wwPDB EM Validation Summary Report ⓘ

Nov 6, 2022 – 12:54 PM EST

PDB ID	:	6D90
EMDB ID	:	EMD-7834
Title	:	Mammalian 80S ribosome with a double translocated CrPV-IRES, P-site tRNA and eRF1.
Authors	:	Pisareva, V.P.; Pisarev, A.V.; Fernandez, I.S.
Deposited on	:	2018-04-27
Resolution	:	3.20 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

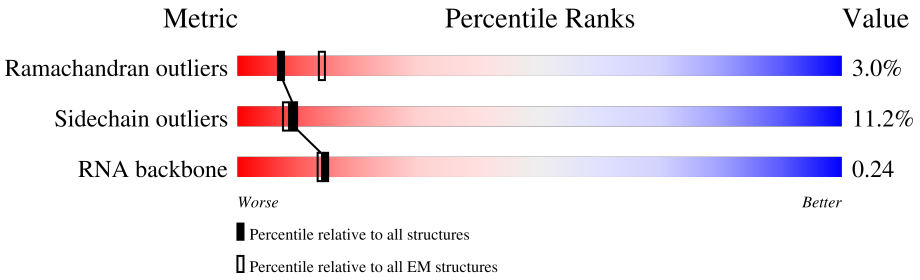
EMDB validation analysis	:	0.0.1.dev43
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.2

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.20 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	A	257	79% 13% • 7%
2	B	403	80% 17% ••
3	C	392	80% 12% • 8%
4	D	297	87% 12% •
5	E	291	65% 9% 26%
6	F	249	80% 10% 10%
7	G	242	88% 9% •
8	H	192	89% 10% ••

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
9	I	214	84% 11%
10	J	178	87% 8%
11	L	211	91% 8%
12	M	198	58% 10% 31%
13	N	204	86% 12%
14	O	199	85% 14%
15	P	184	70% 13% 17%
16	Q	188	81% 18%
17	R	181	83% 15%
18	S	176	87% 13%
19	T	160	85% 14%
20	U	128	70% 7% 23%
21	V	140	79% 12% 8%
22	W	157	59% 8% 32%
23	X	156	64% 11% 24%
24	Y	145	77% 15% 8%
25	Z	136	84% 15%
26	a	148	88% 11%
27	b	226	42% 54%
28	c	115	75% 10% 15%
29	d	125	75% 10% 14%
30	e	135	81% 13% 5%
31	f	110	79% 17%
32	g	126	75% 15% 10%
33	h	123	88% 11%

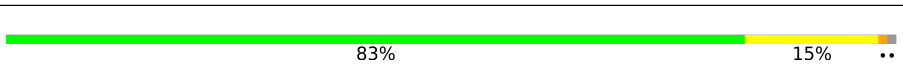
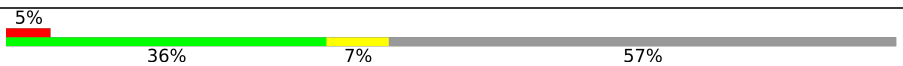
Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
34	i	105	89% 9%
35	j	97	71% 15% 11%
36	k	70	81% 17%
37	l	51	75% 20%
38	m	52	85% 15%
39	n	25	80% 16%
40	o	106	79% 19%
41	p	92	80% 17%
42	r	137	73% 16% 9%
43	s	303	37% 62% 35%
44	t	195	25% 72% 6% 22%
45	5	3594	51% 46%
46	7	119	64% 36%
47	8	151	57% 41%
48	K	217	27% 84% 12%
49	2	1697	55% 43%
50	3	87	5% 47% 53%
51	BB	295	68% 6% 26%
52	CC	264	73% 8% 19%
53	DD	255	75% 11% 13%
54	EE	281	70% 10% 19%
55	FF	263	85% 14%
56	GG	204	79% 10% 9%
57	HH	249	85% 10% 5%
58	II	194	77% 18% 5%

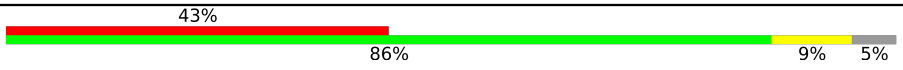
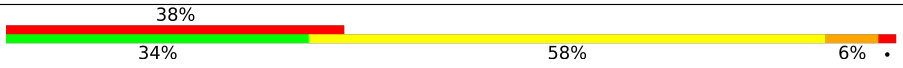
Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
59	JJ	208	
60	KK	194	
61	LL	149	
62	MM	158	
63	NN	132	
64	OO	151	
65	PP	151	
66	QQ	145	
67	RR	172	
68	SS	135	
69	TT	152	
70	UU	145	
71	VV	119	
72	WW	83	
73	XX	130	
74	YY	143	
75	ZZ	134	
76	aa	125	
77	bb	115	
78	cc	84	
79	dd	69	
80	ee	56	
81	ff	133	
82	gg	156	
83	hh	317	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
84	jj	437	
85	4	194	

2 Entry composition (i)

There are 85 unique types of molecules in this entry. The entry contains 223875 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	239	1777	1110	361	300	6	0	0

- Molecule 2 is a protein called uL3.

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

- Molecule 3 is a protein called uL4.

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

- Molecule 4 is a protein called uL18.

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

- Molecule 5 is a protein called eL6.

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

- Molecule 7 is a protein called eL8.

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

- Molecule 8 is a protein called uL6.

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

- Molecule 9 is a protein called uL16.

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

- Molecule 10 is a protein called uL11.

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	137	Total	C	N	O	S	0	0
			1130	722	220	181	7		

- Molecule 13 is a protein called eL15.

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	198	Total	C	N	O	S	0	0
			1623	1046	318	254	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 rL18.

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

There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Q	6	ARG	LEU	conflict	UNP G1TX70
Q	14	ARG	TRP	conflict	UNP G1TX70
Q	23	ILE	MET	conflict	UNP G1TX70
Q	24	TYR	CYS	conflict	UNP G1TX70
Q	38	ARG	HIS	conflict	UNP G1TX70
Q	57	ASN	LYS	conflict	UNP G1TX70
Q	66	MET	VAL	conflict	UNP G1TX70
Q	74	GLY	ASP	conflict	UNP G1TX70
Q	75	ARG	PRO	conflict	UNP G1TX70
Q	86	VAL	ILE	conflict	UNP G1TX70
Q	110	ARG	HIS	conflict	UNP G1TX70
Q	117	GLY	GLU	conflict	UNP G1TX70
Q	124	ASP	HIS	conflict	UNP G1TX70
Q	150	ARG	GLN	conflict	UNP G1TX70
Q	172	ARG	GLY	conflict	UNP G1TX70
Q	184	ARG	TRP	conflict	UNP G1TX70

- Molecule 17 is a protein called eL19.

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

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
R	38	ARG	CYS	conflict	UNP G1TJR3
R	64	ARG	GLN	conflict	UNP G1TJR3
R	94	THR	LYS	conflict	UNP G1TJR3

- Molecule 18 is a protein called eL20.

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

There are 23 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
S	1	MET	THR	conflict	UNP G1TTY7
S	18	PRO	-	insertion	UNP G1TTY7
S	19	THR	-	insertion	UNP G1TTY7
S	20	PRO	SER	conflict	UNP G1TTY7
S	22	CYS	SER	conflict	UNP G1TTY7
S	23	ARG	PRO	conflict	UNP G1TTY7
S	24	THR	ALA	conflict	UNP G1TTY7
S	49	SER	LEU	conflict	UNP G1TTY7
S	50	GLN	GLU	conflict	UNP G1TTY7
S	95	ARG	HIS	conflict	UNP G1TTY7
S	101	THR	ILE	conflict	UNP G1TTY7
S	102	THR	MET	conflict	UNP G1TTY7
S	104	GLY	SER	conflict	UNP G1TTY7
S	126	ILE	VAL	conflict	UNP G1TTY7
S	132	ILE	MET	conflict	UNP G1TTY7
S	135	SER	ALA	conflict	UNP G1TTY7
S	136	LYS	ARG	conflict	UNP G1TTY7
S	138	ARG	PRO	conflict	UNP G1TTY7
S	149	LYS	ARG	conflict	UNP G1TTY7
S	151	LYS	ARG	conflict	UNP G1TTY7
S	168	THR	TYR	conflict	UNP G1TTY7
S	169	THR	ALA	conflict	UNP G1TTY7
S	176	PHE	-	insertion	UNP G1TTY7

- Molecule 19 is a protein called eL21.

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

- Molecule 20 is a protein called eL22.

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

There are 10 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
U	18	LEU	VAL	conflict	UNP G1TSG1
U	32	GLY	ARG	conflict	UNP G1TSG1
U	36	ALA	GLU	conflict	UNP G1TSG1
U	39	PHE	SER	conflict	UNP G1TSG1
U	54	GLY	ARG	conflict	UNP G1TSG1
U	60	VAL	ALA	conflict	UNP G1TSG1
U	62	SER	THR	conflict	UNP G1TSG1
U	63	LEU	ILE	conflict	UNP G1TSG1
U	97	ARG	HIS	conflict	UNP G1TSG1
U	106	THR	SER	conflict	UNP G1TSG1

- Molecule 21 is a protein called uL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	V	129	Total	C	N	O	S	0	0
			969	613	182	169	5		

- Molecule 22 is a protein called eL24.

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

- Molecule 23 is a protein called eL23.

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

- 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 eL27.

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		

- 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
30	e	128	Total	C	N	O	S	0	0
			1053	667	216	165	5		

- Molecule 31 is a protein called eL33.

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

- Molecule 32 is a protein called eL34.

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

- Molecule 33 is a protein called eL35.

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

- Molecule 34 is a protein called eL36.

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

- Molecule 35 is a protein called eL37.

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

- Molecule 36 is a protein called eL38.

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

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
k	3	ARG	GLN	conflict	UNP G1U3J0
k	38	CYS	TYR	conflict	UNP G1U3J0
k	48	THR	MET	conflict	UNP G1U3J0
k	66	VAL	MET	conflict	UNP G1U3J0

- 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 28S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	5	3594	Total	C	N	O	P	0	0
			77073	34324	14116	25039	3594		

- Molecule 46 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	7	119	Total	C	N	O	P	0	0
			2538	1132	454	834	118		

- Molecule 47 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	8	151	Total	C	N	O	P	0	0
			3208	1432	564	1062	150		

- Molecule 48 is a protein called uL1.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	K	212	Total	C	N	O	S	0	0
			1705	1091	306	300	8		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
49	2	1697	Total	C	N	O	P	0	0
			36229	16171	6507	11855	1696		

- Molecule 50 is a RNA chain called P-tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	3	87	Total	C	N	O	P	0	0
			1861	829	333	612	87		

- Molecule 51 is a protein called uS2.

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

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BB	114	THR	ALA	conflict	UNP G1TWL4

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
BB	128	ARG	GLN	conflict	UNP G1TWL4
BB	135	THR	MET	conflict	UNP G1TWL4
BB	155	ARG	HIS	conflict	UNP G1TWL4
BB	162	PRO	LEU	conflict	UNP G1TWL4
BB	180	ARG	GLN	conflict	UNP G1TWL4

- Molecule 52 is a protein called eS1.

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

- Molecule 53 is a protein called uS5.

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

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
DD	97	PHE	CYS	conflict	UNP G1SWM1
DD	101	SER	ALA	conflict	UNP G1SWM1
DD	141	VAL	LEU	conflict	UNP G1SWM1
DD	181	PRO	LEU	conflict	UNP G1SWM1
DD	191	VAL	-	insertion	UNP G1SWM1
DD	215	MET	LEU	conflict	UNP G1SWM1
DD	271	ASP	ASN	conflict	UNP G1SWM1
DD	274	VAL	MET	conflict	UNP G1SWM1

- Molecule 54 is a protein called uS3.

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

- Molecule 55 is a protein called eS4.

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

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
FF	25	GLY	SER	conflict	UNP G1TK17
FF	51	ARG	LYS	conflict	UNP G1TK17
FF	78	THR	ALA	conflict	UNP G1TK17
FF	156	VAL	MET	conflict	UNP G1TK17

- Molecule 56 is a protein called uS7.

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

- Molecule 57 is a protein called eS6.

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

- Molecule 58 is a protein called eS7.

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

- Molecule 59 is a protein called eS8.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
JJ	47	ARG	GLY	conflict	UNP G1TJW1

- Molecule 60 is a protein called uS4.

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

- Molecule 61 is a protein called eS10.

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

- Molecule 62 is a protein called uS17.

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

- Molecule 63 is a protein called eS12.

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

- Molecule 64 is a protein called uS15.

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

- Molecule 65 is a protein called uS11.

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

- Molecule 66 is a protein called uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	QQ	115	Total	C	N	O	S	0	0
			956	610	176	163	7		

- Molecule 67 is a protein called uS9.

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

- Molecule 68 is a protein called eS17.

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

- Molecule 69 is a protein called uS13.

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

- Molecule 70 is a protein called eS19.

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

- Molecule 71 is a protein called uS10.

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

- Molecule 72 is a protein called eS21.

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

There are 7 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
WW	3	ASN	SER	conflict	UNP G1TM82
WW	4	ASP	ASN	conflict	UNP G1TM82
WW	33	GLN	PRO	conflict	UNP G1TM82
WW	50	PHE	SER	conflict	UNP G1TM82
WW	75	ALA	SER	conflict	UNP G1TM82
WW	76	ASP	HIS	conflict	UNP G1TM82
WW	81	LYS	GLN	conflict	UNP G1TM82

- Molecule 73 is a protein called uS8.

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

- Molecule 74 is a protein called uS12.

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

- Molecule 75 is a protein called eS24.

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

- Molecule 76 is a protein called eS25.

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

- Molecule 77 is a protein called eS26.

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

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
bb	28	ARG	CYS	conflict	UNP G1TFE8
bb	56	ALA	VAL	conflict	UNP G1TFE8

- Molecule 78 is a protein called eS27.

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

- Molecule 79 is a protein called eS28.

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

- Molecule 80 is a protein called eS29.

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

- Molecule 81 is a protein called eS30.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	ff	57	Total	C	N	O	S	0	0
			457	282	101	73	1		

- Molecule 82 is a protein called eS31.

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

- Molecule 83 is a protein called RACK1.

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

- Molecule 84 is a protein called eRF1.

Mol	Chain	Residues	Atoms					AltConf	Trace
84	jj	416	Total	C	N	O	S	0	0
			3280	2087	559	623	11		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
jj	183	ALA	GLY	conflict	UNP P62495
jj	184	ALA	GLY	conflict	UNP P62495

- Molecule 85 is a RNA chain called CrPV-IRES.

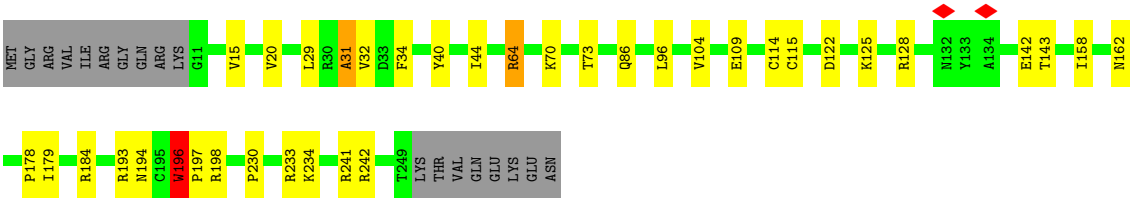
Mol	Chain	Residues	Atoms					AltConf	Trace
85	4	194	Total 4105	C 1840	N 704	O 1367	P 194	0	0

3 Residue-property plots (i)

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

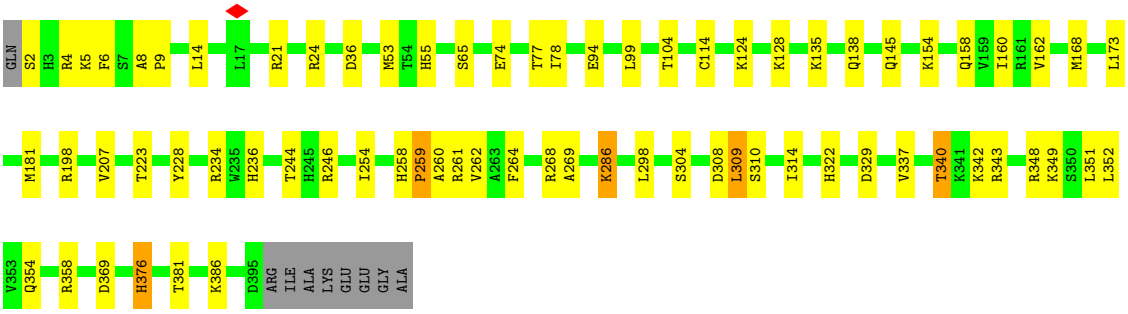
- Molecule 1: uL2

Chain A:



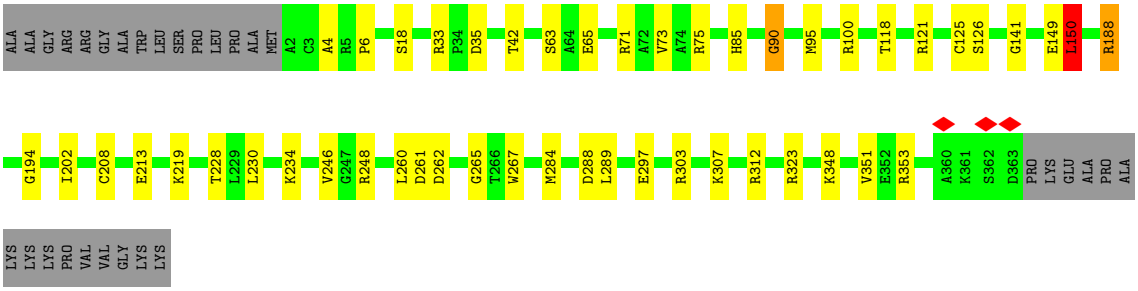
- Molecule 2: uL3

Chain B:



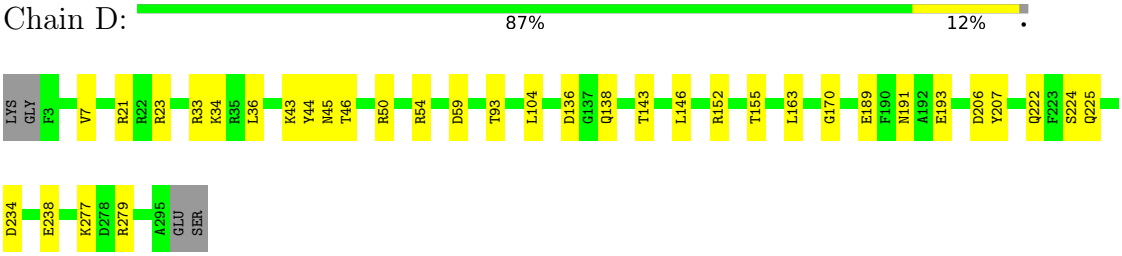
- Molecule 3: uL4

Chain C:



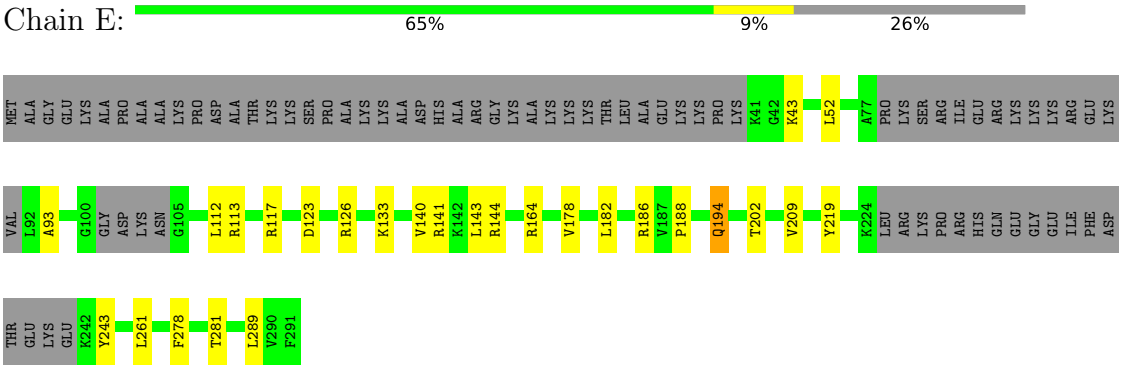
• Molecule 4: uL18

Chain D:



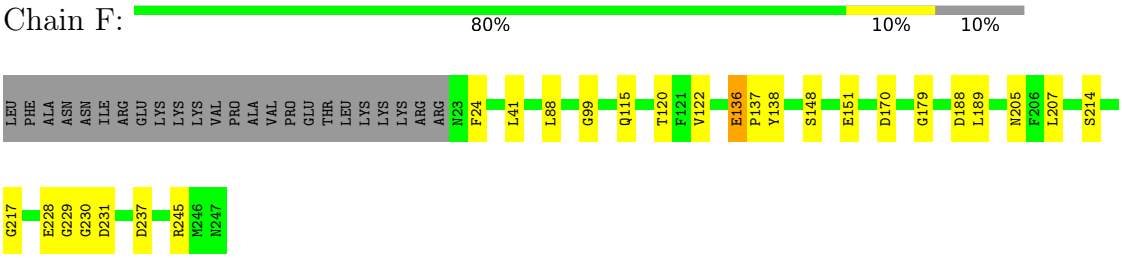
• Molecule 5: eL6

Chain E:



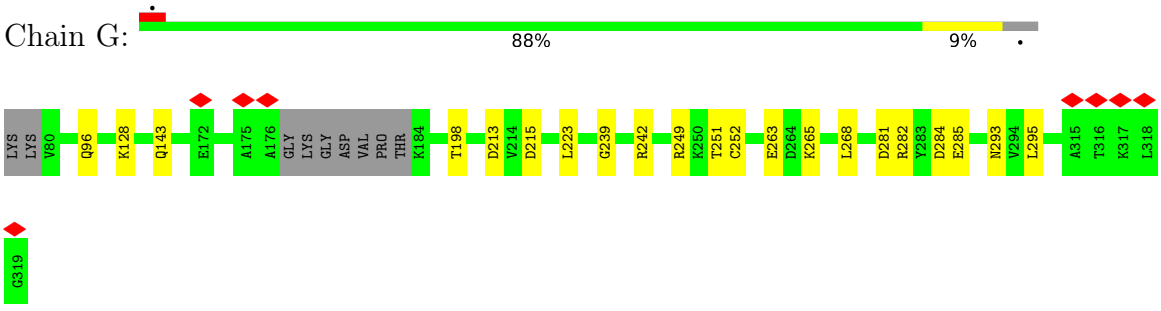
• Molecule 6: uL30

Chain F:



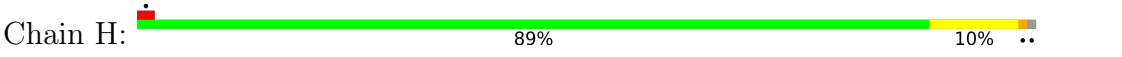
• Molecule 7: eL8

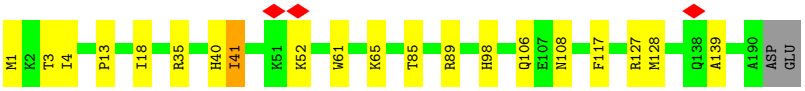
Chain G:



• Molecule 8: uL6

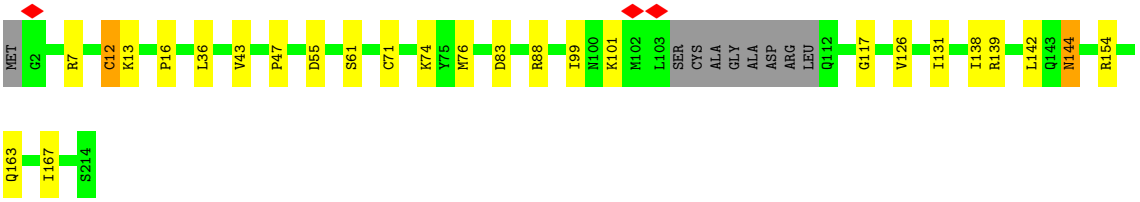
Chain H:





• Molecule 9: uL16

Chain I:

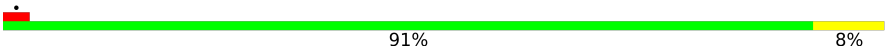


• Molecule 10: uL11

Chain J:

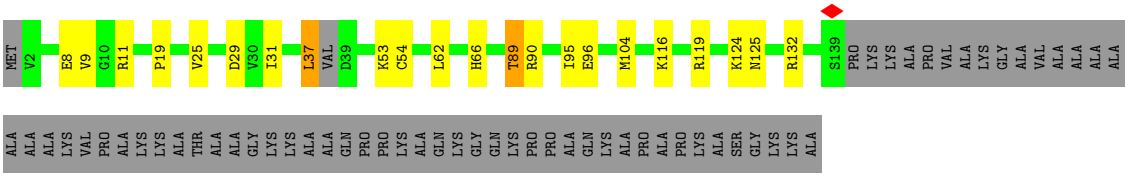
• Molecule 11: eL13

Chain L:



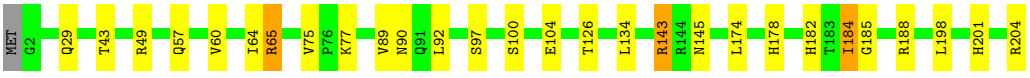
• Molecule 12: eL14

Chain M:



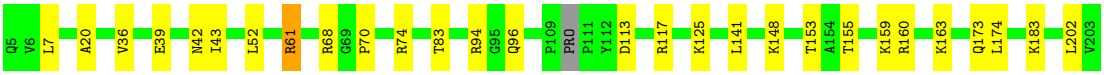
• Molecule 13: eL15

Chain N:



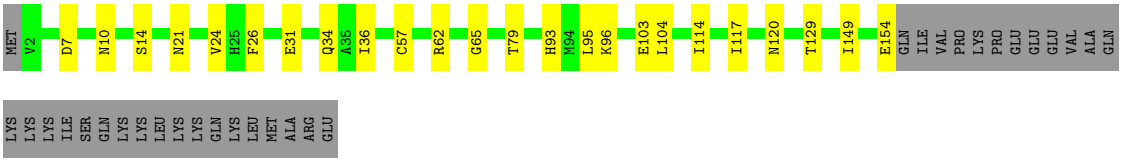
• Molecule 14: uL13

Chain O:



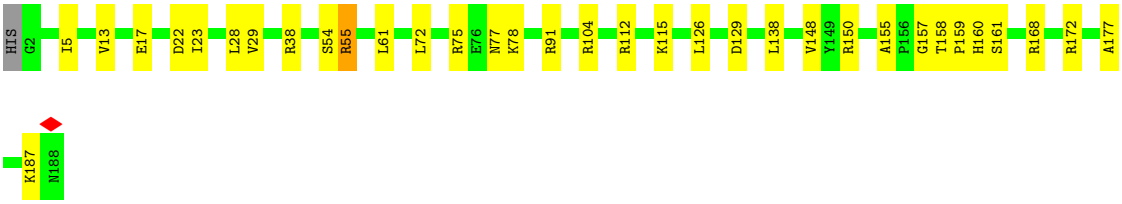
• Molecule 15: uL22

Chain P:



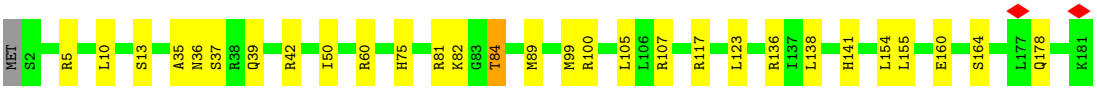
• Molecule 16: rL18

Chain Q:



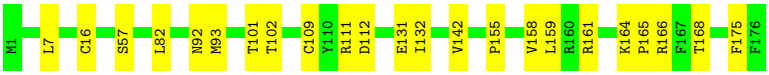
• Molecule 17: eL19

Chain R:



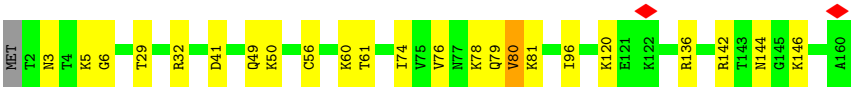
• Molecule 18: eL20

Chain S:



• Molecule 19: eL21

Chain T:

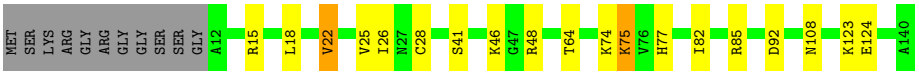


• Molecule 20: eL22

Chain U:

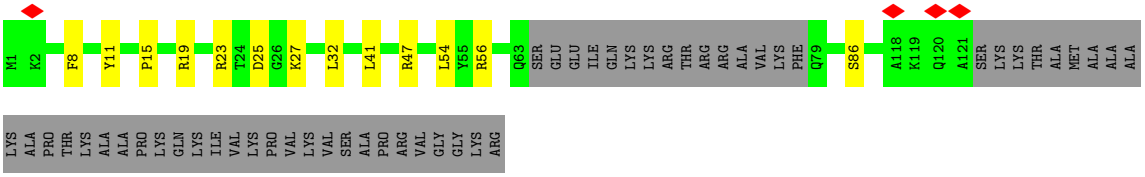
• Molecule 21: uL14

Chain V:



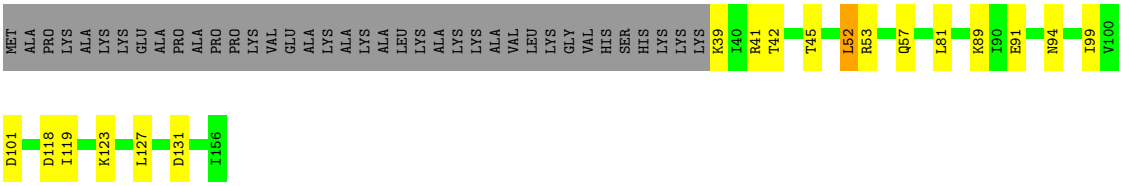
• Molecule 22: eL24

Chain W:



• Molecule 23: eL23

Chain X:

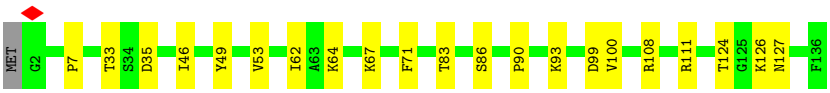


• Molecule 24: uL24

Chain Y:

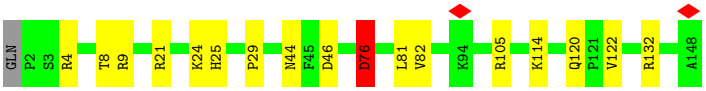
• Molecule 25: eL27

Chain Z:



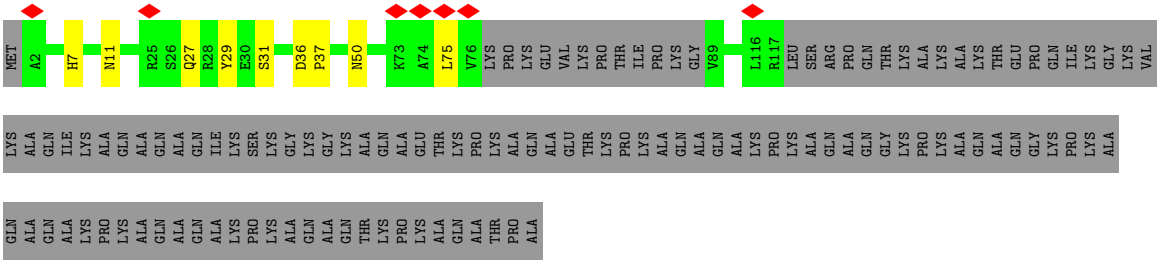
• Molecule 26: uL15

Chain a:



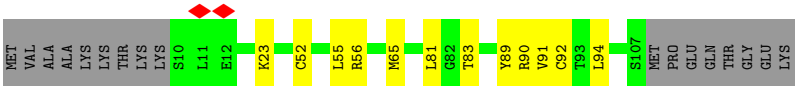
• Molecule 27: eL29

Chain b:



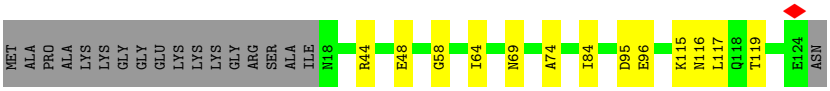
• Molecule 28: eL30

Chain c:



• Molecule 29: eL31

Chain d:

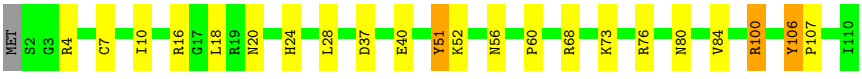


• Molecule 30: eL32

Chain e:

• Molecule 31: eL33

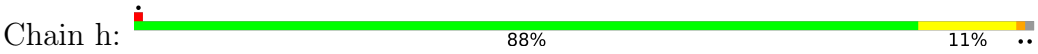
Chain f:



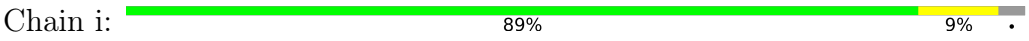
• Molecule 32: eL34

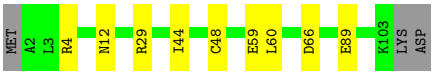
Chain g:

• Molecule 33: eL35

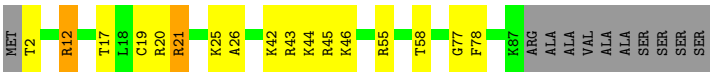


• Molecule 34: eL36

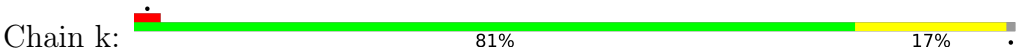




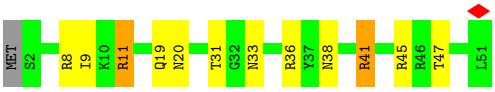
• Molecule 35: eL37



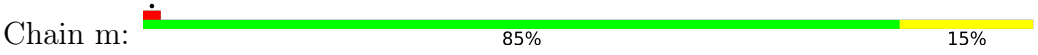
• Molecule 36: eL38

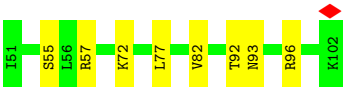


• Molecule 37: eL39

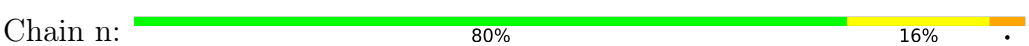


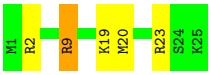
• Molecule 38: eL40





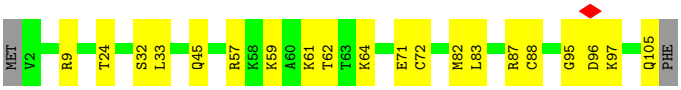
• Molecule 39: eL41





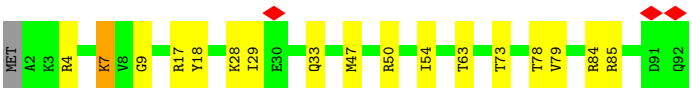
• Molecule 40: eL42

Chain o:



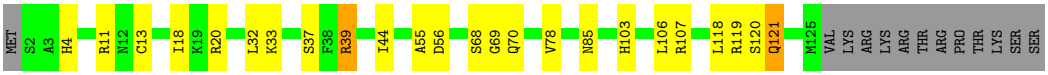
• Molecule 41: eL43

Chain p:



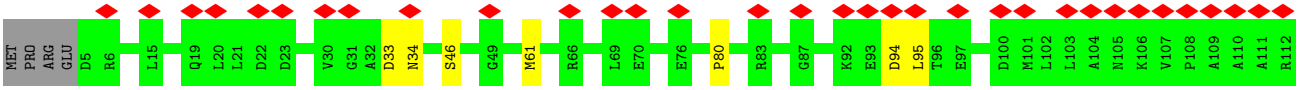
• Molecule 42: eL28

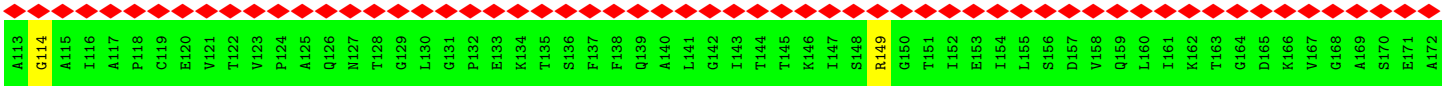
Chain r:

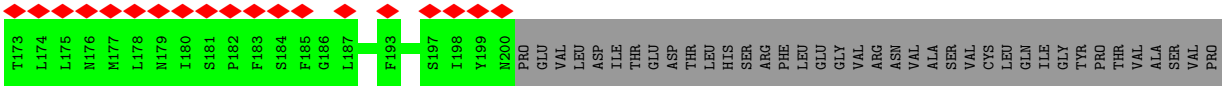


• Molecule 43: uL10

Chain s:

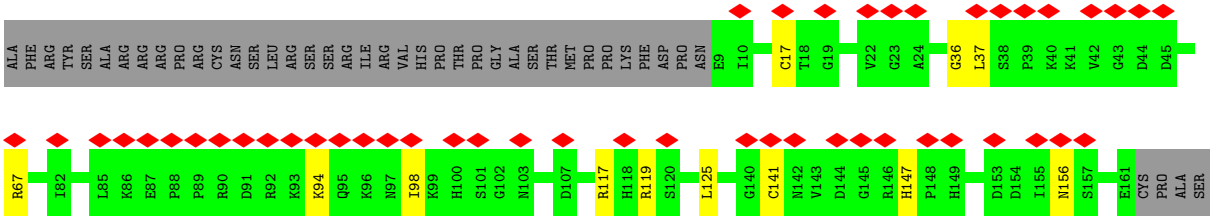






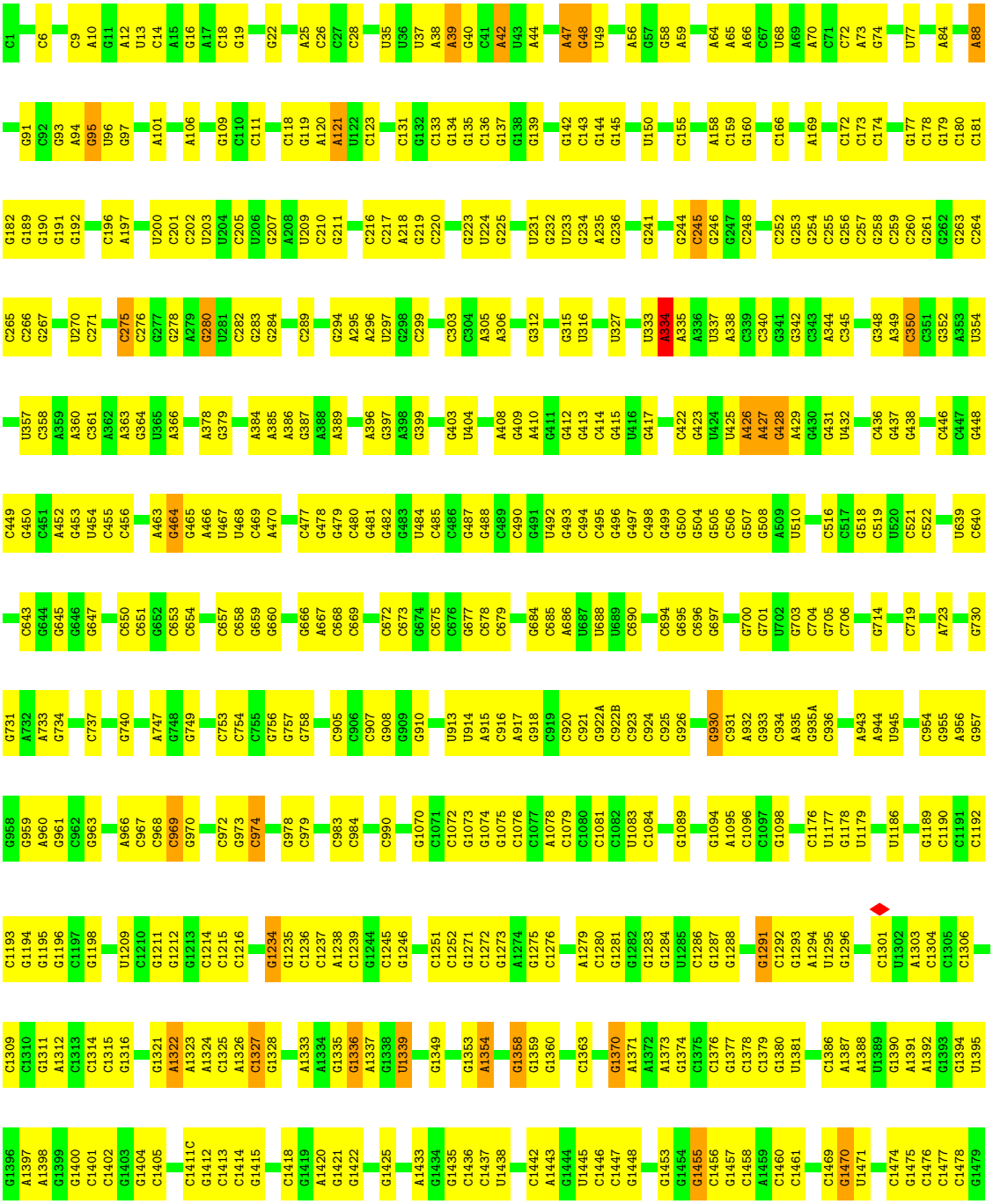
• Molecule 44: uL11

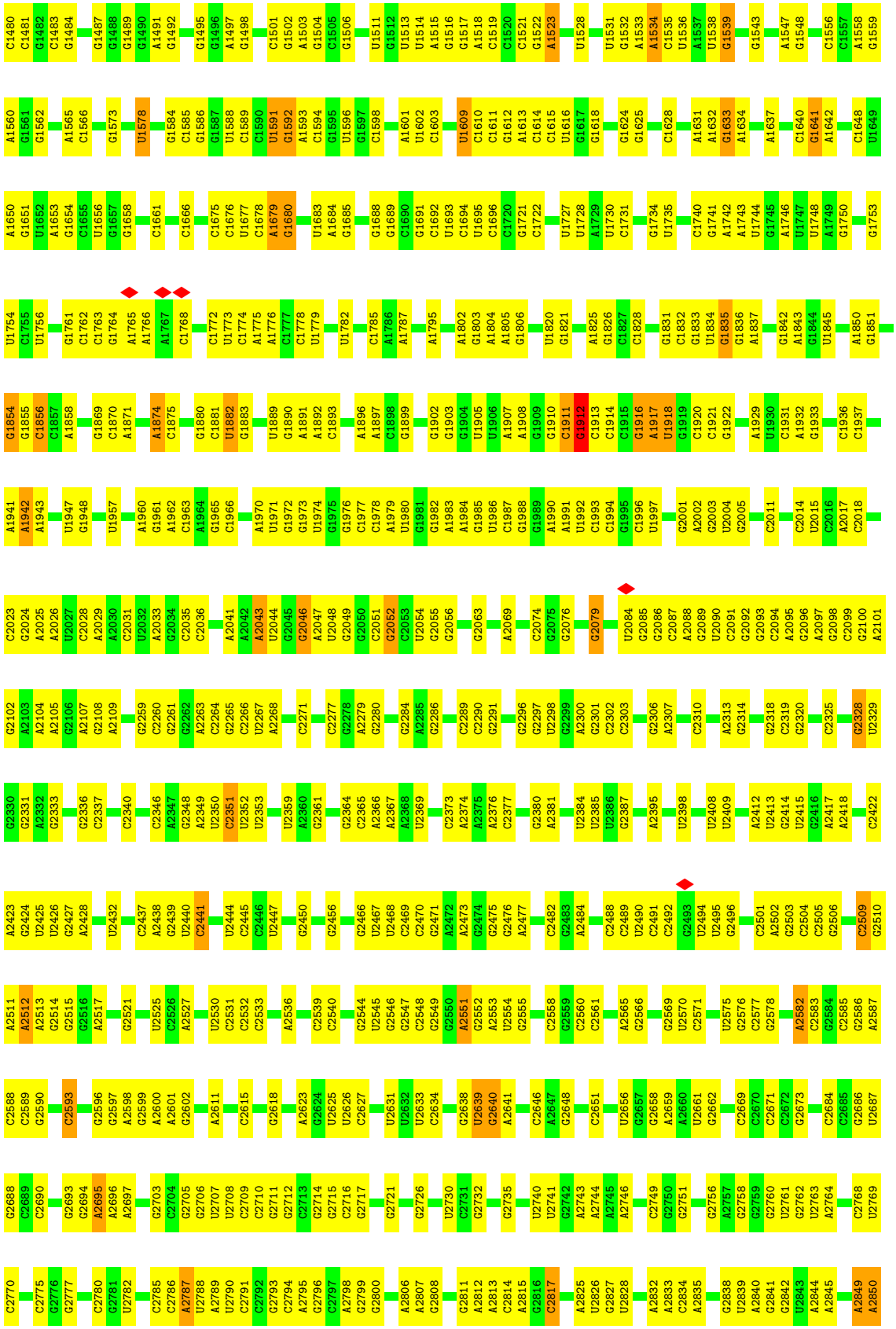
Chain t:

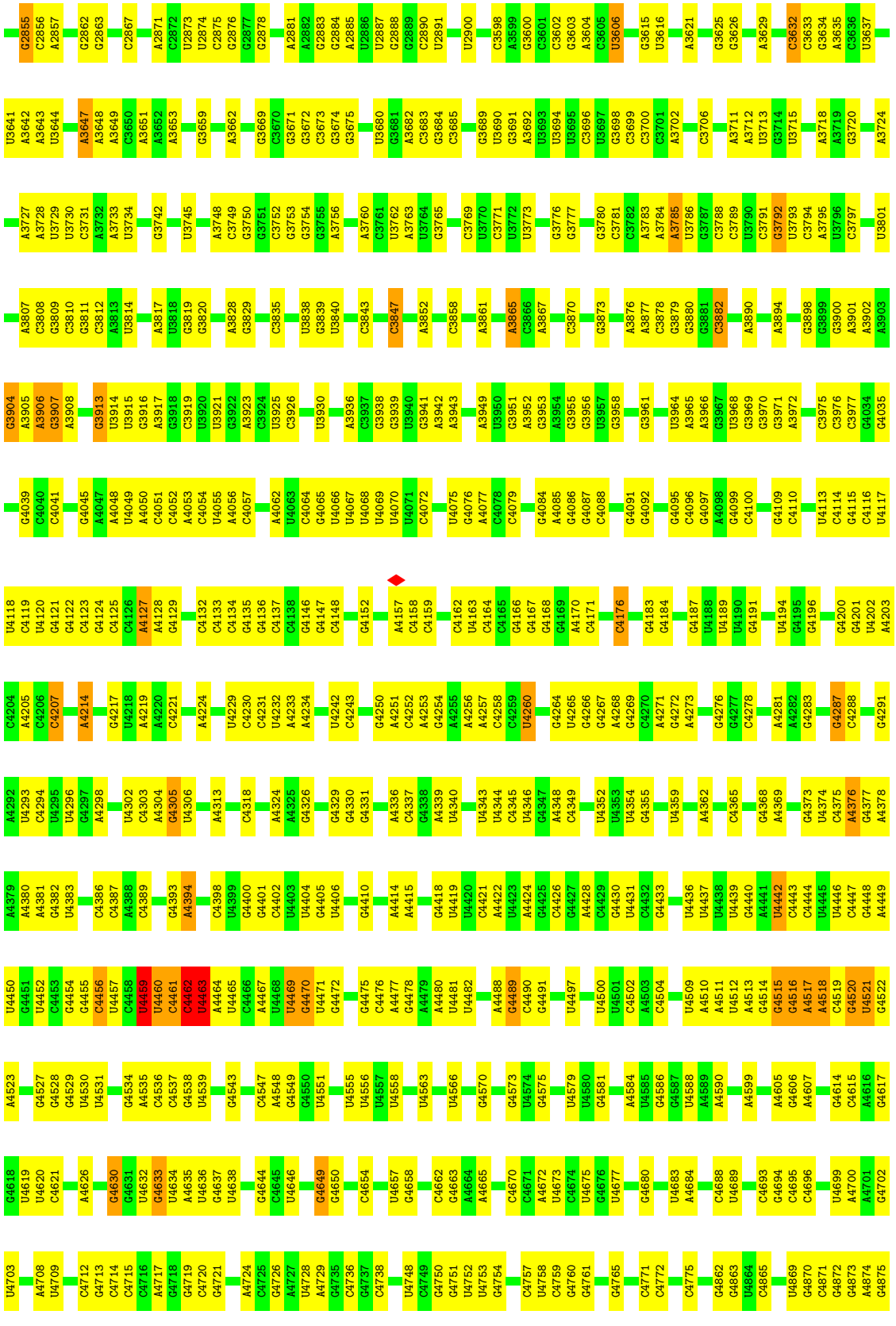


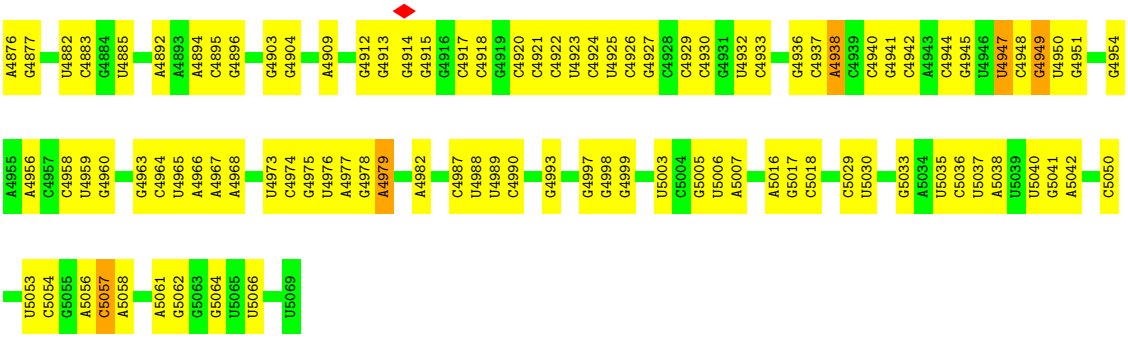
• Molecule 45: 28S rRNA

Chain 5:







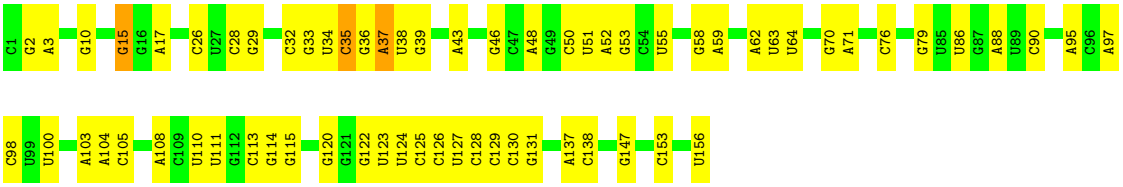


• Molecule 46: 5S rRNA

Chain 7:

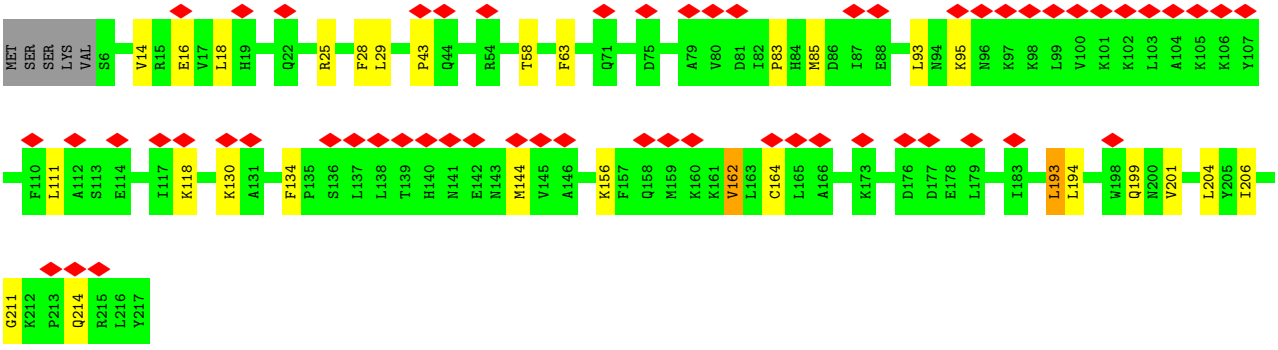
• Molecule 47: 5.8S rRNA

Chain 8:



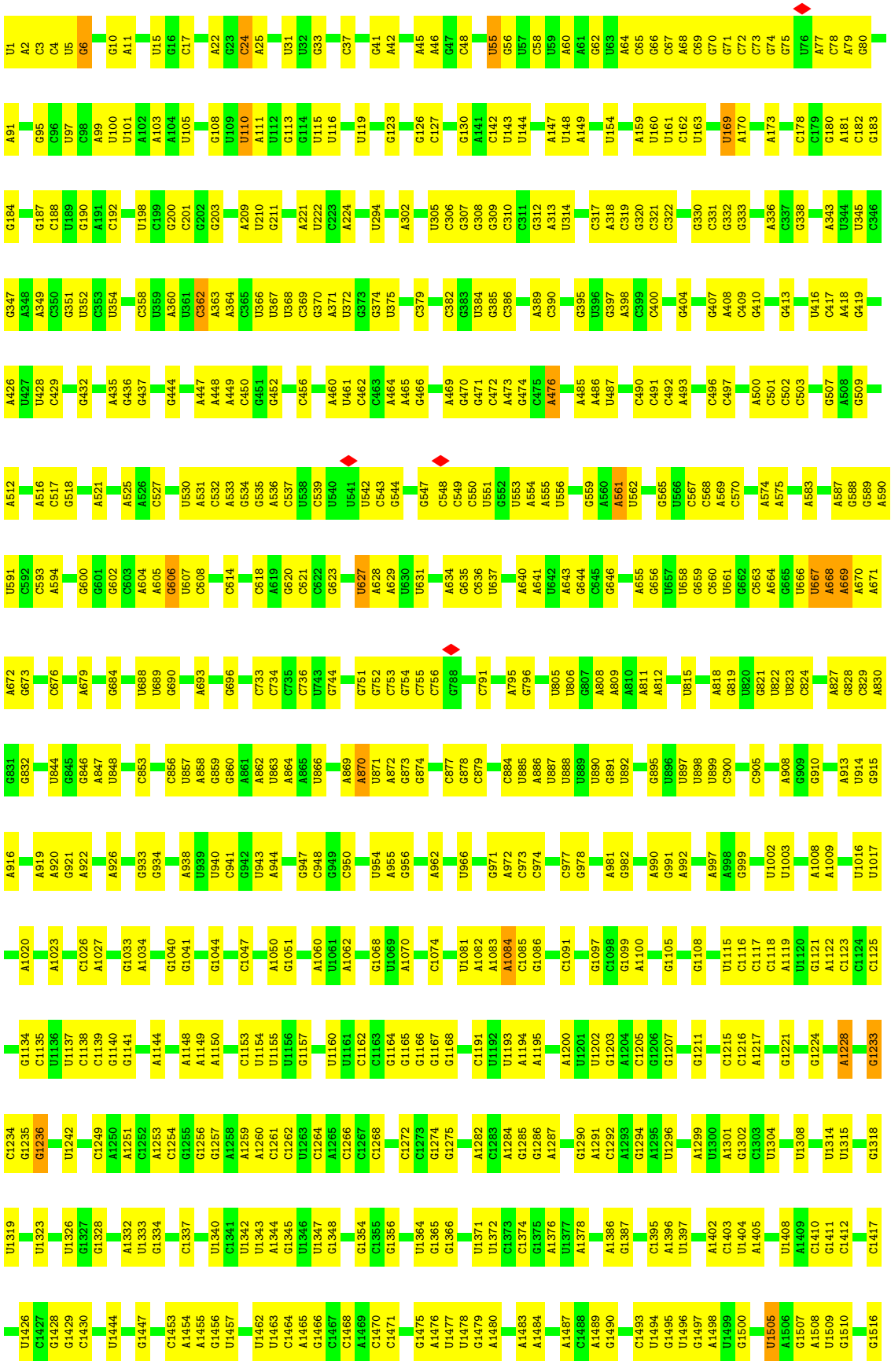
• Molecule 48: uL1

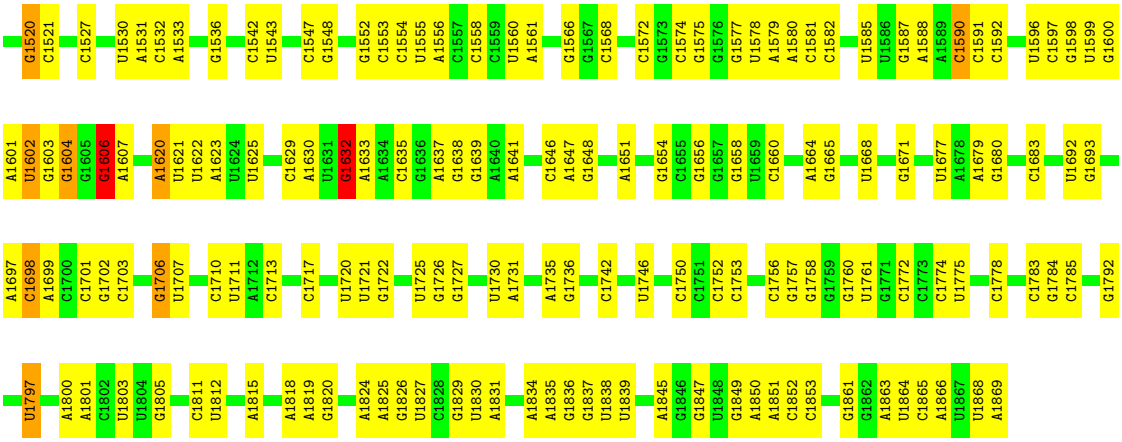
Chain K:



• Molecule 49: 18S rRNA

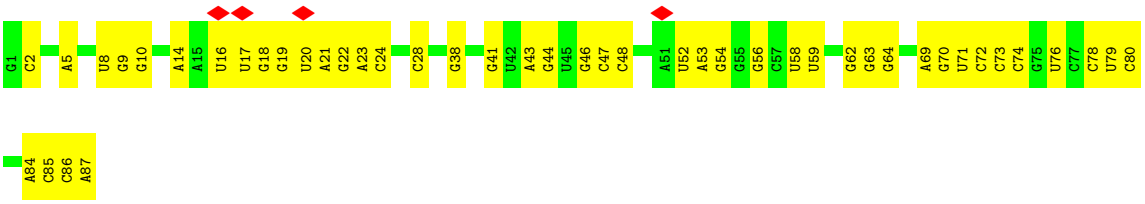
Chain 2:





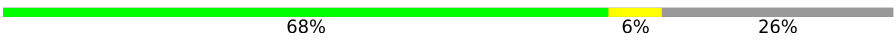
• Molecule 50: P-tRNA

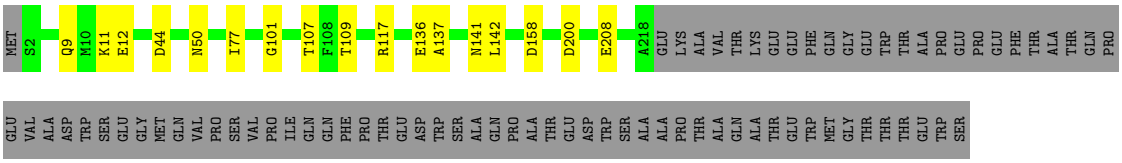
Chain 3:



• Molecule 51: uS2

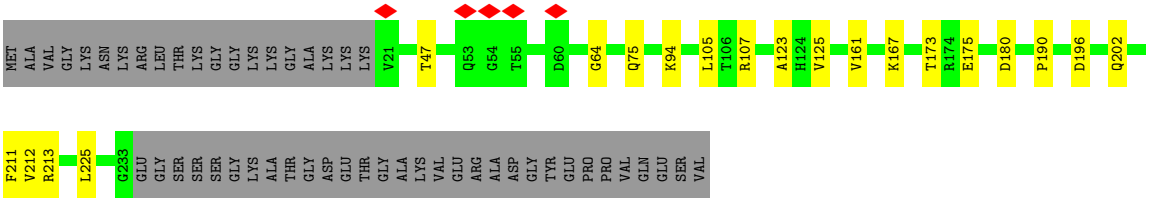
Chain BB:





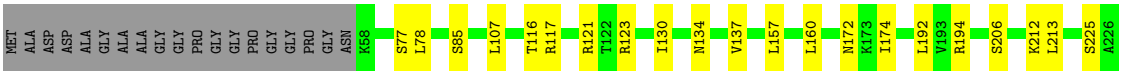
• Molecule 52: eS1

Chain CC:



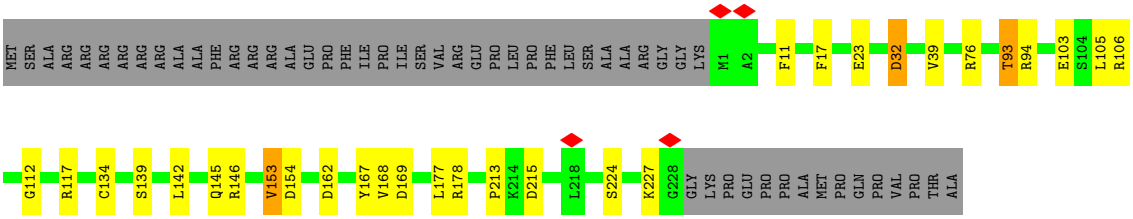
• Molecule 53: uS5

Chain DD:



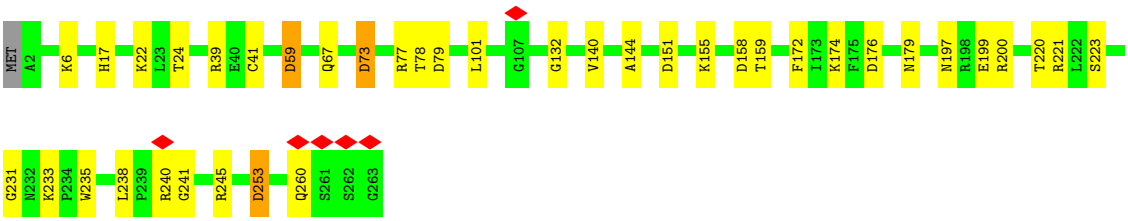
• Molecule 54: uS3

Chain EE:



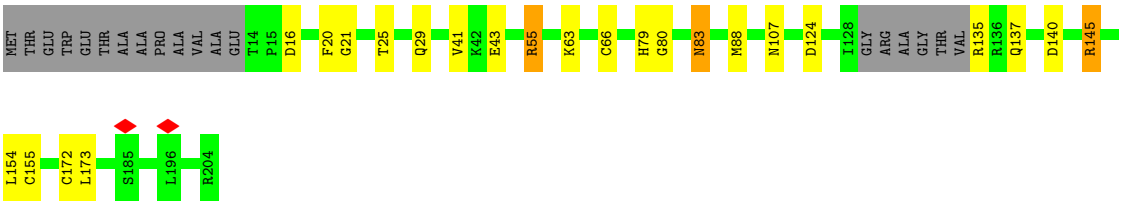
• Molecule 55: eS4

Chain FF:



• Molecule 56: uS7

Chain GG:

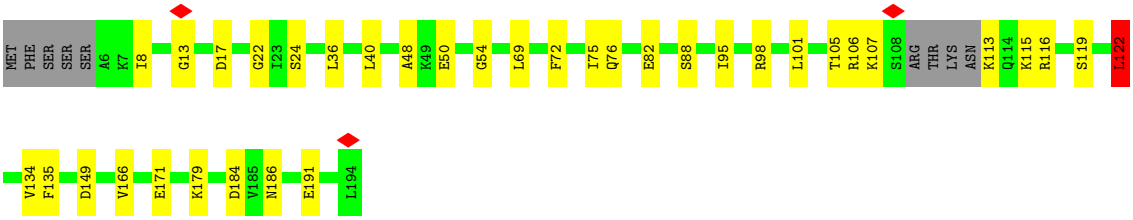


• Molecule 57: eS6

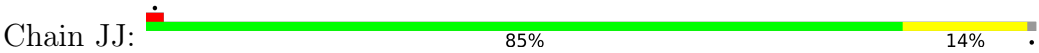
Chain HH:

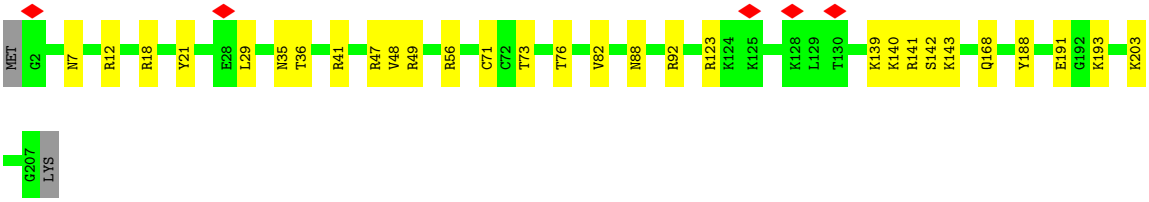
• Molecule 58: eS7

Chain II:

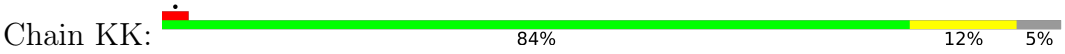


• Molecule 59: eS8

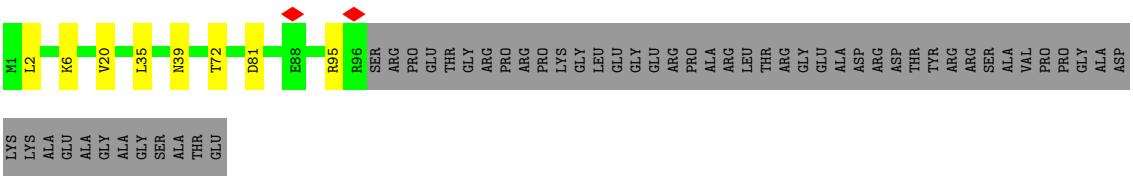




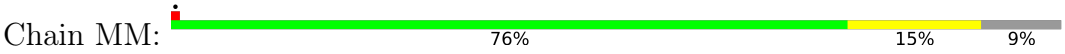
• Molecule 60: uS4

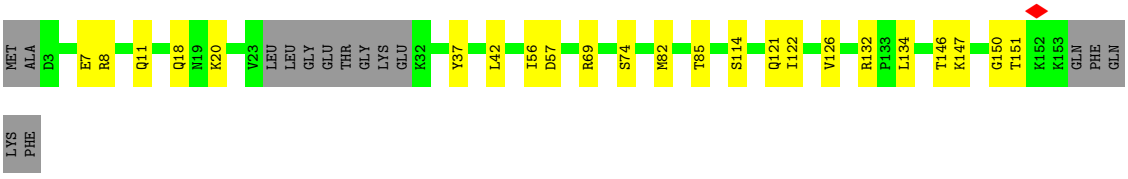


• Molecule 61: eS10

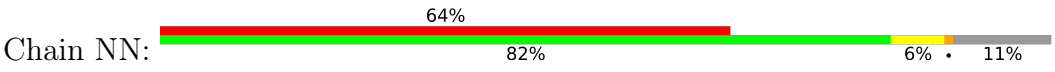


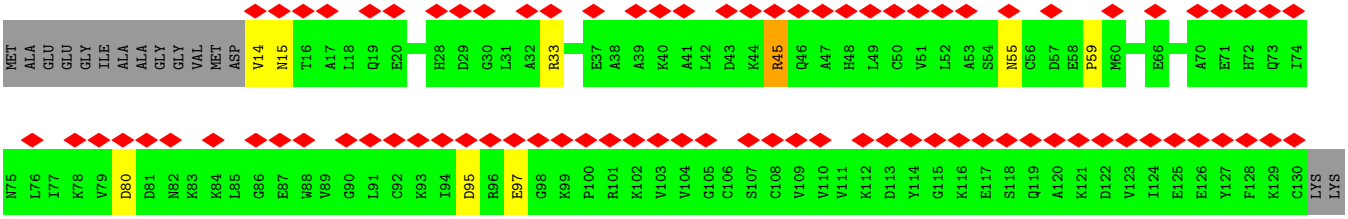
• Molecule 62: uS17





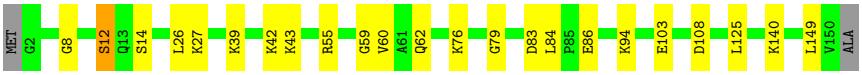
• Molecule 63: eS12





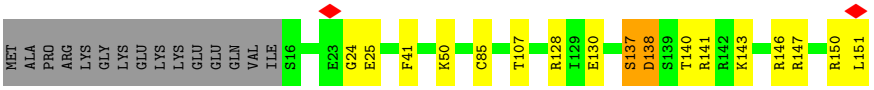
• Molecule 64: uS15

Chain OO:



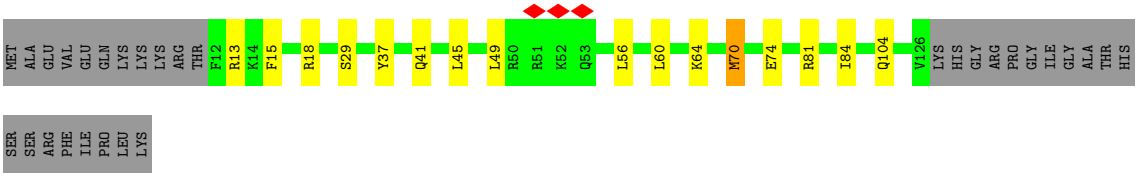
• Molecule 65: uS11

Chain PP:



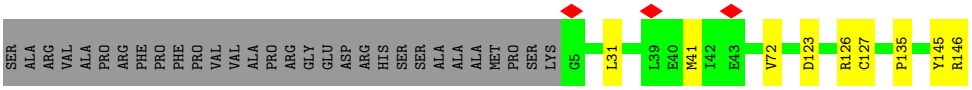
• Molecule 66: uS19

Chain QQ:



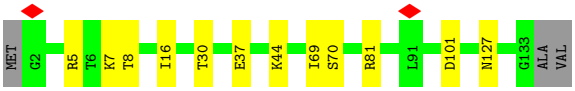
• Molecule 67: uS9

Chain RR:



• Molecule 68: eS17

Chain SS:

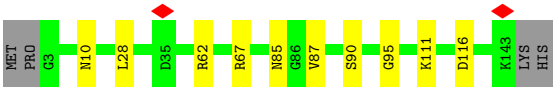


• Molecule 69: uS13

Chain TT:

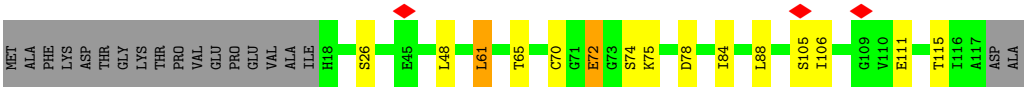
• Molecule 70: eS19

Chain UU:



• Molecule 71: uS10

Chain VV:

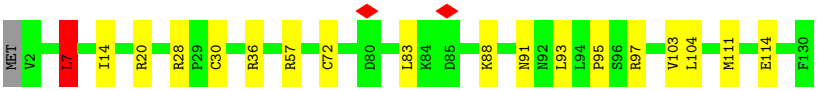


• Molecule 72: eS21

Chain WW:

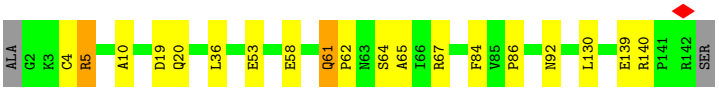
• Molecule 73: uS8

Chain XX:



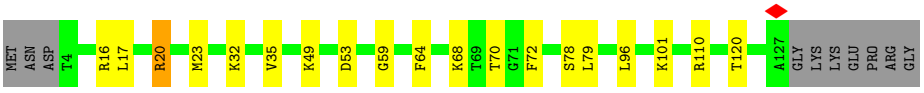
• Molecule 74: uS12

Chain YY:



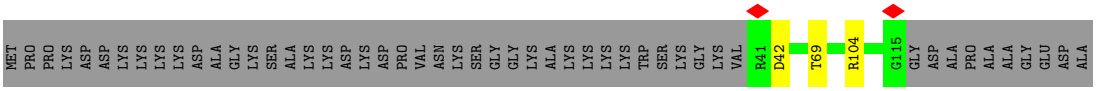
• Molecule 75: eS24

Chain ZZ:



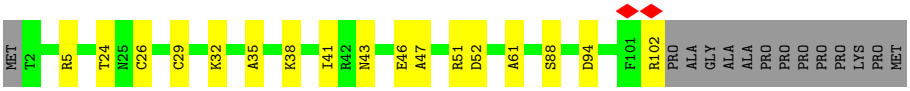
• Molecule 76: eS25

Chain aa:



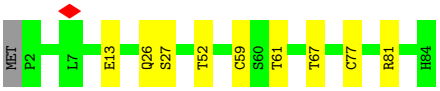
- Molecule 77: eS26

Chain bb:



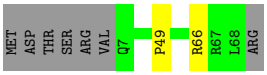
- Molecule 78: eS27

Chain cc:



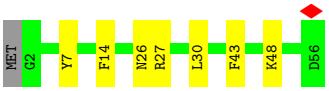
- Molecule 79: eS28

Chain dd:



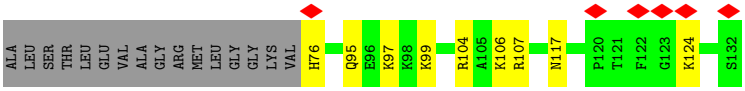
- Molecule 80: eS29

Chain ee:



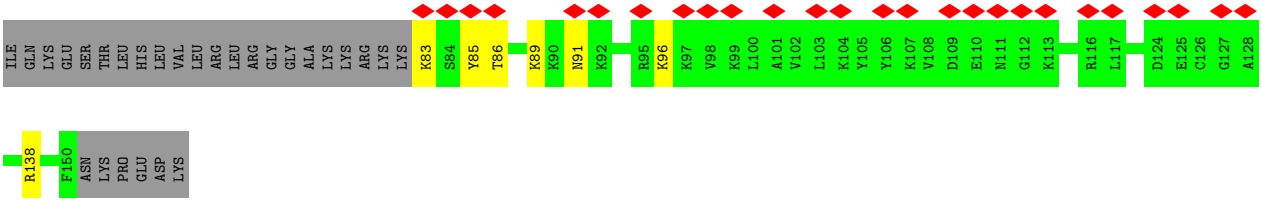
- Molecule 81: eS30

Chain ff:



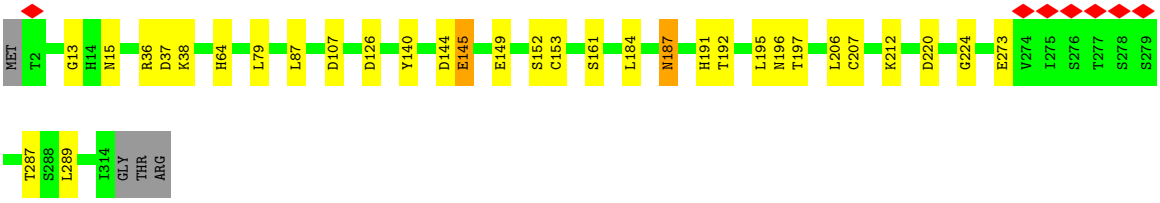
- Molecule 82: eS31

Chain gg:



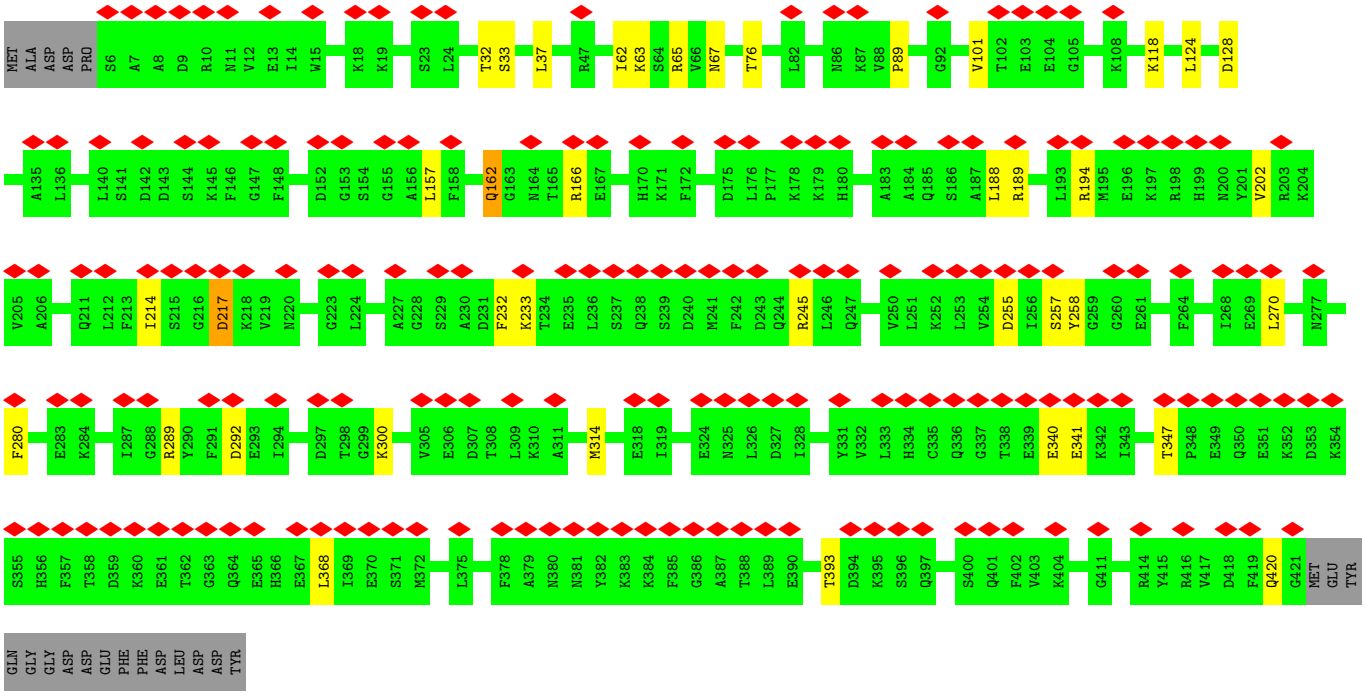
• Molecule 83: RACK1

Chain hh:



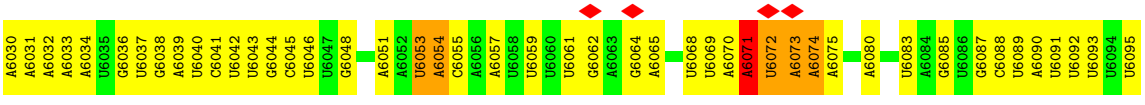
• Molecule 84: eRF1

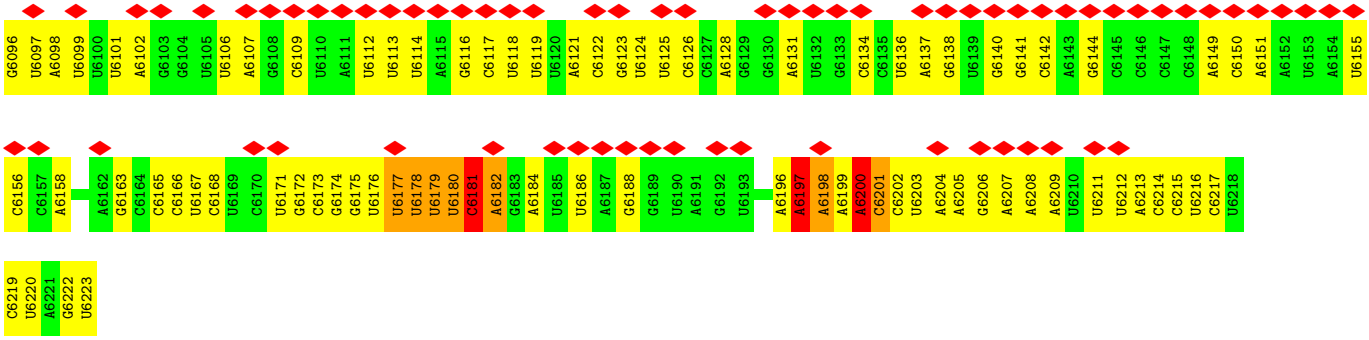
Chain jj:



• Molecule 85: CrPV-IRES

Chain 4:




G6096 U6097 A6098 U6099 U6100 U6101 A6102 G6103 G6104 U6105 U6106 A6107 C6108 C6109 U6110 A6111 U6112 U6113 U6114 A6115 G6116 C6117 U6118 U6119 U6120 A6121 C6122 G6123 U6124 U6125 C6126 C6127 A6128 G6129 G6130 A6131 U6132 G6133 C6134 C6135 U6136 A6137 G6138 U6139 G6140 G6141 C6142 A6143 G6144 C6145 C6146 C6147 C6148 A6149 C6150 A6151 A6152 U6153 A6154 U6155
C6156 C6157 A6158 A6162 G6163 C6164 C6165 C6166 U6167 C6168 U6169 C6170 U6171 G6172 C6173 G6174 G6175 U6176 U6177 U6178 U6179 U6180 C6181 A6182 G6183 A6184 U6185 U6186 A6187 G6188 G6189 U6190 A6191 G6192 U6193 A6196 A6197 A6198 A6199 A6200 C6201 C6202 U6203 A6204 A6205 G6206 A6207 A6208 A6209 U6210 U6211 U6212 A6213 C6214 C6215 U6216 C6217 U6218
C6219 U6220 A6221 G6222 U6223

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	75654	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	64	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.144	Depositor
Minimum map value	-0.061	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.010	Depositor
Recommended contour level	0.025	Depositor
Map size (Å)	432.00003, 432.00003, 432.00003	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.08, 1.08, 1.08	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

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	0.73	0/1812	0.95	3/2439 (0.1%)
2	B	0.70	0/3240	0.98	5/4339 (0.1%)
3	C	0.73	0/2936	0.96	3/3943 (0.1%)
4	D	0.59	0/2437	0.77	3/3264 (0.1%)
5	E	0.63	0/1762	0.89	2/2362 (0.1%)
6	F	0.68	1/1911 (0.1%)	0.84	2/2549 (0.1%)
7	G	0.60	0/1910	0.79	0/2569
8	H	0.66	0/1535	0.87	0/2063
9	I	0.67	0/1702	0.89	1/2272 (0.0%)
10	J	0.59	0/1385	0.77	1/1852 (0.1%)
11	L	0.62	0/1733	0.83	0/2316
12	M	0.69	0/1150	0.88	1/1534 (0.1%)
13	N	0.74	0/1746	1.05	5/2338 (0.2%)
14	O	0.73	0/1653	0.95	1/2206 (0.0%)
15	P	0.74	0/1268	0.93	0/1700
16	Q	0.70	0/1539	0.97	0/2054
17	R	0.67	0/1524	0.98	3/2013 (0.1%)
18	S	0.69	0/1501	0.89	0/2012
19	T	0.69	0/1326	0.88	0/1770
20	U	0.67	1/823 (0.1%)	0.80	1/1104 (0.1%)
21	V	0.72	0/983	0.94	0/1319
22	W	0.65	0/873	0.90	1/1158 (0.1%)
23	X	0.70	0/984	0.92	2/1323 (0.2%)
24	Y	0.67	0/1132	0.86	0/1504
25	Z	0.67	0/1130	0.86	2/1507 (0.1%)
26	a	0.76	0/1191	0.94	2/1590 (0.1%)
27	b	0.61	0/861	0.80	0/1138
28	c	0.64	0/771	0.82	0/1034
29	d	0.76	0/903	0.93	0/1216
30	e	0.76	1/1071 (0.1%)	1.02	0/1429
31	f	0.77	0/895	1.04	4/1198 (0.3%)
32	g	0.70	0/916	1.01	0/1220
33	h	0.68	0/1021	0.93	1/1348 (0.1%)
34	i	0.59	0/841	0.82	0/1112

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
35	j	0.78	0/720	1.09	2/952 (0.2%)
36	k	0.62	0/575	0.81	0/761
37	l	0.71	0/459	1.07	2/608 (0.3%)
38	m	0.67	0/435	0.95	0/575
39	n	0.77	0/240	1.32	2/305 (0.7%)
40	o	0.58	0/864	0.78	1/1140 (0.1%)
41	p	0.73	0/718	0.93	0/953
42	r	0.71	0/1010	0.99	1/1354 (0.1%)
43	s	0.58	0/1530	0.64	0/2064
44	t	0.57	0/1174	0.65	0/1582
45	5	0.62	88/86202 (0.1%)	0.91	151/134412 (0.1%)
46	7	0.50	0/2836	0.79	0/4421
47	8	0.64	5/3581 (0.1%)	0.87	2/5577 (0.0%)
48	K	0.61	0/1730	0.76	1/2315 (0.0%)
49	2	0.55	30/40502 (0.1%)	0.84	23/63100 (0.0%)
50	3	0.39	0/2079	0.77	2/3238 (0.1%)
51	BB	0.95	2/1747 (0.1%)	0.75	2/2374 (0.1%)
52	CC	0.59	0/1756	0.75	0/2350
53	DD	0.64	0/1753	0.87	2/2369 (0.1%)
54	EE	0.60	0/1796	0.82	1/2417 (0.0%)
55	FF	0.62	0/2118	0.88	0/2849
56	GG	0.58	0/1492	0.76	1/2005 (0.0%)
57	HH	0.58	0/1946	0.83	0/2590
58	II	0.60	0/1510	0.81	1/2022 (0.0%)
59	JJ	0.66	0/1715	0.85	0/2287
60	KK	0.64	0/1550	0.88	0/2069
61	LL	0.62	0/834	0.78	0/1125
62	MM	0.71	0/1195	0.89	0/1597
63	NN	0.55	1/918 (0.1%)	0.64	0/1233
64	OO	0.67	0/1226	0.81	0/1649
65	PP	0.57	0/1029	0.79	1/1380 (0.1%)
66	QQ	0.59	0/974	0.83	1/1301 (0.1%)
67	RR	0.55	0/1146	0.71	0/1534
68	SS	0.60	0/1082	0.78	0/1452
69	TT	0.60	0/1208	0.82	0/1618
70	UU	0.56	0/1115	0.68	0/1493
71	VV	0.74	1/805 (0.1%)	0.84	1/1081 (0.1%)
72	WW	0.62	0/643	0.80	0/860
73	XX	0.68	0/1051	0.92	3/1406 (0.2%)
74	YY	0.75	0/1116	0.96	1/1490 (0.1%)
75	ZZ	0.60	0/1028	0.86	1/1366 (0.1%)
76	aa	0.59	0/604	0.70	0/810
77	bb	0.65	0/828	0.86	0/1109

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
78	cc	0.63	0/665	0.87	0/891
79	dd	0.57	0/490	0.78	0/656
80	ee	0.63	0/470	0.85	0/623
81	ff	0.61	0/462	0.88	0/607
82	gg	0.56	0/567	0.67	0/753
83	hh	0.56	0/2492	0.68	0/3391
84	jj	0.63	1/3333 (0.0%)	0.70	1/4483 (0.0%)
85	4	0.51	6/4586 (0.1%)	1.24	61/7136 (0.9%)
All	All	0.62	137/240370 (0.1%)	0.88	307/352528 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	4
2	B	0	2
3	C	0	3
12	M	0	1
13	N	0	1
16	Q	0	1
22	W	0	1
23	X	0	1
24	Y	0	1
27	b	0	1
29	d	0	1
30	e	0	1
31	f	0	3
32	g	0	2
35	j	0	1
36	k	0	1
37	l	0	1
40	o	0	1
45	5	0	7
48	K	0	2
49	2	0	3
51	BB	0	1
52	CC	0	1
54	EE	0	1
55	FF	0	3
57	HH	0	2

Continued on next page...

Continued from previous page...

Mol	Chain	#Chirality outliers	#Planarity outliers
65	PP	0	2
69	TT	0	1
73	XX	0	2
74	YY	0	1
81	ff	0	1
83	hh	0	1
85	4	1	4
All	All	1	59

The worst 5 of 137 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
51	BB	12	GLU	CD-OE2	28.29	1.56	1.25
85	4	6182	A	O3'-P	-13.04	1.45	1.61
45	5	4520	G	O3'-P	11.08	1.74	1.61
51	BB	208	GLU	CD-OE2	10.87	1.37	1.25
71	VV	72	GLU	CD-OE2	10.83	1.37	1.25

The worst 5 of 307 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
85	4	6030	A	P-O3'-C3'	-33.29	79.75	119.70
85	4	6030	A	O3'-P-O5'	26.39	154.14	104.00
85	4	6072	U	N1-C1'-C2'	15.69	134.40	114.00
85	4	6200	A	N9-C1'-C2'	15.45	134.08	114.00
85	4	6181	C	C4'-C3'-O3'	-15.21	77.45	109.40

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
85	4	6200	A	C1'

5 of 59 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	162	ASN	Peptide
1	A	178	PRO	Peptide
1	A	196	TRP	Peptide
1	A	31	ALA	Peptide
2	B	2	SER	Peptide

5.2 Too-close contacts

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

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	237/257 (92%)	183 (77%)	45 (19%)	9 (4%)	3	22
2	B	392/403 (97%)	327 (83%)	46 (12%)	19 (5%)	2	17
3	C	358/392 (91%)	298 (83%)	48 (13%)	12 (3%)	3	24
4	D	291/297 (98%)	257 (88%)	29 (10%)	5 (2%)	9	42
5	E	208/291 (72%)	173 (83%)	29 (14%)	6 (3%)	4	28
6	F	223/249 (90%)	193 (86%)	24 (11%)	6 (3%)	5	30
7	G	229/242 (95%)	202 (88%)	25 (11%)	2 (1%)	17	56
8	H	188/192 (98%)	157 (84%)	20 (11%)	11 (6%)	1	12
9	I	201/214 (94%)	171 (85%)	24 (12%)	6 (3%)	4	28
10	J	168/178 (94%)	144 (86%)	20 (12%)	4 (2%)	6	34
11	L	208/211 (99%)	184 (88%)	19 (9%)	5 (2%)	6	34
12	M	133/198 (67%)	108 (81%)	20 (15%)	5 (4%)	3	22
13	N	201/204 (98%)	171 (85%)	25 (12%)	5 (2%)	5	32
14	O	194/199 (98%)	167 (86%)	25 (13%)	2 (1%)	15	54
15	P	151/184 (82%)	123 (82%)	22 (15%)	6 (4%)	3	21
16	Q	185/188 (98%)	154 (83%)	24 (13%)	7 (4%)	3	22
17	R	178/181 (98%)	148 (83%)	24 (14%)	6 (3%)	3	24
18	S	174/176 (99%)	142 (82%)	26 (15%)	6 (3%)	3	24
19	T	157/160 (98%)	128 (82%)	22 (14%)	7 (4%)	2	18
20	U	97/128 (76%)	80 (82%)	14 (14%)	3 (3%)	4	26
21	V	127/140 (91%)	107 (84%)	16 (13%)	4 (3%)	4	26

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
22	W	102/157 (65%)	87 (85%)	9 (9%)	6 (6%)	1 12
23	X	116/156 (74%)	101 (87%)	11 (10%)	4 (3%)	3 24
24	Y	132/145 (91%)	106 (80%)	23 (17%)	3 (2%)	6 34
25	Z	133/136 (98%)	108 (81%)	21 (16%)	4 (3%)	4 28
26	a	145/148 (98%)	115 (79%)	28 (19%)	2 (1%)	11 46
27	b	100/226 (44%)	86 (86%)	10 (10%)	4 (4%)	3 21
28	c	96/115 (84%)	87 (91%)	9 (9%)	0	100 100
29	d	105/125 (84%)	87 (83%)	13 (12%)	5 (5%)	2 17
30	e	126/135 (93%)	97 (77%)	24 (19%)	5 (4%)	3 21
31	f	107/110 (97%)	91 (85%)	13 (12%)	3 (3%)	5 29
32	g	112/126 (89%)	91 (81%)	14 (12%)	7 (6%)	1 10
33	h	120/123 (98%)	99 (82%)	19 (16%)	2 (2%)	9 42
34	i	100/105 (95%)	90 (90%)	10 (10%)	0	100 100
35	j	84/97 (87%)	67 (80%)	11 (13%)	6 (7%)	1 8
36	k	67/70 (96%)	51 (76%)	12 (18%)	4 (6%)	1 12
37	l	48/51 (94%)	38 (79%)	7 (15%)	3 (6%)	1 10
38	m	50/52 (96%)	42 (84%)	8 (16%)	0	100 100
39	n	23/25 (92%)	17 (74%)	5 (22%)	1 (4%)	2 20
40	o	102/106 (96%)	94 (92%)	6 (6%)	2 (2%)	7 38
41	p	89/92 (97%)	74 (83%)	11 (12%)	4 (4%)	2 18
42	r	122/137 (89%)	95 (78%)	14 (12%)	13 (11%)	0 2
43	s	194/303 (64%)	163 (84%)	27 (14%)	4 (2%)	7 37
44	t	151/195 (77%)	126 (83%)	22 (15%)	3 (2%)	7 38
48	K	204/217 (94%)	143 (70%)	51 (25%)	10 (5%)	2 17
51	BB	215/295 (73%)	193 (90%)	19 (9%)	3 (1%)	11 46
52	CC	211/264 (80%)	174 (82%)	33 (16%)	4 (2%)	8 39
53	DD	219/255 (86%)	185 (84%)	30 (14%)	4 (2%)	8 41
54	EE	226/281 (80%)	187 (83%)	36 (16%)	3 (1%)	12 47
55	FF	260/263 (99%)	212 (82%)	37 (14%)	11 (4%)	3 20
56	GG	181/204 (89%)	153 (84%)	19 (10%)	9 (5%)	2 16
57	HH	235/249 (94%)	197 (84%)	32 (14%)	6 (3%)	5 31

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
58	II	181/194 (93%)	147 (81%)	22 (12%)	12 (7%)	1 9
59	JJ	204/208 (98%)	173 (85%)	23 (11%)	8 (4%)	3 22
60	KK	183/194 (94%)	155 (85%)	23 (13%)	5 (3%)	5 30
61	LL	94/149 (63%)	84 (89%)	9 (10%)	1 (1%)	14 51
62	MM	139/158 (88%)	120 (86%)	16 (12%)	3 (2%)	6 35
63	NN	115/132 (87%)	91 (79%)	20 (17%)	4 (4%)	3 24
64	OO	147/151 (97%)	118 (80%)	22 (15%)	7 (5%)	2 17
65	PP	134/151 (89%)	116 (87%)	17 (13%)	1 (1%)	22 61
66	QQ	113/145 (78%)	83 (74%)	26 (23%)	4 (4%)	3 24
67	RR	140/172 (81%)	123 (88%)	16 (11%)	1 (1%)	22 61
68	SS	130/135 (96%)	114 (88%)	15 (12%)	1 (1%)	19 58
69	TT	142/152 (93%)	125 (88%)	14 (10%)	3 (2%)	7 37
70	UU	139/145 (96%)	120 (86%)	17 (12%)	2 (1%)	11 46
71	VV	98/119 (82%)	82 (84%)	14 (14%)	2 (2%)	7 38
72	WW	81/83 (98%)	71 (88%)	6 (7%)	4 (5%)	2 17
73	XX	127/130 (98%)	107 (84%)	17 (13%)	3 (2%)	6 34
74	YY	139/143 (97%)	112 (81%)	21 (15%)	6 (4%)	2 20
75	ZZ	122/134 (91%)	103 (84%)	17 (14%)	2 (2%)	9 43
76	aa	73/125 (58%)	65 (89%)	7 (10%)	1 (1%)	11 46
77	bb	99/115 (86%)	77 (78%)	16 (16%)	6 (6%)	1 12
78	cc	81/84 (96%)	66 (82%)	13 (16%)	2 (2%)	5 32
79	dd	60/69 (87%)	50 (83%)	9 (15%)	1 (2%)	9 42
80	ee	53/56 (95%)	33 (62%)	18 (34%)	2 (4%)	3 22
81	ff	55/133 (41%)	44 (80%)	9 (16%)	2 (4%)	3 23
82	gg	66/156 (42%)	49 (74%)	16 (24%)	1 (2%)	10 44
83	hh	310/317 (98%)	237 (76%)	69 (22%)	4 (1%)	12 47
84	jj	414/437 (95%)	344 (83%)	65 (16%)	5 (1%)	13 49
All	All	12114/13834 (88%)	10082 (83%)	1668 (14%)	364 (3%)	7 28

5 of 364 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	104	VAL

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	196	TRP
2	B	8	ALA
2	B	9	PRO
2	B	135	LYS

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	172/199 (86%)	146 (85%)	26 (15%)	3 14
2	B	342/348 (98%)	290 (85%)	52 (15%)	3 13
3	C	302/323 (94%)	267 (88%)	35 (12%)	5 24
4	D	247/250 (99%)	220 (89%)	27 (11%)	6 26
5	E	190/251 (76%)	169 (89%)	21 (11%)	6 25
6	F	196/218 (90%)	178 (91%)	18 (9%)	9 33
7	G	200/208 (96%)	181 (90%)	19 (10%)	8 32
8	H	169/171 (99%)	159 (94%)	10 (6%)	19 54
9	I	175/181 (97%)	154 (88%)	21 (12%)	5 22
10	J	143/149 (96%)	133 (93%)	10 (7%)	15 48
11	L	175/176 (99%)	162 (93%)	13 (7%)	13 46
12	M	116/151 (77%)	99 (85%)	17 (15%)	3 14
13	N	171/172 (99%)	150 (88%)	21 (12%)	4 21
14	O	170/171 (99%)	144 (85%)	26 (15%)	2 13
15	P	134/163 (82%)	116 (87%)	18 (13%)	4 18
16	Q	164/165 (99%)	137 (84%)	27 (16%)	2 10
17	R	159/160 (99%)	138 (87%)	21 (13%)	4 19
18	S	157/157 (100%)	140 (89%)	17 (11%)	6 27
19	T	139/140 (99%)	122 (88%)	17 (12%)	5 22
20	U	89/114 (78%)	85 (96%)	4 (4%)	27 63

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
21	V	100/107 (94%)	83 (83%)	17 (17%)	2 10
22	W	86/126 (68%)	81 (94%)	5 (6%)	20 55
23	X	106/134 (79%)	94 (89%)	12 (11%)	6 25
24	Y	124/135 (92%)	104 (84%)	20 (16%)	2 11
25	Z	117/118 (99%)	101 (86%)	16 (14%)	3 17
26	a	119/120 (99%)	104 (87%)	15 (13%)	4 21
27	b	84/172 (49%)	80 (95%)	4 (5%)	25 61
28	c	84/98 (86%)	72 (86%)	12 (14%)	3 15
29	d	98/110 (89%)	91 (93%)	7 (7%)	14 47
30	e	114/121 (94%)	100 (88%)	14 (12%)	4 21
31	f	88/89 (99%)	73 (83%)	15 (17%)	2 10
32	g	98/106 (92%)	86 (88%)	12 (12%)	5 22
33	h	109/110 (99%)	97 (89%)	12 (11%)	6 26
34	i	86/89 (97%)	77 (90%)	9 (10%)	7 28
35	j	73/80 (91%)	63 (86%)	10 (14%)	3 17
36	k	64/65 (98%)	57 (89%)	7 (11%)	6 26
37	l	47/48 (98%)	39 (83%)	8 (17%)	2 10
38	m	48/48 (100%)	40 (83%)	8 (17%)	2 10
39	n	24/24 (100%)	21 (88%)	3 (12%)	4 21
40	o	92/94 (98%)	76 (83%)	16 (17%)	2 10
41	p	74/75 (99%)	60 (81%)	14 (19%)	1 8
42	r	108/121 (89%)	96 (89%)	12 (11%)	6 25
43	s	164/258 (64%)	159 (97%)	5 (3%)	41 73
44	t	126/163 (77%)	117 (93%)	9 (7%)	14 47
48	K	190/196 (97%)	172 (90%)	18 (10%)	8 32
51	BB	180/246 (73%)	169 (94%)	11 (6%)	18 54
52	CC	194/231 (84%)	179 (92%)	15 (8%)	13 44
53	DD	187/206 (91%)	164 (88%)	23 (12%)	4 21
54	EE	190/232 (82%)	162 (85%)	28 (15%)	3 14
55	FF	224/225 (100%)	196 (88%)	28 (12%)	4 21
56	GG	158/170 (93%)	141 (89%)	17 (11%)	6 27

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
57	HH	207/218 (95%)	189 (91%)	18 (9%)	10 37
58	II	165/174 (95%)	140 (85%)	25 (15%)	3 13
59	JJ	178/180 (99%)	157 (88%)	21 (12%)	5 23
60	KK	161/168 (96%)	143 (89%)	18 (11%)	6 25
61	LL	87/125 (70%)	80 (92%)	7 (8%)	12 42
62	MM	130/142 (92%)	110 (85%)	20 (15%)	2 13
63	NN	99/108 (92%)	94 (95%)	5 (5%)	24 60
64	OO	130/131 (99%)	113 (87%)	17 (13%)	4 19
65	PP	106/119 (89%)	91 (86%)	15 (14%)	3 15
66	QQ	105/130 (81%)	93 (89%)	12 (11%)	5 24
67	RR	117/140 (84%)	109 (93%)	8 (7%)	16 49
68	SS	119/121 (98%)	108 (91%)	11 (9%)	9 33
69	TT	125/132 (95%)	113 (90%)	12 (10%)	8 32
70	UU	111/116 (96%)	103 (93%)	8 (7%)	14 47
71	VV	92/107 (86%)	79 (86%)	13 (14%)	3 16
72	WW	67/67 (100%)	61 (91%)	6 (9%)	9 34
73	XX	112/113 (99%)	100 (89%)	12 (11%)	6 27
74	YY	113/114 (99%)	100 (88%)	13 (12%)	5 24
75	ZZ	107/115 (93%)	90 (84%)	17 (16%)	2 12
76	aa	66/103 (64%)	64 (97%)	2 (3%)	41 73
77	bb	88/98 (90%)	77 (88%)	11 (12%)	4 21
78	cc	75/76 (99%)	68 (91%)	7 (9%)	9 33
79	dd	55/62 (89%)	54 (98%)	1 (2%)	59 82
80	ee	48/49 (98%)	43 (90%)	5 (10%)	7 28
81	ff	47/106 (44%)	41 (87%)	6 (13%)	4 20
82	gg	61/140 (44%)	55 (90%)	6 (10%)	8 31
83	hh	272/275 (99%)	243 (89%)	29 (11%)	6 27
84	jj	358/376 (95%)	323 (90%)	35 (10%)	8 31
All	All	10567/11789 (90%)	9385 (89%)	1182 (11%)	9 25

5 of 1182 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
62	MM	126	VAL
83	hh	289	LEU
65	PP	25	GLU
62	MM	122	ILE
73	XX	30	CYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 147 such sidechains are listed below:

Mol	Chain	Res	Type
59	JJ	111	GLN
81	ff	88	GLN
61	LL	7	ASN
67	RR	86	GLN
19	T	127	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
45	5	3562/3594 (99%)	1631 (45%)	283 (7%)
46	7	118/119 (99%)	40 (33%)	5 (4%)
47	8	149/151 (98%)	61 (40%)	5 (3%)
49	2	1681/1697 (99%)	713 (42%)	107 (6%)
50	3	86/87 (98%)	44 (51%)	5 (5%)
85	4	193/194 (99%)	123 (63%)	28 (14%)
All	All	5789/5842 (99%)	2612 (45%)	433 (7%)

5 of 2612 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
45	5	6	C
45	5	9	C
45	5	10	A
45	5	12	A
45	5	13	U

5 of 433 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
45	5	4447	C
46	7	89	G
49	2	1868	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
45	5	4463	U
45	5	4719	G

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

There are no ligands in this entry.

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
45	5	36
49	2	18
48	K	3
47	8	1
50	3	1
83	hh	1
3	C	1

The worst 5 of 61 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	42.98
1	5	1252:C	O3'	1271:G	P	33.33
1	5	1219:G	O3'	1233:G	P	21.96
1	2	697:G	O3'	729:C	P	20.32

Continued on next page...

Continued from previous page...

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	5	1696:C	O3'	1720:C	P	19.72

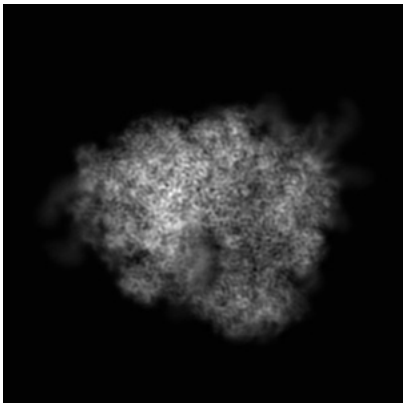
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-7834. These allow visual inspection of the internal detail of the map and identification of artifacts.

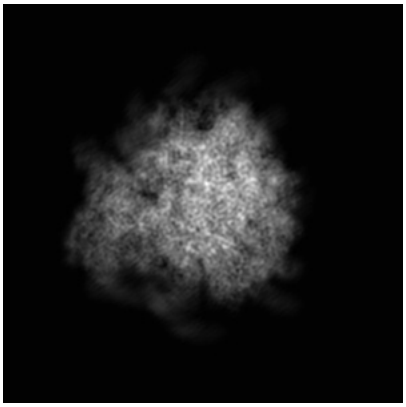
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

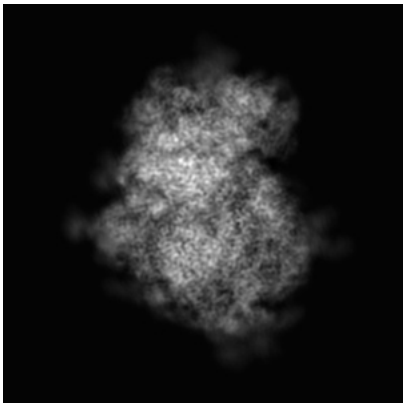
6.1.1 Primary map



X



Y

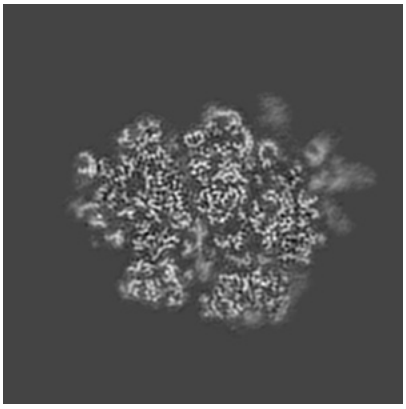


Z

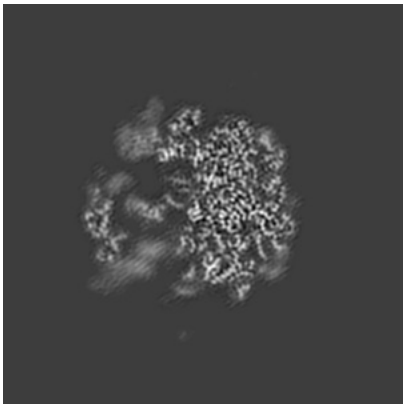
The images above show the map projected in three orthogonal directions.

6.2 Central slices

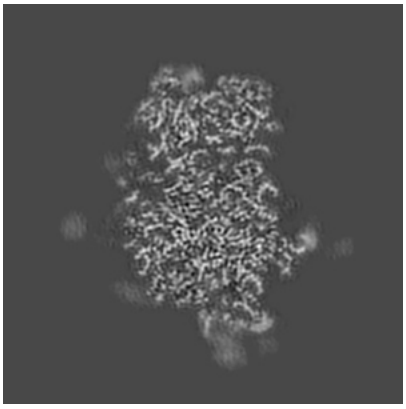
6.2.1 Primary map



X Index: 200



Y Index: 200

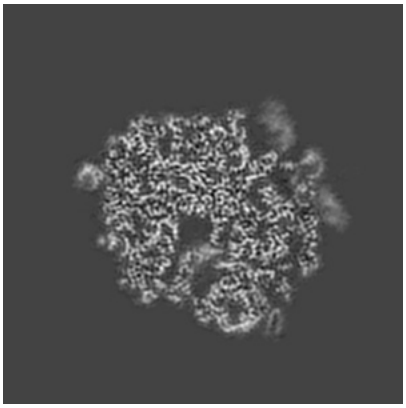


Z Index: 200

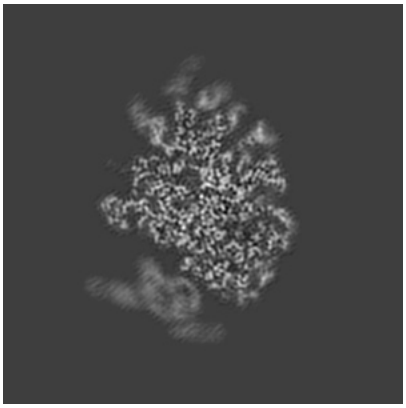
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

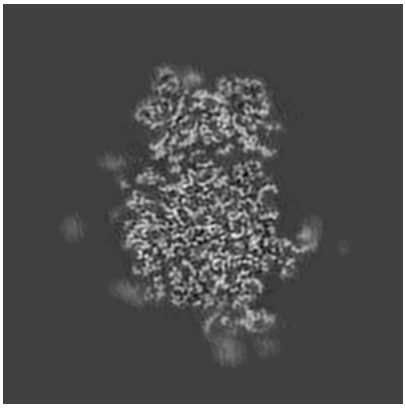
6.3.1 Primary map



X Index: 186



Y Index: 166



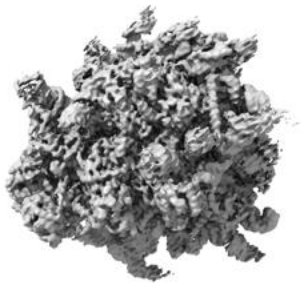
Z Index: 203

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

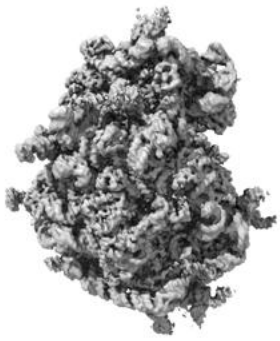
6.4 Orthogonal surface views (i)

6.4.1 Primary map

X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.025. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

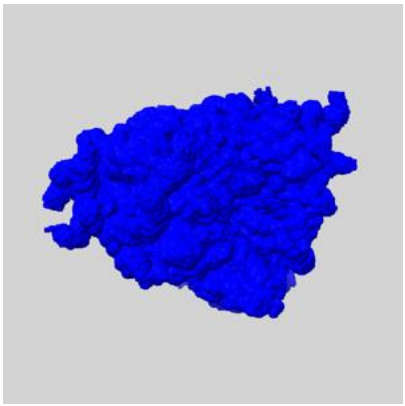
6.5 Mask visualisation (i)

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

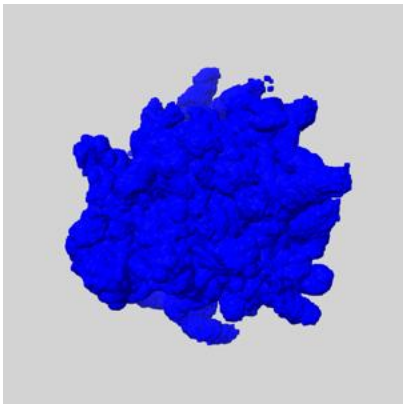
A mask typically either:

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

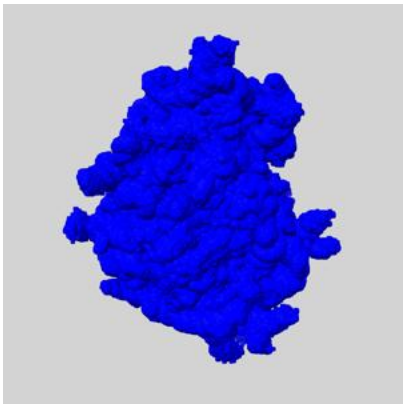
6.5.1 emd_7834_msk_1.map (i)



X



Y

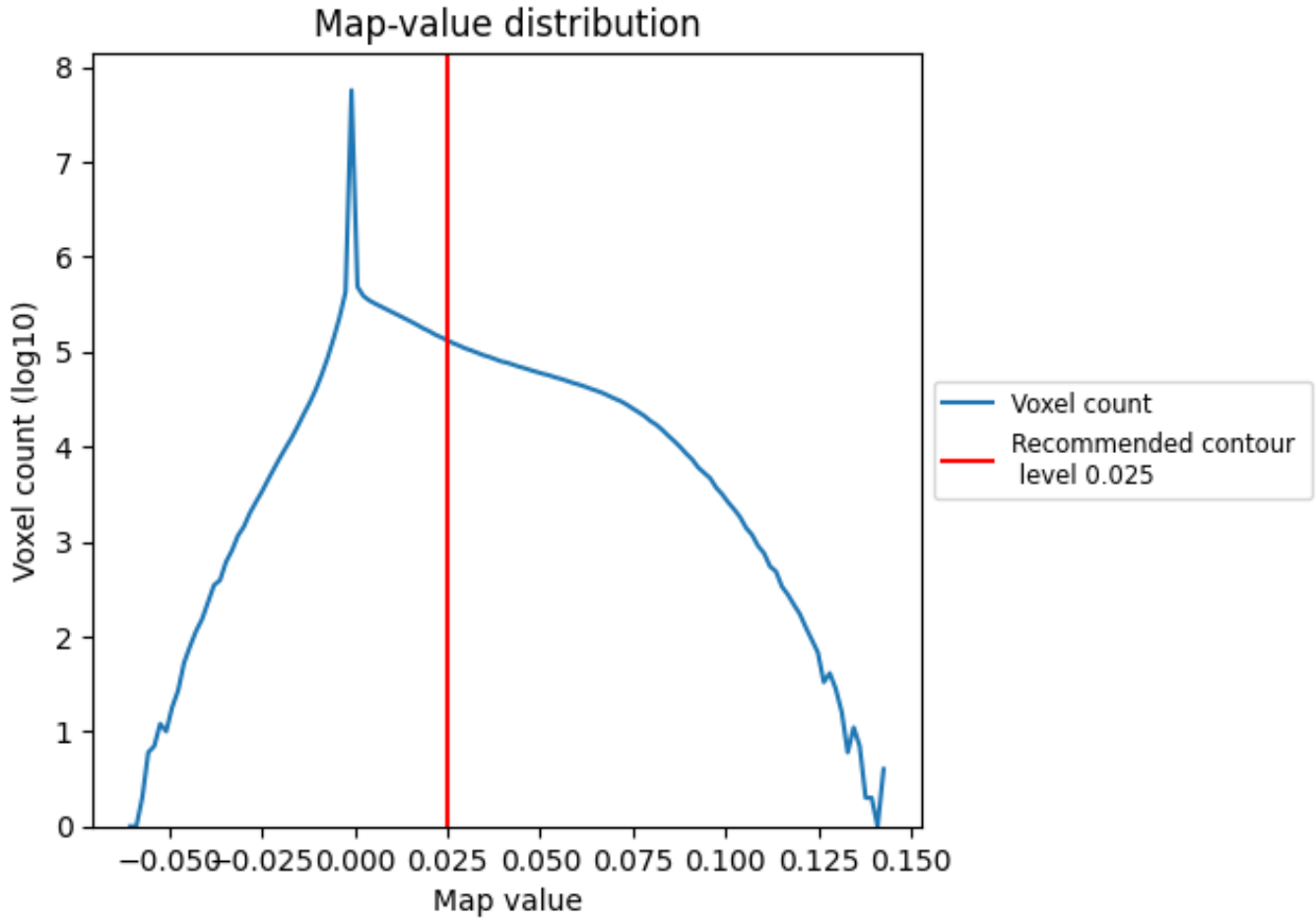


Z

7 Map analysis

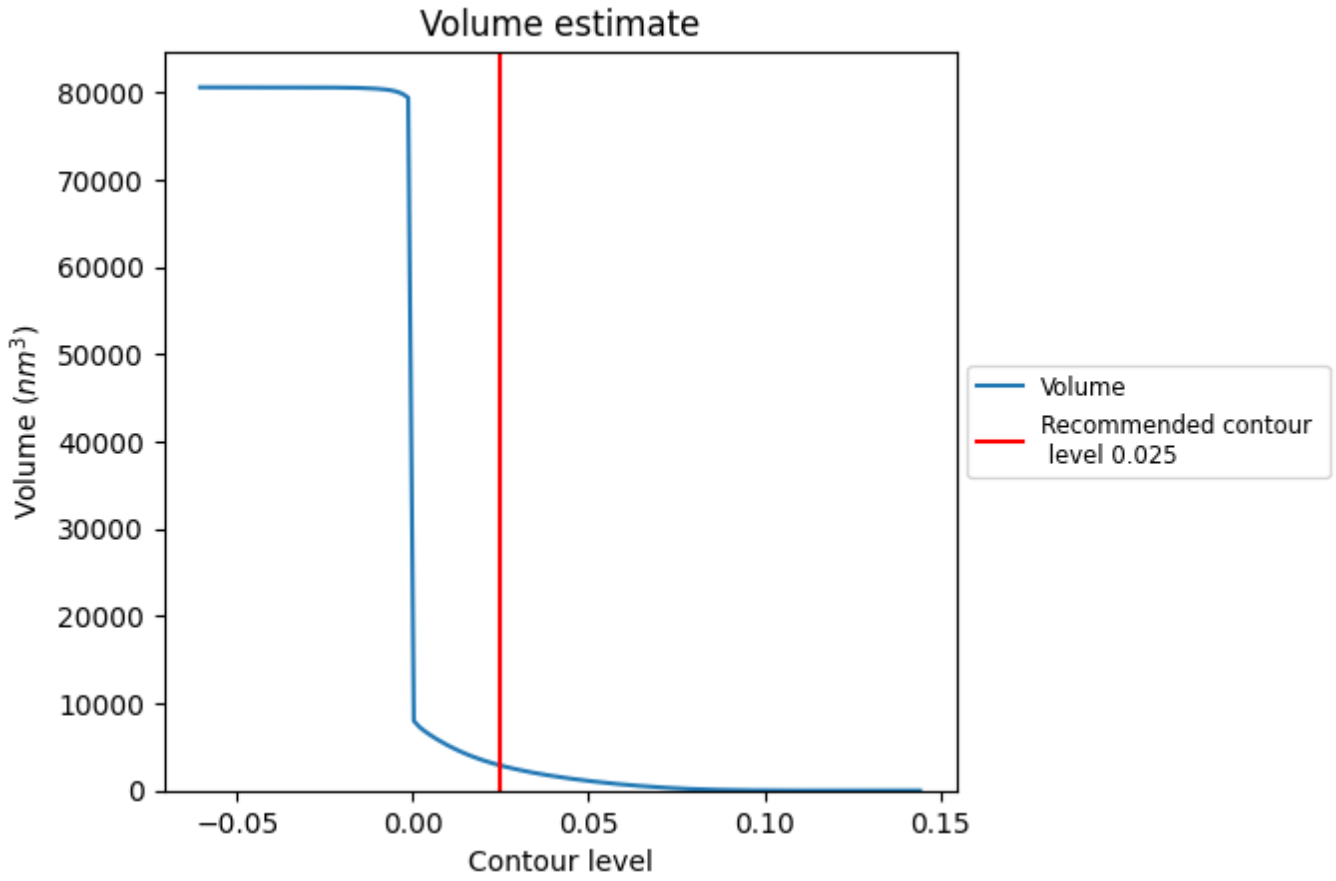
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

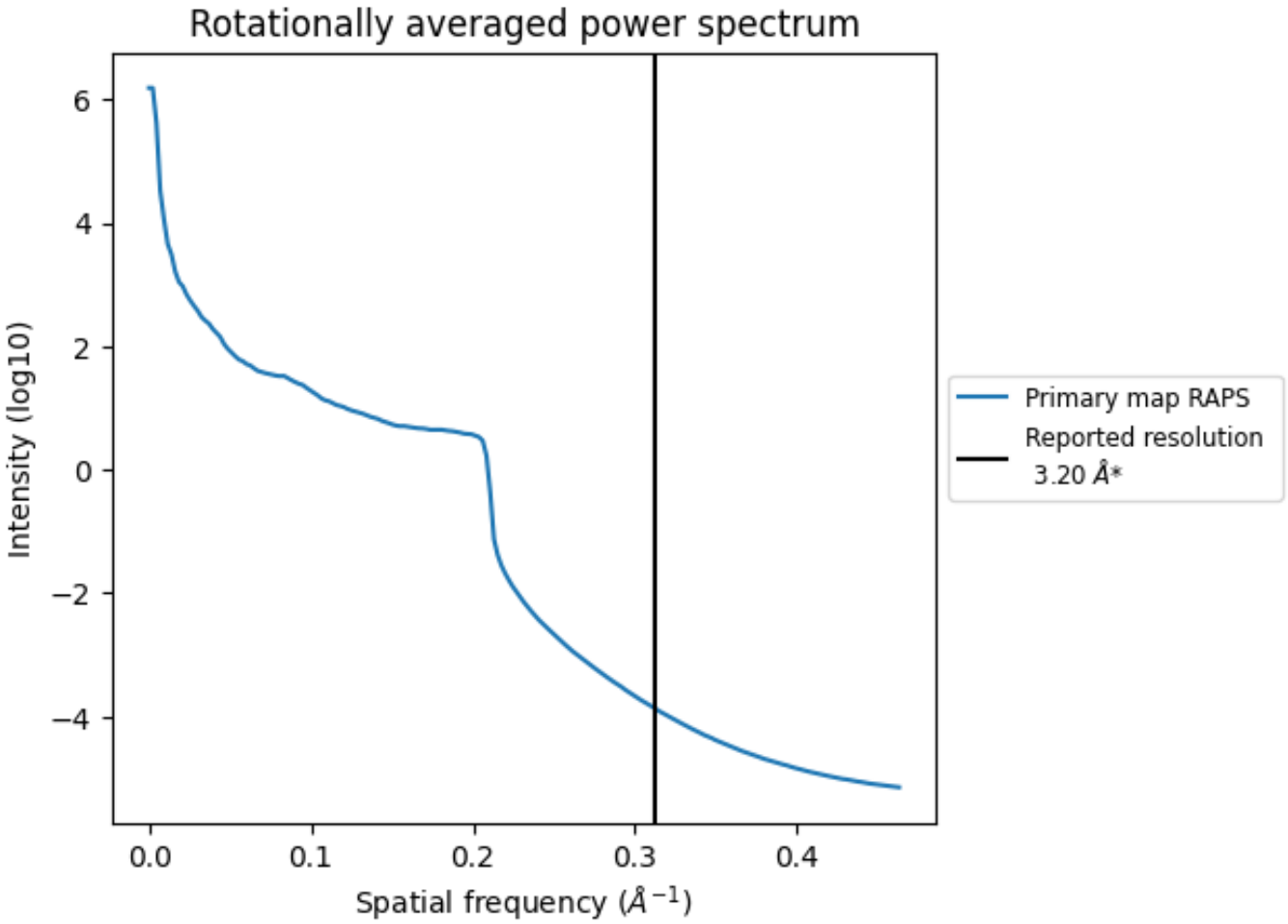
7.2 Volume estimate (i)



The volume at the recommended contour level is 2873 nm^3; this corresponds to an approximate mass of 2595 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)

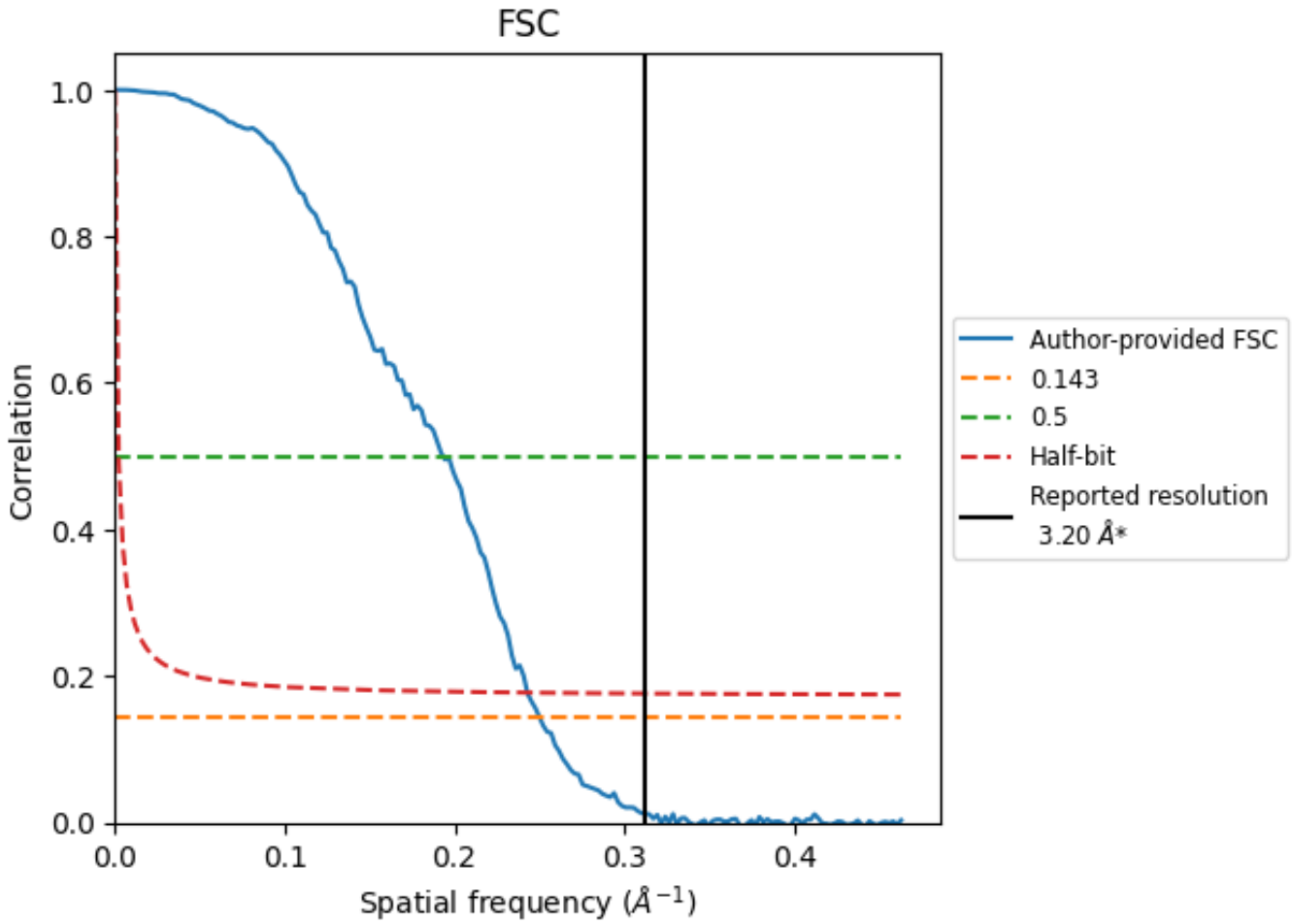


*Reported resolution corresponds to spatial frequency of 0.312 Å^{-1}

8 Fourier-Shell correlation

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

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.312 Å^{-1}

8.2 Resolution estimates (i)

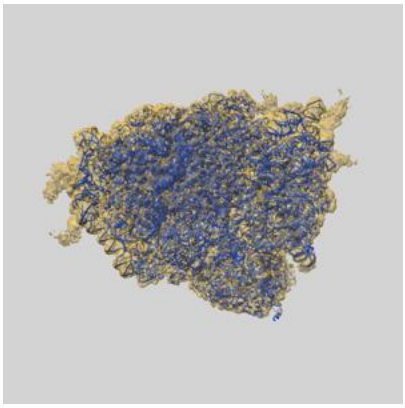
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.20	-	-
Author-provided FSC curve	4.00	5.17	4.12
Unmasked-calculated*	-	-	-

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from author-provided FSC intersecting FSC 0.143 CUT-OFF 4.00 differs from the reported value 3.2 by more than 10 %

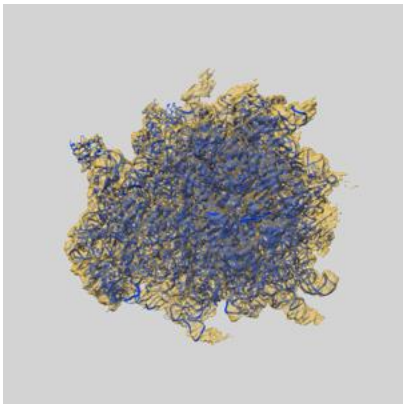
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-7834 and PDB model 6D90. Per-residue inclusion information can be found in section 3 on page 23.

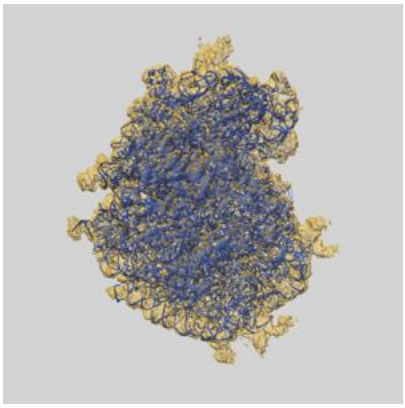
9.1 Map-model overlay



X



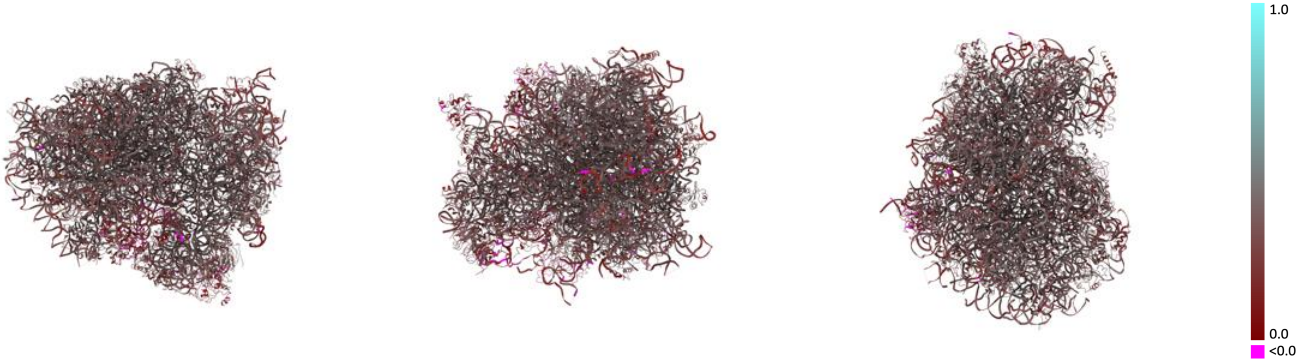
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.025 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

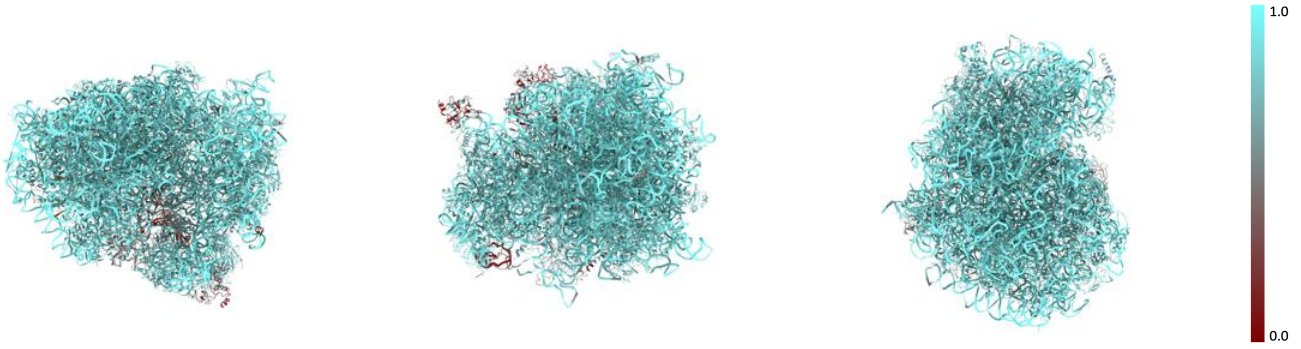
9.2 Q-score mapped to coordinate model



X Y Z

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

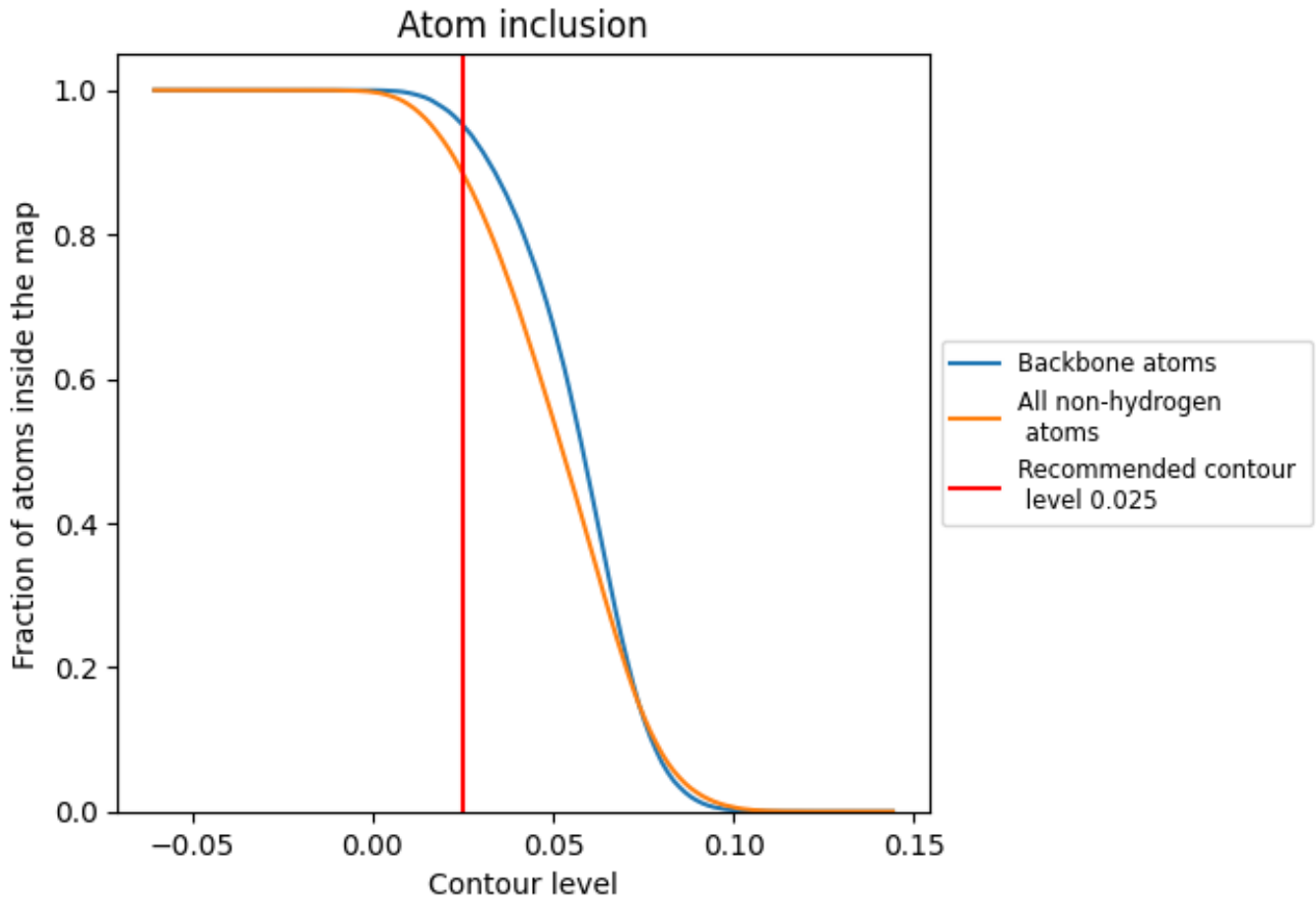
9.3 Atom inclusion mapped to coordinate model



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.025).

9.4 Atom inclusion (i)



At the recommended contour level, 95% of all backbone atoms, 88% 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 (0.025) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8849	0.3350
2	0.9744	0.3550
3	0.8812	0.2840
4	0.5238	0.1010
5	0.9718	0.3540
7	0.9890	0.3620
8	0.9788	0.3650
A	0.8189	0.3560
B	0.8414	0.3650
BB	0.8113	0.3080
C	0.8333	0.3510
CC	0.8181	0.3290
D	0.8499	0.3110
DD	0.8349	0.3540
E	0.8511	0.3350
EE	0.7971	0.3320
F	0.8203	0.3260
FF	0.8331	0.3570
G	0.8016	0.3200
GG	0.7863	0.3000
H	0.8376	0.3550
HH	0.8232	0.3130
I	0.8383	0.3560
II	0.8125	0.3140
J	0.8070	0.3190
JJ	0.8175	0.3150
K	0.5930	0.1140
KK	0.8287	0.3310
L	0.8048	0.3170
LL	0.7987	0.2930
M	0.8425	0.3310
MM	0.8246	0.3550
N	0.8500	0.3550
NN	0.2662	0.1780
O	0.8338	0.3410

Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
OO	0.8190	0.3350
P	0.8574	0.3600
PP	0.8227	0.3220
Q	0.8138	0.3430
QQ	0.8024	0.2750
R	0.8487	0.3310
RR	0.8077	0.2890
S	0.8445	0.3550
SS	0.7649	0.2940
T	0.8092	0.3400
TT	0.8087	0.2920
U	0.8369	0.3430
UU	0.8154	0.2870
V	0.8205	0.3610
VV	0.7752	0.3300
W	0.8087	0.3160
WW	0.8424	0.3360
X	0.8404	0.3650
XX	0.8129	0.3540
Y	0.8534	0.3350
YY	0.8357	0.3630
Z	0.8500	0.3420
ZZ	0.8512	0.3390
a	0.8440	0.3560
aa	0.7702	0.2770
b	0.7583	0.2620
bb	0.8246	0.3310
c	0.8253	0.3320
cc	0.8185	0.3460
d	0.8541	0.3660
dd	0.7915	0.3360
e	0.8653	0.3750
ee	0.8549	0.3150
f	0.8610	0.3680
ff	0.7386	0.3160
g	0.8423	0.3610
gg	0.5056	0.2330
h	0.8131	0.3180
hh	0.8394	0.3060
i	0.8317	0.3300
j	0.8854	0.3610
jj	0.4226	0.2610

Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
k	0.8169	0.3430
l	0.8337	0.3440
m	0.8554	0.3530
n	0.8394	0.3350
o	0.8170	0.3380
p	0.8183	0.3440
r	0.8746	0.3710
s	0.3515	0.1620
t	0.5387	0.1760