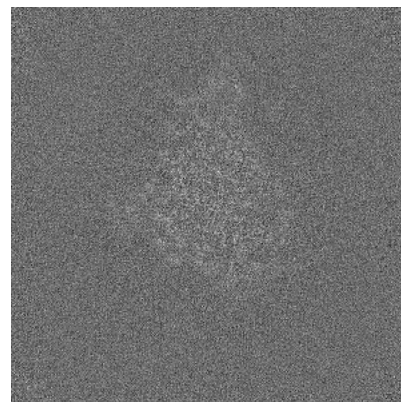
6.2.2 Raw map



X Index: 256



Y Index: 256

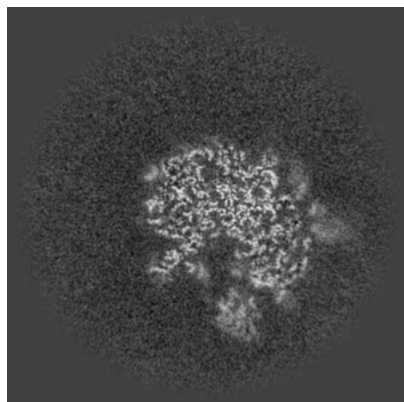


Z Index: 256

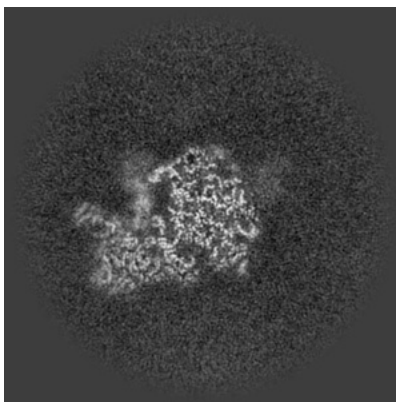
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

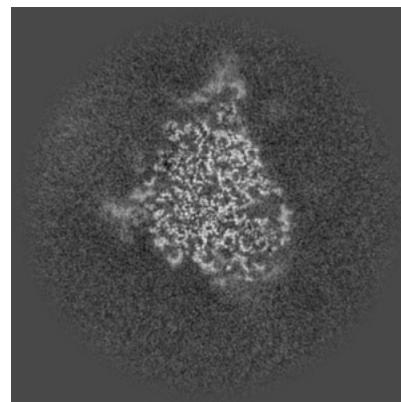
6.3.1 Primary map



X Index: 243

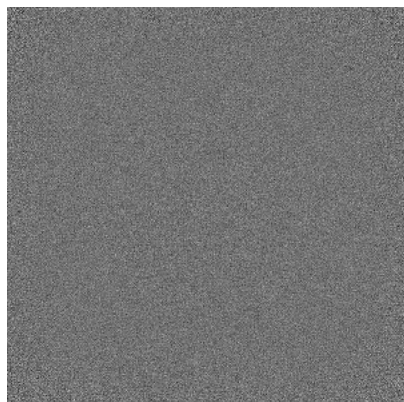


Y Index: 295

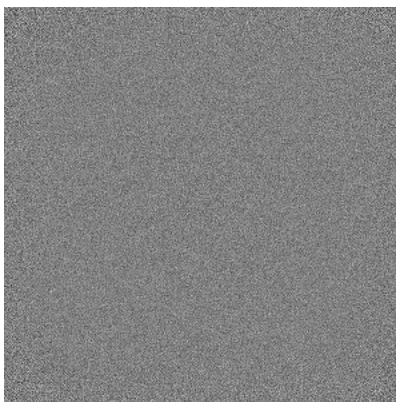


Z Index: 258

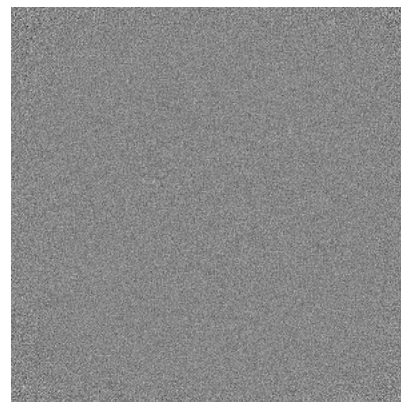
6.3.2 Raw map



X Index: 0



Y Index: 0

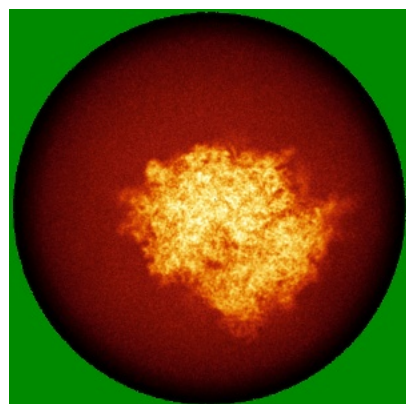


Z Index: 0

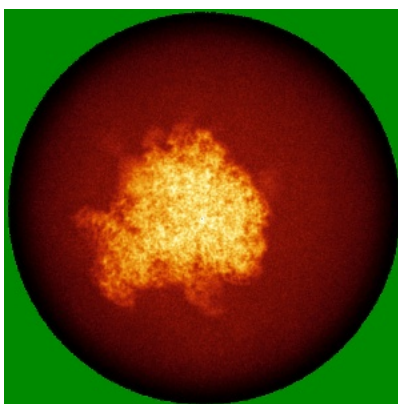
The images above show the largest variance slices of the map in three orthogonal directions.

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

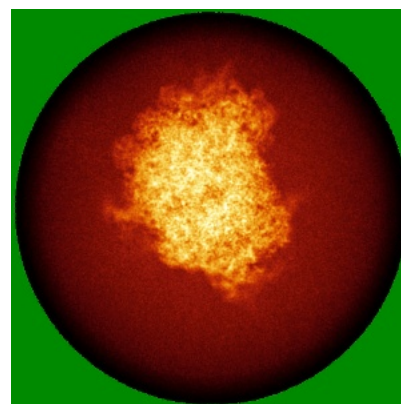
6.4.1 Primary map



X

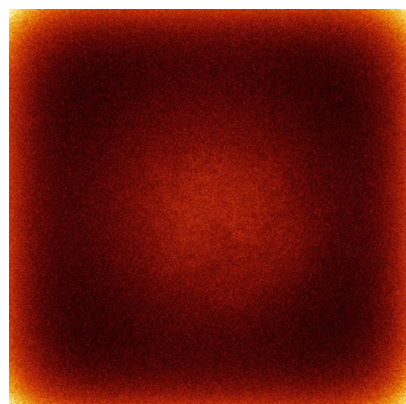


Y

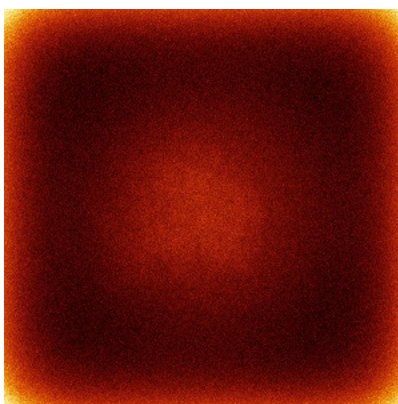


Z

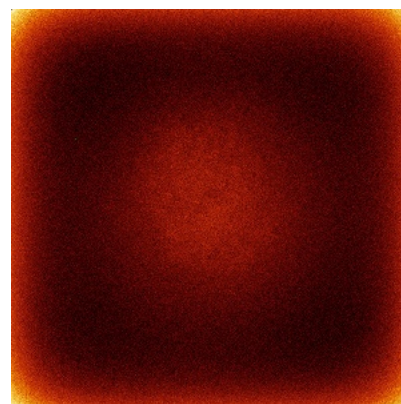
6.4.2 Raw map



X



Y

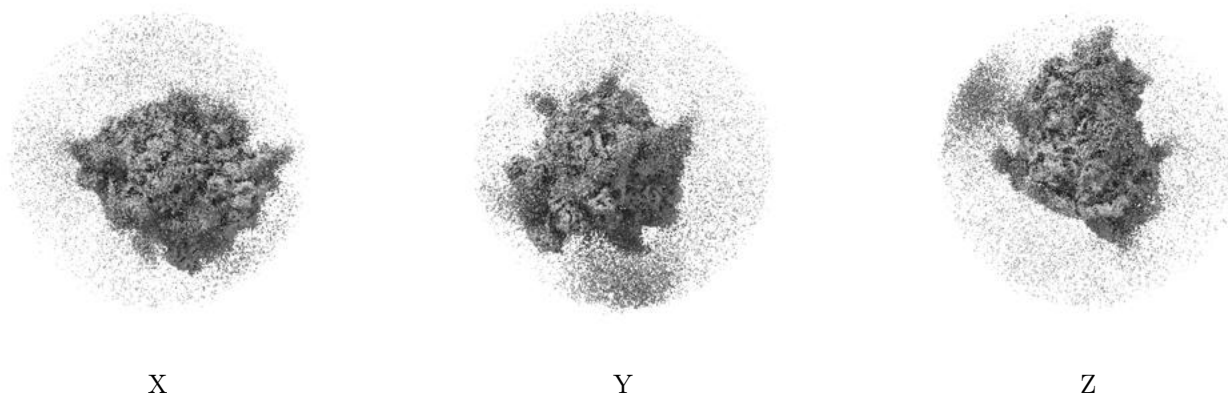


Z

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.

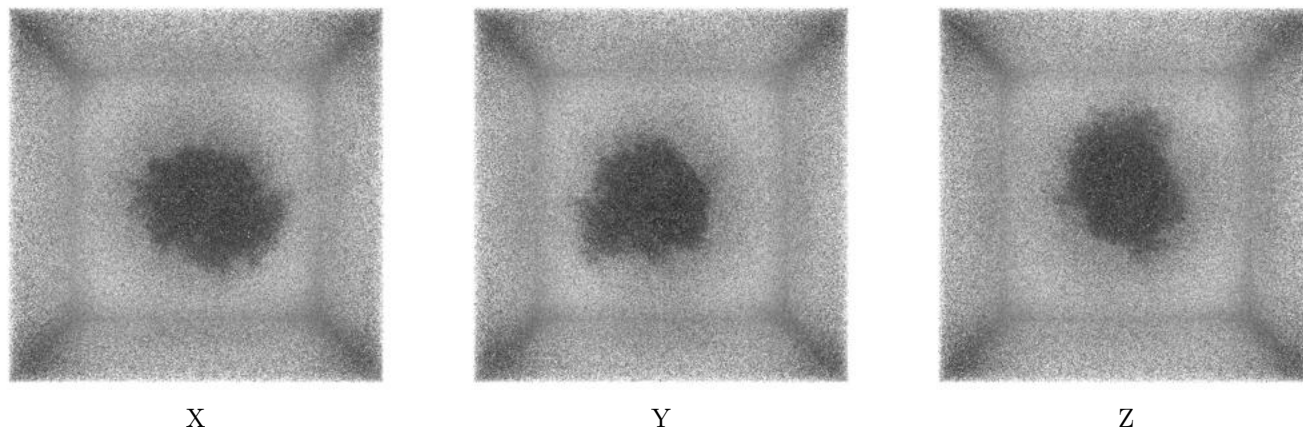
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0792. 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.

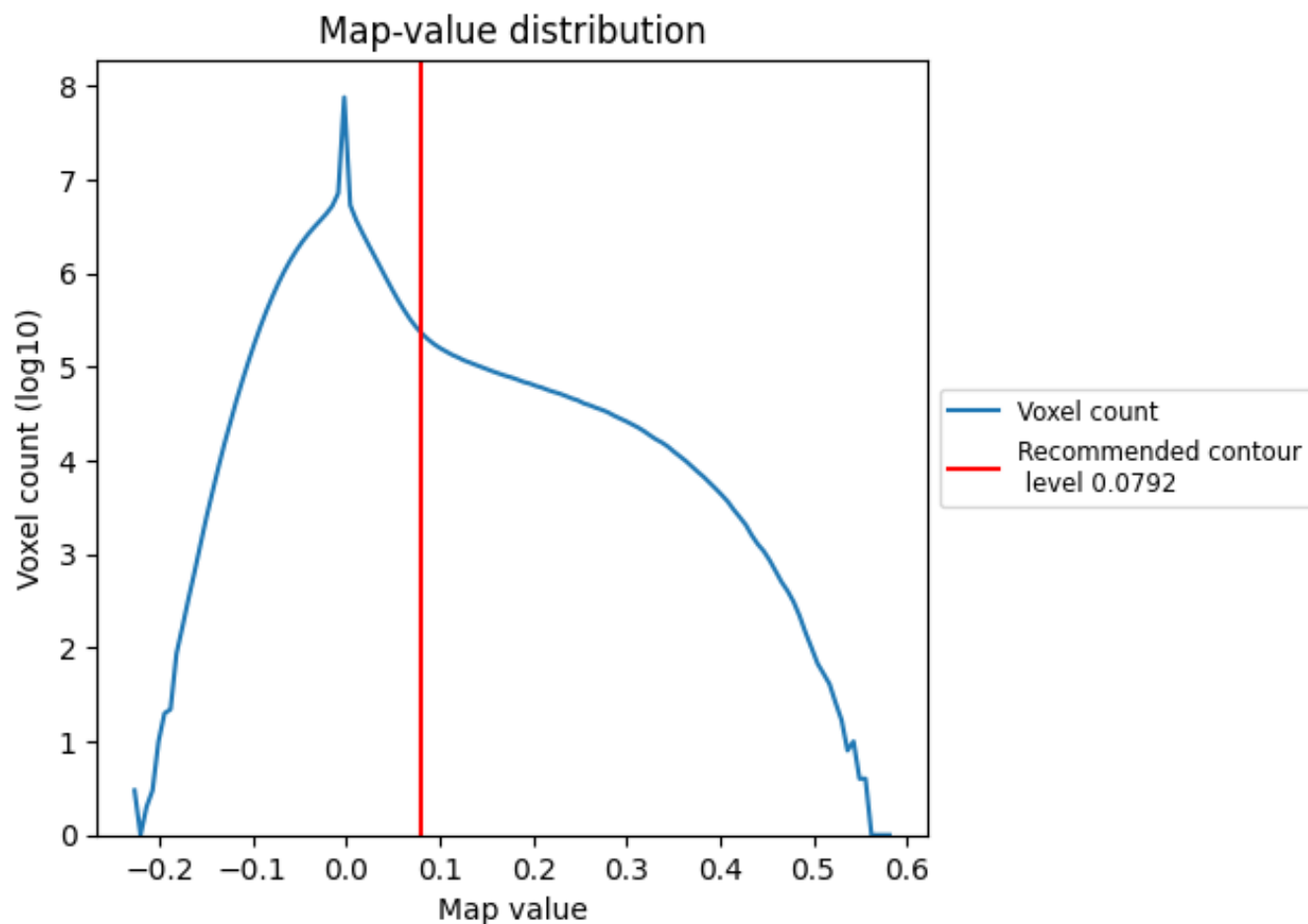
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

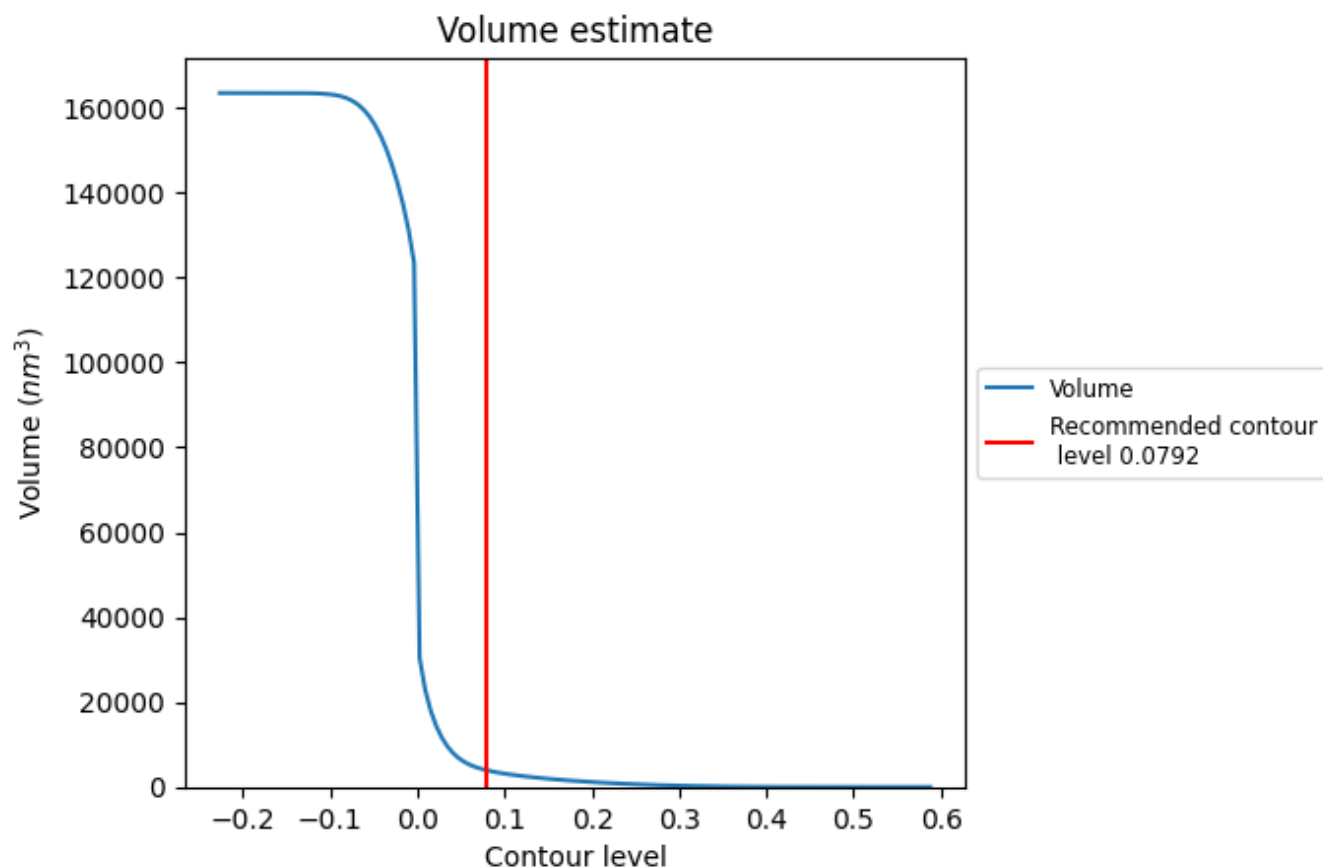
This section contains the results of statistical analysis of the map.

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.

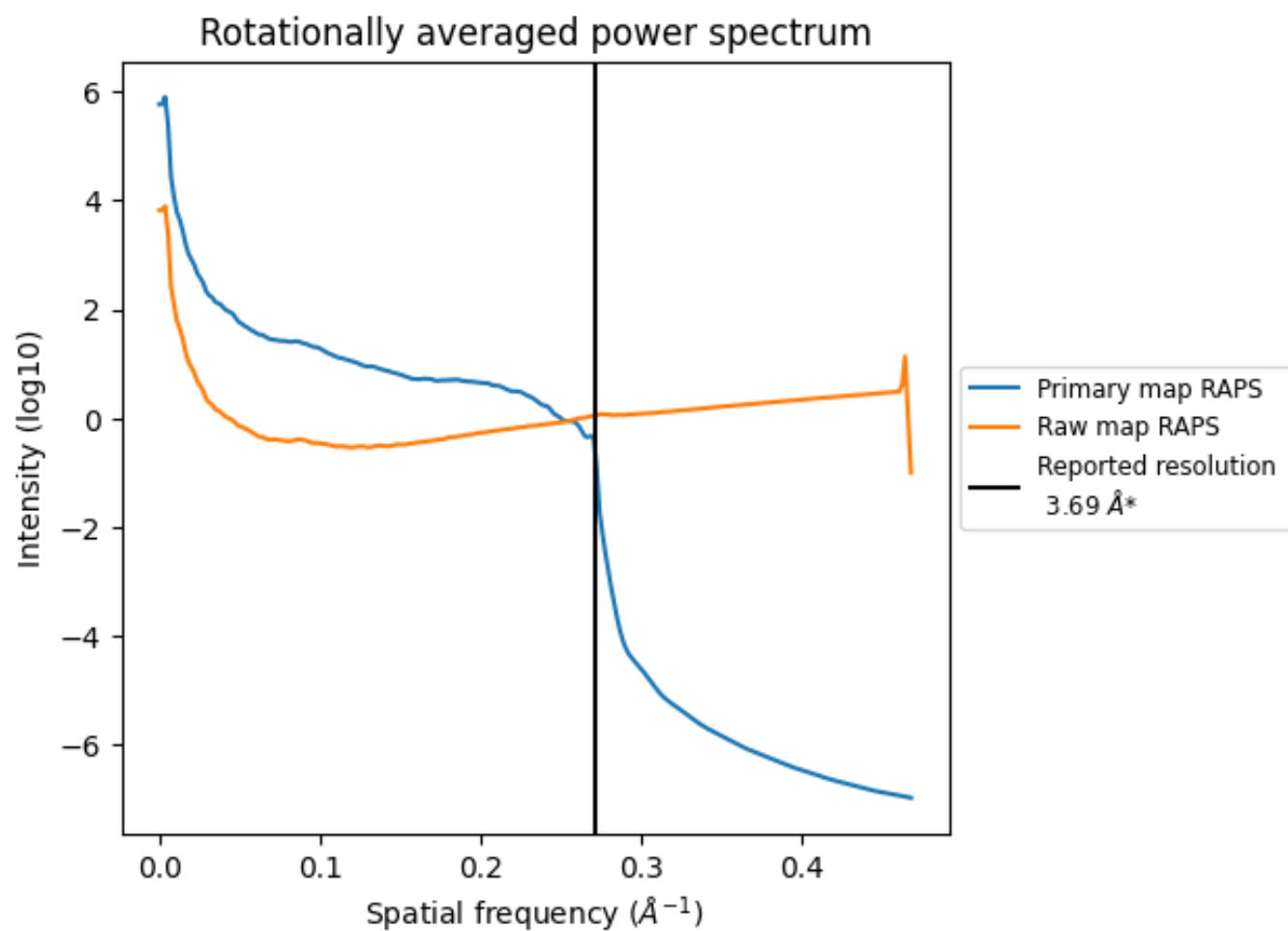
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 3944 nm³; this corresponds to an approximate mass of 3563 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 ⓘ

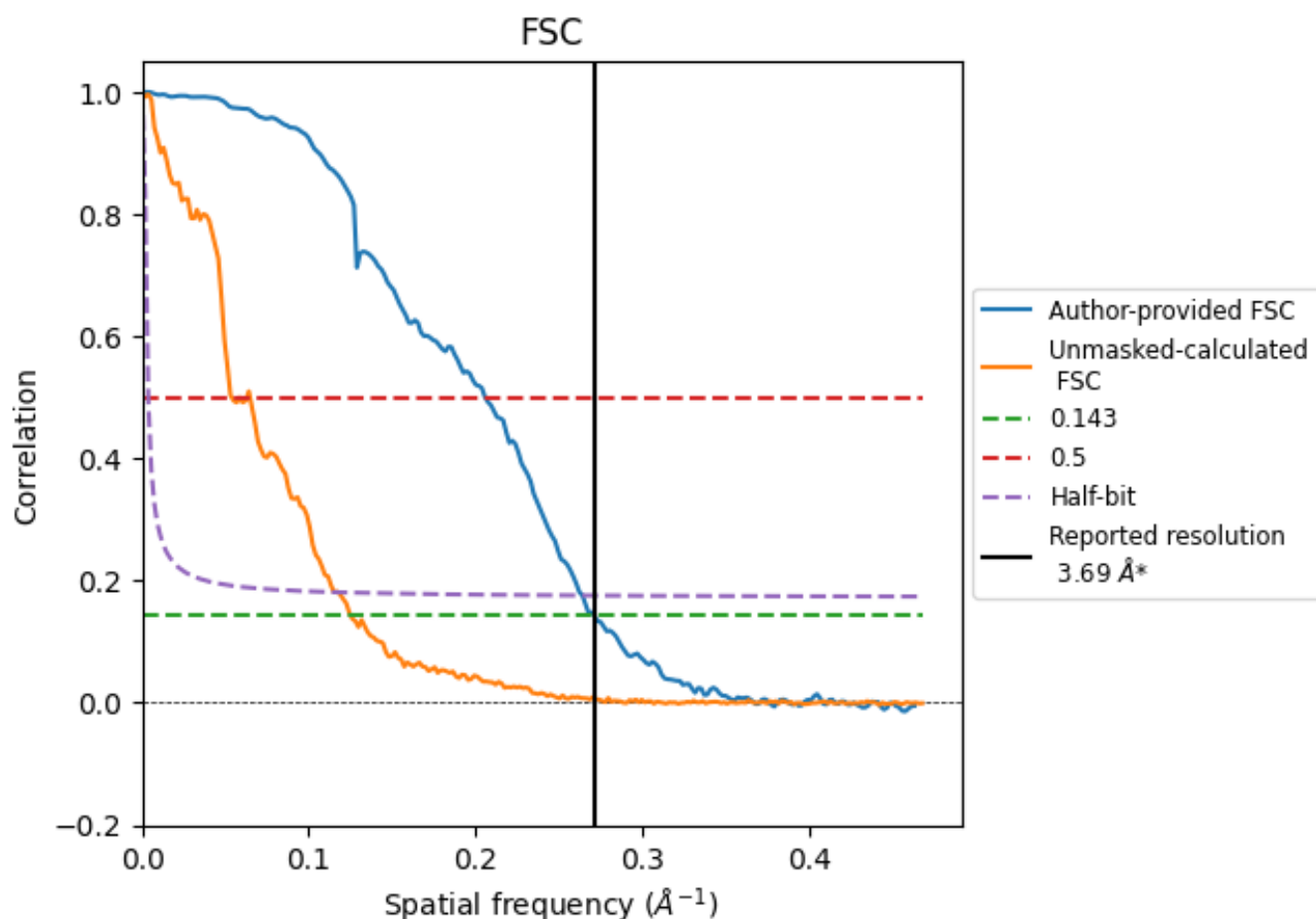


*Reported resolution corresponds to spatial frequency of 0.271 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.271 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

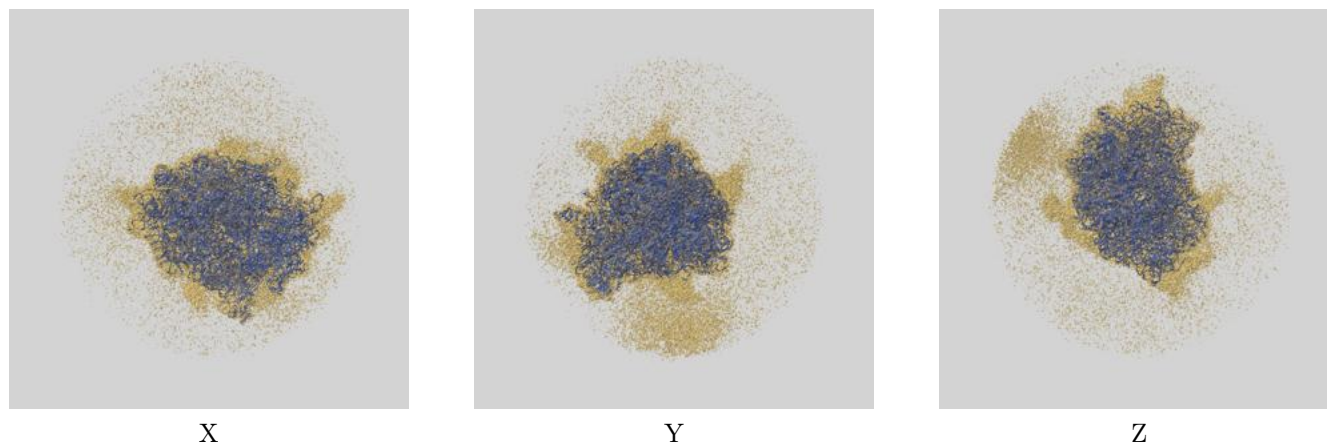
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.69	-	-
Author-provided FSC curve	3.69	4.86	3.79
Unmasked-calculated*	7.99	18.62	8.68

*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 7.99 differs from the reported value 3.69 by more than 10 %

9 Map-model fit [i](#)

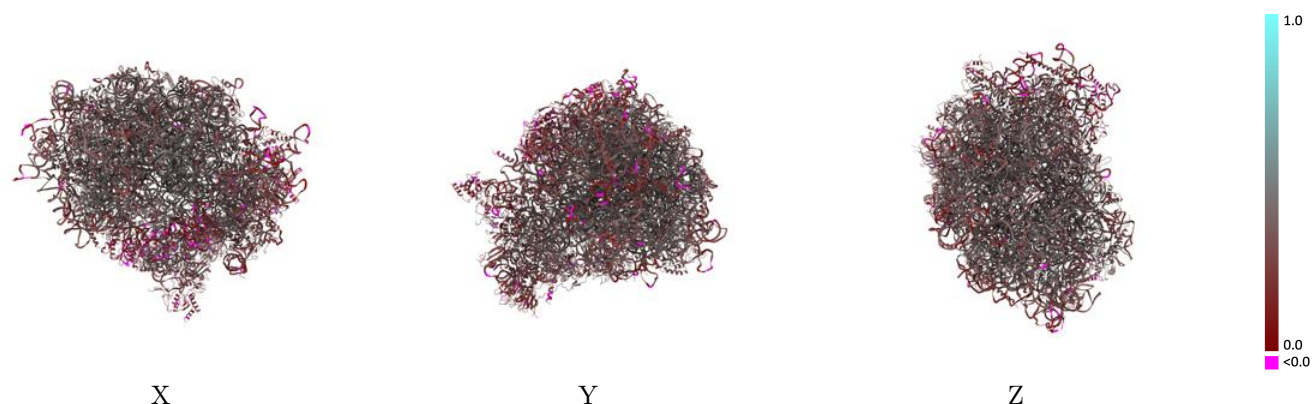
This section contains information regarding the fit between EMDB map EMD-71343 and PDB model 9P7I. Per-residue inclusion information can be found in [section 3](#) on [page 24](#).

9.1 Map-model overlay [i](#)



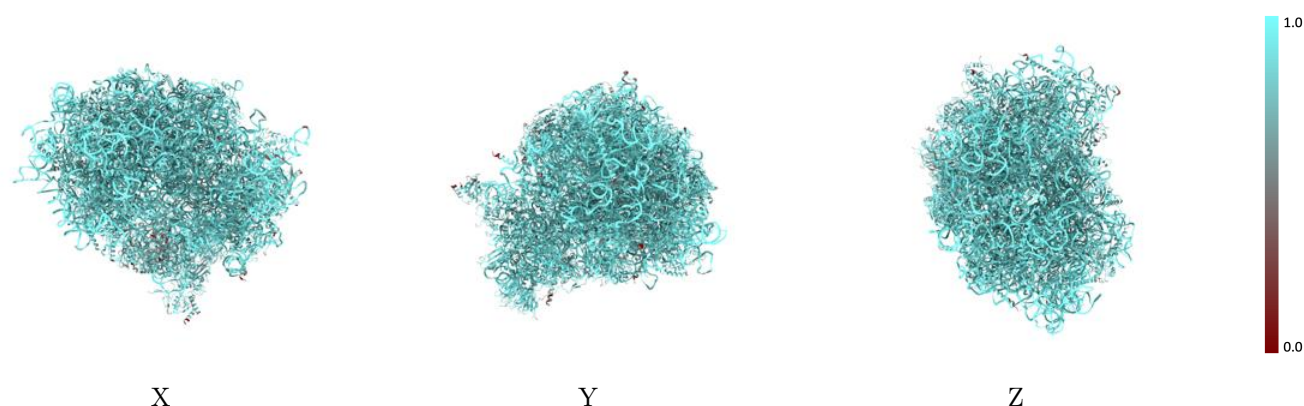
The images above show the 3D surface view of the map at the recommended contour level 0.0792 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



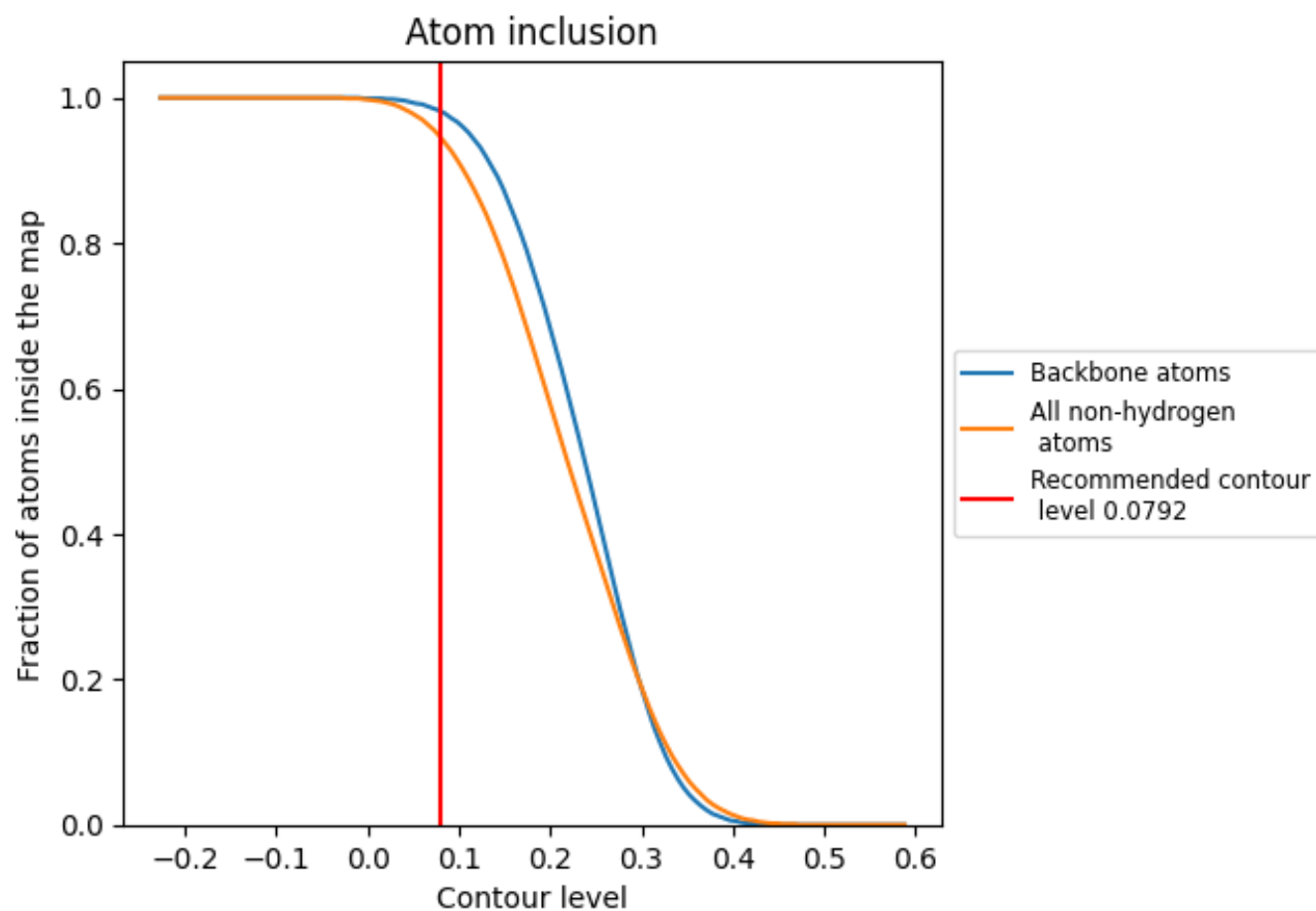
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0792).

9.4 Atom inclusion [i](#)



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

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.0792) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9470	 0.3500
AT	 0.9810	 0.1780
CF	 0.9350	 0.1700
CI	 0.6780	 0.2330
L5	 0.9890	 0.3700
L7	 0.9970	 0.3910
L8	 0.9920	 0.3830
LA	 0.9450	 0.4280
LB	 0.9070	 0.3980
LC	 0.9140	 0.3970
LD	 0.9090	 0.3510
LE	 0.8960	 0.3490
LF	 0.9080	 0.3820
LG	 0.8780	 0.3450
LH	 0.9090	 0.3830
LI	 0.9070	 0.3860
LJ	 0.8830	 0.3320
LL	 0.8980	 0.3790
LM	 0.9080	 0.3730
LN	 0.9340	 0.4170
LO	 0.9230	 0.3860
LP	 0.9250	 0.4090
LQ	 0.9210	 0.4130
LR	 0.8810	 0.3510
LS	 0.9480	 0.4120
LT	 0.9180	 0.4020
LU	 0.9110	 0.3230
LV	 0.9290	 0.4220
LW	 0.8550	 0.2890
LX	 0.9070	 0.3910
LY	 0.9340	 0.3740
LZ	 0.9190	 0.3820
La	 0.9410	 0.4170
Lb	 0.8650	 0.3290
Lc	 0.9000	 0.3730



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Chain	Atom inclusion	Q-score
Ld	 0.9230	 0.3960
Le	 0.9260	 0.4080
Lf	 0.9390	 0.4280
Lg	 0.9380	 0.3990
Lh	 0.8710	 0.3500
Li	 0.9050	 0.3680
Lj	 0.9510	 0.4160
Lk	 0.8730	 0.3550
Ll	 0.9460	 0.3890
Lm	 0.9230	 0.3880
Ln	 0.9140	 0.3750
Lo	 0.9140	 0.4000
Lp	 0.9350	 0.4010
Lr	 0.9190	 0.4130
Ls	 0.6770	 0.1400
Lt	 0.6410	 0.1270
Pt	 0.9650	 0.3210
S2	 0.9880	 0.3450
SA	 0.8910	 0.3450
SB	 0.8810	 0.3630
SC	 0.9210	 0.3720
SD	 0.8870	 0.3160
SE	 0.9150	 0.3250
SF	 0.8540	 0.3020
SG	 0.8760	 0.2450
SH	 0.8390	 0.3010
SI	 0.9030	 0.3350
SJ	 0.8780	 0.3040
SK	 0.9010	 0.2680
SL	 0.8790	 0.3600
SM	 0.7530	 0.1680
SN	 0.8910	 0.3720
SO	 0.9030	 0.3690
SP	 0.8620	 0.2990
SQ	 0.8890	 0.3000
SR	 0.8710	 0.3050
SS	 0.8450	 0.2890
ST	 0.8960	 0.2960
SU	 0.8890	 0.2820
SV	 0.9030	 0.3470
SW	 0.9230	 0.3800
SX	 0.9190	 0.3570

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Chain	Atom inclusion	Q-score
SY	 0.8410	 0.2540
SZ	 0.8150	 0.2760
Sa	 0.9300	 0.3790
Sb	 0.8870	 0.3710
Sc	 0.8660	 0.3150
Sd	 0.9320	 0.3360
Se	 0.8400	 0.2610
Sf	 0.8120	 0.1890
Sg	 0.8730	 0.2350
Zt	 0.9320	 0.1530