



## Full wwPDB EM Validation Report ⓘ

Nov 19, 2022 – 12:55 pm GMT

PDB ID : 5LZY  
EMDB ID : EMD-4136  
Title : Structure of the mammalian rescue complex with Pelota and Hbs1l assembled on a polyadenylated mRNA.  
Authors : Shao, S.; Murray, J.; Brown, A.; Taunton, J.; Ramakrishnan, V.; Hegde, R.S.  
Deposited on : 2016-10-02  
Resolution : 3.99 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](mailto: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>.

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

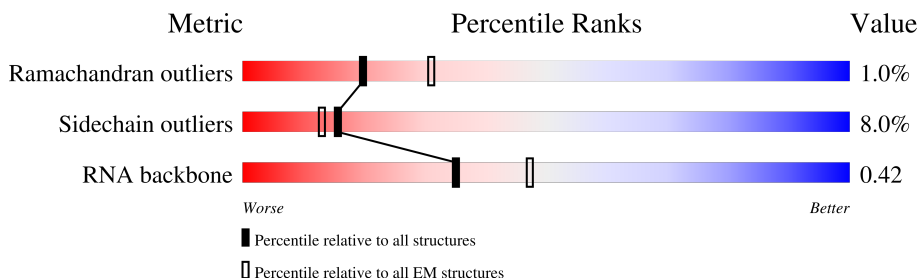
EMDB validation analysis : 0.0.1.dev43  
Mogul : 1.8.4, CSD as541be (2020)  
MolProbity : 4.02b-467  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.9  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (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 3.99 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.




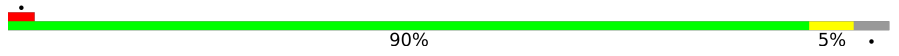
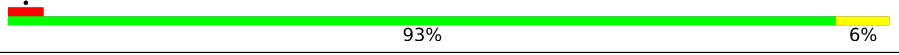
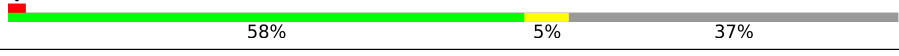
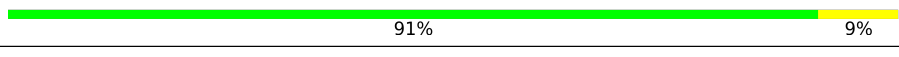
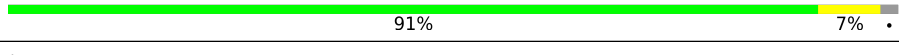

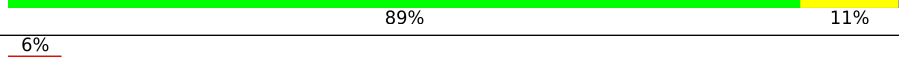
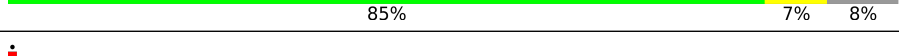
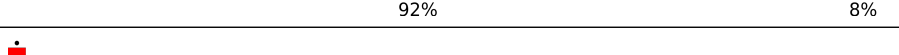
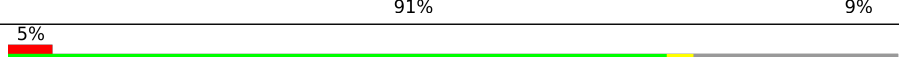
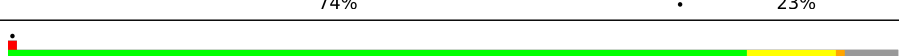

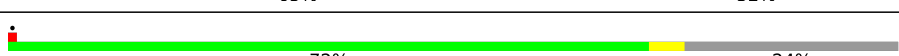
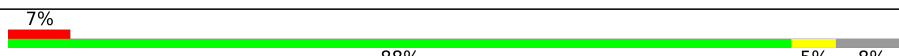
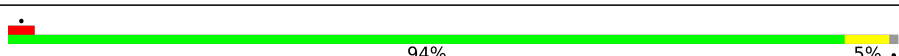
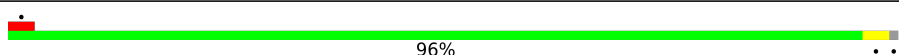




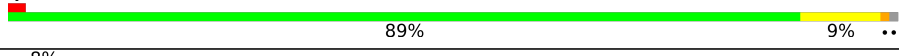

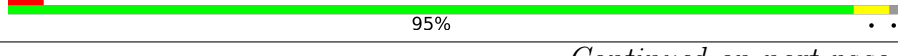

Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

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  $\geq 3$ , 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	A	257	
2	B	403	
3	C	425	
4	D	297	
5	E	291	
6	F	247	
7	G	319	
8	H	192	

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Mol	Chain	Length	Quality of chain
9	I	214	 89% 7%
10	J	178	 90% 5%
11	L	211	 93% 6%
12	M	218	 58% 5% 37%
13	N	204	 91% 9%
14	O	203	 91% 7%
15	P	184	 76% 7% 17%
16	Q	188	 89% 11%
17	R	196	 6% 85% 7% 8%
18	S	176	 92% 8%
19	T	160	 91% 9%
20	U	128	 5% 74% 23%
21	V	140	 83% 10% 6%
22	W	157	 18% 65% 32%
23	X	156	 72% 24%
24	Y	145	 7% 88% 5% 8%
25	Z	136	 94% 5%
26	a	148	 96%
27	b	245	 6% 40% 58%
28	c	115	 7% 80% 5% 15%
29	d	125	 6% 77% 9% 14%
30	e	135	 87% 8% 5%
31	f	110	 89% 9%
32	g	117	 8% 87% 10%
33	h	123	 95%

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Mol	Chain	Length	Quality of chain
34	i	105	6% 94% ..
35	j	97	78% 9% 11%
36	k	70	91% 7%
37	l	51	90% 6% ..
38	m	102	45% 6% 49%
39	n	25	28% 92% 8%
40	o	106	92% 7% .
41	p	92	95% ..
42	r	137	80% 10% 9%
43	s	318	53% 59% 38%
44	t	165	84% 90% 7%
45	2	75	52% 76% 23%
45	3	75	80% 71% 29%
46	5	3543	72% 27% .
47	7	120	84% 16%
48	8	156	72% 25% .
49	9	1869	5% 65% 25% 9%
50	AA	295	6% 66% 7% 26%
51	BB	264	74% 7% 19%
52	CC	293	68% 8% 25%
53	DD	243	12% 88% 5% 6%
54	EE	263	7% 92% 8%
55	FF	204	10% 80% 11% 9%
56	GG	249	13% 87% 8% 5%
57	HH	194	18% 88% 8% 5%

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Mol	Chain	Length	Quality of chain
58	II	208	11% 95% ..
59	JJ	194	5% 87% 8% 5%
60	KK	165	9% 55% 42% .
61	LL	158	8% 82% 8% . 9%
62	MM	132	50% 77% 11% 11%
63	NN	151	8% 87% 11% .
64	OO	168	7% 74% 6% . 19%
65	PP	145	12% 76% 7% 17%
66	QQ	146	8% 92% 5% .
67	RR	135	13% 84% 13% .
68	SS	152	12% 84% 10% . 5%
69	TT	145	8% 92% ..
70	UU	119	13% 76% 8% 16%
71	VV	83	10% 95% 5%
72	WW	130	. 90% 9% .
73	XX	143	6% 90% 8% ..
74	YY	130	5% 84% 12% 5%
75	ZZ	125	6% 56% 40% .
76	aa	115	. 77% 11% 12%
77	bb	84	13% 89% 8% ..
78	cc	69	14% 80% 10% 10%
79	dd	56	7% 91% 7% .
80	ee	133	9% 38% 59%
81	ff	156	21% 38% 5% 56%
82	gg	317	20% 93% 5% .

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Mol	Chain	Length	Quality of chain
83	hh	8	<p>100% 50% 50%</p>
84	ii	403	<p>45% 88% 8%</p>
85	jj	710	<p>25% 56% 40%</p>

## 2 Entry composition

There are 88 unique types of molecules in this entry. The entry contains 221912 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 uL2.

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

- Molecule 2 is a protein called uL3.

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

There is a discrepancy between the modelled and reference sequences:

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

- Molecule 3 is a protein called uL4.

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

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

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

There is a discrepancy between the modelled and reference sequences:

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

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

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

- Molecule 6 is a protein called uL30.

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

There are 4 discrepancies between the modelled and reference sequences:

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

- Molecule 7 is a protein called eL8.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
G	244	GLY	CYS	conflict	UNP G1STW0

- Molecule 8 is a protein called uL6.

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

- Molecule 9 is a protein called Ribosomal protein L10 (Predicted).

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

- Molecule 10 is a protein called uL5.



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

- Molecule 11 is a protein called eL13.

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

- Molecule 12 is a protein called eL14.

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

- Molecule 13 is a protein called Ribosomal protein L15.

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

- Molecule 14 is a protein called uL13.

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

- Molecule 15 is a protein called uL22.

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

- Molecule 16 is a protein called eL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	Q	187	Total	C	N	O	S	0	0
			1515	946	315	250	4		

- Molecule 17 is a protein called eL19.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
17	R	180	1508	933	328	238	9	0	0

- Molecule 18 is a protein called eL20.

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

- Molecule 19 is a protein called eL21.

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

- Molecule 20 is a protein called eL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	U	99	809	519	141	147	2	0	0

- Molecule 21 is a protein called eL14.

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

- Molecule 22 is a protein called eL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	W	106	860	538	174	144	4	0	0

- Molecule 23 is a protein called eL23.

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

- Molecule 24 is a protein called uL24.

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

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

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

- Molecule 26 is a protein called uL15.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
a	1	MET	GLN	conflict	UNP G1SNY0

- Molecule 27 is a protein called eL29.

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

- Molecule 28 is a protein called eL30.

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

- Molecule 29 is a protein called eL31.

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

- Molecule 30 is a protein called eL32.

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

- Molecule 31 is a protein called eL33.

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

- Molecule 32 is a protein called eL34.

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

- Molecule 33 is a protein called uL29.

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

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

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

- Molecule 35 is a protein called eL37.

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

- Molecule 36 is a protein called eL38.

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

- Molecule 37 is a protein called eL39.

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

- Molecule 38 is a protein called eL40.

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

- Molecule 39 is a protein called eL41.

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

- Molecule 40 is a protein called eL42.

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

- Molecule 41 is a protein called eL43.

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

- Molecule 42 is a protein called eL28.

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

- Molecule 43 is a protein called uL10.

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

- Molecule 44 is a protein called uL11.

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

- Molecule 45 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	2	75	Total	C	N	O	P	0	0
			1593	712	281	526	74		
45	3	75	Total	C	N	O	P	0	0
			1593	712	281	526	74		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
46	5	3543	Total	C	N	O	P	0	0
			75972	33833	13910	24686	3543		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
47	7	120	Total	C	N	O	P	0	0
			2558	1141	456	842	119		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
48	8	151	Total	C	N	O	P	0	0
			3208	1432	564	1062	150		

- Molecule 49 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	9	1698	Total	C	N	O	P	0	0
			36249	16180	6508	11864	1697		

- Molecule 50 is a protein called uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	AA	217	Total	C	N	O	S	0	0
			1710	1086	300	316	8		

- Molecule 51 is a protein called 40S ribosomal protein S3a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
51	BB	213	1729	1098	309	308	14	0	0

- Molecule 52 is a protein called uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
52	CC	221	1716	1111	295	301	9	0	0

- Molecule 53 is a protein called uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
53	DD	228	1768	1126	318	316	8	0	0

- Molecule 54 is a protein called eS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
54	EE	262	2076	1324	386	358	8	0	0

- Molecule 55 is a protein called uS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
55	FF	185	1471	921	277	266	7	0	0

- Molecule 56 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
56	GG	237	1923	1200	387	329	7	0	0

- Molecule 57 is a protein called eS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
57	HH	185	1488	952	271	264	1	0	0

- Molecule 58 is a protein called eS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	II	206	Total	C	N	O	S	0	0
			1686	1058	332	291	5		

- Molecule 59 is a protein called Ribosomal protein S9 (Predicted).

Mol	Chain	Residues	Atoms					AltConf	Trace
59	JJ	185	Total	C	N	O	S	0	0
			1525	969	306	248	2		

- Molecule 60 is a protein called eS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	KK	96	Total	C	N	O	S	0	0
			810	530	143	131	6		

- Molecule 61 is a protein called uS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	LL	143	Total	C	N	O	S	0	0
			1175	749	222	198	6		

- Molecule 62 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	MM	117	Total	C	N	O	S	0	0
			908	570	161	169	8		

- Molecule 63 is a protein called uS15.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	NN	149	Total	C	N	O	S	0	0
			1202	770	228	203	1		

- Molecule 64 is a protein called uS11.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	OO	136	Total	C	N	O	S	0	0
			1016	621	199	190	6		

- Molecule 65 is a protein called uS19.



Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
65	PP	120	997	635	187	168	7	0	0

- Molecule 66 is a protein called uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
66	QQ	142	1128	717	213	195	3	0	0

- Molecule 67 is a protein called eS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
67	RR	132	1068	670	199	195	4	0	0

- Molecule 68 is a protein called uS13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
68	SS	144	1190	746	241	202	1	0	0

- Molecule 69 is a protein called eS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
69	TT	141	1097	688	211	195	3	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
TT	119	GLY	TRP	conflict	UNP G1TN62

- Molecule 70 is a protein called uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
70	UU	100	795	498	152	141	4	0	0

- Molecule 71 is a protein called eS21.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	VV	83	Total	C	N	O	S	0	0
			636	393	117	121	5		

- Molecule 72 is a protein called uS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	WW	129	Total	C	N	O	S	0	0
			1034	659	193	176	6		

- Molecule 73 is a protein called uS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	XX	141	Total	C	N	O	S	0	0
			1098	693	219	183	3		

- Molecule 74 is a protein called eS24.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	YY	124	Total	C	N	O	S	0	0
			1011	640	198	168	5		

- Molecule 75 is a protein called eS25.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	ZZ	75	Total	C	N	O	S	0	0
			598	382	111	104	1		

- Molecule 76 is a protein called eS26.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	aa	101	Total	C	N	O	S	0	0
			814	507	170	132	5		

- Molecule 77 is a protein called 40S ribosomal protein S27.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	bb	83	Total	C	N	O	S	0	0
			651	408	121	115	7		

- Molecule 78 is a protein called eS28.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	cc	62	Total	C	N	O	S	0	0
			488	297	97	92	2		

- Molecule 79 is a protein called uS14.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	dd	55	Total	C	N	O	S	0	0
			459	286	94	74	5		

- Molecule 80 is a protein called eS30.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	ee	55	Total	C	N	O	S	0	0
			443	274	97	71	1		

- Molecule 81 is a protein called eS31.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	ff	68	Total	C	N	O	S	0	0
			555	351	103	94	7		

- Molecule 82 is a protein called RACK1.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	gg	313	Total	C	N	O	S	0	0
			2436	1535	424	465	12		

- Molecule 83 is a RNA chain called mRNA (polyadenylated).

Mol	Chain	Residues	Atoms					AltConf	Trace
83	hh	8	Total	C	N	O	P	0	0
			176	80	40	48	8		

- Molecule 84 is a protein called Protein pelota homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
84	ii	372	Total	C	N	O	S	0	0
			2947	1844	528	559	16		

There are 19 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
ii	221	MET	LEU	variant	UNP Q9BRX2
ii	386	GLY	-	expression tag	UNP Q9BRX2
ii	387	SER	-	expression tag	UNP Q9BRX2
ii	388	GLU	-	expression tag	UNP Q9BRX2
ii	389	ASN	-	expression tag	UNP Q9BRX2
ii	390	LEU	-	expression tag	UNP Q9BRX2
ii	391	TYR	-	expression tag	UNP Q9BRX2
ii	392	PHE	-	expression tag	UNP Q9BRX2
ii	393	GLN	-	expression tag	UNP Q9BRX2
ii	394	GLY	-	expression tag	UNP Q9BRX2
ii	395	ALA	-	expression tag	UNP Q9BRX2
ii	396	HIS	-	expression tag	UNP Q9BRX2
ii	397	HIS	-	expression tag	UNP Q9BRX2
ii	398	HIS	-	expression tag	UNP Q9BRX2
ii	399	HIS	-	expression tag	UNP Q9BRX2
ii	400	HIS	-	expression tag	UNP Q9BRX2
ii	401	HIS	-	expression tag	UNP Q9BRX2
ii	402	SER	-	expression tag	UNP Q9BRX2
ii	403	THR	-	expression tag	UNP Q9BRX2

- Molecule 85 is a protein called HBS1-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
85	jj	425	3292	2100	565	609	18	0	0

There are 26 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
jj	-25	MET	-	initiating methionine	UNP Q9Y450
jj	-24	ASP	-	expression tag	UNP Q9Y450
jj	-23	TYR	-	expression tag	UNP Q9Y450
jj	-22	LYS	-	expression tag	UNP Q9Y450
jj	-21	ASP	-	expression tag	UNP Q9Y450
jj	-20	HIS	-	expression tag	UNP Q9Y450
jj	-19	ASP	-	expression tag	UNP Q9Y450
jj	-18	GLY	-	expression tag	UNP Q9Y450
jj	-17	ASP	-	expression tag	UNP Q9Y450
jj	-16	TYR	-	expression tag	UNP Q9Y450
jj	-15	LYS	-	expression tag	UNP Q9Y450
jj	-14	ASP	-	expression tag	UNP Q9Y450
jj	-13	HIS	-	expression tag	UNP Q9Y450
jj	-12	ASP	-	expression tag	UNP Q9Y450

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Chain	Residue	Modelled	Actual	Comment	Reference
jj	-11	ILE	-	expression tag	UNP Q9Y450
jj	-10	ASP	-	expression tag	UNP Q9Y450
jj	-9	TYR	-	expression tag	UNP Q9Y450
jj	-8	LYS	-	expression tag	UNP Q9Y450
jj	-7	ASP	-	expression tag	UNP Q9Y450
jj	-6	ASP	-	expression tag	UNP Q9Y450
jj	-5	ASP	-	expression tag	UNP Q9Y450
jj	-4	ASP	-	expression tag	UNP Q9Y450
jj	-3	LYS	-	expression tag	UNP Q9Y450
jj	-2	ALA	-	expression tag	UNP Q9Y450
jj	-1	GLY	-	expression tag	UNP Q9Y450
jj	0	SER	-	expression tag	UNP Q9Y450

- Molecule 86 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	AltConf
86	B	1	Total Mg 1 1	0
86	I	1	Total Mg 1 1	0
86	L	1	Total Mg 1 1	0
86	P	1	Total Mg 1 1	0
86	Q	1	Total Mg 1 1	0
86	V	1	Total Mg 1 1	0
86	a	1	Total Mg 1 1	0
86	e	1	Total Mg 1 1	0
86	j	1	Total Mg 1 1	0
86	5	160	Total Mg 160 160	0
86	7	5	Total Mg 5 5	0
86	8	3	Total Mg 3 3	0
86	9	58	Total Mg 58 58	0

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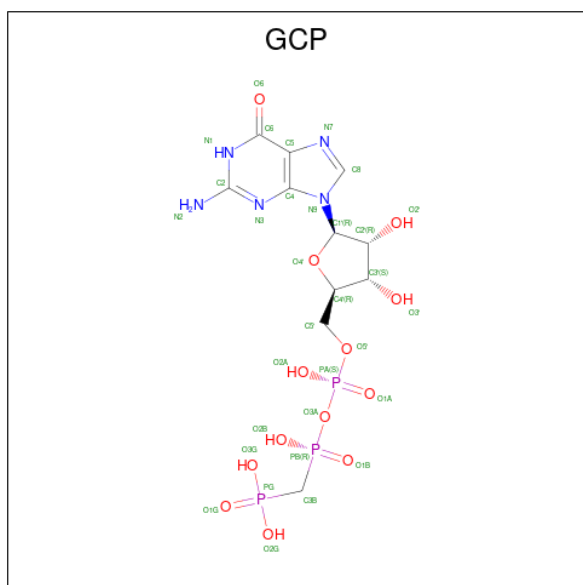
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Mol	Chain	Residues	Atoms		AltConf
86	jj	1	Total	Mg	0
			1	1	

- Molecule 87 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
87	g	1	Total	Zn	0
			1	1	
87	j	1	Total	Zn	0
			1	1	
87	m	1	Total	Zn	0
			1	1	
87	o	1	Total	Zn	0
			1	1	
87	p	1	Total	Zn	0
			1	1	
87	aa	1	Total	Zn	0
			1	1	
87	dd	1	Total	Zn	0
			1	1	
87	ff	1	Total	Zn	0
			1	1	

- Molecule 88 is PHOSPHOMETHYLPHOSPHONIC ACID GUANYLATE ESTER (three-letter code: GCP) (formula: C<sub>11</sub>H<sub>18</sub>N<sub>5</sub>O<sub>13</sub>P<sub>3</sub>).

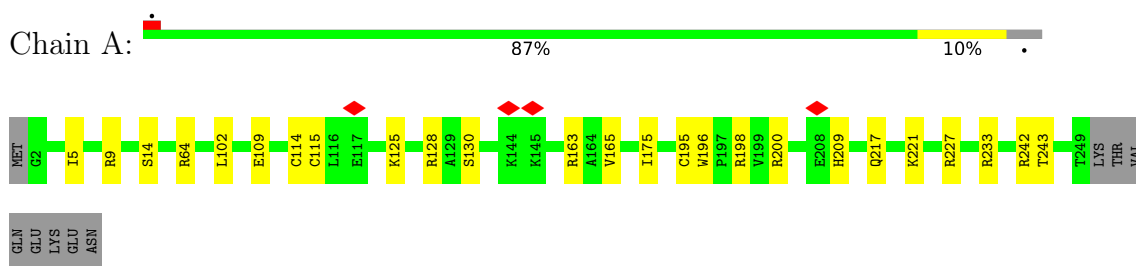


Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
88	jj	1	32	11	5	13	3	0

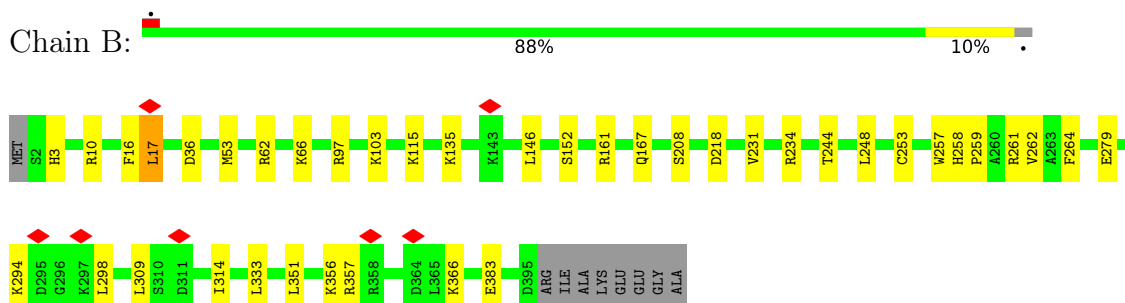
### 3 Residue-property plots

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

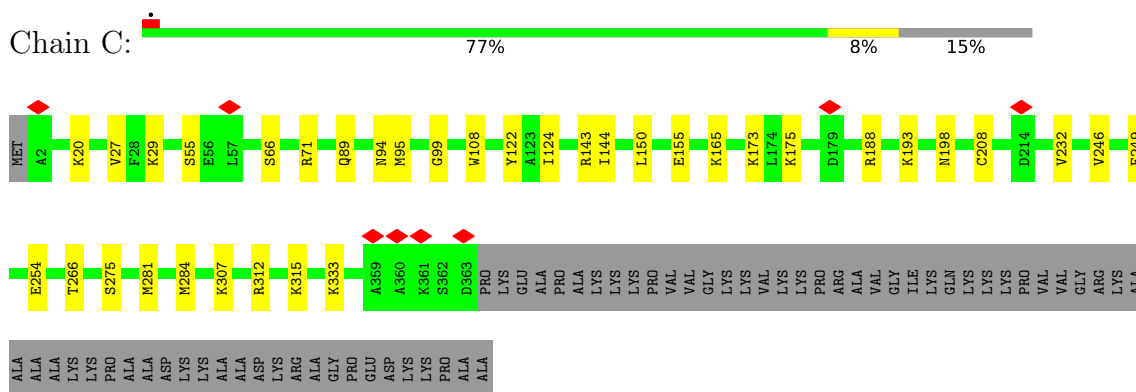
- Molecule 1: uL2



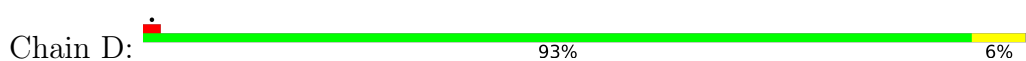
- Molecule 2: uL3



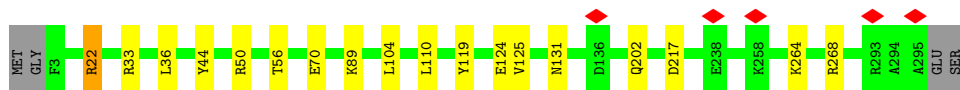
- Molecule 3: uL4



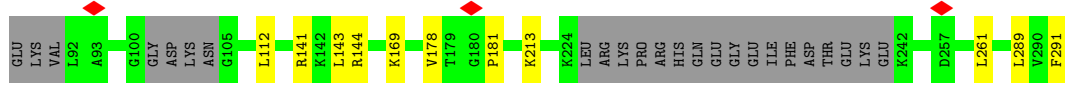
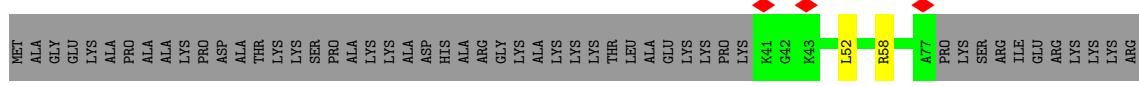
- Molecule 4: 60S ribosomal protein L5



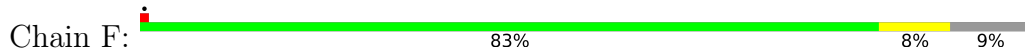




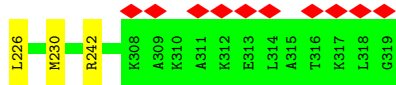
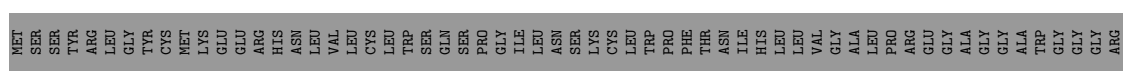
• Molecule 5: 60S ribosomal protein L6



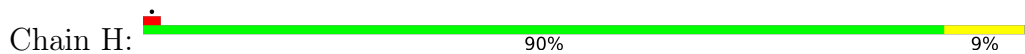
• Molecule 6: uL30



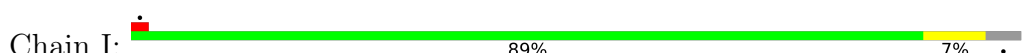
• Molecule 7: eL8



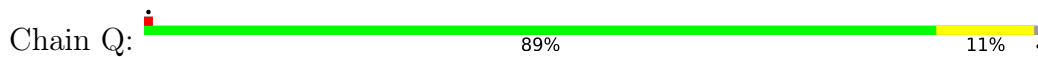
• Molecule 8: uL6



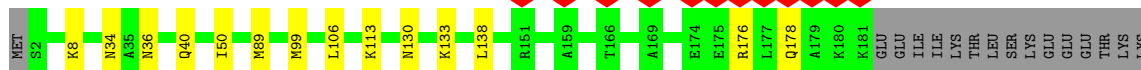
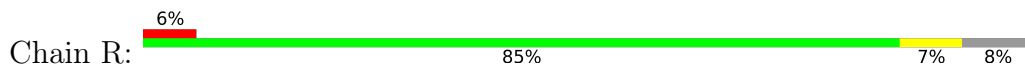
• Molecule 9: Ribosomal protein L10 (Predicted)



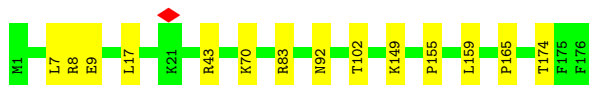
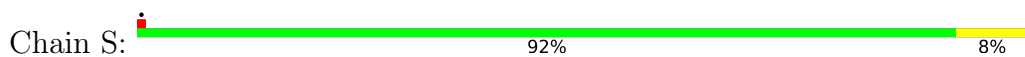




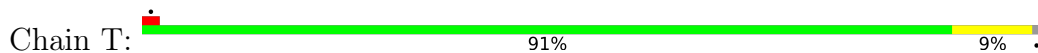
• Molecule 17: eL19



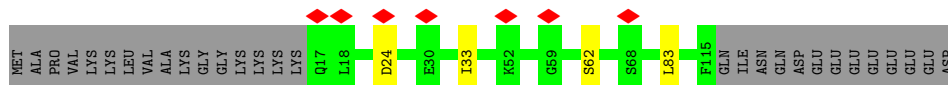
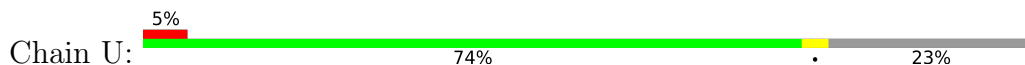
• Molecule 18: eL20



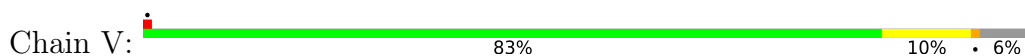
• Molecule 19: eL21



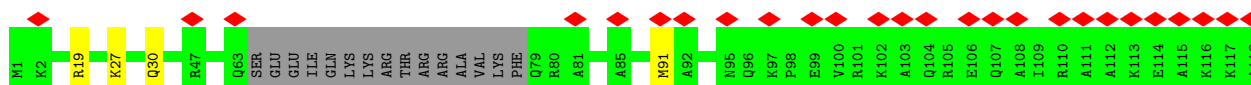
• Molecule 20: eL22



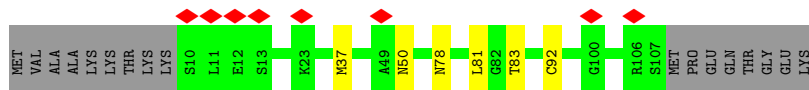
• Molecule 21: eL14



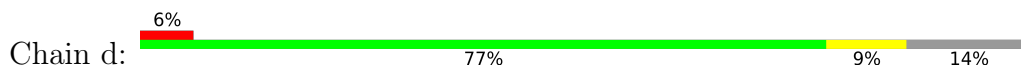
• Molecule 22: eL24



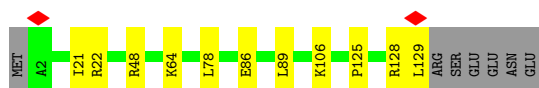
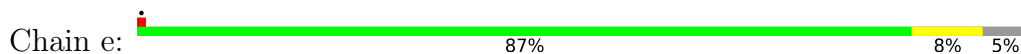




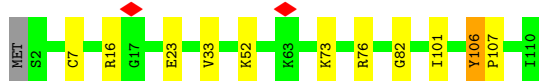
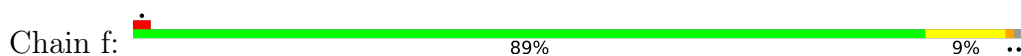
• Molecule 29: eL31



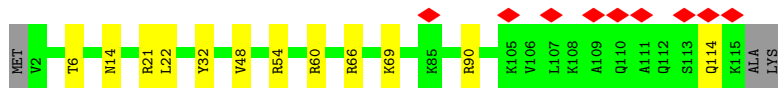
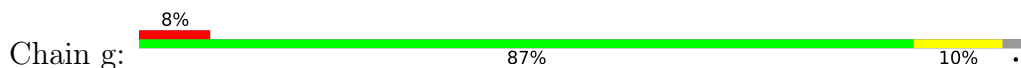
• Molecule 30: eL32



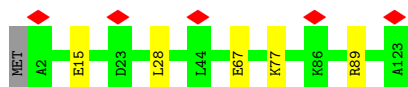
• Molecule 31: eL33



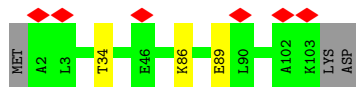
• Molecule 32: eL34



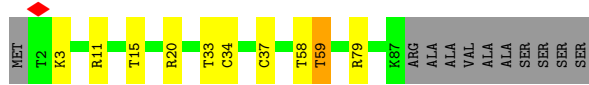
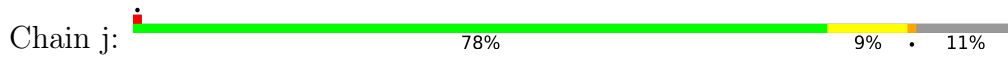
• Molecule 33: uL29



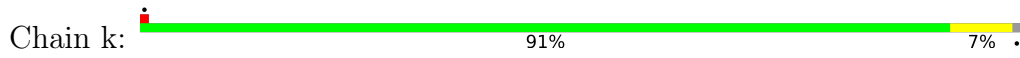
• Molecule 34: 60S ribosomal protein L36



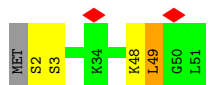
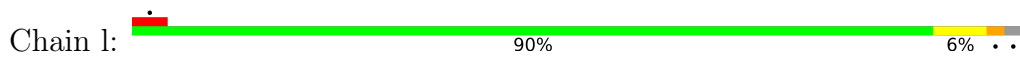
• Molecule 35: eL37



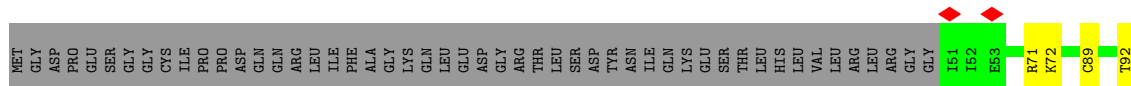
• Molecule 36: eL38



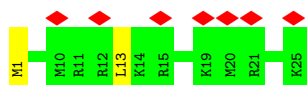
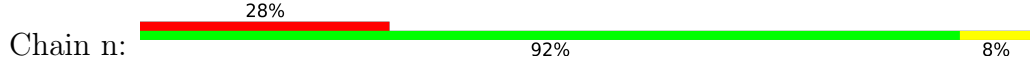
• Molecule 37: eL39



• Molecule 38: eL40



• Molecule 39: eL41

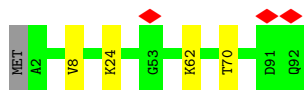


• Molecule 40: eL42

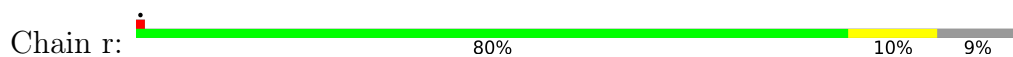


• Molecule 41: eL43

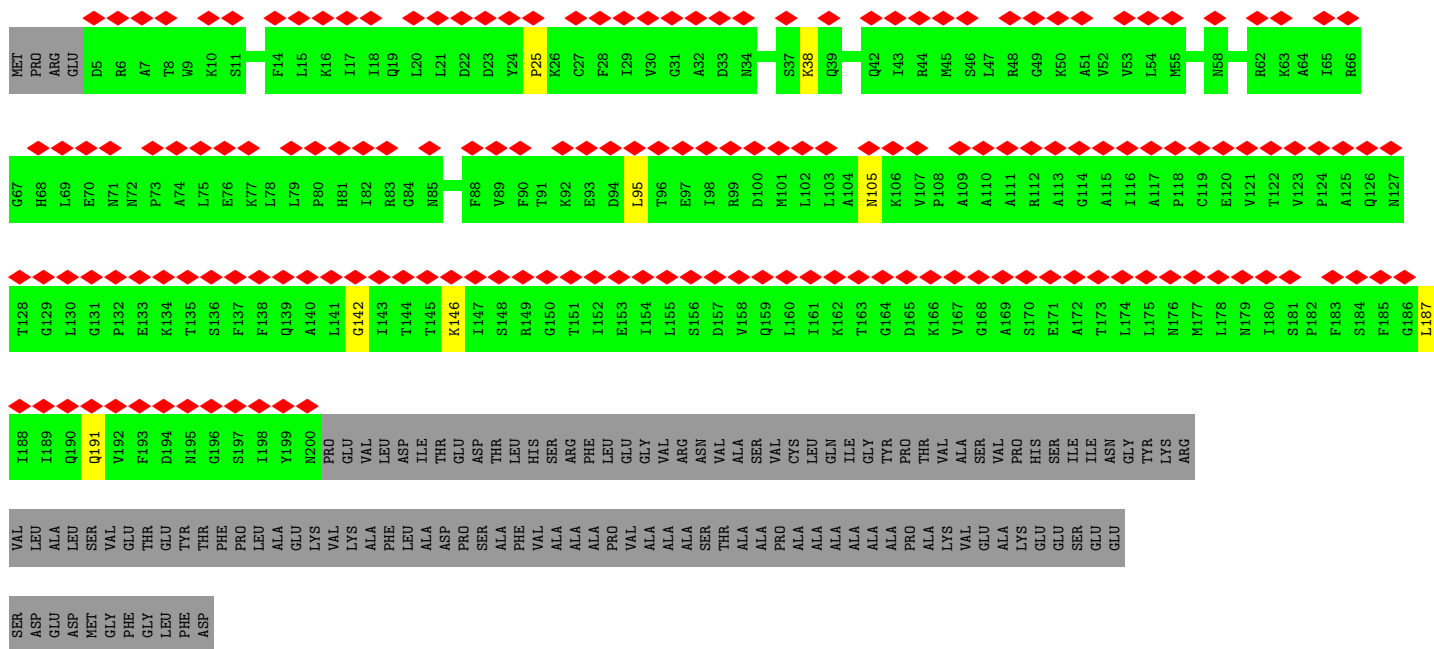




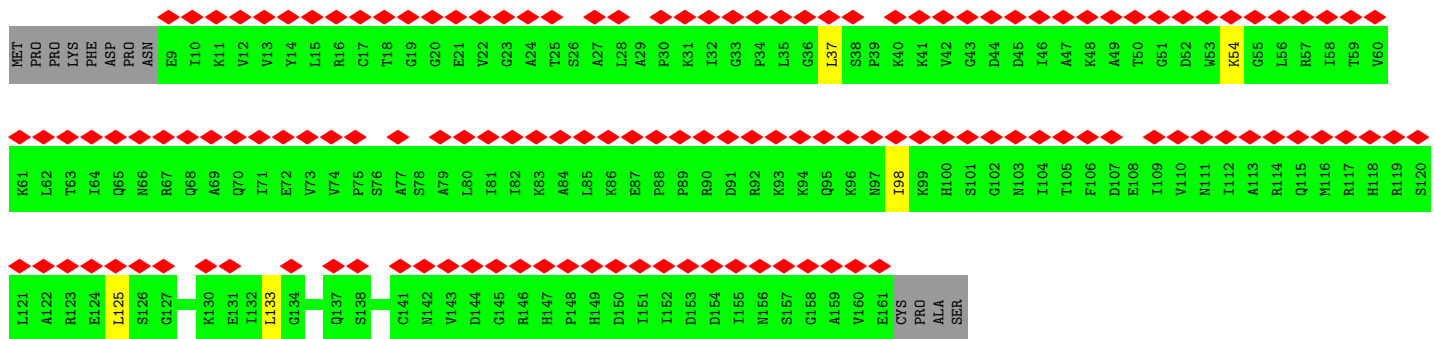
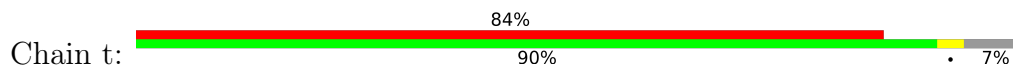
- Molecule 42: eL28



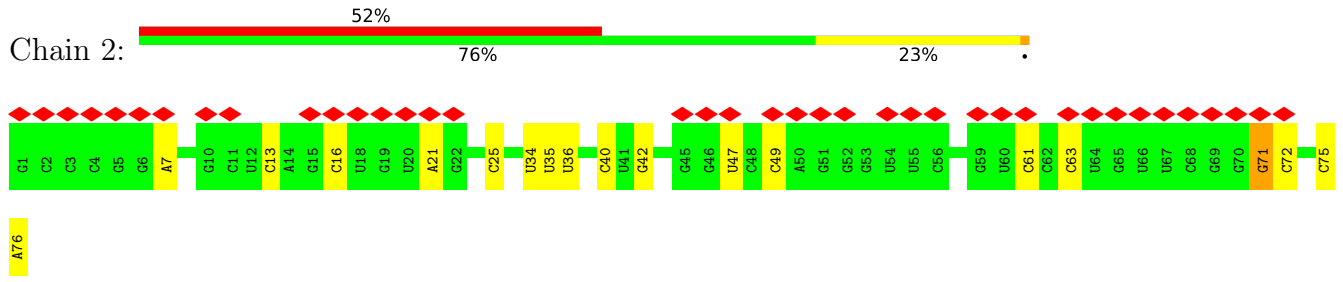
- Molecule 43: uL10



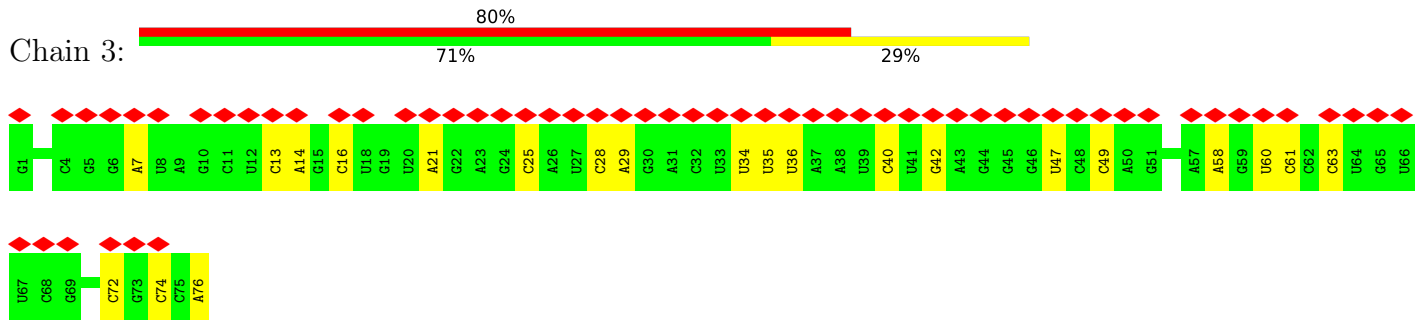
- Molecule 44: uL11



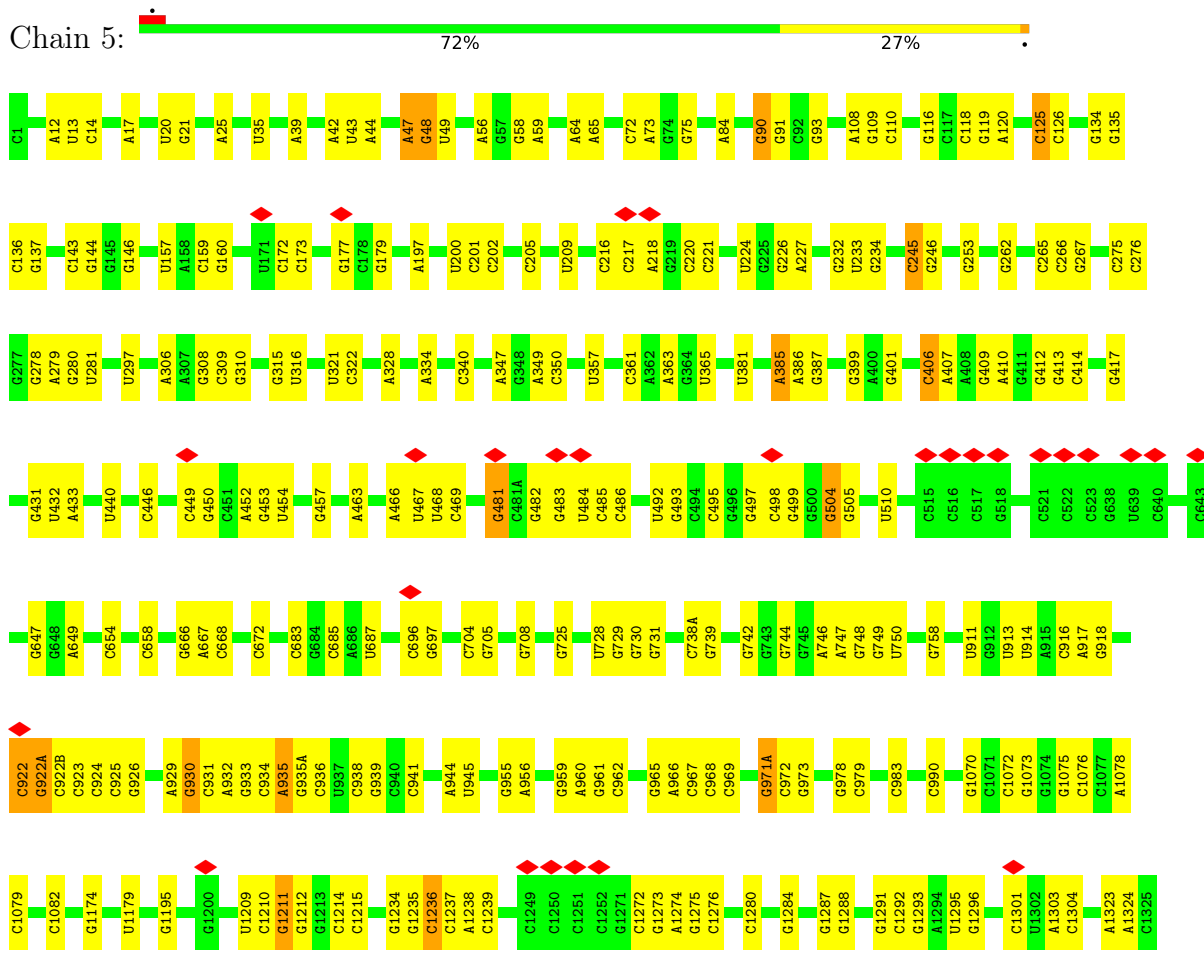
- Molecule 45: tRNA



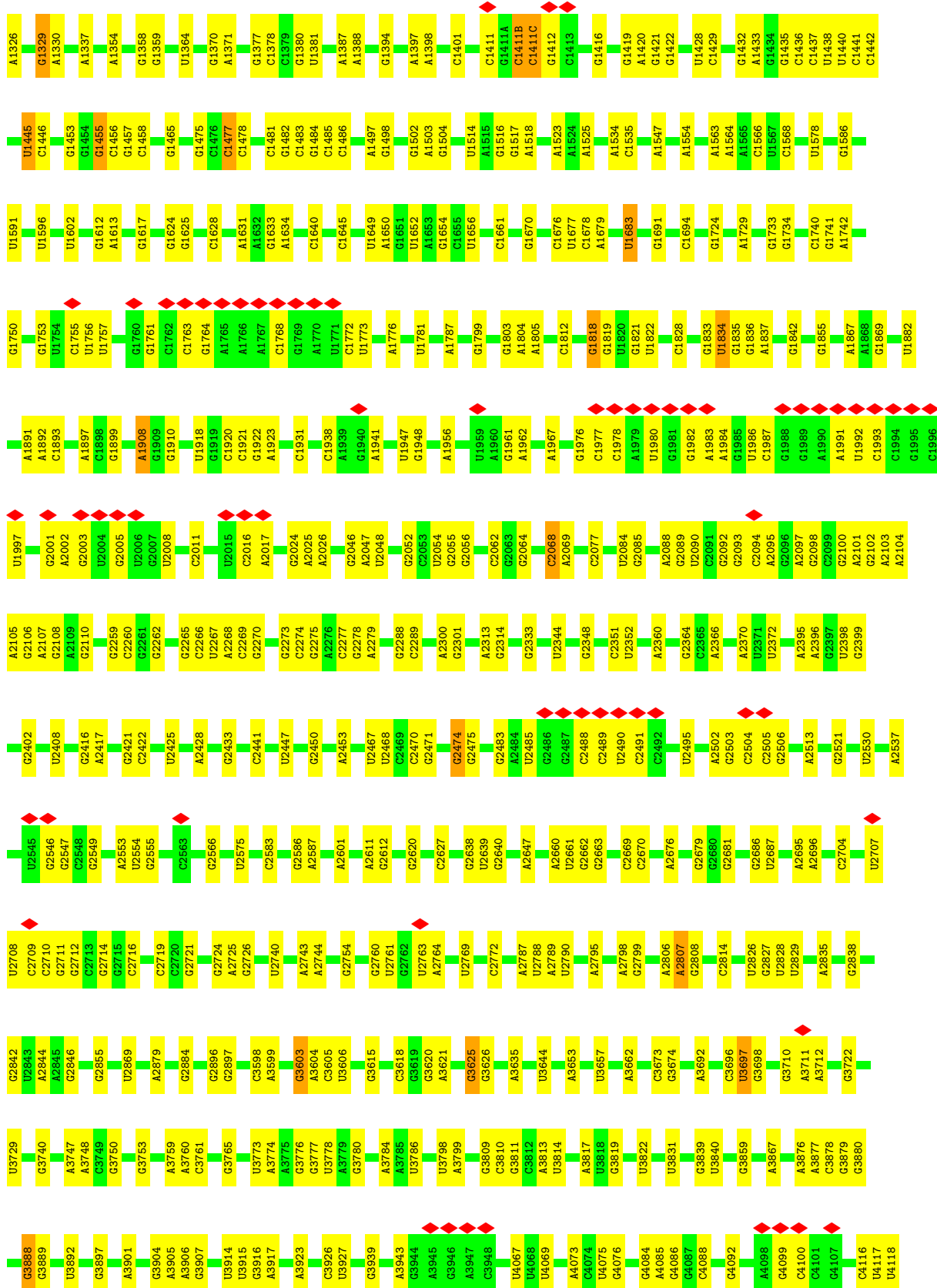
• Molecule 45: tRNA

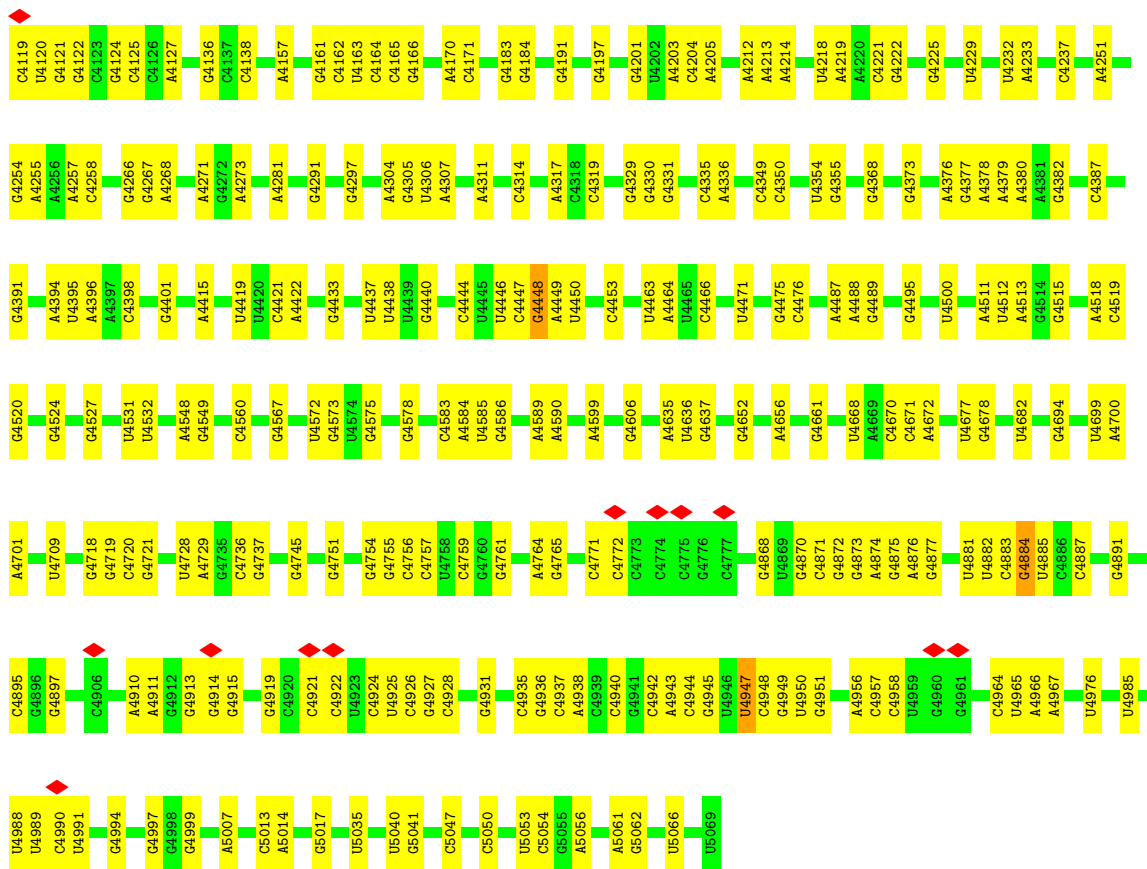


• Molecule 46: 28S ribosomal RNA

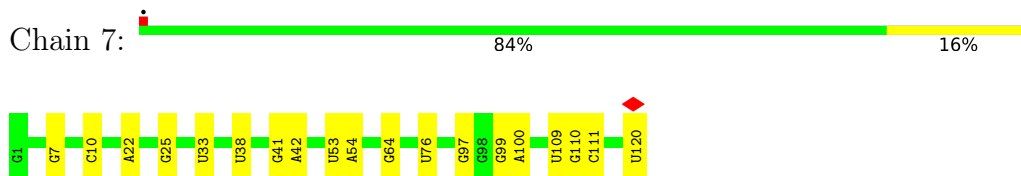




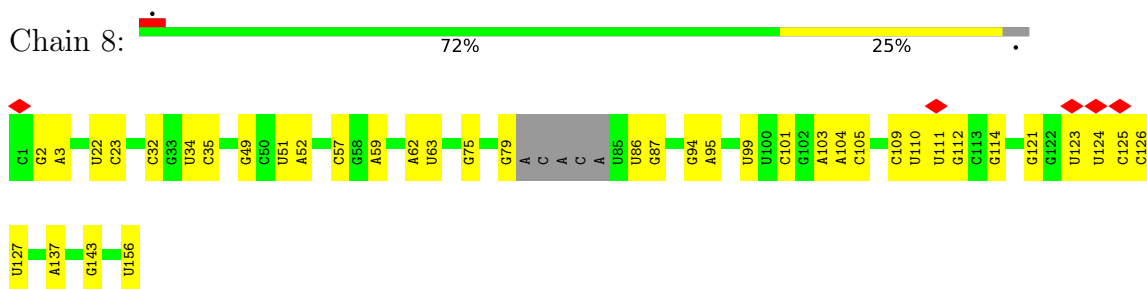




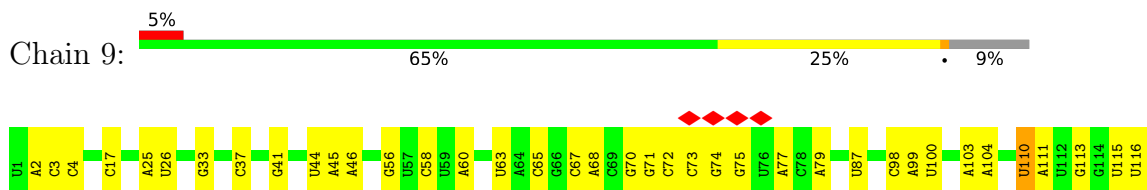
• Molecule 47: 5S ribosomal RNA

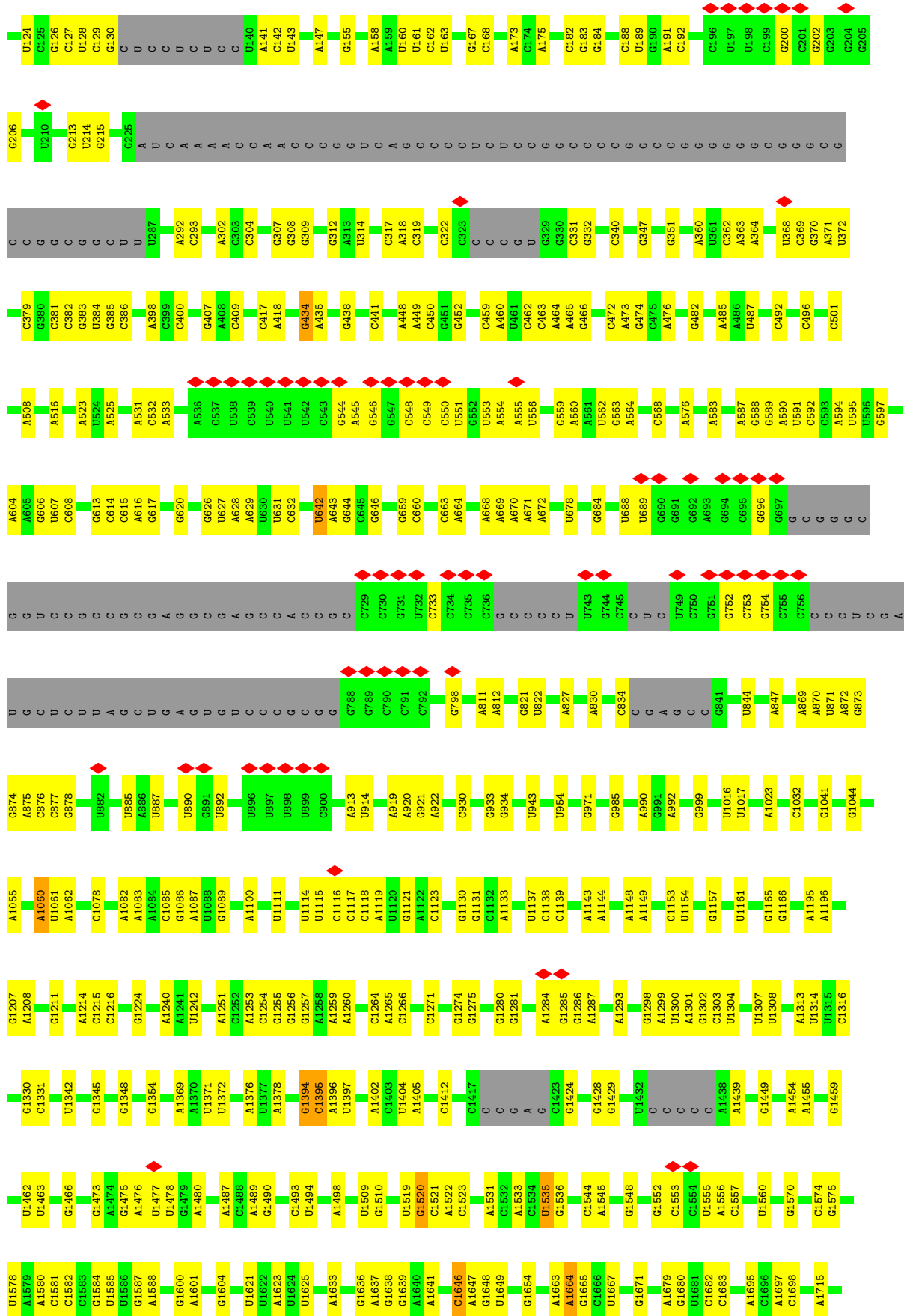


• Molecule 48: 5.8S ribosomal RNA

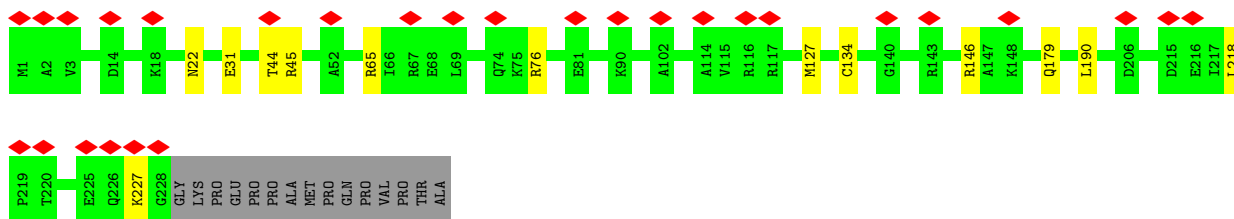


• Molecule 49: 18S ribosomal RNA

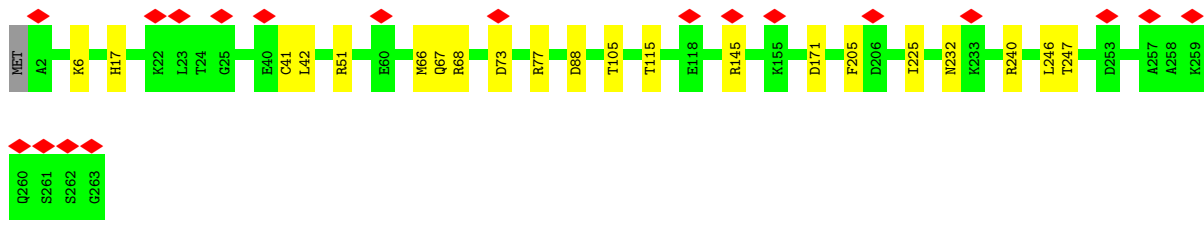




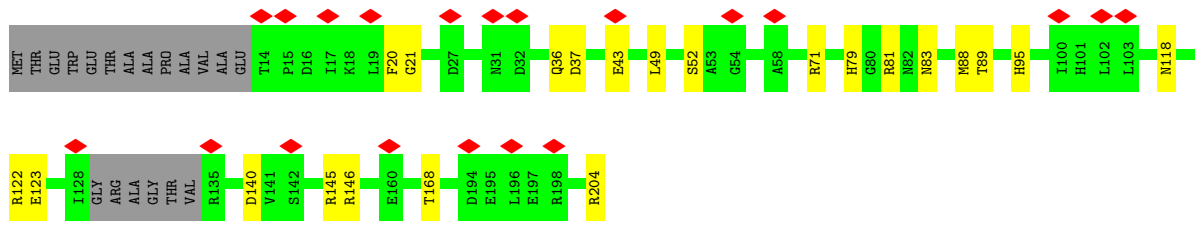
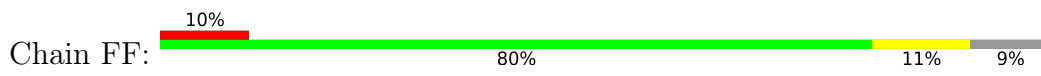




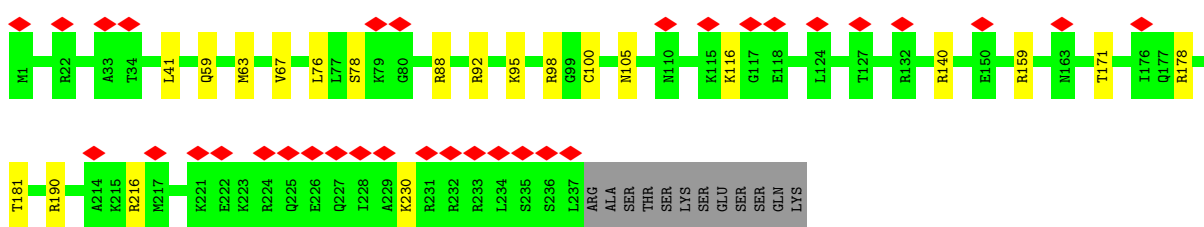
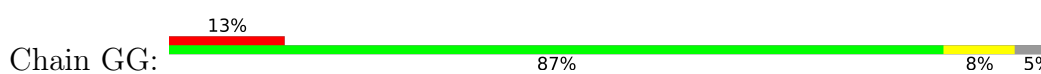
• Molecule 54: eS4



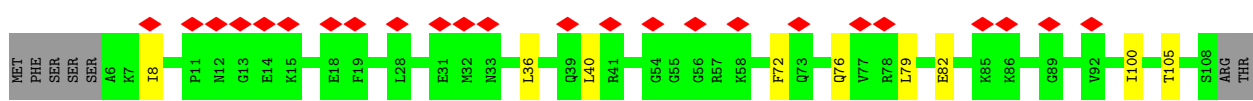
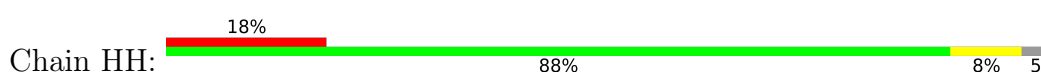
• Molecule 55: uS7

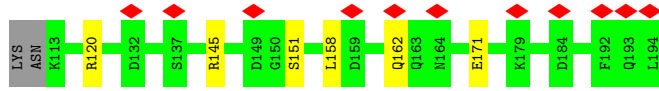


• Molecule 56: 40S ribosomal protein S6

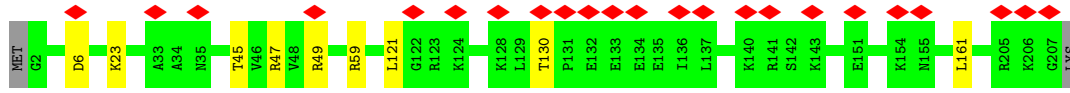
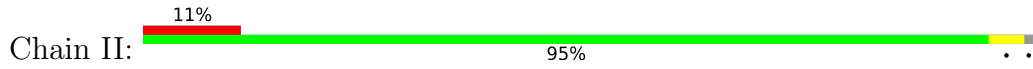


• Molecule 57: eS7

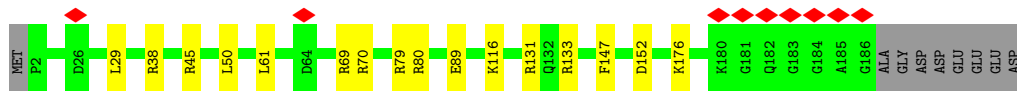
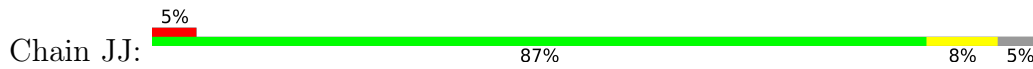




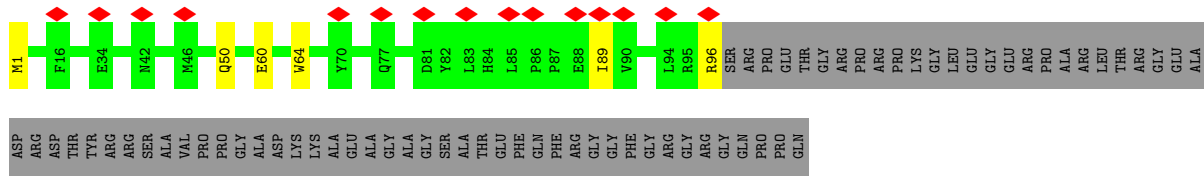
• Molecule 58: eS8



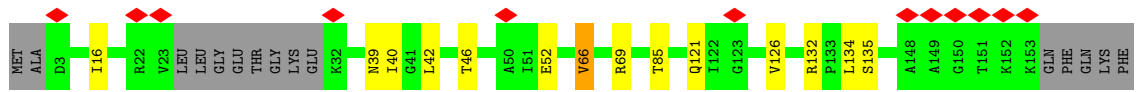
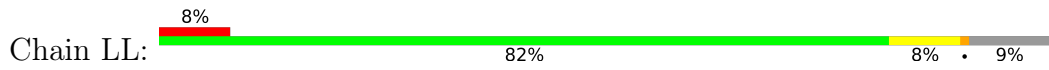
• Molecule 59: Ribosomal protein S9 (Predicted)



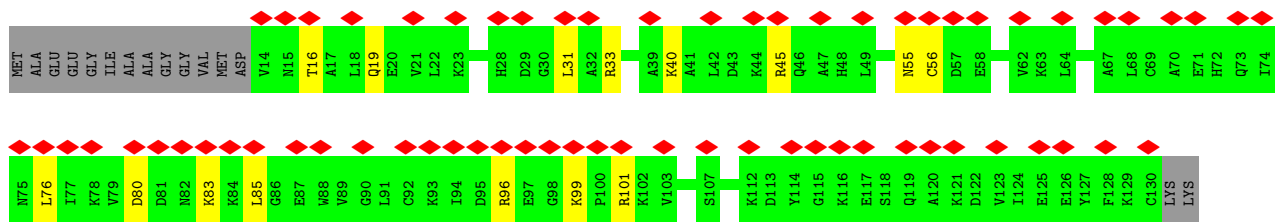
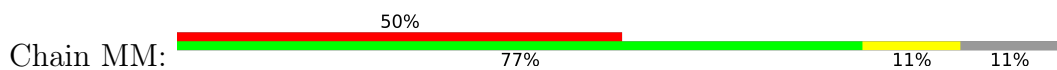
• Molecule 60: eS10



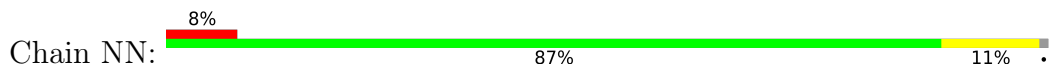
• Molecule 61: uS17

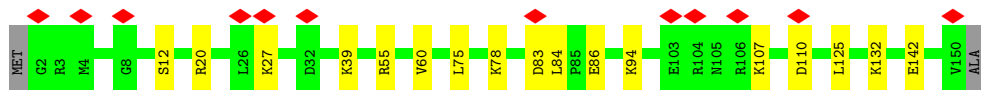


• Molecule 62: 40S ribosomal protein S12

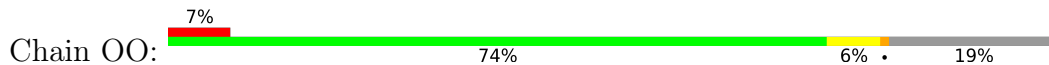


• Molecule 63: uS15

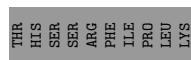
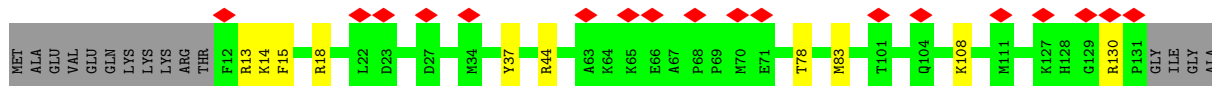
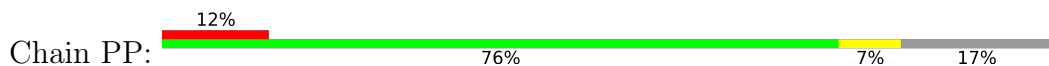




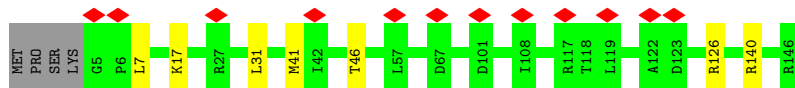
• Molecule 64: uS11



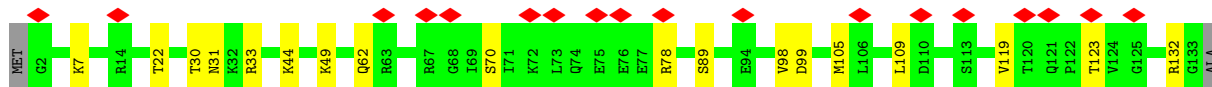
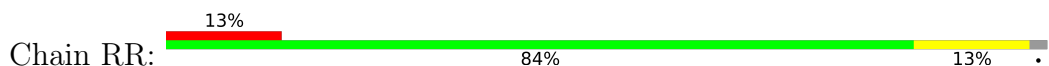
• Molecule 65: uS19



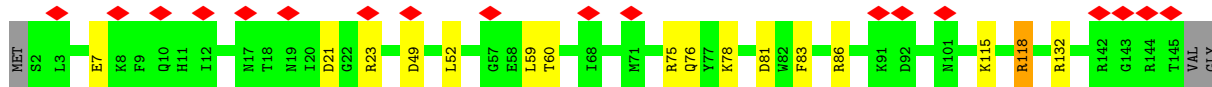
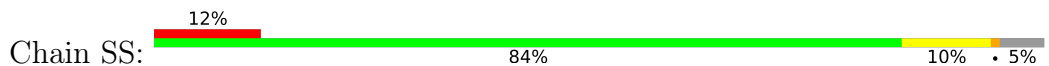
• Molecule 66: uS9



• Molecule 67: eS17

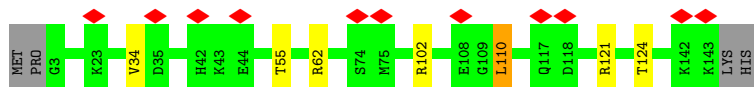


• Molecule 68: uS13

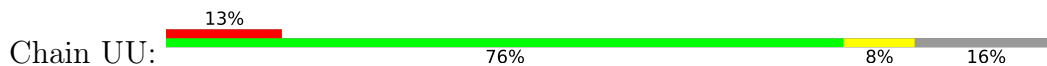


VAL  
SER  
LYS  
LYS  
LYS

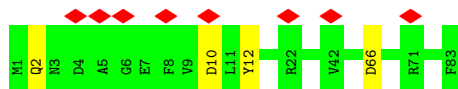
- Molecule 69: eS19



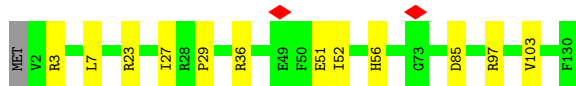
- Molecule 70: uS10



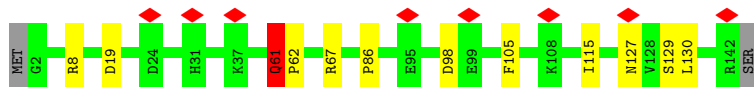
- Molecule 71: eS21



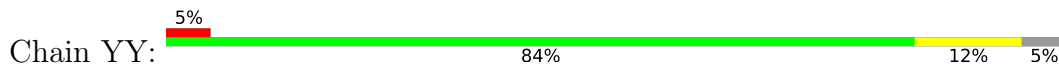
- Molecule 72: uS8



- Molecule 73: uS12



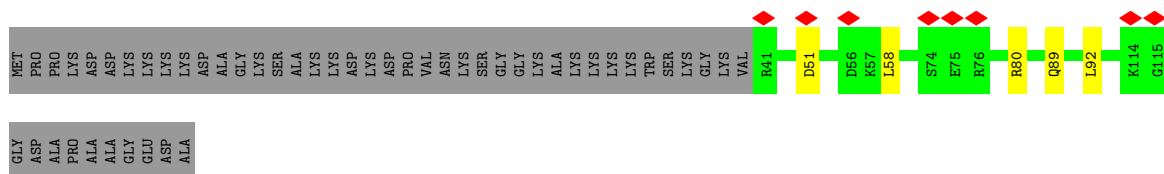
- Molecule 74: eS24



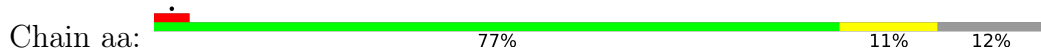
- Molecule 75: eS25



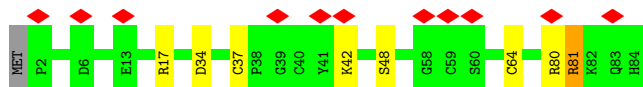
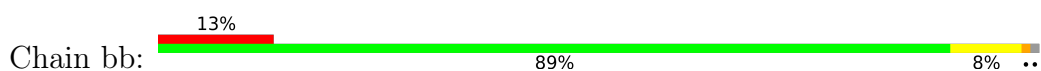




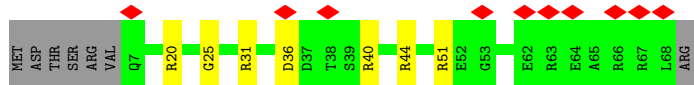
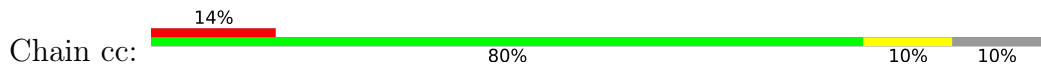
• Molecule 76: eS26



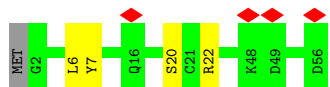
• Molecule 77: 40S ribosomal protein S27



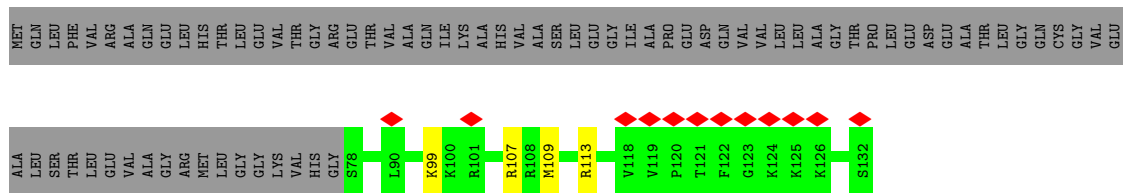
• Molecule 78: eS28



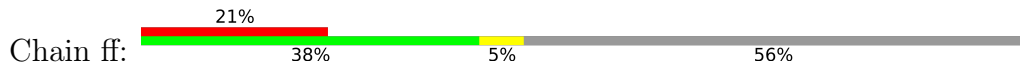
• Molecule 79: uS14

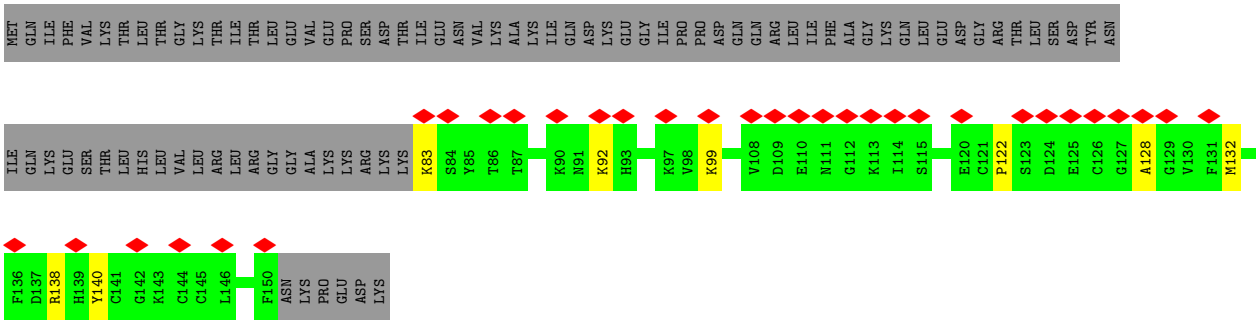


• Molecule 80: eS30

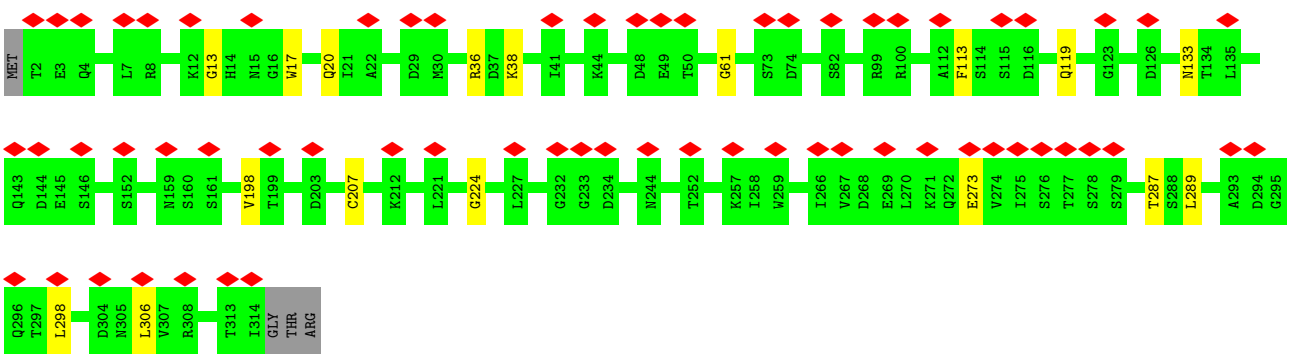


• Molecule 81: eS31





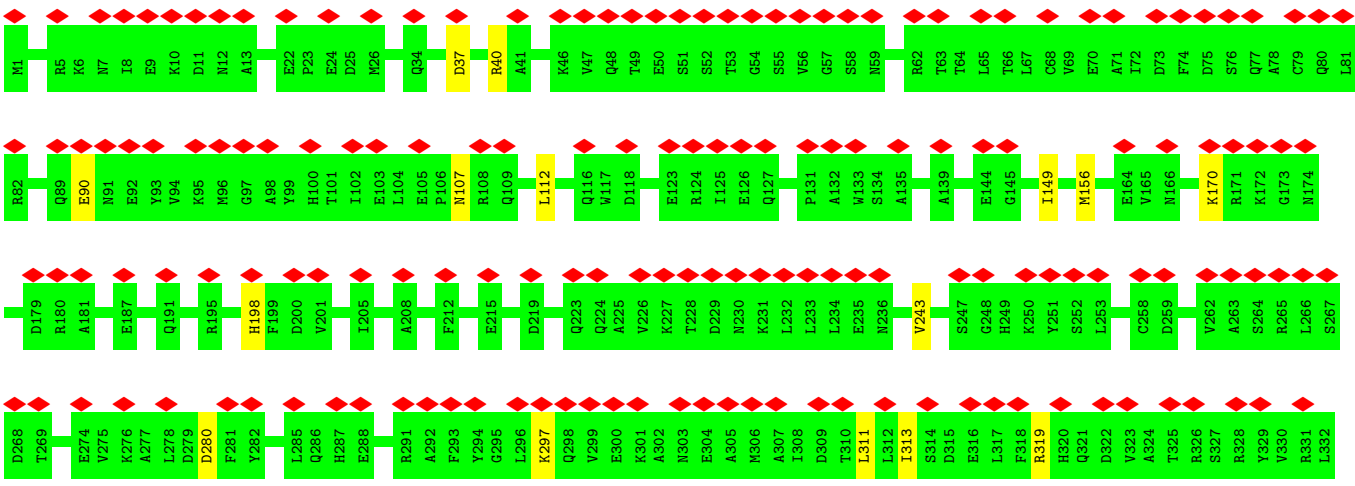
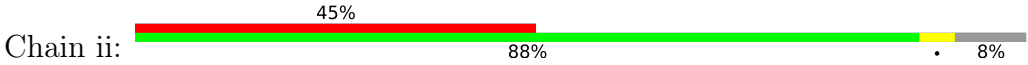
• Molecule 82: RACK1



• Molecule 83: mRNA (polyadenylated)



• Molecule 84: Protein pelota homolog





## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	20717	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	30	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	104478	Depositor
Image detector	FEI FALCON II (4k x 4k)	Depositor
Maximum map value	0.572	Depositor
Minimum map value	-0.367	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.018	Depositor
Recommended contour level	0.08	Depositor
Map size ( $\text{\AA}$ )	562.8, 562.8, 562.8	wwPDB
Map dimensions	420, 420, 420	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	1.3399999, 1.3399999, 1.3399999	Depositor

## 5 Model quality

### 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: GCP, MG, 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	A	0.44	0/1936	0.79	1/2596 (0.0%)
2	B	0.45	0/3240	0.77	2/4339 (0.0%)
3	C	0.48	0/2937	0.79	0/3946
4	D	0.40	0/2437	0.71	3/3264 (0.1%)
5	E	0.39	0/1762	0.70	0/2362
6	F	0.51	0/1911	0.78	0/2549
7	G	0.37	0/1910	0.67	0/2569
8	H	0.41	0/1535	0.72	0/2063
9	I	0.42	0/1702	0.71	0/2272
10	J	0.39	0/1385	0.68	0/1852
11	L	0.42	0/1733	0.77	1/2316 (0.0%)
12	M	0.45	0/1158	0.75	0/1547
13	N	0.44	0/1746	0.79	1/2338 (0.0%)
14	O	0.48	0/1662	0.77	0/2222
15	P	0.45	0/1268	0.71	0/1700
16	Q	0.47	0/1539	0.84	1/2054 (0.0%)
17	R	0.40	0/1524	0.74	0/2013
18	S	0.51	0/1501	0.80	0/2012
19	T	0.43	0/1326	0.73	0/1770
20	U	0.39	0/823	0.63	0/1104
21	V	0.45	0/993	0.75	0/1332
22	W	0.44	0/873	0.61	0/1158
23	X	0.40	0/984	0.68	0/1323
24	Y	0.38	0/1132	0.69	0/1504
25	Z	0.42	0/1130	0.67	0/1507
26	a	0.46	0/1191	0.77	0/1590
27	b	0.40	0/861	0.68	0/1138
28	c	0.39	0/771	0.63	0/1034
29	d	0.43	0/903	0.75	0/1216
30	e	0.50	1/1071 (0.1%)	0.74	0/1429
31	f	0.48	0/895	0.80	0/1198
32	g	0.46	0/916	0.79	0/1220

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
33	h	0.38	0/1021	0.67	0/1348
34	i	0.38	0/841	0.68	0/1112
35	j	0.44	0/720	0.82	0/952
36	k	0.37	0/575	0.64	0/761
37	l	0.44	0/459	0.76	0/608
38	m	0.38	0/435	0.67	0/575
39	n	0.38	0/240	0.71	0/305
40	o	0.40	0/864	0.68	0/1140
41	p	0.44	0/718	0.68	0/953
42	r	0.42	0/1010	0.73	0/1354
43	s	0.37	0/1530	0.50	0/2064
44	t	0.37	0/1174	0.52	0/1582
45	2	0.23	0/1777	0.68	1/2763 (0.0%)
45	3	0.21	0/1777	0.66	0/2763
46	5	0.39	13/84961 (0.0%)	0.79	56/132460 (0.0%)
47	7	0.33	0/2858	0.67	0/4455
48	8	0.37	0/3581	0.73	0/5577
49	9	0.32	0/40524	0.73	12/63134 (0.0%)
50	AA	0.40	0/1747	0.68	0/2374
51	BB	0.36	0/1756	0.64	0/2350
52	CC	0.40	0/1753	0.71	0/2369
53	DD	0.38	0/1796	0.67	0/2417
54	EE	0.39	0/2118	0.68	0/2849
55	FF	0.39	0/1492	0.69	1/2005 (0.0%)
56	GG	0.37	0/1946	0.69	0/2590
57	HH	0.38	0/1510	0.64	0/2022
58	II	0.43	0/1715	0.75	0/2287
59	JJ	0.39	0/1550	0.76	0/2069
60	KK	0.39	0/834	0.60	0/1125
61	LL	0.41	0/1195	0.74	0/1597
62	MM	0.38	0/918	0.57	0/1233
63	NN	0.39	0/1226	0.72	0/1649
64	OO	0.40	0/1029	0.81	1/1380 (0.1%)
65	PP	0.40	0/1017	0.70	0/1358
66	QQ	0.37	0/1146	0.69	0/1534
67	RR	0.41	0/1082	0.64	0/1452
68	SS	0.40	0/1208	0.72	0/1618
69	TT	0.39	0/1115	0.68	1/1493 (0.1%)
70	UU	0.38	0/805	0.69	0/1081
71	VV	0.41	0/643	0.76	0/860
72	WW	0.41	0/1051	0.77	0/1406
73	XX	0.39	0/1116	0.72	0/1490
74	YY	0.37	0/1028	0.66	0/1366

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
75	ZZ	0.36	0/604	0.64	0/810
76	aa	0.40	0/828	0.83	1/1109 (0.1%)
77	bb	0.39	0/665	0.66	0/891
78	cc	0.39	0/490	0.74	0/656
79	dd	0.43	0/470	0.71	0/623
80	ee	0.37	0/447	0.68	0/587
81	ff	0.38	0/567	0.55	0/753
82	gg	0.35	0/2493	0.58	0/3394
83	hh	0.27	0/199	0.76	0/308
84	ii	0.36	0/2996	0.58	0/4050
85	jj	0.36	0/3352	0.57	0/4523
All	All	0.39	14/237727 (0.0%)	0.74	82/348121 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
2	B	0	3
4	D	0	1
11	L	0	1
31	f	0	1
37	l	0	1
46	5	0	2
72	WW	0	1
73	XX	0	1
All	All	0	11

All (14) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
46	5	935	A	C5-C6	-15.76	1.26	1.41
46	5	935	A	C6-N1	-11.91	1.27	1.35
46	5	935	A	C2-N3	10.06	1.42	1.33
46	5	481	G	N1-C2	-9.60	1.30	1.37
46	5	481	G	C2-N2	-9.49	1.25	1.34
46	5	481	G	C5-C6	8.75	1.51	1.42
46	5	935	A	N3-C4	7.09	1.39	1.34
46	5	922(A)	G	O3'-P	6.89	1.69	1.61
46	5	935	A	C6-N6	-6.64	1.28	1.33
46	5	481	G	C2-N3	-6.34	1.27	1.32

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
30	e	129	LEU	C-O	5.65	1.34	1.23
46	5	1411(B)	C	O3'-P	5.10	1.67	1.61
46	5	2273	G	O3'-P	-5.04	1.55	1.61
46	5	1517	G	O3'-P	-5.03	1.55	1.61

All (82) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	5	481	G	N1-C2-N2	-52.72	68.75	116.20
46	5	935	A	C5-C6-N6	-48.91	84.57	123.70
46	5	935	A	N1-C6-N6	-35.79	97.12	118.60
46	5	935	A	C6-N1-C2	-31.76	99.55	118.60
46	5	481	G	N3-C2-N2	-29.71	99.10	119.90
46	5	935	A	C4-C5-C6	-26.66	103.67	117.00
46	5	481	G	C6-N1-C2	-20.66	112.71	125.10
46	5	481	G	C2-N3-C4	-17.30	103.25	111.90
46	5	922	C	C2'-C3'-O3'	11.77	135.40	109.50
46	5	935	A	N3-C4-C5	-11.49	118.76	126.80
46	5	935	A	N1-C2-N3	-10.53	124.03	129.30
4	D	22	ARG	NE-CZ-NH1	9.56	125.08	120.30
46	5	90	G	C2'-C3'-O3'	8.10	127.32	109.50
46	5	922	C	O4'-C4'-C3'	-8.05	95.95	104.00
46	5	406	C	C2'-C3'-O3'	7.84	126.74	109.50
46	5	3697	U	C2'-C3'-O3'	7.81	126.69	109.50
49	9	1835	A	C2'-C3'-O3'	7.75	126.56	109.50
49	9	1394	G	C2'-C3'-O3'	7.63	126.29	109.50
46	5	922	C	N1-C1'-C2'	-7.58	103.66	112.00
49	9	110	U	C2'-C3'-O3'	7.51	126.03	109.50
46	5	3888	G	C2'-C3'-O3'	7.12	125.17	109.50
46	5	1211	G	C2'-C3'-O3'	6.80	124.58	113.70
46	5	1329	G	C2'-C3'-O3'	6.75	124.51	113.70
46	5	1834	U	C2'-C3'-O3'	6.61	124.28	113.70
46	5	481	G	N3-C4-C5	-6.59	125.30	128.60
46	5	1455	G	C2'-C3'-O3'	6.53	124.14	113.70
49	9	434	G	C2'-C3'-O3'	6.47	124.05	113.70
46	5	4884	G	C2'-C3'-O3'	6.41	123.95	113.70
49	9	1520	G	C4'-C3'-O3'	6.28	125.56	113.00
1	A	9	ARG	NE-CZ-NH1	6.26	123.43	120.30
46	5	125	C	C2'-C3'-O3'	6.00	123.31	113.70
46	5	2474	G	C2'-C3'-O3'	5.98	123.27	113.70
64	OO	146	ARG	NE-CZ-NH1	5.97	123.29	120.30
46	5	245	C	C2'-C3'-O3'	5.97	123.25	113.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
49	9	1535	U	N1-C1'-C2'	5.94	121.72	114.00
46	5	2068	C	C2'-C3'-O3'	5.92	123.18	113.70
46	5	930	G	C2'-C3'-O3'	5.91	123.16	113.70
46	5	3657	U	C2'-C3'-O3'	5.90	123.14	113.70
46	5	922	C	C4'-C3'-C2'	-5.90	96.70	102.60
45	2	71	G	C2'-C3'-O3'	5.89	123.13	113.70
46	5	971(A)	G	C4'-C3'-O3'	5.83	124.66	113.00
46	5	1818	G	C2'-C3'-O3'	5.81	123.00	113.70
46	5	3603	G	C2'-C3'-O3'	5.80	122.99	113.70
49	9	1646	C	C2'-C3'-O3'	5.78	122.95	113.70
13	N	202	ARG	NE-CZ-NH1	5.70	123.15	120.30
46	5	385	A	C4'-C3'-O3'	5.69	124.39	113.00
46	5	1683	U	C2'-C3'-O3'	5.66	122.75	113.70
46	5	481	G	C5-C6-N1	-5.63	108.69	111.50
4	D	22	ARG	CG-CD-NE	5.58	123.51	111.80
46	5	1477	C	C2'-C3'-O3'	5.58	122.62	113.70
46	5	4947	U	C2'-C3'-O3'	5.57	122.61	113.70
49	9	642	U	C2'-C3'-O3'	5.55	122.58	113.70
46	5	1411	C	C2'-C3'-O3'	-5.51	97.38	109.50
46	5	1236	C	C2'-C3'-O3'	5.50	122.50	113.70
46	5	1428	U	C2'-C3'-O3'	5.46	122.44	113.70
46	5	1908	A	C2'-C3'-O3'	5.46	122.43	113.70
2	B	161	ARG	NE-CZ-NH1	5.46	123.03	120.30
16	Q	104	ARG	NE-CZ-NH1	5.44	123.02	120.30
46	5	4446	U	O5'-P-OP1	-5.42	100.82	105.70
46	5	922	C	C5'-C4'-O4'	5.41	115.59	109.10
46	5	4448	G	C4'-C3'-O3'	5.39	123.77	113.00
49	9	1664	A	C4'-C3'-O3'	5.38	123.76	113.00
46	5	2807	A	C2'-C3'-O3'	5.36	122.28	113.70
46	5	1411(C)	C	C5'-C4'-O4'	5.33	115.50	109.10
46	5	48	G	C2'-C3'-O3'	5.32	122.21	113.70
76	aa	10	ARG	NE-CZ-NH2	5.31	122.96	120.30
46	5	1323	A	C2'-C3'-O3'	5.30	122.19	113.70
49	9	1060	A	N9-C1'-C2'	5.30	120.89	114.00
46	5	504	G	C2'-C3'-O3'	5.27	122.13	113.70
46	5	1445	U	C2'-C3'-O3'	5.27	122.12	113.70
69	TT	110	LEU	CA-CB-CG	5.26	127.40	115.30
46	5	1236	C	C4'-C3'-O3'	5.23	123.45	113.00
46	5	47	A	C4'-C3'-O3'	5.22	123.44	113.00
55	FF	145	ARG	NE-CZ-NH1	5.21	122.91	120.30
11	L	39	ARG	NE-CZ-NH1	5.21	122.91	120.30
4	D	22	ARG	NE-CZ-NH2	-5.20	117.70	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	5	2408	U	N1-C1'-C2'	5.19	120.75	114.00
46	5	922(A)	G	N9-C1'-C2'	5.15	120.70	114.00
46	5	3625	G	C2'-C3'-O3'	5.12	121.89	113.70
2	B	258	HIS	N-CA-C	5.10	124.76	111.00
49	9	1395	C	C4'-C3'-O3'	5.05	123.10	113.00
49	9	1130	G	C4'-C3'-O3'	5.02	123.05	113.00

There are no chirality outliers.

All (11) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
46	5	481	G	Sidechain
46	5	935	A	Sidechain
2	B	16	PHE	Peptide
2	B	257	TRP	Peptide
2	B	259	PRO	Peptide
4	D	36	LEU	Peptide
11	L	46	ILE	Peptide
72	WW	27	ILE	Peptide
73	XX	61	GLN	Peptide
31	f	106	TYR	Peptide
37	l	48	LYS	Peptide

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

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

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	246/257 (96%)	217 (88%)	25 (10%)	4 (2%)	<b>9</b> 44

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	B	392/403 (97%)	343 (88%)	47 (12%)	2 (0%)	29	67
3	C	360/425 (85%)	319 (89%)	32 (9%)	9 (2%)	5	35
4	D	291/297 (98%)	270 (93%)	18 (6%)	3 (1%)	15	53
5	E	208/291 (72%)	182 (88%)	25 (12%)	1 (0%)	29	67
6	F	223/247 (90%)	199 (89%)	20 (9%)	4 (2%)	8	41
7	G	229/319 (72%)	212 (93%)	16 (7%)	1 (0%)	34	71
8	H	188/192 (98%)	168 (89%)	18 (10%)	2 (1%)	14	51
9	I	201/214 (94%)	178 (89%)	23 (11%)	0	100	100
10	J	168/178 (94%)	156 (93%)	10 (6%)	2 (1%)	13	49
11	L	208/211 (99%)	185 (89%)	21 (10%)	2 (1%)	15	53
12	M	136/218 (62%)	126 (93%)	7 (5%)	3 (2%)	6	37
13	N	201/204 (98%)	180 (90%)	17 (8%)	4 (2%)	7	40
14	O	197/203 (97%)	176 (89%)	21 (11%)	0	100	100
15	P	151/184 (82%)	138 (91%)	11 (7%)	2 (1%)	12	48
16	Q	185/188 (98%)	163 (88%)	20 (11%)	2 (1%)	14	51
17	R	178/196 (91%)	170 (96%)	8 (4%)	0	100	100
18	S	174/176 (99%)	161 (92%)	11 (6%)	2 (1%)	14	51
19	T	157/160 (98%)	141 (90%)	16 (10%)	0	100	100
20	U	97/128 (76%)	86 (89%)	9 (9%)	2 (2%)	7	39
21	V	129/140 (92%)	117 (91%)	10 (8%)	2 (2%)	9	44
22	W	102/157 (65%)	91 (89%)	10 (10%)	1 (1%)	15	53
23	X	116/156 (74%)	109 (94%)	7 (6%)	0	100	100
24	Y	132/145 (91%)	126 (96%)	6 (4%)	0	100	100
25	Z	133/136 (98%)	126 (95%)	5 (4%)	2 (2%)	10	45
26	a	145/148 (98%)	134 (92%)	11 (8%)	0	100	100
27	b	100/245 (41%)	89 (89%)	10 (10%)	1 (1%)	15	53
28	c	96/115 (84%)	91 (95%)	5 (5%)	0	100	100
29	d	105/125 (84%)	87 (83%)	16 (15%)	2 (2%)	8	40
30	e	126/135 (93%)	116 (92%)	9 (7%)	1 (1%)	19	58
31	f	107/110 (97%)	96 (90%)	8 (8%)	3 (3%)	5	33
32	g	112/117 (96%)	98 (88%)	12 (11%)	2 (2%)	8	41

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
33	h	120/123 (98%)	112 (93%)	7 (6%)	1 (1%)	19	58
34	i	100/105 (95%)	91 (91%)	9 (9%)	0	100	100
35	j	84/97 (87%)	72 (86%)	11 (13%)	1 (1%)	13	49
36	k	67/70 (96%)	61 (91%)	5 (8%)	1 (2%)	10	45
37	l	48/51 (94%)	42 (88%)	5 (10%)	1 (2%)	7	39
38	m	50/102 (49%)	46 (92%)	3 (6%)	1 (2%)	7	40
39	n	23/25 (92%)	23 (100%)	0	0	100	100
40	o	102/106 (96%)	89 (87%)	11 (11%)	2 (2%)	7	40
41	p	89/92 (97%)	81 (91%)	8 (9%)	0	100	100
42	r	122/137 (89%)	103 (84%)	16 (13%)	3 (2%)	5	35
43	s	194/318 (61%)	173 (89%)	19 (10%)	2 (1%)	15	53
44	t	151/165 (92%)	135 (89%)	14 (9%)	2 (1%)	12	48
50	AA	215/295 (73%)	189 (88%)	23 (11%)	3 (1%)	11	46
51	BB	211/264 (80%)	194 (92%)	17 (8%)	0	100	100
52	CC	219/293 (75%)	202 (92%)	14 (6%)	3 (1%)	11	46
53	DD	226/243 (93%)	207 (92%)	18 (8%)	1 (0%)	34	71
54	EE	260/263 (99%)	245 (94%)	13 (5%)	2 (1%)	19	58
55	FF	181/204 (89%)	164 (91%)	14 (8%)	3 (2%)	9	43
56	GG	235/249 (94%)	221 (94%)	13 (6%)	1 (0%)	34	71
57	HH	181/194 (93%)	170 (94%)	11 (6%)	0	100	100
58	II	204/208 (98%)	187 (92%)	17 (8%)	0	100	100
59	JJ	183/194 (94%)	172 (94%)	10 (6%)	1 (0%)	29	67
60	KK	94/165 (57%)	85 (90%)	8 (8%)	1 (1%)	14	51
61	LL	139/158 (88%)	119 (86%)	19 (14%)	1 (1%)	22	61
62	MM	115/132 (87%)	97 (84%)	18 (16%)	0	100	100
63	NN	147/151 (97%)	131 (89%)	16 (11%)	0	100	100
64	OO	134/168 (80%)	116 (87%)	17 (13%)	1 (1%)	22	61
65	PP	118/145 (81%)	103 (87%)	15 (13%)	0	100	100
66	QQ	140/146 (96%)	131 (94%)	8 (6%)	1 (1%)	22	61
67	RR	130/135 (96%)	114 (88%)	15 (12%)	1 (1%)	19	58
68	SS	142/152 (93%)	134 (94%)	6 (4%)	2 (1%)	11	46

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
69	TT	139/145 (96%)	130 (94%)	8 (6%)	1 (1%)	22	61
70	UU	98/119 (82%)	90 (92%)	7 (7%)	1 (1%)	15	53
71	VV	81/83 (98%)	76 (94%)	5 (6%)	0	100	100
72	WW	127/130 (98%)	112 (88%)	12 (9%)	3 (2%)	6	36
73	XX	139/143 (97%)	126 (91%)	10 (7%)	3 (2%)	6	37
74	YY	122/130 (94%)	116 (95%)	6 (5%)	0	100	100
75	ZZ	73/125 (58%)	71 (97%)	2 (3%)	0	100	100
76	aa	99/115 (86%)	84 (85%)	13 (13%)	2 (2%)	7	40
77	bb	81/84 (96%)	71 (88%)	9 (11%)	1 (1%)	13	49
78	cc	60/69 (87%)	55 (92%)	4 (7%)	1 (2%)	9	43
79	dd	53/56 (95%)	44 (83%)	8 (15%)	1 (2%)	8	40
80	ee	53/133 (40%)	48 (91%)	5 (9%)	0	100	100
81	ff	66/156 (42%)	60 (91%)	4 (6%)	2 (3%)	4	32
82	gg	311/317 (98%)	281 (90%)	27 (9%)	3 (1%)	15	53
84	ii	370/403 (92%)	342 (92%)	28 (8%)	0	100	100
85	jj	423/710 (60%)	383 (90%)	35 (8%)	5 (1%)	13	49
All	All	12312/14488 (85%)	11148 (90%)	1047 (8%)	117 (1%)	20	53

All (117) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	196	TRP
3	C	254	GLU
7	G	105	THR
18	S	155	PRO
29	d	58	GLY
31	f	107	PRO
42	r	11	ARG
42	r	68	SER
73	XX	62	PRO
85	jj	605	GLN
1	A	14	SER
3	C	71	ARG
3	C	99	GLY
3	C	275	SER
6	F	236	GLU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
11	L	63	THR
12	M	9	VAL
13	N	79	ALA
13	N	89	VAL
13	N	160	GLU
20	U	24	ASP
20	U	62	SER
21	V	50	ASN
22	W	27	LYS
32	g	69	LYS
33	h	89	ARG
35	j	59	THR
43	s	142	GLY
44	t	125	LEU
52	CC	232	THR
61	LL	66	VAL
64	OO	20	GLN
68	SS	78	LYS
69	TT	34	VAL
73	XX	86	PRO
4	D	44	TYR
10	J	141	ILE
12	M	61	ILE
16	Q	14	ARG
18	S	165	PRO
25	Z	91	LEU
31	f	106	TYR
37	l	49	LEU
38	m	94	ASN
54	EE	68	ARG
55	FF	43	GLU
55	FF	79	HIS
59	JJ	147	PHE
60	KK	64	TRP
72	WW	29	PRO
76	aa	47	ALA
1	A	195	CYS
1	A	217	GLN
2	B	208	SER
4	D	119	TYR
11	L	28	GLN
12	M	104	MET

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
21	V	51	ARG
29	d	30	HIS
36	k	20	ALA
40	o	96	ASP
42	r	34	ALA
50	AA	137	ALA
56	GG	105	ASN
66	QQ	17	LYS
68	SS	118	ARG
72	WW	3	ARG
76	aa	26	CYS
77	bb	81	ARG
79	dd	7	TYR
85	jj	618	SER
2	B	17	LEU
3	C	108	TRP
3	C	155	GLU
3	C	315	LYS
5	E	181	PRO
6	F	226	PHE
15	P	21	ASN
25	Z	90	PRO
30	e	125	PRO
50	AA	159	ILE
52	CC	99	GLY
73	XX	61	GLN
81	ff	128	ALA
85	jj	271	ALA
85	jj	596	LYS
3	C	27	VAL
3	C	94	ASN
6	F	227	VAL
43	s	25	PRO
44	t	54	LYS
50	AA	102	ARG
53	DD	44	THR
54	EE	73	ASP
72	WW	56	HIS
85	jj	269	VAL
15	P	114	ILE
82	gg	224	GLY
10	J	68	ILE

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Mol	Chain	Res	Type
16	Q	92	VAL
32	g	48	VAL
67	RR	119	VAL
70	UU	69	PRO
78	cc	25	GLY
4	D	125	VAL
6	F	136	GLU
8	H	22	GLY
27	b	102	PRO
31	f	82	GLY
40	o	50	GLY
82	gg	61	GLY
8	H	30	PRO
13	N	88	GLY
52	CC	253	PRO
55	FF	21	GLY
81	ff	122	PRO
82	gg	13	GLY

### 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	A	190/199 (96%)	170 (90%)	20 (10%)	7 27
2	B	342/348 (98%)	308 (90%)	34 (10%)	8 29
3	C	302/347 (87%)	275 (91%)	27 (9%)	9 34
4	D	247/250 (99%)	233 (94%)	14 (6%)	20 49
5	E	190/251 (76%)	178 (94%)	12 (6%)	18 46
6	F	196/215 (91%)	181 (92%)	15 (8%)	13 40
7	G	200/272 (74%)	186 (93%)	14 (7%)	15 43
8	H	169/171 (99%)	154 (91%)	15 (9%)	9 34
9	I	175/181 (97%)	161 (92%)	14 (8%)	12 39
10	J	143/149 (96%)	136 (95%)	7 (5%)	25 52

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
11	L	175/176 (99%)	164 (94%)	11 (6%)	18	46
12	M	117/161 (73%)	107 (92%)	10 (8%)	10	37
13	N	171/172 (99%)	158 (92%)	13 (8%)	13	40
14	O	171/173 (99%)	156 (91%)	15 (9%)	10	35
15	P	134/163 (82%)	122 (91%)	12 (9%)	9	34
16	Q	164/165 (99%)	147 (90%)	17 (10%)	7	28
17	R	159/175 (91%)	145 (91%)	14 (9%)	10	35
18	S	157/157 (100%)	145 (92%)	12 (8%)	13	40
19	T	139/140 (99%)	125 (90%)	14 (10%)	7	29
20	U	89/114 (78%)	87 (98%)	2 (2%)	52	71
21	V	101/107 (94%)	87 (86%)	14 (14%)	3	20
22	W	86/126 (68%)	83 (96%)	3 (4%)	36	61
23	X	106/134 (79%)	100 (94%)	6 (6%)	20	49
24	Y	124/135 (92%)	117 (94%)	7 (6%)	21	49
25	Z	117/118 (99%)	112 (96%)	5 (4%)	29	56
26	a	119/120 (99%)	114 (96%)	5 (4%)	30	56
27	b	84/184 (46%)	80 (95%)	4 (5%)	25	53
28	c	84/98 (86%)	78 (93%)	6 (7%)	14	42
29	d	98/110 (89%)	89 (91%)	9 (9%)	9	32
30	e	114/121 (94%)	105 (92%)	9 (8%)	12	39
31	f	88/89 (99%)	80 (91%)	8 (9%)	9	33
32	g	98/100 (98%)	88 (90%)	10 (10%)	7	28
33	h	109/110 (99%)	105 (96%)	4 (4%)	34	60
34	i	86/89 (97%)	83 (96%)	3 (4%)	36	61
35	j	73/80 (91%)	63 (86%)	10 (14%)	3	20
36	k	64/65 (98%)	60 (94%)	4 (6%)	18	46
37	l	47/48 (98%)	44 (94%)	3 (6%)	17	45
38	m	48/90 (53%)	43 (90%)	5 (10%)	7	28
39	n	24/24 (100%)	22 (92%)	2 (8%)	11	38
40	o	92/94 (98%)	87 (95%)	5 (5%)	22	50
41	p	74/75 (99%)	70 (95%)	4 (5%)	22	50

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
42	r	108/121 (89%)	97 (90%)	11 (10%)	7	28
43	s	164/258 (64%)	158 (96%)	6 (4%)	34	60
44	t	126/137 (92%)	123 (98%)	3 (2%)	49	69
50	AA	180/245 (74%)	161 (89%)	19 (11%)	6	27
51	BB	194/231 (84%)	176 (91%)	18 (9%)	9	32
52	CC	187/225 (83%)	168 (90%)	19 (10%)	7	28
53	DD	190/202 (94%)	178 (94%)	12 (6%)	18	46
54	EE	224/225 (100%)	205 (92%)	19 (8%)	10	37
55	FF	158/170 (93%)	140 (89%)	18 (11%)	5	25
56	GG	207/218 (95%)	187 (90%)	20 (10%)	8	30
57	HH	165/174 (95%)	150 (91%)	15 (9%)	9	33
58	II	178/180 (99%)	169 (95%)	9 (5%)	24	52
59	JJ	161/168 (96%)	146 (91%)	15 (9%)	9	32
60	KK	87/136 (64%)	82 (94%)	5 (6%)	20	49
61	LL	130/142 (92%)	116 (89%)	14 (11%)	6	27
62	MM	99/108 (92%)	84 (85%)	15 (15%)	3	16
63	NN	130/131 (99%)	113 (87%)	17 (13%)	4	21
64	OO	106/130 (82%)	96 (91%)	10 (9%)	8	31
65	PP	109/130 (84%)	99 (91%)	10 (9%)	9	32
66	QQ	117/121 (97%)	111 (95%)	6 (5%)	24	52
67	RR	119/121 (98%)	102 (86%)	17 (14%)	3	19
68	SS	125/132 (95%)	110 (88%)	15 (12%)	5	23
69	TT	111/115 (96%)	105 (95%)	6 (5%)	22	50
70	UU	92/107 (86%)	84 (91%)	8 (9%)	10	35
71	VV	67/67 (100%)	63 (94%)	4 (6%)	19	47
72	WW	112/113 (99%)	104 (93%)	8 (7%)	14	42
73	XX	113/115 (98%)	103 (91%)	10 (9%)	10	35
74	YY	107/112 (96%)	92 (86%)	15 (14%)	3	20
75	ZZ	66/103 (64%)	61 (92%)	5 (8%)	13	40
76	aa	88/98 (90%)	78 (89%)	10 (11%)	5	25
77	bb	75/76 (99%)	67 (89%)	8 (11%)	6	27

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
78	cc	55/62 (89%)	49 (89%)	6 (11%)	6	26
79	dd	48/49 (98%)	45 (94%)	3 (6%)	18	46
80	ee	46/106 (43%)	42 (91%)	4 (9%)	10	35
81	ff	61/140 (44%)	55 (90%)	6 (10%)	8	29
82	gg	272/275 (99%)	258 (95%)	14 (5%)	24	52
84	ii	326/353 (92%)	310 (95%)	16 (5%)	25	52
85	jj	358/608 (59%)	332 (93%)	26 (7%)	14	42
All	All	10727/12300 (87%)	9867 (92%)	860 (8%)	16	39

All (860) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	5	ILE
1	A	64	ARG
1	A	102	LEU
1	A	109	GLU
1	A	114	CYS
1	A	115	CYS
1	A	125	LYS
1	A	128	ARG
1	A	130	SER
1	A	163	ARG
1	A	165	VAL
1	A	175	ILE
1	A	198	ARG
1	A	200	ARG
1	A	209	HIS
1	A	221	LYS
1	A	227	ARG
1	A	233	ARG
1	A	242	ARG
1	A	243	THR
2	B	3	HIS
2	B	10	ARG
2	B	17	LEU
2	B	36	ASP
2	B	53	MET
2	B	62	ARG
2	B	66	LYS
2	B	97	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	B	103	LYS
2	B	115	LYS
2	B	135	LYS
2	B	146	LEU
2	B	152	SER
2	B	167	GLN
2	B	218	ASP
2	B	231	VAL
2	B	234	ARG
2	B	244	THR
2	B	248	LEU
2	B	253	CYS
2	B	261	ARG
2	B	262	VAL
2	B	264	PHE
2	B	279	GLU
2	B	294	LYS
2	B	298	LEU
2	B	309	LEU
2	B	314	ILE
2	B	333	LEU
2	B	351	LEU
2	B	356	LYS
2	B	357	ARG
2	B	366	LYS
2	B	383	GLU
3	C	20	LYS
3	C	29	LYS
3	C	55	SER
3	C	66	SER
3	C	89	GLN
3	C	95	MET
3	C	122	TYR
3	C	124	ILE
3	C	143	ARG
3	C	144	ILE
3	C	150	LEU
3	C	165	LYS
3	C	173	LYS
3	C	175	LYS
3	C	188	ARG
3	C	193	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	C	198	ASN
3	C	208	CYS
3	C	232	VAL
3	C	246	VAL
3	C	249	PHE
3	C	266	THR
3	C	281	MET
3	C	284	MET
3	C	307	LYS
3	C	312	ARG
3	C	333	LYS
4	D	22	ARG
4	D	33	ARG
4	D	50	ARG
4	D	56	THR
4	D	70	GLU
4	D	89	LYS
4	D	104	LEU
4	D	110	LEU
4	D	124	GLU
4	D	131	ASN
4	D	202	GLN
4	D	217	ASP
4	D	264	LYS
4	D	268	ARG
5	E	52	LEU
5	E	58	ARG
5	E	112	LEU
5	E	141	ARG
5	E	143	LEU
5	E	144	ARG
5	E	169	LYS
5	E	178	VAL
5	E	213	LYS
5	E	261	LEU
5	E	289	LEU
5	E	291	PHE
6	F	30	LYS
6	F	46	ARG
6	F	65	ARG
6	F	67	GLU
6	F	88	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
6	F	134	ILE
6	F	151	GLU
6	F	178	LEU
6	F	186	MET
6	F	187	GLU
6	F	189	LEU
6	F	198	LYS
6	F	211	LYS
6	F	231	ASP
6	F	245	ARG
7	G	97	ASP
7	G	116	LEU
7	G	126	ARG
7	G	162	GLU
7	G	163	LYS
7	G	184	LYS
7	G	203	LYS
7	G	204	LYS
7	G	207	LEU
7	G	220	VAL
7	G	223	LEU
7	G	226	LEU
7	G	230	MET
7	G	242	ARG
8	H	1	MET
8	H	23	ARG
8	H	24	THR
8	H	46	SER
8	H	52	LYS
8	H	54	ARG
8	H	59	LYS
8	H	66	GLU
8	H	74	CYS
8	H	94	SER
8	H	105	ILE
8	H	108	ASN
8	H	128	MET
8	H	173	ARG
8	H	177	ASP
9	I	13	LYS
9	I	24	ARG
9	I	36	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
9	I	39	LYS
9	I	76	MET
9	I	116	ARG
9	I	123	GLN
9	I	142	LEU
9	I	153	ARG
9	I	163	GLN
9	I	164	LYS
9	I	183	ASP
9	I	195	CYS
9	I	208	LYS
10	J	16	ARG
10	J	28	GLU
10	J	33	LEU
10	J	72	CYS
10	J	81	GLU
10	J	113	ILE
10	J	175	LEU
11	L	10	LEU
11	L	61	CYS
11	L	63	THR
11	L	67	HIS
11	L	74	ARG
11	L	104	ASN
11	L	106	SER
11	L	129	ARG
11	L	162	LYS
11	L	186	ARG
11	L	195	ARG
12	M	2	VAL
12	M	5	ARG
12	M	32	ASP
12	M	37	LEU
12	M	57	LEU
12	M	61	ILE
12	M	62	LEU
12	M	96	GLU
12	M	105	THR
12	M	119	ARG
13	N	9	GLU
13	N	26	ARG
13	N	32	GLN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
13	N	44	ARG
13	N	64	ILE
13	N	72	LYS
13	N	75	VAL
13	N	77	LYS
13	N	87	HIS
13	N	104	GLU
13	N	146	PRO
13	N	162	ARG
13	N	182	HIS
14	O	18	ARG
14	O	37	ARG
14	O	42	ASN
14	O	49	ARG
14	O	61	ARG
14	O	67	SER
14	O	74	ARG
14	O	82	ARG
14	O	128	ARG
14	O	130	LYS
14	O	140	ARG
14	O	175	MET
14	O	179	LYS
14	O	188	LYS
14	O	196	LEU
15	P	10	ASN
15	P	21	ASN
15	P	24	VAL
15	P	25	HIS
15	P	69	ARG
15	P	70	CYS
15	P	86	LYS
15	P	91	LEU
15	P	100	SER
15	P	128	ARG
15	P	141	SER
15	P	147	GLU
16	Q	3	VAL
16	Q	5	ILE
16	Q	13	VAL
16	Q	31	LEU
16	Q	42	THR

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
16	Q	63	LEU
16	Q	75	ARG
16	Q	91	ARG
16	Q	95	VAL
16	Q	97	LYS
16	Q	101	CYS
16	Q	112	ARG
16	Q	138	LEU
16	Q	143	ARG
16	Q	168	ARG
16	Q	169	SER
16	Q	188	ASN
17	R	8	LYS
17	R	34	ASN
17	R	36	ASN
17	R	40	GLN
17	R	50	ILE
17	R	89	MET
17	R	99	MET
17	R	106	LEU
17	R	113	LYS
17	R	130	ASN
17	R	133	LYS
17	R	138	LEU
17	R	176	ARG
17	R	178	GLN
18	S	7	LEU
18	S	8	ARG
18	S	9	GLU
18	S	17	LEU
18	S	43	ARG
18	S	70	LYS
18	S	83	ARG
18	S	92	ASN
18	S	102	THR
18	S	149	LYS
18	S	159	LEU
18	S	174	THR
19	T	5	LYS
19	T	33	ILE
19	T	35	LYS
19	T	52	MET

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
19	T	60	LYS
19	T	96	ILE
19	T	113	ASP
19	T	117	LYS
19	T	135	PRO
19	T	142	ARG
19	T	144	ASN
19	T	146	LYS
19	T	157	GLU
19	T	159	MET
20	U	33	ILE
20	U	83	LEU
21	V	15	ARG
21	V	18	LEU
21	V	25	VAL
21	V	35	LYS
21	V	45	ILE
21	V	46	LYS
21	V	50	ASN
21	V	60	MET
21	V	71	GLU
21	V	82	ILE
21	V	88	TYR
21	V	91	LYS
21	V	109	LYS
21	V	123	LYS
22	W	19	ARG
22	W	30	GLN
22	W	91	MET
23	X	39	LYS
23	X	41	ARG
23	X	53	ARG
23	X	57	GLN
23	X	59	LYS
23	X	63	LYS
24	Y	2	LYS
24	Y	8	THR
24	Y	50	ARG
24	Y	72	GLN
24	Y	74	TYR
24	Y	104	VAL
24	Y	112	ASP

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
25	Z	11	VAL
25	Z	31	ASP
25	Z	83	THR
25	Z	84	ARG
25	Z	112	ARG
26	a	16	SER
26	a	56	VAL
26	a	84	GLU
26	a	122	VAL
26	a	132	ARG
27	b	9	THR
27	b	22	LYS
27	b	40	LEU
27	b	101	HIS
28	c	37	MET
28	c	50	ASN
28	c	78	ASN
28	c	81	LEU
28	c	83	THR
28	c	92	CYS
29	d	23	ARG
29	d	26	THR
29	d	44	ARG
29	d	48	GLU
29	d	56	GLU
29	d	78	ARG
29	d	79	ASN
29	d	85	ARG
29	d	98	SER
30	e	21	ILE
30	e	22	ARG
30	e	48	ARG
30	e	64	LYS
30	e	78	LEU
30	e	86	GLU
30	e	89	LEU
30	e	106	LYS
30	e	128	ARG
31	f	7	CYS
31	f	16	ARG
31	f	23	GLU
31	f	33	VAL

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
31	f	52	LYS
31	f	73	LYS
31	f	76	ARG
31	f	101	ILE
32	g	6	THR
32	g	14	ASN
32	g	21	ARG
32	g	22	LEU
32	g	32	TYR
32	g	54	ARG
32	g	60	ARG
32	g	66	ARG
32	g	90	ARG
32	g	114	GLN
33	h	15	GLU
33	h	28	LEU
33	h	67	GLU
33	h	77	LYS
34	i	34	THR
34	i	86	LYS
34	i	89	GLU
35	j	3	LYS
35	j	11	ARG
35	j	15	THR
35	j	20	ARG
35	j	33	THR
35	j	34	CYS
35	j	37	CYS
35	j	58	THR
35	j	59	THR
35	j	79	ARG
36	k	30	ASP
36	k	37	ARG
36	k	69	LEU
36	k	70	LYS
37	l	2	SER
37	l	3	SER
37	l	49	LEU
38	m	71	ARG
38	m	72	LYS
38	m	89	CYS
38	m	92	THR

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
38	m	93	ASN
39	n	1	MET
39	n	13	LEU
40	o	17	LYS
40	o	24	THR
40	o	31	ASP
40	o	61	LYS
40	o	82	MET
41	p	8	VAL
41	p	24	LYS
41	p	62	LYS
41	p	70	THR
42	r	2	SER
42	r	8	MET
42	r	20	ARG
42	r	26	SER
42	r	32	LEU
42	r	35	ARG
42	r	39	ARG
42	r	67	ARG
42	r	90	LEU
42	r	106	LEU
42	r	121	GLN
43	s	38	LYS
43	s	95	LEU
43	s	105	ASN
43	s	146	LYS
43	s	187	LEU
43	s	191	GLN
44	t	37	LEU
44	t	98	ILE
44	t	133	LEU
50	AA	9	GLN
50	AA	12	GLU
50	AA	46	ILE
50	AA	50	ASN
50	AA	56	GLU
50	AA	58	LEU
50	AA	60	LEU
50	AA	85	ARG
50	AA	111	GLN
50	AA	122	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
50	AA	132	GLN
50	AA	134	LEU
50	AA	136	GLU
50	AA	138	SER
50	AA	142	LEU
50	AA	155	ARG
50	AA	169	HIS
50	AA	178	LEU
50	AA	200	ASP
51	BB	32	ASP
51	BB	40	ASN
51	BB	50	THR
51	BB	63	LYS
51	BB	71	LEU
51	BB	82	ARG
51	BB	96	CYS
51	BB	105	LEU
51	BB	157	GLN
51	BB	172	MET
51	BB	173	THR
51	BB	175	GLU
51	BB	180	ASP
51	BB	181	LEU
51	BB	190	PRO
51	BB	207	LEU
51	BB	209	ASP
51	BB	213	ARG
52	CC	78	LEU
52	CC	114	LYS
52	CC	115	GLN
52	CC	117	ARG
52	CC	121	ARG
52	CC	132	ASP
52	CC	137	VAL
52	CC	167	ARG
52	CC	192	LEU
52	CC	227	ARG
52	CC	230	THR
52	CC	233	LEU
52	CC	235	ASN
52	CC	236	PHE
52	CC	244	ILE

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
52	CC	250	TYR
52	CC	251	LEU
52	CC	254	ASP
52	CC	255	LEU
53	DD	22	ASN
53	DD	31	GLU
53	DD	45	ARG
53	DD	65	ARG
53	DD	76	ARG
53	DD	127	MET
53	DD	134	CYS
53	DD	146	ARG
53	DD	179	GLN
53	DD	190	LEU
53	DD	218	LEU
53	DD	227	LYS
54	EE	6	LYS
54	EE	17	HIS
54	EE	41	CYS
54	EE	42	LEU
54	EE	51	ARG
54	EE	66	MET
54	EE	67	GLN
54	EE	77	ARG
54	EE	88	ASP
54	EE	105	THR
54	EE	115	THR
54	EE	145	ARG
54	EE	171	ASP
54	EE	205	PHE
54	EE	225	ILE
54	EE	232	ASN
54	EE	240	ARG
54	EE	246	LEU
54	EE	247	THR
55	FF	20	PHE
55	FF	36	GLN
55	FF	37	ASP
55	FF	49	LEU
55	FF	52	SER
55	FF	71	ARG
55	FF	81	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
55	FF	83	ASN
55	FF	88	MET
55	FF	89	THR
55	FF	95	HIS
55	FF	118	ASN
55	FF	122	ARG
55	FF	123	GLU
55	FF	140	ASP
55	FF	146	ARG
55	FF	168	THR
55	FF	204	ARG
56	GG	41	LEU
56	GG	59	GLN
56	GG	63	MET
56	GG	67	VAL
56	GG	76	LEU
56	GG	78	SER
56	GG	88	ARG
56	GG	92	ARG
56	GG	95	LYS
56	GG	98	ARG
56	GG	100	CYS
56	GG	116	LYS
56	GG	140	ARG
56	GG	159	ARG
56	GG	171	THR
56	GG	178	ARG
56	GG	181	THR
56	GG	190	ARG
56	GG	216	ARG
56	GG	230	LYS
57	HH	8	ILE
57	HH	36	LEU
57	HH	40	LEU
57	HH	72	PHE
57	HH	76	GLN
57	HH	79	LEU
57	HH	82	GLU
57	HH	100	ILE
57	HH	105	THR
57	HH	120	ARG
57	HH	145	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
57	HH	151	SER
57	HH	158	LEU
57	HH	162	GLN
57	HH	171	GLU
58	II	6	ASP
58	II	23	LYS
58	II	45	THR
58	II	47	ARG
58	II	49	ARG
58	II	59	ARG
58	II	121	LEU
58	II	130	THR
58	II	161	LEU
59	JJ	29	LEU
59	JJ	38	ARG
59	JJ	45	ARG
59	JJ	50	LEU
59	JJ	61	LEU
59	JJ	69	ARG
59	JJ	70	ARG
59	JJ	79	ARG
59	JJ	80	ARG
59	JJ	89	GLU
59	JJ	116	LYS
59	JJ	131	ARG
59	JJ	133	ARG
59	JJ	152	ASP
59	JJ	176	LYS
60	KK	1	MET
60	KK	50	GLN
60	KK	60	GLU
60	KK	89	ILE
60	KK	96	ARG
61	LL	16	ILE
61	LL	39	ASN
61	LL	40	ILE
61	LL	42	LEU
61	LL	46	THR
61	LL	52	GLU
61	LL	66	VAL
61	LL	69	ARG
61	LL	85	THR

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
61	LL	121	GLN
61	LL	126	VAL
61	LL	132	ARG
61	LL	134	LEU
61	LL	135	SER
62	MM	16	THR
62	MM	19	GLN
62	MM	31	LEU
62	MM	33	ARG
62	MM	40	LYS
62	MM	45	ARG
62	MM	55	ASN
62	MM	56	CYS
62	MM	76	LEU
62	MM	80	ASP
62	MM	83	LYS
62	MM	85	LEU
62	MM	96	ARG
62	MM	99	LYS
62	MM	101	ARG
63	NN	12	SER
63	NN	20	ARG
63	NN	27	LYS
63	NN	39	LYS
63	NN	55	ARG
63	NN	60	VAL
63	NN	75	LEU
63	NN	78	LYS
63	NN	83	ASP
63	NN	84	LEU
63	NN	86	GLU
63	NN	94	LYS
63	NN	107	LYS
63	NN	110	ASP
63	NN	125	LEU
63	NN	132	LYS
63	NN	142	GLU
64	OO	34	PHE
64	OO	38	ASN
64	OO	40	THR
64	OO	51	GLU
64	OO	56	VAL

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
64	OO	114	SER
64	OO	142	ARG
64	OO	146	ARG
64	OO	150	ARG
64	OO	151	LEU
65	PP	13	ARG
65	PP	14	LYS
65	PP	15	PHE
65	PP	18	ARG
65	PP	37	TYR
65	PP	44	ARG
65	PP	78	THR
65	PP	83	MET
65	PP	108	LYS
65	PP	130	ARG
66	QQ	7	LEU
66	QQ	31	LEU
66	QQ	41	MET
66	QQ	46	THR
66	QQ	126	ARG
66	QQ	140	ARG
67	RR	7	LYS
67	RR	22	THR
67	RR	30	THR
67	RR	31	ASN
67	RR	33	ARG
67	RR	44	LYS
67	RR	49	LYS
67	RR	62	GLN
67	RR	70	SER
67	RR	78	ARG
67	RR	89	SER
67	RR	98	VAL
67	RR	99	ASP
67	RR	105	MET
67	RR	109	LEU
67	RR	123	THR
67	RR	132	ARG
68	SS	7	GLU
68	SS	21	ASP
68	SS	23	ARG
68	SS	49	ASP

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
68	SS	52	LEU
68	SS	59	LEU
68	SS	60	THR
68	SS	75	ARG
68	SS	76	GLN
68	SS	81	ASP
68	SS	83	PHE
68	SS	86	ARG
68	SS	115	LYS
68	SS	118	ARG
68	SS	132	ARG
69	TT	55	THR
69	TT	62	ARG
69	TT	102	ARG
69	TT	110	LEU
69	TT	121	ARG
69	TT	124	THR
70	UU	18	HIS
70	UU	25	THR
70	UU	56	MET
70	UU	60	THR
70	UU	68	THR
70	UU	70	CYS
70	UU	90	ASP
70	UU	106	ILE
71	VV	2	GLN
71	VV	10	ASP
71	VV	12	TYR
71	VV	66	ASP
72	WW	7	LEU
72	WW	23	ARG
72	WW	36	ARG
72	WW	51	GLU
72	WW	52	ILE
72	WW	85	ASP
72	WW	97	ARG
72	WW	103	VAL
73	XX	8	ARG
73	XX	19	ASP
73	XX	61	GLN
73	XX	67	ARG
73	XX	98	ASP

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
73	XX	105	PHE
73	XX	115	ILE
73	XX	127	ASN
73	XX	129	SER
73	XX	130	LEU
74	YY	9	THR
74	YY	16	ARG
74	YY	17	LEU
74	YY	20	ARG
74	YY	40	ILE
74	YY	47	MET
74	YY	53	ASP
74	YY	61	ARG
74	YY	63	HIS
74	YY	74	MET
74	YY	80	ASP
74	YY	88	LYS
74	YY	101	LYS
74	YY	114	MET
74	YY	115	LYS
75	ZZ	51	ASP
75	ZZ	58	LEU
75	ZZ	80	ARG
75	ZZ	89	GLN
75	ZZ	92	LEU
76	aa	6	ARG
76	aa	18	VAL
76	aa	19	GLN
76	aa	33	ASP
76	aa	41	ILE
76	aa	42	ARG
76	aa	44	ILE
76	aa	55	GLU
76	aa	96	THR
76	aa	100	ARG
77	bb	17	ARG
77	bb	34	ASP
77	bb	37	CYS
77	bb	42	LYS
77	bb	48	SER
77	bb	64	CYS
77	bb	80	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
77	bb	81	ARG
78	cc	20	ARG
78	cc	31	ARG
78	cc	36	ASP
78	cc	40	ARG
78	cc	44	ARG
78	cc	51	ARG
79	dd	6	LEU
79	dd	20	SER
79	dd	22	ARG
80	ee	99	LYS
80	ee	107	ARG
80	ee	109	MET
80	ee	113	ARG
81	ff	83	LYS
81	ff	92	LYS
81	ff	99	LYS
81	ff	132	MET
81	ff	138	ARG
81	ff	140	TYR
82	gg	17	TRP
82	gg	20	GLN
82	gg	36	ARG
82	gg	38	LYS
82	gg	113	PHE
82	gg	119	GLN
82	gg	133	ASN
82	gg	198	VAL
82	gg	207	CYS
82	gg	273	GLU
82	gg	287	THR
82	gg	289	LEU
82	gg	298	LEU
82	gg	306	LEU
84	ii	37	ASP
84	ii	40	ARG
84	ii	90	GLU
84	ii	107	ASN
84	ii	112	LEU
84	ii	149	ILE
84	ii	156	MET
84	ii	170	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
84	ii	198	HIS
84	ii	243	VAL
84	ii	280	ASP
84	ii	297	LYS
84	ii	311	LEU
84	ii	313	ILE
84	ii	319	ARG
84	ii	349	LEU
85	jj	269	VAL
85	jj	297	GLN
85	jj	298	GLU
85	jj	304	LYS
85	jj	311	TRP
85	jj	313	LEU
85	jj	327	ASP
85	jj	330	MET
85	jj	361	GLN
85	jj	369	VAL
85	jj	385	GLN
85	jj	389	HIS
85	jj	408	MET
85	jj	425	LEU
85	jj	434	PHE
85	jj	436	GLU
85	jj	482	ARG
85	jj	489	ARG
85	jj	499	GLN
85	jj	505	ILE
85	jj	585	ILE
85	jj	613	ILE
85	jj	616	LEU
85	jj	640	ASN
85	jj	653	LEU
85	jj	664	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (59) such sidechains are listed below:

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	162	ASN
2	B	167	GLN
2	B	175	GLN
2	B	245	HIS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	B	354	GLN
3	C	50	GLN
4	D	191	ASN
5	E	131	HIS
5	E	214	HIS
6	F	130	ASN
6	F	191	HIS
6	F	247	ASN
7	G	134	ASN
7	G	135	GLN
9	I	95	HIS
12	M	66	HIS
12	M	70	GLN
13	N	201	HIS
15	P	56	GLN
15	P	97	ASN
15	P	137	ASN
16	Q	44	ASN
17	R	130	ASN
18	S	50	GLN
18	S	125	GLN
18	S	163	HIS
19	T	98	HIS
19	T	131	GLN
22	W	17	HIS
22	W	30	GLN
23	X	57	GLN
28	c	78	ASN
29	d	34	HIS
32	g	14	ASN
35	j	76	HIS
40	o	19	GLN
43	s	34	ASN
50	AA	9	GLN
50	AA	132	GLN
51	BB	163	GLN
52	CC	115	GLN
53	DD	22	ASN
53	DD	179	GLN
55	FF	83	ASN
55	FF	118	ASN
56	GG	177	GLN

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Mol	Chain	Res	Type
56	GG	187	HIS
57	HH	126	HIS
58	II	99	ASN
61	LL	100	ASN
63	NN	105	ASN
66	QQ	48	GLN
66	QQ	142	GLN
68	SS	10	GLN
73	XX	77	ASN
77	bb	49	HIS
79	dd	3	HIS
81	ff	93	HIS
82	gg	14	HIS

### 5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
45	2	72/75 (96%)	17 (23%)	1 (1%)
45	3	72/75 (96%)	21 (29%)	1 (1%)
46	5	3506/3543 (98%)	921 (26%)	179 (5%)
47	7	119/120 (99%)	19 (15%)	3 (2%)
48	8	149/156 (95%)	39 (26%)	6 (4%)
49	9	1679/1869 (89%)	452 (26%)	88 (5%)
83	hh	7/8 (87%)	4 (57%)	0
All	All	5604/5846 (95%)	1473 (26%)	278 (4%)

All (1473) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
45	2	7	A
45	2	13	C
45	2	16	C
45	2	21	A
45	2	25	C
45	2	34	U
45	2	35	U
45	2	36	U
45	2	40	C
45	2	42	G
45	2	47	U
45	2	49	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
45	2	61	C
45	2	63	C
45	2	72	C
45	2	75	C
45	2	76	A
45	3	7	A
45	3	13	C
45	3	14	A
45	3	16	C
45	3	21	A
45	3	25	C
45	3	28	C
45	3	29	A
45	3	34	U
45	3	35	U
45	3	36	U
45	3	40	C
45	3	42	G
45	3	47	U
45	3	49	C
45	3	58	A
45	3	60	U
45	3	61	C
45	3	63	C
45	3	72	C
45	3	76	A
46	5	12	A
46	5	13	U
46	5	14	C
46	5	17	A
46	5	21	G
46	5	25	A
46	5	35	U
46	5	39	A
46	5	42	A
46	5	43	U
46	5	44	A
46	5	48	G
46	5	49	U
46	5	56	A
46	5	58	G
46	5	59	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	64	A
46	5	65	A
46	5	72	C
46	5	73	A
46	5	75	G
46	5	84	A
46	5	91	G
46	5	93	G
46	5	108	A
46	5	109	G
46	5	110	C
46	5	116	G
46	5	118	C
46	5	119	G
46	5	120	A
46	5	126	C
46	5	134	G
46	5	135	G
46	5	136	C
46	5	137	G
46	5	143	C
46	5	144	G
46	5	146	G
46	5	157	U
46	5	159	C
46	5	160	G
46	5	172	C
46	5	173	C
46	5	177	G
46	5	179	G
46	5	197	A
46	5	200	U
46	5	201	C
46	5	202	C
46	5	205	C
46	5	209	U
46	5	216	C
46	5	217	C
46	5	218	A
46	5	220	C
46	5	221	C
46	5	224	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	226	G
46	5	227	A
46	5	233	U
46	5	234	G
46	5	245	C
46	5	246	G
46	5	253	G
46	5	262	G
46	5	265	C
46	5	266	C
46	5	267	G
46	5	276	C
46	5	279	A
46	5	280	G
46	5	281	U
46	5	297	U
46	5	306	A
46	5	309	C
46	5	310	G
46	5	315	G
46	5	316	U
46	5	321	U
46	5	322	C
46	5	328	A
46	5	334	A
46	5	340	C
46	5	347	A
46	5	349	A
46	5	350	C
46	5	357	U
46	5	361	C
46	5	363	A
46	5	365	U
46	5	381	U
46	5	386	A
46	5	387	G
46	5	399	G
46	5	401	G
46	5	406	C
46	5	407	A
46	5	409	G
46	5	410	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	412	G
46	5	413	G
46	5	414	C
46	5	431	G
46	5	432	U
46	5	433	A
46	5	440	U
46	5	446	C
46	5	449	C
46	5	450	G
46	5	452	A
46	5	453	G
46	5	454	U
46	5	457	G
46	5	463	A
46	5	466	A
46	5	467	U
46	5	468	U
46	5	469	C
46	5	482	G
46	5	483	G
46	5	484	U
46	5	485	C
46	5	486	C
46	5	492	U
46	5	493	G
46	5	495	C
46	5	497	G
46	5	498	C
46	5	499	G
46	5	505	G
46	5	510	U
46	5	647	G
46	5	649	A
46	5	654	C
46	5	658	C
46	5	666	G
46	5	667	A
46	5	668	C
46	5	672	C
46	5	683	C
46	5	685	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	687	U
46	5	696	C
46	5	697	G
46	5	704	C
46	5	705	G
46	5	708	G
46	5	729	G
46	5	730	G
46	5	731	G
46	5	739	G
46	5	742	G
46	5	744	G
46	5	747	A
46	5	748	G
46	5	749	G
46	5	750	U
46	5	758	G
46	5	911	U
46	5	913	U
46	5	914	U
46	5	917	A
46	5	918	G
46	5	922(A)	G
46	5	922(B)	C
46	5	923	C
46	5	924	C
46	5	925	C
46	5	926	G
46	5	929	A
46	5	931	C
46	5	932	A
46	5	933	G
46	5	934	C
46	5	936	C
46	5	938	C
46	5	939	G
46	5	941	C
46	5	944	A
46	5	945	U
46	5	956	A
46	5	959	G
46	5	960	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	961	G
46	5	962	C
46	5	965	G
46	5	966	A
46	5	967	C
46	5	968	C
46	5	969	C
46	5	972	C
46	5	973	G
46	5	979	C
46	5	983	C
46	5	990	C
46	5	1070	G
46	5	1072	C
46	5	1073	G
46	5	1075	G
46	5	1076	C
46	5	1078	A
46	5	1079	C
46	5	1082	C
46	5	1174	G
46	5	1179	U
46	5	1195	G
46	5	1209	U
46	5	1210	C
46	5	1211	G
46	5	1212	G
46	5	1214	C
46	5	1215	C
46	5	1234	G
46	5	1235	G
46	5	1236	C
46	5	1237	C
46	5	1238	A
46	5	1239	C
46	5	1272	C
46	5	1273	G
46	5	1274	A
46	5	1275	G
46	5	1276	C
46	5	1280	C
46	5	1284	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	1287	G
46	5	1288	G
46	5	1291	G
46	5	1292	C
46	5	1293	G
46	5	1295	U
46	5	1296	G
46	5	1301	C
46	5	1303	A
46	5	1304	C
46	5	1326	A
46	5	1329	G
46	5	1330	A
46	5	1337	A
46	5	1354	A
46	5	1359	G
46	5	1364	U
46	5	1370	G
46	5	1371	A
46	5	1377	G
46	5	1378	C
46	5	1380	G
46	5	1381	U
46	5	1387	A
46	5	1388	A
46	5	1394	G
46	5	1397	A
46	5	1398	A
46	5	1401	C
46	5	1411(B)	C
46	5	1411(C)	C
46	5	1412	G
46	5	1416	G
46	5	1419	G
46	5	1420	A
46	5	1421	G
46	5	1422	G
46	5	1429	C
46	5	1433	A
46	5	1435	G
46	5	1436	C
46	5	1437	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	1438	U
46	5	1441	C
46	5	1442	C
46	5	1445	U
46	5	1446	C
46	5	1453	G
46	5	1455	G
46	5	1456	C
46	5	1457	G
46	5	1458	C
46	5	1465	G
46	5	1475	G
46	5	1478	C
46	5	1482	G
46	5	1483	C
46	5	1484	G
46	5	1485	C
46	5	1486	C
46	5	1497	A
46	5	1498	G
46	5	1502	G
46	5	1503	A
46	5	1504	G
46	5	1514	U
46	5	1516	G
46	5	1518	A
46	5	1523	A
46	5	1525	A
46	5	1534	A
46	5	1535	C
46	5	1547	A
46	5	1554	A
46	5	1563	A
46	5	1564	A
46	5	1566	C
46	5	1568	C
46	5	1578	U
46	5	1586	G
46	5	1591	U
46	5	1596	U
46	5	1602	U
46	5	1612	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	1613	A
46	5	1617	G
46	5	1624	G
46	5	1625	G
46	5	1628	C
46	5	1631	A
46	5	1633	G
46	5	1634	A
46	5	1640	C
46	5	1645	C
46	5	1649	U
46	5	1650	A
46	5	1652	U
46	5	1654	G
46	5	1656	U
46	5	1661	C
46	5	1670	G
46	5	1676	C
46	5	1677	U
46	5	1678	C
46	5	1679	A
46	5	1683	U
46	5	1691	G
46	5	1694	C
46	5	1724	G
46	5	1729	A
46	5	1733	G
46	5	1734	G
46	5	1740	C
46	5	1741	G
46	5	1742	A
46	5	1750	G
46	5	1753	G
46	5	1755	C
46	5	1756	U
46	5	1757	U
46	5	1761	G
46	5	1763	C
46	5	1764	G
46	5	1768	C
46	5	1772	C
46	5	1773	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	1776	A
46	5	1781	U
46	5	1787	A
46	5	1799	G
46	5	1803	G
46	5	1804	A
46	5	1805	A
46	5	1812	C
46	5	1819	G
46	5	1821	G
46	5	1822	U
46	5	1828	C
46	5	1833	G
46	5	1834	U
46	5	1835	G
46	5	1836	G
46	5	1837	A
46	5	1842	G
46	5	1855	G
46	5	1867	A
46	5	1869	G
46	5	1882	U
46	5	1891	A
46	5	1892	A
46	5	1893	C
46	5	1897	A
46	5	1899	G
46	5	1910	G
46	5	1918	U
46	5	1920	C
46	5	1921	C
46	5	1922	G
46	5	1923	A
46	5	1931	C
46	5	1938	C
46	5	1941	A
46	5	1947	U
46	5	1948	G
46	5	1956	A
46	5	1961	G
46	5	1962	A
46	5	1967	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	1976	G
46	5	1977	C
46	5	1978	C
46	5	1980	U
46	5	1982	G
46	5	1983	A
46	5	1984	A
46	5	1986	U
46	5	1987	C
46	5	1991	A
46	5	1992	U
46	5	1993	C
46	5	1997	U
46	5	2001	G
46	5	2002	A
46	5	2003	G
46	5	2005	G
46	5	2008	U
46	5	2011	C
46	5	2016	C
46	5	2017	A
46	5	2024	G
46	5	2025	A
46	5	2026	A
46	5	2046	G
46	5	2047	A
46	5	2048	U
46	5	2052	G
46	5	2055	G
46	5	2056	G
46	5	2062	C
46	5	2064	G
46	5	2068	C
46	5	2069	A
46	5	2077	C
46	5	2084	U
46	5	2085	G
46	5	2089	G
46	5	2090	U
46	5	2092	G
46	5	2093	G
46	5	2094	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	2095	A
46	5	2097	A
46	5	2098	G
46	5	2100	G
46	5	2101	A
46	5	2102	G
46	5	2104	A
46	5	2105	A
46	5	2106	G
46	5	2107	A
46	5	2108	G
46	5	2110	G
46	5	2259	G
46	5	2260	C
46	5	2262	G
46	5	2266	C
46	5	2267	U
46	5	2268	A
46	5	2269	C
46	5	2270	G
46	5	2274	C
46	5	2275	G
46	5	2277	C
46	5	2279	A
46	5	2288	G
46	5	2289	C
46	5	2300	A
46	5	2301	G
46	5	2313	A
46	5	2314	G
46	5	2333	G
46	5	2344	U
46	5	2348	G
46	5	2351	C
46	5	2352	U
46	5	2360	A
46	5	2364	G
46	5	2366	A
46	5	2370	A
46	5	2372	U
46	5	2395	A
46	5	2396	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	2399	G
46	5	2402	G
46	5	2416	G
46	5	2417	A
46	5	2421	G
46	5	2422	C
46	5	2425	U
46	5	2433	G
46	5	2441	C
46	5	2447	U
46	5	2450	G
46	5	2453	A
46	5	2467	U
46	5	2468	U
46	5	2470	C
46	5	2471	G
46	5	2475	G
46	5	2483	G
46	5	2485	U
46	5	2488	C
46	5	2489	C
46	5	2490	U
46	5	2491	C
46	5	2495	U
46	5	2503	G
46	5	2504	C
46	5	2505	C
46	5	2506	G
46	5	2513	A
46	5	2521	G
46	5	2530	U
46	5	2537	A
46	5	2546	G
46	5	2547	G
46	5	2549	G
46	5	2553	A
46	5	2554	U
46	5	2555	G
46	5	2566	G
46	5	2575	U
46	5	2583	C
46	5	2586	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	2587	A
46	5	2601	A
46	5	2611	A
46	5	2612	G
46	5	2620	G
46	5	2627	C
46	5	2638	G
46	5	2639	U
46	5	2640	G
46	5	2647	A
46	5	2660	A
46	5	2661	U
46	5	2662	G
46	5	2663	G
46	5	2669	C
46	5	2670	C
46	5	2676	A
46	5	2679	G
46	5	2681	G
46	5	2686	G
46	5	2687	U
46	5	2695	A
46	5	2696	A
46	5	2704	C
46	5	2707	U
46	5	2708	U
46	5	2709	C
46	5	2710	C
46	5	2711	G
46	5	2712	G
46	5	2714	G
46	5	2716	C
46	5	2719	C
46	5	2721	G
46	5	2724	G
46	5	2725	A
46	5	2726	G
46	5	2740	U
46	5	2743	A
46	5	2744	A
46	5	2754	G
46	5	2760	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	2761	U
46	5	2763	U
46	5	2764	A
46	5	2769	U
46	5	2772	C
46	5	2787	A
46	5	2788	U
46	5	2789	A
46	5	2790	U
46	5	2795	A
46	5	2798	A
46	5	2799	G
46	5	2806	A
46	5	2807	A
46	5	2808	G
46	5	2814	C
46	5	2826	U
46	5	2827	G
46	5	2828	U
46	5	2829	U
46	5	2835	A
46	5	2838	G
46	5	2842	G
46	5	2844	A
46	5	2846	G
46	5	2855	G
46	5	2869	U
46	5	2879	A
46	5	2884	G
46	5	2896	G
46	5	2897	G
46	5	3598	C
46	5	3599	A
46	5	3604	A
46	5	3605	C
46	5	3606	U
46	5	3615	G
46	5	3618	C
46	5	3620	G
46	5	3621	A
46	5	3625	G
46	5	3626	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	3635	A
46	5	3644	U
46	5	3653	A
46	5	3662	A
46	5	3673	C
46	5	3674	G
46	5	3692	A
46	5	3696	C
46	5	3698	G
46	5	3711	A
46	5	3712	A
46	5	3722	G
46	5	3729	U
46	5	3740	G
46	5	3747	A
46	5	3748	A
46	5	3750	G
46	5	3753	G
46	5	3759	A
46	5	3760	A
46	5	3761	C
46	5	3765	G
46	5	3773	U
46	5	3774	A
46	5	3776	G
46	5	3777	G
46	5	3778	U
46	5	3780	G
46	5	3784	A
46	5	3786	U
46	5	3798	U
46	5	3799	A
46	5	3809	G
46	5	3810	C
46	5	3811	G
46	5	3813	A
46	5	3814	U
46	5	3817	A
46	5	3819	G
46	5	3822	U
46	5	3831	U
46	5	3839	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	3840	U
46	5	3859	G
46	5	3867	A
46	5	3876	A
46	5	3877	A
46	5	3878	C
46	5	3879	G
46	5	3880	G
46	5	3888	G
46	5	3889	G
46	5	3892	U
46	5	3897	G
46	5	3901	A
46	5	3905	A
46	5	3906	A
46	5	3907	G
46	5	3914	U
46	5	3915	U
46	5	3916	G
46	5	3917	A
46	5	3923	A
46	5	3926	C
46	5	3927	U
46	5	3939	G
46	5	3943	A
46	5	4067	U
46	5	4069	U
46	5	4073	A
46	5	4076	G
46	5	4084	G
46	5	4085	A
46	5	4086	G
46	5	4088	C
46	5	4092	G
46	5	4099	G
46	5	4100	C
46	5	4116	C
46	5	4117	U
46	5	4118	U
46	5	4119	C
46	5	4120	U
46	5	4121	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	4122	G
46	5	4125	C
46	5	4127	A
46	5	4136	G
46	5	4138	C
46	5	4161	G
46	5	4162	C
46	5	4163	U
46	5	4164	C
46	5	4165	C
46	5	4166	G
46	5	4171	C
46	5	4183	G
46	5	4184	G
46	5	4191	G
46	5	4197	G
46	5	4201	G
46	5	4203	A
46	5	4205	A
46	5	4212	A
46	5	4213	A
46	5	4214	A
46	5	4218	U
46	5	4219	A
46	5	4221	C
46	5	4222	G
46	5	4225	G
46	5	4229	U
46	5	4232	U
46	5	4233	A
46	5	4237	C
46	5	4251	A
46	5	4255	A
46	5	4257	A
46	5	4258	C
46	5	4266	G
46	5	4267	G
46	5	4268	A
46	5	4271	A
46	5	4273	A
46	5	4281	A
46	5	4291	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	4297	G
46	5	4304	A
46	5	4305	G
46	5	4306	U
46	5	4307	A
46	5	4311	A
46	5	4314	C
46	5	4317	A
46	5	4319	C
46	5	4329	G
46	5	4330	G
46	5	4331	G
46	5	4335	C
46	5	4336	A
46	5	4349	C
46	5	4350	C
46	5	4354	U
46	5	4355	G
46	5	4368	G
46	5	4373	G
46	5	4376	A
46	5	4377	G
46	5	4378	A
46	5	4379	A
46	5	4380	A
46	5	4382	G
46	5	4387	C
46	5	4391	G
46	5	4394	A
46	5	4395	U
46	5	4396	A
46	5	4398	C
46	5	4401	G
46	5	4415	A
46	5	4419	U
46	5	4421	C
46	5	4422	A
46	5	4433	G
46	5	4437	U
46	5	4438	U
46	5	4440	G
46	5	4444	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	4447	C
46	5	4448	G
46	5	4449	A
46	5	4450	U
46	5	4453	C
46	5	4463	U
46	5	4464	A
46	5	4466	C
46	5	4471	U
46	5	4475	G
46	5	4476	C
46	5	4487	A
46	5	4488	A
46	5	4489	G
46	5	4495	G
46	5	4500	U
46	5	4511	A
46	5	4512	U
46	5	4513	A
46	5	4515	G
46	5	4518	A
46	5	4519	C
46	5	4520	G
46	5	4524	G
46	5	4531	U
46	5	4532	U
46	5	4548	A
46	5	4549	G
46	5	4560	C
46	5	4567	G
46	5	4572	U
46	5	4573	G
46	5	4575	G
46	5	4578	G
46	5	4584	A
46	5	4585	U
46	5	4586	G
46	5	4589	A
46	5	4590	A
46	5	4599	A
46	5	4606	G
46	5	4635	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	4636	U
46	5	4637	G
46	5	4652	G
46	5	4656	A
46	5	4661	G
46	5	4668	U
46	5	4670	C
46	5	4672	A
46	5	4677	U
46	5	4678	G
46	5	4682	U
46	5	4694	G
46	5	4699	U
46	5	4700	A
46	5	4701	A
46	5	4709	U
46	5	4719	G
46	5	4720	C
46	5	4721	G
46	5	4728	U
46	5	4729	A
46	5	4736	C
46	5	4737	G
46	5	4745	G
46	5	4751	G
46	5	4754	G
46	5	4755	G
46	5	4756	C
46	5	4757	C
46	5	4759	C
46	5	4761	G
46	5	4764	A
46	5	4765	G
46	5	4771	C
46	5	4772	C
46	5	4868	G
46	5	4870	G
46	5	4871	C
46	5	4872	G
46	5	4873	G
46	5	4874	A
46	5	4875	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	4876	A
46	5	4877	G
46	5	4881	U
46	5	4882	U
46	5	4883	C
46	5	4885	U
46	5	4887	C
46	5	4891	G
46	5	4895	C
46	5	4897	G
46	5	4910	A
46	5	4911	A
46	5	4913	G
46	5	4914	G
46	5	4915	G
46	5	4919	G
46	5	4921	C
46	5	4922	C
46	5	4924	C
46	5	4926	C
46	5	4927	G
46	5	4928	C
46	5	4931	G
46	5	4935	C
46	5	4937	C
46	5	4938	A
46	5	4940	C
46	5	4943	A
46	5	4944	C
46	5	4945	G
46	5	4948	C
46	5	4949	G
46	5	4950	U
46	5	4951	G
46	5	4956	A
46	5	4957	C
46	5	4958	C
46	5	4964	C
46	5	4965	U
46	5	4966	A
46	5	4967	A
46	5	4976	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	4985	U
46	5	4988	U
46	5	4989	U
46	5	4990	C
46	5	4991	U
46	5	4994	G
46	5	4997	G
46	5	4999	G
46	5	5007	A
46	5	5013	C
46	5	5014	A
46	5	5017	G
46	5	5035	U
46	5	5040	U
46	5	5041	G
46	5	5047	C
46	5	5050	C
46	5	5053	U
46	5	5054	C
46	5	5056	A
46	5	5061	A
46	5	5062	G
46	5	5066	U
47	7	7	G
47	7	10	C
47	7	22	A
47	7	25	G
47	7	33	U
47	7	38	U
47	7	41	G
47	7	42	A
47	7	53	U
47	7	54	A
47	7	64	G
47	7	76	U
47	7	97	G
47	7	99	G
47	7	100	A
47	7	109	U
47	7	110	G
47	7	111	C
47	7	120	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
48	8	2	G
48	8	3	A
48	8	22	U
48	8	23	C
48	8	32	C
48	8	34	U
48	8	35	C
48	8	49	G
48	8	51	U
48	8	52	A
48	8	57	C
48	8	59	A
48	8	62	A
48	8	63	U
48	8	75	G
48	8	79	G
48	8	86	U
48	8	87	G
48	8	94	G
48	8	95	A
48	8	99	U
48	8	101	C
48	8	103	A
48	8	104	A
48	8	105	C
48	8	109	C
48	8	110	U
48	8	111	U
48	8	112	G
48	8	114	G
48	8	121	G
48	8	123	U
48	8	124	U
48	8	125	C
48	8	126	C
48	8	127	U
48	8	137	A
48	8	143	G
48	8	156	U
49	9	2	A
49	9	3	C
49	9	4	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	9	17	C
49	9	25	A
49	9	26	U
49	9	33	G
49	9	37	C
49	9	41	G
49	9	44	U
49	9	45	A
49	9	46	A
49	9	56	G
49	9	58	C
49	9	60	A
49	9	63	U
49	9	65	C
49	9	67	C
49	9	68	A
49	9	70	G
49	9	71	G
49	9	73	C
49	9	74	G
49	9	75	G
49	9	77	A
49	9	79	A
49	9	99	A
49	9	100	U
49	9	103	A
49	9	104	A
49	9	110	U
49	9	111	A
49	9	113	G
49	9	115	U
49	9	116	U
49	9	124	U
49	9	126	G
49	9	127	C
49	9	128	U
49	9	129	C
49	9	130	G
49	9	141	A
49	9	142	C
49	9	143	U
49	9	147	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	9	155	G
49	9	158	A
49	9	161	U
49	9	162	C
49	9	163	U
49	9	167	G
49	9	168	C
49	9	173	A
49	9	175	A
49	9	182	C
49	9	183	G
49	9	184	G
49	9	188	C
49	9	189	U
49	9	191	A
49	9	192	C
49	9	200	G
49	9	202	G
49	9	206	G
49	9	213	G
49	9	215	G
49	9	292	A
49	9	302	A
49	9	304	C
49	9	307	G
49	9	308	G
49	9	309	G
49	9	312	G
49	9	314	U
49	9	317	C
49	9	318	A
49	9	319	C
49	9	322	C
49	9	331	C
49	9	332	G
49	9	340	C
49	9	347	G
49	9	351	G
49	9	360	A
49	9	362	C
49	9	363	A
49	9	364	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	9	368	U
49	9	370	G
49	9	371	A
49	9	372	U
49	9	379	C
49	9	381	C
49	9	382	C
49	9	383	G
49	9	384	U
49	9	385	G
49	9	386	C
49	9	398	A
49	9	400	C
49	9	407	G
49	9	409	C
49	9	417	C
49	9	418	A
49	9	434	G
49	9	435	A
49	9	438	G
49	9	441	C
49	9	448	A
49	9	449	A
49	9	450	C
49	9	452	G
49	9	459	C
49	9	460	A
49	9	462	C
49	9	463	C
49	9	464	A
49	9	465	A
49	9	466	G
49	9	472	C
49	9	473	A
49	9	474	G
49	9	476	A
49	9	482	G
49	9	485	A
49	9	487	U
49	9	492	C
49	9	496	C
49	9	501	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	9	508	A
49	9	523	A
49	9	525	A
49	9	531	A
49	9	532	C
49	9	533	A
49	9	544	G
49	9	545	A
49	9	546	G
49	9	548	C
49	9	549	C
49	9	550	C
49	9	551	U
49	9	554	A
49	9	555	A
49	9	556	U
49	9	559	G
49	9	560	A
49	9	562	U
49	9	563	G
49	9	564	A
49	9	568	C
49	9	576	A
49	9	583	A
49	9	587	A
49	9	588	G
49	9	589	G
49	9	590	A
49	9	591	U
49	9	592	C
49	9	594	A
49	9	595	U
49	9	597	G
49	9	604	A
49	9	606	G
49	9	607	U
49	9	608	C
49	9	613	G
49	9	614	C
49	9	615	C
49	9	616	A
49	9	617	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	9	620	G
49	9	626	G
49	9	627	U
49	9	628	A
49	9	629	A
49	9	631	U
49	9	632	C
49	9	643	A
49	9	644	G
49	9	646	G
49	9	659	G
49	9	660	C
49	9	663	C
49	9	664	A
49	9	668	A
49	9	669	A
49	9	670	A
49	9	671	A
49	9	672	A
49	9	678	U
49	9	684	G
49	9	688	U
49	9	689	U
49	9	696	G
49	9	733	C
49	9	752	G
49	9	753	C
49	9	754	G
49	9	798	G
49	9	811	A
49	9	812	A
49	9	821	G
49	9	822	U
49	9	827	A
49	9	830	A
49	9	834	C
49	9	844	U
49	9	847	A
49	9	869	A
49	9	870	A
49	9	871	U
49	9	872	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	9	873	G
49	9	874	G
49	9	875	A
49	9	876	C
49	9	877	C
49	9	878	G
49	9	885	U
49	9	887	U
49	9	890	U
49	9	892	U
49	9	913	A
49	9	914	U
49	9	919	A
49	9	920	A
49	9	921	G
49	9	922	A
49	9	930	C
49	9	933	G
49	9	934	G
49	9	943	U
49	9	954	U
49	9	971	G
49	9	985	G
49	9	990	A
49	9	992	A
49	9	999	G
49	9	1016	U
49	9	1017	U
49	9	1023	A
49	9	1032	C
49	9	1041	G
49	9	1044	G
49	9	1055	A
49	9	1060	A
49	9	1061	U
49	9	1062	A
49	9	1078	C
49	9	1082	A
49	9	1083	A
49	9	1085	C
49	9	1086	G
49	9	1089	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	9	1100	A
49	9	1111	U
49	9	1115	U
49	9	1116	C
49	9	1117	C
49	9	1118	C
49	9	1119	A
49	9	1121	G
49	9	1123	C
49	9	1131	G
49	9	1133	A
49	9	1138	C
49	9	1139	C
49	9	1143	A
49	9	1144	A
49	9	1148	A
49	9	1149	A
49	9	1153	C
49	9	1154	U
49	9	1157	G
49	9	1161	U
49	9	1165	G
49	9	1166	G
49	9	1195	A
49	9	1196	A
49	9	1207	G
49	9	1208	A
49	9	1211	G
49	9	1214	A
49	9	1215	C
49	9	1216	C
49	9	1224	G
49	9	1240	A
49	9	1242	U
49	9	1251	A
49	9	1253	A
49	9	1254	C
49	9	1255	G
49	9	1256	G
49	9	1257	G
49	9	1259	A
49	9	1260	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	9	1265	A
49	9	1266	C
49	9	1271	C
49	9	1274	G
49	9	1275	G
49	9	1280	G
49	9	1281	G
49	9	1284	A
49	9	1285	G
49	9	1286	G
49	9	1287	A
49	9	1293	A
49	9	1298	G
49	9	1299	A
49	9	1300	U
49	9	1301	A
49	9	1302	G
49	9	1303	C
49	9	1304	U
49	9	1307	U
49	9	1308	U
49	9	1313	A
49	9	1314	U
49	9	1316	C
49	9	1330	G
49	9	1331	C
49	9	1342	U
49	9	1345	G
49	9	1348	G
49	9	1354	G
49	9	1369	A
49	9	1371	U
49	9	1372	U
49	9	1376	A
49	9	1378	A
49	9	1395	C
49	9	1396	A
49	9	1397	U
49	9	1402	A
49	9	1404	U
49	9	1405	A
49	9	1412	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	9	1424	G
49	9	1428	G
49	9	1429	G
49	9	1439	A
49	9	1449	G
49	9	1454	A
49	9	1455	A
49	9	1459	G
49	9	1462	U
49	9	1463	U
49	9	1466	G
49	9	1473	G
49	9	1475	G
49	9	1476	A
49	9	1477	U
49	9	1478	U
49	9	1480	A
49	9	1487	A
49	9	1490	G
49	9	1494	U
49	9	1498	A
49	9	1509	U
49	9	1510	G
49	9	1519	U
49	9	1520	G
49	9	1521	C
49	9	1522	A
49	9	1523	C
49	9	1531	A
49	9	1533	A
49	9	1536	G
49	9	1544	C
49	9	1545	A
49	9	1548	G
49	9	1552	G
49	9	1553	C
49	9	1555	U
49	9	1556	A
49	9	1557	C
49	9	1560	U
49	9	1570	G
49	9	1574	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	9	1575	G
49	9	1580	A
49	9	1581	C
49	9	1582	C
49	9	1585	U
49	9	1587	G
49	9	1588	A
49	9	1600	G
49	9	1601	A
49	9	1604	G
49	9	1621	U
49	9	1623	A
49	9	1625	U
49	9	1633	A
49	9	1637	A
49	9	1638	G
49	9	1639	G
49	9	1641	A
49	9	1647	A
49	9	1648	G
49	9	1649	U
49	9	1654	G
49	9	1663	A
49	9	1664	A
49	9	1665	G
49	9	1667	U
49	9	1671	G
49	9	1680	G
49	9	1683	C
49	9	1695	A
49	9	1698	C
49	9	1715	A
49	9	1721	U
49	9	1722	G
49	9	1726	G
49	9	1728	U
49	9	1729	U
49	9	1730	U
49	9	1732	G
49	9	1744	G
49	9	1745	A
49	9	1746	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	9	1753	C
49	9	1758	G
49	9	1760	G
49	9	1772	C
49	9	1783	C
49	9	1785	C
49	9	1800	A
49	9	1801	A
49	9	1805	G
49	9	1823	A
49	9	1824	A
49	9	1825	A
49	9	1826	G
49	9	1829	G
49	9	1831	A
49	9	1834	A
49	9	1835	A
49	9	1836	G
49	9	1838	U
49	9	1839	U
49	9	1849	G
49	9	1851	A
49	9	1861	G
49	9	1862	G
49	9	1863	A
49	9	1865	C
49	9	1866	A
49	9	1867	U
49	9	1869	A
83	hh	42	A
83	hh	43	A
83	hh	45	A
83	hh	46	A

All (278) RNA pucker outliers are listed below:

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
45	2	71	G
45	3	74	C
46	5	12	A
46	5	20	U
46	5	47	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	48	G
46	5	64	A
46	5	90	G
46	5	119	G
46	5	125	C
46	5	134	G
46	5	143	C
46	5	159	C
46	5	217	C
46	5	224	U
46	5	226	G
46	5	232	G
46	5	245	C
46	5	265	C
46	5	275	C
46	5	278	G
46	5	308	G
46	5	315	G
46	5	385	A
46	5	406	C
46	5	409	G
46	5	417	G
46	5	449	C
46	5	453	G
46	5	484	U
46	5	485	C
46	5	492	U
46	5	497	G
46	5	498	C
46	5	504	G
46	5	696	C
46	5	725	G
46	5	728	U
46	5	729	G
46	5	738(A)	C
46	5	746	A
46	5	747	A
46	5	916	C
46	5	922	C
46	5	922(B)	C
46	5	930	G
46	5	935(A)	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	936	C
46	5	955	G
46	5	956	A
46	5	959	G
46	5	966	A
46	5	968	C
46	5	969	C
46	5	971(A)	G
46	5	978	G
46	5	1072	C
46	5	1209	U
46	5	1211	G
46	5	1214	C
46	5	1236	C
46	5	1238	A
46	5	1287	G
46	5	1291	G
46	5	1295	U
46	5	1324	A
46	5	1329	G
46	5	1358	G
46	5	1370	G
46	5	1378	C
46	5	1432	G
46	5	1440	U
46	5	1445	U
46	5	1455	G
46	5	1477	C
46	5	1481	C
46	5	1484	G
46	5	1485	C
46	5	1497	A
46	5	1502	G
46	5	1625	G
46	5	1633	G
46	5	1654	G
46	5	1678	C
46	5	1724	G
46	5	1733	G
46	5	1740	C
46	5	1804	A
46	5	1818	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	1833	G
46	5	1834	U
46	5	1835	G
46	5	1892	A
46	5	1908	A
46	5	1921	C
46	5	1947	U
46	5	1983	A
46	5	1986	U
46	5	2046	G
46	5	2054	U
46	5	2068	C
46	5	2088	A
46	5	2089	G
46	5	2090	U
46	5	2100	G
46	5	2103	A
46	5	2265	G
46	5	2266	C
46	5	2278	G
46	5	2313	A
46	5	2396	A
46	5	2398	U
46	5	2425	U
46	5	2428	A
46	5	2467	U
46	5	2474	G
46	5	2475	G
46	5	2490	U
46	5	2502	A
46	5	2530	U
46	5	2546	G
46	5	2553	A
46	5	2661	U
46	5	2695	A
46	5	2696	A
46	5	2724	G
46	5	2754	G
46	5	2769	U
46	5	2789	A
46	5	2806	A
46	5	3603	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	3625	G
46	5	3673	C
46	5	3697	U
46	5	3710	G
46	5	3759	A
46	5	3760	A
46	5	3765	G
46	5	3809	G
46	5	3876	A
46	5	3888	G
46	5	3904	G
46	5	4075	U
46	5	4076	G
46	5	4084	G
46	5	4116	C
46	5	4119	C
46	5	4121	G
46	5	4124	G
46	5	4157	A
46	5	4162	C
46	5	4170	A
46	5	4204	C
46	5	4221	C
46	5	4232	U
46	5	4254	G
46	5	4266	G
46	5	4291	G
46	5	4331	G
46	5	4378	A
46	5	4379	A
46	5	4395	U
46	5	4448	G
46	5	4449	A
46	5	4463	U
46	5	4475	G
46	5	4527	G
46	5	4583	C
46	5	4635	A
46	5	4671	C
46	5	4699	U
46	5	4718	G
46	5	4719	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	5	4873	G
46	5	4884	G
46	5	4925	U
46	5	4936	G
46	5	4942	C
46	5	4947	U
46	5	4965	U
46	5	5013	C
47	7	10	C
47	7	41	G
47	7	109	U
48	8	23	C
48	8	51	U
48	8	86	U
48	8	94	G
48	8	110	U
48	8	124	U
49	9	2	A
49	9	3	C
49	9	25	A
49	9	72	C
49	9	87	U
49	9	98	C
49	9	110	U
49	9	126	G
49	9	127	C
49	9	128	U
49	9	142	C
49	9	160	U
49	9	182	C
49	9	191	A
49	9	214	U
49	9	293	C
49	9	312	G
49	9	314	U
49	9	360	A
49	9	363	A
49	9	369	C
49	9	434	G
49	9	448	A
49	9	465	A
49	9	516	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	9	532	C
49	9	553	U
49	9	555	A
49	9	559	G
49	9	563	G
49	9	587	A
49	9	591	U
49	9	594	A
49	9	613	G
49	9	626	G
49	9	627	U
49	9	628	A
49	9	642	U
49	9	670	A
49	9	688	U
49	9	752	G
49	9	821	G
49	9	869	A
49	9	870	A
49	9	872	A
49	9	875	A
49	9	1016	U
49	9	1087	A
49	9	1114	U
49	9	1137	U
49	9	1165	G
49	9	1253	A
49	9	1259	A
49	9	1264	C
49	9	1274	G
49	9	1284	A
49	9	1285	G
49	9	1313	A
49	9	1330	G
49	9	1394	G
49	9	1395	C
49	9	1396	A
49	9	1454	A
49	9	1476	A
49	9	1489	A
49	9	1493	C
49	9	1519	U

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Mol	Chain	Res	Type
49	9	1520	G
49	9	1535	U
49	9	1578	U
49	9	1581	C
49	9	1584	G
49	9	1621	U
49	9	1636	G
49	9	1637	A
49	9	1646	C
49	9	1663	A
49	9	1664	A
49	9	1679	A
49	9	1682	C
49	9	1697	A
49	9	1721	U
49	9	1744	G
49	9	1824	A
49	9	1825	A
49	9	1835	A
49	9	1867	U
49	9	1868	U

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

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

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

Of 245 ligands modelled in this entry, 244 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
88	GCP	jj	700	86	27,34,34	1.55	7 (25%)	34,54,54	1.94	8 (23%)

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
88	GCP	jj	700	86	-	3/15/38/38	0/3/3/3

All (7) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
88	jj	700	GCP	C5-C6	4.55	1.49	1.41
88	jj	700	GCP	PG-O2G	2.82	1.61	1.54
88	jj	700	GCP	PG-O3G	2.74	1.61	1.54
88	jj	700	GCP	C5-C4	2.61	1.47	1.40
88	jj	700	GCP	PB-O2B	2.10	1.61	1.56
88	jj	700	GCP	PB-O3A	2.03	1.60	1.58
88	jj	700	GCP	O4'-C1'	2.03	1.43	1.41

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
88	jj	700	GCP	C2-N3-C4	5.20	121.30	115.36
88	jj	700	GCP	C2-N1-C6	3.87	122.08	115.93
88	jj	700	GCP	C5-C6-N1	-3.86	118.15	123.43
88	jj	700	GCP	PB-O3A-PA	-3.74	120.71	132.56
88	jj	700	GCP	C4-C5-C6	-3.68	117.28	120.80
88	jj	700	GCP	N3-C2-N1	-3.43	122.65	127.22
88	jj	700	GCP	C4-C5-N7	-2.99	106.29	109.40
88	jj	700	GCP	C3'-C2'-C1'	2.39	104.58	100.98

There are no chirality outliers.

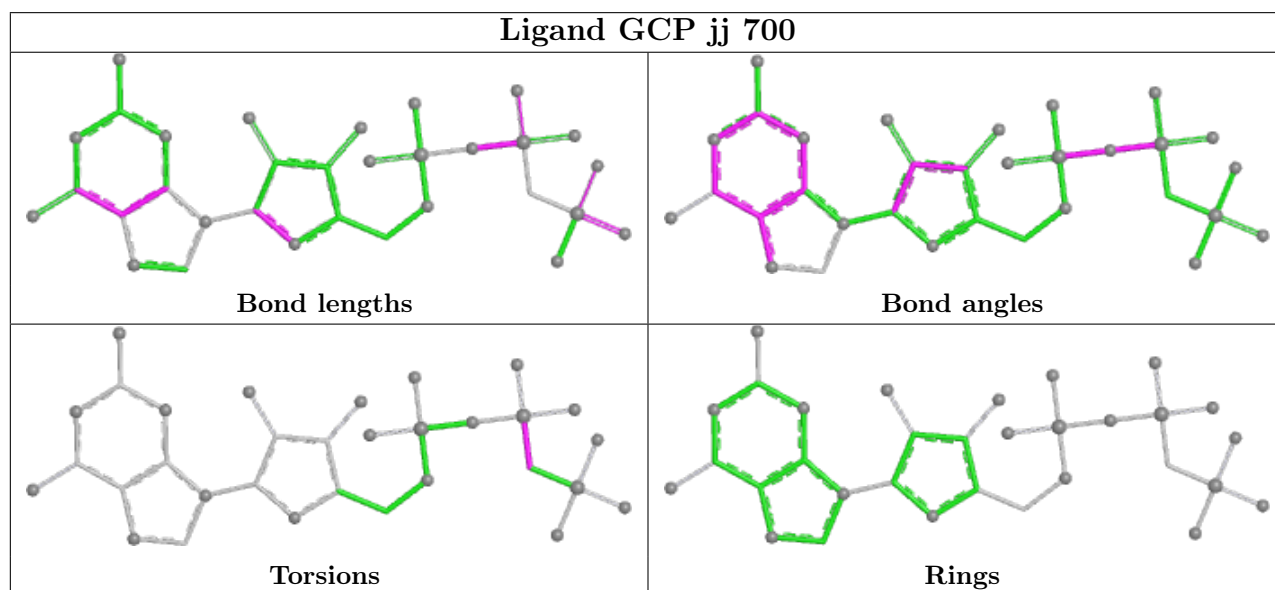
All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
88	jj	700	GCP	PG-C3B-PB-O1B
88	jj	700	GCP	PG-C3B-PB-O3A
88	jj	700	GCP	PG-C3B-PB-O2B

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](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
46	5	42
49	9	7
45	3	2
45	2	2

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	5	2113:G	O3'	2258:C	P	40.66
1	5	1252:C	O3'	1271:G	P	36.39
1	5	1405:C	O3'	1406:G	P	23.89
1	5	1219:G	O3'	1233:G	P	22.08
1	5	1406:G	O3'	1406(A):G	P	20.74
1	5	3948:C	O3'	4065:G	P	19.58
1	5	523:C	O3'	638:G	P	18.11
1	5	4138:C	O3'	4146:G	P	17.87
1	5	990:C	O3'	1064:G	P	17.71
1	5	4101:C	O3'	4107:G	P	17.24
1	5	4777:C	O3'	4859:C	P	16.45
1	5	5022:U	O3'	5028:G	P	15.42
1	5	760:G	O3'	904:C	P	15.08
1	5	1696:C	O3'	1720:C	P	14.92
1	5	1364:U	O3'	1368:A	P	14.40
1	5	182:G	O3'	189:G	P	13.89
1	5	2901:G	O3'	3597:G	P	13.20
1	5	1406(C):G	O3'	1411:C	P	13.13
1	5	1411:C	O3'	1411(A):G	P	12.97
1	5	481:G	O3'	481(A):C	P	12.34
1	5	921:C	O3'	922:C	P	12.33
1	5	934:C	O3'	935:A	P	10.70
1	5	970:G	O3'	971:U	P	10.66
1	5	737:C	O3'	738:C	P	10.59
1	5	971:U	O3'	971(A):G	P	9.97
1	5	512:U	O3'	515:C	P	9.68
1	5	4729:A	O3'	4735:G	P	9.50
1	5	1180:C	O3'	1183:C	P	9.31
1	5	500:G	O3'	504:G	P	7.18
1	5	1100:U	O3'	1168:G	P	6.11
1	3	19:G	O3'	20:U	P	5.51
1	2	19:G	O3'	20:U	P	5.30
1	5	4740:G	O3'	4743:G	P	5.20
1	2	16:C	O3'	18:U	P	5.18
1	5	480:C	O3'	481:G	P	5.17
1	9	322:C	O3'	323:C	P	5.05
1	3	16:C	O3'	18:U	P	4.93
1	9	304:C	O3'	305:U	P	4.29
1	9	798:G	O3'	799:U	P	4.28
1	9	309:G	O3'	310:C	P	4.21
1	5	1239:C	O3'	1244:G	P	4.20
1	5	935:A	O3'	935(A):G	P	4.08

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	5	170:C	O3'	171:U	P	3.84
1	5	1438:U	O3'	1440:U	P	3.64
1	5	4899:G	O3'	4902:C	P	3.41
1	9	902:G	O3'	903:A	P	3.38
1	5	738:C	O3'	738(A):C	P	3.34
1	9	903:A	O3'	904:A	P	3.30
1	9	1295:A	O3'	1296:U	P	3.19
1	5	267:G	O3'	268:G	P	3.10
1	5	5020:G	O3'	5021:C	P	3.05
1	5	751:G	O3'	752:G	P	3.02
1	5	2031:C	O3'	2032:U	P	2.80

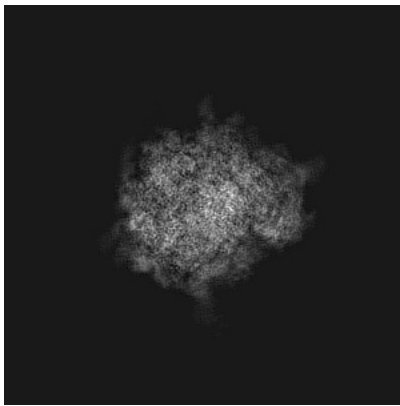
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-4136. These allow visual inspection of the internal detail of the map and identification of artifacts.

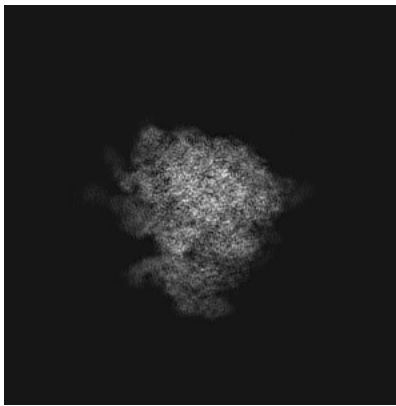
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

### 6.1 Orthogonal projections [i](#)

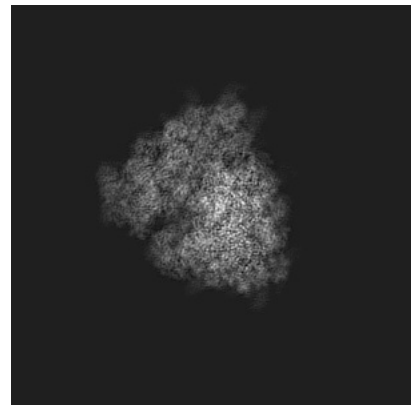
#### 6.1.1 Primary map



X

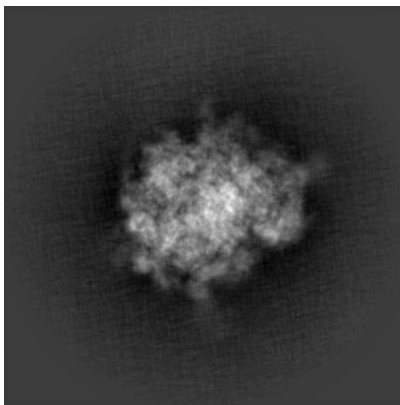


Y

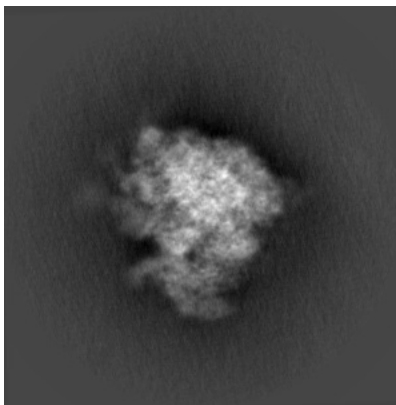


Z

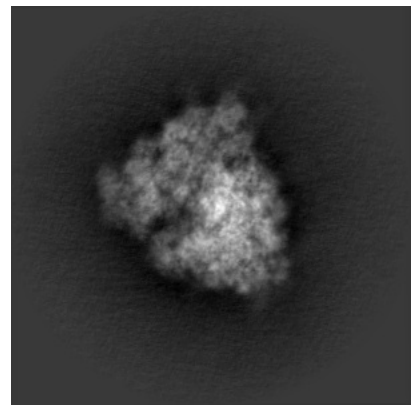
#### 6.1.2 Raw map



X



Y



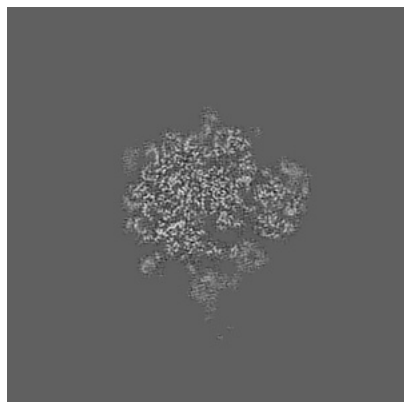
Z

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

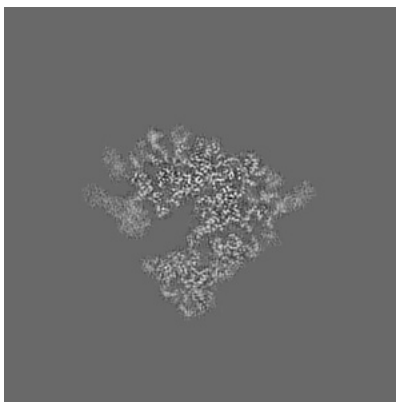


## 6.2 Central slices [i](#)

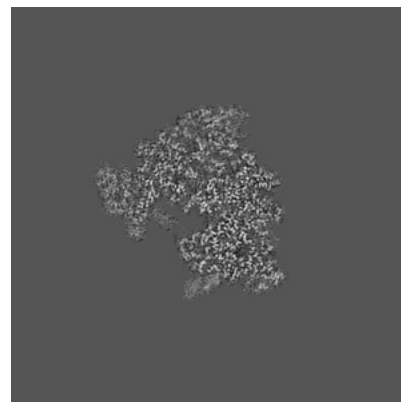
### 6.2.1 Primary map



X Index: 210

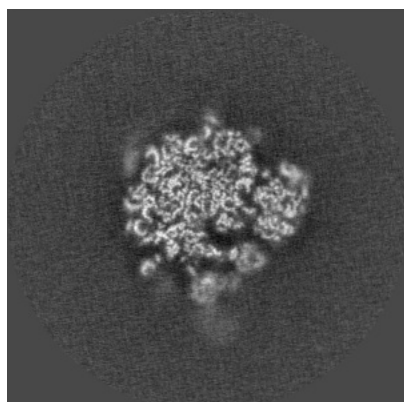


Y Index: 210

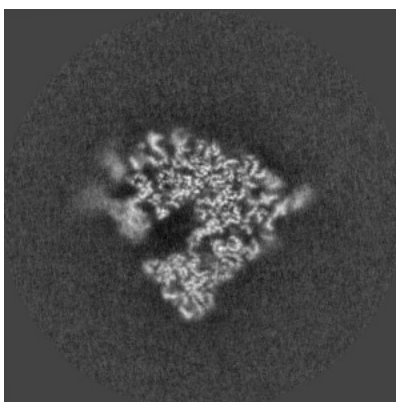


Z Index: 210

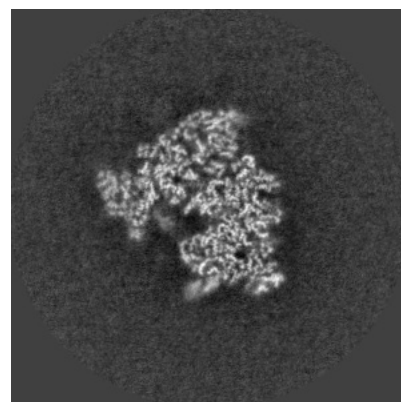
### 6.2.2 Raw map



X Index: 210



Y Index: 210

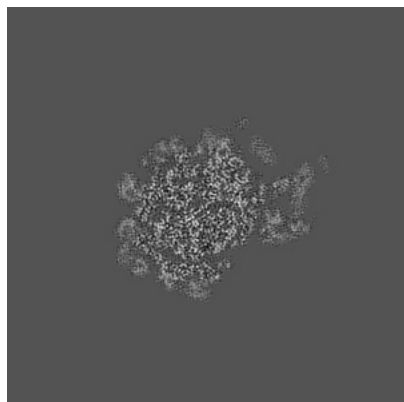


Z Index: 210

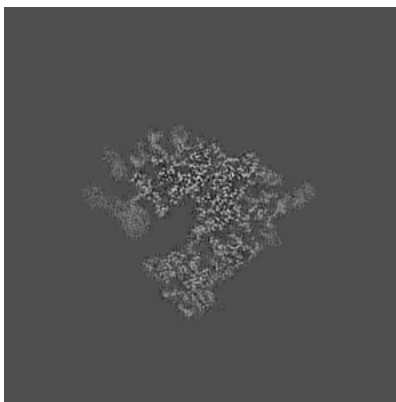
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

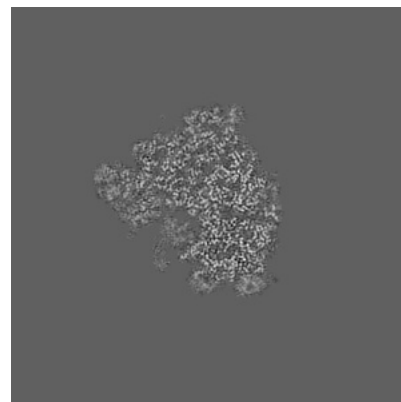
### 6.3.1 Primary map



X Index: 241

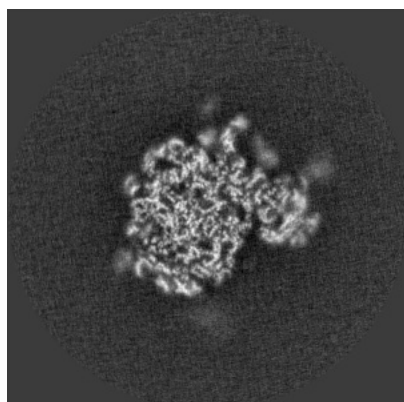


Y Index: 211

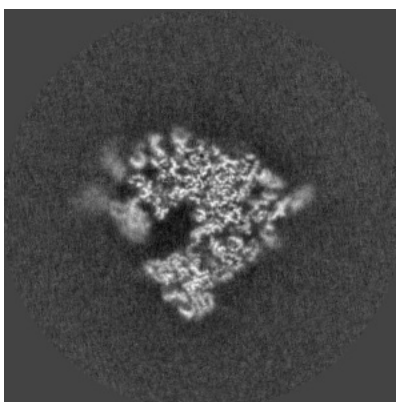


Z Index: 219

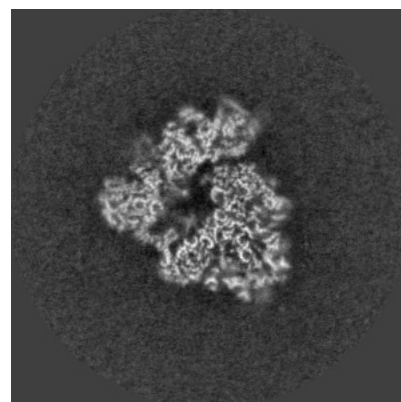
### 6.3.2 Raw map



X Index: 233



Y Index: 212

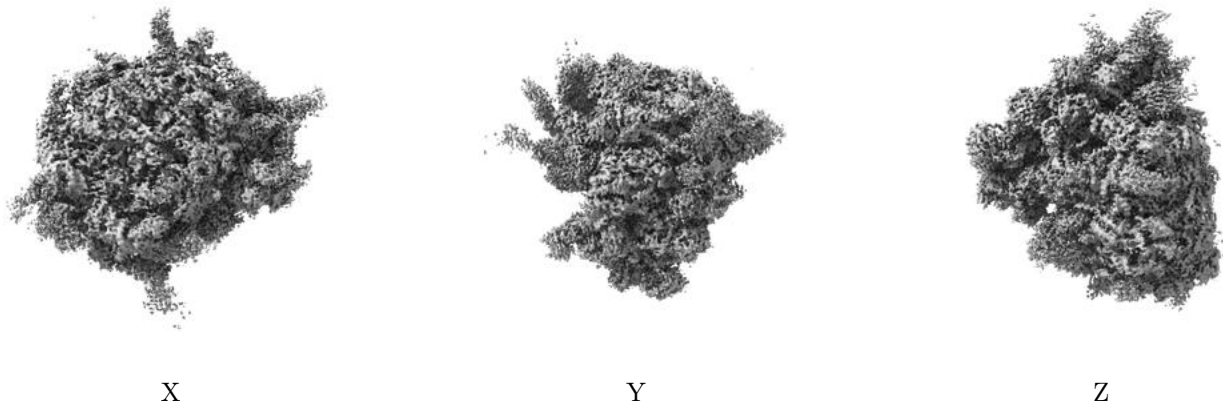


Z Index: 188

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

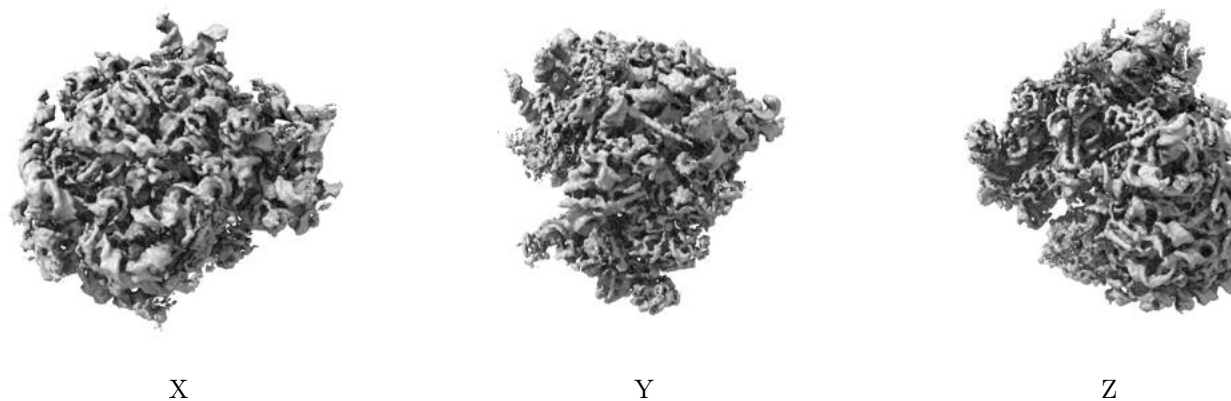
## 6.4 Orthogonal surface views [i](#)

### 6.4.1 Primary map



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

### 6.4.2 Raw map



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

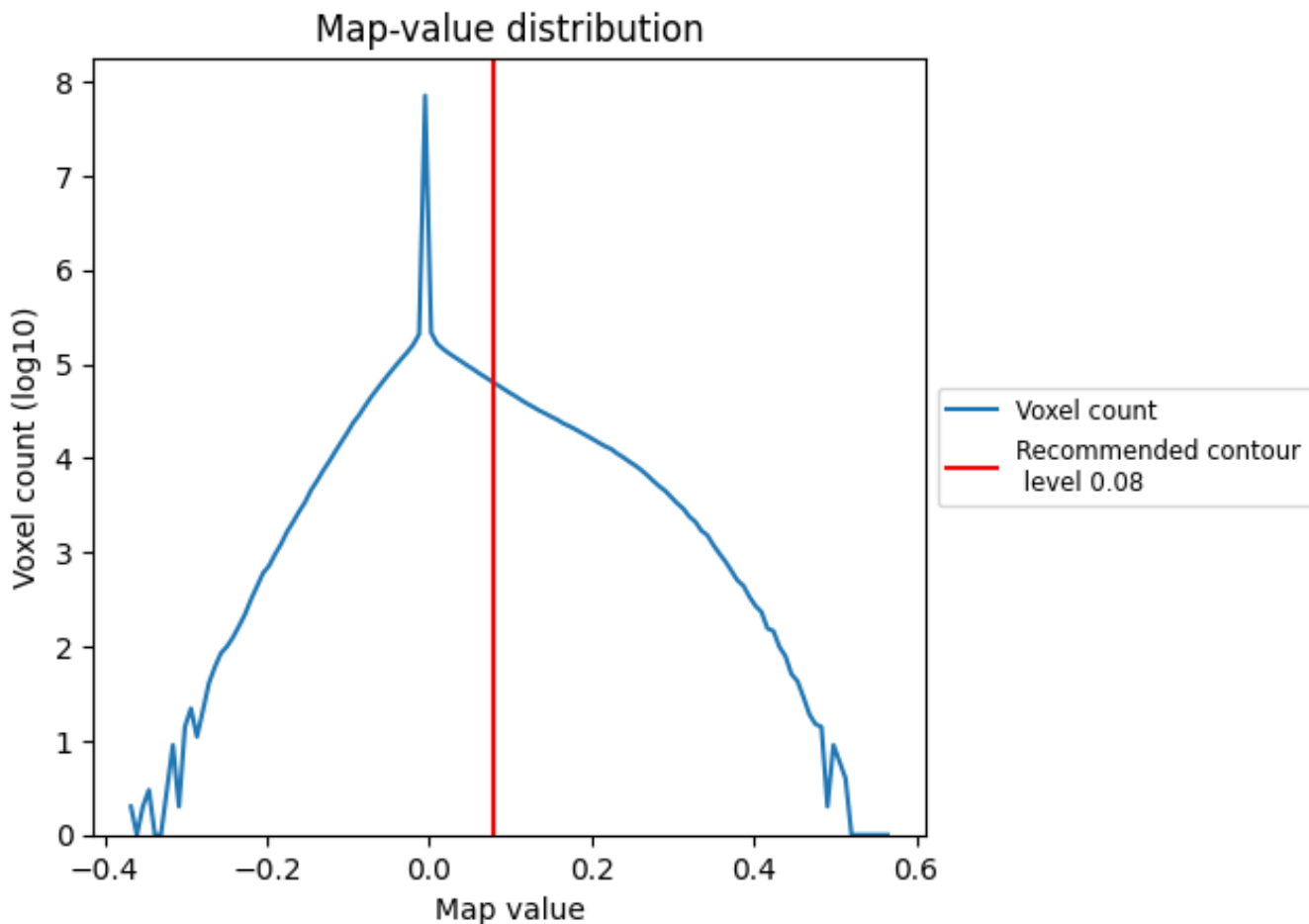
## 6.5 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

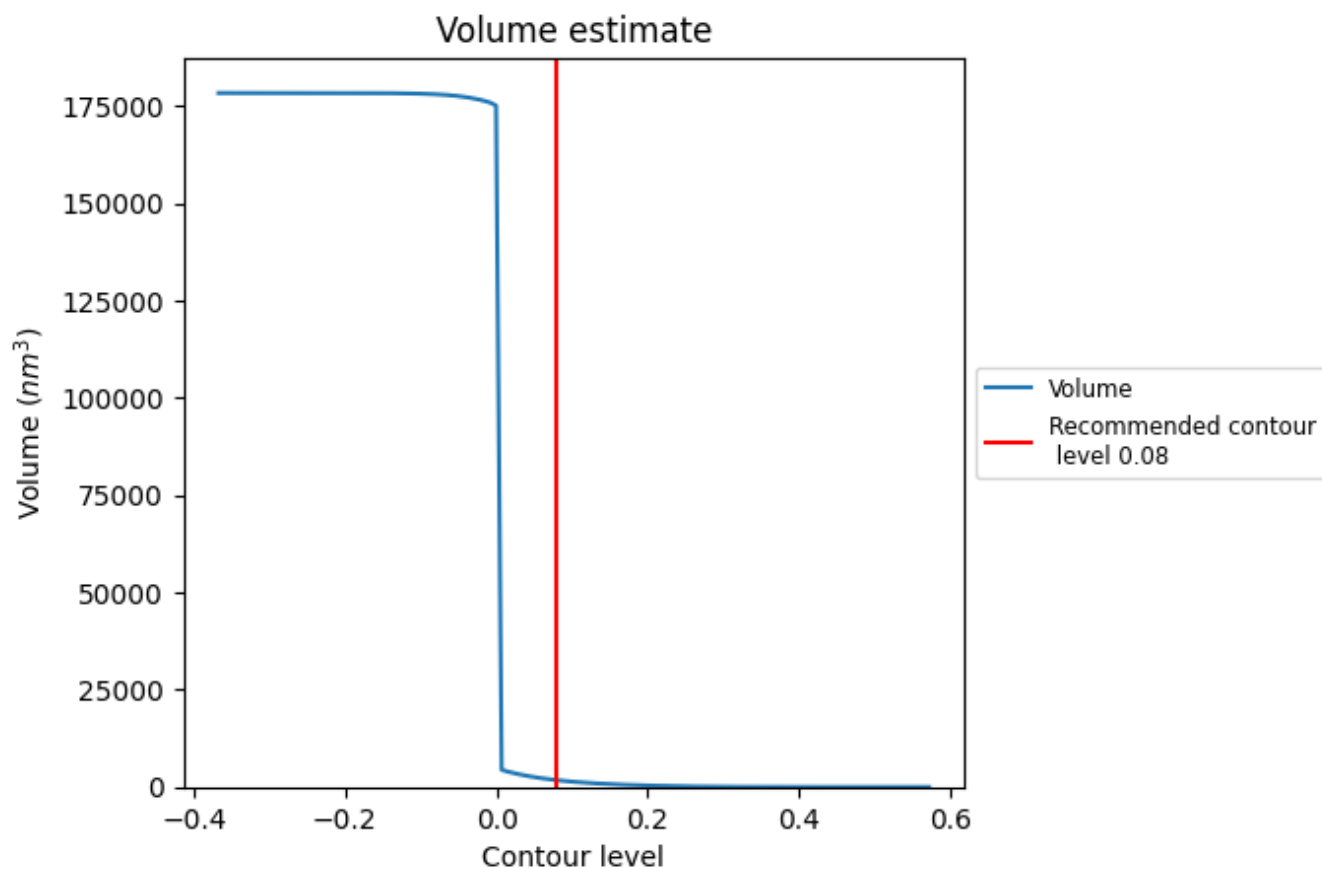
This section contains the results of statistical analysis of the map.

### 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.

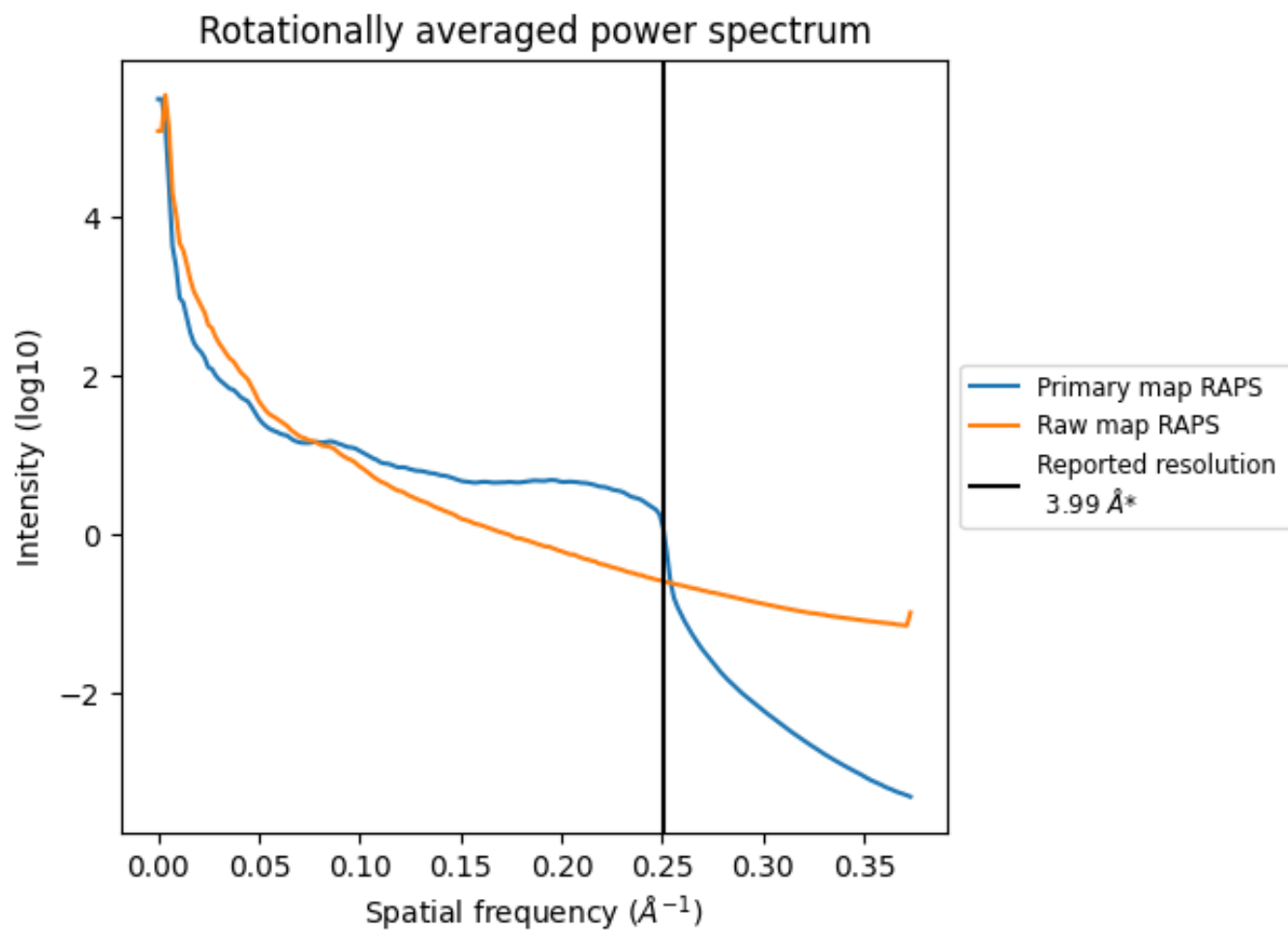
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1742 nm<sup>3</sup>; this corresponds to an approximate mass of 1573 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

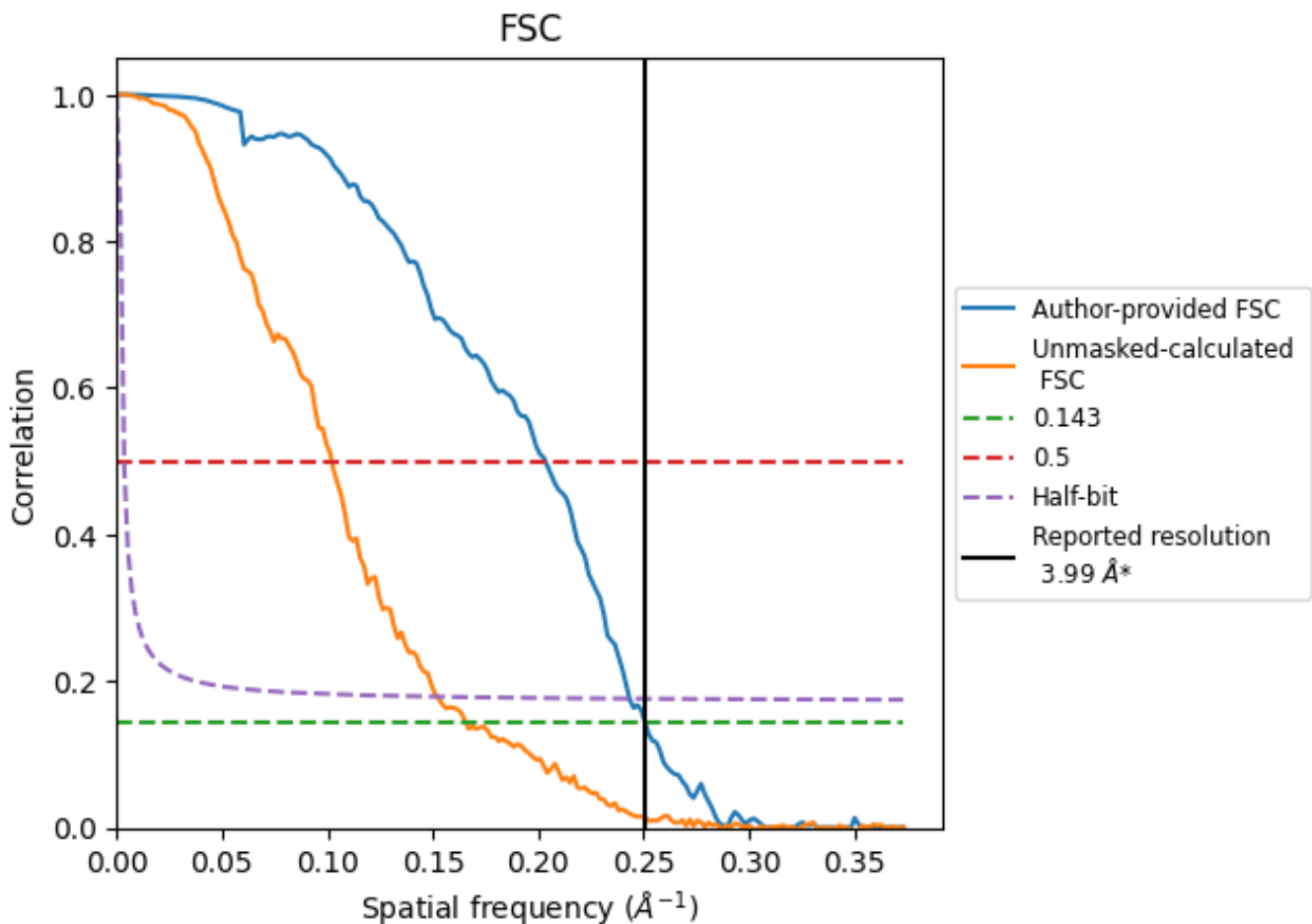


\*Reported resolution corresponds to spatial frequency of 0.251 Å<sup>-1</sup>

## 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 0.251 Å<sup>-1</sup>

## 8.2 Resolution estimates [i](#)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.99	-	-
Author-provided FSC curve	3.99	4.92	4.11
Unmasked-calculated*	6.04	9.80	6.57

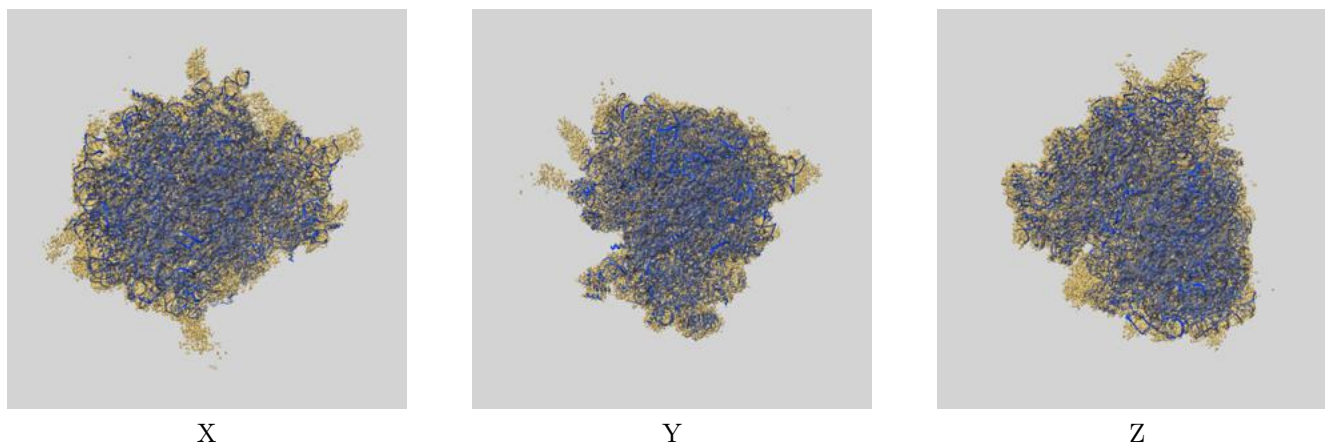
\*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 6.04 differs from the reported value 3.99 by more than 10 %



## 9 Map-model fit [i](#)

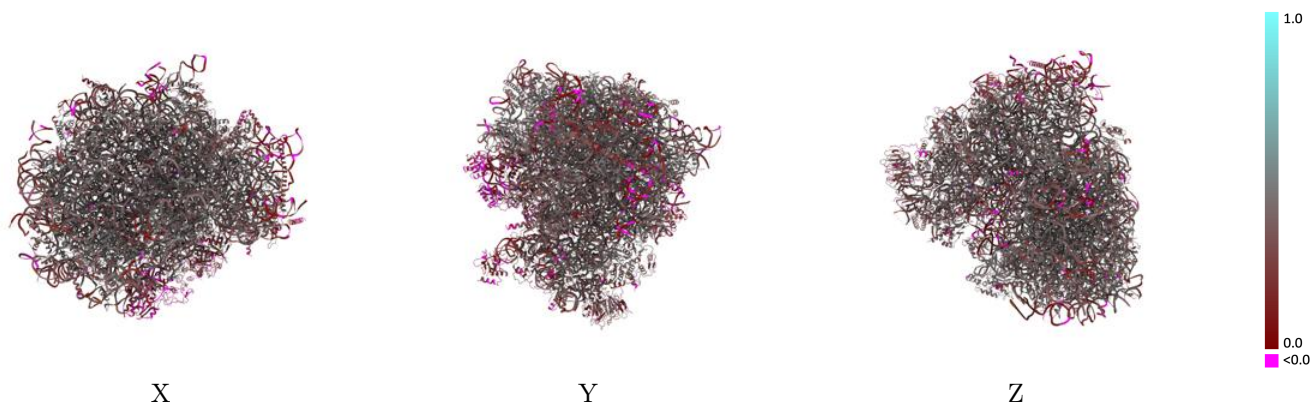
This section contains information regarding the fit between EMDB map EMD-4136 and PDB model 5LZY. Per-residue inclusion information can be found in section 3 on page 24.

### 9.1 Map-model overlay [i](#)



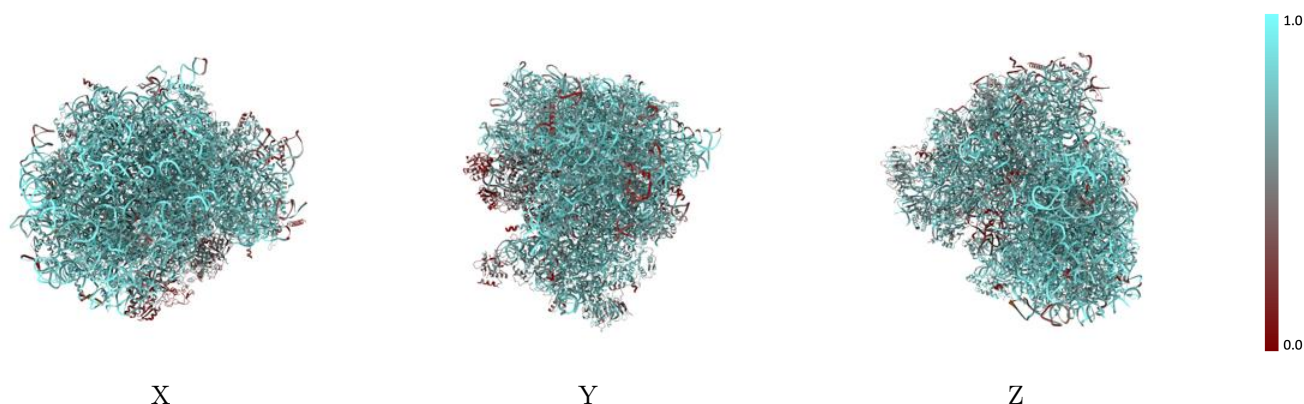
The images above show the 3D surface view of the map at the recommended contour level 0.08 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



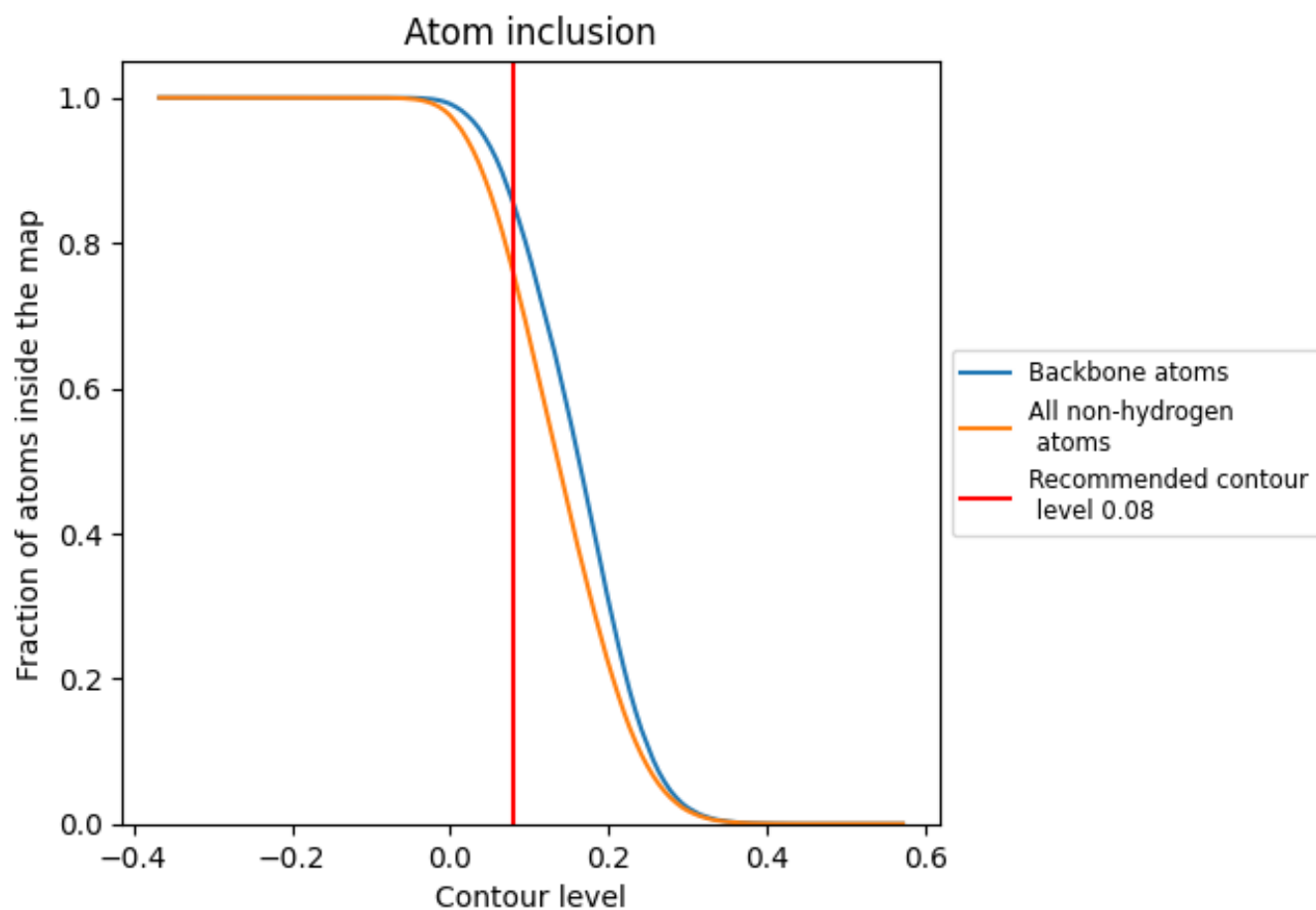
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.08).







































































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 85% of all backbone atoms, 76% of all non-hydrogen atoms, are inside the map.

## 9.5 Map-model fit summary

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

Chain	Atom inclusion	Q-score
All	 0.7585	 0.3670
2	 0.3861	 0.2510
3	 0.2806	 0.1410
5	 0.8447	 0.3750
7	 0.9169	 0.4170
8	 0.8630	 0.3820
9	 0.8183	 0.3540
A	 0.7564	 0.4430
AA	 0.6962	 0.3780
B	 0.7753	 0.4410
BB	 0.6839	 0.3840
C	 0.7701	 0.4310
CC	 0.7090	 0.3900
D	 0.7710	 0.3980
DD	 0.6232	 0.3390
E	 0.7558	 0.3940
EE	 0.6938	 0.3890
F	 0.7674	 0.4270
FF	 0.6585	 0.3620
G	 0.6992	 0.3670
GG	 0.6361	 0.3120
H	 0.7449	 0.4130
HH	 0.5927	 0.3230
I	 0.7430	 0.4230
II	 0.6724	 0.3650
J	 0.7139	 0.3820
JJ	 0.7106	 0.3740
KK	 0.6215	 0.2990
L	 0.7505	 0.4020
LL	 0.6921	 0.4060
M	 0.7643	 0.4050
MM	 0.3468	 0.1410
N	 0.7994	 0.4460
NN	 0.6870	 0.3910
O	 0.7838	 0.4380























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Chain	Atom inclusion	Q-score
OO	0.7011	0.3980
P	0.7639	0.4290
PP	0.6238	0.2960
Q	0.7643	0.4340
QQ	0.6648	0.3480
R	0.7120	0.3880
RR	0.6358	0.3440
S	0.7812	0.4380
SS	0.6437	0.3310
T	0.7617	0.4290
TT	0.6542	0.3400
U	0.7004	0.3690
UU	0.6357	0.3370
V	0.7349	0.4330
VV	0.6865	0.3800
W	0.6005	0.3290
WW	0.7327	0.4210
X	0.7330	0.4090
XX	0.6956	0.4160
Y	0.7514	0.3960
YY	0.6758	0.3510
Z	0.7474	0.4000
ZZ	0.6364	0.3230
a	0.7901	0.4340
aa	0.7161	0.4070
b	0.6847	0.3560
bb	0.6510	0.3640
c	0.7325	0.4000
cc	0.6383	0.3680
d	0.7421	0.4170
dd	0.7285	0.4040
e	0.7623	0.4390
ee	0.6174	0.3110
f	0.7862	0.4500
ff	0.4307	0.1380
g	0.7299	0.4080
gg	0.5813	0.2930
h	0.7181	0.3790
hh	0.1420	0.2150
i	0.7437	0.3980
ii	0.4004	0.2570
j	0.8175	0.4460

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Chain	Atom inclusion	Q-score
jj	 0.4571	 0.2400
k	 0.6930	 0.3710
l	 0.7494	 0.4290
m	 0.7524	 0.4210
n	 0.5872	 0.3820
o	 0.7409	 0.4220
p	 0.7271	 0.4160
r	 0.7952	 0.4450
s	 0.1818	 0.0620
t	 0.1327	 0.0300