wwPDB EM Validation Summary Report ⓘ

Dec 8, 2025 – 01:11 PM JST

PDB ID	:	9KKF / pdb_00009kkf
EMDB ID	:	EMD-62386
Title	:	Structure of the human 40S ribosome complexed with HCV IRES and eIF3
Authors	:	Iwasaki, W.; Kashiwagi, K.; Sakamoto, A.; Nishimoto, M.; Takahashi, M.; Machida, K.; Imataka, H.; Matsumoto, A.; Shichino, Y.; Iwasaki, S.; Imami, K.; Ito, T.
Deposited on	:	2024-11-13
Resolution	:	3.30 Å(reported)

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

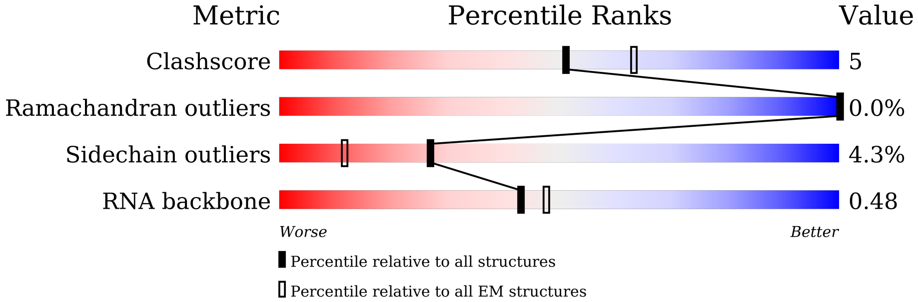
EMDB validation analysis	:	0.0.1.dev129
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.47

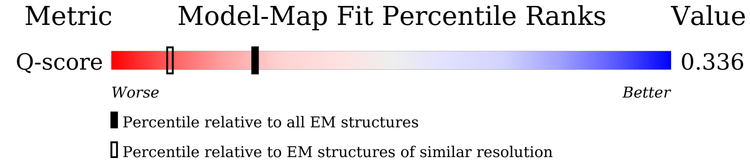
1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.30 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)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	15087 (2.80 - 3.80)

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	SA	295	
2	SB	264	
3	SC	293	

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Mol	Chain	Length	Quality of chain
4	SD	243	80% 12% • 7%
5	SE	263	86% 13% •
6	SF	204	84% 9% 6%
7	SG	249	83% 12% 5%
8	SH	194	80% 13% • •
9	SI	208	86% 12% •
10	SJ	194	82% 11% 7%
11	SK	165	42% 14% • 42%
12	SL	158	83% 11% • 5%
13	Sf	132	• 68% 21% • 8%
14	SN	151	88% 11% •
15	SO	151	74% 15% 11%
16	SP	145	71% 11% 18%
17	SQ	146	76% 19% • •
18	SR	135	80% 16% • •
19	SS	152	74% 18% • 6%
20	ST	145	83% 14% • •
21	SU	119	71% 13% • 15%
22	SV	83	87% 13%
23	SW	130	91% 8% • •
24	SX	143	81% 17% • •
25	SY	133	81% 11% • 7%
26	SZ	125	46% 13% • 40%
27	Sa	115	80% 7% 13%
28	Sb	84	85% 14% •

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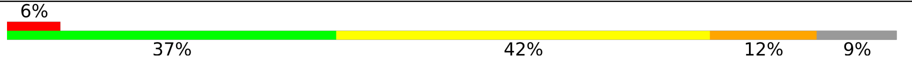
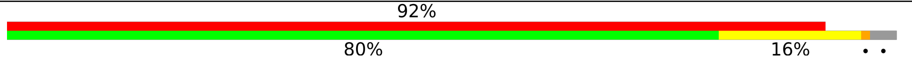
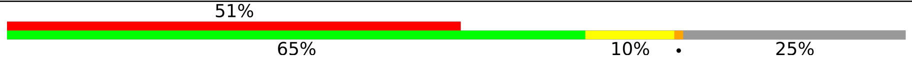
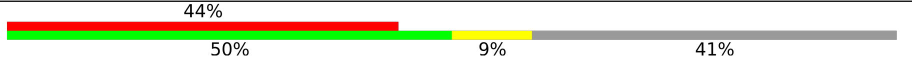
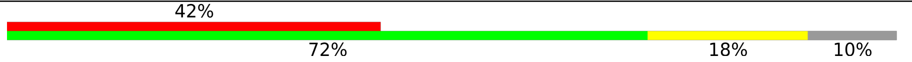
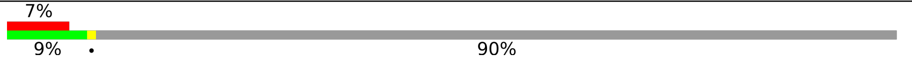
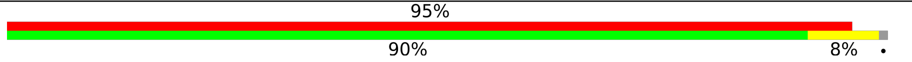
Mol	Chain	Length	Quality of chain
29	Sc	69	 70% 20% 10%
30	Sd	56	 80% 18% •
31	Se	59	 76% 12% 12%
32	sh	156	 • 31% 10% 59%
33	Sg	317	 75% 22% • •
34	Ln	25	 88% 8% •
35	S2	1869	 61% 30% • 6%
36	zz	332	 6% 37% 42% 12% 9%
37	3m	374	 92% 80% 16% • •
38	3f	357	 51% 65% 10% • 25%
39	3a	1382	 26% 35% 7% 57%
40	3e	445	 82% 89% 7% •
41	3c	913	 44% 50% 9% 41%
42	3h	352	 42% 72% 18% 10%
43	3d	548	 7% 9% • 90%
44	3k	218	 95% 90% 8% •
45	3l	564	 85% 69% 22% • 8%

2 Entry composition

There are 47 unique types of molecules in this entry. The entry contains 108043 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 Small ribosomal subunit protein uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	SA	216	1705	1083	299	315	8	0	0

- Molecule 2 is a protein called 40S ribosomal protein S3a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	SB	212	1722	1093	308	307	14	0	0

- Molecule 3 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	SC	219	1700	1100	292	298	10	0	0

- Molecule 4 is a protein called 40S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	SD	226	1756	1119	316	314	7	0	0

- Molecule 5 is a protein called 40S ribosomal protein S4, X isoform.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	SE	260	2065	1319	384	354	8	0	0

- Molecule 6 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	SF	192	1518	948	287	276	7	0	0

- Molecule 7 is a protein called 40S ribosomal protein S6.

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

- Molecule 8 is a protein called 40S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	SH	187	Total	C	N	O	S	0	0
			1506	961	277	267	1		

- Molecule 9 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	SI	205	Total	C	N	O	S	0	0
			1682	1056	331	290	5		

- Molecule 10 is a protein called 40S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	SJ	180	Total	C	N	O	S	0	0
			1499	955	300	242	2		

- Molecule 11 is a protein called 40S ribosomal protein S10.

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

- Molecule 12 is a protein called 40S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	SL	150	Total	C	N	O	S	0	0
			1220	776	228	210	6		

- Molecule 13 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	Sf	121	Total	C	N	O	S	0	0
			935	586	165	175	9		

- Molecule 14 is a protein called 40S ribosomal protein S13.

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

- Molecule 15 is a protein called 40S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
15	SO	135	1007	617	198	186	6	0	0

- Molecule 16 is a protein called 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	SP	119	984	625	187	165	7	0	0

- Molecule 17 is a protein called 40S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
17	SQ	140	1116	710	211	192	3	0	0

- Molecule 18 is a protein called 40S ribosomal protein S17.

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

- Molecule 19 is a protein called 40S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
19	SS	143	1184	743	240	200	1	0	0

- Molecule 20 is a protein called 40S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	ST	142	1103	691	212	197	3	0	0

- Molecule 21 is a protein called 40S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
21	SU	101	803	504	153	142	4	0	0

- Molecule 22 is a protein called 40S ribosomal protein S21.

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

- Molecule 23 is a protein called 40S ribosomal protein S15a.

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

- Molecule 24 is a protein called 40S ribosomal protein S23.

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

- Molecule 25 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	SY	124	1014	641	198	170	5	0	0

- Molecule 26 is a protein called 40S ribosomal protein S25.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
26	SZ	75	601	385	111	104	1	0	0

- Molecule 27 is a protein called 40S ribosomal protein S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	Sa	100	803	501	166	131	5	0	0

- Molecule 28 is a protein called 40S ribosomal protein S27.

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

- Molecule 29 is a protein called 40S ribosomal protein S28.

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
31	Se	52	417	259	92	65	1	0	0

- Molecule 32 is a protein called Ubiquitin-40S ribosomal protein S27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
32	sh	64	522	329	99	87	7	0	0

- Molecule 33 is a protein called Receptor of activated protein C kinase 1.

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

- Molecule 34 is a protein called 60S ribosomal protein L41.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
34	Ln	24	230	139	62	26	3	0	0

- Molecule 35 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	S2	1759	Total 37669	C 16814	N 6767	O 12324	P 1764	6	0

- Molecule 36 is a RNA chain called HCV-IRES RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	zz	302	Total 6443	C 2871	N 1148	O 2122	P 302	0	0

- Molecule 37 is a protein called Eukaryotic translation initiation factor 3 subunit M.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	3m	363	Total 2639	C 1666	N 450	O 511	S 12	0	0

- Molecule 38 is a protein called Eukaryotic translation initiation factor 3 subunit F.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	3f	269	Total 2063	C 1303	N 354	O 394	S 12	0	0

- Molecule 39 is a protein called Eukaryotic translation initiation factor 3 subunit A.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	3a	592	Total 4497	C 2849	N 805	O 822	S 21	0	0

- Molecule 40 is a protein called Eukaryotic translation initiation factor 3 subunit E.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	3e	430	Total 3224	C 2053	N 561	O 594	S 16	0	0

- Molecule 41 is a protein called Eukaryotic translation initiation factor 3 subunit C.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	3c	543	Total 3924	C 2463	N 721	O 716	S 24	0	0

- Molecule 42 is a protein called Eukaryotic translation initiation factor 3 subunit H.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	3h	318	2520	1599	431	475	15	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
43	3d	55	347	222	65	59	1	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
44	3k	215	1475	932	251	282	10	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
45	3l	520	4335	2808	715	793	19	0	0

- Molecule 46 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
			Total	Zn	
46	Sa	1	1	1	0
46	sh	1	1	1	0

- Molecule 47 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

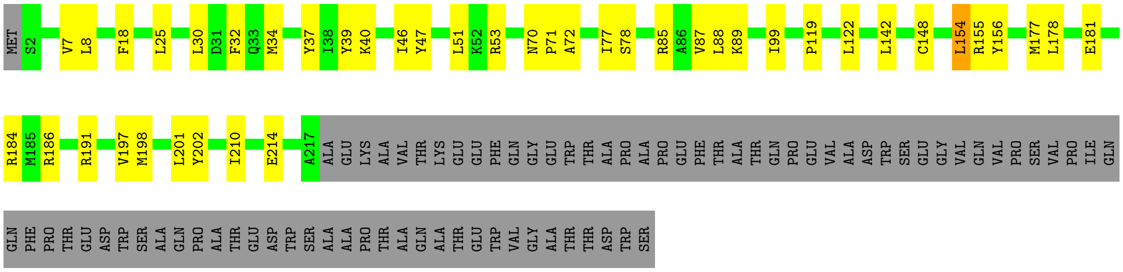
Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
47	S2	8	8	8	0

3 Residue-property plots ⓘ

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

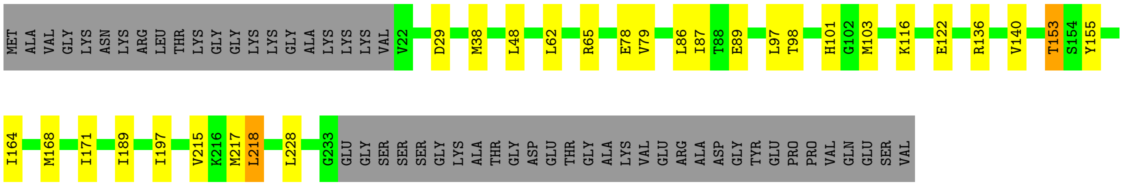
- Molecule 1: Small ribosomal subunit protein uS2

Chain SA:



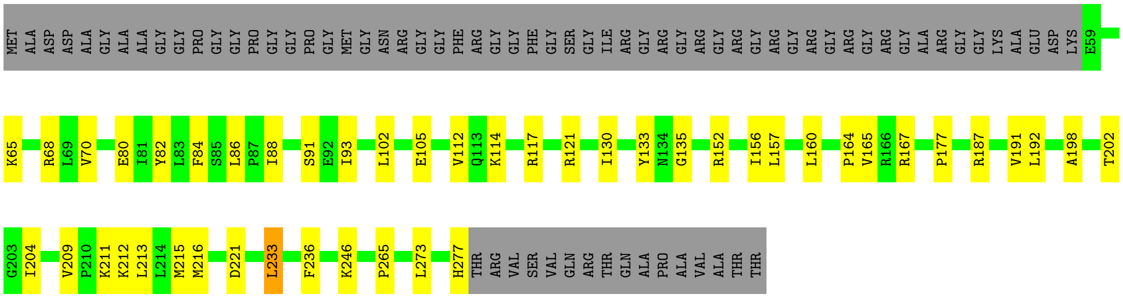
- Molecule 2: 40S ribosomal protein S3a

Chain SB:

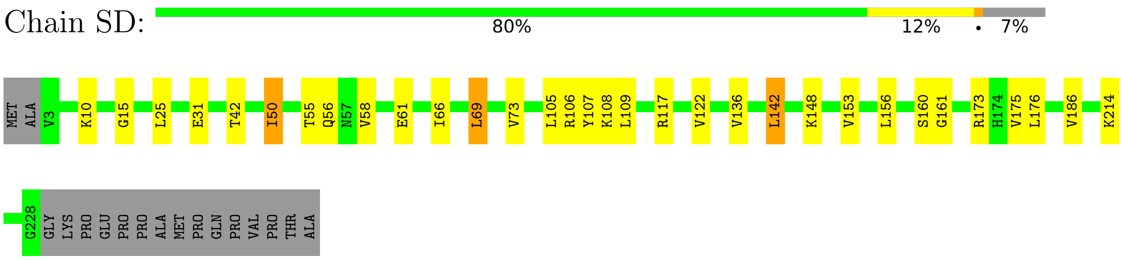


- Molecule 3: 40S ribosomal protein S2

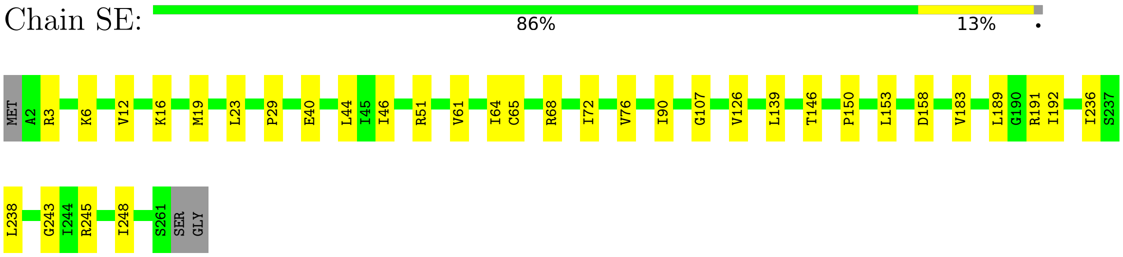
Chain SC:



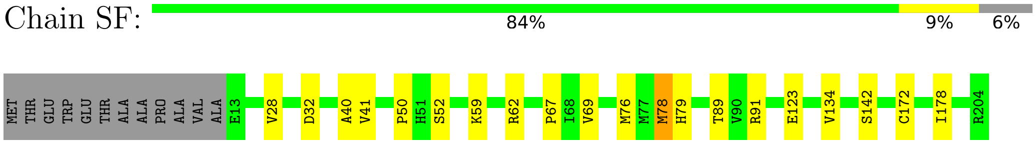
- Molecule 4: 40S ribosomal protein S3



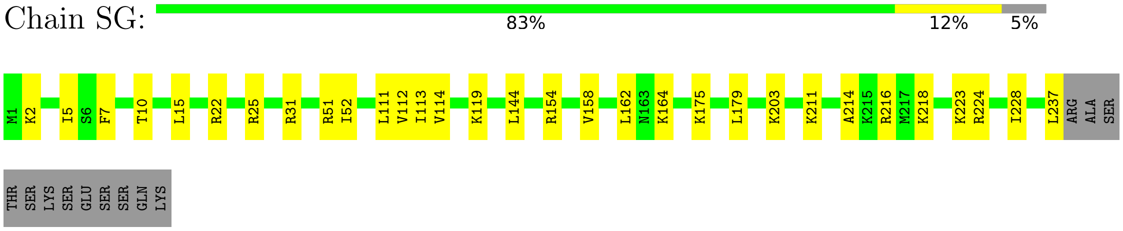
- Molecule 5: 40S ribosomal protein S4, X isoform



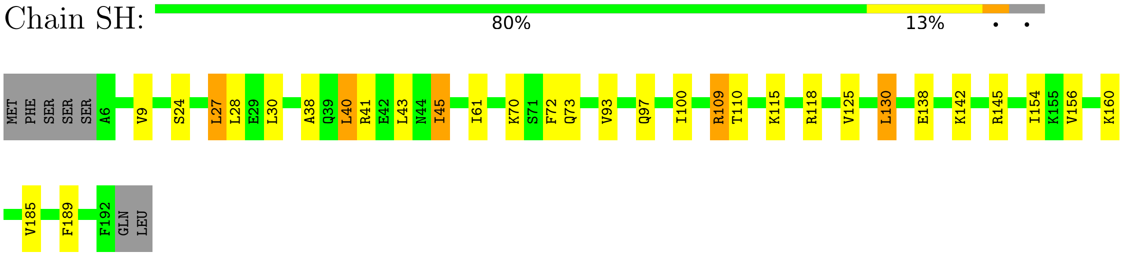
- Molecule 6: 40S ribosomal protein S5



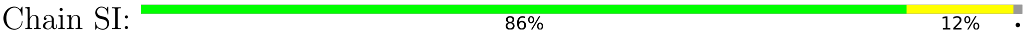
- Molecule 7: 40S ribosomal protein S6

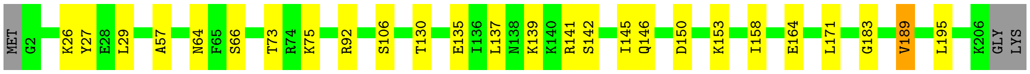


- Molecule 8: 40S ribosomal protein S7



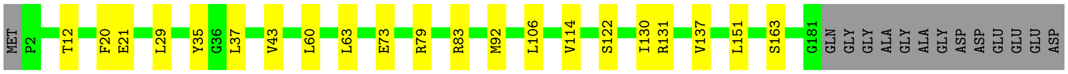
- Molecule 9: 40S ribosomal protein S8





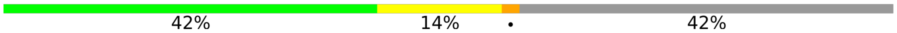
- Molecule 10: 40S ribosomal protein S9

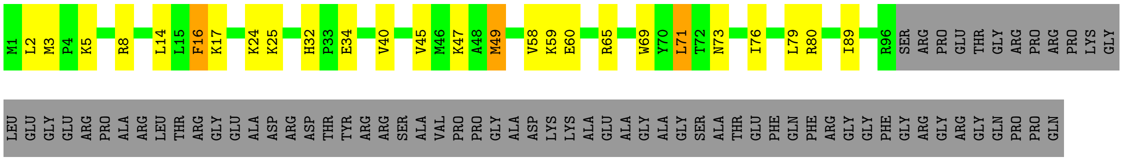
Chain SJ:



- Molecule 11: 40S ribosomal protein S10

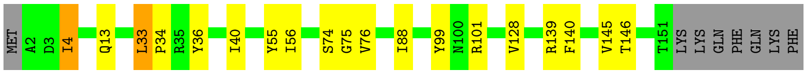
Chain SK:





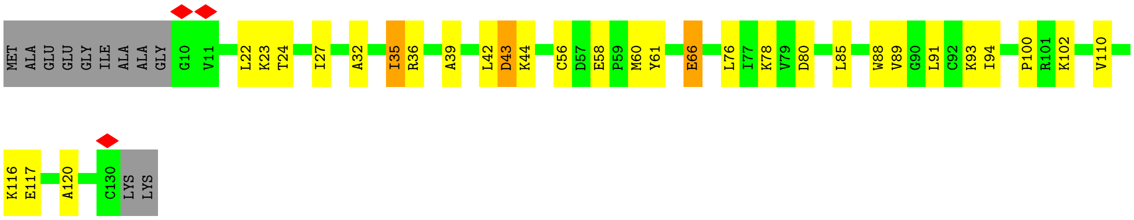
- Molecule 12: 40S ribosomal protein S11

Chain SL:



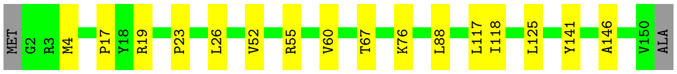
- Molecule 13: 40S ribosomal protein S12

Chain Sf:



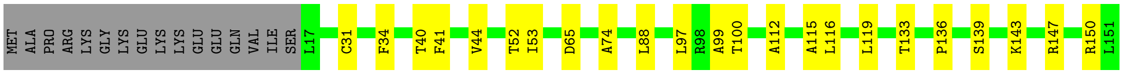
- Molecule 14: 40S ribosomal protein S13

Chain SN:



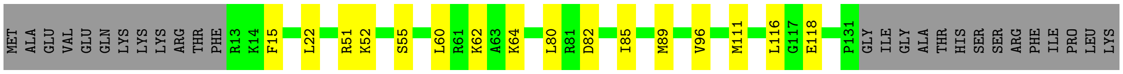
- Molecule 15: 40S ribosomal protein S14

Chain SO:



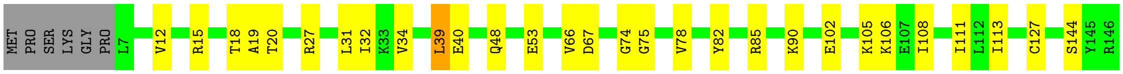
- Molecule 16: 40S ribosomal protein S15

Chain SP:



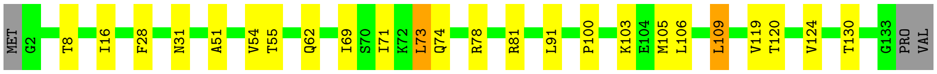
- Molecule 17: 40S ribosomal protein S16

Chain SQ:



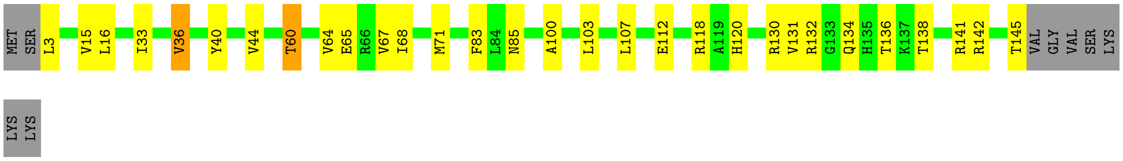
- Molecule 18: 40S ribosomal protein S17

Chain SR:



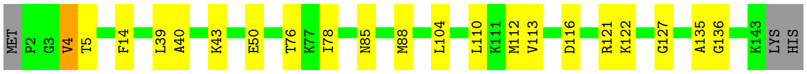
- Molecule 19: 40S ribosomal protein S18

Chain SS:



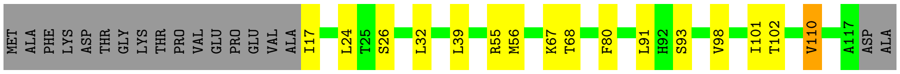
- Molecule 20: 40S ribosomal protein S19

Chain ST:

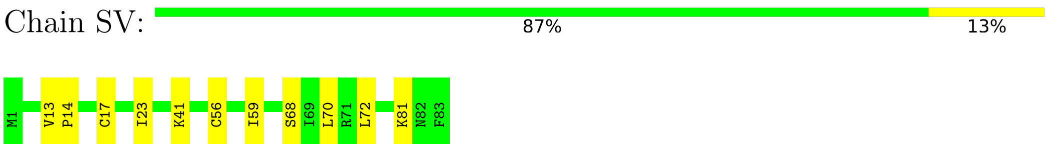


- Molecule 21: 40S ribosomal protein S20

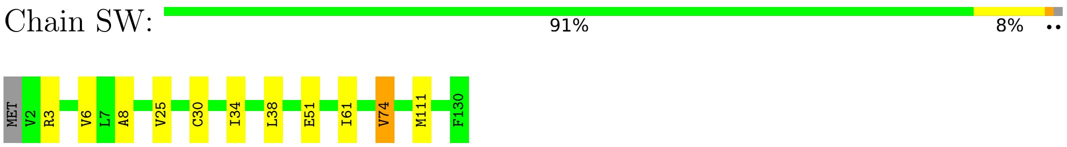
Chain SU:



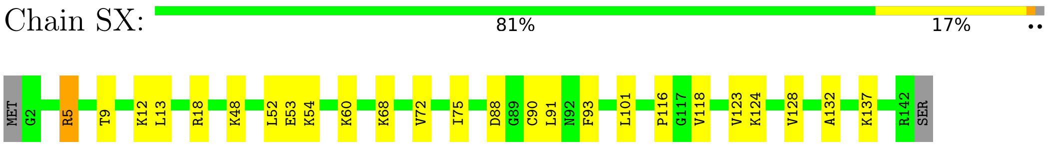
- Molecule 22: 40S ribosomal protein S21



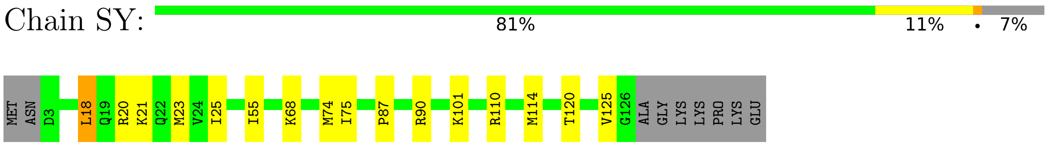
- Molecule 23: 40S ribosomal protein S15a



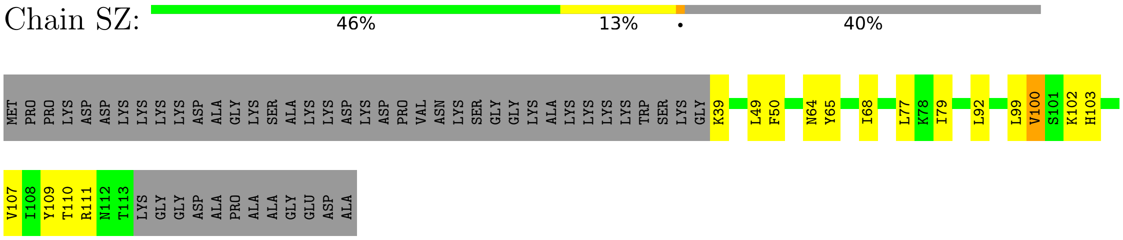
- Molecule 24: 40S ribosomal protein S23



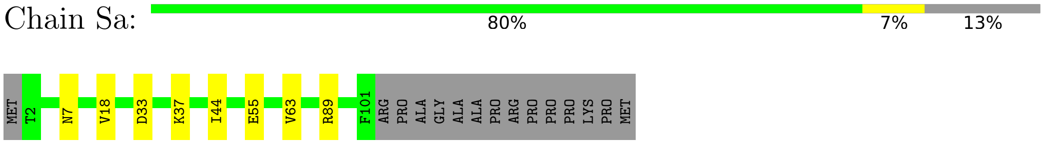
- Molecule 25: 40S ribosomal protein S24



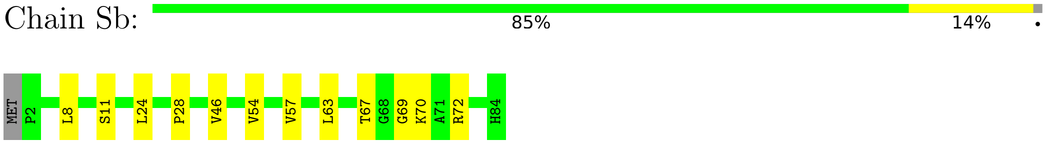
- Molecule 26: 40S ribosomal protein S25



- Molecule 27: 40S ribosomal protein S26

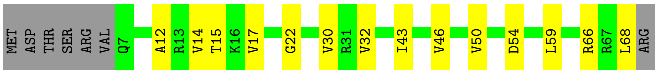


- Molecule 28: 40S ribosomal protein S27



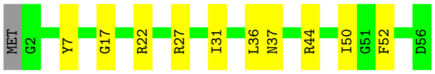
- Molecule 29: 40S ribosomal protein S28

Chain Sc:



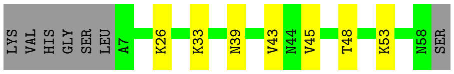
- Molecule 30: 40S ribosomal protein S29

Chain Sd:



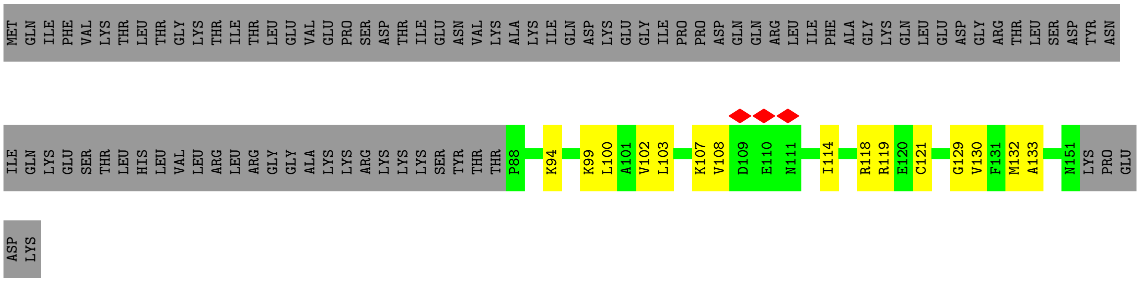
- Molecule 31: 40S ribosomal protein S30

Chain Se:



- Molecule 32: Ubiquitin-40S ribosomal protein S27a

Chain sh:

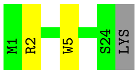


- Molecule 33: Receptor of activated protein C kinase 1

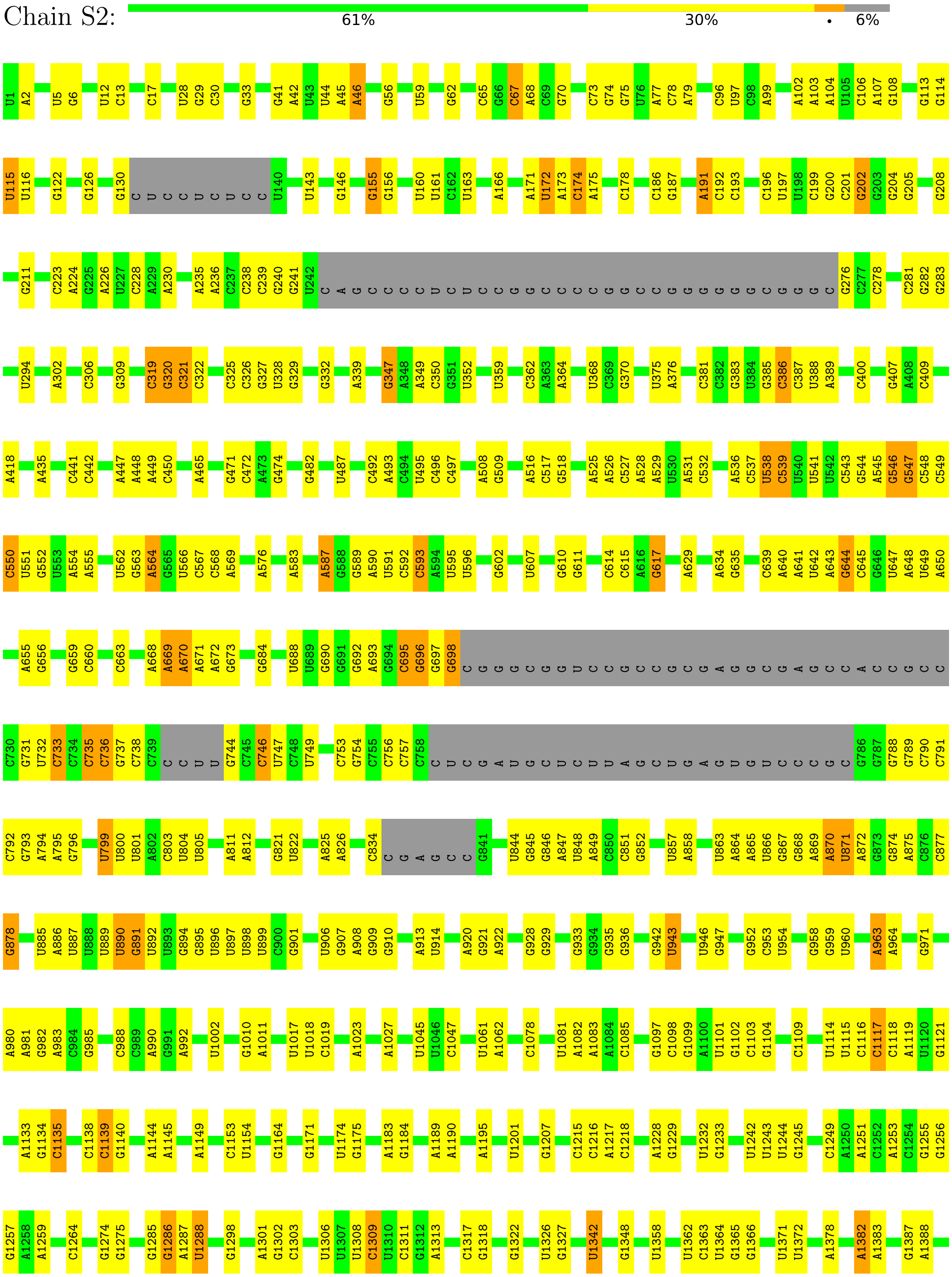
Chain Sg:

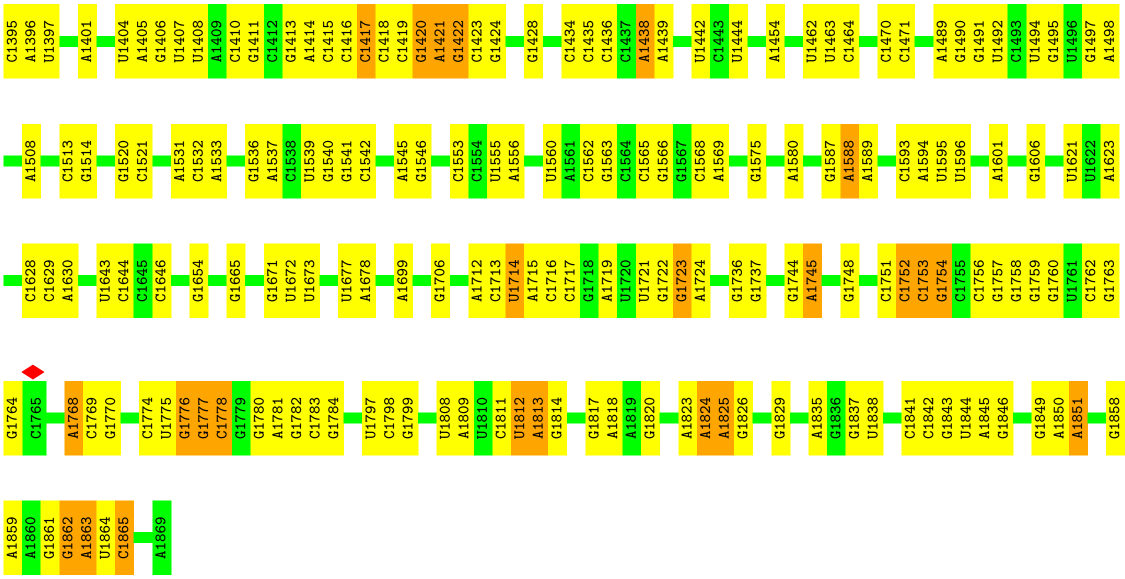
- Molecule 34: 60S ribosomal protein L41

Chain Ln:



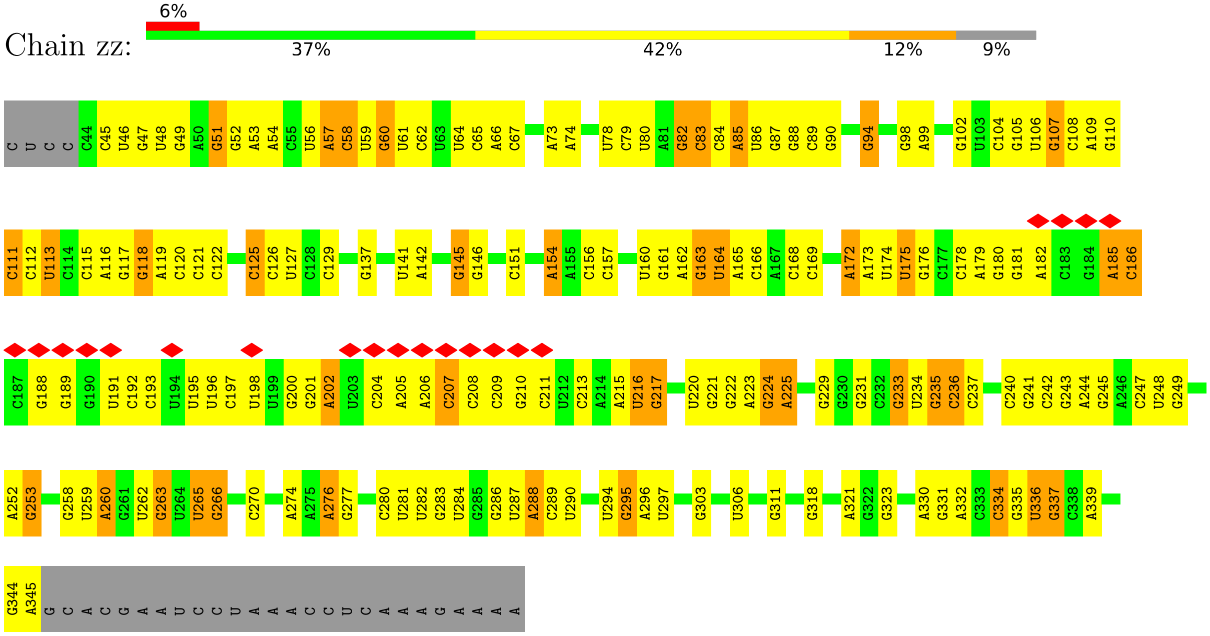
- Molecule 35: 18S ribosomal RNA





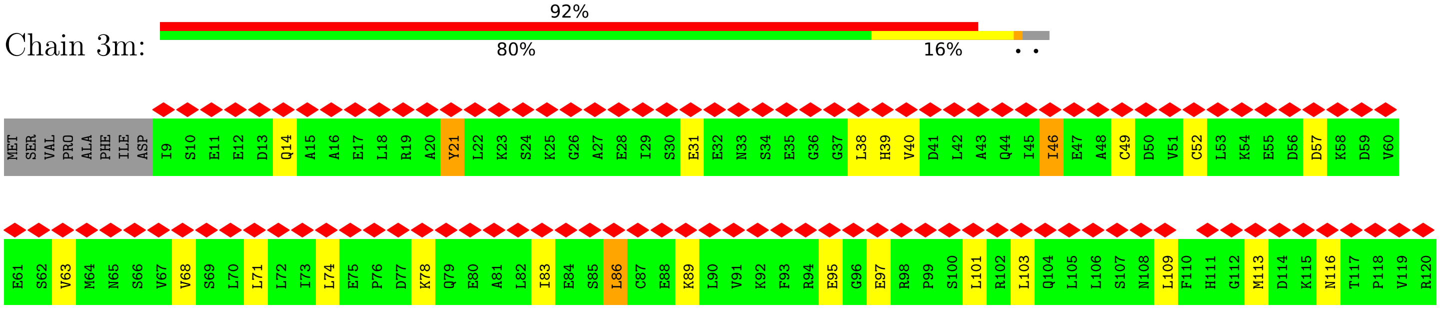
- Molecule 36: HCV-IRES RNA

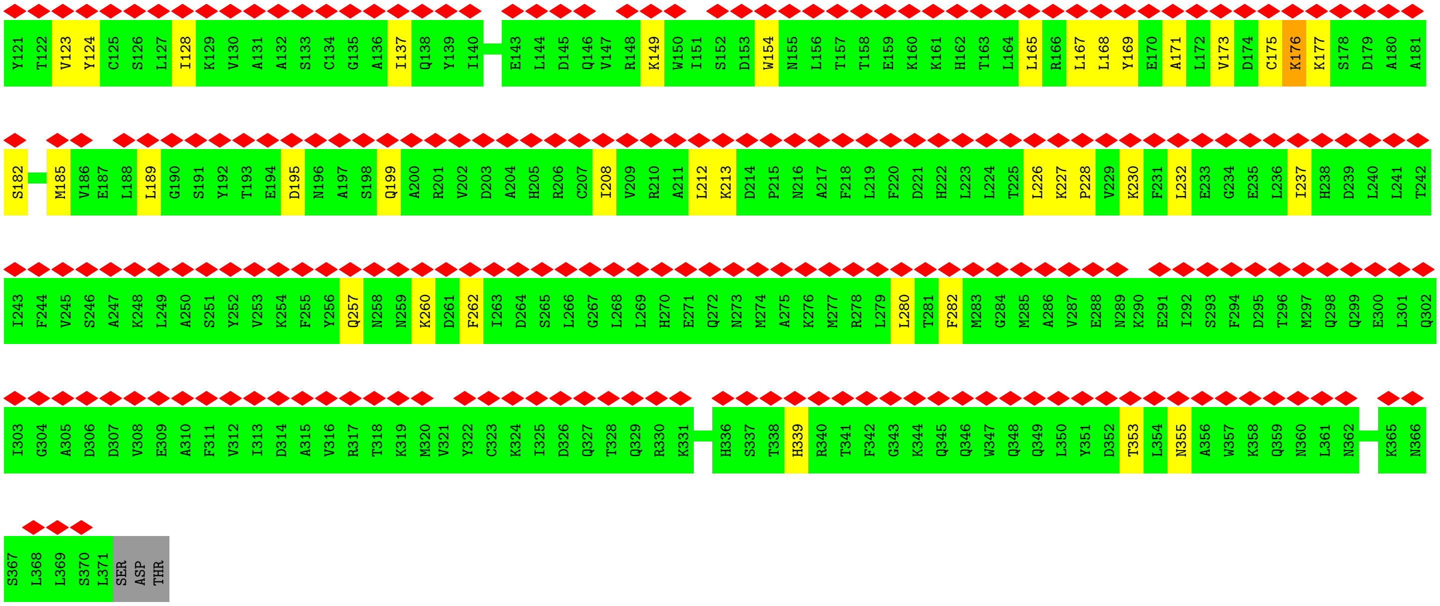
Chain zz:



- Molecule 37: Eukaryotic translation initiation factor 3 subunit M

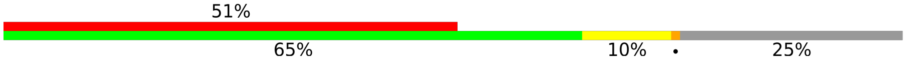
Chain 3m:

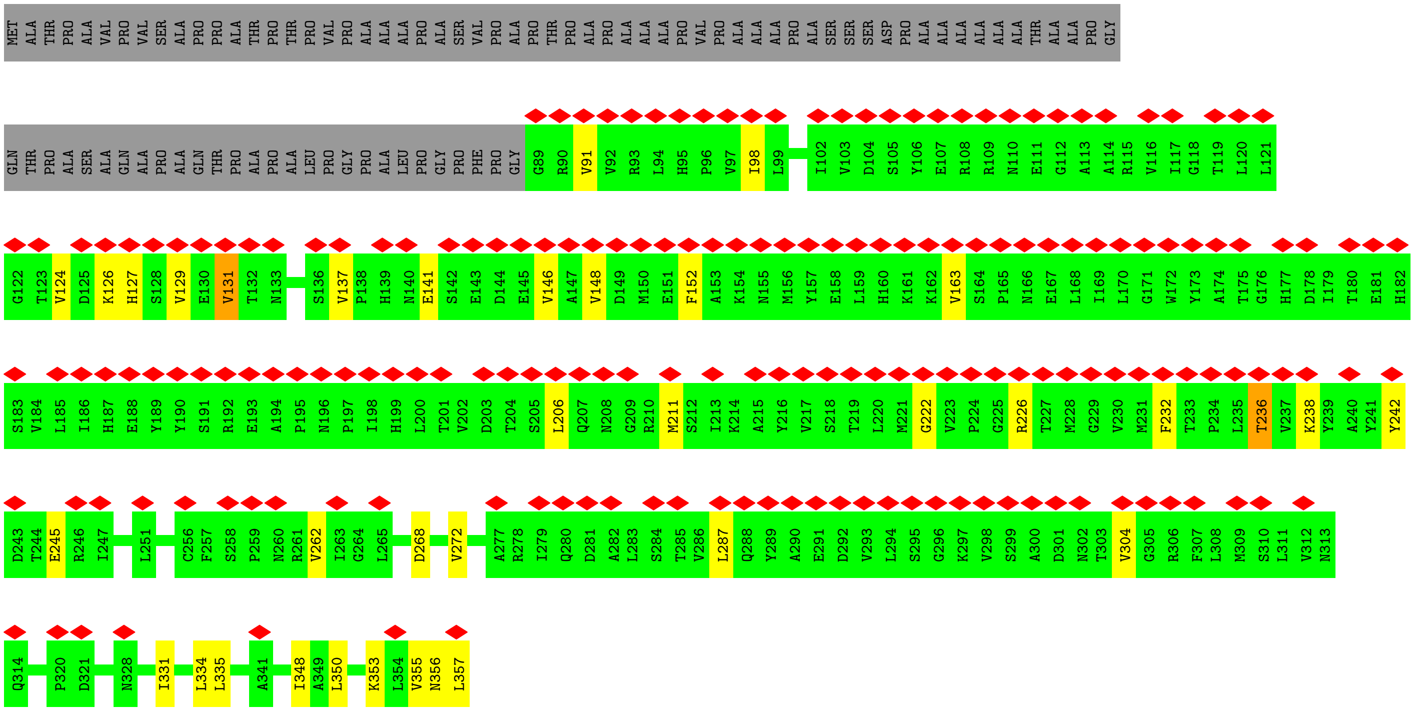




- Molecule 38: Eukaryotic translation initiation factor 3 subunit F

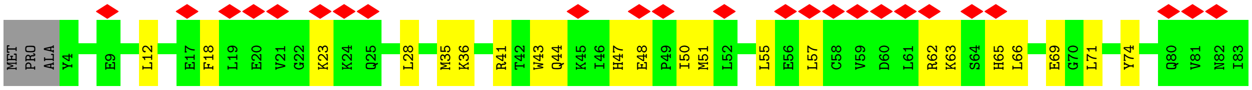
Chain 3f:

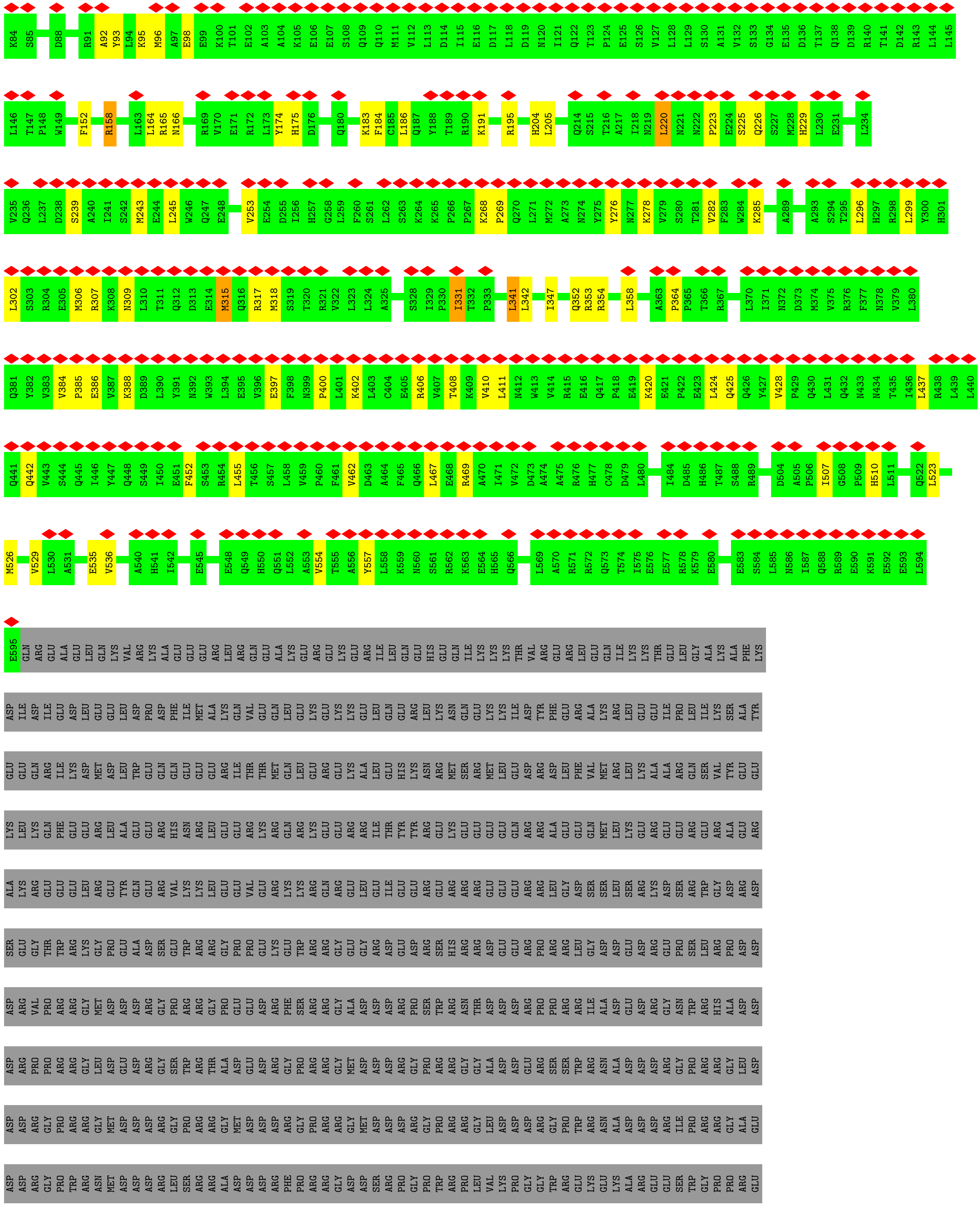


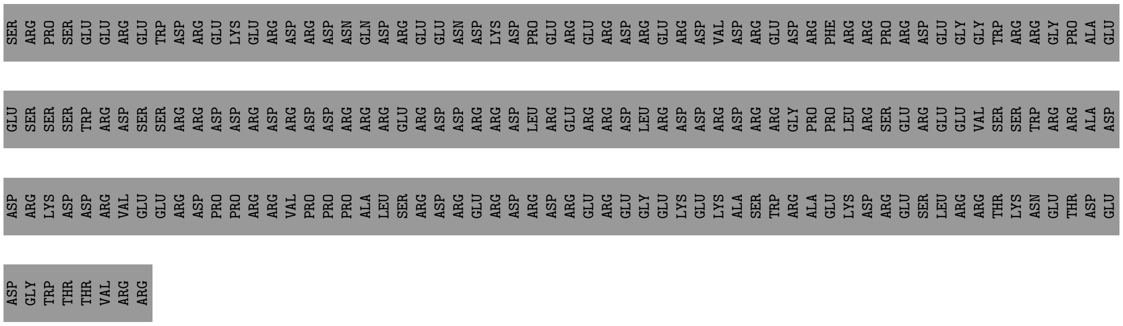


- Molecule 39: Eukaryotic translation initiation factor 3 subunit A

Chain 3a:

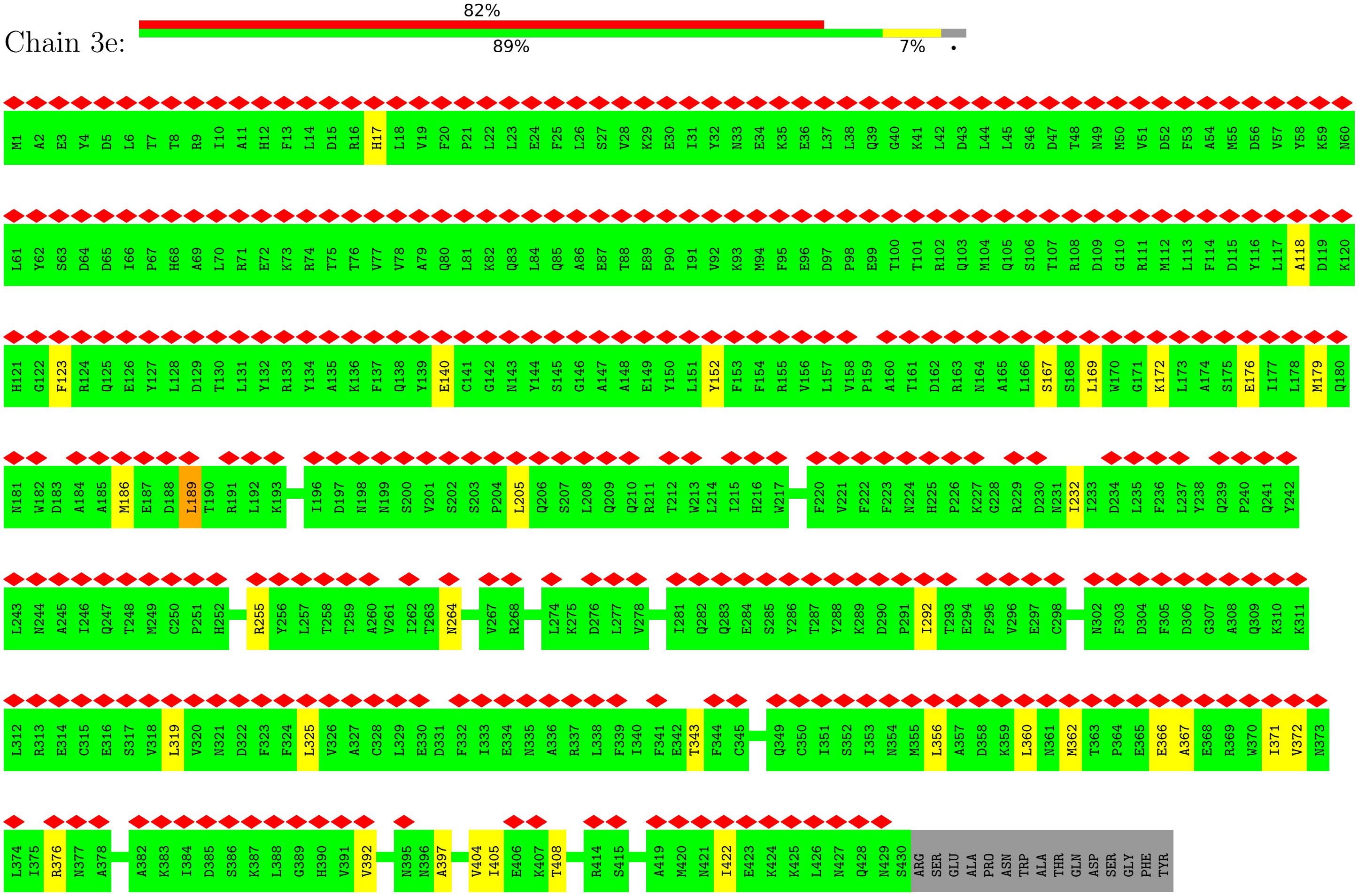



K84 S85 D88 R91 A92 Y93 L94 K95 M96 A97 E98 E99 K100 T101 E102 A103 A104 K105 E106 E107 S108 Q109 Q110 M111 V112 L113 D114 I115 E116 D117 L118 D119 N120 I121 Q122 T123 P124 E125 S126 V127 L128 L129 S130 A131 V132 S133 G134 E135 D136 T137 Q138 D139 R140 T141 D142 R143 L144 L145
L146 T147 P148 W149 F152 R158 L163 L164 R165 N166 R169 V170 E171 R172 L173 Y174 H175 D176 Q180 K183 F184 C185 L186 Q187 Y188 T189 R190 K191 R195 H204 L205 Q214 S215 T216 A217 I218 N219 L220 N221 N222 P223 E224 S225 Q226 S227 M228 H229 L230 E231 L234
V235 Q236 L237 D238 S239 A240 I241 S242 M243 E244 L245 W246 Q247 E248 V253 E254 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 A289 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 S328 I329 P330 I331 T332 P333 L341 L342 I347 Q352 R353 R354 L358 A363 P364 P365 T366 R367 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 N433 N434 T435 I436 L437 R438 L439 L440
Q441 Q442 V443 S444 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 I484 D485 H486 T487 S488 R489 D504 A505 P506 I507 G508 P509 H510 L511 Q522 L523
M526 V529 L530 A531 E535 V536 A540 H541 I542 E545 E548 Q549 H550 Q551 L552 A553 V554 T555 A556 Y557 L558 K559 N560 S561 R562 K563 E564 H565 Q566 L569 A570 R571 R572 Q573 T574 I575 E576 E577 R578 K579 E580 E583 S584 L585 N586 I587 Q588 R589 E590 K591 E592 E593 L594
E595 GLN ARG GLU ALA GLU LEU GLN LYS VAL ARG 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 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 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 ARG GLU ARG ARG ARG GLU GLU GLU ARG ARG LEU GLY ASP SER SER LEU SER ARG LYS 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 GLU ASP ARG SER HIS ARG ARG ASP GLU GLU ARG PRO ARG ARG LEU GLY ASP ASP GLU ASP ARG GLU PRO SER LEU ARG PRO ASP ASP
ASP ARG VAL PRO ARG ARG GLY MET ASP ASP ASP ARG GLY PRO ARG ARG GLY PRO GLU GLU ASP ARG PHE SER ARG ARG GLY ALA ASP ASP ASP ARG PRO SER TRP ARG ASN THR ASP ASP ASP ARG PRO PRO ARG ARG ILE ALA ASP GLU ASP ARG GLY ASN TRP ARG HIS ALA ASP ASP
ASP ARG PRO PRO ARG ARG GLY LEU ASP GLU ASP ARG GLY SER TRP ARG THR ALA ASP GLU ASP ARG GLY PRO ARG ARG GLY MET ASP ASP ARG GLY PRO ARG ARG GLY GLY ALA ASP ASP GLU ARG SER SER TRP ARG ASN ALA ASP ASP ARG GLY PRO ARG ARG GLY LEU ASP
ASP ASP ARG GLY PRO ARG ARG GLY MET ASP ASP ARG GLY PRO ARG ARG GLY MET ASP ASP ASP ARG GLY PRO ARG ARG GLY LEU ASP ASP ASP ARG GLY PRO TRP ARG ASN ALA ASP ASP ARG ILE PRO ARG ARG GLY ALA GLU
ASP ASP ARG GLY PRO TRP ARG ASN MET ASP ASP ASP ARG LEU SER ARG ARG ALA ASP ASP ASP ARG PHE PRO ARG ARG GLY ASP ASP SER ARG PRO GLY PRO TRP ARG PRO LEU VAL LYS PRO GLY TRP ARG GLU LYS GLU LYS ALA ARG GLU GLU SER TRP GLY PRO PRO ARG GLU


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

- Molecule 40: Eukaryotic translation initiation factor 3 subunit E

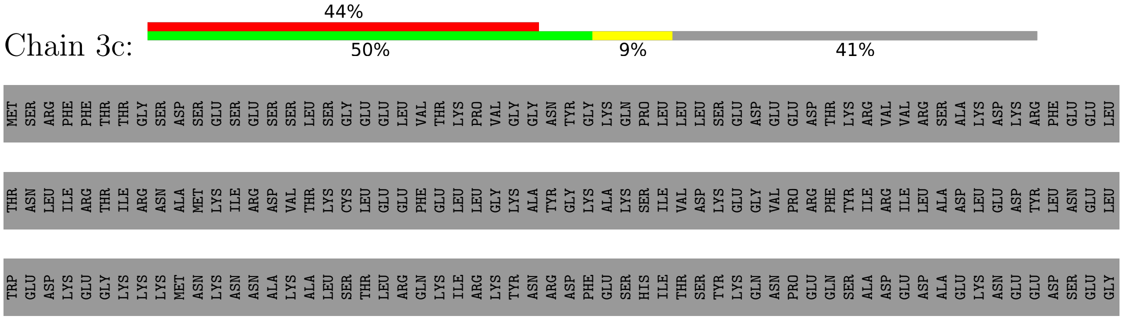
Chain 3e:



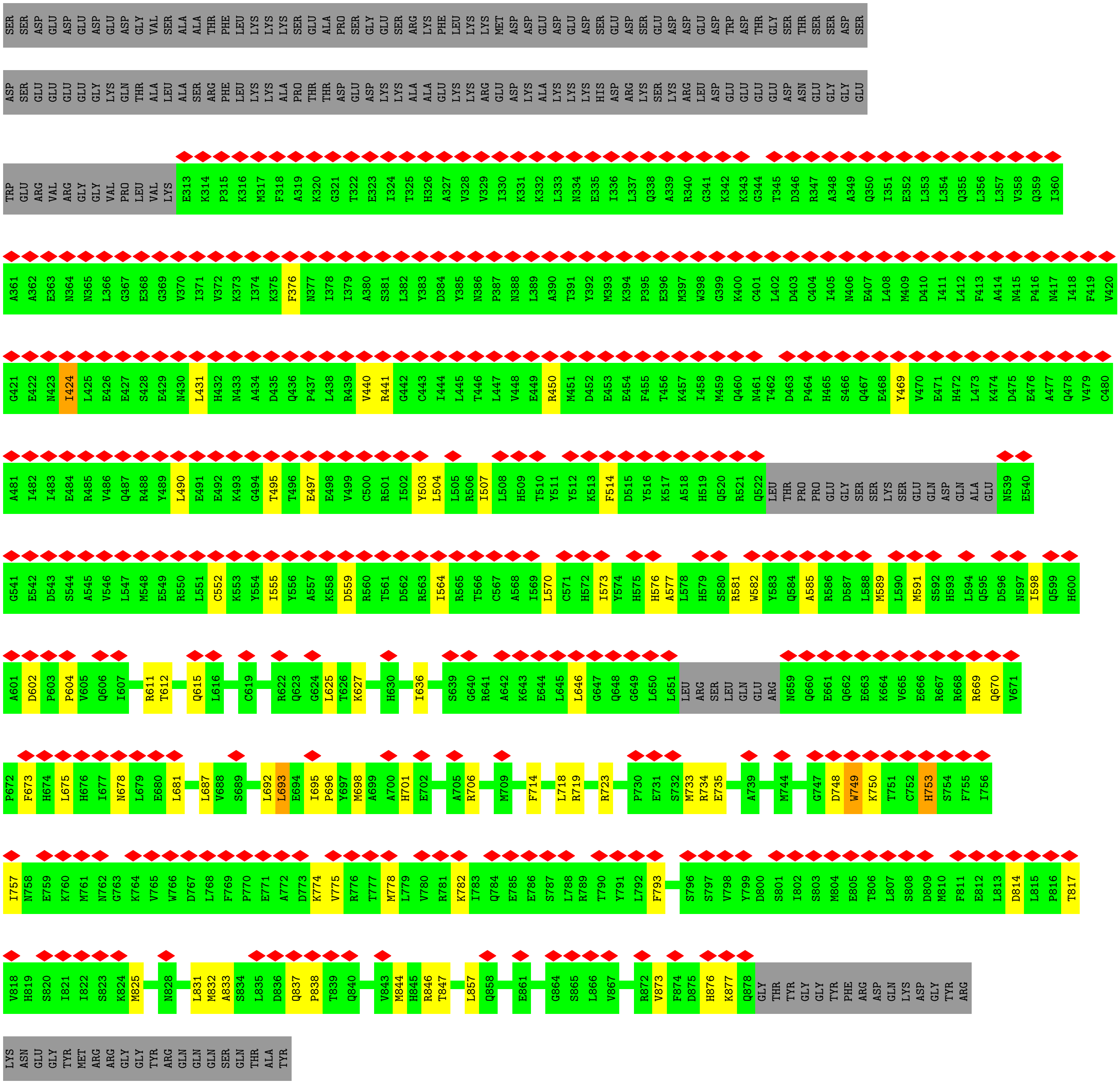
M1 A2 E3 Y4 D5 L6 T7 T8 R9 I10 A11 H12 F13 L14 D15 R16 H17 L18 V19 F20 P21 L22 L23 E24 F25 L26 S27 V28 K29 E30 I31 Y32 N33 E34 K35 E36 L37 L38 Q39 G40 K41 L42 D43 L44 L45 S46 D47 T48 N49 M50 V51 D52 F53 A54 M55 D56 V57 Y58 K59 N60
L61 Y62 S63 D64 D65 I66 P67 H68 A69 L70 R71 E72 K73 R74 T75 T76 V77 V78 A79 Q80 L81 K82 Q83 L84 Q85 A86 E87 T88 E89 P90 I91 V92 K93 M94 F95 E96 D97 P98 E99 T100 T101 R102 Q103 M104 Q105 S106 T107 R108 D109 G110 R111 M112 L113 F114 D115 Y116 L117 A118 D119 K120
H121 G122 F123 R124 Q125 E126 Y127 L128 D129 T130 L131 Y132 R133 Y134 A135 K136 F137 Q138 Y139 E140 C141 G142 N143 Y144 S145 G146 A147 A148 E149 Y150 L151 Y152 F153 F154 R155 V156 L157 V158 P159 A160 T161 D162 R163 N164 A165 L166 S167 S168 L169 W170 G171 K172 L173 A174 S175 E176 I177 L178 M179 Q180
N181 W182 D183 A184 A185 M186 E187 D188 L189 T190 R191 L192 K193 I196 D197 N198 N199 S200 V201 S202 S203 P204 L205 Q206 S207 L208 Q209 Q210 R211 T212 W213 L214 I215 H216 W217 F220 V221 F222 F223 N224 H225 P226 K227 G228 R229 D230 N231 I232 I233 D234 L235 F236 L237 Y238 Q239 P240 Q241 Y242
L243 N244 A245 I246 Q247 T248 M249 C250 P251 H252 R255 Y256 L257 T258 T259 A260 V261 I262 T263 N264 V267 R268 L274 K275 D276 L277 V278 I281 Q282 Q283 E284 S285 Y286 T287 Y288 K289 D290 P291 I292 T293 E294 F295 V296 E297 C298 N302 F303 D304 F305 D306 G307 A308 Q309 K310 K311
L312 R313 E314 C315 E316 S317 V318 L319 V320 N321 D322 F323 F324 L325 V326 A327 C328 L329 E330 D331 F332 I333 E334 N335 A336 R337 L338 F339 I340 F341 E342 T343 F344 C345 Q349 C350 I351 S352 I353 N354 M355 L356 A357 D358 K359 L360 N361 M362 T363 P364 E365 E366 A367 E368 R369 W370 I371 V372 N373
L374 I375 R376 N377 A378 A382 K383 I384 D385 S386 K387 L388 G389 H390 V391 V392 N395 N396 A397 V404 I405 E406 K407 T408 R414 S415 A419 M420 N421 I422 E423 K424 K425 L426 N427 Q428 N429 S430 ARG SER GLU ALA PRO ASN TRP ALA THR GLN ASP SER GLY PHE TYR

- Molecule 41: Eukaryotic translation initiation factor 3 subunit C

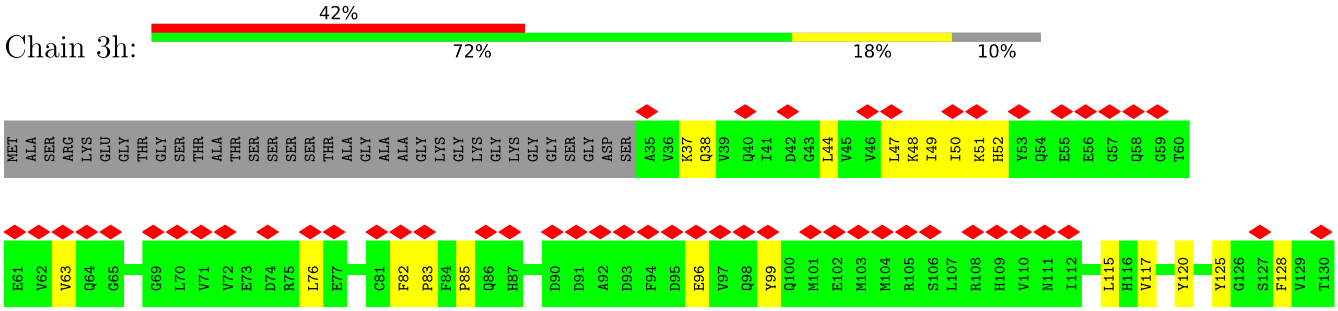
Chain 3c:

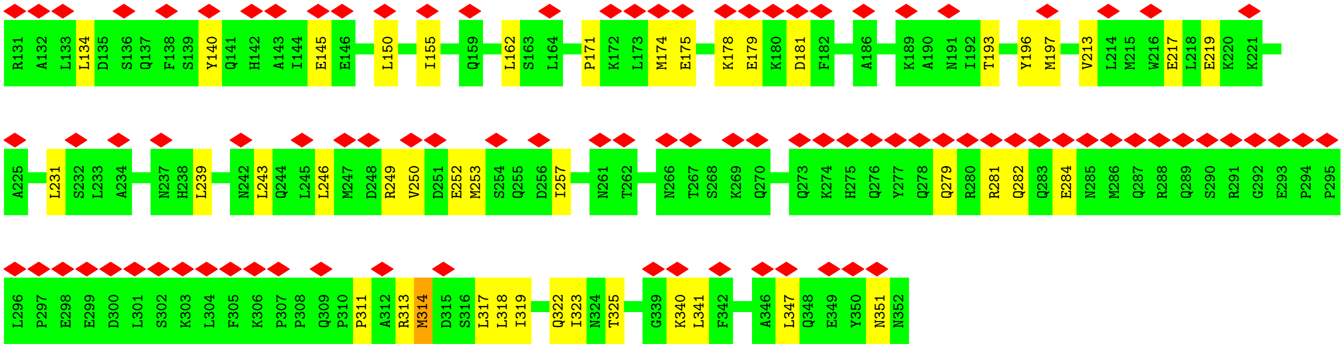


MET SER ARG PHE PHE THR THR GLY SER ASP SER GLU SER GLU SER SER LEU SER GLY GLU GLU LEU VAL THR LYS PRO VAL GLY GLY ASN TYR GLY LYS GLN PRO LEU LEU LEU SER GLU ASP GLU GLU ASP THR LYS ARG VAL VAL ARG SER ALA LYS ASP LYS ARG PHE GLU GLU LEU
THR ASN LEU ILE ARG THR ILE ARG ASN ALA MET LYS ILE ARG ASP VAL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



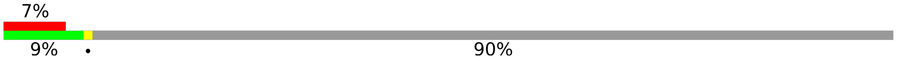
- Molecule 42: Eukaryotic translation initiation factor 3 subunit H

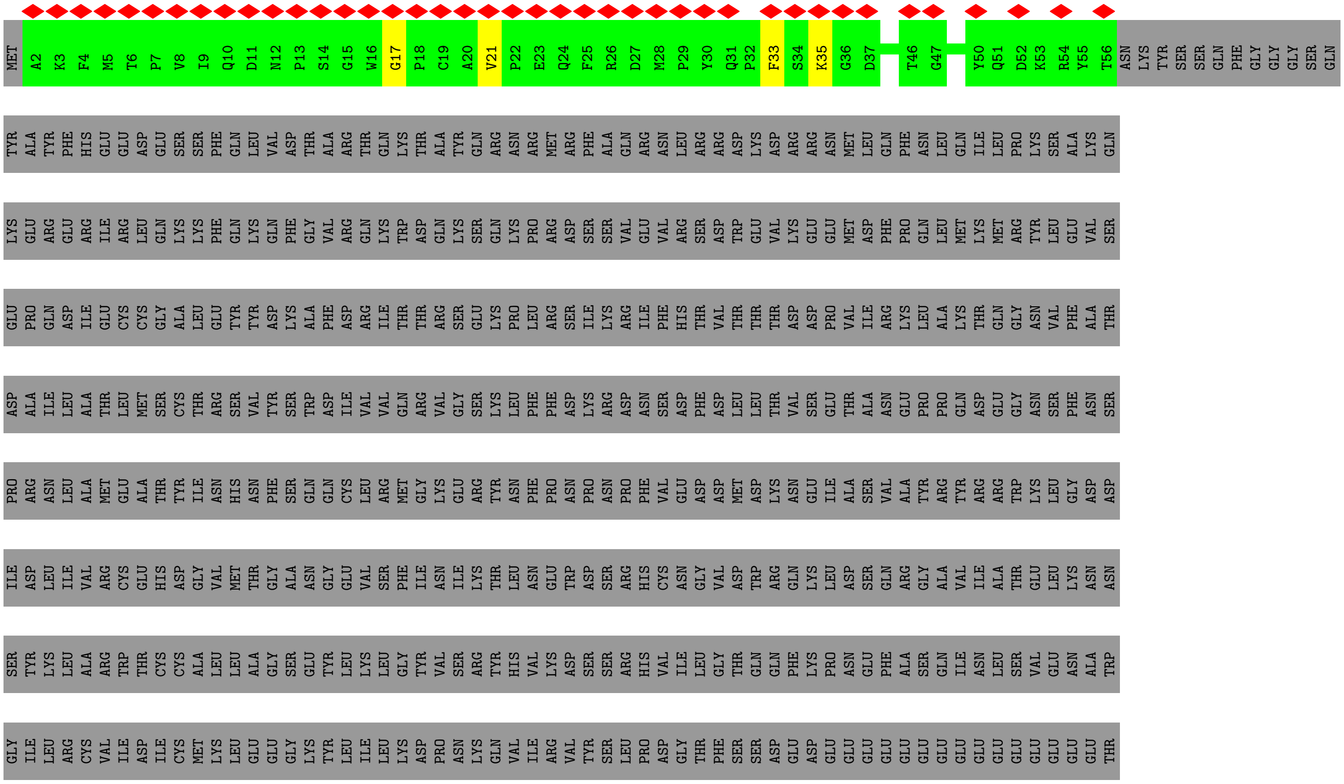




- Molecule 43: Eukaryotic translation initiation factor 3 subunit D

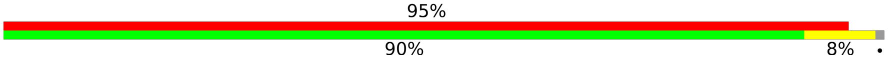
Chain 3d:

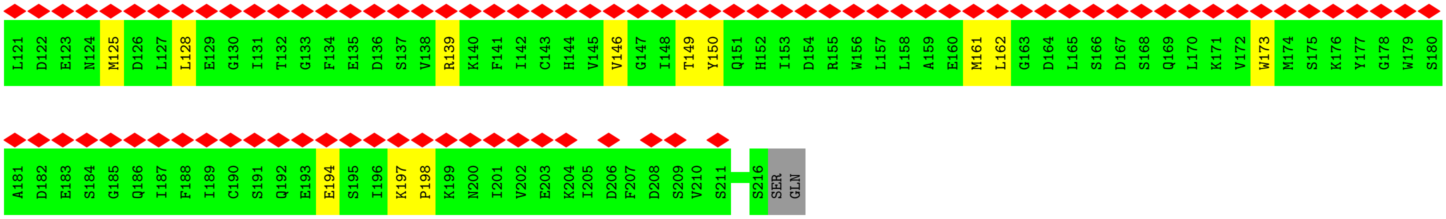




- Molecule 44: Eukaryotic translation initiation factor 3 subunit K

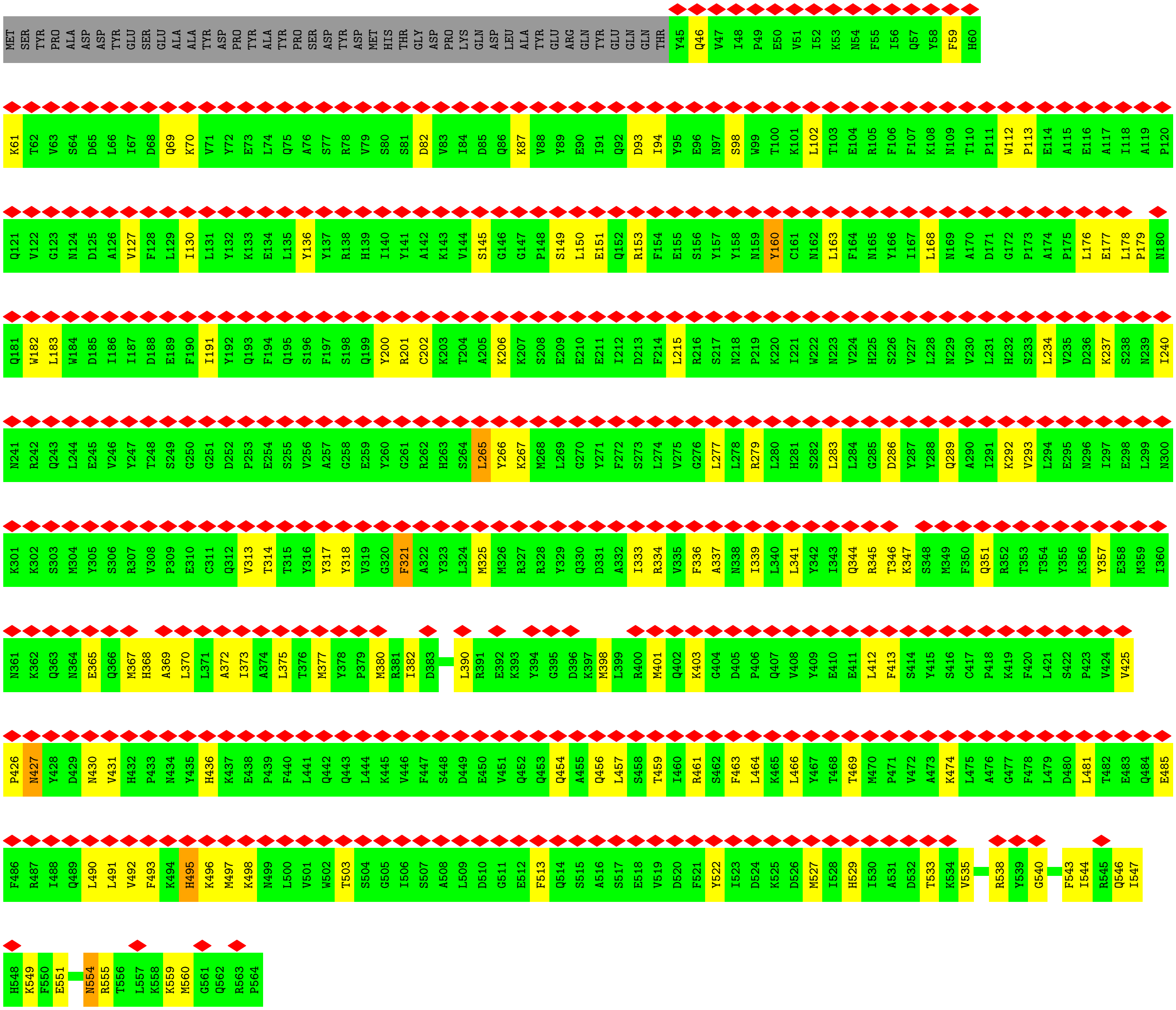
Chain 3k:





- Molecule 45: Eukaryotic translation initiation factor 3 subunit L

Chain 3l:



4 Experimental information ⓘ

Property	**Value**	**Source**
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	24675	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{Å}^2$)	56.2	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.096	Depositor
Minimum map value	-0.016	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.002	Depositor
Recommended contour level	0.008	Depositor
Map size (Å)	636.0, 636.0, 636.0	wwPDB
Map dimensions	500, 500, 500	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.272, 1.272, 1.272	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

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	SA	0.22	0/1742	0.37	0/2367
2	SB	0.21	0/1749	0.43	0/2340
3	SC	0.23	0/1737	0.40	0/2347
4	SD	0.17	0/1784	0.34	0/2402
5	SE	0.23	0/2107	0.43	1/2836 (0.0%)
6	SF	0.23	0/1540	0.50	2/2071 (0.1%)
7	SG	0.17	0/1946	0.34	0/2590
8	SH	0.20	0/1529	0.43	0/2048
9	SI	0.20	0/1711	0.35	0/2282
10	SJ	0.22	0/1524	0.38	0/2035
11	SK	0.19	0/834	0.49	0/1125
12	SL	0.24	0/1241	0.38	0/1662
13	Sf	0.19	0/945	0.53	0/1269
14	SN	0.24	0/1226	0.45	0/1649
15	SO	0.22	0/1020	0.38	0/1368
16	SP	0.19	0/1003	0.49	0/1340
17	SQ	0.23	0/1133	0.51	0/1517
18	SR	0.21	0/1082	0.48	0/1452
19	SS	0.17	0/1202	0.41	0/1610
20	ST	0.18	0/1122	0.37	0/1504
21	SU	0.19	0/813	0.47	0/1092
22	SV	0.22	0/643	0.50	0/860
23	SW	0.25	0/1051	0.36	0/1406
24	SX	0.24	0/1116	0.44	0/1490
25	SY	0.20	0/1031	0.37	0/1370
26	SZ	0.22	0/607	0.52	0/815
27	Sa	0.23	0/817	0.35	0/1095
28	Sb	0.21	0/665	0.41	0/891
29	Sc	0.22	0/490	0.49	0/656
30	Sd	0.22	0/470	0.47	0/623
31	Se	0.21	0/422	0.42	0/555
32	sh	0.18	0/533	0.45	0/706

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	Sg	0.17	0/2493	0.40	0/3394
34	Ln	0.22	0/231	0.59	0/294
35	S2	0.22	0/42121	0.31	0/65651
36	zz	0.16	0/7199	0.33	0/11223
37	3m	0.12	0/2676	0.36	0/3635
38	3f	0.12	0/2099	0.35	0/2856
39	3a	0.14	0/4583	0.40	0/6237
40	3e	0.12	0/3288	0.33	0/4475
41	3c	0.14	0/3990	0.39	1/5424 (0.0%)
42	3h	0.13	0/2571	0.37	0/3484
43	3d	0.11	0/358	0.30	0/493
44	3k	0.13	0/1502	0.34	0/2052
45	3l	0.13	0/4446	0.35	0/6013
All	All	0.20	0/114392	0.36	4/164604 (0.0%)

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
41	3c	424	ILE	N-CA-C	6.65	113.33	106.21
5	SE	19	MET	CB-CG-SD	-5.60	95.90	112.70
6	SF	78	MET	CA-C-N	5.37	130.47	122.74
6	SF	78	MET	C-N-CA	5.37	130.47	122.74

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	SA	1705	0	1706	23	0
2	SB	1722	0	1794	15	0
3	SC	1700	0	1784	24	0
4	SD	1756	0	1851	20	0
5	SE	2065	0	2169	19	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	SF	1518	0	1569	13	0
7	SG	1923	0	2089	21	0
8	SH	1506	0	1603	19	0
9	SI	1682	0	1769	16	0
10	SJ	1499	0	1618	7	0
11	SK	810	0	836	15	0
12	SL	1220	0	1289	9	0
13	Sf	935	0	964	18	0
14	SN	1202	0	1289	7	0
15	SO	1007	0	1032	13	0
16	SP	984	0	1033	10	0
17	SQ	1116	0	1185	17	0
18	SR	1068	0	1121	11	0
19	SS	1184	0	1244	14	0
20	ST	1103	0	1133	11	0
21	SU	803	0	873	9	0
22	SV	636	0	637	7	0
23	SW	1034	0	1080	6	0
24	SX	1098	0	1167	12	0
25	SY	1014	0	1082	11	0
26	SZ	601	0	662	9	0
27	Sa	803	0	850	4	0
28	Sb	651	0	672	6	0
29	Sc	488	0	514	9	0
30	Sd	459	0	452	7	0
31	Se	417	0	463	3	0
32	sh	522	0	530	9	0
33	Sg	2436	0	2393	45	0
34	Ln	230	0	276	2	0
35	S2	37669	0	19037	276	0
36	zz	6443	0	3259	82	0
37	3m	2639	0	2442	32	0
38	3f	2063	0	2054	28	0
39	3a	4497	0	4224	64	0
40	3e	3224	0	2925	18	0
41	3c	3924	0	3512	51	0
42	3h	2520	0	2445	46	0
43	3d	347	0	259	2	0
44	3k	1475	0	1239	10	0
45	3l	4335	0	4272	76	0
46	Sa	1	0	0	0	0
46	sh	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
47	S2	8	0	0	0	0
All	All	108043	0	86397	1035	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 5.

The worst 5 of 1035 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:zz:61:U:H3	36:zz:107:G:H1	1.12	0.94
36:zz:145:G:H1	36:zz:248:U:H3	1.11	0.93
35:S2:172:U:H3	35:S2:174:C:H41	1.18	0.90
36:zz:52:G:N2	36:zz:111:C:O2	2.06	0.88
41:3c:573:ILE:HD13	41:3c:589:MET:HE3	1.60	0.82

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	SA	214/295 (72%)	207 (97%)	7 (3%)	0	100	100
2	SB	210/264 (80%)	204 (97%)	6 (3%)	0	100	100
3	SC	217/293 (74%)	209 (96%)	8 (4%)	0	100	100
4	SD	224/243 (92%)	222 (99%)	2 (1%)	0	100	100
5	SE	258/263 (98%)	243 (94%)	15 (6%)	0	100	100
6	SF	190/204 (93%)	181 (95%)	9 (5%)	0	100	100
7	SG	235/249 (94%)	230 (98%)	5 (2%)	0	100	100
8	SH	185/194 (95%)	175 (95%)	10 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
9	SI	203/208 (98%)	195 (96%)	8 (4%)	0	100	100
10	SJ	178/194 (92%)	174 (98%)	4 (2%)	0	100	100
11	SK	94/165 (57%)	87 (93%)	7 (7%)	0	100	100
12	SL	148/158 (94%)	143 (97%)	5 (3%)	0	100	100
13	Sf	119/132 (90%)	114 (96%)	5 (4%)	0	100	100
14	SN	147/151 (97%)	143 (97%)	4 (3%)	0	100	100
15	SO	133/151 (88%)	128 (96%)	5 (4%)	0	100	100
16	SP	117/145 (81%)	115 (98%)	2 (2%)	0	100	100
17	SQ	138/146 (94%)	133 (96%)	5 (4%)	0	100	100
18	SR	130/135 (96%)	124 (95%)	6 (5%)	0	100	100
19	SS	141/152 (93%)	134 (95%)	7 (5%)	0	100	100
20	ST	140/145 (97%)	137 (98%)	3 (2%)	0	100	100
21	SU	99/119 (83%)	98 (99%)	1 (1%)	0	100	100
22	SV	81/83 (98%)	80 (99%)	1 (1%)	0	100	100
23	SW	127/130 (98%)	125 (98%)	2 (2%)	0	100	100
24	SX	139/143 (97%)	129 (93%)	10 (7%)	0	100	100
25	SY	122/133 (92%)	120 (98%)	2 (2%)	0	100	100
26	SZ	73/125 (58%)	69 (94%)	4 (6%)	0	100	100
27	Sa	98/115 (85%)	95 (97%)	3 (3%)	0	100	100
28	Sb	81/84 (96%)	78 (96%)	3 (4%)	0	100	100
29	Sc	60/69 (87%)	58 (97%)	2 (3%)	0	100	100
30	Sd	53/56 (95%)	50 (94%)	3 (6%)	0	100	100
31	Se	50/59 (85%)	49 (98%)	1 (2%)	0	100	100
32	sh	62/156 (40%)	56 (90%)	6 (10%)	0	100	100
33	Sg	311/317 (98%)	296 (95%)	15 (5%)	0	100	100
34	Ln	22/25 (88%)	20 (91%)	2 (9%)	0	100	100
37	3m	361/374 (96%)	347 (96%)	14 (4%)	0	100	100
38	3f	267/357 (75%)	261 (98%)	6 (2%)	0	100	100
39	3a	590/1382 (43%)	567 (96%)	23 (4%)	0	100	100
40	3e	428/445 (96%)	419 (98%)	8 (2%)	1 (0%)	44	71
41	3c	537/913 (59%)	522 (97%)	15 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
42	3h	316/352 (90%)	306 (97%)	10 (3%)	0	100	100
43	3d	53/548 (10%)	49 (92%)	4 (8%)	0	100	100
44	3k	213/218 (98%)	210 (99%)	3 (1%)	0	100	100
45	3l	518/564 (92%)	506 (98%)	12 (2%)	0	100	100
All	All	8082/10654 (76%)	7808 (97%)	273 (3%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
40	3e	264	ASN

5.3.2 Protein sidechains ⓘ

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	SA	180/243 (74%)	172 (96%)	8 (4%)	24	52
2	SB	193/231 (84%)	187 (97%)	6 (3%)	35	61
3	SC	185/225 (82%)	177 (96%)	8 (4%)	25	53
4	SD	189/202 (94%)	180 (95%)	9 (5%)	21	50
5	SE	223/225 (99%)	215 (96%)	8 (4%)	30	57
6	SF	162/170 (95%)	155 (96%)	7 (4%)	25	53
7	SG	207/218 (95%)	202 (98%)	5 (2%)	44	68
8	SH	167/174 (96%)	159 (95%)	8 (5%)	21	50
9	SI	178/180 (99%)	173 (97%)	5 (3%)	38	64
10	SJ	160/168 (95%)	151 (94%)	9 (6%)	17	45
11	SK	87/136 (64%)	79 (91%)	8 (9%)	7	26
12	SL	134/142 (94%)	127 (95%)	7 (5%)	19	47
13	Sf	102/108 (94%)	97 (95%)	5 (5%)	21	49
14	SN	130/131 (99%)	125 (96%)	5 (4%)	28	56

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
15	SO	104/119 (87%)	99 (95%)	5 (5%)	21	50
16	SP	107/130 (82%)	106 (99%)	1 (1%)	75	85
17	SQ	116/121 (96%)	109 (94%)	7 (6%)	16	42
18	SR	119/122 (98%)	110 (92%)	9 (8%)	11	34
19	SS	124/132 (94%)	110 (89%)	14 (11%)	4	18
20	ST	112/115 (97%)	106 (95%)	6 (5%)	18	46
21	SU	93/107 (87%)	89 (96%)	4 (4%)	25	53
22	SV	67/67 (100%)	65 (97%)	2 (3%)	36	62
23	SW	112/113 (99%)	109 (97%)	3 (3%)	40	65
24	SX	113/115 (98%)	104 (92%)	9 (8%)	10	32
25	SY	108/115 (94%)	104 (96%)	4 (4%)	29	56
26	SZ	67/103 (65%)	62 (92%)	5 (8%)	11	34
27	Sa	87/98 (89%)	84 (97%)	3 (3%)	32	59
28	Sb	75/76 (99%)	71 (95%)	4 (5%)	19	47
29	Sc	55/62 (89%)	53 (96%)	2 (4%)	30	57
30	Sd	48/49 (98%)	47 (98%)	1 (2%)	48	70
31	Se	42/48 (88%)	39 (93%)	3 (7%)	12	37
32	sh	57/140 (41%)	54 (95%)	3 (5%)	19	47
33	Sg	272/275 (99%)	256 (94%)	16 (6%)	16	43
34	Ln	23/24 (96%)	23 (100%)	0	100	100
37	3m	252/335 (75%)	237 (94%)	15 (6%)	16	42
38	3f	229/289 (79%)	221 (96%)	8 (4%)	31	58
39	3a	439/1259 (35%)	422 (96%)	17 (4%)	27	55
40	3e	302/406 (74%)	296 (98%)	6 (2%)	50	71
41	3c	347/811 (43%)	338 (97%)	9 (3%)	41	66
42	3h	272/310 (88%)	267 (98%)	5 (2%)	54	74
43	3d	20/494 (4%)	19 (95%)	1 (5%)	20	48
44	3k	121/193 (63%)	118 (98%)	3 (2%)	42	67
45	3l	475/515 (92%)	451 (95%)	24 (5%)	20	48
All	All	6655/9296 (72%)	6368 (96%)	287 (4%)	27	53

5 of 287 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
39	3a	341	LEU
45	3l	554	ASN
39	3a	535	GLU
44	3k	128	LEU
14	SN	118	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 60 such sidechains are listed below:

Mol	Chain	Res	Type
31	Se	37	GLN
45	3l	229	ASN
39	3a	180	GLN
45	3l	225	HIS
45	3l	546	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
35	S2	1746/1869 (93%)	325 (18%)	6 (0%)
36	zz	301/332 (90%)	117 (38%)	0
All	All	2047/2201 (93%)	442 (21%)	6 (0%)

5 of 442 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
35	S2	2	A
35	S2	17	C
35	S2	33	G
35	S2	41	G
35	S2	42	A

5 of 6 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
35	S2	871	U
35	S2	1326	U
35	S2	1434	C
35	S2	517	C
35	S2	174	C

5.4 Non-standard residues in protein, DNA, RNA chains

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

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry

Of 10 ligands modelled in this entry, 10 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

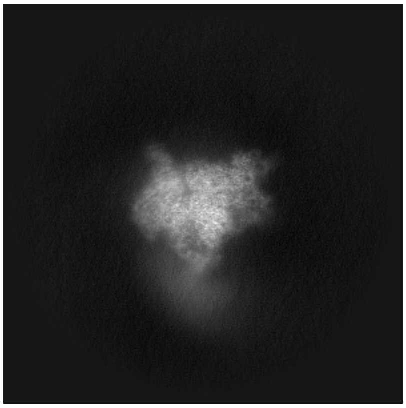
6 Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-62386. These allow visual inspection of the internal detail of the map and identification of artifacts.

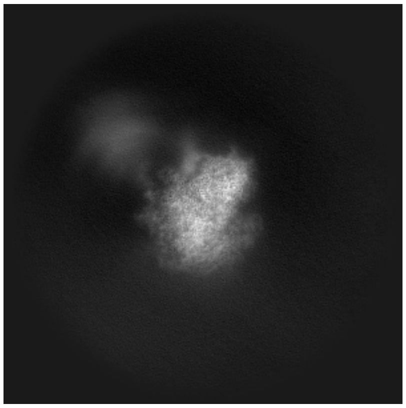
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections ⓘ

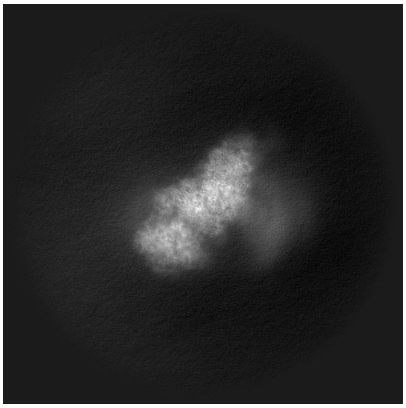
6.1.1 Primary map



X

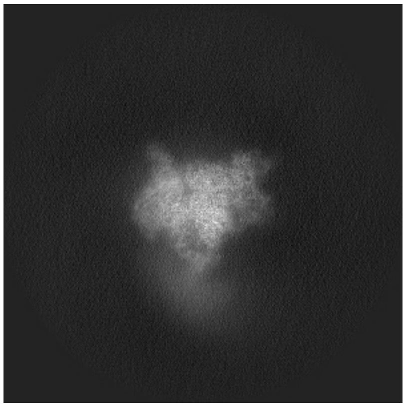


Y

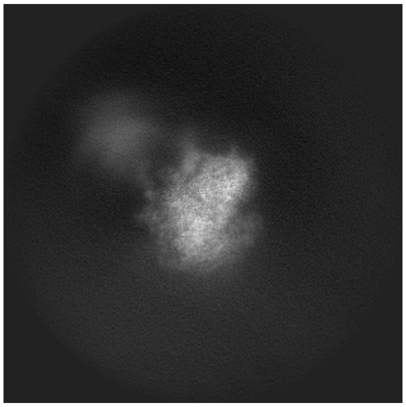


Z

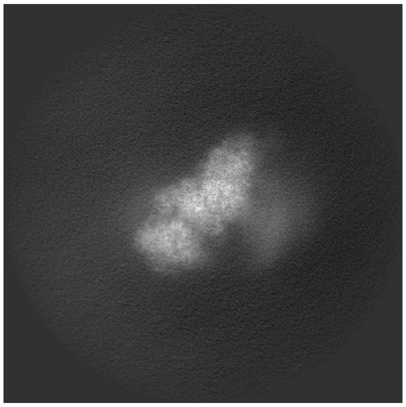
6.1.2 Raw map



X



Y

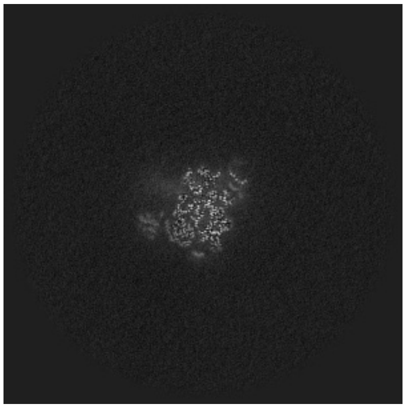


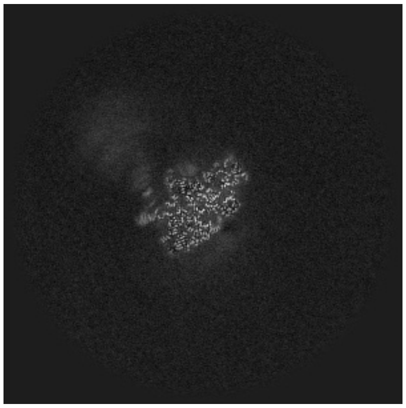
Z

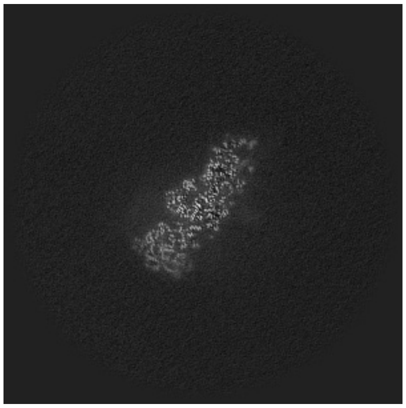
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ

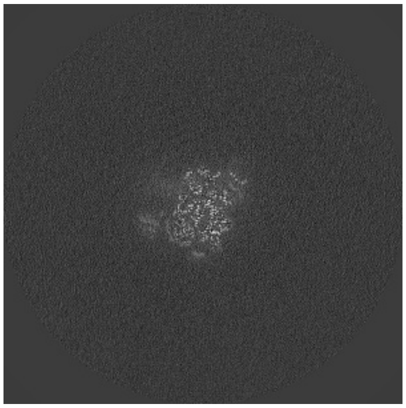
6.2.1 Primary map

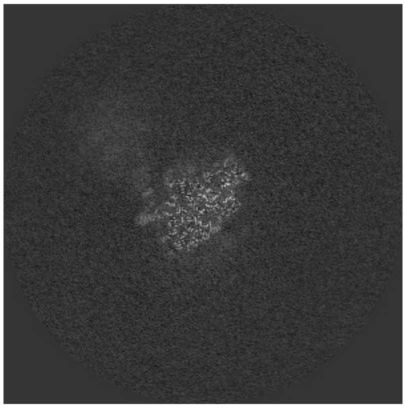

X Index: 250

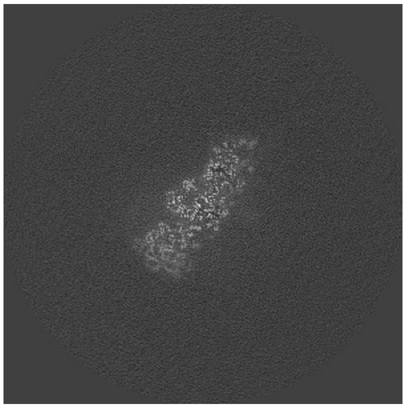

Y Index: 250


Z Index: 250

6.2.2 Raw map


X Index: 250

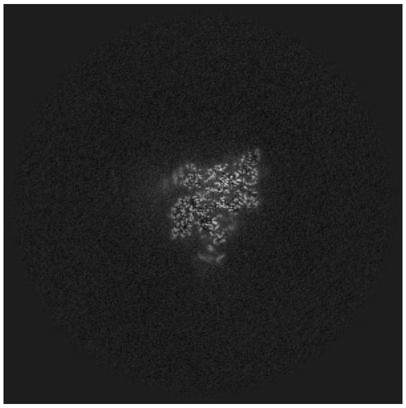

Y Index: 250

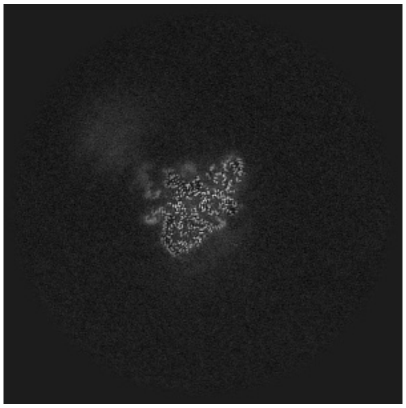

Z Index: 250

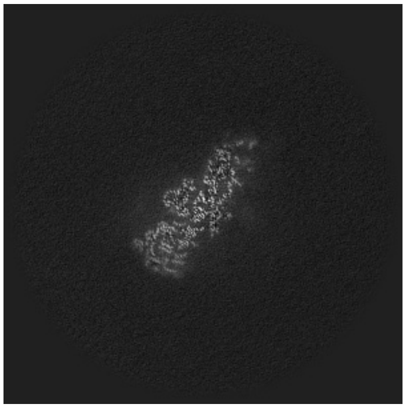
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices

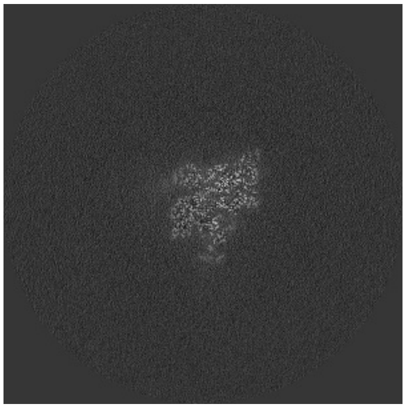
6.3.1 Primary map

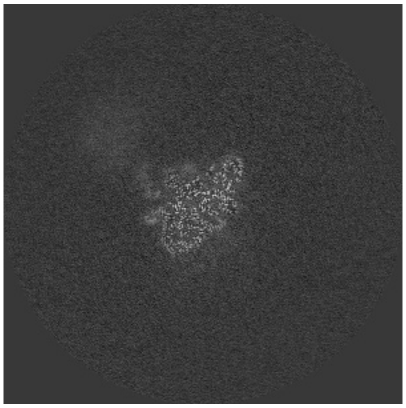

X Index: 267

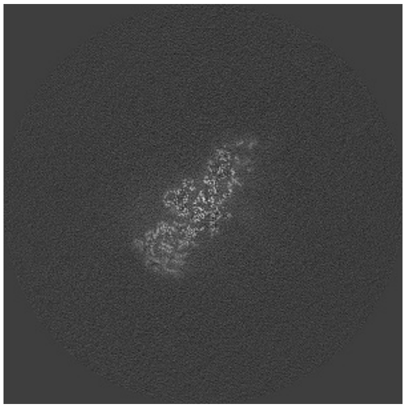

Y Index: 255


Z Index: 248

6.3.2 Raw map


X Index: 267

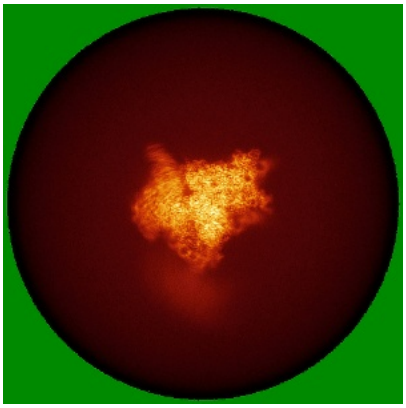

Y Index: 255


Z Index: 248

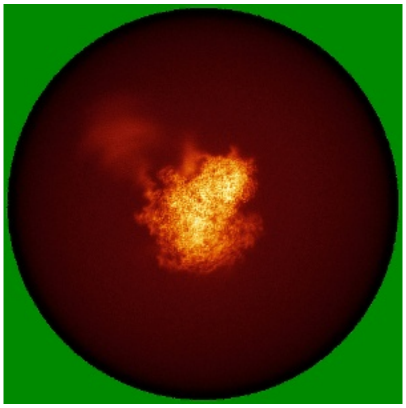
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color)

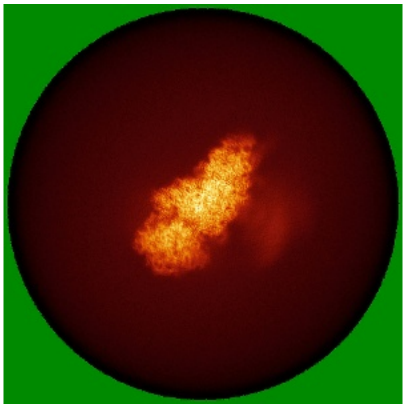
6.4.1 Primary map



X

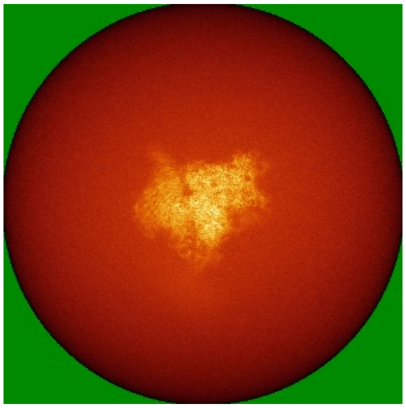


Y

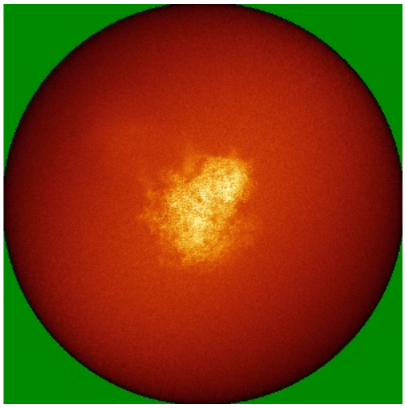


Z

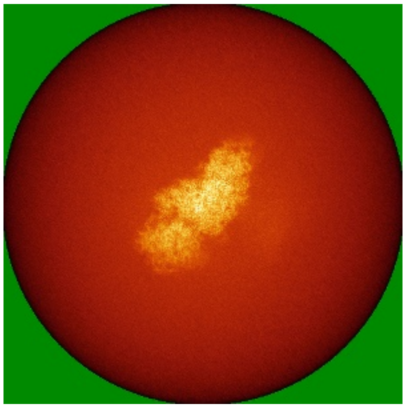
6.4.2 Raw map



X



Y



Z

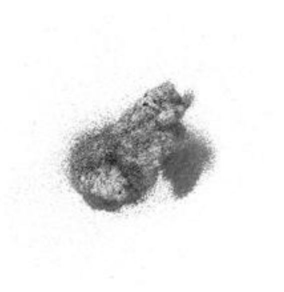
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views ⓘ

6.5.1 Primary map

X

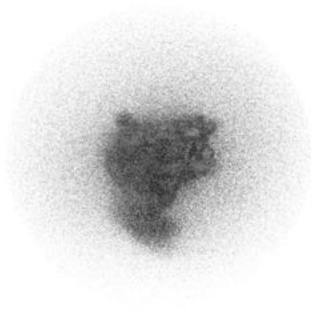
Y



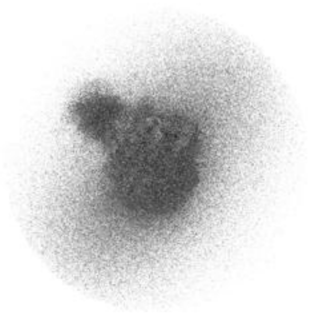
Z

The images above show the 3D surface view of the map at the recommended contour level 0.008. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

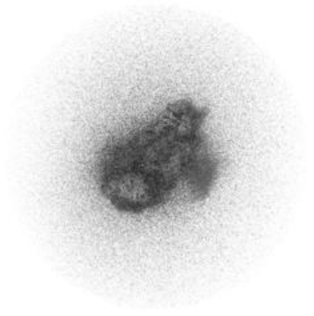
6.5.2 Raw map



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.

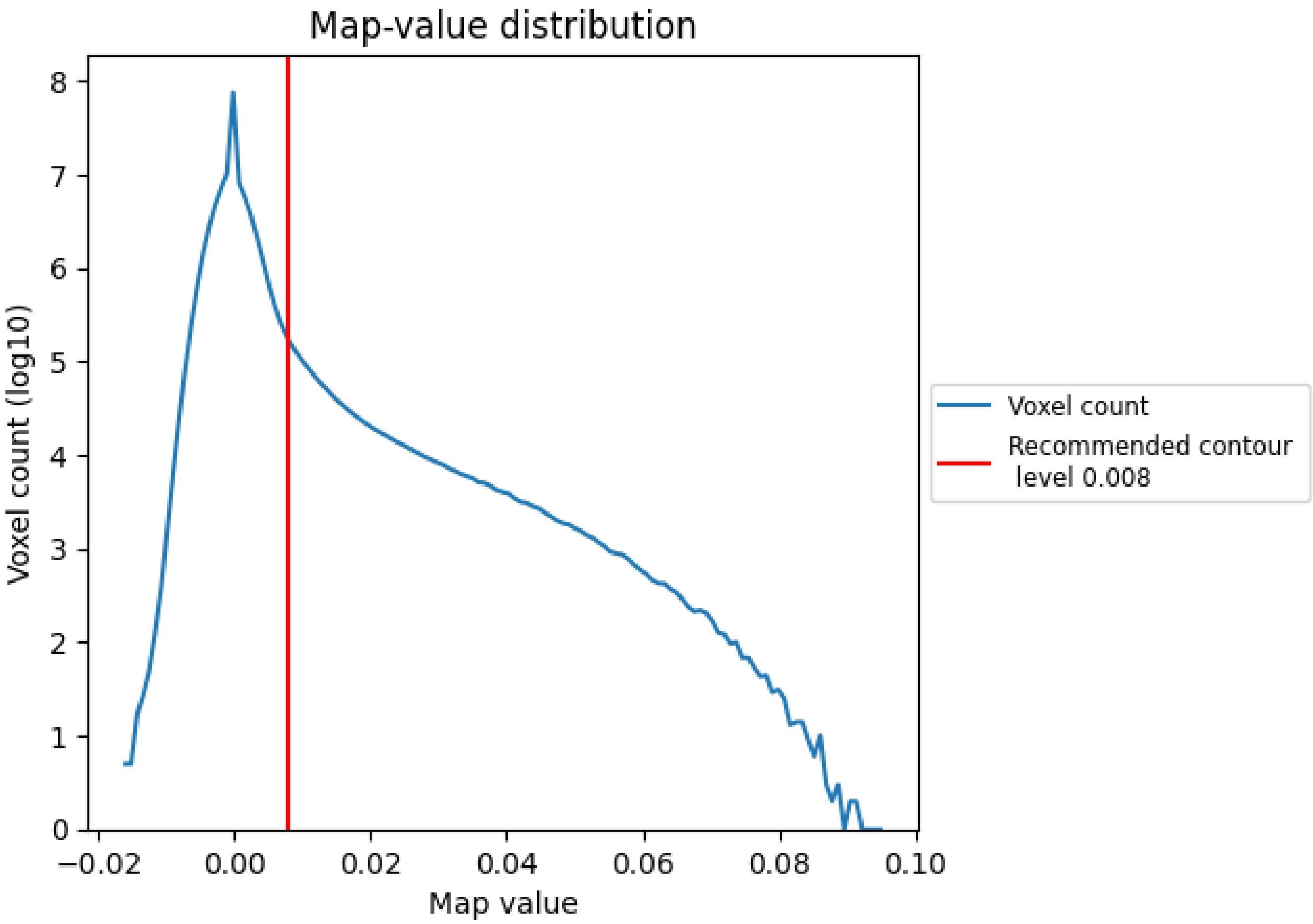
6.6 Mask visualisation ⓘ

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

7 Map analysis ⓘ

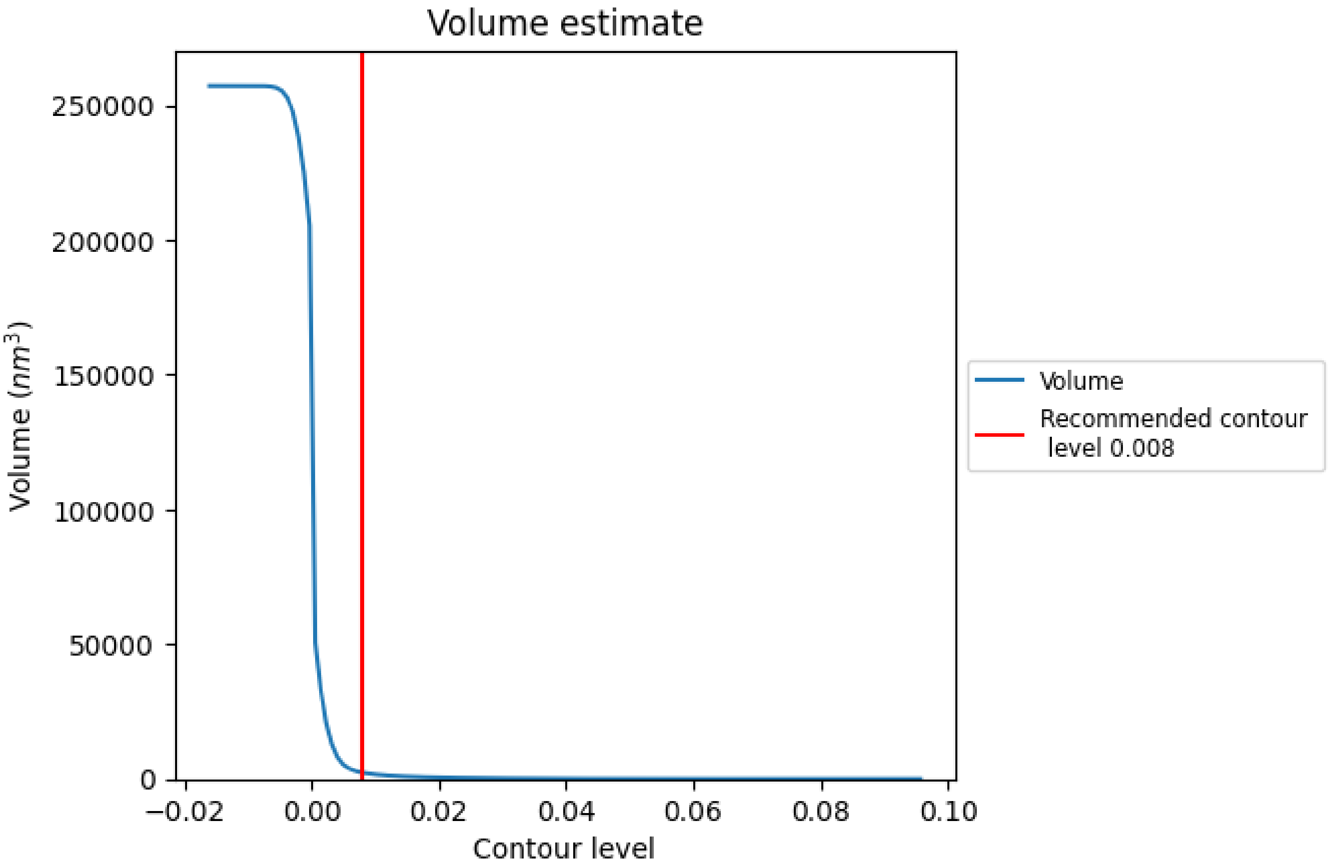
This section contains the results of statistical analysis of the map.

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.

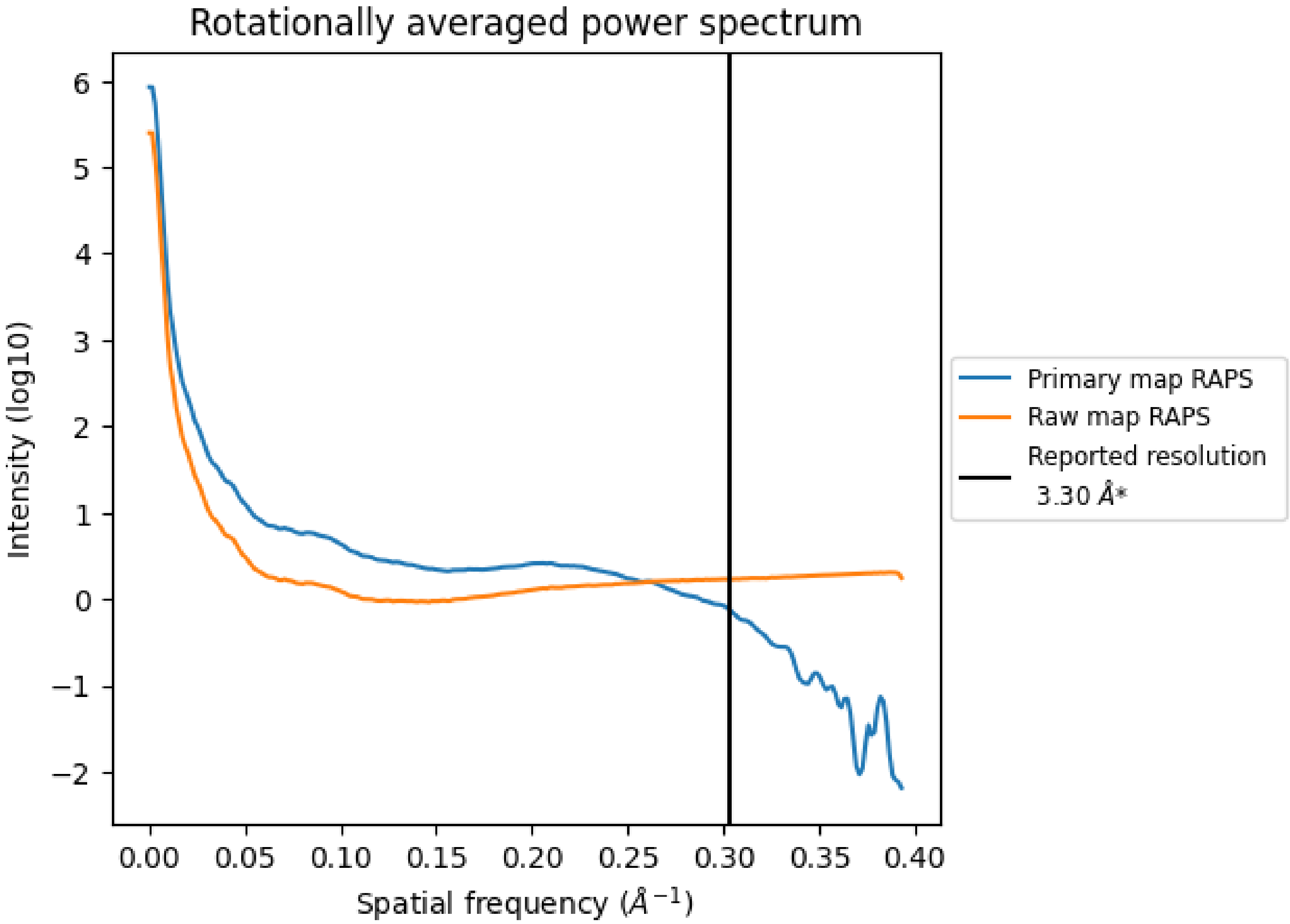
7.2 Volume estimate ⓘ



The volume at the recommended contour level is 2406 nm^3; this corresponds to an approximate mass of 2173 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 ⓘ

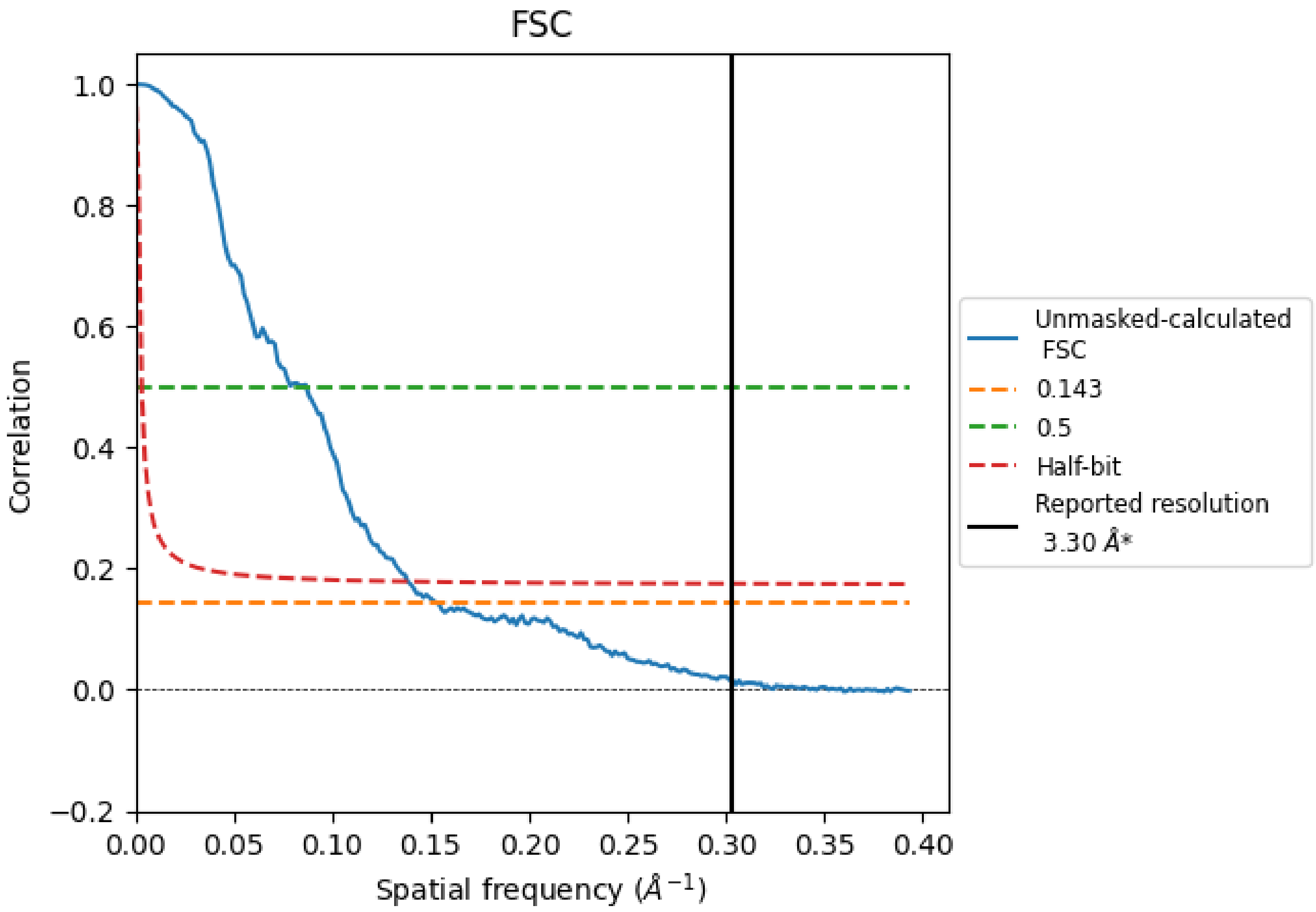


*Reported resolution corresponds to spatial frequency of 0.303 $Å^{-1}$

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 0.303 Å^{-1}

8.2 Resolution estimates ⓘ

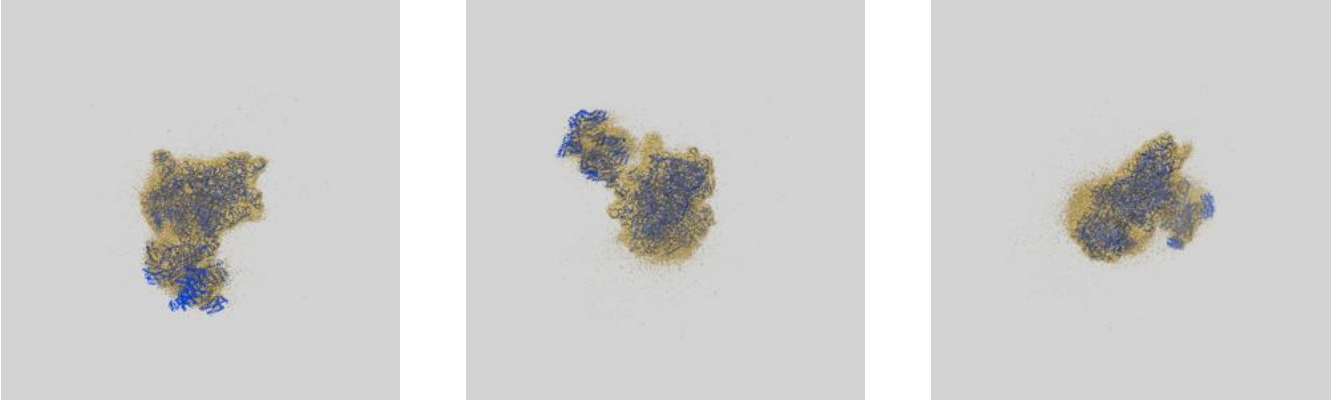
Resolution estimate (Å)	**Estimation criterion (FSC cut-off)**		
	0.143	0.5	Half-bit
Reported by author	3.30	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	6.53	11.53	7.23

*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 6.53 differs from the reported value 3.3 by more than 10 %

9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-62386 and PDB model 9KKF. Per-residue inclusion information can be found in section 3 on page 12.

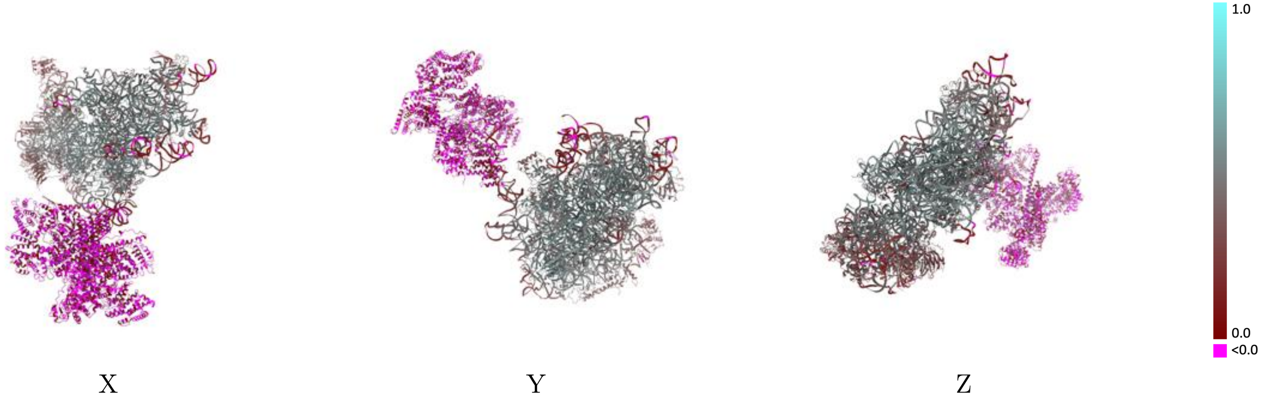
9.1 Map-model overlay ⓘ



X Y Z

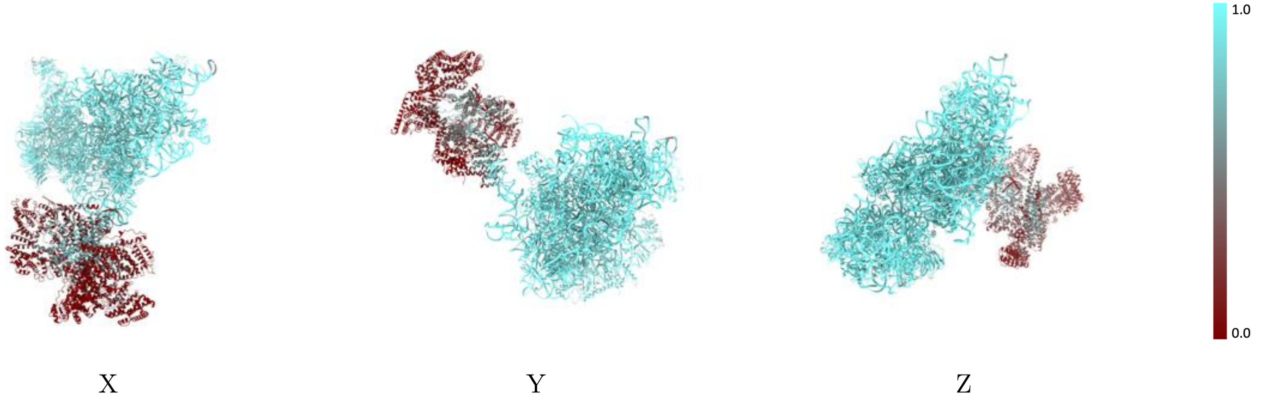
The images above show the 3D surface view of the map at the recommended contour level 0.008 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model ⓘ



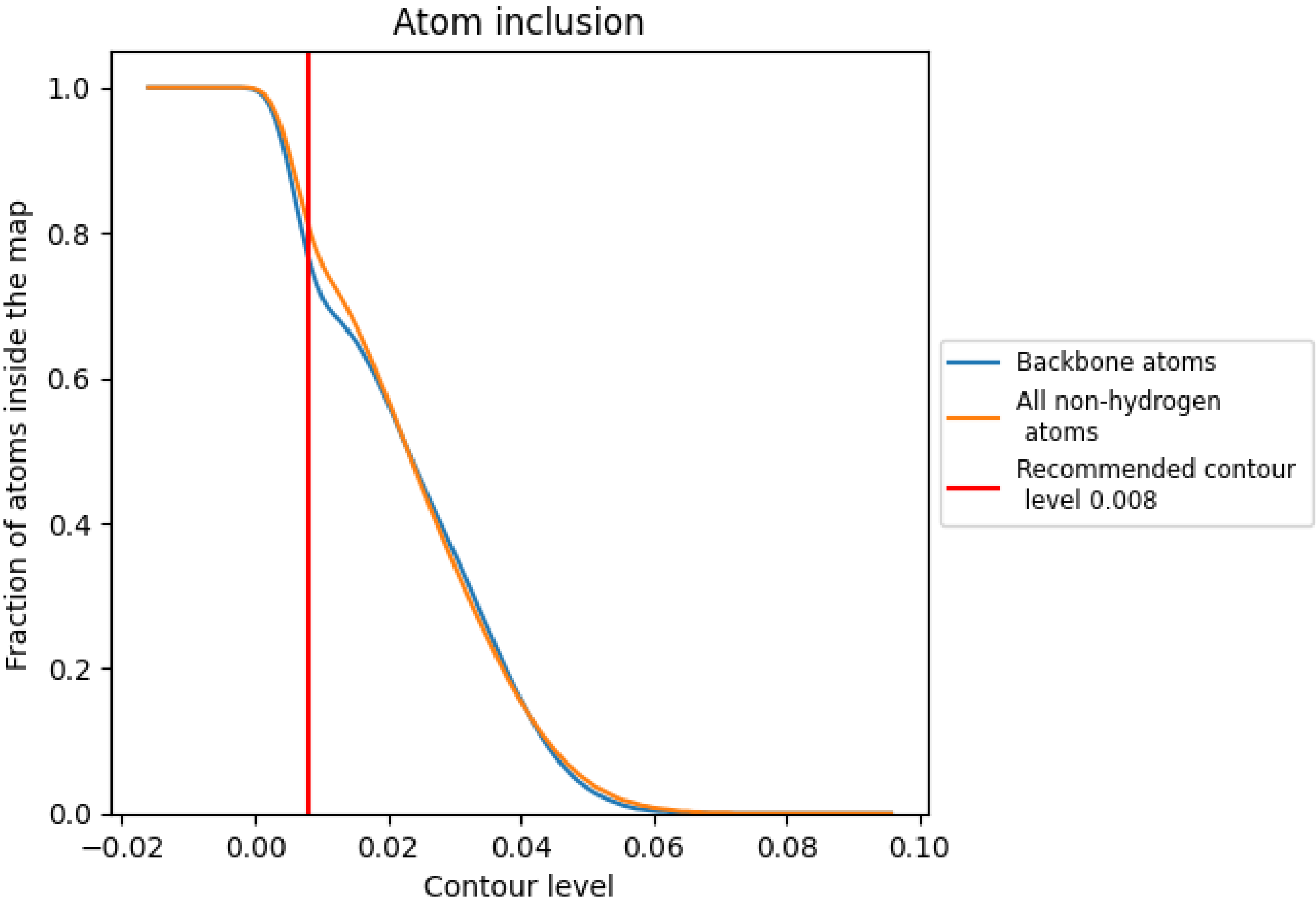
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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



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 (0.008).

9.4 Atom inclusion ⓘ



At the recommended contour level, 77% of all backbone atoms, 81% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.008) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8110	0.3360
3a	0.3820	0.0180
3c	0.2760	-0.0020
3d	0.2020	0.0300
3e	0.1760	0.0030
3f	0.3100	0.0060
3h	0.4350	0.0140
3k	0.0380	-0.0160
3l	0.0860	-0.0050
3m	0.0720	-0.0110
Ln	1.0000	0.5090
S2	0.9960	0.4550
SA	0.9950	0.5030
SB	0.9880	0.5000
SC	0.9960	0.5170
SD	0.9940	0.4090
SE	0.9950	0.4970
SF	0.9960	0.4770
SG	0.9790	0.4050
SH	0.9870	0.4450
SI	0.9880	0.4930
SJ	0.9950	0.5060
SK	0.9920	0.3470
SL	0.9940	0.5010
SN	0.9950	0.4950
SO	0.9960	0.5260
SP	0.9780	0.3210
SQ	0.9950	0.4310
SR	0.9830	0.4480
SS	0.9750	0.3650
ST	0.9910	0.3840
SU	0.9940	0.3800
SV	0.9890	0.5010
SW	1.0000	0.5040
SX	0.9980	0.5080

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Chain	Atom inclusion	Q-score
SY	🟦 0.9880	🟫 0.4480
SZ	🟦 0.9980	🟫 0.4390
Sa	🟦 1.0000	🟫 0.5340
Sb	🟦 0.9950	🟫 0.5070
Sc	🟦 1.0000	🟫 0.5000
Sd	🟦 0.9980	🟫 0.4190
Se	🟦 0.9950	🟫 0.4710
Sf	🟦 0.8830	🟫 0.2190
Sg	🟦 0.9770	🟫 0.3200
sh	🟦 0.9060	🟫 0.2140
zz	🟦 0.9130	🟫 0.2920