



wwPDB EM Validation Summary Report ⓘ

Dec 12, 2022 – 01:08 am GMT

PDB ID : 6T83
EMDB ID : EMD-10398
Title : Structure of yeast disome (di-ribosome) stalled on poly(A) tract.
Authors : Tesina, P.; Buschauer, R.; Cheng, J.; Berninghausen, O.; Becker, R.; Beckmann, R.
Deposited on : 2019-10-24
Resolution : 4.00 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) : 2.31.3

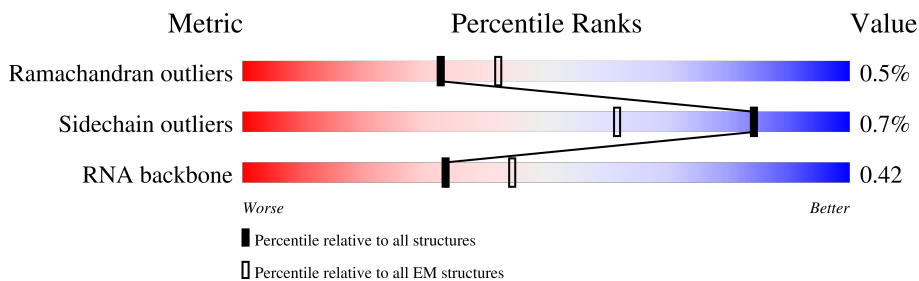
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 4.00 Å.

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







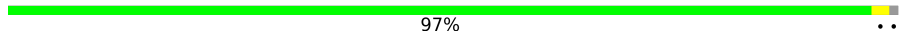
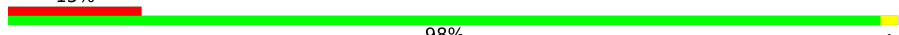


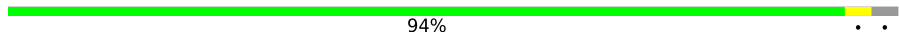

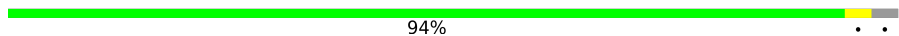











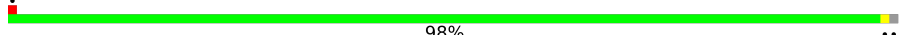


Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

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

Mol	Chain	Length	Quality of chain
1	2b	1800	
1	a	1800	
2	Ab	252	
2	b	252	
3	Ba	255	
3	c	255	
4	Pb	142	
4	q	142	

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Mol	Chain	Length	Quality of chain
5	Cb	254	 81% 15%
5	d	254	 85% 15%
6	Db	240	 91% 8%
6	e	240	 92% 7%
7	Eb	261	 97%
7	f	261	 98%
8	Fb	225	 91% 8%
8	g	225	 90% 8%
9	Gb	236	 94%
9	h	236	 90% 8%
10	Hb	190	 94%
10	i	190	 94%
11	Ib	200	 90% 6%
11	j	200	 93% 6%
12	Jb	197	 89% 7%
12	k	197	 92% 6%
13	Kb	105	 88% 12%
13	l	105	 86% 12%
14	Lb	156	 90% 8%
14	m	156	 93% 6%
15	Mb	143	 79% 5% 15%
15	n	143	 83% 13%
16	Nb	151	 98%
16	o	151	 98%
17	Ob	137	 91% 7%

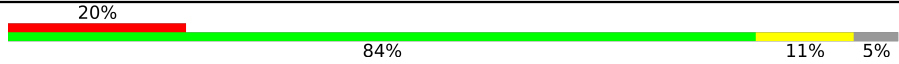
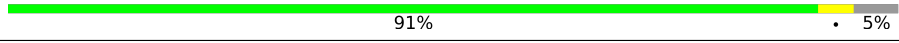
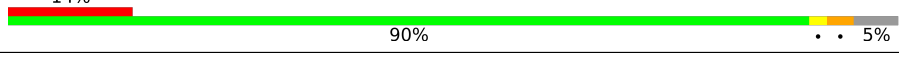
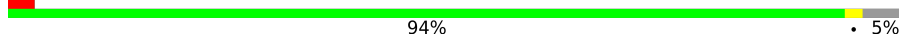
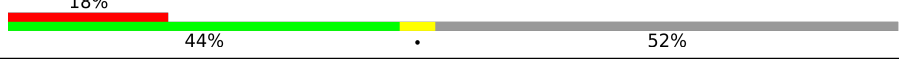

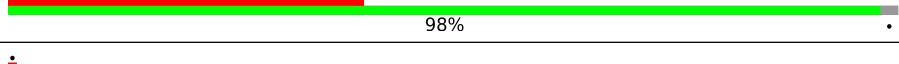
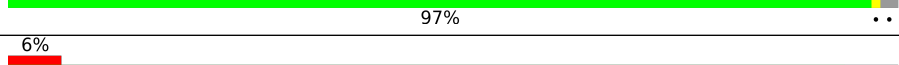
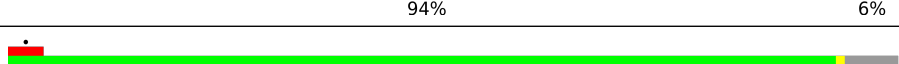
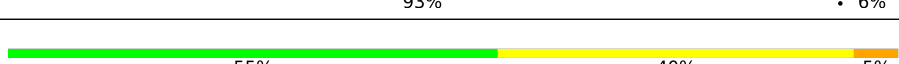
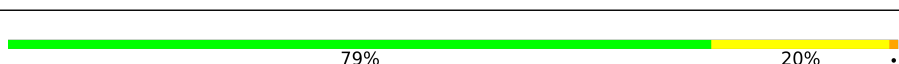
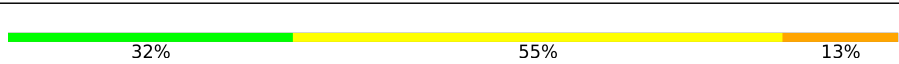

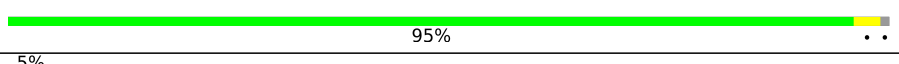
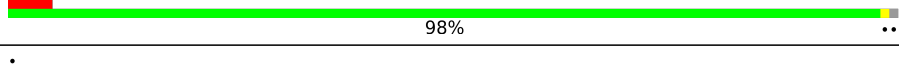
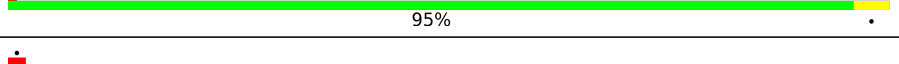
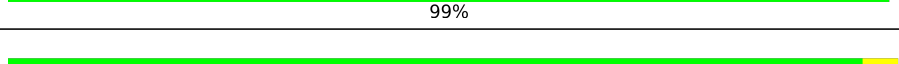
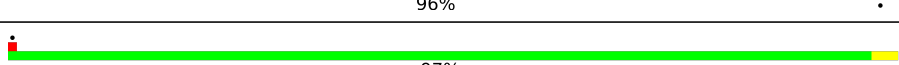
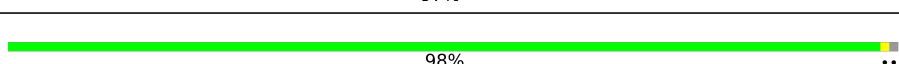
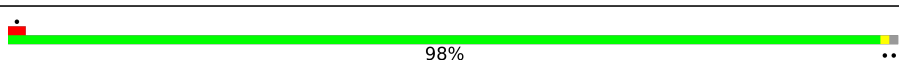
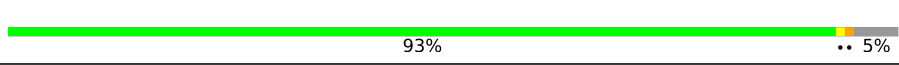
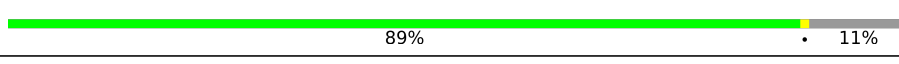
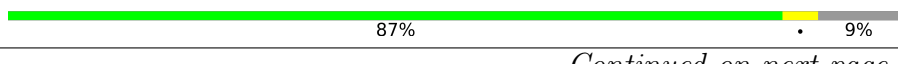


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Mol	Chain	Length	Quality of chain
17	p	137	21% 93% 7%
18	Qb	143	96% ...
18	r	143	8% 95% ..
19	Rb	136	85% 11%
19	s	136	19% 90% 8%
20	Sb	146	95% ...
20	t	146	26% 95% 5%
21	Tb	144	96% ..
21	u	144	14% 99% .
22	Ub	121	82% 17%
22	v	121	7% 80% 17%
23	Vb	87	99% .
23	w	87	5% 100%
24	Wb	130	96% ..
24	x	130	6% 98% ..
25	Xb	145	94% 5%
25	y	145	10% 98% ..
26	Yb	135	97% ..
26	z	135	7% 96% ..
27	0	108	16% 63% 36%
27	Zb	108	6% 76% 24%
28	1	119	9% 80% 18%
28	ab	119	73% 7% 18%
29	2	82	35% 98% ..
29	bb	82	95% ..

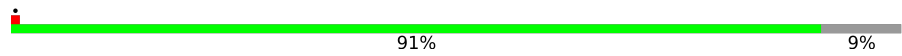

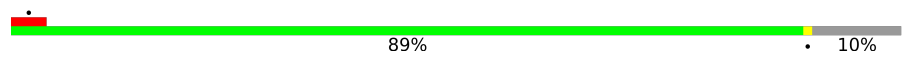
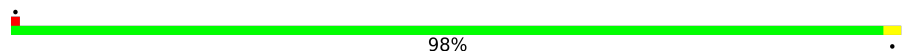
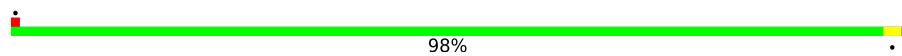
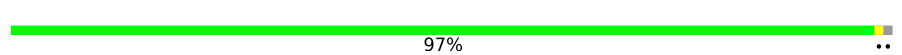
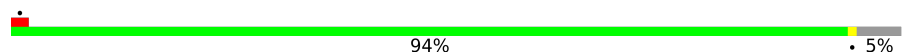
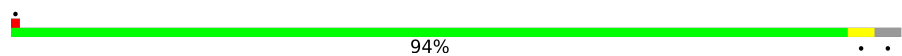
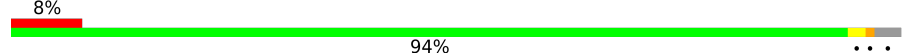
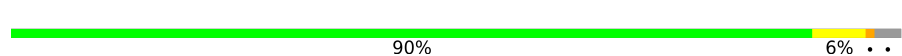
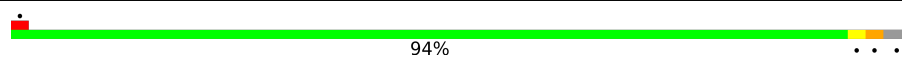
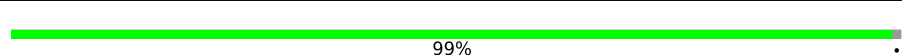
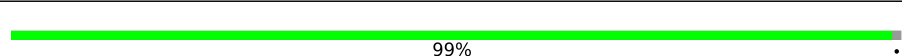
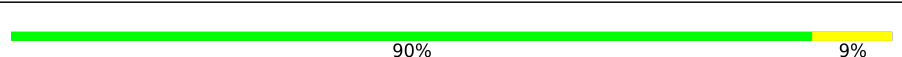
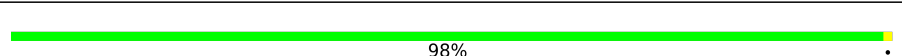
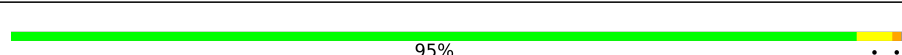
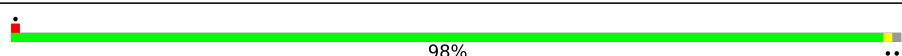
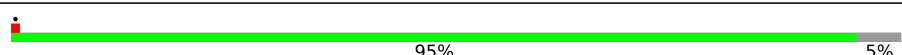
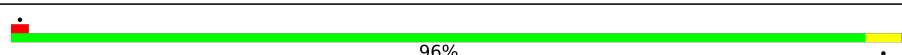
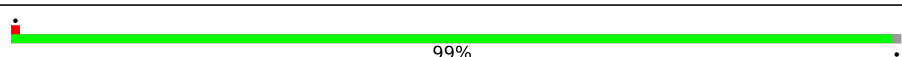
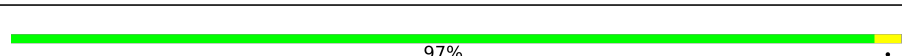
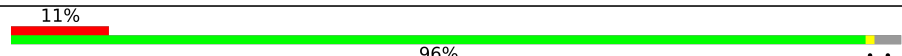
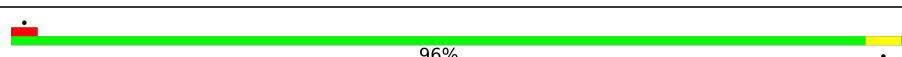
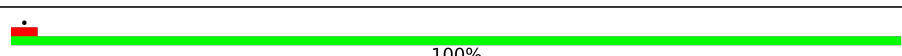
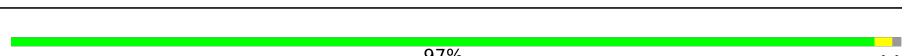
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Mol	Chain	Length	Quality of chain
30	4	56	
30	db	56	
31	5	63	
31	eb	63	
32	6	152	
32	fb	152	
33	7	319	
33	gb	319	
34	3	67	
34	cb	67	
35	4b	121	
35	Bb	121	
36	3b	158	
36	Ca	158	
37	Ay	254	
37	Da	254	
38	By	387	
38	Ea	387	
39	Cy	362	
39	Fa	362	
40	Dy	297	
40	Ga	297	
41	Ey	176	
41	Ha	176	
42	Fy	244	

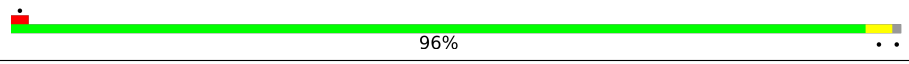
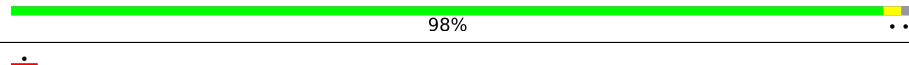
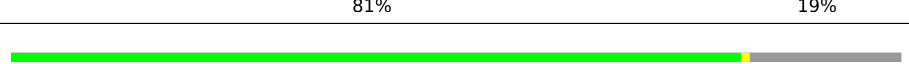
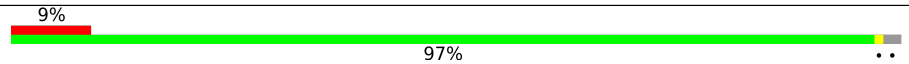
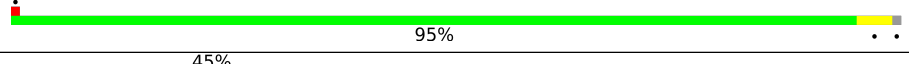

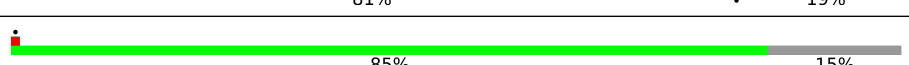

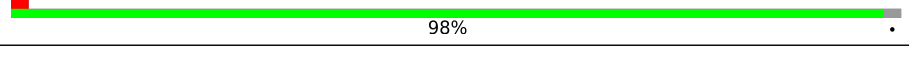
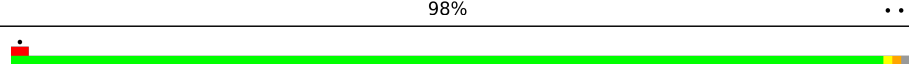
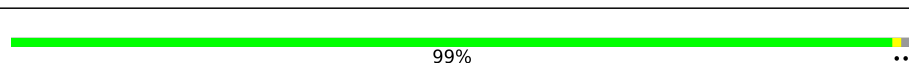
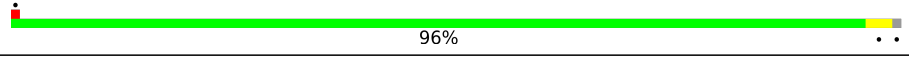
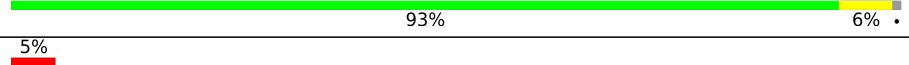
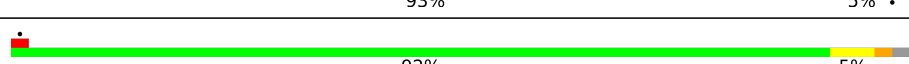
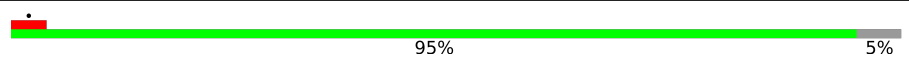
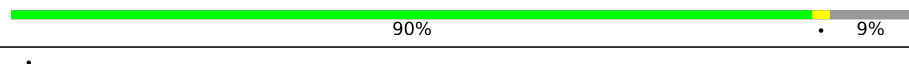
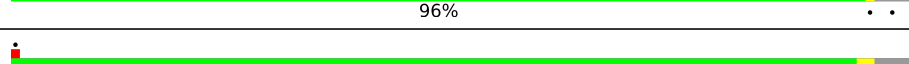
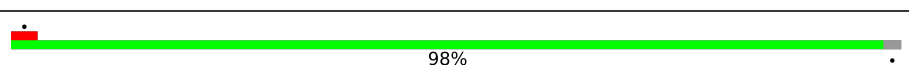
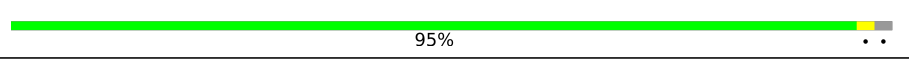
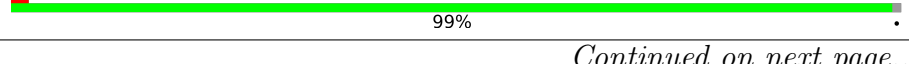



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Mol	Chain	Length	Quality of chain
42	Ia	244	 91% 9%
43	Gy	256	 88% 9%
43	Ja	256	 89% 10%
44	Hy	191	 98%
44	Ka	191	 98%
45	Iy	221	 97%
45	La	221	 94% 5%
46	Jy	174	 94%
46	Ma	174	 94%
47	Ly	199	 90% 6%
47	Na	199	 94%
48	My	138	 99%
48	Oa	138	 99%
49	Ny	204	 90% 9%
49	Pa	204	 98%
50	Oy	199	 95%
50	Qa	199	 98%
51	A	184	 95% 5%
51	Py	184	 96%
52	B	186	 99%
52	Qy	186	 97%
53	C	189	 96%
53	Ry	189	 96%
54	D	172	 100%
54	Sy	172	 97%

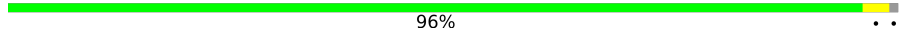


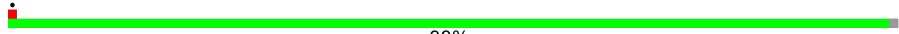




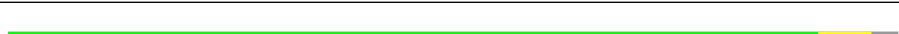

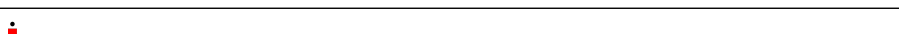
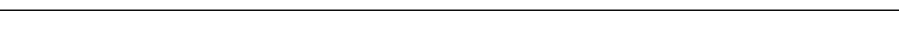
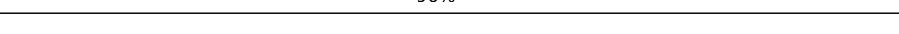
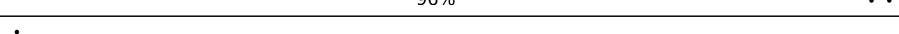


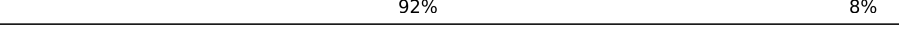
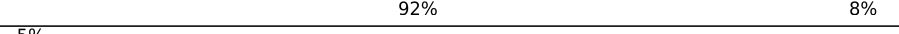
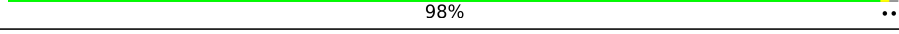
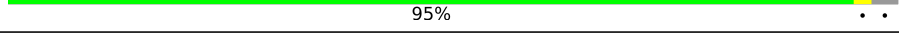
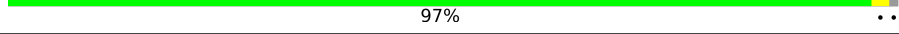




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Mol	Chain	Length	Quality of chain
55	E	160	 96%
55	Ty	160	 98%
56	F	121	 81% 19%
56	Uy	121	 82% 17%
57	G	137	 97%
57	Vy	137	 95%
58	H	155	 45% 82% 5% 13%
58	Wy	155	 20% 81% 19%
59	I	142	 85% 15%
59	Xy	142	 84% 15%
60	J	127	 98%
60	Yy	127	 98%
61	K	136	 98%
61	Zy	136	 99%
62	L	149	 96%
62	ay	149	 93% 6%
63	M	59	 5% 93% 5%
63	by	59	 92% 5%
64	N	105	 95% 5%
64	cy	105	 90% 9%
65	O	113	 96%
65	dy	113	 95%
66	P	130	 98%
66	ey	130	95%
67	Q	107	99%

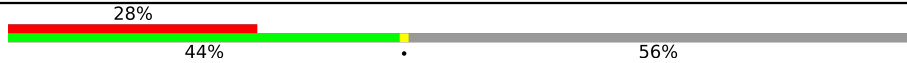
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Mol	Chain	Length	Quality of chain
67	fy	107	 96%
68	R	121	 7% 93% 7%
68	gy	121	 88% 7%
69	S	120	 99%
69	hb	120	 94% 5%
70	T	100	 99%
70	ib	100	 97%
71	U	88	 92% 7%
71	jb	88	 91% 6%
72	V	78	 97%
72	kb	78	 97%
73	W	51	 96%
73	lb	51	 96%
74	X	128	 39% 59%
74	mb	128	 40% 59%
75	Y	25	 24% 92% 8%
75	nb	25	 92% 8%
76	Z	106	 5% 98%
76	ob	106	 95%
77	aa	92	 5% 97%
77	pb	92	 91% 8%
78	1b	3396	 30% 51% 13% 6%
78	Aa	3396	 58% 30% 8%
79	6b	76	 63% 33%
79	8	76	 11% 75% 25%

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Mol	Chain	Length	Quality of chain
80	ba	311	 <p>A horizontal bar chart representing the quality of chain. The bar is divided into three segments: a red segment on the left labeled '28%', a green segment in the middle labeled '44%', and a grey segment on the right labeled '56%'. A small black dot is located at the end of the green segment.</p>

2 Entry composition [i](#)

There are 80 unique types of molecules in this entry. The entry contains 401820 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	2b	1771	37739	16872	6683	12413	1771	0	0
1	a	1758	37455	16745	6624	12328	1758	0	0

- Molecule 2 is a protein called 40S ribosomal protein S0-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	Ab	206	1603	1030	284	287	2	0	0
2	b	206	1583	1017	281	283	2	0	0

- Molecule 3 is a protein called 40S ribosomal protein S1-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	Ba	226	1798	1139	330	325	4	0	0
3	c	216	1722	1091	312	315	4	0	0

- Molecule 4 is a protein called 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	Pb	117	916	583	171	155	7	0	0
4	q	119	939	595	176	161	7	0	0

- Molecule 5 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	Cb	216	Total	C	N	O	S	0	0
			1626	1042	287	295	2		
5	d	217	Total	C	N	O	S	0	0
			1635	1047	289	297	2		

- Molecule 6 is a protein called 40S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	Db	222	Total	C	N	O	S	0	0
			1729	1098	312	313	6		
6	e	223	Total	C	N	O	S	0	0
			1734	1101	313	314	6		

- Molecule 7 is a protein called 40S ribosomal protein S4-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	Eb	258	Total	C	N	O	S	0	0
			2056	1308	387	358	3		
7	f	260	Total	C	N	O	S	0	0
			2068	1316	389	360	3		

- Molecule 8 is a protein called Rps5p.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	Fb	206	Total	C	N	O	S	0	0
			1605	1005	299	298	3		
8	g	206	Total	C	N	O	S	0	0
			1609	1007	300	299	3		

- Molecule 9 is a protein called 40S ribosomal protein S6-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	Gb	228	Total	C	N	O	S	0	0
			1815	1138	351	323	3		
9	h	218	Total	C	N	O	S	0	0
			1755	1102	337	313	3		

- Molecule 10 is a protein called 40S ribosomal protein S7-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
10	Hb	184	Total	C	N	O	0	0
			1473	946	263	264		

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Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
10	i	185	1486	954	266	266	0	0

- Molecule 11 is a protein called 40S ribosomal protein S8-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	Ib	187	1476	916	295	263	2	0	0
11	j	188	1489	925	298	264	2	0	0

- Molecule 12 is a protein called 40S ribosomal protein S9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	Jb	184	1479	935	285	258	1	0	0
12	k	185	1494	943	289	261	1	0	0

- Molecule 13 is a protein called 40S ribosomal protein S10-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	Kb	92	752	487	122	141	2	0	0
13	l	92	741	478	121	140	2	0	0

- Molecule 14 is a protein called 40S ribosomal protein S11-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
14	Lb	144	1159	742	219	195	3	0	0
14	m	146	1168	747	221	197	3	0	0

- Molecule 15 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
15	Mb	121	875	551	153	169	2	0	0
15	n	124	890	560	156	172	2	0	0

- Molecule 16 is a protein called 40S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	Nb	150	Total	C	N	O	S	0	0
			1192	759	224	207	2		
16	o	150	Total	C	N	O	S	0	0
			1192	759	224	207	2		

- Molecule 17 is a protein called 40S ribosomal protein S14-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
17	Ob	127	Total	C	N	O	S	0	0
			926	569	185	169	3		
17	p	128	Total	C	N	O	S	0	0
			949	582	188	176	3		

- Molecule 18 is a protein called 40S ribosomal protein S16-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
18	Qb	141	Total	C	N	O	0	0
			1105	708	203	194		
18	r	141	Total	C	N	O	0	0
			1105	708	203	194		

- Molecule 19 is a protein called 40S ribosomal protein S17-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
19	Rb	121	Total	C	N	O	S	0	0
			948	596	179	171	2		
19	s	125	Total	C	N	O	S	0	0
			1000	625	188	185	2		

- Molecule 20 is a protein called 40S ribosomal protein S18-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	Sb	145	Total	C	N	O	S	0	0
			1192	743	237	210	2		
20	t	145	Total	C	N	O	S	0	0
			1192	743	237	210	2		

- Molecule 21 is a protein called 40S ribosomal protein S19-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	Tb	143	Total	C	N	O	S	0	0
			1112	694	208	208	2		
21	u	143	Total	C	N	O	S	0	0
			1112	694	208	208	2		

- Molecule 22 is a protein called 40S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	Ub	100	Total	C	N	O	S	0	0
			797	506	144	146	1		
22	v	101	Total	C	N	O	S	0	0
			805	512	145	147	1		

- Molecule 23 is a protein called 40S ribosomal protein S21-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	Vb	87	Total	C	N	O	S	0	0
			673	415	125	131	2		
23	w	87	Total	C	N	O	S	0	0
			684	420	125	137	2		

- Molecule 24 is a protein called 40S ribosomal protein S22-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	Wb	129	Total	C	N	O	S	0	0
			1021	650	188	180	3		
24	x	129	Total	C	N	O	S	0	0
			1021	650	188	180	3		

- Molecule 25 is a protein called 40S ribosomal protein S23-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Xb	144	Total	C	N	O	S	0	0
			1121	708	220	191	2		
25	y	144	Total	C	N	O	S	0	0
			1121	708	220	191	2		

- Molecule 26 is a protein called 40S ribosomal protein S24-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
26	Yb	134	Total	C	N	O	0	0
			1073	676	208	189		

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Mol	Chain	Residues	Atoms				AltConf	Trace
26	z	134	Total	C	N	O	0	0
			1073	676	208	189		

- Molecule 27 is a protein called 40S ribosomal protein S25-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
27	Zb	82	Total	C	N	O	0	0
			651	416	123	112		
27	0	69	Total	C	N	O	0	0
			558	357	103	98		

- Molecule 28 is a protein called 40S ribosomal protein S26-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	ab	97	Total	C	N	O	S	0	0
			769	475	160	129	5		
28	1	97	Total	C	N	O	S	0	0
			769	475	160	129	5		

- Molecule 29 is a protein called 40S ribosomal protein S27-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	bb	81	Total	C	N	O	S	0	0
			610	382	110	113	5		
29	2	81	Total	C	N	O	S	0	0
			610	382	110	113	5		

- Molecule 30 is a protein called 40S ribosomal protein S29-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	db	53	Total	C	N	O	S	0	0
			442	274	92	72	4		
30	4	53	Total	C	N	O	S	0	0
			442	274	92	72	4		

- Molecule 31 is a protein called 40S ribosomal protein S30-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	eb	60	Total	C	N	O	S	0	0
			472	298	97	76	1		
31	5	60	Total	C	N	O	S	0	0
			475	299	98	77	1		

- Molecule 32 is a protein called Ubiquitin-40S ribosomal protein S31.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	fb	73	Total	C	N	O	S	0	0
			556	352	105	95	4		
32	6	73	Total	C	N	O	S	0	0
			556	352	105	95	4		

- Molecule 33 is a protein called Guanine nucleotide-binding protein subunit beta-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	gb	312	Total	C	N	O	S	0	0
			2383	1514	409	452	8		
33	7	313	Total	C	N	O	S	0	0
			2403	1521	411	463	8		

- Molecule 34 is a protein called 40S ribosomal protein S28-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	cb	63	Total	C	N	O	S	0	0
			491	303	96	91	1		
34	3	63	Total	C	N	O	S	0	0
			497	306	99	91	1		

- Molecule 35 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	4b	121	Total	C	N	O	P	0	0
			2579	1152	461	845	121		
35	Bb	121	Total	C	N	O	P	0	0
			2579	1152	461	845	121		

- Molecule 36 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	3b	158	Total	C	N	O	P	0	0
			3353	1500	586	1109	158		
36	Ca	157	Total	C	N	O	P	0	0
			3333	1491	584	1101	157		

- Molecule 37 is a protein called 60S ribosomal protein L2-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	Ay	251	Total	C	N	O	S	0	0
			1899	1182	385	331	1		
37	Da	252	Total	C	N	O	S	0	0
			1912	1190	388	333	1		

- Molecule 38 is a protein called 60S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	By	386	Total	C	N	O	S	0	0
			3075	1950	584	533	8		
38	Ea	386	Total	C	N	O	S	0	0
			3075	1950	584	533	8		

- Molecule 39 is a protein called 60S ribosomal protein L4-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	Cy	361	Total	C	N	O	S	0	0
			2748	1729	522	494	3		
39	Fa	361	Total	C	N	O	S	0	0
			2748	1729	522	494	3		

- Molecule 40 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	Dy	294	Total	C	N	O	S	0	0
			2351	1484	410	455	2		
40	Ga	294	Total	C	N	O	S	0	0
			2359	1489	412	456	2		

- Molecule 41 is a protein called 60S ribosomal protein L6-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	Ey	167	Total	C	N	O	S	0	0
			1303	840	234	228	1		
41	Ha	157	Total	C	N	O	S	0	0
			1248	806	224	217	1		

- Molecule 42 is a protein called 60S ribosomal protein L7-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	Fy	222	Total	C	N	O	S	0	0
			1784	1151	324	308	1		

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Mol	Chain	Residues	Atoms					AltConf	Trace
42	Ia	223	Total	C	N	O	S	0	0
			1791	1155	325	310	1		

- Molecule 43 is a protein called 60S ribosomal protein L8-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	Gy	233	Total	C	N	O	S	0	0
			1804	1151	323	327	3		
43	Ja	231	Total	C	N	O	S	0	0
			1763	1130	316	314	3		

- Molecule 44 is a protein called 60S ribosomal protein L9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	Hy	191	Total	C	N	O	S	0	0
			1508	957	274	273	4		
44	Ka	190	Total	C	N	O	S	0	0
			1510	957	273	276	4		

- Molecule 45 is a protein called 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	Iy	218	Total	C	N	O	S	0	0
			1764	1117	334	306	7		
45	La	209	Total	C	N	O	S	0	0
			1696	1077	321	293	5		

- Molecule 46 is a protein called 60S ribosomal protein L11-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	Jy	169	Total	C	N	O	S	0	0
			1350	846	253	247	4		
46	Ma	169	Total	C	N	O	S	0	0
			1353	847	253	249	4		

- Molecule 47 is a protein called 60S ribosomal protein L13-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
47	Ly	193	Total	C	N	O	0	0
			1543	962	315	266		
47	Na	194	Total	C	N	O	0	0
			1548	965	316	267		

- Molecule 48 is a protein called 60S ribosomal protein L14-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
48	My	136	1053	675	199	177	2	0	0
48	Oa	137	1059	678	200	179	2	0	0

- Molecule 49 is a protein called 60S ribosomal protein L15-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
49	Ny	203	1720	1077	361	281	1	0	0
49	Pa	203	1720	1077	361	281	1	0	0

- Molecule 50 is a protein called 60S ribosomal protein L16-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
50	Oy	197	1555	1003	289	262	1	197	0
50	Qa	197	1555	1003	289	262	1	0	0

- Molecule 51 is a protein called 60S ribosomal protein L17-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
51	Py	183	1416	879	284	253	0	0
51	A	175	1378	856	273	249	0	0

- Molecule 52 is a protein called 60S ribosomal protein L18-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
52	Qy	185	1441	908	290	241	2	0	0
52	B	185	1441	908	290	241	2	0	0

- Molecule 53 is a protein called 60S ribosomal protein L19-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
53	Ry	188	1515	932	323	260	0	0
53	C	183	1482	911	320	251	0	0

- Molecule 54 is a protein called 60S ribosomal protein L20-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
54	Sy	171	1437	925	266	243	3	0	0
54	D	172	1445	930	267	244	4	0	0

- Molecule 55 is a protein called 60S ribosomal protein L21-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
55	Ty	159	1276	805	246	221	4	0	0
55	E	159	1276	805	246	221	4	0	0

- Molecule 56 is a protein called 60S ribosomal protein L22-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
56	Uy	100	796	516	131	149	0	0
56	F	98	778	505	127	146	0	0

- Molecule 57 is a protein called 60S ribosomal protein L23-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
57	Vy	136	1003	628	189	179	7	0	0
57	G	134	993	623	187	176	7	0	0

- Molecule 58 is a protein called 60S ribosomal protein L24-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
58	Wy	126	849	532	167	149	1	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
58	H	135	Total	C	N	O	S	0	0
			1089	682	219	187	1		

- Molecule 59 is a protein called 60S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	Xy	121	Total	C	N	O	S	0	0
			964	620	169	173	2		
59	I	120	Total	C	N	O	S	0	0
			959	617	168	172	2		

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

Mol	Chain	Residues	Atoms				AltConf	Trace
60	Yy	125	Total	C	N	O	0	0
			984	620	191	173		
60	J	124	Total	C	N	O	0	0
			976	614	190	172		

- Molecule 61 is a protein called 60S ribosomal protein L27-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
61	Zy	135	Total	C	N	O	0	0
			1092	710	202	180		
61	K	135	Total	C	N	O	0	0
			1092	710	202	180		

- Molecule 62 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	ay	148	Total	C	N	O	S	0	0
			1173	749	231	190	3		
62	L	148	Total	C	N	O	S	0	0
			1173	749	231	190	3		

- Molecule 63 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms				AltConf	Trace
63	by	58	Total	C	N	O	0	0
			462	289	100	73		
63	M	58	Total	C	N	O	0	0
			462	289	100	73		

- Molecule 64 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
64	cy	96	737	476	123	137	1	0	0
64	N	100	767	492	128	146	1	0	0

- Molecule 65 is a protein called 60S ribosomal protein L31-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
65	dy	109	876	556	167	152	1	0	0
65	O	109	883	559	167	156	1	0	0

- Molecule 66 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
66	ey	127	1017	644	205	167	1	0	0
66	P	127	1020	647	205	167	1	0	0

- Molecule 67 is a protein called 60S ribosomal protein L33-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
67	fy	106	850	540	165	144	1	0	0
67	Q	106	850	540	165	144	1	0	0

- Molecule 68 is a protein called 60S ribosomal protein L34-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
68	gy	112	880	545	179	152	4	0	0
68	R	112	880	545	179	152	4	0	0

- Molecule 69 is a protein called 60S ribosomal protein L35-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	hb	119	Total	C	N	O	S	0	0
			969	615	186	167	1		
69	S	119	Total	C	N	O	S	0	0
			965	612	185	167	1		

- Molecule 70 is a protein called 60S ribosomal protein L36-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	ib	99	Total	C	N	O	S	0	0
			766	478	154	132	2		
70	T	99	Total	C	N	O	S	0	0
			770	481	156	131	2		

- Molecule 71 is a protein called 60S ribosomal protein L37-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	jb	85	Total	C	N	O	S	0	0
			670	408	146	111	5		
71	U	82	Total	C	N	O	S	0	0
			650	396	142	107	5		

- Molecule 72 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms				AltConf	Trace
72	kb	77	Total	C	N	O	0	0
			612	391	115	106		
72	V	77	Total	C	N	O	0	0
			608	388	114	106		

- Molecule 73 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	lb	50	Total	C	N	O	S	0	0
			436	272	97	65	2		
73	W	50	Total	C	N	O	S	0	0
			436	272	97	65	2		

- Molecule 74 is a protein called Ubiquitin-60S ribosomal protein L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	mb	52	Total	C	N	O	S	0	0
			417	259	86	67	5		

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
74	X	52	Total	C	N	O	S	0	0
			417	259	86	67	5		

- Molecule 75 is a protein called 60S ribosomal protein L41-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
75	nb	25	Total	C	N	O	S	0	0
			229	139	62	27	1		
75	Y	25	Total	C	N	O	S	0	0
			233	142	63	27	1		

- Molecule 76 is a protein called 60S ribosomal protein L42-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
76	ob	103	Total	C	N	O	S	0	0
			824	517	167	135	5		
76	Z	105	Total	C	N	O	S	0	0
			847	534	170	138	5		

- Molecule 77 is a protein called 60S ribosomal protein L43-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
77	pb	91	Total	C	N	O	S	0	0
			694	429	138	121	6		
77	aa	91	Total	C	N	O	S	0	0
			694	429	138	121	6		

- Molecule 78 is a RNA chain called 25S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
78	1b	3184	Total	C	N	O	P	0	0
			68091	30415	12259	22233	3184		
78	Aa	3127	Total	C	N	O	P	0	0
			66891	29878	12066	21820	3127		

- Molecule 79 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
79	6b	76	Total	C	N	O	P	0	0
			1616	721	281	538	76		
79	8	76	Total	C	N	O	P	0	0
			1616	721	281	538	76		

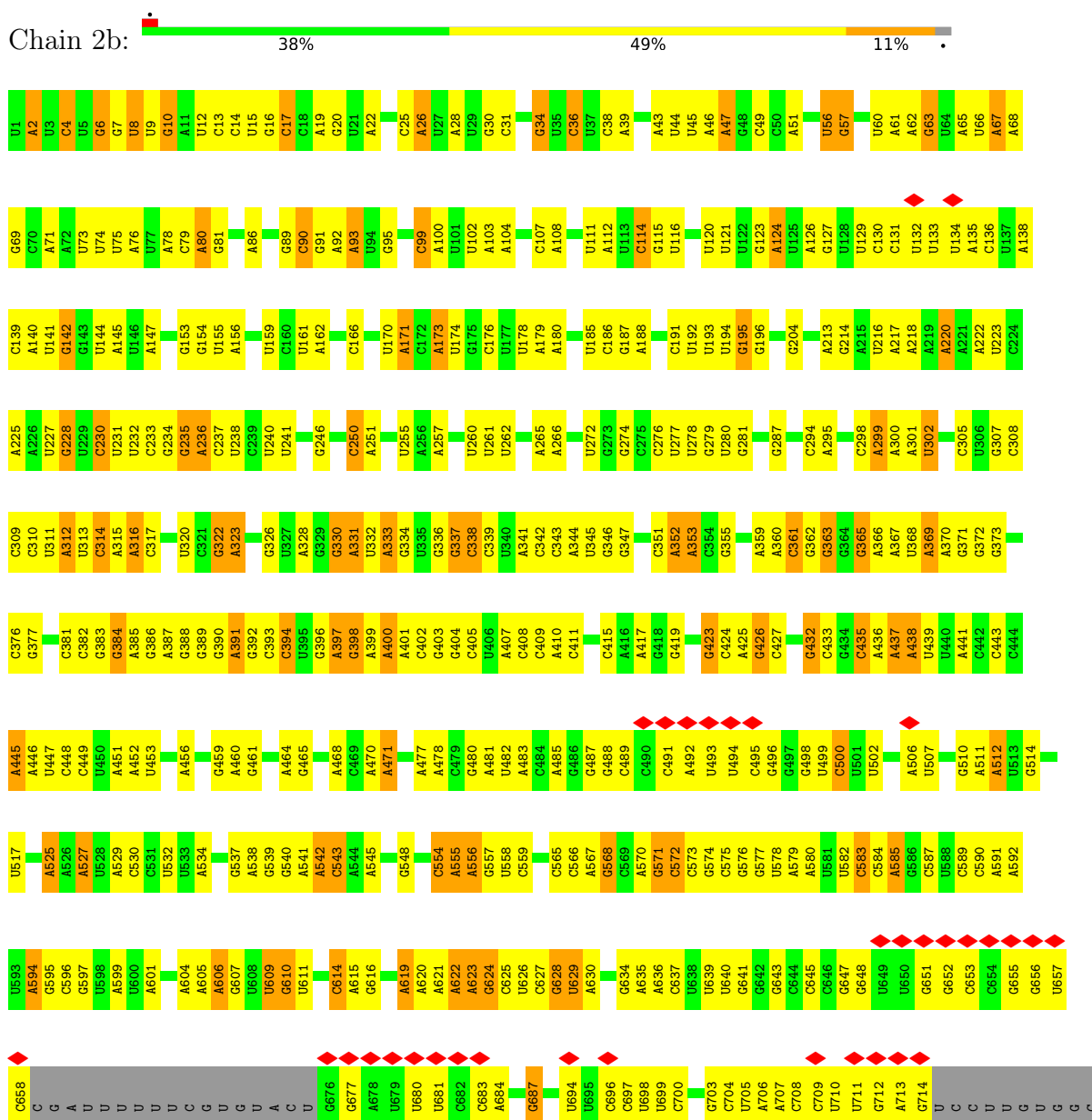
- Molecule 80 is a protein called 60S acidic ribosomal protein P0.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
80	ba	138	1052	672	187	190	3	0	0

3 Residue-property plots

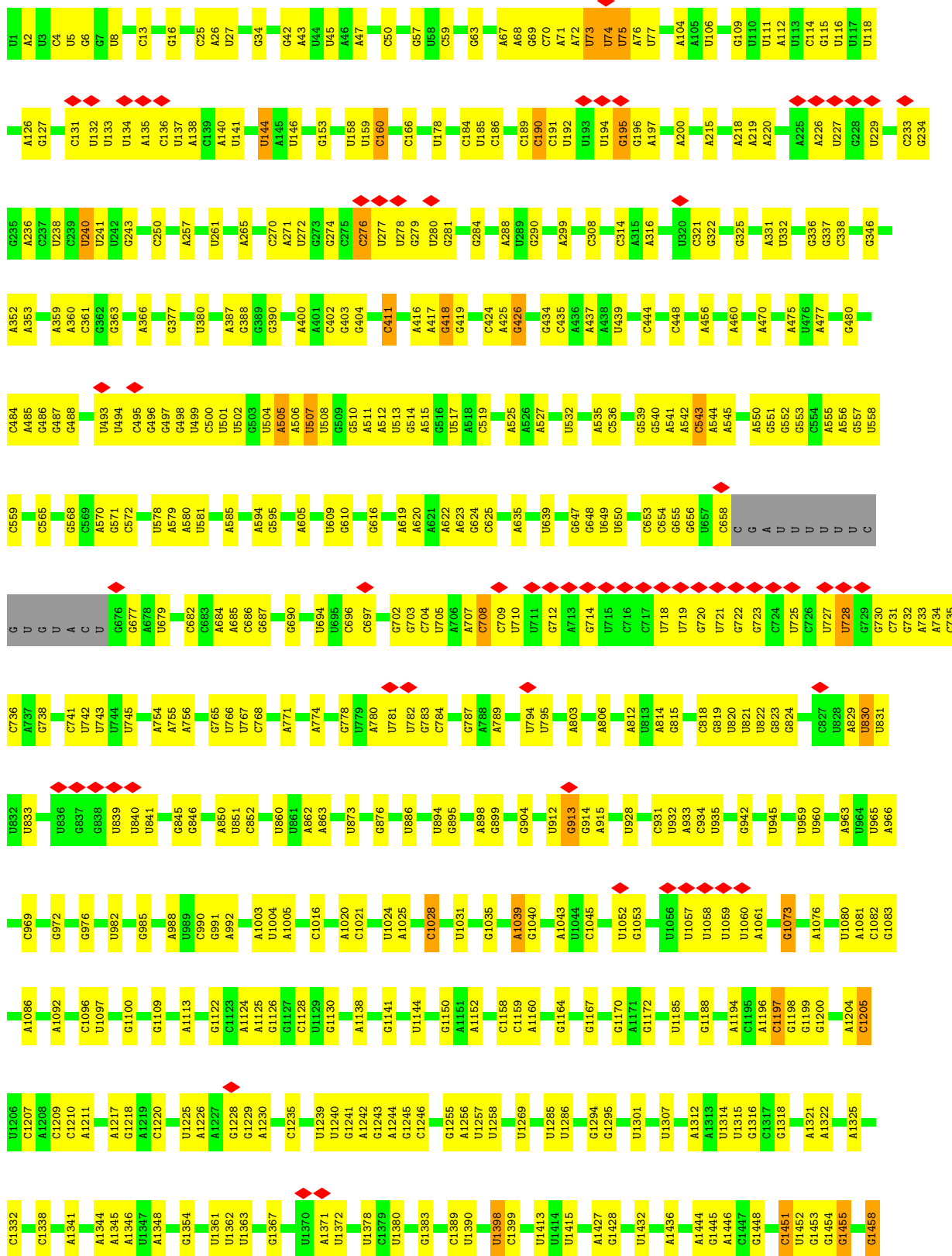
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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.

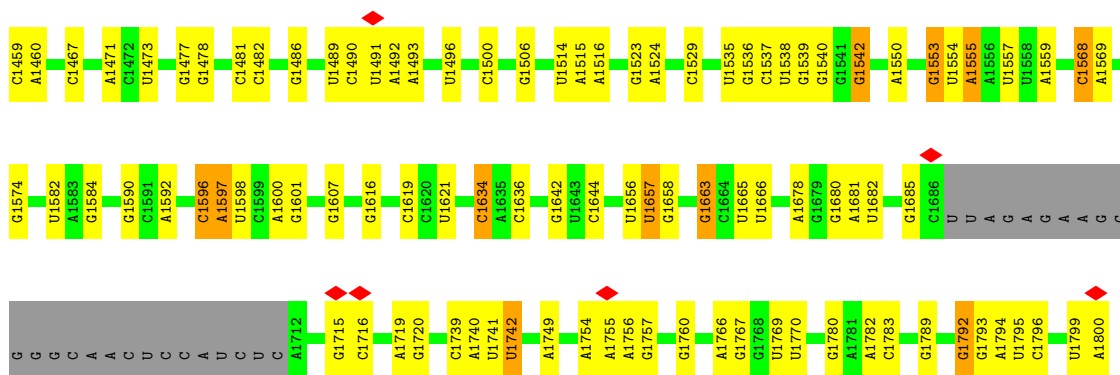
- Molecule 1: 18S rRNA



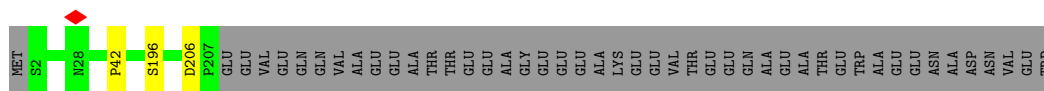
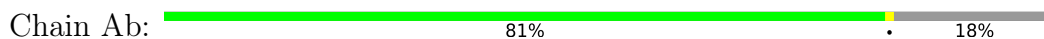
U	C726	C727	U728	U729	C730	C731	C732	C733	C734	C735	C736	C737	C738	C741	U742	U743	U744	U745	U746	C747	A752	A753	A754	A755	A756	A757	A760	G761	G765	U766	U767	C768	A769	A770	A771	A774	G775	G776	C777	G778	U779	A780	U781	U782	G783	G787	A788	A789	U790	A865	G866	G868			
	U800	G801	G802	A803	A804	U805	U806	A807	U808	A809	G810	A811	A812	U813	A814	G815	G819	U820	U821	U822	G823	G824	U825	U826	U827	U832	U833	G834	G835	U836	G837	G838	U839	U840	U841	G845	G846	C852	G853	U854	A855	U856	U857	G858	U859	U861	A862	A863	U864	A865	A866	G866	G868		
	A869	C870	G871	U873	G874	G875	G876	G877	C880	U808	A881	U882	C883	A884	G885	U886	A887	U888	A898	G899	A900	G901	G902	U903	G904	A905	U911	U912	G913	G914	U915	U916	U917	U921	G922	A923	A924	G925	C927	U928	A929	A855	U930	U931	U932	A933	U934	U935	U936	C937	U938	A939	A940	A941	G942
	C943	A944	U945	C949	C950	A951	A952	G953	A955	C956	U959	U960	U961	C962	A963	U964	U965	U966	A967	U968	C969	A970	A971	G972	A973	A974	C975	G976	A977	A978	A979	G980	G984	G987	A988	U989	C990	G991	A992	A993	G994	A995	U996	G997	A998	A1001	G1002	A1003	U1004	A1005	C1006	C1007	C1010		
	G1011	U1012	A1013	U1015	C1016	U1017	U1018	A1019	C1020	C1021	C1022	U1023	A1025	U1026	A1027	C1028	U1029	A1030	C1033	G1034	G1035	A1036	C1037	U1038	A1039	G1042	G1045	G1046	U1052	G1053	U1058	U1059	U1060	A1061	A1062	U1063	A1069	C1072	G1073	G1074	C1075	A1076	C1077	C1078	U1079	A1142	U1004	A1143	U1144	U1145	G1083	A1084	G1085	A1086	
	A1087	A1088	U1089	C1090	A1091	A1092	A1093	U1094	U1095	C1096	U1097	C1021	U1098	U1099	G1100	G1101	G1102	U1103	U1104	A887	C1105	G1112	A1113	U1115	A1116	G1119	U1120	U1121	G1122	C1123	A1124	A1125	G1126	G1127	G1130	U1131	A1132	A1133	U1134	U1135	G1200	G1201	A1137	A1138	A1139	G1140	G1141	A1142	C1209	U1144	U1145	G1146	A1147	C1148	
	G1149	G1150	A1151	C1152	G1155	C1156	A1157	U1158	C1159	A1160	C1161	C1162	A1163	G1164	G1167	U1168	G1169	G1170	A1171	G1172	C1173	C1174	U1175	G1176	C1177	G1179	U1182	A1183	U1184	U1185	G1188	U1191	A1192	A1193	A1194	C1195	A1196	C1197	G1198	G1199	G1200	G1201	A1202	A1203	U1206	C1207	A1208	C1209	C1210	A1211	A1212	G1218			
	A1227	G1228	C1229	A1230	U1231	G1241	A1242	G1243	A1244	G1245	C1246	U1251	C1252	G1255	U1256	U1257	U1258	G1263	G1273	C1274	A1275	U1276	G1277	G1278	C1280	G1281	C1284	U1285	U1286	A1287	G1288	U1293	G1294	A1295	A1296	G1297	U1298	G1299	A1300	U1303	G1304	U1307	G1308	G1385	G1386	G1387	A1343	U1344	U1345	U1315	A1316	C1317			
	G1318	A1319	U1320	A1321	C1322	G1323	U1324	A1325	U1326	C1327	G1328	A1329	G1330	A1331	C1332	C1333	A1336	A1337	C1338	A1341	A1344	A1345	A1346	U1347	A1348	G1349	G1354	C1355	G1367	G1368	U1369	G1370	A1371	U1372	C1373	U1378	C1379	U1380	U1381	A1382	G1383	A1384	G1385	G1454	U1455	U1456	C1457	A1458	C1389	U1390	A1391				
	U1392	C1393	G1394	G1395	U1396	U1397	U1398	C1399	A1400	A1401	G1402	G1408	G1409	A1410	A1411	G1412	U1413	U1414	U1415	A1417	G1418	G1419	C1420	A1421	A1422	A1425	A1426	A1427	G1428	G1429	U1430	C1431	U1432	G1433	U1434	G1435	A1436	U1437	G1438	A1444	G1445	A1446	G1447	G1448	C1451	U1452	G1453	G1454	U1455	U1456	C1457	G1458	C1459	A1460	C1461
	G1462	C1463	G1464	G1465	G1466	U1467	U1468	A1469	A1470	A1471	C1472	G1476	G1477	A1478	A1479	G1480	G1481	C1482	G1486	U1491	A1492	A1493	C1494	U1495	G1496	G1499	G1502	A1503	U1504	A1505	U1514	A1515	U1516	U1517	U1518	U1519	U1520	G1521	U1522	G1523	A1524	A1525	U1526	C1527	U1528	C1529	C1530	G1531	C1532	U1533	G1534	U1535	U1536	C1537	
	G1540	G1541	G1542	U1543	U1544	A1545	G1546	C1549	A1550	A1551	C1524	G1553	U1554	U1557	U1558	A1559	U1560	C1585	A1570	G1571	U1572	A1573	G1574	U1575	A1576	A1577	C1580	C1581	U1582	A1583	U1584	U1585	C1589	G1590	A1591	A1592	A1593	G1594	U1595	C1596	A1597	U1598	U1599	A1600	G1601	C1602	G1605	C1606	U1609	G1610	A1611	C1617	G1619		
	A1614	C1615	G1616	U1617	U1618	C1619	C1620	U1621	G1622	C1623	C1624	C1625	G1629	U1630	A1631	U1632	A1633	C1634	A1635	C1636	C1637	G1638	C1640	C1641	G1642	U1643	U1644	G1645	C1646	G1649	U1650	A1651	C1652	C1653	G1654	A1655	U1656	G1658	A1659	A1660	G1663	C1664	A1667	G1670	A1671	G1672	G1673	C1674	C1675	U1676	C1677	A1678	C1679		
	G1680	A1681	U1682	U1683	U1684	A1685	C1620	U1621	G1622	C1623	C1624	C1625	G1629	U1630	A1631	U1632	A1633	C1634	A1635	C1636	C1637	G1638	C1640	C1641	G1642	U1643	U1644	G1645	C1646	G1649	U1650	A1651	C1652	C1653	G1654	A1655	U1656	G1658	A1659	A1660	G1663	C1664	A1667	G1670	A1671	G1672	G1673	C1674	C1675	U1676	C1677	A1678	C1679		
	G1688	G1699	C1700	A1701	A1702	C1703	A1707	U1708	C1709	U1710	C1711	A1712	G1715	C1716	G1717	G1718	A1719	G1720	A1721	A1722	U1725	G1726	G1727	A1728	C1729	A1730	A1731	A1732	C1733	G1736	A1740	U1741	U1742	A1744	G1745	A1749	A1750	C1751	U1752	A1753	C1754	A1756	G1757	U1758	C1759	G1760									
	U1761	A1762	C1763	A1764	A1765	A1766	G1767	U1768	G1769	U1770	U1771	C1772	C1773	G1774	U1775	A1776	G1777	U1778	U1779	U1780	A1781	C1782	C1783	U1784	U1785	G1786	C1787	G1788	U1789	A1790	A1791	C1792	G1793	A1794	U1795	C1796	A1797	U1798	U1799	A															

• Molecule 1: 18S rRNA

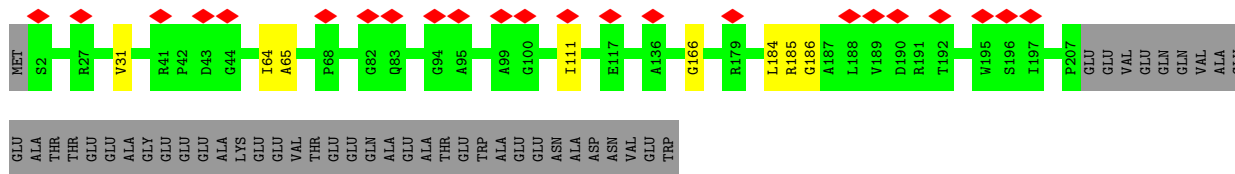
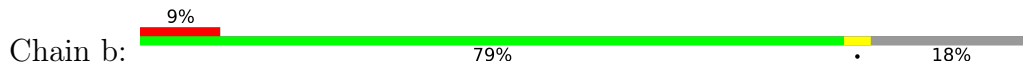




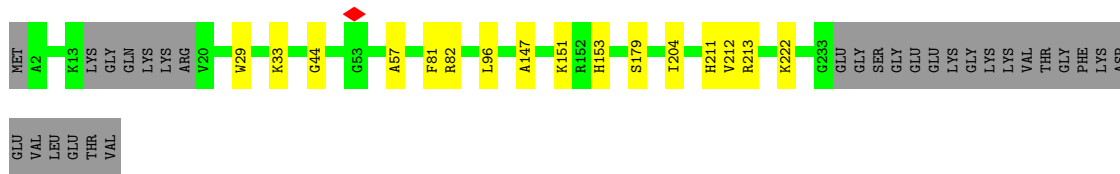
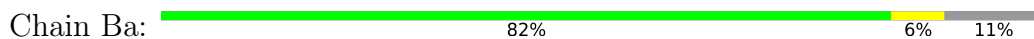
• Molecule 2: 40S ribosomal protein S0-A



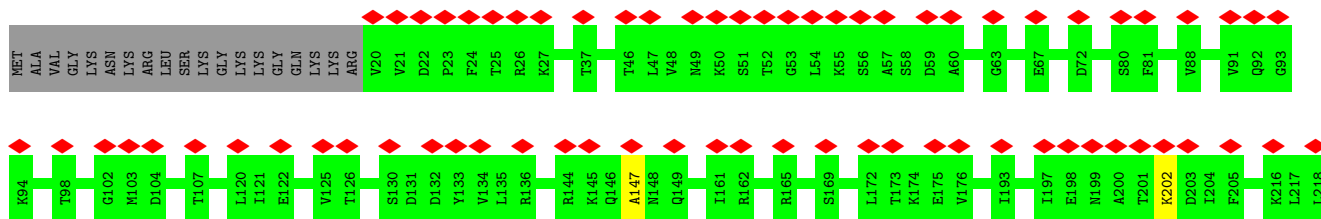
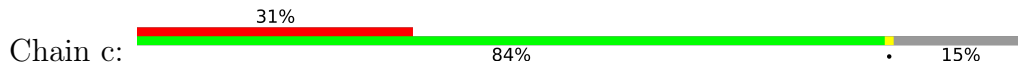
• Molecule 2: 40S ribosomal protein S0-A

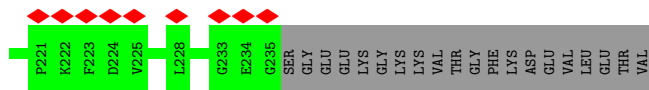


• Molecule 3: 40S ribosomal protein S1-A

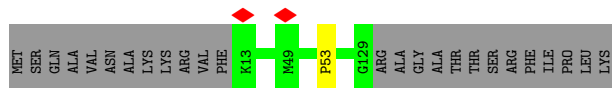
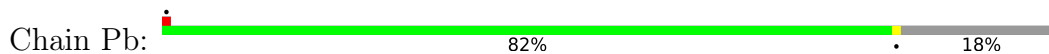


• Molecule 3: 40S ribosomal protein S1-A

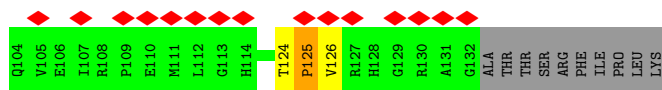
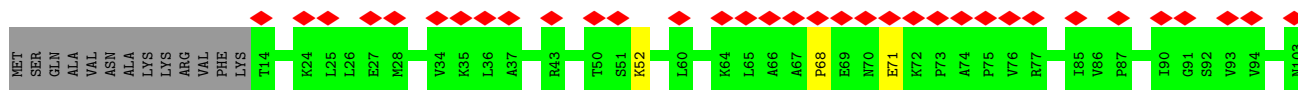
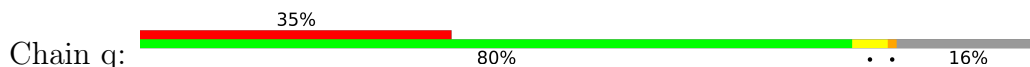




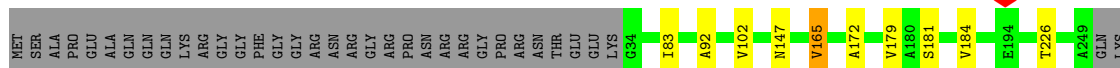
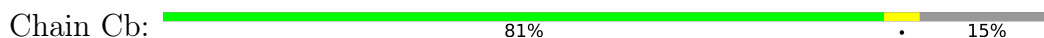
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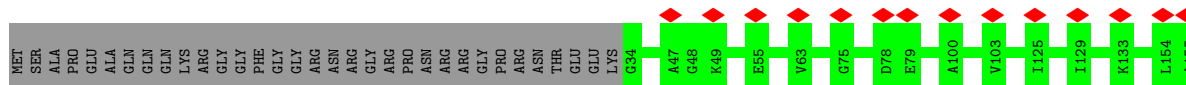
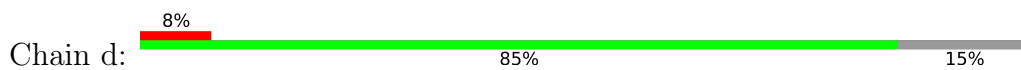
• Molecule 4: 40S ribosomal protein S15



• Molecule 5: 40S ribosomal protein S2

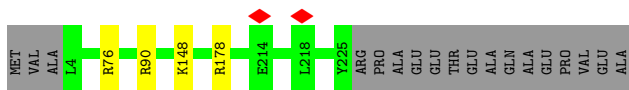


• Molecule 5: 40S ribosomal protein S2

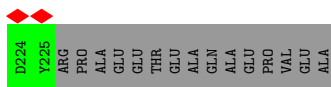
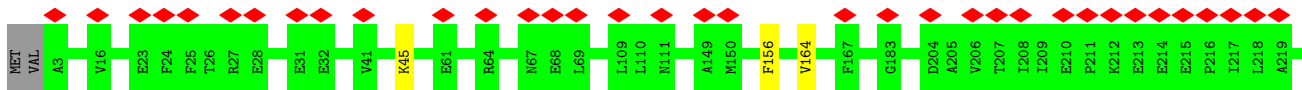
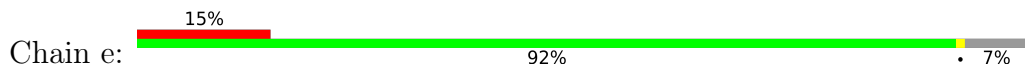


• Molecule 6: 40S ribosomal protein S3





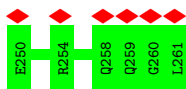
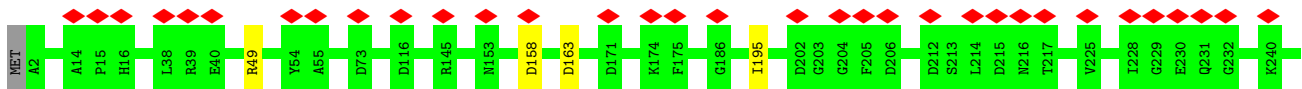
• Molecule 6: 40S ribosomal protein S3



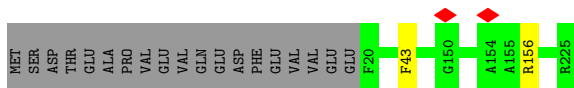
• Molecule 7: 40S ribosomal protein S4-A



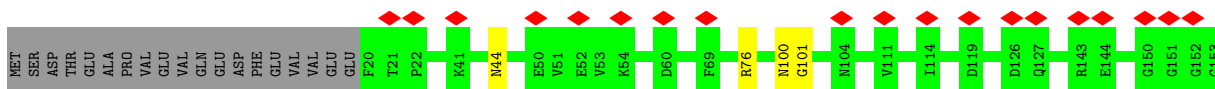
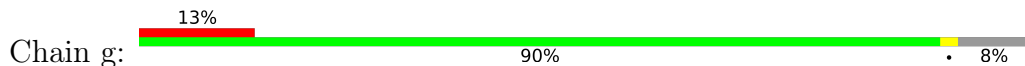
• Molecule 7: 40S ribosomal protein S4-A



• Molecule 8: Rps5p



• Molecule 8: Rps5p





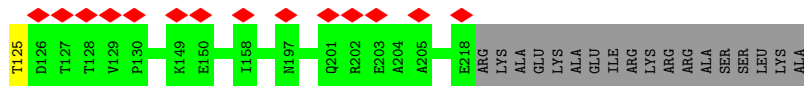
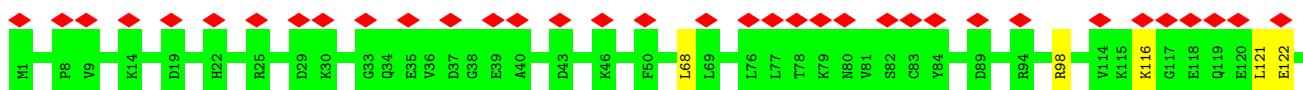
- Molecule 9: 40S ribosomal protein S6-A

Chain Gb: 94%



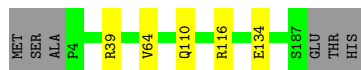
- Molecule 9: 40S ribosomal protein S6-A

Chain h: 21% 90% 8%



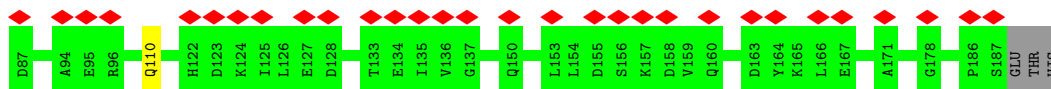
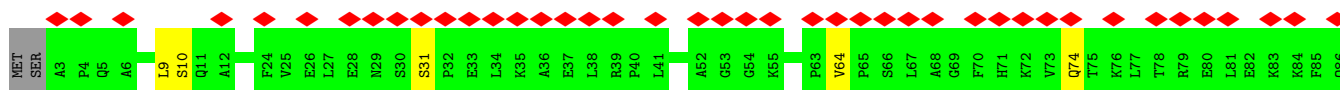
- Molecule 10: 40S ribosomal protein S7-A

Chain Hb: 94%



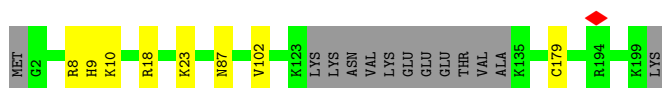
- Molecule 10: 40S ribosomal protein S7-A

Chain i: 38% 94%

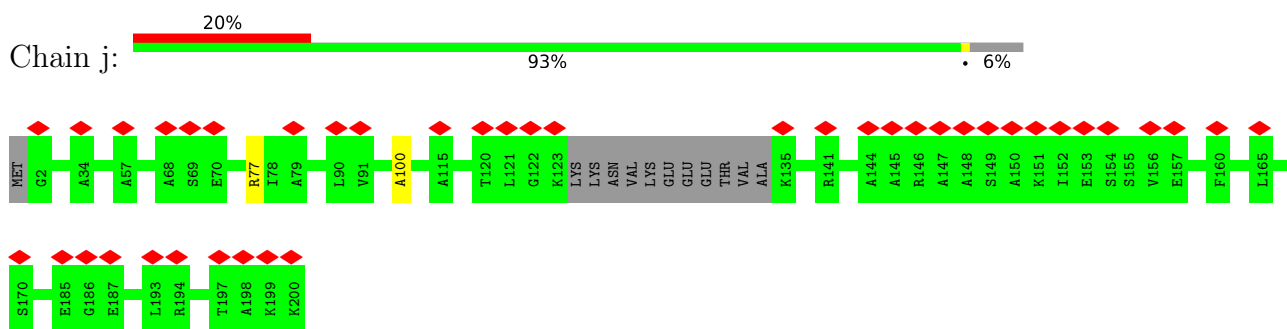


- Molecule 11: 40S ribosomal protein S8-A

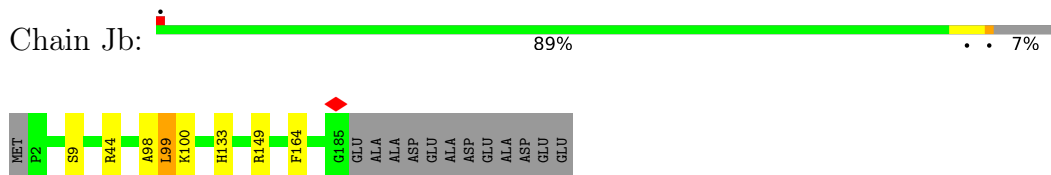
Chain Ib: 90% 6%



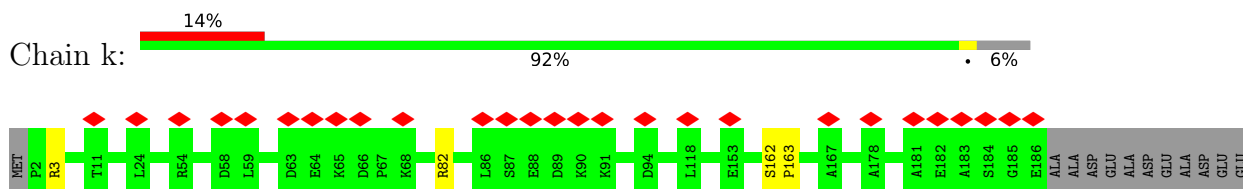
- Molecule 11: 40S ribosomal protein S8-A



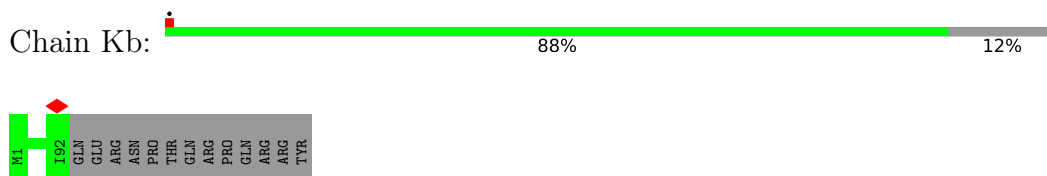
- Molecule 12: 40S ribosomal protein S9-A



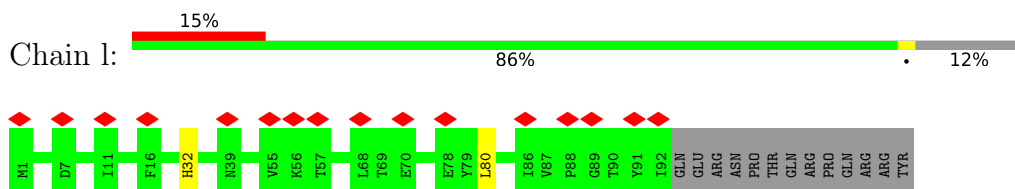
- Molecule 12: 40S ribosomal protein S9-A



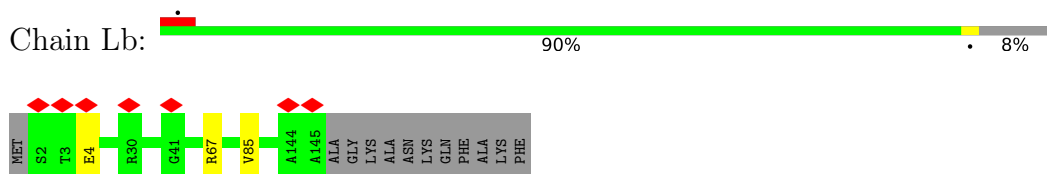
- Molecule 13: 40S ribosomal protein S10-A



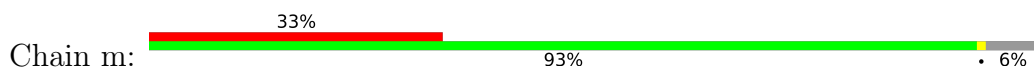
- Molecule 13: 40S ribosomal protein S10-A

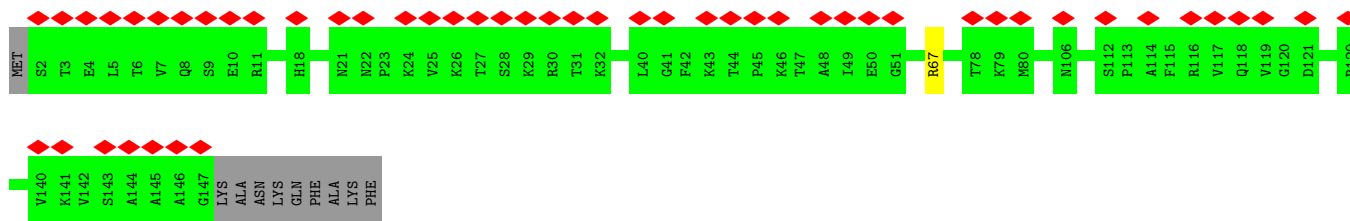


- Molecule 14: 40S ribosomal protein S11-A

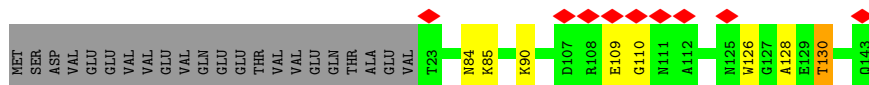
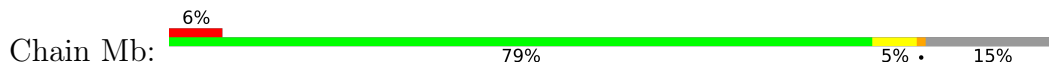


- Molecule 14: 40S ribosomal protein S11-A

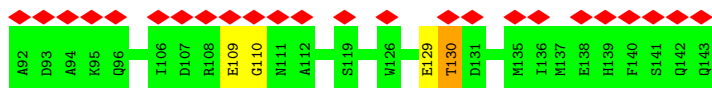
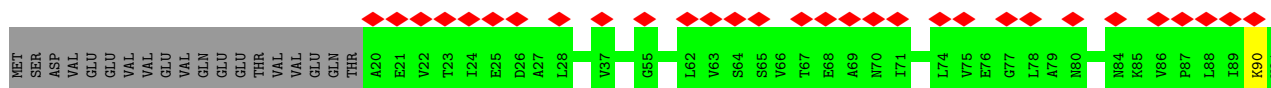
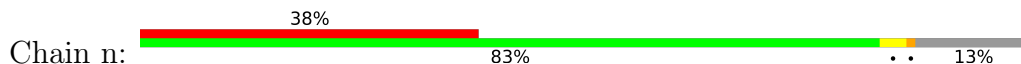




• Molecule 15: 40S ribosomal protein S12



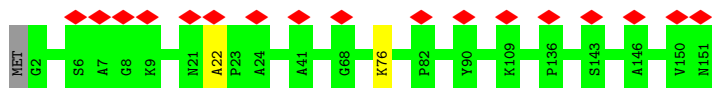
• Molecule 15: 40S ribosomal protein S12



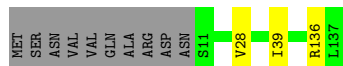
• Molecule 16: 40S ribosomal protein S13



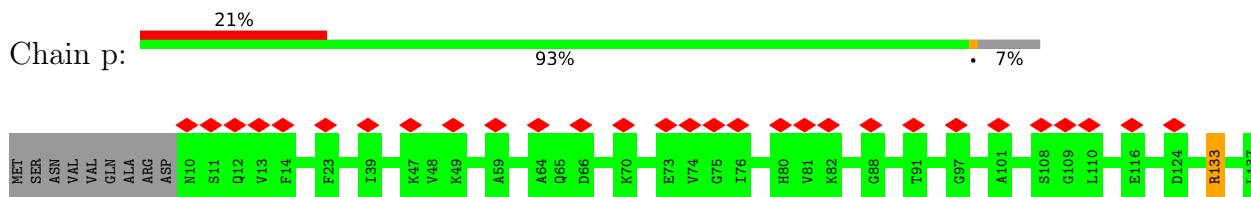
• Molecule 16: 40S ribosomal protein S13



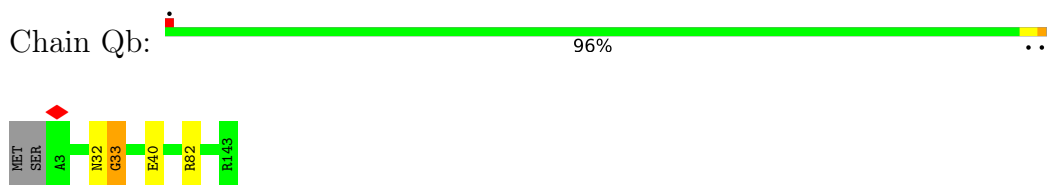
• Molecule 17: 40S ribosomal protein S14-A



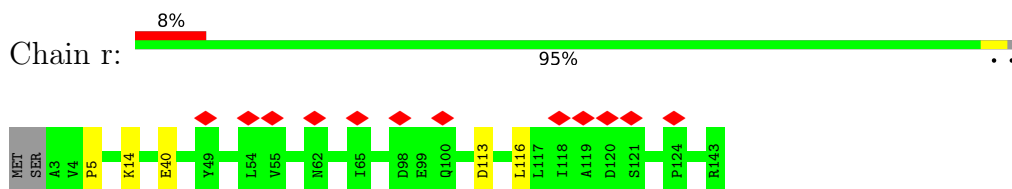
• Molecule 17: 40S ribosomal protein S14-A



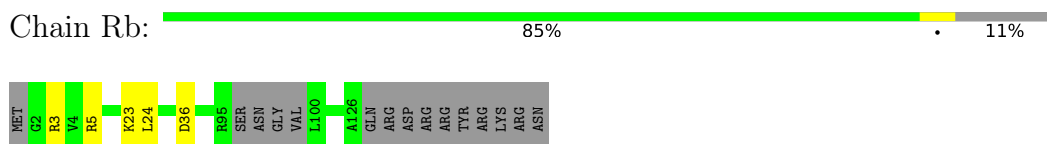
• Molecule 18: 40S ribosomal protein S16-A



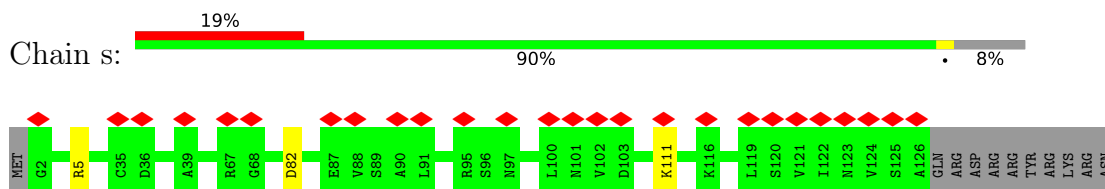
• Molecule 18: 40S ribosomal protein S16-A



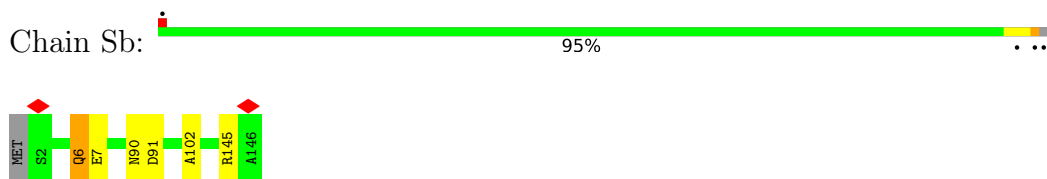
• Molecule 19: 40S ribosomal protein S17-B



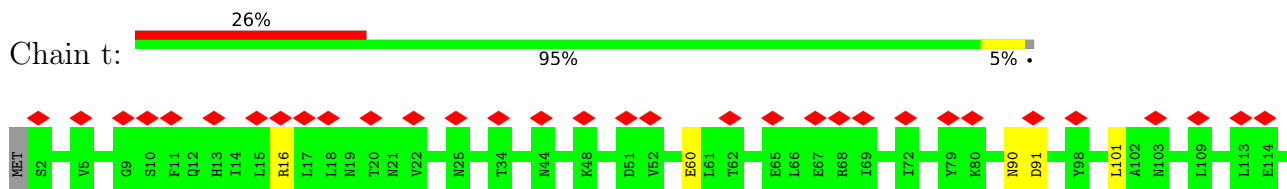
• Molecule 19: 40S ribosomal protein S17-B

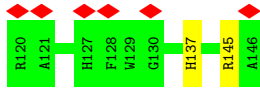


• Molecule 20: 40S ribosomal protein S18-A



• Molecule 20: 40S ribosomal protein S18-A





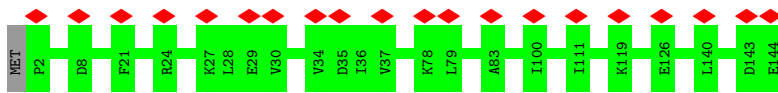
- Molecule 21: 40S ribosomal protein S19-A

Chain Tb: 96%



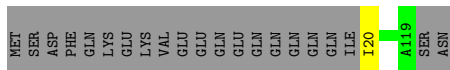
- Molecule 21: 40S ribosomal protein S19-A

Chain u: 14% 99%



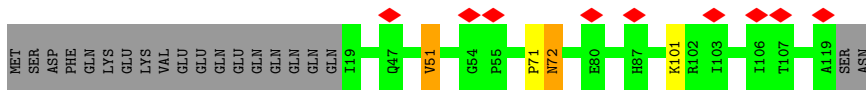
- Molecule 22: 40S ribosomal protein S20

Chain Ub: 82% 17%



- Molecule 22: 40S ribosomal protein S20

Chain v: 7% 80% 17%



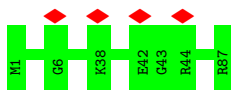
- Molecule 23: 40S ribosomal protein S21-A

Chain Vb: 99%



- Molecule 23: 40S ribosomal protein S21-A

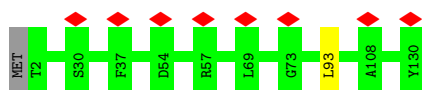
Chain w: 5% 100%



- Molecule 24: 40S ribosomal protein S22-A



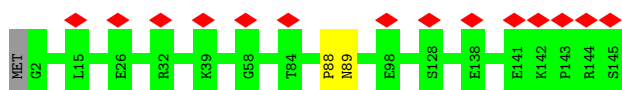
• Molecule 24: 40S ribosomal protein S22-A



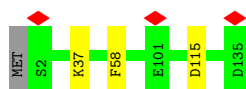
• Molecule 25: 40S ribosomal protein S23-A



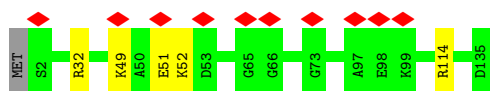
• Molecule 25: 40S ribosomal protein S23-A



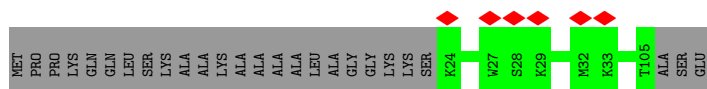
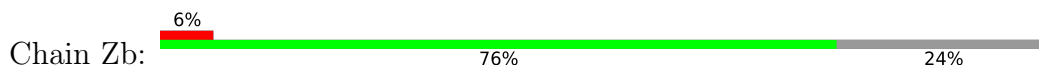
• Molecule 26: 40S ribosomal protein S24-A



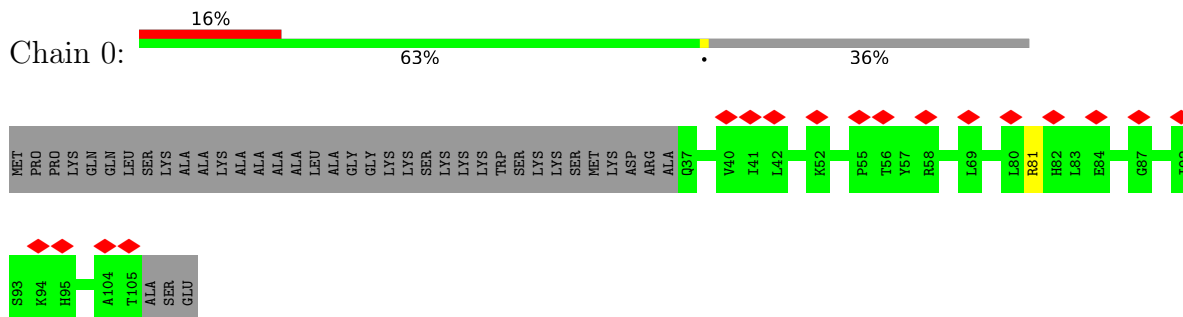
• Molecule 26: 40S ribosomal protein S24-A



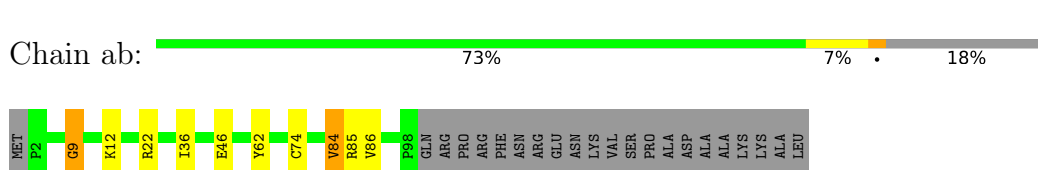
• Molecule 27: 40S ribosomal protein S25-A



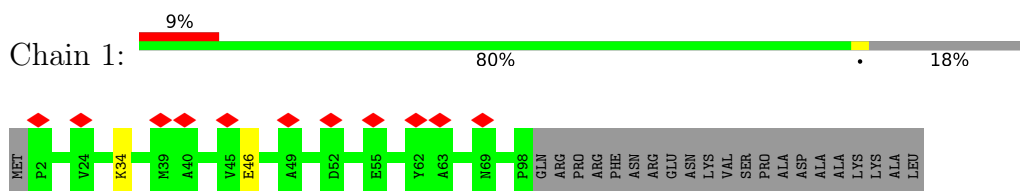
• Molecule 27: 40S ribosomal protein S25-A



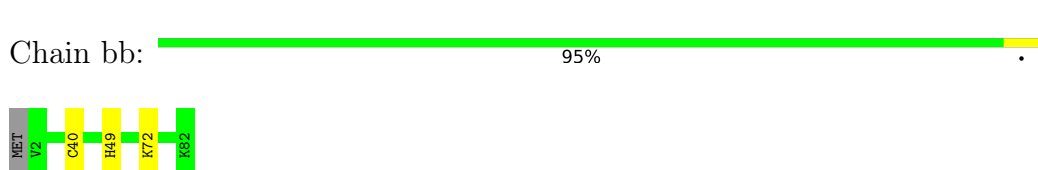
• Molecule 28: 40S ribosomal protein S26-A



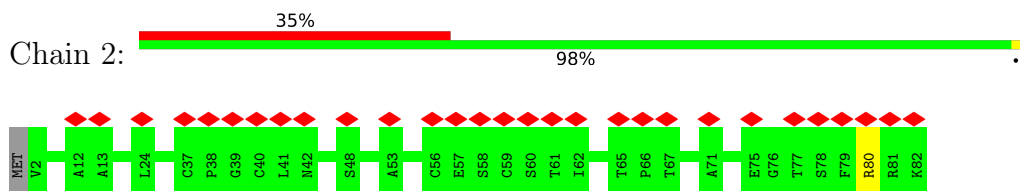
• Molecule 28: 40S ribosomal protein S26-A



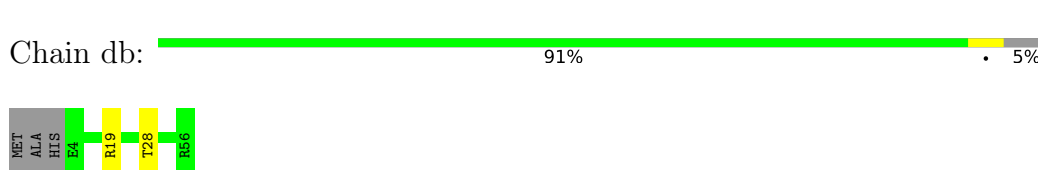
• Molecule 29: 40S ribosomal protein S27-A



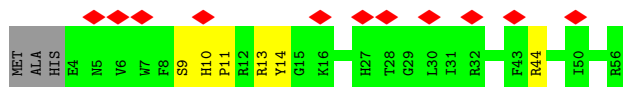
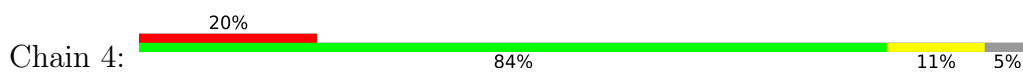
• Molecule 29: 40S ribosomal protein S27-A



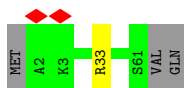
• Molecule 30: 40S ribosomal protein S29-A



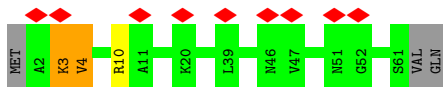
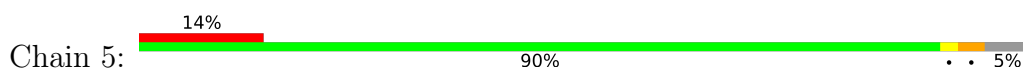
• Molecule 30: 40S ribosomal protein S29-A



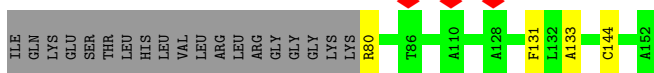
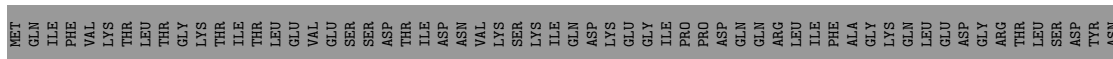
- Molecule 31: 40S ribosomal protein S30-A



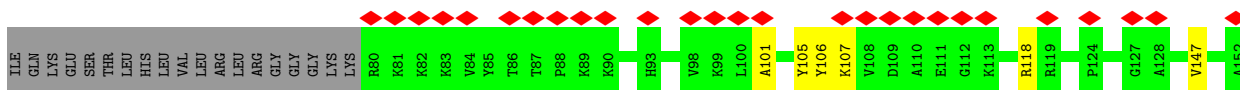
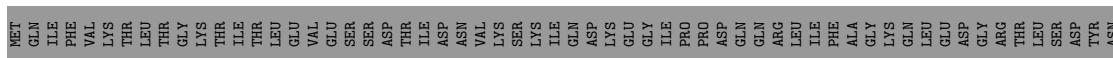
- Molecule 31: 40S ribosomal protein S30-A



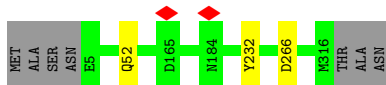
- Molecule 32: Ubiquitin-40S ribosomal protein S31



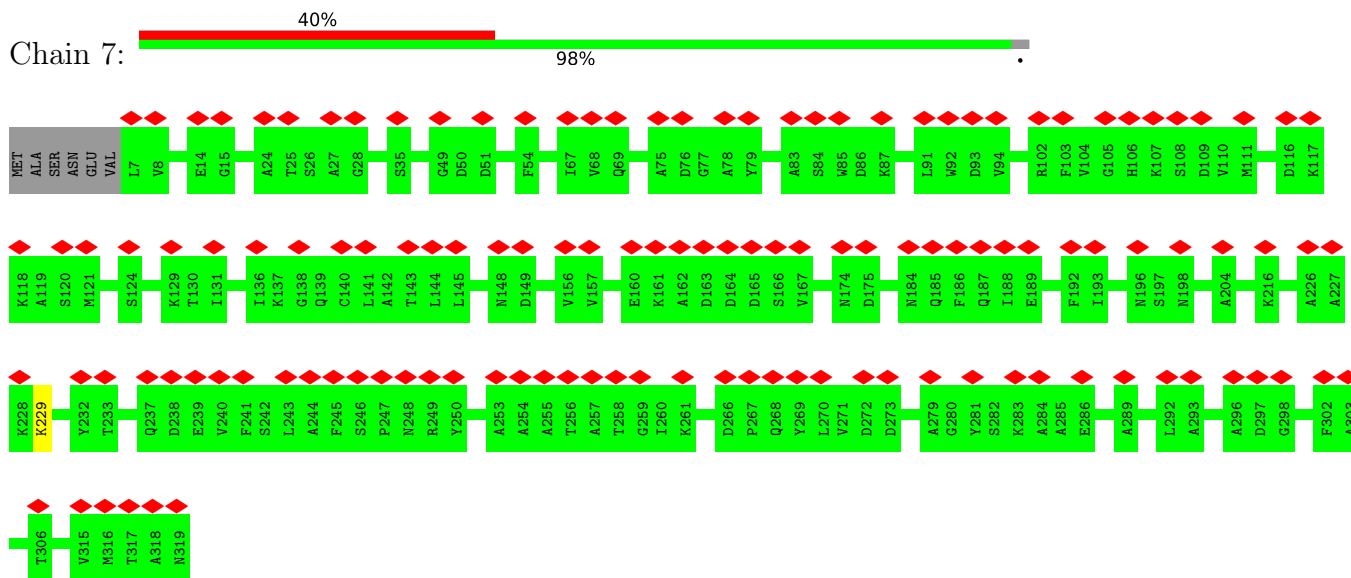
- Molecule 32: Ubiquitin-40S ribosomal protein S31



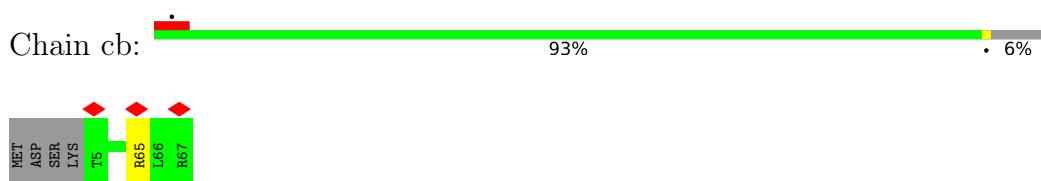
- Molecule 33: Guanine nucleotide-binding protein subunit beta-like protein



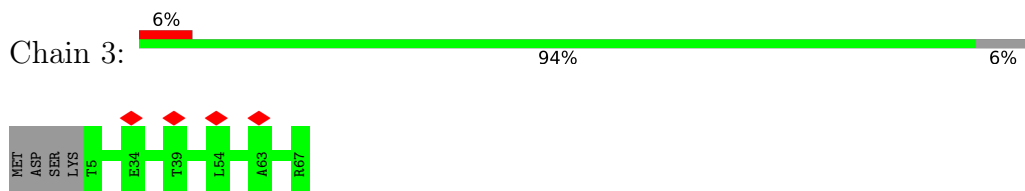
- Molecule 33: Guanine nucleotide-binding protein subunit beta-like protein



• Molecule 34: 40S ribosomal protein S28-B



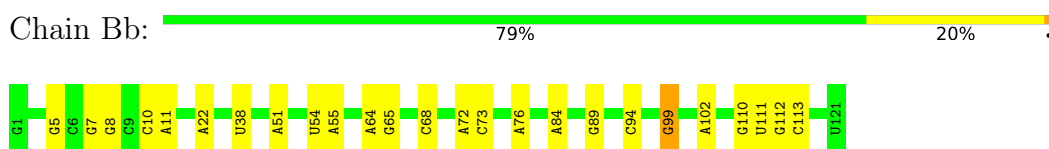
• Molecule 34: 40S ribosomal protein S28-B



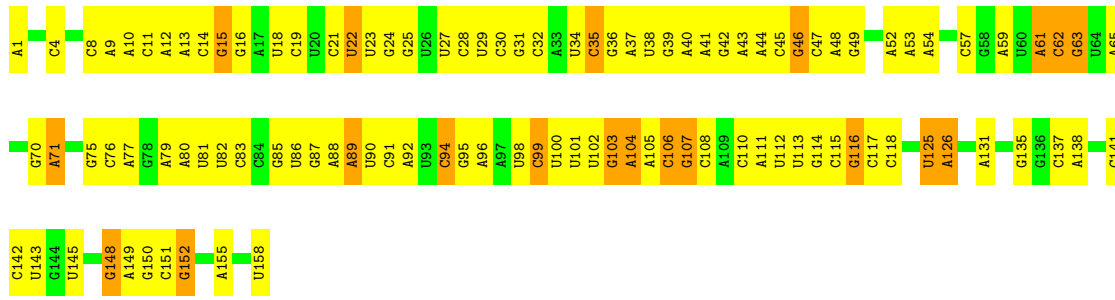
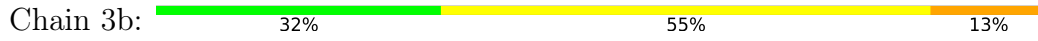
• Molecule 35: 5S rRNA



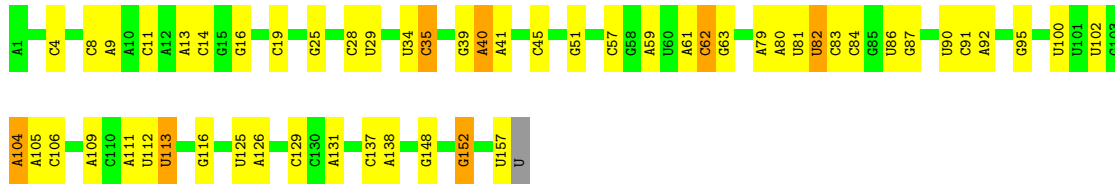
• Molecule 35: 5S rRNA



• Molecule 36: 5.8S rRNA



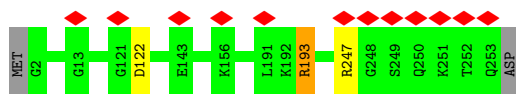
• Molecule 36: 5.8S rRNA



• Molecule 37: 60S ribosomal protein L2-A



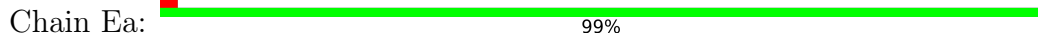
• Molecule 37: 60S ribosomal protein L2-A

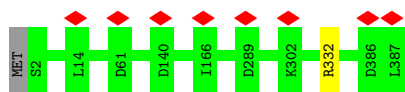


• Molecule 38: 60S ribosomal protein L3



• Molecule 38: 60S ribosomal protein L3

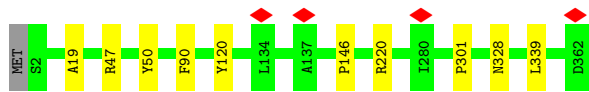




- Molecule 39: 60S ribosomal protein L4-A



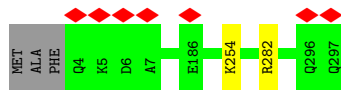
- Molecule 39: 60S ribosomal protein L4-A



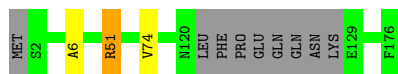
- Molecule 40: 60S ribosomal protein L5



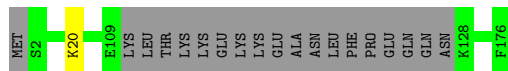
- Molecule 40: 60S ribosomal protein L5



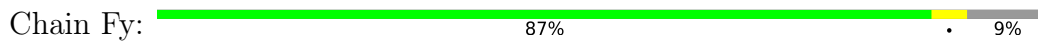
- Molecule 41: 60S ribosomal protein L6-A



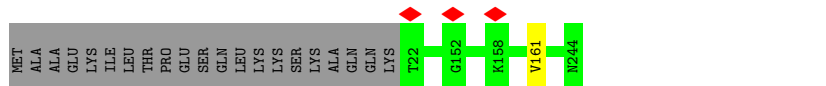
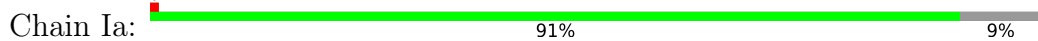
- Molecule 41: 60S ribosomal protein L6-A



- Molecule 42: 60S ribosomal protein L7-A



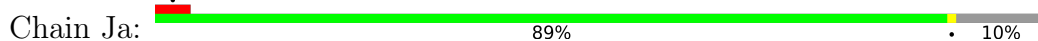
• Molecule 42: 60S ribosomal protein L7-A



• Molecule 43: 60S ribosomal protein L8-A



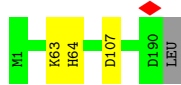
• Molecule 43: 60S ribosomal protein L8-A



• Molecule 44: 60S ribosomal protein L9-A



• Molecule 44: 60S ribosomal protein L9-A

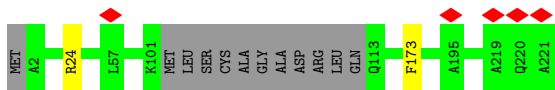


• Molecule 45: 60S ribosomal protein L10

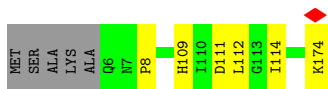




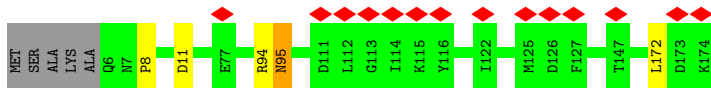
- Molecule 45: 60S ribosomal protein L10



- Molecule 46: 60S ribosomal protein L11-A



- Molecule 46: 60S ribosomal protein L11-A



- Molecule 47: 60S ribosomal protein L13-A



- Molecule 47: 60S ribosomal protein L13-A



- Molecule 48: 60S ribosomal protein L14-A



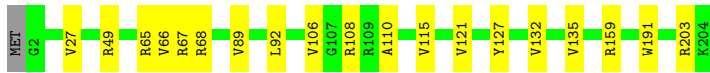
- Molecule 48: 60S ribosomal protein L14-A

Chain Oa:  99%



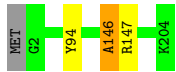
• Molecule 49: 60S ribosomal protein L15-A

Chain Ny:  90% 9%



• Molecule 49: 60S ribosomal protein L15-A

Chain Pa:  98%



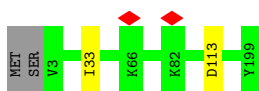
• Molecule 50: 60S ribosomal protein L16-A

Chain Oy:  95%



• Molecule 50: 60S ribosomal protein L16-A

Chain Qa:  98%



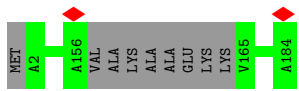
• Molecule 51: 60S ribosomal protein L17-A

Chain Py:  96%



• Molecule 51: 60S ribosomal protein L17-A

Chain A:  95% 5%



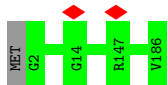
- Molecule 52: 60S ribosomal protein L18-A

Chain Qy:  97%



- Molecule 52: 60S ribosomal protein L18-A

Chain B:  99%



- Molecule 53: 60S ribosomal protein L19-A

Chain Ry:  96%



- Molecule 53: 60S ribosomal protein L19-A

Chain C:  11%



- Molecule 54: 60S ribosomal protein L20-A

Chain Sy:  97%



- Molecule 54: 60S ribosomal protein L20-A

Chain D:  100%

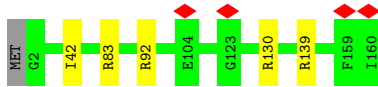


- Molecule 55: 60S ribosomal protein L21-A

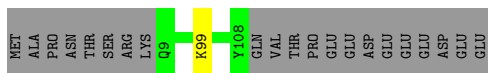
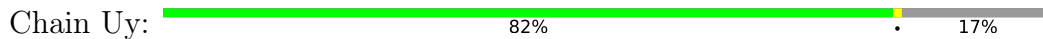
Chain Ty:  98%



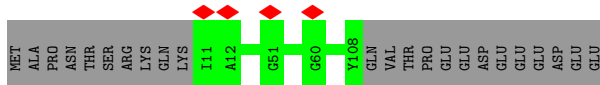
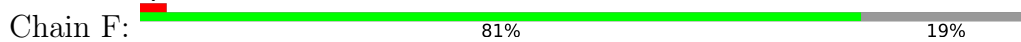
- Molecule 55: 60S ribosomal protein L21-A



- Molecule 56: 60S ribosomal protein L22-A



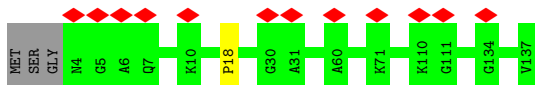
- Molecule 56: 60S ribosomal protein L22-A



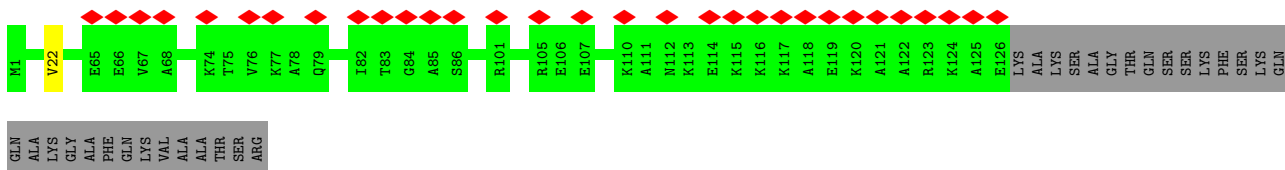
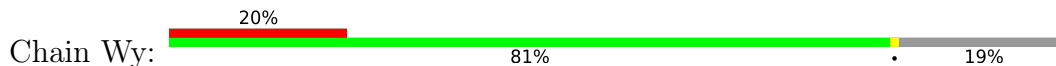
- Molecule 57: 60S ribosomal protein L23-A



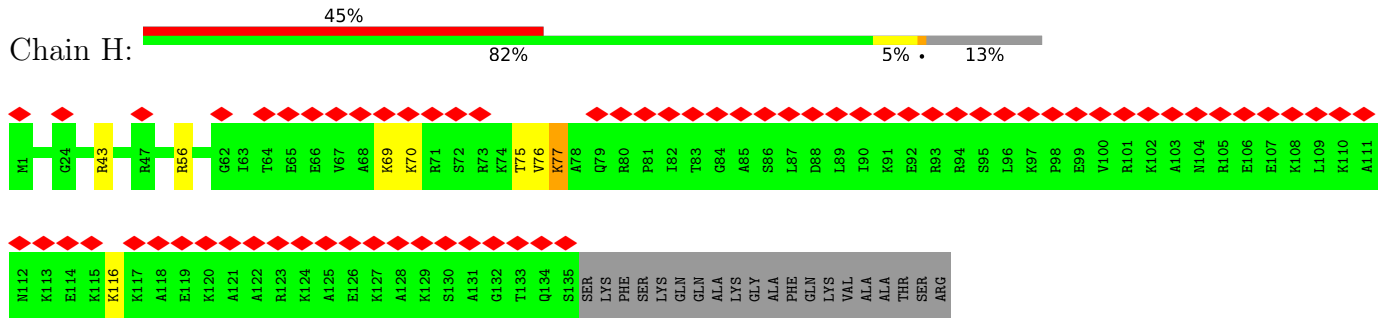
- Molecule 57: 60S ribosomal protein L23-A



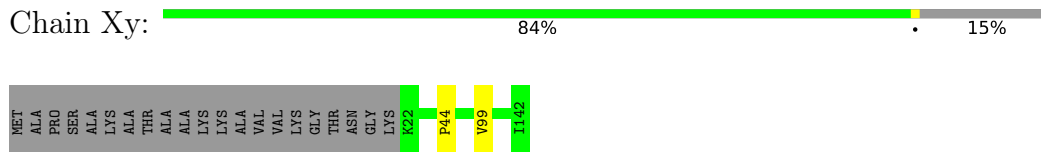
- Molecule 58: 60S ribosomal protein L24-A



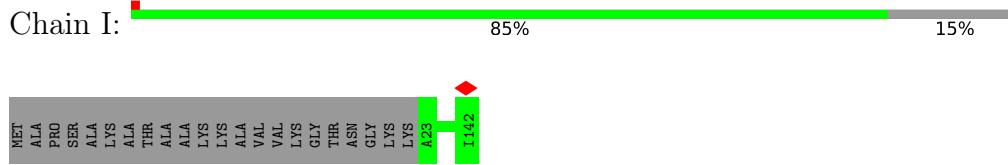
• Molecule 58: 60S ribosomal protein L24-A



• Molecule 59: 60S ribosomal protein L25



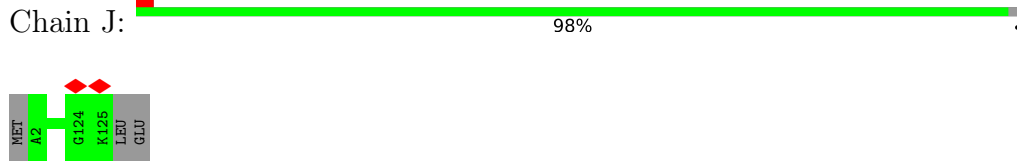
• Molecule 59: 60S ribosomal protein L25



• Molecule 60: 60S ribosomal protein L26-A



• Molecule 60: 60S ribosomal protein L26-A

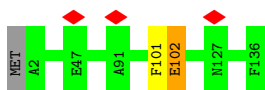


• Molecule 61: 60S ribosomal protein L27-A



• Molecule 61: 60S ribosomal protein L27-A

Chain K:  98%



- Molecule 62: 60S ribosomal protein L28

Chain ay:  93% 6%



- Molecule 62: 60S ribosomal protein L28

Chain L:  96%

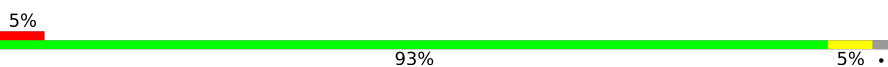


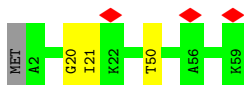
- Molecule 63: 60S ribosomal protein L29

Chain by:  92% 5%



- Molecule 63: 60S ribosomal protein L29

Chain M:  93% 5%



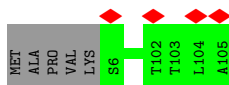
- Molecule 64: 60S ribosomal protein L30

Chain cy:  90% 9%



- Molecule 64: 60S ribosomal protein L30

Chain N:  95% 5%



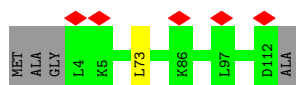
- Molecule 65: 60S ribosomal protein L31-A

Chain dy:  95%



- Molecule 65: 60S ribosomal protein L31-A

Chain O:  96%



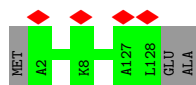
- Molecule 66: 60S ribosomal protein L32

Chain ey:  95%



- Molecule 66: 60S ribosomal protein L32

Chain P:  98%



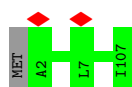
- Molecule 67: 60S ribosomal protein L33-A

Chain fy:  96%



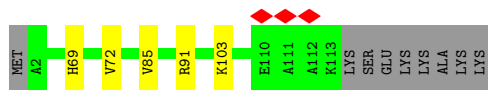
- Molecule 67: 60S ribosomal protein L33-A

Chain Q:  99%

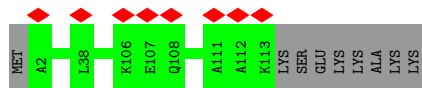
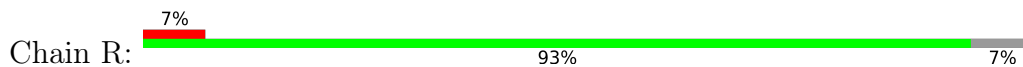


- Molecule 68: 60S ribosomal protein L34-A

Chain gy:  88% 7%



• Molecule 68: 60S ribosomal protein L34-A



• Molecule 69: 60S ribosomal protein L35-A



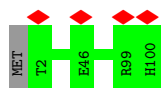
• Molecule 69: 60S ribosomal protein L35-A



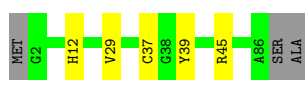
• Molecule 70: 60S ribosomal protein L36-A



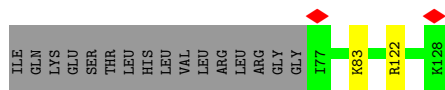
• Molecule 70: 60S ribosomal protein L36-A



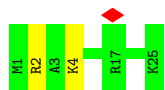
• Molecule 71: 60S ribosomal protein L37-A



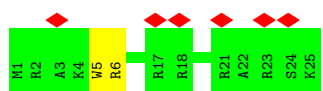
• Molecule 71: 60S ribosomal protein L37-A



• Molecule 75: 60S ribosomal protein L41-A



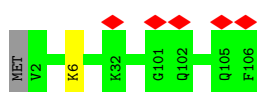
• Molecule 75: 60S ribosomal protein L41-A



• Molecule 76: 60S ribosomal protein L42-A



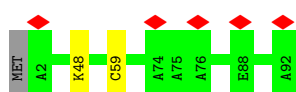
• Molecule 76: 60S ribosomal protein L42-A



• Molecule 77: 60S ribosomal protein L43-A

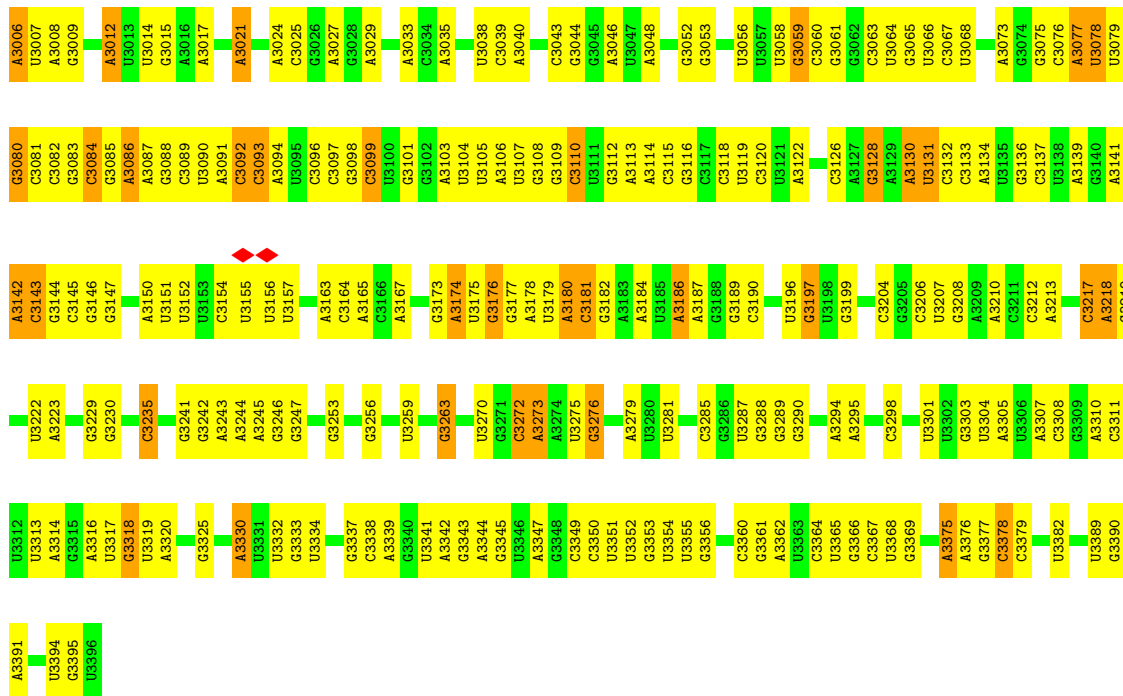


• Molecule 77: 60S ribosomal protein L43-A

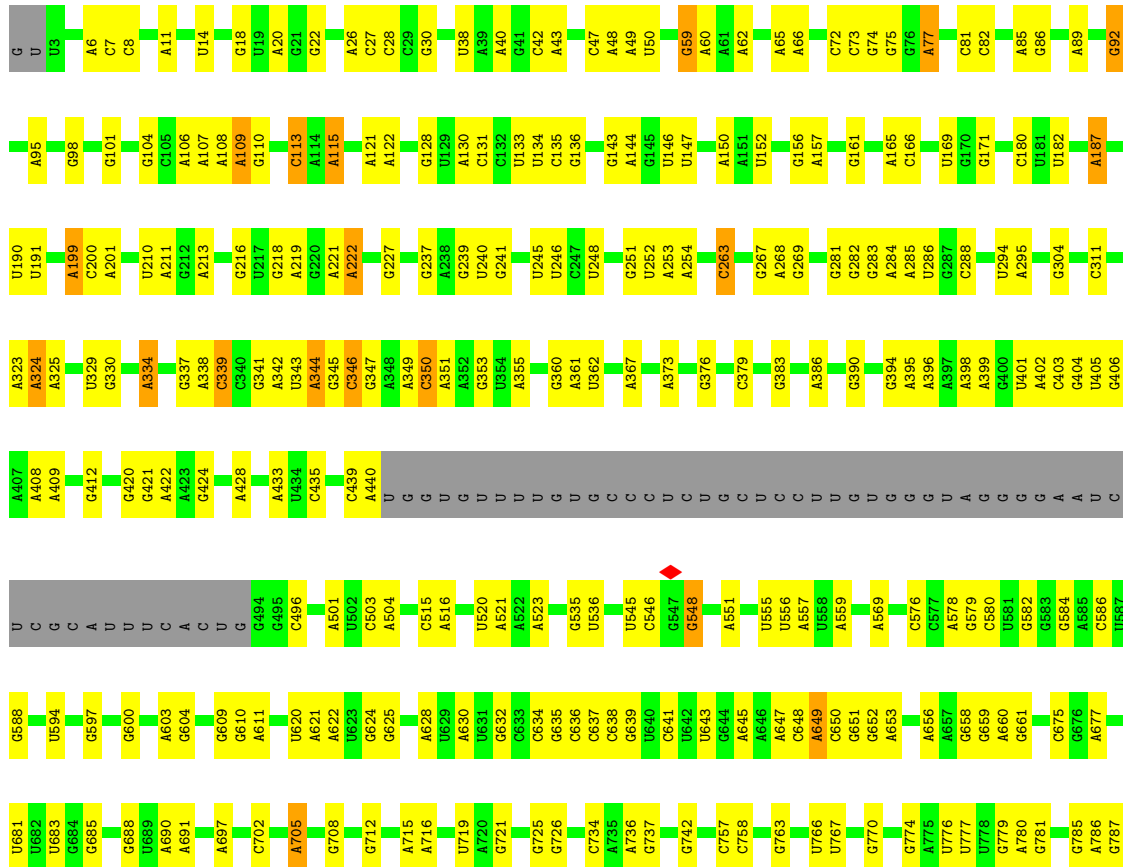


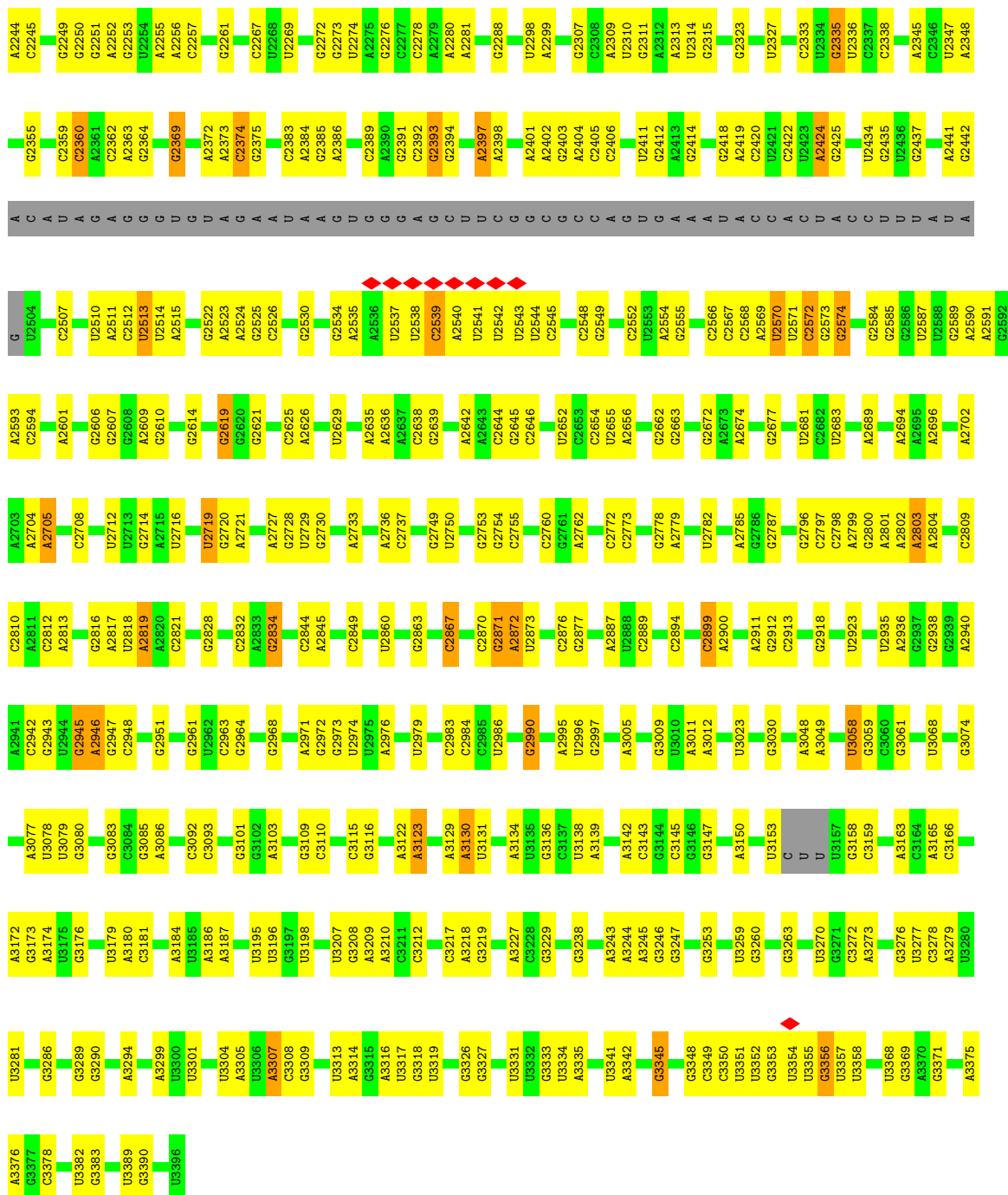
• Molecule 78: 25S rRNA

A2941	C2878	A2811	U9516	U	C3982	C2331	C9267	G2187	U2127	C
C2942	C2879	C2812	A2610	A	G2393	A2332	A2188	A2188	C2128	U
G2943	U2880	A2813	A2619	G	G2394	C2333	U2189	U2189	U2129	U
G2945	C2881	G2814	G2602	G	G2395	U2334	U2190	U2190	G2130	G
A2946	U2882	A2815	G2603	A	G2396	G2335	U2191	U2191	A2131	A
G2947	U2883	G2816	U2604	U	A2397	U2336	C2192	C2192	C2132	U
C2948	C2884	A2817	G2605	A	A2398	C2337	U2193	U2193	U2133	G
C2949	U2885	U2818	G2606	A	A2399	C2338	U2194	U2194	G2134	A
U2949	A2819	A2819	G2607	G	G2400	C2339	C2195	C2195	U2135	C
G2950	G2886	G2820	U2608	G	A2401	U2340	C2196	C2196	U2136	C
C2951	U2887	C2821	A2609	U	A2402	A2341	C2197	C2197	U2137	G
G2952	C2888	U2822	G2610	G	A2403	U2342	A2198	A2198	G2138	U
U2953	A2890	G2823	U2611	A	A2404	G2343	G2199	G2199	A2139	U
U2954	U2891	C2824	U2612	A	C2405	U2344	U2282	U2282	U2140	G
U2955	A2892	C2825	U2613	C	A2406	A2345	G2283	G2283	U2141	U
A2956	C2893	G2826	G2614	G	C2407	C2346	U2284	U2284	A2142	C
G2957	U2894	U2827	G2615	C	A2408	U2347	C2285	C2285	A2143	U
A2958	C2895	U2827	U2616	U	G2409	U2348	U2286	U2286	A2144	G
G2959	U2896	G2830	G2617	U	U2410	U2349	C2287	C2287	A2145	U
C2960	A2897	C2831	G2618	C	U2411	C2350	G2288	G2288	C2146	U
G2961	G2898	U2832	U2619	G	A2412	U2351	U2289	U2289	A2147	A
U2962	A2899	G2833	G2620	C	G2413	A2352	C2290	C2290	U2148	C
C2963	C2899	U2834	U2621	G	G2414	G2353	A2291	A2291	U2149	A
G2964	G2901	G2835	U2622	C	U2415	C2354	U2292	U2292	G2150	A
U2965	A2902	C2836	U2623	C	U2416	G2355	G2293	G2293	C2151	U
C2966	C2772	A2837	U2624	A	U2417	A2356	U2294	U2294	U2152	U
A2967	G2773	U2838	A2626	G	G2418	A2357	A2295	A2295	U2153	A
G2968	C2774	A2839	C2627	G	U2419	C2358	A2296	A2296	U2154	A
A2969	U2775	G2840	A2628	U	A2420	C2359	U2297	U2297	U2155	G
C2970	G2776	U2842	U2629	G	U2421	C2360	U2298	U2298	C2156	G
A2971	C2777	G2845	C2630	A	C2422	U2361	A2299	A2299	C2157	U
U2972	U2778	U2846	U2631	A	U2423	C2362	G2300	G2300	U2158	U
G2973	A2779	A2847	G2632	U	A2424	A2363	U2301	U2301	A2159	C
C2974	C2780	U2848	U2633	A	G2425	G2364	U2302	U2302	G2160	C
U2975	A2781	G2849	A2634	C	U2426	C2365	A2303	A2303	G2161	A
A2976	U2782	U2850	U2635	C	U2427	A2366	C2304	C2304	U2162	A
G2977	G2783	G2851	A2636	A	U2428	C2367	G2305	G2305	U2163	U
U2978	C2784	U2852	U2637	A	A2429	A2368	U2306	U2306	U2164	U
C2979	U2785	G2853	G2638	C	U2430	G2369	G2307	G2307	A2165	A
U2980	A2786	U2854	U2639	A	C2431	G2370	C2308	C2308	G2166	G
G2981	G2787	G2855	A2640	A	U2432	C2371	A2309	A2309	A2167	A
A2982	C2788	U2856	U2641	U	U2433	U2372	U2310	U2310	U2168	A
C2983	U2789	C2857	A2642	U	U2434	A2373	G2311	G2311	C2169	C
U2984	A2790	U2858	C2643	C	G2435	C2374	A2312	A2312	U2170	U
G2985	U2791	G2859	U2644	A	U2436	G2375	A2313	A2313	G2171	G
C2986	C2792	U2860	G2645	U	G2437	G2376	U2314	U2314	U2172	U
U2987	U2793	U2861	A2646	A	A2438	C2377	A2242	A2242	A2173	A
C2988	U2794	U2862	C2647	C	U2439	G2378	C2243	C2243	U2174	U
U2989	G2795	G2863	U2648	C	A2440	U2379	G2244	G2244	G2175	G
G2990	C2796	U2864	A2649	A	U2441	U2380	C2245	C2245	U2176	U
A2991	U2797	G2865	U2650	U	G2442	G2381	G2246	G2246	G2177	G
C2992	C2798	U2866	U2651	U	U2443	C2382	C2247	C2247	A2178	A
G2993	A2799	C2867	U2652	C	U2444	G2383	G2248	G2248	C2179	C
A2994	G2800	U2868	U2653	A	A2445	U2384	A2249	A2249	U2179	U
U2995	U2801	G2869	U2654	U	U2446	C2385	C2250	C2250	A2180	A
C2996	A2802	C2870	U2655	C	A2447	U2386	C2251	C2251	G2181	G
U2997	G2803	U2871	U2656	A	G2448	A2387	A2252	A2252	A2182	A
G2998	C2804	G2872	A2657	U	U2449	U2388	U2253	U2253	G2183	G
A2999	U2805	U2873	U2658	U	G2450	C2389	A2254	A2254	U2184	U
C3000	G2806	G2874	G2659	C	U2451	G2390	C2255	C2255	A2185	A
G3001	U2807	U2875	U2660	A	G2452	C2391	U2256	U2256	U2186	U
C3002	A2808	C2876	G2661	U	U					
G3003	G2809	G2877	U2511	G						
C3004	C2810	C2878	U2512							
A3005	G2879	G2879	U2513							
			U2514							
			A2515							



• Molecule 78: 25S rRNA





• Molecule 79: tRNA



• Molecule 79: tRNA



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	19459	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 ($e^-/\text{\AA}^2$)	2.5	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	FEI FALCON II (4k x 4k)	Depositor
Maximum map value	0.335	Depositor
Minimum map value	-0.031	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.010	Depositor
Recommended contour level	0.02	Depositor
Map size (\AA)	574.52, 574.52, 574.52	wwPDB
Map dimensions	530, 530, 530	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.084, 1.084, 1.084	Depositor

5 Model quality

5.1 Standard geometry

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	2b	1.84	750/42211 (1.8%)	1.64	1016/65773 (1.5%)
1	a	1.40	19/41891 (0.0%)	1.22	201/65273 (0.3%)
2	Ab	0.75	0/1644	0.66	0/2249
2	b	0.40	0/1623	0.64	1/2222 (0.0%)
3	Ba	0.85	2/1823 (0.1%)	0.76	0/2447
3	c	0.40	0/1748	0.60	0/2352
4	Pb	0.71	0/936	0.64	0/1259
4	q	0.36	0/959	0.63	0/1288
5	Cb	1.04	5/1656 (0.3%)	0.74	0/2251
5	d	0.45	0/1665	0.60	0/2263
6	Db	0.74	0/1754	0.65	0/2361
6	e	0.38	0/1759	0.58	0/2368
7	Eb	0.92	1/2097 (0.0%)	0.72	0/2823
7	f	0.40	0/2109	0.62	0/2839
8	Fb	0.76	0/1625	0.67	0/2197
8	g	0.37	0/1629	0.59	0/2202
9	Gb	0.67	0/1839	0.75	0/2460
9	h	0.39	0/1779	0.64	0/2379
10	Hb	0.76	0/1498	0.67	0/2019
10	i	0.37	0/1511	0.61	0/2036
11	Ib	0.96	2/1501 (0.1%)	0.77	0/2006
11	j	0.43	0/1514	0.63	0/2021
12	Jb	0.86	1/1504 (0.1%)	0.75	1/2016 (0.0%)
12	k	0.40	0/1519	0.60	0/2035
13	Kb	0.66	0/769	0.59	0/1039
13	l	0.38	0/757	0.57	0/1022
14	Lb	1.19	1/1185 (0.1%)	0.74	0/1598
14	m	0.44	0/1194	0.63	0/1610
15	Mb	0.40	0/883	0.70	0/1199
15	n	0.33	0/898	0.64	0/1220
16	Nb	1.08	1/1215 (0.1%)	0.75	0/1638
16	o	0.46	0/1215	0.62	0/1638
17	Ob	0.98	0/937	0.87	0/1261
17	p	0.43	0/960	0.71	1/1290 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
18	Qb	0.86	0/1125	0.69	0/1510
18	r	0.41	0/1125	0.64	0/1510
19	Rb	0.72	0/957	0.72	2/1283 (0.2%)
19	s	0.37	0/1010	0.60	0/1355
20	Sb	0.63	0/1211	0.68	0/1628
20	t	0.39	0/1211	0.64	0/1628
21	Tb	0.78	0/1130	0.69	0/1517
21	u	0.40	0/1130	0.58	0/1517
22	Ub	0.79	0/807	0.68	0/1091
22	v	0.41	0/815	0.60	0/1102
23	Vb	0.89	0/682	0.72	0/921
23	w	0.47	0/693	0.61	0/935
24	Wb	1.12	1/1038 (0.1%)	0.80	0/1395
24	x	0.49	0/1038	0.65	1/1395 (0.1%)
25	Xb	1.07	1/1139 (0.1%)	0.76	0/1518
25	y	0.49	0/1139	0.64	0/1518
26	Yb	0.77	0/1087	0.69	0/1449
26	z	0.42	0/1087	0.66	0/1449
27	0	0.36	0/566	0.61	0/761
27	Zb	0.60	0/661	0.67	0/888
28	1	0.50	0/782	0.70	0/1047
28	ab	1.16	2/782 (0.3%)	0.89	2/1047 (0.2%)
29	2	0.37	0/620	0.59	0/838
29	bb	0.82	1/620 (0.2%)	0.72	0/838
30	4	1.27	2/452 (0.4%)	1.14	2/600 (0.3%)
30	db	0.94	0/452	0.74	0/600
31	5	0.40	0/483	0.61	0/643
31	eb	0.79	0/480	0.72	1/639 (0.2%)
32	6	0.36	0/567	0.59	0/764
32	fb	0.53	0/567	0.69	0/764
33	7	0.34	0/2456	0.58	0/3343
33	gb	0.59	0/2436	0.66	0/3318
34	3	0.38	0/499	0.67	0/670
34	cb	0.83	0/493	0.77	0/663
35	4b	1.77	33/2883 (1.1%)	1.58	62/4491 (1.4%)
35	Bb	1.11	0/2883	1.26	17/4491 (0.4%)
36	3b	2.14	109/3746 (2.9%)	1.82	142/5832 (2.4%)
36	Ca	1.28	5/3724 (0.1%)	1.38	42/5798 (0.7%)
37	Ay	1.25	7/1933 (0.4%)	0.85	1/2598 (0.0%)
37	Da	0.72	0/1946	0.73	2/2614 (0.1%)
38	By	1.20	5/3146 (0.2%)	0.80	5/4228 (0.1%)
38	Ea	0.63	0/3146	0.68	0/4228
39	Cy	1.24	14/2800 (0.5%)	0.79	1/3790 (0.0%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
39	Fa	0.66	1/2800 (0.0%)	0.69	2/3790 (0.1%)
40	Dy	0.82	0/2400	0.69	2/3239 (0.1%)
40	Ga	0.52	0/2408	0.62	0/3248
41	Ey	0.88	1/1324 (0.1%)	0.74	1/1782 (0.1%)
41	Ha	0.57	0/1269	0.62	0/1705
42	Fy	1.19	4/1821 (0.2%)	0.78	2/2451 (0.1%)
42	Ia	0.67	0/1828	0.66	0/2461
43	Gy	0.95	1/1836 (0.1%)	0.74	0/2481
43	Ja	0.53	0/1795	0.58	0/2429
44	Hy	0.90	0/1529	0.71	0/2060
44	Ka	0.58	0/1531	0.62	0/2062
45	Iy	0.97	2/1801 (0.1%)	0.73	0/2416
45	La	0.58	0/1732	0.62	0/2323
46	Jy	0.79	0/1371	0.68	0/1838
46	Ma	0.42	0/1374	0.68	0/1842
47	Ly	1.16	5/1568 (0.3%)	0.79	3/2106 (0.1%)
47	Na	0.60	0/1573	0.71	0/2113
48	My	0.87	0/1068	0.75	0/1438
48	Oa	0.54	0/1074	0.67	0/1446
49	Ny	1.48	13/1757 (0.7%)	0.90	6/2354 (0.3%)
49	Pa	0.80	2/1757 (0.1%)	0.76	0/2354
50	Oy	1.30	6/1585 (0.4%)	0.75	0/2128
50	Qa	0.72	0/1585	0.66	1/2128 (0.0%)
51	A	0.69	0/1400	0.65	0/1882
51	Py	1.26	5/1439 (0.3%)	0.84	0/1938
52	B	0.58	0/1465	0.71	0/1965
52	Qy	1.13	1/1465 (0.1%)	0.77	2/1965 (0.1%)
53	C	0.59	0/1499	0.66	2/1998 (0.1%)
53	Ry	1.06	2/1532 (0.1%)	0.77	1/2043 (0.0%)
54	D	0.66	0/1481	0.66	0/1990
54	Sy	1.14	3/1473 (0.2%)	0.73	0/1980
55	E	0.68	0/1300	0.70	2/1743 (0.1%)
55	Ty	1.16	1/1300 (0.1%)	0.75	1/1743 (0.1%)
56	F	0.51	0/794	0.58	0/1076
56	Uy	0.75	0/812	0.68	0/1099
57	G	0.61	0/1008	0.65	0/1356
57	Vy	1.21	4/1018 (0.4%)	0.83	3/1369 (0.2%)
58	H	2.21	1/1103 (0.1%)	0.76	3/1458 (0.2%)
58	Wy	0.89	1/863 (0.1%)	0.65	0/1169
59	I	0.65	0/974	0.66	0/1314
59	Xy	1.10	1/979 (0.1%)	0.72	0/1321
60	J	0.56	0/987	0.69	0/1318
60	Yy	1.00	0/995	0.81	0/1329

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
61	K	0.57	0/1118	0.61	0/1497
61	Zy	1.03	0/1118	0.67	0/1497
62	L	0.68	0/1204	0.71	0/1612
62	ay	1.22	2/1204 (0.2%)	0.82	1/1612 (0.1%)
63	M	0.53	0/473	0.73	0/629
63	by	0.96	0/473	0.69	0/629
64	N	0.62	0/775	0.61	0/1040
64	cy	1.10	1/745 (0.1%)	0.74	0/1001
65	O	0.64	0/897	0.66	0/1205
65	dy	1.11	0/890	0.79	1/1196 (0.1%)
66	P	0.65	0/1041	0.65	0/1394
66	ey	1.14	3/1038 (0.3%)	0.74	0/1390
67	Q	0.76	0/868	0.69	0/1168
67	fy	1.36	3/868 (0.3%)	0.80	0/1168
68	R	0.67	0/890	0.72	0/1189
68	gy	1.23	2/890 (0.2%)	0.82	1/1189 (0.1%)
69	S	0.53	0/974	0.65	0/1297
69	hb	1.03	1/978 (0.1%)	0.71	0/1301
70	T	0.54	0/777	0.66	0/1033
70	ib	0.95	2/772 (0.3%)	0.71	0/1026
71	U	0.82	0/665	0.82	2/882 (0.2%)
71	jb	1.39	3/685 (0.4%)	0.89	1/908 (0.1%)
72	V	0.46	0/614	0.65	0/822
72	kb	0.76	0/618	0.66	0/826
73	W	0.73	0/443	0.75	1/588 (0.2%)
73	lb	1.30	0/443	0.82	0/588
74	X	0.52	0/423	0.65	1/562 (0.2%)
74	mb	0.96	1/423 (0.2%)	0.73	0/562
75	Y	0.46	0/234	0.75	0/300
75	nb	0.93	0/230	0.98	2/296 (0.7%)
76	Z	0.63	0/860	0.70	0/1136
76	ob	1.01	0/836	0.79	1/1104 (0.1%)
77	aa	0.75	0/701	0.67	0/934
77	pb	1.38	5/701 (0.7%)	0.83	4/934 (0.4%)
78	1b	2.21	2892/76214 (3.8%)	1.81	2772/118821 (2.3%)
78	Aa	1.29	109/74873 (0.1%)	1.38	699/116727 (0.6%)
79	6b	1.50	9/1804 (0.5%)	1.54	35/2809 (1.2%)
79	8	0.57	0/1804	1.04	1/2809 (0.0%)
80	ba	0.37	0/1067	0.61	0/1439
All	All	1.43	4049/431658 (0.9%)	1.29	5053/634238 (0.8%)

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	Ab	0	1
2	b	0	5
3	Ba	0	6
4	Pb	0	1
4	q	0	3
5	Cb	0	3
7	Eb	0	1
7	f	0	1
8	g	0	2
9	h	0	3
10	Hb	0	2
10	i	0	4
11	Ib	0	2
11	j	0	1
12	Jb	0	4
13	l	0	1
14	Lb	0	1
15	Mb	0	4
15	n	0	3
16	o	0	1
17	Ob	0	2
17	p	0	1
18	Qb	0	3
18	r	0	2
20	Sb	0	2
20	t	0	3
21	Tb	0	2
22	Ub	0	1
22	v	0	3
24	Wb	0	2
25	Xb	0	3
26	z	0	2
28	1	0	1
28	ab	0	3
30	4	0	3
31	5	0	2
32	6	0	4
32	fb	0	3
33	gb	0	1
38	By	0	3
39	Fa	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
42	Fy	0	1
43	Gy	0	3
44	Hy	0	2
45	La	0	1
46	Jy	0	2
46	Ma	0	4
47	Ly	0	1
47	Na	0	5
49	Ny	0	2
49	Pa	0	1
50	Oy	0	2
50	Qa	0	1
52	Qy	0	1
53	Ry	0	1
54	Sy	0	1
55	E	0	1
55	Ty	0	1
57	G	0	1
57	Vy	0	1
58	H	0	4
60	Yy	0	1
61	K	0	1
62	L	0	2
62	ay	0	3
63	M	0	2
63	by	0	3
64	cy	0	1
69	hb	0	1
All	All	0	146

The worst 5 of 4049 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	a	1597	A	N3-C4	114.04	2.03	1.34
1	a	1597	A	C6-N1	113.96	2.15	1.35
1	a	1597	A	N1-C2	87.38	2.12	1.34
1	a	1597	A	C2-N3	73.39	1.99	1.33
1	a	1597	A	C5-C4	72.97	1.89	1.38

The worst 5 of 5053 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	a	1597	A	N1-C2-N3	-60.58	99.01	129.30
1	a	1597	A	C2-N3-C4	50.02	135.61	110.60
78	1b	846	A	C8-N9-C4	-33.16	92.54	105.80
78	1b	846	A	N7-C8-N9	27.18	127.39	113.80
1	a	1597	A	C4-C5-N7	-23.61	98.89	110.70

There are no chirality outliers.

5 of 146 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	Ab	42	PRO	Peptide
3	Ba	147	ALA	Peptide
3	Ba	151	LYS	Peptide
3	Ba	44	GLY	Peptide
3	Ba	81	PHE	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	
2	Ab	204/252 (81%)	170 (83%)	33 (16%)	1 (0%)	29	67
2	b	204/252 (81%)	165 (81%)	38 (19%)	1 (0%)	29	67
3	Ba	222/255 (87%)	182 (82%)	36 (16%)	4 (2%)	8	41
3	c	214/255 (84%)	192 (90%)	21 (10%)	1 (0%)	29	67
4	Pb	115/142 (81%)	101 (88%)	14 (12%)	0	100	100
4	q	117/142 (82%)	97 (83%)	16 (14%)	4 (3%)	3	30
5	Cb	214/254 (84%)	187 (87%)	26 (12%)	1 (0%)	29	67

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	d	215/254 (85%)	183 (85%)	32 (15%)	0	100	100
6	Db	220/240 (92%)	199 (90%)	21 (10%)	0	100	100
6	e	221/240 (92%)	188 (85%)	32 (14%)	1 (0%)	29	67
7	Eb	256/261 (98%)	211 (82%)	44 (17%)	1 (0%)	34	71
7	f	258/261 (99%)	224 (87%)	33 (13%)	1 (0%)	34	71
8	Fb	204/225 (91%)	176 (86%)	27 (13%)	1 (0%)	29	67
8	g	204/225 (91%)	175 (86%)	28 (14%)	1 (0%)	29	67
9	Gb	226/236 (96%)	194 (86%)	28 (12%)	4 (2%)	8	41
9	h	216/236 (92%)	196 (91%)	19 (9%)	1 (0%)	29	67
10	Hb	182/190 (96%)	156 (86%)	25 (14%)	1 (0%)	29	67
10	i	183/190 (96%)	156 (85%)	25 (14%)	2 (1%)	14	51
11	Ib	183/200 (92%)	159 (87%)	22 (12%)	2 (1%)	14	51
11	j	184/200 (92%)	168 (91%)	16 (9%)	0	100	100
12	Jb	182/197 (92%)	155 (85%)	25 (14%)	2 (1%)	14	51
12	k	183/197 (93%)	162 (88%)	19 (10%)	2 (1%)	14	51
13	Kb	90/105 (86%)	67 (74%)	23 (26%)	0	100	100
13	l	90/105 (86%)	74 (82%)	15 (17%)	1 (1%)	14	51
14	Lb	142/156 (91%)	113 (80%)	29 (20%)	0	100	100
14	m	144/156 (92%)	124 (86%)	20 (14%)	0	100	100
15	Mb	119/143 (83%)	74 (62%)	40 (34%)	5 (4%)	3	25
15	n	122/143 (85%)	79 (65%)	40 (33%)	3 (2%)	5	35
16	Nb	148/151 (98%)	121 (82%)	26 (18%)	1 (1%)	22	61
16	o	148/151 (98%)	128 (86%)	20 (14%)	0	100	100
17	Ob	125/137 (91%)	104 (83%)	21 (17%)	0	100	100
17	p	126/137 (92%)	105 (83%)	21 (17%)	0	100	100
18	Qb	139/143 (97%)	117 (84%)	21 (15%)	1 (1%)	22	61
18	r	139/143 (97%)	121 (87%)	15 (11%)	3 (2%)	6	37
19	Rb	117/136 (86%)	104 (89%)	11 (9%)	2 (2%)	9	43
19	s	123/136 (90%)	110 (89%)	12 (10%)	1 (1%)	19	58
20	Sb	143/146 (98%)	113 (79%)	26 (18%)	4 (3%)	5	33
20	t	143/146 (98%)	124 (87%)	17 (12%)	2 (1%)	11	46

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
21	Tb	141/144 (98%)	114 (81%)	25 (18%)	2 (1%)	11	46
21	u	141/144 (98%)	132 (94%)	9 (6%)	0	100	100
22	Ub	98/121 (81%)	86 (88%)	12 (12%)	0	100	100
22	v	99/121 (82%)	87 (88%)	10 (10%)	2 (2%)	7	40
23	Vb	85/87 (98%)	65 (76%)	19 (22%)	1 (1%)	13	49
23	w	85/87 (98%)	71 (84%)	14 (16%)	0	100	100
24	Wb	127/130 (98%)	103 (81%)	24 (19%)	0	100	100
24	x	127/130 (98%)	115 (91%)	12 (9%)	0	100	100
25	Xb	142/145 (98%)	110 (78%)	30 (21%)	2 (1%)	11	46
25	y	142/145 (98%)	123 (87%)	17 (12%)	2 (1%)	11	46
26	Yb	132/135 (98%)	119 (90%)	12 (9%)	1 (1%)	19	58
26	z	132/135 (98%)	109 (83%)	21 (16%)	2 (2%)	10	45
27	0	67/108 (62%)	61 (91%)	6 (9%)	0	100	100
27	Zb	80/108 (74%)	63 (79%)	17 (21%)	0	100	100
28	1	95/119 (80%)	71 (75%)	23 (24%)	1 (1%)	14	51
28	ab	95/119 (80%)	64 (67%)	26 (27%)	5 (5%)	2	21
29	2	79/82 (96%)	64 (81%)	15 (19%)	0	100	100
29	bb	79/82 (96%)	63 (80%)	16 (20%)	0	100	100
30	4	51/56 (91%)	38 (74%)	13 (26%)	0	100	100
30	db	51/56 (91%)	42 (82%)	9 (18%)	0	100	100
31	5	58/63 (92%)	43 (74%)	14 (24%)	1 (2%)	9	43
31	eb	58/63 (92%)	45 (78%)	13 (22%)	0	100	100
32	6	71/152 (47%)	41 (58%)	29 (41%)	1 (1%)	11	46
32	fb	71/152 (47%)	43 (61%)	28 (39%)	0	100	100
33	7	311/319 (98%)	281 (90%)	30 (10%)	0	100	100
33	gb	310/319 (97%)	264 (85%)	45 (14%)	1 (0%)	41	75
34	3	61/67 (91%)	54 (88%)	7 (12%)	0	100	100
34	cb	61/67 (91%)	47 (77%)	14 (23%)	0	100	100
37	Ay	249/254 (98%)	199 (80%)	48 (19%)	2 (1%)	19	58
37	Da	250/254 (98%)	205 (82%)	45 (18%)	0	100	100
38	By	384/387 (99%)	314 (82%)	68 (18%)	2 (0%)	29	67

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
38	Ea	384/387 (99%)	342 (89%)	42 (11%)	0	100	100
39	Cy	359/362 (99%)	292 (81%)	65 (18%)	2 (1%)	25	63
39	Fa	359/362 (99%)	297 (83%)	58 (16%)	4 (1%)	14	51
40	Dy	292/297 (98%)	251 (86%)	40 (14%)	1 (0%)	41	75
40	Ga	292/297 (98%)	265 (91%)	27 (9%)	0	100	100
41	Ey	163/176 (93%)	138 (85%)	24 (15%)	1 (1%)	25	63
41	Ha	153/176 (87%)	132 (86%)	21 (14%)	0	100	100
42	Fy	220/244 (90%)	178 (81%)	40 (18%)	2 (1%)	17	55
42	Ia	221/244 (91%)	198 (90%)	23 (10%)	0	100	100
43	Gy	231/256 (90%)	196 (85%)	35 (15%)	0	100	100
43	Ja	229/256 (90%)	187 (82%)	42 (18%)	0	100	100
44	Hy	189/191 (99%)	164 (87%)	25 (13%)	0	100	100
44	Ka	188/191 (98%)	176 (94%)	12 (6%)	0	100	100
45	Iy	216/221 (98%)	187 (87%)	29 (13%)	0	100	100
45	La	205/221 (93%)	178 (87%)	27 (13%)	0	100	100
46	Jy	167/174 (96%)	129 (77%)	35 (21%)	3 (2%)	8	41
46	Ma	167/174 (96%)	141 (84%)	24 (14%)	2 (1%)	13	49
47	Ly	191/199 (96%)	148 (78%)	39 (20%)	4 (2%)	7	39
47	Na	192/199 (96%)	149 (78%)	38 (20%)	5 (3%)	5	34
48	My	134/138 (97%)	114 (85%)	20 (15%)	0	100	100
48	Oa	135/138 (98%)	123 (91%)	12 (9%)	0	100	100
49	Ny	201/204 (98%)	160 (80%)	41 (20%)	0	100	100
49	Pa	201/204 (98%)	182 (90%)	17 (8%)	2 (1%)	15	53
50	Oy	195/199 (98%)	161 (83%)	32 (16%)	2 (1%)	15	53
50	Qa	195/199 (98%)	183 (94%)	12 (6%)	0	100	100
51	A	171/184 (93%)	160 (94%)	11 (6%)	0	100	100
51	Py	181/184 (98%)	149 (82%)	32 (18%)	0	100	100
52	B	183/186 (98%)	158 (86%)	25 (14%)	0	100	100
52	Qy	183/186 (98%)	152 (83%)	31 (17%)	0	100	100
53	C	181/189 (96%)	171 (94%)	10 (6%)	0	100	100
53	Ry	186/189 (98%)	168 (90%)	16 (9%)	2 (1%)	14	51

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
54	D	170/172 (99%)	157 (92%)	13 (8%)	0	100	100
54	Sy	169/172 (98%)	150 (89%)	19 (11%)	0	100	100
55	E	157/160 (98%)	137 (87%)	20 (13%)	0	100	100
55	Ty	157/160 (98%)	132 (84%)	25 (16%)	0	100	100
56	F	96/121 (79%)	91 (95%)	5 (5%)	0	100	100
56	Uy	98/121 (81%)	87 (89%)	11 (11%)	0	100	100
57	G	132/137 (96%)	121 (92%)	11 (8%)	0	100	100
57	Vy	134/137 (98%)	115 (86%)	19 (14%)	0	100	100
58	H	133/155 (86%)	109 (82%)	24 (18%)	0	100	100
58	Wy	124/155 (80%)	97 (78%)	27 (22%)	0	100	100
59	I	118/142 (83%)	102 (86%)	16 (14%)	0	100	100
59	Xy	119/142 (84%)	98 (82%)	20 (17%)	1 (1%)	19	58
60	J	122/127 (96%)	113 (93%)	9 (7%)	0	100	100
60	Yy	123/127 (97%)	101 (82%)	22 (18%)	0	100	100
61	K	133/136 (98%)	115 (86%)	16 (12%)	2 (2%)	10	45
61	Zy	133/136 (98%)	116 (87%)	17 (13%)	0	100	100
62	L	146/149 (98%)	116 (80%)	27 (18%)	3 (2%)	7	39
62	ay	146/149 (98%)	113 (77%)	30 (20%)	3 (2%)	7	39
63	M	56/59 (95%)	43 (77%)	13 (23%)	0	100	100
63	by	56/59 (95%)	39 (70%)	15 (27%)	2 (4%)	3	28
64	N	98/105 (93%)	92 (94%)	6 (6%)	0	100	100
64	cy	94/105 (90%)	86 (92%)	8 (8%)	0	100	100
65	O	107/113 (95%)	97 (91%)	10 (9%)	0	100	100
65	dy	107/113 (95%)	91 (85%)	16 (15%)	0	100	100
66	P	125/130 (96%)	110 (88%)	15 (12%)	0	100	100
66	ey	125/130 (96%)	110 (88%)	15 (12%)	0	100	100
67	Q	104/107 (97%)	90 (86%)	14 (14%)	0	100	100
67	fy	104/107 (97%)	87 (84%)	17 (16%)	0	100	100
68	R	110/121 (91%)	103 (94%)	7 (6%)	0	100	100
68	gy	110/121 (91%)	92 (84%)	18 (16%)	0	100	100
69	S	117/120 (98%)	100 (86%)	17 (14%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
69	hb	117/120 (98%)	102 (87%)	15 (13%)	0	100	100
70	T	97/100 (97%)	83 (86%)	14 (14%)	0	100	100
70	ib	97/100 (97%)	80 (82%)	17 (18%)	0	100	100
71	U	80/88 (91%)	70 (88%)	10 (12%)	0	100	100
71	jb	83/88 (94%)	67 (81%)	16 (19%)	0	100	100
72	V	75/78 (96%)	69 (92%)	5 (7%)	1 (1%)	12	48
72	kb	75/78 (96%)	67 (89%)	8 (11%)	0	100	100
73	W	48/51 (94%)	41 (85%)	7 (15%)	0	100	100
73	lb	48/51 (94%)	41 (85%)	7 (15%)	0	100	100
74	X	50/128 (39%)	46 (92%)	4 (8%)	0	100	100
74	mb	50/128 (39%)	40 (80%)	10 (20%)	0	100	100
75	Y	23/25 (92%)	23 (100%)	0	0	100	100
75	nb	23/25 (92%)	23 (100%)	0	0	100	100
76	Z	103/106 (97%)	91 (88%)	12 (12%)	0	100	100
76	ob	101/106 (95%)	87 (86%)	14 (14%)	0	100	100
77	aa	89/92 (97%)	76 (85%)	13 (15%)	0	100	100
77	pb	89/92 (97%)	71 (80%)	18 (20%)	0	100	100
80	ba	134/311 (43%)	128 (96%)	6 (4%)	0	100	100
All	All	22066/24071 (92%)	18754 (85%)	3191 (14%)	121 (0%)	32	67

5 of 121 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
12	Jb	99	LEU
28	ab	84	VAL
18	r	116	LEU
19	s	82	ASP
26	z	52	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	
2	Ab	170/210 (81%)	169 (99%)	1 (1%)	86	92
2	b	165/210 (79%)	164 (99%)	1 (1%)	86	92
3	Ba	200/224 (89%)	196 (98%)	4 (2%)	55	73
3	c	192/224 (86%)	191 (100%)	1 (0%)	88	93
4	Pb	95/118 (80%)	95 (100%)	0	100	100
4	q	98/118 (83%)	98 (100%)	0	100	100
5	Cb	175/205 (85%)	173 (99%)	2 (1%)	73	85
5	d	176/205 (86%)	176 (100%)	0	100	100
6	Db	182/195 (93%)	178 (98%)	4 (2%)	52	71
6	e	182/195 (93%)	180 (99%)	2 (1%)	73	85
7	Eb	220/222 (99%)	218 (99%)	2 (1%)	78	88
7	f	221/222 (100%)	219 (99%)	2 (1%)	78	88
8	Fb	172/191 (90%)	171 (99%)	1 (1%)	86	92
8	g	173/191 (91%)	172 (99%)	1 (1%)	86	92
9	Gb	189/201 (94%)	186 (98%)	3 (2%)	62	79
9	h	187/201 (93%)	185 (99%)	2 (1%)	73	85
10	Hb	163/170 (96%)	161 (99%)	2 (1%)	71	84
10	i	165/170 (97%)	165 (100%)	0	100	100
11	Ib	148/161 (92%)	146 (99%)	2 (1%)	67	81
11	j	150/161 (93%)	149 (99%)	1 (1%)	84	90
12	Jb	156/166 (94%)	155 (99%)	1 (1%)	86	92
12	k	158/166 (95%)	156 (99%)	2 (1%)	69	82
13	Kb	77/98 (79%)	77 (100%)	0	100	100
13	l	73/98 (74%)	73 (100%)	0	100	100
14	Lb	129/137 (94%)	128 (99%)	1 (1%)	81	89
14	m	129/137 (94%)	128 (99%)	1 (1%)	81	89
15	Mb	88/119 (74%)	88 (100%)	0	100	100
15	n	88/119 (74%)	88 (100%)	0	100	100
16	Nb	127/128 (99%)	127 (100%)	0	100	100
16	o	127/128 (99%)	126 (99%)	1 (1%)	81	89
17	Ob	91/105 (87%)	90 (99%)	1 (1%)	73	85

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
17	p	97/105 (92%)	97 (100%)	0	100	100
18	Qb	117/119 (98%)	116 (99%)	1 (1%)	78	88
18	r	117/119 (98%)	117 (100%)	0	100	100
19	Rb	101/124 (82%)	100 (99%)	1 (1%)	76	86
19	s	113/124 (91%)	111 (98%)	2 (2%)	59	77
20	Sb	128/129 (99%)	127 (99%)	1 (1%)	81	89
20	t	128/129 (99%)	126 (98%)	2 (2%)	62	79
21	Tb	115/116 (99%)	114 (99%)	1 (1%)	78	88
21	u	115/116 (99%)	115 (100%)	0	100	100
22	Ub	93/114 (82%)	93 (100%)	0	100	100
22	v	94/114 (82%)	93 (99%)	1 (1%)	73	85
23	Vb	71/74 (96%)	71 (100%)	0	100	100
23	w	74/74 (100%)	74 (100%)	0	100	100
24	Wb	110/111 (99%)	109 (99%)	1 (1%)	78	88
24	x	110/111 (99%)	110 (100%)	0	100	100
25	Xb	119/120 (99%)	118 (99%)	1 (1%)	81	89
25	y	119/120 (99%)	119 (100%)	0	100	100
26	Yb	112/113 (99%)	110 (98%)	2 (2%)	59	77
26	z	112/113 (99%)	111 (99%)	1 (1%)	78	88
27	0	61/89 (68%)	60 (98%)	1 (2%)	62	79
27	Zb	67/89 (75%)	67 (100%)	0	100	100
28	1	83/101 (82%)	83 (100%)	0	100	100
28	ab	83/101 (82%)	82 (99%)	1 (1%)	71	84
29	2	70/71 (99%)	69 (99%)	1 (1%)	67	81
29	bb	70/71 (99%)	68 (97%)	2 (3%)	42	65
30	4	47/49 (96%)	46 (98%)	1 (2%)	53	72
30	db	47/49 (96%)	45 (96%)	2 (4%)	29	56
31	5	51/54 (94%)	49 (96%)	2 (4%)	32	58
31	eb	50/54 (93%)	50 (100%)	0	100	100
32	6	56/135 (42%)	55 (98%)	1 (2%)	59	77
32	fb	56/135 (42%)	55 (98%)	1 (2%)	59	77

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
33	7	255/262 (97%)	254 (100%)	1 (0%)	91	94
33	gb	250/262 (95%)	249 (100%)	1 (0%)	91	94
34	3	56/60 (93%)	56 (100%)	0	100	100
34	cb	55/60 (92%)	54 (98%)	1 (2%)	59	77
37	Ay	190/196 (97%)	188 (99%)	2 (1%)	73	85
37	Da	192/196 (98%)	190 (99%)	2 (1%)	76	86
38	By	319/323 (99%)	315 (99%)	4 (1%)	69	82
38	Ea	318/323 (98%)	317 (100%)	1 (0%)	92	95
39	Cy	288/289 (100%)	286 (99%)	2 (1%)	84	90
39	Fa	288/289 (100%)	286 (99%)	2 (1%)	84	90
40	Dy	241/245 (98%)	240 (100%)	1 (0%)	91	94
40	Ga	243/245 (99%)	241 (99%)	2 (1%)	81	89
41	Ey	137/153 (90%)	136 (99%)	1 (1%)	84	90
41	Ha	135/153 (88%)	134 (99%)	1 (1%)	84	90
42	Fy	186/205 (91%)	185 (100%)	1 (0%)	88	93
42	Ia	187/205 (91%)	186 (100%)	1 (0%)	88	93
43	Gy	187/208 (90%)	184 (98%)	3 (2%)	62	79
43	Ja	177/208 (85%)	175 (99%)	2 (1%)	73	85
44	Hy	168/171 (98%)	166 (99%)	2 (1%)	71	84
44	Ka	170/171 (99%)	167 (98%)	3 (2%)	59	77
45	Iy	185/187 (99%)	184 (100%)	1 (0%)	88	93
45	La	177/187 (95%)	176 (99%)	1 (1%)	86	92
46	Jy	146/150 (97%)	145 (99%)	1 (1%)	84	90
46	Ma	147/150 (98%)	147 (100%)	0	100	100
47	Ly	154/159 (97%)	152 (99%)	2 (1%)	69	82
47	Na	154/159 (97%)	154 (100%)	0	100	100
48	My	107/109 (98%)	107 (100%)	0	100	100
48	Oa	108/109 (99%)	108 (100%)	0	100	100
49	Ny	175/176 (99%)	175 (100%)	0	100	100
49	Pa	175/176 (99%)	175 (100%)	0	100	100
50	Oy	160/162 (99%)	160 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
50	Qa	160/162 (99%)	160 (100%)	0	100	100
51	A	139/146 (95%)	139 (100%)	0	100	100
51	Py	138/146 (94%)	136 (99%)	2 (1%)	67	81
52	B	150/151 (99%)	150 (100%)	0	100	100
52	Qy	150/151 (99%)	149 (99%)	1 (1%)	84	90
53	C	149/154 (97%)	148 (99%)	1 (1%)	84	90
53	Ry	152/154 (99%)	151 (99%)	1 (1%)	84	90
54	D	156/156 (100%)	156 (100%)	0	100	100
54	Sy	155/156 (99%)	155 (100%)	0	100	100
55	E	136/137 (99%)	134 (98%)	2 (2%)	65	80
55	Ty	136/137 (99%)	136 (100%)	0	100	100
56	F	85/107 (79%)	85 (100%)	0	100	100
56	Uy	87/107 (81%)	86 (99%)	1 (1%)	73	85
57	G	103/105 (98%)	103 (100%)	0	100	100
57	Vy	104/105 (99%)	104 (100%)	0	100	100
58	H	114/129 (88%)	112 (98%)	2 (2%)	59	77
58	Wy	60/129 (46%)	60 (100%)	0	100	100
59	I	104/118 (88%)	104 (100%)	0	100	100
59	Xy	104/118 (88%)	104 (100%)	0	100	100
60	J	107/110 (97%)	107 (100%)	0	100	100
60	Yy	108/110 (98%)	108 (100%)	0	100	100
61	K	115/116 (99%)	115 (100%)	0	100	100
61	Zy	115/116 (99%)	114 (99%)	1 (1%)	78	88
62	L	118/119 (99%)	118 (100%)	0	100	100
62	ay	118/119 (99%)	118 (100%)	0	100	100
63	M	46/47 (98%)	45 (98%)	1 (2%)	52	71
63	by	46/47 (98%)	46 (100%)	0	100	100
64	N	84/88 (96%)	84 (100%)	0	100	100
64	cy	81/88 (92%)	81 (100%)	0	100	100
65	O	94/97 (97%)	93 (99%)	1 (1%)	73	85
65	dy	92/97 (95%)	91 (99%)	1 (1%)	73	85

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
66	P	109/111 (98%)	109 (100%)	0	100	100
66	ey	108/111 (97%)	108 (100%)	0	100	100
67	Q	90/91 (99%)	90 (100%)	0	100	100
67	fy	90/91 (99%)	90 (100%)	0	100	100
68	R	95/103 (92%)	95 (100%)	0	100	100
68	gy	95/103 (92%)	93 (98%)	2 (2%)	53	72
69	S	103/105 (98%)	103 (100%)	0	100	100
69	hb	104/105 (99%)	100 (96%)	4 (4%)	33	59
70	T	80/82 (98%)	80 (100%)	0	100	100
70	ib	80/82 (98%)	80 (100%)	0	100	100
71	U	67/71 (94%)	67 (100%)	0	100	100
71	jb	69/71 (97%)	68 (99%)	1 (1%)	67	81
72	V	67/69 (97%)	67 (100%)	0	100	100
72	kb	68/69 (99%)	67 (98%)	1 (2%)	65	80
73	W	45/46 (98%)	45 (100%)	0	100	100
73	lb	45/46 (98%)	44 (98%)	1 (2%)	52	71
74	X	47/116 (40%)	46 (98%)	1 (2%)	53	72
74	mb	47/116 (40%)	47 (100%)	0	100	100
75	Y	23/23 (100%)	21 (91%)	2 (9%)	10	35
75	nb	22/23 (96%)	22 (100%)	0	100	100
76	Z	90/91 (99%)	89 (99%)	1 (1%)	73	85
76	ob	87/91 (96%)	86 (99%)	1 (1%)	73	85
77	aa	71/72 (99%)	69 (97%)	2 (3%)	43	65
77	pb	71/72 (99%)	71 (100%)	0	100	100
80	ba	105/253 (42%)	103 (98%)	2 (2%)	57	75
All	All	18566/20221 (92%)	18432 (99%)	134 (1%)	84	90

5 of 134 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
44	Ka	63	LYS
53	C	85	ARG
77	aa	48	LYS

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Mol	Chain	Res	Type
40	Dy	271	LYS
39	Cy	259	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 239 such sidechains are listed below:

Mol	Chain	Res	Type
68	gy	108	GLN
65	O	57	GLN
20	t	44	ASN
63	M	19	ASN
76	Z	105	GLN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	2b	1768/1800 (98%)	638 (36%)	0
1	a	1755/1800 (97%)	533 (30%)	0
35	4b	120/121 (99%)	20 (16%)	0
35	Bb	120/121 (99%)	17 (14%)	0
36	3b	157/158 (99%)	41 (26%)	0
36	Ca	156/158 (98%)	37 (23%)	0
78	1b	3180/3396 (93%)	879 (27%)	0
78	Aa	3120/3396 (91%)	804 (25%)	0
79	6b	75/76 (98%)	16 (21%)	0
79	8	75/76 (98%)	18 (24%)	0
All	All	10526/11102 (94%)	3003 (28%)	0

5 of 3003 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	2b	2	A
1	2b	4	C
1	2b	6	G
1	2b	8	U
1	2b	10	G

There are no RNA pucker outliers to report.

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
30	4	1
39	Fa	1
16	Nb	1
45	Iy	1
3	Ba	1
47	Ly	1

The worst 5 of 6 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	4	13:ARG	C	14:TYR	N	1.73
1	Fa	19:ALA	C	20:LEU	N	1.20
1	Nb	134:VAL	C	135:LEU	N	1.19
1	Iy	120:GLY	C	121:LYS	N	1.17
1	Ba	33:LYS	C	34:ALA	N	1.11

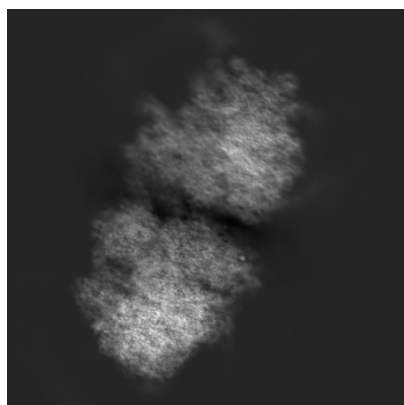
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-10398. These allow visual inspection of the internal detail of the map and identification of artifacts.

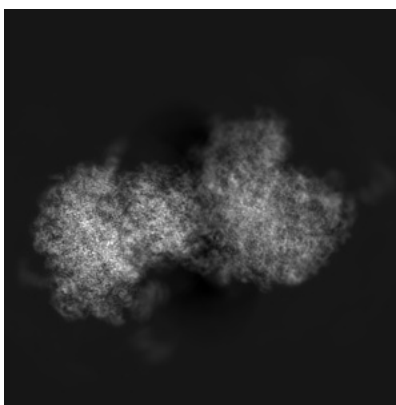
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

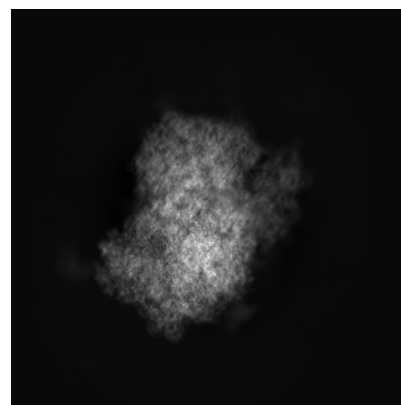
6.1.1 Primary map



X



Y

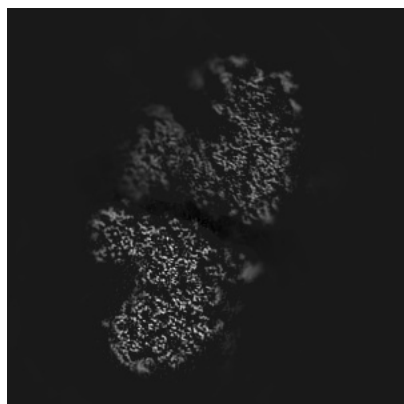


Z

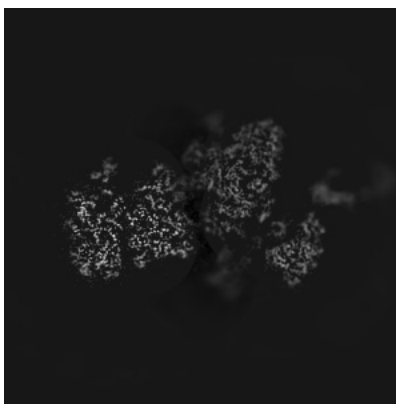
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

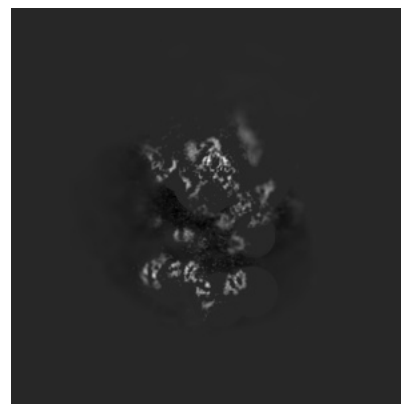
6.2.1 Primary map



X Index: 265



Y Index: 265

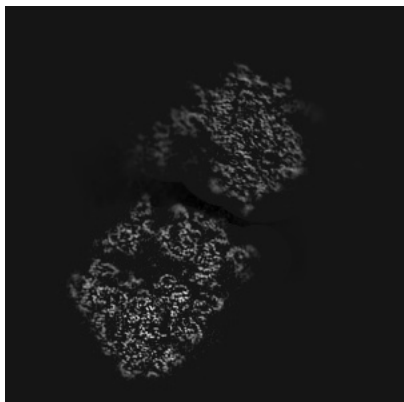


Z Index: 265

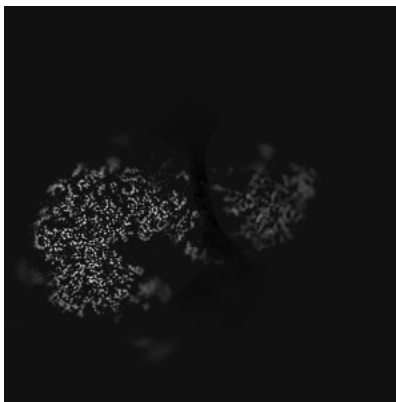
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

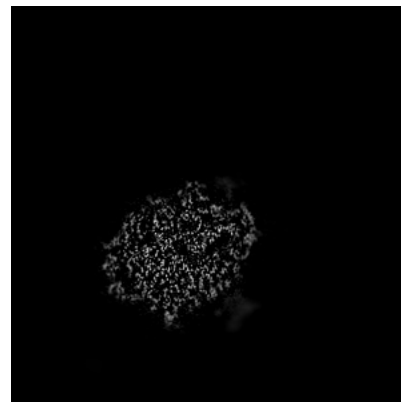
6.3.1 Primary map



X Index: 218



Y Index: 197



Z Index: 119

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

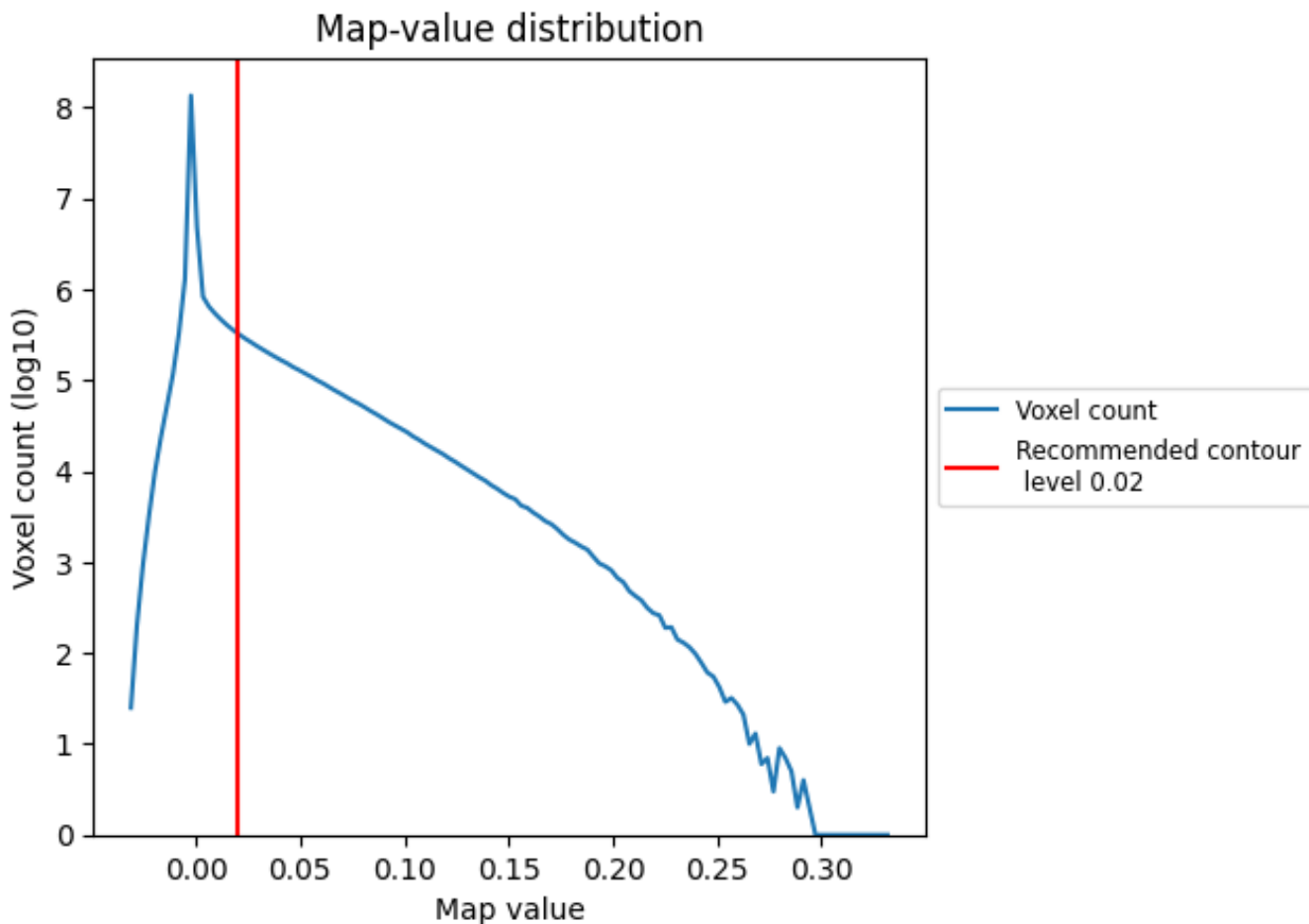
6.5 Mask visualisation

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

7 Map analysis [i](#)

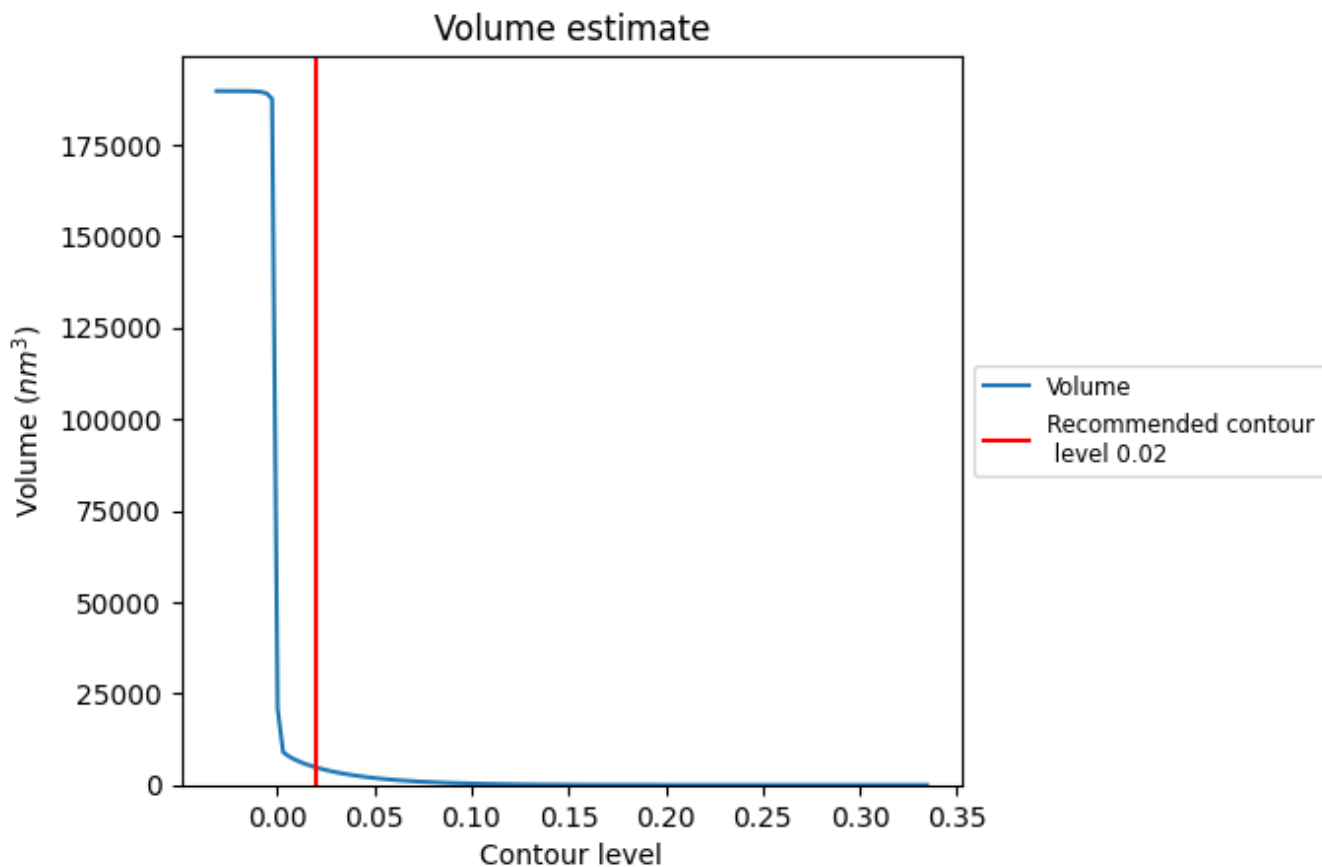
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

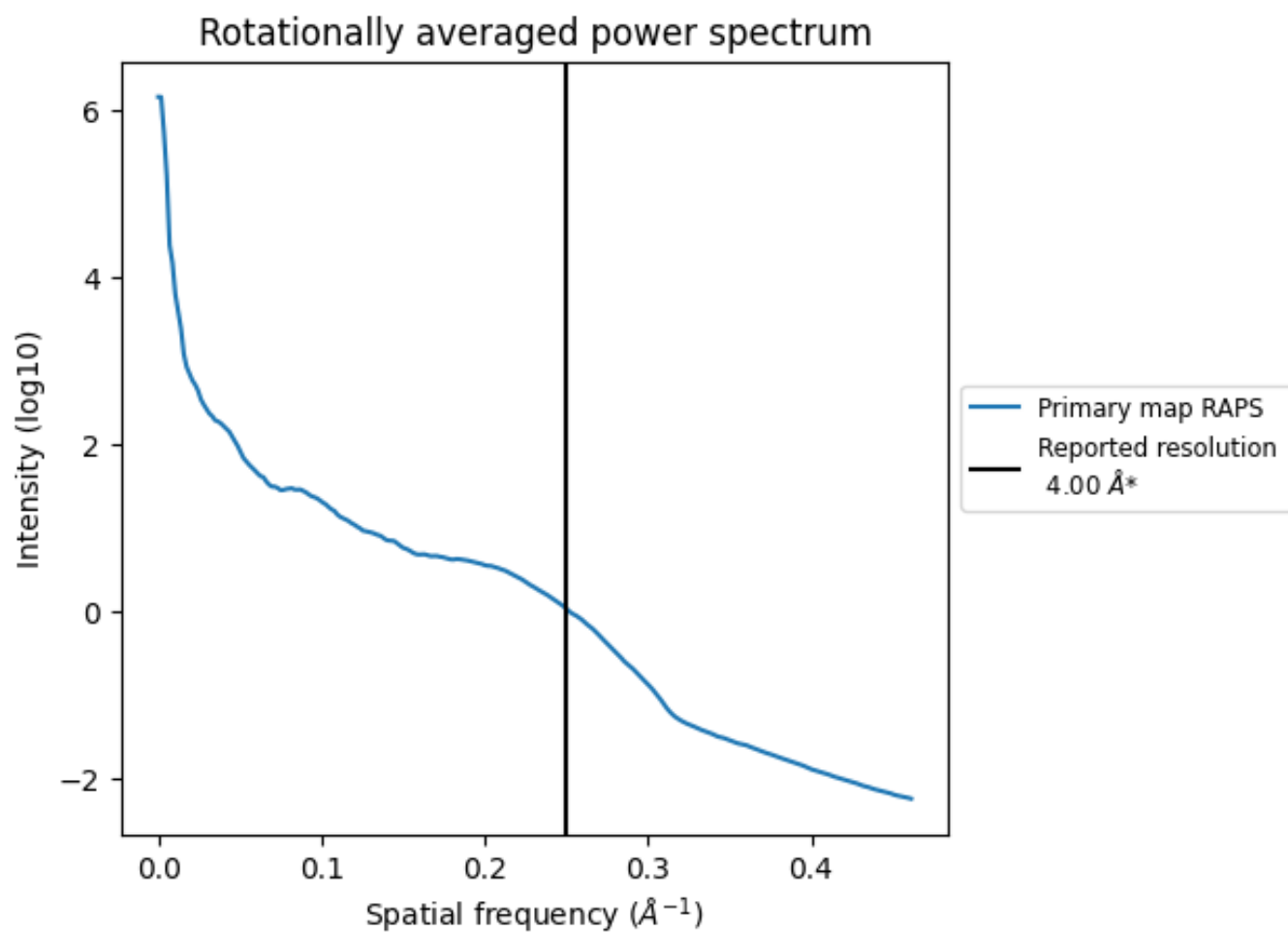
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 4789 nm^3 ; this corresponds to an approximate mass of 4326 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 0.250 Å⁻¹

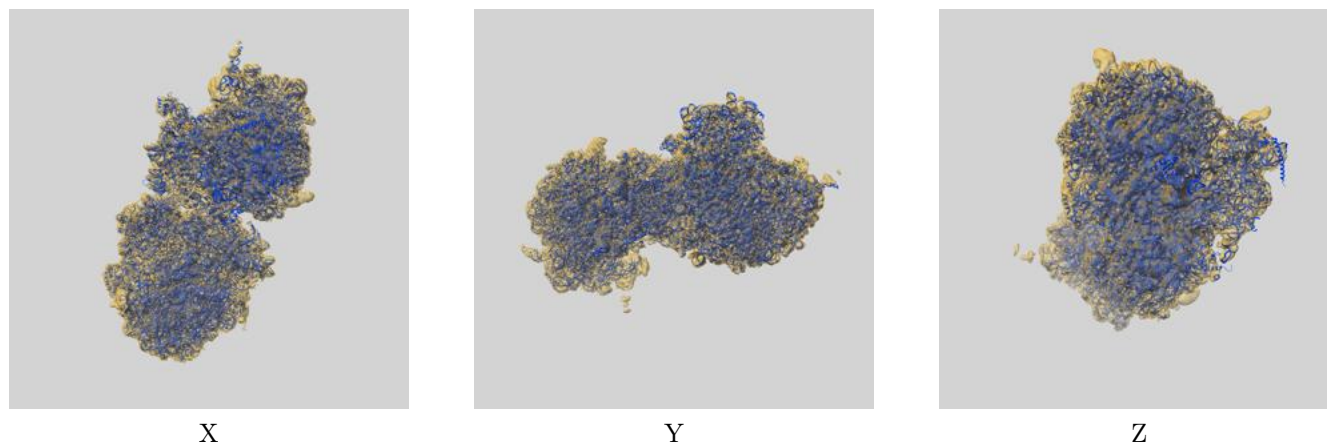
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

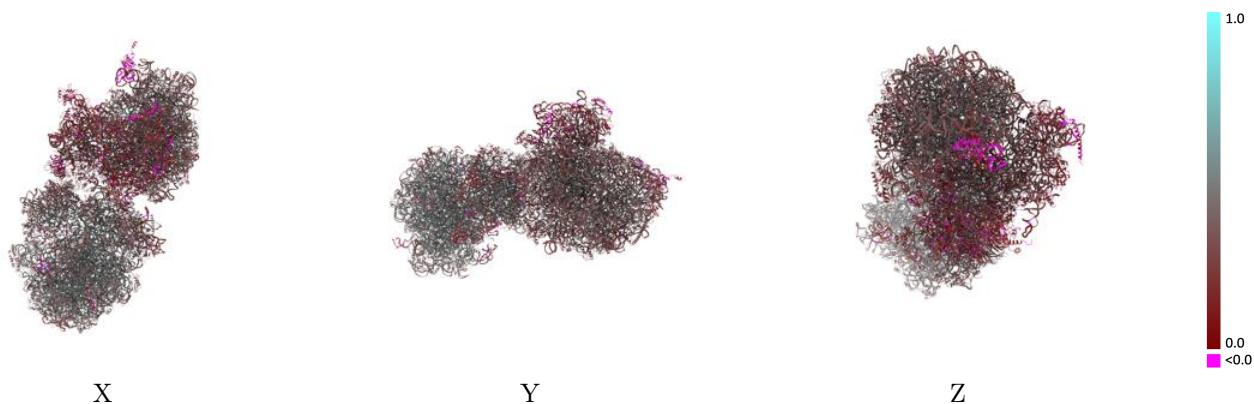
This section contains information regarding the fit between EMDB map EMD-10398 and PDB model 6T83. Per-residue inclusion information can be found in section 3 on page 26.

9.1 Map-model overlay [i](#)



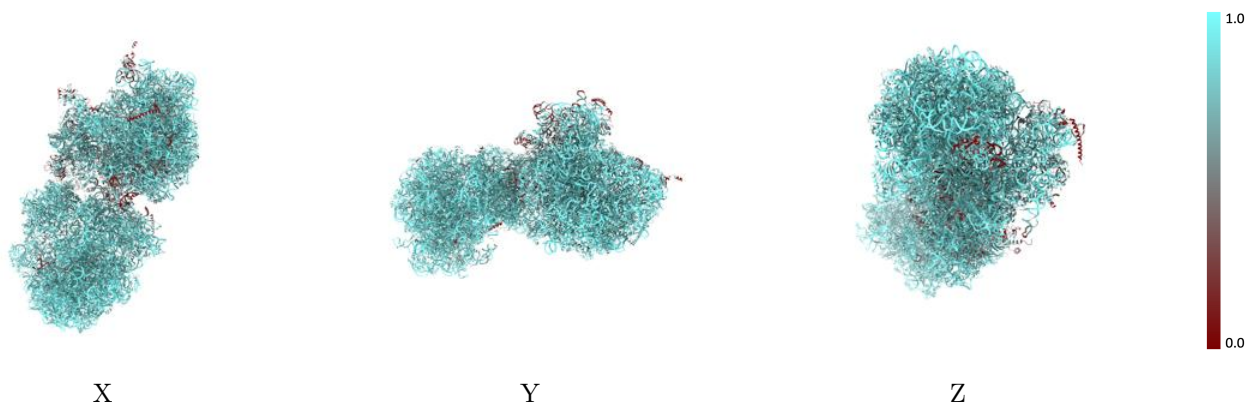
The images above show the 3D surface view of the map at the recommended contour level 0.02 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



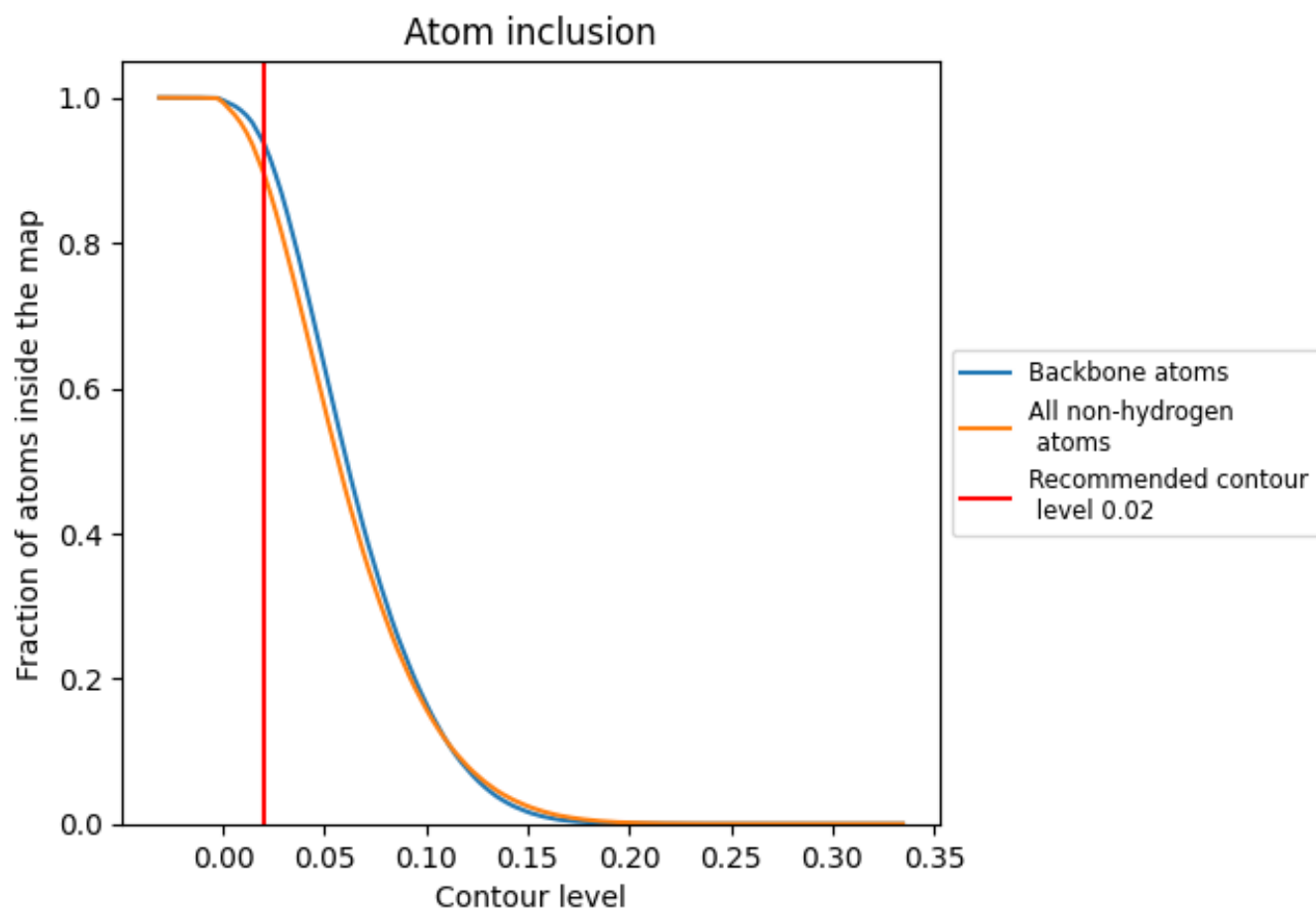
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.02).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 94% of all backbone atoms, 90% 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 (0.02) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8970	 0.3720
0	 0.6439	 0.1400
1	 0.7618	 0.3220
1b	 0.9777	 0.4500
2	 0.5358	 0.3050
2b	 0.9572	 0.4070
3	 0.7778	 0.2390
3b	 0.9845	 0.4590
4	 0.6761	 0.0740
4b	 0.9934	 0.4270
5	 0.7298	 0.2160
6	 0.5801	 0.1370
6b	 0.9616	 0.3880
7	 0.4989	 0.1450
8	 0.7389	 0.2520
A	 0.8733	 0.3870
Aa	 0.9545	 0.3780
Ab	 0.8696	 0.3760
Ay	 0.9119	 0.4880
B	 0.8330	 0.3560
Ba	 0.8811	 0.3970
Bb	 0.9911	 0.3470
By	 0.9284	 0.4590
C	 0.7775	 0.3330
Ca	 0.9700	 0.3930
Cb	 0.8730	 0.4230
Cy	 0.9389	 0.4560
D	 0.8224	 0.3600
Da	 0.8272	 0.4040
Db	 0.8290	 0.3710
Dy	 0.9384	 0.3800
E	 0.8387	 0.3740
Ea	 0.8428	 0.3740
Eb	 0.8686	 0.4070
Ey	 0.9303	 0.4030























































































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Chain	Atom inclusion	Q-score
F	 0.8089	 0.2970
Fa	 0.8794	 0.3720
Fb	 0.8756	 0.3690
Fy	 0.9294	 0.4400
G	 0.7461	 0.3770
Ga	 0.8680	 0.2740
Gb	 0.9006	 0.3480
Gy	 0.9114	 0.4020
H	 0.4153	 0.1670
Ha	 0.8200	 0.3140
Hb	 0.8774	 0.3410
Hy	 0.9041	 0.4150
I	 0.8282	 0.3620
Ia	 0.8411	 0.3530
Ib	 0.9129	 0.4190
Iy	 0.8958	 0.4040
J	 0.8746	 0.3330
Ja	 0.7963	 0.3100
Jb	 0.8593	 0.3780
Jy	 0.9017	 0.3700
K	 0.8114	 0.3160
Ka	 0.8367	 0.3500
Kb	 0.8293	 0.3270
L	 0.8476	 0.3680
La	 0.8411	 0.3130
Lb	 0.8661	 0.4400
Ly	 0.9435	 0.4460
M	 0.8473	 0.3440
Ma	 0.7498	 0.1980
Mb	 0.8162	 0.2290
My	 0.9298	 0.3990
N	 0.7775	 0.3260
Na	 0.8485	 0.3320
Nb	 0.9048	 0.4220
Ny	 0.9432	 0.4980
O	 0.8156	 0.3540
Oa	 0.8944	 0.3290
Ob	 0.8940	 0.4230
Oy	 0.9333	 0.4690
P	 0.8270	 0.3900
Pa	 0.8699	 0.3950
Pb	 0.8640	 0.3410



















































































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Chain	Atom inclusion	Q-score
Py	 0.9431	 0.4660
Q	 0.8599	 0.4110
Qa	 0.8620	 0.3830
Qb	 0.8851	 0.3960
Qy	 0.9412	 0.4590
R	 0.7814	 0.3810
Rb	 0.8872	 0.3670
Ry	 0.8955	 0.4170
S	 0.8413	 0.3330
Sb	 0.8718	 0.3570
Sy	 0.9089	 0.4440
T	 0.7957	 0.3170
Tb	 0.9075	 0.3590
Ty	 0.9210	 0.4590
U	 0.9215	 0.4330
Ub	 0.8645	 0.3570
Uy	 0.9194	 0.3700
V	 0.8168	 0.3060
Vb	 0.8698	 0.4080
Vy	 0.8948	 0.4680
W	 0.8602	 0.4080
Wb	 0.9098	 0.4500
Wy	 0.7539	 0.3600
X	 0.7692	 0.3400
Xb	 0.8848	 0.4440
Xy	 0.9225	 0.4370
Y	 0.5802	 0.2890
Yb	 0.8722	 0.3580
Yy	 0.9404	 0.4290
Z	 0.8140	 0.3380
Zb	 0.8149	 0.3320
Zy	 0.9094	 0.4060
a	 0.9045	 0.2810
aa	 0.8072	 0.3670
ab	 0.9161	 0.4620
ay	 0.9326	 0.4730
b	 0.6871	 0.2350
ba	 0.3524	 0.0160
bb	 0.9135	 0.4110
by	 0.9159	 0.4480
c	 0.4905	 0.2180
cb	 0.8689	 0.3940

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Chain	Atom inclusion	Q-score
cy	 0.9062	 0.4270
d	 0.7394	 0.2710
db	 0.9149	 0.4360
dy	 0.9153	 0.4550
e	 0.6542	 0.2260
eb	 0.8465	 0.3930
ey	 0.9334	 0.4810
f	 0.7051	 0.2360
fb	 0.8619	 0.2360
fy	 0.9391	 0.4950
g	 0.7276	 0.1950
gb	 0.8593	 0.3220
gy	 0.8931	 0.4490
h	 0.6563	 0.2140
hb	 0.9332	 0.4220
i	 0.5175	 0.2290
ib	 0.9189	 0.4090
j	 0.6567	 0.2100
jb	 0.9674	 0.5060
k	 0.7074	 0.2310
kb	 0.9032	 0.3930
l	 0.6369	 0.1880
lb	 0.9253	 0.4850
m	 0.5541	 0.2500
mb	 0.9305	 0.4540
n	 0.4818	 0.1210
nb	 0.8317	 0.4600
o	 0.7126	 0.2980
ob	 0.9019	 0.4400
p	 0.6561	 0.2780
pb	 0.9058	 0.4680
q	 0.4929	 0.1440
r	 0.7553	 0.2030
s	 0.6111	 0.2190
t	 0.6187	 0.1730
u	 0.7558	 0.1740
v	 0.7114	 0.2210
w	 0.7892	 0.2640
x	 0.7635	 0.2980
y	 0.7669	 0.3010
z	 0.7915	 0.1960