



Full wwPDB EM Validation Report ⓘ

Apr 21, 2025 – 02:22 PM EDT

PDB ID : 9AZN / pdb_00009azn
EMDB ID : EMD-44017
Title : In situ human A/P-P/E state 80S ribosome
Authors : Wei, Z.; Yong, Z.
Deposited on : 2024-03-11
Resolution : 2.98 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev117
MolProbity : 4.02b-467
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.42

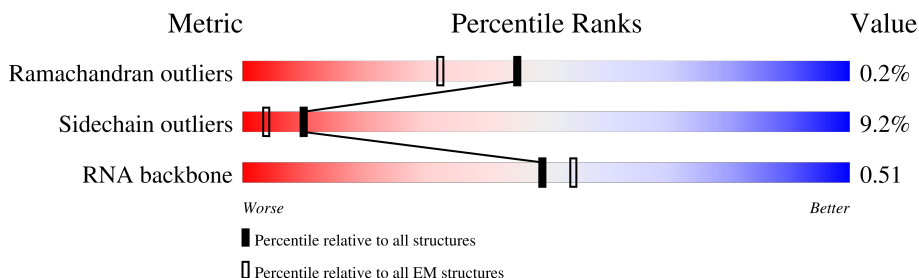
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.98 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	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	CH	132	
2	Se	47	
3	LW	118	
4	SE	262	
5	SI	206	
6	SL	153	
7	SX	141	
8	SG	237	

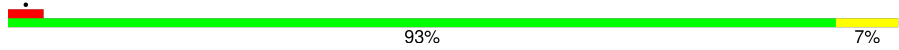
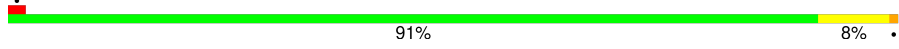
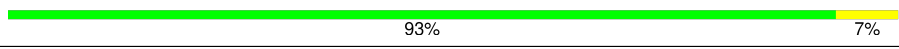
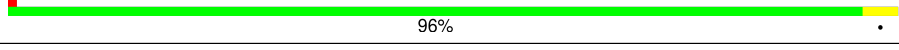

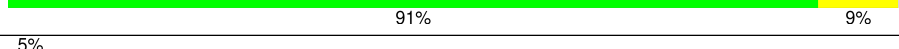
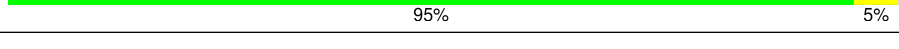
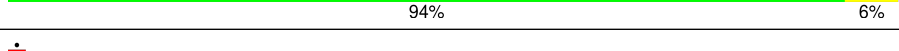
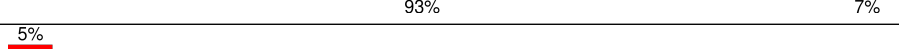
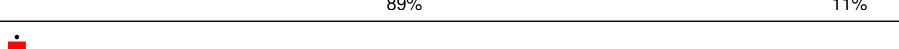
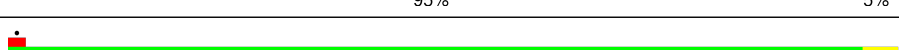
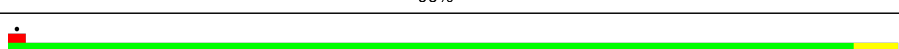
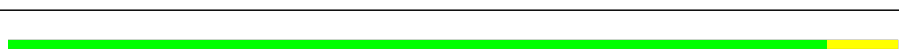
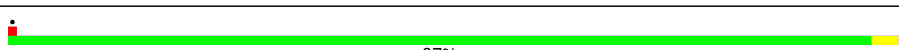
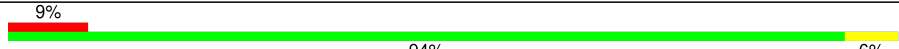


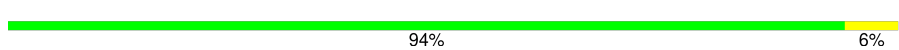
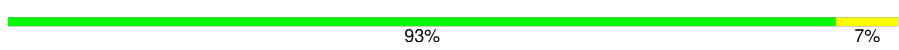

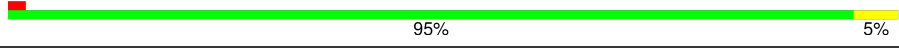
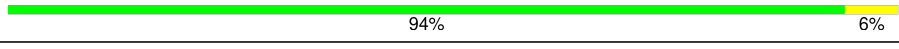
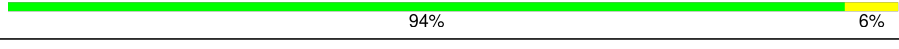


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Mol	Chain	Length	Quality of chain
9	SJ	185	
10	SY	131	
11	SA	221	
12	SB	214	
13	SH	186	
14	SV	83	
15	Sa	102	
16	SC	222	
17	SN	150	
18	SO	140	
19	SW	129	
20	Sb	83	
21	L5	3740	
22	L7	120	
23	L8	156	
24	LA	248	
25	LB	402	
26	LC	368	
27	LD	293	
28	LE	236	
29	LF	225	
30	LG	241	
31	LH	190	
32	LI	202	
33	LJ	176	

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Mol	Chain	Length	Quality of chain
34	LL	210	
35	LM	139	
36	LN	203	
37	LO	201	
38	LP	153	
39	LQ	187	
40	LR	187	
41	LS	175	
42	LT	159	
43	LU	101	
44	LV	131	
45	LX	120	
46	LY	134	
47	LZ	135	
48	La	147	
49	Lb	109	
50	Lc	98	
51	Ld	107	
52	Le	128	
53	Lf	109	
54	Lg	114	
55	Lh	122	
56	Li	102	
57	Lj	86	
58	Lk	69	

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Mol	Chain	Length	Quality of chain
59	Ll	50	
60	Lm	52	
61	Ln	24	
62	Lo	105	
63	Lp	91	
64	Lr	125	
65	Lz	217	
66	SR	135	
67	SD	227	
68	SF	189	
69	SK	98	
70	SP	121	
71	SQ	144	
72	SS	145	
73	ST	143	
74	SU	104	
75	Sc	64	
76	Sd	55	
77	Sg	313	
78	SM	122	
79	SZ	75	
80	Sf	67	
81	AP	71	
82	PE	75	
83	Ls	196	

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Mol	Chain	Length	Quality of chain
84	Lt	141	<div><div></div><div>72%</div><div></div><div>95%</div><div></div><div>5%</div></div>
85	S2	1740	<div><div></div><div>98%</div><div></div></div>
85	S3	1740	<div><div></div><div>72%</div><div></div><div>26%</div><div></div></div>

2 Entry composition

There are 87 unique types of molecules in this entry. The entry contains 223564 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called EDF1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	CH	132	Total	C	N	O	S	0	0
			1023	624	202	196	1		

- Molecule 2 is a protein called 40S ribosomal protein S30.

Mol	Chain	Residues	Atoms				AltConf	Trace
2	Se	47	Total	C	N	O	0	0
			348	210	74	64		

- Molecule 3 is a protein called 60S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	LW	118	Total	C	N	O	S	0	0
			965	604	199	158	4		

- Molecule 4 is a protein called Small ribosomal subunit protein eS4, X isoform.

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

- Molecule 5 is a protein called 40S ribosomal protein S8.

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

- Molecule 6 is a protein called 40S ribosomal protein S11.

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

- Molecule 7 is a protein called 40S ribosomal protein S23.

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

- Molecule 8 is a protein called 40S ribosomal protein S6.

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

- Molecule 9 is a protein called 40S ribosomal protein S9.

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

- Molecule 10 is a protein called 40S ribosomal protein S24.

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

- Molecule 11 is a protein called 40S ribosomal protein SA.

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

- Molecule 12 is a protein called 40S ribosomal protein S3a.

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

- Molecule 13 is a protein called 40S ribosomal protein S7.

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

- Molecule 14 is a protein called 40S ribosomal protein S21.

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

- Molecule 15 is a protein called 40S ribosomal protein S26.

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

- Molecule 16 is a protein called 40S ribosomal protein S2.

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

- Molecule 17 is a protein called 40S ribosomal protein S13.

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

- Molecule 18 is a protein called Small ribosomal subunit protein uS11.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	SO	140	Total	C	N	O	S	0	0
			1049	642	204	197	6		

- Molecule 19 is a protein called 40S ribosomal protein S15a.

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

- Molecule 20 is a protein called Small ribosomal subunit protein eS27.

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

- Molecule 21 is a RNA chain called 28S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	L5	3740	Total	C	N	O	P	0	0
			79860	35549	14585	25987	3739		

- Molecule 22 is a RNA chain called 5S rRNA.

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

- Molecule 23 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	L8	156	Total	C	N	O	P	0	0
			3314	1480	585	1094	155		

- Molecule 24 is a protein called 60S ribosomal protein L8.

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

- Molecule 25 is a protein called Large ribosomal subunit protein uL3.

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

- Molecule 26 is a protein called 60S ribosomal protein L4.

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

- Molecule 27 is a protein called Large ribosomal subunit protein uL18.

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

- Molecule 28 is a protein called 60S ribosomal protein L6 [Homo sapiens].

Mol	Chain	Residues	Atoms					AltConf	Trace
28	LE	236	Total	C	N	O	S	0	0
			1904	1222	361	317	4		

- Molecule 29 is a protein called 60S ribosomal protein L7.

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

- Molecule 30 is a protein called 60S ribosomal protein L7a.

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

- Molecule 31 is a protein called 60S ribosomal protein L9.

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

- Molecule 32 is a protein called 60S ribosomal protein L10-like [Homo sapiens].

Mol	Chain	Residues	Atoms					AltConf	Trace
32	LI	202	Total	C	N	O	S	0	0
			1634	1037	314	269	14		

- Molecule 33 is a protein called 60S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	LJ	176	Total	C	N	O	S	0	0
			1410	888	263	253	6		

- Molecule 34 is a protein called Large ribosomal subunit protein eL13.

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

- Molecule 35 is a protein called 60S ribosomal protein L14.

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

- Molecule 36 is a protein called 60S ribosomal protein L15.

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

- Molecule 37 is a protein called 60S ribosomal protein L13a.

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

- Molecule 38 is a protein called 60S ribosomal protein L17.

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

- Molecule 39 is a protein called 60S ribosomal protein L18.

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

- Molecule 40 is a protein called 60S ribosomal protein L19.

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

- Molecule 41 is a protein called 60S ribosomal protein L18a.

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

- Molecule 42 is a protein called 60S ribosomal protein L21.

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

- Molecule 43 is a protein called Heparin-binding protein HBp15.

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

- Molecule 44 is a protein called 60S ribosomal protein L23.

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

- Molecule 45 is a protein called 60S ribosomal protein L23a.

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

- Molecule 46 is a protein called 60S ribosomal protein L26.

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

- Molecule 47 is a protein called 60S ribosomal protein L27.

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

- Molecule 48 is a protein called 60S ribosomal protein L27a.

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

- Molecule 49 is a protein called 60S ribosomal protein L29.

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

- Molecule 50 is a protein called 60S ribosomal protein L30.

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

- Molecule 51 is a protein called 60S ribosomal protein L31.

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

- Molecule 52 is a protein called 60S ribosomal protein L32.

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

- Molecule 53 is a protein called 60S ribosomal protein L35a.

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

- Molecule 54 is a protein called 60S ribosomal protein L34.

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

- Molecule 55 is a protein called 60S ribosomal protein L35.

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

- Molecule 56 is a protein called 60S ribosomal protein L36.

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

- Molecule 57 is a protein called 60S ribosomal protein L37.

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

- Molecule 58 is a protein called 60S ribosomal protein L38.

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

- Molecule 59 is a protein called 60S ribosomal protein L39.

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

- Molecule 60 is a protein called Large ribosomal subunit protein eL40.

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

- Molecule 61 is a protein called 60S ribosomal protein L41.

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

- Molecule 62 is a protein called 60S ribosomal protein L36a.

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

- Molecule 63 is a protein called 60S ribosomal protein L37a.

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

- Molecule 64 is a protein called 60S ribosomal protein L28.

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

- Molecule 65 is a protein called 60S ribosomal protein L10a.

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

- Molecule 66 is a protein called 40S ribosomal protein S17.

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

- Molecule 67 is a protein called Small ribosomal subunit protein uS3.

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

- Molecule 68 is a protein called 40S ribosomal protein S5.

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

- Molecule 69 is a protein called 40S ribosomal protein S10.

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

- Molecule 70 is a protein called Small ribosomal subunit protein uS19.

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

- Molecule 71 is a protein called Small ribosomal subunit protein uS9.

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

- Molecule 72 is a protein called 40S ribosomal protein S18.

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

- Molecule 73 is a protein called 40S ribosomal protein S19.

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

- Molecule 74 is a protein called 40S ribosomal protein S20.

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

- Molecule 75 is a protein called 40S ribosomal protein S28.

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

- Molecule 76 is a protein called 40S ribosomal protein S29.

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

- Molecule 77 is a protein called Receptor of activated protein C kinase 1.

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

- Molecule 78 is a protein called Small ribosomal subunit protein eS12.

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

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

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

- Molecule 80 is a protein called Ubiquitin-40S ribosomal protein S27a.

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

- Molecule 81 is a RNA chain called A/P site tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	AP	71	Total	C	N	O	P	0	0
			1514	677	275	492	70		

- Molecule 82 is a RNA chain called P/E site tRNA.

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

- Molecule 83 is a protein called 60S acidic ribosomal protein P0.

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

- Molecule 84 is a protein called 60S ribosomal protein L12.

Mol	Chain	Residues	Atoms					AltConf	Trace
84	Lt	141	Total	C	N	O	S	0	0
			1046	652	191	199	4		

- Molecule 85 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
85	S2	32	Total	C	N	O	P	0	0
			680	304	119	225	32		
85	S3	1708	Total	C	N	O	P	0	0
			36218	16155	6480	11876	1707		

- Molecule 86 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

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

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

Mol	Chain	Residues	Atoms		AltConf
87	L5	211	Total	Mg	0
			211	211	
87	L7	3	Total	Mg	0
			3	3	
87	L8	5	Total	Mg	0
			5	5	
87	LA	1	Total	Mg	0
			1	1	
87	LB	1	Total	Mg	0
			1	1	

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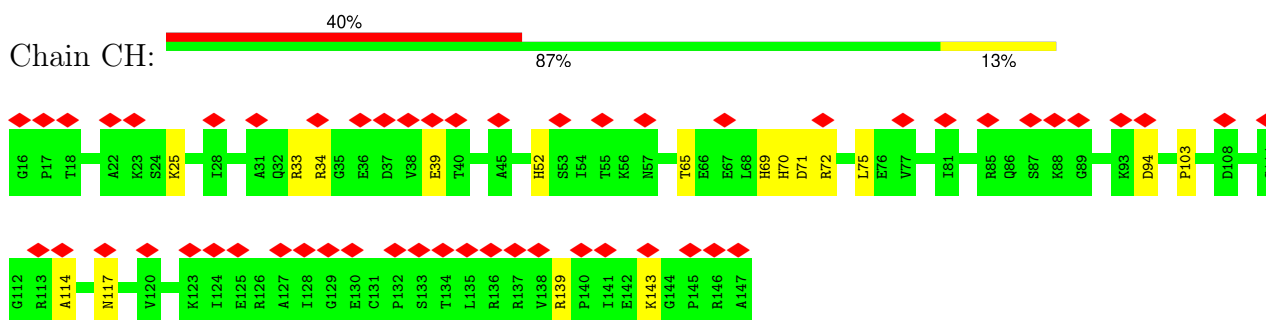
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Mol	Chain	Residues	Atoms		AltConf
87	LI	1	Total 1	Mg 1	0
87	LP	1	Total 1	Mg 1	0
87	LV	1	Total 1	Mg 1	0
87	Le	1	Total 1	Mg 1	0
87	Lg	1	Total 1	Mg 1	0
87	S3	29	Total 29	Mg 29	0

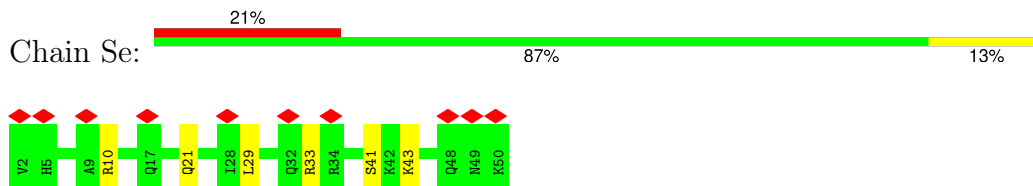
3 Residue-property plots

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

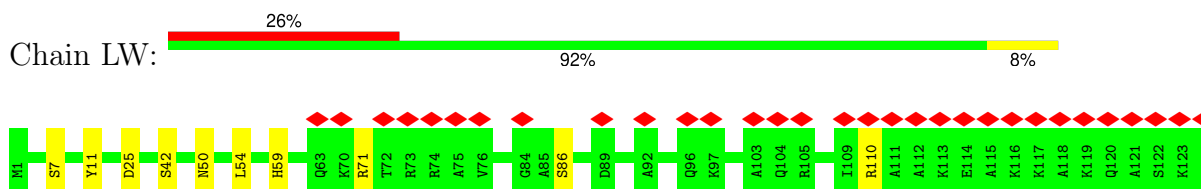
- Molecule 1: EDF1



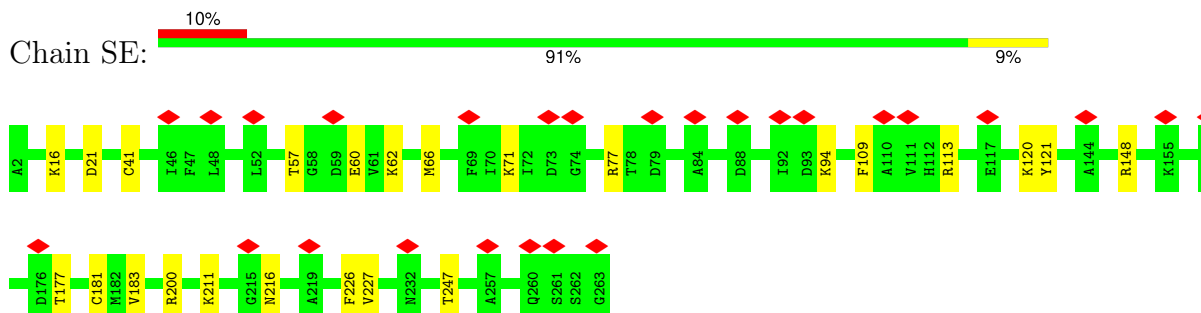
- Molecule 2: 40S ribosomal protein S30



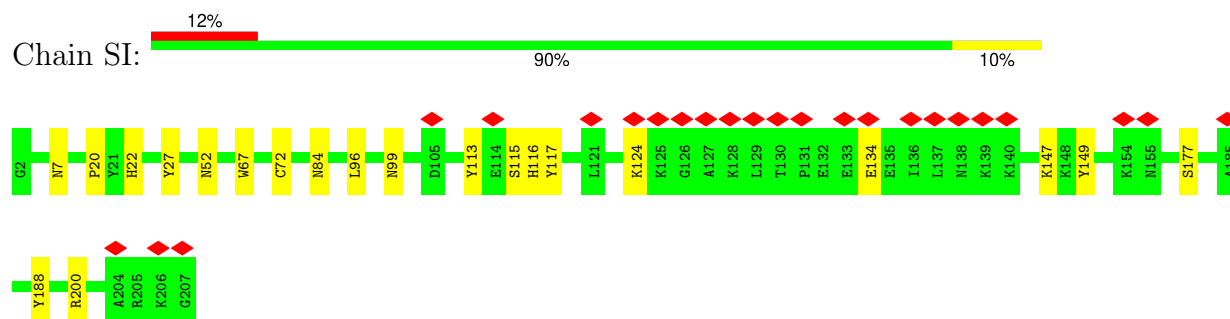
- Molecule 3: 60S ribosomal protein L24



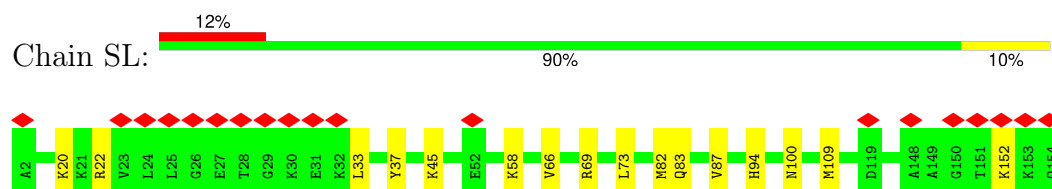
- Molecule 4: Small ribosomal subunit protein eS4, X isoform



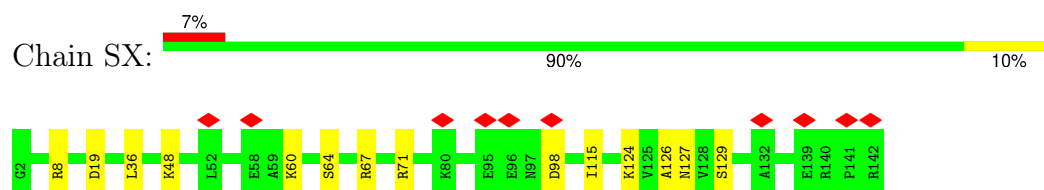
- Molecule 5: 40S ribosomal protein S8



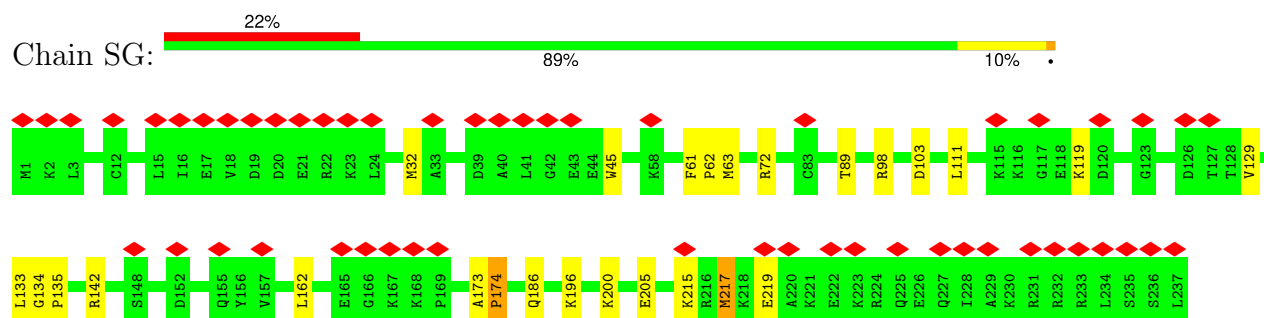
- Molecule 6: 40S ribosomal protein S11



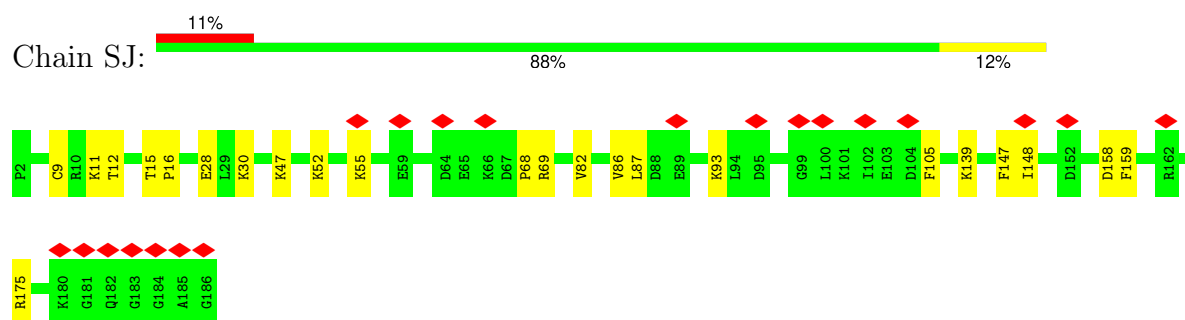
- Molecule 7: 40S ribosomal protein S23



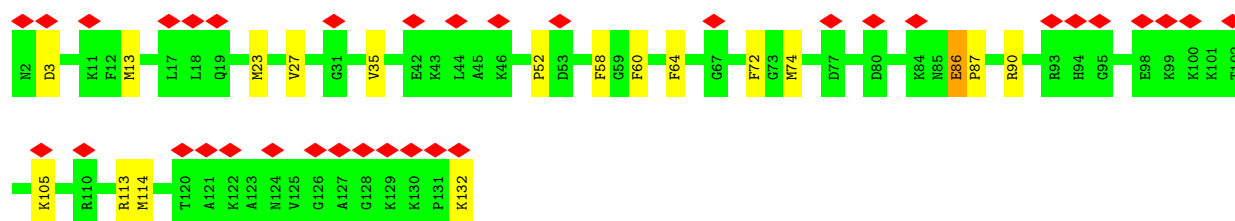
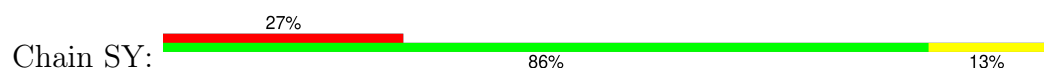
- Molecule 8: 40S ribosomal protein S6



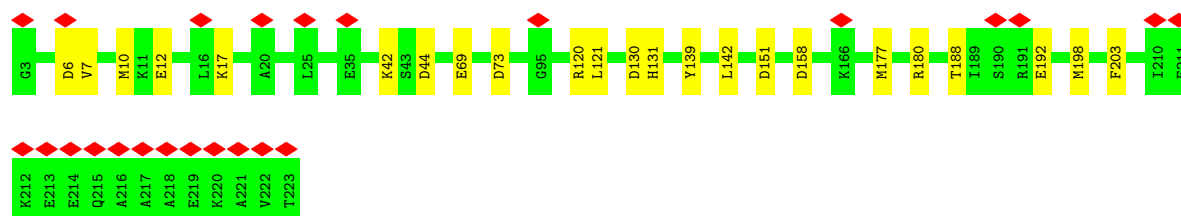
- Molecule 9: 40S ribosomal protein S9



- Molecule 10: 40S ribosomal protein S24



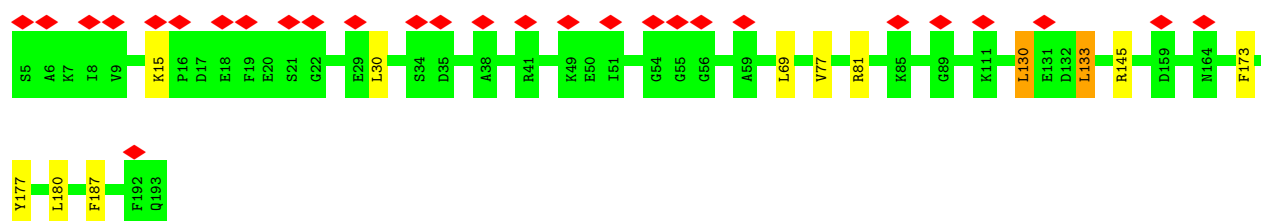
- Molecule 11: 40S ribosomal protein SA



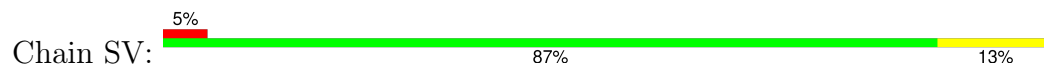
- Molecule 12: 40S ribosomal protein S3a



- Molecule 13: 40S ribosomal protein S7

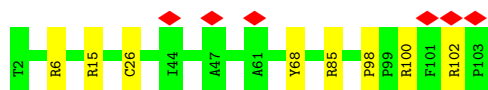


- Molecule 14: 40S ribosomal protein S21

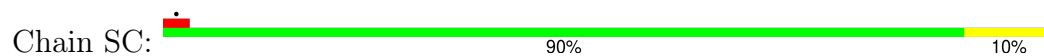


- Molecule 15: 40S ribosomal protein S26





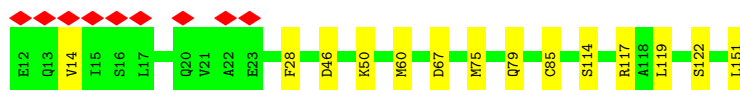
- Molecule 16: 40S ribosomal protein S2



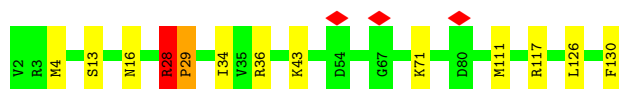
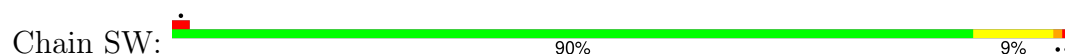
- Molecule 17: 40S ribosomal protein S13



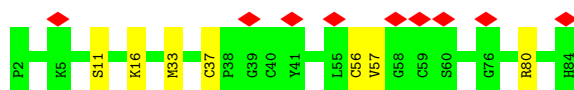
- Molecule 18: Small ribosomal subunit protein uS11



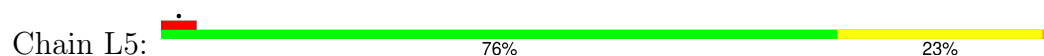
- Molecule 19: 40S ribosomal protein S15a

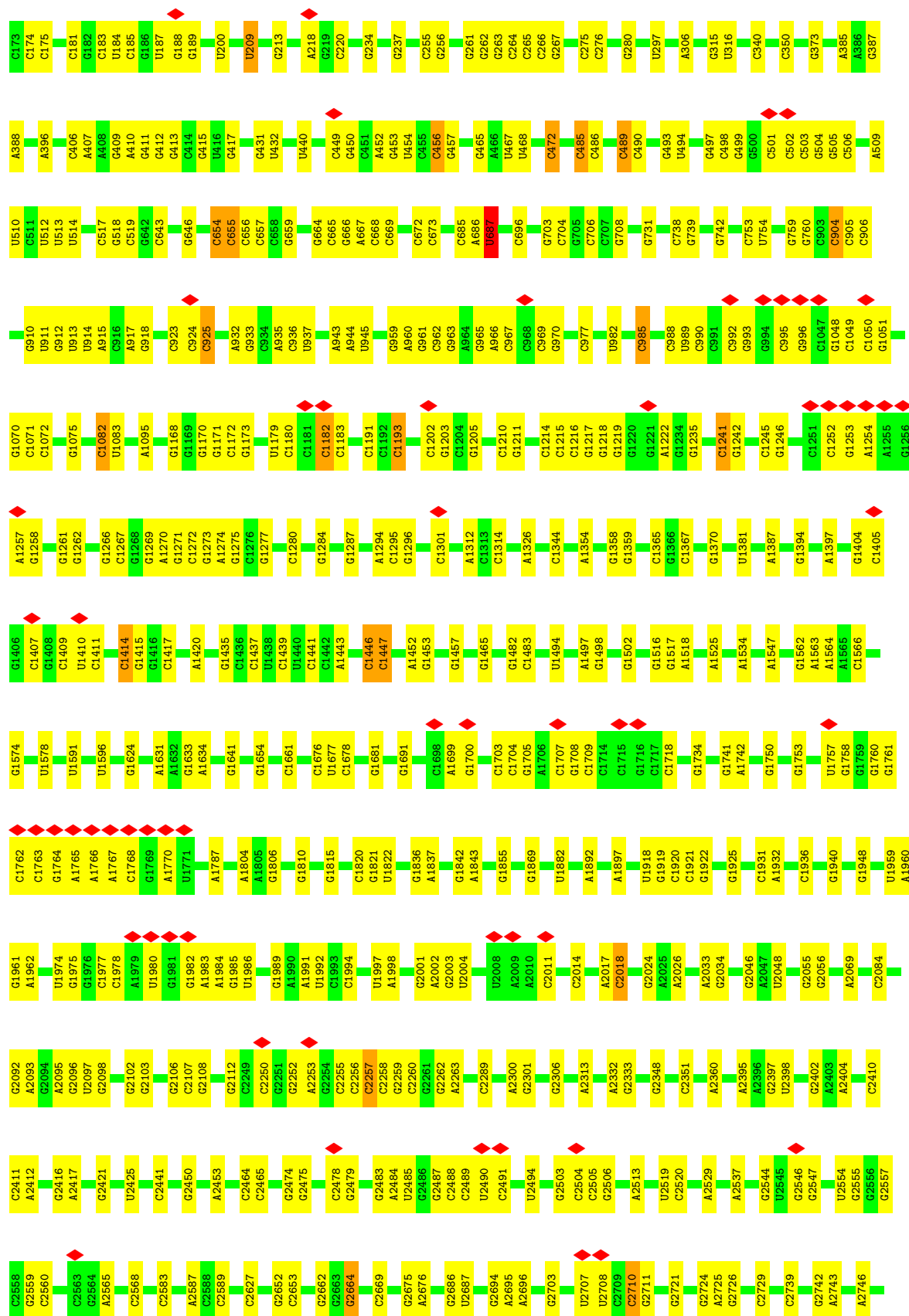


- Molecule 20: Small ribosomal subunit protein eS27

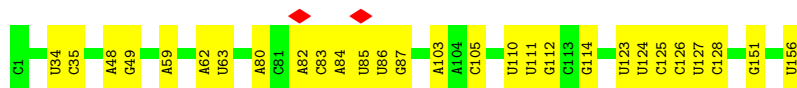


- Molecule 21: 28S rRNA









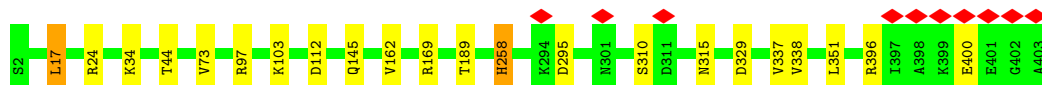
- Molecule 24: 60S ribosomal protein L8

Chain LA: 93% 7%



- Molecule 25: Large ribosomal subunit protein uL3

Chain LB: 95% 5%



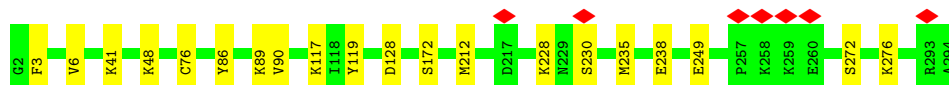
- Molecule 26: 60S ribosomal protein L4

Chain LC: 95% 5%



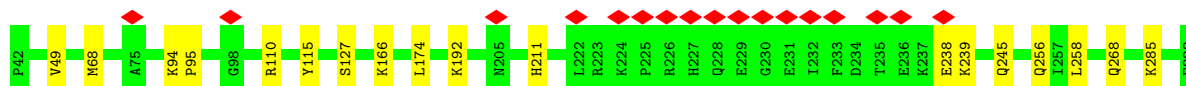
- Molecule 27: Large ribosomal subunit protein uL18

Chain LD: 93% 7%



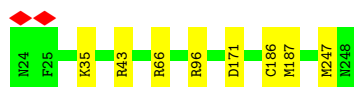
- Molecule 28: 60S ribosomal protein L6 [Homo sapiens]

Chain LE: 92% 7% 8%

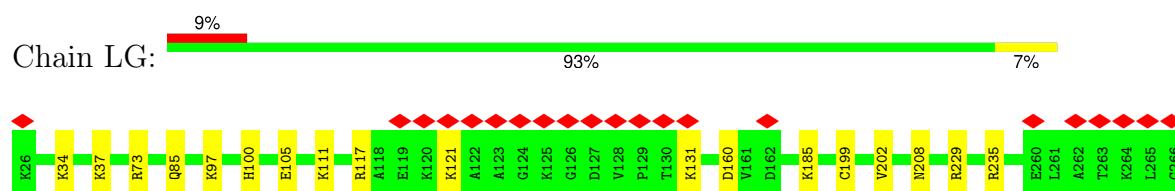


- Molecule 29: 60S ribosomal protein L7

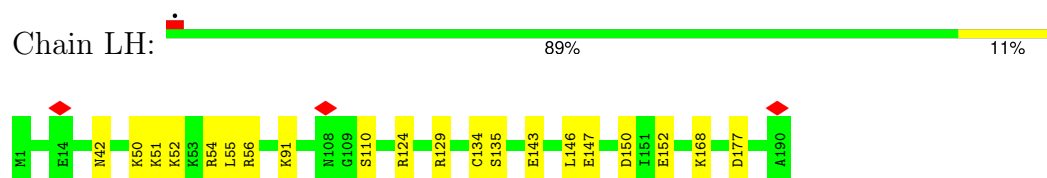
Chain LF: 96% 4%



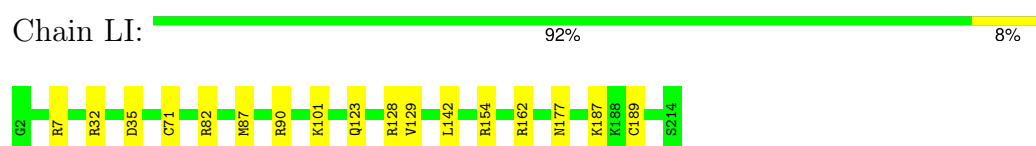
- Molecule 30: 60S ribosomal protein L7a



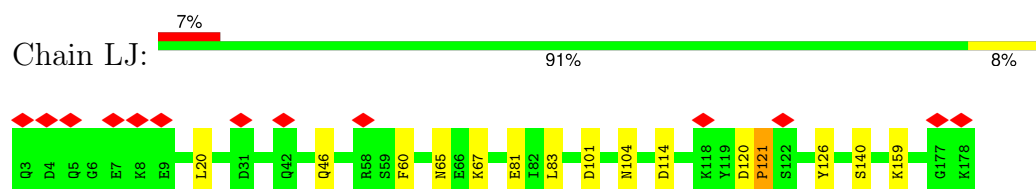
- Molecule 31: 60S ribosomal protein L9



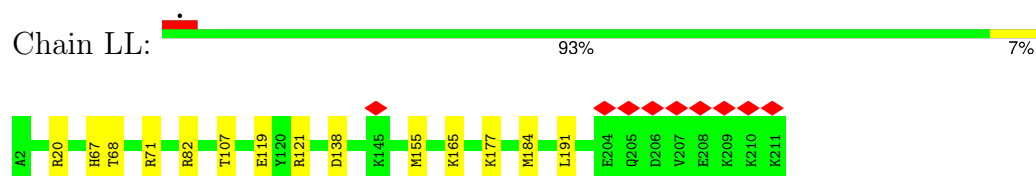
- Molecule 32: 60S ribosomal protein L10-like [Homo sapiens]



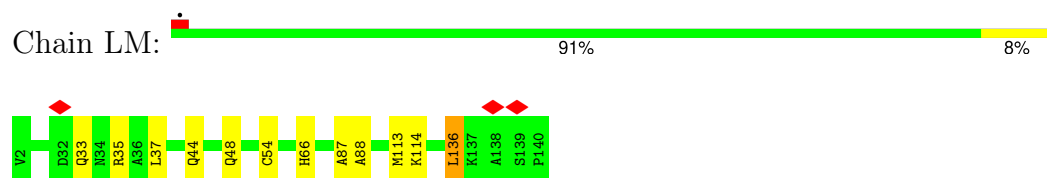
- Molecule 33: 60S ribosomal protein L11



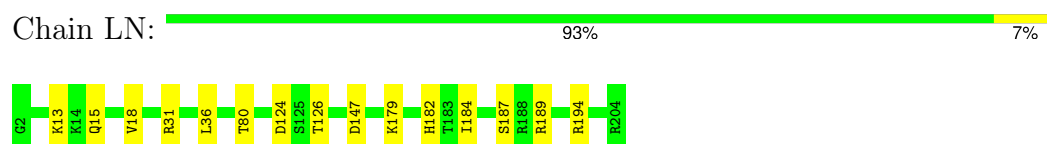
- Molecule 34: Large ribosomal subunit protein eL13



- Molecule 35: 60S ribosomal protein L14



- Molecule 36: 60S ribosomal protein L15




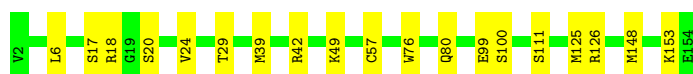
- Molecule 37: 60S ribosomal protein L13a

Chain LO:  96%



- Molecule 38: 60S ribosomal protein L17

Chain LP:  88%



- Molecule 39: 60S ribosomal protein L18

Chain LQ:  91%



- Molecule 40: 60S ribosomal protein L19

Chain LR:  95%



- Molecule 41: 60S ribosomal protein L18a

Chain LS:  94%




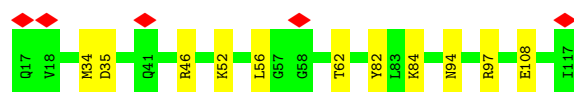
- Molecule 42: 60S ribosomal protein L21

Chain LT:  93%

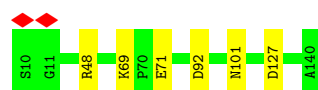


- Molecule 43: Heparin-binding protein HBp15

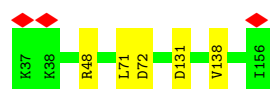
Chain LU:  89%



- Molecule 44: 60S ribosomal protein L23



- Molecule 45: 60S ribosomal protein L23a



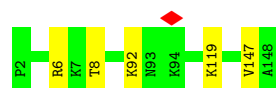
- Molecule 46: 60S ribosomal protein L26



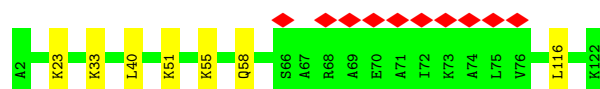
- Molecule 47: 60S ribosomal protein L27



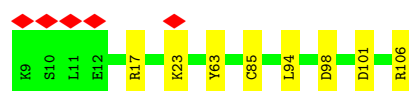
- Molecule 48: 60S ribosomal protein L27a



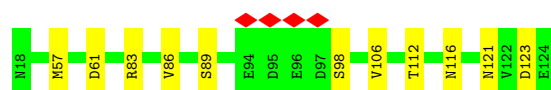
- Molecule 49: 60S ribosomal protein L29



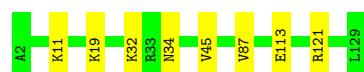
- Molecule 50: 60S ribosomal protein L30



- Molecule 51: 60S ribosomal protein L31



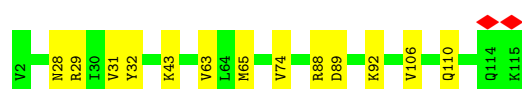
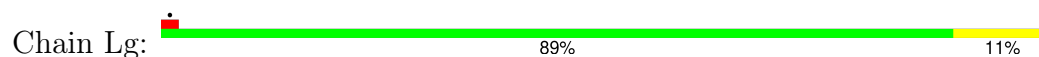
- Molecule 52: 60S ribosomal protein L32



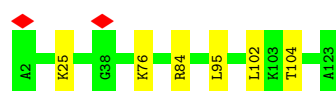
- Molecule 53: 60S ribosomal protein L35a



- Molecule 54: 60S ribosomal protein L34



- Molecule 55: 60S ribosomal protein L35



- Molecule 56: 60S ribosomal protein L36



- Molecule 57: 60S ribosomal protein L37

Chain Lj:  94% 6%



- Molecule 58: 60S ribosomal protein L38

Chain Lk:  87% 13%



- Molecule 59: 60S ribosomal protein L39

Chain Ll:  94% 6%



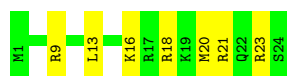
- Molecule 60: Large ribosomal subunit protein eL40

Chain Lm:  94% 6%



- Molecule 61: 60S ribosomal protein L41

Chain Ln:  71% 29%



- Molecule 62: 60S ribosomal protein L36a

Chain Lo:  87% 13%



- Molecule 63: 60S ribosomal protein L37a

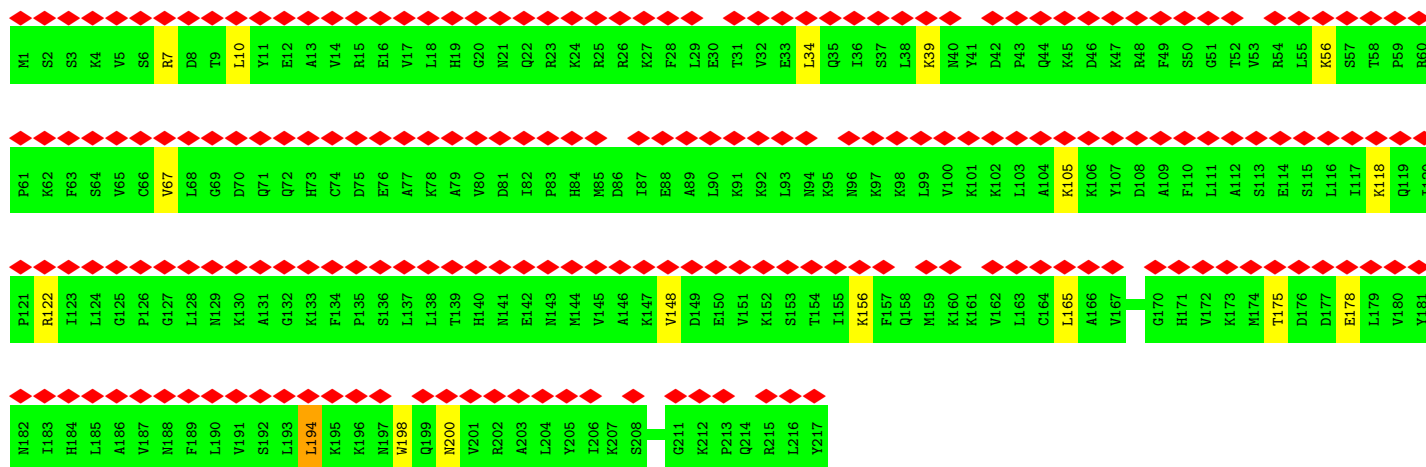
Chain Lp:  95% 5%



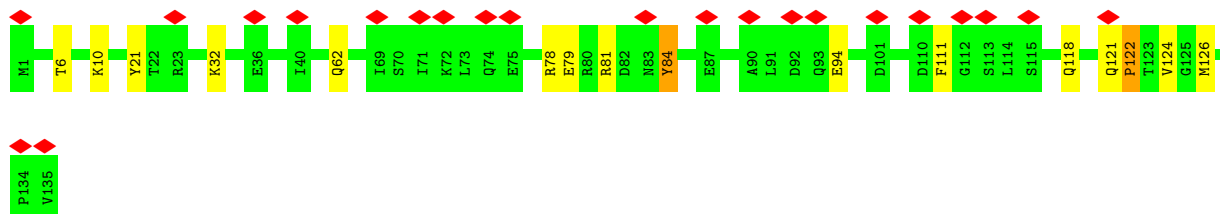
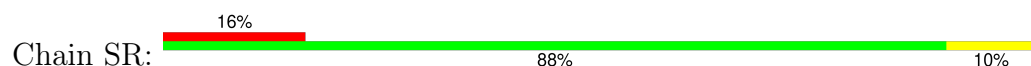
- Molecule 64: 60S ribosomal protein L28



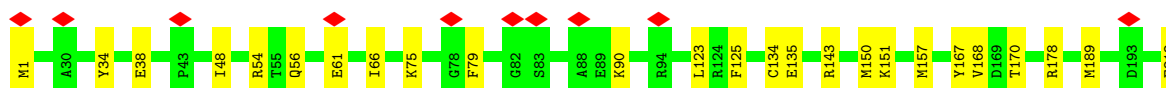
- Molecule 65: 60S ribosomal protein L10a



- Molecule 66: 40S ribosomal protein S17

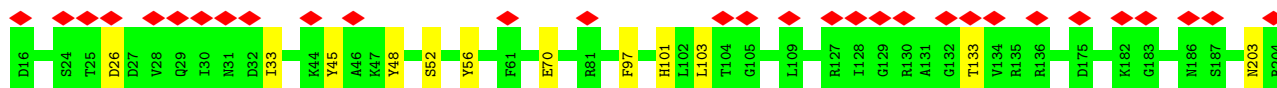


- Molecule 67: Small ribosomal subunit protein uS3

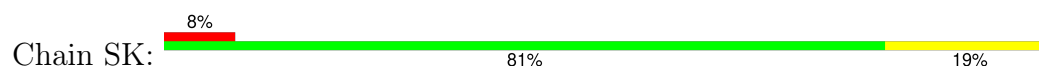




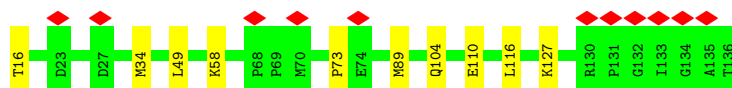
- Molecule 68: 40S ribosomal protein S5



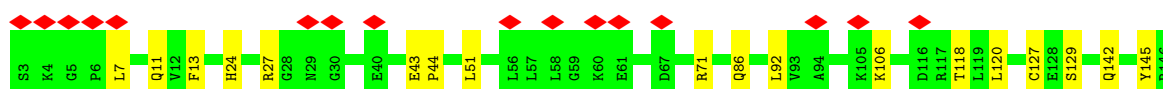
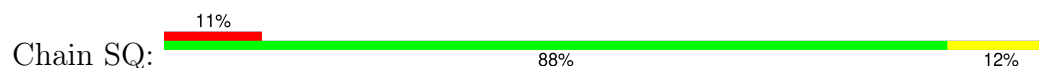
- Molecule 69: 40S ribosomal protein S10



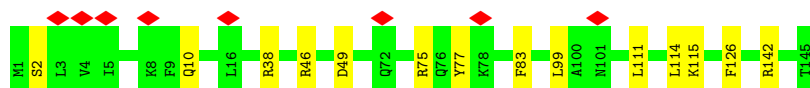
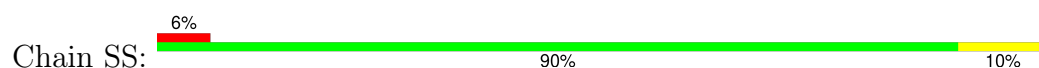
- Molecule 70: Small ribosomal subunit protein uS19



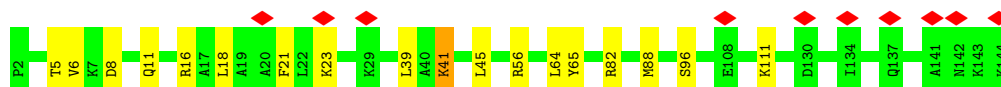
- Molecule 71: Small ribosomal subunit protein uS9



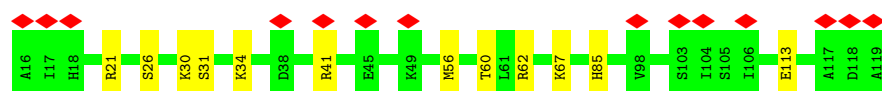
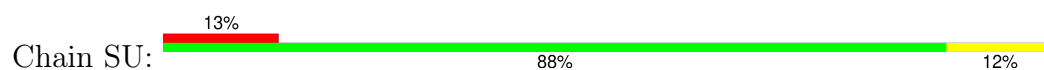
- Molecule 72: 40S ribosomal protein S18



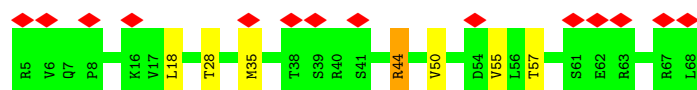
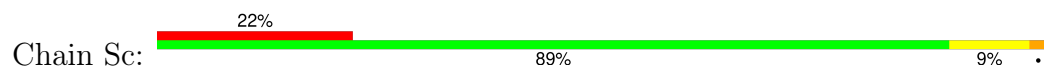
- Molecule 73: 40S ribosomal protein S19



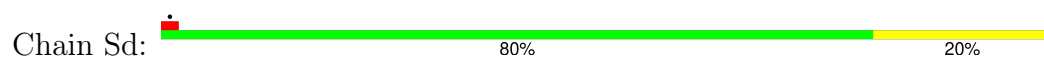
- Molecule 74: 40S ribosomal protein S20



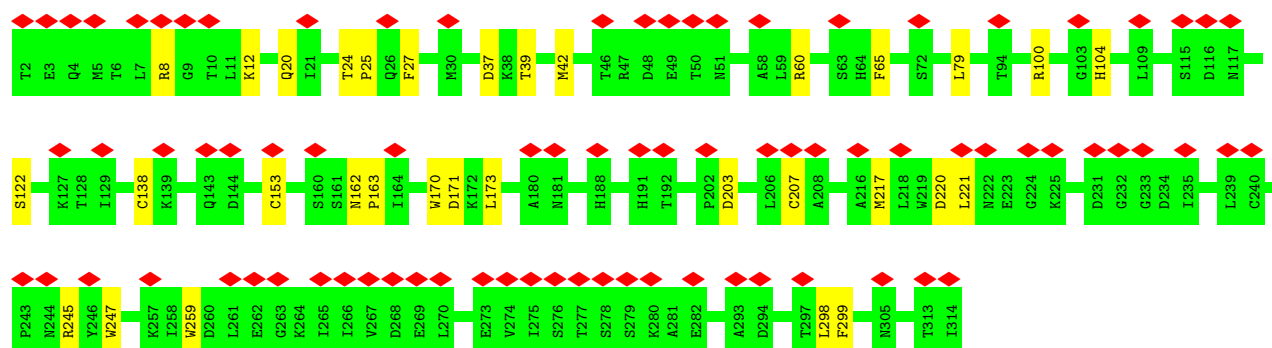
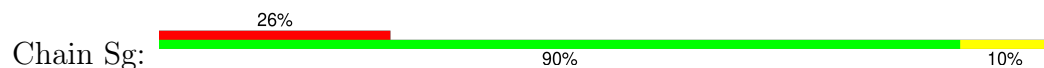
- Molecule 75: 40S ribosomal protein S28



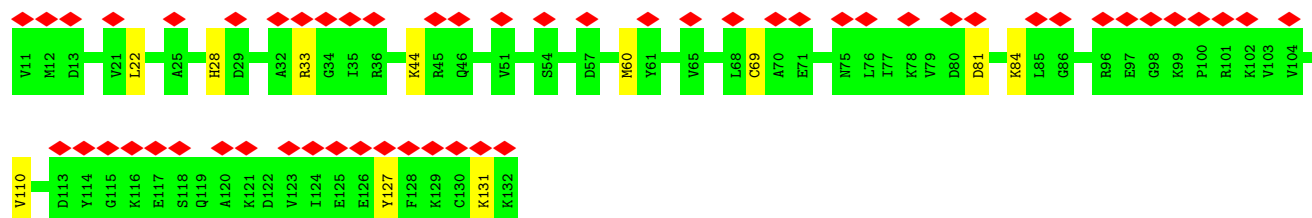
- Molecule 76: 40S ribosomal protein S29



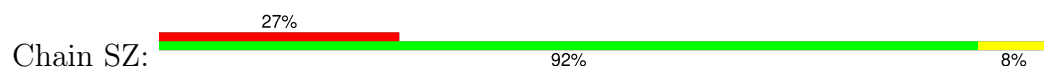
- Molecule 77: Receptor of activated protein C kinase 1

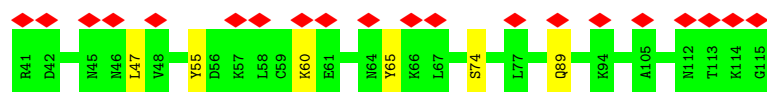


- Molecule 78: Small ribosomal subunit protein eS12

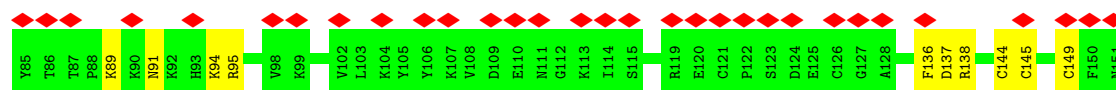
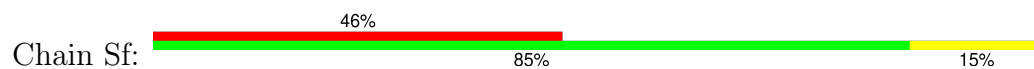


- Molecule 79: Small ribosomal subunit protein eS25

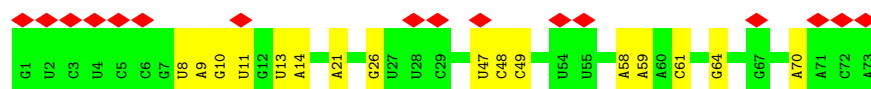
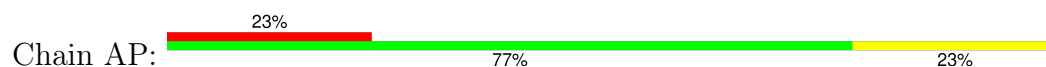




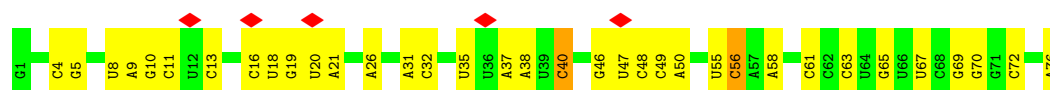
- Molecule 80: Ubiquitin-40S ribosomal protein S27a



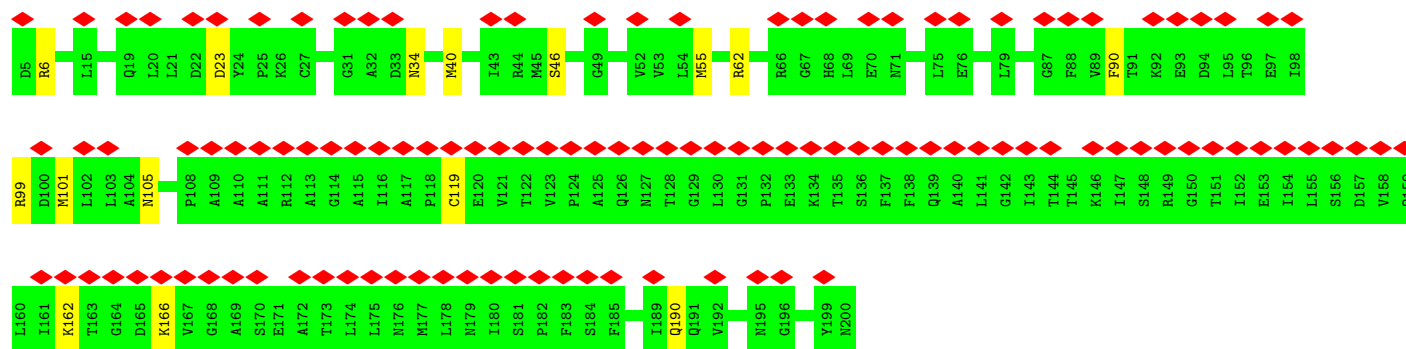
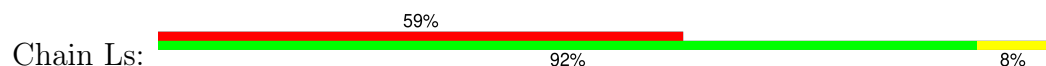
- Molecule 81: A/P site tRNA



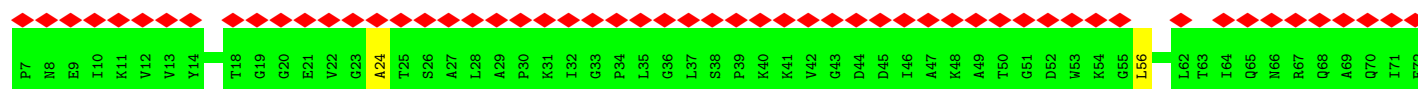
- Molecule 82: P/E site tRNA



- Molecule 83: 60S acidic ribosomal protein P0

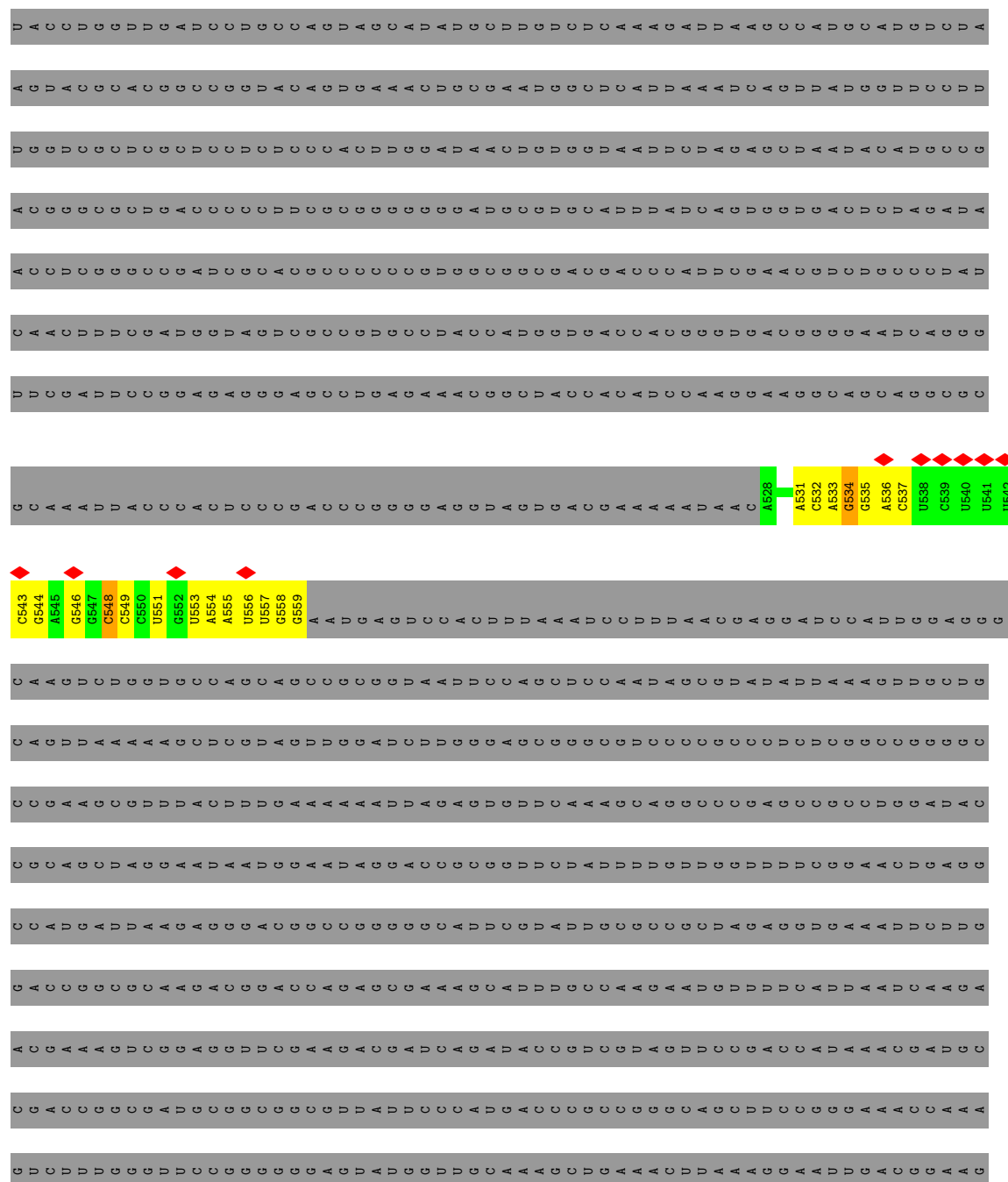


- Molecule 84: 60S ribosomal protein L12



- Molecule 85: 18S rRNA

Chain S2: 98%







4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	36954	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.143	Depositor
Minimum map value	-0.062	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.0182	Depositor
Map size (\AA)	546.816, 546.816, 546.816	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.068, 1.068, 1.068	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: MG, ZN

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	CH	0.31	0/1034	0.64	1/1388 (0.1%)
2	Se	0.36	0/350	0.59	0/465
3	LW	0.33	0/979	0.58	0/1295
4	SE	0.28	0/2118	0.58	0/2849
5	SI	0.30	0/1715	0.62	1/2287 (0.0%)
6	SL	0.33	0/1268	0.62	0/1696
7	SX	0.28	0/1116	0.56	0/1490
8	SG	1.44	11/1946 (0.6%)	1.57	16/2590 (0.6%)
9	SJ	0.52	2/1550 (0.1%)	0.83	2/2069 (0.1%)
10	SY	0.75	3/1083 (0.3%)	0.93	4/1438 (0.3%)
11	SA	0.34	0/1778	0.63	0/2416
12	SB	0.31	0/1765	0.57	0/2362
13	SH	0.36	0/1519	0.64	2/2033 (0.1%)
14	SV	0.40	1/643 (0.2%)	0.68	0/860
15	Sa	0.34	0/836	0.65	1/1121 (0.1%)
16	SC	0.32	0/1762	0.60	1/2381 (0.0%)
17	SN	0.32	0/1232	0.58	0/1656
18	SO	0.29	0/1062	0.66	2/1425 (0.1%)
19	SW	0.97	3/1051 (0.3%)	0.99	5/1406 (0.4%)
20	Sb	0.30	0/665	0.58	0/891
21	L5	0.52	1/89313 (0.0%)	0.84	76/139291 (0.1%)
22	L7	0.50	0/2861	0.77	0/4459
23	L8	0.52	0/3701	0.77	0/5766
24	LA	0.40	0/1936	0.63	0/2596
25	LB	0.39	2/3306 (0.1%)	0.60	1/4424 (0.0%)
26	LC	0.33	0/2981	0.59	1/4002 (0.0%)
27	LD	0.42	2/2428 (0.1%)	0.56	0/3252
28	LE	0.44	2/1942 (0.1%)	0.60	1/2606 (0.0%)
29	LF	0.37	0/1905	0.58	0/2539
30	LG	0.34	0/1960	0.58	0/2637
31	LH	0.33	0/1537	0.61	0/2066
32	LI	0.34	0/1673	0.59	0/2233

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	LJ	0.69	2/1433 (0.1%)	0.90	3/1915 (0.2%)
34	LL	0.32	0/1732	0.59	0/2315
35	LM	0.34	0/1161	0.58	1/1554 (0.1%)
36	LN	0.35	0/1746	0.59	0/2338
37	LO	0.37	0/1682	0.58	0/2250
38	LP	0.34	0/1268	0.60	1/1701 (0.1%)
39	LQ	0.35	0/1537	0.64	1/2052 (0.0%)
40	LR	0.33	0/1582	0.62	0/2091
41	LS	0.37	0/1493	0.58	0/2003
42	LT	0.36	0/1326	0.58	0/1770
43	LU	0.36	0/839	0.65	1/1126 (0.1%)
44	LV	0.37	0/993	0.60	0/1332
45	LX	0.36	0/1002	0.62	1/1345 (0.1%)
46	LY	0.34	0/1132	0.59	0/1504
47	LZ	0.36	0/1130	0.58	0/1507
48	La	0.35	0/1191	0.57	0/1591
49	Lb	0.32	0/889	0.59	0/1175
50	Lc	0.41	1/774 (0.1%)	0.64	1/1038 (0.1%)
51	Ld	0.35	0/903	0.64	1/1216 (0.1%)
52	Le	0.35	0/1071	0.58	0/1429
53	Lf	0.39	0/895	0.63	0/1198
54	Lg	0.35	0/916	0.62	0/1220
55	Lh	0.30	0/1023	0.59	0/1351
56	Li	0.31	0/843	0.58	0/1115
57	Lj	0.35	0/720	0.62	0/952
58	Lk	0.40	0/575	0.65	0/761
59	Ll	0.30	0/454	0.59	0/599
60	Lm	0.34	0/435	0.71	0/575
61	Ln	0.25	0/231	0.74	0/294
62	Lo	0.36	0/876	0.59	0/1156
63	Lp	0.34	0/718	0.55	0/953
64	Lr	0.33	0/1017	0.60	0/1364
65	Lz	0.25	0/1769	0.56	1/2371 (0.0%)
66	SR	0.50	1/1105 (0.1%)	0.76	3/1484 (0.2%)
67	SD	0.33	0/1793	0.62	0/2414
68	SF	0.32	0/1516	0.59	0/2037
69	SK	0.37	0/851	0.68	1/1147 (0.1%)
70	SP	0.54	2/1003 (0.2%)	0.85	2/1342 (0.1%)
71	SQ	0.30	0/1160	0.66	1/1553 (0.1%)
72	SS	0.33	0/1216	0.65	0/1628
73	ST	0.28	0/1131	0.63	1/1515 (0.1%)
74	SU	0.28	0/831	0.61	0/1115
75	Sc	0.44	1/508 (0.2%)	0.76	1/680 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
76	Sd	0.34	0/470	0.64	0/623
77	Sg	0.88	10/2493 (0.4%)	1.08	12/3394 (0.4%)
78	SM	0.28	0/950	0.56	1/1275 (0.1%)
79	SZ	0.30	0/604	0.66	0/810
80	Sf	0.29	0/560	0.62	0/745
81	AP	0.25	0/1692	0.77	0/2634
82	PE	0.32	0/1778	0.90	2/2767 (0.1%)
83	Ls	0.29	0/1519	0.58	0/2052
84	Lt	0.27	0/1058	0.63	0/1430
85	S2	0.34	0/759	1.04	6/1180 (0.5%)
85	S3	0.35	1/40482 (0.0%)	0.82	25/63071 (0.0%)
All	All	0.46	45/239850 (0.0%)	0.78	180/352046 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
7	SX	0	1
10	SY	0	1
13	SH	0	1
19	SW	0	1
21	L5	0	1
24	LA	0	1
25	LB	0	2
35	LM	0	1
37	LO	0	1
42	LT	0	1
53	Lf	0	3
57	Lj	0	1
71	SQ	0	1
All	All	0	16

All (45) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
8	SG	62	PRO	N-CD	31.86	1.92	1.47
8	SG	62	PRO	CG-CD	-30.13	0.51	1.50
8	SG	135	PRO	N-CD	26.13	1.84	1.47
77	Sg	25	PRO	CG-CD	-21.22	0.80	1.50
8	SG	135	PRO	CG-CD	-21.10	0.81	1.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
77	Sg	163	PRO	CG-CD	-20.72	0.82	1.50
33	LJ	121	PRO	N-CD	19.09	1.74	1.47
19	SW	29	PRO	N-CD	18.82	1.74	1.47
10	SY	87	PRO	N-CD	17.55	1.72	1.47
77	Sg	25	PRO	N-CD	17.19	1.72	1.47
8	SG	174	PRO	N-CD	16.98	1.71	1.47
19	SW	28	ARG	C-N	16.17	1.65	1.34
8	SG	174	PRO	CG-CD	-14.24	1.03	1.50
19	SW	29	PRO	CG-CD	-13.99	1.04	1.50
33	LJ	121	PRO	CG-CD	-12.13	1.10	1.50
77	Sg	162	ASN	C-N	12.13	1.57	1.34
9	SJ	16	PRO	N-CD	11.67	1.64	1.47
10	SY	87	PRO	CG-CD	-11.55	1.12	1.50
28	LE	94	LYS	CD-CE	-11.04	1.23	1.51
77	Sg	163	PRO	N-CD	10.77	1.62	1.47
66	SR	122	PRO	N-CD	10.04	1.61	1.47
70	SP	73	PRO	N-CD	9.93	1.61	1.47
27	LD	238	GLU	CD-OE2	-9.45	1.15	1.25
77	Sg	24	THR	C-N	9.16	1.51	1.34
8	SG	134	GLY	C-O	8.98	1.38	1.23
70	SP	73	PRO	CG-CD	-7.73	1.25	1.50
8	SG	61	PHE	C-N	7.54	1.48	1.34
21	L5	687	U	N1-C2	7.20	1.45	1.38
8	SG	61	PHE	C-O	7.17	1.36	1.23
9	SJ	16	PRO	CG-CD	-6.91	1.27	1.50
8	SG	62	PRO	CA-CB	-6.82	1.40	1.53
75	Sc	44	ARG	CZ-NH2	-6.51	1.24	1.33
14	SV	39	VAL	CB-CG1	-6.50	1.39	1.52
25	LB	400	GLU	CG-CD	-6.41	1.42	1.51
77	Sg	25	PRO	CB-CG	-6.37	1.18	1.50
8	SG	62	PRO	CB-CG	5.88	1.79	1.50
77	Sg	24	THR	C-O	5.74	1.34	1.23
28	LE	95	PRO	CG-CD	-5.72	1.31	1.50
77	Sg	25	PRO	CA-CB	-5.68	1.42	1.53
25	LB	396	ARG	CZ-NH2	-5.59	1.25	1.33
77	Sg	163	PRO	CB-CG	-5.39	1.23	1.50
85	S3	65	C	N1-C6	5.38	1.40	1.37
50	Lc	85	CYS	CB-SG	-5.28	1.73	1.81
27	LD	238	GLU	CG-CD	-5.24	1.44	1.51
10	SY	87	PRO	CB-CG	5.07	1.75	1.50

All (180) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	SG	62	PRO	N-CD-CG	-45.60	34.80	103.20
8	SG	135	PRO	N-CD-CG	-31.21	56.39	103.20
77	Sg	25	PRO	N-CD-CG	-22.33	69.70	103.20
33	LJ	121	PRO	CA-N-CD	-21.99	80.71	111.50
8	SG	174	PRO	CA-N-CD	-21.29	81.69	111.50
10	SY	87	PRO	CA-N-CD	-20.97	82.15	111.50
77	Sg	163	PRO	N-CD-CG	-19.86	73.41	103.20
19	SW	29	PRO	CA-N-CD	-19.78	83.80	111.50
9	SJ	16	PRO	CA-N-CD	-18.86	85.09	111.50
77	Sg	163	PRO	CB-CG-CD	18.83	179.93	106.50
70	SP	73	PRO	CA-N-CD	-17.75	86.65	111.50
77	Sg	25	PRO	CB-CG-CD	17.72	175.59	106.50
8	SG	61	PHE	C-N-CD	16.86	163.81	128.40
8	SG	62	PRO	CA-N-CD	-16.44	88.48	111.50
77	Sg	25	PRO	CA-N-CD	-16.21	88.81	111.50
19	SW	29	PRO	N-CD-CG	-14.94	80.79	103.20
77	Sg	24	THR	C-N-CD	14.31	158.44	128.40
77	Sg	163	PRO	CA-CB-CG	-14.07	77.27	104.00
8	SG	135	PRO	CA-N-CD	-13.10	93.16	111.50
8	SG	135	PRO	CA-CB-CG	-12.55	80.16	104.00
77	Sg	25	PRO	CA-CB-CG	-12.53	80.19	104.00
33	LJ	120	ASP	C-N-CD	12.31	154.25	128.40
8	SG	174	PRO	N-CD-CG	-12.30	84.76	103.20
33	LJ	121	PRO	N-CD-CG	-12.16	84.96	103.20
77	Sg	163	PRO	CA-N-CD	-11.87	94.89	111.50
8	SG	134	GLY	C-N-CD	11.71	152.98	128.40
10	SY	86	GLU	C-N-CD	11.04	151.58	128.40
77	Sg	162	ASN	C-N-CD	10.66	150.79	128.40
8	SG	173	ALA	C-N-CD	10.62	150.69	128.40
9	SJ	15	THR	C-N-CD	10.37	150.17	128.40
21	L5	129	C	N3-C2-O2	-9.90	114.97	121.90
8	SG	62	PRO	CA-CB-CG	-9.65	85.67	104.00
21	L5	174	C	N3-C2-O2	-9.36	115.35	121.90
21	L5	456	C	O4'-C1'-N1	9.24	115.59	108.20
21	L5	485	C	C2-N1-C1'	9.07	128.77	118.80
75	Sc	44	ARG	NE-CZ-NH1	8.96	124.78	120.30
85	S3	1772	C	N1-C2-O2	8.95	124.27	118.90
25	LB	396	ARG	NE-CZ-NH1	8.86	124.73	120.30
21	L5	2710	C	N1-C2-O2	8.53	124.02	118.90
8	SG	62	PRO	CB-CG-CD	-8.44	73.57	106.50
85	S3	1453	C	N1-C2-O2	8.25	123.85	118.90
85	S3	1453	C	C2-N1-C1'	8.13	127.74	118.80
21	L5	2710	C	C2-N1-C1'	8.04	127.64	118.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
19	SW	28	ARG	C-N-CD	8.03	145.26	128.40
21	L5	1447	C	N3-C2-O2	-8.02	116.29	121.90
19	SW	29	PRO	N-CA-C	7.90	132.63	112.10
85	S3	1772	C	N3-C2-O2	-7.89	116.38	121.90
8	SG	135	PRO	N-CA-CB	-7.86	93.86	103.30
85	S3	1416	C	N3-C2-O2	-7.53	116.63	121.90
21	L5	1252	C	N3-C2-O2	-7.47	116.67	121.90
21	L5	4138	C	N3-C2-O2	-7.46	116.68	121.90
1	CH	103	PRO	CA-N-CD	-7.35	101.21	111.50
85	S2	548	C	C2-N1-C1'	7.34	126.87	118.80
21	L5	490	C	N3-C2-O2	-7.33	116.77	121.90
21	L5	456	C	N3-C2-O2	-7.32	116.78	121.90
66	SR	84	TYR	CG-CD2-CE2	7.29	127.13	121.30
21	L5	1414	C	N1-C2-O2	7.21	123.23	118.90
21	L5	485	C	C6-N1-C1'	-7.12	112.25	120.80
21	L5	1414	C	N3-C2-O2	-7.12	116.92	121.90
15	Sa	98	PRO	CA-N-CD	-7.11	101.55	111.50
21	L5	130	C	N3-C2-O2	-7.10	116.93	121.90
21	L5	2710	C	N3-C2-O2	-7.09	116.93	121.90
73	ST	18	LEU	CA-CB-CG	7.03	131.47	115.30
13	SH	133	LEU	CA-CB-CG	7.00	131.41	115.30
21	L5	1082	C	O4'-C1'-N1	7.00	113.80	108.20
85	S3	834	C	N3-C2-O2	-6.85	117.11	121.90
21	L5	3773	U	N3-C2-O2	-6.69	117.52	122.20
85	S3	1772	C	C2-N1-C1'	6.67	126.14	118.80
21	L5	1191	C	N3-C2-O2	-6.67	117.23	121.90
85	S3	1453	C	N3-C2-O2	-6.64	117.25	121.90
65	Lz	194	LEU	CA-CB-CG	6.63	130.56	115.30
85	S2	549	C	C6-N1-C2	-6.63	117.65	120.30
70	SP	73	PRO	N-CD-CG	-6.43	93.55	103.20
21	L5	1082	C	N3-C2-O2	-6.42	117.41	121.90
18	SO	14	VAL	C-N-CA	6.33	137.52	121.70
85	S2	534	G	N3-C4-N9	-6.27	122.24	126.00
21	L5	175	C	N3-C2-O2	-6.26	117.52	121.90
85	S3	621	C	N3-C2-O2	-6.24	117.53	121.90
45	LX	71	LEU	CA-CB-CG	6.20	129.56	115.30
85	S3	1424	G	N3-C4-N9	6.16	129.70	126.00
21	L5	4709	U	C2-N1-C1'	6.15	125.08	117.70
21	L5	209	U	C2-N1-C1'	6.00	124.90	117.70
8	SG	62	PRO	N-CA-C	5.99	127.67	112.10
21	L5	1994	C	N3-C2-O2	-5.99	117.71	121.90
21	L5	3773	U	C2-N1-C1'	5.97	124.86	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
21	L5	100	C	C2-N1-C1'	5.96	125.36	118.80
77	Sg	25	PRO	N-CA-CB	-5.93	96.08	102.60
66	SR	121	GLN	C-N-CD	5.90	140.79	128.40
10	SY	52	PRO	CA-N-CD	-5.87	103.28	111.50
21	L5	4924	C	N3-C2-O2	-5.86	117.80	121.90
35	LM	136	LEU	CA-CB-CG	5.84	128.73	115.30
10	SY	87	PRO	N-CD-CG	-5.82	94.46	103.20
21	L5	4101	C	N3-C4-C5	5.79	124.22	121.90
8	SG	217	MET	CA-CB-CG	5.77	123.11	113.30
21	L5	262	G	C5-C6-O6	5.76	132.06	128.60
21	L5	654	C	N1-C2-O2	5.76	122.36	118.90
85	S3	834	C	N1-C2-O2	5.75	122.35	118.90
21	L5	925	C	N1-C2-O2	5.73	122.34	118.90
21	L5	1193	C	C2-N1-C1'	5.68	125.05	118.80
21	L5	417	G	O4'-C1'-N9	5.68	112.74	108.20
21	L5	139	G	C5-C6-O6	5.66	131.99	128.60
21	L5	3761	C	C2-N1-C1'	5.65	125.02	118.80
21	L5	489	C	N1-C2-O2	5.65	122.29	118.90
13	SH	130	LEU	CA-CB-CG	5.64	128.27	115.30
85	S3	1453	C	C6-N1-C1'	-5.63	114.04	120.80
21	L5	925	C	N3-C2-O2	-5.63	117.96	121.90
21	L5	2257	C	C2-N1-C1'	5.62	124.98	118.80
5	SI	20	PRO	CA-N-CD	-5.62	103.63	111.50
21	L5	3773	U	N1-C2-O2	5.62	126.73	122.80
85	S2	548	C	C6-N1-C1'	-5.61	114.07	120.80
21	L5	1447	C	N1-C2-O2	5.60	122.26	118.90
18	SO	119	LEU	CA-CB-CG	5.59	128.16	115.30
21	L5	1446	C	N1-C2-O2	5.59	122.25	118.90
21	L5	2710	C	C6-N1-C1'	-5.58	114.10	120.80
39	LQ	4	ASP	CB-CG-OD2	5.58	123.33	118.30
19	SW	29	PRO	CB-CG-CD	-5.57	84.77	106.50
38	LP	6	LEU	CA-CB-CG	5.55	128.08	115.30
85	S3	4	C	C2-N1-C1'	5.54	124.89	118.80
69	SK	79	LEU	CA-CB-CG	5.53	128.02	115.30
21	L5	1182	C	C2-N1-C1'	5.52	124.87	118.80
21	L5	4709	U	C5-C4-O4	-5.51	122.59	125.90
21	L5	140	G	C5-C6-O6	5.51	131.91	128.60
21	L5	262	G	N1-C6-O6	-5.50	116.60	119.90
21	L5	263	G	C5-C6-O6	5.49	131.90	128.60
43	LU	56	LEU	CA-CB-CG	5.49	127.93	115.30
85	S3	833	C	N1-C2-O2	5.49	122.19	118.90
21	L5	209	U	N1-C2-O2	5.46	126.62	122.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
85	S3	1022	U	C2-N1-C1'	5.42	124.21	117.70
85	S3	1314	U	C2-N1-C1'	5.38	124.16	117.70
82	PE	40	C	C2-N1-C1'	5.38	124.72	118.80
21	L5	4147	G	N1-C6-O6	-5.37	116.68	119.90
85	S3	1520	G	C4-N9-C1'	5.37	133.47	126.50
21	L5	1082	C	C6-N1-C1'	5.33	127.20	120.80
21	L5	4928	C	C2-N1-C1'	5.33	124.67	118.80
21	L5	1082	C	C2-N1-C1'	-5.33	112.94	118.80
85	S3	118	C	C2-N1-C1'	5.33	124.66	118.80
21	L5	4859	C	N3-C2-O2	-5.32	118.17	121.90
21	L5	963	G	C4-N9-C1'	5.32	133.42	126.50
28	LE	95	PRO	N-CD-CG	5.32	111.18	103.20
21	L5	1216	C	C2-N1-C1'	5.31	124.64	118.80
21	L5	485	C	N1-C2-O2	5.31	122.09	118.90
16	SC	73	MET	CA-CB-CG	5.30	122.32	113.30
21	L5	4945	G	C5-C6-O6	-5.30	125.42	128.60
85	S3	688	U	P-O3'-C3'	5.28	126.04	119.70
21	L5	2018	C	C5-C6-N1	5.28	123.64	121.00
21	L5	129	C	N1-C2-O2	5.26	122.06	118.90
21	L5	174	C	N1-C2-O2	5.25	122.05	118.90
85	S3	1453	C	C6-N1-C2	-5.23	118.21	120.30
21	L5	664	G	N1-C6-O6	-5.22	116.77	119.90
21	L5	130	C	C6-N1-C2	-5.21	118.22	120.30
21	L5	2710	C	C6-N1-C2	-5.21	118.22	120.30
21	L5	129	C	C6-N1-C2	-5.21	118.22	120.30
66	SR	122	PRO	CA-N-CD	-5.20	104.22	111.50
8	SG	174	PRO	CA-CB-CG	-5.20	94.12	104.00
71	SQ	7	LEU	CA-CB-CG	5.19	127.24	115.30
21	L5	1252	C	C6-N1-C2	-5.19	118.22	120.30
85	S3	1772	C	C6-N1-C2	-5.19	118.23	120.30
21	L5	1191	C	N1-C2-O2	5.17	122.00	118.90
21	L5	4107	G	C5-C6-O6	5.16	131.70	128.60
82	PE	56	C	N3-C2-O2	-5.15	118.30	121.90
26	LC	2	ALA	C-N-CA	5.14	134.54	121.70
21	L5	1241	C	C2-N1-C1'	5.12	124.43	118.80
78	SM	22	LEU	CA-CB-CG	5.12	127.06	115.30
50	Lc	98	ASP	CB-CG-OD2	5.11	122.90	118.30
85	S3	1520	G	N3-C4-N9	5.11	129.06	126.00
85	S2	549	C	C5-C6-N1	5.10	123.55	121.00
21	L5	985	C	C2-N1-C1'	5.10	124.41	118.80
21	L5	4147	G	C5-C6-O6	5.10	131.66	128.60
85	S3	118	C	N1-C2-O2	5.09	121.96	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
21	L5	4709	U	C6-N1-C1'	-5.09	114.07	121.20
51	Ld	61	ASP	CB-CG-OD1	5.09	122.88	118.30
21	L5	4758	U	N1-C2-O2	5.07	126.35	122.80
21	L5	904	C	C2-N1-C1'	5.06	124.36	118.80
85	S2	548	C	N1-C2-O2	5.04	121.92	118.90
85	S3	1424	G	C4-N9-C1'	5.03	133.04	126.50
77	Sg	25	PRO	CB-CA-C	5.03	124.57	112.00
21	L5	655	C	C6-N1-C1'	5.03	126.83	120.80
21	L5	472	C	C2-N1-C1'	5.01	124.31	118.80
21	L5	2664	G	N1-C6-O6	-5.01	116.89	119.90
85	S3	1078	C	N1-C2-O2	5.01	121.91	118.90

There are no chirality outliers.

All (16) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
21	L5	687	U	Sidechain
24	LA	13	GLY	Peptide
25	LB	17	LEU	Peptide
25	LB	258	HIS	Peptide
35	LM	87	ALA	Peptide
37	LO	110	PRO	Peptide
42	LT	136	ARG	Peptide
53	Lf	103	VAL	Peptide
53	Lf	106	TYR	Peptide
53	Lf	79	GLY	Peptide
57	Lj	39	TYR	Peptide
13	SH	15	LYS	Peptide
71	SQ	43	GLU	Peptide
19	SW	28	ARG	Peptide
7	SX	126	ALA	Peptide
10	SY	86	GLU	Peptide

5.2 Too-close contacts

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	
1	CH	130/132 (98%)	103 (79%)	25 (19%)	2 (2%)	8	34
2	Se	45/47 (96%)	42 (93%)	3 (7%)	0	100	100
3	LW	114/118 (97%)	110 (96%)	4 (4%)	0	100	100
4	SE	260/262 (99%)	245 (94%)	15 (6%)	0	100	100
5	SI	204/206 (99%)	192 (94%)	12 (6%)	0	100	100
6	SL	151/153 (99%)	139 (92%)	12 (8%)	0	100	100
7	SX	139/141 (99%)	126 (91%)	12 (9%)	1 (1%)	19	51
8	SG	235/237 (99%)	218 (93%)	16 (7%)	1 (0%)	30	63
9	SJ	183/185 (99%)	170 (93%)	13 (7%)	0	100	100
10	SY	129/131 (98%)	118 (92%)	11 (8%)	0	100	100
11	SA	219/221 (99%)	201 (92%)	17 (8%)	1 (0%)	25	59
12	SB	212/214 (99%)	203 (96%)	9 (4%)	0	100	100
13	SH	182/186 (98%)	156 (86%)	26 (14%)	0	100	100
14	SV	81/83 (98%)	74 (91%)	7 (9%)	0	100	100
15	Sa	100/102 (98%)	92 (92%)	8 (8%)	0	100	100
16	SC	220/222 (99%)	205 (93%)	15 (7%)	0	100	100
17	SN	148/150 (99%)	144 (97%)	4 (3%)	0	100	100
18	SO	138/140 (99%)	124 (90%)	14 (10%)	0	100	100
19	SW	127/129 (98%)	121 (95%)	4 (3%)	2 (2%)	8	32
20	Sb	81/83 (98%)	73 (90%)	8 (10%)	0	100	100
24	LA	246/248 (99%)	224 (91%)	22 (9%)	0	100	100
25	LB	400/402 (100%)	370 (92%)	30 (8%)	0	100	100
26	LC	366/368 (100%)	336 (92%)	30 (8%)	0	100	100
27	LD	291/293 (99%)	276 (95%)	15 (5%)	0	100	100
28	LE	232/236 (98%)	206 (89%)	26 (11%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
29	LF	223/225 (99%)	211 (95%)	12 (5%)	0	100	100
30	LG	239/241 (99%)	221 (92%)	18 (8%)	0	100	100
31	LH	188/190 (99%)	173 (92%)	15 (8%)	0	100	100
32	LI	198/202 (98%)	186 (94%)	12 (6%)	0	100	100
33	LJ	174/176 (99%)	158 (91%)	15 (9%)	1 (1%)	22	55
34	LL	208/210 (99%)	188 (90%)	20 (10%)	0	100	100
35	LM	137/139 (99%)	128 (93%)	8 (6%)	1 (1%)	19	51
36	LN	201/203 (99%)	188 (94%)	12 (6%)	1 (0%)	25	59
37	LO	199/201 (99%)	191 (96%)	8 (4%)	0	100	100
38	LP	151/153 (99%)	138 (91%)	13 (9%)	0	100	100
39	LQ	185/187 (99%)	176 (95%)	9 (5%)	0	100	100
40	LR	185/187 (99%)	178 (96%)	7 (4%)	0	100	100
41	LS	173/175 (99%)	161 (93%)	12 (7%)	0	100	100
42	LT	157/159 (99%)	147 (94%)	10 (6%)	0	100	100
43	LU	99/101 (98%)	84 (85%)	15 (15%)	0	100	100
44	LV	129/131 (98%)	122 (95%)	7 (5%)	0	100	100
45	LX	118/120 (98%)	114 (97%)	4 (3%)	0	100	100
46	LY	132/134 (98%)	127 (96%)	5 (4%)	0	100	100
47	LZ	133/135 (98%)	122 (92%)	11 (8%)	0	100	100
48	La	145/147 (99%)	134 (92%)	11 (8%)	0	100	100
49	Lb	105/109 (96%)	96 (91%)	9 (9%)	0	100	100
50	Lc	96/98 (98%)	87 (91%)	9 (9%)	0	100	100
51	Ld	105/107 (98%)	100 (95%)	5 (5%)	0	100	100
52	Le	126/128 (98%)	119 (94%)	7 (6%)	0	100	100
53	Lf	107/109 (98%)	99 (92%)	7 (6%)	1 (1%)	14	46
54	Lg	112/114 (98%)	109 (97%)	3 (3%)	0	100	100
55	Lh	120/122 (98%)	117 (98%)	3 (2%)	0	100	100
56	Li	100/102 (98%)	97 (97%)	3 (3%)	0	100	100
57	Lj	84/86 (98%)	78 (93%)	6 (7%)	0	100	100
58	Lk	67/69 (97%)	66 (98%)	1 (2%)	0	100	100
59	Ll	48/50 (96%)	46 (96%)	2 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
60	Lm	50/52 (96%)	49 (98%)	1 (2%)	0	100	100
61	Ln	22/24 (92%)	22 (100%)	0	0	100	100
62	Lo	103/105 (98%)	100 (97%)	3 (3%)	0	100	100
63	Lp	89/91 (98%)	86 (97%)	3 (3%)	0	100	100
64	Lr	123/125 (98%)	116 (94%)	7 (6%)	0	100	100
65	Lz	215/217 (99%)	174 (81%)	41 (19%)	0	100	100
66	SR	133/135 (98%)	113 (85%)	19 (14%)	1 (1%)	16	48
67	SD	225/227 (99%)	206 (92%)	19 (8%)	0	100	100
68	SF	187/189 (99%)	167 (89%)	20 (11%)	0	100	100
69	SK	96/98 (98%)	86 (90%)	8 (8%)	2 (2%)	5	25
70	SP	119/121 (98%)	107 (90%)	12 (10%)	0	100	100
71	SQ	142/144 (99%)	127 (89%)	14 (10%)	1 (1%)	19	51
72	SS	143/145 (99%)	133 (93%)	10 (7%)	0	100	100
73	ST	141/143 (99%)	129 (92%)	11 (8%)	1 (1%)	19	51
74	SU	102/104 (98%)	96 (94%)	6 (6%)	0	100	100
75	Sc	62/64 (97%)	49 (79%)	13 (21%)	0	100	100
76	Sd	53/55 (96%)	49 (92%)	3 (6%)	1 (2%)	6	28
77	Sg	311/313 (99%)	276 (89%)	35 (11%)	0	100	100
78	SM	120/122 (98%)	111 (92%)	9 (8%)	0	100	100
79	SZ	73/75 (97%)	58 (80%)	15 (20%)	0	100	100
80	Sf	65/67 (97%)	61 (94%)	4 (6%)	0	100	100
83	Ls	194/196 (99%)	184 (95%)	10 (5%)	0	100	100
84	Lt	137/141 (97%)	108 (79%)	27 (20%)	2 (2%)	8	34
All	All	11982/12152 (99%)	11036 (92%)	927 (8%)	19 (0%)	45	74

All (19) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	CH	72	ARG
8	SG	174	PRO
69	SK	96	ARG
1	CH	114	ALA
36	LN	124	ASP
69	SK	36	ALA

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Mol	Chain	Res	Type
84	Lt	144	ASP
11	SA	12	GLU
35	LM	88	ALA
19	SW	29	PRO
7	SX	127	ASN
19	SW	28	ARG
66	SR	124	VAL
73	ST	41	LYS
33	LJ	121	PRO
71	SQ	44	PRO
76	Sd	14	PHE
84	Lt	24	ALA
53	Lf	107	PRO

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	CH	108/108 (100%)	94 (87%)	14 (13%)	3	14
2	Se	32/32 (100%)	26 (81%)	6 (19%)	1	6
3	LW	97/97 (100%)	87 (90%)	10 (10%)	6	22
4	SE	224/224 (100%)	200 (89%)	24 (11%)	5	21
5	SI	178/178 (100%)	158 (89%)	20 (11%)	5	19
6	SL	137/137 (100%)	121 (88%)	16 (12%)	4	18
7	SX	113/113 (100%)	101 (89%)	12 (11%)	5	21
8	SG	207/207 (100%)	187 (90%)	20 (10%)	6	25
9	SJ	161/161 (100%)	140 (87%)	21 (13%)	3	14
10	SY	113/113 (100%)	98 (87%)	15 (13%)	3	14
11	SA	183/183 (100%)	161 (88%)	22 (12%)	4	17
12	SB	195/195 (100%)	180 (92%)	15 (8%)	10	35
13	SH	166/166 (100%)	155 (93%)	11 (7%)	14	41
14	SV	67/67 (100%)	57 (85%)	10 (15%)	2	11

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
15	Sa	89/89 (100%)	82 (92%)	7 (8%)	10	33
16	SC	188/188 (100%)	167 (89%)	21 (11%)	5	19
17	SN	130/130 (100%)	122 (94%)	8 (6%)	15	43
18	SO	110/110 (100%)	98 (89%)	12 (11%)	5	20
19	SW	112/112 (100%)	101 (90%)	11 (10%)	6	25
20	Sb	75/75 (100%)	68 (91%)	7 (9%)	7	27
24	LA	190/190 (100%)	173 (91%)	17 (9%)	8	29
25	LB	348/348 (100%)	328 (94%)	20 (6%)	17	47
26	LC	306/306 (100%)	290 (95%)	16 (5%)	19	50
27	LD	246/247 (100%)	227 (92%)	19 (8%)	10	35
28	LE	209/209 (100%)	193 (92%)	16 (8%)	10	35
29	LF	194/194 (100%)	186 (96%)	8 (4%)	26	58
30	LG	203/205 (99%)	185 (91%)	18 (9%)	8	29
31	LH	169/169 (100%)	149 (88%)	20 (12%)	4	18
32	LI	172/172 (100%)	155 (90%)	17 (10%)	6	24
33	LJ	148/148 (100%)	135 (91%)	13 (9%)	8	29
34	LL	176/176 (100%)	162 (92%)	14 (8%)	10	33
35	LM	118/118 (100%)	108 (92%)	10 (8%)	8	31
36	LN	171/171 (100%)	157 (92%)	14 (8%)	9	32
37	LO	173/173 (100%)	166 (96%)	7 (4%)	27	58
38	LP	134/134 (100%)	116 (87%)	18 (13%)	3	13
39	LQ	164/164 (100%)	148 (90%)	16 (10%)	6	25
40	LR	166/166 (100%)	156 (94%)	10 (6%)	16	45
41	LS	156/156 (100%)	145 (93%)	11 (7%)	12	38
42	LT	139/139 (100%)	129 (93%)	10 (7%)	12	38
43	LU	91/91 (100%)	81 (89%)	10 (11%)	5	20
44	LV	101/101 (100%)	95 (94%)	6 (6%)	16	45
45	LX	108/108 (100%)	104 (96%)	4 (4%)	29	61
46	LY	124/124 (100%)	117 (94%)	7 (6%)	17	47
47	LZ	117/117 (100%)	106 (91%)	11 (9%)	7	26
48	La	120/120 (100%)	115 (96%)	5 (4%)	25	57

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
49	Lb	88/90 (98%)	81 (92%)	7 (8%)	10	33
50	Lc	83/83 (100%)	77 (93%)	6 (7%)	12	38
51	Ld	98/98 (100%)	88 (90%)	10 (10%)	6	23
52	Le	114/114 (100%)	106 (93%)	8 (7%)	12	39
53	Lf	88/88 (100%)	84 (96%)	4 (4%)	23	55
54	Lg	98/98 (100%)	85 (87%)	13 (13%)	3	14
55	Lh	109/109 (100%)	103 (94%)	6 (6%)	18	48
56	Li	86/86 (100%)	80 (93%)	6 (7%)	12	39
57	Lj	73/73 (100%)	69 (94%)	4 (6%)	18	48
58	Lk	64/64 (100%)	55 (86%)	9 (14%)	3	12
59	Ll	47/47 (100%)	44 (94%)	3 (6%)	14	42
60	Lm	48/48 (100%)	45 (94%)	3 (6%)	15	43
61	Ln	23/23 (100%)	16 (70%)	7 (30%)	0	1
62	Lo	93/93 (100%)	79 (85%)	14 (15%)	2	10
63	Lp	74/74 (100%)	69 (93%)	5 (7%)	13	40
64	Lr	109/109 (100%)	101 (93%)	8 (7%)	11	37
65	Lz	195/196 (100%)	178 (91%)	17 (9%)	8	30
66	SR	122/122 (100%)	108 (88%)	14 (12%)	4	19
67	SD	190/190 (100%)	163 (86%)	27 (14%)	2	12
68	SF	159/159 (100%)	147 (92%)	12 (8%)	11	36
69	SK	89/89 (100%)	73 (82%)	16 (18%)	1	7
70	SP	107/107 (100%)	98 (92%)	9 (8%)	9	31
71	SQ	119/119 (100%)	104 (87%)	15 (13%)	3	15
72	SS	126/126 (100%)	112 (89%)	14 (11%)	5	20
73	ST	113/113 (100%)	96 (85%)	17 (15%)	2	10
74	SU	94/94 (100%)	82 (87%)	12 (13%)	3	15
75	Sc	57/57 (100%)	50 (88%)	7 (12%)	4	16
76	Sd	48/48 (100%)	38 (79%)	10 (21%)	1	4
77	Sg	272/272 (100%)	244 (90%)	28 (10%)	6	22
78	SM	102/104 (98%)	92 (90%)	10 (10%)	6	25
79	SZ	66/66 (100%)	60 (91%)	6 (9%)	7	28

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
80	Sf	60/60 (100%)	50 (83%)	10 (17%)	2	8
83	Ls	162/164 (99%)	147 (91%)	15 (9%)	7	27
84	Lt	112/115 (97%)	107 (96%)	5 (4%)	23	55
All	All	10416/10429 (100%)	9460 (91%)	956 (9%)	10	27

All (956) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	CH	25	LYS
1	CH	33	ARG
1	CH	34	ARG
1	CH	39	GLU
1	CH	52	HIS
1	CH	65	THR
1	CH	69	HIS
1	CH	70	HIS
1	CH	71	ASP
1	CH	75	LEU
1	CH	94	ASP
1	CH	117	ASN
1	CH	139	ARG
1	CH	143	LYS
2	Se	10	ARG
2	Se	21	GLN
2	Se	29	LEU
2	Se	33	ARG
2	Se	41	SER
2	Se	43	LYS
3	LW	7	SER
3	LW	11	TYR
3	LW	25	ASP
3	LW	42	SER
3	LW	50	ASN
3	LW	54	LEU
3	LW	59	HIS
3	LW	71	ARG
3	LW	86	SER
3	LW	110	ARG
4	SE	16	LYS
4	SE	21	ASP
4	SE	41	CYS

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Mol	Chain	Res	Type
4	SE	57	THR
4	SE	60	GLU
4	SE	62	LYS
4	SE	66	MET
4	SE	71	LYS
4	SE	77	ARG
4	SE	94	LYS
4	SE	109	PHE
4	SE	113	ARG
4	SE	120	LYS
4	SE	121	TYR
4	SE	148	ARG
4	SE	177	THR
4	SE	181	CYS
4	SE	183	VAL
4	SE	200	ARG
4	SE	211	LYS
4	SE	216	ASN
4	SE	226	PHE
4	SE	227	VAL
4	SE	247	THR
5	SI	7	ASN
5	SI	22	HIS
5	SI	27	TYR
5	SI	52	ASN
5	SI	67	TRP
5	SI	72	CYS
5	SI	84	ASN
5	SI	96	LEU
5	SI	99	ASN
5	SI	113	TYR
5	SI	115	SER
5	SI	116	HIS
5	SI	117	TYR
5	SI	124	LYS
5	SI	134	GLU
5	SI	147	LYS
5	SI	149	TYR
5	SI	177	SER
5	SI	188	TYR
5	SI	200	ARG
6	SL	20	LYS

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Mol	Chain	Res	Type
6	SL	22	ARG
6	SL	33	LEU
6	SL	37	TYR
6	SL	45	LYS
6	SL	58	LYS
6	SL	66	VAL
6	SL	69	ARG
6	SL	73	LEU
6	SL	82	MET
6	SL	83	GLN
6	SL	87	VAL
6	SL	94	HIS
6	SL	100	ASN
6	SL	109	MET
6	SL	152	LYS
7	SX	8	ARG
7	SX	19	ASP
7	SX	36	LEU
7	SX	48	LYS
7	SX	60	LYS
7	SX	64	SER
7	SX	67	ARG
7	SX	71	ARG
7	SX	98	ASP
7	SX	115	ILE
7	SX	124	LYS
7	SX	129	SER
8	SG	32	MET
8	SG	45	TRP
8	SG	63	MET
8	SG	72	ARG
8	SG	89	THR
8	SG	98	ARG
8	SG	103	ASP
8	SG	111	LEU
8	SG	119	LYS
8	SG	129	VAL
8	SG	133	LEU
8	SG	142	ARG
8	SG	162	LEU
8	SG	186	GLN
8	SG	196	LYS

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Mol	Chain	Res	Type
8	SG	200	LYS
8	SG	205	GLU
8	SG	215	LYS
8	SG	217	MET
8	SG	219	GLU
9	SJ	9	CYS
9	SJ	11	LYS
9	SJ	12	THR
9	SJ	28	GLU
9	SJ	30	LYS
9	SJ	47	LYS
9	SJ	52	LYS
9	SJ	55	LYS
9	SJ	68	PRO
9	SJ	69	ARG
9	SJ	82	VAL
9	SJ	86	VAL
9	SJ	87	LEU
9	SJ	93	LYS
9	SJ	105	PHE
9	SJ	139	LYS
9	SJ	147	PHE
9	SJ	148	ILE
9	SJ	158	ASP
9	SJ	159	PHE
9	SJ	175	ARG
10	SY	3	ASP
10	SY	13	MET
10	SY	23	MET
10	SY	27	VAL
10	SY	35	VAL
10	SY	58	PHE
10	SY	60	PHE
10	SY	64	PHE
10	SY	72	PHE
10	SY	74	MET
10	SY	90	ARG
10	SY	105	LYS
10	SY	113	ARG
10	SY	114	MET
10	SY	132	LYS
11	SA	6	ASP

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Mol	Chain	Res	Type
11	SA	7	VAL
11	SA	10	MET
11	SA	17	LYS
11	SA	42	LYS
11	SA	44	ASP
11	SA	69	GLU
11	SA	73	ASP
11	SA	120	ARG
11	SA	121	LEU
11	SA	130	ASP
11	SA	131	HIS
11	SA	139	TYR
11	SA	142	LEU
11	SA	151	ASP
11	SA	158	ASP
11	SA	177	MET
11	SA	180	ARG
11	SA	188	THR
11	SA	192	GLU
11	SA	198	MET
11	SA	203	PHE
12	SB	26	SER
12	SB	42	ARG
12	SB	46	LYS
12	SB	75	GLN
12	SB	97	LEU
12	SB	100	PHE
12	SB	103	MET
12	SB	113	MET
12	SB	124	HIS
12	SB	136	ARG
12	SB	144	LYS
12	SB	166	LYS
12	SB	169	MET
12	SB	178	THR
12	SB	205	TYR
13	SH	30	LEU
13	SH	69	LEU
13	SH	77	VAL
13	SH	81	ARG
13	SH	130	LEU
13	SH	133	LEU

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Mol	Chain	Res	Type
13	SH	145	ARG
13	SH	173	PHE
13	SH	177	TYR
13	SH	180	LEU
13	SH	187	PHE
14	SV	1	MET
14	SV	10	ASP
14	SV	12	TYR
14	SV	13	VAL
14	SV	34	MET
14	SV	42	VAL
14	SV	45	ARG
14	SV	49	GLN
14	SV	62	MET
14	SV	83	PHE
15	Sa	6	ARG
15	Sa	15	ARG
15	Sa	26	CYS
15	Sa	68	TYR
15	Sa	85	ARG
15	Sa	100	ARG
15	Sa	102	ARG
16	SC	76	LYS
16	SC	78	LEU
16	SC	79	GLU
16	SC	104	ASP
16	SC	110	MET
16	SC	117	ARG
16	SC	120	GLN
16	SC	124	PHE
16	SC	132	ASP
16	SC	137	VAL
16	SC	159	LYS
16	SC	178	HIS
16	SC	215	MET
16	SC	216	MET
16	SC	236	PHE
16	SC	241	PHE
16	SC	250	TYR
16	SC	256	TRP
16	SC	257	LYS
16	SC	258	GLU

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Mol	Chain	Res	Type
16	SC	269	PHE
17	SN	34	LYS
17	SN	38	TYR
17	SN	64	ARG
17	SN	70	LYS
17	SN	73	ARG
17	SN	78	LYS
17	SN	87	ASP
17	SN	149	LEU
18	SO	28	PHE
18	SO	46	ASP
18	SO	50	LYS
18	SO	60	MET
18	SO	67	ASP
18	SO	75	MET
18	SO	79	GLN
18	SO	85	CYS
18	SO	114	SER
18	SO	117	ARG
18	SO	122	SER
18	SO	151	LEU
19	SW	4	MET
19	SW	13	SER
19	SW	16	ASN
19	SW	34	ILE
19	SW	36	ARG
19	SW	43	LYS
19	SW	71	LYS
19	SW	111	MET
19	SW	117	ARG
19	SW	126	LEU
19	SW	130	PHE
20	Sb	11	SER
20	Sb	16	LYS
20	Sb	33	MET
20	Sb	37	CYS
20	Sb	56	CYS
20	Sb	57	VAL
20	Sb	80	ARG
24	LA	4	VAL
24	LA	15	VAL
24	LA	48	ILE

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Mol	Chain	Res	Type
24	LA	54	ARG
24	LA	95	GLN
24	LA	102	LEU
24	LA	109	GLU
24	LA	114	CYS
24	LA	144	LYS
24	LA	147	ARG
24	LA	156	LYS
24	LA	160	SER
24	LA	181	LYS
24	LA	208	GLU
24	LA	228	ASP
24	LA	245	ARG
24	LA	247	ARG
25	LB	17	LEU
25	LB	24	ARG
25	LB	34	LYS
25	LB	44	THR
25	LB	73	VAL
25	LB	97	ARG
25	LB	103	LYS
25	LB	112	ASP
25	LB	145	GLN
25	LB	162	VAL
25	LB	169	ARG
25	LB	189	THR
25	LB	258	HIS
25	LB	295	ASP
25	LB	310	SER
25	LB	315	ASN
25	LB	329	ASP
25	LB	337	VAL
25	LB	338	VAL
25	LB	351	LEU
26	LC	1	MET
26	LC	80	ARG
26	LC	95	MET
26	LC	96	CYS
26	LC	122	TYR
26	LC	156	ASP
26	LC	189	MET
26	LC	196	MET

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Mol	Chain	Res	Type
26	LC	201	ARG
26	LC	257	PHE
26	LC	272	SER
26	LC	276	ASN
26	LC	290	SER
26	LC	306	ARG
26	LC	334	THR
26	LC	366	ASP
27	LD	3	PHE
27	LD	6	VAL
27	LD	41	LYS
27	LD	48	LYS
27	LD	76	CYS
27	LD	86	TYR
27	LD	89	LYS
27	LD	90	VAL
27	LD	117	LYS
27	LD	119	TYR
27	LD	128	ASP
27	LD	172	SER
27	LD	212	MET
27	LD	228	LYS
27	LD	230	SER
27	LD	235	MET
27	LD	249	GLU
27	LD	272	SER
27	LD	276	LYS
28	LE	49	VAL
28	LE	68	MET
28	LE	110	ARG
28	LE	115	TYR
28	LE	127	SER
28	LE	166	LYS
28	LE	174	LEU
28	LE	192	LYS
28	LE	211	HIS
28	LE	238	GLU
28	LE	239	LYS
28	LE	245	GLN
28	LE	256	GLN
28	LE	258	LEU
28	LE	268	GLN

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Mol	Chain	Res	Type
28	LE	285	LYS
29	LF	35	LYS
29	LF	43	ARG
29	LF	66	ARG
29	LF	96	ARG
29	LF	171	ASP
29	LF	186	CYS
29	LF	187	MET
29	LF	247	MET
30	LG	34	LYS
30	LG	37	LYS
30	LG	73	ARG
30	LG	85	GLN
30	LG	97	LYS
30	LG	100	HIS
30	LG	105	GLU
30	LG	111	LYS
30	LG	117	ARG
30	LG	121	LYS
30	LG	131	LYS
30	LG	160	ASP
30	LG	185	LYS
30	LG	199	CYS
30	LG	202	VAL
30	LG	208	ASN
30	LG	229	ARG
30	LG	235	ARG
31	LH	42	ASN
31	LH	50	LYS
31	LH	51	LYS
31	LH	52	LYS
31	LH	54	ARG
31	LH	55	LEU
31	LH	56	ARG
31	LH	91	LYS
31	LH	110	SER
31	LH	124	ARG
31	LH	129	ARG
31	LH	134	CYS
31	LH	135	SER
31	LH	143	GLU
31	LH	146	LEU

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Mol	Chain	Res	Type
31	LH	147	GLU
31	LH	150	ASP
31	LH	152	GLU
31	LH	168	LYS
31	LH	177	ASP
32	LI	7	ARG
32	LI	32	ARG
32	LI	35	ASP
32	LI	71	CYS
32	LI	82	ARG
32	LI	87	MET
32	LI	90	ARG
32	LI	101	LYS
32	LI	123	GLN
32	LI	128	ARG
32	LI	129	VAL
32	LI	142	LEU
32	LI	154	ARG
32	LI	162	ARG
32	LI	177	ASN
32	LI	187	LYS
32	LI	189	CYS
33	LJ	20	LEU
33	LJ	46	GLN
33	LJ	60	PHE
33	LJ	65	ASN
33	LJ	67	LYS
33	LJ	81	GLU
33	LJ	83	LEU
33	LJ	101	ASP
33	LJ	104	ASN
33	LJ	114	ASP
33	LJ	126	TYR
33	LJ	140	SER
33	LJ	159	LYS
34	LL	20	ARG
34	LL	67	HIS
34	LL	68	THR
34	LL	71	ARG
34	LL	82	ARG
34	LL	107	THR
34	LL	119	GLU

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Mol	Chain	Res	Type
34	LL	121	ARG
34	LL	138	ASP
34	LL	155	MET
34	LL	165	LYS
34	LL	177	LYS
34	LL	184	MET
34	LL	191	LEU
35	LM	33	GLN
35	LM	35	ARG
35	LM	37	LEU
35	LM	44	GLN
35	LM	48	GLN
35	LM	54	CYS
35	LM	66	HIS
35	LM	113	MET
35	LM	114	LYS
35	LM	136	LEU
36	LN	13	LYS
36	LN	15	GLN
36	LN	18	VAL
36	LN	31	ARG
36	LN	36	LEU
36	LN	80	THR
36	LN	126	THR
36	LN	147	ASP
36	LN	179	LYS
36	LN	182	HIS
36	LN	184	ILE
36	LN	187	SER
36	LN	189	ARG
36	LN	194	ARG
37	LO	27	VAL
37	LO	49	ARG
37	LO	52	LEU
37	LO	64	THR
37	LO	67	SER
37	LO	82	ARG
37	LO	180	GLN
38	LP	17	SER
38	LP	18	ARG
38	LP	20	SER
38	LP	24	VAL

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Mol	Chain	Res	Type
38	LP	29	THR
38	LP	39	MET
38	LP	42	ARG
38	LP	49	LYS
38	LP	57	CYS
38	LP	76	TRP
38	LP	80	GLN
38	LP	99	GLU
38	LP	100	SER
38	LP	111	SER
38	LP	125	MET
38	LP	126	ARG
38	LP	148	MET
38	LP	153	LYS
39	LQ	3	VAL
39	LQ	16	LYS
39	LQ	17	GLU
39	LQ	49	LYS
39	LQ	62	SER
39	LQ	81	VAL
39	LQ	85	THR
39	LQ	94	GLU
39	LQ	115	ARG
39	LQ	132	LYS
39	LQ	137	VAL
39	LQ	160	HIS
39	LQ	176	ARG
39	LQ	178	ARG
39	LQ	183	SER
39	LQ	187	LYS
40	LR	25	ASP
40	LR	27	ASN
40	LR	46	LYS
40	LR	59	SER
40	LR	65	LYS
40	LR	71	ARG
40	LR	119	MET
40	LR	162	ARG
40	LR	173	ARG
40	LR	186	LYS
41	LS	8	ARG
41	LS	50	GLN

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Mol	Chain	Res	Type
41	LS	63	TYR
41	LS	71	SER
41	LS	84	TYR
41	LS	85	ASP
41	LS	90	THR
41	LS	92	ASN
41	LS	99	ASP
41	LS	117	HIS
41	LS	162	GLN
42	LT	24	VAL
42	LT	45	MET
42	LT	63	ARG
42	LT	64	VAL
42	LT	83	LYS
42	LT	100	LYS
42	LT	143	THR
42	LT	147	GLU
42	LT	149	GLU
42	LT	158	PHE
43	LU	34	MET
43	LU	35	ASP
43	LU	46	ARG
43	LU	52	LYS
43	LU	62	THR
43	LU	82	TYR
43	LU	84	LYS
43	LU	94	ASN
43	LU	97	ARG
43	LU	108	GLU
44	LV	48	ARG
44	LV	69	LYS
44	LV	71	GLU
44	LV	92	ASP
44	LV	101	ASN
44	LV	127	ASP
45	LX	48	ARG
45	LX	72	ASP
45	LX	131	ASP
45	LX	138	VAL
46	LY	1	MET
46	LY	40	GLN
46	LY	56	GLN

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Mol	Chain	Res	Type
46	LY	73	VAL
46	LY	74	TYR
46	LY	117	LYS
46	LY	121	ARG
47	LZ	59	LYS
47	LZ	66	SER
47	LZ	70	SER
47	LZ	77	TYR
47	LZ	90	PRO
47	LZ	92	ASP
47	LZ	95	VAL
47	LZ	98	LYS
47	LZ	102	ARG
47	LZ	120	GLU
47	LZ	123	LYS
48	La	6	ARG
48	La	8	THR
48	La	92	LYS
48	La	119	LYS
48	La	147	VAL
49	Lb	23	LYS
49	Lb	33	LYS
49	Lb	40	LEU
49	Lb	51	LYS
49	Lb	55	LYS
49	Lb	58	GLN
49	Lb	116	LEU
50	Lc	17	ARG
50	Lc	23	LYS
50	Lc	63	TYR
50	Lc	94	LEU
50	Lc	101	ASP
50	Lc	106	ARG
51	Ld	57	MET
51	Ld	83	ARG
51	Ld	86	VAL
51	Ld	89	SER
51	Ld	98	SER
51	Ld	106	VAL
51	Ld	112	THR
51	Ld	116	ASN
51	Ld	121	ASN

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Mol	Chain	Res	Type
51	Ld	123	ASP
52	Le	11	LYS
52	Le	19	LYS
52	Le	32	LYS
52	Le	34	ASN
52	Le	45	VAL
52	Le	87	VAL
52	Le	113	GLU
52	Le	121	ARG
53	Lf	33	VAL
53	Lf	46	ARG
53	Lf	90	SER
53	Lf	108	SER
54	Lg	28	ASN
54	Lg	29	ARG
54	Lg	31	VAL
54	Lg	32	TYR
54	Lg	43	LYS
54	Lg	63	VAL
54	Lg	65	MET
54	Lg	74	VAL
54	Lg	88	ARG
54	Lg	89	ASP
54	Lg	92	LYS
54	Lg	106	VAL
54	Lg	110	GLN
55	Lh	25	LYS
55	Lh	76	LYS
55	Lh	84	ARG
55	Lh	95	LEU
55	Lh	102	LEU
55	Lh	104	THR
56	Li	16	LYS
56	Li	29	ARG
56	Li	53	TYR
56	Li	64	SER
56	Li	84	LYS
56	Li	97	MET
57	Lj	22	CYS
57	Lj	50	SER
57	Lj	64	MET
57	Lj	75	ARG

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Mol	Chain	Res	Type
58	Lk	10	ASP
58	Lk	14	THR
58	Lk	32	VAL
58	Lk	40	ARG
58	Lk	47	ILE
58	Lk	49	ASP
58	Lk	55	LYS
58	Lk	56	LEU
58	Lk	58	GLN
59	Ll	15	LYS
59	Ll	37	TYR
59	Ll	47	THR
60	Lm	88	LYS
60	Lm	91	CYS
60	Lm	126	LYS
61	Ln	9	ARG
61	Ln	13	LEU
61	Ln	16	LYS
61	Ln	18	ARG
61	Ln	20	MET
61	Ln	21	ARG
61	Ln	23	ARG
62	Lo	7	THR
62	Lo	15	CYS
62	Lo	23	VAL
62	Lo	31	ASP
62	Lo	36	GLN
62	Lo	43	ARG
62	Lo	46	SER
62	Lo	62	THR
62	Lo	72	CYS
62	Lo	77	CYS
62	Lo	79	SER
62	Lo	90	HIS
62	Lo	96	ASP
62	Lo	102	GLN
63	Lp	16	THR
63	Lp	24	LYS
63	Lp	61	MET
63	Lp	75	SER
63	Lp	84	ARG
64	Lr	18	ILE

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Mol	Chain	Res	Type
64	Lr	24	THR
64	Lr	58	LYS
64	Lr	71	ARG
64	Lr	79	ARG
64	Lr	84	LYS
64	Lr	101	LYS
64	Lr	119	ARG
65	Lz	7	ARG
65	Lz	10	LEU
65	Lz	34	LEU
65	Lz	39	LYS
65	Lz	56	LYS
65	Lz	67	VAL
65	Lz	105	LYS
65	Lz	118	LYS
65	Lz	122	ARG
65	Lz	148	VAL
65	Lz	156	LYS
65	Lz	165	LEU
65	Lz	175	THR
65	Lz	178	GLU
65	Lz	194	LEU
65	Lz	198	TRP
65	Lz	200	ASN
66	SR	6	THR
66	SR	10	LYS
66	SR	21	TYR
66	SR	32	LYS
66	SR	62	GLN
66	SR	78	ARG
66	SR	79	GLU
66	SR	81	ARG
66	SR	84	TYR
66	SR	94	GLU
66	SR	111	PHE
66	SR	118	GLN
66	SR	122	PRO
66	SR	126	MET
67	SD	1	MET
67	SD	34	TYR
67	SD	38	GLU
67	SD	48	ILE

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Mol	Chain	Res	Type
67	SD	54	ARG
67	SD	56	GLN
67	SD	61	GLU
67	SD	66	ILE
67	SD	75	LYS
67	SD	79	PHE
67	SD	90	LYS
67	SD	123	LEU
67	SD	125	PHE
67	SD	134	CYS
67	SD	135	GLU
67	SD	143	ARG
67	SD	150	MET
67	SD	151	LYS
67	SD	157	MET
67	SD	167	TYR
67	SD	168	VAL
67	SD	170	THR
67	SD	178	ARG
67	SD	189	MET
67	SD	212	GLU
67	SD	218	LEU
67	SD	221	THR
68	SF	26	ASP
68	SF	33	ILE
68	SF	45	TYR
68	SF	48	TYR
68	SF	52	SER
68	SF	56	TYR
68	SF	70	GLU
68	SF	97	PHE
68	SF	101	HIS
68	SF	103	LEU
68	SF	133	THR
68	SF	203	ASN
69	SK	3	MET
69	SK	16	PHE
69	SK	17	LYS
69	SK	25	LYS
69	SK	26	ASP
69	SK	32	HIS
69	SK	43	LEU

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Mol	Chain	Res	Type
69	SK	49	MET
69	SK	57	TYR
69	SK	60	GLU
69	SK	62	PHE
69	SK	71	LEU
69	SK	78	TYR
69	SK	83	LEU
69	SK	84	HIS
69	SK	88	GLU
70	SP	16	THR
70	SP	34	MET
70	SP	49	LEU
70	SP	58	LYS
70	SP	89	MET
70	SP	104	GLN
70	SP	110	GLU
70	SP	116	LEU
70	SP	127	LYS
71	SQ	11	GLN
71	SQ	13	PHE
71	SQ	24	HIS
71	SQ	27	ARG
71	SQ	51	LEU
71	SQ	71	ARG
71	SQ	86	GLN
71	SQ	92	LEU
71	SQ	106	LYS
71	SQ	118	THR
71	SQ	120	LEU
71	SQ	127	CYS
71	SQ	129	SER
71	SQ	142	GLN
71	SQ	145	TYR
72	SS	2	SER
72	SS	10	GLN
72	SS	38	ARG
72	SS	46	ARG
72	SS	49	ASP
72	SS	75	ARG
72	SS	77	TYR
72	SS	83	PHE
72	SS	99	LEU

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Mol	Chain	Res	Type
72	SS	111	LEU
72	SS	114	LEU
72	SS	115	LYS
72	SS	126	PHE
72	SS	142	ARG
73	ST	5	THR
73	ST	6	VAL
73	ST	8	ASP
73	ST	11	GLN
73	ST	16	ARG
73	ST	21	PHE
73	ST	23	LYS
73	ST	39	LEU
73	ST	41	LYS
73	ST	45	LEU
73	ST	56	ARG
73	ST	64	LEU
73	ST	65	TYR
73	ST	82	ARG
73	ST	88	MET
73	ST	96	SER
73	ST	111	LYS
74	SU	21	ARG
74	SU	26	SER
74	SU	30	LYS
74	SU	31	SER
74	SU	34	LYS
74	SU	41	ARG
74	SU	56	MET
74	SU	60	THR
74	SU	62	ARG
74	SU	67	LYS
74	SU	85	HIS
74	SU	113	GLU
75	Sc	18	LEU
75	Sc	28	THR
75	Sc	35	MET
75	Sc	44	ARG
75	Sc	50	VAL
75	Sc	55	VAL
75	Sc	57	THR
76	Sd	3	HIS

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Mol	Chain	Res	Type
76	Sd	4	GLN
76	Sd	8	TRP
76	Sd	16	GLN
76	Sd	26	ASN
76	Sd	32	ARG
76	Sd	36	LEU
76	Sd	43	PHE
76	Sd	49	ASP
76	Sd	55	LEU
77	Sg	8	ARG
77	Sg	12	LYS
77	Sg	20	GLN
77	Sg	27	PHE
77	Sg	37	ASP
77	Sg	39	THR
77	Sg	42	MET
77	Sg	60	ARG
77	Sg	65	PHE
77	Sg	79	LEU
77	Sg	100	ARG
77	Sg	104	HIS
77	Sg	122	SER
77	Sg	138	CYS
77	Sg	153	CYS
77	Sg	170	TRP
77	Sg	171	ASP
77	Sg	173	LEU
77	Sg	203	ASP
77	Sg	207	CYS
77	Sg	217	MET
77	Sg	220	ASP
77	Sg	221	LEU
77	Sg	245	ARG
77	Sg	247	TRP
77	Sg	259	TRP
77	Sg	298	LEU
77	Sg	299	PHE
78	SM	28	HIS
78	SM	33	ARG
78	SM	44	LYS
78	SM	60	MET
78	SM	69	CYS

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Mol	Chain	Res	Type
78	SM	81	ASP
78	SM	84	LYS
78	SM	110	VAL
78	SM	127	TYR
78	SM	131	LYS
79	SZ	47	LEU
79	SZ	55	TYR
79	SZ	60	LYS
79	SZ	65	TYR
79	SZ	74	SER
79	SZ	89	GLN
80	Sf	89	LYS
80	Sf	91	ASN
80	Sf	94	LYS
80	Sf	95	ARG
80	Sf	136	PHE
80	Sf	137	ASP
80	Sf	138	ARG
80	Sf	144	CYS
80	Sf	145	CYS
80	Sf	149	CYS
83	Ls	6	ARG
83	Ls	23	ASP
83	Ls	34	ASN
83	Ls	40	MET
83	Ls	46	SER
83	Ls	55	MET
83	Ls	62	ARG
83	Ls	90	PHE
83	Ls	99	ARG
83	Ls	101	MET
83	Ls	105	ASN
83	Ls	119	CYS
83	Ls	162	LYS
83	Ls	166	LYS
83	Ls	190	GLN
84	Lt	56	LEU
84	Lt	86	LYS
84	Lt	121	LEU
84	Lt	137	GLN
84	Lt	146	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (47)

such sidechains are listed below:

Mol	Chain	Res	Type
3	LW	79	GLN
4	SE	98	ASN
5	SI	44	HIS
6	SL	5	GLN
6	SL	13	GLN
6	SL	19	ASN
10	SY	15	ASN
10	SY	19	GLN
11	SA	24	HIS
11	SA	141	ASN
12	SB	118	GLN
12	SB	158	HIS
12	SB	202	GLN
19	SW	113	HIS
25	LB	186	ASN
25	LB	302	ASN
26	LC	50	GLN
27	LD	63	GLN
27	LD	244	HIS
28	LE	128	HIS
29	LF	241	ASN
30	LG	227	ASN
32	LI	73	ASN
32	LI	100	ASN
37	LO	14	HIS
37	LO	180	GLN
41	LS	92	ASN
48	La	120	GLN
57	Lj	28	HIS
64	Lr	70	GLN
67	SD	4	GLN
67	SD	56	GLN
67	SD	57	ASN
67	SD	74	GLN
67	SD	101	GLN
68	SF	83	ASN
68	SF	203	ASN
71	SQ	24	HIS
72	SS	17	ASN
72	SS	85	ASN
72	SS	97	GLN
74	SU	81	GLN

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Mol	Chain	Res	Type
76	Sd	3	HIS
77	Sg	56	GLN
83	Ls	105	ASN
84	Lt	66	ASN
84	Lt	156	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
21	L5	3705/3740 (99%)	860 (23%)	20 (0%)
22	L7	119/120 (99%)	12 (10%)	0
23	L8	155/156 (99%)	28 (18%)	1 (0%)
81	AP	69/71 (97%)	16 (23%)	0
82	PE	74/75 (98%)	34 (45%)	1 (1%)
85	S2	31/1740 (1%)	19 (61%)	1 (3%)
85	S3	1683/1740 (96%)	437 (25%)	6 (0%)
All	All	5836/7642 (76%)	1406 (24%)	29 (0%)

All (1406) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
21	L5	2	G
21	L5	25	A
21	L5	26	C
21	L5	30	C
21	L5	39	A
21	L5	42	A
21	L5	48	G
21	L5	56	A
21	L5	59	A
21	L5	64	A
21	L5	65	A
21	L5	69	A
21	L5	73	A
21	L5	91	G
21	L5	104	G
21	L5	108	A
21	L5	109	G
21	L5	110	C
21	L5	119	G
21	L5	120	A

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Mol	Chain	Res	Type
21	L5	132	G
21	L5	133	C
21	L5	134	G
21	L5	135	G
21	L5	144	G
21	L5	152	U
21	L5	159	C
21	L5	165	A
21	L5	170	C
21	L5	171	U
21	L5	172	C
21	L5	181	C
21	L5	183	C
21	L5	184	U
21	L5	185	C
21	L5	187	U
21	L5	188	G
21	L5	189	G
21	L5	200	U
21	L5	209	U
21	L5	213	G
21	L5	218	A
21	L5	220	C
21	L5	234	G
21	L5	237	G
21	L5	255	C
21	L5	256	G
21	L5	261	G
21	L5	264	C
21	L5	265	C
21	L5	266	C
21	L5	267	G
21	L5	275	C
21	L5	276	C
21	L5	280	G
21	L5	297	U
21	L5	306	A
21	L5	315	G
21	L5	316	U
21	L5	340	C
21	L5	350	C
21	L5	373	G

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Mol	Chain	Res	Type
21	L5	385	A
21	L5	387	G
21	L5	388	A
21	L5	396	A
21	L5	407	A
21	L5	409	G
21	L5	410	A
21	L5	411	G
21	L5	412	G
21	L5	413	G
21	L5	415	G
21	L5	431	G
21	L5	432	U
21	L5	440	U
21	L5	449	C
21	L5	450	G
21	L5	452	A
21	L5	453	G
21	L5	454	U
21	L5	456	C
21	L5	457	G
21	L5	465	G
21	L5	467	U
21	L5	468	U
21	L5	472	C
21	L5	485	C
21	L5	486	C
21	L5	489	C
21	L5	493	G
21	L5	494	U
21	L5	497	G
21	L5	498	C
21	L5	499	G
21	L5	501	C
21	L5	502	C
21	L5	503	C
21	L5	504	G
21	L5	505	G
21	L5	506	C
21	L5	509	A
21	L5	510	U
21	L5	512	U

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Mol	Chain	Res	Type
21	L5	513	U
21	L5	514	U
21	L5	517	C
21	L5	518	G
21	L5	519	C
21	L5	643	C
21	L5	646	G
21	L5	654	C
21	L5	655	C
21	L5	656	C
21	L5	657	C
21	L5	659	G
21	L5	665	C
21	L5	666	G
21	L5	667	A
21	L5	668	C
21	L5	669	C
21	L5	672	C
21	L5	673	C
21	L5	685	C
21	L5	686	A
21	L5	687	U
21	L5	696	C
21	L5	703	G
21	L5	704	C
21	L5	706	C
21	L5	708	G
21	L5	731	G
21	L5	738	C
21	L5	739	G
21	L5	742	G
21	L5	753	C
21	L5	754	U
21	L5	759	G
21	L5	760	G
21	L5	904	C
21	L5	905	C
21	L5	906	C
21	L5	910	G
21	L5	911	U
21	L5	912	G
21	L5	913	U

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Mol	Chain	Res	Type
21	L5	914	U
21	L5	915	A
21	L5	917	A
21	L5	918	G
21	L5	923	C
21	L5	924	C
21	L5	925	C
21	L5	932	A
21	L5	933	G
21	L5	935	A
21	L5	936	C
21	L5	937	U
21	L5	943	A
21	L5	944	A
21	L5	945	U
21	L5	959	G
21	L5	960	A
21	L5	961	G
21	L5	962	C
21	L5	965	G
21	L5	966	A
21	L5	967	C
21	L5	969	C
21	L5	970	G
21	L5	977	C
21	L5	982	U
21	L5	985	C
21	L5	988	C
21	L5	989	U
21	L5	990	C
21	L5	992	C
21	L5	993	G
21	L5	995	C
21	L5	996	G
21	L5	1048	G
21	L5	1049	C
21	L5	1050	C
21	L5	1051	G
21	L5	1070	G
21	L5	1071	C
21	L5	1072	C
21	L5	1075	G

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Mol	Chain	Res	Type
21	L5	1082	C
21	L5	1083	U
21	L5	1095	A
21	L5	1168	G
21	L5	1170	G
21	L5	1171	G
21	L5	1172	C
21	L5	1173	G
21	L5	1179	U
21	L5	1180	C
21	L5	1182	C
21	L5	1183	C
21	L5	1193	C
21	L5	1202	C
21	L5	1203	G
21	L5	1205	G
21	L5	1210	C
21	L5	1211	G
21	L5	1214	C
21	L5	1215	C
21	L5	1217	G
21	L5	1218	G
21	L5	1219	G
21	L5	1222	A
21	L5	1235	G
21	L5	1241	C
21	L5	1242	G
21	L5	1245	C
21	L5	1246	G
21	L5	1253	G
21	L5	1254	A
21	L5	1257	A
21	L5	1258	G
21	L5	1261	G
21	L5	1262	G
21	L5	1266	G
21	L5	1267	C
21	L5	1269	G
21	L5	1270	A
21	L5	1271	G
21	L5	1272	C
21	L5	1273	G

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Mol	Chain	Res	Type
21	L5	1274	A
21	L5	1275	G
21	L5	1277	G
21	L5	1280	C
21	L5	1284	G
21	L5	1287	G
21	L5	1294	A
21	L5	1295	C
21	L5	1296	G
21	L5	1301	C
21	L5	1312	A
21	L5	1314	C
21	L5	1326	A
21	L5	1344	C
21	L5	1354	A
21	L5	1358	G
21	L5	1359	G
21	L5	1365	C
21	L5	1367	C
21	L5	1370	G
21	L5	1381	U
21	L5	1387	A
21	L5	1394	G
21	L5	1397	A
21	L5	1404	G
21	L5	1405	C
21	L5	1407	C
21	L5	1409	C
21	L5	1410	U
21	L5	1411	C
21	L5	1414	C
21	L5	1415	G
21	L5	1417	C
21	L5	1420	A
21	L5	1435	G
21	L5	1437	C
21	L5	1439	C
21	L5	1441	C
21	L5	1443	A
21	L5	1446	C
21	L5	1447	C
21	L5	1452	A

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Mol	Chain	Res	Type
21	L5	1453	G
21	L5	1457	G
21	L5	1465	G
21	L5	1482	G
21	L5	1483	C
21	L5	1494	U
21	L5	1497	A
21	L5	1498	G
21	L5	1502	G
21	L5	1516	G
21	L5	1517	G
21	L5	1518	A
21	L5	1525	A
21	L5	1534	A
21	L5	1547	A
21	L5	1562	G
21	L5	1563	A
21	L5	1564	A
21	L5	1566	C
21	L5	1574	G
21	L5	1578	U
21	L5	1591	U
21	L5	1596	U
21	L5	1624	G
21	L5	1631	A
21	L5	1633	G
21	L5	1634	A
21	L5	1641	G
21	L5	1654	G
21	L5	1661	C
21	L5	1676	C
21	L5	1677	U
21	L5	1678	C
21	L5	1681	G
21	L5	1691	G
21	L5	1699	A
21	L5	1700	G
21	L5	1703	C
21	L5	1704	C
21	L5	1705	G
21	L5	1707	C
21	L5	1708	G

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Mol	Chain	Res	Type
21	L5	1709	C
21	L5	1718	C
21	L5	1734	G
21	L5	1741	G
21	L5	1742	A
21	L5	1750	G
21	L5	1753	G
21	L5	1757	U
21	L5	1758	G
21	L5	1760	G
21	L5	1761	G
21	L5	1762	C
21	L5	1763	C
21	L5	1764	G
21	L5	1765	A
21	L5	1766	A
21	L5	1767	A
21	L5	1768	C
21	L5	1770	A
21	L5	1787	A
21	L5	1804	A
21	L5	1806	G
21	L5	1810	G
21	L5	1815	G
21	L5	1820	C
21	L5	1821	G
21	L5	1822	U
21	L5	1836	G
21	L5	1837	A
21	L5	1842	G
21	L5	1843	A
21	L5	1855	G
21	L5	1869	G
21	L5	1882	U
21	L5	1892	A
21	L5	1897	A
21	L5	1918	U
21	L5	1919	G
21	L5	1920	C
21	L5	1921	C
21	L5	1922	G
21	L5	1925	G

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Mol	Chain	Res	Type
21	L5	1931	C
21	L5	1932	A
21	L5	1936	C
21	L5	1940	G
21	L5	1948	G
21	L5	1959	U
21	L5	1960	A
21	L5	1961	G
21	L5	1962	A
21	L5	1974	U
21	L5	1975	G
21	L5	1978	C
21	L5	1980	U
21	L5	1982	G
21	L5	1983	A
21	L5	1984	A
21	L5	1985	G
21	L5	1986	U
21	L5	1989	G
21	L5	1991	A
21	L5	1992	U
21	L5	1997	U
21	L5	1998	A
21	L5	2001	G
21	L5	2002	A
21	L5	2003	G
21	L5	2004	U
21	L5	2011	C
21	L5	2014	C
21	L5	2017	A
21	L5	2018	C
21	L5	2024	G
21	L5	2026	A
21	L5	2033	A
21	L5	2034	G
21	L5	2046	G
21	L5	2048	U
21	L5	2055	G
21	L5	2056	G
21	L5	2069	A
21	L5	2084	C
21	L5	2092	G

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Mol	Chain	Res	Type
21	L5	2093	A
21	L5	2095	A
21	L5	2096	G
21	L5	2097	U
21	L5	2098	G
21	L5	2102	G
21	L5	2103	G
21	L5	2106	G
21	L5	2107	C
21	L5	2108	G
21	L5	2112	G
21	L5	2250	C
21	L5	2252	G
21	L5	2253	A
21	L5	2255	C
21	L5	2256	C
21	L5	2257	C
21	L5	2258	C
21	L5	2259	G
21	L5	2260	C
21	L5	2262	G
21	L5	2263	A
21	L5	2289	C
21	L5	2300	A
21	L5	2301	G
21	L5	2306	G
21	L5	2313	A
21	L5	2332	A
21	L5	2333	G
21	L5	2348	G
21	L5	2351	C
21	L5	2360	A
21	L5	2395	A
21	L5	2397	G
21	L5	2398	U
21	L5	2402	G
21	L5	2404	A
21	L5	2410	C
21	L5	2411	C
21	L5	2412	A
21	L5	2417	A
21	L5	2421	G

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Mol	Chain	Res	Type
21	L5	2425	U
21	L5	2441	C
21	L5	2450	G
21	L5	2453	A
21	L5	2464	C
21	L5	2465	C
21	L5	2474	G
21	L5	2475	G
21	L5	2478	C
21	L5	2479	G
21	L5	2483	G
21	L5	2484	A
21	L5	2485	U
21	L5	2487	G
21	L5	2488	C
21	L5	2489	C
21	L5	2490	U
21	L5	2491	C
21	L5	2494	U
21	L5	2503	G
21	L5	2504	C
21	L5	2505	C
21	L5	2506	G
21	L5	2513	A
21	L5	2519	U
21	L5	2520	C
21	L5	2529	A
21	L5	2537	A
21	L5	2544	G
21	L5	2546	G
21	L5	2547	G
21	L5	2554	U
21	L5	2555	G
21	L5	2557	G
21	L5	2559	G
21	L5	2560	C
21	L5	2565	A
21	L5	2568	C
21	L5	2583	C
21	L5	2587	A
21	L5	2589	C
21	L5	2627	C

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Mol	Chain	Res	Type
21	L5	2652	G
21	L5	2653	C
21	L5	2662	G
21	L5	2664	G
21	L5	2669	C
21	L5	2675	G
21	L5	2676	A
21	L5	2686	G
21	L5	2687	U
21	L5	2694	G
21	L5	2695	A
21	L5	2696	A
21	L5	2703	G
21	L5	2707	U
21	L5	2708	U
21	L5	2710	C
21	L5	2711	G
21	L5	2721	G
21	L5	2724	G
21	L5	2725	A
21	L5	2726	G
21	L5	2729	C
21	L5	2739	C
21	L5	2742	G
21	L5	2743	A
21	L5	2746	A
21	L5	2761	U
21	L5	2763	U
21	L5	2764	A
21	L5	2769	U
21	L5	2770	C
21	L5	2787	A
21	L5	2788	U
21	L5	2790	U
21	L5	2814	C
21	L5	2826	U
21	L5	2827	G
21	L5	2846	G
21	L5	2848	G
21	L5	2855	G
21	L5	2867	C
21	L5	2877	G

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Mol	Chain	Res	Type
21	L5	2892	C
21	L5	2894	A
21	L5	2899	C
21	L5	2900	U
21	L5	2902	G
21	L5	2903	G
21	L5	2904	U
21	L5	2905	C
21	L5	2906	G
21	L5	2908	U
21	L5	3587	C
21	L5	3590	G
21	L5	3591	C
21	L5	3594	C
21	L5	3595	U
21	L5	3596	A
21	L5	3597	G
21	L5	3599	A
21	L5	3605	C
21	L5	3615	G
21	L5	3618	C
21	L5	3626	G
21	L5	3630	A
21	L5	3635	A
21	L5	3644	U
21	L5	3646	A
21	L5	3648	A
21	L5	3662	A
21	L5	3664	G
21	L5	3670	C
21	L5	3673	C
21	L5	3674	G
21	L5	3685	C
21	L5	3698	G
21	L5	3710	G
21	L5	3711	A
21	L5	3713	U
21	L5	3726	A
21	L5	3727	A
21	L5	3748	A
21	L5	3750	G
21	L5	3756	A

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Mol	Chain	Res	Type
21	L5	3759	A
21	L5	3772	U
21	L5	3773	U
21	L5	3774	A
21	L5	3776	G
21	L5	3777	G
21	L5	3783	A
21	L5	3786	U
21	L5	3802	U
21	L5	3811	G
21	L5	3812	C
21	L5	3814	U
21	L5	3817	A
21	L5	3818	U
21	L5	3819	G
21	L5	3823	G
21	L5	3838	U
21	L5	3839	G
21	L5	3840	U
21	L5	3841	C
21	L5	3867	A
21	L5	3876	A
21	L5	3877	A
21	L5	3878	C
21	L5	3879	G
21	L5	3885	G
21	L5	3887	C
21	L5	3890	A
21	L5	3892	U
21	L5	3897	G
21	L5	3901	A
21	L5	3906	A
21	L5	3907	G
21	L5	3908	A
21	L5	3915	U
21	L5	3923	A
21	L5	3926	C
21	L5	3938	G
21	L5	3939	G
21	L5	3943	A
21	L5	3944	G
21	L5	3947	A

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Mol	Chain	Res	Type
21	L5	3948	C
21	L5	3949	A
21	L5	3950	U
21	L5	3953	G
21	L5	3955	G
21	L5	3956	G
21	L5	3957	U
21	L5	3959	U
21	L5	3960	A
21	L5	3962	A
21	L5	3963	A
21	L5	3965	A
21	L5	3966	A
21	L5	3967	G
21	L5	3968	U
21	L5	3969	G
21	L5	3970	G
21	L5	3972	A
21	L5	3973	G
21	L5	3974	G
21	L5	3975	C
21	L5	3977	C
21	L5	4034	G
21	L5	4036	G
21	L5	4038	C
21	L5	4039	G
21	L5	4041	C
21	L5	4042	G
21	L5	4043	G
21	L5	4044	U
21	L5	4046	A
21	L5	4047	A
21	L5	4048	A
21	L5	4049	U
21	L5	4052	C
21	L5	4053	A
21	L5	4054	C
21	L5	4055	U
21	L5	4056	A
21	L5	4057	C
21	L5	4058	U
21	L5	4059	C

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Mol	Chain	Res	Type
21	L5	4060	U
21	L5	4061	G
21	L5	4062	A
21	L5	4063	U
21	L5	4064	C
21	L5	4065	G
21	L5	4066	U
21	L5	4068	U
21	L5	4069	U
21	L5	4076	G
21	L5	4084	G
21	L5	4092	G
21	L5	4093	G
21	L5	4095	G
21	L5	4096	C
21	L5	4097	G
21	L5	4099	G
21	L5	4100	C
21	L5	4101	C
21	L5	4102	C
21	L5	4103	C
21	L5	4104	G
21	L5	4108	G
21	L5	4110	C
21	L5	4111	U
21	L5	4114	C
21	L5	4115	G
21	L5	4116	C
21	L5	4117	U
21	L5	4119	C
21	L5	4121	G
21	L5	4122	G
21	L5	4127	A
21	L5	4134	C
21	L5	4138	C
21	L5	4139	G
21	L5	4140	C
21	L5	4141	G
21	L5	4142	C
21	L5	4143	G
21	L5	4144	C
21	L5	4146	G

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Mol	Chain	Res	Type
21	L5	4149	C
21	L5	4160	C
21	L5	4162	C
21	L5	4163	U
21	L5	4170	A
21	L5	4183	G
21	L5	4184	G
21	L5	4191	G
21	L5	4196	G
21	L5	4197	G
21	L5	4201	G
21	L5	4203	A
21	L5	4212	A
21	L5	4222	G
21	L5	4229	U
21	L5	4232	U
21	L5	4233	A
21	L5	4237	C
21	L5	4251	A
21	L5	4254	G
21	L5	4255	A
21	L5	4257	A
21	L5	4265	U
21	L5	4273	A
21	L5	4291	G
21	L5	4297	G
21	L5	4304	A
21	L5	4305	G
21	L5	4306	U
21	L5	4313	A
21	L5	4314	C
21	L5	4329	G
21	L5	4330	G
21	L5	4332	C
21	L5	4339	A
21	L5	4349	C
21	L5	4354	U
21	L5	4373	G
21	L5	4376	A
21	L5	4377	G
21	L5	4378	A
21	L5	4379	A

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Mol	Chain	Res	Type
21	L5	4380	A
21	L5	4387	C
21	L5	4394	A
21	L5	4398	C
21	L5	4421	C
21	L5	4422	A
21	L5	4426	C
21	L5	4436	U
21	L5	4448	G
21	L5	4449	A
21	L5	4450	U
21	L5	4453	C
21	L5	4464	A
21	L5	4466	C
21	L5	4488	A
21	L5	4500	U
21	L5	4512	U
21	L5	4513	A
21	L5	4518	A
21	L5	4524	G
21	L5	4545	G
21	L5	4548	A
21	L5	4549	G
21	L5	4557	U
21	L5	4560	C
21	L5	4567	G
21	L5	4572	U
21	L5	4573	G
21	L5	4575	G
21	L5	4584	A
21	L5	4589	A
21	L5	4590	A
21	L5	4600	G
21	L5	4601	U
21	L5	4617	G
21	L5	4636	U
21	L5	4637	G
21	L5	4648	A
21	L5	4652	G
21	L5	4656	A
21	L5	4659	G
21	L5	4670	C

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Mol	Chain	Res	Type
21	L5	4672	A
21	L5	4687	A
21	L5	4694	G
21	L5	4695	C
21	L5	4700	A
21	L5	4708	A
21	L5	4709	U
21	L5	4719	G
21	L5	4720	C
21	L5	4732	G
21	L5	4733	C
21	L5	4734	A
21	L5	4735	G
21	L5	4740	G
21	L5	4741	C
21	L5	4742	G
21	L5	4745	G
21	L5	4754	G
21	L5	4757	C
21	L5	4759	C
21	L5	4761	G
21	L5	4765	G
21	L5	4771	C
21	L5	4772	C
21	L5	4773	C
21	L5	4775	C
21	L5	4776	G
21	L5	4860	G
21	L5	4862	G
21	L5	4865	C
21	L5	4870	G
21	L5	4871	C
21	L5	4874	A
21	L5	4875	G
21	L5	4877	G
21	L5	4882	U
21	L5	4883	C
21	L5	4889	G
21	L5	4895	C
21	L5	4896	G
21	L5	4897	G
21	L5	4900	C

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Mol	Chain	Res	Type
21	L5	4901	G
21	L5	4902	C
21	L5	4910	G
21	L5	4912	G
21	L5	4914	C
21	L5	4922	C
21	L5	4923	C
21	L5	4924	C
21	L5	4925	U
21	L5	4926	C
21	L5	4927	G
21	L5	4928	C
21	L5	4934	A
21	L5	4941	G
21	L5	4943	A
21	L5	4944	C
21	L5	4951	G
21	L5	4960	G
21	L5	4976	U
21	L5	4985	U
21	L5	4988	U
21	L5	4989	U
21	L5	4990	C
21	L5	4991	U
21	L5	5009	G
21	L5	5014	A
21	L5	5017	G
21	L5	5024	C
21	L5	5025	C
21	L5	5026	U
21	L5	5027	C
21	L5	5028	G
21	L5	5029	C
21	L5	5030	U
21	L5	5032	C
21	L5	5034	A
21	L5	5041	G
21	L5	5050	C
21	L5	5054	C
21	L5	5055	G
21	L5	5061	A
21	L5	5069	U

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Mol	Chain	Res	Type
22	L7	7	G
22	L7	24	C
22	L7	33	U
22	L7	38	U
22	L7	53	U
22	L7	54	A
22	L7	63	C
22	L7	64	G
22	L7	66	G
22	L7	100	A
22	L7	109	U
22	L7	111	C
23	L8	34	U
23	L8	35	C
23	L8	48	A
23	L8	49	G
23	L8	59	A
23	L8	62	A
23	L8	63	U
23	L8	80	A
23	L8	82	A
23	L8	83	C
23	L8	84	A
23	L8	85	U
23	L8	86	U
23	L8	87	G
23	L8	103	A
23	L8	105	C
23	L8	110	U
23	L8	111	U
23	L8	112	G
23	L8	114	G
23	L8	123	U
23	L8	124	U
23	L8	125	C
23	L8	126	C
23	L8	127	U
23	L8	128	C
23	L8	151	G
23	L8	156	U
81	AP	8	U
81	AP	9	A

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Mol	Chain	Res	Type
81	AP	10	G
81	AP	11	U
81	AP	13	U
81	AP	14	A
81	AP	21	A
81	AP	26	G
81	AP	47	U
81	AP	48	C
81	AP	49	C
81	AP	58	A
81	AP	59	A
81	AP	61	C
81	AP	64	G
81	AP	70	A
82	PE	4	C
82	PE	5	G
82	PE	8	U
82	PE	9	A
82	PE	10	G
82	PE	11	C
82	PE	13	C
82	PE	16	C
82	PE	19	G
82	PE	20	U
82	PE	21	A
82	PE	26	A
82	PE	31	A
82	PE	32	C
82	PE	35	U
82	PE	37	A
82	PE	38	A
82	PE	40	C
82	PE	46	G
82	PE	47	U
82	PE	48	C
82	PE	49	C
82	PE	50	A
82	PE	55	U
82	PE	56	C
82	PE	58	A
82	PE	61	C
82	PE	63	C

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Mol	Chain	Res	Type
82	PE	65	G
82	PE	67	U
82	PE	69	G
82	PE	70	G
82	PE	72	C
82	PE	76	A
85	S2	531	A
85	S2	532	C
85	S2	533	A
85	S2	534	G
85	S2	535	G
85	S2	536	A
85	S2	537	C
85	S2	543	C
85	S2	544	G
85	S2	546	G
85	S2	548	C
85	S2	551	U
85	S2	553	U
85	S2	554	A
85	S2	555	A
85	S2	556	U
85	S2	557	U
85	S2	558	G
85	S2	559	G
85	S3	2	A
85	S3	13	C
85	S3	25	A
85	S3	33	G
85	S3	41	G
85	S3	42	A
85	S3	44	U
85	S3	45	A
85	S3	46	A
85	S3	49	C
85	S3	56	G
85	S3	58	C
85	S3	59	U
85	S3	64	A
85	S3	65	C
85	S3	66	G
85	S3	67	C

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Mol	Chain	Res	Type
85	S3	68	A
85	S3	72	C
85	S3	73	C
85	S3	74	G
85	S3	76	U
85	S3	92	A
85	S3	103	A
85	S3	113	G
85	S3	115	U
85	S3	116	U
85	S3	126	G
85	S3	130	G
85	S3	139	C
85	S3	143	U
85	S3	149	A
85	S3	158	A
85	S3	160	U
85	S3	162	C
85	S3	163	U
85	S3	170	A
85	S3	175	A
85	S3	182	C
85	S3	190	G
85	S3	192	C
85	S3	196	C
85	S3	197	U
85	S3	198	U
85	S3	200	G
85	S3	202	G
85	S3	203	G
85	S3	204	G
85	S3	206	G
85	S3	207	G
85	S3	208	G
85	S3	211	G
85	S3	212	C
85	S3	214	U
85	S3	220	U
85	S3	291	G
85	S3	292	A
85	S3	294	U
85	S3	295	C

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Mol	Chain	Res	Type
85	S3	298	G
85	S3	301	A
85	S3	303	C
85	S3	305	U
85	S3	306	C
85	S3	307	G
85	S3	308	G
85	S3	309	G
85	S3	310	C
85	S3	311	C
85	S3	312	G
85	S3	316	G
85	S3	318	A
85	S3	319	C
85	S3	322	C
85	S3	323	C
85	S3	324	C
85	S3	325	C
85	S3	326	C
85	S3	328	U
85	S3	329	G
85	S3	332	G
85	S3	338	G
85	S3	339	A
85	S3	340	C
85	S3	347	G
85	S3	351	G
85	S3	360	A
85	S3	361	U
85	S3	362	C
85	S3	364	A
85	S3	368	U
85	S3	370	G
85	S3	374	G
85	S3	385	G
85	S3	386	C
85	S3	407	G
85	S3	408	A
85	S3	409	C
85	S3	421	G
85	S3	426	A
85	S3	437	G

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Mol	Chain	Res	Type
85	S3	448	A
85	S3	449	A
85	S3	450	C
85	S3	452	G
85	S3	464	A
85	S3	465	A
85	S3	471	G
85	S3	472	C
85	S3	473	A
85	S3	474	G
85	S3	476	A
85	S3	487	U
85	S3	488	U
85	S3	492	C
85	S3	493	A
85	S3	496	C
85	S3	497	C
85	S3	502	C
85	S3	503	C
85	S3	516	A
85	S3	517	C
85	S3	563	G
85	S3	564	A
85	S3	566	U
85	S3	576	A
85	S3	581	U
85	S3	583	A
85	S3	587	A
85	S3	589	G
85	S3	590	A
85	S3	591	U
85	S3	604	A
85	S3	607	U
85	S3	608	C
85	S3	614	C
85	S3	617	G
85	S3	622	C
85	S3	623	G
85	S3	628	A
85	S3	629	A
85	S3	631	U
85	S3	638	C

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Mol	Chain	Res	Type
85	S3	643	A
85	S3	644	G
85	S3	655	A
85	S3	660	C
85	S3	662	G
85	S3	664	A
85	S3	668	A
85	S3	669	A
85	S3	671	A
85	S3	672	A
85	S3	673	G
85	S3	684	G
85	S3	688	U
85	S3	689	U
85	S3	692	G
85	S3	693	A
85	S3	694	G
85	S3	695	C
85	S3	696	G
85	S3	697	G
85	S3	698	G
85	S3	732	U
85	S3	733	C
85	S3	734	C
85	S3	736	C
85	S3	738	C
85	S3	749	U
85	S3	750	C
85	S3	751	G
85	S3	752	G
85	S3	753	C
85	S3	788	G
85	S3	789	G
85	S3	791	C
85	S3	792	C
85	S3	793	G
85	S3	798	G
85	S3	799	U
85	S3	821	G
85	S3	822	U
85	S3	823	U
85	S3	824	C

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Mol	Chain	Res	Type
85	S3	827	A
85	S3	830	A
85	S3	834	C
85	S3	835	C
85	S3	836	G
85	S3	837	A
85	S3	838	G
85	S3	839	C
85	S3	841	G
85	S3	842	C
85	S3	844	U
85	S3	847	A
85	S3	870	A
85	S3	871	U
85	S3	873	G
85	S3	874	G
85	S3	877	C
85	S3	878	G
85	S3	882	U
85	S3	887	U
85	S3	888	U
85	S3	889	U
85	S3	891	G
85	S3	894	G
85	S3	896	U
85	S3	897	U
85	S3	898	U
85	S3	899	U
85	S3	900	C
85	S3	901	G
85	S3	903	A
85	S3	913	A
85	S3	914	U
85	S3	917	U
85	S3	919	A
85	S3	920	A
85	S3	933	G
85	S3	934	G
85	S3	949	G
85	S3	955	A
85	S3	956	G
85	S3	968	U

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Mol	Chain	Res	Type
85	S3	971	G
85	S3	972	A
85	S3	978	G
85	S3	988	C
85	S3	990	A
85	S3	991	G
85	S3	992	A
85	S3	999	G
85	S3	1001	A
85	S3	1008	A
85	S3	1023	A
85	S3	1027	A
85	S3	1028	A
85	S3	1042	A
85	S3	1045	U
85	S3	1060	A
85	S3	1061	U
85	S3	1062	A
85	S3	1067	C
85	S3	1083	A
85	S3	1085	C
85	S3	1088	U
85	S3	1109	C
85	S3	1113	A
85	S3	1114	U
85	S3	1115	U
85	S3	1116	C
85	S3	1118	C
85	S3	1119	A
85	S3	1121	G
85	S3	1126	G
85	S3	1132	C
85	S3	1133	A
85	S3	1138	C
85	S3	1139	C
85	S3	1148	A
85	S3	1150	A
85	S3	1153	C
85	S3	1154	U
85	S3	1155	U
85	S3	1195	A
85	S3	1207	G

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Mol	Chain	Res	Type
85	S3	1208	A
85	S3	1215	C
85	S3	1216	C
85	S3	1217	A
85	S3	1220	A
85	S3	1224	G
85	S3	1227	G
85	S3	1237	C
85	S3	1240	A
85	S3	1242	U
85	S3	1243	U
85	S3	1251	A
85	S3	1253	A
85	S3	1256	G
85	S3	1257	G
85	S3	1259	A
85	S3	1263	U
85	S3	1264	C
85	S3	1274	G
85	S3	1275	G
85	S3	1281	G
85	S3	1283	C
85	S3	1284	A
85	S3	1286	G
85	S3	1287	A
85	S3	1290	G
85	S3	1294	G
85	S3	1295	A
85	S3	1301	A
85	S3	1302	G
85	S3	1303	C
85	S3	1308	U
85	S3	1315	U
85	S3	1333	U
85	S3	1342	U
85	S3	1348	G
85	S3	1363	C
85	S3	1371	U
85	S3	1372	U
85	S3	1376	A
85	S3	1378	A
85	S3	1401	A

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Mol	Chain	Res	Type
85	S3	1402	A
85	S3	1404	U
85	S3	1408	U
85	S3	1411	G
85	S3	1414	A
85	S3	1415	C
85	S3	1419	C
85	S3	1420	G
85	S3	1421	A
85	S3	1422	G
85	S3	1423	C
85	S3	1424	G
85	S3	1428	G
85	S3	1433	C
85	S3	1434	C
85	S3	1435	C
85	S3	1436	C
85	S3	1438	A
85	S3	1442	U
85	S3	1449	G
85	S3	1454	A
85	S3	1463	U
85	S3	1466	G
85	S3	1468	C
85	S3	1478	U
85	S3	1489	A
85	S3	1490	G
85	S3	1494	U
85	S3	1495	G
85	S3	1497	G
85	S3	1498	A
85	S3	1507	G
85	S3	1508	A
85	S3	1521	C
85	S3	1522	A
85	S3	1533	A
85	S3	1535	U
85	S3	1536	G
85	S3	1537	A
85	S3	1544	C
85	S3	1552	G
85	S3	1553	C

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Mol	Chain	Res	Type
85	S3	1556	A
85	S3	1560	U
85	S3	1572	C
85	S3	1573	G
85	S3	1575	G
85	S3	1578	U
85	S3	1579	A
85	S3	1580	A
85	S3	1581	C
85	S3	1582	C
85	S3	1584	G
85	S3	1585	U
85	S3	1586	U
85	S3	1587	G
85	S3	1588	A
85	S3	1594	A
85	S3	1601	A
85	S3	1603	G
85	S3	1604	G
85	S3	1606	G
85	S3	1621	U
85	S3	1623	A
85	S3	1630	A
85	S3	1633	A
85	S3	1634	A
85	S3	1637	A
85	S3	1639	G
85	S3	1640	A
85	S3	1646	C
85	S3	1648	G
85	S3	1654	G
85	S3	1663	A
85	S3	1665	G
85	S3	1671	G
85	S3	1683	C
85	S3	1694	U
85	S3	1696	C
85	S3	1699	A
85	S3	1712	A
85	S3	1715	A
85	S3	1722	G
85	S3	1726	G

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Mol	Chain	Res	Type
85	S3	1729	U
85	S3	1742	C
85	S3	1743	G
85	S3	1744	G
85	S3	1745	A
85	S3	1752	C
85	S3	1753	C
85	S3	1754	G
85	S3	1755	C
85	S3	1756	C
85	S3	1757	G
85	S3	1758	G
85	S3	1759	G
85	S3	1761	U
85	S3	1771	G
85	S3	1772	C
85	S3	1773	C
85	S3	1774	C
85	S3	1777	G
85	S3	1782	G
85	S3	1783	C
85	S3	1784	G
85	S3	1785	C
85	S3	1787	G
85	S3	1798	C
85	S3	1809	A
85	S3	1810	U
85	S3	1812	U
85	S3	1822	A
85	S3	1823	A
85	S3	1825	A
85	S3	1826	G
85	S3	1835	A
85	S3	1838	U
85	S3	1849	G
85	S3	1851	A
85	S3	1852	C
85	S3	1861	G
85	S3	1862	G
85	S3	1863	A
85	S3	1864	U
85	S3	1865	C

All (29) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
21	L5	406	C
21	L5	914	U
21	L5	1049	C
21	L5	1082	C
21	L5	1633	G
21	L5	1977	C
21	L5	2033	A
21	L5	2055	G
21	L5	2416	G
21	L5	2675	G
21	L5	2760	G
21	L5	2786	C
21	L5	3614	G
21	L5	3673	C
21	L5	3948	C
21	L5	4061	G
21	L5	4420	U
21	L5	4600	G
21	L5	4699	U
21	L5	4913	G
23	L8	86	U
82	PE	18	U
85	S2	531	A
85	S3	291	G
85	S3	420	G
85	S3	563	G
85	S3	688	U
85	S3	1434	C
85	S3	1781	A

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

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 261 ligands modelled in this entry, 261 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
21	L5	11
85	S3	5
49	Lb	1
28	LE	1
3	LW	1
81	AP	1
84	Lt	1
13	SH	1
32	LI	1
82	PE	1
19	SW	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	Lb	76:VAL	C	89:VAL	N	34.29
1	S3	753:C	O3'	785:C	P	28.14
1	LE	76:ALA	C	88:VAL	N	24.31
1	L5	2910:G	O3'	3584:C	P	20.73
1	LW	63:GLN	C	70:LYS	N	17.66
1	L5	760:G	O3'	903:C	P	17.01

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	L5	519:C	O3'	642:G	P	16.73
1	L5	4776:G	O3'	4858:C	P	16.06
1	S3	698:G	O3'	730:C	P	15.54
1	L5	2112:G	O3'	2249:C	P	14.54
1	L5	996:G	O3'	1047:C	P	13.90
1	S3	739:C	O3'	746:C	P	13.54
1	L5	1222:A	O3'	1234:G	P	11.66
1	AP	15:G	O3'	18:G	P	11.31
1	Lt	87:GLU	C	104:ILE	N	11.27
1	SH	107:LYS	C	111:LYS	N	9.94
1	L5	1051:G	O3'	1064:G	P	8.06
1	S3	225:G	O3'	287:U	P	7.71
1	LI	102:MET	C	114:GLY	N	7.27
1	L5	1709:C	O3'	1714:C	P	6.59
1	PE	16:C	O3'	18:U	P	6.19
1	L5	1100:U	O3'	1167:C	P	5.78
1	L5	3985:C	O3'	4018:G	P	5.49
1	S3	1210:G	O3'	1211:G	P	3.05
1	SW	28:ARG	C	29:PRO	N	1.65

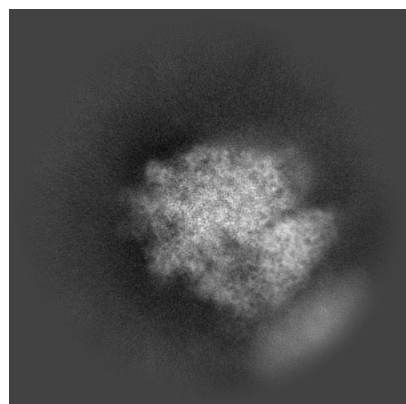
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-44017. These allow visual inspection of the internal detail of the map and identification of artifacts.

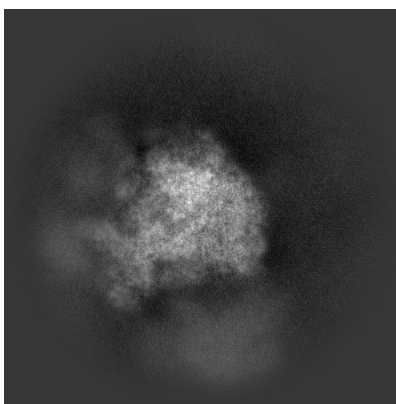
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

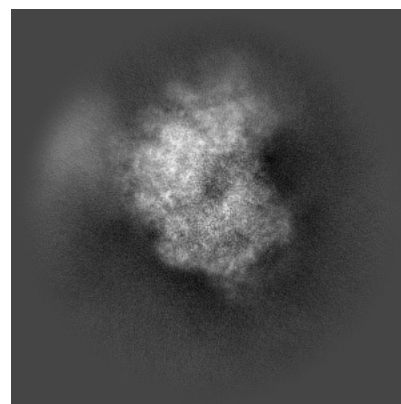
6.1.1 Primary map



X

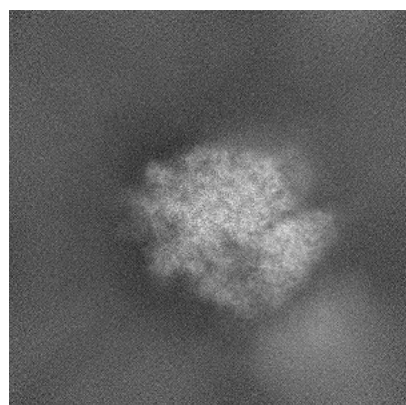


Y

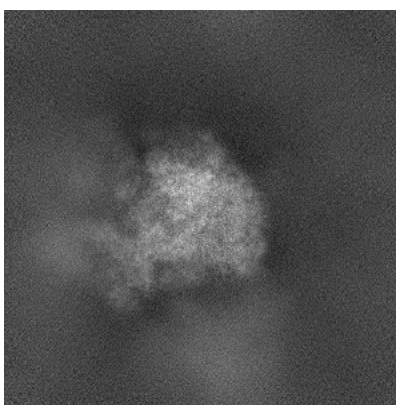


Z

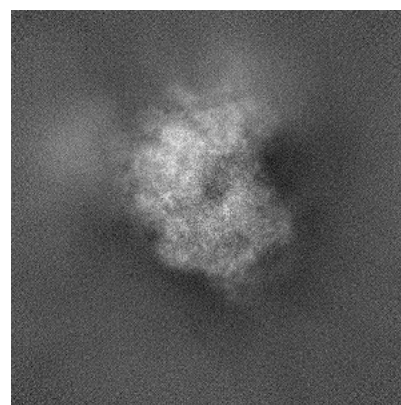
6.1.2 Raw map



X



Y

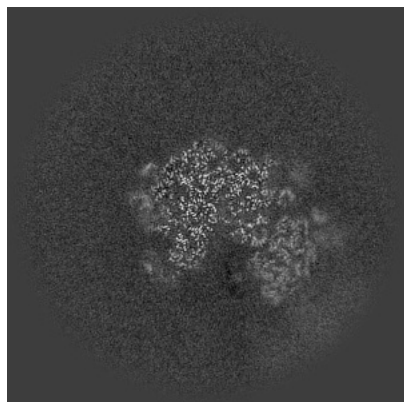


Z

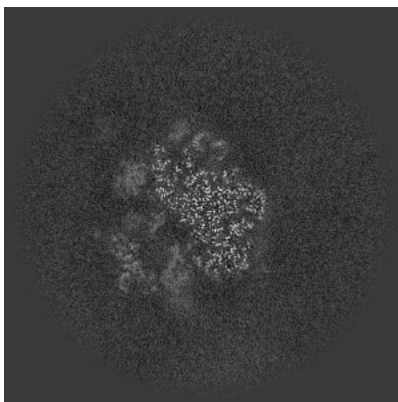
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

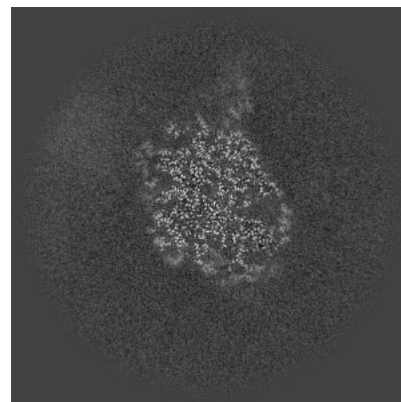
6.2.1 Primary map



X Index: 256

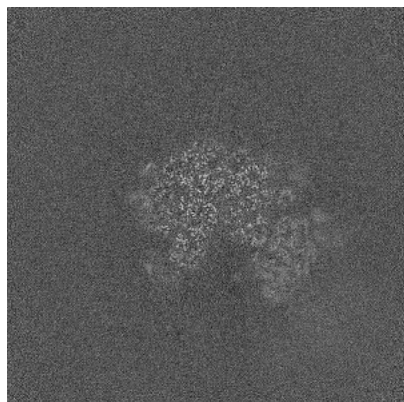


Y Index: 256

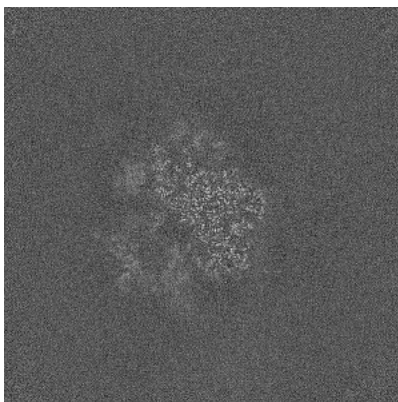


Z Index: 256

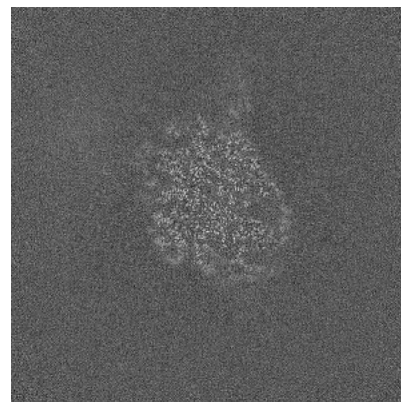
6.2.2 Raw map



X Index: 256



Y Index: 256

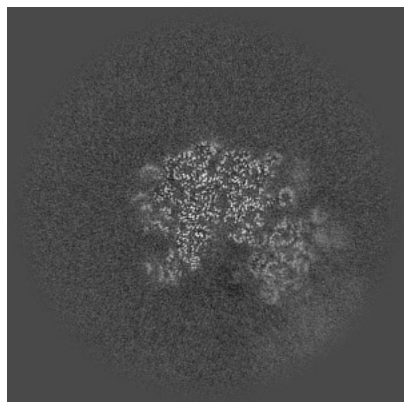


Z Index: 256

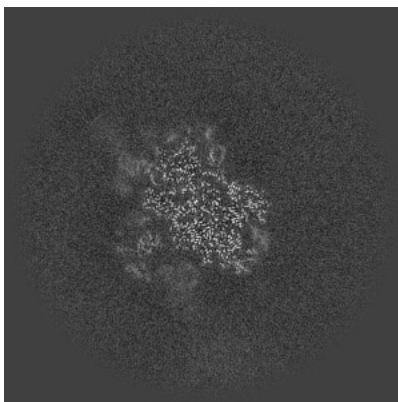
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

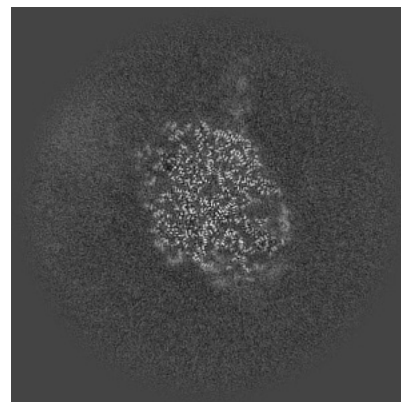
6.3.1 Primary map



X Index: 253

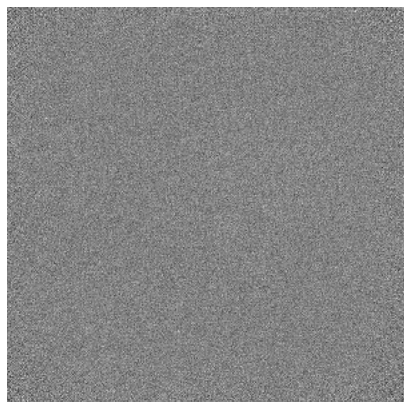


Y Index: 243

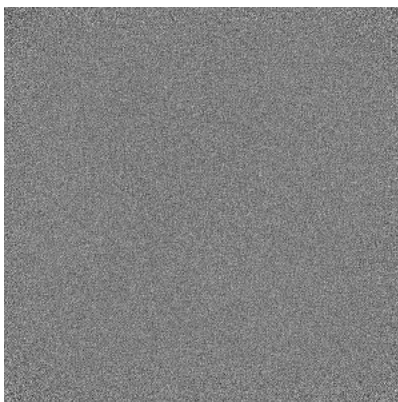


Z Index: 258

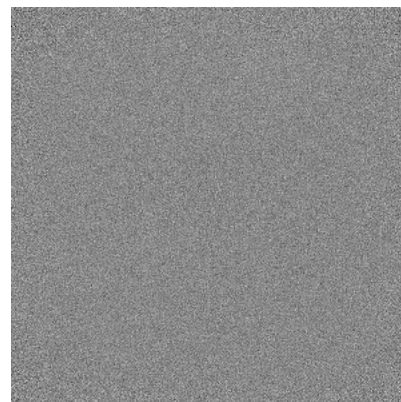
6.3.2 Raw map



X Index: 0



Y Index: 0

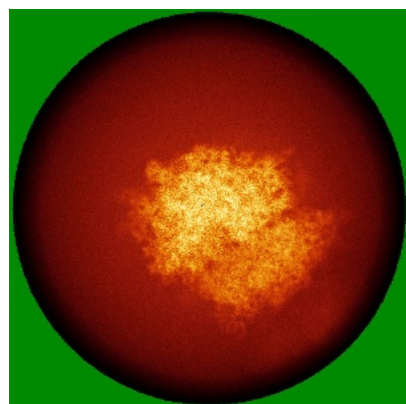


Z Index: 0

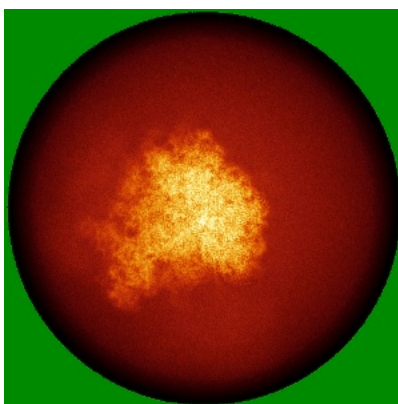
The images above show the largest variance slices of the map in three orthogonal directions.

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

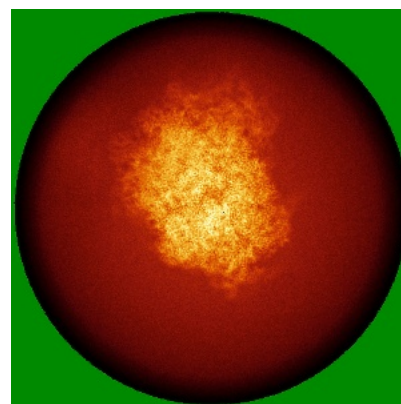
6.4.1 Primary map



X

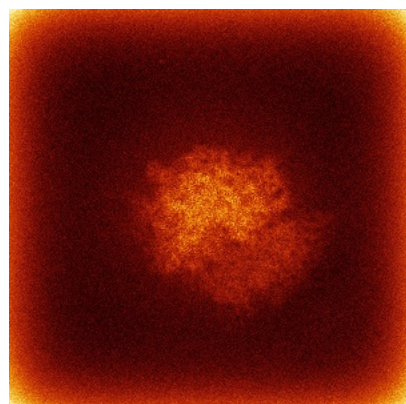


Y

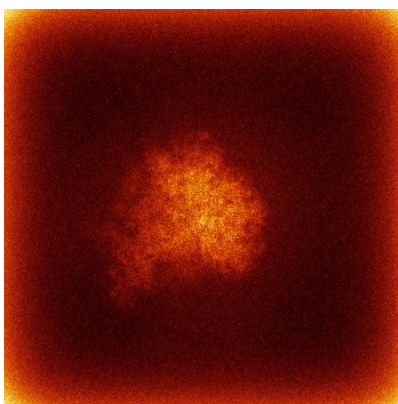


Z

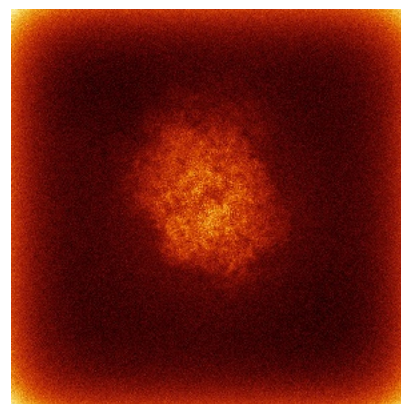
6.4.2 Raw map



X



Y

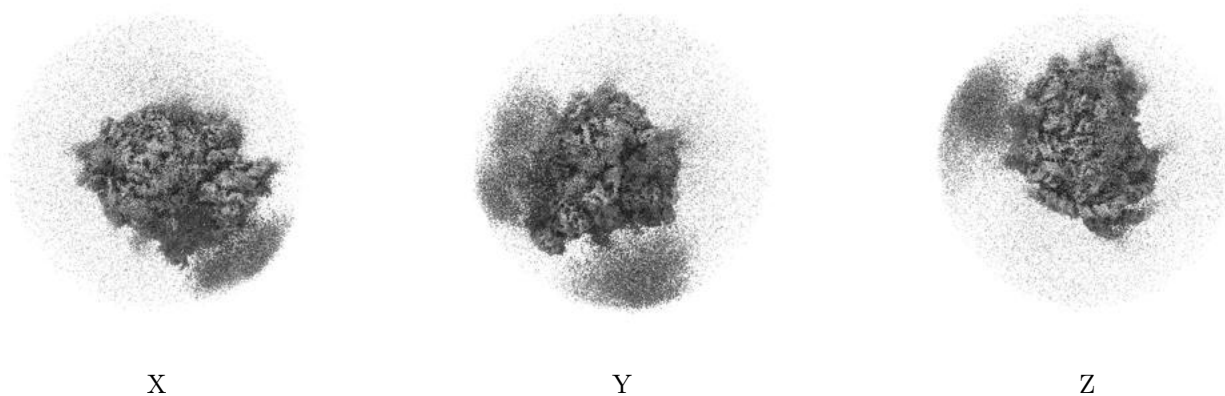


Z

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

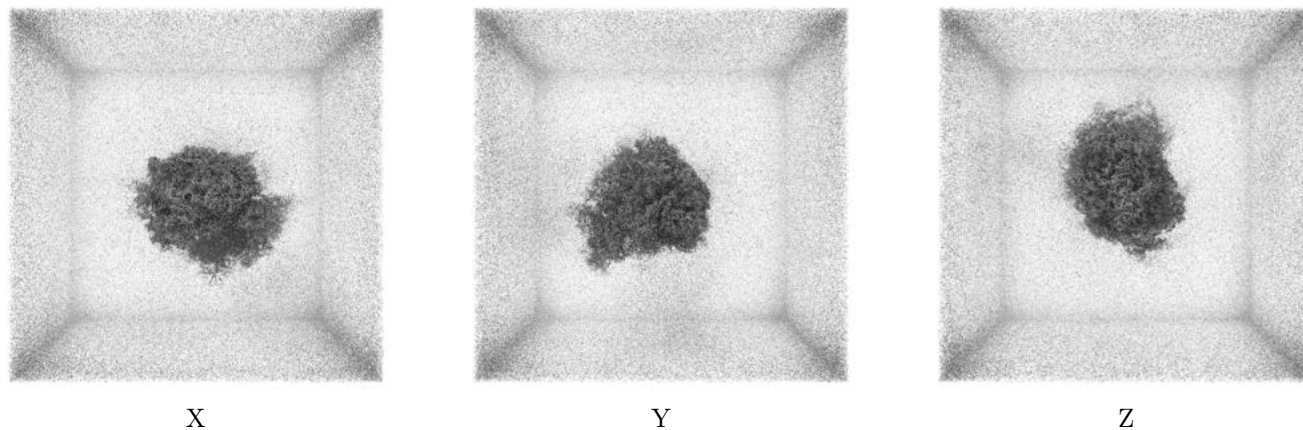
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0182. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

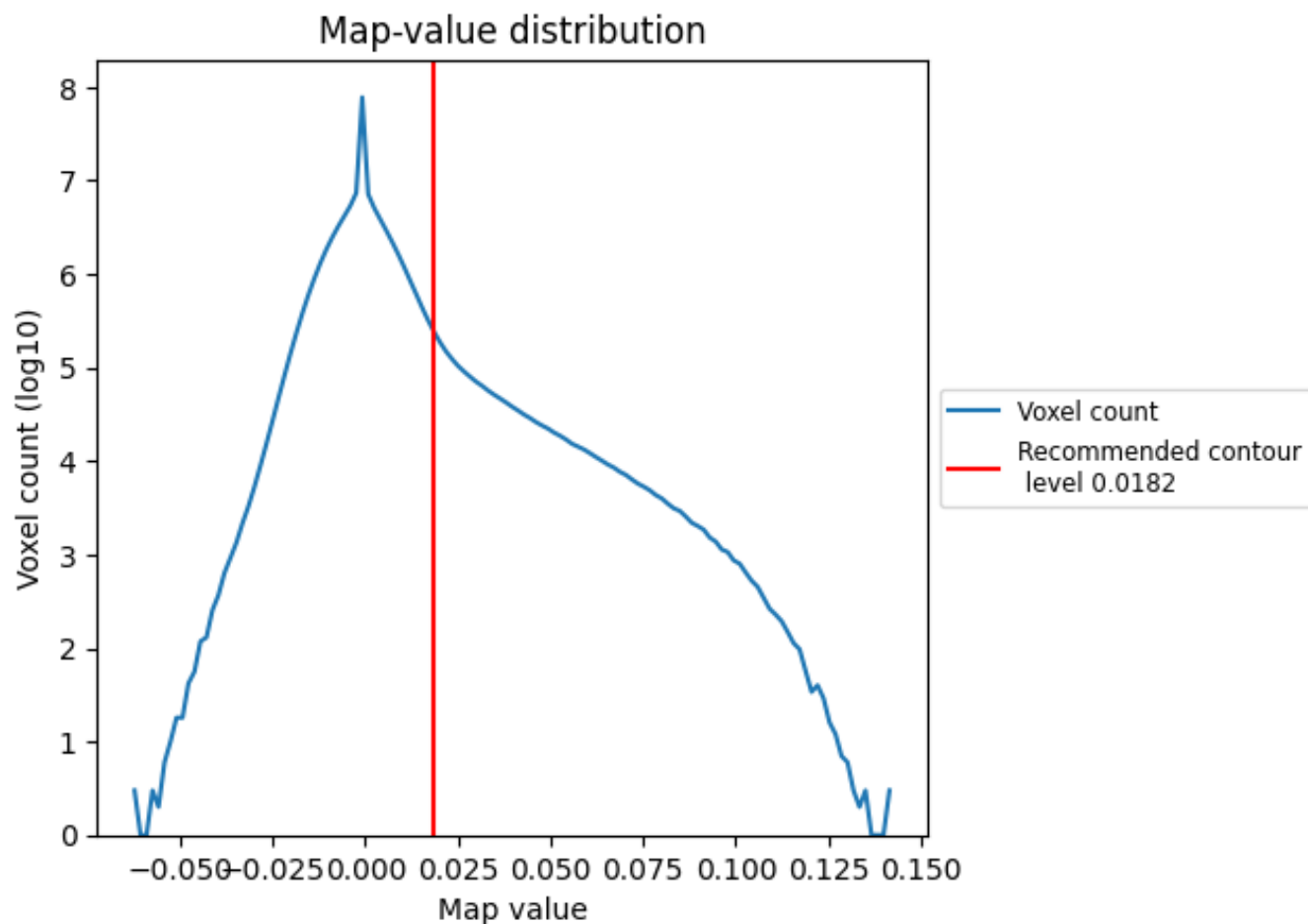
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

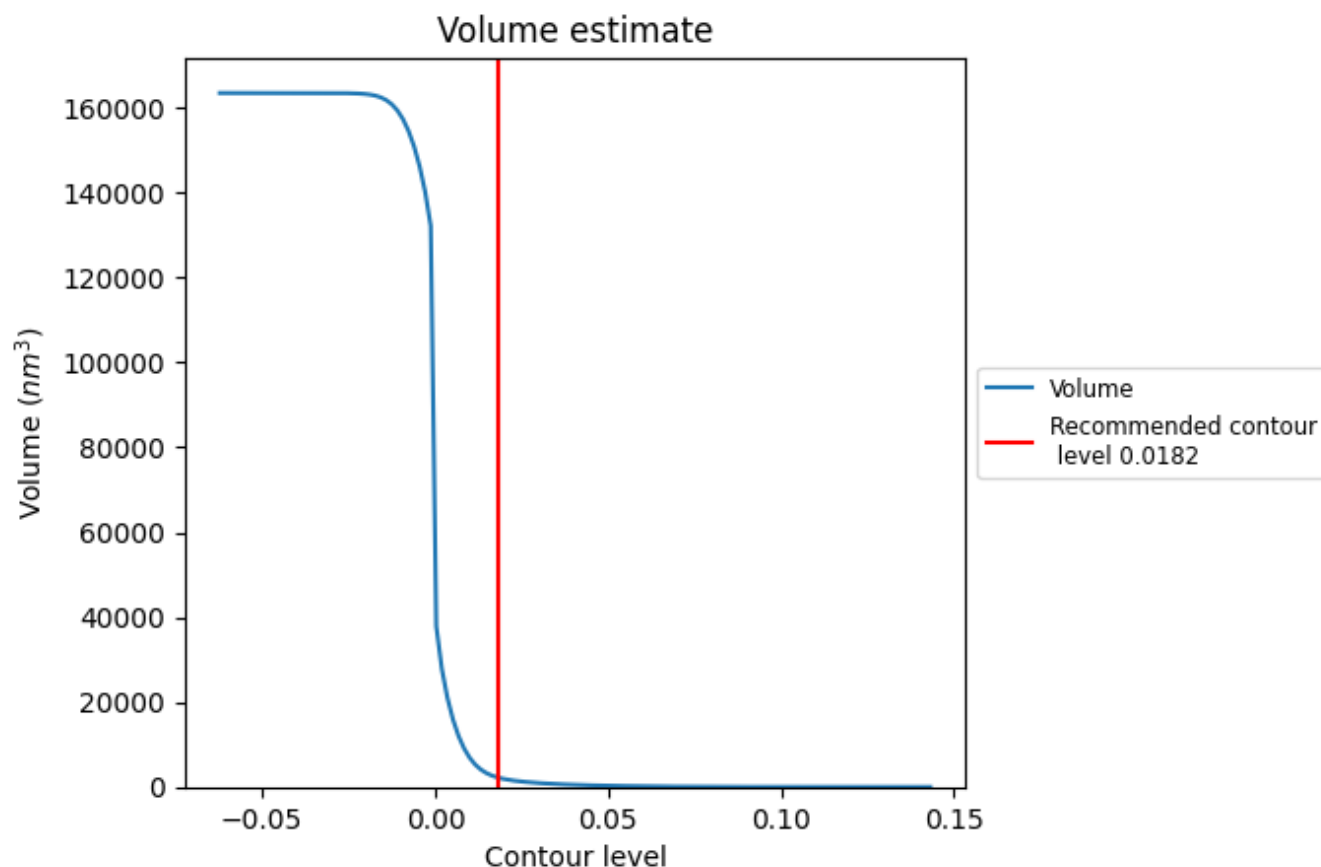
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

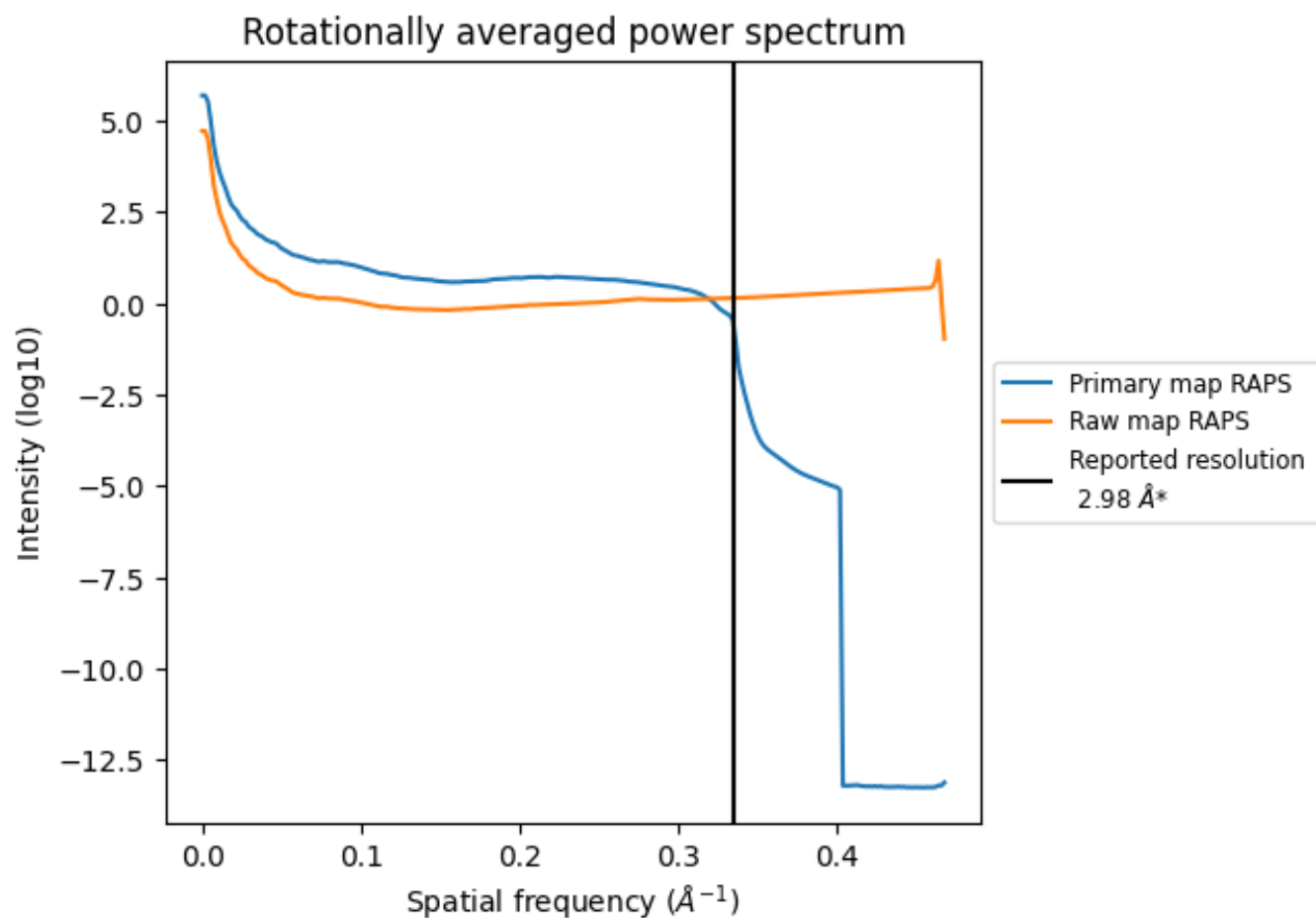
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2211 nm^3 ; this corresponds to an approximate mass of 1998 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum ⓘ

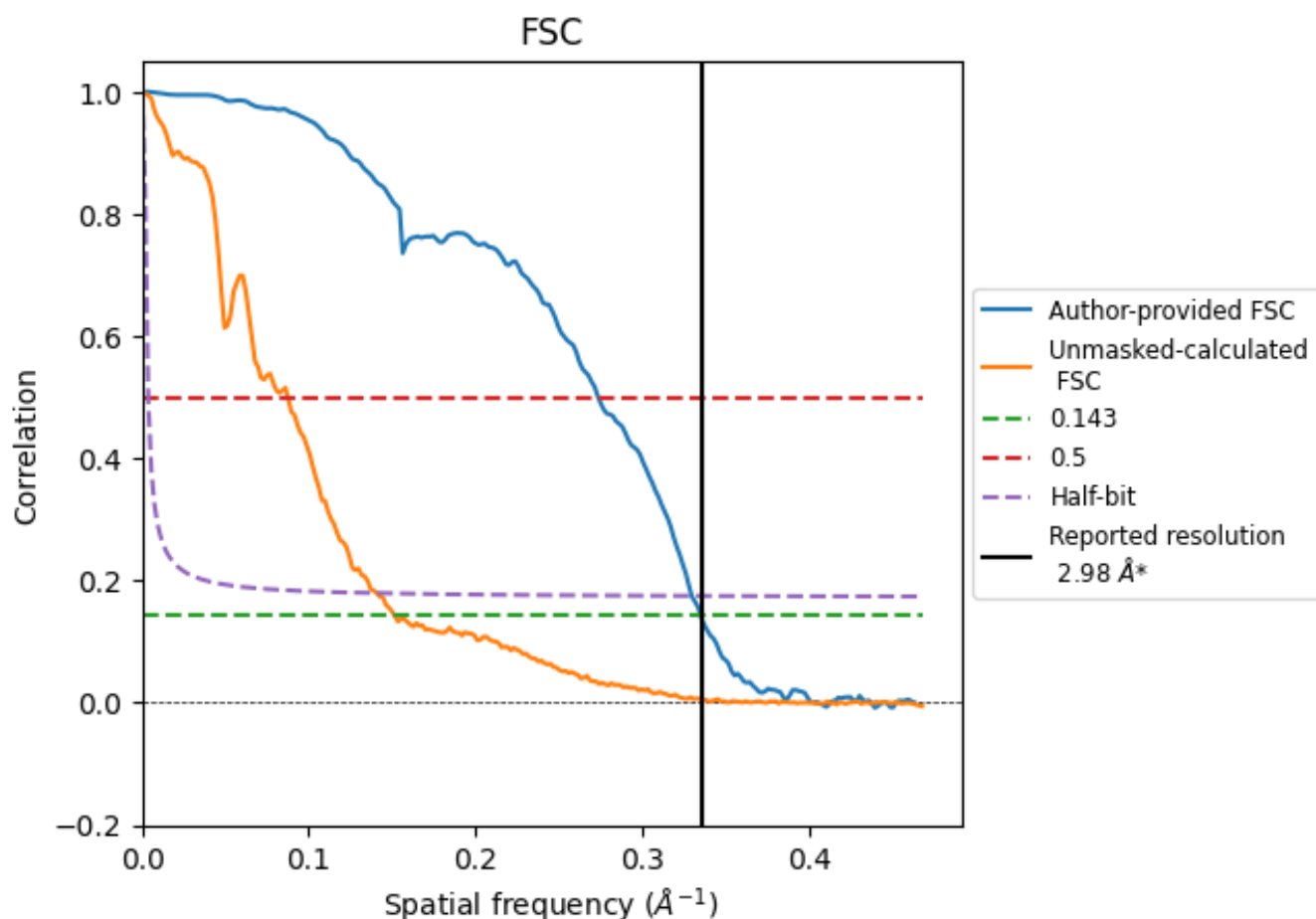


*Reported resolution corresponds to spatial frequency of 0.336 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.336 \AA^{-1}

8.2 Resolution estimates [i](#)

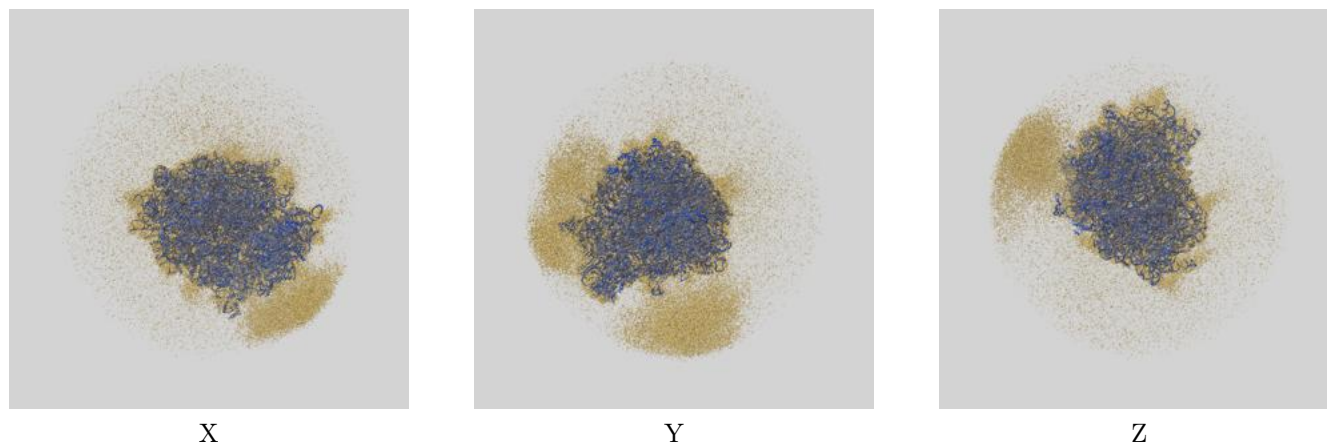
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.98	-	-
Author-provided FSC curve	2.98	3.65	3.03
Unmasked-calculated*	6.61	11.45	7.10

*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 6.61 differs from the reported value 2.98 by more than 10 %

9 Map-model fit [i](#)

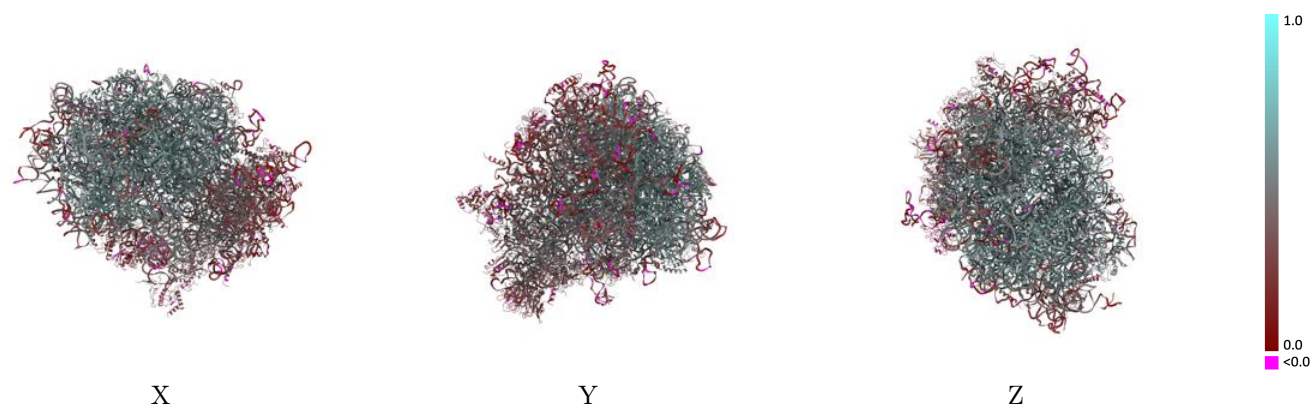
This section contains information regarding the fit between EMDB map EMD-44017 and PDB model 9AZN. Per-residue inclusion information can be found in section 3 on page 21.

9.1 Map-model overlay [i](#)



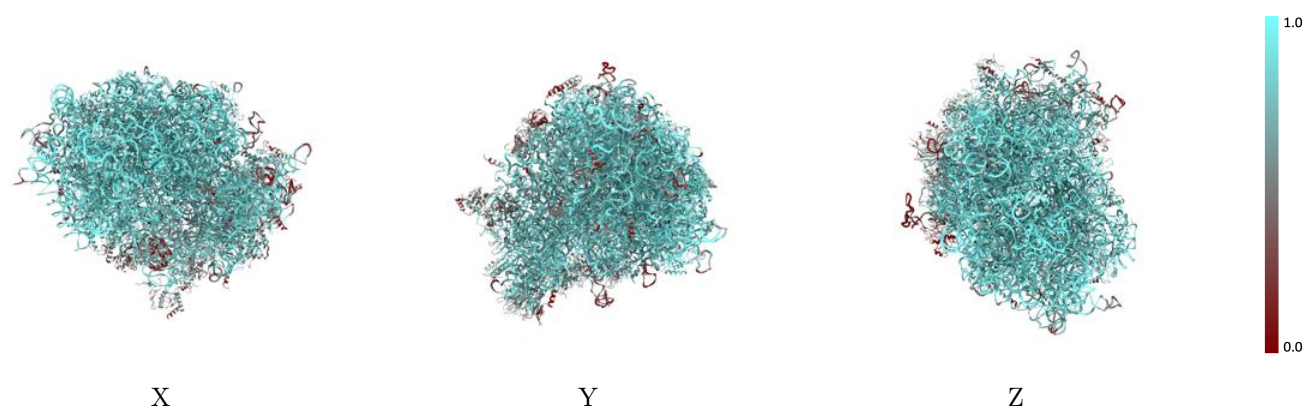
The images above show the 3D surface view of the map at the recommended contour level 0.0182 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



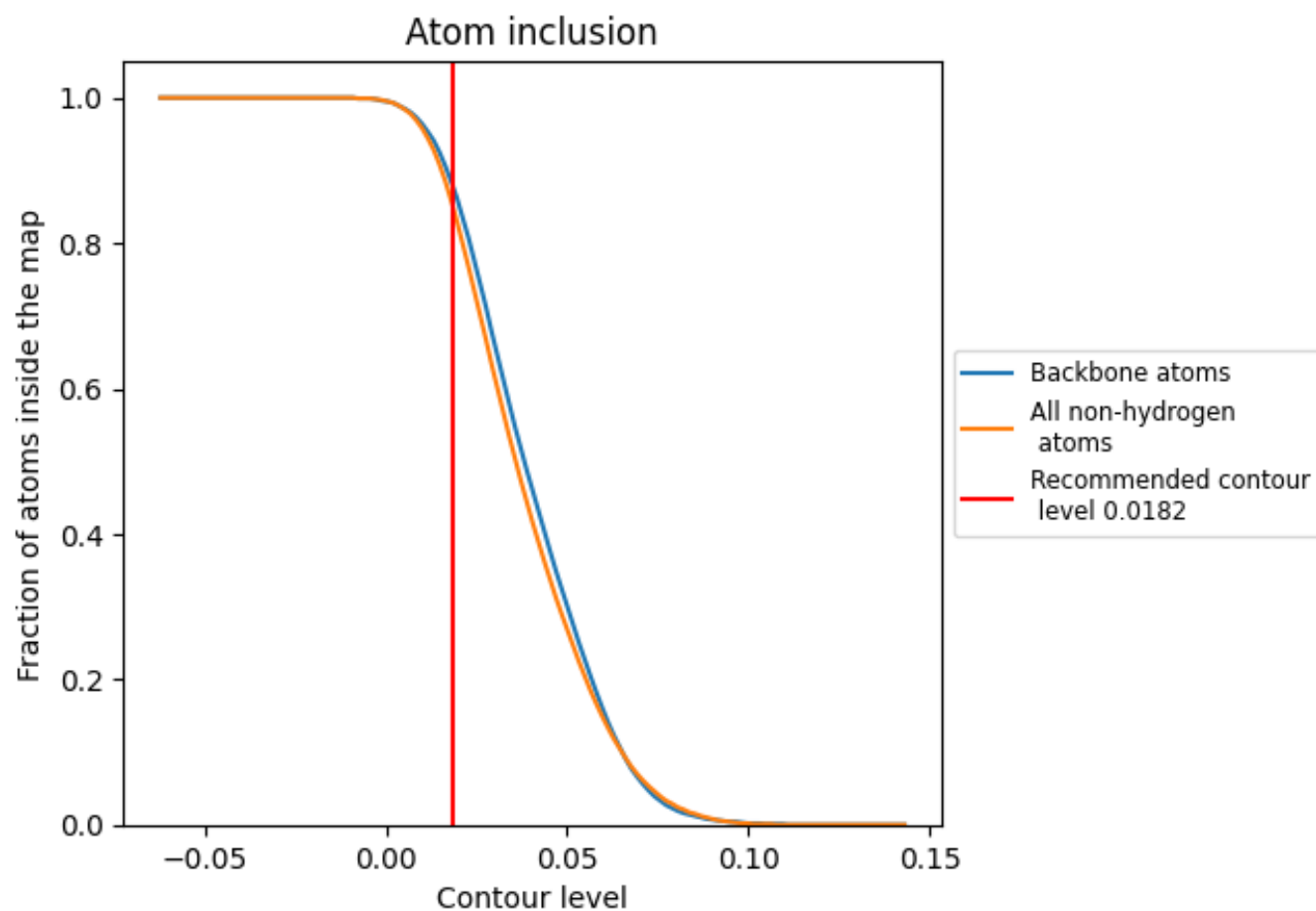
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0182).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 88% of all backbone atoms, 86% 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 (0.0182) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8550	 0.4560
AP	 0.5670	 0.2840
CH	 0.4960	 0.3070
L5	 0.9190	 0.4920
L7	 0.9810	 0.5490
L8	 0.9470	 0.5240
LA	 0.9370	 0.5720
LB	 0.9020	 0.5460
LC	 0.9050	 0.5520
LD	 0.8700	 0.5060
LE	 0.8260	 0.4890
LF	 0.9180	 0.5560
LG	 0.8290	 0.4930
LH	 0.8800	 0.5230
LI	 0.9030	 0.5510
LJ	 0.7830	 0.4480
LL	 0.8670	 0.5260
LM	 0.9030	 0.5290
LN	 0.9600	 0.5840
LO	 0.9240	 0.5600
LP	 0.9160	 0.5670
LQ	 0.9300	 0.5750
LR	 0.8570	 0.5020
LS	 0.9250	 0.5700
LT	 0.8910	 0.5430
LU	 0.8070	 0.4470
LV	 0.9050	 0.5570
LW	 0.6830	 0.3910
LX	 0.8770	 0.5370
LY	 0.9080	 0.5490
LZ	 0.9050	 0.5210
La	 0.9320	 0.5750
Lb	 0.8230	 0.4690
Lc	 0.8550	 0.4910
Ld	 0.8840	 0.5360























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Chain	Atom inclusion	Q-score
Le	 0.9200	 0.5710
Lf	 0.9510	 0.5810
Lg	 0.9000	 0.5520
Lh	 0.8830	 0.5420
Li	 0.8910	 0.5400
Lj	 0.9780	 0.5780
Lk	 0.7950	 0.4860
Ll	 0.9240	 0.5660
Lm	 0.9160	 0.5420
Ln	 0.9040	 0.5270
Lo	 0.8820	 0.5460
Lp	 0.9090	 0.5520
Lr	 0.9170	 0.5580
Ls	 0.3560	 0.2130
Lt	 0.2810	 0.1440
Lz	 0.0990	 0.1200
PE	 0.7510	 0.2590
S2	 0.5370	 0.1220
S3	 0.9040	 0.4010
SA	 0.7410	 0.3910
SB	 0.7830	 0.4540
SC	 0.8080	 0.4280
SD	 0.7300	 0.3710
SE	 0.7300	 0.3400
SF	 0.6890	 0.3600
SG	 0.6210	 0.3070
SH	 0.6630	 0.3440
SI	 0.7350	 0.3790
SJ	 0.7100	 0.3330
SK	 0.7180	 0.3580
SL	 0.7820	 0.4250
SM	 0.4190	 0.2230
SN	 0.8390	 0.4590
SO	 0.7830	 0.4480
SP	 0.7550	 0.4120
SQ	 0.7150	 0.3760
SR	 0.6780	 0.3450
SS	 0.7550	 0.4050
ST	 0.7480	 0.3800
SU	 0.7290	 0.3410
SV	 0.7600	 0.3880
SW	 0.8680	 0.4700

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Chain	Atom inclusion	Q-score
SX	 0.7530	 0.4290
SY	 0.5870	 0.2510
SZ	 0.5850	 0.3060
Sa	 0.8340	 0.4710
Sb	 0.7530	 0.4030
Sc	 0.6320	 0.3070
Sd	 0.8800	 0.4270
Se	 0.6400	 0.3170
Sf	 0.4730	 0.2350
Sg	 0.5750	 0.2800