wwPDB EM Validation Summary Report

Nov 6, 2023 – 12:24 PM JST

PDB ID	:	8IR3
EMDB ID	:	EMD-35673
Title	:	human nuclear pre-60S ribosomal particle - State B'
Authors	:	Zhang, Y.; Gao, N.
Deposited on	:	2023-03-17
Resolution	:	3.50 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:

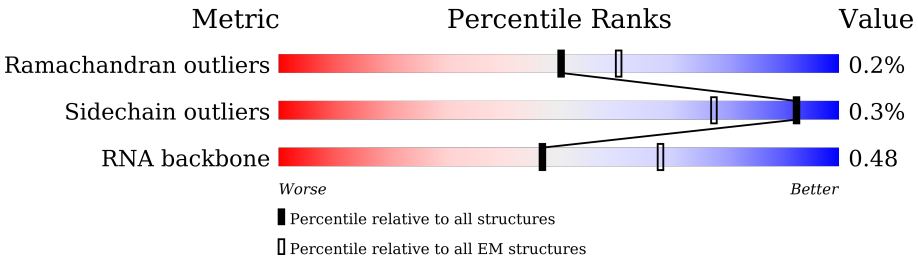
EMDB validation analysis	:	0.0.1.dev70
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.50 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	y	165	56% 99%
2	4	634	23% 94%
3	6	245	10% 99%
4	7	163	9% 82% 17%
5	9	134	63% 63% 36%
6	B	403	5% 99%
7	D	427	83% 16%
8	E	115	58% 84% 15%

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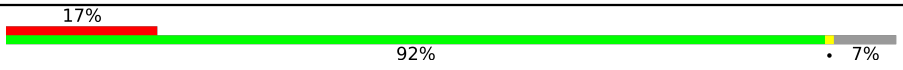
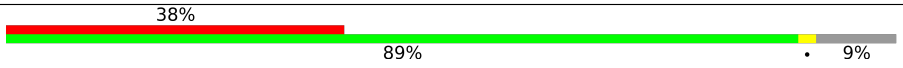
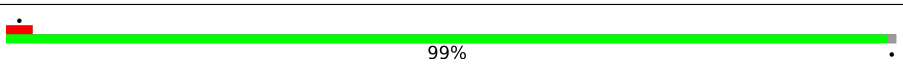
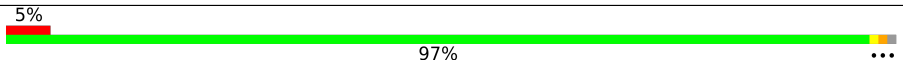
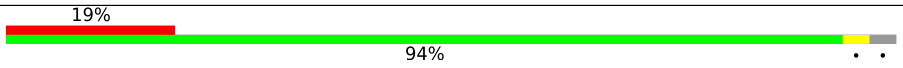
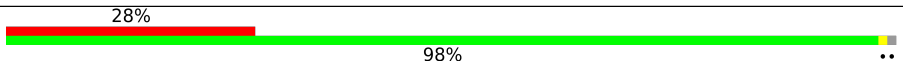
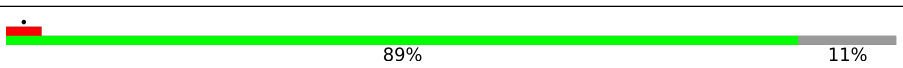
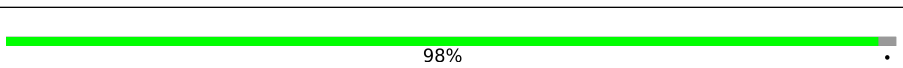
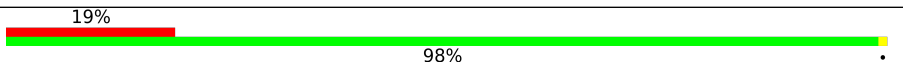
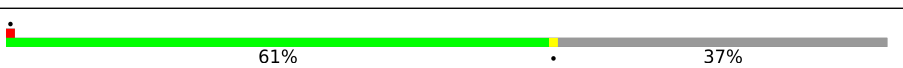
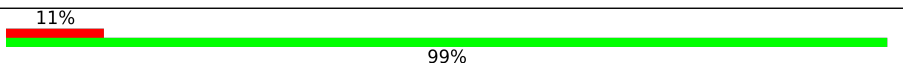
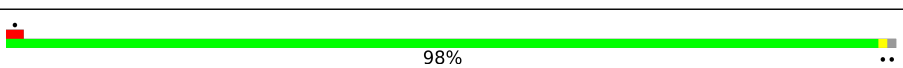
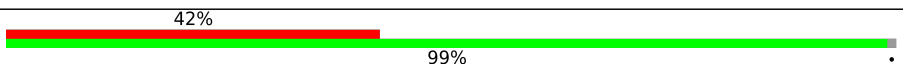
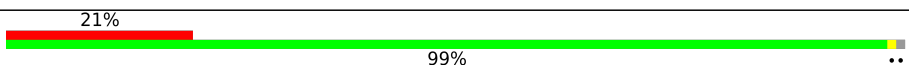
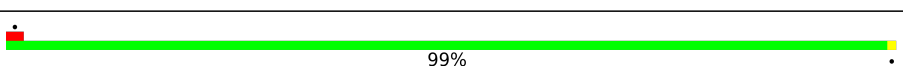
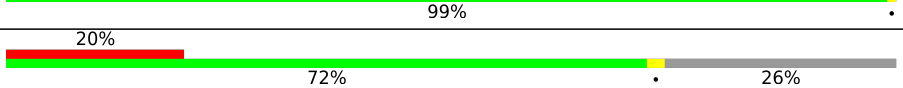
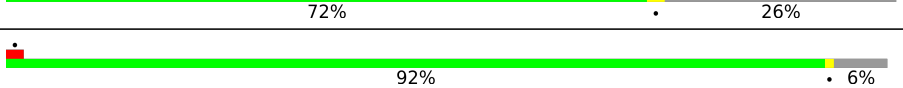
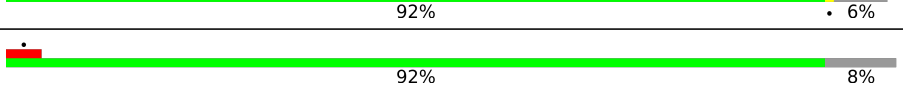
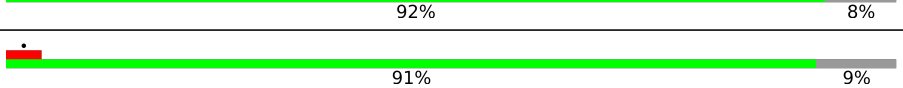
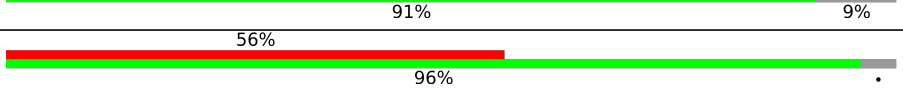
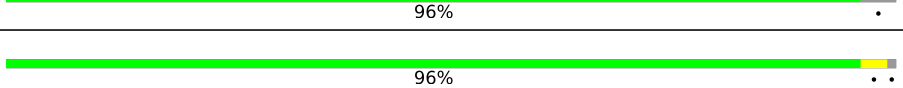
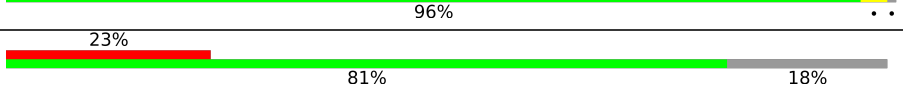
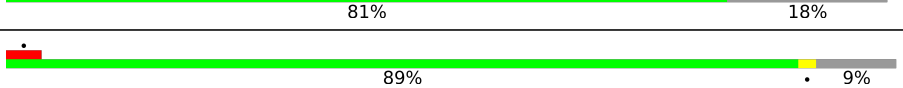
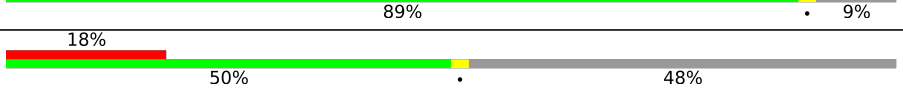
Mol	Chain	Length	Quality of chain
9	F	117	
10	G	266	
11	H	123	
12	I	192	
13	K	105	
14	L	148	
15	M	97	
16	P	51	
17	Q	211	
18	S	215	
19	U	204	
20	V	203	
21	X	92	
22	Z	188	
23	a	196	
24	b	176	
25	c	160	
26	e	140	
27	h	145	
28	l	137	
29	m	257	
30	n	110	
31	o	288	
32	p	248	
33	z	129	

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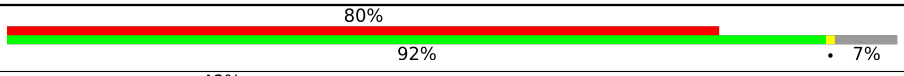
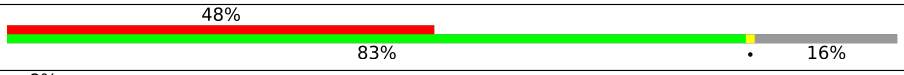
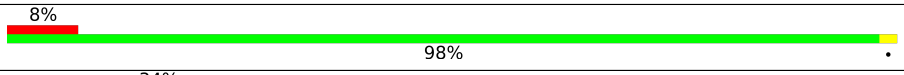
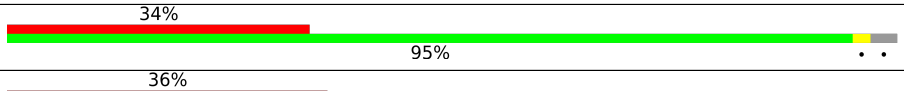
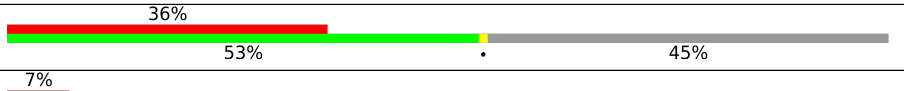
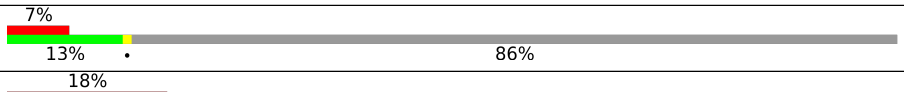
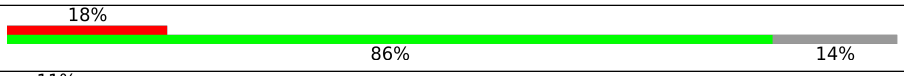
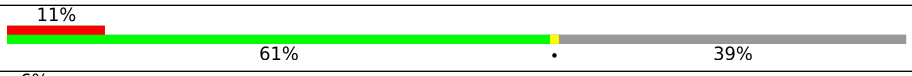
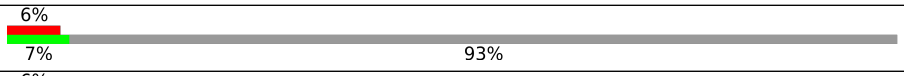
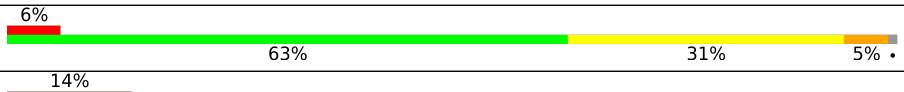
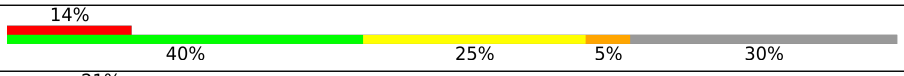
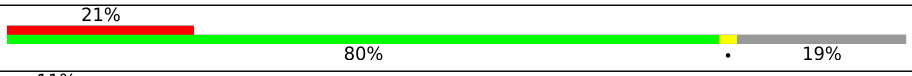
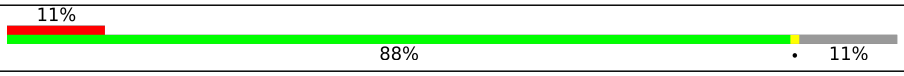
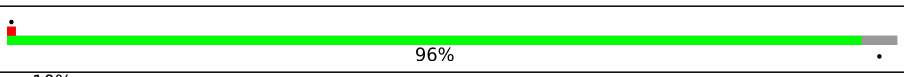
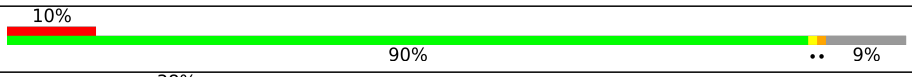
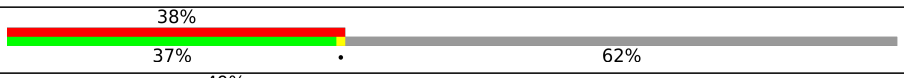
Mol	Chain	Length	Quality of chain
34	A	178	
35	C	297	
36	J	260	
37	N	485	
38	R	365	
39	u	549	
40	v	239	
41	w	731	
42	r	360	
43	8	156	
44	2	5054	
45	d	128	
46	j	125	
47	k	135	
48	Y	184	
49	t	293	
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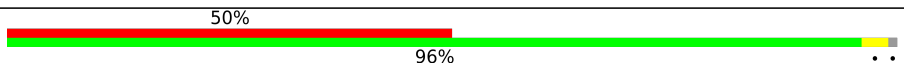
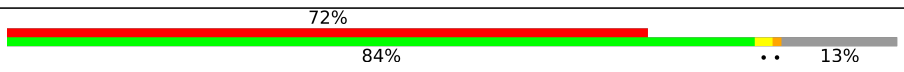
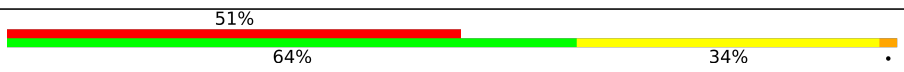
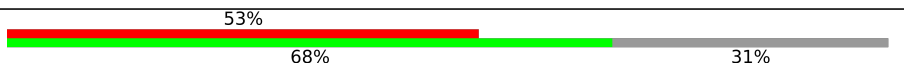
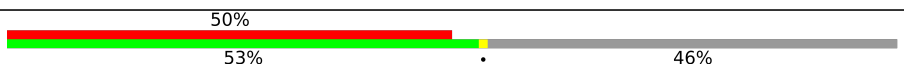
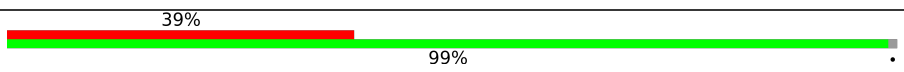
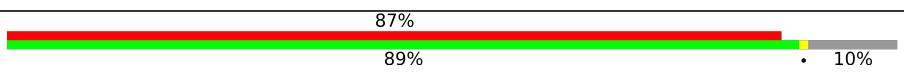
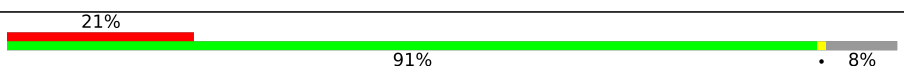
51	i	136	
52	T	306	
53	5	120	
54	q	588	
55	f	478	
56	O	70	
57	3	255	
58	g	156	

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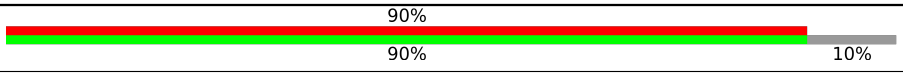
Mol	Chain	Length	Quality of chain
59	x	60	

2 Entry composition (i)

There are 61 unique types of molecules in this entry. The entry contains 166429 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called 60S ribosomal protein L12.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	y	165	1250	779	232	234	5	0	0

- Molecule 2 is a protein called GTP-binding protein 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	4	620	5093	3198	935	933	27	0	0

- Molecule 3 is a protein called Eukaryotic translation initiation factor 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	6	244	1852	1149	318	372	13	0	0

- Molecule 4 is a protein called Probable ribosome biogenesis protein RLP24.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	7	135	1159	737	225	187	10	0	0

- Molecule 5 is a protein called Zinc finger protein 593.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	9	86	711	433	154	121	3	0	0

- Molecule 6 is a protein called 60S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	B	402	3244	2065	609	556	14	1	0

- Molecule 7 is a protein called 60S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	D	358	Total	C	N	O	S	0	0
			2853	1797	570	473	13		

- Molecule 8 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	E	98	Total	C	N	O	S	0	0
			764	485	135	138	6		

- Molecule 9 is a protein called 60S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	F	109	Total	C	N	O	S	0	0
			868	544	179	139	6		

- Molecule 10 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	G	241	Total	C	N	O	S	1	0
			1935	1233	374	324	4		

- Molecule 11 is a protein called 60S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	H	122	Total	C	N	O	S	0	0
			1015	641	205	168	1		

- Molecule 12 is a protein called 60S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	I	190	Total	C	N	O	S	0	0
			1518	956	284	272	6		

- Molecule 13 is a protein called 60S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	K	102	Total	C	N	O	S	0	0
			832	521	177	129	5		

- Molecule 14 is a protein called 60S ribosomal protein L27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	L	147	Total	C	N	O	S	0	0
			1162	736	237	186	3		

- Molecule 15 is a protein called 60S ribosomal protein L37.

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

- Molecule 16 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	P	50	Total	C	N	O	S	0	0
			444	281	98	64	1		

- Molecule 17 is a protein called 60S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	Q	210	Total	C	N	O	S	0	0
			1701	1064	352	281	4		

- Molecule 18 is a protein called 60S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	S	135	Total	C	N	O	S	0	0
			1111	713	213	178	7		

- Molecule 19 is a protein called 60S ribosomal protein L15.

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

- Molecule 20 is a protein called 60S ribosomal protein L13a.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	V	201	Total	C	N	O	S	0	0
			1650	1063	321	261	5		

- Molecule 21 is a protein called 60S ribosomal protein L37a.

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

- Molecule 22 is a protein called 60S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	Z	187	Total	C	N	O	S	0	0
			1513	944	314	250	5		

- Molecule 23 is a protein called 60S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	a	148	Total	C	N	O	S	0	0
			1239	772	266	192	9		

- Molecule 24 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	b	176	Total	C	N	O	S	0	0
			1461	930	284	236	11		

- Molecule 25 is a protein called 60S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	c	119	Total	C	N	O	S	0	0
			975	619	189	164	3		

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

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

- Molecule 27 is a protein called 60S ribosomal protein L26.

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

- Molecule 28 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	l	125	Total	C	N	O	S	0	0
			1002	622	207	168	5		

- Molecule 29 is a protein called 60S ribosomal protein L8.

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

- Molecule 30 is a protein called 60S ribosomal protein L35a.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	n	109	Total	C	N	O	S	0	0
			876	555	174	144	3		

- Molecule 31 is a protein called 60S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	o	235	Total	C	N	O	S	0	0
			1897	1217	360	316	4		

- Molecule 32 is a protein called 60S ribosomal protein L7.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	p	225	Total	C	N	O	S	1	0
			1878	1207	361	301	9		

- Molecule 33 is a protein called Protein LLP homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	z	67	Total	C	N	O	S	0	0
			581	363	128	88	2		

- Molecule 34 is a protein called 60S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	A	165	Total	C	N	O	S	0	0
			1319	836	245	233	5		

- Molecule 35 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	C	248	Total	C	N	O	S	0	0
			2027	1289	370	354	14		

- Molecule 36 is a protein called Ribosome biogenesis protein NSA2 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	J	259	Total	C	N	O	S	0	0
			2106	1339	399	359	9		

- Molecule 37 is a protein called Notchless protein homolog 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	N	472	Total	C	N	O	S	0	0
			3669	2307	660	690	12		

- Molecule 38 is a protein called Ribosome biogenesis regulatory protein homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	R	199	Total	C	N	O	S	0	0
			1636	1022	315	296	3		

- Molecule 39 is a protein called Guanine nucleotide-binding protein-like 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	u	75	Total	C	N	O	S	0	0
			639	400	138	98	3		

- Molecule 40 is a protein called mRNA turnover protein 4 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	v	206	Total	C	N	O	S	0	0
			1680	1072	293	304	11		

- Molecule 41 is a protein called G Protein Nucleolar 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	w	449	Total	C	N	O	S	0	0
			3623	2301	643	665	14		

- Molecule 42 is a protein called Coiled-coil domain-containing protein 86.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	r	24	Total	C	N	O	S	0	0
			217	134	45	37	1		

- Molecule 43 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	8	155	Total	C	N	O	P	0	0
			3295	1472	583	1086	154		

- Molecule 44 is a RNA chain called 28S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	2	3541	Total	C	N	O	P	0	0
			75906	33833	13870	24663	3540		

- Molecule 45 is a protein called 60S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	d	104	Total	C	N	O	S	0	0
			850	542	149	157	2		

- Molecule 46 is a protein called 60S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	j	111	Total	C	N	O	S	0	0
			918	578	178	160	2		

- Molecule 47 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	k	129	Total	C	N	O	S	0	0
			1064	673	220	166	5		

- Molecule 48 is a protein called 60S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	Y	167	Total	C	N	O	S	0	0
			1355	848	260	238	9		

- Molecule 49 is a protein called MKI67 FHA domain-interacting nucleolar phosphoprotein.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	t	111	Total	C	N	O	S	0	0
			928	601	157	167	3		

- Molecule 50 is a protein called Ribosomal L1 domain-containing protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	s	239	Total	C	N	O	S	0	0
			1924	1232	338	348	6		

- Molecule 51 is a protein called 60S ribosomal protein L27.

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

- Molecule 52 is a protein called Ribosome production factor 2 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	T	266	Total	C	N	O	S	0	0
			2166	1388	382	384	12		

- Molecule 53 is a RNA chain called 5S RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	5	120	Total	C	N	O	P	0	0
			2558	1141	456	842	119		

- Molecule 54 is a protein called Pescadillo homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	q	404	Total	C	N	O	S	0	0
			3317	2140	582	582	13		

- Molecule 55 is a protein called Ribosome biogenesis protein NOP53.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	f	258	Total	C	N	O	S	0	0
			2137	1326	427	382	2		

- Molecule 56 is a protein called 60S ribosomal protein L38.

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

- Molecule 57 is a protein called 60S ribosomal protein L7-like 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	3	229	Total	C	N	O	S	0	0
			1892	1223	356	309	4		

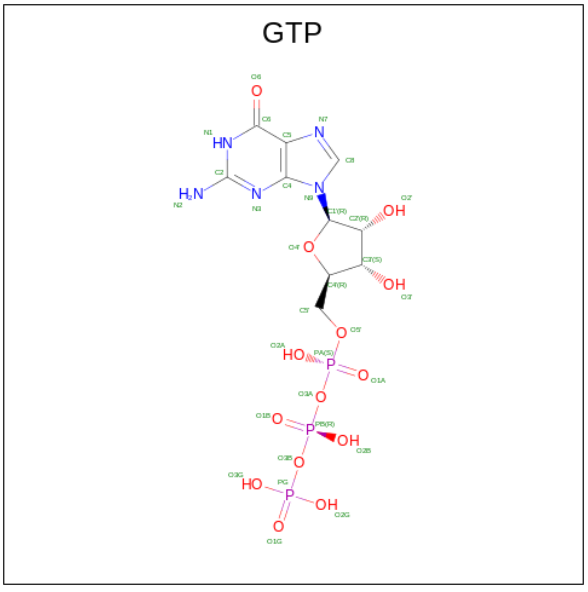
- Molecule 58 is a protein called 60S ribosomal protein L23a.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	g	143	Total	C	N	O	S	0	0
			1156	740	220	195	1		

- Molecule 59 is a RNA chain called ITS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	x	54	Total	C	N	O	P	0	0
			648	270	1	323	54		

- Molecule 60 is GUANOSINE-5'-TRIPHOSPHATE (three-letter code: GTP) (formula: $C_{10}H_{16}N_5O_{14}P_3$).



Mol	Chain	Residues	Atoms					AltConf
60	w	1	Total	C	N	O	P	0
			32	10	5	14	3	

- Molecule 61 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

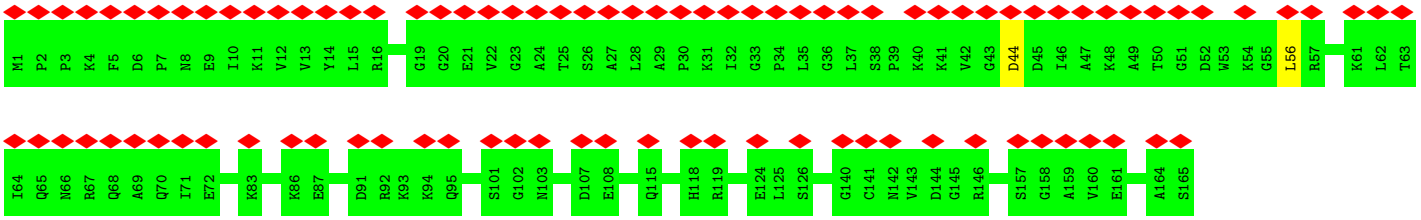
Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
61	w	1	1	1	0

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.

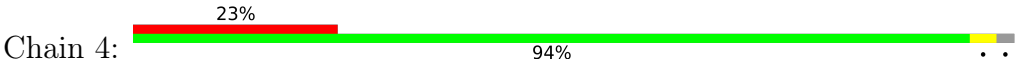
• Molecule 1: 60S ribosomal protein L12

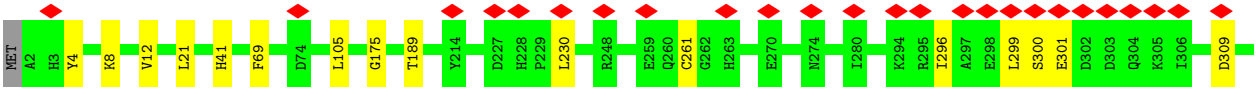
Chain y:

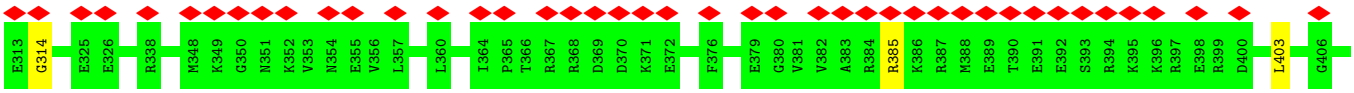


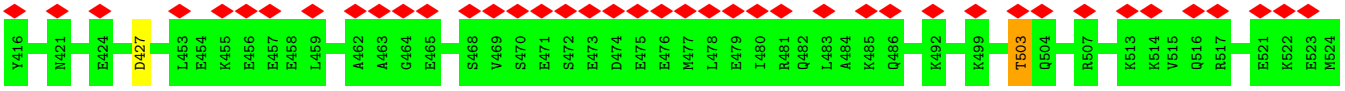
• Molecule 2: GTP-binding protein 4

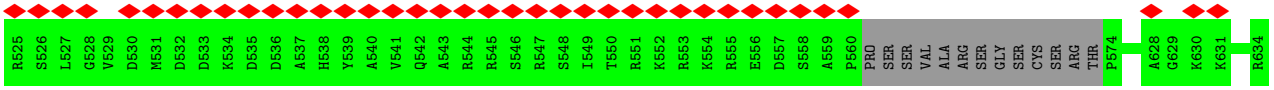
Chain 4:





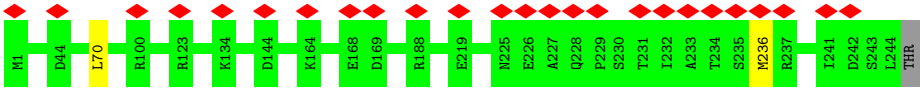






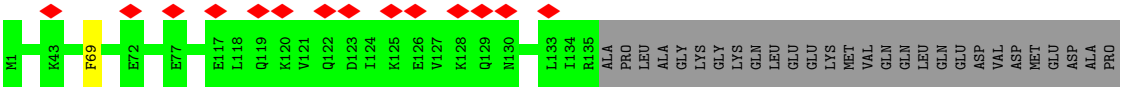
• Molecule 3: Eukaryotic translation initiation factor 6

Chain 6:



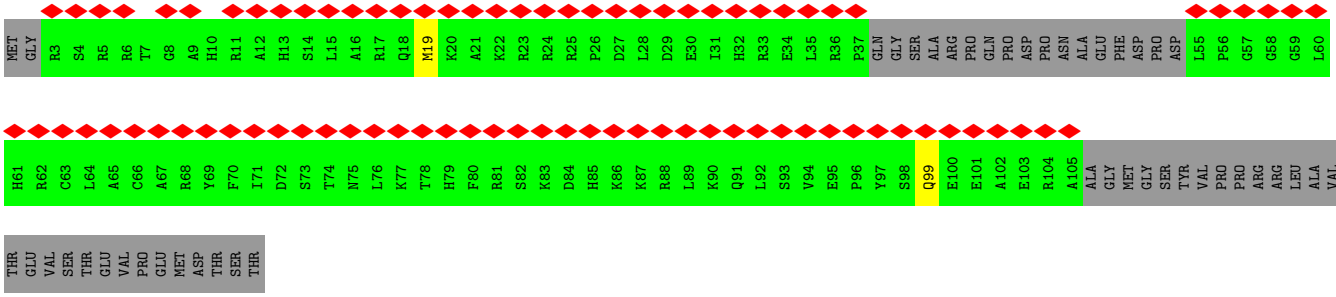
• Molecule 4: Probable ribosome biogenesis protein RLP24

Chain 7:



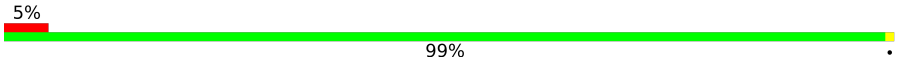
• Molecule 5: Zinc finger protein 593

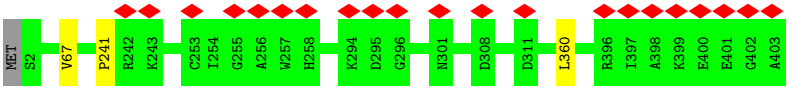
Chain 9:



• Molecule 6: 60S ribosomal protein L3

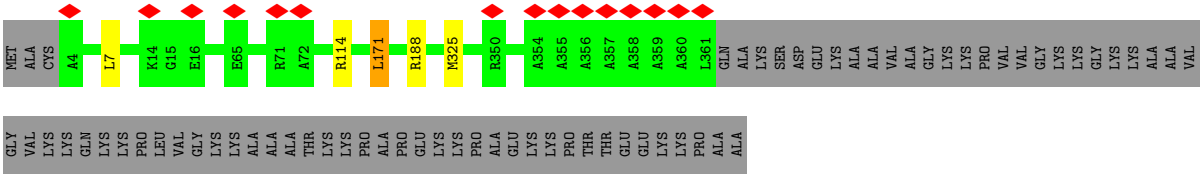
Chain B:





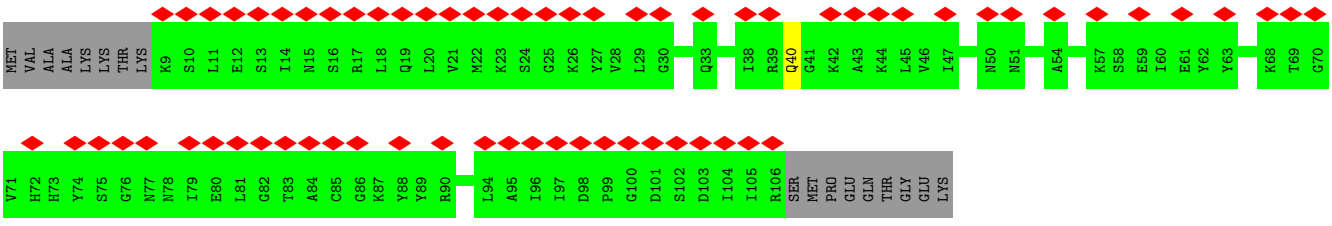
• Molecule 7: 60S ribosomal protein L4

Chain D:



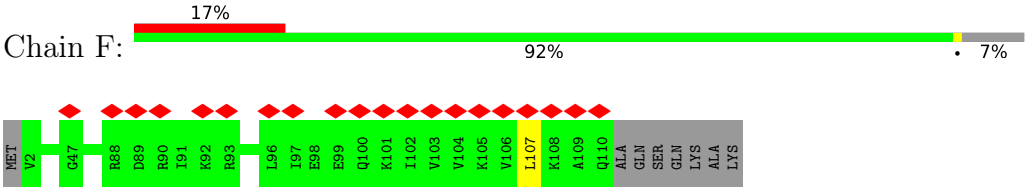
• Molecule 8: 60S ribosomal protein L30

Chain E:



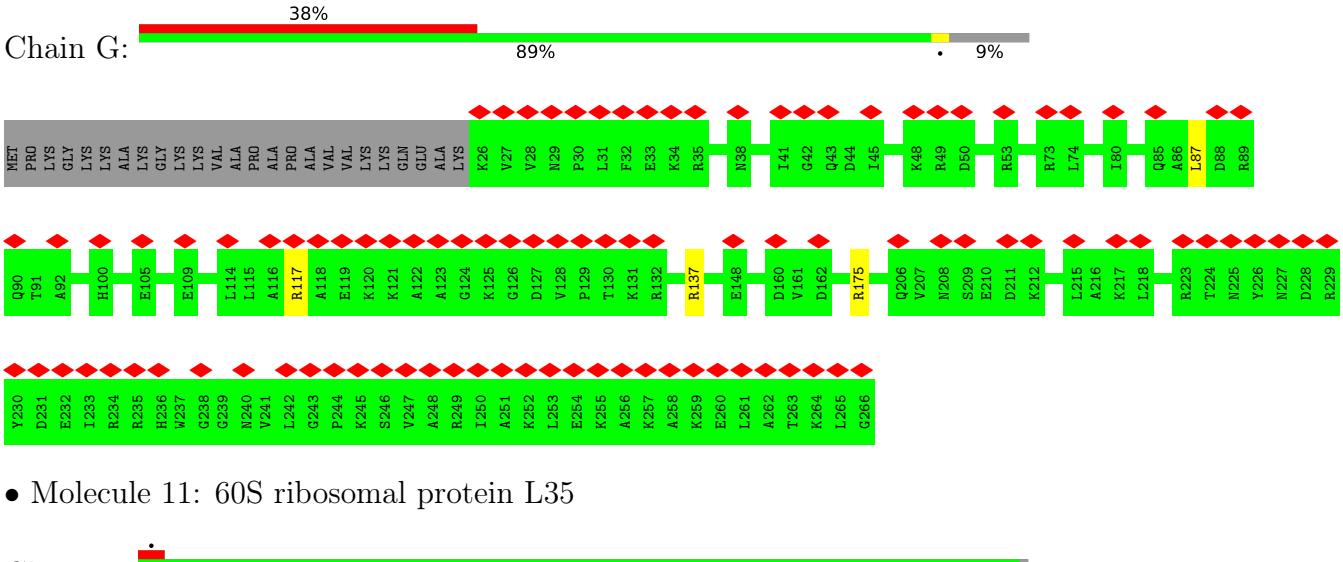
• Molecule 9: 60S ribosomal protein L34

Chain F:



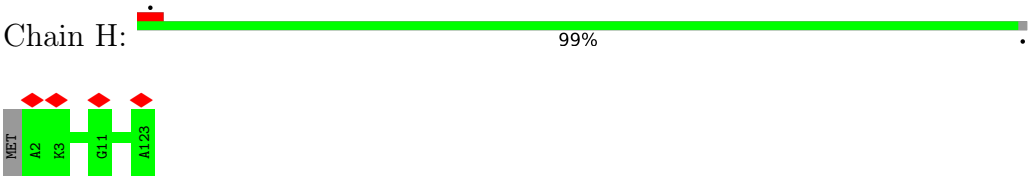
• Molecule 10: 60S ribosomal protein L7a

Chain G:



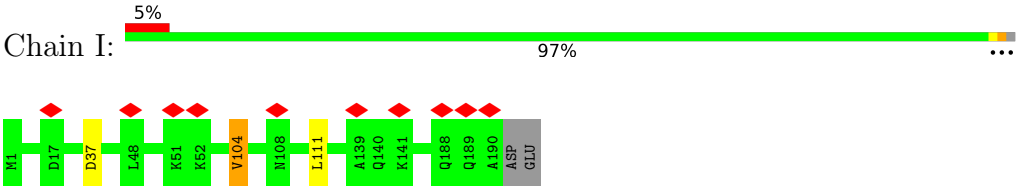
• Molecule 11: 60S ribosomal protein L35

Chain H:



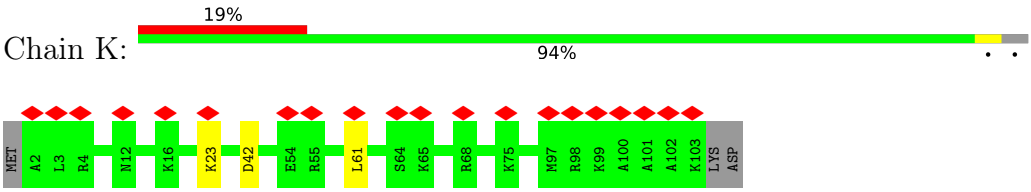
• Molecule 12: 60S ribosomal protein L9

Chain I:



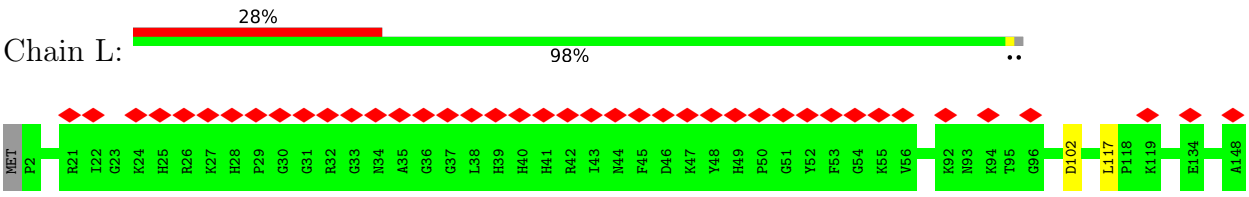
• Molecule 13: 60S ribosomal protein L36

Chain K:



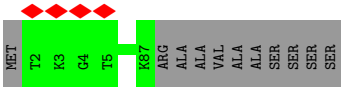
• Molecule 14: 60S ribosomal protein L27a

Chain L:



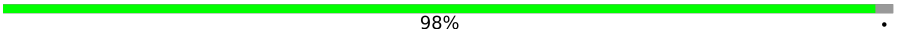
• Molecule 15: 60S ribosomal protein L37

Chain M:



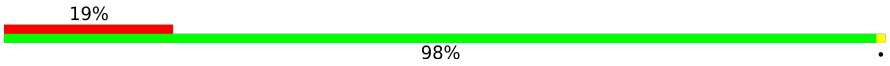
• Molecule 16: 60S ribosomal protein L39

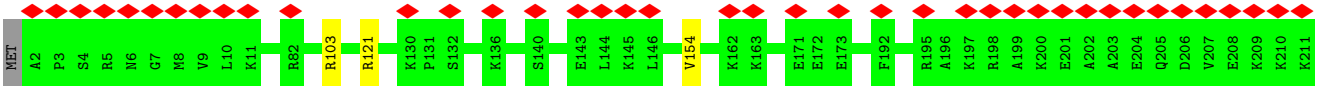
Chain P:



• Molecule 17: 60S ribosomal protein L13

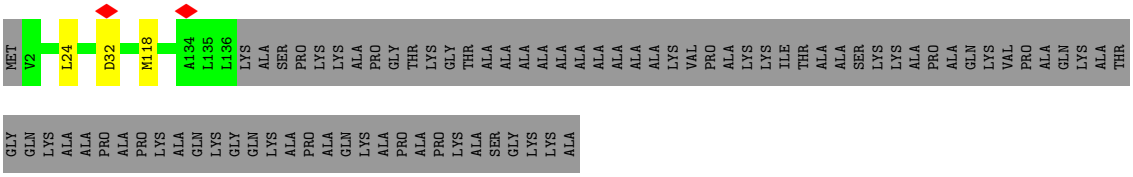
Chain Q:





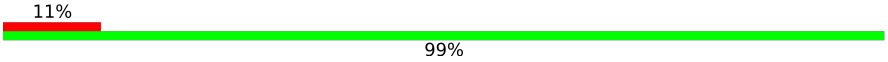
• Molecule 18: 60S ribosomal protein L14

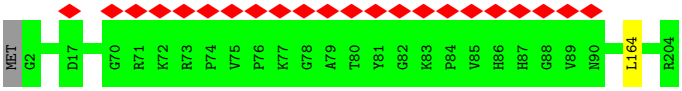
Chain S:



• Molecule 19: 60S ribosomal protein L15

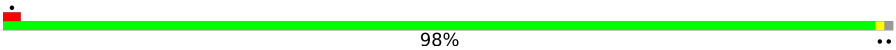
Chain U:

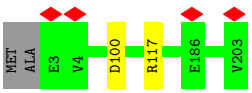




• Molecule 20: 60S ribosomal protein L13a

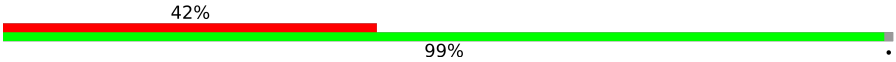
Chain V:

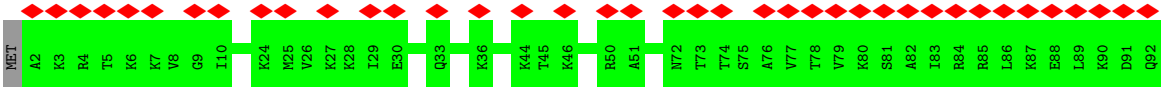




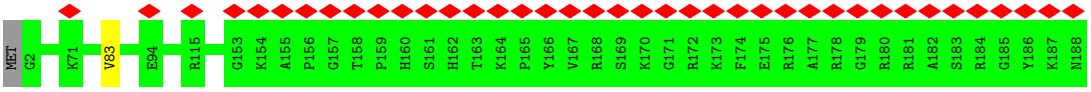
• Molecule 21: 60S ribosomal protein L37a

Chain X:

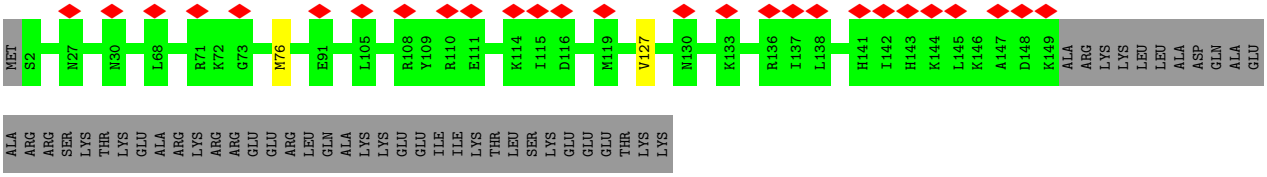




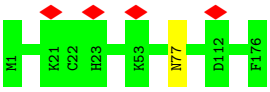
• Molecule 22: 60S ribosomal protein L18



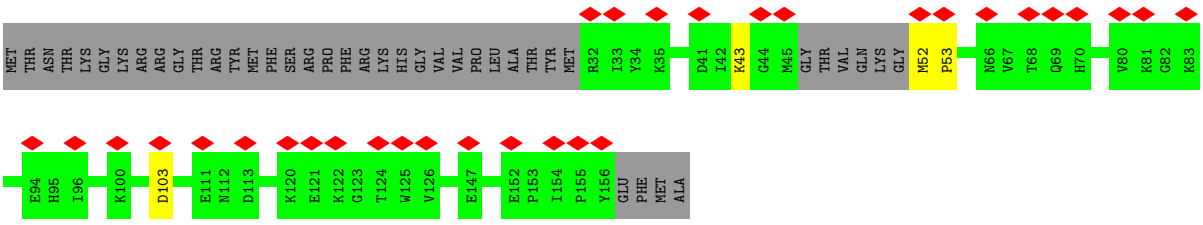
• Molecule 23: 60S ribosomal protein L19



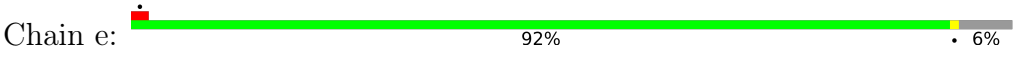
• Molecule 24: 60S ribosomal protein L18a

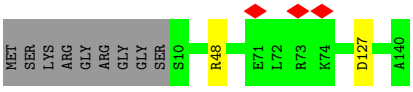


• Molecule 25: 60S ribosomal protein L21



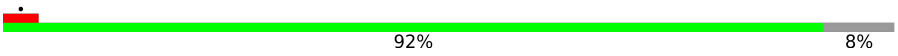
• Molecule 26: 60S ribosomal protein L23

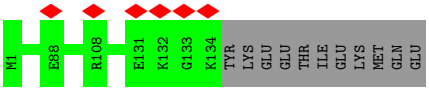




• Molecule 27: 60S ribosomal protein L26

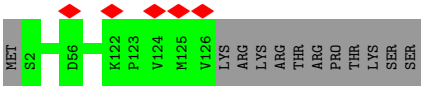
Chain h:





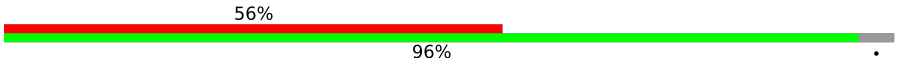
• Molecule 28: 60S ribosomal protein L28

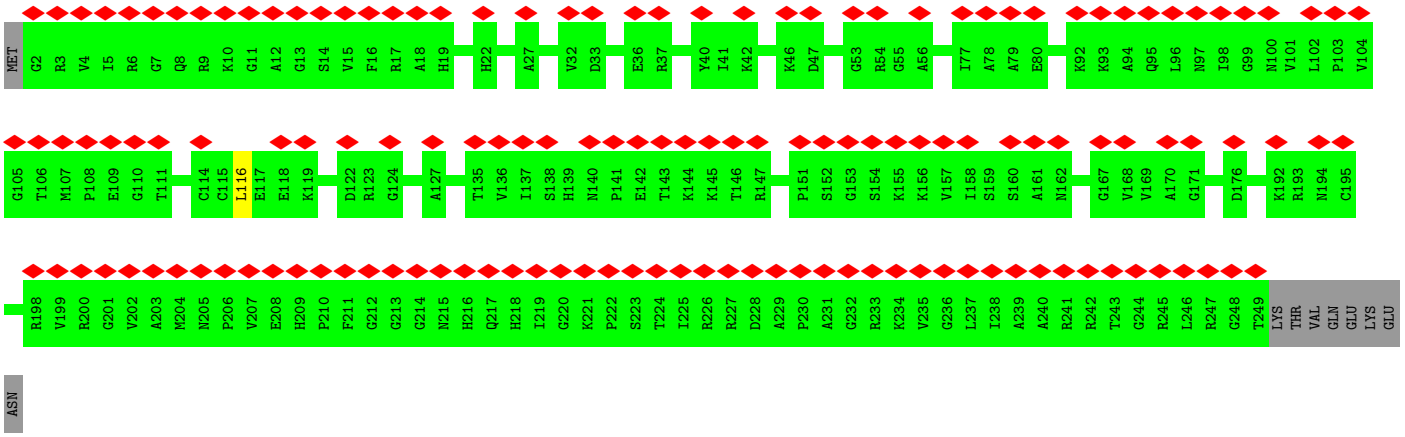
Chain l:



• Molecule 29: 60S ribosomal protein L8

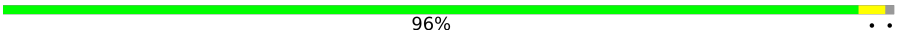
Chain m:





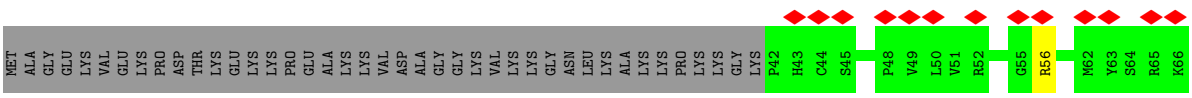
• Molecule 30: 60S ribosomal protein L35a

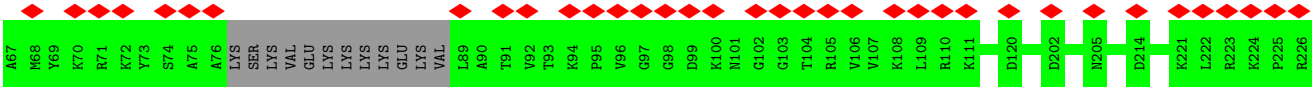
Chain n:

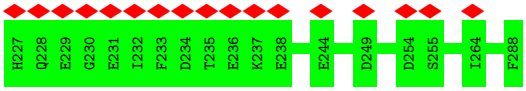


• Molecule 31: 60S ribosomal protein L6

Chain o:

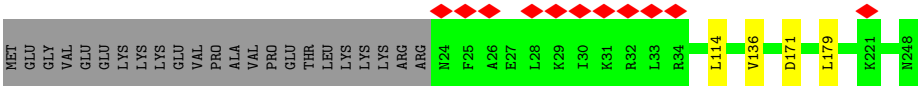






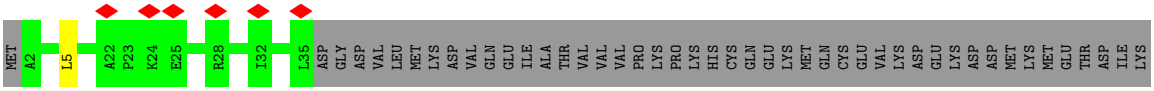
• Molecule 32: 60S ribosomal protein L7

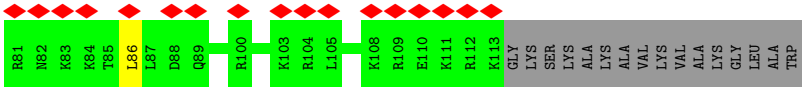
Chain p:



• Molecule 33: Protein LLP homolog

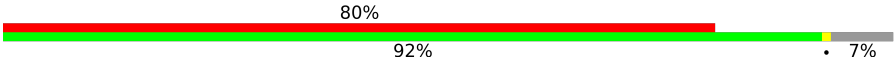
Chain z:

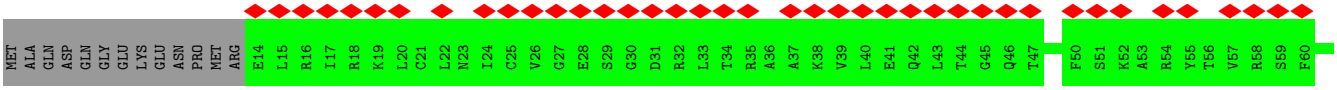


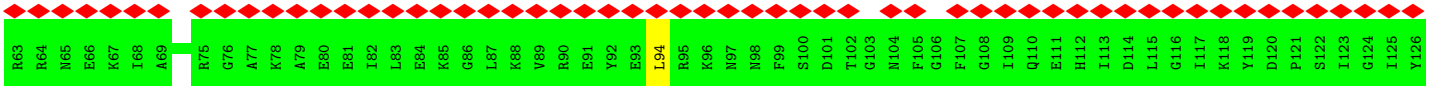


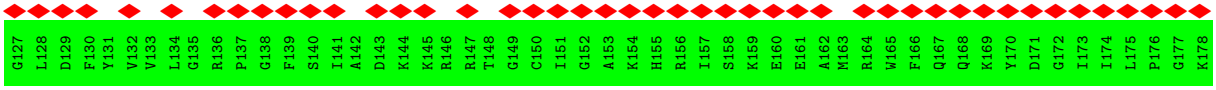
• Molecule 34: 60S ribosomal protein L11

Chain A:



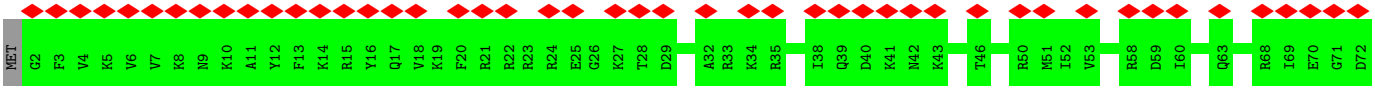


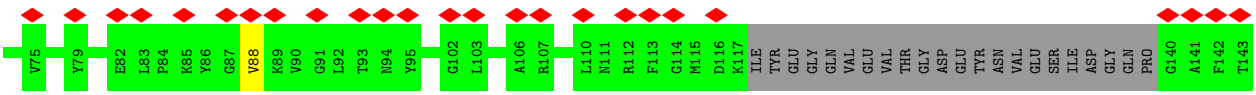


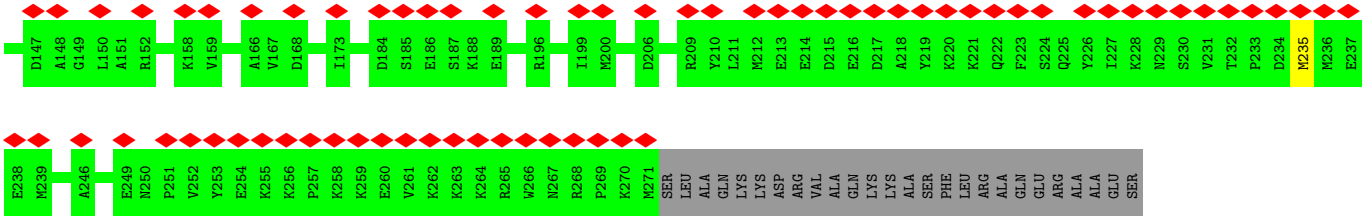


• Molecule 35: 60S ribosomal protein L5

Chain C:

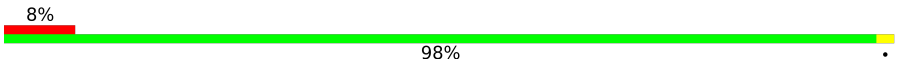


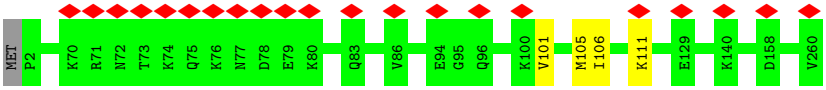




• Molecule 36: Ribosome biogenesis protein NSA2 homolog

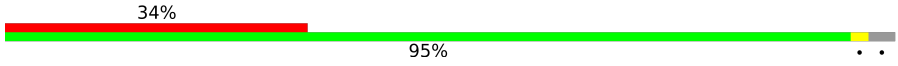
Chain J:

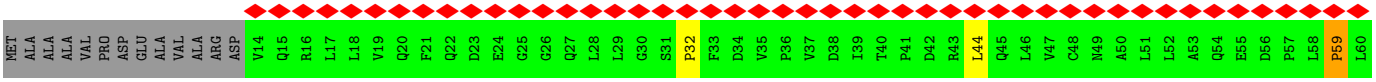


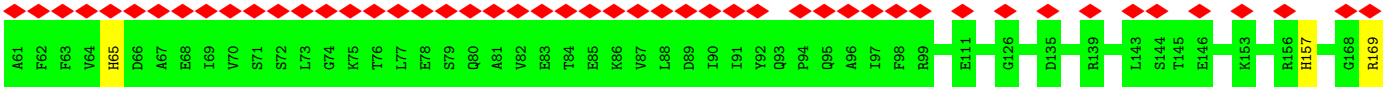


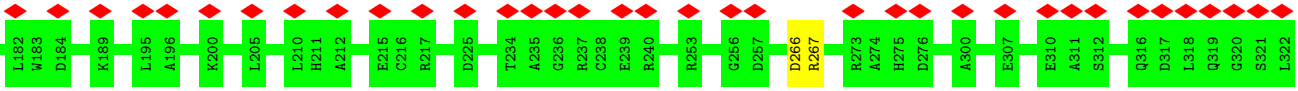
• Molecule 37: Notchless protein homolog 1

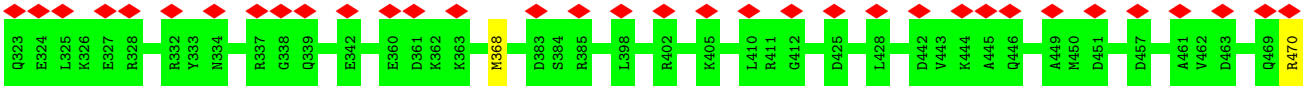
Chain N:





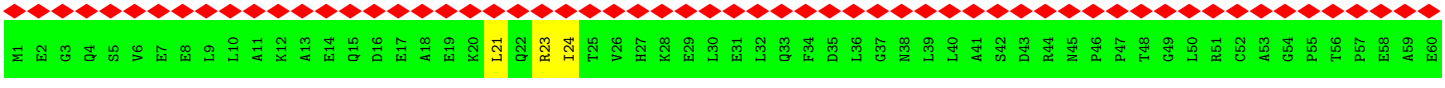


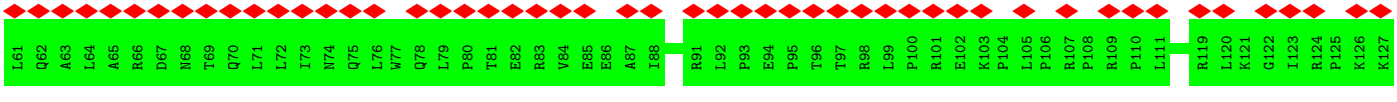


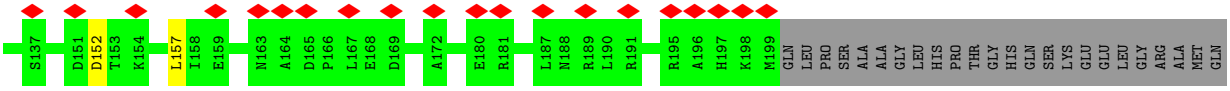


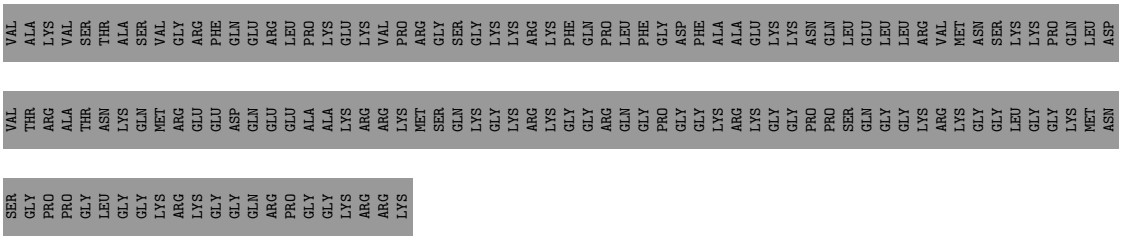
• Molecule 38: Ribosome biogenesis regulatory protein homolog

Chain R:



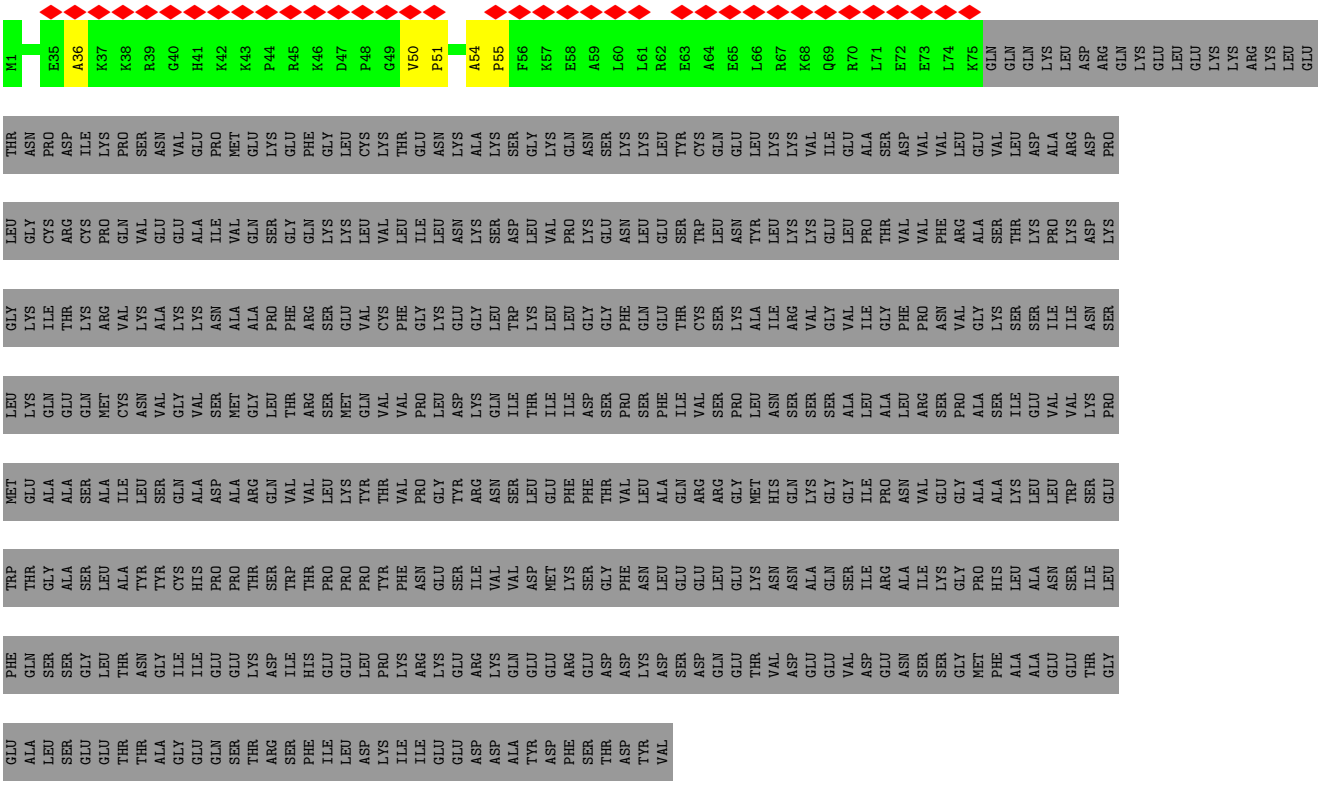






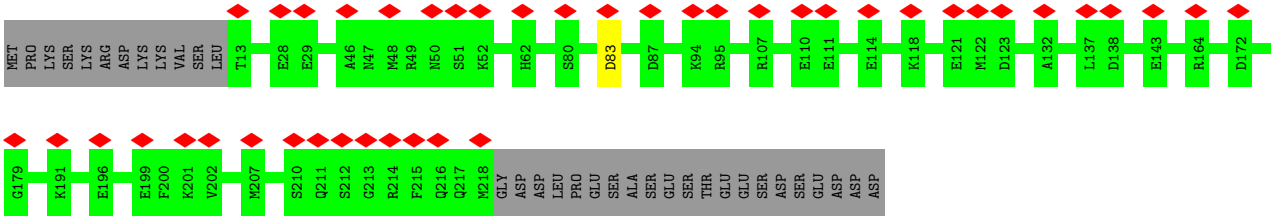
• Molecule 39: Guanine nucleotide-binding protein-like 3

Chain u:



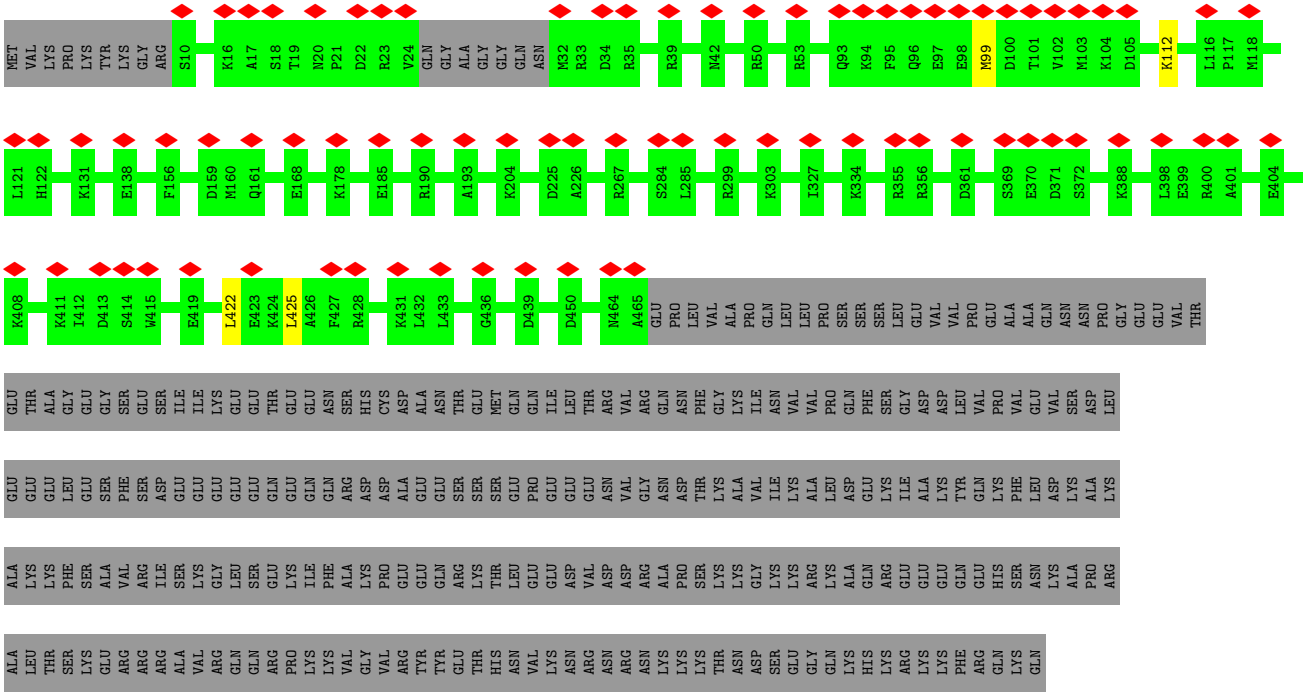
• Molecule 40: mRNA turnover protein 4 homolog

Chain v:



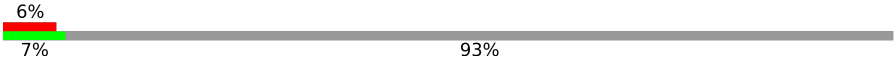
• Molecule 41: G Protein Nucleolar 2

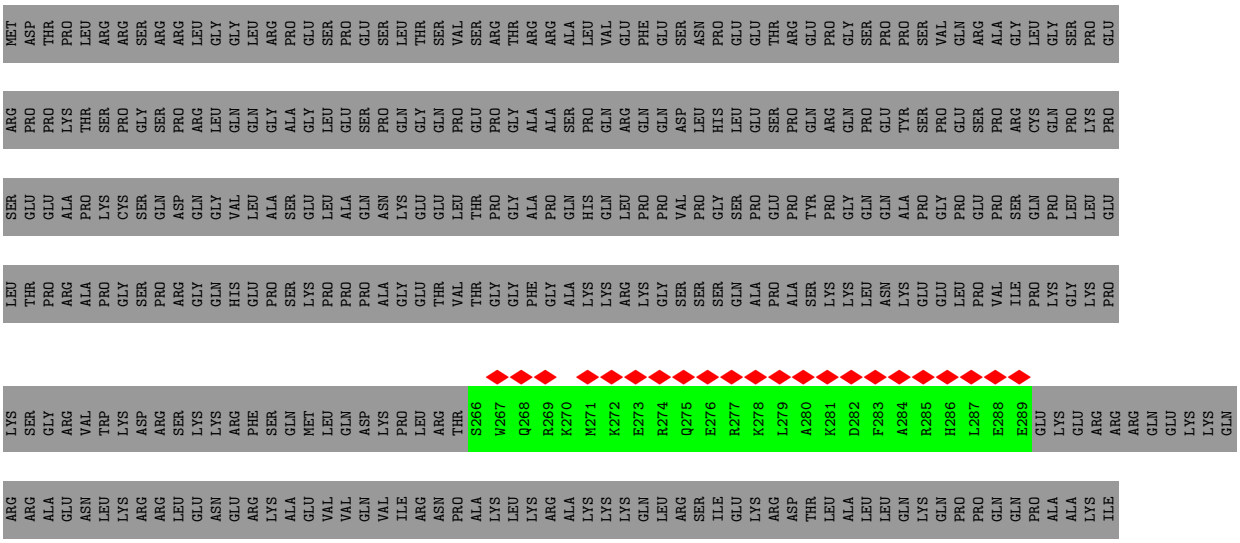
Chain w:



• Molecule 42: Coiled-coil domain-containing protein 86

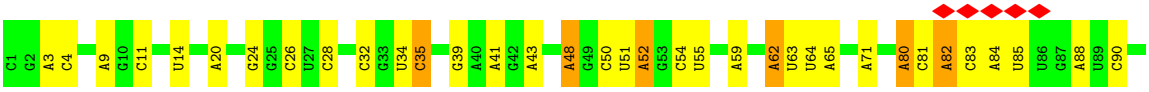
Chain r:

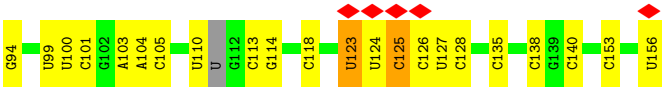




• Molecule 43: 5.8S rRNA

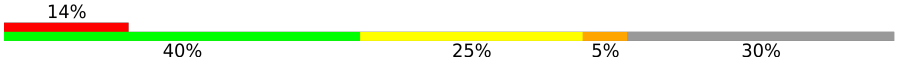
Chain 8:

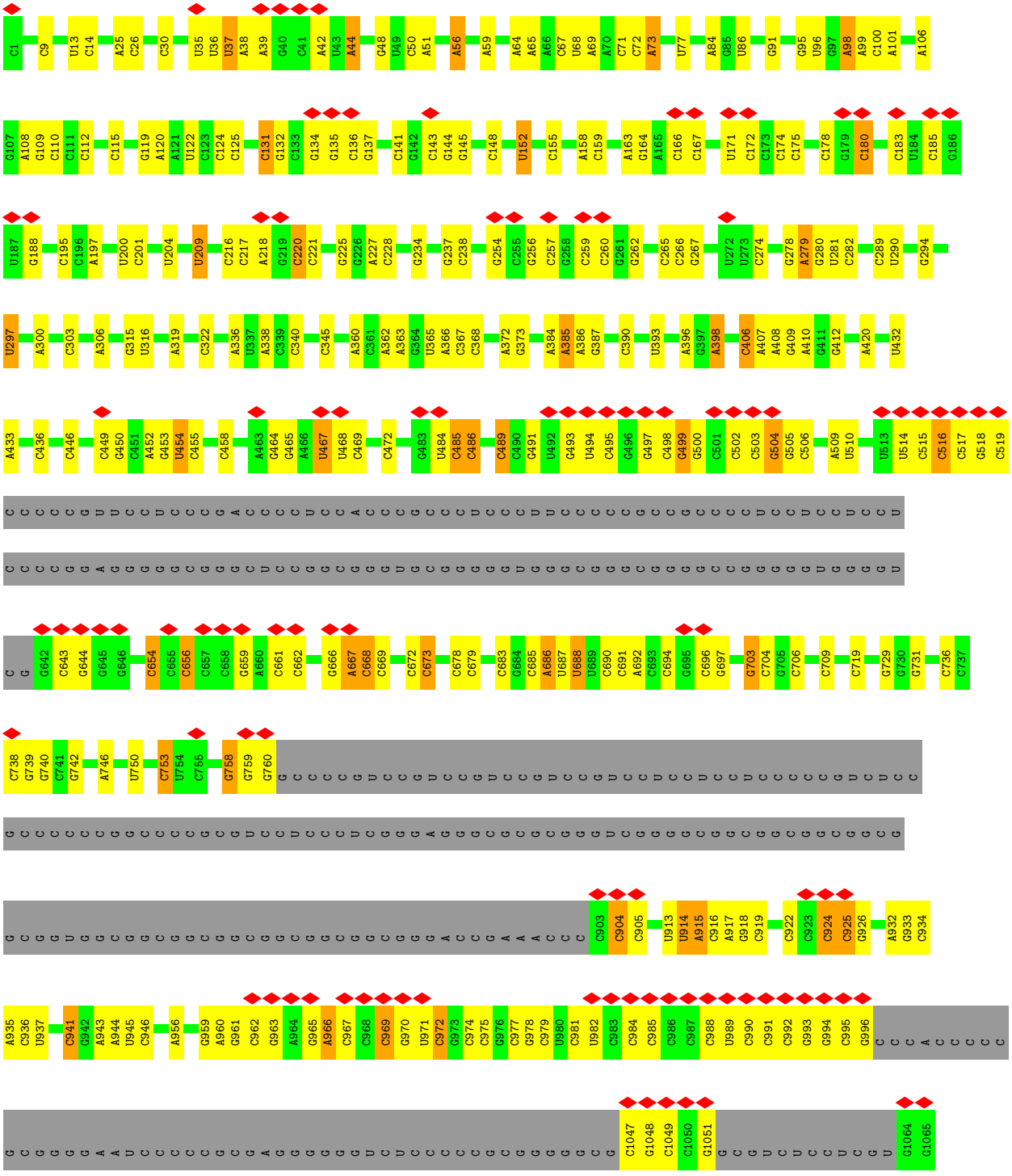


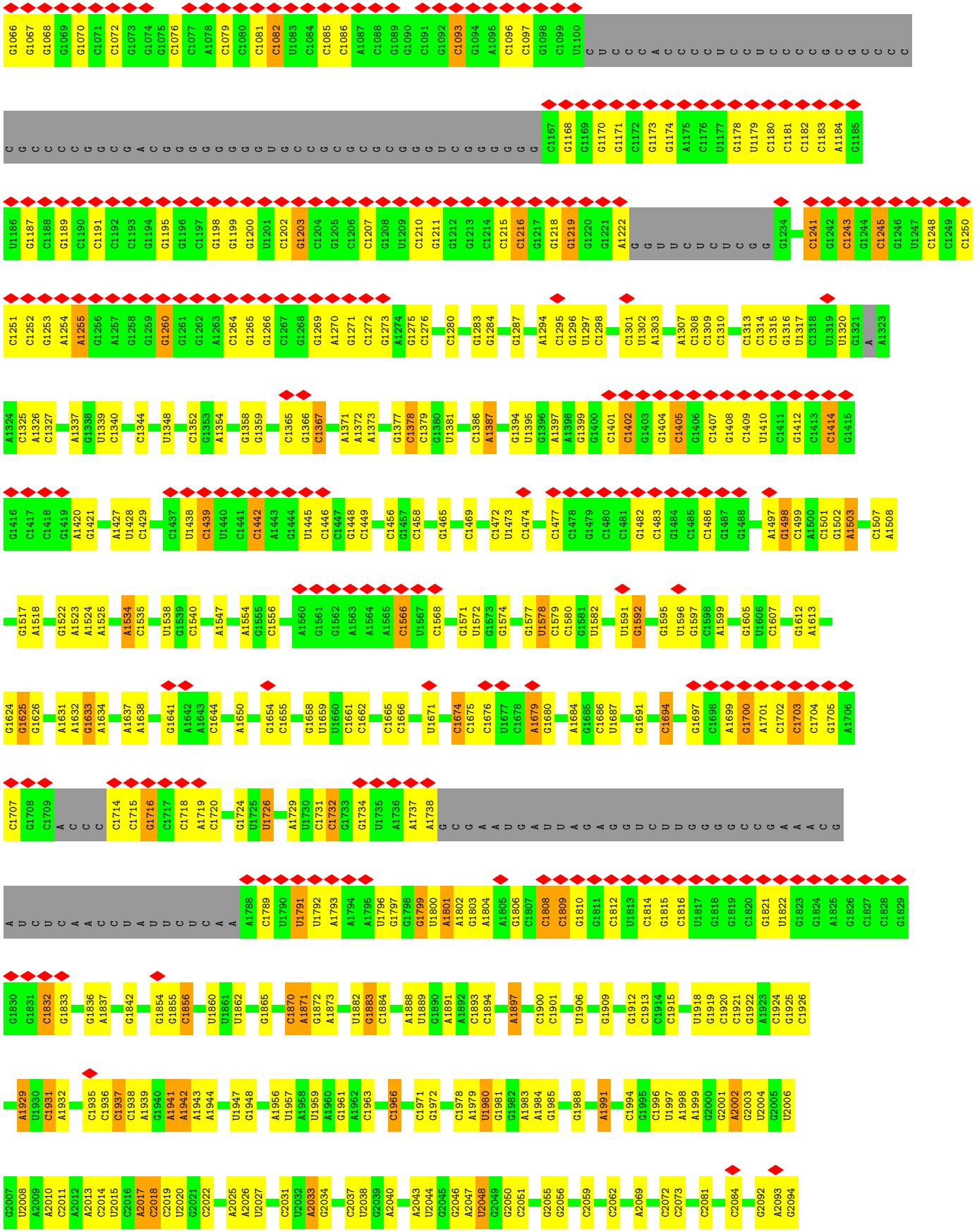


• Molecule 44: 28S rRNA

Chain 2:



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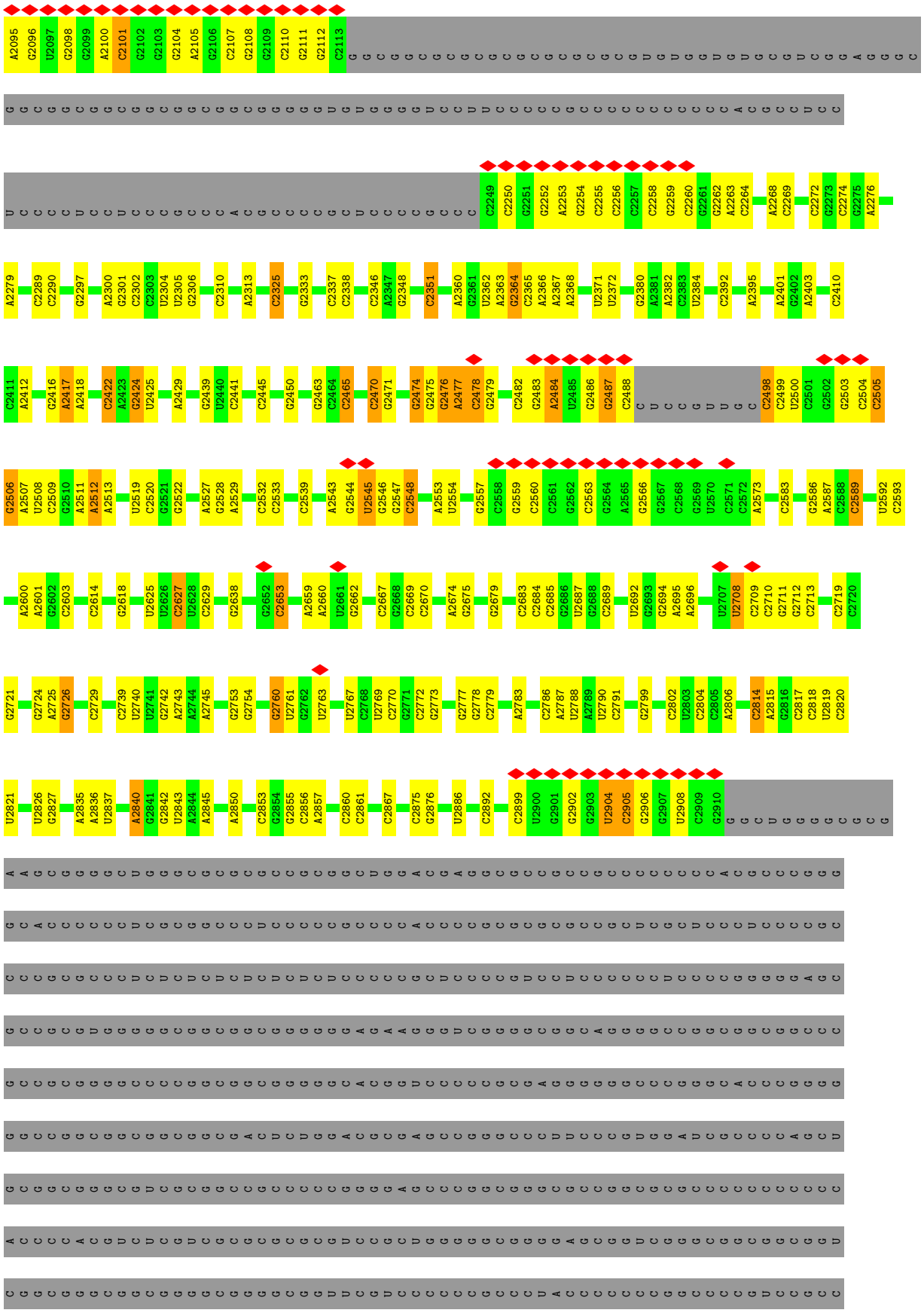
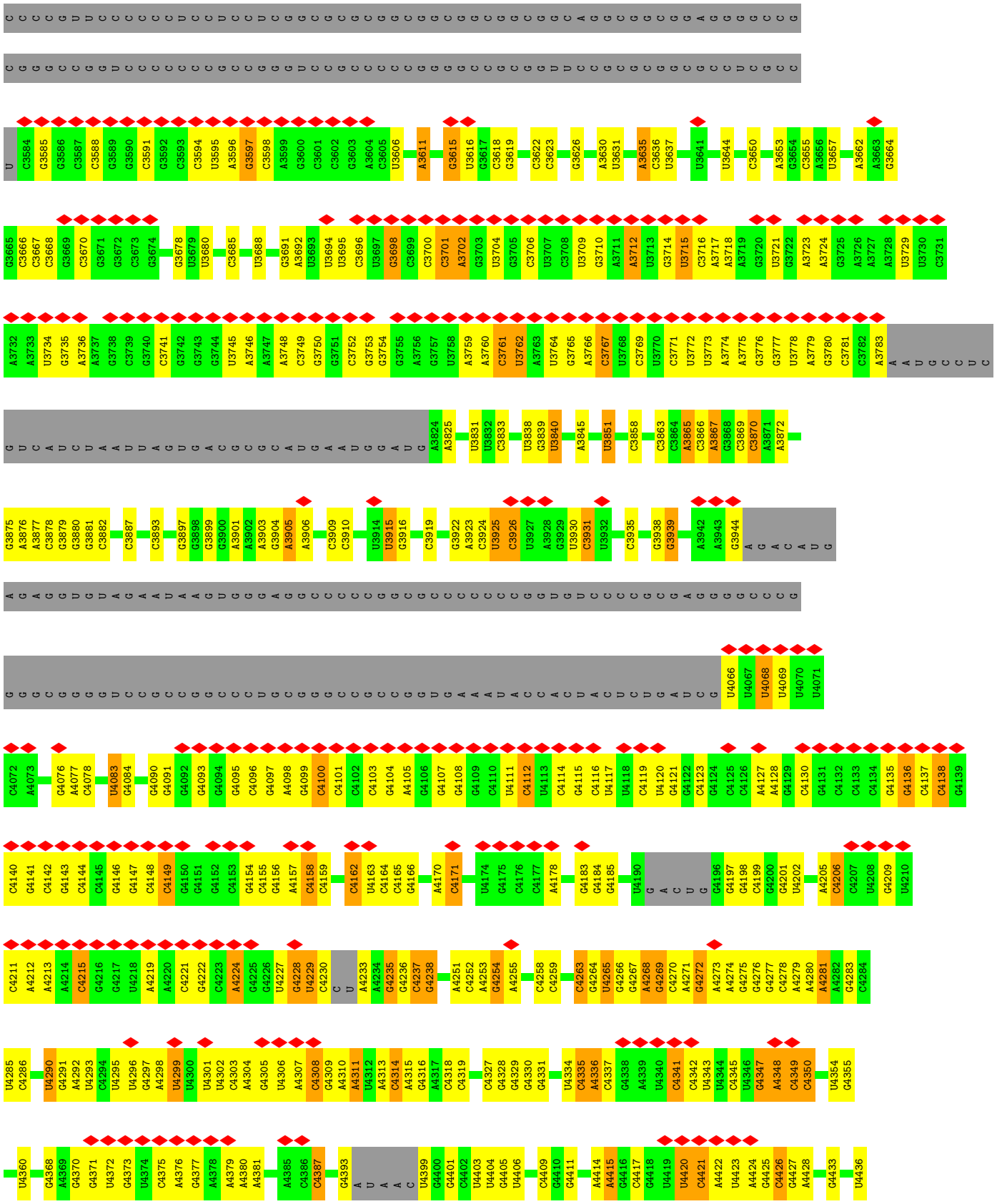
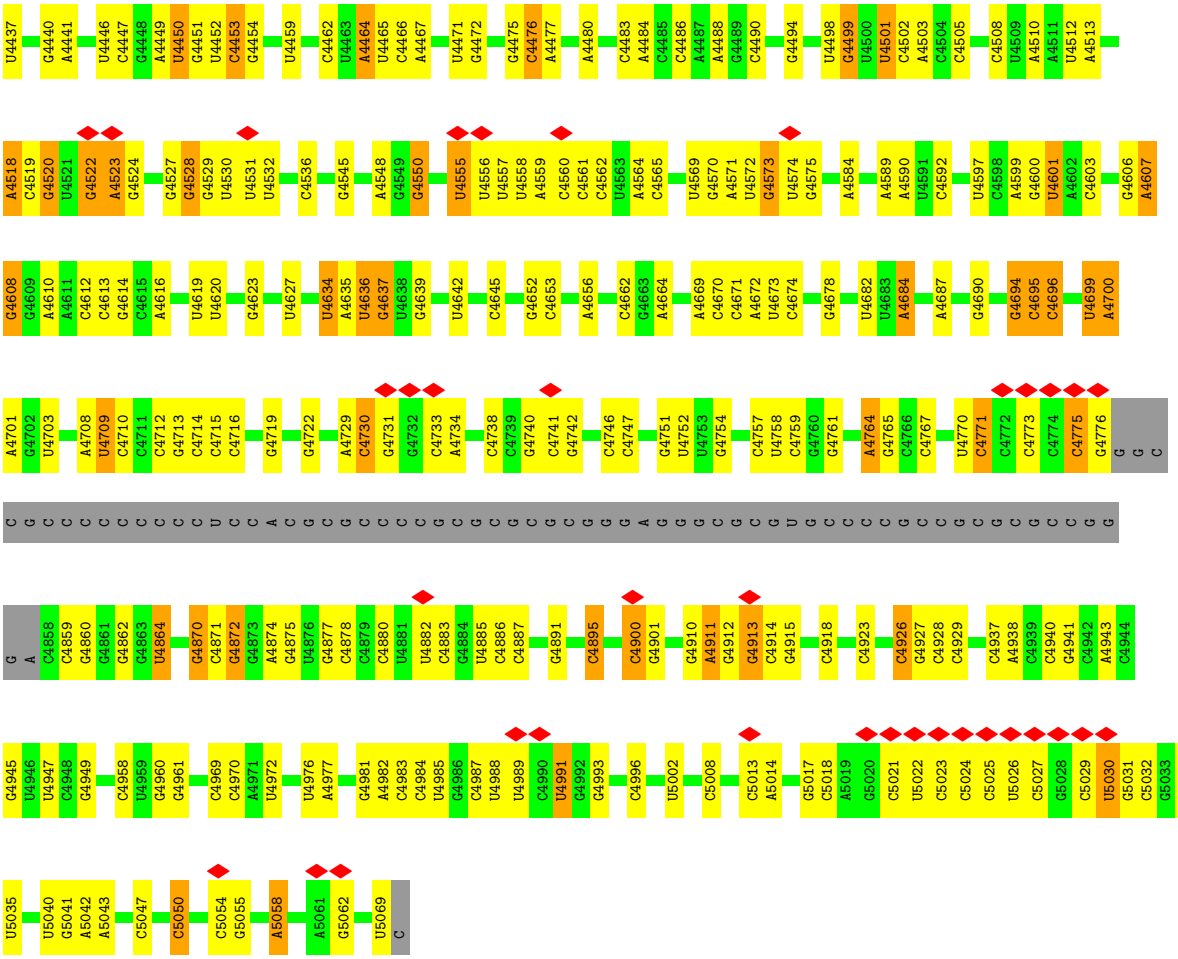
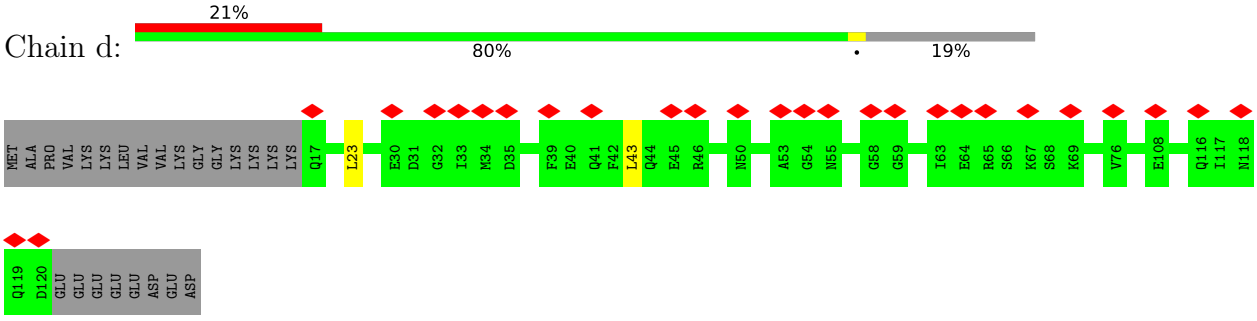
C1167 G1168 G1169 G1170 G1171 C1172 G1173 G1174 A1175 C1176 U1177 G1178 U1179 C1180 C1181 C1182 C1183 A1184 G1185
U1186 G1187 C1188 G1189 C1190 C1191 C1192 C1193 G1194 G1195 C1196 C1197 G1198 G1199 G1200 U1201 C1202 G1203 C1204 G1205 C1206 C1207 G1208 U1209 C1210 G1211 G1212 G1213 C1214 C1215 C1216 G1217 G1218 G1219 G1220 G1221 A1222 G1234
C1241 G1242 C1243 G1244 C1245 G1246 U1247 C1248 C1249 C1250
C1251 C1252 G1253 A1254 A1255 G1256 A1257 G1258 G1259 G1260 G1261 G1262 A1263 C1264 G1265 G1266 C1267 G1268 G1269 A1270 G1271 C1272 G1273 A1274 G1275 C1276 C1280 G1283 G1284 G1287 A1294 C1295 G1296 U1297 C1298 C1301 U1302 A1303 A1307 C1308 C1309 C1310 C1313 C1314 C1315 G1316 U1317 C1318 U1319 U1320 G1321 A1323
A1324 C1325 A1326 C1327 A1337 G1338 U1339 C1340 C1344 U1348 C1352 G1353 A1354 G1358 G1359 C1365 G1366 C1367 A1371 A1372 A1373 G1377 C1378 C1379 G1380 U1381 C1386 A1387 G1394 U1395 G1396 A1397 A1398 G1399 G1400 C1401 C1402 G1403 G1404 C1405 G1406 C1407 G1408 C1409 U1410 C1411 G1412 C1413 C1414 G1415
G1416 C1417 C1418 G1419 A1420 G1421 A1427 U1428 C1429 C1437 U1438 C1439 U1440 C1441 C1442 A1443 G1444 U1445 C1446 C1447 G1448 C1449 C1456 G1457 C1458 G1465 C1469 C1472 U1473 C1474 C1477 C1478 G1479 C1480 C1481 G1482 C1483 G1484 C1485 C1486 G1487 G1488 A1497 G1498 C1499 A1500 C1501 G1502 A1503 C1507 A1508
G1517 A1518 G1522 A1523 A1524 A1525 A1534 C1535 U1538 G1539 C1540 A1547 A1554 G1555 C1556 A1560 G1561 G1562 A1563 A1564 A1565 C1566 U1567 C1568 G1571 U1572 G1573 G1574 G1577 U1578 C1579 C1580 G1581 U1582 U1591 G1592 G1595 U1596 G1597 C1598 A1599 G1605 U1606 C1607 G1612 A1613
G1624 G1625 G1626 A1631 A1632 G1633 A1634 A1637 A1638 G1641 A1642 A1643 C1644 A1650 G1654 C1655 G1658 U1659 U1660 C1661 C1662 C1665 C1666 U1671 C1674 C1675 C1676 U1677 C1678 A1679 G1680 A1684 G1685 C1686 U1687 G1691 C1694 G1697 C1698 A1699 G1700 A1701 C1702 C1703 C1704 G1705 A1706
C1707 G1708 C1709 C1714 C1715 G1716 C1717 C1718 A1719 C1720 G1724 U1725 U1726 A1729 U1730 C1731 C1732 G1733 G1734 U1735 A1736 A1737 A1738
A1788 C1789 U1790 U1791 U1792 A1793 A1794 A1795 U1796 G1797 G1798 G1799 U1800 A1801 A1802 G1803 A1804 A1805 G1806 C1807 C1808 C1809 G1810 G1811 C1812 U1813 C1814 G1815 C1816 U1817 G1818 G1819 C1820 G1821 U1822 G1823 G1824 A1825 G1826 C1827 C1828 G1829
G1830 G1831 C1832 G1833 G1836 A1837 G1842 G1854 G1855 C1856 U1860 U1861 U1862 G1865 C1870 A1871 A1872 A1873 U1882 G1883 C1884 A1888 U1889 G1890 A1891 A1892 C1893 C1894 A1897 C1900 C1901 U1906 G1909 G1912 C1913 C1914 C1915 U1918 G1919 C1920 C1921 G1922 A1923 C1924 G1925 C1926
A1929 U1930 C1931 A1932 C1935 C1936 C1937 C1938 A1939 G1940 A1941 A1942 A1943 A1944 U1947 G1948 A1956 U1957 A1958 U1959 A1960 G1961 A1962 C1963 C1966 C1971 G1972 C1978 A1979 U1980 G1981 G1982 A1983 A1984 G1985 G1988 A1991 C1994 G1995 C1996 U1997 A1998 A1999 G2000 G2001 A2002 G2003 U2004 G2005 U2006
G2007 U2008 A2009 A2010 C2011 A2012 A2013 C2014 U2015 C2016 A2017 C2018 C2019 U2020 C2021 C2022 A2025 A2026 U2027 C2031 U2032 A2033 G2034 C2037 U2038 G2039 A2040 A2043 U2044 G2045 G2046 A2047 U2048 G2049 C2050 C2051 G2055 C2056 C2059 C2062 A2069 C2072 C2073 C2081 C2084 G2092 A2093 G2094



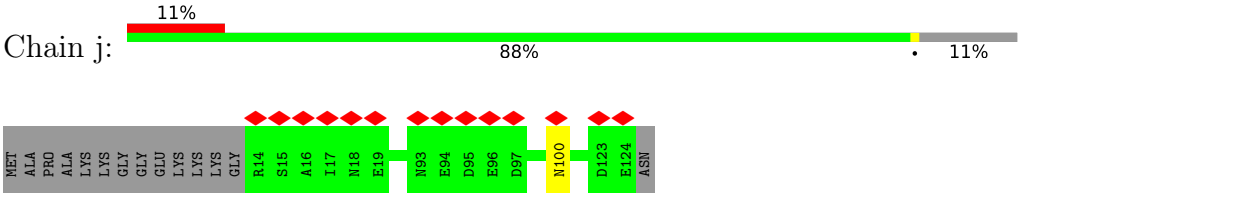




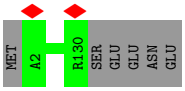
• Molecule 45: 60S ribosomal protein L22



• Molecule 46: 60S ribosomal protein L31

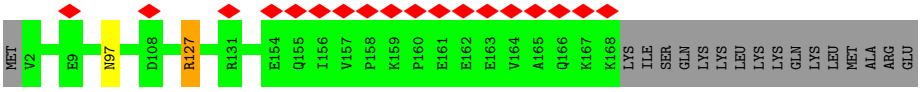


• Molecule 47: 60S ribosomal protein L32



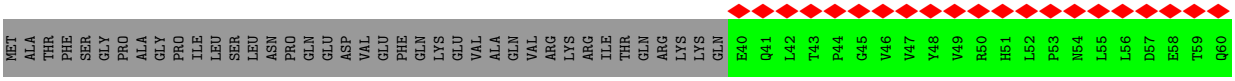
• Molecule 48: 60S ribosomal protein L17

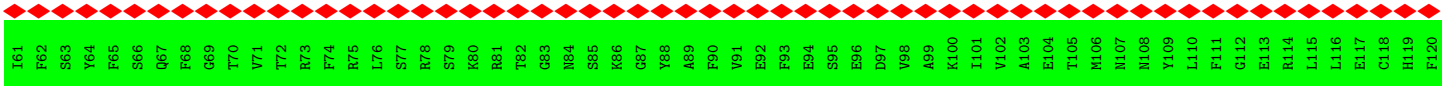
Chain Y:

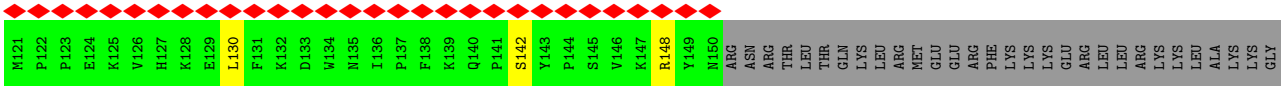


• Molecule 49: MKI67 FHA domain-interacting nucleolar phosphoprotein

Chain t:

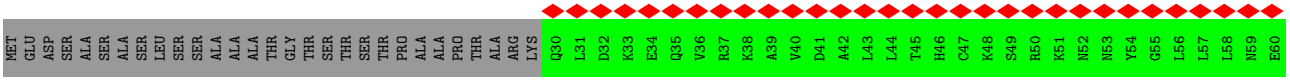


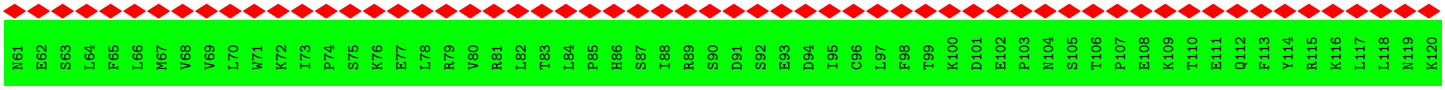


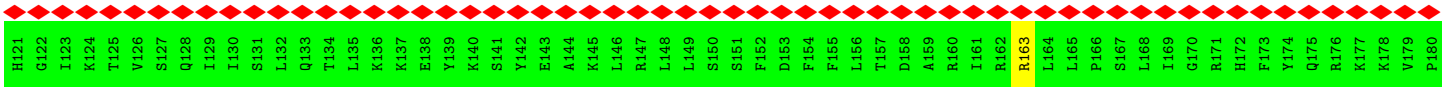


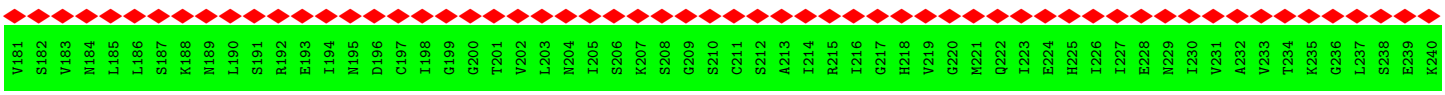
• Molecule 50: Ribosomal L1 domain-containing protein 1

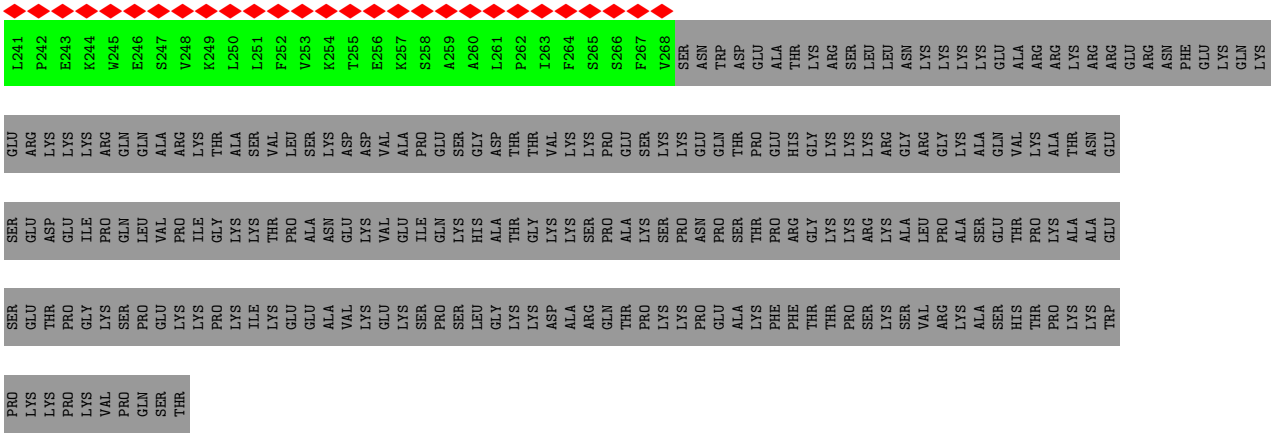
Chain s:





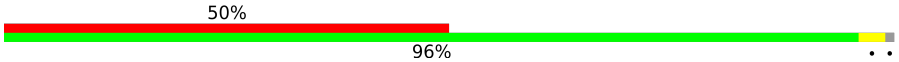


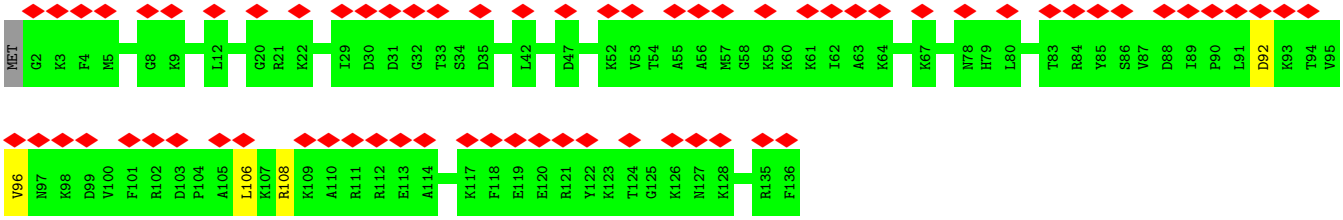




• Molecule 51: 60S ribosomal protein L27

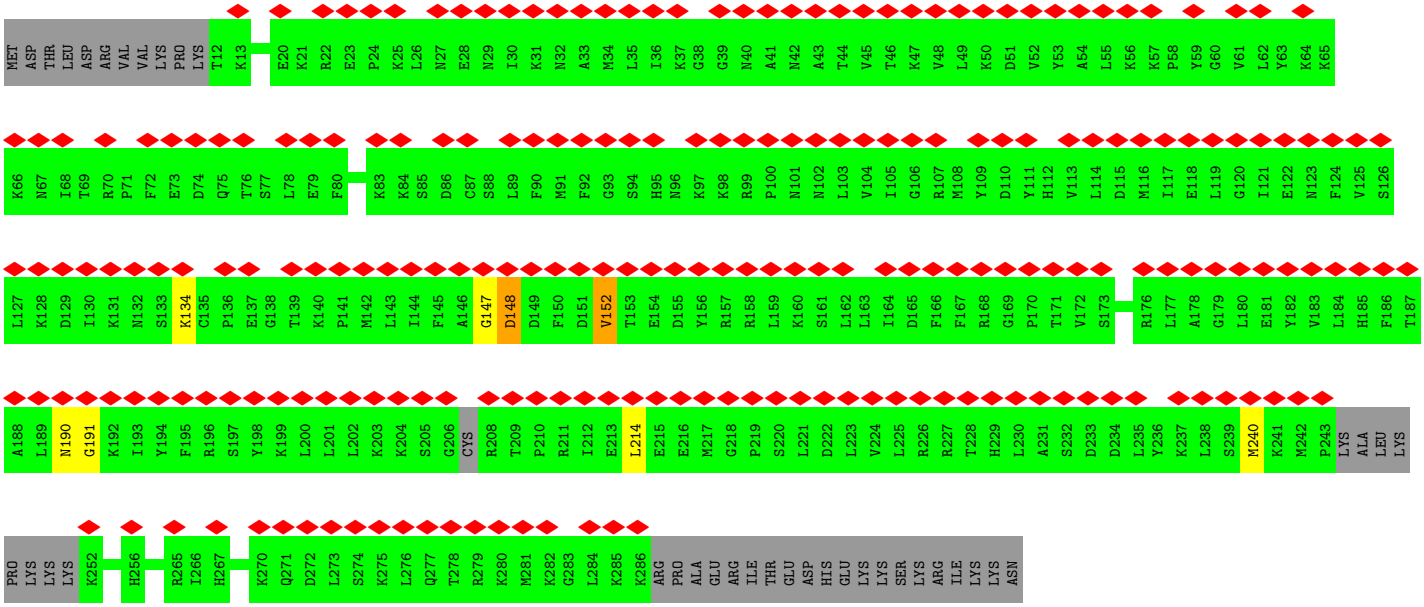
Chain i:





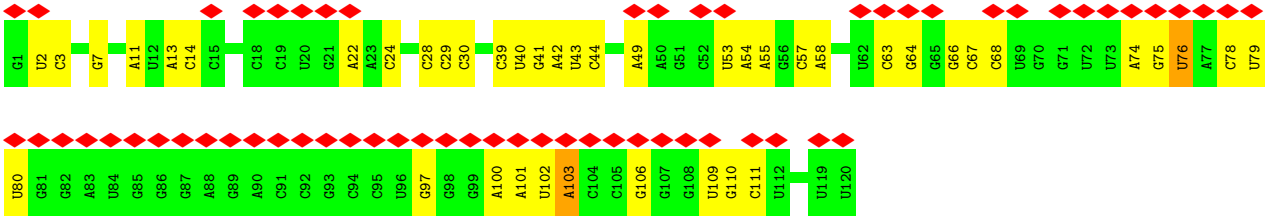
• Molecule 52: Ribosome production factor 2 homolog

Chain T:



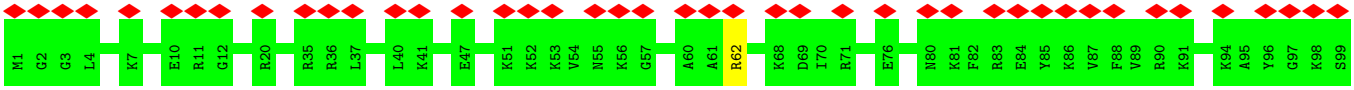
• Molecule 53: 5S RNA

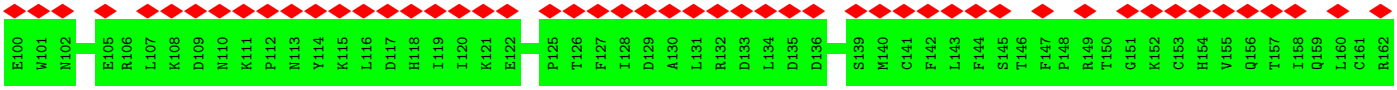
Chain 5:

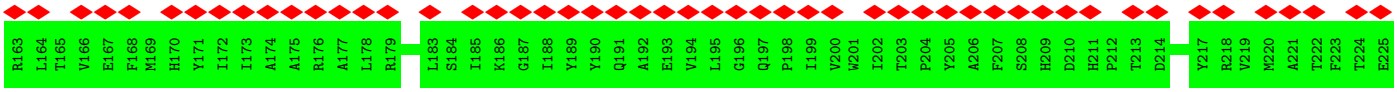


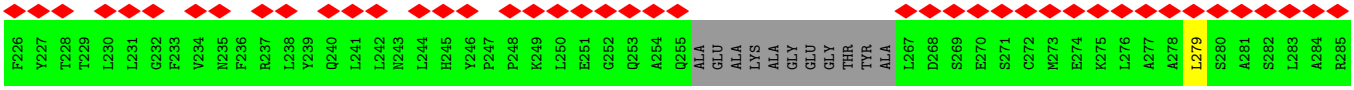
• Molecule 54: Pescadillo homolog

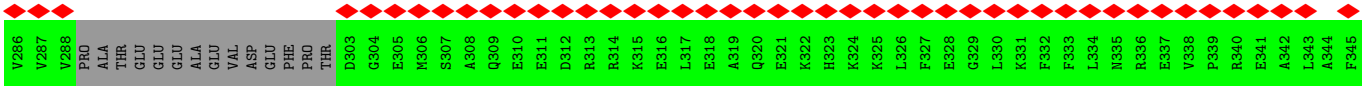
Chain q:

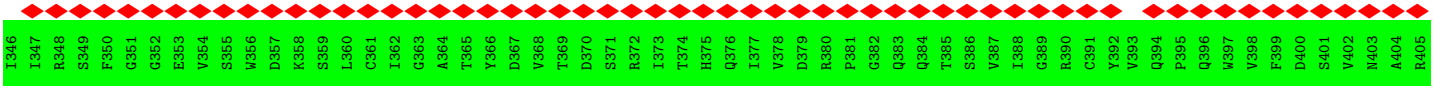


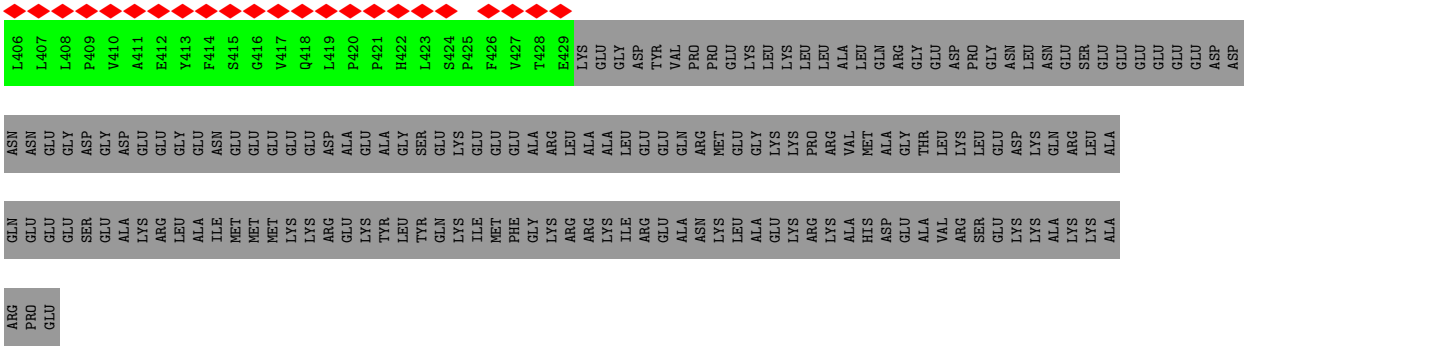






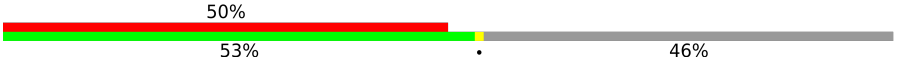


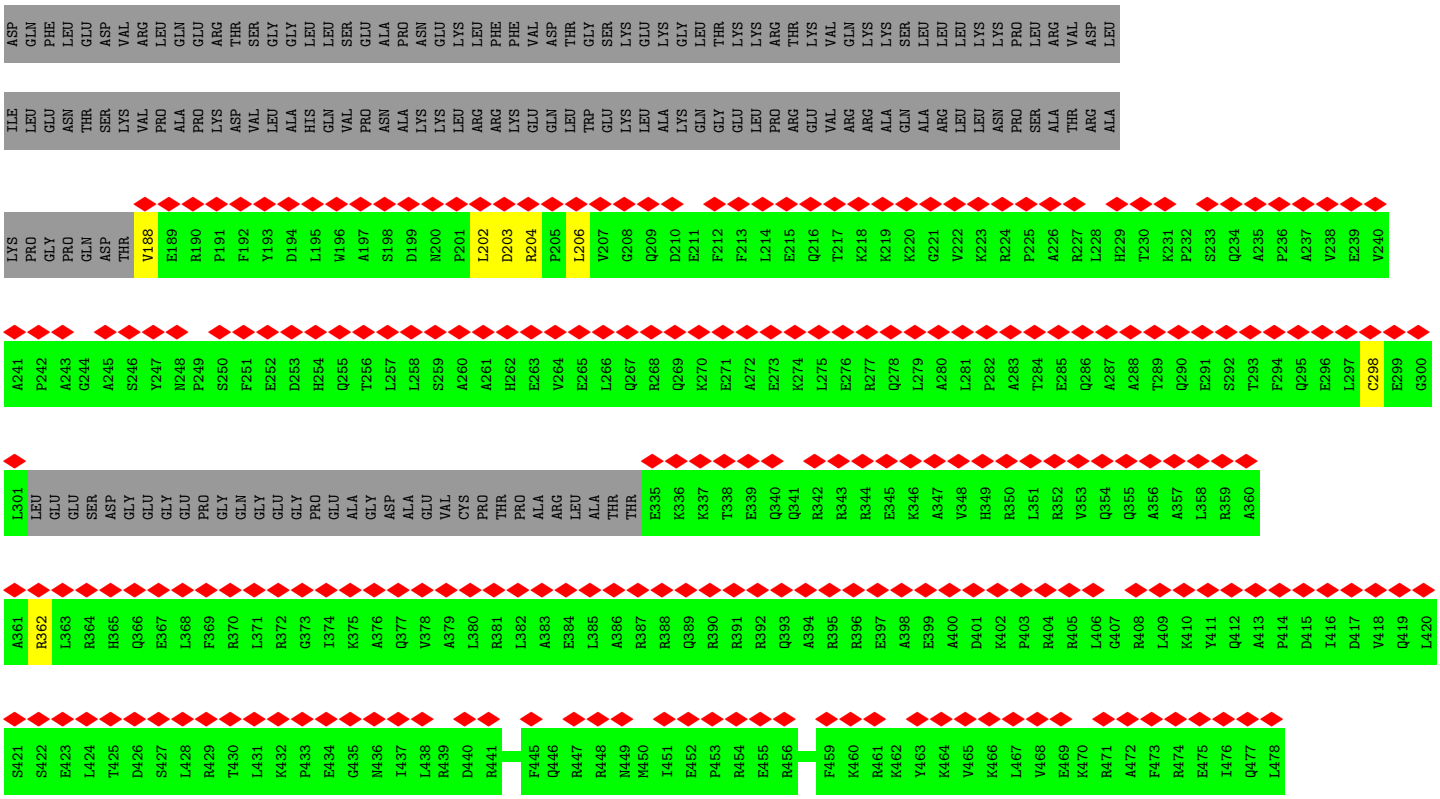




• Molecule 55: Ribosome biogenesis protein NOP53

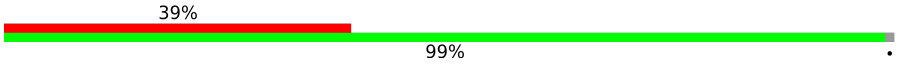
Chain f:

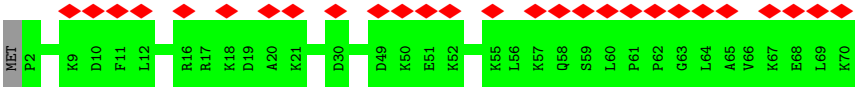




• Molecule 56: 60S ribosomal protein L38

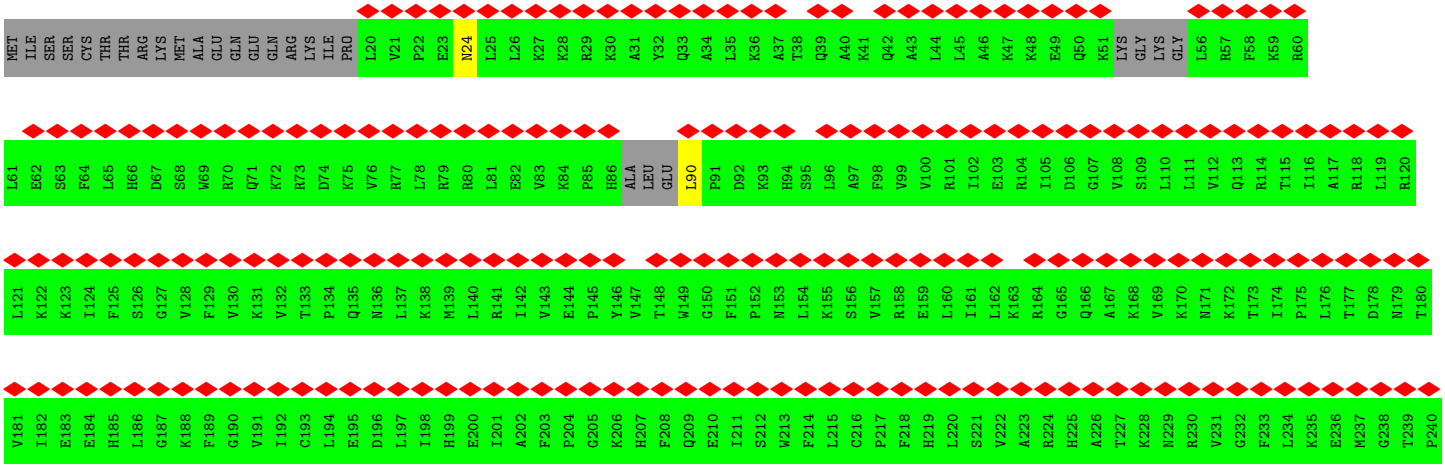
Chain O:

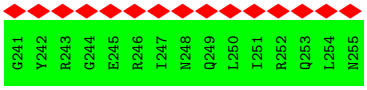




• Molecule 57: 60S ribosomal protein L7-like 1

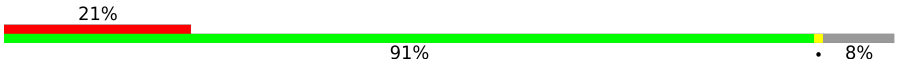
Chain 3:

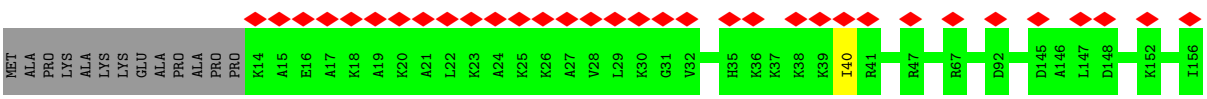




• Molecule 58: 60S ribosomal protein L23a

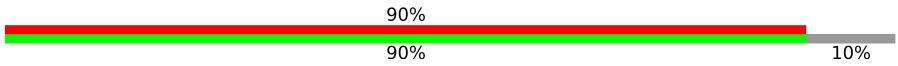
Chain g:

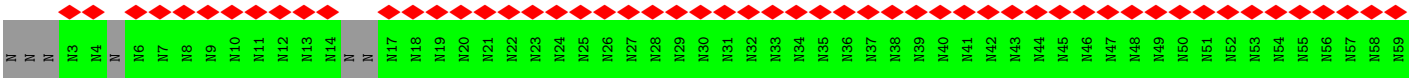




• Molecule 59: ITS2

Chain x:





4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	18549	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 ($e^-/Å^2$)	1.8	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	1800	Depositor
Magnification	Not provided	
Image detector	GATAN K2 QUANTUM (4k x 4k)	Depositor
Maximum map value	0.165	Depositor
Minimum map value	-0.056	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.04	Depositor
Map size (Å)	548.0, 548.0, 548.0	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.37, 1.37, 1.37	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: B8T, I4U, PSU, B9H, B9B, 7MG, OMC, 2MG, A2M, OMG, MG, M7A, 1MA, UR3, E7G, P7G, B8W, BGH, GTP, OMU, B8K, P4U, 5MU, B8Q

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	y	0.33	0/1269	0.74	2/1712 (0.1%)
2	4	0.37	0/5177	0.81	11/6942 (0.2%)
3	6	0.37	0/1877	0.75	2/2554 (0.1%)
4	7	0.37	0/1181	0.72	1/1563 (0.1%)
5	9	0.35	0/723	0.90	1/961 (0.1%)
6	B	0.38	0/3315	0.71	2/4435 (0.0%)
7	D	0.34	0/2907	0.72	3/3905 (0.1%)
8	E	0.40	0/774	0.76	1/1038 (0.1%)
9	F	0.32	0/878	0.73	1/1170 (0.1%)
10	G	0.35	0/1971	0.74	1/2651 (0.0%)
11	H	0.33	0/1023	0.66	0/1351
12	I	0.37	0/1537	0.81	3/2066 (0.1%)
13	K	0.35	0/843	0.81	2/1115 (0.2%)
14	L	0.33	0/1191	0.71	2/1591 (0.1%)
15	M	0.33	0/720	0.74	0/952
16	P	0.33	0/454	0.68	0/599
17	Q	0.35	0/1732	0.74	0/2315
18	S	0.39	0/1133	0.75	3/1516 (0.2%)
19	U	0.31	0/1746	0.66	1/2338 (0.0%)
20	V	0.38	0/1682	0.72	1/2250 (0.0%)
21	X	0.32	0/718	0.73	0/953
22	Z	0.35	0/1537	0.74	1/2052 (0.0%)
23	a	0.32	0/1255	0.77	2/1662 (0.1%)
24	b	0.37	0/1501	0.71	0/2013
25	c	0.38	0/994	0.77	1/1327 (0.1%)
26	e	0.38	0/993	0.85	1/1332 (0.1%)
27	h	0.37	0/1132	0.69	0/1504
28	l	0.33	0/1017	0.72	0/1364
29	m	0.36	0/1936	0.79	1/2596 (0.0%)
30	n	0.34	0/895	0.76	1/1198 (0.1%)
31	o	0.34	0/1935	0.72	0/2596

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
32	p	0.37	0/1916	0.76	4/2553 (0.2%)
33	z	0.35	0/587	0.86	2/767 (0.3%)
34	A	0.35	0/1341	0.77	1/1793 (0.1%)
35	C	0.34	0/2068	0.71	2/2767 (0.1%)
36	J	0.35	0/2146	0.68	1/2865 (0.0%)
37	N	0.33	0/3756	0.73	5/5103 (0.1%)
38	R	0.32	0/1668	0.78	4/2255 (0.2%)
39	u	0.45	0/649	0.86	0/851
40	v	0.35	0/1714	0.75	1/2300 (0.0%)
41	w	0.34	0/3699	0.70	3/4992 (0.1%)
42	r	0.31	0/220	0.74	0/288
43	8	0.56	0/3656	1.41	61/5694 (1.1%)
44	2	0.53	5/83201 (0.0%)	1.43	1590/129722 (1.2%)
45	d	0.38	0/864	0.88	2/1160 (0.2%)
46	j	0.36	0/933	0.72	0/1256
47	k	0.36	0/1082	0.71	0/1443
48	Y	0.32	0/1383	0.67	1/1856 (0.1%)
49	t	0.37	0/955	0.77	1/1290 (0.1%)
50	s	0.33	0/1956	0.64	0/2631
51	i	0.37	0/1130	0.82	3/1507 (0.2%)
52	T	0.36	0/2204	0.80	6/2944 (0.2%)
53	5	0.46	0/2858	1.42	60/4455 (1.3%)
54	q	0.35	0/3395	0.70	1/4578 (0.0%)
55	f	0.38	1/2169 (0.0%)	0.79	6/2902 (0.2%)
56	O	0.42	0/575	0.79	0/761
57	3	0.34	0/1928	0.72	1/2584 (0.0%)
58	g	0.39	0/1175	0.66	0/1572
All	All	0.45	6/175274 (0.0%)	1.17	1799/254510 (0.7%)

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	4	0	5
6	B	0	1
7	D	0	1
17	Q	0	1
25	c	0	1
30	n	0	1
39	u	0	3

Continued on next page...

Continued from previous page...

Mol	Chain	#Chirality outliers	#Planarity outliers
48	Y	0	1
49	t	0	1
52	T	0	1
55	f	0	1
All	All	0	17

The worst 5 of 6 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
55	f	188	VAL	C-N	9.21	1.55	1.34
44	2	4405	G	C1'-N9	-6.78	1.37	1.46
44	2	4403	U	C1'-N1	5.74	1.57	1.48
44	2	2850	A	N9-C4	5.58	1.41	1.37
44	2	1679	A	N9-C4	5.19	1.41	1.37

The worst 5 of 1799 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
44	2	1872	G	OP1-P-OP2	-26.92	79.22	119.60
44	2	1872	G	O5'-P-OP1	-25.62	79.96	110.70
44	2	1871	A2M	OP2-P-O3'	-16.21	69.55	105.20
44	2	2710	C	N1-C2-O2	15.55	128.23	118.90
44	2	1872	G	O5'-P-OP2	14.72	128.36	110.70

There are no chirality outliers.

5 of 17 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	4	189	THR	Peptide
2	4	299	LEU	Peptide
2	4	300	SER	Peptide
2	4	503	THR	Peptide
2	4	69	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	
1	y	163/165 (99%)	160 (98%)	3 (2%)	0	100	100
2	4	616/634 (97%)	555 (90%)	57 (9%)	4 (1%)	25	64
3	6	242/245 (99%)	227 (94%)	15 (6%)	0	100	100
4	7	133/163 (82%)	128 (96%)	5 (4%)	0	100	100
5	9	82/134 (61%)	71 (87%)	10 (12%)	1 (1%)	13	50
6	B	401/403 (100%)	380 (95%)	21 (5%)	0	100	100
7	D	356/427 (83%)	330 (93%)	26 (7%)	0	100	100
8	E	96/115 (84%)	92 (96%)	4 (4%)	0	100	100
9	F	107/117 (92%)	105 (98%)	2 (2%)	0	100	100
10	G	240/266 (90%)	225 (94%)	15 (6%)	0	100	100
11	H	120/123 (98%)	116 (97%)	4 (3%)	0	100	100
12	I	188/192 (98%)	176 (94%)	11 (6%)	1 (0%)	29	68
13	K	100/105 (95%)	96 (96%)	4 (4%)	0	100	100
14	L	145/148 (98%)	131 (90%)	14 (10%)	0	100	100
15	M	84/97 (87%)	74 (88%)	10 (12%)	0	100	100
16	P	48/51 (94%)	47 (98%)	1 (2%)	0	100	100
17	Q	208/211 (99%)	198 (95%)	10 (5%)	0	100	100
18	S	133/215 (62%)	124 (93%)	9 (7%)	0	100	100
19	U	201/204 (98%)	188 (94%)	13 (6%)	0	100	100
20	V	199/203 (98%)	195 (98%)	4 (2%)	0	100	100
21	X	89/92 (97%)	84 (94%)	5 (6%)	0	100	100
22	Z	185/188 (98%)	180 (97%)	5 (3%)	0	100	100
23	a	146/196 (74%)	141 (97%)	5 (3%)	0	100	100
24	b	174/176 (99%)	167 (96%)	7 (4%)	0	100	100
25	c	115/160 (72%)	101 (88%)	12 (10%)	2 (2%)	9	42

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
26	e	129/140 (92%)	116 (90%)	13 (10%)	0	100	100
27	h	132/145 (91%)	126 (96%)	6 (4%)	0	100	100
28	l	123/137 (90%)	115 (94%)	8 (6%)	0	100	100
29	m	246/257 (96%)	223 (91%)	23 (9%)	0	100	100
30	n	107/110 (97%)	100 (94%)	6 (6%)	1 (1%)	17	56
31	o	231/288 (80%)	214 (93%)	17 (7%)	0	100	100
32	p	224/248 (90%)	215 (96%)	9 (4%)	0	100	100
33	z	63/129 (49%)	61 (97%)	2 (3%)	0	100	100
34	A	163/178 (92%)	151 (93%)	12 (7%)	0	100	100
35	C	244/297 (82%)	226 (93%)	18 (7%)	0	100	100
36	J	257/260 (99%)	244 (95%)	11 (4%)	2 (1%)	19	58
37	N	470/485 (97%)	444 (94%)	23 (5%)	3 (1%)	25	64
38	R	197/365 (54%)	184 (93%)	12 (6%)	1 (0%)	29	68
39	u	73/549 (13%)	63 (86%)	8 (11%)	2 (3%)	5	33
40	v	204/239 (85%)	197 (97%)	7 (3%)	0	100	100
41	w	445/731 (61%)	424 (95%)	20 (4%)	1 (0%)	47	81
42	r	22/360 (6%)	21 (96%)	1 (4%)	0	100	100
45	d	102/128 (80%)	92 (90%)	10 (10%)	0	100	100
46	j	109/125 (87%)	103 (94%)	6 (6%)	0	100	100
47	k	127/135 (94%)	119 (94%)	8 (6%)	0	100	100
48	Y	165/184 (90%)	156 (94%)	9 (6%)	0	100	100
49	t	109/293 (37%)	103 (94%)	6 (6%)	0	100	100
50	s	237/490 (48%)	230 (97%)	7 (3%)	0	100	100
51	i	133/136 (98%)	125 (94%)	8 (6%)	0	100	100
52	T	260/306 (85%)	235 (90%)	22 (8%)	3 (1%)	13	50
54	q	398/588 (68%)	385 (97%)	13 (3%)	0	100	100
55	f	254/478 (53%)	236 (93%)	17 (7%)	1 (0%)	34	72
56	O	67/70 (96%)	62 (92%)	5 (8%)	0	100	100
57	3	223/255 (88%)	209 (94%)	13 (6%)	1 (0%)	34	72
58	g	141/156 (90%)	135 (96%)	5 (4%)	1 (1%)	22	61
All	All	10226/13292 (77%)	9605 (94%)	597 (6%)	24 (0%)	50	81

5 of 24 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
25	c	53	PRO
36	J	106	ILE
37	N	59	PRO
37	N	267	ARG
38	R	24	ILE

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	y	137/137 (100%)	137 (100%)	0	100 100
2	4	562/574 (98%)	560 (100%)	2 (0%)	91 96
3	6	212/213 (100%)	212 (100%)	0	100 100
4	7	126/149 (85%)	126 (100%)	0	100 100
5	9	74/114 (65%)	74 (100%)	0	100 100
6	B	349/349 (100%)	349 (100%)	0	100 100
7	D	298/348 (86%)	296 (99%)	2 (1%)	84 93
8	E	83/97 (86%)	83 (100%)	0	100 100
9	F	94/100 (94%)	94 (100%)	0	100 100
10	G	204/223 (92%)	200 (98%)	4 (2%)	55 79
11	H	109/110 (99%)	109 (100%)	0	100 100
12	I	169/171 (99%)	169 (100%)	0	100 100
13	K	86/89 (97%)	85 (99%)	1 (1%)	71 87
14	L	120/121 (99%)	120 (100%)	0	100 100
15	M	73/80 (91%)	73 (100%)	0	100 100
16	P	47/48 (98%)	47 (100%)	0	100 100
17	Q	176/177 (99%)	174 (99%)	2 (1%)	73 88
18	S	115/161 (71%)	115 (100%)	0	100 100
19	U	171/172 (99%)	171 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
20	V	173/174 (99%)	172 (99%)	1 (1%)	86 94
21	X	74/75 (99%)	74 (100%)	0	100 100
22	Z	164/165 (99%)	164 (100%)	0	100 100
23	a	133/175 (76%)	133 (100%)	0	100 100
24	b	157/157 (100%)	156 (99%)	1 (1%)	86 94
25	c	106/140 (76%)	106 (100%)	0	100 100
26	e	101/107 (94%)	100 (99%)	1 (1%)	76 88
27	h	124/135 (92%)	124 (100%)	0	100 100
28	l	109/121 (90%)	109 (100%)	0	100 100
29	m	190/199 (96%)	190 (100%)	0	100 100
30	n	88/89 (99%)	88 (100%)	0	100 100
31	o	208/252 (82%)	207 (100%)	1 (0%)	88 94
32	p	195/215 (91%)	195 (100%)	0	100 100
33	z	61/115 (53%)	61 (100%)	0	100 100
34	A	138/149 (93%)	138 (100%)	0	100 100
35	C	209/250 (84%)	209 (100%)	0	100 100
36	J	227/228 (100%)	226 (100%)	1 (0%)	91 96
37	N	396/404 (98%)	393 (99%)	3 (1%)	81 91
38	R	173/300 (58%)	173 (100%)	0	100 100
39	u	68/485 (14%)	68 (100%)	0	100 100
40	v	182/214 (85%)	182 (100%)	0	100 100
41	w	405/654 (62%)	405 (100%)	0	100 100
42	r	22/312 (7%)	22 (100%)	0	100 100
45	d	94/115 (82%)	94 (100%)	0	100 100
46	j	101/110 (92%)	100 (99%)	1 (1%)	76 88
47	k	115/121 (95%)	115 (100%)	0	100 100
48	Y	147/163 (90%)	146 (99%)	1 (1%)	84 93
49	t	103/274 (38%)	102 (99%)	1 (1%)	76 88
50	s	222/437 (51%)	221 (100%)	1 (0%)	88 94
51	i	117/118 (99%)	116 (99%)	1 (1%)	78 90
52	T	241/279 (86%)	241 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
54	q	359/509 (70%)	358 (100%)	1 (0%)	92 97
55	f	222/402 (55%)	221 (100%)	1 (0%)	88 94
56	O	64/65 (98%)	64 (100%)	0	100 100
57	3	206/228 (90%)	206 (100%)	0	100 100
58	g	124/133 (93%)	124 (100%)	0	100 100
All	All	9023/11502 (78%)	8997 (100%)	26 (0%)	92 97

5 of 26 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
31	o	56	ARG
37	N	368	MET
54	q	62	ARG
37	N	169	ARG
37	N	470	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 8 such sidechains are listed below:

Mol	Chain	Res	Type
57	3	199	HIS
54	q	28	GLN
49	t	127	HIS
34	A	155	HIS
52	T	271	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
43	8	153/156 (98%)	28 (18%)	2 (1%)
44	2	3503/5054 (69%)	956 (27%)	33 (0%)
53	5	119/120 (99%)	19 (15%)	0
59	x	0/60	-	-
All	All	3775/5390 (70%)	1003 (26%)	35 (0%)

5 of 1003 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
43	8	24	G

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Mol	Chain	Res	Type
43	8	34	U
43	8	35	C
43	8	39	G
43	8	48	A

5 of 35 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
44	2	4426	C
44	2	4555	U
44	2	4634	U
44	2	2475	G
44	2	2474	G

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

65 non-standard protein/DNA/RNA residues are 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	$\#\|Z\| > 2$
44	2MG	2	978	44	18,26,27	2.67	6 (33%)	16,38,41	1.34	3 (18%)
44	OMC	2	3869	44	19,22,23	2.91	7 (36%)	26,31,34	1.14	3 (11%)
44	OMG	2	1625	44	18,26,27	2.93	8 (44%)	19,38,41	1.48	4 (21%)
44	P7G	2	1909	44	24,28,29	3.97	11 (45%)	27,41,44	1.64	3 (11%)
44	OMG	2	2364	44	18,26,27	2.71	8 (44%)	19,38,41	1.52	5 (26%)
44	A2M	2	2401	44	18,25,26	3.63	8 (44%)	18,36,39	3.37	3 (16%)
44	B9B	2	2754	44	21,28,29	1.98	3 (14%)	23,40,43	6.40	5 (21%)
44	OMC	2	2804	44	19,22,23	2.92	8 (42%)	26,31,34	0.77	1 (3%)
44	A2M	2	4523	44	18,25,26	3.58	8 (44%)	18,36,39	3.46	3 (16%)
44	OMU	2	4620	44	19,22,23	2.84	7 (36%)	26,31,34	1.68	4 (15%)
44	PSU	2	4636	44	18,21,22	1.06	1 (5%)	22,30,33	1.81	4 (18%)
44	B8K	2	4690	44	24,28,29	3.17	12 (50%)	30,42,45	2.78	11 (36%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
44	P7G	2	3880	44	24,28,29	3.92	11 (45%)	27,41,44	1.45	3 (11%)
44	5MU	2	4083	44	19,22,23	7.27	8 (42%)	28,32,35	3.20	10 (35%)
44	OMG	2	2424	44	18,26,27	2.83	8 (44%)	19,38,41	1.48	4 (21%)
44	A2M	2	1534	44	18,25,26	3.60	8 (44%)	18,36,39	3.54	3 (16%)
44	B8Q	2	1456	44	17,22,23	2.95	5 (29%)	22,32,35	2.33	6 (27%)
44	A2M	2	398	44	18,25,26	3.62	8 (44%)	18,36,39	3.46	3 (16%)
44	M7A	2	4564	44	20,25,26	1.98	3 (15%)	28,37,40	3.95	6 (21%)
44	A2M	2	1326	44	18,25,26	3.59	8 (44%)	18,36,39	3.45	4 (22%)
44	B9B	2	1574	44	21,28,29	2.02	3 (14%)	23,40,43	6.34	5 (21%)
44	B9B	2	237	44	21,28,29	2.01	3 (14%)	23,40,43	6.57	5 (21%)
44	OMG	2	1522	44	18,26,27	2.78	8 (44%)	19,38,41	1.44	3 (15%)
44	OMC	2	2861	44	19,22,23	2.99	8 (42%)	26,31,34	1.24	3 (11%)
44	1MA	2	4415	44	16,25,26	4.39	4 (25%)	18,37,40	1.48	3 (16%)
44	OMG	2	373	44	18,26,27	2.80	8 (44%)	19,38,41	1.61	6 (31%)
44	OMC	2	4536	44	19,22,23	2.98	8 (42%)	26,31,34	0.72	0
44	B8W	2	4472	44	18,26,27	2.08	2 (11%)	21,38,41	2.50	7 (33%)
44	2MG	2	4872	44	18,26,27	2.55	6 (33%)	16,38,41	1.74	4 (25%)
43	OMU	8	14	43,44	19,22,23	2.90	8 (42%)	26,31,34	1.85	6 (23%)
44	B8W	2	2380	44	18,26,27	2.09	2 (11%)	21,38,41	2.53	7 (33%)
44	2MG	2	729	44	18,26,27	2.61	6 (33%)	16,38,41	1.44	4 (25%)
44	B8W	2	4185	44	18,26,27	2.12	2 (11%)	21,38,41	2.49	7 (33%)
44	UR3	2	4597	44	19,22,23	2.67	6 (31%)	26,32,35	1.98	4 (15%)
44	7MG	2	2522	44	22,26,27	3.63	10 (45%)	29,39,42	1.96	8 (27%)
44	7MG	2	4550	44	22,26,27	3.79	10 (45%)	29,39,42	2.00	9 (31%)
44	BGH	2	3899	44	25,29,30	4.54	16 (64%)	31,43,46	2.55	11 (35%)
44	A2M	2	1871	44	18,25,26	3.66	8 (44%)	18,36,39	3.52	4 (22%)
44	I4U	2	1659	44	21,24,25	3.50	9 (42%)	27,34,37	1.19	1 (3%)
44	OMC	2	3887	44	19,22,23	2.98	8 (42%)	26,31,34	0.94	1 (3%)
44	OMC	2	3701	44	19,22,23	3.10	8 (42%)	26,31,34	0.98	1 (3%)
44	A2M	2	3867	44	18,25,26	3.61	8 (44%)	18,36,39	3.43	4 (22%)
44	A2M	2	3825	44	18,25,26	3.59	8 (44%)	18,36,39	3.42	4 (22%)
44	E7G	2	1797	44	24,27,28	4.04	11 (45%)	30,40,43	2.13	9 (30%)
44	OMC	2	2365	44	19,22,23	2.90	8 (42%)	26,31,34	0.74	0
44	OMG	2	4494	44	18,26,27	2.81	8 (44%)	19,38,41	1.52	4 (21%)
44	OMG	2	4637	44	18,26,27	2.77	8 (44%)	19,38,41	1.61	4 (21%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
44	OMG	2	4870	44	18,26,27	2.84	8 (44%)	19,38,41	1.50	4 (21%)
44	OMC	2	3909	44	19,22,23	3.05	8 (42%)	26,31,34	1.94	7 (26%)
44	B8T	2	4671	44	19,22,23	3.50	8 (42%)	26,31,34	0.97	1 (3%)
44	OMC	2	2422	48,44	19,22,23	2.95	8 (42%)	26,31,34	1.23	3 (11%)
44	B9H	2	2786	44	20,25,26	3.13	5 (25%)	22,35,38	1.92	5 (22%)
44	OMG	2	4623	44	18,26,27	2.74	8 (44%)	19,38,41	1.51	5 (26%)
44	7MG	2	1605	44	22,26,27	3.72	10 (45%)	29,39,42	1.95	9 (31%)
44	B8T	2	4483	44	19,22,23	3.51	8 (42%)	26,31,34	1.47	5 (19%)
44	OMG	2	2050	44	18,26,27	2.74	8 (44%)	19,38,41	1.55	5 (26%)
44	2MG	2	1517	44	18,26,27	2.64	6 (33%)	16,38,41	1.44	3 (18%)
44	B8K	2	3897	44	24,28,29	3.28	11 (45%)	30,42,45	2.49	11 (36%)
44	OMG	2	1883	44	18,26,27	2.83	8 (44%)	19,38,41	1.56	4 (21%)
44	A2M	2	1524	44	18,25,26	3.67	9 (50%)	18,36,39	3.43	4 (22%)
44	A2M	2	2363	44	18,25,26	3.60	8 (44%)	18,36,39	3.45	4 (22%)
44	P4U	2	1348	44	21,24,25	3.53	8 (38%)	27,33,36	1.16	3 (11%)
44	OMG	2	1316	44	18,26,27	2.77	8 (44%)	19,38,41	1.63	5 (26%)
44	OMG	2	2773	44	18,26,27	2.83	8 (44%)	19,38,41	1.44	4 (21%)
44	E7G	2	2297	44	24,27,28	3.83	11 (45%)	30,40,43	2.12	9 (30%)

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
44	2MG	2	978	44	-	0/5/27/28	0/3/3/3
44	OMC	2	3869	44	-	0/9/27/28	0/2/2/2
44	OMG	2	1625	44	-	3/5/27/28	0/3/3/3
44	P7G	2	1909	44	-	3/10/40/41	0/3/3/3
44	OMG	2	2364	44	-	3/5/27/28	0/3/3/3
44	A2M	2	2401	44	-	0/5/27/28	0/3/3/3
44	B9B	2	2754	44	-	3/7/29/30	0/3/3/3
44	OMC	2	2804	44	-	0/9/27/28	0/2/2/2
44	A2M	2	4523	44	-	0/5/27/28	0/3/3/3
44	OMU	2	4620	44	-	0/9/27/28	0/2/2/2
44	PSU	2	4636	44	-	5/7/25/26	0/2/2/2
44	B8K	2	4690	44	-	0/11/41/42	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
44	P7G	2	3880	44	-	3/10/40/41	0/3/3/3
44	5MU	2	4083	44	-	3/7/25/26	0/2/2/2
44	OMG	2	2424	44	-	2/5/27/28	0/3/3/3
44	A2M	2	1534	44	-	2/5/27/28	0/3/3/3
44	B8Q	2	1456	44	-	0/7/42/43	0/2/2/2
44	A2M	2	398	44	-	2/5/27/28	0/3/3/3
44	M7A	2	4564	44	-	0/7/37/38	0/3/3/3
44	A2M	2	1326	44	-	0/5/27/28	0/3/3/3
44	B9B	2	1574	44	-	4/7/29/30	0/3/3/3
44	B9B	2	237	44	-	4/7/29/30	0/3/3/3
44	OMG	2	1522	44	-	0/5/27/28	0/3/3/3
44	OMC	2	2861	44	-	0/9/27/28	0/2/2/2
44	1MA	2	4415	44	-	2/3/25/26	0/3/3/3
44	OMG	2	373	44	-	1/5/27/28	0/3/3/3
44	OMC	2	4536	44	-	0/9/27/28	0/2/2/2
44	B8W	2	4472	44	-	2/5/27/28	0/3/3/3
44	2MG	2	4872	44	-	2/5/27/28	0/3/3/3
43	OMU	8	14	43,44	-	1/9/27/28	0/2/2/2
44	B8W	2	2380	44	-	2/5/27/28	0/3/3/3
44	2MG	2	729	44	-	2/5/27/28	0/3/3/3
44	B8W	2	4185	44	-	0/5/27/28	0/3/3/3
44	UR3	2	4597	44	-	0/7/25/26	0/2/2/2
44	7MG	2	2522	44	-	0/7/37/38	0/3/3/3
44	7MG	2	4550	44	-	2/7/37/38	0/3/3/3
44	BGH	2	3899	44	-	0/13/43/44	0/3/3/3
44	A2M	2	1871	44	-	2/5/27/28	0/3/3/3
44	I4U	2	1659	44	-	2/9/29/30	0/2/2/2
44	OMC	2	3887	44	-	1/9/27/28	0/2/2/2
44	OMC	2	3701	44	-	7/9/27/28	0/2/2/2
44	A2M	2	3867	44	-	2/5/27/28	0/3/3/3
44	A2M	2	3825	44	-	0/5/27/28	0/3/3/3
44	E7G	2	1797	44	-	1/9/39/40	0/3/3/3
44	OMC	2	2365	44	-	0/9/27/28	0/2/2/2
44	OMG	2	4494	44	-	0/5/27/28	0/3/3/3
44	OMG	2	4637	44	-	2/5/27/28	0/3/3/3
44	OMG	2	4870	44	-	3/5/27/28	0/3/3/3
44	OMC	2	3909	44	-	3/9/27/28	0/2/2/2
44	B8T	2	4671	44	-	1/7/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
44	OMC	2	2422	48,44	-	1/9/27/28	0/2/2/2
44	B9H	2	2786	44	-	0/12/47/48	0/2/2/2
44	OMG	2	4623	44	-	0/5/27/28	0/3/3/3
44	7MG	2	1605	44	-	1/7/37/38	0/3/3/3
44	B8T	2	4483	44	-	0/7/27/28	0/2/2/2
44	OMG	2	2050	44	-	0/5/27/28	0/3/3/3
44	2MG	2	1517	44	-	2/5/27/28	0/3/3/3
44	B8K	2	3897	44	-	2/11/41/42	0/3/3/3
44	OMG	2	1883	44	-	2/5/27/28	0/3/3/3
44	A2M	2	1524	44	-	1/5/27/28	0/3/3/3
44	A2M	2	2363	44	-	0/5/27/28	0/3/3/3
44	P4U	2	1348	44	-	1/10/29/30	0/2/2/2
44	OMG	2	1316	44	-	0/5/27/28	0/3/3/3
44	OMG	2	2773	44	-	2/5/27/28	0/3/3/3
44	E7G	2	2297	44	-	1/9/39/40	0/3/3/3

The worst 5 of 488 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
44	2	4083	5MU	C4-C5	20.65	1.79	1.44
44	2	4083	5MU	C6-N1	16.54	1.66	1.38
44	2	4415	1MA	C2-N3	16.35	1.48	1.29
44	2	4083	5MU	C6-C5	-11.39	1.15	1.34
44	2	4083	5MU	C4-N3	-11.09	1.18	1.38

The worst 5 of 303 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
44	2	237	B9B	O6-C6-N1	-30.04	94.19	120.12
44	2	2754	B9B	O6-C6-N1	-29.22	94.90	120.12
44	2	1574	B9B	O6-C6-N1	-29.19	94.92	120.12
44	2	4564	M7A	C5-C6-N6	13.86	147.41	123.74
44	2	4564	M7A	N6-C6-N1	-11.96	92.16	118.35

There are no chirality outliers.

5 of 88 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
43	8	14	OMU	C1'-C2'-O2'-CM2
44	2	237	B9B	C5-C6-O6-C61
44	2	237	B9B	N1-C6-O6-C61

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Mol	Chain	Res	Type	Atoms
44	2	237	B9B	C3'-C4'-C5'-O5'
44	2	237	B9B	O4'-C4'-C5'-O5'

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 2 ligands modelled in this entry, 1 is monoatomic - leaving 1 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
60	GTP	w	801	61	26,34,34	0.99	3 (11%)	32,54,54	0.84	0

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
60	GTP	w	801	61	-	1/18/38/38	0/3/3/3

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	w	801	GTP	C5-C6	-2.66	1.42	1.47
60	w	801	GTP	C8-N7	-2.11	1.31	1.35
60	w	801	GTP	C5-C4	-2.09	1.37	1.43

There are no bond angle outliers.

There are no chirality outliers.

All (1) torsion outliers are listed below:

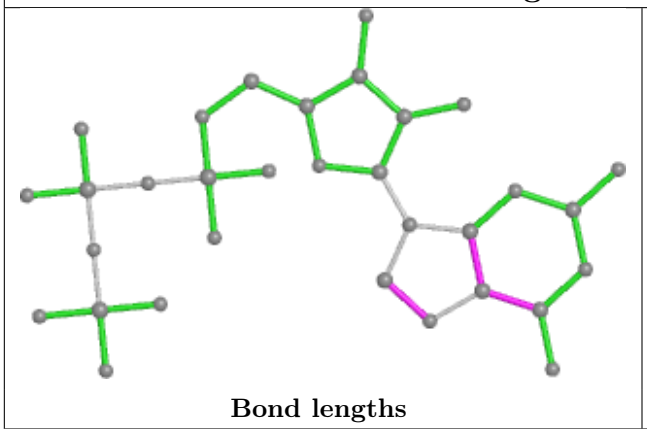
Mol	Chain	Res	Type	Atoms
60	w	801	GTP	C5'-O5'-PA-O1A

There are no ring outliers.

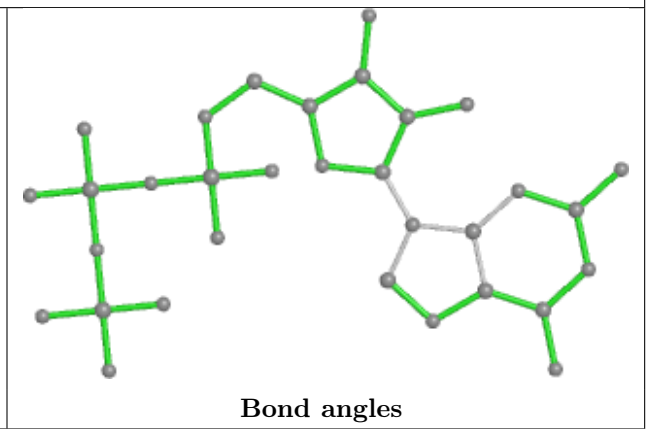
No monomer is involved in short contacts.

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 then 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.

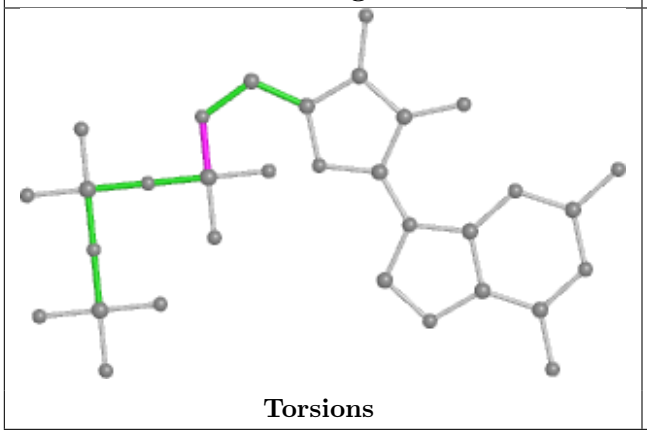
Ligand GTP w 801



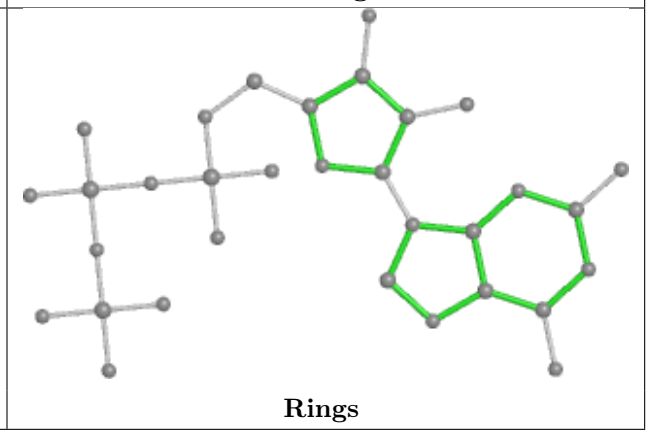
Bond lengths



Bond angles



Torsions



Rings

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

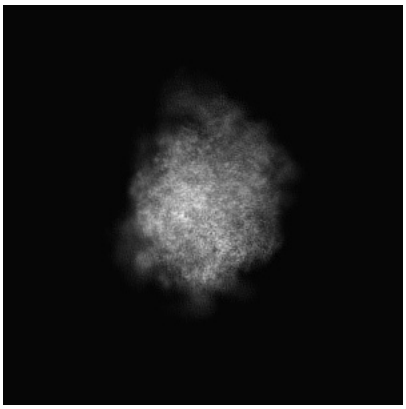
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-35673. These allow visual inspection of the internal detail of the map and identification of artifacts.

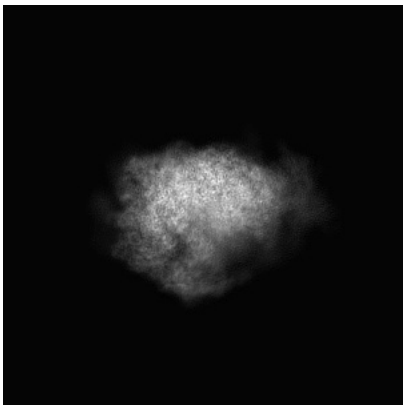
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

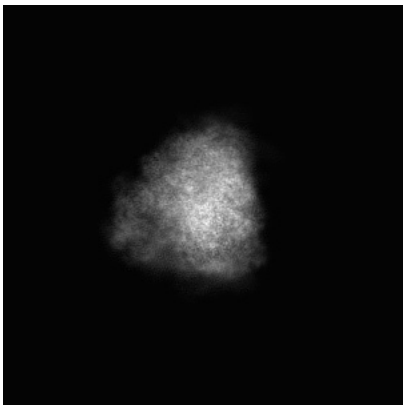
6.1.1 Primary map



X

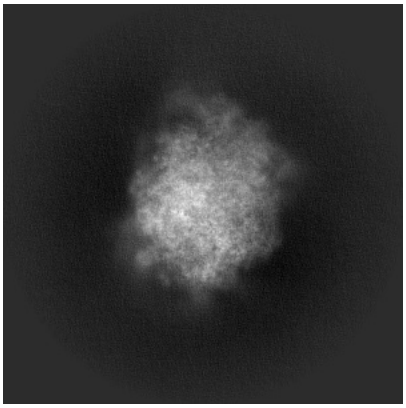


Y

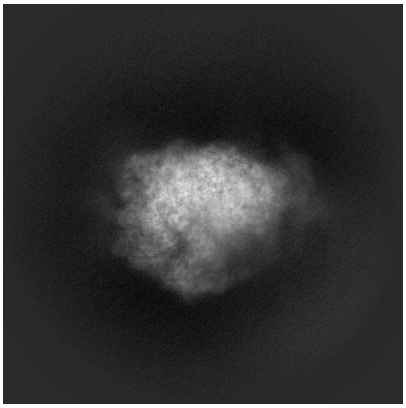


Z

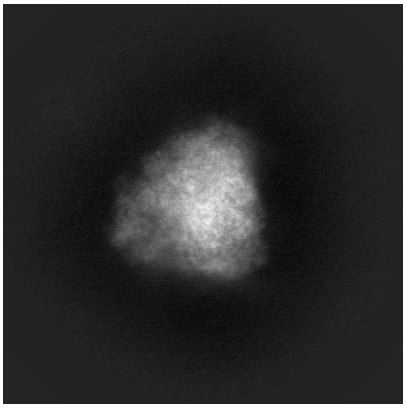
6.1.2 Raw map



X



Y

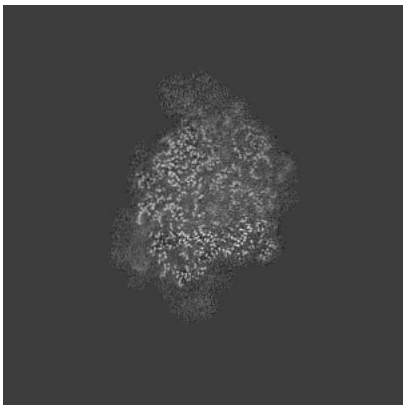


Z

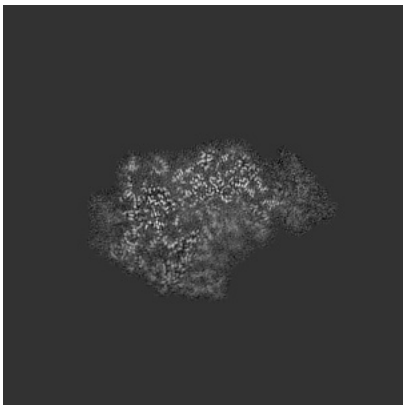
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

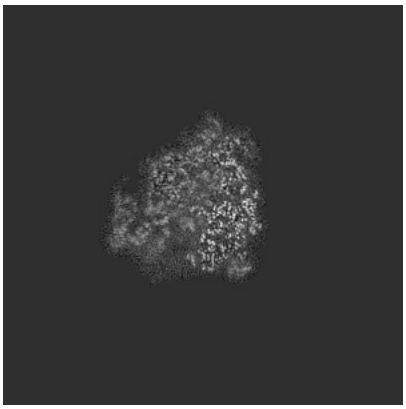
6.2.1 Primary map



X Index: 200

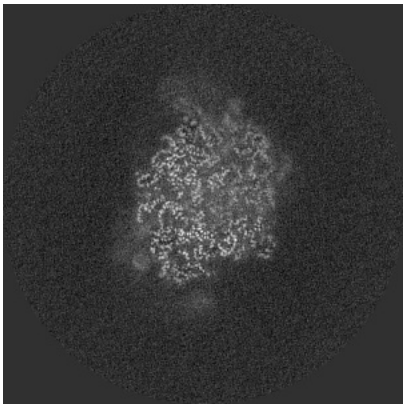


Y Index: 200

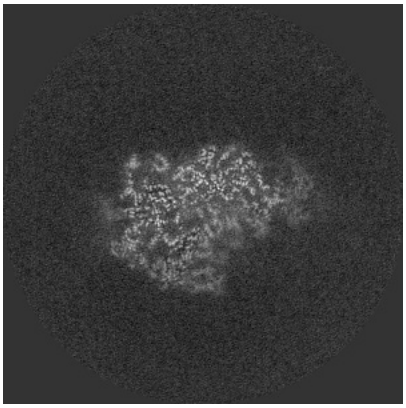


Z Index: 200

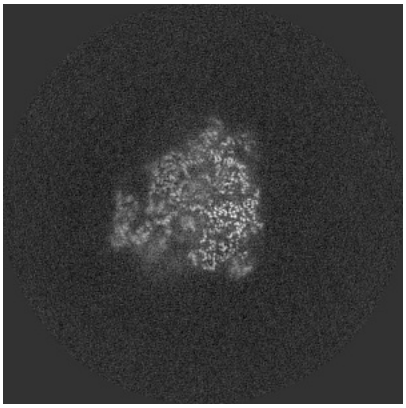
6.2.2 Raw map



X Index: 200



Y Index: 200

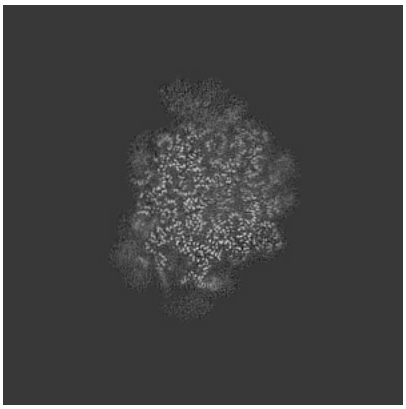


Z Index: 200

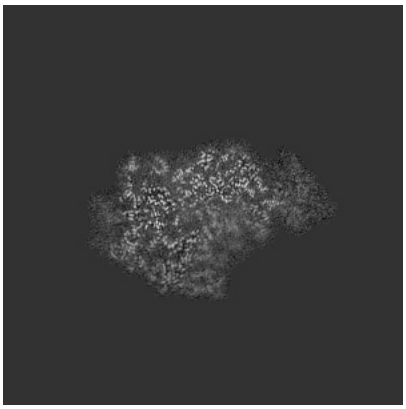
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

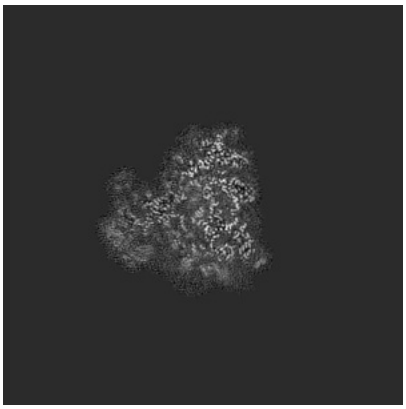
6.3.1 Primary map



X Index: 207

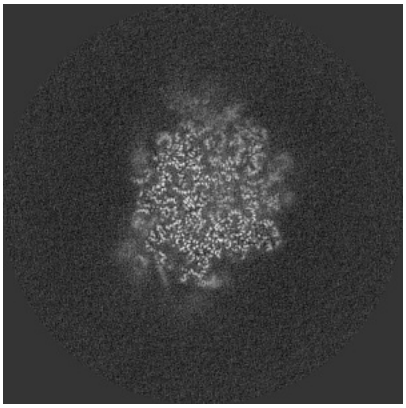


Y Index: 200

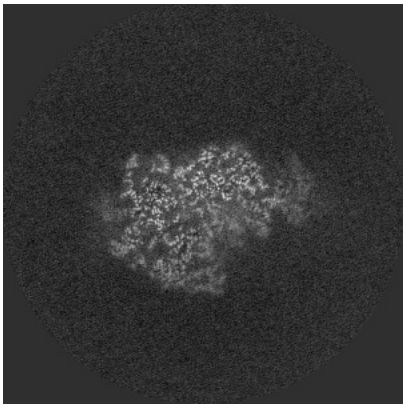


Z Index: 183

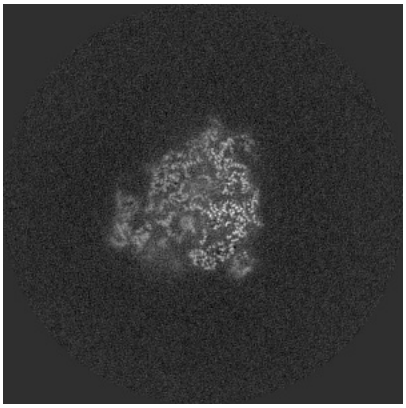
6.3.2 Raw map



X Index: 208



Y Index: 199

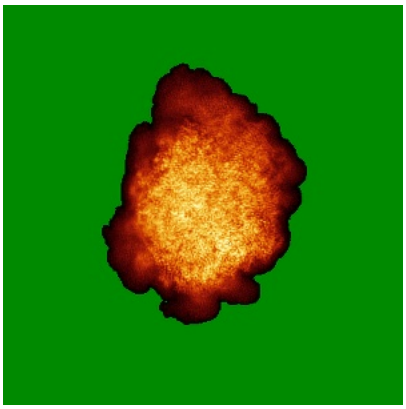


Z Index: 199

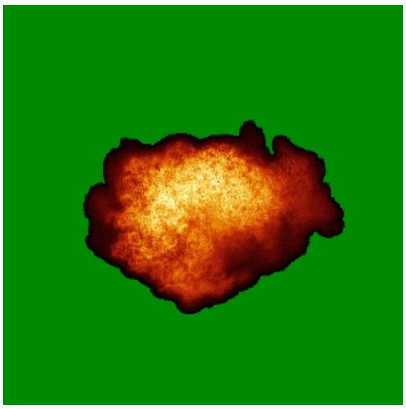
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

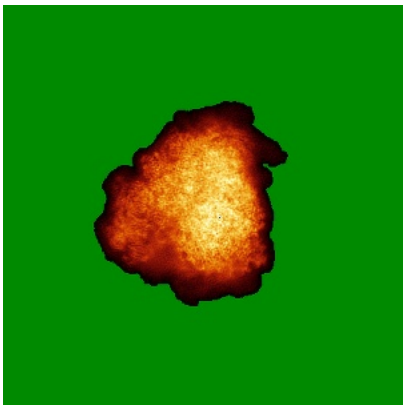
6.4.1 Primary map



X

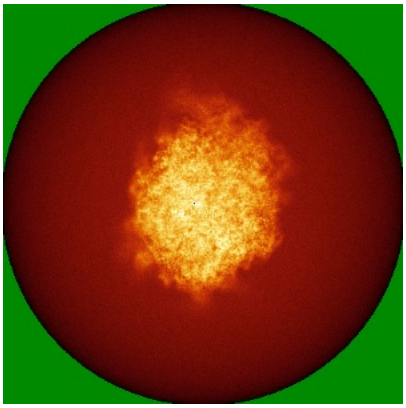


Y

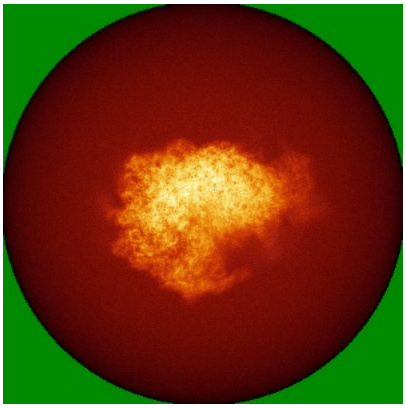


Z

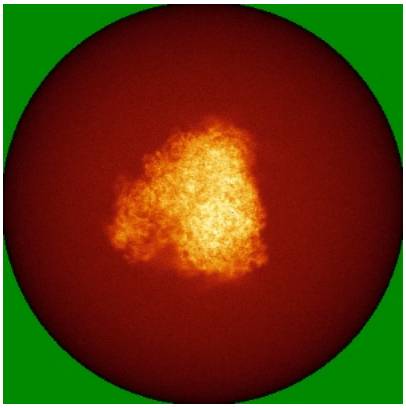
6.4.2 Raw map



X



Y



Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views (i)

6.5.1 Primary map

X

Y

Z

The images above show the 3D surface view of the map at the recommended contour level 0.04. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map

X

Y

Z

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

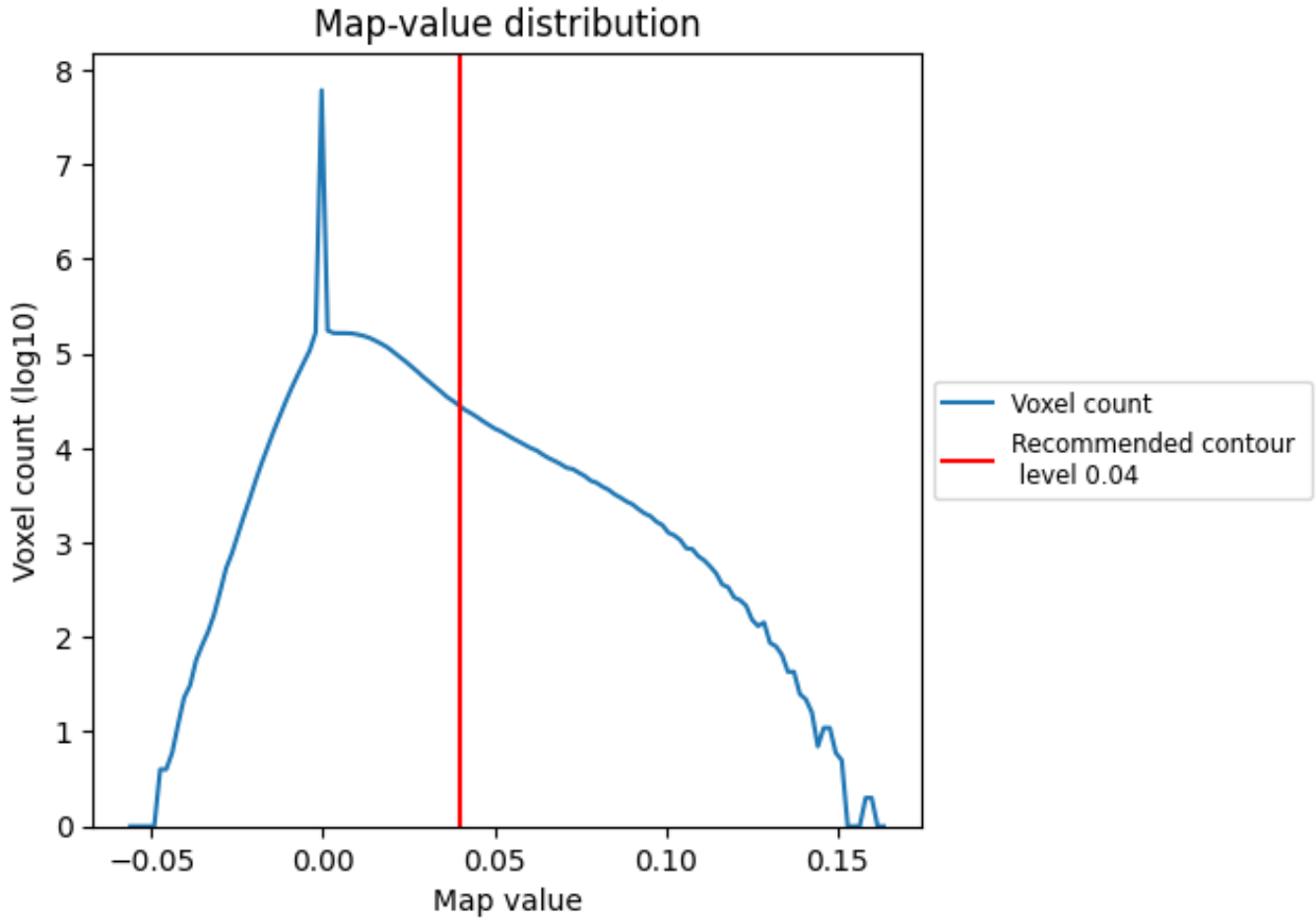
6.6 Mask visualisation (i)

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

7 Map analysis

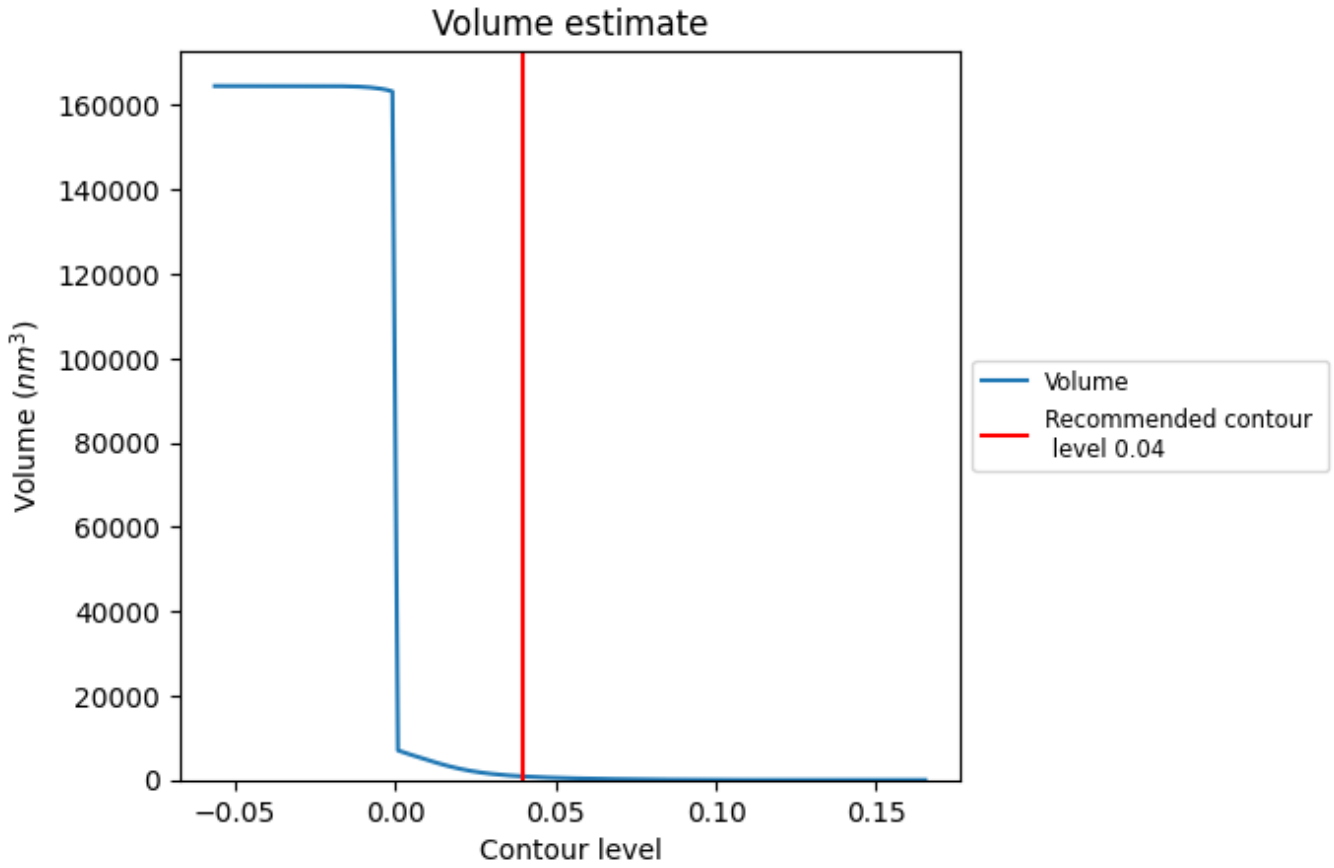
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

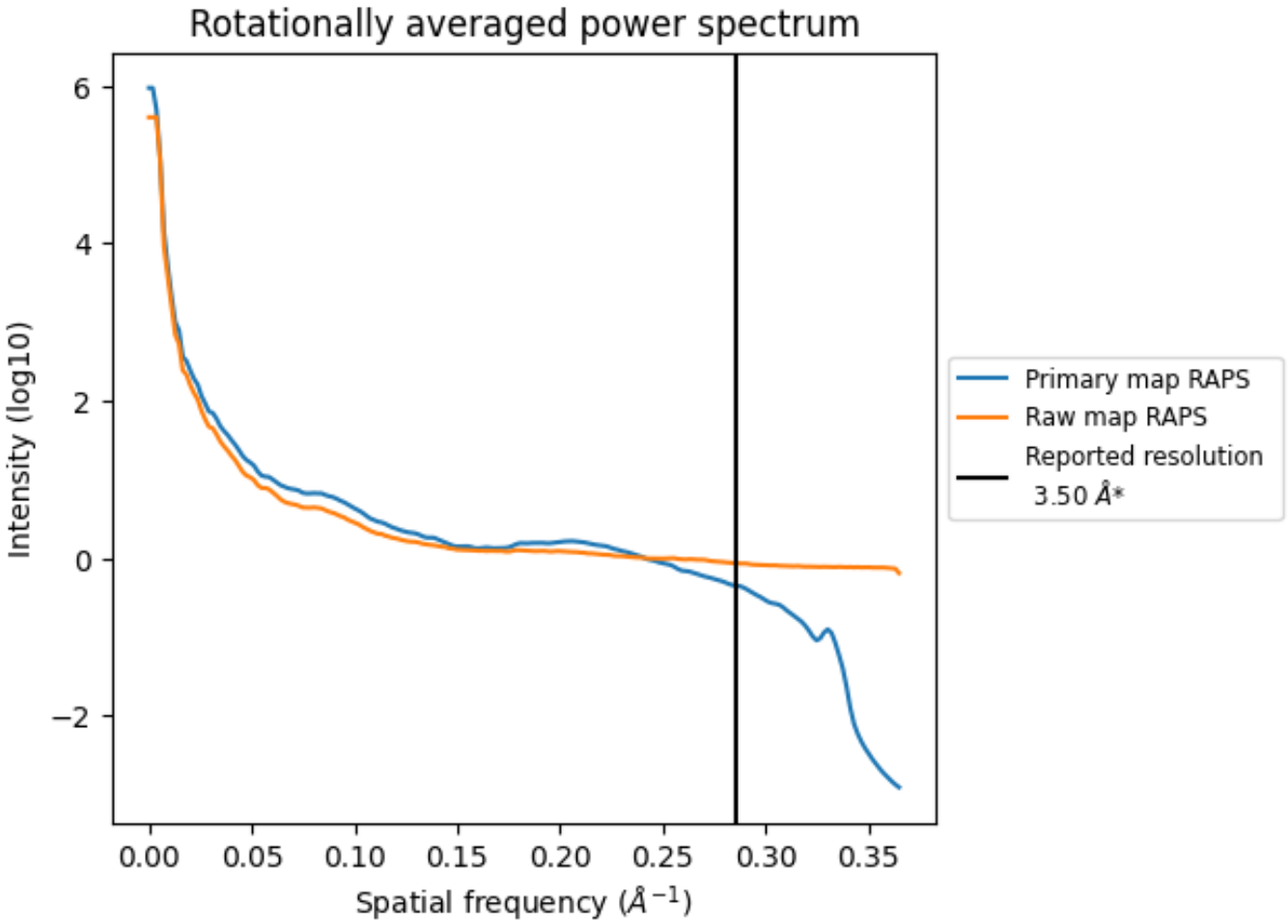
7.2 Volume estimate (i)



The volume at the recommended contour level is 849 nm^3; this corresponds to an approximate mass of 767 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)

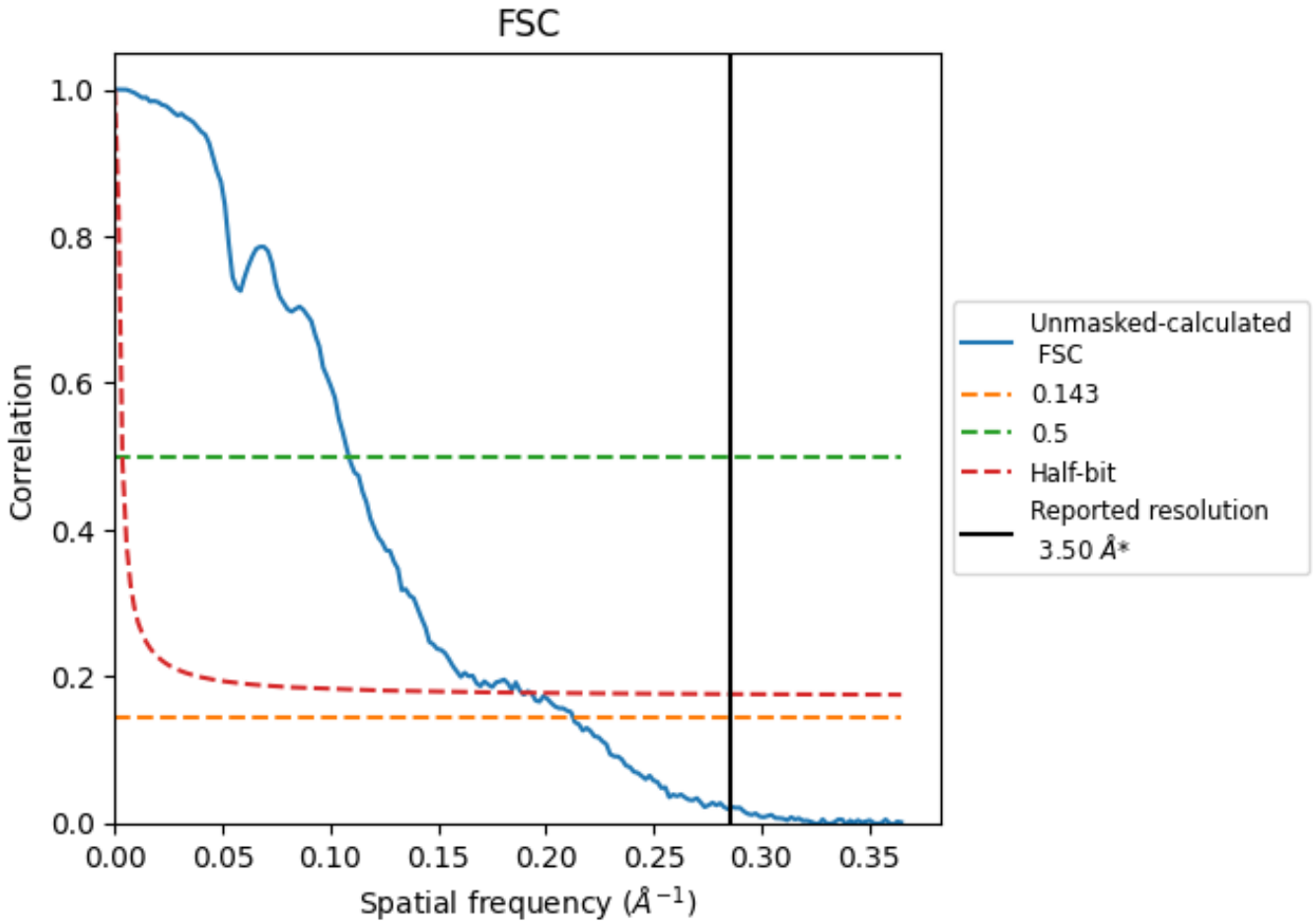


*Reported resolution corresponds to spatial frequency of 0.286 Å^{-1}

8 Fourier-Shell correlation

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

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.286 Å^{-1}

8.2 Resolution estimates (i)

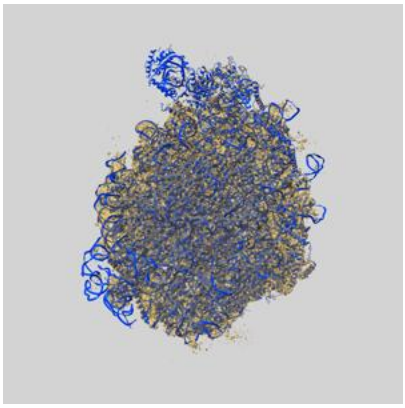
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.50	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.70	9.21	5.29

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.70 differs from the reported value 3.5 by more than 10 %

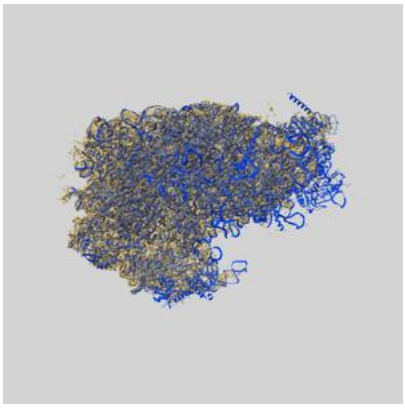
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-35673 and PDB model 8IR3. Per-residue inclusion information can be found in section 3 on page 16.

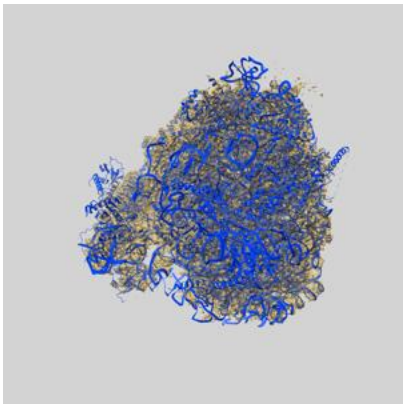
9.1 Map-model overlay



X



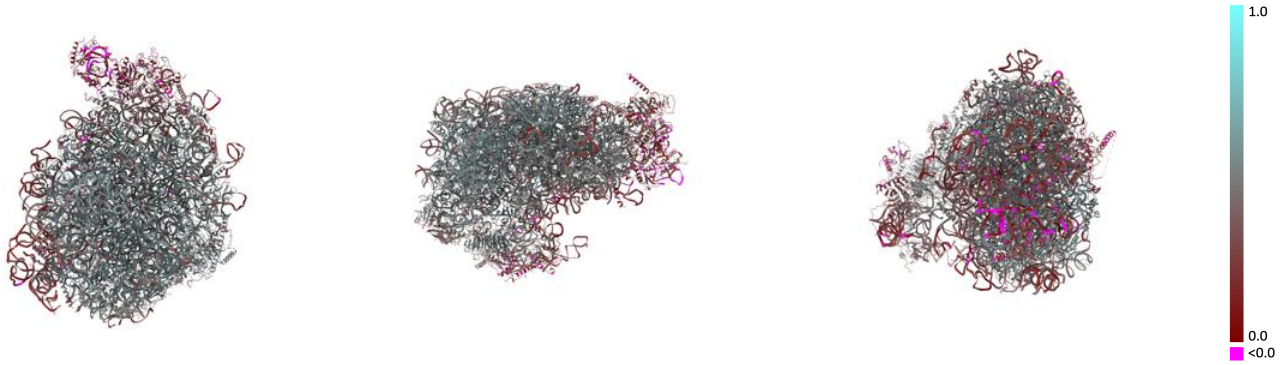
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.04 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

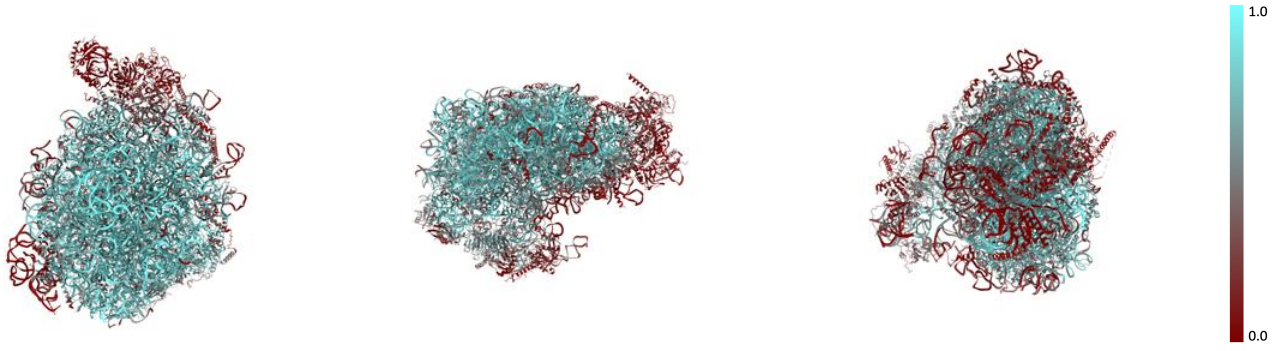
9.2 Q-score mapped to coordinate model



X Y Z

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

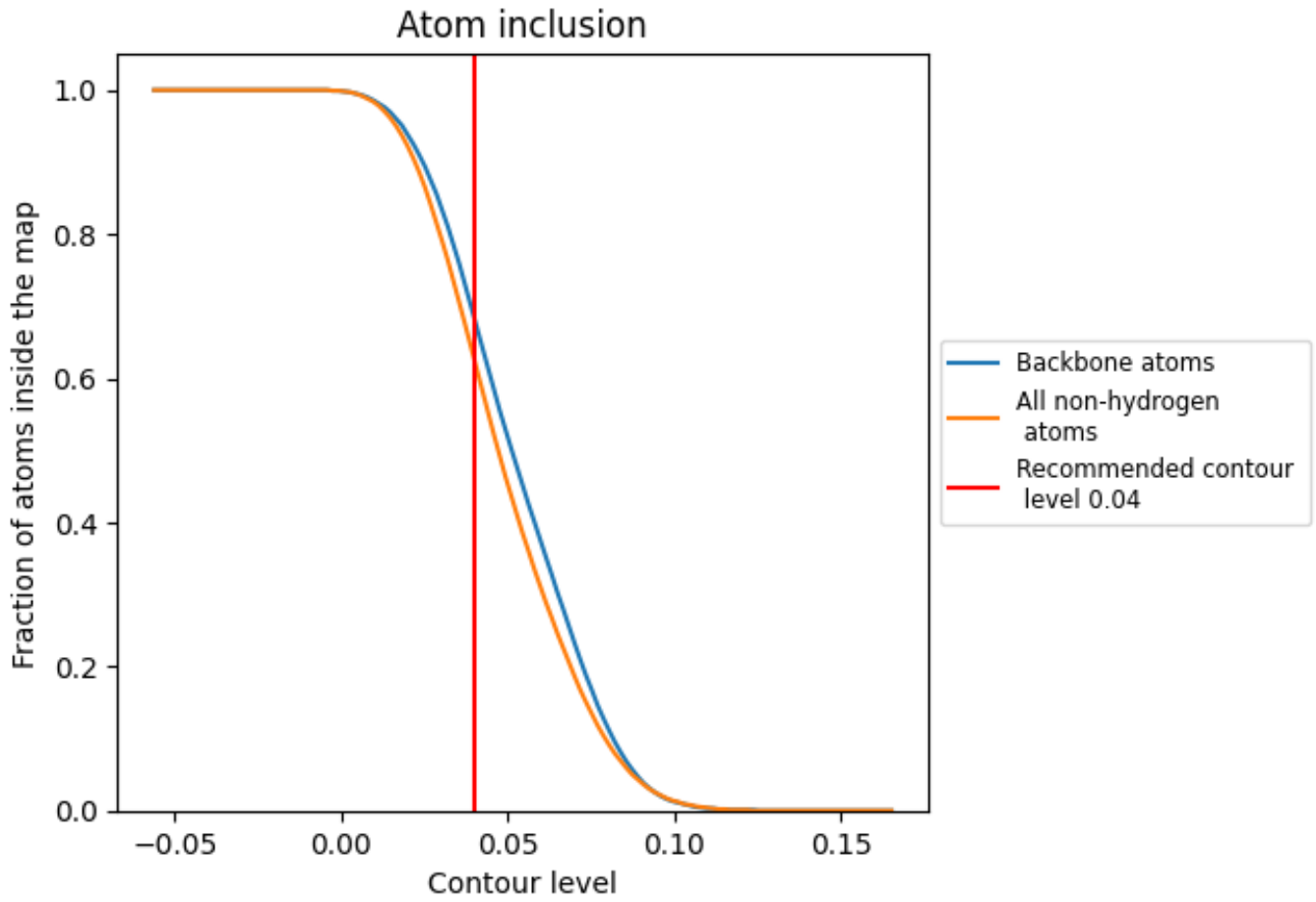
9.3 Atom inclusion mapped to coordinate model



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.04).

9.4 Atom inclusion (i)



At the recommended contour level, 68% of all backbone atoms, 62% 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 (0.04) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6250	0.4390
2	0.7200	0.4400
3	0.1010	0.2160
4	0.5930	0.4630
5	0.4090	0.2530
6	0.6770	0.5030
7	0.6930	0.5240
8	0.8810	0.5140
9	0.0710	0.3690
A	0.1830	0.3060
B	0.7890	0.5400
C	0.3550	0.3670
D	0.7960	0.5370
E	0.2930	0.4090
F	0.6440	0.5060
G	0.4460	0.4340
H	0.7220	0.5130
I	0.7370	0.5310
J	0.7090	0.5190
K	0.6100	0.4640
L	0.5570	0.4300
M	0.8350	0.5410
N	0.4720	0.4280
O	0.4690	0.4100
P	0.8720	0.5620
Q	0.6470	0.4770
R	0.2940	0.3390
S	0.7650	0.5260
T	0.2110	0.3270
U	0.7560	0.5130
V	0.8290	0.5410
X	0.4260	0.4480
Y	0.7580	0.5150
Z	0.6440	0.4620
a	0.6110	0.4990

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Chain	Atom inclusion	Q-score
b	0.7960	0.5330
c	0.5210	0.4360
d	0.5520	0.4790
e	0.7750	0.5370
f	0.1460	0.2800
g	0.5800	0.4360
h	0.7670	0.5400
i	0.4100	0.4440
j	0.7120	0.5120
k	0.8150	0.5460
l	0.7910	0.5380
m	0.3340	0.3880
n	0.8560	0.5560
o	0.5640	0.4720
p	0.7500	0.5110
q	0.2440	0.3220
r	0.0670	0.3300
s	0.0030	0.2130
t	0.0240	0.2500
u	0.4720	0.4030
v	0.5420	0.4680
w	0.6060	0.4620
x	0.0000	0.0260
y	0.3440	0.4030
z	0.5130	0.4610