



## wwPDB EM Validation Summary Report ⓘ

Nov 4, 2023 – 10:31 PM EDT

PDB ID : 8G60  
EMDB ID : EMD-29759  
Title : mRNA decoding in human is kinetically and structurally distinct from bacteria (CR state)  
Authors : Holm, M.; Natchiar, K.S.; Rundlet, E.J.; Myasnikov, A.G.; Altman, R.B.; Blanchard, S.C.  
Deposited on : 2023-02-14  
Resolution : 2.54 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](mailto: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>.

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

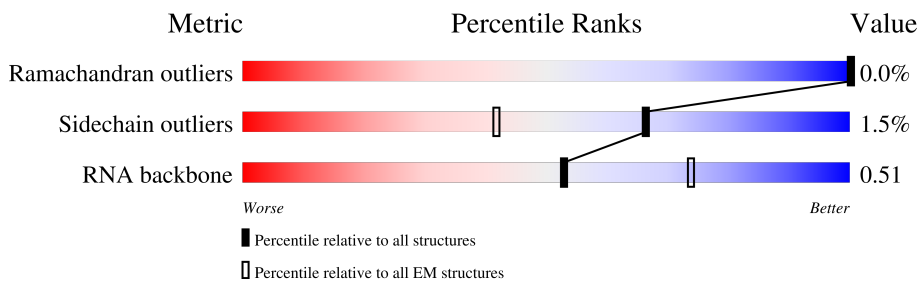
EMDB validation analysis : 0.0.1.dev70  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
MolProbity : 4.02b-467  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.9  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.36

# 1 Overall quality at a glance

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

The reported resolution of this entry is 2.54 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.



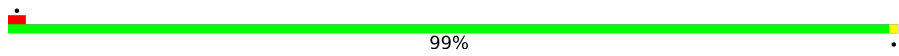

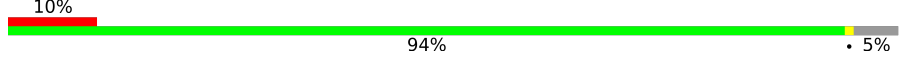
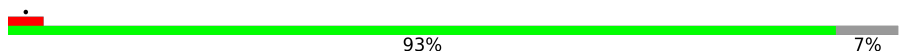
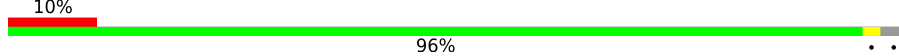
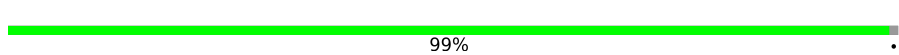
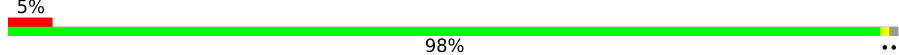
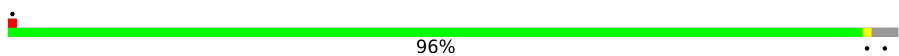



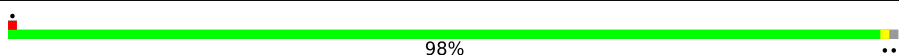
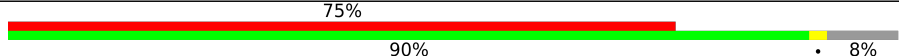
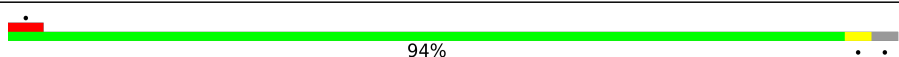
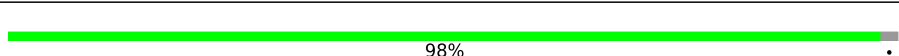
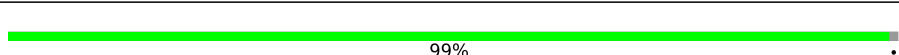
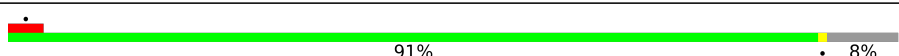
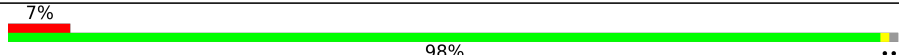
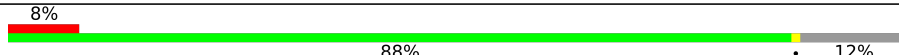
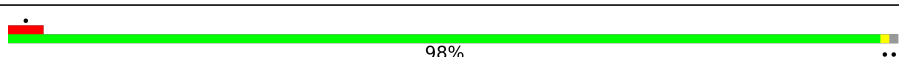
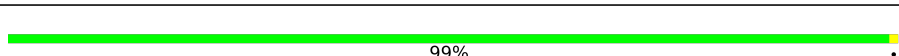
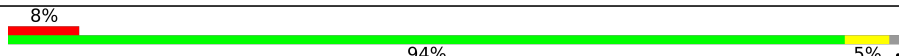


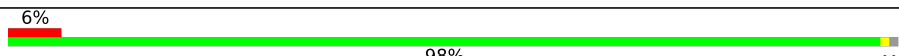
Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

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  $\geq 3$ , 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	S2	1869	
2	L8	156	
3	L5	5069	
4	L7	120	
5	SB	264	
6	SA	295	
7	SD	243	
8	SJ	194	

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Mol	Chain	Length	Quality of chain
9	SE	263	 99%
10	SC	293	 75%
11	SG	249	 94%
12	SF	204	 93%
13	SH	194	 96%
14	SW	130	 99%
15	SI	208	 98%
16	SQ	146	 96%
17	SU	119	 82%
18	SK	165	 58%
19	SO	151	 88%
20	SX	143	 98%
21	SM	132	 90%
22	SS	152	 94%
23	Sd	56	 98%
24	SN	151	 99%
25	SL	158	 91%
26	SR	135	 98%
27	SP	145	 88%
28	ST	145	 98%
29	SV	83	 99%
30	SY	133	 94%
31	SZ	125	 66%
32	Sa	115	 85%
33	Sb	84	 98%

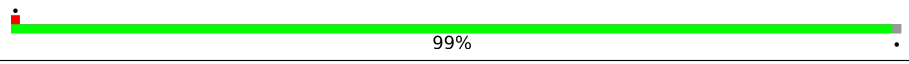





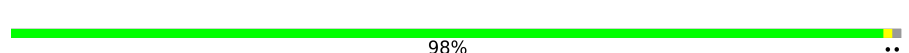
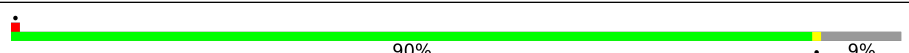
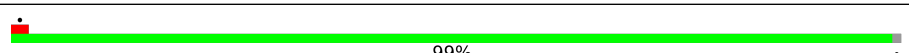
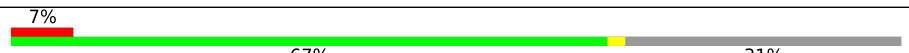
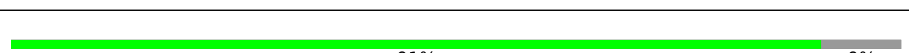
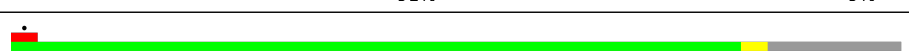

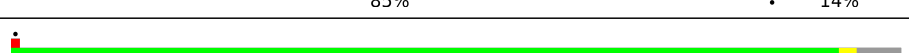
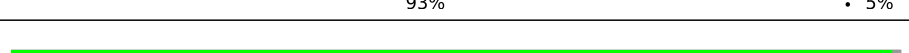
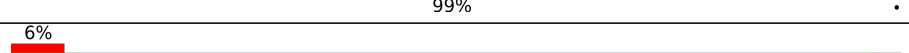
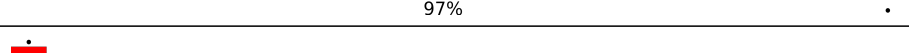
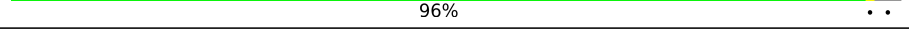

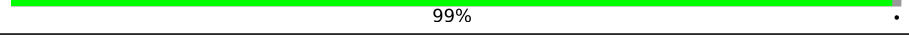
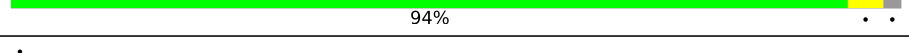

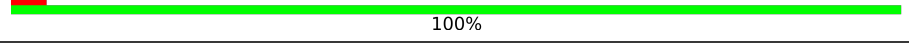
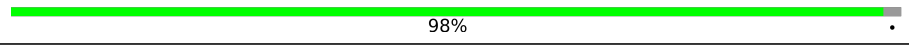
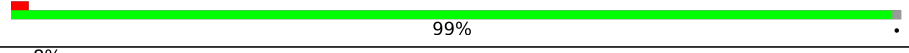
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Mol	Chain	Length	Quality of chain
34	Sc	69	12% 91% 7%
35	Se	133	38% 62%
36	Sf	156	21% 35% 5% 60%
37	Sg	317	12% 95%
38	Lz	217	100% 98%
39	LA	257	96%
40	LB	403	99%
41	LC	427	85% 14%
42	LJ	178	95% 5%
43	LH	192	98%
44	LE	288	76% 23%
45	LG	266	8% 88% 10%
46	Lq	317	52% 59% 38%
47	LK	165	82% 87% 11%
48	LO	203	97%
49	LL	270	74% 24%
50	LV	140	94% 5%
51	LM	215	63% 37%
52	La	148	97%
53	LN	204	98%
54	LI	214	97%
55	LD	297	98%
56	LQ	188	99%
57	LR	196	6% 94% 5%
58	LS	176	99%

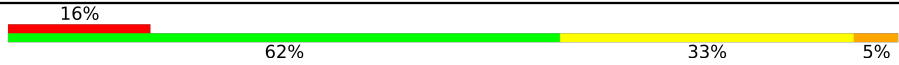

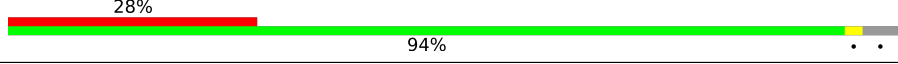
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Mol	Chain	Length	Quality of chain
59	LT	160	 99%
60	LP	184	 83% 17%
61	LU	128	 77% 23%
62	LX	156	 76% 24%
63	LY	145	 90% 8%
64	LW	157	 18% 73% 25%
65	LZ	136	 98%
66	Lr	137	 90% 9%
67	Lh	123	 99%
68	Lb	159	 7% 67% 31%
69	LF	248	 91% 9%
70	Lc	115	 82% 15%
71	Ld	125	 85% 14%
72	Le	135	 93% 5%
73	Lf	110	 99%
74	Lg	117	 6% 97%
75	Li	105	 96%
76	Lj	97	 89% 11%
77	Lk	70	 99%
78	Ll	51	 94%
79	Lm	128	 41% 59%
80	Ln	25	 100%
81	Lo	106	 98%
82	Lp	92	 99%
83	mR	60	 8% 12% 85%

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Mol	Chain	Length	Quality of chain
84	At	76	
85	Pt	77	
86	EF	462	

## 2 Entry composition

There are 98 unique types of molecules in this entry. The entry contains 223755 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 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	S2	1654	35359	15812	6338	11555	1654	0	0

- Molecule 2 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	L8	156	3320	1482	585	1097	156	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	L5	3637	78069	34805	14275	25351	3638	1	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	L7	120	2562	1141	456	845	120	0	0

- Molecule 5 is a protein called eS1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	SB	223	1806	1145	325	322	14	0	0

- Molecule 6 is a protein called uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	SA	222	1750	1111	306	325	8	0	0

- Molecule 7 is a protein called uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	SD	226	1756	1119	315	314	8	0	0

- Molecule 8 is a protein called uS4.

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

- Molecule 9 is a protein called eS4.

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

- Molecule 10 is a protein called uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	SC	222	1725	1115	298	302	10	0	0

- Molecule 11 is a protein called eS6.

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

- Molecule 12 is a protein called uS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	SF	189	1494	934	284	269	7	0	0

- Molecule 13 is a protein called eS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	SH	189	1517	966	279	271	1	0	0

- Molecule 14 is a protein called uS8.



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

- Molecule 15 is a protein called eS8.

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

- Molecule 16 is a protein called uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	SQ	141	1123	715	212	193	3	0	0

- Molecule 17 is a protein called uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
17	SU	101	803	504	153	142	4	0	0

- Molecule 18 is a protein called eS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
18	SK	96	810	530	143	131	6	0	0

- Molecule 19 is a protein called uS11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
19	SO	135	1009	618	198	187	6	0	0

- Molecule 20 is a protein called uS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	SX	142	1105	696	220	186	3	0	0

- Molecule 21 is a protein called eS12.

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

- Molecule 22 is a protein called uS13.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	SS	148	Total	C	N	O	S	0	0
			1214	761	245	207	1		

- Molecule 23 is a protein called uS14.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	Sd	55	Total	C	N	O	S	0	0
			458	286	94	73	5		

- Molecule 24 is a protein called uS15.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	SN	150	Total	C	N	O	S	1	0
			1214	778	231	204	1		

- Molecule 25 is a protein called uS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	SL	145	Total	C	N	O	S	0	0
			1189	757	225	201	6		

- Molecule 26 is a protein called eS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	SR	134	Total	C	N	O	S	0	0
			1083	680	201	198	4		

- Molecule 27 is a protein called uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	SP	128	Total	C	N	O	S	0	0
			1050	666	198	179	7		

- Molecule 28 is a protein called eS19.

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

- Molecule 29 is a protein called eS21.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
29	SV	83	639	395	117	122	5	0	0

- Molecule 30 is a protein called eS24.

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

- Molecule 31 is a protein called eS25.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
31	SZ	84	674	433	126	114	1	0	0

- Molecule 32 is a protein called eS26.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
32	Sa	99	792	492	165	130	5	0	0

- Molecule 33 is a protein called eS27.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
33	Sb	83	650	408	121	114	7	0	0

- Molecule 34 is a protein called eS28.

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

- Molecule 35 is a protein called eS30.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	Se	51	Total	C	N	O	S	0	0
			406	248	92	65	1		

- Molecule 36 is a protein called eS31.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	Sf	63	Total	C	N	O	S	0	0
			515	324	98	86	7		

- Molecule 37 is a protein called RACK1.

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

- Molecule 38 is a protein called uL1.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	Lz	217	Total	C	N	O	S	0	0
			1741	1113	312	307	9		

- Molecule 39 is a protein called uL2.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	LA	251	Total	C	N	O	S	1	0
			1930	1209	396	319	6		

- Molecule 40 is a protein called uL3.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	LB	402	Total	C	N	O	S	0	0
			3240	2061	608	557	14		

- Molecule 41 is a protein called uL4.

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

- Molecule 42 is a protein called uL5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	LJ	169	1358	859	253	240	6	0	0

- Molecule 43 is a protein called uL6.

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

- Molecule 44 is a protein called eL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
44	LE	223	1786	1150	339	293	4	0	0

- Molecule 45 is a protein called eL8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
45	LG	239	1910	1217	368	321	4	0	0

- Molecule 46 is a protein called uL10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
46	Lq	196	1506	958	263	276	9	0	0

- Molecule 47 is a protein called uL11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
47	LK	147	1121	700	211	207	3	0	0

- Molecule 48 is a protein called uL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
48	LO	199	1634	1053	319	257	5	0	0

- Molecule 49 is a protein called eL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	LL	206	Total	C	N	O	S	0	0
			1664	1041	345	274	4		

- Molecule 50 is a protein called uL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	LV	133	Total	C	N	O	S	0	0
			989	623	186	175	5		

- Molecule 51 is a protein called eL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	LM	136	Total	C	N	O	S	0	0
			1120	719	215	179	7		

- Molecule 52 is a protein called uL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	La	147	Total	C	N	O	S	0	0
			1163	736	237	187	3		

- Molecule 53 is a protein called eL15.

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

- Molecule 54 is a protein called uL16.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	LI	208	Total	C	N	O	S	0	0
			1680	1065	323	278	14		

- Molecule 55 is a protein called uL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	LD	293	Total	C	N	O	S	0	0
			2387	1511	435	427	14		

- Molecule 56 is a protein called eL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	LQ	187	Total	C	N	O	S	0	0
			1511	944	314	248	5		

- Molecule 57 is a protein called eL19.

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

- Molecule 58 is a protein called eL20.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	LS	176	Total	C	N	O	S	0	0
			1460	930	284	235	11		

- Molecule 59 is a protein called eL21.

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

- Molecule 60 is a protein called uL22.

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

- Molecule 61 is a protein called eL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	LU	99	Total	C	N	O	S	0	0
			808	518	141	147	2		

- Molecule 62 is a protein called uL23.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	LX	118	Total	C	N	O	S	0	0
			967	618	181	167	1		

- Molecule 63 is a protein called uL24.

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

- Molecule 64 is a protein called eL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	LW	117	Total	C	N	O	S	0	0
			944	592	191	157	4		

- Molecule 65 is a protein called eL27.

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

- Molecule 66 is a protein called eL28.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	Lr	125	Total	C	N	O	S	0	0
			1005	624	207	169	5		

- Molecule 67 is a protein called uL29.

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

- Molecule 68 is a protein called eL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	Lb	109	Total	C	N	O	S	0	0
			885	552	192	137	4		

- Molecule 69 is a protein called uL30.

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

- Molecule 70 is a protein called eL30.



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

- Molecule 71 is a protein called eL31.

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

- Molecule 72 is a protein called eL32.

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

- Molecule 73 is a protein called eL33.

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

- Molecule 74 is a protein called eL34.

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

- Molecule 75 is a protein called eL36.

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

- Molecule 76 is a protein called eL37.

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

- Molecule 77 is a protein called eL38.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	Lk	69	Total	C	N	O	S	0	0
			568	366	103	98	1		

- Molecule 78 is a protein called eL39.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	Ll	50	Total	C	N	O	S	0	0
			443	281	98	63	1		

- Molecule 79 is a protein called eL40.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	Lm	52	Total	C	N	O	S	0	0
			431	269	90	66	6		

- Molecule 80 is a protein called eL41.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	Ln	25	Total	C	N	O	S	0	0
			239	145	64	27	3		

- Molecule 81 is a protein called eL42.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	Lo	104	Total	C	N	O	S	0	0
			852	534	174	138	6		

- Molecule 82 is a protein called eL43.

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

- Molecule 83 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	mR	9	Total	C	N	O	P	0	0
			188	84	29	66	9		

- Molecule 84 is a RNA chain called A-site tRNA.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	N	O	P	S		
84	At	76	1630	730	290	532	76	2	0	0

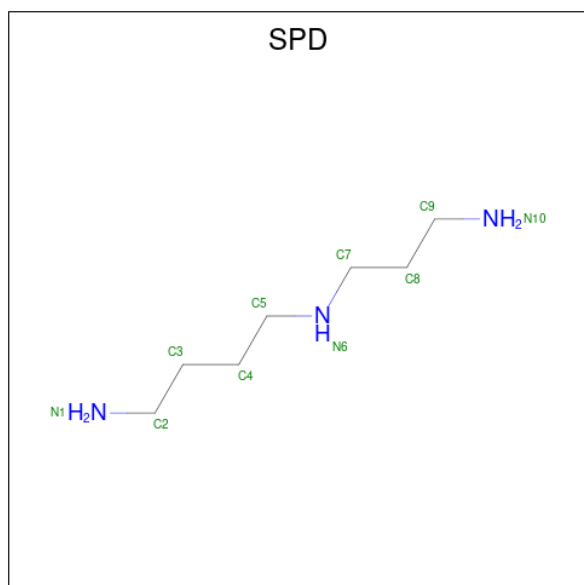
- Molecule 85 is a RNA chain called P-site tRNA.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	N	O	P	S		
85	Pt	77	1645	734	298	535	77	1	0	0

- Molecule 86 is a protein called eEF1A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
86	EF	443	3401	2165	584	635	17	1	0

- Molecule 87 is SPERMIDINE (three-letter code: SPD) (formula:  $C_7H_{19}N_3$ ).



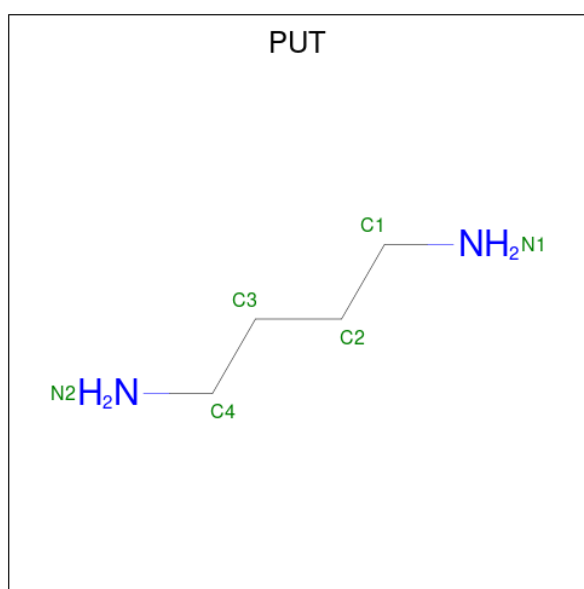
Mol	Chain	Residues	Atoms			AltConf
87	S2	1	Total	C	N	0
			10	7	3	
87	L5	1	Total	C	N	0
			10	7	3	
87	L5	1	Total	C	N	0
			10	7	3	
87	L5	1	Total	C	N	0
			10	7	3	

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

- Molecule 88 is 1,4-DIAMINOBTUTANE (three-letter code: PUT) (formula: C<sub>4</sub>H<sub>12</sub>N<sub>2</sub>).



Mol	Chain	Residues	Atoms			AltConf
			Total	C	N	
88	S2	1	Total 6	C 4	N 2	0
88	S2	1	Total 6	C 4	N 2	0
88	L5	1	Total 6	C 4	N 2	0
88	L5	1	Total 6	C 4	N 2	0
88	L5	1	Total 6	C 4	N 2	0
88	L5	1	Total 6	C 4	N 2	0
88	L5	1	Total 6	C 4	N 2	0

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Mol	Chain	Residues	Atoms			AltConf
88	L5	1	Total	C	N	0
			6	4	2	
88	L5	1	Total	C	N	0
			6	4	2	
88	L5	1	Total	C	N	0
			6	4	2	

- Molecule 89 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

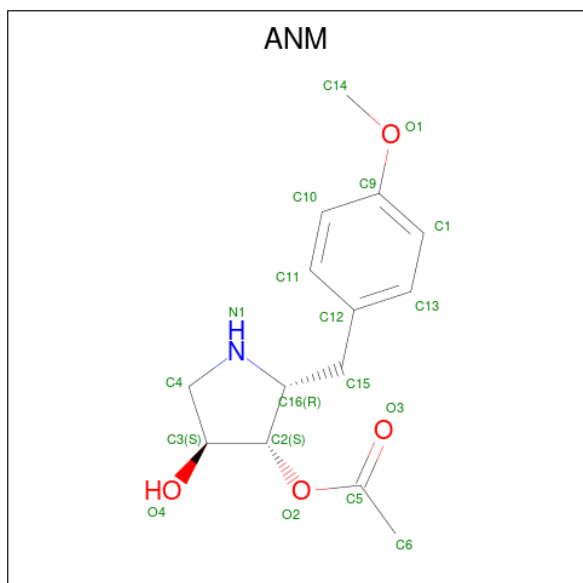
Mol	Chain	Residues	Atoms		AltConf
89	S2	112	Total	Mg	0
			112	112	
89	L8	7	Total	Mg	0
			7	7	
89	L5	307	Total	Mg	0
			307	307	
89	L7	7	Total	Mg	0
			7	7	
89	SG	1	Total	Mg	0
			1	1	
89	SO	1	Total	Mg	0
			1	1	
89	SS	2	Total	Mg	0
			2	2	
89	SN	1	Total	Mg	0
			1	1	
89	SP	1	Total	Mg	0
			1	1	
89	Sa	1	Total	Mg	0
			1	1	
89	LA	1	Total	Mg	0
			1	1	
89	LB	3	Total	Mg	0
			3	3	
89	LC	1	Total	Mg	0
			1	1	
89	LL	1	Total	Mg	0
			1	1	
89	LV	1	Total	Mg	0
			1	1	
89	LN	1	Total	Mg	0
			1	1	

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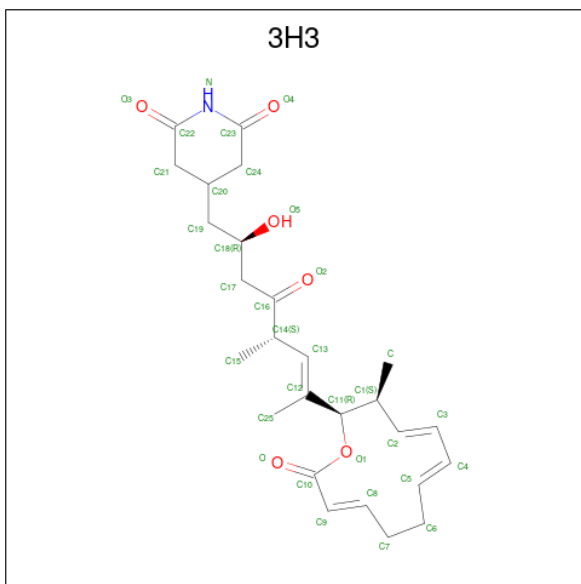
Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
89	LI	1	1	1	0
89	LR	1	1	1	0
89	LS	1	1	1	0
89	LP	2	2	2	0
89	Le	1	1	1	0
89	Lf	1	1	1	0
89	Lg	2	2	2	0
89	Lj	1	1	1	0
89	Pt	2	2	2	0
89	EF	1	1	1	0

- Molecule 90 is ANISOMYCIN (three-letter code: ANM) (formula: C<sub>14</sub>H<sub>19</sub>NO<sub>4</sub>).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
90	L5	1	19	14	1	4	0

- Molecule 91 is 4-[(2R,5S,6E)-2-hydroxy-5-methyl-7-[(2R,3S,4E,6Z,10E)-3-methyl-12-oxooxacyclododeca-4,6,10-trien-2-yl]-4-oxooct-6-en-1-yl]piperidine-2,6-dione (three-letter code: 3H3) (formula: C<sub>26</sub>H<sub>35</sub>NO<sub>6</sub>).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
91	L5	1	33	26	1	6	0

- Molecule 92 is POTASSIUM ION (three-letter code: K) (formula: K).

Mol	Chain	Residues	Atoms		AltConf
			Total	K	
92	L5	10	10	10	0

- Molecule 93 is ZINC ION (three-letter code: ZN) (formula: Zn).

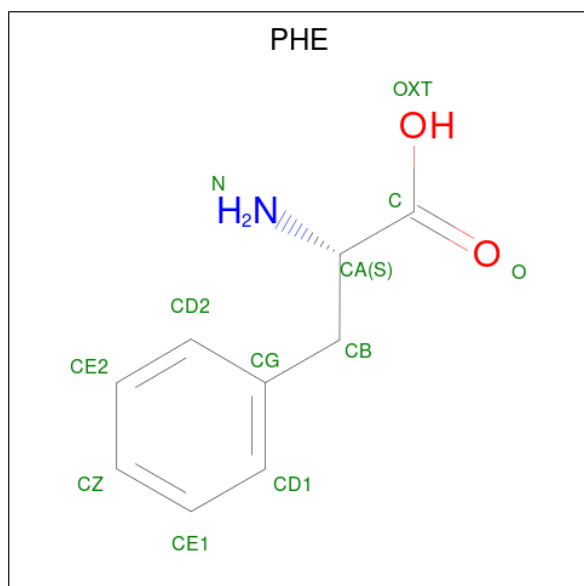
Mol	Chain	Residues	Atoms		AltConf
			Total	Zn	
93	Sd	1	1	1	0
93	Sa	1	1	1	0
93	Lg	1	1	1	0
93	Lj	1	1	1	0
93	Lm	1	1	1	0
93	Lo	1	1	1	0

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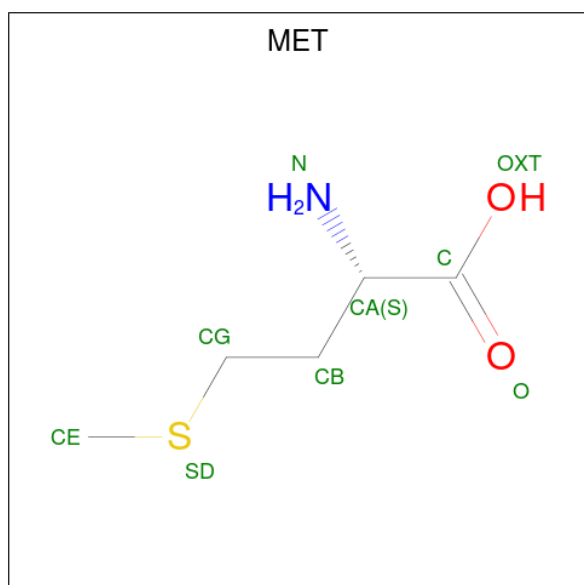
Mol	Chain	Residues	Atoms		AltConf
			Total	Zn	
93	Lp	1	1	1	0

- Molecule 94 is PHENYLALANINE (three-letter code: PHE) (formula:  $C_9H_{11}NO_2$ ).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
94	At	1	11	9	1	1	0

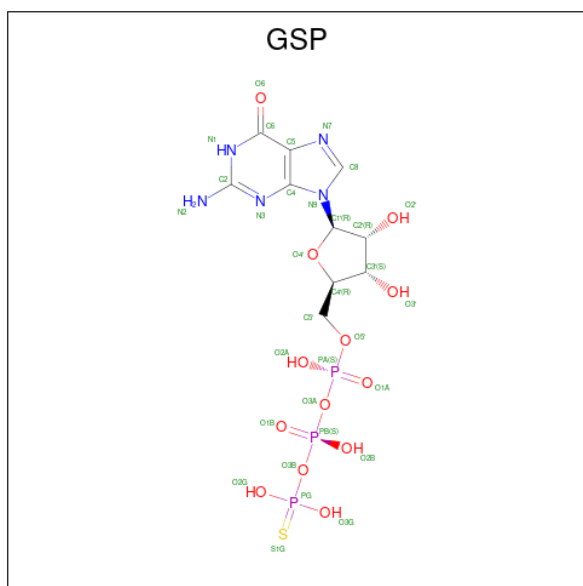
- Molecule 95 is METHIONINE (three-letter code: MET) (formula:  $C_5H_{11}NO_2S$ ).





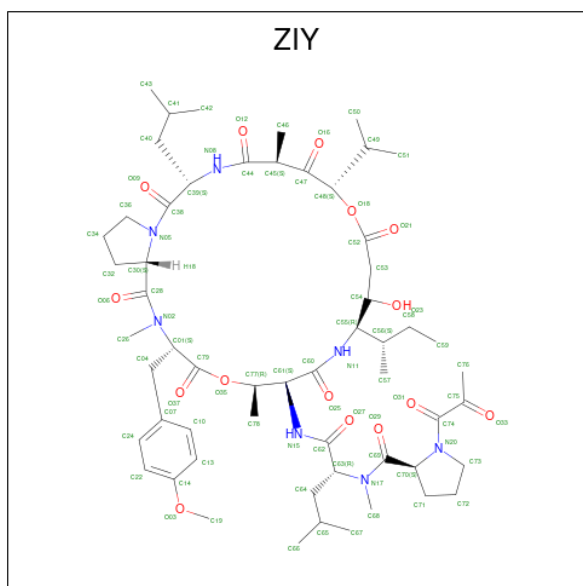
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	S	
95	Pt	1	8	5	1	1	1	0

- Molecule 96 is 5'-GUANOSINE-DIPHOSPHATE-MONOTHIOPHOSPHATE (three-letter code: GSP) (formula: C<sub>10</sub>H<sub>16</sub>N<sub>5</sub>O<sub>13</sub>P<sub>3</sub>S).



Mol	Chain	Residues	Atoms						AltConf
			Total	C	N	O	P	S	
96	EF	1	32	10	5	13	3	1	0

- Molecule 97 is plitidepsin (three-letter code: ZIY) (formula: C<sub>57</sub>H<sub>87</sub>N<sub>7</sub>O<sub>15</sub>) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
97	EF	1	79	57	7	15	0

- Molecule 98 is water.

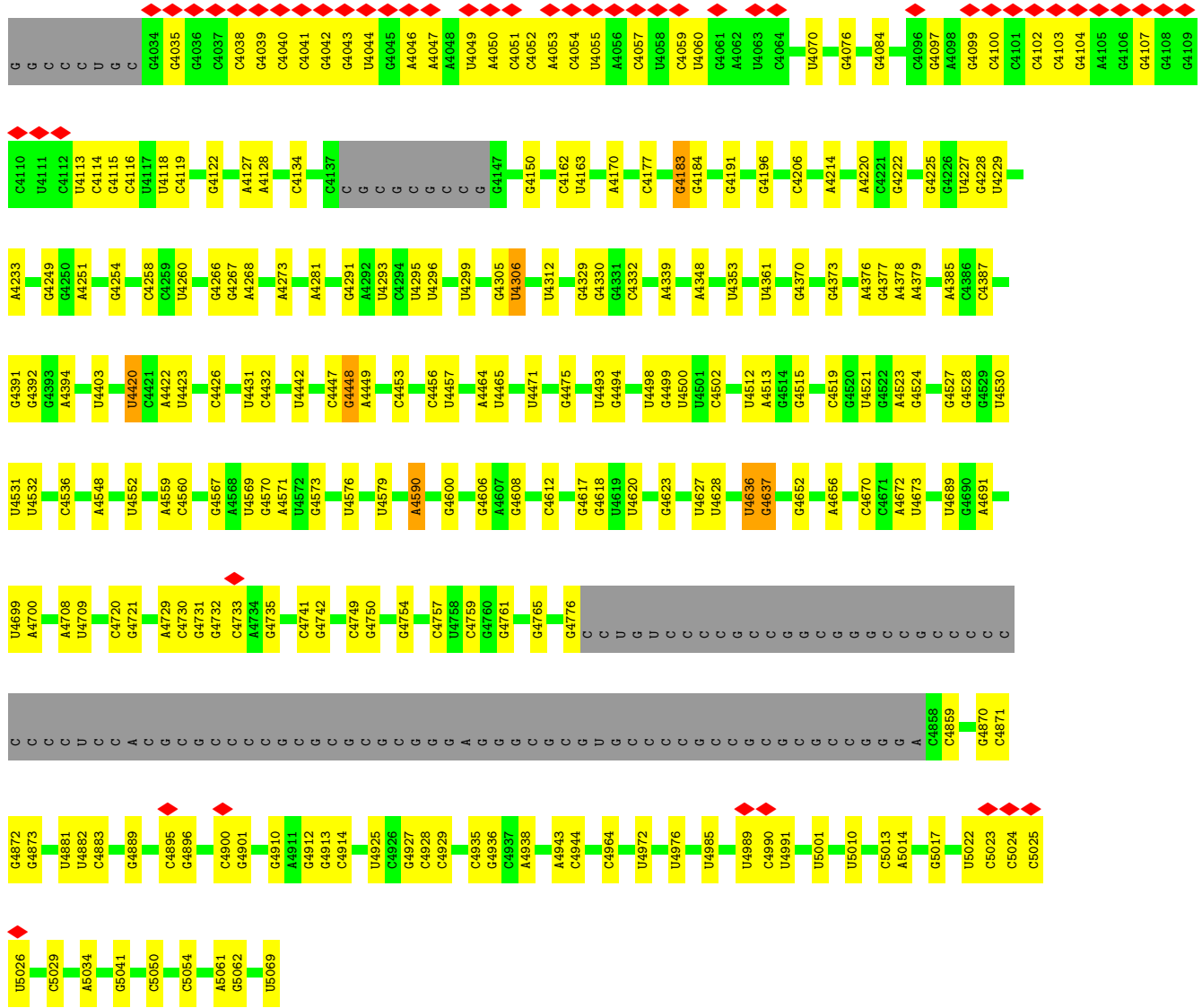
Mol	Chain	Residues	Atoms		AltConf
			Total	O	
98	S2	9	9	9	0
98	L8	3	3	3	0
98	L5	228	228	228	0
98	L7	1	1	1	0
98	SQ	1	1	1	0
98	SO	1	1	1	0
98	LA	7	7	7	0
98	LB	1	1	1	0
98	LC	1	1	1	0
98	LH	1	1	1	0
98	LL	1	1	1	0
98	LQ	1	1	1	0
98	LS	1	1	1	0
98	Lb	2	2	2	0
98	LF	1	1	1	0
98	Le	2	2	2	0
98	Lo	2	2	2	0



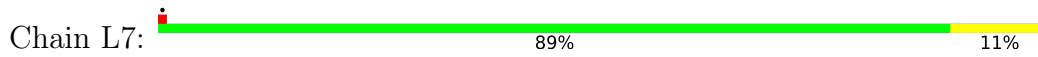




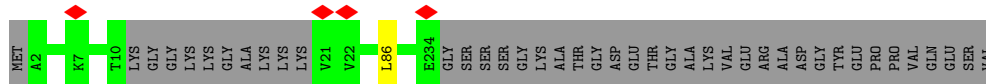
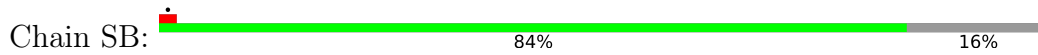




• Molecule 4: 5S rRNA



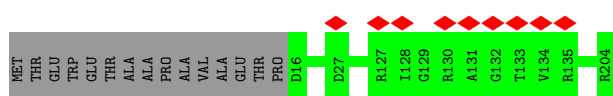
• Molecule 5: eS1



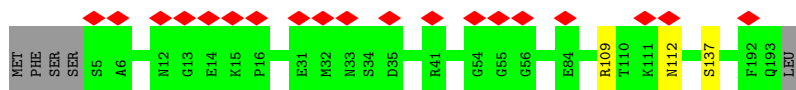
• Molecule 6: uS2







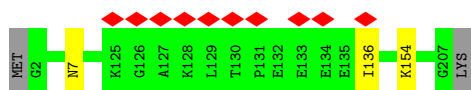
• Molecule 13: eS7



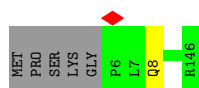
• Molecule 14: uS8



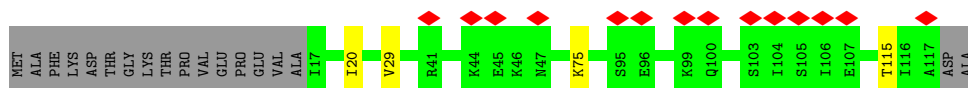
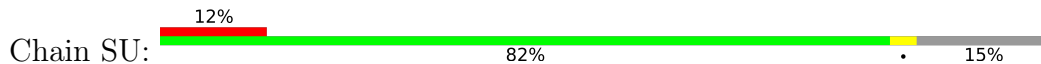
• Molecule 15: eS8



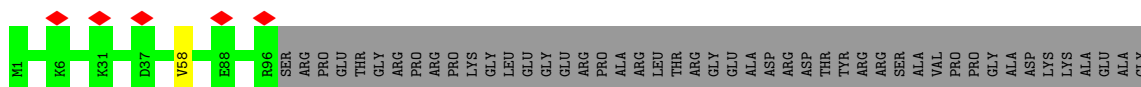
• Molecule 16: uS9



• Molecule 17: uS10

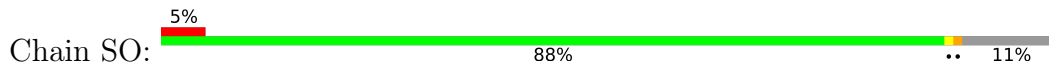


• Molecule 18: eS10



ALA	GLY	SER	ALA	THR	GLU	PHE	GLN	ARG	ARG	ARG	GLY	GLN	PRO	PRO	GLN
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• Molecule 19: uS11



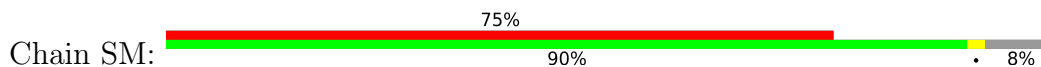
MET	ALA	PRO	ARG	LYS	LYS	LYS	LYS	GLU	GLN	GLN	VAL	ILE	SER	L17	Q20	V21	A22	E23	G24	E25	L88	D138	L151
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------

• Molecule 20: uS12



MET	G2	P62	F105	R142	S143
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• Molecule 21: eS12



MET	ALA	GLU	GLU	ILE	ALA	ALA	GLY	GLY	V11	M12	D13	V14	M15	T16	A17	L18	V21	L22	K23	I27	H28	D29	G30	L31	A32	R33	R36	E37	K40	A41	L42	D43	K44	R45	Q46	A47	H48	L49	C50	V51	L52	A53	S54	M55	C56	D57	E58	P59	H60	Y61	V62	R63	L64	V65			
E66	A67	L68	C69	A70	E71	H72	Q73	I74	N75	L76	I77	K78	V79	D80	D81	M82	R83	K84	E87	M88	N89	G90	L91	C92	K93	I94	D95	R96	E97	G98	K99	F100	R101	K102	V103	V104	G105	C106	S107	C108	K112	D113	Y114	G115	K116	E117	S118	Q119	A120	K121	D122	V123	I124	E125	E126	Y127	F128
K129	C130	K131	K132																																																						

• Molecule 22: uS13



MET	S2	E7	L16	L59	F83	D82	R142	G143	R144	G147	V148	S149	LYS	LYS	LYS
-----	----	----	-----	-----	-----	-----	------	------	------	------	------	------	-----	-----	-----

• Molecule 23: uS14



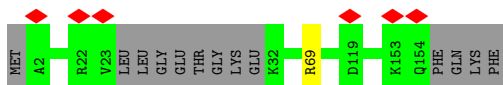
MET	G2	D56
-----	----	-----

• Molecule 24: uS15

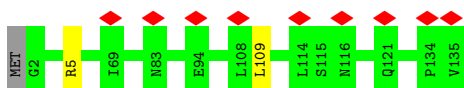




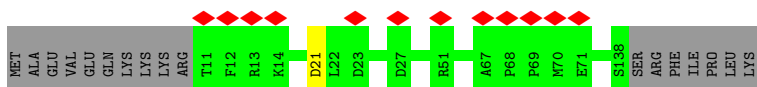
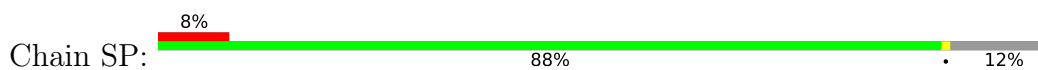
- Molecule 25: uS17



- Molecule 26: eS17



- Molecule 27: uS19



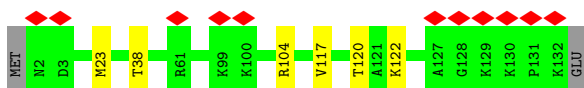
- Molecule 28: eS19



- Molecule 29: eS21

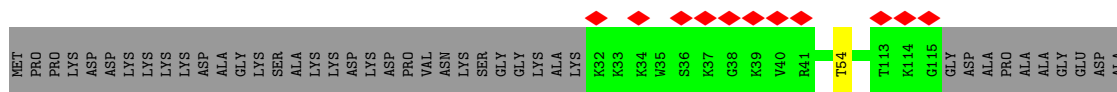


- Molecule 30: eS24

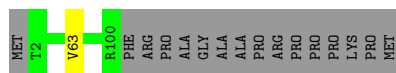
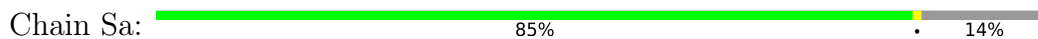


- Molecule 31: eS25

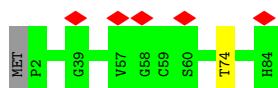




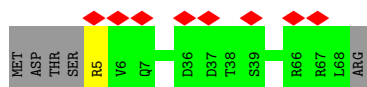
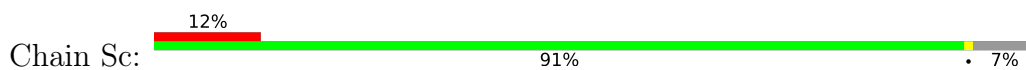
• Molecule 32: eS26



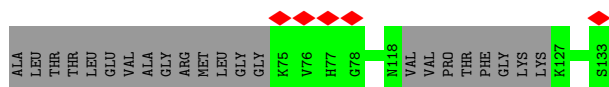
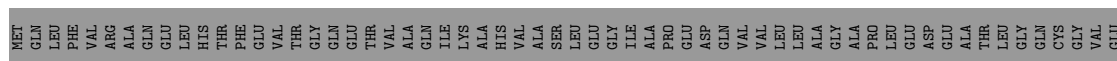
• Molecule 33: eS27



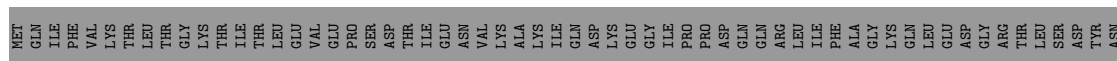
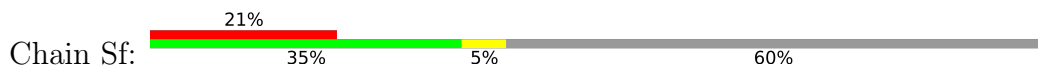
• Molecule 34: eS28



• Molecule 35: eS30



• Molecule 36: eS31



• Molecule 37: RACK1



PRO  
ALA  
PRO  
GLU  
LYS  
LYS  
PRO  
ALA  
GLU  
LYS  
LYS  
LYS  
PRO  
THR  
THR  
GLU  
GLU  
LYS  
LYS  
PRO  
ALA  
ALA

• Molecule 42: uL5



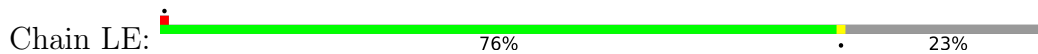
MET  
ALA  
GLN  
ASP  
GLN  
GLY  
GLU  
K8  
P176  
GLY  
LYS

• Molecule 43: uL6



HI  
K51  
K52  
E113  
A190  
ASP  
GLU

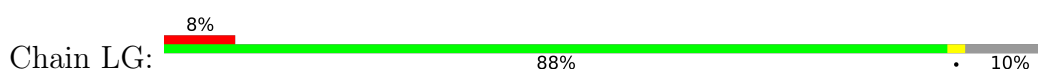
• Molecule 44: eL6



MET  
ALA  
GLY  
LYS  
VAL  
GLU  
LYS  
PRO  
THR  
LYS  
GLU  
LYS  
LYS  
PRO  
GLU  
ALA  
LYS  
LYS  
VAL  
ASP  
ALA  
GLY  
GLY  
LYS  
VAL  
LYS  
LYS  
LYS  
ASN  
LEU  
LEU  
LYS  
LYS  
LYS  
PRO  
LYS  
K39  
R56  
A76  
LYS  
SER  
LYS  
VAL  
LYS  
LYS  
LYS  
LYS  
LYS  
LYS  
LYS  
GLU  
LYS  
V88  
Y115  
K221  
LEU

ARG  
LYS  
PRO  
ARG  
HIS  
GLN  
GLU  
GLY  
LYS  
PHE  
ILE  
THR  
GLU  
LYS  
E238  
T278  
F288

• Molecule 45: eL8



MET  
PRO  
LYS  
GLY  
LYS  
LYS  
ALA  
LYS  
LYS  
LYS  
VAL  
ALA  
PRO  
PRO  
ALA  
VAL  
VAL  
LYS  
LYS  
GLN  
GLU  
ALA  
ALA  
LYS  
LYS  
VAL  
V28  
R73  
L74  
E119  
K120  
K121  
A122  
A123  
G124  
K125  
G126  
D127  
V128  
P129  
T130  
K131  
R132  
A258  
K259  
E260  
L261  
A262  
T263  
K264  
L265  
G266

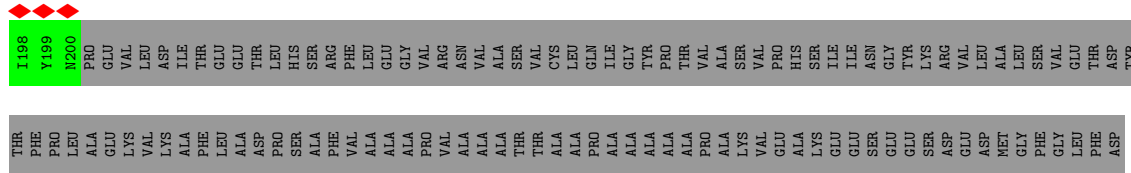
• Molecule 46: uL10



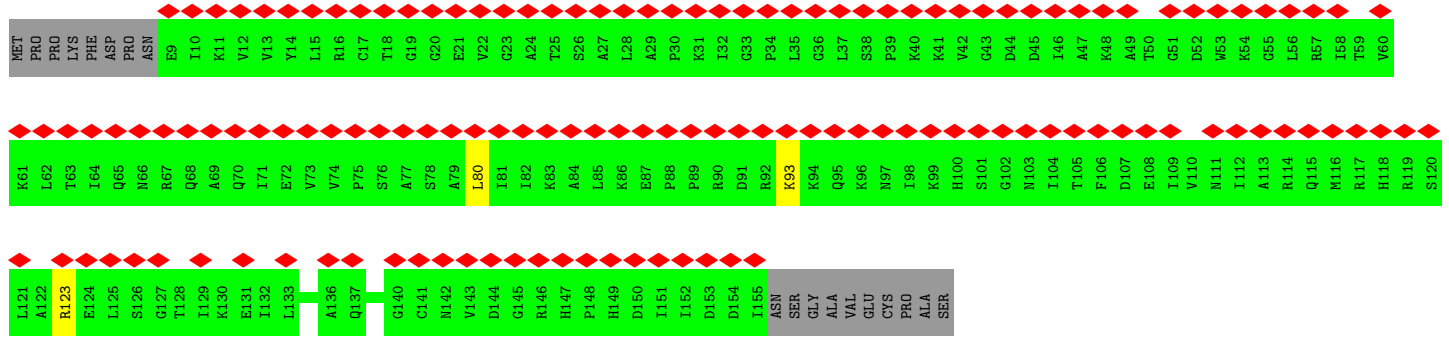
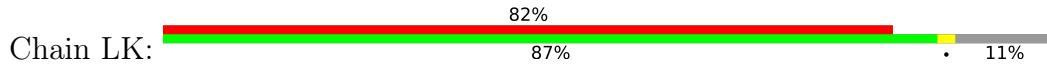
MET  
PRO  
ARG  
GLU  
D5  
R6  
L15  
K16  
I17  
I18  
Q19  
L20  
L21  
D22  
D23  
Y24  
P25  
K26  
C27  
F28  
I29  
V30  
G31  
A32  
V35  
R38  
Q41  
Q42  
I43  
L47  
R48  
G49  
K50  
A51  
V52  
V53  
L54  
M61  
R62  
K63  
A64  
I65  
R66  
O67  
H68  
L69  
E70  
N71  
N72  
P73  
A74  
L75  
E76  
K77

L78  
L79  
P80  
H81  
I82  
R83  
G84  
N85  
V86  
G87  
F88  
V89  
F90  
T91  
K92  
E93  
D94  
I95  
L96  
T96  
E97  
I98  
Q99  
D100  
M101  
L102  
L103  
A104  
N105  
K106  
V107  
P108  
A109  
A110  
A111  
R112  
A113  
G114  
L174  
A115  
V53  
L116  
A117  
P118  
C119  
E120  
V121  
I65  
R66  
V123  
P124  
A125  
H68  
Q126  
E70  
N127  
T128  
G129  
P73  
L130  
G131  
P132  
E133  
K134  
T135  
S136  
F137

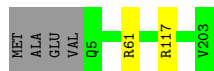
F138  
Q139  
A140  
L141  
G142  
I143  
T144  
T145  
K146  
G87  
F88  
S148  
R149  
G150  
T151  
I152  
E153  
I154  
L155  
S156  
D157  
V158  
Q159  
L160  
I161  
K162  
T163  
G164  
D165  
K166  
V167  
G168  
A169  
S170  
E171  
A172  
T173  
L174  
L175  
M176  
M177  
L178  
M179  
I180  
S181  
P182  
F183  
S184  
F185  
G186  
V188  
I189  
Q190  
V192  
F193  
D194  
M195  
G196  
S197



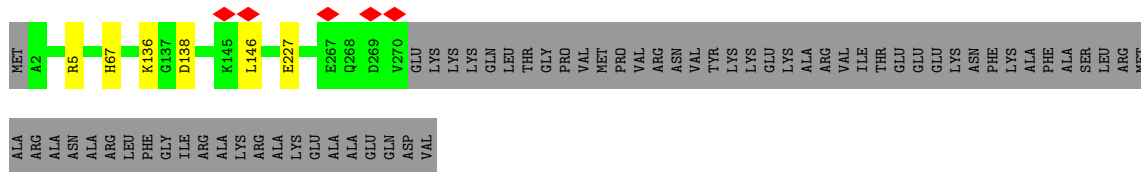
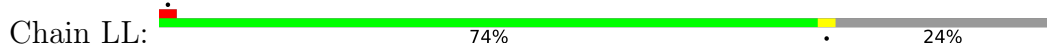
• Molecule 47: uL11



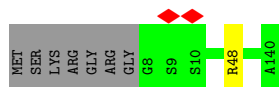
• Molecule 48: uL13



• Molecule 49: eL13

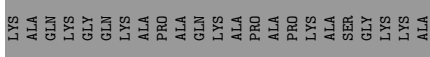
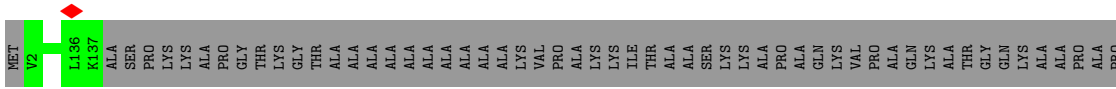


• Molecule 50: uL14

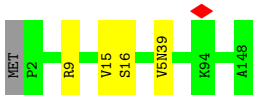


• Molecule 51: eL14

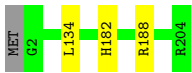




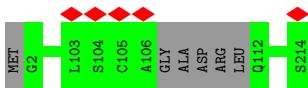
• Molecule 52: uL15



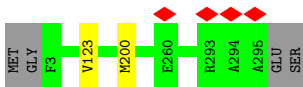
• Molecule 53: eL15



• Molecule 54: uL16



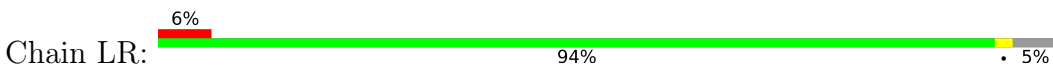
• Molecule 55: uL18



• Molecule 56: eL18

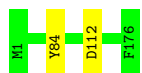


• Molecule 57: eL19





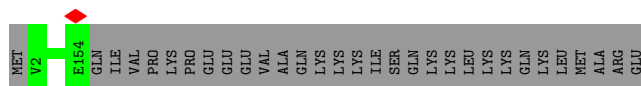
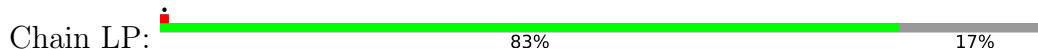
• Molecule 58: eL20



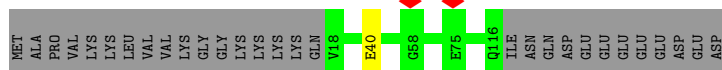
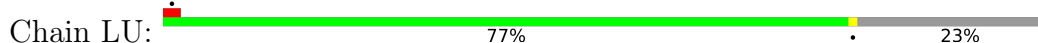
• Molecule 59: eL21



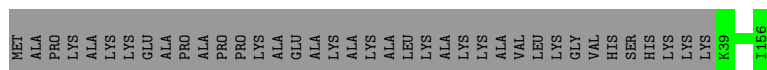
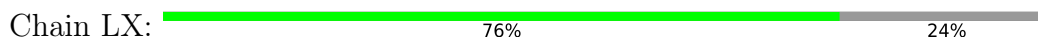
• Molecule 60: uL22



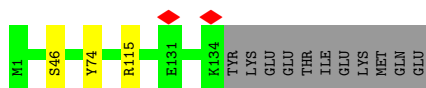
• Molecule 61: eL22



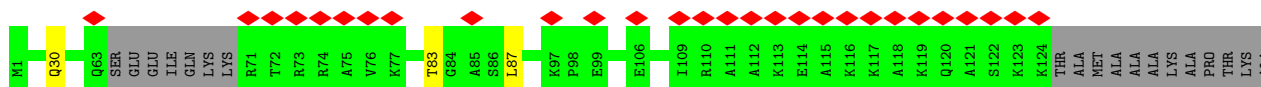
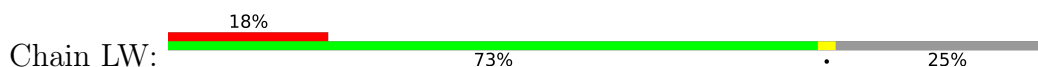
• Molecule 62: uL23



• Molecule 63: uL24



• Molecule 64: eL24



ALA  
PRO  
LYS  
GLN  
LYS  
ILE  
VAL  
LYS  
LYS  
PRO  
VAL  
LYS  
VAL  
SER  
ALA  
PRO  
ARG  
VAL  
GLY  
GLY  
LYS  
ARG

• Molecule 65: eL27



MET  
G2  
D31  
D88  
F136

• Molecule 66: eL28



MET  
S2  
S26  
M125  
V126  
LYS  
ARG  
LYS  
ARG  
THR  
ARG  
PRO  
THR  
LYS  
SER  
SER

• Molecule 67: uL29



MET  
A2  
A123

• Molecule 68: eL29



MET  
A2  
K38  
F39  
L40  
N50  
S66  
A67  
R68  
A69  
E70  
A71  
I72  
K73  
A74  
L75  
V76  
LYS  
PRO  
LYS  
GLU  
VAL  
LYS  
PRO  
LYS  
ILE  
PRO  
LYS  
GLY  
V89  
K122  
ALA  
LYS  
ALA  
LYS  
ALA  
LYS  
ALA  
LYS  
ASP  
GLN  
THR  
LYS  
GLN  
ALA  
ALA  
ALA  
PRO  
ALA  
SER  
VAL  
PRO  
ALA  
GLN  
ALA

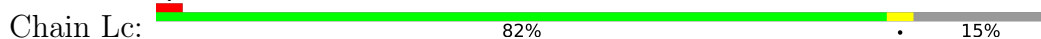
PRO  
LYS  
ARG  
THR  
GLN  
ALA  
PRO  
THR  
LYS  
LYS  
GLU  
VAL  
PRO  
ALA  
VAL  
PRO  
GLU  
LEU  
LYS  
LYS  
LYS  
ARG  
ARG

• Molecule 69: uL30



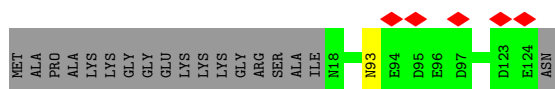
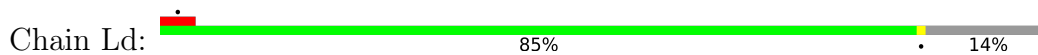
MET  
GLU  
GLY  
VAL  
GLU  
GLU  
LYS  
LYS  
LYS  
GLU  
VAL  
PRO  
ALA  
VAL  
PRO  
GLU  
LEU  
LYS  
LYS  
LYS  
ARG  
ARG  
N24  
E27  
N248

• Molecule 70: eL30



MET  
VAL  
ALA  
ALA  
LYS  
LYS  
THR  
LYS  
K9  
S10  
L11  
E12  
V28  
L94  
I104  
I105  
R106  
SER  
MET  
PRO  
GLU  
GLN  
THR  
GLY  
GLU  
LYS

• Molecule 71: eL31



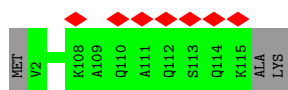
• Molecule 72: eL32



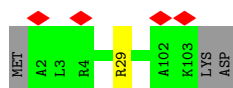
• Molecule 73: eL33



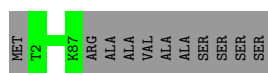
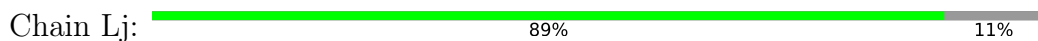
• Molecule 74: eL34



• Molecule 75: eL36



• Molecule 76: eL37



• Molecule 77: eL38



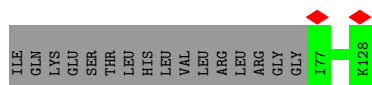
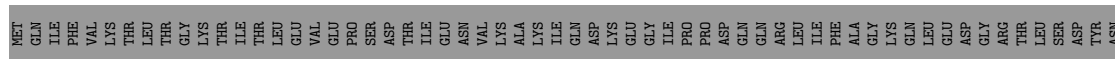
• Molecule 78: eL39

Chain Ll:  94%



• Molecule 79: eL40

Chain Lm:  41% 59%



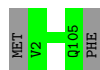
• Molecule 80: eL41

Chain Ln:  100%



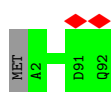
• Molecule 81: eL42

Chain Lo:  98%



• Molecule 82: eL43

Chain Lp:  99%



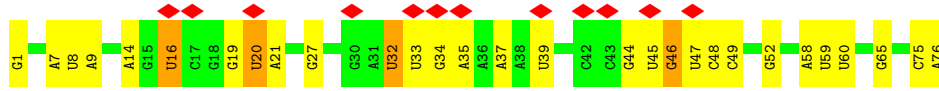
• Molecule 83: mRNA

Chain mR:  8% 12% 85%

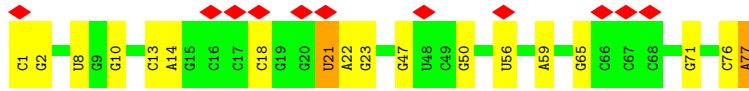
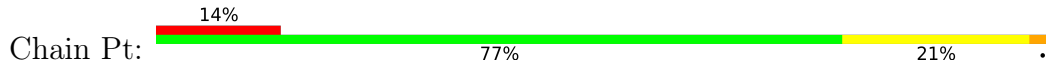


• Molecule 84: A-site tRNA

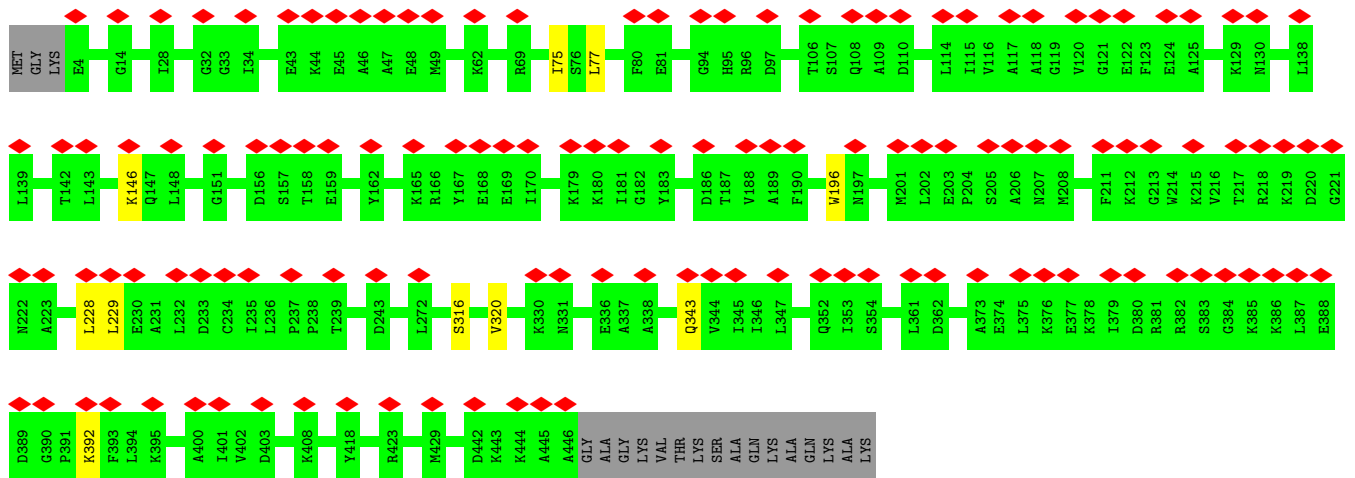
Chain At:  16% 62% 33% 5%



• Molecule 85: P-site tRNA



• Molecule 86: eEF1A



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	21942	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	79	Depositor
Minimum defocus (nm)	-500	Depositor
Maximum defocus (nm)	-1500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.045	Depositor
Minimum map value	-0.014	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.005	Depositor
Map size ( $\text{\AA}$ )	528.64, 528.64, 528.64	wwPDB
Map dimensions	640, 640, 640	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	0.82600003, 0.82600003, 0.82600003	Depositor

## 5 Model quality i

### 5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: OMC, 4SU, ZIY, G7M, ANM, HY3, B8N, GSP, PUT, 6MZ, ZN, M3L, SPD, 3H3, OMU, K, 4AC, AME, MLZ, UR3, MA6, MIA, UY1, V5N, 5MC, MG, OMG, SAC, MLY, HIC, PSU, H2U, 1MA, A2M

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	S2	0.61	1/37514 (0.0%)	0.74	4/58464 (0.0%)
2	L8	0.78	1/3613 (0.0%)	0.82	0/5627
3	L5	0.76	4/84265 (0.0%)	0.83	20/131451 (0.0%)
4	L7	0.82	1/2862 (0.0%)	0.80	0/4459
5	SB	0.37	0/1832	0.54	0/2449
6	SA	0.46	0/1778	0.64	0/2416
7	SD	0.45	0/1784	0.66	0/2403
8	SJ	0.39	0/1550	0.58	0/2069
9	SE	0.41	0/2118	0.61	0/2849
10	SC	0.42	0/1762	0.56	0/2381
11	SG	0.41	0/1946	0.63	0/2590
12	SF	0.38	0/1515	0.55	0/2037
13	SH	0.34	0/1540	0.56	0/2064
14	SW	0.40	0/1051	0.57	0/1406
15	SI	0.47	0/1715	0.62	0/2287
16	SQ	0.40	0/1141	0.61	0/1528
17	SU	0.48	0/813	0.68	0/1092
18	SK	0.35	0/834	0.52	0/1125
19	SO	0.41	0/1022	0.68	1/1372 (0.1%)
20	SX	0.40	0/1113	0.58	0/1483
21	SM	0.36	0/950	0.54	0/1275
22	SS	0.39	0/1232	0.64	0/1651
23	Sd	0.37	0/469	0.56	0/623
24	SN	0.42	0/1242	0.59	0/1671
25	SL	0.43	0/1209	0.57	0/1616
26	SR	0.33	0/1098	0.57	0/1474
27	SP	0.41	0/1071	0.60	0/1432
28	ST	0.47	0/1131	0.63	0/1515
29	SV	0.44	0/635	0.61	0/850
30	SY	0.46	0/1083	0.67	0/1438

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
31	SZ	0.42	0/682	0.57	0/911
32	Sa	0.45	0/805	0.64	0/1079
33	Sb	0.39	0/664	0.55	0/891
34	Sc	0.32	0/508	0.62	0/680
35	Se	0.44	0/409	0.65	0/535
36	Sf	0.53	0/525	0.75	0/695
37	Sg	0.43	0/2493	0.64	0/3394
38	Lz	0.29	0/1769	0.55	0/2371
39	LA	0.47	0/1958	0.69	2/2623 (0.1%)
40	LB	0.44	0/3295	0.60	0/4406
41	LC	0.44	0/2981	0.64	0/4002
42	LJ	0.40	0/1381	0.63	0/1847
43	LH	0.38	0/1537	0.57	0/2066
44	LE	0.40	0/1820	0.60	0/2442
45	LG	0.41	0/1943	0.57	0/2616
46	Lq	0.37	0/1529	0.58	0/2063
47	LK	0.36	0/1135	0.56	0/1529
48	LO	0.44	0/1666	0.60	0/2228
49	LL	0.44	0/1695	0.67	0/2270
50	LV	0.40	0/1003	0.62	0/1345
51	LM	0.39	0/1142	0.53	0/1527
52	La	0.44	0/1179	0.64	0/1573
53	LN	0.49	0/1746	0.69	1/2338 (0.0%)
54	LI	0.43	0/1718	0.60	0/2293
55	LD	0.46	0/2433	0.60	0/3258
56	LQ	0.44	0/1535	0.66	0/2050
57	LR	0.42	0/1582	0.63	0/2091
58	LS	0.47	0/1500	0.63	1/2013 (0.0%)
59	LT	0.46	0/1326	0.58	0/1770
60	LP	0.45	0/1268	0.62	0/1701
61	LU	0.40	0/822	0.60	0/1103
62	LX	0.38	0/984	0.56	0/1323
63	LY	0.46	0/1132	0.68	0/1504
64	LW	0.42	0/958	0.61	0/1270
65	LZ	0.48	0/1130	0.64	0/1507
66	Lr	0.44	0/1011	0.64	0/1356
67	Lh	0.39	0/1023	0.57	0/1351
68	Lb	0.41	0/887	0.60	0/1171
69	LF	0.44	0/1905	0.59	0/2539
70	Lc	0.50	0/774	0.63	0/1038
71	Ld	0.43	0/903	0.62	0/1216
72	Le	0.47	0/1071	0.66	0/1429
73	Lf	0.50	0/895	0.66	0/1198



Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
74	Lg	0.45	0/916	0.63	0/1220
75	Li	0.37	0/843	0.58	0/1115
76	Lj	0.49	0/720	0.71	0/952
77	Lk	0.39	0/574	0.54	0/761
78	Ll	0.51	0/453	0.80	0/599
79	Lm	0.38	0/425	0.62	0/564
80	Ln	0.41	0/240	0.74	0/305
81	Lo	0.43	0/854	0.61	0/1125
82	Lp	0.48	0/718	0.62	0/953
83	mR	0.34	0/208	0.80	0/321
84	At	0.61	6/1650 (0.4%)	0.96	10/2566 (0.4%)
85	Pt	0.67	6/1721 (0.3%)	0.95	11/2679 (0.4%)
86	EF	0.36	0/3424	0.55	0/4639
All	All	0.61	19/233356 (0.0%)	0.74	50/341508 (0.0%)

The worst 5 of 19 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
85	Pt	77	A	C5-C4	11.52	1.46	1.38
84	At	76	A	C5-C4	11.06	1.46	1.38
2	L8	1	C	OP3-P	-10.86	1.48	1.61
85	Pt	1	C	OP3-P	-10.80	1.48	1.61
4	L7	1	G	OP3-P	-10.78	1.48	1.61

The worst 5 of 50 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
84	At	76	A	C2-N3-C4	21.87	121.53	110.60
85	Pt	77	A	C2-N3-C4	18.74	119.97	110.60
84	At	76	A	N1-C2-N3	-13.33	122.64	129.30
85	Pt	77	A	N1-C2-N3	-11.42	123.59	129.30
84	At	76	A	N3-C4-C5	-10.92	119.16	126.80

There are no chirality outliers.

There are no planarity outliers.

## 5.2 Too-close contacts [\(i\)](#)

Due to software issues we are unable to calculate clashes - this section is therefore empty.

## 5.3 Torsion angles

### 5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	SB	219/264 (83%)	214 (98%)	5 (2%)	0	100	100
6	SA	220/295 (75%)	214 (97%)	6 (3%)	0	100	100
7	SD	224/243 (92%)	219 (98%)	4 (2%)	1 (0%)	34	46
8	SJ	183/194 (94%)	178 (97%)	5 (3%)	0	100	100
9	SE	260/263 (99%)	253 (97%)	7 (3%)	0	100	100
10	SC	220/293 (75%)	216 (98%)	4 (2%)	0	100	100
11	SG	235/249 (94%)	232 (99%)	3 (1%)	0	100	100
12	SF	187/204 (92%)	175 (94%)	12 (6%)	0	100	100
13	SH	187/194 (96%)	178 (95%)	9 (5%)	0	100	100
14	SW	127/130 (98%)	124 (98%)	3 (2%)	0	100	100
15	SI	204/208 (98%)	202 (99%)	2 (1%)	0	100	100
16	SQ	139/146 (95%)	137 (99%)	2 (1%)	0	100	100
17	SU	99/119 (83%)	95 (96%)	4 (4%)	0	100	100
18	SK	94/165 (57%)	86 (92%)	8 (8%)	0	100	100
19	SO	133/151 (88%)	128 (96%)	5 (4%)	0	100	100
20	SX	139/143 (97%)	137 (99%)	2 (1%)	0	100	100
21	SM	120/132 (91%)	109 (91%)	11 (9%)	0	100	100
22	SS	146/152 (96%)	139 (95%)	6 (4%)	1 (1%)	22	30
23	Sd	53/56 (95%)	53 (100%)	0	0	100	100
24	SN	149/151 (99%)	147 (99%)	2 (1%)	0	100	100
25	SL	141/158 (89%)	133 (94%)	8 (6%)	0	100	100
26	SR	132/135 (98%)	125 (95%)	7 (5%)	0	100	100
27	SP	126/145 (87%)	117 (93%)	9 (7%)	0	100	100
28	ST	141/145 (97%)	136 (96%)	5 (4%)	0	100	100
29	SV	81/83 (98%)	77 (95%)	4 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
30	SY	129/133 (97%)	124 (96%)	5 (4%)	0	100	100
31	SZ	82/125 (66%)	78 (95%)	4 (5%)	0	100	100
32	Sa	97/115 (84%)	95 (98%)	2 (2%)	0	100	100
33	Sb	81/84 (96%)	76 (94%)	5 (6%)	0	100	100
34	Sc	62/69 (90%)	59 (95%)	3 (5%)	0	100	100
35	Se	47/133 (35%)	47 (100%)	0	0	100	100
36	Sf	61/156 (39%)	55 (90%)	5 (8%)	1 (2%)	9	12
37	Sg	311/317 (98%)	290 (93%)	21 (7%)	0	100	100
38	Lz	215/217 (99%)	187 (87%)	28 (13%)	0	100	100
39	LA	249/257 (97%)	239 (96%)	10 (4%)	0	100	100
40	LB	399/403 (99%)	390 (98%)	9 (2%)	0	100	100
41	LC	366/427 (86%)	361 (99%)	5 (1%)	0	100	100
42	LJ	167/178 (94%)	166 (99%)	1 (1%)	0	100	100
43	LH	188/192 (98%)	186 (99%)	2 (1%)	0	100	100
44	LE	217/288 (75%)	210 (97%)	7 (3%)	0	100	100
45	LG	237/266 (89%)	227 (96%)	9 (4%)	1 (0%)	34	46
46	Lq	194/317 (61%)	181 (93%)	13 (7%)	0	100	100
47	LK	145/165 (88%)	131 (90%)	14 (10%)	0	100	100
48	LO	197/203 (97%)	195 (99%)	2 (1%)	0	100	100
49	LL	204/270 (76%)	196 (96%)	8 (4%)	0	100	100
50	LV	131/140 (94%)	129 (98%)	2 (2%)	0	100	100
51	LM	134/215 (62%)	131 (98%)	3 (2%)	0	100	100
52	La	144/148 (97%)	138 (96%)	5 (4%)	1 (1%)	22	30
53	LN	201/204 (98%)	196 (98%)	5 (2%)	0	100	100
54	LI	204/214 (95%)	193 (95%)	11 (5%)	0	100	100
55	LD	291/297 (98%)	287 (99%)	4 (1%)	0	100	100
56	LQ	185/188 (98%)	182 (98%)	3 (2%)	0	100	100
57	LR	185/196 (94%)	183 (99%)	2 (1%)	0	100	100
58	LS	174/176 (99%)	173 (99%)	1 (1%)	0	100	100
59	LT	157/160 (98%)	155 (99%)	2 (1%)	0	100	100
60	LP	151/184 (82%)	148 (98%)	3 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
61	LU	97/128 (76%)	90 (93%)	7 (7%)	0	100	100
62	LX	116/156 (74%)	115 (99%)	1 (1%)	0	100	100
63	LY	132/145 (91%)	130 (98%)	2 (2%)	0	100	100
64	LW	113/157 (72%)	111 (98%)	2 (2%)	0	100	100
65	LZ	133/136 (98%)	129 (97%)	4 (3%)	0	100	100
66	Lr	123/137 (90%)	117 (95%)	6 (5%)	0	100	100
67	Lh	120/123 (98%)	117 (98%)	3 (2%)	0	100	100
68	Lb	104/159 (65%)	99 (95%)	5 (5%)	0	100	100
69	LF	223/248 (90%)	215 (96%)	8 (4%)	0	100	100
70	Lc	96/115 (84%)	95 (99%)	1 (1%)	0	100	100
71	Ld	105/125 (84%)	103 (98%)	2 (2%)	0	100	100
72	Le	126/135 (93%)	125 (99%)	1 (1%)	0	100	100
73	Lf	107/110 (97%)	107 (100%)	0	0	100	100
74	Lg	112/117 (96%)	111 (99%)	1 (1%)	0	100	100
75	Li	100/105 (95%)	96 (96%)	4 (4%)	0	100	100
76	Lj	84/97 (87%)	83 (99%)	1 (1%)	0	100	100
77	Lk	67/70 (96%)	67 (100%)	0	0	100	100
78	Ll	48/51 (94%)	48 (100%)	0	0	100	100
79	Lm	49/128 (38%)	49 (100%)	0	0	100	100
80	Ln	23/25 (92%)	23 (100%)	0	0	100	100
81	Lo	101/106 (95%)	99 (98%)	2 (2%)	0	100	100
82	Lp	89/92 (97%)	84 (94%)	5 (6%)	0	100	100
86	EF	437/462 (95%)	413 (94%)	24 (6%)	0	100	100
All	All	12269/13982 (88%)	11858 (97%)	406 (3%)	5 (0%)	100	100

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
52	La	15	VAL
7	SD	157	MET
22	SS	92	ASP
36	Sf	97	LYS
45	LG	132	ARG

### 5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
5	SB	202/231 (87%)	201 (100%)	1 (0%)	88	93
6	SA	183/242 (76%)	180 (98%)	3 (2%)	62	77
7	SD	189/202 (94%)	183 (97%)	6 (3%)	39	53
8	SJ	161/168 (96%)	161 (100%)	0	100	100
9	SE	224/225 (100%)	222 (99%)	2 (1%)	78	86
10	SC	188/225 (84%)	186 (99%)	2 (1%)	73	83
11	SG	207/218 (95%)	205 (99%)	2 (1%)	76	84
12	SF	159/170 (94%)	159 (100%)	0	100	100
13	SH	168/174 (97%)	165 (98%)	3 (2%)	59	74
14	SW	112/113 (99%)	112 (100%)	0	100	100
15	SI	178/180 (99%)	175 (98%)	3 (2%)	60	75
16	SQ	117/121 (97%)	116 (99%)	1 (1%)	78	86
17	SU	93/107 (87%)	89 (96%)	4 (4%)	29	39
18	SK	87/136 (64%)	86 (99%)	1 (1%)	73	83
19	SO	105/119 (88%)	103 (98%)	2 (2%)	57	72
20	SX	113/114 (99%)	112 (99%)	1 (1%)	78	86
21	SM	102/108 (94%)	99 (97%)	3 (3%)	42	57
22	SS	128/132 (97%)	124 (97%)	4 (3%)	40	54
23	Sd	48/49 (98%)	48 (100%)	0	100	100
24	SN	131/131 (100%)	131 (100%)	0	100	100
25	SL	131/142 (92%)	130 (99%)	1 (1%)	81	88
26	SR	121/122 (99%)	119 (98%)	2 (2%)	60	75
27	SP	114/130 (88%)	113 (99%)	1 (1%)	78	86
28	ST	113/115 (98%)	112 (99%)	1 (1%)	78	86
29	SV	66/66 (100%)	66 (100%)	0	100	100
30	SY	113/115 (98%)	107 (95%)	6 (5%)	22	30

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
31	SZ	74/103 (72%)	73 (99%)	1 (1%)	67	79
32	Sa	86/98 (88%)	85 (99%)	1 (1%)	71	81
33	Sb	75/76 (99%)	74 (99%)	1 (1%)	69	80
34	Sc	57/62 (92%)	56 (98%)	1 (2%)	59	74
35	Se	41/104 (39%)	41 (100%)	0	100	100
36	Sf	56/140 (40%)	49 (88%)	7 (12%)	4	4
37	Sg	272/275 (99%)	261 (96%)	11 (4%)	31	43
38	Lz	195/196 (100%)	191 (98%)	4 (2%)	53	68
39	LA	193/198 (98%)	192 (100%)	1 (0%)	88	93
40	LB	347/348 (100%)	346 (100%)	1 (0%)	92	96
41	LC	306/348 (88%)	302 (99%)	4 (1%)	69	80
42	LJ	143/149 (96%)	143 (100%)	0	100	100
43	LH	169/171 (99%)	167 (99%)	2 (1%)	71	81
44	LE	196/252 (78%)	193 (98%)	3 (2%)	65	77
45	LG	201/223 (90%)	196 (98%)	5 (2%)	47	62
46	Lq	164/258 (64%)	155 (94%)	9 (6%)	21	29
47	LK	122/137 (89%)	119 (98%)	3 (2%)	47	62
48	LO	171/174 (98%)	169 (99%)	2 (1%)	71	81
49	LL	172/224 (77%)	166 (96%)	6 (4%)	36	49
50	LV	102/107 (95%)	101 (99%)	1 (1%)	76	84
51	LM	116/161 (72%)	116 (100%)	0	100	100
52	La	119/120 (99%)	117 (98%)	2 (2%)	60	75
53	LN	171/172 (99%)	169 (99%)	2 (1%)	71	81
54	LI	177/181 (98%)	177 (100%)	0	100	100
55	LD	247/250 (99%)	245 (99%)	2 (1%)	81	88
56	LQ	164/165 (99%)	164 (100%)	0	100	100
57	LR	166/175 (95%)	163 (98%)	3 (2%)	59	74
58	LS	157/157 (100%)	156 (99%)	1 (1%)	86	92
59	LT	139/140 (99%)	139 (100%)	0	100	100
60	LP	134/163 (82%)	134 (100%)	0	100	100
61	LU	89/115 (77%)	88 (99%)	1 (1%)	73	83

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
62	LX	106/133 (80%)	106 (100%)	0	100	100
63	LY	124/135 (92%)	121 (98%)	3 (2%)	49	64
64	LW	94/126 (75%)	91 (97%)	3 (3%)	39	53
65	LZ	117/118 (99%)	115 (98%)	2 (2%)	60	75
66	Lr	108/120 (90%)	107 (99%)	1 (1%)	78	86
67	Lh	109/110 (99%)	109 (100%)	0	100	100
68	Lb	89/125 (71%)	86 (97%)	3 (3%)	37	50
69	LF	194/215 (90%)	194 (100%)	0	100	100
70	Lc	83/97 (86%)	79 (95%)	4 (5%)	25	34
71	Ld	98/110 (89%)	97 (99%)	1 (1%)	76	84
72	Le	114/121 (94%)	111 (97%)	3 (3%)	46	61
73	Lf	88/89 (99%)	88 (100%)	0	100	100
74	Lg	98/100 (98%)	98 (100%)	0	100	100
75	Li	86/89 (97%)	85 (99%)	1 (1%)	71	81
76	Lj	73/80 (91%)	73 (100%)	0	100	100
77	Lk	64/65 (98%)	64 (100%)	0	100	100
78	Ll	47/48 (98%)	45 (96%)	2 (4%)	29	39
79	Lm	47/115 (41%)	47 (100%)	0	100	100
80	Ln	24/24 (100%)	24 (100%)	0	100	100
81	Lo	91/93 (98%)	91 (100%)	0	100	100
82	Lp	74/75 (99%)	74 (100%)	0	100	100
86	EF	363/375 (97%)	353 (97%)	10 (3%)	43	58
All	All	10665/11860 (90%)	10509 (98%)	156 (2%)	66	77

5 of 156 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
53	LN	188	ARG
75	Li	29	ARG
57	LR	183	GLU
65	LZ	88	ASP
86	EF	228	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 45 such sidechains are listed below:

Mol	Chain	Res	Type
41	LC	321	ASN
59	LT	112	ASN
42	LJ	23	ASN
47	LK	142	ASN
64	LW	30	GLN

### 5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	S2	1641/1869 (87%)	322 (19%)	28 (1%)
2	L8	155/156 (99%)	25 (16%)	1 (0%)
3	L5	3619/5069 (71%)	628 (17%)	54 (1%)
4	L7	119/120 (99%)	12 (10%)	0
83	mR	8/60 (13%)	2 (25%)	0
84	At	74/76 (97%)	24 (32%)	0
85	Pt	76/77 (98%)	14 (18%)	0
All	All	5692/7427 (76%)	1027 (18%)	83 (1%)

5 of 1027 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	S2	17	C
1	S2	23	G
1	S2	25	A
1	S2	33	G
1	S2	41	G

5 of 83 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
3	L5	2091	C
3	L5	3956	G
3	L5	2259	G
3	L5	2724	G
3	L5	4699	U

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

244 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
6	SAC	SA	2	6	7,8,9	3.61	2 (28%)	8,9,11	4.35	5 (62%)
1	PSU	S2	296	1	18,21,22	1.38	4 (22%)	22,30,33	1.96	3 (13%)
3	PSU	L5	4579	3	18,21,22	1.51	4 (22%)	22,30,33	1.98	3 (13%)
52	V5N	La	39	52	4,11,12	0.46	0	5,14,16	1.93	3 (60%)
3	PSU	L5	3851	3	18,21,22	1.57	4 (22%)	22,30,33	2.05	6 (27%)
1	PSU	S2	814	1	18,21,22	1.50	4 (22%)	22,30,33	2.00	4 (18%)
1	PSU	S2	609	1	18,21,22	1.40	4 (22%)	22,30,33	1.93	3 (13%)
1	PSU	S2	1136	1	18,21,22	1.48	3 (16%)	22,30,33	1.90	4 (18%)
1	A2M	S2	590	1	18,25,26	0.95	1 (5%)	18,36,39	1.23	2 (11%)
3	PSU	L5	2508	3	18,21,22	1.41	3 (16%)	22,30,33	1.83	3 (13%)
3	A2M	L5	3825	3	18,25,26	0.86	0	18,36,39	1.23	1 (5%)
1	OMG	S2	644	1	18,26,27	0.99	1 (5%)	19,38,41	1.22	3 (15%)
1	OMG	S2	683	1	18,26,27	1.04	1 (5%)	19,38,41	1.11	2 (10%)
3	OMC	L5	1881	89,3	19,22,23	0.81	0	26,31,34	0.89	0
3	PSU	L5	4552	3	18,21,22	1.63	4 (22%)	22,30,33	2.04	3 (13%)
1	A2M	S2	576	1	18,25,26	0.94	1 (5%)	18,36,39	1.28	2 (11%)
3	OMG	L5	1625	89,3	18,26,27	1.04	1 (5%)	19,38,41	1.29	2 (10%)
81	MLZ	Lo	53	81	8,9,10	0.63	0	4,9,11	0.85	0
3	OMG	L5	3899	3	18,26,27	1.01	1 (5%)	19,38,41	1.19	2 (10%)
2	OMG	L8	75	2	18,26,27	1.02	1 (5%)	19,38,41	1.14	2 (10%)
3	OMC	L5	4536	3	19,22,23	0.85	0	26,31,34	1.03	2 (7%)
84	PSU	At	32	84	18,21,22	1.42	3 (16%)	22,30,33	1.90	5 (22%)
1	PSU	S2	1347	1	18,21,22	1.42	4 (22%)	22,30,33	1.94	3 (13%)
3	OMC	L5	2804	3	19,22,23	0.85	1 (5%)	26,31,34	0.98	1 (3%)
3	A2M	L5	4590	3	18,25,26	0.96	1 (5%)	18,36,39	1.34	3 (16%)
1	OMC	S2	517	1	19,22,23	0.85	0	26,31,34	1.00	2 (7%)
1	B8N	S2	1248	1	24,29,30	0.97	1 (4%)	29,42,45	1.48	6 (20%)
1	PSU	S2	918	1	18,21,22	1.43	3 (16%)	22,30,33	2.22	4 (18%)
1	PSU	S2	651	1	18,21,22	1.43	4 (22%)	22,30,33	1.86	4 (18%)
85	H2U	Pt	21	85	18,21,22	1.01	2 (11%)	21,30,33	1.50	1 (4%)
1	OMG	S2	1490	89,1	18,26,27	1.03	1 (5%)	19,38,41	1.07	2 (10%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
3	PSU	L5	4457	3	18,21,22	1.50	4 (22%)	22,30,33	2.03	5 (22%)
3	OMU	L5	2415	3	19,22,23	1.37	3 (15%)	26,31,34	1.82	4 (15%)
3	5MC	L5	3782	89,3	18,22,23	1.02	2 (11%)	26,32,35	1.35	3 (11%)
3	A2M	L5	3867	3	18,25,26	0.95	1 (5%)	18,36,39	1.34	2 (11%)
84	H2U	At	16	84	18,21,22	1.01	2 (11%)	21,30,33	1.41	2 (9%)
3	A2M	L5	1871	89,3	18,25,26	0.89	1 (5%)	18,36,39	1.39	3 (16%)
3	OMG	L5	4623	3	18,26,27	0.99	1 (5%)	19,38,41	1.20	3 (15%)
2	PSU	L8	69	2	18,21,22	1.54	6 (33%)	22,30,33	2.12	5 (22%)
3	OMC	L5	3869	3	19,22,23	0.83	0	26,31,34	1.01	1 (3%)
3	PSU	L5	4403	3	18,21,22	1.56	4 (22%)	22,30,33	2.01	5 (22%)
3	PSU	L5	4296	3	18,21,22	1.45	3 (16%)	22,30,33	2.08	4 (18%)
1	A2M	S2	468	1	18,25,26	0.98	1 (5%)	18,36,39	1.26	2 (11%)
3	PSU	L5	4673	3	18,21,22	1.35	3 (16%)	22,30,33	1.73	3 (13%)
1	A2M	S2	1031	1	18,25,26	0.95	1 (5%)	18,36,39	1.59	3 (16%)
3	PSU	L5	1781	3	18,21,22	1.37	2 (11%)	22,30,33	1.98	4 (18%)
3	PSU	L5	3639	3	18,21,22	1.55	5 (27%)	22,30,33	1.85	3 (13%)
3	A2M	L5	4523	89,3	18,25,26	0.88	0	18,36,39	1.38	2 (11%)
3	PSU	L5	3920	89,3	18,21,22	1.56	4 (22%)	22,30,33	2.13	4 (18%)
1	PSU	S2	93	1	18,21,22	1.37	2 (11%)	22,30,33	1.89	3 (13%)
3	A2M	L5	398	3	18,25,26	0.96	1 (5%)	18,36,39	1.34	2 (11%)
3	A2M	L5	3760	1,3	18,25,26	1.00	1 (5%)	18,36,39	1.21	2 (11%)
3	OMU	L5	4227	3	19,22,23	1.38	2 (10%)	26,31,34	1.90	5 (19%)
1	PSU	S2	119	1	18,21,22	1.46	4 (22%)	22,30,33	1.99	5 (22%)
3	PSU	L5	3844	3	18,21,22	1.58	5 (27%)	22,30,33	1.97	3 (13%)
3	A2M	L5	400	3	18,25,26	0.97	1 (5%)	18,36,39	1.22	2 (11%)
1	A2M	S2	512	1	18,25,26	0.94	1 (5%)	18,36,39	1.23	2 (11%)
1	PSU	S2	406	1	18,21,22	1.49	4 (22%)	22,30,33	1.98	3 (13%)
3	PSU	L5	4361	3	18,21,22	1.47	4 (22%)	22,30,33	1.96	3 (13%)
3	UR3	L5	4530	3	19,22,23	0.86	0	26,32,35	1.72	4 (15%)
1	A2M	S2	166	1	18,25,26	0.94	1 (5%)	18,36,39	1.33	2 (11%)
1	PSU	S2	966	1	18,21,22	1.51	3 (16%)	22,30,33	1.83	4 (18%)
66	SAC	Lr	2	66	7,8,9	3.63	2 (28%)	8,9,11	4.43	4 (50%)
3	OMG	L5	4392	3	18,26,27	1.11	1 (5%)	19,38,41	1.12	2 (10%)
1	OMC	S2	1391	1	19,22,23	0.85	0	26,31,34	1.01	2 (7%)
3	PSU	L5	1677	3	18,21,22	1.58	4 (22%)	22,30,33	2.14	6 (27%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
3	PSU	L5	4493	3	18,21,22	1.58	4 (22%)	22,30,33	2.09	5 (22%)
3	PSU	L5	3764	3	18,21,22	1.49	2 (11%)	22,30,33	1.95	4 (18%)
3	A2M	L5	2401	3	18,25,26	0.89	1 (5%)	18,36,39	1.33	3 (16%)
3	OMG	L5	1522	3	18,26,27	0.67	0	19,38,41	1.52	3 (15%)
3	PSU	L5	4532	3	18,21,22	1.55	4 (22%)	22,30,33	2.07	6 (27%)
84	PSU	At	39	84	18,21,22	1.34	2 (11%)	22,30,33	1.96	4 (18%)
86	M3L	EF	36	86	10,11,12	0.49	0	9,14,16	0.49	0
1	PSU	S2	649	1	18,21,22	1.49	4 (22%)	22,30,33	2.01	3 (13%)
3	PSU	L5	4431	3	18,21,22	1.56	5 (27%)	22,30,33	2.04	3 (13%)
3	PSU	L5	4442	3	18,21,22	1.52	4 (22%)	22,30,33	2.10	5 (22%)
1	PSU	S2	866	1	18,21,22	1.49	4 (22%)	22,30,33	1.70	3 (13%)
3	1MA	L5	1322	89,3	16,25,26	1.34	2 (12%)	18,37,40	1.12	2 (11%)
3	PSU	L5	1792	3	18,21,22	1.49	4 (22%)	22,30,33	2.06	4 (18%)
3	PSU	L5	4576	3	18,21,22	1.50	3 (16%)	22,30,33	1.74	5 (22%)
3	OMG	L5	4196	89,85,3	18,26,27	1.05	1 (5%)	19,38,41	0.97	2 (10%)
1	OMU	S2	1288	1	19,22,23	1.22	2 (10%)	26,31,34	1.77	5 (19%)
3	PSU	L5	1582	3	18,21,22	1.54	5 (27%)	22,30,33	1.81	4 (18%)
3	A2M	L5	1534	89,3	18,25,26	1.00	1 (5%)	18,36,39	1.48	3 (16%)
3	PSU	L5	3770	3	18,21,22	1.41	2 (11%)	22,30,33	1.92	3 (13%)
3	OMC	L5	3841	3	19,22,23	0.83	1 (5%)	26,31,34	0.91	0
3	OMG	L5	2876	3	18,26,27	1.03	1 (5%)	19,38,41	1.07	2 (10%)
3	PSU	L5	4972	3	18,21,22	1.51	4 (22%)	22,30,33	1.90	3 (13%)
84	H2U	At	20	84	18,21,22	1.00	2 (11%)	21,30,33	1.35	2 (9%)
1	PSU	S2	1232	1	18,21,22	1.51	4 (22%)	22,30,33	1.97	3 (13%)
3	OMU	L5	4306	3	19,22,23	1.38	3 (15%)	26,31,34	1.98	4 (15%)
1	PSU	S2	1081	1	18,21,22	1.56	5 (27%)	22,30,33	2.03	4 (18%)
3	PSU	L5	3715	3	18,21,22	1.41	4 (22%)	22,30,33	1.90	3 (13%)
3	PSU	L5	4312	3	18,21,22	1.53	4 (22%)	22,30,33	1.89	3 (13%)
3	PSU	L5	3762	3	18,21,22	1.35	2 (11%)	22,30,33	1.99	5 (22%)
3	OMG	L5	2364	3	18,26,27	0.87	1 (5%)	19,38,41	1.30	3 (15%)
1	MA6	S2	1851	1	19,26,27	0.86	1 (5%)	18,38,41	1.27	2 (11%)
3	A2M	L5	3718	3	18,25,26	0.95	1 (5%)	18,36,39	1.14	2 (11%)
1	PSU	S2	1239	1	18,21,22	1.46	4 (22%)	22,30,33	1.95	4 (18%)
1	OMC	S2	462	1	19,22,23	0.89	0	26,31,34	0.84	0
3	A2M	L5	3723	3	18,25,26	0.94	1 (5%)	18,36,39	1.31	3 (16%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
3	OMG	L5	4494	3	18,26,27	1.00	1 (5%)	19,38,41	1.08	2 (10%)
3	PSU	L5	5001	3	18,21,22	1.41	3 (16%)	22,30,33	1.96	3 (13%)
1	UY1	S2	1326	89,1	19,22,23	1.34	3 (15%)	22,31,34	2.05	4 (18%)
3	OMG	L5	3944	3	18,26,27	1.04	1 (5%)	19,38,41	1.25	3 (15%)
85	OMC	Pt	33	85	19,22,23	0.84	0	26,31,34	0.80	0
20	HY3	SX	62	20	6,8,9	1.70	1 (16%)	5,10,12	1.35	0
1	PSU	S2	1692	1	18,21,22	1.43	4 (22%)	22,30,33	2.01	3 (13%)
3	PSU	L5	3768	3	18,21,22	1.51	4 (22%)	22,30,33	1.77	3 (13%)
3	PSU	L5	1744	92,3	18,21,22	1.44	2 (11%)	22,30,33	1.96	3 (13%)
40	HIC	LB	245	40	8,11,12	1.30	1 (12%)	6,14,16	1.15	0
39	V5N	LA	216	39	4,11,12	0.62	0	5,14,16	1.93	3 (60%)
3	PSU	L5	3734	3	18,21,22	1.39	4 (22%)	22,30,33	2.08	4 (18%)
1	OMU	S2	1442	89,1	19,22,23	1.32	3 (15%)	26,31,34	1.82	5 (19%)
1	OMU	S2	354	1	19,22,23	1.44	3 (15%)	26,31,34	1.98	5 (19%)
3	PSU	L5	1782	3	18,21,22	1.53	4 (22%)	22,30,33	1.92	5 (22%)
3	A2M	L5	1524	3	18,25,26	1.02	1 (5%)	18,36,39	1.48	4 (22%)
3	PSU	L5	3853	89,3	18,21,22	1.58	3 (16%)	22,30,33	1.74	4 (18%)
1	OMU	S2	627	1	19,22,23	1.24	2 (10%)	26,31,34	1.86	5 (19%)
3	PSU	L5	3729	3	18,21,22	1.47	3 (16%)	22,30,33	2.01	4 (18%)
3	PSU	L5	4636	3	18,21,22	1.46	3 (16%)	22,30,33	2.01	5 (22%)
1	OMU	S2	172	1	19,22,23	1.33	4 (21%)	26,31,34	2.03	8 (30%)
1	A2M	S2	668	89,1	18,25,26	0.86	0	18,36,39	1.17	2 (11%)
3	PSU	L5	5010	3	18,21,22	1.50	4 (22%)	22,30,33	1.95	3 (13%)
3	OMG	L5	2424	3	18,26,27	1.04	1 (5%)	19,38,41	1.06	2 (10%)
3	OMC	L5	2422	89,3	19,22,23	0.85	0	26,31,34	0.95	1 (3%)
1	PSU	S2	573	1	18,21,22	1.38	3 (16%)	22,30,33	1.88	3 (13%)
1	PSU	S2	1174	89,1	18,21,22	1.53	5 (27%)	22,30,33	1.86	3 (13%)
1	OMG	S2	509	89,1	18,26,27	0.97	1 (5%)	19,38,41	1.13	2 (10%)
3	OMG	L5	4499	3	18,26,27	1.01	1 (5%)	19,38,41	1.14	2 (10%)
1	PSU	S2	1056	1	18,21,22	1.46	3 (16%)	22,30,33	2.01	4 (18%)
84	G7M	At	46	84	20,26,27	2.63	4 (20%)	17,39,42	0.99	1 (5%)
3	OMG	L5	4228	3	18,26,27	0.96	1 (5%)	19,38,41	1.45	5 (26%)
3	5MC	L5	4447	3	18,22,23	1.06	2 (11%)	26,32,35	1.54	3 (11%)
3	OMG	L5	3744	3	18,26,27	1.00	1 (5%)	19,38,41	1.12	3 (15%)
1	G7M	S2	1639	85,1	20,26,27	2.69	4 (20%)	17,39,42	0.98	1 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
1	PSU	S2	1243	1	18,21,22	1.53	5 (27%)	22,30,33	2.13	4 (18%)
3	A2M	L5	2363	89,3	18,25,26	0.95	1 (5%)	18,36,39	1.26	2 (11%)
3	OMG	L5	3792	3	18,26,27	1.05	1 (5%)	19,38,41	1.07	2 (10%)
3	PSU	L5	4471	3	18,21,22	1.53	3 (16%)	22,30,33	1.64	3 (13%)
2	OMU	L8	14	2,3	19,22,23	1.41	4 (21%)	26,31,34	1.88	6 (23%)
1	PSU	S2	1177	1	18,21,22	1.45	4 (22%)	22,30,33	1.91	3 (13%)
3	OMG	L5	4637	3	18,26,27	1.14	1 (5%)	19,38,41	1.16	2 (10%)
1	OMC	S2	174	89,1	19,22,23	0.87	0	26,31,34	0.96	1 (3%)
3	UY1	L5	3818	89,3	19,22,23	1.38	4 (21%)	22,31,34	1.96	4 (18%)
1	OMU	S2	428	1	19,22,23	1.21	2 (10%)	26,31,34	1.95	6 (23%)
86	M3L	EF	318	86	10,11,12	0.46	0	9,14,16	0.10	0
1	PSU	S2	1004	1	18,21,22	1.56	5 (27%)	22,30,33	1.82	3 (13%)
3	OMG	L5	3627	3	18,26,27	0.99	1 (5%)	19,38,41	1.21	2 (10%)
3	PSU	L5	4521	89,3	18,21,22	1.60	4 (22%)	22,30,33	2.18	6 (27%)
3	PSU	L5	4500	3	18,21,22	1.58	5 (27%)	22,30,33	1.93	4 (18%)
1	4AC	S2	1337	1	21,24,25	1.11	1 (4%)	29,34,37	1.20	3 (10%)
1	PSU	S2	863	1	18,21,22	1.45	3 (16%)	22,30,33	1.88	3 (13%)
3	OMC	L5	2351	3	19,22,23	0.92	1 (5%)	26,31,34	0.96	1 (3%)
1	PSU	S2	572	1	18,21,22	1.39	4 (22%)	22,30,33	1.89	4 (18%)
3	A2M	L5	3785	3	18,25,26	0.85	0	18,36,39	1.42	3 (16%)
3	OMU	L5	2837	3	19,22,23	1.29	3 (15%)	26,31,34	1.89	5 (19%)
3	PSU	L5	3637	89,3	18,21,22	1.56	3 (16%)	22,30,33	2.08	6 (27%)
85	PSU	Pt	56	85	18,21,22	1.37	3 (16%)	22,30,33	1.93	3 (13%)
3	PSU	L5	2843	3	18,21,22	1.54	4 (22%)	22,30,33	2.03	4 (18%)
3	OMG	L5	1316	3	18,26,27	1.10	1 (5%)	19,38,41	1.17	2 (10%)
3	PSU	L5	4420	3	18,21,22	1.54	4 (22%)	22,30,33	1.89	3 (13%)
3	PSU	L5	3758	3	18,21,22	1.41	4 (22%)	22,30,33	1.87	4 (18%)
3	PSU	L5	4628	3	18,21,22	1.42	4 (22%)	22,30,33	1.83	4 (18%)
1	A2M	S2	484	1	18,25,26	0.94	1 (5%)	18,36,39	1.19	2 (11%)
3	OMC	L5	3887	3	19,22,23	0.85	0	26,31,34	0.86	0
1	PSU	S2	1367	1	18,21,22	1.53	3 (16%)	22,30,33	1.98	4 (18%)
1	OMG	S2	867	1	18,26,27	0.97	1 (5%)	19,38,41	1.04	2 (10%)
3	PSU	L5	4531	3	18,21,22	1.44	3 (16%)	22,30,33	2.23	4 (18%)
1	A2M	S2	27	89,1	18,25,26	0.90	1 (5%)	18,36,39	1.19	2 (11%)
1	PSU	S2	822	1	18,21,22	1.49	4 (22%)	22,30,33	2.08	4 (18%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
3	PSU	L5	1860	3	18,21,22	1.53	4 (22%)	22,30,33	1.95	3 (13%)
3	OMG	L5	4370	3	18,26,27	0.88	1 (5%)	19,38,41	1.06	2 (10%)
3	OMC	L5	2861	3	19,22,23	0.73	0	26,31,34	0.77	1 (3%)
3	PSU	L5	4689	3	18,21,22	1.46	3 (16%)	22,30,33	2.01	5 (22%)
1	OMG	S2	1447	1	18,26,27	1.08	1 (5%)	19,38,41	1.38	3 (15%)
3	A2M	L5	3830	3	18,25,26	0.88	0	18,36,39	1.28	2 (11%)
1	PSU	S2	109	1	18,21,22	1.52	4 (22%)	22,30,33	2.01	3 (13%)
1	OMG	S2	601	1	18,26,27	1.03	1 (5%)	19,38,41	1.00	2 (10%)
3	OMU	L5	3925	3	19,22,23	1.36	3 (15%)	26,31,34	1.75	5 (19%)
85	4SU	Pt	8	85	18,21,22	1.86	4 (22%)	26,30,33	2.18	5 (19%)
1	A2M	S2	99	89,1	18,25,26	0.93	1 (5%)	18,36,39	1.24	2 (11%)
1	PSU	S2	801	1	18,21,22	1.38	2 (11%)	22,30,33	1.95	3 (13%)
1	PSU	S2	1238	1	18,21,22	1.51	3 (16%)	22,30,33	1.96	4 (18%)
3	6MZ	L5	4220	3	18,25,26	0.78	0	16,36,39	2.10	4 (25%)
86	M3L	EF	79	86	10,11,12	0.46	0	9,14,16	0.10	0
1	PSU	S2	1625	1	18,21,22	1.37	2 (11%)	22,30,33	1.89	3 (13%)
3	OMC	L5	2824	3	19,22,23	0.76	0	26,31,34	0.68	0
3	PSU	L5	4423	3	18,21,22	1.39	4 (22%)	22,30,33	1.91	3 (13%)
1	OMG	S2	436	1	18,26,27	1.02	1 (5%)	19,38,41	1.11	2 (10%)
3	PSU	L5	1862	3	18,21,22	1.58	4 (22%)	22,30,33	1.85	3 (13%)
85	G7M	Pt	47	85	20,26,27	2.42	3 (15%)	17,39,42	0.61	0
84	MIA	At	37	84	24,31,32	2.19	3 (12%)	26,44,47	2.67	10 (38%)
86	MLY	EF	55	86	9,10,11	0.47	0	6,11,13	0.89	0
3	A2M	L5	1326	3	18,25,26	0.93	1 (5%)	18,36,39	1.46	3 (16%)
68	MLZ	Lb	5	68	8,9,10	0.92	0	4,9,11	0.98	0
1	PSU	S2	1643	89,1	18,21,22	1.53	5 (27%)	22,30,33	1.99	4 (18%)
3	PSU	L5	3884	3	18,21,22	1.37	3 (16%)	22,30,33	1.72	4 (18%)
1	MA6	S2	1850	1	19,26,27	0.84	1 (5%)	18,38,41	1.35	2 (11%)
2	PSU	L8	55	2	18,21,22	1.43	3 (16%)	22,30,33	2.07	4 (18%)
1	PSU	S2	686	1	18,21,22	1.47	4 (22%)	22,30,33	2.03	3 (13%)
1	6MZ	S2	1832	89,1	18,25,26	0.75	0	16,36,39	2.64	3 (18%)
3	PSU	L5	3695	89,3	18,21,22	1.49	3 (16%)	22,30,33	2.06	6 (27%)
3	PSU	L5	1683	89,3	18,21,22	1.66	5 (27%)	22,30,33	2.00	3 (13%)
3	A2M	L5	2787	89,3	18,25,26	0.97	0	18,36,39	1.42	3 (16%)
1	PSU	S2	681	1	18,21,22	1.54	5 (27%)	22,30,33	2.06	3 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
1	PSU	S2	1445	1	18,21,22	1.56	5 (27%)	22,30,33	2.07	3 (13%)
3	OMG	L5	4618	3	18,26,27	1.06	1 (5%)	19,38,41	1.16	2 (10%)
1	A2M	S2	1383	1	18,25,26	1.01	2 (11%)	18,36,39	1.46	2 (11%)
1	PSU	S2	105	1	18,21,22	1.59	5 (27%)	22,30,33	2.08	4 (18%)
1	OMU	S2	1804	1	19,22,23	1.31	3 (15%)	26,31,34	1.74	5 (19%)
3	OMC	L5	1340	3	19,22,23	0.87	1 (5%)	26,31,34	0.91	0
3	OMU	L5	4498	3	19,22,23	1.29	3 (15%)	26,31,34	1.87	5 (19%)
1	OMU	S2	116	1	19,22,23	1.29	3 (15%)	26,31,34	1.74	4 (15%)
3	PSU	L5	1536	3	18,21,22	1.67	5 (27%)	22,30,33	2.05	3 (13%)
3	OMC	L5	4456	3	19,22,23	0.95	0	26,31,34	0.99	1 (3%)
79	M3L	Lm	98	79	10,11,12	0.37	0	9,14,16	0.09	0
1	OMG	S2	1328	1	18,26,27	1.05	1 (5%)	19,38,41	1.04	2 (10%)
3	PSU	L5	1779	3	18,21,22	1.57	5 (27%)	22,30,33	1.96	3 (13%)
3	PSU	L5	4299	3	18,21,22	1.53	4 (22%)	22,30,33	1.93	4 (18%)
3	PSU	L5	4569	3	18,21,22	1.45	5 (27%)	22,30,33	2.07	4 (18%)
3	A2M	L5	3724	3	18,25,26	0.91	1 (5%)	18,36,39	1.42	2 (11%)
1	PSU	S2	1244	1	18,21,22	1.44	3 (16%)	22,30,33	1.91	3 (13%)
3	A2M	L5	2815	89,3	18,25,26	1.00	1 (5%)	18,36,39	1.27	3 (16%)
3	PSU	L5	2839	3	18,21,22	1.50	5 (27%)	22,30,33	2.00	4 (18%)
1	PSU	S2	815	1	18,21,22	1.46	3 (16%)	22,30,33	1.89	5 (22%)
3	PSU	L5	4293	3	18,21,22	1.46	4 (22%)	22,30,33	1.81	4 (18%)
3	OMU	L5	4620	3	19,22,23	1.35	3 (15%)	26,31,34	1.90	6 (23%)
84	4SU	At	8	84	18,21,22	1.88	4 (22%)	26,30,33	2.46	7 (26%)
1	OMC	S2	1703	1	19,22,23	0.83	1 (5%)	26,31,34	0.79	0
1	PSU	S2	218	1	18,21,22	1.47	4 (22%)	22,30,33	1.99	4 (18%)
1	A2M	S2	159	1	18,25,26	0.96	1 (5%)	18,36,39	1.24	2 (11%)
1	PSU	S2	34	1	18,21,22	1.42	4 (22%)	22,30,33	1.92	4 (18%)
3	OMC	L5	3701	92,3	19,22,23	0.98	0	26,31,34	1.19	2 (7%)
3	OMC	L5	3808	3	19,22,23	0.80	0	26,31,34	0.84	0
1	4AC	S2	1842	1	21,24,25	1.05	1 (4%)	29,34,37	1.18	4 (13%)
3	A2M	L5	4571	3	18,25,26	0.98	1 (5%)	18,36,39	1.25	3 (16%)
1	PSU	S2	36	1	18,21,22	1.53	5 (27%)	22,30,33	1.95	3 (13%)
3	PSU	L5	2632	3	18,21,22	1.43	4 (22%)	22,30,33	1.94	3 (13%)
1	OMU	S2	121	1	19,22,23	1.43	3 (15%)	26,31,34	1.68	5 (19%)
3	PSU	L5	4353	3	18,21,22	1.56	4 (22%)	22,30,33	1.96	3 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
1	A2M	S2	1678	1	18,25,26	0.95	1 (5%)	18,36,39	1.21	2 (11%)
29	AME	SV	1	29	9,10,11	3.29	2 (22%)	9,11,13	4.40	4 (44%)
3	OMC	L5	2365	89,3	19,22,23	0.83	0	26,31,34	0.89	1 (3%)

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
6	SAC	SA	2	6	-	1/7/8/10	-
1	PSU	S2	296	1	-	0/7/25/26	0/2/2/2
3	PSU	L5	4579	3	-	0/7/25/26	0/2/2/2
52	V5N	La	39	52	-	0/5/10/12	0/1/1/1
3	PSU	L5	3851	3	-	2/7/25/26	0/2/2/2
1	PSU	S2	814	1	-	0/7/25/26	0/2/2/2
1	PSU	S2	609	1	-	0/7/25/26	0/2/2/2
1	PSU	S2	1136	1	-	0/7/25/26	0/2/2/2
1	A2M	S2	590	1	-	3/5/27/28	0/3/3/3
3	PSU	L5	2508	3	-	0/7/25/26	0/2/2/2
3	A2M	L5	3825	3	-	0/5/27/28	0/3/3/3
1	OMG	S2	644	1	-	4/5/27/28	0/3/3/3
1	OMG	S2	683	1	-	2/5/27/28	0/3/3/3
3	OMC	L5	1881	89,3	-	0/9/27/28	0/2/2/2
3	PSU	L5	4552	3	-	0/7/25/26	0/2/2/2
1	A2M	S2	576	1	-	3/5/27/28	0/3/3/3
3	OMG	L5	1625	89,3	-	3/5/27/28	0/3/3/3
81	MLZ	Lo	53	81	-	2/7/8/10	-
3	OMG	L5	3899	3	-	0/5/27/28	0/3/3/3
2	OMG	L8	75	2	-	0/5/27/28	0/3/3/3
3	OMC	L5	4536	3	-	0/9/27/28	0/2/2/2
84	PSU	At	32	84	-	2/7/25/26	0/2/2/2
1	PSU	S2	1347	1	-	0/7/25/26	0/2/2/2
3	OMC	L5	2804	3	-	0/9/27/28	0/2/2/2
3	A2M	L5	4590	3	-	1/5/27/28	0/3/3/3
1	OMC	S2	517	1	-	0/9/27/28	0/2/2/2
1	B8N	S2	1248	1	-	4/16/34/35	0/2/2/2
1	PSU	S2	918	1	-	0/7/25/26	0/2/2/2
1	PSU	S2	651	1	-	0/7/25/26	0/2/2/2
85	H2U	Pt	21	85	-	3/7/38/39	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	OMG	S2	1490	89,1	-	2/5/27/28	0/3/3/3
3	PSU	L5	4457	3	-	0/7/25/26	0/2/2/2
3	OMU	L5	2415	3	-	1/9/27/28	0/2/2/2
3	5MC	L5	3782	89,3	-	0/7/25/26	0/2/2/2
3	A2M	L5	3867	3	-	0/5/27/28	0/3/3/3
84	H2U	At	16	84	-	3/7/38/39	0/2/2/2
3	A2M	L5	1871	89,3	-	0/5/27/28	0/3/3/3
3	OMG	L5	4623	3	-	0/5/27/28	0/3/3/3
2	PSU	L8	69	2	-	0/7/25/26	0/2/2/2
3	OMC	L5	3869	3	-	0/9/27/28	0/2/2/2
3	PSU	L5	4403	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4296	3	-	0/7/25/26	0/2/2/2
1	A2M	S2	468	1	-	0/5/27/28	0/3/3/3
3	PSU	L5	4673	3	-	0/7/25/26	0/2/2/2
1	A2M	S2	1031	1	-	0/5/27/28	0/3/3/3
3	PSU	L5	1781	3	-	2/7/25/26	0/2/2/2
3	PSU	L5	3639	3	-	0/7/25/26	0/2/2/2
3	A2M	L5	4523	89,3	-	0/5/27/28	0/3/3/3
3	PSU	L5	3920	89,3	-	0/7/25/26	0/2/2/2
1	PSU	S2	93	1	-	0/7/25/26	0/2/2/2
3	A2M	L5	398	3	-	2/5/27/28	0/3/3/3
3	A2M	L5	3760	1,3	-	2/5/27/28	0/3/3/3
3	OMU	L5	4227	3	-	0/9/27/28	0/2/2/2
1	PSU	S2	119	1	-	0/7/25/26	0/2/2/2
3	PSU	L5	3844	3	-	1/7/25/26	0/2/2/2
3	A2M	L5	400	3	-	1/5/27/28	0/3/3/3
1	A2M	S2	512	1	-	1/5/27/28	0/3/3/3
1	PSU	S2	406	1	-	0/7/25/26	0/2/2/2
3	PSU	L5	4361	3	-	0/7/25/26	0/2/2/2
3	UR3	L5	4530	3	-	0/7/25/26	0/2/2/2
1	A2M	S2	166	1	-	0/5/27/28	0/3/3/3
1	PSU	S2	966	1	-	0/7/25/26	0/2/2/2
66	SAC	Lr	2	66	-	2/7/8/10	-
3	OMG	L5	4392	3	-	0/5/27/28	0/3/3/3
1	OMC	S2	1391	1	-	0/9/27/28	0/2/2/2
3	PSU	L5	1677	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4493	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	3764	3	-	0/7/25/26	0/2/2/2
3	A2M	L5	2401	3	-	2/5/27/28	0/3/3/3
3	OMG	L5	1522	3	-	0/5/27/28	0/3/3/3
3	PSU	L5	4532	3	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
84	PSU	At	39	84	-	0/7/25/26	0/2/2/2
86	M3L	EF	36	86	-	0/9/10/12	-
1	PSU	S2	649	1	-	0/7/25/26	0/2/2/2
3	PSU	L5	4431	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4442	3	-	0/7/25/26	0/2/2/2
1	PSU	S2	866	1	-	0/7/25/26	0/2/2/2
3	1MA	L5	1322	89,3	-	0/3/25/26	0/3/3/3
3	PSU	L5	1792	3	-	2/7/25/26	0/2/2/2
3	PSU	L5	4576	3	-	0/7/25/26	0/2/2/2
3	OMG	L5	4196	89,85,3	-	0/5/27/28	0/3/3/3
1	OMU	S2	1288	1	-	3/9/27/28	0/2/2/2
3	PSU	L5	1582	3	-	0/7/25/26	0/2/2/2
3	A2M	L5	1534	89,3	-	2/5/27/28	0/3/3/3
3	PSU	L5	3770	3	-	0/7/25/26	0/2/2/2
3	OMC	L5	3841	3	-	0/9/27/28	0/2/2/2
3	OMG	L5	2876	3	-	0/5/27/28	0/3/3/3
3	PSU	L5	4972	3	-	0/7/25/26	0/2/2/2
84	H2U	At	20	84	-	6/7/38/39	0/2/2/2
1	PSU	S2	1232	1	-	0/7/25/26	0/2/2/2
3	OMU	L5	4306	3	-	0/9/27/28	0/2/2/2
1	PSU	S2	1081	1	-	1/7/25/26	0/2/2/2
3	PSU	L5	3715	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4312	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	3762	3	-	0/7/25/26	0/2/2/2
3	OMG	L5	2364	3	-	2/5/27/28	0/3/3/3
1	MA6	S2	1851	1	-	2/7/29/30	0/3/3/3
3	A2M	L5	3718	3	-	1/5/27/28	0/3/3/3
1	PSU	S2	1239	1	-	0/7/25/26	0/2/2/2
1	OMC	S2	462	1	-	0/9/27/28	0/2/2/2
3	A2M	L5	3723	3	-	1/5/27/28	0/3/3/3
3	OMG	L5	4494	3	-	1/5/27/28	0/3/3/3
3	PSU	L5	5001	3	-	0/7/25/26	0/2/2/2
1	UY1	S2	1326	89,1	-	2/9/27/28	0/2/2/2
3	OMG	L5	3944	3	-	1/5/27/28	0/3/3/3
85	OMC	Pt	33	85	-	0/9/27/28	0/2/2/2
20	HY3	SX	62	20	-	1/1/12/14	0/1/1/1
1	PSU	S2	1692	1	-	0/7/25/26	0/2/2/2
3	PSU	L5	3768	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	1744	92,3	-	0/7/25/26	0/2/2/2
40	HIC	LB	245	40	-	1/5/6/8	0/1/1/1
39	V5N	LA	216	39	-	1/5/10/12	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	PSU	L5	3734	3	-	0/7/25/26	0/2/2/2
1	OMU	S2	1442	89,1	-	2/9/27/28	0/2/2/2
1	OMU	S2	354	1	-	0/9/27/28	0/2/2/2
3	PSU	L5	1782	3	-	0/7/25/26	0/2/2/2
3	A2M	L5	1524	3	-	0/5/27/28	0/3/3/3
3	PSU	L5	3853	89,3	-	0/7/25/26	0/2/2/2
1	OMU	S2	627	1	-	0/9/27/28	0/2/2/2
3	PSU	L5	3729	3	-	2/7/25/26	0/2/2/2
3	PSU	L5	4636	3	-	2/7/25/26	0/2/2/2
1	OMU	S2	172	1	-	4/9/27/28	0/2/2/2
1	A2M	S2	668	89,1	-	2/5/27/28	0/3/3/3
3	PSU	L5	5010	3	-	0/7/25/26	0/2/2/2
3	OMG	L5	2424	3	-	1/5/27/28	0/3/3/3
3	OMC	L5	2422	89,3	-	0/9/27/28	0/2/2/2
1	PSU	S2	573	1	-	0/7/25/26	0/2/2/2
1	PSU	S2	1174	89,1	-	0/7/25/26	0/2/2/2
1	OMG	S2	509	89,1	-	0/5/27/28	0/3/3/3
3	OMG	L5	4499	3	-	0/5/27/28	0/3/3/3
1	PSU	S2	1056	1	-	0/7/25/26	0/2/2/2
84	G7M	At	46	84	-	2/3/25/26	0/3/3/3
3	OMG	L5	4228	3	-	0/5/27/28	0/3/3/3
3	5MC	L5	4447	3	-	4/7/25/26	0/2/2/2
3	OMG	L5	3744	3	-	1/5/27/28	0/3/3/3
1	G7M	S2	1639	85,1	-	0/3/25/26	0/3/3/3
1	PSU	S2	1243	1	-	1/7/25/26	0/2/2/2
3	A2M	L5	2363	89,3	-	0/5/27/28	0/3/3/3
3	OMG	L5	3792	3	-	1/5/27/28	0/3/3/3
3	PSU	L5	4471	3	-	0/7/25/26	0/2/2/2
2	OMU	L8	14	2,3	-	1/9/27/28	0/2/2/2
1	PSU	S2	1177	1	-	0/7/25/26	0/2/2/2
3	OMG	L5	4637	3	-	3/5/27/28	0/3/3/3
1	OMC	S2	174	89,1	-	1/9/27/28	0/2/2/2
3	UY1	L5	3818	89,3	-	2/9/27/28	0/2/2/2
1	OMU	S2	428	1	-	2/9/27/28	0/2/2/2
86	M3L	EF	318	86	-	7/9/10/12	-
1	PSU	S2	1004	1	-	0/7/25/26	0/2/2/2
3	OMG	L5	3627	3	-	0/5/27/28	0/3/3/3
3	PSU	L5	4521	89,3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4500	3	-	1/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	4AC	S2	1337	1	-	4/11/29/30	0/2/2/2
1	PSU	S2	863	1	-	0/7/25/26	0/2/2/2
3	OMC	L5	2351	3	-	1/9/27/28	0/2/2/2
1	PSU	S2	572	1	-	0/7/25/26	0/2/2/2
3	A2M	L5	3785	3	-	2/5/27/28	0/3/3/3
3	OMU	L5	2837	3	-	0/9/27/28	0/2/2/2
3	PSU	L5	3637	89,3	-	0/7/25/26	0/2/2/2
85	PSU	Pt	56	85	-	0/7/25/26	0/2/2/2
3	PSU	L5	2843	3	-	0/7/25/26	0/2/2/2
3	OMG	L5	1316	3	-	0/5/27/28	0/3/3/3
3	PSU	L5	4420	3	-	2/7/25/26	0/2/2/2
3	PSU	L5	3758	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4628	3	-	0/7/25/26	0/2/2/2
1	A2M	S2	484	1	-	1/5/27/28	0/3/3/3
3	OMC	L5	3887	3	-	0/9/27/28	0/2/2/2
1	PSU	S2	1367	1	-	0/7/25/26	0/2/2/2
1	OMG	S2	867	1	-	1/5/27/28	0/3/3/3
3	PSU	L5	4531	3	-	2/7/25/26	0/2/2/2
1	A2M	S2	27	89,1	-	1/5/27/28	0/3/3/3
1	PSU	S2	822	1	-	1/7/25/26	0/2/2/2
3	PSU	L5	1860	3	-	0/7/25/26	0/2/2/2
3	OMG	L5	4370	3	-	0/5/27/28	0/3/3/3
3	OMC	L5	2861	3	-	0/9/27/28	0/2/2/2
3	PSU	L5	4689	3	-	0/7/25/26	0/2/2/2
1	OMG	S2	1447	1	-	1/5/27/28	0/3/3/3
3	A2M	L5	3830	3	-	0/5/27/28	0/3/3/3
1	PSU	S2	109	1	-	0/7/25/26	0/2/2/2
1	OMG	S2	601	1	-	0/5/27/28	0/3/3/3
3	OMU	L5	3925	3	-	1/9/27/28	0/2/2/2
85	4SU	Pt	8	85	-	0/7/25/26	0/2/2/2
1	A2M	S2	99	89,1	-	1/5/27/28	0/3/3/3
1	PSU	S2	801	1	-	0/7/25/26	0/2/2/2
1	PSU	S2	1238	1	-	0/7/25/26	0/2/2/2
3	6MZ	L5	4220	3	-	0/5/27/28	0/3/3/3
86	M3L	EF	79	86	-	3/9/10/12	-
1	PSU	S2	1625	1	-	0/7/25/26	0/2/2/2
3	OMC	L5	2824	3	-	1/9/27/28	0/2/2/2
3	PSU	L5	4423	3	-	0/7/25/26	0/2/2/2
1	OMG	S2	436	1	-	0/5/27/28	0/3/3/3
3	PSU	L5	1862	3	-	0/7/25/26	0/2/2/2
85	G7M	Pt	47	85	-	0/3/25/26	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
84	MIA	At	37	84	-	2/11/33/34	0/3/3/3
86	MLY	EF	55	86	-	3/8/9/11	-
3	A2M	L5	1326	3	-	3/5/27/28	0/3/3/3
68	MLZ	Lb	5	68	-	2/7/8/10	-
1	PSU	S2	1643	89,1	-	0/7/25/26	0/2/2/2
3	PSU	L5	3884	3	-	0/7/25/26	0/2/2/2
1	MA6	S2	1850	1	-	0/7/29/30	0/3/3/3
2	PSU	L8	55	2	-	0/7/25/26	0/2/2/2
1	PSU	S2	686	1	-	0/7/25/26	0/2/2/2
1	6MZ	S2	1832	89,1	-	2/5/27/28	0/3/3/3
3	PSU	L5	3695	89,3	-	0/7/25/26	0/2/2/2
3	PSU	L5	1683	89,3	-	0/7/25/26	0/2/2/2
3	A2M	L5	2787	89,3	-	2/5/27/28	0/3/3/3
1	PSU	S2	681	1	-	0/7/25/26	0/2/2/2
1	PSU	S2	1445	1	-	0/7/25/26	0/2/2/2
3	OMG	L5	4618	3	-	1/5/27/28	0/3/3/3
1	A2M	S2	1383	1	-	1/5/27/28	0/3/3/3
1	PSU	S2	105	1	-	0/7/25/26	0/2/2/2
1	OMU	S2	1804	1	-	0/9/27/28	0/2/2/2
3	OMC	L5	1340	3	-	0/9/27/28	0/2/2/2
3	OMU	L5	4498	3	-	0/9/27/28	0/2/2/2
1	OMU	S2	116	1	-	0/9/27/28	0/2/2/2
3	PSU	L5	1536	3	-	0/7/25/26	0/2/2/2
3	OMC	L5	4456	3	-	1/9/27/28	0/2/2/2
79	M3L	Lm	98	79	-	0/9/10/12	-
1	OMG	S2	1328	1	-	1/5/27/28	0/3/3/3
3	PSU	L5	1779	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4299	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4569	3	-	0/7/25/26	0/2/2/2
3	A2M	L5	3724	3	-	1/5/27/28	0/3/3/3
1	PSU	S2	1244	1	-	0/7/25/26	0/2/2/2
3	A2M	L5	2815	89,3	-	0/5/27/28	0/3/3/3
3	PSU	L5	2839	3	-	0/7/25/26	0/2/2/2
1	PSU	S2	815	1	-	0/7/25/26	0/2/2/2
3	PSU	L5	4293	3	-	0/7/25/26	0/2/2/2
3	OMU	L5	4620	3	-	0/9/27/28	0/2/2/2
84	4SU	At	8	84	-	2/7/25/26	0/2/2/2
1	OMC	S2	1703	1	-	0/9/27/28	0/2/2/2
1	PSU	S2	218	1	-	0/7/25/26	0/2/2/2
1	A2M	S2	159	1	-	0/5/27/28	0/3/3/3
1	PSU	S2	34	1	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	OMC	L5	3701	92,3	-	4/9/27/28	0/2/2/2
3	OMC	L5	3808	3	-	0/9/27/28	0/2/2/2
1	4AC	S2	1842	1	-	0/11/29/30	0/2/2/2
3	A2M	L5	4571	3	-	0/5/27/28	0/3/3/3
1	PSU	S2	36	1	-	0/7/25/26	0/2/2/2
3	PSU	L5	2632	3	-	0/7/25/26	0/2/2/2
1	OMU	S2	121	1	-	1/9/27/28	0/2/2/2
3	PSU	L5	4353	3	-	0/7/25/26	0/2/2/2
1	A2M	S2	1678	1	-	1/5/27/28	0/3/3/3
29	AME	SV	1	29	-	2/9/10/12	-
3	OMC	L5	2365	89,3	-	0/9/27/28	0/2/2/2

The worst 5 of 566 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	SV	1	AME	OT-CT1	8.88	1.43	1.23
66	Lr	2	SAC	OAC-C1A	8.75	1.43	1.23
6	SA	2	SAC	OAC-C1A	8.52	1.42	1.23
1	S2	1639	G7M	C8-N9	7.47	1.46	1.33
85	Pt	47	G7M	C8-N9	7.32	1.46	1.33

The worst 5 of 746 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	S2	1832	6MZ	C2-N1-C6	9.00	124.31	116.59
84	At	37	MIA	C12-C13-C14	-8.58	110.44	127.14
29	SV	1	AME	CA-N-CT1	-7.61	109.11	123.15
66	Lr	2	SAC	OAC-C1A-N	-7.55	108.06	121.95
6	SA	2	SAC	OAC-C1A-C2A	-7.35	108.41	122.06

There are no chirality outliers.

5 of 166 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	L8	14	OMU	C1'-C2'-O2'-CM2
6	SA	2	SAC	OAC-C1A-N-CA
29	SV	1	AME	OT-CT1-N-CA
40	LB	245	HIC	CA-CB-CG-ND1
66	Lr	2	SAC	C2A-C1A-N-CA

There are no ring outliers.

No monomer is involved in short contacts.

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

Of 502 ligands modelled in this entry, 478 are monoatomic - leaving 24 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	PUT	L5	5114	-	5,5,5	0.18	0	4,4,4	0.24	0
87	SPD	L5	5102	-	9,9,9	0.40	0	8,8,8	0.83	0
94	PHE	At	77	84	10,11,12	0.35	0	10,13,15	0.93	0
96	GSP	EF	501	89	26,34,34	1.05	2 (7%)	27,54,54	0.93	1 (3%)
88	PUT	L5	5111	-	5,5,5	0.13	0	4,4,4	0.18	0
87	SPD	L5	5104	-	9,9,9	0.33	0	8,8,8	0.79	0
87	SPD	L5	5103	-	9,9,9	0.39	0	8,8,8	0.97	1 (12%)
87	SPD	S2	1901	-	9,9,9	0.14	0	8,8,8	0.23	0
88	PUT	L5	5116	-	5,5,5	0.15	0	4,4,4	0.20	0
88	PUT	L5	5109	-	5,5,5	0.16	0	4,4,4	0.22	0
88	PUT	L5	5113	-	5,5,5	0.15	0	4,4,4	0.23	0
90	ANM	L5	5101	-	20,20,20	1.16	1 (5%)	22,27,27	1.34	3 (13%)
87	SPD	L5	5105	-	9,9,9	0.31	0	8,8,8	0.76	0
91	3H3	L5	5117	-	33,34,34	3.34	13 (39%)	34,45,45	3.99	19 (55%)
88	PUT	L5	5112	-	5,5,5	0.20	0	4,4,4	0.24	0
87	SPD	L5	5106	-	9,9,9	0.35	0	8,8,8	0.70	0
95	MET	Pt	78	85	6,7,8	0.58	0	2,7,9	1.86	1 (50%)
97	ZIY	EF	502	-	81,82,82	1.00	4 (4%)	111,117,117	1.40	13 (11%)
87	SPD	L5	5107	-	9,9,9	0.43	0	8,8,8	0.93	0
88	PUT	S2	1902	-	5,5,5	0.16	0	4,4,4	0.16	0
88	PUT	L5	5115	-	5,5,5	0.16	0	4,4,4	0.19	0
88	PUT	S2	1903	-	5,5,5	0.15	0	4,4,4	0.21	0
87	SPD	L5	5108	-	9,9,9	0.33	0	8,8,8	1.03	1 (12%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
88	PUT	L5	5110	-	5,5,5	0.08	0	4,4,4	0.18	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	PUT	L5	5114	-	-	0/3/3/3	-
87	SPD	L5	5102	-	-	0/7/7/7	-
94	PHE	At	77	84	-	3/5/6/8	0/1/1/1
96	GSP	EF	501	89	-	0/17/38/38	0/3/3/3
88	PUT	L5	5111	-	-	0/3/3/3	-
87	SPD	L5	5104	-	-	4/7/7/7	-
87	SPD	L5	5103	-	-	5/7/7/7	-
87	SPD	S2	1901	-	-	0/7/7/7	-
88	PUT	L5	5116	-	-	1/3/3/3	-
88	PUT	L5	5109	-	-	0/3/3/3	-
88	PUT	L5	5113	-	-	2/3/3/3	-
90	ANM	L5	5101	-	-	4/10/23/23	0/2/2/2
87	SPD	L5	5105	-	-	2/7/7/7	-
91	3H3	L5	5117	-	-	16/39/51/51	0/1/2/2
88	PUT	L5	5112	-	-	0/3/3/3	-
87	SPD	L5	5106	-	-	6/7/7/7	-
95	MET	Pt	78	85	-	3/5/6/8	-
97	ZIY	EF	502	-	-	12/120/140/140	0/3/4/4
87	SPD	L5	5107	-	-	3/7/7/7	-
88	PUT	S2	1902	-	-	1/3/3/3	-
88	PUT	L5	5115	-	-	1/3/3/3	-
88	PUT	S2	1903	-	-	0/3/3/3	-
87	SPD	L5	5108	-	-	2/7/7/7	-
88	PUT	L5	5110	-	-	3/3/3/3	-

The worst 5 of 20 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
91	L5	5117	3H3	C13-C12	9.38	1.53	1.33
91	L5	5117	3H3	O3-C22	7.52	1.38	1.23
91	L5	5117	3H3	O4-C23	7.06	1.37	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
91	L5	5117	3H3	C23-N	6.55	1.48	1.37
91	L5	5117	3H3	C22-N	5.45	1.46	1.37

The worst 5 of 39 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
91	L5	5117	3H3	O3-C22-N	-9.93	104.55	120.28
91	L5	5117	3H3	C22-N-C23	-9.44	114.32	125.78
91	L5	5117	3H3	O4-C23-N	-8.53	106.76	120.28
91	L5	5117	3H3	O1-C11-C1	8.07	116.86	106.31
97	EF	502	ZIY	O33-C75-C74	6.66	126.68	118.96

There are no chirality outliers.

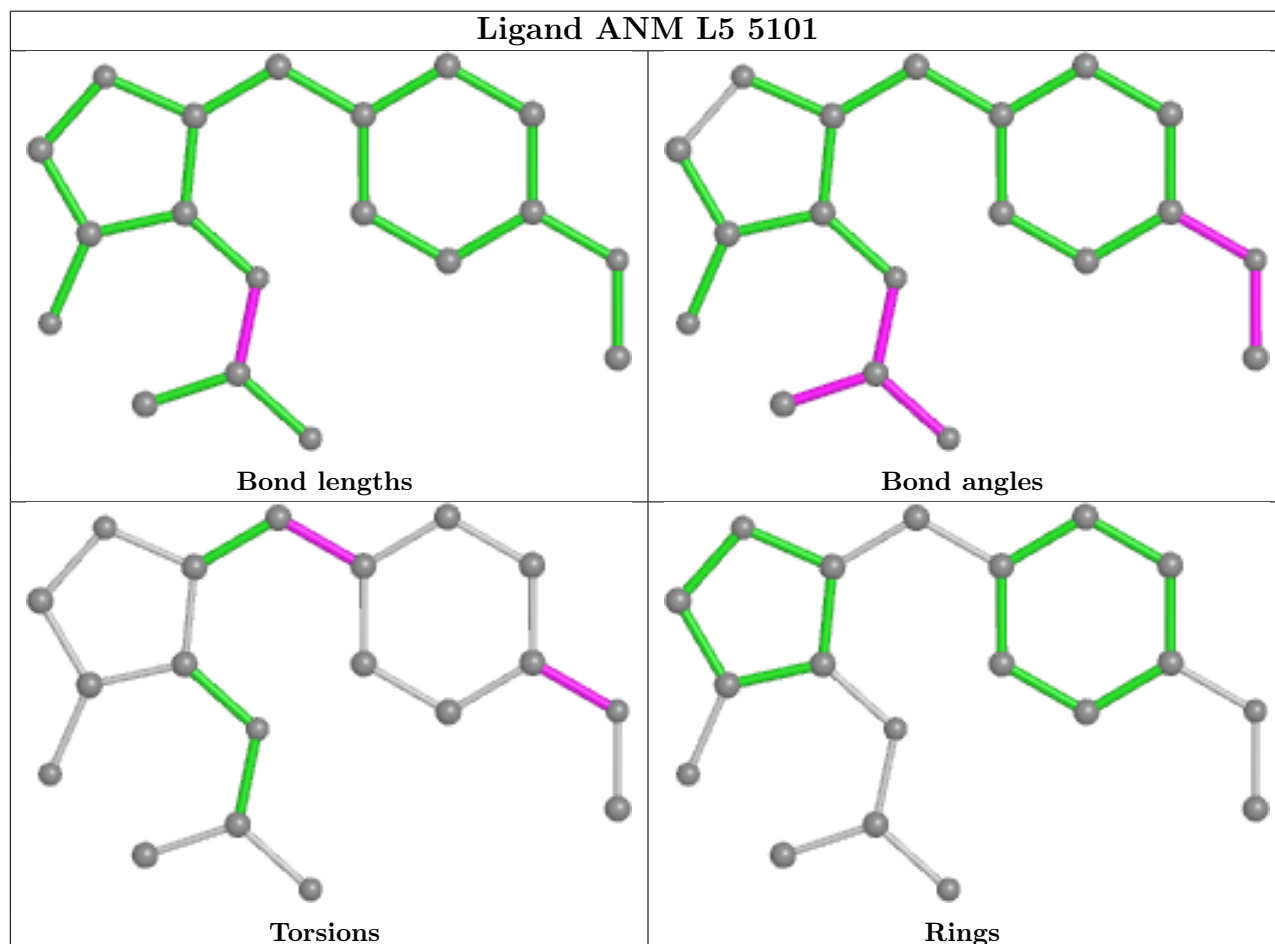
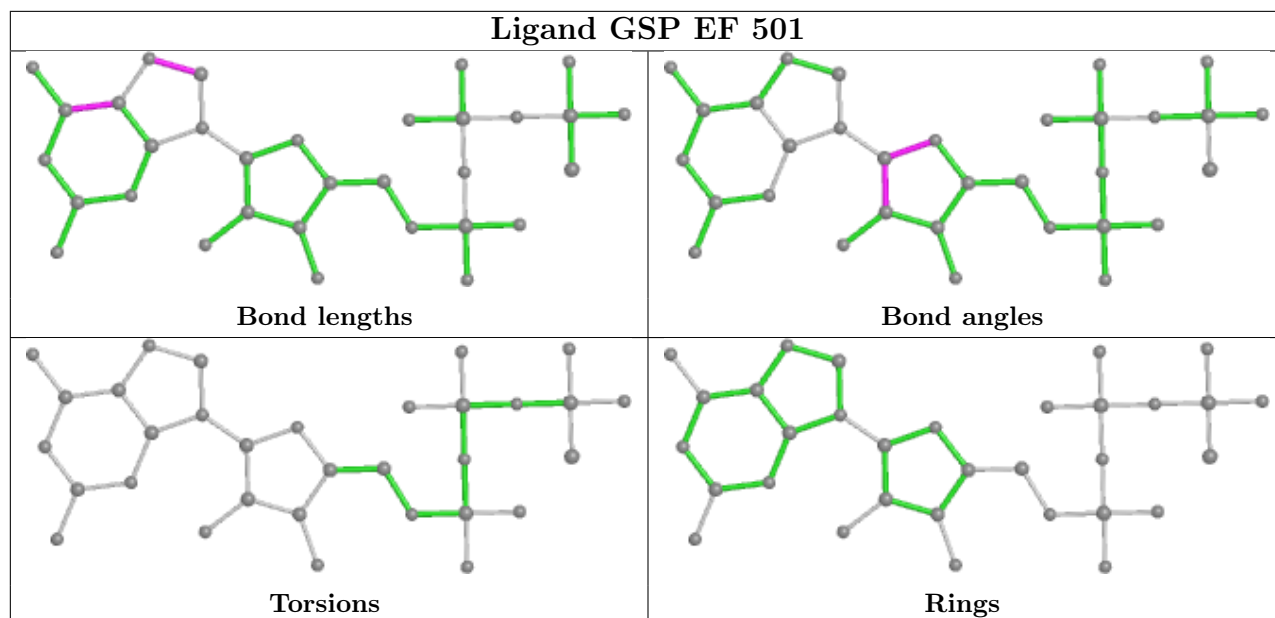
5 of 68 torsion outliers are listed below:

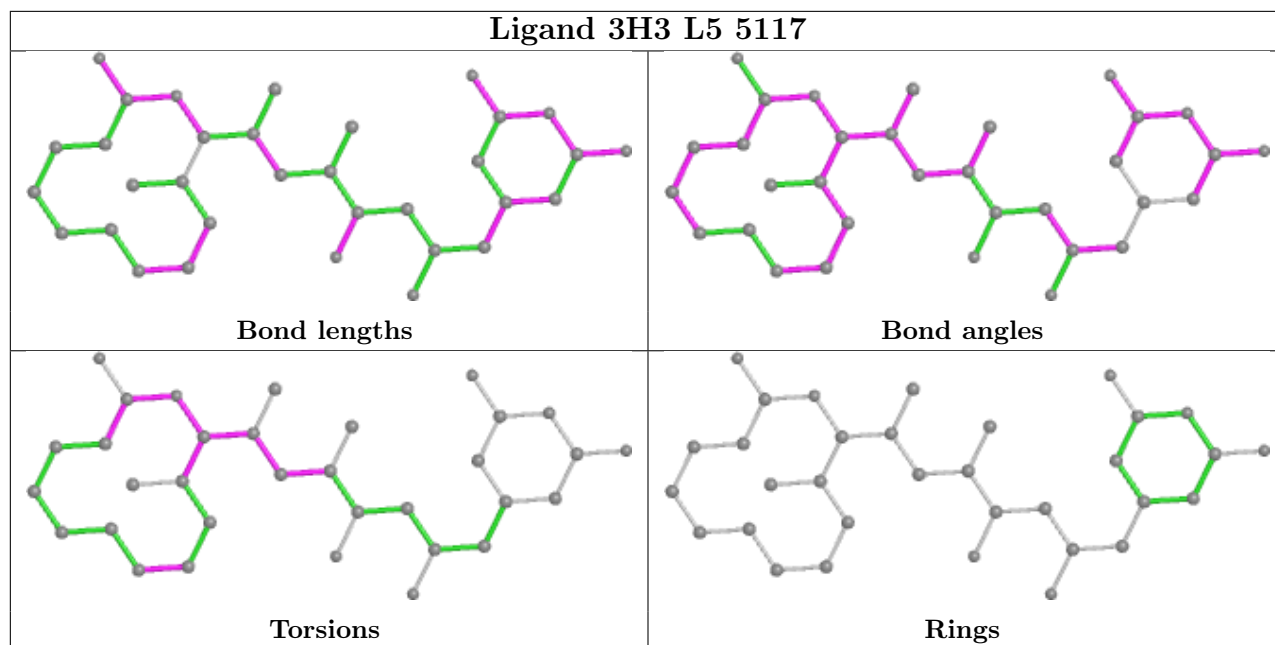
Mol	Chain	Res	Type	Atoms
91	L5	5117	3H3	C2-C1-C11-O1
91	L5	5117	3H3	C2-C1-C11-C12
91	L5	5117	3H3	C-C1-C11-O1
91	L5	5117	3H3	C-C1-C11-C12
91	L5	5117	3H3	C1-C11-O1-C10

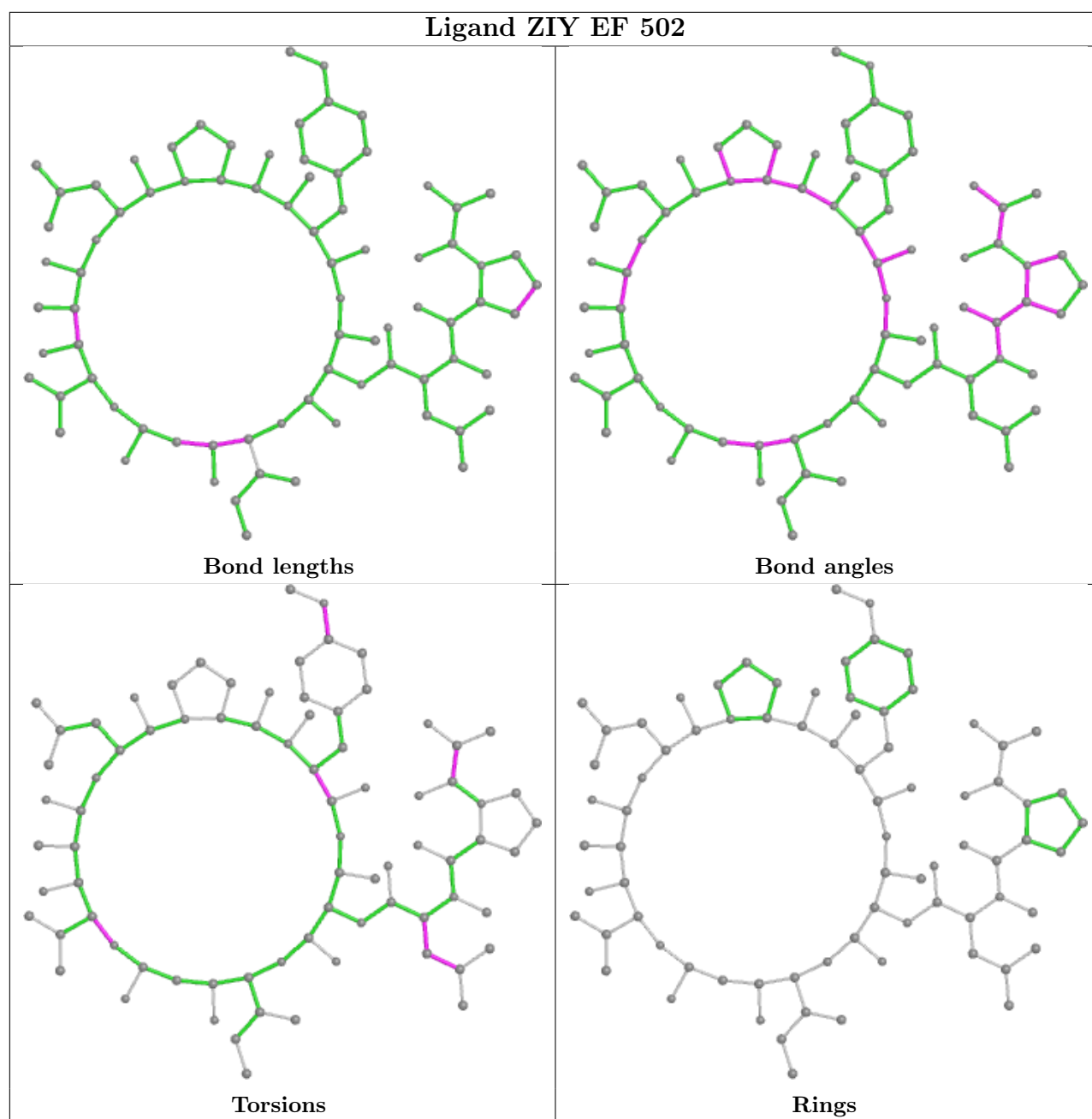
There are no ring outliers.

No monomer is involved in short contacts.

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](#)

There are no chain breaks in this entry.

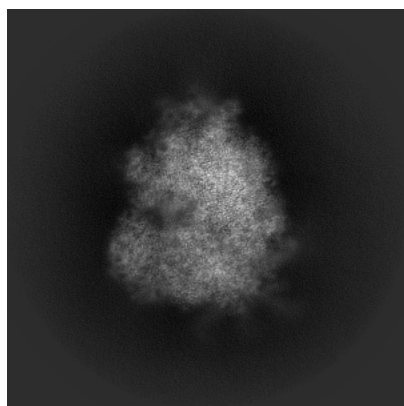
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-29759. These allow visual inspection of the internal detail of the map and identification of artifacts.

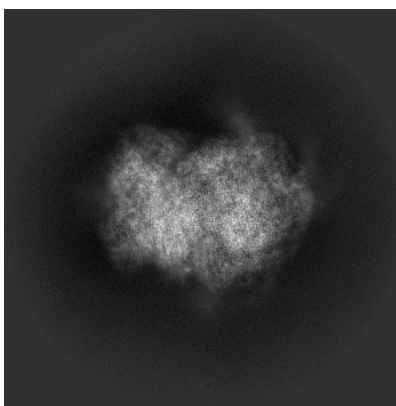
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

### 6.1 Orthogonal projections [i](#)

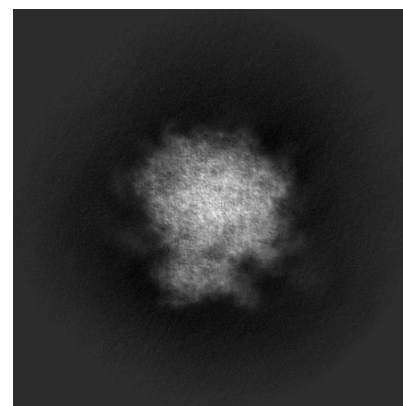
#### 6.1.1 Primary map



X

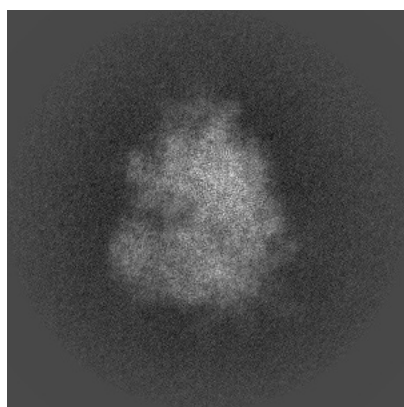


Y

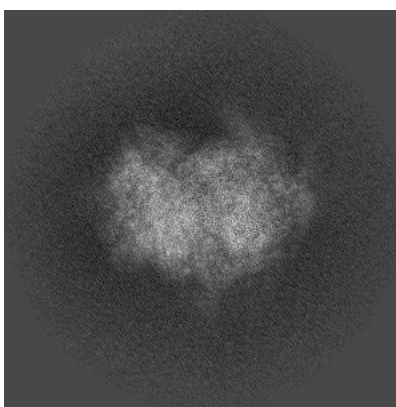


Z

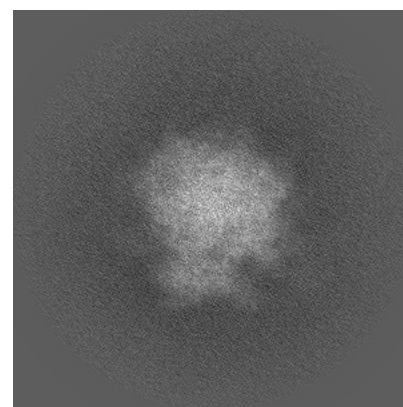
#### 6.1.2 Raw map



X



Y

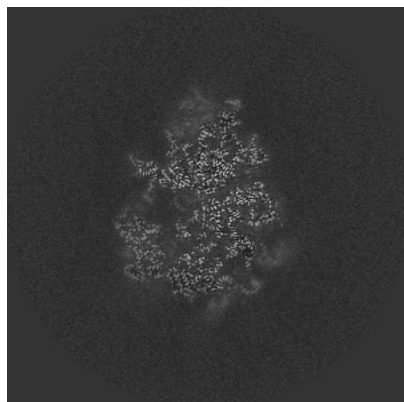


Z

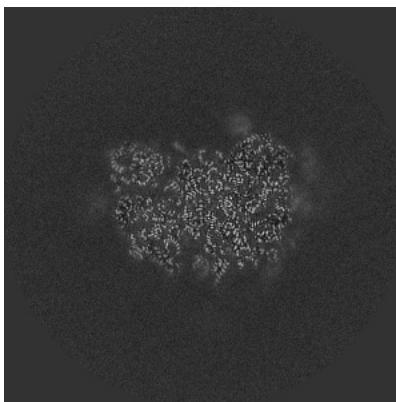
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

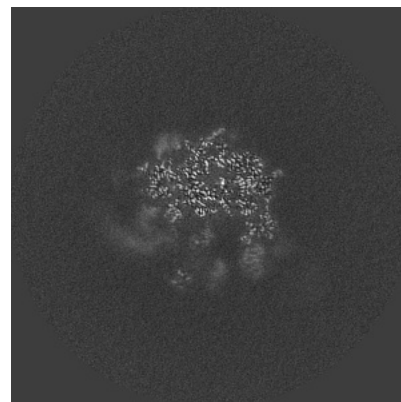
### 6.2.1 Primary map



X Index: 320

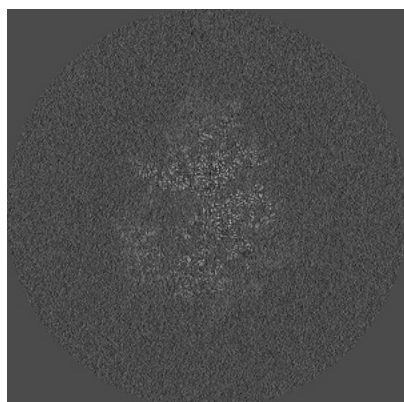


Y Index: 320

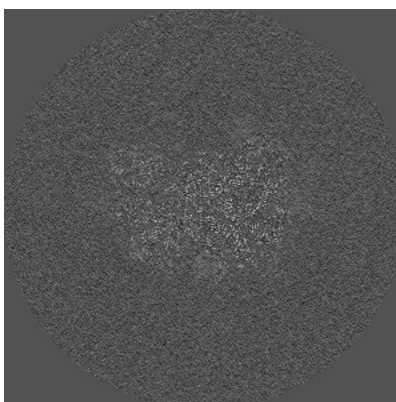


Z Index: 320

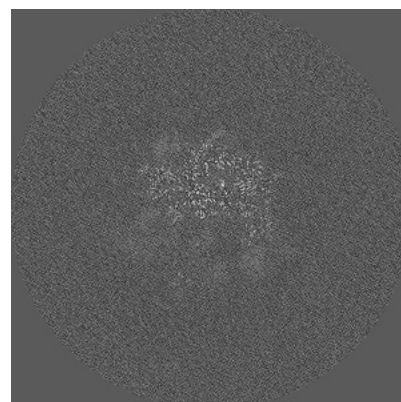
### 6.2.2 Raw map



X Index: 320



Y Index: 320

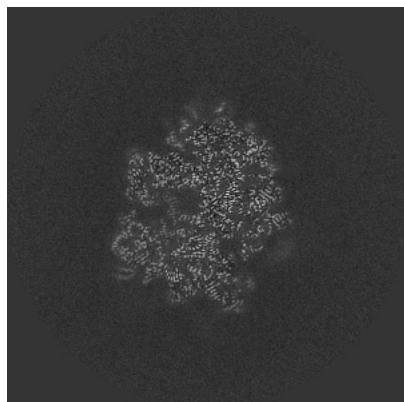


Z Index: 320

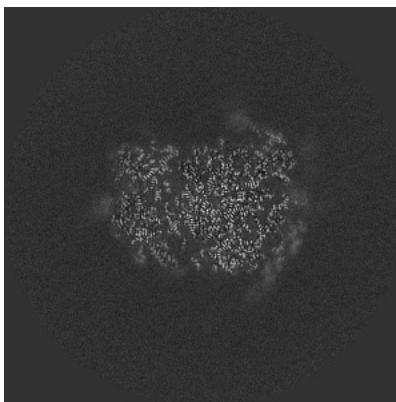
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

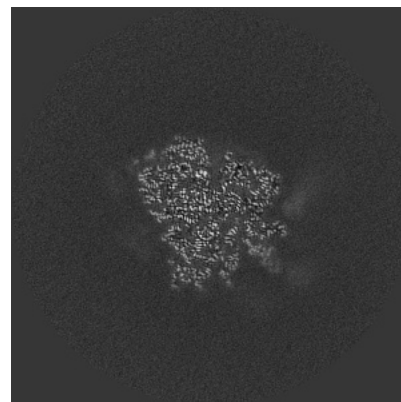
### 6.3.1 Primary map



X Index: 297

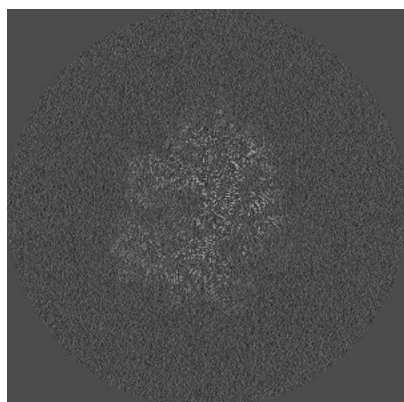


Y Index: 332

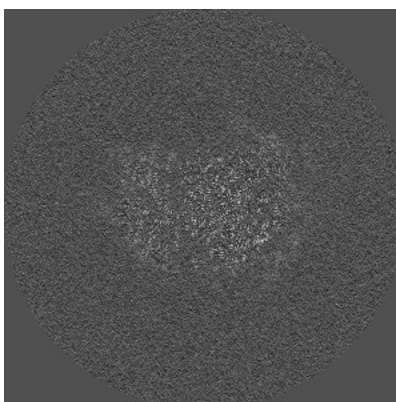


Z Index: 366

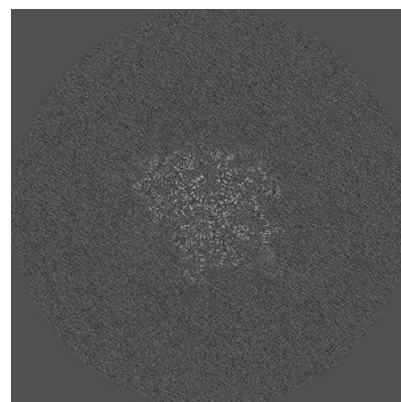
### 6.3.2 Raw map



X Index: 297



Y Index: 327

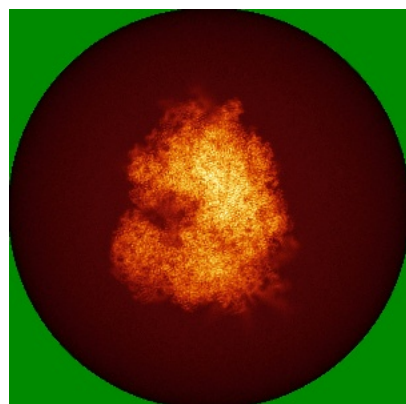


Z Index: 354

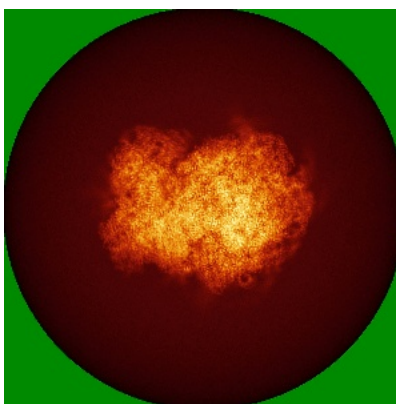
The images above show the largest variance slices of the map in three orthogonal directions.

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

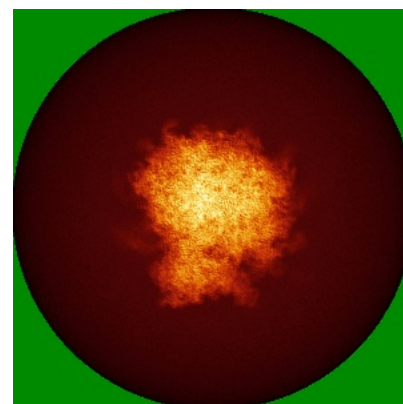
### 6.4.1 Primary map



X

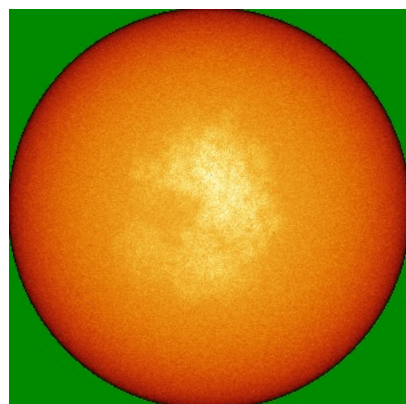


Y

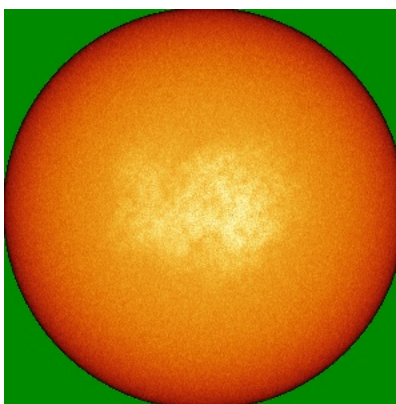


Z

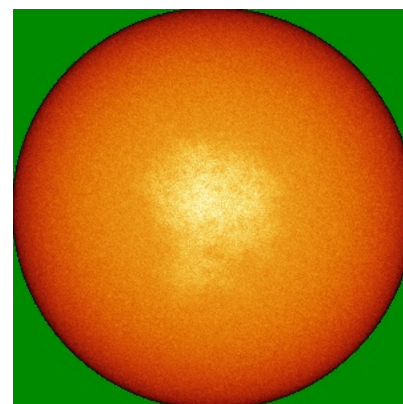
### 6.4.2 Raw map



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



X



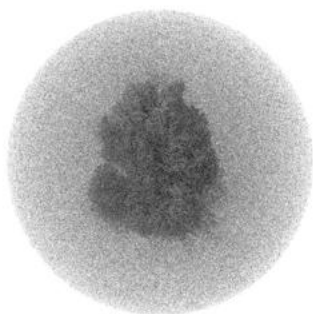
Y



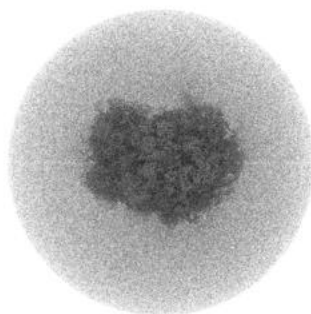
Z

The images above show the 3D surface view of the map at the recommended contour level 0.005. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

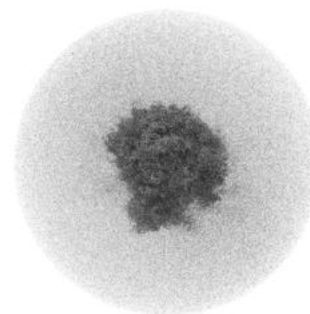
### 6.5.2 Raw map



X



Y



Z

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.

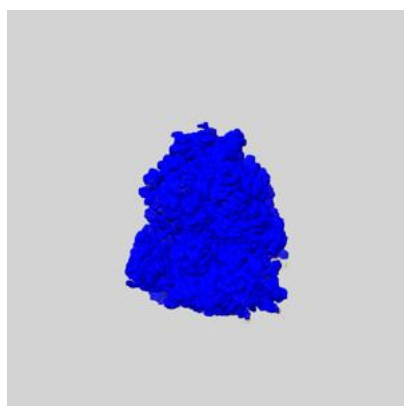
## 6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

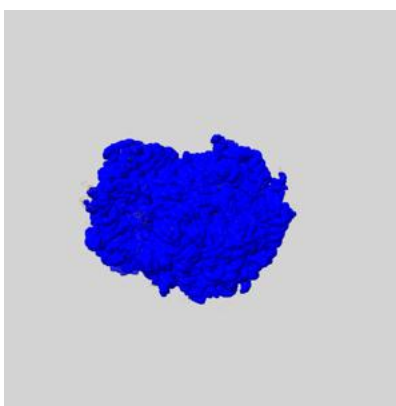
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

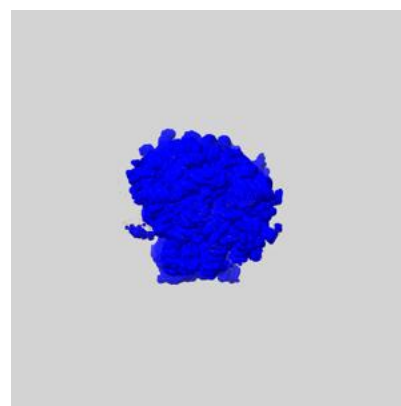
### 6.6.1 emd\_29759\_msk\_1.map [i](#)



X



Y

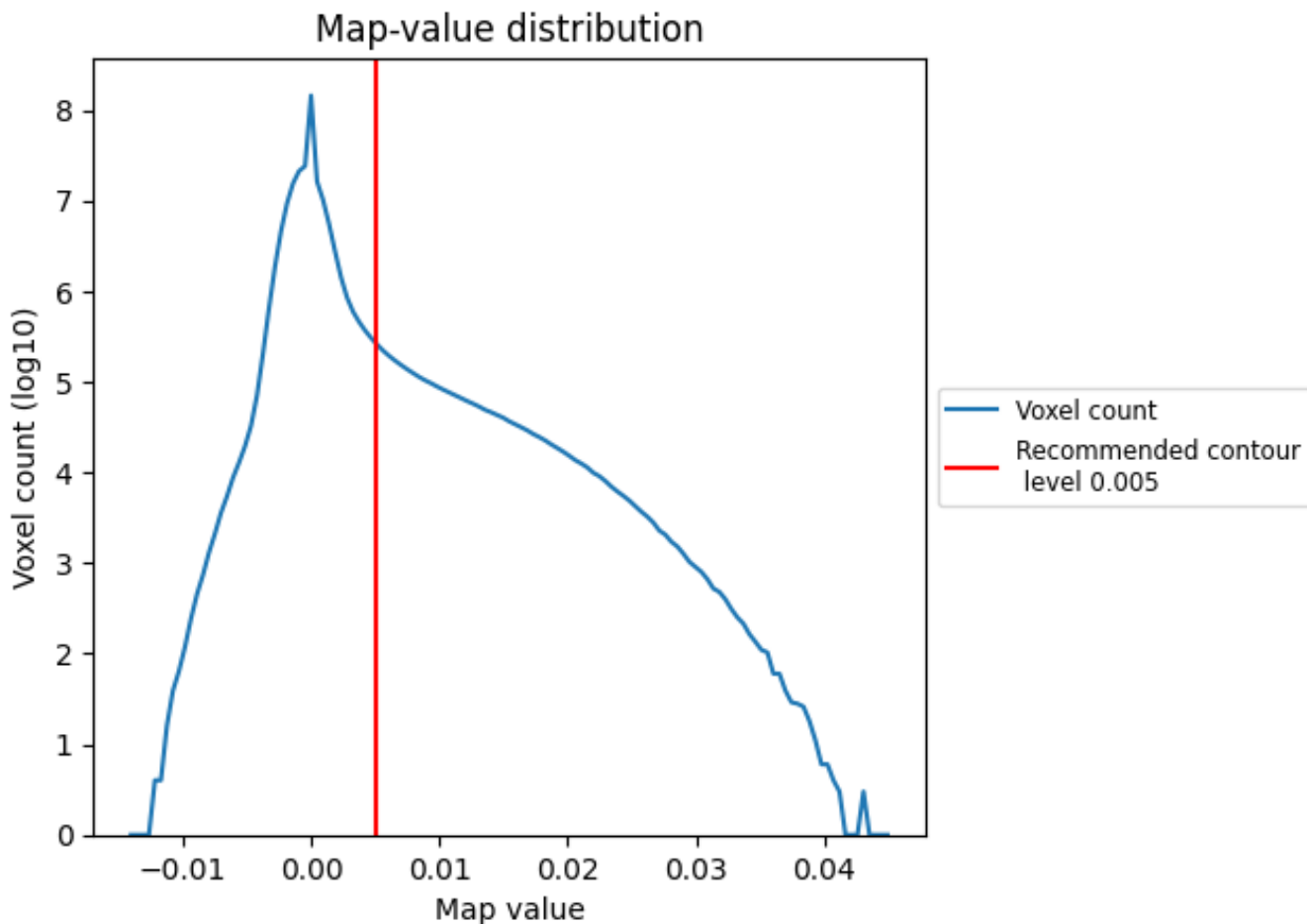


Z

## 7 Map analysis [i](#)

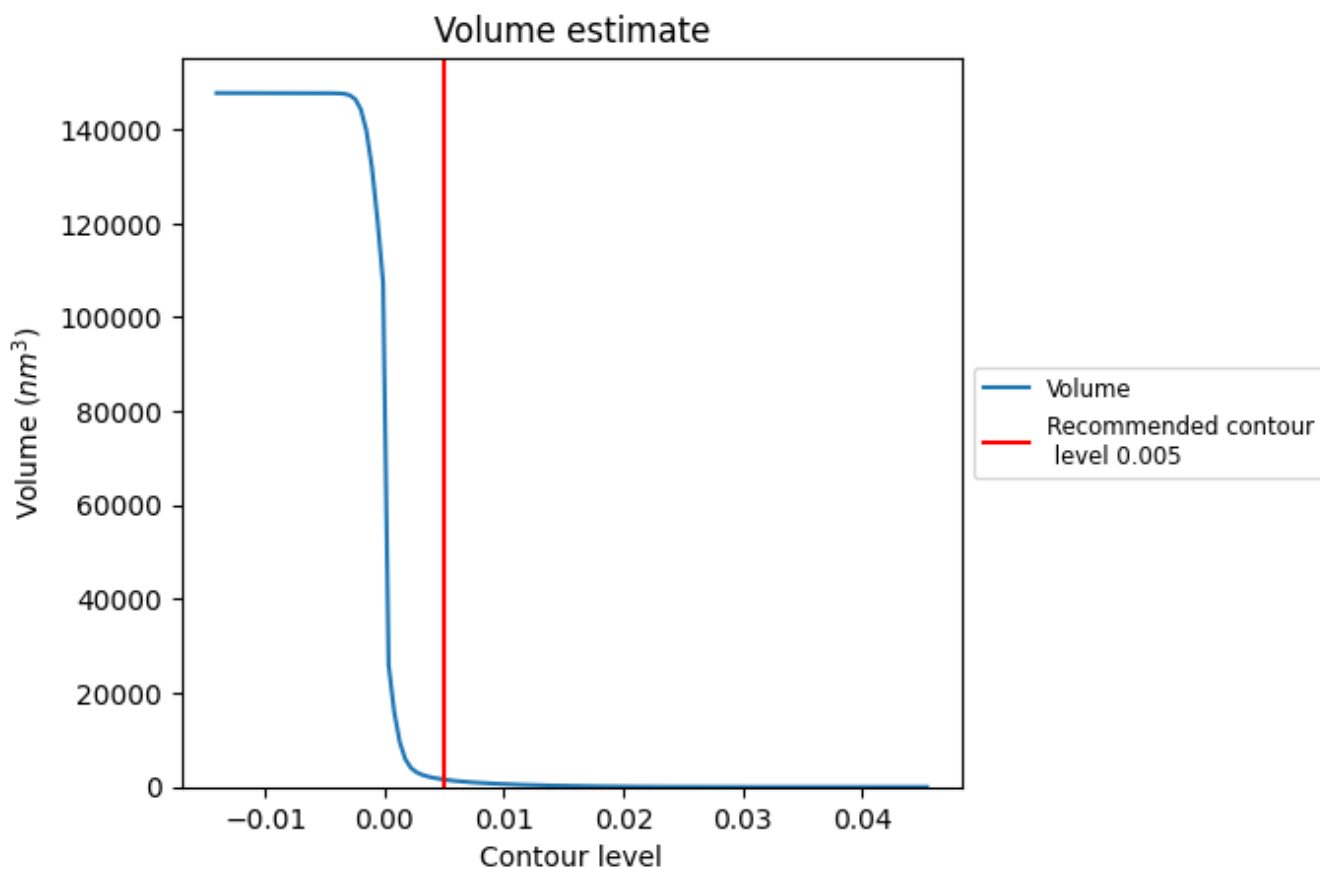
This section contains the results of statistical analysis of the map.

### 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.

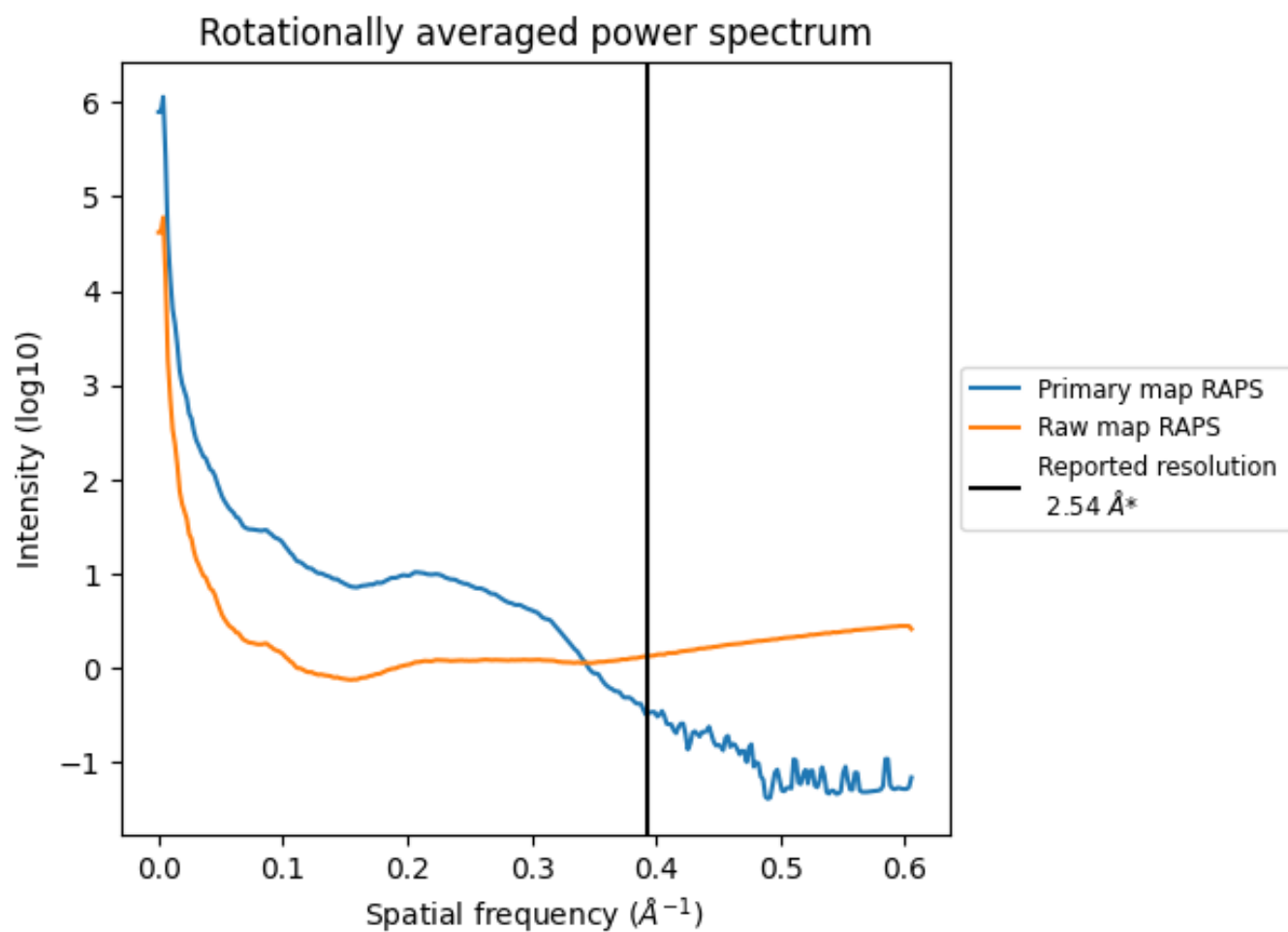
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1563  $\text{nm}^3$ ; this corresponds to an approximate mass of 1412 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 i

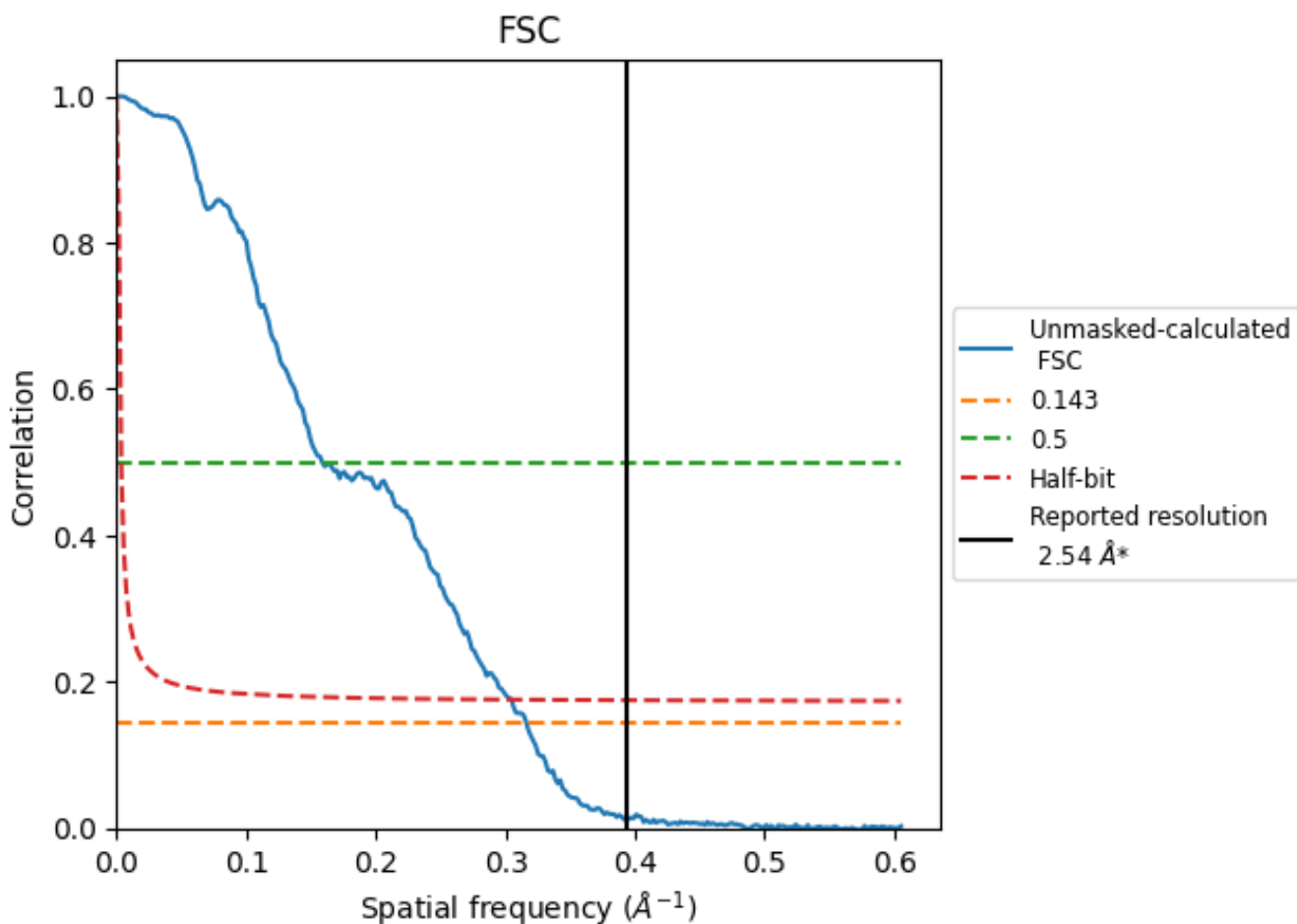


\*Reported resolution corresponds to spatial frequency of  $0.394 \text{ \AA}^{-1}$

## 8 Fourier-Shell correlation [i](#)

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

### 8.1 FSC [i](#)



\*Reported resolution corresponds to spatial frequency of 0.394 Å<sup>-1</sup>

## 8.2 Resolution estimates [i](#)

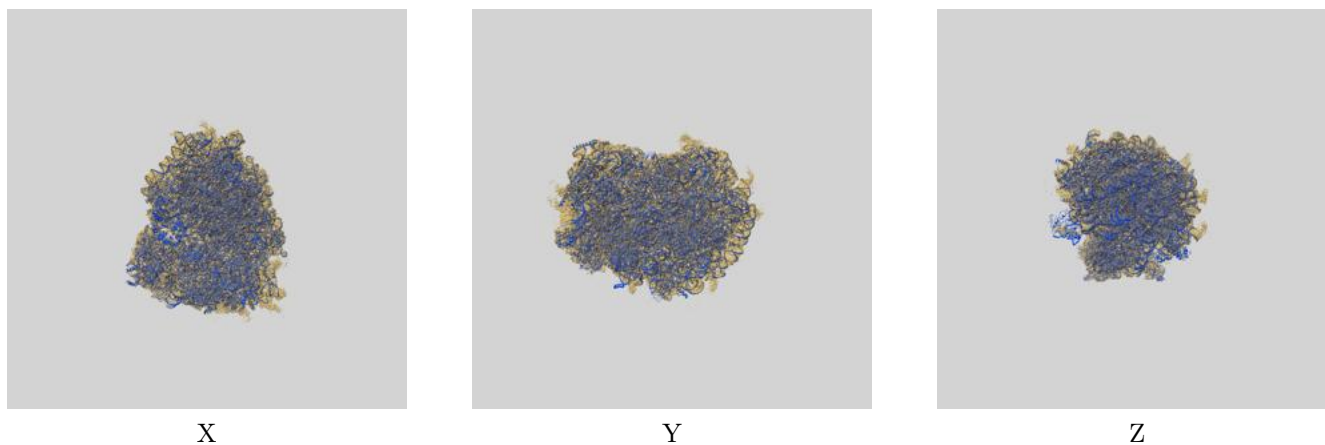
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.54	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.16	6.30	3.28

\*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.16 differs from the reported value 2.54 by more than 10 %

## 9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-29759 and PDB model 8G60. Per-residue inclusion information can be found in section [3](#) on page [27](#).

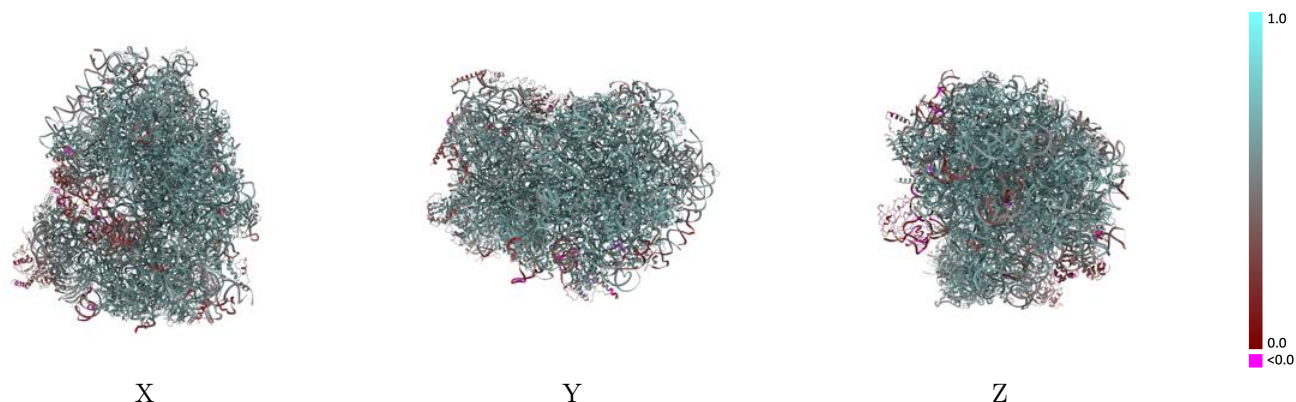
### 9.1 Map-model overlay [i](#)



The images above show the 3D surface view of the map at the recommended contour level 0.005 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

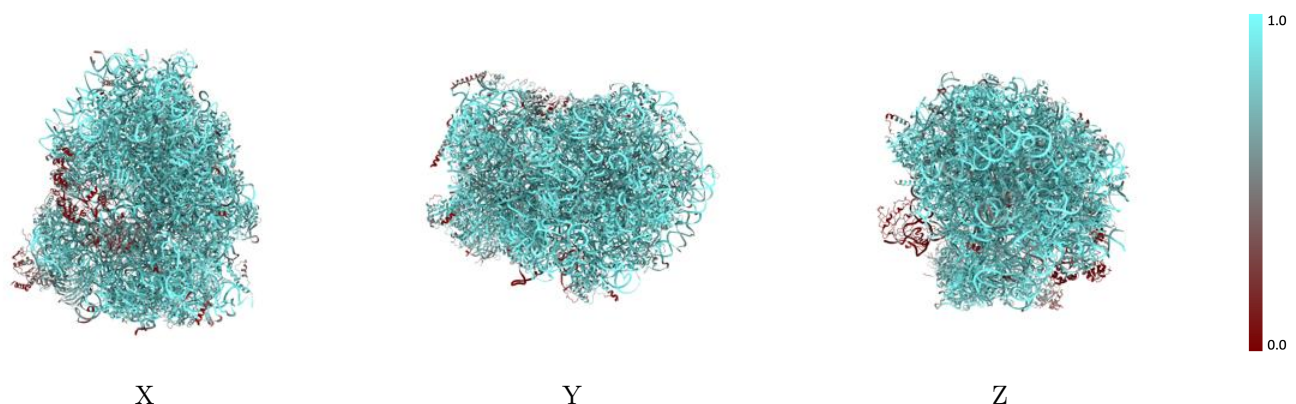


## 9.2 Q-score mapped to coordinate model [i](#)



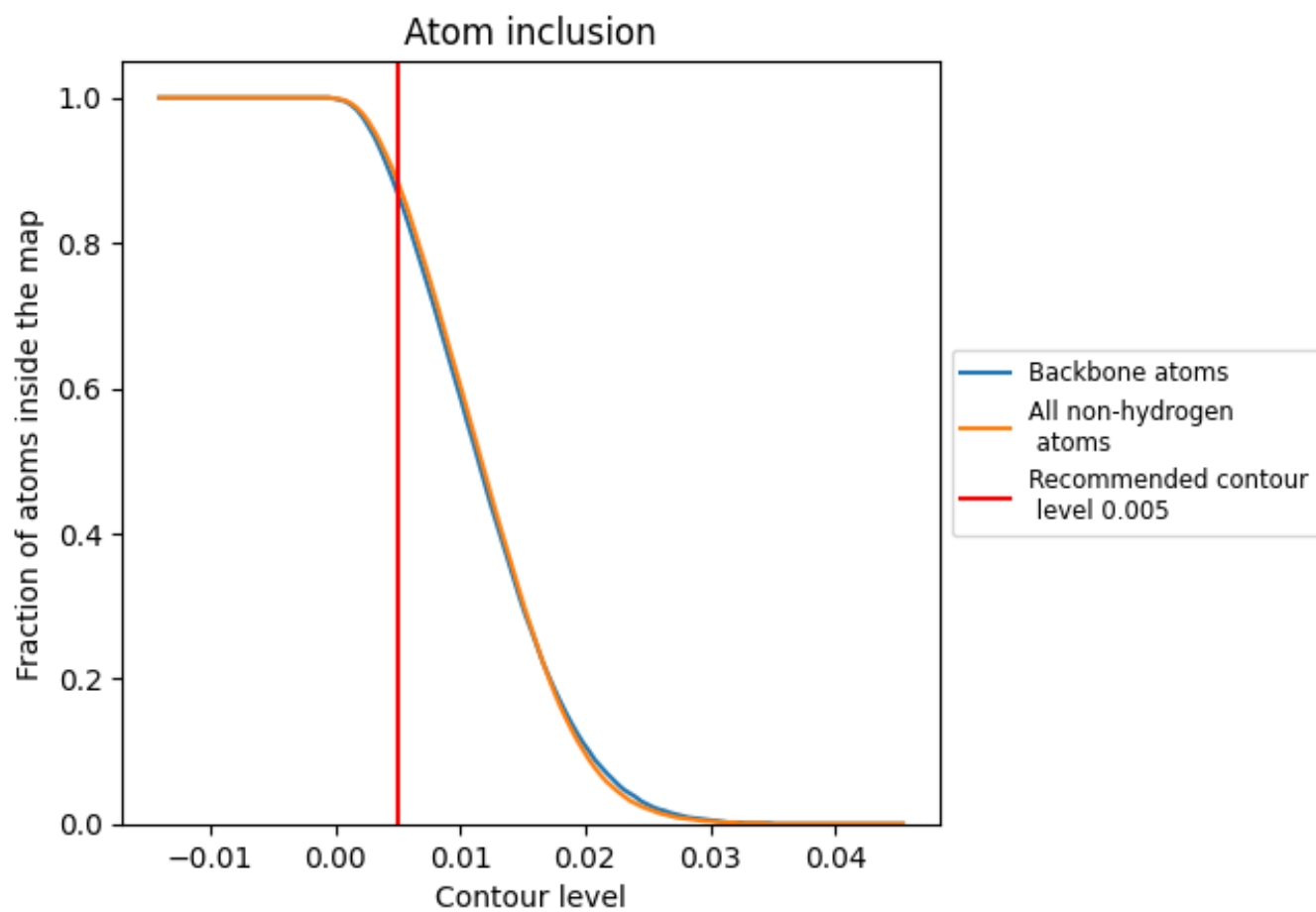
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

## 9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.005).







































































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 87% of all backbone atoms, 88% 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 (0.005) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8840	 0.5760
At	 0.6780	 0.3340
EF	 0.5180	 0.3890
L5	 0.9380	 0.5890
L7	 0.9940	 0.6390
L8	 0.9760	 0.6170
LA	 0.9690	 0.6560
LB	 0.9230	 0.6330
LC	 0.9400	 0.6360
LD	 0.9010	 0.6030
LE	 0.8940	 0.6050
LF	 0.9450	 0.6380
LG	 0.8220	 0.5570
LH	 0.8990	 0.6110
LI	 0.9130	 0.6190
LJ	 0.8600	 0.5920
LK	 0.1030	 0.2140
LL	 0.8950	 0.6090
LM	 0.9250	 0.6150
LN	 0.9820	 0.6550
LO	 0.9440	 0.6370
LP	 0.9460	 0.6470
LQ	 0.9680	 0.6570
LR	 0.8550	 0.5960
LS	 0.9650	 0.6420
LT	 0.9190	 0.6270
LU	 0.8150	 0.5430
LV	 0.9200	 0.6360
LW	 0.6960	 0.4990
LX	 0.9100	 0.6220
LY	 0.9140	 0.6170
LZ	 0.9100	 0.6060
La	 0.9670	 0.6550
Lb	 0.7950	 0.5640
Lc	 0.8940	 0.6130























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Chain	Atom inclusion	Q-score
Ld	0.8910	0.6080
Le	0.9670	0.6570
Lf	0.9680	0.6530
Lg	0.8990	0.6190
Lh	0.9130	0.6160
Li	0.8880	0.5980
Lj	0.9690	0.6560
Lk	0.8220	0.5690
Ll	0.9460	0.6250
Lm	0.9020	0.6150
Ln	0.9080	0.6230
Lo	0.9290	0.6310
Lp	0.9380	0.6420
Lq	0.1600	0.2630
Lr	0.9420	0.6360
Lz	0.0050	0.1450
Pt	0.6650	0.5440
S2	0.9600	0.5840
SA	0.8660	0.5840
SB	0.8560	0.5930
SC	0.8940	0.6050
SD	0.7650	0.5270
SE	0.8670	0.5900
SF	0.8350	0.5640
SG	0.7440	0.5050
SH	0.7420	0.5270
SI	0.8670	0.5860
SJ	0.8620	0.5750
SK	0.7540	0.4870
SL	0.8960	0.6160
SM	0.2280	0.2260
SN	0.9140	0.6160
SO	0.8940	0.6080
SP	0.7440	0.5070
SQ	0.8610	0.5710
SR	0.7820	0.5340
SS	0.8040	0.5500
ST	0.8300	0.5530
SU	0.7190	0.4980
SV	0.8800	0.6000
SW	0.9430	0.6310
SX	0.9160	0.6100

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Chain	Atom inclusion	Q-score
SY	 0.7630	 0.5130
SZ	 0.6950	 0.5130
Sa	 0.9240	 0.6160
Sb	 0.8210	 0.5810
Sc	 0.7330	 0.5380
Sd	 0.9410	 0.5890
Se	 0.7800	 0.5510
Sf	 0.4130	 0.3250
Sg	 0.6850	 0.4910
mR	 0.4470	 0.4820