



wwPDB EM Validation Summary Report ⓘ

Jun 20, 2024 – 09:16 pm BST

PDB ID : 8QU5
EMDB ID : EMD-18461
Title : mt-LSU assembly intermediate in GTPBP8 knock-out cells, state 2
Authors : Valentin Gese, G.; Cipullo, M.; Rorbach, J.; Hallberg, B.M.
Deposited on : 2023-10-13
Resolution : 2.42 Å (reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

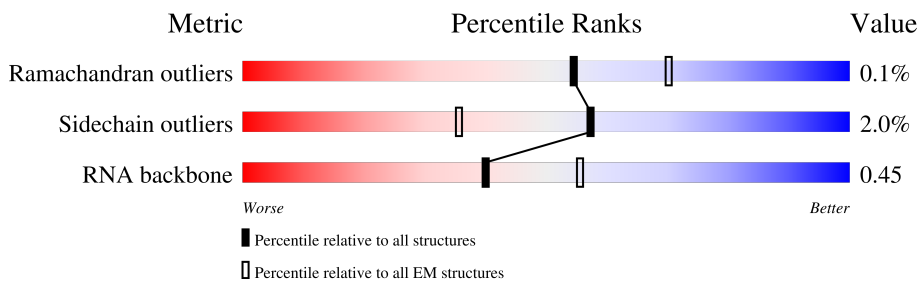
EMDB validation analysis : 0.0.1.dev92
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.37.1

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 2.42 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 $\leq 5\%$. 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	0	188	
2	1	65	
3	2	92	
4	3	188	
5	7	338	
6	8	206	
7	F	311	
8	H	267	

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Mol	Chain	Length	Quality of chain
9	J	192	73% 73% 27%
10	K	178	81% 98%
11	L	145	74% 78% 21%
12	M	296	79% 93%
13	N	251	72% 80% 18%
14	O	175	74% 84% 13%
15	P	180	66% 77% 22%
16	Q	292	66% 73% 26%
17	R	149	78% 89% 6%
18	S	205	62% 76% 24%
19	W	148	59% 72% 26%
20	X	256	77% 92% 5%
21	Y	250	53% 69% 30%
22	Z	161	59% 73% 25%
23	b	215	52% 67% 31%
24	g	166	60% 73% 22%
25	i	128	65% 73% 24%
26	j	123	54% 69% 31%
27	l	138	17% 17% 83%
28	m	128	35% 34% 65%
29	o	102	59% 77% 23%
30	q	222	52% 56% 42%
31	t	28	100% 100%
32	u	234	46% 47% 53%
33	v	70	97% 97%

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Mol	Chain	Length	Quality of chain
34	w	156	51% 50% 49%
35	5	423	80% 89% 9%
36	6	380	69% 84% 15%
37	9	137	70% 85% 15%
38	A	1559	53% 46% 20% 33%
39	B	69	67% 59% 20% 19%
40	D	305	71% 71% 28%
41	E	348	68% 81% 18%
42	I	261	57% 60% 39%
43	T	206	59% 76% 23%
44	U	153	71% 86% 5% 9%
45	V	216	75% 87% 11%
46	a	142	46% 56% 42%
47	c	332	69% 82% 17%
48	d	306	59% 68% 31%
49	e	279	77% 76% 22%
50	f	212	52% 54% 45%
51	h	158	53% 62% 37%
52	k	112	70% 71% 29%
53	p	206	56% 61% 38%
54	r	196	63% 73% 26%
55	s	439	70% 82% 16%

2 Entry composition [i](#)

There are 58 unique types of molecules in this entry. The entry contains 89817 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 39S ribosomal protein L32, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	0	108	880	545	172	157	6	0	0

- Molecule 2 is a protein called 39S ribosomal protein L33, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	1	52	433	278	83	70	2	0	0

- Molecule 3 is a protein called 39S ribosomal protein L34, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	2	43	351	218	76	56	1	0	0

- Molecule 4 is a protein called 39S ribosomal protein L35, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	3	95	831	539	162	127	3	0	0

- Molecule 5 is a protein called 39S ribosomal protein L39, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	7	287	2334	1495	397	425	17	0	0

- Molecule 6 is a protein called 39S ribosomal protein L40, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	8	99	836	535	144	155	2	0	0

- Molecule 7 is a protein called 39S ribosomal protein L4, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	F	250	2013	1294	365	348	6	0	0

- Molecule 8 is a protein called 39S ribosomal protein L9, mitochondrial.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
8	H	95	784	498	152	134	0	0

- Molecule 9 is a protein called 39S ribosomal protein L11, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	J	140	1061	680	192	187	2	0	0

- Molecule 10 is a protein called 39S ribosomal protein L13, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	K	177	1451	934	259	251	7	0	0

- Molecule 11 is a protein called 39S ribosomal protein L14, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	L	115	889	559	171	154	5	0	0

- Molecule 12 is a protein called 39S ribosomal protein L15, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	M	287	2305	1472	425	402	6	0	0

- Molecule 13 is a protein called 39S ribosomal protein L16, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	N	205	1654	1056	308	280	10	0	0

- Molecule 14 is a protein called 39S ribosomal protein L17, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	O	152	Total	C	N	O	S	0	0
			1245	784	239	215	7		

- Molecule 15 is a protein called 39S ribosomal protein L18, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	P	141	Total	C	N	O	S	0	0
			1148	719	221	203	5		

- Molecule 16 is a protein called 39S ribosomal protein L19, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	Q	217	Total	C	N	O	S	0	0
			1805	1159	317	320	9		

- Molecule 17 is a protein called 39S ribosomal protein L20, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	R	140	Total	C	N	O	S	0	0
			1153	732	231	186	4		

- Molecule 18 is a protein called 39S ribosomal protein L21, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	S	156	Total	C	N	O	S	0	0
			1251	806	222	219	4		

- Molecule 19 is a protein called 39S ribosomal protein L27, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	W	109	Total	C	N	O	S	0	0
			859	552	162	142	3		

- Molecule 20 is a protein called 39S ribosomal protein L28, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	X	243	Total	C	N	O	S	0	0
			2035	1317	351	362	5		

- Molecule 21 is a protein called 39S ribosomal protein L47, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
21	Y	176	1517	970	291	252	4	0	0

- Molecule 22 is a protein called 39S ribosomal protein L30, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	Z	120	978	626	183	166	3	0	0

- Molecule 23 is a protein called 39S ribosomal protein L43, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
23	b	148	1178	733	229	213	3	0	0

- Molecule 24 is a protein called 39S ribosomal protein L49, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	g	129	1067	690	185	190	2	0	0

- Molecule 25 is a protein called 39S ribosomal protein L51, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	i	97	827	532	165	126	4	0	0

- Molecule 26 is a protein called 39S ribosomal protein L52, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
26	j	85	684	423	133	126	2	0	0

- Molecule 27 is a protein called 39S ribosomal protein L54, mitochondrial.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
27	l	23	221	137	52	32	0	0

- Molecule 28 is a protein called 39S ribosomal protein L55, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	m	45	Total	C	N	O	S	0	0
			372	232	76	62	2		

- Molecule 29 is a protein called Ribosomal protein 63, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	o	79	Total	C	N	O	S	0	0
			665	420	130	112	3		

- Molecule 30 is a protein called Growth arrest and DNA damage-inducible proteins-interacting protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	q	128	Total	C	N	O	S	0	0
			1076	671	208	192	5		

- Molecule 31 is a protein called Unknown protein or protein extension.

Mol	Chain	Residues	Atoms				AltConf	Trace
31	t	28	Total	C	N	O	0	0
			140	84	28	28		

- Molecule 32 is a protein called Mitochondrial assembly of ribosomal large subunit protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	u	111	Total	C	N	O	S	0	0
			927	595	155	167	10		

- Molecule 33 is a protein called MIEF1 upstream open reading frame protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
33	v	69	Total	C	N	O	0	0
			588	372	116	100		

- Molecule 34 is a protein called Acyl carrier protein, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	w	79	Total	C	N	O	S	0	0
			638	410	95	128	5		

- Molecule 35 is a protein called 39S ribosomal protein L37, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
35	5	387	3156	2039	548	558	11	0	0

- Molecule 36 is a protein called 39S ribosomal protein L38, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
36	6	324	2640	1694	470	468	8	0	0

- Molecule 37 is a protein called 39S ribosomal protein L41, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
37	9	117	947	614	163	168	2	0	0

- Molecule 38 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
38	A	1049	22263	9996	4029	7189	1049	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	3107	U	UNK	variant	GB 1025814679

- Molecule 39 is a RNA chain called mitochondrial tRNA^{Val}.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
39	B	56	1191	534	214	387	56	0	0

- Molecule 40 is a protein called 39S ribosomal protein L2, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
40	D	220	1706	1059	339	299	9	0	0

- Molecule 41 is a protein called 39S ribosomal protein L3, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	E	285	2258	1457	384	406	11	0	0

- Molecule 42 is a protein called 39S ribosomal protein L10, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	I	158	1283	828	235	210	10	0	0

- Molecule 43 is a protein called 39S ribosomal protein L22, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
43	T	159	1305	835	239	224	7	0	0

- Molecule 44 is a protein called 39S ribosomal protein L23, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
44	U	139	1154	734	220	197	3	0	0

- Molecule 45 is a protein called 39S ribosomal protein L24, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
45	V	192	1575	1003	281	283	8	0	0

- Molecule 46 is a protein called 39S ribosomal protein L42, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
46	a	82	686	434	124	123	5	0	0

- Molecule 47 is a protein called 39S ribosomal protein L44, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
47	c	275	2217	1415	383	410	9	0	0

- Molecule 48 is a protein called 39S ribosomal protein L45, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
48	d	211	1741	1123	299	309	10	0	0

- Molecule 49 is a protein called 39S ribosomal protein L46, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
49	e	217	1762	1124	310	323	5	0	0

- Molecule 50 is a protein called 39S ribosomal protein L48, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
50	f	116	915	585	152	175	3	0	0

- Molecule 51 is a protein called 39S ribosomal protein L50, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
51	h	100	827	524	146	155	2	0	0

- Molecule 52 is a protein called 39S ribosomal protein L53, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
52	k	80	627	392	116	114	5	0	0

- Molecule 53 is a protein called Peptidyl-tRNA hydrolase ICT1, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
53	p	127	1058	661	201	192	4	0	0

- Molecule 54 is a protein called 39S ribosomal protein S18a, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
54	r	146	1203	764	232	199	8	0	0

- Molecule 55 is a protein called 39S ribosomal protein S30, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
55	s	370	3036	1946	542	534	14	0	0

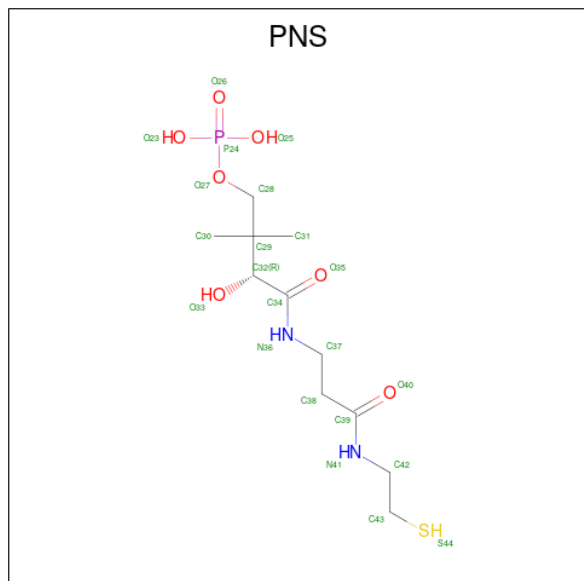
- Molecule 56 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
			Total	Zn	
56	0	1	1	1	0
56	r	1	1	1	0

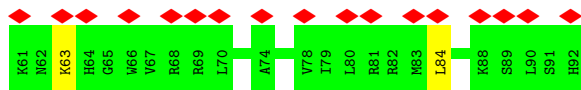
- Molecule 57 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
57	g	1	1	1	0
57	A	47	47	47	0

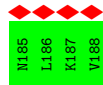
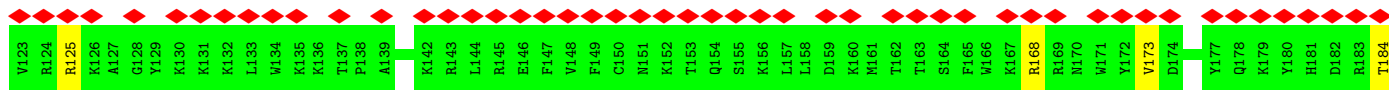
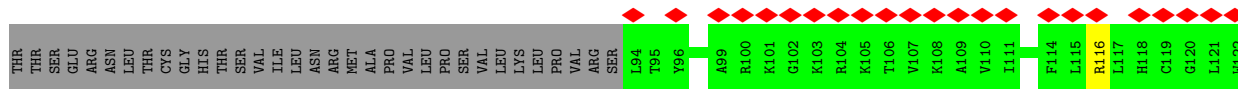
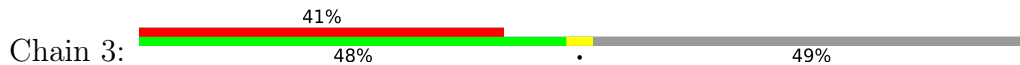
- Molecule 58 is 4'-PHOSPHOPANTETHEINE (three-letter code: PNS) (formula: C₁₁H₂₃N₂O₇PS).



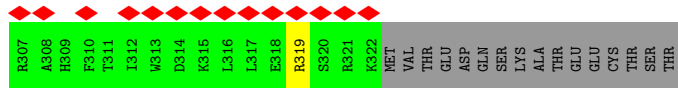
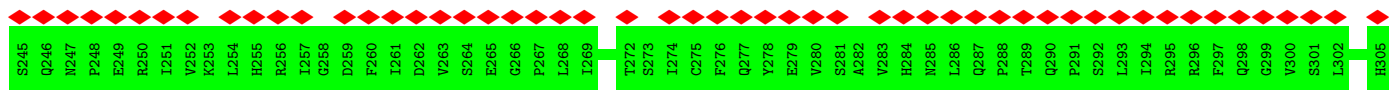
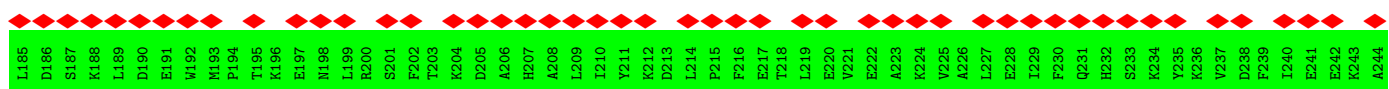
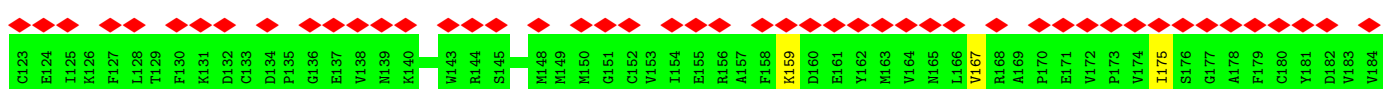
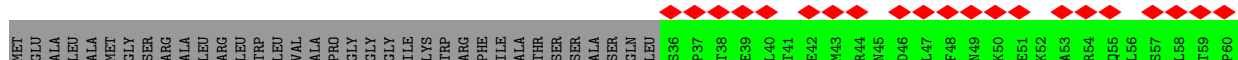
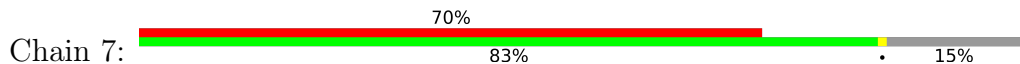
Mol	Chain	Residues	Atoms					AltConf	
			Total	C	N	O	P		S
58	v	1	21	11	2	6	1	1	0



- Molecule 4: 39S ribosomal protein L35, mitochondrial

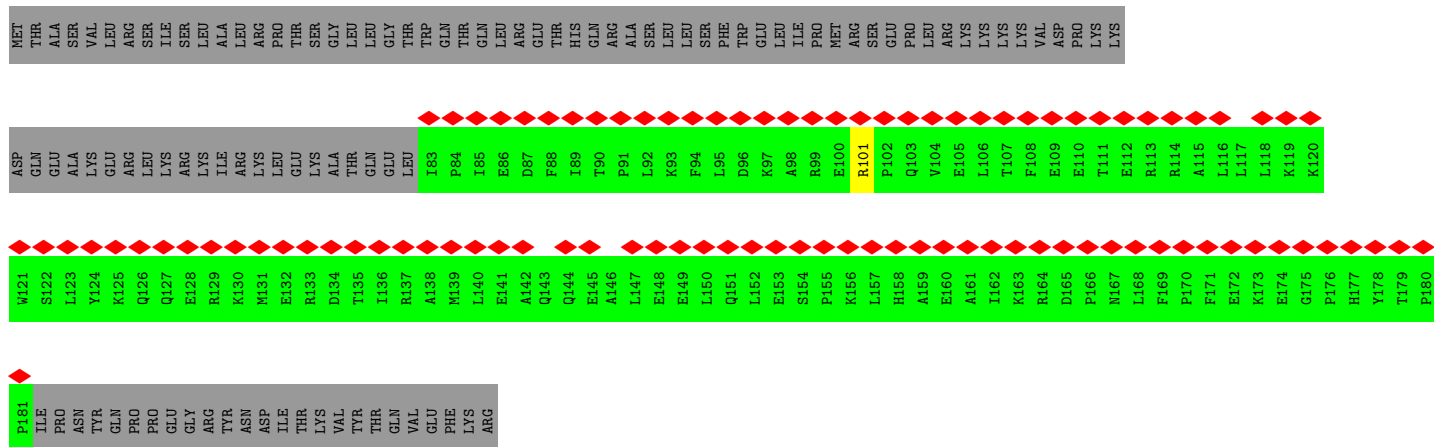


- Molecule 5: 39S ribosomal protein L39, mitochondrial

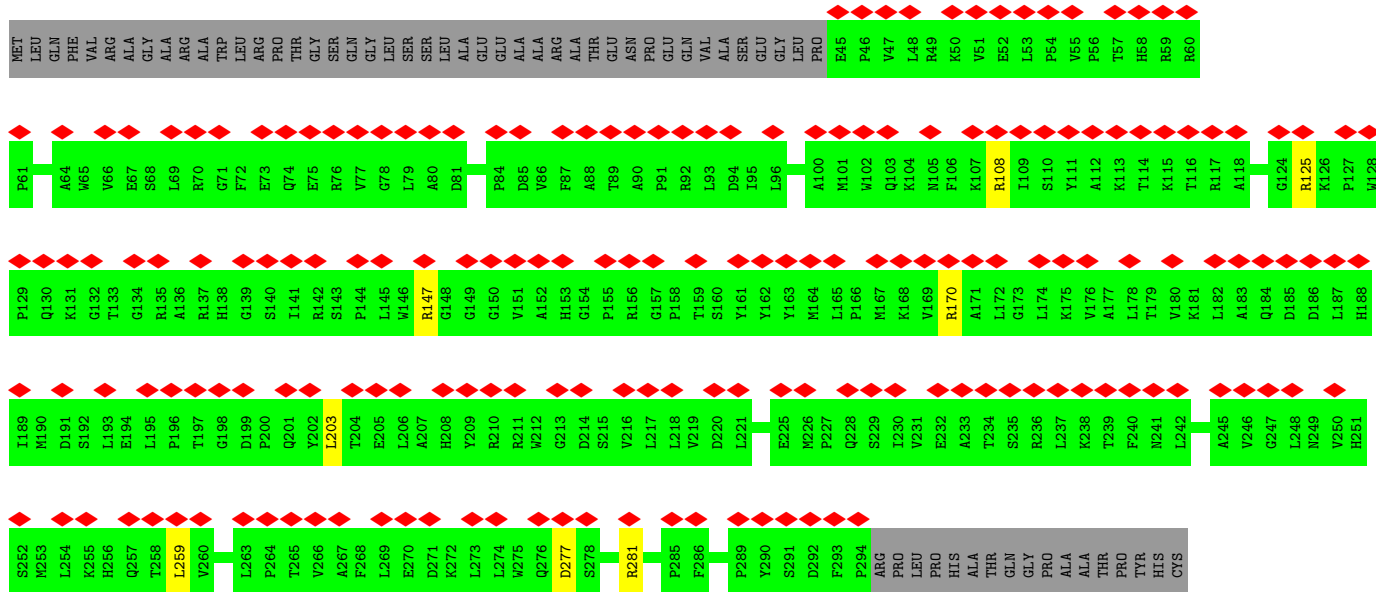
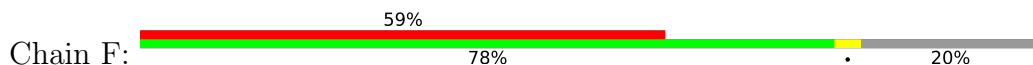


- Molecule 6: 39S ribosomal protein L40, mitochondrial

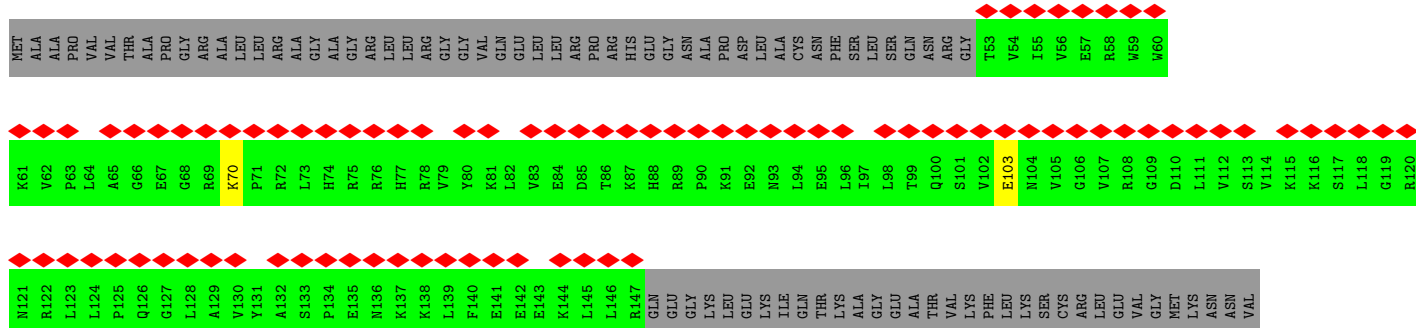


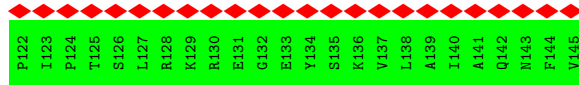


• Molecule 7: 39S ribosomal protein L4, mitochondrial

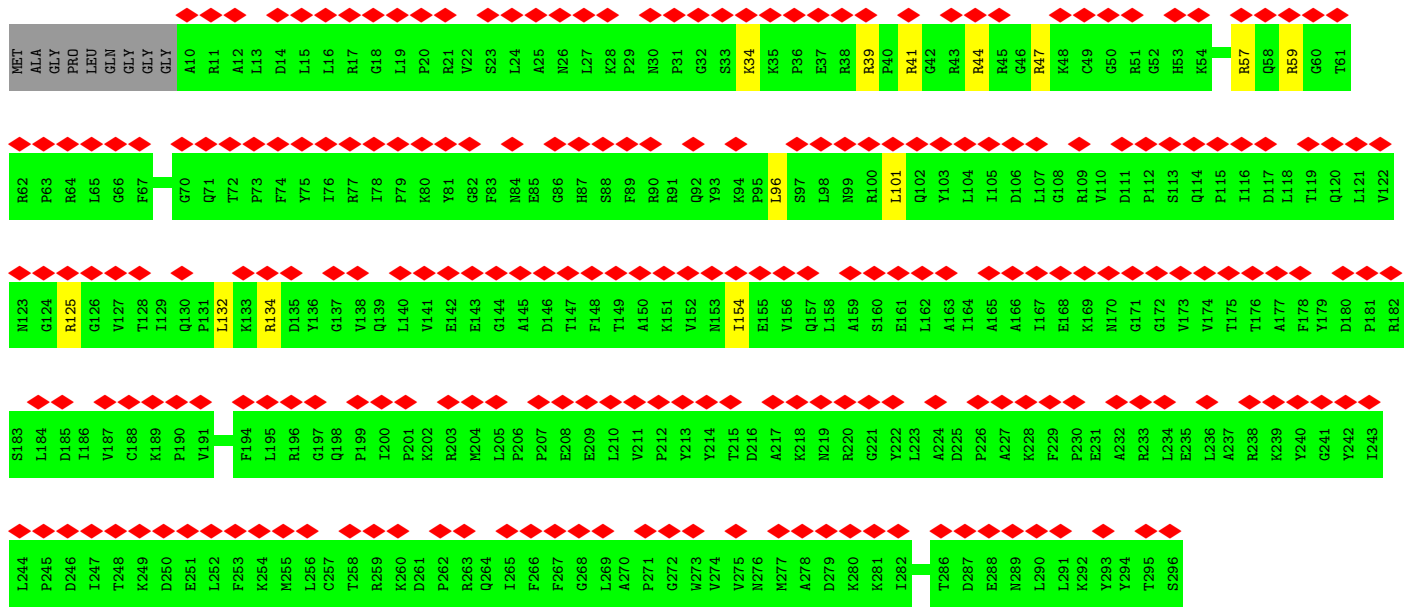
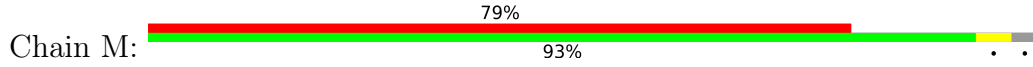


• Molecule 8: 39S ribosomal protein L9, mitochondrial

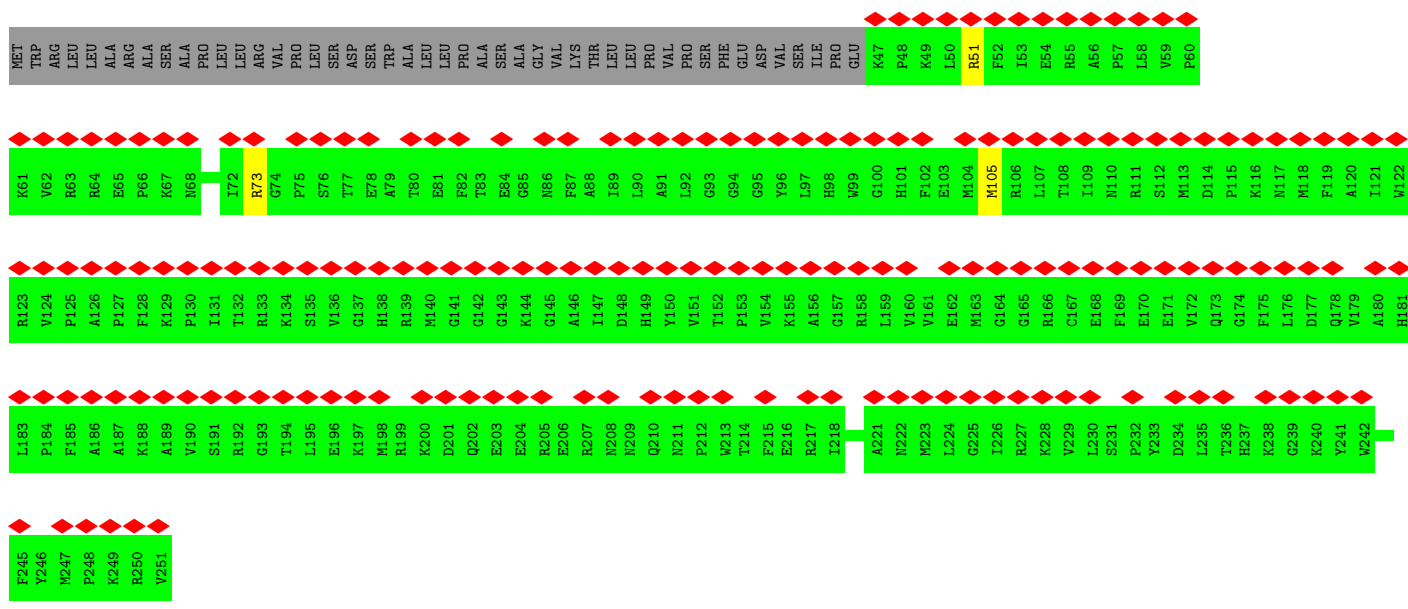
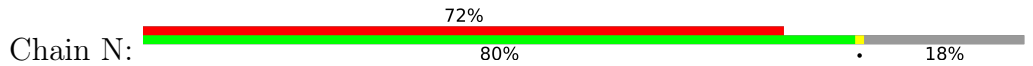




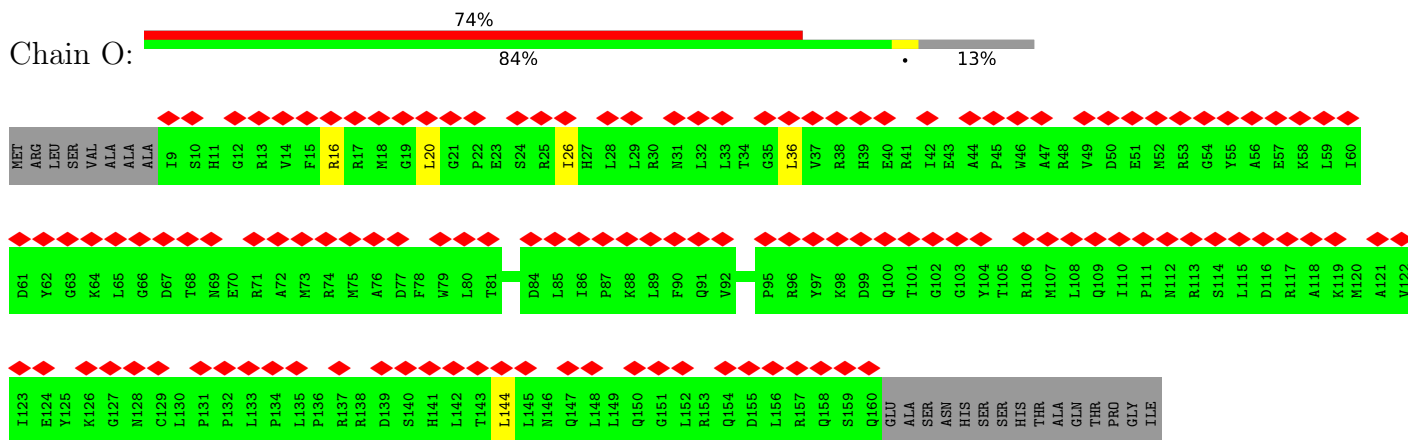
• Molecule 12: 39S ribosomal protein L15, mitochondrial



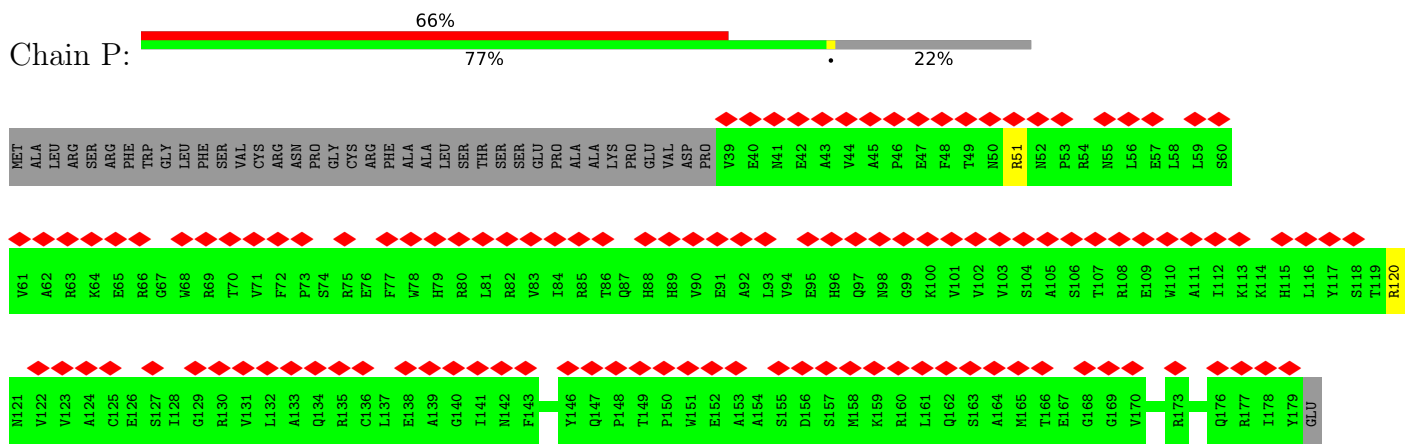
• Molecule 13: 39S ribosomal protein L16, mitochondrial



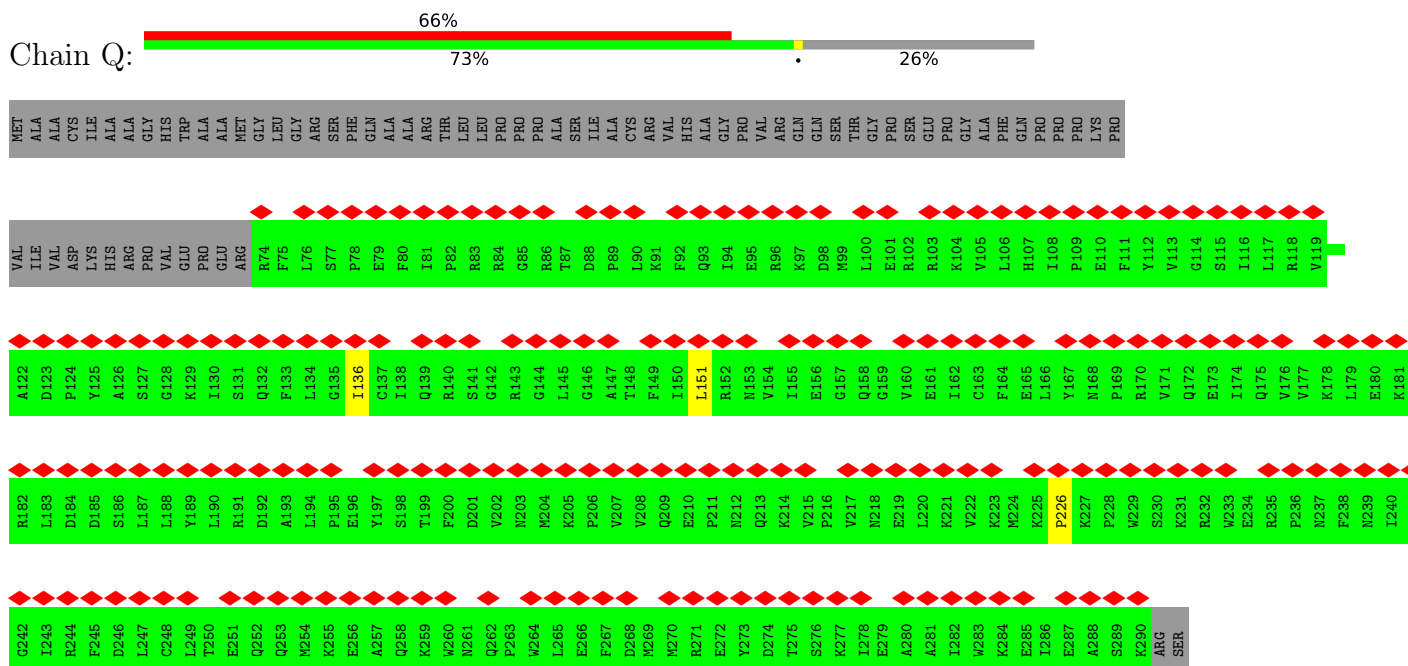
• Molecule 14: 39S ribosomal protein L17, mitochondrial



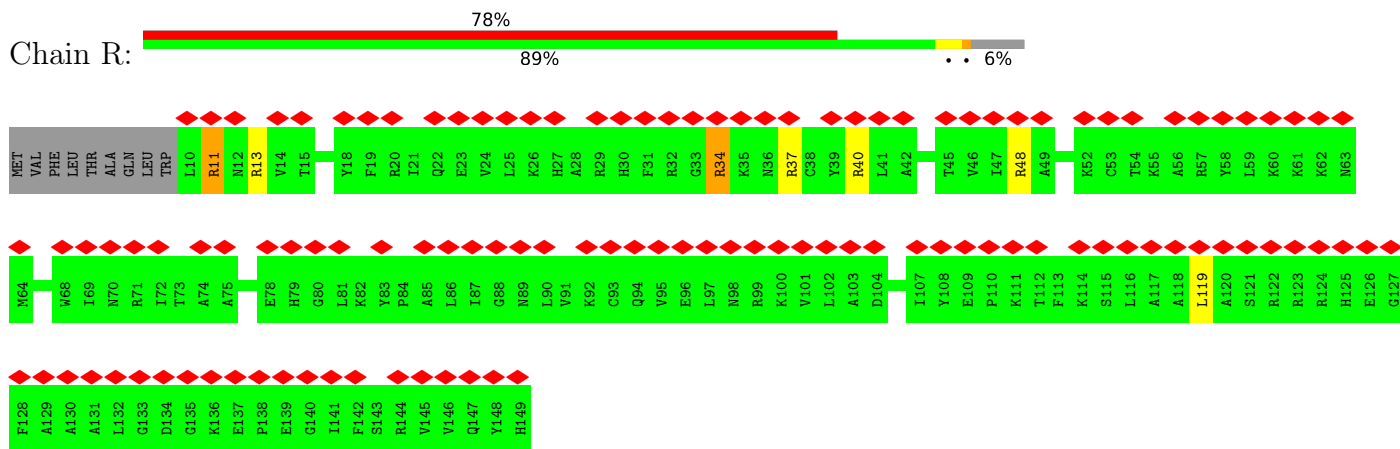
• Molecule 15: 39S ribosomal protein L18, mitochondrial



• Molecule 16: 39S ribosomal protein L19, mitochondrial



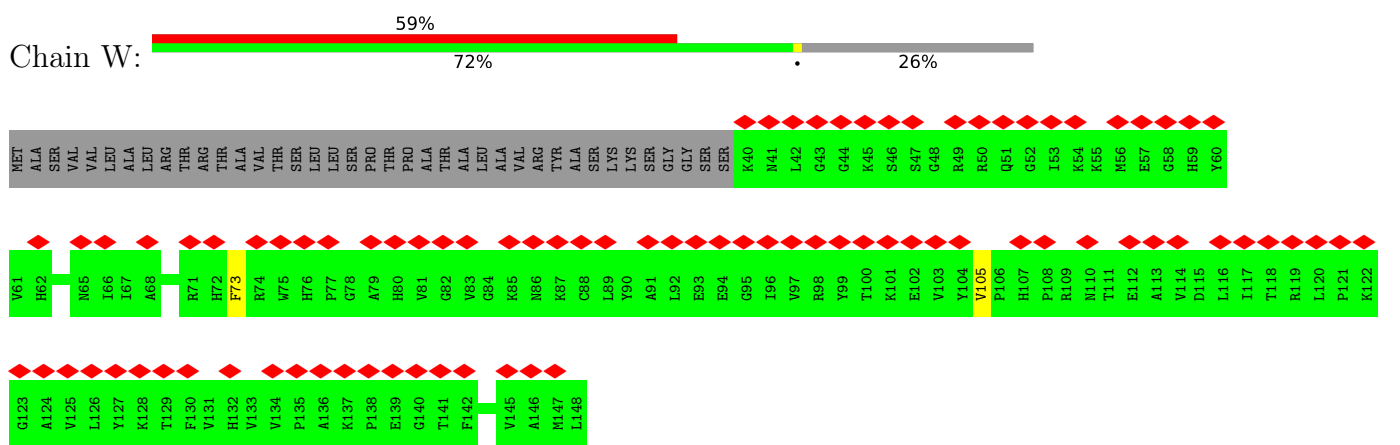
• Molecule 17: 39S ribosomal protein L20, mitochondrial



• Molecule 18: 39S ribosomal protein L21, mitochondrial

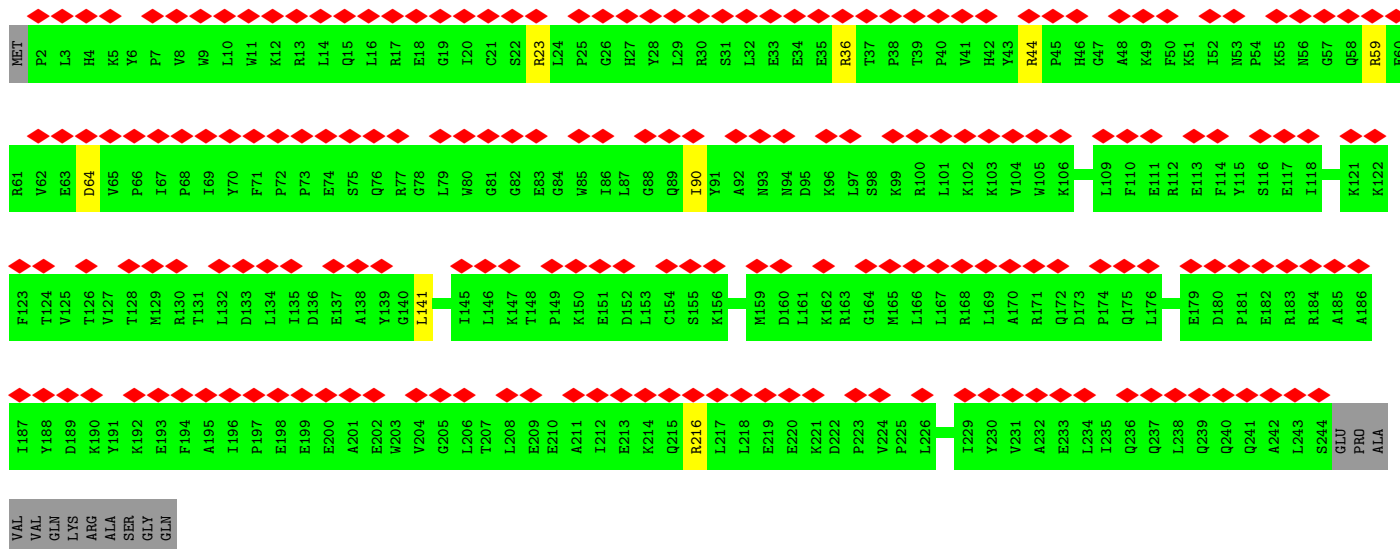


• Molecule 19: 39S ribosomal protein L27, mitochondrial

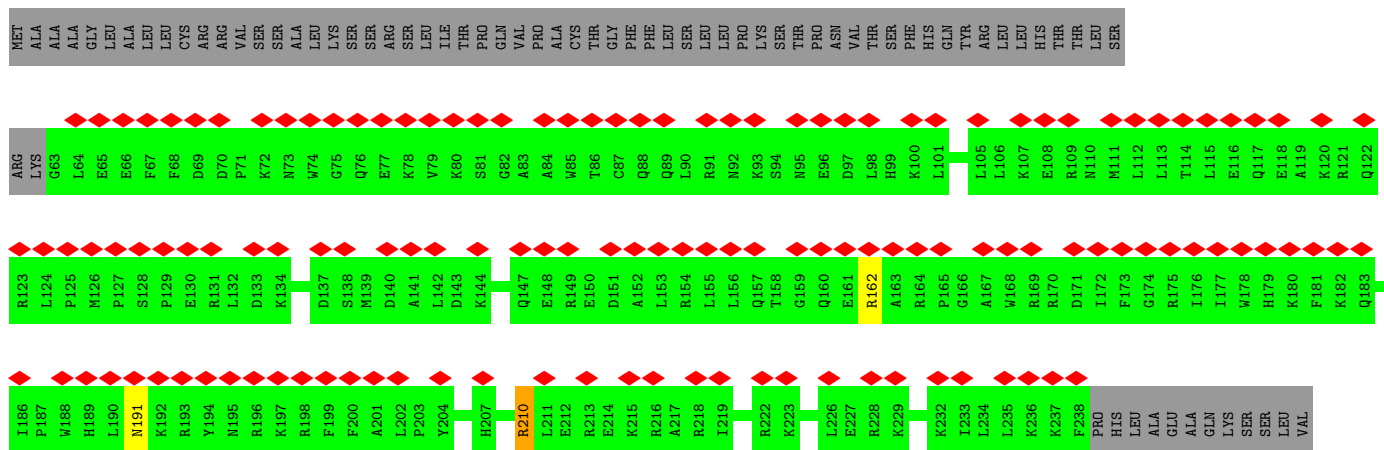


• Molecule 20: 39S ribosomal protein L28, mitochondrial

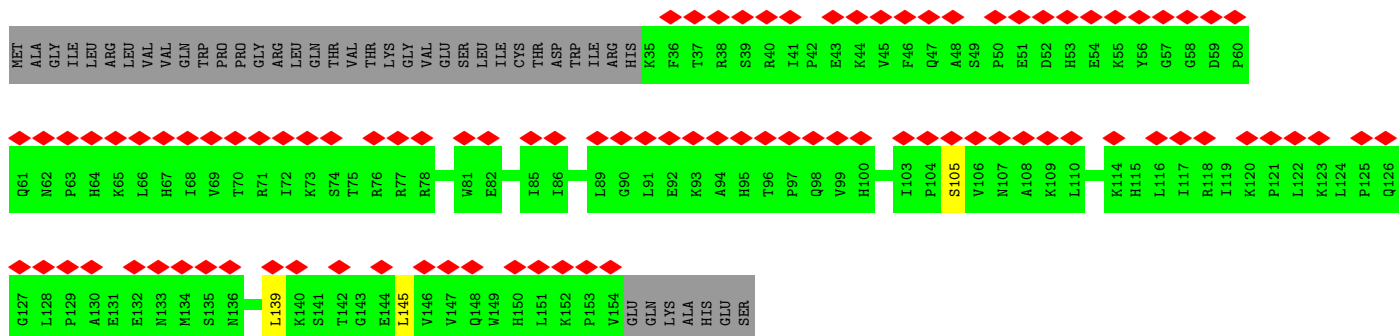
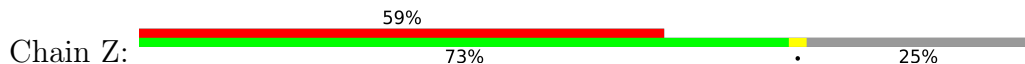




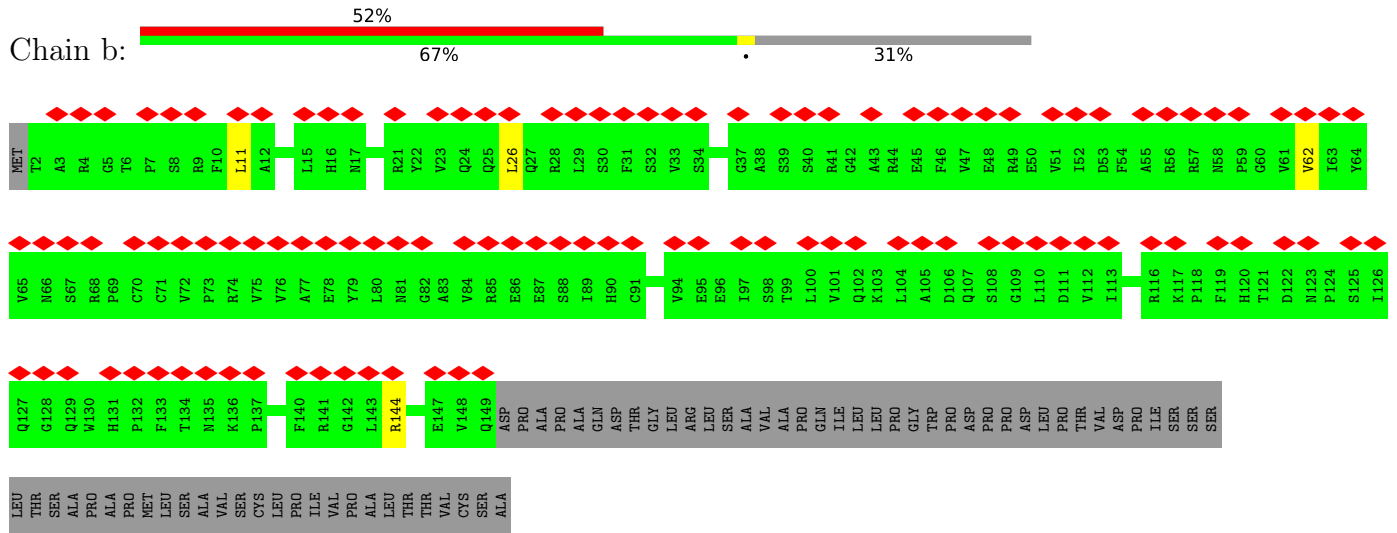
• Molecule 21: 39S ribosomal protein L47, mitochondrial



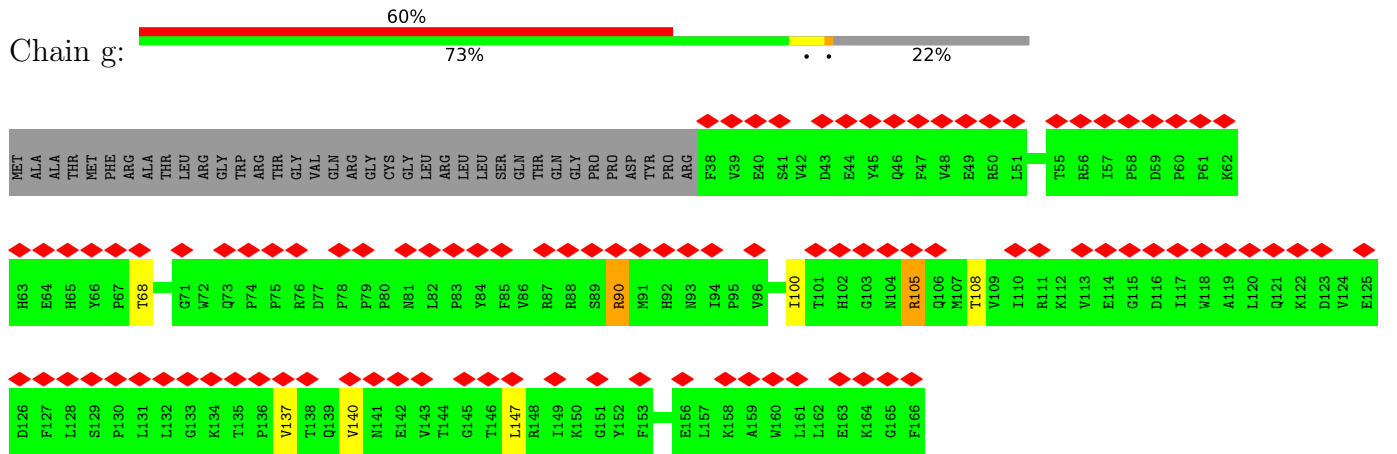
• Molecule 22: 39S ribosomal protein L30, mitochondrial



• Molecule 23: 39S ribosomal protein L43, mitochondrial



• Molecule 24: 39S ribosomal protein L49, mitochondrial

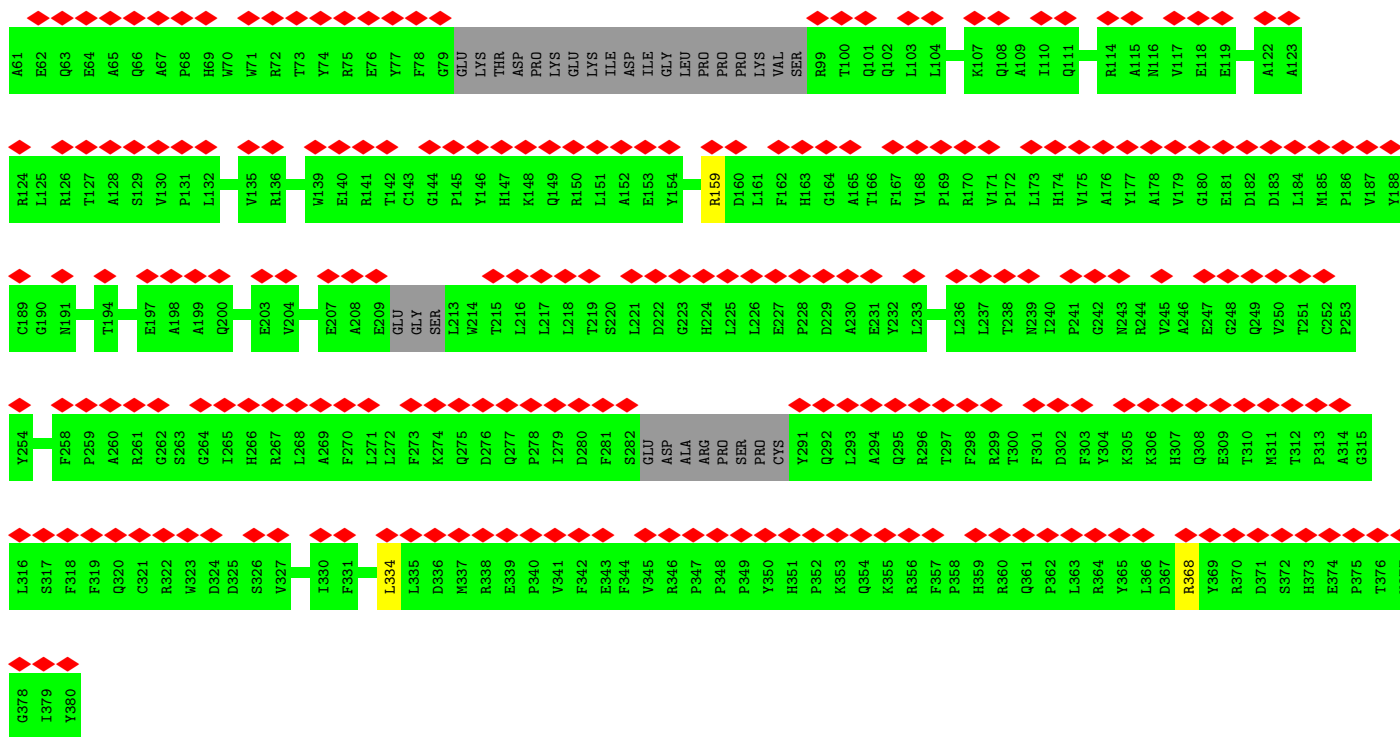


• Molecule 25: 39S ribosomal protein L51, mitochondrial

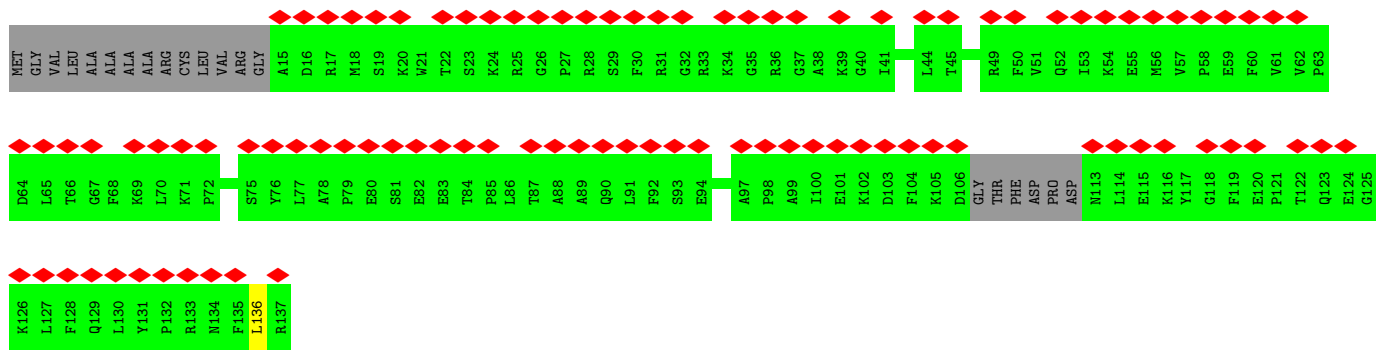
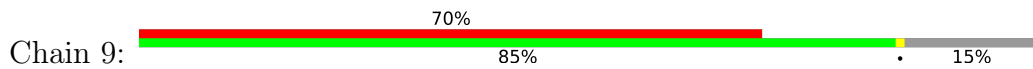


• Molecule 26: 39S ribosomal protein L52, mitochondrial

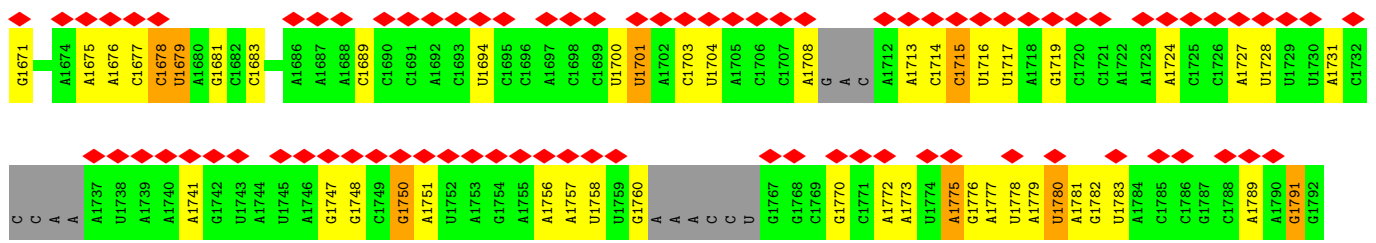


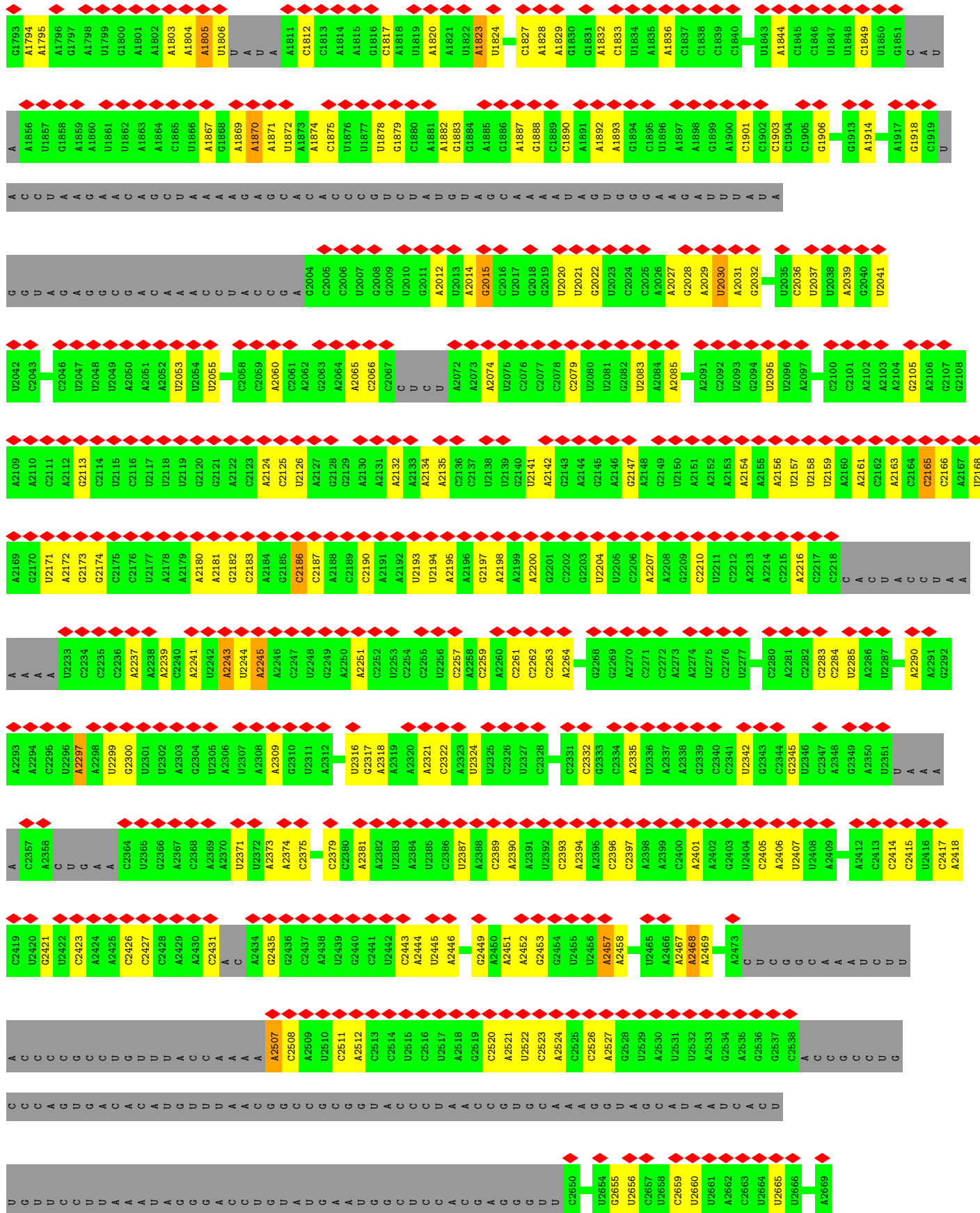


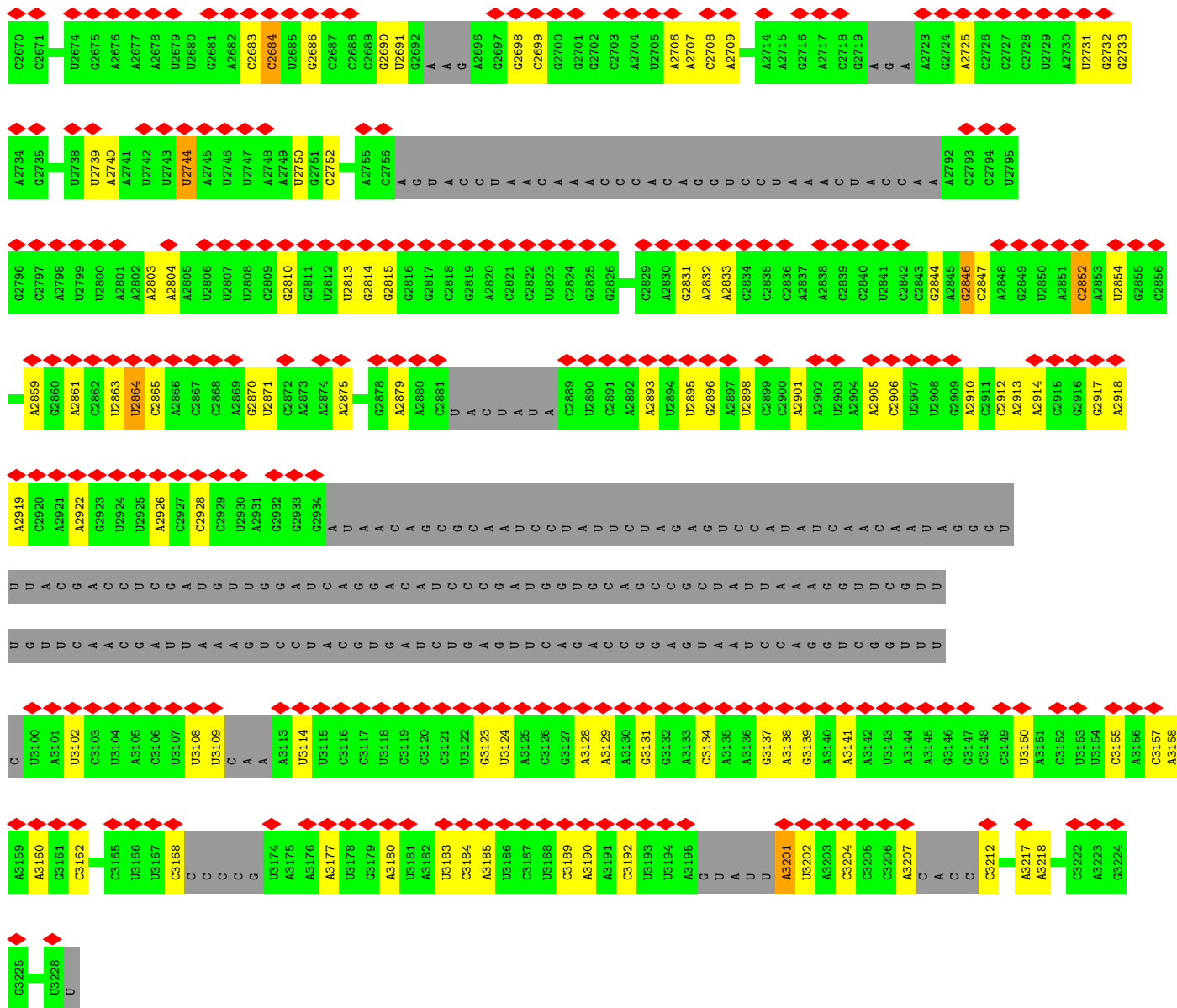
• Molecule 37: 39S ribosomal protein L41, mitochondrial



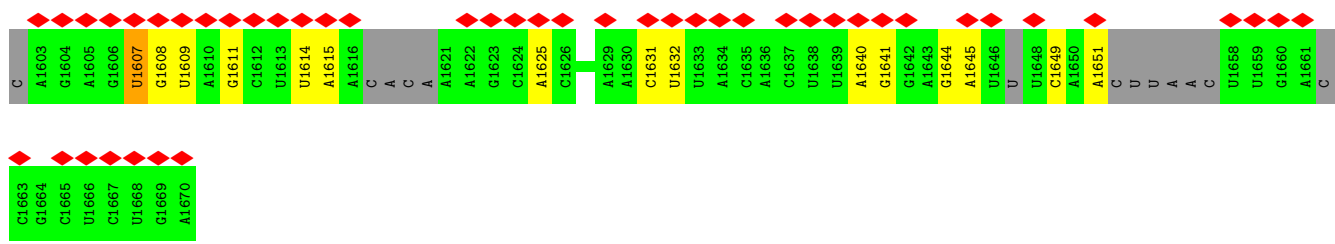
• Molecule 38: 16S ribosomal RNA





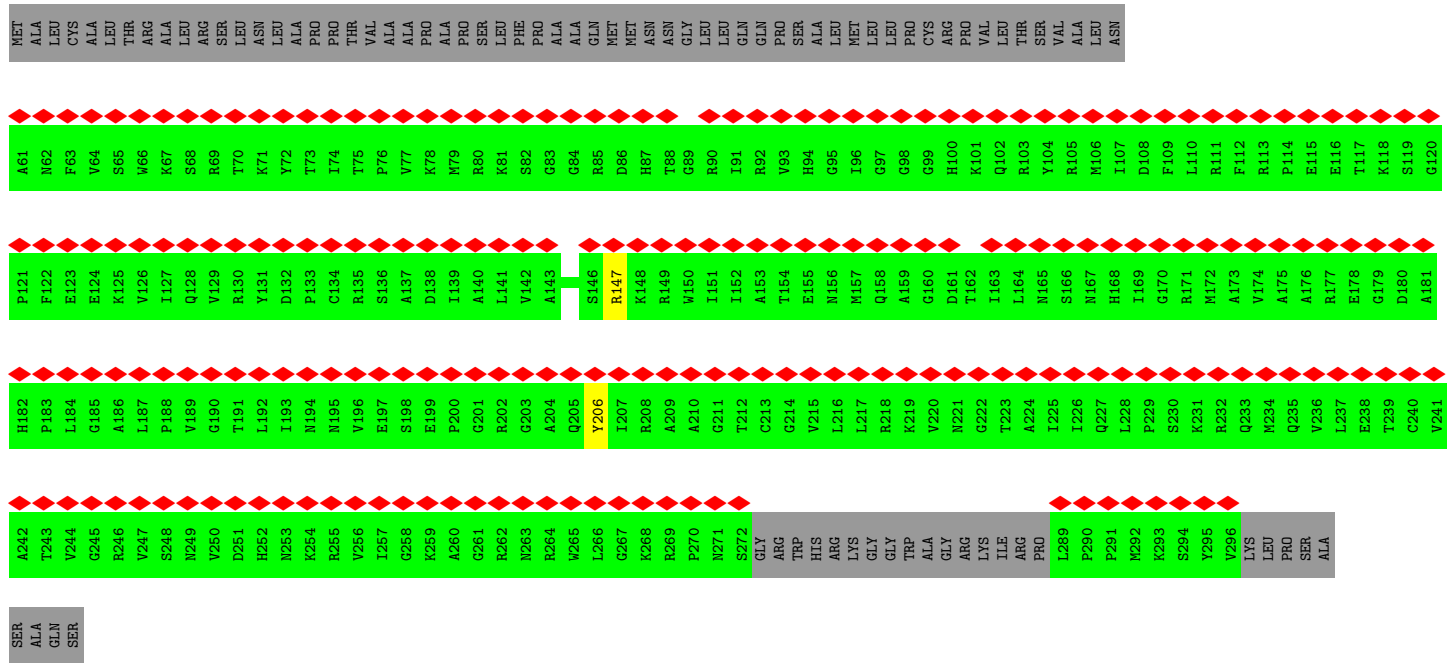


- Molecule 39: mitochondrial tRNA^{Val}

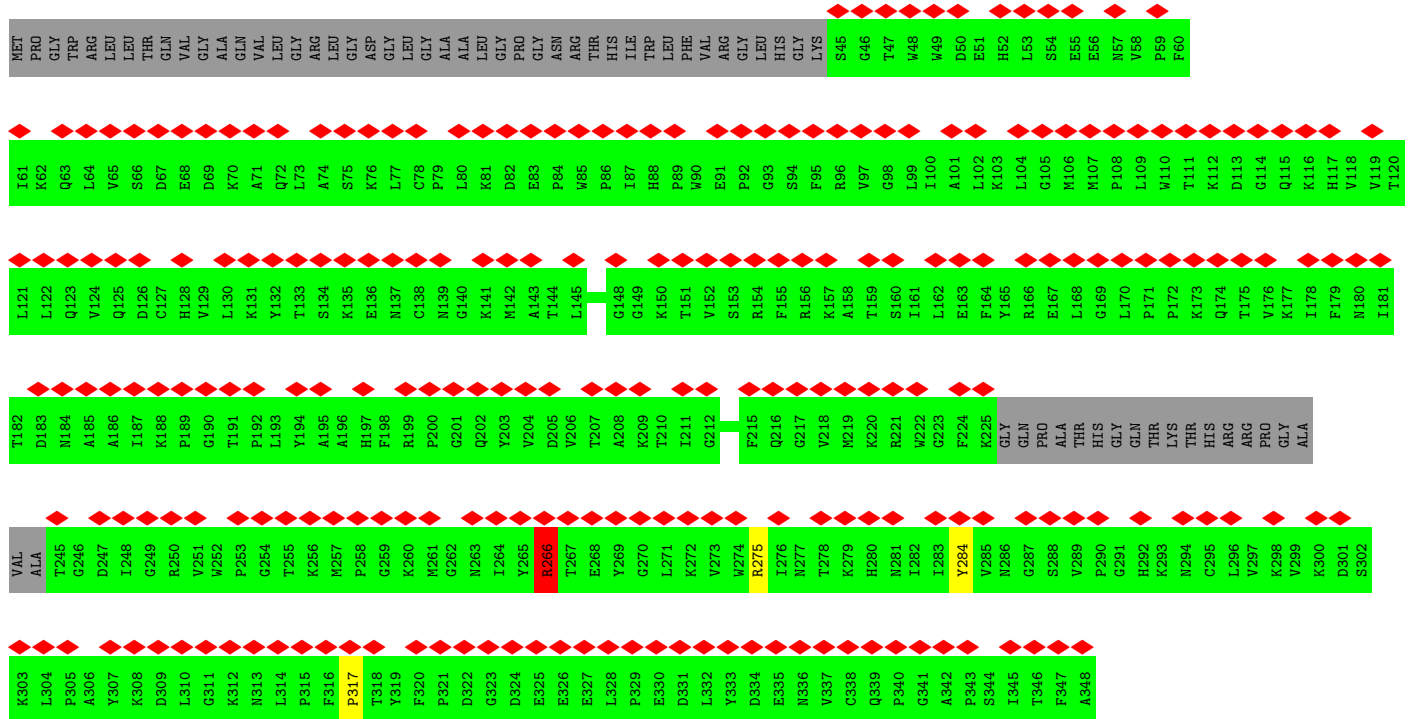
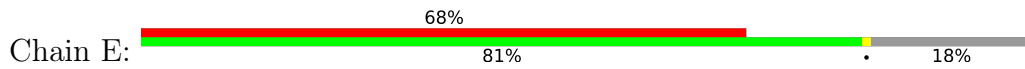


- Molecule 40: 39S ribosomal protein L2, mitochondrial



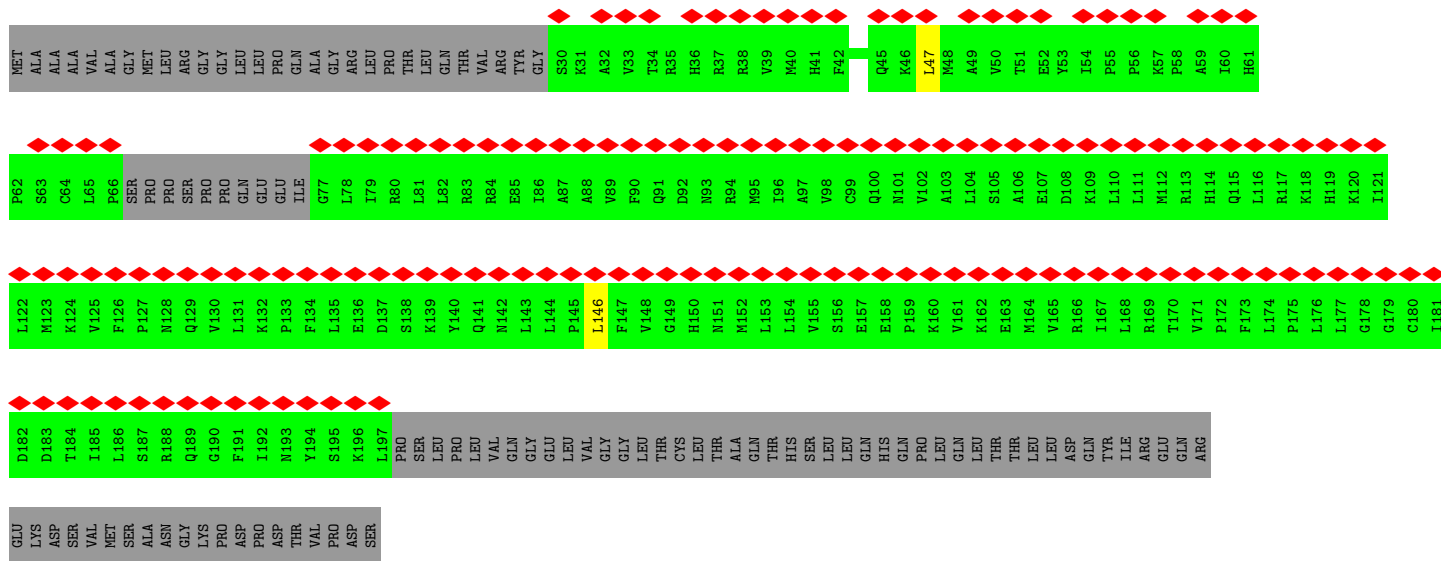


- Molecule 41: 39S ribosomal protein L3, mitochondrial

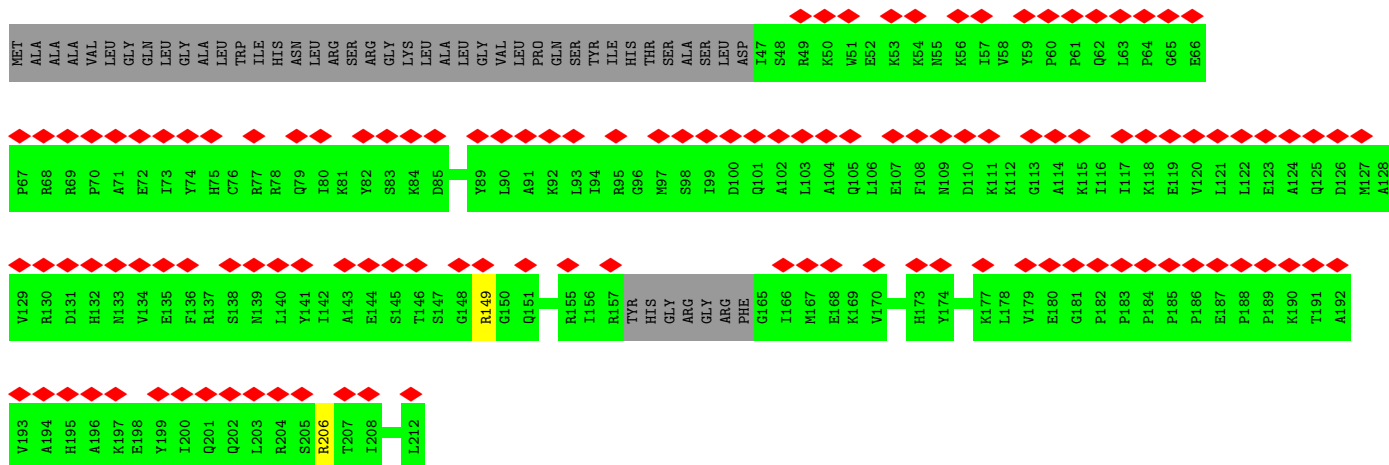


- Molecule 42: 39S ribosomal protein L10, mitochondrial

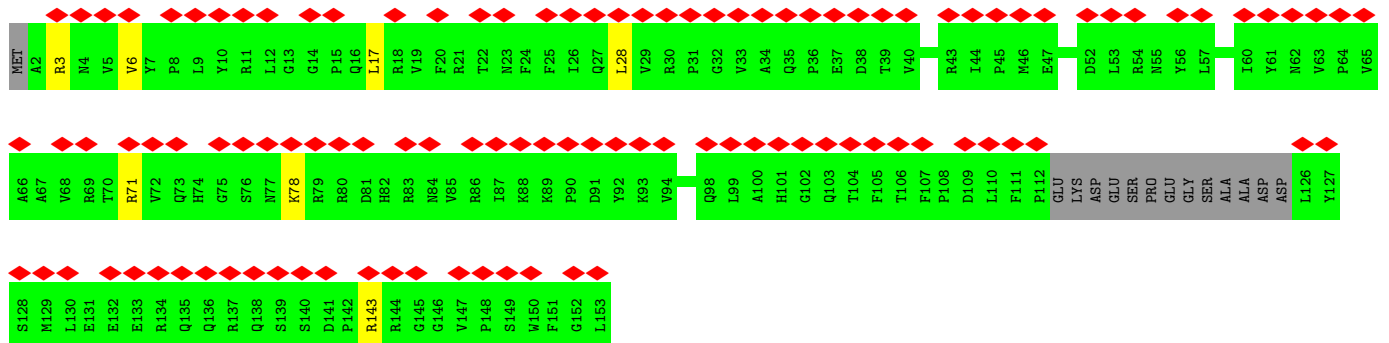
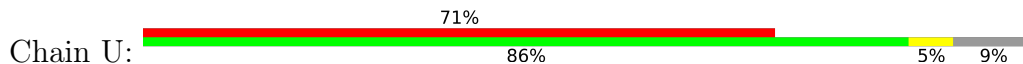


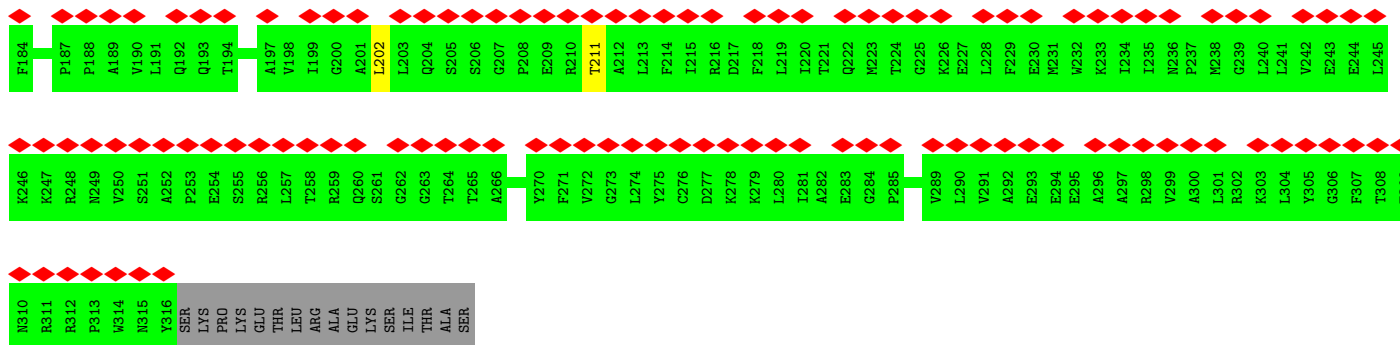


• Molecule 43: 39S ribosomal protein L22, mitochondrial

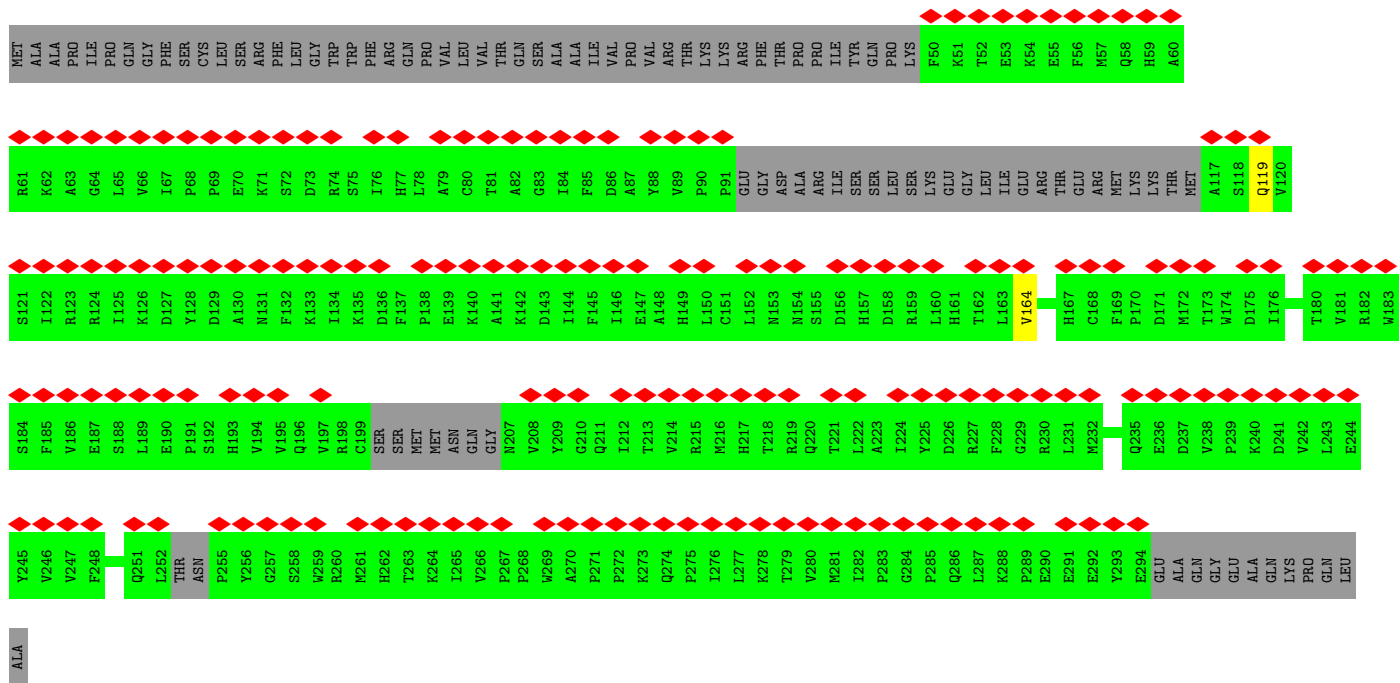


• Molecule 44: 39S ribosomal protein L23, mitochondrial

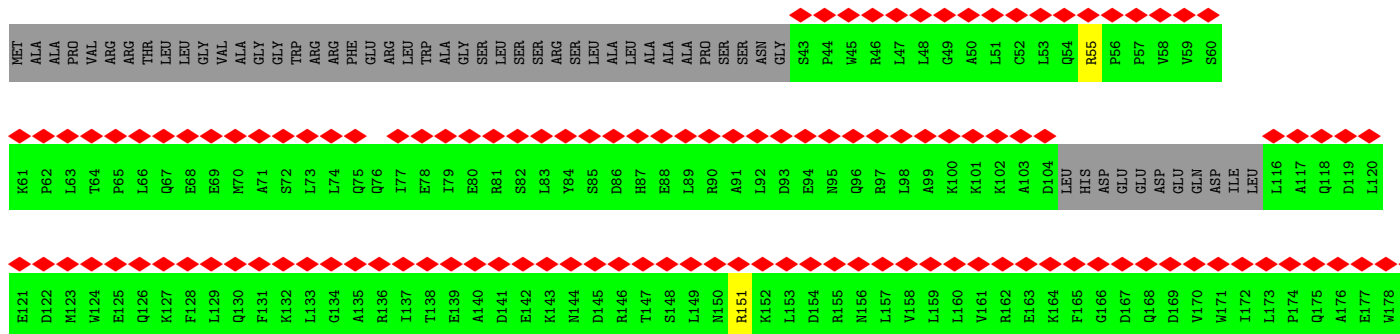
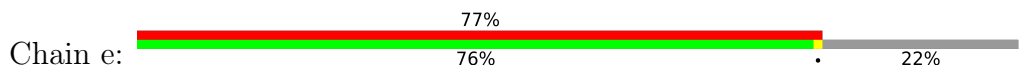


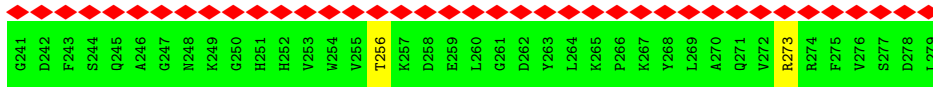
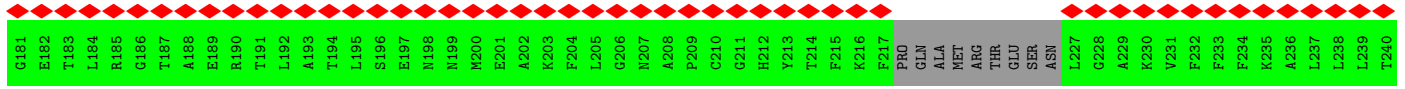


• Molecule 48: 39S ribosomal protein L45, mitochondrial

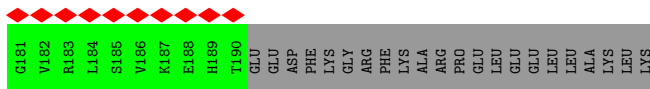
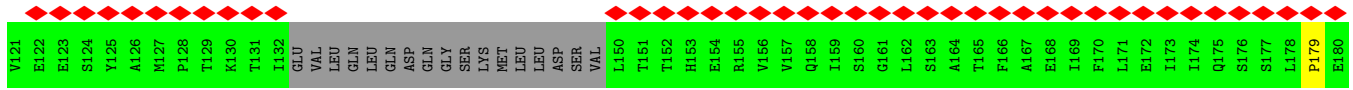
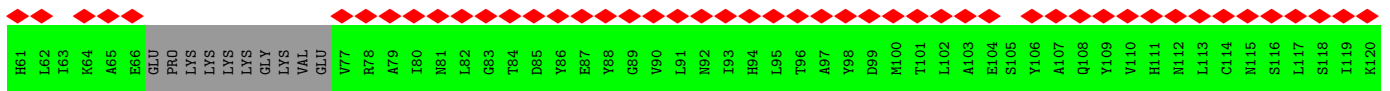
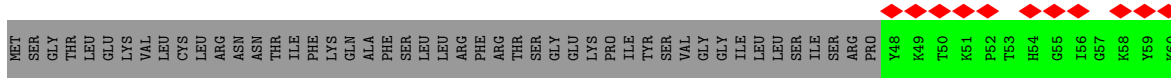


• Molecule 49: 39S ribosomal protein L46, mitochondrial

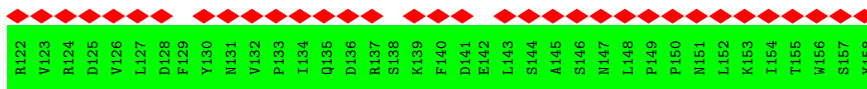
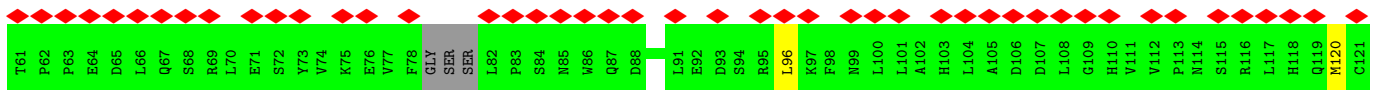
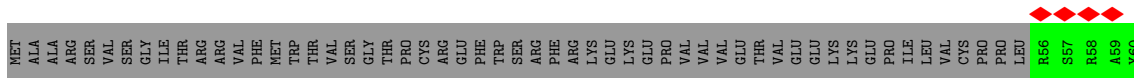




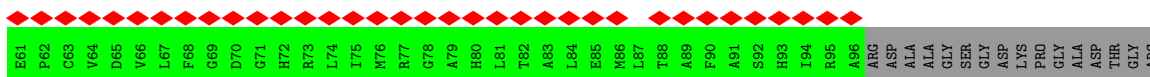
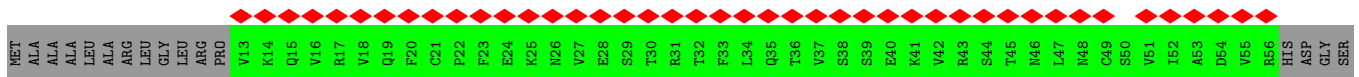
• Molecule 50: 39S ribosomal protein L48, mitochondrial



• Molecule 51: 39S ribosomal protein L50, mitochondrial



• Molecule 52: 39S ribosomal protein L53, mitochondrial



V181	S182	T183	L184	V185	G186	L187	L188	S189	P190	H191	N192	P193	A194	L195	A196	A197	A198	A199	L200	D201	Y202	R203	C204	P205	V206	H207	F208	Y209	W210	V211	R212	G213	E214	E215	I216	I217	P218	R219	G220	H221	R222	R223	G224	R225	I226	D227	D228	L229	R230	Y231	Q232	I233	D234	D235	K236	P237	N238	N239	Q240
I241	R242	I243	S244	K245	Q246	L247	A248	E249	F250	V251	P252	L253	D254	Y255	S256	V257	P258	I259	E260	I261	P262	T263	I264	K265	C266	K267	P268	D269	K270	L271	P272	L273	F274	K275	R276	Q277	Y278	E279	N280	H281	I282	F283	V284	G285	S286	K287	T288	A289	D290	P291	C292	C293	Y294	Q298	F299	H300	L301	L302	
F303	D304	K305	L306	R307	K308	E309	R310	L311	L312	R313	Q314	N315	C316	A317	D318	Q319	I320	E321	V322	V323	F324	R325	A326	N327	A328	I329	A330	S331	L332	F333	A334	W335	T336	G337	A338	Q339	A340	M341	Y342	Q343	G344	S347	E348	A349	D350	V351	T352	R353	F354	S357	Q358	A359	V360	I361	T362	D363	G364		
K365	V366	F367	S368	F369	F370	Q373	L374	N375	T376	L379	T380	T381	Q382	A383	D384	Q385	N386	N387	P388	R389	K390	N391	I392	C393	W394	G395	T396	Q397	S398	K399	P400	L401	Y402	E403	T404	I405	E406	D407	N408	D409	V410	K411	G412	F413	N414	D415	D416	V417	L418	L419	Q420	I421	V422	H423	F424	L425	L426		
M427	R428	P429	K430	GLU	GLU	LYS	SER	GLN	LEU	LEU	GLU	ASN																																															

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	76796	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	48	Depositor
Minimum defocus (nm)	200	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	3.129	Depositor
Minimum map value	-1.129	Depositor
Average map value	-0.001	Depositor
Map value standard deviation	0.065	Depositor
Recommended contour level	0.3	Depositor
Map size (Å)	606.0, 606.0, 606.0	wwPDB
Map dimensions	600, 600, 600	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.01, 1.01, 1.01	Depositor

5 Model quality i

5.1 Standard geometry i

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

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	0	0.38	0/895	0.72	0/1201
2	1	0.33	0/438	0.69	0/583
3	2	0.49	0/357	0.73	0/475
4	3	0.45	0/852	0.80	1/1136 (0.1%)
5	7	0.35	0/2391	0.57	0/3234
6	8	0.27	0/855	0.44	0/1152
7	F	0.43	0/2071	0.72	0/2817
8	H	0.32	0/798	0.64	0/1073
9	J	0.26	0/1077	0.50	0/1452
10	K	0.40	0/1495	0.66	0/2029
11	L	0.29	0/904	0.55	0/1218
12	M	0.40	0/2359	0.71	0/3185
13	N	0.31	0/1697	0.55	0/2281
14	O	0.39	0/1269	0.74	1/1708 (0.1%)
15	P	0.37	0/1173	0.61	0/1588
16	Q	0.32	0/1846	0.60	0/2487
17	R	0.46	0/1174	0.81	3/1572 (0.2%)
18	S	0.42	0/1276	0.73	0/1729
19	W	0.42	0/881	0.64	0/1188
20	X	0.34	0/2090	0.60	0/2825
21	Y	0.37	0/1552	0.63	0/2079
22	Z	0.39	0/1003	0.67	0/1354
23	b	0.45	0/1202	0.73	0/1626
24	g	0.43	0/1102	0.76	2/1503 (0.1%)
25	i	0.43	0/849	0.76	0/1135
26	j	0.40	0/698	0.60	0/940
27	l	0.27	0/226	0.42	0/299
28	m	0.29	0/379	0.59	0/510
29	o	0.41	0/682	0.64	0/916
30	q	0.32	0/1107	0.56	0/1498
32	u	0.27	0/949	0.50	0/1281
33	v	0.27	0/597	0.46	0/796

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
34	w	0.26	0/647	0.47	0/871
35	5	0.31	0/3250	0.59	0/4429
36	6	0.34	0/2726	0.60	0/3715
37	9	0.37	0/972	0.60	0/1306
38	A	0.68	3/24893 (0.0%)	1.26	117/38695 (0.3%)
39	B	0.48	0/1328	0.94	2/2056 (0.1%)
40	D	0.32	0/1736	0.56	0/2335
41	E	0.35	0/2322	0.64	2/3148 (0.1%)
42	I	0.27	0/1308	0.54	0/1761
43	T	0.46	0/1335	0.69	1/1796 (0.1%)
44	U	0.36	0/1183	0.69	0/1600
45	V	0.35	0/1616	0.59	0/2189
46	a	0.39	0/709	0.62	0/963
47	c	0.38	0/2264	0.63	0/3059
48	d	0.32	0/1790	0.56	0/2423
49	e	0.26	0/1797	0.50	0/2422
50	f	0.32	0/931	0.49	0/1259
51	h	0.35	0/847	0.58	0/1150
52	k	0.28	0/635	0.53	0/855
53	p	0.34	0/1071	0.54	0/1433
54	r	0.36	0/1238	0.64	0/1676
55	s	0.36	0/3114	0.65	0/4225
All	All	0.47	3/93956 (0.0%)	0.86	129/132236 (0.1%)

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	1	0	1
4	3	0	1
5	7	0	1
12	M	0	3
13	N	0	1
16	Q	0	1
17	R	0	5
21	Y	0	1
24	g	0	2
35	5	0	4
36	6	0	1
41	E	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
43	T	0	1
53	p	0	1
55	s	0	1
All	All	0	25

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
38	A	2875	A	P-O5'	8.27	1.68	1.59
38	A	2317	G	P-O5'	5.15	1.65	1.59
38	A	1789	A	N9-C4	-5.08	1.34	1.37

The worst 5 of 129 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
38	A	1778	U	O5'-P-OP1	-53.08	47.00	110.70
38	A	2317	G	O5'-P-OP1	38.53	156.94	110.70
38	A	2691	U	O5'-P-OP1	-33.14	70.93	110.70
38	A	2691	U	O5'-P-OP2	29.73	146.37	110.70
38	A	1779	A	O5'-P-OP1	27.20	143.34	110.70

There are no chirality outliers.

5 of 25 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	1	25	GLY	Peptide
4	3	184	THR	Peptide
5	7	159	LYS	Peptide
12	M	41	ARG	Sidechain
12	M	59	ARG	Sidechain

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

5.3.1 Protein backbone

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	0	106/188 (56%)	102 (96%)	4 (4%)	0	100	100
2	1	50/65 (77%)	50 (100%)	0	0	100	100
3	2	41/92 (45%)	40 (98%)	1 (2%)	0	100	100
4	3	93/188 (50%)	89 (96%)	4 (4%)	0	100	100
5	7	285/338 (84%)	259 (91%)	26 (9%)	0	100	100
6	8	97/206 (47%)	90 (93%)	7 (7%)	0	100	100
7	F	248/311 (80%)	232 (94%)	16 (6%)	0	100	100
8	H	93/267 (35%)	84 (90%)	8 (9%)	1 (1%)	14	19
9	J	138/192 (72%)	122 (88%)	16 (12%)	0	100	100
10	K	175/178 (98%)	166 (95%)	9 (5%)	0	100	100
11	L	113/145 (78%)	104 (92%)	9 (8%)	0	100	100
12	M	285/296 (96%)	274 (96%)	11 (4%)	0	100	100
13	N	203/251 (81%)	191 (94%)	12 (6%)	0	100	100
14	O	150/175 (86%)	144 (96%)	6 (4%)	0	100	100
15	P	139/180 (77%)	131 (94%)	8 (6%)	0	100	100
16	Q	215/292 (74%)	201 (94%)	14 (6%)	0	100	100
17	R	138/149 (93%)	132 (96%)	6 (4%)	0	100	100
18	S	154/205 (75%)	147 (96%)	7 (4%)	0	100	100
19	W	107/148 (72%)	103 (96%)	3 (3%)	1 (1%)	17	24
20	X	241/256 (94%)	236 (98%)	5 (2%)	0	100	100
21	Y	174/250 (70%)	169 (97%)	5 (3%)	0	100	100
22	Z	118/161 (73%)	111 (94%)	7 (6%)	0	100	100
23	b	146/215 (68%)	131 (90%)	15 (10%)	0	100	100
24	g	127/166 (76%)	115 (91%)	12 (9%)	0	100	100
25	i	95/128 (74%)	91 (96%)	4 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
26	j	83/123 (68%)	82 (99%)	1 (1%)	0	100	100
27	l	21/138 (15%)	21 (100%)	0	0	100	100
28	m	43/128 (34%)	38 (88%)	4 (9%)	1 (2%)	6	6
29	o	77/102 (76%)	77 (100%)	0	0	100	100
30	q	126/222 (57%)	124 (98%)	2 (2%)	0	100	100
32	u	109/234 (47%)	100 (92%)	9 (8%)	0	100	100
33	v	67/70 (96%)	66 (98%)	1 (2%)	0	100	100
34	w	77/156 (49%)	69 (90%)	8 (10%)	0	100	100
35	5	383/423 (90%)	359 (94%)	24 (6%)	0	100	100
36	6	316/380 (83%)	300 (95%)	16 (5%)	0	100	100
37	9	113/137 (82%)	108 (96%)	5 (4%)	0	100	100
40	D	216/305 (71%)	203 (94%)	13 (6%)	0	100	100
41	E	281/348 (81%)	269 (96%)	11 (4%)	1 (0%)	34	47
42	I	154/261 (59%)	142 (92%)	12 (8%)	0	100	100
43	T	155/206 (75%)	153 (99%)	2 (1%)	0	100	100
44	U	135/153 (88%)	128 (95%)	7 (5%)	0	100	100
45	V	188/216 (87%)	182 (97%)	6 (3%)	0	100	100
46	a	78/142 (55%)	74 (95%)	4 (5%)	0	100	100
47	c	271/332 (82%)	264 (97%)	7 (3%)	0	100	100
48	d	203/306 (66%)	192 (95%)	11 (5%)	0	100	100
49	e	211/279 (76%)	181 (86%)	29 (14%)	1 (0%)	29	40
50	f	110/212 (52%)	99 (90%)	10 (9%)	1 (1%)	17	24
51	h	96/158 (61%)	91 (95%)	5 (5%)	0	100	100
52	k	76/112 (68%)	69 (91%)	7 (9%)	0	100	100
53	p	119/206 (58%)	115 (97%)	4 (3%)	0	100	100
54	r	140/196 (71%)	133 (95%)	7 (5%)	0	100	100
55	s	366/439 (83%)	350 (96%)	15 (4%)	1 (0%)	41	54
All	All	7945/11026 (72%)	7503 (94%)	435 (6%)	7 (0%)	54	67

5 of 7 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
28	m	71	PRO

Continued on next page...

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Mol	Chain	Res	Type
8	H	103	GLU
55	s	272	PRO
49	e	256	THR
50	f	179	PRO

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	0	97/164 (59%)	95 (98%)	2 (2%)	53	71
2	1	49/60 (82%)	45 (92%)	4 (8%)	11	16
3	2	38/72 (53%)	36 (95%)	2 (5%)	22	36
4	3	88/166 (53%)	85 (97%)	3 (3%)	37	54
5	7	263/303 (87%)	259 (98%)	4 (2%)	65	79
6	8	91/190 (48%)	90 (99%)	1 (1%)	73	86
7	F	217/262 (83%)	209 (96%)	8 (4%)	34	51
8	H	86/228 (38%)	85 (99%)	1 (1%)	71	84
9	J	113/150 (75%)	113 (100%)	0	100	100
10	K	155/156 (99%)	152 (98%)	3 (2%)	57	74
11	L	98/124 (79%)	96 (98%)	2 (2%)	55	72
12	M	245/249 (98%)	235 (96%)	10 (4%)	30	47
13	N	172/211 (82%)	170 (99%)	2 (1%)	71	84
14	O	133/150 (89%)	129 (97%)	4 (3%)	41	59
15	P	123/155 (79%)	121 (98%)	2 (2%)	62	78
16	Q	199/256 (78%)	197 (99%)	2 (1%)	76	87
17	R	118/126 (94%)	117 (99%)	1 (1%)	81	91
18	S	141/180 (78%)	140 (99%)	1 (1%)	84	92
19	W	89/119 (75%)	88 (99%)	1 (1%)	73	86
20	X	219/229 (96%)	211 (96%)	8 (4%)	34	51

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
21	Y	159/223 (71%)	156 (98%)	3 (2%)	57	74
22	Z	111/147 (76%)	108 (97%)	3 (3%)	44	63
23	b	130/186 (70%)	126 (97%)	4 (3%)	40	58
24	g	119/148 (80%)	113 (95%)	6 (5%)	24	38
25	i	86/110 (78%)	82 (95%)	4 (5%)	26	41
26	j	68/97 (70%)	68 (100%)	0	100	100
27	l	23/116 (20%)	23 (100%)	0	100	100
28	m	40/113 (35%)	39 (98%)	1 (2%)	47	66
29	o	68/87 (78%)	68 (100%)	0	100	100
30	q	110/178 (62%)	107 (97%)	3 (3%)	44	63
32	u	105/200 (52%)	104 (99%)	1 (1%)	76	87
33	v	59/60 (98%)	58 (98%)	1 (2%)	60	77
34	w	73/136 (54%)	72 (99%)	1 (1%)	67	81
35	5	348/368 (95%)	339 (97%)	9 (3%)	46	64
36	6	265/332 (80%)	262 (99%)	3 (1%)	73	86
37	9	99/112 (88%)	98 (99%)	1 (1%)	76	87
40	D	179/245 (73%)	177 (99%)	2 (1%)	73	86
41	E	246/290 (85%)	243 (99%)	3 (1%)	71	84
42	I	145/232 (62%)	143 (99%)	2 (1%)	67	81
43	T	141/176 (80%)	141 (100%)	0	100	100
44	U	124/135 (92%)	117 (94%)	7 (6%)	21	32
45	V	172/191 (90%)	168 (98%)	4 (2%)	50	68
46	a	78/133 (59%)	76 (97%)	2 (3%)	46	64
47	c	241/288 (84%)	237 (98%)	4 (2%)	60	77
48	d	193/274 (70%)	191 (99%)	2 (1%)	76	87
49	e	188/236 (80%)	185 (98%)	3 (2%)	62	78
50	f	101/188 (54%)	101 (100%)	0	100	100
51	h	95/148 (64%)	93 (98%)	2 (2%)	53	71
52	k	71/90 (79%)	71 (100%)	0	100	100
53	p	117/181 (65%)	116 (99%)	1 (1%)	78	89
54	r	133/169 (79%)	131 (98%)	2 (2%)	65	79

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
55	s	326/381 (86%)	320 (98%)	6 (2%)	59 75
All	All	7147/9520 (75%)	7006 (98%)	141 (2%)	57 72

5 of 141 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
45	V	92	ASN
46	a	111	GLN
51	h	96	LEU
16	Q	136	ILE
15	P	120	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 39 such sidechains are listed below:

Mol	Chain	Res	Type
44	U	35	GLN
51	h	67	GLN
44	U	74	HIS
48	d	251	GLN
52	k	26	ASN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
38	A	1028/1559 (65%)	289 (28%)	25 (2%)
39	B	51/69 (73%)	15 (29%)	1 (1%)
All	All	1079/1628 (66%)	304 (28%)	26 (2%)

5 of 304 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
38	A	1675	A
38	A	1676	A
38	A	1677	C
38	A	1678	C
38	A	1679	U

5 of 26 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
38	A	2186	C
38	A	2373	A
38	A	3201	A
38	A	2321	A
38	A	2444	A

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 51 ligands modelled in this entry, 50 are monoatomic - leaving 1 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
58	PNS	v	101	-	13,20,21	0.17	0	18,26,29	0.93	0

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	PNS	v	101	-	-	7/24/26/27	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

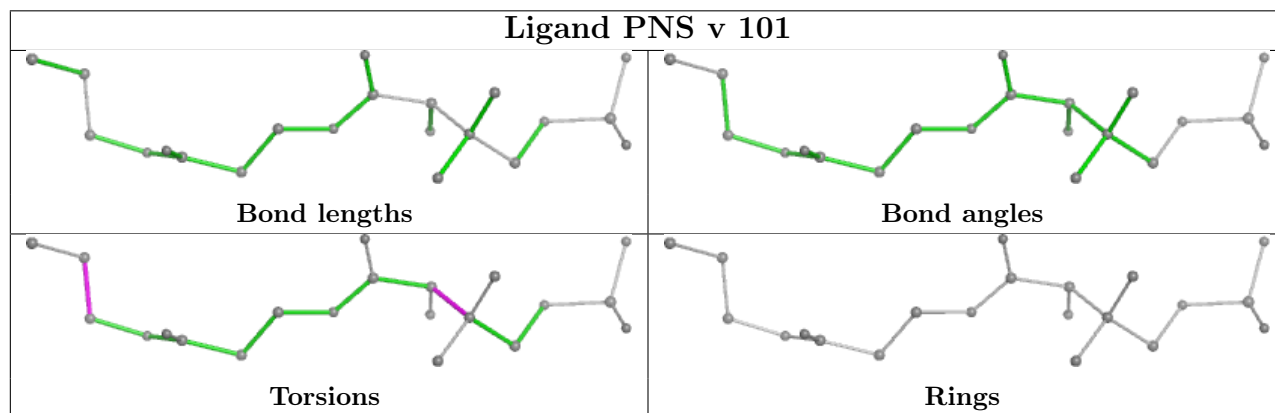
5 of 7 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
58	v	101	PNS	C28-C29-C32-O33
58	v	101	PNS	C28-C29-C32-C34
58	v	101	PNS	C31-C29-C32-O33
58	v	101	PNS	C31-C29-C32-C34
58	v	101	PNS	N41-C42-C43-S44

There are no ring outliers.

No monomer is involved in short contacts.

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



5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [\(i\)](#)

There are no chain breaks in this entry.

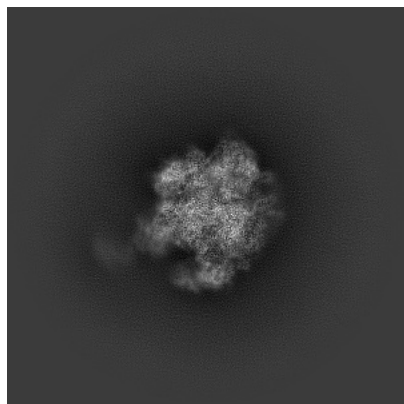
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-18461. These allow visual inspection of the internal detail of the map and identification of artifacts.

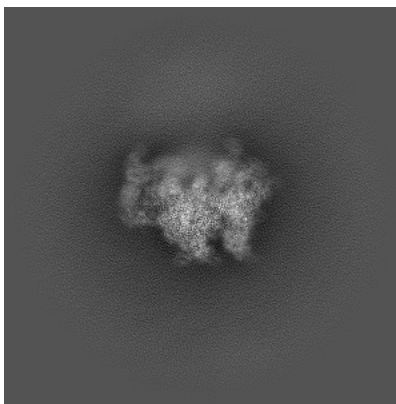
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

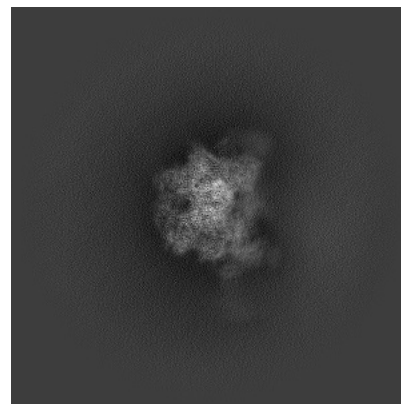
6.1.1 Primary map



X

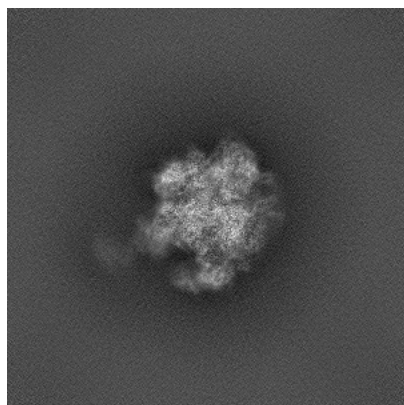


Y

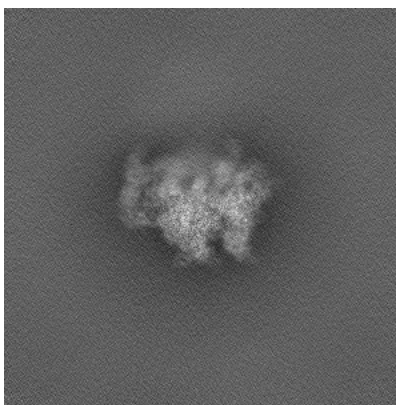


Z

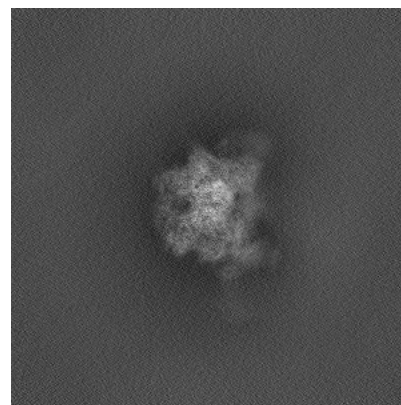
6.1.2 Raw map



X



Y

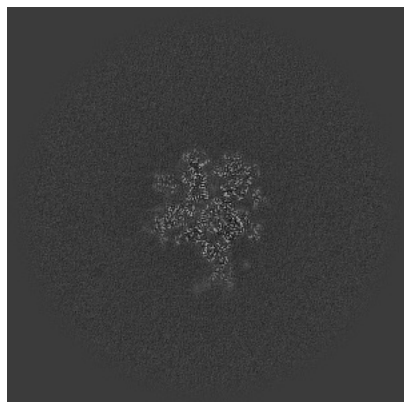


Z

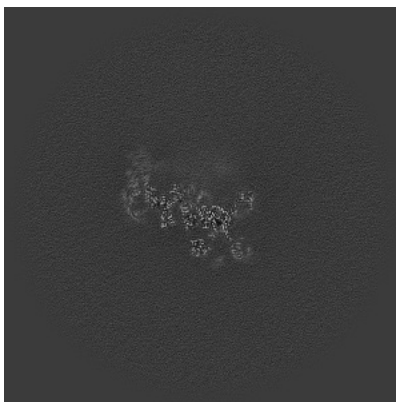
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

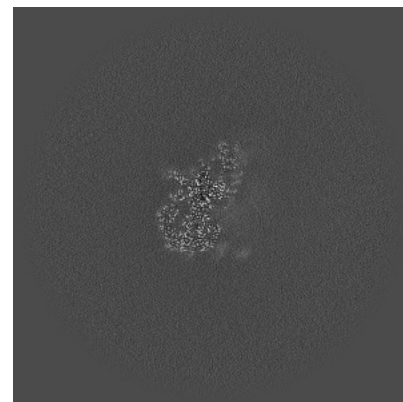
6.2.1 Primary map



X Index: 300

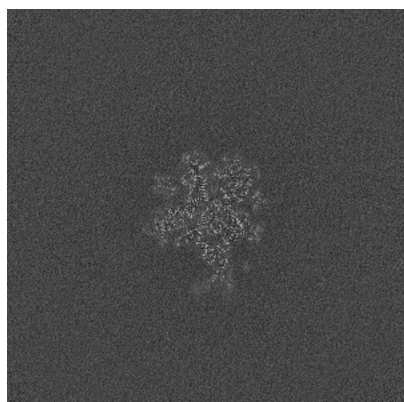


Y Index: 300

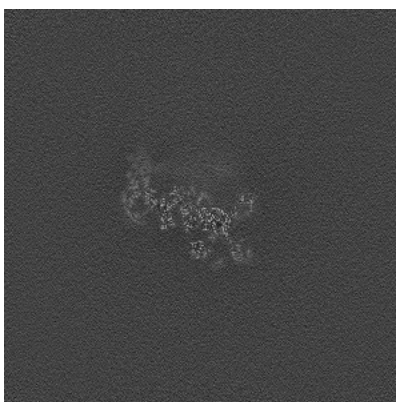


Z Index: 300

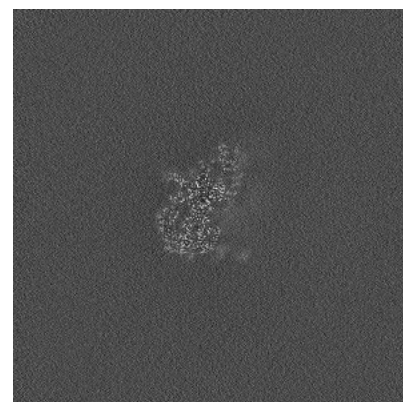
6.2.2 Raw map



X Index: 300



Y Index: 300

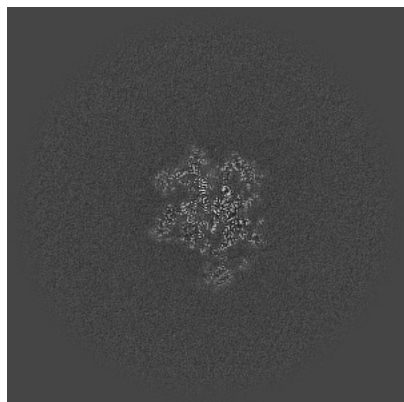


Z Index: 300

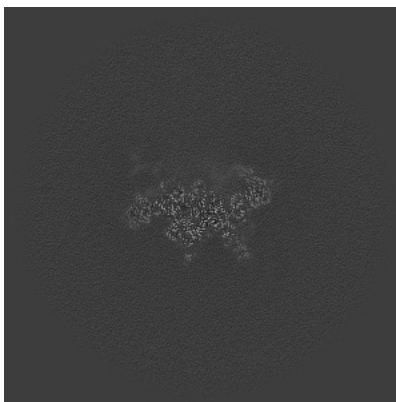
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

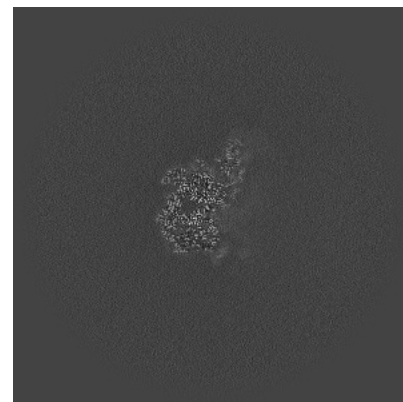
6.3.1 Primary map



X Index: 293

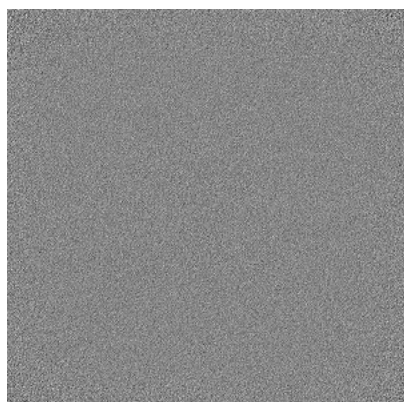


Y Index: 326

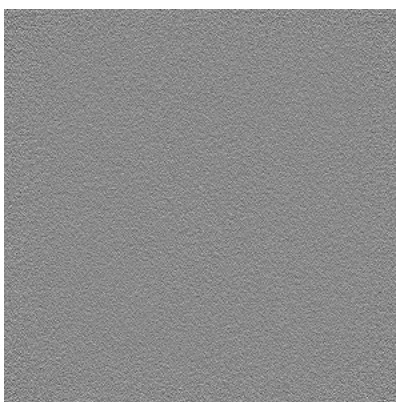


Z Index: 294

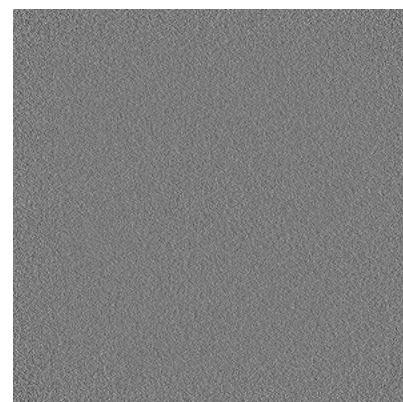
6.3.2 Raw map



X Index: 0



Y Index: 0

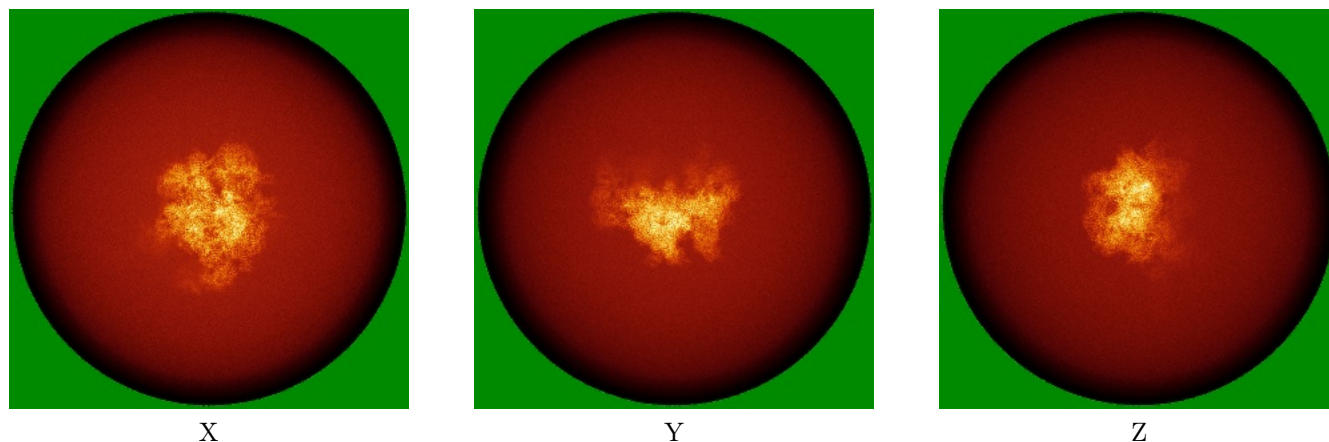


Z Index: 0

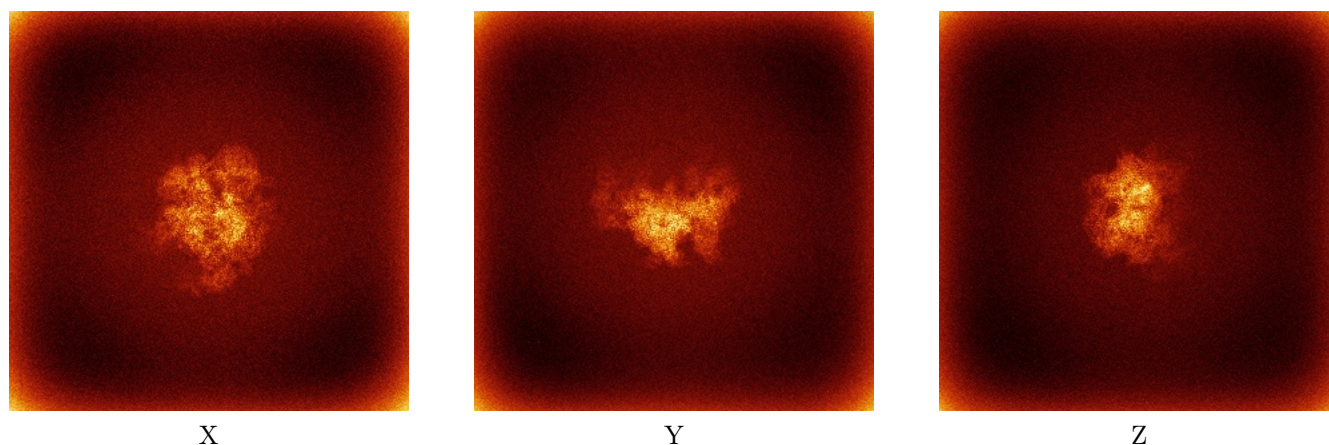
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map



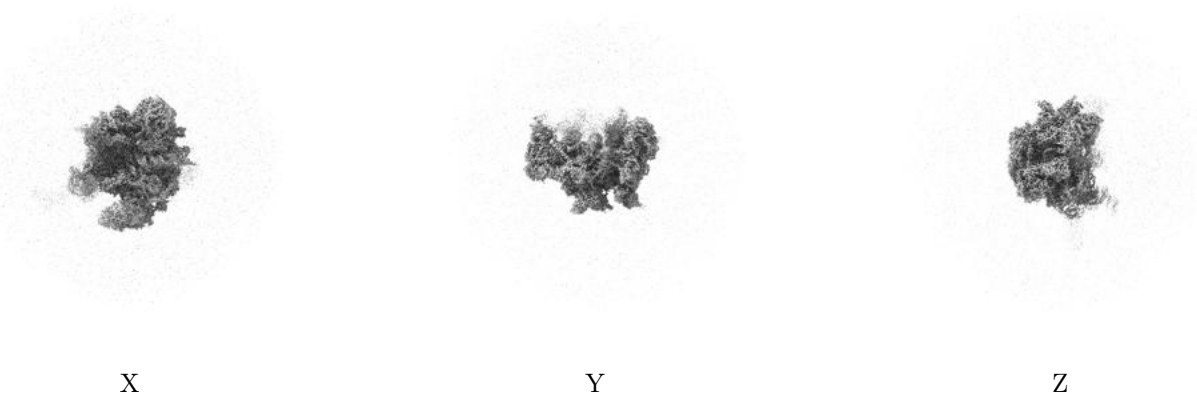
6.4.2 Raw map



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

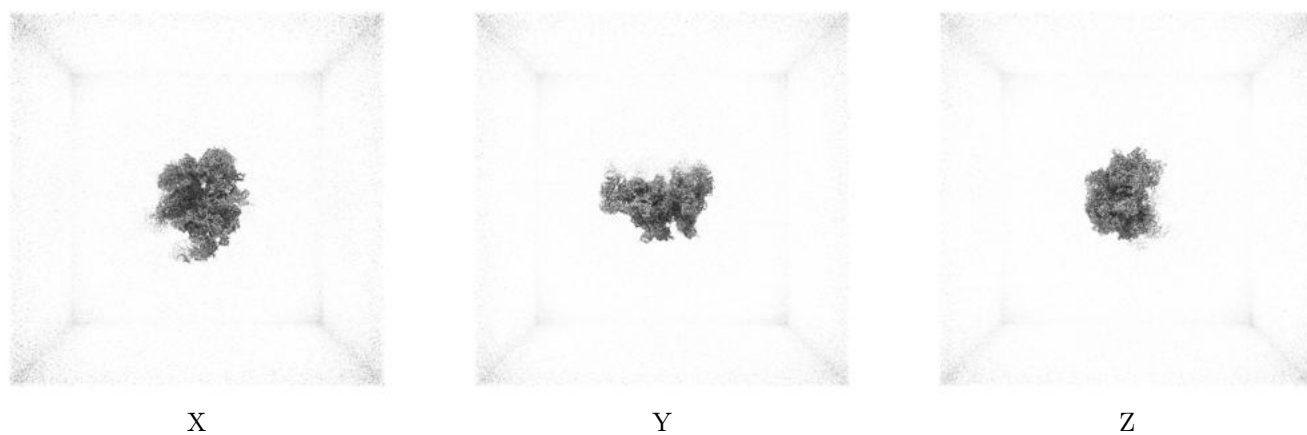
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.3. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

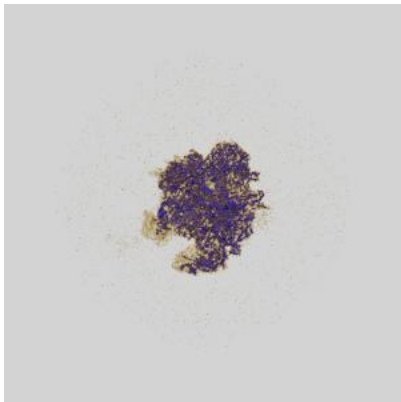
6.6 Mask visualisation [i](#)

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

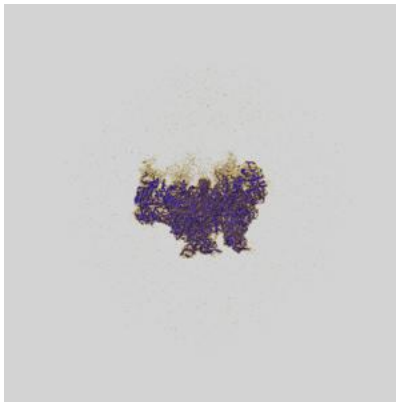
A mask typically either:

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

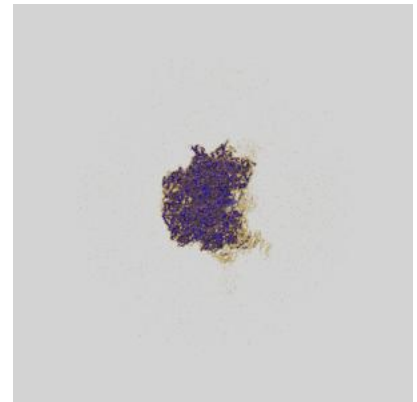
6.6.1 emd_18461_msk_1.map [i](#)



X



Y

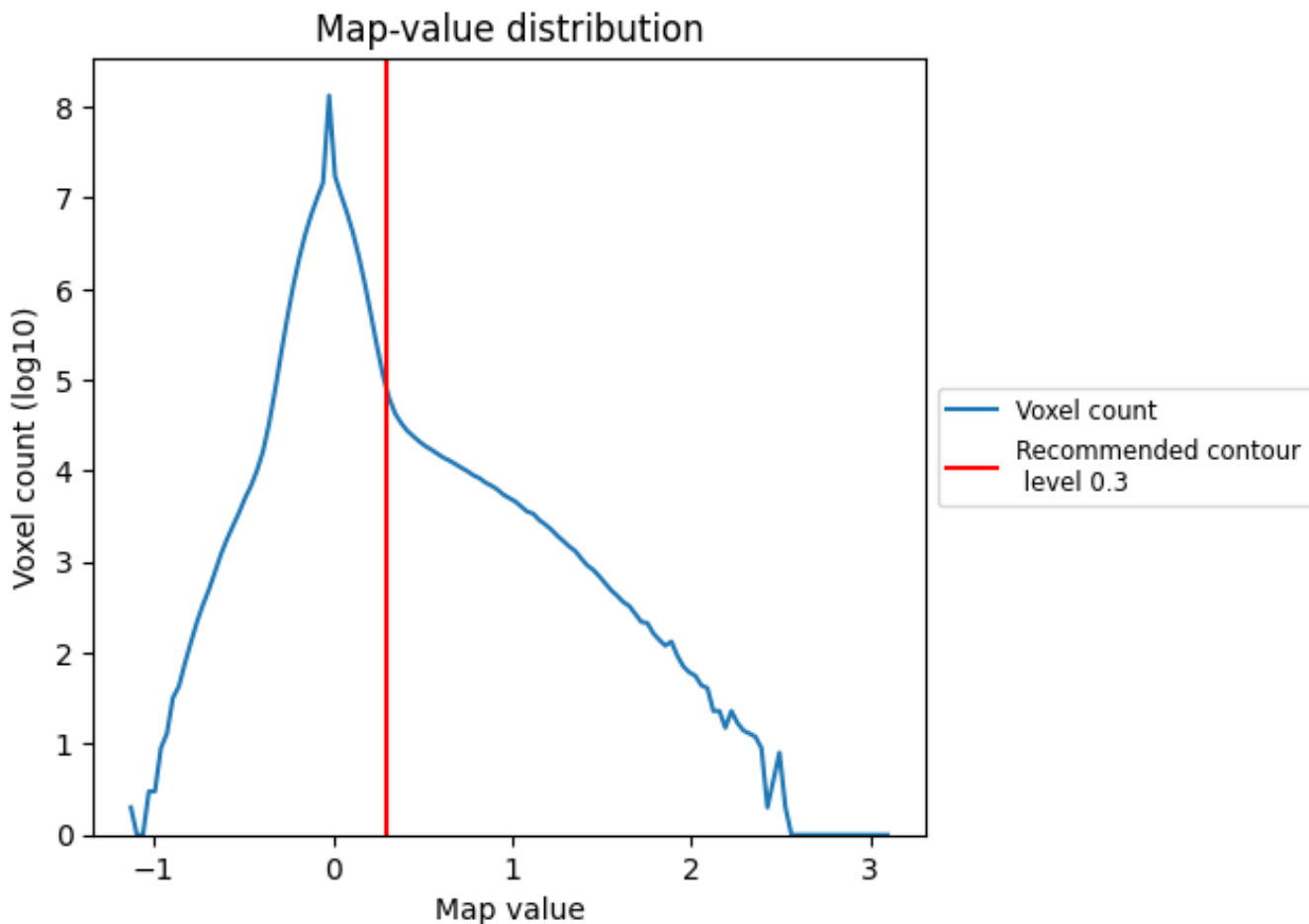


Z

7 Map analysis [i](#)

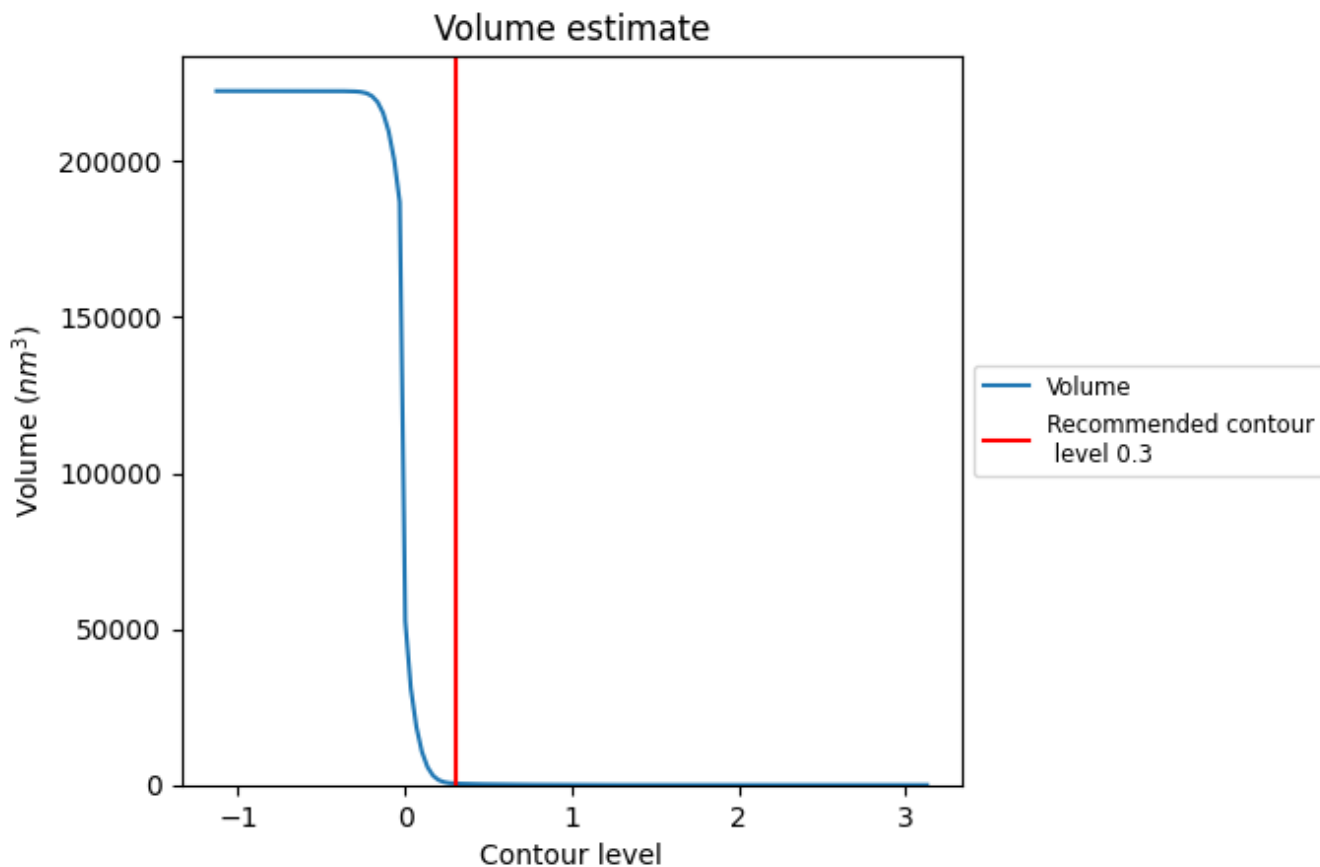
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

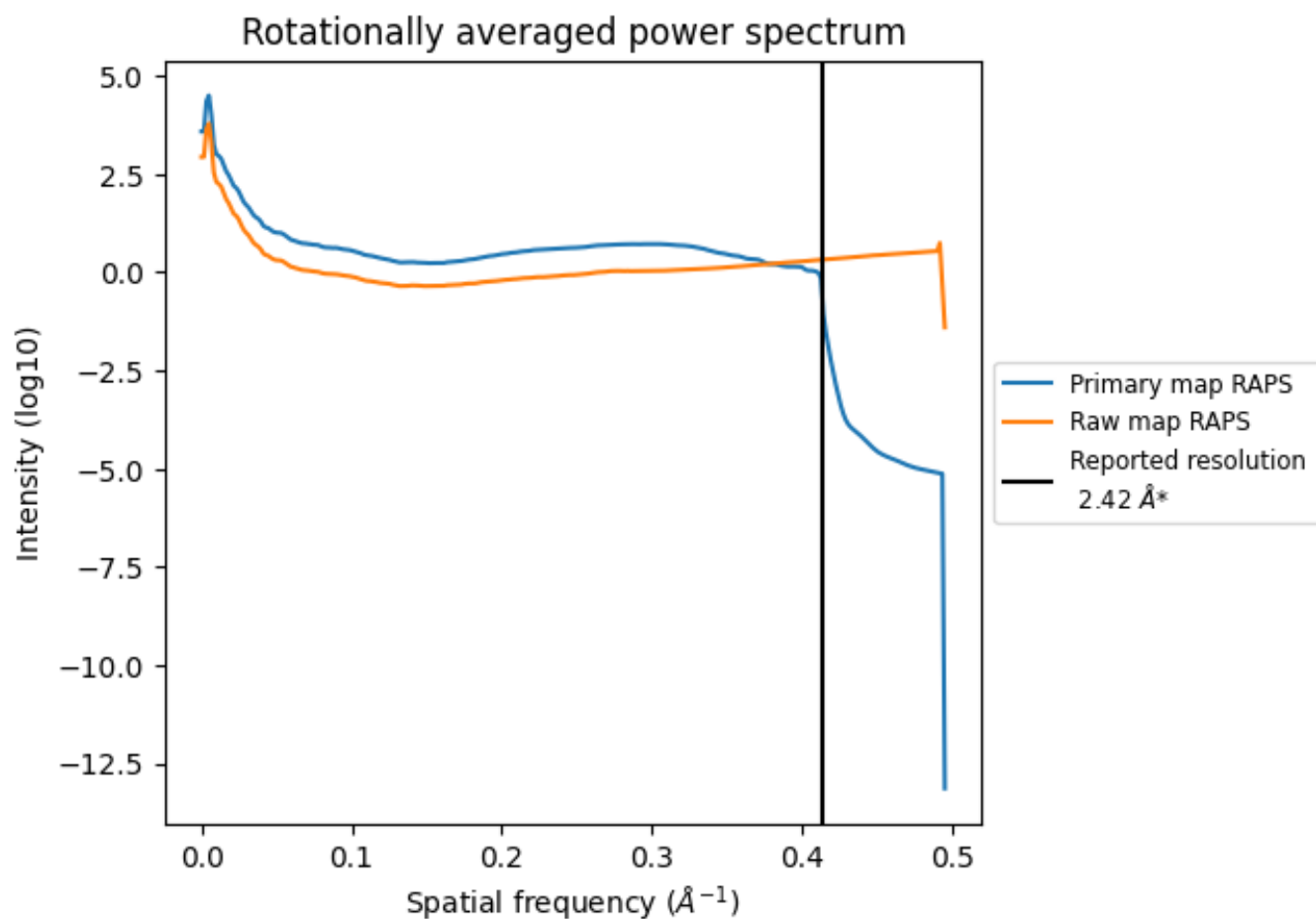
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 458 nm^3 ; this corresponds to an approximate mass of 414 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](#)

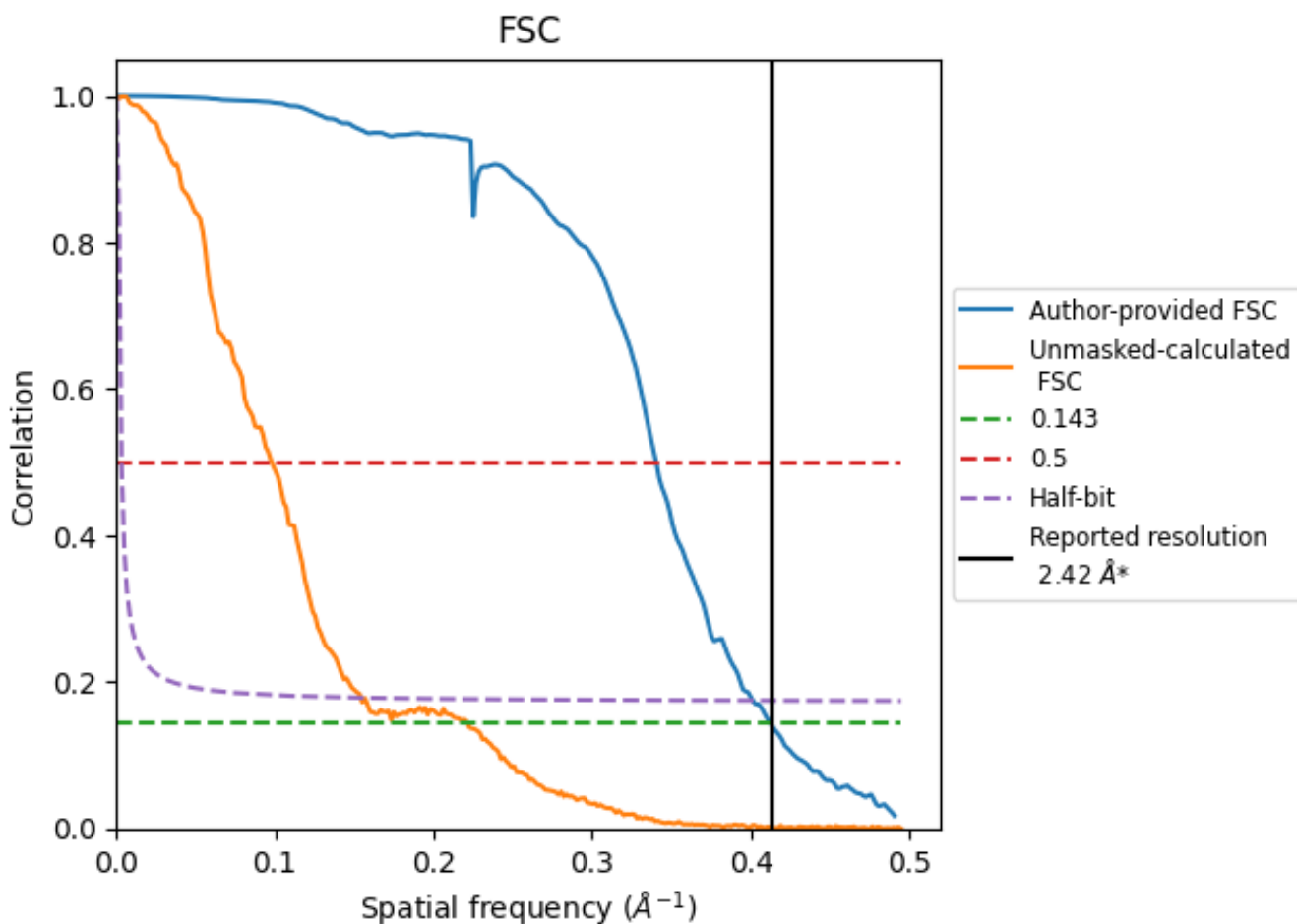


*Reported resolution corresponds to spatial frequency of 0.413 Å⁻¹

8 Fourier-Shell correlation [i](#)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.413 Å⁻¹

8.2 Resolution estimates [i](#)

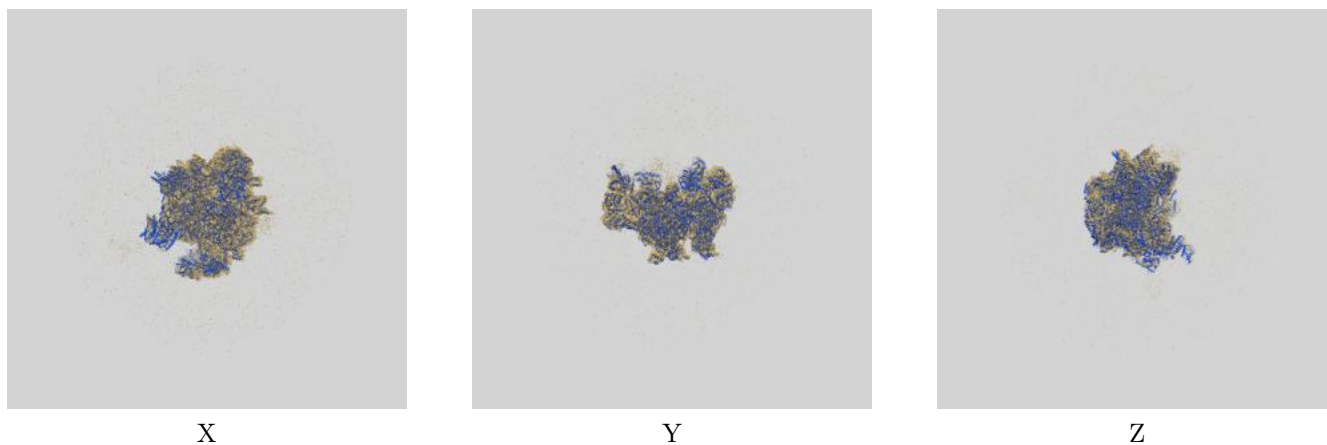
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.42	-	-
Author-provided FSC curve	2.42	2.94	2.49
Unmasked-calculated*	4.51	10.21	6.49

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.51 differs from the reported value 2.42 by more than 10 %

9 Map-model fit [i](#)

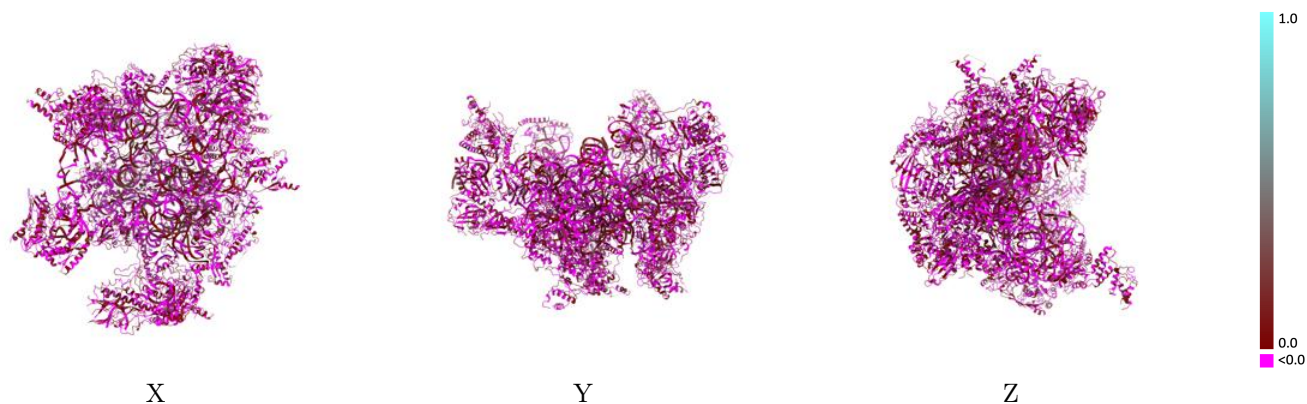
This section contains information regarding the fit between EMDB map EMD-18461 and PDB model 8QU5. Per-residue inclusion information can be found in section 3 on page 14.

9.1 Map-model overlay [i](#)



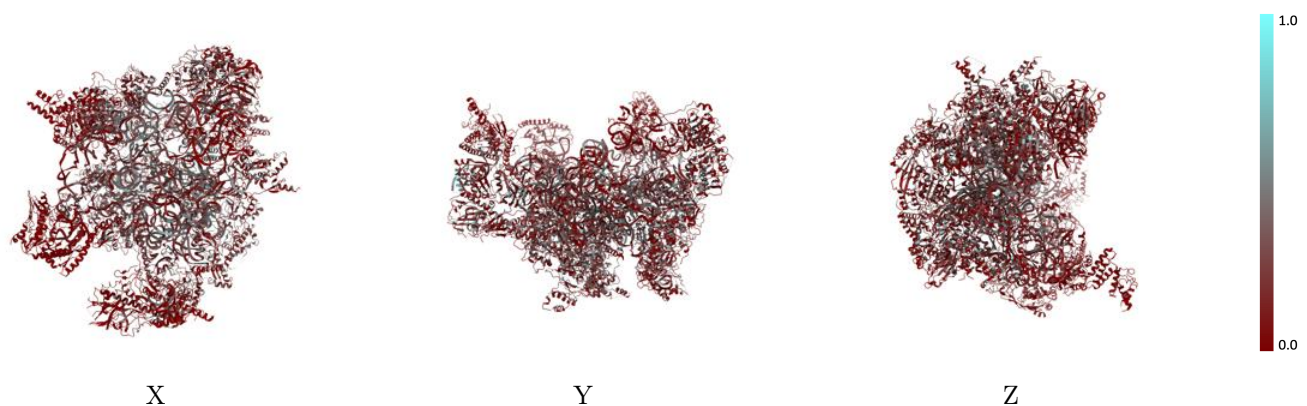
The images above show the 3D surface view of the map at the recommended contour level 0.3 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



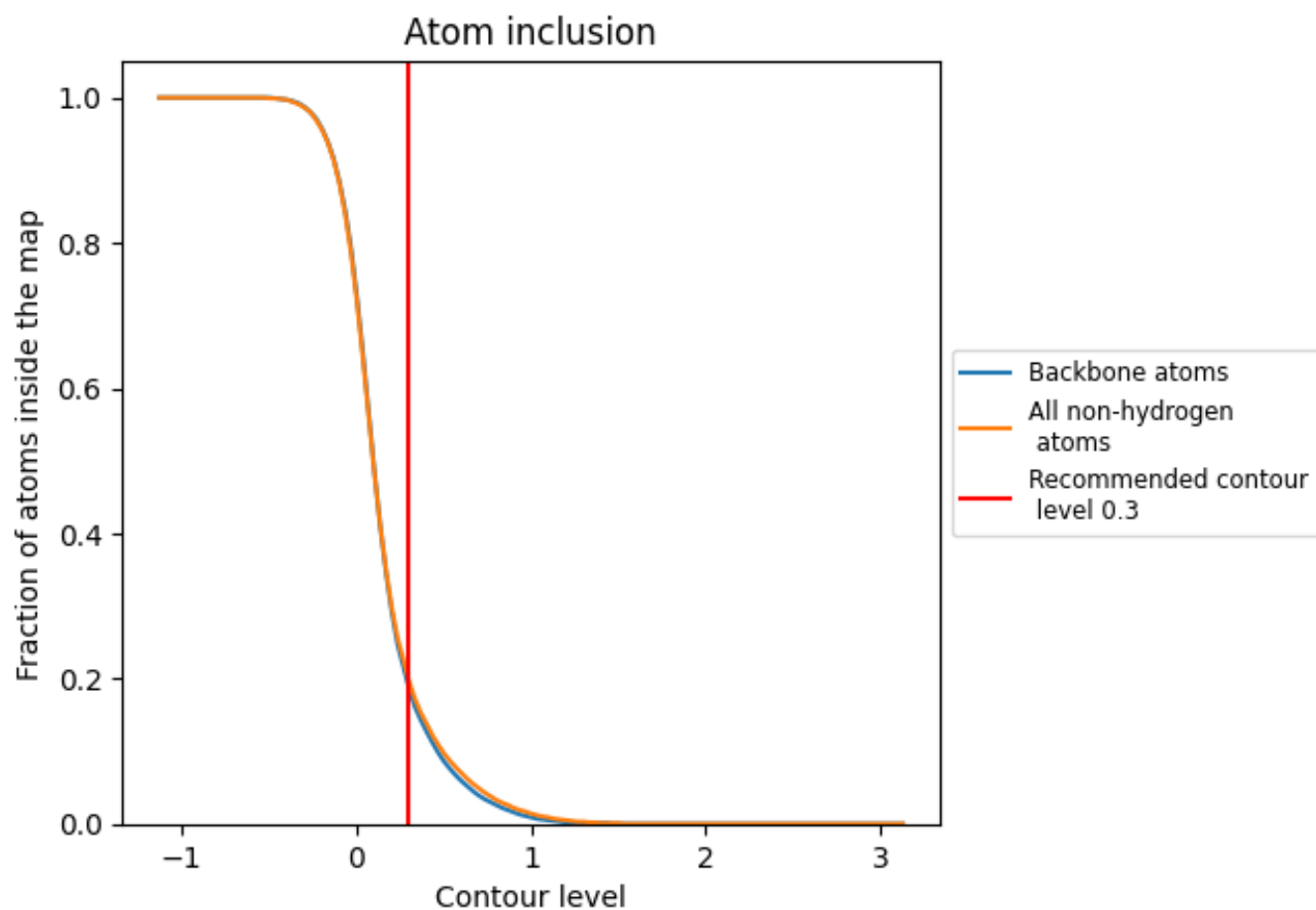
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.3).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 19% of all backbone atoms, 20% 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 (0.3) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.1970	 0.0060
0	 0.1960	 -0.0140
1	 0.2020	 -0.0110
2	 0.2820	 0.0440
3	 0.2320	 0.0000
5	 0.1690	 0.0150
6	 0.2110	 0.0060
7	 0.1930	 0.0130
8	 0.0730	 0.0040
9	 0.1970	 0.0150
A	 0.2580	 0.0320
B	 0.2290	 0.0200
D	 0.0220	 0.0070
E	 0.1980	 -0.0250
F	 0.2600	 -0.0090
H	 0.1460	 -0.0190
I	 0.0560	 0.0040
J	 0.0070	 0.0030
K	 0.2150	 -0.0060
L	 0.1020	 -0.0640
M	 0.2250	 -0.0310
N	 0.1640	 -0.0080
O	 0.2070	 -0.0520
P	 0.1900	 -0.0150
Q	 0.1660	 -0.0370
R	 0.2270	 -0.0420
S	 0.2050	 -0.0190
T	 0.2510	 -0.0010
U	 0.2230	 0.0390
V	 0.1770	 0.0240
W	 0.2290	 -0.0200
X	 0.1950	 -0.0000
Y	 0.2480	 0.0210
Z	 0.2190	 0.0210
a	 0.1970	 0.0260



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Chain	Atom inclusion	Q-score
b	 0.2510	 -0.0080
c	 0.2040	 0.0070
d	 0.1610	 0.0150
e	 0.0390	 0.0270
f	 0.0920	 0.0030
g	 0.2280	 0.0070
h	 0.1590	 -0.0190
i	 0.2210	 -0.0350
j	 0.2090	 -0.0090
k	 0.0700	 0.0420
l	 0.0580	 0.0410
m	 0.0110	 0.0130
o	 0.2200	 0.0320
p	 0.1640	 -0.0030
q	 0.1510	 -0.0160
r	 0.1930	 -0.0190
s	 0.2120	 -0.0100
t	 0.0000	 0.0050
u	 0.0810	 -0.0080
v	 0.0400	 -0.0020
w	 0.0170	 0.0150