



Full wwPDB EM Validation Report ⓘ

Nov 21, 2022 – 03:35 PM EST

PDB ID : 8ETG
EMDB ID : EMD-24397
Title : Fkbp39 associated 60S nascent ribosome State 3
Authors : Zhou, X.; Bilokapic, S.; Deshmukh, A.A.; Halic, M.
Deposited on : 2022-10-17
Resolution : 3.40 Å (reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

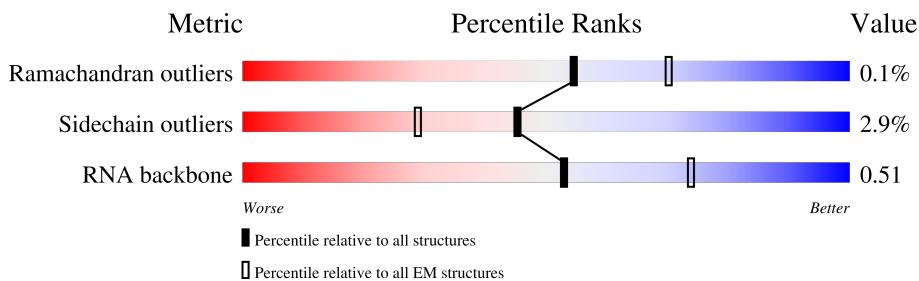
EMDB validation analysis : 0.0.1.dev43
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.2

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 3.40 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.





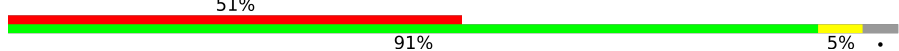


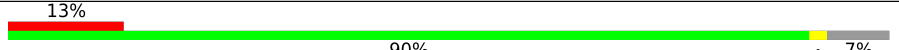
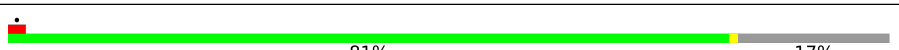
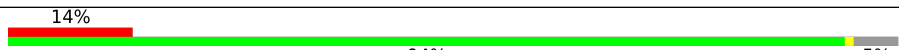
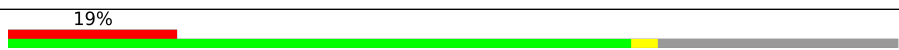


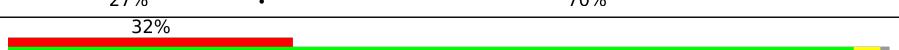
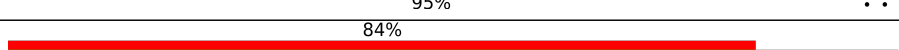
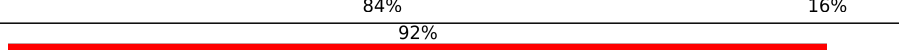


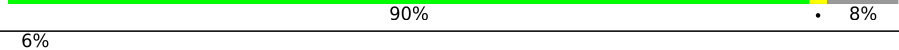
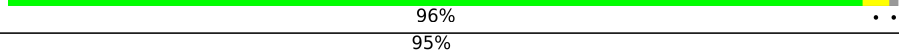
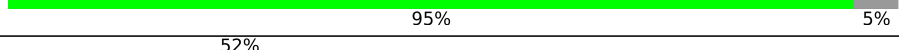




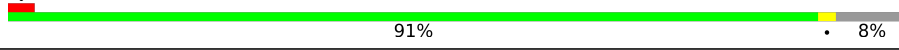
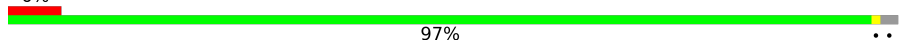
Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

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	1	3497	
2	2	165	
3	3	302	
4	A	295	
5	B	388	
6	C	363	
7	D	578	
8	E	195	

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Mol	Chain	Length	Quality of chain
9	F	250	
10	G	259	
11	H	190	
12	K	373	
13	L	208	
14	M	134	
15	N	201	
16	O	197	
17	P	187	
18	Q	187	
19	R	193	
20	S	176	
21	U	117	
22	V	139	
23	W	241	
24	X	141	
25	Y	126	
26	Z	136	
27	a	148	
28	b	642	
29	c	117	
30	d	113	
31	e	127	
32	f	108	
33	g	112	

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Mol	Chain	Length	Quality of chain
34	h	122	
35	i	99	
36	j	91	
37	k	74	
38	m	740	
39	n	607	
40	o	276	
41	p	440	
42	r	260	
43	t	249	
44	u	192	
45	v	209	
46	y	244	
47	T	160	
48	6	300	

2 Entry composition [i](#)

There are 49 unique types of molecules in this entry. The entry contains 99257 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called RNA (1912-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	1	2018	43202	19298	7842	14044	2018	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
1	3196	U	C	conflict	GB 157310483

- Molecule 2 is a RNA chain called RNA (146-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	2	146	3102	1388	547	1021	146	0	0

- Molecule 3 is a protein called Protein mak16.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	3	120	1015	642	190	177	6	0	0

- Molecule 4 is a protein called Ribosome biogenesis protein brx1.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
4	A	196	1015	610	201	204	0	0

- Molecule 5 is a protein called 60S ribosomal protein L3-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	B	334	2653	1682	491	471	9	0	0

- Molecule 6 is a protein called 60S ribosomal protein L4-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	C	359	2795	1765	536	491	3	0	0

- Molecule 7 is a protein called ATP-dependent RNA helicase has1.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
7	D	82	408	244	82	82	0	0

- Molecule 8 is a protein called 60S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	E	145	1126	723	208	192	3	0	0

- Molecule 9 is a protein called 60S ribosomal protein L7-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	F	214	1745	1124	320	298	3	0	0

- Molecule 10 is a protein called 60S ribosomal protein L8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	G	184	1452	934	262	254	2	0	0

- Molecule 11 is a protein called 60S ribosomal protein L9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	H	183	1451	914	266	265	6	0	0

- Molecule 12 is a protein called Putative ribosome biogenesis protein C8F11.04.

Mol	Chain	Residues	Atoms			AltConf	Trace	
			Total	C	N			O
12	K	231	1145	683	231	231	0	0

- Molecule 13 is a protein called 60S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	L	118	Total	C	N	O	S	0	0
			962	603	204	154	1		

- Molecule 14 is a protein called 60S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	M	124	Total	C	N	O	S	0	0
			1000	639	190	167	4		

- Molecule 15 is a protein called 60S ribosomal protein L15-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	N	166	Total	C	N	O	S	0	0
			1406	883	291	229	3		

- Molecule 16 is a protein called 60S ribosomal protein L16-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	O	187	Total	C	N	O	S	0	0
			1483	956	281	242	4		

- Molecule 17 is a protein called 60S ribosomal protein L17-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	P	136	Total	C	N	O	S	0	0
			1080	690	196	191	3		

- Molecule 18 is a protein called 60S ribosomal protein L18-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	Q	130	Total	C	N	O	S	0	0
			1020	646	196	177	1		

- Molecule 19 is a protein called 60S ribosomal protein L19-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	R	57	Total	C	N	O	S	0	0
			456	282	93	78	3		

- Molecule 20 is a protein called 60S ribosomal protein L20-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	S	174	1434	925	269	235	5	0	0

- Molecule 21 is a protein called 60S ribosomal protein L22.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
21	U	98	484	288	98	98	0	0

- Molecule 22 is a protein called 60S ribosomal protein L23-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	V	129	976	617	179	172	8	0	0

- Molecule 23 is a protein called Ribosome assembly factor mrt4.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
23	W	193	948	562	193	193	0	0

- Molecule 24 is a protein called 60S ribosomal protein L25-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	X	130	1032	658	192	181	1	0	0

- Molecule 25 is a protein called 60S ribosomal protein L26.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	Y	125	998	622	201	173	2	0	0

- Molecule 26 is a protein called 60S ribosomal protein L27-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
26	Z	129	637	378	129	130	0	0

- Molecule 27 is a protein called 60S ribosomal protein L28-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
27	a	94	Total	C	N	O	0	0
			747	474	142	131		

- Molecule 28 is a protein called Probable nucleolar GTP-binding protein 1.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	b	378	Total	C	N	O	0	0
			1875	1119	378	378		

- Molecule 29 is a protein called 60S ribosomal protein L30-2.

Mol	Chain	Residues	Atoms				AltConf	Trace
29	c	66	Total	C	N	O	0	0
			325	193	66	66		

- Molecule 30 is a protein called 60S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	d	94	Total	C	N	O	S	0	0
			787	500	156	128	3		

- Molecule 31 is a protein called 60S ribosomal protein L32-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	e	117	Total	C	N	O	S	0	0
			939	588	190	156	5		

- Molecule 32 is a protein called 60S ribosomal protein L33-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	f	106	Total	C	N	O	S	0	0
			839	534	162	140	3		

- Molecule 33 is a protein called 60S ribosomal protein L34-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
33	g	87	Total	C	N	O	0	0
			428	254	87	87		

- Molecule 34 is a protein called 60S ribosomal protein L35.

Mol	Chain	Residues	Atoms				AltConf	Trace
34	h	121	Total	C	N	O	0	0
			999	629	194	176		

- Molecule 35 is a protein called 60S ribosomal protein L36-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	i	78	Total	C	N	O	S	0	0
			637	394	135	107	1		

- Molecule 36 is a protein called 60S ribosomal protein L37-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	j	71	Total	C	N	O	S	0	0
			563	346	121	90	6		

- Molecule 37 is a protein called 60S ribosomal protein L38-1.

Mol	Chain	Residues	Atoms				AltConf	Trace
37	k	70	Total	C	N	O	0	0
			349	209	70	70		

- Molecule 38 is a protein called Ribosome biogenesis protein erb1.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	m	484	Total	C	N	O	S	0	0
			2881	1757	557	566	1		

- Molecule 39 is a protein called Pescadillo homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	n	416	Total	C	N	O	S	0	0
			3389	2186	587	604	12		

- Molecule 40 is a protein called Uncharacterized RNA-binding protein C1827.05c.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	o	109	Total	C	N	O	S	0	0
			897	579	162	150	6		

- Molecule 41 is a protein called Ribosome biogenesis protein ytm1.

Mol	Chain	Residues	Atoms				AltConf	Trace
41	p	287	Total	C	N	O	0	0
			1416	842	287	287		

- Molecule 42 is a protein called Ribosome biogenesis protein nsa2.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	r	154	Total	C	N	O	S	0	0
			1009	613	208	187	1		

- Molecule 43 is a protein called 60S ribosomal protein L7-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	t	235	Total	C	N	O	S	0	0
			1948	1242	367	334	5		

- Molecule 44 is a protein called Ribosome biogenesis protein rlp24.

Mol	Chain	Residues	Atoms				AltConf	Trace
44	u	99	Total	C	N	O	0	0
			491	293	99	99		

- Molecule 45 is a protein called Nucleolar protein 16.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	v	140	Total	C	N	O	S	0	0
			1143	721	220	199	3		

- Molecule 46 is a protein called Eukaryotic translation initiation factor 6.

Mol	Chain	Residues	Atoms				AltConf	Trace
46	y	225	Total	C	N	O	0	0
			1107	657	225	225		

- Molecule 47 is a protein called 60S ribosomal protein L21-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
47	T	19	Total	C	N	O	0	0
			147	93	26	28		

- Molecule 48 is a RNA chain called RNA (62-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
48	6	62	1315	590	229	434	62	0	0

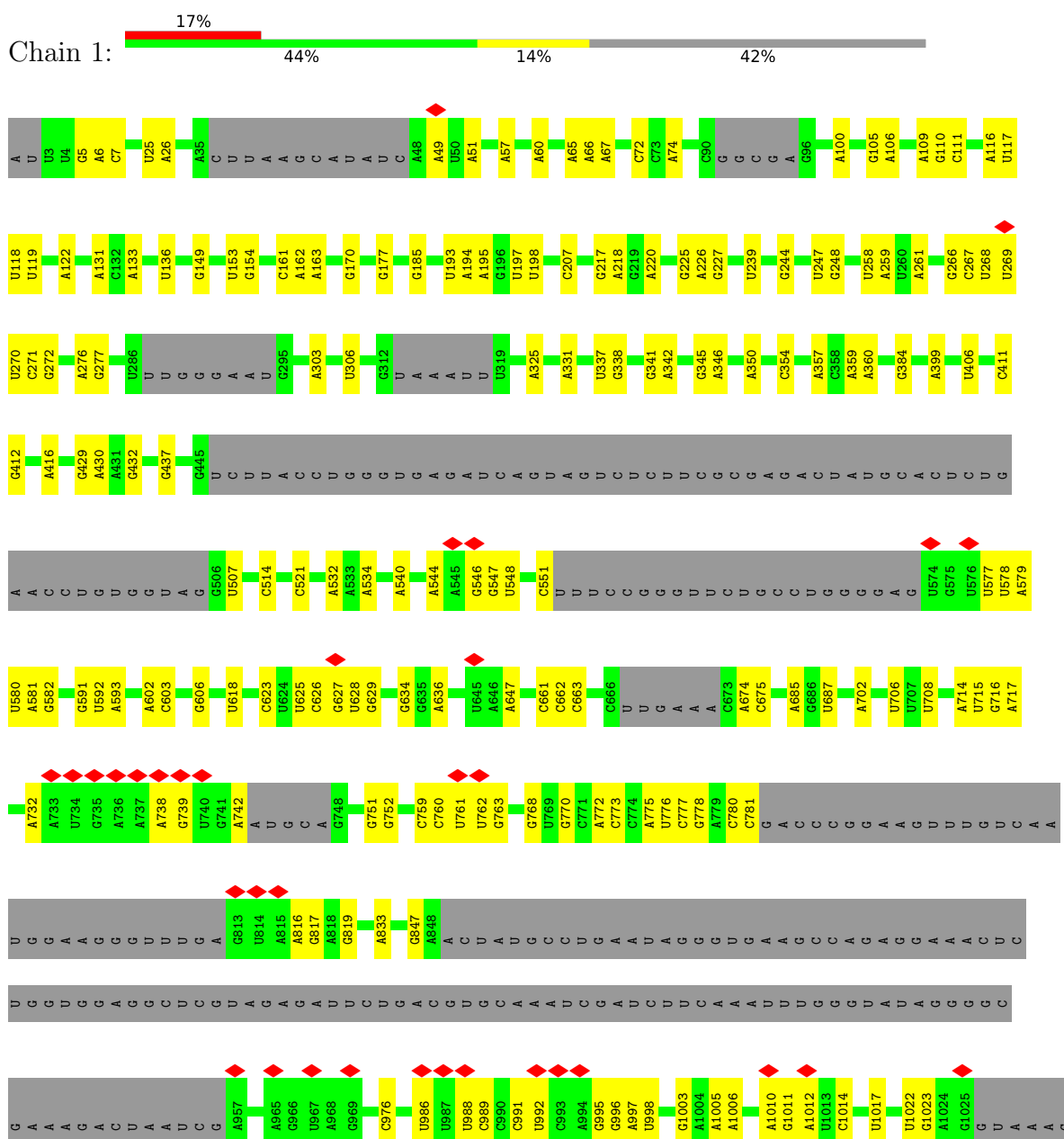
- Molecule 49 is ZINC ION (three-letter code: ZN) (formula: Zn).

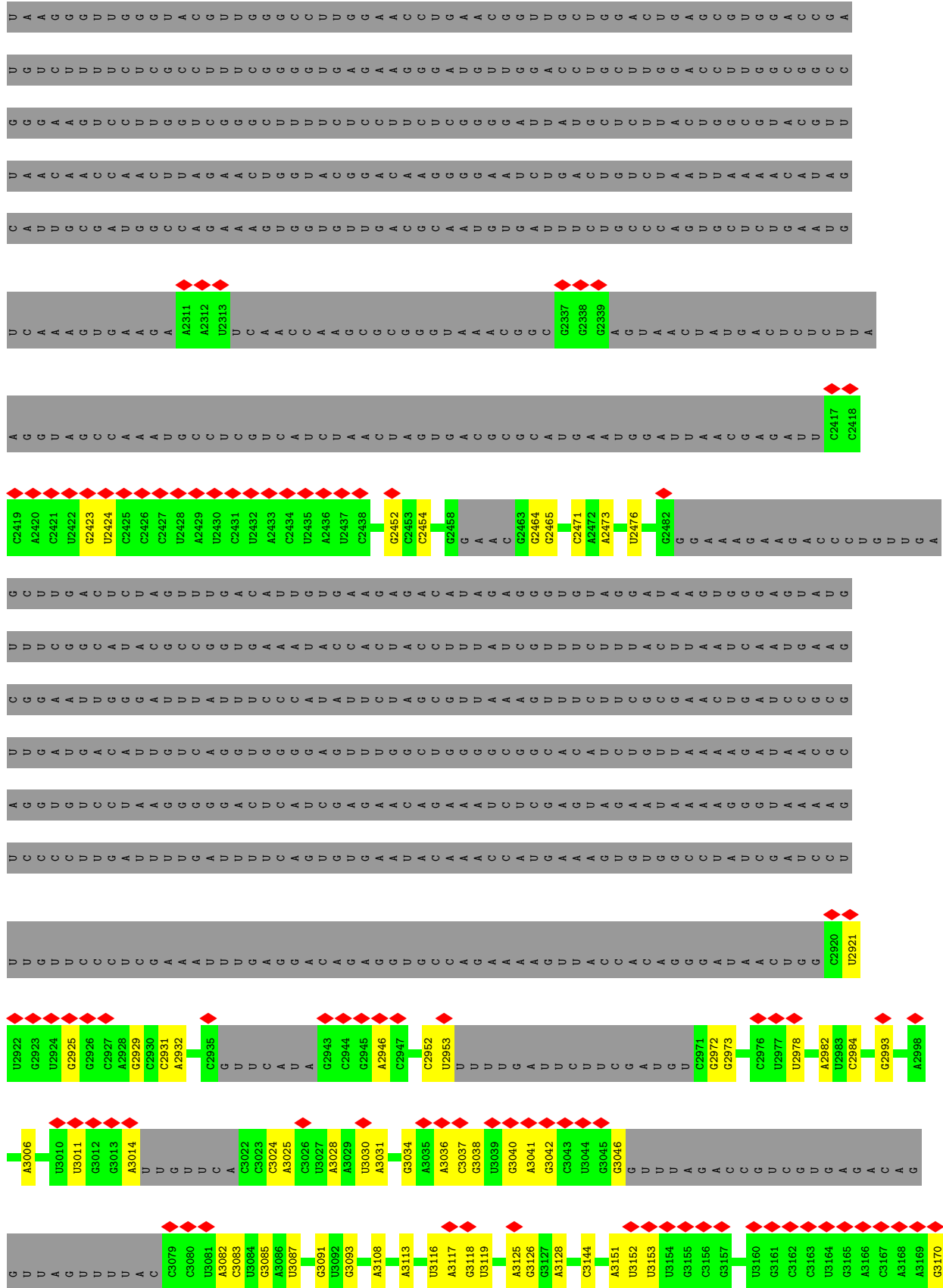
Mol	Chain	Residues	Atoms		AltConf
49	j	1	Total	Zn	0
			1	1	

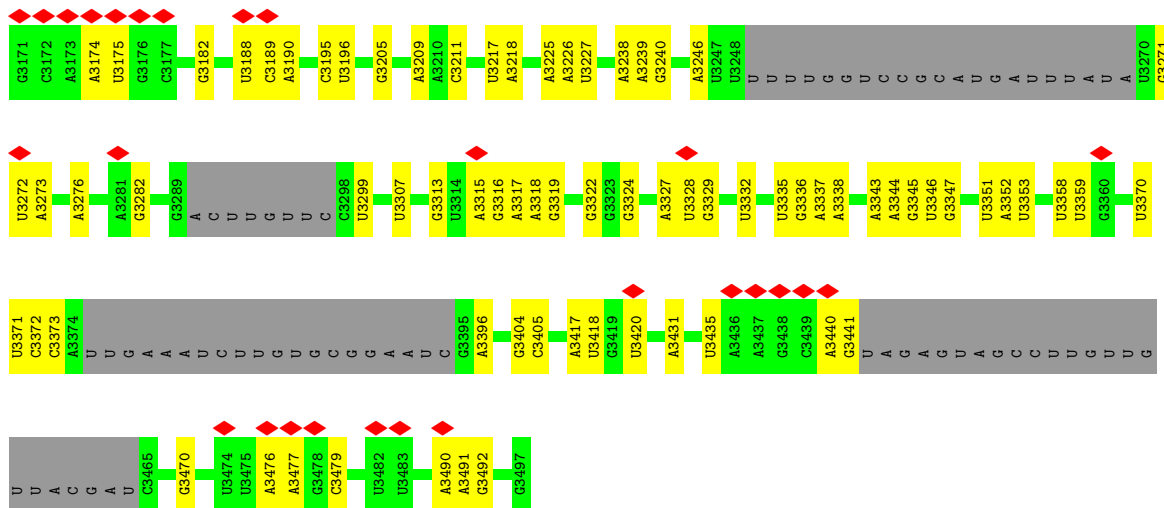
3 Residue-property plots i

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.

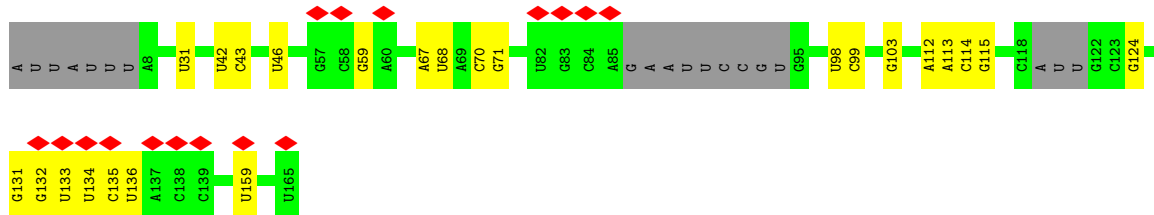
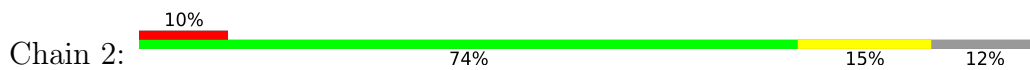
• Molecule 1: RNA (1912-MER)



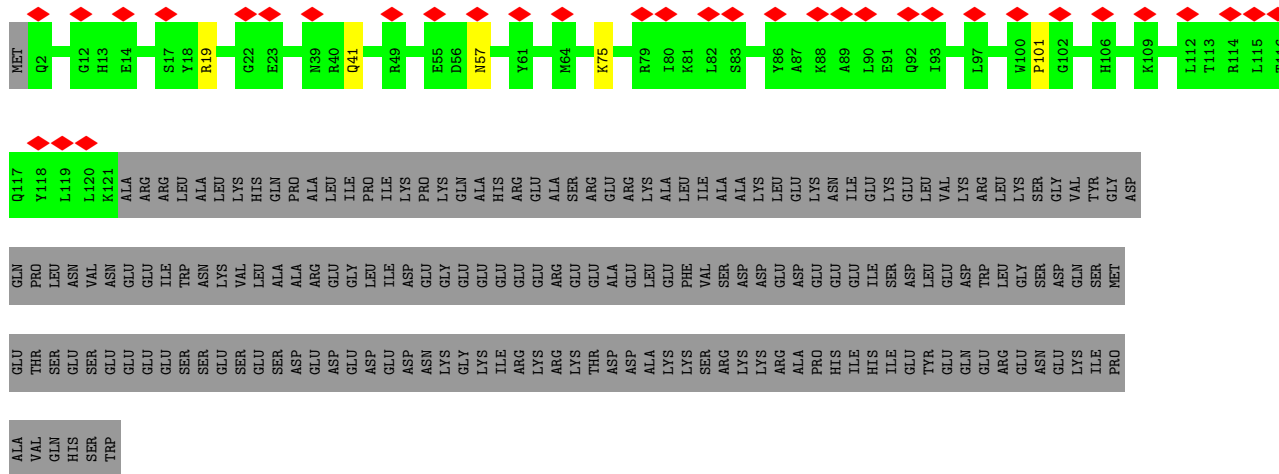




• Molecule 2: RNA (146-MER)

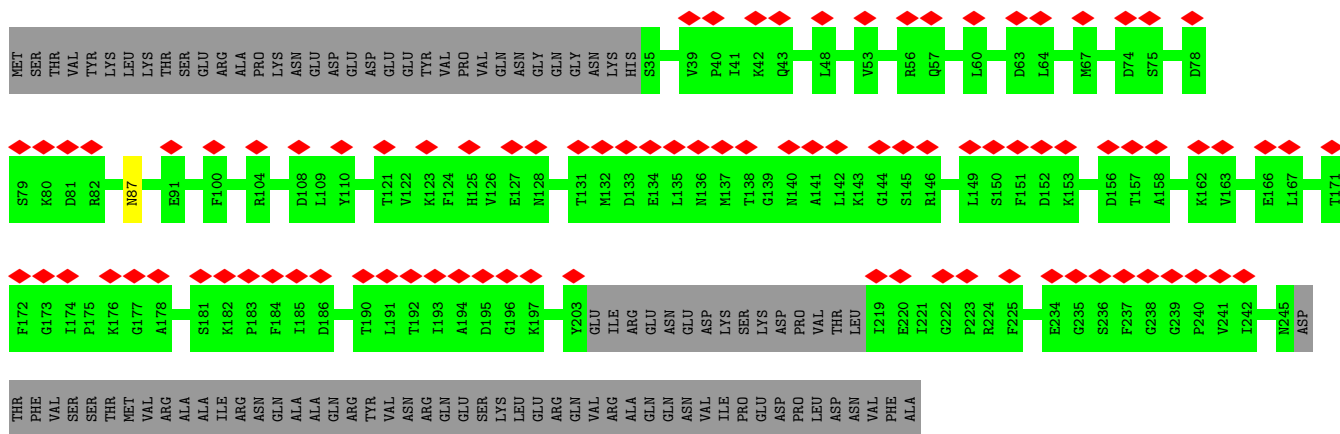


• Molecule 3: Protein mak16

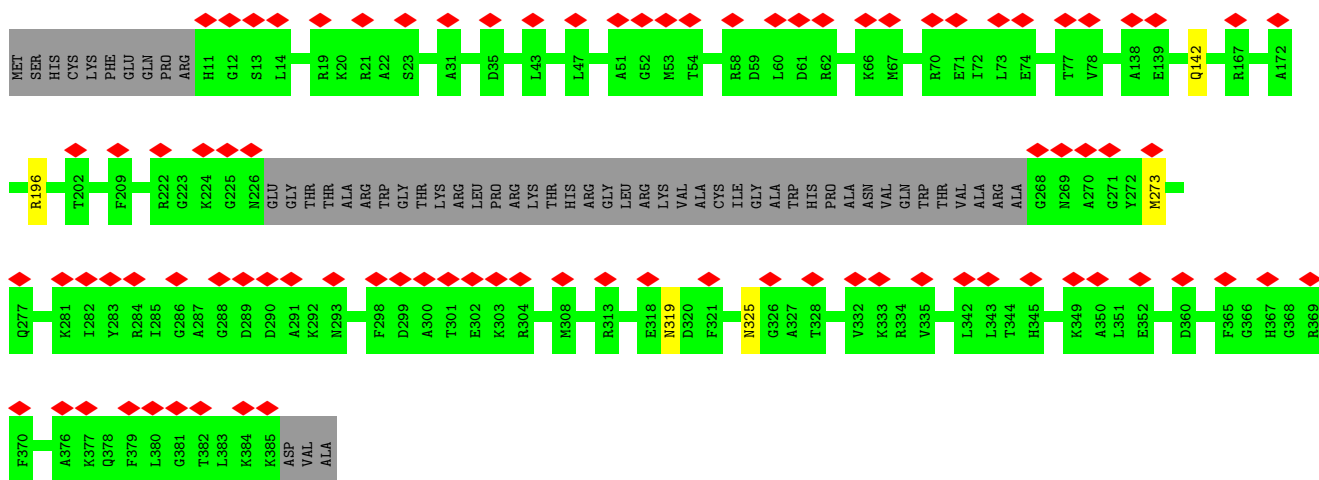
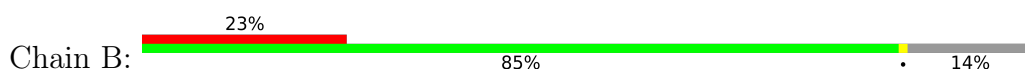


• Molecule 4: Ribosome biogenesis protein brx1

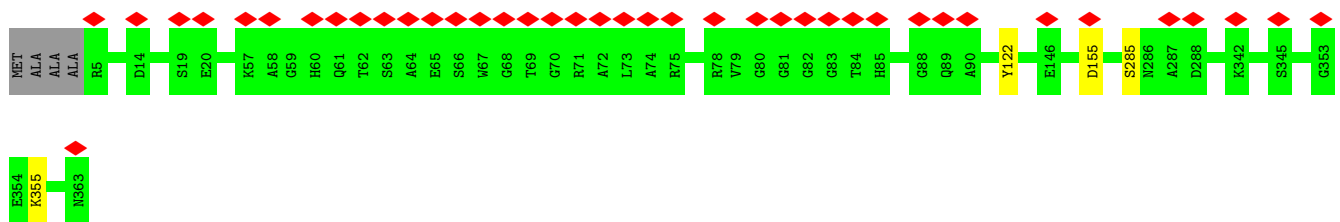




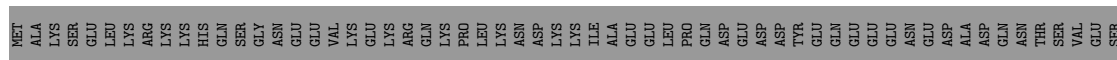
• Molecule 5: 60S ribosomal protein L3-A

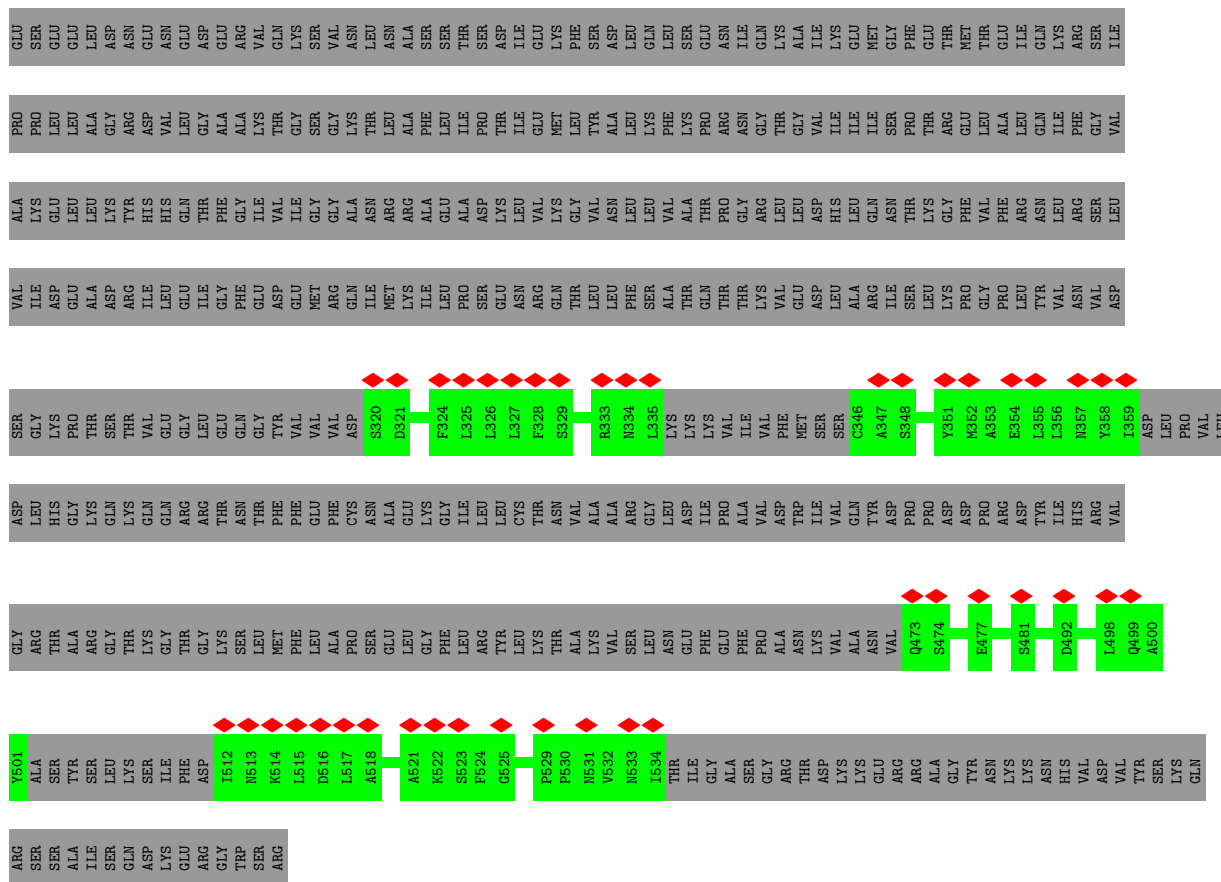


• Molecule 6: 60S ribosomal protein L4-B

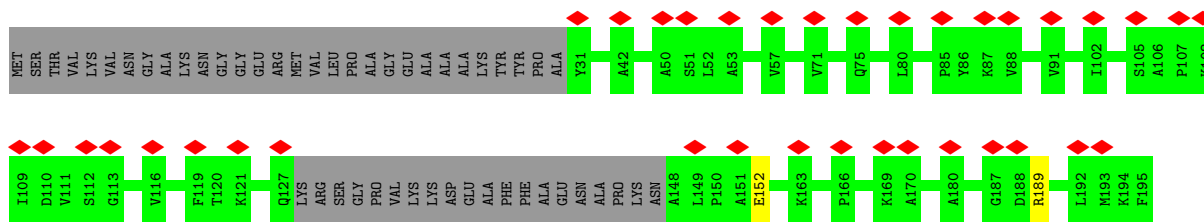
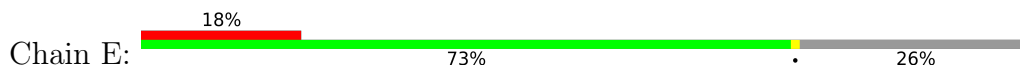


• Molecule 7: ATP-dependent RNA helicase has1

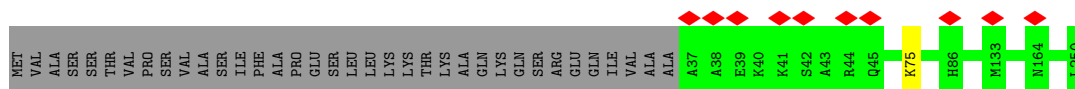
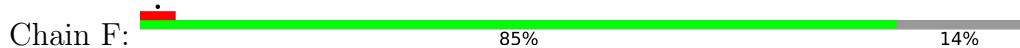




• Molecule 8: 60S ribosomal protein L6

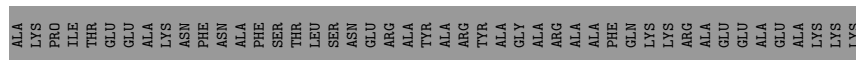
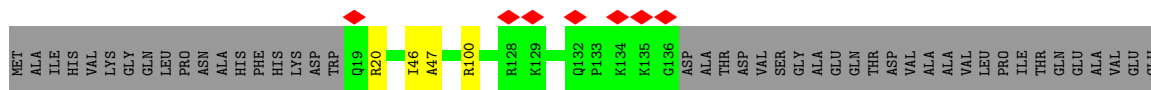


• Molecule 9: 60S ribosomal protein L7-B

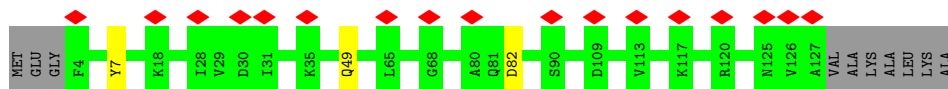
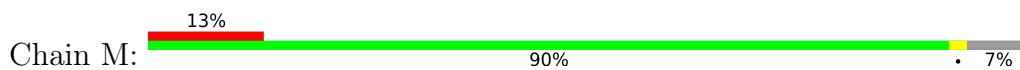


• Molecule 10: 60S ribosomal protein L8

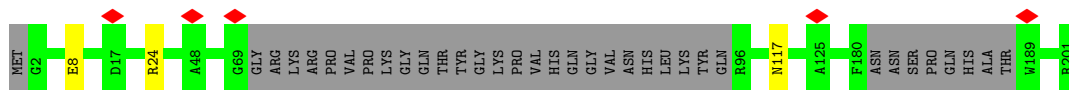
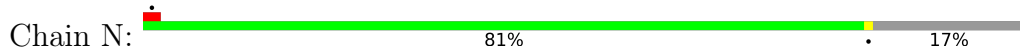




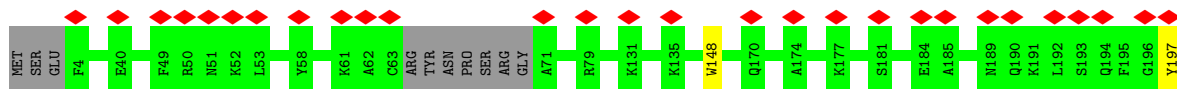
• Molecule 14: 60S ribosomal protein L14



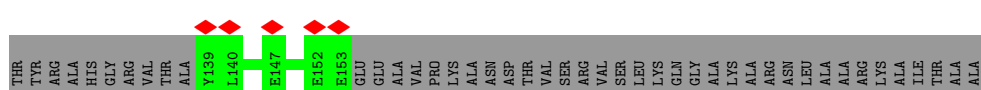
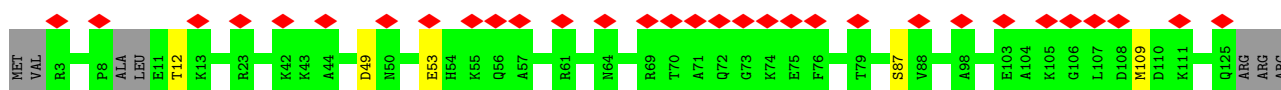
• Molecule 15: 60S ribosomal protein L15-A



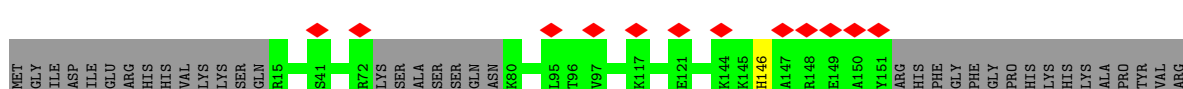
• Molecule 16: 60S ribosomal protein L16-B



• Molecule 17: 60S ribosomal protein L17-A

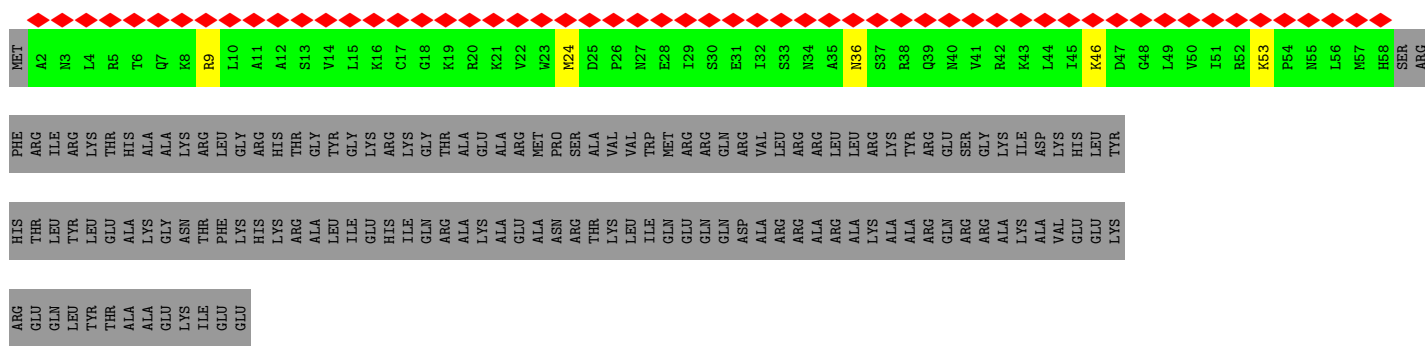


• Molecule 18: 60S ribosomal protein L18-A

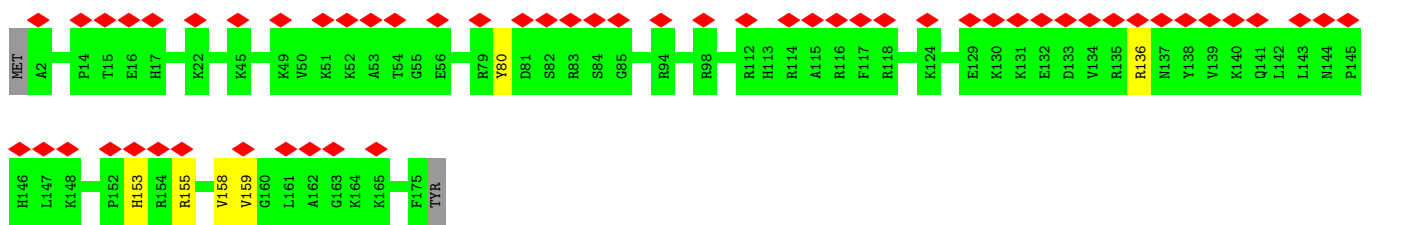
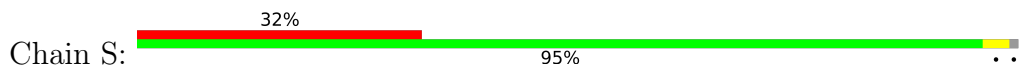


SER
GLU
GLY
ARG
LYS
PHE
GLU
ARG
ALA
ARG
GLY
ARG
ARG
LYS
SER
ARG
ALA
PHE
LYS
VAL

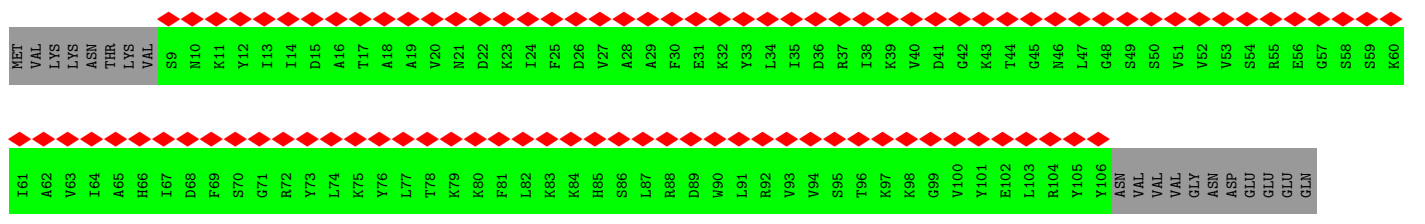
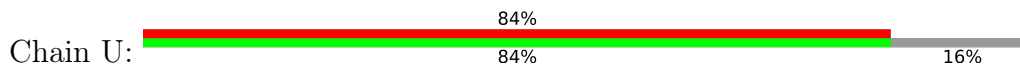
- Molecule 19: 60S ribosomal protein L19-A



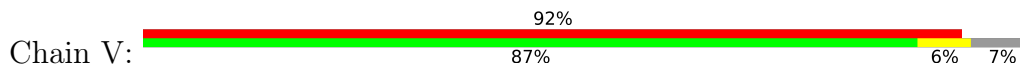
- Molecule 20: 60S ribosomal protein L20-A



- Molecule 21: 60S ribosomal protein L22

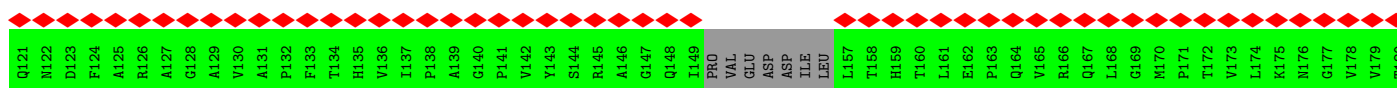
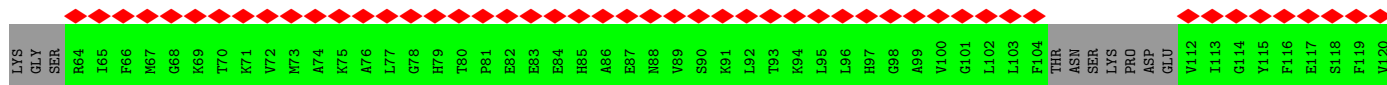
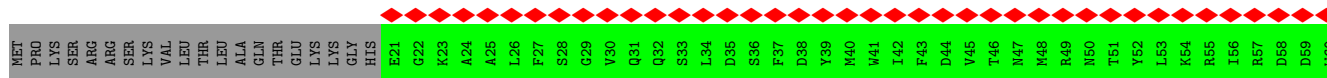
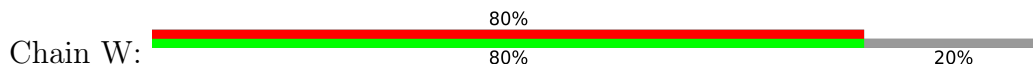


- Molecule 22: 60S ribosomal protein L23-A



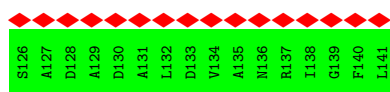
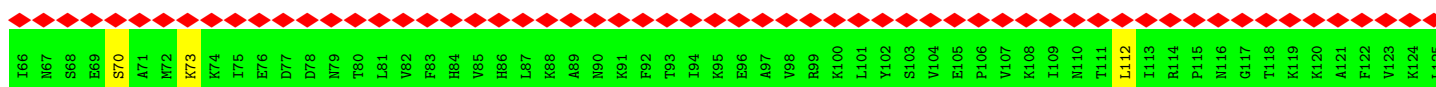
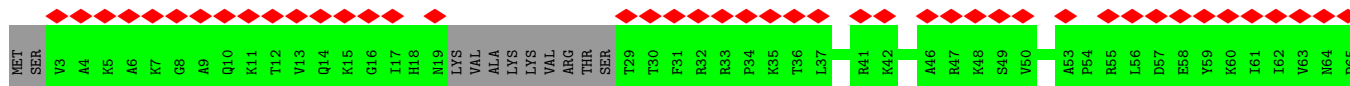
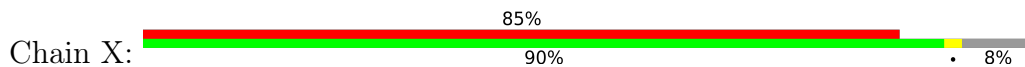


• Molecule 23: Ribosome assembly factor mrt4

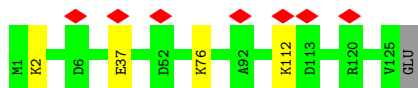


GLU

• Molecule 24: 60S ribosomal protein L25-A

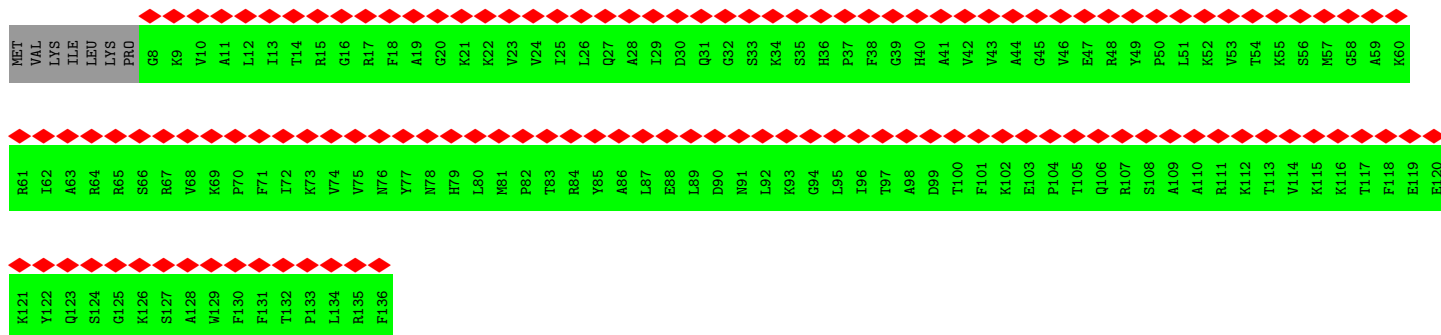


• Molecule 25: 60S ribosomal protein L26

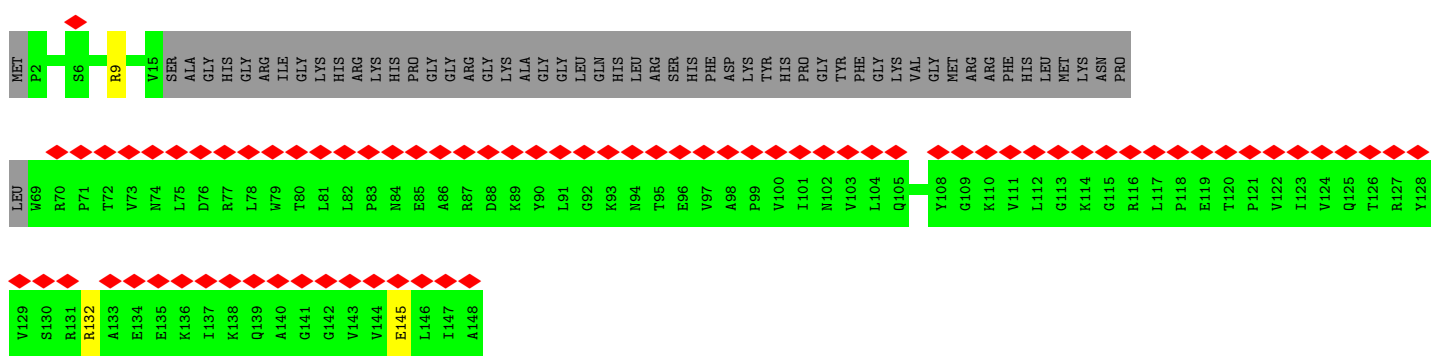


• Molecule 26: 60S ribosomal protein L27-A

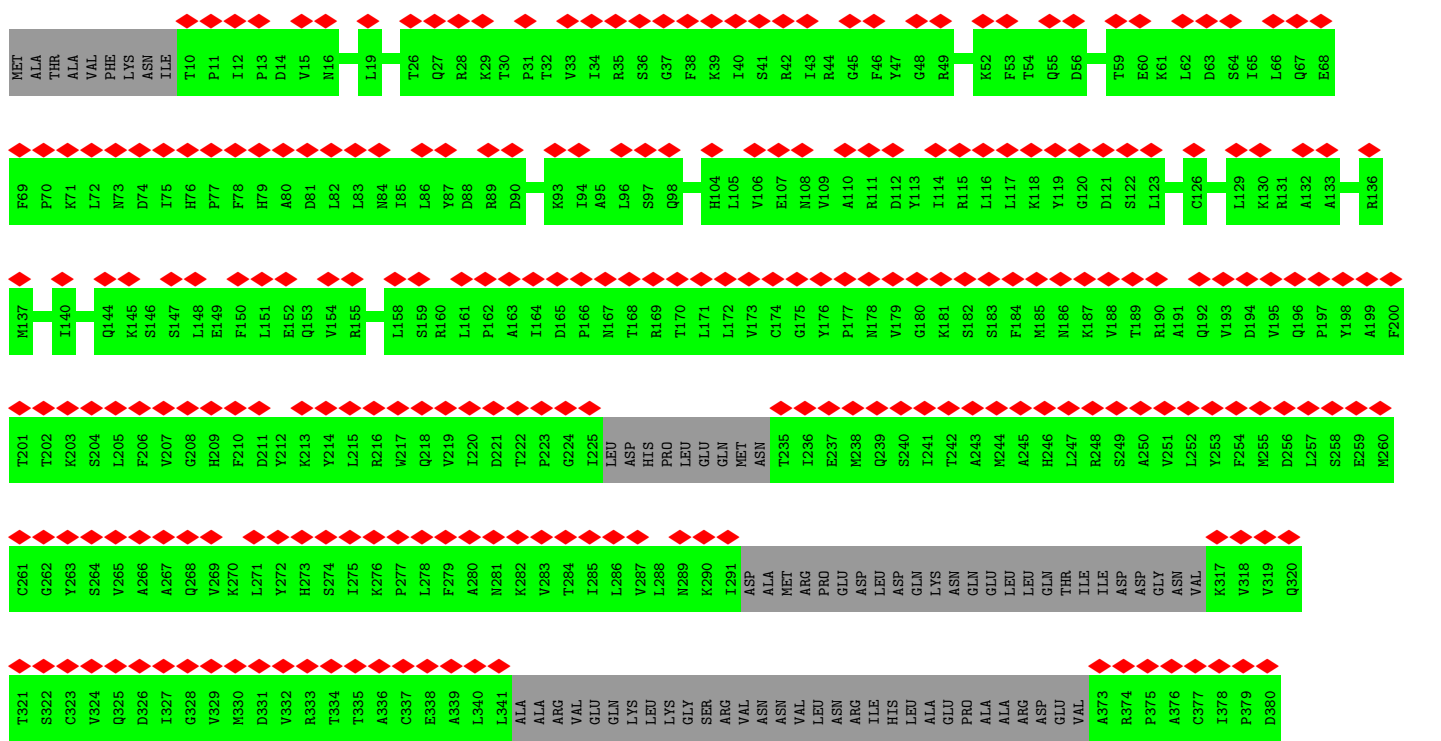


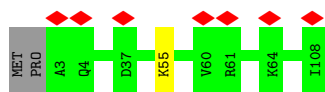


• Molecule 27: 60S ribosomal protein L28-A

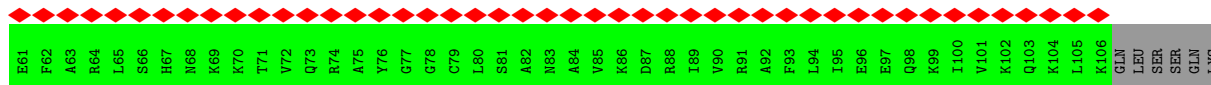
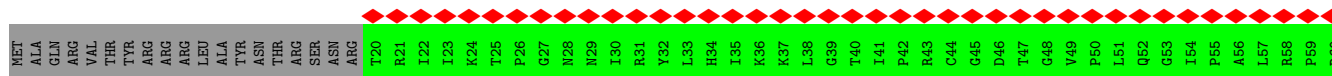
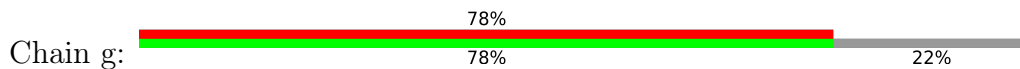


• Molecule 28: Probable nucleolar GTP-binding protein 1

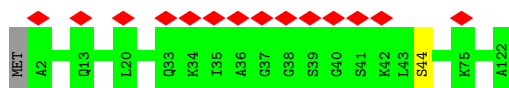




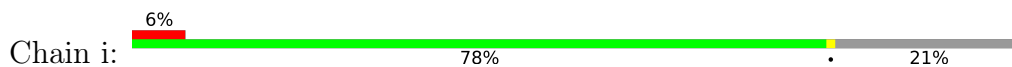
- Molecule 33: 60S ribosomal protein L34-A



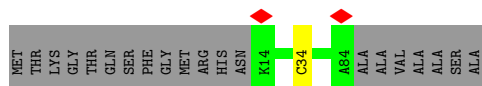
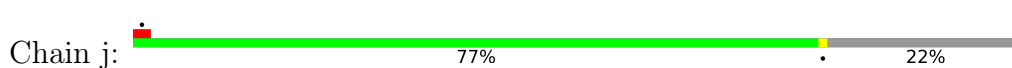
- Molecule 34: 60S ribosomal protein L35



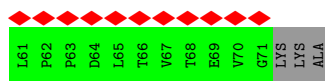
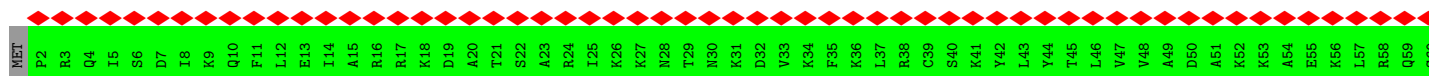
- Molecule 35: 60S ribosomal protein L36-B



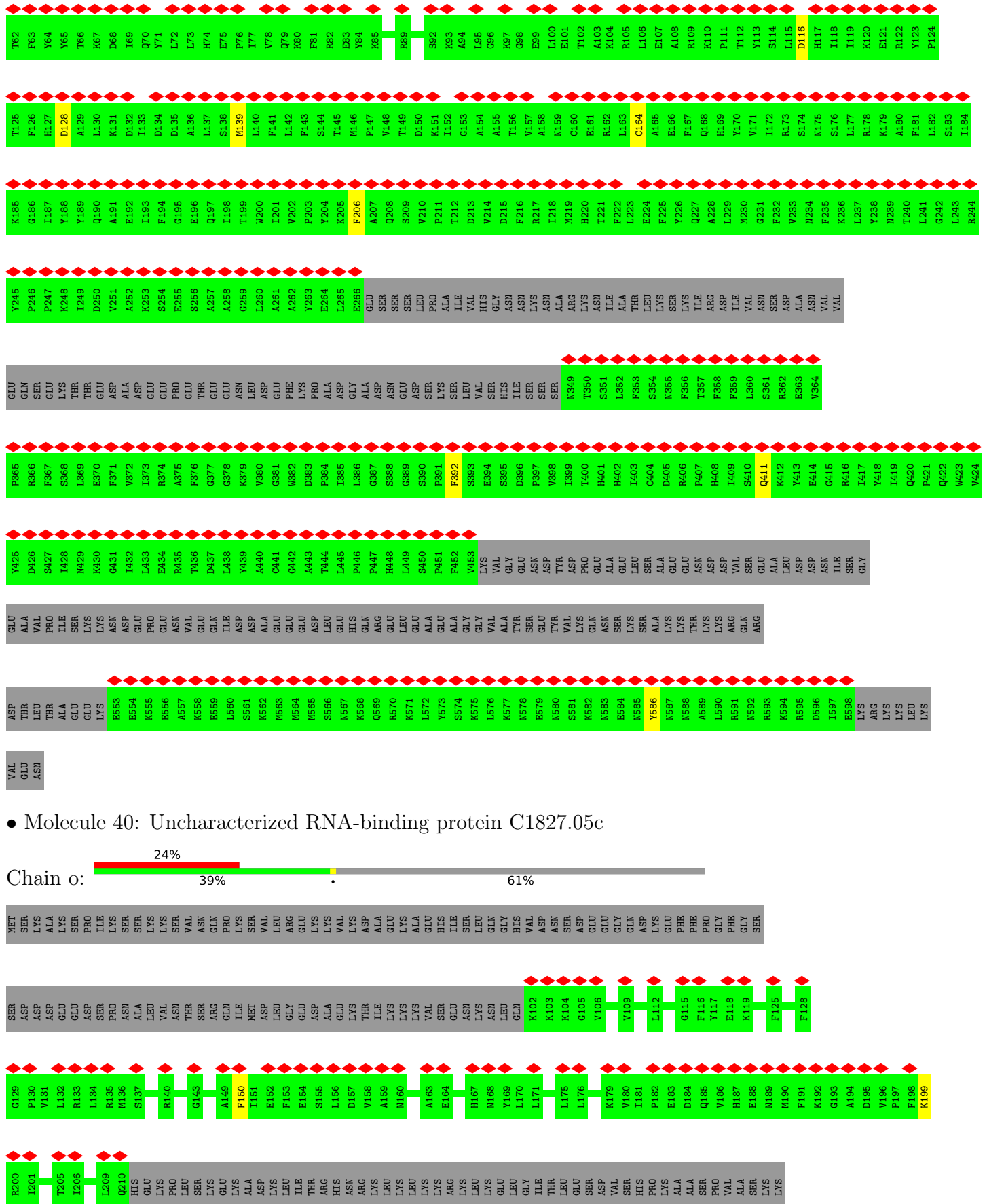
- Molecule 36: 60S ribosomal protein L37-B



- Molecule 37: 60S ribosomal protein L38-1



- Molecule 38: Ribosome biogenesis protein erb1



● Molecule 40: Uncharacterized RNA-binding protein C1827.05c



SER
SER
LYS
LYS
LYS
ASN
LYS
LYS
VAL
ALA
ALA
HIS
LYS

• Molecule 41: Ribosome biogenesis protein ytm1

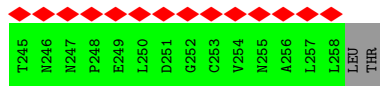
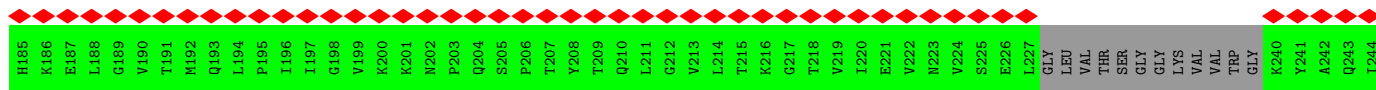


MET	ASP	ALA	GLN	GLN	SER	ALA	PRO	SER	GLY	GLN	VAL	ALA	ALA	HIS	LYS
GLN	GLY	LEU	LEU	LYS	THR	THR	THR	LEU	ASP	GLN	TYR	ILE	VAL	ARG	ASN
GLN	GLY	LEU	LEU	LYS	THR	THR	THR	LEU	ASP	GLN	TYR	ILE	VAL	ARG	ASN
S121	Y122	D123	G124	I125	A126	R127	V128	W129	T130	L131	K132	S133	G134	E135	I136
K136	F137	Q138	S139	T140	G141	G143	P144	S145	L146	K147	S148	A149	S150	L151	H152
I153	P154	N155	Q156	S157	F158	L159	T160	A161	S162	L163	D164	Q165	T166	S167	L168
H169	W170	V171	I172	GLU	GLU	PRO	GLU	PRO	THR	THR	PRO	ASP	PHE	PHE	LEU
VAL	ALA	GLU	LYS	SER	S186	G187	I188	L189	Q190	T191	L192	F193	V194	G195	H196
K197	D198	I199	V200	R201	E202	V203	R204	S205	L206	E207	S208	S209	S210	V211	F212
I213	S214	A215	S216	A217	D218	N219	T220	V221	G222	I223	W224	D225	F226	E227	R228
S229	P230	E231	THR	THR	LEU	GLU	SER	PHE	SER	SER	SER	SER	SER	SER	SER
T300	A258	R259	S260	P261	L262	L264	C265	E266	H268	T269	G270	P271	V272	M273	D274
I275	V276	F277	S278	D279	D280	P281	S282	V283	A284	Y285	S286	V287	G288	Q289	D290
H291	T292	I293	K294	T295	W296	D297	L298	I299	T300	G301	Q302	N303	V304	D305	S306
K307	I308	T309	K310	A311	P312	L313	L314	C315	V316	E317	K318	L319	T320	D321	L322
H323	L324	V325	I326	C327	G328	S329	S330	A331	R332	H333	I334	V335	V336	H337	P338
R339	ALA	GLY	SER	ASP	LYS	ILE	V347	S348	H349	T350	L351	S352	G353	H354	K355
N356	L357	V358	S359	G360	L361	S362	A363	S364	P365	E366	N367	P368	Y369	M370	F371
A372	S373	V374	S375	H376	D377	N378	T379	C380	R381	V382	W383	D384	V385	R386	A387
T388	S389	G390	S391	I392	Y393	T394	I395	S396	R397	A398	GLU	LYS	THR	THR	GLY
SER	SER	GLN	W405	D406	K407	L408	F409	A410	V411	D412	W413	N414	K415	S416	I417
G418	I419	V420	T421	G422	G423	T424	D425	K426	Q427	L428	Q429	T430	M431	Q432	SER
SER	SER	PHE	GLY	LYS	SER	GLU	SER	SER	SER	SER	SER	SER	SER	SER	SER

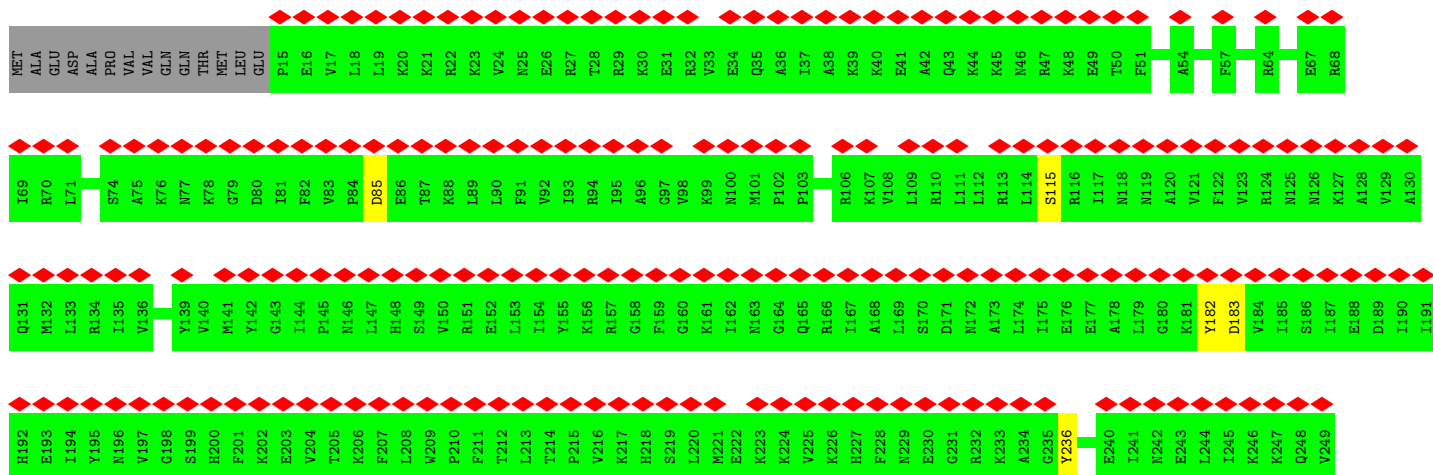
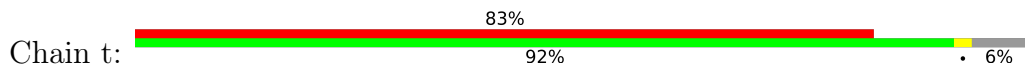
• Molecule 42: Ribosome biogenesis protein nsa2



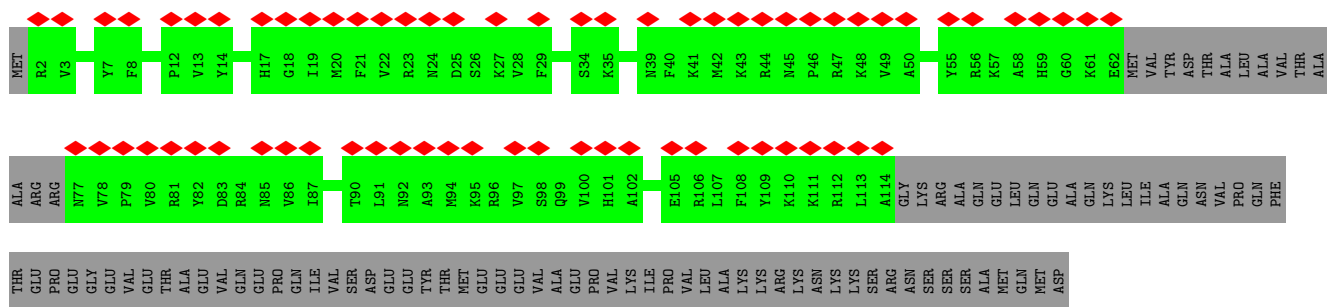
MET	P2	Q3	M4	E5	Y6	S10	K13	H14	G15	R16	R17	F18	D19	H20	E21	E22	R23	K24	R25	K26	K27	A28	A29	R30	E31	A32	H33	D34	A35	S36	L37	Y38	A39	Q40	K41	T42	R43	G44	R45	I46	K46	A47	K48	L49	Y50	Q51	E52	R55	K56	E57	K58	I59	Q60	M61	K62	K63	T64													
I65	K66	Q67	H68	GLU	GLU	ARG	MET	PHE	ASN	VAL	ILE	GLN	ARG	THR	GLY	ASP	ALA	GLN	THR	GLN	THR	PRO	THR	TYR	R25	L150	T151	K152	A153	T154	F155	V156	G157	H33	ALA	LYS	ASP	GLY	GLY	MET	LEU	SER	THR	THR	ARG	ARG	VAL	VAL	LYS	GLN	ARG	ARG	GLU	GLY	ARG	F170	I171	R172	P173	M174	A175	L176	R177	Q178	K179	K180	A181	M182	V183	T184



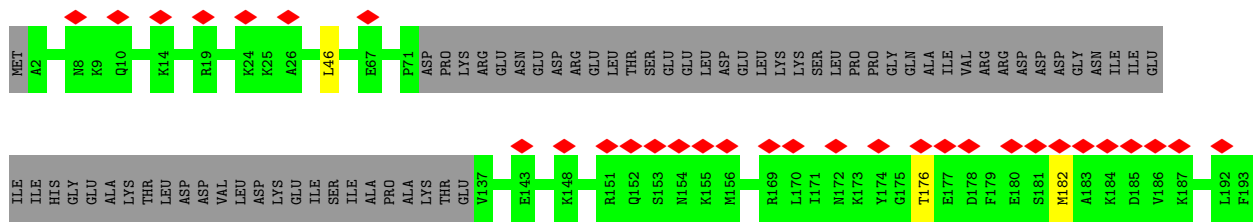
• Molecule 43: 60S ribosomal protein L7-A

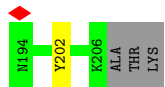


• Molecule 44: Ribosome biogenesis protein rlp24

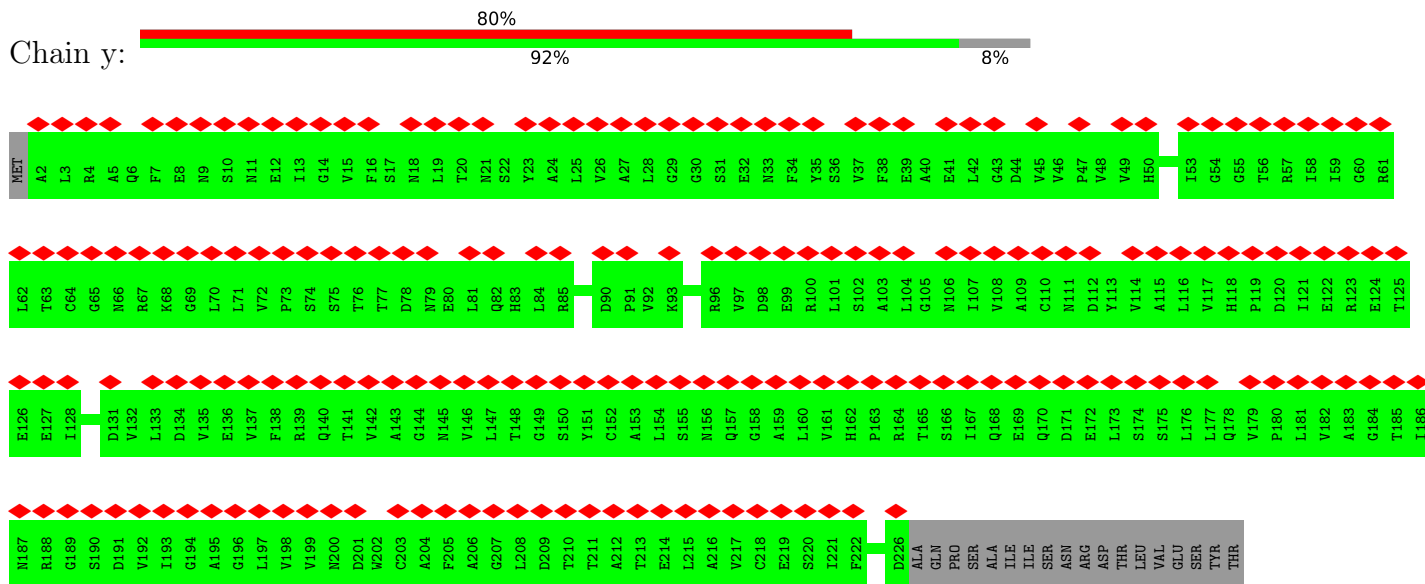


• Molecule 45: Nucleolar protein 16

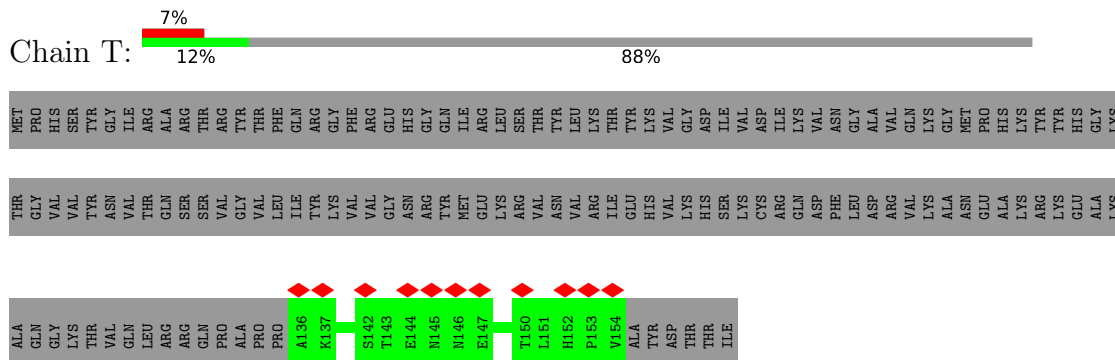




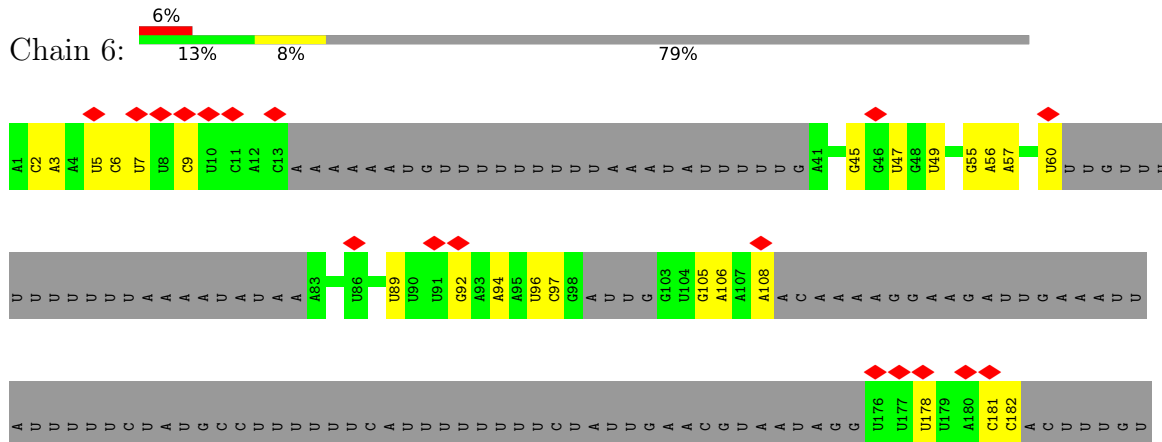
• Molecule 46: Eukaryotic translation initiation factor 6



• Molecule 47: 60S ribosomal protein L21-A



• Molecule 48: RNA (62-MER)



U U G A U A G A A A A A A A G A A A A U U A A G G A A A A G A A A A A A A C U A A A A A A G U U U U A A U C U C U U U U A U A

U U U G A A C C U U A A C G A A A A A A A A A A G U U A U U U U U U U U U C A C A G U A C C U U U U U U U

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	19000	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 ($e^-/\text{\AA}^2$)	60	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.532	Depositor
Minimum map value	-0.304	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.008	Depositor
Recommended contour level	0.05	Depositor
Map size (\AA)	542.72, 542.72, 542.72	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.06, 1.06, 1.06	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

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	1	0.33	0/48337	0.75	0/75284
2	2	0.45	0/3465	0.76	0/5390
3	3	0.28	0/1037	0.53	0/1396
4	A	0.25	0/1015	0.45	0/1406
5	B	0.28	0/2706	0.54	0/3635
6	C	0.32	0/2848	0.57	0/3842
7	D	0.22	0/404	0.32	0/558
8	E	0.28	0/1146	0.56	0/1545
9	F	0.30	0/1781	0.52	0/2389
10	G	0.32	0/1474	0.52	0/1987
11	H	0.27	0/1470	0.56	0/1982
12	K	0.24	0/1143	0.42	0/1591
13	L	0.35	0/980	0.62	0/1314
14	M	0.30	0/1017	0.52	0/1365
15	N	0.36	0/1436	0.59	0/1920
16	O	0.29	0/1511	0.51	0/2023
17	P	0.30	0/1101	0.52	0/1475
18	Q	0.29	0/1031	0.56	0/1384
19	R	0.29	0/460	0.62	0/614
20	S	0.28	0/1470	0.56	0/1977
21	U	0.24	0/483	0.42	0/671
22	V	0.25	0/992	0.54	0/1337
23	W	0.24	0/944	0.44	0/1305
24	X	0.30	0/1048	0.56	0/1406
25	Y	0.32	0/1008	0.61	0/1341
26	Z	0.24	0/636	0.40	0/882
27	a	0.35	0/760	0.61	0/1026
28	b	0.23	0/1870	0.38	0/2601
29	c	0.24	0/323	0.40	0/446
30	d	0.43	0/801	0.71	0/1075
31	e	0.32	0/953	0.57	0/1271
32	f	0.32	0/859	0.55	0/1152

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	g	0.24	0/427	0.41	0/592
34	h	0.29	0/1008	0.53	0/1340
35	i	0.27	0/643	0.57	0/852
36	j	0.34	0/575	0.61	0/761
37	k	0.24	0/348	0.39	0/485
38	m	0.29	0/2910	0.48	0/3993
39	n	0.28	0/3468	0.48	0/4670
40	o	0.32	0/919	0.57	0/1232
41	p	0.24	0/1411	0.44	0/1956
42	r	0.29	0/1014	0.57	0/1361
43	t	0.27	0/1979	0.52	0/2645
44	u	0.23	0/489	0.37	0/679
45	v	0.30	0/1161	0.56	0/1552
46	y	0.24	0/1106	0.45	0/1536
47	T	0.26	0/151	0.51	0/207
48	6	0.19	0/1466	0.68	0/2270
All	All	0.32	0/105584	0.65	0/153721

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

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
3	3	118/302 (39%)	108 (92%)	10 (8%)	0	100 100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	A	192/295 (65%)	188 (98%)	4 (2%)	0	100	100
5	B	330/388 (85%)	307 (93%)	23 (7%)	0	100	100
6	C	357/363 (98%)	329 (92%)	28 (8%)	0	100	100
7	D	74/578 (13%)	74 (100%)	0	0	100	100
8	E	141/195 (72%)	133 (94%)	8 (6%)	0	100	100
9	F	212/250 (85%)	202 (95%)	10 (5%)	0	100	100
10	G	180/259 (70%)	170 (94%)	8 (4%)	2 (1%)	14	44
11	H	181/190 (95%)	166 (92%)	15 (8%)	0	100	100
12	K	227/373 (61%)	213 (94%)	13 (6%)	1 (0%)	34	67
13	L	116/208 (56%)	108 (93%)	7 (6%)	1 (1%)	17	49
14	M	122/134 (91%)	116 (95%)	6 (5%)	0	100	100
15	N	160/201 (80%)	147 (92%)	13 (8%)	0	100	100
16	O	183/197 (93%)	180 (98%)	3 (2%)	0	100	100
17	P	130/187 (70%)	115 (88%)	14 (11%)	1 (1%)	19	51
18	Q	126/187 (67%)	119 (94%)	7 (6%)	0	100	100
19	R	55/193 (28%)	51 (93%)	4 (7%)	0	100	100
20	S	172/176 (98%)	160 (93%)	10 (6%)	2 (1%)	13	41
21	U	96/117 (82%)	92 (96%)	4 (4%)	0	100	100
22	V	127/139 (91%)	124 (98%)	3 (2%)	0	100	100
23	W	185/241 (77%)	176 (95%)	9 (5%)	0	100	100
24	X	126/141 (89%)	121 (96%)	5 (4%)	0	100	100
25	Y	123/126 (98%)	117 (95%)	6 (5%)	0	100	100
26	Z	127/136 (93%)	125 (98%)	2 (2%)	0	100	100
27	a	90/148 (61%)	87 (97%)	3 (3%)	0	100	100
28	b	368/642 (57%)	360 (98%)	8 (2%)	0	100	100
29	c	62/117 (53%)	60 (97%)	2 (3%)	0	100	100
30	d	90/113 (80%)	82 (91%)	7 (8%)	1 (1%)	14	44
31	e	115/127 (91%)	109 (95%)	6 (5%)	0	100	100
32	f	104/108 (96%)	96 (92%)	8 (8%)	0	100	100
33	g	85/112 (76%)	84 (99%)	1 (1%)	0	100	100
34	h	119/122 (98%)	117 (98%)	2 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
35	i	76/99 (77%)	73 (96%)	3 (4%)	0	100	100
36	j	69/91 (76%)	67 (97%)	2 (3%)	0	100	100
37	k	68/74 (92%)	67 (98%)	1 (2%)	0	100	100
38	m	470/740 (64%)	450 (96%)	20 (4%)	0	100	100
39	n	410/607 (68%)	388 (95%)	22 (5%)	0	100	100
40	o	107/276 (39%)	102 (95%)	5 (5%)	0	100	100
41	p	277/440 (63%)	270 (98%)	7 (2%)	0	100	100
42	r	146/260 (56%)	143 (98%)	3 (2%)	0	100	100
43	t	233/249 (94%)	219 (94%)	14 (6%)	0	100	100
44	u	95/192 (50%)	90 (95%)	5 (5%)	0	100	100
45	v	136/209 (65%)	127 (93%)	9 (7%)	0	100	100
46	y	223/244 (91%)	219 (98%)	4 (2%)	0	100	100
47	T	17/160 (11%)	17 (100%)	0	0	100	100
All	All	7220/10706 (67%)	6868 (95%)	344 (5%)	8 (0%)	54	82

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
17	P	12	THR
20	S	158	VAL
10	G	227	ASP
20	S	159	VAL
12	K	153	ILE
30	d	12	VAL
10	G	182	ASN
13	L	47	ALA

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	3	109/271 (40%)	104 (95%)	5 (5%)	27	57
4	A	11/266 (4%)	10 (91%)	1 (9%)	9	32
5	B	283/326 (87%)	278 (98%)	5 (2%)	59	79
6	C	296/297 (100%)	292 (99%)	4 (1%)	67	83
8	E	119/155 (77%)	117 (98%)	2 (2%)	60	80
9	F	180/210 (86%)	179 (99%)	1 (1%)	86	94
10	G	154/212 (73%)	152 (99%)	2 (1%)	69	84
11	H	164/170 (96%)	154 (94%)	10 (6%)	18	48
13	L	99/167 (59%)	96 (97%)	3 (3%)	41	68
14	M	107/113 (95%)	104 (97%)	3 (3%)	43	70
15	N	146/176 (83%)	143 (98%)	3 (2%)	53	76
16	O	153/162 (94%)	151 (99%)	2 (1%)	69	84
17	P	112/149 (75%)	108 (96%)	4 (4%)	35	63
18	Q	111/159 (70%)	110 (99%)	1 (1%)	78	90
19	R	51/162 (32%)	46 (90%)	5 (10%)	8	28
20	S	152/154 (99%)	148 (97%)	4 (3%)	46	72
22	V	102/107 (95%)	94 (92%)	8 (8%)	12	39
24	X	112/122 (92%)	109 (97%)	3 (3%)	44	70
25	Y	110/111 (99%)	106 (96%)	4 (4%)	35	63
27	a	81/122 (66%)	78 (96%)	3 (4%)	34	62
30	d	86/102 (84%)	75 (87%)	11 (13%)	4	16
31	e	100/107 (94%)	98 (98%)	2 (2%)	55	77
32	f	89/91 (98%)	88 (99%)	1 (1%)	73	86
34	h	106/107 (99%)	105 (99%)	1 (1%)	78	90
35	i	68/84 (81%)	67 (98%)	1 (2%)	65	82
36	j	58/71 (82%)	57 (98%)	1 (2%)	60	80
38	m	132/659 (20%)	128 (97%)	4 (3%)	41	68
39	n	364/532 (68%)	355 (98%)	9 (2%)	47	72
40	o	96/246 (39%)	94 (98%)	2 (2%)	53	76
42	r	59/224 (26%)	52 (88%)	7 (12%)	5	19
43	t	211/223 (95%)	206 (98%)	5 (2%)	49	74
45	v	120/181 (66%)	116 (97%)	4 (3%)	38	66

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
47	T	17/139 (12%)	17 (100%)	0	100	100
All	All	4158/6377 (65%)	4037 (97%)	121 (3%)	45	69

All (121) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	3	19	ARG
3	3	41	GLN
3	3	57	ASN
3	3	75	LYS
3	3	101	PRO
4	A	87	ASN
5	B	142	GLN
5	B	196	ARG
5	B	273	MET
5	B	319	ASN
5	B	325	ASN
6	C	122	TYR
6	C	155	ASP
6	C	285	SER
6	C	355	LYS
8	E	152	GLU
8	E	189	ARG
9	F	75	LYS
10	G	83	ASP
10	G	112	GLU
11	H	6	TYR
11	H	63	LYS
11	H	88	TYR
11	H	94	TYR
11	H	115	PHE
11	H	126	CYS
11	H	127	LEU
11	H	140	ASP
11	H	178	TYR
11	H	182	ARG
13	L	20	ARG
13	L	46	ILE
13	L	100	ARG
14	M	7	TYR
14	M	49	GLN
14	M	82	ASP

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Mol	Chain	Res	Type
15	N	8	GLU
15	N	24	ARG
15	N	117	ASN
16	O	148	TRP
16	O	197	TYR
17	P	49	ASP
17	P	53	GLU
17	P	87	SER
17	P	109	MET
18	Q	146	HIS
19	R	9	ARG
19	R	24	MET
19	R	36	ASN
19	R	46	LYS
19	R	53	LYS
20	S	80	TYR
20	S	136	ARG
20	S	153	HIS
20	S	155	ARG
22	V	27	CYS
22	V	35	ASN
22	V	51	LEU
22	V	85	LYS
22	V	100	ASN
22	V	111	MET
22	V	124	CYS
22	V	130	ARG
24	X	70	SER
24	X	73	LYS
24	X	112	LEU
25	Y	2	LYS
25	Y	37	GLU
25	Y	76	LYS
25	Y	112	LYS
27	a	9	ARG
27	a	132	ARG
27	a	145	GLU
30	d	11	GLN
30	d	26	TYR
30	d	29	SER
30	d	44	PHE
30	d	48	HIS

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Mol	Chain	Res	Type
30	d	50	GLN
30	d	67	ARG
30	d	83	LYS
30	d	93	TYR
30	d	100	ASP
30	d	109	THR
31	e	27	GLU
31	e	84	MET
32	f	55	LYS
34	h	44	SER
35	i	57	GLU
36	j	34	CYS
38	m	252	GLN
38	m	263	ASN
38	m	267	HIS
38	m	326	TYR
39	n	3	ARG
39	n	116	ASP
39	n	128	ASP
39	n	139	MET
39	n	164	CYS
39	n	206	PHE
39	n	392	PHE
39	n	411	GLN
39	n	586	TYR
40	o	150	PHE
40	o	199	LYS
42	r	18	PHE
42	r	19	ASP
42	r	20	HIS
42	r	31	GLU
42	r	36	SER
42	r	38	TYR
42	r	61	MET
43	t	85	ASP
43	t	115	SER
43	t	182	TYR
43	t	183	ASP
43	t	236	TYR
45	v	46	LEU
45	v	176	THR
45	v	182	MET

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Mol	Chain	Res	Type
45	v	202	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (9) such sidechains are listed below:

Mol	Chain	Res	Type
4	A	87	ASN
5	B	165	GLN
11	H	37	GLN
11	H	41	HIS
13	L	66	ASN
17	P	54	HIS
17	P	80	GLN
43	t	163	ASN
45	v	194	ASN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	1981/3497 (56%)	472 (23%)	23 (1%)
2	2	143/165 (86%)	23 (16%)	2 (1%)
48	6	57/300 (19%)	24 (42%)	0
All	All	2181/3962 (55%)	519 (23%)	25 (1%)

All (519) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	5	G
1	1	6	A
1	1	7	C
1	1	25	U
1	1	26	A
1	1	49	A
1	1	51	A
1	1	57	A
1	1	60	A
1	1	65	A
1	1	66	A
1	1	67	A
1	1	72	C
1	1	74	A

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Mol	Chain	Res	Type
1	1	100	A
1	1	105	G
1	1	106	A
1	1	109	A
1	1	110	G
1	1	111	C
1	1	116	A
1	1	117	U
1	1	118	U
1	1	119	U
1	1	122	A
1	1	131	A
1	1	133	A
1	1	136	U
1	1	149	G
1	1	153	U
1	1	154	G
1	1	161	C
1	1	162	A
1	1	163	A
1	1	170	G
1	1	177	G
1	1	185	G
1	1	193	U
1	1	194	A
1	1	195	A
1	1	197	U
1	1	198	U
1	1	207	C
1	1	217	G
1	1	218	A
1	1	220	A
1	1	225	G
1	1	226	A
1	1	227	G
1	1	239	U
1	1	244	G
1	1	247	U
1	1	248	G
1	1	258	U
1	1	259	A
1	1	261	A

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Mol	Chain	Res	Type
1	1	266	G
1	1	267	C
1	1	268	U
1	1	269	U
1	1	271	C
1	1	272	G
1	1	276	A
1	1	277	G
1	1	303	A
1	1	306	U
1	1	325	A
1	1	331	A
1	1	337	U
1	1	338	G
1	1	341	G
1	1	342	A
1	1	345	G
1	1	346	A
1	1	350	A
1	1	354	C
1	1	357	A
1	1	359	A
1	1	360	A
1	1	384	G
1	1	399	A
1	1	406	U
1	1	411	C
1	1	412	G
1	1	416	A
1	1	429	G
1	1	430	A
1	1	432	G
1	1	437	G
1	1	507	U
1	1	514	C
1	1	521	C
1	1	532	A
1	1	534	A
1	1	540	A
1	1	544	A
1	1	546	G
1	1	547	G

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Mol	Chain	Res	Type
1	1	548	U
1	1	551	C
1	1	577	U
1	1	578	U
1	1	579	A
1	1	580	U
1	1	581	A
1	1	582	G
1	1	591	G
1	1	592	U
1	1	593	A
1	1	602	A
1	1	603	C
1	1	606	G
1	1	618	U
1	1	623	C
1	1	625	U
1	1	626	C
1	1	627	G
1	1	628	U
1	1	629	G
1	1	634	G
1	1	636	A
1	1	647	A
1	1	661	C
1	1	662	C
1	1	663	C
1	1	674	A
1	1	675	C
1	1	685	A
1	1	687	U
1	1	702	A
1	1	706	U
1	1	708	U
1	1	714	A
1	1	715	U
1	1	716	G
1	1	717	A
1	1	732	A
1	1	738	A
1	1	739	G
1	1	742	A

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Mol	Chain	Res	Type
1	1	751	G
1	1	752	G
1	1	759	C
1	1	760	C
1	1	761	U
1	1	762	U
1	1	763	G
1	1	768	G
1	1	770	G
1	1	772	A
1	1	773	C
1	1	775	A
1	1	776	U
1	1	777	C
1	1	778	G
1	1	780	C
1	1	781	C
1	1	816	A
1	1	817	G
1	1	819	G
1	1	833	A
1	1	847	G
1	1	976	C
1	1	986	U
1	1	988	U
1	1	989	C
1	1	991	C
1	1	992	U
1	1	995	G
1	1	996	G
1	1	997	A
1	1	998	U
1	1	1003	G
1	1	1005	A
1	1	1006	A
1	1	1010	A
1	1	1011	G
1	1	1012	A
1	1	1014	C
1	1	1017	U
1	1	1022	U
1	1	1023	G

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Mol	Chain	Res	Type
1	1	1135	G
1	1	1137	G
1	1	1138	U
1	1	1139	U
1	1	1142	U
1	1	1143	A
1	1	1147	G
1	1	1154	U
1	1	1158	G
1	1	1160	A
1	1	1163	C
1	1	1164	A
1	1	1166	A
1	1	1169	U
1	1	1170	G
1	1	1173	G
1	1	1176	G
1	1	1184	A
1	1	1186	C
1	1	1191	C
1	1	1205	G
1	1	1211	A
1	1	1212	U
1	1	1223	C
1	1	1224	A
1	1	1232	G
1	1	1235	A
1	1	1244	G
1	1	1249	U
1	1	1251	U
1	1	1252	A
1	1	1253	G
1	1	1258	C
1	1	1259	A
1	1	1273	G
1	1	1276	A
1	1	1277	G
1	1	1282	A
1	1	1283	A
1	1	1284	U
1	1	1286	C
1	1	1289	U

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Mol	Chain	Res	Type
1	1	1290	A
1	1	1291	A
1	1	1293	G
1	1	1294	A
1	1	1295	G
1	1	1296	U
1	1	1303	C
1	1	1309	A
1	1	1310	C
1	1	1315	C
1	1	1316	G
1	1	1317	A
1	1	1318	A
1	1	1323	C
1	1	1333	A
1	1	1334	A
1	1	1335	A
1	1	1336	U
1	1	1337	G
1	1	1338	G
1	1	1339	A
1	1	1349	A
1	1	1361	A
1	1	1379	U
1	1	1381	G
1	1	1389	A
1	1	1390	A
1	1	1407	A
1	1	1414	G
1	1	1433	U
1	1	1451	G
1	1	1452	A
1	1	1453	A
1	1	1464	U
1	1	1468	G
1	1	1471	C
1	1	1477	G
1	1	1515	A
1	1	1517	G
1	1	1519	G
1	1	1521	G
1	1	1528	U

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Mol	Chain	Res	Type
1	1	1529	U
1	1	1538	A
1	1	1541	G
1	1	1542	C
1	1	1545	U
1	1	1561	C
1	1	1576	G
1	1	1581	G
1	1	1588	A
1	1	1589	U
1	1	1590	G
1	1	1594	G
1	1	1598	C
1	1	1602	A
1	1	1603	U
1	1	1604	U
1	1	1605	U
1	1	1606	U
1	1	1607	U
1	1	1608	C
1	1	1609	G
1	1	1614	U
1	1	1622	A
1	1	1628	A
1	1	1640	A
1	1	1643	C
1	1	1654	A
1	1	1655	G
1	1	1660	A
1	1	1661	A
1	1	1662	U
1	1	1673	A
1	1	1677	A
1	1	1678	A
1	1	1680	U
1	1	1720	C
1	1	1736	A
1	1	1737	C
1	1	1738	C
1	1	1739	A
1	1	1746	U
1	1	1753	A

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Mol	Chain	Res	Type
1	1	1781	G
1	1	1782	U
1	1	1783	G
1	1	1784	U
1	1	1789	A
1	1	1790	A
1	1	1791	G
1	1	1801	C
1	1	1804	C
1	1	1805	A
1	1	1806	U
1	1	1811	A
1	1	1814	C
1	1	1816	G
1	1	1820	C
1	1	1821	G
1	1	1833	C
1	1	1849	G
1	1	1852	G
1	1	1874	U
1	1	1875	U
1	1	1876	U
1	1	1877	C
1	1	1881	U
1	1	1917	U
1	1	1920	A
1	1	1921	C
1	1	1924	C
1	1	1933	G
1	1	1935	U
1	1	1939	A
1	1	1940	C
1	1	1947	G
1	1	2423	G
1	1	2424	U
1	1	2452	G
1	1	2454	C
1	1	2464	G
1	1	2465	G
1	1	2471	C
1	1	2473	A
1	1	2476	U

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Mol	Chain	Res	Type
1	1	2921	U
1	1	2925	G
1	1	2929	G
1	1	2931	C
1	1	2932	A
1	1	2946	A
1	1	2952	C
1	1	2953	U
1	1	2972	G
1	1	2973	G
1	1	2978	U
1	1	2982	A
1	1	2984	C
1	1	2993	G
1	1	3006	A
1	1	3011	U
1	1	3014	A
1	1	3024	C
1	1	3025	A
1	1	3028	A
1	1	3030	U
1	1	3031	A
1	1	3034	G
1	1	3036	A
1	1	3037	C
1	1	3038	G
1	1	3040	G
1	1	3041	A
1	1	3042	G
1	1	3046	G
1	1	3082	A
1	1	3083	C
1	1	3085	G
1	1	3087	U
1	1	3091	G
1	1	3093	G
1	1	3108	A
1	1	3113	A
1	1	3116	U
1	1	3117	A
1	1	3118	G
1	1	3119	U

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Mol	Chain	Res	Type
1	1	3125	A
1	1	3126	G
1	1	3128	A
1	1	3144	C
1	1	3151	A
1	1	3152	U
1	1	3153	U
1	1	3170	G
1	1	3174	A
1	1	3175	U
1	1	3182	G
1	1	3188	U
1	1	3189	C
1	1	3190	A
1	1	3195	C
1	1	3196	U
1	1	3205	G
1	1	3209	A
1	1	3211	C
1	1	3218	A
1	1	3225	A
1	1	3226	A
1	1	3227	U
1	1	3238	A
1	1	3239	A
1	1	3240	G
1	1	3246	A
1	1	3271	G
1	1	3272	U
1	1	3273	A
1	1	3276	A
1	1	3282	G
1	1	3299	U
1	1	3307	U
1	1	3313	G
1	1	3315	A
1	1	3316	G
1	1	3317	A
1	1	3318	A
1	1	3319	G
1	1	3322	G
1	1	3324	G

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Mol	Chain	Res	Type
1	1	3327	A
1	1	3329	G
1	1	3332	U
1	1	3335	U
1	1	3336	G
1	1	3337	A
1	1	3338	A
1	1	3343	A
1	1	3344	A
1	1	3345	G
1	1	3346	U
1	1	3347	G
1	1	3351	U
1	1	3352	A
1	1	3353	U
1	1	3358	U
1	1	3359	U
1	1	3370	U
1	1	3371	U
1	1	3372	C
1	1	3373	C
1	1	3396	A
1	1	3404	G
1	1	3405	C
1	1	3417	A
1	1	3418	U
1	1	3420	U
1	1	3431	A
1	1	3435	U
1	1	3440	A
1	1	3441	G
1	1	3470	G
1	1	3476	A
1	1	3477	A
1	1	3479	C
1	1	3490	A
1	1	3491	A
1	1	3492	G
2	2	31	U
2	2	42	U
2	2	43	C
2	2	46	U

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Mol	Chain	Res	Type
2	2	59	G
2	2	67	A
2	2	68	U
2	2	70	C
2	2	71	G
2	2	98	U
2	2	99	C
2	2	103	G
2	2	112	A
2	2	113	A
2	2	114	C
2	2	115	G
2	2	124	G
2	2	132	G
2	2	133	U
2	2	134	U
2	2	135	C
2	2	136	U
2	2	159	U
48	6	2	C
48	6	3	A
48	6	5	U
48	6	6	C
48	6	7	U
48	6	9	C
48	6	45	G
48	6	47	U
48	6	49	U
48	6	55	G
48	6	56	A
48	6	57	A
48	6	60	U
48	6	89	U
48	6	92	G
48	6	94	A
48	6	96	U
48	6	97	C
48	6	105	G
48	6	106	A
48	6	108	A
48	6	178	U
48	6	181	C

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Mol	Chain	Res	Type
48	6	182	C

All (25) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	1	270	U
1	1	674	A
1	1	716	G
1	1	761	U
1	1	995	G
1	1	997	A
1	1	1159	U
1	1	1234	A
1	1	1258	C
1	1	1272	U
1	1	1314	C
1	1	1333	A
1	1	1338	G
1	1	1389	A
1	1	1540	A
1	1	1851	A
1	1	1916	G
1	1	3217	U
1	1	3239	A
1	1	3318	A
1	1	3328	U
1	1	3337	A
1	1	3372	C
2	2	103	G
2	2	131	G

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

Of 1 ligands modelled in this entry, 1 is 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

There are no chain breaks in this entry.

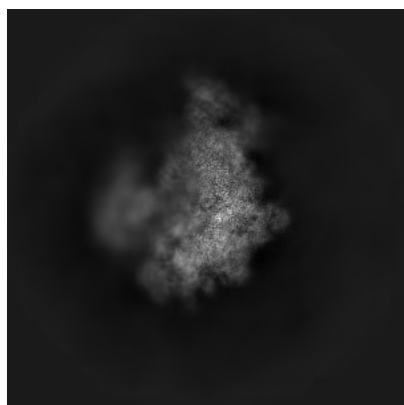
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-24397. These allow visual inspection of the internal detail of the map and identification of artifacts.

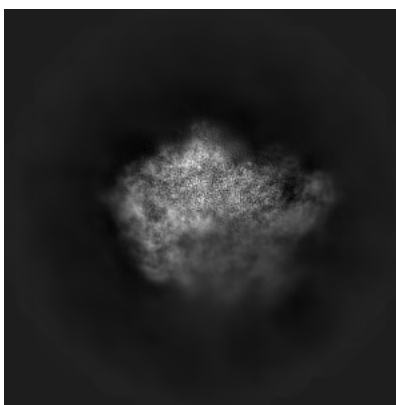
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

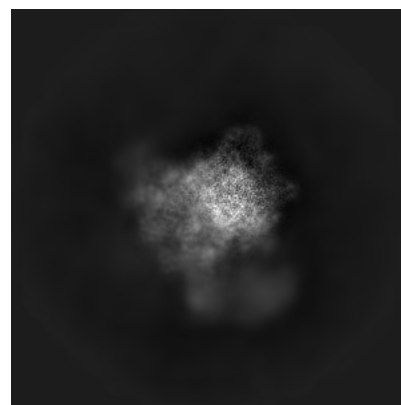
6.1.1 Primary map



X



Y

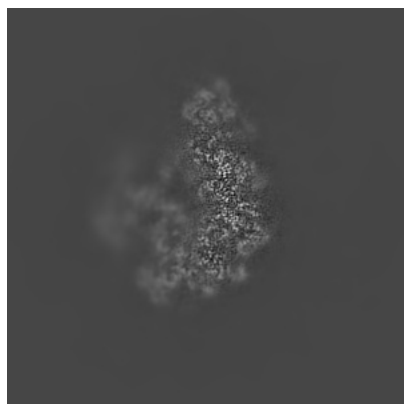


Z

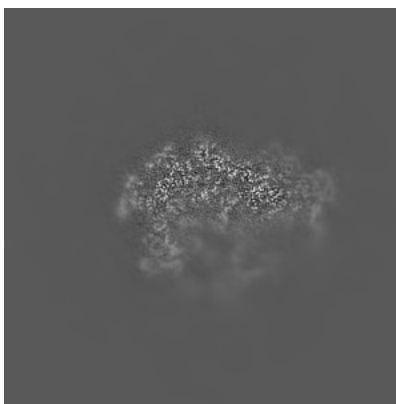
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

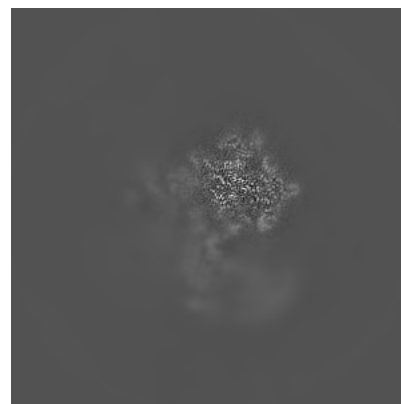
6.2.1 Primary map



X Index: 256



Y Index: 256

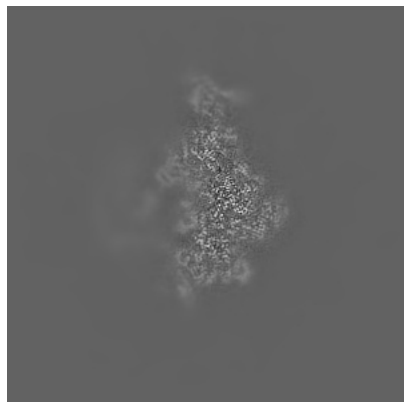


Z Index: 256

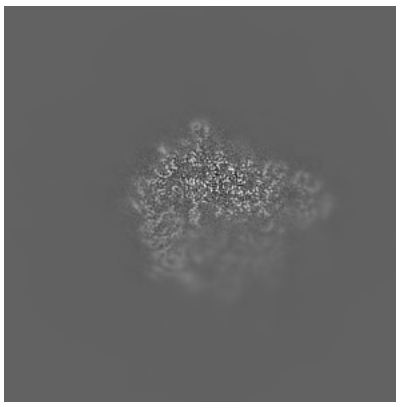
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

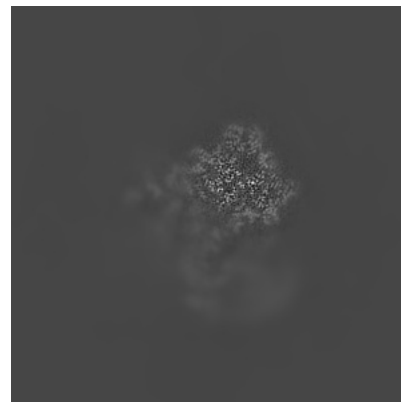
6.3.1 Primary map



X Index: 282



Y Index: 272



Z Index: 250

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 0.05. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

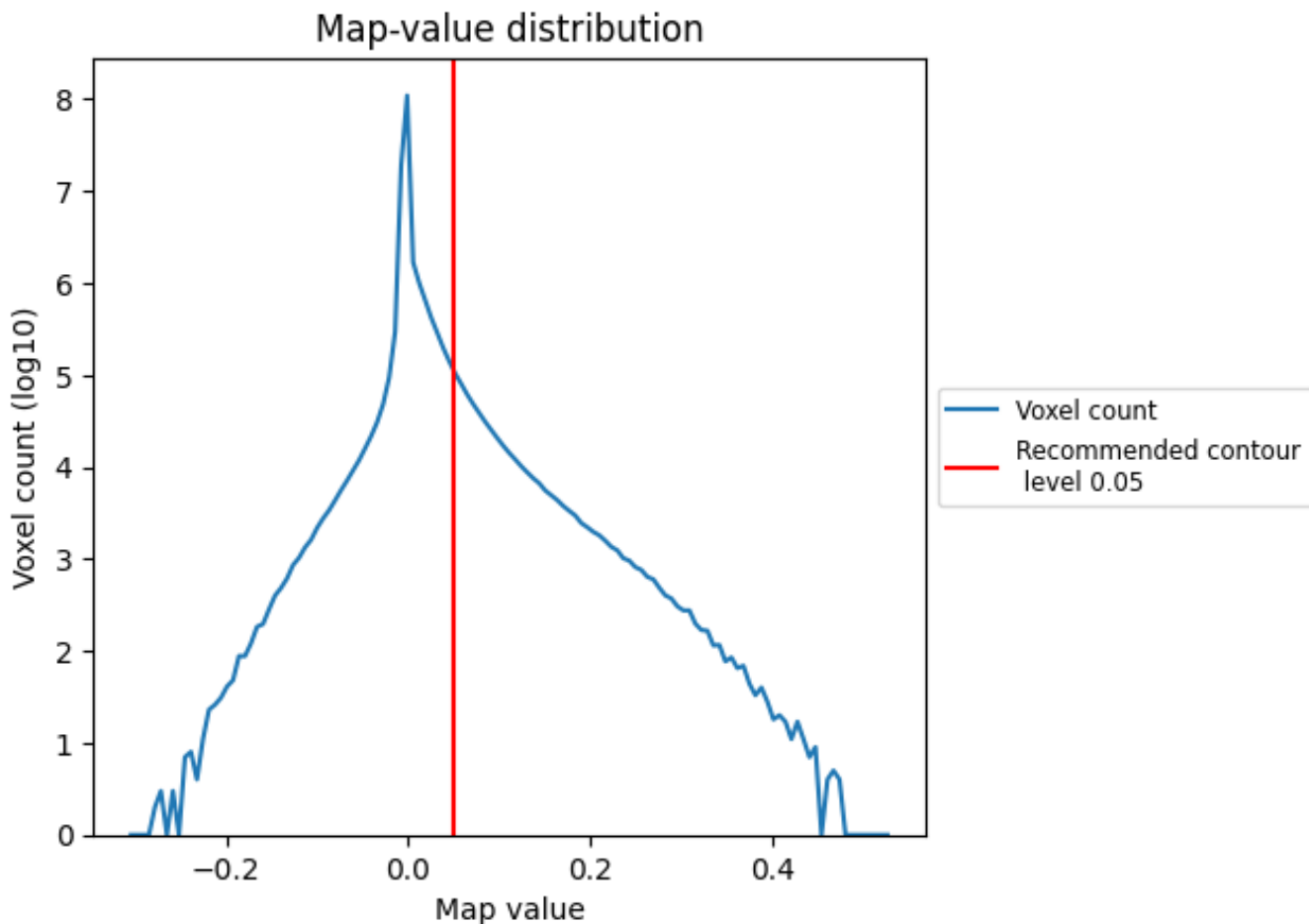
6.5 Mask visualisation

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

7 Map analysis [i](#)

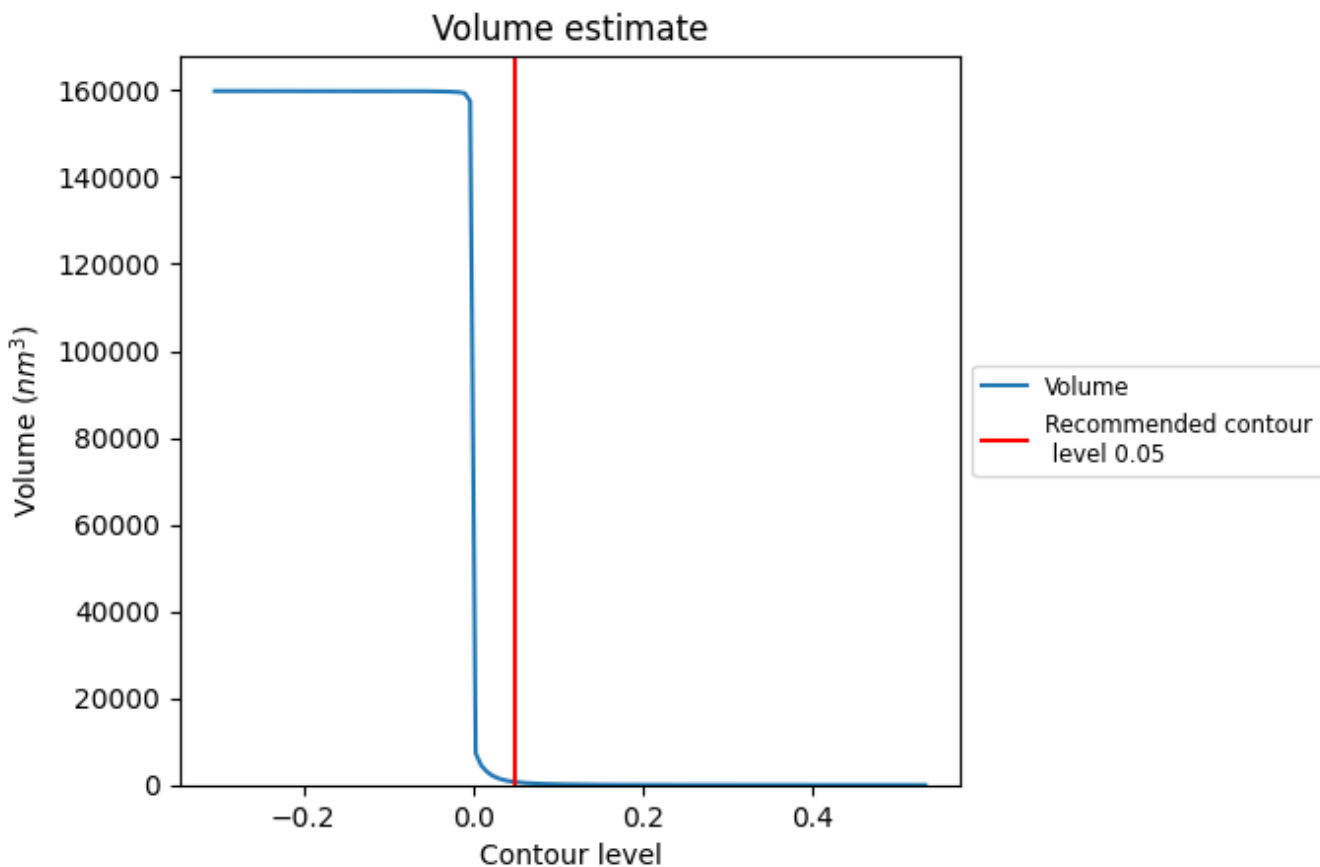
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

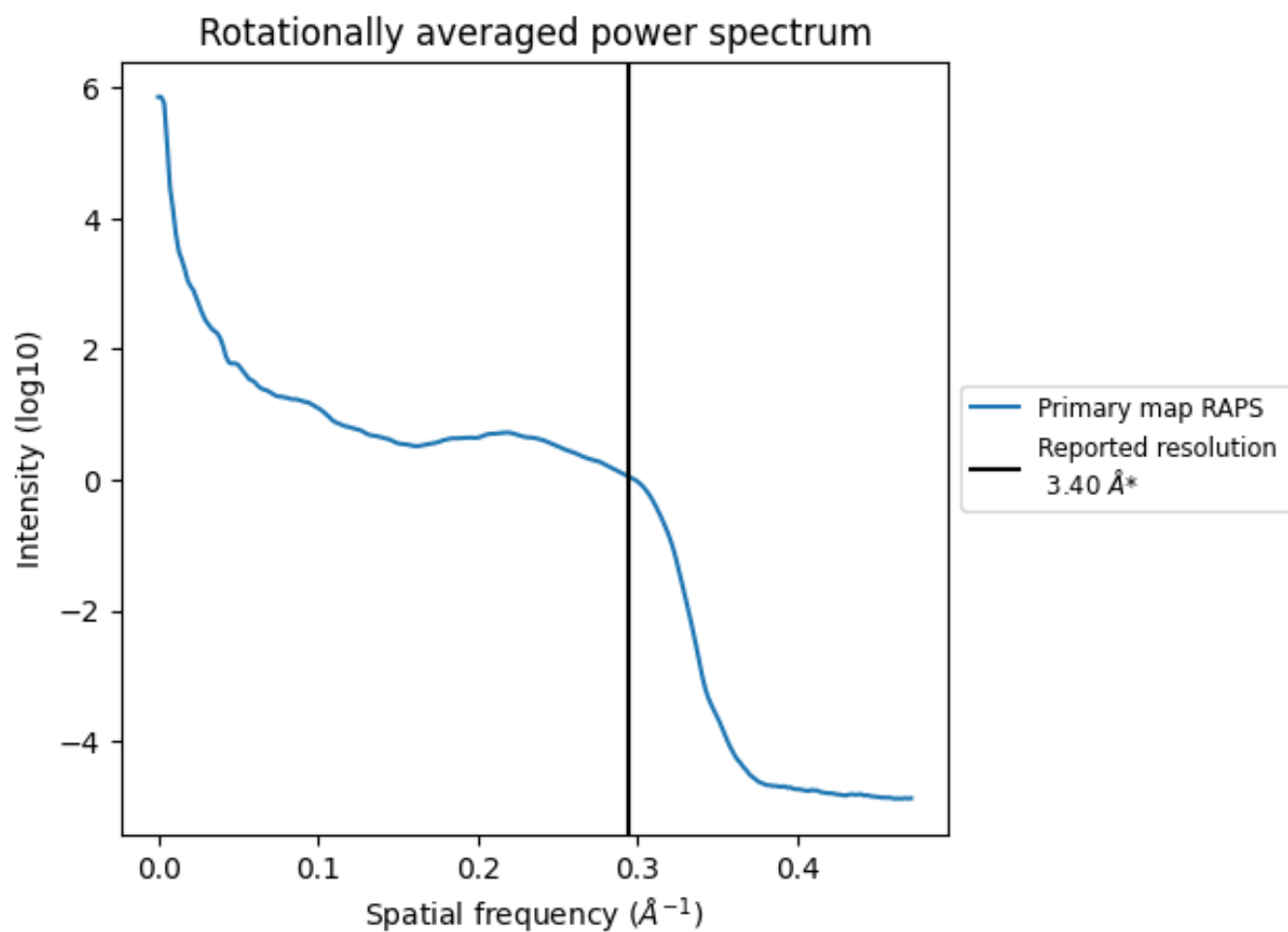
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 669 nm^3 ; this corresponds to an approximate mass of 605 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 0.294 Å⁻¹

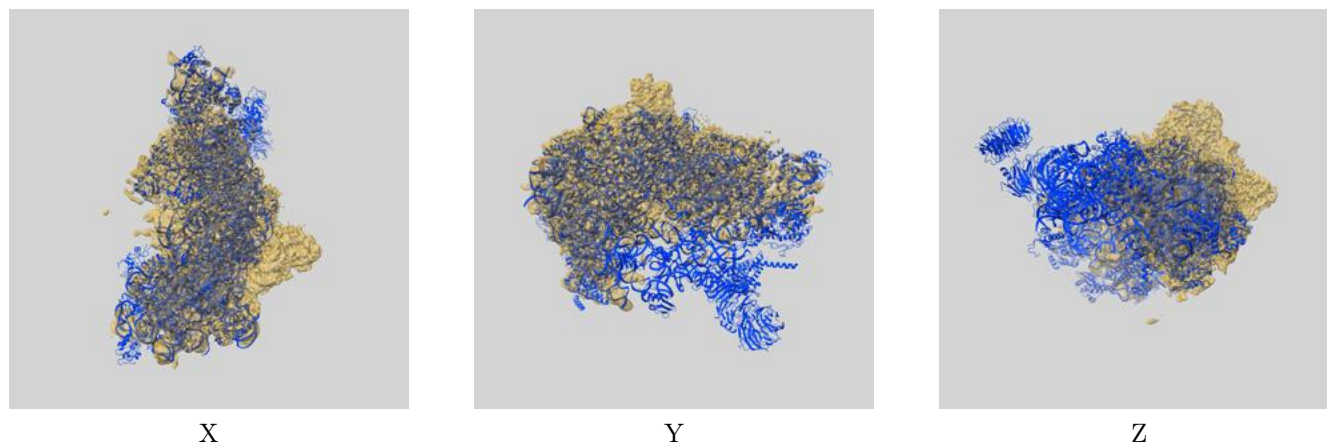
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

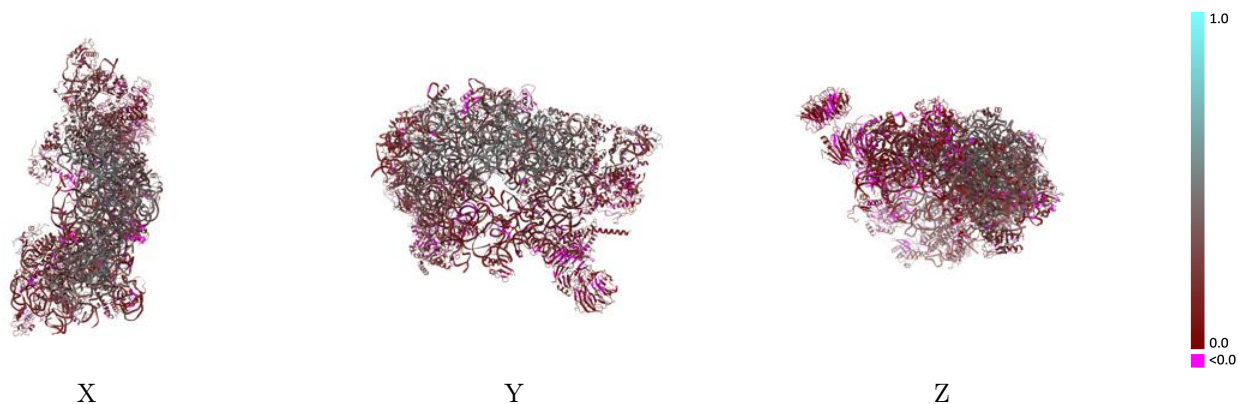
This section contains information regarding the fit between EMDB map EMD-24397 and PDB model 8ETG. Per-residue inclusion information can be found in section 3 on page 13.

9.1 Map-model overlay [i](#)



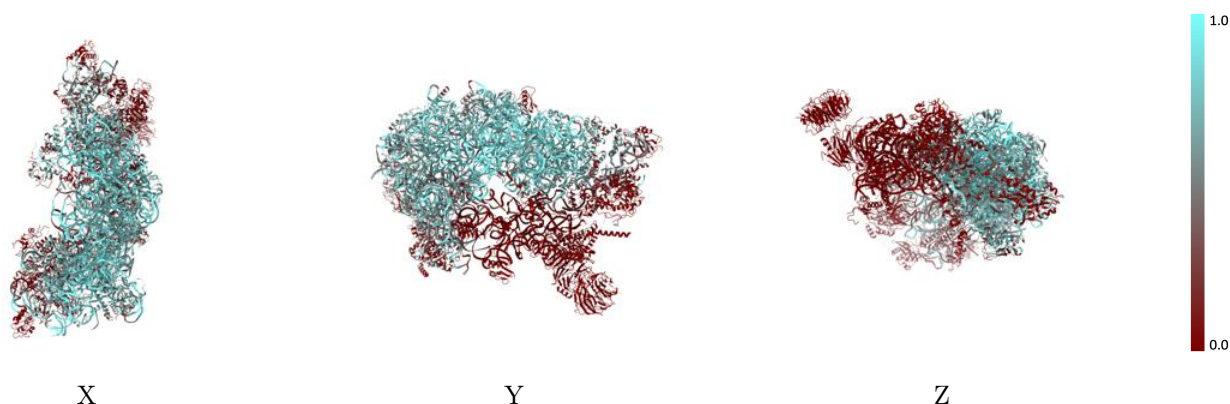
The images above show the 3D surface view of the map at the recommended contour level 0.05 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



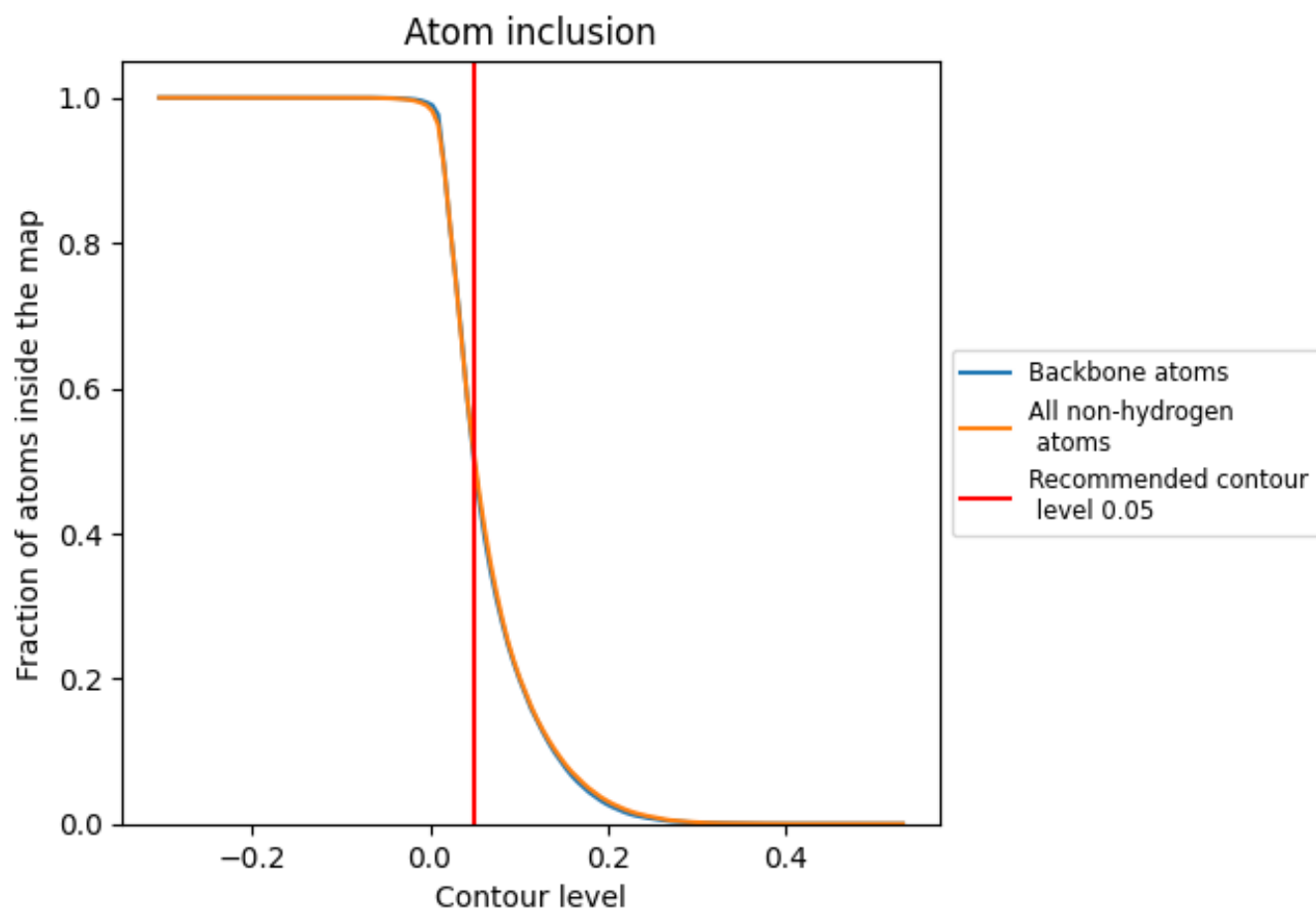
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.05).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 50% of all backbone atoms, 51% 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 (0.05) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5053	 0.2580
1	 0.6106	 0.2740
2	 0.7843	 0.3630
3	 0.5550	 0.1600
6	 0.4837	 0.2490
A	 0.4906	 0.2160
B	 0.5579	 0.2520
C	 0.7320	 0.3730
D	 0.4265	 0.3090
E	 0.5834	 0.2080
F	 0.7454	 0.3850
G	 0.6266	 0.2970
H	 0.3862	 0.1750
K	 0.2664	 0.2550
L	 0.8257	 0.4420
M	 0.6175	 0.2650
N	 0.7829	 0.4010
O	 0.6584	 0.3360
P	 0.5675	 0.2640
Q	 0.6910	 0.3180
R	 0.0000	 0.1510
S	 0.5212	 0.2810
T	 0.3469	 0.2810
U	 0.0000	 0.1600
V	 0.0399	 0.0870
W	 0.0042	 0.1490
X	 0.0987	 0.2120
Y	 0.7308	 0.3790
Z	 0.0000	 0.1140
a	 0.1533	 0.0820
b	 0.1627	 0.1630
c	 0.0000	 0.0820
d	 0.0040	 0.1560
e	 0.7735	 0.3970
f	 0.7742	 0.3980



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Chain	Atom inclusion	Q-score
g	 0.0000	 0.0670
h	 0.6863	 0.3740
i	 0.6875	 0.3140
j	 0.8278	 0.4290
k	 0.0000	 0.1790
m	 0.1130	 0.1280
n	 0.0818	 0.1570
o	 0.3326	 0.2010
p	 0.0000	 0.0760
r	 0.1447	 0.1580
t	 0.1373	 0.1360
u	 0.3462	 0.2140
v	 0.6184	 0.3110
y	 0.1400	 0.1250