wwPDB EM Validation Summary Report ⓘ

Dec 12, 2022 – 09:26 am GMT

PDB ID	:	6YAM
EMDB ID	:	EMD-10761
Title	:	Mammalian 48S late-stage translation initiation complex (LS48S+eIF3 IC) with beta-globin mRNA
Authors	:	Bochler, A.; Simonetti, A.; Guca, E.; Hashem, Y.
Deposited on	:	2020-03-12
Resolution	:	3.60 Å(reported)

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

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

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

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

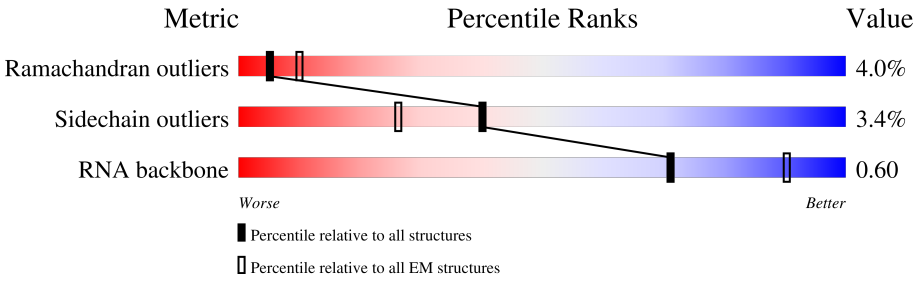
EMDB validation analysis	:	0.0.1.dev43
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.3

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 3.60 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	1	75	69% · 77% 16% ·
2	1	25	28% 96% ·
3	C	208	14% 95% 5%
4	D	264	22% 77% 5% 19%
5	E	226	14% 97% ·
6	F	227	32% 95% 5%
7	G	263	17% 98% ·
8	H	191	21% 97% ·

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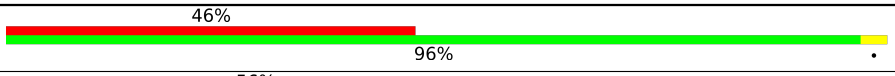
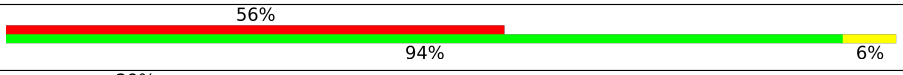
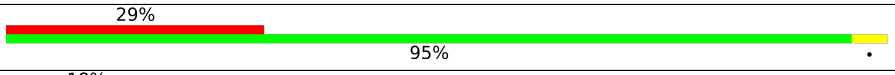
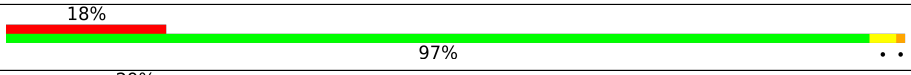
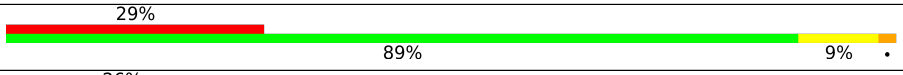
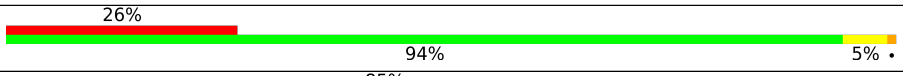
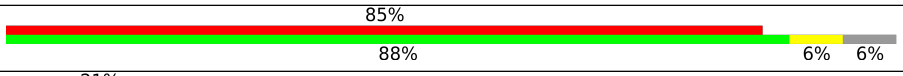
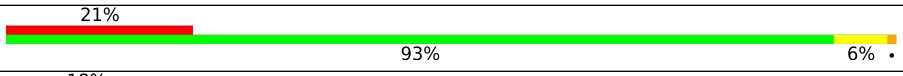
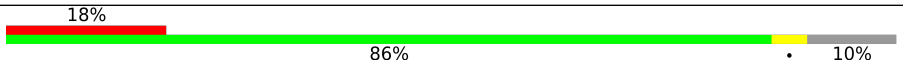
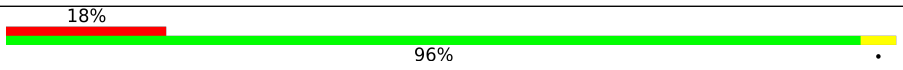
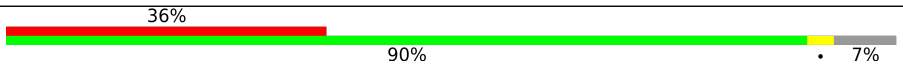
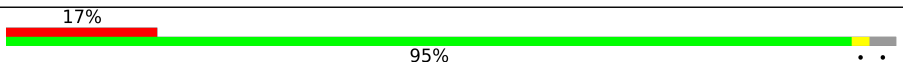
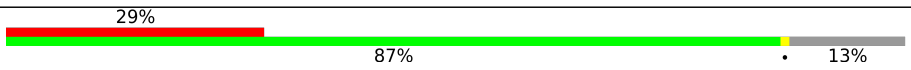
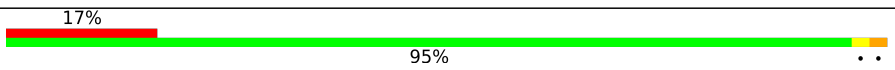
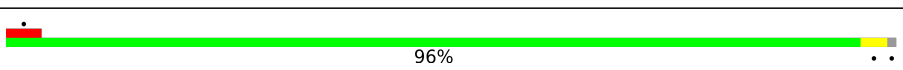
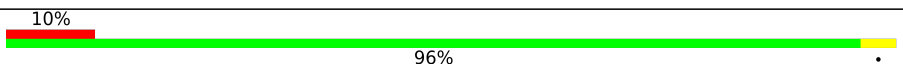
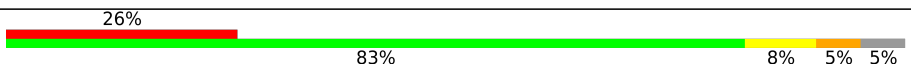
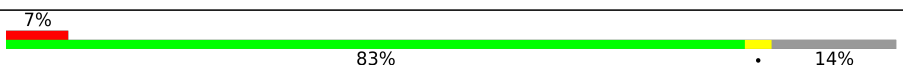
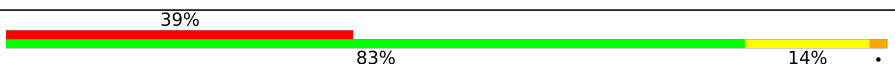
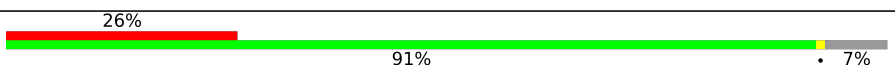
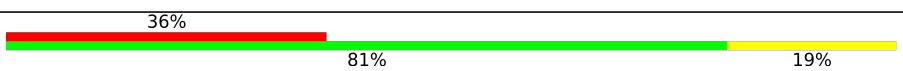
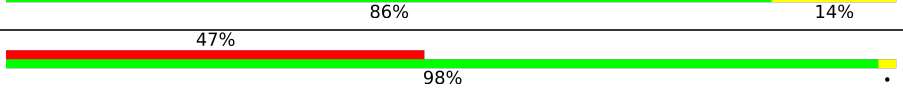
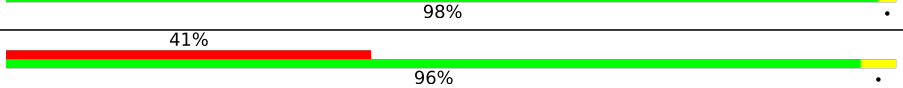
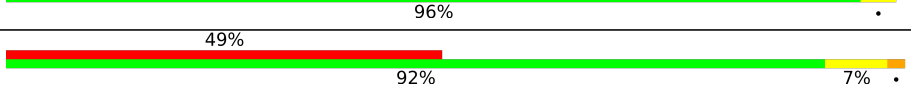
Mol	Chain	Length	Quality of chain
9	I	237	
10	J	190	
11	K	206	
12	L	182	
13	M	98	
14	N	158	
15	O	132	
16	P	150	
17	Q	151	
18	S	141	
19	T	135	
20	V	145	
21	W	119	
22	X	82	
23	Y	130	
24	Z	142	
25	a	133	
26	b	115	
27	c	84	
28	d	69	
29	e	53	
30	f	71	
31	g	313	
32	n	75	
33	i	59	

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Mol	Chain	Length	Quality of chain
34	2	1863	15% 78% 12% 6%
35	A	266	95% 92% 6%
36	B	422	100% 89% 10%
37	j	144	56% 48% 19% 8% 24%
38	k	595	92% 78% 17%
39	U	152	29% 88% 5% 5%
40	R	145	37% 83% 11%
41	3	45	87% 27% 71%
42	m	548	66% 66% 33%
43	y	1350	40% 34% 9% 55%
44	v	913	55% 51% 7% 39%
45	w	445	94% 87% 7% 6%
46	q	272	100% 92% 8%
47	r	352	92% 84% 8% 8%
48	s	218	99% 96%
49	t	564	66% 63% 34%
50	u	374	98% 93% 5%

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
34	C4J	2	1244	X	-	-	-

2 Entry composition (i)

There are 53 unique types of molecules in this entry. The entry contains 118536 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called initiator methionylated tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	1	75	1614	722	299	519	74	0	0

- Molecule 2 is a protein called 60s ribosomal protein l41.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	l	25	240	145	64	28	3	0	0

- Molecule 3 is a protein called 40S ribosomal protein uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	208	1643	1045	289	301	8	0	0

- Molecule 4 is a protein called 40S ribosomal protein eS1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D	215	1741	1107	309	310	15	0	0

- Molecule 5 is a protein called 40S ribosomal protein uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	E	226	1743	1127	300	307	9	0	0

- Molecule 6 is a protein called 40S ribosomal protein uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	F	227	1765	1124	317	316	8	0	0

- Molecule 7 is a protein called 40S ribosomal protein eS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	G	263	Total	C	N	O	S	0	0
			2083	1329	385	359	10		

- Molecule 8 is a protein called 40S ribosomal protein uS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	H	191	Total	C	N	O	S	0	0
			1509	943	286	273	7		

- Molecule 9 is a protein called 40S ribosomal protein eS6.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	I	237	Total	C	N	O	S	0	0
			1924	1200	387	330	7		

- Molecule 10 is a protein called ribosomal protein eS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	J	190	Total	C	N	O	S	0	0
			1530	975	281	273	1		

- Molecule 11 is a protein called 40S ribosomal protein eS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	K	206	Total	C	N	O	S	0	0
			1680	1054	329	292	5		

- Molecule 12 is a protein called 40S ribosomal protein uS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	L	182	Total	C	N	O	S	0	0
			1499	952	300	245	2		

- Molecule 13 is a protein called 40S ribosomal protein eS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	M	98	Total	C	N	O	S	0	0
			828	539	148	135	6		

- Molecule 14 is a protein called 40S ribosomal protein uS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	N	158	Total	C	N	O	S	0	0
			1296	827	241	221	7		

- Molecule 15 is a protein called 40S ribosomal protein eS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	O	124	Total	C	N	O	S	0	0
			958	600	170	179	9		

- Molecule 16 is a protein called ribosomal protein uS15.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	P	150	Total	C	N	O	S	0	0
			1208	773	229	205	1		

- Molecule 17 is a protein called 40S ribosomal protein uS11.

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

- Molecule 18 is a protein called 40S ribosomal protein uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	S	141	Total	C	N	O	S	0	0
			1124	715	212	194	3		

- Molecule 19 is a protein called 40S ribosomal protein eS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	T	126	Total	C	N	O	S	0	0
			1019	639	188	187	5		

- Molecule 20 is a protein called 40S ribosomal protein eS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	V	141	Total	C	N	O	S	0	0
			1112	701	213	195	3		

- Molecule 21 is a protein called 40S ribosomal protein uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	W	104	Total	C	N	O	S	0	0
			822	514	156	148	4		

- Molecule 22 is a protein called 40S ribosomal protein eS21.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	X	82	Total	C	N	O	S	0	0
			620	378	117	120	5		

- Molecule 23 is a protein called 40S ribosomal protein uS8.

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

- Molecule 24 is a protein called 40S ribosomal protein uS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	Z	142	Total	C	N	O	S	0	0
			1107	698	220	185	4		

- Molecule 25 is a protein called 40S ribosomal protein eS24.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	a	126	Total	C	N	O	S	0	0
			1021	645	198	173	5		

- Molecule 26 is a protein called 40S ribosomal protein eS26.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	b	99	Total	C	N	O	S	0	0
			789	491	162	130	6		

- Molecule 27 is a protein called 40S ribosomal protein eS27.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	c	84	Total	C	N	O	S	0	0
			659	413	122	116	8		

- Molecule 28 is a protein called 40S ribosomal protein eS28.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	d	64	Total	C	N	O	S	0	0
			506	308	102	94	2		

- Molecule 29 is a protein called ribosomal protein uS14.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	e	53	Total	C	N	O	S	0	0
			445	278	90	72	5		

- Molecule 30 is a protein called ribosomal protein eS31.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	f	71	Total	C	N	O	S	0	0
			582	367	109	99	7		

- Molecule 31 is a protein called ribosomal protein RACK1.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	g	313	Total	C	N	O	S	0	0
			2437	1535	424	466	12		

- Molecule 32 is a protein called ribosomal protein eS25.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	n	75	Total	C	N	O	S	0	0
			599	382	111	105	1		

- Molecule 33 is a protein called 40S ribosomal protein eS30.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	i	59	Total	C	N	O	S	0	0
			473	293	104	75	1		

- Molecule 34 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	2	1743	Total	C	N	O	P	0	0
			37187	16605	6660	12182	1740		

- Molecule 35 is a protein called eukaryotic translation initiation factor 2 subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	A	266	Total	C	N	O	S	0	0
			2147	1354	376	406	11		

- Molecule 36 is a protein called eukaryotic translation initiation factor 2 subunit gamma.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	B	422	Total	C	N	O	S	0	0
			3214	2044	561	592	17		

- Molecule 37 is a protein called eukaryotic translation initiation factor 1A.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	j	109	Total	C	N	O	S	0	0
			882	549	168	161	4		

- Molecule 38 is a protein called ATP-binding cassette sub-family E member 1 (ABCE1).

Mol	Chain	Residues	Atoms					AltConf	Trace
38	k	595	Total	C	N	O	S	0	0
			4693	2995	802	865	31		

- Molecule 39 is a protein called 40S ribosomal protein uS13.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	U	145	Total	C	N	O	S	0	0
			1194	747	243	203	1		

- Molecule 40 is a protein called 40S ribosomal protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	R	140	Total	C	N	O	S	0	0
			1154	733	219	195	7		

- Molecule 41 is a RNA chain called beta-globin mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	3	45	Total	C	N	O	P	0	0
			960	430	179	306	45		

- Molecule 42 is a protein called eukaryotic translation initiation factor 3 subunit d.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	m	365	Total	C	N	O	S	0	0
			2955	1856	517	564	18		

- Molecule 43 is a protein called Eukaryotic translation initiation factor 3 subunit A.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	y	603	Total	C	N	O	S	0	0
			4971	3133	897	920	21		

- Molecule 44 is a protein called Eukaryotic translation initiation factor 3 subunit C.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	v	554	Total	C	N	O	S	0	0
			4508	2830	800	845	33		

- Molecule 45 is a protein called Eukaryotic translation initiation factor 3 subunit E.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	w	419	Total	C	N	O	S	0	0
			3465	2220	586	639	20		

- Molecule 46 is a protein called Eukaryotic translation initiation factor 3 subunit F.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	q	272	Total	C	N	O	S	0	0
			2111	1330	359	410	12		

- Molecule 47 is a protein called eukaryotic translation initiation factor 3 subunit h.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	r	324	Total	C	N	O	S	0	0
			2624	1654	452	503	15		

- Molecule 48 is a protein called Eukaryotic translation initiation factor 3 subunit K.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	s	215	Total	C	N	O	S	0	0
			1737	1109	285	330	13		

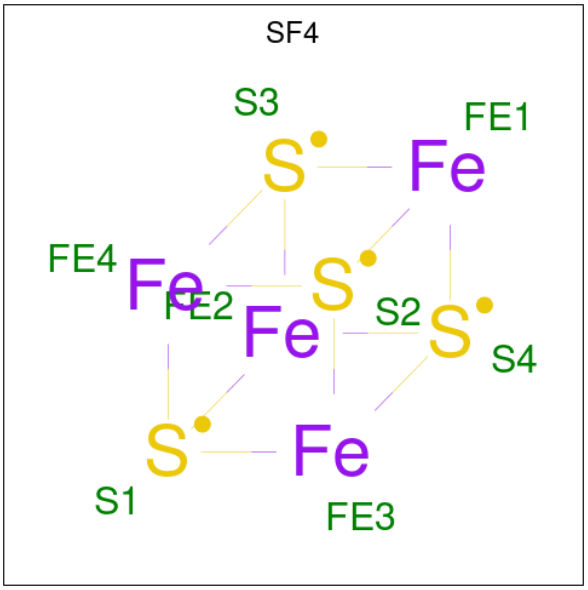
- Molecule 49 is a protein called eukaryotic translation initiation factor 3 subunit l.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	t	372	Total	C	N	O	S	0	0
			3109	2010	519	563	17		

- Molecule 50 is a protein called Eukaryotic translation initiation factor 3 subunit M.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	u	365	Total	C	N	O	S	0	0
			2918	1850	493	558	17		

- Molecule 51 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula: Fe_4S_4).

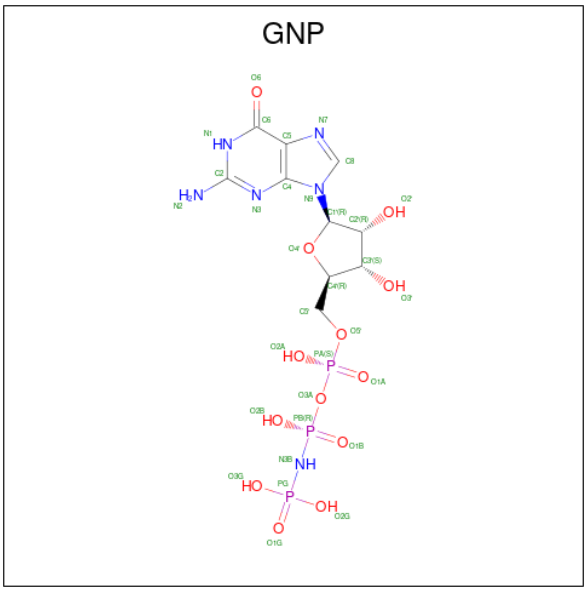


Mol	Chain	Residues	Atoms			AltConf
51	k	1	Total	Fe	S	0
			16	8	8	
51	k	1	Total	Fe	S	0
			16	8	8	

- Molecule 52 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
52	k	1	Total	Mg	0
			1	1	

- Molecule 53 is PHOSPHOAMINOPHOSPHONIC ACID-GUANYLATE ESTER (three-letter code: GNP) (formula: $C_{10}H_{17}N_6O_{13}P_3$).

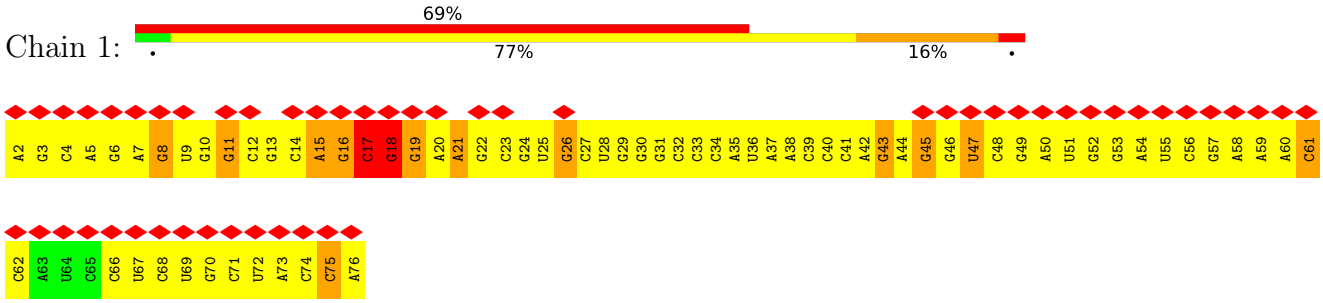


Mol	Chain	Residues	Atoms					AltConf
53	k	1	Total	C	N	O	P	0
			64	20	12	26	6	
53	k	1	Total	C	N	O	P	0
			64	20	12	26	6	

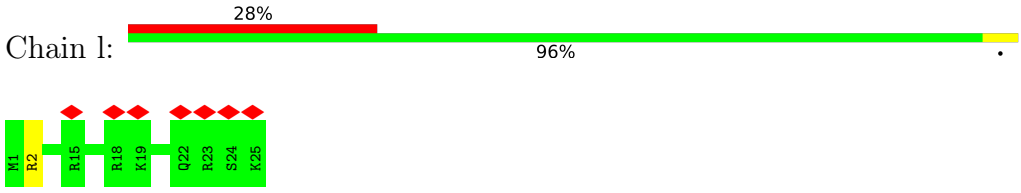
3 Residue-property plots (i)

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.

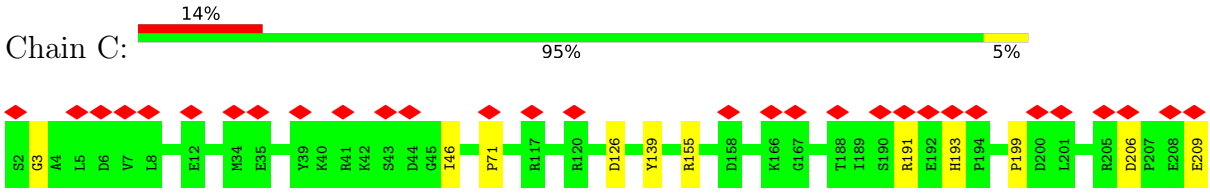
• Molecule 1: initiator methionylated tRNA



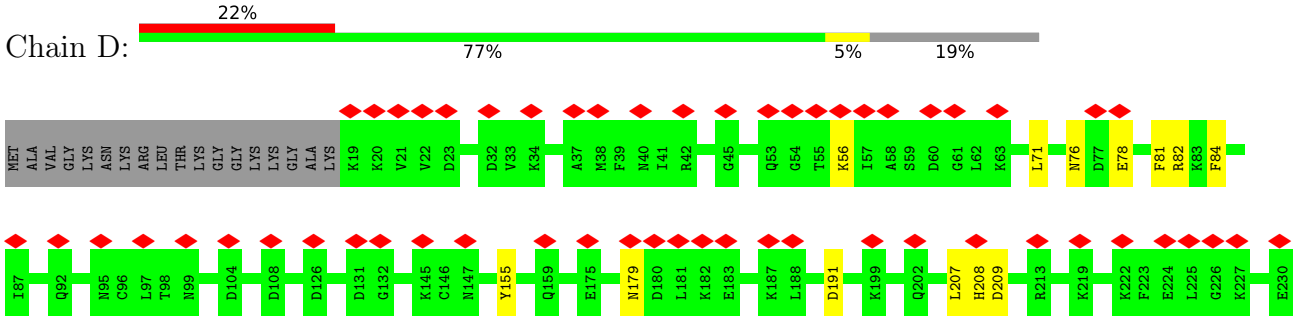
• Molecule 2: 60s ribosomal protein l41

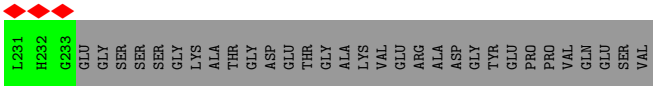


• Molecule 3: 40S ribosomal protein uS2



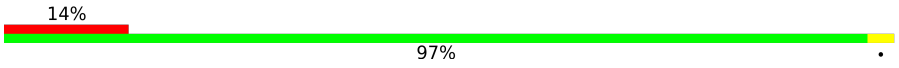
• Molecule 4: 40S ribosomal protein eS1

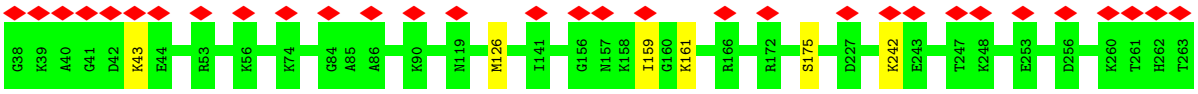




• Molecule 5: 40S ribosomal protein uS5

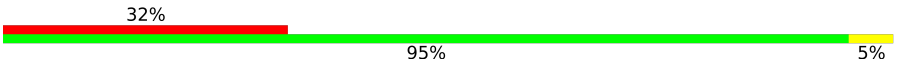
Chain E:

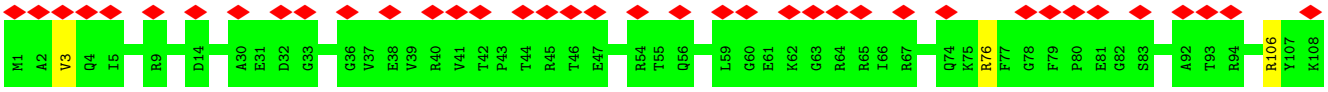


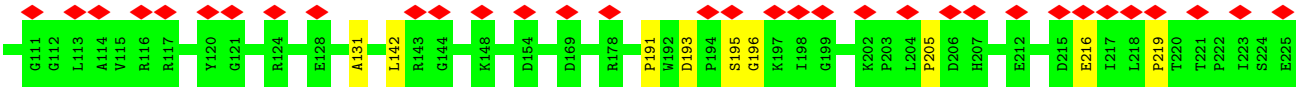


• Molecule 6: 40S ribosomal protein uS3

Chain F:

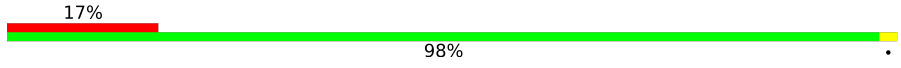


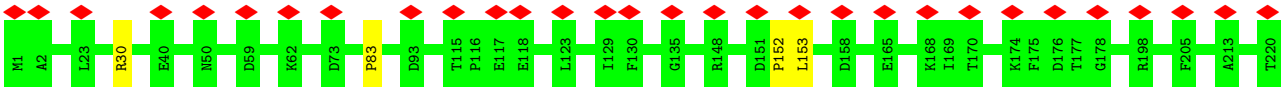


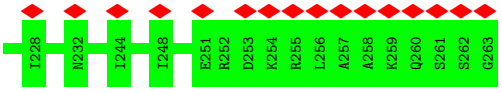


• Molecule 7: 40S ribosomal protein eS4

Chain G:

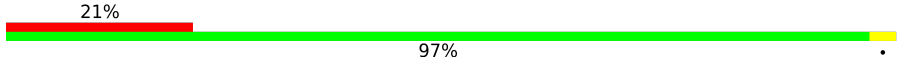


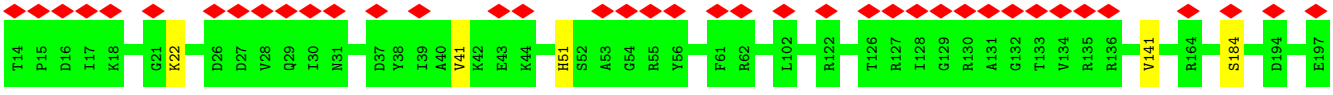




• Molecule 8: 40S ribosomal protein uS7

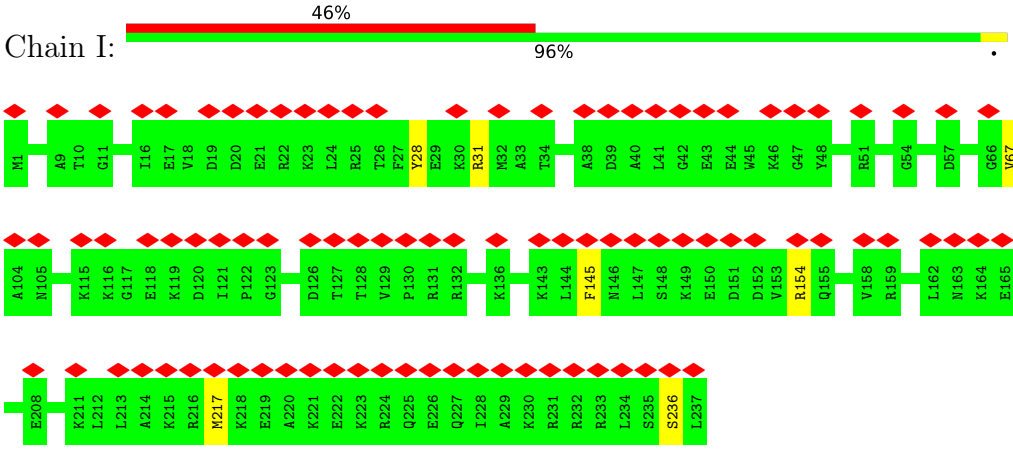
Chain H:





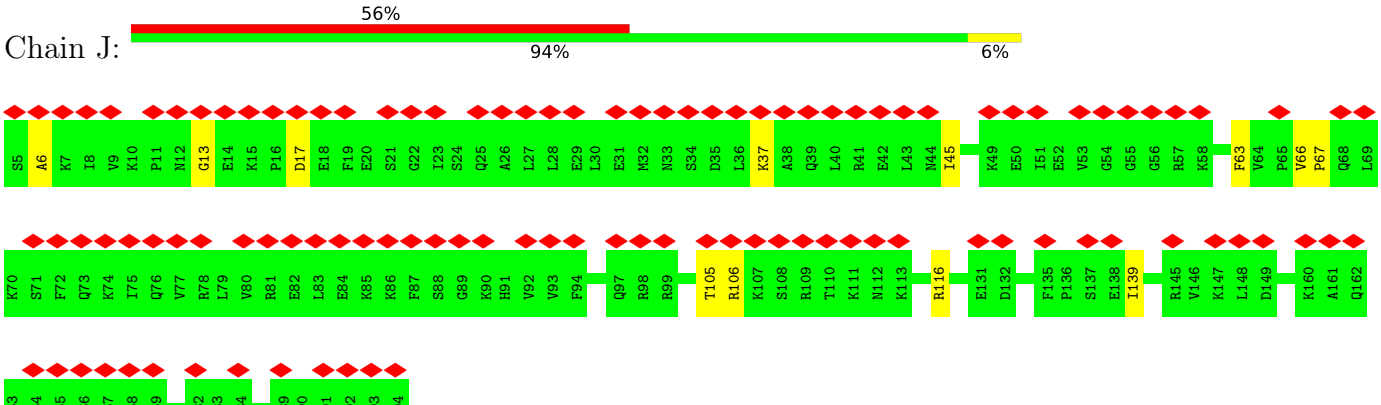
• Molecule 9: 40S ribosomal protein eS6

Chain I:



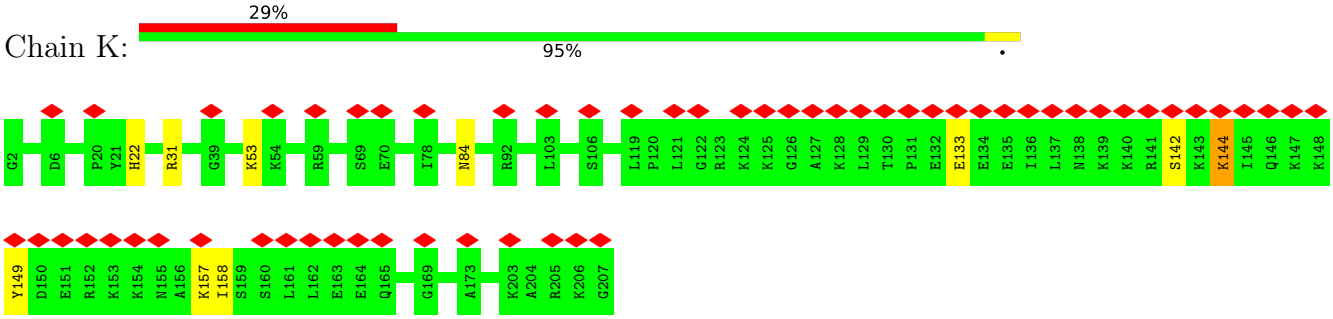
• Molecule 10: ribosomal protein eS7

Chain J:



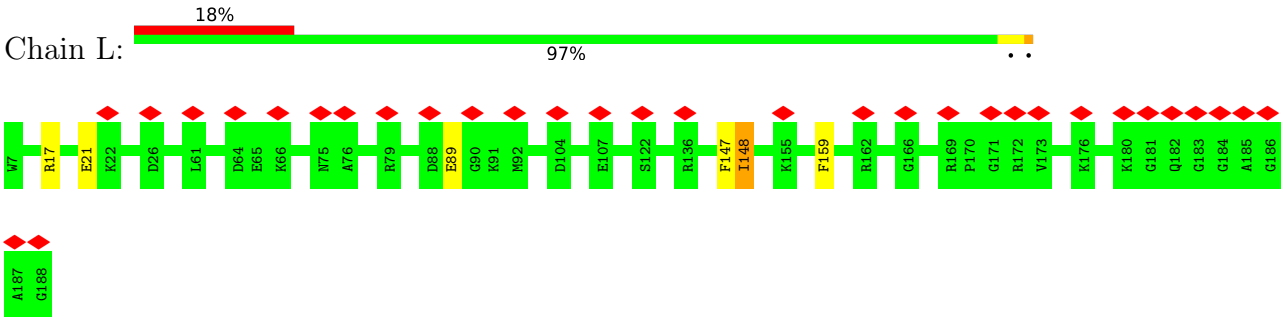
• Molecule 11: 40S ribosomal protein eS8

Chain K:



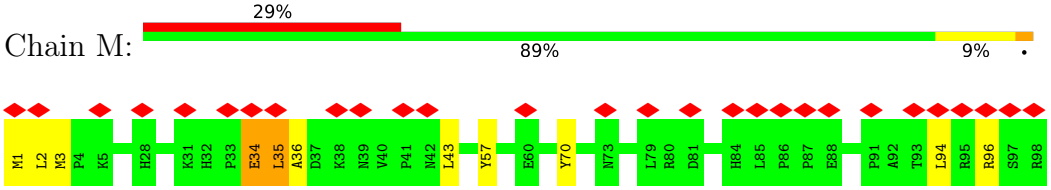
• Molecule 12: 40S ribosomal protein uS4

Chain L:



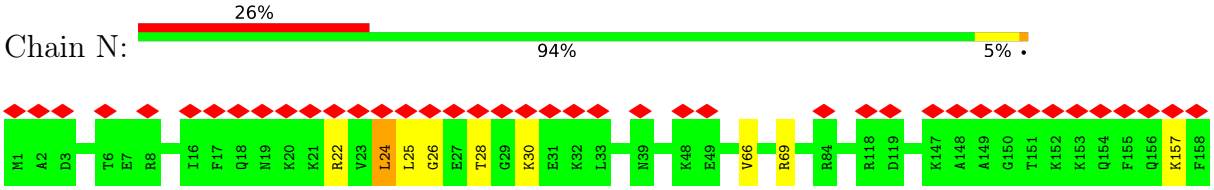
• Molecule 13: 40S ribosomal protein eS10

Chain M:



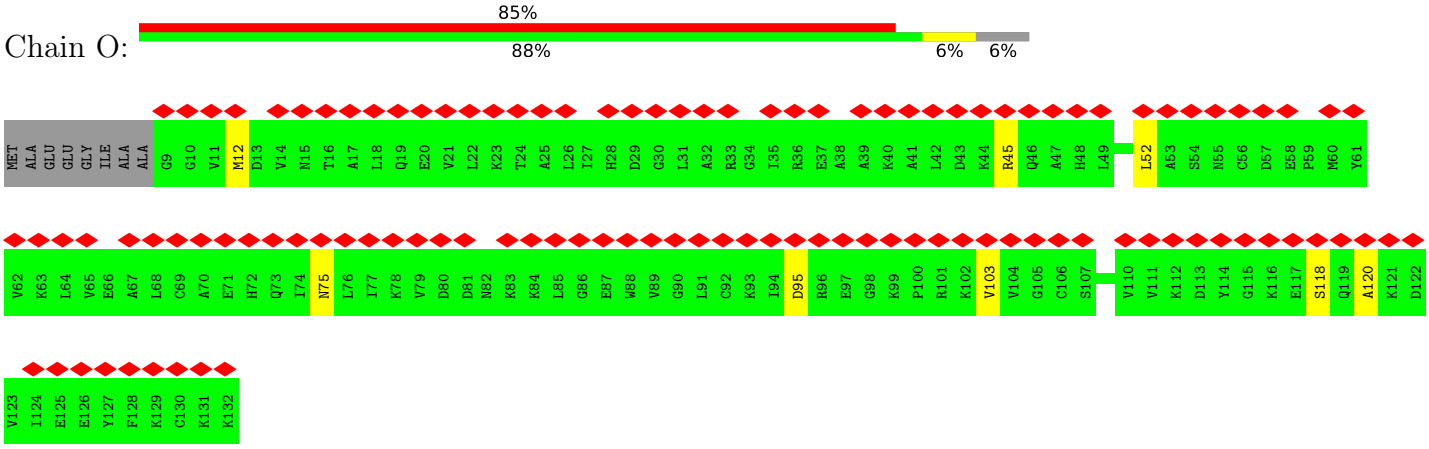
• Molecule 14: 40S ribosomal protein uS17

Chain N:



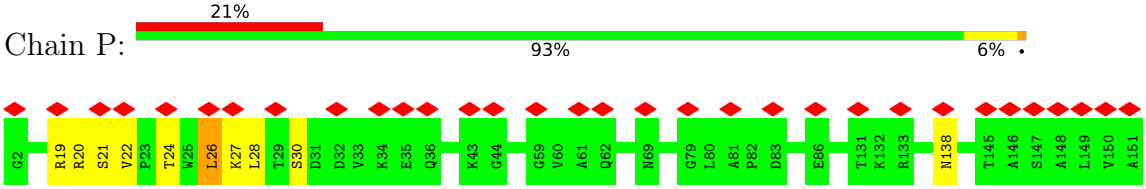
• Molecule 15: 40S ribosomal protein eS12

Chain O:



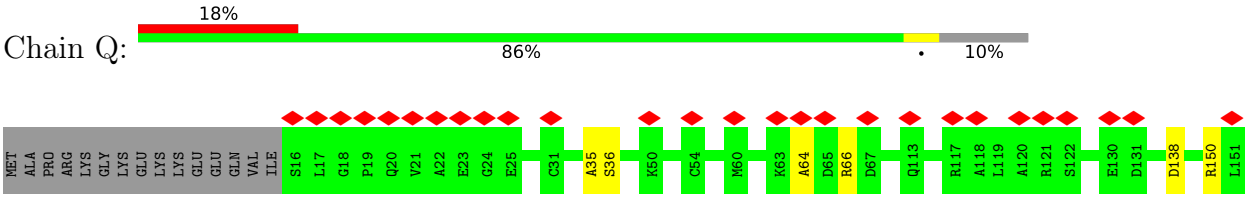
• Molecule 16: ribosomal protein uS15

Chain P:



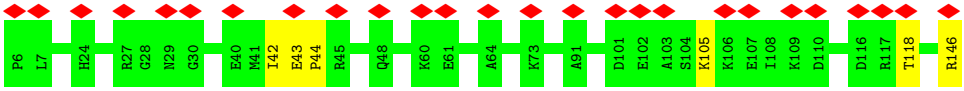
• Molecule 17: 40S ribosomal protein uS11

Chain Q:

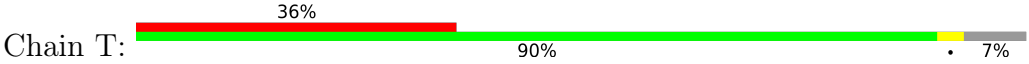


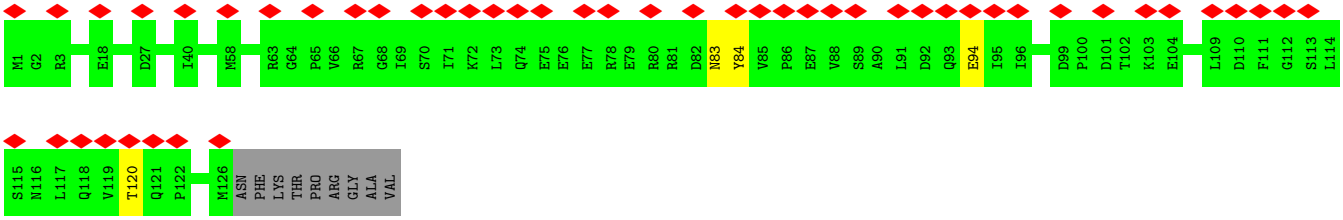
• Molecule 18: 40S ribosomal protein uS9

Chain S:

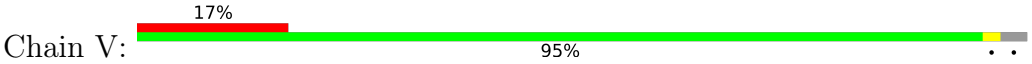


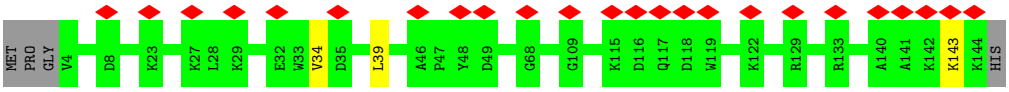
• Molecule 19: 40S ribosomal protein eS17



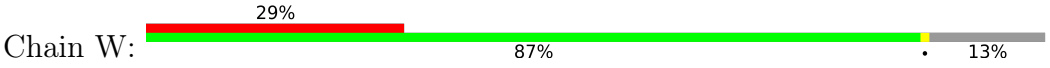


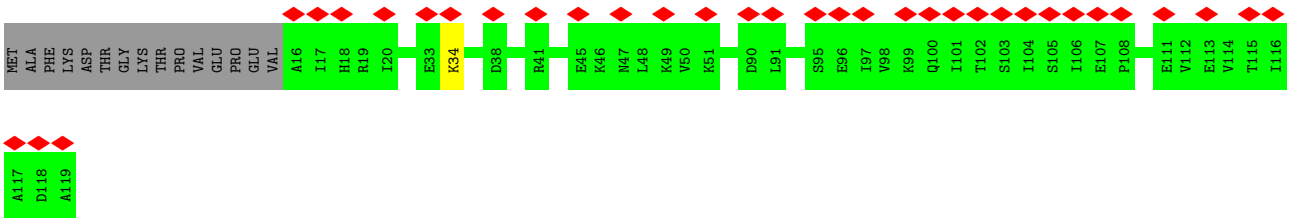
• Molecule 20: 40S ribosomal protein eS19



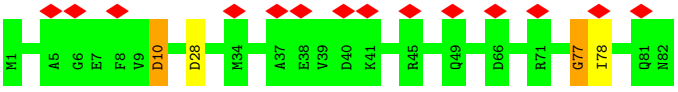


• Molecule 21: 40S ribosomal protein uS10

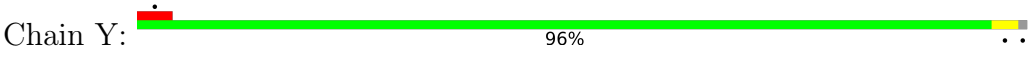


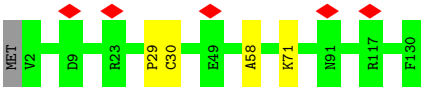


• Molecule 22: 40S ribosomal protein eS21



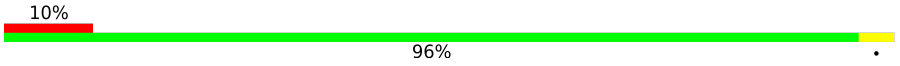
• Molecule 23: 40S ribosomal protein uS8

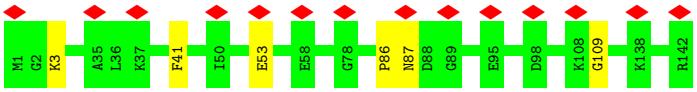




• Molecule 24: 40S ribosomal protein uS12

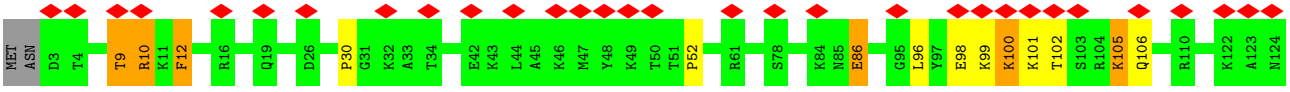
Chain Z:

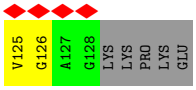




- Molecule 25: 40S ribosomal protein eS24

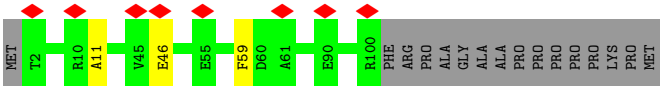
Chain a:





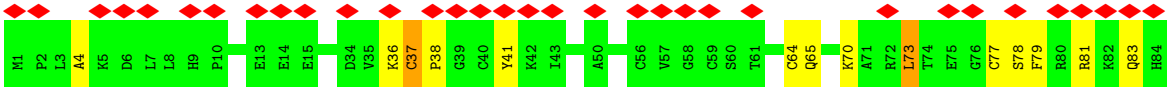
- Molecule 26: 40S ribosomal protein eS26

Chain b:



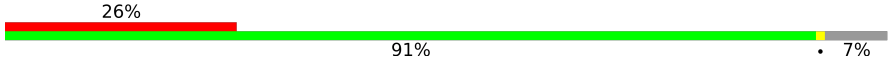
- Molecule 27: 40S ribosomal protein eS27

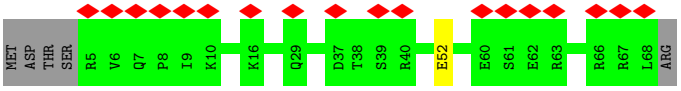
Chain c:



- Molecule 28: 40S ribosomal protein eS28

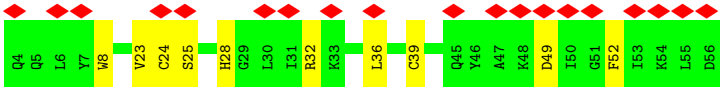
Chain d:





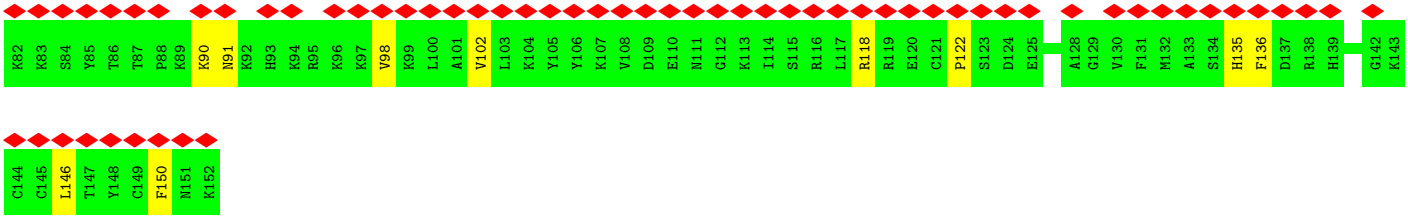
- Molecule 29: ribosomal protein uS14

Chain e:



- Molecule 30: ribosomal protein eS31

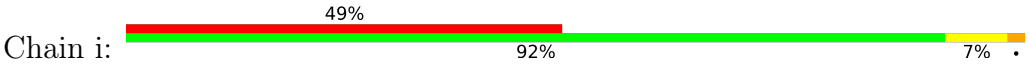
Chain f:



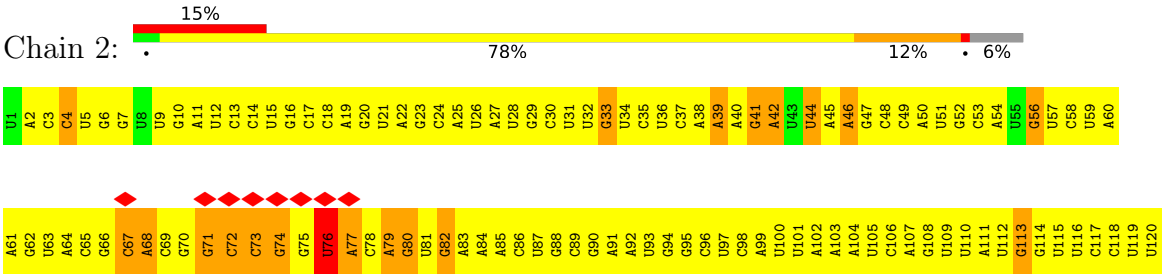
• Molecule 31: ribosomal protein RACK1

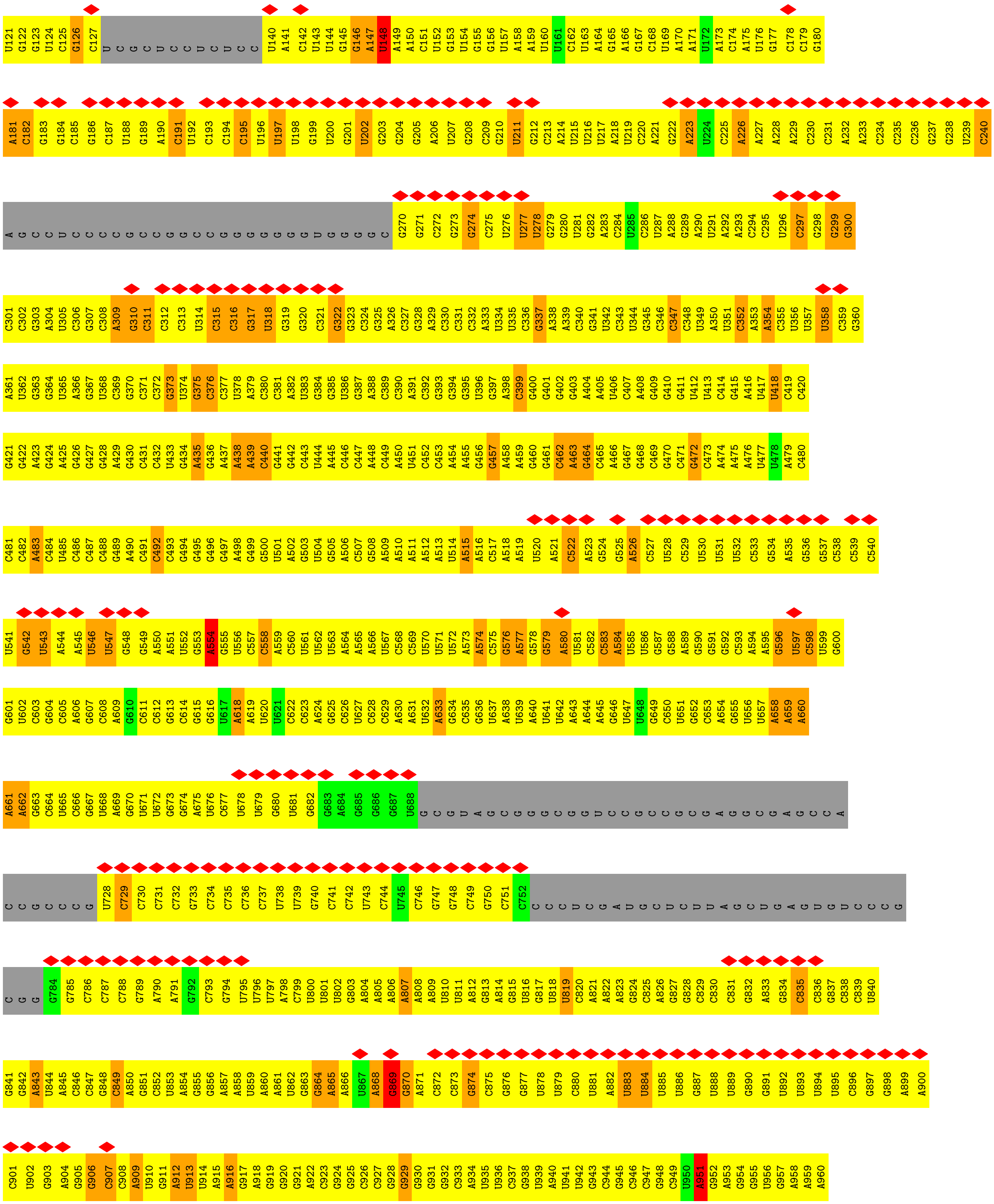
• Molecule 32: ribosomal protein eS25

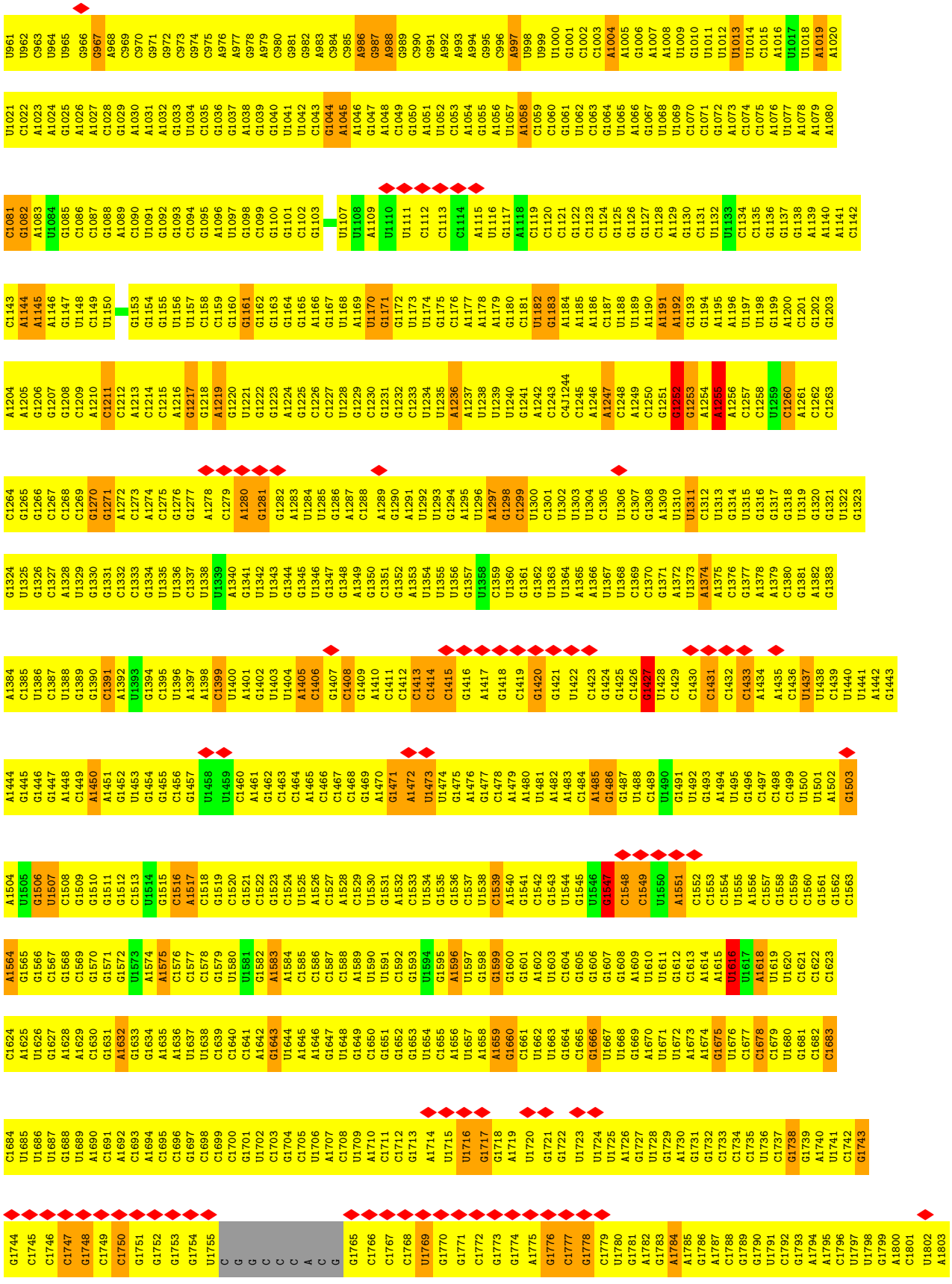
• Molecule 33: 40S ribosomal protein eS30

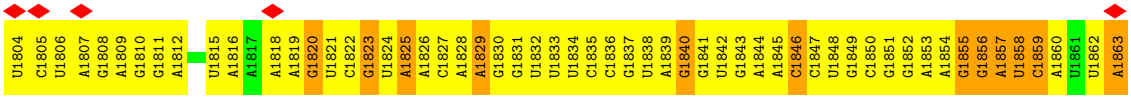


• Molecule 34: 18S ribosomal RNA



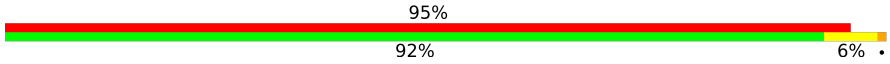

U121 G122 G123 U124 C125 G126 C127 U C G C U C C U C U C C U140 A141 C142 U143 U144 G145 G146 A147 U148 A149 A150 C151 U152 G153 U154 G155 G156 U157 A158 A159 U160 U161 C162 U163 A164 G165 A166 G167 C168 U169 A170 A171 U172 A173 C174 A175 U176 G177 C178 C179 G180
A181 C182 G183 G184 C185 G186 C187 U188 G189 A190 C191 U192 C193 C194 C195 U196 U197 U198 G199 U200 G201 U202 G203 G204 G205 A206 U207 G208 C209 G210 U211 G212 C213 A214 U215 U216 U217 A218 U219 C220 A221 G222 A223 U224 C225 A226 A227 A228 A229 C230 C231 A232 A233 C234 C235 C236 G237 G238 U239 C240
A G C C U C C C C G C C G G C C G G G G G G G U G G G G C G270 G271 C272 G273 G274 C275 U276 U277 U278 G279 G280 U281 G282 A283 C284 U285 C286 U287 A288 G289 A290 U291 A292 C293 C294 C295 U296 C297 G298 G299 G300
C301 C302 G303 A304 U305 C306 G307 C308 A309 G310 C311 C312 C313 U314 C315 C316 G317 U318 G319 G320 C321 G322 G323 C324 G325 A326 C327 G328 A329 C330 C331 C332 A333 U334 U335 C336 G337 A338 A339 C340 G341 U342 C343 U344 G345 C346 C347 C348 U349 A350 U351 C352 A353 A354 C355 U356 U357 U358 C359 G360
A361 U362 G363 G364 U365 A366 G367 U368 C369 G370 C371 C372 G373 U374 G375 C376 C377 U378 A379 C380 C381 A382 U383 G384 G385 U386 G387 A388 C389 C390 A391 G392 G393 G394 G395 U396 G397 A398 C399 G400 G401 G402 G403 A404 A405 U406 C407 A408 G409 G410 G411 U412 U413 C414 G415 A416 U417 U418 C419 C420
G421 G422 A423 G424 A425 G426 G427 G428 A429 G430 C431 C432 U433 G434 A435 G436 A437 A438 A439 C440 G441 G442 C443 U444 A445 C446 C447 A448 C449 A450 U451 C452 C453 A454 A455 G456 G457 A458 A459 G460 G461 C462 A463 G464 C465 A466 G467 G468 C469 G470 C471 G472 C473 A474 A475 A476 U477 U478 A479 C480
C481 C482 A483 U484 U485 C486 C487 G488 G489 A490 C491 C492 C493 G494 G495 G496 G497 A498 G499 G500 U501 A502 G503 U504 G505 A506 C507 G508 A509 A510 A511 A512 U513 U514 A515 A516 C517 A518 A519 U520 A521 C522 A523 G524 G525 A526 C527 U528 C529 U530 U531 U532 C533 G534 A535 G536 G537 C538 C539 C540
U541 G542 U543 A544 A545 U546 U547 G548 G549 A550 A551 U552 G553 A554 G555 U556 C557 C558 A559 C560 G561 U562 U563 A564 A565 U567 C568 C569 U570 U571 U572 A573 A574 C575 G576 A577 G578 G579 A580 U581 C582 C583 A584 U585 U586 G587 G588 A589 G590 G591 U592 C593 A594 A595 G596 U597 C598 U599 G600
G601 U602 C603 G604 C605 A606 G607 C608 A609 G610 C611 G612 G613 C614 G615 G616 U617 A618 A619 U620 U621 C622 C623 A624 G625 C626 U627 C628 C629 A630 A631 U632 A633 G634 C635 G636 U637 A638 U639 A640 U641 U642 A643 A644 A645 G646 U647 U648 G649 C650 U651 G652 C653 A654 G655 U656 U657 A658 A659 A660
A661 A662 G663 C664 U665 C666 G667 U668 A669 G670 U671 U672 G673 G674 A675 U676 C677 U678 U679 G680 U681 G682 G683 A684 G685 G686 G687 U688 G C G U A G C G G G C G G U C C G C C G C G A G G C G A G C C A
C C G C C C G U728 C729 C730 C731 C732 G733 C734 C735 C736 C737 U738 U739 G740 C741 C742 U743 C744 U745 C746 G747 G748 C749 G750 C751 C752 C C C U C G A U G C U C U U A G C U G A G U G U C C C G
C G G G784 G785 C786 C787 C788 G789 A790 A791 G792 C793 G794 U795 U796 U797 A798 C799 U800 U801 U802 G803 A804 A805 A806 A807 A808 A809 U810 U811 A812 G813 A814 G815 U816 G817 U818 U819 C820 A821 A822 A823 G824 C825 A826 G827 G828 C829 C830 C831 G832 A833 G834 C835 C836 G837 C838 C839 U840
G841 G842 A843 U844 A845 C846 C847 G848 C849 A850 G851 C852 U853 A854 G855 G856 A857 A858 U859 A860 A861 U862 G863 G864 A865 A866 U867 A868 C869 G870 A871 C872 C873 G874 C875 G876 G877 U878 C879 C880 U881 A882 U883 U884 U885 U886 G887 U888 U889 G890 G891 U892 U893 U894 U895 C896 G897 G898 A899 A900
C901 U902 G903 A904 G905 G906 C907 C908 A909 U910 G911 A912 U913 U914 A915 A916 G917 A918 G919 G920 G921 A922 C923 G924 G925 C926 C927 G928 G929 G930 G931 G932 C933 A934 U935 U936 C937 G938 U939 A940 U941 U942 G943 C944 G945 C946 C947 G948 C949 U950 A951 G952 A953 G954 G955 U956 G957 A958 A959 A960

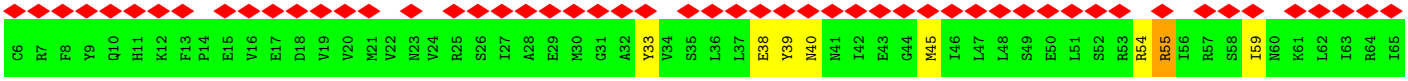


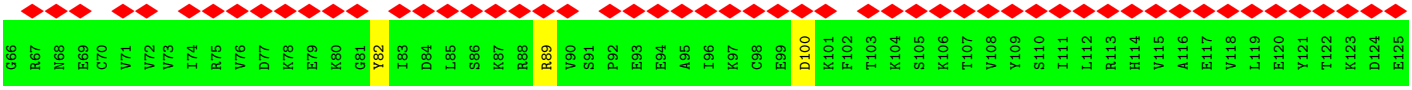


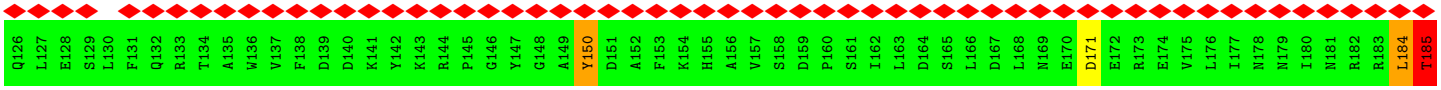
• Molecule 35: eukaryotic translation initiation factor 2 subunit alpha

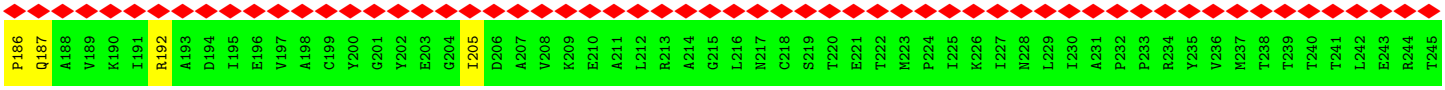
Chain A:

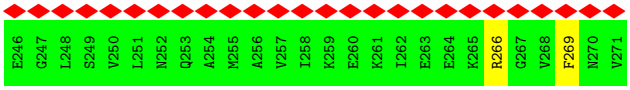






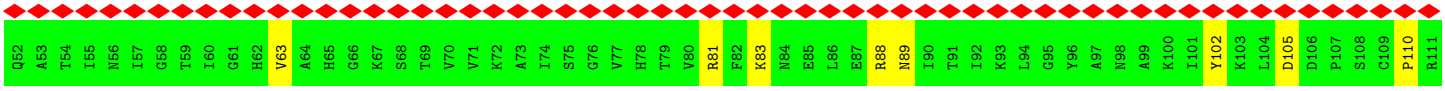


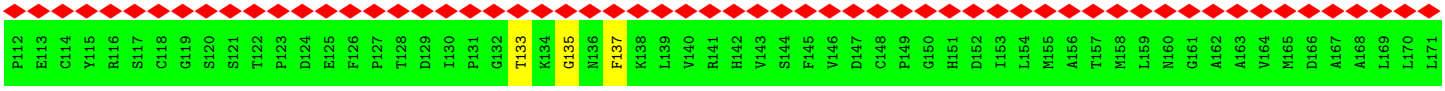


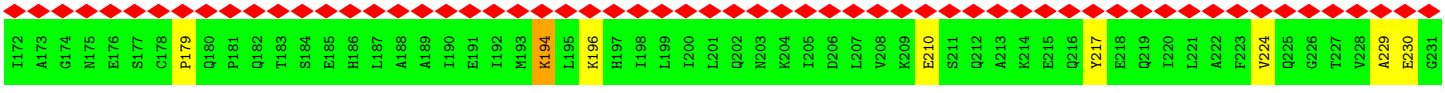


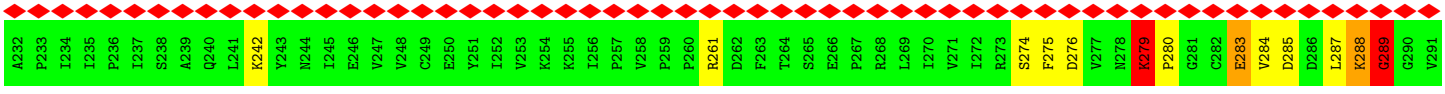
• Molecule 36: eukaryotic translation initiation factor 2 subunit gamma

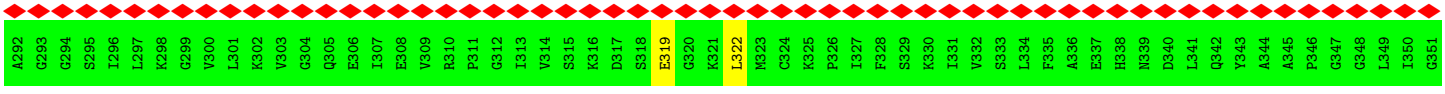
Chain B:

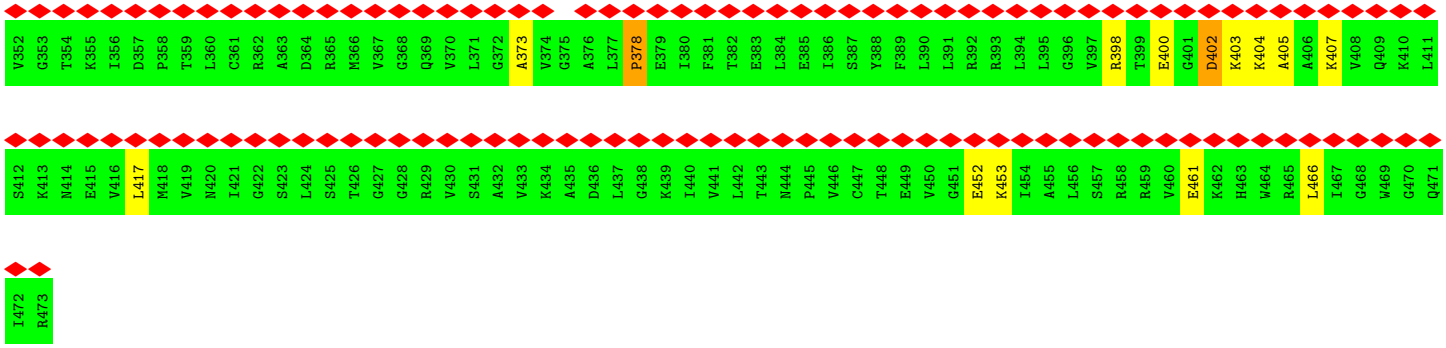






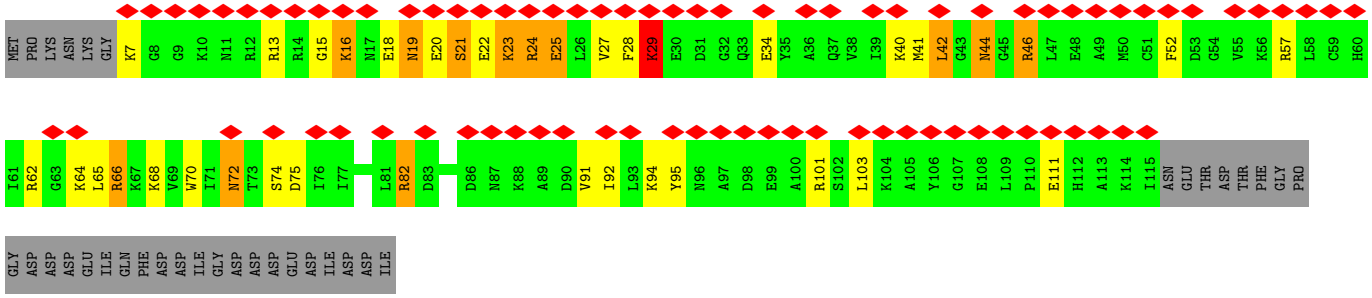






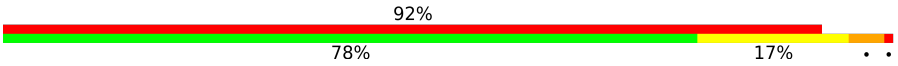
• Molecule 37: eukaryotic translation initiation factor 1A

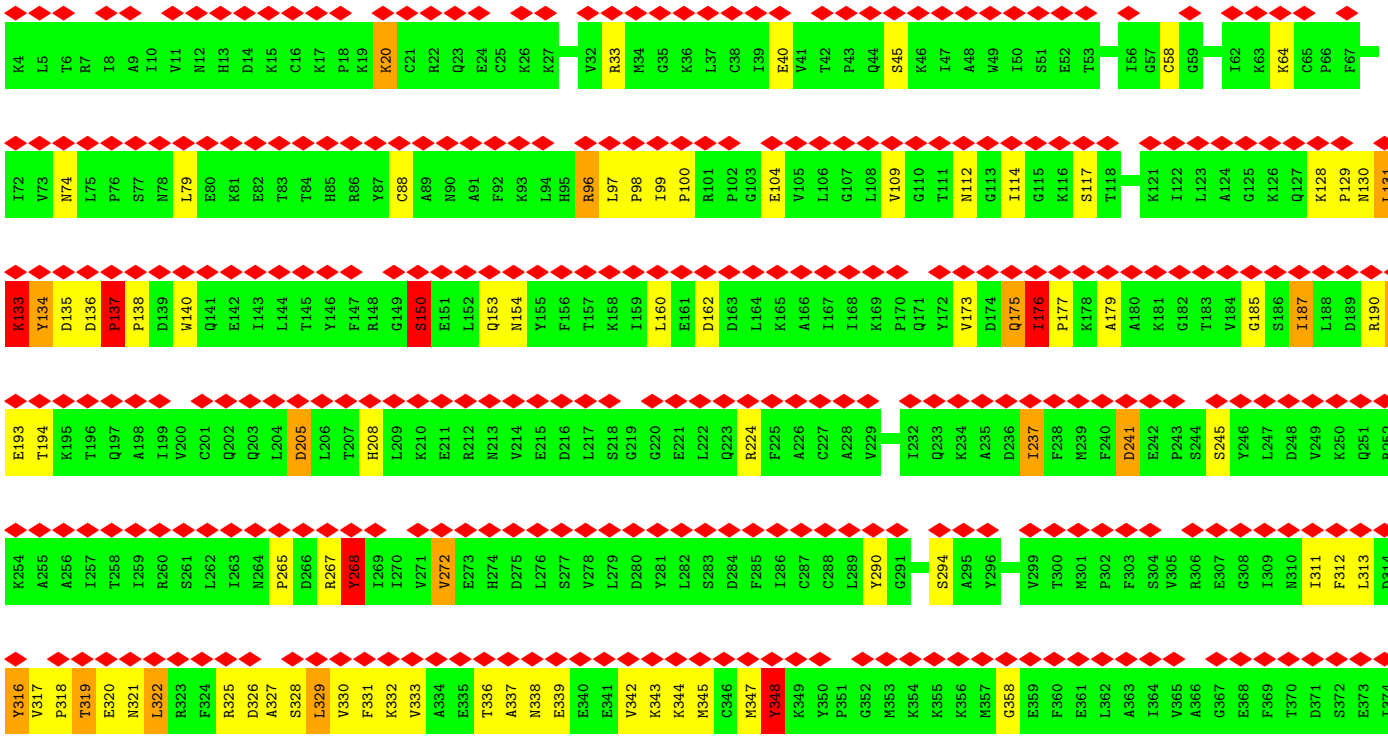
Chain j:

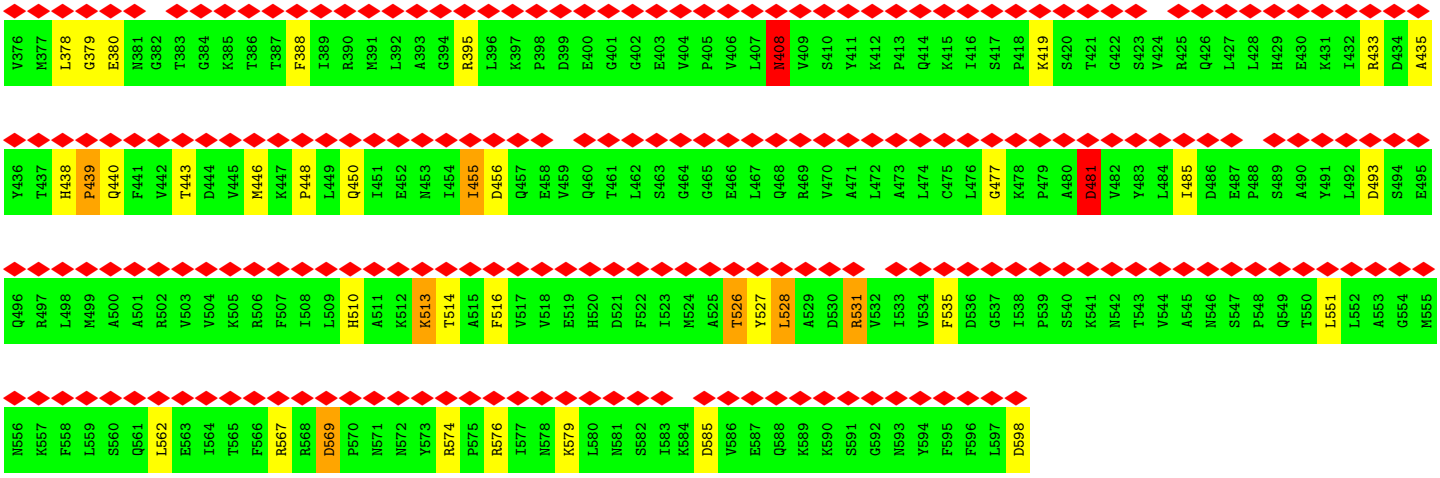


• Molecule 38: ATP-binding cassette sub-family E member 1 (ABCE1)

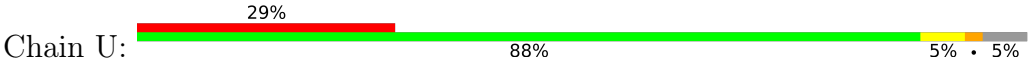
Chain k:

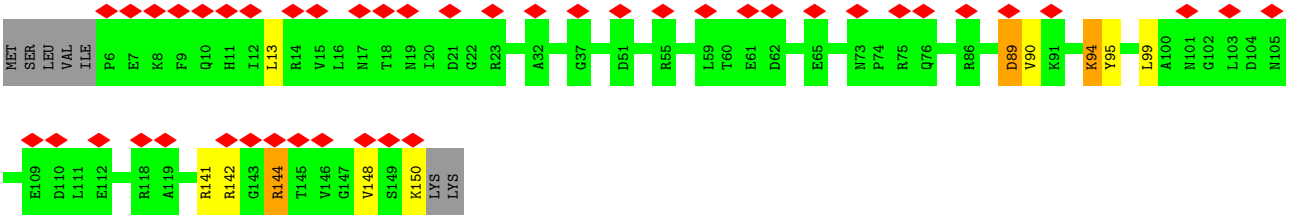




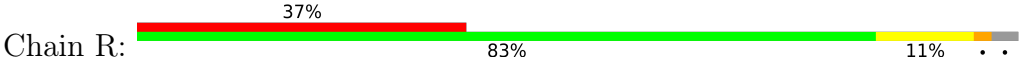


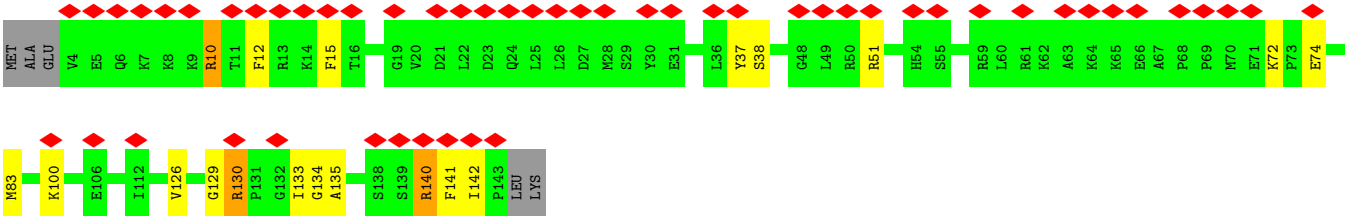
- Molecule 39: 40S ribosomal protein uS13



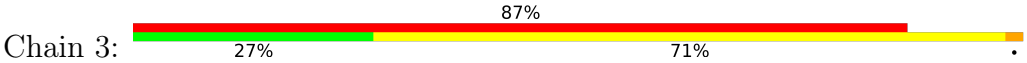


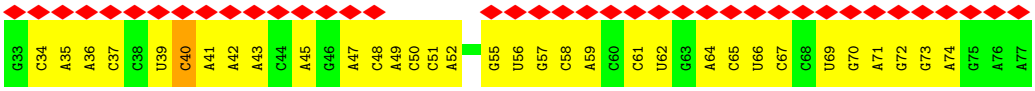
- Molecule 40: 40S ribosomal protein uS19



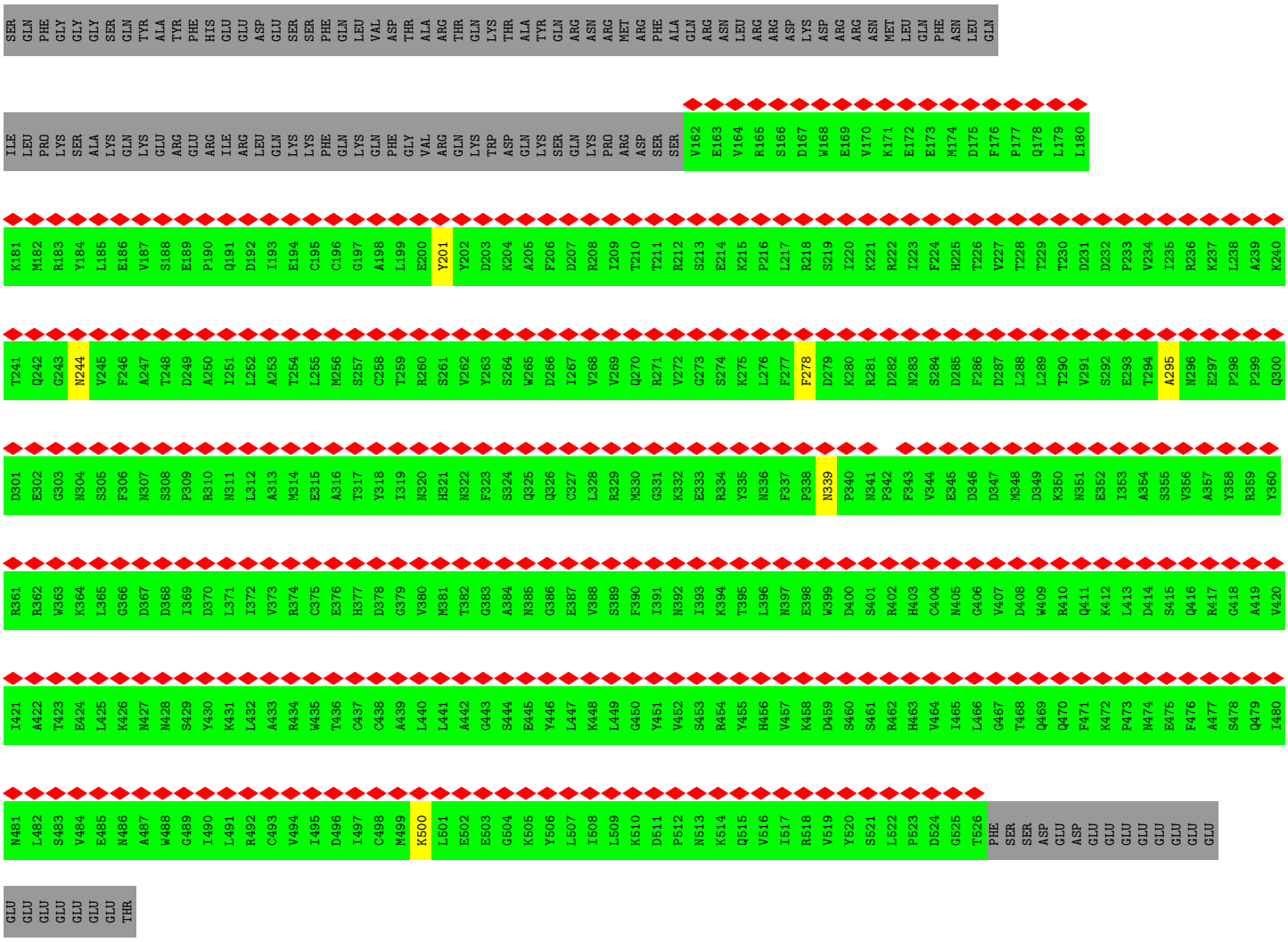


- Molecule 41: beta-globin mRNA



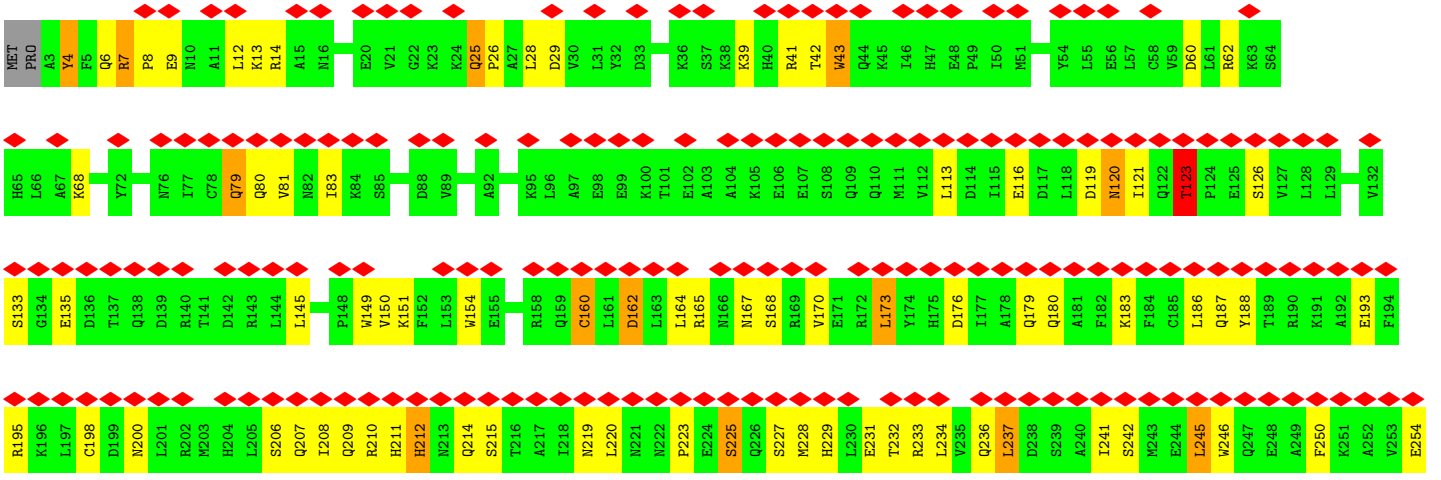


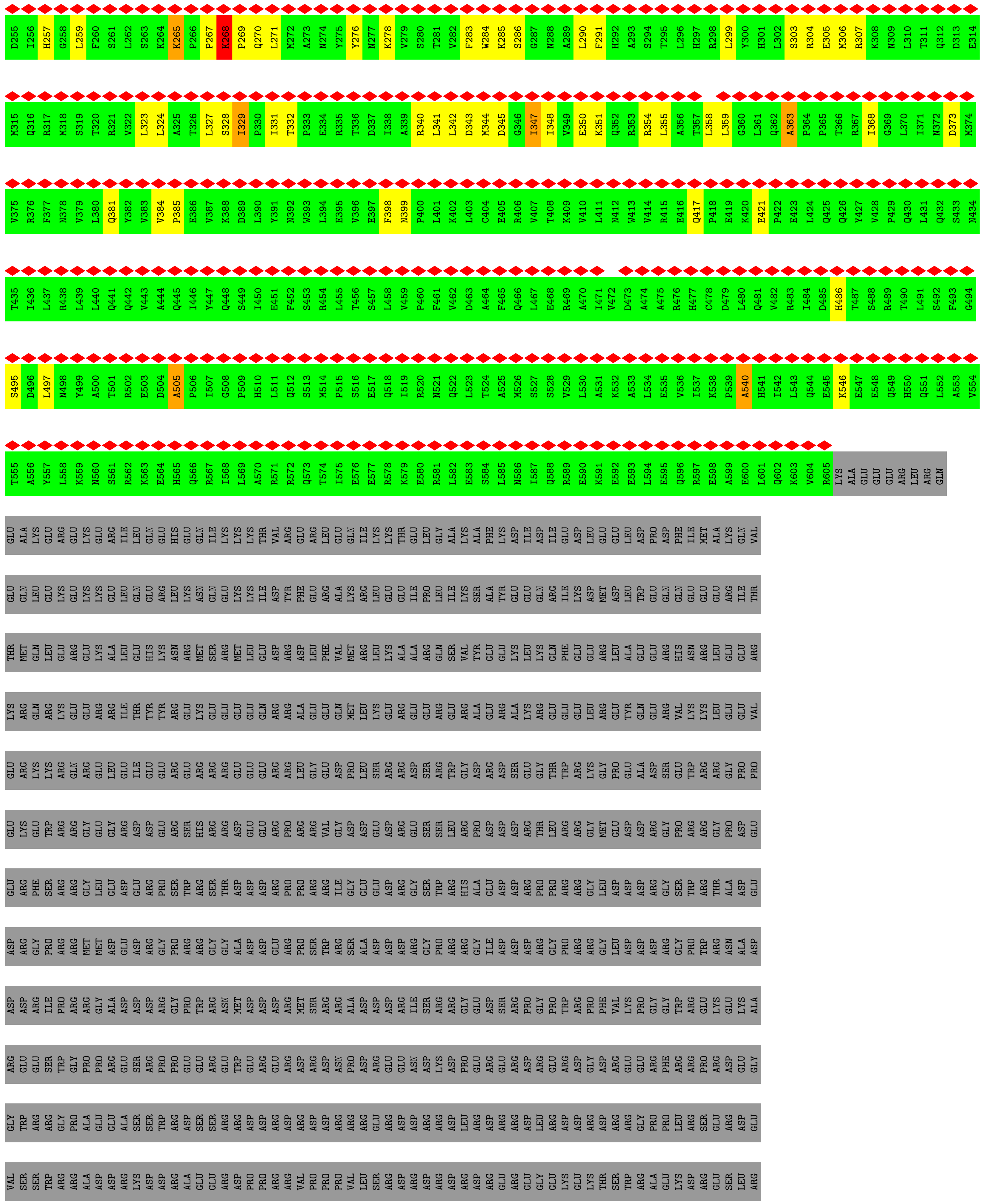
- Molecule 42: eukaryotic translation initiation factor 3 subunit d



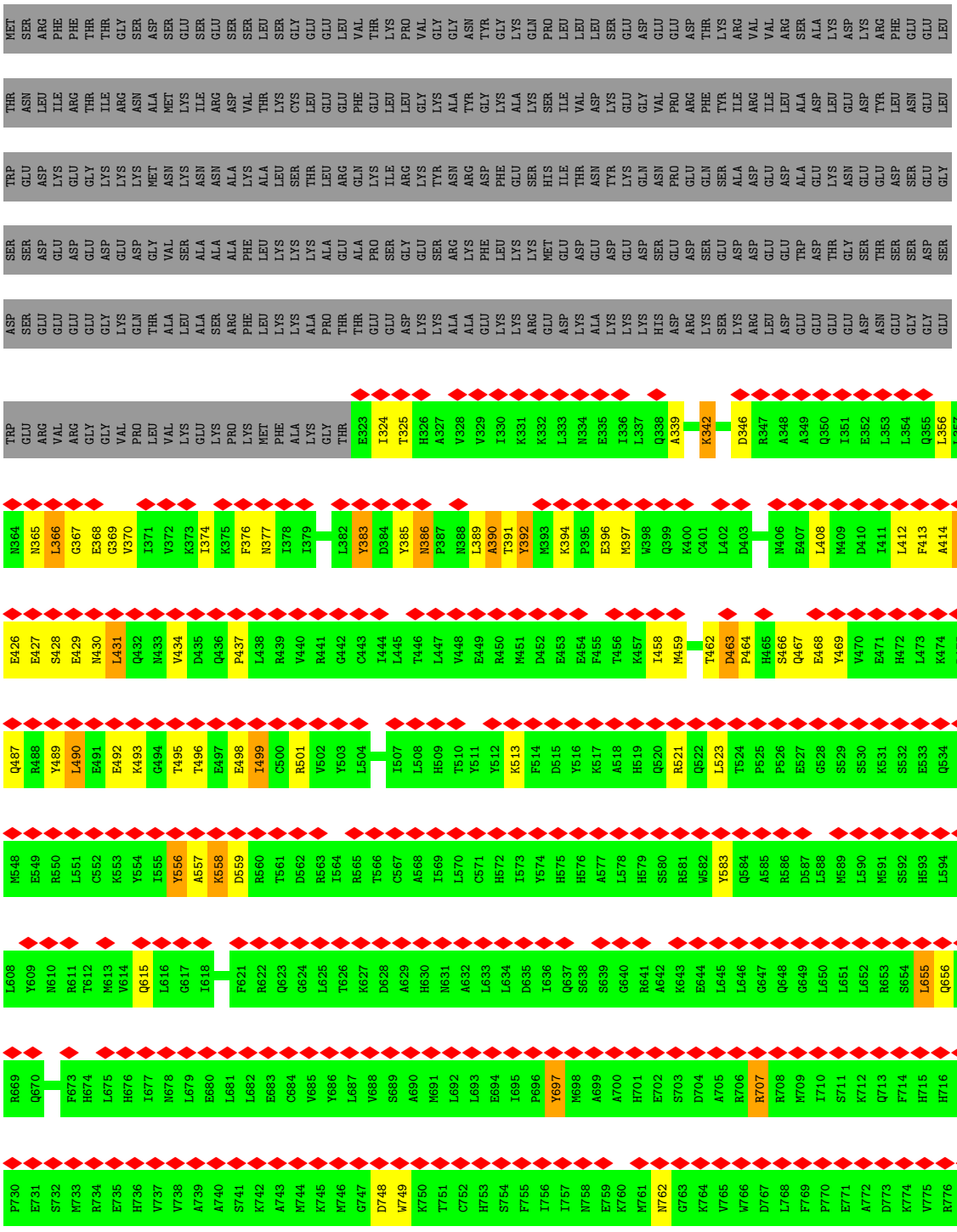
• Molecule 43: Eukaryotic translation initiation factor 3 subunit A

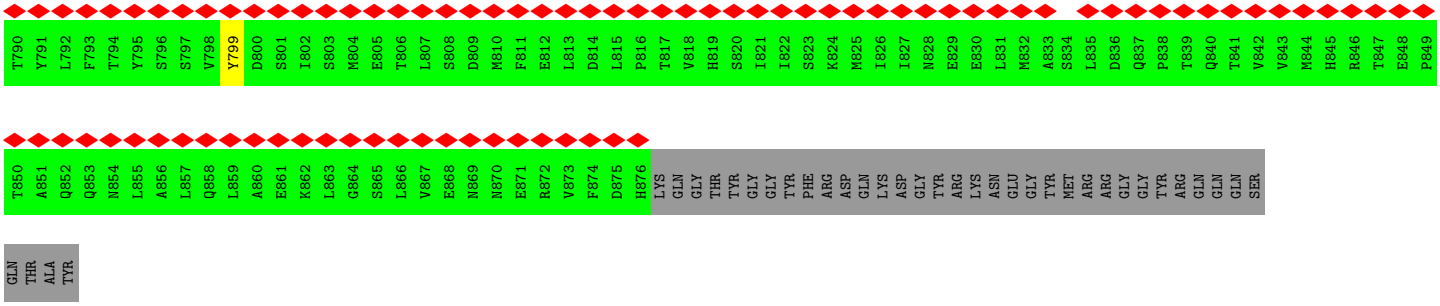
Chain y:




D255 I256 H257 G258 L259 F260 S261 L262 S263 K264 K265 P266 P267 K268 P269 Q270 L271 M272 A273 N274 Y275 Y276 N277 K278 V279 S280 T281 V282 F283 W284 K285 S286 G287 N288 A289 L290 F291 H292 A293 S294 T295 L296 H297 R298 L299 Y300 H301 L302 S303 R304 E305 M306 R307 K308 N309 L310 T311 Q312 D313 E314
M315 Q316 R317 M318 S319 T320 R321 V322 L323 L324 A325 T326 L327 S328 I329 P330 I331 T332 P333 E334 R335 T336 D337 I338 A339 R340 L341 L342 D343 M344 D345 G346 I347 I348 V349 E350 K351 Q352 R353 R354 L355 A356 T357 L358 L359 G360 L361 Q362 A363 P364 P365 T366 R367 I368 G369 L370 I371 N372 D373 M374
V375 R376 F377 N378 V379 L380 Q381 Y382 V383 V384 P385 E386 V387 K388 D389 L390 Y391 N392 W393 L394 E395 V396 E397 F398 N399 P400 L401 K402 L403 C404 E405 R406 V407 T408 K409 V410 L411 N412 W413 V414 R415 E416 Q417 P418 E419 K420 E421 P422 E423 L424 Q425 Q426 Y427 V428 P429 Q430 L431 Q432 S433 N434
T435 I436 L437 R438 L439 L440 Q441 Q442 V443 A444 Q445 I446 Y447 Q448 S449 I450 E451 F452 S453 R454 L455 T456 S457 L458 V459 P460 F461 V462 D463 A464 F465 Q466 L467 E468 R469 A470 I471 V472 D473 A474 A475 R476 H477 C478 D479 L480 Q481 V482 R483 I484 D485 H486 T487 S488 R489 T490 L491 S492 F493 G494
S495 D496 L497 N498 Y499 A500 T501 R502 E503 D504 A505 P506 I507 G508 P509 H510 L511 Q512 S513 M514 P515 S516 E517 Q518 I519 R520 N521 Q522 L523 T524 A525 M526 S527 S528 V529 L530 A531 K532 A533 L534 E535 V536 I537 K538 P539 A540 H541 I542 L543 Q544 E545 K546 E547 E548 Q549 H550 Q551 L552 A553 V554
T555 A556 Y557 L558 K559 N560 S561 R562 K563 E564 H565 Q566 R567 I568 L569 A570 R571 R572 Q573 T574 I575 E576 E577 R578 K579 E580 R581 L582 E583 S584 L585 N586 I587 Q588 R589 E590 K591 E592 E593 L594 E595 Q596 R597 E598 A599 E600 L601 Q602 K603 V604 R605 LYS ALA GLU GLU GLU ARG LEU ARG GLN
GLU ALA LYS GLU ARG GLU LYS GLU ARG ILE LEU GLN GLU HIS GLU GLN ILE LYS LYS LYS THR VAL ARG GLU ARG LEU GLU GLN ILE LYS LYS THR GLU LEU GLY ALA LYS ALA PHE LYS ASP ILE ASP ILE GLU ASP LEU GLU GLU LEU ASP PRO ASP PHE ILE MET ALA LYS GLN VAL
GLU GLN LEU GLU LYS GLU LYS LYS GLU LEU GLN GLU ARG LEU LYS ASN GLN GLU LYS LYS ILE ASP TYR PHE GLU ARG ALA LYS ARG LEU GLU GLU ILE PRO LEU ILE LYS SER ALA TYR GLU GLU GLN ARG ILE LYS ASP MET ASP LEU TRP GLU GLN GLN GLU GLU ARG ILE THR
THR MET GLN LEU GLU ARG GLU LYS ALA LEU GLU HIS LYS ASN ARG MET SER ARG MET LEU GLU ASP ARG ASP LEU PHE VAL MET ARG LEU LYS ALA ALA ARG GLN SER VAL TYR GLU GLU LYS LEU LYS GLN PHE GLU GLU ARG LEU ALA GLU GLU ARG HIS ASN ARG LEU GLU GLU ARG
LYS ARG GLN ARG LYS GLU GLU ARG ARG ILE THR TYR TYR ARG GLU LYS GLU GLU GLU GLU GLN ARG ARG ALA GLU GLU GLN MET LEU LYS GLU ARG GLU GLU ARG GLU ARG ALA GLU ARG ALA LYS ARG GLU GLU GLU LEU ARG GLU TYR GLN GLU ARG VAL LYS LYS LEU GLU GLU VAL
GLU ARG LYS LYS ARG GLN ARG GLU LEU GLU ILE GLU GLU ARG GLU ARG ARG ARG GLU GLU GLU ARG LEU GLY GLU ASP PRO LEU SER ARG ARG ASP SER ARG TRP GLY ASP ARG ASP SER GLU GLY THR TRP ARG LYS GLY PRO GLU ALA ASP SER GLU TRP ARG ARG GLY PRO PRO
GLU LYS GLU TRP ARG ARG GLY GLU GLY ARG ASP ASP GLU ARG SER HIS ARG ARG ASP GLU GLU ARG PRO ARG ARG VAL GLY ASP ASP GLU ASP ARG GLU SER SER LEU ARG PRO ASP ASP ASP ARG THR LEU ARG GLY MET GLU ASP ASP ARG GLY PRO ARG ARG GLY PRO ASP GLU
GLU ARG PHE SER ARG ARG GLY LEU GLU ASP GLU ARG PRO SER TRP ARG SER THR ASP ASP ASP ARG PRO PRO ARG ARG ILE GLY GLU ASP ARG GLY SER TRP ARG HIS ALA GLU ASP ASP ARG PRO PRO ARG ARG GLY LEU ASP ASP ASP ARG GLY SER TRP ARG THR ALA ASP GLU
ASP ARG GLY PRO ARG ARG MET MET ASP GLU ASP ARG GLY PRO ARG ARG GLY GLY ALA ASP ASP GLU ARG PRO SER TRP ARG SER ALA ASP ASP ASP ARG GLY PRO ARG ARG GLY ILE ASP ASP ASP ARG GLY PRO ARG ARG GLY LEU ASP ASP ASP ARG GLY PRO TRP ARG ASN ALA ASP
ASP ASP ARG ILE PRO ARG ARG GLY ALA ASP ASP ASP ARG GLY PRO TRP ARG ASN MET ASP ASP ASP ASP ARG MET SER ARG ARG ALA ASP ASP ASP ARG ILE SER ARG ARG GLY GLU ASP SER ARG PRO GLY PRO TRP ARG PRO PHE VAL LYS PRO GLY GLY TRP ARG GLU LYS GLU LYS ALA
ARG GLU GLU SER TRP GLY PRO PRO ARG GLU SER ARG PRO PRO GLU GLU ARG GLU TRP GLU ARG GLU ARG ASP ARG ASP ASN PRO ASP ARG GLU GLU ASN ASP LYS ASP PRO GLU ARG GLU ARG ASP ARG GLU ARG ASP GLY ASP ARG GLU GLU ARG PHE ARG ARG PRO ARG ASP GLU GLY
GLY TRP ARG ARG GLY PRO ALA GLU GLU ALA SER SER TRP ARG ASP SER SER ARG ARG ASP ASP ARG ASP ARG ASP ASP ARG ARG ARG GLU ARG ASP ASP ARG ASP LEU ARG ASP ARG ARG ASP LEU ARG ASP ARG ASP ARG ARG GLY PRO PRO LEU ARG SER GLU ARG ASP GLU
VAL SER SER TRP ARG ARG ALA ASP ASP ARG LYS ASP ASP TRP ARG ALA GLU GLU ARG ASP PRO PRO ARG ARG VAL PRO PRO PRO VAL LEU SER ARG ASP ARG ASP ARG ASP ARG ASP ARG GLU ARG GLU GLY GLU LYS GLU LYS THR SER TRP ARG ALA GLU LYS ASP ARG GLU SER LEU ARG

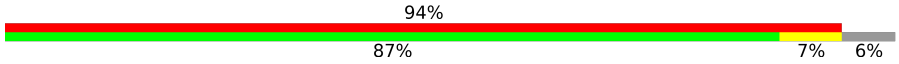
• Molecule 44: Eukaryotic translation initiation factor 3 subunit C

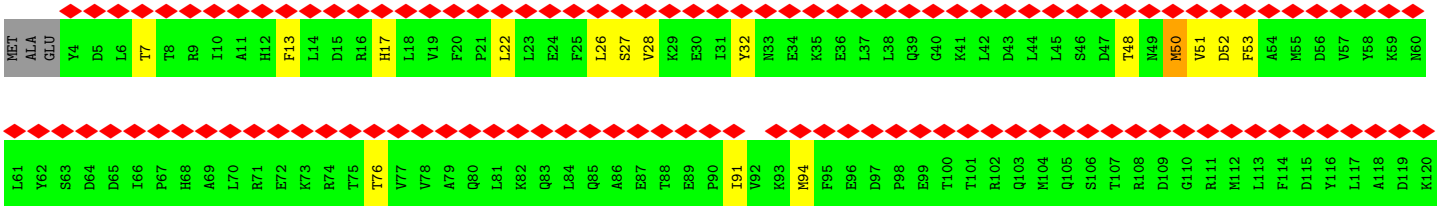




• Molecule 45: Eukaryotic translation initiation factor 3 subunit E

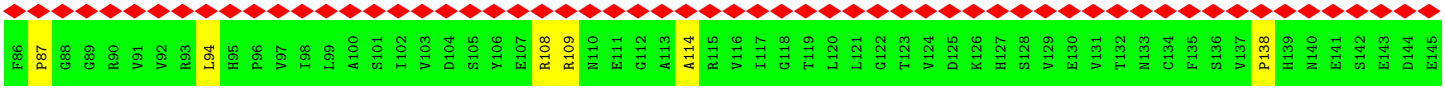
Chain w:





• Molecule 46: Eukaryotic translation initiation factor 3 subunit F

Chain q:



V146 A147 V148 D149 M150 E151 F152 A153 K154 N155 M156 Y157 E158 L159 H160 K161 K162 V163 S164 P165 N166 E167 L168 I169 L170 G171 W172 Y173 A174 T175 G176 H177 D178 I179 T180 E181 H182 S183 V184 L185 I186 H187 E188 Y189 Y190 S191 R192 E193 A194 P195 N196 P197 I198 H199 L200 T201 V202 D203 T204 S205

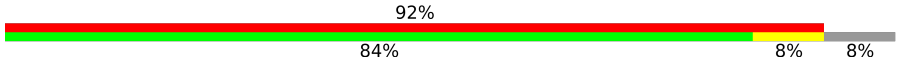
L206 Q207 N208 G209 R210 M211 S212 I213 K214 A215 Y216 V217 S218 T219 S220 M221 G222 Y223 P224 G225 R226 T227 M228 G229 V230 M231 F232 T233 P234 L235 T236 V237 K238 Y239 A240 Y241 Y242 D243 T244 E245 R246 I247 G248 V249 D250 L251 I252 M253 K254 T255 C256 F257 S258 P259 N260 R261 V262 I263 G264 L265

S266 S267 D268 L269 Q270 Q271 V272 G273 G274 A275 S276 A277 R278 I279 Q280 D281 A282 L283 S284 T285 V286 L287 Q288 Y289 A290 E291 D292 V293 L294 S295 G296 K297 V298 S299 A300 D301 N302 T303 V304 G305 R306 F307 L308 M309 S310 L311 V312 N313 Q314 V315 P316 K317 I318 V319 P320 D321 D322 F323 E324 T325

M326 L327 N328 S329 N330 I331 N332 D333 L334 L335 M336 V337 T338 Y339 L340 A341 N342 L343 T344 Q345 S346 Q347 I348 A349 L350 N351 E352 K353 L354 V355 N356 L357

• Molecule 47: eukaryotic translation initiation factor 3 subunit h

Chain r:



MET ALA SER ARG LYS GLU GLY THR GLY SER THR ALA THR SER SER SER SER THR ALA GLY ALA ALA GLY LYS GLY LYS GLY LYS G29 G30 S31 G32 D33 S34 A35 V36 K37 Q38 V39 Q40 I41 D42 G43 L44 V45 V46 L47 K48 I49 I50 K51 H52 Y53 Q54 E55 E56 G57 Q58 G59 T60

E61 V62 V63 Q64 G65 V66 L67 L68 G69 L70 V71 V72 E73 D74 R75 L76 E77 I78 T79 N80 C81 F82 P83 F84 P85 Q86 H87 T88 E89 D90 D91 A92 D93 F94 D95 E96 V97 Q98 Y99 Q100 M101 E102 M103 M104 R105 S106 L107 R108 H109 V110 N111 I112 D113 H114 L115 H116 V117 G118 W119 Y120

Q121 S122 T123 Y124 Y125 G126 S127 F128 V129 T130 R131 A132 L133 L134 D135 S136 Q137 F138 S139 Y140 Q141 H142 A143 I144 E145 E146 S147 V148 V149 L150 I151 Y152 D153 P154 I155 K156 T157 A158 Q159 G160 S161 L162 S163 L164 K165 A166 Y167 R168 L169 T170 P171 K172 L173 M174 E175 V176 C177 K178 E179 K180

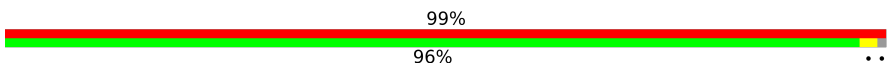
D181 F182 S183 P184 E185 A186 L187 K188 K189 A190 N191 I192 T193 F194 E195 H196 M197 F198 E199 E200 V201 P202 I203 V204 I205 K206 N207 S208 H209 L210 I211 N212 V213 L214 M215 W216 E217 L218 E219 K220 K221 S222 A223 V224 A225 D226 K227 H228 E229 L230 L231 S232 L233 A234 S235 S236 N237 H238 L239 G240

K241 N242 L243 Q244 L245 L246 M247 D248 R249 V250 D251 E252 M253 S254 Q255 D256 I257 V258 K259 Y260 N261 T262 Y263 M264 R265 N266 T267 S268 K269 Q270 Q271 Q272 Q273 K274 H275 Q276 Y277 Q278 Q279 R280 R281 Q282 Q283 E284 N285 M286 Q287 R288 Q289 S290 R291 G292 E293 P294 P295 L296 P297 E298 E299 D300

L301 S302 K303 L304 F305 K306 P307 P308 Q309 P310 P311 A312 R313 M314 D315 S316 L317 L318 I319 A320 G321 Q322 I323 N324 T325 Y326 C327 Q328 N329 I330 K331 E332 F333 T334 A335 Q336 N337 L338 G339 K340 L341 F342 M343 A344 Q345 A346 L347 Q348 E349 Y350 N351 N352

• Molecule 48: Eukaryotic translation initiation factor 3 subunit K

Chain s:



MET A2 M3 F4 E5 Q6 M7 R8 A9 N10 V11 G12 K13 L14 L15 K16 G17 I18 D19 R20 Y21 N22 P23 E24 N25 L26 A27 T28 L29 E30 R31 Y32 V33 E34 T35 Q36 A37 K38 E39 N40 A41 Y42 D43 L44 E45 A46 N47 L48 A49 V50 L51 K52 L53 Y54 Q55 F56 N57 P58 A59 F60

F61 Q62 T63 T64 V65 T66 A67 Q68 I69 L70 L71 K72 A73 L74 T75 N76 L77 P78 H79 T80 D81 F82 T83 L84 C85 K86 C87 M88 I89 D90 Q91 A92 H93 Q94 E95 E96 R97 P98 I99 R100 Q101 I102 L103 Y104 L105 G106 D107 L108 L109 E110 T111 C112 H113 F114 Q115 A116 F117 W118 Q119 A120

L121 D122 E123 N124 M125 D126 L127 L128 E129 G130 I131 T132 G133 F134 E135 D136 S137 V138 R139 K140 F141 I142 C143 H144 V145 V146 G147 I148 T149 Y150 Q151 H152 I153 D154 R155 W156 L157 L158 A159 E160 M161 L162 G163 D164 L165 T166 D167 S168 Q169 L170 K171 M172 W173 M174 S175 K176 Y177 G178 W179 S180

A181 D182 E183 S184 G185 Q186 I187 F188 I189 C190 S191 Q192 E193 E194 S195 I196 K197 P198 K199 N200 I201 V202 E203 K204 I205 D206 F207 D208 S209 V210 S211 S212 I213 M214 A215 S216 SER GLN

• Molecule 49: eukaryotic translation initiation factor 3 subunit l

Chain t: 66% 63% 34%

MET SER TYR PRO ALA ASP ASP TYR GLU SER GLU ALA ALA TYR ASP PRO TYR ALA TYR PRO SER ASP TYR ASP MET HIS THR GLY ASP PRO LYS GLN ASP LEU ALA TYR GLU ARG GLN TYR GLU GLN GLN THR TYR GLN VAL ILE PRO GLU VAL ILE LYS ASN PHE ILE GLN TYR PHE HIS

LYS THR VAL SER ASP LEU ILE ASP GLN LYS VAL TYR GLU LEU GLN ALA SER ARG VAL SER SER ASP VAL ILE ASP GLN LYS VAL TYR GLU ILE GLN ASP ILE TYR GLU ASN SER TRP THR LYS LEU THR GLU ARG PHE PHE LYS ASN THR PRO TRP PRO GLU ALA GLU ALA ILE ALA PRO

GLN VAL GLY ASN ASP ALA VAL PHE LEU ILE LEU TYR LYS GLU LEU TYR TYR ARG HIS ILE TYR ALA LYS VAL SER GLY GLY PRO SER LEU GLU GLN ARG PHE GLU SER TYR TYR ASN TYR CYS ASN LEU PHE ASN TYR ILE LEU ASN ALA ASP GLY PRO ALA PRO LEU GLU LEU PRO ASN

Q181 W182 L183 W184 D185 I186 I187 D188 E189 F190 I191 Y192 Q193 F194 Q195 S196 F197 S198 Q199 Y200 R201 C202 K203 T204 A205 K206 K207 S208 E209 E210 E211 I212 D213 F214 L215 R216 S217 N218 P219 K220 I221 W222 N223 V224 H225 S226 V227 L228 N229 V230 L231 H232 S233 L234 V235 D236 K237 S238 N239 I240

N241 R242 Q243 L244 E245 V246 Y247 T248 S249 G250 G251 D252 P253 E254 S255 V256 A257 G258 E259 Y260 G261 R262 H263 S264 L265 Y266 K267 M268 L269 G270 Y271 F272 S273 L274 V275 G276 L277 L278 R279 L280 H281 S282 L283 L284 G285 D286 Y287 Y288 Q289 A290 I291 K292 V293 L294 E295 N296 I297 E298 L299 N300

K301 K302 S303 M304 Y305 S306 R307 V308 P309 E310 C311 Q312 V313 T314 T315 Y316 Y317 Y318 V319 G320 F321 A322 Y323 L324 M325 M326 R327 R328 Y329 Q330 D331 A332 I333 R334 V335 F336 A337 N338 I339 L340 L341 Y342 I343 Q344 R345 T346 K347 S348 M349 F350 Q351 R352 T353 T354 Y355 K356 Y357 E358 M359 I360

N361 K362 Q363 N364 E365 Q366 M367 H368 A369 L370 L371 A372 I373 A374 L375 T376 M377 Y378 P379 M380 R381 I382 D383 E384 S385 I386 H387 L388 Q389 L390 R391 E392 K393 Y394 G395 D396 K397 M398 L399 R400 M401 Q402 K403 G404 D405 P406 Q407 V408 Y409 E410 E411 L412 F413 S414 Y415 S416 C417 P418 K419 F420

L421 S422 P423 V424 V425 P426 N427 Y428 D429 S430 V431 H432 P433 N434 Y435 H436 K437 E438 P439 F440 L441 Q442 Q443 L444 K445 V446 F447 S448 D449 E450 V451 Q452 Q453 Q454 A455 Q456 L457 S458 T459 I460 R461 S462 F463 L464 K465 L466 Y467 T468 T469 M470 P471 V472 A473 K474 L475 A476 G477 F478 L479 D480

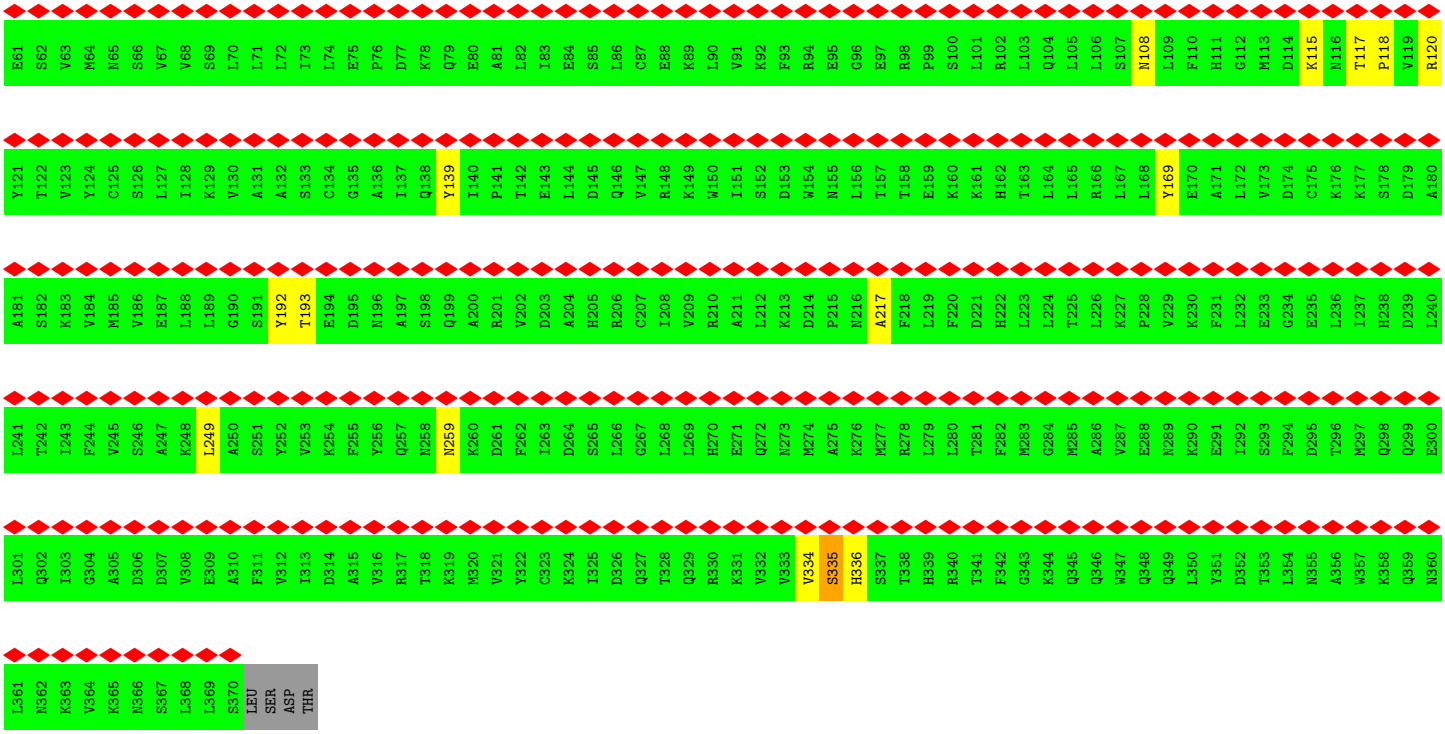
L481 T482 E483 Q484 E485 F486 R487 I488 Q489 L490 L491 V492 F493 K494 H495 K496 M497 K498 N499 L500 V501 W502 T503 S504 G505 I506 S507 A508 L509 D510 G511 E512 F513 Q514 S515 A516 S517 E518 V519 D520 F521 Y522 I523 D524 K525 D526 M527 I528 H529 I530 A531 D532 T533 K534 V535 A536 R537 R538 Y539 G540

D541 F542 F543 I544 R545 Q546 I547 H548 K549 F550 E551 E552 LEU ASN ARG THR LEU LYS LYS MET GLY GLN ARG PRO

• Molecule 50: Eukaryotic translation initiation factor 3 subunit M

Chain u: 98% 93% 5%

MET SER VAL PRO ALA F6 I7 D8 I9 S10 E11 E12 D13 Q14 A15 A16 E17 L18 R19 A20 Y21 L22 K23 S24 K25 G26 A27 E28 I29 S30 E31 E32 N33 S34 E35 G36 G37 L38 H39 V40 D41 L42 A43 Q44 I45 I46 E47 A48 C49 D50 V51 C52 L53 K54 E55 D56 D57 K58 D59 V60


E61 S62 V63 M64 N65 S66 V67 V68 S69 L70 L71 L72 I73 L74 E75 P76 D77 K78 Q79 E80 A81 L82 I83 E84 S85 L86 C87 E88 K89 L90 V91 K92 F93 R94 E95 G96 E97 R98 P99 S100 L101 R102 L103 Q104 L105 L106 S107 N108 L109 F110 H111 G112 M113 D114 K115 N116 T117 P118 V119 R120
Y121 T122 V123 Y124 C125 S126 L127 I128 K129 V130 A131 A132 S133 C134 G135 A136 I137 Q138 Y139 I140 P141 T142 E143 L144 D145 Q146 V147 R148 K149 W150 I151 S152 D153 W154 N155 L156 T157 T158 E159 K160 K161 H162 T163 L164 L165 R166 L167 L168 Y169 E170 A171 L172 V173 D174 C175 K176 K177 S178 D179 A180
A181 S182 K183 V184 M185 V186 E187 L188 L189 G190 S191 Y192 T193 E194 D195 N196 A197 S198 Q199 A200 R201 V202 D203 A204 H205 R206 C207 I208 V209 R210 A211 L212 K213 D214 P215 N216 A217 F218 L219 F220 D221 H222 L223 L224 T225 L226 K227 P228 V229 K230 F231 L232 E233 G234 E235 L236 I237 H238 D239 L240
L241 T242 I243 F244 V245 S246 A247 K248 L249 A250 S251 Y252 V253 K254 F255 Y256 Q257 N258 N259 K260 D261 F262 I263 D264 S265 L266 G267 L268 L269 H270 E271 Q272 N273 M274 A275 K276 M277 R278 L279 L280 T281 F282 M283 G284 M285 A286 V287 E288 N289 K290 E291 I292 S293 P294 D295 T296 M297 Q298 Q299 E300
L301 Q302 I303 G304 A305 D306 D307 V308 E309 A310 F311 V312 I313 D314 A315 V316 R317 T318 K319 M320 V321 Y322 C323 K324 I325 D326 Q327 T328 Q329 R330 K331 V332 V333 V334 S335 H336 S337 T338 H339 R340 T341 F342 G343 K344 Q345 Q346 W347 Q348 Q349 L350 Y351 D352 T353 L354 N355 A356 W357 K358 Q359 N360
L361 N362 K363 V364 K365 N366 S367 L368 L369 S370 LEU SER ASP THR

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	43450	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	26	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.119	Depositor
Minimum map value	-0.073	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.02	Depositor
Map size (Å)	422.40002, 422.40002, 422.40002	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.1, 1.1, 1.1	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: MG, GNP, C4J, SF4, T6A

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	1	1.99	11/1770 (0.6%)	2.43	176/2759 (6.4%)
2	l	1.36	0/241	0.93	0/305
3	C	0.97	0/1680	0.97	1/2283 (0.0%)
4	D	0.86	0/1769	0.96	2/2367 (0.1%)
5	E	0.91	0/1779	0.94	1/2399 (0.0%)
6	F	0.97	0/1793	0.98	0/2412
7	G	0.97	0/2125	0.97	0/2856
8	H	0.99	0/1531	0.93	0/2059
9	I	1.01	0/1947	0.98	4/2590 (0.2%)
10	J	0.96	0/1553	1.00	2/2079 (0.1%)
11	K	1.03	0/1709	1.00	3/2278 (0.1%)
12	L	1.07	0/1523	0.91	2/2031 (0.1%)
13	M	0.96	0/852	1.03	4/1147 (0.3%)
14	N	0.97	0/1319	0.95	0/1761
15	O	0.90	0/968	0.95	0/1296
16	P	0.94	0/1232	0.84	0/1656
17	Q	1.03	0/1029	0.98	0/1380
18	S	1.03	0/1142	0.98	0/1528
19	T	0.99	0/1031	0.93	0/1383
20	V	0.99	0/1132	0.91	0/1517
21	W	0.97	0/832	1.00	0/1117
22	X	1.05	1/627 (0.2%)	1.02	3/839 (0.4%)
23	Y	1.00	0/1051	0.96	0/1406
24	Z	0.99	0/1125	0.95	2/1500 (0.1%)
25	a	1.04	1/1038 (0.1%)	1.06	3/1380 (0.2%)
26	b	1.03	0/802	0.94	0/1076
27	c	0.85	0/673	0.89	2/902 (0.2%)
28	d	1.12	0/508	0.95	0/680
29	e	1.11	0/455	1.08	0/603
30	f	0.98	0/594	1.06	2/786 (0.3%)
31	g	0.91	0/2494	1.04	2/3394 (0.1%)
32	n	0.98	0/605	1.01	2/810 (0.2%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	i	1.09	0/478	0.98	0/628
34	2	1.58	72/41548 (0.2%)	2.39	4296/64753 (6.6%)
35	A	0.79	1/2178 (0.0%)	1.15	11/2935 (0.4%)
36	B	0.91	2/3267 (0.1%)	1.00	4/4415 (0.1%)
37	j	0.72	1/892 (0.1%)	1.16	7/1186 (0.6%)
38	k	1.53	16/4772 (0.3%)	1.71	58/6428 (0.9%)
39	U	1.04	0/1211	0.95	0/1618
40	R	0.99	0/1177	1.00	3/1571 (0.2%)
41	3	0.54	0/1074	1.03	17/1671 (1.0%)
42	m	0.97	0/3015	0.96	4/4078 (0.1%)
43	y	0.70	1/5059 (0.0%)	0.79	13/6832 (0.2%)
44	v	0.86	2/4585 (0.0%)	1.01	12/6185 (0.2%)
45	w	0.95	0/3538	1.01	15/4786 (0.3%)
46	q	0.91	0/2149	0.97	1/2920 (0.0%)
47	r	0.91	0/2675	0.96	3/3609 (0.1%)
48	s	0.88	0/1772	0.88	4/2396 (0.2%)
49	t	0.95	0/3185	0.95	7/4296 (0.2%)
50	u	0.88	0/2963	0.97	3/3998 (0.1%)
All	All	1.23	108/124467 (0.1%)	1.68	4669/176884 (2.6%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	1	3	2
3	C	0	1
4	D	0	1
9	I	0	3
10	J	0	2
11	K	0	2
12	L	0	2
13	M	0	5
17	Q	0	2
18	S	0	2
22	X	0	1
25	a	0	1
26	b	0	1
27	c	0	1
29	e	0	4
30	f	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
33	i	0	3
34	2	1	46
35	A	0	7
36	B	0	8
37	j	0	12
38	k	0	33
39	U	0	3
43	y	0	8
44	v	0	53
45	w	0	10
46	q	0	6
47	r	0	10
48	s	0	1
49	t	0	5
50	u	0	9
All	All	4	245

The worst 5 of 108 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
38	k	455	ILE	C-N	-38.75	0.45	1.34
38	k	562	LEU	C-N	-35.45	0.52	1.34
38	k	378	LEU	C-N	34.34	1.94	1.33
1	1	17	C	O3'-P	32.10	1.99	1.61
38	k	408	ASN	C-N	-28.67	0.68	1.34

The worst 5 of 4669 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
38	k	160	LEU	O-C-N	35.04	178.76	122.70
38	k	531	ARG	C-N-CA	-34.40	35.70	121.70
38	k	531	ARG	CA-C-N	-33.55	43.38	117.20
44	v	762	ASN	C-N-CA	-29.30	60.77	122.30
38	k	378	LEU	CA-C-N	-27.37	61.45	116.20

All (4) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	1	17	C	C3',C2'
1	1	18	G	C3'
34	2	1244	C4J	C4'

5 of 245 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	1	18	G	Sidechain
1	1	26	G	Sidechain
3	C	193	HIS	Peptide
4	D	208	HIS	Peptide
9	I	68	LEU	Peptide

5.2 Too-close contacts (i)

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

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
2	l	23/25 (92%)	23 (100%)	0	0	100 100
3	C	206/208 (99%)	177 (86%)	21 (10%)	8 (4%)	3 27
4	D	213/264 (81%)	186 (87%)	21 (10%)	6 (3%)	5 34
5	E	224/226 (99%)	208 (93%)	14 (6%)	2 (1%)	17 57
6	F	225/227 (99%)	202 (90%)	14 (6%)	9 (4%)	3 26
7	G	261/263 (99%)	233 (89%)	24 (9%)	4 (2%)	10 47
8	H	189/191 (99%)	169 (89%)	17 (9%)	3 (2%)	9 46
9	I	235/237 (99%)	209 (89%)	22 (9%)	4 (2%)	9 45
10	J	188/190 (99%)	161 (86%)	18 (10%)	9 (5%)	2 22
11	K	204/206 (99%)	178 (87%)	20 (10%)	6 (3%)	4 33
12	L	180/182 (99%)	167 (93%)	11 (6%)	2 (1%)	14 53
13	M	96/98 (98%)	74 (77%)	16 (17%)	6 (6%)	1 17
14	N	156/158 (99%)	130 (83%)	22 (14%)	4 (3%)	5 35
15	O	122/132 (92%)	105 (86%)	13 (11%)	4 (3%)	4 31

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
16	P	148/150 (99%)	130 (88%)	11 (7%)	7 (5%)	2 22
17	Q	134/151 (89%)	119 (89%)	12 (9%)	3 (2%)	6 39
18	S	139/141 (99%)	126 (91%)	11 (8%)	2 (1%)	11 48
19	T	124/135 (92%)	112 (90%)	8 (6%)	4 (3%)	4 31
20	V	139/145 (96%)	128 (92%)	8 (6%)	3 (2%)	6 39
21	W	102/119 (86%)	93 (91%)	9 (9%)	0	100 100
22	X	80/82 (98%)	71 (89%)	7 (9%)	2 (2%)	5 36
23	Y	127/130 (98%)	117 (92%)	6 (5%)	4 (3%)	4 32
24	Z	140/142 (99%)	129 (92%)	7 (5%)	4 (3%)	4 33
25	a	124/133 (93%)	104 (84%)	10 (8%)	10 (8%)	1 11
26	b	97/115 (84%)	86 (89%)	10 (10%)	1 (1%)	15 55
27	c	82/84 (98%)	56 (68%)	16 (20%)	10 (12%)	0 5
28	d	62/69 (90%)	57 (92%)	4 (6%)	1 (2%)	9 46
29	e	51/53 (96%)	40 (78%)	7 (14%)	4 (8%)	1 11
30	f	69/71 (97%)	51 (74%)	12 (17%)	6 (9%)	1 9
31	g	311/313 (99%)	273 (88%)	33 (11%)	5 (2%)	9 46
32	n	73/75 (97%)	69 (94%)	3 (4%)	1 (1%)	11 48
33	i	57/59 (97%)	49 (86%)	7 (12%)	1 (2%)	8 43
35	A	264/266 (99%)	233 (88%)	25 (10%)	6 (2%)	6 38
36	B	420/422 (100%)	352 (84%)	48 (11%)	20 (5%)	2 22
37	j	107/144 (74%)	64 (60%)	27 (25%)	16 (15%)	0 3
38	k	577/595 (97%)	431 (75%)	95 (16%)	51 (9%)	1 9
39	U	141/152 (93%)	123 (87%)	12 (8%)	6 (4%)	2 24
40	R	138/145 (95%)	107 (78%)	18 (13%)	13 (9%)	0 8
42	m	363/548 (66%)	336 (93%)	25 (7%)	2 (1%)	25 64
43	y	601/1350 (44%)	457 (76%)	85 (14%)	59 (10%)	0 8
44	v	548/913 (60%)	446 (81%)	72 (13%)	30 (6%)	2 19
45	w	417/445 (94%)	349 (84%)	57 (14%)	11 (3%)	5 35
46	q	270/272 (99%)	226 (84%)	32 (12%)	12 (4%)	2 23
47	r	322/352 (92%)	267 (83%)	42 (13%)	13 (4%)	3 26
48	s	213/218 (98%)	201 (94%)	10 (5%)	2 (1%)	17 57

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
49	t	370/564 (66%)	328 (89%)	38 (10%)	4 (1%)	14 53
50	u	363/374 (97%)	308 (85%)	47 (13%)	8 (2%)	6 39
All	All	9695/11534 (84%)	8260 (85%)	1047 (11%)	388 (4%)	5 26

5 of 388 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	C	191	ARG
4	D	78	GLU
4	D	209	ASP
6	F	3	VAL
6	F	193	ASP

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
2	l	24/24 (100%)	23 (96%)	1 (4%)	30 63
3	C	174/174 (100%)	173 (99%)	1 (1%)	86 94
4	D	196/231 (85%)	192 (98%)	4 (2%)	55 79
5	E	187/187 (100%)	184 (98%)	3 (2%)	62 83
6	F	190/190 (100%)	187 (98%)	3 (2%)	62 83
7	G	225/225 (100%)	225 (100%)	0	100 100
8	H	161/161 (100%)	159 (99%)	2 (1%)	71 87
9	I	207/207 (100%)	206 (100%)	1 (0%)	88 95
10	J	170/170 (100%)	170 (100%)	0	100 100
11	K	177/177 (100%)	176 (99%)	1 (1%)	86 94
12	L	157/157 (100%)	155 (99%)	2 (1%)	69 86
13	M	89/89 (100%)	89 (100%)	0	100 100
14	N	142/142 (100%)	136 (96%)	6 (4%)	30 63
15	O	104/108 (96%)	100 (96%)	4 (4%)	33 66

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
16	P	130/130 (100%)	126 (97%)	4 (3%)	40 71
17	Q	106/119 (89%)	105 (99%)	1 (1%)	78 90
18	S	117/117 (100%)	115 (98%)	2 (2%)	60 82
19	T	114/121 (94%)	114 (100%)	0	100 100
20	V	113/116 (97%)	113 (100%)	0	100 100
21	W	94/107 (88%)	93 (99%)	1 (1%)	73 88
22	X	67/67 (100%)	67 (100%)	0	100 100
23	Y	112/113 (99%)	112 (100%)	0	100 100
24	Z	114/114 (100%)	113 (99%)	1 (1%)	78 90
25	a	108/115 (94%)	101 (94%)	7 (6%)	17 51
26	b	87/99 (88%)	86 (99%)	1 (1%)	73 88
27	c	76/76 (100%)	73 (96%)	3 (4%)	32 65
28	d	57/62 (92%)	57 (100%)	0	100 100
29	e	47/47 (100%)	45 (96%)	2 (4%)	29 63
30	f	64/64 (100%)	63 (98%)	1 (2%)	62 83
31	g	272/272 (100%)	271 (100%)	1 (0%)	91 97
32	n	66/66 (100%)	65 (98%)	1 (2%)	65 84
33	i	49/49 (100%)	47 (96%)	2 (4%)	30 64
35	A	238/238 (100%)	231 (97%)	7 (3%)	42 72
36	B	354/354 (100%)	328 (93%)	26 (7%)	14 46
37	j	92/123 (75%)	69 (75%)	23 (25%)	0 4
38	k	523/523 (100%)	466 (89%)	57 (11%)	6 32
39	U	125/132 (95%)	120 (96%)	5 (4%)	31 65
40	R	126/130 (97%)	119 (94%)	7 (6%)	21 56
42	m	329/494 (67%)	327 (99%)	2 (1%)	86 94
43	y	554/1233 (45%)	467 (84%)	87 (16%)	2 17
44	v	501/812 (62%)	489 (98%)	12 (2%)	49 75
45	w	384/406 (95%)	380 (99%)	4 (1%)	76 88
46	q	239/239 (100%)	237 (99%)	2 (1%)	81 91
47	r	293/310 (94%)	290 (99%)	3 (1%)	76 88
48	s	190/193 (98%)	190 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
49	t	342/515 (66%)	341 (100%)	1 (0%)	92 97
50	u	327/335 (98%)	327 (100%)	0	100 100
All	All	8613/10133 (85%)	8322 (97%)	291 (3%)	40 69

5 of 291 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
43	y	237	LEU
46	q	249	VAL
43	y	265	LYS
43	y	347	ILE
37	j	52	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 66 such sidechains are listed below:

Mol	Chain	Res	Type
44	v	701	HIS
45	w	348	HIS
49	t	495	HIS
42	m	377	HIS
42	m	296	ASN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	74/75 (98%)	13 (17%)	3 (4%)
34	2	1735/1863 (93%)	248 (14%)	8 (0%)
41	3	44/45 (97%)	29 (65%)	2 (4%)
All	All	1853/1983 (93%)	290 (15%)	13 (0%)

5 of 290 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	9	U
1	1	11	G
1	1	15	A
1	1	16	G
1	1	17	C

5 of 13 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
34	2	1112	C
34	2	1270	G
41	3	39	U
34	2	1857	A
41	3	36	A

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

2 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	$\#\|Z\| > 2$
34	C4J	2	1244	34	24,29,30	0.78	1 (4%)	29,42,45	1.03	1 (3%)
1	T6A	1	37	1	27,34,35	1.05	2 (7%)	29,49,52	2.65	9 (31%)

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
34	C4J	2	1244	34	1/1/7/7	9/16/34/35	0/2/2/2
1	T6A	1	37	1	-	6/19/41/42	0/3/3/3

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	37	T6A	C5-C4	2.54	1.47	1.40
1	1	37	T6A	O4'-C1'	2.20	1.44	1.41
34	2	1244	C4J	C1'-C5	-2.10	1.45	1.50

The worst 5 of 10 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	37	T6A	C12-N11-C10	8.53	136.15	121.94
1	1	37	T6A	C2-N1-C6	7.05	122.64	116.59
1	1	37	T6A	C14-C12-C13	3.72	116.53	110.19
1	1	37	T6A	N3-C2-N1	-3.61	123.04	128.68
34	2	1244	C4J	C4-N3-C2	-3.45	121.10	125.46

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
34	2	1244	C4J	C4'

5 of 15 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	1	37	T6A	C14-C12-N11-C10
34	2	1244	C4J	C31-C3-N3-C2
34	2	1244	C4J	C31-C3-N3-C4
34	2	1244	C4J	N3-C3-C31-C32
34	2	1244	C4J	C3-C31-C32-C34

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 5 ligands modelled in this entry, 1 is monoatomic - leaving 4 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	$\#\|Z\| > 2$
53	GNP	k	705	-	29,34,34	1.77	6 (20%)	33,54,54	2.16	6 (18%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
53	GNP	k	704	52	29,34,34	1.76	6 (20%)	33,54,54	2.15	6 (18%)
51	SF4	k	702	38	0,12,12	-	-	-		
51	SF4	k	701	38	0,12,12	-	-	-		

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
53	GNP	k	705	-	-	5/14/38/38	0/3/3/3
53	GNP	k	704	52	-	6/14/38/38	0/3/3/3
51	SF4	k	702	38	-	-	0/6/5/5
51	SF4	k	701	38	-	-	0/6/5/5

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

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
53	k	705	GNP	PG-O2G	-4.55	1.44	1.56
53	k	704	GNP	PG-O2G	-4.54	1.44	1.56
53	k	704	GNP	C6-N1	4.07	1.40	1.33
53	k	705	GNP	PB-O2B	-4.01	1.45	1.56
53	k	705	GNP	C6-N1	3.84	1.39	1.33

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

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
53	k	704	GNP	C5-C6-N1	-7.91	112.62	123.43
53	k	705	GNP	C5-C6-N1	-7.87	112.67	123.43
53	k	705	GNP	C2-N1-C6	6.08	125.59	115.93
53	k	704	GNP	C2-N1-C6	6.02	125.49	115.93
53	k	705	GNP	N3-C2-N1	-3.76	122.21	127.22

There are no chirality outliers.

5 of 11 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
53	k	704	GNP	PG-N3B-PB-O1B
53	k	704	GNP	PG-N3B-PB-O3A
53	k	704	GNP	PA-O3A-PB-O1B
53	k	704	GNP	PA-O3A-PB-O2B

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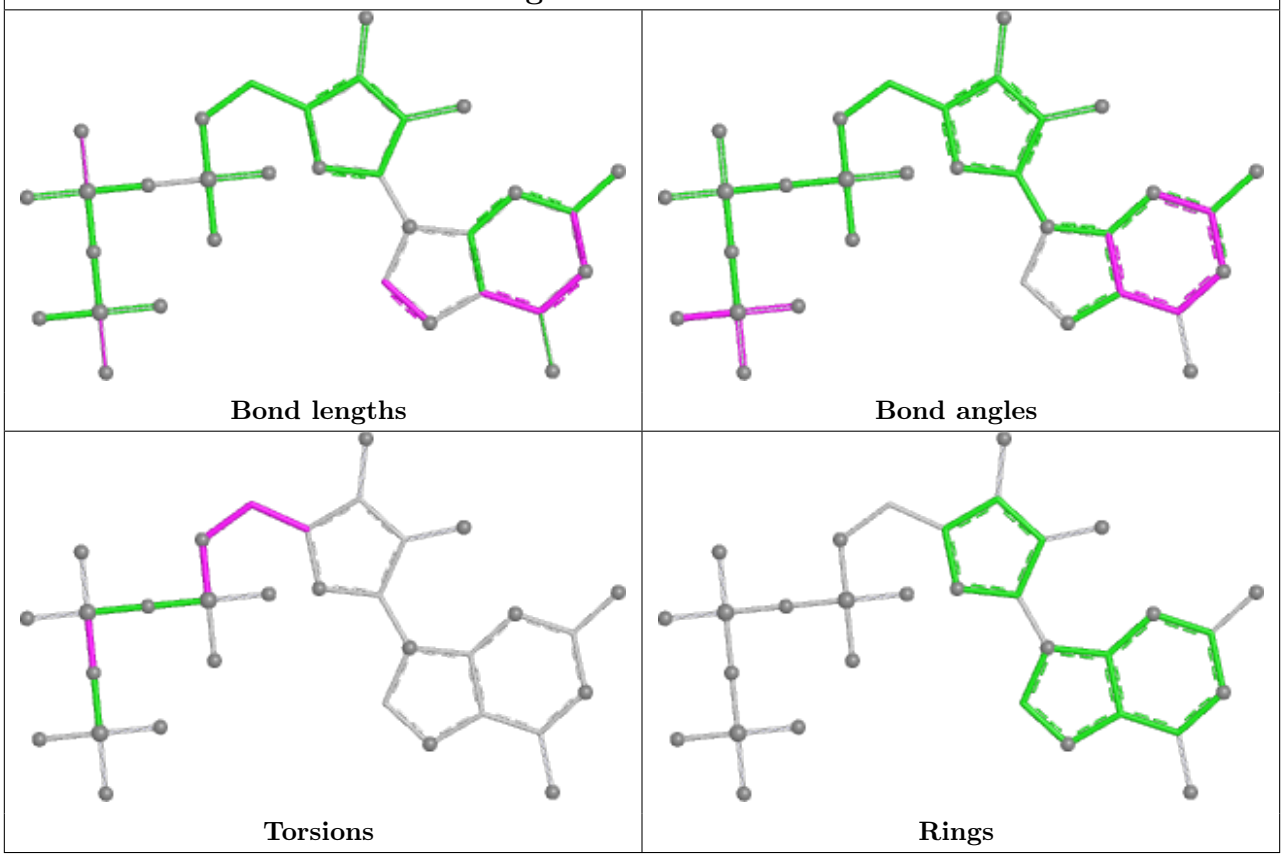
Mol	Chain	Res	Type	Atoms
53	k	705	GNP	PG-N3B-PB-O1B

There are no ring outliers.

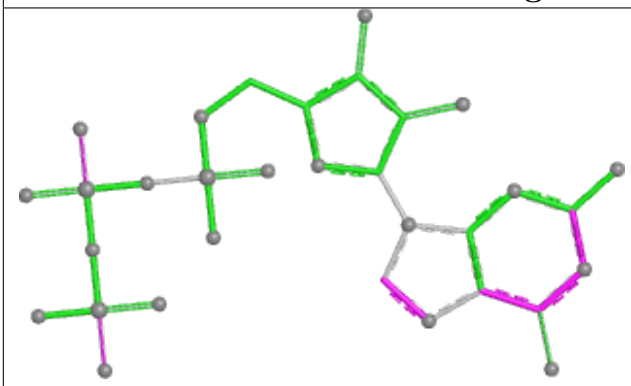
No monomer is involved in short contacts.

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.

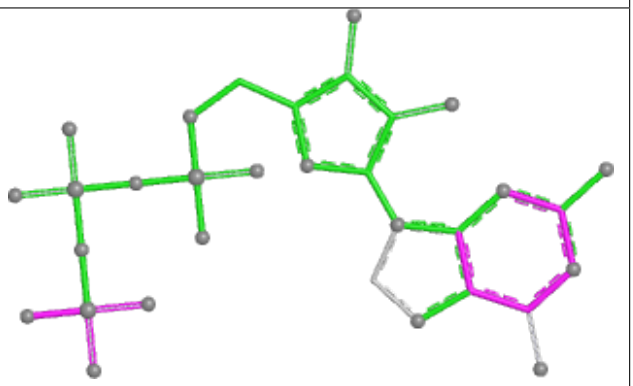
Ligand GNP k 705



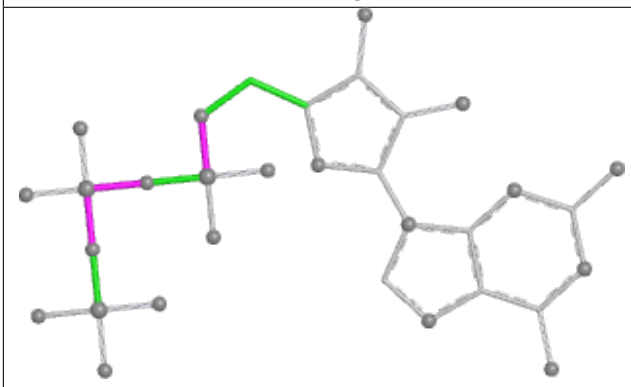
Ligand GNP k 704



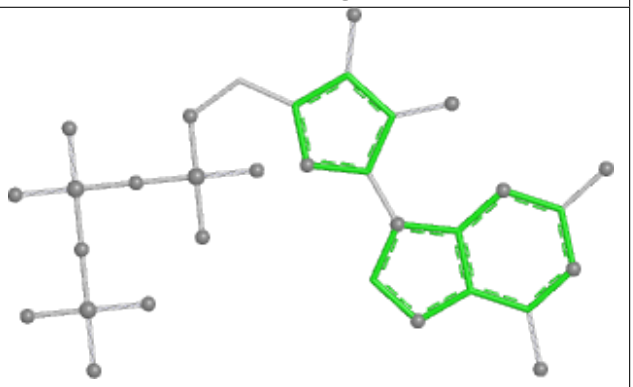
Bond lengths



Bond angles



Torsions



Rings

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

The following chains have linkage breaks:

Mol	Chain	Number of breaks
38	k	23
34	2	4
44	v	4
1	1	2
39	U	1
25	a	1
37	j	1

The worst 5 of 36 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	2	730:C	O3'	731:C	P	8.58
1	k	521:ASP	C	522:PHE	N	2.98
1	U	142:ARG	C	143:GLY	N	2.92
1	k	451:ILE	C	452:GLU	N	2.79
1	k	373:GLU	C	374:ILE	N	2.70

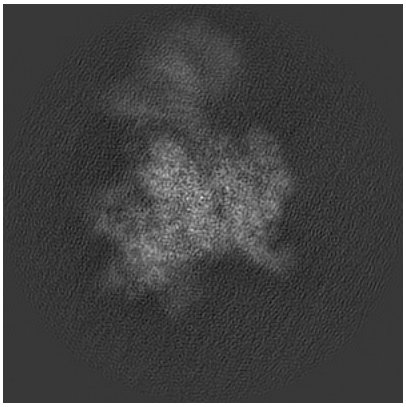
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-10761. These allow visual inspection of the internal detail of the map and identification of artifacts.

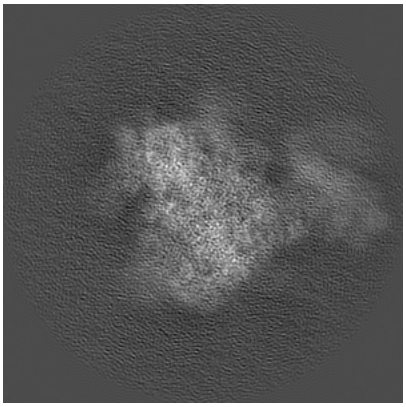
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

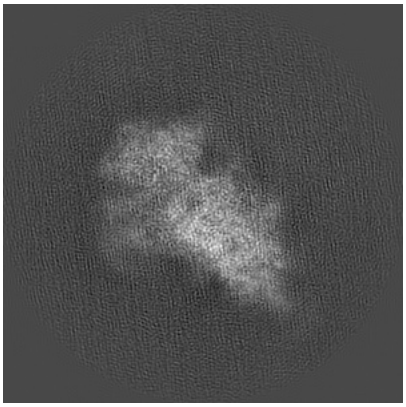
6.1.1 Primary map



X



Y

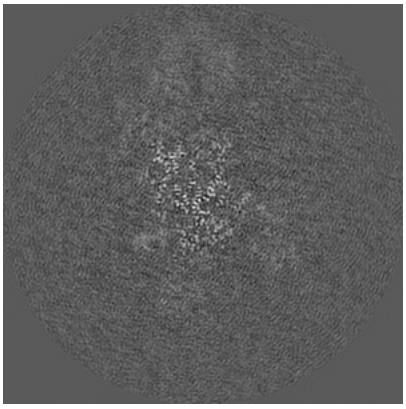


Z

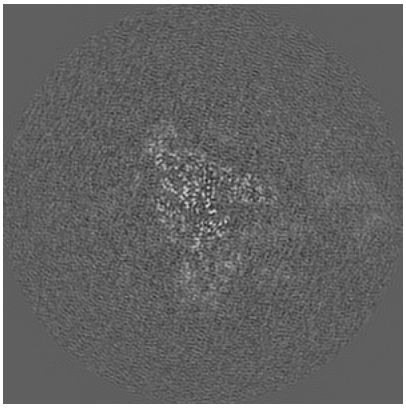
The images above show the map projected in three orthogonal directions.

6.2 Central slices

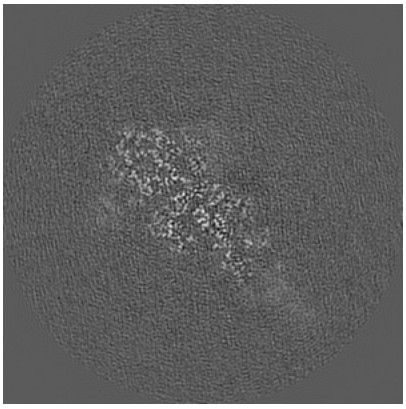
6.2.1 Primary map



X Index: 192



Y Index: 192

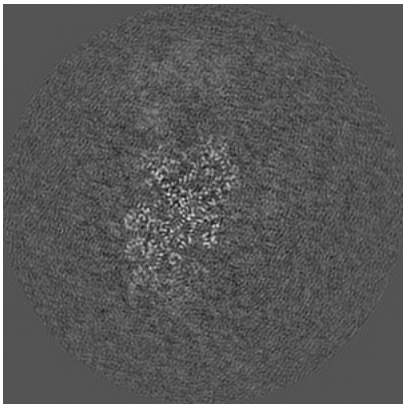


Z Index: 192

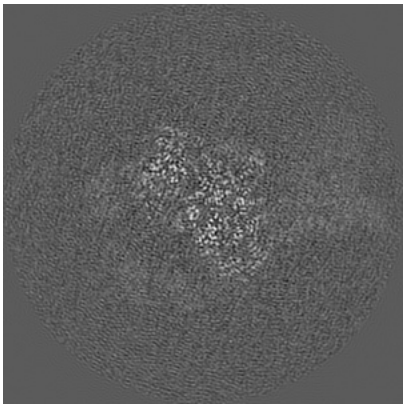
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

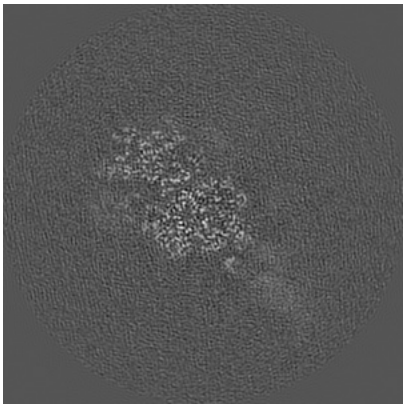
6.3.1 Primary map



X Index: 210



Y Index: 165

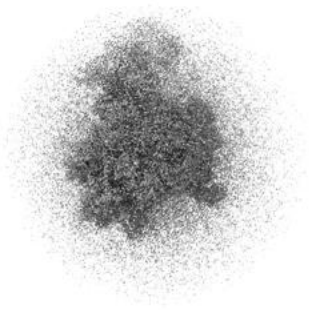


Z Index: 199

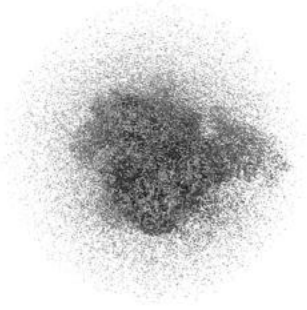
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views (i)

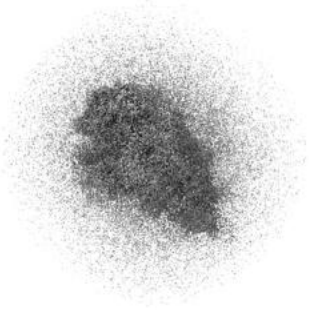
6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.02. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

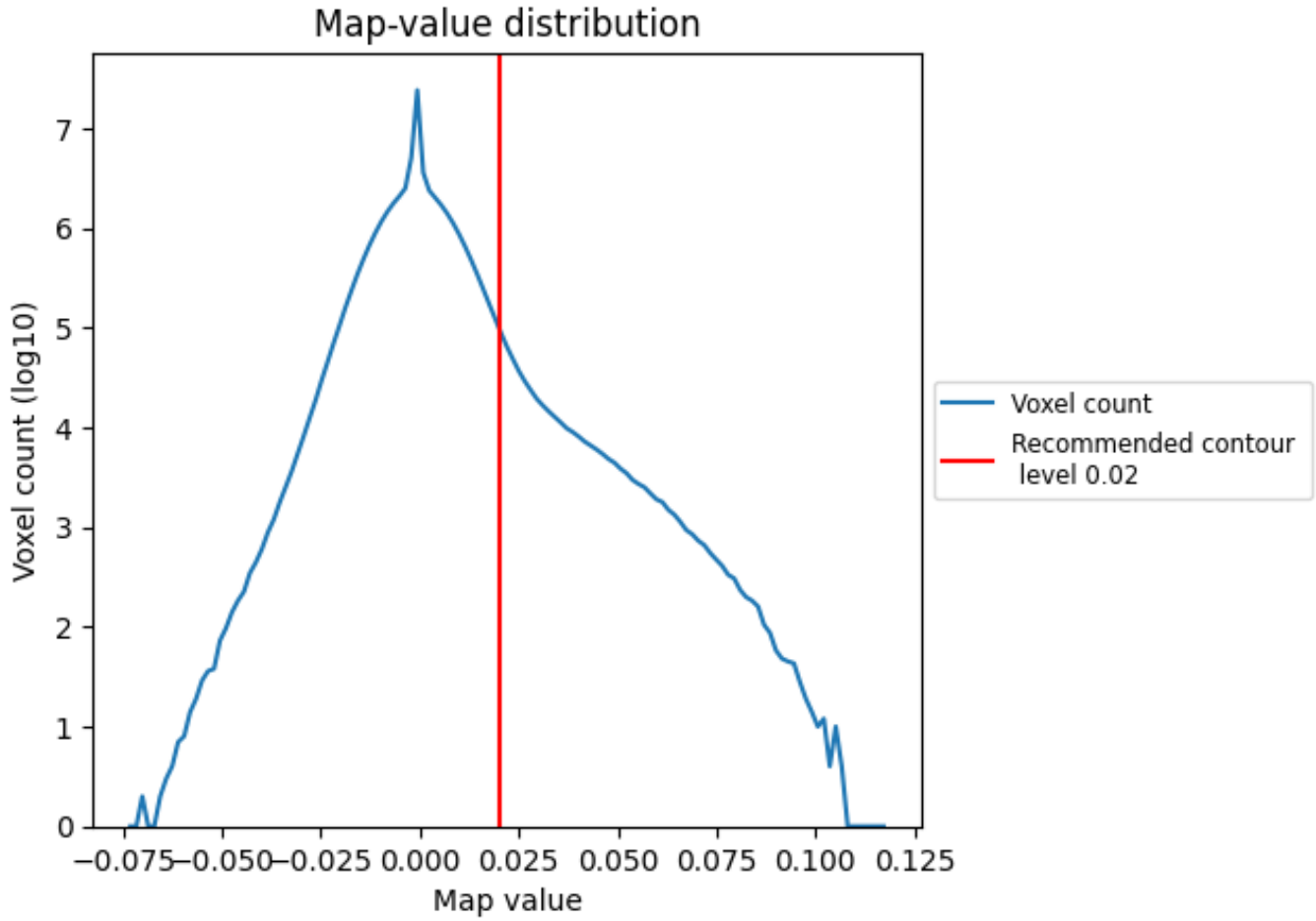
6.5 Mask visualisation (i)

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

7 Map analysis

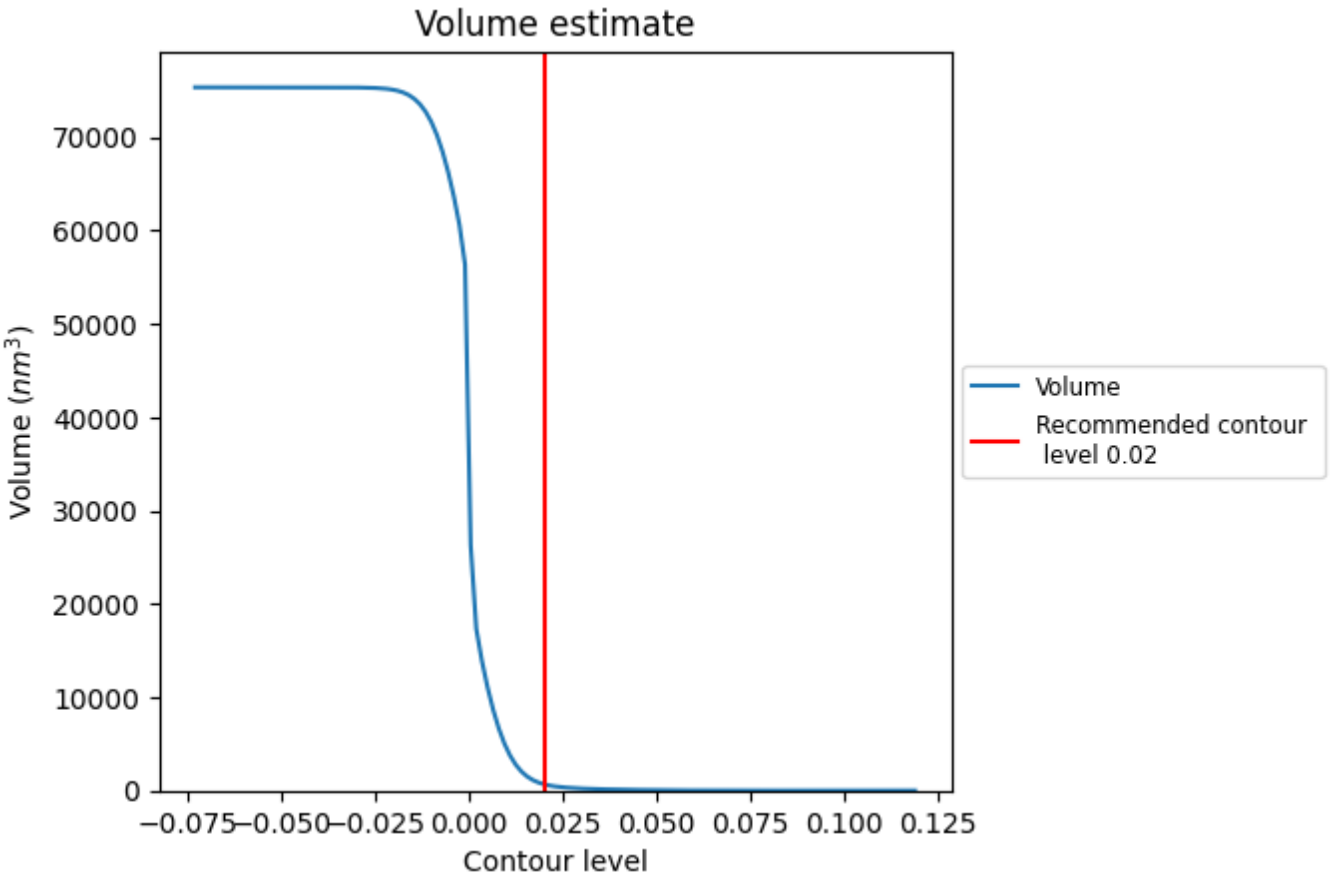
This section contains the results of statistical analysis of the map.

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.

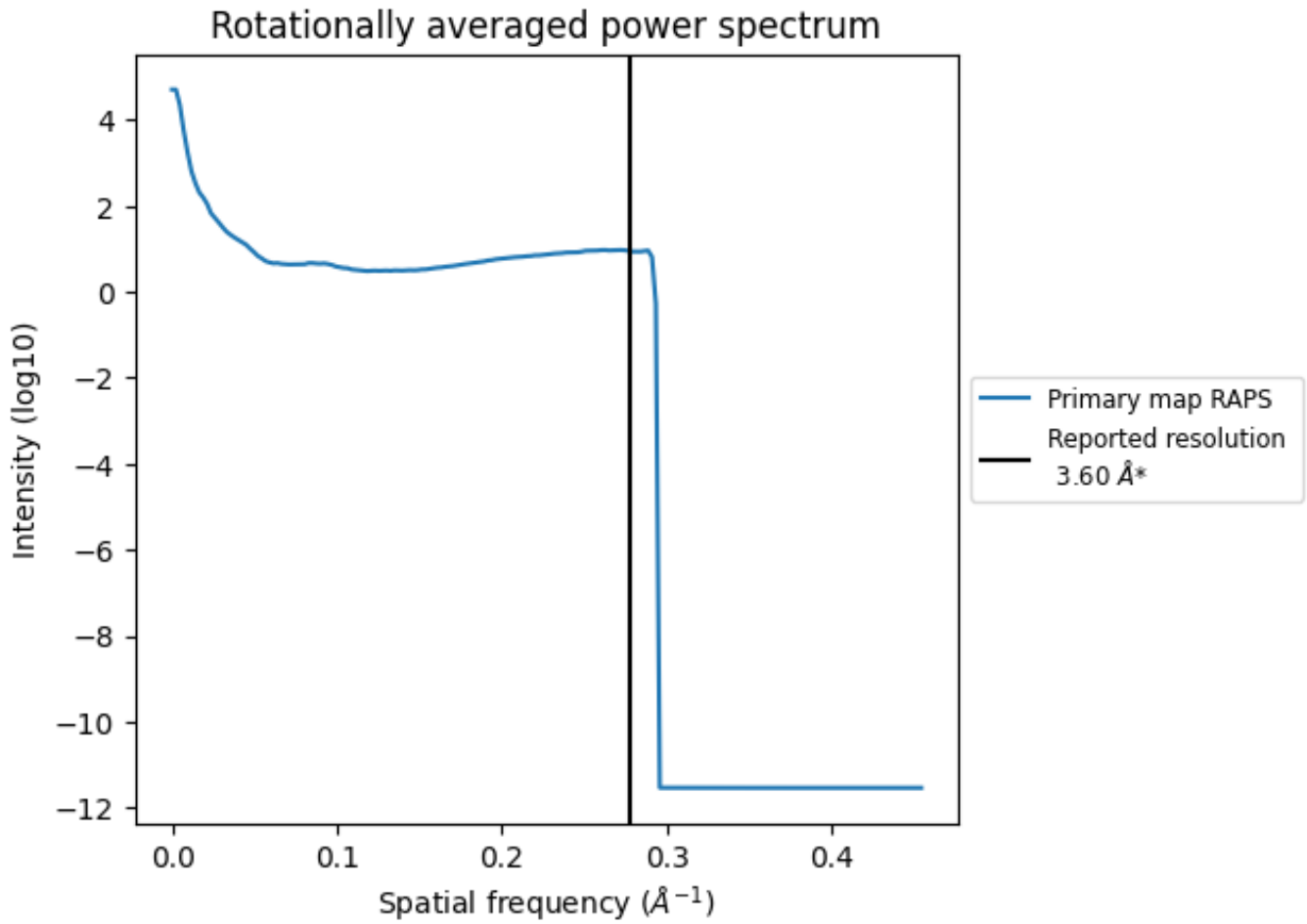
7.2 Volume estimate (i)



The volume at the recommended contour level is 665 nm^3; this corresponds to an approximate mass of 600 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 0.278 Å^{-1}

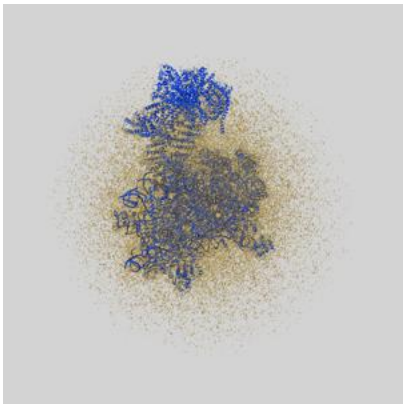
8 Fourier-Shell correlation (i)

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

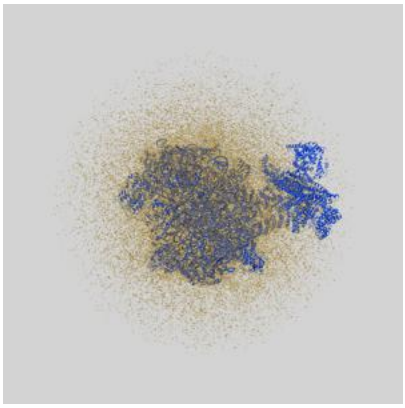
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-10761 and PDB model 6YAM. Per-residue inclusion information can be found in section 3 on page 14.

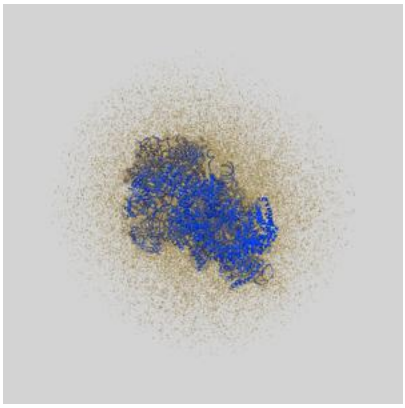
9.1 Map-model overlay



X



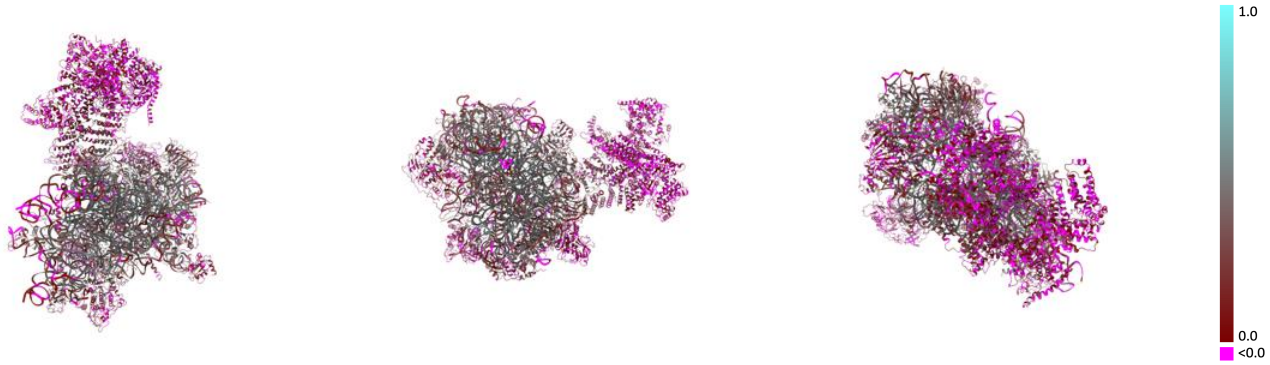
Y



Z

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

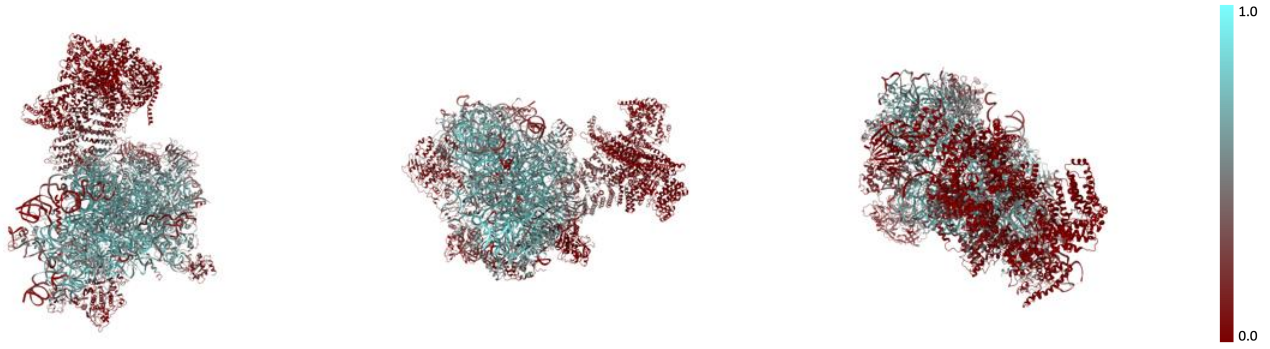
9.2 Q-score mapped to coordinate model



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.

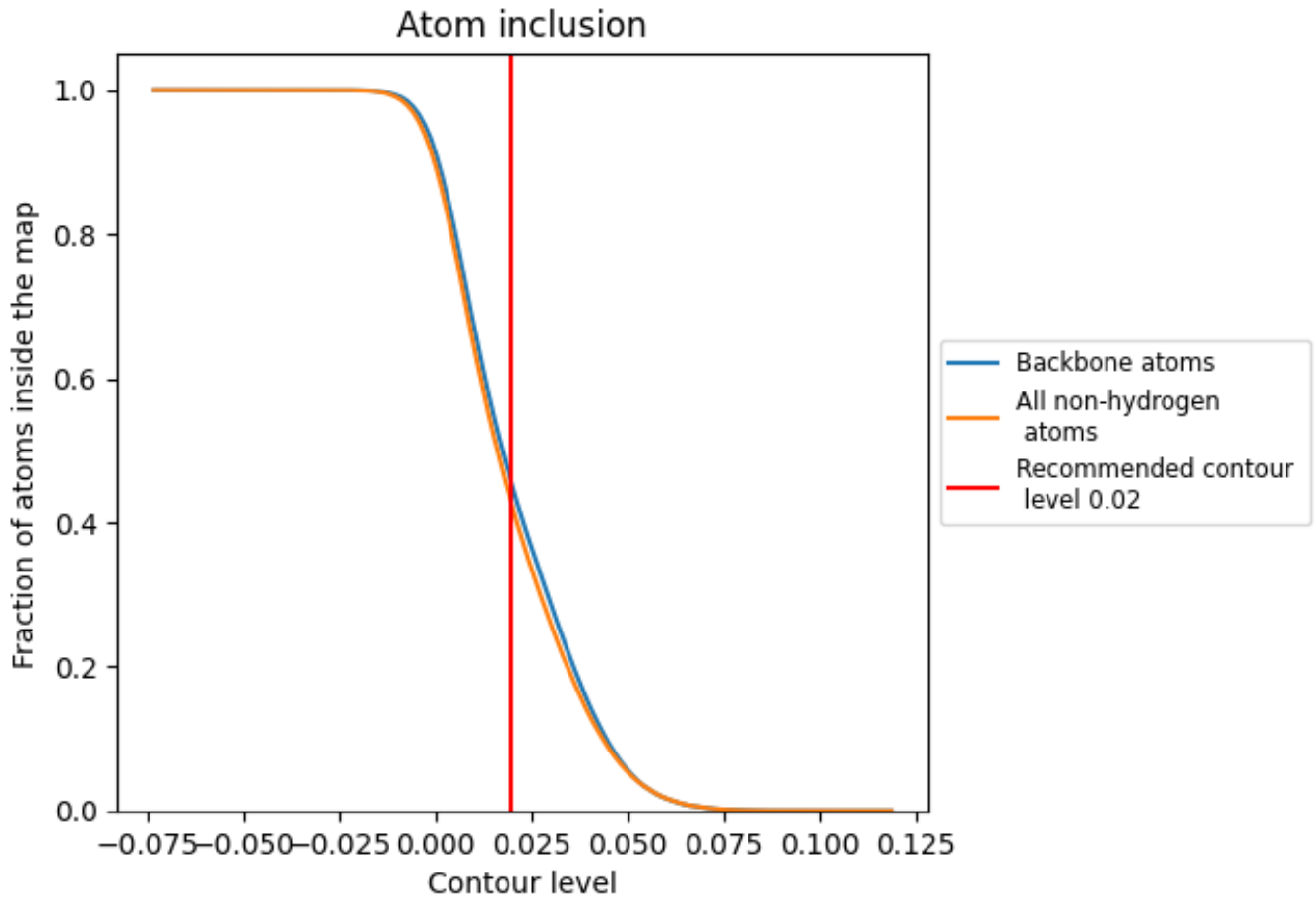
9.3 Atom inclusion mapped to coordinate model



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 (0.02).

9.4 Atom inclusion (i)



At the recommended contour level, 45% of all backbone atoms, 42% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.02) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.4235	0.2570
1	0.3488	0.1490
2	0.6964	0.3870
3	0.1615	0.0600
A	0.1177	0.1080
B	0.0243	0.0050
C	0.6030	0.3790
D	0.5458	0.3610
E	0.6357	0.4040
F	0.5000	0.3230
G	0.6067	0.3860
H	0.5756	0.3590
I	0.4208	0.2830
J	0.3604	0.2360
K	0.5102	0.3180
L	0.6149	0.3760
M	0.4888	0.2770
N	0.5551	0.3550
O	0.1388	0.0940
P	0.5751	0.3590
Q	0.5714	0.3550
R	0.4472	0.2960
S	0.6057	0.3790
T	0.4874	0.2970
U	0.5170	0.3340
V	0.5883	0.3760
W	0.4869	0.3130
X	0.5809	0.3810
Y	0.6950	0.4320
Z	0.6583	0.4060
a	0.5156	0.3190
b	0.6539	0.4120
c	0.4992	0.3270
d	0.5226	0.3360
e	0.5152	0.2410

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Chain	Atom inclusion	Q-score
f	0.1922	0.1410
g	0.4214	0.2840
i	0.4079	0.2680
j	0.2649	0.2090
k	0.1383	0.1510
l	0.5114	0.3240
m	0.0208	0.0430
n	0.4281	0.2780
q	0.0164	0.0020
r	0.0147	-0.0050
s	0.0006	0.0140
t	0.0033	0.0140
u	0.0090	0.0180
v	0.1509	0.1240
w	0.0330	0.0340
y	0.1504	0.1290