



## wwPDB EM Validation Summary Report ⓘ

Nov 20, 2022 – 04:35 am GMT

PDB ID : 6GQ1  
EMDB ID : EMD-0047  
Title : Cryo-EM reconstruction of yeast 80S ribosome in complex with mRNA, tRNA and eEF2 (GMPPCP/sordarin)  
Authors : Pellegrino, S.; Demeshkina, N.; Mancera-Martinez, E.; Melnikov, S.; Simonetti, A.; Myasnikov, A.; Yusupov, M.; Yusupova, G.; Hashem, Y.  
Deposited on : 2018-06-07  
Resolution : 4.40 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](mailto:validation@mail.wwpdb.org)

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev43  
Mogul : 1.8.4, CSD as541be (2020)  
MolProbity : 4.02b-467  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.9  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.31.2

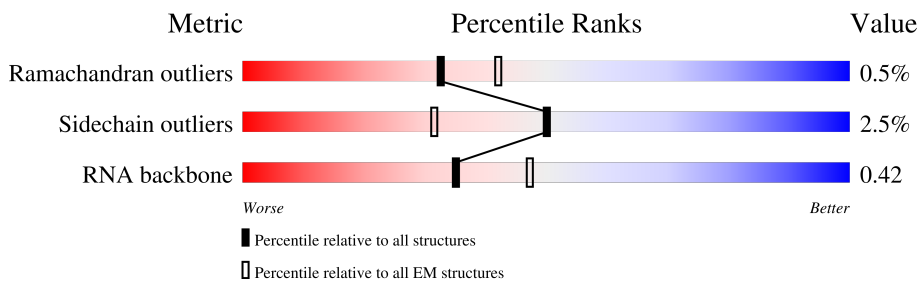
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 4.40 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	1	3396	
2	3	121	
3	4	158	
4	P0	189	
5	P2	94	
6	A	252	
7	B	386	
8	C	361	

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Mol	Chain	Length	Quality of chain
9	D	296	5% 97%
10	E	175	86% 11%
11	F	222	95% 5%
12	G	233	5% 95% 5%
13	H	191	5% 95% 5%
14	I	220	6% 91% 5%
15	J	169	8% 96%
16	L	193	96%
17	M	136	97%
18	N	203	96%
19	O	197	95% 5%
20	P	183	6% 97%
21	Q	185	96%
22	R	188	97%
23	S	172	97%
24	T	159	93% 7%
25	U	100	98%
26	V	136	7% 97%
27	W	63	95% 5%
28	X	121	100%
29	Y	126	98%
30	Z	135	96%
31	a	148	99%
32	b	58	7% 95% 5%
33	c	97	97%

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Mol	Chain	Length	Quality of chain
34	d	109	7% 98% ..
35	e	127	94% 6%
36	f	106	93% 6%
37	g	112	91% 8%
38	h	119	95% 5%
39	i	99	5% 95% 5%
40	j	87	97% ..
41	k	77	9% 96%
42	l	50	92% 6%
43	m	52	98%
44	n	25	20% 96%
45	o	105	6% 96%
46	p	91	100%
47	2	1797	57% 37% 5%
48	q	206	7% 97%
49	r	214	5% 93% 7%
50	s	217	98%
51	t	223	36% 95% 5%
52	u	260	5% 93% 6%
53	v	206	40% 98%
54	w	223	9% 93% 6%
55	x	184	9% 97%
56	y	199	9% 92% 6%
57	z	185	5% 96%
58	AA	105	16% 86% 5% 9%

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Mol	Chain	Length	Quality of chain
59	AB	153	14% 97%
60	AC	124	88% 96%
61	AD	150	7% 94% 5%
62	AE	127	98%
63	AF	124	27% 91% 9%
64	AG	141	32% 96%
65	AH	125	32% 93%
66	AI	145	31% 95% 5%
67	AJ	143	25% 97%
68	AK	107	52% 95% 5%
69	AL	87	9% 95% 5%
70	AM	129	96%
71	AN	144	10% 94% 6%
72	AO	134	8% 96%
73	AP	70	50% 96%
74	AQ	97	9% 87% 12%
75	AR	81	5% 94% 6%
76	AS	63	49% 100%
77	AT	53	13% 96%
78	AU	60	17% 95% 5%
79	AV	318	44% 98%
80	AW	37	70% 95% 5%
81	AX	76	9% 47% 50%
82	AY	8	75% 38% 62%
83	AZ	840	13% 95% 5%

## 2 Entry composition [i](#)

There are 86 unique types of molecules in this entry. The entry contains 210540 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 *Saccharomyces cerevisiae* S288C 35S pre-ribosomal RNA (RDN37-1), miscRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	1	3223	68931	30790	12416	22502	3223	0	0

- Molecule 2 is a RNA chain called 5.8S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	3	121	2579	1152	461	845	121	0	0

- Molecule 3 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	4	158	3353	1500	586	1109	158	0	0

- Molecule 4 is a protein called 60S acidic ribosomal protein P0.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	P0	189	1473	942	257	270	4	0	0

- Molecule 5 is a protein called 60S ribosomal protein L12-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	P2	94	723	448	138	135	2	0	0

- Molecule 6 is a protein called 60S ribosomal protein L2-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	A	252	1914	1191	388	334	1	0	0

- Molecule 7 is a protein called 60S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	B	386	3075	1950	584	533	8	0	0

- Molecule 8 is a protein called 60S ribosomal protein L4-A.

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

- Molecule 9 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	D	296	2375	1501	414	458	2	0	0

- Molecule 10 is a protein called 60S ribosomal protein L6-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	E	156	1239	800	222	216	1	0	0

- Molecule 11 is a protein called 60S ribosomal protein L7-A.

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

- Molecule 12 is a protein called 60S ribosomal protein L8-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	G	233	1804	1151	323	327	3	0	0

- Molecule 13 is a protein called 60S ribosomal protein L9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	H	191	1518	963	274	277	4	0	0

- Molecule 14 is a protein called 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	I	211	Total	C	N	O	S	0	0
			1705	1083	322	294	6		

- Molecule 15 is a protein called 60S ribosomal protein L11-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	J	169	Total	C	N	O	S	0	0
			1353	847	253	249	4		

- Molecule 16 is a protein called 60S ribosomal protein L13-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	L	193	Total	C	N	O	S	0	0
			1543	962	315	266			

- Molecule 17 is a protein called 60S ribosomal protein L14-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	M	136	Total	C	N	O	S	0	0
			1053	675	199	177	2		

- Molecule 18 is a protein called 60S ribosomal protein L15-A.

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

- Molecule 19 is a protein called 60S ribosomal protein L16-A.

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

- Molecule 20 is a protein called 60S ribosomal protein L17-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	P	183	Total	C	N	O	S	0	0
			1420	882	281	257			

- Molecule 21 is a protein called 60S ribosomal protein L18-A.



Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
21	Q	185	1441	908	290	241	2	0	0

- Molecule 22 is a protein called 60S ribosomal protein L19-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	R	188	1521	935	326	260		0	0

- Molecule 23 is a protein called 60S ribosomal protein L20-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
23	S	172	1445	930	267	244	4	0	0

- Molecule 24 is a protein called 60S ribosomal protein L21-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	T	159	1276	805	246	221	4	0	0

- Molecule 25 is a protein called 60S ribosomal protein L22-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	U	100	796	516	131	149		0	0

- Molecule 26 is a protein called 60S ribosomal protein L23-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
26	V	136	1003	628	189	179	7	0	0

- Molecule 27 is a protein called 60S ribosomal protein L24-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	W	63	521	336	102	82	1	0	0

- Molecule 28 is a protein called 60S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
28	X	121	964	620	169	173	2	0	0

- Molecule 29 is a protein called 60S ribosomal protein L26-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
29	Y	126	993	625	192	176		0	0

- Molecule 30 is a protein called 60S ribosomal protein L27-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
30	Z	135	1092	710	202	180		0	0

- Molecule 31 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
31	a	148	1173	749	231	190	3	0	0

- Molecule 32 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
32	b	58	462	289	100	73		0	0

- Molecule 33 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
33	c	97	743	479	124	139	1	0	0

- Molecule 34 is a protein called 60S ribosomal protein L31-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
34	d	109	883	559	167	156	1	0	0

- Molecule 35 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	e	127	Total	C	N	O	S	0	0
			1020	647	205	167	1		

- Molecule 36 is a protein called 60S ribosomal protein L33-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	f	106	Total	C	N	O	S	0	0
			850	540	165	144	1		

- Molecule 37 is a protein called 60S ribosomal protein L34-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	g	112	Total	C	N	O	S	0	0
			880	545	179	152	4		

- Molecule 38 is a protein called 60S ribosomal protein L35-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	h	119	Total	C	N	O	S	0	0
			969	615	186	167	1		

- Molecule 39 is a protein called 60S ribosomal protein L36-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	i	99	Total	C	N	O	S	0	0
			771	481	156	132	2		

- Molecule 40 is a protein called 60S ribosomal protein L37-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	j	87	Total	C	N	O	S	0	0
			681	414	148	114	5		

- Molecule 41 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms				AltConf	Trace
41	k	77	Total	C	N	O	0	0
			612	391	115	106		

- Molecule 42 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	l	50	Total	C	N	O	S	0	0
			436	272	97	65	2		

- Molecule 43 is a protein called Ubiquitin-60S ribosomal protein L40.

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

- Molecule 44 is a protein called 60S ribosomal protein L41-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	n	25	Total	C	N	O	S	0	0
			227	139	60	27	1		

- Molecule 45 is a protein called 60S ribosomal protein L42-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	o	105	Total	C	N	O	S	0	0
			847	534	170	138	5		

- Molecule 46 is a protein called 60S ribosomal protein L43-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	p	91	Total	C	N	O	S	0	0
			694	429	138	121	6		

- Molecule 47 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	2	1776	Total	C	N	O	P	0	0
			37845	16918	6702	12449	1776		

- Molecule 48 is a protein called 40S ribosomal protein S0-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	q	206	Total	C	N	O	S	0	0
			1577	1014	278	283	2		

- Molecule 49 is a protein called 40S ribosomal protein S1-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	r	214	Total	C	N	O	S	0	0
			1709	1084	310	311	4		

- Molecule 50 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	s	217	Total	C	N	O	S	0	0
			1635	1047	289	297	2		

- Molecule 51 is a protein called 40S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	t	223	Total	C	N	O	S	0	0
			1734	1101	313	314	6		

- Molecule 52 is a protein called 40S ribosomal protein S4-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	u	260	Total	C	N	O	S	0	0
			2068	1316	389	360	3		

- Molecule 53 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	v	206	Total	C	N	O	S	0	0
			1609	1007	300	299	3		

- Molecule 54 is a protein called 40S ribosomal protein S6-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	w	223	Total	C	N	O	S	0	0
			1790	1123	346	318	3		

- Molecule 55 is a protein called 40S ribosomal protein S7-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
55	x	184	Total	C	N	O	0	0
			1481	951	265	265		

- Molecule 56 is a protein called 40S ribosomal protein S8-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
56	y	188	1489	925	298	264	2	0	0

- Molecule 57 is a protein called 40S ribosomal protein S9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
57	z	185	1494	943	289	261	1	0	0

- Molecule 58 is a protein called 40S ribosomal protein S10-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
58	AA	96	772	499	126	145	2	0	0

- Molecule 59 is a protein called 40S ribosomal protein S11-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
59	AB	153	1220	780	231	206	3	0	0

- Molecule 60 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
60	AC	124	890	560	156	172	2	0	0

- Molecule 61 is a protein called 40S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
61	AD	150	1192	759	224	207	2	0	0

- Molecule 62 is a protein called 40S ribosomal protein S14-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
62	AE	127	891	545	182	163	1	0	0

- Molecule 63 is a protein called 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
63	AF	124	977	622	182	166	7	0	0

- Molecule 64 is a protein called 40S ribosomal protein S16-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
64	AG	141	1105	708	203	194		0	0

- Molecule 65 is a protein called 40S ribosomal protein S17-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
65	AH	120	926	577	177	170	2	0	0

- Molecule 66 is a protein called 40S ribosomal protein S18-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
66	AI	145	1192	743	237	210	2	0	0

- Molecule 67 is a protein called 40S ribosomal protein S19-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
67	AJ	143	1112	694	208	208	2	0	0

- Molecule 68 is a protein called 40S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
68	AK	107	855	539	156	159	1	0	0

- Molecule 69 is a protein called 40S ribosomal protein S21-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
69	AL	87	684	420	125	137	2	0	0

- Molecule 70 is a protein called 40S ribosomal protein S22-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	AM	129	Total	C	N	O	S	0	0
			1021	650	188	180	3		

- Molecule 71 is a protein called 40S ribosomal protein S23-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	AN	144	Total	C	N	O	S	0	0
			1121	708	220	191	2		

- Molecule 72 is a protein called 40S ribosomal protein S24-A.

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

- Molecule 73 is a protein called 40S ribosomal protein S25-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
73	AP	70	Total	C	N	O	0	0
			563	360	104	99		

- Molecule 74 is a protein called 40S ribosomal protein S26-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	AQ	97	Total	C	N	O	S	0	0
			769	475	160	129	5		

- Molecule 75 is a protein called 40S ribosomal protein S27-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	AR	81	Total	C	N	O	S	0	0
			610	382	110	113	5		

- Molecule 76 is a protein called 40S ribosomal protein S28-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	AS	63	Total	C	N	O	S	0	0
			497	306	99	91	1		

- Molecule 77 is a protein called 40S ribosomal protein S29-A.



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

- Molecule 78 is a protein called 40S ribosomal protein S30-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	AU	60	Total	C	N	O	S	0	0
			475	299	98	77	1		

- Molecule 79 is a protein called Guanine nucleotide-binding protein subunit beta-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	AV	318	Total	C	N	O	S	0	0
			2437	1541	418	470	8		

- Molecule 80 is a protein called Ubiquitin-40S ribosomal protein S31.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	AW	37	Total	C	N	O	S	0	0
			287	177	57	49	4		

- Molecule 81 is a RNA chain called Transfer RNA - Phe.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	AX	76	Total	C	N	O	P	0	0
			1626	725	293	532	76		

- Molecule 82 is a RNA chain called Messenger RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	AY	8	Total	C	N	O	P	0	0
			164	74	23	59	8		

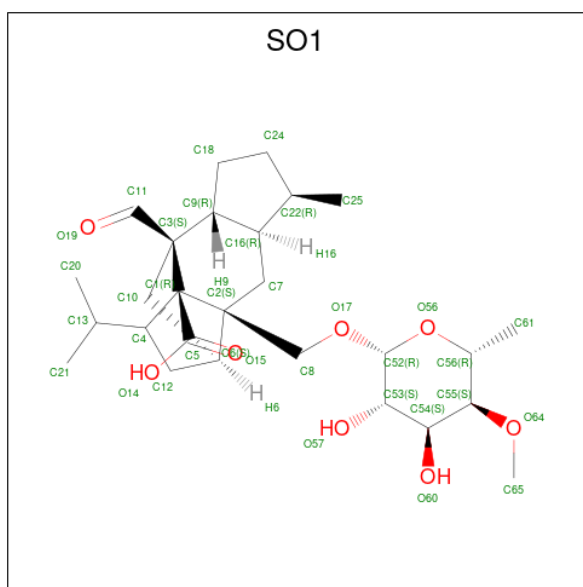
- Molecule 83 is a protein called Elongation factor 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	AZ	840	Total	C	N	O	S	0	0
			6551	4161	1124	1237	29		

- Molecule 84 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
84	j	1	Total	Zn	0
			1	1	
84	m	1	Total	Zn	0
			1	1	
84	o	1	Total	Zn	0
			1	1	
84	p	1	Total	Zn	0
			1	1	
84	AQ	1	Total	Zn	0
			1	1	
84	AR	1	Total	Zn	0
			1	1	
84	AT	1	Total	Zn	0
			1	1	
84	AW	1	Total	Zn	0
			1	1	

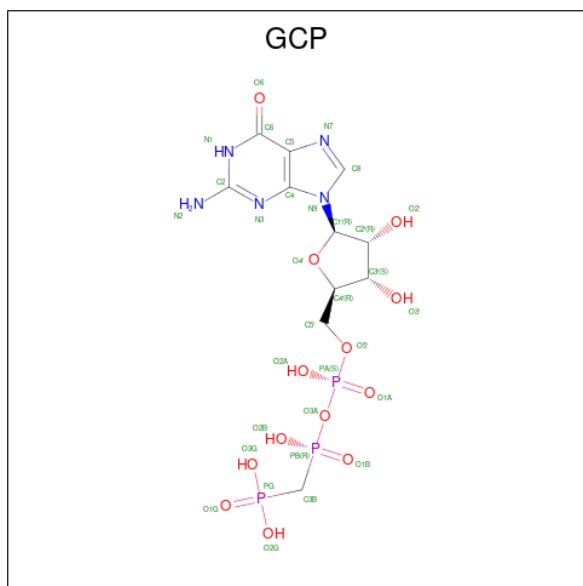
- Molecule 85 is [1R-(1.ALPHA.,3A.BETA.,4.BETA.,4A.BETA.,7.BETA.,7A.ALPHA.,8A.B ETA.)]8A-[(6-DEOXY-4-O-METHYL-BETA-D-ALTROPYRANOSYLOXY)METHYL]-4-FORMYL-4,4A,5,6,7,7A,8,8A-OCTAHYDRO-7-METHYL-3-(1-METHYLETHYL)-1,4-M ETHANO-S-INDACENE-3A(1H)-CARBOXYLIC ACID (three-letter code: SO1) (formula: C<sub>27</sub>H<sub>42</sub>O<sub>8</sub>).



Mol	Chain	Residues	Atoms			AltConf
85	AZ	1	Total	C	O	0
			35	27	8	

- Molecule 86 is PHOSPHOMETHYLPHOSPHONIC ACID GUANYLATE ESTER (three-

letter code: GCP) (formula: C<sub>11</sub>H<sub>18</sub>N<sub>5</sub>O<sub>13</sub>P<sub>3</sub>).

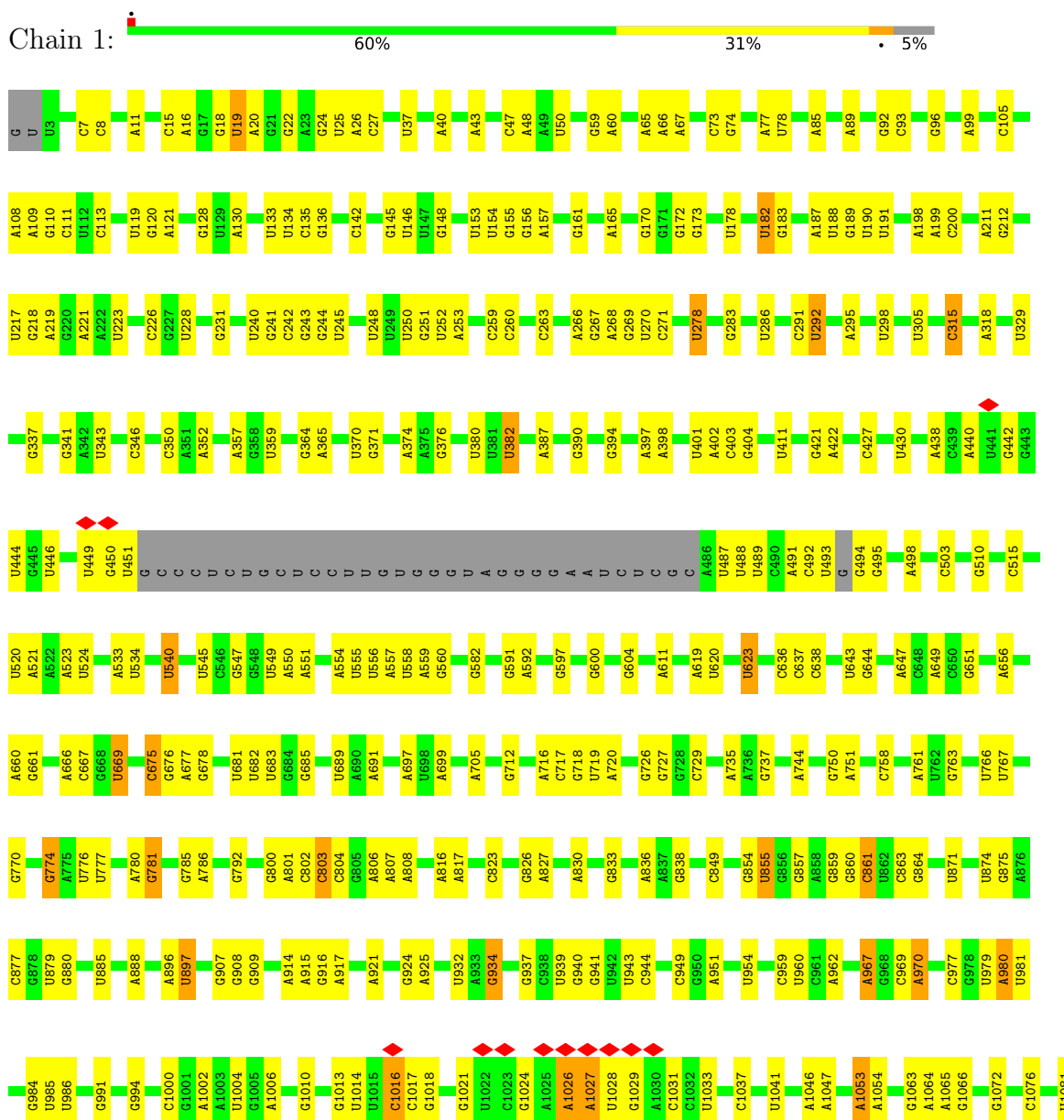


Mol	Chain	Residues	Atoms				AltConf	
			Total	C	N	O		P
86	AZ	1	32	11	5	13	3	0

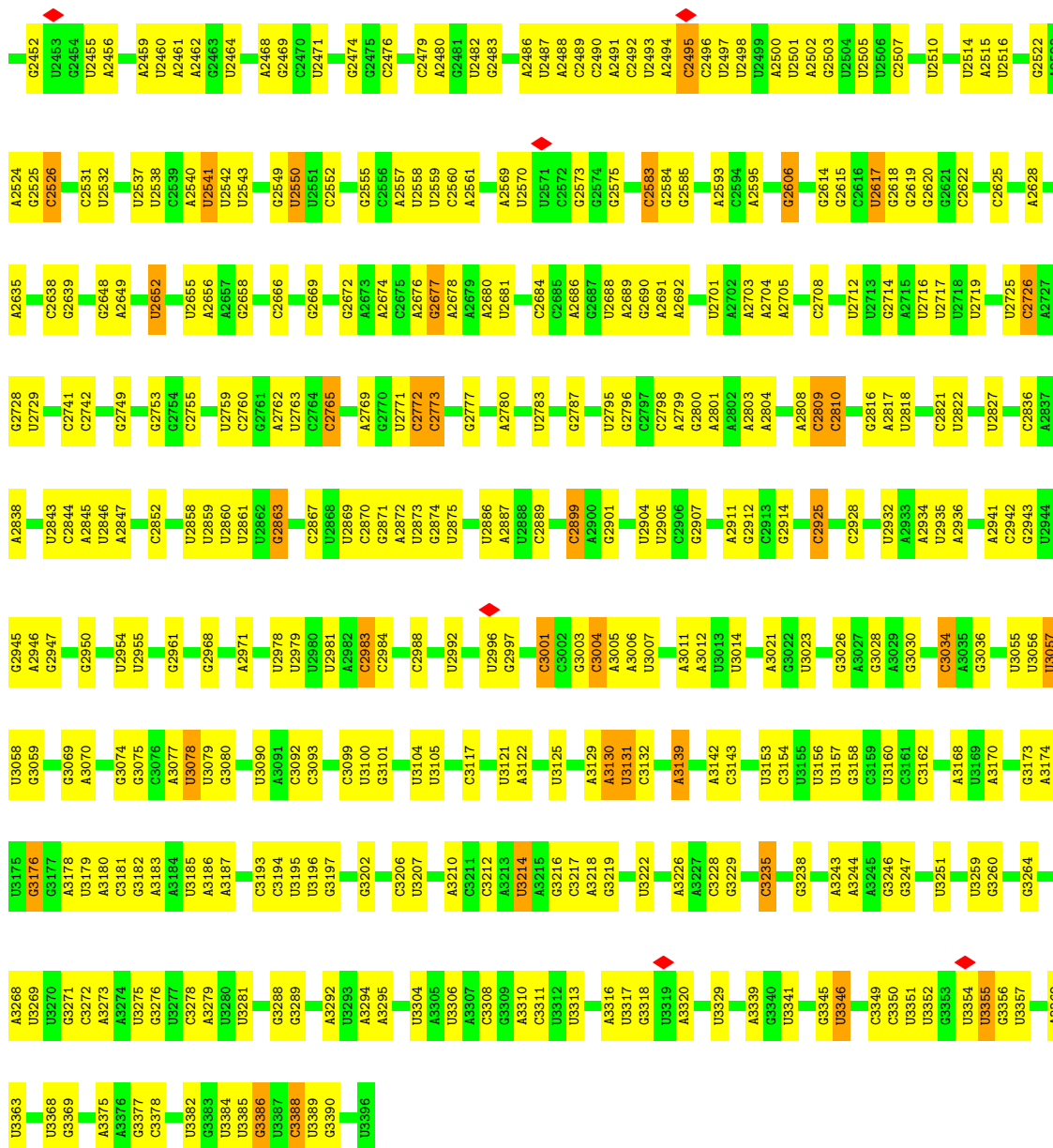
### 3 Residue-property plots [i](#)

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

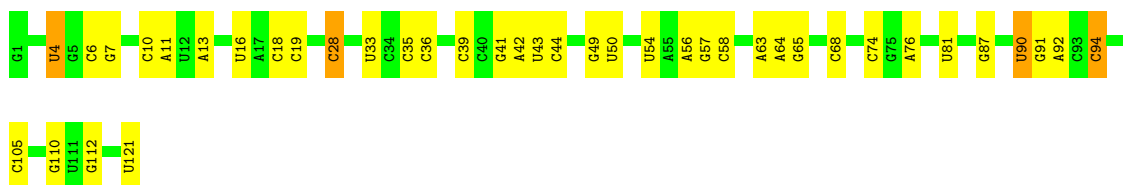
- Molecule 1: *Saccharomyces cerevisiae* S288C 35S pre-ribosomal RNA (RDN37-1), miscRNA



A2345	A2346	U2347	A2357	A2361	C2362	A2363	G2364	C2365	G2370	G2371	A2372	A2373	C2374	G2375	G2376	C2377	C2378	C2383	A2384	G2385	U2388	G2393	A2397	G2400	A2401	A2402	G2403	A2404	C2405	U2410	U2411	C2415	U2416	U2417	A2418	A2419	C2422	U2423	A2424	G2429	U2432	G2433	A2434	A2438	A2439							
C2114	G2115	A2116	A2117	C2118	A2119	G2122	A2131	C2132	U2133	G2134	U2135	U2136	A2137	A2138	A2139	A2143	A2144	A2145	U2148	G2157	A2158	U2159	G2160	A2166	A2167	A2168	G2169	U2170	A2171	A2172	U2176	G2177	A2178	C2179	G2180	U2184	G2185	U2186	G2187	A2188	U2189	C2192	U2193	G2194	U2205	G2206	A2207	G2210				
A2223	C2230	C2231	C2239	A2255	A2256	C2257	C2263	U2269	A2270	A2271	G2272	G2273	C2277	A2278	A2279	A2280	A2281	C2285	U2286	C2287	G2288	A2295	A2296	A2303	C2304	G2305	C2306	G2307	C2308	A2309	U2310	G2311	A2312	A2313	G2315	U2319	U2327	C2333	U2334	G2335	U2336	C2339	U2344									
U1181	A1182	C1185	U1191	C1192	A1193	U1194	U1195	A1196	A1197	C1201	G1209	U1210	U1211	A1212	U1213	U1214	A1217	C1218	U1220	A1221	G1222	C1227	G1230	A1231	G1232	G1233	G1234	U1235	G1236	G1237	C1238	C1239	A1245	G1246	G1249	U1252	C1253	C1254	C1255	G1256	C1257	U1258	A1259	G1262	A1263	G1264	A1180					
G1268	U1269	A1270	A1271	A1272	A1273	A1274	C1275	C1276	C1277	C1278	C1279	C1280	G1281	G1282	C1283	G1284	G1285	G1286	A1287	A1290	A1291	C1292	G1295	C1296	C1297	A1302	U1305	G1306	G1307	A1308	G1309	G1313	C1314	U1315	C1316	A1317	G1321	U1322	G1323	U1324	U1325	A1330	C1333	U1348	U1349	A1350	U1351	U1352	U1353	G1354		
A1355	U1356	G1357	G1362	A1365	A1366	C1372	G1382	G1385	A1386	C1391	G1392	A1393	A1394	A1399	G1400	G1408	A1418	A1419	G1422	C1423	C1424	U1425	U1430	G1434	G1435	U1436	C1437	G1443	A1446	U1448	A1449	G1450	C1451	U1455	A1456	U1457	U1458	A1468	C1469	U1470	U1471	U1472	G1473									
A1482	U1484	G1485	G1486	G1487	A1488	U1494	U1495	C1496	G1500	A1501	C1502	A1503	A1504	C1505	A1506	G1507	C1508	U1511	C1516	U1522	C1523	C1524	G1525	U1526	U1533	A1534	A1535	C1551	G1552	U1553	U1554	U1555	C1556	A1557	A1558	U1559	G1560	G1561	C1562	C1563	U1564	G1565	U1566	U1567	U1568	U1570	A1571	U1572				
G1573	C1574	G1577	C1578	C1579	A1580	G1581	C1582	A1583	U1584	C1585	G1586	A1587	A1588	A1589	G1590	A1593	A1594	U1595	C1596	G1604	A1605	U1606	U1607	C1608	A1613	U1614	U1620	C1628	U1629	U1630	C1633	G1634	G1635	U1636	A1637	C1638	G1640	A1643	U1644	U1645	G1646	C1657	G1658	U1659	G1662	C1663	G1664					
A1683	U1687	C1701	C1706	A1707	G1712	A1713	A1714	C1715	U1716	U1717	A1719	G1720	U1721	U1724	G1728	A1729	G1730	A1731	U1732	G1736	U1737	U1740	A1741	U1742	A1750	A1751	U1756	A1760	C1761	C1762	U1763	U1764	U1765	G1769	G1770	C1773	C1774	G1775	C1779	G1780	C1781	C1788	C1793	G1794								
U1795	G1796	A1797	C1805	A1806	G1807	G1808	G1812	A1813	A1814	U1815	U1818	U1819	U1820	U1821	A1835	C1836	U1837	G1838	A1839	U1840	A1841	A1842	C1843	A1844	G1845	A1846	A1847	G1848	C1849	G1851	U1855	C1856	C1857	G1863	A1864	A1865	C1870	U1871	C1872	U1873	A1874	G1878	A1879	U1880	A1881	A1884	U1885	A1886				
G1889	A1893	A1896	A1900	C1904	G1905	G1906	C1907	A1908	U1912	G1913	A1915	C1926	G1927	G1928	U1929	A1930	U1931	A1932	G1935	G1948	G1953	U1954	U1955	A	U	A	G	C	C	C	C	C	U	U	C	U	C	C	A	G	C	C	G	C	C	C	C	C				
G	C	U	G	G	A	C	U	U	G	C	U	G	G	G	U	C	C	G	G	U	U	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
U	U	G	U	A	A	C	U	U	G	G	G	U	G	G	C	U	C	U	U	U	U	U	U	U	A	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
C2093	C2094	C2101	U2102	A2107	G2111	A2093	C2094	C2101	U2102	A2107	G2111																																									



• Molecule 2: 5.8S ribosomal RNA

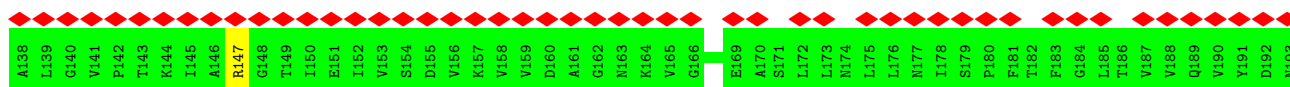
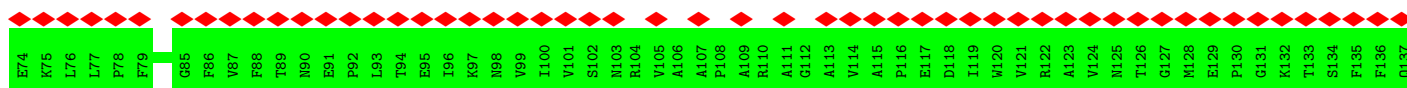
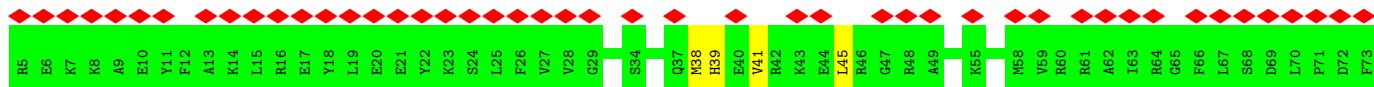
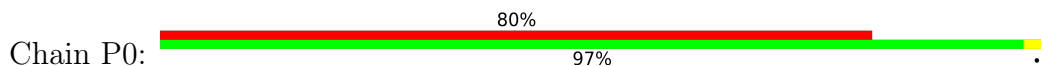


• Molecule 3: 5S ribosomal RNA

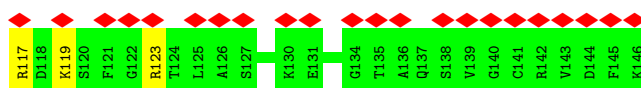
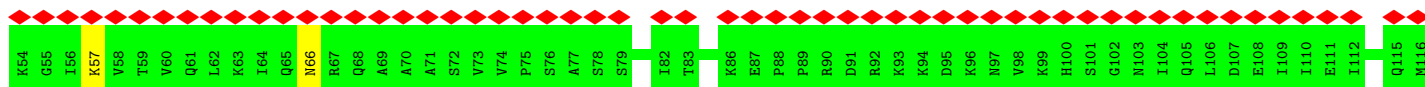
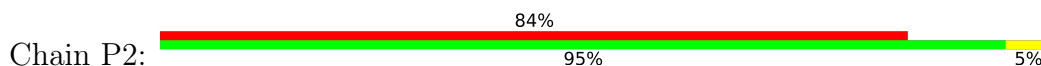




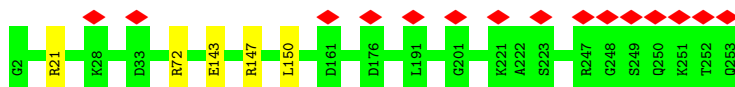
- Molecule 4: 60S acidic ribosomal protein P0



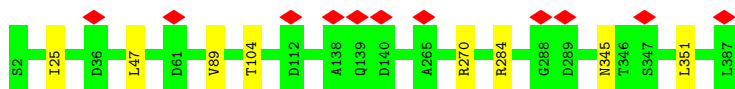
- Molecule 5: 60S ribosomal protein L12-A



- Molecule 6: 60S ribosomal protein L2-A

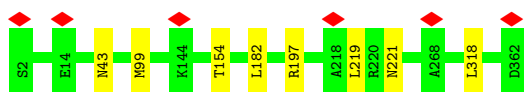


- Molecule 7: 60S ribosomal protein L3



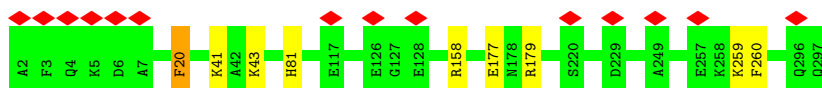
- Molecule 8: 60S ribosomal protein L4-A

Chain C:  98%




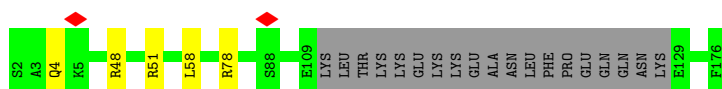
- Molecule 9: 60S ribosomal protein L5

Chain D:  5% 97%



- Molecule 10: 60S ribosomal protein L6-A

Chain E:  86% 11%



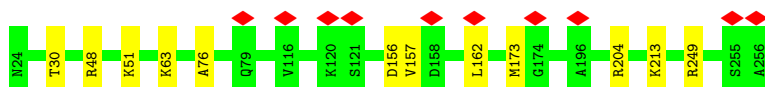
- Molecule 11: 60S ribosomal protein L7-A

Chain F:  95% 5%



- Molecule 12: 60S ribosomal protein L8-A

Chain G:  95% 5%




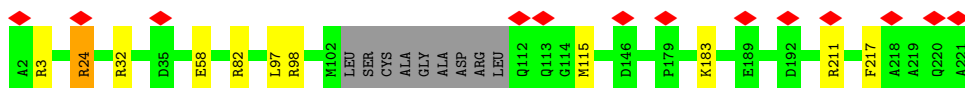
- Molecule 13: 60S ribosomal protein L9-A

Chain H:  5% 95% 5%



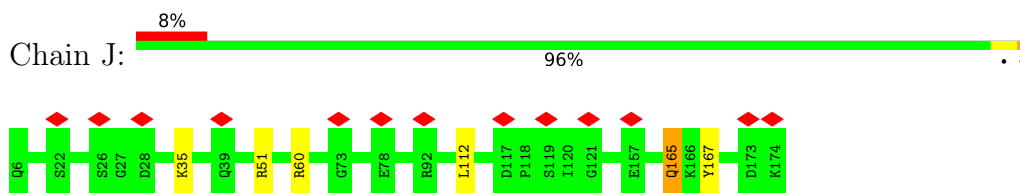
- Molecule 14: 60S ribosomal protein L10

Chain I:  6% 91% 5%

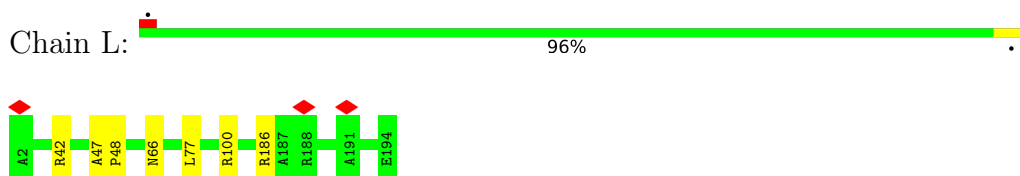




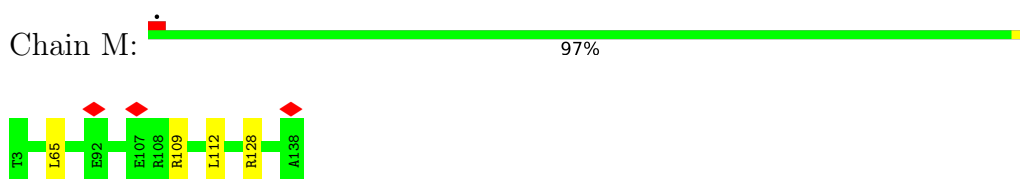
- Molecule 15: 60S ribosomal protein L11-B



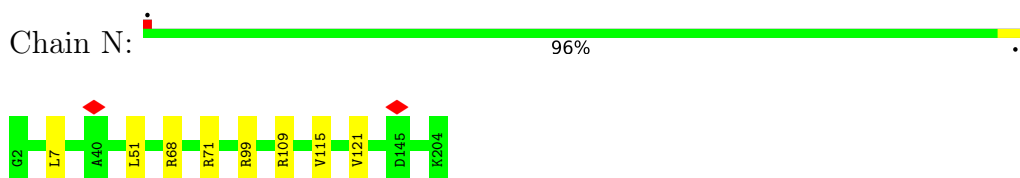
- Molecule 16: 60S ribosomal protein L13-A



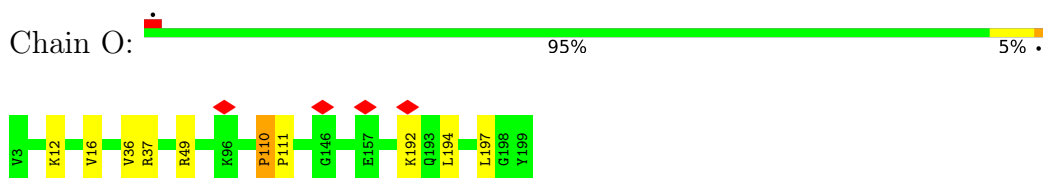
- Molecule 17: 60S ribosomal protein L14-A



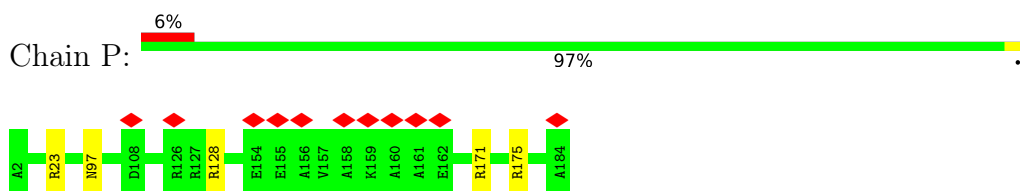
- Molecule 18: 60S ribosomal protein L15-A



- Molecule 19: 60S ribosomal protein L16-A

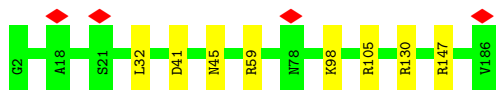


- Molecule 20: 60S ribosomal protein L17-A



- Molecule 21: 60S ribosomal protein L18-A

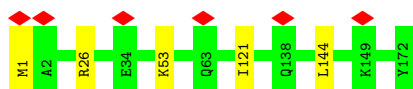




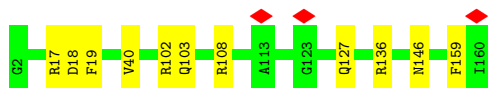
- Molecule 22: 60S ribosomal protein L19-A



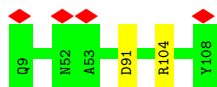
- Molecule 23: 60S ribosomal protein L20-A



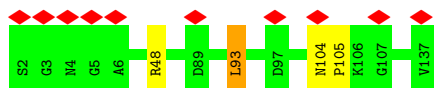
- Molecule 24: 60S ribosomal protein L21-A



- Molecule 25: 60S ribosomal protein L22-A



- Molecule 26: 60S ribosomal protein L23-A

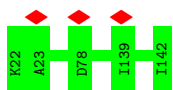


- Molecule 27: 60S ribosomal protein L24-A



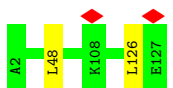
- Molecule 28: 60S ribosomal protein L25

Chain X:  100%



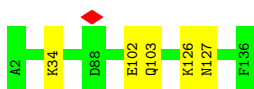
- Molecule 29: 60S ribosomal protein L26-A

Chain Y:  98%



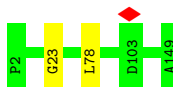
- Molecule 30: 60S ribosomal protein L27-A

Chain Z:  96%



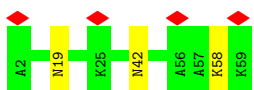
- Molecule 31: 60S ribosomal protein L28

Chain a:  99%



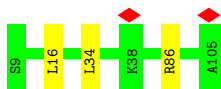
- Molecule 32: 60S ribosomal protein L29

Chain b:  95%



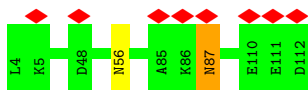
- Molecule 33: 60S ribosomal protein L30

Chain c:  97%



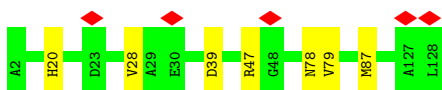
- Molecule 34: 60S ribosomal protein L31-A

Chain d:  98%

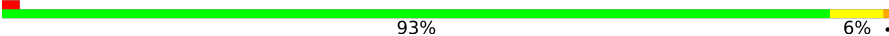


- Molecule 35: 60S ribosomal protein L32

Chain e:  94% 6%

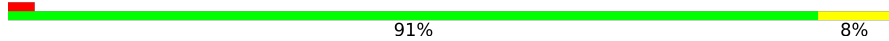


- Molecule 36: 60S ribosomal protein L33-A

Chain f:  93% 6%



- Molecule 37: 60S ribosomal protein L34-A

Chain g:  91% 8%

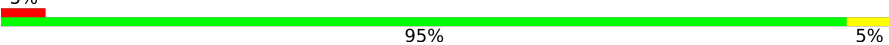


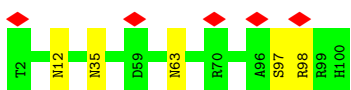
- Molecule 38: 60S ribosomal protein L35-A

Chain h:  95% 5%



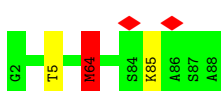
- Molecule 39: 60S ribosomal protein L36-A

Chain i:  5% 95% 5%



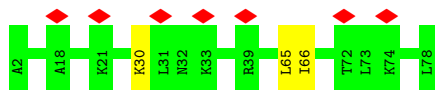
- Molecule 40: 60S ribosomal protein L37-A

Chain j:  97% 2%

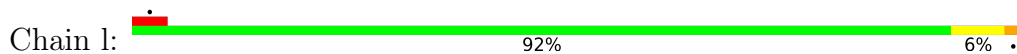


- Molecule 41: 60S ribosomal protein L38

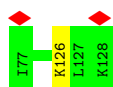
Chain k:  9% 96%



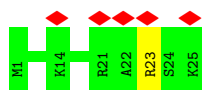
- Molecule 42: 60S ribosomal protein L39



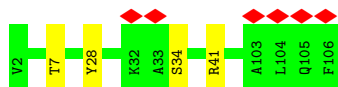
- Molecule 43: Ubiquitin-60S ribosomal protein L40



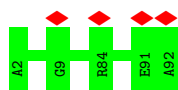
- Molecule 44: 60S ribosomal protein L41-B



- Molecule 45: 60S ribosomal protein L42-A

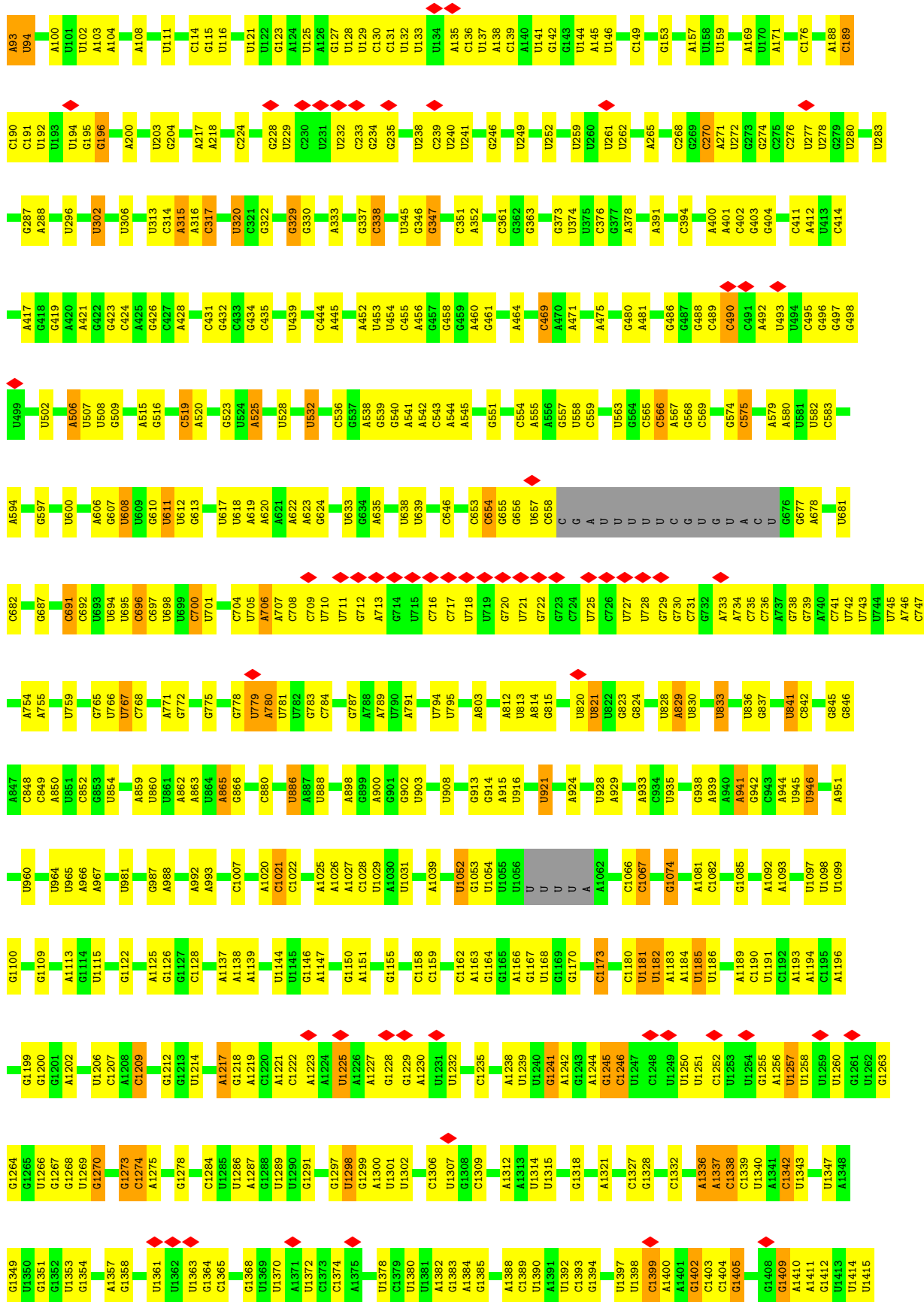


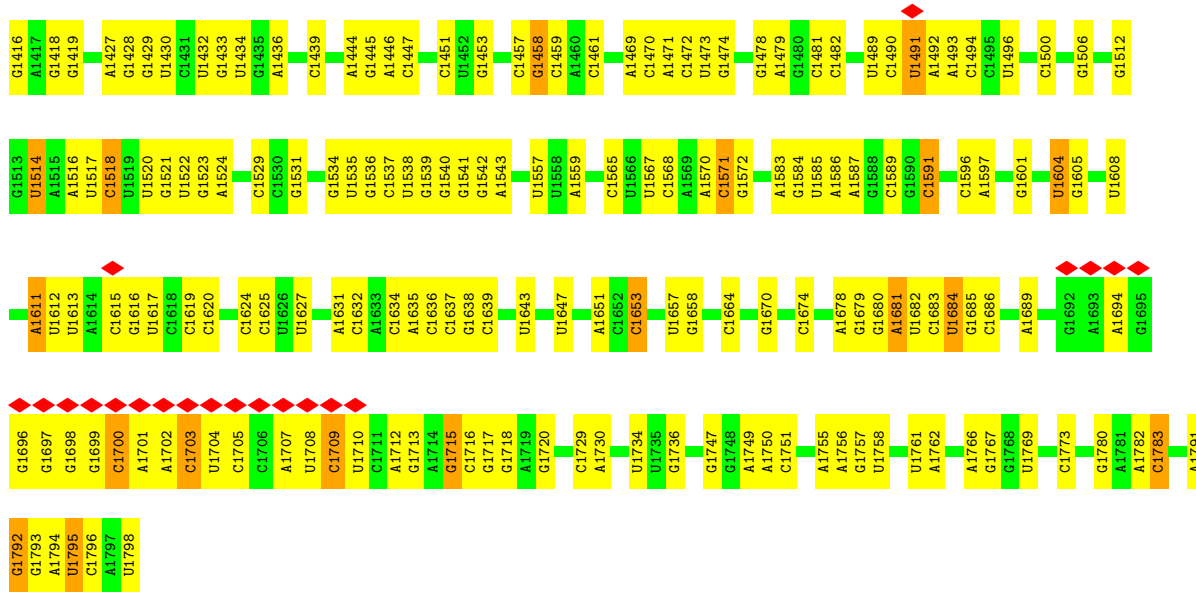
- Molecule 46: 60S ribosomal protein L43-A



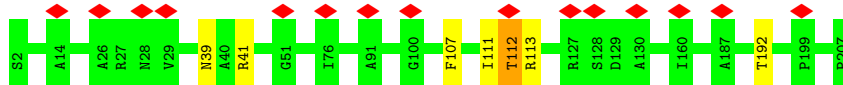
- Molecule 47: 18S ribosomal RNA



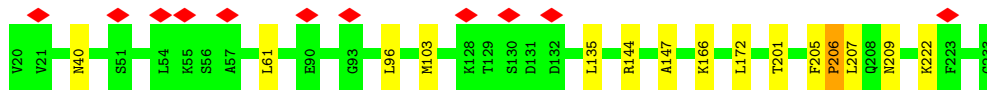
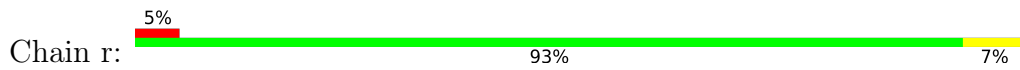




• Molecule 48: 40S ribosomal protein S0-A



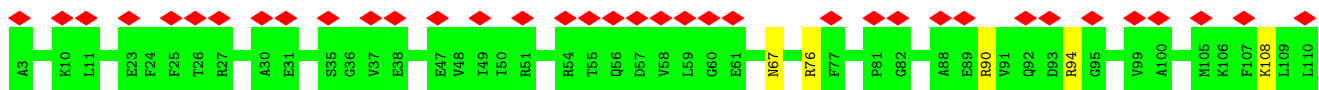
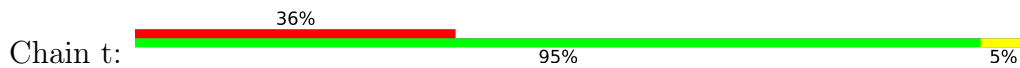
• Molecule 49: 40S ribosomal protein S1-A

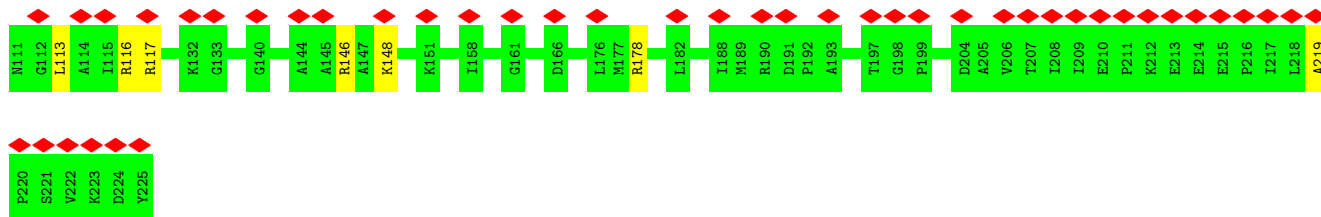


• Molecule 50: 40S ribosomal protein S2

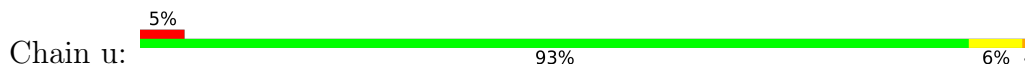


• Molecule 51: 40S ribosomal protein S3

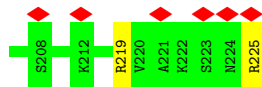
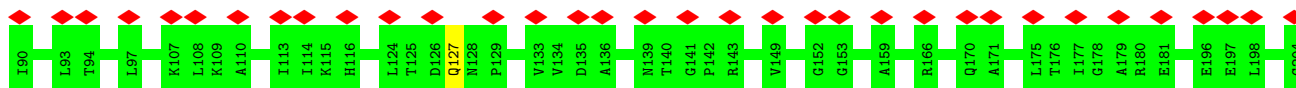
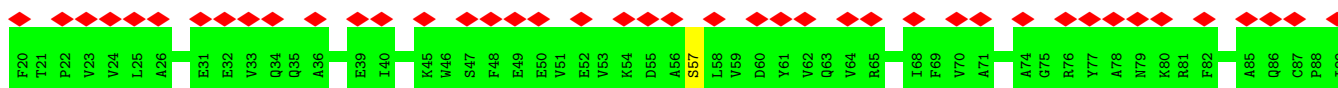
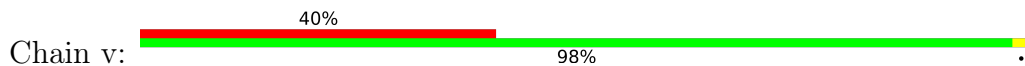




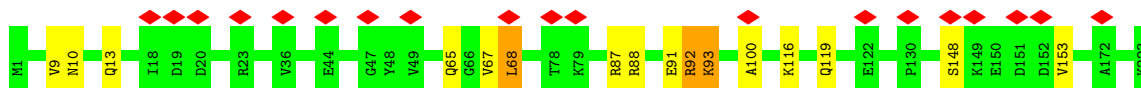
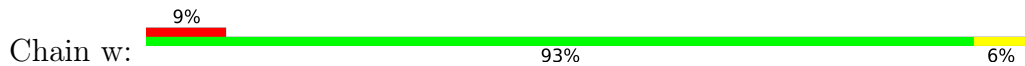
• Molecule 52: 40S ribosomal protein S4-A



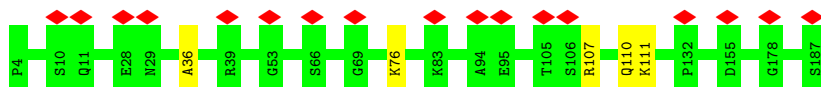
• Molecule 53: 40S ribosomal protein S5



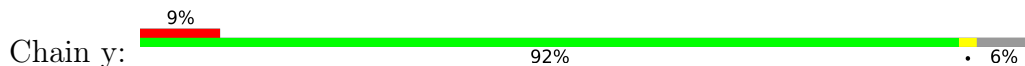
• Molecule 54: 40S ribosomal protein S6-A



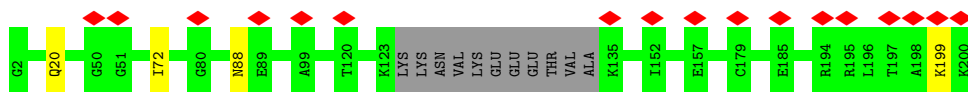
• Molecule 55: 40S ribosomal protein S7-A



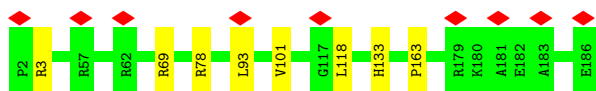
• Molecule 56: 40S ribosomal protein S8-A



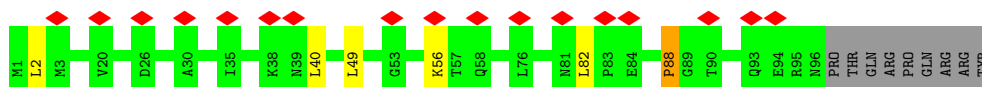
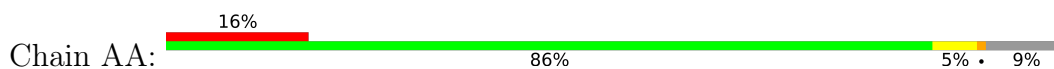




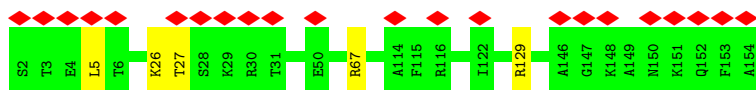
- Molecule 57: 40S ribosomal protein S9-A



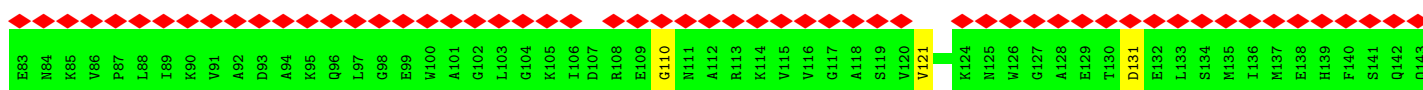
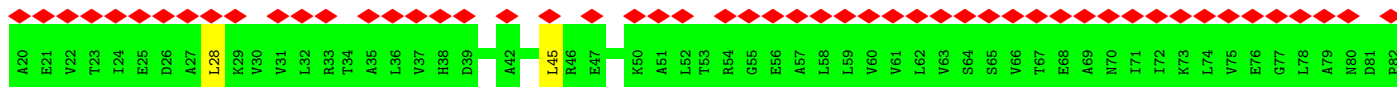
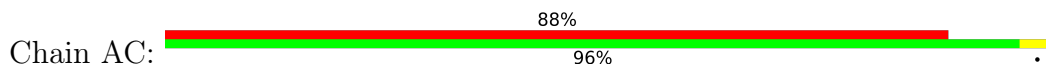
- Molecule 58: 40S ribosomal protein S10-A



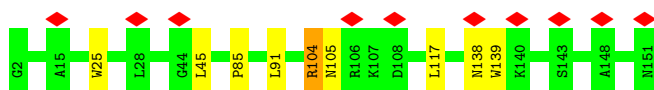
- Molecule 59: 40S ribosomal protein S11-A



- Molecule 60: 40S ribosomal protein S12

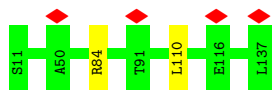


- Molecule 61: 40S ribosomal protein S13

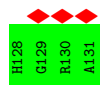
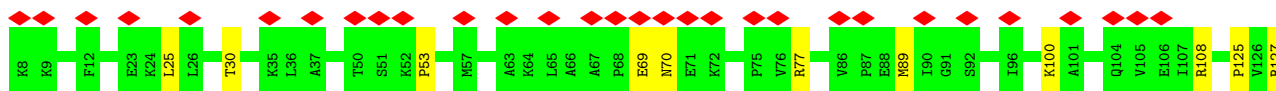
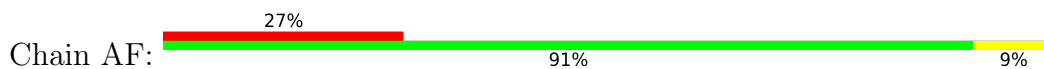


- Molecule 62: 40S ribosomal protein S14-B

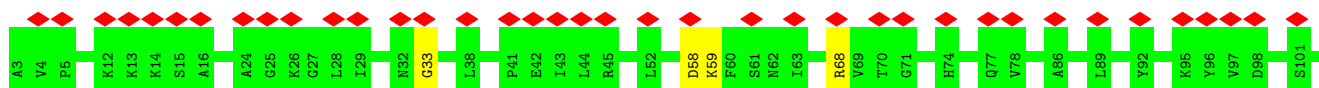




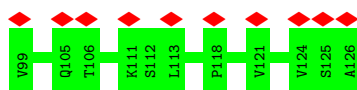
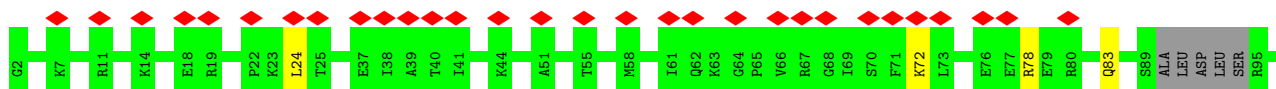
- Molecule 63: 40S ribosomal protein S15



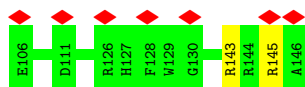
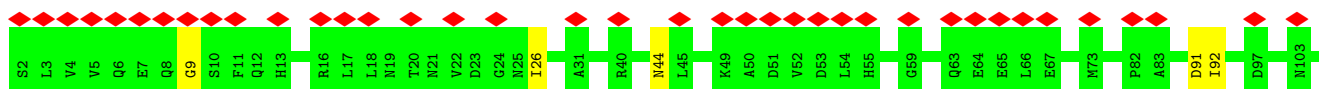
- Molecule 64: 40S ribosomal protein S16-A



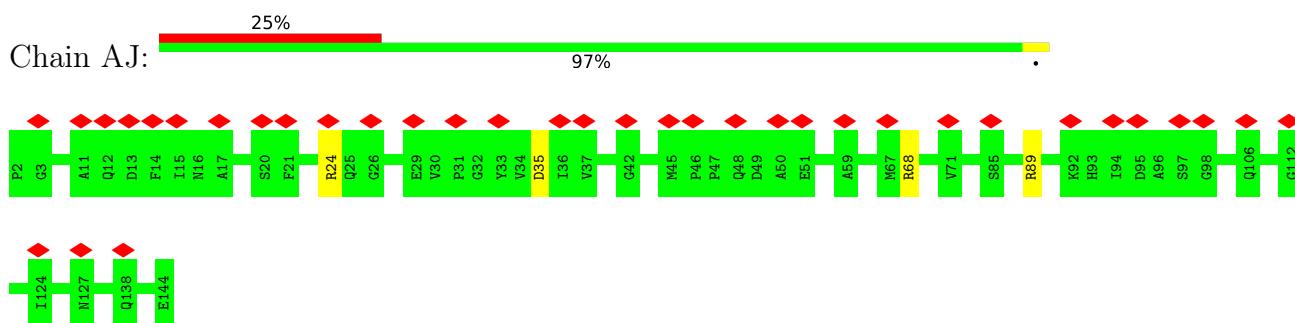
- Molecule 65: 40S ribosomal protein S17-B



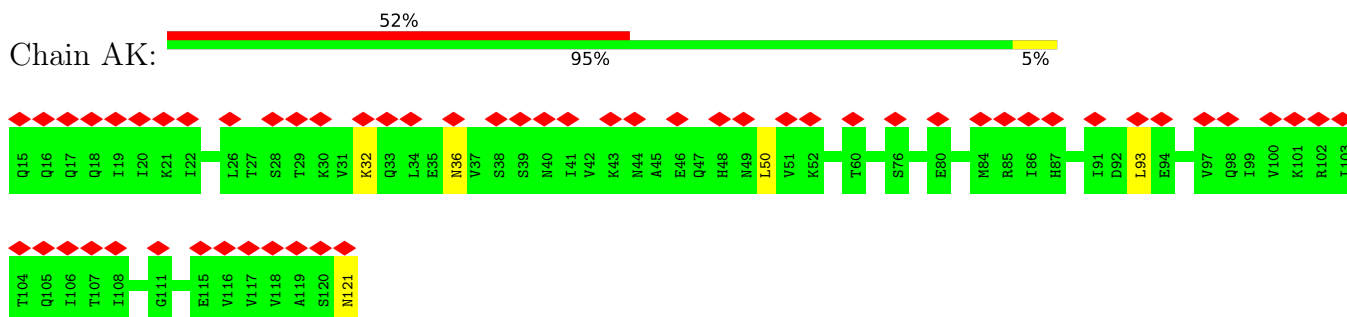
- Molecule 66: 40S ribosomal protein S18-A



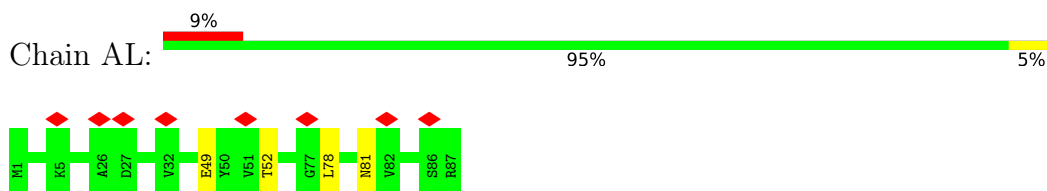
- Molecule 67: 40S ribosomal protein S19-A



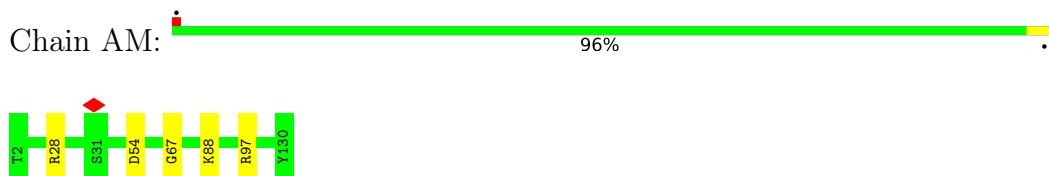
- Molecule 68: 40S ribosomal protein S20



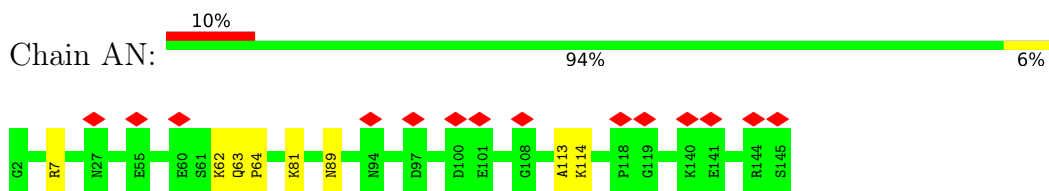
- Molecule 69: 40S ribosomal protein S21-A



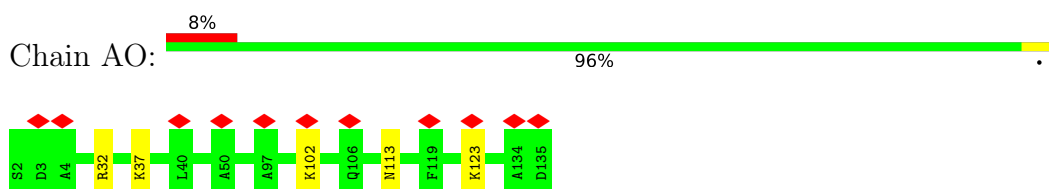
- Molecule 70: 40S ribosomal protein S22-A



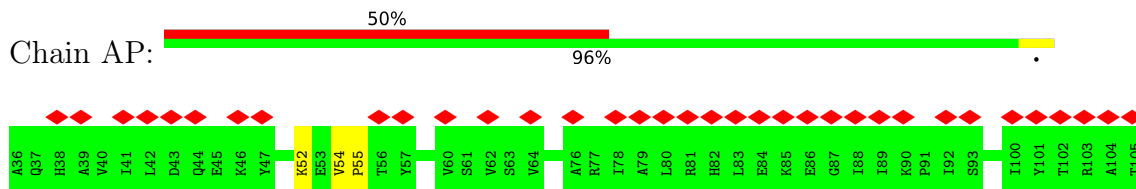
- Molecule 71: 40S ribosomal protein S23-A



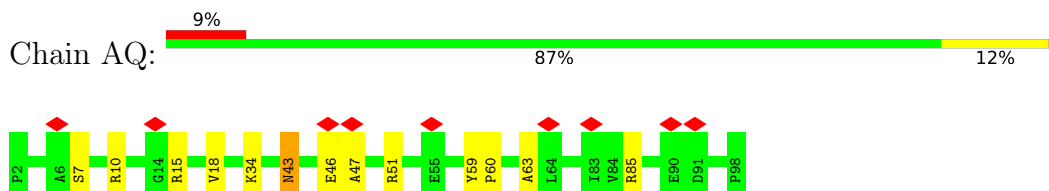
- Molecule 72: 40S ribosomal protein S24-A



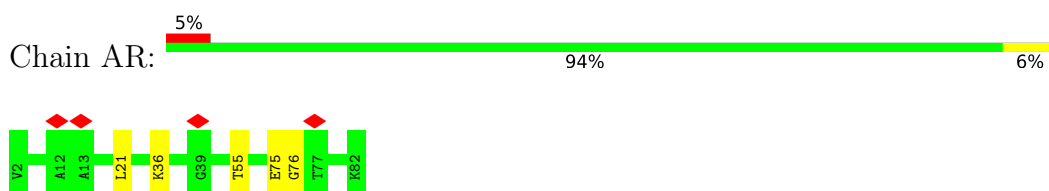
• Molecule 73: 40S ribosomal protein S25-A



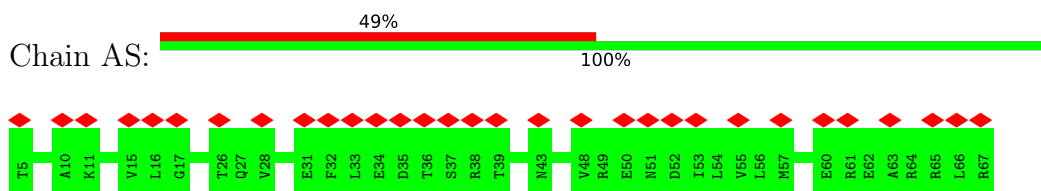
• Molecule 74: 40S ribosomal protein S26-B



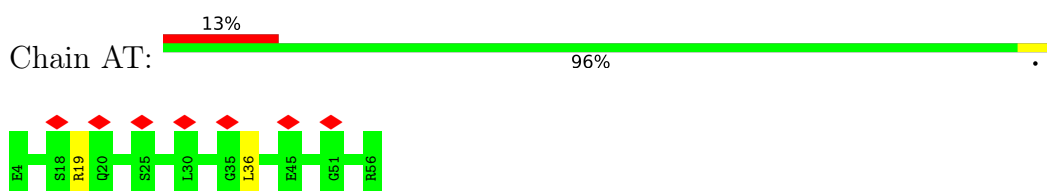
• Molecule 75: 40S ribosomal protein S27-A



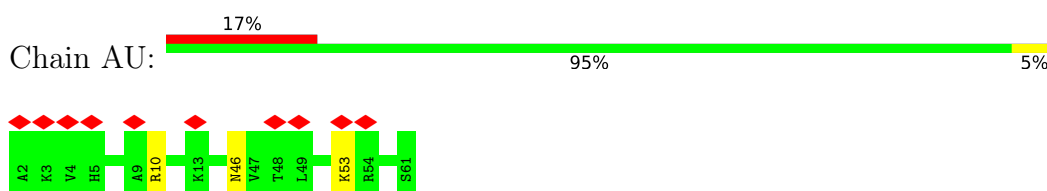
• Molecule 76: 40S ribosomal protein S28-A



• Molecule 77: 40S ribosomal protein S29-A

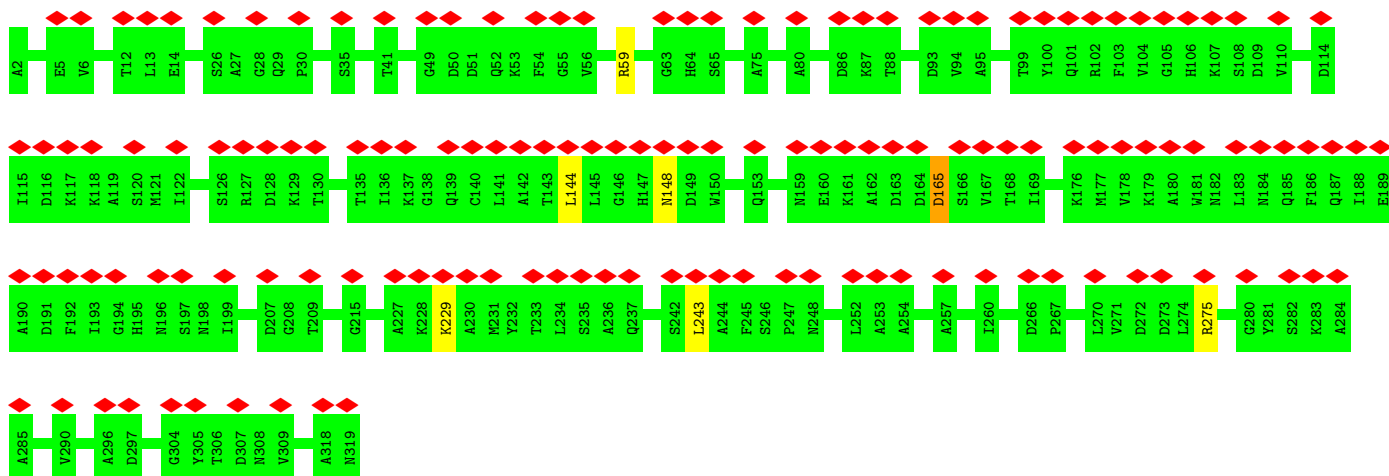


• Molecule 78: 40S ribosomal protein S30-A

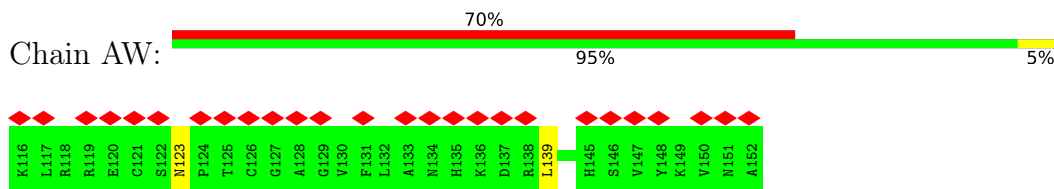


• Molecule 79: Guanine nucleotide-binding protein subunit beta-like protein

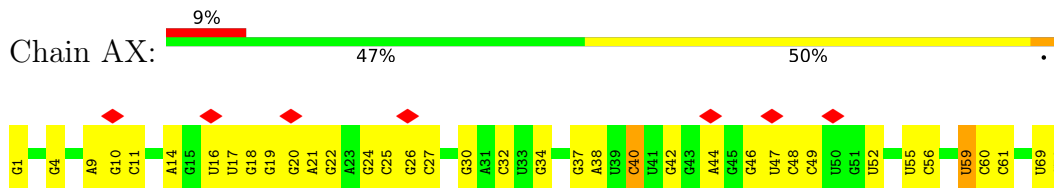




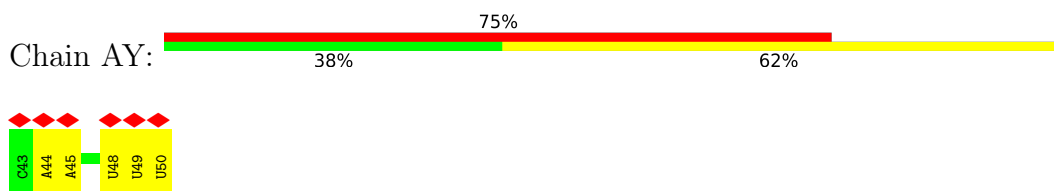
• Molecule 80: Ubiquitin-40S ribosomal protein S31



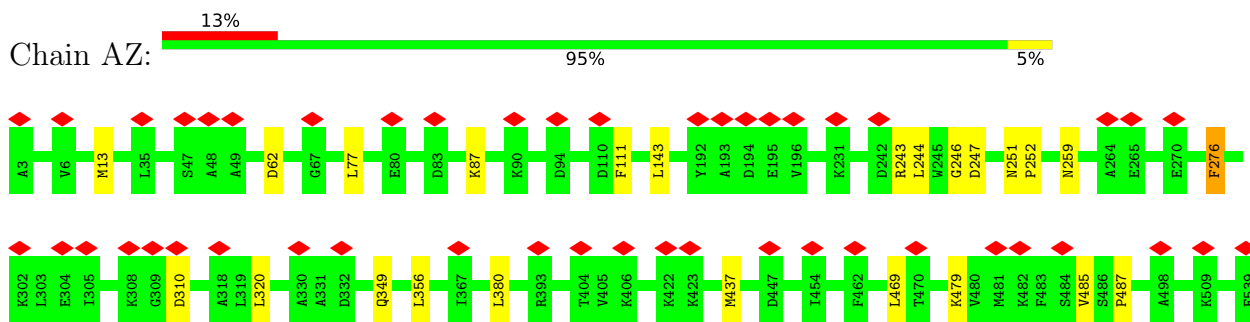
• Molecule 81: Transfer RNA - Phe

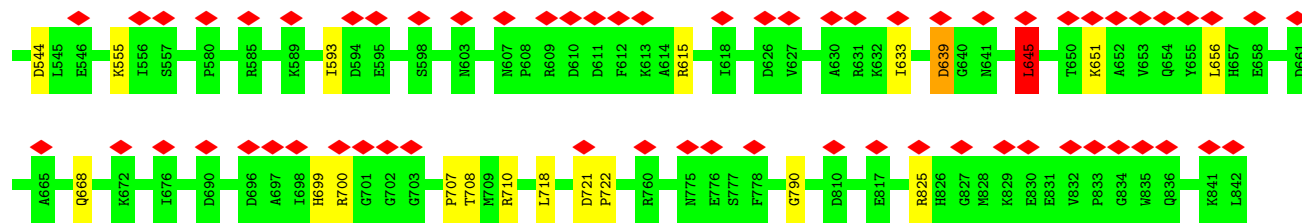


• Molecule 82: Messenger RNA



• Molecule 83: Elongation factor 2





## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	189700	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 ( $e^-/\text{\AA}^2$ )	60	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	0.347	Depositor
Minimum map value	-0.197	Depositor
Average map value	0.003	Depositor
Map value standard deviation	0.018	Depositor
Recommended contour level	0.05	Depositor
Map size (Å)	396.0, 396.0, 396.0	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.1, 1.1, 1.1	Depositor

## 5 Model quality i

### 5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: SO1, ZN, GCP, DDE

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
1	1	0.64	0/77157	1.21	496/120295 (0.4%)
2	3	0.54	0/2883	1.17	23/4491 (0.5%)
3	4	0.61	0/3746	1.13	14/5832 (0.2%)
4	P0	0.31	0/1498	0.67	1/2025 (0.0%)
5	P2	0.28	0/728	0.68	0/975
6	A	0.43	0/1948	0.72	1/2617 (0.0%)
7	B	0.37	0/3146	0.65	1/4228 (0.0%)
8	C	0.35	0/2800	0.66	3/3790 (0.1%)
9	D	0.34	0/2425	0.62	0/3271
10	E	0.31	0/1260	0.62	0/1694
11	F	0.37	0/1821	0.66	0/2451
12	G	0.34	0/1836	0.64	1/2481 (0.0%)
13	H	0.34	0/1539	0.64	0/2073
14	I	0.37	0/1741	0.67	0/2335
15	J	0.32	0/1374	0.73	1/1842 (0.1%)
16	L	0.35	0/1568	0.65	0/2106
17	M	0.31	0/1068	0.62	1/1438 (0.1%)
18	N	0.41	0/1757	0.69	1/2354 (0.0%)
19	O	0.39	0/1585	0.66	2/2128 (0.1%)
20	P	0.35	0/1443	0.62	0/1944
21	Q	0.34	0/1465	0.65	2/1965 (0.1%)
22	R	0.32	0/1538	0.61	0/2050
23	S	0.36	0/1481	0.65	1/1990 (0.1%)
24	T	0.36	0/1300	0.68	2/1743 (0.1%)
25	U	0.35	0/812	0.67	1/1099 (0.1%)
26	V	0.38	0/1018	0.71	1/1369 (0.1%)
27	W	0.36	0/533	0.70	1/707 (0.1%)
28	X	0.36	0/979	0.66	0/1321
29	Y	0.31	0/1004	0.68	2/1341 (0.1%)
30	Z	0.36	0/1118	0.66	2/1497 (0.1%)
31	a	0.36	0/1204	0.65	0/1612
32	b	0.28	0/473	0.63	0/629



Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
33	c	0.35	0/751	0.67	1/1008 (0.1%)
34	d	0.36	0/897	0.63	0/1205
35	e	0.32	0/1041	0.61	0/1394
36	f	0.40	0/868	0.70	1/1168 (0.1%)
37	g	0.37	0/890	0.72	2/1189 (0.2%)
38	h	0.31	0/978	0.66	2/1301 (0.2%)
39	i	0.32	0/778	0.66	0/1034
40	j	0.40	0/696	0.74	1/923 (0.1%)
41	k	0.29	0/618	0.66	1/826 (0.1%)
42	l	0.45	0/443	0.83	1/588 (0.2%)
43	m	0.35	0/423	0.63	0/562
44	n	0.28	0/228	0.60	0/293
45	o	0.35	0/860	0.65	0/1136
46	p	0.39	0/701	0.68	0/934
47	2	0.53	0/42328	1.23	349/65955 (0.5%)
48	q	0.31	0/1617	0.63	0/2215
49	r	0.33	0/1735	0.78	3/2335 (0.1%)
50	s	0.32	0/1665	0.67	1/2263 (0.0%)
51	t	0.32	0/1759	0.69	1/2368 (0.0%)
52	u	0.33	0/2109	0.76	3/2839 (0.1%)
53	v	0.30	0/1629	0.67	0/2202
54	w	0.33	0/1814	0.77	2/2425 (0.1%)
55	x	0.33	0/1506	0.73	0/2028
56	y	0.33	0/1514	0.68	0/2021
57	z	0.33	0/1519	0.70	3/2035 (0.1%)
58	AA	0.33	0/789	0.75	4/1067 (0.4%)
59	AB	0.34	0/1247	0.66	1/1681 (0.1%)
60	AC	0.29	0/898	0.72	2/1220 (0.2%)
61	AD	0.32	0/1215	0.70	1/1638 (0.1%)
62	AE	0.32	0/901	0.64	0/1217
63	AF	0.36	0/998	0.74	1/1341 (0.1%)
64	AG	0.30	0/1125	0.73	0/1510
65	AH	0.30	0/935	0.67	1/1254 (0.1%)
66	AI	0.29	0/1211	0.68	1/1628 (0.1%)
67	AJ	0.32	0/1130	0.67	1/1517 (0.1%)
68	AK	0.30	0/865	0.71	2/1169 (0.2%)
69	AL	0.38	0/693	0.78	1/935 (0.1%)
70	AM	0.36	0/1038	0.68	2/1395 (0.1%)
71	AN	0.36	0/1139	0.72	0/1518
72	AO	0.31	0/1087	0.63	0/1449
73	AP	0.32	0/571	0.73	0/768
74	AQ	0.36	0/782	0.82	2/1047 (0.2%)
75	AR	0.38	0/620	0.81	0/838

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
76	AS	0.30	0/499	0.69	0/670
77	AT	0.32	0/452	0.63	1/600 (0.2%)
78	AU	0.29	0/483	0.59	0/643
79	AV	0.30	0/2490	0.70	3/3389 (0.1%)
80	AW	0.30	0/292	0.65	0/390
81	AX	0.52	1/1818 (0.1%)	1.34	25/2831 (0.9%)
82	AY	0.30	0/181	0.97	0/278
83	AZ	0.35	0/6655	0.76	11/9009 (0.1%)
All	All	0.51	1/225729 (0.0%)	1.04	987/330942 (0.3%)

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
4	P0	0	2
5	P2	0	1
6	A	0	1
7	B	0	1
9	D	0	5
10	E	0	1
11	F	0	3
12	G	0	3
13	H	0	2
14	I	0	2
15	J	0	1
16	L	0	1
19	O	0	2
21	Q	0	1
24	T	0	2
26	V	0	2
27	W	0	1
31	a	0	1
34	d	0	2
35	e	0	2
36	f	0	1
37	g	0	3
38	h	0	1
39	i	0	3
40	j	0	1
42	l	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
45	o	0	3
48	q	0	4
49	r	0	4
51	t	0	1
52	u	0	5
53	v	0	2
54	w	0	11
55	x	0	2
56	y	0	1
57	z	0	2
59	AB	0	1
60	AC	0	1
61	AD	0	3
63	AF	0	2
64	AG	0	3
65	AH	0	2
66	AI	0	1
69	AL	0	2
71	AN	0	1
72	AO	0	1
73	AP	0	1
74	AQ	0	7
75	AR	0	2
79	AV	0	1
83	AZ	0	14
All	All	0	123

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
81	AX	1	G	OP3-P	-10.59	1.48	1.61

The worst 5 of 987 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
47	2	94	U	C2-N3-C4	22.19	140.31	127.00
47	2	654	C	N1-C2-O2	13.09	126.75	118.90
47	2	654	C	C2-N1-C1'	12.26	132.29	118.80
47	2	94	U	N3-C4-C5	12.07	121.84	114.60
47	2	453	U	C2-N1-C1'	11.67	131.70	117.70

There are no chirality outliers.

5 of 123 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
6	A	143	GLU	Peptide
7	B	25	ILE	Peptide
4	P0	39	HIS	Peptide
4	P0	41	VAL	Peptide
5	P2	117	ARG	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	
4	P0	187/189 (99%)	151 (81%)	36 (19%)	0	100	100
5	P2	92/94 (98%)	71 (77%)	21 (23%)	0	100	100
6	A	250/252 (99%)	212 (85%)	38 (15%)	0	100	100
7	B	384/386 (100%)	337 (88%)	47 (12%)	0	100	100
8	C	359/361 (99%)	307 (86%)	52 (14%)	0	100	100
9	D	294/296 (99%)	257 (87%)	35 (12%)	2 (1%)	22	62
10	E	152/175 (87%)	135 (89%)	17 (11%)	0	100	100
11	F	220/222 (99%)	184 (84%)	34 (16%)	2 (1%)	17	56
12	G	231/233 (99%)	199 (86%)	31 (13%)	1 (0%)	34	72
13	H	189/191 (99%)	159 (84%)	30 (16%)	0	100	100
14	I	207/220 (94%)	182 (88%)	24 (12%)	1 (0%)	29	68
15	J	167/169 (99%)	135 (81%)	31 (19%)	1 (1%)	25	65
16	L	191/193 (99%)	155 (81%)	34 (18%)	2 (1%)	15	54
17	M	134/136 (98%)	119 (89%)	15 (11%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
18	N	201/203 (99%)	171 (85%)	30 (15%)	0	100	100
19	O	195/197 (99%)	170 (87%)	22 (11%)	3 (2%)	10	46
20	P	181/183 (99%)	161 (89%)	20 (11%)	0	100	100
21	Q	183/185 (99%)	162 (88%)	21 (12%)	0	100	100
22	R	186/188 (99%)	173 (93%)	13 (7%)	0	100	100
23	S	170/172 (99%)	147 (86%)	23 (14%)	0	100	100
24	T	157/159 (99%)	137 (87%)	19 (12%)	1 (1%)	25	65
25	U	98/100 (98%)	85 (87%)	13 (13%)	0	100	100
26	V	134/136 (98%)	114 (85%)	19 (14%)	1 (1%)	22	62
27	W	61/63 (97%)	55 (90%)	6 (10%)	0	100	100
28	X	119/121 (98%)	103 (87%)	16 (13%)	0	100	100
29	Y	124/126 (98%)	112 (90%)	12 (10%)	0	100	100
30	Z	133/135 (98%)	111 (84%)	22 (16%)	0	100	100
31	a	146/148 (99%)	117 (80%)	28 (19%)	1 (1%)	22	62
32	b	56/58 (97%)	48 (86%)	8 (14%)	0	100	100
33	c	95/97 (98%)	84 (88%)	11 (12%)	0	100	100
34	d	107/109 (98%)	91 (85%)	16 (15%)	0	100	100
35	e	125/127 (98%)	111 (89%)	12 (10%)	2 (2%)	9	45
36	f	104/106 (98%)	82 (79%)	20 (19%)	2 (2%)	8	41
37	g	110/112 (98%)	99 (90%)	9 (8%)	2 (2%)	8	42
38	h	117/119 (98%)	103 (88%)	14 (12%)	0	100	100
39	i	97/99 (98%)	78 (80%)	19 (20%)	0	100	100
40	j	85/87 (98%)	65 (76%)	19 (22%)	1 (1%)	13	50
41	k	75/77 (97%)	67 (89%)	8 (11%)	0	100	100
42	l	48/50 (96%)	36 (75%)	11 (23%)	1 (2%)	7	39
43	m	50/52 (96%)	45 (90%)	5 (10%)	0	100	100
44	n	23/25 (92%)	23 (100%)	0	0	100	100
45	o	103/105 (98%)	78 (76%)	25 (24%)	0	100	100
46	p	89/91 (98%)	78 (88%)	11 (12%)	0	100	100
48	q	204/206 (99%)	169 (83%)	33 (16%)	2 (1%)	15	54
49	r	212/214 (99%)	161 (76%)	49 (23%)	2 (1%)	17	56

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
50	s	215/217 (99%)	183 (85%)	32 (15%)	0	100	100
51	t	221/223 (99%)	182 (82%)	39 (18%)	0	100	100
52	u	258/260 (99%)	200 (78%)	56 (22%)	2 (1%)	19	60
53	v	204/206 (99%)	164 (80%)	40 (20%)	0	100	100
54	w	221/223 (99%)	157 (71%)	61 (28%)	3 (1%)	11	47
55	x	182/184 (99%)	150 (82%)	31 (17%)	1 (0%)	29	68
56	y	184/199 (92%)	141 (77%)	43 (23%)	0	100	100
57	z	183/185 (99%)	153 (84%)	30 (16%)	0	100	100
58	AA	94/105 (90%)	77 (82%)	16 (17%)	1 (1%)	14	52
59	AB	151/153 (99%)	125 (83%)	26 (17%)	0	100	100
60	AC	122/124 (98%)	98 (80%)	23 (19%)	1 (1%)	19	60
61	AD	148/150 (99%)	129 (87%)	15 (10%)	4 (3%)	5	34
62	AE	125/127 (98%)	105 (84%)	20 (16%)	0	100	100
63	AF	122/124 (98%)	85 (70%)	33 (27%)	4 (3%)	4	30
64	AG	139/141 (99%)	111 (80%)	26 (19%)	2 (1%)	11	47
65	AH	116/125 (93%)	97 (84%)	19 (16%)	0	100	100
66	AI	143/145 (99%)	122 (85%)	19 (13%)	2 (1%)	11	47
67	AJ	141/143 (99%)	124 (88%)	17 (12%)	0	100	100
68	AK	105/107 (98%)	91 (87%)	14 (13%)	0	100	100
69	AL	85/87 (98%)	64 (75%)	20 (24%)	1 (1%)	13	50
70	AM	127/129 (98%)	114 (90%)	12 (9%)	1 (1%)	19	60
71	AN	142/144 (99%)	114 (80%)	26 (18%)	2 (1%)	11	47
72	AO	132/134 (98%)	112 (85%)	20 (15%)	0	100	100
73	AP	68/70 (97%)	46 (68%)	21 (31%)	1 (2%)	10	46
74	AQ	95/97 (98%)	65 (68%)	30 (32%)	0	100	100
75	AR	79/81 (98%)	57 (72%)	21 (27%)	1 (1%)	12	48
76	AS	61/63 (97%)	54 (88%)	7 (12%)	0	100	100
77	AT	51/53 (96%)	46 (90%)	5 (10%)	0	100	100
78	AU	58/60 (97%)	49 (84%)	9 (16%)	0	100	100
79	AV	316/318 (99%)	254 (80%)	61 (19%)	1 (0%)	41	76
80	AW	35/37 (95%)	26 (74%)	9 (26%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
83	AZ	837/840 (100%)	676 (81%)	157 (19%)	4 (0%)	29	68
All	All	12005/12221 (98%)	10010 (83%)	1937 (16%)	58 (0%)	32	68

5 of 58 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
19	O	111	PRO
48	q	113	ARG
49	r	207	LEU
54	w	10	ASN
54	w	68	LEU

### 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	
4	P0	160/160 (100%)	158 (99%)	2 (1%)	69	82
5	P2	81/81 (100%)	77 (95%)	4 (5%)	25	51
6	A	193/194 (100%)	190 (98%)	3 (2%)	62	79
7	B	321/322 (100%)	315 (98%)	6 (2%)	57	75
8	C	288/288 (100%)	283 (98%)	5 (2%)	60	78
9	D	244/244 (100%)	241 (99%)	3 (1%)	71	84
10	E	134/152 (88%)	130 (97%)	4 (3%)	41	63
11	F	186/186 (100%)	181 (97%)	5 (3%)	44	66
12	G	187/191 (98%)	180 (96%)	7 (4%)	34	59
13	H	171/171 (100%)	164 (96%)	7 (4%)	30	56
14	I	177/186 (95%)	168 (95%)	9 (5%)	24	50
15	J	147/147 (100%)	143 (97%)	4 (3%)	44	66
16	L	154/154 (100%)	150 (97%)	4 (3%)	46	67
17	M	107/107 (100%)	104 (97%)	3 (3%)	43	65
18	N	175/175 (100%)	168 (96%)	7 (4%)	31	56

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
19	O	160/160 (100%)	156 (98%)	4 (2%)	47	68
20	P	140/145 (97%)	135 (96%)	5 (4%)	35	60
21	Q	150/150 (100%)	145 (97%)	5 (3%)	38	61
22	R	153/153 (100%)	148 (97%)	5 (3%)	38	61
23	S	156/156 (100%)	152 (97%)	4 (3%)	46	67
24	T	136/136 (100%)	130 (96%)	6 (4%)	28	54
25	U	87/87 (100%)	86 (99%)	1 (1%)	73	85
26	V	104/104 (100%)	103 (99%)	1 (1%)	76	86
27	W	55/55 (100%)	54 (98%)	1 (2%)	59	77
28	X	104/105 (99%)	104 (100%)	0	100	100
29	Y	109/109 (100%)	109 (100%)	0	100	100
30	Z	115/115 (100%)	112 (97%)	3 (3%)	46	67
31	a	118/118 (100%)	118 (100%)	0	100	100
32	b	46/46 (100%)	43 (94%)	3 (6%)	17	44
33	c	81/81 (100%)	79 (98%)	2 (2%)	47	68
34	d	94/96 (98%)	93 (99%)	1 (1%)	73	85
35	e	109/109 (100%)	106 (97%)	3 (3%)	43	65
36	f	90/90 (100%)	86 (96%)	4 (4%)	28	54
37	g	95/95 (100%)	91 (96%)	4 (4%)	30	55
38	h	104/104 (100%)	101 (97%)	3 (3%)	42	64
39	i	81/81 (100%)	79 (98%)	2 (2%)	47	68
40	j	70/70 (100%)	68 (97%)	2 (3%)	42	64
41	k	68/68 (100%)	66 (97%)	2 (3%)	42	64
42	l	45/45 (100%)	43 (96%)	2 (4%)	28	54
43	m	47/47 (100%)	46 (98%)	1 (2%)	53	72
44	n	22/23 (96%)	21 (96%)	1 (4%)	27	54
45	o	90/90 (100%)	89 (99%)	1 (1%)	73	85
46	p	71/71 (100%)	71 (100%)	0	100	100
48	q	164/173 (95%)	162 (99%)	2 (1%)	71	84
49	r	191/191 (100%)	184 (96%)	7 (4%)	34	59
50	s	176/176 (100%)	172 (98%)	4 (2%)	50	70

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
51	t	182/182 (100%)	172 (94%)	10 (6%)	21	49
52	u	221/221 (100%)	212 (96%)	9 (4%)	30	56
53	v	173/173 (100%)	171 (99%)	2 (1%)	71	84
54	w	189/191 (99%)	186 (98%)	3 (2%)	62	79
55	x	165/165 (100%)	163 (99%)	2 (1%)	71	84
56	y	150/160 (94%)	147 (98%)	3 (2%)	55	73
57	z	158/158 (100%)	155 (98%)	3 (2%)	57	75
58	AA	77/98 (79%)	75 (97%)	2 (3%)	46	67
59	AB	133/134 (99%)	130 (98%)	3 (2%)	50	70
60	AC	88/100 (88%)	87 (99%)	1 (1%)	73	85
61	AD	127/127 (100%)	125 (98%)	2 (2%)	62	79
62	AE	81/96 (84%)	79 (98%)	2 (2%)	47	68
63	AF	101/104 (97%)	97 (96%)	4 (4%)	31	56
64	AG	117/117 (100%)	117 (100%)	0	100	100
65	AH	94/113 (83%)	93 (99%)	1 (1%)	73	85
66	AI	128/128 (100%)	125 (98%)	3 (2%)	50	70
67	AJ	115/115 (100%)	112 (97%)	3 (3%)	46	67
68	AK	100/100 (100%)	97 (97%)	3 (3%)	41	63
69	AL	74/74 (100%)	74 (100%)	0	100	100
70	AM	110/110 (100%)	108 (98%)	2 (2%)	59	77
71	AN	119/119 (100%)	114 (96%)	5 (4%)	30	55
72	AO	112/112 (100%)	108 (96%)	4 (4%)	35	60
73	AP	61/61 (100%)	60 (98%)	1 (2%)	62	79
74	AQ	83/83 (100%)	78 (94%)	5 (6%)	19	46
75	AR	70/70 (100%)	68 (97%)	2 (3%)	42	64
76	AS	56/56 (100%)	56 (100%)	0	100	100
77	AT	47/47 (100%)	46 (98%)	1 (2%)	53	72
78	AU	51/51 (100%)	48 (94%)	3 (6%)	19	47
79	AV	259/261 (99%)	256 (99%)	3 (1%)	71	84
80	AW	31/31 (100%)	29 (94%)	2 (6%)	17	44
83	AZ	711/712 (100%)	693 (98%)	18 (2%)	47	68

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	10139/10276 (99%)	9885 (98%)	254 (2%)	50 68

5 of 254 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
35	e	47	ARG
74	AQ	15	ARG
49	r	166	LYS
73	AP	52	LYS
83	AZ	13	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 124 such sidechains are listed below:

Mol	Chain	Res	Type
37	g	61	GLN
73	AP	98	GLN
52	u	223	ASN
72	AO	113	ASN
83	AZ	224	GLN

### 5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	3220/3396 (94%)	1049 (32%)	18 (0%)
2	3	120/121 (99%)	31 (25%)	0
3	4	157/158 (99%)	50 (31%)	2 (1%)
47	2	1774/1797 (98%)	665 (37%)	23 (1%)
81	AX	75/76 (98%)	33 (44%)	1 (1%)
82	AY	7/8 (87%)	5 (71%)	0
All	All	5353/5556 (96%)	1833 (34%)	44 (0%)

5 of 1833 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	11	A
1	1	15	C
1	1	16	A
1	1	18	G
1	1	19	U

5 of 44 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
47	2	865	A
47	2	1338	C
47	2	941	A
47	2	1273	G
47	2	1491	U

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

1 non-standard protein/DNA/RNA residue is modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
83	DDE	AZ	699	83	14,20,21	1.97	3 (21%)	14,28,30	2.18	5 (35%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '2' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
83	DDE	AZ	699	83	-	7/20/21/23	0/1/1/1

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
83	AZ	699	DDE	CBI-NAD	5.69	1.47	1.32
83	AZ	699	DDE	CAT-CE1	3.25	1.54	1.50
83	AZ	699	DDE	OAG-CBI	-2.11	1.19	1.23

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
83	AZ	699	DDE	CBW-CBI-NAD	5.22	121.94	115.28

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
83	AZ	699	DDE	CAC-NCB-CAB	3.55	117.80	108.10
83	AZ	699	DDE	OAG-CBI-NAD	-2.80	118.14	123.00
83	AZ	699	DDE	CAU-CBW-CBI	-2.27	106.70	111.20
83	AZ	699	DDE	CG-ND1-CE1	2.01	108.99	103.05

There are no chirality outliers.

5 of 7 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
83	AZ	699	DDE	N-CA-CB-CG
83	AZ	699	DDE	C-CA-CB-CG
83	AZ	699	DDE	CAT-CAU-CBW-CBI
83	AZ	699	DDE	CAT-CAU-CBW-NCB
83	AZ	699	DDE	CE1-CAT-CAU-CBW

There are no ring outliers.

No monomer is involved in short contacts.

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

Of 10 ligands modelled in this entry, 8 are monoatomic - leaving 2 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
85	SO1	AZ	901	-	35,39,39	0.20	0	39,64,64	0.85	2 (5%)
86	GCP	AZ	902	-	27,34,34	1.18	4 (14%)	34,54,54	2.22	10 (29%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral

centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
85	SO1	AZ	901	-	-	9/21/104/104	0/7/5/5
86	GCP	AZ	902	-	-	6/15/38/38	0/3/3/3

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
86	AZ	902	GCP	C6-N1	3.06	1.38	1.33
86	AZ	902	GCP	PB-O2B	-2.73	1.50	1.56
86	AZ	902	GCP	PG-O1G	2.17	1.54	1.50
86	AZ	902	GCP	PG-O3G	-2.15	1.50	1.54

The worst 5 of 12 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
86	AZ	902	GCP	C5-C6-N1	-8.16	112.27	123.43
86	AZ	902	GCP	C2-N1-C6	5.76	125.08	115.93
85	AZ	901	SO1	C18-C9-C16	-4.13	97.73	103.64
86	AZ	902	GCP	O2B-PB-C3B	3.94	122.68	106.58
86	AZ	902	GCP	N3-C2-N1	-2.94	123.30	127.22

There are no chirality outliers.

5 of 15 torsion outliers are listed below:

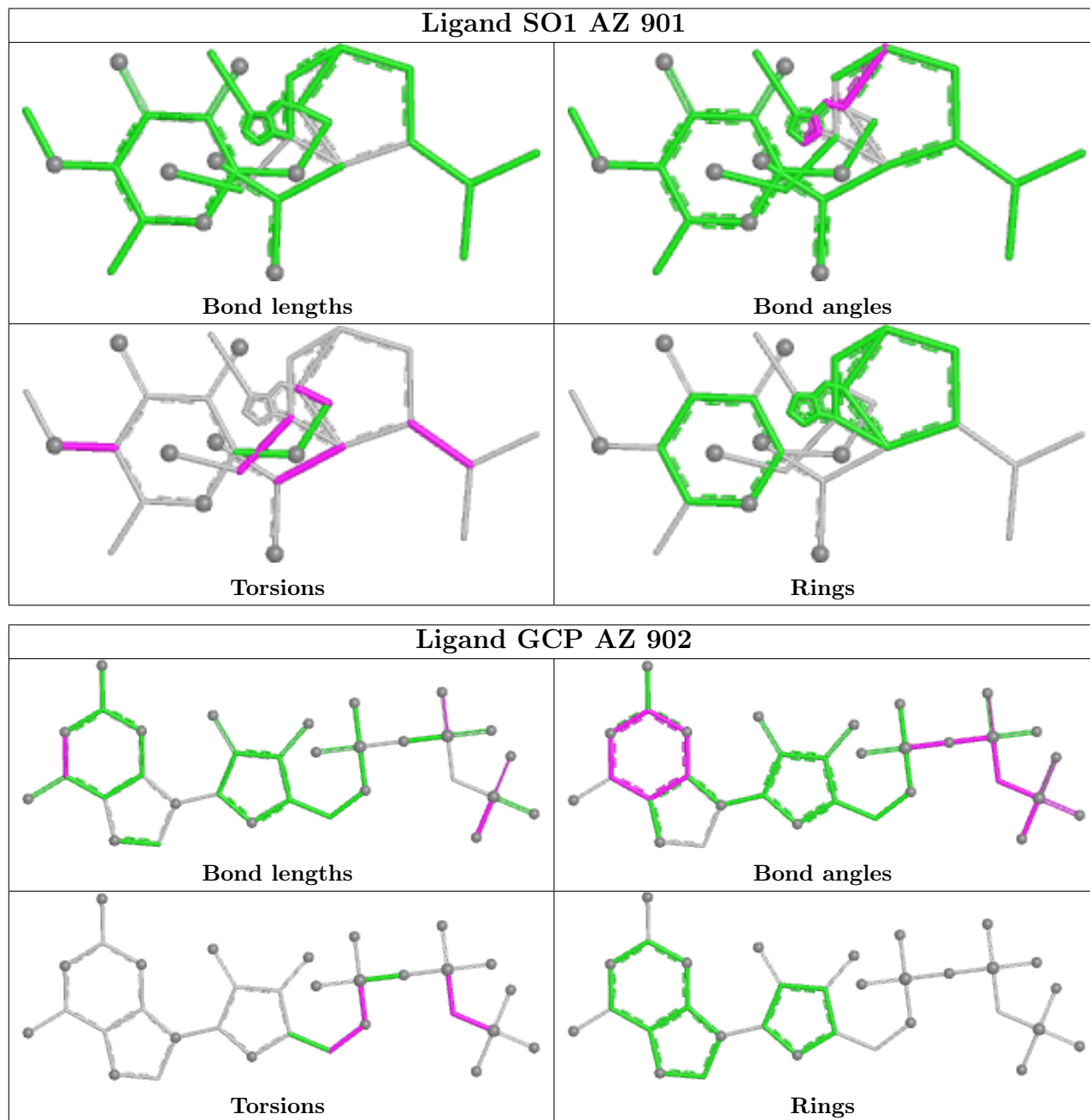
Mol	Chain	Res	Type	Atoms
86	AZ	902	GCP	PG-C3B-PB-O1B
86	AZ	902	GCP	PG-C3B-PB-O3A
85	AZ	901	SO1	C56-C55-O64-C65
85	AZ	901	SO1	C2-C1-C5-O14
85	AZ	901	SO1	C2-C1-C5-O15

There are no ring outliers.

No monomer is involved in short contacts.

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be

highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



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

There are no such residues in this entry.

## 5.8 Polymer linkage issues

There are no chain breaks in this entry.

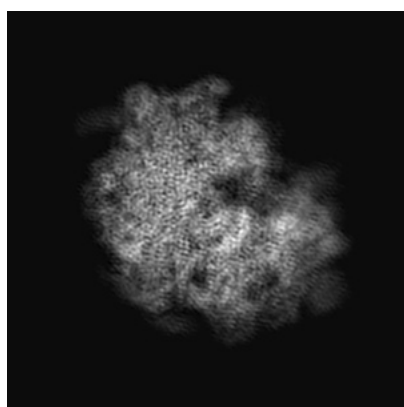
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-0047. These allow visual inspection of the internal detail of the map and identification of artifacts.

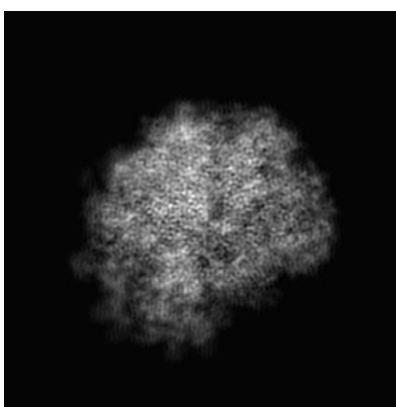
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

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

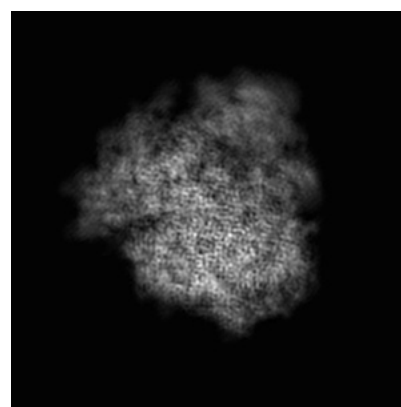
#### 6.1.1 Primary map



X



Y

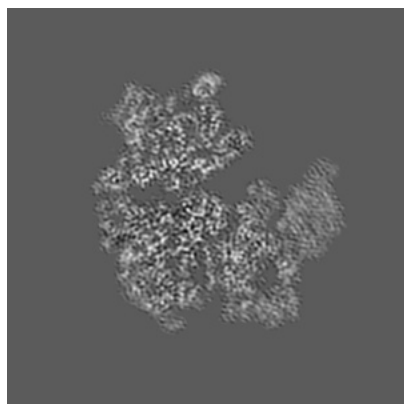


Z

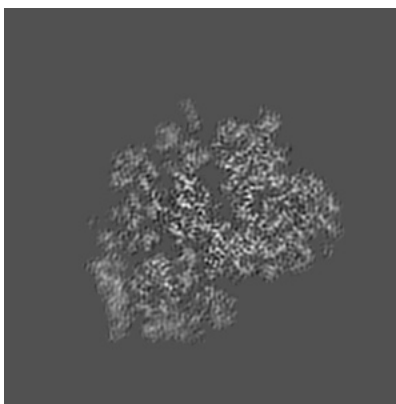
The images above show the map projected in three orthogonal directions.

### 6.2 Central slices [i](#)

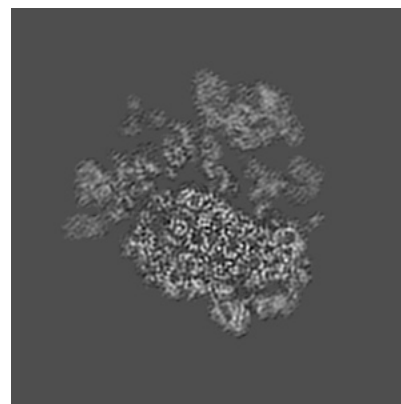
#### 6.2.1 Primary map



X Index: 180



Y Index: 180



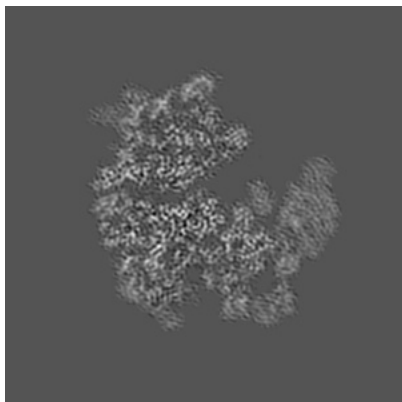
Z Index: 180



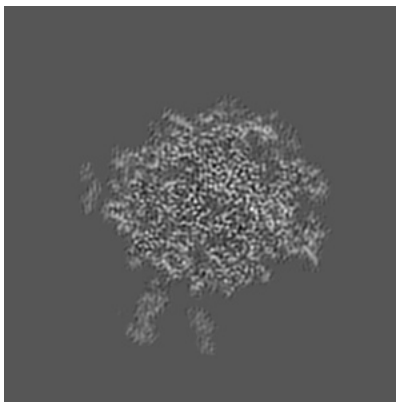
The images above show central slices of the map in three orthogonal directions.

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

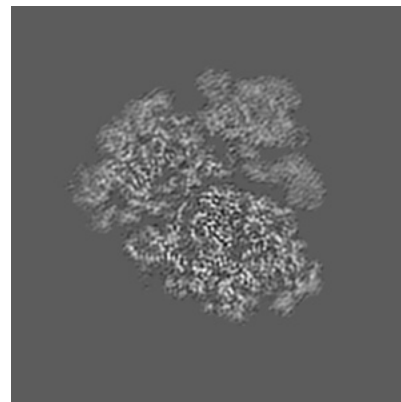
### 6.3.1 Primary map



X Index: 183



Y Index: 156



Z Index: 166

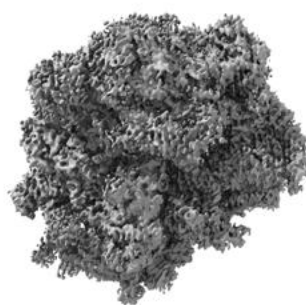
The images above show the largest variance slices of the map in three orthogonal directions.

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

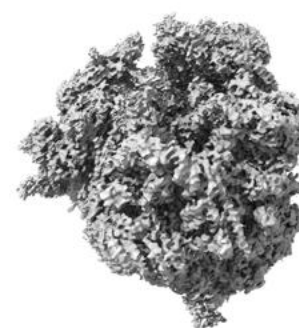
### 6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.05. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

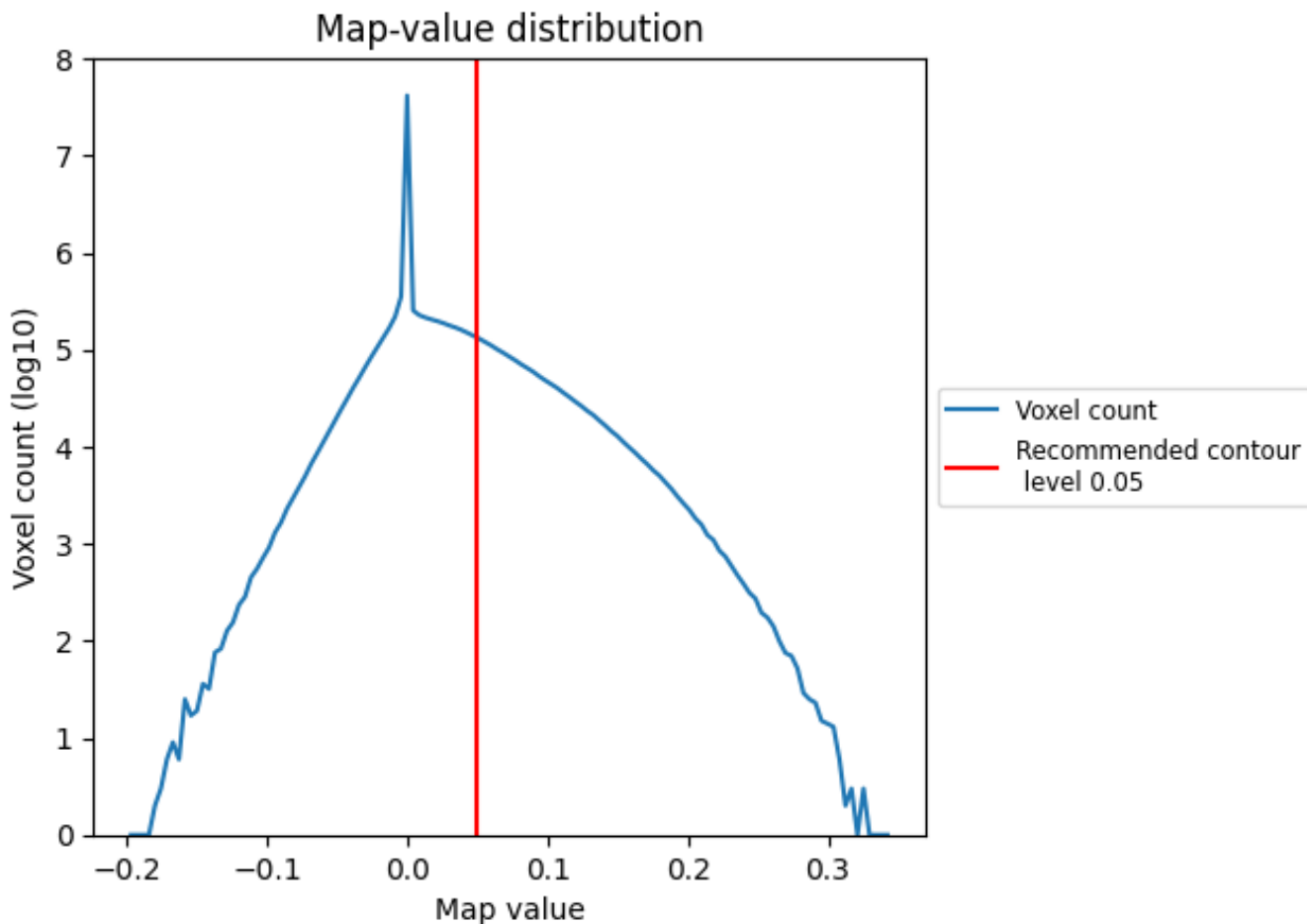
## 6.5 Mask visualisation

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

## 7 Map analysis [i](#)

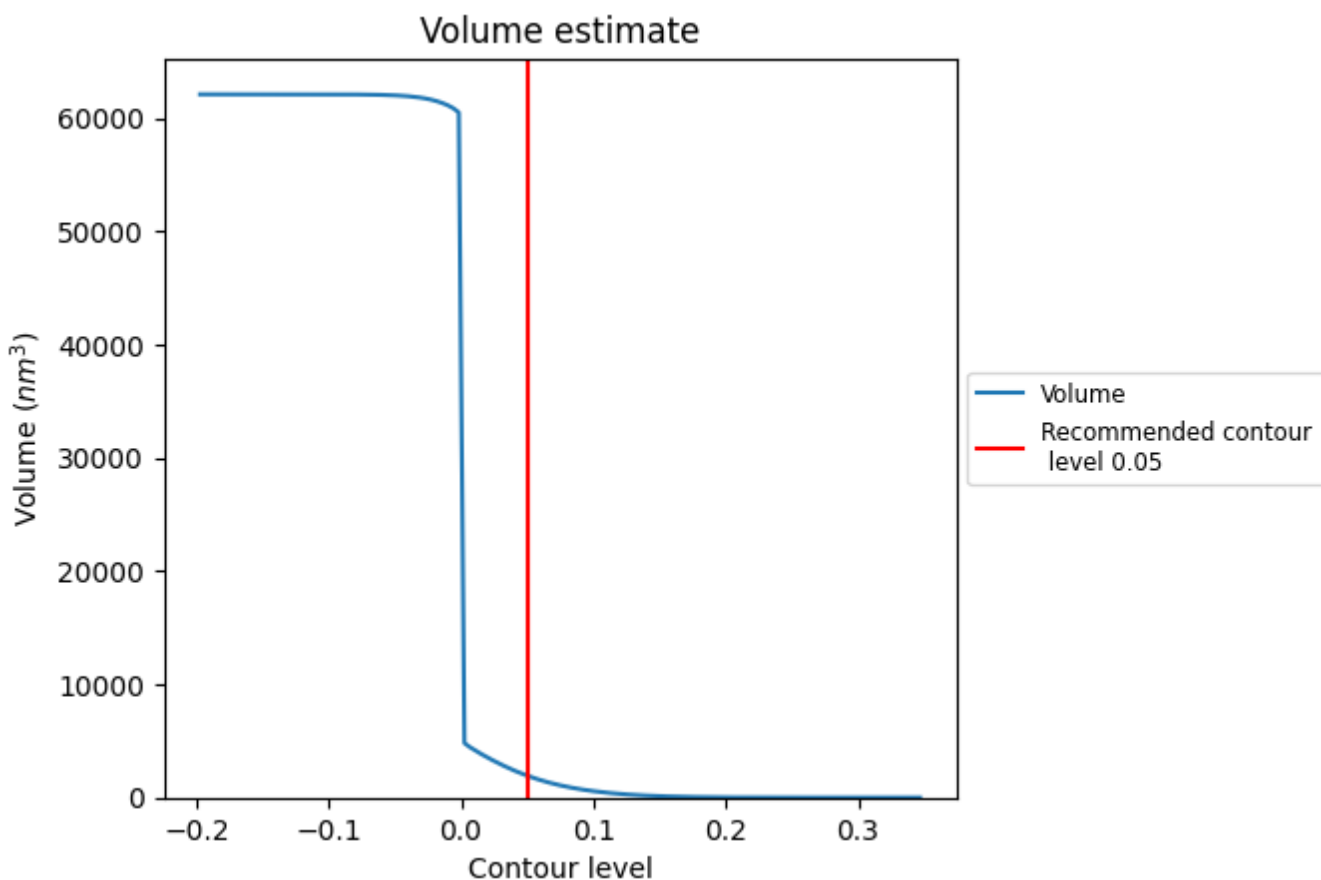
This section contains the results of statistical analysis of the map.

### 7.1 Map-value distribution [i](#)



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

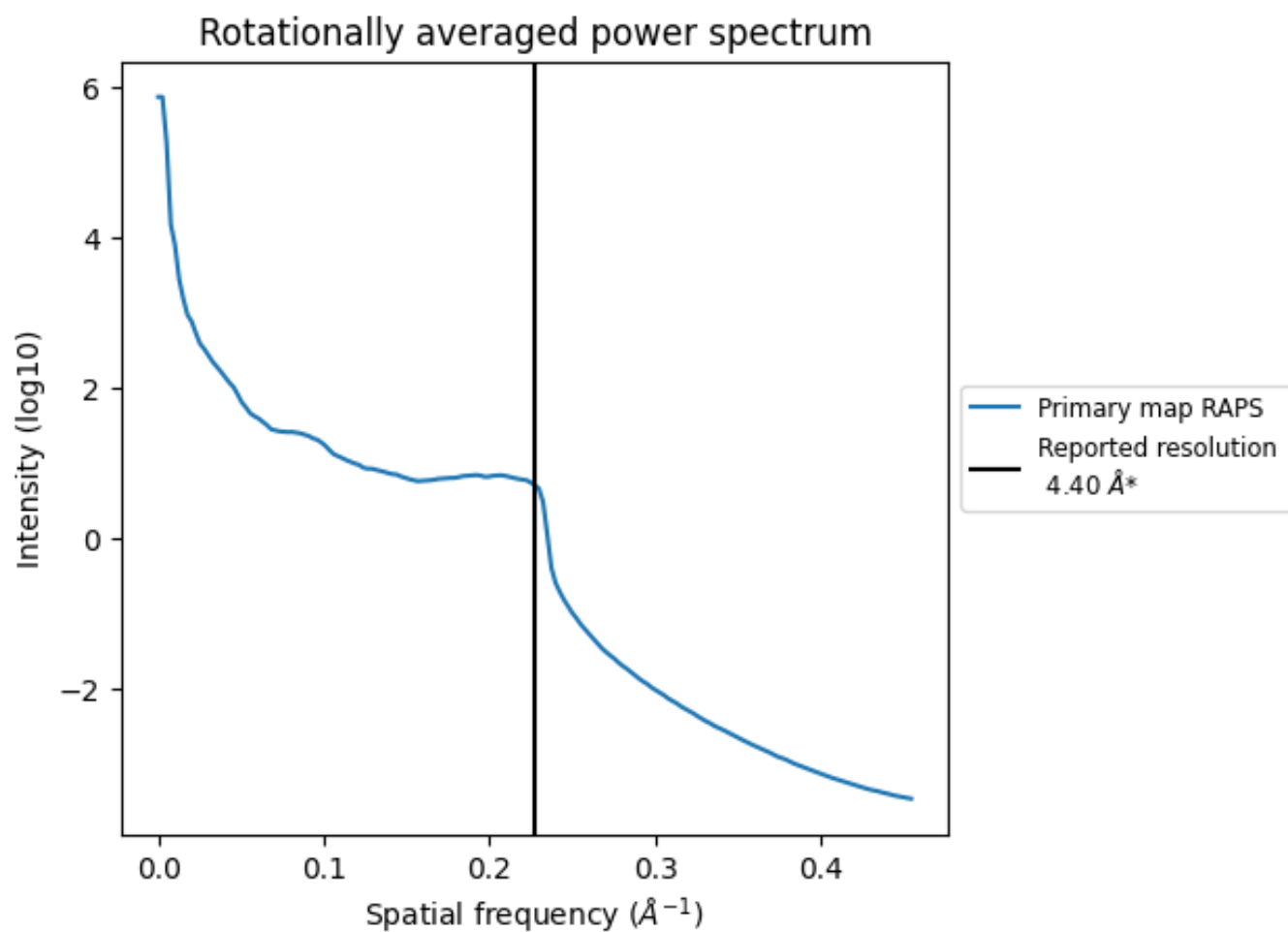
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1936 nm<sup>3</sup>; this corresponds to an approximate mass of 1749 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  $0.227 \text{\AA}^{-1}$

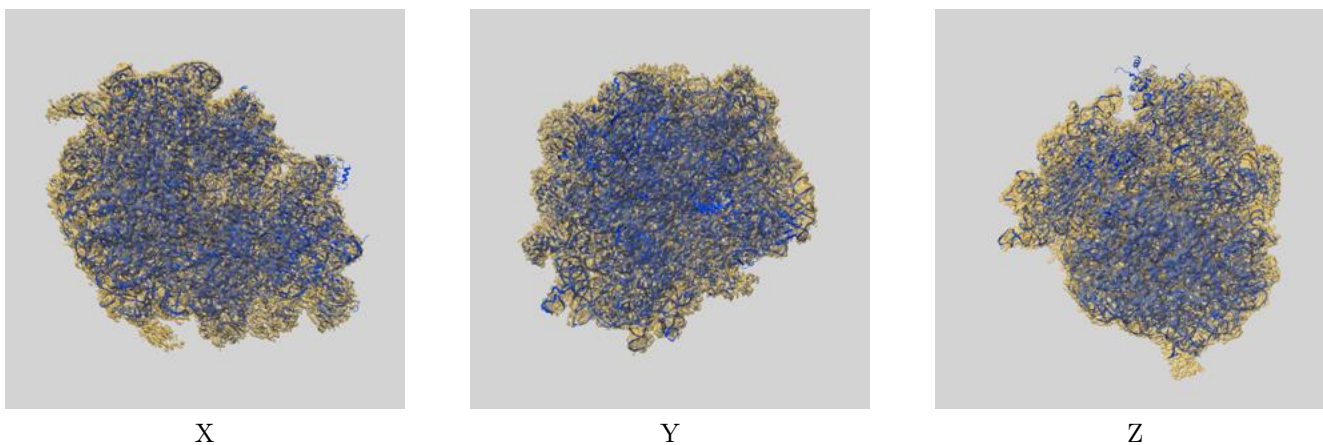
## 8 Fourier-Shell correlation

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

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

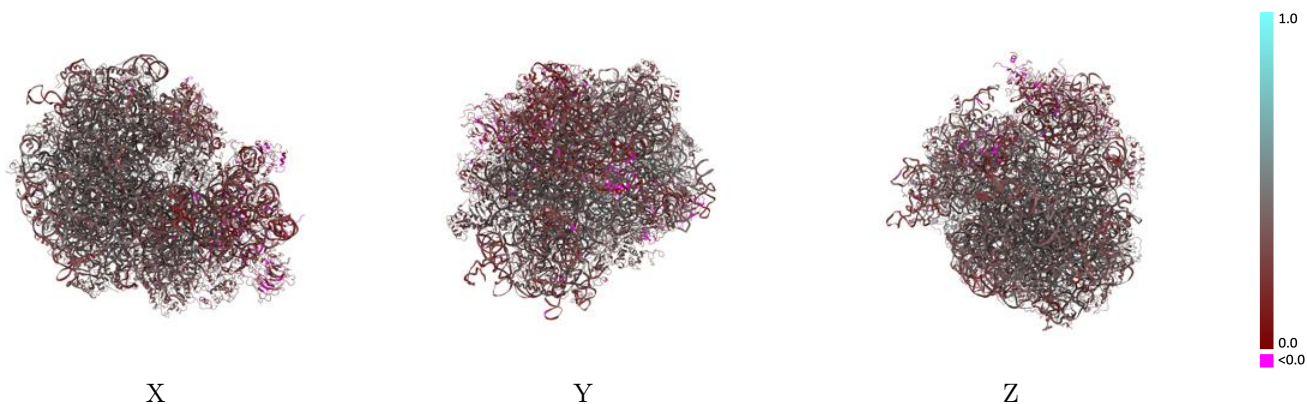
This section contains information regarding the fit between EMDB map EMD-0047 and PDB model 6GQ1. Per-residue inclusion information can be found in section 3 on page 20.

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



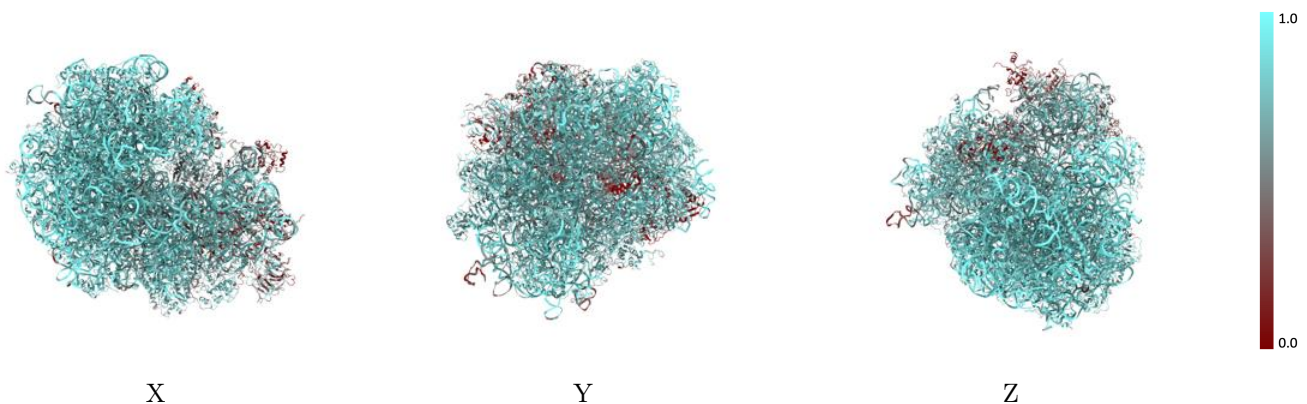
The images above show the 3D surface view of the map at the recommended contour level 0.05 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



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

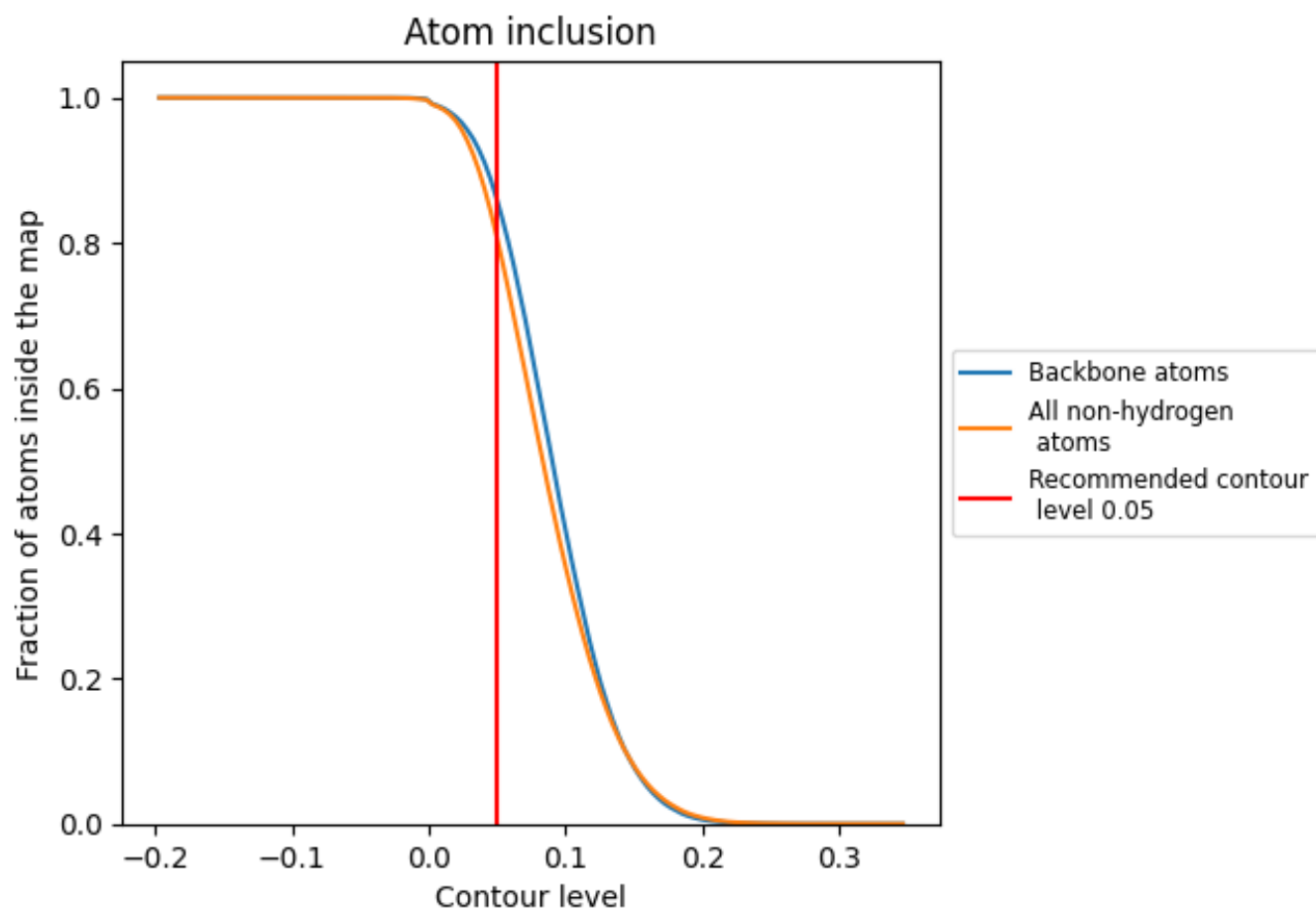
## 9.3 Atom inclusion mapped to coordinate model [i](#)



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









































































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 86% of all backbone atoms, 81% of all non-hydrogen atoms, are inside the map.

## 9.5 Map-model fit summary





















































































The table lists the average atom inclusion at the recommended contour level (0.05) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8060	 0.3570
1	 0.9111	 0.3810
2	 0.8438	 0.3240
3	 0.9356	 0.3530
4	 0.9344	 0.3930
A	 0.7740	 0.4380
AA	 0.6570	 0.2610
AB	 0.6779	 0.3880
AC	 0.1068	 0.1250
AD	 0.7697	 0.3720
AE	 0.7993	 0.3800
AF	 0.5996	 0.2770
AG	 0.5533	 0.2570
AH	 0.5300	 0.2530
AI	 0.5572	 0.2540
AJ	 0.5782	 0.2420
AK	 0.3583	 0.2170
AL	 0.7108	 0.3380
AM	 0.7655	 0.3910
AN	 0.6984	 0.3920
AO	 0.7464	 0.3370
AP	 0.3711	 0.1990
AQ	 0.7459	 0.3600
AR	 0.7475	 0.3620
AS	 0.4109	 0.2240
AT	 0.7028	 0.2720
AU	 0.6253	 0.3360
AV	 0.4710	 0.2100
AW	 0.3214	 0.1830
AX	 0.6667	 0.2570
AY	 0.2988	 0.3080
AZ	 0.6606	 0.3520
B	 0.8064	 0.4140
C	 0.8276	 0.4080
D	 0.7764	 0.3260

















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Chain	Atom inclusion	Q-score
E	 0.8087	 0.3660
F	 0.8175	 0.3970
G	 0.7980	 0.3630
H	 0.7725	 0.3940
I	 0.7785	 0.4000
J	 0.7445	 0.3430
L	 0.8117	 0.3950
M	 0.8109	 0.3730
N	 0.8332	 0.4160
O	 0.8137	 0.3990
P	 0.8198	 0.4120
P0	 0.1918	 0.1770
P2	 0.1749	 0.1810
Q	 0.8151	 0.4190
R	 0.7978	 0.3970
S	 0.8031	 0.4050
T	 0.7976	 0.4070
U	 0.7558	 0.3640
V	 0.7365	 0.4370
W	 0.7861	 0.4210
X	 0.7834	 0.4060
Y	 0.8323	 0.4070
Z	 0.8170	 0.3910
a	 0.8345	 0.4160
b	 0.7633	 0.4150
c	 0.7975	 0.3830
d	 0.7526	 0.4080
e	 0.8159	 0.4230
f	 0.8027	 0.4150
g	 0.7861	 0.4240
h	 0.7837	 0.3870
i	 0.7946	 0.3630
j	 0.8552	 0.4370
k	 0.7462	 0.3910
l	 0.7904	 0.4110
m	 0.7772	 0.4180
n	 0.6298	 0.4360
o	 0.7720	 0.4100
p	 0.7627	 0.4320
q	 0.7252	 0.3320
r	 0.7528	 0.3650
s	 0.7289	 0.3740

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Chain	Atom inclusion	Q-score
t	 0.5027	 0.2530
u	 0.7383	 0.3500
v	 0.4736	 0.2470
w	 0.7182	 0.3120
x	 0.7032	 0.3170
y	 0.7326	 0.3570
z	 0.7559	 0.3450