



wwPDB EM Validation Summary Report ⓘ

Nov 14, 2022 – 11:22 pm GMT

PDB ID : 7QVP
EMDB ID : EMD-14181
Title : Human collided disome (di-ribosome) stalled on XBP1 mRNA
Authors : Denk, T.G.; Tesina, P.; Beckmann, R.
Deposited on : 2022-01-22
Resolution : 3.00 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

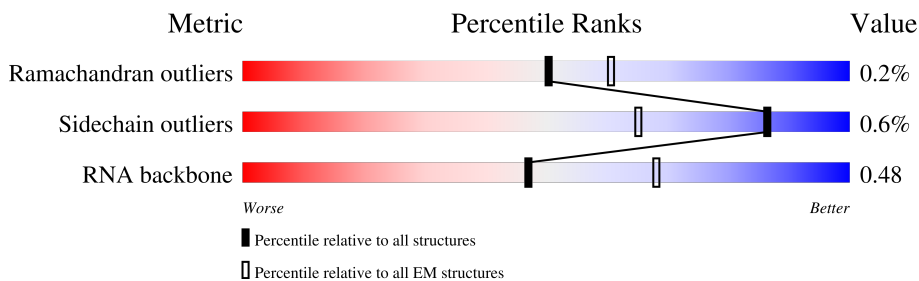
EMDB validation analysis : 0.0.1.dev43
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.2

1 Overall quality at a glance

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

The reported resolution of this entry is 3.00 Å.

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







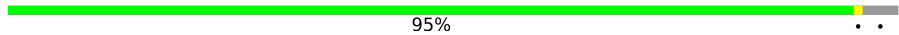
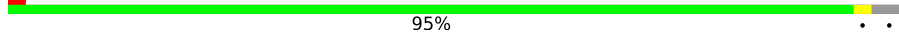
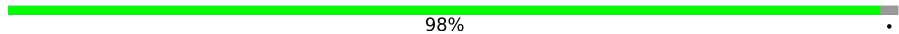
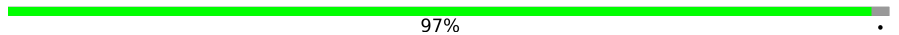


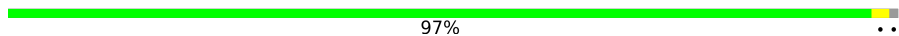
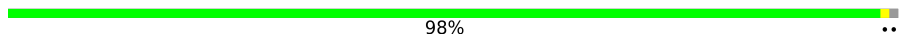






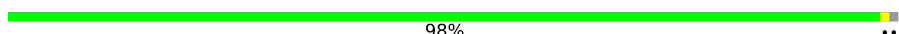
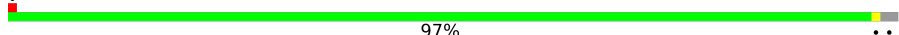
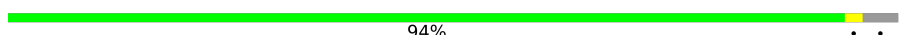
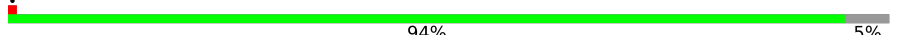
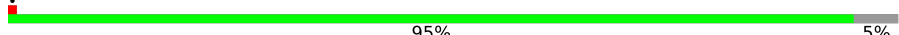

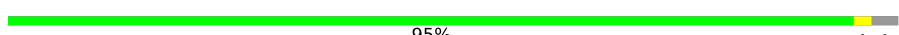
Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 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	A4	14	
2	A5	11	
3	B4	76	
3	D5	76	
4	B5	75	
5	CC	75	
6	L1	157	
6	L8	157	

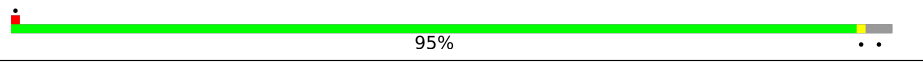


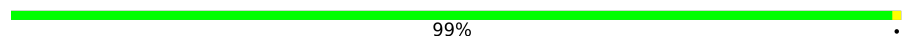
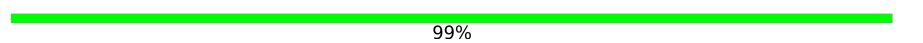
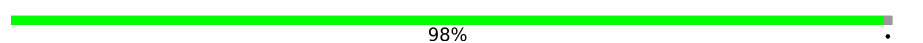
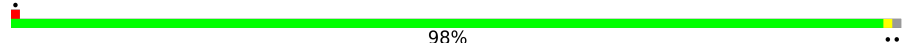
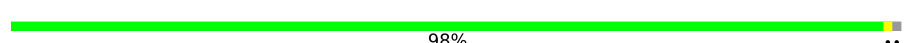
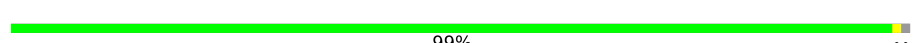
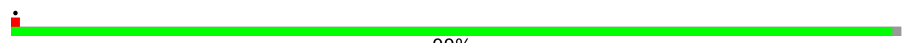

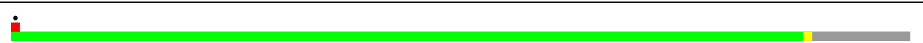



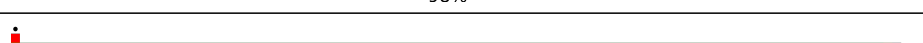
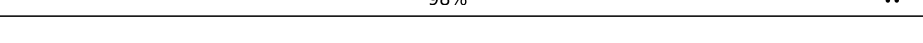
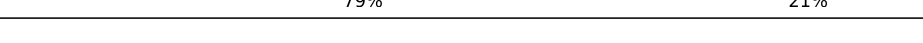

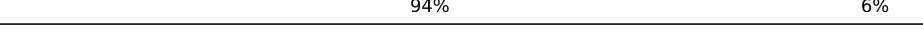
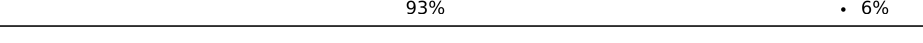
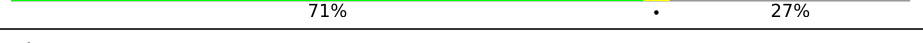



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Mol	Chain	Length	Quality of chain
7	L5	5227	
7	L6	5227	
8	L7	121	
8	L9	121	
9	LA	257	
9	MA	257	
10	LB	403	
10	MB	403	
11	LC	427	
11	MC	427	
12	LD	297	
12	MD	297	
13	LE	288	
13	ME	288	
14	LF	248	
14	MF	248	
15	LG	266	
15	MG	266	
16	LH	192	
16	MH	192	
17	LI	214	
17	MI	214	
18	LJ	178	
18	MJ	178	
19	LL	211	

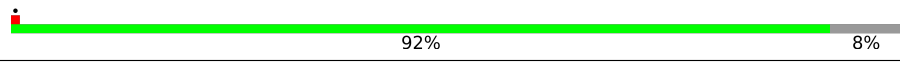
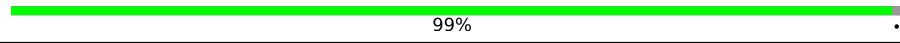
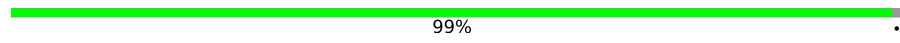
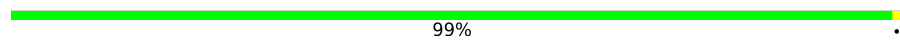
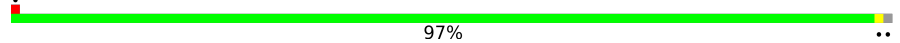






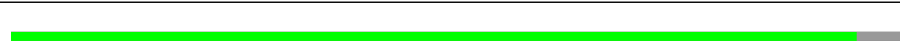



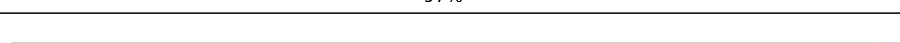
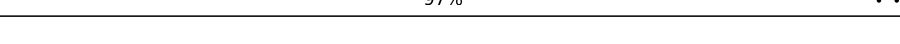
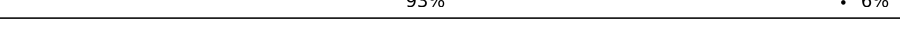
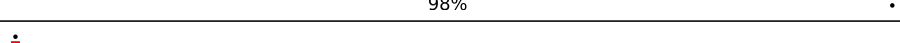
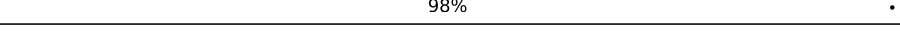
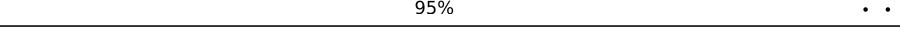
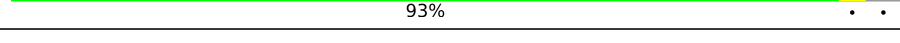
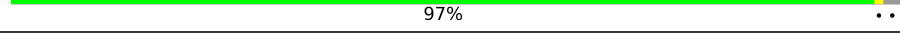
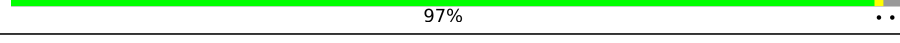
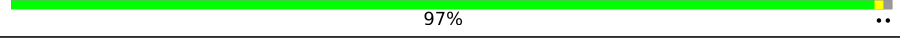
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Mol	Chain	Length	Quality of chain
19	ML	211	 95%
20	LM	215	 63% 35%
20	MM	215	 62% 37%
21	LN	204	 99%
21	MN	204	 99%
22	LO	203	 98%
22	MO	203	 98%
23	LP	154	 98%
24	LQ	188	 99%
24	MQ	188	 99%
25	LR	196	 90% 10%
25	MR	196	 89% 11%
26	LS	176	 99%
26	MS	176	 97%
27	LT	160	 98%
27	MT	160	 98%
28	LU	128	 79% 21%
28	MU	128	 79% 21%
29	LV	140	 94% 6%
29	MV	140	 93% 6%
30	LW	157	 71% 27%
30	MW	157	 73% 27%
31	LX	156	 76% 23%
31	MX	156	 74% 23%
32	LY	145	 92% 8%

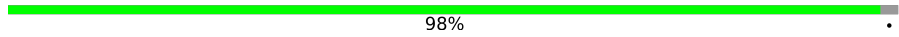
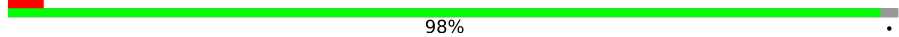


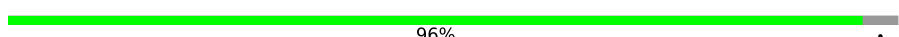
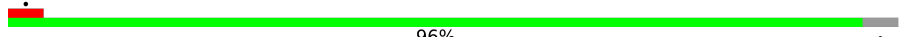
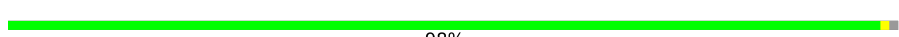



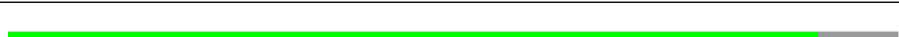


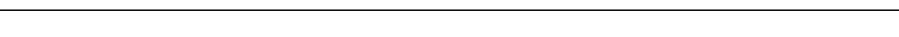
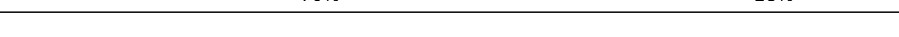
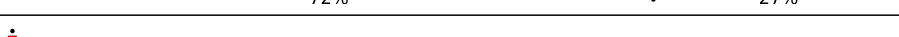



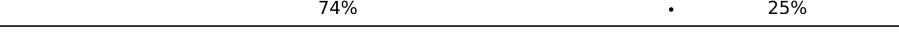


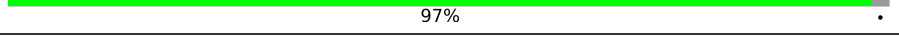
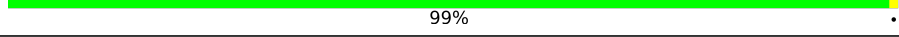

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Mol	Chain	Length	Quality of chain
32	MY	145	 92% 8%
33	LZ	136	 99%
33	MZ	136	 99%
34	La	148	 99%
34	Ma	148	 97%
35	Lb	159	 47% 53%
35	Mb	159	 40% 60%
36	Lc	115	 83% 16%
36	Mc	115	 81% 19%
37	Ld	125	 86% 14%
37	Md	125	 86% 14%
38	Le	135	 95% 5%
38	Me	135	 94% 6%
39	Lf	110	 98%
39	Mf	110	 97%
40	Lg	117	 97%
40	Mg	117	 93% 6%
41	Lh	123	 98%
41	Mh	123	 98%
42	Li	105	 95%
42	Mi	105	 93%
43	Lj	88	 97%
43	Mj	88	 97%
44	Lk	70	 97%
44	Mk	70	 99%



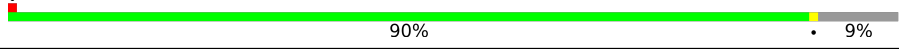
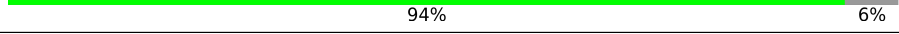

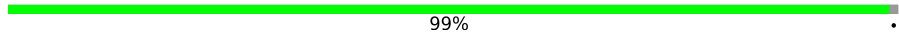




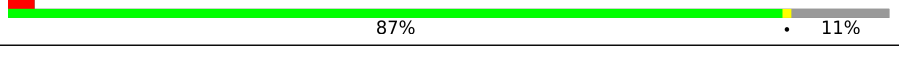
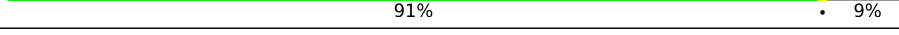
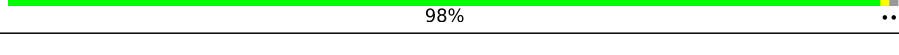
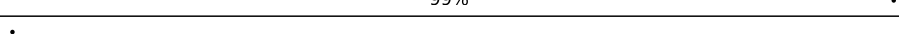
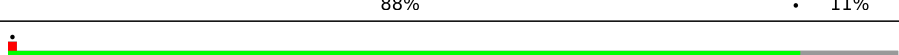
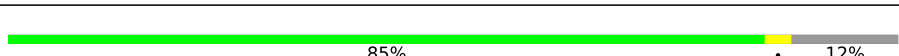

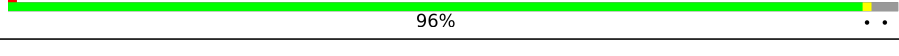
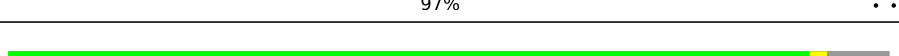
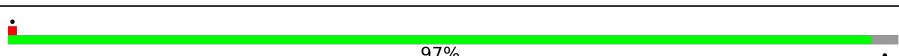
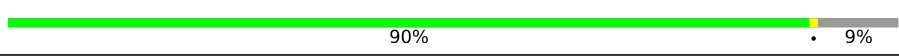
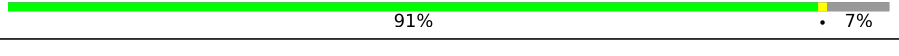
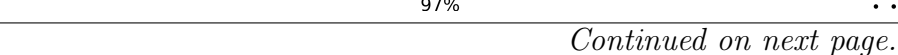


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Mol	Chain	Length	Quality of chain
45	Ll	51	 98%
45	Ml	51	 98%
46	Lm	128	 41% 59%
46	Mm	128	 39% 61%
47	Ln	25	 96%
47	Mn	25	 96%
48	Lo	106	 98%
48	Mo	106	 90% 8%
49	Lp	92	 98%
49	Mp	92	 99%
50	Lr	137	 91% 9%
50	Mr	137	 89% 9%
51	MP	184	 82% 17%
52	RA	295	 70% 28%
52	SA	295	 72% 27%
53	RB	264	 81% 19%
53	SB	264	 80% 19%
54	RC	293	 74% 26%
54	SC	293	 74% 25%
55	RD	243	 87% 12%
55	SD	243	 91% 8%
56	RE	263	 97%
56	SE	263	 99%
57	RF	204	 87% 12%
57	SF	204	 91% 8%

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Mol	Chain	Length	Quality of chain
58	RG	249	 85% 14%
58	SG	249	 91% 7%
59	RH	194	 90% 9%
59	SH	194	 94% 6%
60	RI	208	 89% 10%
60	SI	208	 99%
61	RJ	194	 89% 9%
61	SJ	194	 92% 8%
62	RK	165	 58% 42%
62	SK	165	 57% 42%
63	RL	158	 87% 11%
63	SL	158	 91% 9%
64	RN	151	 98%
64	SN	151	 99%
65	RO	151	 88% 11%
65	SO	151	 89% 11%
66	RP	145	 85% 12%
66	SP	145	 88% 12%
67	RQ	146	 96%
67	SQ	146	 97%
68	RR	135	 90% 7%
68	SR	135	 97%
69	RS	152	 90% 9%
69	SS	152	 91% 7%
70	RT	145	 97%

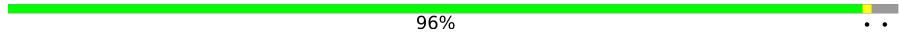



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Mol	Chain	Length	Quality of chain
70	ST	145	98%
71	RU	119	82% 16%
71	SU	119	82% 15%
72	RV	83	100%
72	SV	83	100%
73	RW	130	99%
73	SW	130	98%
74	RX	143	97%
74	SX	143	96%
75	RY	133	85% 15%
75	SY	133	92% 8%
76	RZ	125	52% 44%
76	SZ	125	59% 40%
77	Ra	101	98%
77	Sa	101	98%
78	Rb	84	96%
78	Sb	84	95%
79	Rc	69	86% 12%
79	Sc	69	90% 9%
80	Rd	56	93% 7%
80	Sd	56	95% 5%
81	Re	59	86% 14%
81	Se	59	93%
82	Rf	132	58% 41%
83	Rg	317	89% 11%

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Mol	Chain	Length	Quality of chain
83	Sg	317	 96%
84	Rh	156	 26% 74%
85	S2	1869	 57% 31% 8%
85	S3	1869	 58% 29% 9%

2 Entry composition i

There are 85 unique types of molecules in this entry. The entry contains 417512 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	A4	14	280	126	28	112	14	0	0

- Molecule 2 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	A5	11	220	99	22	88	11	0	0

- Molecule 3 is a RNA chain called tRNA P/P.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	B4	76	1622	723	290	533	76	0	0
3	D5	73	1559	696	283	508	72	0	0

- Molecule 4 is a RNA chain called tRNA P/E.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	B5	75	1604	717	298	515	74	0	0

- Molecule 5 is a RNA chain called tRNA E/E.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
5	CC	75	1589	710	279	525	75	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
CC	11	C	U	conflict	GB 176418

- Molecule 6 is a RNA chain called 5.8S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	L1	156	Total	C	N	O	P	0	0
			3314	1480	585	1094	155		
6	L8	156	Total	C	N	O	P	0	0
			3314	1480	585	1094	155		

- Molecule 7 is a RNA chain called 28S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	L5	3611	Total	C	N	O	P	0	0
			77405	34468	14160	25167	3610		
7	L6	3572	Total	C	N	O	P	0	0
			76565	34095	14005	24894	3571		

- Molecule 8 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	L7	120	Total	C	N	O	P	0	0
			2558	1141	456	842	119		
8	L9	120	Total	C	N	O	P	0	0
			2558	1141	456	842	119		

- Molecule 9 is a protein called 60S ribosomal protein L8.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	LA	248	Total	C	N	O	S	0	0
			1898	1189	389	314	6		
9	MA	248	Total	C	N	O	S	0	0
			1886	1183	386	311	6		

- Molecule 10 is a protein called 60S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	LB	395	Total	C	N	O	S	0	0
			3183	2027	597	545	14		
10	MB	393	Total	C	N	O	S	0	0
			3101	1979	583	525	14		

- Molecule 11 is a protein called 60S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	LC	364	Total	C	N	O	S	0	0
			2884	1814	576	479	15		
11	MC	365	Total	C	N	O	S	0	0
			2894	1819	578	482	15		

- Molecule 12 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	LD	293	Total	C	N	O	S	0	0
			2361	1496	430	421	14		
12	MD	293	Total	C	N	O	S	0	0
			2287	1455	426	392	14		

- Molecule 13 is a protein called 60S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	LE	219	Total	C	N	O	S	0	0
			1754	1129	334	287	4		
13	ME	220	Total	C	N	O	S	0	0
			1713	1104	326	279	4		

- Molecule 14 is a protein called 60S ribosomal protein L7.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	LF	225	Total	C	N	O	S	0	0
			1870	1202	358	301	9		
14	MF	225	Total	C	N	O	S	0	0
			1844	1189	355	291	9		

- Molecule 15 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	LG	229	Total	C	N	O	S	0	0
			1818	1157	351	306	4		
15	MG	229	Total	C	N	O	S	0	0
			1733	1106	335	288	4		

- Molecule 16 is a protein called 60S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	LH	190	Total	C	N	O	S	0	0
			1510	950	282	272	6		

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	MH	189	1439	910	273	250	6	0	0

- Molecule 17 is a protein called 60S ribosomal protein L10-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
17	LI	206	1651	1051	318	268	14	0	0
17	MI	203	1581	1007	306	254	14	0	0

- Molecule 18 is a protein called 60S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
18	LJ	169	1329	841	250	232	6	0	0
18	MJ	167	1226	780	228	212	6	0	0

- Molecule 19 is a protein called 60S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
19	LL	205	1630	1020	340	266	4	0	0
19	ML	204	1580	992	335	249	4	0	0

- Molecule 20 is a protein called 60S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	LM	139	1122	720	216	179	7	0	0
20	MM	136	1097	705	211	174	7	0	0

- Molecule 21 is a protein called 60S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
21	LN	203	1701	1072	359	266	4	0	0
21	MN	203	1693	1068	359	262	4	0	0

- Molecule 22 is a protein called 60S ribosomal protein L13a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	LO	200	Total	C	N	O	S	0	0
			1633	1053	318	257	5		
22	MO	201	Total	C	N	O	S	0	0
			1613	1042	318	248	5		

- Molecule 23 is a protein called 60S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
23	LP	153	Total	C	N	O	S	0	0
			1234	771	240	214	9		

- Molecule 24 is a protein called 60S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	LQ	187	Total	C	N	O	S	0	0
			1502	939	313	245	5		
24	MQ	187	Total	C	N	O	S	0	0
			1493	931	311	246	5		

- Molecule 25 is a protein called 60S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	LR	176	Total	C	N	O	S	0	0
			1452	898	318	227	9		
25	MR	175	Total	C	N	O	S	0	0
			1412	874	312	218	8		

- Molecule 26 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
26	LS	175	Total	C	N	O	S	0	0
			1452	925	283	234	10		
26	MS	175	Total	C	N	O	S	0	0
			1436	915	281	230	10		

- Molecule 27 is a protein called 60S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	LT	159	Total	C	N	O	S	0	0
			1282	813	250	213	6		

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	MT	159	1268	805	249	209	5	0	0

- Molecule 28 is a protein called 60S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
28	LU	101	799	515	140	142	2	0	0
28	MU	101	768	497	136	133	2	0	0

- Molecule 29 is a protein called 60S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
29	LV	131	971	613	183	170	5	0	0
29	MV	131	954	604	180	165	5	0	0

- Molecule 30 is a protein called 60S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
30	LW	115	808	506	160	139	3	0	0
30	MW	115	784	493	154	135	2	0	0

- Molecule 31 is a protein called 60S ribosomal protein L23a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
31	LX	120	981	627	184	169	1	0	0
31	MX	120	950	611	182	156	1	0	0

- Molecule 32 is a protein called KOW domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
32	LY	134	1111	697	225	186	3	0	0
32	MY	134	1084	681	220	180	3	0	0

- Molecule 33 is a protein called 60S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	LZ	135	Total	C	N	O	S	0	0
			1107	714	208	182	3		
33	MZ	135	Total	C	N	O	S	0	0
			1082	703	207	169	3		

- Molecule 34 is a protein called 60S ribosomal protein L27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	La	147	Total	C	N	O	S	0	0
			1154	731	236	184	3		
34	Ma	146	Total	C	N	O	S	0	0
			1145	726	233	183	3		

- Molecule 35 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	Lb	75	Total	C	N	O	S	0	0
			590	367	123	97	3		
35	Mb	63	Total	C	N	O	S	0	0
			499	310	107	80	2		

- Molecule 36 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	Lc	97	Total	C	N	O	S	0	0
			742	473	130	133	6		
36	Mc	93	Total	C	N	O	S	0	0
			716	456	125	129	6		

- Molecule 37 is a protein called 60S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	Ld	107	Total	C	N	O	S	0	0
			874	554	171	147	2		
37	Md	107	Total	C	N	O	S	0	0
			856	546	168	140	2		

- Molecule 38 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	Le	128	Total	C	N	O	S	0	0
			1049	664	215	165	5		
38	Me	127	Total	C	N	O	S	0	0
			1045	661	215	164	5		

- Molecule 39 is a protein called 60S ribosomal protein L35a.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	Lf	109	Total	C	N	O	S	0	0
			872	552	173	144	3		
39	Mf	109	Total	C	N	O	S	0	0
			864	547	173	141	3		

- Molecule 40 is a protein called 60S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	Lg	114	Total	C	N	O	S	0	0
			889	557	184	142	6		
40	Mg	110	Total	C	N	O	S	0	0
			851	531	175	139	6		

- Molecule 41 is a protein called 60S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	Lh	121	Total	C	N	O	S	0	0
			1006	635	203	167	1		
41	Mh	121	Total	C	N	O	S	0	0
			975	617	200	157	1		

- Molecule 42 is a protein called 60S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	Li	102	Total	C	N	O	S	0	0
			813	510	176	123	4		
42	Mi	101	Total	C	N	O	S	0	0
			797	500	170	122	5		

- Molecule 43 is a protein called Ribosomal protein L37.

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

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
43	Mj	86	701	431	154	111	5	0	0

- Molecule 44 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
44	Lk	69	542	350	100	91	1	0	0
44	Mk	69	528	339	99	89	1	0	0

- Molecule 45 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
45	Ll	50	444	281	98	64	1	0	0
45	Ml	50	440	278	97	64	1	0	0

- Molecule 46 is a protein called Ubiquitin-60S ribosomal protein L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
46	Lm	52	425	264	90	65	6	0	0
46	Mm	50	393	244	82	61	6	0	0

- Molecule 47 is a protein called 60S ribosomal protein L41.

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

- Molecule 48 is a protein called 60S ribosomal protein L36a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
48	Lo	105	848	532	173	137	6	0	0
48	Mo	98	774	488	159	121	6	0	0

- Molecule 49 is a protein called 60S ribosomal protein L37a.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	Lp	91	Total	C	N	O	S	0	0
			696	440	135	114	7		
49	Mp	91	Total	C	N	O	S	0	0
			689	436	132	114	7		

- Molecule 50 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	Lr	125	Total	C	N	O	S	0	0
			997	618	207	168	4		
50	Mr	125	Total	C	N	O	S	0	0
			982	609	205	164	4		

- Molecule 51 is a protein called 60S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	MP	153	Total	C	N	O	S	0	0
			1203	754	238	202	9		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
52	RA	212	Total	C	N	O	S	0	0
			1575	1016	285	266	8		
52	SA	216	Total	C	N	O	S	0	0
			1671	1068	297	298	8		

- Molecule 53 is a protein called 40S ribosomal protein S3a.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	RB	214	Total	C	N	O	S	0	0
			1627	1041	296	277	13		
53	SB	213	Total	C	N	O	S	0	0
			1718	1092	308	304	14		

- Molecule 54 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	RC	217	Total	C	N	O	S	0	0
			1590	1039	276	266	9		

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
54	SC	219	1661	1076	284	291	10	0	0

- Molecule 55 is a protein called 40S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
55	RD	215	1475	950	267	251	7	0	0
55	SD	223	1580	1016	286	271	7	0	0

- Molecule 56 is a protein called 40S ribosomal protein S4, X isoform.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
56	RE	257	1891	1218	358	307	8	0	0
56	SE	262	1972	1270	370	324	8	0	0

- Molecule 57 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
57	RF	180	1365	861	261	237	6	0	0
57	SF	187	1416	886	269	254	7	0	0

- Molecule 58 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
58	RG	213	1551	972	313	260	6	0	0
58	SG	231	1634	1026	332	269	7	0	0

- Molecule 59 is a protein called 40S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
59	RH	176	1342	871	249	221	1	0	0
59	SH	183	1274	819	242	213		0	0

- Molecule 60 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
60	RI	187	Total	C	N	O	S	0	0
			1450	910	286	249	5		
60	SI	206	Total	C	N	O	S	0	0
			1574	989	308	272	5		

- Molecule 61 is a protein called 40S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
61	RJ	176	Total	C	N	O	S	0	0
			1407	899	280	226	2		
61	SJ	179	Total	C	N	O	S	0	0
			1431	915	290	224	2		

- Molecule 62 is a protein called 40S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
62	RK	95	Total	C	N	O	S	0	0
			736	482	131	119	4		
62	SK	96	Total	C	N	O	S	0	0
			726	479	127	115	5		

- Molecule 63 is a protein called 40S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
63	RL	140	Total	C	N	O	S	0	0
			1139	725	214	194	6		
63	SL	144	Total	C	N	O	S	0	0
			1143	730	213	194	6		

- Molecule 64 is a protein called 40S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
64	RN	150	Total	C	N	O	S	0	0
			1199	766	229	203	1		
64	SN	150	Total	C	N	O	S	0	0
			1182	758	226	197	1		

- Molecule 65 is a protein called 40S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	RO	135	Total	C	N	O	S	0	0
			1003	615	198	184	6		
65	SO	134	Total	C	N	O	S	0	0
			969	596	194	173	6		

- Molecule 66 is a protein called 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	RP	127	Total	C	N	O	S	0	0
			1001	636	188	170	7		
66	SP	128	Total	C	N	O	S	0	0
			975	617	185	167	6		

- Molecule 67 is a protein called 40S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	RQ	141	Total	C	N	O	S	0	0
			1078	690	207	178	3		
67	SQ	142	Total	C	N	O	S	0	0
			1071	687	204	177	3		

- Molecule 68 is a protein called 40S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	RR	125	Total	C	N	O	S	0	0
			879	551	166	159	3		
68	SR	131	Total	C	N	O	S	0	0
			942	600	179	159	4		

- Molecule 69 is a protein called 40S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	RS	138	Total	C	N	O	S	0	0
			1080	684	220	175	1		
69	SS	141	Total	C	N	O	S	0	0
			1118	706	226	185	1		

- Molecule 70 is a protein called 40S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	RT	141	Total	C	N	O	S	0	0
			993	624	195	172	2		

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
70	ST	143	1081	679	210	189	3	0	0

- Molecule 71 is a protein called 40S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
71	RU	100	749	470	143	134	2	0	0
71	SU	101	713	447	137	125	4	0	0

- Molecule 72 is a protein called 40S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
72	RV	83	589	369	111	104	5	0	0
72	SV	83	618	385	115	113	5	0	0

- Molecule 73 is a protein called 40S ribosomal protein S15a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
73	RW	129	1027	655	192	174	6	0	0
73	SW	129	1026	655	193	172	6	0	0

- Molecule 74 is a protein called 40S ribosomal protein S23.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
74	RX	141	1048	663	206	176	3	0	0
74	SX	141	1078	682	212	181	3	0	0

- Molecule 75 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
75	RY	113	855	544	164	143	4	0	0
75	SY	123	927	588	183	152	4	0	0

- Molecule 76 is a protein called 40S ribosomal protein S25.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	RZ	70	Total	C	N	O	S	0	0
			487	311	90	85	1		
76	SZ	75	Total	C	N	O	S	0	0
			559	361	105	92	1		

- Molecule 77 is a protein called 40S ribosomal protein S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	Ra	99	Total	C	N	O	S	0	0
			762	478	157	122	5		
77	Sa	99	Total	C	N	O	S	0	0
			781	487	165	124	5		

- Molecule 78 is a protein called 40S ribosomal protein S27.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	Rb	83	Total	C	N	O	S	0	0
			617	390	114	109	4		
78	Sb	83	Total	C	N	O	S	0	0
			618	386	118	107	7		

- Molecule 79 is a protein called 40S ribosomal protein S28.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	Rc	61	Total	C	N	O	S	0	0
			430	267	83	78	2		
79	Sc	63	Total	C	N	O	S	0	0
			472	289	92	89	2		

- Molecule 80 is a protein called 40S ribosomal protein S29.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	Rd	52	Total	C	N	O	S	0	0
			420	264	83	69	4		
80	Sd	53	Total	C	N	O	S	0	0
			433	271	87	70	5		

- Molecule 81 is a protein called 40S ribosomal protein S30.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	Re	51	Total	C	N	O	S	0	0
			386	240	83	62	1		
81	Se	57	Total	C	N	O	S	0	0
			426	259	96	70	1		

- Molecule 82 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	Rf	78	Total	C	N	O	S	0	0
			483	307	90	82	4		

- Molecule 83 is a protein called Receptor of activated protein C kinase 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	Rg	283	Total	C	N	O	S	0	0
			1952	1243	341	359	9		
83	Sg	308	Total	C	N	O	S	0	0
			2172	1388	379	394	11		

- Molecule 84 is a protein called Ubiquitin-40S ribosomal protein S27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
84	Rh	41	Total	C	N	O	S	0	0
			269	168	54	44	3		

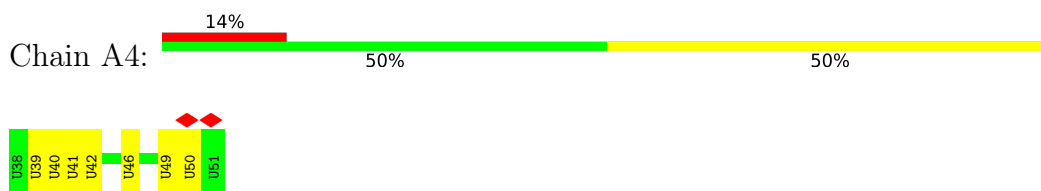
- Molecule 85 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
85	S2	1714	Total	C	N	O	P	0	0
			36582	16329	6568	11972	1713		
85	S3	1705	Total	C	N	O	P	0	0
			36401	16247	6542	11908	1704		

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.

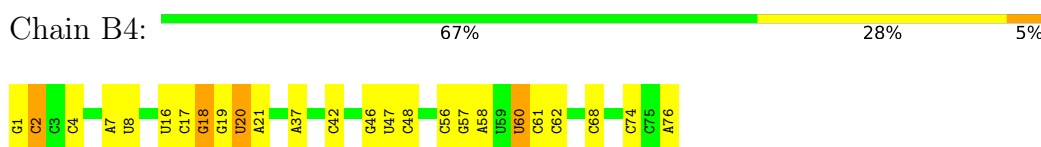
- Molecule 1: mRNA



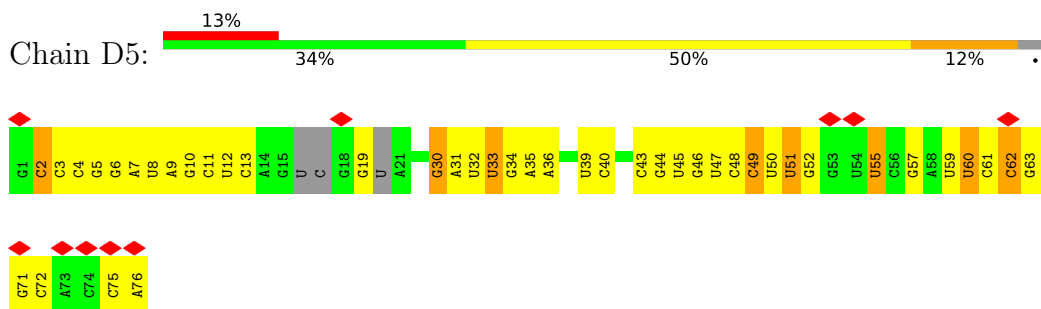
- Molecule 2: mRNA



- Molecule 3: tRNA P/P



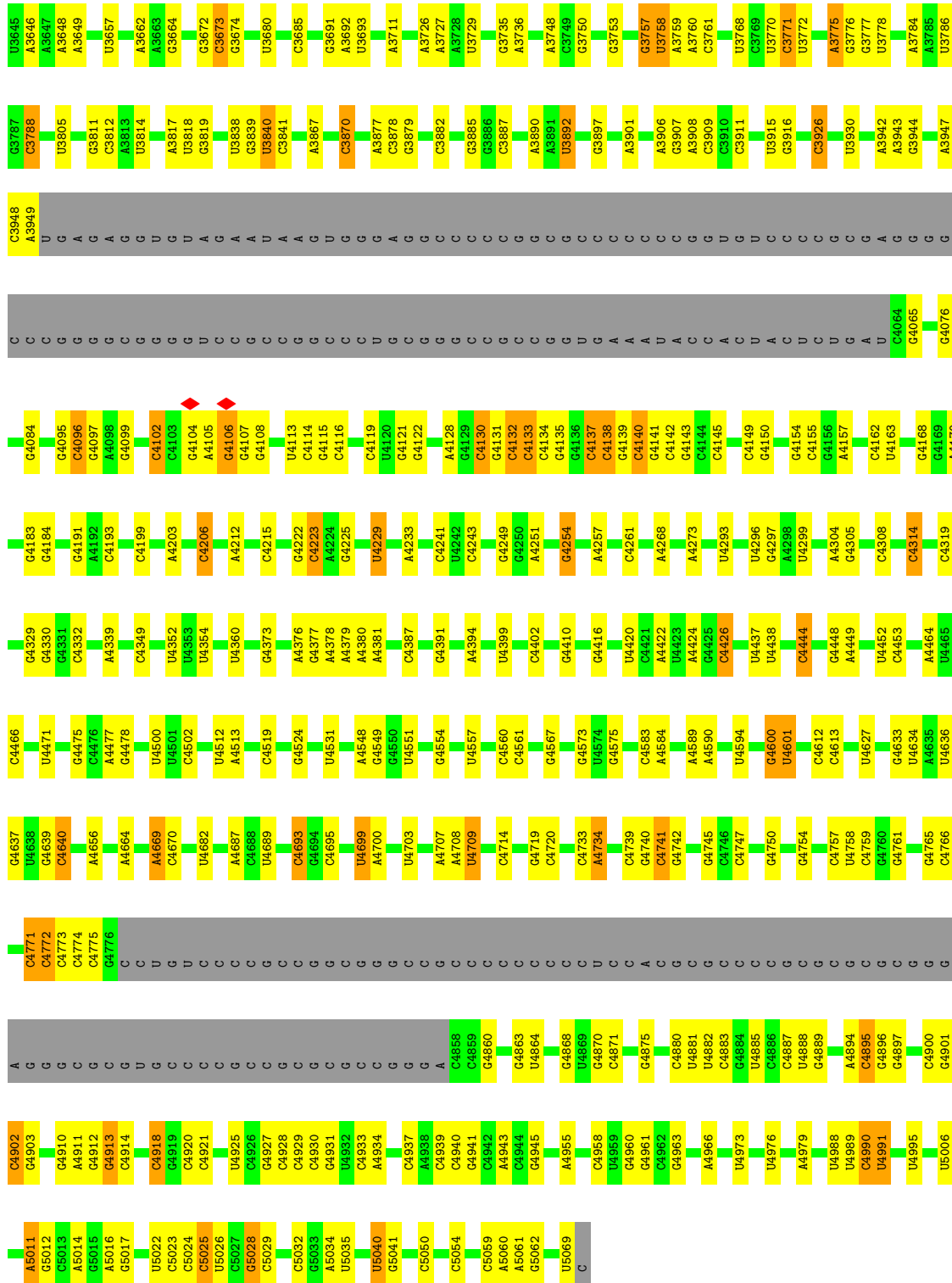
- Molecule 3: tRNA P/P



- Molecule 4: tRNA P/E



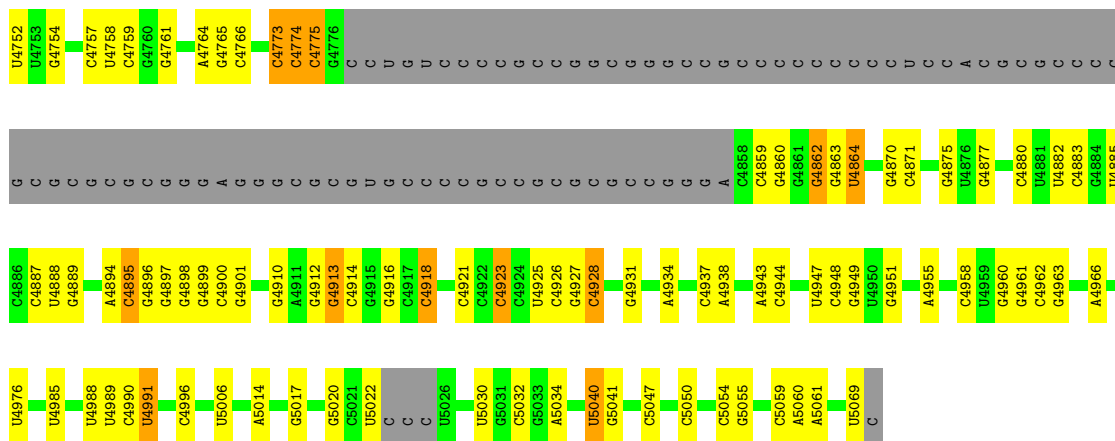
U1959	C1703	A1805	G1275	G1409	U1209	G	U	C	A915	G1094	C	G	C896	U	G	C903	C	C	C993
A1960	C1704	G1806	G1280	U1410	U1210	G	G	C	C916	G1094	C	C	G897	C	C	C904	C	C	C904
G1961	G1705	C1809	C1280	C1411	G1211	G	G	C	A917	G1068	C	C	G700	C	C	C905	C	C	C905
A1962	A1706	G1810	G1284	C1414	G1212	G	G	C	G918	G1069	C	C	G703	C	C	C906	C	C	C906
C1963	C1707	U1577	U1284	U1285	C1214	G	G	C	C923	G1070	C	C	C704	C	C	C907	C	C	C907
A1964	G	U1578	C1286	C1415	C1215	G	G	C	C924	G1071	C	C	C705	C	C	C908	C	C	C908
G1965	C	C1585	G1287	C1416	C1216	G	G	C	C925	G1075	C	C	C706	C	C	C909	C	C	C909
C1966	A	U1591	U1293	C1417	G1219	G	G	C	G926	C1076	C	C	C707	C	C	C910	C	C	C910
U1970	C	U1821	G1294	A1420	G1220	C	C	A	A929	C1079	C	C	C708	C	C	C911	C	C	C911
U1974	C	U1822	C1295	G1425	G1221	C	C	U	A932	C1082	C	C	G730	C	C	C912	C	C	C912
G1975	C1715	U1596	C1301	G1435	A	C	C	C	G933	U1083	C	C	G731	C	C	C913	C	C	C913
C1976	G1716	U1597	U1302	C1436	G	C	C	C	C934	G1092	C	C	C738	C	C	C914	C	C	C914
U1977	C1717	C1437	U1303	U1437	U	C	C	C	C935	G1093	C	C	C739	C	C	C915	C	C	C915
C	C1718	U1438	C1304	U1438	U	C	C	C	C936	G1094	C	C	G740	C	C	C916	C	C	C916
C	A1719	U1439	U	U1440	C	C	C	C	C937	G1095	C	C	C741	C	C	C917	C	C	C917
U	C1720	U1440	C1309	U1441	U	C	C	C	C941	U1100	C	C	G742	C	C	C918	C	C	C918
G	G1724	C1441	U	C1442	U	C	C	C	C944	C	C	C	U	C	C	C919	C	C	C919
G	U1725	C1442	A1324	C1443	C	C	C	A	A944	U1167	C	C	G	C	C	C920	C	C	C920
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A	G1854	G1624	C1326	G	G	C	C	C	C946	G1169	C	C	C	C	C	C922	C	C	C922
U	G1855	G1625	C1327	G	G	C	C	C	C947	G1170	C	C	C	C	C	C923	C	C	C923
G	U1735	G1631	U1234	C1447	G1234	G	G	C	C949	G1171	C	C	C	C	C	C924	C	C	C924
C	G1741	A1632	G1235	G1454	G1235	G	G	C	C951	G1172	C	C	C	C	C	C925	C	C	C925
G	A1742	G1633	G1238	G1454	G1238	G	G	C	C952	G1173	C	C	C	C	C	C926	C	C	C926
G	G1750	A1634	A1238	C1458	A1238	G	G	C	C953	G1174	C	C	C	C	C	C927	C	C	C927
A	G1753	G1641	C1241	C1467	C1241	C	C	C	C954	G1175	C	C	C	C	C	C928	C	C	C928
A	U1754	U1649	G1242	C1468	G1242	C	C	C	C955	G1176	C	C	C	C	C	C929	C	C	C929
C	C1755	U1649	C1243	C1469	C1243	C	C	C	C956	G1177	C	C	C	C	C	C930	C	C	C930
U	U1756	G1654	C1244	C1472	C1244	C	C	C	C957	G1178	C	C	C	C	C	C931	C	C	C931
C	U1757	C1655	C1245	C1477	C1245	C	C	C	C958	G1179	C	C	C	C	C	C932	C	C	C932
G	G1758	U1656	C1248	C1477	C1248	C	C	C	C959	G1180	C	C	C	C	C	C933	C	C	C933
A	G1759	C1661	C1249	C1477	C1249	C	C	C	C960	G1181	C	C	C	C	C	C934	C	C	C934
G	G1760	G1662	C1250	C1483	C1250	C	C	C	C961	G1182	C	C	C	C	C	C935	C	C	C935
G	G1761	C1663	C1251	C1483	C1251	C	C	C	C962	G1183	C	C	C	C	C	C936	C	C	C936
G	C1920	C1663	G1252	G1493	G1252	C	C	C	C963	G1184	C	C	C	C	C	C937	C	C	C937
G	C1921	C1666	A	A1497	A	C	C	C	C964	G1185	C	C	C	C	C	C938	C	C	C938
G	C1922	C1666	C	G1498	C	C	C	C	C965	G1186	C	C	C	C	C	C939	C	C	C939
U	A1923	U1671	A	G1498	A	C	C	C	C966	G1187	C	C	C	C	C	C940	C	C	C940
G	C1924	U1671	C	C1501	C	C	C	C	C967	G1188	C	C	C	C	C	C941	C	C	C941
U	A1766	C	G1378	G1501	G1257	C	C	C	C968	G1189	C	C	C	C	C	C942	C	C	C942
G	U1929	U1676	C1379	G1502	G1258	C	C	C	C969	G1190	C	C	C	C	C	C943	C	C	C943
U	U1930	C	U1381	G1502	G1259	C	C	C	C970	G1191	C	C	C	C	C	C944	C	C	C944
A	C1931	A1770	U1381	G1502	G1260	C	C	C	C971	G1192	C	C	C	C	C	C945	C	C	C945
A	A1932	U1771	A1387	U1514	G1261	C	C	C	C972	G1193	C	C	C	C	C	C946	C	C	C946
C	C1935	U1781	G1393	A1515	G1262	C	C	C	C973	G1194	C	C	C	C	C	C947	C	C	C947
A	C1936	U1781	G1394	G1516	G1263	C	C	C	C974	G1195	C	C	C	C	C	C948	C	C	C948
A	C1937	A1787	U1395	A1525	G1266	C	C	C	C975	G1196	C	C	C	C	C	C949	C	C	C949
C	C1938	U1792	U1395	A1534	G1269	C	C	C	C976	G1197	C	C	C	C	C	C950	C	C	C950
C	A1939	U1792	C1698	G1697	G1270	C	C	C	C977	G1198	C	C	C	C	C	C951	C	C	C951
A	U1940	G1797	U1699	U1588	G1271	C	C	C	C978	G1199	C	C	C	C	C	C952	C	C	C952
C	C2017	C1948	G1700	U1547	G1272	C	C	C	C979	G1200	C	C	C	C	C	C953	C	C	C953
C	C2018	U1948	A1701	A1547	G1273	C	C	C	C980	G1201	C	C	C	C	C	C954	C	C	C954
U	C2019	U1949	C1405	A1547	G1274	C	C	C	C981	G1202	C	C	C	C	C	C955	C	C	C955
U	U2020	G1803	C1405	A1547	G1275	C	C	C	C982	G1203	C	C	C	C	C	C956	C	C	C956
G	G2021	A1804	G1702	A1547	A1274	C	C	C	C983	G1204	C	C	C	C	C	C957	C	C	C957



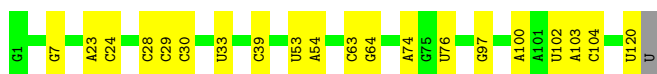
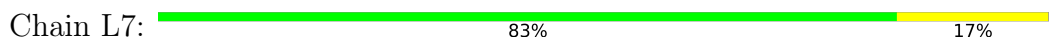
● Molecule 7: 28S ribosomal RNA



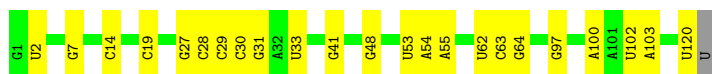
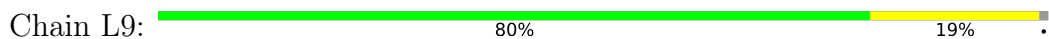
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C4101	C4102	C4103	C4104	C4105	C4106	C4107	C4108	C4109	C4110	U4111	C4112	U4113	C4114	C4115	C4116	U4117	U4118	C4119	A4127	A4128	C4133	C4137	C4138	G4139	C4140	C4141	C4142	C4143	C4144	G4150	A4157	C4182	U4183	C4187	A4170	G4183	G4184	C4191	C4199	A4203	C4206	U4212	C4215	A4220																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
G4221	G4222	G4225	U4229	A4233	A4234	C4237	C4241	U4242	C4243	A4251	G4254	A4255	A4256	A4257	U4265	A4268	A4273	A4279	A4282	C4286	U4290	G4291	U4296	G4297	A4298	U4299	A4304	G4305	U4306	A4307	C4308	C4314	C4319	G4326	G4329	G4330	G4331	C4332	A4339	C4341	C4345	C4349	C4350	U4351	U4352	U4353	U4354	C4355	U4360	G4364	G4373	U4374	C4375	A4376	C4377	A4378	A4379	A4380	A4381	C4382	A4394	A4422	C4426	C4429	G4433	U4437	C4444	G4448	A4449	U4450	G4451	U4452	C4453	C4461	A4464																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
C4465	C4466	U4471	U4481	A4488	U4500	U4501	C4502	A4510	A4511	U4512	A4513	C4516	A4517	A4518	C4519	C4524	C4545	A4548	C4549	U4550	U4551	C4554	U4557	C4560	C4561	C4562	C4567	C4573	U4574	C4575	C4583	A4584	A4589	A4590	C4593	U4594	A4599	C4600	U4601	C4608																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
C4612	C4613	G4618	U4636	G4652	C4653	U4656	G4657	G4658	C4670	C4671	A4672	U4677	G4678	G4679	U4682	U4683	A4684	A4687	C4688	U4689	C4695	U4699	A4700	A4701	A4707	A4708	U4709	C4714	A4729	C4730	G4731	G4732	C4733	A4734	G4740	C4741	G4742	G4745	C4746	C4747	G4750	G4751																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
C3878	G3879	G3885	G3886	C3887	A3890	A3891	U3892	G3897	A3901	A3906	G3907	A3908	C3909	C3910	C3911	U3915	G3916	U3920	C3926	G3927	U3930	G3939	U3940	A3941	A3942	A3943	G3944	A3945	G3946	A4068	U4069	U4070	U4071	G4076	C4080	G4084	A4085	G4086	C4094	C4095	U4096	G4097	A4098	G4099	C4100																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
C3878	G3879	G3885	G3886	C3887	A3890	A3891	U3892	G3897	A3901	A3906	G3907	A3908	C3909	C3910	C3911	U3915	G3916	U3920	C3926	G3927	U3930	G3939	U3940	A3941	A3942	A3943	G3944	A3945	G3946	A4068	U4069	U4070	U4071	G4076	C4080	G4084	A4085	G4086	C4094	C4095	U4096	G4097	A4098	G4099	C4100																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
U3729	U3730	U3731	U3732	U3733	U3734	U3735	U3736	U3737	U3738	U3739	U3740	U3741	U3742	U3743	U3744	U3745	U3746	U3747	U3748	U3749	U3750	U3751	U3752	U3753	U3754	U3755	U3756	U3757	U3758	U3759	U3760	U3761	U3762	U3763	U3764	U3765	U3766	U3767	U3768	U3769	U3770	U3771	U3772	U3773	U3774	U3775	U3776	U3777	U3778	U3779	U3780	U3781	U3782	U3783	U3784	U3785	U3786	U3787	U3788	U3789	U3790	U3791	U3792	U3793	U3794	U3795	U3796	U3797	U3798	U3799	U3800	U3801	U3802	U3803	U3804	U3805	U3806	U3807	U3808	U3809	U3810	U3811	U3812	U3813	U3814	U3815	U3816	U3817	U3818	U3819	U3820	U3821	U3822	U3823	U3824	U3825	U3826	U3827	U3828	U3829	U3830	U3831	U3832	U3833	U3834	U3835	U3836	U3837	U3838	U3839	U3840	U3841	U3842	U3843	U3844	U3845	U3846	U3847	U3848	U3849	U3850	U3851	U3852	U3853	U3854	U3855	U3856	U3857	U3858	U3859	U3860	U3861	U3862	U3863	U3864	U3865	U3866	U3867	U3868	U3869	U3870	U3871	U3872	U3873	U3874	U3875	U3876	U3877	U3878	U3879	U3880	U3881	U3882	U3883	U3884	U3885	U3886	U3887	U3888	U3889	U3890	U3891	U3892	U3893	U3894	U3895	U3896	U3897	U3898	U3899	U3900	U3901	U3902	U3903	U3904	U3905	U3906	U3907	U3908	U3909	U3910	U3911	U3912	U3913	U3914	U3915	U3916	U3917	U3918	U3919	U3920	U3921	U3922	U3923	U3924	U3925	U3926	U3927	U3928	U3929	U3930	U3931	U3932	U3933	U3934	U3935	U3936	U3937	U3938	U3939	U3940	U3941	U3942	U3943	U3944	U3945	U3946	U3947	U3948	U3949	U3950	U3951	U3952	U3953	U3954	U3955	U3956	U3957	U3958	U3959	U3960	U3961	U3962	U3963	U3964	U3965	U3966	U3967	U3968	U3969	U3970	U3971	U3972	U3973	U3974	U3975	U3976	U3977	U3978	U3979	U3980	U3981	U3982	U3983	U3984	U3985	U3986	U3987	U3988	U3989	U3990	U3991	U3992	U3993	U3994	U3995	U3996	U3997	U3998	U3999	U4000	U4001	U4002	U4003	U4004	U4005	U4006	U4007	U4008	U4009	U4010	U4011	U4012	U4013	U4014	U4015	U4016	U4017	U4018	U4019	U4020	U4021	U4022	U4023	U4024	U4025	U4026	U4027	U4028	U4029	U4030	U4031	U4032	U4033	U4034	U4035	U4036	U4037	U4038	U4039	U4040	U4041	U4042	U4043	U4044	U4045	U4046	U4047	U4048	U4049	U4050	U4051	U4052	U4053	U4054	U4055	U4056	U4057	U4058	U4059	U4060	U4061	U4062	U4063	U4064	U4065	U4066	U4067	U4068	U4069	U4070	U4071	U4072	U4073	U4074	U4075	U4076	U4077	U4078	U4079	U4080	U4081	U4082	U4083	U4084	U4085	U4086	U4087	U4088	U4089	U4090	U4091	U4092	U4093	U4094	U4095	U4096	U4097	U4098	U4099	U4100	U4101	U4102	U4103	U4104	U4105	U4106	U4107	U4108	U4109	U4110	U4111	U4112	U4113	U4114	U4115	U4116	U4117	U4118	U4119	U4120	U4121	U4122	U4123	U4124	U4125	U4126	U4127	U4128	U4129	U4130	U4131	U4132	U4133	U4134	U4135	U4136	U4137	U4138	U4139	U4140	U4141	U4142	U4143	U4144	U4145	U4146	U4147	U4148	U4149	U4150	U4151	U4152	U4153	U4154	U4155	U4156	U4157	U4158	U4159	U4160	U4161	U4162	U4163	U4164	U4165	U4166	U4167	U4168	U4169	U4170	U4171	U4172	U4173	U4174	U4175	U4176	U4177	U4178	U4179	U4180	U4181	U4182	U4183	U4184	U4185	U4186	U4187	U4188	U4189	U4190	U4191	U4192	U4193	U4194	U4195	U4196	U4197	U4198	U4199	U4200	U4201	U4202	U4203	U4204	U4205	U4206	U4207	U4208	U4209	U4210	U4211	U4212	U4213	U4214	U4215	U4216	U4217	U4218	U4219	U4220	U4221	U4222	U4223	U4224	U4225	U4226	U4227	U4228	U4229	U4230	U4231	U4232	U4233	U4234	U4235	U4236	U4237	U4238	U4239	U4240	U4241	U4242	U4243	U4244	U4245	U4246	U4247	U4248	U4249	U4250	U4251	U4252	U4253	U4254	U4255	U4256	U4257	U4258	U4259	U4260	U4261	U4262	U4263	U4264	U4265	U4266	U4267	U4268	U4269	U4270	U4271	U4272	U4273	U4274	U4275	U4276	U4277	U4278	U4279	U4280	U4281	U4282	U4283	U4284	U4285	U4286	U4287	U4288	U4289	U4290	U4291	U4292	U4293	U4294	U4295	U4296	U4297	U4298	U4299	U4300	U4301	U4302	U4303	U4304	U4305	U4306	U4307	U4308	U4309	U4310	U4311	U4312	U4313	U4314	U4315	U4316	U4317	U4318	U4319	U4320	U4321	U4322	U4323	U4324	U4325	U4326	U4327	U4328	U4329	U4330	U4331	U4332	U4333	U4334	U4335	U4336	U4337	U4338	U4339	U4340	U4341	U4342	U4343	U4344	U4345	U4346	U4347	U4348	U4349	U4350	U4351	U4352	U4353	U4354	U4355	U4356	U4357	U4358	U4359	U4360	U4361	U4362	U4363	U4364	U4365	U4366	U4367	U4368	U4369	U4370	U4371	U4372	U4373	U4374	U4375	U4376	U4377	U4378	U4379	U4380	U4381	U4382	U4383	U4384	U4385	U4386	U4387	U4388	U4389	U4390	U4391	U4392	U4393	U4394	U4395	U4396	U4397	U4398	U4399	U4400	U4401	U4402	U4403	U4404	U4405	U4406	U4407	U4408	U4409	U4410	U4411	U4412	U4413	U4414	U4415	U4416	U4417	U4418	U4419	U4420	U4421	U4422	U4423	U4424	U4425	U4426	U4427	U4428	U4429	U4430	U4431	U4432	U4433	U4434	U4435	U4436	U4437	U4438	U4439	U4440	U4441	U4442	U4443	U4444	U4445	U4446	U4447	U4448	U4449	U4450	U4451	U4452	U4453	U4454	U4455	U4456	U4457	U4458	U4459	U4460	U4461	U4462	U4463	U4464	U4465	U4466	U4467	U4468	U4469	U4470	U4471	U4472	U4473	U4474	U4475	U4476	U4477	U4478	U4479	U4480	U4481	U4482	U4483	U4484	U4485	U4486	U4487	U4488	U4489	U4490	U4491	U4492	U4493	U4494	U4495	U4496	U4497	U4498	U4499	U4500	U4501	U4502	U4503	U4504	U4505	U4506	U4507	U4508	U4509	U4510	U4511	U4512	U4513	U4514	U4515	U4516	U4517	U4518	U4519	U4520	U4521	U4522	U4523	U4524	U4525	U4526	U4527	U4528	U4529	U4530	U4531	U4532	U4533	U4534	U4535	U4536	U4537	U4538	U4539	U4540	U4541	U4542	U4543	U4544	U4545	U4546	U4547	U4548	U4549	U4550	U4551	U4552	U4553	U4554	U4555	U4556	U4557	U4558	U4559	U4560	U4561	U4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• Molecule 8: 5S ribosomal RNA



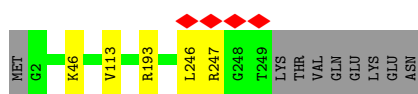
• Molecule 8: 5S ribosomal RNA



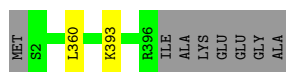
• Molecule 9: 60S ribosomal protein L8




• Molecule 9: 60S ribosomal protein L8

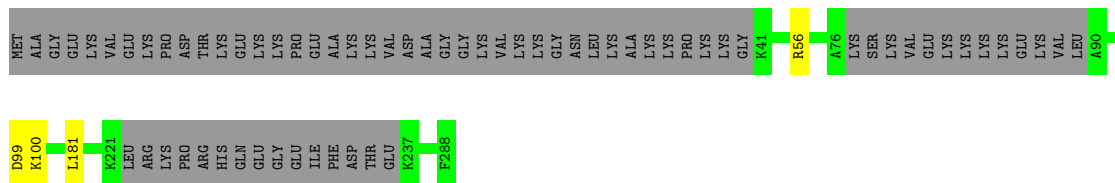


• Molecule 10: 60S ribosomal protein L3



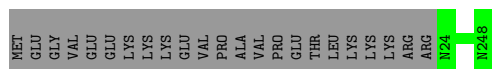
• Molecule 10: 60S ribosomal protein L3

Chain ME:  75% 24%



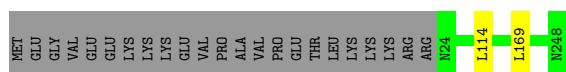
- Molecule 14: 60S ribosomal protein L7

Chain LF:  91% 9%




- Molecule 14: 60S ribosomal protein L7

Chain MF:  90% 9%




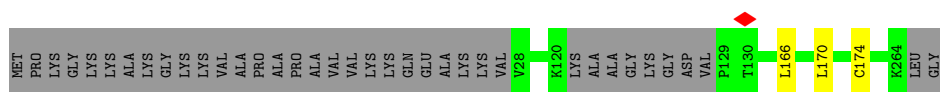
- Molecule 15: 60S ribosomal protein L7a

Chain LG:  85% 14%



- Molecule 15: 60S ribosomal protein L7a

Chain MG:  85% 14%



- Molecule 16: 60S ribosomal protein L9

Chain LH:  98%



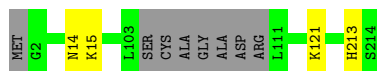
- Molecule 16: 60S ribosomal protein L9

Chain MH:  97%



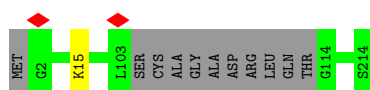
- Molecule 17: 60S ribosomal protein L10-like

Chain LI: 94%



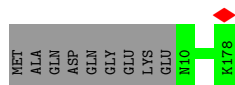
- Molecule 17: 60S ribosomal protein L10-like

Chain MI: 94% 5%



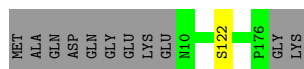
- Molecule 18: 60S ribosomal protein L11

Chain LJ: 95% 5%



- Molecule 18: 60S ribosomal protein L11

Chain MJ: 93% 6%



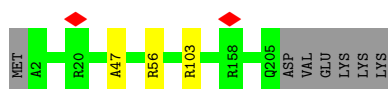
- Molecule 19: 60S ribosomal protein L13

Chain LL: 95%




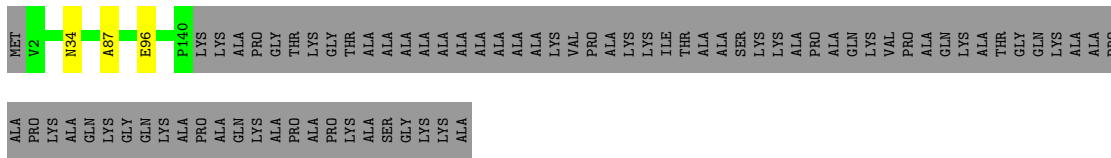
- Molecule 19: 60S ribosomal protein L13

Chain ML: 95%



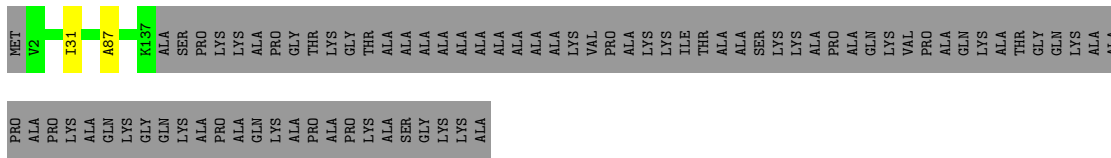
- Molecule 20: 60S ribosomal protein L14

Chain LM:  63% 35%



- Molecule 20: 60S ribosomal protein L14

Chain MM:  62% 37%



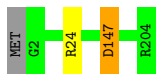
- Molecule 21: 60S ribosomal protein L15

Chain LN:  99%



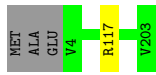
- Molecule 21: 60S ribosomal protein L15

Chain MN:  99%



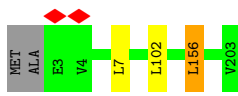
- Molecule 22: 60S ribosomal protein L13a

Chain LO:  98%



- Molecule 22: 60S ribosomal protein L13a

Chain MO:  98%



- Molecule 23: 60S ribosomal protein L17

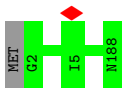
Chain LP:  98%



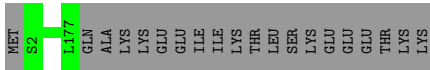
- Molecule 24: 60S ribosomal protein L18



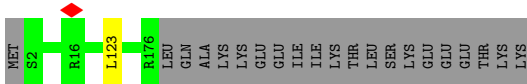
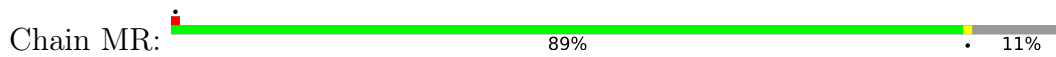
- Molecule 24: 60S ribosomal protein L18



- Molecule 25: 60S ribosomal protein L19



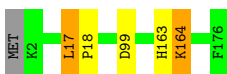
- Molecule 25: 60S ribosomal protein L19



- Molecule 26: 60S ribosomal protein L18a

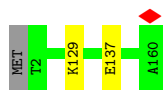


- Molecule 26: 60S ribosomal protein L18a

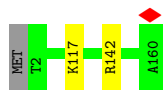


- Molecule 27: 60S ribosomal protein L21

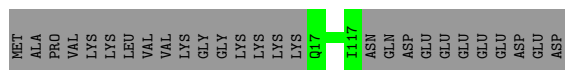
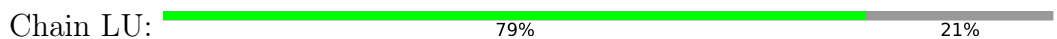




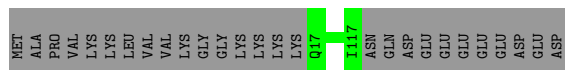
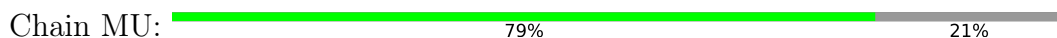
• Molecule 27: 60S ribosomal protein L21



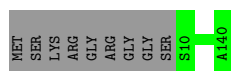
• Molecule 28: 60S ribosomal protein L22



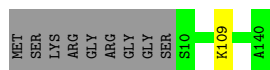
• Molecule 28: 60S ribosomal protein L22



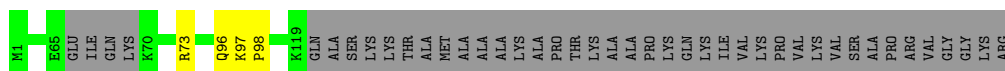
• Molecule 29: 60S ribosomal protein L23



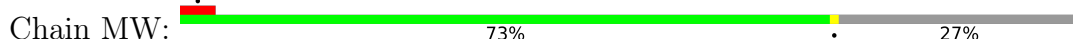
• Molecule 29: 60S ribosomal protein L23

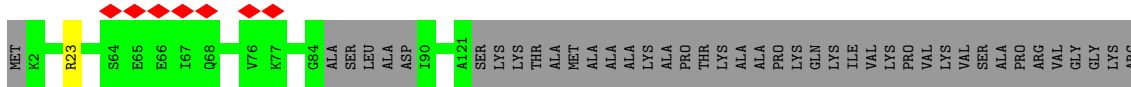


• Molecule 30: 60S ribosomal protein L24

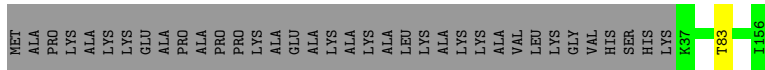
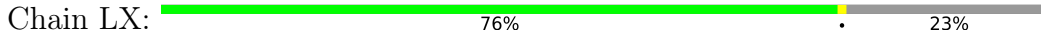


• Molecule 30: 60S ribosomal protein L24

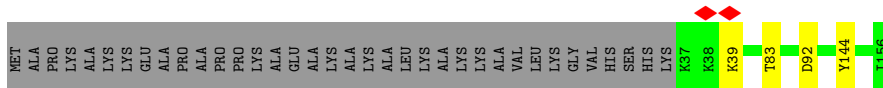
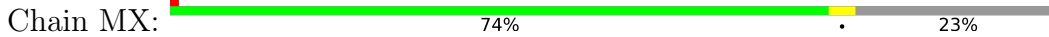




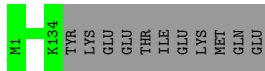
• Molecule 31: 60S ribosomal protein L23a



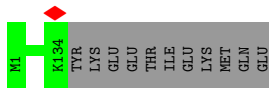
• Molecule 31: 60S ribosomal protein L23a



• Molecule 32: KOW domain-containing protein



• Molecule 32: KOW domain-containing protein



• Molecule 33: 60S ribosomal protein L27

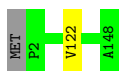


• Molecule 33: 60S ribosomal protein L27

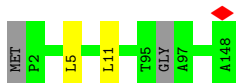


• Molecule 34: 60S ribosomal protein L27a

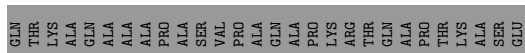
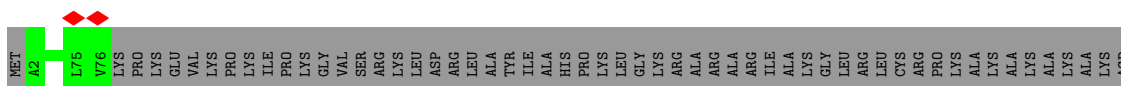




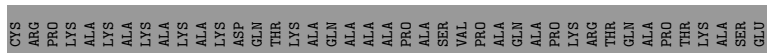
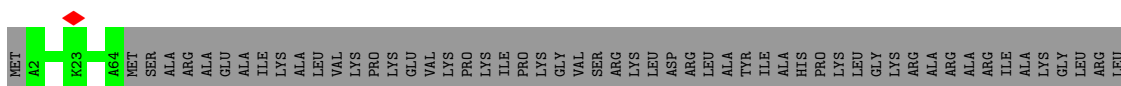
- Molecule 34: 60S ribosomal protein L27a



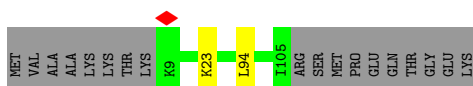
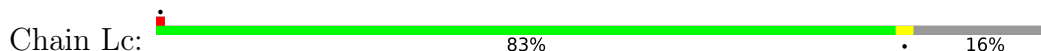
- Molecule 35: 60S ribosomal protein L29



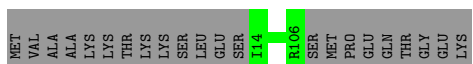
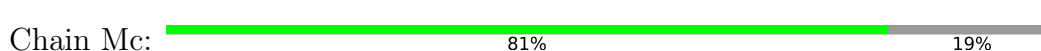
- Molecule 35: 60S ribosomal protein L29



- Molecule 36: 60S ribosomal protein L30

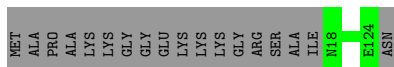


- Molecule 36: 60S ribosomal protein L30

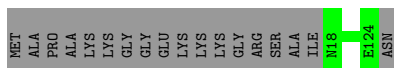
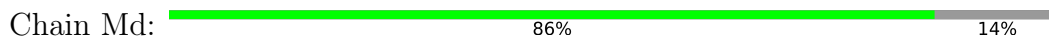


- Molecule 37: 60S ribosomal protein L31





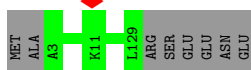
• Molecule 37: 60S ribosomal protein L31



• Molecule 38: 60S ribosomal protein L32



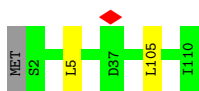
• Molecule 38: 60S ribosomal protein L32



• Molecule 39: 60S ribosomal protein L35a



• Molecule 39: 60S ribosomal protein L35a

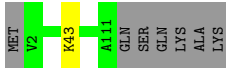


• Molecule 40: 60S ribosomal protein L34



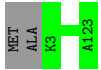
• Molecule 40: 60S ribosomal protein L34





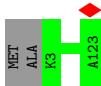
- Molecule 41: 60S ribosomal protein L35

Chain Lh: 98%



- Molecule 41: 60S ribosomal protein L35

Chain Mh: 98%



- Molecule 42: 60S ribosomal protein L36

Chain Li: 95%



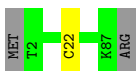
- Molecule 42: 60S ribosomal protein L36

Chain Mi: 93%



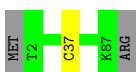
- Molecule 43: Ribosomal protein L37

Chain Lj: 97%



- Molecule 43: Ribosomal protein L37

Chain Mj: 97%



- Molecule 44: 60S ribosomal protein L38

Chain Lk: 97%



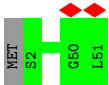
- Molecule 44: 60S ribosomal protein L38



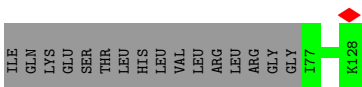
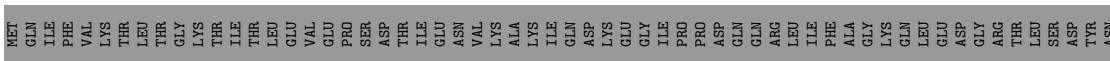
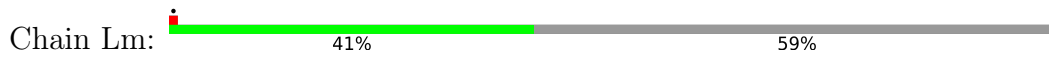
- Molecule 45: 60S ribosomal protein L39



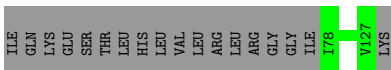
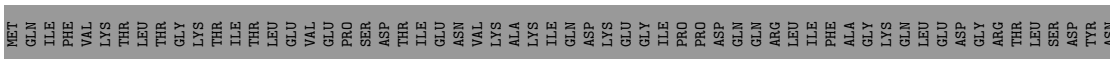
- Molecule 45: 60S ribosomal protein L39



- Molecule 46: Ubiquitin-60S ribosomal protein L40



- Molecule 46: Ubiquitin-60S ribosomal protein L40

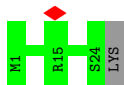


- Molecule 47: 60S ribosomal protein L41

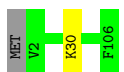




- Molecule 47: 60S ribosomal protein L41



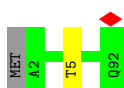
- Molecule 48: 60S ribosomal protein L36a



- Molecule 48: 60S ribosomal protein L36a



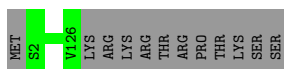
- Molecule 49: 60S ribosomal protein L37a



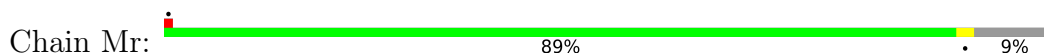
- Molecule 49: 60S ribosomal protein L37a

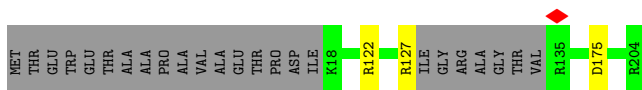


- Molecule 50: 60S ribosomal protein L28

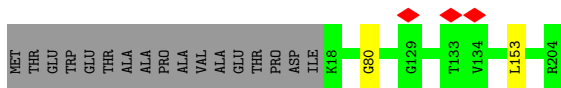


- Molecule 50: 60S ribosomal protein L28

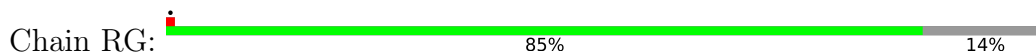




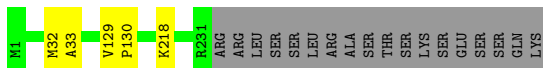
- Molecule 57: 40S ribosomal protein S5



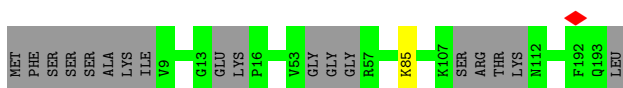
- Molecule 58: 40S ribosomal protein S6



- Molecule 58: 40S ribosomal protein S6



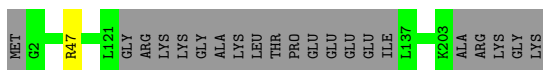
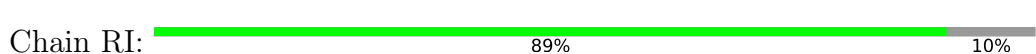
- Molecule 59: 40S ribosomal protein S7



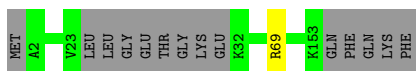
- Molecule 59: 40S ribosomal protein S7



- Molecule 60: 40S ribosomal protein S8



- Molecule 60: 40S ribosomal protein S8



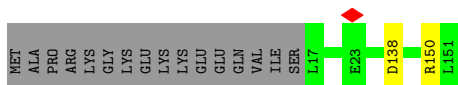
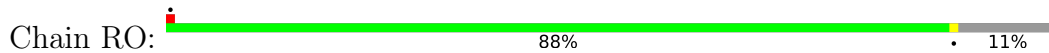
- Molecule 64: 40S ribosomal protein S13



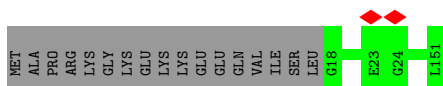
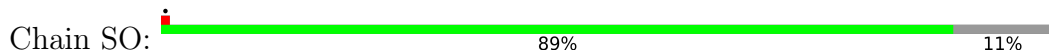
- Molecule 64: 40S ribosomal protein S13



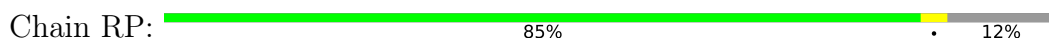
- Molecule 65: 40S ribosomal protein S14



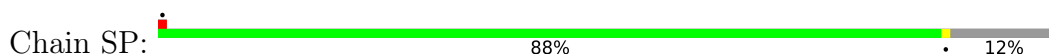
- Molecule 65: 40S ribosomal protein S14



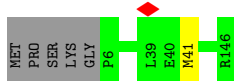
- Molecule 66: 40S ribosomal protein S15



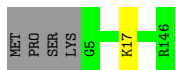
- Molecule 66: 40S ribosomal protein S15



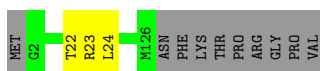
- Molecule 67: 40S ribosomal protein S16



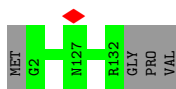
- Molecule 67: 40S ribosomal protein S16



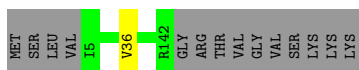
- Molecule 68: 40S ribosomal protein S17



- Molecule 68: 40S ribosomal protein S17



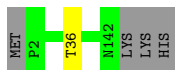
- Molecule 69: 40S ribosomal protein S18



- Molecule 69: 40S ribosomal protein S18

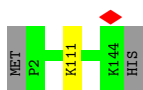


- Molecule 70: 40S ribosomal protein S19




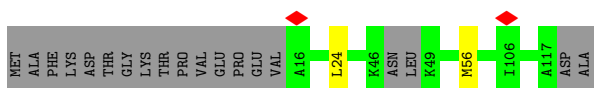
- Molecule 70: 40S ribosomal protein S19

Chain ST:  98%




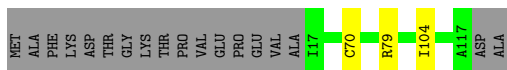
- Molecule 71: 40S ribosomal protein S20

Chain RU:  82% 16%



- Molecule 71: 40S ribosomal protein S20

Chain SU:  82% 15%



- Molecule 72: 40S ribosomal protein S21

Chain RV:  100%

There are no outlier residues recorded for this chain.

- Molecule 72: 40S ribosomal protein S21

Chain SV:  100%

There are no outlier residues recorded for this chain.

- Molecule 73: 40S ribosomal protein S15a

Chain RW:  99%



- Molecule 73: 40S ribosomal protein S15a

Chain SW:  98%



- Molecule 74: 40S ribosomal protein S23

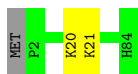
Chain RX:  97%

Chain Sa:  98%



- Molecule 78: 40S ribosomal protein S27

Chain Rb:  96%



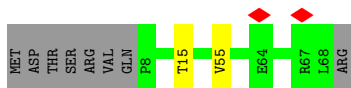
- Molecule 78: 40S ribosomal protein S27

Chain Sb:  95%



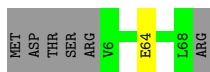
- Molecule 79: 40S ribosomal protein S28

Chain Rc:  86% 12%



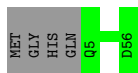
- Molecule 79: 40S ribosomal protein S28

Chain Sc:  90% 9%



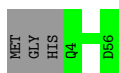
- Molecule 80: 40S ribosomal protein S29

Chain Rd:  93% 7%

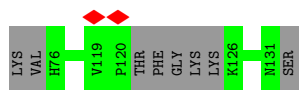


- Molecule 80: 40S ribosomal protein S29

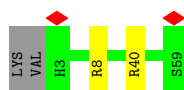
Chain Sd:  95% 5%



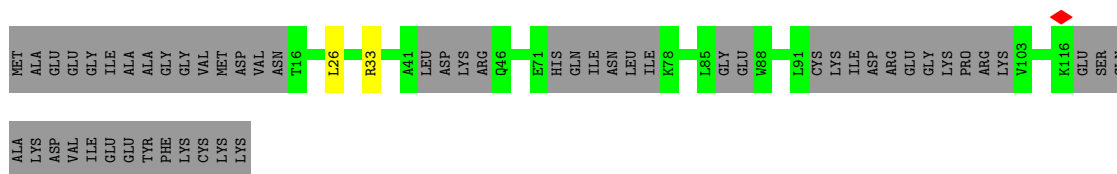
- Molecule 81: 40S ribosomal protein S30



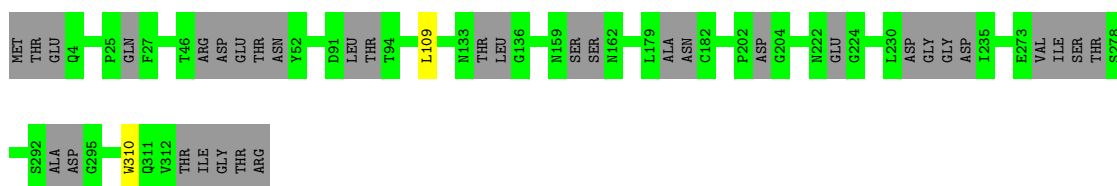
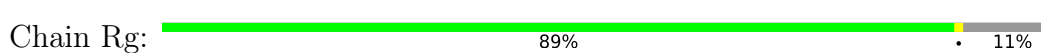
- Molecule 81: 40S ribosomal protein S30



- Molecule 82: 40S ribosomal protein S12



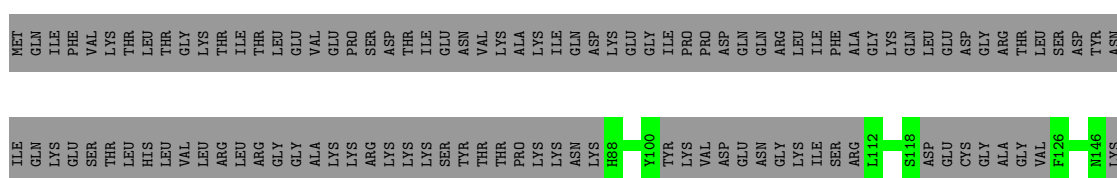
- Molecule 83: Receptor of activated protein C kinase 1



- Molecule 83: Receptor of activated protein C kinase 1



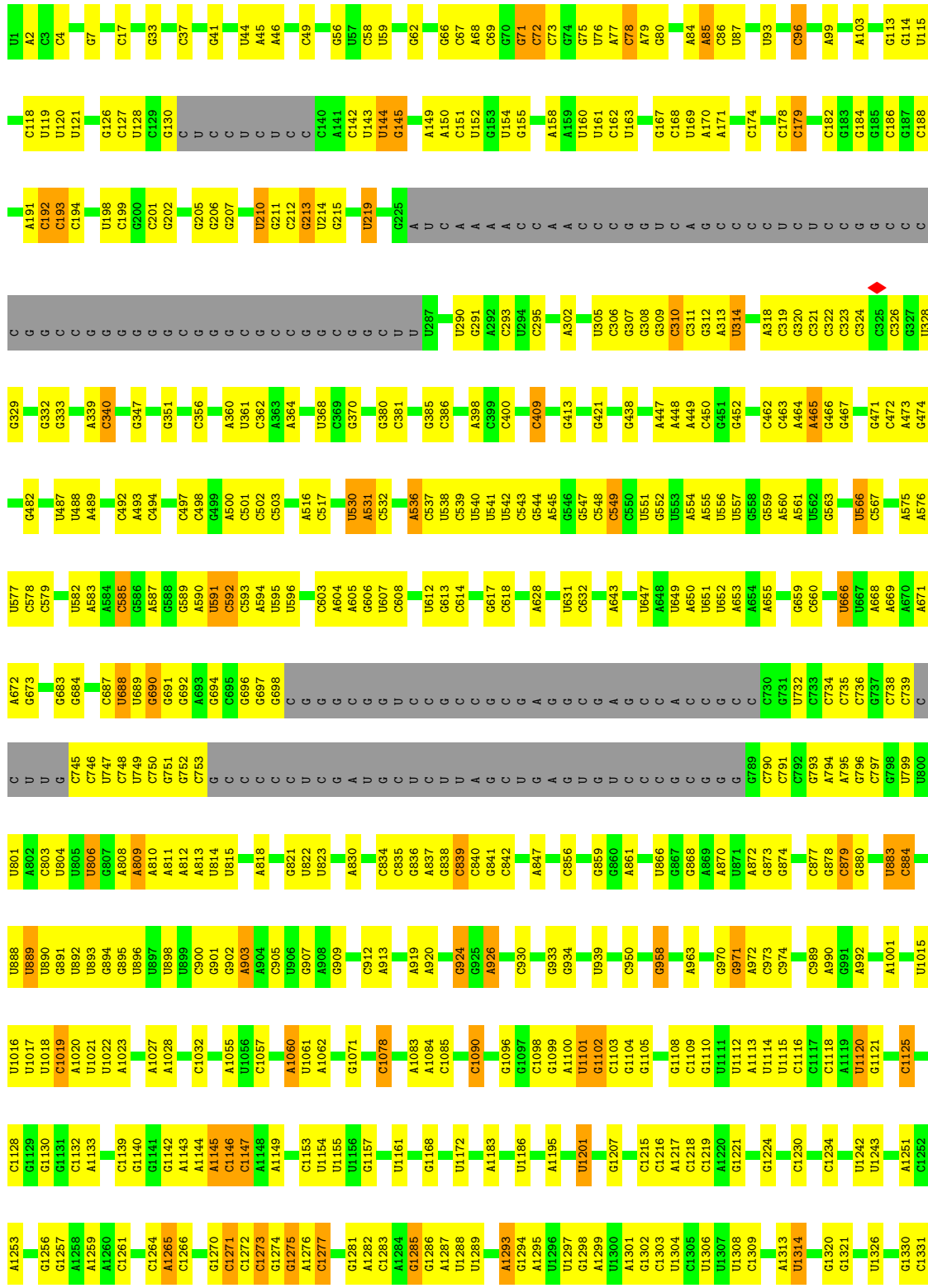
- Molecule 84: Ubiquitin-40S ribosomal protein S27a

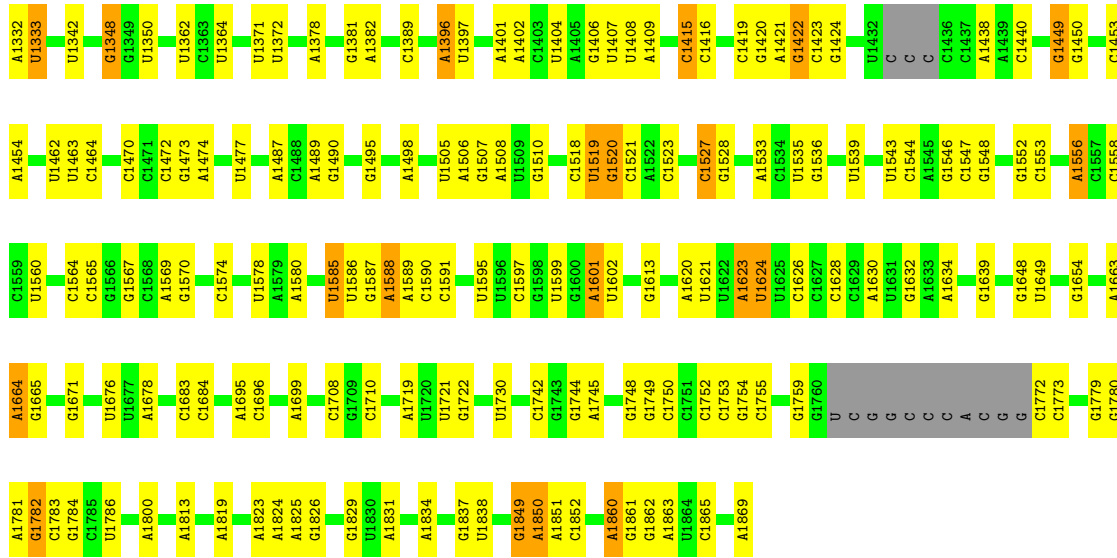


PRO
GLU
ASP
LYS

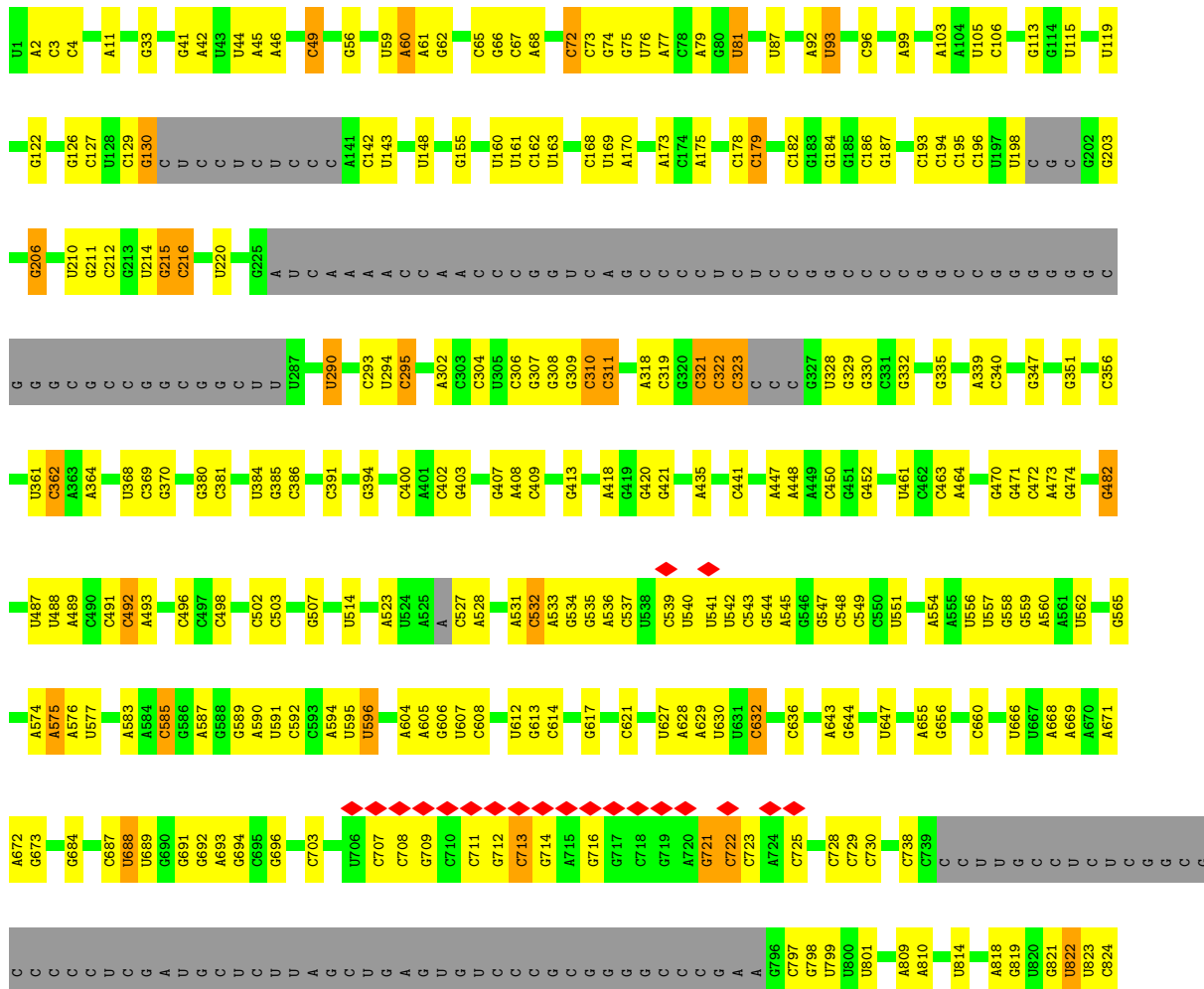
● Molecule 85: 18S ribosomal RNA

Chain S2: 57% 31% 8%





• Molecule 85: 18S ribosomal RNA



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	53848	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	43.6	Depositor
Minimum defocus (nm)	400	Depositor
Maximum defocus (nm)	3500	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	1.570	Depositor
Minimum map value	-0.176	Depositor
Average map value	0.009	Depositor
Map value standard deviation	0.059	Depositor
Recommended contour level	0.12	Depositor
Map size (Å)	668.8, 668.8, 668.8	wwPDB
Map dimensions	640, 640, 640	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.045, 1.045, 1.045	Depositor

5 Model quality i

5.1 Standard geometry i

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	A4	0.51	0/307	1.12	0/472
2	A5	0.60	0/241	1.46	4/370 (1.1%)
3	B4	0.70	0/1812	1.19	12/2823 (0.4%)
3	D5	0.53	0/1741	1.55	43/2709 (1.6%)
4	B5	0.58	0/1795	1.14	4/2798 (0.1%)
5	CC	0.51	0/1773	1.16	12/2759 (0.4%)
6	L1	0.80	0/3701	1.09	17/5766 (0.3%)
6	L8	1.02	1/3701 (0.0%)	1.14	26/5766 (0.5%)
7	L5	1.03	3/86579 (0.0%)	1.16	640/135047 (0.5%)
7	L6	0.81	3/85637 (0.0%)	1.17	678/133571 (0.5%)
8	L7	1.01	0/2858	1.14	15/4455 (0.3%)
8	L9	0.77	0/2858	1.13	15/4455 (0.3%)
9	LA	0.53	0/1936	0.62	0/2596
9	MA	0.44	0/1924	0.66	1/2581 (0.0%)
10	LB	0.50	0/3251	0.58	0/4352
10	MB	0.42	0/3168	0.61	1/4253 (0.0%)
11	LC	0.48	0/2938	0.58	0/3947
11	MC	0.40	0/2948	0.60	2/3960 (0.1%)
12	LD	0.47	0/2407	0.58	0/3227
12	MD	0.38	0/2333	0.56	0/3139
13	LE	0.43	0/1788	0.60	0/2399
13	ME	0.38	0/1747	0.63	0/2354
14	LF	0.50	0/1905	0.58	0/2539
14	MF	0.43	0/1879	0.66	2/2507 (0.1%)
15	LG	0.43	0/1849	0.61	2/2496 (0.1%)
15	MG	0.38	0/1765	0.63	2/2400 (0.1%)
16	LH	0.44	0/1529	0.59	0/2058
16	MH	0.38	0/1458	0.65	1/1973 (0.1%)
17	LI	0.48	0/1690	0.55	0/2258
17	MI	0.40	0/1619	0.59	0/2170
18	LJ	0.42	0/1352	0.60	0/1813
18	MJ	0.38	0/1249	0.59	0/1690
19	LL	0.44	0/1661	0.55	1/2229 (0.0%)
19	ML	0.39	0/1611	0.57	0/2167

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
20	LM	0.47	0/1145	0.56	0/1536
20	MM	0.43	0/1119	0.61	0/1501
21	LN	0.51	0/1746	0.57	1/2338 (0.0%)
21	MN	0.43	0/1738	0.60	1/2328 (0.0%)
22	LO	0.50	0/1665	0.52	0/2229
22	MO	0.42	0/1645	0.61	3/2205 (0.1%)
23	LP	0.50	0/1260	0.54	0/1692
24	LQ	0.50	0/1526	0.57	0/2038
24	MQ	0.40	0/1517	0.55	0/2030
25	LR	0.44	0/1468	0.53	0/1945
25	MR	0.36	0/1428	0.63	1/1897 (0.1%)
26	LS	0.52	0/1492	0.55	0/2003
26	MS	0.42	0/1476	0.60	2/1983 (0.1%)
27	LT	0.47	0/1310	0.57	0/1752
27	MT	0.41	0/1296	0.57	0/1734
28	LU	0.42	0/813	0.60	0/1093
28	MU	0.37	0/782	0.63	0/1057
29	LV	0.49	0/985	0.56	0/1323
29	MV	0.44	0/968	0.58	0/1303
30	LW	0.44	0/820	0.56	0/1104
30	MW	0.36	0/798	0.52	0/1081
31	LX	0.46	0/998	0.54	0/1341
31	MX	0.39	0/967	0.65	1/1304 (0.1%)
32	LY	0.48	0/1128	0.58	0/1500
32	MY	0.40	0/1101	0.56	0/1469
33	LZ	0.48	0/1130	0.56	0/1507
33	MZ	0.40	0/1105	0.52	0/1475
34	La	0.48	0/1183	0.55	0/1582
34	Ma	0.39	0/1173	0.57	1/1568 (0.1%)
35	Lb	0.41	0/600	0.57	0/796
35	Mb	0.36	0/509	0.50	0/675
36	Lc	0.50	0/752	0.54	0/1011
36	Mc	0.39	0/726	0.63	0/977
37	Ld	0.47	0/889	0.54	0/1198
37	Md	0.39	0/871	0.57	0/1176
38	Le	0.52	0/1067	0.59	0/1425
38	Me	0.41	0/1063	0.55	0/1418
39	Lf	0.52	0/891	0.63	0/1194
39	Mf	0.45	0/883	0.69	1/1185 (0.1%)
40	Lg	0.50	0/899	0.58	0/1200
40	Mg	0.40	0/861	0.61	0/1153
41	Lh	0.44	0/1014	0.53	0/1340
41	Mh	0.34	0/983	0.53	0/1304

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
42	Li	0.38	0/824	0.55	0/1093
42	Mi	0.34	0/808	0.56	0/1074
43	Lj	0.51	0/720	0.61	0/952
43	Mj	0.41	0/716	0.54	0/948
44	Lk	0.45	0/548	0.60	0/730
44	Mk	0.39	0/534	0.63	0/712
45	Ll	0.44	0/454	0.57	0/599
45	Ml	0.38	0/450	0.52	0/595
46	Lm	0.45	0/431	0.54	0/570
46	Mm	0.38	0/399	0.53	0/532
47	Ln	0.47	0/231	0.50	0/294
47	Mn	0.33	0/231	0.54	0/294
48	Lo	0.48	0/861	0.59	0/1137
48	Mo	0.40	0/787	0.62	1/1042 (0.1%)
49	Lp	0.53	0/706	0.60	0/939
49	Mp	0.44	0/699	0.58	0/931
50	Lr	0.48	0/1012	0.60	0/1358
50	Mr	0.38	0/997	0.57	2/1341 (0.1%)
51	MP	0.40	0/1229	0.59	1/1655 (0.1%)
52	RA	0.36	0/1612	0.56	1/2203 (0.0%)
52	SA	0.43	0/1708	0.58	0/2324
53	RB	0.36	0/1654	0.59	0/2227
53	SB	0.44	0/1745	0.63	0/2337
54	RC	0.40	0/1626	0.62	0/2211
54	SC	0.46	0/1697	0.58	0/2301
55	RD	0.38	0/1499	0.63	1/2041 (0.0%)
55	SD	0.38	0/1606	0.58	1/2181 (0.0%)
56	RE	0.34	0/1933	0.58	0/2623
56	SE	0.43	0/2014	0.61	0/2726
57	RF	0.35	0/1385	0.61	1/1870 (0.1%)
57	SF	0.38	0/1437	0.62	1/1936 (0.1%)
58	RG	0.31	0/1570	0.56	0/2112
58	SG	0.34	0/1657	0.57	0/2247
59	RH	0.32	0/1362	0.58	0/1831
59	SH	0.40	0/1295	0.57	0/1763
60	RI	0.32	0/1477	0.57	0/1990
60	SI	0.43	0/1603	0.57	0/2161
61	RJ	0.35	0/1432	0.63	0/1926
61	SJ	0.39	0/1456	0.55	0/1957
62	RK	0.34	0/759	0.60	0/1036
62	SK	0.40	0/750	0.56	1/1026 (0.1%)
63	RL	0.36	0/1159	0.61	0/1555
63	SL	0.47	0/1163	0.54	0/1562

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
64	RN	0.33	0/1223	0.57	1/1644 (0.1%)
64	SN	0.42	0/1206	0.58	0/1626
65	RO	0.36	0/1016	0.66	1/1363 (0.1%)
65	SO	0.44	0/982	0.62	0/1320
66	RP	0.36	0/1020	0.65	0/1369
66	SP	0.38	0/995	0.54	0/1344
67	RQ	0.34	0/1096	0.61	0/1473
67	SQ	0.40	0/1089	0.60	0/1465
68	RR	0.31	0/890	0.65	1/1207 (0.1%)
68	SR	0.38	0/955	0.61	0/1294
69	RS	0.35	0/1098	0.60	0/1480
69	SS	0.40	0/1136	0.63	0/1528
70	RT	0.33	0/1012	0.53	0/1371
70	ST	0.37	0/1100	0.52	0/1479
71	RU	0.29	0/758	0.61	1/1023 (0.1%)
71	SU	0.35	0/722	0.60	0/983
72	RV	0.35	0/596	0.55	0/800
72	SV	0.42	0/625	0.57	0/837
73	RW	0.34	0/1044	0.53	0/1398
73	SW	0.47	0/1043	0.60	0/1396
74	RX	0.33	0/1066	0.65	1/1434 (0.1%)
74	SX	0.45	0/1096	0.62	0/1467
75	RY	0.33	0/871	0.59	0/1169
75	SY	0.36	0/944	0.56	0/1271
76	RZ	0.31	0/493	0.73	2/672 (0.3%)
76	SZ	0.39	0/565	0.68	1/764 (0.1%)
77	Ra	0.35	0/775	0.55	0/1042
77	Sa	0.46	0/794	0.58	0/1065
78	Rb	0.33	0/631	0.64	0/853
78	Sb	0.39	0/632	0.61	0/851
79	Rc	0.34	0/432	0.78	0/582
79	Sc	0.42	0/474	0.68	1/638 (0.2%)
80	Rd	0.34	0/430	0.52	0/573
80	Sd	0.43	0/443	0.53	0/589
81	Re	0.34	0/390	0.58	0/515
81	Se	0.38	0/431	0.55	0/570
82	Rf	0.26	0/485	0.55	1/661 (0.2%)
83	Rg	0.30	0/1993	0.61	0/2730
83	Sg	0.35	0/2227	0.69	0/3059
84	Rh	0.29	0/270	0.48	0/359
85	S2	0.91	6/40905 (0.0%)	1.24	450/63753 (0.7%)
85	S3	0.70	4/40701 (0.0%)	1.23	386/63428 (0.6%)
All	All	0.74	17/449690 (0.0%)	1.02	2345/663456 (0.4%)

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
9	LA	0	1
9	MA	0	2
11	MC	0	1
12	LD	0	1
12	MD	0	1
13	LE	0	1
13	ME	0	1
15	MG	0	1
16	LH	0	1
17	LI	0	2
17	MI	0	1
18	MJ	0	1
19	LL	0	2
19	ML	0	1
20	MM	0	1
24	LQ	0	1
26	MS	0	2
27	LT	0	1
29	MV	0	1
31	MX	0	1
39	Lf	0	1
48	Mo	0	1
51	MP	0	1
52	RA	0	1
52	SA	0	1
53	SB	0	1
54	SC	0	1
58	SG	0	2
66	RP	0	1
67	SQ	0	1
68	RR	0	1
69	SS	0	1
71	RU	0	1
71	SU	0	2
74	SX	0	2
76	RZ	0	1
78	Rb	0	1
78	Sb	0	2
79	Rc	0	2

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Mol	Chain	#Chirality outliers	#Planarity outliers
83	Rg	0	2
83	Sg	0	1
All	All	0	51

The worst 5 of 17 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	L8	62	A	N9-C4	-7.77	1.33	1.37
85	S3	216	C	N3-C4	-7.53	1.28	1.33
85	S2	926	A	C6-N1	-7.27	1.30	1.35
85	S3	215	G	C6-N1	-7.13	1.34	1.39
85	S2	536	A	N9-C4	6.03	1.41	1.37

The worst 5 of 2345 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
85	S3	310	C	N3-C4-N4	-23.33	101.67	118.00
85	S3	215	G	N1-C6-O6	-21.95	106.73	119.90
7	L6	468	U	C5-C4-O4	20.43	138.16	125.90
85	S3	310	C	C5-C4-N4	19.96	134.17	120.20
7	L6	468	U	N3-C4-O4	-18.11	106.72	119.40

There are no chirality outliers.

5 of 51 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
9	LA	46	LYS	Peptide
12	LD	119	TYR	Peptide
13	LE	278	THR	Peptide
16	LH	187	VAL	Peptide
17	LI	14	ASN	Peptide

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

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

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
9	LA	246/257 (96%)	224 (91%)	22 (9%)	0	100	100
9	MA	246/257 (96%)	219 (89%)	27 (11%)	0	100	100
10	LB	393/403 (98%)	362 (92%)	29 (7%)	2 (0%)	29	68
10	MB	389/403 (96%)	353 (91%)	36 (9%)	0	100	100
11	LC	362/427 (85%)	335 (92%)	25 (7%)	2 (1%)	25	64
11	MC	363/427 (85%)	341 (94%)	20 (6%)	2 (1%)	25	64
12	LD	291/297 (98%)	270 (93%)	18 (6%)	3 (1%)	15	53
12	MD	291/297 (98%)	270 (93%)	19 (6%)	2 (1%)	22	60
13	LE	213/288 (74%)	191 (90%)	22 (10%)	0	100	100
13	ME	214/288 (74%)	201 (94%)	12 (6%)	1 (0%)	29	68
14	LF	223/248 (90%)	211 (95%)	12 (5%)	0	100	100
14	MF	223/248 (90%)	211 (95%)	12 (5%)	0	100	100
15	LG	225/266 (85%)	206 (92%)	18 (8%)	1 (0%)	34	72
15	MG	225/266 (85%)	206 (92%)	19 (8%)	0	100	100
16	LH	188/192 (98%)	172 (92%)	16 (8%)	0	100	100
16	MH	187/192 (97%)	166 (89%)	21 (11%)	0	100	100
17	LI	202/214 (94%)	185 (92%)	16 (8%)	1 (0%)	29	68
17	MI	199/214 (93%)	178 (89%)	21 (11%)	0	100	100
18	LJ	167/178 (94%)	161 (96%)	6 (4%)	0	100	100
18	MJ	165/178 (93%)	155 (94%)	10 (6%)	0	100	100
19	LL	203/211 (96%)	184 (91%)	18 (9%)	1 (0%)	29	68
19	ML	202/211 (96%)	182 (90%)	19 (9%)	1 (0%)	29	68
20	LM	137/215 (64%)	127 (93%)	8 (6%)	2 (2%)	10	42
20	MM	134/215 (62%)	126 (94%)	7 (5%)	1 (1%)	22	60
21	LN	201/204 (98%)	194 (96%)	7 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
21	MN	201/204 (98%)	192 (96%)	9 (4%)	0	100	100
22	LO	198/203 (98%)	193 (98%)	5 (2%)	0	100	100
22	MO	199/203 (98%)	191 (96%)	8 (4%)	0	100	100
23	LP	151/154 (98%)	142 (94%)	9 (6%)	0	100	100
24	LQ	185/188 (98%)	170 (92%)	15 (8%)	0	100	100
24	MQ	185/188 (98%)	174 (94%)	11 (6%)	0	100	100
25	LR	174/196 (89%)	173 (99%)	1 (1%)	0	100	100
25	MR	173/196 (88%)	171 (99%)	2 (1%)	0	100	100
26	LS	173/176 (98%)	159 (92%)	14 (8%)	0	100	100
26	MS	173/176 (98%)	158 (91%)	13 (8%)	2 (1%)	13	48
27	LT	157/160 (98%)	144 (92%)	12 (8%)	1 (1%)	25	64
27	MT	157/160 (98%)	146 (93%)	11 (7%)	0	100	100
28	LU	99/128 (77%)	94 (95%)	5 (5%)	0	100	100
28	MU	99/128 (77%)	92 (93%)	7 (7%)	0	100	100
29	LV	129/140 (92%)	118 (92%)	11 (8%)	0	100	100
29	MV	129/140 (92%)	120 (93%)	9 (7%)	0	100	100
30	LW	111/157 (71%)	101 (91%)	7 (6%)	3 (3%)	5	26
30	MW	111/157 (71%)	104 (94%)	7 (6%)	0	100	100
31	LX	118/156 (76%)	114 (97%)	4 (3%)	0	100	100
31	MX	118/156 (76%)	105 (89%)	13 (11%)	0	100	100
32	LY	132/145 (91%)	119 (90%)	13 (10%)	0	100	100
32	MY	132/145 (91%)	119 (90%)	13 (10%)	0	100	100
33	LZ	133/136 (98%)	127 (96%)	6 (4%)	0	100	100
33	MZ	133/136 (98%)	127 (96%)	6 (4%)	0	100	100
34	La	145/148 (98%)	134 (92%)	11 (8%)	0	100	100
34	Ma	142/148 (96%)	127 (89%)	15 (11%)	0	100	100
35	Lb	73/159 (46%)	67 (92%)	6 (8%)	0	100	100
35	Mb	61/159 (38%)	56 (92%)	5 (8%)	0	100	100
36	Lc	95/115 (83%)	92 (97%)	2 (2%)	1 (1%)	14	50
36	Mc	91/115 (79%)	85 (93%)	6 (7%)	0	100	100
37	Ld	105/125 (84%)	99 (94%)	6 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
37	Md	105/125 (84%)	98 (93%)	7 (7%)	0	100	100
38	Le	126/135 (93%)	119 (94%)	7 (6%)	0	100	100
38	Me	125/135 (93%)	120 (96%)	5 (4%)	0	100	100
39	Lf	107/110 (97%)	101 (94%)	6 (6%)	0	100	100
39	Mf	107/110 (97%)	97 (91%)	9 (8%)	1 (1%)	17	55
40	Lg	112/117 (96%)	104 (93%)	8 (7%)	0	100	100
40	Mg	108/117 (92%)	99 (92%)	9 (8%)	0	100	100
41	Lh	119/123 (97%)	115 (97%)	4 (3%)	0	100	100
41	Mh	119/123 (97%)	117 (98%)	2 (2%)	0	100	100
42	Li	100/105 (95%)	95 (95%)	5 (5%)	0	100	100
42	Mi	99/105 (94%)	95 (96%)	4 (4%)	0	100	100
43	Lj	84/88 (96%)	78 (93%)	6 (7%)	0	100	100
43	Mj	84/88 (96%)	82 (98%)	2 (2%)	0	100	100
44	Lk	67/70 (96%)	60 (90%)	7 (10%)	0	100	100
44	Mk	67/70 (96%)	59 (88%)	8 (12%)	0	100	100
45	Ll	48/51 (94%)	46 (96%)	2 (4%)	0	100	100
45	Ml	48/51 (94%)	42 (88%)	6 (12%)	0	100	100
46	Lm	50/128 (39%)	50 (100%)	0	0	100	100
46	Mm	48/128 (38%)	43 (90%)	5 (10%)	0	100	100
47	Ln	22/25 (88%)	22 (100%)	0	0	100	100
47	Mn	22/25 (88%)	22 (100%)	0	0	100	100
48	Lo	103/106 (97%)	98 (95%)	5 (5%)	0	100	100
48	Mo	96/106 (91%)	88 (92%)	8 (8%)	0	100	100
49	Lp	89/92 (97%)	81 (91%)	8 (9%)	0	100	100
49	Mp	89/92 (97%)	85 (96%)	4 (4%)	0	100	100
50	Lr	123/137 (90%)	116 (94%)	7 (6%)	0	100	100
50	Mr	123/137 (90%)	116 (94%)	7 (6%)	0	100	100
51	MP	151/184 (82%)	137 (91%)	14 (9%)	0	100	100
52	RA	210/295 (71%)	196 (93%)	13 (6%)	1 (0%)	29	68
52	SA	214/295 (72%)	204 (95%)	9 (4%)	1 (0%)	29	68
53	RB	212/264 (80%)	202 (95%)	10 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
53	SB	211/264 (80%)	205 (97%)	6 (3%)	0	100	100
54	RC	215/293 (73%)	205 (95%)	10 (5%)	0	100	100
54	SC	217/293 (74%)	207 (95%)	10 (5%)	0	100	100
55	RD	207/243 (85%)	189 (91%)	17 (8%)	1 (0%)	29	68
55	SD	219/243 (90%)	193 (88%)	26 (12%)	0	100	100
56	RE	255/263 (97%)	236 (92%)	19 (8%)	0	100	100
56	SE	260/263 (99%)	238 (92%)	22 (8%)	0	100	100
57	RF	176/204 (86%)	165 (94%)	11 (6%)	0	100	100
57	SF	185/204 (91%)	167 (90%)	17 (9%)	1 (0%)	29	68
58	RG	203/249 (82%)	186 (92%)	17 (8%)	0	100	100
58	SG	229/249 (92%)	206 (90%)	21 (9%)	2 (1%)	17	55
59	RH	168/194 (87%)	150 (89%)	18 (11%)	0	100	100
59	SH	179/194 (92%)	164 (92%)	15 (8%)	0	100	100
60	RI	183/208 (88%)	173 (94%)	10 (6%)	0	100	100
60	SI	204/208 (98%)	193 (95%)	11 (5%)	0	100	100
61	RJ	174/194 (90%)	165 (95%)	7 (4%)	2 (1%)	14	50
61	SJ	177/194 (91%)	168 (95%)	9 (5%)	0	100	100
62	RK	93/165 (56%)	82 (88%)	11 (12%)	0	100	100
62	SK	94/165 (57%)	86 (92%)	8 (8%)	0	100	100
63	RL	136/158 (86%)	124 (91%)	12 (9%)	0	100	100
63	SL	140/158 (89%)	129 (92%)	11 (8%)	0	100	100
64	RN	148/151 (98%)	132 (89%)	16 (11%)	0	100	100
64	SN	148/151 (98%)	137 (93%)	11 (7%)	0	100	100
65	RO	133/151 (88%)	120 (90%)	13 (10%)	0	100	100
65	SO	132/151 (87%)	118 (89%)	14 (11%)	0	100	100
66	RP	123/145 (85%)	112 (91%)	9 (7%)	2 (2%)	9	40
66	SP	126/145 (87%)	120 (95%)	6 (5%)	0	100	100
67	RQ	139/146 (95%)	130 (94%)	9 (6%)	0	100	100
67	SQ	140/146 (96%)	127 (91%)	13 (9%)	0	100	100
68	RR	123/135 (91%)	106 (86%)	16 (13%)	1 (1%)	19	57
68	SR	129/135 (96%)	114 (88%)	15 (12%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
69	RS	136/152 (90%)	117 (86%)	19 (14%)	0	100	100
69	SS	139/152 (91%)	119 (86%)	20 (14%)	0	100	100
70	RT	139/145 (96%)	130 (94%)	9 (6%)	0	100	100
70	ST	141/145 (97%)	137 (97%)	4 (3%)	0	100	100
71	RU	96/119 (81%)	85 (88%)	11 (12%)	0	100	100
71	SU	99/119 (83%)	88 (89%)	11 (11%)	0	100	100
72	RV	81/83 (98%)	76 (94%)	5 (6%)	0	100	100
72	SV	81/83 (98%)	73 (90%)	8 (10%)	0	100	100
73	RW	127/130 (98%)	115 (91%)	12 (9%)	0	100	100
73	SW	127/130 (98%)	119 (94%)	8 (6%)	0	100	100
74	RX	139/143 (97%)	123 (88%)	15 (11%)	1 (1%)	22	60
74	SX	139/143 (97%)	128 (92%)	9 (6%)	2 (1%)	11	43
75	RY	111/133 (84%)	106 (96%)	5 (4%)	0	100	100
75	SY	121/133 (91%)	113 (93%)	8 (7%)	0	100	100
76	RZ	68/125 (54%)	59 (87%)	9 (13%)	0	100	100
76	SZ	73/125 (58%)	66 (90%)	7 (10%)	0	100	100
77	Ra	97/101 (96%)	89 (92%)	8 (8%)	0	100	100
77	Sa	97/101 (96%)	84 (87%)	13 (13%)	0	100	100
78	Rb	81/84 (96%)	66 (82%)	14 (17%)	1 (1%)	13	48
78	Sb	81/84 (96%)	72 (89%)	9 (11%)	0	100	100
79	Rc	59/69 (86%)	48 (81%)	11 (19%)	0	100	100
79	Sc	61/69 (88%)	53 (87%)	8 (13%)	0	100	100
80	Rd	50/56 (89%)	46 (92%)	4 (8%)	0	100	100
80	Sd	51/56 (91%)	50 (98%)	1 (2%)	0	100	100
81	Re	47/59 (80%)	40 (85%)	7 (15%)	0	100	100
81	Se	55/59 (93%)	50 (91%)	5 (9%)	0	100	100
82	Rf	68/132 (52%)	58 (85%)	10 (15%)	0	100	100
83	Rg	259/317 (82%)	220 (85%)	39 (15%)	0	100	100
83	Sg	304/317 (96%)	244 (80%)	58 (19%)	2 (1%)	22	60
84	Rh	35/156 (22%)	33 (94%)	2 (6%)	0	100	100
All	All	21776/25012 (87%)	20084 (92%)	1648 (8%)	44 (0%)	50	82

5 of 44 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
11	LC	111	TRP
12	LD	113	PHE
17	LI	213	HIS
20	LM	96	GLU
36	Lc	23	LYS

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
9	LA	190/199 (96%)	188 (99%)	2 (1%)	73	90
9	MA	187/199 (94%)	185 (99%)	2 (1%)	73	90
10	LB	343/349 (98%)	343 (100%)	0	100	100
10	MB	324/349 (93%)	324 (100%)	0	100	100
11	LC	299/348 (86%)	297 (99%)	2 (1%)	84	94
11	MC	301/348 (86%)	301 (100%)	0	100	100
12	LD	241/250 (96%)	240 (100%)	1 (0%)	91	97
12	MD	218/250 (87%)	217 (100%)	1 (0%)	88	96
13	LE	191/252 (76%)	188 (98%)	3 (2%)	62	86
13	ME	179/252 (71%)	177 (99%)	2 (1%)	73	90
14	LF	194/215 (90%)	194 (100%)	0	100	100
14	MF	187/215 (87%)	187 (100%)	0	100	100
15	LG	188/223 (84%)	188 (100%)	0	100	100
15	MG	167/223 (75%)	167 (100%)	0	100	100
16	LH	167/171 (98%)	166 (99%)	1 (1%)	86	95
16	MH	150/171 (88%)	149 (99%)	1 (1%)	84	94
17	LI	172/181 (95%)	171 (99%)	1 (1%)	86	95
17	MI	156/181 (86%)	156 (100%)	0	100	100
18	LJ	136/149 (91%)	136 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
18	MJ	113/149 (76%)	113 (100%)	0	100	100
19	LL	164/177 (93%)	163 (99%)	1 (1%)	86	95
19	ML	152/177 (86%)	151 (99%)	1 (1%)	84	94
20	LM	114/161 (71%)	113 (99%)	1 (1%)	78	92
20	MM	110/161 (68%)	110 (100%)	0	100	100
21	LN	171/172 (99%)	170 (99%)	1 (1%)	86	95
21	MN	169/172 (98%)	167 (99%)	2 (1%)	71	90
22	LO	170/174 (98%)	169 (99%)	1 (1%)	86	95
22	MO	163/174 (94%)	162 (99%)	1 (1%)	86	95
23	LP	132/135 (98%)	130 (98%)	2 (2%)	65	87
24	LQ	161/165 (98%)	161 (100%)	0	100	100
24	MQ	159/165 (96%)	159 (100%)	0	100	100
25	LR	150/175 (86%)	150 (100%)	0	100	100
25	MR	141/175 (81%)	141 (100%)	0	100	100
26	LS	156/157 (99%)	156 (100%)	0	100	100
26	MS	151/157 (96%)	150 (99%)	1 (1%)	84	94
27	LT	135/140 (96%)	135 (100%)	0	100	100
27	MT	130/140 (93%)	128 (98%)	2 (2%)	65	87
28	LU	84/115 (73%)	84 (100%)	0	100	100
28	MU	77/115 (67%)	77 (100%)	0	100	100
29	LV	99/107 (92%)	99 (100%)	0	100	100
29	MV	94/107 (88%)	94 (100%)	0	100	100
30	LW	61/126 (48%)	60 (98%)	1 (2%)	62	86
30	MW	54/126 (43%)	53 (98%)	1 (2%)	57	84
31	LX	107/133 (80%)	106 (99%)	1 (1%)	78	92
31	MX	98/133 (74%)	96 (98%)	2 (2%)	55	83
32	LY	123/135 (91%)	123 (100%)	0	100	100
32	MY	116/135 (86%)	116 (100%)	0	100	100
33	LZ	117/118 (99%)	117 (100%)	0	100	100
33	MZ	109/118 (92%)	109 (100%)	0	100	100
34	La	118/121 (98%)	117 (99%)	1 (1%)	81	93

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
34	Ma	116/121 (96%)	115 (99%)	1 (1%)	78	92
35	Lb	59/126 (47%)	59 (100%)	0	100	100
35	Mb	49/126 (39%)	49 (100%)	0	100	100
36	Lc	79/97 (81%)	78 (99%)	1 (1%)	69	89
36	Mc	76/97 (78%)	76 (100%)	0	100	100
37	Ld	94/110 (86%)	94 (100%)	0	100	100
37	Md	88/110 (80%)	88 (100%)	0	100	100
38	Le	113/121 (93%)	113 (100%)	0	100	100
38	Me	113/121 (93%)	113 (100%)	0	100	100
39	Lf	87/89 (98%)	87 (100%)	0	100	100
39	Mf	85/89 (96%)	85 (100%)	0	100	100
40	Lg	93/100 (93%)	92 (99%)	1 (1%)	73	90
40	Mg	88/100 (88%)	87 (99%)	1 (1%)	73	90
41	Lh	108/110 (98%)	108 (100%)	0	100	100
41	Mh	100/110 (91%)	100 (100%)	0	100	100
42	Li	81/89 (91%)	79 (98%)	2 (2%)	47	79
42	Mi	79/89 (89%)	76 (96%)	3 (4%)	33	69
43	Lj	73/75 (97%)	72 (99%)	1 (1%)	67	88
43	Mj	72/75 (96%)	71 (99%)	1 (1%)	67	88
44	Lk	57/65 (88%)	56 (98%)	1 (2%)	59	85
44	Mk	52/65 (80%)	52 (100%)	0	100	100
45	Ll	47/48 (98%)	47 (100%)	0	100	100
45	Ml	46/48 (96%)	46 (100%)	0	100	100
46	Lm	47/116 (40%)	47 (100%)	0	100	100
46	Mm	42/116 (36%)	42 (100%)	0	100	100
47	Ln	23/24 (96%)	23 (100%)	0	100	100
47	Mn	23/24 (96%)	23 (100%)	0	100	100
48	Lo	90/94 (96%)	89 (99%)	1 (1%)	73	90
48	Mo	79/94 (84%)	78 (99%)	1 (1%)	69	89
49	Lp	71/75 (95%)	70 (99%)	1 (1%)	67	88
49	Mp	70/75 (93%)	70 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
50	Lr	107/121 (88%)	107 (100%)	0	100	100
50	Mr	103/121 (85%)	102 (99%)	1 (1%)	76	91
51	MP	124/163 (76%)	123 (99%)	1 (1%)	81	93
52	RA	147/243 (60%)	145 (99%)	2 (1%)	67	88
52	SA	170/243 (70%)	168 (99%)	2 (1%)	71	90
53	RB	162/231 (70%)	162 (100%)	0	100	100
53	SB	191/231 (83%)	191 (100%)	0	100	100
54	RC	155/225 (69%)	155 (100%)	0	100	100
54	SC	175/225 (78%)	173 (99%)	2 (1%)	73	90
55	RD	126/202 (62%)	125 (99%)	1 (1%)	81	93
55	SD	145/202 (72%)	144 (99%)	1 (1%)	84	94
56	RE	176/225 (78%)	175 (99%)	1 (1%)	86	95
56	SE	196/225 (87%)	194 (99%)	2 (1%)	76	91
57	RF	133/170 (78%)	131 (98%)	2 (2%)	65	87
57	SF	139/170 (82%)	139 (100%)	0	100	100
58	RG	137/218 (63%)	136 (99%)	1 (1%)	84	94
58	SG	138/218 (63%)	137 (99%)	1 (1%)	84	94
59	RH	134/174 (77%)	133 (99%)	1 (1%)	84	94
59	SH	109/174 (63%)	109 (100%)	0	100	100
60	RI	141/180 (78%)	140 (99%)	1 (1%)	84	94
60	SI	149/180 (83%)	149 (100%)	0	100	100
61	RJ	140/168 (83%)	138 (99%)	2 (1%)	67	88
61	SJ	143/168 (85%)	143 (100%)	0	100	100
62	RK	68/136 (50%)	68 (100%)	0	100	100
62	SK	65/136 (48%)	64 (98%)	1 (2%)	65	87
63	RL	124/142 (87%)	122 (98%)	2 (2%)	62	86
63	SL	121/142 (85%)	120 (99%)	1 (1%)	81	93
64	RN	127/131 (97%)	126 (99%)	1 (1%)	81	93
64	SN	123/131 (94%)	123 (100%)	0	100	100
65	RO	103/119 (87%)	102 (99%)	1 (1%)	76	91
65	SO	95/119 (80%)	95 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
66	RP	103/130 (79%)	102 (99%)	1 (1%)	76	91
66	SP	96/130 (74%)	95 (99%)	1 (1%)	76	91
67	RQ	105/121 (87%)	104 (99%)	1 (1%)	76	91
67	SQ	102/121 (84%)	102 (100%)	0	100	100
68	RR	77/122 (63%)	77 (100%)	0	100	100
68	SR	84/122 (69%)	84 (100%)	0	100	100
69	RS	103/132 (78%)	102 (99%)	1 (1%)	76	91
69	SS	110/132 (83%)	109 (99%)	1 (1%)	78	92
70	RT	82/115 (71%)	81 (99%)	1 (1%)	71	90
70	ST	105/115 (91%)	104 (99%)	1 (1%)	76	91
71	RU	78/107 (73%)	78 (100%)	0	100	100
71	SU	68/107 (64%)	67 (98%)	1 (2%)	65	87
72	RV	53/67 (79%)	53 (100%)	0	100	100
72	SV	62/67 (92%)	62 (100%)	0	100	100
73	RW	110/113 (97%)	110 (100%)	0	100	100
73	SW	110/113 (97%)	108 (98%)	2 (2%)	59	85
74	RX	101/115 (88%)	101 (100%)	0	100	100
74	SX	109/115 (95%)	109 (100%)	0	100	100
75	RY	79/115 (69%)	79 (100%)	0	100	100
75	SY	86/115 (75%)	85 (99%)	1 (1%)	71	90
76	RZ	40/103 (39%)	38 (95%)	2 (5%)	24	60
76	SZ	56/103 (54%)	56 (100%)	0	100	100
77	Ra	79/88 (90%)	79 (100%)	0	100	100
77	Sa	83/88 (94%)	83 (100%)	0	100	100
78	Rb	64/76 (84%)	64 (100%)	0	100	100
78	Sb	65/76 (86%)	64 (98%)	1 (2%)	65	87
79	Rc	41/62 (66%)	41 (100%)	0	100	100
79	Sc	51/62 (82%)	51 (100%)	0	100	100
80	Rd	42/49 (86%)	42 (100%)	0	100	100
80	Sd	44/49 (90%)	44 (100%)	0	100	100
81	Re	37/48 (77%)	37 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
81	Se	39/48 (81%)	37 (95%)	2 (5%)	24	60
82	Rf	30/108 (28%)	29 (97%)	1 (3%)	38	73
83	Rg	167/275 (61%)	167 (100%)	0	100	100
83	Sg	199/275 (72%)	198 (100%)	1 (0%)	88	96
84	Rh	17/140 (12%)	17 (100%)	0	100	100
All	All	17231/21296 (81%)	17136 (99%)	95 (1%)	86	95

5 of 95 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
57	RF	127	ARG
76	RZ	60	LYS
59	RH	85	LYS
64	RN	46	THR
52	SA	212	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 223 such sidechains are listed below:

Mol	Chain	Res	Type
27	MT	77	ASN
83	Sg	191	HIS
55	RD	165	ASN
83	Sg	62	HIS
64	SN	36	GLN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A4	13/14 (92%)	7 (53%)	0
2	A5	10/11 (90%)	4 (40%)	0
3	B4	75/76 (98%)	23 (30%)	0
3	D5	70/76 (92%)	37 (52%)	2 (2%)
4	B5	74/75 (98%)	22 (29%)	0
5	CC	74/75 (98%)	27 (36%)	2 (2%)
6	L1	155/157 (98%)	37 (23%)	2 (1%)
6	L8	155/157 (98%)	30 (19%)	2 (1%)
7	L5	3594/5227 (68%)	867 (24%)	22 (0%)
7	L6	3553/5227 (67%)	900 (25%)	13 (0%)

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
8	L7	119/121 (98%)	13 (10%)	0
8	L9	119/121 (98%)	16 (13%)	0
85	S2	1706/1869 (91%)	543 (31%)	20 (1%)
85	S3	1693/1869 (90%)	504 (29%)	14 (0%)
All	All	11410/15075 (75%)	3030 (26%)	77 (0%)

5 of 3030 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A4	39	U
1	A4	40	U
1	A4	41	U
1	A4	42	U
1	A4	46	U

5 of 77 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
85	S2	1519	U
85	S3	1395	C
85	S2	1597	C
85	S3	604	A
85	S3	1824	A

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

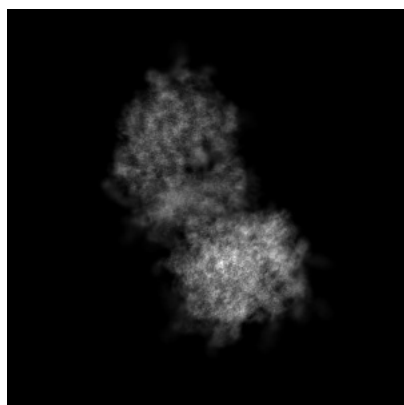
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-14181. These allow visual inspection of the internal detail of the map and identification of artifacts.

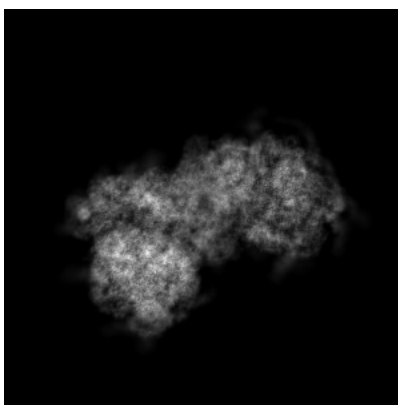
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

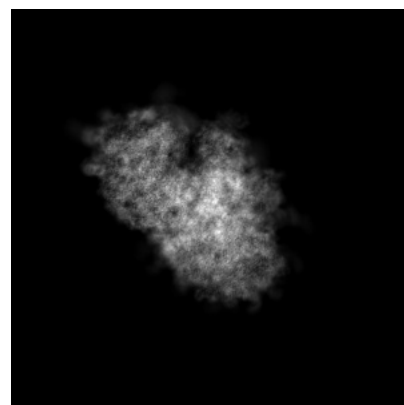
6.1.1 Primary map



X



Y

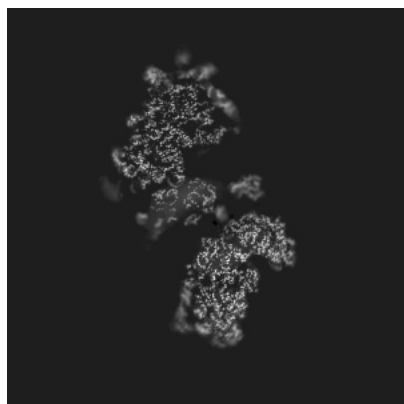


Z

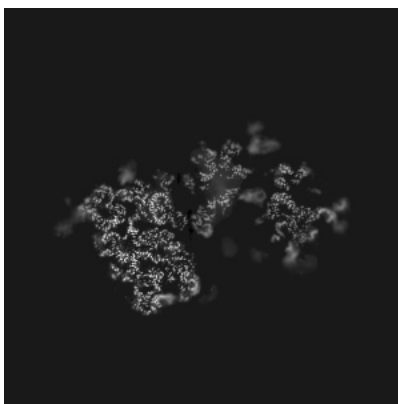
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

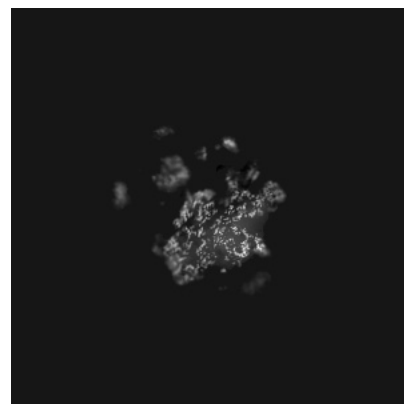
6.2.1 Primary map



X Index: 320



Y Index: 320

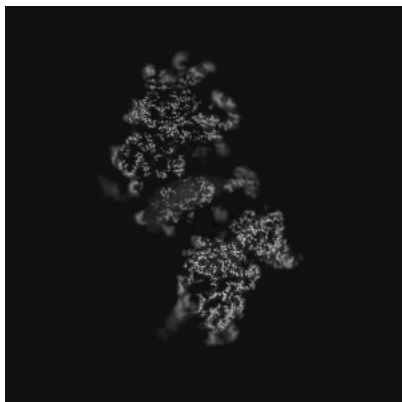


Z Index: 320

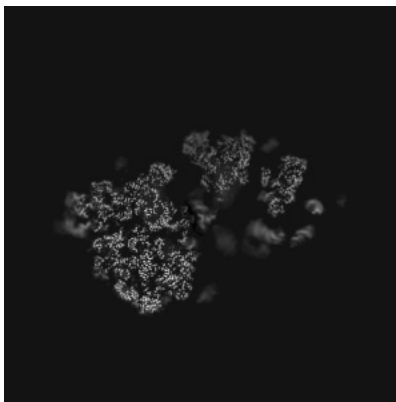
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

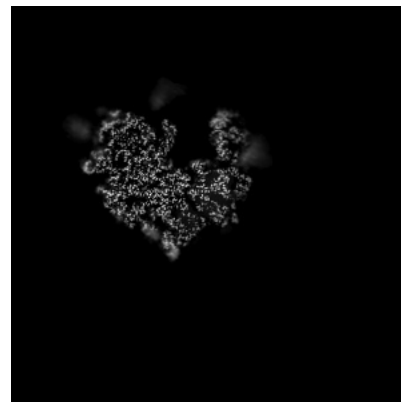
6.3.1 Primary map



X Index: 327



Y Index: 336



Z Index: 231

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

6.4 Orthogonal surface views [i](#)

6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.12. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

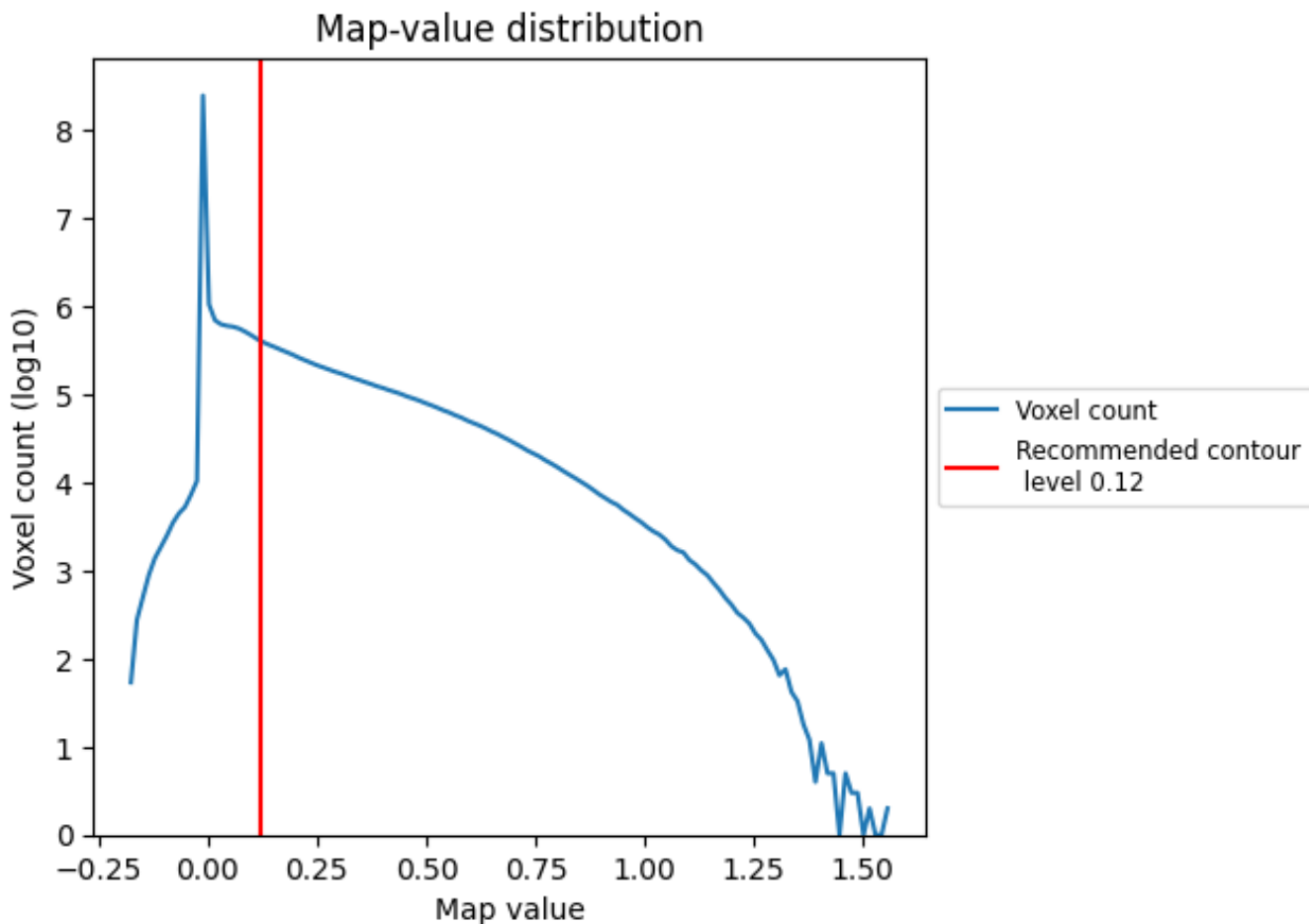
6.5 Mask visualisation

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

7 Map analysis [i](#)

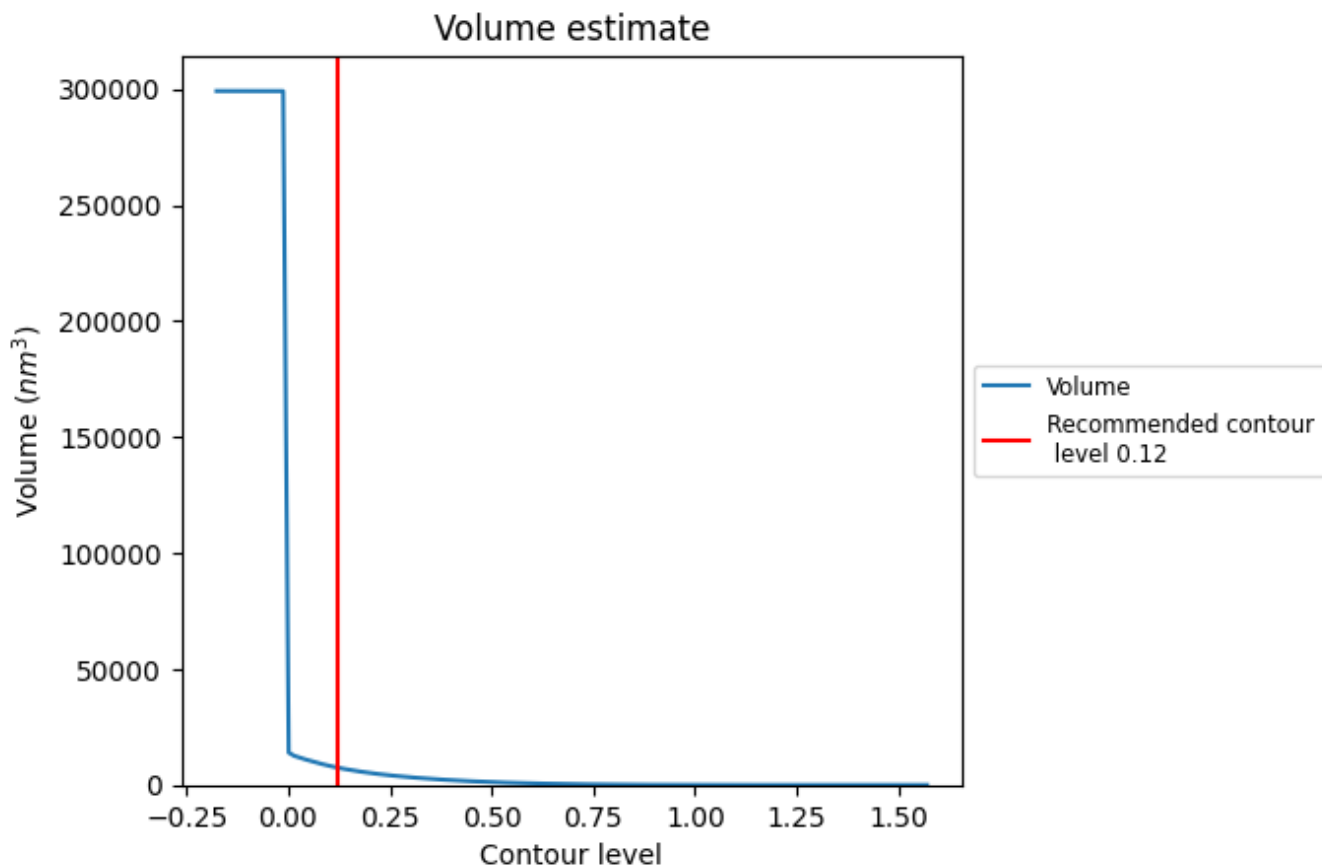
This section contains the results of statistical analysis of the map.

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.

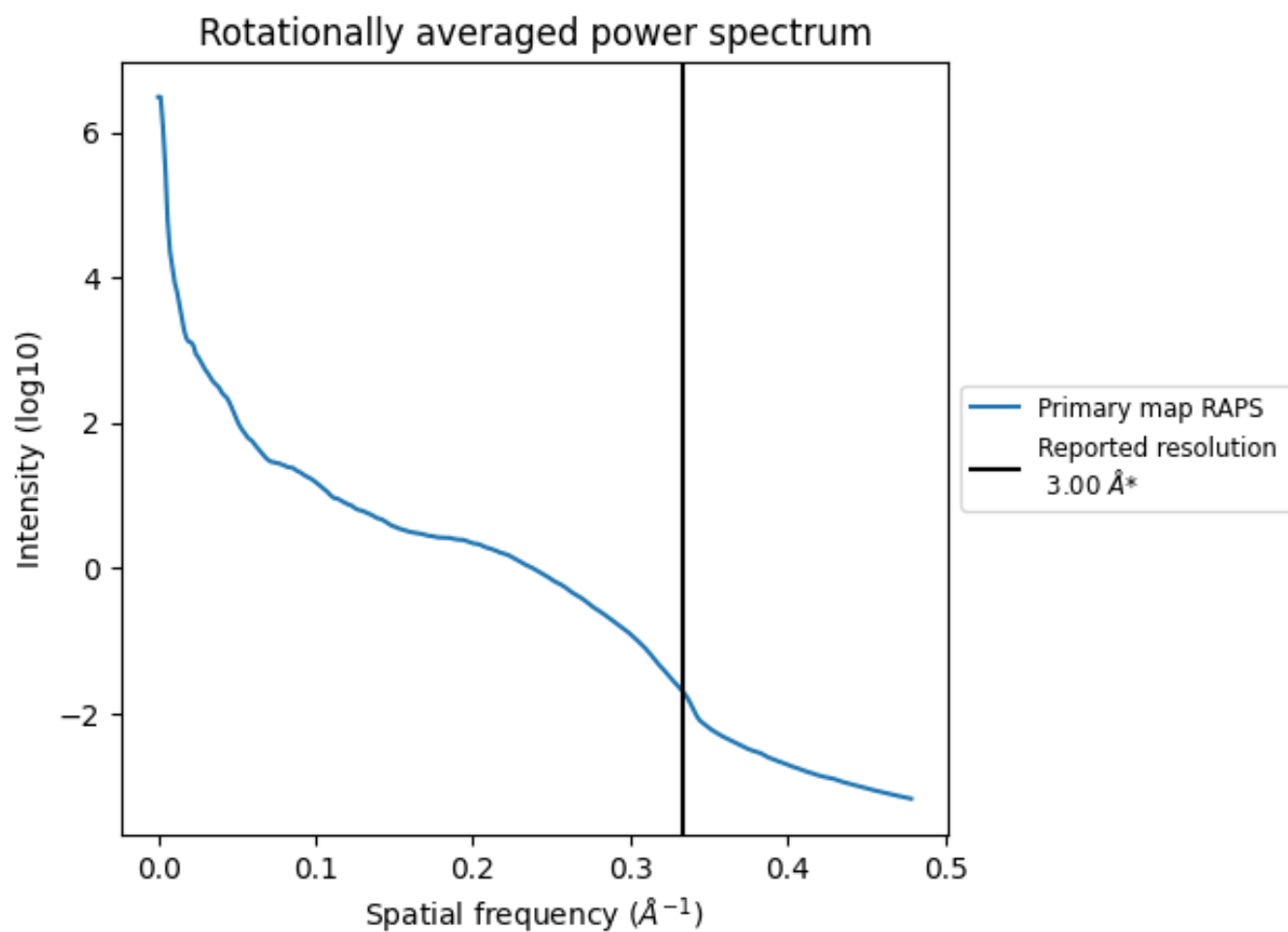
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 7521 nm³; this corresponds to an approximate mass of 6794 kDa.

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

7.3 Rotationally averaged power spectrum [i](#)

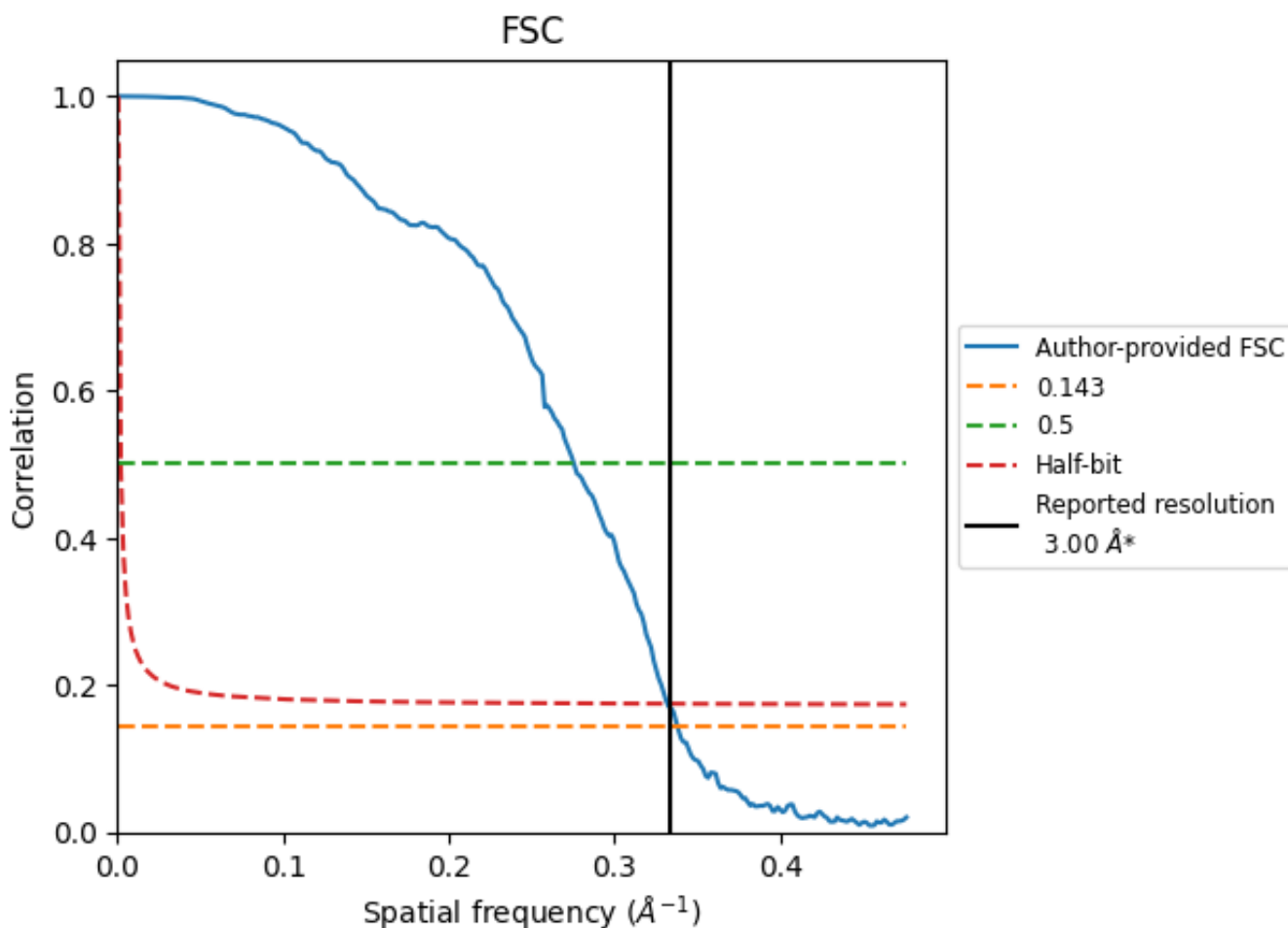


*Reported resolution corresponds to spatial frequency of 0.333 Å⁻¹

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 0.333 Å⁻¹

8.2 Resolution estimates [i](#)

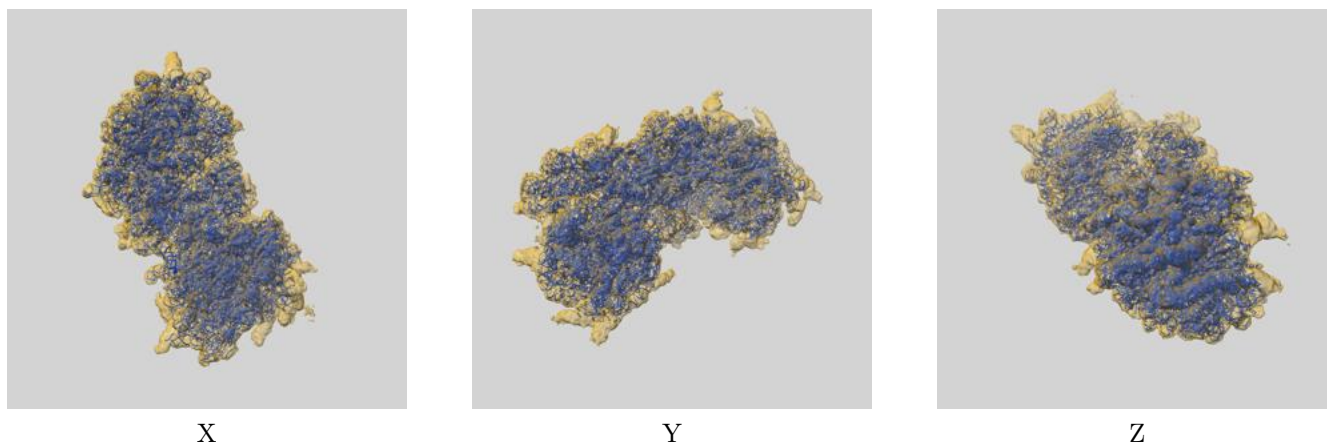
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.00	-	-
Author-provided FSC curve	2.96	3.63	3.01
Unmasked-calculated*	-	-	-

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

9 Map-model fit [i](#)

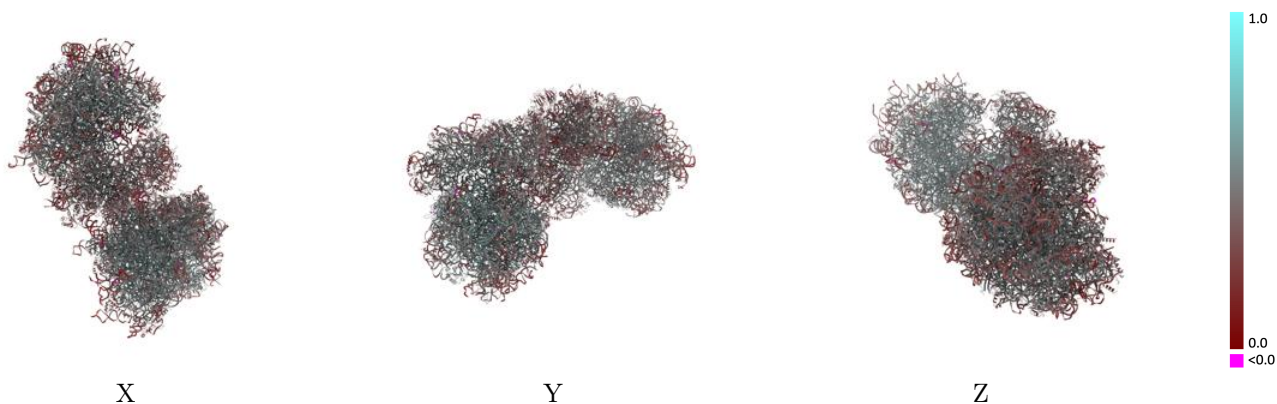
This section contains information regarding the fit between EMDB map EMD-14181 and PDB model 7QVP. Per-residue inclusion information can be found in section 3 on page 26.

9.1 Map-model overlay [i](#)



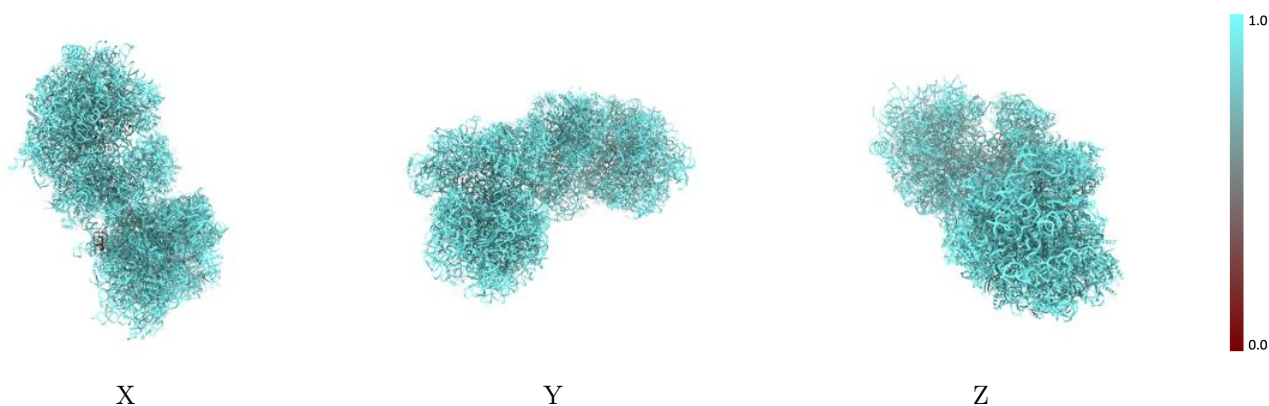
The images above show the 3D surface view of the map at the recommended contour level 0.12 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



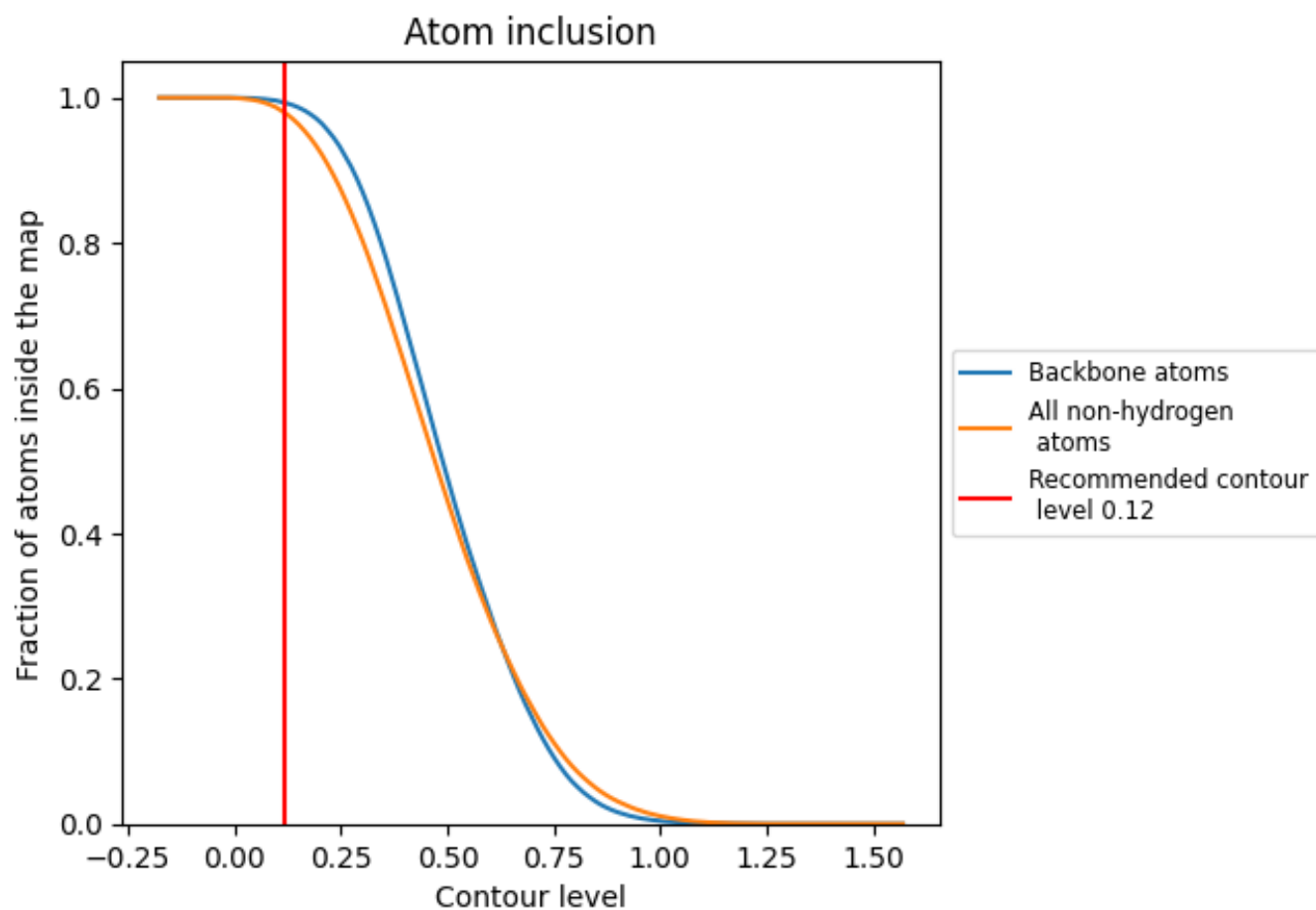
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.12).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 99% of all backbone atoms, 98% 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 (0.12) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9787	 0.4490
A4	 0.8536	 0.3350
A5	 0.9864	 0.3950
B4	 0.9834	 0.4260
B5	 0.9863	 0.3010
CC	 0.8660	 0.2510
D5	 0.7960	 0.1770
L1	 0.9870	 0.4450
L5	 0.9970	 0.4900
L6	 0.9911	 0.4420
L7	 0.9996	 0.5190
L8	 0.9934	 0.4970
L9	 0.9992	 0.4420
LA	 0.9837	 0.5510
LB	 0.9830	 0.5220
LC	 0.9849	 0.5210
LD	 0.9961	 0.4660
LE	 0.9877	 0.4810
LF	 0.9834	 0.5130
LG	 0.9541	 0.4520
LH	 0.9857	 0.4930
LI	 0.9757	 0.5120
LJ	 0.9767	 0.4570
LL	 0.9738	 0.5010
LM	 0.9908	 0.4810
LN	 0.9846	 0.5500
LO	 0.9892	 0.5220
LP	 0.9841	 0.5360
LQ	 0.9833	 0.5380
LR	 0.9827	 0.4920
LS	 0.9929	 0.5330
LT	 0.9719	 0.5030
LU	 0.9859	 0.4480
LV	 0.9779	 0.5380
LW	 0.9733	 0.4080























































































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Chain	Atom inclusion	Q-score
LX	 0.9801	 0.5070
LY	 0.9898	 0.4970
LZ	 0.9916	 0.4820
La	 0.9902	 0.5360
Lb	 0.9481	 0.4570
Lc	 0.9656	 0.4990
Ld	 0.9775	 0.5040
Le	 0.9803	 0.5450
Lf	 0.9833	 0.5460
Lg	 0.9671	 0.5120
Lh	 0.9753	 0.4760
Li	 0.9679	 0.4760
Lj	 0.9926	 0.5360
Lk	 0.9660	 0.4500
Ll	 0.9669	 0.5220
Lm	 0.9757	 0.5050
Ln	 0.9665	 0.5420
Lo	 0.9562	 0.5180
Lp	 0.9615	 0.5210
Lr	 0.9875	 0.5200
MA	 0.8937	 0.4880
MB	 0.9554	 0.4770
MC	 0.9367	 0.4690
MD	 0.9833	 0.4140
ME	 0.9808	 0.4330
MF	 0.9231	 0.4560
MG	 0.9482	 0.3970
MH	 0.9465	 0.4350
MI	 0.9407	 0.4500
MJ	 0.9732	 0.4280
ML	 0.9405	 0.4450
MM	 0.9672	 0.4310
MN	 0.9212	 0.4970
MO	 0.9224	 0.4660
MP	 0.9546	 0.4920
MQ	 0.9153	 0.4880
MR	 0.9428	 0.4210
MS	 0.9538	 0.4810
MT	 0.9262	 0.4530
MU	 0.9814	 0.3800
MV	 0.9152	 0.4870
MW	 0.8784	 0.3850





















































































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Chain	Atom inclusion	Q-score
MX	 0.9274	 0.4360
MY	 0.9685	 0.4400
MZ	 0.9685	 0.4350
Ma	 0.9470	 0.4820
Mb	 0.9363	 0.4500
Mc	 0.9458	 0.4250
Md	 0.9394	 0.4540
Me	 0.9068	 0.4900
Mf	 0.9518	 0.4910
Mg	 0.9005	 0.4680
Mh	 0.9501	 0.4280
Mi	 0.9516	 0.4110
Mj	 0.9431	 0.5000
Mk	 0.9477	 0.3940
Ml	 0.8496	 0.4650
Mm	 0.9423	 0.4720
Mn	 0.8517	 0.3940
Mo	 0.9360	 0.4780
Mp	 0.8927	 0.4930
Mr	 0.9629	 0.4740
RA	 0.9857	 0.3930
RB	 0.9537	 0.4130
RC	 0.9487	 0.4300
RD	 0.9232	 0.3520
RE	 0.9274	 0.3620
RF	 0.9209	 0.3530
RG	 0.9540	 0.3130
RH	 0.9711	 0.3220
RI	 0.9499	 0.3380
RJ	 0.9164	 0.3250
RK	 0.9218	 0.2950
RL	 0.9321	 0.3920
RN	 0.9149	 0.3670
RO	 0.9209	 0.3980
RP	 0.9671	 0.3710
RQ	 0.9261	 0.3500
RR	 0.9581	 0.3350
RS	 0.9616	 0.3640
RT	 0.9679	 0.3550
RU	 0.9164	 0.3300
RV	 0.9601	 0.4210
RW	 0.9711	 0.3980





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Chain	Atom inclusion	Q-score
RX	 0.9854	 0.4020
RY	 0.9362	 0.3000
RZ	 0.9601	 0.2930
Ra	 0.9728	 0.4230
Rb	 0.9835	 0.3760
Rc	 0.9190	 0.3660
Rd	 0.9282	 0.3820
Re	 0.8960	 0.3560
Rf	 0.9791	 0.2200
Rg	 0.9797	 0.2750
Rh	 0.9848	 0.2510
S2	 0.9971	 0.4600
S3	 0.9812	 0.3930
SA	 0.9840	 0.4550
SB	 0.9230	 0.4720
SC	 0.9859	 0.4890
SD	 0.9761	 0.4260
SE	 0.9901	 0.4710
SF	 0.9587	 0.4180
SG	 0.9949	 0.3960
SH	 0.9920	 0.4360
SI	 0.9882	 0.4840
SJ	 0.9847	 0.4520
SK	 0.9845	 0.3710
SL	 0.9721	 0.5210
SN	 0.9625	 0.4870
SO	 0.9596	 0.5020
SP	 0.9884	 0.4060
SQ	 0.9778	 0.4370
SR	 0.9728	 0.4260
SS	 0.9852	 0.4190
ST	 0.9876	 0.4130
SU	 0.9971	 0.4220
SV	 0.9901	 0.4700
SW	 0.9850	 0.5060
SX	 0.9782	 0.5110
SY	 0.9878	 0.4140
SZ	 0.9707	 0.3980
Sa	 0.9773	 0.5030
Sb	 0.9637	 0.4480
Sc	 0.9432	 0.4460
Sd	 0.9807	 0.4560

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Chain	Atom inclusion	Q-score
Se	 0.9465	 0.4330
Sg	 0.9743	 0.3650