



wwPDB EM Validation Summary Report ⓘ

May 19, 2024 – 03:53 PM EDT

PDB ID : 7MQ8
EMDB ID : EMD-23936
Title : Cryo-EM structure of the human SSU processome, state pre-A1
Authors : Vanden Broeck, A.; Singh, S.; Klinge, S.
Deposited on : 2021-05-05
Resolution : 3.60 Å (reported)
Based on initial models : 2OZB, 6ZOJ, 6G4S, 4JXM, 2IPX, 6G18, 5FAI, 6ZQD, 5WLC

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:

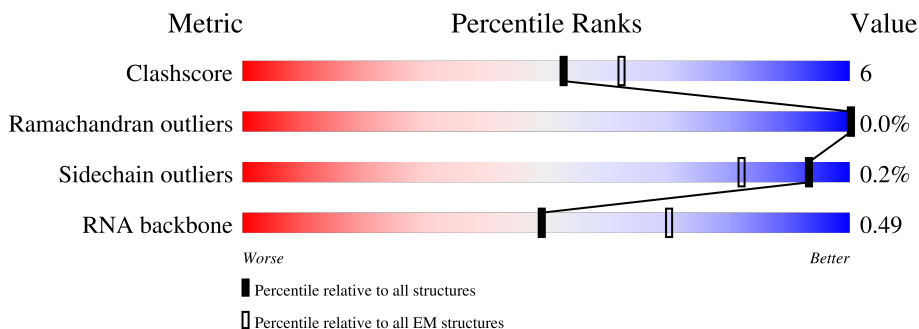
EMDB validation analysis : 0.0.1.dev92
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36.2

1 Overall quality at a glance i

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

The reported resolution of this entry is 3.60 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.



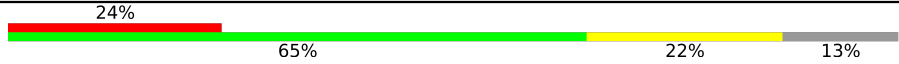


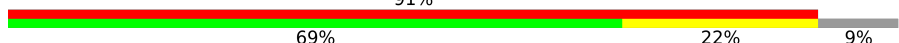




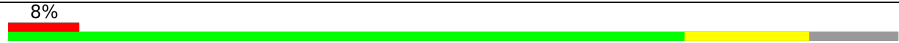

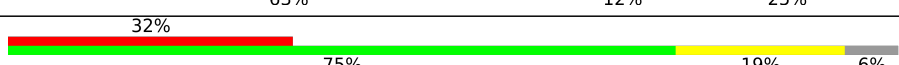


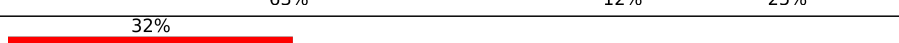
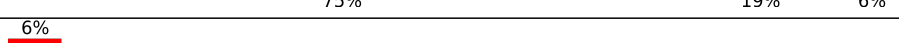
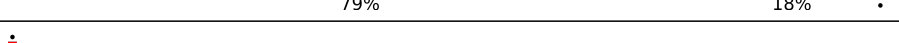
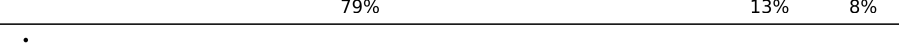
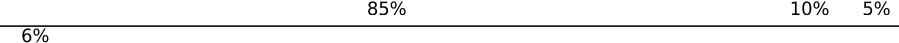
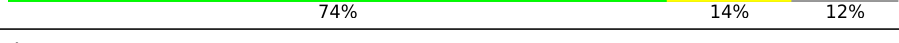




Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

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	L0	3617	 93%
2	L1	1869	 37% 27% 5% 30% 9%
3	L2	217	 46% 43% 10% 18%
4	L3	116	 75% 24% 53%
5	L4	263	 89% 11% 10%
6	L5	204	 82% 11% 7%
7	L6	249	 76% 13% 10%






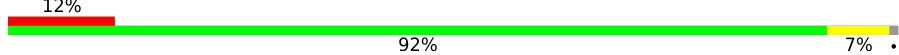

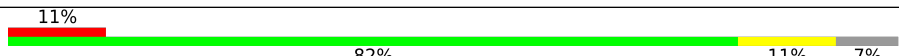
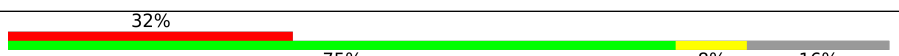

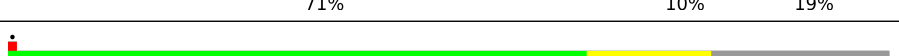
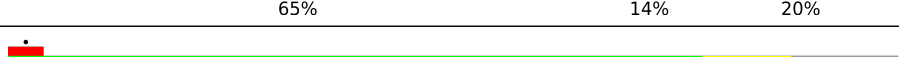
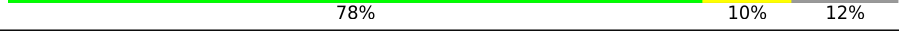
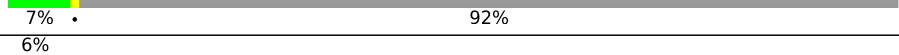

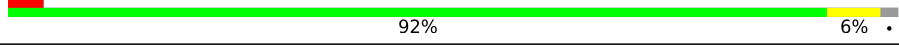
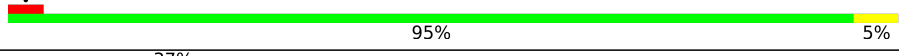



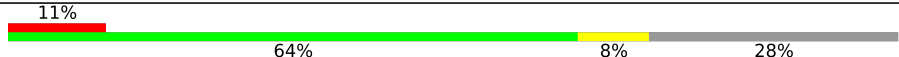

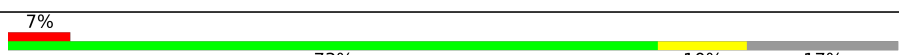
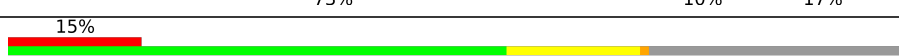

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Mol	Chain	Length	Quality of chain
8	L7	194	
9	L8	208	
10	L9	194	
11	LA	132	
12	LC	146	
13	LD	158	
14	LF	133	
15	LG	69	
16	LH	830	
17	LI	678	
18	LJ	518	
19	LK	677	
19	LL	677	
20	LM	2144	
21	LN	686	
22	LO	919	
23	LP	597	
24	LQ	943	
25	LR	808	
26	LS	556	
27	LT	951	
28	LU	445	
29	LW	610	
30	LZ	184	
31	N0	22	

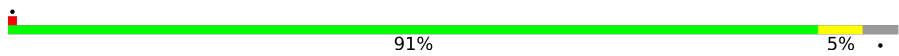


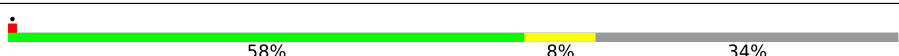

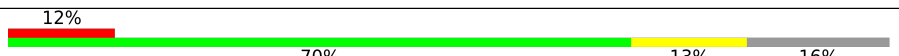
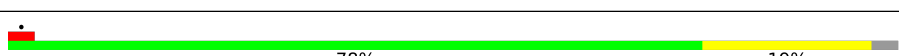
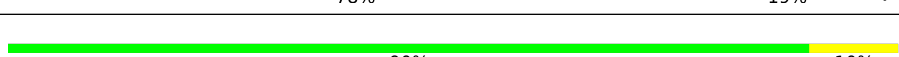
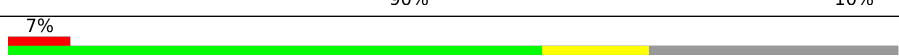
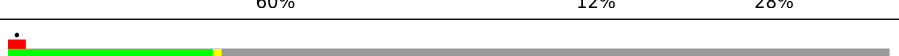
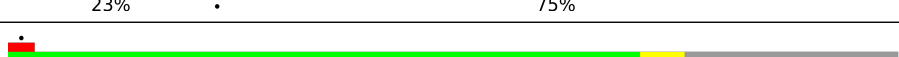
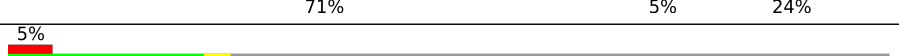

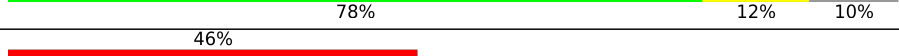
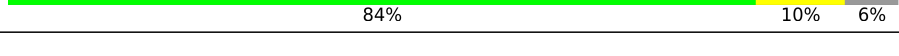
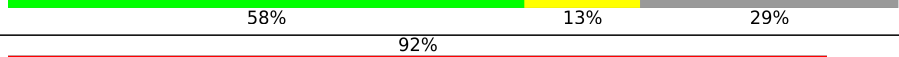
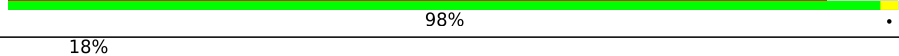

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Mol	Chain	Length	Quality of chain
32	NA	681	
33	NB	479	
34	NC	315	
35	ND	257	
36	NE	293	
37	NF	151	
38	NG	151	
39	NH	1146	
40	NI	280	
41	NJ	1025	
41	NK	1025	
42	NM	264	
43	NN	560	
44	NO	130	
45	NQ	84	
46	NR	861	
47	NT	156	
48	NU	135	
49	NW	688	
50	NY	381	
51	SA	594	
52	SB	529	
53	SC	321	
53	SD	321	
54	SE	128	

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Mol	Chain	Length	Quality of chain
54	SF	128	 91% 5%
55	SG	475	 75% 7% 18%
56	SH	373	 86% 13%
57	SI	1282	 58% 8% 34%
58	SJ	244	 67% 17% 16%
58	SK	244	 70% 13% 16%
59	SL	198	 78% 19%
60	SM	291	 90% 10%
61	SP	2785	 60% 12% 28%
62	SQ	756	 23% 75%
63	SR	143	 71% 5% 24%
64	SS	771	 22% 74%
65	ST	632	 78% 12% 10%
66	SU	472	 46% 84% 10% 6%
67	SW	252	 58% 13% 29%
68	SX	177	 92% 98%
69	SY	253	 18% 83% 11% 6%
70	SZ	304	 25% 79% 16% 5%

2 Entry composition

There are 75 unique types of molecules in this entry. The entry contains 245114 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 5'ETS rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	L0	242	5152	2289	908	1713	242	0	0

- Molecule 2 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	L1	1301	27777	12396	5002	9078	1301	0	0

- Molecule 3 is a RNA chain called U3 snoRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	L2	215	4589	2047	809	1518	215	0	0

- Molecule 4 is a protein called 40S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	L3	115	854	538	164	151	1	0	0

- Molecule 5 is a protein called 40S ribosomal protein S4, X isoform.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	L4	262	2076	1324	386	358	8	0	0

- Molecule 6 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	L5	190	1501	939	285	270	7	0	0

- Molecule 7 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	L6	223	1811	1133	361	311	6	0	0

- Molecule 8 is a protein called 40S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	L7	168	1346	862	239	244	1	0	0

- Molecule 9 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	L8	180	1474	925	294	250	5	0	0

- Molecule 10 is a protein called 40S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	L9	171	1425	908	284	232	1	0	0

- Molecule 11 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	LA	120	931	584	164	174	9	0	0

- Molecule 12 is a protein called 40S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	LC	139	1098	699	207	189	3	0	0

- Molecule 13 is a protein called 40S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	LD	147	1204	767	225	206	6	0	0

- Molecule 14 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	LF	104	Total	C	N	O	S	0	0
			851	543	158	145	5		

- Molecule 15 is a protein called 40S ribosomal protein S28.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	LG	62	Total	C	N	O	S	0	0
			488	297	97	92	2		

- Molecule 16 is a protein called WD repeat-containing protein 75.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	LH	746	Total	C	N	O	S	0	0
			5987	3846	1005	1101	35		

- Molecule 17 is a protein called Nucleolar protein 11.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	LI	537	Total	C	N	O	S	0	0
			3889	2508	654	706	21		

- Molecule 18 is a protein called U3 small nucleolar RNA-associated protein 15 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	LJ	469	Total	C	N	O	S	0	0
			3711	2372	637	688	14		

- Molecule 19 is a protein called WD repeat-containing protein 43.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	LK	118	Total	C	N	O	S	0	0
			943	612	163	163	5		
19	LL	510	Total	C	N	O	S	0	0
			3982	2538	686	731	27		

- Molecule 20 is a protein called HEAT repeat-containing protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	LM	2005	Total	C	N	O	S	0	0
			15820	10259	2597	2883	81		

- Molecule 21 is a protein called U3 small nucleolar RNA-associated protein 4 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
21	LN	671	5299	3394	925	956	24	0	0

- Molecule 22 is a protein called Periodic tryptophan protein 2 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	LO	848	6676	4258	1151	1234	33	0	0

- Molecule 23 is a protein called U3 small nucleolar RNA-associated protein 6 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
23	LP	567	4705	3022	808	847	28	0	0

- Molecule 24 is a protein called WD repeat-containing protein 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	LQ	828	6438	4103	1108	1194	33	0	0

- Molecule 25 is a protein called Transducin beta-like protein 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	LR	773	6015	3789	1079	1116	31	0	0

- Molecule 26 is a protein called U3 small nucleolar RNA-associated protein 18 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
26	LS	453	3560	2235	631	671	23	0	0

- Molecule 27 is a protein called WD repeat-containing protein 36.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	LT	869	6756	4321	1158	1244	33	0	0

- Molecule 28 is a protein called DDB1- and CUL4-associated factor 13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
28	LU	445	3611	2282	653	651	25	0	0

- Molecule 29 is a protein called WD repeat-containing protein 46.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
29	LW	453	3519	2221	637	646	15	0	0

- Molecule 30 is a protein called U3 small nucleolar ribonucleoprotein protein IMP3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
30	LZ	183	1532	966	292	270	4	0	0

- Molecule 31 is a RNA chain called 5'ETS rRNA.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	O	P		
31	N0	22	264	110	132	22	0	0

- Molecule 32 is a protein called U3 small nucleolar ribonucleoprotein protein MPP10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
32	NA	249	2055	1299	359	391	6	0	0

- Molecule 33 is a protein called Something about silencing protein 10.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
33	NB	73	617	379	140	98	0	0

- Molecule 34 is a protein called Neuroguidin.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
34	NC	94	779	469	160	147	3	0	0

- Molecule 35 is a protein called Nucleolar protein 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	ND	84	Total	C	N	O	S	0	0
			696	438	143	114	1		

- Molecule 36 is a protein called Uncharacterized protein C1orf131.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	NE	100	Total	C	N	O	S	0	0
			799	509	143	146	1		

- Molecule 37 is a protein called 40S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	NF	149	Total	C	N	O	S	0	0
			1202	770	228	203	1		

- Molecule 38 is a protein called 40S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	NG	116	Total	C	N	O	S	0	0
			861	531	159	165	6		

- Molecule 39 is a protein called Nucleolar protein 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	NH	1066	Total	C	N	O	S	0	0
			8374	5345	1491	1506	32		

- Molecule 40 is a protein called Ribosomal RNA-processing protein 7 homolog A.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	NI	234	Total	C	N	O	S	0	0
			1840	1171	329	336	4		

- Molecule 41 is a protein called RNA cytidine acetyltransferase.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	NJ	827	Total	C	N	O	S	0	0
			6526	4187	1126	1178	35		
41	NK	815	Total	C	N	O	S	0	0
			6419	4118	1109	1160	32		

- Molecule 42 is a protein called 40S ribosomal protein S3a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	NM	233	1873	1186	339	334	14	0	0

- Molecule 43 is a protein called Protein AATF.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
43	NN	42	340	215	63	60	2	0	0

- Molecule 44 is a protein called 40S ribosomal protein S15a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
44	NO	129	1034	659	193	176	6	0	0

- Molecule 45 is a protein called 40S ribosomal protein S27.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
45	NQ	82	640	402	118	113	7	0	0

- Molecule 46 is a protein called RRP12-like protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
46	NR	861	4305	2583	861	861	0	0

- Molecule 47 is a protein called Ubiquitin-40S ribosomal protein S27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
47	NT	58	470	295	89	79	7	0	0

- Molecule 48 is a protein called 40S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
48	NU	60	495	314	98	81	2	0	0

- Molecule 49 is a protein called Nucleolar protein 10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
49	NW	311	2498	1599	413	472	14	0	0

- Molecule 50 is a protein called KRR1 small subunit processome component homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
50	NY	274	2222	1422	391	400	9	0	0

- Molecule 51 is a protein called Nucleolar protein 56.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
51	SA	396	3077	1948	542	575	12	0	0

- Molecule 52 is a protein called Nucleolar protein 58.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
52	SB	440	3439	2179	596	642	22	0	0

- Molecule 53 is a protein called rRNA 2'-O-methyltransferase fibrillarin.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
53	SC	229	1781	1129	322	323	7	0	0
53	SD	237	1841	1163	337	334	7	0	0

- Molecule 54 is a protein called NHP2-like protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
54	SE	125	968	611	172	180	5	0	0
54	SF	123	955	604	170	176	5	0	0

- Molecule 55 is a protein called U3 small nucleolar RNA-interacting protein 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
55	SG	389	2884	1809	534	528	13	1	0

- Molecule 56 is a protein called RNA 3'-terminal phosphate cyclase-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
56	SH	368	2832	1803	495	518	16	0	0

- Molecule 57 is a protein called Ribosome biogenesis protein BMS1 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
57	SI	844	6803	4351	1230	1188	34	0	0

- Molecule 58 is a protein called Ribosomal RNA small subunit methyltransferase NEP1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
58	SJ	204	1579	1012	272	286	9	0	0
58	SK	204	1579	1012	272	286	9	0	0

- Molecule 59 is a protein called rRNA-processing protein FCF1 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
59	SL	192	1586	1006	290	275	15	0	0

- Molecule 60 is a protein called U3 small nucleolar ribonucleoprotein protein IMP4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
60	SM	290	2369	1485	451	424	9	0	0

- Molecule 61 is a protein called Small subunit processome component 20 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
61	SP	1993	16078	10412	2689	2897	80	0	0

- Molecule 62 is a protein called Deoxynucleotidyltransferase terminal-interacting protein 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
62	SQ	187	1533	972	278	277	6	0	0

- Molecule 63 is a protein called 40S ribosomal protein S23.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
63	SR	108	816	521	153	140	2	0	0

- Molecule 64 is a protein called U3 small nucleolar RNA-associated protein 14 homolog A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
64	SS	197	1626	1039	301	285	1	0	0

- Molecule 65 is a protein called Nucleolar protein 14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
65	ST	568	4170	2634	760	755	21	0	0

- Molecule 66 is a protein called Nucleolar complex protein 4 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
66	SU	442	3154	2030	565	551	8	0	0

- Molecule 67 is a protein called RNA-binding protein PNO1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
67	SW	180	1413	906	257	246	4	0	0

- Molecule 68 is a protein called Unassigned peptides.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
68	SX	177	885	531	177	177	0	0

- Molecule 69 is a protein called Probable U3 small nucleolar RNA-associated protein 11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
69	SY	238	2024	1280	385	353	6	0	0

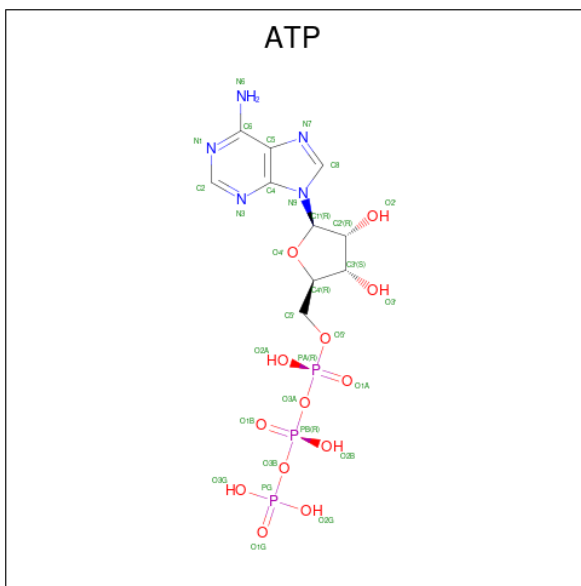
- Molecule 70 is a protein called Bystin.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
70	SZ	290	2222	1438	392	383	9	0	0

- Molecule 71 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
71	L1	19	Total	Mg	0
			19	19	
71	NH	1	Total	Mg	0
			1	1	
71	SI	1	Total	Mg	0
			1	1	
71	SL	1	Total	Mg	0
			1	1	

- Molecule 72 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula: C₁₀H₁₆N₅O₁₃P₃).

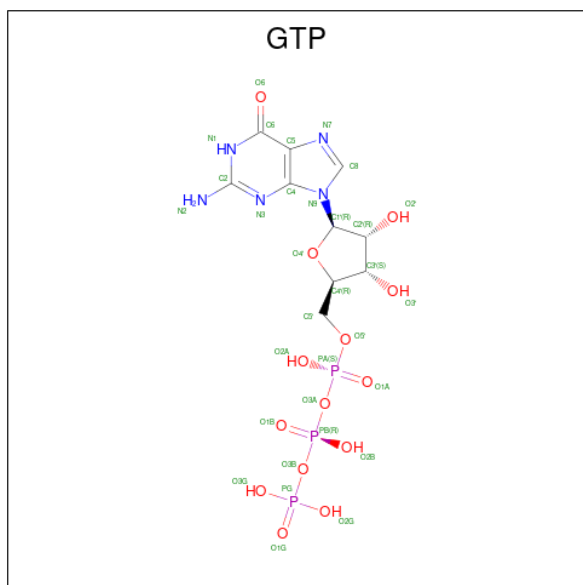


Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
72	NH	1	Total	C	N	O	P	0
			31	10	5	13	3	
72	NK	1	Total	C	N	O	P	0
			31	10	5	13	3	

- Molecule 73 is ZINC ION (three-letter code: ZN) (formula: Zn).

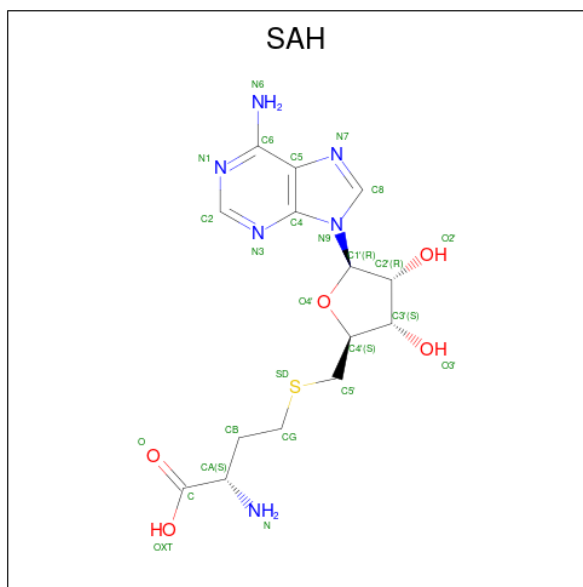
Mol	Chain	Residues	Atoms		AltConf
73	NQ	1	Total	Zn	0
			1	1	
73	NT	1	Total	Zn	0
			1	1	
73	SL	1	Total	Zn	0
			1	1	

- Molecule 74 is GUANOSINE-5'-TRIPHOSPHATE (three-letter code: GTP) (formula: $C_{10}H_{16}N_5O_{14}P_3$).



Mol	Chain	Residues	Atoms					AltConf
74	SI	1	Total	C	N	O	P	0
			32	10	5	14	3	

- Molecule 75 is S-ADENOSYL-L-HOMOCYSTEINE (three-letter code: SAH) (formula: $C_{14}H_{20}N_6O_5S$).

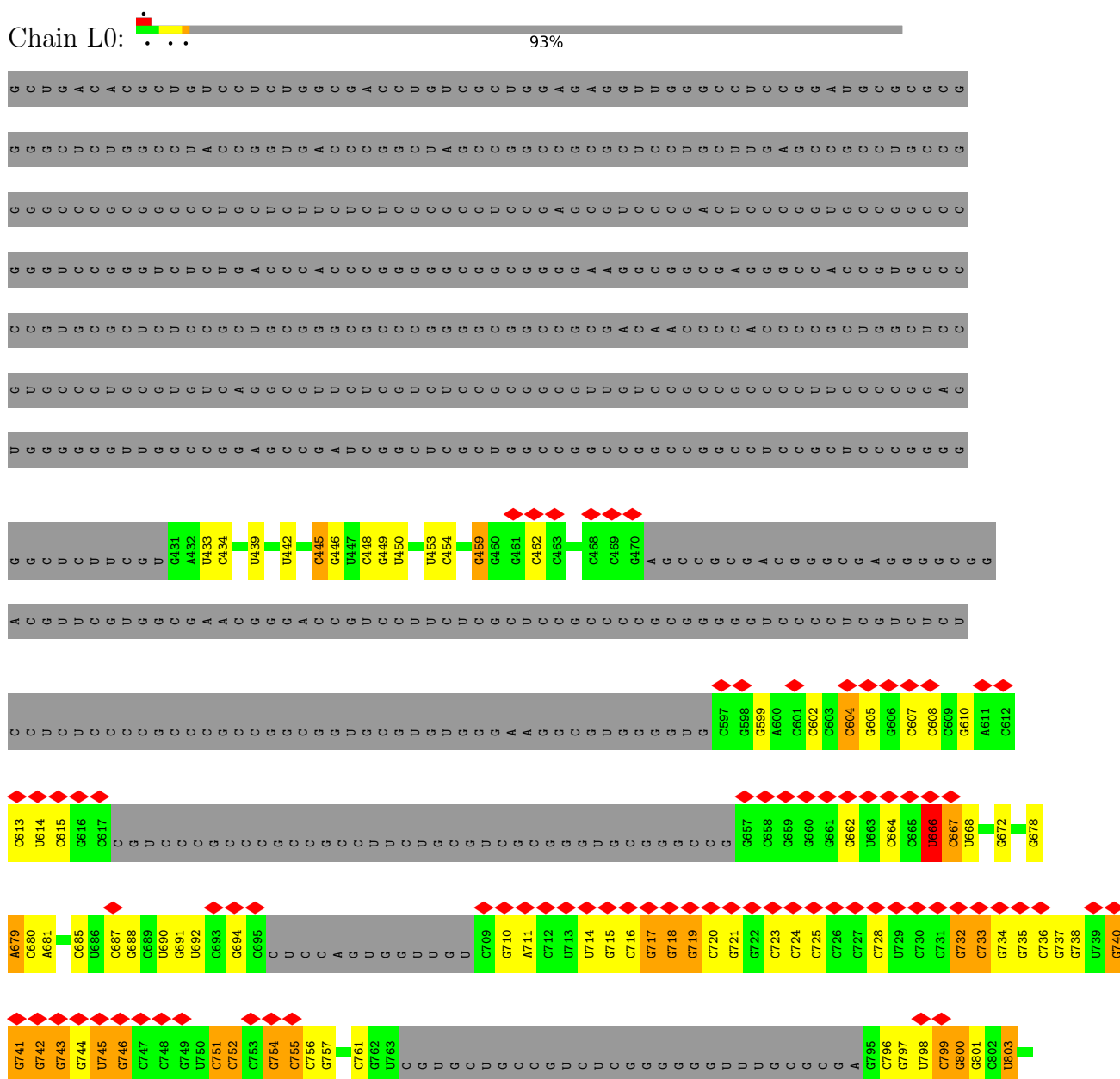


Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	S	
75	SJ	1	Total	C	N	O	S	0
			26	14	6	5	1	
75	SK	1	Total	C	N	O	S	0
			26	14	6	5	1	

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.

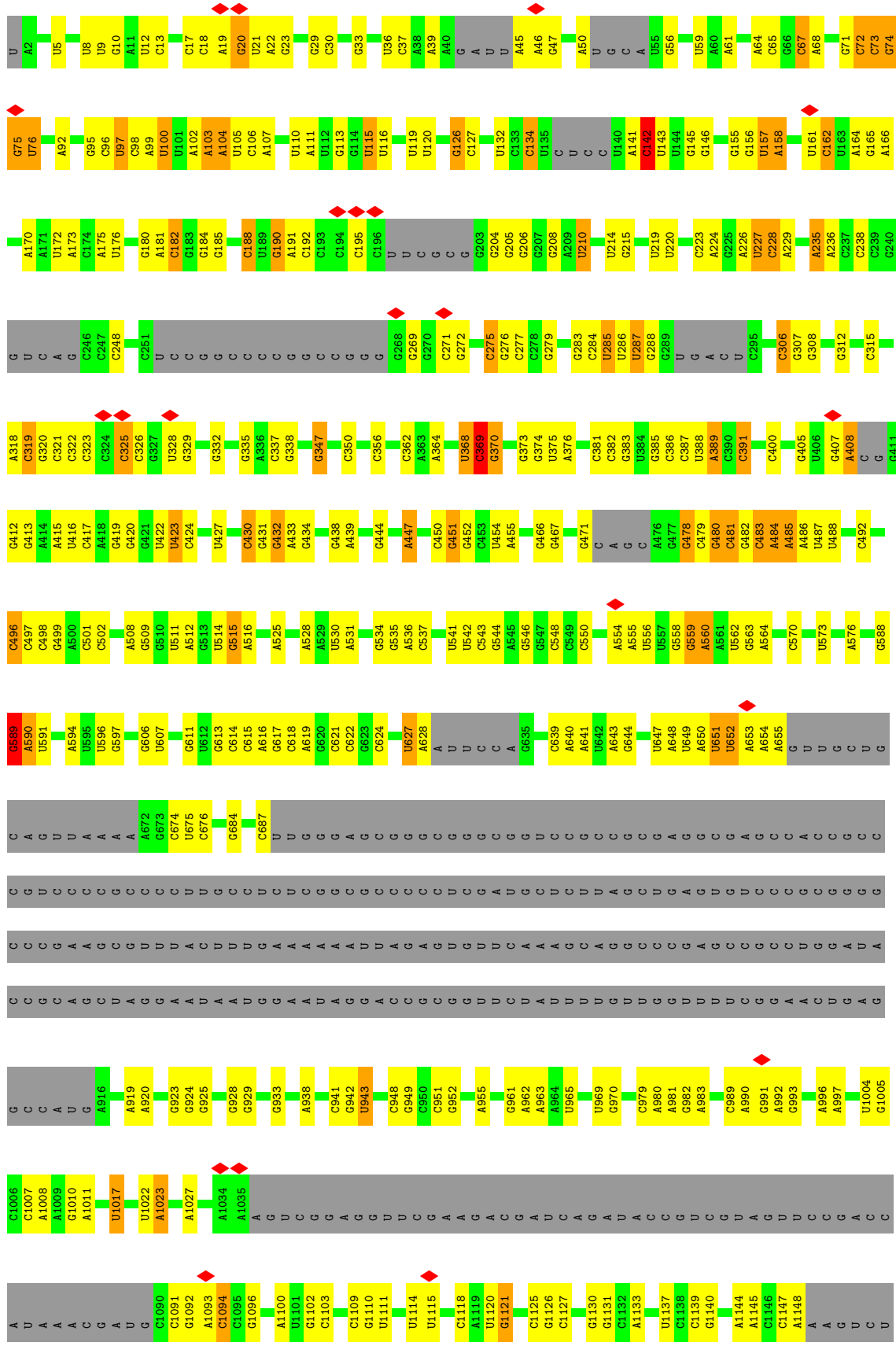
- Molecule 1: 5'ETS rRNA

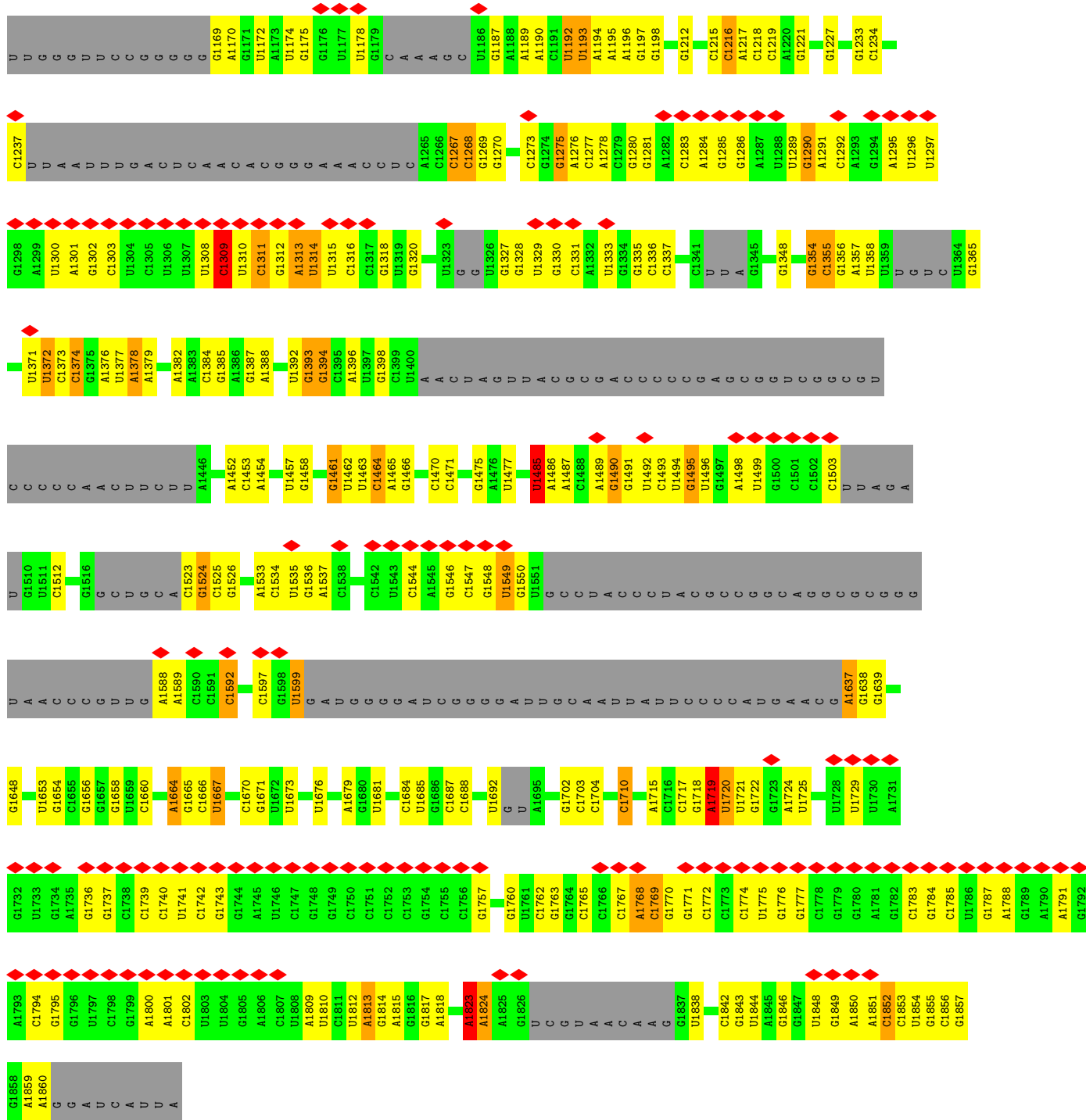


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C C D C C D G G G C C C C C G G C C C G G C C C A C D D G A D G G G C C C G G G D C C G G C C G C C G C C G C
C D D G G G A C C C G G D C C G D D G G C C C C C G G C C D D G G G C C G G D D C C A G G A G C G D D C C
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G C D C G A G G G G D C C C C D G G G G D C C C C D D C C G C C G G C C C D D D C D G G C C D D C C C
G C C C C C C C C C C D D G C C C G D D C D D C D D C C C G G C C C G G D D C C C G C C C G C C A C C G G G D
G G C C C G D C C C C G G G D C C G C C D C G C D D C C C C C G G G C C D D C C C G A G G C C G D
C C D C C G G G C C C D D G G G C C A G A G C C C G D C C D C C C C G C C D G G C C C C D D C C
G G G C C G G D C C C A G G G G G C C G G D G G D C C C G A A G G C G D D G D G G G A C G
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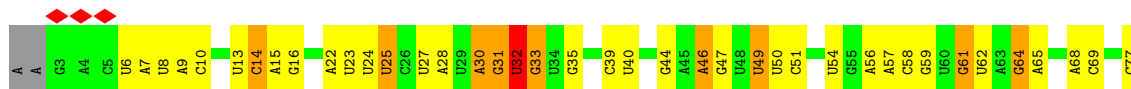
● Molecule 2: 18S rRNA

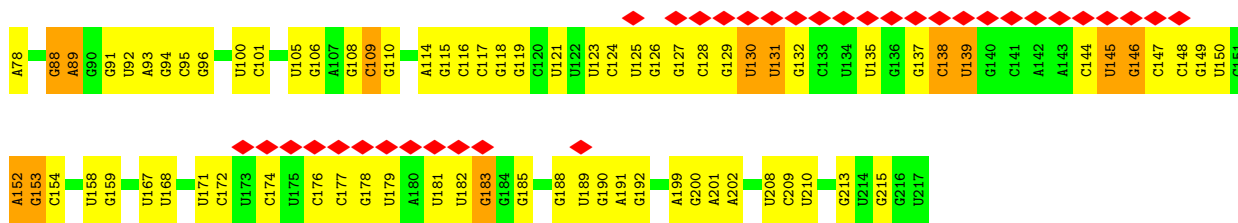




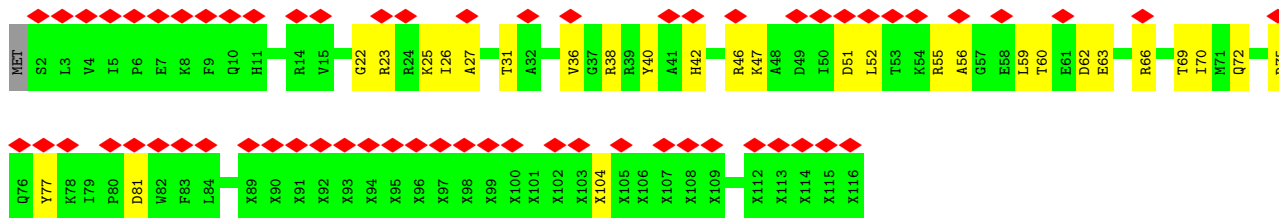
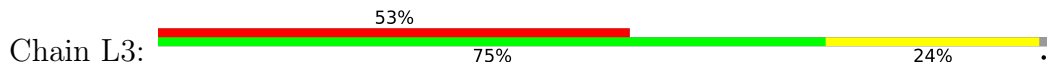


● Molecule 3: U3 snoRNA

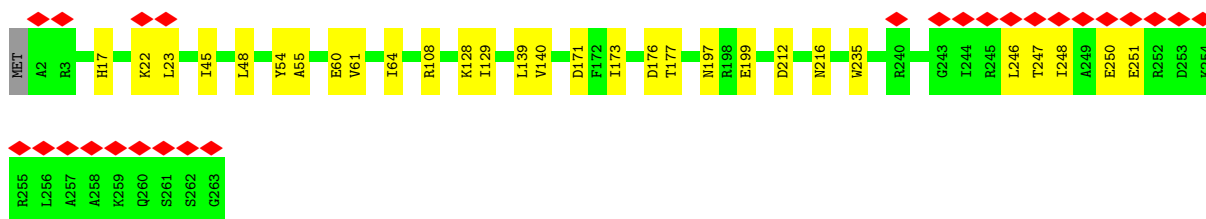
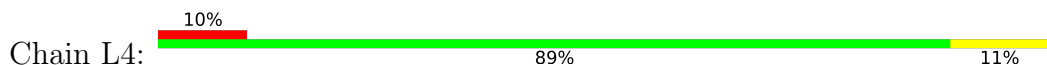




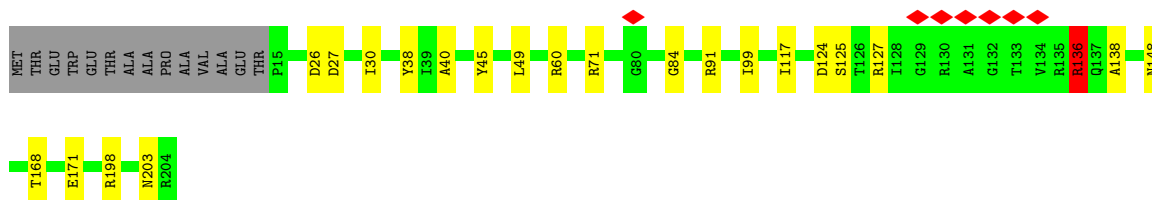
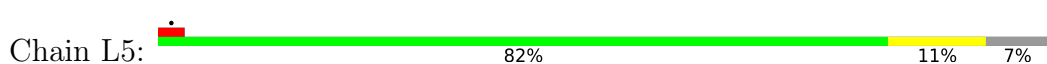
• Molecule 4: 40S ribosomal protein S18



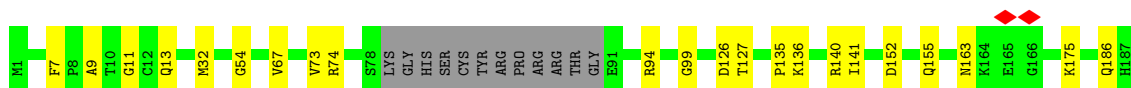
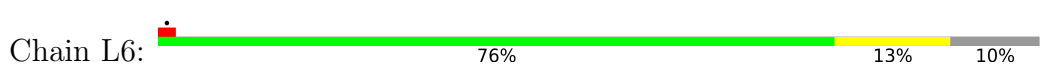
• Molecule 5: 40S ribosomal protein S4, X isoform

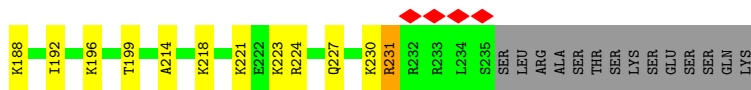


• Molecule 6: 40S ribosomal protein S5

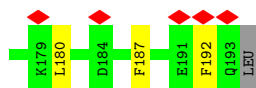
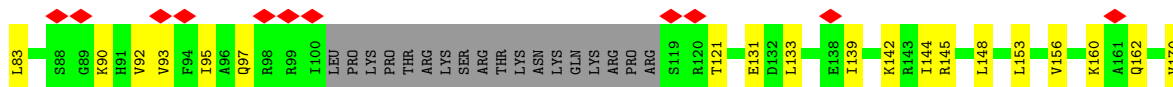


• Molecule 7: 40S ribosomal protein S6

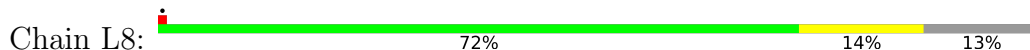




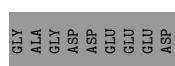
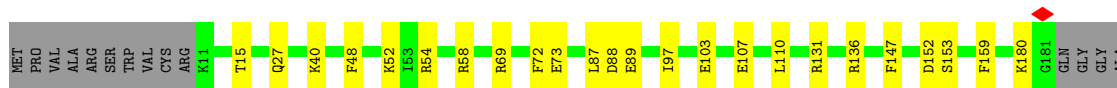
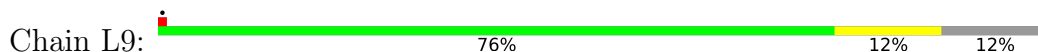
• Molecule 8: 40S ribosomal protein S7



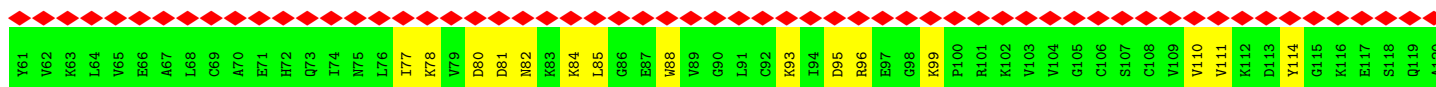
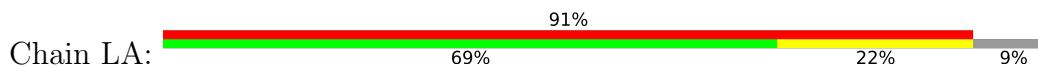
• Molecule 9: 40S ribosomal protein S8



• Molecule 10: 40S ribosomal protein S9

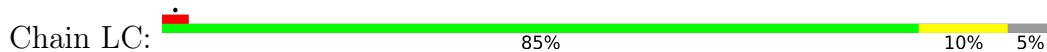


• Molecule 11: 40S ribosomal protein S12

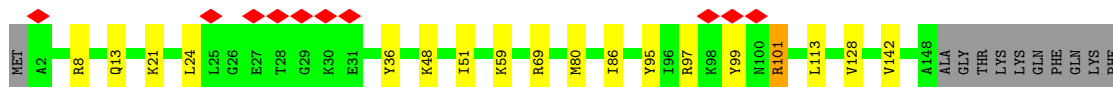
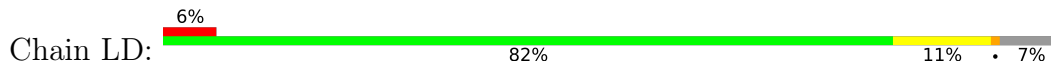




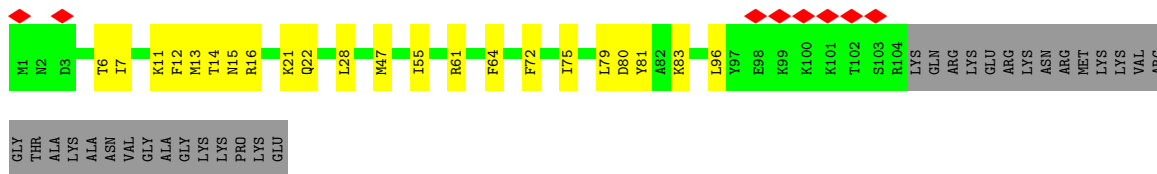
• Molecule 12: 40S ribosomal protein S16



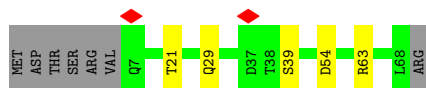
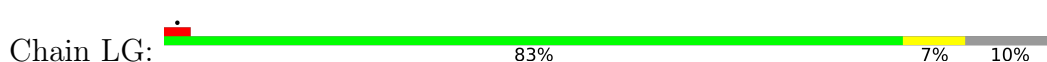
• Molecule 13: 40S ribosomal protein S11



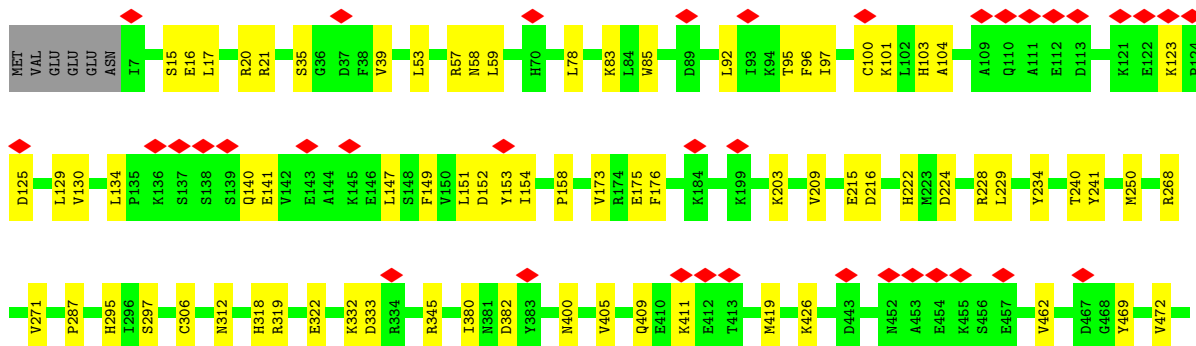
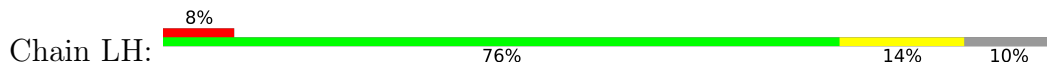
• Molecule 14: 40S ribosomal protein S24

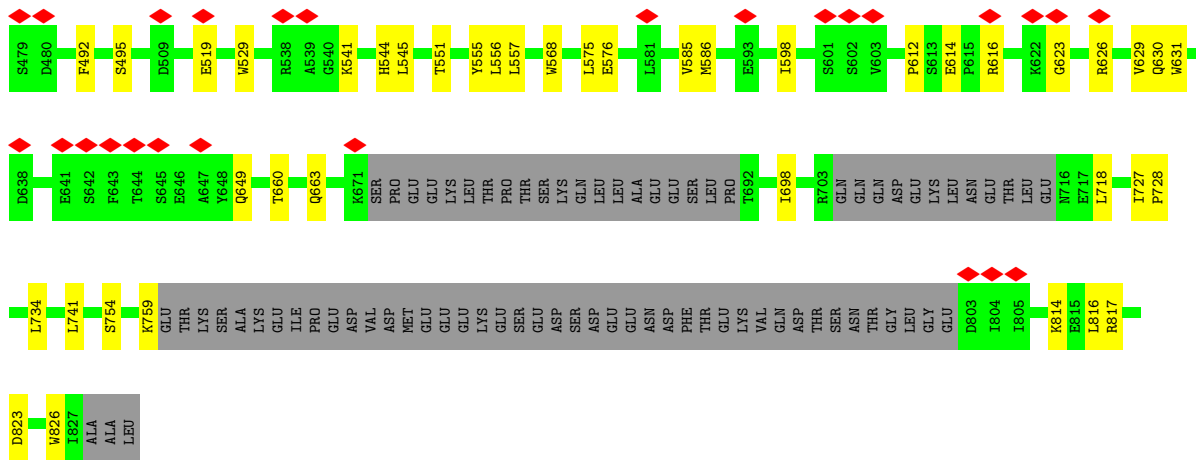


• Molecule 15: 40S ribosomal protein S28

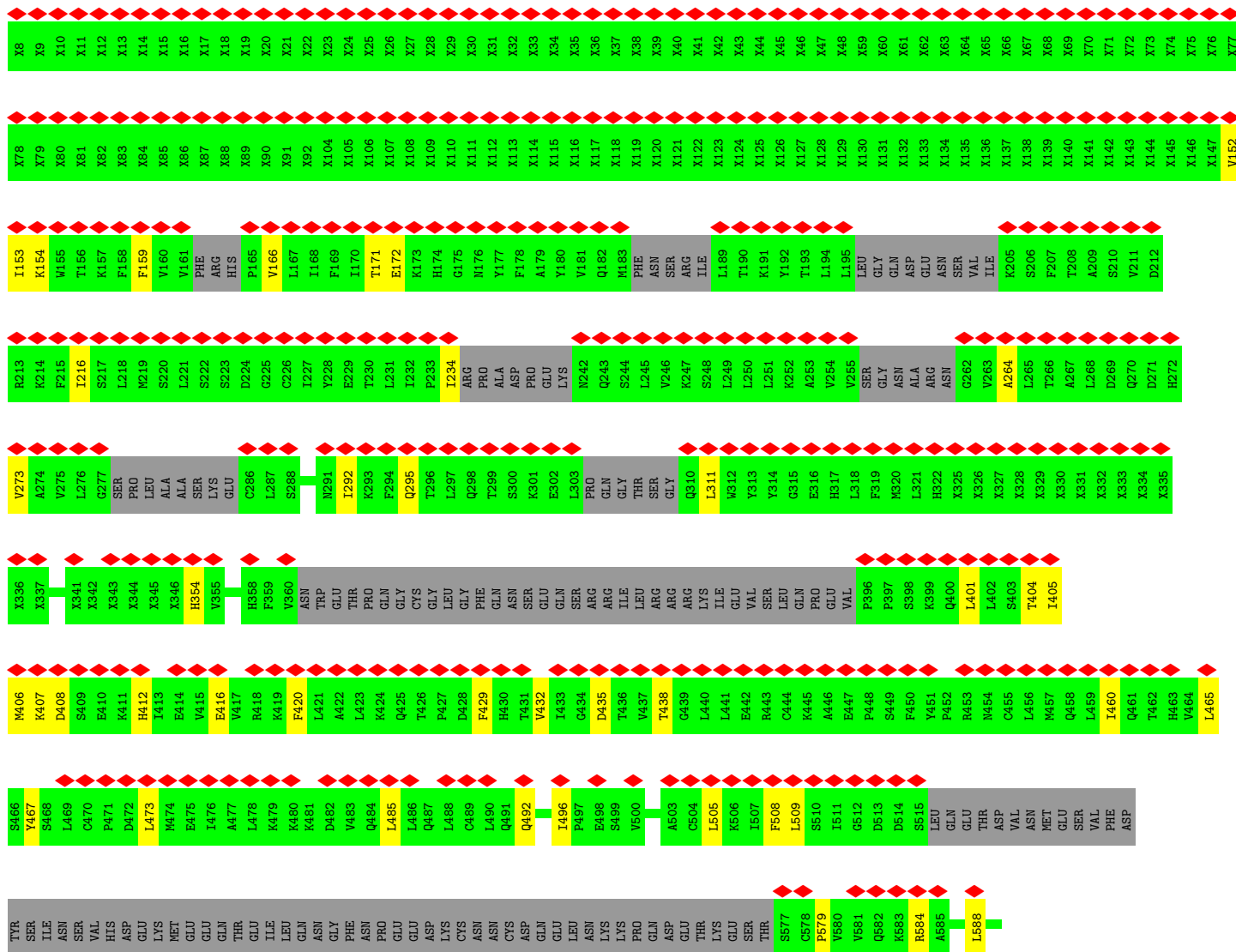


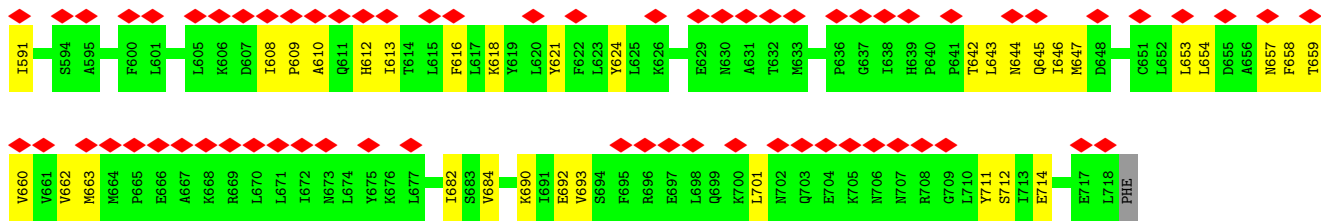
• Molecule 16: WD repeat-containing protein 75



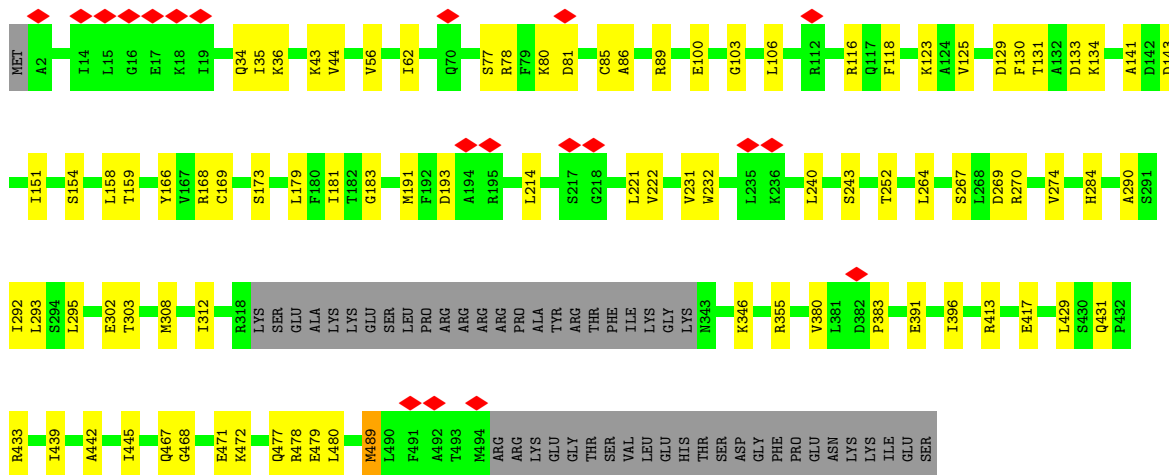
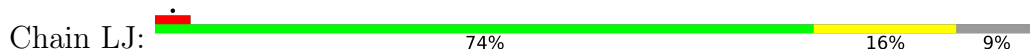


• Molecule 17: Nucleolar protein 11

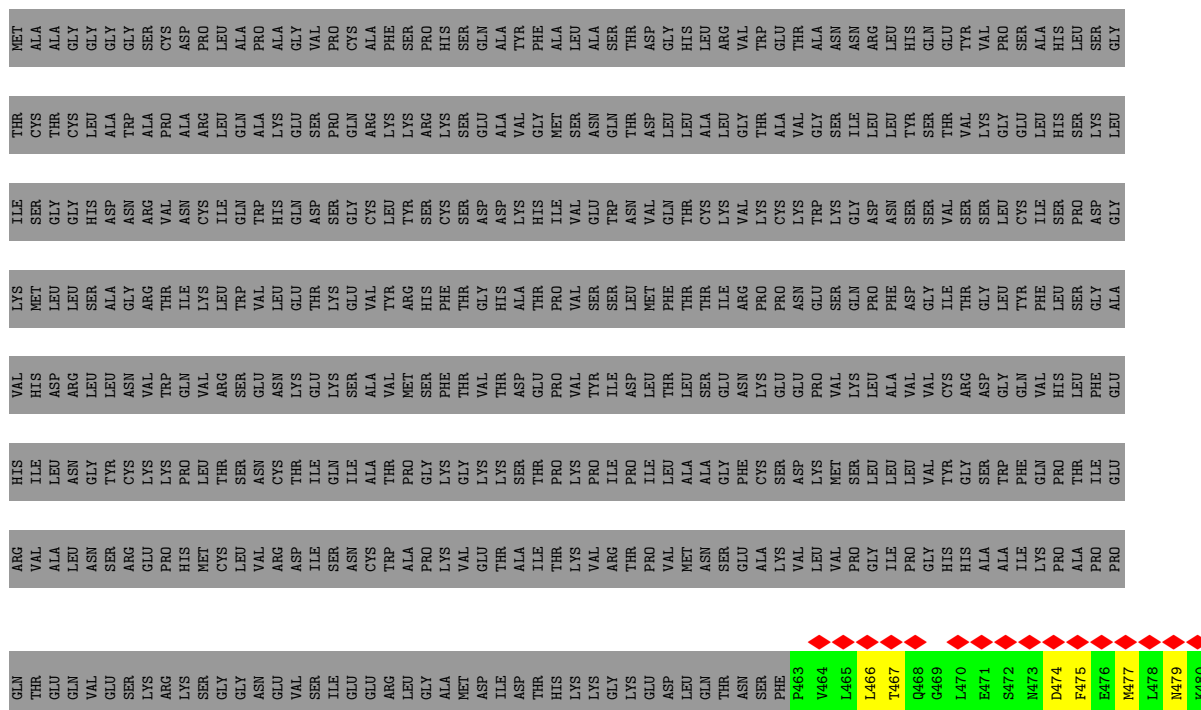


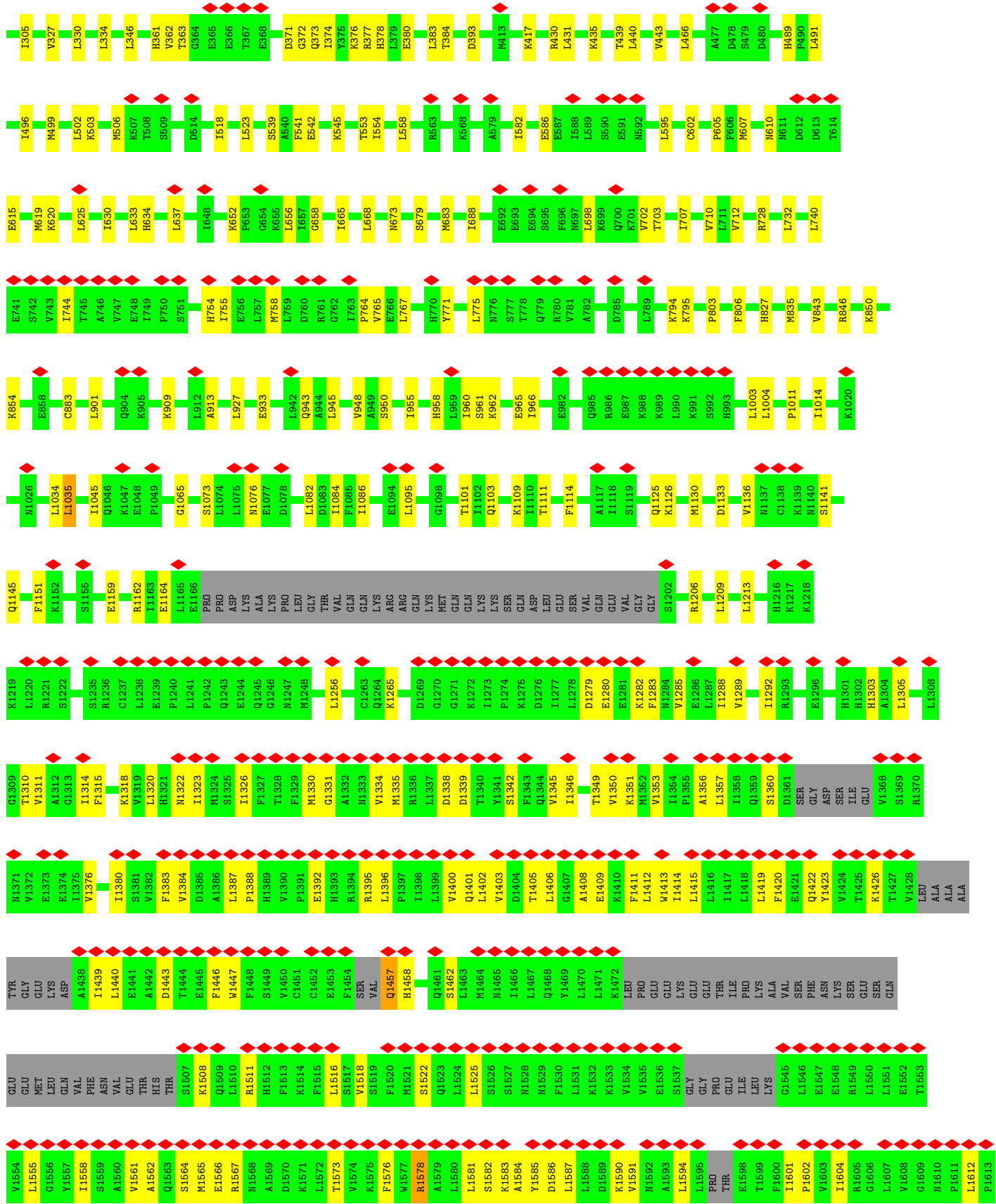


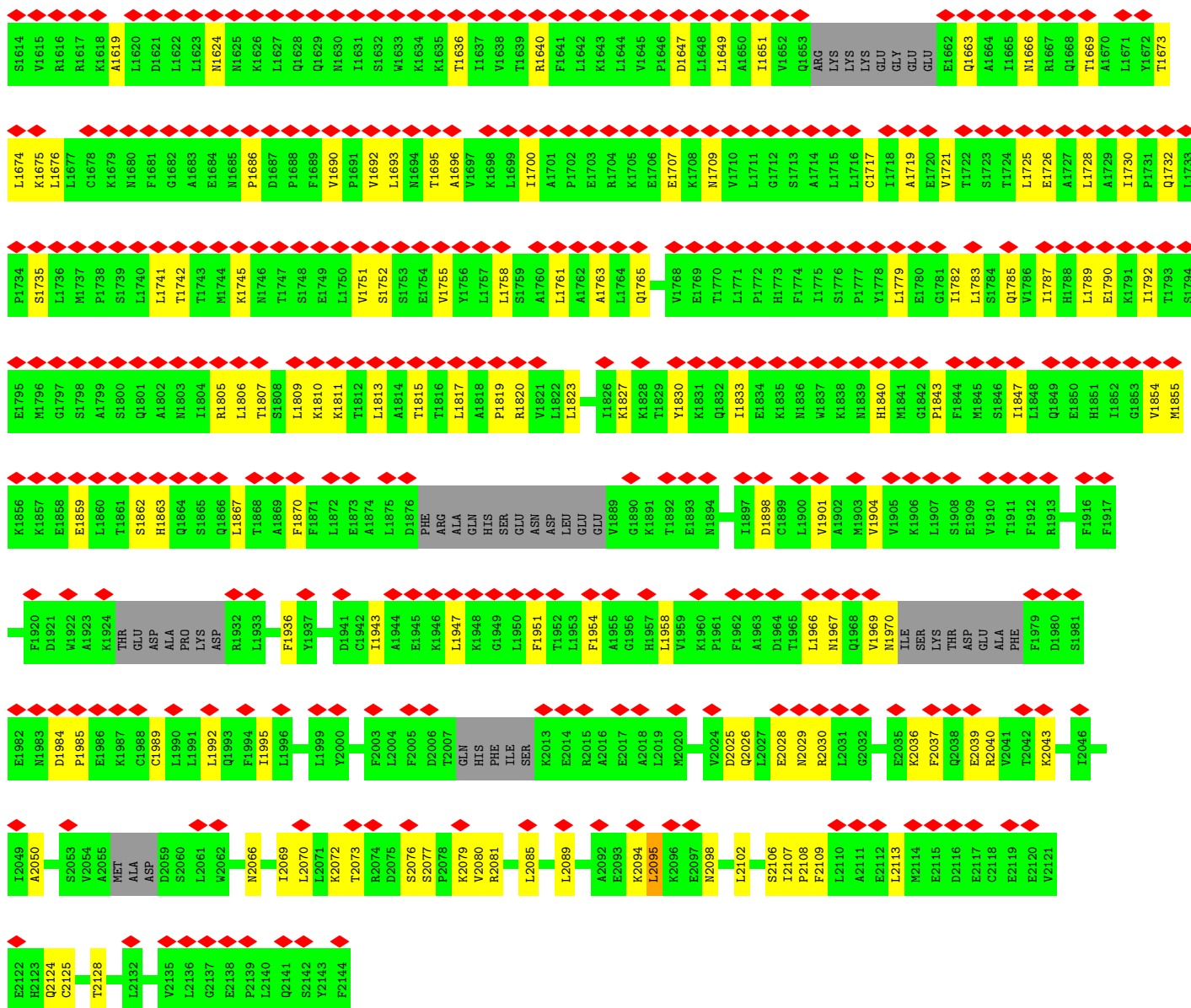
• Molecule 18: U3 small nucleolar RNA-associated protein 15 homolog



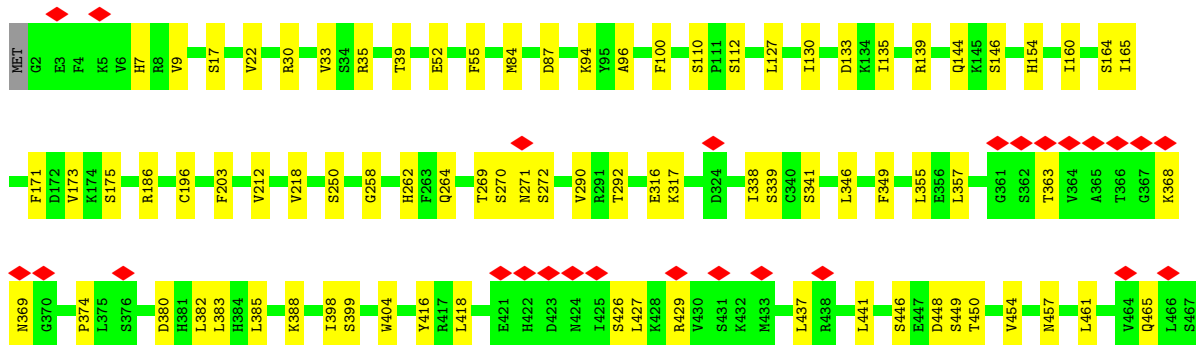
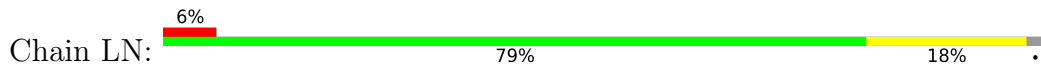
• Molecule 19: WD repeat-containing protein 43

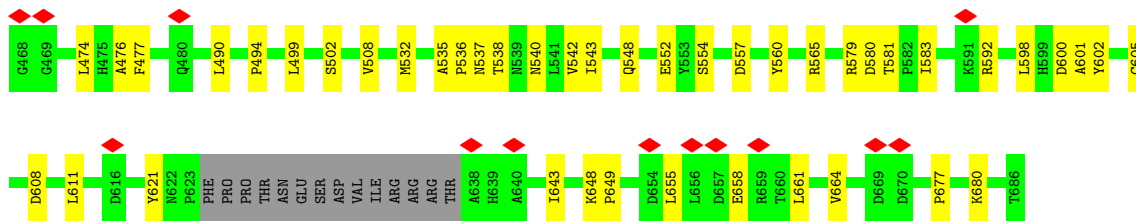




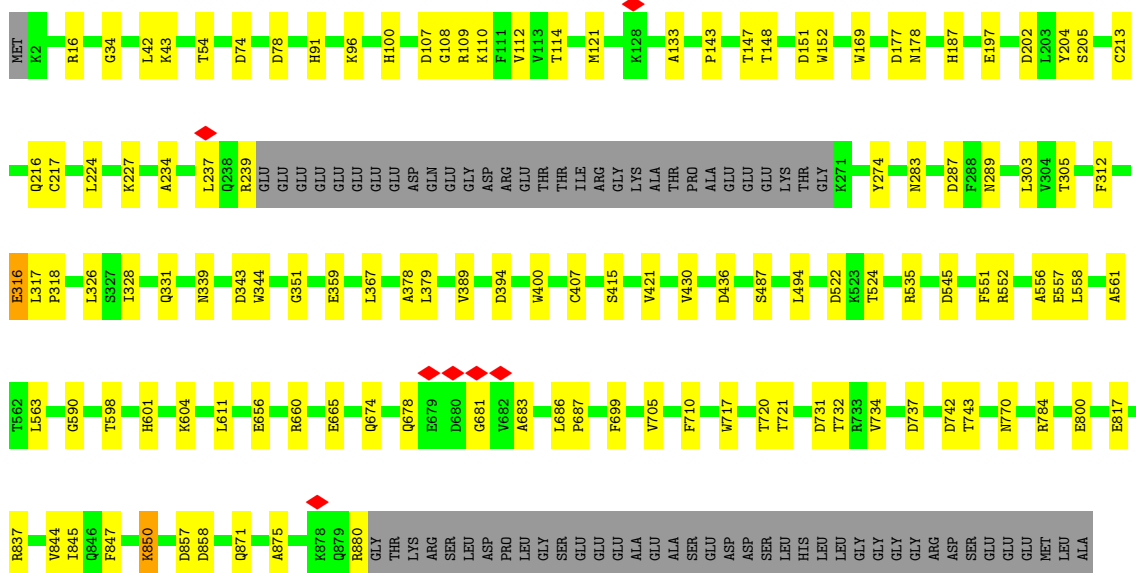
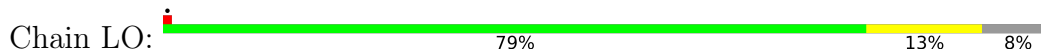


● Molecule 21: U3 small nucleolar RNA-associated protein 4 homolog

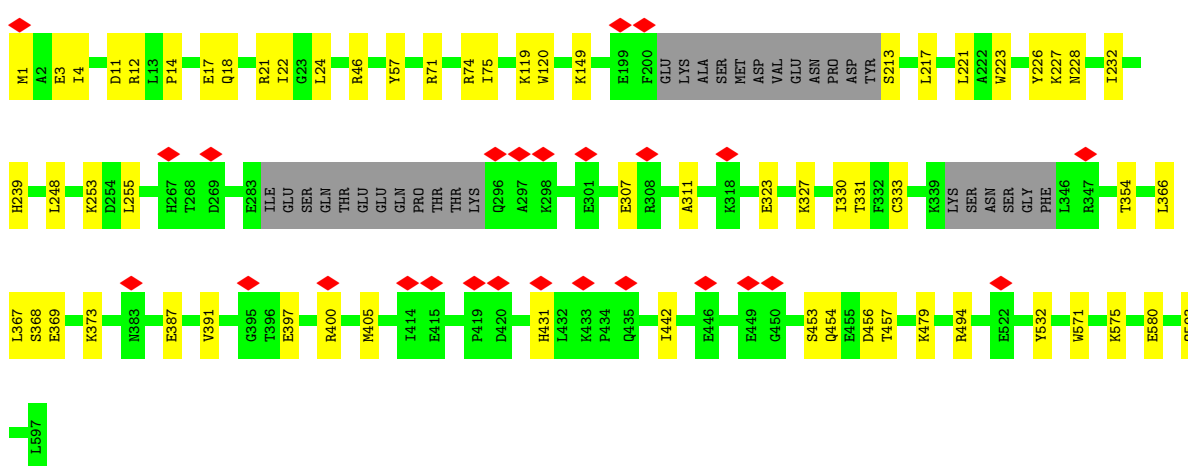
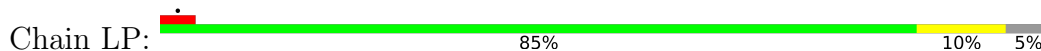




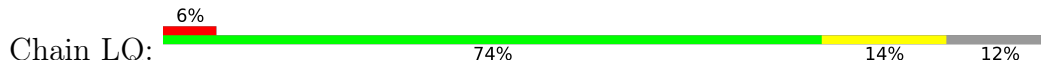
• Molecule 22: Periodic tryptophan protein 2 homolog

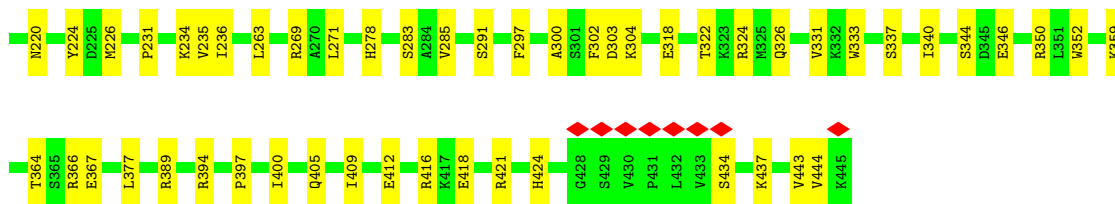


• Molecule 23: U3 small nucleolar RNA-associated protein 6 homolog

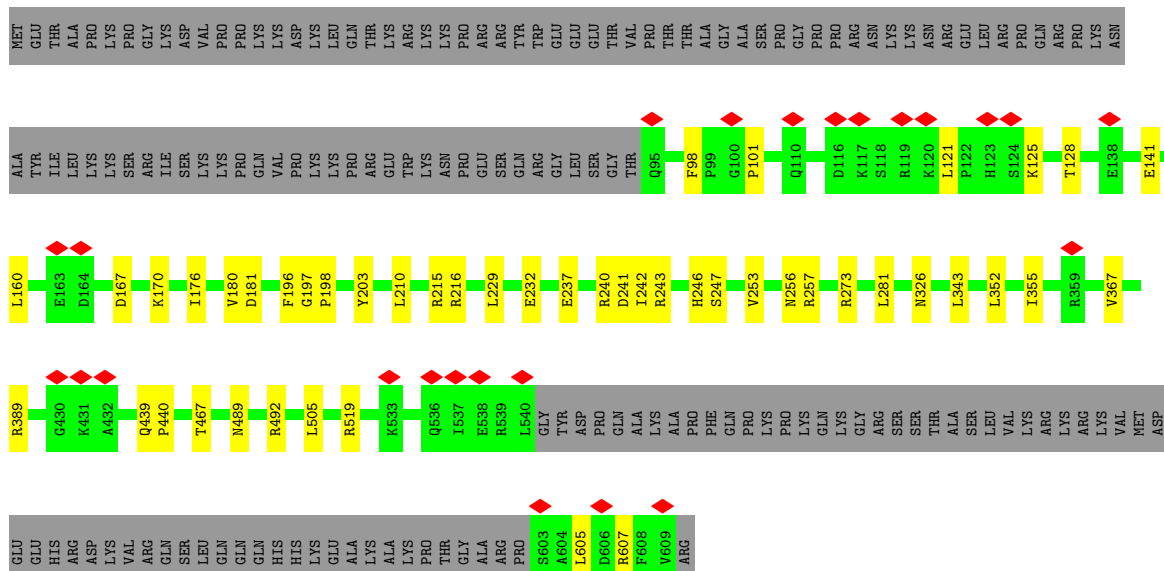


• Molecule 24: WD repeat-containing protein 3





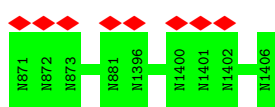
• Molecule 29: WD repeat-containing protein 46



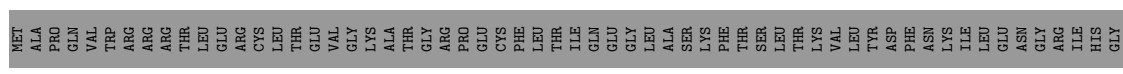
• Molecule 30: U3 small nucleolar ribonucleoprotein protein IMP3

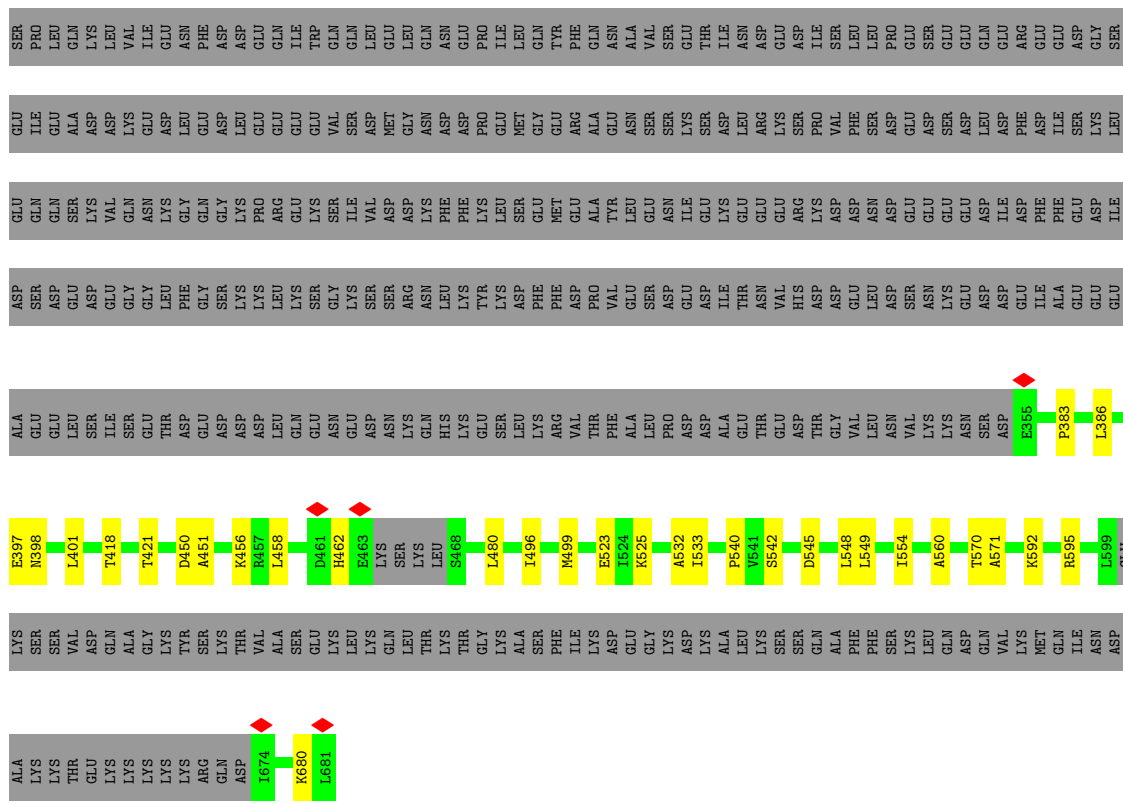


• Molecule 31: 5'ETS rRNA



• Molecule 32: U3 small nucleolar ribonucleoprotein protein MPP10

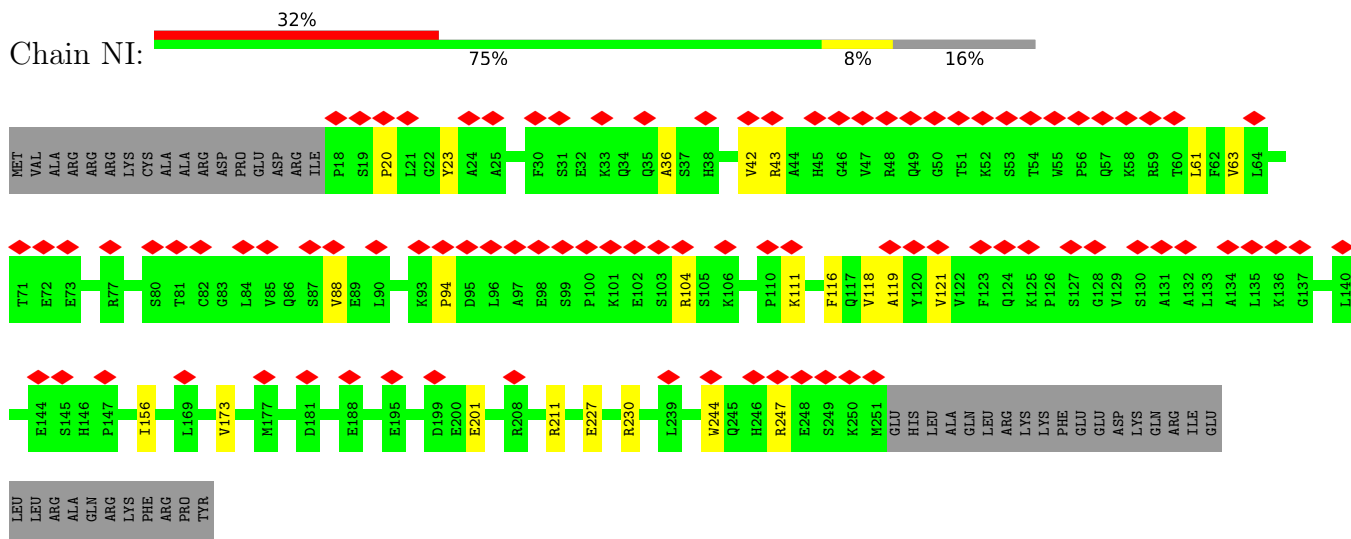




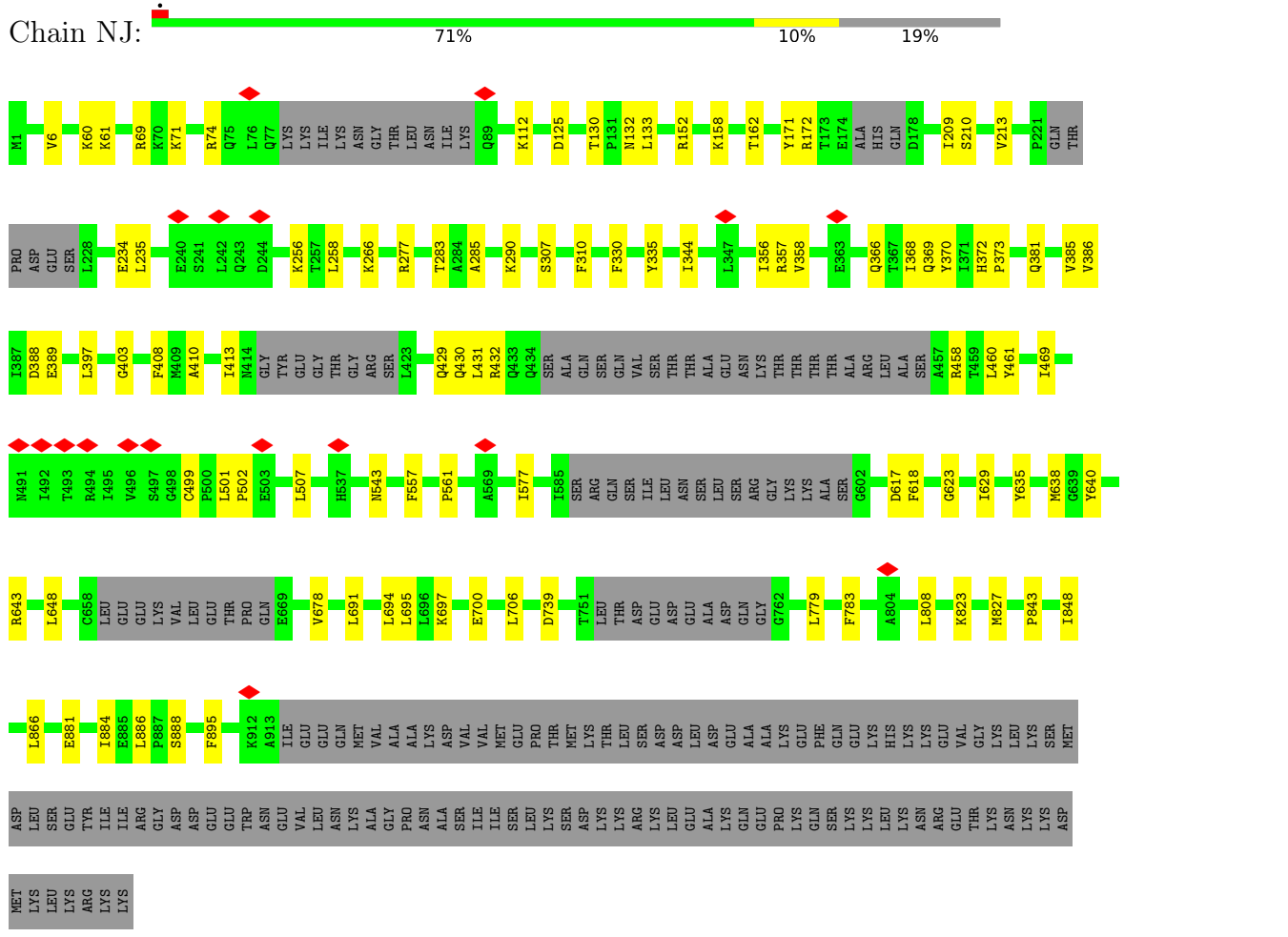
● Molecule 33: Something about silencing protein 10



● Molecule 34: Neuroguidin

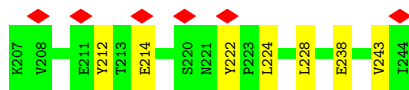


• Molecule 41: RNA cytidine acetyltransferase

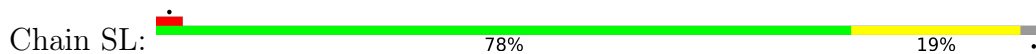


• Molecule 41: RNA cytidine acetyltransferase





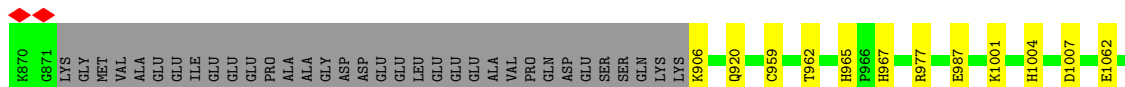
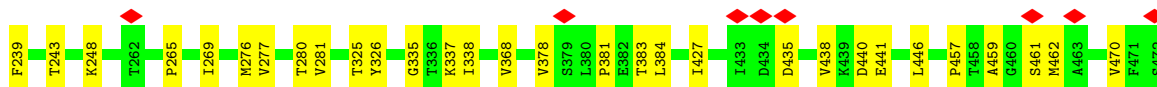
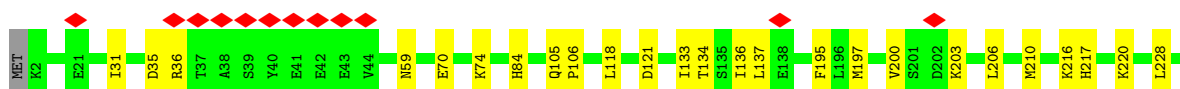
- Molecule 59: rRNA-processing protein FCF1 homolog



- Molecule 60: U3 small nucleolar ribonucleoprotein protein IMP4



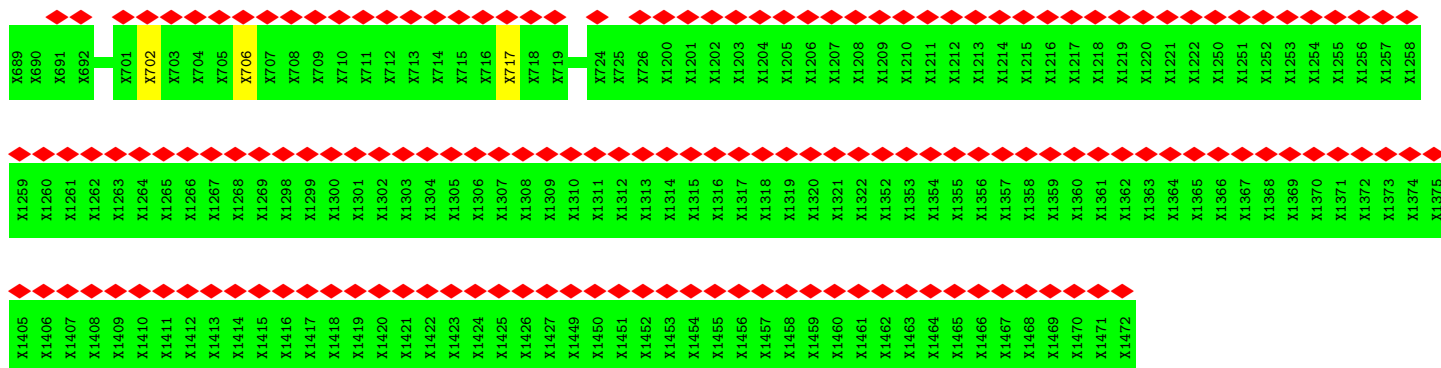
- Molecule 61: Small subunit processome component 20 homolog



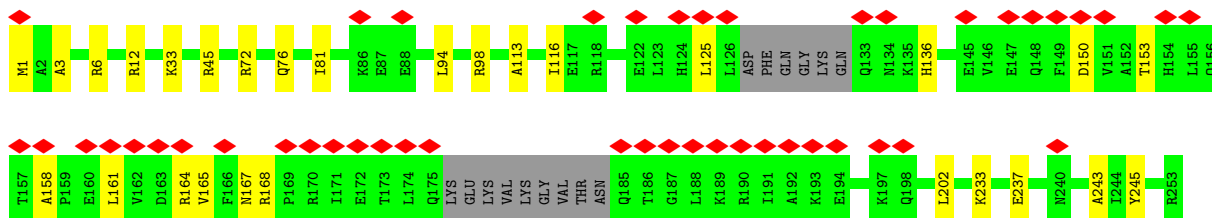
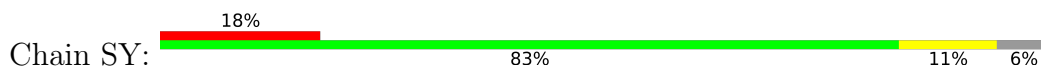
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GLY	L1374	Y1470	F1574	G1673	ASP	V1819	G1895	L1984	VAL	D2165	K2235	TYR	LEU
SER	C1384	L1471	F1575	S1675	PRO	R1820	V1898	L1985	SER	Y2166	K2236	HIS	GLY
T1292	P1393	I1472	M1577	L1676	ALA	L1823	T1902	E1986	ARG	A2167	L2237	THR	THR
I1294	I1394	P1473	M1578	H1685	GLY	A1826	F1903	I1987	K2077	K2168	V2238	GLY	GLY
R1297	A1395	M1475	H1476	T1690	THR	I1834	T1904	Q1989	F2083	L2169	PRO	ARG	GLY
V1303	K1396	H1477	F1398	LEU	SER	K1829	V1905	N1990	Z2084	L2093	GLU	ILE	GLY
S1311	S1399	G1478	F1479	GLN	ALA	M1830	M1907	H1991	Z2085	S2094	ASP	THR	ASP
K1312	V1400	F1479	L1482	GLN	LYS	M1831	L1908	T1992	Z2086	L2095	LEU	THR	LEU
T1313	I1401	F1479	A1493	MET	SER	L1834	L1912	T2003	Z2087	L2096	VAL	THR	VAL
THR	N1402	I1500	I1500	LYS	CYS	M1839	D1922	L2004	Z2088	L2097	ALA	THR	ALA
ILE	N1403	I1500	I1500	ILE	THR	E1840	S1923	R2005	L2011	L2111	VAL	THR	VAL
SER	K1408	L1504	L1504	GLU	THR	L1847	E1924	R2006	A2019	D2112	ALA	ALA	ALA
ALA	L1409	L1504	L1504	ASN	PRO	L1848	C1924	I2007	E2020	P2113	GLN	SER	SER
GLU	L1410	D1513	D1513	GLU	VAL	K1849	L1925	T2008	S2021	F2114	LEU	LEU	LEU
VAL	V1413	R1515	R1515	ALA	VAL	A1852	D1926	L2011	S2022	V2115	ALA	PRO	ASN
LYS	V1413	E1516	E1516	ALA	SER	I1846	I1927	L2011	I2022	S2116	ALA	ALA	ALA
LYS	V1413	Y1517	Y1517	ALA	PHE	L1847	E1930	A2019	L2023	L2117	ALA	PRO	PRO
LYS	V1413	I1518	I1518	ILE	LEU	L1848	I1931	E2020	L2024	L2118	ALA	ALA	ALA
LYS	V1413	H1519	H1519	ALA	GLN	K1849	H1931	S2021	L2024	L2118	ALA	ALA	ALA
LYS	V1413	R1520	R1520	ILE	ASN	A1852	E1935	S2021	L2024	L2118	ALA	ALA	ALA
N1325	L1424	R1326	R1326	GLU	LYS	I1846	L1936	I2022	L2024	L2118	ALA	ALA	ALA
R1326	L1424	I1427	I1427	GLU	GLU	L1846	F1937	I2022	L2024	L2118	ALA	ALA	ALA
A1327	L1427	T1428	T1428	LEU	LEU	L1848	F1937	I2022	L2024	L2118	ALA	ALA	ALA
Q1328	V1430	D1429	D1429	PRO	PRO	K1855	F1937	I2022	L2024	L2118	ALA	ALA	ALA
L1333	A1435	V1430	V1430	PRO	PRO	K1855	F1937	I2022	L2024	L2118	ALA	ALA	ALA
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E1370	F1453	A1435	A1435	ALA	ALA	K1855	F1937	I2022	L2024	L2118	ALA	ALA	ALA
V1371	I1456	A1435	A1435	ALA	ALA	K1855	F1937	I2022	L2024	L2118	ALA	ALA	ALA
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C1384	I1466	A1435	A1435	ALA	ALA	K1855	F1937	I2022	L2024	L2118	ALA	ALA	ALA
P1393	I1466	A1435	A1435	ALA	ALA	K1855	F1937	I2022	L2024	L2118	ALA	ALA	ALA
I1394	I1466	A1435	A1435	ALA	ALA	K1855	F1937	I2022	L2024	L2118	ALA	ALA	ALA
A1395	I1466	A1435	A1435	ALA	ALA	K1855	F1937	I2022	L2024	L2118	ALA	ALA	ALA
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I1394	I1466	A1435	A1435	ALA	ALA	K1855	F1937	I2022	L2024	L2118	ALA	ALA	ALA
A1395	I1466	A1435	A1435	ALA	ALA	K1855	F1937	I2022	L2024	L2118	ALA	ALA	ALA
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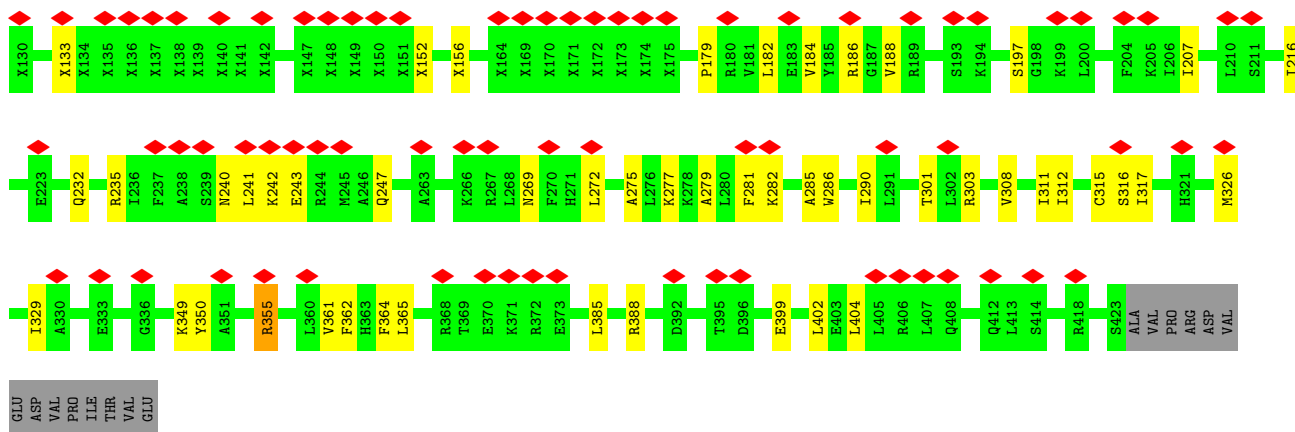
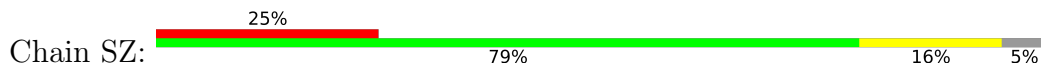
• Molecule 68: Unassigned peptides



• Molecule 69: Probable U3 small nucleolar RNA-associated protein 11



• Molecule 70: Bystin



GLU
ASP
VAL
PRO
ILE
THR
VAL
GLU

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	42142	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 ($e^-/\text{\AA}^2$)	58	Depositor
Minimum defocus (nm)	700	Depositor
Maximum defocus (nm)	2700	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	20.935	Depositor
Minimum map value	-14.456	Depositor
Average map value	0.024	Depositor
Map value standard deviation	0.682	Depositor
Recommended contour level	2.68	Depositor
Map size (\AA)	604.80005, 604.80005, 604.80005	wwPDB
Map dimensions	560, 560, 560	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.08, 1.08, 1.08	Depositor

5 Model quality i

5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: SAH, GTP, ATP, MG, ZN

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	L0	0.19	0/5739	0.85	2/8931 (0.0%)
2	L1	0.19	0/31039	0.85	66/48327 (0.1%)
3	L2	0.18	0/5130	0.81	5/7996 (0.1%)
4	L3	0.26	0/720	0.61	0/970
5	L4	0.25	0/2118	0.56	0/2849
6	L5	0.26	0/1523	0.56	2/2048 (0.1%)
7	L6	0.27	0/1830	0.59	0/2434
8	L7	0.29	0/1365	0.56	0/1830
9	L8	0.26	0/1500	0.57	0/2002
10	L9	0.25	0/1447	0.56	0/1930
11	LA	0.28	0/941	0.54	0/1264
12	LC	0.27	0/1115	0.56	0/1494
13	LD	0.26	0/1225	0.60	0/1640
14	LF	0.25	0/868	0.54	0/1159
15	LG	0.24	0/490	0.62	0/656
16	LH	0.25	0/6127	0.50	0/8292
17	LI	0.26	0/3245	0.48	0/4386
18	LJ	0.27	0/3788	0.56	2/5128 (0.0%)
19	LK	0.29	0/959	0.58	1/1302 (0.1%)
19	LL	0.24	0/4072	0.51	0/5539
20	LM	0.26	0/16110	0.50	3/21817 (0.0%)
21	LN	0.25	0/5438	0.51	1/7377 (0.0%)
22	LO	0.26	0/6835	0.55	0/9256
23	LP	0.25	0/4806	0.47	0/6455
24	LQ	0.24	0/6548	0.51	0/8839
25	LR	0.25	0/6141	0.53	0/8348
26	LS	0.25	0/3621	0.51	0/4876
27	LT	0.25	0/6907	0.50	0/9359
28	LU	0.24	0/3695	0.52	0/4986
29	LW	0.28	1/3594 (0.0%)	0.57	3/4867 (0.1%)
30	LZ	0.25	0/1560	0.56	0/2104
32	NA	0.26	0/2084	0.50	1/2789 (0.0%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	NB	0.25	0/622	0.64	0/816
34	NC	0.24	0/788	0.57	0/1049
35	ND	0.25	0/708	0.54	0/947
36	NE	0.25	0/807	0.46	0/1069
37	NF	0.23	0/1226	0.49	0/1649
38	NG	0.25	0/873	0.52	0/1177
39	NH	0.25	0/8580	0.51	0/11685
40	NI	0.25	0/1887	0.52	0/2558
41	NJ	0.25	0/6652	0.50	0/9006
41	NK	0.25	0/6545	0.52	1/8867 (0.0%)
42	NM	0.24	0/1899	0.49	0/2533
43	NN	0.25	0/346	0.59	0/462
44	NO	0.27	0/1051	0.60	1/1406 (0.1%)
45	NQ	0.24	0/653	0.49	0/876
47	NT	0.28	0/479	0.69	1/635 (0.2%)
48	NU	0.25	0/501	0.55	0/667
49	NW	0.25	0/2556	0.54	0/3469
50	NY	0.25	0/2265	0.49	1/3045 (0.0%)
51	SA	0.24	0/3122	0.46	0/4208
52	SB	0.24	0/3491	0.48	0/4695
53	SC	0.29	0/1818	0.56	2/2463 (0.1%)
53	SD	0.24	0/1878	0.50	0/2540
54	SE	0.24	0/980	0.50	0/1323
54	SF	0.25	0/967	0.50	0/1305
55	SG	0.24	0/2941	0.51	0/3988
56	SH	0.24	0/2882	0.50	0/3887
57	SI	0.25	0/6917	0.49	0/9297
58	SJ	0.25	0/1609	0.53	0/2181
58	SK	0.25	0/1609	0.52	0/2181
59	SL	0.25	0/1619	0.53	0/2174
60	SM	0.25	0/2420	0.57	0/3264
61	SP	0.25	0/16393	0.49	2/22173 (0.0%)
62	SQ	0.25	0/1561	0.48	0/2083
63	SR	0.26	0/828	0.51	0/1110
64	SS	0.24	0/1663	0.50	0/2250
65	ST	0.27	0/3597	0.51	0/4836
66	SU	0.25	0/2634	0.52	1/3581 (0.0%)
67	SW	0.27	0/1436	0.59	0/1936
69	SY	0.24	0/2051	0.49	0/2723
70	SZ	0.25	0/2043	0.52	0/2763
All	All	0.24	1/245477 (0.0%)	0.59	95/340127 (0.0%)

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
6	L5	0	1
22	LO	0	1
67	SW	0	1
All	All	0	3

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	LW	101	PRO	CG-CD	-7.89	1.24	1.50

The worst 5 of 95 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
29	LW	101	PRO	N-CD-CG	-10.97	86.75	103.20
2	L1	1453	C	N1-C2-O2	9.35	124.51	118.90
2	L1	1453	C	C2-N1-C1'	9.25	128.98	118.80
2	L1	1535	U	C2-N1-C1'	8.14	127.47	117.70
2	L1	1742	C	C2-N1-C1'	8.11	127.72	118.80

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
6	L5	136	ARG	Sidechain
22	LO	316	GLU	Peptide
67	SW	247	ARG	Sidechain

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	L0	5152	0	2630	49	0
2	L1	27777	0	14063	253	0
3	L2	4589	0	2306	44	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	L3	854	0	774	24	0
5	L4	2076	0	2177	17	0
6	L5	1501	0	1557	16	0
7	L6	1811	0	1974	22	0
8	L7	1346	0	1410	30	0
9	L8	1474	0	1542	21	0
10	L9	1425	0	1541	16	0
11	LA	931	0	961	18	0
12	LC	1098	0	1168	10	0
13	LD	1204	0	1274	11	0
14	LF	851	0	894	17	0
15	LG	488	0	514	4	0
16	LH	5987	0	5953	72	0
17	LI	3889	0	3464	54	0
18	LJ	3711	0	3758	65	0
19	LK	943	0	1023	25	0
19	LL	3982	0	4031	55	0
20	LM	15820	0	16318	272	0
21	LN	5299	0	5269	78	0
22	LO	6676	0	6579	74	0
23	LP	4705	0	4720	49	0
24	LQ	6438	0	6400	75	0
25	LR	6015	0	5981	90	0
26	LS	3560	0	3570	51	0
27	LT	6756	0	6768	80	0
28	LU	3611	0	3618	59	0
29	LW	3519	0	3518	33	0
30	LZ	1532	0	1553	10	0
31	NO	264	0	178	0	0
32	NA	2055	0	2135	21	0
33	NB	617	0	685	7	0
34	NC	779	0	788	10	0
35	ND	696	0	729	10	0
36	NE	799	0	854	11	0
37	NF	1202	0	1289	9	0
38	NG	861	0	871	8	0
39	NH	8374	0	8456	77	0
40	NI	1840	0	1812	18	0
41	NJ	6526	0	6599	56	0
41	NK	6419	0	6480	87	0
42	NM	1873	0	1968	17	0
43	NN	340	0	345	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
44	NO	1034	0	1080	18	0
45	NQ	640	0	661	5	0
46	NR	4305	0	945	22	0
47	NT	470	0	474	14	0
48	NU	495	0	541	10	0
49	NW	2498	0	2456	34	0
50	NY	2222	0	2310	16	0
51	SA	3077	0	3139	32	0
52	SB	3439	0	3559	42	0
53	SC	1781	0	1803	37	0
53	SD	1841	0	1867	14	0
54	SE	968	0	1017	7	0
54	SF	955	0	1008	5	0
55	SG	2884	0	2751	17	0
56	SH	2832	0	2937	28	0
57	SI	6803	0	6966	63	0
58	SJ	1579	0	1646	28	0
58	SK	1579	0	1646	24	0
59	SL	1586	0	1641	31	0
60	SM	2369	0	2376	18	0
61	SP	16078	0	16633	204	0
62	SQ	1533	0	1579	8	0
63	SR	816	0	871	5	0
64	SS	1626	0	1677	19	0
65	ST	4170	0	3804	56	0
66	SU	3154	0	2736	30	0
67	SW	1413	0	1489	26	0
68	SX	885	0	192	2	0
69	SY	2024	0	2148	19	0
70	SZ	2222	0	2142	32	0
71	L1	19	0	0	0	0
71	NH	1	0	0	0	0
71	SI	1	0	0	0	0
71	SL	1	0	0	0	0
72	NH	31	0	12	2	0
72	NK	31	0	12	1	0
73	NQ	1	0	0	0	0
73	NT	1	0	0	0	0
73	SL	1	0	0	0	0
74	SI	32	0	12	0	0
75	SJ	26	0	19	3	0
75	SK	26	0	19	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	245114	0	224665	2570	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 6.

The worst 5 of 2570 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:LM:1457:GLN:HE21	20:LM:1457:GLN:N	1.53	1.06
28:LU:66:ARG:HH12	59:SL:127:PRO:HD3	1.40	0.84
27:LT:748:ASN:HB3	27:LT:751:LEU:HD23	1.60	0.83
21:LN:461:LEU:HB2	21:LN:477:PHE:HB2	1.63	0.81
61:SP:1430:VAL:HG12	61:SP:1477:ASN:HD21	1.45	0.80

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	L3	85/116 (73%)	84 (99%)	1 (1%)	0	100	100
5	L4	260/263 (99%)	259 (100%)	1 (0%)	0	100	100
6	L5	188/204 (92%)	182 (97%)	6 (3%)	0	100	100
7	L6	219/249 (88%)	218 (100%)	1 (0%)	0	100	100
8	L7	164/194 (84%)	160 (98%)	4 (2%)	0	100	100
9	L8	176/208 (85%)	174 (99%)	2 (1%)	0	100	100
10	L9	169/194 (87%)	168 (99%)	1 (1%)	0	100	100
11	LA	118/132 (89%)	111 (94%)	7 (6%)	0	100	100
12	LC	137/146 (94%)	136 (99%)	1 (1%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
13	LD	145/158 (92%)	141 (97%)	4 (3%)	0	100	100
14	LF	102/133 (77%)	102 (100%)	0	0	100	100
15	LG	60/69 (87%)	59 (98%)	1 (2%)	0	100	100
16	LH	738/830 (89%)	721 (98%)	17 (2%)	0	100	100
17	LI	374/678 (55%)	370 (99%)	4 (1%)	0	100	100
18	LJ	465/518 (90%)	448 (96%)	17 (4%)	0	100	100
19	LK	116/677 (17%)	113 (97%)	3 (3%)	0	100	100
19	LL	500/677 (74%)	483 (97%)	17 (3%)	0	100	100
20	LM	1977/2144 (92%)	1933 (98%)	44 (2%)	0	100	100
21	LN	667/686 (97%)	647 (97%)	19 (3%)	1 (0%)	51	83
22	LO	844/919 (92%)	826 (98%)	18 (2%)	0	100	100
23	LP	559/597 (94%)	556 (100%)	3 (0%)	0	100	100
24	LQ	810/943 (86%)	792 (98%)	18 (2%)	0	100	100
25	LR	769/808 (95%)	748 (97%)	21 (3%)	0	100	100
26	LS	447/556 (80%)	440 (98%)	7 (2%)	0	100	100
27	LT	863/951 (91%)	847 (98%)	16 (2%)	0	100	100
28	LU	443/445 (100%)	435 (98%)	8 (2%)	0	100	100
29	LW	449/610 (74%)	436 (97%)	13 (3%)	0	100	100
30	LZ	181/184 (98%)	179 (99%)	2 (1%)	0	100	100
32	NA	243/681 (36%)	242 (100%)	1 (0%)	0	100	100
33	NB	71/479 (15%)	69 (97%)	2 (3%)	0	100	100
34	NC	92/315 (29%)	90 (98%)	2 (2%)	0	100	100
35	ND	82/257 (32%)	81 (99%)	1 (1%)	0	100	100
36	NE	94/293 (32%)	94 (100%)	0	0	100	100
37	NF	147/151 (97%)	145 (99%)	2 (1%)	0	100	100
38	NG	114/151 (76%)	113 (99%)	1 (1%)	0	100	100
39	NH	1064/1146 (93%)	1044 (98%)	20 (2%)	0	100	100
40	NI	232/280 (83%)	229 (99%)	3 (1%)	0	100	100
41	NJ	809/1025 (79%)	783 (97%)	26 (3%)	0	100	100
41	NK	801/1025 (78%)	782 (98%)	19 (2%)	0	100	100
42	NM	229/264 (87%)	226 (99%)	3 (1%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
43	NN	40/560 (7%)	39 (98%)	1 (2%)	0	100	100
44	NO	127/130 (98%)	124 (98%)	3 (2%)	0	100	100
45	NQ	80/84 (95%)	79 (99%)	1 (1%)	0	100	100
47	NT	56/156 (36%)	55 (98%)	1 (2%)	0	100	100
48	NU	58/135 (43%)	57 (98%)	1 (2%)	0	100	100
49	NW	305/688 (44%)	293 (96%)	12 (4%)	0	100	100
50	NY	270/381 (71%)	270 (100%)	0	0	100	100
51	SA	390/594 (66%)	388 (100%)	2 (0%)	0	100	100
52	SB	438/529 (83%)	437 (100%)	1 (0%)	0	100	100
53	SC	225/321 (70%)	219 (97%)	6 (3%)	0	100	100
53	SD	233/321 (73%)	227 (97%)	6 (3%)	0	100	100
54	SE	123/128 (96%)	122 (99%)	1 (1%)	0	100	100
54	SF	121/128 (94%)	119 (98%)	2 (2%)	0	100	100
55	SG	383/475 (81%)	374 (98%)	9 (2%)	0	100	100
56	SH	366/373 (98%)	362 (99%)	4 (1%)	0	100	100
57	SI	825/1282 (64%)	812 (98%)	13 (2%)	0	100	100
58	SJ	202/244 (83%)	200 (99%)	2 (1%)	0	100	100
58	SK	202/244 (83%)	200 (99%)	2 (1%)	0	100	100
59	SL	190/198 (96%)	186 (98%)	4 (2%)	0	100	100
60	SM	288/291 (99%)	280 (97%)	8 (3%)	0	100	100
61	SP	1967/2785 (71%)	1933 (98%)	34 (2%)	0	100	100
62	SQ	183/756 (24%)	182 (100%)	1 (0%)	0	100	100
63	SR	106/143 (74%)	104 (98%)	2 (2%)	0	100	100
64	SS	191/771 (25%)	187 (98%)	4 (2%)	0	100	100
65	ST	432/632 (68%)	424 (98%)	8 (2%)	0	100	100
66	SU	316/472 (67%)	311 (98%)	5 (2%)	0	100	100
67	SW	178/252 (71%)	175 (98%)	3 (2%)	0	100	100
69	SY	232/253 (92%)	230 (99%)	2 (1%)	0	100	100
70	SZ	244/304 (80%)	237 (97%)	7 (3%)	0	100	100
All	All	24774/33986 (73%)	24292 (98%)	481 (2%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
21	LN	175	SER

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	
4	L3	76/77 (99%)	76 (100%)	0	100	100
5	L4	224/225 (100%)	224 (100%)	0	100	100
6	L5	160/170 (94%)	160 (100%)	0	100	100
7	L6	195/218 (89%)	194 (100%)	1 (0%)	88	95
8	L7	149/174 (86%)	149 (100%)	0	100	100
9	L8	155/180 (86%)	155 (100%)	0	100	100
10	L9	152/168 (90%)	151 (99%)	1 (1%)	84	93
11	LA	102/108 (94%)	100 (98%)	2 (2%)	55	79
12	LC	114/121 (94%)	114 (100%)	0	100	100
13	LD	133/142 (94%)	131 (98%)	2 (2%)	65	84
14	LF	92/115 (80%)	92 (100%)	0	100	100
15	LG	55/62 (89%)	55 (100%)	0	100	100
16	LH	670/748 (90%)	667 (100%)	3 (0%)	91	97
17	LI	368/497 (74%)	368 (100%)	0	100	100
18	LJ	412/456 (90%)	412 (100%)	0	100	100
19	LK	112/594 (19%)	112 (100%)	0	100	100
19	LL	456/594 (77%)	454 (100%)	2 (0%)	91	97
20	LM	1783/1943 (92%)	1779 (100%)	4 (0%)	93	98
21	LN	582/597 (98%)	582 (100%)	0	100	100
22	LO	726/783 (93%)	725 (100%)	1 (0%)	93	98
23	LP	499/527 (95%)	499 (100%)	0	100	100
24	LQ	690/828 (83%)	690 (100%)	0	100	100
25	LR	648/672 (96%)	648 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
26	LS	393/476 (83%)	392 (100%)	1 (0%)	92	97
27	LT	744/823 (90%)	743 (100%)	1 (0%)	93	98
28	LU	399/399 (100%)	399 (100%)	0	100	100
29	LW	373/512 (73%)	373 (100%)	0	100	100
30	LZ	166/167 (99%)	166 (100%)	0	100	100
32	NA	229/626 (37%)	229 (100%)	0	100	100
33	NB	63/413 (15%)	63 (100%)	0	100	100
34	NC	87/282 (31%)	87 (100%)	0	100	100
35	ND	72/222 (32%)	72 (100%)	0	100	100
36	NE	86/253 (34%)	85 (99%)	1 (1%)	71	87
37	NF	130/131 (99%)	130 (100%)	0	100	100
38	NG	92/119 (77%)	92 (100%)	0	100	100
39	NH	917/984 (93%)	916 (100%)	1 (0%)	93	98
40	NI	193/246 (78%)	193 (100%)	0	100	100
41	NJ	707/899 (79%)	705 (100%)	2 (0%)	92	97
41	NK	692/899 (77%)	690 (100%)	2 (0%)	92	97
42	NM	207/231 (90%)	207 (100%)	0	100	100
43	NN	37/484 (8%)	37 (100%)	0	100	100
44	NO	112/113 (99%)	112 (100%)	0	100	100
45	NQ	74/76 (97%)	74 (100%)	0	100	100
47	NT	51/140 (36%)	50 (98%)	1 (2%)	55	79
48	NU	53/122 (43%)	53 (100%)	0	100	100
49	NW	282/635 (44%)	280 (99%)	2 (1%)	84	93
50	NY	245/340 (72%)	244 (100%)	1 (0%)	91	97
51	SA	334/511 (65%)	334 (100%)	0	100	100
52	SB	372/455 (82%)	371 (100%)	1 (0%)	92	97
53	SC	192/234 (82%)	191 (100%)	1 (0%)	88	95
53	SD	198/234 (85%)	198 (100%)	0	100	100
54	SE	108/111 (97%)	108 (100%)	0	100	100
54	SF	107/111 (96%)	107 (100%)	0	100	100
55	SG	287/382 (75%)	287 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
56	SH	315/318 (99%)	315 (100%)	0	100	100
57	SI	738/1114 (66%)	738 (100%)	0	100	100
58	SJ	181/209 (87%)	179 (99%)	2 (1%)	73	88
58	SK	181/209 (87%)	181 (100%)	0	100	100
59	SL	177/182 (97%)	177 (100%)	0	100	100
60	SM	253/254 (100%)	253 (100%)	0	100	100
61	SP	1822/2522 (72%)	1818 (100%)	4 (0%)	93	98
62	SQ	165/676 (24%)	165 (100%)	0	100	100
63	SR	85/115 (74%)	85 (100%)	0	100	100
64	SS	177/686 (26%)	176 (99%)	1 (1%)	86	94
65	ST	389/439 (89%)	388 (100%)	1 (0%)	92	97
66	SU	269/303 (89%)	269 (100%)	0	100	100
67	SW	152/208 (73%)	151 (99%)	1 (1%)	84	93
69	SY	219/232 (94%)	219 (100%)	0	100	100
70	SZ	214/227 (94%)	213 (100%)	1 (0%)	88	95
All	All	21892/29323 (75%)	21852 (100%)	40 (0%)	93	98

5 of 40 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
52	SB	70	LYS
61	SP	2052	ARG
53	SC	87	MET
61	SP	36	ARG
65	ST	789	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 35 such sidechains are listed below:

Mol	Chain	Res	Type
64	SS	195	ASN
65	ST	37	ASN
65	ST	796	HIS
24	LQ	632	HIS
23	LP	267	HIS

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	L0	234/3617 (6%)	101 (43%)	6 (2%)
2	L1	1275/1869 (68%)	346 (27%)	23 (1%)
3	L2	214/217 (98%)	80 (37%)	4 (1%)
31	N0	0/22	-	-
All	All	1723/5725 (30%)	527 (30%)	33 (1%)

5 of 527 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	L0	434	C
1	L0	439	U
1	L0	442	U
1	L0	445	C
1	L0	446	G

5 of 33 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
2	L1	1823	A
3	L2	14	C
3	L2	188	G
2	L1	423	U
2	L1	369	C

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](#)

Of 30 ligands modelled in this entry, 25 are monoatomic - leaving 5 for Mogul analysis.

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
72	ATP	NH	3000	71	26,33,33	0.58	0	31,52,52	0.81	2 (6%)
72	ATP	NK	1101	-	26,33,33	0.59	0	31,52,52	0.74	2 (6%)
75	SAH	SJ	301	-	24,28,28	1.20	3 (12%)	25,40,40	1.70	5 (20%)
74	GTP	SI	2001	71	26,34,34	1.13	2 (7%)	32,54,54	1.54	6 (18%)
75	SAH	SK	301	-	24,28,28	1.19	3 (12%)	25,40,40	1.71	5 (20%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
72	ATP	NH	3000	71	-	6/18/38/38	0/3/3/3
72	ATP	NK	1101	-	-	7/18/38/38	0/3/3/3
75	SAH	SJ	301	-	-	3/11/31/31	0/3/3/3
74	GTP	SI	2001	71	-	7/18/38/38	0/3/3/3
75	SAH	SK	301	-	-	9/11/31/31	0/3/3/3

The worst 5 of 8 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
74	SI	2001	GTP	C5-C6	-4.16	1.39	1.47
75	SJ	301	SAH	C2-N3	3.92	1.38	1.32
75	SK	301	SAH	C2-N3	3.86	1.38	1.32
75	SK	301	SAH	C2-N1	2.47	1.38	1.33
75	SJ	301	SAH	C2-N1	2.45	1.38	1.33

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

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
75	SK	301	SAH	N3-C2-N1	-5.40	120.25	128.68
75	SJ	301	SAH	N3-C2-N1	-5.39	120.25	128.68
74	SI	2001	GTP	PB-O3B-PG	-3.57	120.57	132.83
75	SK	301	SAH	C5'-SD-CG	-3.42	92.02	102.27
75	SJ	301	SAH	C5'-SD-CG	-3.31	92.33	102.27

There are no chirality outliers.

5 of 32 torsion outliers are listed below:

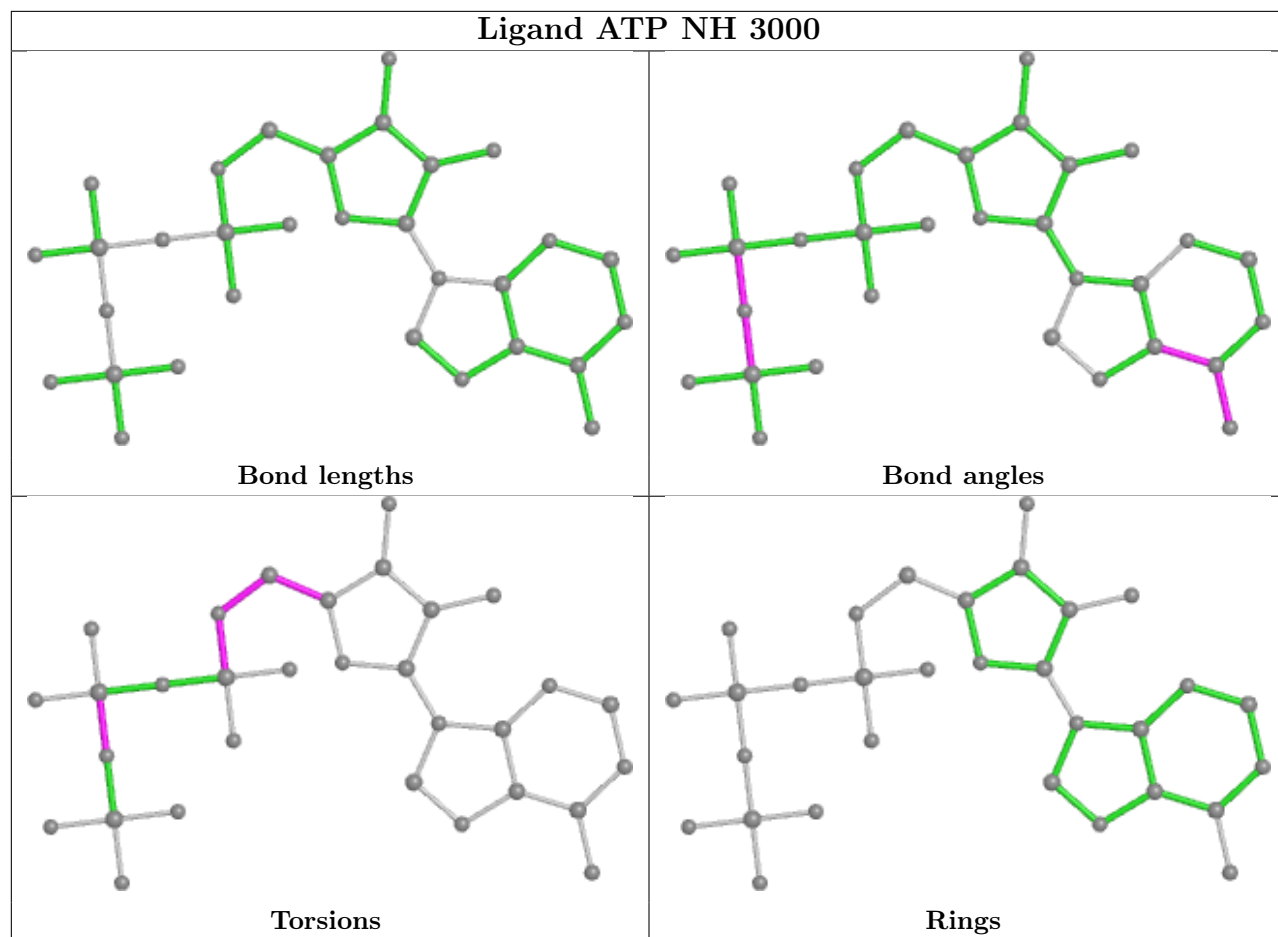
Mol	Chain	Res	Type	Atoms
72	NH	3000	ATP	C5'-O5'-PA-O1A
72	NH	3000	ATP	C5'-O5'-PA-O3A
72	NK	1101	ATP	C5'-O5'-PA-O1A
74	SI	2001	GTP	C5'-O5'-PA-O1A
74	SI	2001	GTP	C5'-O5'-PA-O2A

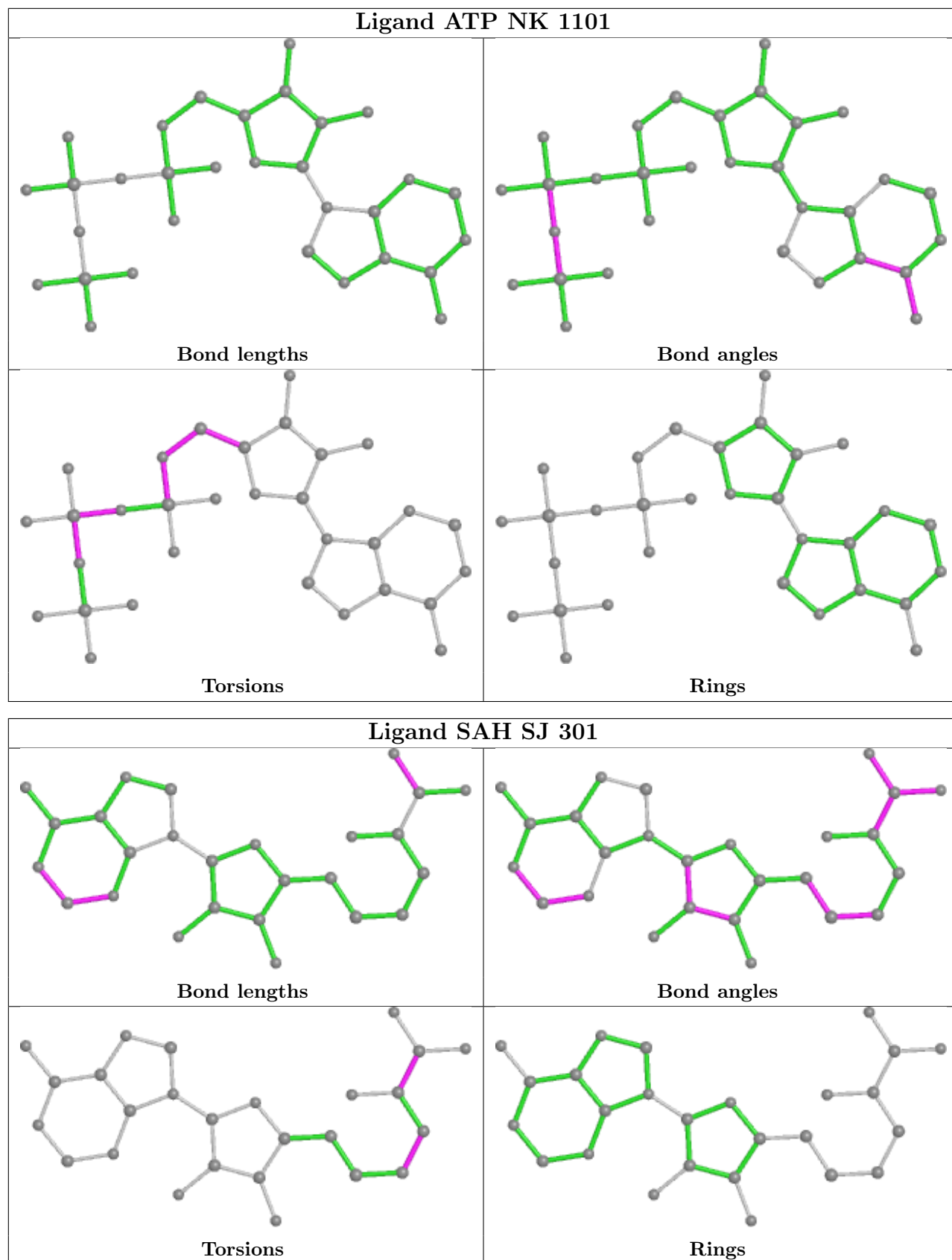
There are no ring outliers.

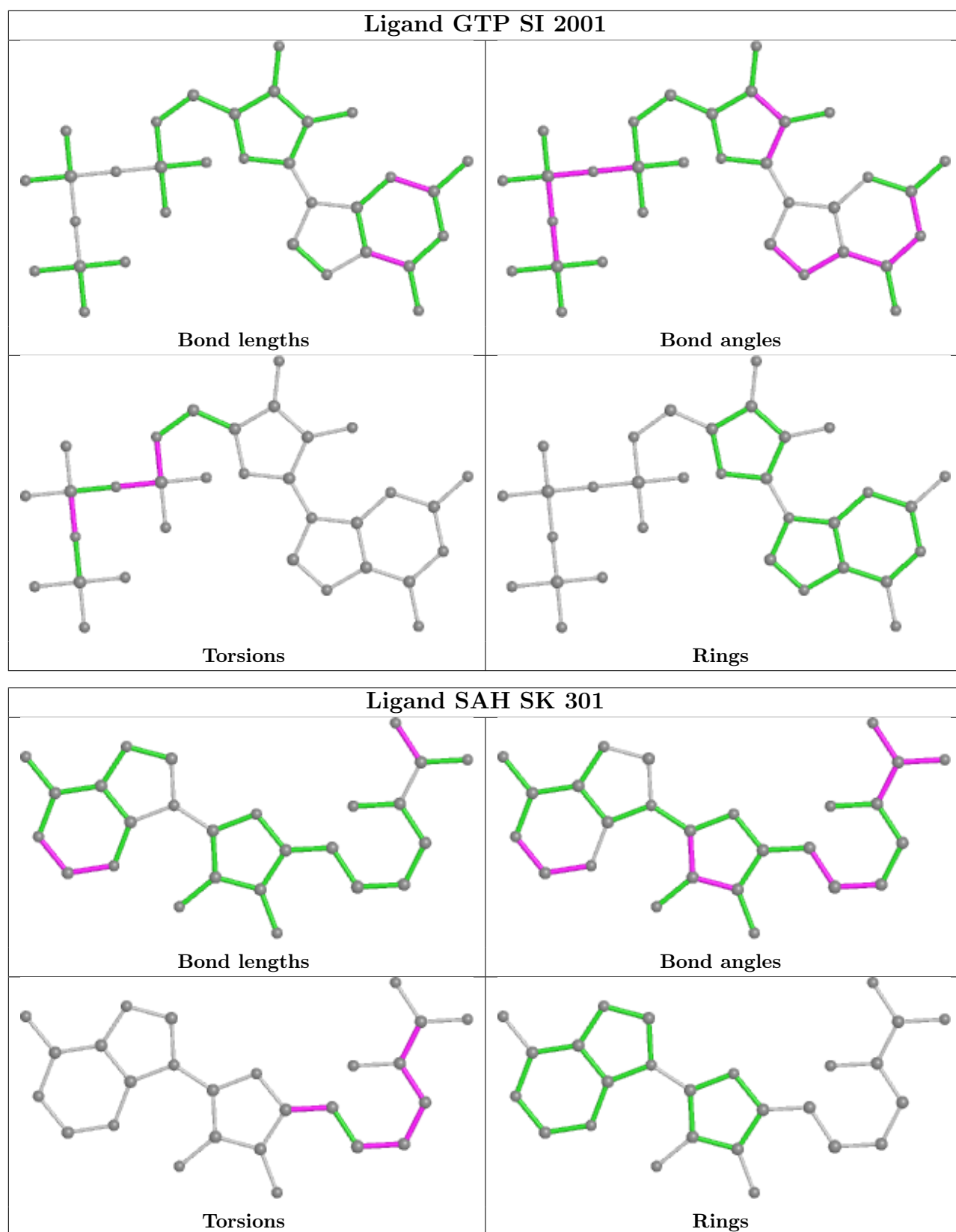
3 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
72	NH	3000	ATP	2	0
72	NK	1101	ATP	1	0
75	SJ	301	SAH	3	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.







5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
46	NR	41
68	SX	6
17	LI	5
66	SU	5
65	ST	3
31	N0	1
70	SZ	1

The worst 5 of 62 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	SX	726:UNK	C	1200:UNK	N	185.51
1	ST	298:LEU	C	414:UNK	N	52.49
1	SX	1269:UNK	C	1298:UNK	N	38.16
1	ST	86:LYS	C	186:UNK	N	37.14
1	SX	1427:UNK	C	1449:UNK	N	35.74

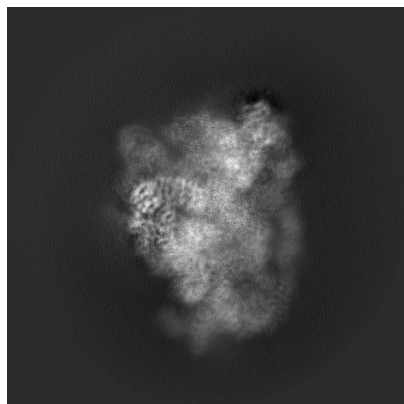
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-23936. These allow visual inspection of the internal detail of the map and identification of artifacts.

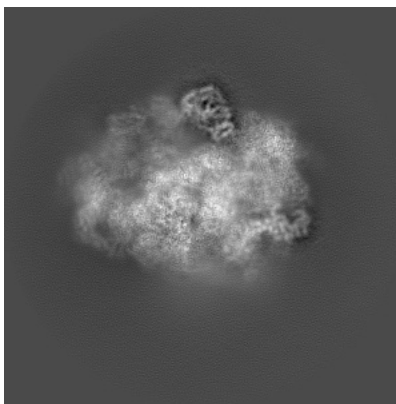
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

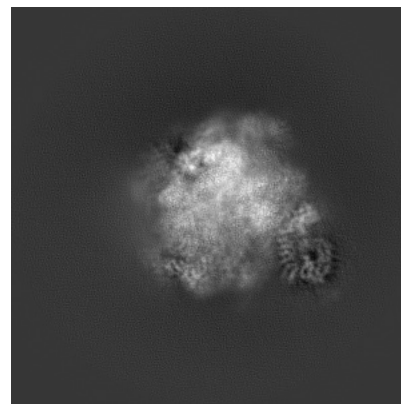
6.1.1 Primary map



X

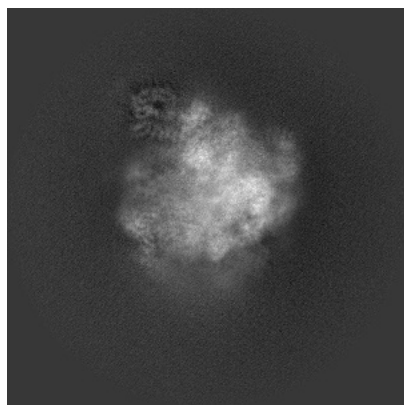


Y

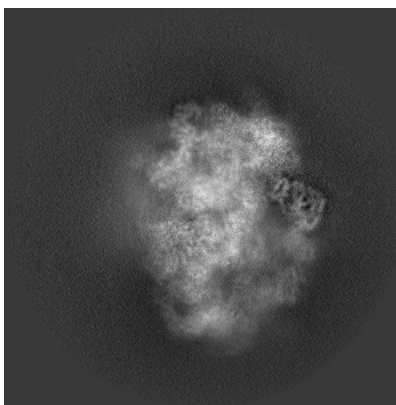


Z

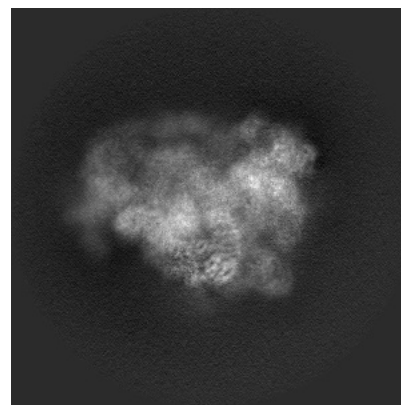
6.1.2 Raw map



X



Y

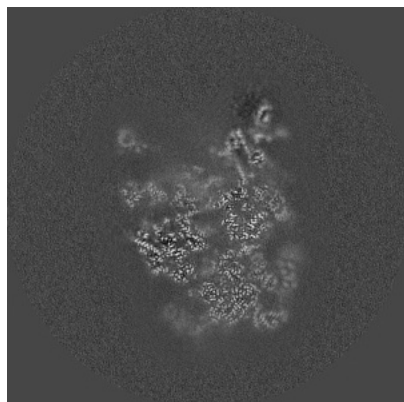


Z

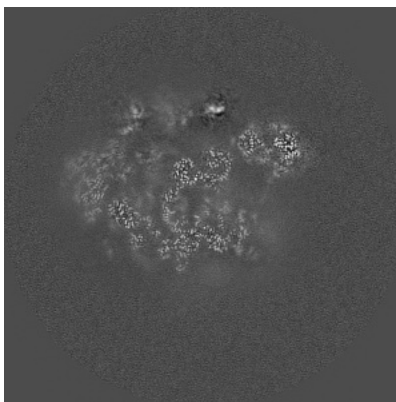
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

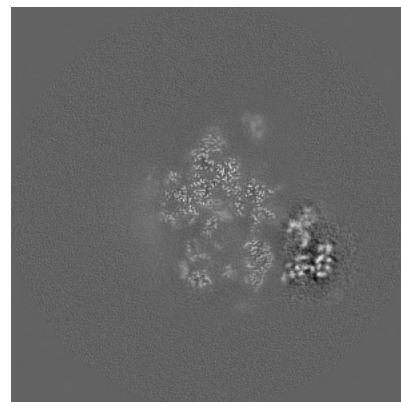
6.2.1 Primary map



X Index: 280

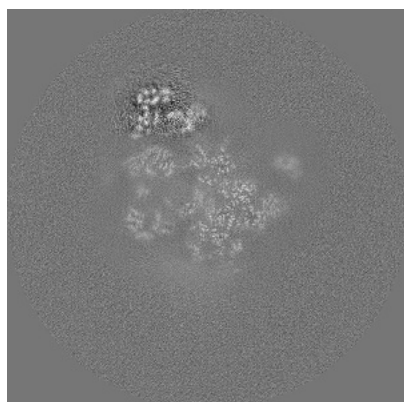


Y Index: 280

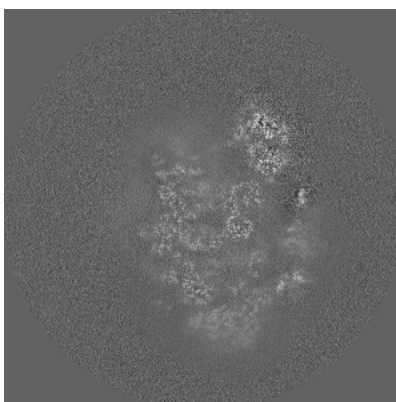


Z Index: 280

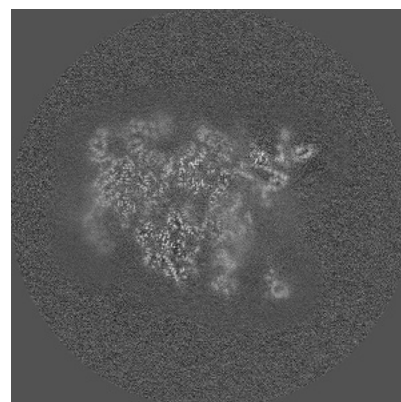
6.2.2 Raw map



X Index: 280



Y Index: 280

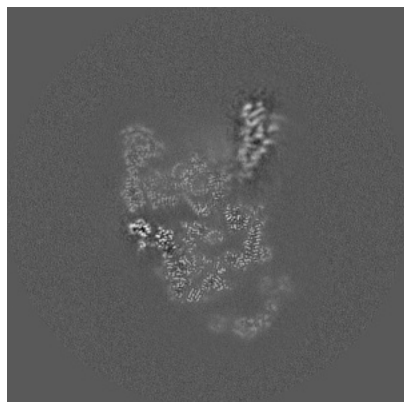


Z Index: 280

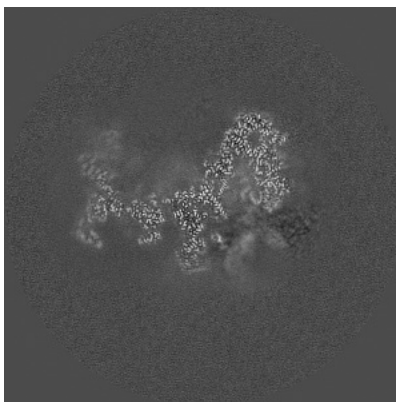
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

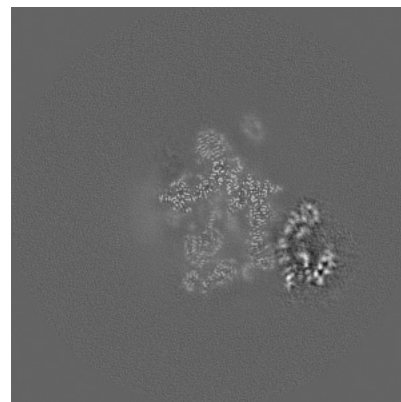
6.3.1 Primary map



X Index: 254

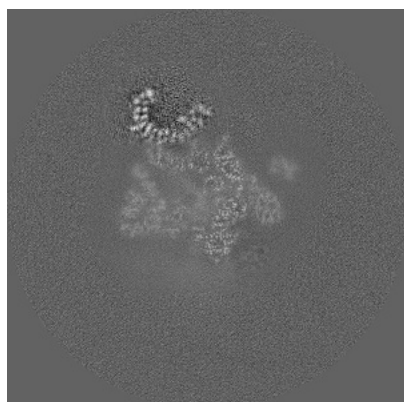


Y Index: 318

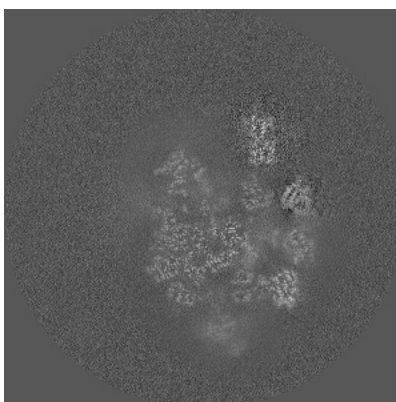


Z Index: 291

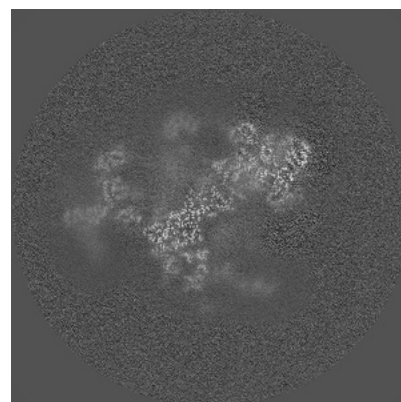
6.3.2 Raw map



X Index: 298



Y Index: 261

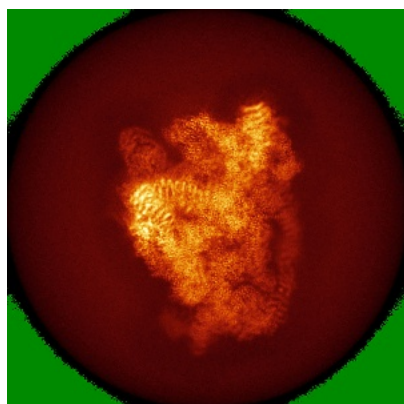


Z Index: 320

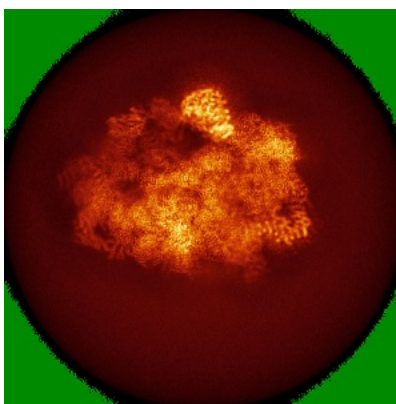
The images above show the largest variance slices of the map in three orthogonal directions.

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

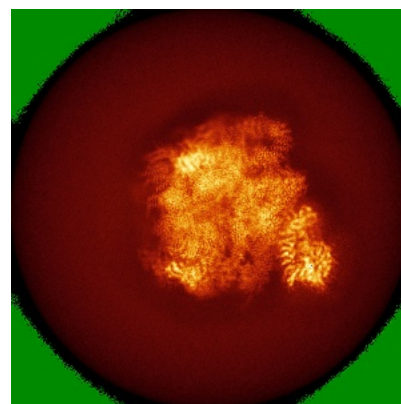
6.4.1 Primary map



X

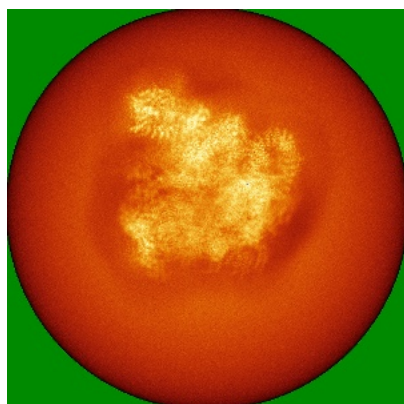


Y

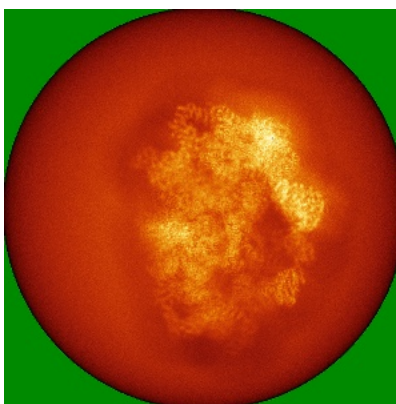


Z

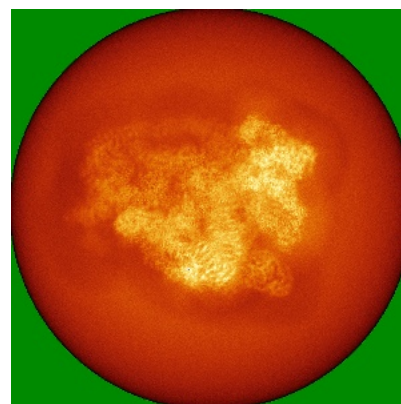
6.4.2 Raw map



X



Y



Z

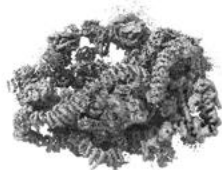
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

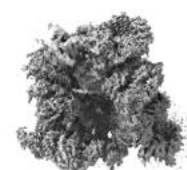
6.5.1 Primary map



X



Y



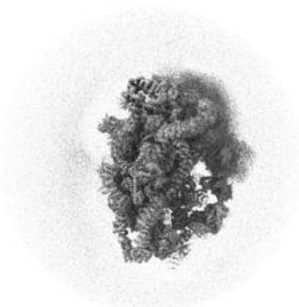
Z

The images above show the 3D surface view of the map at the recommended contour level 2.68. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

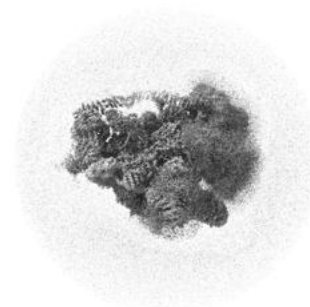
6.5.2 Raw map



X



Y



Z

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

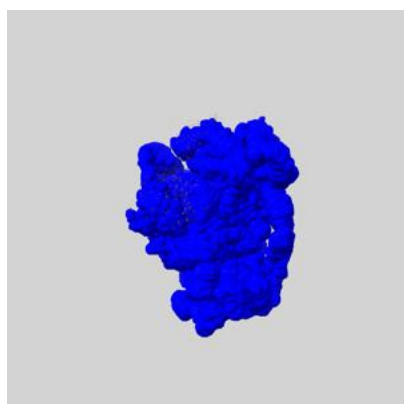
6.6 Mask visualisation [i](#)

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

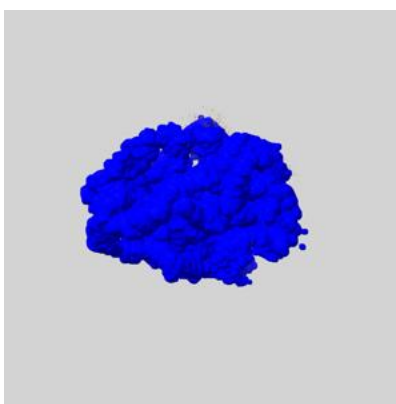
A mask typically either:

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

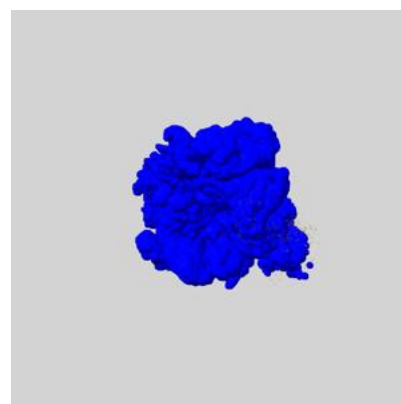
6.6.1 emd_23936_msk_1.map [i](#)



X



Y

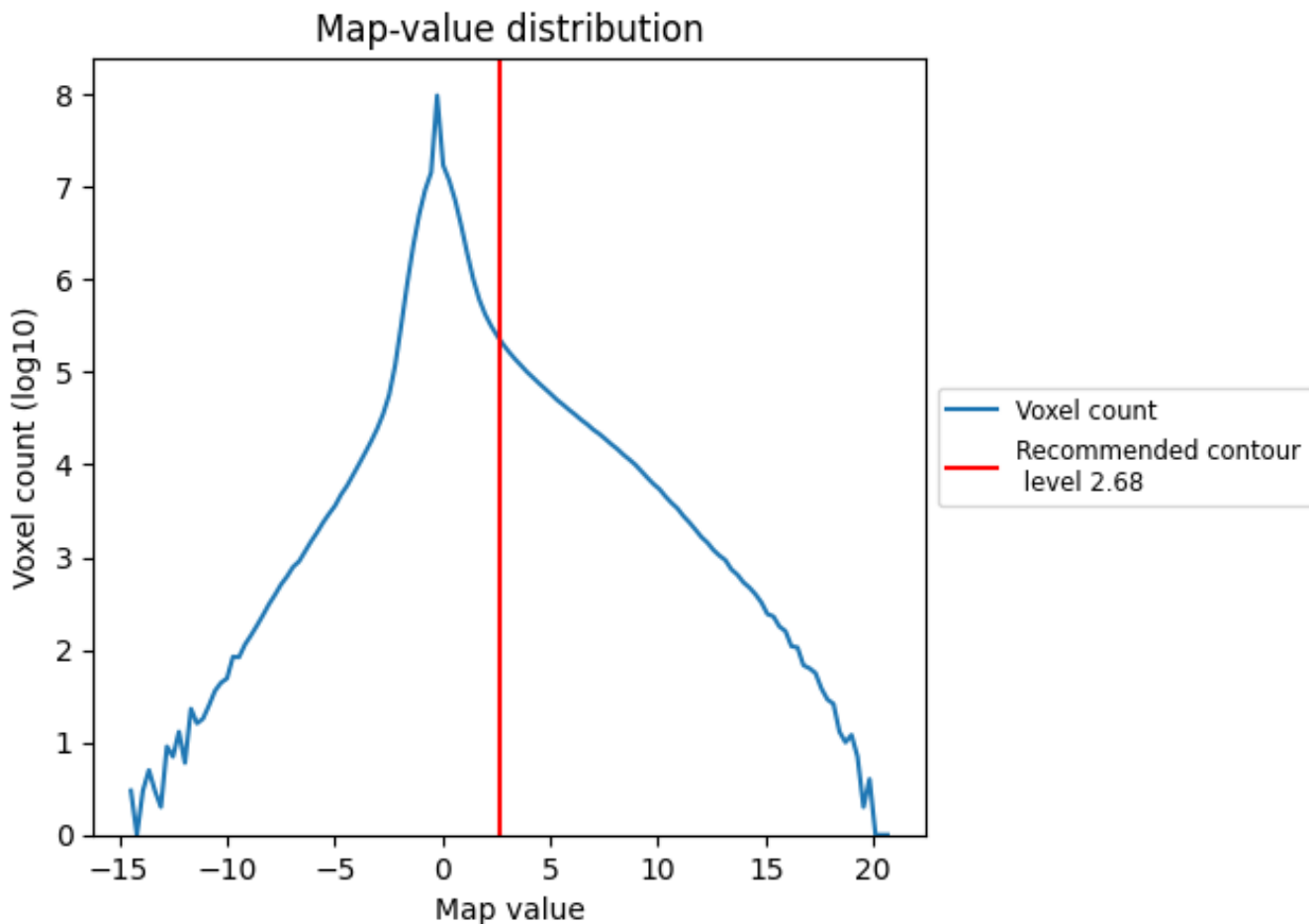


Z

7 Map analysis [i](#)

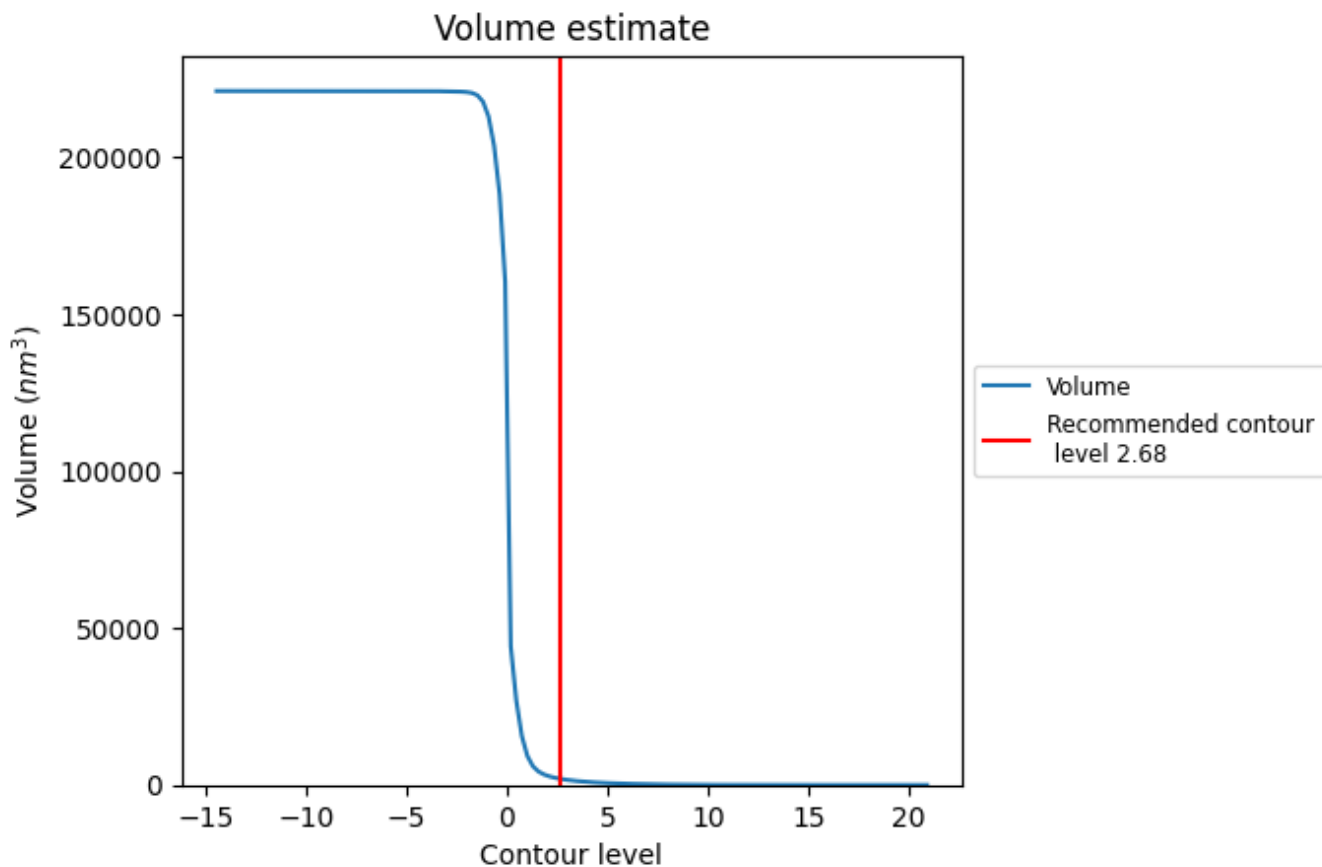
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

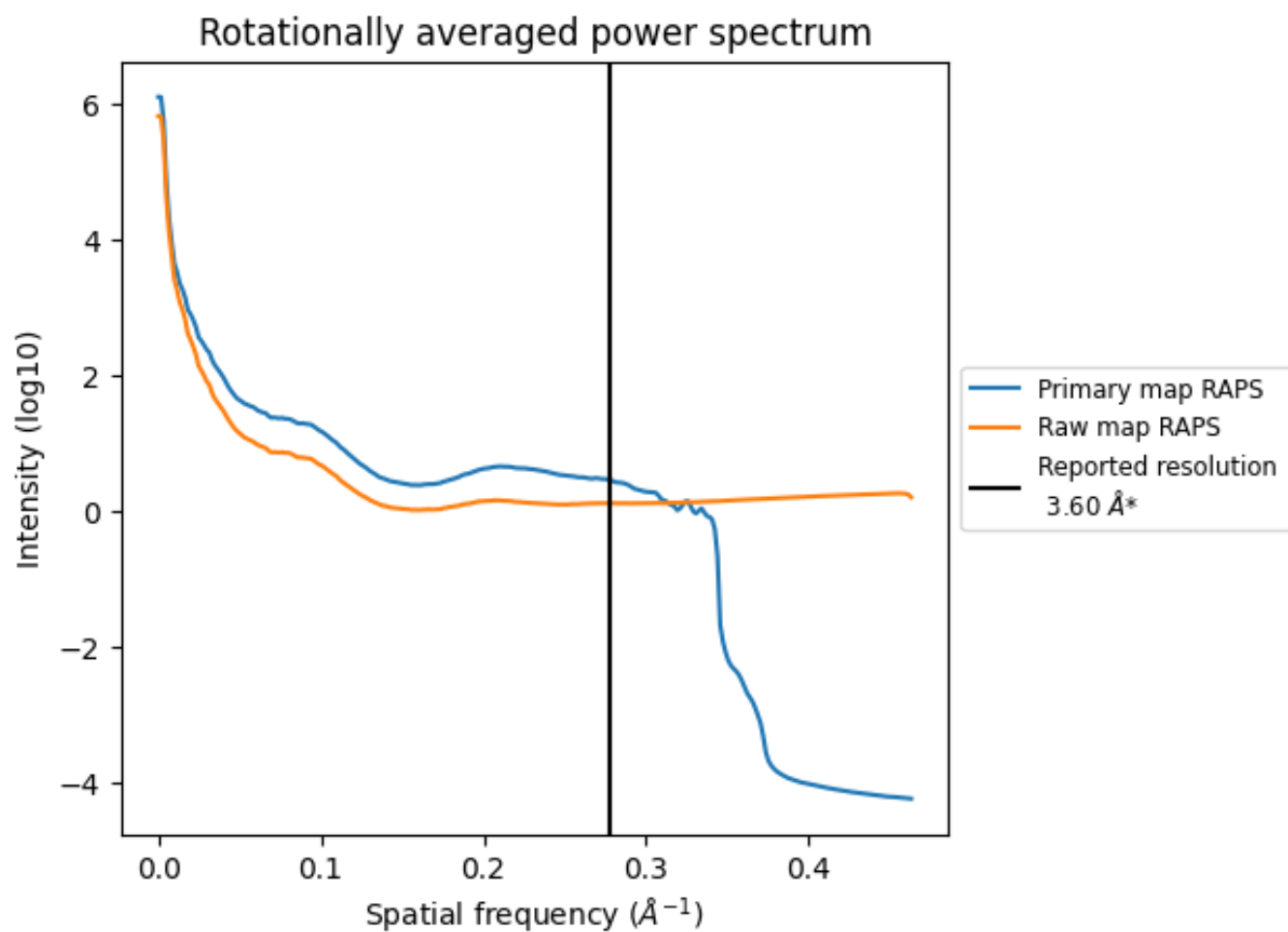
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1931 nm³; this corresponds to an approximate mass of 1744 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

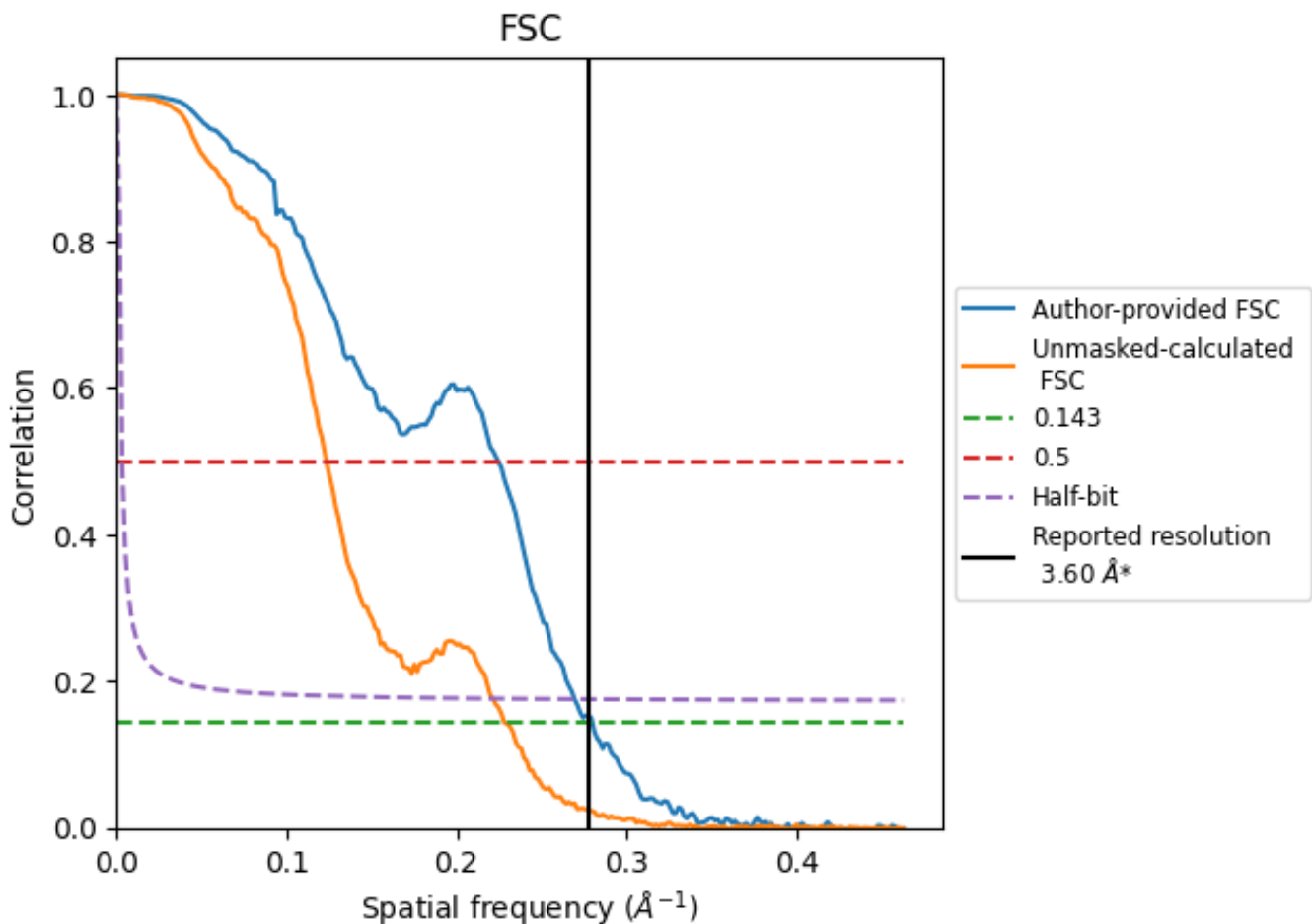


*Reported resolution corresponds to spatial frequency of 0.278 Å⁻¹

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 0.278 Å⁻¹

8.2 Resolution estimates [i](#)

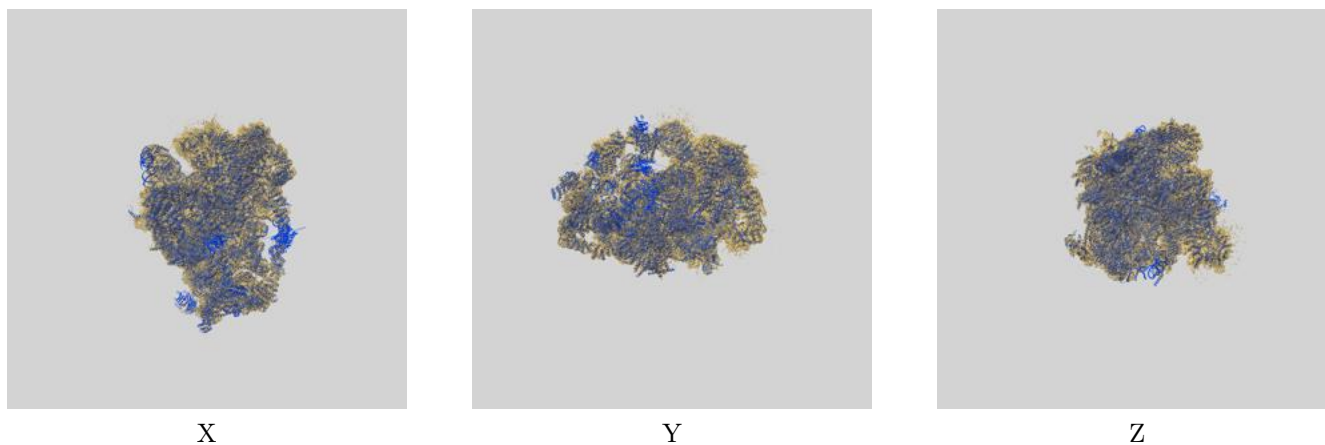
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.60	-	-
Author-provided FSC curve	3.57	4.46	3.71
Unmasked-calculated*	4.38	8.10	4.52

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.38 differs from the reported value 3.6 by more than 10 %

9 Map-model fit [i](#)

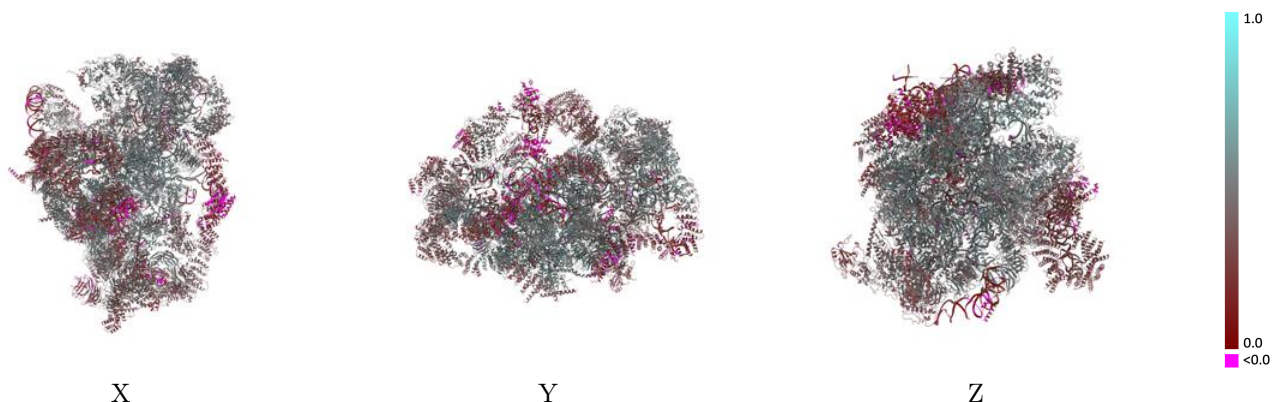
This section contains information regarding the fit between EMDB map EMD-23936 and PDB model 7MQ8. Per-residue inclusion information can be found in section 3 on page 19.

9.1 Map-model overlay [i](#)



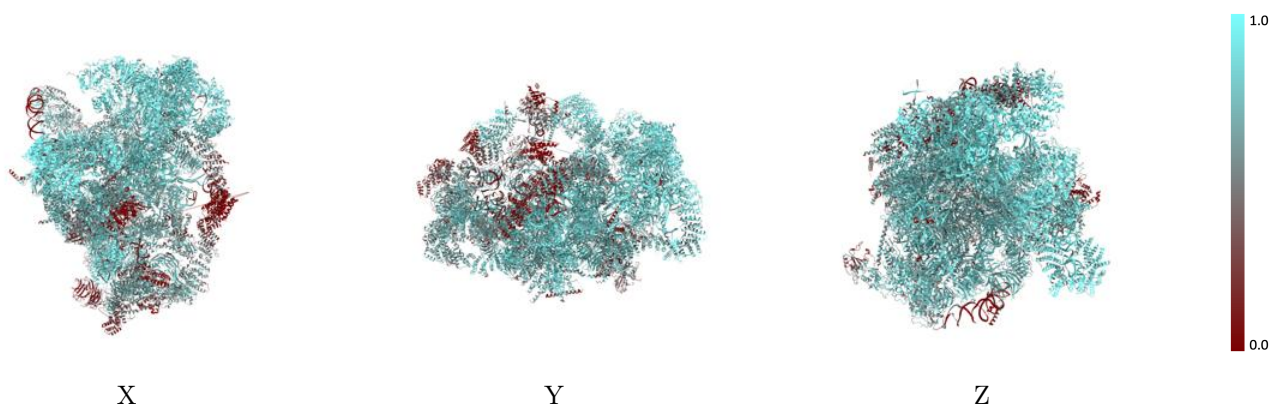
The images above show the 3D surface view of the map at the recommended contour level 2.68 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



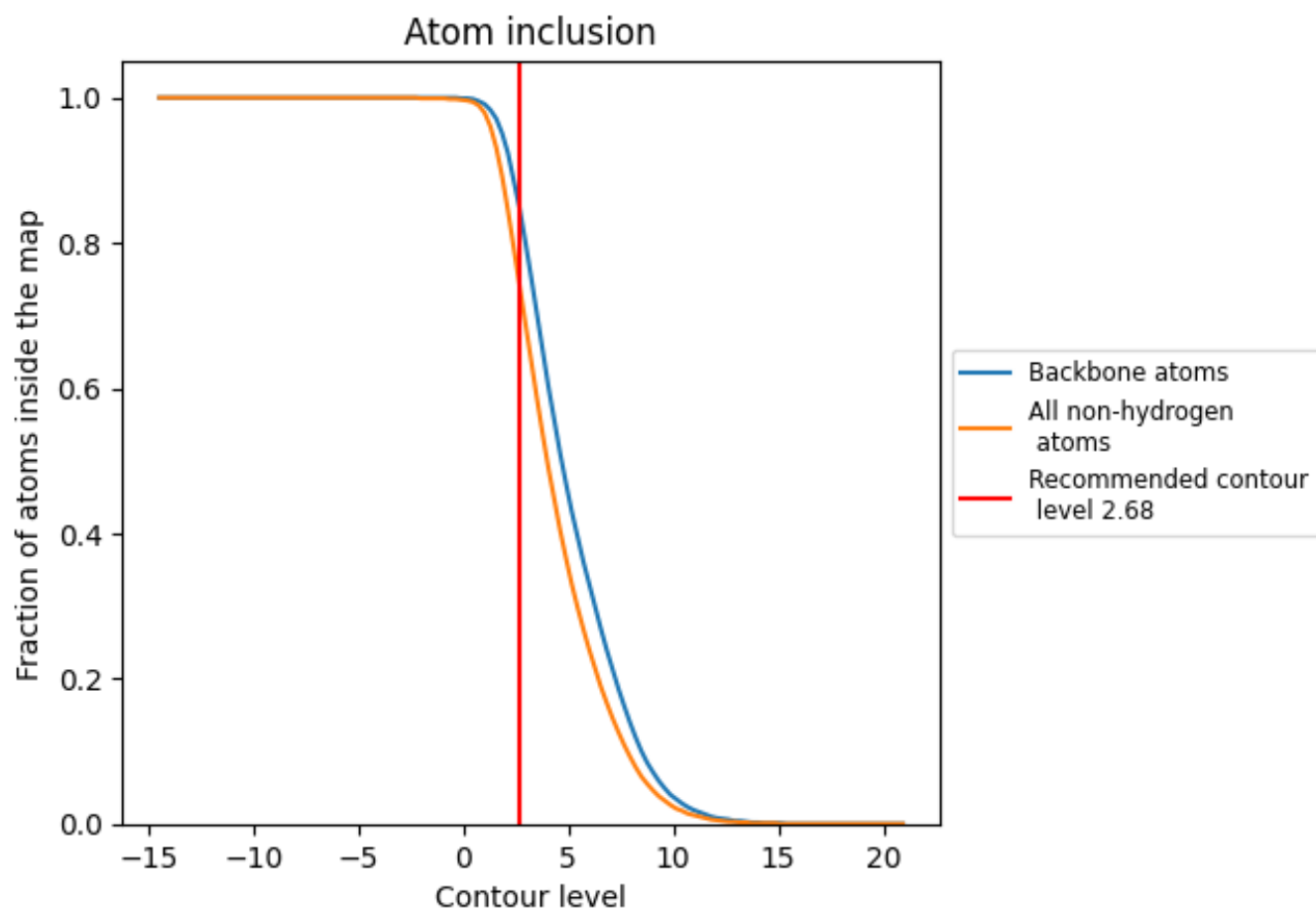
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (2.68).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 85% of all backbone atoms, 74% 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 (2.68) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7440	 0.4170
L0	 0.5930	 0.3800
L1	 0.8240	 0.3850
L2	 0.7870	 0.4060
L3	 0.3730	 0.3330
L4	 0.8270	 0.4270
L5	 0.8640	 0.5070
L6	 0.8730	 0.4700
L7	 0.5340	 0.3320
L8	 0.9090	 0.4960
L9	 0.9010	 0.5360
LA	 0.0020	 0.0770
LC	 0.8590	 0.5180
LD	 0.8340	 0.4070
LF	 0.8150	 0.4490
LG	 0.8570	 0.5030
LH	 0.7380	 0.4450
LI	 0.1930	 0.2410
LJ	 0.7520	 0.4570
LK	 0.3240	 0.3190
LL	 0.7280	 0.4550
LM	 0.5090	 0.2910
LN	 0.7620	 0.4500
LO	 0.8740	 0.5190
LP	 0.7730	 0.4530
LQ	 0.7590	 0.4540
LR	 0.7840	 0.4430
LS	 0.8280	 0.5170
LT	 0.8670	 0.5220
LU	 0.8530	 0.5120
LW	 0.8220	 0.5080
LZ	 0.8780	 0.5340
N0	 0.5300	 0.3920
NA	 0.7890	 0.4960
NB	 0.9140	 0.5630



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Chain	Atom inclusion	Q-score
NC	 0.7540	 0.4330
ND	 0.6010	 0.4040
NE	 0.6560	 0.4580
NF	 0.6800	 0.4240
NG	 0.7670	 0.4680
NH	 0.6650	 0.3730
NI	 0.4700	 0.3110
NJ	 0.8630	 0.4660
NK	 0.8890	 0.4630
NM	 0.7030	 0.4550
NN	 0.8550	 0.4880
NO	 0.7100	 0.4780
NQ	 0.7710	 0.5090
NR	 0.9110	 0.2750
NT	 0.0350	 0.1220
NU	 0.7070	 0.2240
NW	 0.8850	 0.4900
NY	 0.6540	 0.4250
SA	 0.8380	 0.4900
SB	 0.7290	 0.4540
SC	 0.6170	 0.3780
SD	 0.9280	 0.5620
SE	 0.8620	 0.5220
SF	 0.8800	 0.5270
SG	 0.7850	 0.4290
SH	 0.8560	 0.5200
SI	 0.8630	 0.5100
SJ	 0.3440	 0.2800
SK	 0.5870	 0.4270
SL	 0.8710	 0.5300
SM	 0.8860	 0.5350
SP	 0.7810	 0.3450
SQ	 0.7580	 0.4580
SR	 0.8750	 0.5290
SS	 0.6780	 0.4560
ST	 0.7310	 0.3820
SU	 0.4610	 0.3320
SW	 0.8380	 0.3510
SX	 0.0810	 0.0890
SY	 0.6790	 0.4100
SZ	 0.5930	 0.2680