wwPDB EM Validation Summary Report

Feb 9, 2026 – 05:23 am GMT

PDB ID	:	9QLQ / pdb_00009qlq
EMDB ID	:	EMD-53232
Title	:	NMT1-NAC bound human RNC with full length ARF1 - alternative State
Authors	:	Denk, T.; Berninghausen, O.; Beckmann, R.
Deposited on	:	2025-03-21
Resolution	:	2.57 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:

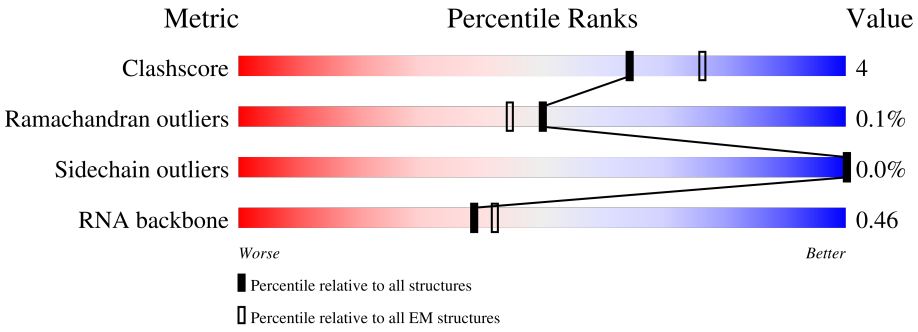
EMDB validation analysis	:	0.0.1.dev131
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.48

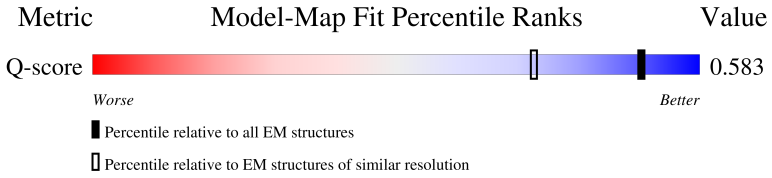
1 Overall quality at a glance

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

The reported resolution of this entry is 2.57 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	7615 (2.07 - 3.07)

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	CM	952	99%
2	CP	75	59% 37%
3	CR	437	83% 11% 5%

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Mol	Chain	Length	Quality of chain
4	CZ	217	18% 81% 19%
5	L5	5070	49% 20% 28%
6	L7	121	80% 18%
7	L8	157	69% 25%
8	LA	257	84% 12%
9	LB	403	87% 11%
10	LC	427	78% 7% 15%
11	LD	297	89% 10%
12	LE	288	65% 11% 24%
13	LF	248	78% 12% 9%
14	LG	266	75% 11% 14%
15	LH	192	86% 13%
16	LI	214	81% 15%
17	LJ	178	84% 10% 5%
18	LL	211	83% 13%
19	LM	215	60% 35%
20	LN	204	85% 15%
21	LO	203	86% 13%
22	LP	184	71% 12% 17%
23	LQ	188	90% 9%
24	LR	196	81% 9% 10%
25	LS	176	89% 11%
26	LT	160	85% 14%
27	LU	128	66% 13% 21%
28	LV	140	84% 9% 6%

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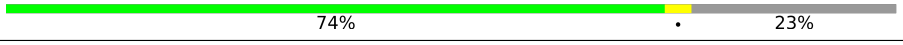
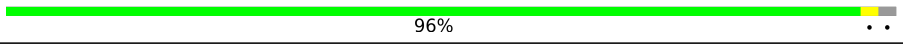
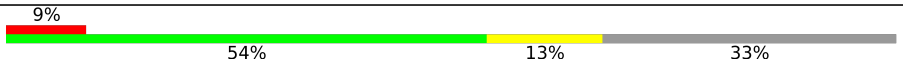
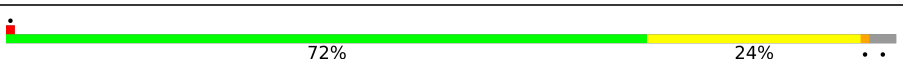
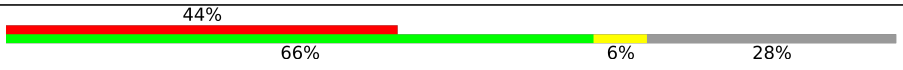
Mol	Chain	Length	Quality of chain
29	LW	157	
30	LX	156	
31	LY	145	
32	LZ	136	
33	La	148	
34	Lb	159	
35	Lc	115	
36	Ld	125	
37	Le	135	
38	Lf	110	
39	Lg	117	
40	Lh	123	
41	Li	105	
42	Lj	97	
43	Lk	70	
44	Ll	51	
45	Lm	128	
46	Ln	25	
47	Lo	106	
48	Lp	92	
49	Lr	137	
50	Ls	317	
51	Lt	165	
52	NA	215	
53	NB	162	

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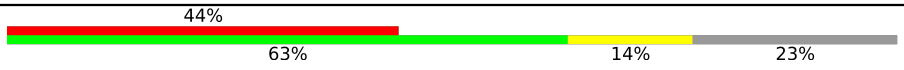
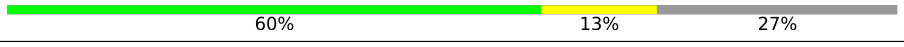
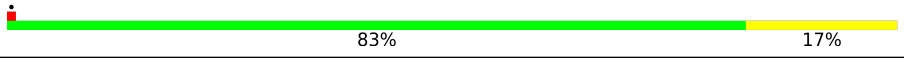
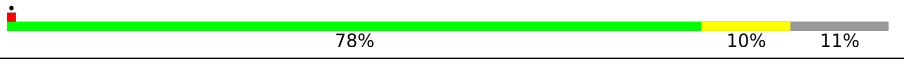
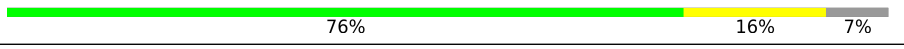
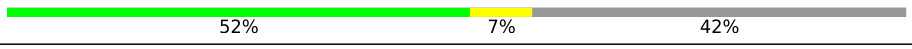
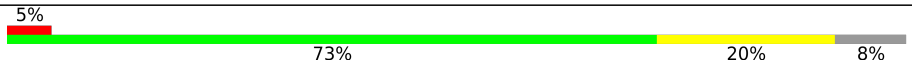
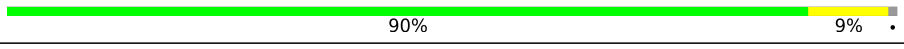
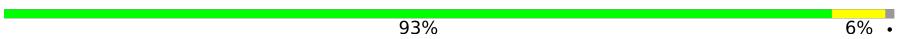
Mol	Chain	Length	Quality of chain
54	NM	496	
55	S2	1869	
56	SA	295	
57	SB	264	
58	SC	293	
59	SD	243	
60	SE	263	
61	SF	204	
62	SG	249	
63	SH	194	
64	SI	208	
65	SJ	194	
66	SK	165	
67	SL	158	
68	SM	132	
69	SN	151	
70	SO	151	
71	SP	145	
72	SQ	146	
73	SR	135	
74	SS	152	
75	ST	145	
76	SU	119	
77	SV	83	
78	SW	130	

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Mol	Chain	Length	Quality of chain
79	SX	143	
80	SY	133	
81	SZ	125	
82	Sa	115	
83	Sb	84	
84	Sc	69	
85	Sd	56	
86	Se	133	
87	Sf	156	
88	Sg	317	

2 Entry composition (i)

There are 91 unique types of molecules in this entry. The entry contains 223423 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 Full length ARF1-V5-hCMV staller mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	CM	12	Total	C	N	O	P	0	0
			247	111	37	87	12		

- Molecule 2 is a RNA chain called prolyl-tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	CP	75	Total	C	N	O	P	0	0
			1602	713	284	530	75		

- Molecule 3 is a protein called Eukaryotic peptide chain release factor subunit 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	CR	414	Total	C	N	O	S	0	0
			3269	2080	557	621	11		

- Molecule 4 is a protein called ADP-ribosylation factor 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	CZ	216	Total	C	N	O	S	0	0
			1627	1033	282	304	8		

There are 42 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
CZ	1	GLN	-	expression tag	UNP P84077
CZ	4	SER	ILE	conflict	UNP P84077
CZ	6	SER	ALA	conflict	UNP P84077
CZ	7	LYS	ASN	conflict	UNP P84077
CZ	8	PRO	LEU	conflict	UNP P84077
CZ	9	ARG	PHE	conflict	UNP P84077
CZ	182	GLY	-	expression tag	UNP P84077
CZ	183	LYS	-	expression tag	UNP P84077
CZ	184	PRO	-	expression tag	UNP P84077

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Chain	Residue	Modelled	Actual	Comment	Reference
CZ	185	ILE	-	expression tag	UNP P84077
CZ	186	PRO	-	expression tag	UNP P84077
CZ	187	ASN	-	expression tag	UNP P84077
CZ	188	PRO	-	expression tag	UNP P84077
CZ	189	LEU	-	expression tag	UNP P84077
CZ	190	LEU	-	expression tag	UNP P84077
CZ	191	GLY	-	expression tag	UNP P84077
CZ	192	LEU	-	expression tag	UNP P84077
CZ	193	ASP	-	expression tag	UNP P84077
CZ	194	SER	-	expression tag	UNP P84077
CZ	195	THR	-	expression tag	UNP P84077
CZ	196	MET	-	expression tag	UNP P84077
CZ	197	GLU	-	expression tag	UNP P84077
CZ	198	PRO	-	expression tag	UNP P84077
CZ	199	LEU	-	expression tag	UNP P84077
CZ	200	VAL	-	expression tag	UNP P84077
CZ	201	LEU	-	expression tag	UNP P84077
CZ	202	SER	-	expression tag	UNP P84077
CZ	203	ALA	-	expression tag	UNP P84077
CZ	204	LYS	-	expression tag	UNP P84077
CZ	205	LYS	-	expression tag	UNP P84077
CZ	206	LEU	-	expression tag	UNP P84077
CZ	207	SER	-	expression tag	UNP P84077
CZ	208	SER	-	expression tag	UNP P84077
CZ	209	LEU	-	expression tag	UNP P84077
CZ	210	LEU	-	expression tag	UNP P84077
CZ	211	THR	-	expression tag	UNP P84077
CZ	212	CYS	-	expression tag	UNP P84077
CZ	213	LYS	-	expression tag	UNP P84077
CZ	214	TYR	-	expression tag	UNP P84077
CZ	215	ILE	-	expression tag	UNP P84077
CZ	216	PRO	-	expression tag	UNP P84077
CZ	217	PRO	-	expression tag	UNP P84077

- Molecule 5 is a RNA chain called 28S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	L5	3648	Total	C	N	O	P	0	0
			78199	34823	14307	25422	3647		

- Molecule 6 is a RNA chain called 5S rRNA.

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

- Molecule 7 is a RNA chain called 5.8S rRNA.

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

- Molecule 8 is a protein called 60S ribosomal protein L8.

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

- Molecule 9 is a protein called 60S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	LB	395	Total	C	N	O	S	0	0
			3183	2027	597	545	14		

- Molecule 10 is a protein called 60S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	LC	364	Total	C	N	O	S	0	0
			2884	1814	576	479	15		

- Molecule 11 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	LD	293	Total	C	N	O	S	0	0
			2361	1496	430	421	14		

- Molecule 12 is a protein called Large ribosomal subunit protein eL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	LE	219	Total	C	N	O	S	0	0
			1754	1129	334	287	4		

- Molecule 13 is a protein called Large ribosomal subunit protein uL30.

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

- Molecule 14 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	LG	229	Total	C	N	O	S	0	0
			1818	1157	351	306	4		

- Molecule 15 is a protein called 60S ribosomal protein L9.

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

- Molecule 16 is a protein called Ribosomal protein uL16-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	LI	207	Total	C	N	O	S	0	0
			1666	1059	323	270	14		

- Molecule 17 is a protein called 60S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	LJ	169	Total	C	N	O	S	0	0
			1329	841	250	232	6		

- Molecule 18 is a protein called 60S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	LL	205	Total	C	N	O	S	0	0
			1630	1020	340	266	4		

- Molecule 19 is a protein called 60S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	LM	139	Total	C	N	O	S	0	0
			1122	720	216	179	7		

- Molecule 20 is a protein called 60S ribosomal protein L15.

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

- Molecule 21 is a protein called 60S ribosomal protein L13a.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	LO	200	Total	C	N	O	S	0	0
			1633	1053	318	257	5		

- Molecule 22 is a protein called 60S ribosomal protein L17.

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

- Molecule 23 is a protein called 60S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	LQ	187	Total	C	N	O	S	0	0
			1502	939	313	245	5		

- Molecule 24 is a protein called 60S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	LR	176	Total	C	N	O	S	0	0
			1452	898	318	227	9		

- Molecule 25 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	LS	175	Total	C	N	O	S	0	0
			1452	925	283	234	10		

- Molecule 26 is a protein called 60S ribosomal protein L21.

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

- Molecule 27 is a protein called 60S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	LU	101	Total	C	N	O	S	0	0
			806	520	141	143	2		

- Molecule 28 is a protein called 60S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	LV	131	Total	C	N	O	S	0	0
			971	613	183	170	5		

- Molecule 29 is a protein called 60S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	LW	115	Total	C	N	O	S	0	0
			808	506	160	139	3		

- Molecule 30 is a protein called 60S ribosomal protein L23a.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	LX	120	Total	C	N	O	S	0	0
			981	627	184	169	1		

- Molecule 31 is a protein called 60S ribosomal protein L26.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	LY	134	Total	C	N	O	S	0	0
			1111	697	225	186	3		

- Molecule 32 is a protein called 60S ribosomal protein L27.

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

- Molecule 33 is a protein called 60S ribosomal protein L27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	La	147	Total	C	N	O	S	0	0
			1154	731	236	184	3		

- Molecule 34 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	Lb	75	Total	C	N	O	S	0	0
			590	367	123	97	3		

- Molecule 35 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	Lc	97	Total	C	N	O	S	0	0
			742	473	130	133	6		

- Molecule 36 is a protein called 60S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	Ld	107	Total	C	N	O	S	0	0
			874	554	171	147	2		

- Molecule 37 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	Le	128	Total	C	N	O	S	0	0
			1049	664	215	165	5		

- Molecule 38 is a protein called 60S ribosomal protein L35a.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	Lf	109	Total	C	N	O	S	0	0
			872	552	173	144	3		

- Molecule 39 is a protein called 60S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	Lg	114	Total	C	N	O	S	0	0
			889	557	184	142	6		

- Molecule 40 is a protein called 60S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	Lh	121	Total	C	N	O	S	0	0
			1006	635	203	167	1		

- Molecule 41 is a protein called 60S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	Li	102	Total	C	N	O	S	0	0
			813	510	176	123	4		

- Molecule 42 is a protein called Large ribosomal subunit protein eL37.

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

- Molecule 43 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	Lk	69	Total	C	N	O	S	0	0
			542	350	100	91	1		

- Molecule 44 is a protein called 60S ribosomal protein L39.

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

- Molecule 45 is a protein called Ubiquitin-60S ribosomal protein L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	Lm	52	Total	C	N	O	S	0	0
			425	264	90	65	6		

- Molecule 46 is a protein called 60S ribosomal protein L41.

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

- Molecule 47 is a protein called 60S ribosomal protein L36a.

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

- Molecule 48 is a protein called 60S ribosomal protein L37a.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	Lp	91	Total	C	N	O	S	0	0
			696	440	135	114	7		

- Molecule 49 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	Lr	125	Total	C	N	O	S	0	0
			997	618	207	168	4		

- Molecule 50 is a protein called 60S acidic ribosomal protein P0.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	Ls	212	Total	C	N	O	S	0	0
			1640	1042	284	305	9		

- Molecule 51 is a protein called Large ribosomal subunit protein uL11.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	Lt	160	Total	C	N	O	S	0	0
			1208	749	226	229	4		

- Molecule 52 is a protein called Nascent polypeptide-associated complex subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	NA	70	Total	C	N	O	S	0	0
			553	349	101	102	1		

- Molecule 53 is a protein called Isoform 2 of Transcription factor BTF3.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	NB	117	Total	C	N	O	S	0	0
			901	560	161	177	3		

- Molecule 54 is a protein called Glycylpeptide N-tetradecanoyltransferase 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	NM	380	Total	C	N	O	S	3	0
			3122	2024	527	555	16		

- Molecule 55 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	S2	1713	Total	C	N	O	P	0	0
			36562	16320	6564	11966	1712		

- Molecule 56 is a protein called 40S ribosomal protein SA.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	SA	216	Total	C	N	O	S	0	0
			1671	1068	297	298	8		

- Molecule 57 is a protein called 40S ribosomal protein S3a.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	SB	213	Total	C	N	O	S	0	0
			1718	1092	308	304	14		

- Molecule 58 is a protein called 40S ribosomal protein S2.

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

- Molecule 59 is a protein called 40S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	SD	223	Total	C	N	O	S	0	0
			1594	1023	291	273	7		

- Molecule 60 is a protein called Small ribosomal subunit protein eS4, X isoform.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	SE	262	Total	C	N	O	S	0	0
			1972	1270	370	324	8		

- Molecule 61 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	SF	181	Total	C	N	O	S	0	0
			1403	879	269	248	7		

- Molecule 62 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	SG	231	Total	C	N	O	S	0	0
			1634	1026	332	269	7		

- Molecule 63 is a protein called 40S ribosomal protein S7.

Mol	Chain	Residues	Atoms				AltConf	Trace
63	SH	183	Total	C	N	O	0	0
			1274	819	242	213		

- Molecule 64 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	SI	206	Total	C	N	O	S	0	0
			1574	989	308	272	5		

- Molecule 65 is a protein called 40S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	SJ	179	Total	C	N	O	S	0	0
			1431	915	290	224	2		

- Molecule 66 is a protein called 40S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	SK	96	Total	C	N	O	S	0	0
			726	479	127	115	5		

- Molecule 67 is a protein called 40S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	SL	144	Total	C	N	O	S	0	0
			1143	730	213	194	6		

- Molecule 68 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	SM	122	Total	C	N	O	S	0	0
			950	596	168	177	9		

- Molecule 69 is a protein called 40S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	SN	150	Total	C	N	O	S	0	0
			1182	758	226	197	1		

- Molecule 70 is a protein called 40S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	SO	134	Total	C	N	O	S	0	0
			969	596	194	173	6		

- Molecule 71 is a protein called 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	SP	129	Total	C	N	O	S	0	0
			990	626	190	168	6		

- Molecule 72 is a protein called 40S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	SQ	142	Total	C	N	O	S	0	0
			1075	689	204	179	3		

- Molecule 73 is a protein called 40S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	SR	131	Total	C	N	O	S	0	0
			942	600	179	159	4		

- Molecule 74 is a protein called 40S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	SS	141	Total	C	N	O	S	0	0
			1130	712	232	185	1		

- Molecule 75 is a protein called 40S ribosomal protein S19.

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

- Molecule 76 is a protein called 40S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	SU	101	Total	C	N	O	S	0	0
			713	447	137	125	4		

- Molecule 77 is a protein called 40S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	SV	83	Total	C	N	O	S	0	0
			618	385	115	113	5		

- Molecule 78 is a protein called 40S ribosomal protein S15a.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	SW	129	Total	C	N	O	S	0	0
			1026	655	193	172	6		

- Molecule 79 is a protein called 40S ribosomal protein S23.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	SX	141	Total	C	N	O	S	0	0
			1078	682	212	181	3		

- Molecule 80 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	SY	123	Total	C	N	O	S	0	0
			927	588	183	152	4		

- Molecule 81 is a protein called 40S ribosomal protein S25.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	SZ	75	Total	C	N	O	S	0	0
			559	361	105	92	1		

- Molecule 82 is a protein called 40S ribosomal protein S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	Sa	99	Total	C	N	O	S	0	0
			781	487	165	124	5		

- Molecule 83 is a protein called 40S ribosomal protein S27.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	Sb	83	Total	C	N	O	S	0	0
			618	386	118	107	7		

- Molecule 84 is a protein called 40S ribosomal protein S28.

Mol	Chain	Residues	Atoms					AltConf	Trace
84	Sc	63	Total	C	N	O	S	0	0
			472	289	92	89	2		

- Molecule 85 is a protein called 40S ribosomal protein S29.

Mol	Chain	Residues	Atoms					AltConf	Trace
85	Sd	53	Total	C	N	O	S	0	0
			433	271	87	70	5		

- Molecule 86 is a protein called Ubiquitin-like FUBI-ribosomal protein eS30 fusion protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
86	Se	55	Total	C	N	O	S	0	0
			416	254	93	68	1		

- Molecule 87 is a protein called Ubiquitin.

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

- Molecule 88 is a protein called Receptor of activated protein C kinase 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
88	Sg	308	Total	C	N	O	S	0	0
			2180	1393	381	395	11		

- Molecule 89 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
89	CM	1	Total	Mg	0
			1	1	
89	L5	125	Total	Mg	0
			125	125	
89	L7	3	Total	Mg	0
			3	3	

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Mol	Chain	Residues	Atoms	AltConf
89	L8	3	Total Mg 3 3	0
89	LA	1	Total Mg 1 1	0
89	LC	1	Total Mg 1 1	0
89	LI	1	Total Mg 1 1	0
89	LN	1	Total Mg 1 1	0
89	LP	1	Total Mg 1 1	0
89	LV	1	Total Mg 1 1	0
89	Le	1	Total Mg 1 1	0
89	S2	52	Total Mg 52 52	0

- Molecule 90 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	AltConf
90	Lg	1	Total Zn 1 1	0
90	Lj	1	Total Zn 1 1	0
90	Lm	1	Total Zn 1 1	0
90	Lo	1	Total Zn 1 1	0
90	Lp	1	Total Zn 1 1	0
90	Sa	1	Total Zn 1 1	0
90	Sd	1	Total Zn 1 1	0
90	Sf	1	Total Zn 1 1	0

- Molecule 91 is water.

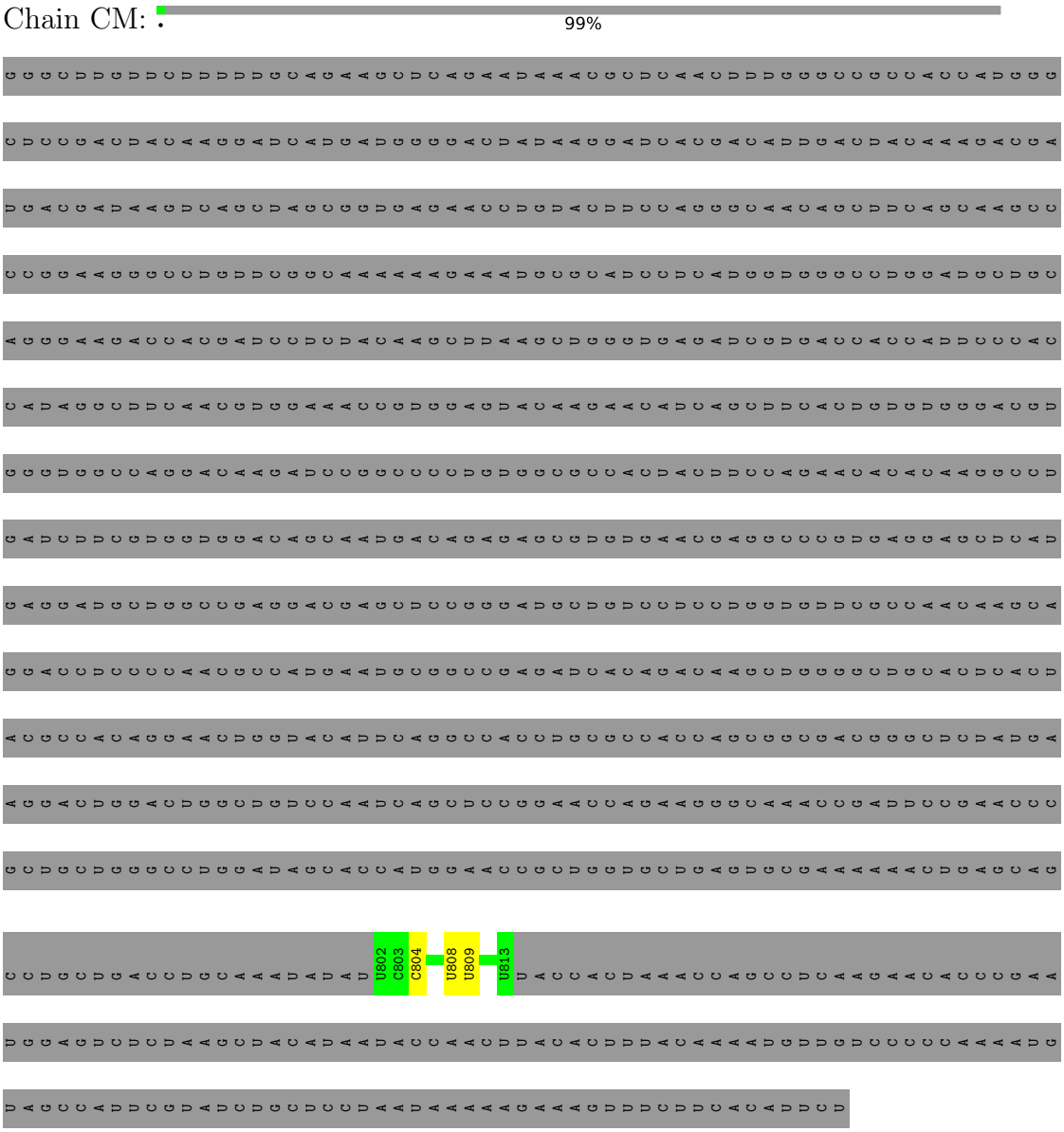
Mol	Chain	Residues	Atoms	AltConf
91	L5	4	Total O 4 4	0
91	L7	1	Total O 1 1	0
91	LI	1	Total O 1 1	0
91	La	1	Total O 1 1	0
91	Lp	1	Total O 1 1	0
91	S2	3	Total O 3 3	0

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.

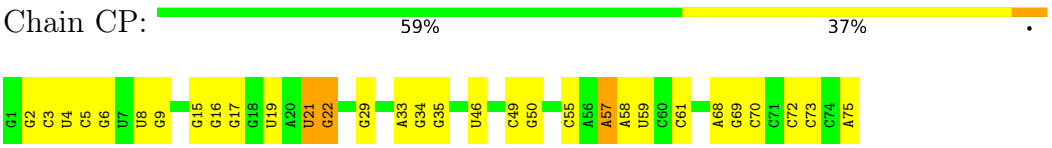
- Molecule 1: Full length ARF1-V5-hCMV staller mRNA

Chain CM:



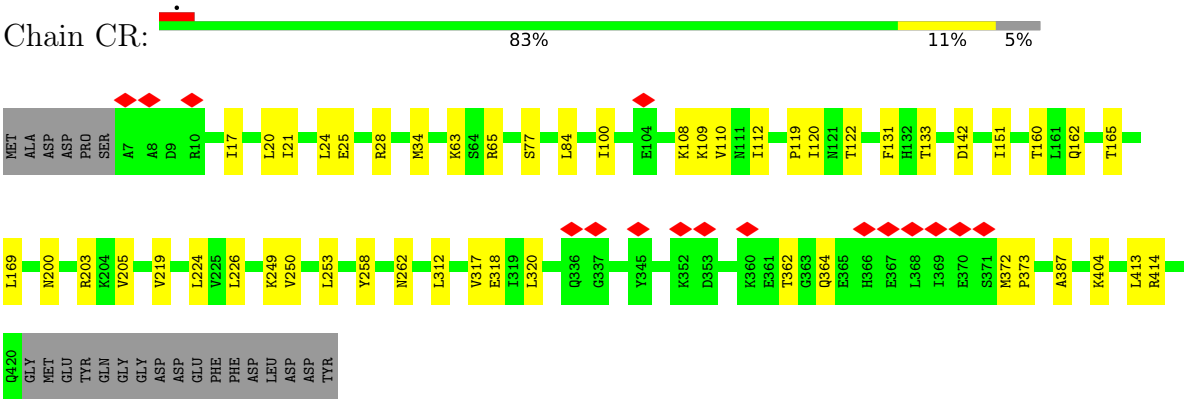
- Molecule 2: prolyl-tRNA

Chain CP:



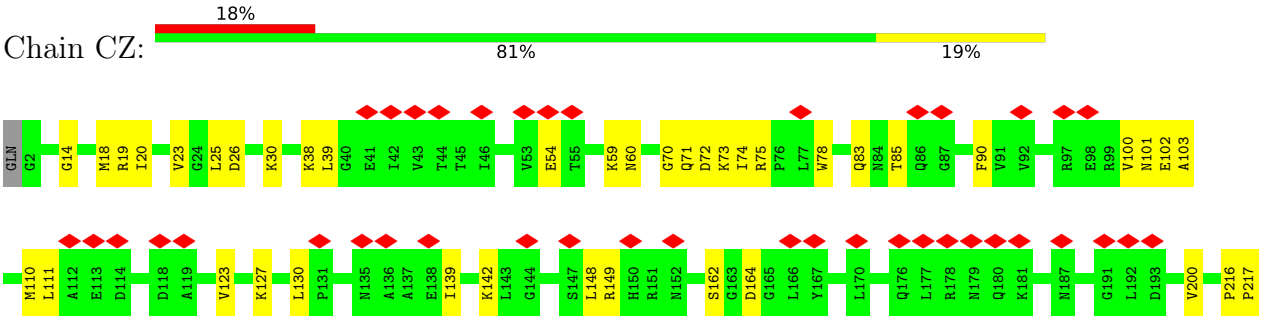
• Molecule 3: Eukaryotic peptide chain release factor subunit 1

Chain CR:



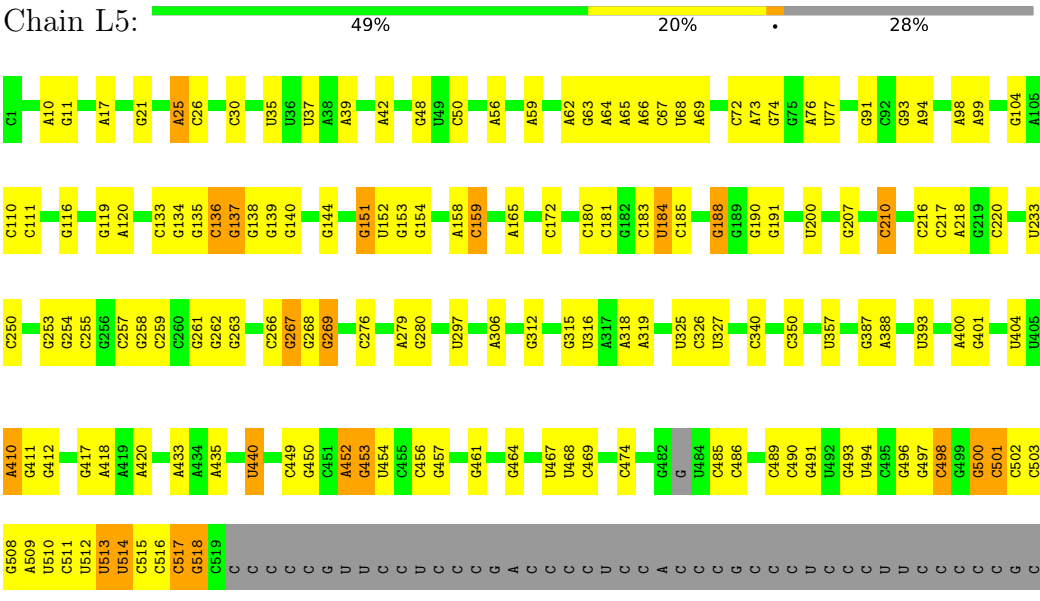
• Molecule 4: ADP-ribosylation factor 1

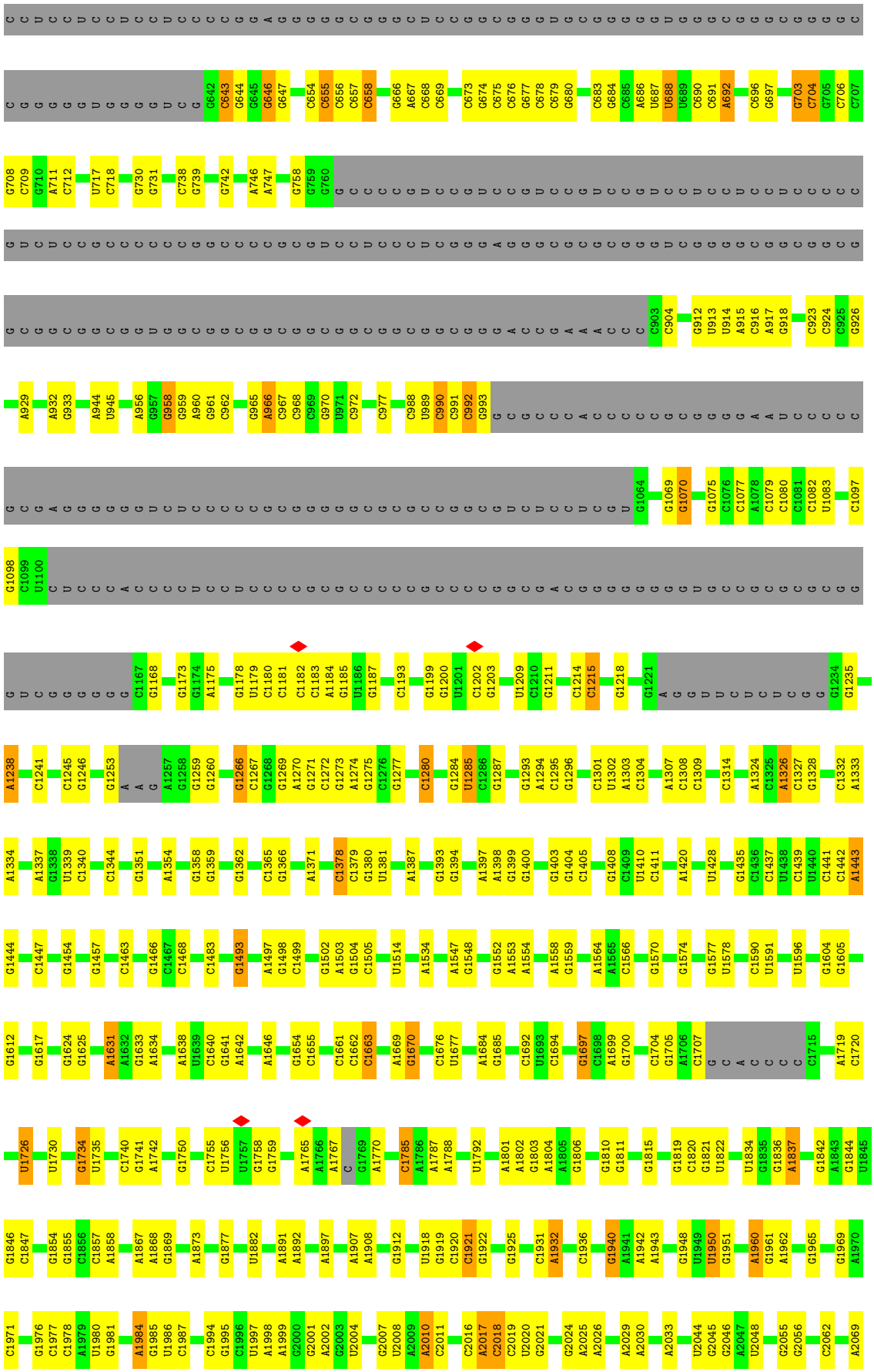
Chain CZ:

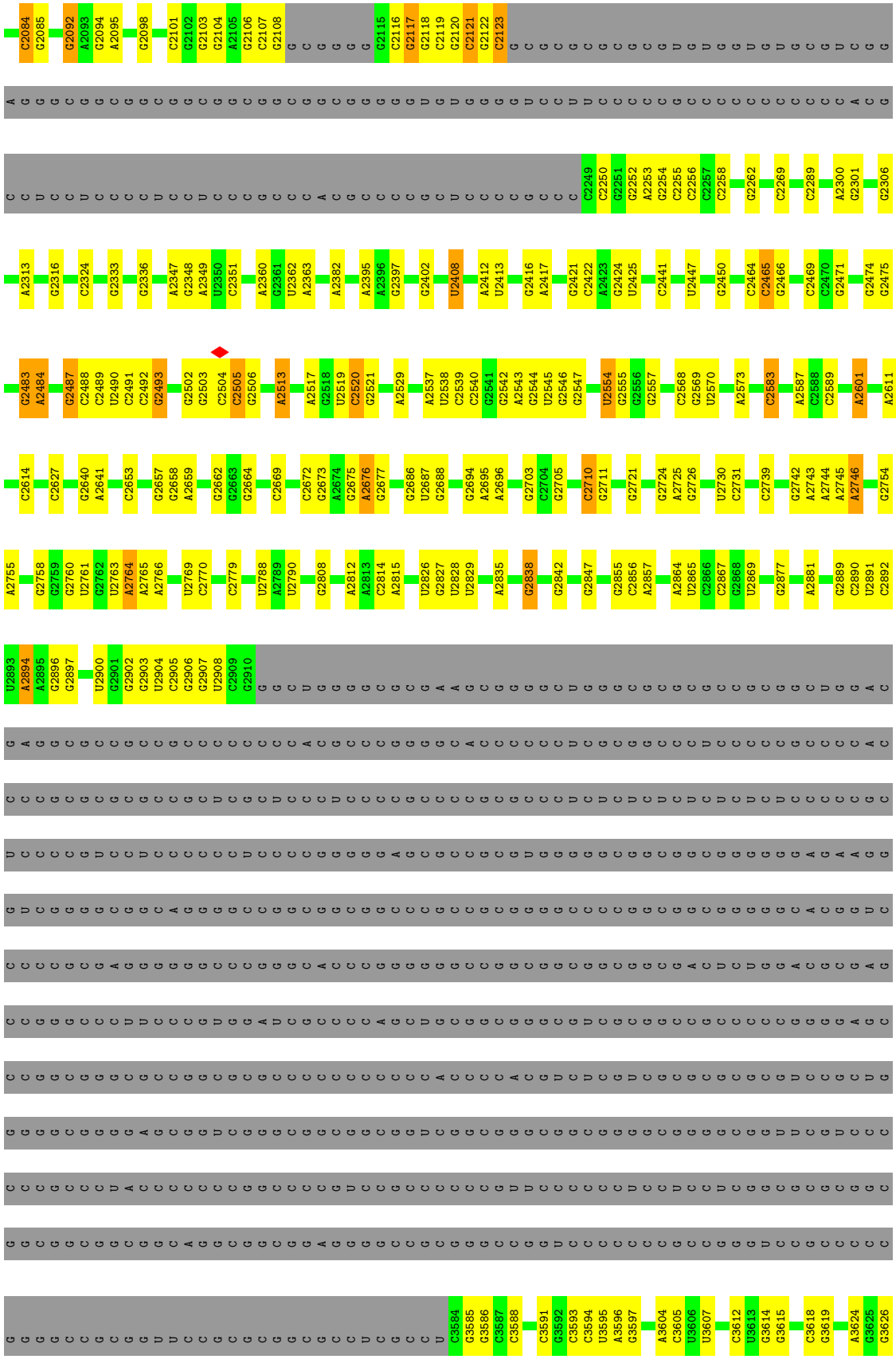


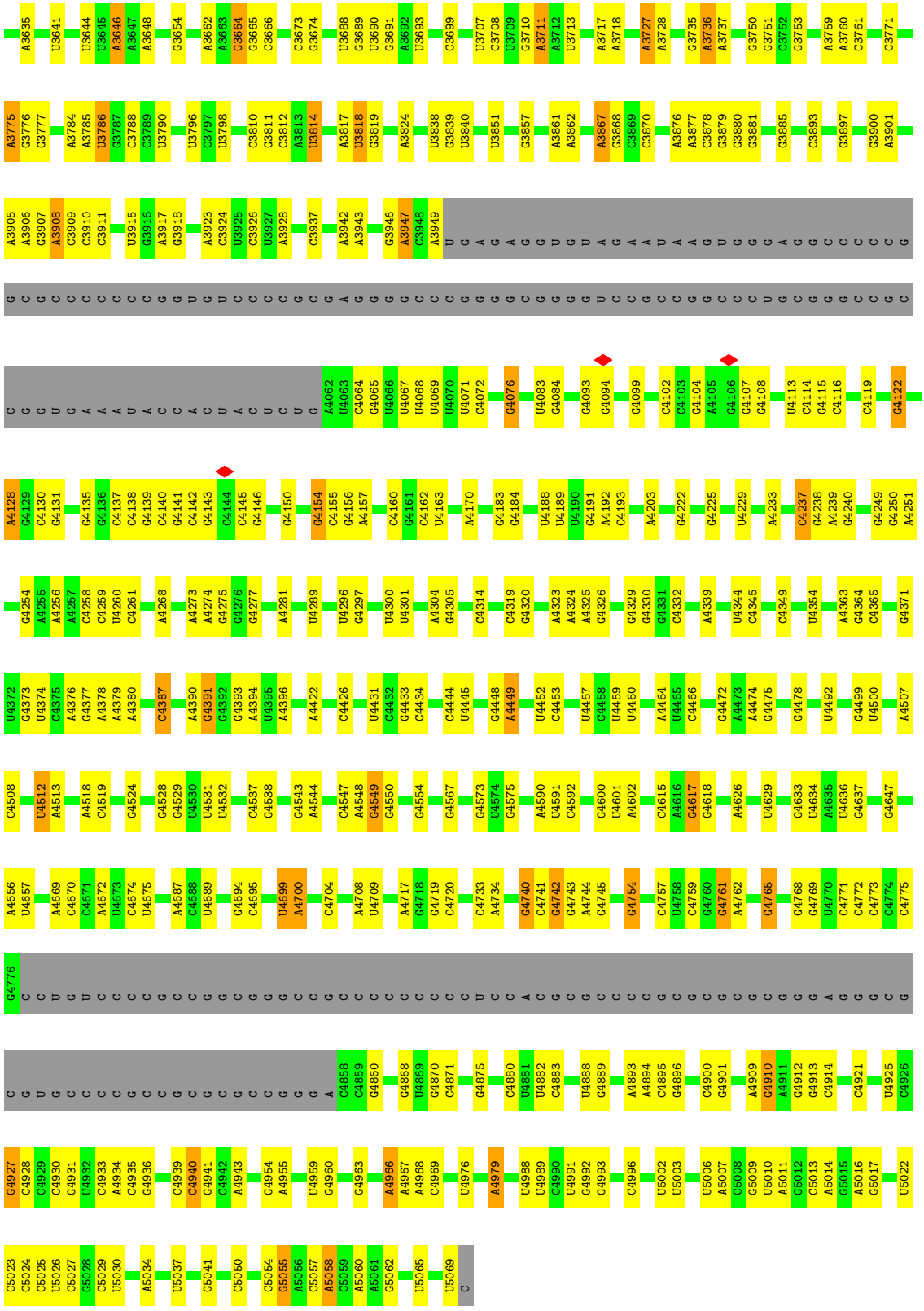
• Molecule 5: 28S rRNA

Chain L5:






C2084 G2085 G2092 A2093 G2094 A2095 G2098 C2101 G2102 G2103 G2104 A2105 G2106 C2107 G2108 G2115 C2116 G2117 G2118 C2119 G2120 C2121 G2122 C2123
C2249 C2250 G2251 G2252 A2253 G2254 C2255 C2256 C2257 C2258 G2262 C2269 C2289 A2300 G2301 G2306
A2313 G2316 C2324 G2333 G2336 A2347 G2348 A2349 U2350 C2351 A2360 G2361 U2362 A2363 A2382 A2395 A2396 G2397 G2402 U2408 A2412 U2413 G2416 A2417 G2421 C2422 A2423 G2424 U2425 C2441 U2447 G2450 C2464 C2465 G2466 C2469 C2470 G2471 G2474 G2475
G2483 A2484 G2487 C2488 C2489 U2490 C2491 C2492 G2493 G2502 G2503 C2504 C2505 G2506 A2513 A2517 G2518 U2519 C2520 G2521 A2529 A2537 U2538 C2539 C2540 G2541 G2542 A2543 G2544 U2545 G2546 G2547 U2554 G2555 G2556 G2557 C2568 G2569 U2570 A2573 C2583 A2587 C2588 C2589 A2601 A2611
C2614 C2627 G2640 A2641 C2653 G2657 G2658 A2659 G2662 G2663 G2664 C2669 C2672 G2673 A2674 G2675 A2676 G2677 G2686 U2687 G2688 G2694 A2695 A2696 G2703 C2704 G2705 C2710 G2711 G2721 G2724 A2725 G2726 U2730 C2731 C2739 G2742 A2743 A2744 A2745 A2746 G2754
A2755 G2758 G2759 G2760 U2761 G2762 U2763 A2764 A2765 A2766 U2769 C2770 C2779 U2788 A2789 U2790 G2808 A2812 A2813 C2814 A2815 U2826 G2827 U2828 U2829 A2835 G2838 G2842 G2847 G2855 C2856 A2857 A2864 U2865 C2866 C2867 G2868 U2869 G2877 A2881 G2889 C2890 U2891 C2892
U2893 A2894 A2895 G2896 G2897 U2900 G2901 G2902 G2903 U2904 C2905 G2906 G2907 U2908 C2909 G2910
C3584 G3585 G3586 C3587 C3588 C3591 G3592 C3593 C3594 U3595 A3596 G3597 A3604 C3605 U3606 U3607 C3612 U3613 G3614 G3615 C3618 G3619 A3624 G3625 G3626

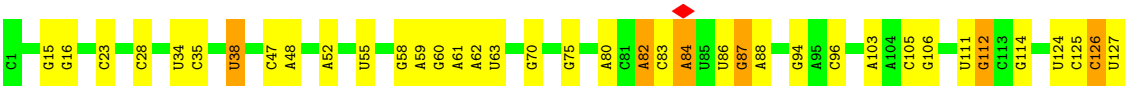


• Molecule 6: 5S rRNA

Chain L7: 80% 18%

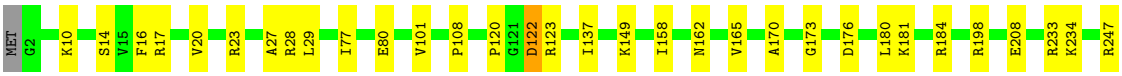
• Molecule 7: 5.8S rRNA

Chain L8:



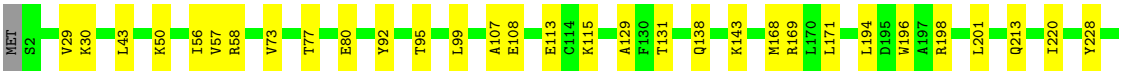
• Molecule 8: 60S ribosomal protein L8

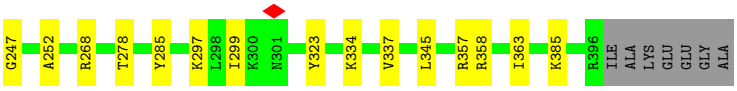
Chain LA:



• Molecule 9: 60S ribosomal protein L3

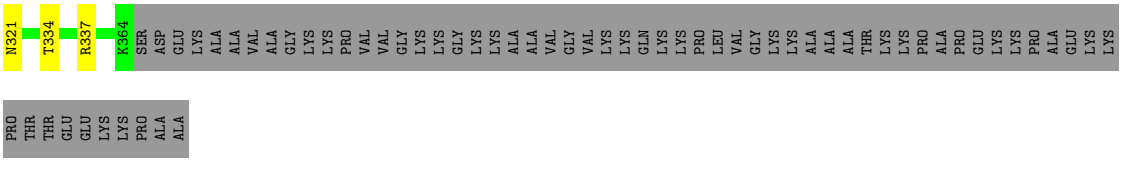
Chain LB:





• Molecule 10: 60S ribosomal protein L4

Chain LC:

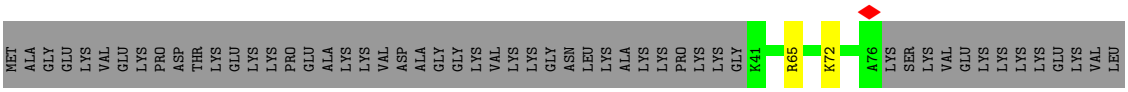


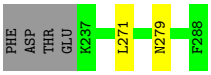
• Molecule 11: 60S ribosomal protein L5

Chain LD:

• Molecule 12: Large ribosomal subunit protein eL6

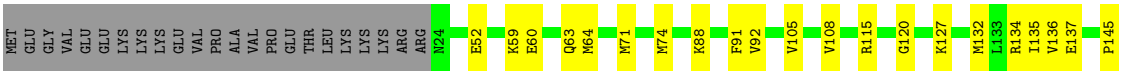
Chain LE:

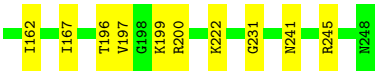




• Molecule 13: Large ribosomal subunit protein uL30

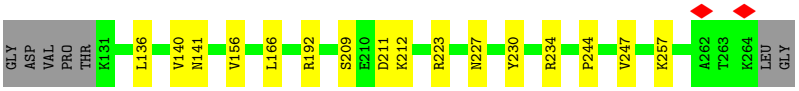
Chain LF:





• Molecule 14: 60S ribosomal protein L7a

Chain LG:

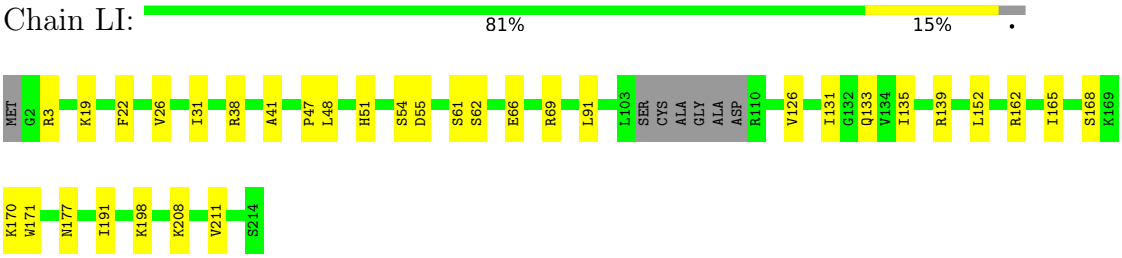


• Molecule 15: 60S ribosomal protein L9

Chain LH:

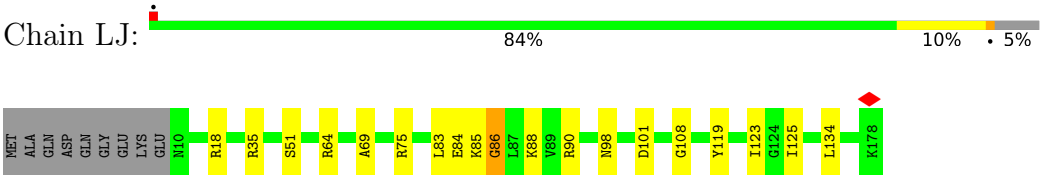
• Molecule 16: Ribosomal protein uL16-like

Chain LI:



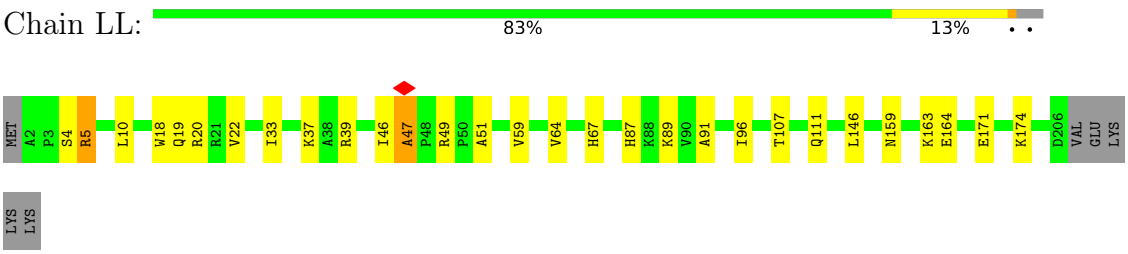
• Molecule 17: 60S ribosomal protein L11

Chain LJ:



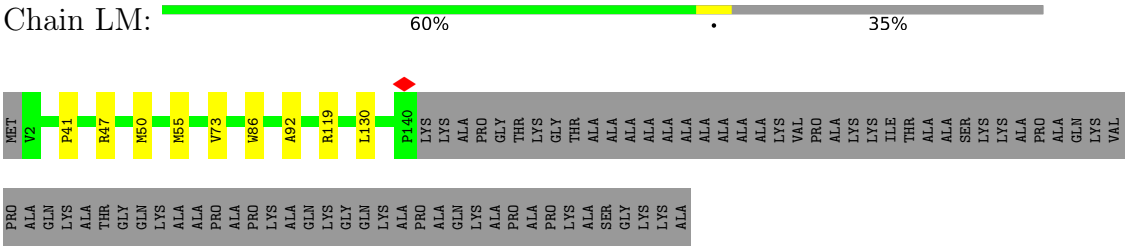
• Molecule 18: 60S ribosomal protein L13

Chain LL:



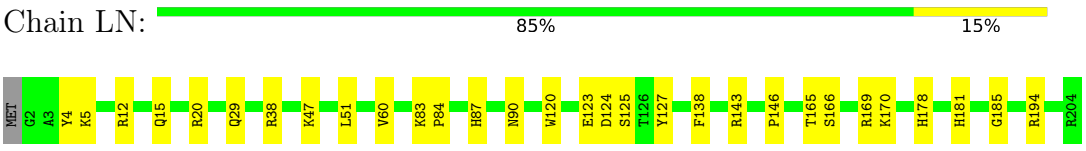
• Molecule 19: 60S ribosomal protein L14

Chain LM:



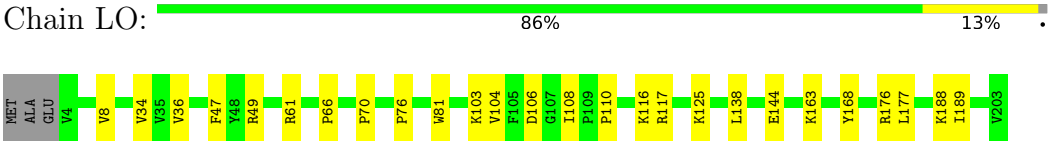
• Molecule 20: 60S ribosomal protein L15

Chain LN:



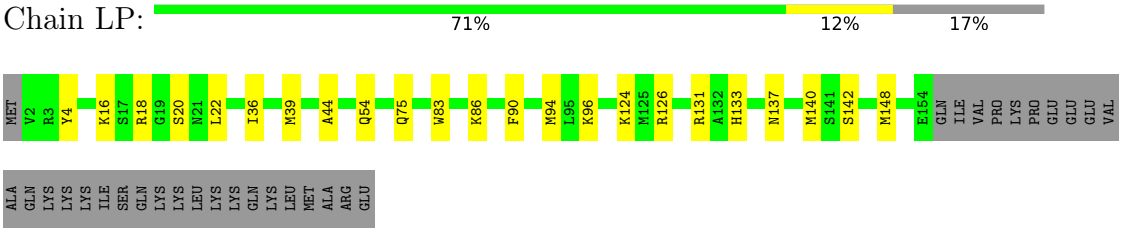
• Molecule 21: 60S ribosomal protein L13a

Chain LO:



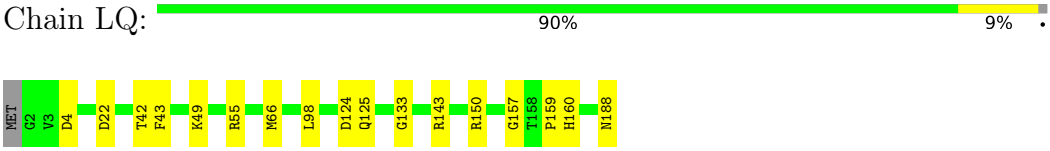
• Molecule 22: 60S ribosomal protein L17

Chain LP:



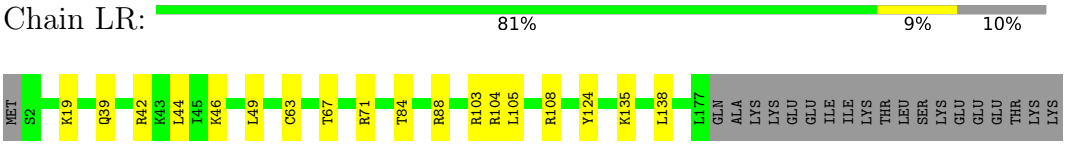
• Molecule 23: 60S ribosomal protein L18

Chain LQ:



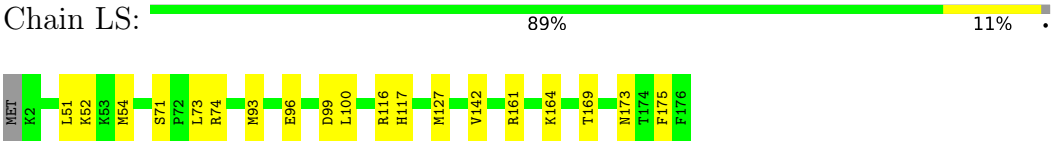
• Molecule 24: 60S ribosomal protein L19

Chain LR:



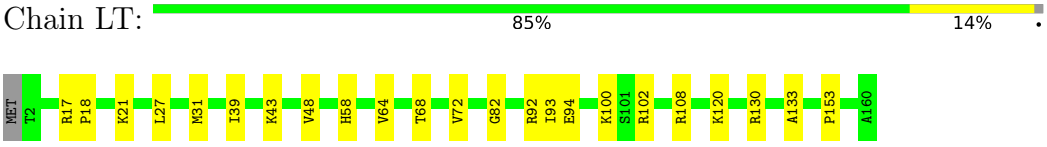
• Molecule 25: 60S ribosomal protein L18a

Chain LS:



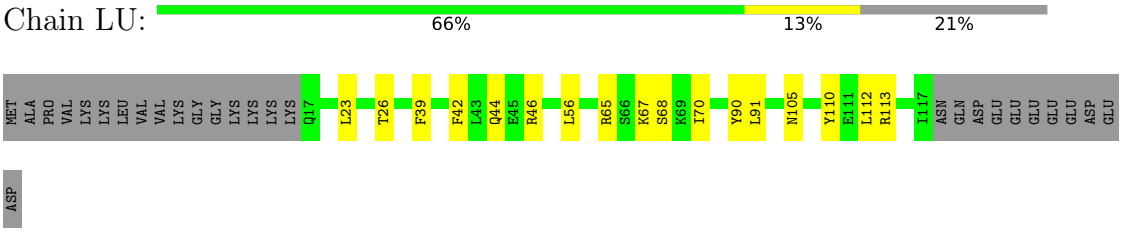
• Molecule 26: 60S ribosomal protein L21

Chain LT:



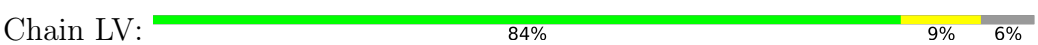
• Molecule 27: 60S ribosomal protein L22

Chain LU:



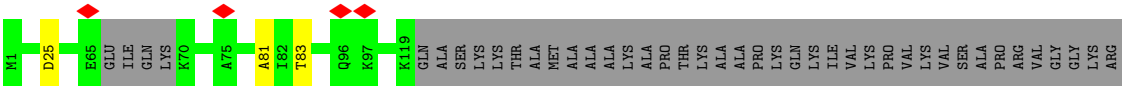
• Molecule 28: 60S ribosomal protein L23

Chain LV:



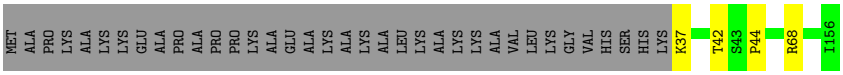
• Molecule 29: 60S ribosomal protein L24

Chain LW:



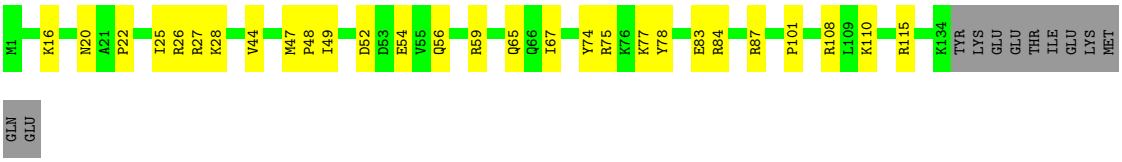
• Molecule 30: 60S ribosomal protein L23a

Chain LX:



• Molecule 31: 60S ribosomal protein L26

Chain LY:



• Molecule 32: 60S ribosomal protein L27

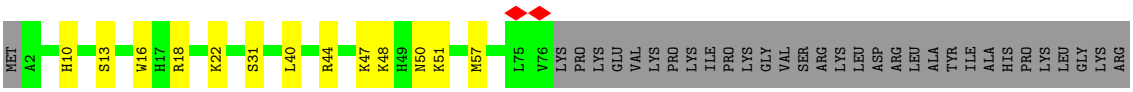
Chain LZ:

• Molecule 33: 60S ribosomal protein L27a

Chain La:

• Molecule 34: 60S ribosomal protein L29

Chain Lb:

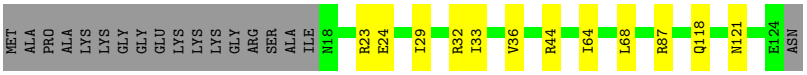


• Molecule 35: 60S ribosomal protein L30

Chain Lc:

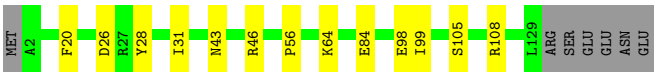
• Molecule 36: 60S ribosomal protein L31

Chain Ld:



• Molecule 37: 60S ribosomal protein L32

Chain Le:



• Molecule 38: 60S ribosomal protein L35a

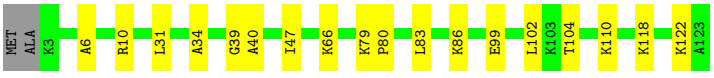
Chain Lf:

• Molecule 39: 60S ribosomal protein L34

Chain Lg:

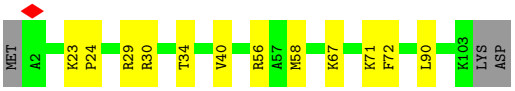
• Molecule 40: 60S ribosomal protein L35

Chain Lh:



• Molecule 41: 60S ribosomal protein L36

Chain Li:

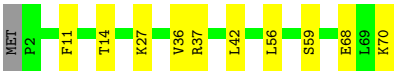


• Molecule 42: Large ribosomal subunit protein eL37

Chain Lj:

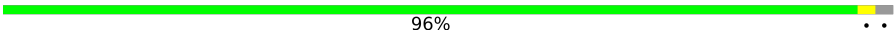
• Molecule 43: 60S ribosomal protein L38

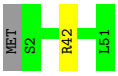
Chain Lk:



• Molecule 44: 60S ribosomal protein L39

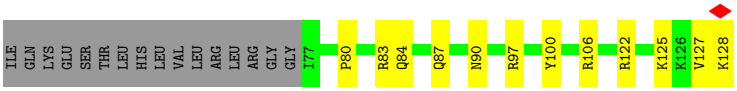
Chain Ll:





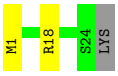
• Molecule 45: Ubiquitin-60S ribosomal protein L40

Chain Lm:



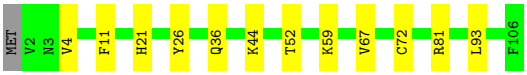
• Molecule 46: 60S ribosomal protein L41

Chain Ln:



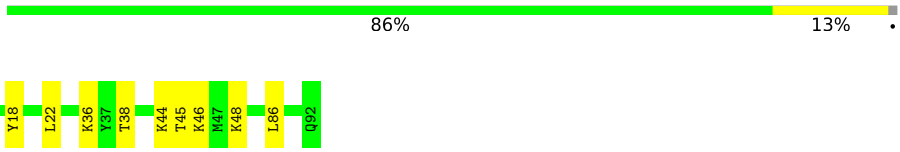
• Molecule 47: 60S ribosomal protein L36a

Chain Lo:



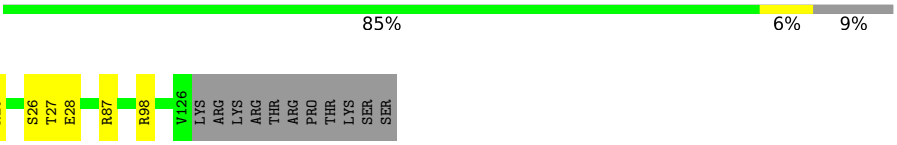
• Molecule 48: 60S ribosomal protein L37a

Chain Lp:



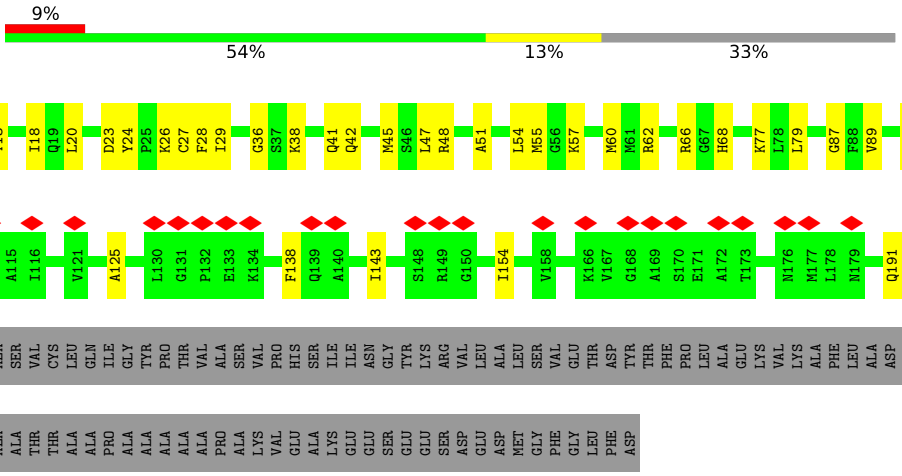
• Molecule 49: 60S ribosomal protein L28

Chain Lr:



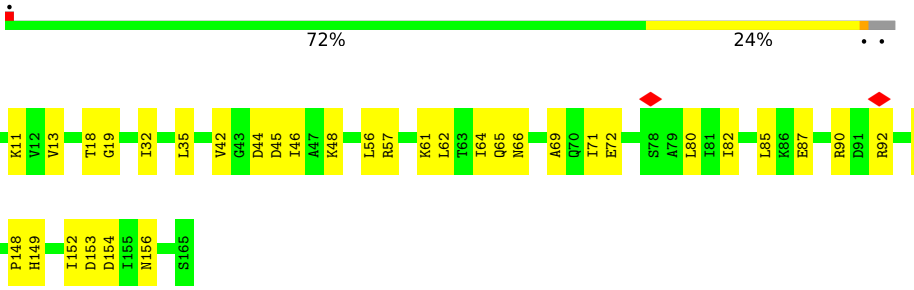
• Molecule 50: 60S acidic ribosomal protein P0

Chain Ls:



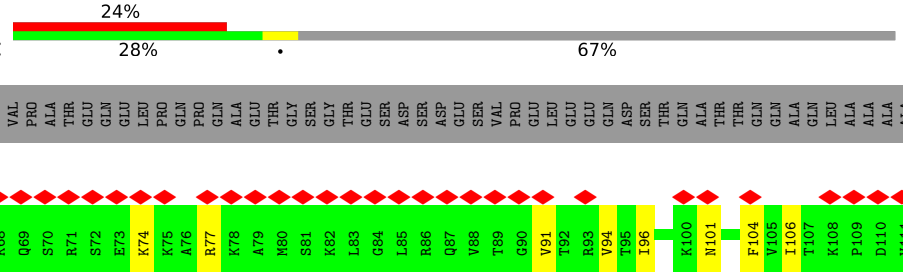
• Molecule 51: Large ribosomal subunit protein uL11

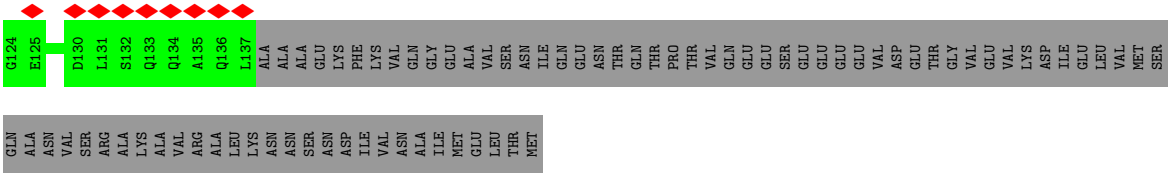
Chain Lt:



• Molecule 52: Nascent polypeptide-associated complex subunit alpha

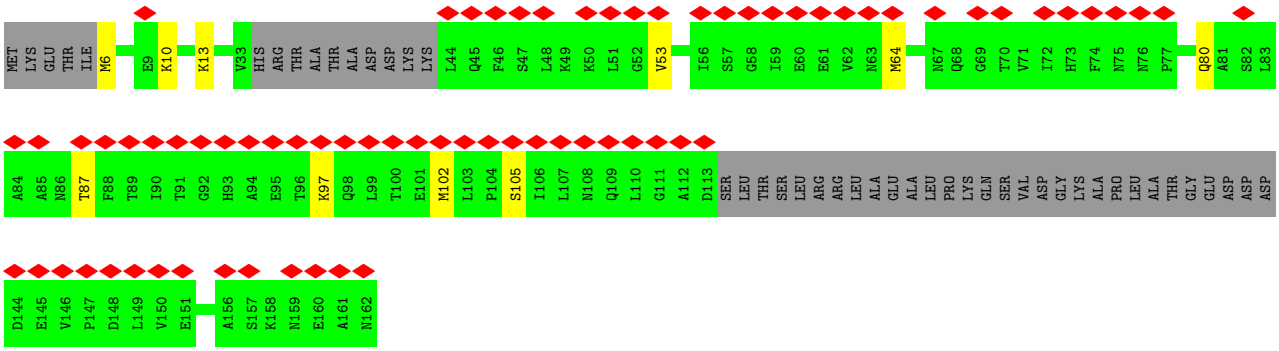
Chain NA:





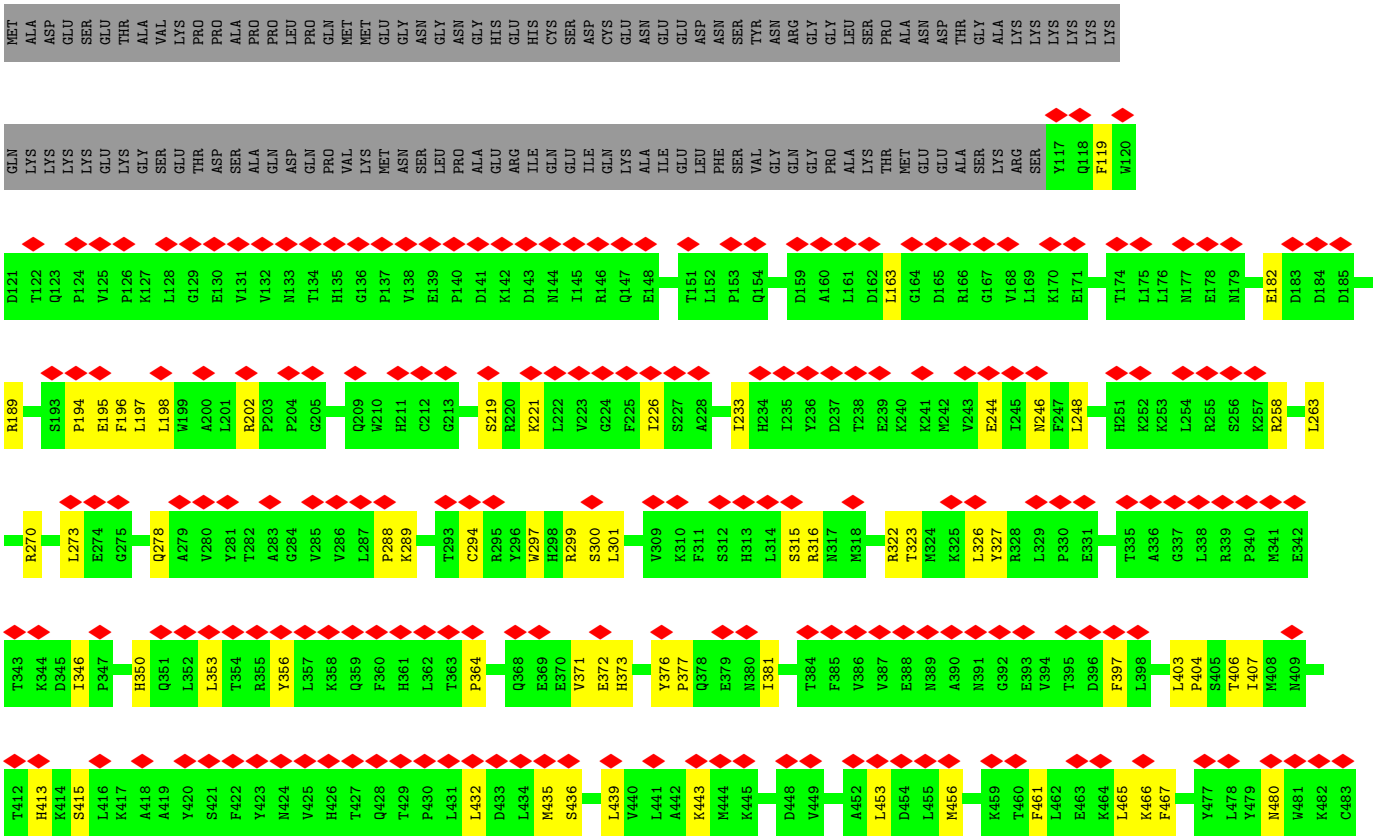
• Molecule 53: Isoform 2 of Transcription factor BTF3

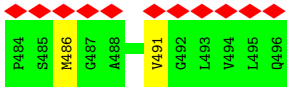
Chain NB:



• Molecule 54: Glycylpeptide N-tetradecanoyltransferase 1

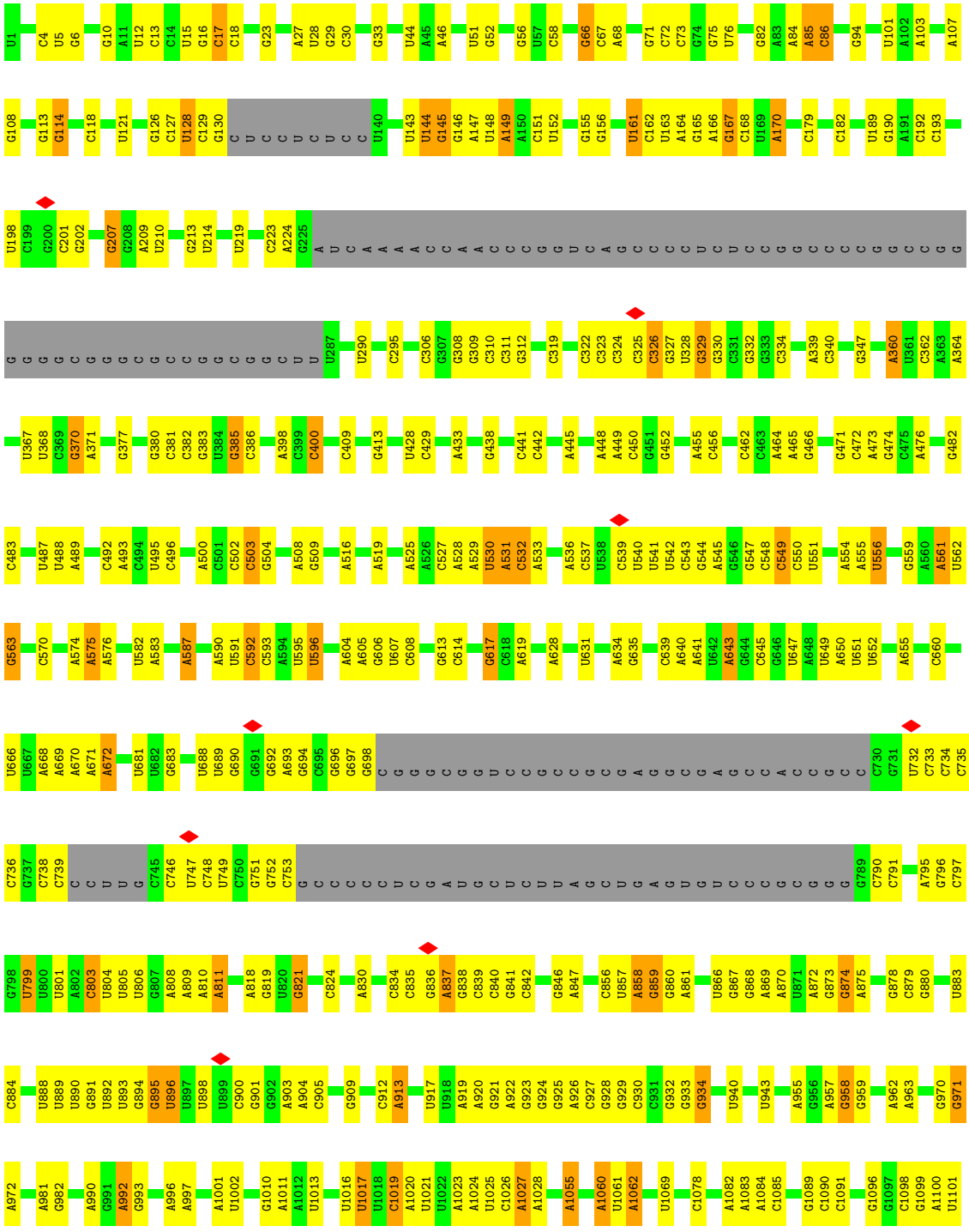
Chain NM:

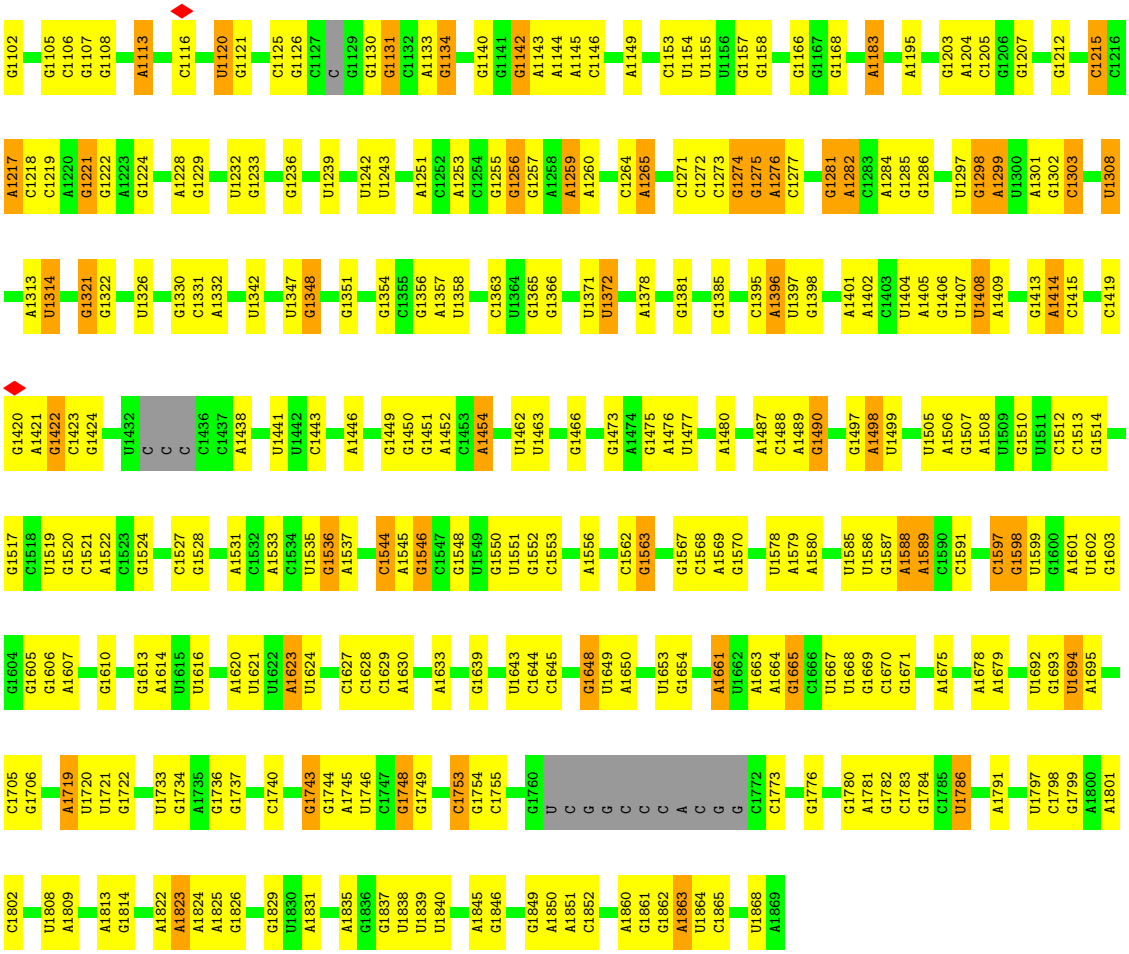




• Molecule 55: 18S rRNA

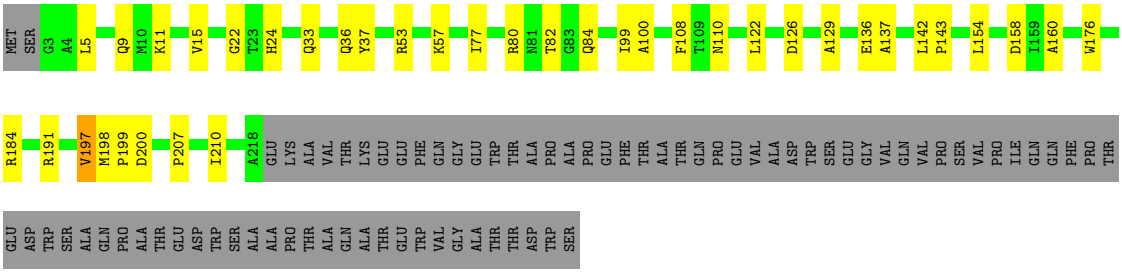
Chain S2:





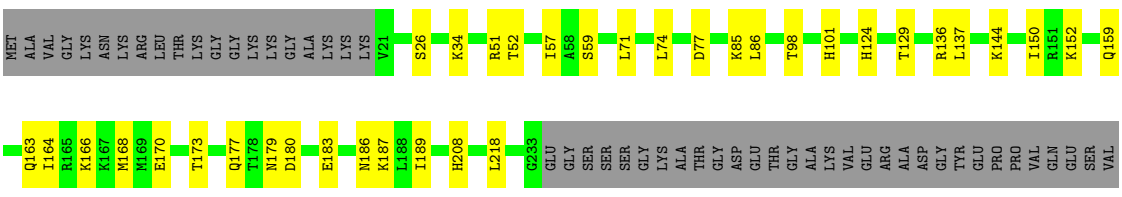
• Molecule 56: 40S ribosomal protein SA

Chain SA:



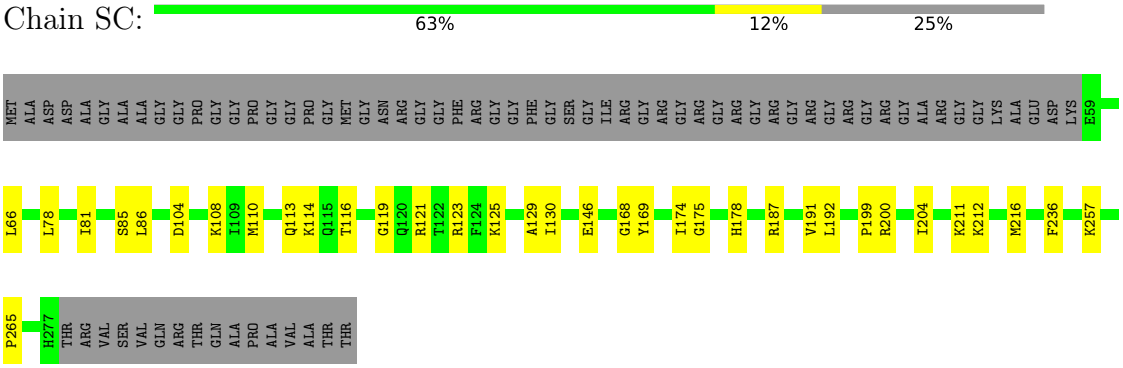
• Molecule 57: 40S ribosomal protein S3a

Chain SB:



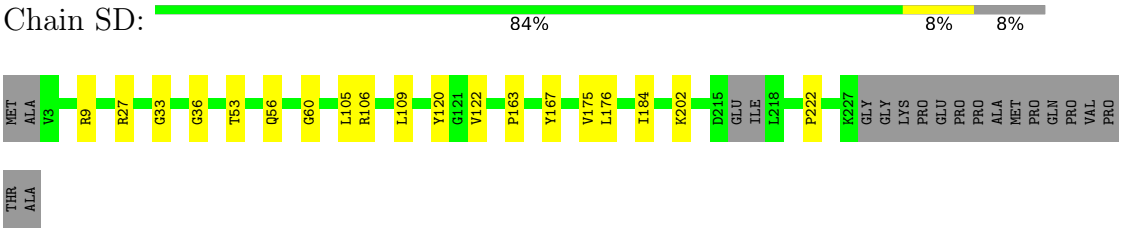
• Molecule 58: 40S ribosomal protein S2

Chain SC:



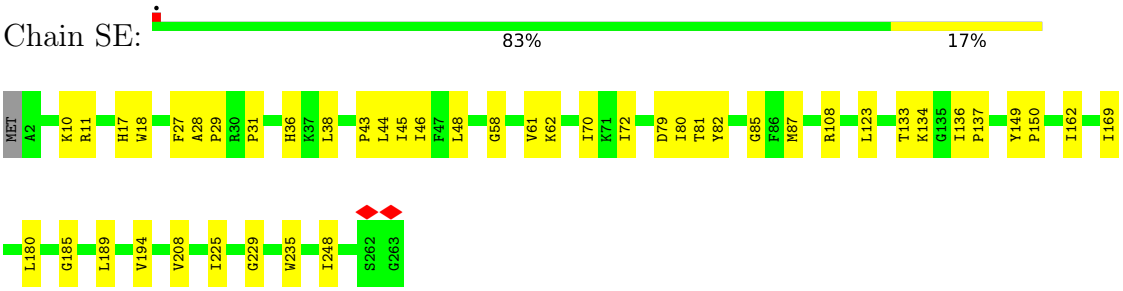
• Molecule 59: 40S ribosomal protein S3

Chain SD:



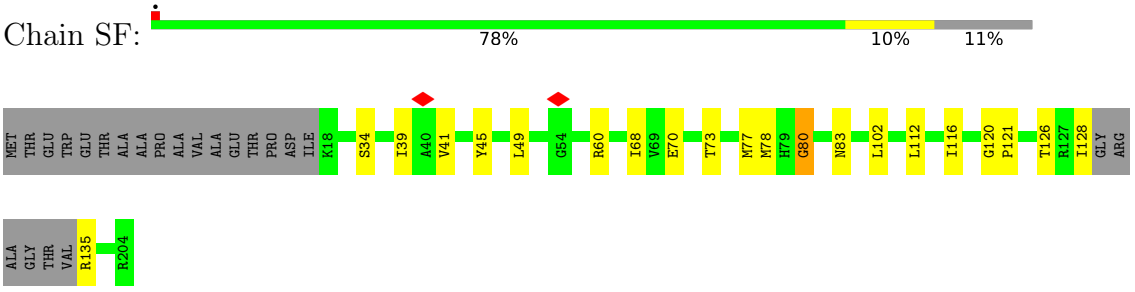
• Molecule 60: Small ribosomal subunit protein eS4, X isoform

Chain SE:



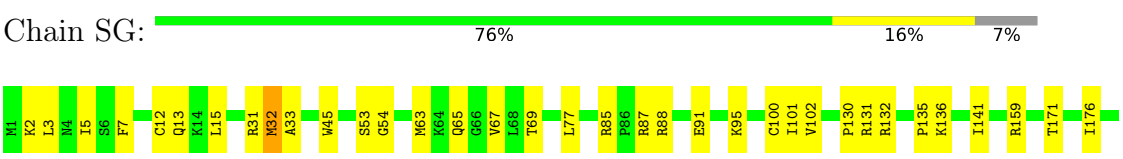
• Molecule 61: 40S ribosomal protein S5

Chain SF:



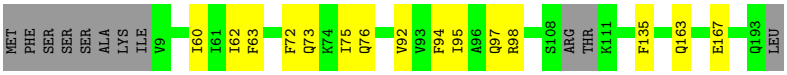
• Molecule 62: 40S ribosomal protein S6

Chain SG:



- Molecule 63: 40S ribosomal protein S7

Chain SH:

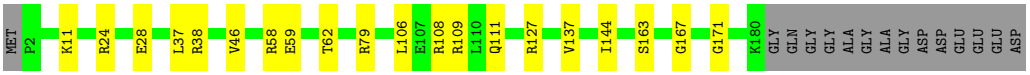


- Molecule 64: 40S ribosomal protein S8

Chain SI:

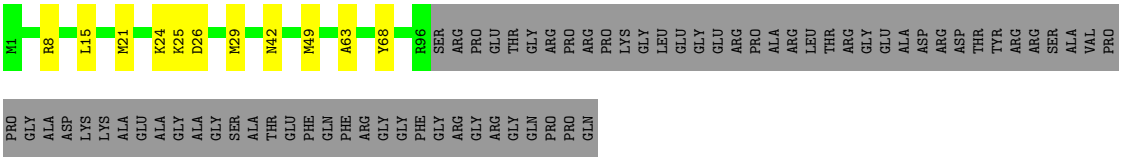
- Molecule 65: 40S ribosomal protein S9

Chain SJ:



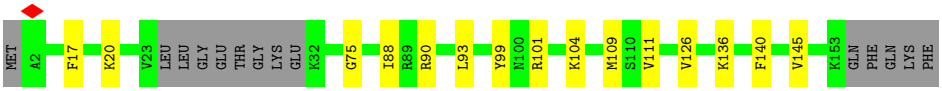
- Molecule 66: 40S ribosomal protein S10

Chain SK:



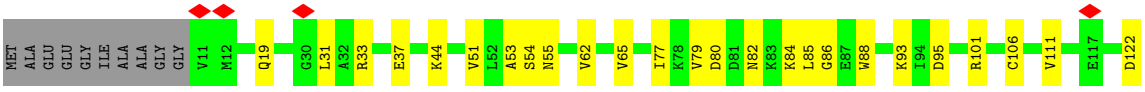
- Molecule 67: 40S ribosomal protein S11

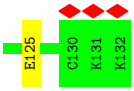
Chain SL:



- Molecule 68: 40S ribosomal protein S12

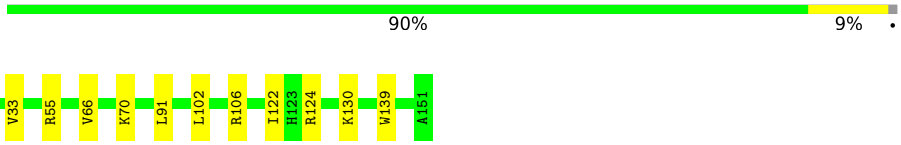
Chain SM:





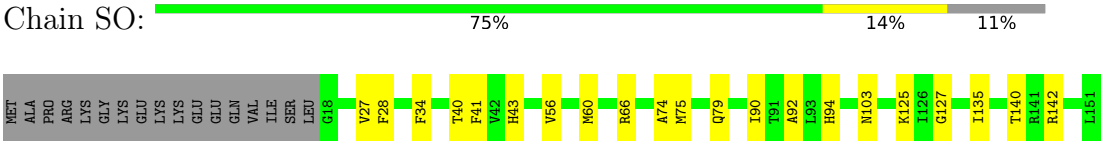
• Molecule 69: 40S ribosomal protein S13

Chain SN:



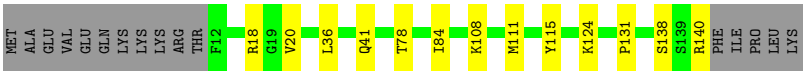
• Molecule 70: 40S ribosomal protein S14

Chain SO:



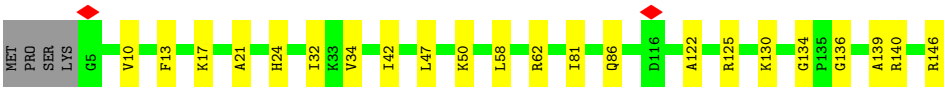
• Molecule 71: 40S ribosomal protein S15

Chain SP:



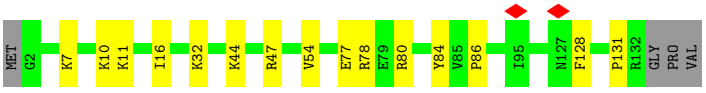
• Molecule 72: 40S ribosomal protein S16

Chain SQ:



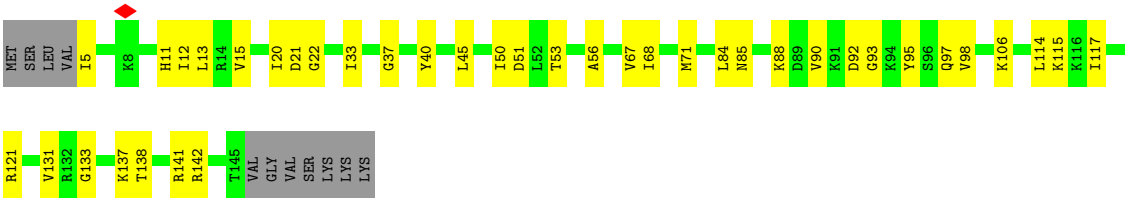
• Molecule 73: 40S ribosomal protein S17

Chain SR:



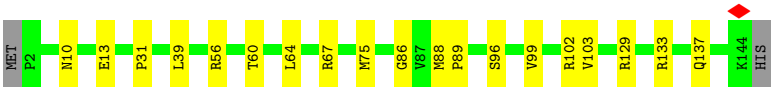
• Molecule 74: 40S ribosomal protein S18

Chain SS:



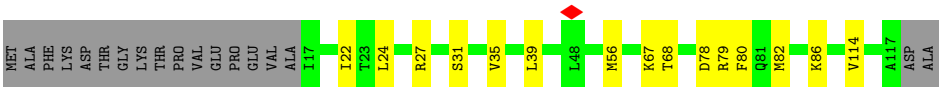
• Molecule 75: 40S ribosomal protein S19

Chain ST:



• Molecule 76: 40S ribosomal protein S20

Chain SU:

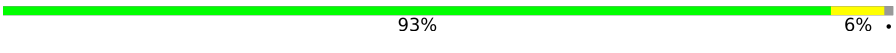


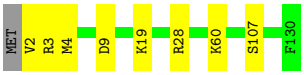
• Molecule 77: 40S ribosomal protein S21

Chain SV:

• Molecule 78: 40S ribosomal protein S15a

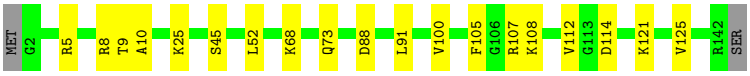
Chain SW:





• Molecule 79: 40S ribosomal protein S23

Chain SX:

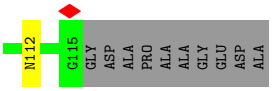


• Molecule 80: 40S ribosomal protein S24

Chain SY:

• Molecule 81: 40S ribosomal protein S25

Chain SZ:

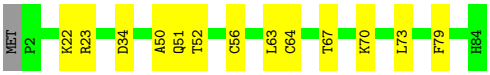


• Molecule 82: 40S ribosomal protein S26

Chain Sa:

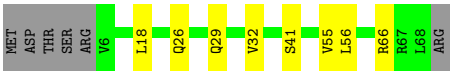
• Molecule 83: 40S ribosomal protein S27

Chain Sb:



• Molecule 84: 40S ribosomal protein S28

Chain Sc:

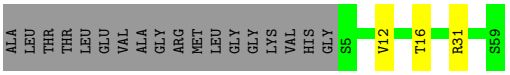


• Molecule 85: 40S ribosomal protein S29

Chain Sd:

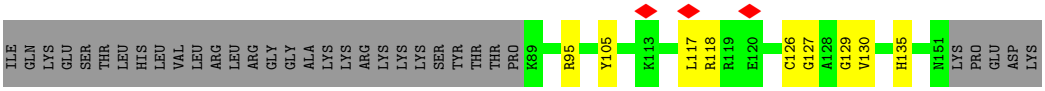
• Molecule 86: Ubiquitin-like FUBI-ribosomal protein eS30 fusion protein

Chain Se:



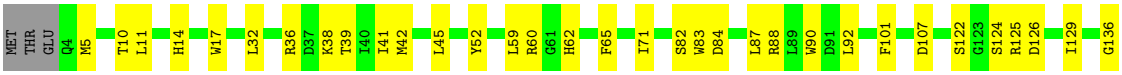
• Molecule 87: Ubiquitin

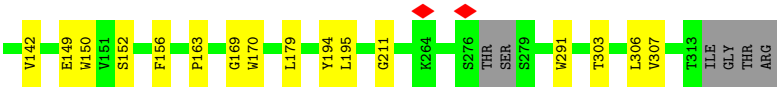
Chain Sf:



• Molecule 88: Receptor of activated protein C kinase 1

Chain Sg:





4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	44109	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	40	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	3500	Depositor
Magnification	Not provided	
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	5.788	Depositor
Minimum map value	-3.146	Depositor
Average map value	0.008	Depositor
Map value standard deviation	0.134	Depositor
Recommended contour level	0.1	Depositor
Map size (Å)	465.28, 465.28, 465.28	wwPDB
Map dimensions	640, 640, 640	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.727, 0.727, 0.727	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

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

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	CM	0.31	0/273	0.45	0/421
2	CP	0.25	0/1789	0.44	0/2788
3	CR	0.22	0/3311	0.47	0/4452
4	CZ	0.18	0/1657	0.46	0/2252
5	L5	0.30	0/87471	0.38	2/136443 (0.0%)
6	L7	0.29	0/2858	0.35	0/4455
7	L8	0.29	0/3701	0.36	0/5766
8	LA	0.34	0/1936	0.63	2/2596 (0.1%)
9	LB	0.29	0/3251	0.52	0/4352
10	LC	0.28	0/2938	0.51	0/3947
11	LD	0.25	0/2407	0.51	2/3227 (0.1%)
12	LE	0.27	0/1788	0.59	1/2399 (0.0%)
13	LF	0.28	0/1905	0.53	0/2539
14	LG	0.26	0/1849	0.51	0/2496
15	LH	0.25	0/1529	0.50	0/2058
16	LI	0.25	0/1705	0.48	0/2277
17	LJ	0.26	0/1352	0.55	0/1813
18	LL	0.25	0/1661	0.50	0/2229
19	LM	0.25	0/1145	0.47	0/1536
20	LN	0.31	0/1746	0.48	0/2338
21	LO	0.30	0/1665	0.52	1/2229 (0.0%)
22	LP	0.30	0/1260	0.59	0/1692
23	LQ	0.28	0/1526	0.49	0/2038
24	LR	0.26	0/1468	0.48	0/1945
25	LS	0.28	0/1492	0.48	0/2003
26	LT	0.26	0/1310	0.52	0/1752
27	LU	0.28	0/820	0.63	0/1102
28	LV	0.27	0/985	0.48	0/1323
29	LW	0.22	0/820	0.44	0/1104
30	LX	0.24	0/998	0.47	0/1341
31	LY	0.32	0/1128	0.55	0/1500
32	LZ	0.26	0/1130	0.47	0/1507

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\|>5$	RMSZ	$\#\|Z\|>5$
33	La	0.29	0/1183	0.50	0/1582
34	Lb	0.26	0/600	0.55	0/796
35	Lc	0.29	0/752	0.45	0/1011
36	Ld	0.26	0/889	0.45	0/1198
37	Le	0.30	0/1067	0.51	0/1425
38	Lf	0.29	0/891	0.54	0/1194
39	Lg	0.27	0/899	0.54	0/1200
40	Lh	0.23	0/1014	0.44	0/1340
41	Li	0.22	0/824	0.44	0/1093
42	Lj	0.28	0/720	0.56	0/952
43	Lk	0.26	0/548	0.53	0/730
44	Ll	0.27	0/454	0.42	0/599
45	Lm	0.25	0/431	0.48	0/570
46	Ln	0.28	0/231	0.48	0/294
47	Lo	0.27	0/876	0.46	0/1156
48	Lp	0.27	0/706	0.55	0/939
49	Lr	0.29	0/1012	0.55	0/1358
50	Ls	0.21	0/1666	0.55	0/2250
51	Lt	0.24	0/1224	0.67	2/1651 (0.1%)
52	NA	0.22	0/558	0.61	0/745
53	NB	0.17	0/908	0.42	0/1217
54	NM	0.19	0/3211	0.48	0/4365
55	S2	0.29	0/40882	0.41	0/63715
56	SA	0.28	0/1708	0.56	0/2324
57	SB	0.23	0/1745	0.46	0/2337
58	SC	0.28	0/1697	0.51	0/2301
59	SD	0.38	1/1620 (0.1%)	0.62	4/2198 (0.2%)
60	SE	0.25	0/2014	0.51	0/2726
61	SF	0.23	0/1423	0.57	1/1913 (0.1%)
62	SG	0.20	0/1657	0.47	0/2247
63	SH	0.19	0/1295	0.46	0/1763
64	SI	0.24	0/1603	0.48	0/2161
65	SJ	0.22	0/1456	0.43	0/1957
66	SK	0.23	0/750	0.50	0/1026
67	SL	0.28	0/1163	0.48	0/1562
68	SM	0.21	0/960	0.59	0/1286
69	SN	0.25	0/1206	0.46	0/1626
70	SO	0.28	0/982	0.64	1/1320 (0.1%)
71	SP	0.22	0/1010	0.45	0/1362
72	SQ	0.25	0/1093	0.63	0/1470
73	SR	0.23	0/955	0.52	0/1294
74	SS	0.25	0/1148	0.60	0/1542
75	ST	0.21	0/1100	0.41	0/1479

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
76	SU	0.25	0/722	0.46	0/983
77	SV	0.23	0/625	0.44	0/837
78	SW	0.26	0/1043	0.49	0/1396
79	SX	0.28	0/1096	0.59	0/1467
80	SY	0.23	0/944	0.55	0/1271
81	SZ	0.22	0/565	0.52	0/764
82	Sa	0.29	0/794	0.56	0/1065
83	Sb	0.26	0/632	0.54	0/851
84	Sc	0.25	0/474	0.59	0/638
85	Sd	0.24	0/443	0.44	0/589
86	Se	0.23	0/420	0.46	0/554
87	Sf	0.19	0/525	0.51	0/695
88	Sg	0.22	0/2235	0.57	0/3068
All	All	0.28	1/239523 (0.0%)	0.45	16/351372 (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
9	LB	0	1
12	LE	0	1
15	LH	0	1
17	LJ	0	1
18	LL	0	1
38	Lf	0	1
62	SG	0	1
65	SJ	0	1
72	SQ	0	1
74	SS	0	1
75	ST	0	1
82	Sa	0	1
All	All	0	12

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
59	SD	222	PRO	CG-CD	-11.75	1.10	1.50

The worst 5 of 16 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
59	SD	222	PRO	N-CD-CG	-14.25	81.83	103.20
59	SD	222	PRO	CA-N-CD	-8.38	100.28	112.00
59	SD	222	PRO	CA-CB-CG	-8.26	88.81	104.50
21	LO	110	PRO	N-CA-C	5.88	117.87	110.70
70	SO	43	HIS	N-CA-C	5.84	117.75	110.91

There are no chirality outliers.

5 of 12 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
9	LB	268	ARG	Sidechain
12	LE	176	THR	Peptide
15	LH	173	ARG	Peptide
17	LJ	85	LYS	Peptide
18	LL	47	ALA	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	CM	247	0	128	1	0
2	CP	1602	0	809	6	0
3	CR	3269	0	3312	31	0
4	CZ	1627	0	1563	26	0
5	L5	78199	0	39524	382	0
6	L7	2558	0	1296	5	0
7	L8	3314	0	1683	22	0
8	LA	1898	0	1993	24	0
9	LB	3183	0	3316	30	0
10	LC	2884	0	3050	20	0
11	LD	2361	0	2378	21	0
12	LE	1754	0	1899	25	0
13	LF	1870	0	1996	18	0
14	LG	1818	0	1911	20	0
15	LH	1510	0	1579	15	0
16	LI	1666	0	1711	19	0
17	LJ	1329	0	1348	13	0
18	LL	1630	0	1715	23	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
19	LM	1122	0	1174	6	0
20	LN	1701	0	1749	24	0
21	LO	1633	0	1771	19	0
22	LP	1234	0	1254	17	0
23	LQ	1502	0	1616	12	0
24	LR	1452	0	1580	13	0
25	LS	1452	0	1490	14	0
26	LT	1282	0	1336	19	0
27	LU	806	0	826	9	0
28	LV	971	0	1024	9	0
29	LW	808	0	726	3	0
30	LX	981	0	1055	4	0
31	LY	1111	0	1194	18	0
32	LZ	1107	0	1182	10	0
33	La	1154	0	1198	9	0
34	Lb	590	0	613	12	0
35	Lc	742	0	774	9	0
36	Ld	874	0	918	7	0
37	Le	1049	0	1136	10	0
38	Lf	872	0	901	9	0
39	Lg	889	0	968	9	0
40	Lh	1006	0	1132	13	0
41	Li	813	0	887	7	0
42	Lj	705	0	737	4	0
43	Lk	542	0	590	6	0
44	Ll	444	0	483	1	0
45	Lm	425	0	462	8	0
46	Ln	230	0	276	2	0
47	Lo	862	0	929	7	0
48	Lp	696	0	744	10	0
49	Lr	997	0	1054	7	0
50	Ls	1640	0	1687	28	0
51	Lt	1208	0	1257	27	0
52	NA	553	0	597	7	0
53	NB	901	0	915	7	0
54	NM	3122	0	3103	42	0
55	S2	36562	0	18472	252	0
56	SA	1671	0	1672	24	0
57	SB	1718	0	1786	23	0
58	SC	1661	0	1710	23	0
59	SD	1594	0	1568	12	0
60	SE	1972	0	2012	31	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
61	SF	1403	0	1421	15	0
62	SG	1634	0	1568	28	0
63	SH	1274	0	1196	10	0
64	SI	1574	0	1540	15	0
65	SJ	1431	0	1497	15	0
66	SK	726	0	674	8	0
67	SL	1143	0	1177	10	0
68	SM	950	0	987	16	0
69	SN	1182	0	1249	9	0
70	SO	969	0	982	12	0
71	SP	990	0	974	13	0
72	SQ	1075	0	1110	13	0
73	SR	942	0	913	10	0
74	SS	1130	0	1167	26	0
75	ST	1081	0	1093	13	0
76	SU	713	0	692	10	0
77	SV	618	0	617	12	0
78	SW	1026	0	1072	7	0
79	SX	1078	0	1130	16	0
80	SY	927	0	914	7	0
81	SZ	559	0	594	7	0
82	Sa	781	0	831	10	0
83	Sb	618	0	604	10	0
84	Sc	472	0	484	6	0
85	Sd	433	0	415	8	0
86	Se	416	0	439	2	0
87	Sf	515	0	521	6	0
88	Sg	2180	0	1968	28	0
89	CM	1	0	0	0	0
89	L5	125	0	0	0	0
89	L7	3	0	0	0	0
89	L8	3	0	0	0	0
89	LA	1	0	0	0	0
89	LC	1	0	0	0	0
89	LI	1	0	0	0	0
89	LN	1	0	0	0	0
89	LP	1	0	0	0	0
89	LV	1	0	0	0	0
89	Le	1	0	0	0	0
89	S2	52	0	0	0	0
90	Lg	1	0	0	0	0
90	Lj	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
90	Lm	1	0	0	0	0
90	Lo	1	0	0	0	0
90	Lp	1	0	0	0	0
90	Sa	1	0	0	0	0
90	Sd	1	0	0	0	0
90	Sf	1	0	0	0	0
91	L5	4	0	0	0	0
91	L7	1	0	0	0	0
91	LI	1	0	0	0	0
91	La	1	0	0	0	0
91	Lp	1	0	0	0	0
91	S2	3	0	0	0	0
All	All	223423	0	165598	1503	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 4.

The worst 5 of 1503 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)
55:S2:1748:G:H1	55:S2:1786:U:H3	1.10	0.94
5:L5:3751:G:H21	5:L5:3775:A:H8	1.20	0.85
59:SD:106:ARG:HG3	59:SD:175:VAL:HG22	1.63	0.80
1:CM:808:U:H3	2:CP:33:A:H61	1.30	0.80
55:S2:925:G:H1	55:S2:1017:U:H3	1.29	0.77

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	CR	411/437 (94%)	398 (97%)	13 (3%)	0	100	100
4	CZ	214/217 (99%)	206 (96%)	7 (3%)	1 (0%)	25	45
8	LA	246/257 (96%)	229 (93%)	17 (7%)	0	100	100
9	LB	393/403 (98%)	376 (96%)	17 (4%)	0	100	100
10	LC	362/427 (85%)	338 (93%)	22 (6%)	2 (1%)	22	41
11	LD	291/297 (98%)	278 (96%)	13 (4%)	0	100	100
12	LE	213/288 (74%)	194 (91%)	19 (9%)	0	100	100
13	LF	223/248 (90%)	211 (95%)	12 (5%)	0	100	100
14	LG	225/266 (85%)	212 (94%)	13 (6%)	0	100	100
15	LH	188/192 (98%)	176 (94%)	12 (6%)	0	100	100
16	LI	203/214 (95%)	193 (95%)	10 (5%)	0	100	100
17	LJ	167/178 (94%)	159 (95%)	7 (4%)	1 (1%)	22	41
18	LL	203/211 (96%)	192 (95%)	10 (5%)	1 (0%)	25	45
19	LM	137/215 (64%)	131 (96%)	6 (4%)	0	100	100
20	LN	201/204 (98%)	195 (97%)	6 (3%)	0	100	100
21	LO	198/203 (98%)	195 (98%)	3 (2%)	0	100	100
22	LP	151/184 (82%)	142 (94%)	9 (6%)	0	100	100
23	LQ	185/188 (98%)	181 (98%)	4 (2%)	0	100	100
24	LR	174/196 (89%)	173 (99%)	1 (1%)	0	100	100
25	LS	173/176 (98%)	163 (94%)	10 (6%)	0	100	100
26	LT	157/160 (98%)	146 (93%)	11 (7%)	0	100	100
27	LU	99/128 (77%)	96 (97%)	3 (3%)	0	100	100
28	LV	129/140 (92%)	122 (95%)	7 (5%)	0	100	100
29	LW	111/157 (71%)	104 (94%)	7 (6%)	0	100	100
30	LX	118/156 (76%)	115 (98%)	3 (2%)	0	100	100
31	LY	132/145 (91%)	125 (95%)	7 (5%)	0	100	100
32	LZ	133/136 (98%)	126 (95%)	7 (5%)	0	100	100
33	La	145/148 (98%)	136 (94%)	9 (6%)	0	100	100
34	Lb	73/159 (46%)	72 (99%)	1 (1%)	0	100	100
35	Lc	95/115 (83%)	92 (97%)	3 (3%)	0	100	100
36	Ld	105/125 (84%)	103 (98%)	2 (2%)	0	100	100
37	Le	126/135 (93%)	122 (97%)	4 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
38	Lf	107/110 (97%)	100 (94%)	7 (6%)	0	100	100
39	Lg	112/117 (96%)	103 (92%)	9 (8%)	0	100	100
40	Lh	119/123 (97%)	117 (98%)	2 (2%)	0	100	100
41	Li	100/105 (95%)	98 (98%)	2 (2%)	0	100	100
42	Lj	84/97 (87%)	81 (96%)	3 (4%)	0	100	100
43	Lk	67/70 (96%)	63 (94%)	4 (6%)	0	100	100
44	Ll	48/51 (94%)	46 (96%)	2 (4%)	0	100	100
45	Lm	50/128 (39%)	49 (98%)	1 (2%)	0	100	100
46	Ln	22/25 (88%)	22 (100%)	0	0	100	100
47	Lo	103/106 (97%)	98 (95%)	5 (5%)	0	100	100
48	Lp	89/92 (97%)	84 (94%)	5 (6%)	0	100	100
49	Lr	123/137 (90%)	115 (94%)	8 (6%)	0	100	100
50	Ls	210/317 (66%)	205 (98%)	5 (2%)	0	100	100
51	Lt	158/165 (96%)	155 (98%)	3 (2%)	0	100	100
52	NA	68/215 (32%)	66 (97%)	2 (3%)	0	100	100
53	NB	111/162 (68%)	110 (99%)	1 (1%)	0	100	100
54	NM	381/496 (77%)	364 (96%)	17 (4%)	0	100	100
56	SA	214/295 (72%)	203 (95%)	11 (5%)	0	100	100
57	SB	211/264 (80%)	201 (95%)	10 (5%)	0	100	100
58	SC	217/293 (74%)	206 (95%)	11 (5%)	0	100	100
59	SD	219/243 (90%)	208 (95%)	11 (5%)	0	100	100
60	SE	260/263 (99%)	248 (95%)	12 (5%)	0	100	100
61	SF	177/204 (87%)	167 (94%)	9 (5%)	1 (1%)	22	41
62	SG	229/249 (92%)	206 (90%)	21 (9%)	2 (1%)	14	30
63	SH	179/194 (92%)	166 (93%)	13 (7%)	0	100	100
64	SI	204/208 (98%)	197 (97%)	7 (3%)	0	100	100
65	SJ	177/194 (91%)	171 (97%)	6 (3%)	0	100	100
66	SK	94/165 (57%)	88 (94%)	6 (6%)	0	100	100
67	SL	140/158 (89%)	130 (93%)	10 (7%)	0	100	100
68	SM	120/132 (91%)	114 (95%)	6 (5%)	0	100	100
69	SN	148/151 (98%)	143 (97%)	5 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
70	SO	132/151 (87%)	121 (92%)	11 (8%)	0	100	100
71	SP	127/145 (88%)	119 (94%)	8 (6%)	0	100	100
72	SQ	140/146 (96%)	129 (92%)	11 (8%)	0	100	100
73	SR	129/135 (96%)	114 (88%)	15 (12%)	0	100	100
74	SS	139/152 (91%)	119 (86%)	19 (14%)	1 (1%)	19	36
75	ST	141/145 (97%)	135 (96%)	6 (4%)	0	100	100
76	SU	99/119 (83%)	92 (93%)	7 (7%)	0	100	100
77	SV	81/83 (98%)	79 (98%)	2 (2%)	0	100	100
78	SW	127/130 (98%)	120 (94%)	7 (6%)	0	100	100
79	SX	139/143 (97%)	130 (94%)	8 (6%)	1 (1%)	19	36
80	SY	121/133 (91%)	116 (96%)	5 (4%)	0	100	100
81	SZ	73/125 (58%)	68 (93%)	5 (7%)	0	100	100
82	Sa	97/115 (84%)	90 (93%)	7 (7%)	0	100	100
83	Sb	81/84 (96%)	70 (86%)	11 (14%)	0	100	100
84	Sc	61/69 (88%)	52 (85%)	9 (15%)	0	100	100
85	Sd	51/56 (91%)	50 (98%)	1 (2%)	0	100	100
86	Se	53/133 (40%)	52 (98%)	1 (2%)	0	100	100
87	Sf	61/156 (39%)	54 (88%)	7 (12%)	0	100	100
88	Sg	304/317 (96%)	269 (88%)	35 (12%)	0	100	100
All	All	12678/14771 (86%)	12004 (95%)	664 (5%)	10 (0%)	50	69

5 of 10 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
18	LL	5	ARG
61	SF	80	GLY
4	CZ	59	LYS
10	LC	111	TRP
79	SX	10	ALA

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	CR	356/375 (95%)	356 (100%)	0	100	100
4	CZ	162/189 (86%)	162 (100%)	0	100	100
8	LA	190/199 (96%)	190 (100%)	0	100	100
9	LB	343/349 (98%)	343 (100%)	0	100	100
10	LC	299/348 (86%)	299 (100%)	0	100	100
11	LD	241/250 (96%)	241 (100%)	0	100	100
12	LE	191/252 (76%)	191 (100%)	0	100	100
13	LF	194/215 (90%)	194 (100%)	0	100	100
14	LG	188/223 (84%)	188 (100%)	0	100	100
15	LH	167/171 (98%)	167 (100%)	0	100	100
16	LI	174/181 (96%)	174 (100%)	0	100	100
17	LJ	136/149 (91%)	136 (100%)	0	100	100
18	LL	164/177 (93%)	164 (100%)	0	100	100
19	LM	114/161 (71%)	114 (100%)	0	100	100
20	LN	171/172 (99%)	171 (100%)	0	100	100
21	LO	170/174 (98%)	170 (100%)	0	100	100
22	LP	132/163 (81%)	132 (100%)	0	100	100
23	LQ	161/165 (98%)	161 (100%)	0	100	100
24	LR	150/175 (86%)	150 (100%)	0	100	100
25	LS	156/157 (99%)	156 (100%)	0	100	100
26	LT	135/140 (96%)	135 (100%)	0	100	100
27	LU	86/115 (75%)	86 (100%)	0	100	100
28	LV	99/107 (92%)	99 (100%)	0	100	100
29	LW	61/126 (48%)	61 (100%)	0	100	100
30	LX	107/133 (80%)	107 (100%)	0	100	100
31	LY	123/135 (91%)	123 (100%)	0	100	100
32	LZ	117/118 (99%)	117 (100%)	0	100	100
33	La	118/121 (98%)	118 (100%)	0	100	100
34	Lb	59/126 (47%)	59 (100%)	0	100	100
35	Lc	79/97 (81%)	79 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
36	Ld	94/110 (86%)	94 (100%)	0	100	100
37	Le	113/121 (93%)	113 (100%)	0	100	100
38	Lf	87/89 (98%)	87 (100%)	0	100	100
39	Lg	93/100 (93%)	93 (100%)	0	100	100
40	Lh	108/110 (98%)	108 (100%)	0	100	100
41	Li	81/89 (91%)	81 (100%)	0	100	100
42	Lj	73/80 (91%)	73 (100%)	0	100	100
43	Lk	57/65 (88%)	57 (100%)	0	100	100
44	Ll	47/48 (98%)	47 (100%)	0	100	100
45	Lm	47/116 (40%)	47 (100%)	0	100	100
46	Ln	23/24 (96%)	23 (100%)	0	100	100
47	Lo	93/94 (99%)	93 (100%)	0	100	100
48	Lp	71/75 (95%)	71 (100%)	0	100	100
49	Lr	107/121 (88%)	107 (100%)	0	100	100
50	Ls	180/258 (70%)	180 (100%)	0	100	100
51	Lt	132/137 (96%)	132 (100%)	0	100	100
52	NA	62/183 (34%)	62 (100%)	0	100	100
53	NB	99/136 (73%)	99 (100%)	0	100	100
54	NM	345/443 (78%)	345 (100%)	0	100	100
56	SA	170/243 (70%)	169 (99%)	1 (1%)	84	93
57	SB	191/231 (83%)	191 (100%)	0	100	100
58	SC	175/225 (78%)	175 (100%)	0	100	100
59	SD	148/202 (73%)	148 (100%)	0	100	100
60	SE	196/225 (87%)	196 (100%)	0	100	100
61	SF	142/170 (84%)	142 (100%)	0	100	100
62	SG	138/218 (63%)	138 (100%)	0	100	100
63	SH	109/174 (63%)	109 (100%)	0	100	100
64	SI	149/180 (83%)	149 (100%)	0	100	100
65	SJ	143/168 (85%)	143 (100%)	0	100	100
66	SK	65/136 (48%)	65 (100%)	0	100	100
67	SL	121/142 (85%)	121 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
68	SM	104/108 (96%)	104 (100%)	0	100	100
69	SN	123/131 (94%)	123 (100%)	0	100	100
70	SO	95/119 (80%)	95 (100%)	0	100	100
71	SP	98/130 (75%)	98 (100%)	0	100	100
72	SQ	103/121 (85%)	103 (100%)	0	100	100
73	SR	84/122 (69%)	84 (100%)	0	100	100
74	SS	112/132 (85%)	112 (100%)	0	100	100
75	ST	105/115 (91%)	105 (100%)	0	100	100
76	SU	68/107 (64%)	68 (100%)	0	100	100
77	SV	62/67 (92%)	62 (100%)	0	100	100
78	SW	110/113 (97%)	110 (100%)	0	100	100
79	SX	109/115 (95%)	109 (100%)	0	100	100
80	SY	86/115 (75%)	86 (100%)	0	100	100
81	SZ	56/103 (54%)	56 (100%)	0	100	100
82	Sa	83/98 (85%)	83 (100%)	0	100	100
83	Sb	65/76 (86%)	65 (100%)	0	100	100
84	Sc	51/62 (82%)	51 (100%)	0	100	100
85	Sd	44/49 (90%)	44 (100%)	0	100	100
86	Se	39/104 (38%)	39 (100%)	0	100	100
87	Sf	56/140 (40%)	56 (100%)	0	100	100
88	Sg	201/275 (73%)	201 (100%)	0	100	100
All	All	10356/12578 (82%)	10355 (100%)	1 (0%)	100	100

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
56	SA	197	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 108 such sidechains are listed below:

Mol	Chain	Res	Type
35	Lc	15	ASN
50	Ls	42	GLN
72	SQ	86	GLN

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Mol	Chain	Res	Type
37	Le	80	HIS
43	Lk	31	ASN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	CM	11/952 (1%)	2 (18%)	0
2	CP	74/75 (98%)	24 (32%)	2 (2%)
5	L5	3633/5070 (71%)	751 (20%)	16 (0%)
55	S2	1704/1869 (91%)	470 (27%)	18 (1%)
6	L7	119/121 (98%)	16 (13%)	0
7	L8	155/157 (98%)	28 (18%)	1 (0%)
All	All	5696/8244 (69%)	1291 (22%)	37 (0%)

5 of 1291 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	CM	804	C
1	CM	809	U
2	CP	2	G
2	CP	4	U
2	CP	5	C

5 of 37 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
55	S2	1120	U
55	S2	1664	A
55	S2	1273	C
55	S2	1535	U
5	L5	3673	C

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	$\#\|Z\| > 2$
3	LYO	CR	63	3	7,9,10	0.75	0	6,10,12	1.17	1 (16%)

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
3	LYO	CR	63	3	-	2/8/9/11	-

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	CR	63	LYO	CB-CG-CD	-2.23	107.72	112.51

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	CR	63	LYO	N-CA-CB-CG
3	CR	63	LYO	C-CA-CB-CG

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 199 ligands modelled in this entry, 199 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

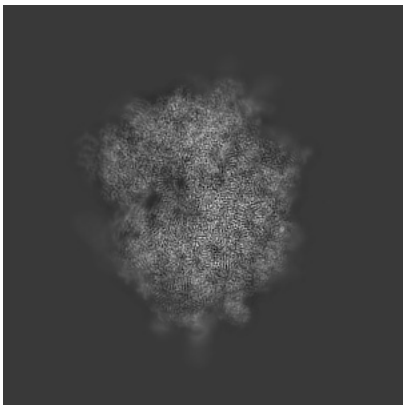
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-53232. These allow visual inspection of the internal detail of the map and identification of artifacts.

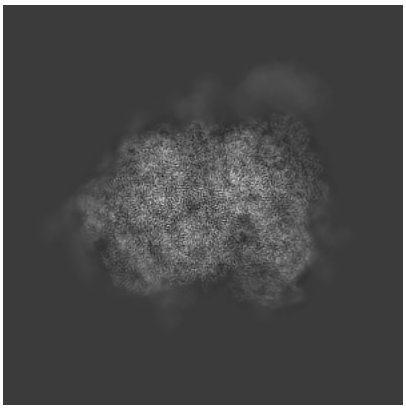
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

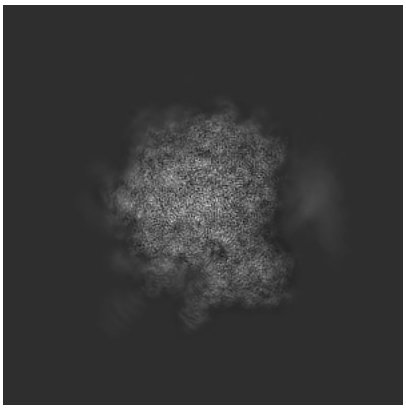
6.1.1 Primary map



X

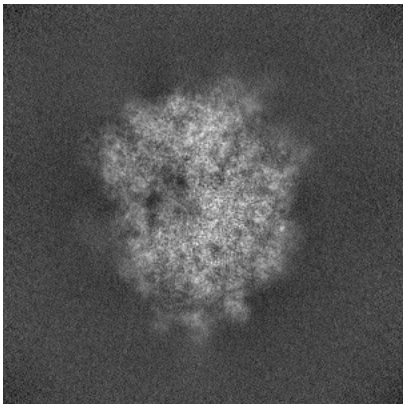


Y

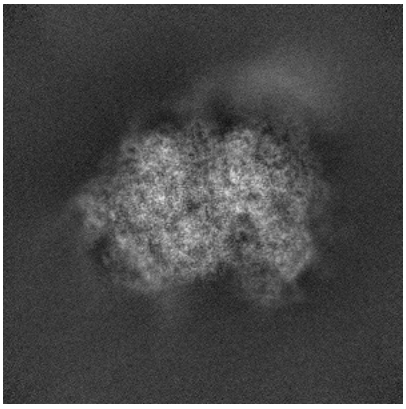


Z

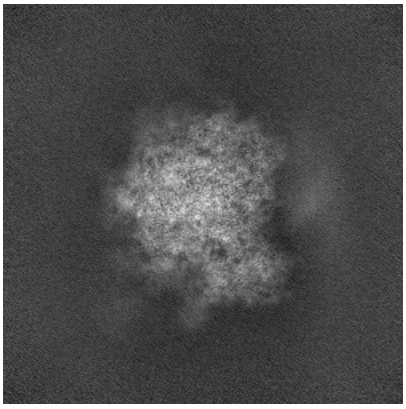
6.1.2 Raw map



X



Y

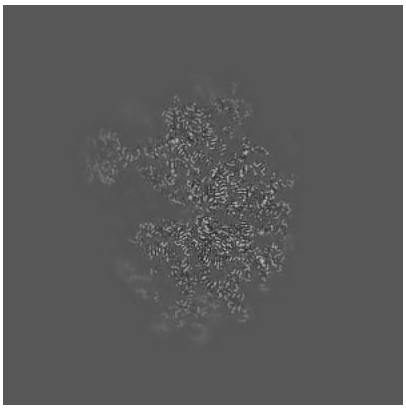


Z

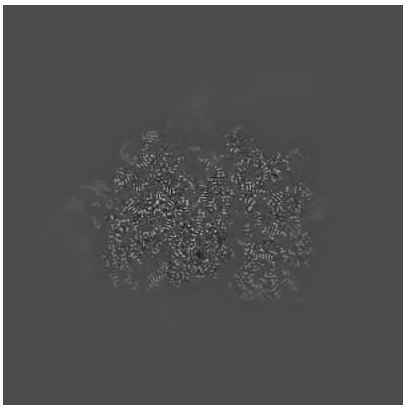
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

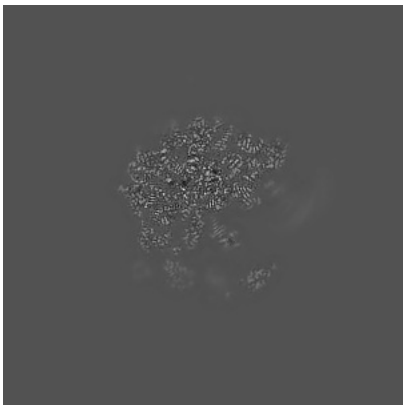
6.2.1 Primary map



X Index: 320

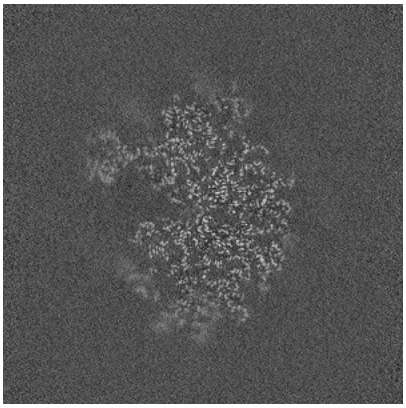


Y Index: 320

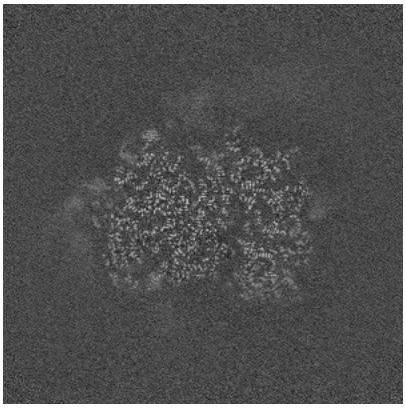


Z Index: 320

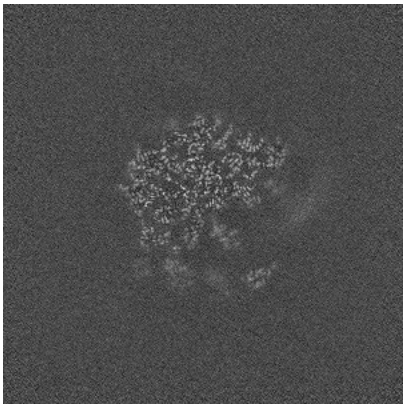
6.2.2 Raw map



X Index: 320



Y Index: 320

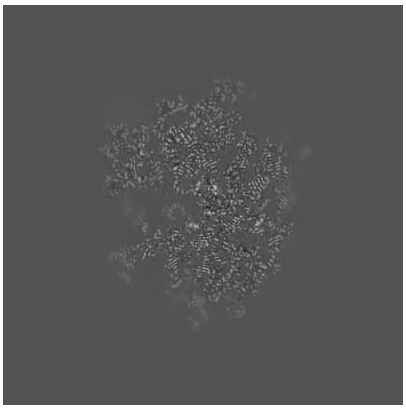


Z Index: 320

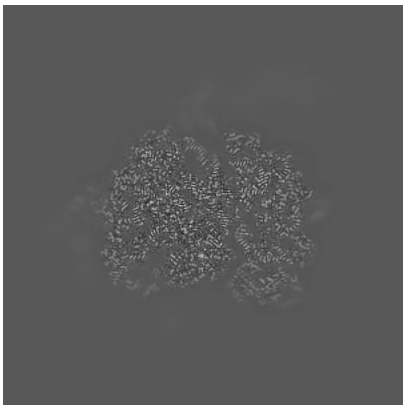
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

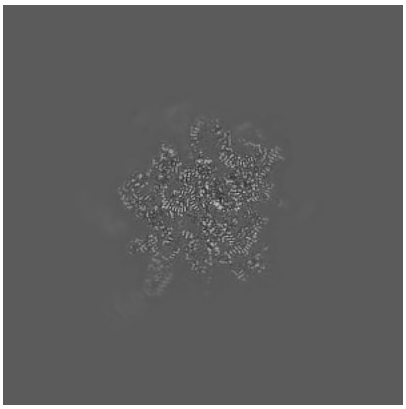
6.3.1 Primary map



X Index: 344

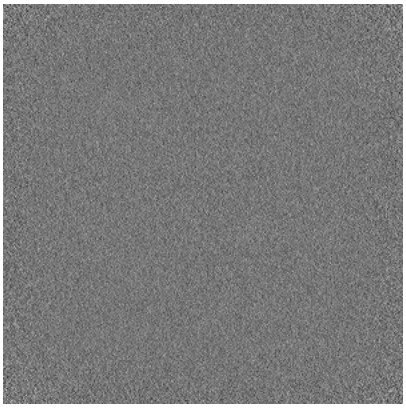


Y Index: 327

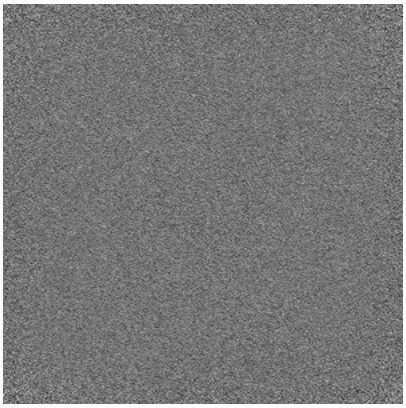


Z Index: 267

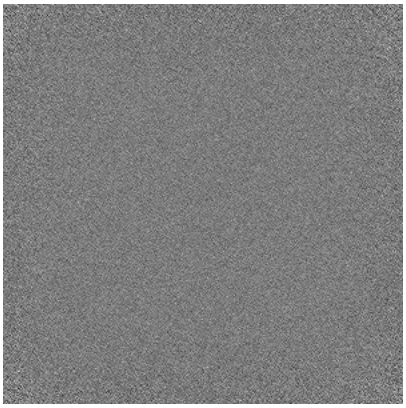
6.3.2 Raw map



X Index: 0



Y Index: 0

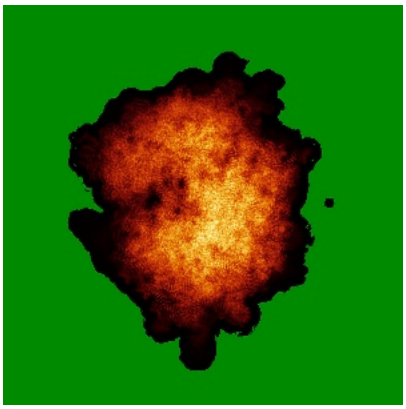


Z Index: 0

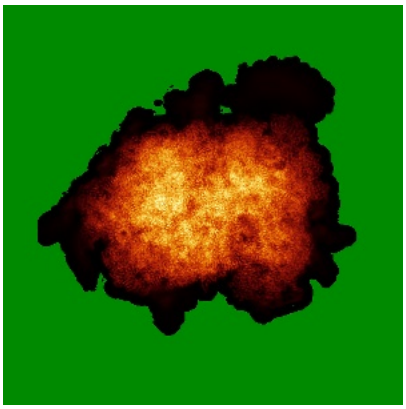
The images above show the largest variance slices of the map in three orthogonal directions.

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

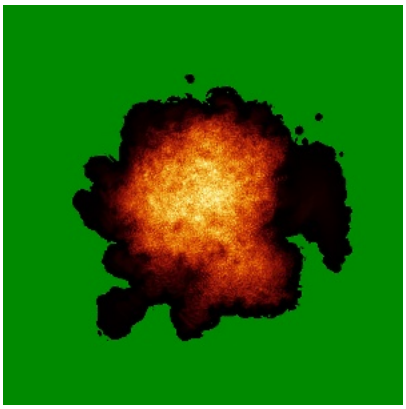
6.4.1 Primary map



X

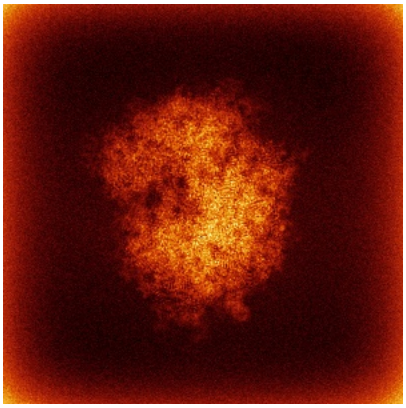


Y

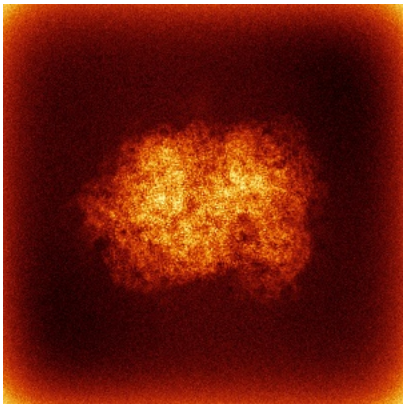


Z

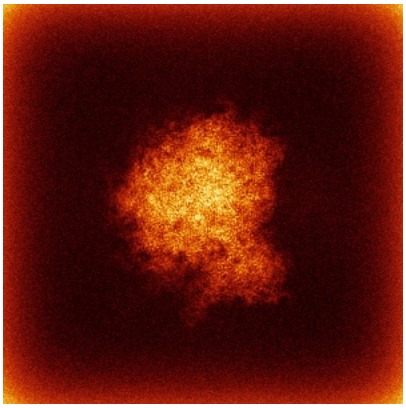
6.4.2 Raw map



X



Y



Z

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

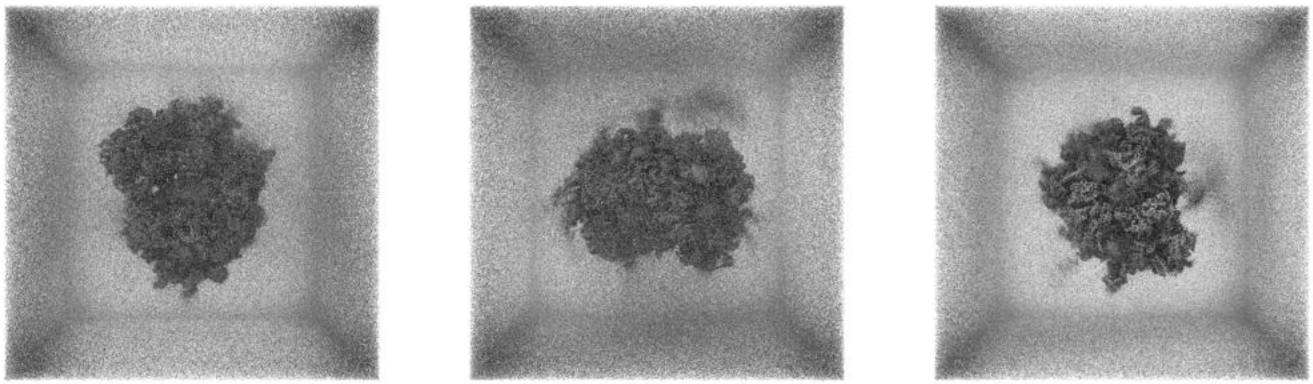
6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.1. 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.

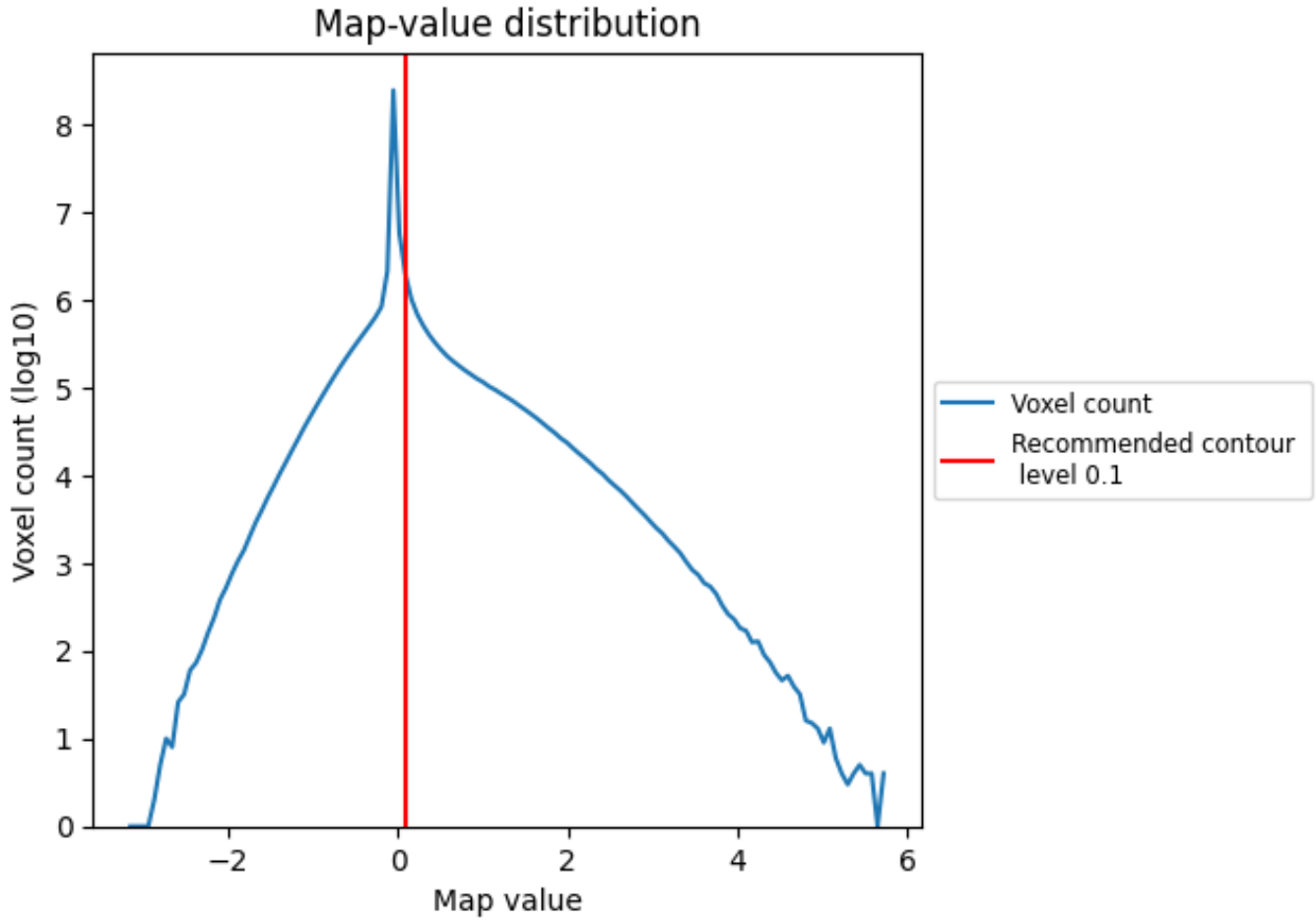
6.6 Mask visualisation (i)

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

7 Map analysis

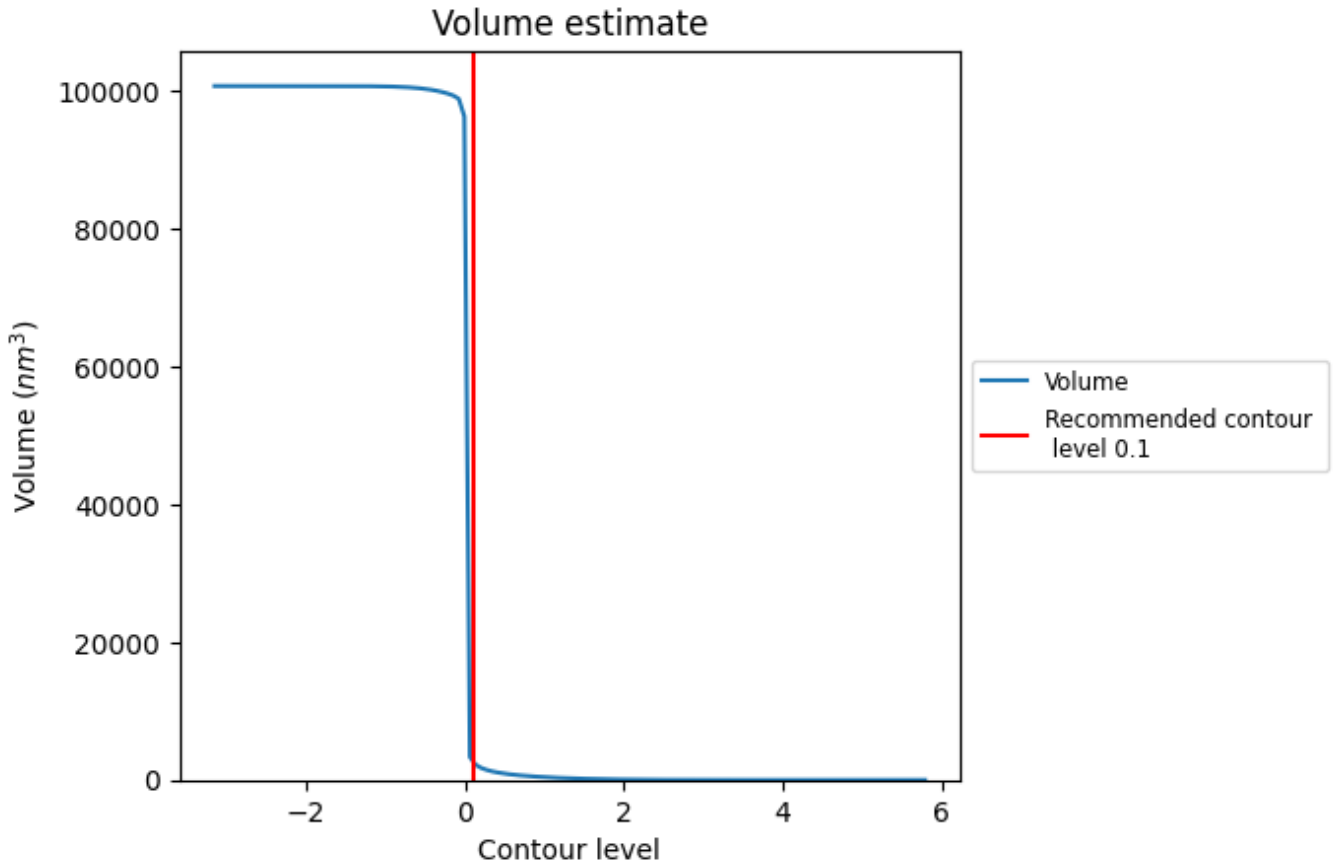
This section contains the results of statistical analysis of the map.

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.

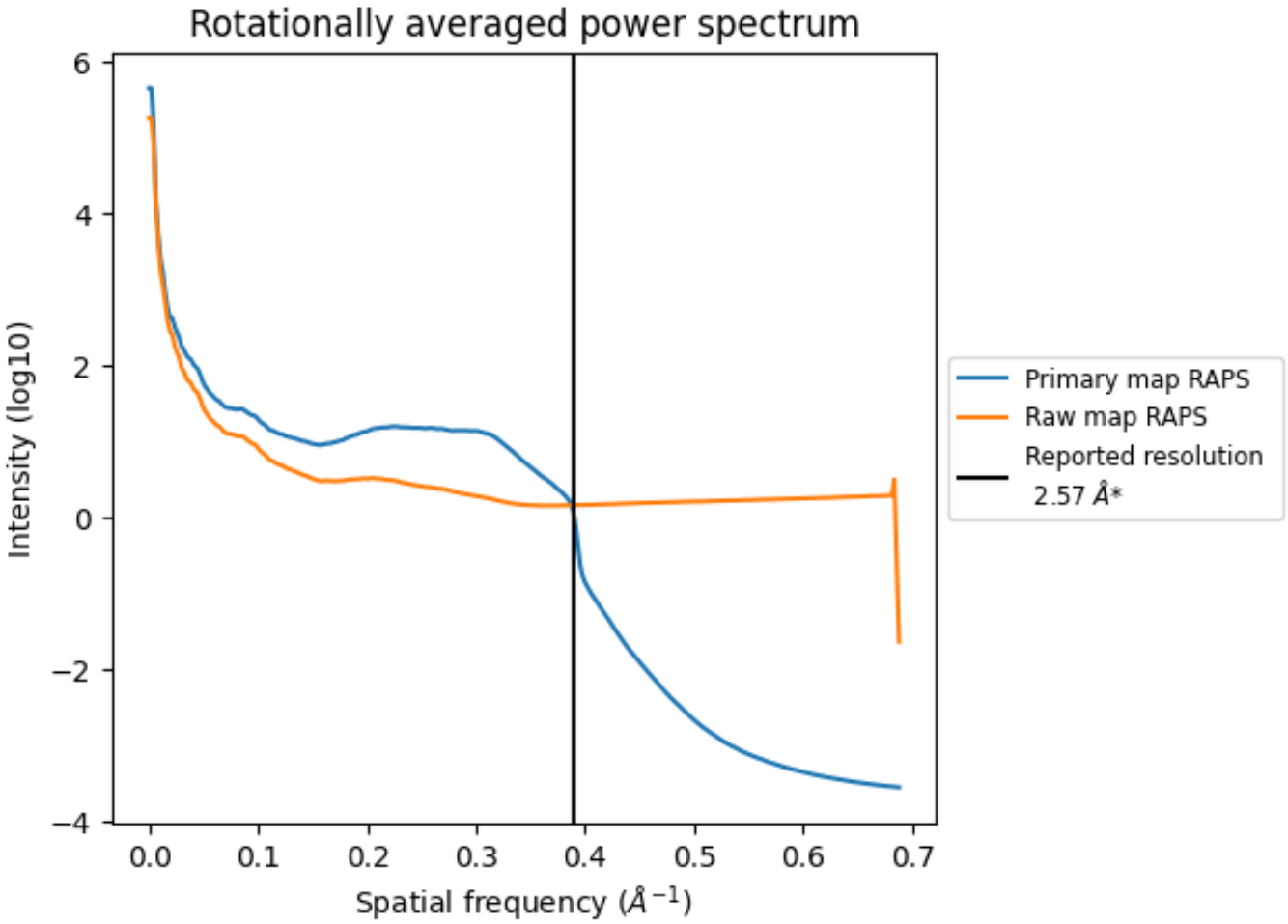
7.2 Volume estimate (i)



The volume at the recommended contour level is 2773 nm^3; this corresponds to an approximate mass of 2505 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)

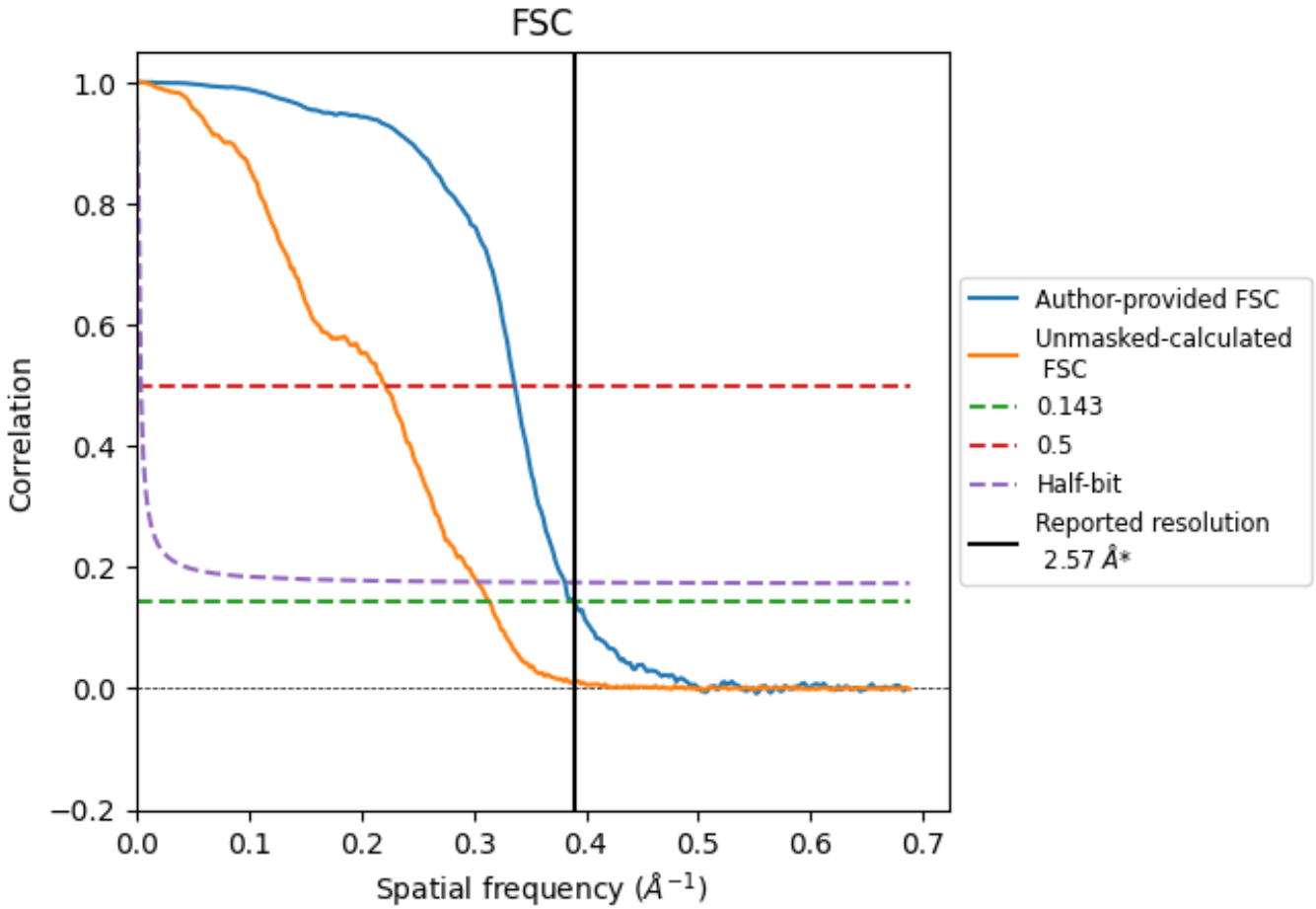


*Reported resolution corresponds to spatial frequency of 0.389 Å^{-1}

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 0.389 Å^{-1}

8.2 Resolution estimates (i)

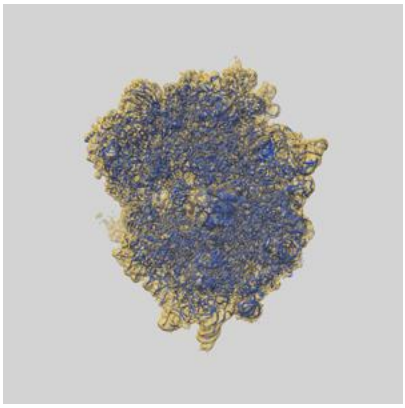
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.57	-	-
Author-provided FSC curve	2.57	2.97	2.62
Unmasked-calculated*	3.18	4.51	3.30

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.18 differs from the reported value 2.57 by more than 10 %

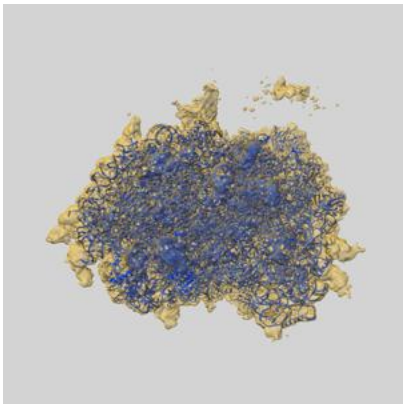
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-53232 and PDB model 9QLQ. Per-residue inclusion information can be found in section 3 on page 23.

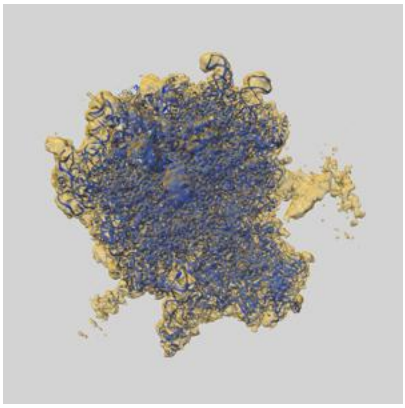
9.1 Map-model overlay



X



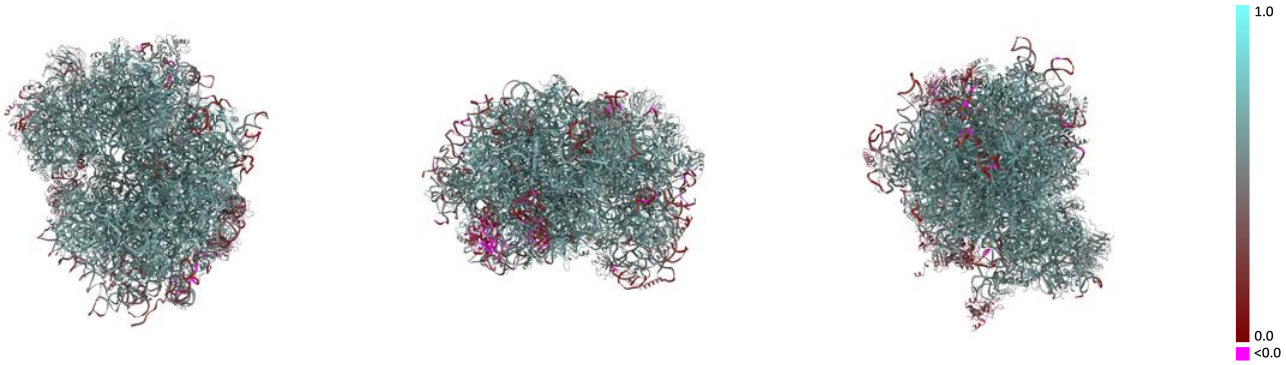
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.1 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.

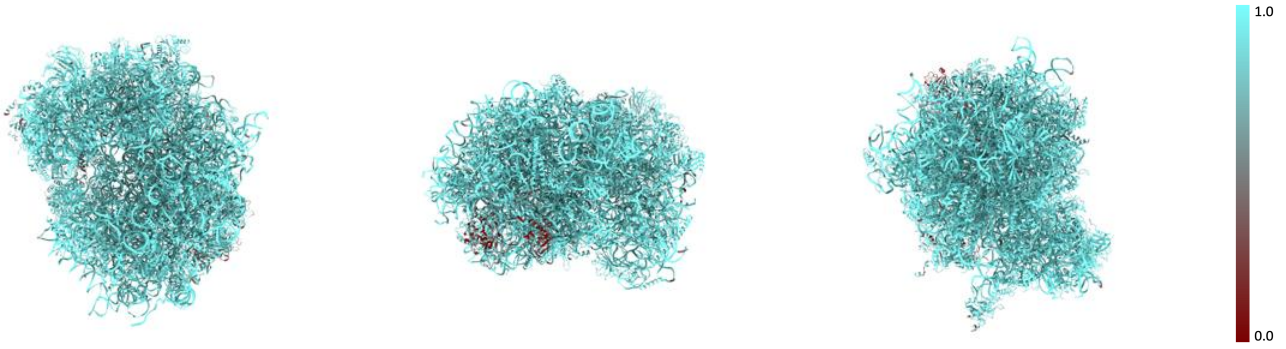
9.2 Q-score mapped to coordinate model (i)



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.

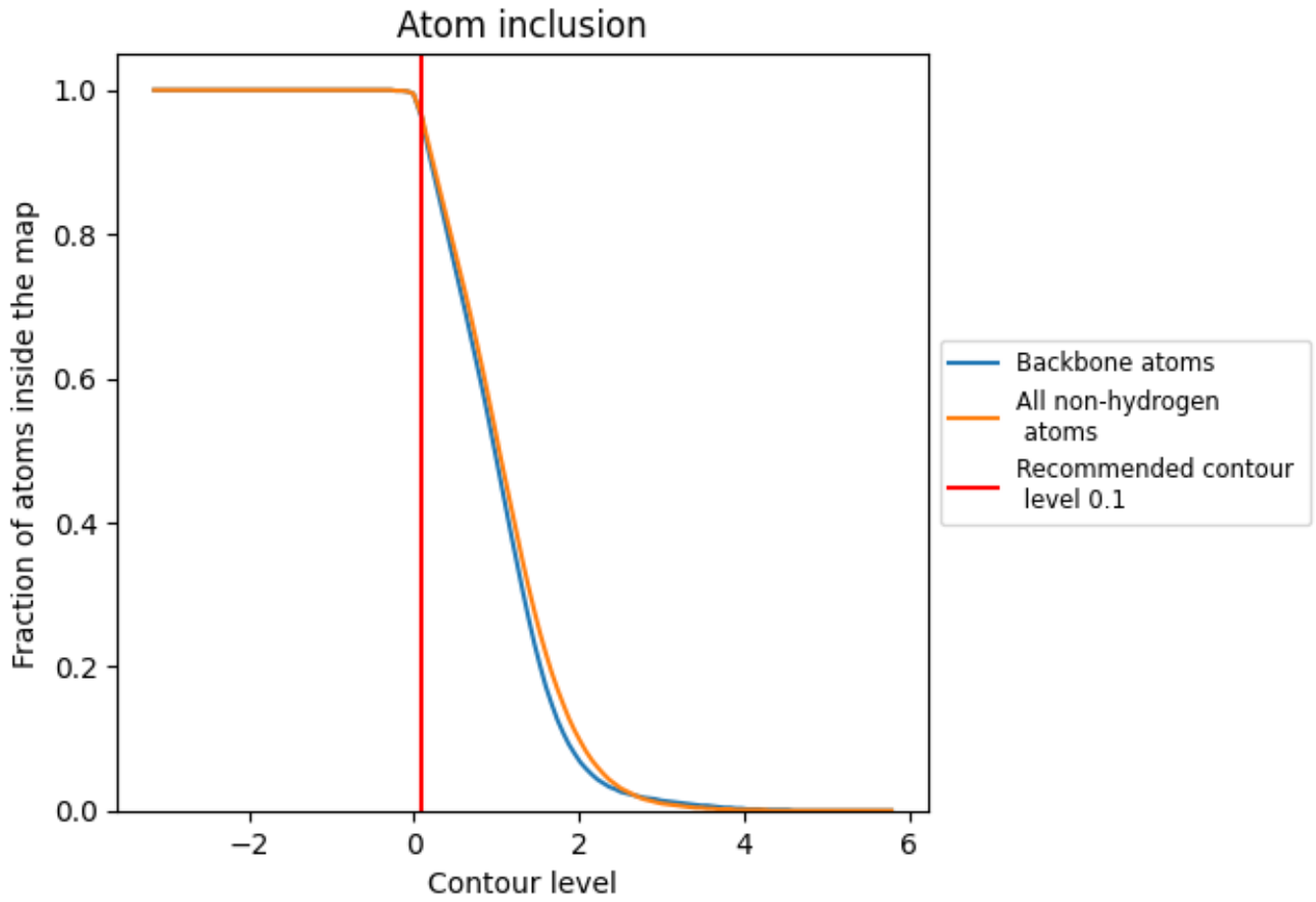
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.1).

9.4 Atom inclusion (i)



At the recommended contour level, 96% of all backbone atoms, 96% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.1) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9630	0.5830
CM	0.9760	0.5900
CP	0.9800	0.5630
CR	0.8970	0.4850
CZ	0.7020	0.2070
L5	0.9860	0.6000
L7	0.9970	0.6510
L8	0.9880	0.6180
LA	0.9930	0.6720
LB	0.9850	0.6480
LC	0.9840	0.6450
LD	0.9820	0.5990
LE	0.9760	0.5920
LF	0.9790	0.6520
LG	0.9670	0.5930
LH	0.9890	0.6240
LI	0.9750	0.6260
LJ	0.9680	0.5880
LL	0.9780	0.6190
LM	0.9850	0.6250
LN	0.9950	0.6740
LO	0.9870	0.6590
LP	0.9850	0.6580
LQ	0.9950	0.6660
LR	0.9810	0.6320
LS	0.9890	0.6540
LT	0.9700	0.6150
LU	0.9450	0.5140
LV	0.9820	0.6450
LW	0.9310	0.5110
LX	0.9760	0.6290
LY	0.9780	0.6200
LZ	0.9820	0.6250
La	0.9910	0.6630
Lb	0.9450	0.5660

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Chain	Atom inclusion	Q-score
Lc	0.9740	0.6280
Ld	0.9810	0.6340
Le	0.9930	0.6620
Lf	0.9830	0.6640
Lg	0.9800	0.6290
Lh	0.9860	0.6250
Li	0.9820	0.6040
Lj	0.9870	0.6640
Lk	0.9550	0.5630
Ll	0.9880	0.6390
Lm	0.9680	0.6350
Ln	0.9900	0.6690
Lo	0.9820	0.6390
Lp	0.9900	0.6640
Lr	0.9850	0.6380
Ls	0.7980	0.2780
Lt	0.9030	0.3190
NA	0.2140	0.1110
NB	0.3510	0.2070
NM	0.4040	0.0800
S2	0.9830	0.5860
SA	0.9760	0.6140
SB	0.9710	0.6120
SC	0.9830	0.6260
SD	0.9840	0.5780
SE	0.9820	0.5990
SF	0.9630	0.5850
SG	0.9800	0.5190
SH	0.9850	0.5550
SI	0.9850	0.6070
SJ	0.9820	0.6050
SK	0.9780	0.5540
SL	0.9890	0.6420
SM	0.8160	0.2680
SN	0.9890	0.6440
SO	0.9870	0.6230
SP	0.9730	0.5550
SQ	0.9700	0.5970
SR	0.9460	0.5410
SS	0.9630	0.5690
ST	0.9770	0.5890
SU	0.9610	0.5310

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Chain	Atom inclusion	Q-score
SV	0.9830	0.6250
SW	0.9890	0.6540
SX	0.9780	0.6220
SY	0.9810	0.5640
SZ	0.9740	0.5610
Sa	0.9840	0.6240
Sb	0.9640	0.5730
Sc	0.9280	0.5250
Sd	0.9880	0.6310
Se	0.9700	0.5690
Sf	0.8310	0.2880
Sg	0.9630	0.5120