



wwPDB EM Validation Summary Report ⓘ

Nov 19, 2022 – 04:00 PM EST

PDB ID : 4V72
EMDB ID : EMD-1719
Title : E. coli 70S-fMetVal-tRNAVal-tRNAfMet complex in hybrid pre-translocation state (pre4)
Authors : Blau, C.; Bock, L.V.; Schroder, G.F.; Davydov, I.; Fischer, N.; Stark, H.; Rodnina, M.V.; Vaiana, A.C.; Grubmuller, H.
Deposited on : 2013-10-14
Resolution : 13.00 Å (reported)
Based on initial models : 2K4C, 2HGP, 2WRI, 3I1O

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

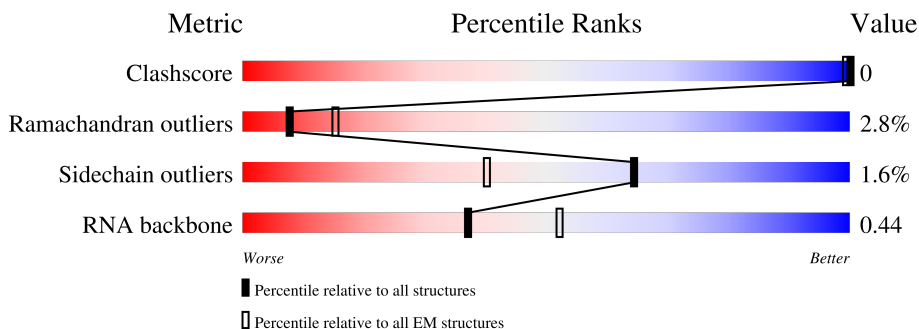
EMDB validation analysis : 0.0.1.dev43
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.3

1 Overall quality at a glance i

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

The reported resolution of this entry is 13.00 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	AB	220	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">29%</div> <div style="width: 100%; height: 15px; background: linear-gradient(to right, red 29%, orange 29%, yellow 29%, green 29%, grey 29%);"></div> <div style="text-align: center;">92%</div> <div style="text-align: right;">8%</div> </div>
2	AC	208	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">30%</div> <div style="width: 100%; height: 15px; background: linear-gradient(to right, red 30%, orange 30%, yellow 30%, green 30%, grey 30%);"></div> <div style="text-align: center;">87%</div> <div style="text-align: right;">12%</div> </div>
3	AD	206	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">43%</div> <div style="width: 100%; height: 15px; background: linear-gradient(to right, red 43%, orange 43%, yellow 43%, green 43%, grey 43%);"></div> <div style="text-align: center;">87%</div> <div style="text-align: right;">13%</div> </div>
4	AE	152	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">28%</div> <div style="width: 100%; height: 15px; background: linear-gradient(to right, red 28%, orange 28%, yellow 28%, green 28%, grey 28%);"></div> <div style="text-align: center;">90%</div> <div style="text-align: right;">10%</div> </div>
5	AF	101	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">14%</div> <div style="width: 100%; height: 15px; background: linear-gradient(to right, red 14%, orange 14%, yellow 14%, green 14%, grey 14%);"></div> <div style="text-align: center;">82%</div> <div style="text-align: right;">18%</div> </div>
6	AG	152	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">22%</div> <div style="width: 100%; height: 15px; background: linear-gradient(to right, red 22%, orange 22%, yellow 22%, green 22%, grey 22%);"></div> <div style="text-align: center;">86%</div> <div style="text-align: right;">13%</div> </div>
7	AH	130	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">32%</div> <div style="width: 100%; height: 15px; background: linear-gradient(to right, red 32%, orange 32%, yellow 32%, green 32%, grey 32%);"></div> <div style="text-align: center;">92%</div> <div style="text-align: right;">6% ..</div> </div>

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Mol	Chain	Length	Quality of chain
8	AI	128	27% 82% 17%
9	AJ	100	33% 88% 10%
10	AK	118	34% 90% 9%
11	AL	124	38% 89% 10%
12	AM	115	38% 83% 15%
13	AN	101	40% 88% 10%
14	AO	89	17% 88% 11%
15	AP	81	44% 88% 12%
16	AQ	82	26% 89% 10%
17	AR	57	30% 89% 11%
18	AS	81	21% 93% 5%
19	AT	86	29% 91% 9%
20	AU	53	57% 81% 17%
21	AA	1533	6% 25% 51% 20%
22	A1	76	34% 26% 53% 17%
23	A2	15	40% 27% 27% 33% 13%
24	A3	77	10% 18% 52% 25% 5%
25	BC	273	47% 87% 12%
26	BD	209	44% 91% 8%
27	BE	201	32% 90% 10%
28	BF	179	22% 88% 11%
29	BG	177	40% 90% 10%
30	BH	149	80% 95% 5%
31	BI	142	96% 96%
32	BJ	142	37% 90% 9%

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Mol	Chain	Length	Quality of chain
33	BK	123	35% 85% 13%
34	BL	144	40% 85% 14%
35	BM	136	39% 87% 12%
36	BN	121	31% 89% 11%
37	BO	117	9% 85% 13%
38	BP	115	36% 84% 14%
39	BQ	118	45% 84% 14%
40	BR	103	23% 94% 5%
41	BS	110	37% 90% 9%
42	BT	94	33% 94% 6%
43	BU	104	41% 88% 9%
44	BV	94	32% 95% 5%
45	BW	80	24% 86% 12%
46	BX	79	49% 86% 11%
47	BY	63	19% 90% 10%
48	BZ	59	41% 83% 15%
49	B0	57	33% 88% 11%
50	B1	52	29% 92% 8%
51	B2	46	57% 78% 20%
52	B3	65	63% 83% 14%
53	B4	38	26% 89% 11%
54	BA	2903	7% 22% 51% 22%
55	BB	118	7% 21% 54% 20%
56	B5	234	48% 90% 5% 5%

2 Entry composition i

There are 58 unique types of molecules in this entry. The entry contains 147653 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	AB	220	1708	1083	306	312	7	0	1

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AB	7	ACE	-	acetylation	UNP P0A7V0
AB	226	NH2	-	amidation	UNP P0A7V0

- Molecule 2 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	AC	207	1625	1028	306	288	3	0	1

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AC	207	NH2	-	amidation	UNP P0A7V3

- Molecule 3 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	AD	205	1643	1026	315	298	4	0	0

- Molecule 4 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	AE	152	1109	689	212	202	6	0	1

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AE	8	ACE	-	acetylation	UNP P0A7W1
AE	159	NH2	-	amidation	UNP P0A7W1

- Molecule 5 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	AF	101	818	515	149	148	6	0	1

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AF	101	NH2	-	amidation	UNP P02358

- Molecule 6 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	AG	152	1178	732	227	215	4	0	1

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AG	1	ACE	-	acetylation	UNP P02359
AG	152	NH2	-	amidation	UNP P02359

- Molecule 7 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	AH	129	979	616	173	184	6	0	0

- Molecule 8 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	AI	128	1025	636	206	180	3	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AI	2	ACE	-	acetylation	UNP P0A7X3

- Molecule 9 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	AJ	100	790	495	151	143	1	0	1

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AJ	4	ACE	-	acetylation	UNP P0A7R5
AJ	103	NH2	-	amidation	UNP P0A7R5

- Molecule 10 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	AK	118	880	542	174	161	3	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AK	11	ACE	-	acetylation	UNP P0A7R9

- Molecule 11 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	AL	123	955	590	196	165	4	0	0

- Molecule 12 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	AM	114	877	541	178	155	3	0	1

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AM	114	NH2	-	amidation	UNP P0A7S9

- Molecule 13 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	AN	100	805	499	164	139	3	0	0

- Molecule 14 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
14	AO	88	714	439	144	130	1	0	0

- Molecule 15 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
15	AP	81	639	400	127	111	1	0	1

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AP	81	NH2	-	amidation	UNP P0A7T3

- Molecule 16 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	AQ	82	652	413	122	114	3	0	1

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AQ	2	ACE	-	acetylation	UNP P0AG63
AQ	83	NH2	-	amidation	UNP P0AG63

- Molecule 17 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
17	AR	57	459	290	87	82	0	1

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AR	18	ACE	-	acetylation	UNP P0A7T7

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Chain	Residue	Modelled	Actual	Comment	Reference
AR	74	NH2	-	amidation	UNP P0A7T7

- Molecule 18 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
18	AS	81	641	410	121	108	2	0	1

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AS	1	ACE	-	acetylation	UNP P0A7U3
AS	81	NH2	-	amidation	UNP P0A7U3

- Molecule 19 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
19	AT	86	668	413	137	115	3	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AT	1	ACE	-	acetylation	UNP P0A7U7

- Molecule 20 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	AU	53	429	267	87	74	1	0	1

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AU	2	ACE	-	acetylation	UNP P68679
AU	54	NH2	-	amidation	UNP P68679

- Molecule 21 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
21	AA	1530	32828	14642	6024	10633	1529	0	0

- Molecule 22 is a RNA chain called fMet-Val-tRNA-Val.

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	N	O	P			S
22	A1	76	1627	728	292	531	75	1	0	0

- Molecule 23 is a RNA chain called 5'-R(*AP*CP*UP*AP*UP*GP*GP*UP*UP*UP*UP*UP*AP*UP*U)-3'.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
23	A2	15	309	140	46	109	14	0	0

- Molecule 24 is a RNA chain called tRNA-fMet.

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	N	O	P			S
24	A3	77	1642	734	297	534	76	1	0	0

- Molecule 25 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	BC	272	2083	1288	424	364	7	0	1

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BC	272	NH2	-	amidation	UNP P60422

- Molecule 26 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
26	BD	209	1565	979	288	294	4	0	0

- Molecule 27 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	BE	201	Total	C	N	O	S	0	0
			1552	974	283	290	5		

- Molecule 28 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	BF	178	Total	C	N	O	S	0	0
			1420	905	251	258	6		

- Molecule 29 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	BG	176	Total	C	N	O	S	0	0
			1323	832	243	246	2		

- Molecule 30 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	BH	149	Total	C	N	O	S	0	0
			1111	699	197	214	1		

- Molecule 31 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	BI	141	Total	C	N	O	S	0	0
			1032	651	179	196	6		

- Molecule 32 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	BJ	142	Total	C	N	O	S	0	0
			1129	714	212	199	4		

- Molecule 33 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	BK	123	Total	C	N	O	S	0	1
			939	587	181	165	6		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BK	123	NH2	-	amidation	UNP P0ADY3

- Molecule 34 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
34	BL	143	1045	649	206	189	1	0	0

- Molecule 35 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
35	BM	136	1074	686	205	177	6	0	0

- Molecule 36 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
36	BN	121	961	593	197	166	5	0	1

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BN	121	NH2	-	amidation	UNP P0AG44

- Molecule 37 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
37	BO	116	892	552	178	162	0	0

- Molecule 38 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
38	BP	114	917	574	179	163	1	0	0

- Molecule 39 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
39	BQ	117	947	604	192	151	0	0

- Molecule 40 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
40	BR	103	816	516	153	145	2	0	0

- Molecule 41 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	BS	110	857	532	166	156	3	0	0

- Molecule 42 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	BT	94	739	466	140	131	2	0	1

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BT	94	NH2	-	amidation	UNP P0ADZ0

- Molecule 43 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
43	BU	103	780	492	147	141	0	1

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BU	103	NH2	-	amidation	UNP P60624

- Molecule 44 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
44	BV	94	753	479	137	134	3	0	0

- Molecule 45 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
45	BW	80	599	369	120	109	1	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BW	5	ACE	-	acetylation	UNP P0A7L8

- Molecule 46 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
46	BX	77	625	388	129	106	2	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BX	-1	ACE	-	acetylation	UNP P0A7M2

- Molecule 47 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
47	BY	63	509	313	99	95	2	0	0

- Molecule 48 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
48	BZ	58	449	281	87	79	2	0	0

- Molecule 49 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
49	B0	56	444	269	94	80	1	0	0

- Molecule 50 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
50	B1	52	413	265	76	72	0	1

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B1	2	ACE	-	acetylation	UNP P0A7N9
B1	53	NH2	-	amidation	UNP P0A7N9

- Molecule 51 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	B2	46	Total	C	N	O	S	0	0
			377	228	90	57	2		

- Molecule 52 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	B3	64	Total	C	N	O	S	0	0
			504	323	105	74	2		

- Molecule 53 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	B4	38	Total	C	N	O	S	0	0
			302	185	65	48	4		

- Molecule 54 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	BA	2903	Total	C	N	O	P	0	0
			62317	27801	11467	20147	2902		

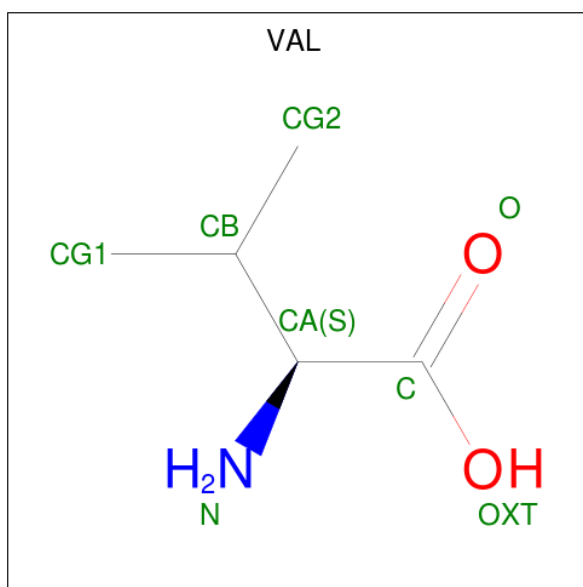
- Molecule 55 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	BB	117	Total	C	N	O	P	0	0
			2504	1116	459	813	116		

- Molecule 56 is a protein called 50S ribosomal protein L1.

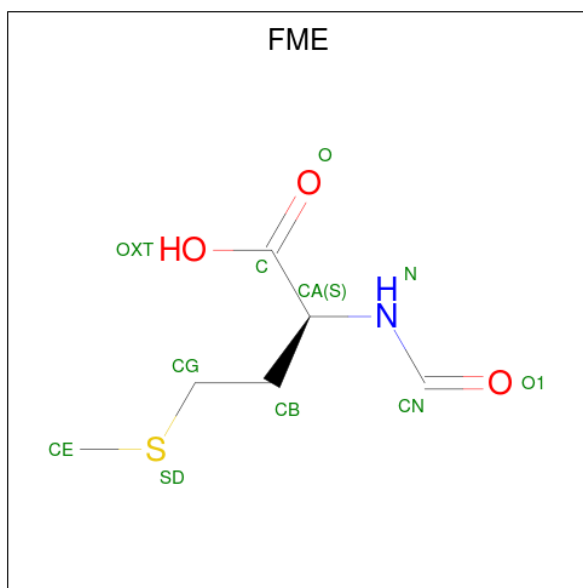
Mol	Chain	Residues	Atoms					AltConf	Trace
56	B5	223	Total	C	N	O	S	0	0
			1658	1038	302	312	6		

- Molecule 57 is VALINE (three-letter code: VAL) (formula: C₅H₁₁NO₂).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
57	A1	1	7	5	1	1	0

- Molecule 58 is N-FORMYLMETHIONINE (three-letter code: FME) (formula: C₆H₁₁NO₃S).

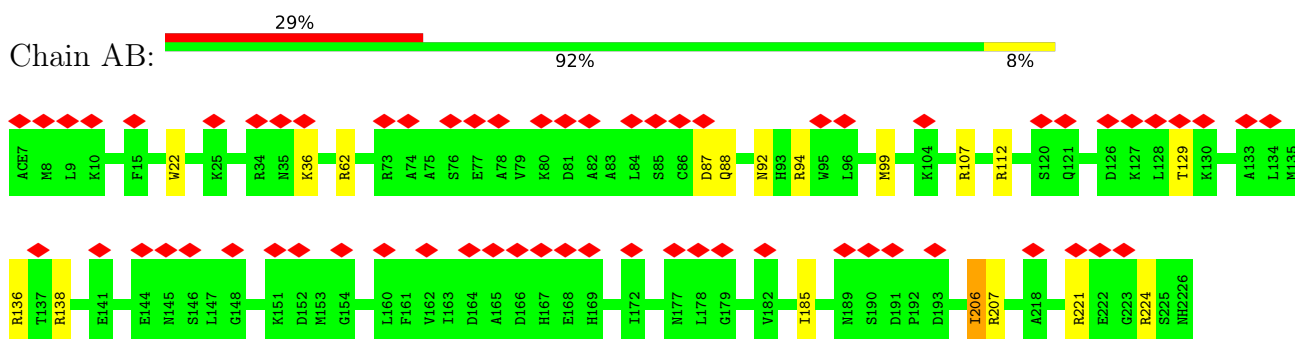


Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	S	
58	BA	1	10	6	1	2	1	0

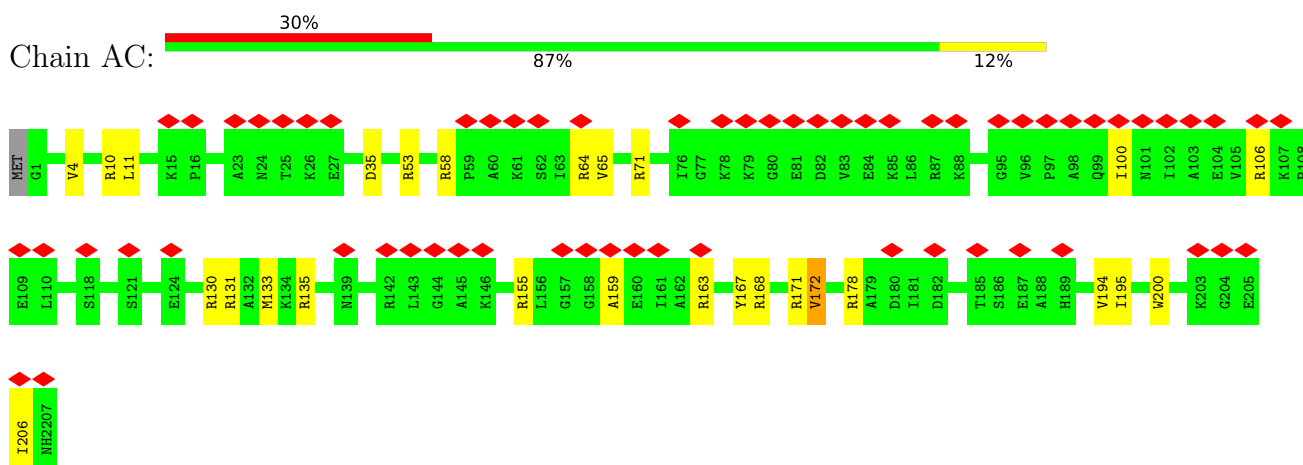
3 Residue-property plots

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

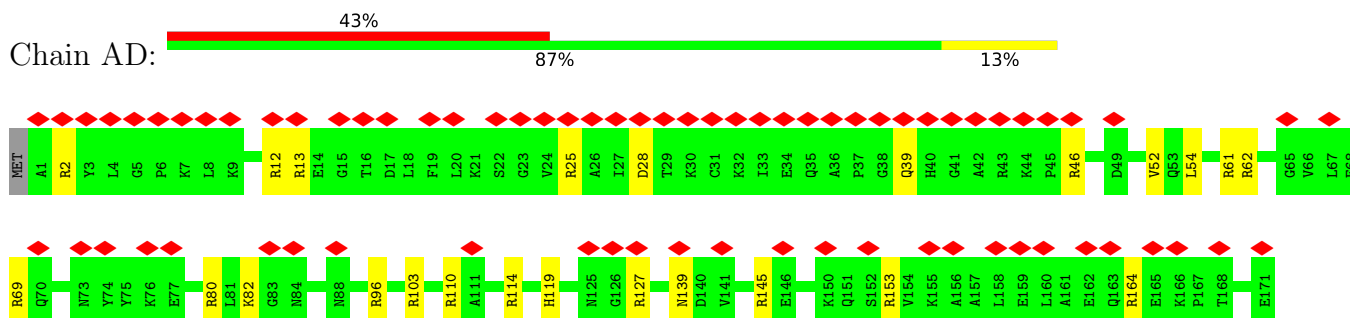
- Molecule 1: 30S ribosomal protein S2

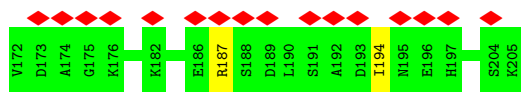


- Molecule 2: 30S ribosomal protein S3

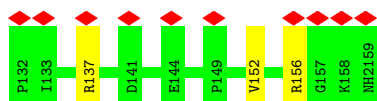
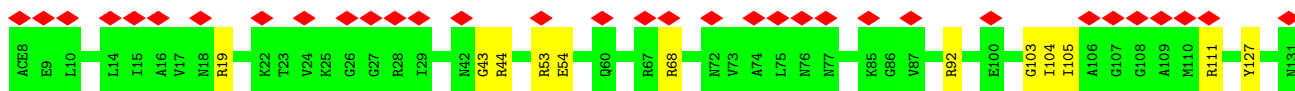
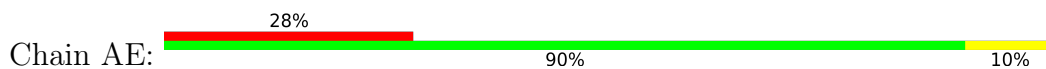


- Molecule 3: 30S ribosomal protein S4

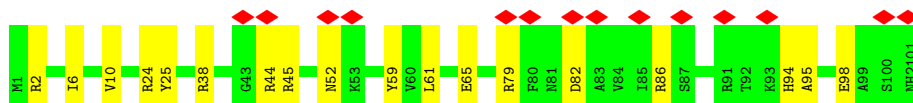
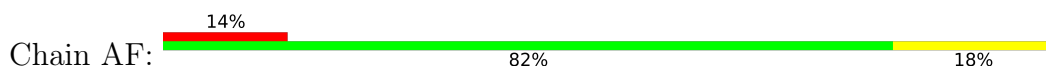




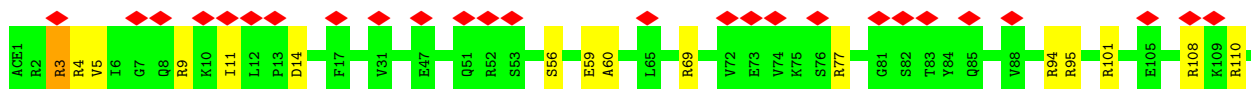
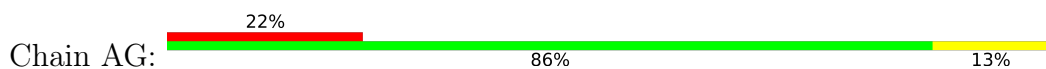
- Molecule 4: 30S ribosomal protein S5



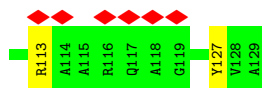
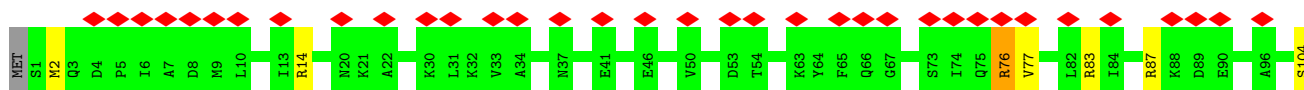
- Molecule 5: 30S ribosomal protein S6



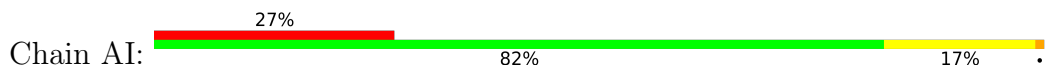
- Molecule 6: 30S ribosomal protein S7

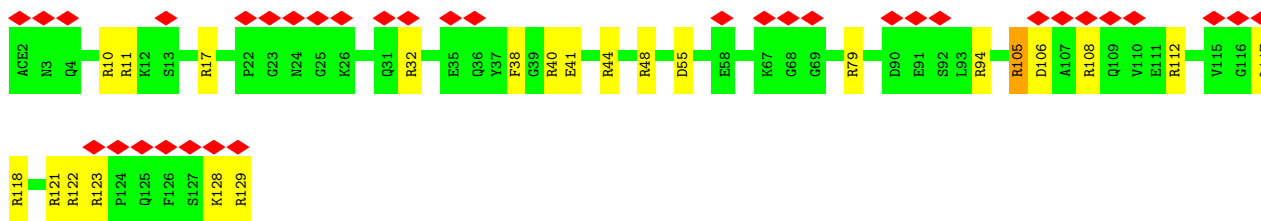


- Molecule 7: 30S ribosomal protein S8

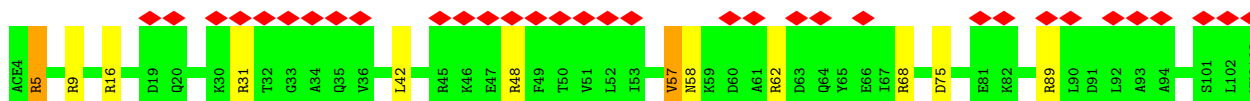
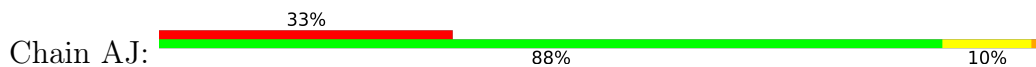


- Molecule 8: 30S ribosomal protein S9

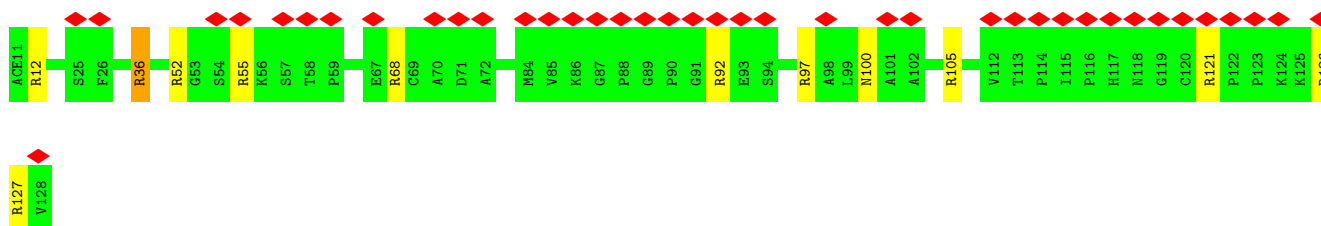




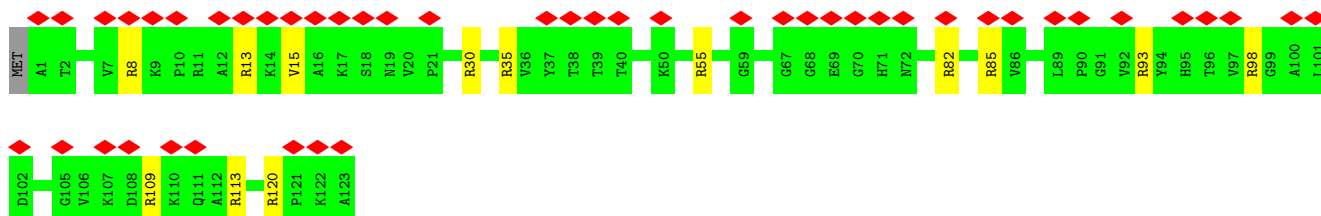
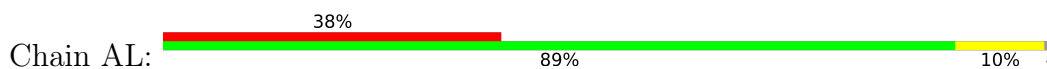
- Molecule 9: 30S ribosomal protein S10



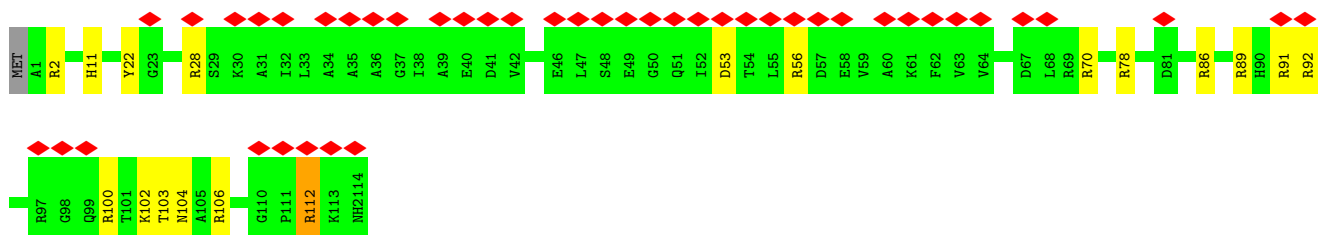
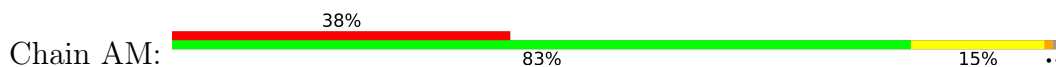
- Molecule 10: 30S ribosomal protein S11



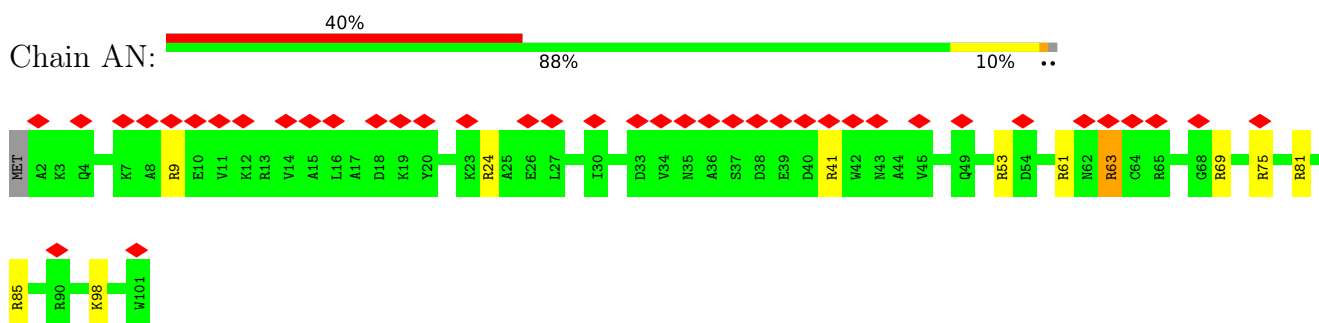
- Molecule 11: 30S ribosomal protein S12



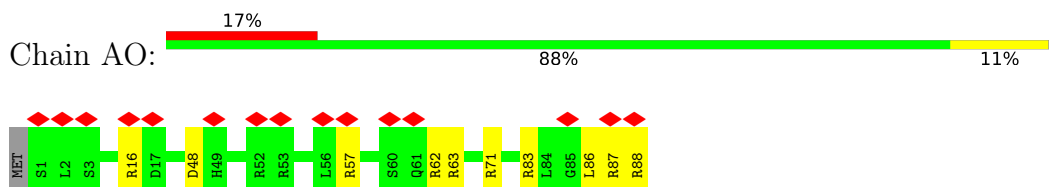
- Molecule 12: 30S ribosomal protein S13



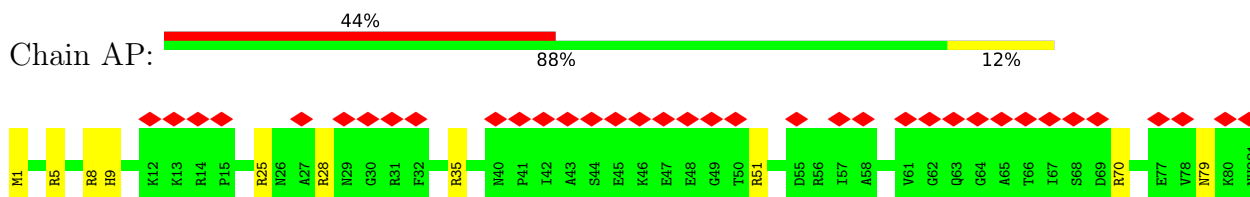
- Molecule 13: 30S ribosomal protein S14



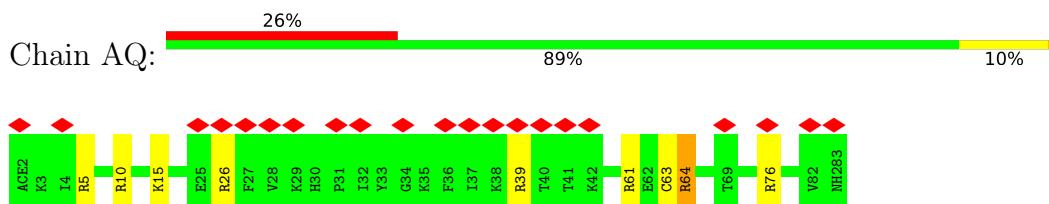
- Molecule 14: 30S ribosomal protein S15



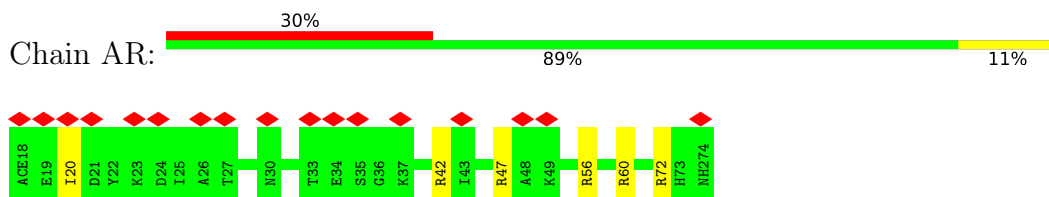
- Molecule 15: 30S ribosomal protein S16



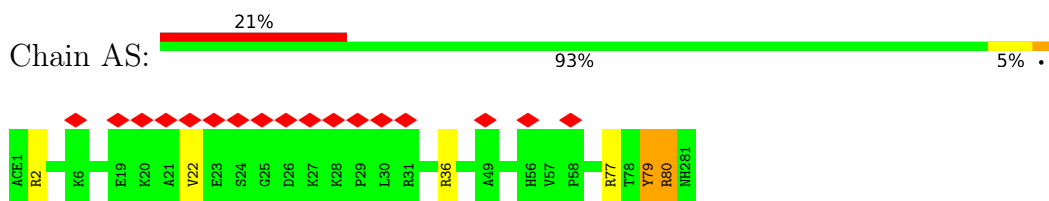
- Molecule 16: 30S ribosomal protein S17



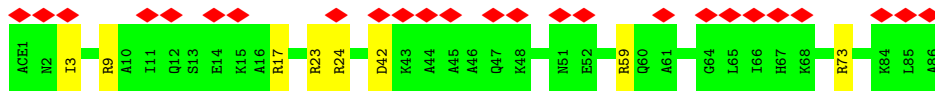
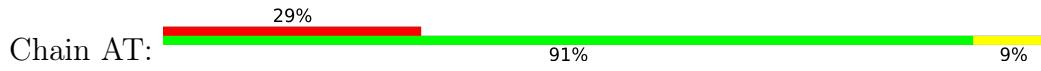
- Molecule 17: 30S ribosomal protein S18



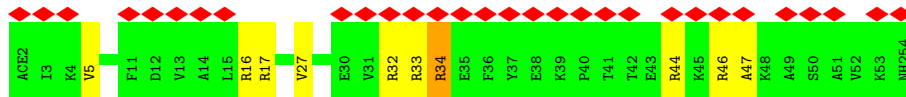
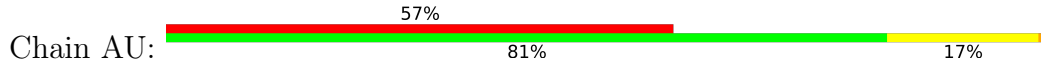
- Molecule 18: 30S ribosomal protein S19



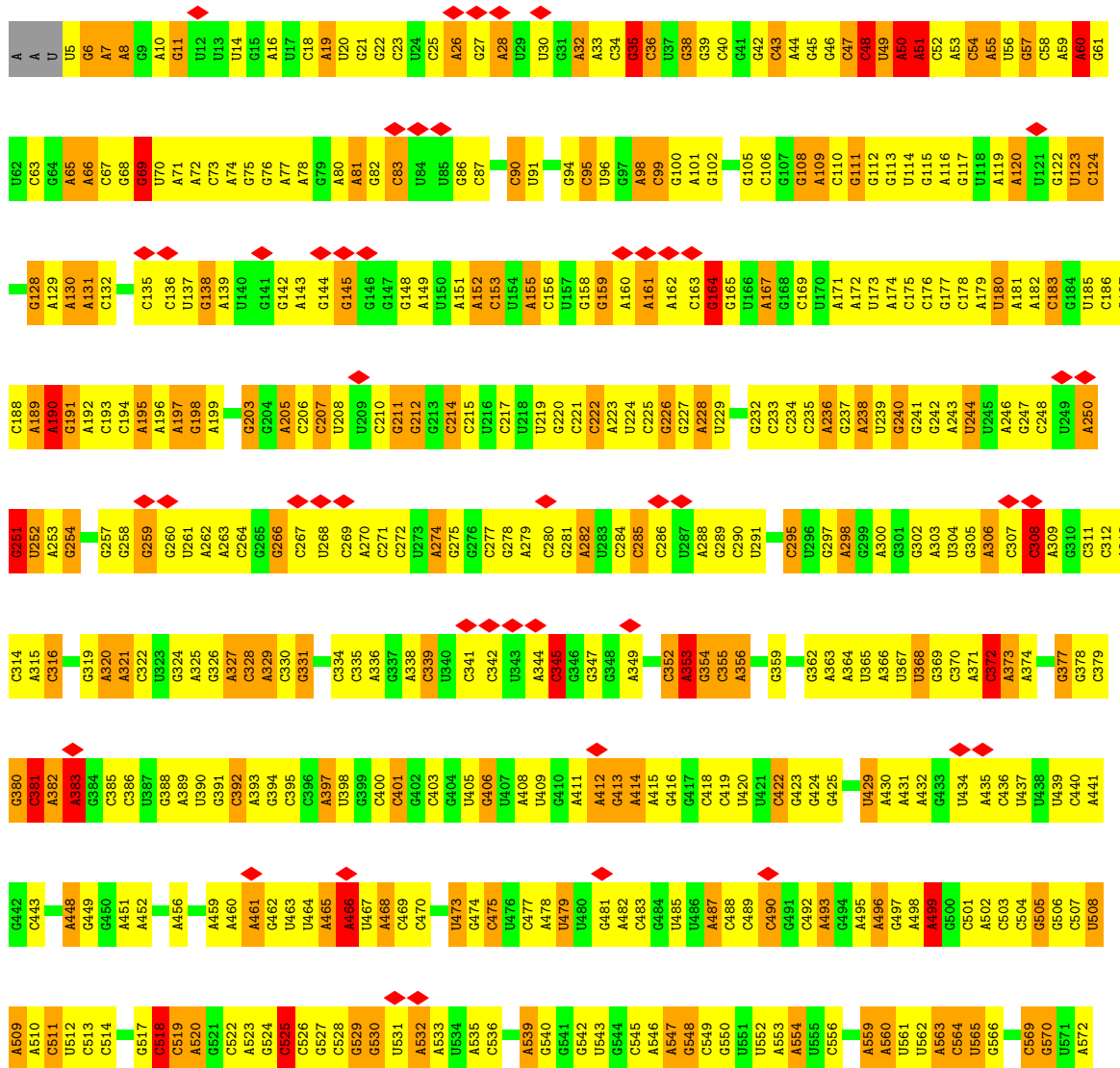
- Molecule 19: 30S ribosomal protein S20

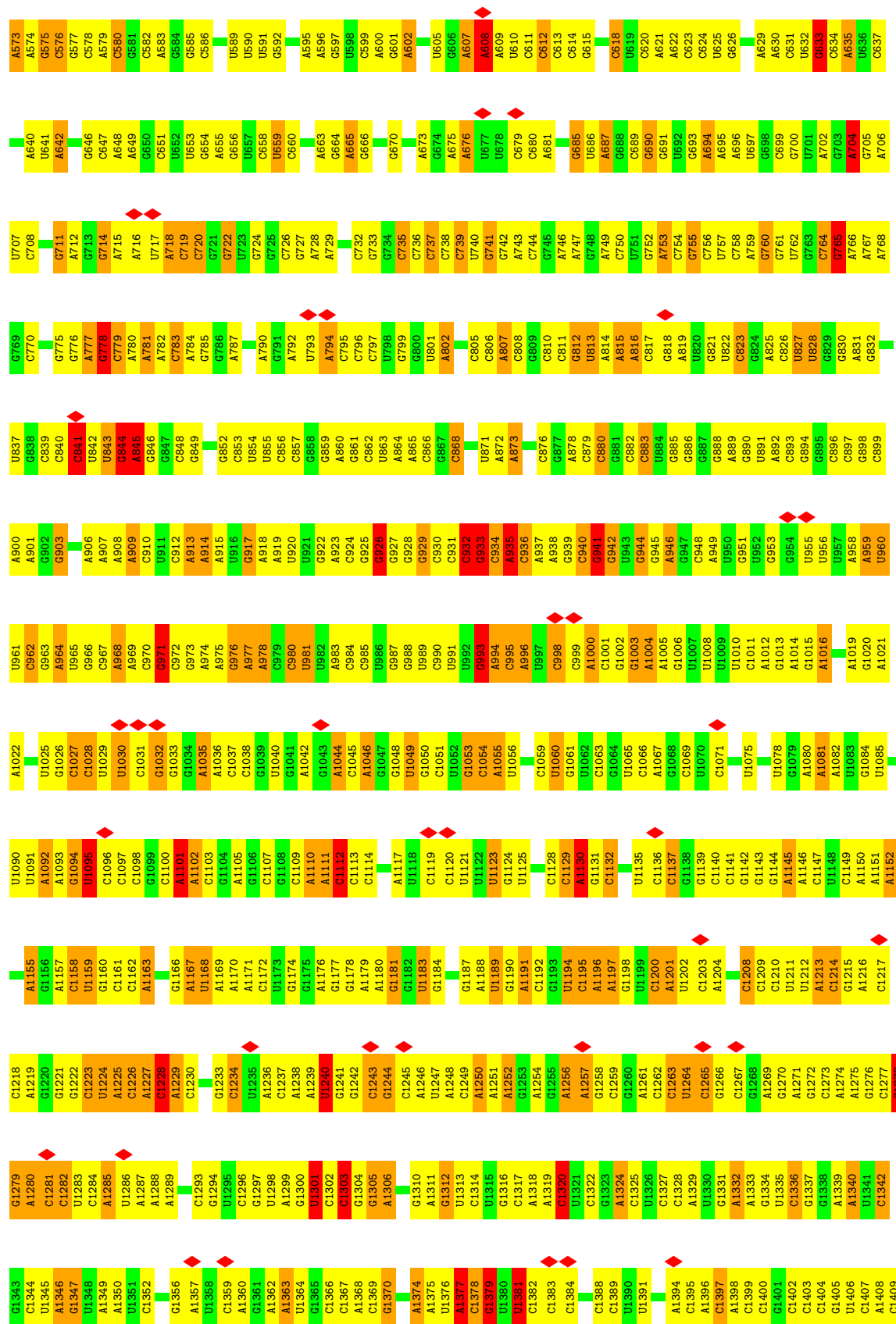


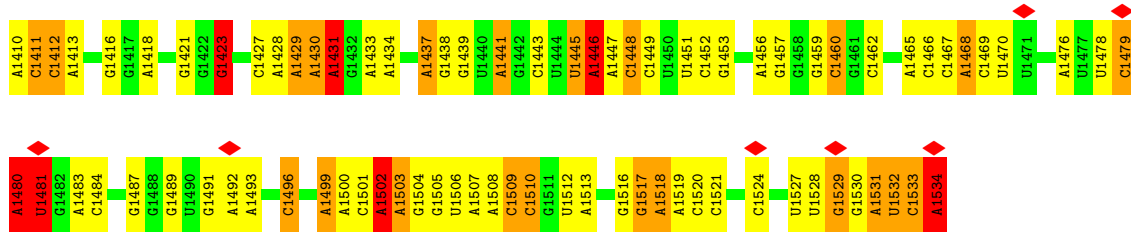
• Molecule 20: 30S ribosomal protein S21



• Molecule 21: 16S ribosomal RNA



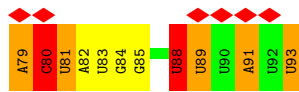
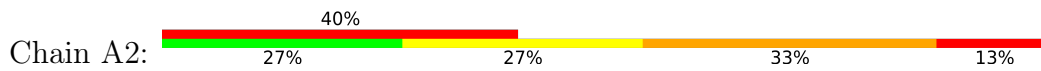




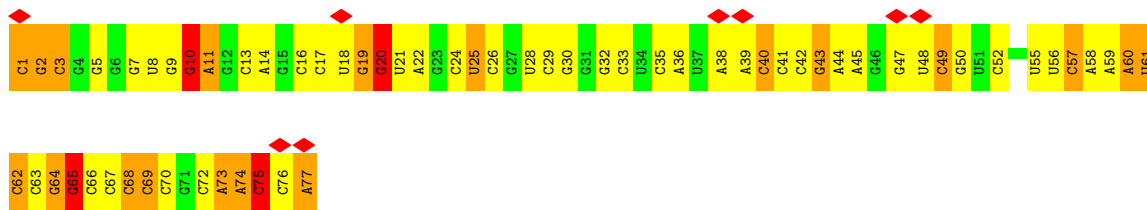
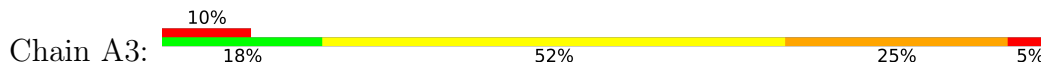
• Molecule 22: fMet-Val-tRNA-Val



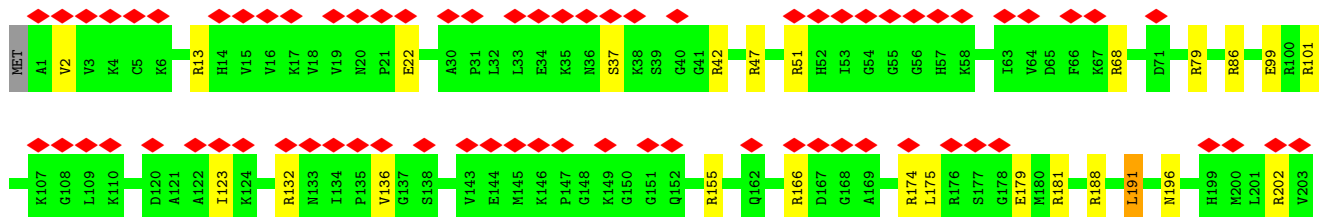
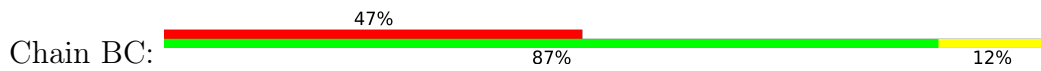
• Molecule 23: 5'-R>(*AP*CP*UP*AP*UP*GP*GP*UP*UP*UP*UP*UP*AP*UP*U)-3'

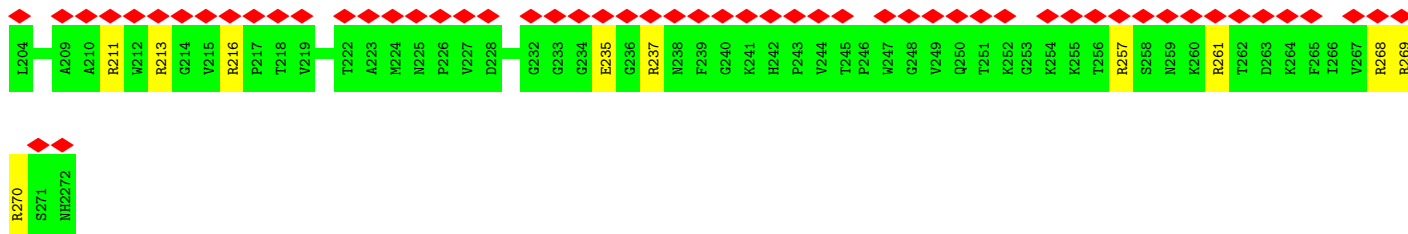


• Molecule 24: tRNA-fMet

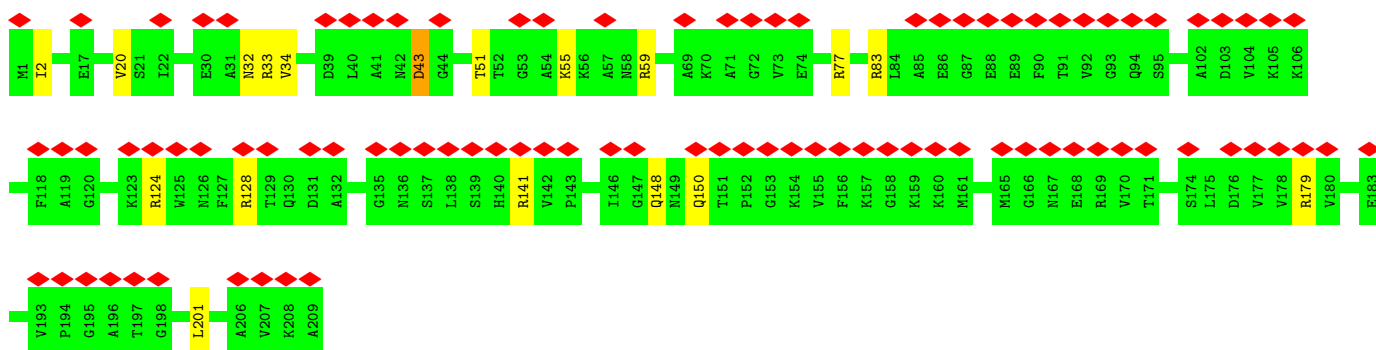
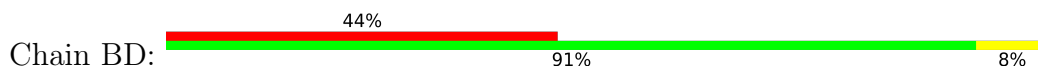


• Molecule 25: 50S ribosomal protein L2

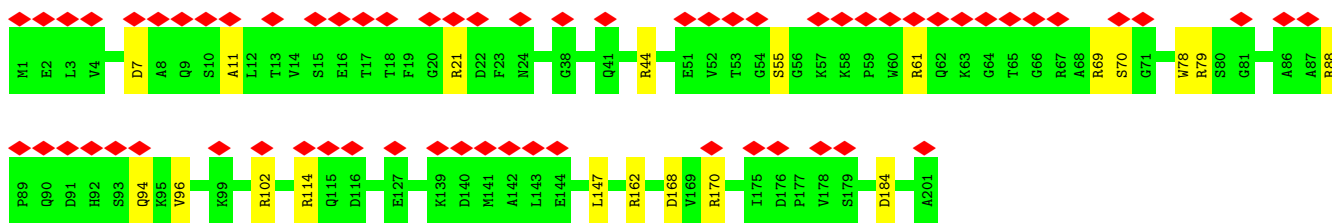
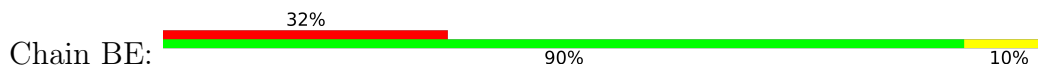




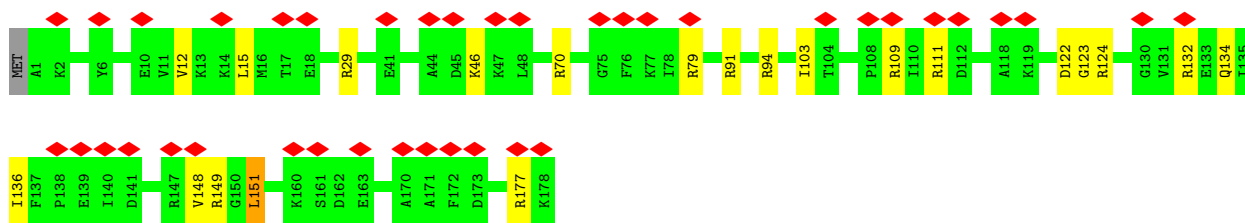
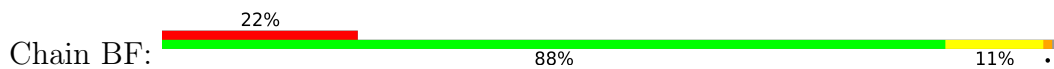
• Molecule 26: 50S ribosomal protein L3



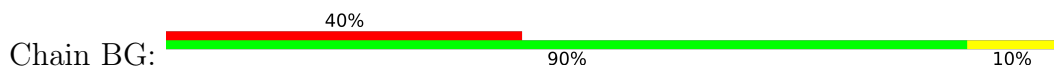
• Molecule 27: 50S ribosomal protein L4

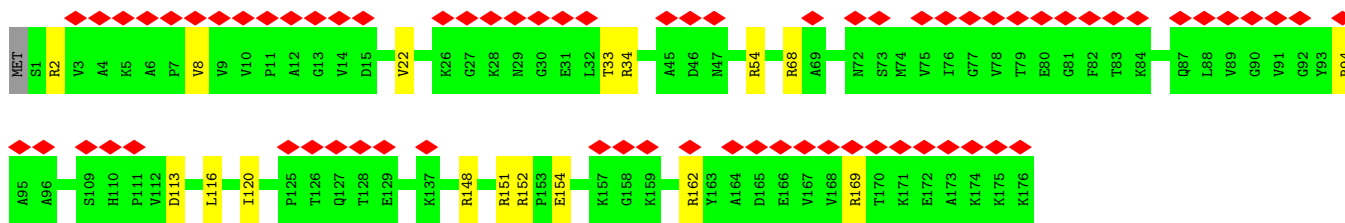


• Molecule 28: 50S ribosomal protein L5

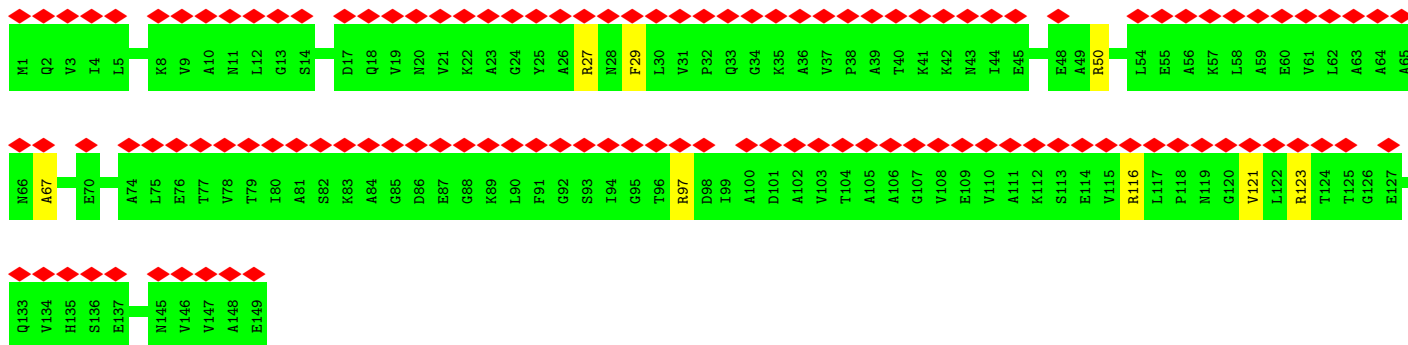
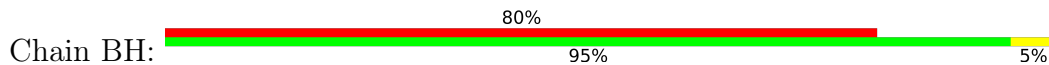


• Molecule 29: 50S ribosomal protein L6





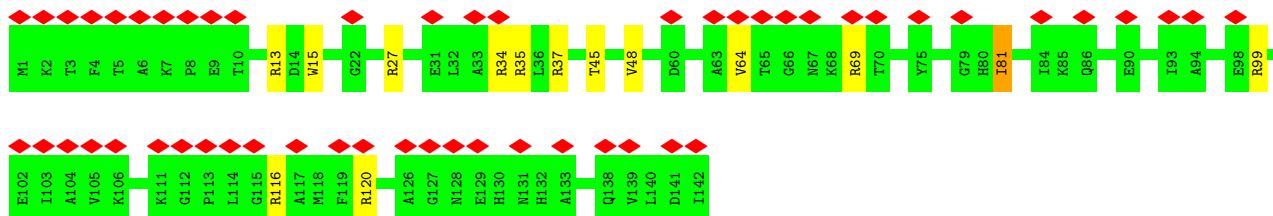
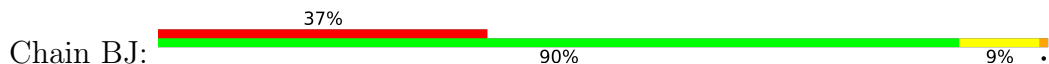
• Molecule 30: 50S ribosomal protein L9



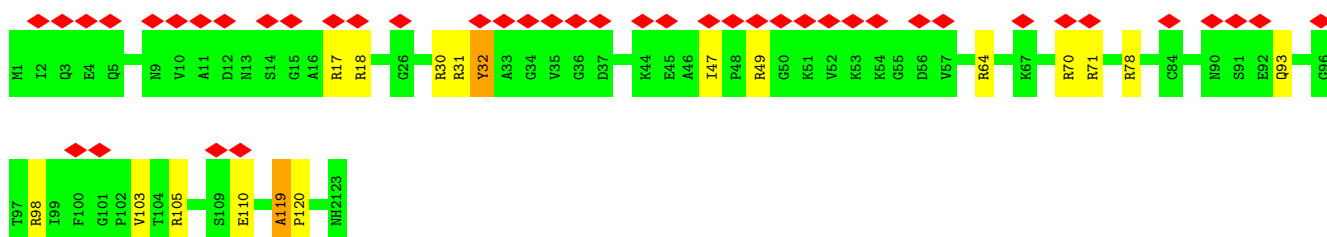
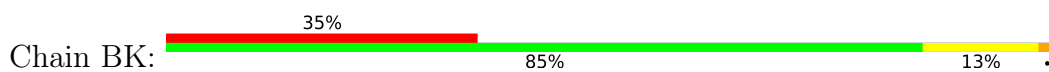
• Molecule 31: 50S ribosomal protein L11



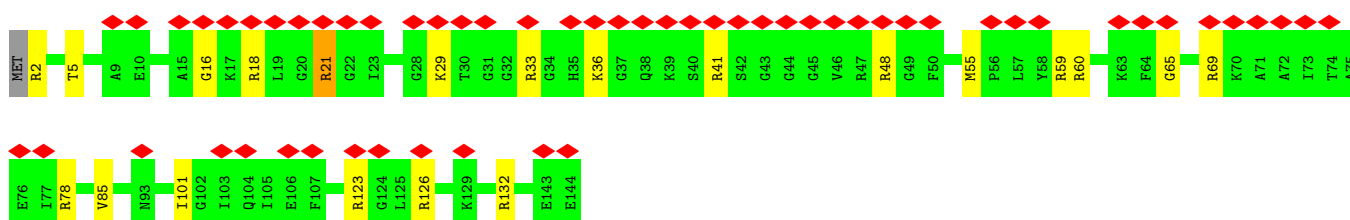
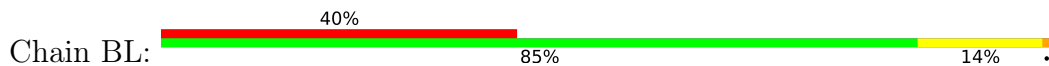
• Molecule 32: 50S ribosomal protein L13



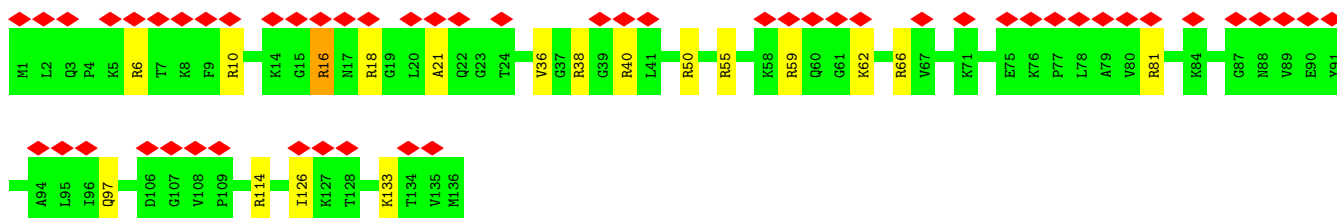
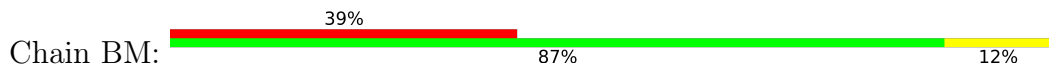
• Molecule 33: 50S ribosomal protein L14



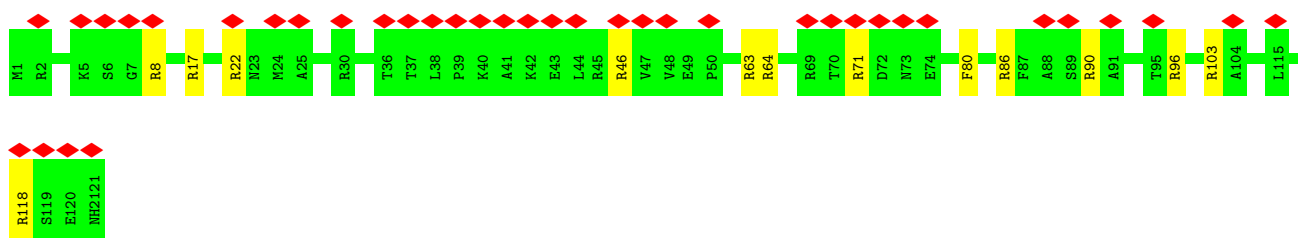
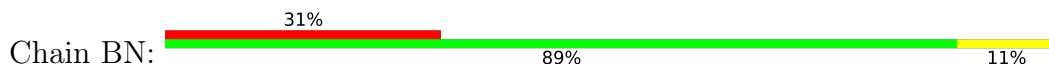
- Molecule 34: 50S ribosomal protein L15



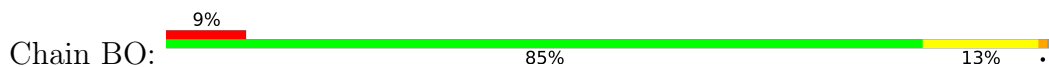
- Molecule 35: 50S ribosomal protein L16



- Molecule 36: 50S ribosomal protein L17

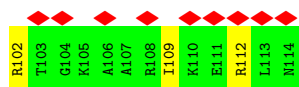
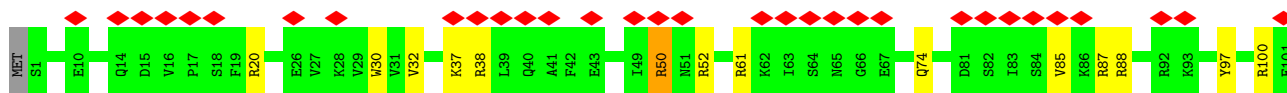
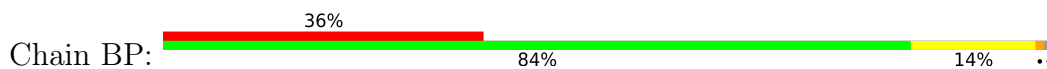


- Molecule 37: 50S ribosomal protein L18

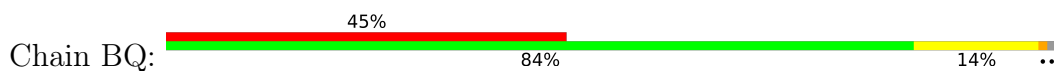




- Molecule 38: 50S ribosomal protein L19



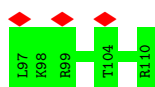
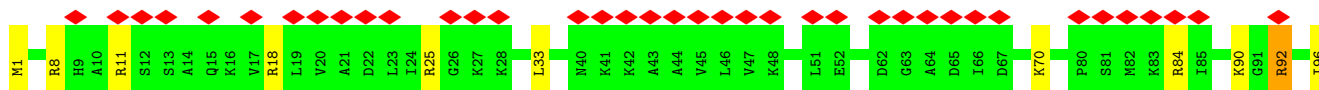
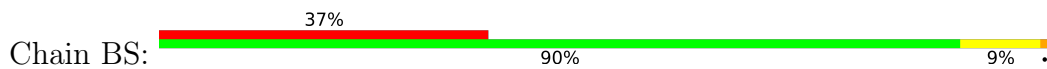
- Molecule 39: 50S ribosomal protein L20



- Molecule 40: 50S ribosomal protein L21

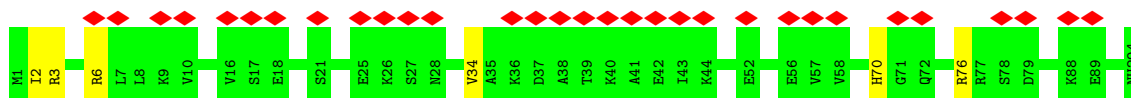


- Molecule 41: 50S ribosomal protein L22



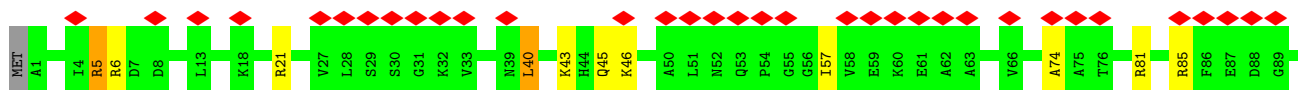
- Molecule 42: 50S ribosomal protein L23





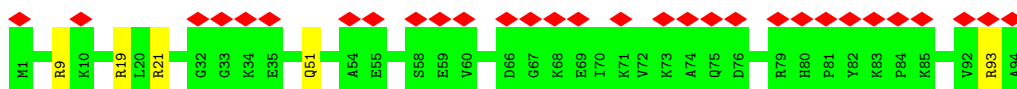
- Molecule 43: 50S ribosomal protein L24

Chain BU: 41% 88% 9% ..



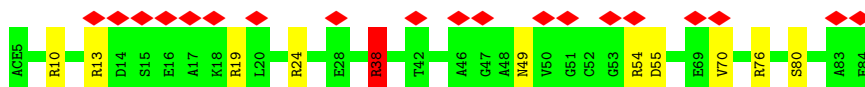
- Molecule 44: 50S ribosomal protein L25

Chain BV: 32% 95% 5%



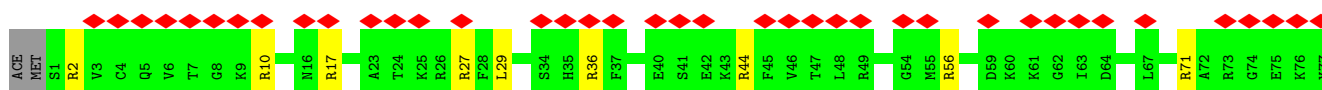
- Molecule 45: 50S ribosomal protein L27

Chain BW: 24% 86% 12%



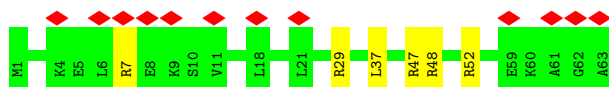
- Molecule 46: 50S ribosomal protein L28

Chain BX: 49% 86% 11%



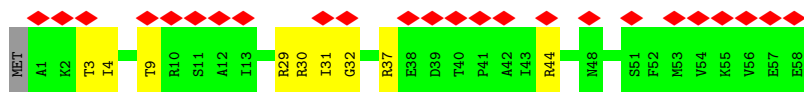
- Molecule 47: 50S ribosomal protein L29

Chain BY: 19% 90% 10%

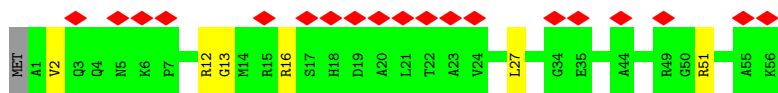
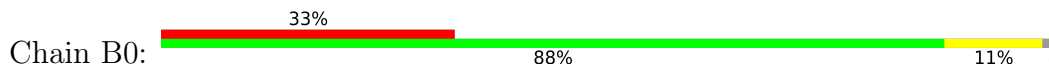


- Molecule 48: 50S ribosomal protein L30

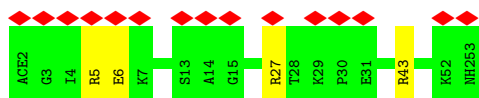
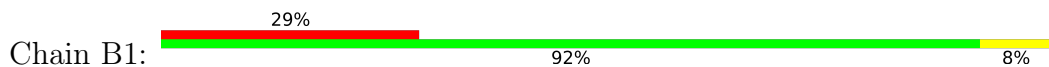
Chain BZ: 41% 83% 15%



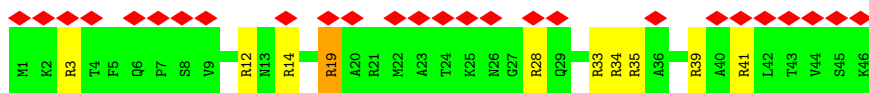
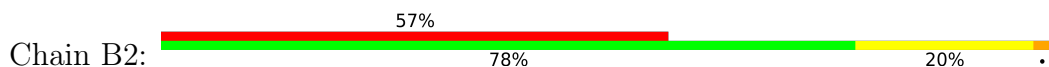
• Molecule 49: 50S ribosomal protein L32



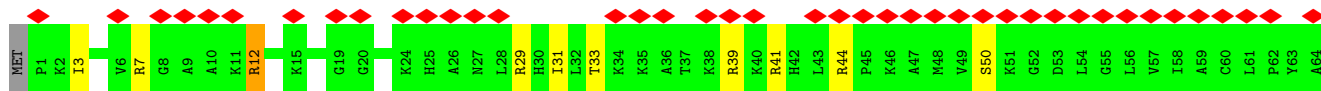
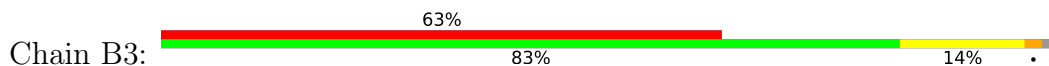
• Molecule 50: 50S ribosomal protein L33



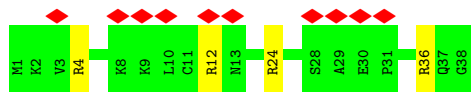
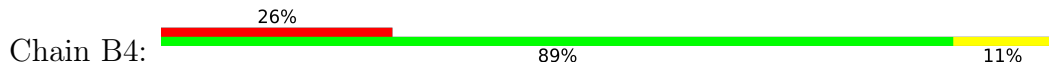
• Molecule 51: 50S ribosomal protein L34



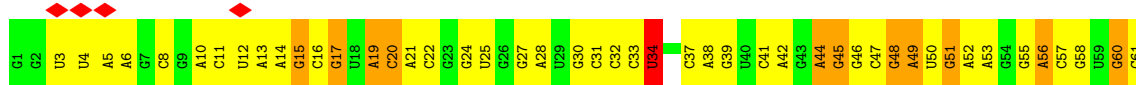
• Molecule 52: 50S ribosomal protein L35

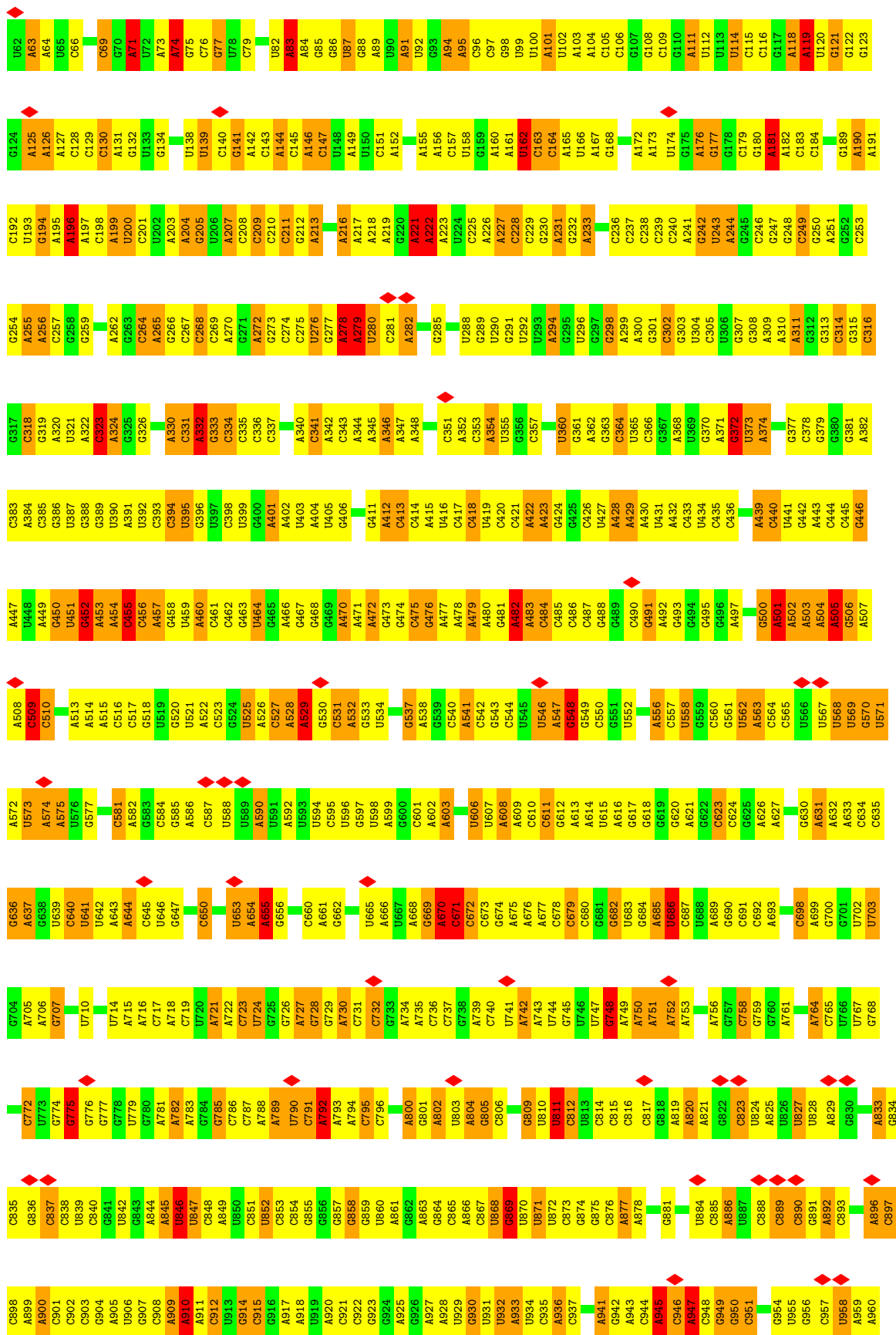


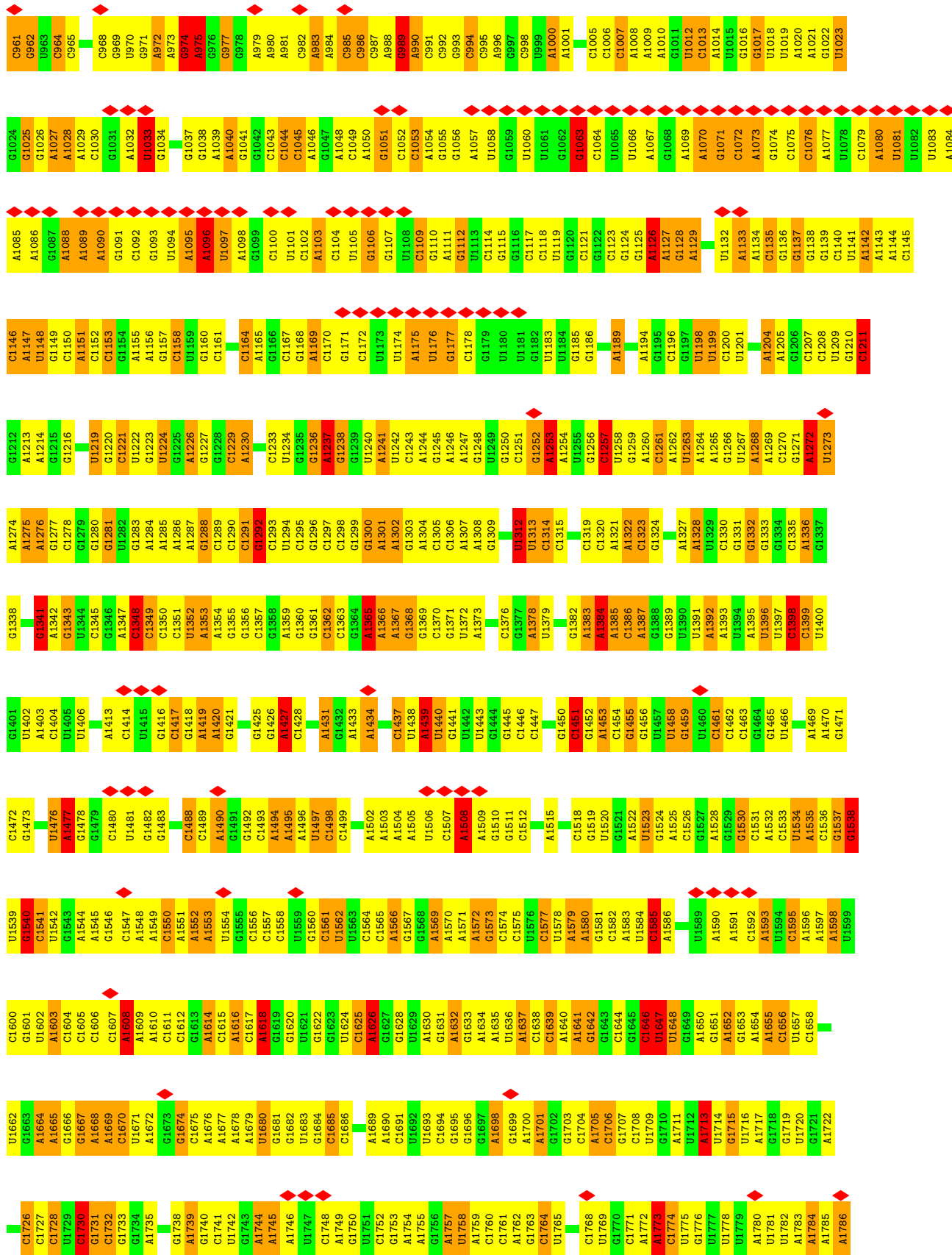
• Molecule 53: 50S ribosomal protein L36



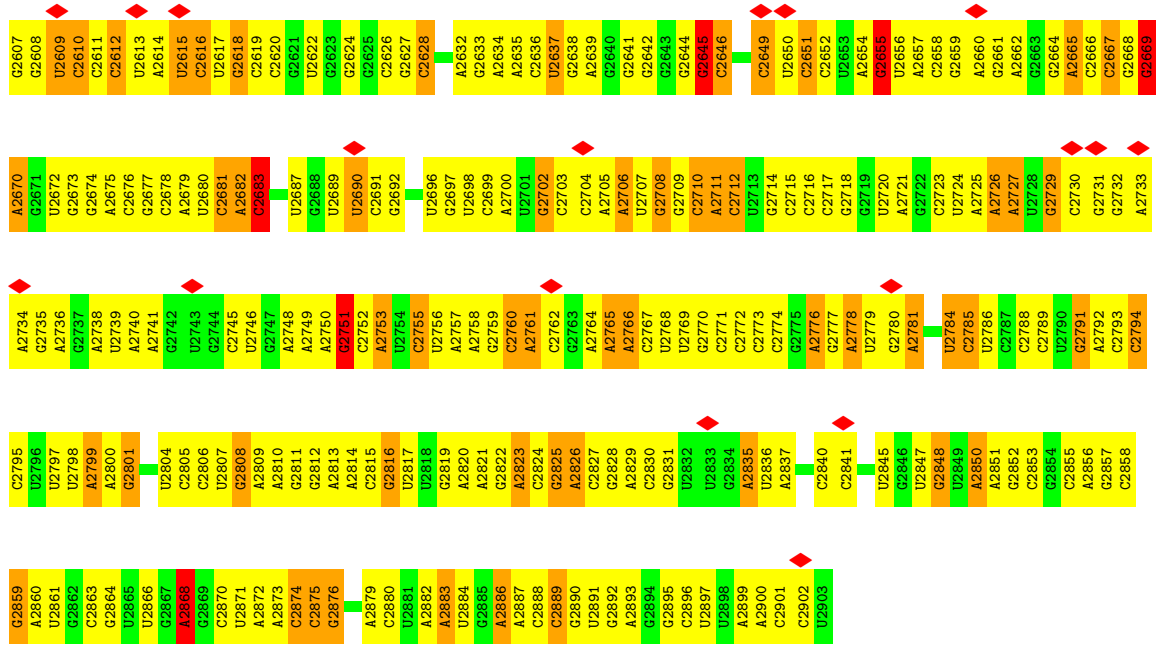
• Molecule 54: 23S ribosomal RNA



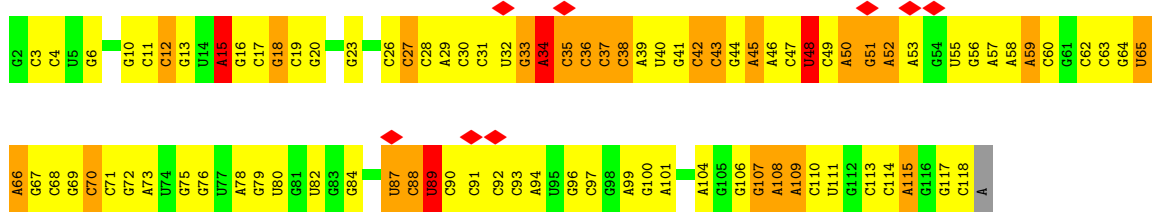




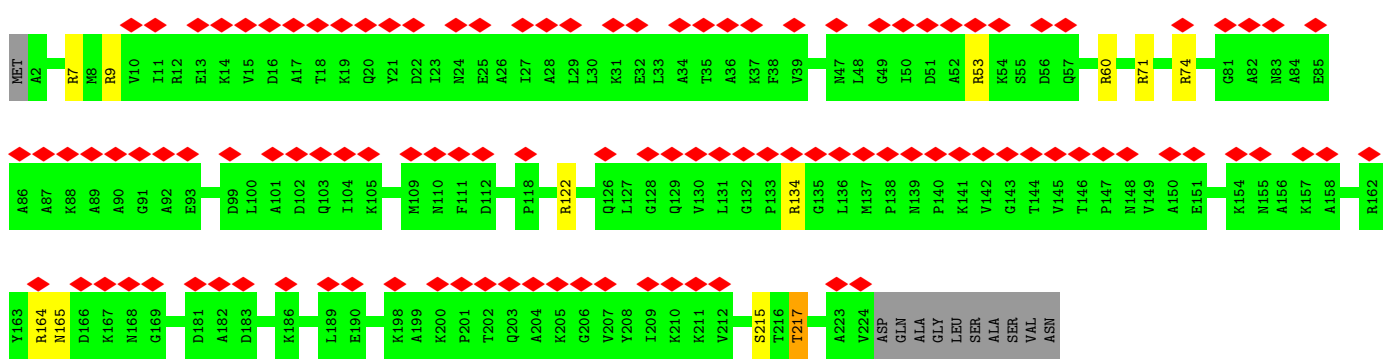
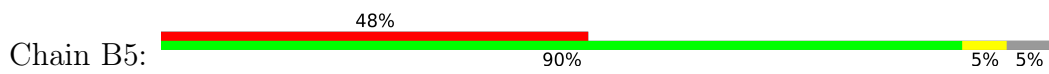
A1787	A1788	A1789	A1790	A1791	A1792	A1793	A1794	A1795	A1796	A1797	A1798	A1799	A1800	A1801	A1802	A1803	A1804	A1805	A1806	A1807	A1808	A1809	A1810	G1813	G1814	G1815	G1816	G1817	G1818	G1819	G1820	G1822	G1823	G1824	G1825	G1826	G1827	G1828	G1829	G1830	G1831	G1832	G1833	G1834	G1835	G1836	G1837	G1838	G1839	G1840	G1841	G1842	G1843	G1844	A1847	A1848			
G1849	G1850	G1851	G1852	G1853	G1854	G1855	G1856	G1857	G1858	G1859	G1860	G1861	G1862	G1863	G1864	G1865	G1866	G1867	G1868	G1869	G1870	G1871	G1872	G1873	G1874	G1875	G1876	G1877	G1878	G1879	G1880	G1881	G1882	G1883	G1884	G1885	G1886	G1887	G1888	G1889	G1890	G1891	G1892	G1893	G1894	G1895	A1899	A1900	A1901	A1902	C1905	G1906	G1907	G1908	G1909	G1910	A1911		
A1912	A1913	A1914	A1915	A1916	A1917	A1918	A1919	A1920	A1921	A1922	A1923	A1924	A1925	A1926	A1927	A1928	A1929	A1930	A1931	A1932	A1933	A1934	A1935	A1936	A1937	A1938	A1939	A1940	A1941	A1942	A1943	A1944	A1945	A1946	A1947	A1948	A1949	A1950	A1951	A1952	A1953	A1954	A1955	A1956	A1957	A1958	A1959	A1960	A1961	A1962	A1963	A1964	C1965	G1966	G1967	G1968	A1969	A1970	A1971
G1972	G1973	G1974	G1975	G1976	G1977	G1978	G1979	G1980	G1981	G1982	G1983	G1984	G1985	G1986	G1987	G1988	G1989	G1990	G1991	G1992	G1993	G1994	G1995	G1996	G1997	G1998	G1999	G2000	G2001	G2002	G2003	G2004	G2005	G2006	G2007	G2008	G2009	G2010	G2011	G2012	A2013	A2014	A2015	A2016	A2017	A2018	A2019	A2020	C2021	C2022	C2023	C2024	C2025	C2026	G2027	C2028	C2029	A2030	A2031
G2032	A2033	A2034	G2035	G2036	A2037	G2038	A2039	A2040	A2041	A2042	G2043	A2044	G2045	G2046	G2047	C2050	A2051	A2052	G2053	A2054	C2055	A2058	A2059	A2060	G2061	A2062	G2063	G2064	G2065	G2066	G2067	G2068	G2069	A2070	A2071	C2072	G2073	A2074	G2075	A2076	A2077	A2078	A2079	A2080	A2081	A2082	G2083	G2084	G2085	G2086	G2087	A2088	A2089	A2090	C2091	A2092	G2093	A2094	
A2095	C2096	A2097	U2098	U2099	G2100	A2101	G2102	G2103	G2104	U2105	U2106	G2107	A2108	U2109	G2110	U2111	U2112	U2113	G2114	G2115	G2116	A2117	U2118	A2119	G2120	U2121	U2122	A2126	G2127	G2128	G2129	U2130	U2131	U2132	G2133	A2134	A2135	G2136	U2137	G2138	U2139	U2140	G2141	A2142	U2143	G2144	G2145	U2146	A2147	U2148	U2149	C2150	C2153	A2154	G2157	A2158			
G2159	G2160	G2161	G2162	G2163	G2164	G2165	U2166	U2167	G2168	A2169	A2170	A2171	U2172	A2173	A2174	G2175	A2176	C2177	C2178	C2179	U2180	U2181	A2182	A2183	A2184	U2185	U2186	U2187	U2188	U2189	A2190	A2191	U2192	G2193	A2194	A2195	C2196	U2197	A2198	A2199	C2200	G2201	U2202	U2203	G2204	A2205	C2206	C2207	C2208	G2209	U2210	U2211	A2212	U2213	C2214	C2215	U2219	U2220	
G2221	G2222	A2225	G2226	A2227	G2228	U2229	G2230	U2231	C2232	U2236	G2237	G2238	G2239	U2240	A2241	G2242	U2243	G2246	C2248	U2249	G2250	G2251	C2254	U2257	C2258	U2259	G2260	C2261	U2262	C2263	C2264	U2265	A2266	A2267	A2268	G2269	A2270	G2271	U2272	A2273	A2274	C2275	G2276	G2277	A2278	G2279	G2280	A2281	G2282	A2283	A2284	C2285	G2286						
A2287	A2288	G2289	U2290	U2291	U2292	G2293	G2294	U2295	U2296	A2297	U2298	C2300	C2301	U2305	C2306	G2307	G2308	A2309	C2310	U2312	C2313	A2314	A2317	G2318	G2319	U2320	U2321	A2322	G2323	U2324	G2325	C2326	A2327	U2328	U2329	G2330	C2331	C2332	U2333	C2334	A2335	G2336	G2337	C2338	C2339	G2340	U2341	U2342	U2343	U2344	U2345	A2346	C2347	U2348	G2349				
C2350	C2351	A2352	G2353	C2354	G2357	A2358	C2359	U2362	G2363	C2364	G2365	G2366	A2367	C2368	A2369	G2370	G2371	U2372	G2373	C2374	G2375	A2376	A2377	G2378	G2379	C2380	A2381	G2382	G2383	U2384	G2385	A2386	U2387	A2388	G2389	U2390	C2391	A2392	U2393	C2394	G2395	G2396	G2397	U2398	G2399	G2400	U2401	U2402	C2403	U2404	G2405	U2406	A2407	U2408	A2411	A2412			
G2415	C2416	C2417	C2418	U2419	C2420	G2421	C2422	U2423	C2424	A2425	A2426	C2427	G2428	U2429	A2430	U2431	A2432	A2433	A2434	A2435	U2436	A2439	C2440	U2441	C2442	C2443	G2444	G2445	G2446	G2447	A2448	U2449	A2450	A2451	C2452	A2453	G2454	G2455	C2456	U2457	G2458	A2459	U2460	U2461	C2462	C2463	G2464	C2465	C2466	C2467	A2468	A2469	G2470	A2471	C2472	U2473	U2474		
C2475	A2476	U2477	A2478	U2479	G2480	G2481	A2482	C2483	G2486	G2487	G2488	U2489	G2490	U2491	U2492	U2493	G2494	G2495	G2496	A2497	C2498	C2499	U2500	C2501	G2502	A2503	U2504	G2505	U2506	C2507	C2510	U2511	U2512	A2513	U2514	C2515	U2516	G2517	A2518	U2519	C2520	C2521	U2527	G2529	A2530	A2531	U2534	G2535	G2536	U2537	A2538	A2539	C2540	A2541					
A2542	G2543	G2544	G2545	U2546	U2547	U2548	G2549	G2550	C2551	G2552	G2553	U2554	U2555	G2556	G2557	C2558	C2559	U2560	A2561	U2562	U2563	A2564	A2565	A2566	G2567	U2568	A2572	C2573	G2574	C2575	G2576	A2577	G2578	C2579	U2580	G2581	U2584	U2585	U2586	A2587	G2588	A2589	C2590	C2591	C2594	G2595	U2596	G2597	A2598	A2599	A2600	C2601	A2602	U2605	C2606				



- Molecule 55: 5S ribosomal RNA



- Molecule 56: 50S ribosomal protein L1



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	8375	Depositor
Resolution determination method	FSC 0.5 CUT-OFF	Depositor
CTF correction method	local	Depositor
Microscope	FEI/PHILIPS CM200FEG	Depositor
Voltage (kV)	160	Depositor
Electron dose ($e^-/\text{\AA}^2$)	20	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	162740	Depositor
Image detector	GENERIC TVIPS (4k x 4k)	Depositor
Maximum map value	194.626	Depositor
Minimum map value	-114.806	Depositor
Average map value	-0.932	Depositor
Map value standard deviation	20.010	Depositor
Recommended contour level	26.0	Depositor
Map size (\AA)	358.4, 358.4, 358.4	wwPDB
Map dimensions	128, 128, 128	wwPDB
Map angles ($^\circ$)	90, 90, 90	wwPDB
Pixel spacing (\AA)	2.8, 2.8, 2.8	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: OMC, 7MG, 5MU, H2U, PSU, FME, CM0, 6MZ, 4SU, NH2, ACE

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	AB	0.72	0/1736	1.06	11/2340 (0.5%)
2	AC	0.75	0/1651	1.13	14/2225 (0.6%)
3	AD	0.78	0/1665	1.20	20/2227 (0.9%)
4	AE	0.70	0/1119	1.01	8/1506 (0.5%)
5	AF	0.74	0/835	1.16	8/1128 (0.7%)
6	AG	0.74	0/1188	1.21	15/1593 (0.9%)
7	AH	0.71	0/989	1.03	6/1326 (0.5%)
8	AI	0.82	0/1035	1.31	19/1377 (1.4%)
9	AJ	0.71	0/797	1.18	8/1079 (0.7%)
10	AK	0.75	0/894	1.17	11/1207 (0.9%)
11	AL	0.78	0/969	1.24	13/1300 (1.0%)
12	AM	0.75	0/884	1.29	13/1181 (1.1%)
13	AN	0.78	0/817	1.22	10/1088 (0.9%)
14	AO	0.73	0/722	1.14	9/964 (0.9%)
15	AP	0.78	0/648	1.21	7/870 (0.8%)
16	AQ	0.69	0/658	1.21	11/883 (1.2%)
17	AR	0.83	0/463	1.23	7/623 (1.1%)
18	AS	0.76	0/653	1.17	7/879 (0.8%)
19	AT	0.70	0/672	1.11	7/890 (0.8%)
20	AU	0.83	0/431	1.39	7/572 (1.2%)
21	AA	1.52	2/36759 (0.0%)	2.22	1945/57346 (3.4%)
22	A1	1.52	0/1668	2.16	80/2595 (3.1%)
23	A2	1.51	0/343	2.27	22/531 (4.1%)
24	A3	1.54	0/1722	2.21	92/2685 (3.4%)
25	BC	0.76	0/2121	1.32	27/2852 (0.9%)
26	BD	0.69	0/1586	1.14	10/2134 (0.5%)
27	BE	0.68	0/1571	1.18	13/2113 (0.6%)
28	BF	0.76	0/1444	1.15	11/1937 (0.6%)
29	BG	0.69	0/1343	1.16	9/1816 (0.5%)
30	BH	0.67	0/1122	1.14	6/1515 (0.4%)
31	BI	0.67	0/1046	1.04	3/1410 (0.2%)
32	BJ	0.75	0/1152	1.20	9/1551 (0.6%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	BK	0.72	0/947	1.25	11/1268 (0.9%)
34	BL	0.75	0/1054	1.38	15/1403 (1.1%)
35	BM	0.76	0/1093	1.25	14/1460 (1.0%)
36	BN	0.77	0/973	1.28	13/1301 (1.0%)
37	BO	0.75	0/902	1.25	13/1209 (1.1%)
38	BP	0.74	0/929	1.26	12/1242 (1.0%)
39	BQ	0.82	0/960	1.35	17/1278 (1.3%)
40	BR	0.72	0/829	1.14	6/1107 (0.5%)
41	BS	0.66	0/864	1.18	6/1156 (0.5%)
42	BT	0.67	0/744	1.15	4/994 (0.4%)
43	BU	0.69	0/787	1.16	5/1051 (0.5%)
44	BV	0.74	0/766	1.13	4/1025 (0.4%)
45	BW	0.76	0/604	1.33	9/799 (1.1%)
46	BX	0.76	0/635	1.27	9/848 (1.1%)
47	BY	0.69	0/510	1.26	6/677 (0.9%)
48	BZ	0.70	0/453	1.24	5/605 (0.8%)
49	B0	0.74	0/450	1.17	3/599 (0.5%)
50	B1	0.72	0/417	1.15	4/556 (0.7%)
51	B2	0.83	0/380	1.65	11/498 (2.2%)
52	B3	0.75	0/513	1.25	5/676 (0.7%)
53	B4	0.71	0/303	1.34	5/397 (1.3%)
54	BA	1.40	0/69796	2.21	4043/108888 (3.7%)
55	BB	1.41	0/2800	2.18	152/4367 (3.5%)
56	B5	0.67	0/1673	1.09	10/2255 (0.4%)
All	All	1.28	2/160085 (0.0%)	2.00	6820/239402 (2.8%)

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
2	AC	0	1
6	AG	0	1
7	AH	0	1
21	AA	0	369
22	A1	0	10
23	A2	0	4
24	A3	0	19
37	BO	0	1
52	B3	0	1
54	BA	0	715

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Mol	Chain	#Chirality outliers	#Planarity outliers
55	BB	0	28
All	All	0	1150

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
21	AA	1533	C	C4-N4	-5.16	1.29	1.33
21	AA	942	G	C5'-C4'	5.05	1.57	1.51

The worst 5 of 6820 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
21	AA	704	A	N1-C6-N6	-13.07	110.76	118.60
54	BA	1274	A	N1-C6-N6	-12.32	111.21	118.60
34	BL	41	ARG	NE-CZ-NH1	12.26	126.43	120.30
54	BA	910	A	N1-C6-N6	-12.23	111.26	118.60
21	AA	913	A	N1-C6-N6	-12.01	111.40	118.60

There are no chirality outliers.

5 of 1150 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
21	AA	6	G	Sidechain
21	AA	7	A	Sidechain
2	AC	172	VAL	Peptide
6	AG	3	ARG	Sidechain
7	AH	76	ARG	Sidechain

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

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	AB	1708	0	1736	0	0
2	AC	1625	0	1699	0	0
3	AD	1643	0	1710	0	0
4	AE	1109	0	1152	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	AF	818	0	808	2	0
6	AG	1178	0	1234	0	0
7	AH	979	0	1034	0	0
8	AI	1025	0	1074	0	0
9	AJ	790	0	832	1	0
10	AK	880	0	891	0	0
11	AL	955	0	1019	0	0
12	AM	877	0	937	0	0
13	AN	805	0	844	0	0
14	AO	714	0	737	0	0
15	AP	639	0	656	0	0
16	AQ	652	0	695	0	0
17	AR	459	0	482	0	0
18	AS	641	0	669	0	0
19	AT	668	0	718	0	0
20	AU	429	0	453	0	0
21	AA	32828	0	16520	2	0
22	A1	1627	0	832	0	0
23	A2	309	0	158	0	0
24	A3	1642	0	843	0	0
25	BC	2083	0	2157	0	0
26	BD	1565	0	1616	0	0
27	BE	1552	0	1619	0	0
28	BF	1420	0	1460	1	0
29	BG	1323	0	1374	0	0
30	BH	1111	0	1148	0	0
31	BI	1032	0	1088	0	0
32	BJ	1129	0	1162	0	0
33	BK	939	0	1012	1	0
34	BL	1045	0	1117	0	0
35	BM	1074	0	1157	0	0
36	BN	961	0	1000	0	0
37	BO	892	0	923	0	0
38	BP	917	0	965	2	0
39	BQ	947	0	1022	1	0
40	BR	816	0	839	0	0
41	BS	857	0	922	0	0
42	BT	739	0	807	0	0
43	BU	780	0	834	0	0
44	BV	753	0	780	0	0
45	BW	599	0	614	0	0
46	BX	625	0	655	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
47	BY	509	0	543	0	0
48	BZ	449	0	491	0	0
49	B0	444	0	461	0	0
50	B1	413	0	444	0	0
51	B2	377	0	418	0	0
52	B3	504	0	574	0	0
53	B4	302	0	343	0	0
54	BA	62317	0	31345	1	0
55	BB	2504	0	1271	0	0
56	B5	1658	0	1751	0	0
57	A1	7	0	8	0	0
58	BA	10	0	10	0	0
All	All	147653	0	99663	11	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 0.

The worst 5 of 11 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)
28:BF:151:LEU:HD13	28:BF:151:LEU:H	1.75	0.51
9:AJ:57:VAL:HG23	9:AJ:58:ASN:H	1.77	0.50
5:AF:94:HIS:CG	5:AF:95:ALA:H	2.30	0.50
21:AA:565:U:H2'	21:AA:566:G:C8	2.48	0.47
21:AA:940:C:H2'	21:AA:941:G:C8	2.50	0.46

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	
1	AB	218/220 (99%)	198 (91%)	16 (7%)	4 (2%)	8	40
2	AC	205/208 (99%)	188 (92%)	8 (4%)	9 (4%)	2	22
3	AD	203/206 (98%)	182 (90%)	18 (9%)	3 (2%)	10	46
4	AE	150/152 (99%)	136 (91%)	8 (5%)	6 (4%)	3	23
5	AF	99/101 (98%)	84 (85%)	9 (9%)	6 (6%)	1	17
6	AG	150/152 (99%)	130 (87%)	14 (9%)	6 (4%)	3	23
7	AH	127/130 (98%)	124 (98%)	2 (2%)	1 (1%)	19	60
8	AI	126/128 (98%)	115 (91%)	9 (7%)	2 (2%)	9	44
9	AJ	98/100 (98%)	92 (94%)	2 (2%)	4 (4%)	3	23
10	AK	116/118 (98%)	104 (90%)	11 (10%)	1 (1%)	17	57
11	AL	121/124 (98%)	107 (88%)	13 (11%)	1 (1%)	19	60
12	AM	112/115 (97%)	98 (88%)	9 (8%)	5 (4%)	2	22
13	AN	98/101 (97%)	87 (89%)	10 (10%)	1 (1%)	15	55
14	AO	86/89 (97%)	79 (92%)	6 (7%)	1 (1%)	13	50
15	AP	79/81 (98%)	71 (90%)	7 (9%)	1 (1%)	12	48
16	AQ	80/82 (98%)	71 (89%)	7 (9%)	2 (2%)	5	32
17	AR	55/57 (96%)	52 (94%)	2 (4%)	1 (2%)	8	40
18	AS	79/81 (98%)	67 (85%)	9 (11%)	3 (4%)	3	24
19	AT	84/86 (98%)	78 (93%)	4 (5%)	2 (2%)	6	33
20	AU	51/53 (96%)	33 (65%)	14 (28%)	4 (8%)	1	13
25	BC	270/273 (99%)	237 (88%)	25 (9%)	8 (3%)	4	28
26	BD	207/209 (99%)	181 (87%)	17 (8%)	9 (4%)	2	22
27	BE	199/201 (99%)	180 (90%)	12 (6%)	7 (4%)	3	25
28	BF	176/179 (98%)	161 (92%)	8 (4%)	7 (4%)	3	23
29	BG	174/177 (98%)	158 (91%)	11 (6%)	5 (3%)	4	29
30	BH	147/149 (99%)	129 (88%)	15 (10%)	3 (2%)	7	38
31	BI	139/142 (98%)	132 (95%)	7 (5%)	0	100	100
32	BJ	140/142 (99%)	124 (89%)	11 (8%)	5 (4%)	3	25
33	BK	121/123 (98%)	103 (85%)	12 (10%)	6 (5%)	2	20
34	BL	141/144 (98%)	122 (86%)	10 (7%)	9 (6%)	1	16
35	BM	134/136 (98%)	121 (90%)	8 (6%)	5 (4%)	3	24
36	BN	119/121 (98%)	101 (85%)	17 (14%)	1 (1%)	19	60

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
37	BO	114/117 (97%)	109 (96%)	4 (4%)	1 (1%)	17	57
38	BP	112/115 (97%)	99 (88%)	10 (9%)	3 (3%)	5	31
39	BQ	115/118 (98%)	105 (91%)	7 (6%)	3 (3%)	5	31
40	BR	101/103 (98%)	94 (93%)	5 (5%)	2 (2%)	7	38
41	BS	108/110 (98%)	96 (89%)	8 (7%)	4 (4%)	3	24
42	BT	92/94 (98%)	80 (87%)	10 (11%)	2 (2%)	6	35
43	BU	101/104 (97%)	79 (78%)	16 (16%)	6 (6%)	1	17
44	BV	92/94 (98%)	88 (96%)	4 (4%)	0	100	100
45	BW	78/80 (98%)	64 (82%)	12 (15%)	2 (3%)	5	31
46	BX	75/79 (95%)	69 (92%)	6 (8%)	0	100	100
47	BY	61/63 (97%)	57 (93%)	3 (5%)	1 (2%)	9	44
48	BZ	56/59 (95%)	47 (84%)	4 (7%)	5 (9%)	1	11
49	B0	54/57 (95%)	50 (93%)	2 (4%)	2 (4%)	3	24
50	B1	50/52 (96%)	45 (90%)	4 (8%)	1 (2%)	7	38
51	B2	44/46 (96%)	42 (96%)	2 (4%)	0	100	100
52	B3	62/65 (95%)	50 (81%)	8 (13%)	4 (6%)	1	16
53	B4	36/38 (95%)	34 (94%)	2 (6%)	0	100	100
56	B5	221/234 (94%)	205 (93%)	15 (7%)	1 (0%)	29	69
All	All	5876/6008 (98%)	5258 (90%)	453 (8%)	165 (3%)	8	30

5 of 165 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	AB	206	ILE
2	AC	4	VAL
3	AD	54	LEU
4	AE	105	ILE
5	AF	59	TYR

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	
1	AB	180/180 (100%)	175 (97%)	5 (3%)	43	65
2	AC	170/171 (99%)	166 (98%)	4 (2%)	49	69
3	AD	172/173 (99%)	168 (98%)	4 (2%)	50	70
4	AE	113/113 (100%)	112 (99%)	1 (1%)	78	87
5	AF	87/87 (100%)	85 (98%)	2 (2%)	50	70
6	AG	123/123 (100%)	121 (98%)	2 (2%)	62	79
7	AH	104/105 (99%)	102 (98%)	2 (2%)	57	75
8	AI	105/105 (100%)	100 (95%)	5 (5%)	25	51
9	AJ	86/86 (100%)	86 (100%)	0	100	100
10	AK	90/90 (100%)	88 (98%)	2 (2%)	52	71
11	AL	103/104 (99%)	103 (100%)	0	100	100
12	AM	91/92 (99%)	90 (99%)	1 (1%)	73	84
13	AN	83/84 (99%)	82 (99%)	1 (1%)	71	83
14	AO	76/77 (99%)	75 (99%)	1 (1%)	69	81
15	AP	65/65 (100%)	63 (97%)	2 (3%)	40	62
16	AQ	74/74 (100%)	74 (100%)	0	100	100
17	AR	48/48 (100%)	48 (100%)	0	100	100
18	AS	70/70 (100%)	70 (100%)	0	100	100
19	AT	65/65 (100%)	65 (100%)	0	100	100
20	AU	44/44 (100%)	44 (100%)	0	100	100
25	BC	216/217 (100%)	212 (98%)	4 (2%)	57	75
26	BD	164/164 (100%)	161 (98%)	3 (2%)	59	77
27	BE	165/165 (100%)	161 (98%)	4 (2%)	49	69
28	BF	149/150 (99%)	146 (98%)	3 (2%)	55	74
29	BG	137/138 (99%)	134 (98%)	3 (2%)	52	71
30	BH	114/114 (100%)	114 (100%)	0	100	100
31	BI	109/110 (99%)	107 (98%)	2 (2%)	59	77
32	BJ	116/116 (100%)	115 (99%)	1 (1%)	78	87
33	BK	103/103 (100%)	102 (99%)	1 (1%)	76	86
34	BL	102/103 (99%)	102 (100%)	0	100	100
35	BM	109/109 (100%)	107 (98%)	2 (2%)	59	77

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
36	BN	100/100 (100%)	100 (100%)	0	100	100
37	BO	86/87 (99%)	83 (96%)	3 (4%)	36	59
38	BP	99/100 (99%)	97 (98%)	2 (2%)	55	74
39	BQ	89/90 (99%)	88 (99%)	1 (1%)	73	84
40	BR	84/84 (100%)	83 (99%)	1 (1%)	71	83
41	BS	93/93 (100%)	91 (98%)	2 (2%)	52	71
42	BT	80/80 (100%)	79 (99%)	1 (1%)	69	81
43	BU	83/84 (99%)	81 (98%)	2 (2%)	49	69
44	BV	78/78 (100%)	77 (99%)	1 (1%)	69	81
45	BW	59/59 (100%)	55 (93%)	4 (7%)	16	41
46	BX	67/68 (98%)	66 (98%)	1 (2%)	65	80
47	BY	55/55 (100%)	55 (100%)	0	100	100
48	BZ	48/49 (98%)	48 (100%)	0	100	100
49	B0	47/48 (98%)	46 (98%)	1 (2%)	53	72
50	B1	45/45 (100%)	45 (100%)	0	100	100
51	B2	38/38 (100%)	37 (97%)	1 (3%)	46	66
52	B3	51/52 (98%)	50 (98%)	1 (2%)	55	74
53	B4	34/34 (100%)	34 (100%)	0	100	100
56	B5	173/181 (96%)	170 (98%)	3 (2%)	60	78
All	All	4842/4870 (99%)	4763 (98%)	79 (2%)	64	79

5 of 79 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
37	BO	117	PHE
45	BW	80	SER
38	BP	85	VAL
43	BU	40	LEU
52	B3	33	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
5	AF	14	GLN

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Mol	Chain	Res	Type
27	BE	46	GLN
35	BM	97	GLN
37	BO	29	HIS
49	B0	40	HIS

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
21	AA	1529/1533 (99%)	229 (14%)	86 (5%)
22	A1	73/76 (96%)	14 (19%)	5 (6%)
23	A2	15/15 (100%)	5 (33%)	4 (26%)
24	A3	76/77 (98%)	17 (22%)	6 (7%)
54	BA	2902/2903 (99%)	457 (15%)	117 (4%)
55	BB	116/118 (98%)	18 (15%)	4 (3%)
All	All	4711/4722 (99%)	740 (15%)	222 (4%)

5 of 740 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
21	AA	8	A
21	AA	27	G
21	AA	28	A
21	AA	32	A
21	AA	35	G

5 of 222 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
54	BA	276	U
55	BB	107	G
54	BA	989	G
55	BB	51	G
54	BA	2428	G

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

11 non-standard protein/DNA/RNA residues are 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
22	5MU	A1	54	22	19,22,23	0.70	0	28,32,35	1.19	3 (10%)
24	5MU	A3	55	24	19,22,23	0.72	0	28,32,35	1.31	4 (14%)
22	PSU	A1	55	22	18,21,22	0.83	0	22,30,33	1.28	3 (13%)
22	CM0	A1	34	23,22	22,26,27	1.36	3 (13%)	28,37,40	1.31	2 (7%)
22	4SU	A1	7	22	18,21,22	1.33	1 (5%)	26,30,33	1.08	3 (11%)
24	OMC	A3	33	24	19,22,23	0.70	0	26,31,34	1.08	1 (3%)
22	6MZ	A1	37	22	18,25,26	0.99	1 (5%)	16,36,39	1.37	2 (12%)
24	PSU	A3	56	24	18,21,22	0.83	0	22,30,33	1.06	1 (4%)
24	H2U	A3	21	24	18,21,22	1.35	2 (11%)	21,30,33	1.19	3 (14%)
24	4SU	A3	8	24	18,21,22	1.40	1 (5%)	26,30,33	0.83	1 (3%)
22	7MG	A1	46	22	22,26,27	4.86	2 (9%)	29,39,42	1.42	1 (3%)

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
22	5MU	A1	54	22	-	0/7/25/26	0/2/2/2
24	5MU	A3	55	24	-	0/7/25/26	0/2/2/2
22	PSU	A1	55	22	-	1/7/25/26	0/2/2/2
22	CM0	A1	34	23,22	-	2/12/30/31	0/2/2/2
22	4SU	A1	7	22	-	0/7/25/26	0/2/2/2
24	OMC	A3	33	24	-	0/9/27/28	0/2/2/2
22	6MZ	A1	37	22	-	0/5/27/28	0/3/3/3
24	PSU	A3	56	24	-	2/7/25/26	0/2/2/2
24	H2U	A3	21	24	-	0/7/38/39	0/2/2/2
24	4SU	A3	8	24	-	0/7/25/26	0/2/2/2
22	7MG	A1	46	22	-	0/7/37/38	0/3/3/3

The worst 5 of 10 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
22	A1	46	7MG	C8-N9	-22.51	1.33	1.46
24	A3	8	4SU	C5-C4	-4.94	1.36	1.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
22	A1	7	4SU	C5-C4	-4.72	1.36	1.42
22	A1	34	CM0	O5-C5	-4.72	1.25	1.36
24	A3	21	H2U	C2-N3	-3.38	1.31	1.38

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

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
22	A1	46	7MG	N9-C8-N7	6.01	111.97	103.38
22	A1	34	CM0	C7-O5-C5	4.27	123.17	117.58
22	A1	37	6MZ	C9-N6-C6	3.71	126.07	122.87
22	A1	55	PSU	C6-C5-C4	3.56	120.69	118.20
24	A3	55	5MU	C5M-C5-C6	-3.38	118.34	122.85

There are no chirality outliers.

All (5) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
24	A3	56	PSU	O4'-C1'-C5-C4
24	A3	56	PSU	O4'-C1'-C5-C6
22	A1	34	CM0	O5-C7-C8-O9
22	A1	34	CM0	O5-C7-C8-O8
22	A1	55	PSU	O4'-C1'-C5-C6

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

2 ligands are 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	$\# Z > 2$
58	FME	BA	3001	57	8,9,10	0.72	0	7,9,11	1.31	1 (14%)
57	VAL	A1	101	58,22	4,6,7	0.74	0	6,7,9	1.78	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
58	FME	BA	3001	57	-	1/7/9/11	-
57	VAL	A1	101	58,22	-	0/5/6/8	-

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed($^{\circ}$)	Ideal($^{\circ}$)
57	A1	101	VAL	O-C-CA	-4.03	114.21	124.78
58	BA	3001	FME	C-CA-N	2.52	114.28	109.73

There are no chirality outliers.

All (1) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
58	BA	3001	FME	O1-CN-N-CA

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.

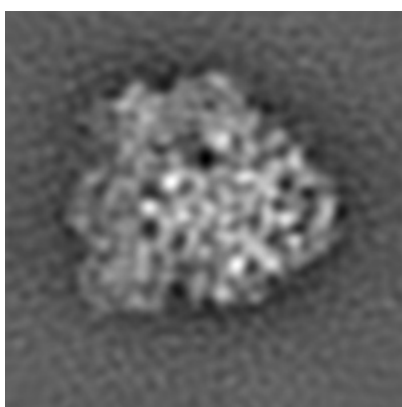
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-1719. These allow visual inspection of the internal detail of the map and identification of artifacts.

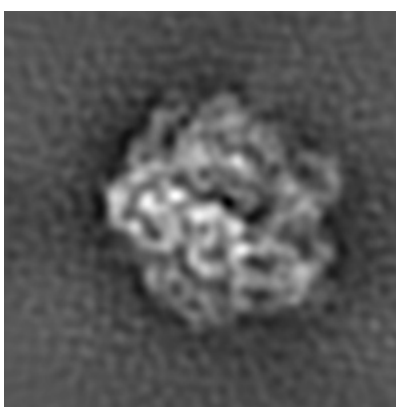
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

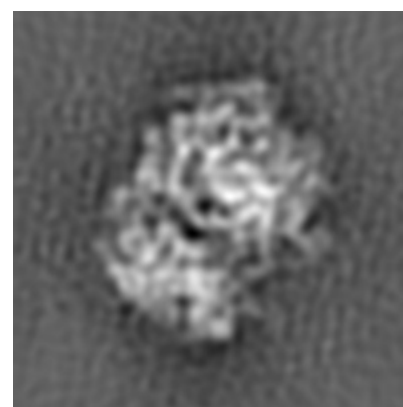
6.1.1 Primary map



X



Y

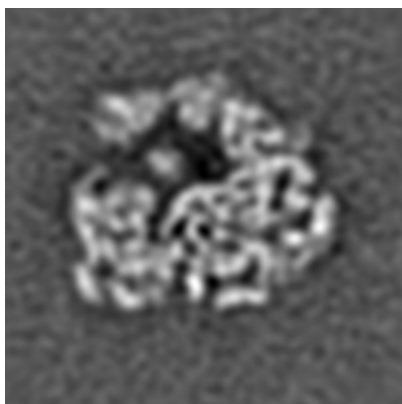


Z

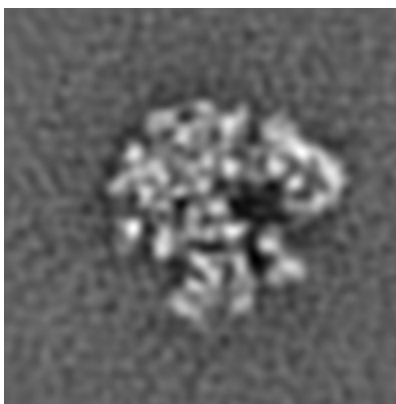
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

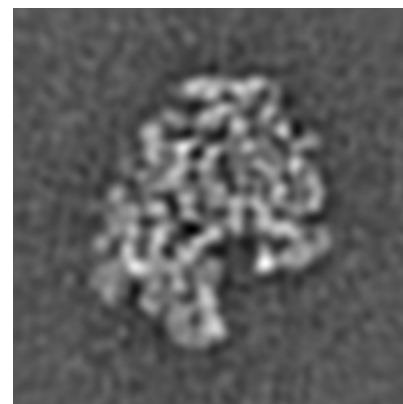
6.2.1 Primary map



X Index: 64



Y Index: 64

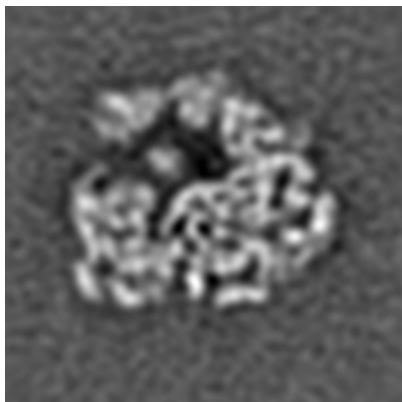


Z Index: 64

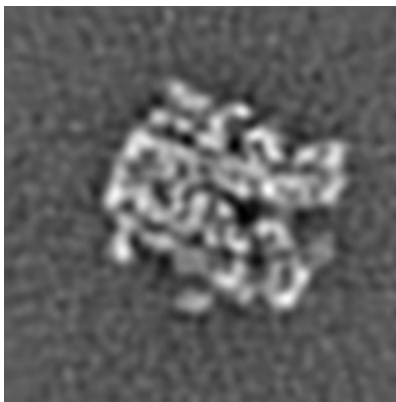
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

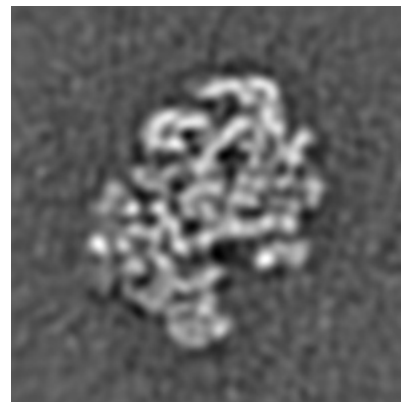
6.3.1 Primary map



X Index: 64



Y Index: 69

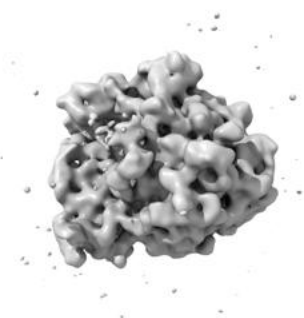


Z Index: 61

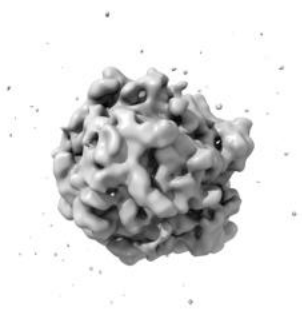
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views [i](#)

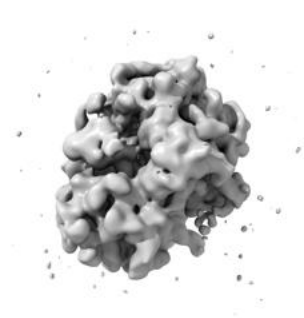
6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 26.0. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

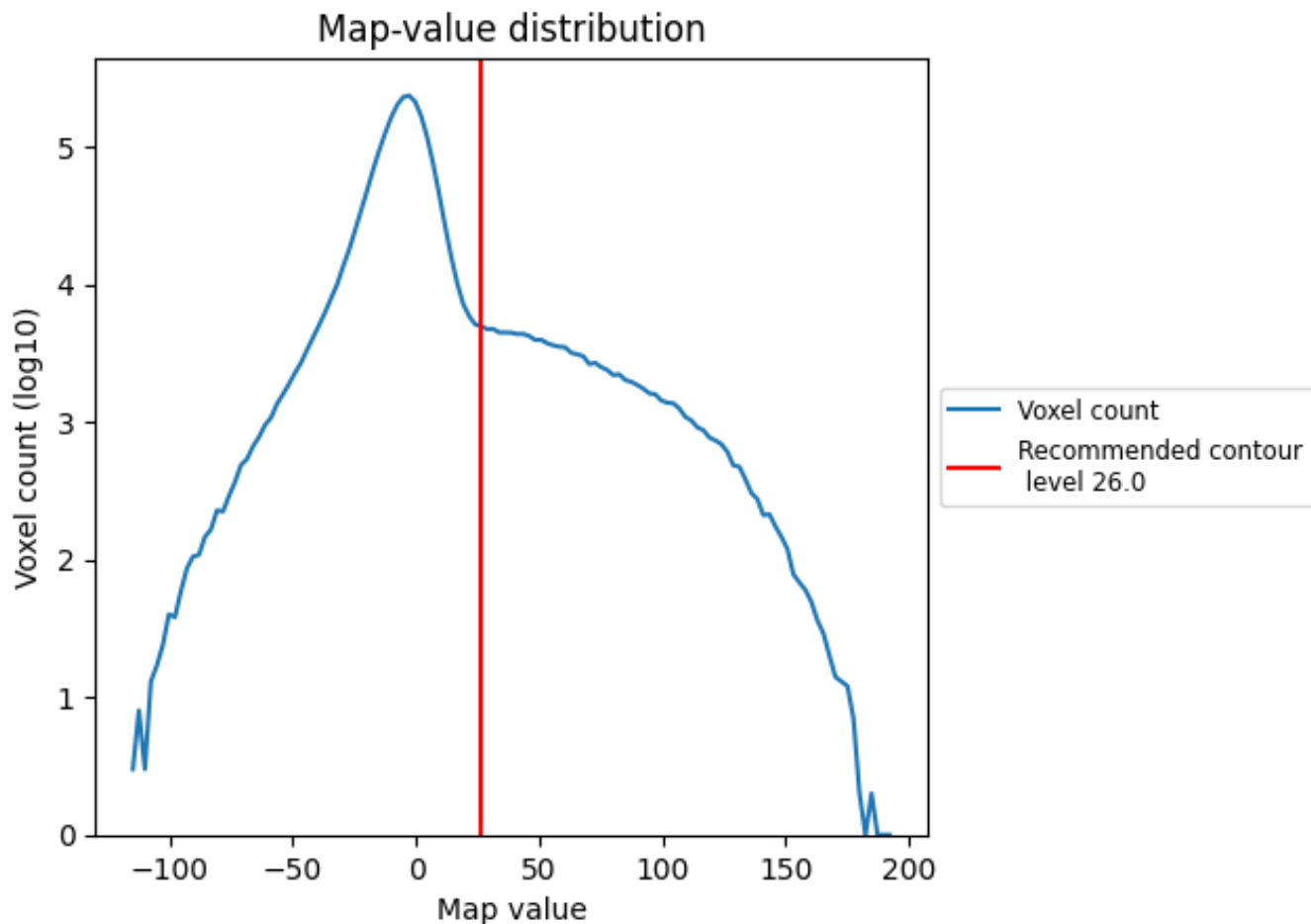
6.5 Mask visualisation

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

7 Map analysis [i](#)

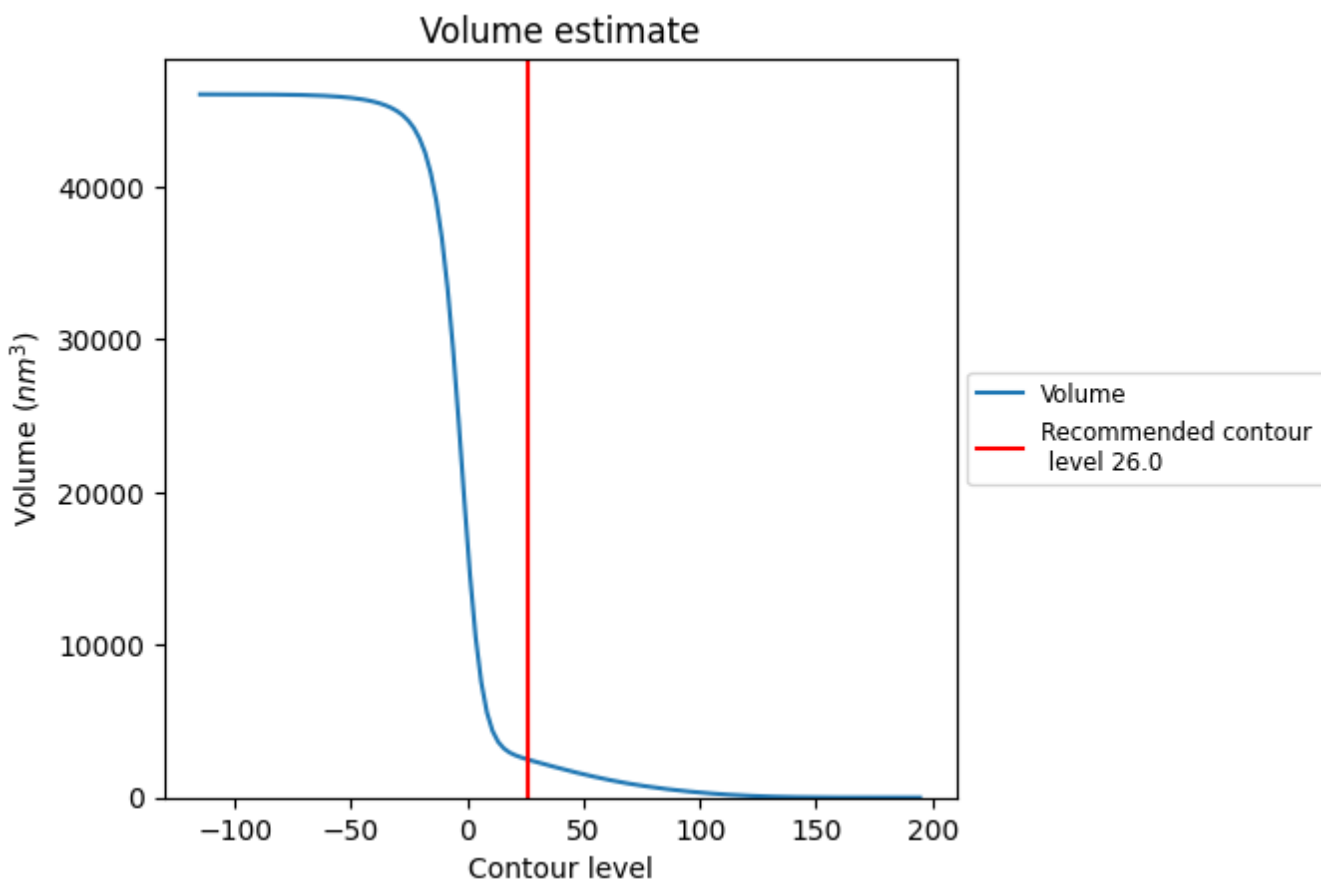
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

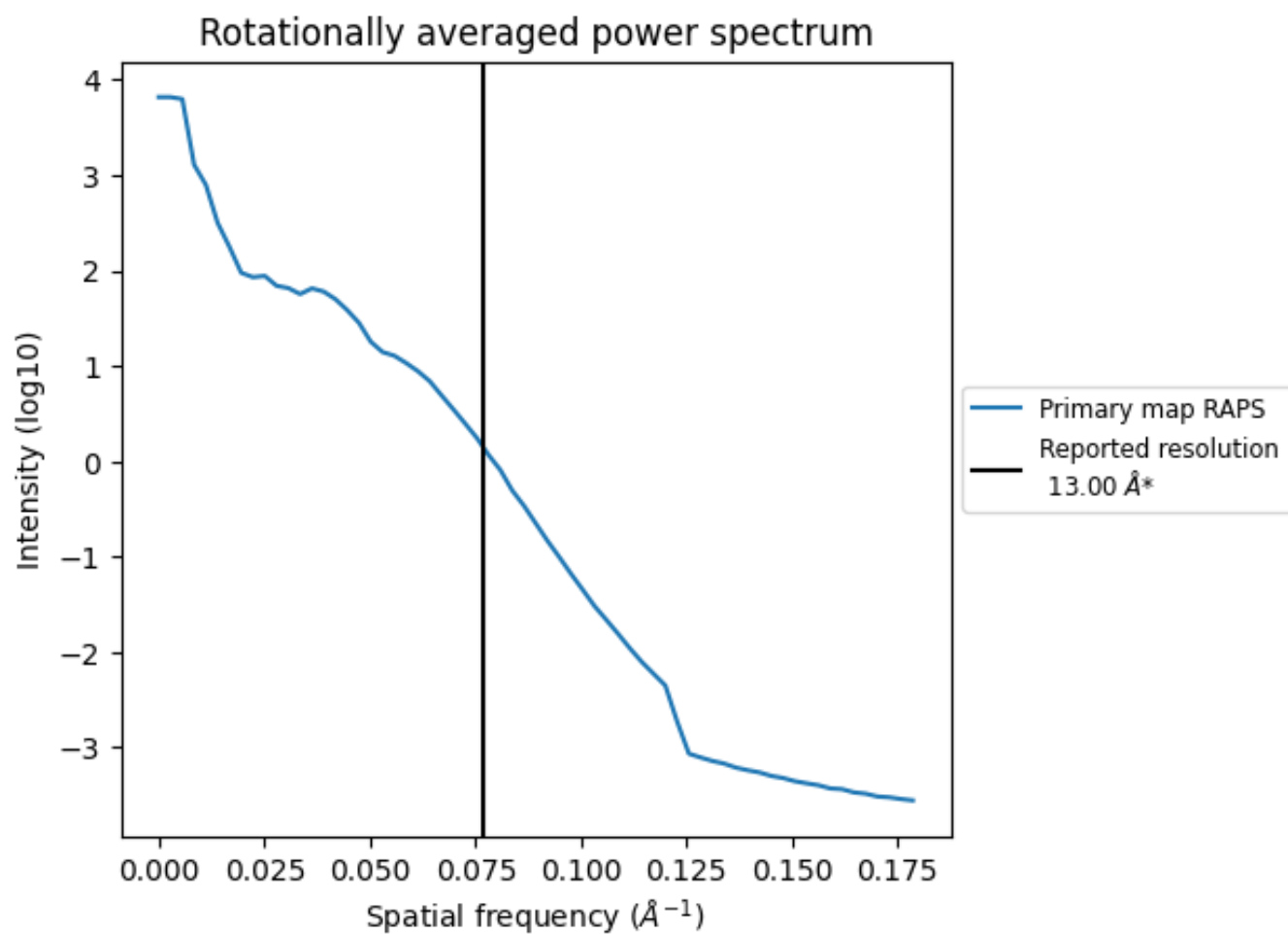
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2493 nm³; this corresponds to an approximate mass of 2252 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 0.077 Å⁻¹

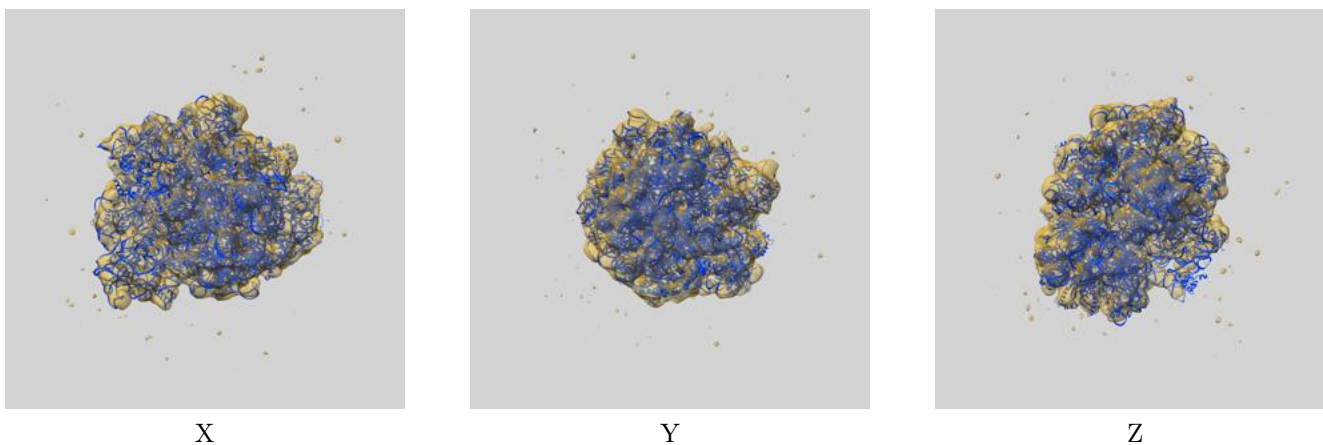
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

9 Map-model fit [i](#)

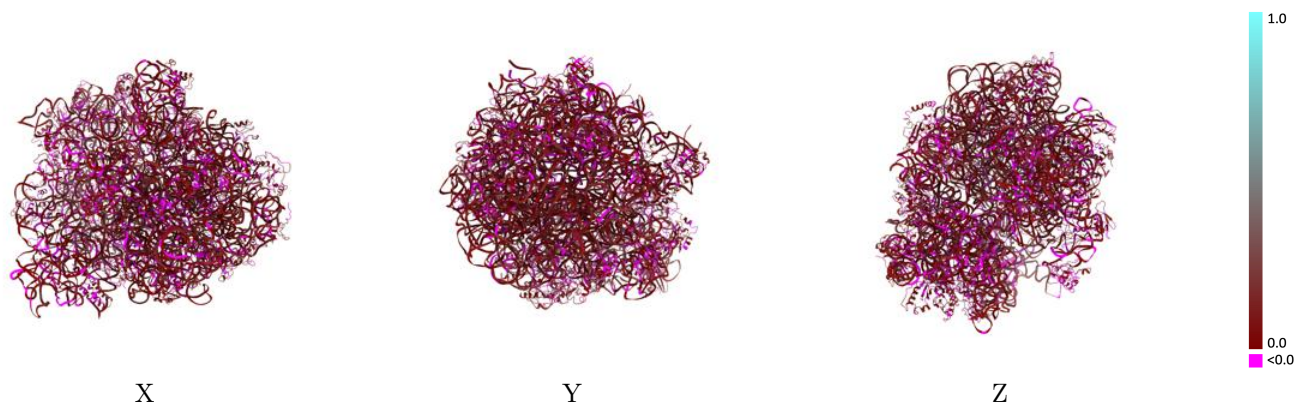
This section contains information regarding the fit between EMDB map EMD-1719 and PDB model 4V72. Per-residue inclusion information can be found in section 3 on page 17.

9.1 Map-model overlay [i](#)



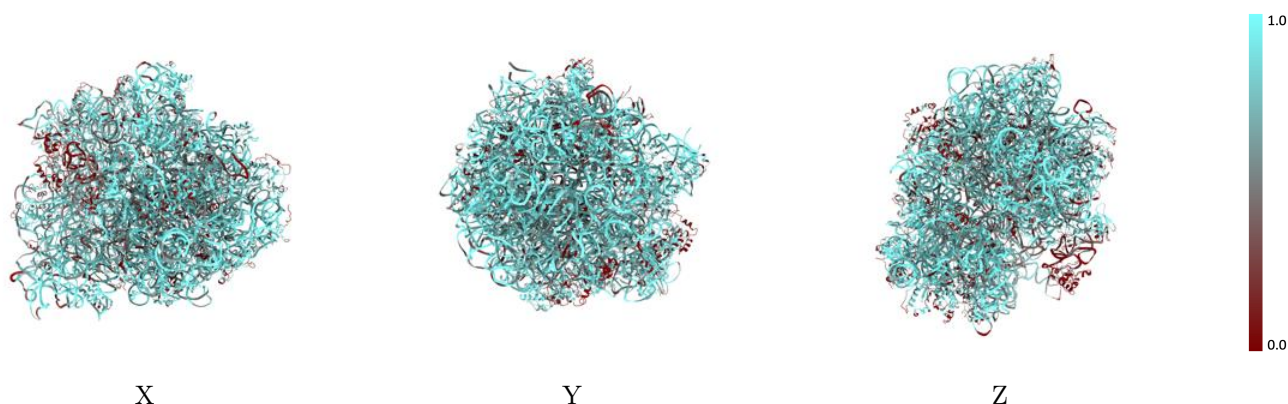
The images above show the 3D surface view of the map at the recommended contour level 26.0 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



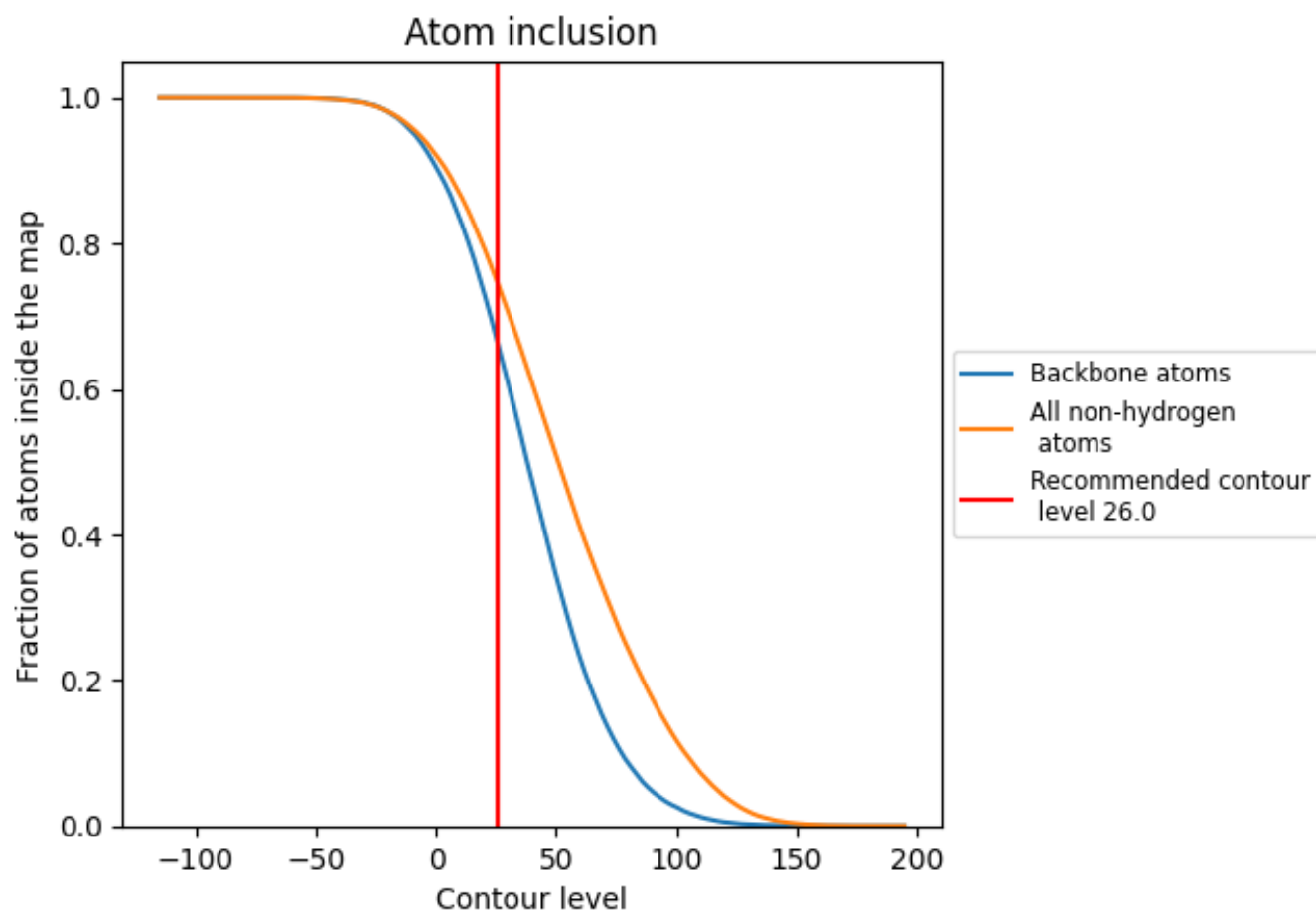
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (26.0).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 66% of all backbone atoms, 74% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary













































The table lists the average atom inclusion at the recommended contour level (26.0) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7426	 0.0720
A1	 0.5900	 0.0670
A2	 0.5793	 0.0370
A3	 0.7363	 0.0960
AA	 0.8326	 0.0830
AB	 0.6478	 0.0790
AC	 0.6656	 0.0570
AD	 0.5616	 0.0410
AE	 0.6768	 0.0650
AF	 0.8080	 0.0820
AG	 0.7018	 0.0440
AH	 0.6146	 0.0490
AI	 0.6993	 0.0370
AJ	 0.6322	 0.0230
AK	 0.6222	 0.0360
AL	 0.5581	 0.0380
AM	 0.5751	 0.0250
AN	 0.5581	 0.0390
AO	 0.7464	 0.0500
AP	 0.5494	 0.0060
AQ	 0.6850	 0.0690
AR	 0.6856	 0.0420
AS	 0.7708	 0.0290
AT	 0.6641	 0.0250
AU	 0.3936	 -0.0080
B0	 0.6215	 0.0360
B1	 0.6807	 0.0480
B2	 0.3718	 0.0240
B3	 0.3320	 -0.0140
B4	 0.6438	 0.0190
B5	 0.4538	 0.0460
BA	 0.8101	 0.0890
BB	 0.8630	 0.0810
BC	 0.4928	 0.0310
BD	 0.5312	 0.0370



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Chain	Atom inclusion	Q-score
BE	 0.6158	 0.0380
BF	 0.7375	 0.0570
BG	 0.5690	 0.0360
BH	 0.2126	 0.0390
BI	 0.0294	 0.0230
BJ	 0.5764	 0.0320
BK	 0.5635	 0.0400
BL	 0.5719	 0.0130
BM	 0.5192	 0.0400
BN	 0.6154	 0.0260
BO	 0.8575	 0.0500
BP	 0.5766	 0.0500
BQ	 0.5121	 0.0270
BR	 0.7127	 0.0580
BS	 0.5730	 0.0520
BT	 0.6362	 0.0350
BU	 0.5638	 0.0190
BV	 0.6640	 0.0480
BW	 0.6856	 0.0440
BX	 0.4226	 0.0510
BY	 0.7445	 0.0880
BZ	 0.5446	 0.0230