wwPDB EM Validation Summary Report

Sep 24, 2025 – 05:58 pm BST

PDB ID	:	7NRC / pdb_00007nrc
EMDB ID	:	EMD-12534
Title	:	Structure of the yeast Gcn1 bound to a leading stalled 80S ribosome with Rbg2, Gir2, A- and P-tRNA and eIF5A
Authors	:	Pochopien, A.A.; Beckert, B.; Wilson, D.N.
Deposited on	:	2021-03-03
Resolution	:	3.90 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

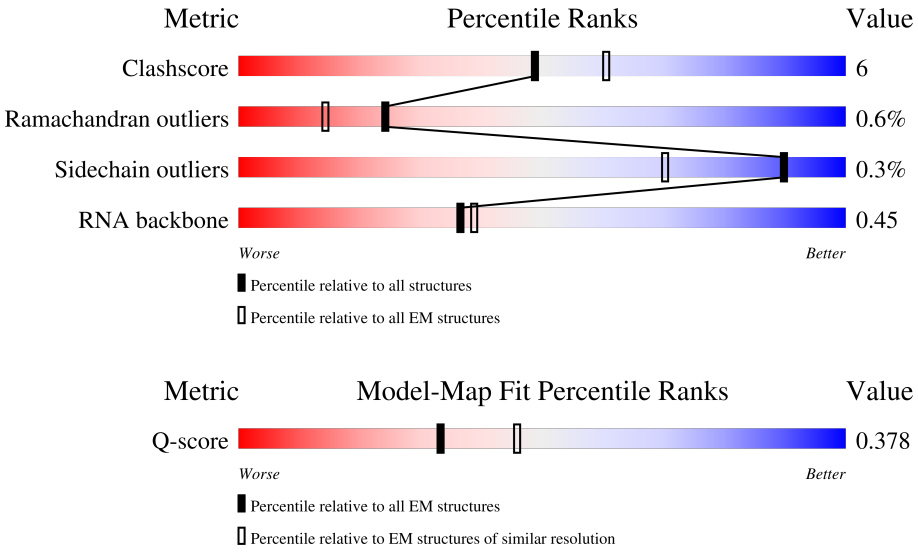
EMDB validation analysis	:	0.0.1.dev129
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.46

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 3.90 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	8855 (3.40 - 4.40)

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 <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	S2	1800	54% 36% 8%
2	Sl	6	83% 17%
3	SP	206	6% 86% 14%

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Mol	Chain	Length	Quality of chain
4	SQ	232	9% 79% 18%
5	SE	117	82% 18%
6	SR	216	83% 17%
7	SA	222	9% 90% 10%
8	SS	258	81% 19%
9	SB	206	9% 84% 16%
10	ST	228	86% 14%
11	SU	184	14% 81% 19%
12	SV	198	70% 25% 6%
13	SW	184	8% 79% 20%
14	SC	92	10% 85% 14%
15	SX	142	87% 13%
16	SD	121	26% 81% 18%
17	SY	150	5% 87% 13%
18	SZ	127	77% 22%
19	SF	141	85% 15%
20	SG	125	10% 81% 16%
21	SH	145	7% 81% 19%
22	SI	143	9% 79% 20%
23	SJ	100	7% 83% 17%
24	Sa	87	86% 13%
25	Sb	129	81% 19%
26	Sc	144	84% 15%
27	Sd	134	81% 19%
28	SK	82	20% 76% 23%

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Mol	Chain	Length	Quality of chain
29	Se	97	78% 21%
30	Sf	81	9% 83% 17%
31	SM	53	89% 11%
32	Sg	57	7% 91% 9%
33	SN	73	26% 84% 16%
34	SO	312	17% 84% 16%
35	SL	63	6% 95% 5%
36	Sm	76	50% 43% 7%
37	Sn	75	63% 33%
38	So	366	24% 80% 15% 5%
39	Sp	48	15% 100%
40	LA	3394	61% 29% 6%
41	LB	121	71% 26%
42	LC	158	65% 31%
43	LD	251	86% 14%
44	LE	386	83% 17%
45	LF	361	84% 16%
46	LG	294	6% 87% 13%
47	LH	175	78% 18% 5%
48	LI	222	89% 11%
49	LJ	233	82% 18%
50	LK	191	90% 10%
51	LL	218	5% 85% 15%
52	LM	169	22% 86% 14%
53	LN	193	87% 13%

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Mol	Chain	Length	Quality of chain
54	LO	136	86% 14%
55	LP	203	77% 23%
56	LQ	197	90% 10%
57	LR	183	89% 11%
58	LS	185	90% 10%
59	LT	188	7% 92% 8%
60	LU	171	92% 8%
61	LV	159	87% 13%
62	LW	100	90% 10%
63	LX	136	82% 18%
64	LY	65	83% 17%
65	LZ	121	92% 8%
66	La	125	89% 11%
67	Lb	135	86% 14%
68	Lc	148	82% 18%
69	Ld	58	5% 76% 22%
70	Le	96	85% 15%
71	Lf	109	6% 86% 14%
72	Lg	127	87% 13%
73	Lh	106	85% 15%
74	Li	112	87% 13%
75	Lj	119	91% 9%
76	Lk	99	94% 6%
77	Ll	81	78% 21%
78	Lm	77	5% 83% 17%

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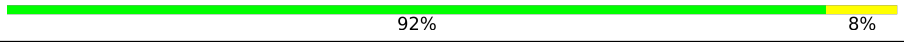
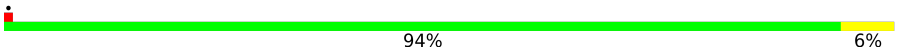
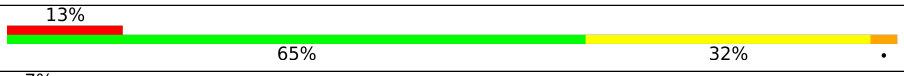
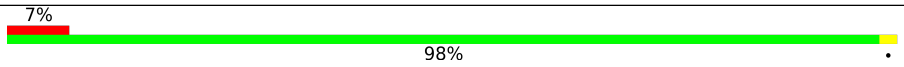
Mol	Chain	Length	Quality of chain
79	Ln	50	
80	Lo	52	
81	Lp	25	
82	Lq	103	
83	Lr	91	
84	Ls	154	
85	Lt	210	
86	A	1209	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
84	5CT	Ls	51	X	-	-	-

2 Entry composition (i)

There are 86 unique types of molecules in this entry. The entry contains 213576 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 18S rRNA (1771-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	S2	1771	37739	16872	6683	12413	1771	0	0

- Molecule 2 is a RNA chain called RNA (5'-R(P*AP*UP*GP*AP*AP*A)-3').

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	Sl	6	131	59	27	39	6	0	0

- Molecule 3 is a protein called 40S ribosomal protein S0-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	SP	206	1603	1030	284	287	2	0	0

- Molecule 4 is a protein called 40S ribosomal protein S1-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	SQ	226	1798	1139	330	325	4	0	0

- Molecule 5 is a protein called 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	SE	117	916	583	171	155	7	0	0

- Molecule 6 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	SR	216	1626	1042	287	295	2	0	0

- Molecule 7 is a protein called 40S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	SA	222	Total	C	N	O	S	0	0
			1729	1098	312	313	6		

- Molecule 8 is a protein called 40S ribosomal protein S4-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	SS	258	Total	C	N	O	S	0	0
			2056	1308	387	358	3		

- Molecule 9 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	SB	206	Total	C	N	O	S	0	0
			1605	1005	299	298	3		

- Molecule 10 is a protein called 40S ribosomal protein S6-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	ST	228	Total	C	N	O	S	0	0
			1815	1138	351	323	3		

- Molecule 11 is a protein called 40S ribosomal protein S7-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
11	SU	184	Total	C	N	O	0	0
			1473	946	263	264		

- Molecule 12 is a protein called 40S ribosomal protein S8-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	SV	187	Total	C	N	O	S	0	0
			1476	916	295	263	2		

- Molecule 13 is a protein called 40S ribosomal protein S9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	SW	184	Total	C	N	O	S	0	0
			1479	935	285	258	1		

- Molecule 14 is a protein called 40S ribosomal protein S10-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	SC	92	Total	C	N	O	S	0	0
			752	487	122	141	2		

- Molecule 15 is a protein called 40S ribosomal protein S11-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	SX	142	Total	C	N	O	S	0	0
			1142	733	217	189	3		

- Molecule 16 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	SD	121	Total	C	N	O	S	0	0
			875	551	153	169	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
17	SY	150	Total	C	N	O	S	0	0
			1192	759	224	207	2		

- Molecule 18 is a protein called 40S ribosomal protein S14-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	SZ	127	Total	C	N	O	S	0	0
			923	568	185	167	3		

- Molecule 19 is a protein called 40S ribosomal protein S16-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
19	SF	141	Total	C	N	O	0	0
			1105	708	203	194		

- Molecule 20 is a protein called 40S ribosomal protein S17-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	SG	121	Total	C	N	O	S	0	0
			948	596	179	171	2		

- Molecule 21 is a protein called 40S ribosomal protein S18-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	SH	145	Total	C	N	O	S	0	0
			1188	741	237	208	2		

- Molecule 22 is a protein called 40S ribosomal protein S19-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	SI	143	Total	C	N	O	S	0	0
			1112	694	208	208	2		

- Molecule 23 is a protein called 40S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	SJ	100	Total	C	N	O	S	0	0
			797	506	144	146	1		

- Molecule 24 is a protein called 40S ribosomal protein S21-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	Sa	87	Total	C	N	O	S	0	0
			673	415	125	131	2		

- Molecule 25 is a protein called 40S ribosomal protein S22-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Sb	129	Total	C	N	O	S	0	0
			1021	650	188	180	3		

- Molecule 26 is a protein called 40S ribosomal protein S23-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	Sc	144	Total	C	N	O	S	0	0
			1121	708	220	191	2		

- Molecule 27 is a protein called 40S ribosomal protein S24-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
27	Sd	134	Total	C	N	O	0	0
			1032	651	195	186		

- Molecule 28 is a protein called 40S ribosomal protein S25-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	SK	82	Total 651	C 416	N 123	O 112	0	0

- Molecule 29 is a protein called 40S ribosomal protein S26-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	Se	97	Total 765	C 473	N 160	O 127	S 5	0	0

- Molecule 30 is a protein called 40S ribosomal protein S27-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Sf	81	Total 610	C 382	N 110	O 113	S 5	0	0

- Molecule 31 is a protein called 40S ribosomal protein S29-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	SM	53	Total 442	C 274	N 92	O 72	S 4	0	0

- Molecule 32 is a protein called 40S ribosomal protein S30-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	Sg	57	Total 451	C 284	N 93	O 73	S 1	0	0

- Molecule 33 is a protein called 40S ribosomal protein S31.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	SN	73	Total 556	C 352	N 105	O 95	S 4	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
SN	97	ALA	LYS	variant	UNP P05759

- Molecule 34 is a protein called Guanine nucleotide-binding protein subunit beta-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	SO	312	Total	C	N	O	S	0	0
			2383	1514	409	452	8		

- Molecule 35 is a protein called 40S ribosomal protein S28-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	SL	63	Total	C	N	O	S	0	0
			491	303	96	91	1		

- Molecule 36 is a RNA chain called tRNA (76-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
36	Sm	76	Total	C	N	O	P	0	0
			1611	721	281	534	75		

- Molecule 37 is a RNA chain called tRNA (75-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
37	Sn	75	Total	C	N	O	P	0	0
			1606	716	297	518	75		

- Molecule 38 is a protein called Ribosome-interacting GTPase 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	So	347	Total	C	N	O	S	0	0
			2729	1723	478	518	10		

There are 10 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
So	62	ALA	LYS	variant	UNP P53295
So	92	ALA	ILE	variant	UNP P53295
So	94	GLU	HIS	variant	UNP P53295
So	96	GLU	ALA	variant	UNP P53295
So	134	LYS	ARG	variant	UNP P53295
So	271	ALA	THR	variant	UNP P53295
So	299	ALA	TYR	variant	UNP P53295
So	303	ALA	ARG	variant	UNP P53295
So	318	ASP	ASN	variant	UNP P53295
So	361	GLU	ASP	variant	UNP P53295

- Molecule 39 is a protein called GIR2.

Mol	Chain	Residues	Atoms				AltConf	Trace
39	Sp	48	Total	C	N	O	0	0
			240	144	48	48		

- Molecule 40 is a RNA chain called 25S rRNA (3184-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
40	LA	3184	Total	C	N	O	P	0	0
			68091	30415	12259	22233	3184		

- Molecule 41 is a RNA chain called 5S rRNA (121-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
41	LB	121	Total	C	N	O	P	0	0
			2579	1152	461	845	121		

- Molecule 42 is a RNA chain called 5.8S rRNA (158-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
42	LC	158	Total	C	N	O	P	0	0
			3353	1500	586	1109	158		

- Molecule 43 is a protein called 60S ribosomal protein L2-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	LD	251	Total	C	N	O	S	0	0
			1899	1182	385	331	1		

- Molecule 44 is a protein called 60S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	LE	386	Total	C	N	O	S	0	0
			3075	1950	584	533	8		

- Molecule 45 is a protein called 60S ribosomal protein L4-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	LF	361	Total	C	N	O	S	0	0
			2748	1729	522	494	3		

- Molecule 46 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	LG	294	Total	C	N	O	S	0	0
			2351	1484	410	455	2		

- Molecule 47 is a protein called 60S ribosomal protein L6-B.

Mol	Chain	Residues	Atoms				AltConf	Trace
47	LH	167	Total	C	N	O	0	0
			1307	843	234	230		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LH	120	LYS	ASN	variant	UNP P05739

- Molecule 48 is a protein called 60S ribosomal protein L7-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	LI	222	Total	C	N	O	S	0	0
			1784	1151	324	308	1		

- Molecule 49 is a protein called 60S ribosomal protein L8-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	LJ	233	Total	C	N	O	S	0	0
			1804	1151	323	327	3		

- Molecule 50 is a protein called 60S ribosomal protein L9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	LK	191	Total	C	N	O	S	0	0
			1508	957	274	273	4		

- Molecule 51 is a protein called 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	LL	218	Total	C	N	O	S	0	0
			1764	1117	334	306	7		

- Molecule 52 is a protein called 60S ribosomal protein L11-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	LM	169	Total	C	N	O	S	0	0
			1346	843	252	247	4		

- Molecule 53 is a protein called 60S ribosomal protein L13-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
53	LN	193	Total	C	N	O	0	0
			1543	962	315	266		

- Molecule 54 is a protein called 60S ribosomal protein L14-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	LO	136	Total	C	N	O	S	0	0
			1053	675	199	177	2		

- Molecule 55 is a protein called 60S ribosomal protein L15-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	LP	203	Total	C	N	O	S	0	0
			1720	1077	361	281	1		

- Molecule 56 is a protein called 60S ribosomal protein L16-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	LQ	197	Total	C	N	O	S	197	0
			1555	1003	289	262	1		

- Molecule 57 is a protein called 60S ribosomal protein L17-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
57	LR	183	Total	C	N	O	0	0
			1416	879	284	253		

- Molecule 58 is a protein called 60S ribosomal protein L18-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	LS	185	Total	C	N	O	S	0	0
			1441	908	290	241	2		

- Molecule 59 is a protein called 60S ribosomal protein L19-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
59	LT	188	Total	C	N	O	0	0
			1515	932	323	260		

- Molecule 60 is a protein called 60S ribosomal protein L20-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	LU	171	Total	C	N	O	S	0	0
			1437	925	266	243	3		

- Molecule 61 is a protein called 60S ribosomal protein L21-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	LV	159	Total	C	N	O	S	0	0
			1272	802	245	221	4		

- Molecule 62 is a protein called 60S ribosomal protein L22-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
62	LW	100	Total	C	N	O	0	0
			796	516	131	149		

- Molecule 63 is a protein called 60S ribosomal protein L23-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	LX	136	Total	C	N	O	S	0	0
			1003	628	189	179	7		

- Molecule 64 is a protein called 60S ribosomal protein L24-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	LY	65	Total	C	N	O	S	0	0
			528	339	104	84	1		

- Molecule 65 is a protein called 60S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	LZ	121	Total	C	N	O	S	0	0
			964	620	169	173	2		

- Molecule 66 is a protein called 60S ribosomal protein L26-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
66	La	125	Total 984	C 620	N 191	O 173	0	0

- Molecule 67 is a protein called 60S ribosomal protein L27-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
67	Lb	135	Total 1080	C 701	N 199	O 180	0	0

- Molecule 68 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	Lc	148	Total 1169	C 747	N 231	O 188	S 3	0	0

- Molecule 69 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms				AltConf	Trace
69	Ld	58	Total 462	C 289	N 100	O 73	0	0

- Molecule 70 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	Le	96	Total 737	C 476	N 123	O 137	S 1	0	0

- Molecule 71 is a protein called 60S ribosomal protein L31-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	Lf	109	Total 876	C 556	N 167	O 152	S 1	0	0

- Molecule 72 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	Lg	127	Total 1017	C 644	N 205	O 167	S 1	0	0

- Molecule 73 is a protein called 60S ribosomal protein L33-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	Lh	106	Total 850	C 540	N 165	O 144	S 1	0	0

- Molecule 74 is a protein called 60S ribosomal protein L34-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	Li	112	Total 880	C 545	N 179	O 152	S 4	0	0

- Molecule 75 is a protein called 60S ribosomal protein L35-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	Lj	119	Total 969	C 615	N 186	O 167	S 1	0	0

- Molecule 76 is a protein called 60S ribosomal protein L36-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	Lk	99	Total 766	C 478	N 154	O 132	S 2	0	0

- Molecule 77 is a protein called 60S ribosomal protein L37-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	Ll	81	Total 645	C 393	N 141	O 106	S 5	0	0

- Molecule 78 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms				AltConf	Trace
78	Lm	77	Total 612	C 391	N 115	O 106	0	0

- Molecule 79 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	Ln	50	Total 436	C 272	N 97	O 65	S 2	0	0

- Molecule 80 is a protein called 60S ribosomal protein L40-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	Lo	52	Total	C	N	O	S	0	0
			410	254	86	65	5		

- Molecule 81 is a protein called 60S ribosomal protein L41-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	Lp	25	Total	C	N	O	S	0	0
			229	139	62	27	1		

- Molecule 82 is a protein called 60S ribosomal protein L42-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	Lq	103	Total	C	N	O	S	0	0
			824	517	167	135	5		

- Molecule 83 is a protein called 60S ribosomal protein L43-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	Lr	91	Total	C	N	O	S	0	0
			694	429	138	121	6		

- Molecule 84 is a protein called eiF5A.

Mol	Chain	Residues	Atoms					AltConf	Trace
84	Ls	154	Total	C	N	O	S	0	0
			1143	709	195	230	9		

- Molecule 85 is a protein called L1 60S ribosomal protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
85	Lt	210	Total	C	N	O	0	0
			1050	630	210	210		

- Molecule 86 is a protein called GCN1.

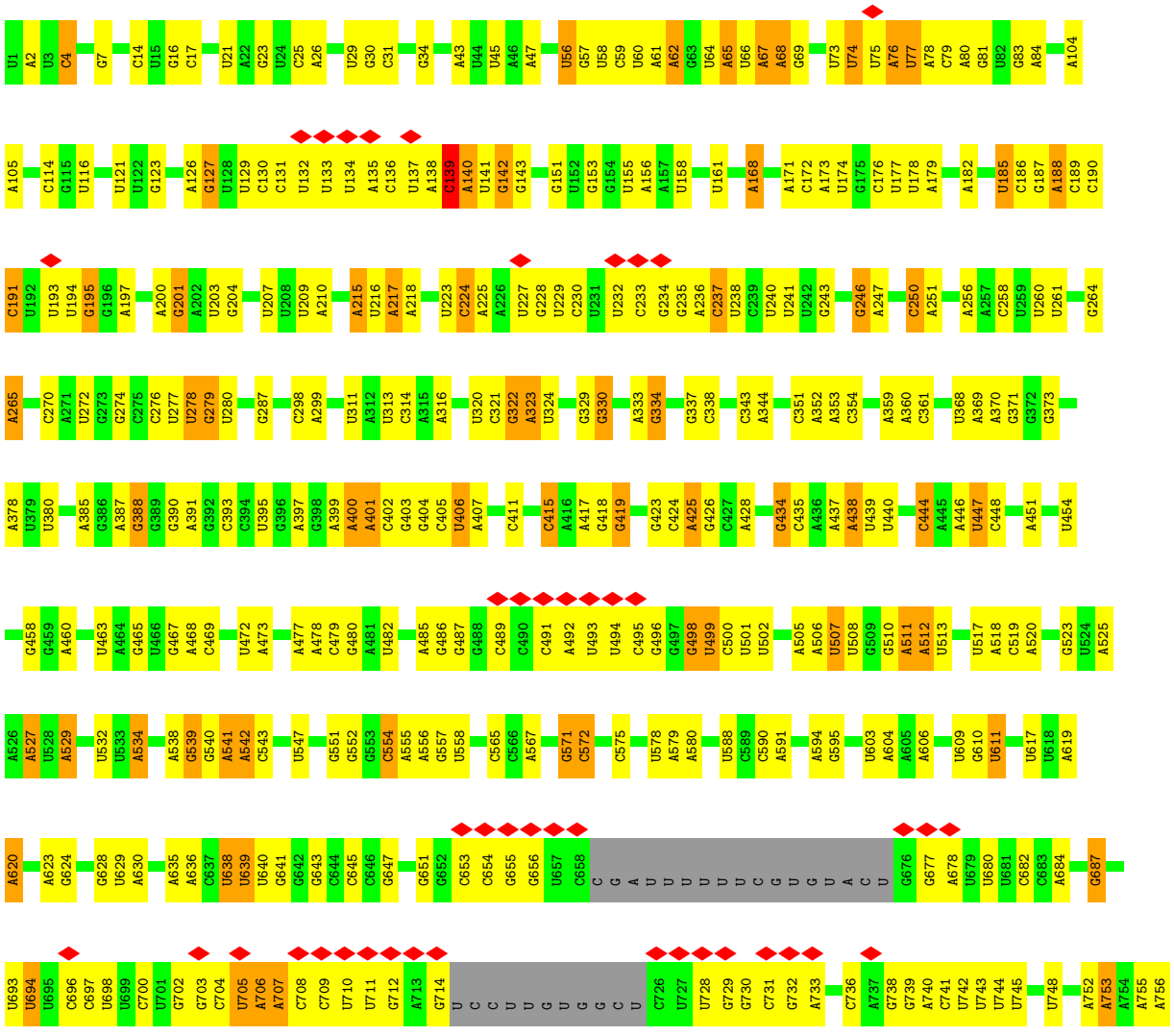
Mol	Chain	Residues	Atoms				AltConf	Trace
86	A	1209	Total	C	N	O	1	0
			6029	3609	1210	1210		

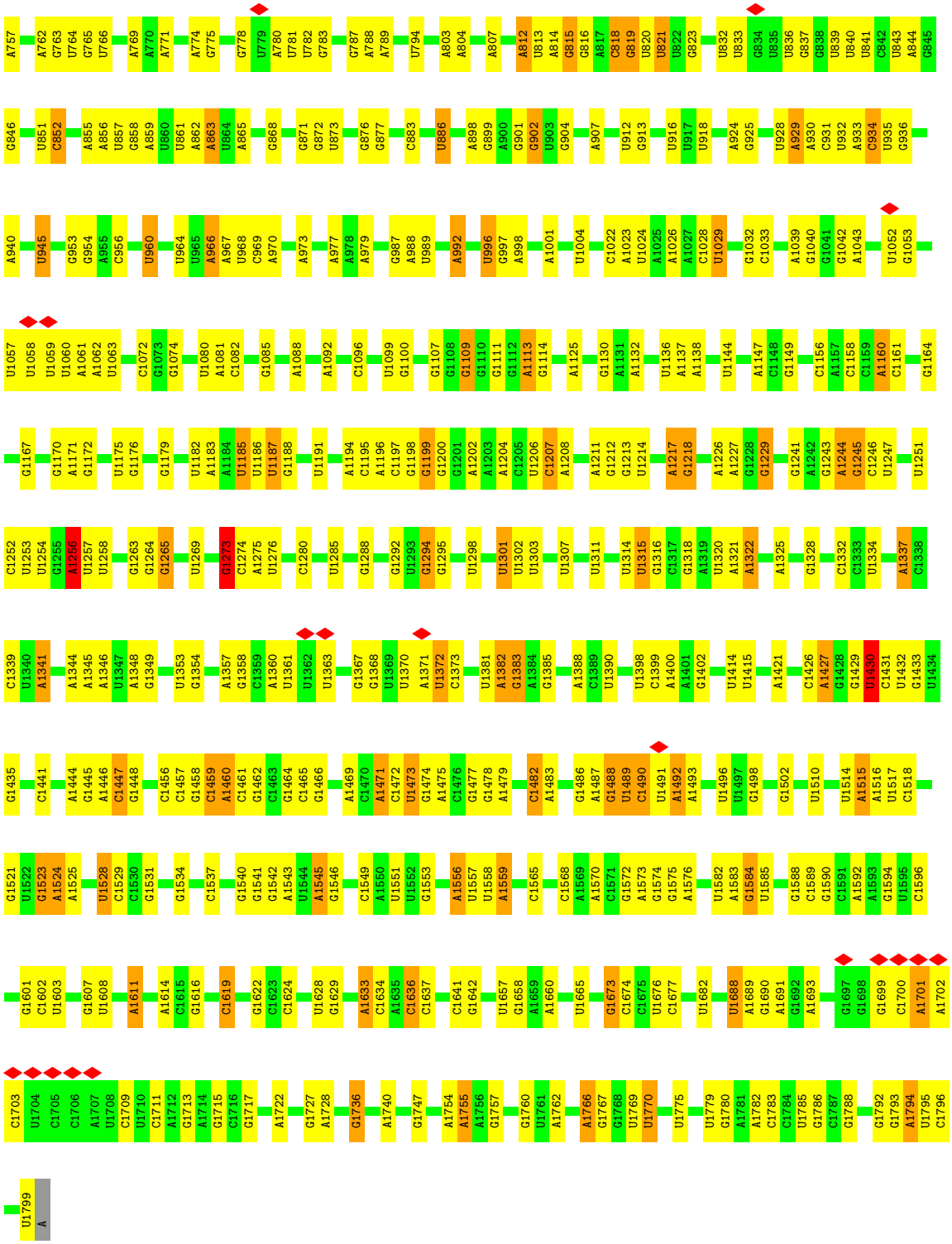
3 Residue-property plots (i)

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: 18S rRNA (1771-MER)

Chain S2:



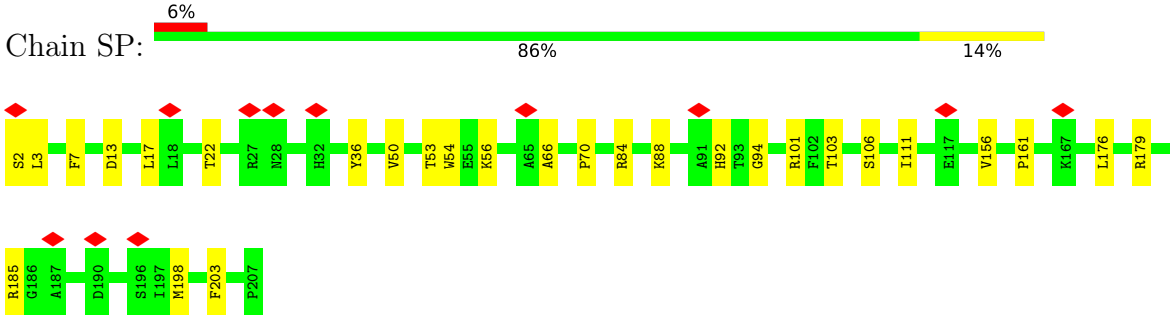


• Molecule 2: RNA (5'-R(P*AP*UP*GP*AP*AP*A)-3')

Chain Sl:

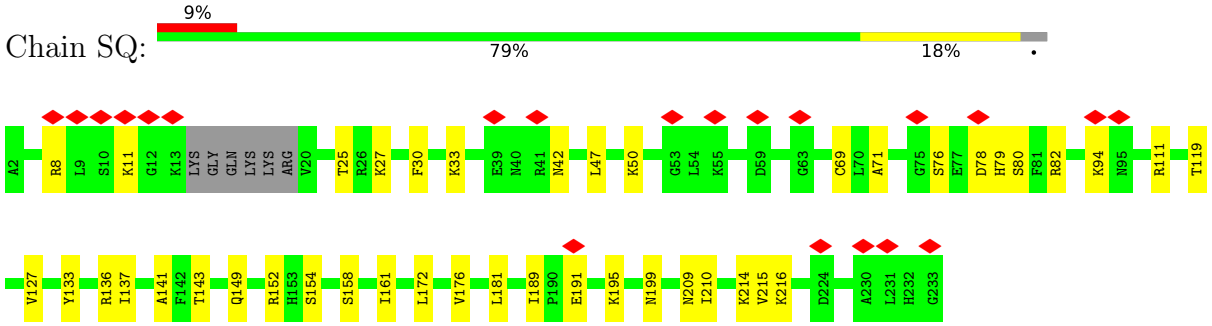
• Molecule 3: 40S ribosomal protein S0-A

Chain SP:



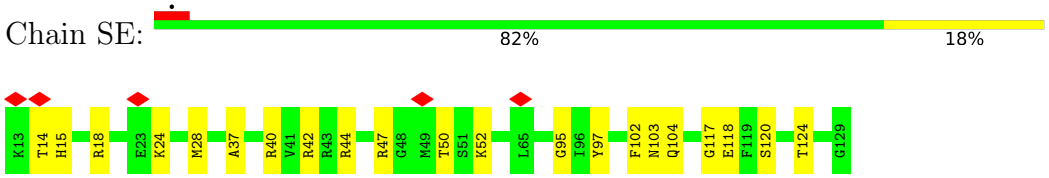
• Molecule 4: 40S ribosomal protein S1-A

Chain SQ:



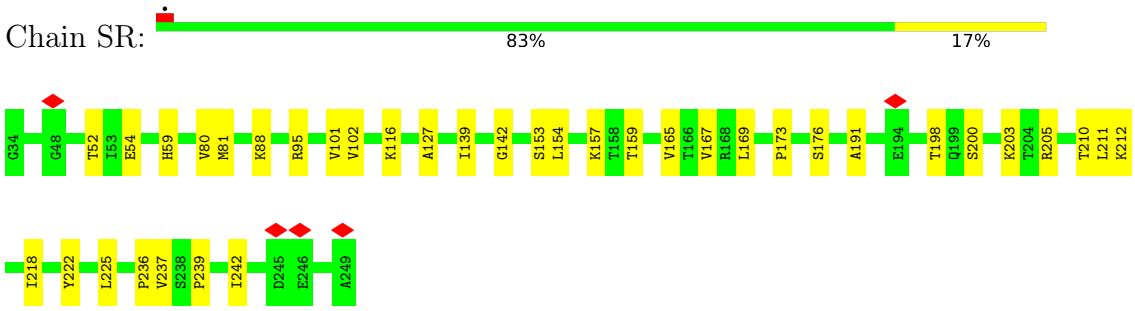
• Molecule 5: 40S ribosomal protein S15

Chain SE:



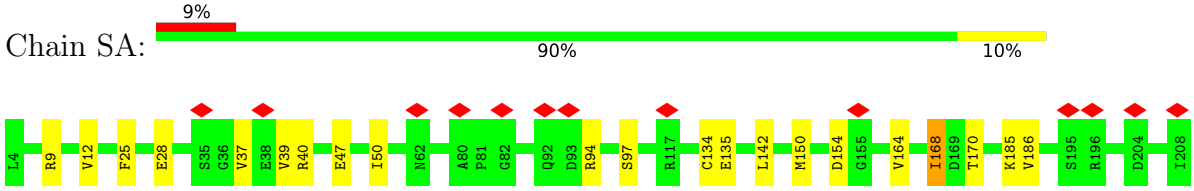
• Molecule 6: 40S ribosomal protein S2

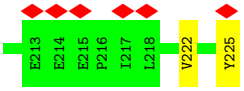
Chain SR:



• Molecule 7: 40S ribosomal protein S3

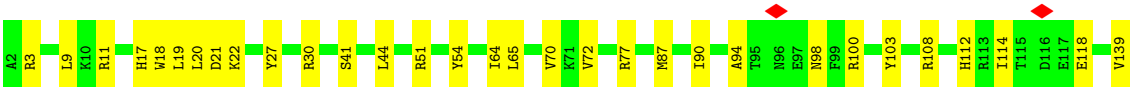
Chain SA:

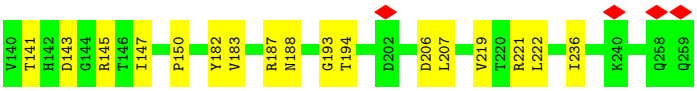




• Molecule 8: 40S ribosomal protein S4-A

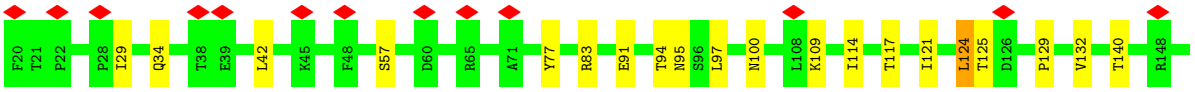
Chain SS:





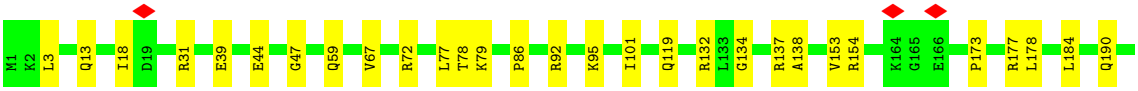
• Molecule 9: 40S ribosomal protein S5

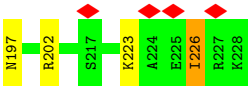
Chain SB:



• Molecule 10: 40S ribosomal protein S6-A

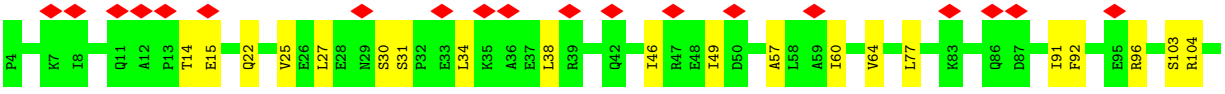
Chain ST:

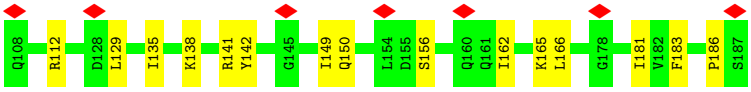




• Molecule 11: 40S ribosomal protein S7-A

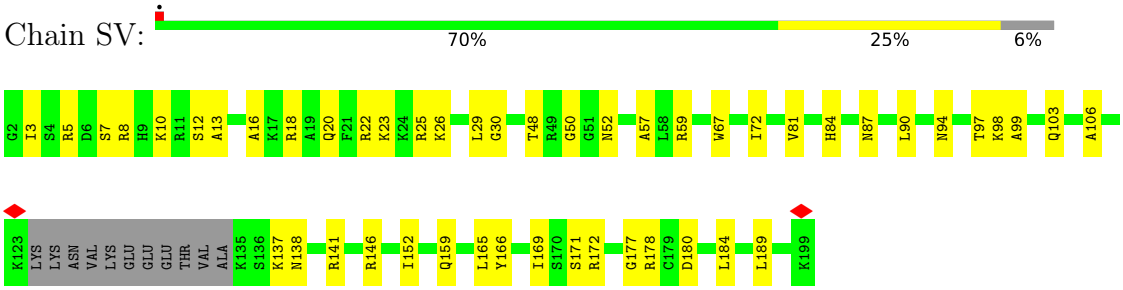
Chain SU:





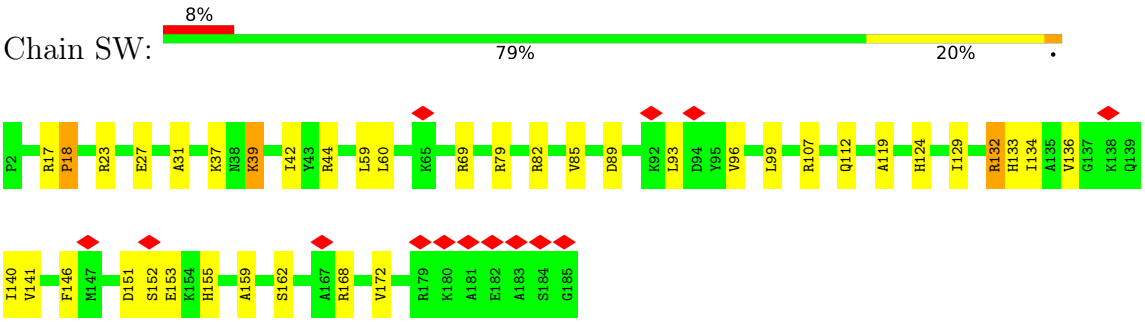
• Molecule 12: 40S ribosomal protein S8-A

Chain SV:



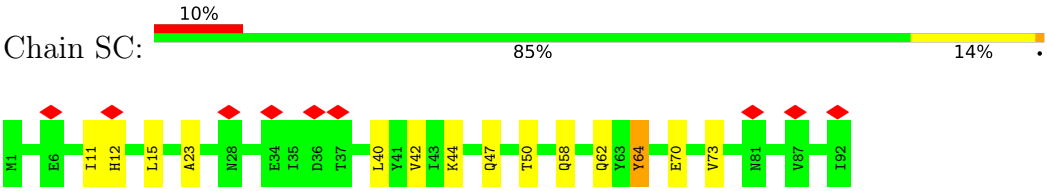
• Molecule 13: 40S ribosomal protein S9-A

Chain SW:



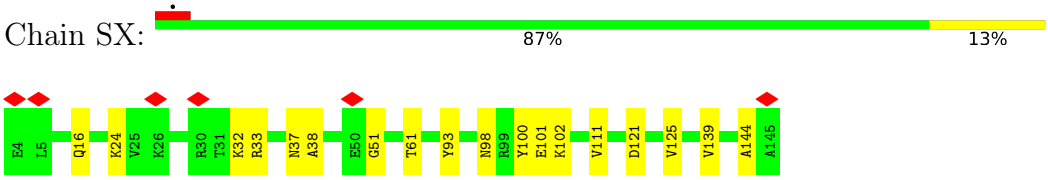
• Molecule 14: 40S ribosomal protein S10-A

Chain SC:



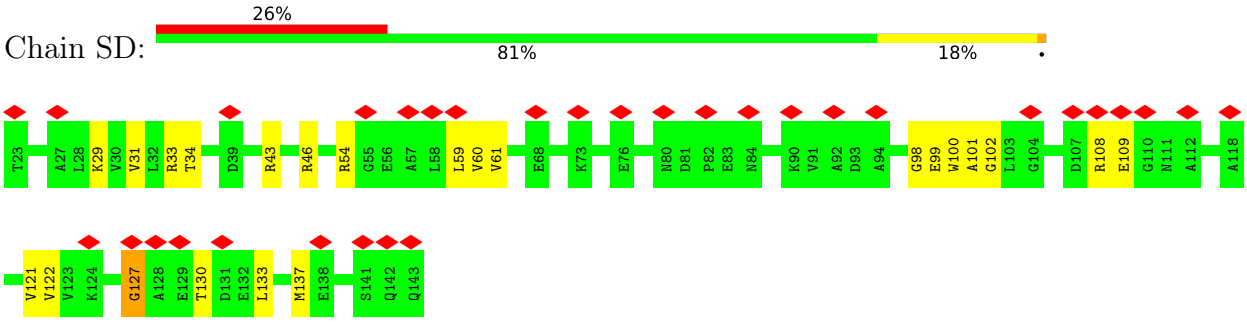
• Molecule 15: 40S ribosomal protein S11-A

Chain SX:



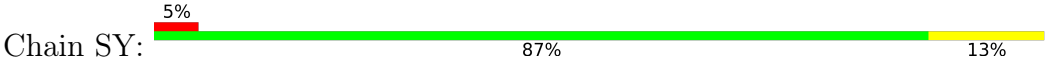
• Molecule 16: 40S ribosomal protein S12

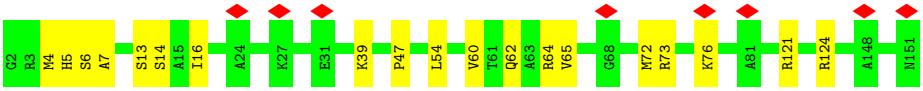
Chain SD:



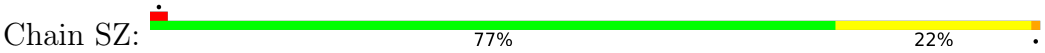
• Molecule 17: 40S ribosomal protein S13

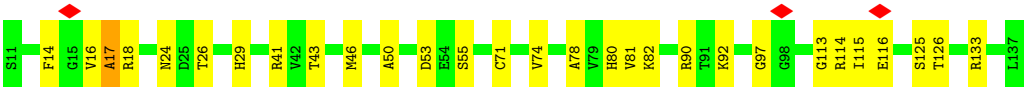
Chain SY:



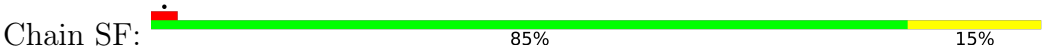


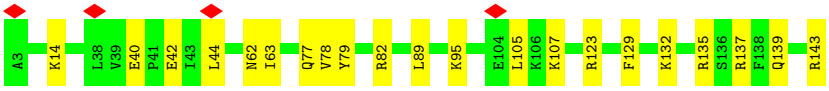
• Molecule 18: 40S ribosomal protein S14-B



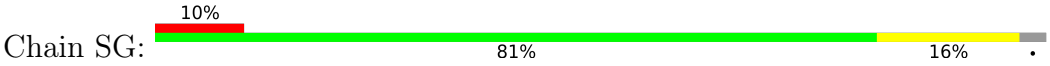


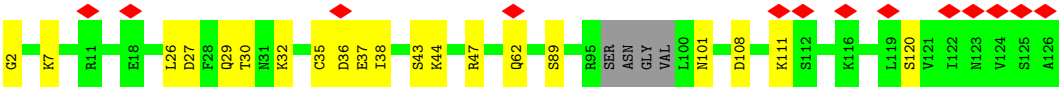
• Molecule 19: 40S ribosomal protein S16-A



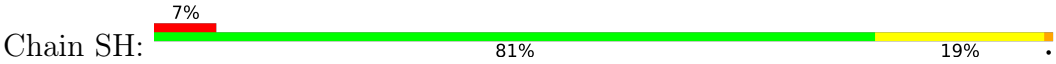


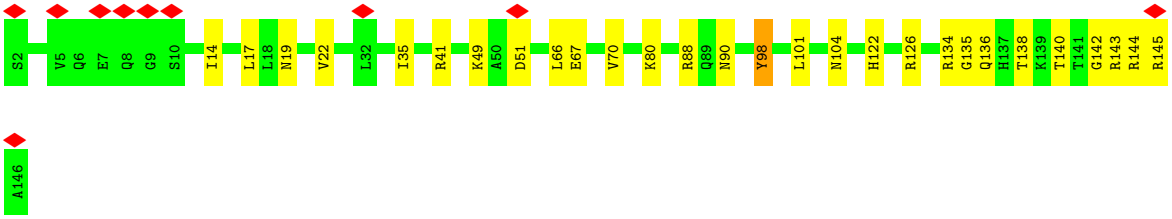
• Molecule 20: 40S ribosomal protein S17-B



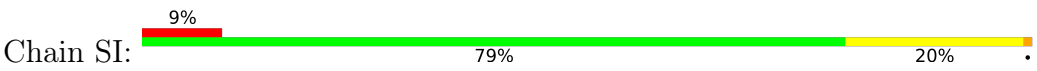


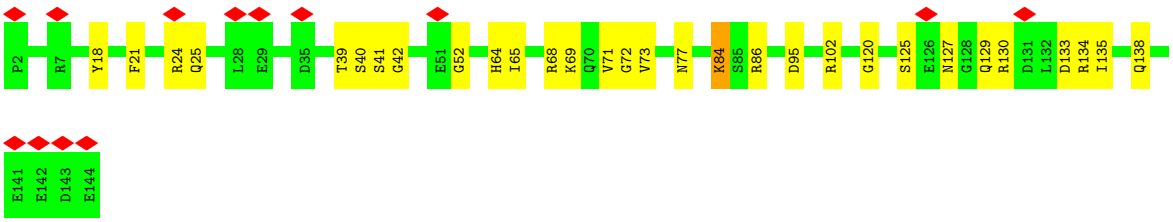
• Molecule 21: 40S ribosomal protein S18-A





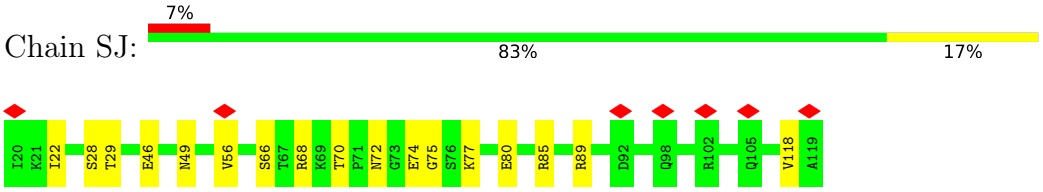
• Molecule 22: 40S ribosomal protein S19-A





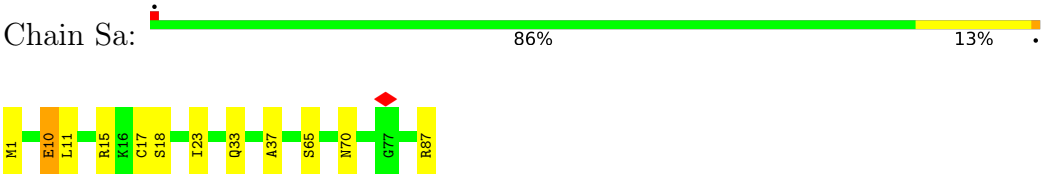
• Molecule 23: 40S ribosomal protein S20

Chain SJ:



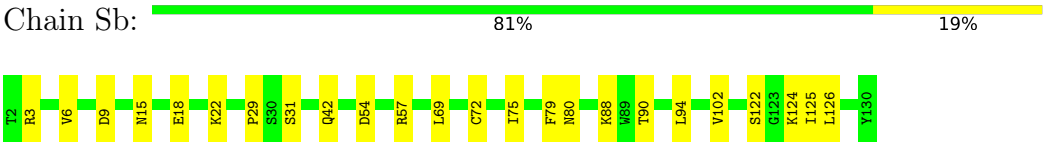
• Molecule 24: 40S ribosomal protein S21-A

Chain Sa:



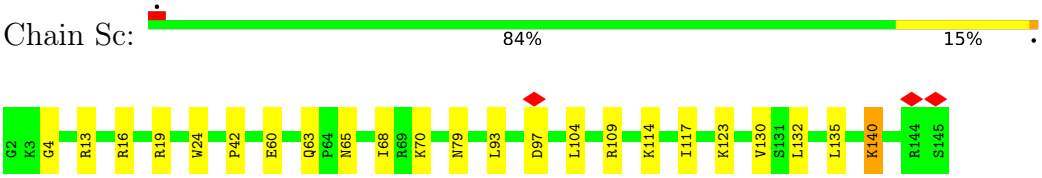
• Molecule 25: 40S ribosomal protein S22-A

Chain Sb:



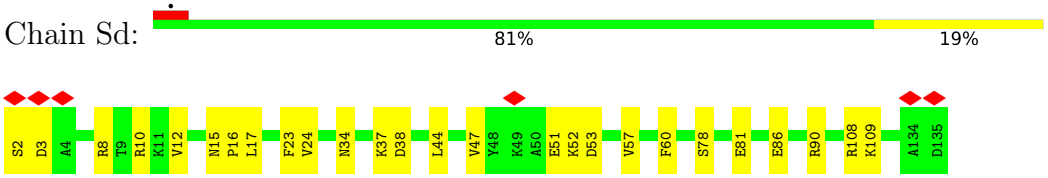
• Molecule 26: 40S ribosomal protein S23-A

Chain Sc:



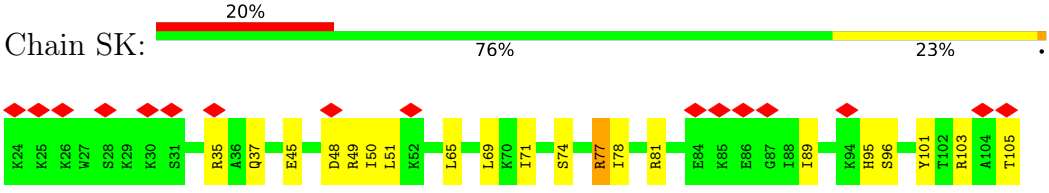
• Molecule 27: 40S ribosomal protein S24-A

Chain Sd:



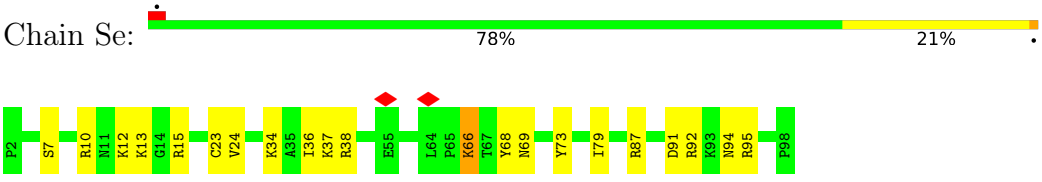
• Molecule 28: 40S ribosomal protein S25-A

Chain SK:



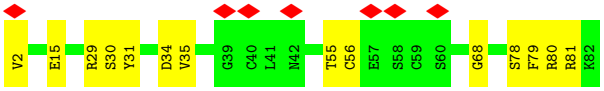
• Molecule 29: 40S ribosomal protein S26-B

Chain Se:



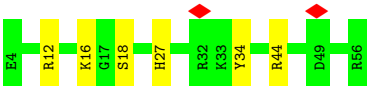
• Molecule 30: 40S ribosomal protein S27-A

Chain Sf:



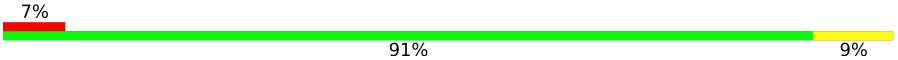
• Molecule 31: 40S ribosomal protein S29-A

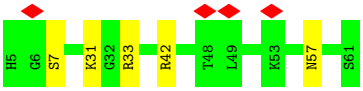
Chain SM:



• Molecule 32: 40S ribosomal protein S30-A

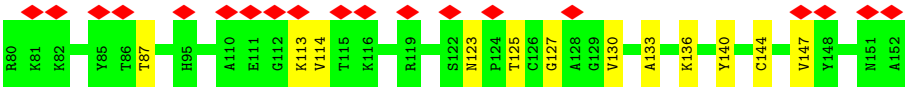
Chain Sg:





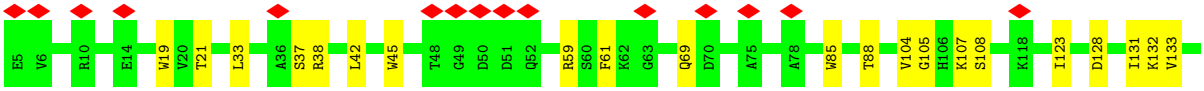
• Molecule 33: 40S ribosomal protein S31

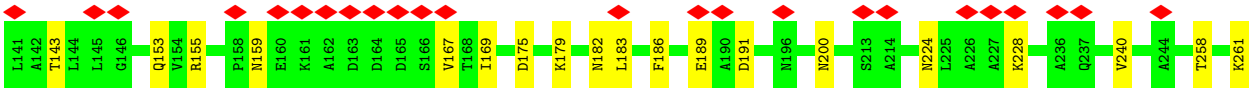
Chain SN:

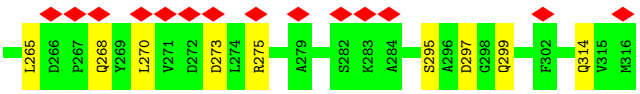


• Molecule 34: Guanine nucleotide-binding protein subunit beta-like protein

Chain SO:

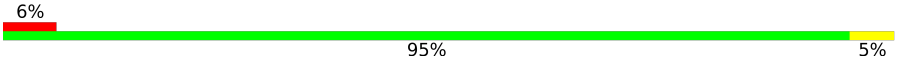






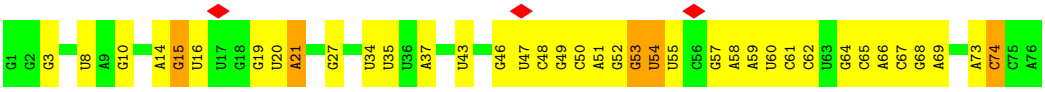
• Molecule 35: 40S ribosomal protein S28-A

Chain SL:



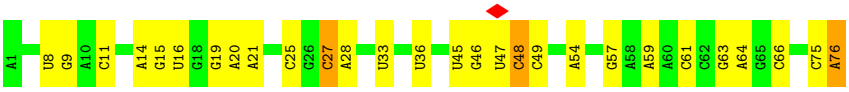
• Molecule 36: tRNA (76-MER)

Chain Sm:



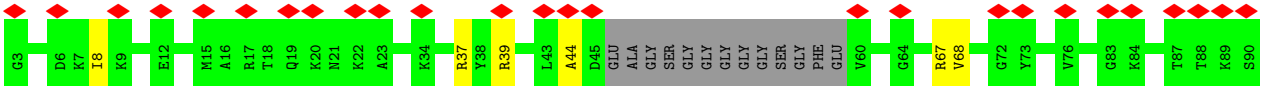
• Molecule 37: tRNA (75-MER)

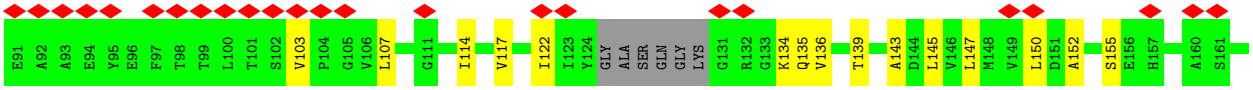
Chain Sn:

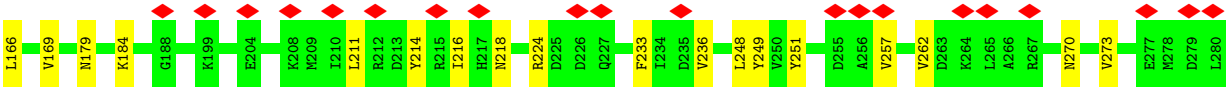


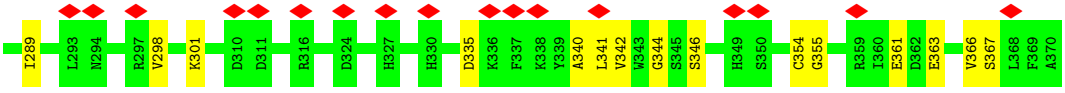
• Molecule 38: Ribosome-interacting GTPase 2

Chain So:



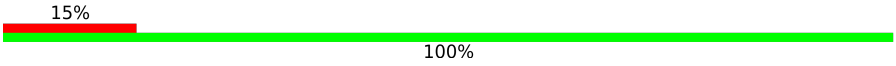


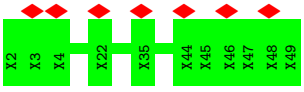




• Molecule 39: GIR2

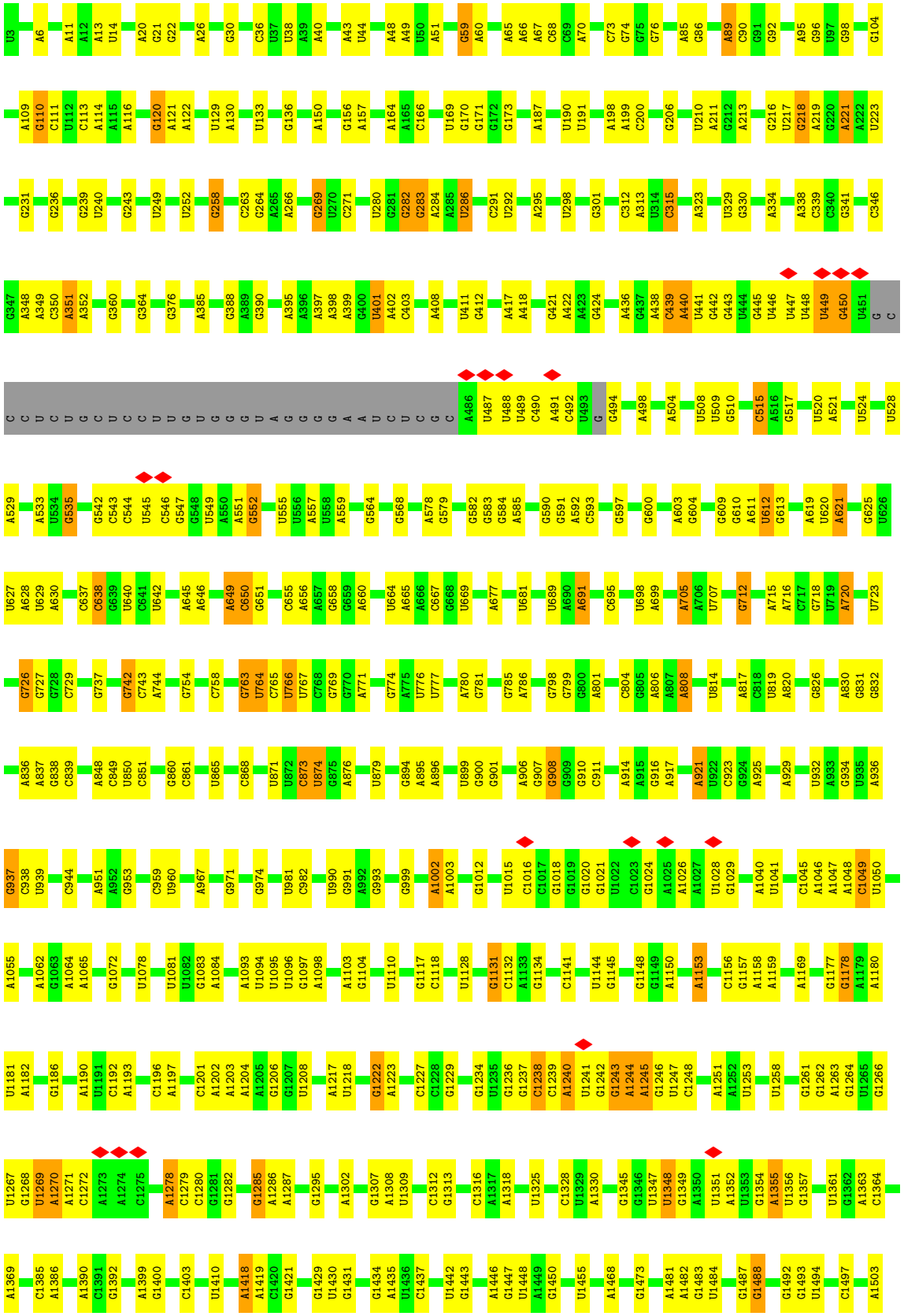
Chain Sp:

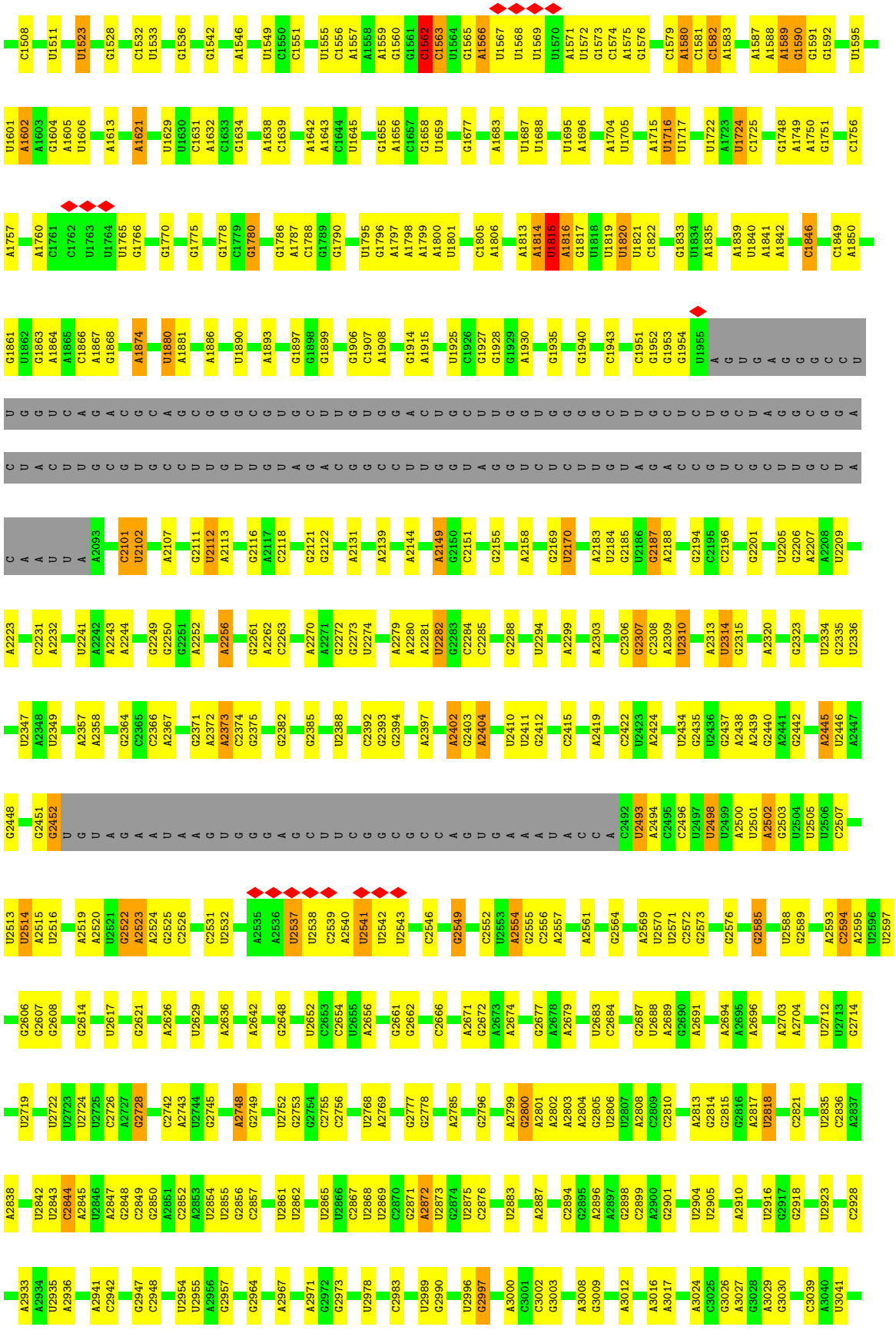


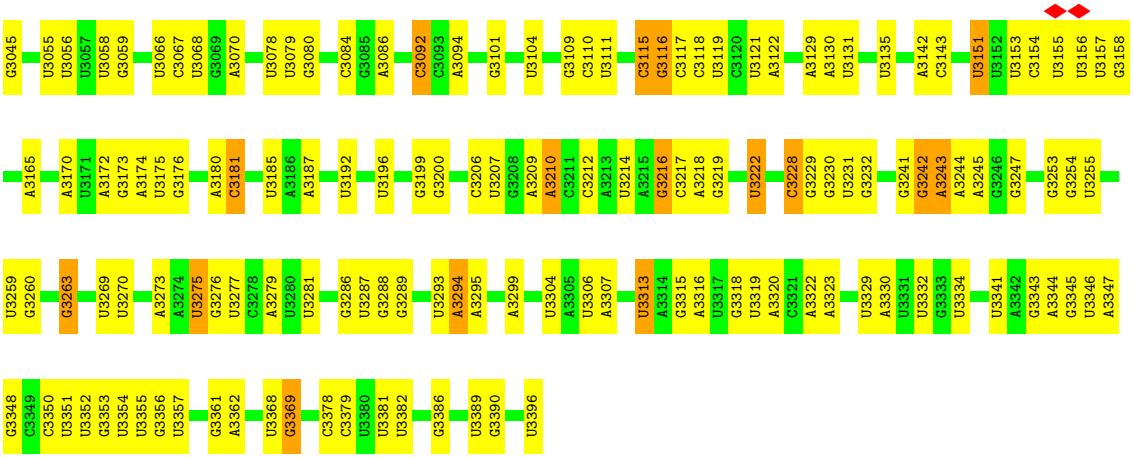


• Molecule 40: 25S rRNA (3184-MER)

Chain LA:

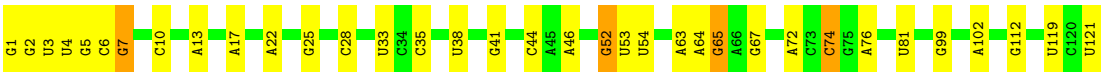






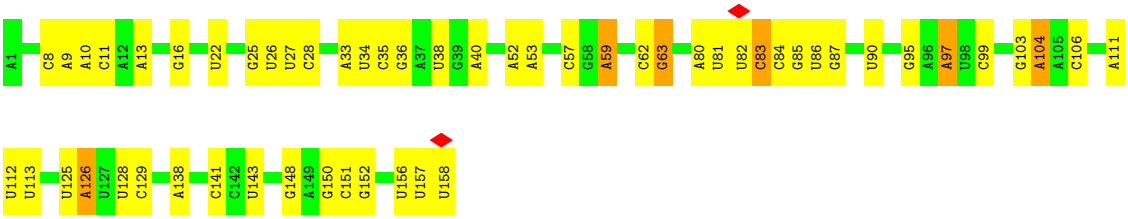
• Molecule 41: 5S rRNA (121-MER)

Chain LB:



• Molecule 42: 5.8S rRNA (158-MER)

Chain LC:

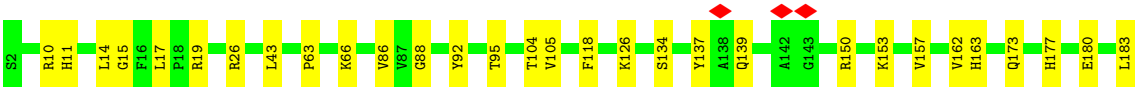


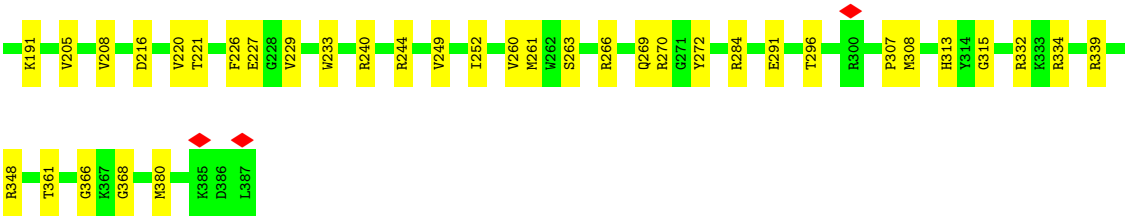
• Molecule 43: 60S ribosomal protein L2-A

Chain LD:

• Molecule 44: 60S ribosomal protein L3

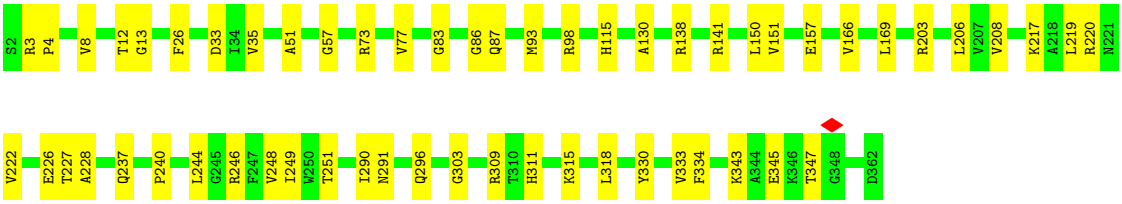
Chain LE:





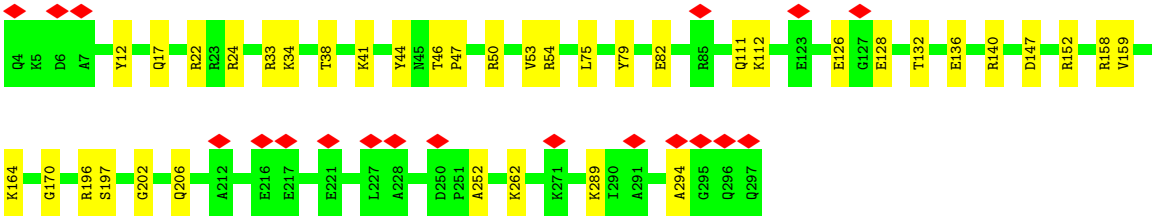
• Molecule 45: 60S ribosomal protein L4-A

Chain LF:



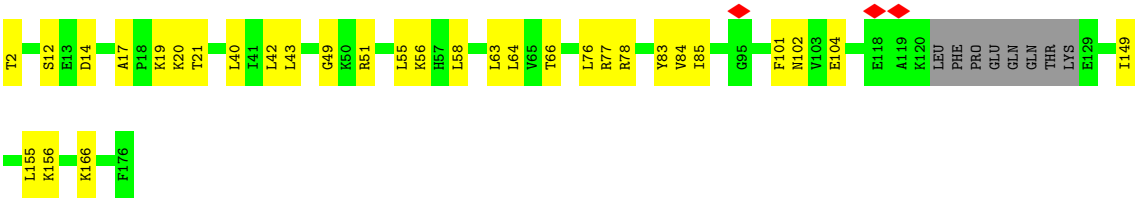
• Molecule 46: 60S ribosomal protein L5

Chain LG:



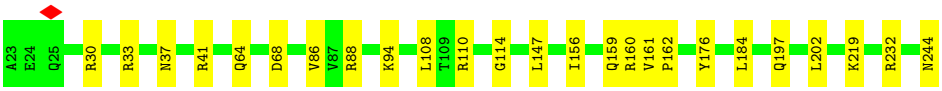
• Molecule 47: 60S ribosomal protein L6-B

Chain LH:



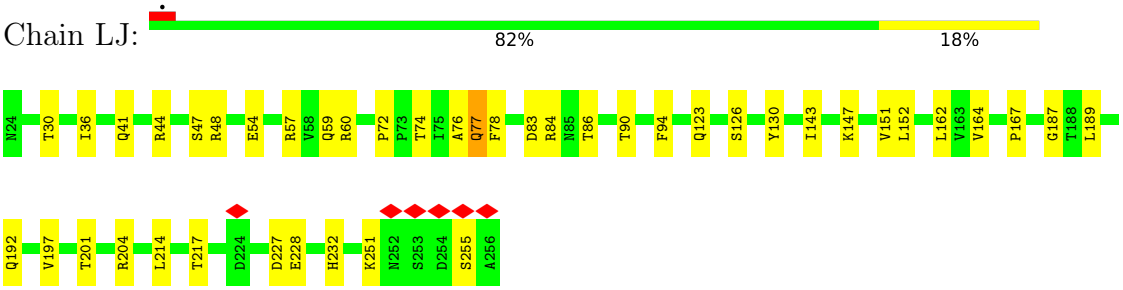
• Molecule 48: 60S ribosomal protein L7-A

Chain LI:



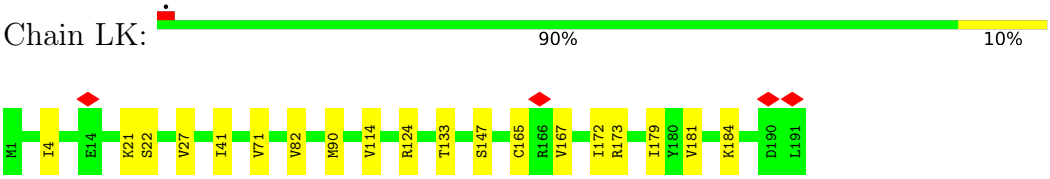
• Molecule 49: 60S ribosomal protein L8-A

Chain LJ:



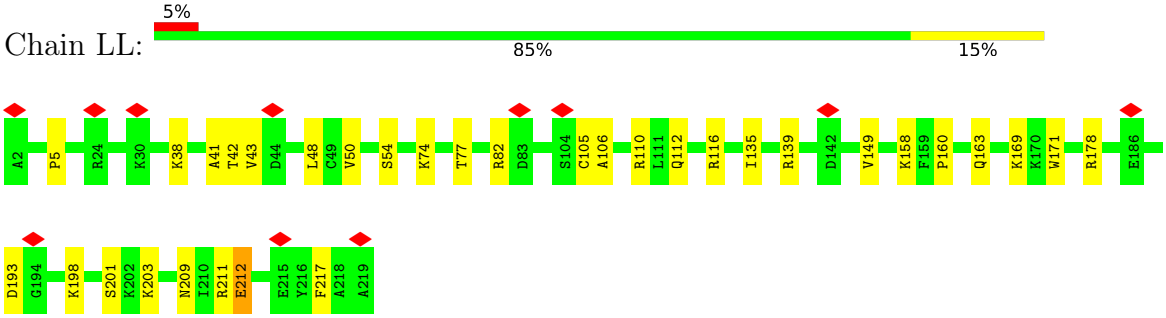
• Molecule 50: 60S ribosomal protein L9-A

Chain LK:



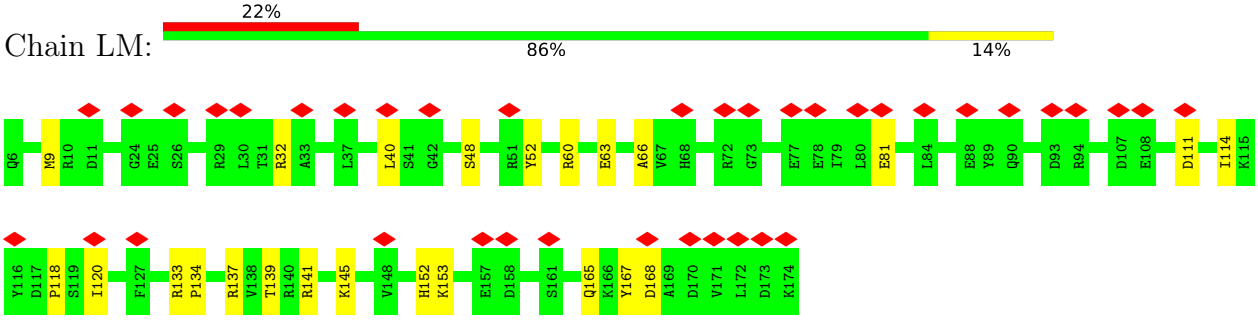
• Molecule 51: 60S ribosomal protein L10

Chain LL:



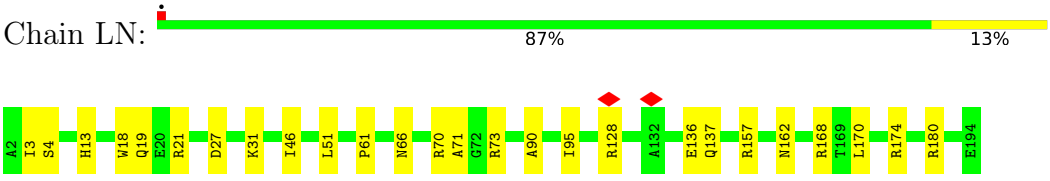
• Molecule 52: 60S ribosomal protein L11-B

Chain LM:



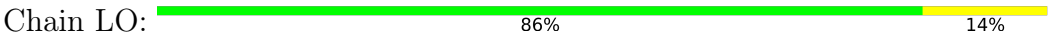
• Molecule 53: 60S ribosomal protein L13-A

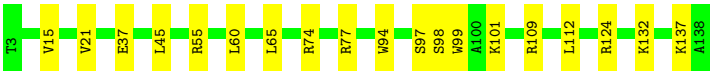
Chain LN:



• Molecule 54: 60S ribosomal protein L14-A

Chain LO:



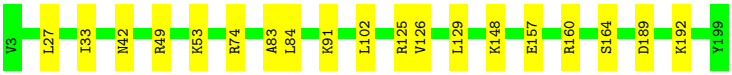


• Molecule 55: 60S ribosomal protein L15-A

Chain LP:

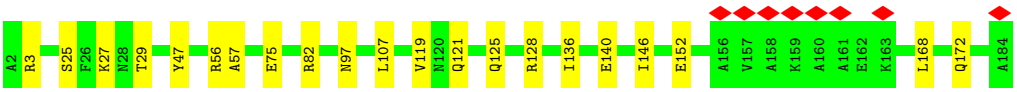
• Molecule 56: 60S ribosomal protein L16-A

Chain LQ:



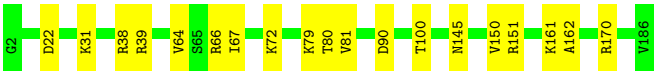
• Molecule 57: 60S ribosomal protein L17-A

Chain LR:



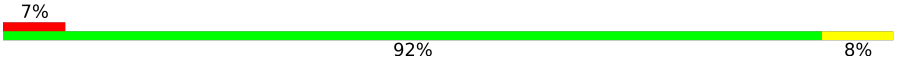
• Molecule 58: 60S ribosomal protein L18-A

Chain LS:



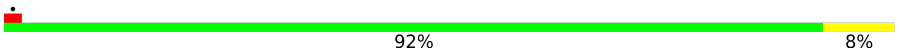
• Molecule 59: 60S ribosomal protein L19-A

Chain LT:



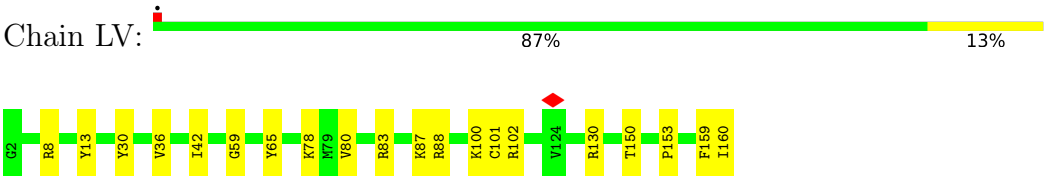
• Molecule 60: 60S ribosomal protein L20-A

Chain LU:



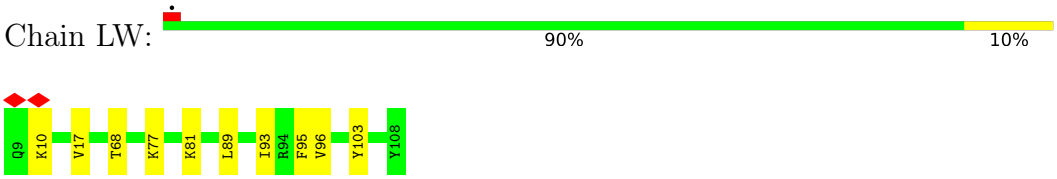
• Molecule 61: 60S ribosomal protein L21-A

Chain LV:



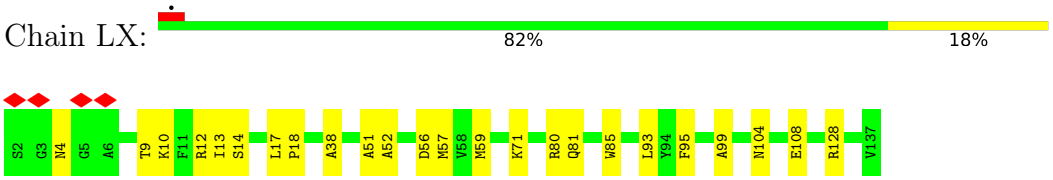
• Molecule 62: 60S ribosomal protein L22-A

Chain LW:



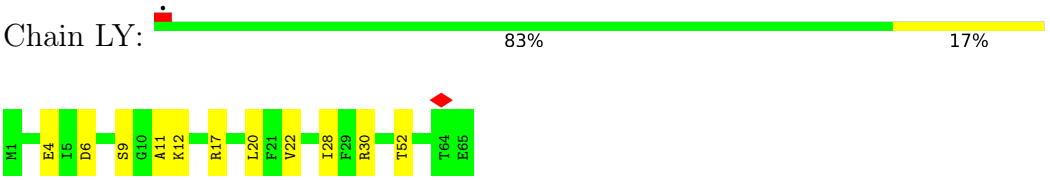
• Molecule 63: 60S ribosomal protein L23-A

Chain LX:



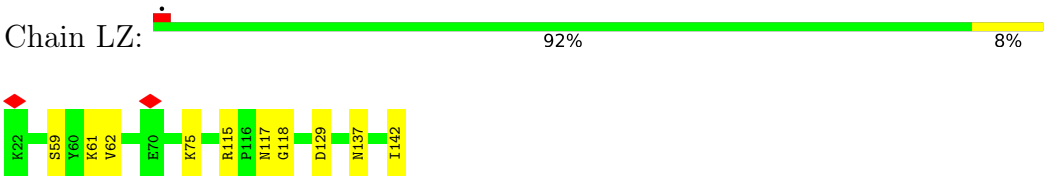
• Molecule 64: 60S ribosomal protein L24-A

Chain LY:



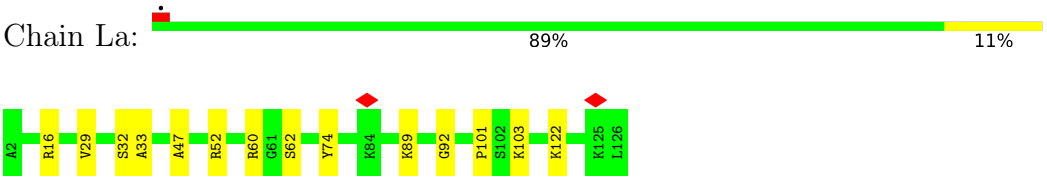
• Molecule 65: 60S ribosomal protein L25

Chain LZ:



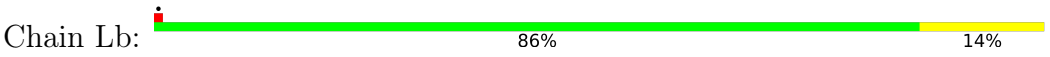
• Molecule 66: 60S ribosomal protein L26-A

Chain La:



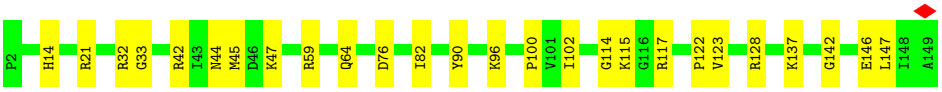
• Molecule 67: 60S ribosomal protein L27-A

Chain Lb:



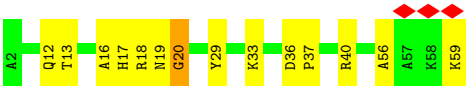
• Molecule 68: 60S ribosomal protein L28

Chain Lc:



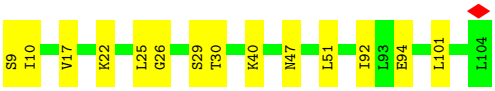
• Molecule 69: 60S ribosomal protein L29

Chain Ld:



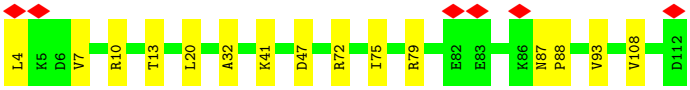
• Molecule 70: 60S ribosomal protein L30

Chain Le:



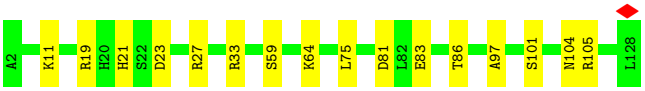
• Molecule 71: 60S ribosomal protein L31-A

Chain Lf:



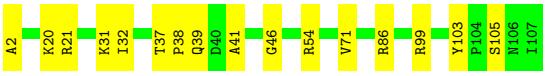
• Molecule 72: 60S ribosomal protein L32

Chain Lg:



• Molecule 73: 60S ribosomal protein L33-A

Chain Lh:

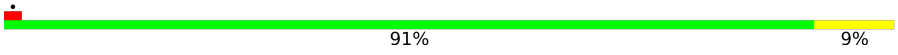


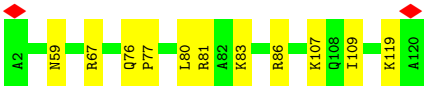
• Molecule 74: 60S ribosomal protein L34-A

Chain Li:

• Molecule 75: 60S ribosomal protein L35-A

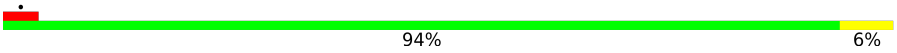
Chain Lj:

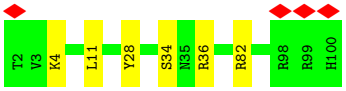




• Molecule 76: 60S ribosomal protein L36-A

Chain Lk:



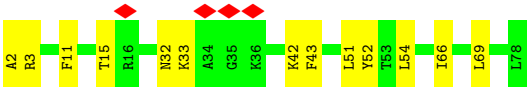


• Molecule 77: 60S ribosomal protein L37-A

Chain Ll:

• Molecule 78: 60S ribosomal protein L38

Chain Lm:

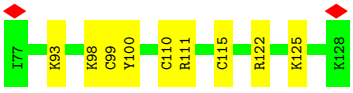


• Molecule 79: 60S ribosomal protein L39

Chain Ln:

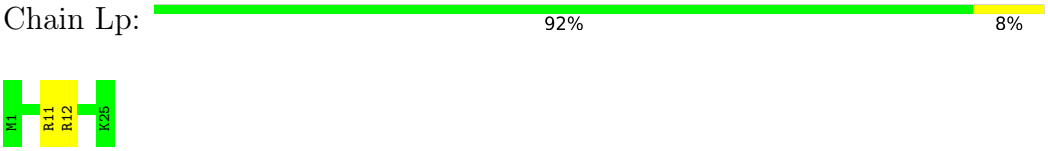
• Molecule 80: 60S ribosomal protein L40-A

Chain Lo:



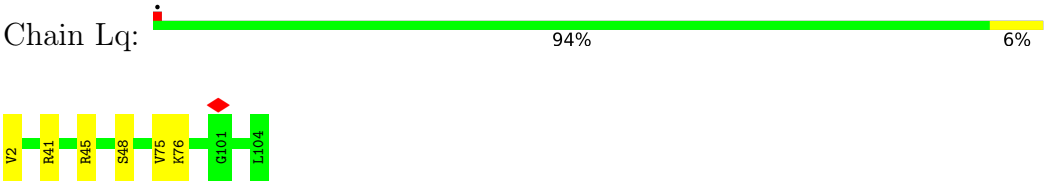
• Molecule 81: 60S ribosomal protein L41-A

Chain Lp:



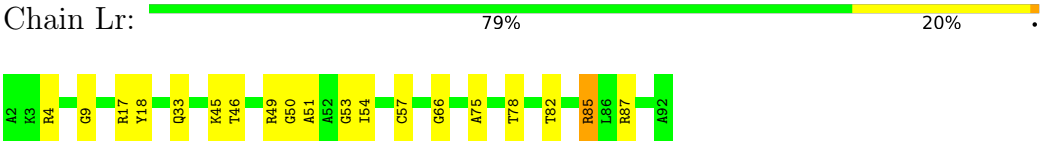
• Molecule 82: 60S ribosomal protein L42-A

Chain Lq:



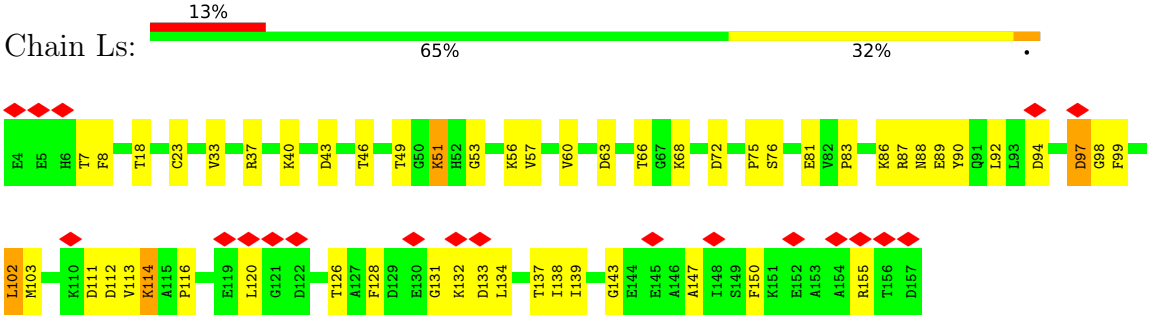
• Molecule 83: 60S ribosomal protein L43-A

Chain Lr:



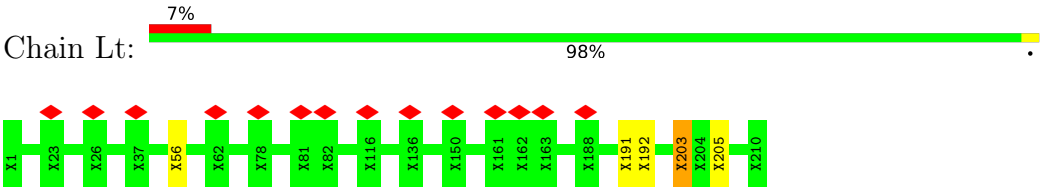
• Molecule 84: eiF5A

Chain Ls:



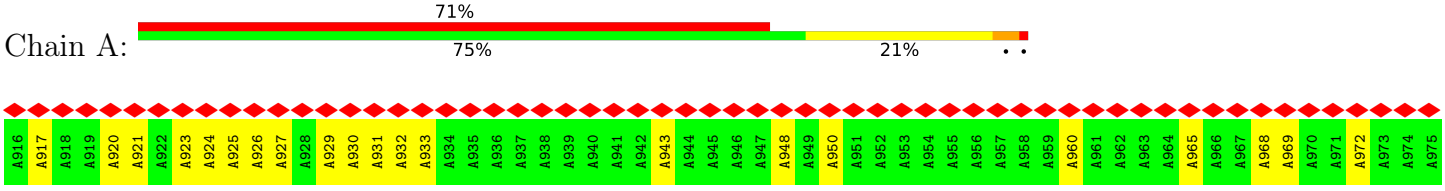
• Molecule 85: L1 60S ribosomal protein

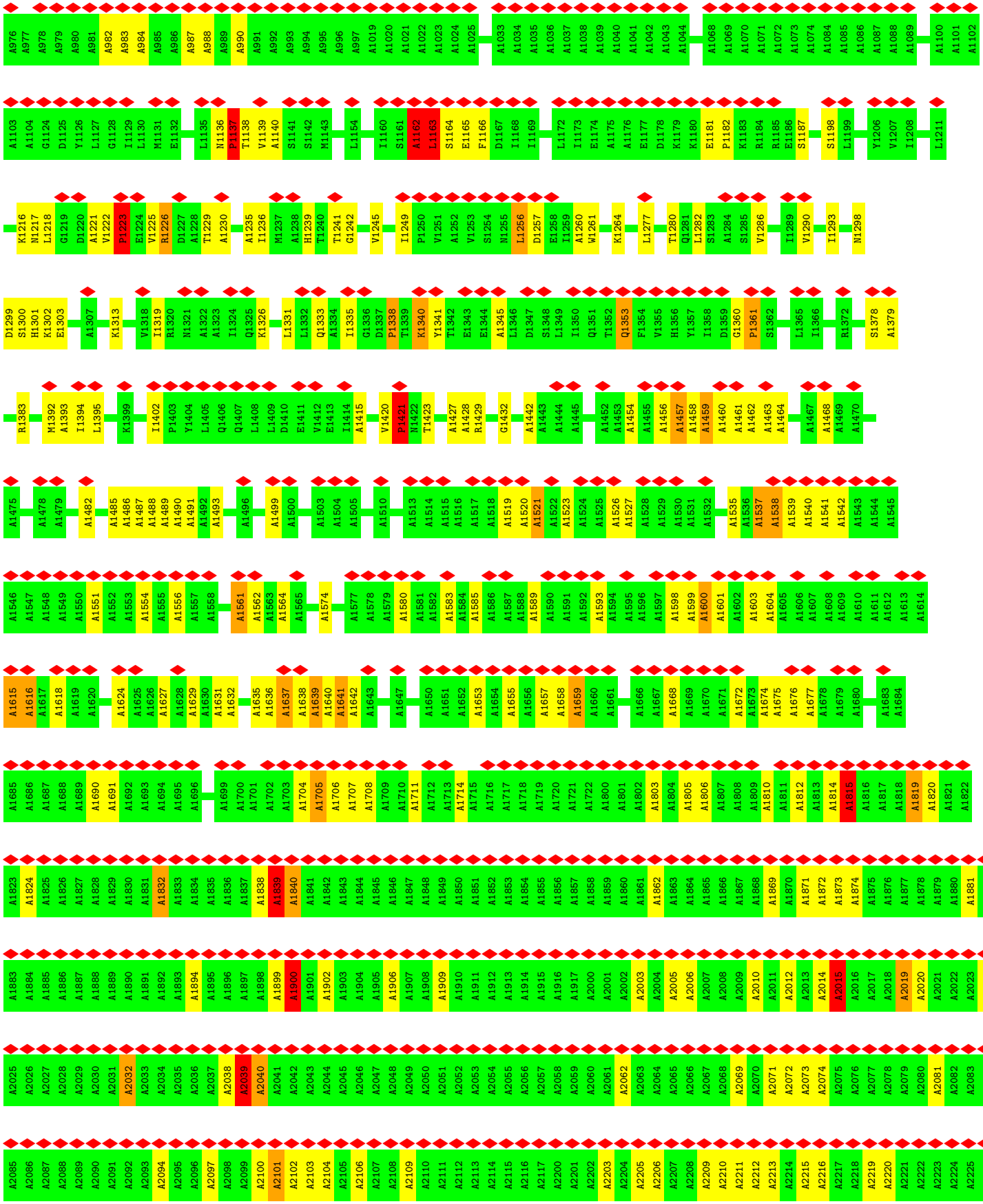
Chain Lt:



• Molecule 86: GCN1

Chain A:




A976 A977 A978 A979 A980 A981 A982 A983 A984 A985 A986 A987 A988 A989 A990 A991 A992 A993 A994 A995 A996 A997 A1019 A1020 A1021 A1022 A1023 A1024 A1025 A1033 A1034 A1035 A1036 A1037 A1038 A1039 A1040 A1041 A1042 A1043 A1044 A1068 A1069 A1070 A1071 A1072 A1073 A1074 A1084 A1085 A1086 A1087 A1088 A1089 A1100 A1101 A1102
A1103 A1104 G1124 D1125 Y1126 L1127 G1128 I1129 L1130 M1131 E1132 L1135 N1136 P1137 T1138 V1139 A1140 S1141 S1142 M1143 L1154 T1160 S1161 A1162 L1163 S1164 E1165 F1166 D1167 I1168 I1169 L1172 I1173 E1174 A1175 A1176 E1177 D1178 K1179 K1180 E1181 P1182 K1183 R1184 R1185 E1186 S1187 S1198 L1199 Y1206 V1207 I1208 L1211
K1216 N1217 L1218 G1219 D1220 A1221 V1222 P1223 E1224 V1225 R1226 D1227 A1228 T1229 A1230 A1235 I1236 M1237 A1238 H1239 T1240 T1241 G1242 V1245 I1249 P1250 V1251 A1252 V1253 S1254 N1255 L1256 D1257 E1258 I1259 A1260 W1261 K1264 L1277 T1280 Q1281 L1282 S1283 A1284 S1285 V1286 I1289 V1290 I1293 N1298
D1299 S1300 H1301 K1302 E1303 A1307 K1313 V1318 I1319 R1320 N1321 A1322 A1323 I1324 Q1325 K1326 L1331 L1332 Q1333 A1334 I1335 G1336 D1337 P1338 T1339 K1340 Y1341 T1342 E1343 E1344 A1345 L1346 D1347 S1348 L1349 I1350 Q1351 T1352 Q1353 F1354 V1355 H1356 Y1357 I1358 D1359 G1360 P1361 S1362 L1365 I1366 R1372 S1378 A1379
R1383 M1392 A1393 I1394 L1395 K1399 I1402 P1403 Y1404 L1405 Q1406 Q1407 L1408 L1409 D1410 E1411 V1412 E1413 I1414 A1415 V1420 P1421 N1422 T1423 A1427 A1428 R1429 G1432 A1442 A1443 A1444 A1445 A1452 A1453 A1454 A1455 A1456 A1457 A1458 A1459 A1460 A1461 A1462 A1463 A1464 A1467 A1468 A1469 A1470
A1475 A1478 A1479 A1482 A1485 A1486 A1487 A1488 A1489 A1490 A1491 A1492 A1493 A1496 A1499 A1500 A1503 A1504 A1505 A1510 A1513 A1514 A1515 A1516 A1517 A1518 A1519 A1520 A1521 A1522 A1523 A1524 A1525 A1526 A1527 A1528 A1529 A1530 A1531 A1532 A1535 A1536 A1537 A1538 A1539 A1540 A1541 A1542 A1543 A1544 A1545
A1546 A1547 A1548 A1549 A1550 A1551 A1552 A1553 A1554 A1555 A1556 A1557 A1558 A1561 A1562 A1563 A1564 A1565 A1574 A1577 A1578 A1579 A1580 A1581 A1582 A1583 A1584 A1585 A1586 A1587 A1588 A1589 A1590 A1591 A1592 A1593 A1594 A1595 A1596 A1597 A1598 A1599 A1600 A1601 A1602 A1603 A1604 A1605 A1606 A1607 A1608 A1609 A1610 A1611 A1612 A1613 A1614
A1615 A1616 A1617 A1618 A1619 A1620 A1624 A1625 A1626 A1627 A1628 A1629 A1630 A1631 A1632 A1635 A1636 A1637 A1638 A1639 A1640 A1641 A1642 A1643 A1647 A1650 A1651 A1652 A1653 A1654 A1655 A1656 A1657 A1658 A1659 A1660 A1661 A1666 A1667 A1668 A1669 A1670 A1671 A1672 A1673 A1674 A1675 A1676 A1677 A1678 A1679 A1680 A1683 A1684
A1685 A1686 A1687 A1688 A1689 A1690 A1691 A1692 A1693 A1694 A1695 A1696 A1699 A1700 A1701 A1702 A1703 A1704 A1705 A1706 A1707 A1708 A1709 A1710 A1711 A1712 A1713 A1714 A1715 A1716 A1717 A1718 A1719 A1720 A1721 A1722 A1800 A1801 A1802 A1803 A1804 A1805 A1806 A1807 A1808 A1809 A1810 A1811 A1812 A1813 A1814 A1815 A1816 A1817 A1818 A1819 A1820 A1821 A1822
A1823 A1824 A1825 A1826 A1827 A1828 A1829 A1830 A1831 A1832 A1833 A1834 A1835 A1836 A1837 A1838 A1839 A1840 A1841 A1842 A1843 A1844 A1845 A1846 A1847 A1848 A1849 A1850 A1851 A1852 A1853 A1854 A1855 A1856 A1857 A1858 A1859 A1860 A1861 A1862 A1863 A1864 A1865 A1866 A1867 A1868 A1869 A1870 A1871 A1872 A1873 A1874 A1875 A1876 A1877 A1878 A1879 A1880 A1881 A1882
A1883 A1884 A1885 A1886 A1887 A1888 A1889 A1890 A1891 A1892 A1893 A1894 A1895 A1896 A1897 A1898 A1899 A1900 A1901 A1902 A1903 A1904 A1905 A1906 A1907 A1908 A1909 A1910 A1911 A1912 A1913 A1914 A1915 A1916 A1917 A2000 A2001 A2002 A2003 A2004 A2005 A2006 A2007 A2008 A2009 A2010 A2011 A2012 A2013 A2014 A2015 A2016 A2017 A2018 A2019 A2020 A2021 A2022 A2023 A2024
A2025 A2026 A2027 A2028 A2029 A2030 A2031 A2032 A2033 A2034 A2035 A2036 A2037 A2038 A2039 A2040 A2041 A2042 A2043 A2044 A2045 A2046 A2047 A2048 A2049 A2050 A2051 A2052 A2053 A2054 A2055 A2056 A2057 A2058 A2059 A2060 A2061 A2062 A2063 A2064 A2065 A2066 A2067 A2068 A2069 A2070 A2071 A2072 A2073 A2074 A2075 A2076 A2077 A2078 A2079 A2080 A2081 A2082 A2083 A2084
A2085 A2086 A2087 A2088 A2089 A2090 A2091 A2092 A2093 A2094 A2095 A2096 A2097 A2098 A2099 A2100 A2101 A2102 A2103 A2104 A2105 A2106 A2107 A2108 A2109 A2110 A2111 A2112 A2113 A2114 A2115 A2116 A2117 A2200 A2201 A2202 A2203 A2204 A2205 A2206 A2207 A2208 A2209 A2210 A2211 A2212 A2213 A2214 A2215 A2216 A2217 A2218 A2219 A2220 A2221 A2222 A2223 A2224 A2225 A2226


A2227 A2228 A2229 A2230 A2231 A2232 A2233 A2234 A2235 A2236 A2237 A2238 A2239 A2240 A2241 A2242 A2243 A2244 A2245 A2246 A2247 A2248 A2249 A2250 A2251 A2252 A2253 A2254 A2255 A2256 A2257 A2258 A2259 A2260 A2261 A2262 A2263 A2264 A2265 A2266 A2267 A2268 A2269 A2270 A2271 A2272 A2273 A2274 A2275 A2276 A2277 A2278 A2279 A2280 A2281 A2282 A2283 A2284 A2285 A2286
A2287 A2288 A2289 A2290 A2291 A2292 A2293 A2294 A2295 A2296 A2297 A2298 A2299 A2300 A2301 A2302 A2303 A2304 A2305 A2306 A2307 A2308 A2309 A2310 A2311 A2312 A2313 A2314 A2315 A2316 A2317 A2320 A2321 A2322 A2323 A2324 A2325 A2326 A2327 A2328 A2329 A2330 A2331 A2332 A2333 A2334 A2335 A2336 A2337 A2338 A2339 A2340 A2341 A2342 A2343 A2344 A2345 A2346 A2347 A2348
A2349 A2350 A2351 A2352 A2353 A2354 A2355 A2356 A2357 A2358 A2359 A2360 A2361 A2362 A2363 A2364 A2365 A2366 A2367 A2368 A2369 A2370 A2371 A2372 A2373 A2374 A2375 A2376 A2377 A2378 A2379 A2380 A2381 A2382 A2383 A2384 A2385 A2386 A2387 A2388 A2389 A2390 A2391 A2392 A2393 A2394 A2395 A2396 A2397 A2398 A2399 A2400 A2401 A2402 A2403 A2404 A2405 A2406 A2407 A2408
A2409 A2410 A2411 A2412 A2413 A2414 A2415 A2416 A2417 A2418 A2419 A2420 A2421 A2422 A2423 A2424 A2425 A2426 A2427 A2428

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	30016	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 ($e^-/Å^2$)	2.5	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	FEI FALCON II (4k x 4k)	Depositor
Maximum map value	0.512	Depositor
Minimum map value	-0.389	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.008	Depositor
Recommended contour level	0.03	Depositor
Map size (Å)	758.8, 758.8, 758.8	wwPDB
Map dimensions	700, 700, 700	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.084, 1.084, 1.084	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 5CT

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	S2	0.28	0/42211	0.59	14/65773 (0.0%)
2	Sl	0.26	0/147	0.46	0/227
3	SP	0.34	0/1644	0.79	0/2249
4	SQ	0.37	0/1823	0.90	3/2447 (0.1%)
5	SE	0.37	0/936	0.87	0/1259
6	SR	0.38	0/1656	0.85	0/2251
7	SA	0.33	0/1754	0.78	0/2361
8	SS	0.38	0/2097	0.87	0/2823
9	SB	0.36	0/1625	0.83	2/2197 (0.1%)
10	ST	0.35	0/1839	0.85	0/2460
11	SU	0.39	0/1498	0.88	0/2019
12	SV	0.31	0/1501	0.78	0/2006
13	SW	0.33	0/1504	0.83	1/2016 (0.0%)
14	SC	0.37	0/769	0.85	0/1039
15	SX	0.30	0/1168	0.75	0/1575
16	SD	0.40	0/883	0.95	0/1199
17	SY	0.35	0/1215	0.83	0/1638
18	SZ	0.36	0/934	0.86	2/1257 (0.2%)
19	SF	0.33	0/1125	0.84	0/1510
20	SG	0.33	0/957	0.75	0/1283
21	SH	0.34	0/1207	0.86	0/1623
22	SI	0.36	0/1130	0.83	2/1517 (0.1%)
23	SJ	0.34	0/807	0.78	0/1091
24	Sa	0.29	0/682	0.78	1/921 (0.1%)
25	Sb	0.38	0/1038	0.87	0/1395
26	Sc	0.36	0/1139	0.86	2/1518 (0.1%)
27	Sd	0.34	0/1046	0.80	0/1401
28	SK	0.38	0/661	0.92	1/888 (0.1%)
29	Se	0.32	0/778	0.81	0/1042
30	Sf	0.29	0/620	0.82	0/838
31	SM	0.32	0/452	0.83	0/600
32	Sg	0.32	0/459	0.89	0/611

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	SN	0.33	0/567	0.89	1/764 (0.1%)
34	SO	0.32	0/2436	0.84	0/3318
35	SL	0.36	0/493	0.96	0/663
36	Sm	0.32	0/1799	0.69	0/2801
37	Sn	0.31	0/1796	0.62	0/2799
38	So	0.25	0/2769	0.67	0/3736
40	LA	0.28	0/76214	0.55	10/118821 (0.0%)
41	LB	0.25	0/2883	0.51	1/4491 (0.0%)
42	LC	0.28	0/3746	0.55	0/5832
43	LD	0.33	0/1933	0.79	0/2598
44	LE	0.33	0/3146	0.78	1/4228 (0.0%)
45	LF	0.34	0/2800	0.80	0/3790
46	LG	0.33	0/2400	0.77	2/3239 (0.1%)
47	LH	0.35	0/1329	0.81	1/1794 (0.1%)
48	LI	0.35	0/1821	0.78	0/2451
49	LJ	0.35	0/1836	0.79	0/2481
50	LK	0.32	0/1529	0.77	0/2060
51	LL	0.32	0/1801	0.80	5/2416 (0.2%)
52	LM	0.35	0/1367	0.85	0/1834
53	LN	0.32	0/1568	0.78	1/2106 (0.0%)
54	LO	0.32	0/1068	0.77	0/1438
55	LP	0.38	0/1757	0.80	0/2354
56	LQ	0.37	0/1585	0.75	0/2128
57	LR	0.32	0/1439	0.72	0/1938
58	LS	0.32	0/1465	0.79	0/1965
59	LT	0.30	0/1532	0.72	0/2043
60	LU	0.32	0/1473	0.75	0/1980
61	LV	0.32	0/1296	0.76	0/1739
62	LW	0.34	0/812	0.77	0/1099
63	LX	0.30	0/1018	0.71	0/1369
64	LY	0.23	0/540	0.66	0/717
65	LZ	0.31	0/979	0.79	0/1321
66	La	0.28	0/995	0.73	0/1329
67	Lb	0.29	0/1106	0.78	0/1485
68	Lc	0.33	0/1200	0.78	0/1607
69	Ld	0.31	0/473	0.79	0/629
70	Le	0.30	0/745	0.76	0/1001
71	Lf	0.34	0/890	0.81	0/1196
72	Lg	0.30	0/1038	0.71	0/1390
73	Lh	0.32	0/868	0.79	1/1168 (0.1%)
74	Li	0.38	0/890	0.82	0/1189
75	Lj	0.31	0/978	0.74	0/1301
76	Lk	0.31	0/772	0.77	0/1026

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
77	Ll	0.43	0/660	0.94	0/875
78	Lm	0.34	0/618	0.74	0/826
79	Ln	0.32	0/443	0.81	0/588
80	Lo	0.30	0/416	0.84	0/553
81	Lp	0.37	0/230	0.87	0/296
82	Lq	0.33	0/836	0.80	0/1104
83	Lr	0.33	0/701	0.80	1/934 (0.1%)
84	Ls	0.43	0/1142	1.26	18/1537 (1.2%)
86	A	1.43	24/6015 (0.4%)	1.76	69/8386 (0.8%)
All	All	0.38	24/227518 (0.0%)	0.72	139/333767 (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
8	SS	0	1
9	SB	0	2
11	SU	0	1
16	SD	0	1
18	SZ	0	1
19	SF	0	1
22	SI	0	1
25	Sb	0	1
33	SN	0	1
45	LF	0	3
48	LI	0	1
49	LJ	0	3
58	LS	0	1
68	Lc	0	2
69	Ld	0	2
70	Le	0	1
71	Lf	0	1
75	Lj	0	1
84	Ls	1	2
85	Lt	0	4
86	A	0	12
All	All	1	43

The worst 5 of 24 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
86	A	2351	ALA	N-CA	20.84	1.70	1.46
86	A	1840	ALA	N-CA	20.80	1.70	1.46
86	A	2040	ALA	N-CA	20.79	1.70	1.46
86	A	2240	ALA	N-CA	20.75	1.70	1.46
86	A	2300	ALA	N-CA	18.20	1.69	1.46

The worst 5 of 139 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
86	A	1181	GLU	CA-C-N	20.41	145.35	119.84
86	A	1181	GLU	C-N-CA	20.41	145.35	119.84
86	A	1420	VAL	CA-C-N	17.02	141.12	119.84
86	A	1420	VAL	C-N-CA	17.02	141.12	119.84
86	A	1360	GLY	CA-C-N	15.08	138.70	119.84

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
84	Ls	51	5CT	C2

5 of 43 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
9	SB	125	THR	Peptide
9	SB	42	LEU	Peptide
16	SD	108	ARG	Peptide
8	SS	193	GLY	Peptide
11	SU	64	VAL	Peptide

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	S2	37739	0	18988	295	0
2	Sl	131	0	66	0	0
3	SP	1603	0	1610	19	0
4	SQ	1798	0	1890	26	0
5	SE	916	0	941	17	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	SR	1626	0	1715	24	0
7	SA	1729	0	1812	17	0
8	SS	2056	0	2140	33	0
9	SB	1605	0	1669	20	0
10	ST	1815	0	1894	25	0
11	SU	1473	0	1555	20	0
12	SV	1476	0	1501	37	0
13	SW	1479	0	1556	26	0
14	SC	752	0	719	9	0
15	SX	1142	0	1209	13	0
16	SD	875	0	878	12	0
17	SY	1192	0	1255	14	0
18	SZ	923	0	948	20	0
19	SF	1105	0	1166	15	0
20	SG	948	0	990	13	0
21	SH	1188	0	1218	25	0
22	SI	1112	0	1122	67	0
23	SJ	797	0	863	13	0
24	Sa	673	0	662	10	0
25	Sb	1021	0	1060	17	0
26	Sc	1121	0	1196	17	0
27	Sd	1032	0	1044	18	0
28	SK	651	0	682	11	0
29	Se	765	0	814	16	0
30	Sf	610	0	633	10	0
31	SM	442	0	432	5	0
32	Sg	451	0	494	6	0
33	SN	556	0	552	7	0
34	SO	2383	0	2332	30	0
35	SL	491	0	524	3	0
36	Sm	1611	0	817	5	0
37	Sn	1606	0	816	8	0
38	So	2729	0	2780	33	0
39	Sp	240	0	50	0	0
40	LA	68091	0	34217	406	0
41	LB	2579	0	1304	19	0
42	LC	3353	0	1695	32	0
43	LD	1899	0	1957	29	0
44	LE	3075	0	3142	48	0
45	LF	2748	0	2859	39	0
46	LG	2351	0	2294	26	0
47	LH	1307	0	1377	22	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
48	LI	1784	0	1862	15	0
49	LJ	1804	0	1877	32	0
50	LK	1508	0	1572	12	0
51	LL	1764	0	1804	22	0
52	LM	1346	0	1370	23	0
53	LN	1543	0	1608	20	0
54	LO	1053	0	1149	14	0
55	LP	1720	0	1779	36	0
56	LQ	1555	0	1659	13	0
57	LR	1416	0	1433	15	0
58	LS	1441	0	1543	17	0
59	LT	1515	0	1606	14	0
60	LU	1437	0	1475	13	0
61	LV	1272	0	1312	17	0
62	LW	796	0	812	6	0
63	LX	1003	0	1048	16	0
64	LY	528	0	546	9	0
65	LZ	964	0	1025	7	0
66	La	984	0	1075	10	0
67	Lb	1080	0	1122	11	0
68	Lc	1169	0	1211	24	0
69	Ld	462	0	491	11	0
70	Le	737	0	792	7	0
71	Lf	876	0	912	7	0
72	Lg	1017	0	1081	12	0
73	Lh	850	0	880	10	0
74	Li	880	0	945	16	0
75	Lj	969	0	1078	7	0
76	Lk	766	0	844	5	0
77	Ll	645	0	649	14	0
78	Lm	612	0	682	8	0
79	Ln	436	0	475	15	0
80	Lo	410	0	446	7	0
81	Lp	229	0	273	2	0
82	Lq	824	0	892	6	0
83	Lr	694	0	738	17	0
84	Ls	1143	0	1104	25	0
85	Lt	1050	0	230	1	0
86	A	6029	0	5195	439	0
All	All	213576	0	158033	1993	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 1993 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)
22:SI:138:GLN:HG2	86:A:1303:GLU:CA	1.24	1.55
86:A:2240:ALA:N	86:A:2240:ALA:CA	1.70	1.54
86:A:2411:ALA:N	86:A:2411:ALA:CA	1.69	1.54
86:A:1421:PRO:N	86:A:1421:PRO:CA	1.69	1.53
86:A:2040:ALA:N	86:A:2040:ALA:CA	1.70	1.53

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	
3	SP	204/206 (99%)	183 (90%)	21 (10%)	0	100	100
4	SQ	222/232 (96%)	201 (90%)	21 (10%)	0	100	100
5	SE	115/117 (98%)	100 (87%)	15 (13%)	0	100	100
6	SR	214/216 (99%)	190 (89%)	24 (11%)	0	100	100
7	SA	220/222 (99%)	209 (95%)	11 (5%)	0	100	100
8	SS	256/258 (99%)	229 (90%)	27 (10%)	0	100	100
9	SB	204/206 (99%)	189 (93%)	15 (7%)	0	100	100
10	ST	226/228 (99%)	211 (93%)	14 (6%)	1 (0%)	30	65
11	SU	182/184 (99%)	163 (90%)	19 (10%)	0	100	100
12	SV	183/198 (92%)	167 (91%)	16 (9%)	0	100	100
13	SW	182/184 (99%)	165 (91%)	16 (9%)	1 (0%)	25	60
14	SC	90/92 (98%)	79 (88%)	11 (12%)	0	100	100
15	SX	140/142 (99%)	124 (89%)	16 (11%)	0	100	100
16	SD	119/121 (98%)	91 (76%)	26 (22%)	2 (2%)	7	36

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
17	SY	148/150 (99%)	133 (90%)	15 (10%)	0	100	100
18	SZ	125/127 (98%)	110 (88%)	15 (12%)	0	100	100
19	SF	139/141 (99%)	125 (90%)	14 (10%)	0	100	100
20	SG	117/125 (94%)	112 (96%)	5 (4%)	0	100	100
21	SH	143/145 (99%)	131 (92%)	12 (8%)	0	100	100
22	SI	141/143 (99%)	128 (91%)	13 (9%)	0	100	100
23	SJ	98/100 (98%)	88 (90%)	10 (10%)	0	100	100
24	Sa	85/87 (98%)	73 (86%)	12 (14%)	0	100	100
25	Sb	127/129 (98%)	113 (89%)	14 (11%)	0	100	100
26	Sc	142/144 (99%)	123 (87%)	19 (13%)	0	100	100
27	Sd	132/134 (98%)	124 (94%)	8 (6%)	0	100	100
28	SK	80/82 (98%)	69 (86%)	11 (14%)	0	100	100
29	Se	95/97 (98%)	84 (88%)	11 (12%)	0	100	100
30	Sf	79/81 (98%)	67 (85%)	12 (15%)	0	100	100
31	SM	51/53 (96%)	48 (94%)	3 (6%)	0	100	100
32	Sg	55/57 (96%)	43 (78%)	12 (22%)	0	100	100
33	SN	71/73 (97%)	48 (68%)	23 (32%)	0	100	100
34	SO	310/312 (99%)	268 (86%)	42 (14%)	0	100	100
35	SL	61/63 (97%)	57 (93%)	4 (7%)	0	100	100
38	So	341/366 (93%)	311 (91%)	30 (9%)	0	100	100
43	LD	249/251 (99%)	223 (90%)	26 (10%)	0	100	100
44	LE	384/386 (100%)	355 (92%)	29 (8%)	0	100	100
45	LF	359/361 (99%)	323 (90%)	35 (10%)	1 (0%)	37	70
46	LG	292/294 (99%)	266 (91%)	26 (9%)	0	100	100
47	LH	163/175 (93%)	147 (90%)	16 (10%)	0	100	100
48	LI	220/222 (99%)	203 (92%)	17 (8%)	0	100	100
49	LJ	231/233 (99%)	208 (90%)	23 (10%)	0	100	100
50	LK	189/191 (99%)	174 (92%)	15 (8%)	0	100	100
51	LL	216/218 (99%)	189 (88%)	27 (12%)	0	100	100
52	LM	167/169 (99%)	153 (92%)	14 (8%)	0	100	100
53	LN	191/193 (99%)	171 (90%)	19 (10%)	1 (0%)	25	60

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
54	LO	134/136 (98%)	121 (90%)	13 (10%)	0	100	100
55	LP	201/203 (99%)	181 (90%)	19 (10%)	1 (0%)	25	60
56	LQ	195/197 (99%)	186 (95%)	9 (5%)	0	100	100
57	LR	181/183 (99%)	168 (93%)	13 (7%)	0	100	100
58	LS	183/185 (99%)	170 (93%)	13 (7%)	0	100	100
59	LT	186/188 (99%)	178 (96%)	8 (4%)	0	100	100
60	LU	169/171 (99%)	159 (94%)	10 (6%)	0	100	100
61	LV	157/159 (99%)	143 (91%)	14 (9%)	0	100	100
62	LW	98/100 (98%)	93 (95%)	5 (5%)	0	100	100
63	LX	134/136 (98%)	128 (96%)	6 (4%)	0	100	100
64	LY	63/65 (97%)	59 (94%)	4 (6%)	0	100	100
65	LZ	119/121 (98%)	110 (92%)	9 (8%)	0	100	100
66	La	123/125 (98%)	117 (95%)	6 (5%)	0	100	100
67	Lb	133/135 (98%)	117 (88%)	16 (12%)	0	100	100
68	Lc	146/148 (99%)	130 (89%)	16 (11%)	0	100	100
69	Ld	56/58 (97%)	47 (84%)	9 (16%)	0	100	100
70	Le	94/96 (98%)	92 (98%)	2 (2%)	0	100	100
71	Lf	107/109 (98%)	93 (87%)	14 (13%)	0	100	100
72	Lg	125/127 (98%)	115 (92%)	10 (8%)	0	100	100
73	Lh	104/106 (98%)	98 (94%)	6 (6%)	0	100	100
74	Li	110/112 (98%)	105 (96%)	5 (4%)	0	100	100
75	Lj	117/119 (98%)	109 (93%)	8 (7%)	0	100	100
76	Lk	97/99 (98%)	91 (94%)	6 (6%)	0	100	100
77	Ll	79/81 (98%)	71 (90%)	8 (10%)	0	100	100
78	Lm	75/77 (97%)	72 (96%)	3 (4%)	0	100	100
79	Ln	48/50 (96%)	46 (96%)	2 (4%)	0	100	100
80	Lo	50/52 (96%)	44 (88%)	6 (12%)	0	100	100
81	Lp	23/25 (92%)	23 (100%)	0	0	100	100
82	Lq	101/103 (98%)	93 (92%)	8 (8%)	0	100	100
83	Lr	89/91 (98%)	87 (98%)	2 (2%)	0	100	100
84	Ls	151/154 (98%)	117 (78%)	31 (20%)	3 (2%)	6	33

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
86	A	1182/1209 (98%)	929 (79%)	190 (16%)	63 (5%)	1 18
All	All	12588/12828 (98%)	11260 (90%)	1255 (10%)	73 (1%)	24 57

5 of 73 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
84	Ls	133	ASP
86	A	1162	ALA
86	A	1163	LEU
86	A	1164	SER
86	A	1182	PRO

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
3	SP	170/173 (98%)	170 (100%)	0	100 100
4	SQ	200/205 (98%)	200 (100%)	0	100 100
5	SE	95/98 (97%)	95 (100%)	0	100 100
6	SR	175/175 (100%)	175 (100%)	0	100 100
7	SA	182/182 (100%)	180 (99%)	2 (1%)	70 79
8	SS	220/220 (100%)	220 (100%)	0	100 100
9	SB	172/173 (99%)	172 (100%)	0	100 100
10	ST	189/195 (97%)	189 (100%)	0	100 100
11	SU	163/165 (99%)	163 (100%)	0	100 100
12	SV	148/159 (93%)	148 (100%)	0	100 100
13	SW	156/157 (99%)	155 (99%)	1 (1%)	84 88
14	SC	77/85 (91%)	76 (99%)	1 (1%)	65 76
15	SX	126/127 (99%)	125 (99%)	1 (1%)	79 84
16	SD	88/98 (90%)	88 (100%)	0	100 100
17	SY	127/127 (100%)	126 (99%)	1 (1%)	79 84

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
18	SZ	90/96 (94%)	90 (100%)	0	100	100
19	SF	117/117 (100%)	116 (99%)	1 (1%)	75	83
20	SG	101/113 (89%)	101 (100%)	0	100	100
21	SH	127/128 (99%)	126 (99%)	1 (1%)	79	84
22	SI	115/115 (100%)	114 (99%)	1 (1%)	75	83
23	SJ	93/93 (100%)	93 (100%)	0	100	100
24	Sa	71/74 (96%)	71 (100%)	0	100	100
25	Sb	110/110 (100%)	110 (100%)	0	100	100
26	Sc	119/119 (100%)	118 (99%)	1 (1%)	79	84
27	Sd	102/112 (91%)	102 (100%)	0	100	100
28	SK	67/73 (92%)	67 (100%)	0	100	100
29	Se	82/83 (99%)	81 (99%)	1 (1%)	67	78
30	Sf	70/70 (100%)	70 (100%)	0	100	100
31	SM	47/47 (100%)	47 (100%)	0	100	100
32	Sg	48/49 (98%)	48 (100%)	0	100	100
33	SN	56/63 (89%)	56 (100%)	0	100	100
34	SO	250/257 (97%)	250 (100%)	0	100	100
35	SL	55/56 (98%)	55 (100%)	0	100	100
38	So	298/308 (97%)	297 (100%)	1 (0%)	91	92
43	LD	190/193 (98%)	190 (100%)	0	100	100
44	LE	318/322 (99%)	317 (100%)	1 (0%)	91	92
45	LF	288/288 (100%)	287 (100%)	1 (0%)	91	92
46	LG	241/243 (99%)	241 (100%)	0	100	100
47	LH	139/154 (90%)	138 (99%)	1 (1%)	81	86
48	LI	186/186 (100%)	186 (100%)	0	100	100
49	LJ	187/191 (98%)	187 (100%)	0	100	100
50	LK	168/171 (98%)	168 (100%)	0	100	100
51	LL	185/185 (100%)	185 (100%)	0	100	100
52	LM	145/147 (99%)	145 (100%)	0	100	100
53	LN	154/154 (100%)	154 (100%)	0	100	100
54	LO	107/107 (100%)	107 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
55	LP	175/175 (100%)	174 (99%)	1 (1%)	84	88
56	LQ	160/160 (100%)	160 (100%)	0	100	100
57	LR	138/145 (95%)	138 (100%)	0	100	100
58	LS	150/150 (100%)	149 (99%)	1 (1%)	81	86
59	LT	152/153 (99%)	152 (100%)	0	100	100
60	LU	155/155 (100%)	155 (100%)	0	100	100
61	LV	135/136 (99%)	135 (100%)	0	100	100
62	LW	87/87 (100%)	87 (100%)	0	100	100
63	LX	104/104 (100%)	104 (100%)	0	100	100
64	LY	54/57 (95%)	54 (100%)	0	100	100
65	LZ	104/105 (99%)	104 (100%)	0	100	100
66	La	108/108 (100%)	107 (99%)	1 (1%)	75	83
67	Lb	112/115 (97%)	112 (100%)	0	100	100
68	Lc	117/118 (99%)	117 (100%)	0	100	100
69	Ld	46/46 (100%)	46 (100%)	0	100	100
70	Le	81/81 (100%)	81 (100%)	0	100	100
71	Lf	92/96 (96%)	92 (100%)	0	100	100
72	Lg	108/109 (99%)	108 (100%)	0	100	100
73	Lh	90/90 (100%)	89 (99%)	1 (1%)	70	79
74	Li	95/95 (100%)	95 (100%)	0	100	100
75	Lj	104/104 (100%)	103 (99%)	1 (1%)	73	81
76	Lk	80/81 (99%)	79 (99%)	1 (1%)	65	76
77	Ll	67/67 (100%)	64 (96%)	3 (4%)	23	48
78	Lm	68/68 (100%)	68 (100%)	0	100	100
79	Ln	45/45 (100%)	45 (100%)	0	100	100
80	Lo	45/47 (96%)	45 (100%)	0	100	100
81	Lp	22/23 (96%)	22 (100%)	0	100	100
82	Lq	87/88 (99%)	87 (100%)	0	100	100
83	Lr	71/71 (100%)	70 (99%)	1 (1%)	62	75
84	Ls	118/129 (92%)	117 (99%)	1 (1%)	79	84
All	All	9584/9771 (98%)	9558 (100%)	26 (0%)	90	92

5 of 26 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
47	LH	156	LYS
66	La	74	TYR
83	Lr	45	LYS
58	LS	31	LYS
73	Lh	20	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 140 such sidechains are listed below:

Mol	Chain	Res	Type
67	Lb	122	HIS
68	Lc	62	HIS
74	Li	61	GLN
25	Sb	80	ASN
25	Sb	56	HIS

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	S2	1768/1800 (98%)	533 (30%)	52 (2%)
2	Sl	5/6 (83%)	1 (20%)	0
36	Sm	75/76 (98%)	35 (46%)	0
37	Sn	74/75 (98%)	23 (31%)	0
40	LA	3180/3394 (93%)	717 (22%)	42 (1%)
41	LB	120/121 (99%)	15 (12%)	1 (0%)
42	LC	157/158 (99%)	32 (20%)	3 (1%)
All	All	5379/5630 (95%)	1356 (25%)	98 (1%)

5 of 1356 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	S2	2	A
1	S2	4	C
1	S2	14	C
1	S2	25	C
1	S2	26	A

5 of 98 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
40	LA	849	C
40	LA	1815	U
40	LA	896	A
40	LA	1307	G
40	LA	2445	A

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

1 non-standard protein/DNA/RNA residue is modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
84	5CT	Ls	51	84	13,14,15	2.31	1 (7%)	9,15,17	2.26	4 (44%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
84	5CT	Ls	51	84	1/1/2/4	5/13/14/16	-

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
84	Ls	51	5CT	O1-C2	-8.19	1.18	1.43

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
84	Ls	51	5CT	O1-C2-C3	3.62	119.57	109.21
84	Ls	51	5CT	O1-C2-C1	3.37	120.84	109.32
84	Ls	51	5CT	C3-C2-C1	3.26	119.58	112.16
84	Ls	51	5CT	C1-NZ-CE	-2.69	107.41	113.42

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
84	Ls	51	5CT	C2

All (5) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
84	Ls	51	5CT	C2-C1-NZ-CE
84	Ls	51	5CT	NZ-C1-C2-C3
84	Ls	51	5CT	O1-C2-C3-C4
84	Ls	51	5CT	C2-C3-C4-N1
84	Ls	51	5CT	CE-CD-CG-CB

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
84	Ls	51	5CT	1	0

5.5 Carbohydrates (i)

There are no oligosaccharides 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 (i)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
86	A	13

The worst 5 of 13 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	1104:ALA	C	1124:GLY	N	40.36
1	A	997:ALA	C	1019:ALA	N	35.44
1	A	1917:ALA	C	2000:ALA	N	14.67
1	A	1044:ALA	C	1055:ALA	N	12.76
1	A	1074:ALA	C	1084:ALA	N	11.98

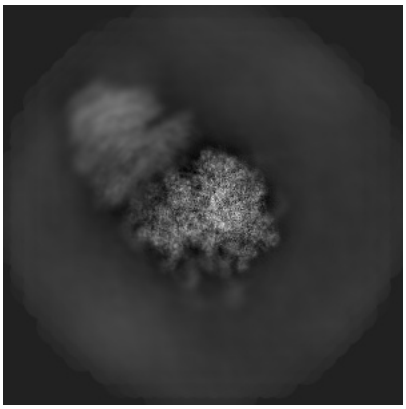
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-12534. These allow visual inspection of the internal detail of the map and identification of artifacts.

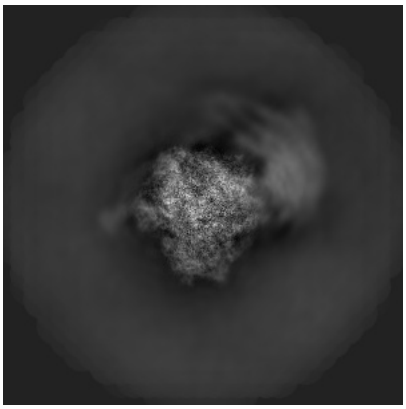
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

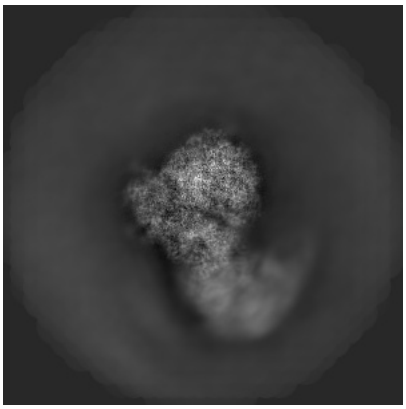
6.1.1 Primary map



X

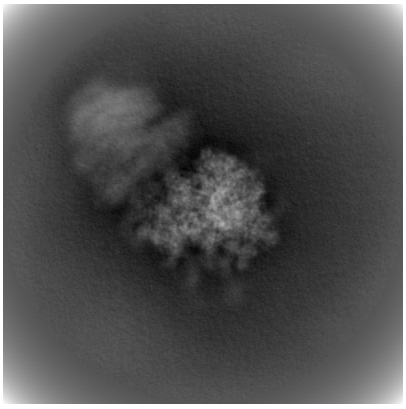


Y

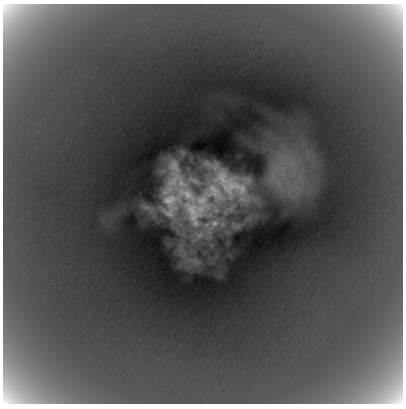


Z

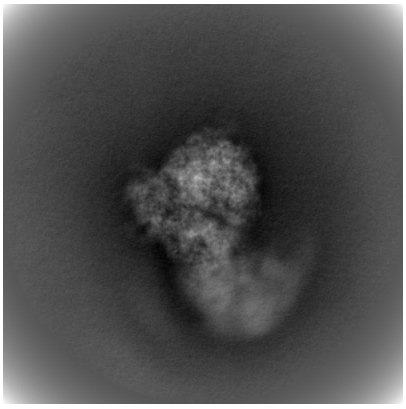
6.1.2 Raw map



X



Y

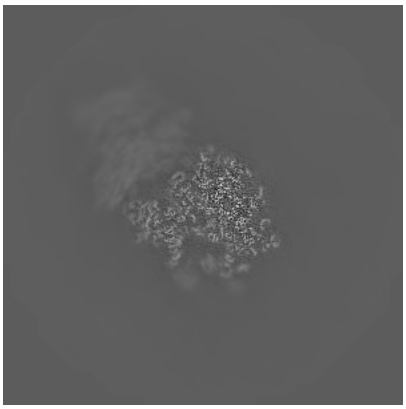


Z

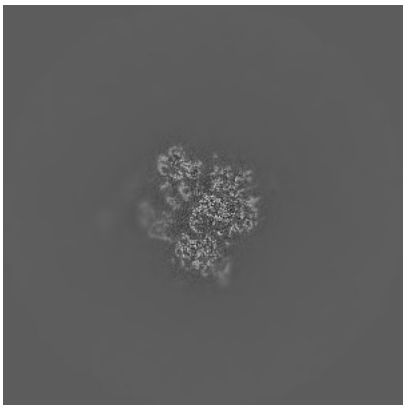
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

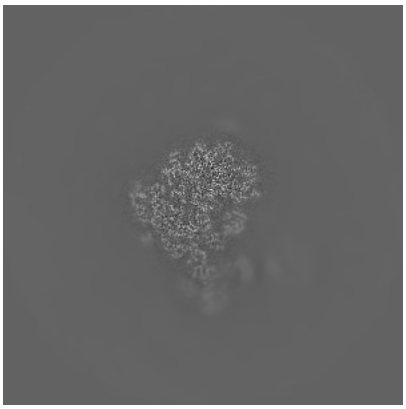
6.2.1 Primary map



X Index: 350

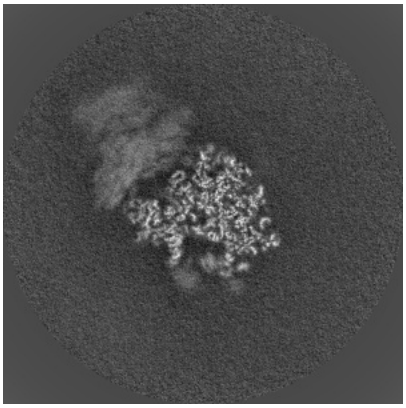


Y Index: 350

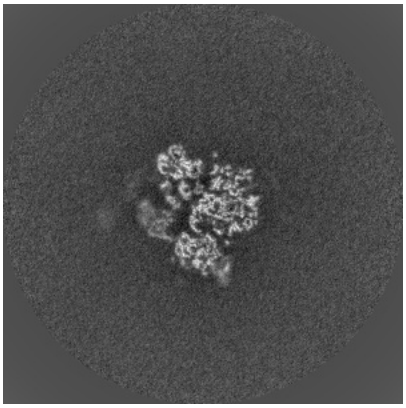


Z Index: 350

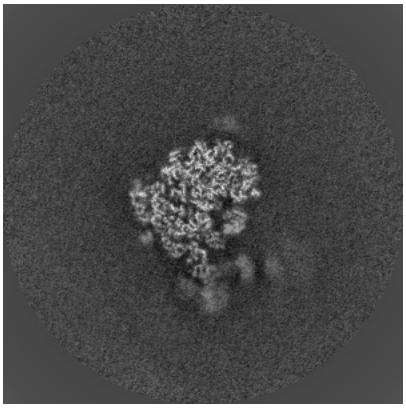
6.2.2 Raw map



X Index: 350



Y Index: 350

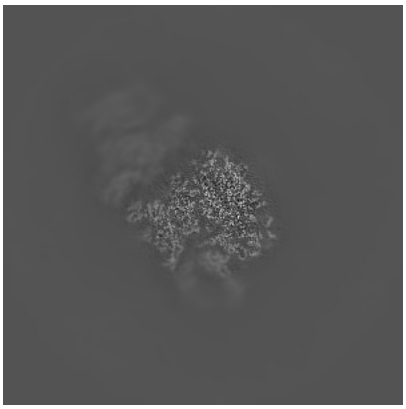


Z Index: 350

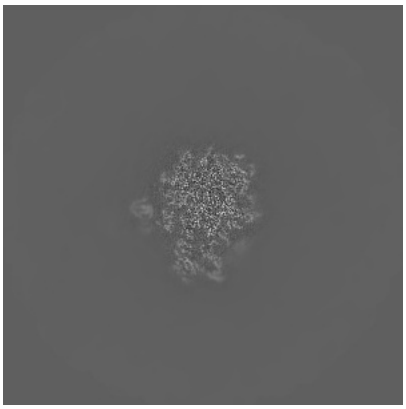
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

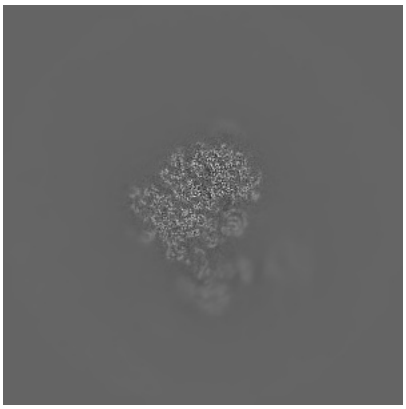
6.3.1 Primary map



X Index: 338

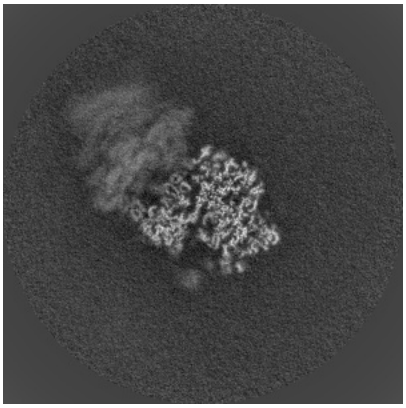


Y Index: 381

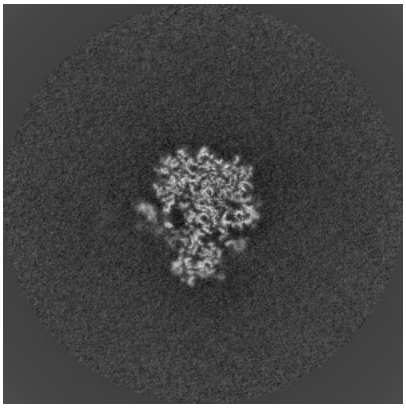


Z Index: 356

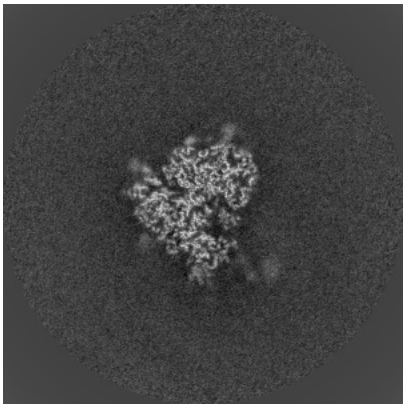
6.3.2 Raw map



X Index: 360



Y Index: 369

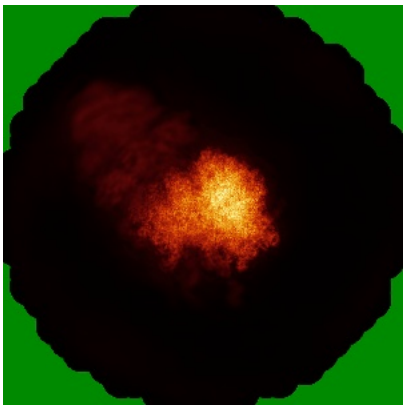


Z Index: 334

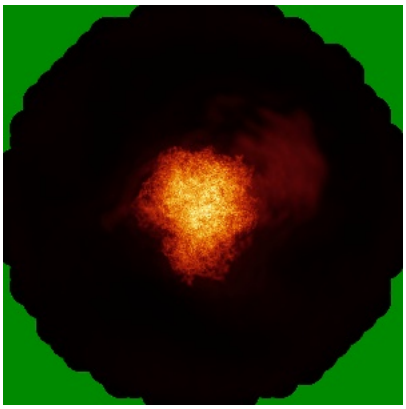
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

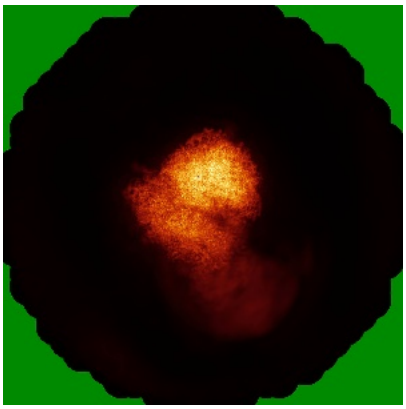
6.4.1 Primary map



X

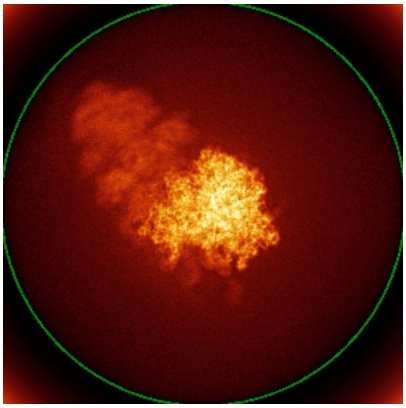


Y

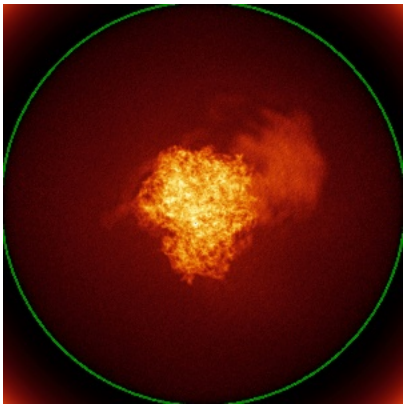


Z

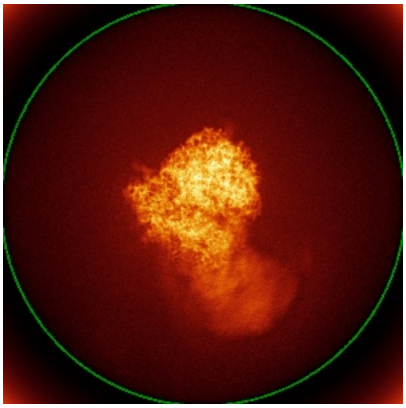
6.4.2 Raw map



X



Y



Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.03. 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.

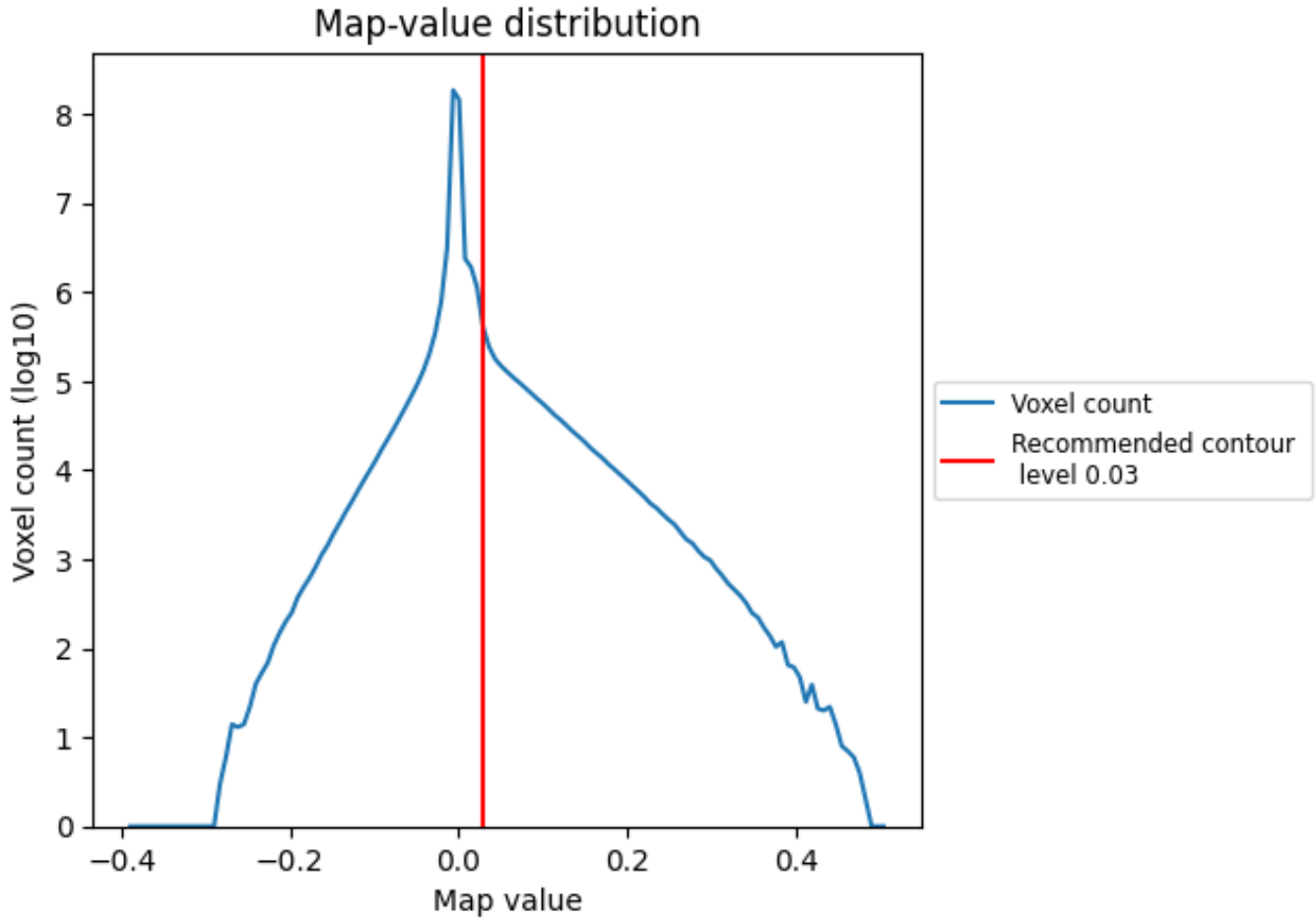
6.6 Mask visualisation (i)

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

7 Map analysis

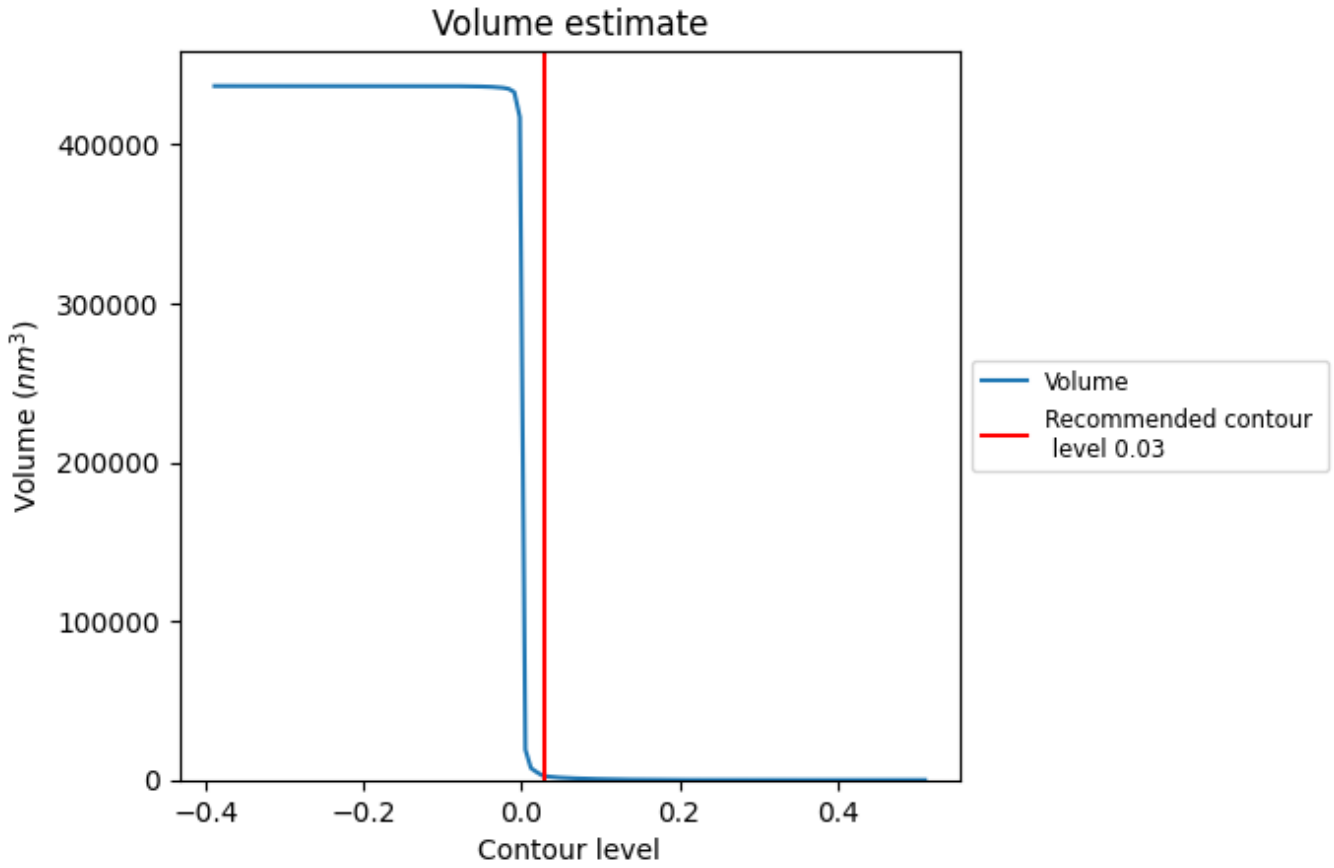
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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.

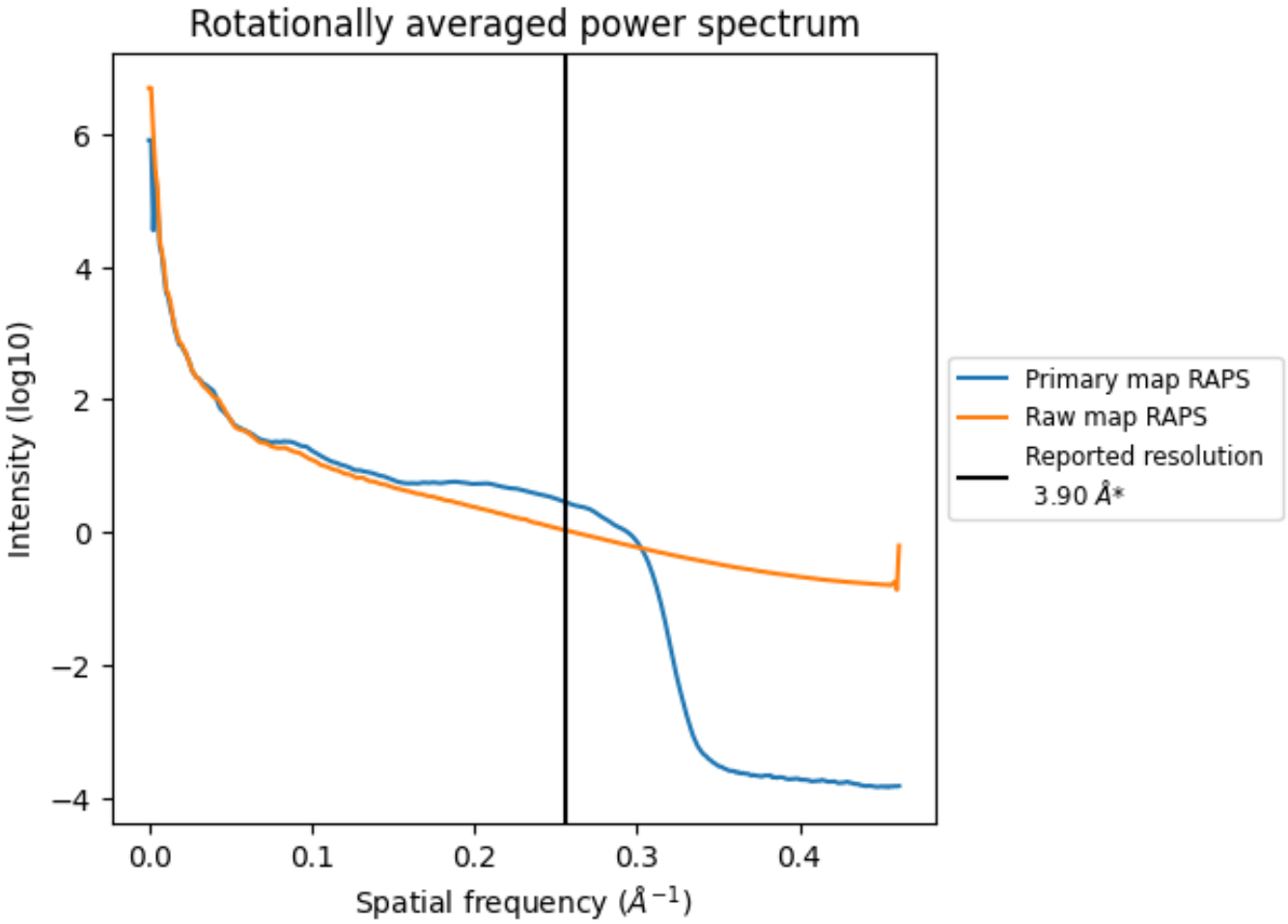
7.2 Volume estimate (i)



The volume at the recommended contour level is 2499 nm^3; this corresponds to an approximate mass of 2257 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)

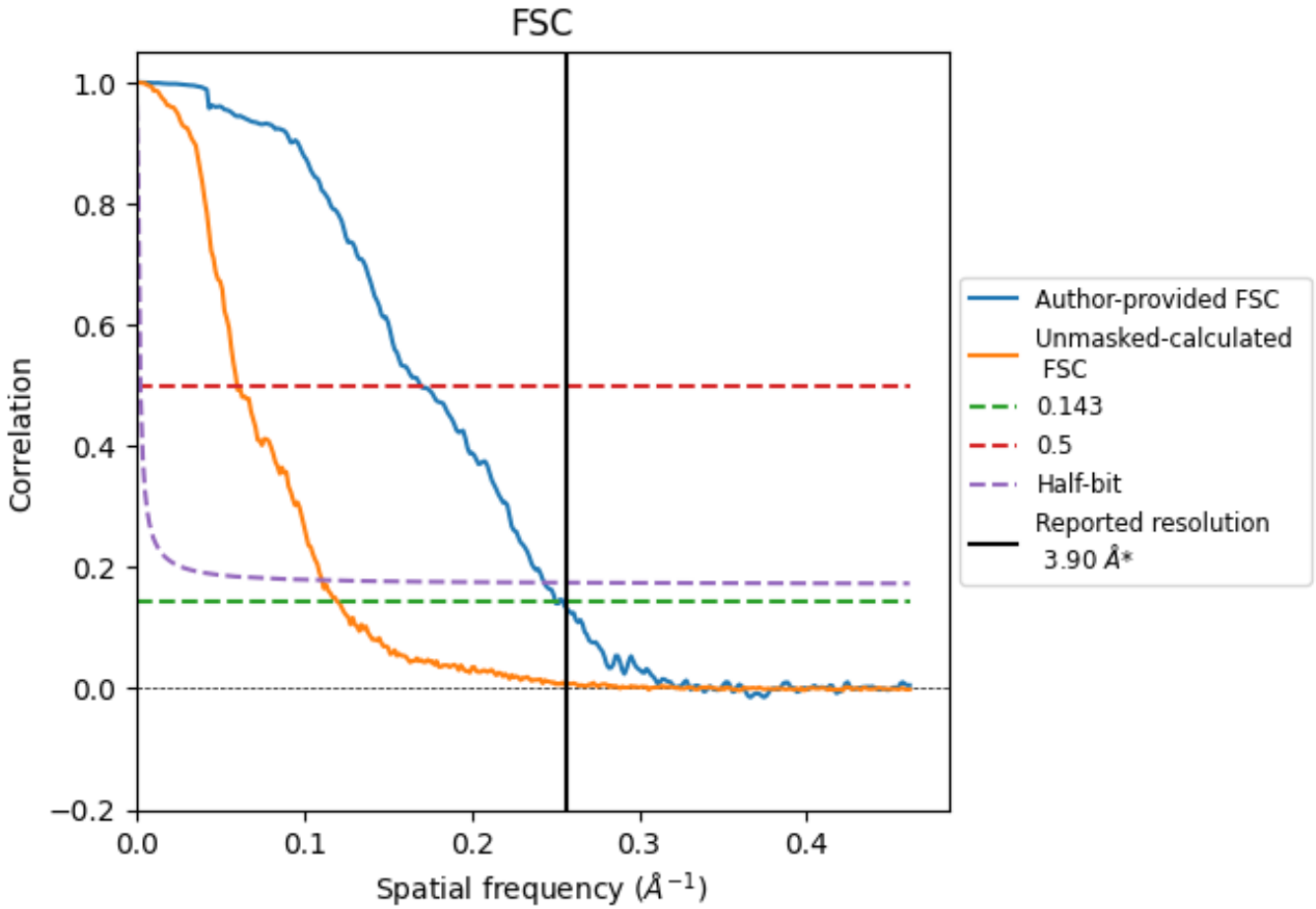


*Reported resolution corresponds to spatial frequency of 0.256 Å^{-1}

8 Fourier-Shell correlation

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



*Reported resolution corresponds to spatial frequency of 0.256 Å^{-1}

8.2 Resolution estimates (i)

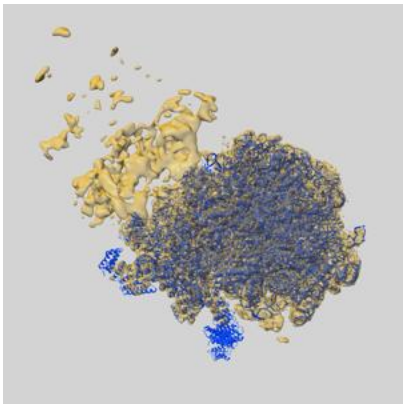
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.90	-	-
Author-provided FSC curve	4.00	5.90	4.11
Unmasked-calculated*	8.33	16.61	9.03

*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 8.33 differs from the reported value 3.9 by more than 10 %

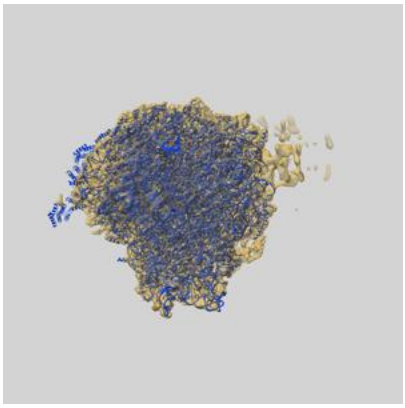
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-12534 and PDB model 7NRC. Per-residue inclusion information can be found in section 3 on page 20.

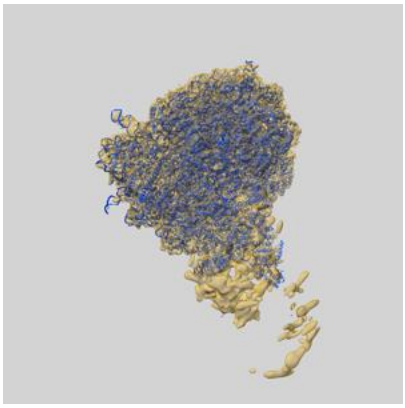
9.1 Map-model overlay



X



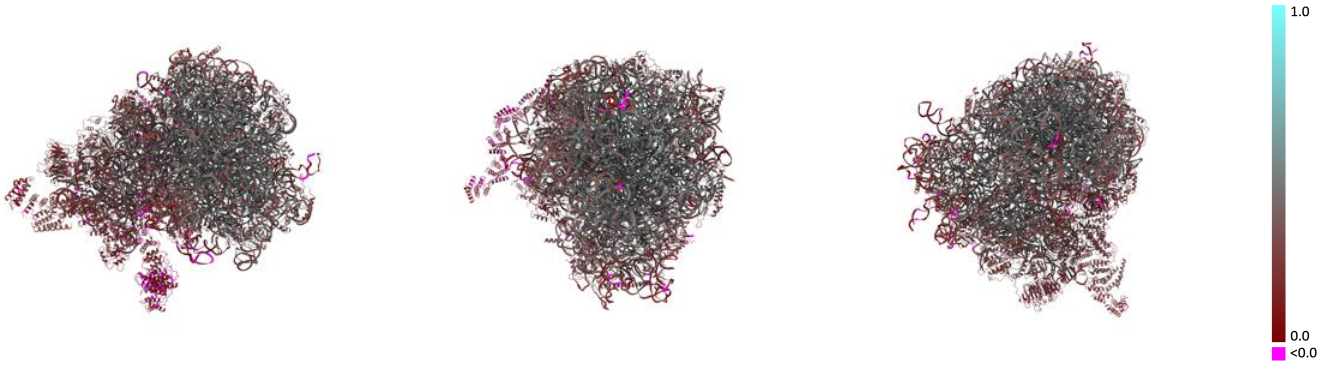
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.03 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.

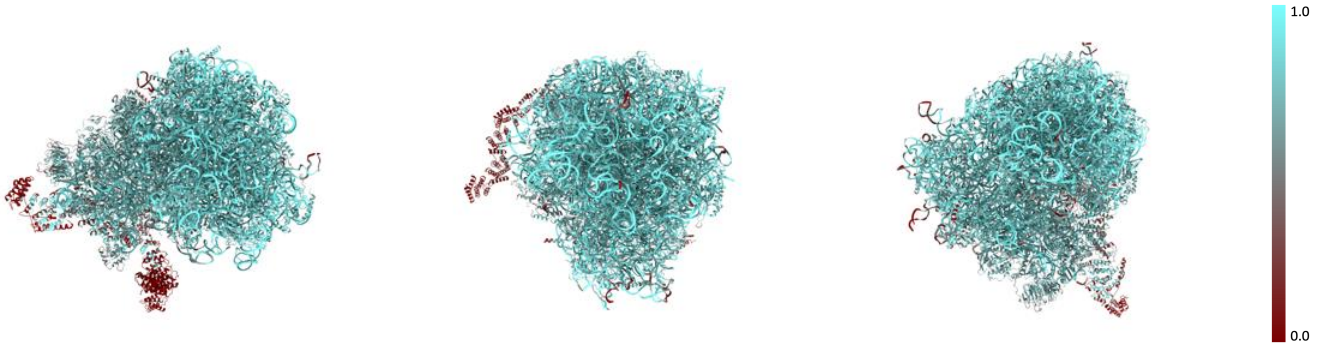
9.2 Q-score mapped to coordinate model (i)



X Y Z

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.

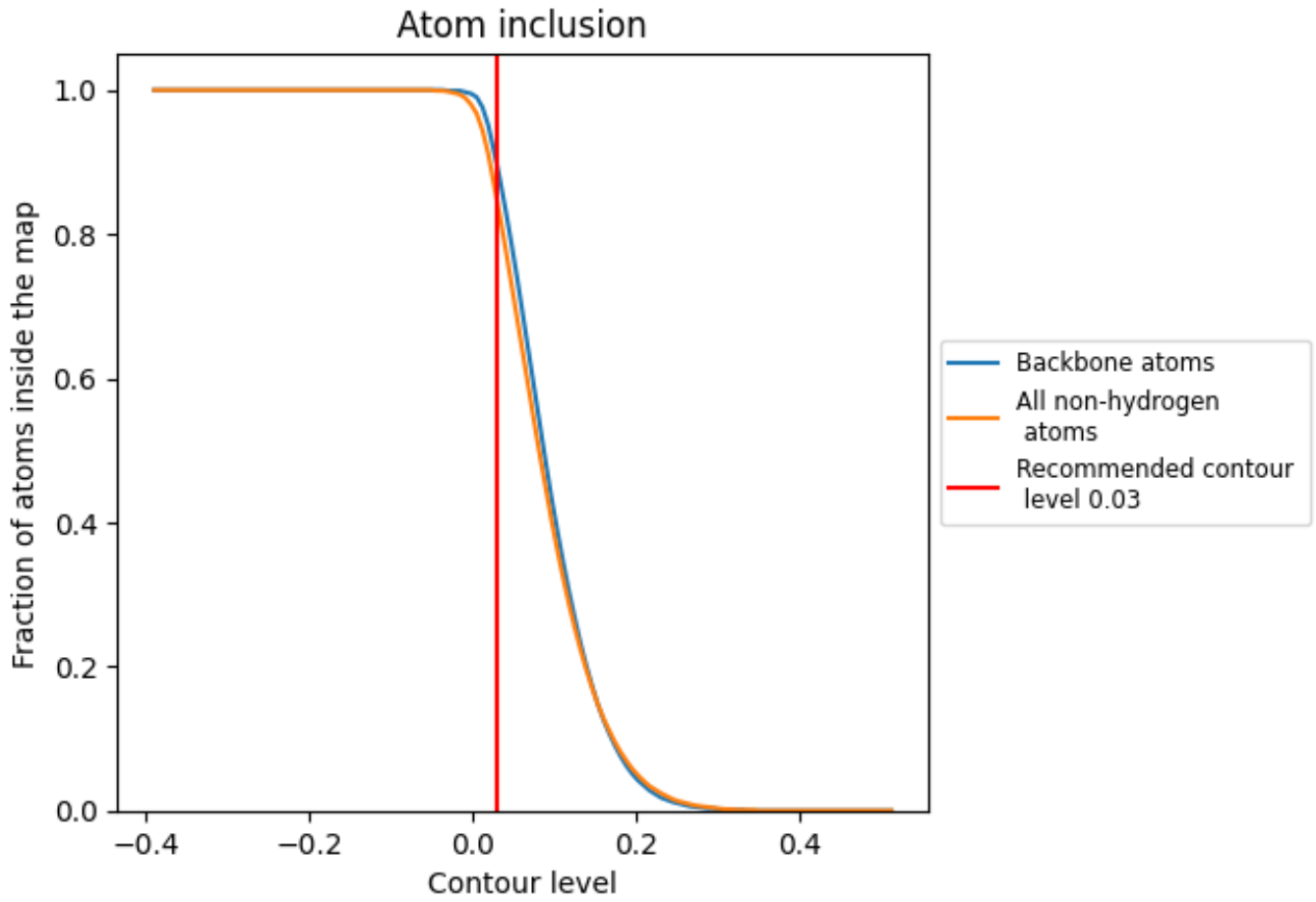
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

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 (0.03).

9.4 Atom inclusion (i)



At the recommended contour level, 89% of all backbone atoms, 84% 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 (0.03) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8450	0.3780
A	0.2820	0.1550
LA	0.9450	0.4340
LB	0.9490	0.3610
LC	0.9520	0.4520
LD	0.8640	0.4660
LE	0.8640	0.4320
LF	0.8480	0.4070
LG	0.7670	0.2890
LH	0.8260	0.3730
LI	0.8670	0.4010
LJ	0.8090	0.3590
LK	0.8110	0.3720
LL	0.7860	0.3500
LM	0.6150	0.1650
LN	0.8410	0.3960
LO	0.8610	0.3760
LP	0.8800	0.4560
LQ	0.8740	0.4510
LR	0.8630	0.4320
LS	0.8550	0.4130
LT	0.7830	0.3720
LU	0.8390	0.4170
LV	0.8430	0.4050
LW	0.7860	0.3220
LX	0.8210	0.4320
LY	0.8500	0.4500
LZ	0.8320	0.4090
La	0.8350	0.3670
Lb	0.8310	0.3800
Lc	0.8660	0.4240
Ld	0.8520	0.3950
Le	0.8040	0.3710
Lf	0.8120	0.4100
Lg	0.8670	0.4440

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Chain	Atom inclusion	Q-score
Lh	0.8840	0.4680
Li	0.8060	0.4110
Lj	0.8220	0.3790
Lk	0.8090	0.3610
Ll	0.8950	0.4670
Lm	0.7860	0.3300
Ln	0.8750	0.4410
Lo	0.8260	0.3990
Lp	0.8030	0.4130
Lq	0.8350	0.4320
Lr	0.8280	0.4270
Ls	0.6430	0.3290
Lt	0.8380	0.2970
S2	0.9020	0.3700
SA	0.6950	0.3000
SB	0.6820	0.2860
SC	0.6760	0.2400
SD	0.5780	0.1730
SE	0.7390	0.2740
SF	0.7310	0.3150
SG	0.6800	0.2890
SH	0.7010	0.2750
SI	0.6770	0.2650
SJ	0.7050	0.2900
SK	0.6080	0.2620
SL	0.6960	0.3260
SM	0.7850	0.3670
SN	0.5750	0.1420
SO	0.6180	0.2390
SP	0.7100	0.3030
SQ	0.6700	0.3000
SR	0.7780	0.3720
SS	0.7970	0.3580
ST	0.7680	0.3090
SU	0.6480	0.2620
SV	0.8290	0.3660
SW	0.7500	0.3100
SX	0.7890	0.3990
SY	0.7630	0.3580
SZ	0.7420	0.3590
Sa	0.7410	0.3490
Sb	0.8140	0.3970

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Chain	Atom inclusion	Q-score
Sc	0.8090	0.4200
Sd	0.7740	0.3140
Se	0.8140	0.3980
Sf	0.7390	0.3380
Sg	0.7490	0.3190
Sl	0.9470	0.4400
Sm	0.8870	0.3140
Sn	0.8950	0.3330
So	0.5370	0.2640
Sp	0.7580	0.2700