



wwPDB EM Validation Summary Report ⓘ

Nov 19, 2022 – 10:23 pm GMT

PDB ID : 6EXN
EMDB ID : EMD-3979
Title : Post-catalytic P complex spliceosome with 3' splice site docked
Authors : Wilkinson, M.E.; Fica, S.M.; Galej, W.P.; Norman, C.M.; Newman, A.J.; Nagai, K.
Deposited on : 2017-11-08
Resolution : 3.70 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

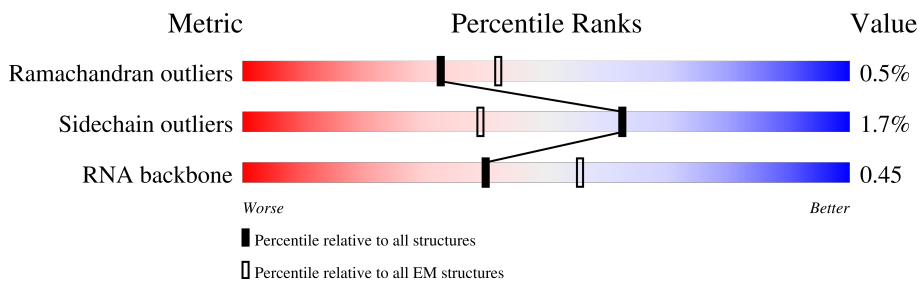
EMDB validation analysis : 0.0.1.dev43
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA)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

1 Overall quality at a glance

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

The reported resolution of this entry is 3.70 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	2	1175	
2	5	179	
3	6	112	
4	A	2413	
5	C	1008	
6	D	278	
7	E	39	
8	H	577	

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Mol	Chain	Length	Quality of chain
9	I	95	14% 27% 12% 59%
10	J	451	6% 76% 24%
11	K	379	9% 45% 55%
12	L	157	11% 98% ..
13	M	339	14% 75% 25%
14	N	364	28% 66% 34%
15	O	590	24% 53% 46%
16	P	175	9% 42% 58%
17	R	135	27% 54% 46%
18	S	687	34% 68% 31%
19	T	859	63% 69% 31%
20	V	1145	52% 46% 9% 44%
21	W	238	63% 59% 37%
22	X	95	59% 97%
23	Y	111	78% 77% 22%
24	a	251	25% 67% 32%
25	b	196	33% 41% 59%
25	k	196	36% 36% 64%
26	c	382	24% 51% 47%
27	d	101	51% 81% 19%
27	n	101	81% 81% 19%
28	e	94	74% 80% 20%
28	p	94	82% 82% 18%
29	f	86	81% 84% 16%
29	q	86	85% 85% 15%

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Mol	Chain	Length	Quality of chain
30	g	77	
30	r	77	
31	h	146	
31	l	146	
32	j	110	
32	m	110	
33	o	455	
34	s	175	
35	t	503	
35	u	503	
35	v	503	
35	w	503	
36	y	215	

2 Entry composition

There are 40 unique types of molecules in this entry. The entry contains 80677 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called U2 snRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	2	136	2868	1282	476	974	136	0	0

- Molecule 2 is a RNA chain called U5 snRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	5	171	3626	1623	630	1203	170	0	0

- Molecule 3 is a RNA chain called U6 snRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	6	102	2170	972	386	710	102	0	0

- Molecule 4 is a protein called Pre-mRNA-splicing factor Prp8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	A	1945	16046	10308	2764	2915	59	0	0

- Molecule 5 is a protein called Pre-mRNA-splicing factor SNU114.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	C	880	6999	4522	1169	1280	28	0	0

- Molecule 6 is a protein called Pre-mRNA-splicing factor CWC16.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	D	97	579	347	108	123	1	0	0

- Molecule 7 is a RNA chain called Ligated exons: UBC4 mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
7	E	32	586	258	86	210	32	0	0

- Molecule 8 is a protein called Pre-mRNA-splicing factor CWC22.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	H	411	2689	1685	477	521	6	0	0

- Molecule 9 is a RNA chain called Intron lariat: UBC4 RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
9	I	39	804	360	136	269	39	0	0

- Molecule 10 is a protein called Pre-mRNA-splicing factor PRP46.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	J	342	2691	1699	475	507	10	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
J	80	THR	ALA	conflict	UNP Q12417

- Molecule 11 is a protein called Pre-mRNA-processing protein 45.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	K	170	1355	847	249	254	5	0	0

- Molecule 12 is a protein called Pre-mRNA-splicing factor BUD31.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	L	156	1283	803	239	231	10	0	0

- Molecule 13 is a protein called Pre-mRNA-splicing factor CWC2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	M	255	2048	1297	362	378	11	0	0

- Molecule 14 is a protein called Pre-mRNA-splicing factor SLT11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
14	N	242	1917	1217	335	350	15	0	0

- Molecule 15 is a protein called Pre-mRNA-splicing factor CEF1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
15	O	320	2350	1457	437	449	7	0	0

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
O	125	VAL	ALA	conflict	UNP Q03654
O	285	PRO	SER	conflict	UNP Q03654
O	341	GLU	ASP	conflict	UNP Q03654
O	342	PRO	SER	conflict	UNP Q03654
O	417	SER	PRO	conflict	UNP Q03654
O	425	PRO	ARG	conflict	UNP Q03654

- Molecule 16 is a protein called Pre-mRNA-splicing factor CWC15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	P	73	600	378	119	102	1	0	0

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
P	49	LYS	ARG	conflict	UNP Q03772
P	58	ASN	SER	conflict	UNP Q03772
P	66	VAL	ALA	conflict	UNP Q03772
P	68	VAL	MET	conflict	UNP Q03772

- Molecule 17 is a protein called Pre-mRNA-splicing factor CWC21.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
17	R	73	423	252	82	89	0	0

- Molecule 18 is a protein called Pre-mRNA-splicing factor CLF1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
18	S	472	3189	1989	599	593	8	0	0

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
S	561	LYS	GLU	conflict	UNP Q12309
S	615	MET	LEU	conflict	UNP Q12309
S	649	ASP	ASN	conflict	UNP Q12309
S	659	VAL	ILE	conflict	UNP Q12309

- Molecule 19 is a protein called Pre-mRNA-splicing factor SYF1.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
19	T	594	2957	1769	594	594	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
T	695	ILE	THR	conflict	UNP Q04048

- Molecule 20 is a protein called Pre-mRNA-splicing factor ATP-dependent RNA helicase PRP22.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	V	638	5059	3217	854	959	29	0	0

- Molecule 21 is a protein called U2 small nuclear ribonucleoprotein A'.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
21	W	149	1211	756	223	228	4	0	0

- Molecule 22 is a protein called Unassigned structure.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
22	X	95	475	285	95	95	0	0

- Molecule 23 is a protein called U2 small nuclear ribonucleoprotein B”.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
23	Y	87	704	451	123	127	3	0	0

- Molecule 24 is a protein called Pre-mRNA-splicing factor Prp18.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	a	171	1372	878	244	246	4	0	0

- Molecule 25 is a protein called Small nuclear ribonucleoprotein-associated protein B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	b	80	631	403	114	111	3	0	0
25	k	70	563	360	98	102	3	0	0

- Molecule 26 is a protein called Pre-mRNA-splicing factor SLU7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
26	c	204	1709	1072	315	314	8	0	0

- Molecule 27 is a protein called Small nuclear ribonucleoprotein Sm D3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	d	82	625	399	109	115	2	0	0
27	n	82	632	402	109	119	2	0	0

- Molecule 28 is a protein called Small nuclear ribonucleoprotein E.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
28	e	75	575	379	92	101	3	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
28	p	77	Total	C	N	O	S	0	0
			602	396	95	108	3		

- Molecule 29 is a protein called Small nuclear ribonucleoprotein F.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	f	72	Total	C	N	O	S	0	0
			573	368	101	103	1		
29	q	73	Total	C	N	O	S	0	0
			585	376	102	106	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
30	g	69	Total	C	N	O	S	0	0
			529	337	93	97	2		
30	r	75	Total	C	N	O	S	0	0
			577	363	100	112	2		

- Molecule 31 is a protein called Small nuclear ribonucleoprotein Sm D1.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	h	82	Total	C	N	O	S	0	0
			644	409	110	123	2		
31	l	87	Total	C	N	O	S	0	0
			679	435	118	123	3		

- Molecule 32 is a protein called Small nuclear ribonucleoprotein Sm D2.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	j	94	Total	C	N	O	S	0	0
			741	477	141	119	4		
32	m	92	Total	C	N	O	S	0	0
			752	481	136	131	4		

- Molecule 33 is a protein called Pre-mRNA-processing factor Prp17.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	o	322	Total	C	N	O	S	0	0
			2599	1655	462	474	8		

- Molecule 34 is a protein called Pre-mRNA-splicing factor SNT309.

Mol	Chain	Residues	Atoms			AltConf	Trace	
			Total	C	N			O
34	s	110	548	328	110	110	0	0

- Molecule 35 is a protein called Pre-mRNA-processing factor Prp19.

Mol	Chain	Residues	Atoms			AltConf	Trace	
			Total	C	N			O
35	t	117	583	349	117	117	0	0
35	u	116	578	346	116	116	0	0
35	v	118	588	352	118	118	0	0
35	w	114	568	340	114	114	0	0

- Molecule 36 is a protein called Pre-mRNA-splicing factor SYF2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
36	y	88	719	444	132	142	1	0	0

- Molecule 37 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

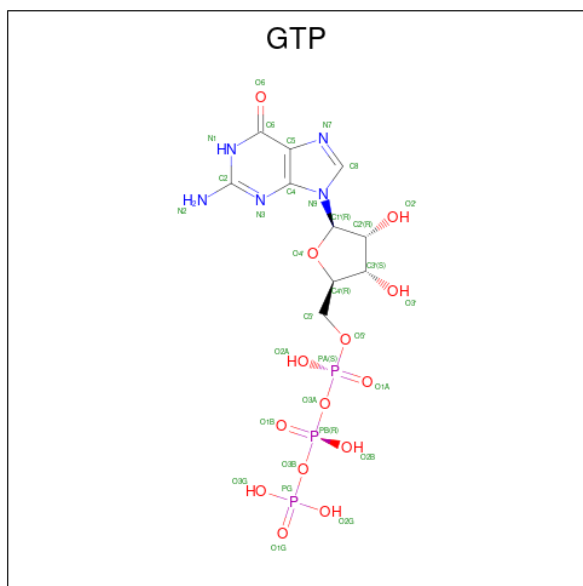
Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
37	6	1	1	1	0

- Molecule 38 is INOSITOL HEXAKISPHOSPHATE (three-letter code: IHP) (formula: C₆H₁₈O₂₄P₆).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	O	P	
38	A	1	36	6	24	6	0

- Molecule 39 is GUANOSINE-5'-TRIPHOSPHATE (three-letter code: GTP) (formula: $C_{10}H_{16}N_5O_{14}P_3$).



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

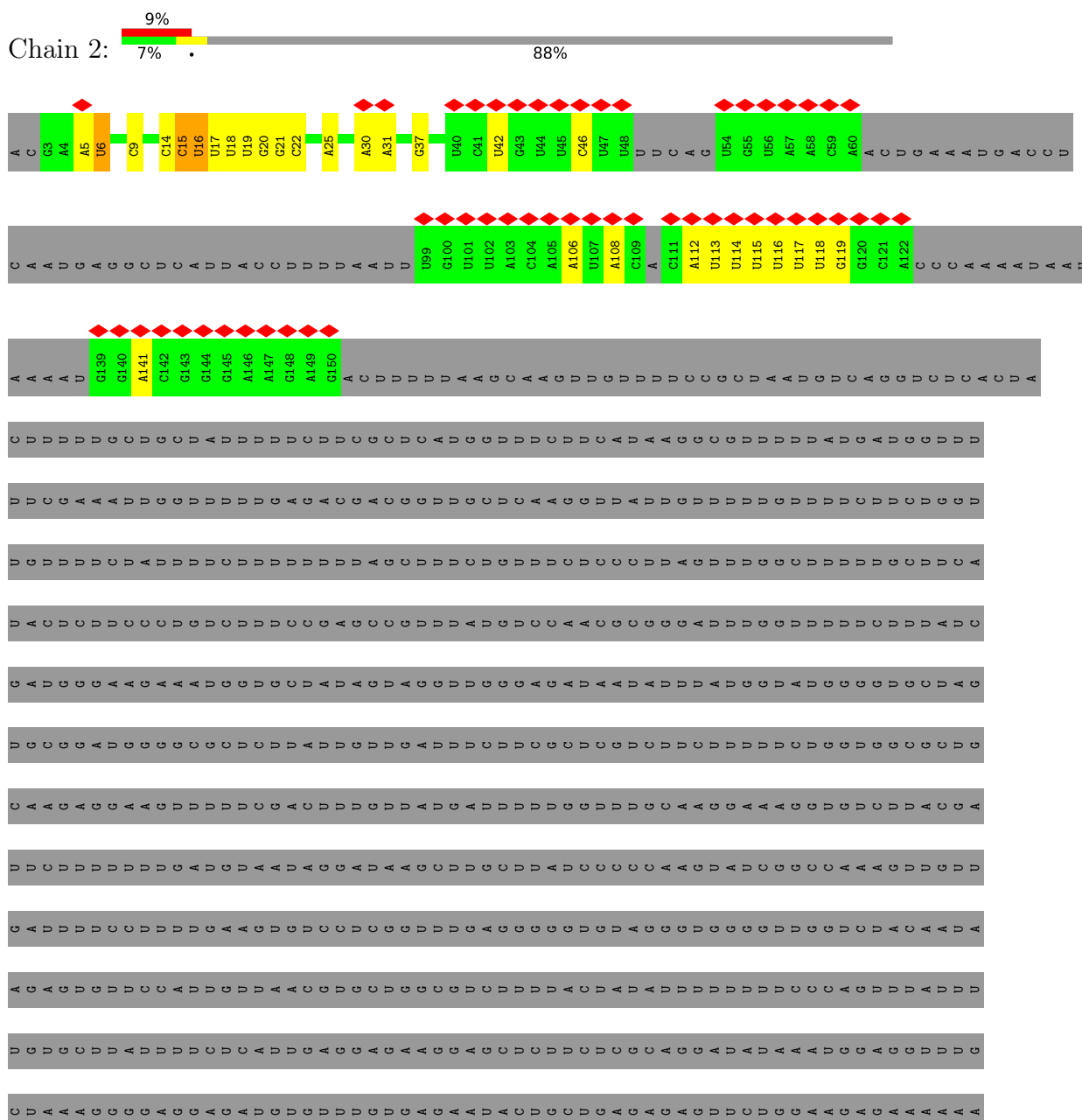
- Molecule 40 is ZINC ION (three-letter code: ZN) (formula: Zn).

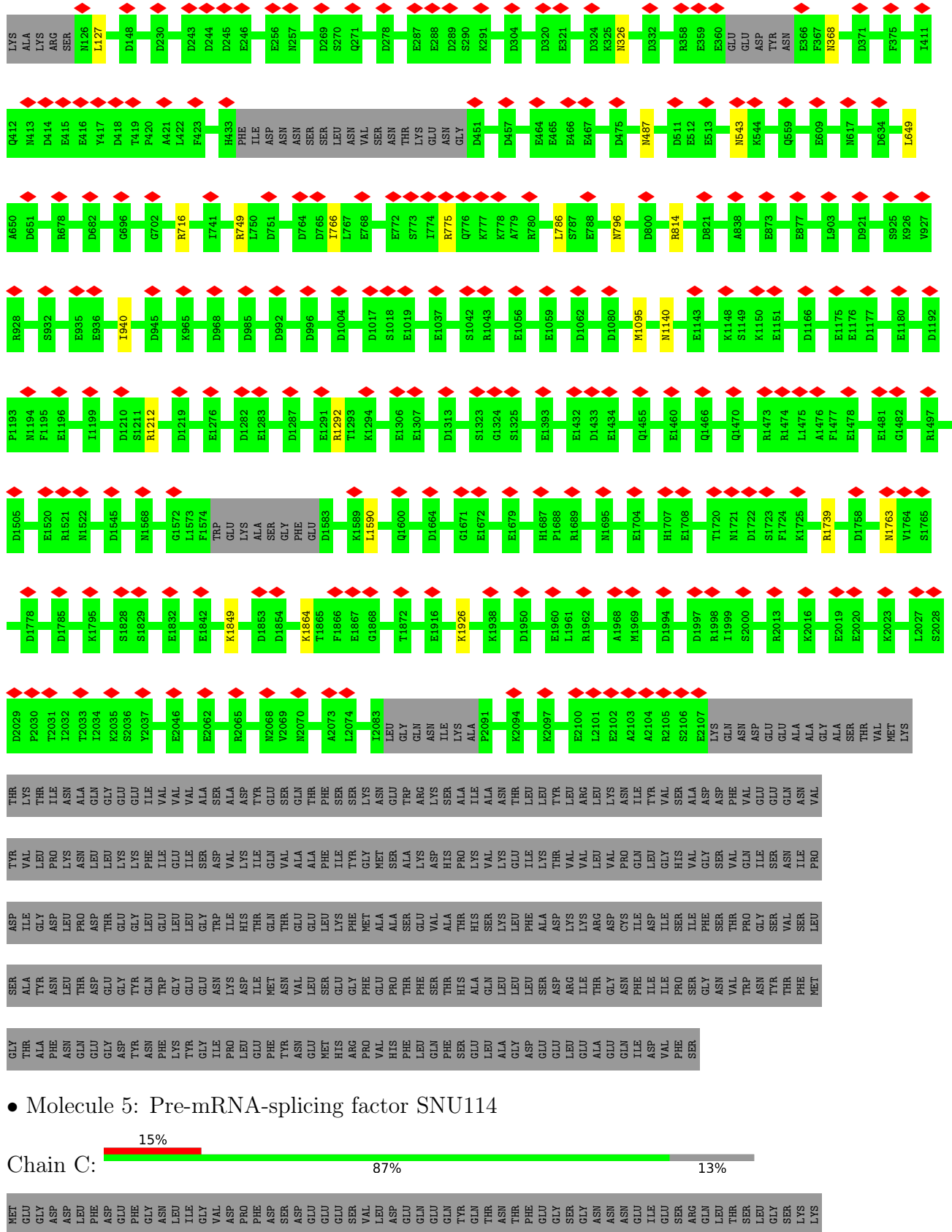
Mol	Chain	Residues	Atoms		AltConf
40	L	3	Total 3	Zn 3	0
40	M	1	Total 1	Zn 1	0
40	N	2	Total 2	Zn 2	0
40	c	1	Total 1	Zn 1	0

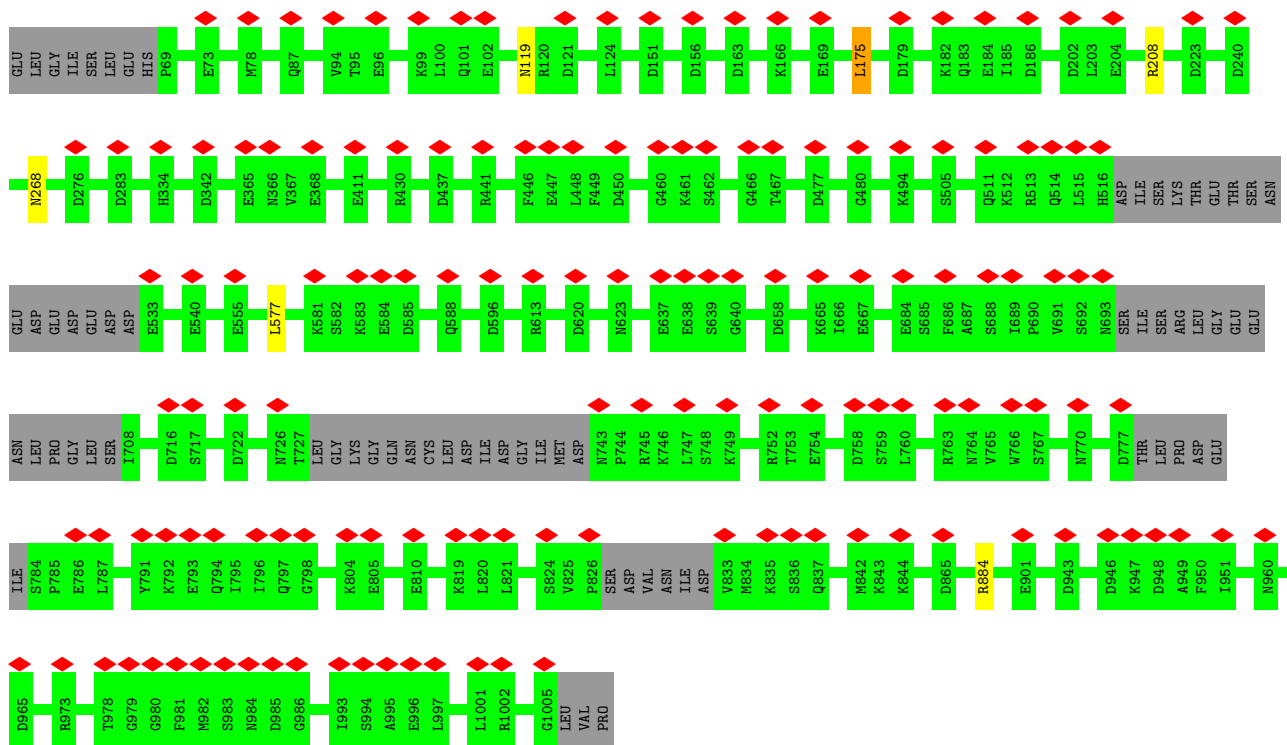
3 Residue-property plots [i](#)

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

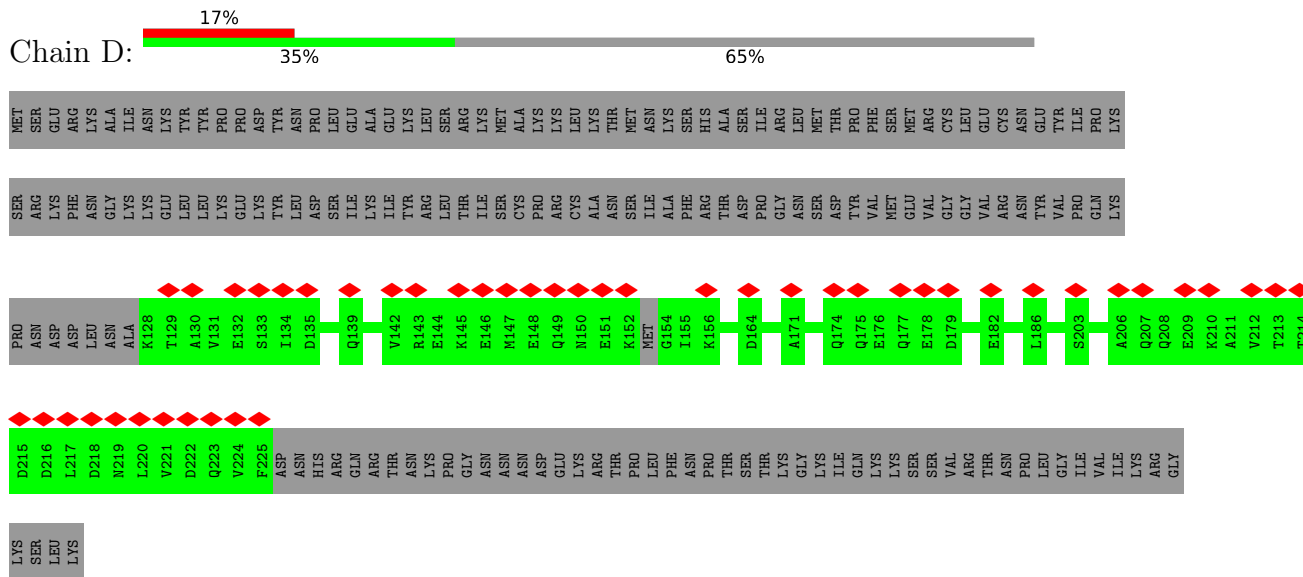
- Molecule 1: U2 snRNA



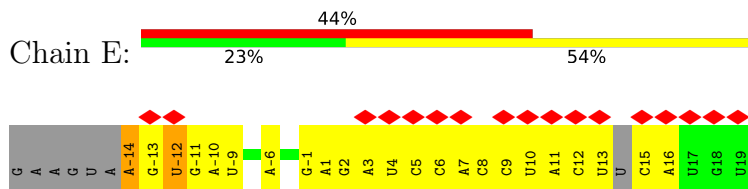




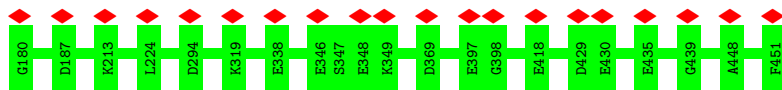
• Molecule 6: Pre-mRNA-splicing factor CWC16



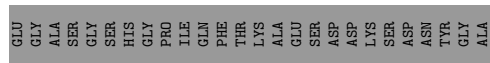
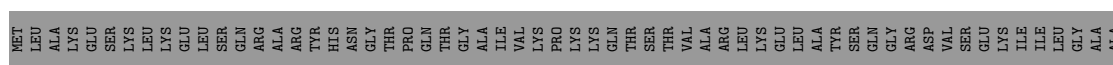
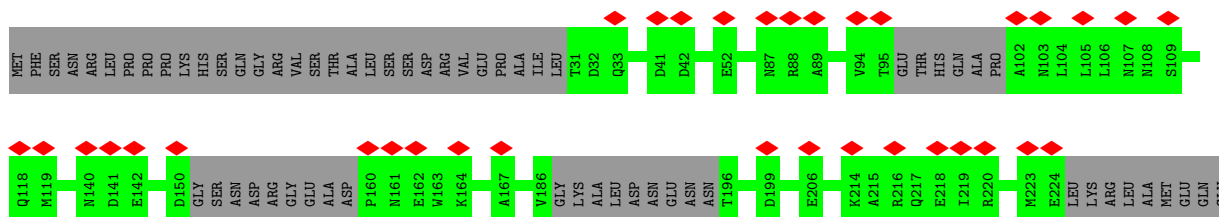
• Molecule 7: Ligated exons: UBC4 mRNA



• Molecule 8: Pre-mRNA-splicing factor CWC22



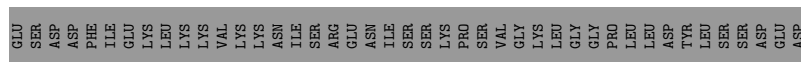
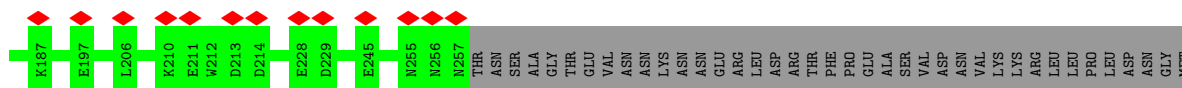
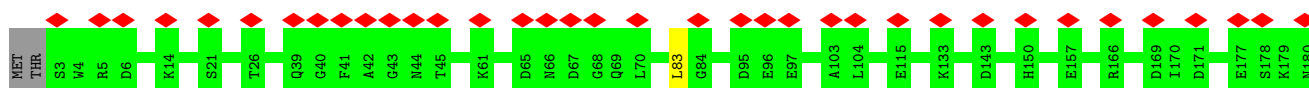
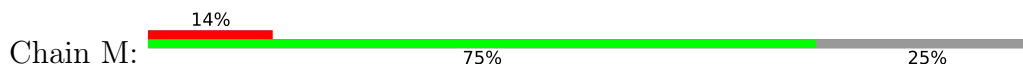
- Molecule 11: Pre-mRNA-processing protein 45



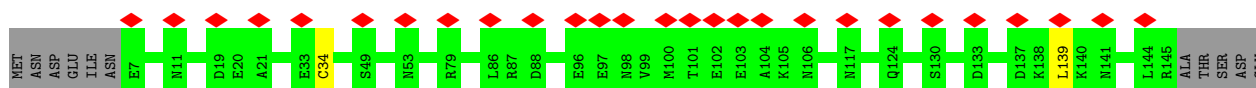
- Molecule 12: Pre-mRNA-splicing factor BUD31

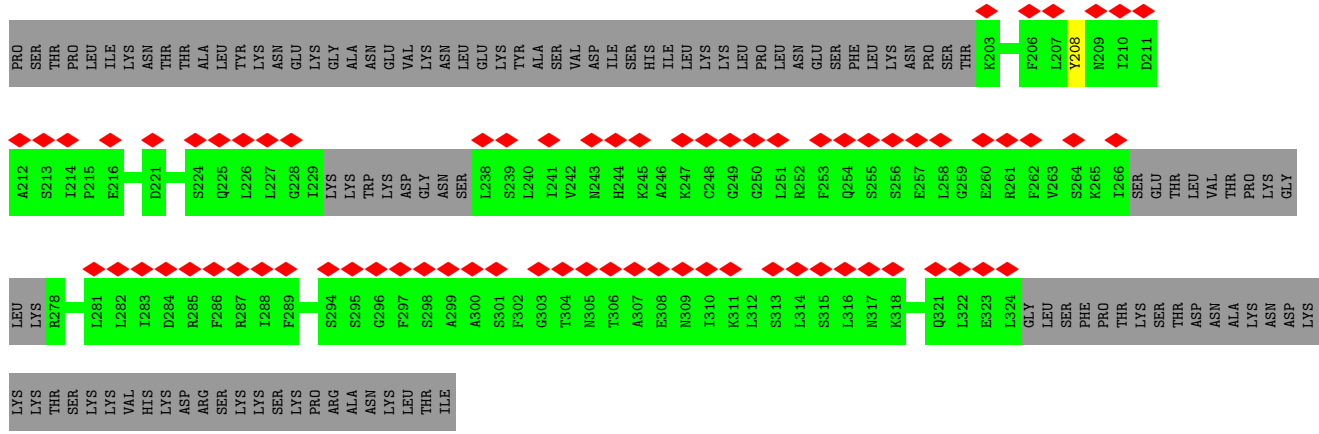


- Molecule 13: Pre-mRNA-splicing factor CWC2

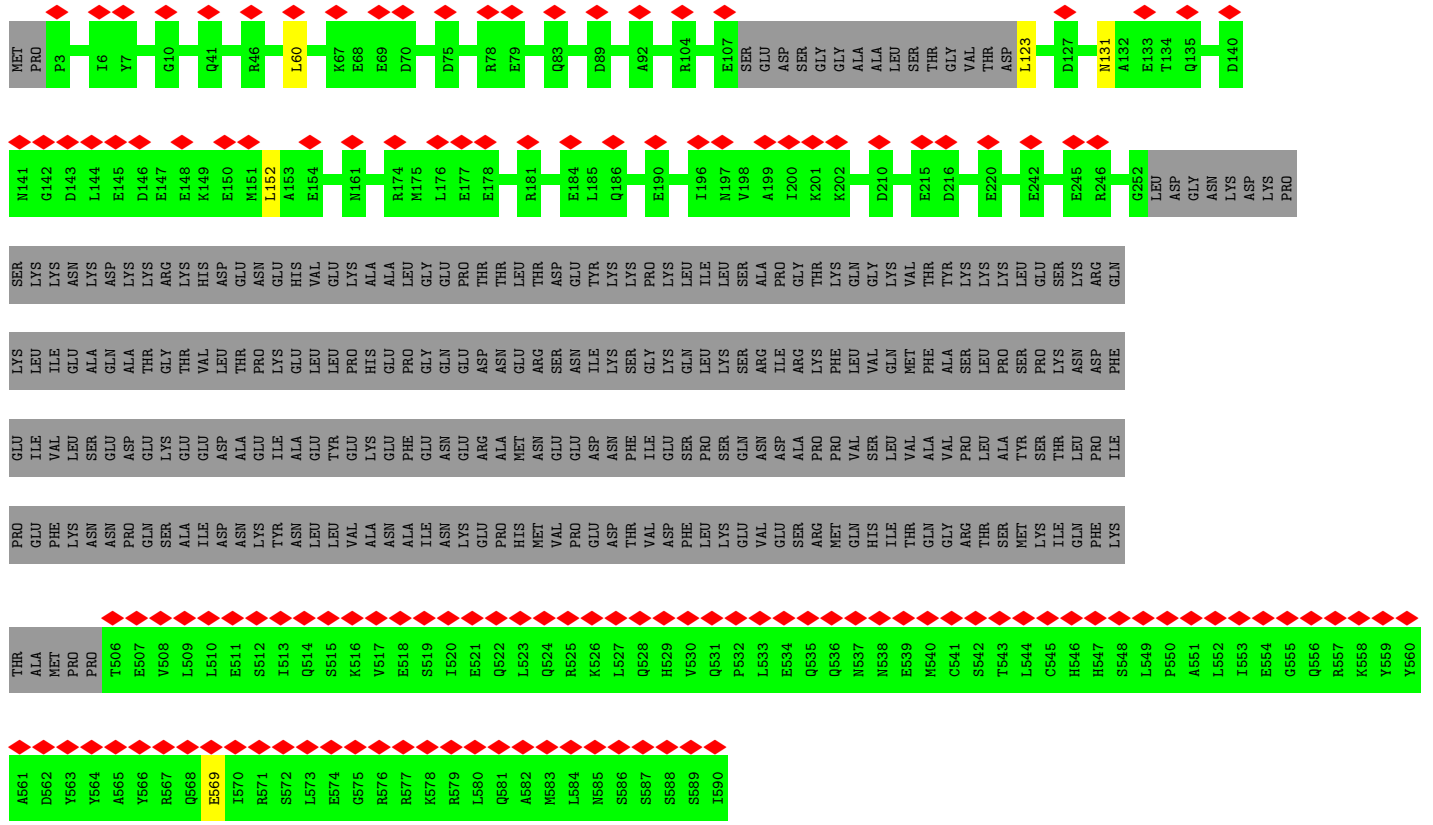


- Molecule 14: Pre-mRNA-splicing factor SLT11





• Molecule 15: Pre-mRNA-splicing factor CEF1



• Molecule 16: Pre-mRNA-splicing factor CWC15



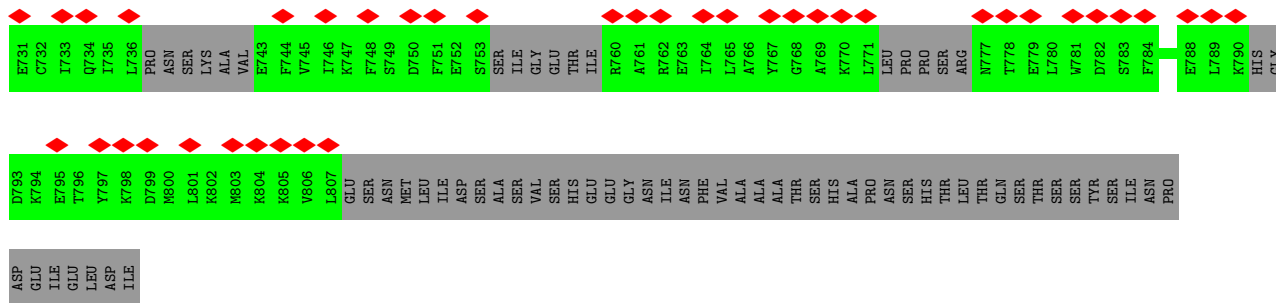
LYS
PRO
SER
LYS
PRO
TYR
SER
ALA
LYS
PHE
LEU
GLU
LEU
VAL
ALA
LYS
LYS
TRP
GLN
GLU
GLN
ALA
LEU

● Molecule 19: Pre-mRNA-splicing factor SYF1

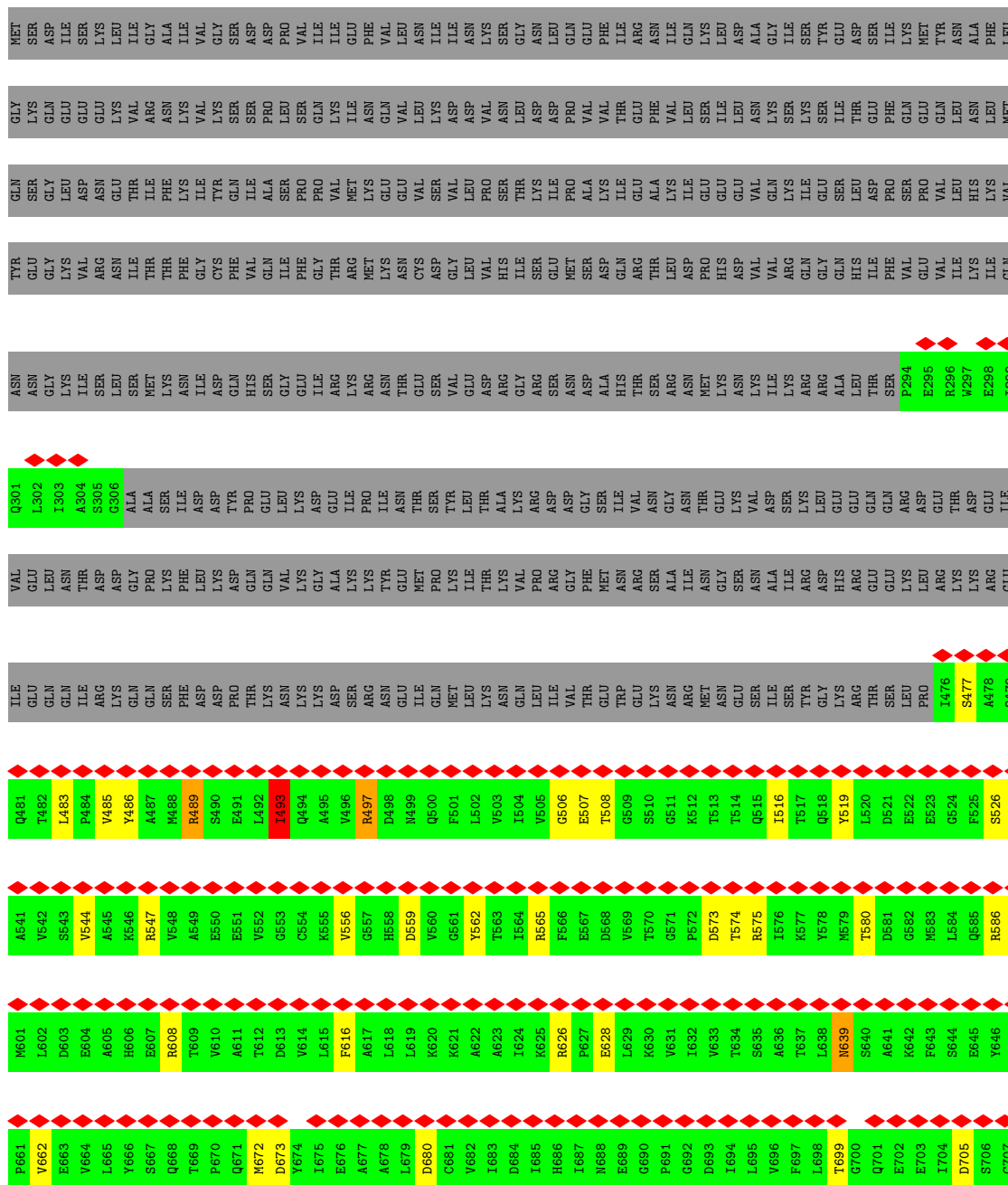
Chain T:

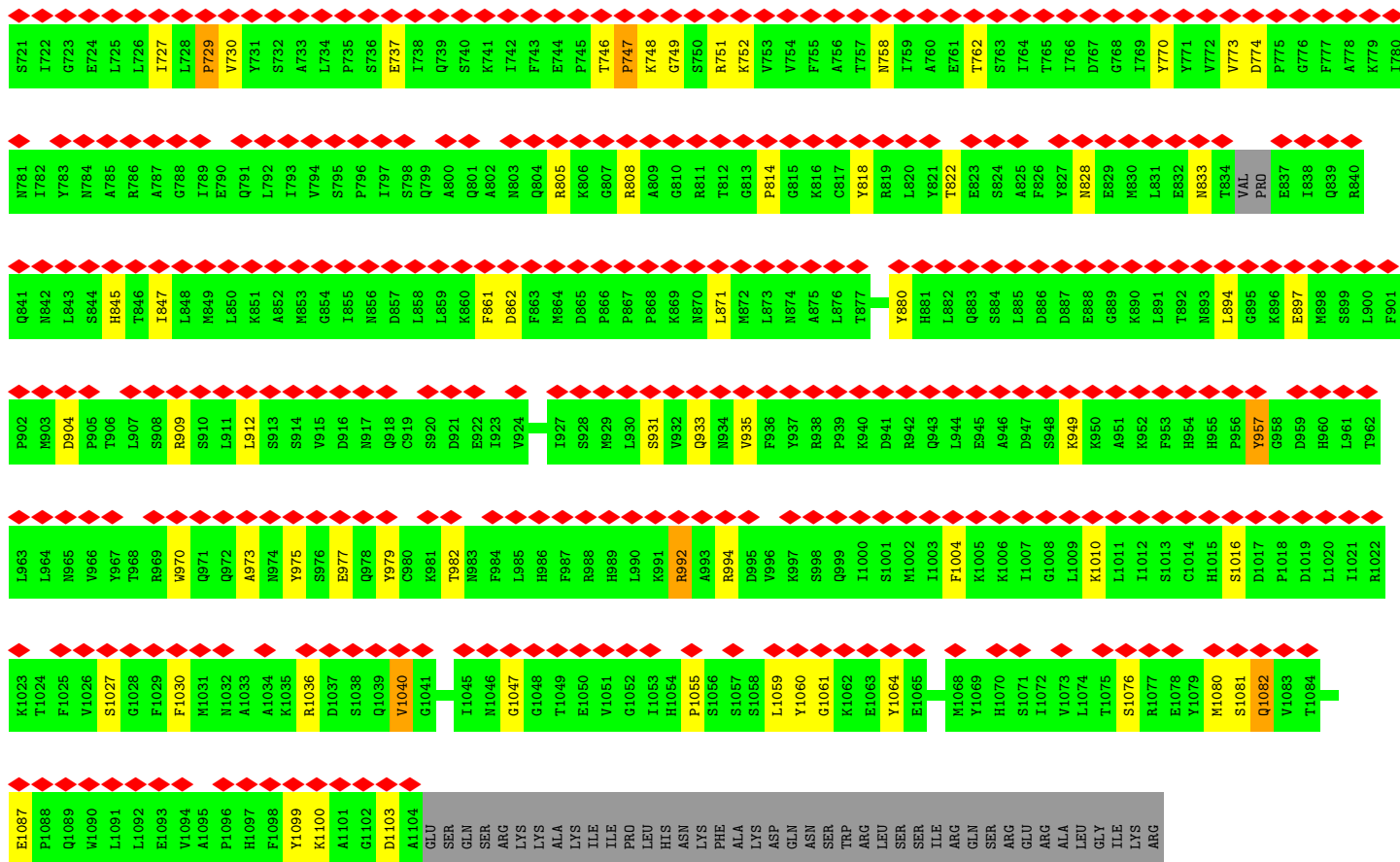


LYS	PRO	SER	LYS	PRO	TYR	SER	ALA	LYS	PHE	LEU	GLU	LEU	VAL	ALA	LYS	LYS	TRP	GLN	GLU	GLN	ALA	LEU																																						
MET	SER	ALA	TYR	ILE	ALA	ILE	MET	LYS	GLY	VAL	VAL	ILE	THR	ASN	VAL	D21	E22	D23	Y24	A25	F26	E27	Y28	E29	I30	Q31	K32	THR	PRO	GLN	R36	I37	L38	T39	W40	K41	R42	Y43	I44	E45	Y46	W47	K48	GLU	GLY	ARG	THR	D54	K55	Q56	I57	R58	W59	L60						
V61	E62	R63	F64	C65	S66	Q67	PHE	VAL	VAL	THR	ASP	T72	S73	I74	W75	E76	D77	Y78	I79	R80	W81	E82	S83	THR	LYS	GLY	VAL	V89	T90	S91	R92	I93	F94	W95	R96	F97	Q98	R99	C100	L101	K102	S103	CYS	VAL	ARG	D107	C108	G109	D110	I111	C112	L113	S114	Y115	L116	E117	L118	A119	I120	
E121	GLN	TYR	ASP	LEU	MET	I128	R129	H130	H131	L132	A133	S134	S135	L136	M137	M138	M139	E140	ARG	GLU	M143	H144	R145	K146	V147	W148	D149	P150	V151	I152	K153	F154	V155	E156	E157	K158	LEU	PRO	LEU	THR	LEU	GLN	R226	R227	M228	E229	S230	L231	A232	T233	L234	A235	L236	T237	R238	ASP	M240			
L181	I182	M183	V184	L305	L186	V187	K188	G189	F190	T191	LYS	GLY	PHE	ILE	SER	GLU	ILE	SER	ASN	GLY	ARG	GLY	ASP	I209	W210	S211	S212	H213	I214	L215	E216	R217	Y218	LEU	LYS	VAL	ALA	PRO	Q224	Q225	K226	R227	M228	E229	L231	A232	T233	L234	A235	L236	T237	R238	ASP	M240						
I241	T242	L243	K244	S245	V246	Y247	E248	K249	Y250	L251	PRO	GLN	ASP	GLU	ASN	SER	GLY	TYR	LEU	PRO	SER	SER	GLU	LEU	PHE	L270	M271	F272	M273	Y274	L275	A276	S277	L278	E279	K280	L281	G282	LEU	D284	N285	Q286	Y287	E288	E289	F290	M291	R292	Q293	M294	N295	G296	ILE	P299	D300					
K301	W302	L303	F304	L305	I306	L307	S308	L309	A310	K311	Y312	Y313	I314	SER	ARG	G317	R318	L319	D320	S321	C322	G323	D324	L325	L326	K327	K328	S329	L330	Q331	L332	A333	THR	LEU	ARG	TYR	SER	ASP	F339	D340	R341	I342	Y343	M344	F345	Y346	L347	L348	F349	E350	Q351	E352	C353	S354	Q355	F356	I357	L358	G359	K360
L361	K362	E363	N364	S365	SER	LYS	PHE	PHE	ASN	GLN	LYS	D373	W374	T375	E376	K377	L378	Q379	A380	H381	M382	A383	T384	F385	E386	S387	L388	L389	N390	L391	Y392	D393	I394	Y395	L396	N397	D398	V399	A400	L401	Q403	ASP	SER	ASN	L407	V408	E409	T410	W411	M412	K413	L414	V415	S416	L417	GLN	LYS	SER		
A421	A422	E423	K424	C425	N426	V427	Y428	S429	E430	A431	A432	L433	K434	I435	ASP	PRO	ARG	LYS	VAL	GLY	THR	PRO	G444	S445	F446	G447	R448	L449	W450	C451	S452	Y453	G454	D455	L456	Y457	W458	R459	S460	N461	ALA	I463	S464	T465	A466	F467	R468	L469	W470	T471	Q472	S473	L474	K475	VAL	PRO	TYR	PRO	TYR	
I481	E482	D483	L484	E485	E486	I487	Y488	L489	M490	W491	A492	D493	R494	E495	L496	D497	K498	GLU	G500	V501	E502	R503	A504	F505	S506	I507	L508	E509	D510	A511	L512	HIS	VAL	PRO	THR	ASN	P518	E519	I520	L521	L522	E523	K524	Y525	K526	N527	GLY	HIS	ARG	ARG	LYS	ILE	P533	A534	Q535	T536	V537	L538	F539	N540
S541	L542	R543	I544	W545	S546	K547	Y548	I549	D550	Y551	L552	E553	A554	Y555	C556	PRO	LYS	ALA	ASN	SER	SER	ASP	LYS	I566	F567	N568	K569	T570	K571	M572	A573	Y574	N575	T576	V577	I578	D579	L580	ARG	LEU	THR	P585	A586	M587	A588	E589	N590	F591	A592	L593	F594	L595	Q596	N597	H598	TYR	E600			
V601	M602	E603	S604	F605	Q606	V607	Y608	E609	K610	T611	I612	P613	L614	F615	PRO	P617	E618	I619	Q620	Y621	E622	I625	E626	Y627	L628	E629	V630	A631	T632	S633	HIS	GLN	SER	SER	SER	LEU	SER	P641	E642	R645	F646	L647	F648	E649	K650	A651	N654	L655	C656	S657	M658	GLY	ILE	ASP	C662	K663				
F666	F672	E673	E674	R675	ILE	SER	GLY	LEU	ILE	S681	K682	S683	I684	E685	I686	L687	R688	R689	G690	A691	V692	I693	G694	ILE	VAL	VAL	SER	SER	THR	HIS	L702	E703	S704	R705	L706	Q707	L708	W709	R710	M711	C712	I713	S714	K715	A716	E717	S718	THR	LEU	GLY	PRO	SER	V724	T725	Y729	Q730				

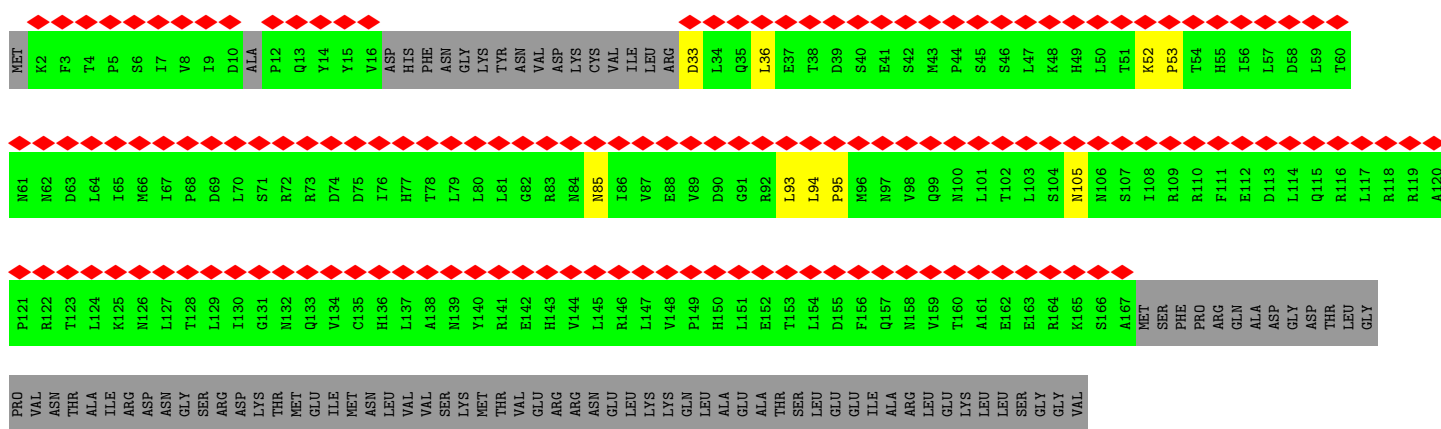


● Molecule 20: Pre-mRNA-splicing factor ATP-dependent RNA helicase PRP22

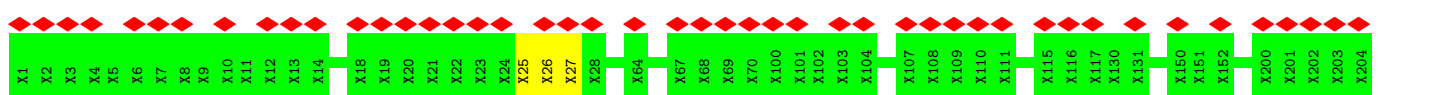
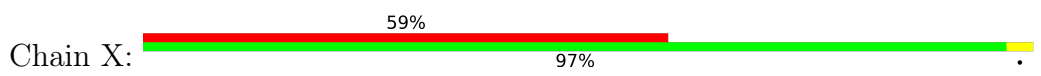


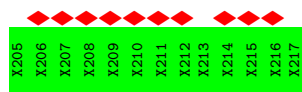


• Molecule 21: U2 small nuclear ribonucleoprotein A'

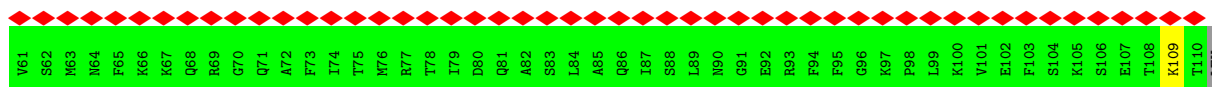
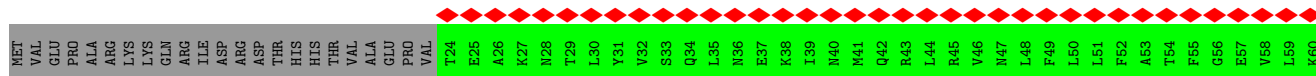
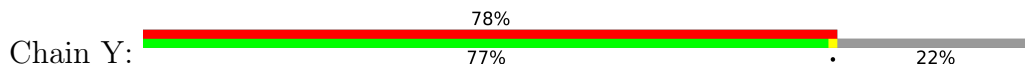


• Molecule 22: Unassigned structure

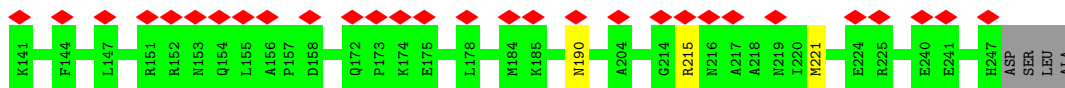
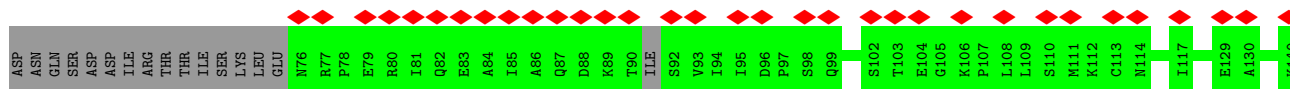




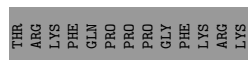
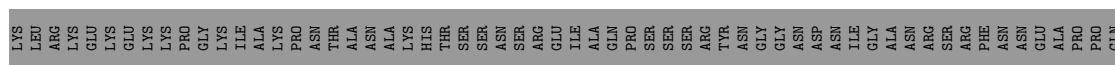
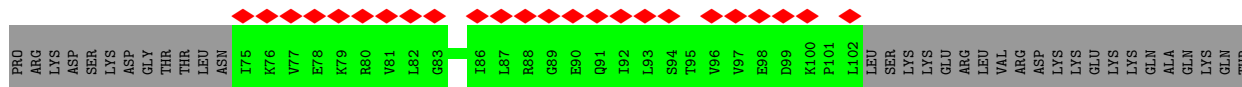
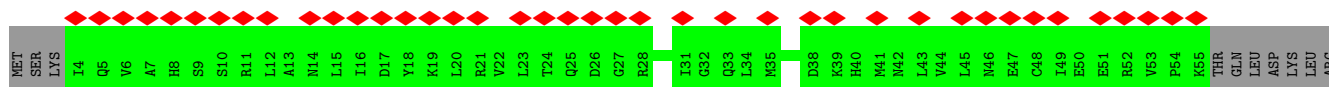
• Molecule 23: U2 small nuclear ribonucleoprotein B”



• Molecule 24: Pre-mRNA-splicing factor Prp18

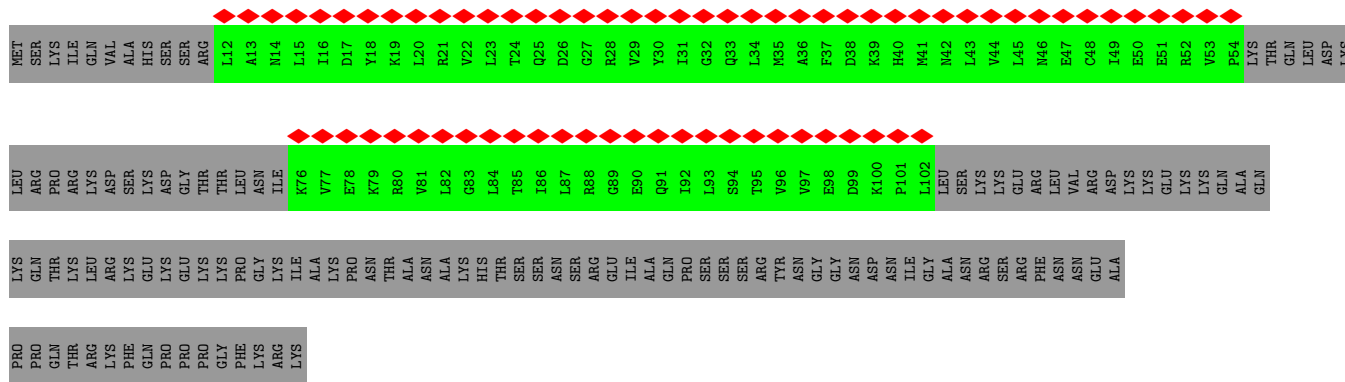


• Molecule 25: Small nuclear ribonucleoprotein-associated protein B

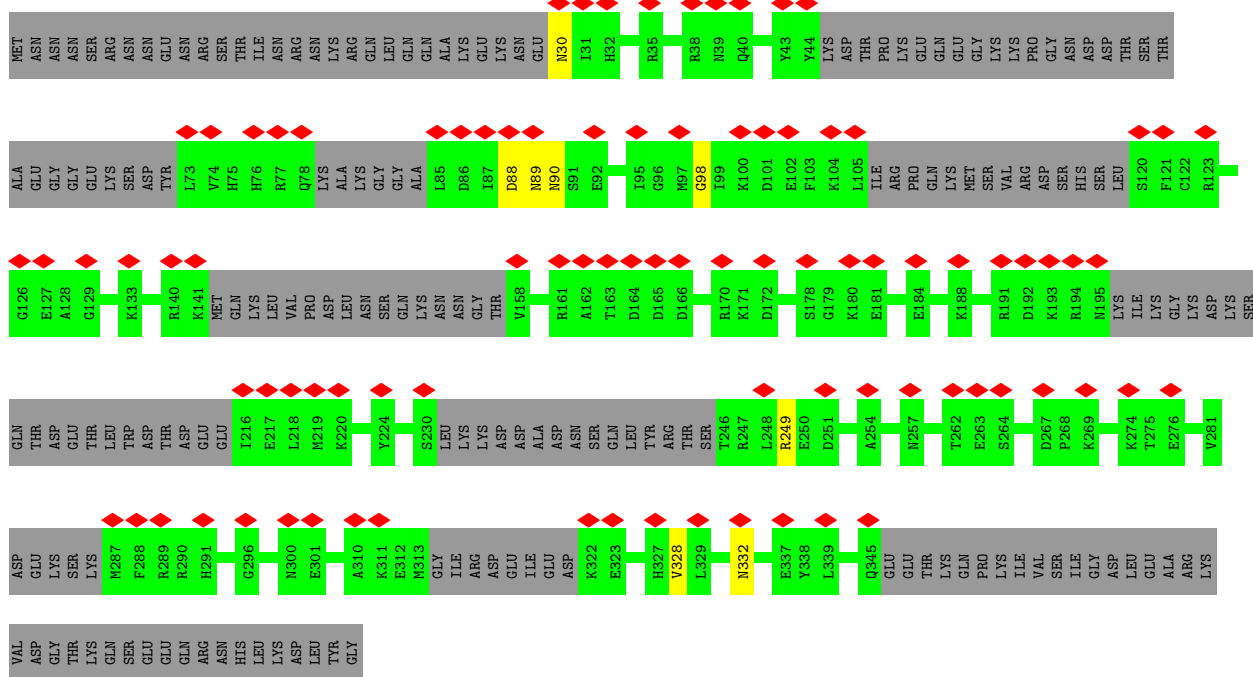
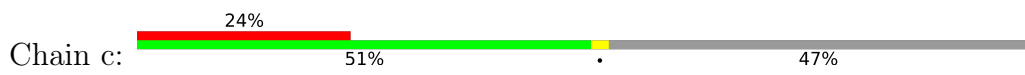


• Molecule 25: Small nuclear ribonucleoprotein-associated protein B

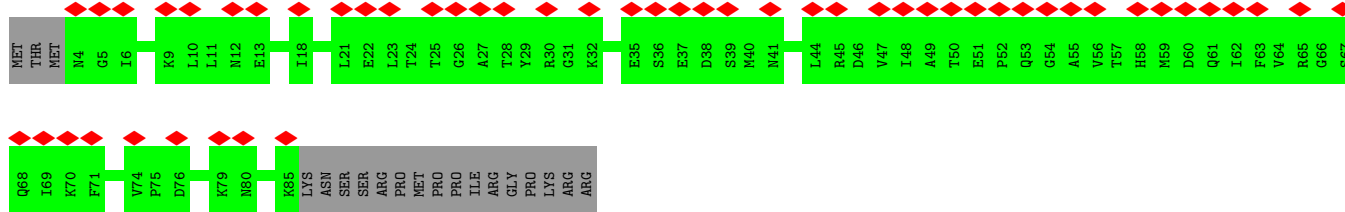
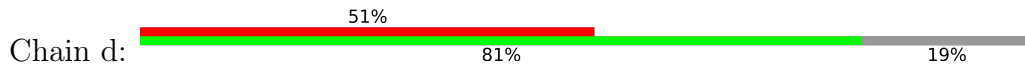




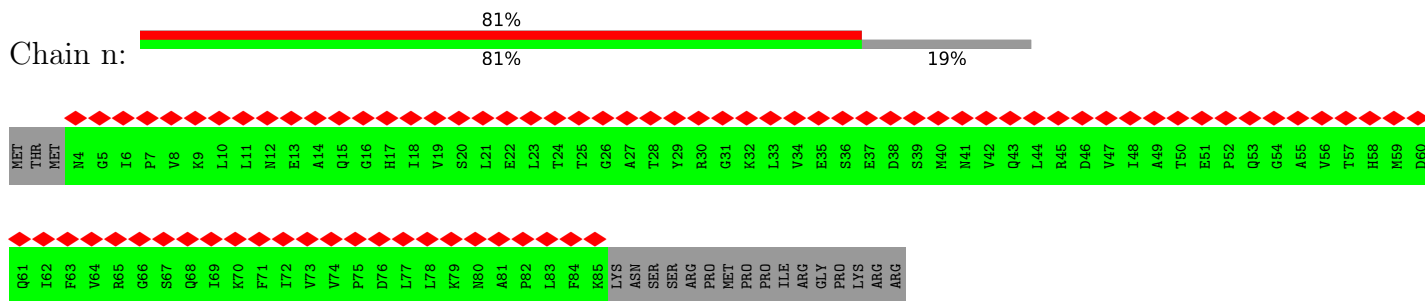
● Molecule 26: Pre-mRNA-splicing factor SLU7



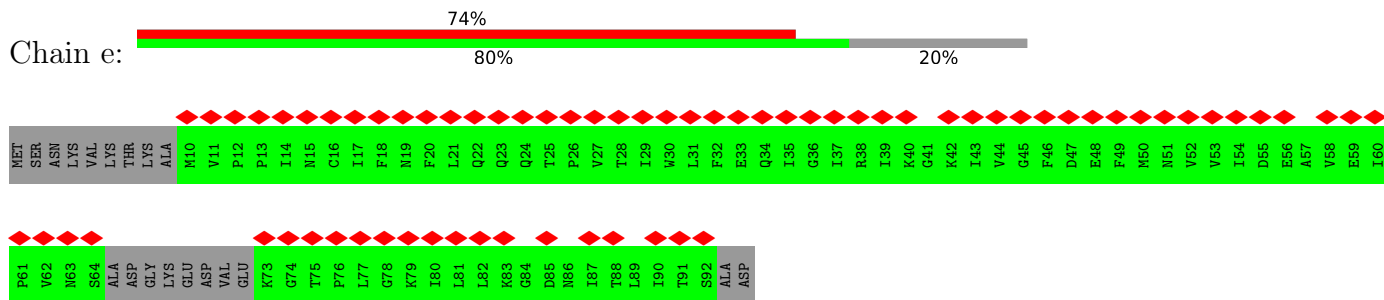
● Molecule 27: Small nuclear ribonucleoprotein Sm D3



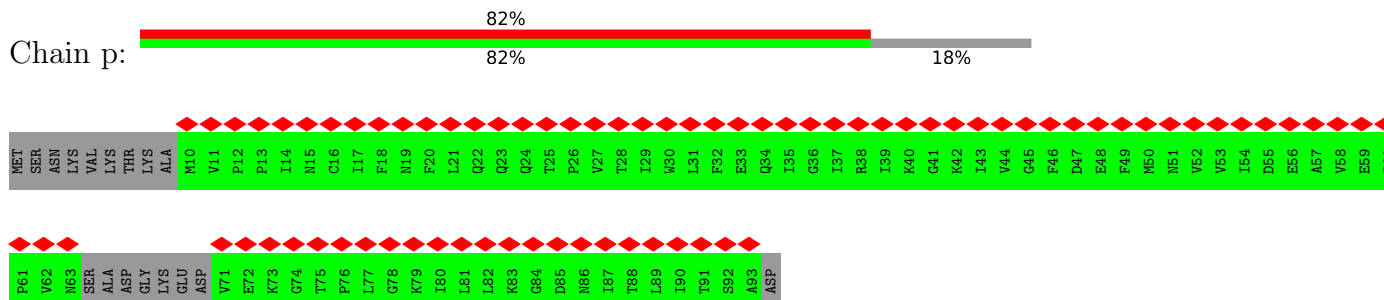
● Molecule 27: Small nuclear ribonucleoprotein Sm D3



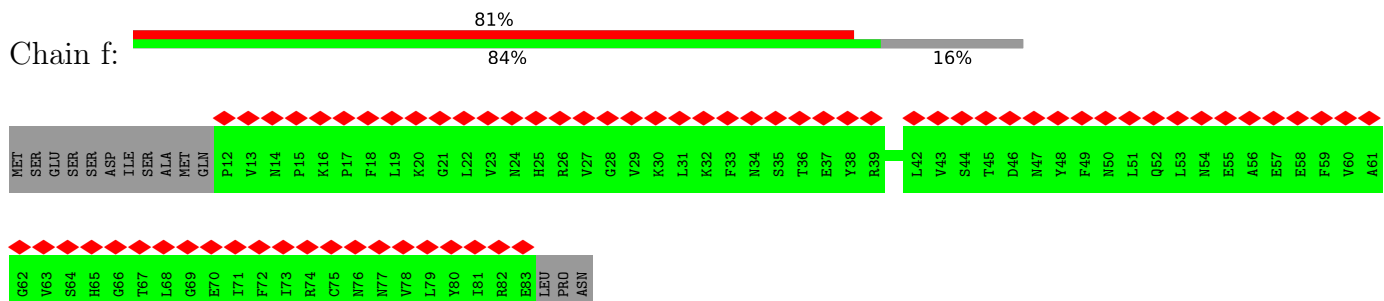
• Molecule 28: Small nuclear ribonucleoprotein E



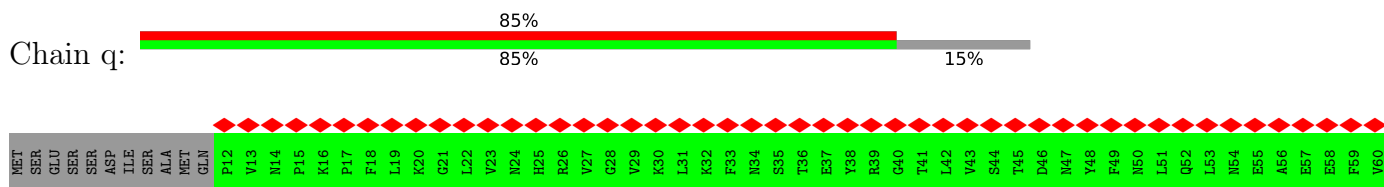
• Molecule 28: Small nuclear ribonucleoprotein E

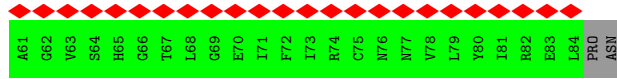


• Molecule 29: Small nuclear ribonucleoprotein F

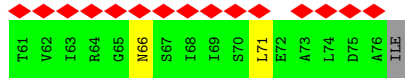
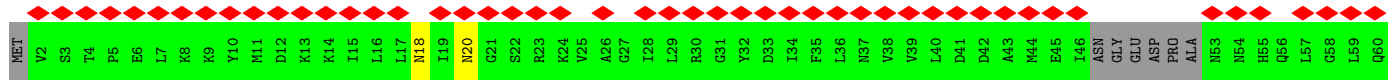
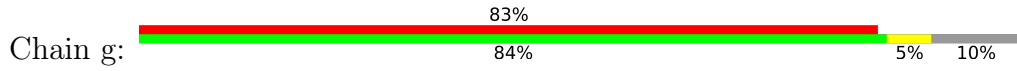


• Molecule 29: Small nuclear ribonucleoprotein F

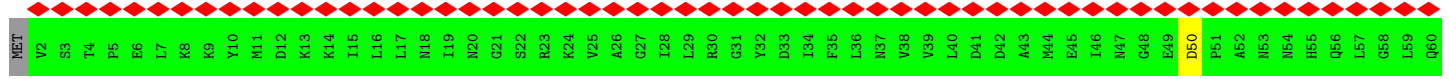




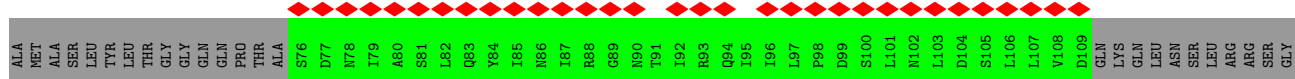
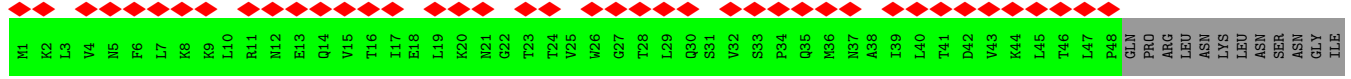
• Molecule 30: Small nuclear ribonucleoprotein G



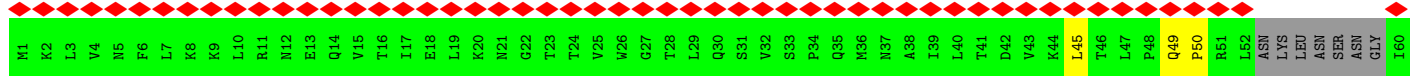
• Molecule 30: Small nuclear ribonucleoprotein G



• Molecule 31: Small nuclear ribonucleoprotein Sm D1

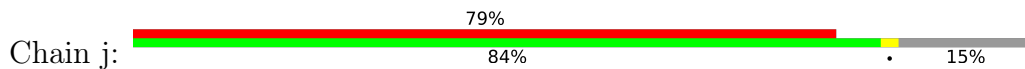


• Molecule 31: Small nuclear ribonucleoprotein Sm D1

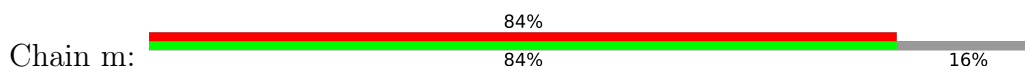


GLN
ILE
ALA
GLN
ASN
ASP
PRO
PRO
SER
LYS
LYS
ARG
ARG
HIS
ARG
GLU
LEU
ASP
PHE
GLY
ALA
ALA
ALA
ASN
LYS
ARG
ARG
PRO
ARG
ARG
GLY
LEU

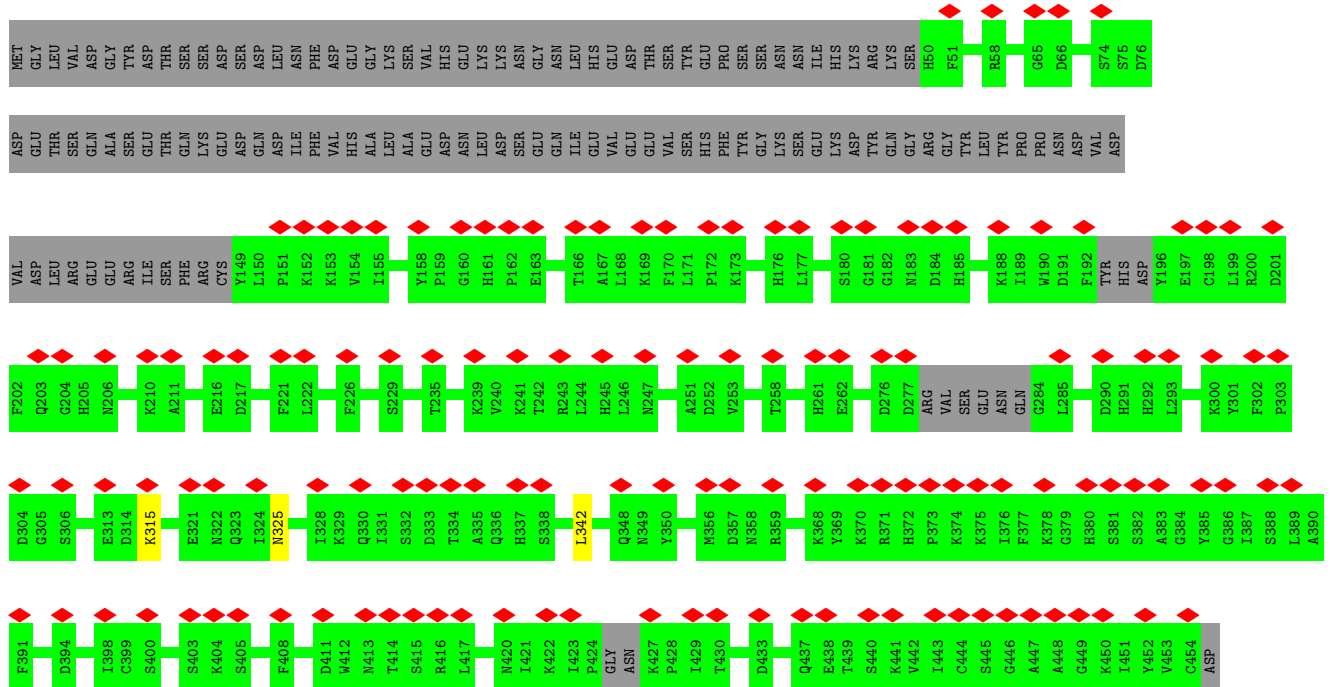
• Molecule 32: Small nuclear ribonucleoprotein Sm D2



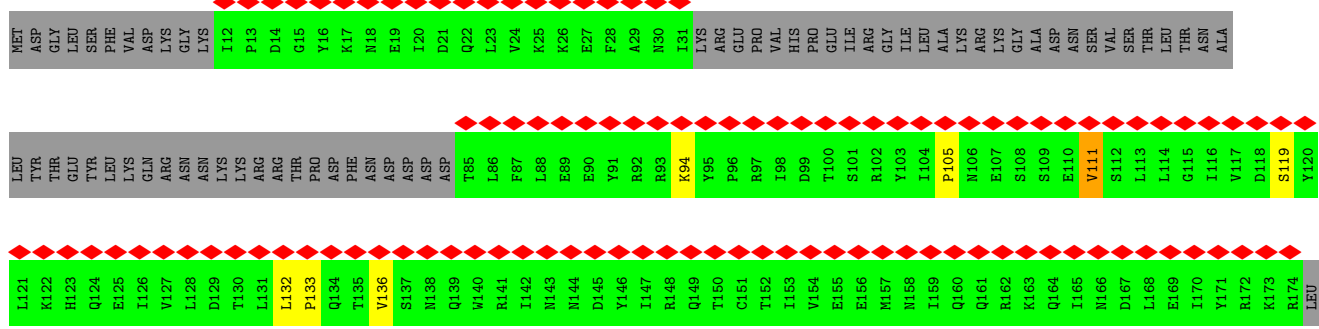
• Molecule 32: Small nuclear ribonucleoprotein Sm D2



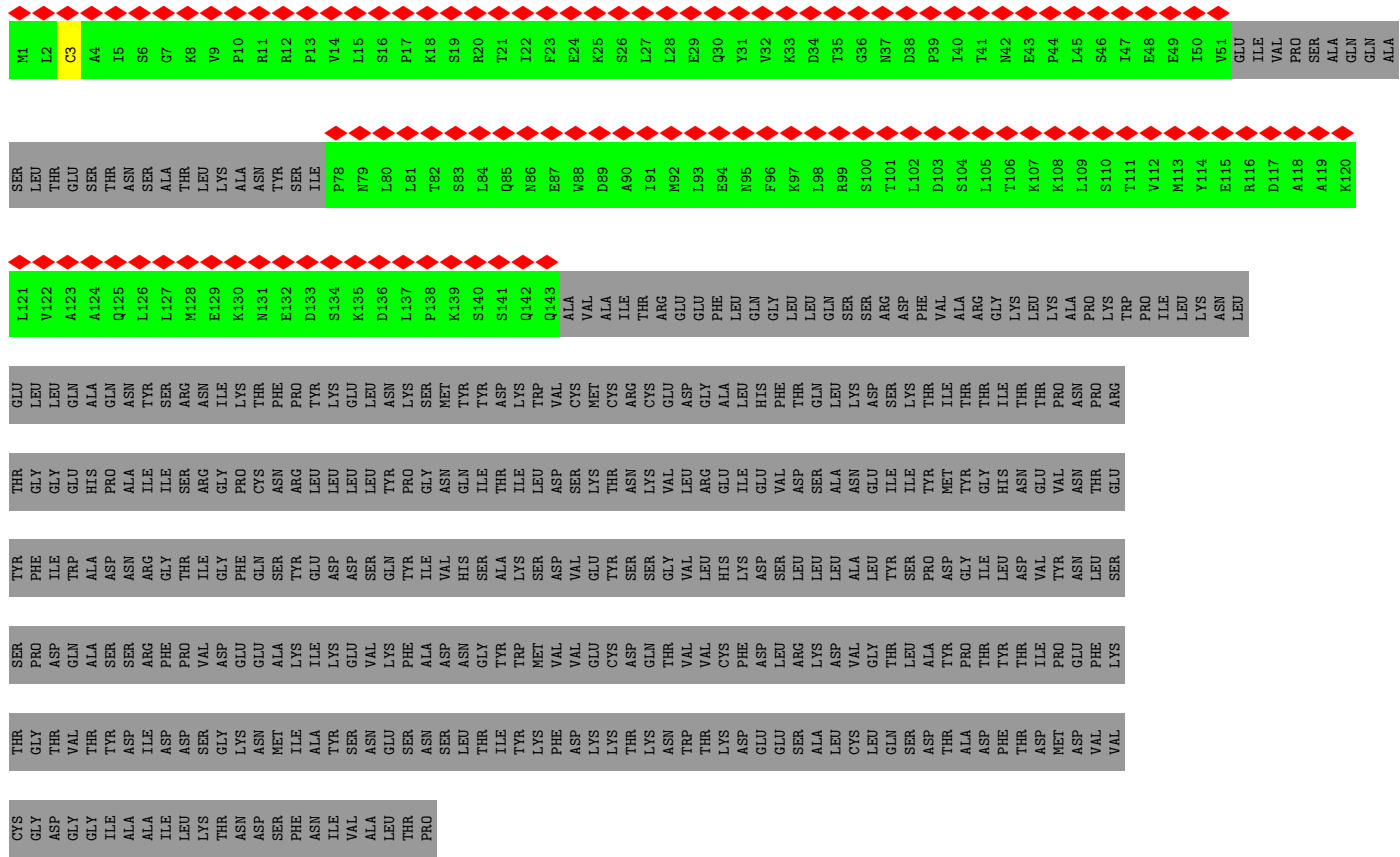
• Molecule 33: Pre-mRNA-processing factor Prp17



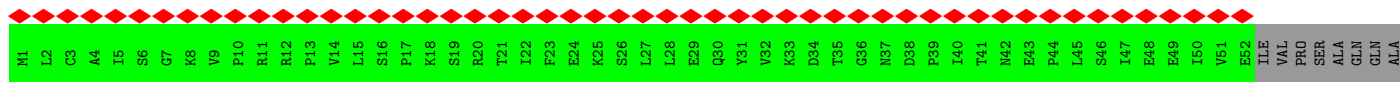
• Molecule 34: Pre-mRNA-splicing factor SNT309

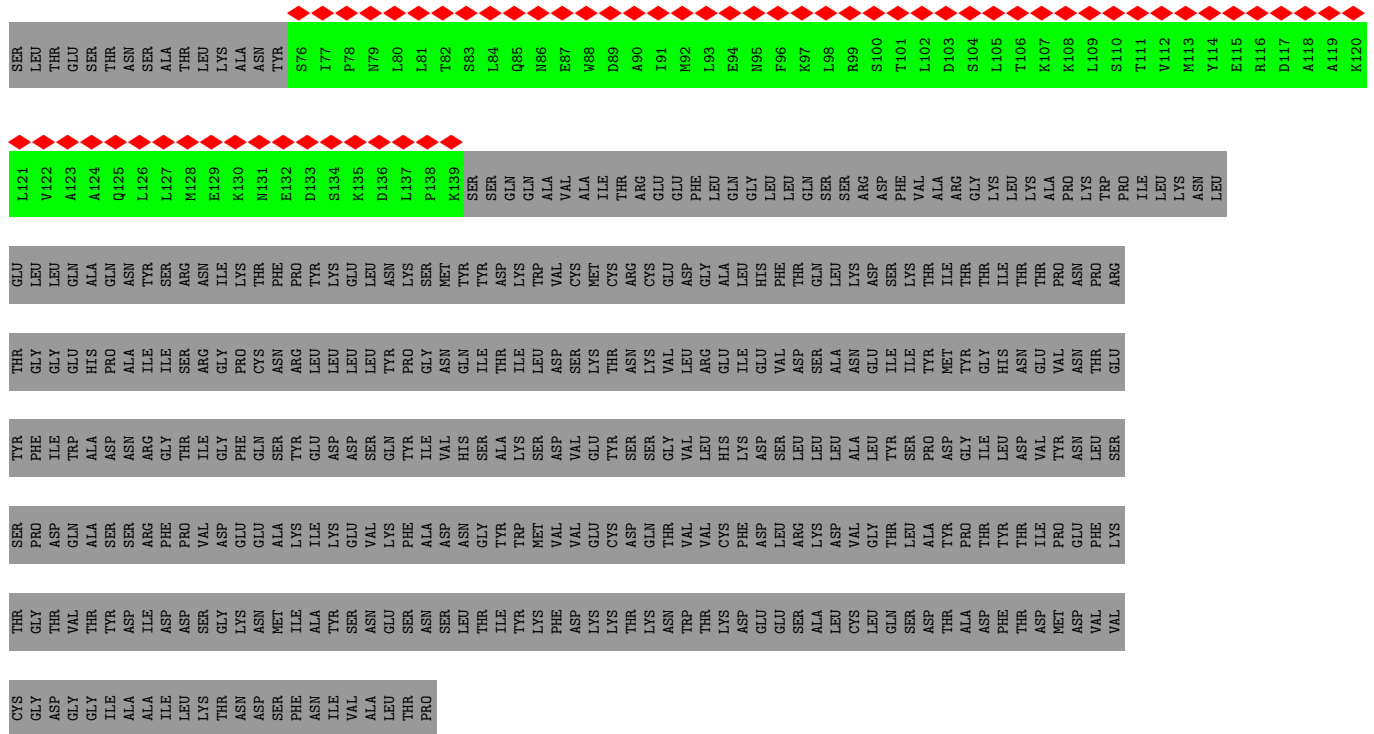


• Molecule 35: Pre-mRNA-processing factor Prp19

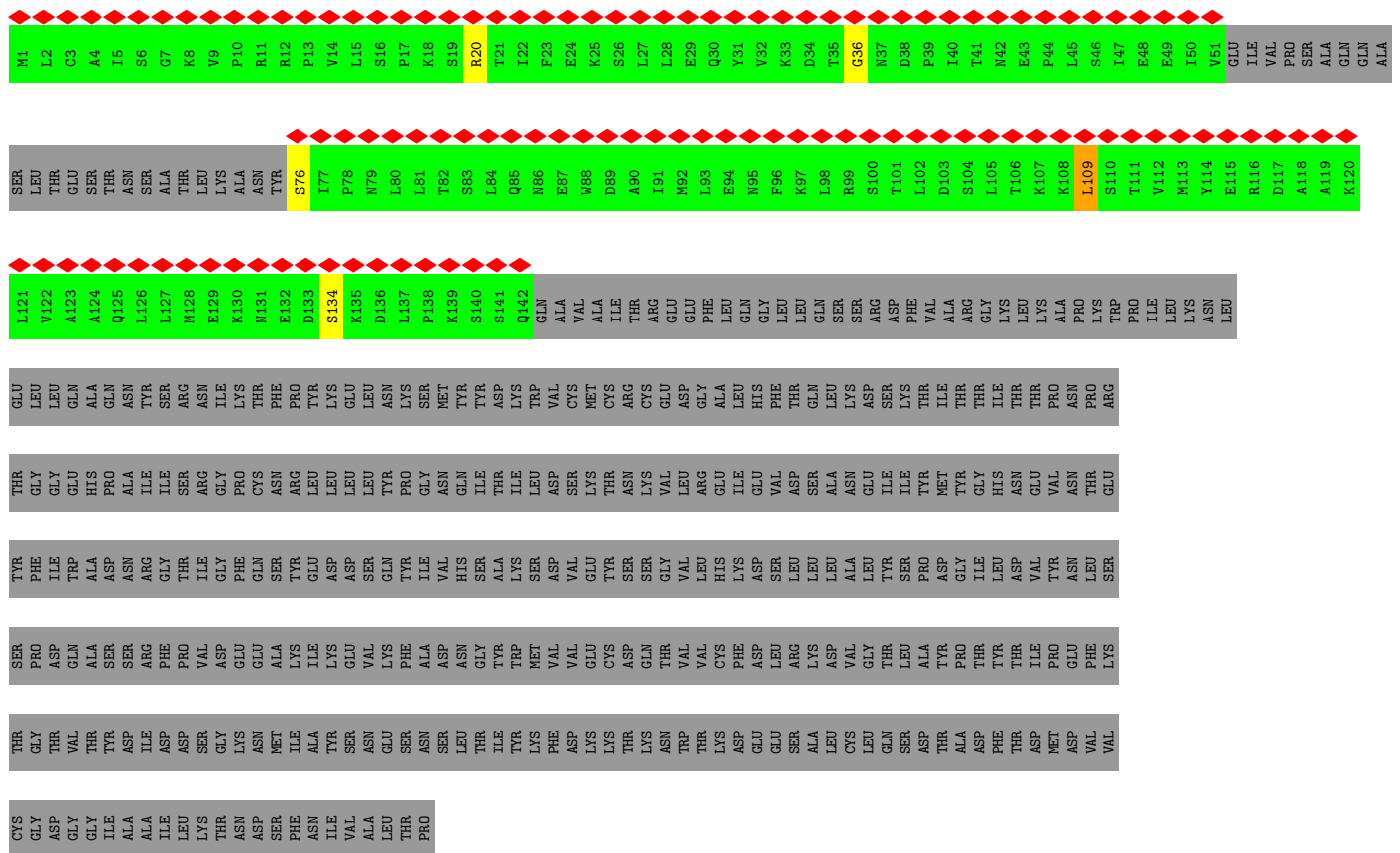


• Molecule 35: Pre-mRNA-processing factor Prp19

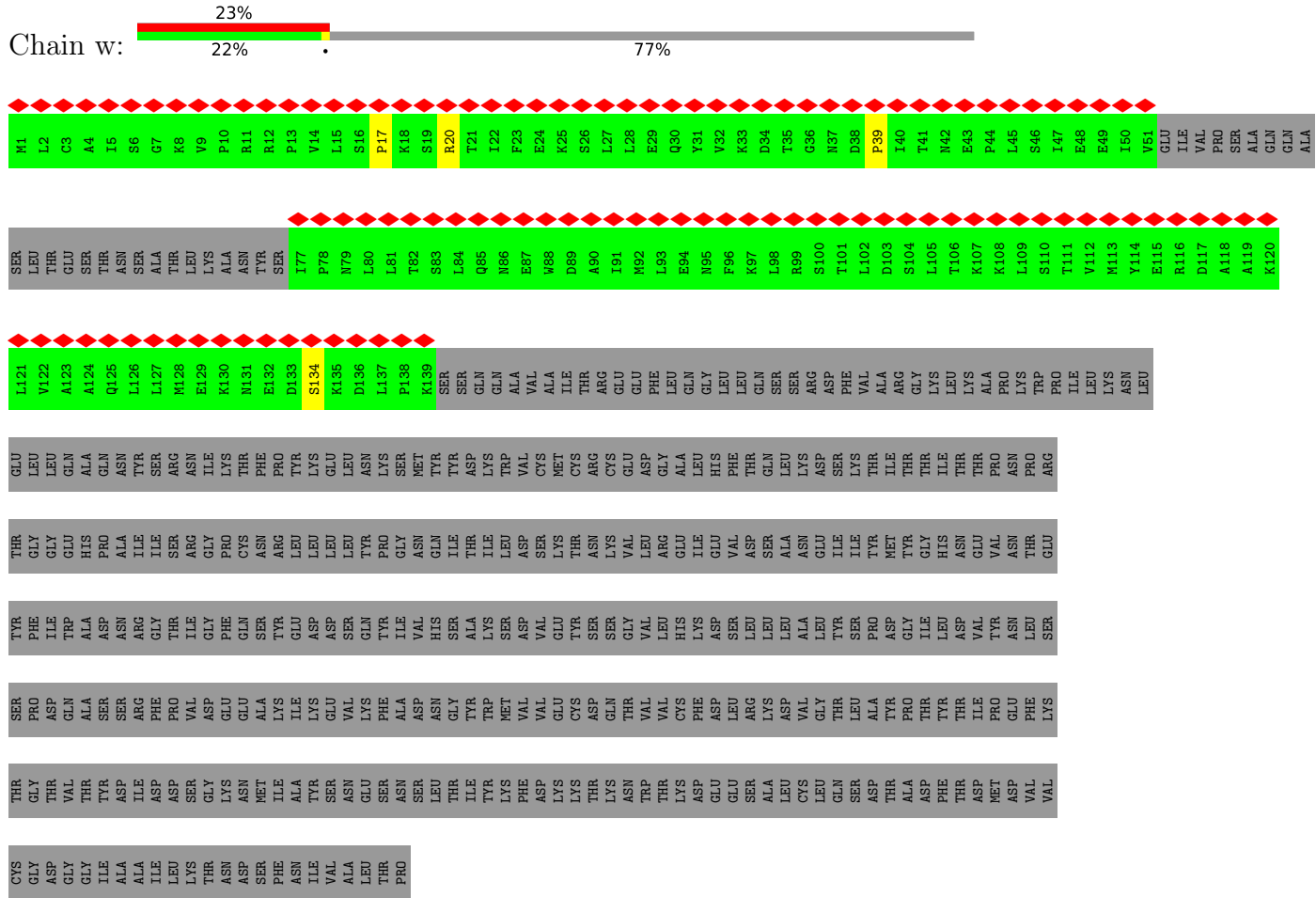




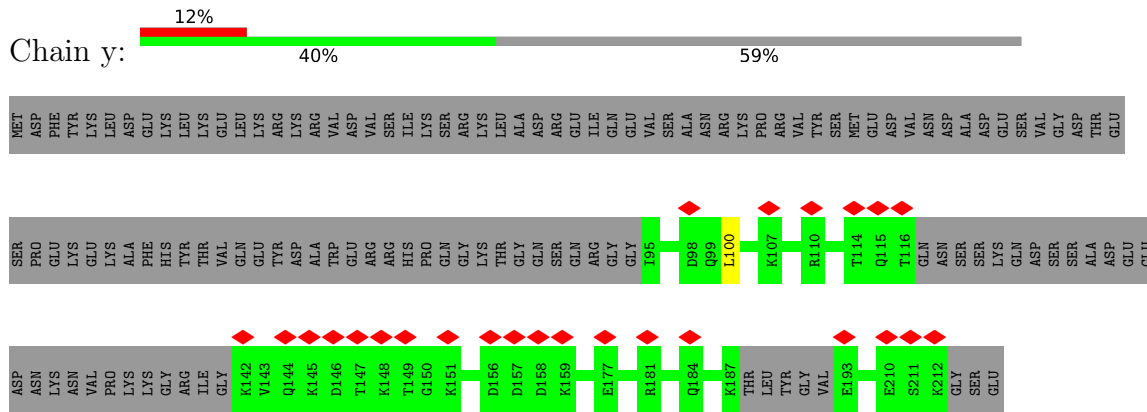
● Molecule 35: Pre-mRNA-processing factor Prp19



• Molecule 35: Pre-mRNA-processing factor Prp19



• Molecule 36: Pre-mRNA-splicing factor SYF2



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	48617	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	47	Depositor
Minimum defocus (nm)	200	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	105000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.174	Depositor
Minimum map value	-0.094	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.007	Depositor
Recommended contour level	0.04	Depositor
Map size (Å)	537.6, 537.6, 537.6	wwPDB
Map dimensions	480, 480, 480	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.12, 1.12, 1.12	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: IHP, GTP, 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	2	0.38	0/3190	0.93	8/4946 (0.2%)
2	5	0.49	0/4049	1.24	40/6300 (0.6%)
3	6	0.53	0/2427	1.09	10/3778 (0.3%)
4	A	0.38	0/16452	0.57	2/22294 (0.0%)
5	C	0.38	0/7147	0.60	2/9673 (0.0%)
6	D	0.25	0/577	0.37	0/787
7	E	0.47	0/651	1.04	4/1008 (0.4%)
8	H	0.36	0/2716	0.65	1/3702 (0.0%)
9	I	0.45	0/895	1.09	4/1384 (0.3%)
10	J	0.41	0/2750	0.61	0/3735
11	K	0.31	0/1375	0.52	0/1854
12	L	0.37	0/1307	0.53	0/1748
13	M	0.36	0/2094	0.57	1/2815 (0.0%)
14	N	0.30	0/1945	0.59	1/2617 (0.0%)
15	O	0.37	0/2378	0.65	3/3212 (0.1%)
16	P	0.30	0/616	0.51	0/822
17	R	0.38	0/423	0.68	0/577
18	S	0.36	0/3221	0.64	0/4379
19	T	0.36	0/2918	0.67	0/4015
20	V	0.72	0/5157	1.25	29/6973 (0.4%)
21	W	0.34	0/1228	0.68	1/1663 (0.1%)
23	Y	0.34	0/713	0.59	0/952
24	a	0.30	0/1400	0.55	0/1897
25	b	0.27	0/636	0.61	0/856
25	k	0.38	0/567	0.62	0/762
26	c	0.31	0/1737	0.59	0/2315
27	d	0.28	0/634	0.57	0/859
27	n	0.33	0/641	0.63	0/868
28	e	0.30	0/585	0.61	0/795
28	p	0.32	0/612	0.56	0/830
29	f	0.30	0/585	0.63	0/791
29	q	0.36	0/597	0.63	0/807

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
30	g	0.27	0/532	0.64	1/715 (0.1%)
30	r	0.30	0/582	0.63	0/785
31	h	0.27	0/649	0.57	0/880
31	l	0.30	0/685	0.63	0/926
32	j	0.28	0/753	0.61	1/1013 (0.1%)
32	m	0.31	0/764	0.56	0/1026
33	o	0.35	0/2671	0.59	1/3605 (0.0%)
34	s	0.57	0/546	0.80	0/760
35	t	0.45	0/581	0.72	0/809
35	u	0.57	0/576	0.78	0/802
35	v	0.59	0/586	0.89	3/816 (0.4%)
35	w	0.47	0/566	0.74	1/788 (0.1%)
36	y	0.30	0/721	0.50	1/954 (0.1%)
All	All	0.41	0/82435	0.76	114/113893 (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
14	N	0	1
18	S	0	1
20	V	0	23
21	W	0	3
22	X	0	3
26	c	0	2
30	r	0	1
34	s	0	2
35	t	0	1
35	v	0	1
35	w	0	1
All	All	0	39

There are no bond length outliers.

The worst 5 of 114 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
20	V	909	ARG	NE-CZ-NH1	11.53	126.06	120.30
20	V	626	ARG	NE-CZ-NH1	10.42	125.51	120.30
3	6	87	U	C2-N1-C1'	9.53	129.14	117.70
3	6	87	U	N3-C2-O2	-9.48	115.56	122.20

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
20	V	493	ILE	CB-CA-C	-9.47	92.65	111.60

There are no chirality outliers.

5 of 39 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
14	N	208	TYR	Peptide
18	S	212	HIS	Peptide
20	V	489	ARG	Sidechain
20	V	493	ILE	Peptide
20	V	497	ARG	Sidechain

5.2 Too-close contacts [i](#)

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

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	A	1935/2413 (80%)	1824 (94%)	111 (6%)	0	100	100
5	C	868/1008 (86%)	812 (94%)	56 (6%)	0	100	100
6	D	93/278 (34%)	91 (98%)	2 (2%)	0	100	100
8	H	403/577 (70%)	380 (94%)	23 (6%)	0	100	100
10	J	340/451 (75%)	318 (94%)	22 (6%)	0	100	100
11	K	162/379 (43%)	155 (96%)	7 (4%)	0	100	100
12	L	154/157 (98%)	150 (97%)	4 (3%)	0	100	100
13	M	253/339 (75%)	238 (94%)	15 (6%)	0	100	100
14	N	234/364 (64%)	223 (95%)	11 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
15	O	314/590 (53%)	293 (93%)	20 (6%)	1 (0%)	41	74
16	P	67/175 (38%)	64 (96%)	3 (4%)	0	100	100
17	R	69/135 (51%)	66 (96%)	3 (4%)	0	100	100
18	S	436/687 (64%)	427 (98%)	9 (2%)	0	100	100
19	T	516/859 (60%)	509 (99%)	6 (1%)	1 (0%)	47	78
20	V	630/1145 (55%)	549 (87%)	59 (9%)	22 (4%)	3	30
21	W	143/238 (60%)	122 (85%)	18 (13%)	3 (2%)	7	38
23	Y	85/111 (77%)	79 (93%)	6 (7%)	0	100	100
24	a	167/251 (66%)	148 (89%)	19 (11%)	0	100	100
25	b	76/196 (39%)	68 (90%)	8 (10%)	0	100	100
25	k	66/196 (34%)	59 (89%)	7 (11%)	0	100	100
26	c	186/382 (49%)	157 (84%)	29 (16%)	0	100	100
27	d	80/101 (79%)	74 (92%)	6 (8%)	0	100	100
27	n	80/101 (79%)	76 (95%)	4 (5%)	0	100	100
28	e	71/94 (76%)	66 (93%)	5 (7%)	0	100	100
28	p	73/94 (78%)	70 (96%)	3 (4%)	0	100	100
29	f	70/86 (81%)	57 (81%)	13 (19%)	0	100	100
29	q	71/86 (83%)	68 (96%)	3 (4%)	0	100	100
30	g	65/77 (84%)	61 (94%)	4 (6%)	0	100	100
30	r	73/77 (95%)	62 (85%)	11 (15%)	0	100	100
31	h	78/146 (53%)	70 (90%)	8 (10%)	0	100	100
31	l	81/146 (56%)	74 (91%)	2 (2%)	5 (6%)	1	18
32	j	92/110 (84%)	86 (94%)	6 (6%)	0	100	100
32	m	90/110 (82%)	86 (96%)	4 (4%)	0	100	100
33	o	312/455 (69%)	274 (88%)	38 (12%)	0	100	100
34	s	106/175 (61%)	92 (87%)	8 (8%)	6 (6%)	1	19
35	t	113/503 (22%)	108 (96%)	5 (4%)	0	100	100
35	u	112/503 (22%)	104 (93%)	8 (7%)	0	100	100
35	v	114/503 (23%)	108 (95%)	3 (3%)	3 (3%)	5	34
35	w	110/503 (22%)	105 (96%)	3 (3%)	2 (2%)	8	41
36	y	82/215 (38%)	82 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
All	All	9070/15016 (60%)	8455 (93%)	572 (6%)	43 (0%)	32	66

5 of 43 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
20	V	507	GLU
20	V	729	PRO
20	V	747	PRO
20	V	773	VAL
20	V	774	ASP

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	A	1768/2182 (81%)	1746 (99%)	22 (1%)	71	84
5	C	783/910 (86%)	778 (99%)	5 (1%)	86	93
6	D	26/256 (10%)	26 (100%)	0	100	100
8	H	183/538 (34%)	183 (100%)	0	100	100
10	J	299/398 (75%)	298 (100%)	1 (0%)	92	96
11	K	152/328 (46%)	152 (100%)	0	100	100
12	L	140/141 (99%)	138 (99%)	2 (1%)	67	82
13	M	219/296 (74%)	219 (100%)	0	100	100
14	N	221/332 (67%)	220 (100%)	1 (0%)	88	94
15	O	205/526 (39%)	204 (100%)	1 (0%)	88	94
16	P	60/152 (40%)	60 (100%)	0	100	100
17	R	22/121 (18%)	22 (100%)	0	100	100
18	S	216/633 (34%)	213 (99%)	3 (1%)	67	82
20	V	562/1029 (55%)	501 (89%)	61 (11%)	6	29
21	W	142/219 (65%)	140 (99%)	2 (1%)	67	82
23	Y	78/100 (78%)	77 (99%)	1 (1%)	69	83

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
24	a	151/225 (67%)	148 (98%)	3 (2%)	55	74
25	b	70/176 (40%)	70 (100%)	0	100	100
25	k	64/176 (36%)	64 (100%)	0	100	100
26	c	184/346 (53%)	178 (97%)	6 (3%)	38	64
27	d	69/89 (78%)	69 (100%)	0	100	100
27	n	71/89 (80%)	71 (100%)	0	100	100
28	e	65/83 (78%)	65 (100%)	0	100	100
28	p	69/83 (83%)	69 (100%)	0	100	100
29	f	63/77 (82%)	63 (100%)	0	100	100
29	q	65/77 (84%)	65 (100%)	0	100	100
30	g	58/66 (88%)	55 (95%)	3 (5%)	23	55
30	r	64/66 (97%)	64 (100%)	0	100	100
31	h	77/129 (60%)	77 (100%)	0	100	100
31	l	78/129 (60%)	76 (97%)	2 (3%)	46	69
32	j	79/103 (77%)	78 (99%)	1 (1%)	69	83
32	m	85/103 (82%)	85 (100%)	0	100	100
33	o	291/413 (70%)	289 (99%)	2 (1%)	84	91
36	y	81/193 (42%)	81 (100%)	0	100	100
All	All	6760/10784 (63%)	6644 (98%)	116 (2%)	62	79

5 of 116 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
20	V	654	ASN
30	g	66	ASN
20	V	822	THR
30	g	20	ASN
24	a	190	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 118 such sidechains are listed below:

Mol	Chain	Res	Type
12	L	112	ASN
33	o	337	HIS
16	P	34	HIS

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Mol	Chain	Res	Type
33	o	325	ASN
30	g	66	ASN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	2	128/1175 (10%)	44 (34%)	3 (2%)
2	5	169/179 (94%)	57 (33%)	6 (3%)
3	6	101/112 (90%)	26 (25%)	3 (2%)
7	E	32/39 (82%)	21 (65%)	4 (12%)
9	I	36/95 (37%)	10 (27%)	2 (5%)
All	All	466/1600 (29%)	158 (33%)	18 (3%)

5 of 158 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	2	5	A
1	2	6	U
1	2	14	C
1	2	16	U
1	2	17	U

5 of 18 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
7	E	2	G
9	I	91	A
9	I	66	A
2	5	174	G
7	E	1	A

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
38	IHP	A	2500	-	36,36,36	0.70	0	54,60,60	0.52	0
39	GTP	C	2501	-	26,34,34	1.30	1 (3%)	32,54,54	1.67	8 (25%)

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
38	IHP	A	2500	-	-	5/30/54/54	0/1/1/1
39	GTP	C	2501	-	-	6/18/38/38	0/3/3/3

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
39	C	2501	GTP	C5-C6	-4.64	1.38	1.47

The worst 5 of 8 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
39	C	2501	GTP	PA-O3A-PB	-3.62	120.41	132.83
39	C	2501	GTP	PB-O3B-PG	-3.48	120.90	132.83
39	C	2501	GTP	C5-C6-N1	3.40	119.95	113.95
39	C	2501	GTP	C8-N7-C5	2.90	108.51	102.99
39	C	2501	GTP	C2-N1-C6	-2.87	119.80	125.10

There are no chirality outliers.

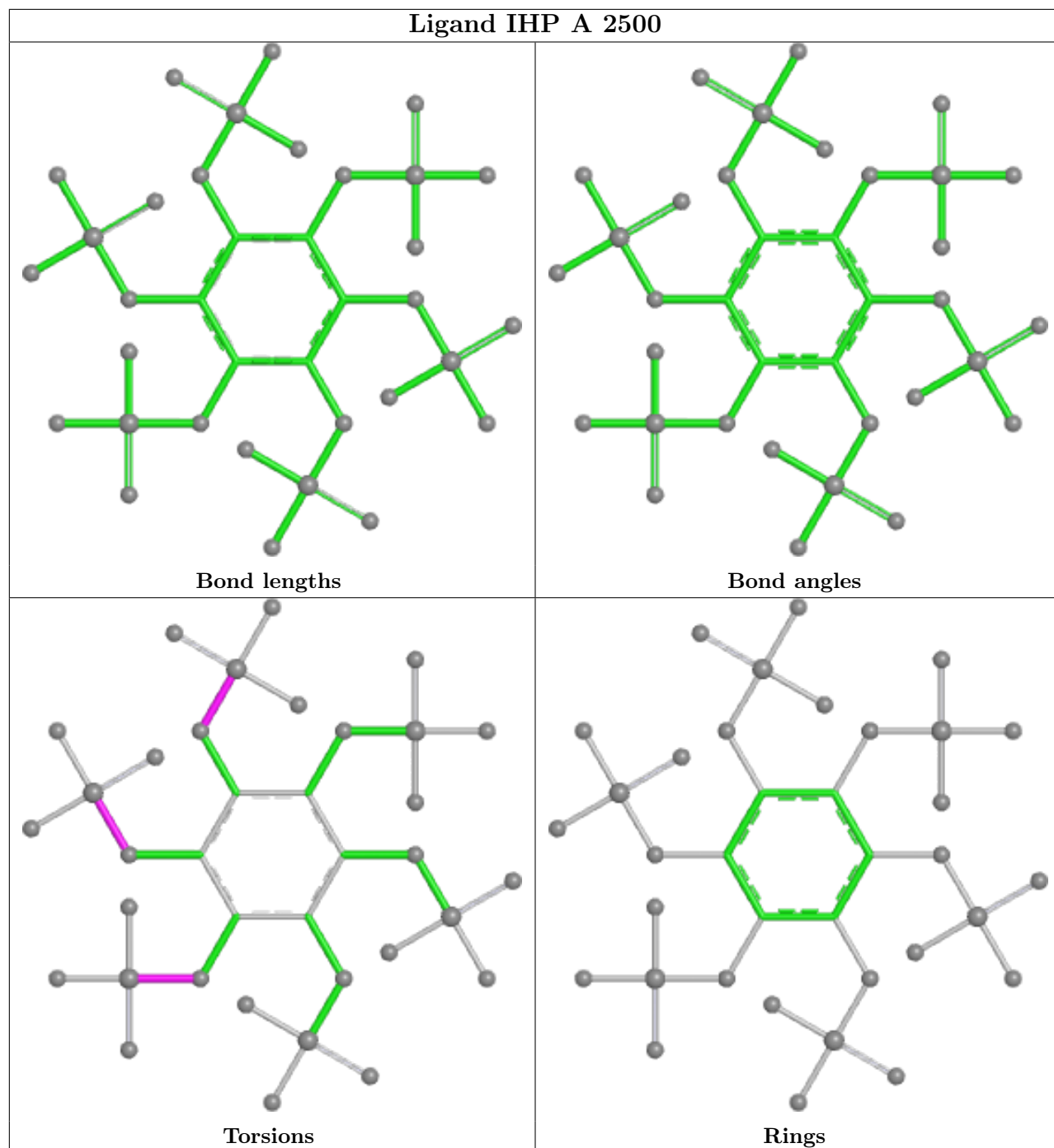
5 of 11 torsion outliers are listed below:

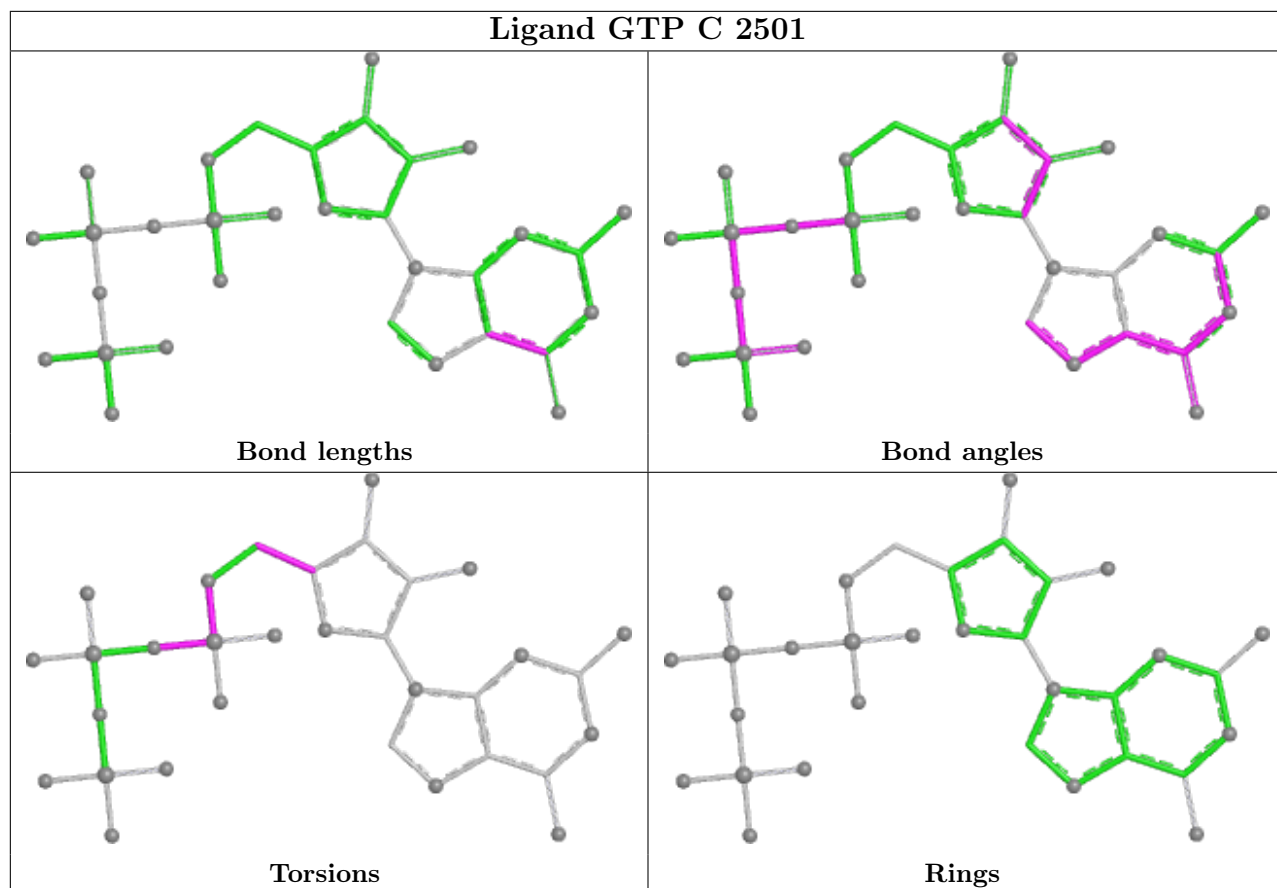
Mol	Chain	Res	Type	Atoms
38	A	2500	IHP	C2-O12-P2-O22
39	C	2501	GTP	C5'-O5'-PA-O1A
39	C	2501	GTP	C5'-O5'-PA-O2A
38	A	2500	IHP	C1-O11-P1-O31
39	C	2501	GTP	PB-O3A-PA-O1A

There are no ring outliers.

No monomer is involved in short contacts.

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





5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
22	X	5

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	X	70:UNK	C	100:UNK	N	122.60
1	X	156:UNK	C	200:UNK	N	74.32
1	X	28:UNK	C	60:UNK	N	43.20
1	X	117:UNK	C	130:UNK	N	9.37
1	X	142:UNK	C	150:UNK	N	9.29

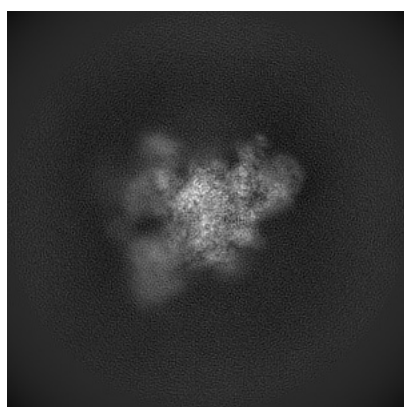
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-3979. These allow visual inspection of the internal detail of the map and identification of artifacts.

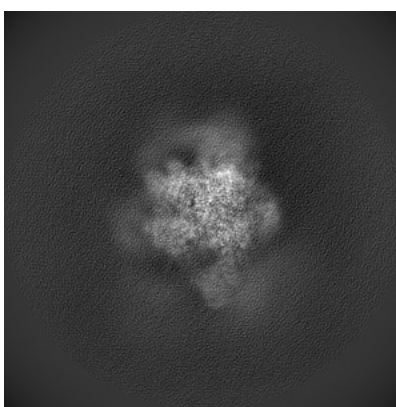
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

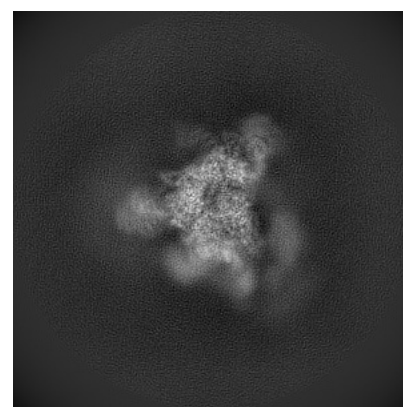
6.1.1 Primary map



X



Y

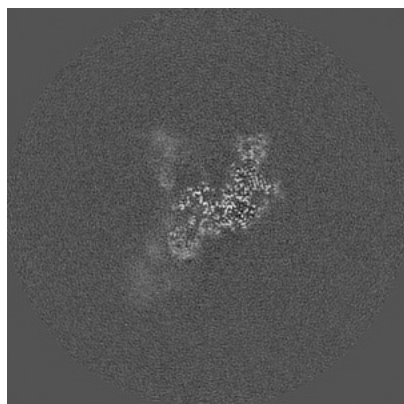


Z

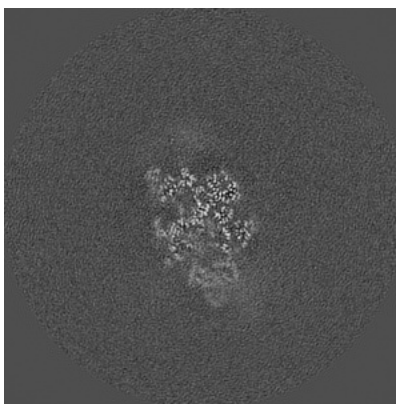
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

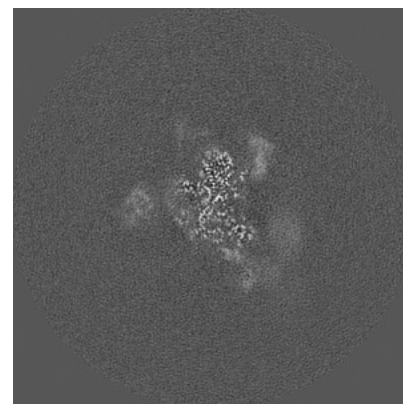
6.2.1 Primary map



X Index: 240



Y Index: 240

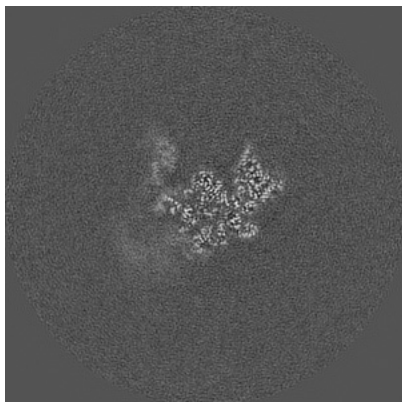


Z Index: 240

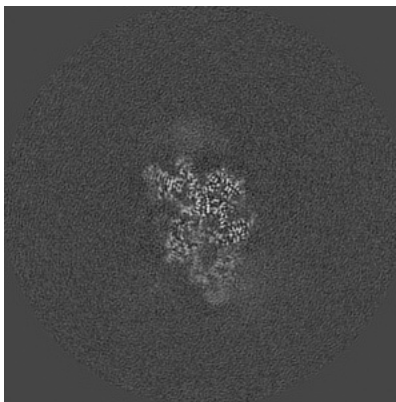
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

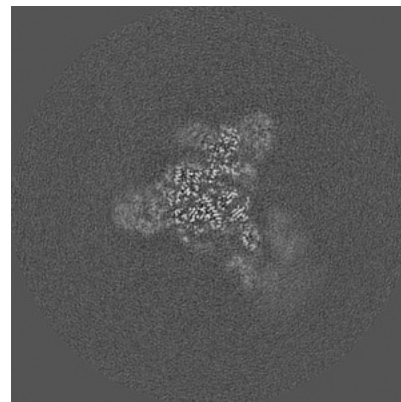
6.3.1 Primary map



X Index: 259



Y Index: 236



Z Index: 261

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

6.4 Orthogonal surface views [i](#)

6.4.1 Primary map



X



Y



Z

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

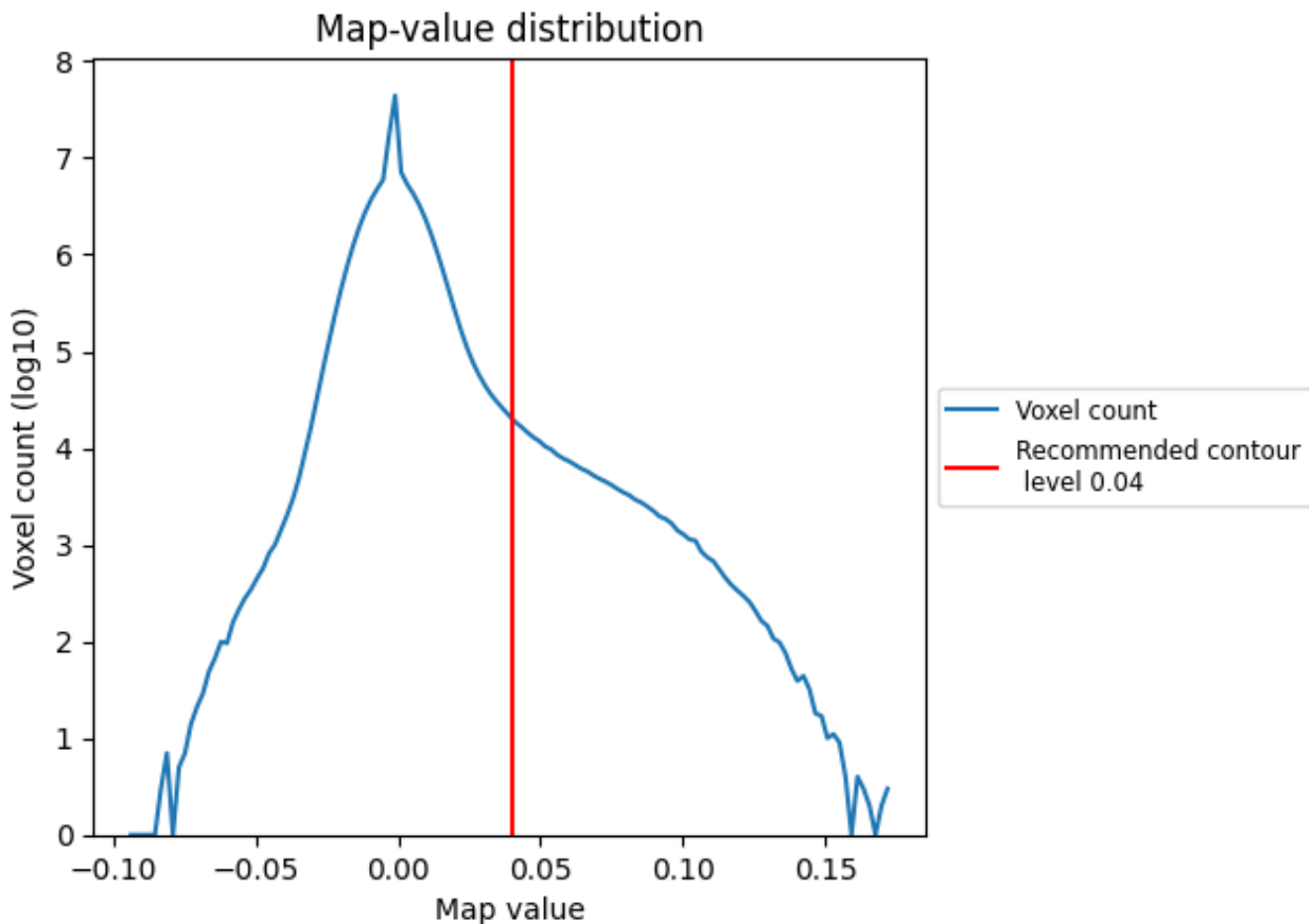
6.5 Mask visualisation

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

7 Map analysis [i](#)

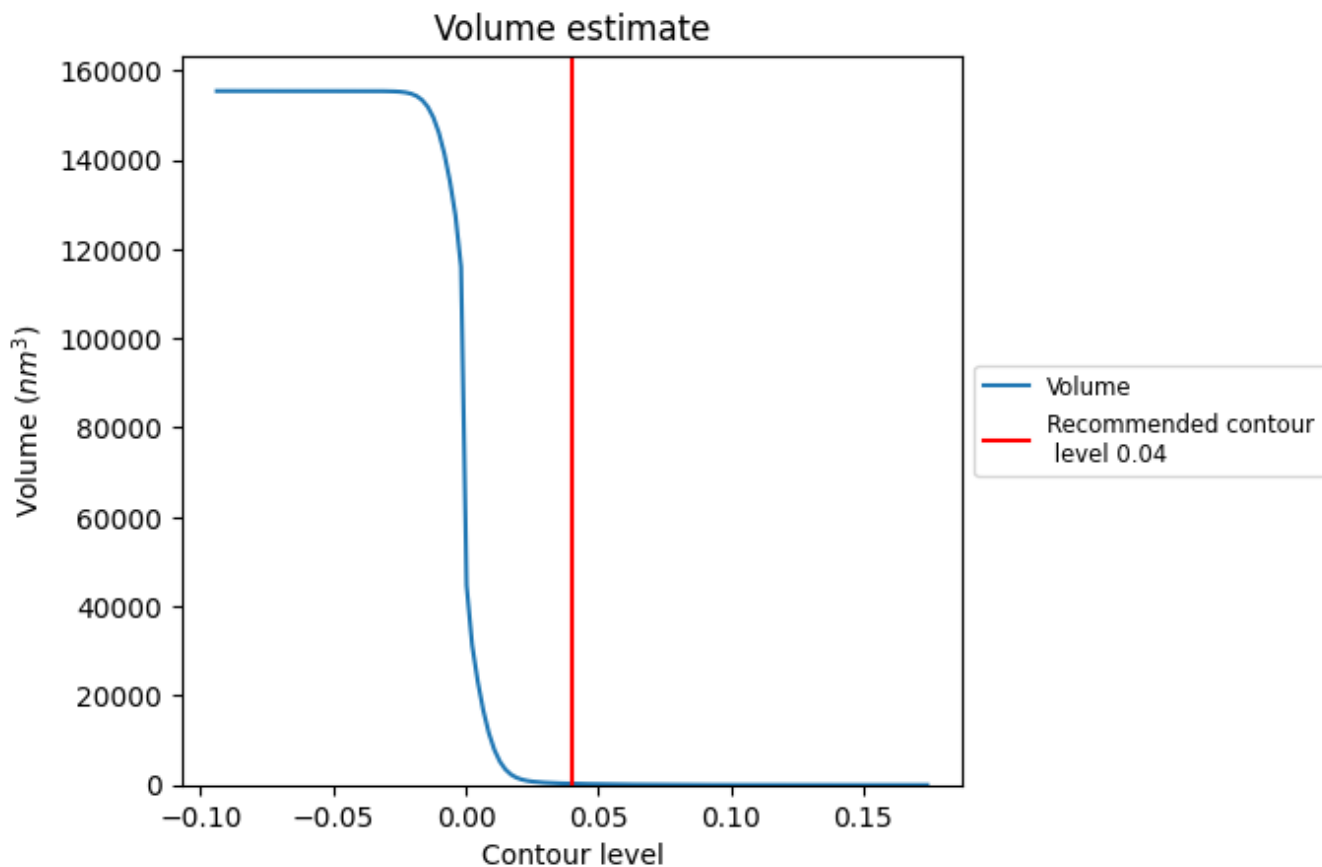
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

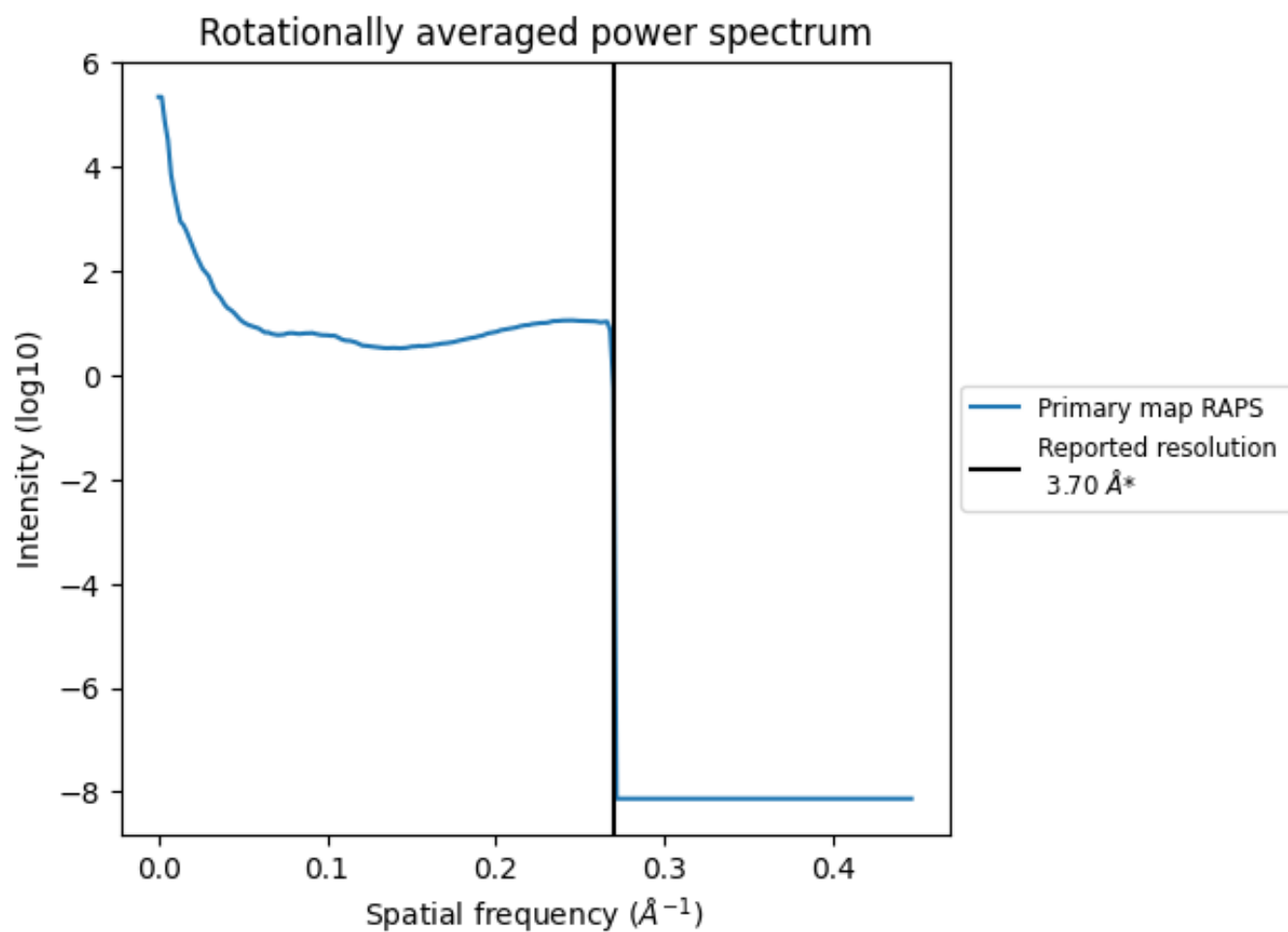
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 287 nm³; this corresponds to an approximate mass of 259 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](#)

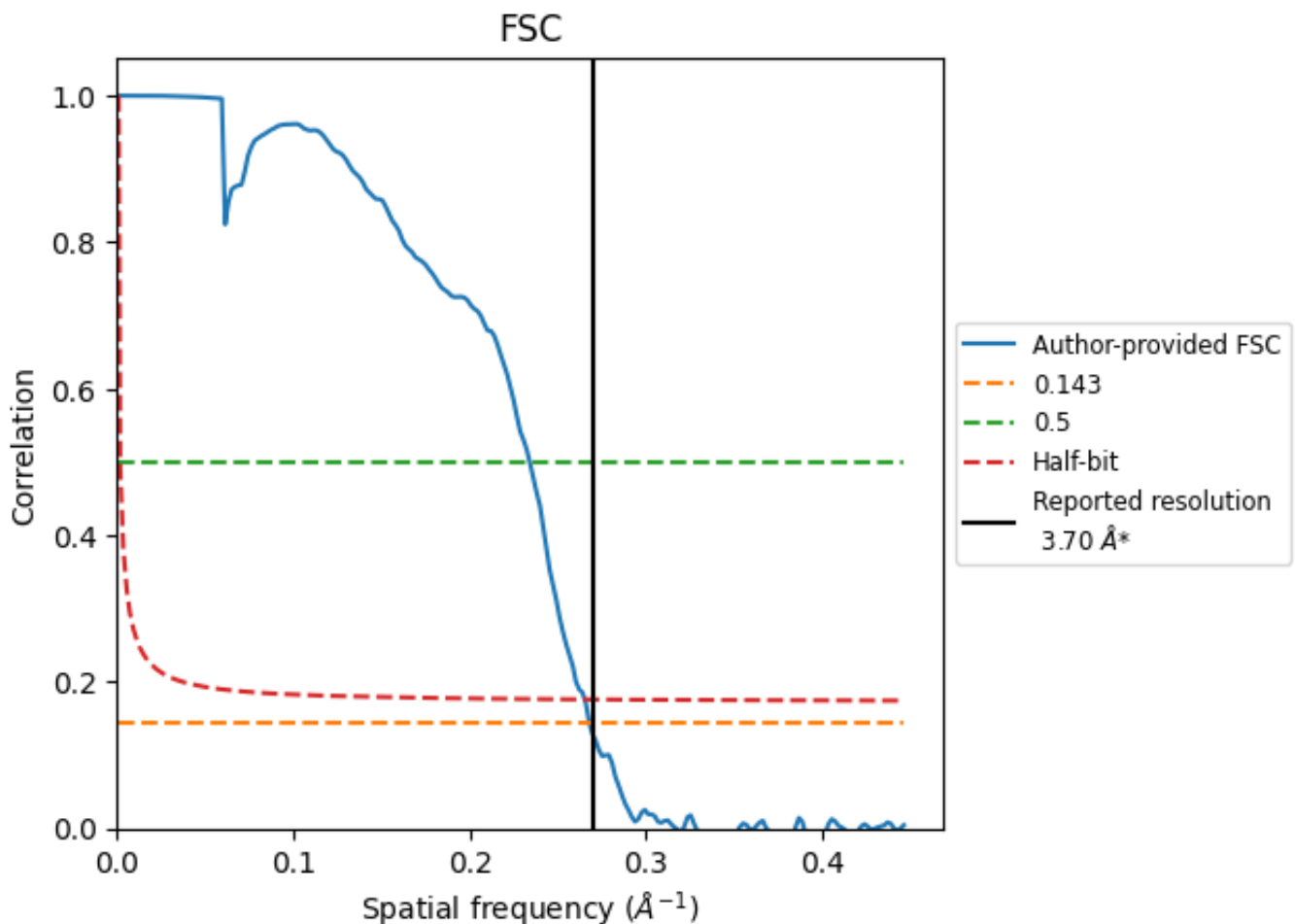


*Reported resolution corresponds to spatial frequency of 0.270 Å⁻¹

8 Fourier-Shell correlation [i](#)

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 [i](#)



*Reported resolution corresponds to spatial frequency of 0.270 Å⁻¹

8.2 Resolution estimates [i](#)

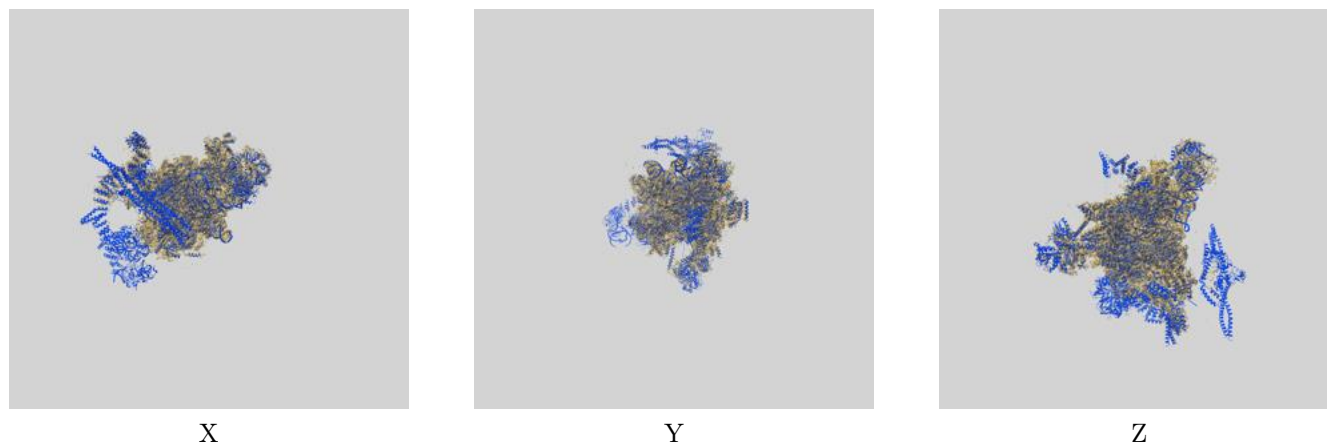
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.70	-	-
Author-provided FSC curve	3.73	4.27	3.77
Unmasked-calculated*	-	-	-

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

9 Map-model fit [i](#)

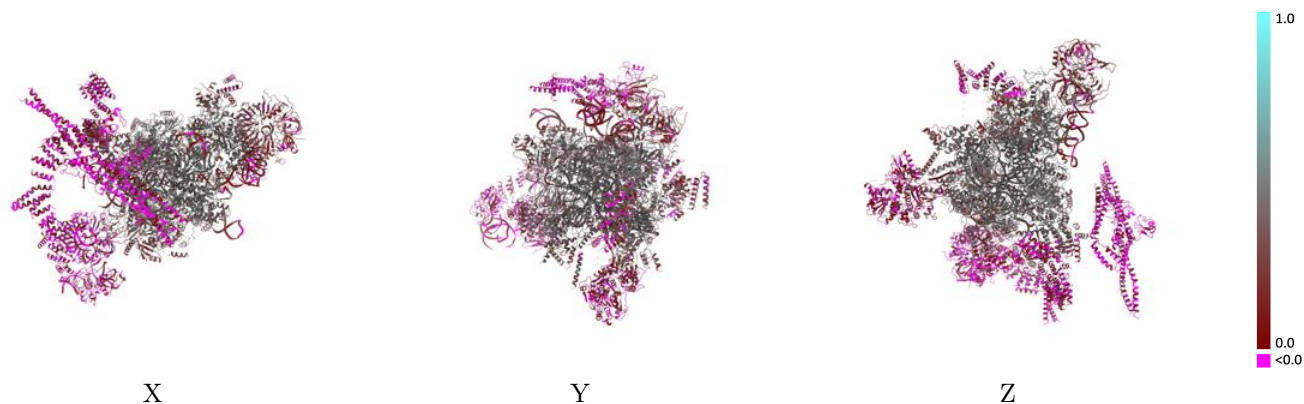
This section contains information regarding the fit between EMDB map EMD-3979 and PDB model 6EXN. Per-residue inclusion information can be found in section 3 on page 14.

9.1 Map-model overlay [i](#)



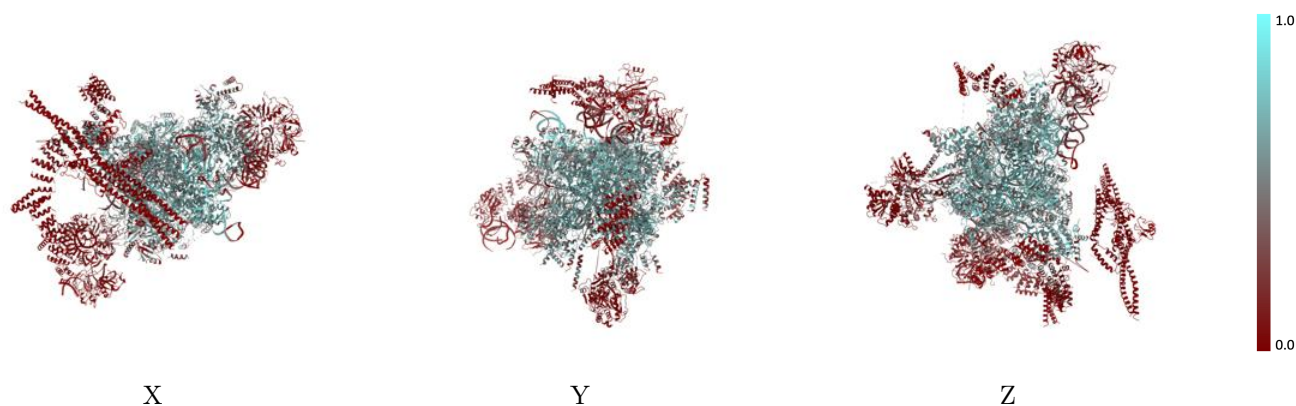
The images above show the 3D surface view of the map at the recommended contour level 0.04 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



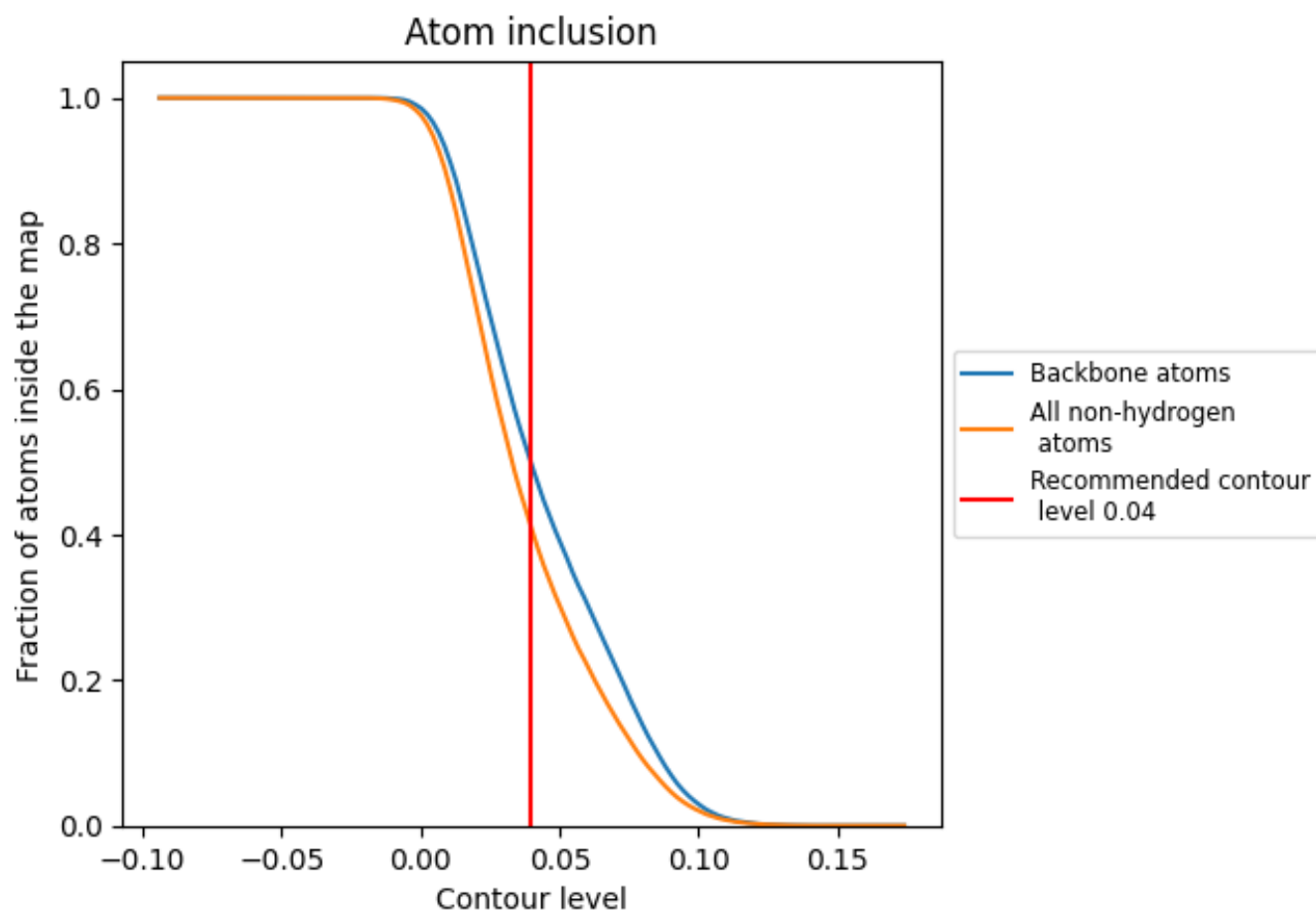
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



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







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 50% of all backbone atoms, 41% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

























The table lists the average atom inclusion at the recommended contour level (0.04) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.4081	 0.2960
2	 0.1911	 0.1300
5	 0.4608	 0.2840
6	 0.6909	 0.3820
A	 0.6212	 0.4310
C	 0.5846	 0.4150
D	 0.4385	 0.3080
E	 0.4488	 0.3090
H	 0.3724	 0.2960
I	 0.5634	 0.3590
J	 0.6444	 0.4540
K	 0.5550	 0.4100
L	 0.6336	 0.4270
M	 0.5747	 0.3970
N	 0.4619	 0.3610
O	 0.4483	 0.3180
P	 0.5835	 0.4480
R	 0.4381	 0.2970
S	 0.4409	 0.2850
T	 0.1184	 0.0880
V	 0.1128	 0.1090
W	 0.0000	 0.0040
X	 0.3705	 0.2460
Y	 0.0000	 0.0310
a	 0.4736	 0.3540
b	 0.2658	 0.3200
c	 0.4590	 0.3660
d	 0.3301	 0.3480
e	 0.1084	 0.2290
f	 0.0979	 0.2000
g	 0.1459	 0.2540
h	 0.1667	 0.2620
j	 0.1050	 0.1980
k	 0.0018	 0.0530
l	 0.0000	 -0.0180



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Chain	Atom inclusion	Q-score
m	 0.0000	 0.0040
n	 0.0032	 0.0520
o	 0.4441	 0.3500
p	 0.0000	 -0.0040
q	 0.0017	 0.0330
r	 0.0000	 0.0440
s	 0.0073	 0.0320
t	 0.0000	 -0.0120
u	 0.0000	 0.0350
v	 0.0000	 -0.0400
w	 0.0018	 0.0170
y	 0.5368	 0.3950