wwPDB EM Validation Summary Report (i)

Dec 11, 2022 – 08:39 pm GMT

PDB ID	:	6T59
EMDB ID	:	EMD-10380
Title	:	Structure of rabbit 80S ribosome translating beta-tubulin in complex with tetratricopeptide protein 5 and nascent chain-associated complex
Authors	:	Lin, Z.; Gasic, I.; Chandrasekaran, V.; Peters, N.; Shao, S.; Ramakrishnan, V.; Mitchison, T.J.; Hegde, R.S.
Deposited on	:	2019-10-15
Resolution	:	3.11 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 (i) 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 (i)) were used in the production of this report:

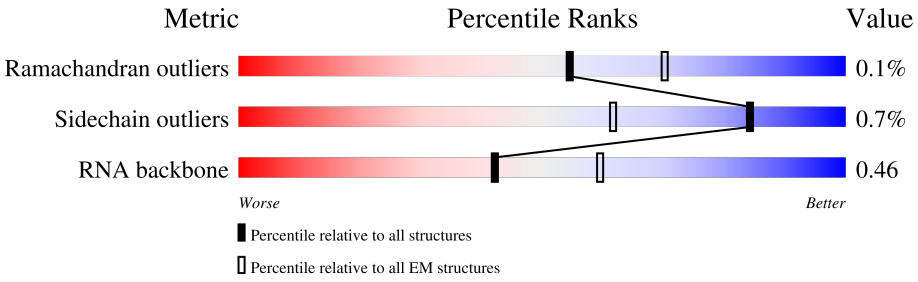
EMDB validation analysis	:	0.0.1.dev43
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.3

1 Overall quality at a glance

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

The reported resolution of this entry is 3.11 Å.

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



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

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=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	A3	257	85% 96%
2	B3	403	79% 97%
3	C3	425	68% 84% 15%
4	D3	297	70% 99%
5	E3	291	62% 73% 26%
6	F3	247	75% 91% 9%
7	G3	319	57% 73% 27%
8	H3	192	84% 99%

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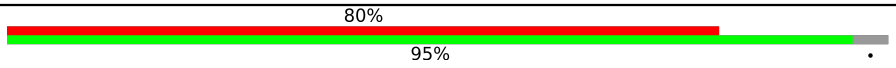
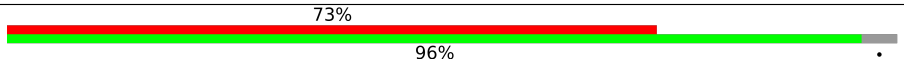
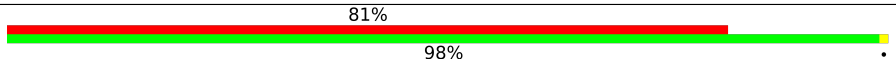
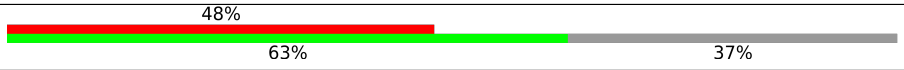
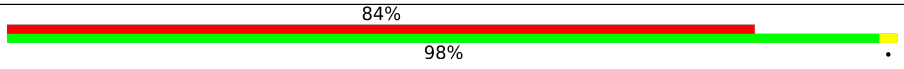
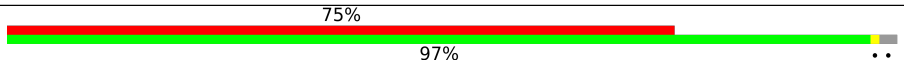
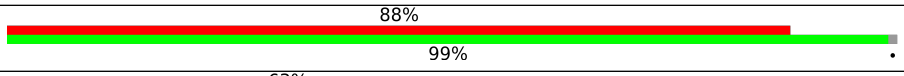
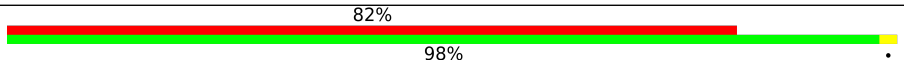
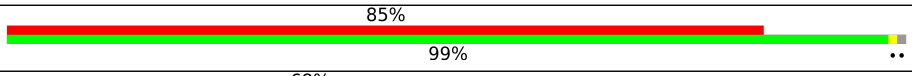
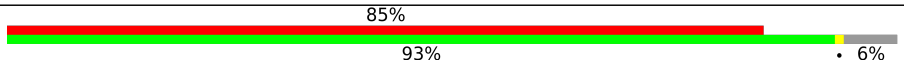
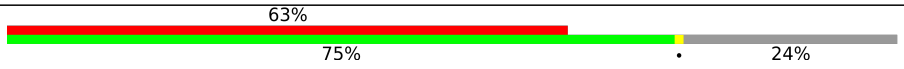
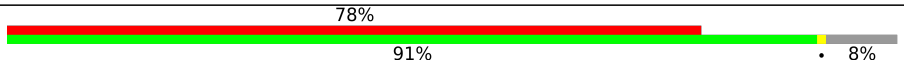
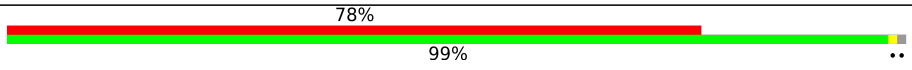
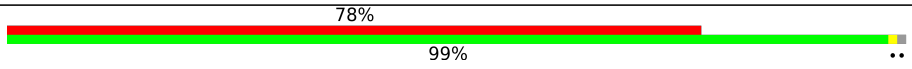
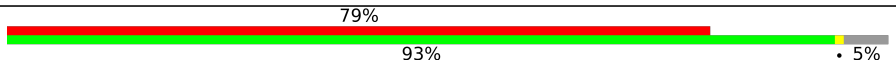
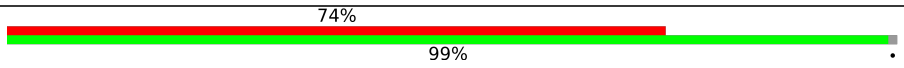
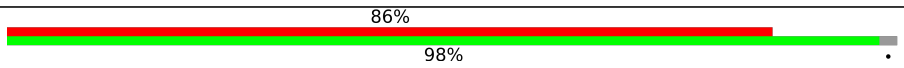
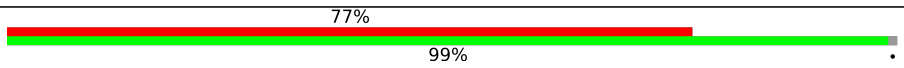
Mol	Chain	Length	Quality of chain
9	I3	214	
10	J3	178	
11	L3	211	
12	M3	218	
13	N3	204	
14	O3	203	
15	P3	184	
16	Q3	188	
17	R3	196	
18	S3	176	
19	T3	160	
20	U3	128	
21	V3	140	
22	W3	157	
23	X3	156	
24	Y3	145	
25	Z3	136	
26	a3	148	
27	b3	226	
28	c3	115	
29	d3	125	
30	e3	135	
31	f3	110	
32	g3	116	
33	h3	123	

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Mol	Chain	Length	Quality of chain
34	i3	105	79% 97%
35	j3	97	68% 86% 11%
36	k3	70	84% 99%
37	l3	51	80% 98%
38	m3	102	41% 51% 49%
39	n3	25	100% 100%
40	o3	106	81% 98%
41	p3	92	74% 96%
42	r3	137	78% 91% 9%
43	s3	318	58% 61% 38%
44	t3	165	92% 91% 7%
45	23	76	99% 82% 18%
46	54	3543	73% 76% 24%
47	74	120	65% 88% 12%
48	84	156	68% 76% 21%
49	NI	29	90% 97%
50	NA	215	25% 25% 75%
51	NB	206	28% 28% 72%
52	TT	440	92% 96%
53	1	64	55% 44% 12% 44%

2 Entry composition (i)

There are 55 unique types of molecules in this entry. The entry contains 143047 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 Ribosomal protein L8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A3	248	1898	1189	389	314	6	0	0

- Molecule 2 is a protein called uL3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B3	394	3172	2020	597	542	13	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B3	1	MET	-	initiating methionine	UNP G1TL06

- Molecule 3 is a protein called uL4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C3	362	2883	1812	577	480	14	0	0

- Molecule 4 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D3	293	2391	1512	438	427	14	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D3	1	MET	-	initiating methionine	UNP G1SYJ6

- Molecule 5 is a protein called 60S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E3	216	Total	C	N	O	S	0	0
			1729	1115	329	282	3		

- Molecule 6 is a protein called Ul30.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	F3	225	Total	C	N	O	S	0	0
			1875	1205	358	303	9		

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
F3	61	ARG	GLY	conflict	UNP G1TUB1
F3	93	ARG	GLY	conflict	UNP G1TUB1
F3	131	MET	VAL	conflict	UNP G1TUB1
F3	153	ILE	VAL	conflict	UNP G1TUB1

- Molecule 7 is a protein called eL8.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	G3	233	Total	C	N	O	S	0	0
			1879	1199	361	315	4		

- Molecule 8 is a protein called uL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	H3	190	Total	C	N	O	S	0	0
			1516	954	284	272	6		

- Molecule 9 is a protein called 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	I3	205	Total	C	N	O	S	0	0
			1664	1056	321	274	13		

- Molecule 10 is a protein called Ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	J3	170	Total	C	N	O	S	0	0
			1362	861	254	241	6		

- Molecule 11 is a protein called eL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	L3	210	Total	C	N	O	S	0	0
			1702	1065	354	279	4		

- Molecule 12 is a protein called Ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	M3	138	Total	C	N	O	S	0	0
			1137	727	221	182	7		

- Molecule 13 is a protein called Ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	N3	203	Total	C	N	O	S	0	0
			1701	1072	359	266	4		

- Molecule 14 is a protein called uL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	O3	199	Total	C	N	O	S	0	0
			1630	1051	319	255	5		

- Molecule 15 is a protein called uL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	P3	153	Total	C	N	O	S	0	0
			1242	777	241	215	9		

- Molecule 16 is a protein called eL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	Q3	187	Total	C	N	O	S	0	0
			1514	946	315	249	4		

- Molecule 17 is a protein called eL19.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	R3	155	Total	C	N	O	S	0	0
			1294	808	278	199	9		

- Molecule 18 is a protein called eL20.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	S3	176	Total	C	N	O	S	0	0
			1462	930	285	236	11		

- Molecule 19 is a protein called eL21.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	T3	159	Total	C	N	O	S	0	0
			1298	823	252	217	6		

- Molecule 20 is a protein called eL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	U3	102	Total	C	N	O	S	0	0
			834	534	146	152	2		

- Molecule 21 is a protein called Ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	V3	131	Total	C	N	O	S	0	0
			979	618	184	172	5		

- Molecule 22 is a protein called eL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	W3	63	Total	C	N	O	S	0	0
			528	337	103	85	3		

- Molecule 23 is a protein called uL23.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	X3	118	Total	C	N	O	S	0	0
			967	618	181	167	1		

- Molecule 24 is a protein called Ribosomal protein L26.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	Y3	134	Total	C	N	O	S	0	0
			1115	700	226	186	3		

- Molecule 25 is a protein called 60S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Z3	135	Total	C	N	O	S	0	0
			1107	714	208	182	3		

- Molecule 26 is a protein called uL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	a3	147	Total	C	N	O	S	0	0
			1162	734	239	185	4		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
a3	1	MET	-	initiating methionine	UNP G1SNY0

- Molecule 27 is a protein called eL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	b3	104	Total	C	N	O	S	0	0
			848	527	189	129	3		

- Molecule 28 is a protein called eL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	c3	98	Total	C	N	O	S	0	0
			761	481	134	140	6		

- Molecule 29 is a protein called eL31.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	d3	107	Total	C	N	O	S	0	0
			888	560	171	155	2		

- Molecule 30 is a protein called eL32.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	e3	128	Total	C	N	O	S	0	0
			1053	667	216	165	5		

- Molecule 31 is a protein called eL33.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	f3	109	Total	C	N	O	S	0	0
			876	555	174	143	4		

- Molecule 32 is a protein called eL34.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	g3	114	Total	C	N	O	S	0	0
			906	566	187	147	6		

- Molecule 33 is a protein called uL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	h3	122	Total	C	N	O	S	0	0
			1013	640	204	168	1		

- Molecule 34 is a protein called 60S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	i3	102	Total	C	N	O	S	0	0
			830	520	176	129	5		

- Molecule 35 is a protein called Ribosomal protein L37.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	j3	86	Total	C	N	O	S	0	0
			705	434	155	111	5		

- Molecule 36 is a protein called eL38.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	k3	69	Total	C	N	O	S	0	0
			569	366	103	99	1		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
k3	24	LYS	ASN	conflict	UNP G1U001

- Molecule 37 is a protein called eL39.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	l3	50	Total	C	N	O	S	0	0
			447	286	96	64	1		

- Molecule 38 is a protein called eL40.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	m3	52	Total	C	N	O	S	0	0
			429	266	90	67	6		

- Molecule 39 is a protein called 60s ribosomal protein l41.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	n3	25	Total	C	N	O	S	0	0
			239	145	64	27	3		

- Molecule 40 is a protein called eL42.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	o3	104	Total	C	N	O	S	0	0
			851	533	174	138	6		

- Molecule 41 is a protein called eL43.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	p3	91	Total	C	N	O	S	0	0
			708	445	136	120	7		

- Molecule 42 is a protein called eL28.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	r3	124	Total	C	N	O	S	0	0
			994	616	205	167	6		

- Molecule 43 is a protein called uL10.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	s3	196	Total	C	N	O	S	0	0
			1507	959	263	276	9		

- Molecule 44 is a protein called Ribosomal protein L12.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	t3	153	Total	C	N	O	S	0	0
			1160	722	218	217	3		

- Molecule 45 is a RNA chain called P-site tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	23	76	Total	C	N	O	P	0	0
			1616	723	291	527	75		

- Molecule 46 is a RNA chain called 28S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	54	3543	Total	C	N	O	P	0	0
			75972	33833	13910	24686	3543		

- Molecule 47 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	74	120	Total	C	N	O	P	0	0
			2558	1141	456	842	119		

- Molecule 48 is a RNA chain called 5.8S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	84	151	Total	C	N	O	P	0	0
			3208	1432	564	1062	150		

- Molecule 49 is a protein called Nascent polypeptide-associated complex subunit alpha N-terminal region.

Mol	Chain	Residues	Atoms				AltConf	Trace
49	NI	29	Total	C	N	O	0	0
			150	92	29	29		

- Molecule 50 is a protein called Nascent polypeptide-associated complex subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	NA	54	Total	C	N	O	S	0	0
			420	270	71	78	1		

- Molecule 51 is a protein called Transcription factor BTF3.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	NB	58	Total	C	N	O	S	0	0
			444	278	76	88	2		

- Molecule 52 is a protein called Tetratricopeptide repeat protein 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	TT	426	Total	C	N	O	S	0	0
			3337	2097	580	647	13		

- Molecule 53 is a protein called Tubulin Beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	1	36	Total	C	N	O	S	0	0
			292	184	51	55	2		

- Molecule 54 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
54	P3	2	Total	Mg	0
			2	2	
54	V3	1	Total	Mg	0
			1	1	
54	a3	1	Total	Mg	0
			1	1	
54	g3	1	Total	Mg	0
			1	1	
54	j3	1	Total	Mg	0
			1	1	
54	54	201	Total	Mg	0
			201	201	
54	74	7	Total	Mg	0
			7	7	
54	84	6	Total	Mg	0
			6	6	

- Molecule 55 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
55	g3	1	Total	Zn	0
			1	1	
55	j3	1	Total	Zn	0
			1	1	

Continued on next page...

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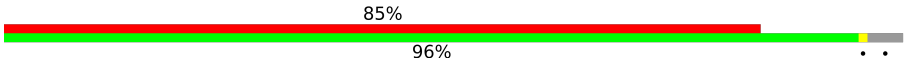
Mol	Chain	Residues	Atoms	AltConf
55	m3	1	Total Zn 1 1	0
55	o3	1	Total Zn 1 1	0
55	p3	1	Total Zn 1 1	0

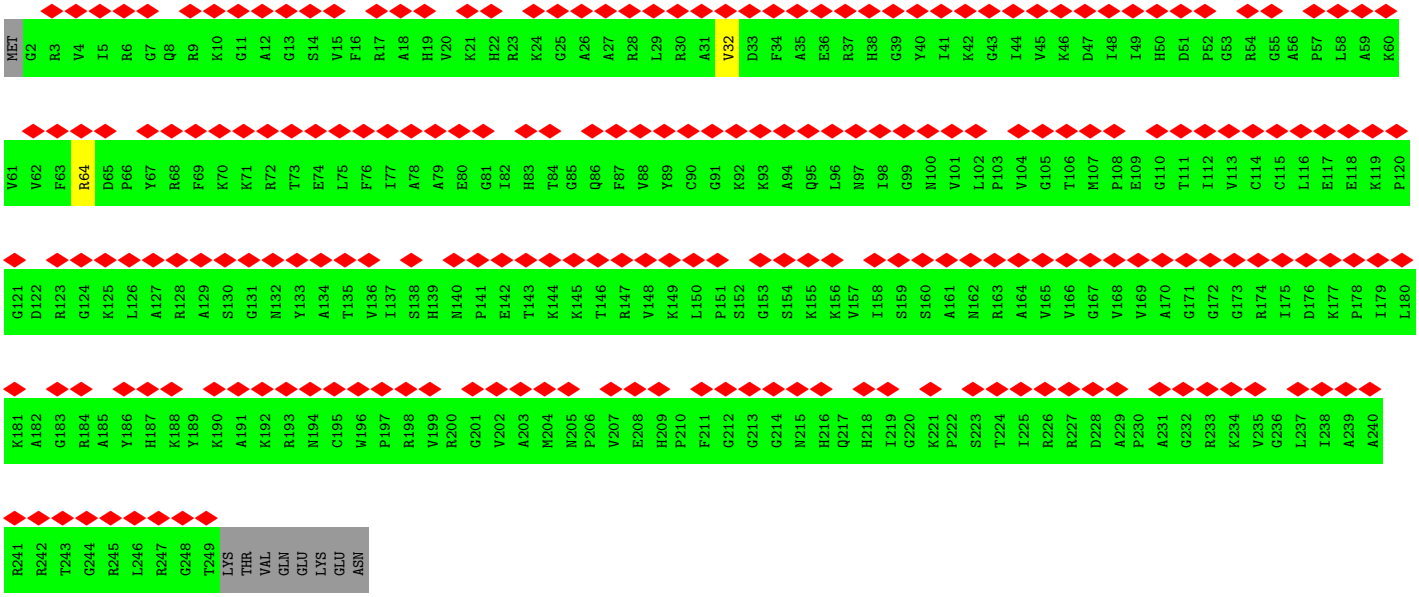
3 Residue-property plots (i)

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: Ribosomal protein L8

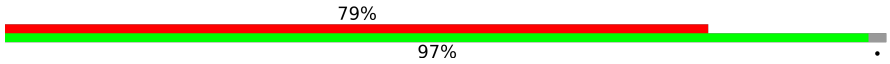
Chain A3:

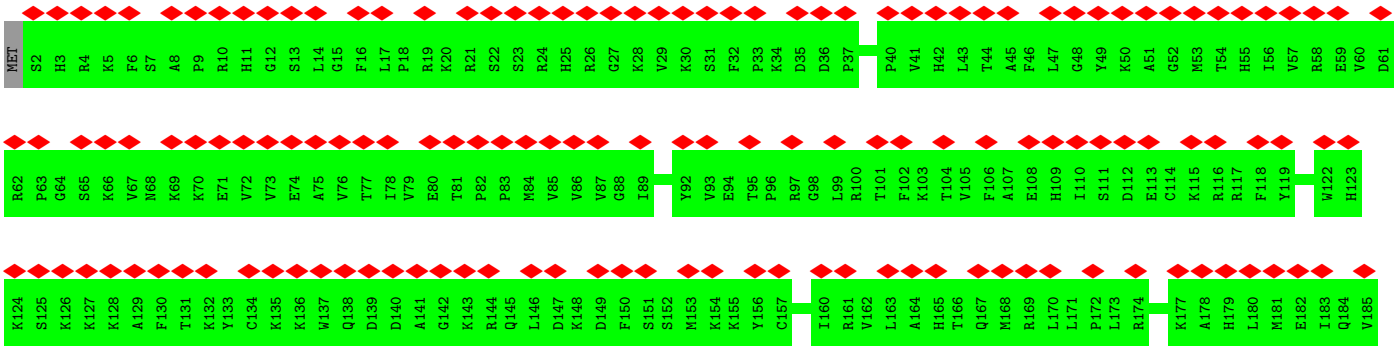


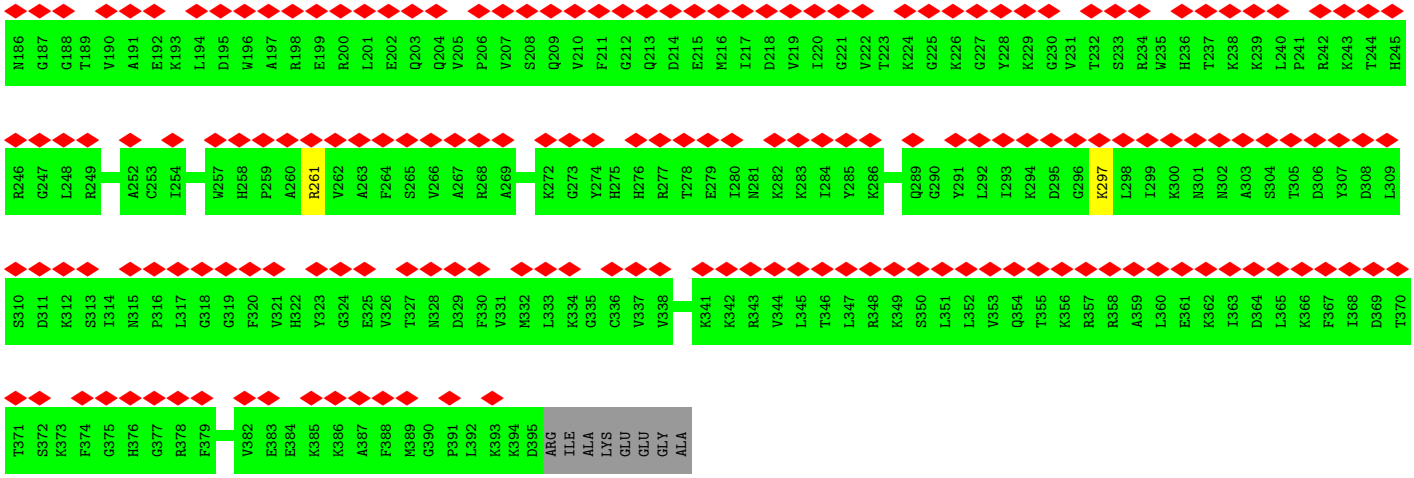


• Molecule 2: uL3

Chain B3:

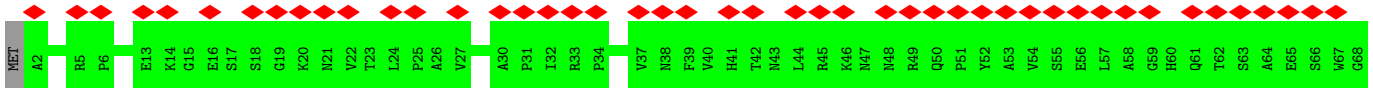






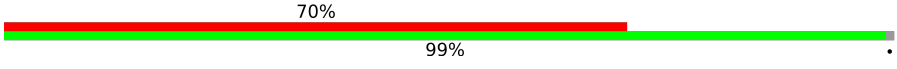
• Molecule 3: uL4

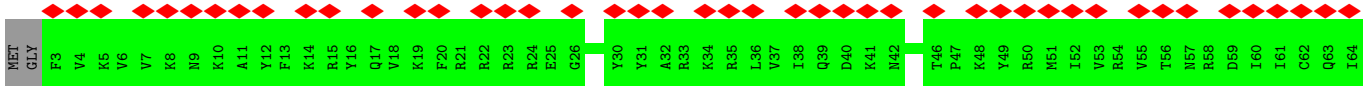
Chain C3:

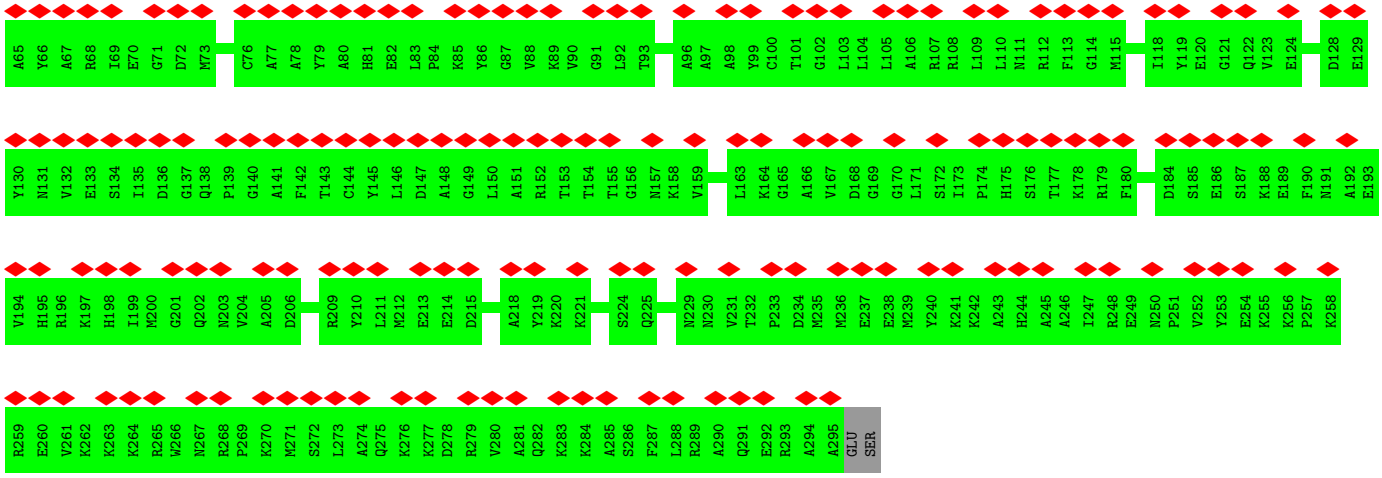


• Molecule 4: 60S ribosomal protein L5

Chain D3:

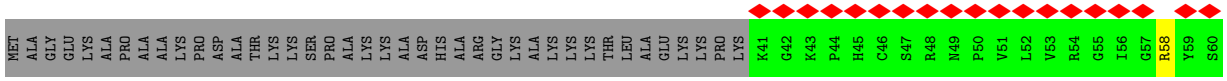


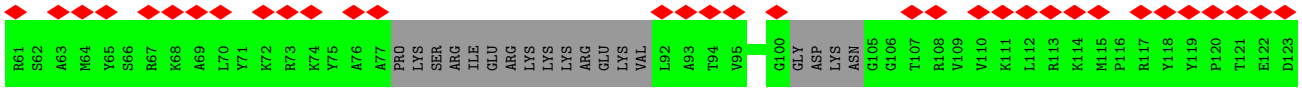


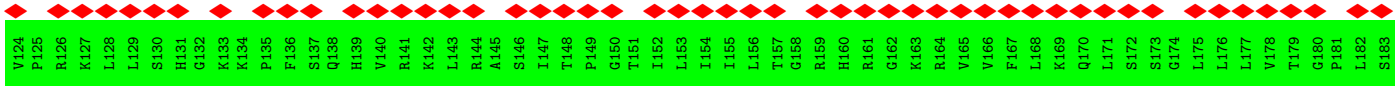


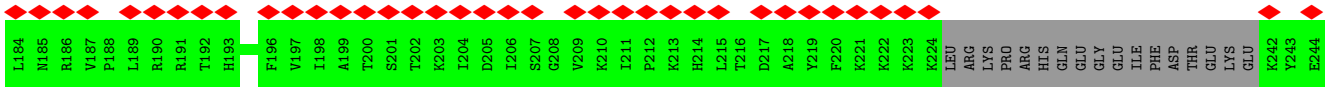
• Molecule 5: 60S ribosomal protein L6

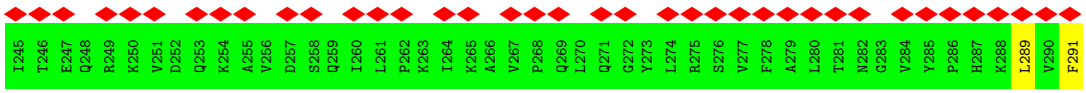
Chain E3:





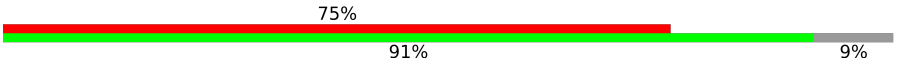


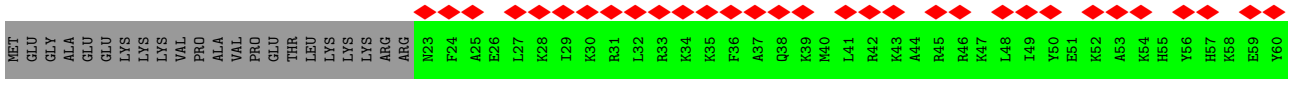


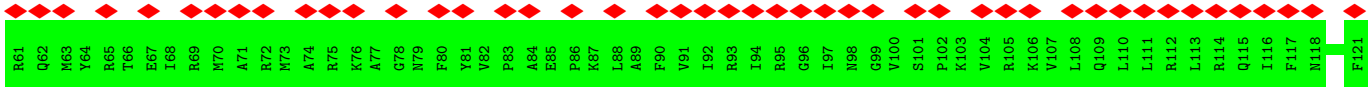


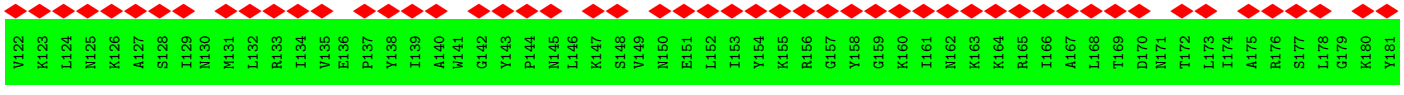
• Molecule 6: Ul30

Chain F3:



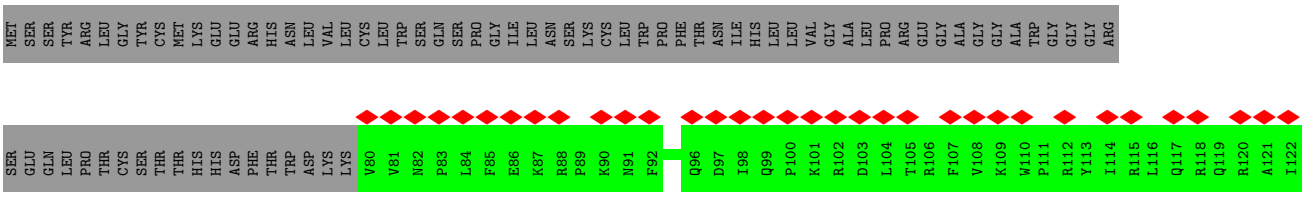






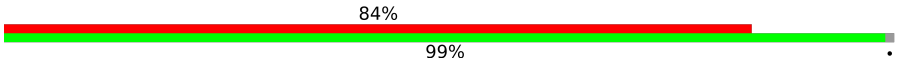
• Molecule 7: eL8

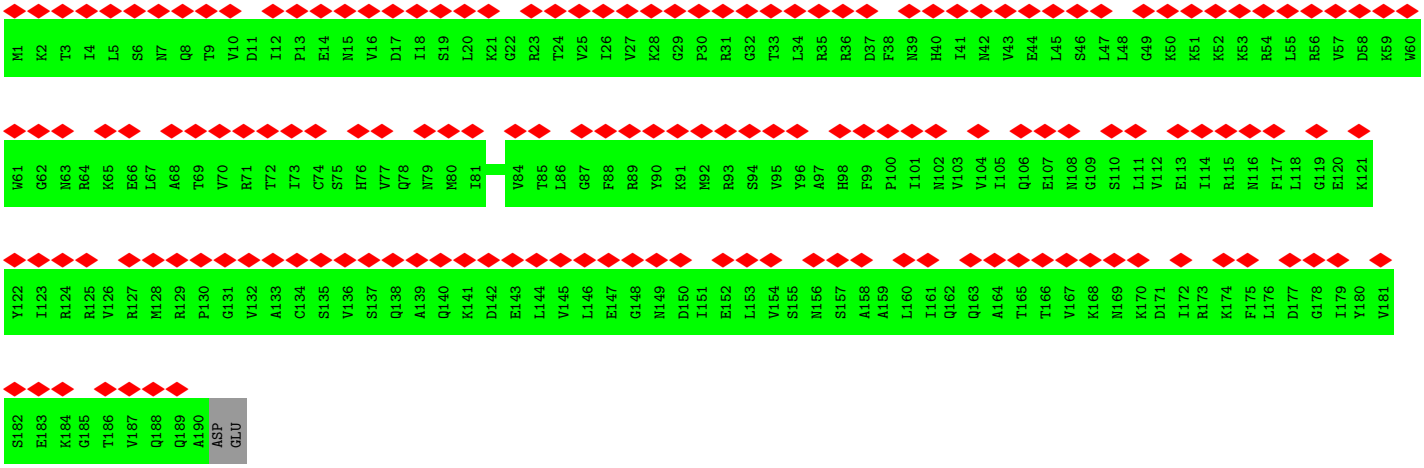
Chain G3:



• Molecule 8: uL6

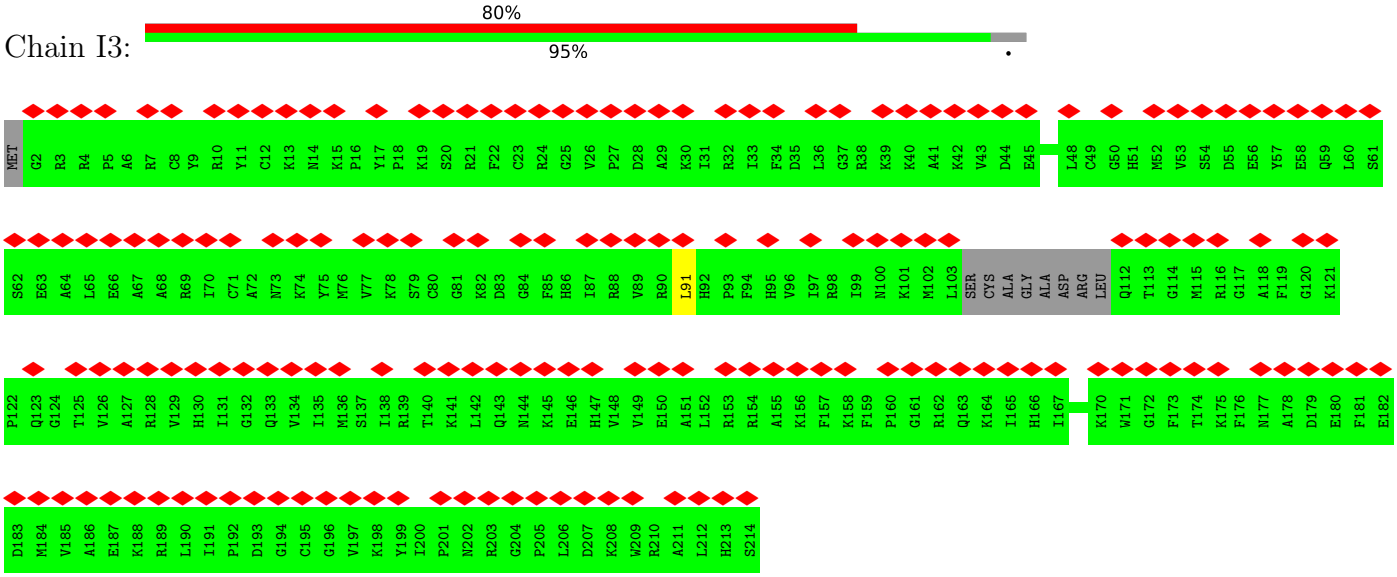
Chain H3:





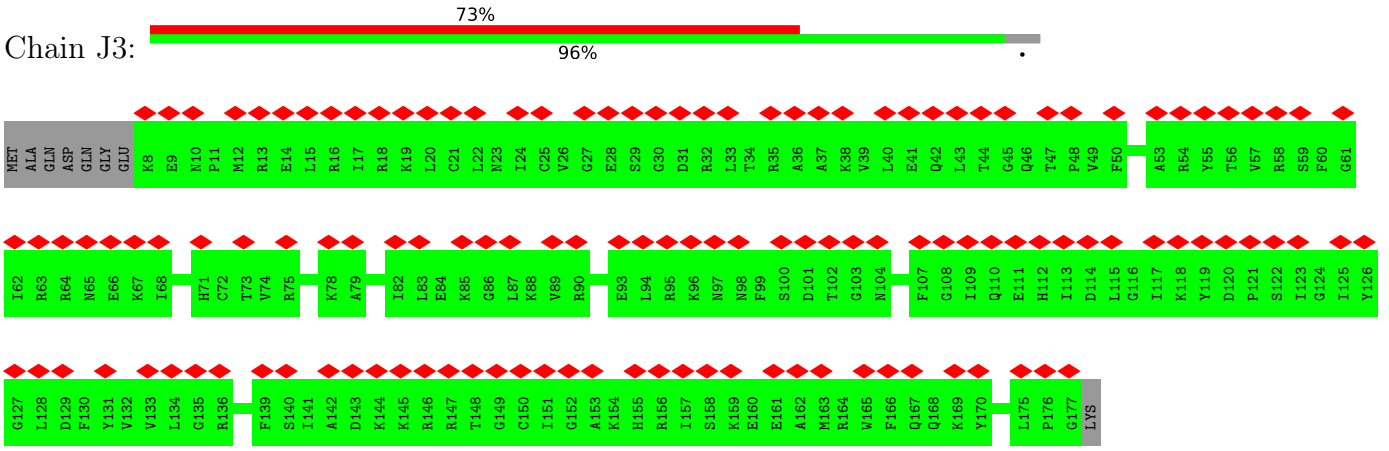
• Molecule 9: 60S ribosomal protein L10

Chain I3:



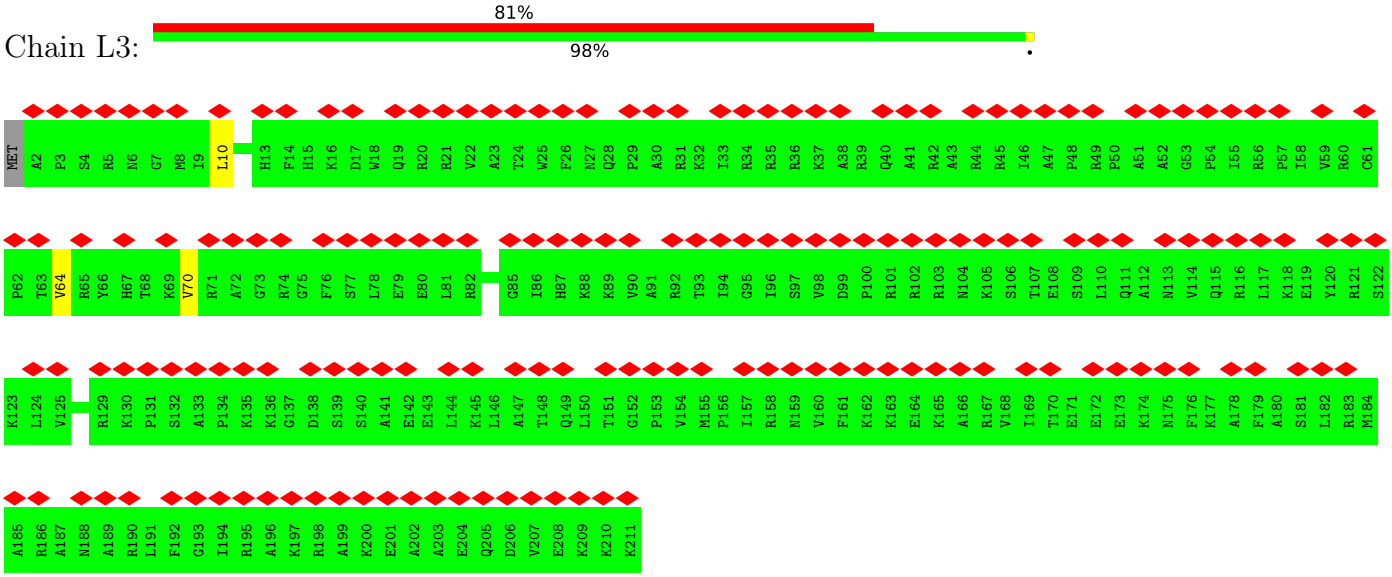
• Molecule 10: Ribosomal protein L11

Chain J3:



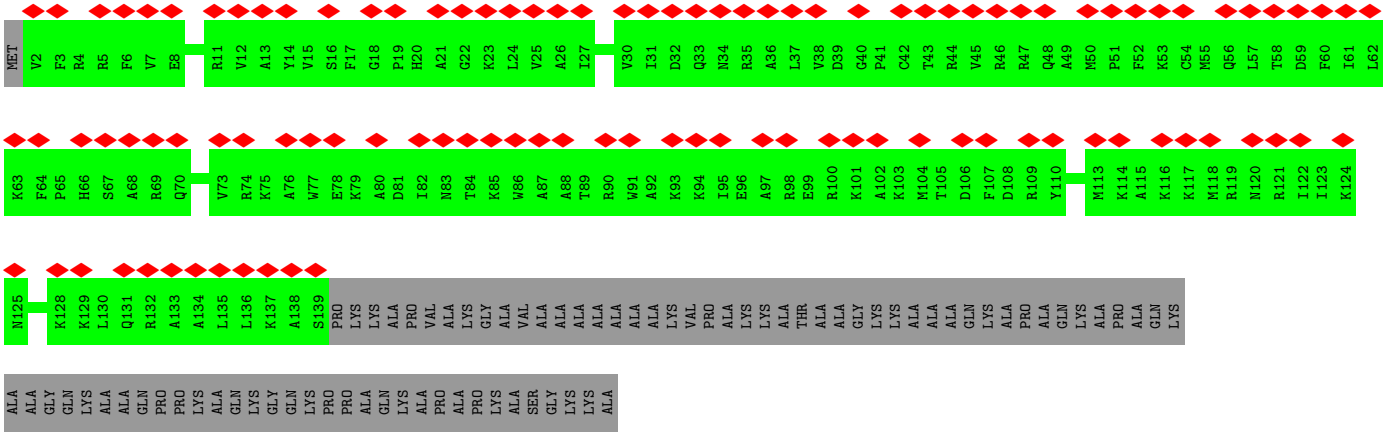
• Molecule 11: eL13

Chain L3:



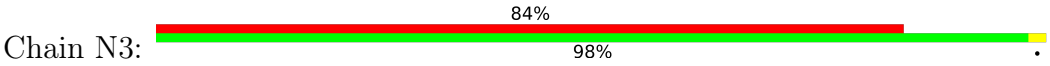
• Molecule 12: Ribosomal protein L14

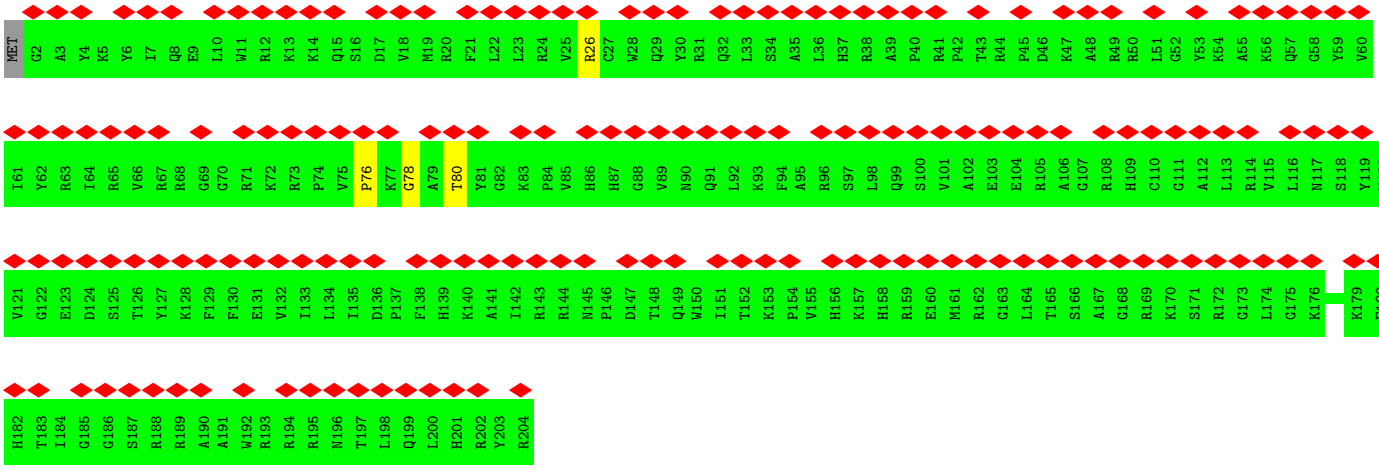
Chain M3:



• Molecule 13: Ribosomal protein L15

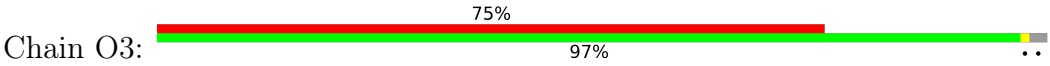
Chain N3:

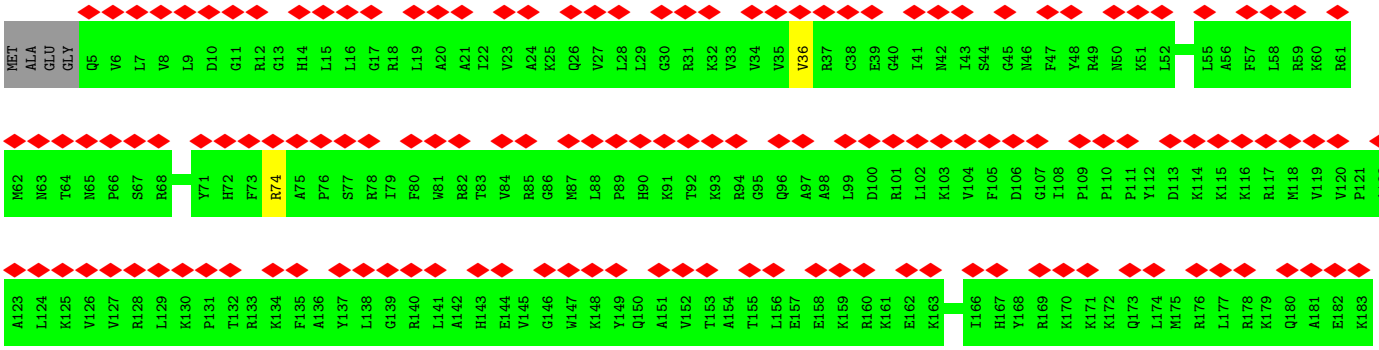


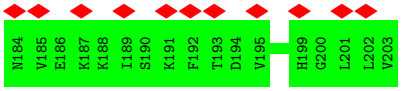


• Molecule 14: uL13

Chain O3:

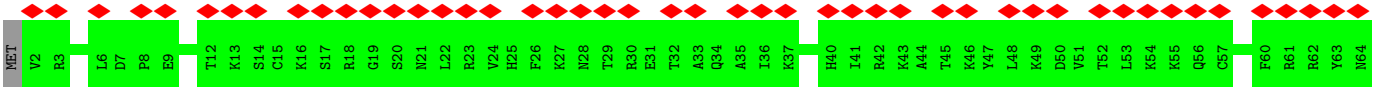


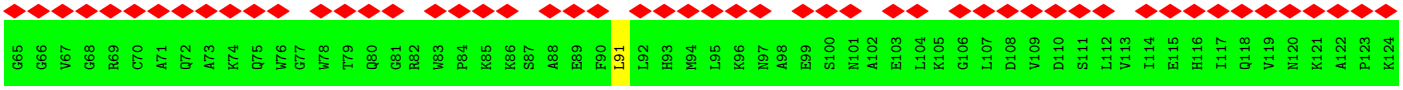


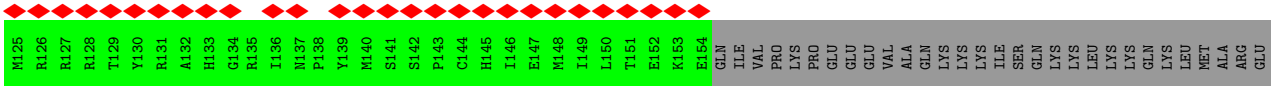


• Molecule 15: uL22

Chain P3:

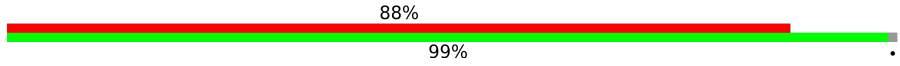


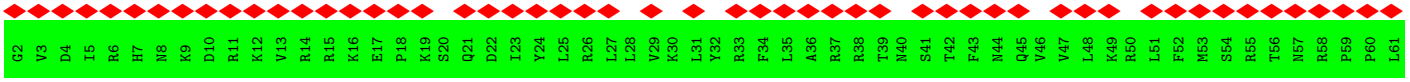


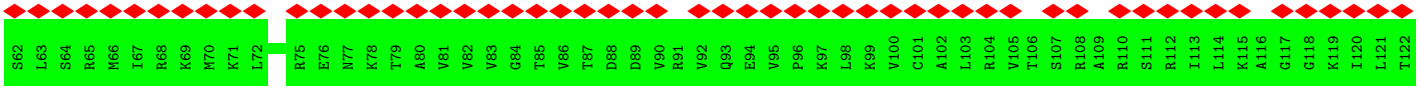


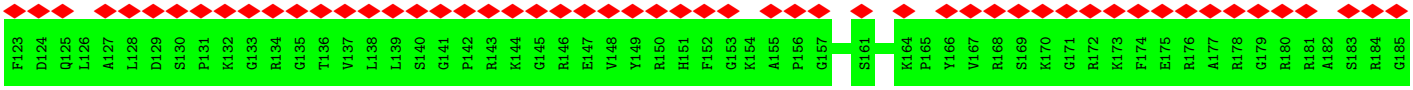
• Molecule 16: eL18

Chain Q3:



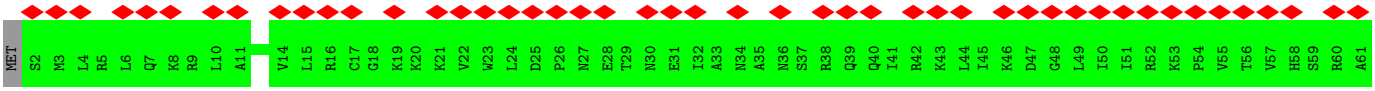


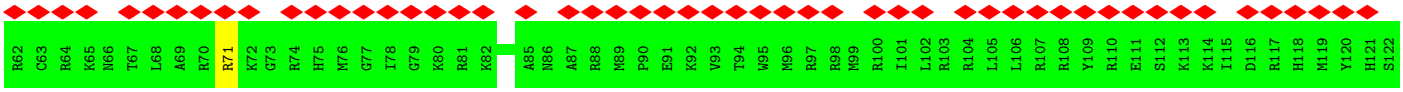


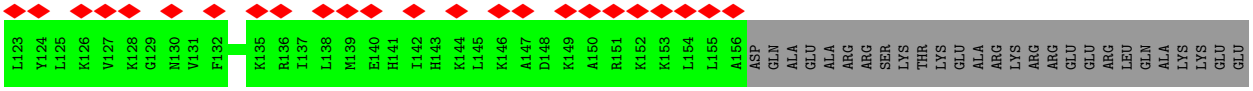


• Molecule 17: eL19

Chain R3:

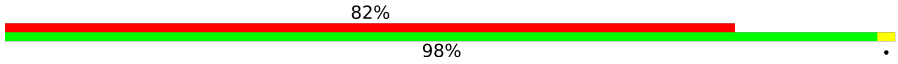


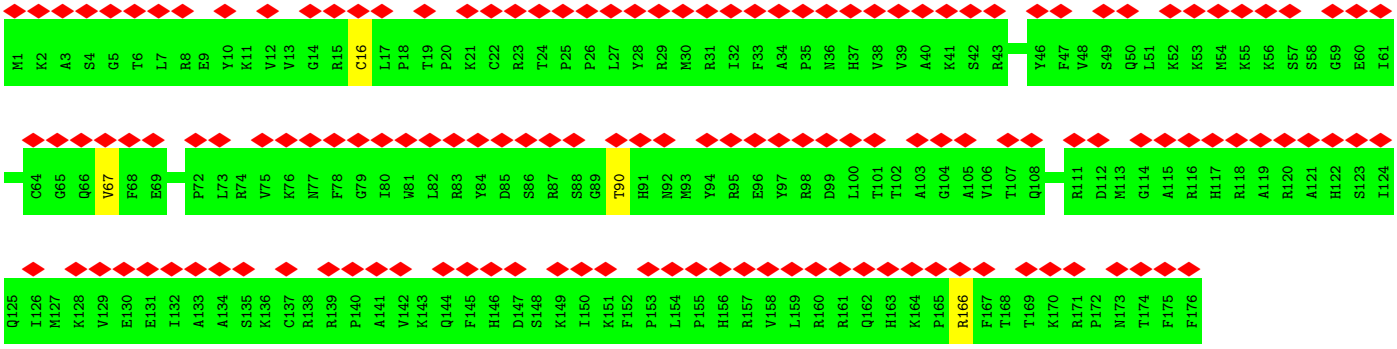




• Molecule 18: eL20

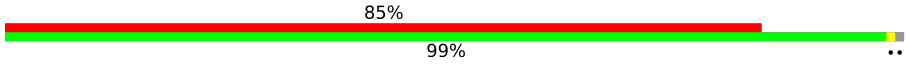
Chain S3:

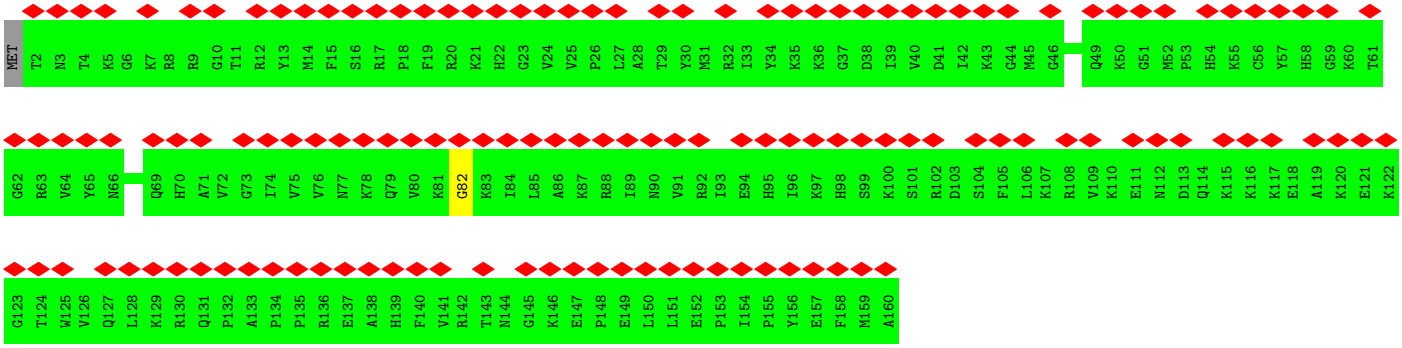




• Molecule 19: eL21

Chain T3:



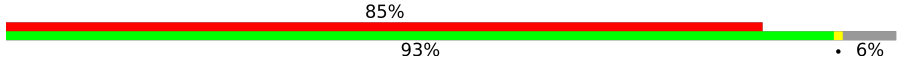


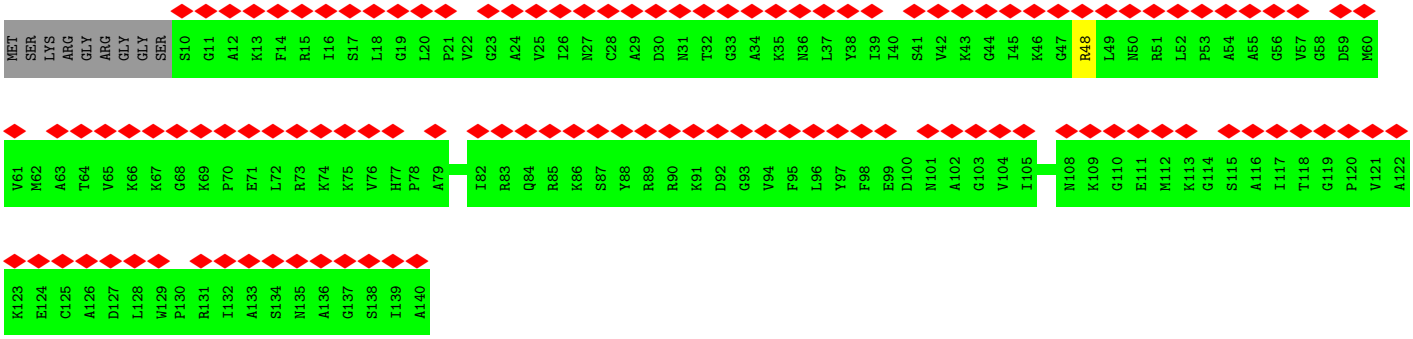
• Molecule 20: eL22

Chain U3:

• Molecule 21: Ribosomal protein L23

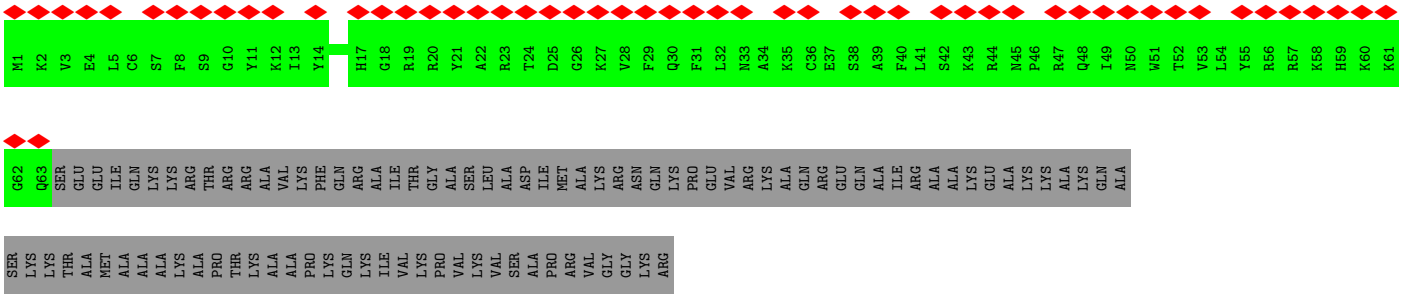
Chain V3:





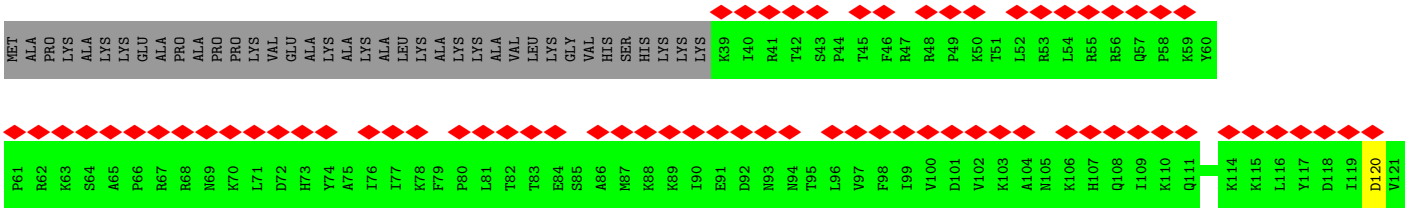
• Molecule 22: eL24

Chain W3:



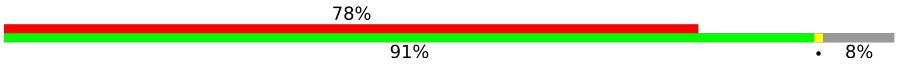
• Molecule 23: uL23

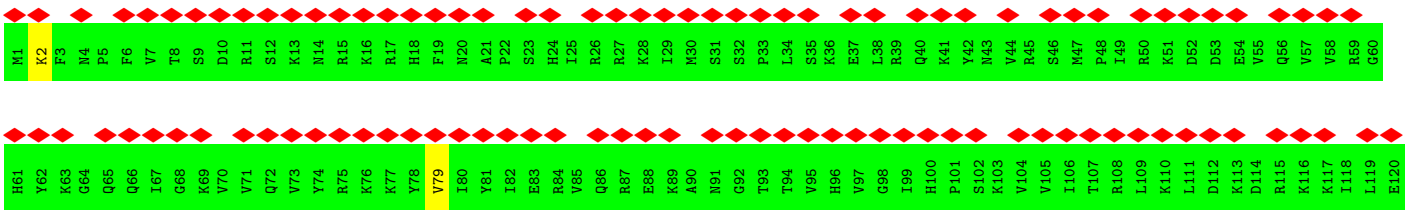
Chain X3:

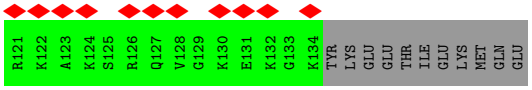


• Molecule 24: Ribosomal protein L26

Chain Y3:

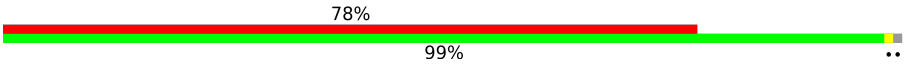


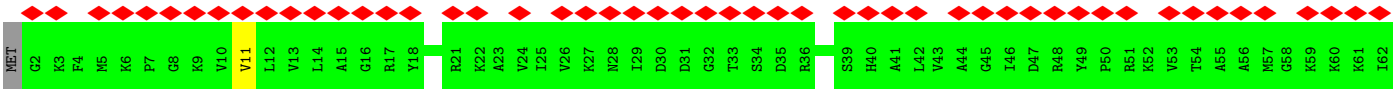


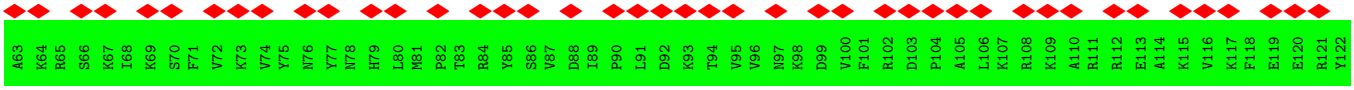


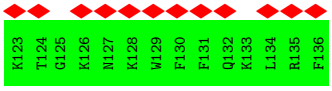
• Molecule 25: 60S ribosomal protein L27

Chain Z3:



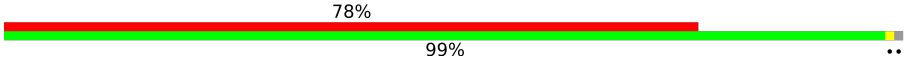


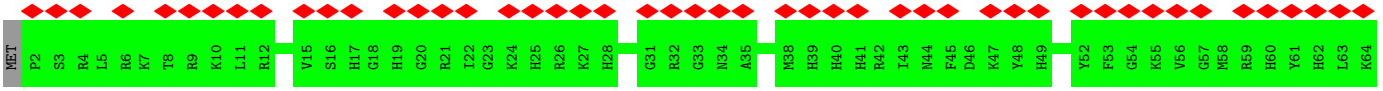


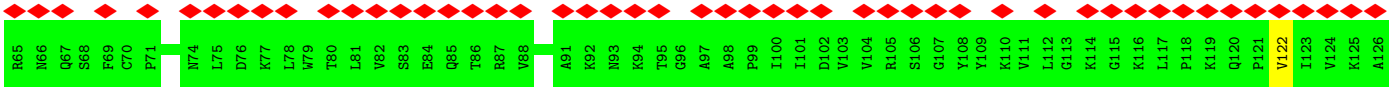


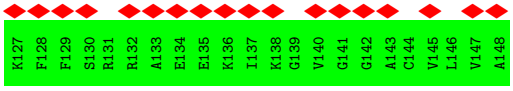
• Molecule 26: uL15

Chain a3:



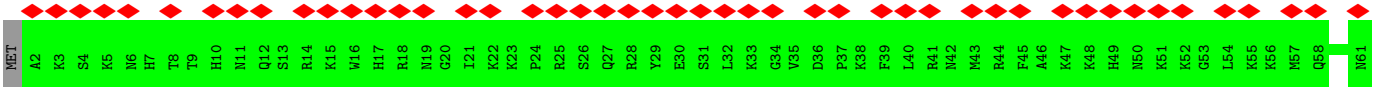


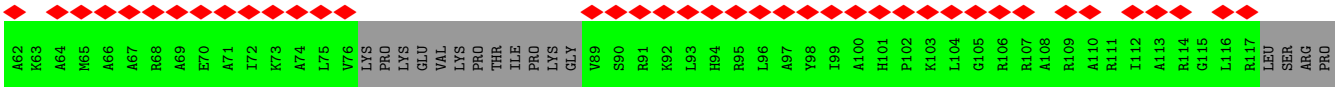


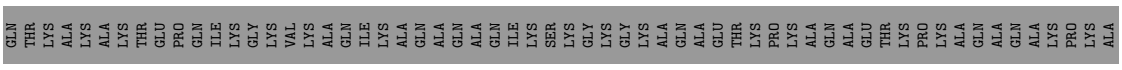


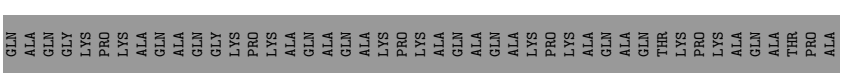
• Molecule 27: eL29

Chain b3:



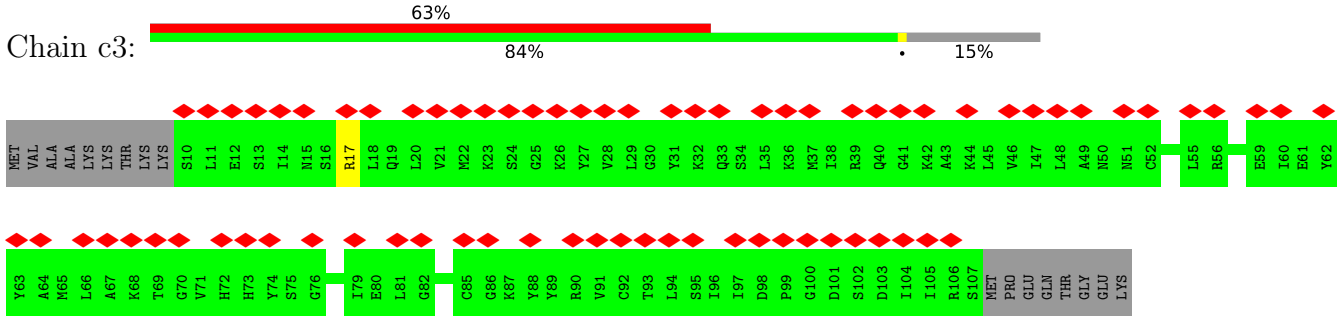






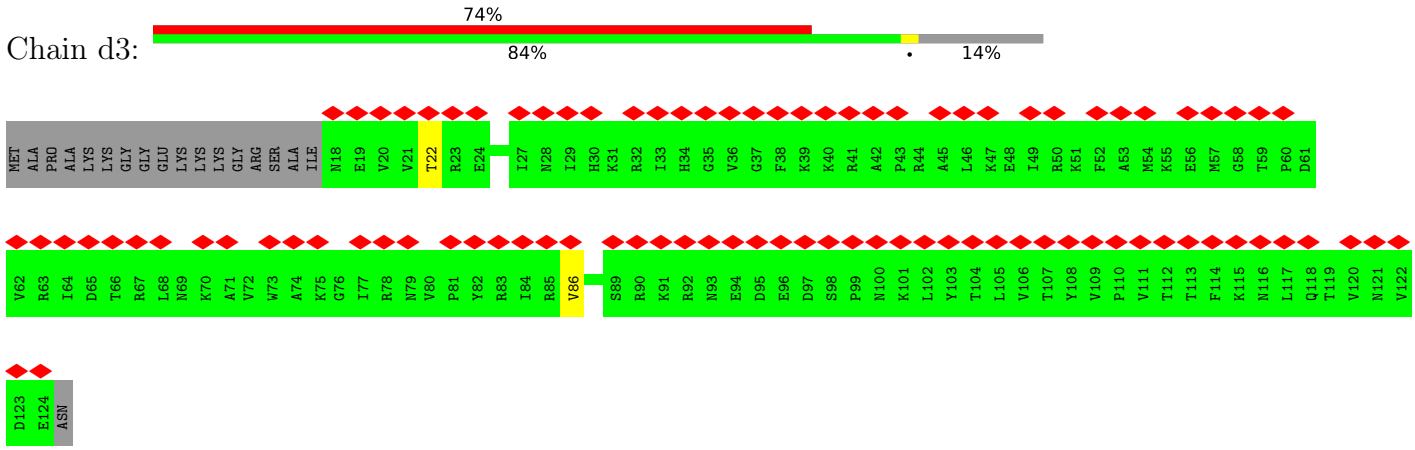
• Molecule 28: eL30

Chain c3:



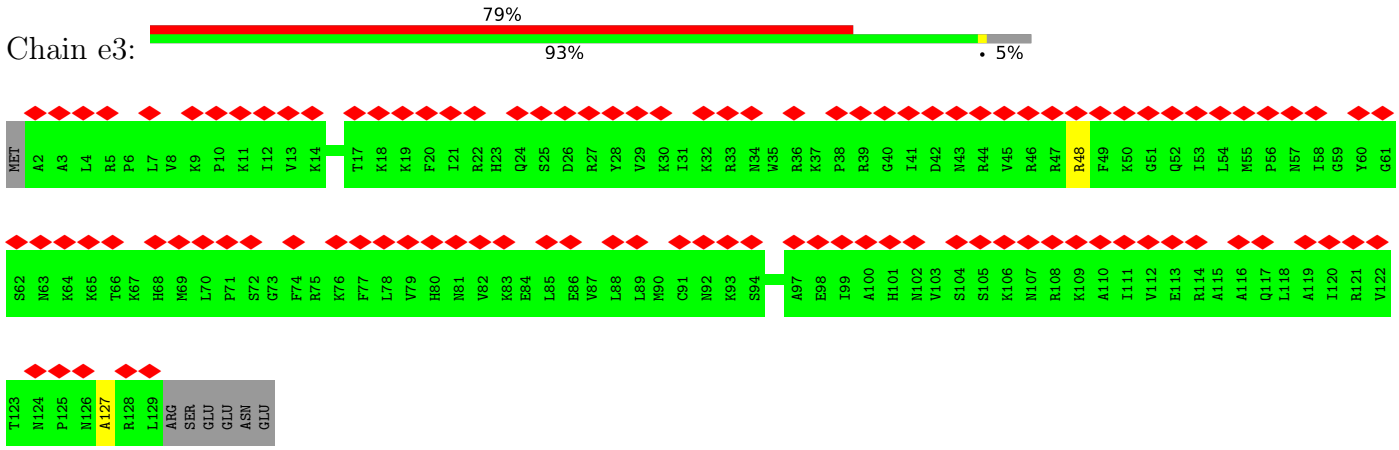
• Molecule 29: eL31

Chain d3:



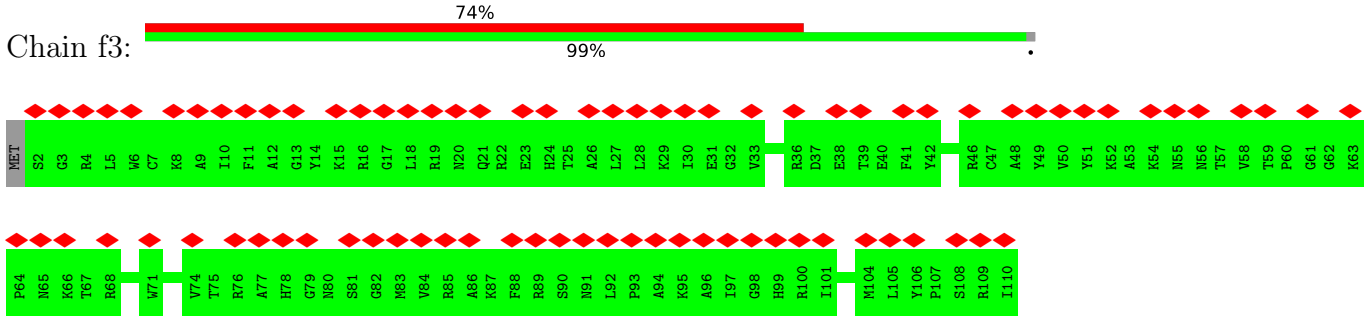
• Molecule 30: eL32

Chain e3:



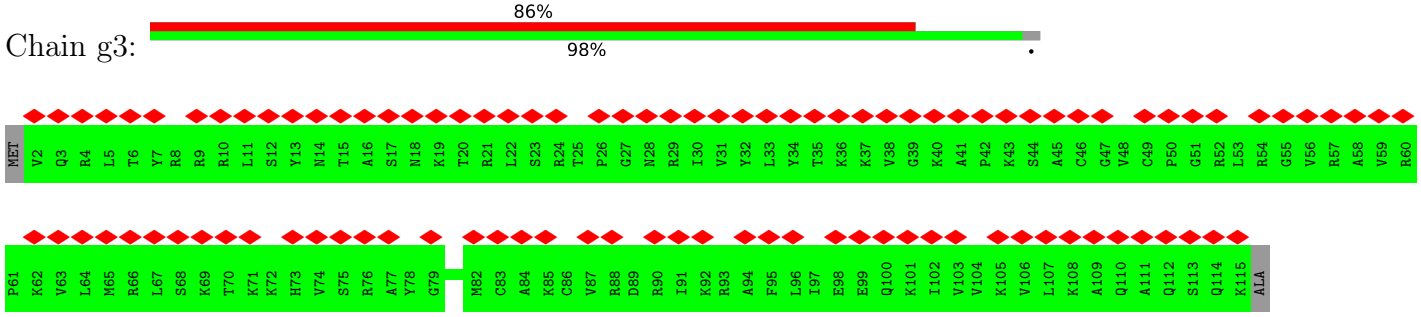
• Molecule 31: eL33

Chain f3:



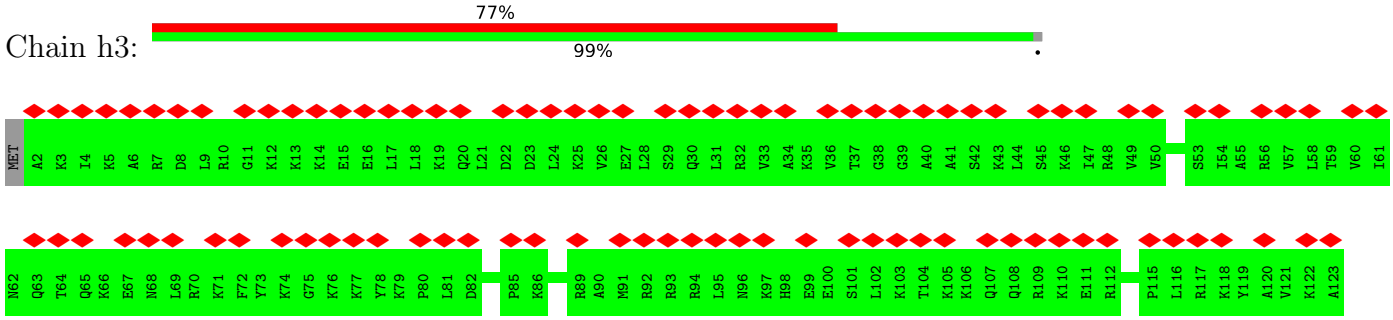
• Molecule 32: eL34

Chain g3:



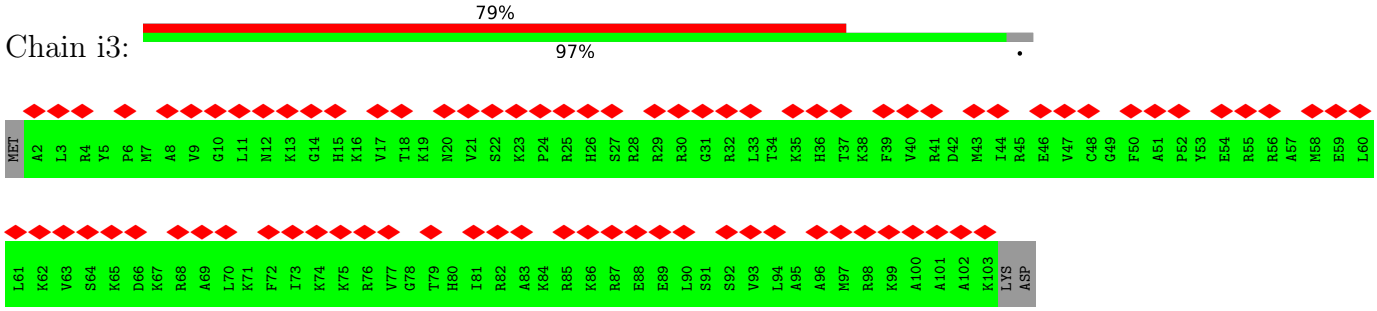
• Molecule 33: uL29

Chain h3:



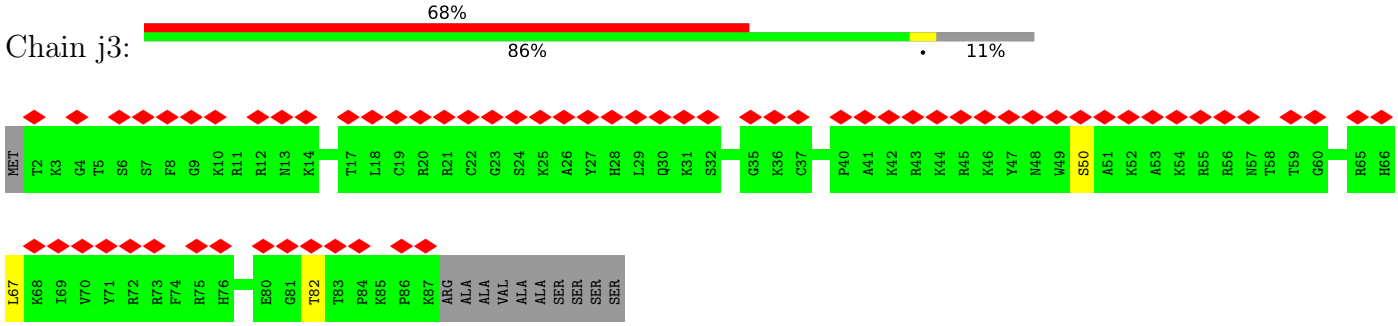
• Molecule 34: 60S ribosomal protein L36

Chain i3:



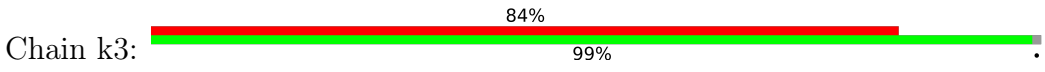
• Molecule 35: Ribosomal protein L37

Chain j3:



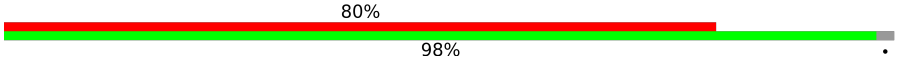
• Molecule 36: eL38

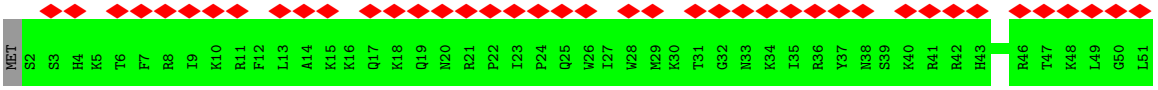
Chain k3:



• Molecule 37: eL39

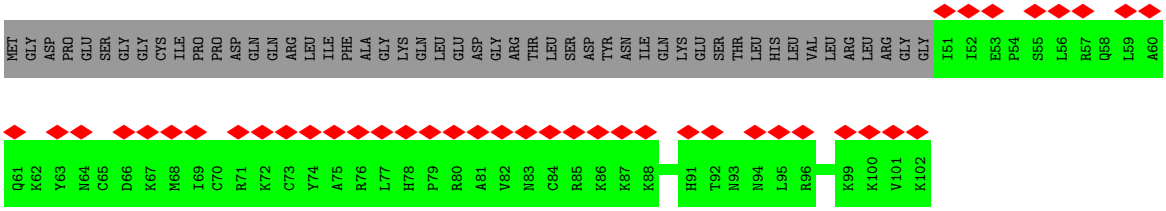
Chain l3:





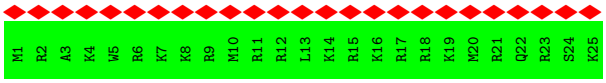
• Molecule 38: eL40

Chain m3:



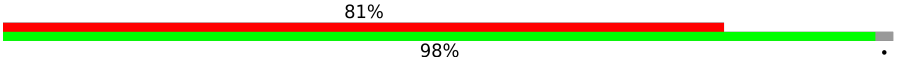
• Molecule 39: 60s ribosomal protein l41

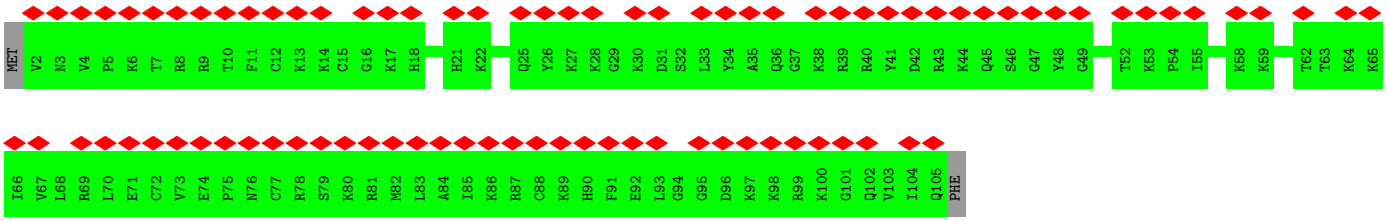
Chain n3:



• Molecule 40: eL42

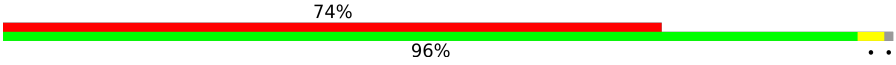
Chain o3:

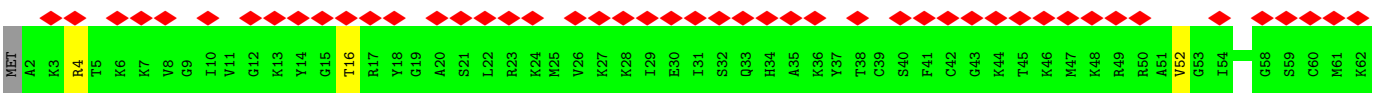


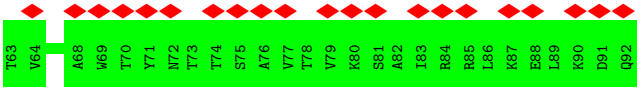


• Molecule 41: eL43

Chain p3:

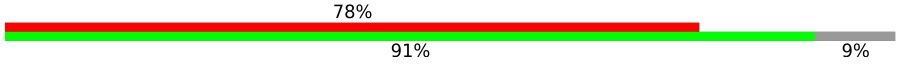


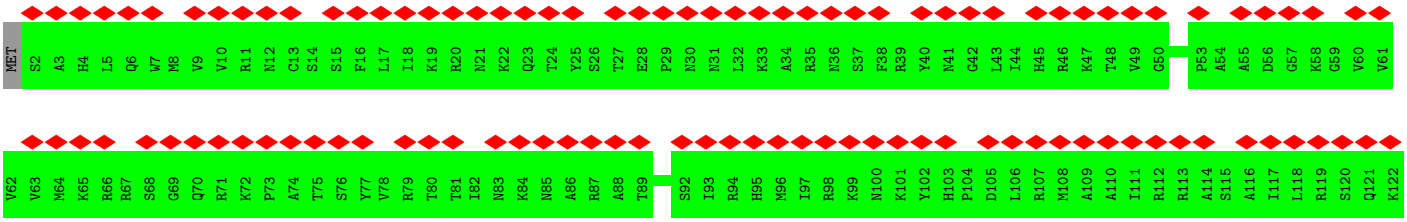




• Molecule 42: eL28

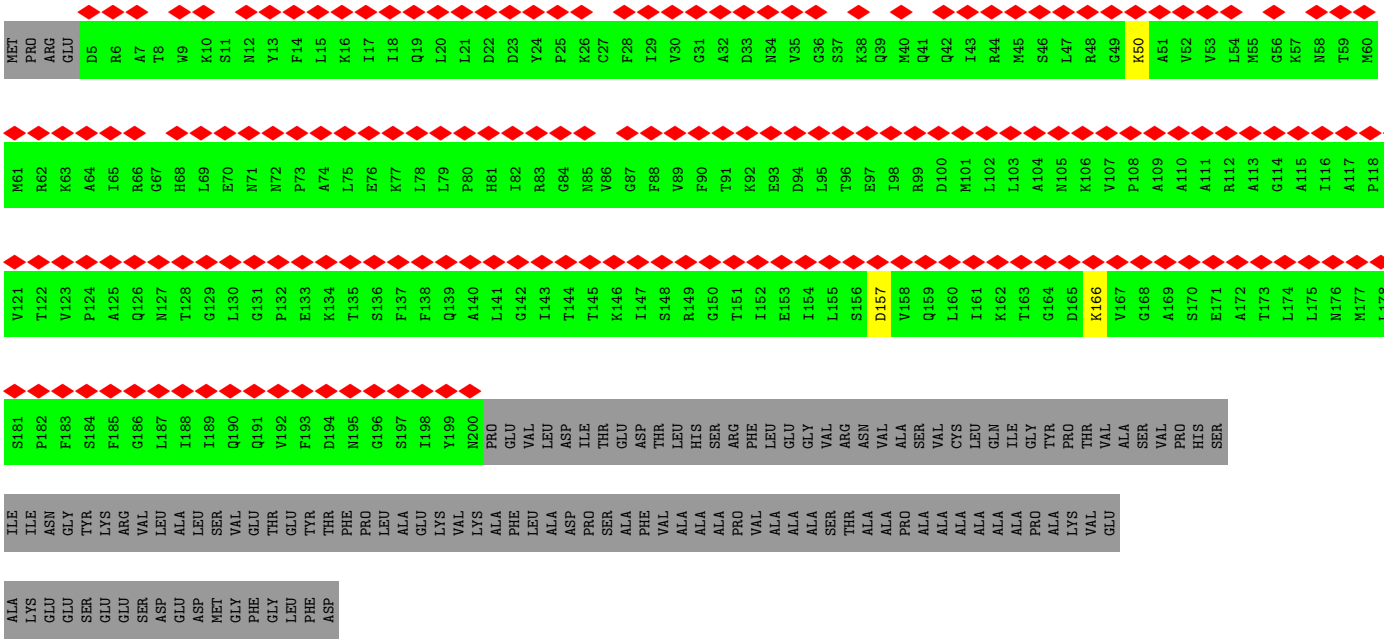
Chain r3:





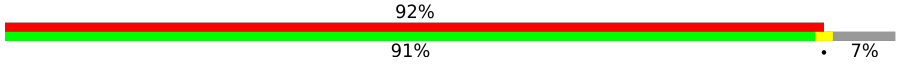
• Molecule 43: uL10

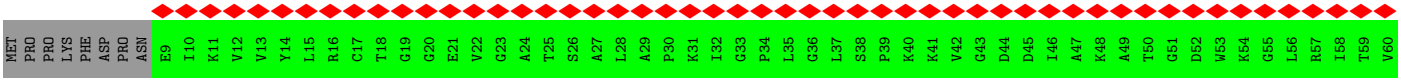
Chain s3:

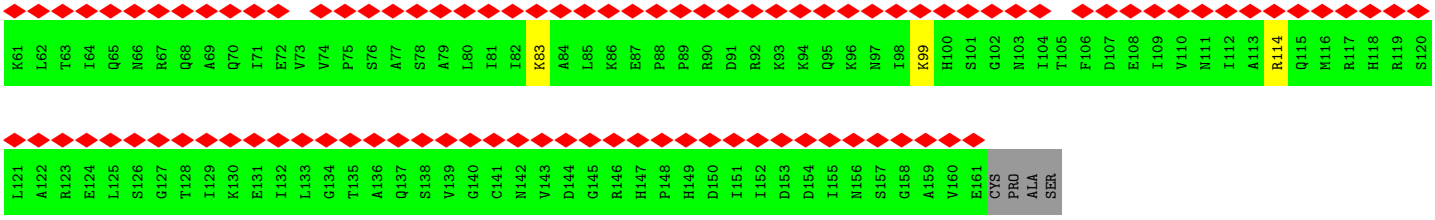


• Molecule 44: Ribosomal protein L12

Chain t3:

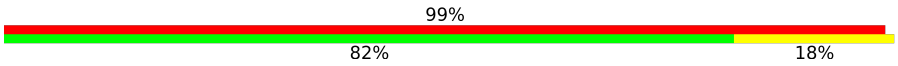


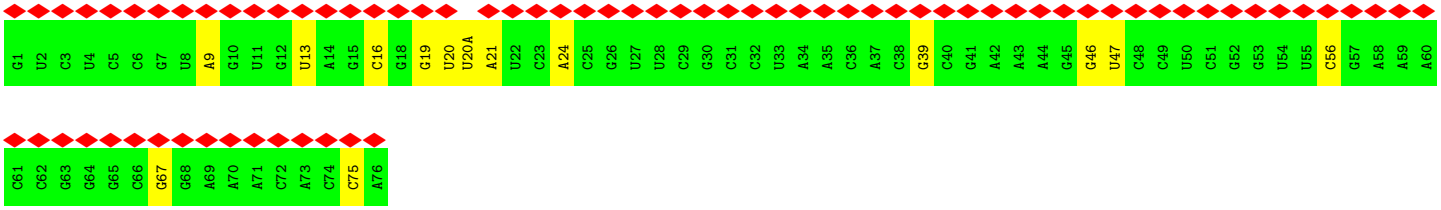




• Molecule 45: P-site tRNA

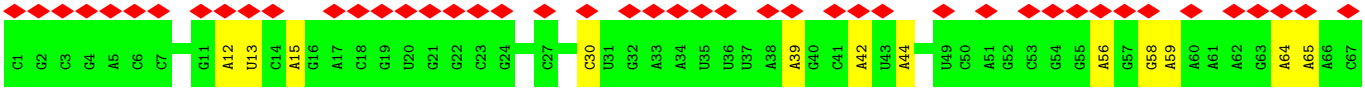
Chain 23:

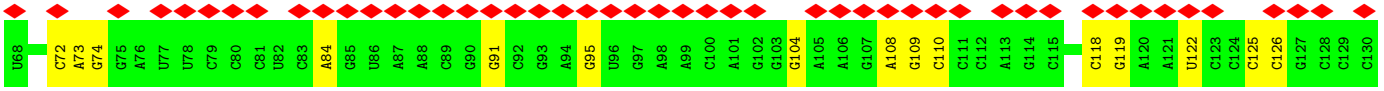


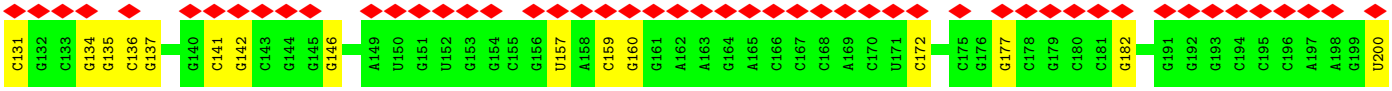


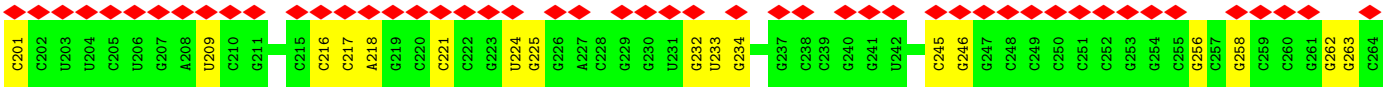
• Molecule 46: 28S ribosomal RNA

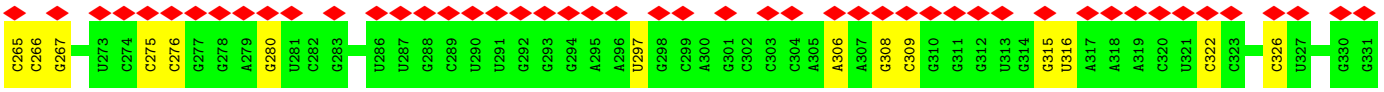
Chain 54:

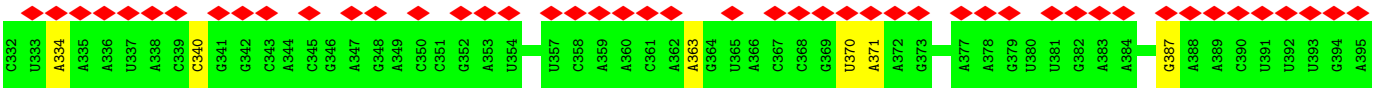


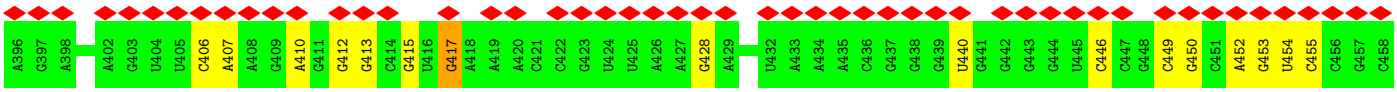


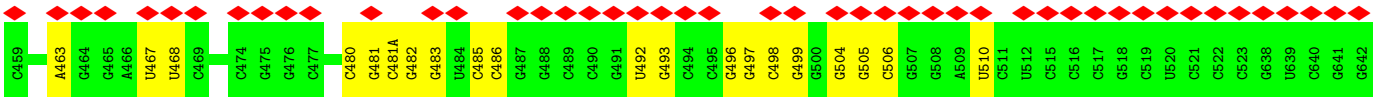


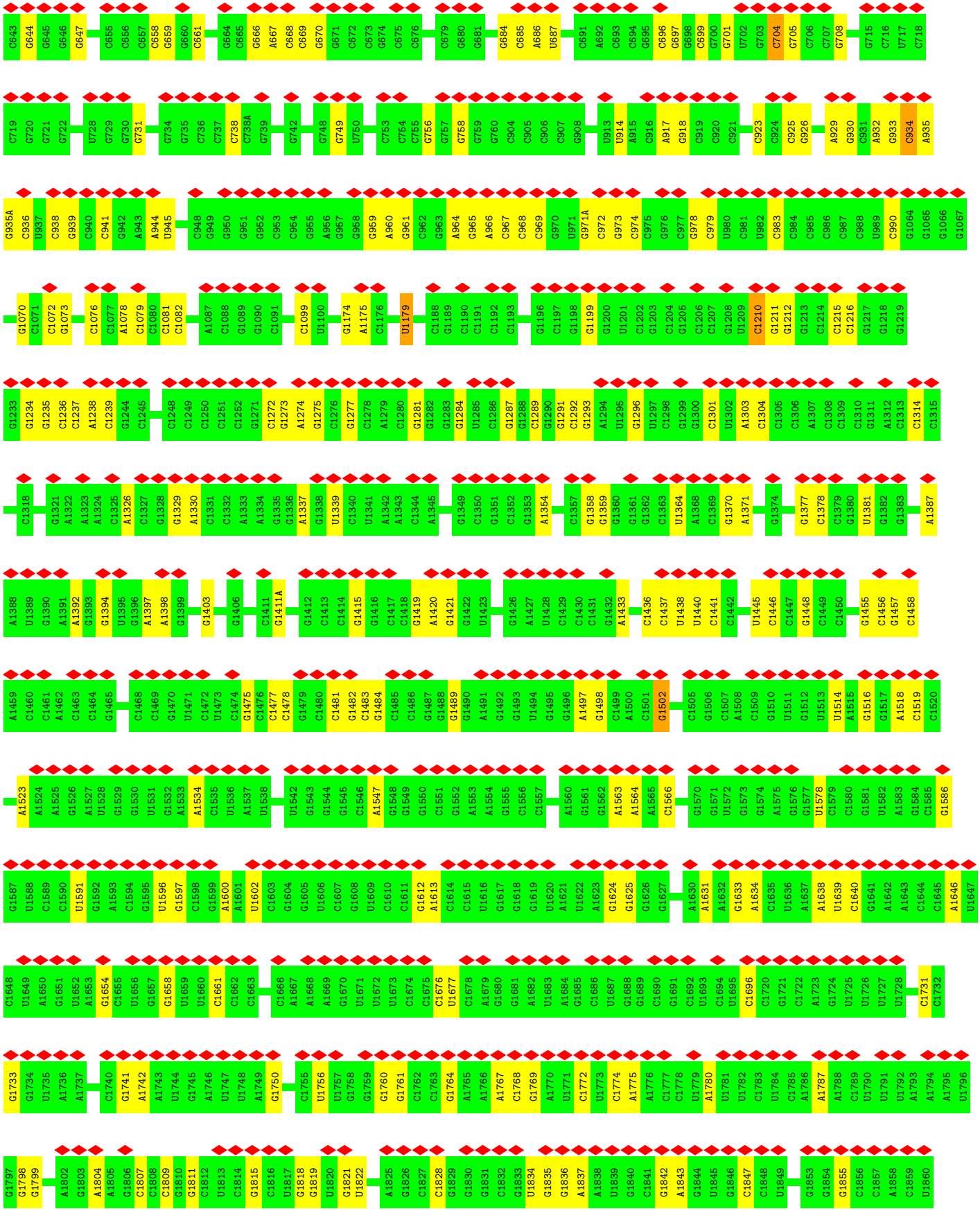








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C719 G720 G721 G722 U728 G729 G730 G731 G734 G735 C736 C737 C738 C738A G739 G742 G748 G749 U750 C753 C754 C755 G756 G757 G758 G759 G760 C904 C905 C906 C907 G908 U913 U914 A915 C916 A917 G918 C919 C920 C921 C923 C924 C925 G926 A929 G930 C931 A932 G933 C934 A935
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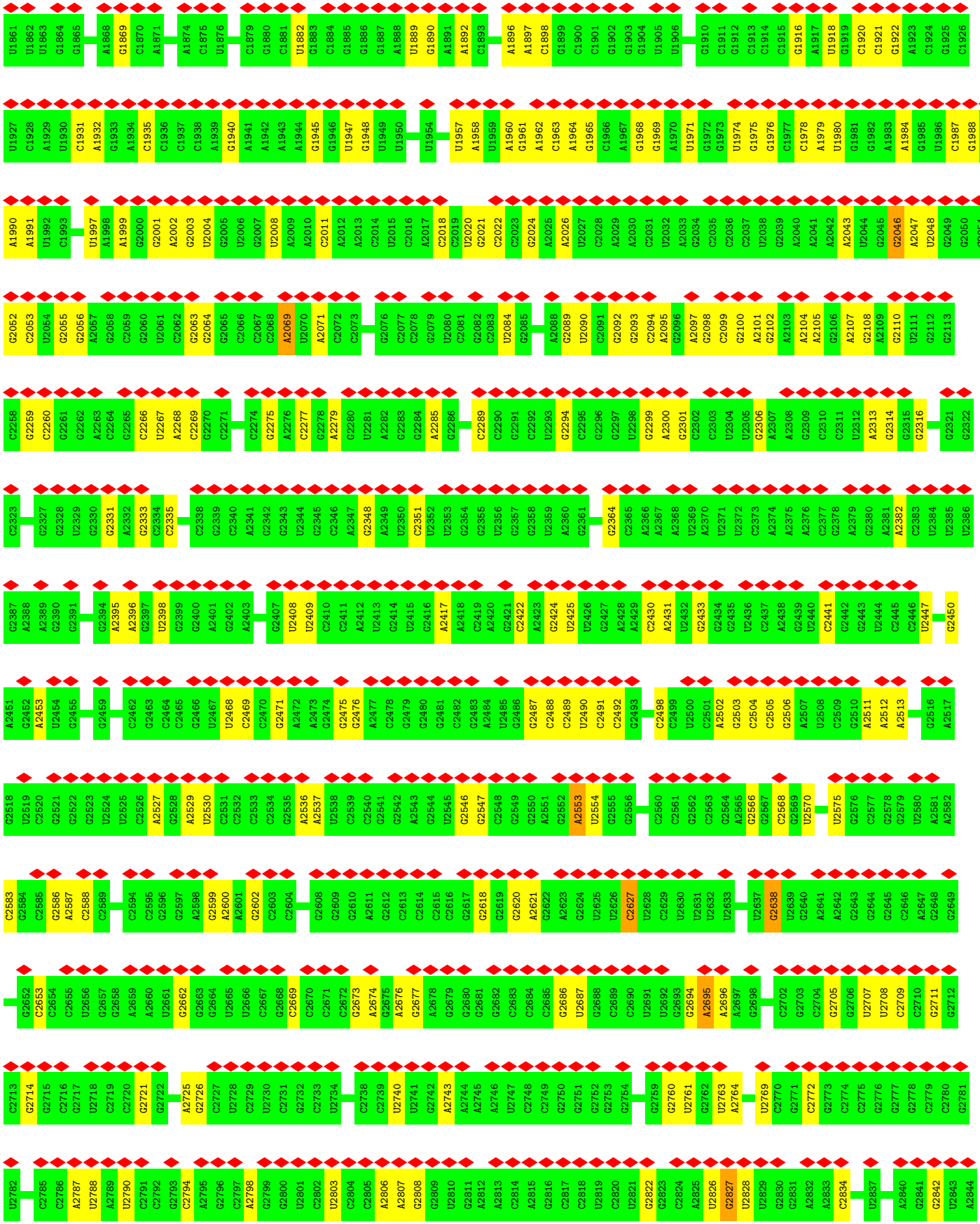
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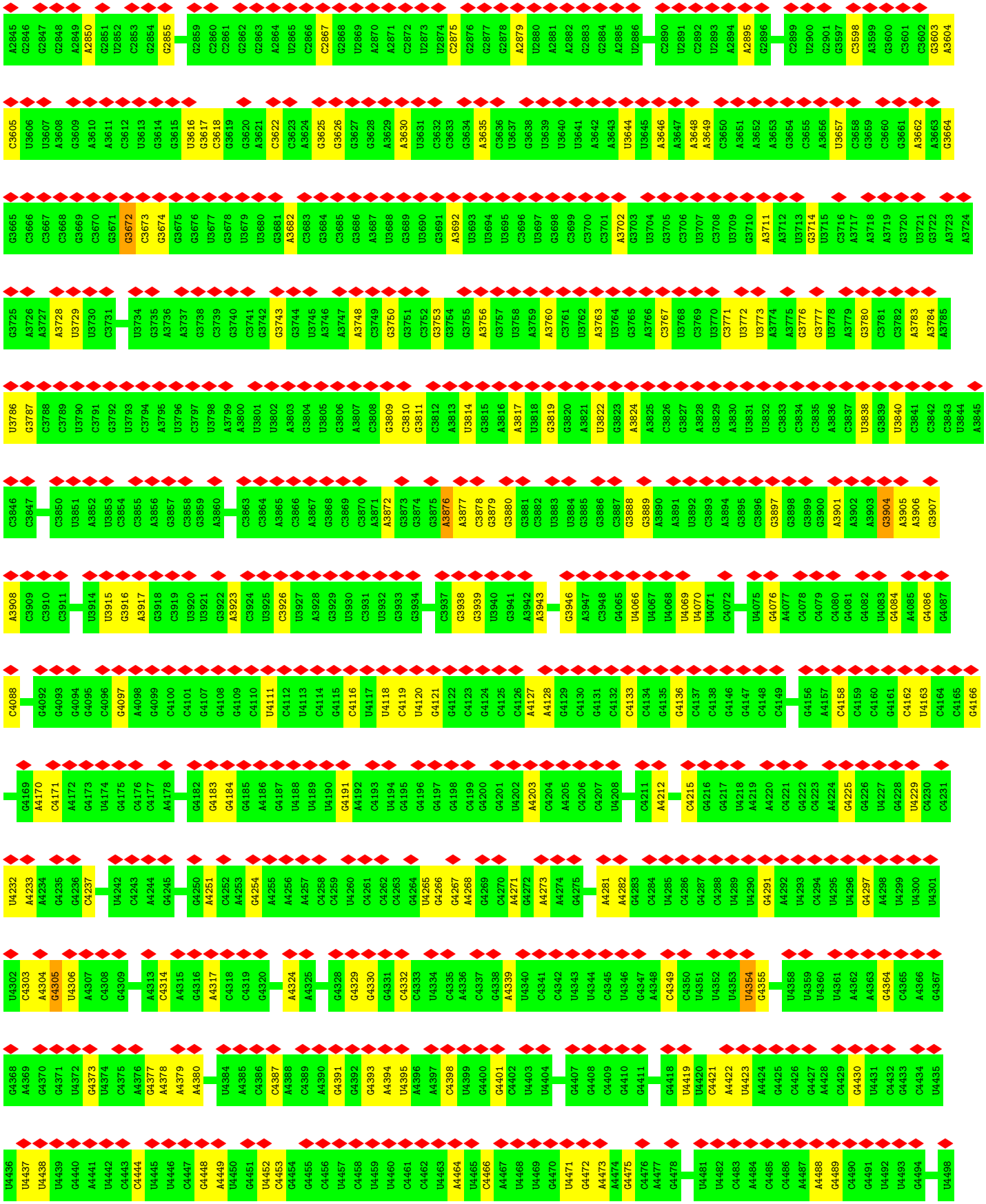
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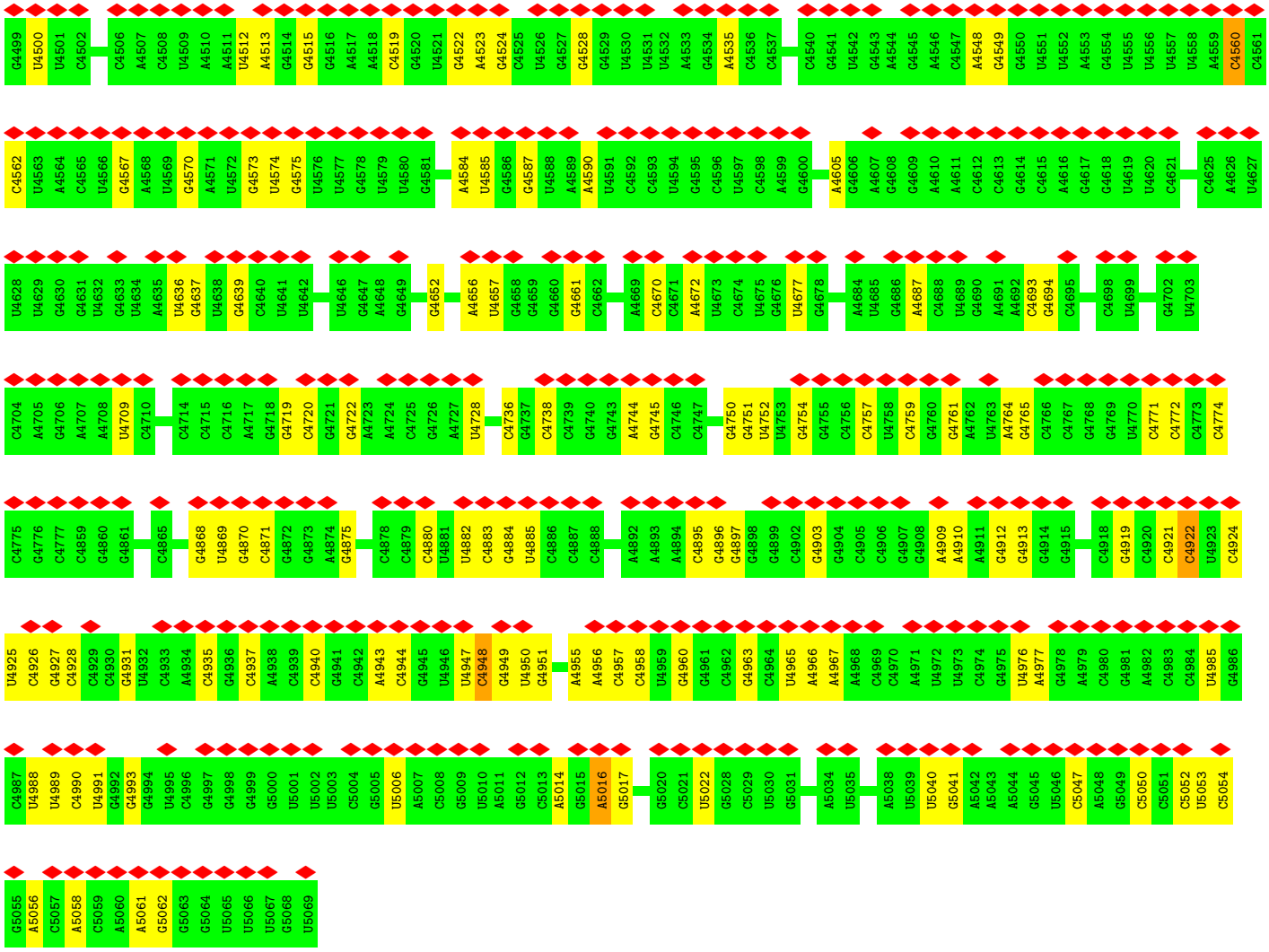
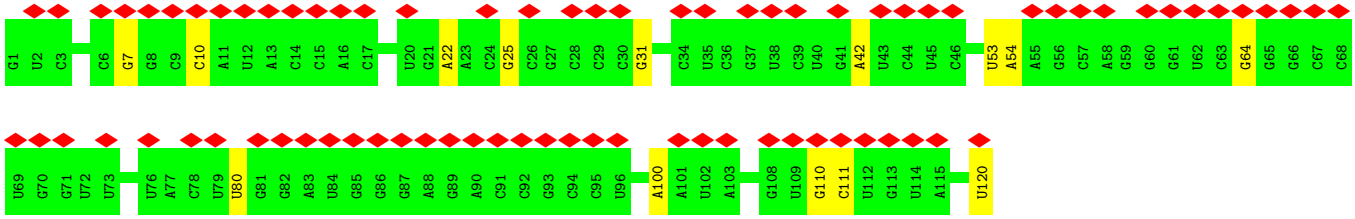


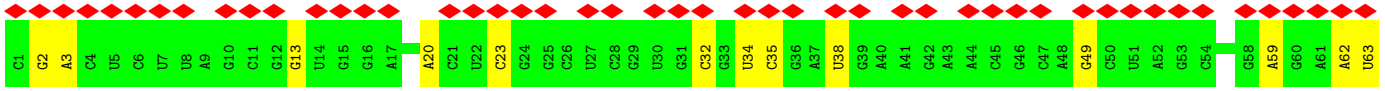
• Molecule 47: 5S ribosomal RNA

Chain 74:

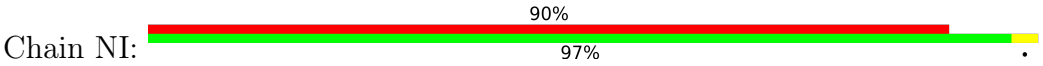


• Molecule 48: 5.8S ribosomal RNA

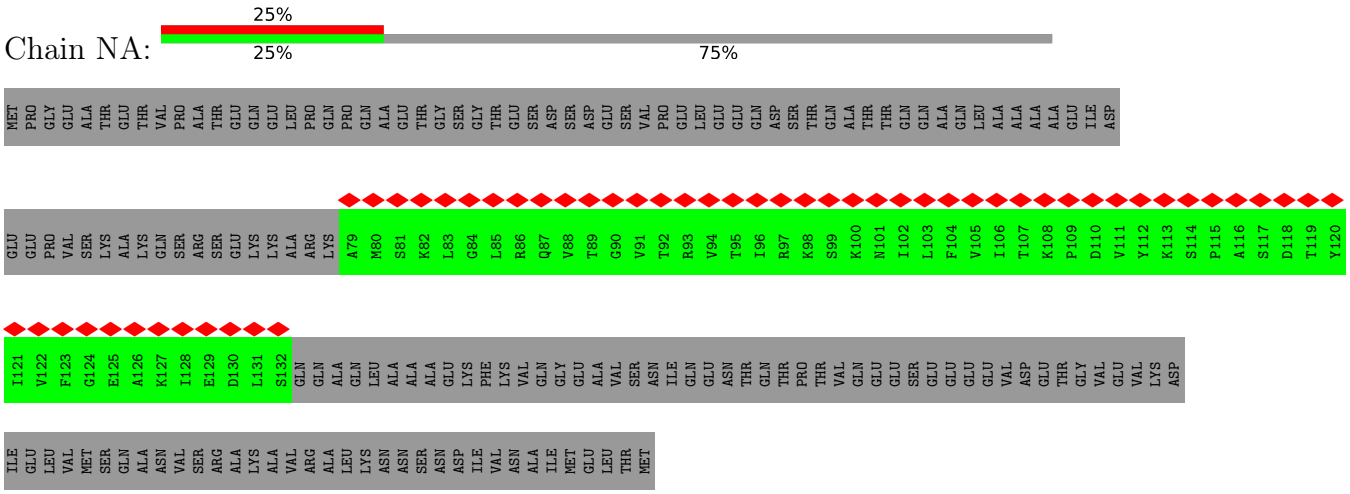
Chain 84:



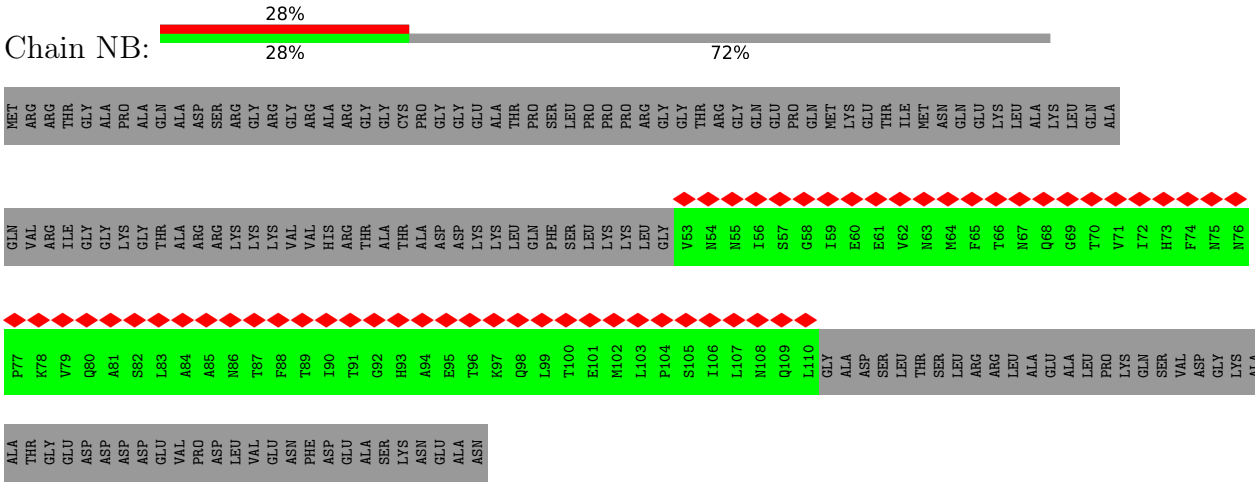
• Molecule 49: Nascent polypeptide-associated complex subunit alpha N-terminal region



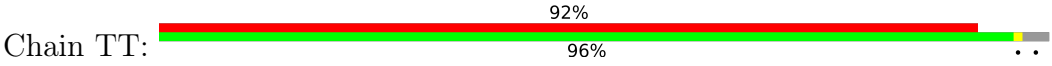
• Molecule 50: Nascent polypeptide-associated complex subunit alpha

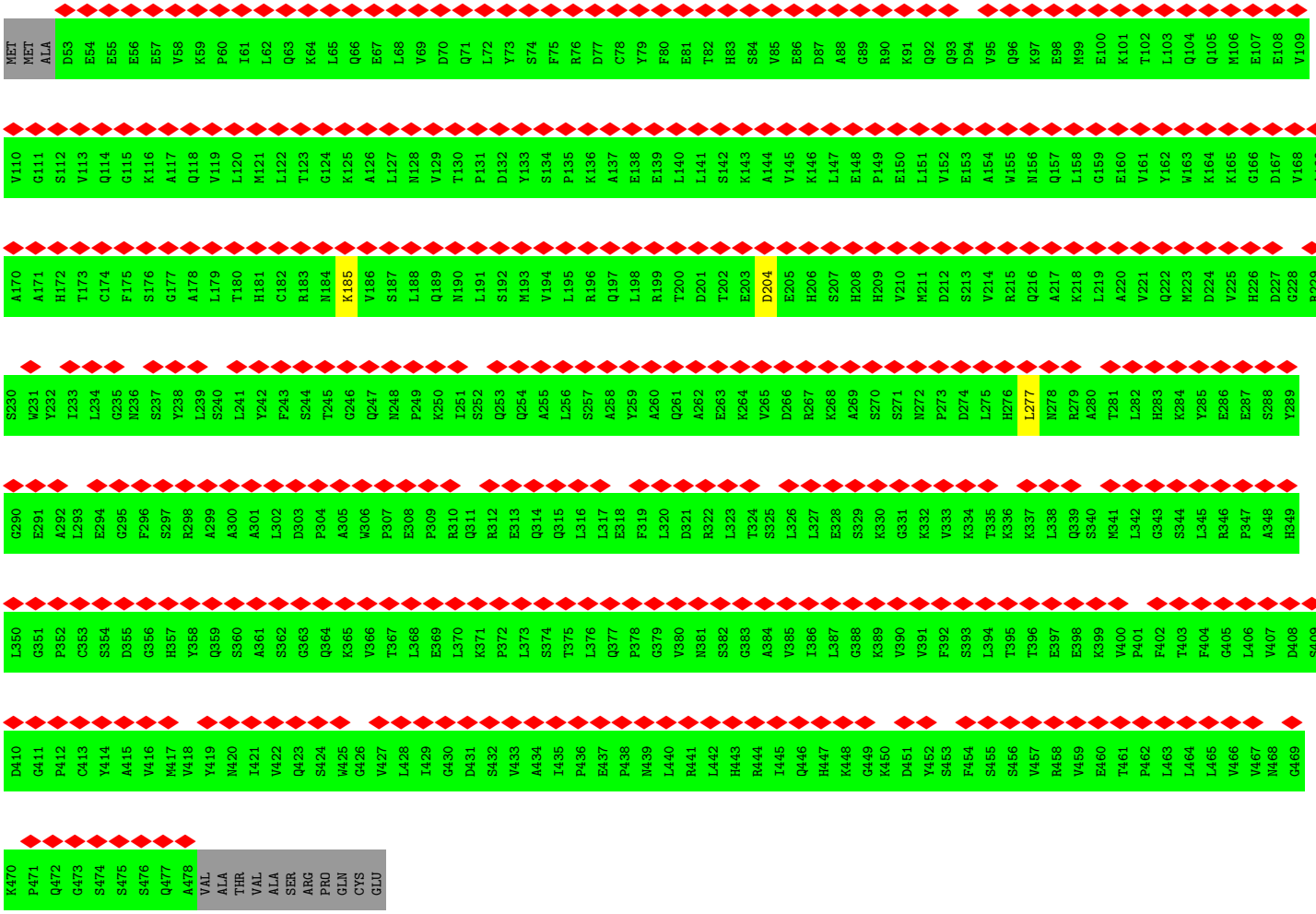


• Molecule 51: Transcription factor BTF3



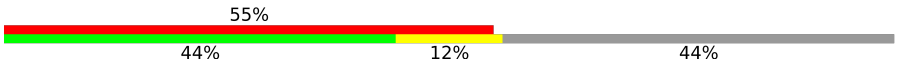
• Molecule 52: Tetratricopeptide repeat protein 5

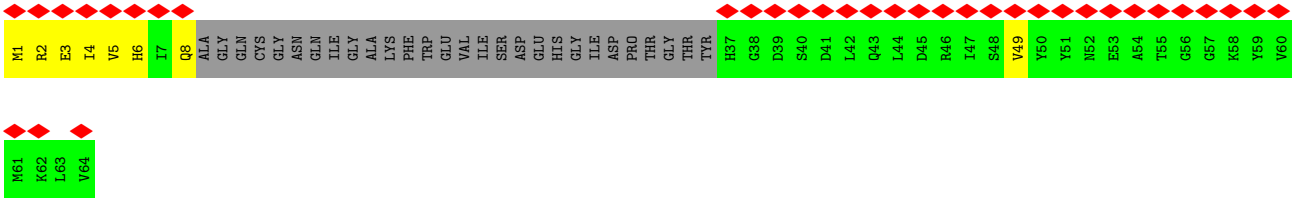




• Molecule 53: Tubulin Beta

Chain 1:





4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	49626	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	48.36	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	0.694	Depositor
Minimum map value	-0.371	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.018	Depositor
Recommended contour level	0.08	Depositor
Map size (Å)	532.0, 532.0, 532.0	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.33, 1.33, 1.33	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, 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	A3	0.63	0/1936	0.55	0/2596
2	B3	0.63	0/3240	0.56	0/4339
3	C3	0.61	0/2937	0.56	1/3946 (0.0%)
4	D3	0.60	0/2437	0.49	0/3264
5	E3	0.53	0/1762	0.55	0/2362
6	F3	0.66	0/1911	0.50	0/2549
7	G3	0.51	0/1910	0.50	0/2569
8	H3	0.54	0/1535	0.54	0/2063
9	I3	0.60	0/1702	0.53	1/2272 (0.0%)
10	J3	0.46	0/1385	0.52	0/1852
11	L3	0.54	0/1733	0.50	0/2316
12	M3	0.59	0/1158	0.49	0/1547
13	N3	0.70	0/1746	0.55	0/2338
14	O3	0.66	1/1662 (0.1%)	0.55	0/2222
15	P3	0.63	0/1268	0.55	1/1700 (0.1%)
16	Q3	0.64	0/1538	0.56	0/2054
17	R3	0.51	0/1310	0.52	0/1734
18	S3	0.69	0/1501	0.56	1/2012 (0.0%)
19	T3	0.64	0/1326	0.52	0/1770
20	U3	0.52	0/848	0.55	0/1138
21	V3	0.60	0/993	0.55	0/1332
22	W3	0.61	0/541	0.50	0/720
23	X3	0.54	0/984	0.50	0/1323
24	Y3	0.59	0/1132	0.52	0/1504
25	Z3	0.57	0/1130	0.52	0/1507
26	a3	0.68	0/1191	0.55	0/1590
27	b3	0.45	0/861	0.47	0/1138
28	c3	0.56	0/771	0.52	0/1034
29	d3	0.60	0/903	0.52	0/1216
30	e3	0.64	0/1071	0.57	0/1429
31	f3	0.73	0/895	0.61	0/1198
32	g3	0.59	0/916	0.55	0/1220

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	h3	0.52	0/1021	0.48	0/1348
34	i3	0.46	0/841	0.48	0/1112
35	j3	0.70	1/720 (0.1%)	0.56	0/952
36	k3	0.51	0/575	0.53	0/761
37	l3	0.62	0/459	0.55	0/608
38	m3	0.57	0/435	0.59	0/575
39	n3	0.28	0/240	0.43	0/305
40	o3	0.57	0/864	0.51	0/1140
41	p3	0.59	0/718	0.53	0/953
42	r3	0.61	0/1010	0.57	0/1354
43	s3	0.29	0/1530	0.49	0/2064
44	t3	0.27	0/1174	0.52	0/1582
45	23	0.41	0/1805	0.83	1/2809 (0.0%)
46	54	1.24	10/84976 (0.0%)	0.93	64/132520 (0.0%)
47	74	1.24	0/2858	0.87	0/4455
48	84	1.22	0/3581	0.87	0/5577
49	NI	0.31	0/150	0.63	0/209
50	NA	0.28	0/425	0.53	0/572
51	NB	0.28	0/450	0.52	0/612
52	TT	0.30	0/3402	0.46	0/4603
53	1	0.47	0/295	0.57	0/394
All	All	1.02	12/153762 (0.0%)	0.80	69/226359 (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
13	N3	0	2

The worst 5 of 12 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
46	54	1890	G	N9-C4	-7.84	1.31	1.38
46	54	978	G	N9-C4	-6.37	1.32	1.38
35	j3	50	SER	CA-CB	-6.22	1.43	1.52
46	54	1896	A	N9-C4	-6.03	1.34	1.37
46	54	1337	A	N9-C4	-5.72	1.34	1.37

The worst 5 of 69 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
46	54	1890	G	N3-C4-C5	9.26	133.23	128.60
46	54	978	G	N3-C4-C5	8.94	133.07	128.60
46	54	1890	G	N3-C4-N9	-8.64	120.81	126.00
46	54	2638	G	N3-C4-N9	-8.53	120.88	126.00
46	54	2638	G	N3-C4-C5	8.28	132.74	128.60

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
13	N3	76	PRO	Peptide
13	N3	78	GLY	Peptide

5.2 Too-close contacts (i)

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

5.3 Torsion angles (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	A3	246/257 (96%)	218 (89%)	28 (11%)	0	100	100
2	B3	392/403 (97%)	358 (91%)	34 (9%)	0	100	100
3	C3	360/425 (85%)	331 (92%)	29 (8%)	0	100	100
4	D3	291/297 (98%)	265 (91%)	26 (9%)	0	100	100
5	E3	208/291 (72%)	185 (89%)	23 (11%)	0	100	100
6	F3	223/247 (90%)	206 (92%)	17 (8%)	0	100	100
7	G3	229/319 (72%)	212 (93%)	17 (7%)	0	100	100
8	H3	188/192 (98%)	176 (94%)	12 (6%)	0	100	100
9	I3	201/214 (94%)	181 (90%)	20 (10%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
10	J3	168/178 (94%)	155 (92%)	13 (8%)	0	100	100
11	L3	208/211 (99%)	193 (93%)	14 (7%)	1 (0%)	29	63
12	M3	136/218 (62%)	125 (92%)	11 (8%)	0	100	100
13	N3	201/204 (98%)	185 (92%)	16 (8%)	0	100	100
14	O3	197/203 (97%)	185 (94%)	12 (6%)	0	100	100
15	P3	151/184 (82%)	142 (94%)	9 (6%)	0	100	100
16	Q3	185/188 (98%)	170 (92%)	15 (8%)	0	100	100
17	R3	153/196 (78%)	142 (93%)	11 (7%)	0	100	100
18	S3	174/176 (99%)	158 (91%)	15 (9%)	1 (1%)	25	59
19	T3	157/160 (98%)	138 (88%)	18 (12%)	1 (1%)	25	59
20	U3	100/128 (78%)	89 (89%)	11 (11%)	0	100	100
21	V3	129/140 (92%)	119 (92%)	10 (8%)	0	100	100
22	W3	61/157 (39%)	54 (88%)	7 (12%)	0	100	100
23	X3	116/156 (74%)	104 (90%)	12 (10%)	0	100	100
24	Y3	132/145 (91%)	122 (92%)	10 (8%)	0	100	100
25	Z3	133/136 (98%)	122 (92%)	11 (8%)	0	100	100
26	a3	145/148 (98%)	131 (90%)	14 (10%)	0	100	100
27	b3	100/226 (44%)	94 (94%)	6 (6%)	0	100	100
28	c3	96/115 (84%)	91 (95%)	5 (5%)	0	100	100
29	d3	105/125 (84%)	92 (88%)	13 (12%)	0	100	100
30	e3	126/135 (93%)	118 (94%)	7 (6%)	1 (1%)	19	53
31	f3	107/110 (97%)	98 (92%)	9 (8%)	0	100	100
32	g3	112/116 (97%)	106 (95%)	6 (5%)	0	100	100
33	h3	120/123 (98%)	114 (95%)	6 (5%)	0	100	100
34	i3	100/105 (95%)	94 (94%)	6 (6%)	0	100	100
35	j3	84/97 (87%)	80 (95%)	4 (5%)	0	100	100
36	k3	67/70 (96%)	63 (94%)	4 (6%)	0	100	100
37	l3	48/51 (94%)	38 (79%)	10 (21%)	0	100	100
38	m3	50/102 (49%)	46 (92%)	4 (8%)	0	100	100
39	n3	23/25 (92%)	23 (100%)	0	0	100	100
40	o3	102/106 (96%)	90 (88%)	12 (12%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
41	p3	89/92 (97%)	83 (93%)	6 (7%)	0	100 100
42	r3	122/137 (89%)	111 (91%)	11 (9%)	0	100 100
43	s3	194/318 (61%)	167 (86%)	27 (14%)	0	100 100
44	t3	151/165 (92%)	121 (80%)	30 (20%)	0	100 100
49	NI	27/29 (93%)	15 (56%)	11 (41%)	1 (4%)	3 18
50	NA	52/215 (24%)	42 (81%)	10 (19%)	0	100 100
51	NB	56/206 (27%)	50 (89%)	6 (11%)	0	100 100
52	TT	424/440 (96%)	395 (93%)	29 (7%)	0	100 100
53	1	32/64 (50%)	17 (53%)	13 (41%)	2 (6%)	1 8
All	All	7271/8745 (83%)	6614 (91%)	650 (9%)	7 (0%)	54 83

5 of 7 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
53	1	4	ILE
11	L3	64	VAL
18	S3	166	ARG
30	e3	127	ALA
49	NI	20	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
1	A3	190/199 (96%)	188 (99%)	2 (1%)	73 88
2	B3	342/348 (98%)	340 (99%)	2 (1%)	86 93
3	C3	302/347 (87%)	300 (99%)	2 (1%)	84 93
4	D3	247/250 (99%)	247 (100%)	0	100 100
5	E3	190/251 (76%)	187 (98%)	3 (2%)	62 84
6	F3	196/215 (91%)	196 (100%)	0	100 100
7	G3	200/272 (74%)	200 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
8	H3	169/171 (99%)	169 (100%)	0	100	100
9	I3	175/181 (97%)	175 (100%)	0	100	100
10	J3	143/149 (96%)	143 (100%)	0	100	100
11	L3	175/176 (99%)	173 (99%)	2 (1%)	73	88
12	M3	117/161 (73%)	117 (100%)	0	100	100
13	N3	171/172 (99%)	169 (99%)	2 (1%)	71	87
14	O3	171/173 (99%)	170 (99%)	1 (1%)	86	93
15	P3	134/163 (82%)	134 (100%)	0	100	100
16	Q3	164/164 (100%)	164 (100%)	0	100	100
17	R3	138/175 (79%)	137 (99%)	1 (1%)	84	93
18	S3	157/157 (100%)	155 (99%)	2 (1%)	69	86
19	T3	139/140 (99%)	139 (100%)	0	100	100
20	U3	92/114 (81%)	92 (100%)	0	100	100
21	V3	101/107 (94%)	100 (99%)	1 (1%)	76	89
22	W3	55/126 (44%)	55 (100%)	0	100	100
23	X3	106/134 (79%)	105 (99%)	1 (1%)	78	91
24	Y3	124/135 (92%)	122 (98%)	2 (2%)	62	84
25	Z3	117/118 (99%)	116 (99%)	1 (1%)	78	91
26	a3	119/120 (99%)	118 (99%)	1 (1%)	81	92
27	b3	84/172 (49%)	84 (100%)	0	100	100
28	c3	84/98 (86%)	83 (99%)	1 (1%)	71	87
29	d3	98/110 (89%)	96 (98%)	2 (2%)	55	79
30	e3	114/121 (94%)	113 (99%)	1 (1%)	78	91
31	f3	88/89 (99%)	88 (100%)	0	100	100
32	g3	98/99 (99%)	98 (100%)	0	100	100
33	h3	109/110 (99%)	109 (100%)	0	100	100
34	i3	86/89 (97%)	86 (100%)	0	100	100
35	j3	73/80 (91%)	71 (97%)	2 (3%)	44	73
36	k3	64/65 (98%)	64 (100%)	0	100	100
37	l3	47/48 (98%)	47 (100%)	0	100	100
38	m3	48/90 (53%)	48 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
39	n3	24/24 (100%)	24 (100%)	0	100 100
40	o3	92/94 (98%)	92 (100%)	0	100 100
41	p3	74/75 (99%)	71 (96%)	3 (4%)	30 63
42	r3	108/121 (89%)	108 (100%)	0	100 100
43	s3	164/258 (64%)	161 (98%)	3 (2%)	59 82
44	t3	126/137 (92%)	123 (98%)	3 (2%)	49 75
49	NI	2/2 (100%)	2 (100%)	0	100 100
50	NA	48/183 (26%)	48 (100%)	0	100 100
51	NB	51/165 (31%)	51 (100%)	0	100 100
52	TT	370/381 (97%)	367 (99%)	3 (1%)	81 92
53	1	32/53 (60%)	26 (81%)	6 (19%)	1 7
All	All	6318/7382 (86%)	6271 (99%)	47 (1%)	84 93

5 of 47 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
35	j3	82	THR
44	t3	83	LYS
41	p3	4	ARG
43	s3	50	LYS
44	t3	114	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 96 such sidechains are listed below:

Mol	Chain	Res	Type
18	S3	37	HIS
27	b3	61	ASN
18	S3	92	ASN
22	W3	50	ASN
32	g3	114	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
45	23	74/76 (97%)	13 (17%)	0
46	54	3516/3543 (99%)	822 (23%)	58 (1%)

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
47	74	119/120 (99%)	14 (11%)	0
48	84	149/156 (95%)	32 (21%)	1 (0%)
All	All	3858/3895 (99%)	881 (22%)	59 (1%)

5 of 881 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
45	23	9	A
45	23	13	U
45	23	16	C
45	23	19	G
45	23	20(A)	U

5 of 59 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
46	54	1455	G
46	54	4925	U
46	54	2266	C
46	54	4921	C
46	54	4354	U

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 225 ligands modelled in this entry, 225 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

There are no such residues in this entry.

5.8 Polymer linkage issues

The following chains have linkage breaks:

Mol	Chain	Number of breaks
46	54	27
45	23	1

The worst 5 of 28 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	54	2113:G	O3'	2258:C	P	40.63
1	54	1252:C	O3'	1271:G	P	37.10
1	54	1219:G	O3'	1233:G	P	19.39
1	54	3948:C	O3'	4065:G	P	18.92
1	54	4138:C	O3'	4146:G	P	18.16

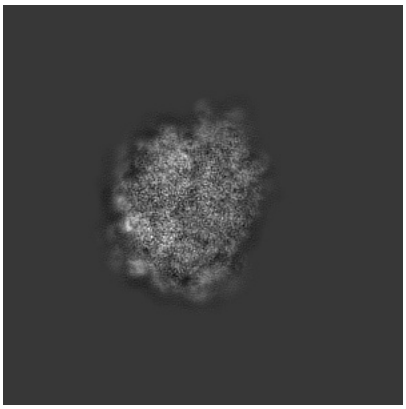
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-10380. These allow visual inspection of the internal detail of the map and identification of artifacts.

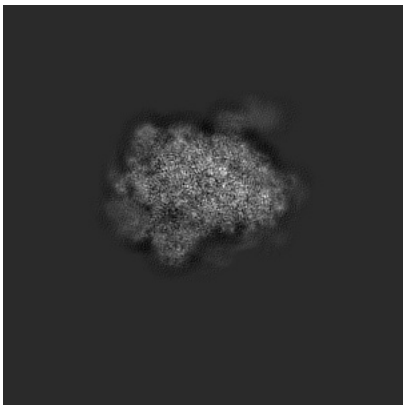
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

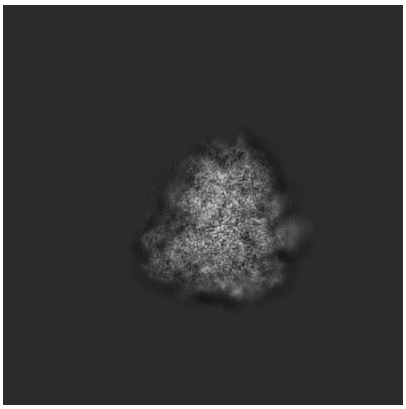
6.1.1 Primary map



X

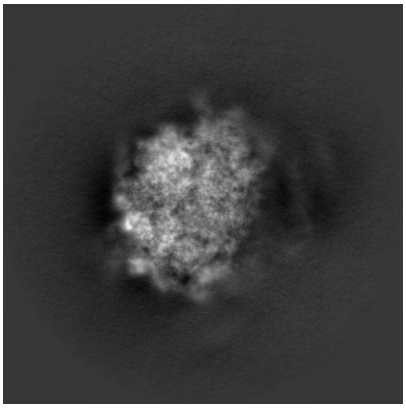


Y

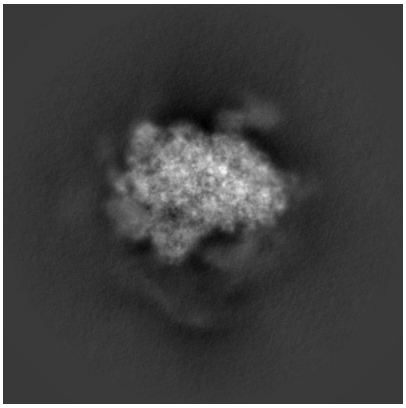


Z

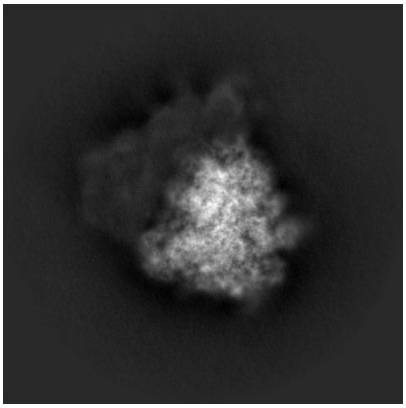
6.1.2 Raw map



X



Y

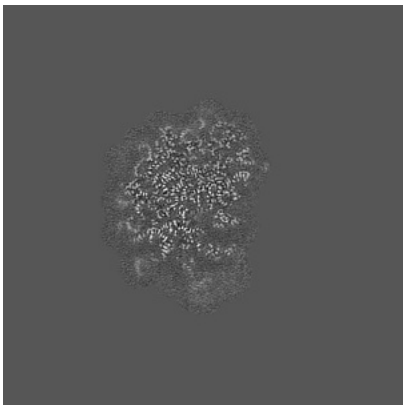


Z

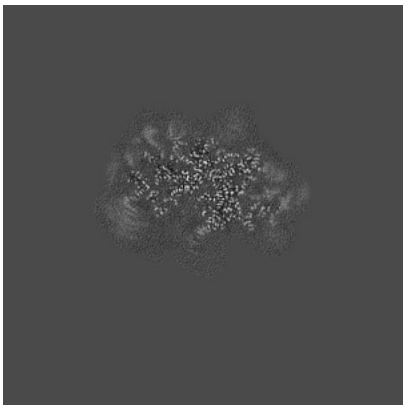
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

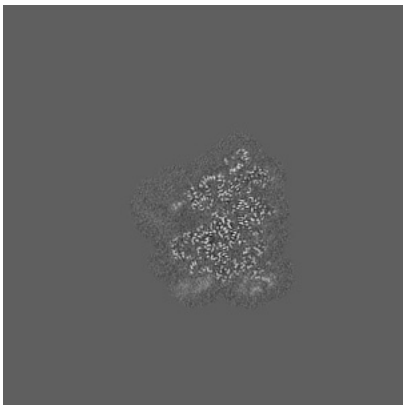
6.2.1 Primary map



X Index: 200

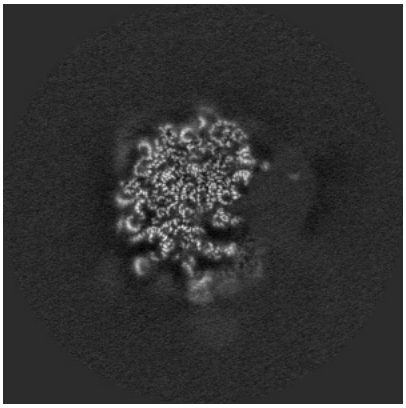


Y Index: 200

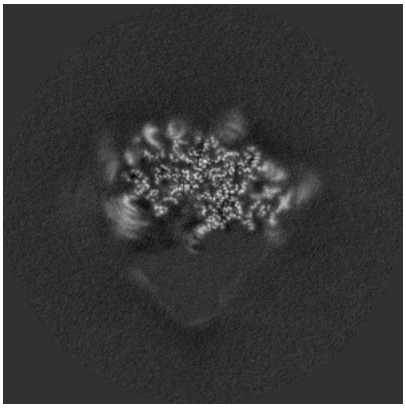


Z Index: 200

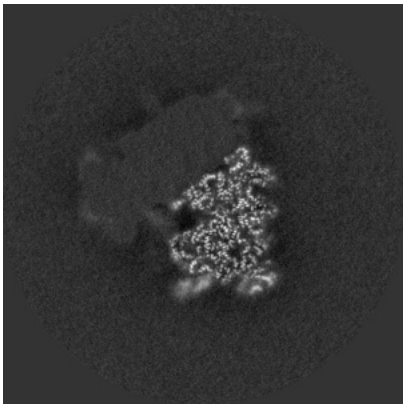
6.2.2 Raw map



X Index: 200



Y Index: 200

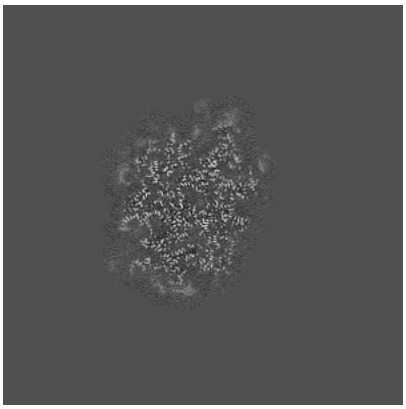


Z Index: 200

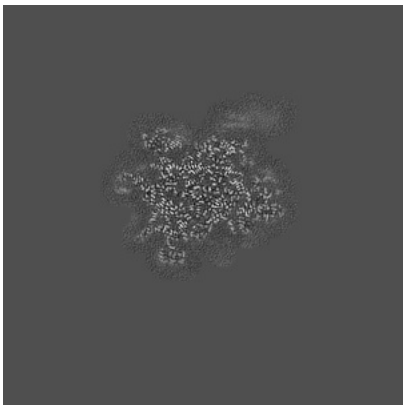
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

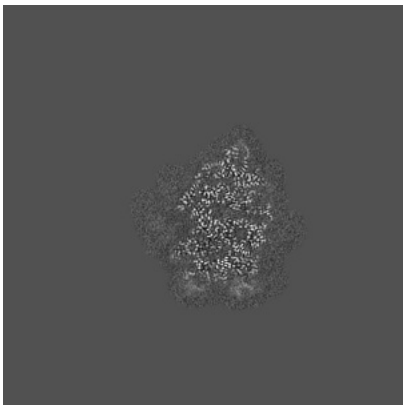
6.3.1 Primary map



X Index: 218

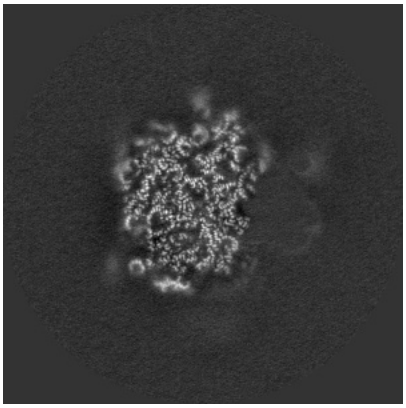


Y Index: 161

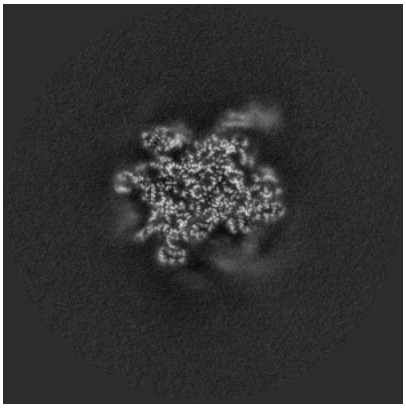


Z Index: 208

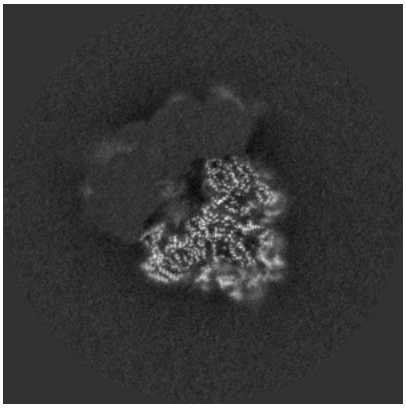
6.3.2 Raw map



X Index: 215



Y Index: 161



Z Index: 176

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

6.4 Orthogonal surface views (i)

6.4.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.08. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.4.2 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.

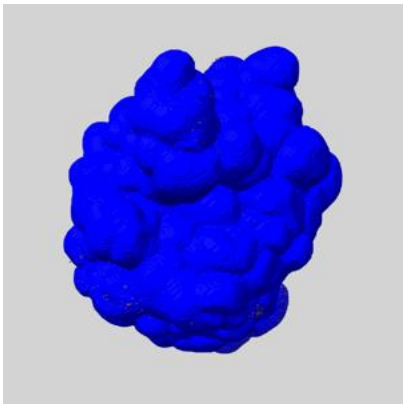
6.5 Mask visualisation (i)

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

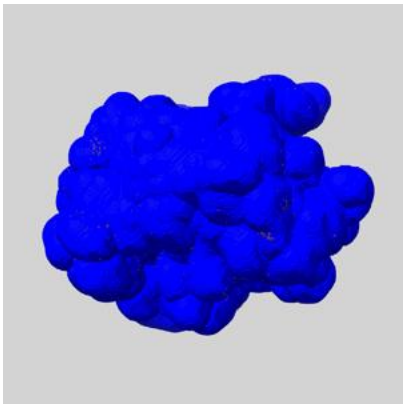
A mask typically either:

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

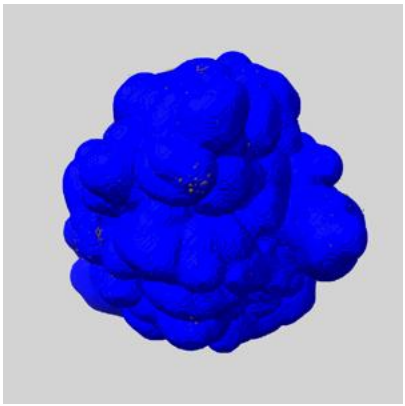
6.5.1 emd_10380_msk_1.map (i)



X



Y

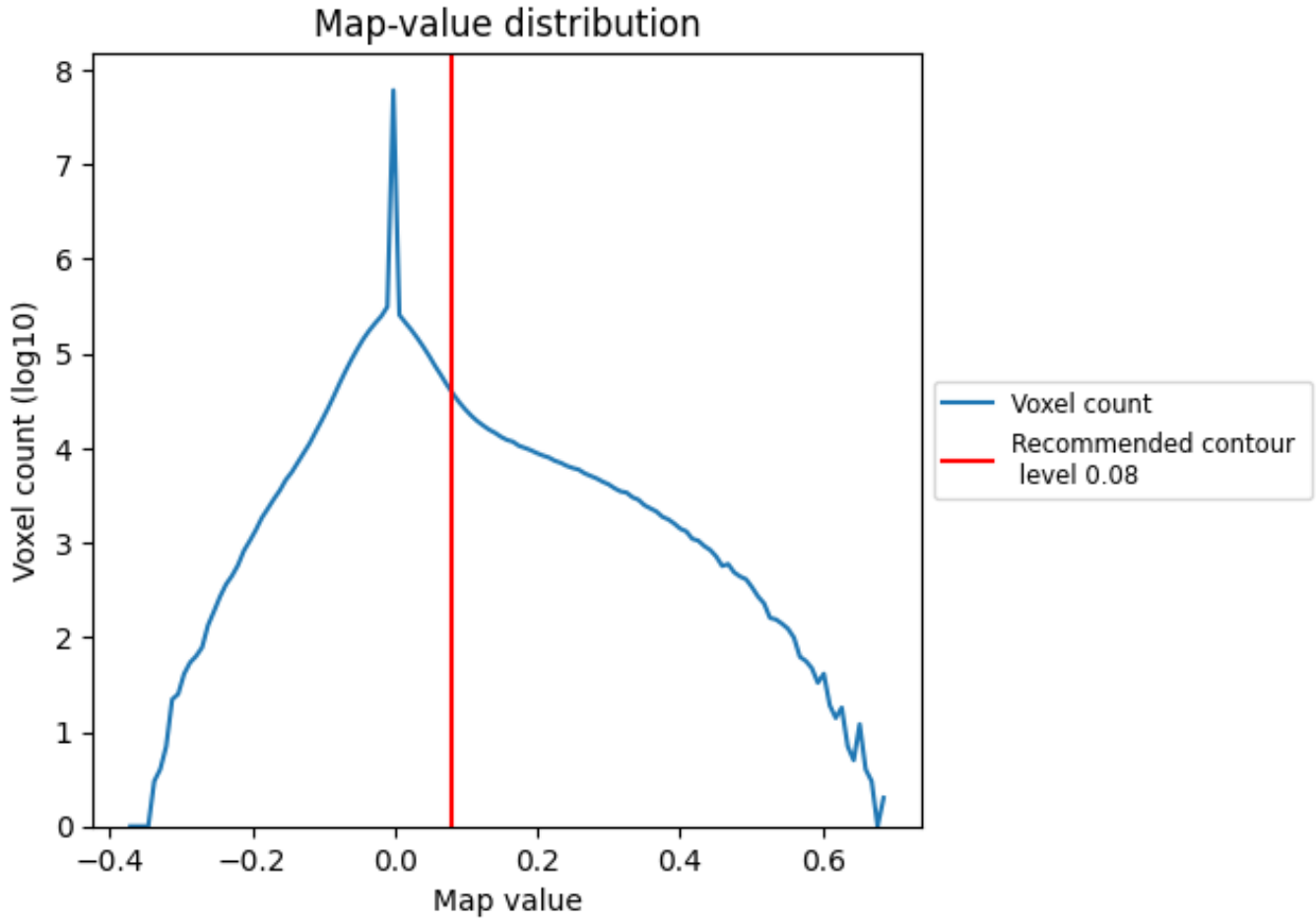


Z

7 Map analysis

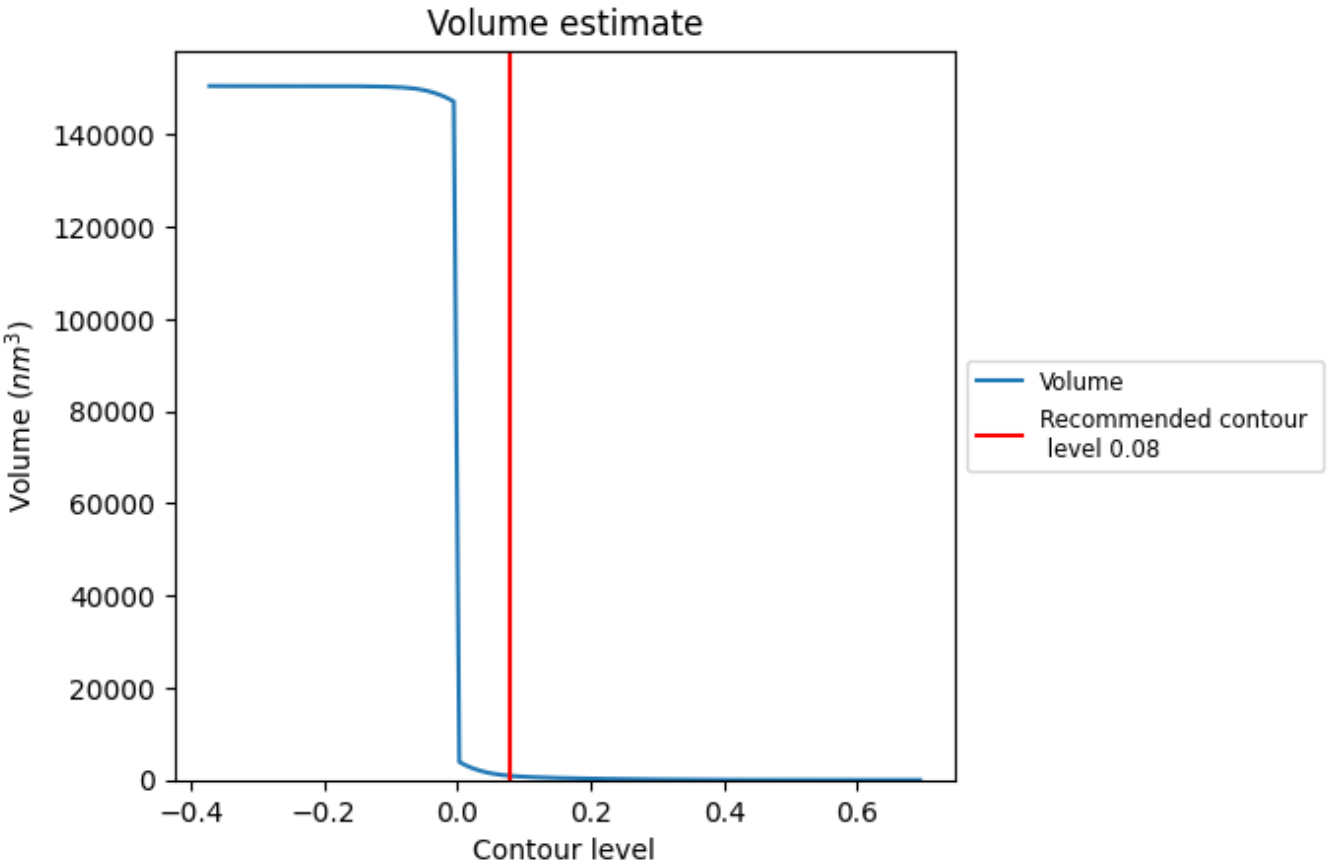
This section contains the results of statistical analysis of the map.

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.

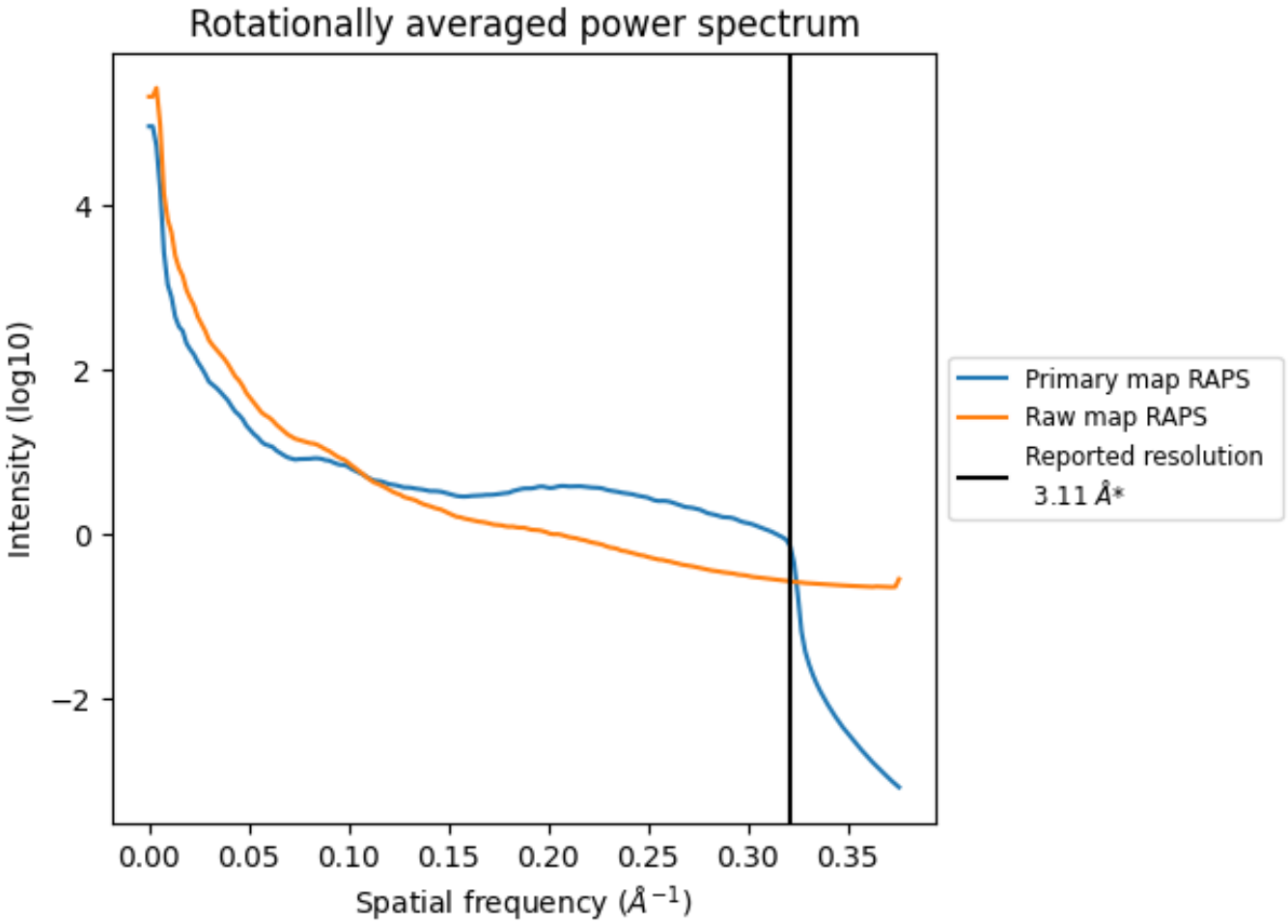
7.2 Volume estimate



The volume at the recommended contour level is 897 nm^3; this corresponds to an approximate mass of 810 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)

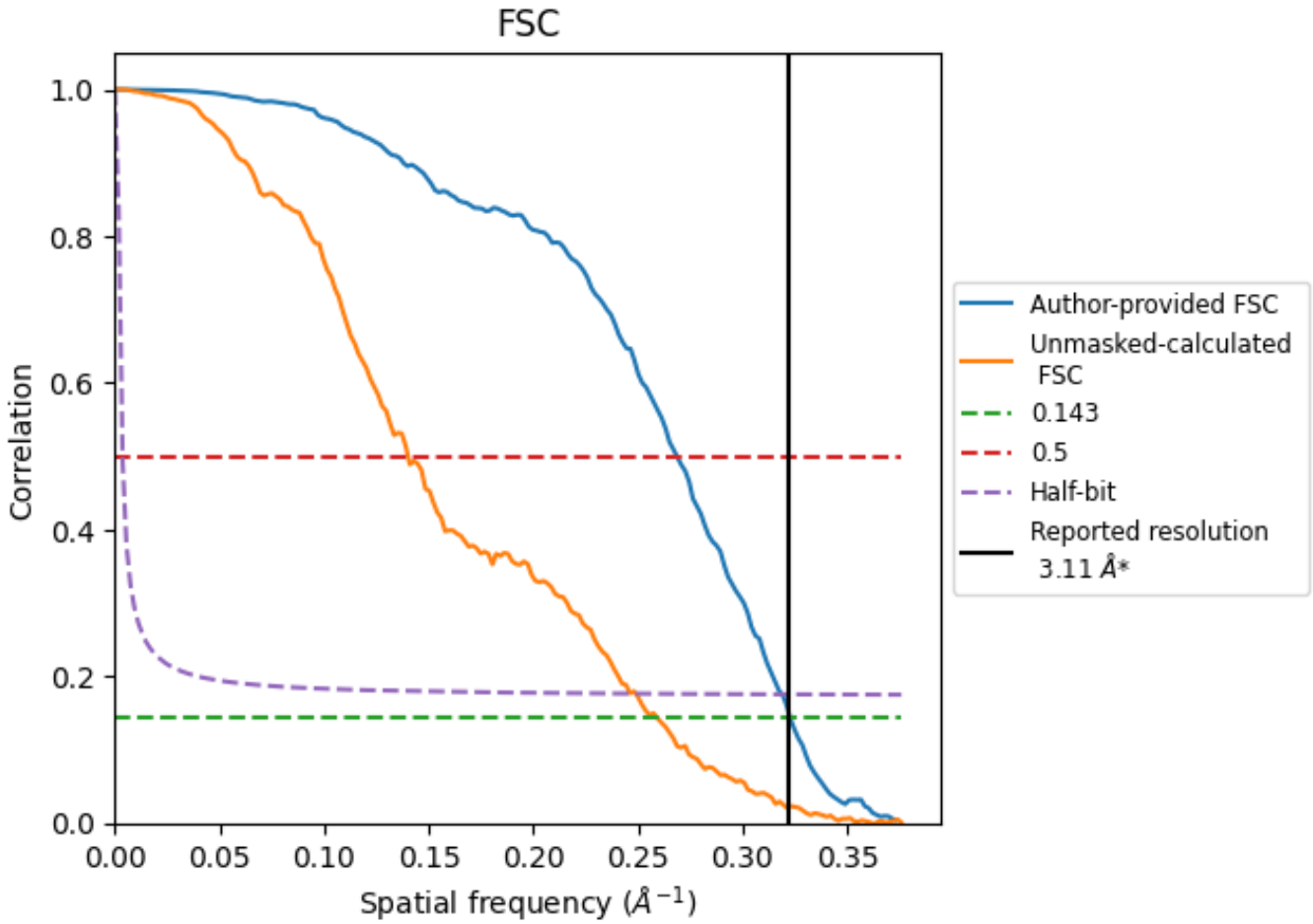


*Reported resolution corresponds to spatial frequency of 0.322 Å^{-1}

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 0.322 Å^{-1}

8.2 Resolution estimates (i)

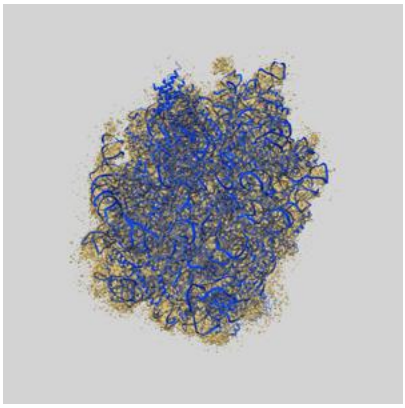
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.11	-	-
Author-provided FSC curve	3.10	3.72	3.14
Unmasked-calculated*	3.86	7.14	4.02

*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 3.86 differs from the reported value 3.11 by more than 10 %

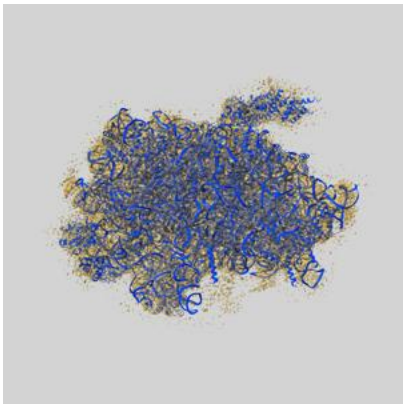
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-10380 and PDB model 6T59. Per-residue inclusion information can be found in section 3 on page 15.

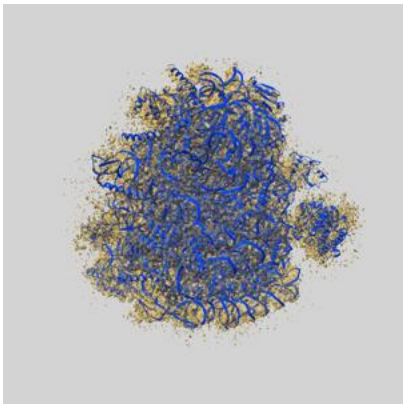
9.1 Map-model overlay



X



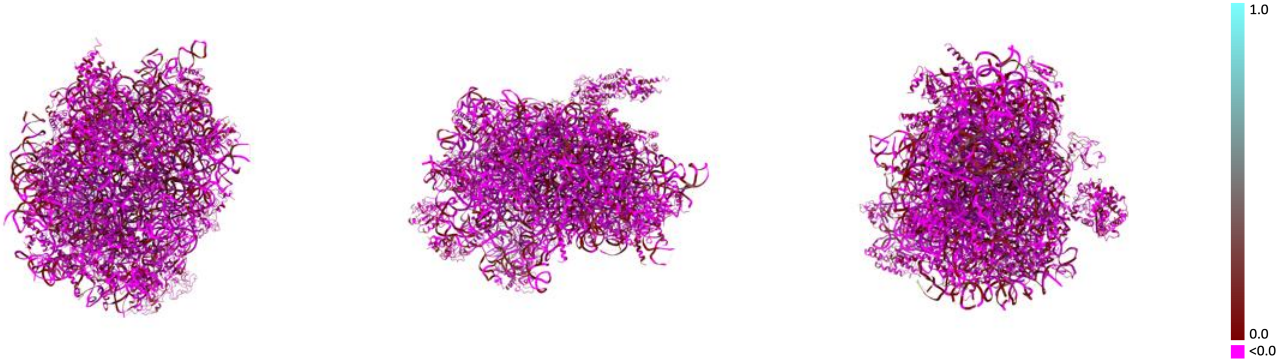
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.08 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.

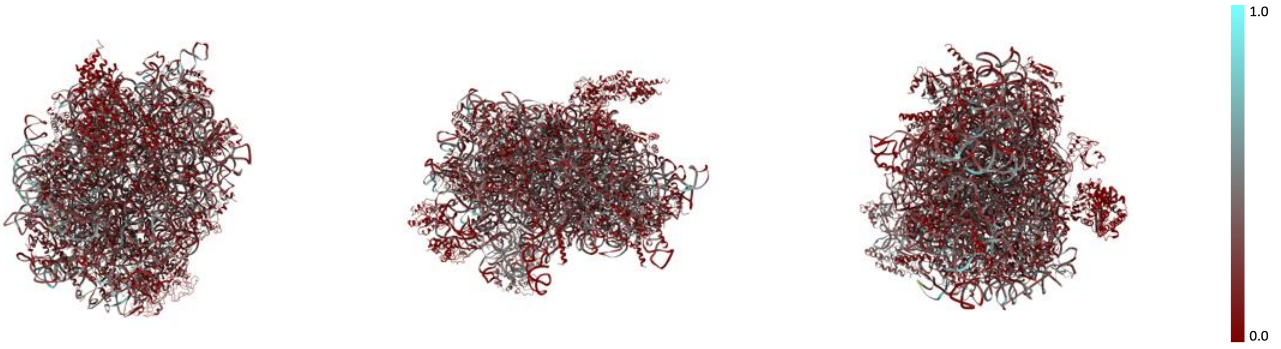
9.2 Q-score mapped to coordinate model



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.

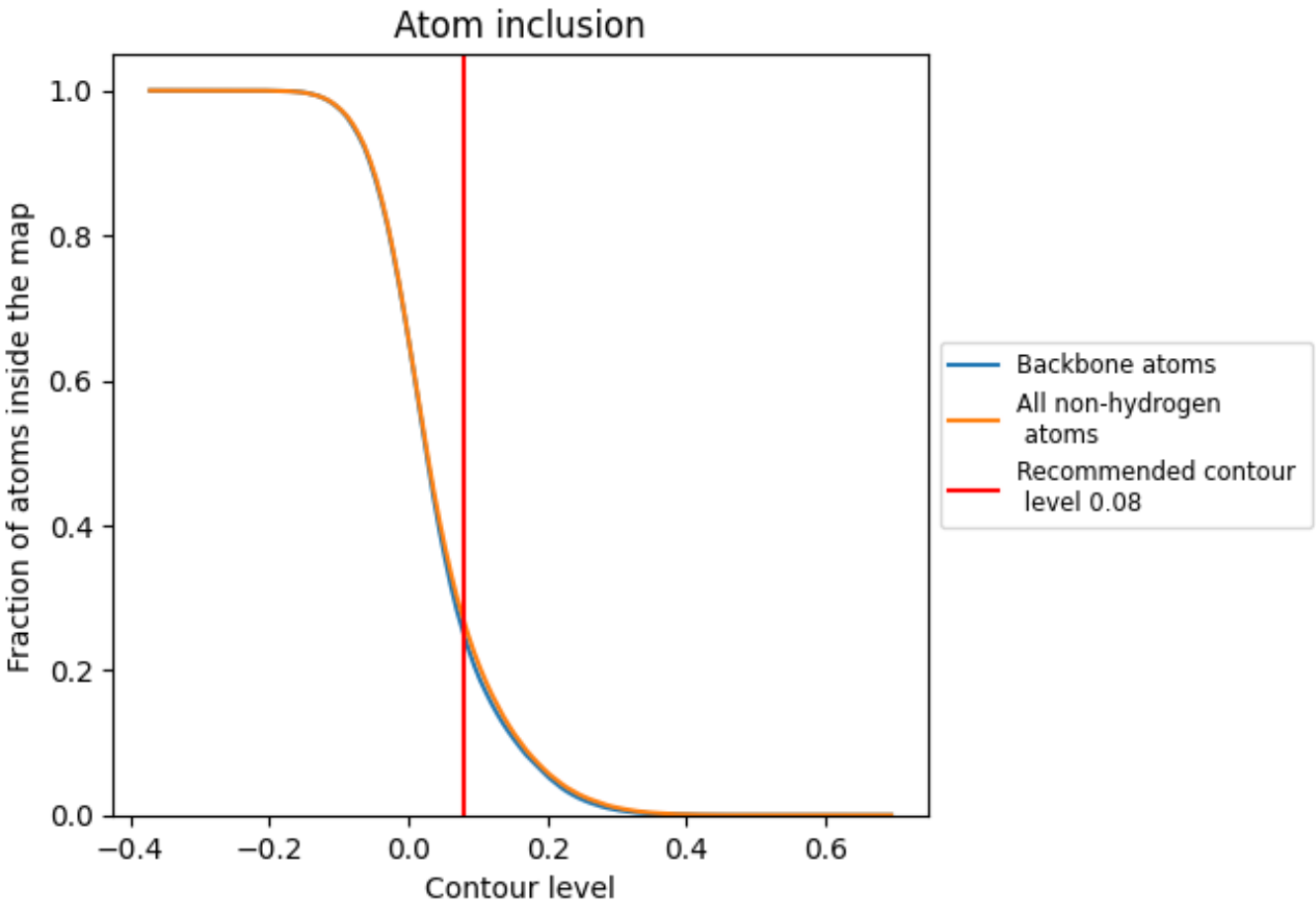
9.3 Atom inclusion mapped to coordinate model



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 (0.08).

9.4 Atom inclusion (i)



At the recommended contour level, 25% of all backbone atoms, 27% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.08) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.2673	-0.0680
1	0.0456	0.0020
23	0.0730	-0.0110
54	0.3171	-0.0600
74	0.3821	-0.1130
84	0.3295	-0.0320
A3	0.1847	-0.1380
B3	0.2074	-0.0910
C3	0.2267	-0.0980
D3	0.2967	-0.0630
E3	0.2210	-0.0940
F3	0.2233	-0.1080
G3	0.2170	-0.0680
H3	0.1928	-0.0940
I3	0.2317	-0.0920
J3	0.2415	-0.0470
L3	0.2319	-0.0770
M3	0.2548	-0.1010
N3	0.2198	-0.1120
NA	0.0558	0.0400
NB	0.0225	0.0230
NI	0.1533	-0.1020
O3	0.2315	-0.0910
P3	0.1904	-0.1070
Q3	0.1925	-0.1340
R3	0.2203	-0.0660
S3	0.2571	-0.0880
T3	0.2249	-0.1000
TT	0.0901	-0.0270
U3	0.1740	-0.0630
V3	0.1681	-0.1160
W3	0.1847	-0.0880
X3	0.1819	-0.0520
Y3	0.1865	-0.0900
Z3	0.2134	-0.0630

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Chain	Atom inclusion	Q-score
a3	0.2391	-0.1140
b3	0.1890	-0.0920
c3	0.2513	-0.0690
d3	0.1774	-0.0770
e3	0.1937	-0.1160
f3	0.2197	-0.1000
g3	0.1848	-0.0740
h3	0.2063	-0.0630
i3	0.2412	-0.0720
j3	0.2374	-0.0720
k3	0.1688	-0.0380
l3	0.2178	-0.0780
m3	0.2019	-0.1270
n3	0.0321	-0.0910
o3	0.1901	-0.1030
p3	0.2467	-0.0540
r3	0.1912	-0.1180
s3	0.0700	-0.0170
t3	0.0580	0.0140