wwPDB EM Validation Summary Report

Oct 15, 2024 – 01:53 AM JST

PDB ID	:	8I0P
EMDB ID	:	EMD-35105
Title	:	The cryo-EM structure of human pre-Bact complex
Authors	:	Zhan, X.; Lu, Y.; Shi, Y.
Deposited on	:	2023-01-11
Resolution	:	3.40 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
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:

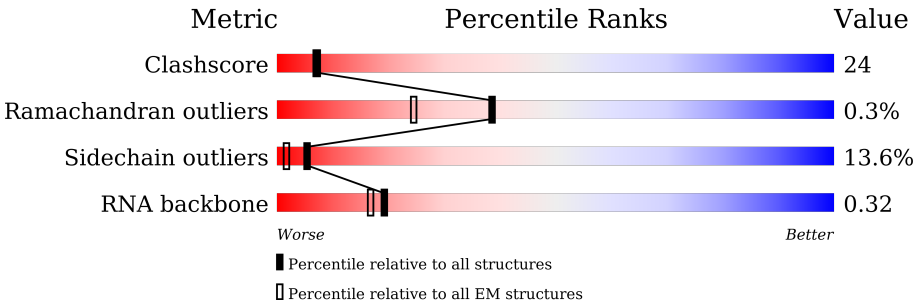
EMDB validation analysis	:	0.0.1.dev113
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

1 Overall quality at a glance

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

The reported resolution of this entry is 3.40 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

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	A	2335	10% 51% 34% 6% 8%
2	B	117	• 10% 47% 22% • 16%
3	C	972	• 38% 50% 5% 8%
4	D	2136	51% 78% • 19%
5	E	357	6% 41% 39% • 16%
6	F	107	7% 12% 35% 37% 5% 11%
7	G	220	• 12% 14% • 71%

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Mol	Chain	Length	Quality of chain
8	H	188	16% 20% 48% 18% 12%
9	I	855	17% 65% 31%
10	J	848	15% 13% 71%
11	K	393	11% 48% 26% 5% 21%
12	L	802	7% 88%
13	N	144	11% 89% 7%
14	O	420	60% 5% 35%
15	P	229	10% 7% 82%
16	Q	1485	36% 86% 11%
17	R	536	20% 11% 64%
18	T	514	24% 31% 7% 38%
19	X	396	17% 20% 61%
20	Y	322	15% 18% 63%
21	Z	619	6% 91%
22	1	1304	35% 34% 6% 24%
23	3	1217	43% 44% 10%
24	o	255	6% 64% 36%
25	p	225	75% 25%
26	c	118	18% 82% 18%
26	h	118	8% 80% 19%
27	d	86	23% 86% 14%
27	i	86	5% 84% 16%
28	a	240	7% 35% 65%
28	m	240	34% 66%
29	g	126	15% 64% 36%

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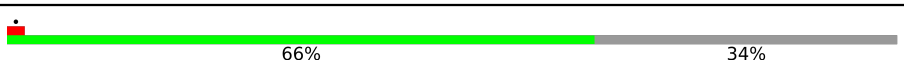
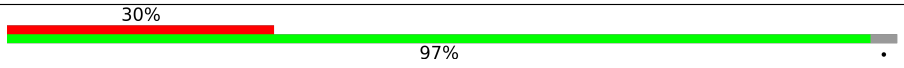
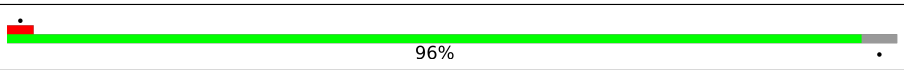
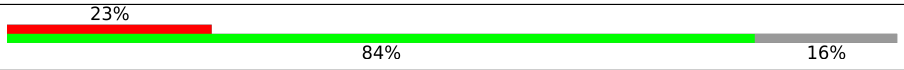
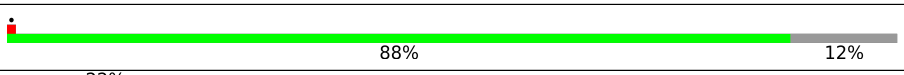
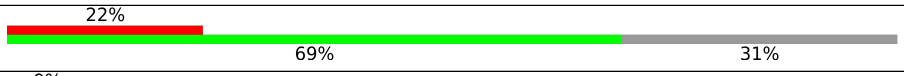
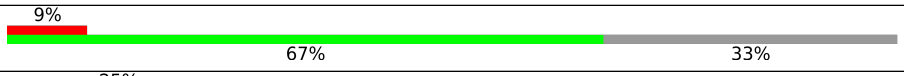
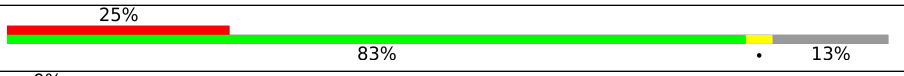
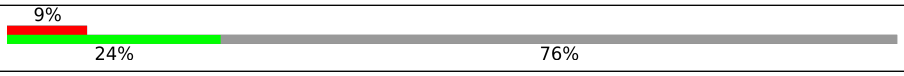
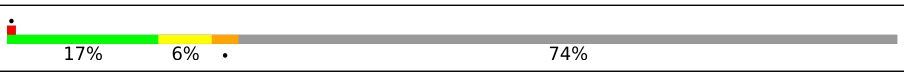
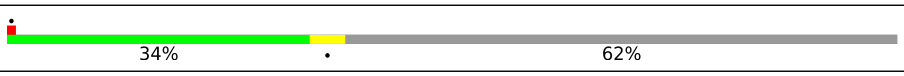
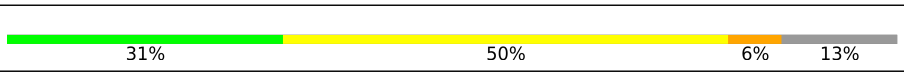
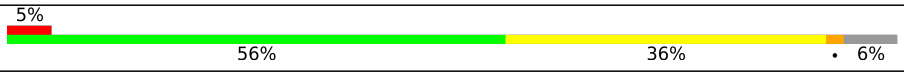
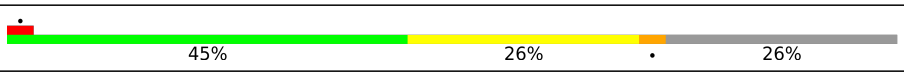
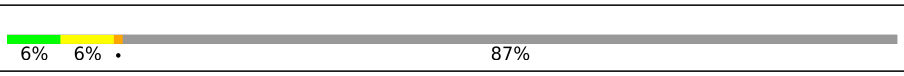
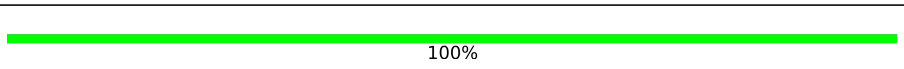
Mol	Chain	Length	Quality of chain
29	l	126	
30	f	76	
30	k	76	
31	e	92	
31	j	92	
32	b	119	
32	n	119	
33	w	501	
34	u	793	
35	2	895	
36	4	424	
37	6	125	
38	7	110	
39	5	86	
40	9	520	
41	8	904	
42	y	301	
43	v	464	
44	z	25	

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
22	SEP	1	129	-	-	X	-

2 Entry composition (i)

There are 47 unique types of molecules in this entry. The entry contains 103887 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 Pre-mRNA-processing-splicing factor 8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	2149	16165	10296	2906	2900	63	0	0

- Molecule 2 is a RNA chain called U5 snRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	B	98	2066	925	347	696	98	0	0

- Molecule 3 is a protein called 116 kDa U5 small nuclear ribonucleoprotein component.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	896	7077	4528	1176	1338	35	0	0

- Molecule 4 is a protein called U5 small nuclear ribonucleoprotein 200 kDa helicase.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
4	D	1722	8528	5084	1722	1722	0	0

- Molecule 5 is a protein called U5 small nuclear ribonucleoprotein 40 kDa protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	E	299	2338	1470	410	445	13	0	0

- Molecule 6 is a RNA chain called U6 snRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
6	F	95	2035	910	377	653	95	0	0

- Molecule 7 is a RNA chain called pre-mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	G	63	Total	C	N	O	P	0	0
			1321	592	217	449	63		

- Molecule 8 is a RNA chain called U2 snRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	H	165	Total	C	N	O	P	0	0
			3497	1562	600	1170	165		

- Molecule 9 is a protein called Pre-mRNA-splicing factor SYF1.

Mol	Chain	Residues	Atoms				AltConf	Trace
9	I	593	Total	C	N	O	0	0
			2991	1805	593	593		

- Molecule 10 is a protein called Crooked neck-like protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	J	249	Total	C	N	O	S	0	0
			2116	1355	380	375	6		

- Molecule 11 is a protein called DNA/RNA-binding protein KIN17.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	K	312	Total	C	N	O	S	0	0
			2173	1338	413	412	10		

- Molecule 12 is a protein called Cell division cycle 5-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	L	99	Total	C	N	O	S	0	0
			829	532	149	144	4		

- Molecule 13 is a protein called Protein BUD31 homolog.

Mol	Chain	Residues	Atoms				AltConf	Trace
13	N	134	Total	C	N	O	0	0
			662	394	134	134		

- Molecule 14 is a protein called Pre-mRNA-splicing factor RBM22.

Mol	Chain	Residues	Atoms				AltConf	Trace
14	O	271	Total 1340	C 798	N 271	O 271	0	0

- Molecule 15 is a protein called Spliceosome-associated protein CWC15 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	P	42	Total 362	C 231	N 63	O 66	S 2	0	0

- Molecule 16 is a protein called RNA helicase aquarius.

Mol	Chain	Residues	Atoms				AltConf	Trace
16	Q	1329	Total 6730	C 4072	N 1329	O 1329	0	0

- Molecule 17 is a protein called SNW domain-containing protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	R	192	Total 1520	C 937	N 278	O 297	S 8	0	0

- Molecule 18 is a protein called Pleiotropic regulator 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	T	320	Total 2507	C 1582	N 456	O 462	S 7	0	0

- Molecule 19 is a protein called Smad nuclear-interacting protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	X	154	Total 1279	C 819	N 231	O 227	S 2	0	0

- Molecule 20 is a protein called RNA-binding motif protein, X-linked 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	Y	118	Total 948	C 605	N 163	O 176	S 4	0	0

- Molecule 21 is a protein called BUD13 homolog.

Mol	Chain	Residues	Atoms				AltConf	Trace
21	Z	55	Total 439	C 282	N 85	O 72	0	0

- Molecule 22 is a protein called Splicing factor 3B subunit 1.

Mol	Chain	Residues	Atoms						AltConf	Trace
22	1	993	Total 7845	C 5003	N 1360	O 1435	P 1	S 46	0	0

- Molecule 23 is a protein called Splicing factor 3B subunit 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	3	1180	Total 9240	C 5868	N 1569	O 1758	S 45	0	0

- Molecule 24 is a protein called U2 small nuclear ribonucleoprotein A'.

Mol	Chain	Residues	Atoms				AltConf	Trace
24	o	162	Total 816	C 492	N 162	O 162	0	0

- Molecule 25 is a protein called U2 small nuclear ribonucleoprotein B".

Mol	Chain	Residues	Atoms				AltConf	Trace
25	p	169	Total 851	C 513	N 169	O 169	0	0

- Molecule 26 is a protein called Small nuclear ribonucleoprotein Sm D2.

Mol	Chain	Residues	Atoms				AltConf	Trace
26	h	95	Total 482	C 292	N 95	O 95	0	0
26	c	97	Total 388	C 194	N 97	O 97	0	0

- Molecule 27 is a protein called Small nuclear ribonucleoprotein F.

Mol	Chain	Residues	Atoms				AltConf	Trace
27	i	72	Total 359	C 215	N 72	O 72	0	0
27	d	74	Total 296	C 148	N 74	O 74	0	0

- Molecule 28 is a protein called Small nuclear ribonucleoprotein-associated proteins B and B'.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	m	82	Total 413	C 249	N 82	O 82	0	0
28	a	84	Total 336	C 168	N 84	O 84	0	0

- Molecule 29 is a protein called Small nuclear ribonucleoprotein Sm D3.

Mol	Chain	Residues	Atoms				AltConf	Trace
29	l	83	Total 415	C 249	N 83	O 83	0	0
29	g	81	Total 324	C 162	N 81	O 81	0	0

- Molecule 30 is a protein called Small nuclear ribonucleoprotein G.

Mol	Chain	Residues	Atoms				AltConf	Trace
30	k	73	Total 364	C 218	N 73	O 73	0	0
30	f	74	Total 296	C 148	N 74	O 74	0	0

- Molecule 31 is a protein called Small nuclear ribonucleoprotein E.

Mol	Chain	Residues	Atoms				AltConf	Trace
31	j	81	Total 403	C 241	N 81	O 81	0	0
31	e	77	Total 308	C 154	N 77	O 77	0	0

- Molecule 32 is a protein called Small nuclear ribonucleoprotein Sm D1.

Mol	Chain	Residues	Atoms				AltConf	Trace
32	n	80	Total 402	C 242	N 80	O 80	0	0
32	b	82	Total 328	C 164	N 82	O 82	0	0

- Molecule 33 is a protein called Splicing factor 3A subunit 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	w	434	Total	C	N	O	S	0	0
			2275	1287	491	493	4		

- Molecule 34 is a protein called Splicing factor 3A subunit 1.

Mol	Chain	Residues	Atoms				AltConf	Trace
34	u	187	Total	C	N	O	0	0
			834	460	187	187		

- Molecule 35 is a protein called Splicing factor 3B subunit 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	2	231	Total	C	N	O	S	0	0
			1651	1037	309	301	4		

- Molecule 36 is a protein called Splicing factor 3B subunit 4.

Mol	Chain	Residues	Atoms				AltConf	Trace
36	4	161	Total	C	N	O	0	0
			792	470	161	161		

- Molecule 37 is a protein called Splicing factor 3B subunit 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	6	109	Total	C	N	O	S	0	0
			906	582	157	163	4		

- Molecule 38 is a protein called PHD finger-like domain-containing protein 5A.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	7	105	Total	C	N	O	S	0	0
			811	502	145	151	13		

- Molecule 39 is a protein called Splicing factor 3B subunit 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	5	81	Total	C	N	O	S	0	0
			669	422	117	124	6		

- Molecule 40 is a protein called RING-type E3 ubiquitin-protein ligase PPIL2.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	9	384	Total	C	N	O	S	0	0
			2681	1665	484	524	8		

- Molecule 41 is a protein called Serine/arginine repetitive matrix protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	8	115	Total	C	N	O	S	0	0
			931	602	154	170	5		

- Molecule 42 is a protein called Peptidyl-prolyl cis-trans isomerase E.

Mol	Chain	Residues	Atoms				AltConf	Trace
42	y	79	Total	C	N	O	0	0
			390	232	79	79		

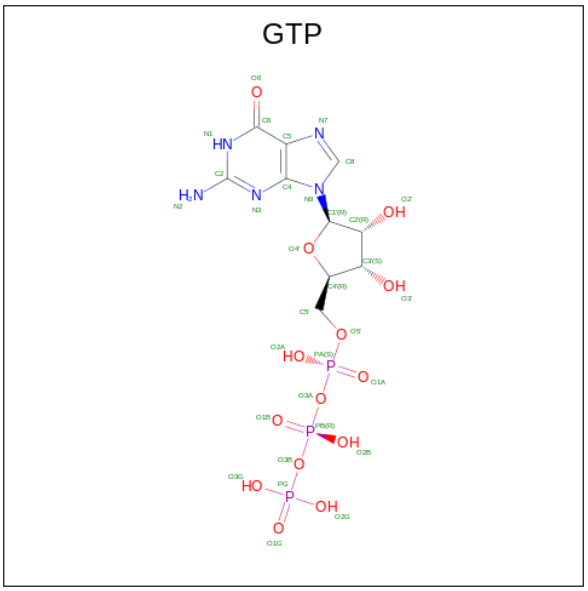
- Molecule 43 is a protein called Splicing factor 3A subunit 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	v	166	Total	C	N	O	S	0	0
			997	576	211	207	3		

- Molecule 44 is a protein called Unknown polymer.

Mol	Chain	Residues	Atoms				AltConf	Trace
44	z	25	Total	C	N	O	0	0
			124	74	25	25		

- Molecule 45 is GUANOSINE-5'-TRIPHOSPHATE (three-letter code: GTP) (formula: $C_{10}H_{16}N_5O_{14}P_3$).



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

- Molecule 46 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
46	C	1	Total	Mg	0
			1	1	

- Molecule 47 is ZINC ION (three-letter code: ZN) (formula: Zn).

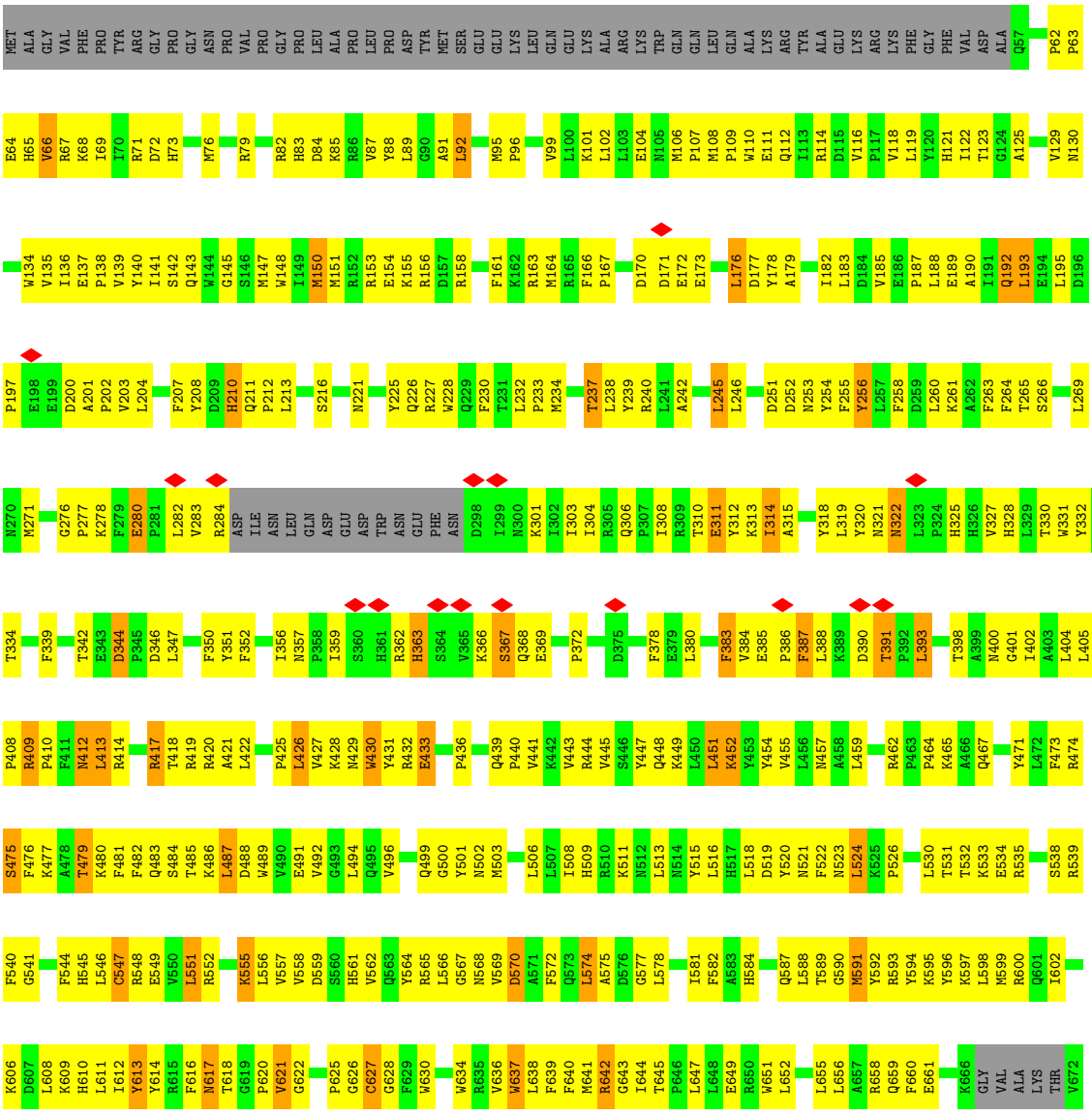
Mol	Chain	Residues	Atoms		AltConf
47	K	1	Total	Zn	0
			1	1	
47	7	3	Total	Zn	0
			3	3	

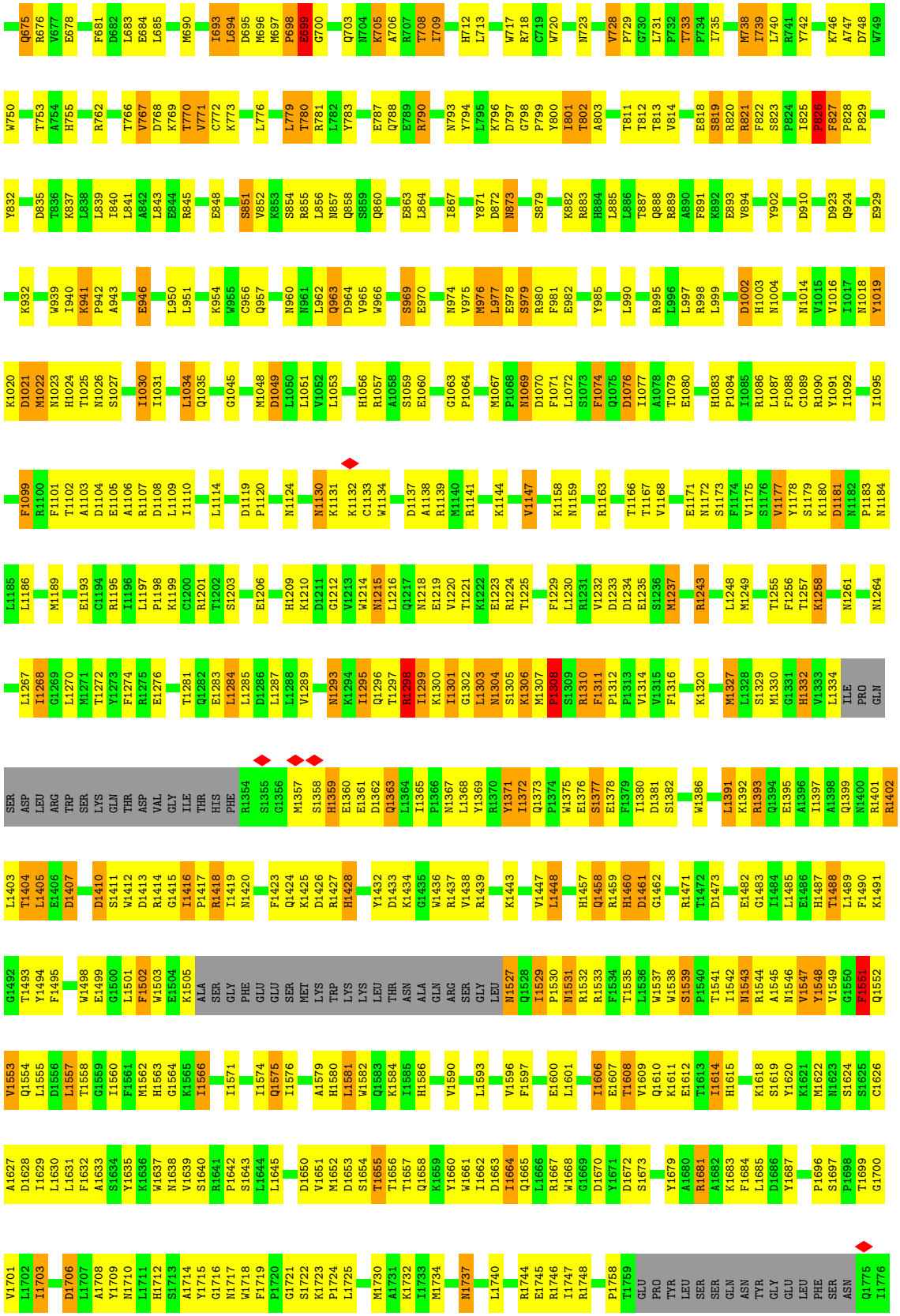
3 Residue-property plots (i)

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: Pre-mRNA-processing-splicing factor 8

Chain A:

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W750 T753 A754 H755 R762 T766 V767 D768 K769 T770 V771 C772 K773 L776 L779 T780 R781 L782 Y783 E787 Q788 E789 R790 N793 Y794 L795 K796 D797 G798 P799 Y800 I801 T802 A803 T811 T812 T813 V814 E818 S819 R820 R821 F822 S823 P824 I825 P826 F827 P828 P829
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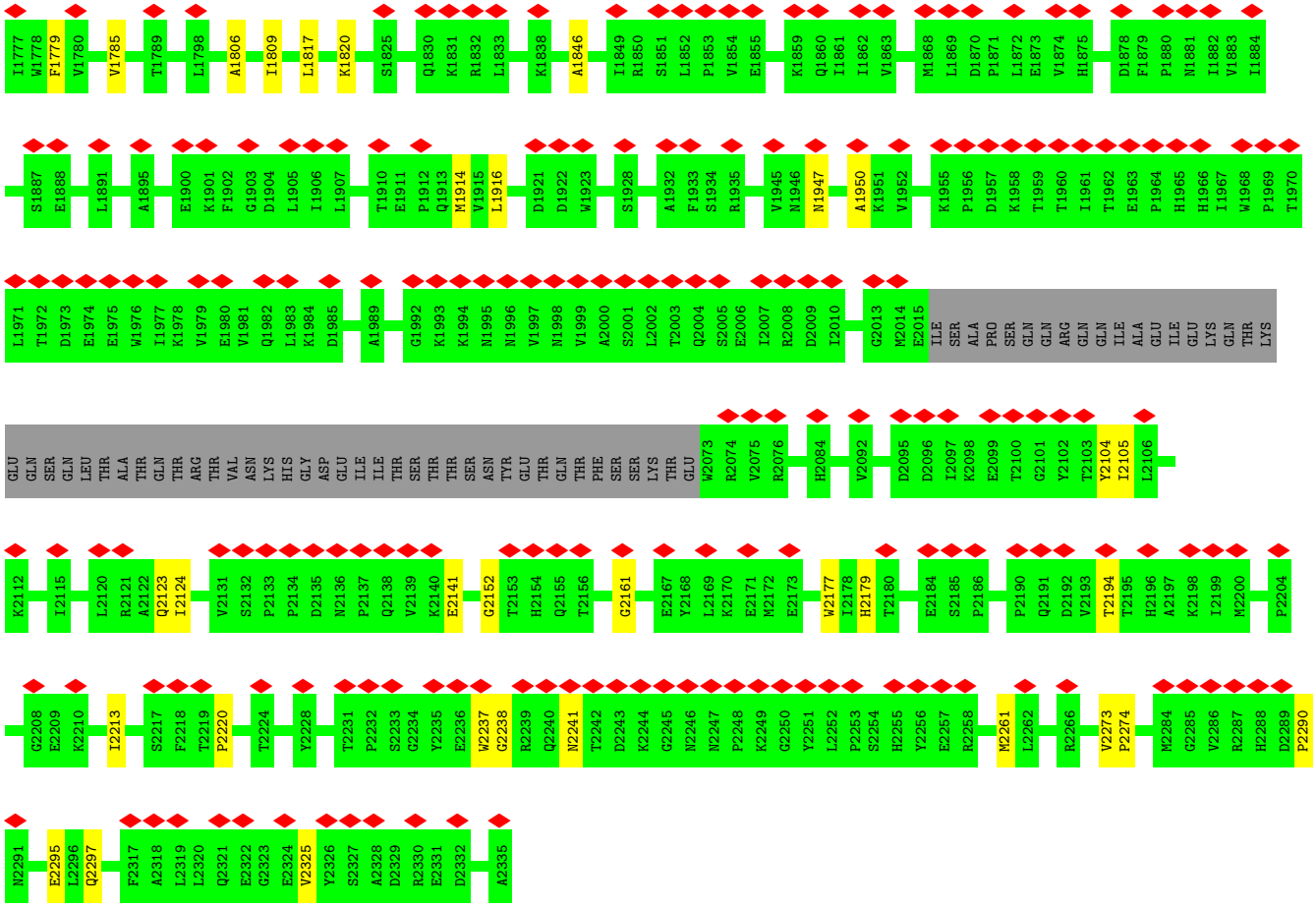

• Molecule 2: U5 snRNA

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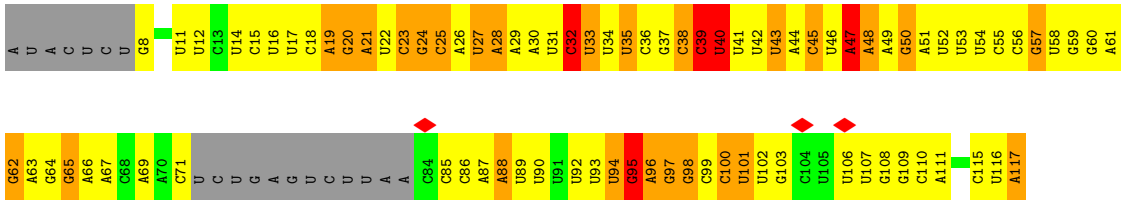

• Molecule 3: 116 kDa U5 small nuclear ribonucleoprotein component

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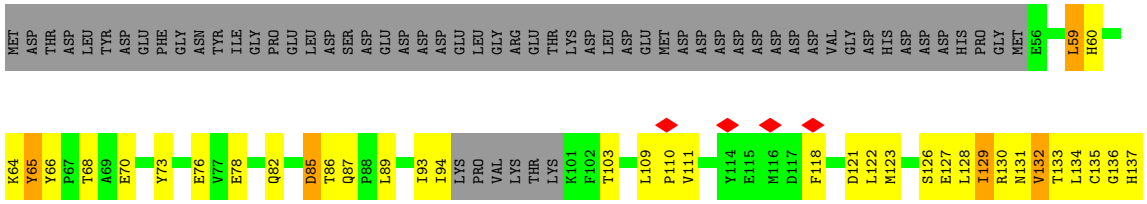
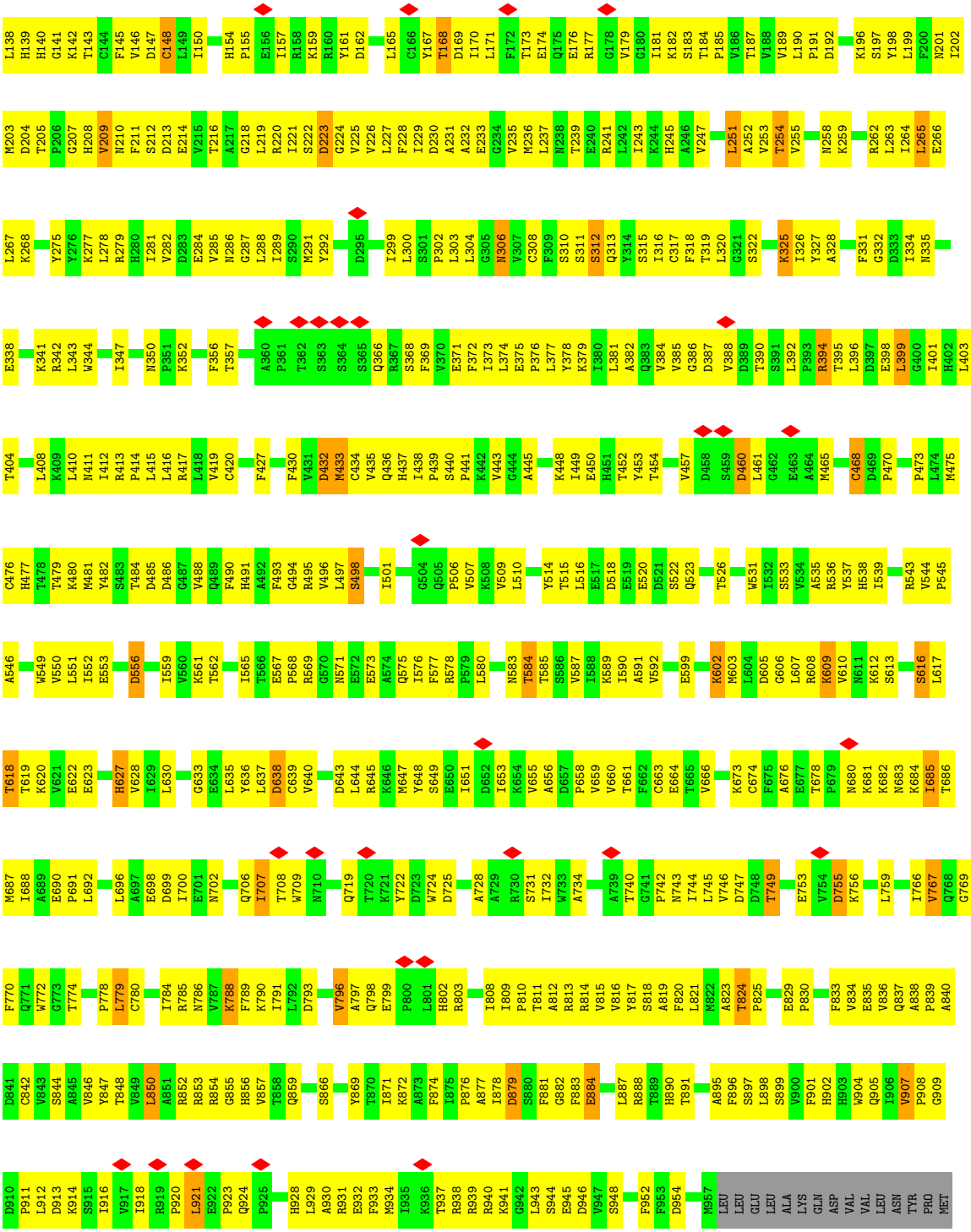
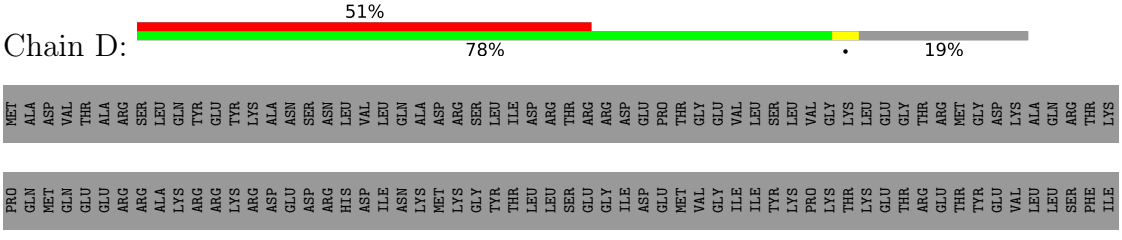
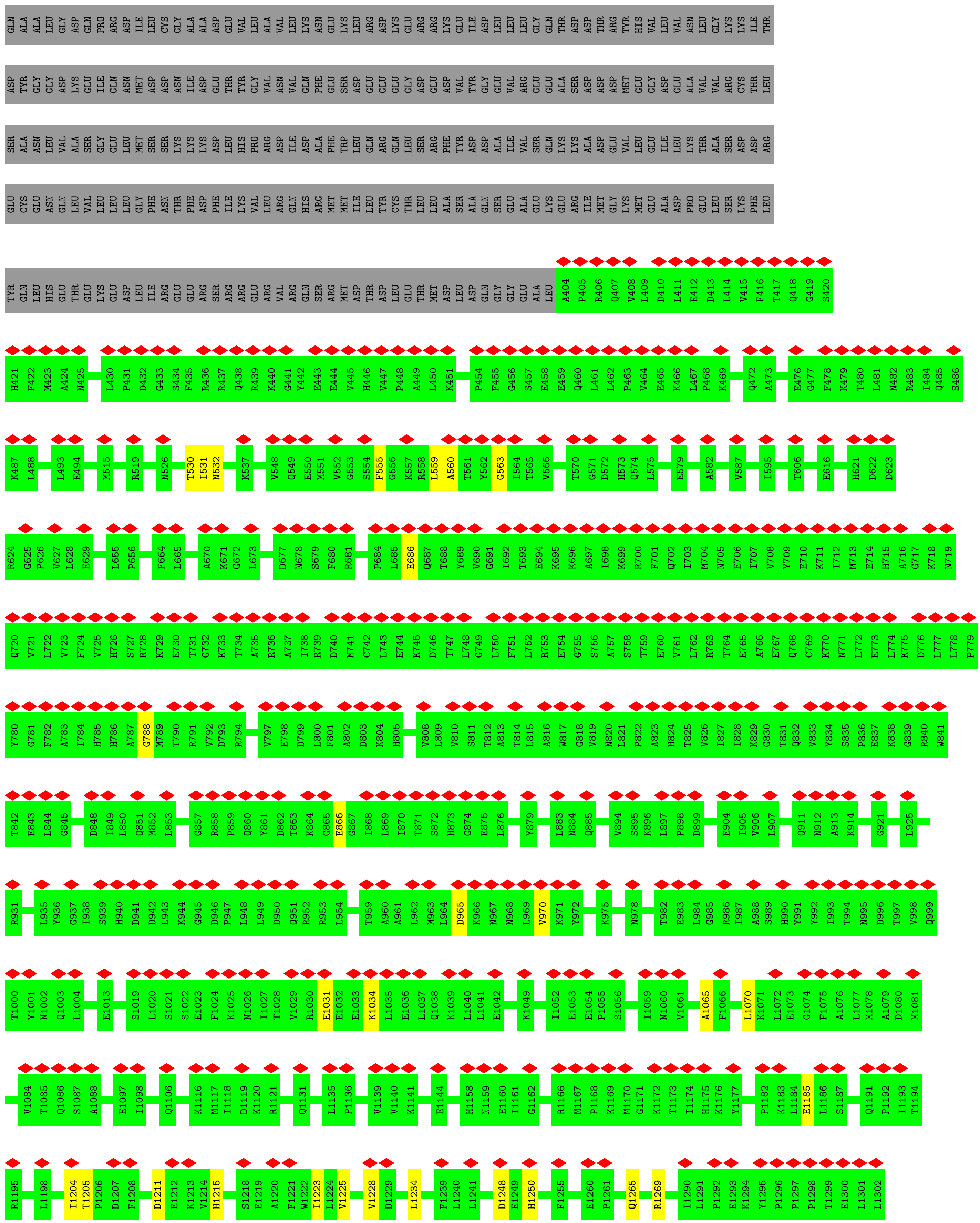




• Molecule 4: U5 small nuclear ribonucleoprotein 200 kDa helicase

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ASP TYR GLY GLY ASP LYS GLU ILE GLN ASN MET ASP ASP ASN ILE ASP GLU THR TYR GLY VAL ASN VAL GLN PHE GLU SER ASP GLU GLU GLU GLY ASP GLU ASP VAL TYR GLY GLU VAL ARG GLU GLU ALA SER ASP ASP ASP MET GLU GLY ASP GLU ALA VAL VAL ARG CYS THR LEU
SER ALA ASN LEU VAL ALA SER GLY GLU LEU MET SER SER LYS LYS LYS ASP LEU HIS PRO ARG ASP ILE ASP ALA PHE TRP LEU GLN ARG GLN LEU SER ARG PHE TYR ASP ASP ALA ILE VAL SER GLN LYS LYS ALA ASP GLU VAL LEU GLU ILE LEU LYS THR ALA SER ASP ASP ARG
GLU CYS GLU ASN GLN LEU VAL LEU LEU LEU GLY PHE ASN THR PHE ASP PHE ILE LYS VAL LEU ARG GLN HIS ARG MET MET ILE LEU TYR CYS THR LEU LEU ALA SER ALA GLN SER GLU ALA GLU LYS GLU ARG ILE MET GLY LYS MET GLU ALA ASP PRO GLU LEU SER LYS PHE LEU
TYR GLN LEU HIS GLU THR GLU LYS GLU ASP LEU ILE ARG GLU GLU ARG SER ARG ARG GLU ARG VAL ARG GLN SER ARG MET ASP THR ASP LEU GLU THR MET ASP LEU ASP GLN GLY GLY GLU ALA LEU A404 P405 R406 Q407 V408 L409 D410 L411 E412 D413 L414 V415 F416 T417 Q418 G419 S420
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Y780 G781 F782 A783 I784 H785 H786 A787 G788 M789 T790 R791 V792 D793 R794 V797 E798 D799 L800 F801 A802 D803 K804 H805 V808 L809 V810 S811 T812 A813 T814 L815 A816 W817 G818 V819 N820 L821 P822 A823 H824 T825 V826 I827 I828 K829 G830 T831 Q832 V833 Y834 S835 P836 E837 K838 G839 R840 W841
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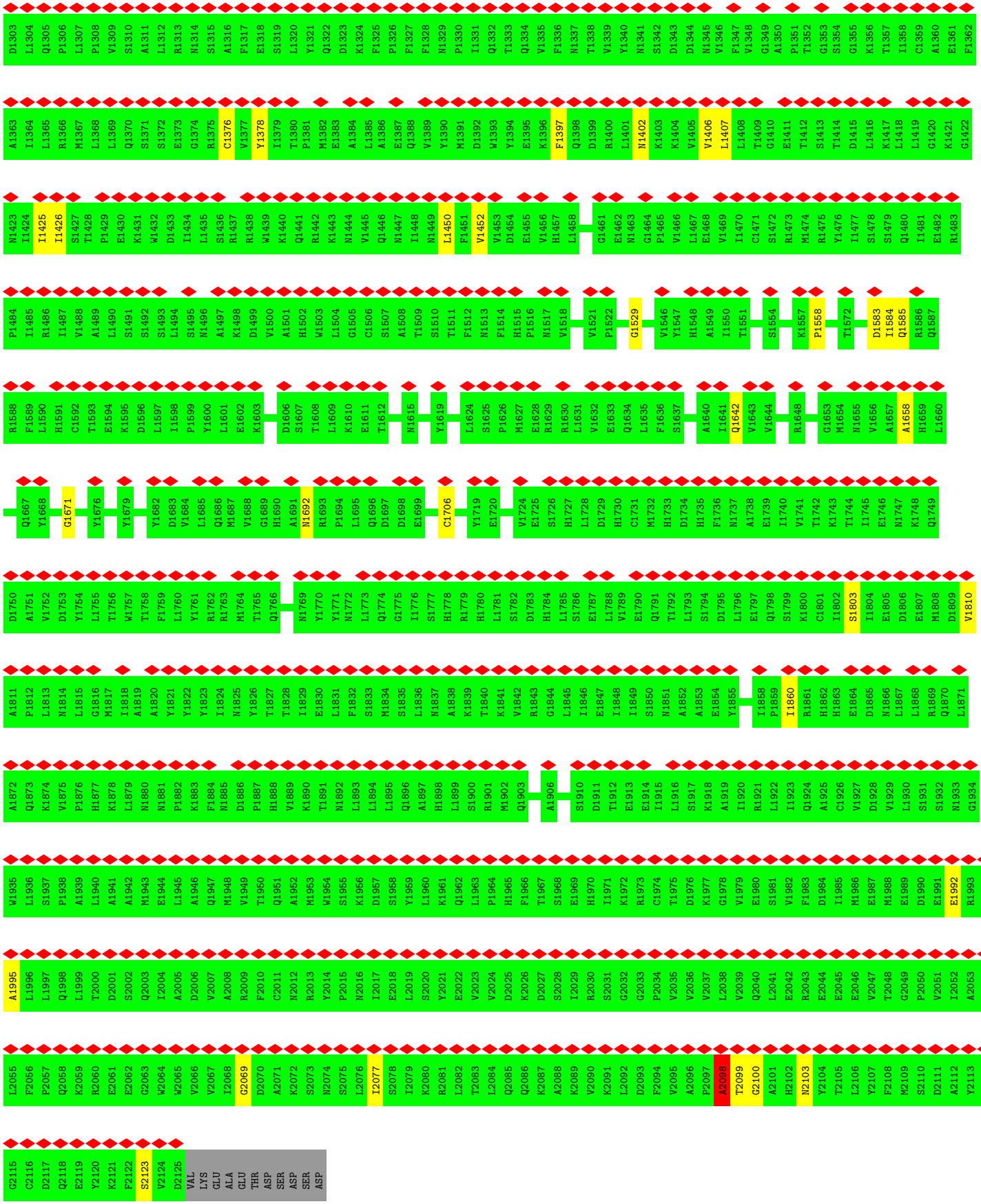
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• Molecule 5: U5 small nuclear ribonucleoprotein 40 kDa protein

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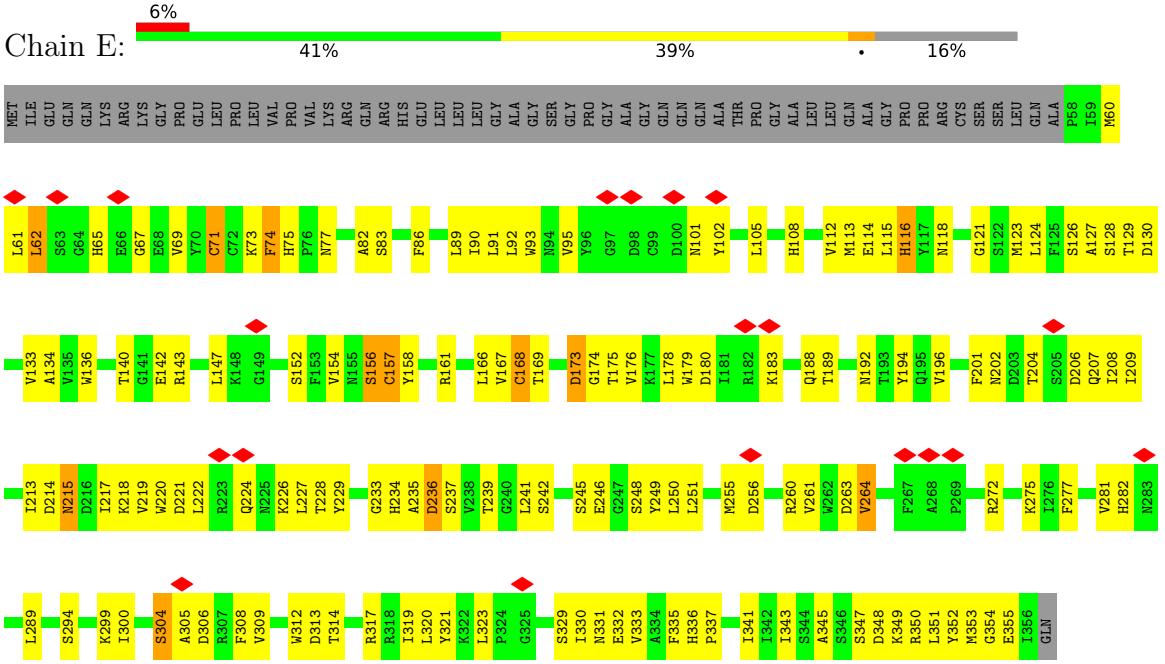

• Molecule 6: U6 snRNA

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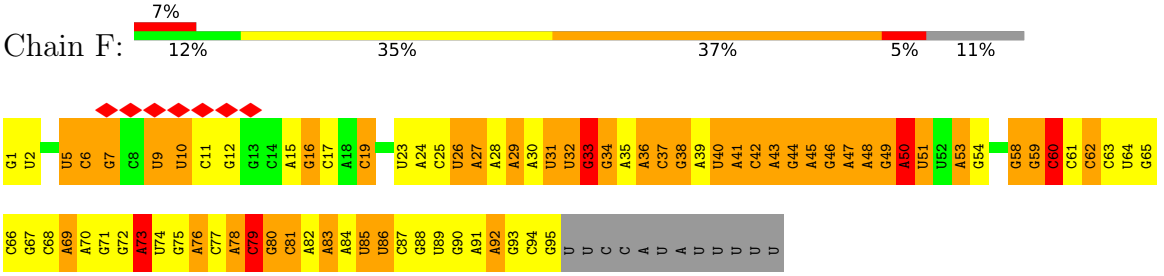
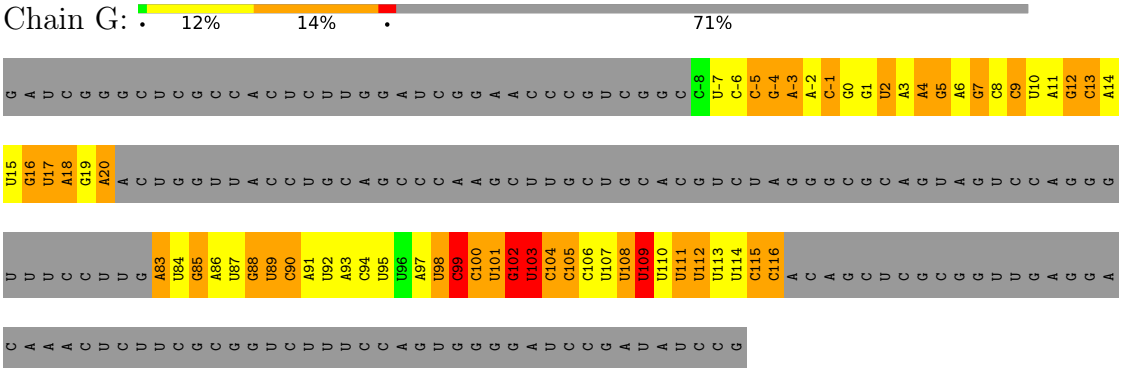


• Molecule 7: pre-mRNA

Chain G:



• Molecule 8: U2 snRNA

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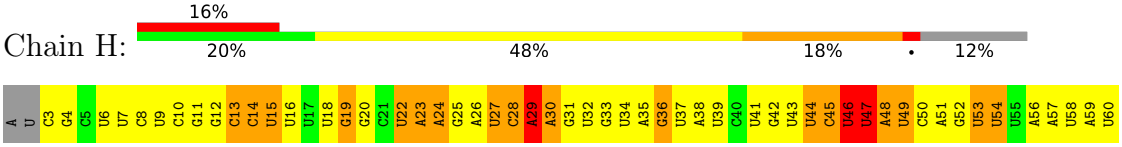

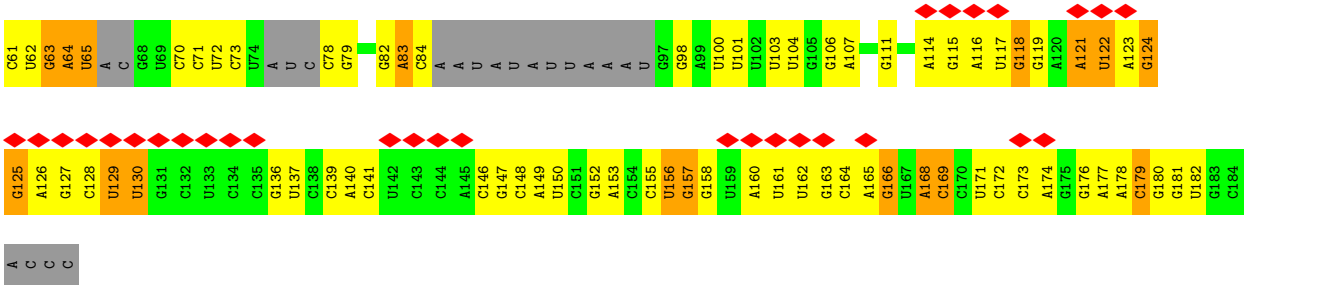

• Molecule 9: Pre-mRNA-splicing factor SYF1

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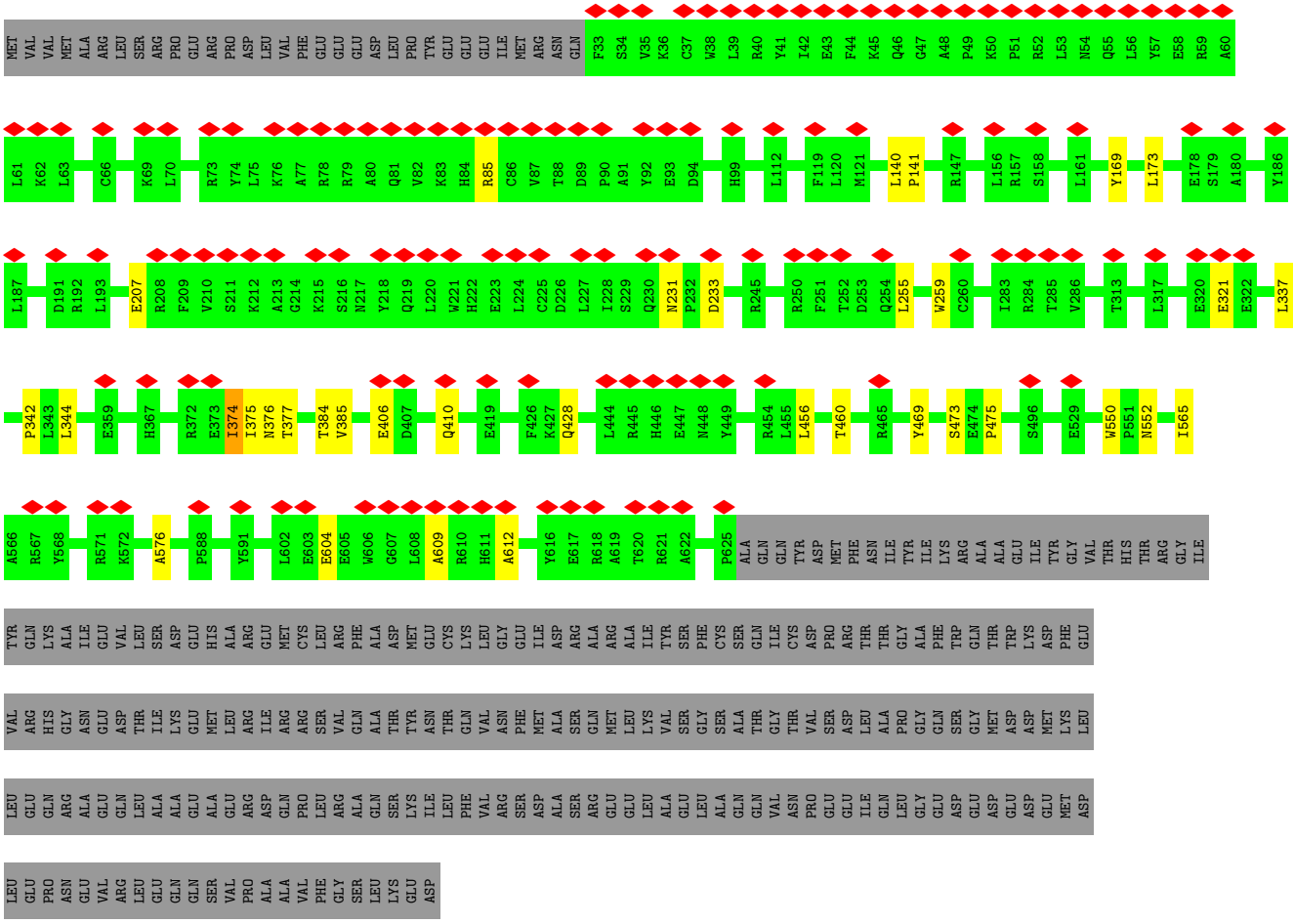
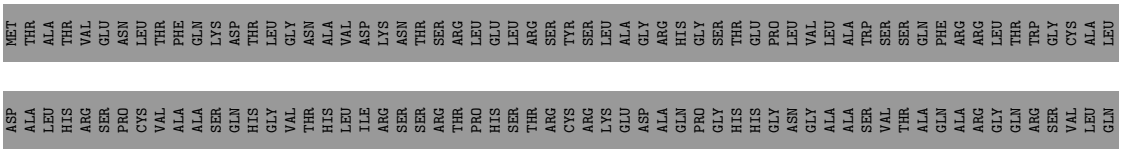
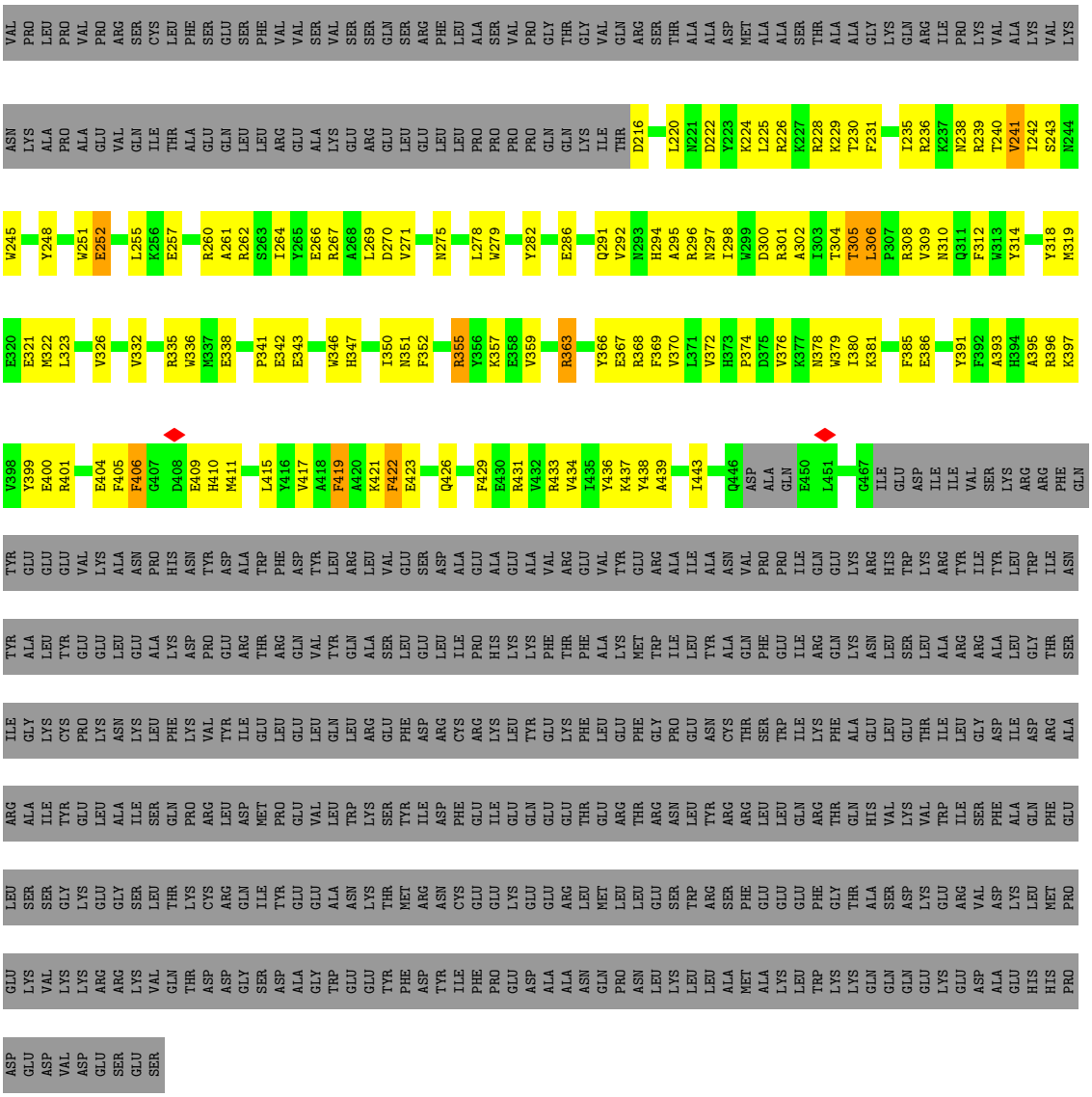


• Molecule 10: Crooked neck-like protein 1

Chain J:





• Molecule 11: DNA/RNA-binding protein KIN17

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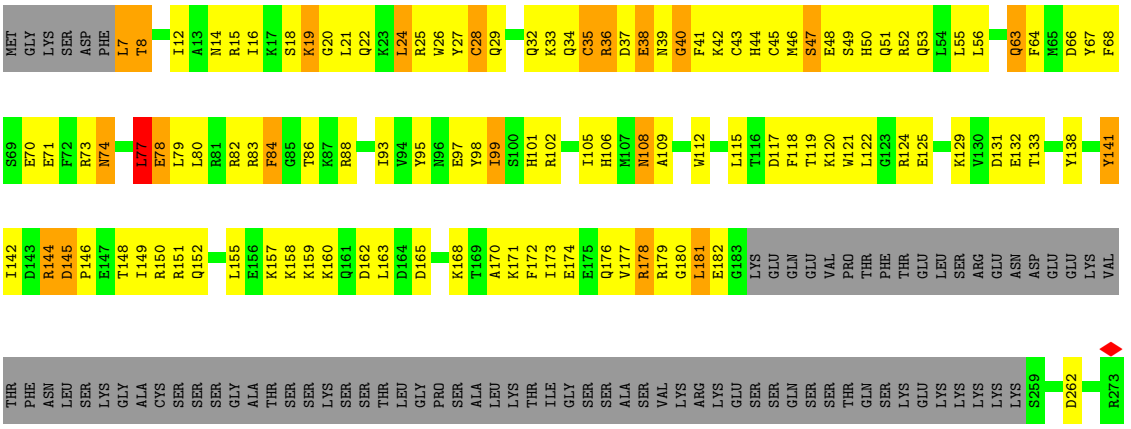
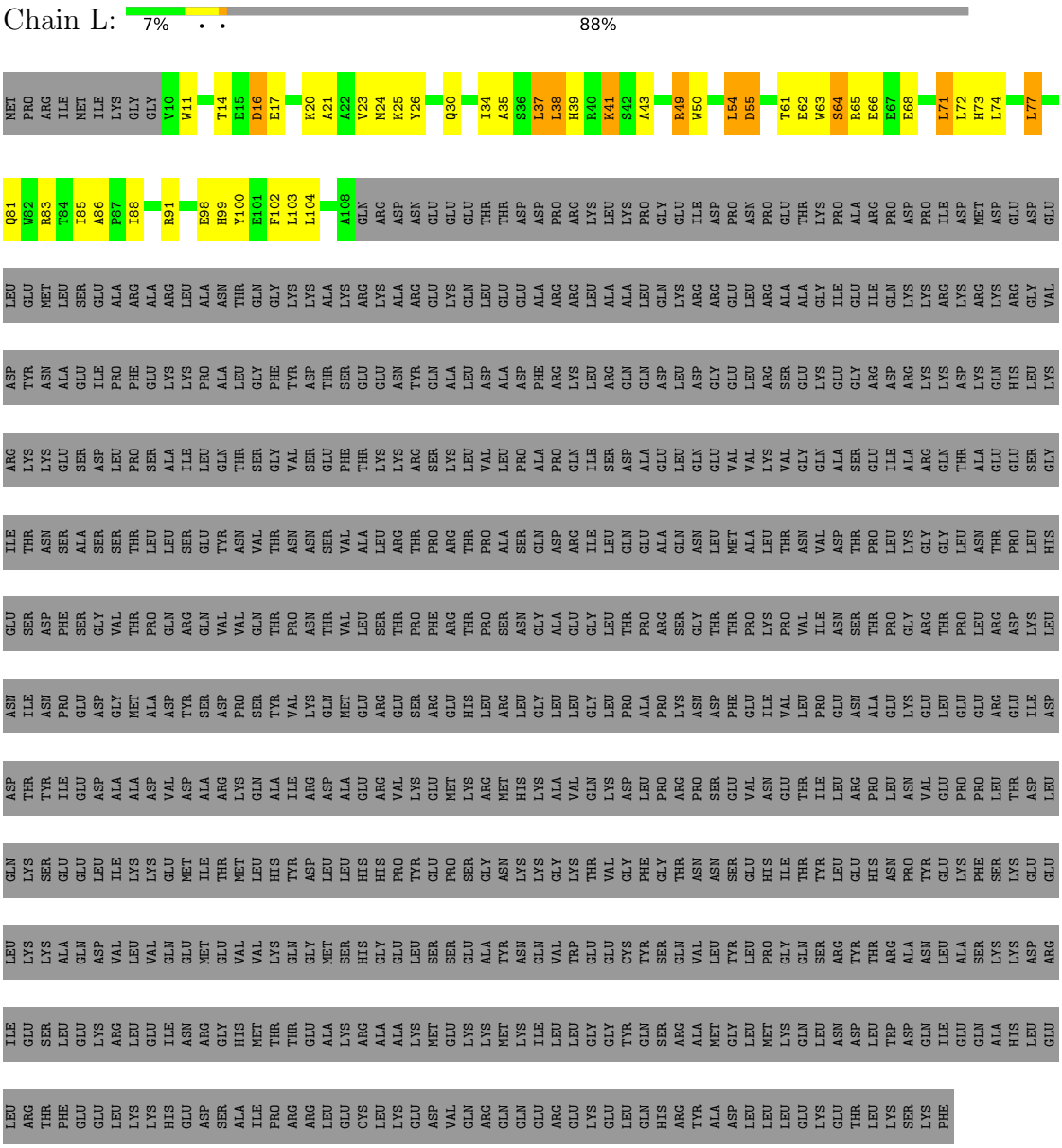


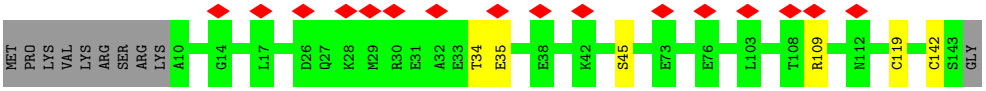
• Molecule 12: Cell division cycle 5-like protein

Chain L:



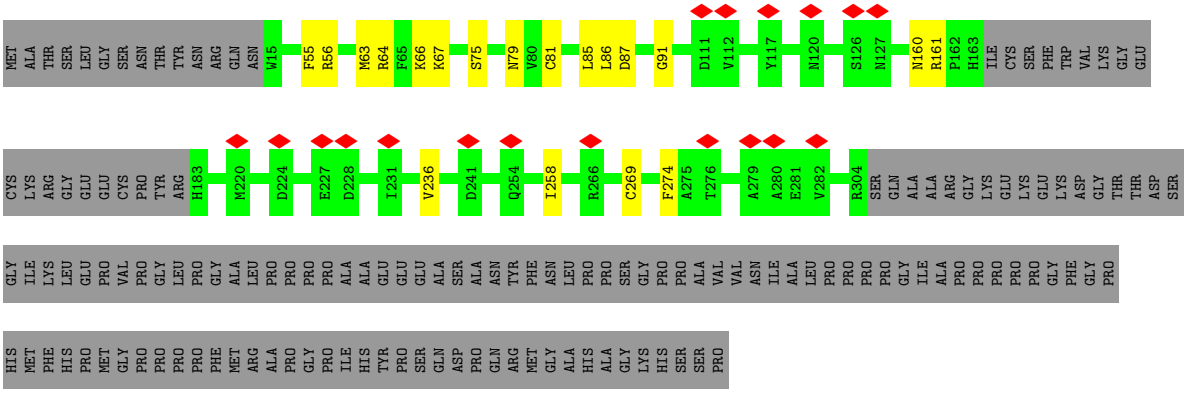
• Molecule 13: Protein BUD31 homolog

Chain N:



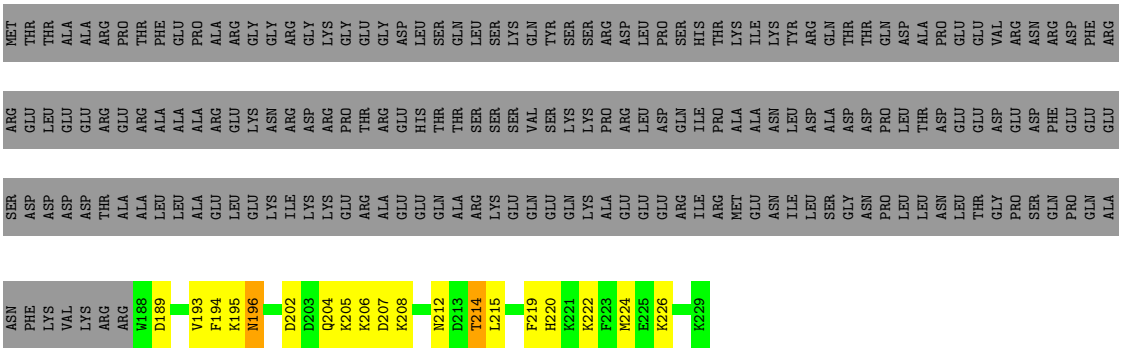
• Molecule 14: Pre-mRNA-splicing factor RBM22

Chain O:



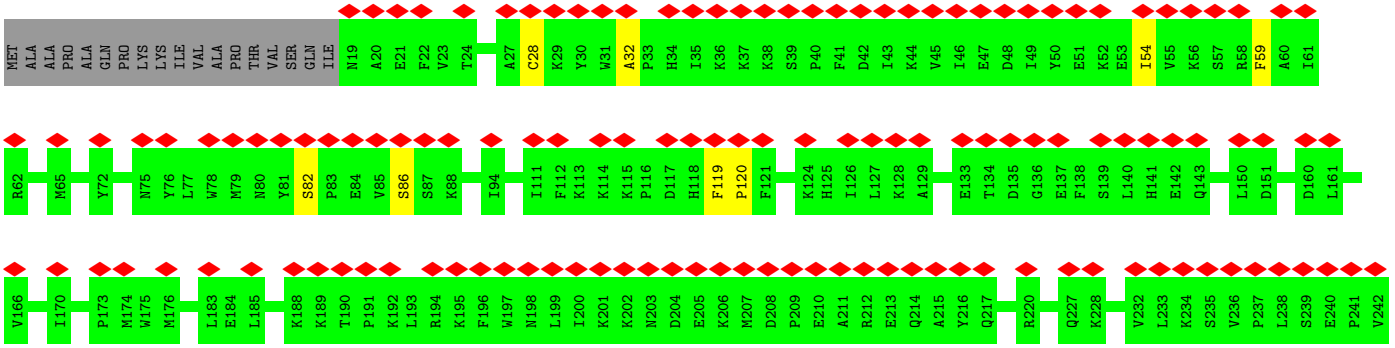
• Molecule 15: Spliceosome-associated protein CWC15 homolog

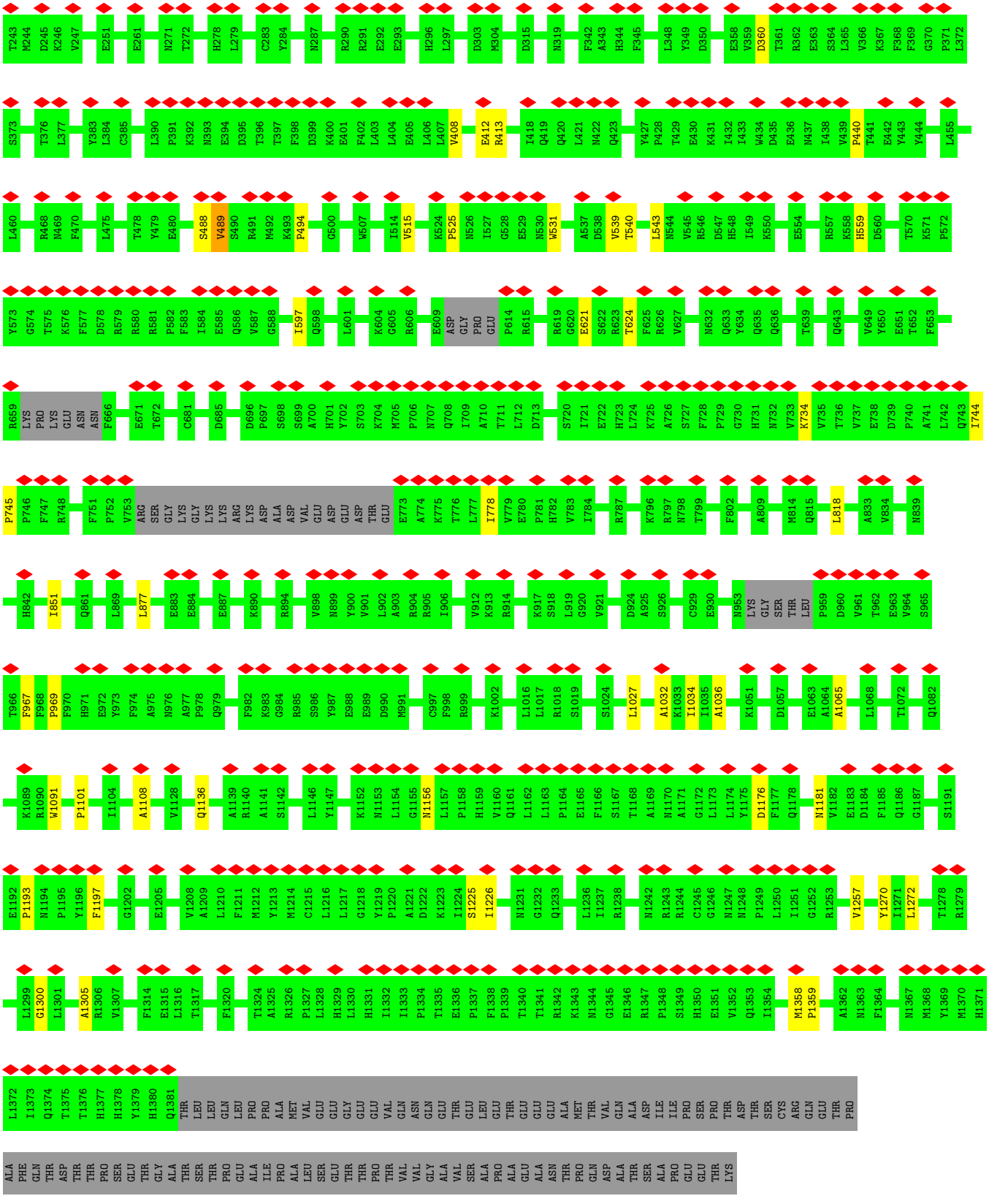
Chain P:



• Molecule 16: RNA helicase aquarius

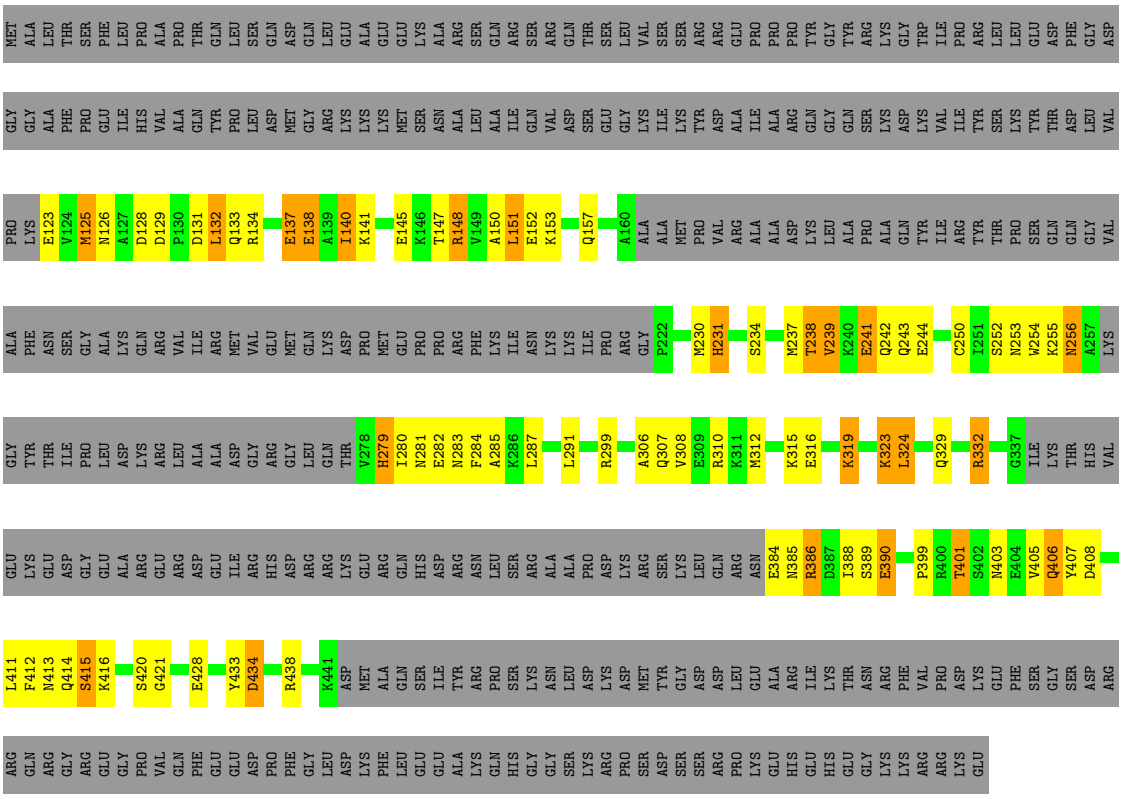
Chain Q:





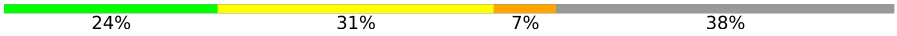
• Molecule 17: SNW domain-containing protein 1

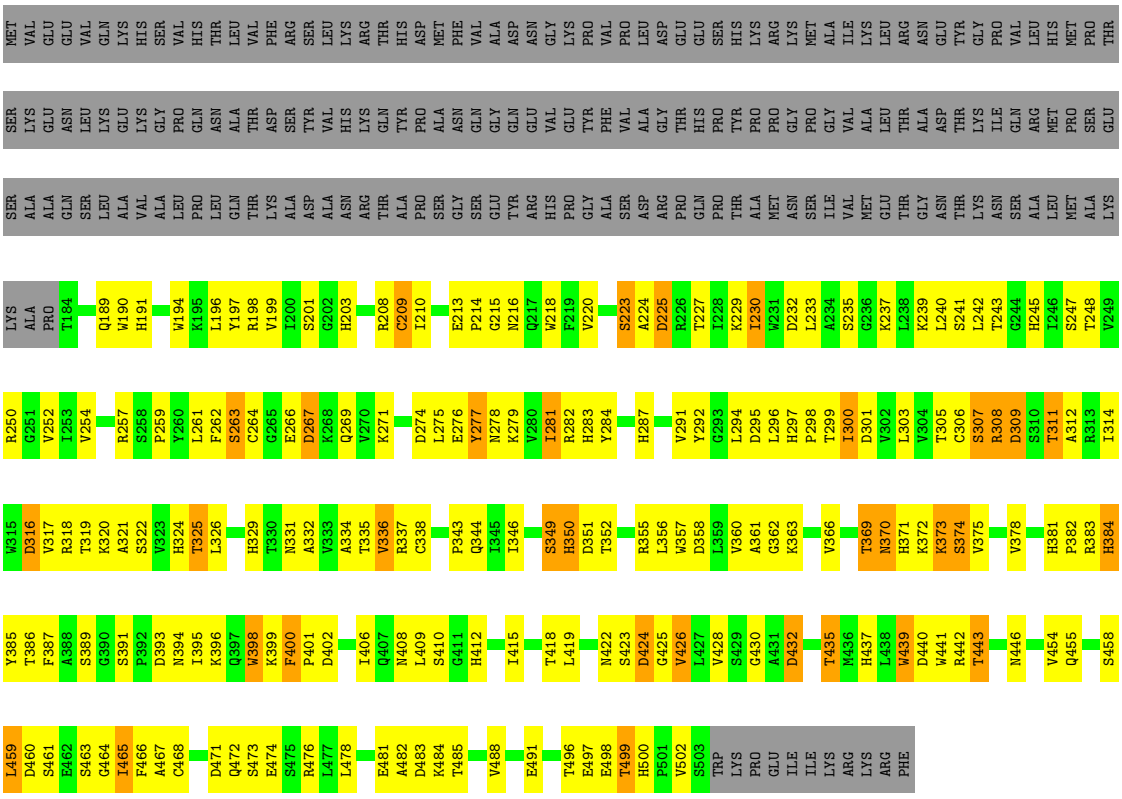
Chain R: 20% 11% • 64%



• Molecule 18: Pleiotropic regulator 1

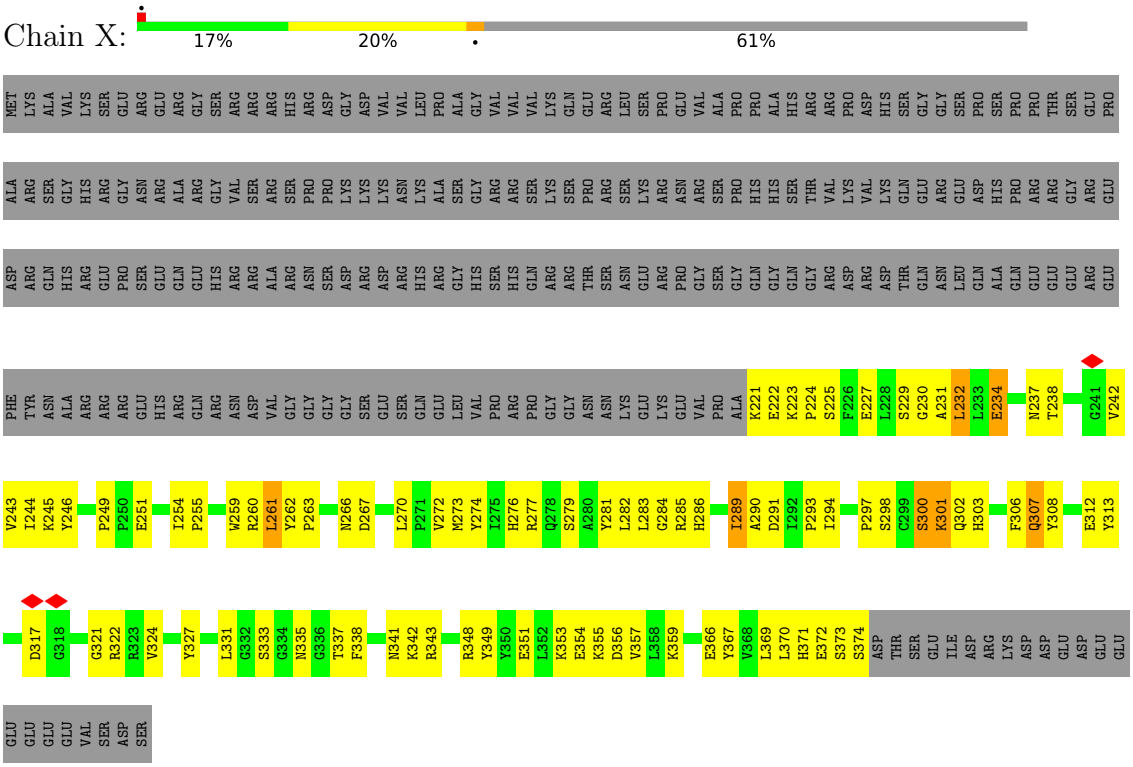
Chain T:





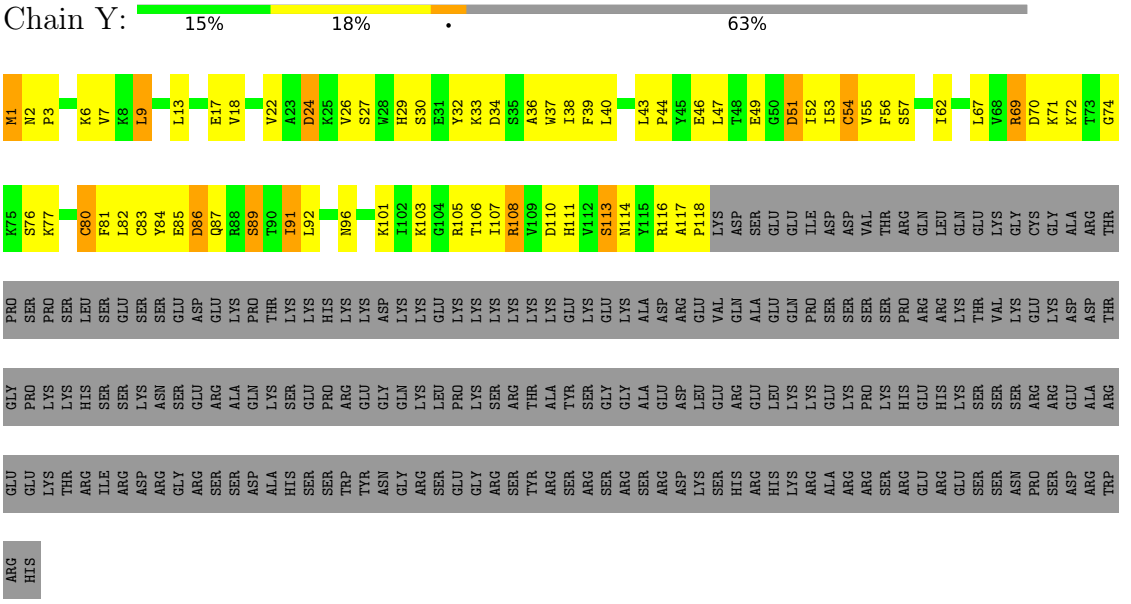
• Molecule 19: Smad nuclear-interacting protein 1

Chain X:



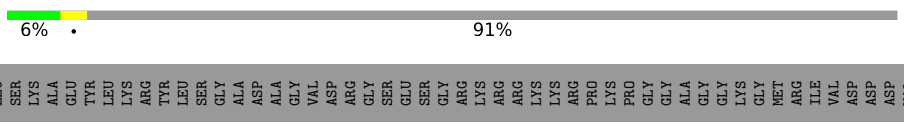
• Molecule 20: RNA-binding motif protein, X-linked 2

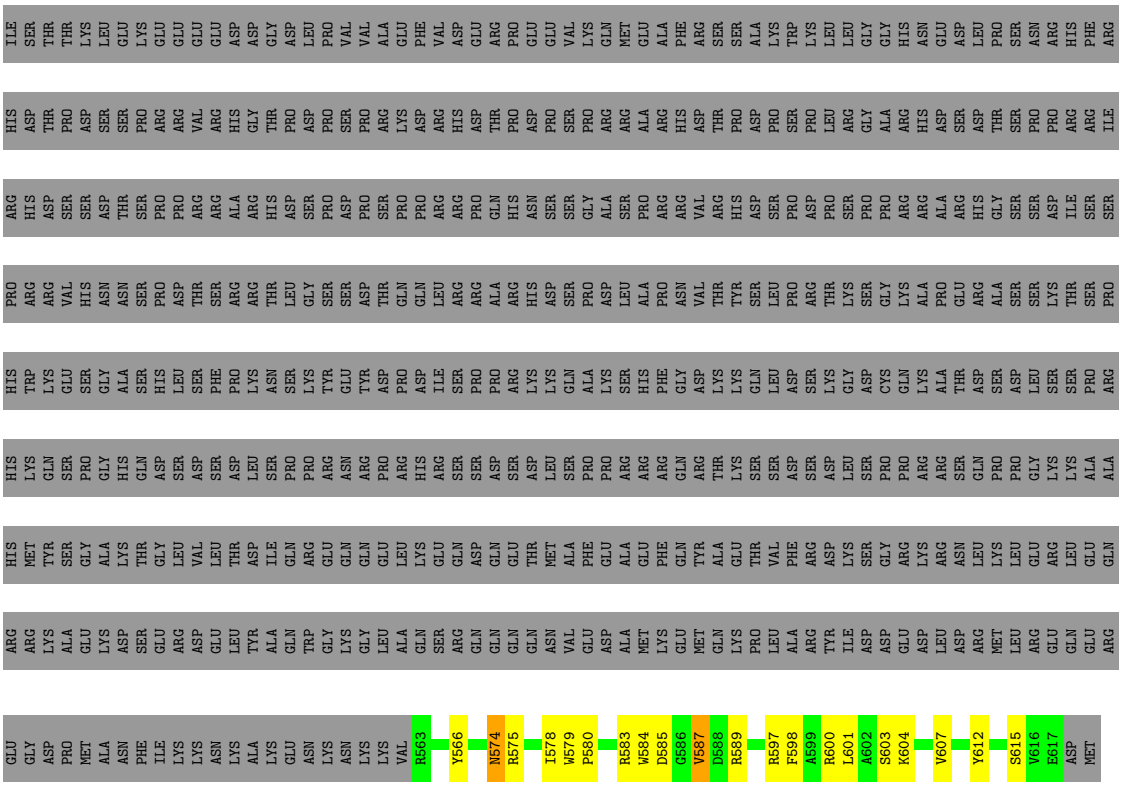
Chain Y:



• Molecule 21: BUD13 homolog

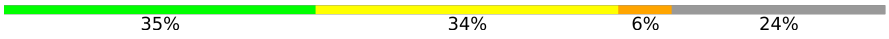
Chain Z:

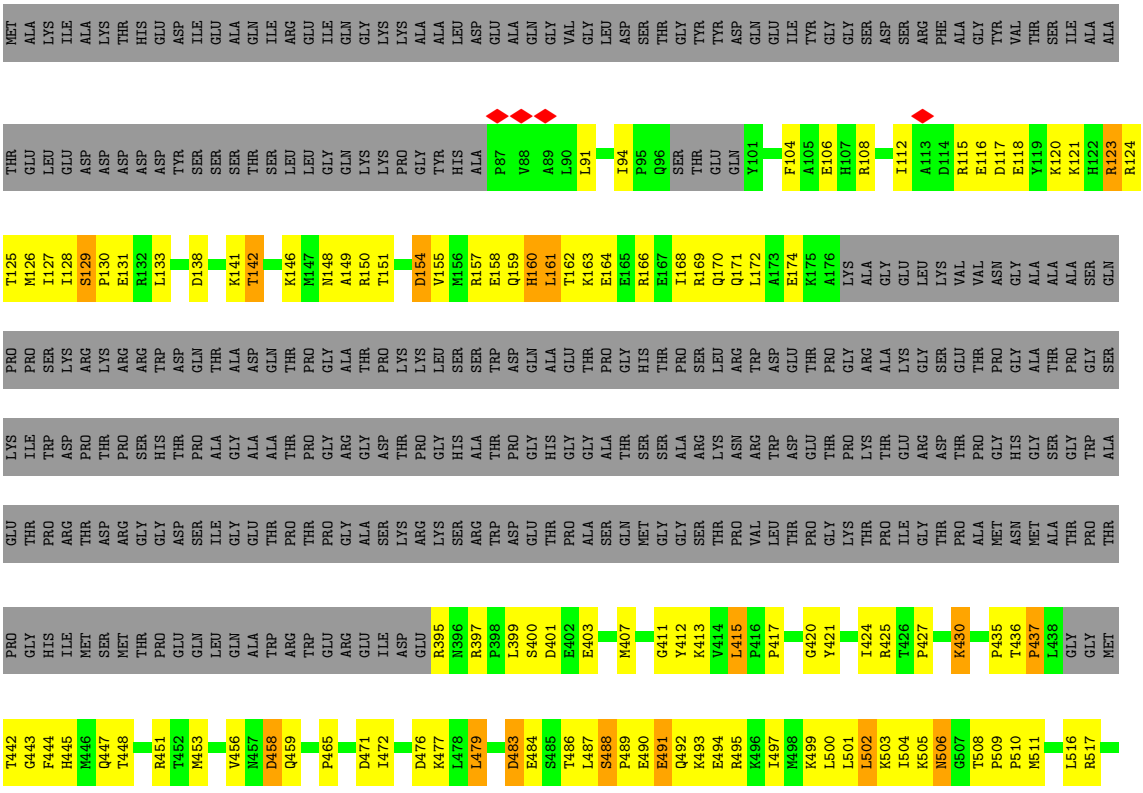


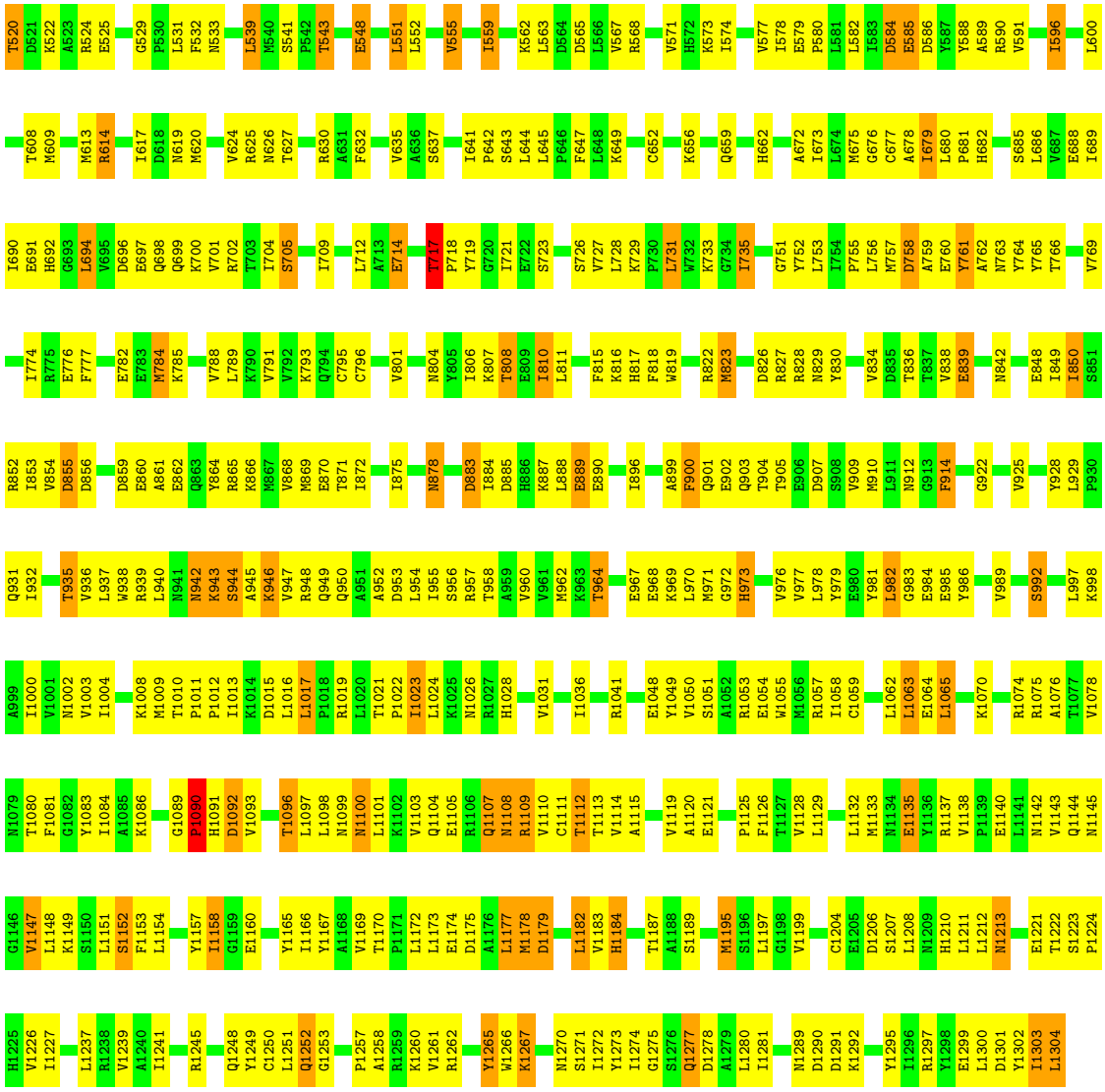


• Molecule 22: Splicing factor 3B subunit 1

Chain 1:

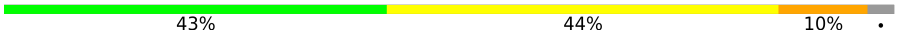


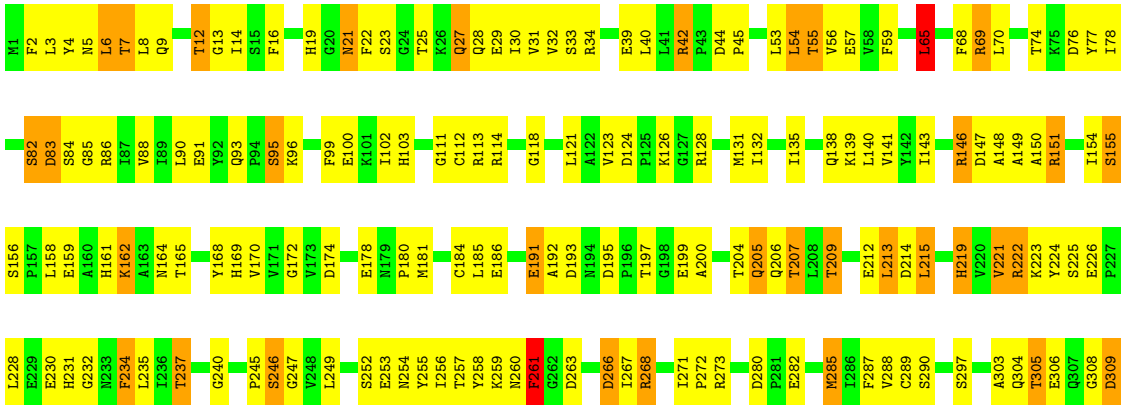


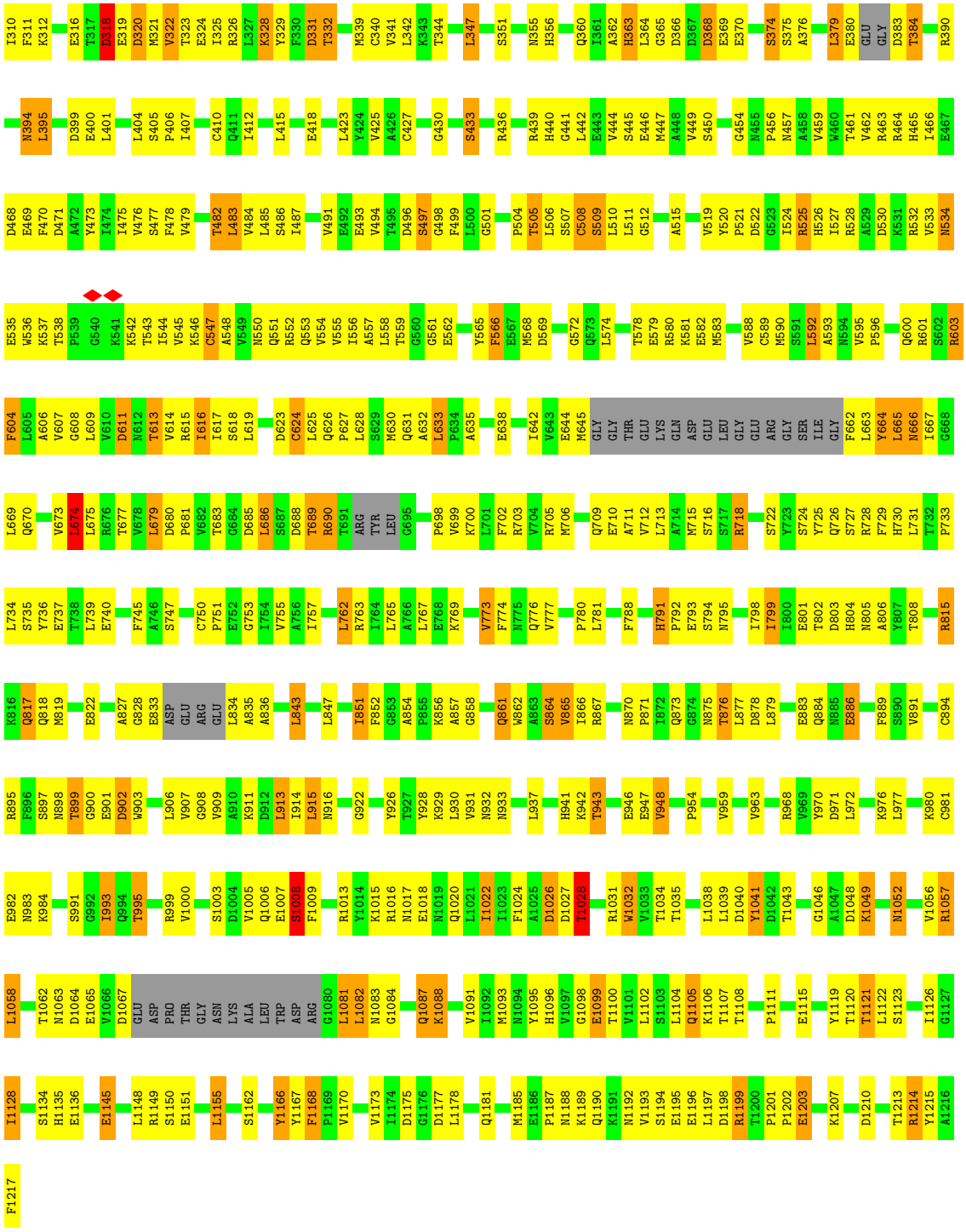


• Molecule 23: Splicing factor 3B subunit 3

Chain 3:

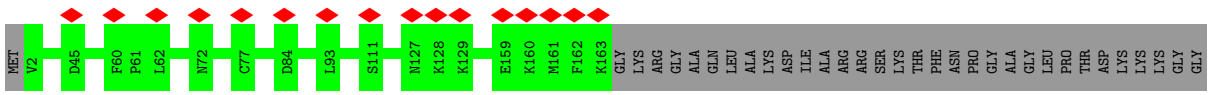


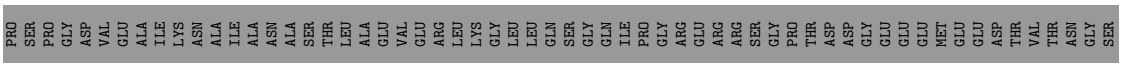




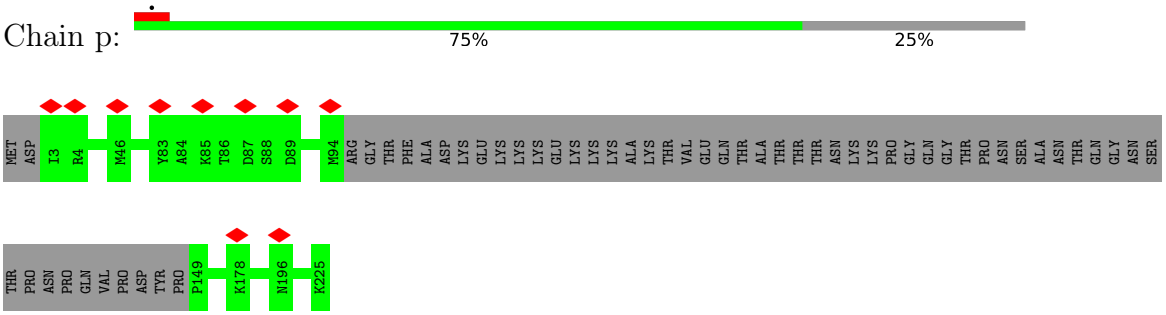
• Molecule 24: U2 small nuclear ribonucleoprotein A'

Chain o:

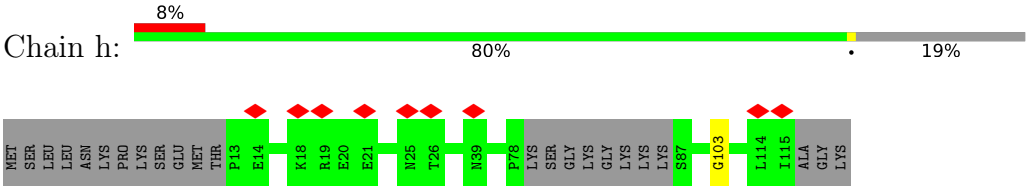




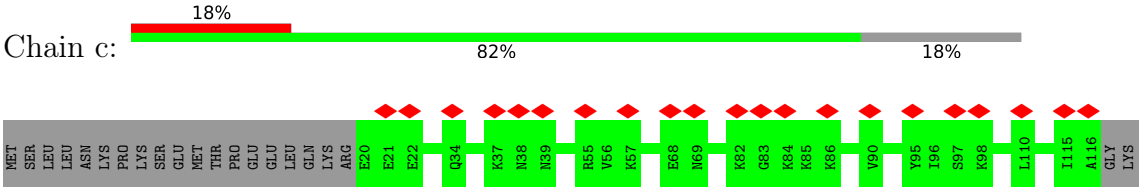
• Molecule 25: U2 small nuclear ribonucleoprotein B”



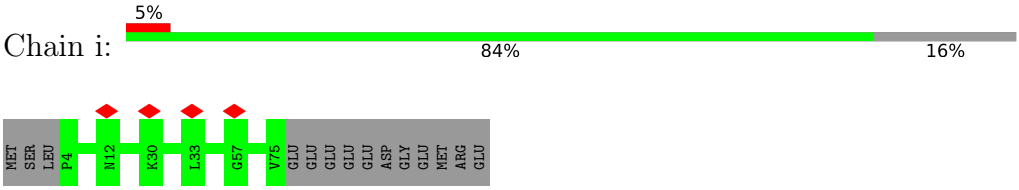
• Molecule 26: Small nuclear ribonucleoprotein Sm D2



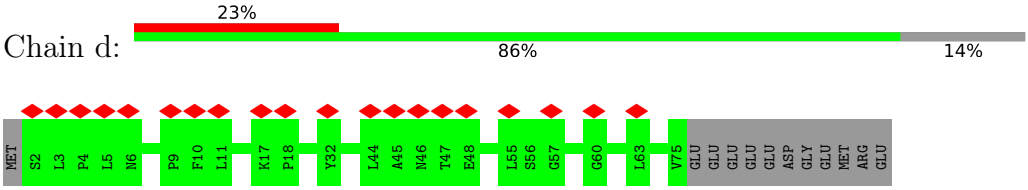
• Molecule 26: Small nuclear ribonucleoprotein Sm D2



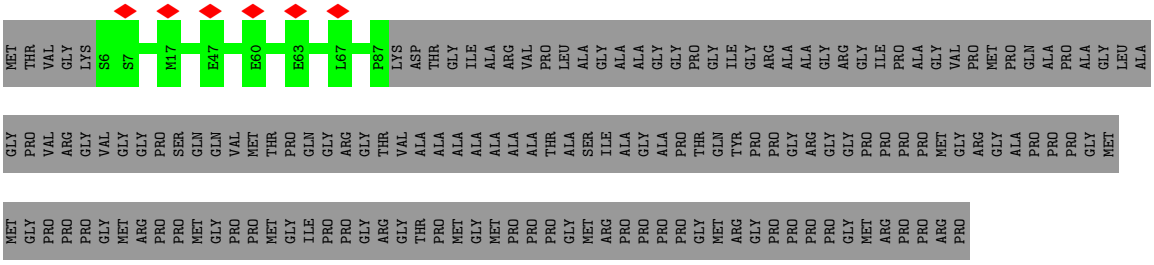
• Molecule 27: Small nuclear ribonucleoprotein F



• Molecule 27: Small nuclear ribonucleoprotein F

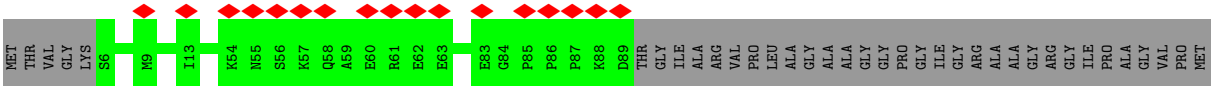


• Molecule 28: Small nuclear ribonucleoprotein-associated proteins B and B’



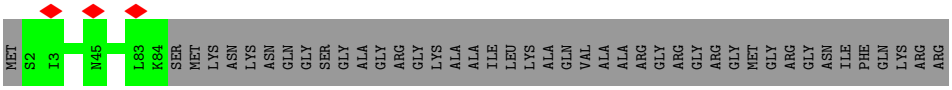
• Molecule 28: Small nuclear ribonucleoprotein-associated proteins B and B'

Chain a:



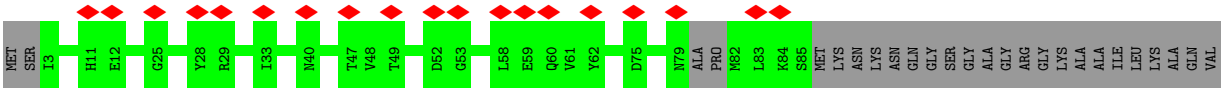
• Molecule 29: Small nuclear ribonucleoprotein Sm D3

Chain l:



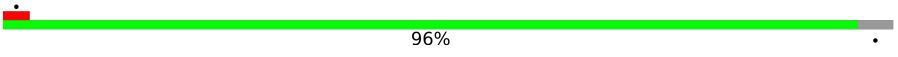
• Molecule 29: Small nuclear ribonucleoprotein Sm D3

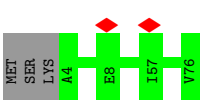
Chain g:



• Molecule 30: Small nuclear ribonucleoprotein G

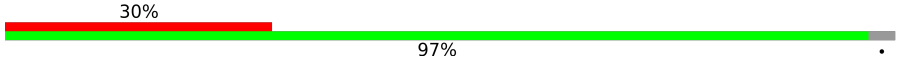
Chain k:

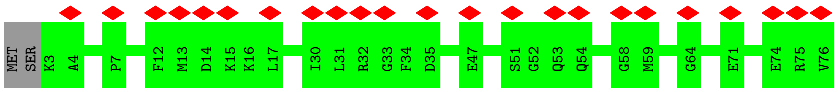




• Molecule 30: Small nuclear ribonucleoprotein G

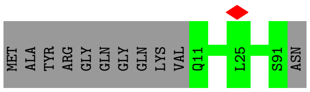
Chain f:





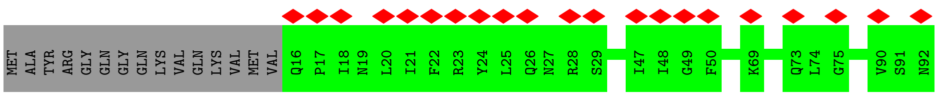
• Molecule 31: Small nuclear ribonucleoprotein E

Chain j:



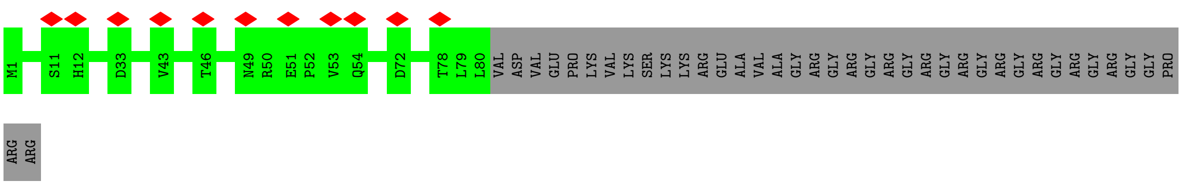
• Molecule 31: Small nuclear ribonucleoprotein E

Chain e:



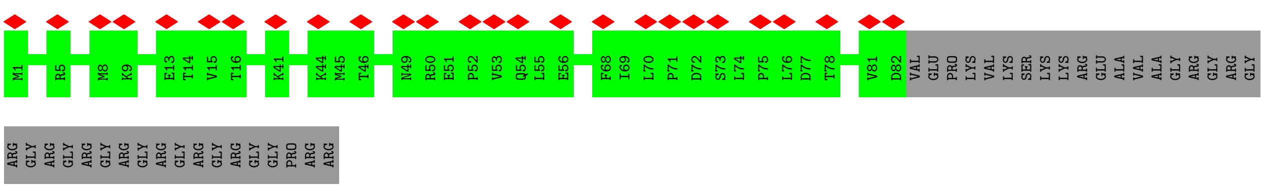
• Molecule 32: Small nuclear ribonucleoprotein Sm D1

Chain n:



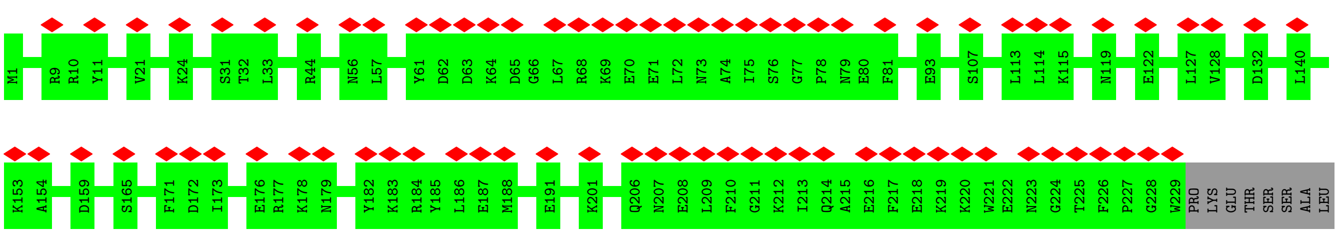
• Molecule 32: Small nuclear ribonucleoprotein Sm D1

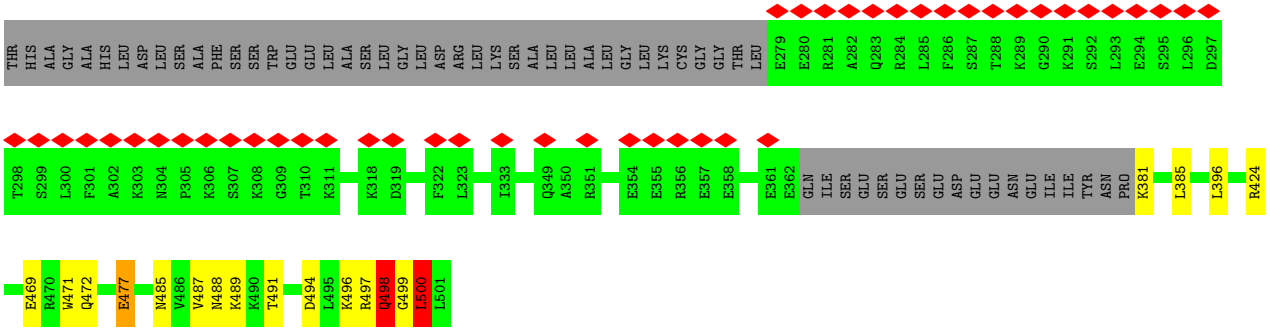
Chain b:



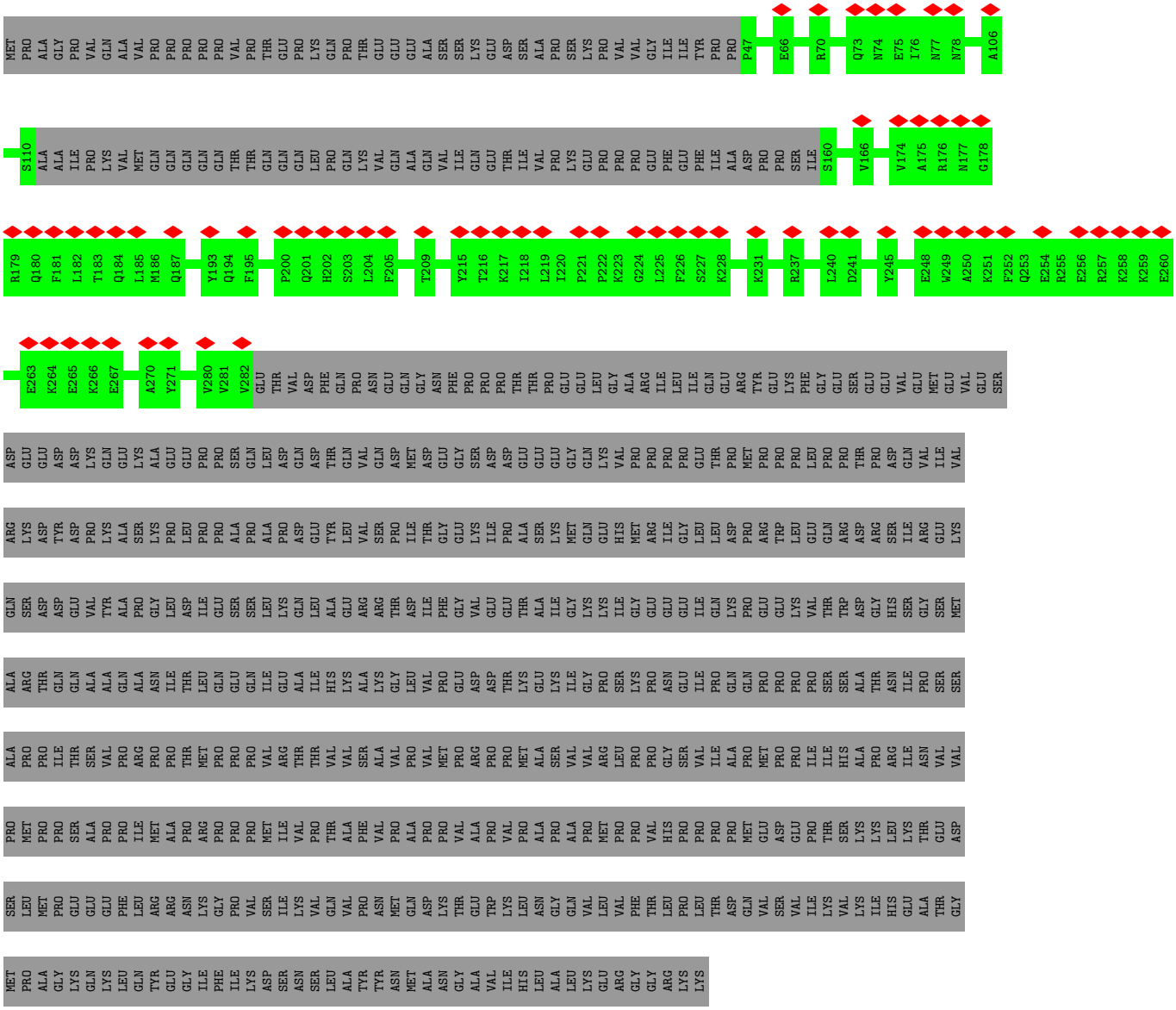
• Molecule 33: Splicing factor 3A subunit 3

Chain w:



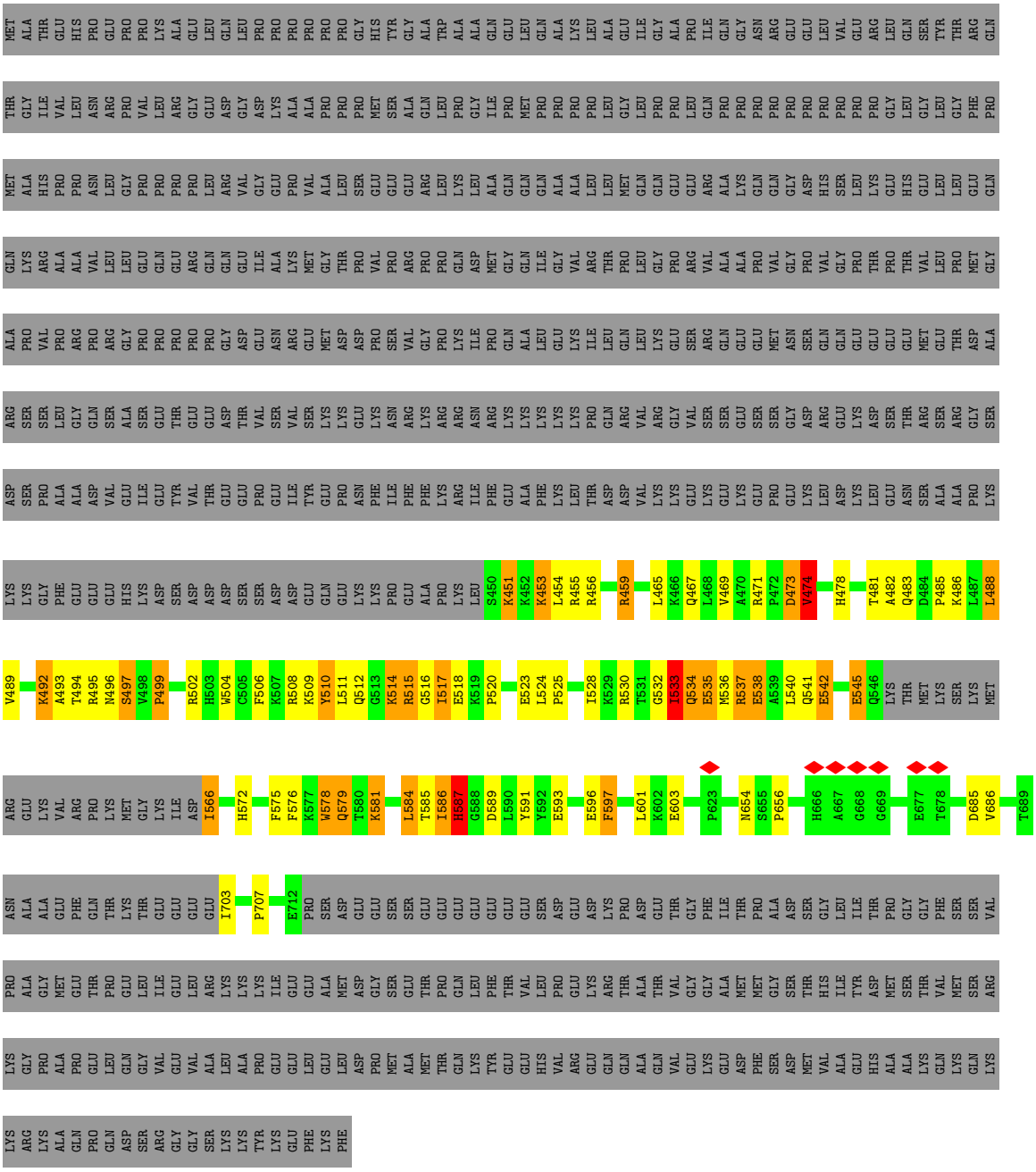


• Molecule 34: Splicing factor 3A subunit 1



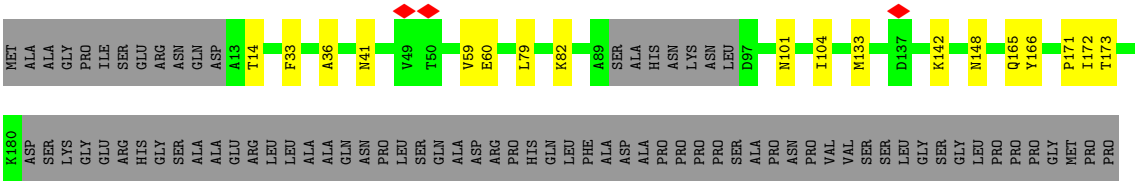
• Molecule 35: Splicing factor 3B subunit 2

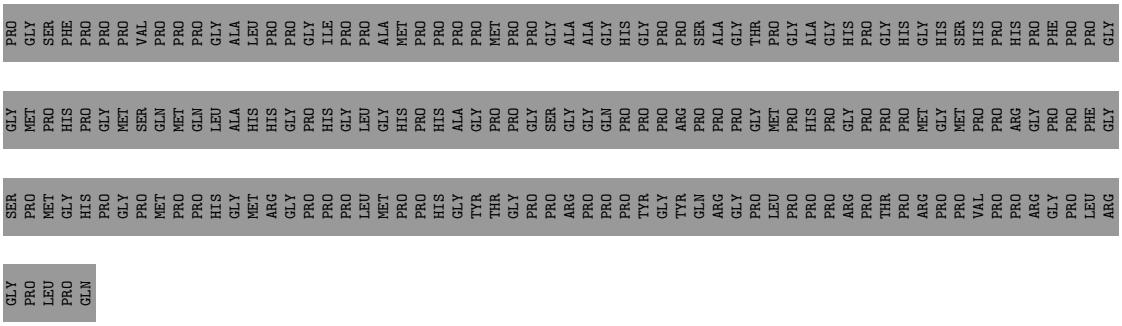
Chain 2:



• Molecule 36: Splicing factor 3B subunit 4

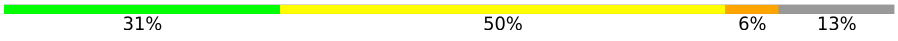
Chain 4:

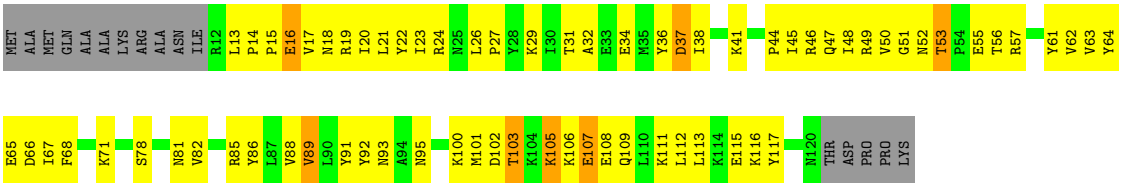




• Molecule 37: Splicing factor 3B subunit 6

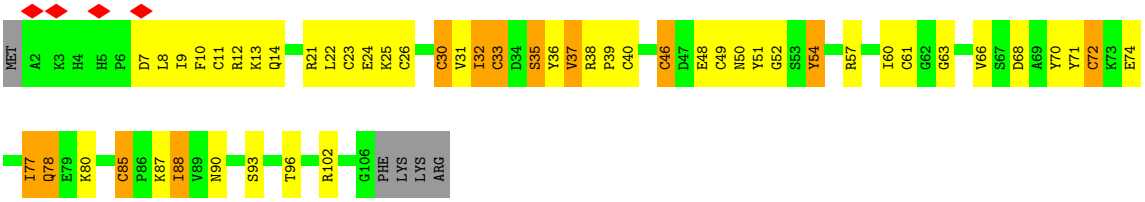
Chain 6:





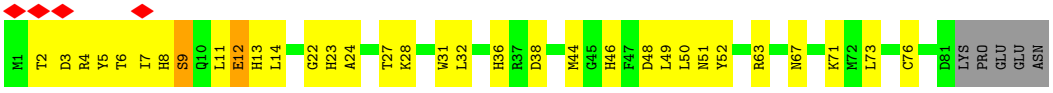
• Molecule 38: PHD finger-like domain-containing protein 5A

Chain 7:



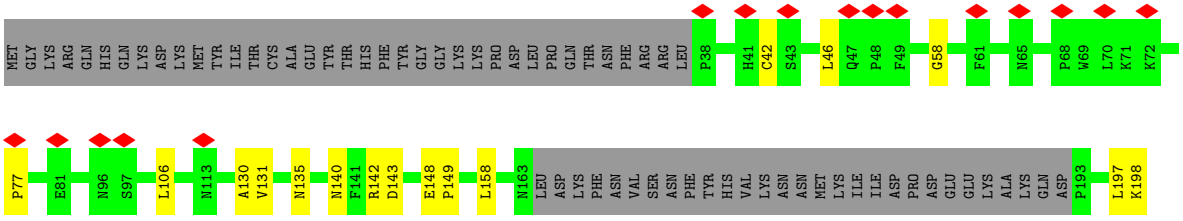
• Molecule 39: Splicing factor 3B subunit 5

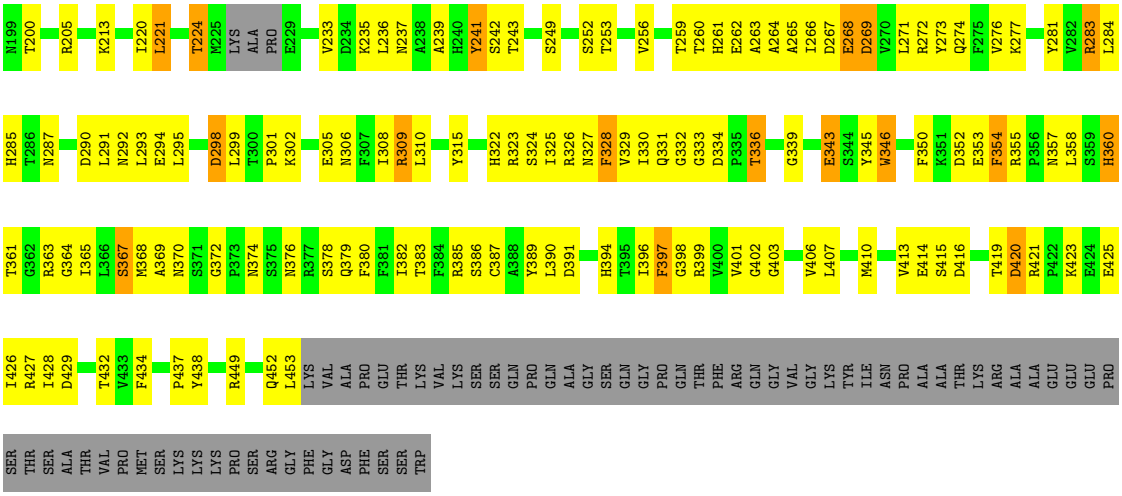
Chain 5:



• Molecule 40: RING-type E3 ubiquitin-protein ligase PPIL2

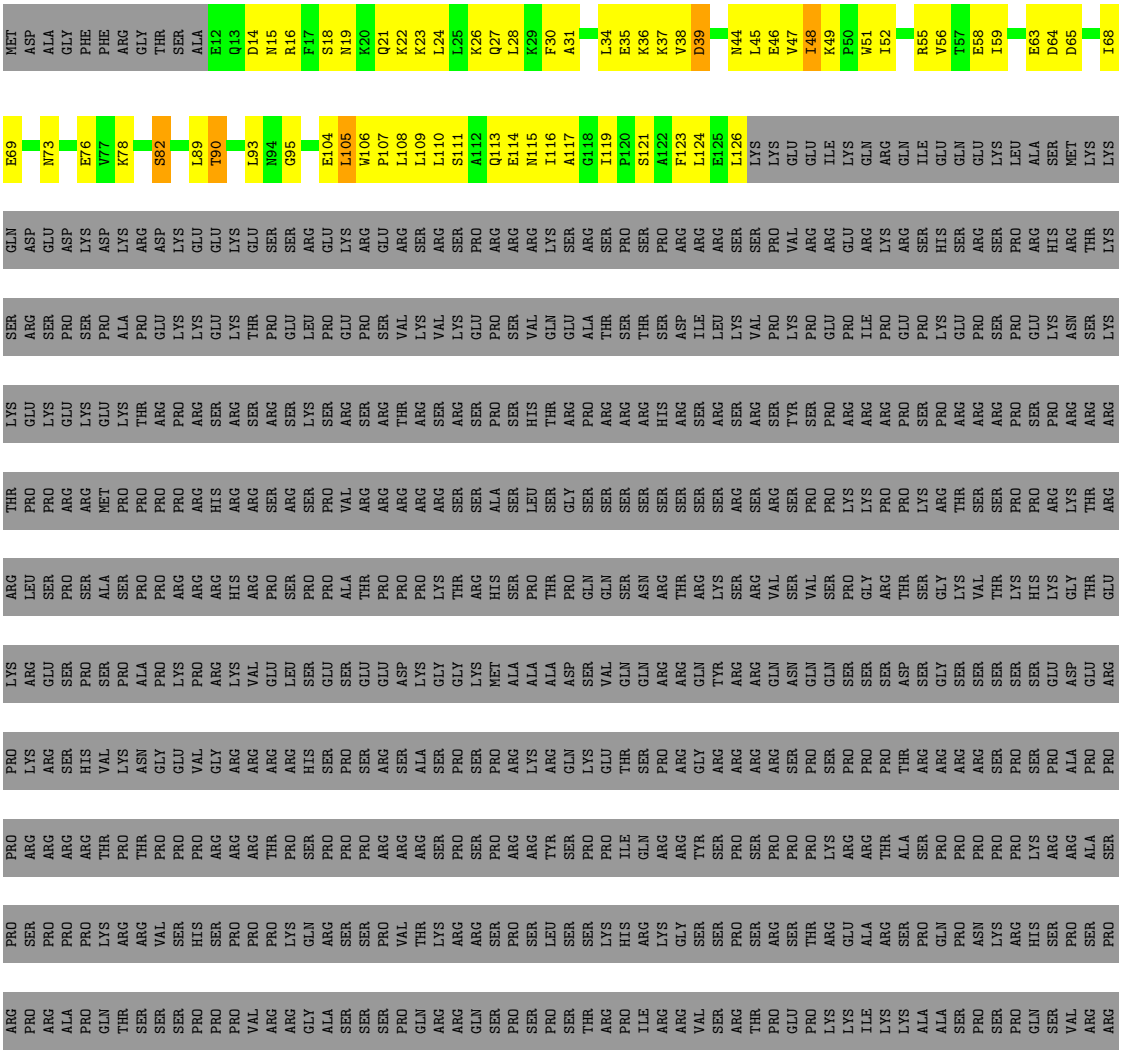
Chain 9:

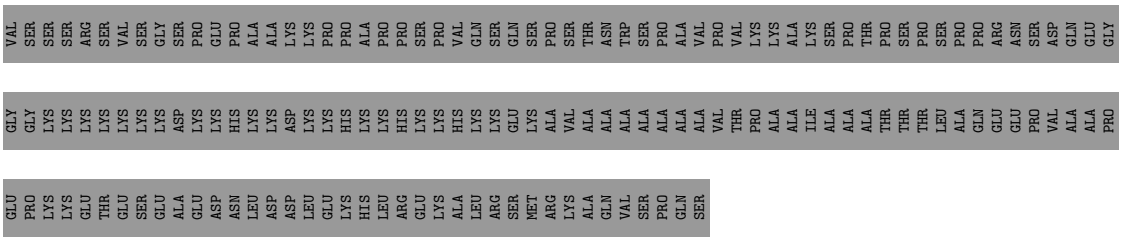


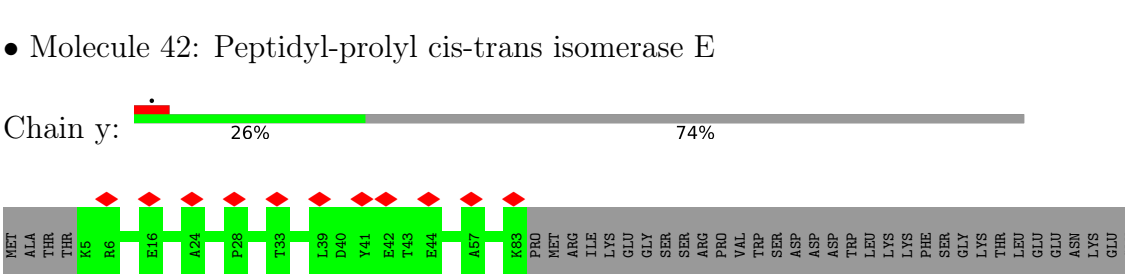


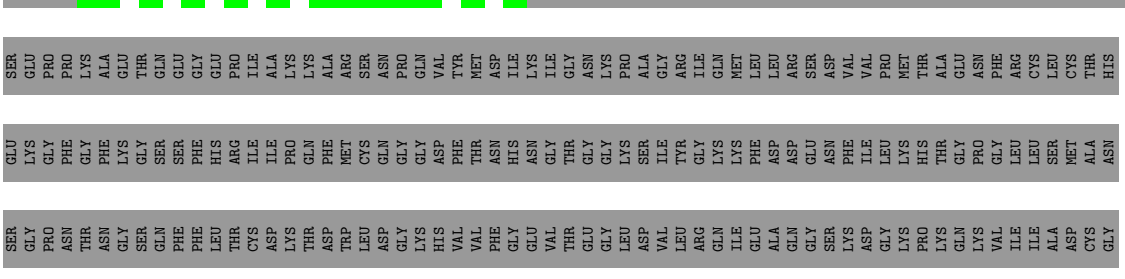
• Molecule 41: Serine/arginine repetitive matrix protein 1

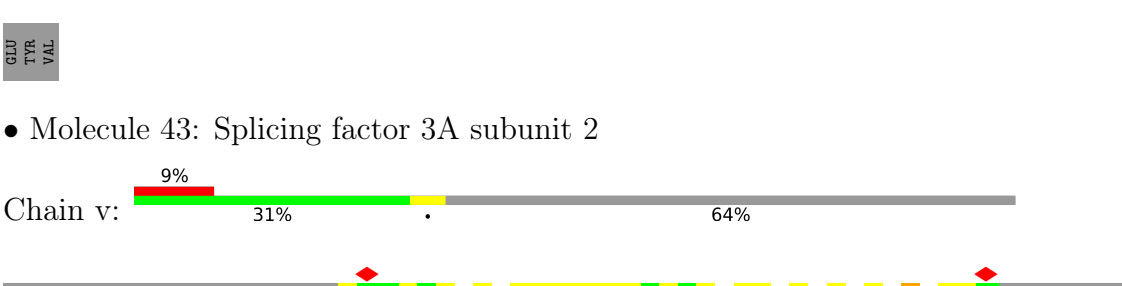
Chain 8: 6% 6% • 87%

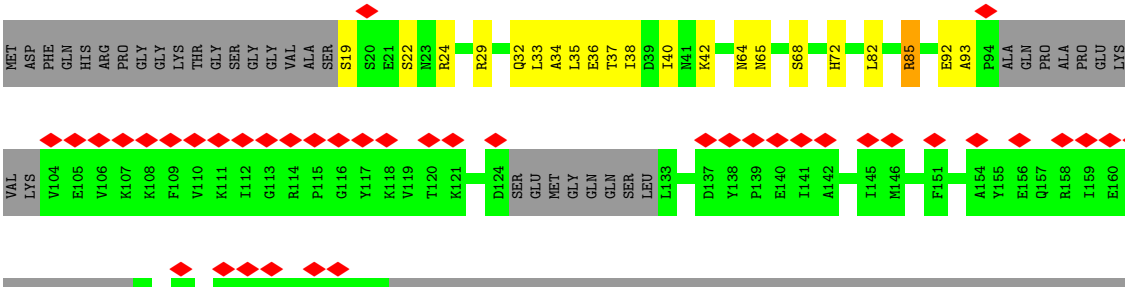


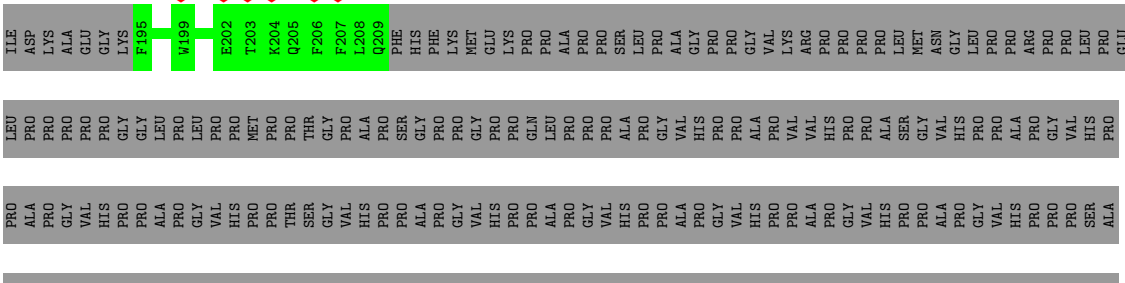










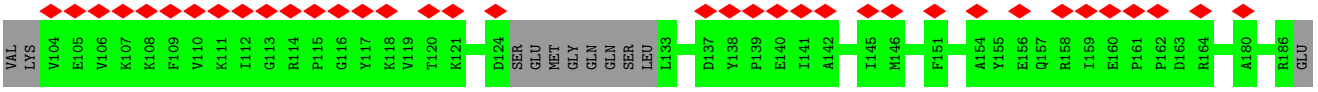


• Molecule 42: Peptidyl-prolyl cis-trans isomerase E

Chain y:

• Molecule 43: Splicing factor 3A subunit 2

Chain v:



• Molecule 44: Unknown polymer

Chain z: 

There are no outlier residues recorded for this chain.

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	46696	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 ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	1400	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	2.456	Depositor
Minimum map value	-1.255	Depositor
Average map value	0.006	Depositor
Map value standard deviation	0.063	Depositor
Recommended contour level	0.19	Depositor
Map size (Å)	516.96, 516.96, 516.96	wwPDB
Map dimensions	480, 480, 480	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.077, 1.077, 1.077	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, GTP, SEP

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	A	0.71	2/16545 (0.0%)	0.65	9/22533 (0.0%)
2	B	0.51	0/2303	1.11	9/3579 (0.3%)
3	C	0.33	0/7237	0.54	1/9834 (0.0%)
4	D	0.24	0/8527	0.44	0/11887
5	E	0.31	0/2392	0.53	0/3242
6	F	0.61	1/2279 (0.0%)	1.20	16/3551 (0.5%)
7	G	0.83	0/1470	1.27	11/2281 (0.5%)
8	H	0.67	0/3900	1.03	9/6065 (0.1%)
9	I	0.25	0/3013	0.47	0/4223
10	J	0.36	0/2171	0.48	0/2929
11	K	0.37	0/2203	0.62	2/2983 (0.1%)
12	L	0.70	0/850	0.63	0/1146
13	N	0.24	0/661	0.41	0/919
14	O	0.25	0/1338	0.45	0/1861
15	P	0.73	0/369	0.63	0/489
16	Q	0.24	0/6796	0.43	0/9527
17	R	0.55	0/1544	0.64	0/2074
18	T	0.65	0/2574	0.66	0/3511
19	X	0.37	0/1312	0.51	0/1769
20	Y	0.60	0/966	0.54	0/1303
21	Z	0.48	0/455	0.54	0/617
22	1	0.83	6/7983 (0.1%)	0.71	4/10805 (0.0%)
23	3	0.99	6/9428 (0.1%)	0.75	5/12794 (0.0%)
24	o	0.23	0/821	0.46	0/1149
25	p	0.27	0/857	0.46	0/1196
26	c	0.24	0/387	0.52	0/482
26	h	0.25	0/485	0.46	0/677
27	d	0.25	0/295	0.54	0/367
27	i	0.26	0/362	0.48	0/502
28	a	0.25	0/335	0.54	0/417
28	m	0.26	0/416	0.52	0/581
29	g	0.24	0/322	0.53	0/399

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
29	l	0.26	0/417	0.45	0/581
30	f	0.24	0/295	0.54	0/367
30	k	0.26	0/366	0.52	0/509
31	e	0.23	0/307	0.50	0/382
31	j	0.24	0/403	0.45	0/561
32	b	0.24	0/327	0.53	0/407
32	n	0.23	0/404	0.50	0/564
33	w	0.55	1/2311 (0.0%)	0.82	8/3008 (0.3%)
34	u	0.24	0/842	0.42	0/1110
35	2	0.90	4/1679 (0.2%)	1.10	15/2267 (0.7%)
36	4	0.27	0/790	0.48	0/1095
37	6	0.49	0/925	0.55	0/1247
38	7	0.78	1/825 (0.1%)	0.62	1/1106 (0.1%)
39	5	1.20	1/688 (0.1%)	0.74	1/930 (0.1%)
40	9	0.34	0/2723	0.53	0/3697
41	8	0.52	0/946	0.56	0/1270
42	y	0.26	0/389	0.46	0/540
43	v	0.78	2/1010 (0.2%)	1.10	5/1326 (0.4%)
All	All	0.60	24/106243 (0.0%)	0.68	96/146659 (0.1%)

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	A	0	11
4	D	0	1
5	E	0	1
9	I	0	4
11	K	0	2
16	Q	0	1
22	1	0	8
23	3	0	3
33	w	0	1
35	2	0	1
40	9	0	1
43	v	0	1
All	All	0	35

The worst 5 of 24 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
22	1	1090	PRO	N-CA	11.88	1.67	1.47
35	2	485	PRO	N-CA	10.71	1.65	1.47
43	v	93	ALA	C-N	9.29	1.51	1.34
35	2	510	TYR	C-O	8.64	1.39	1.23
1	A	827	PHE	C-N	8.37	1.50	1.34

The worst 5 of 96 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
33	w	500	LEU	C-N-CA	-9.80	97.21	121.70
35	2	502	ARG	CG-CD-NE	-8.83	93.25	111.80
6	F	33	G	N3-C4-N9	-8.47	120.92	126.00
35	2	502	ARG	CB-CA-C	-8.28	93.85	110.40
6	F	60	C	N1-C2-O2	8.26	123.86	118.90

There are no chirality outliers.

5 of 35 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	109	PRO	Peptide
1	A	166	PHE	Peptide
1	A	346	ASP	Peptide
1	A	698	PRO	Peptide
1	A	699	GLU	Peptide

5.2 Too-close contacts (i)

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	A	16165	0	14621	961	0
2	B	2066	0	1047	127	0
3	C	7077	0	7067	504	0
4	D	8528	0	3745	30	0
5	E	2338	0	2275	120	0
6	F	2035	0	1028	165	0
7	G	1321	0	673	134	0
8	H	3497	0	1770	121	0
9	I	2991	0	1473	16	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
10	J	2116	0	1977	94	0
11	K	2173	0	1770	124	0
12	L	829	0	837	47	0
13	N	662	0	284	5	0
14	O	1340	0	581	11	0
15	P	362	0	356	19	0
16	Q	6730	0	3268	29	0
17	R	1520	0	1482	98	0
18	T	2507	0	2451	192	0
19	X	1279	0	1284	79	0
20	Y	948	0	954	61	0
21	Z	439	0	410	16	0
22	1	7845	0	7915	480	0
23	3	9240	0	9164	524	0
24	o	816	0	386	0	0
25	p	851	0	423	0	0
26	c	388	0	102	0	0
26	h	482	0	220	0	0
27	d	296	0	87	0	0
27	i	359	0	179	0	0
28	a	336	0	89	0	0
28	m	413	0	194	0	0
29	g	324	0	89	0	0
29	l	415	0	198	0	0
30	f	296	0	84	0	0
30	k	364	0	176	0	0
31	e	308	0	83	0	0
31	j	403	0	173	0	0
32	b	328	0	89	0	0
32	n	402	0	184	0	0
33	w	2275	0	1347	0	0
34	u	834	0	325	0	0
35	2	1651	0	1438	155	0
36	4	792	0	367	9	0
37	6	906	0	913	66	0
38	7	811	0	789	42	0
39	5	669	0	631	26	0
40	9	2681	0	2270	133	0
41	8	931	0	960	60	0
42	y	390	0	190	0	0
43	v	997	0	745	0	0
44	z	124	0	26	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
45	C	32	0	12	7	0
46	C	1	0	0	0	0
47	7	3	0	0	0	0
47	K	1	0	0	0	0
All	All	103887	0	79201	4037	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 24.

The worst 5 of 4037 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)
1:A:1308:PRO:HB3	1:A:1548:TYR:CE2	1.15	1.65
35:2:530:ARG:HG2	35:2:578:TRP:CH2	1.15	1.64
35:2:530:ARG:CG	35:2:578:TRP:HH2	1.19	1.53
35:2:530:ARG:CG	35:2:578:TRP:CH2	1.89	1.53
35:2:530:ARG:HG2	35:2:578:TRP:CZ3	1.46	1.50

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	2135/2335 (91%)	1880 (88%)	240 (11%)	15 (1%)	19 47
3	C	892/972 (92%)	827 (93%)	65 (7%)	0	100 100
4	D	1720/2136 (80%)	1602 (93%)	114 (7%)	4 (0%)	44 72
5	E	297/357 (83%)	274 (92%)	23 (8%)	0	100 100
9	I	591/855 (69%)	494 (84%)	93 (16%)	4 (1%)	19 47
10	J	245/848 (29%)	226 (92%)	17 (7%)	2 (1%)	16 44

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
11	K	308/393 (78%)	292 (95%)	14 (4%)	2 (1%)	22 50
12	L	97/802 (12%)	94 (97%)	3 (3%)	0	100 100
13	N	132/144 (92%)	123 (93%)	9 (7%)	0	100 100
14	O	267/420 (64%)	255 (96%)	12 (4%)	0	100 100
15	P	40/229 (18%)	31 (78%)	9 (22%)	0	100 100
16	Q	1319/1485 (89%)	1256 (95%)	62 (5%)	1 (0%)	48 78
17	R	184/536 (34%)	172 (94%)	12 (6%)	0	100 100
18	T	318/514 (62%)	281 (88%)	36 (11%)	1 (0%)	37 66
19	X	152/396 (38%)	142 (93%)	10 (7%)	0	100 100
20	Y	116/322 (36%)	106 (91%)	10 (9%)	0	100 100
21	Z	53/619 (9%)	48 (91%)	5 (9%)	0	100 100
22	1	984/1304 (76%)	872 (89%)	102 (10%)	10 (1%)	13 39
23	3	1168/1217 (96%)	1023 (88%)	141 (12%)	4 (0%)	37 66
24	o	160/255 (63%)	148 (92%)	12 (8%)	0	100 100
25	p	165/225 (73%)	152 (92%)	13 (8%)	0	100 100
26	c	95/118 (80%)	84 (88%)	11 (12%)	0	100 100
26	h	91/118 (77%)	86 (94%)	4 (4%)	1 (1%)	12 37
27	d	72/86 (84%)	66 (92%)	6 (8%)	0	100 100
27	i	70/86 (81%)	65 (93%)	5 (7%)	0	100 100
28	a	82/240 (34%)	77 (94%)	5 (6%)	0	100 100
28	m	80/240 (33%)	75 (94%)	5 (6%)	0	100 100
29	g	77/126 (61%)	70 (91%)	7 (9%)	0	100 100
29	l	81/126 (64%)	74 (91%)	7 (9%)	0	100 100
30	f	72/76 (95%)	67 (93%)	5 (7%)	0	100 100
30	k	71/76 (93%)	67 (94%)	4 (6%)	0	100 100
31	e	75/92 (82%)	68 (91%)	7 (9%)	0	100 100
31	j	79/92 (86%)	70 (89%)	9 (11%)	0	100 100
32	b	80/119 (67%)	75 (94%)	5 (6%)	0	100 100
32	n	78/119 (66%)	72 (92%)	6 (8%)	0	100 100
33	w	428/501 (85%)	403 (94%)	23 (5%)	2 (0%)	25 54
34	u	183/793 (23%)	175 (96%)	8 (4%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
35	2	225/895 (25%)	205 (91%)	17 (8%)	3 (1%)	10 33
36	4	157/424 (37%)	145 (92%)	12 (8%)	0	100 100
37	6	107/125 (86%)	98 (92%)	9 (8%)	0	100 100
38	7	103/110 (94%)	89 (86%)	14 (14%)	0	100 100
39	5	79/86 (92%)	70 (89%)	9 (11%)	0	100 100
40	9	378/520 (73%)	343 (91%)	34 (9%)	1 (0%)	37 66
41	8	113/904 (12%)	104 (92%)	9 (8%)	0	100 100
42	y	77/301 (26%)	73 (95%)	4 (5%)	0	100 100
43	v	158/464 (34%)	143 (90%)	15 (10%)	0	100 100
All	All	14454/23201 (62%)	13162 (91%)	1242 (9%)	50 (0%)	38 66

5 of 50 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	802	THR
1	A	1553	VAL
22	1	430	LYS
22	1	435	PRO
22	1	437	PRO

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	1476/2108 (70%)	1265 (86%)	211 (14%)	2 10
3	C	792/866 (92%)	722 (91%)	70 (9%)	8 28
5	E	256/300 (85%)	242 (94%)	14 (6%)	18 44
9	I	23/749 (3%)	23 (100%)	0	100 100
10	J	205/751 (27%)	190 (93%)	15 (7%)	11 36
11	K	164/354 (46%)	139 (85%)	25 (15%)	2 9
12	L	86/709 (12%)	74 (86%)	12 (14%)	3 11

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
15	P	40/203 (20%)	35 (88%)	5 (12%)	3 14
16	Q	71/1336 (5%)	71 (100%)	0	100 100
17	R	160/459 (35%)	128 (80%)	32 (20%)	1 3
18	T	273/441 (62%)	232 (85%)	41 (15%)	2 9
19	X	139/349 (40%)	128 (92%)	11 (8%)	10 32
20	Y	105/291 (36%)	83 (79%)	22 (21%)	1 2
21	Z	40/545 (7%)	35 (88%)	5 (12%)	3 14
22	1	834/1103 (76%)	707 (85%)	127 (15%)	2 9
23	3	1020/1051 (97%)	831 (82%)	189 (18%)	1 4
24	o	6/218 (3%)	6 (100%)	0	100 100
25	p	8/195 (4%)	8 (100%)	0	100 100
26	h	5/110 (4%)	5 (100%)	0	100 100
27	i	4/74 (5%)	4 (100%)	0	100 100
28	m	4/177 (2%)	4 (100%)	0	100 100
29	l	3/101 (3%)	3 (100%)	0	100 100
30	k	3/66 (4%)	3 (100%)	0	100 100
31	j	1/84 (1%)	1 (100%)	0	100 100
32	n	3/101 (3%)	3 (100%)	0	100 100
33	w	112/446 (25%)	98 (88%)	14 (12%)	3 14
34	u	10/709 (1%)	10 (100%)	0	100 100
35	2	134/776 (17%)	102 (76%)	32 (24%)	0 1
37	6	97/109 (89%)	86 (89%)	11 (11%)	4 18
38	7	90/95 (95%)	73 (81%)	17 (19%)	1 4
39	5	72/77 (94%)	67 (93%)	5 (7%)	13 38
40	9	223/456 (49%)	197 (88%)	26 (12%)	4 16
41	8	104/831 (12%)	98 (94%)	6 (6%)	17 42
43	v	73/382 (19%)	59 (81%)	14 (19%)	1 3
All	All	6636/16622 (40%)	5732 (86%)	904 (14%)	5 12

5 of 904 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
22	1	91	LEU

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Mol	Chain	Res	Type
41	8	48	ILE
22	1	1178	MET
40	9	354	PHE
35	2	473	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 138 such sidechains are listed below:

Mol	Chain	Res	Type
23	3	1020	GLN
33	w	485	ASN
40	9	379	GLN
5	E	150	HIS
3	C	802	HIS

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
2	B	96/117 (82%)	37 (38%)	3 (3%)
6	F	94/107 (87%)	51 (54%)	8 (8%)
7	G	62/220 (28%)	40 (64%)	10 (16%)
8	H	161/188 (85%)	59 (36%)	4 (2%)
All	All	413/632 (65%)	187 (45%)	25 (6%)

5 of 187 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
2	B	19	A
2	B	20	G
2	B	21	A
2	B	22	U
2	B	23	C

5 of 25 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
7	G	84	U
7	G	101	U
8	H	47	U
7	G	89	U
7	G	104	C

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
22	SEP	1	129	22	8,9,10	1.13	0	8,12,14	1.45	1 (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
22	SEP	1	129	22	-	1/5/8/10	-

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
22	1	129	SEP	OG-CB-CA	-3.43	104.81	108.14

There are no chirality outliers.

All (1) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
22	1	129	SEP	CB-OG-P-O2P

There are no ring outliers.

1 monomer is involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
22	1	129	SEP	5	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 6 ligands modelled in this entry, 5 are monoatomic - leaving 1 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
45	GTP	C	1500	46	26,34,34	1.14	2 (7%)	32,54,54	1.38	6 (18%)

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
45	GTP	C	1500	46	-	9/18/38/38	0/3/3/3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
45	C	1500	GTP	C5-C6	-3.92	1.39	1.47
45	C	1500	GTP	C2-N3	2.24	1.38	1.33

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

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
45	C	1500	GTP	C5-C6-N1	3.09	119.40	113.95
45	C	1500	GTP	C8-N7-C5	3.08	108.86	102.99
45	C	1500	GTP	PA-O3A-PB	-2.73	123.47	132.83
45	C	1500	GTP	PB-O3B-PG	-2.65	123.74	132.83
45	C	1500	GTP	C2-N1-C6	-2.64	120.24	125.10

There are no chirality outliers.

5 of 9 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
45	C	1500	GTP	O4'-C4'-C5'-O5'
45	C	1500	GTP	C3'-C4'-C5'-O5'
45	C	1500	GTP	PB-O3B-PG-O1G
45	C	1500	GTP	PG-O3B-PB-O2B
45	C	1500	GTP	PA-O3A-PB-O2B

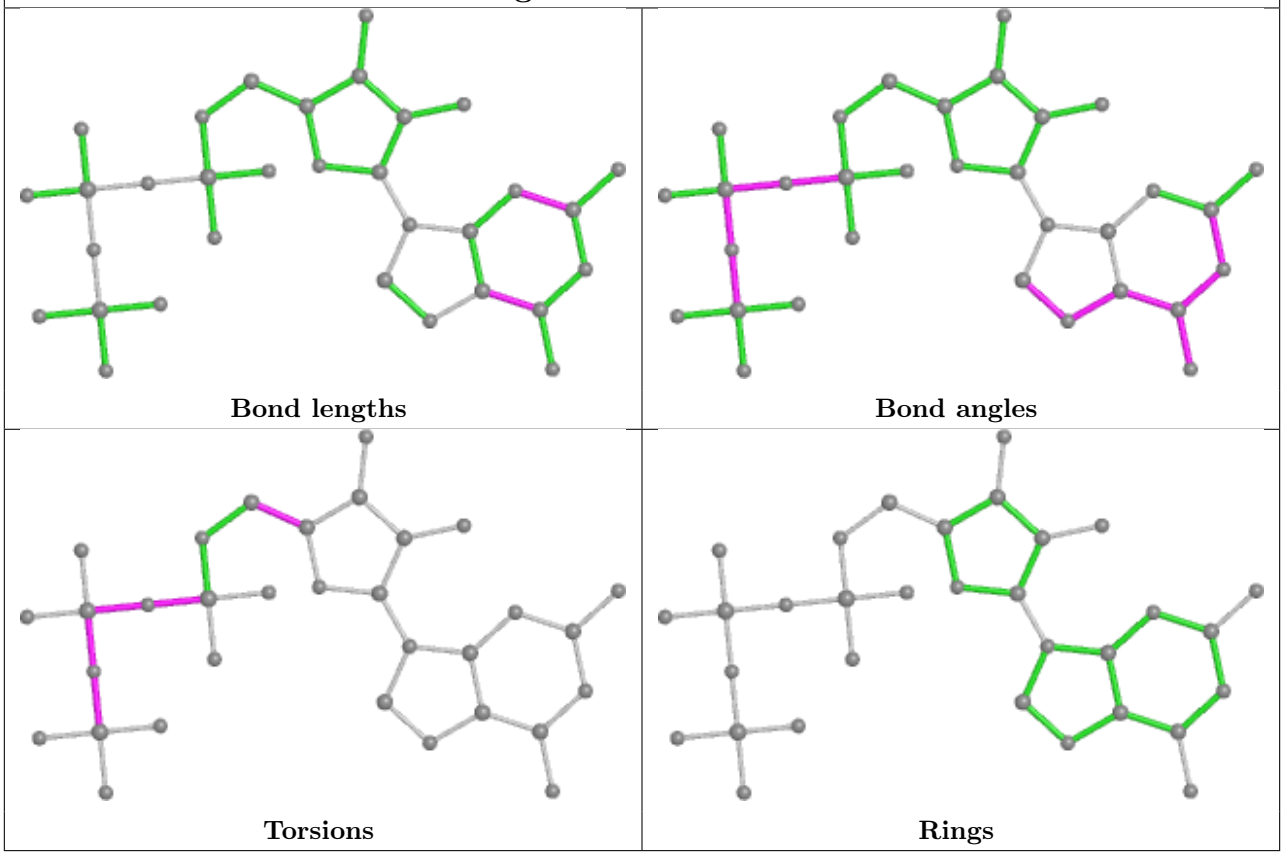
There are no ring outliers.

1 monomer is involved in 7 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
45	C	1500	GTP	7	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand GTP C 1500



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.

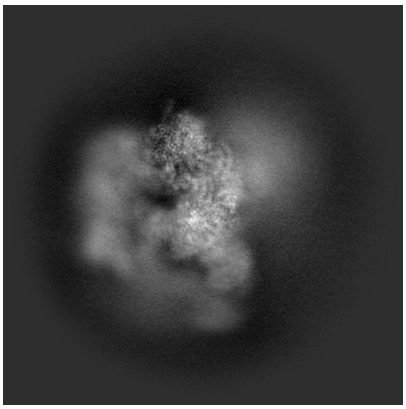
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-35105. These allow visual inspection of the internal detail of the map and identification of artifacts.

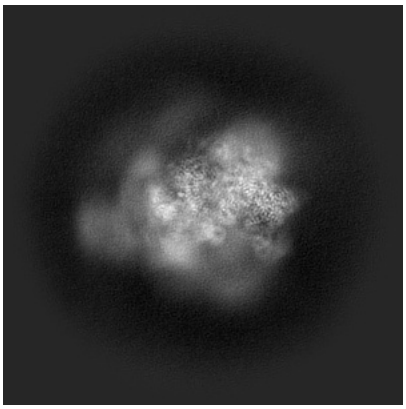
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

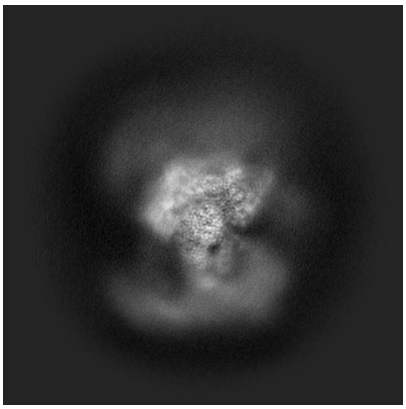
6.1.1 Primary map



X

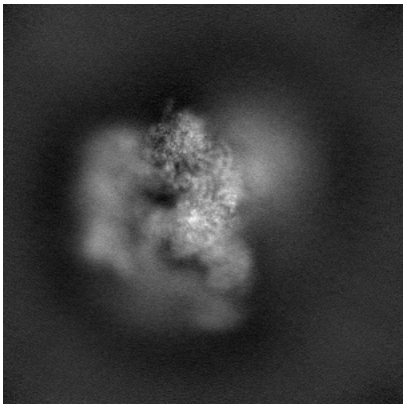


Y

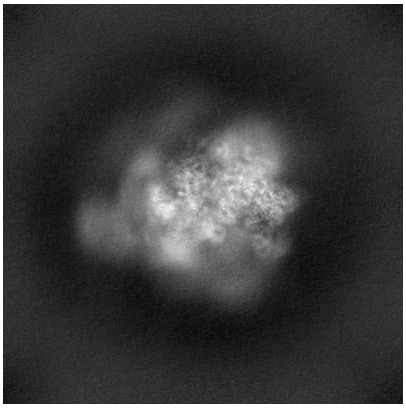


Z

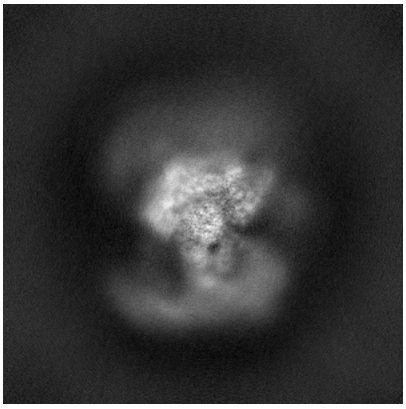
6.1.2 Raw map



X



Y

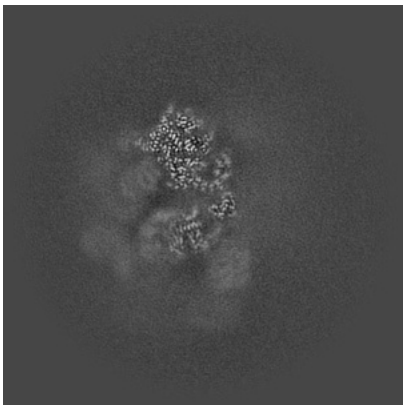


Z

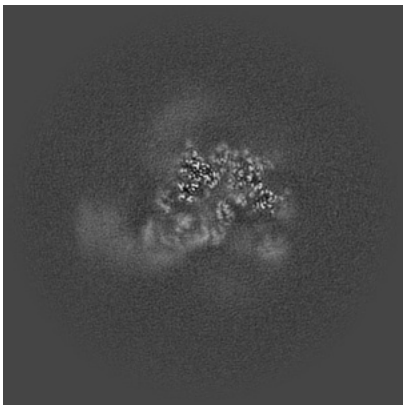
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

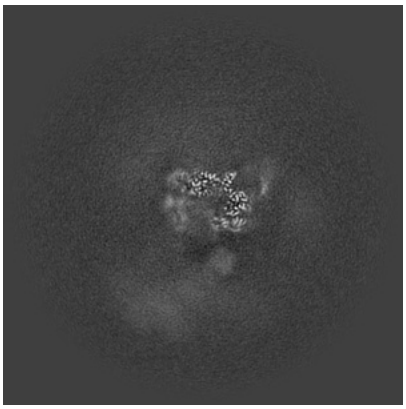
6.2.1 Primary map



X Index: 240

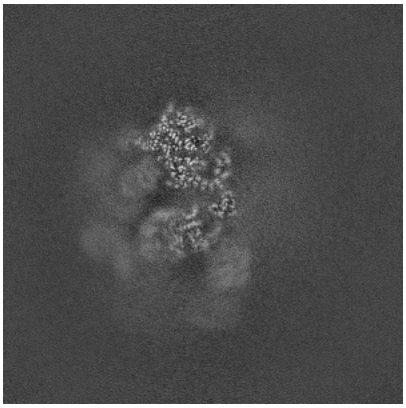


Y Index: 240

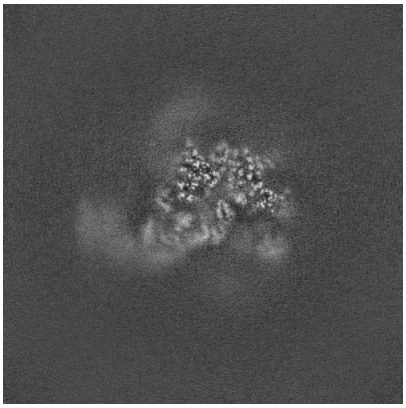


Z Index: 240

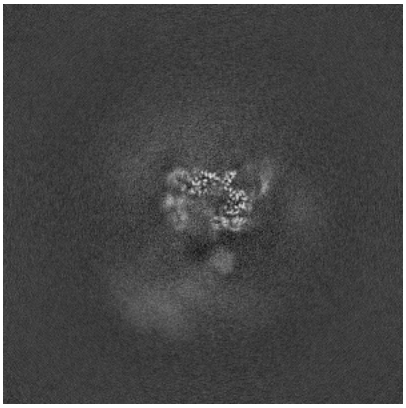
6.2.2 Raw map



X Index: 240



Y Index: 240

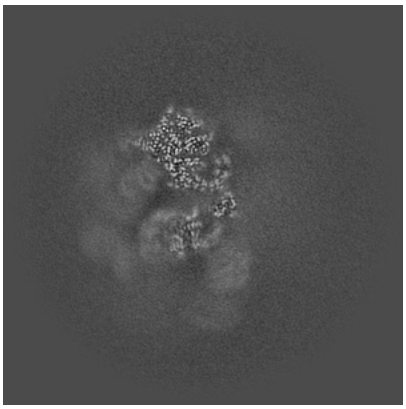


Z Index: 240

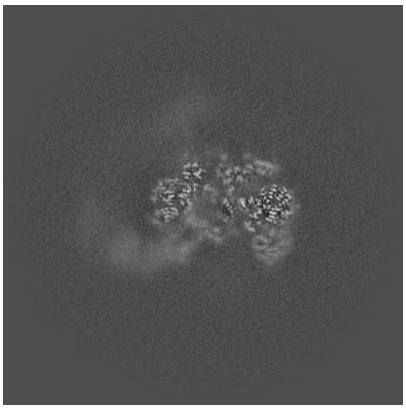
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

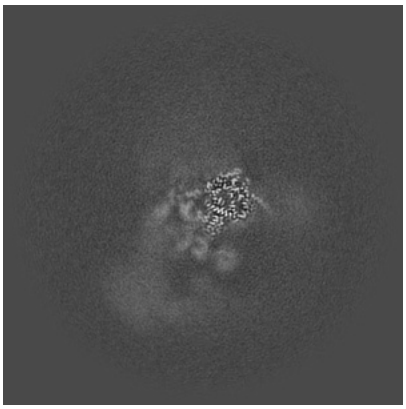
6.3.1 Primary map



X Index: 239

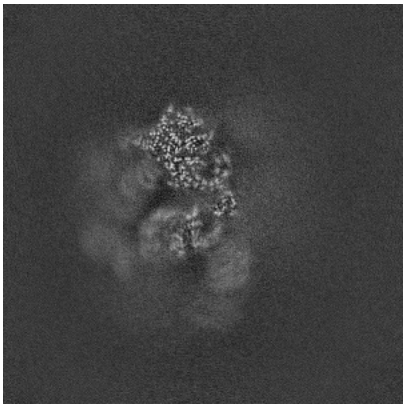


Y Index: 225

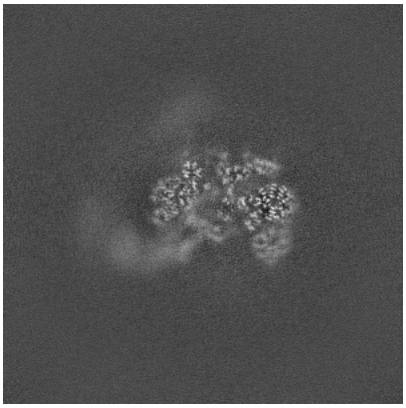


Z Index: 222

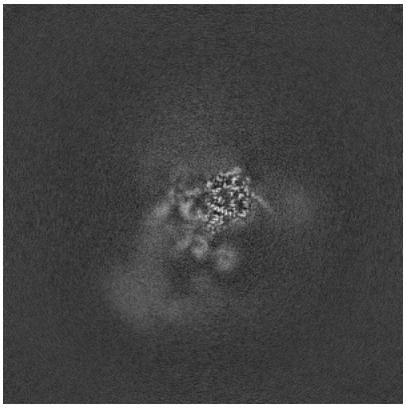
6.3.2 Raw map



X Index: 239



Y Index: 226

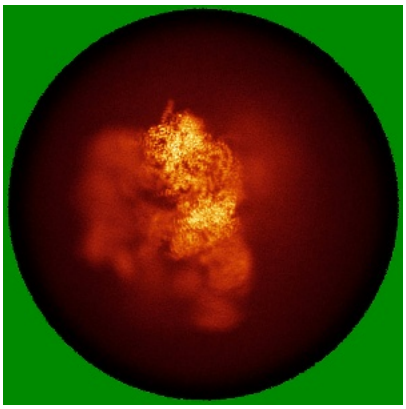


Z Index: 222

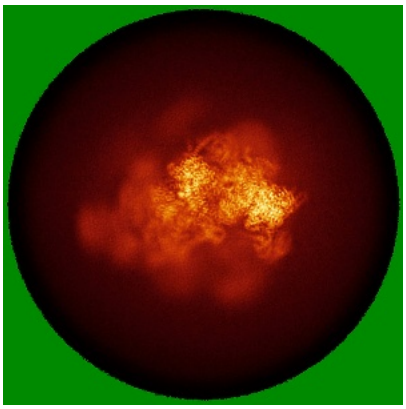
The images above show the largest variance slices of the map in three orthogonal directions.

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

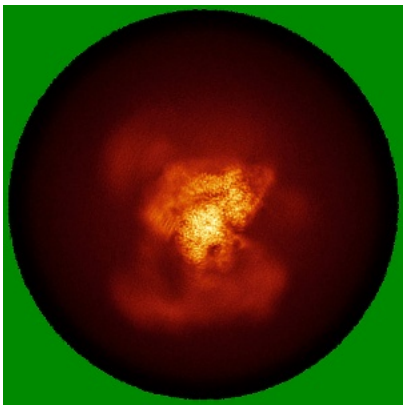
6.4.1 Primary map



X

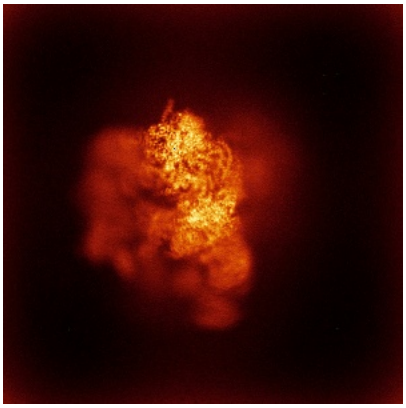


Y

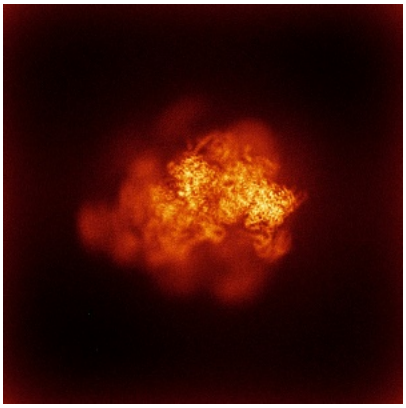


Z

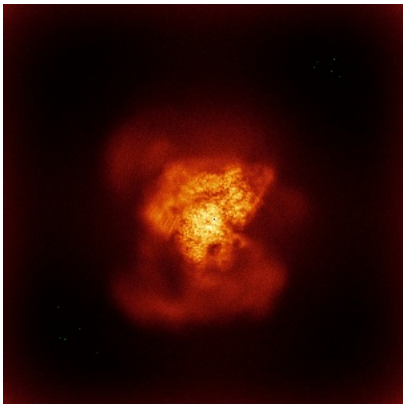
6.4.2 Raw map



X



Y



Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.19. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map

X Y Z

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

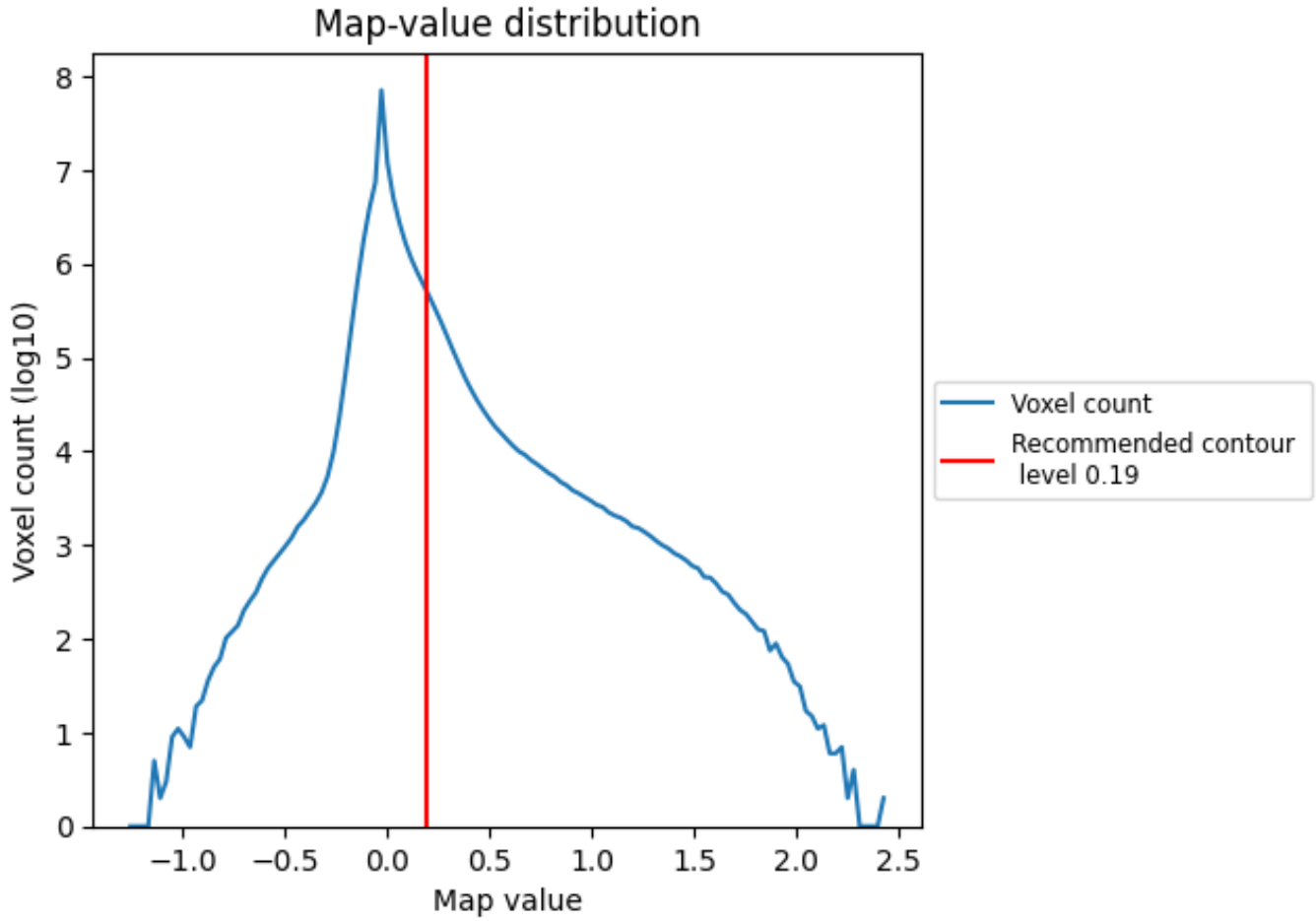
6.6 Mask visualisation (i)

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

7 Map analysis

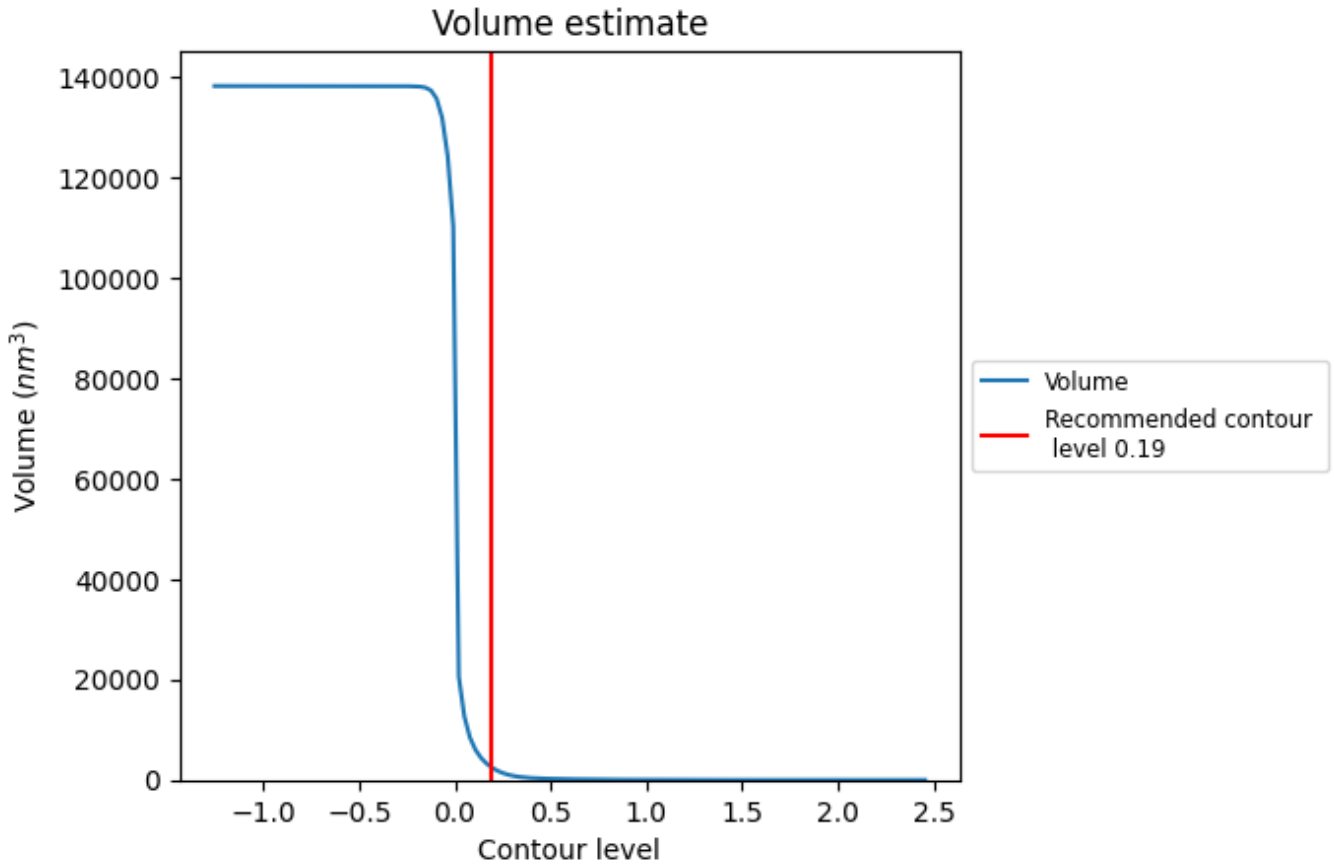
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

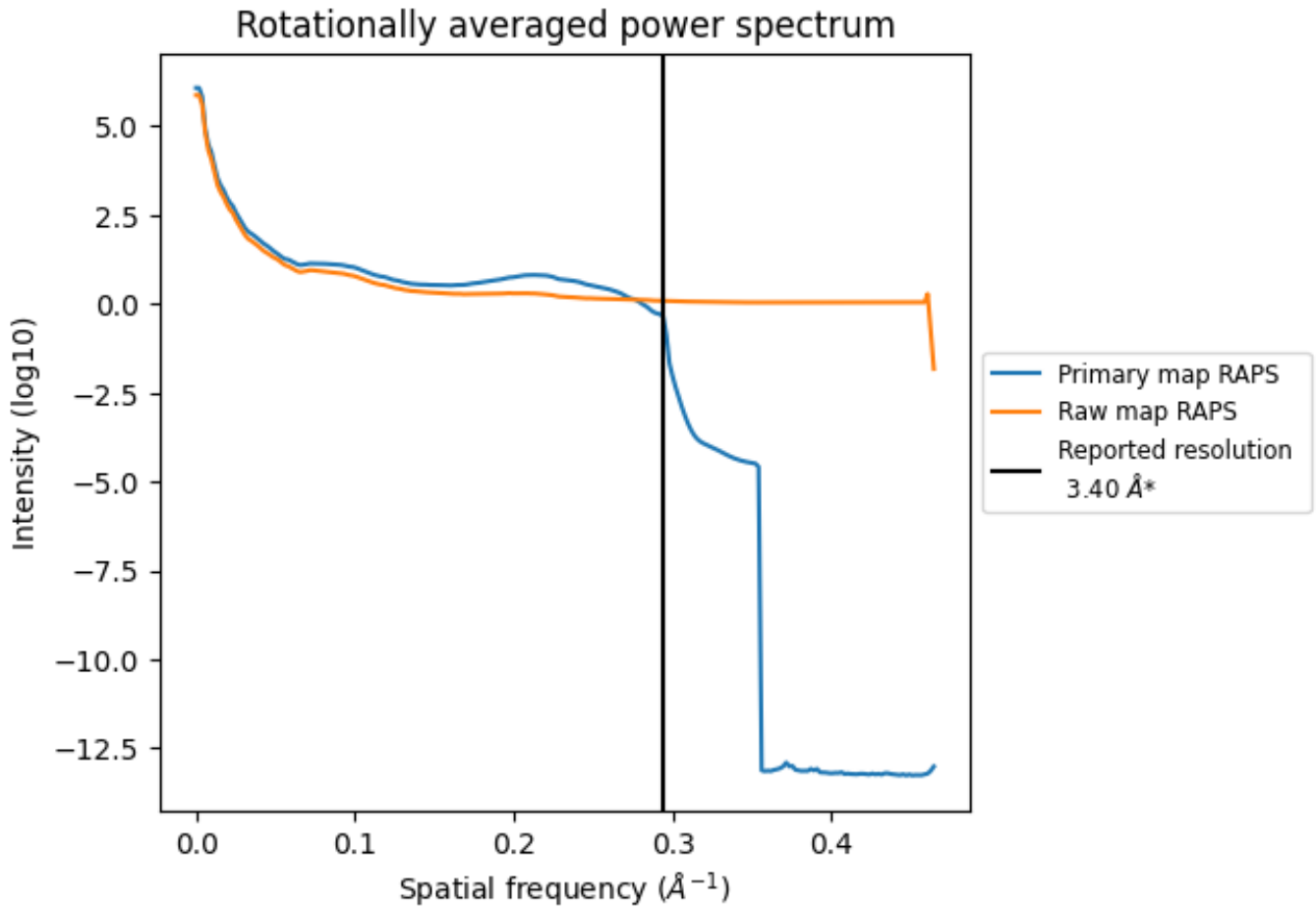
7.2 Volume estimate (i)



The volume at the recommended contour level is 2577 nm^3; this corresponds to an approximate mass of 2328 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)

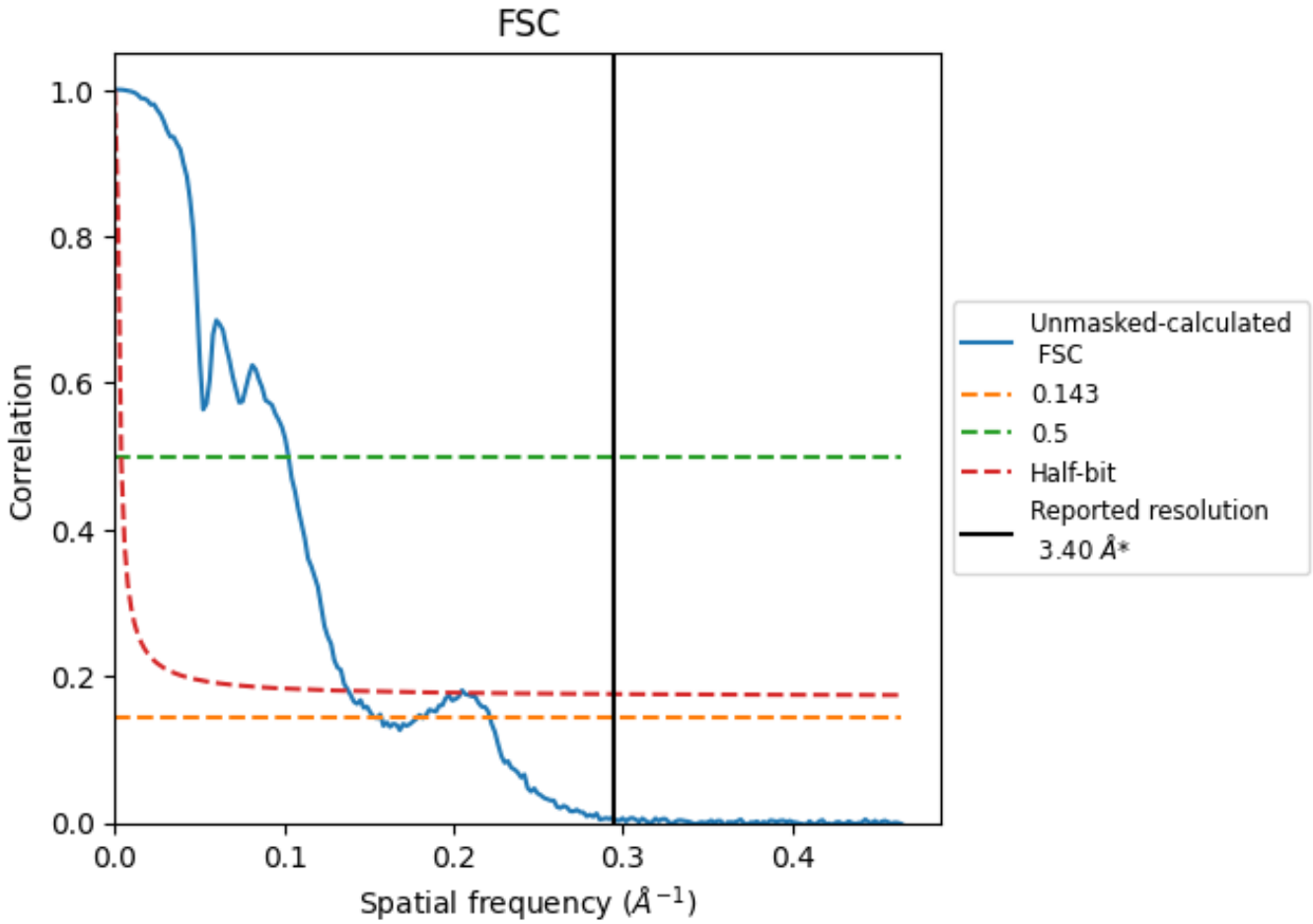


*Reported resolution corresponds to spatial frequency of 0.294 $Å^{-1}$

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 0.294 Å^{-1}

8.2 Resolution estimates (i)

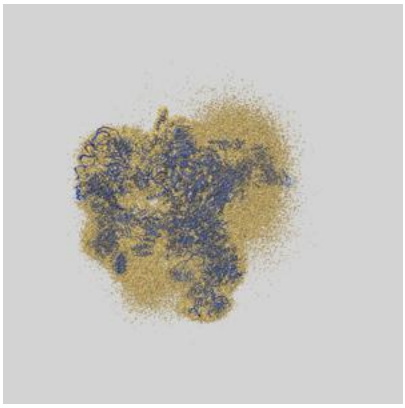
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.40	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	6.48	9.75	7.25

*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 6.48 differs from the reported value 3.4 by more than 10 %

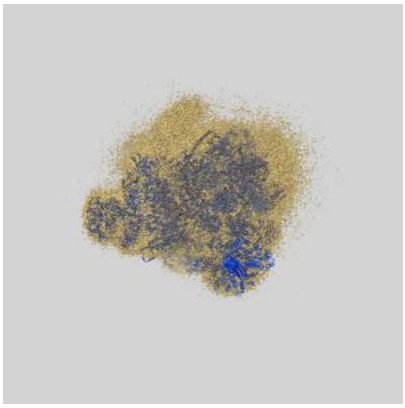
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-35105 and PDB model 8I0P. Per-residue inclusion information can be found in section 3 on page 13.

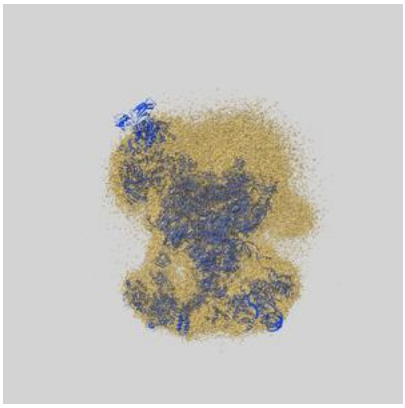
9.1 Map-model overlay



X



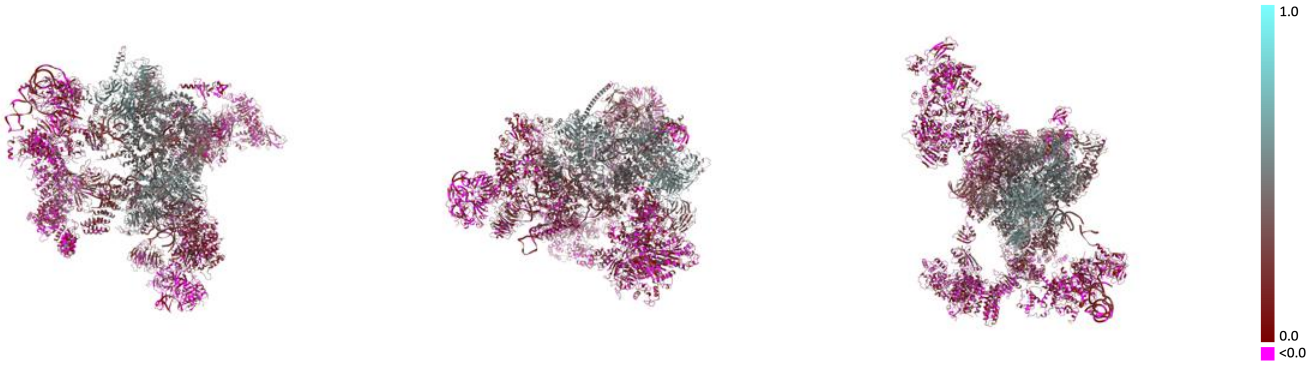
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.19 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.

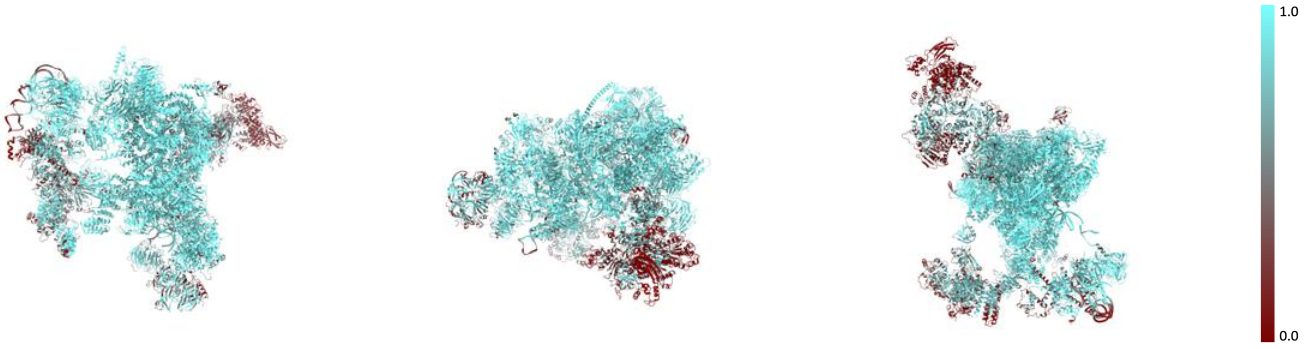
9.2 Q-score mapped to coordinate model



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.

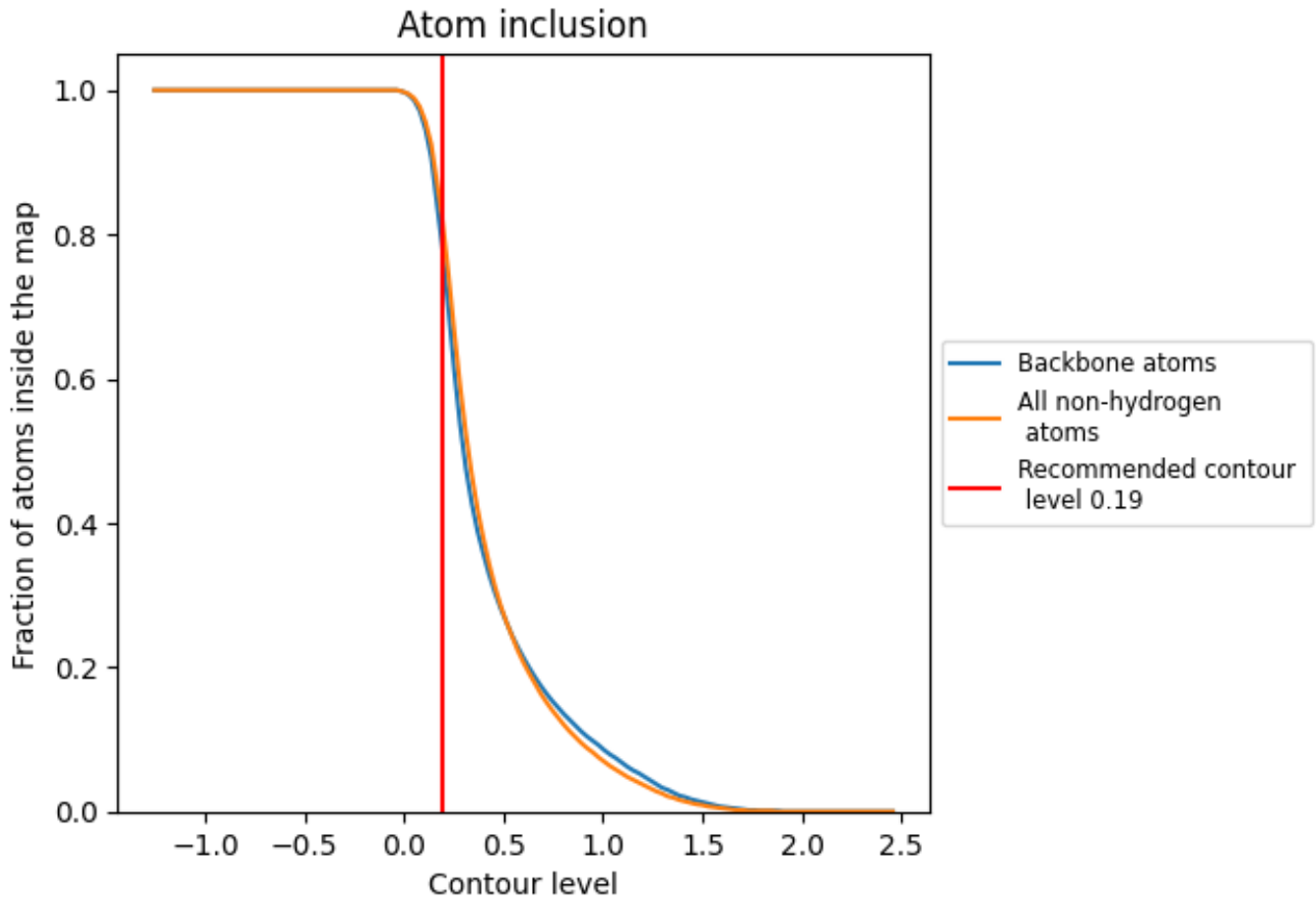
9.3 Atom inclusion mapped to coordinate model



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 (0.19).

9.4 Atom inclusion (i)



At the recommended contour level, 79% of all backbone atoms, 83% 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 (0.19) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8270	0.2870
1	0.9710	0.4690
2	0.9300	0.3980
3	0.9870	0.4850
4	0.9420	0.2370
5	0.9340	0.5140
6	0.9910	0.3740
7	0.9520	0.4660
8	0.9720	0.4140
9	0.9100	0.2660
A	0.8960	0.3530
B	0.9040	0.1640
C	0.9010	0.1980
D	0.3650	0.1400
E	0.8420	0.1810
F	0.8960	0.2350
G	0.9640	0.2930
H	0.7850	0.2110
I	0.7100	0.1150
J	0.9590	0.2620
K	0.8650	0.2550
L	0.9840	0.4810
N	0.8340	0.1620
O	0.8730	0.1820
P	0.9520	0.4780
Q	0.5540	0.1340
R	0.9420	0.4120
T	0.9860	0.4700
X	0.9680	0.3540
Y	0.9680	0.4810
Z	0.9670	0.4700
a	0.6700	0.0550
b	0.5760	0.0140
c	0.6260	0.0030
d	0.6420	0.0290

Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
e	0.6430	0.0390
f	0.5850	0.0300
g	0.6480	-0.0220
h	0.8420	0.1220
i	0.8660	0.1030
j	0.9280	0.1720
k	0.9340	0.1280
l	0.8940	0.1710
m	0.8860	0.1450
n	0.7760	0.1740
o	0.8330	0.1390
p	0.9010	0.1850
u	0.5620	0.1590
v	0.7330	0.2950
w	0.6850	0.2220
y	0.7640	0.1920
z	0.9760	0.3290