



## Full wwPDB EM Validation Report ⓘ

Nov 4, 2024 – 12:57 AM EST

PDB ID : 7UIF  
EMDB ID : EMD-26544  
Title : Mediator-PIC Early (Core B)  
Authors : Gorbea Colon, J.J.; Chen, S.-F.; Tsai, K.L.; Murakami, K.  
Deposited on : 2022-03-29  
Resolution : 4.60 Å (reported)

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

We welcome your comments at [validation@mail.wwpdb.org](mailto: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>.

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

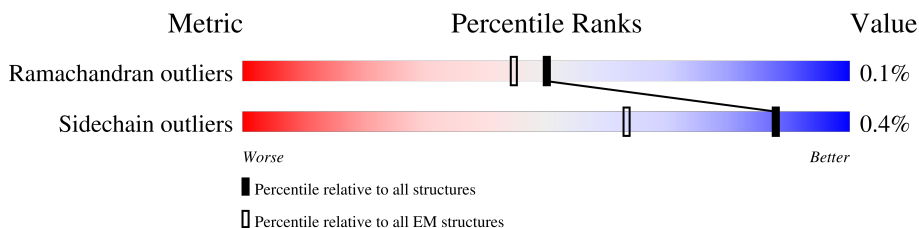
EMDB validation analysis : 0.0.1.dev113  
MolProbity : 4.02b-467  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 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 4.60 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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  $\geq 3$ , 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	A	1733	 8% 84% 16%
1	z	1733	 99%
2	B	1224	 22% 96%
3	C	318	 12% 85% 15%
4	D	221	 17% 76% 24%
5	E	215	 100%
6	F	155	 55% 45%
7	G	171	 16% 99%
8	H	146	 97%

*Continued on next page...*

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Mol	Chain	Length	Quality of chain
9	I	122	17% 95% 5%
10	J	70	27% 100%
11	K	120	97%
12	L	70	11% 61% 39%
13	M	345	10% 90%
14	P	735	14% 86%
15	Q	400	13% 31% 69%
16	S	309	9% 58% 41%
17	a	566	26% 63% 36%
18	d	284	21% 60% 40%
19	f	295	28% 57% 43%
20	g	222	33% 75% 24%
21	h	223	22% 61% 39%
22	i	149	5% 55% 44%
23	j	157	65% 93% 7%
24	k	115	16% 94% 6%
25	n	1082	16% 57% 42%
26	q	687	15% 75% 25%
27	r	307	8% 82% 18%
28	s	220	35% 37% 63%
29	t	210	8% 100%
30	u	140	21% 84% 13%
31	v	121	24% 89% 10%
32	w	127	44% 81% 19%

## 2 Entry composition [i](#)

There are 32 unique types of molecules in this entry. The entry contains 63137 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 DNA-directed RNA polymerase II subunit RPB1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	1453	Total	C	N	O	S	0	0
			11425	7192	1995	2176	62		
1	z	25	Total	C	N	O		0	0
			184	116	25	43			

- Molecule 2 is a protein called DNA-directed RNA polymerase II subunit RPB2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	1172	Total	C	N	O	S	0	0
			9336	5895	1637	1748	56		

- Molecule 3 is a protein called DNA-directed RNA polymerase II subunit RPB3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	271	Total	C	N	O	S	0	0
			2133	1340	355	424	14		

- Molecule 4 is a protein called DNA-directed RNA polymerase II subunit RPB4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D	169	Total	C	N	O	S	0	0
			1353	838	237	275	3		

- Molecule 5 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	E	215	Total	C	N	O	S	0	0
			1760	1116	310	322	12		

- Molecule 6 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	F	86	697	445	118	131	3	0	0

- Molecule 7 is a protein called DNA-directed RNA polymerase II subunit RPB7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	G	171	1340	861	222	249	8	0	0

- Molecule 8 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	H	141	1126	706	189	226	5	0	0

- Molecule 9 is a protein called DNA-directed RNA polymerase II subunit RPB9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	I	116	943	580	171	181	11	0	0

- Molecule 10 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	J	70	578	366	102	104	6	0	0

- Molecule 11 is a protein called DNA-directed RNA polymerase II subunit RPB11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	K	116	929	596	158	173	2	0	0

- Molecule 12 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	L	43	344	211	69	60	4	0	0

- Molecule 13 is a protein called Transcription initiation factor IIB.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	M	35	Total	C	N	O	S	0	0
			263	169	41	49	4		

- Molecule 14 is a protein called Transcription initiation factor IIF subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	P	103	Total	C	N	O	S	0	0
			861	554	142	162	3		

- Molecule 15 is a protein called Transcription initiation factor IIF subunit beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	Q	125	Total	C	N	O	S	0	0
			1033	644	189	195	5		

- Molecule 16 is a protein called Transcription elongation factor S-II.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	S	181	Total	C	N	O	S	0	0
			1436	893	256	279	8		

- Molecule 17 is a protein called Mediator of RNA polymerase II transcription subunit 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	a	365	Total	C	N	O	S	0	0
			3008	1932	478	588	10		

- Molecule 18 is a protein called Mediator of RNA polymerase II transcription subunit 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	d	171	Total	C	N	O	S	0	0
			1388	875	233	276	4		

- Molecule 19 is a protein called Mediator of RNA polymerase II transcription subunit 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	f	169	Total	C	N	O	S	0	0
			1407	905	234	262	6		

- Molecule 20 is a protein called Mediator of RNA polymerase II transcription subunit 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	g	169	1409	903	238	263	5	0	0

- Molecule 21 is a protein called Mediator of RNA polymerase II transcription subunit 8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
21	h	136	1126	709	199	215	3	0	0

- Molecule 22 is a protein called Mediator of RNA polymerase II transcription subunit 9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	i	83	709	444	130	134	1	0	0

- Molecule 23 is a protein called Mediator of RNA polymerase II transcription subunit 10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
23	j	146	1173	725	206	239	3	0	0

- Molecule 24 is a protein called Mediator of RNA polymerase II transcription subunit 11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	k	108	876	546	149	177	4	0	0

- Molecule 25 is a protein called Mediator of RNA polymerase II transcription subunit 14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	n	625	5139	3318	884	913	24	0	0

- Molecule 26 is a protein called Mediator of RNA polymerase II transcription subunit 17.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
26	q	515	4182	2674	707	788	13	0	0

- Molecule 27 is a protein called Mediator of RNA polymerase II transcription subunit 18.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	r	253	1995	1271	331	383	10	0	0

- Molecule 28 is a protein called Mediator of RNA polymerase II transcription subunit 19.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
28	s	81	657	415	109	132	1	0	0

- Molecule 29 is a protein called Mediator of RNA polymerase II transcription subunit 20.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
29	t	210	1609	1016	270	317	6	0	0

- Molecule 30 is a protein called Mediator of RNA polymerase II transcription subunit 21.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
30	u	122	978	611	163	199	5	0	0

- Molecule 31 is a protein called Mediator of RNA polymerase II transcription subunit 22.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
31	v	109	869	540	143	180	6	0	0

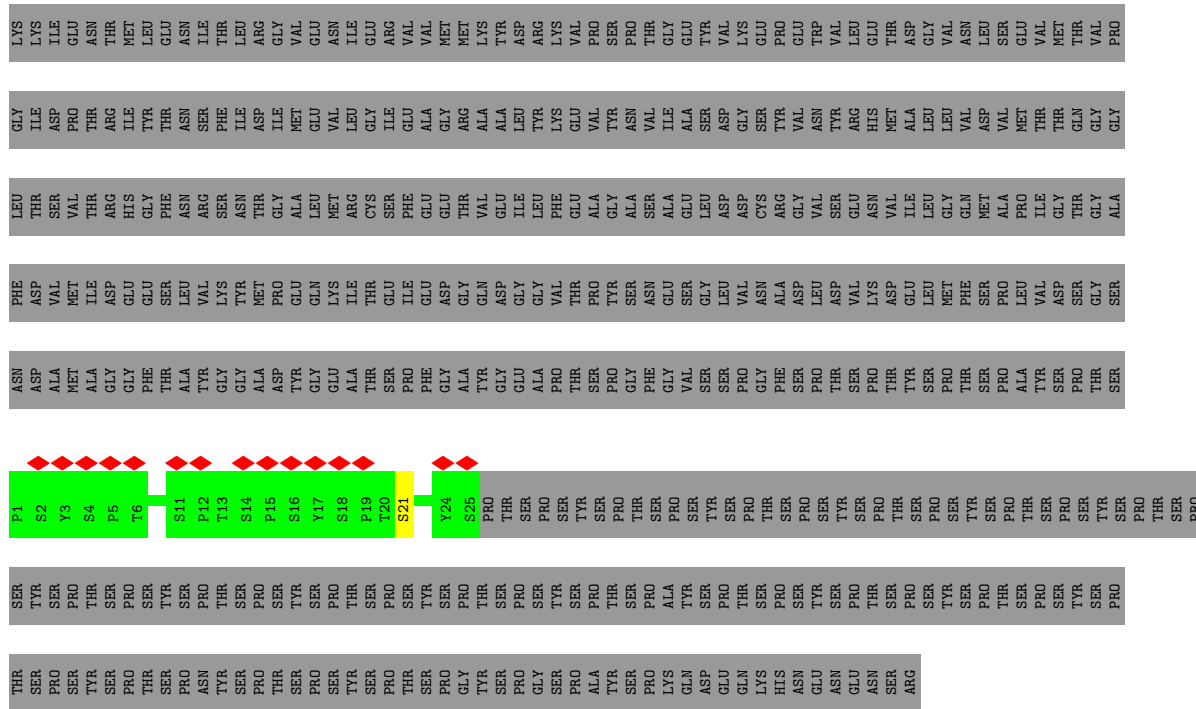
- Molecule 32 is a protein called Mediator of RNA polymerase II transcription subunit 31.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
32	w	103	871	575	135	155	6	0	0

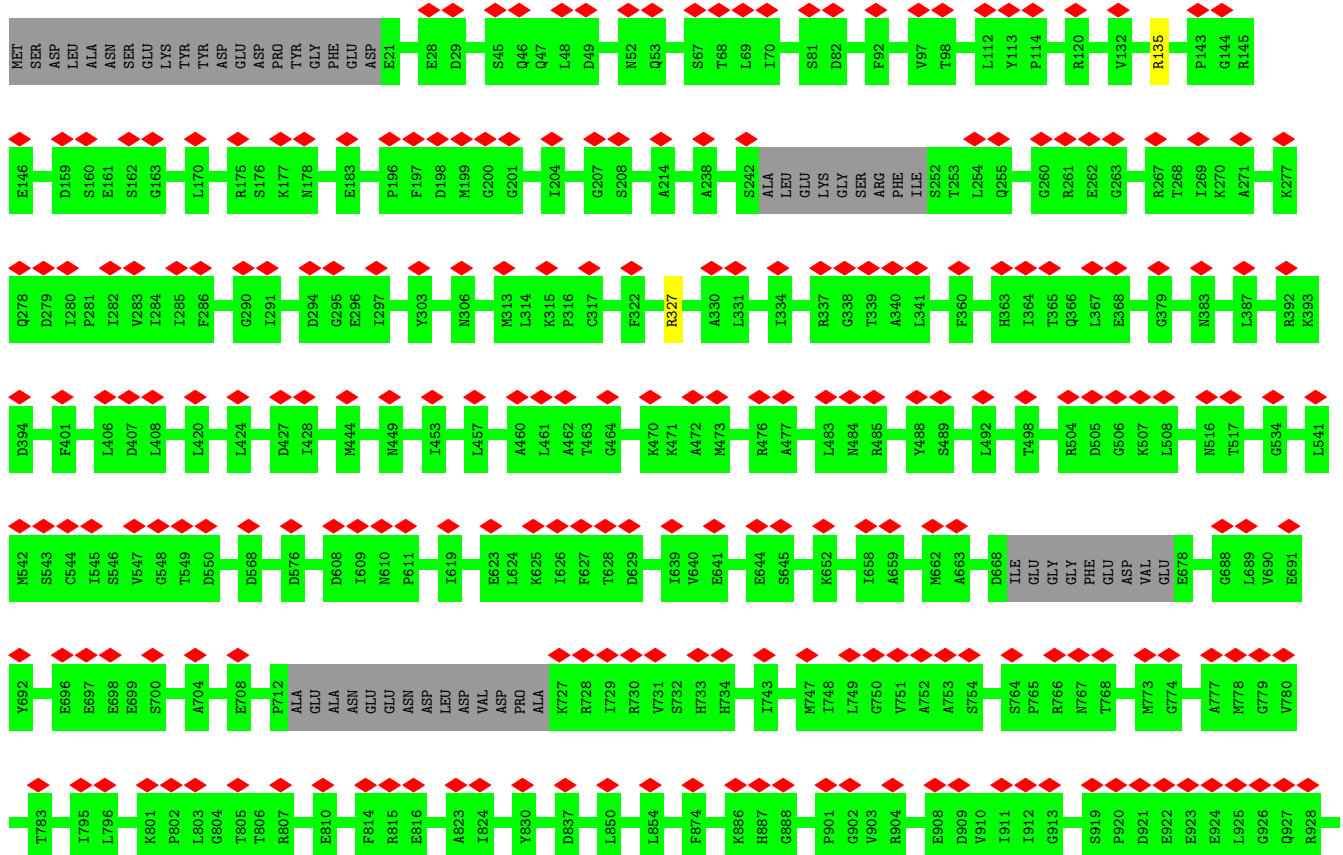


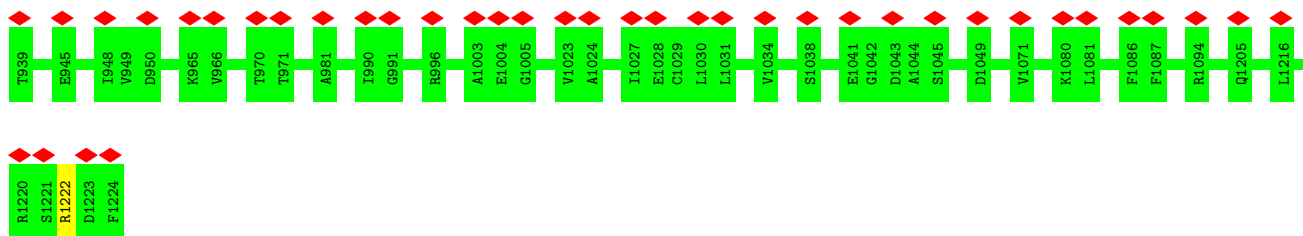




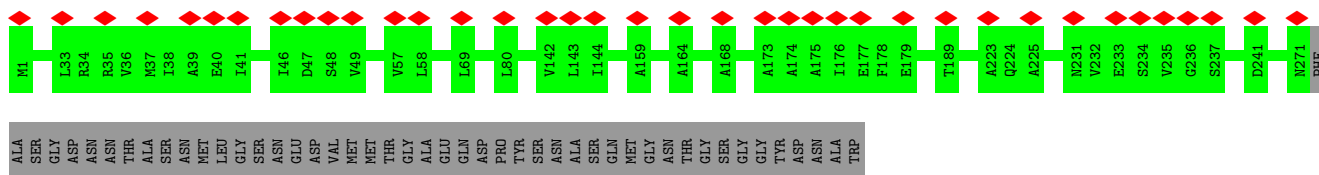
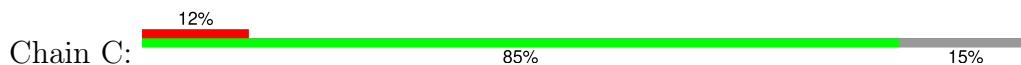


• Molecule 2: DNA-directed RNA polymerase II subunit RPB2

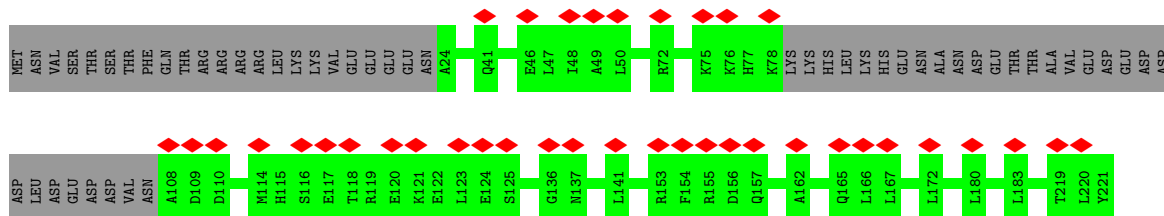
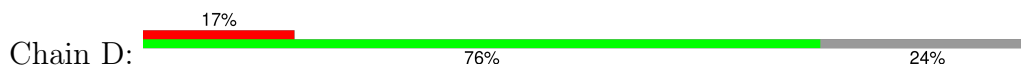




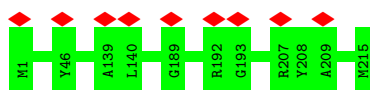
• Molecule 3: DNA-directed RNA polymerase II subunit RPB3



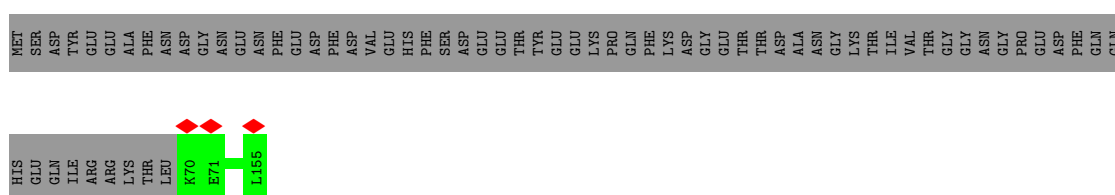
• Molecule 4: DNA-directed RNA polymerase II subunit RPB4



• Molecule 5: DNA-directed RNA polymerases I, II, and III subunit RPABC1

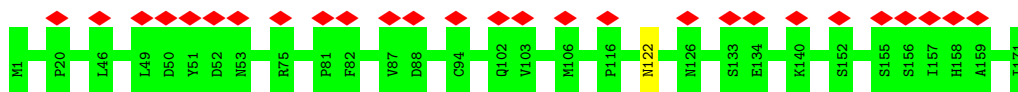


• Molecule 6: DNA-directed RNA polymerases I, II, and III subunit RPABC2

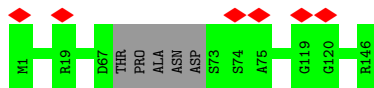


• Molecule 7: DNA-directed RNA polymerase II subunit RPB7





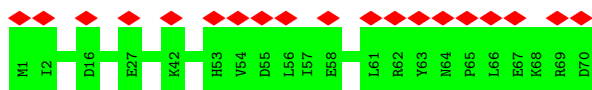
- Molecule 8: DNA-directed RNA polymerases I, II, and III subunit RPABC3



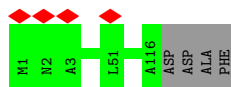
- Molecule 9: DNA-directed RNA polymerase II subunit RPB9



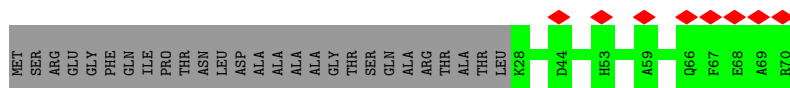
- Molecule 10: DNA-directed RNA polymerases I, II, and III subunit RPABC5



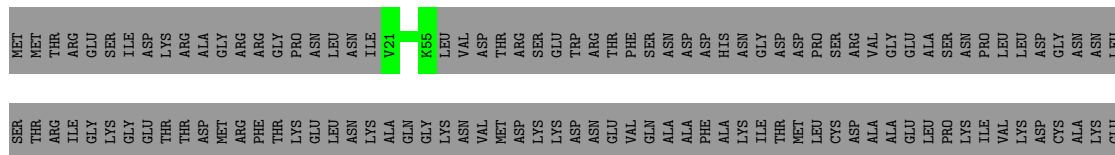
- Molecule 11: DNA-directed RNA polymerase II subunit RPB11



- Molecule 12: DNA-directed RNA polymerases I, II, and III subunit RPABC4

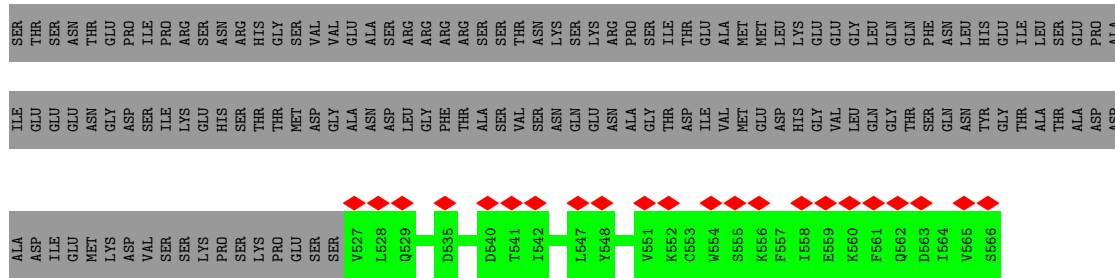


- Molecule 13: Transcription initiation factor IIB

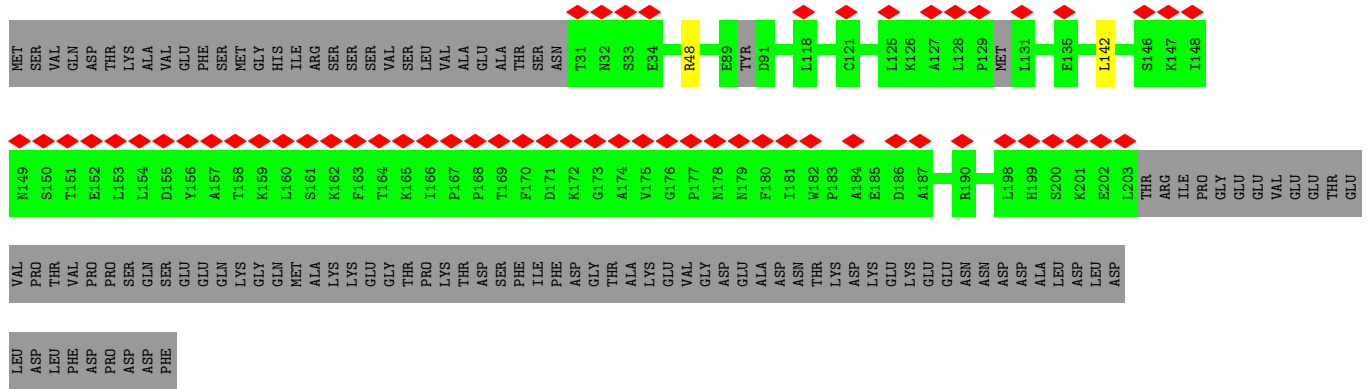




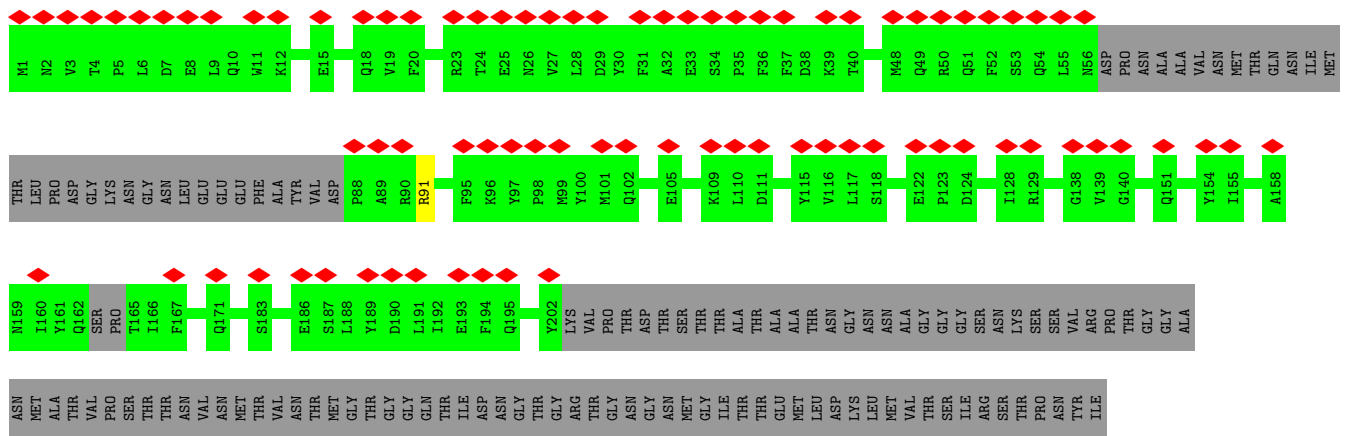




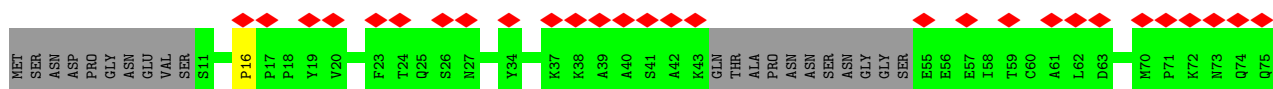
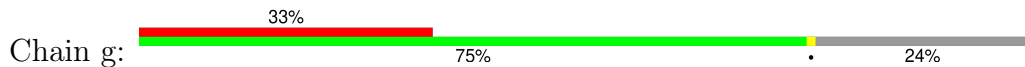
• Molecule 18: Mediator of RNA polymerase II transcription subunit 4



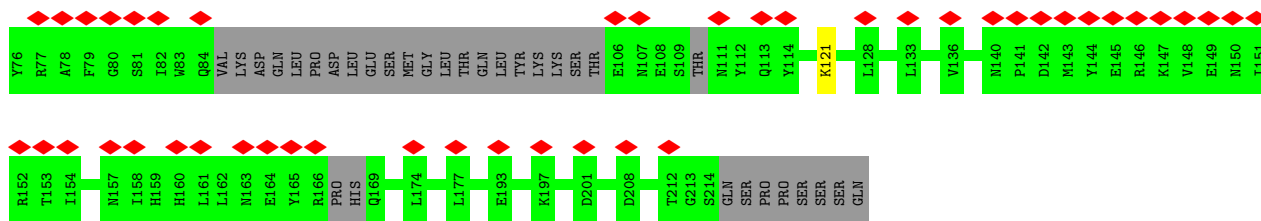
• Molecule 19: Mediator of RNA polymerase II transcription subunit 6



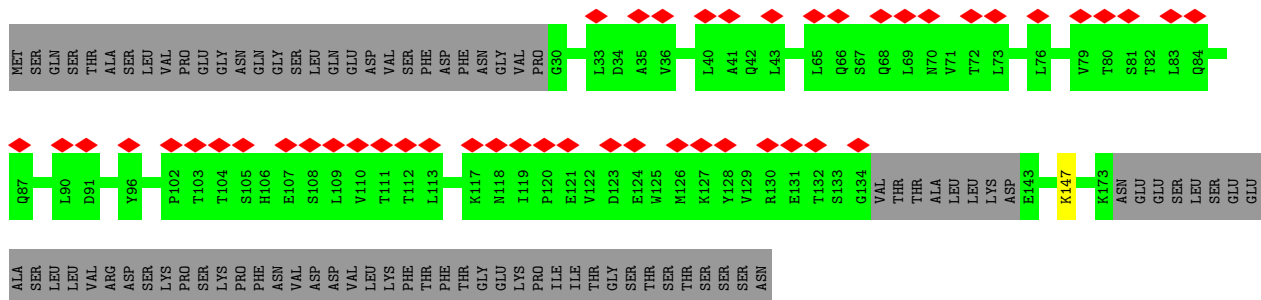
• Molecule 20: Mediator of RNA polymerase II transcription subunit 7



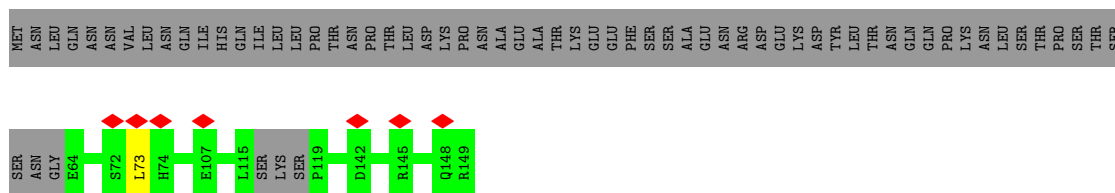




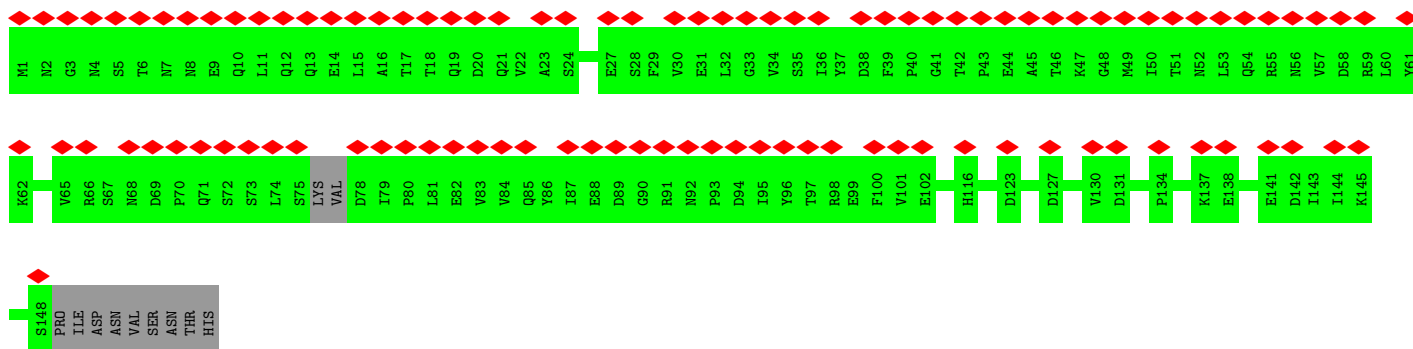
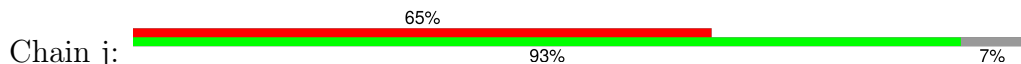
• Molecule 21: Mediator of RNA polymerase II transcription subunit 8



• Molecule 22: Mediator of RNA polymerase II transcription subunit 9

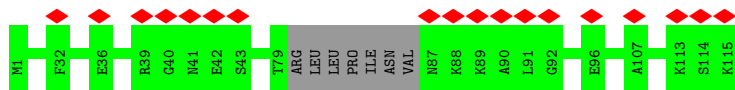


• Molecule 23: Mediator of RNA polymerase II transcription subunit 10

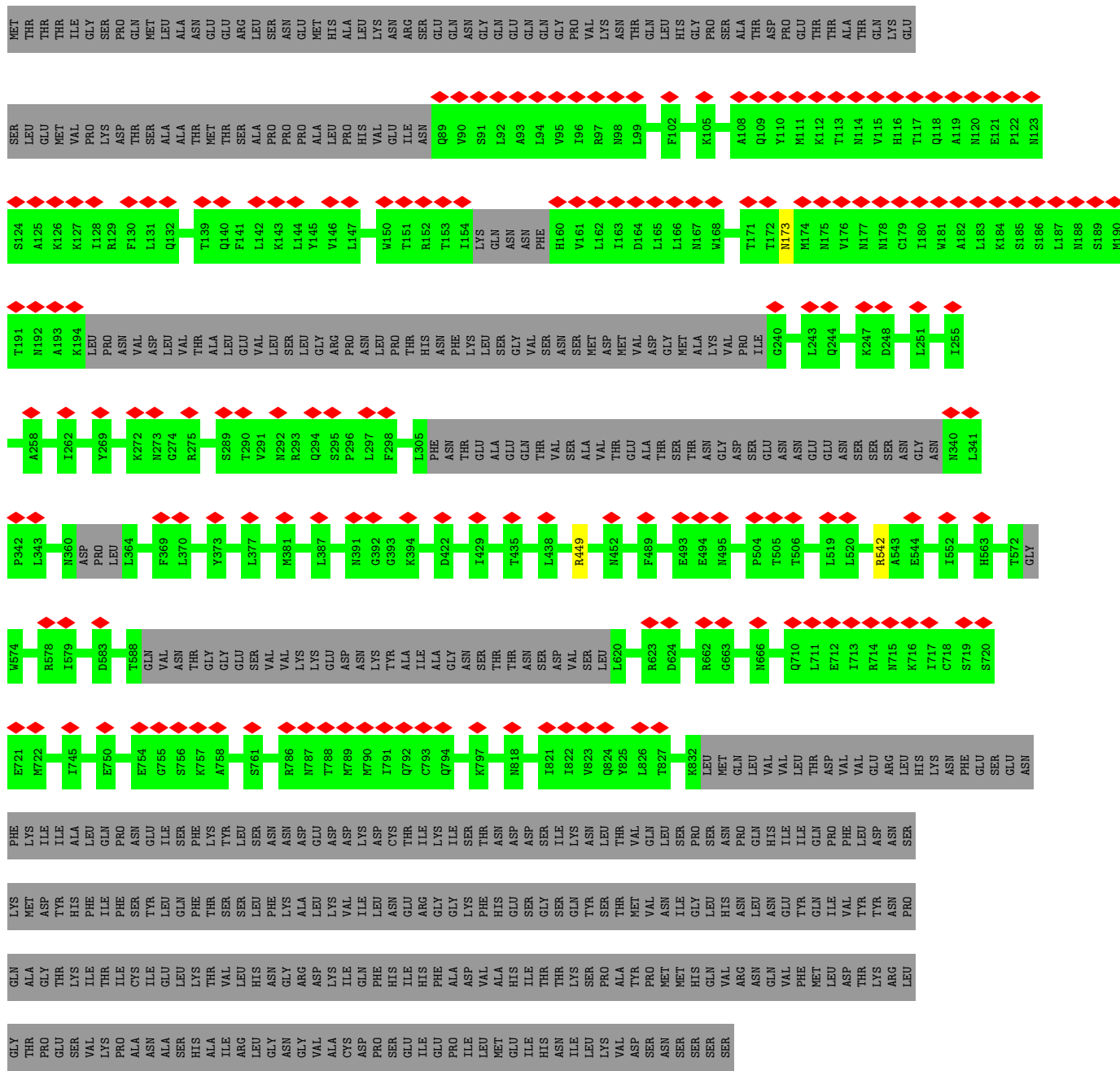


• Molecule 24: Mediator of RNA polymerase II transcription subunit 11

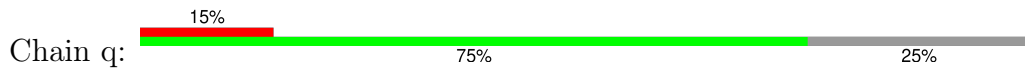


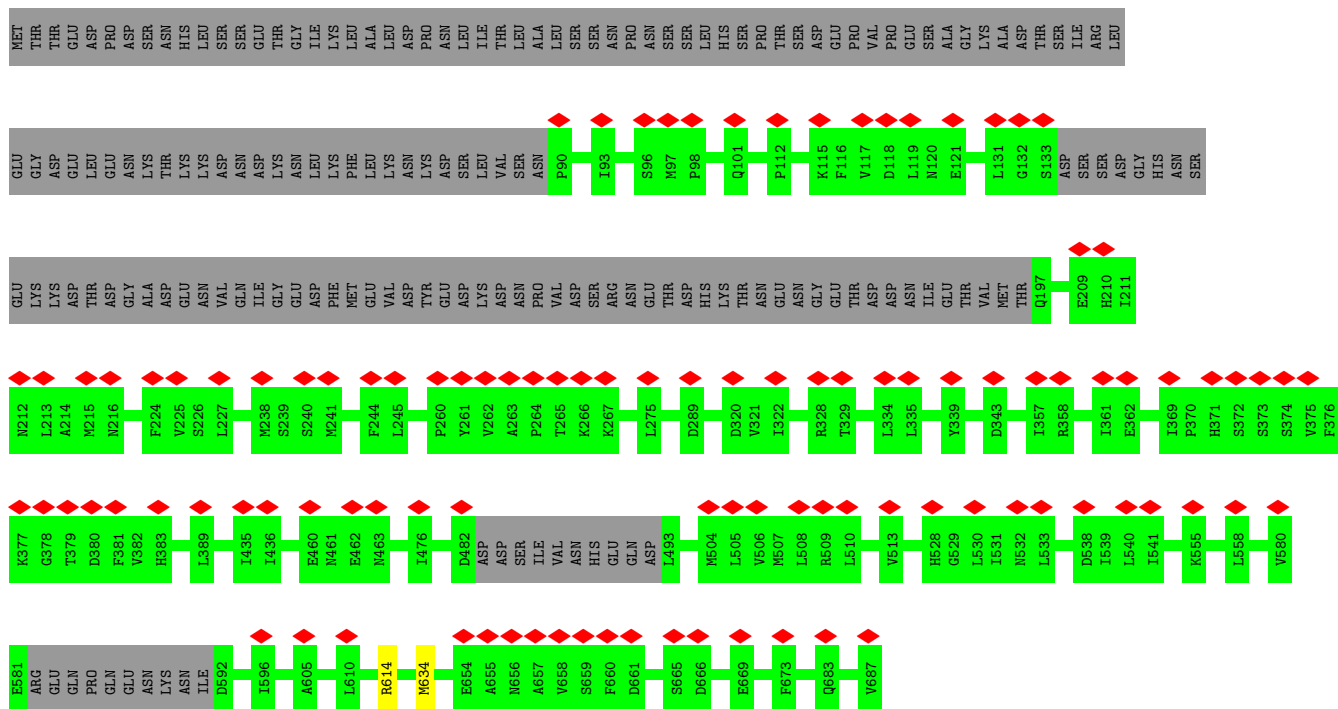


• Molecule 25: Mediator of RNA polymerase II transcription subunit 14

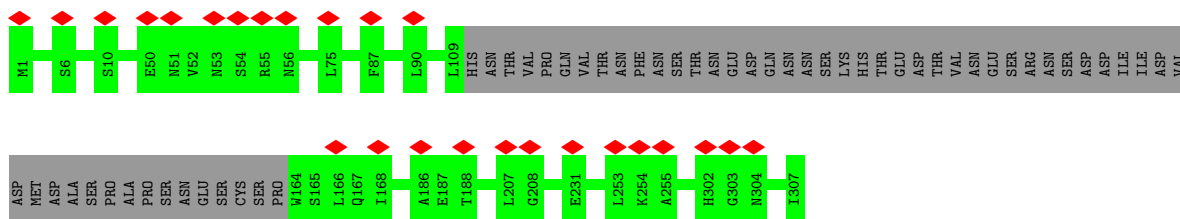
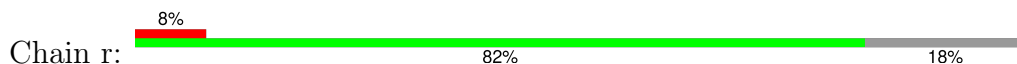


• Molecule 26: Mediator of RNA polymerase II transcription subunit 17

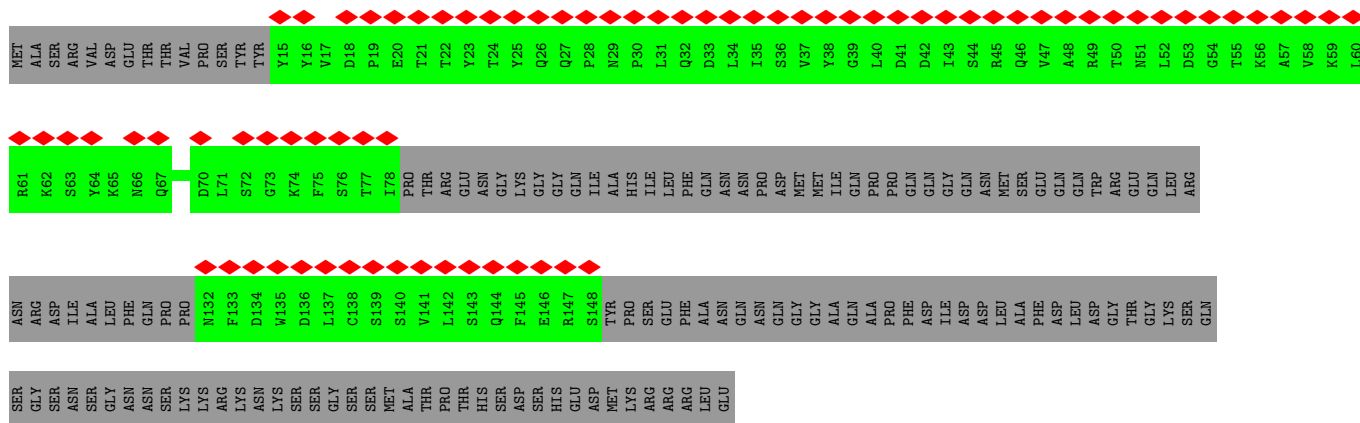




• Molecule 27: Mediator of RNA polymerase II transcription subunit 18

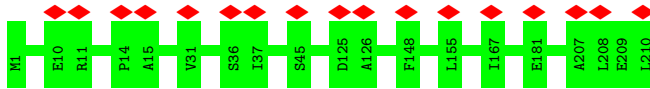


• Molecule 28: Mediator of RNA polymerase II transcription subunit 19




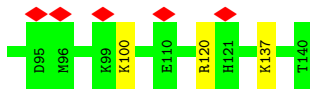
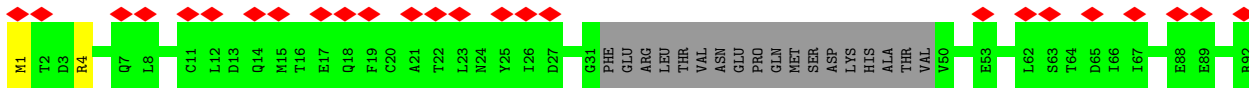
• Molecule 29: Mediator of RNA polymerase II transcription subunit 20

Chain t:  8% 100%




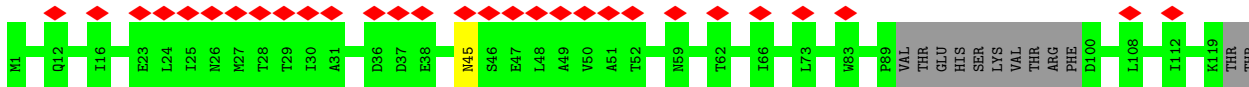
- Molecule 30: Mediator of RNA polymerase II transcription subunit 21

Chain u:  21% 84% 13%




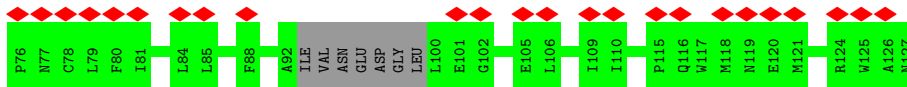
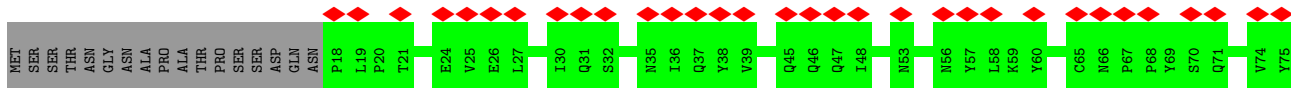
- Molecule 31: Mediator of RNA polymerase II transcription subunit 22

Chain v:  24% 89% 10%



- Molecule 32: Mediator of RNA polymerase II transcription subunit 31

Chain w:  44% 81% 19%



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	91293	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 ( $e^-/\text{\AA}^2$ )	42	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	64000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.051	Depositor
Minimum map value	-0.036	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.004	Depositor
Map size ( $\text{\AA}$ )	496.8, 496.8, 496.8	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	1.38, 1.38, 1.38	Depositor

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

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	0.28	0/11632	0.51	0/15735
1	z	0.25	0/194	0.40	0/270
2	B	0.27	0/9520	0.52	0/12839
3	C	0.27	0/2171	0.50	0/2941
4	D	0.24	0/1365	0.44	0/1831
5	E	0.26	0/1796	0.49	0/2416
6	F	0.27	0/709	0.50	0/956
7	G	0.26	0/1368	0.49	0/1844
8	H	0.28	0/1144	0.53	0/1548
9	I	0.25	0/961	0.55	0/1294
10	J	0.29	0/587	0.57	0/786
11	K	0.28	0/947	0.51	0/1279
12	L	0.25	0/346	0.61	0/457
13	M	0.26	0/267	0.47	0/362
14	P	0.25	0/886	0.47	0/1198
15	Q	0.24	0/1049	0.48	0/1413
16	S	0.25	0/1462	0.48	0/1973
17	a	0.65	0/3067	0.86	4/4148 (0.1%)
18	d	0.27	0/1405	0.58	1/1889 (0.1%)
19	f	0.27	0/1440	0.50	0/1946
20	g	0.28	0/1434	0.50	1/1930 (0.1%)
21	h	0.26	0/1147	0.55	0/1552
22	i	0.26	0/720	0.63	1/965 (0.1%)
23	j	0.24	0/1188	0.45	0/1604
24	k	0.27	0/885	0.49	0/1183
25	n	0.24	0/5226	0.46	0/7051
26	q	0.26	0/4245	0.49	0/5702
27	r	0.26	0/2030	0.50	0/2747
28	s	0.24	0/669	0.43	0/906
29	t	0.26	0/1635	0.50	0/2215
30	u	0.28	0/984	0.58	0/1317
31	v	0.26	0/873	0.51	0/1177
32	w	0.26	0/897	0.42	0/1219
All	All	0.30	0/64249	0.53	7/86693 (0.0%)

There are no bond length outliers.

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
17	a	349	ARG	NE-CZ-NH1	7.26	123.93	120.30
17	a	67	TYR	CB-CG-CD2	-6.29	117.23	121.00
17	a	189	ARG	NE-CZ-NH1	6.23	123.41	120.30
22	i	73	LEU	CA-CB-CG	5.85	128.76	115.30
17	a	311	ARG	NE-CZ-NH1	5.41	123.01	120.30
20	g	16	PRO	CA-N-CD	-5.25	104.16	111.50
18	d	142	LEU	CA-CB-CG	5.02	126.84	115.30

There are no chirality outliers.

There are no planarity outliers.

## 5.2 Too-close contacts [i](#)

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

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	1451/1733 (84%)	1407 (97%)	43 (3%)	1 (0%)	48	83
1	z	23/1733 (1%)	21 (91%)	1 (4%)	1 (4%)	2	18
2	B	1164/1224 (95%)	1132 (97%)	32 (3%)	0	100	100
3	C	269/318 (85%)	261 (97%)	8 (3%)	0	100	100
4	D	165/221 (75%)	163 (99%)	2 (1%)	0	100	100
5	E	213/215 (99%)	210 (99%)	3 (1%)	0	100	100
6	F	84/155 (54%)	83 (99%)	1 (1%)	0	100	100
7	G	169/171 (99%)	166 (98%)	3 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
8	H	137/146 (94%)	134 (98%)	3 (2%)	0	100	100
9	I	114/122 (93%)	113 (99%)	1 (1%)	0	100	100
10	J	68/70 (97%)	65 (96%)	3 (4%)	0	100	100
11	K	114/120 (95%)	112 (98%)	2 (2%)	0	100	100
12	L	41/70 (59%)	39 (95%)	2 (5%)	0	100	100
13	M	33/345 (10%)	33 (100%)	0	0	100	100
14	P	99/735 (14%)	98 (99%)	1 (1%)	0	100	100
15	Q	121/400 (30%)	121 (100%)	0	0	100	100
16	S	179/309 (58%)	177 (99%)	2 (1%)	0	100	100
17	a	357/566 (63%)	343 (96%)	11 (3%)	3 (1%)	16	54
18	d	165/284 (58%)	164 (99%)	1 (1%)	0	100	100
19	f	163/295 (55%)	161 (99%)	2 (1%)	0	100	100
20	g	159/222 (72%)	158 (99%)	1 (1%)	0	100	100
21	h	132/223 (59%)	129 (98%)	3 (2%)	0	100	100
22	i	79/149 (53%)	79 (100%)	0	0	100	100
23	j	142/157 (90%)	137 (96%)	5 (4%)	0	100	100
24	k	104/115 (90%)	104 (100%)	0	0	100	100
25	n	611/1082 (56%)	607 (99%)	4 (1%)	0	100	100
26	q	505/687 (74%)	500 (99%)	5 (1%)	0	100	100
27	r	249/307 (81%)	244 (98%)	5 (2%)	0	100	100
28	s	77/220 (35%)	76 (99%)	1 (1%)	0	100	100
29	t	208/210 (99%)	206 (99%)	2 (1%)	0	100	100
30	u	116/140 (83%)	115 (99%)	1 (1%)	0	100	100
31	v	105/121 (87%)	105 (100%)	0	0	100	100
32	w	99/127 (78%)	97 (98%)	2 (2%)	0	100	100
All	All	7715/12992 (59%)	7560 (98%)	150 (2%)	5 (0%)	50	83

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	z	21	SER
17	a	291	SER
17	a	306	ASN

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Mol	Chain	Res	Type
17	a	289	CYS
1	A	958	VAL

### 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	1268/1520 (83%)	1265 (100%)	3 (0%)	92	93
1	z	25/1520 (2%)	25 (100%)	0	100	100
2	B	1018/1061 (96%)	1015 (100%)	3 (0%)	91	91
3	C	239/274 (87%)	239 (100%)	0	100	100
4	D	150/200 (75%)	150 (100%)	0	100	100
5	E	197/197 (100%)	197 (100%)	0	100	100
6	F	76/137 (56%)	76 (100%)	0	100	100
7	G	152/152 (100%)	151 (99%)	1 (1%)	81	87
8	H	124/128 (97%)	124 (100%)	0	100	100
9	I	110/116 (95%)	110 (100%)	0	100	100
10	J	65/65 (100%)	65 (100%)	0	100	100
11	K	99/102 (97%)	99 (100%)	0	100	100
12	L	38/57 (67%)	38 (100%)	0	100	100
13	M	32/299 (11%)	32 (100%)	0	100	100
14	P	95/641 (15%)	95 (100%)	0	100	100
15	Q	119/363 (33%)	118 (99%)	1 (1%)	79	84
16	S	158/274 (58%)	157 (99%)	1 (1%)	84	88
17	a	350/528 (66%)	347 (99%)	3 (1%)	75	83
18	d	158/258 (61%)	157 (99%)	1 (1%)	84	88
19	f	158/259 (61%)	157 (99%)	1 (1%)	84	88
20	g	160/208 (77%)	159 (99%)	1 (1%)	84	88
21	h	128/207 (62%)	127 (99%)	1 (1%)	79	84

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
22	i	82/144 (57%)	82 (100%)	0	100	100
23	j	134/145 (92%)	134 (100%)	0	100	100
24	k	101/108 (94%)	101 (100%)	0	100	100
25	n	591/1001 (59%)	588 (100%)	3 (0%)	86	89
26	q	482/642 (75%)	480 (100%)	2 (0%)	89	90
27	r	228/280 (81%)	228 (100%)	0	100	100
28	s	75/195 (38%)	75 (100%)	0	100	100
29	t	178/178 (100%)	178 (100%)	0	100	100
30	u	115/132 (87%)	110 (96%)	5 (4%)	25	47
31	v	101/113 (89%)	100 (99%)	1 (1%)	73	81
32	w	97/117 (83%)	97 (100%)	0	100	100
All	All	7103/11621 (61%)	7076 (100%)	27 (0%)	88	90

All (27) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	330	LYS
1	A	471	ASN
1	A	1244	ARG
2	B	135	ARG
2	B	327	ARG
2	B	1222	ARG
7	G	122	ASN
15	Q	63	ARG
16	S	215	LYS
17	a	288	THR
17	a	290	SER
17	a	296	SER
18	d	48	ARG
19	f	91	ARG
20	g	121	LYS
21	h	147	LYS
25	n	173	ASN
25	n	449	ARG
25	n	542	ARG
26	q	614	ARG
26	q	634	MET
30	u	1	MET

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Mol	Chain	Res	Type
30	u	4	ARG
30	u	100	LYS
30	u	120	ARG
30	u	137	LYS
31	v	45	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (16) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	363	GLN
1	A	445	ASN
1	A	811	GLN
1	A	1211	GLN
7	G	122	ASN
7	G	131	GLN
14	P	359	ASN
16	S	166	HIS
17	a	177	GLN
17	a	235	GLN
19	f	10	GLN
21	h	150	GLN
24	k	19	GLN
25	n	715	ASN
30	u	9	GLN
30	u	98	GLN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

### 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 oligosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

There are no ligands in this entry.

## 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
26	q	1
30	u	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	q	318:ASN	C	319:LYS	N	5.82
1	u	80:LEU	C	81:PRO	N	3.17

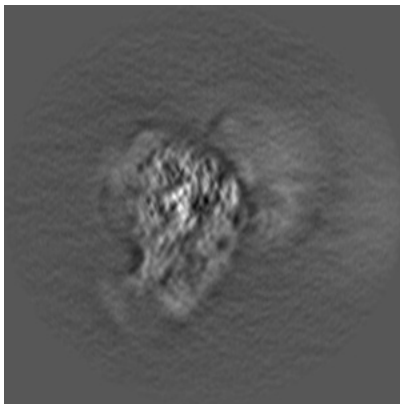
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-26544. These allow visual inspection of the internal detail of the map and identification of artifacts.

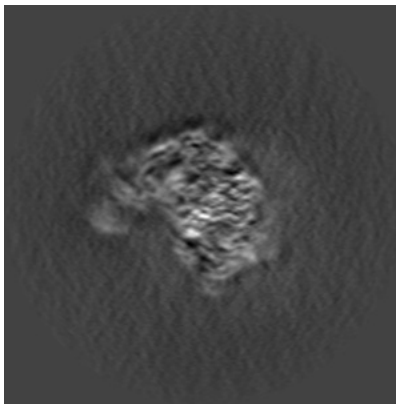
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

### 6.1 Orthogonal projections [i](#)

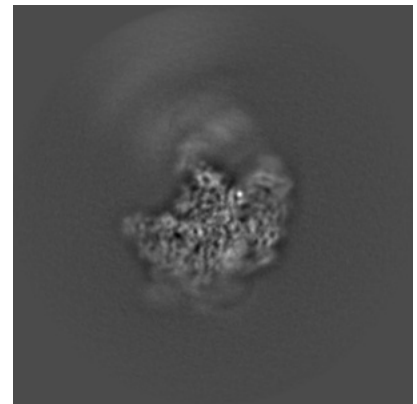
#### 6.1.1 Primary map



X

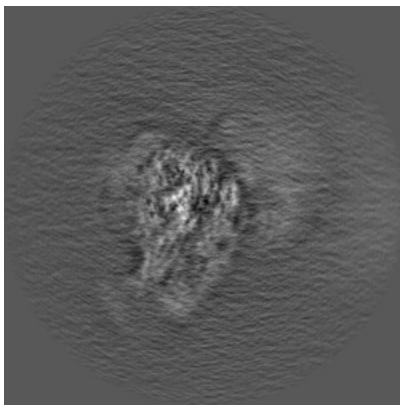


Y

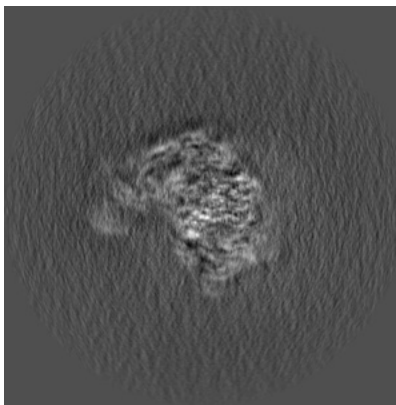


Z

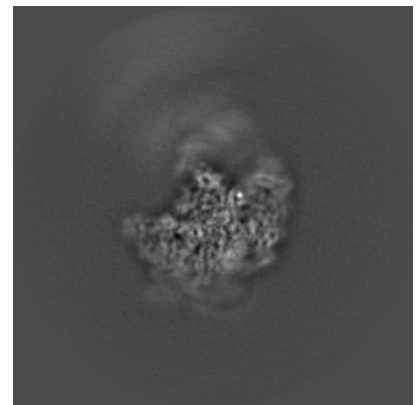
#### 6.1.2 Raw map



X



Y

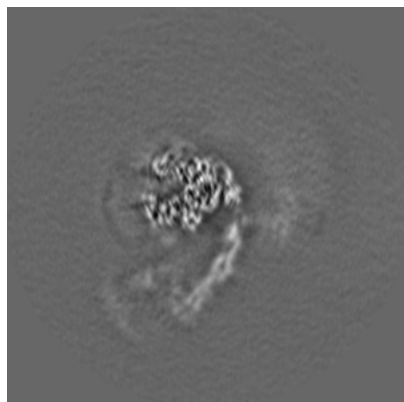


Z

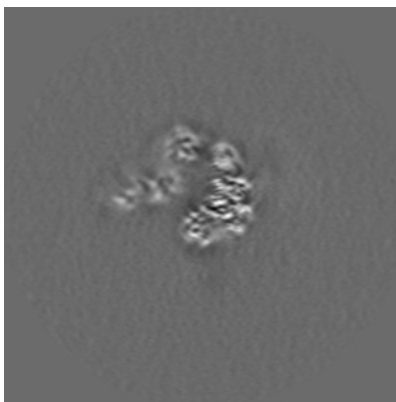
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

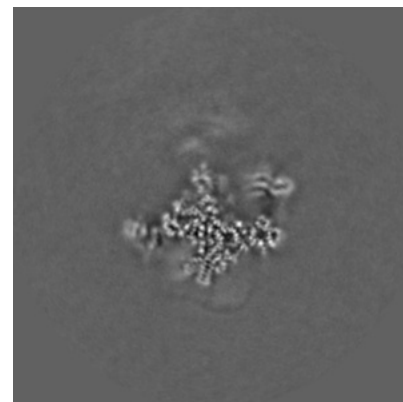
### 6.2.1 Primary map



X Index: 180

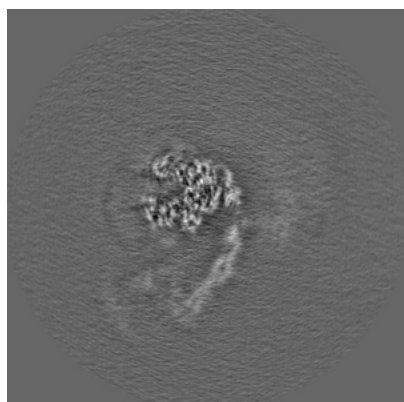


Y Index: 180

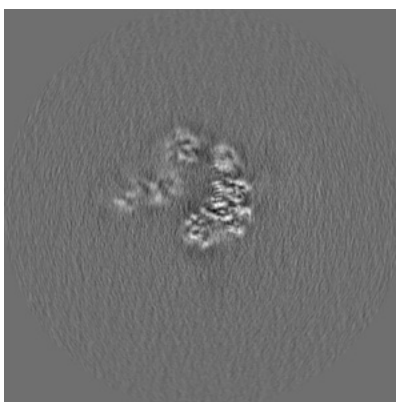


Z Index: 180

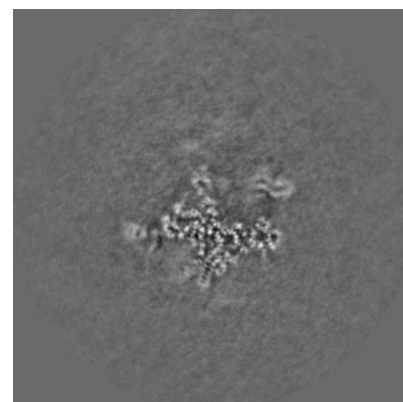
### 6.2.2 Raw map



X Index: 180



Y Index: 180

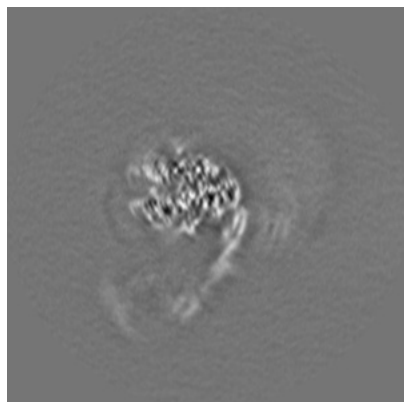


Z Index: 180

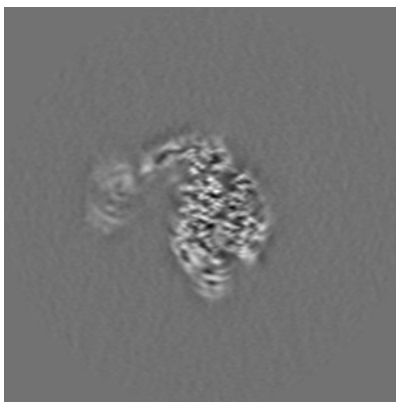
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

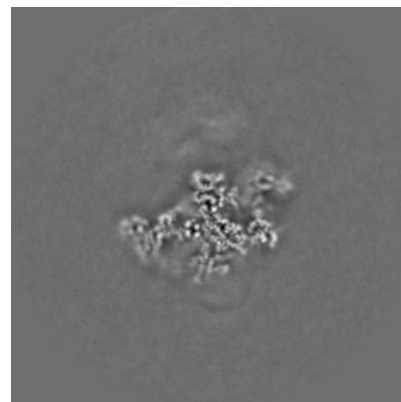
### 6.3.1 Primary map



X Index: 176

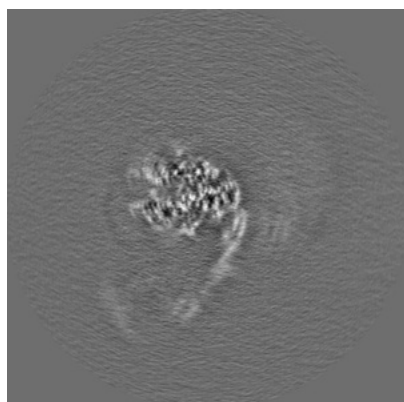


Y Index: 160

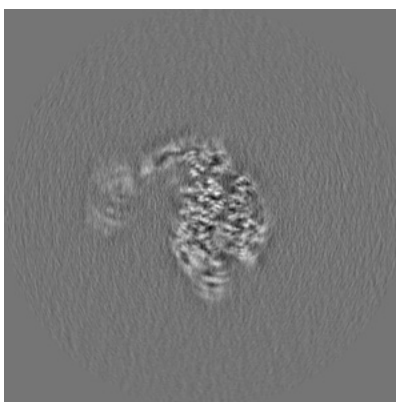


Z Index: 187

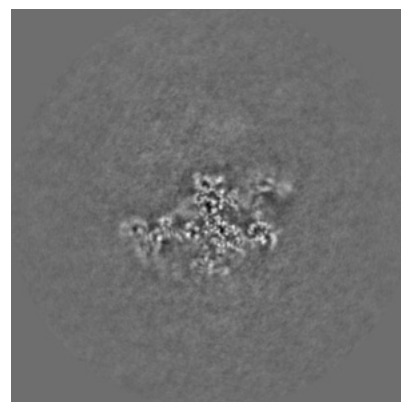
### 6.3.2 Raw map



X Index: 176



Y Index: 160

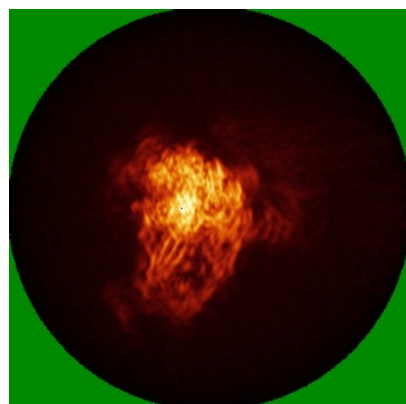


Z Index: 188

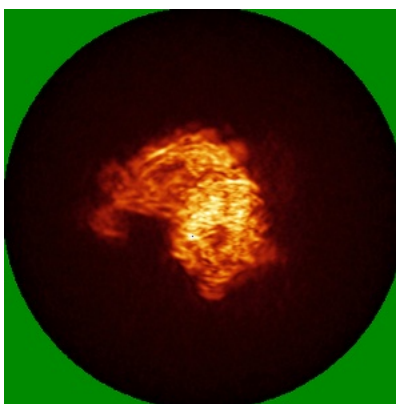
The images above show the largest variance slices of the map in three orthogonal directions.

## 6.4 Orthogonal standard-deviation projections (False-color) [i](#)

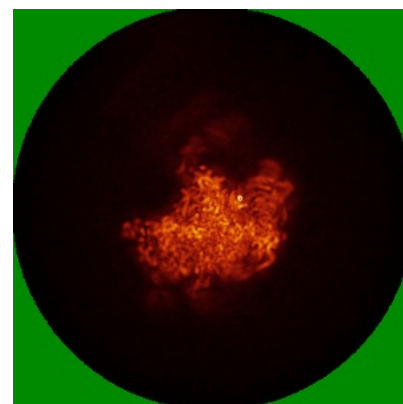
### 6.4.1 Primary map



X

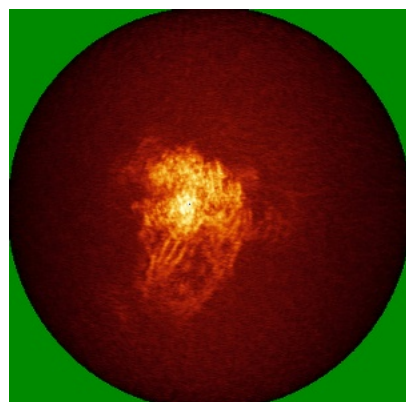


Y

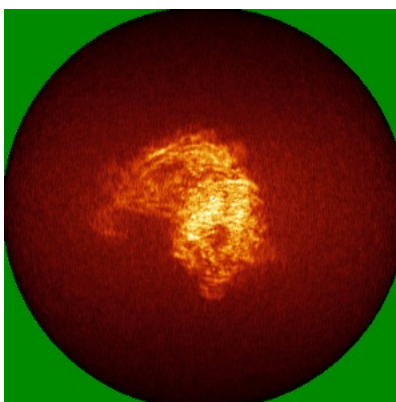


Z

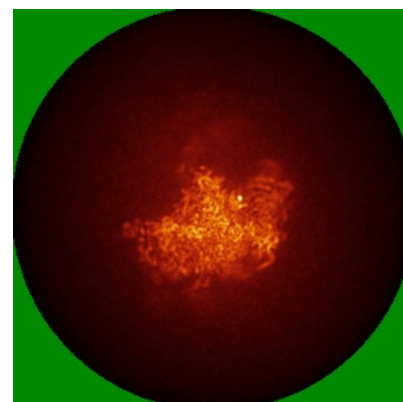
### 6.4.2 Raw map



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 0.004. 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.

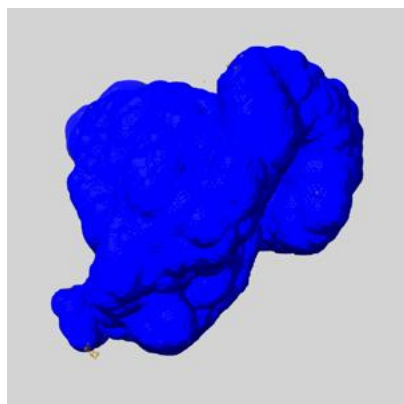
## 6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

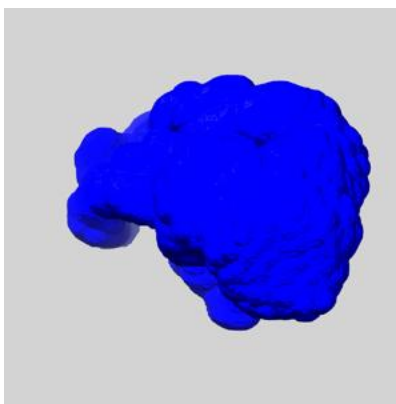
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

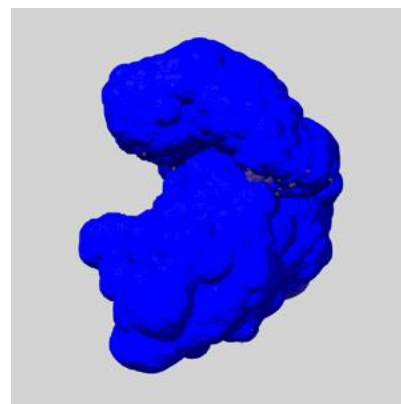
### 6.6.1 emd\_26544\_msk\_1.map [i](#)



X



Y

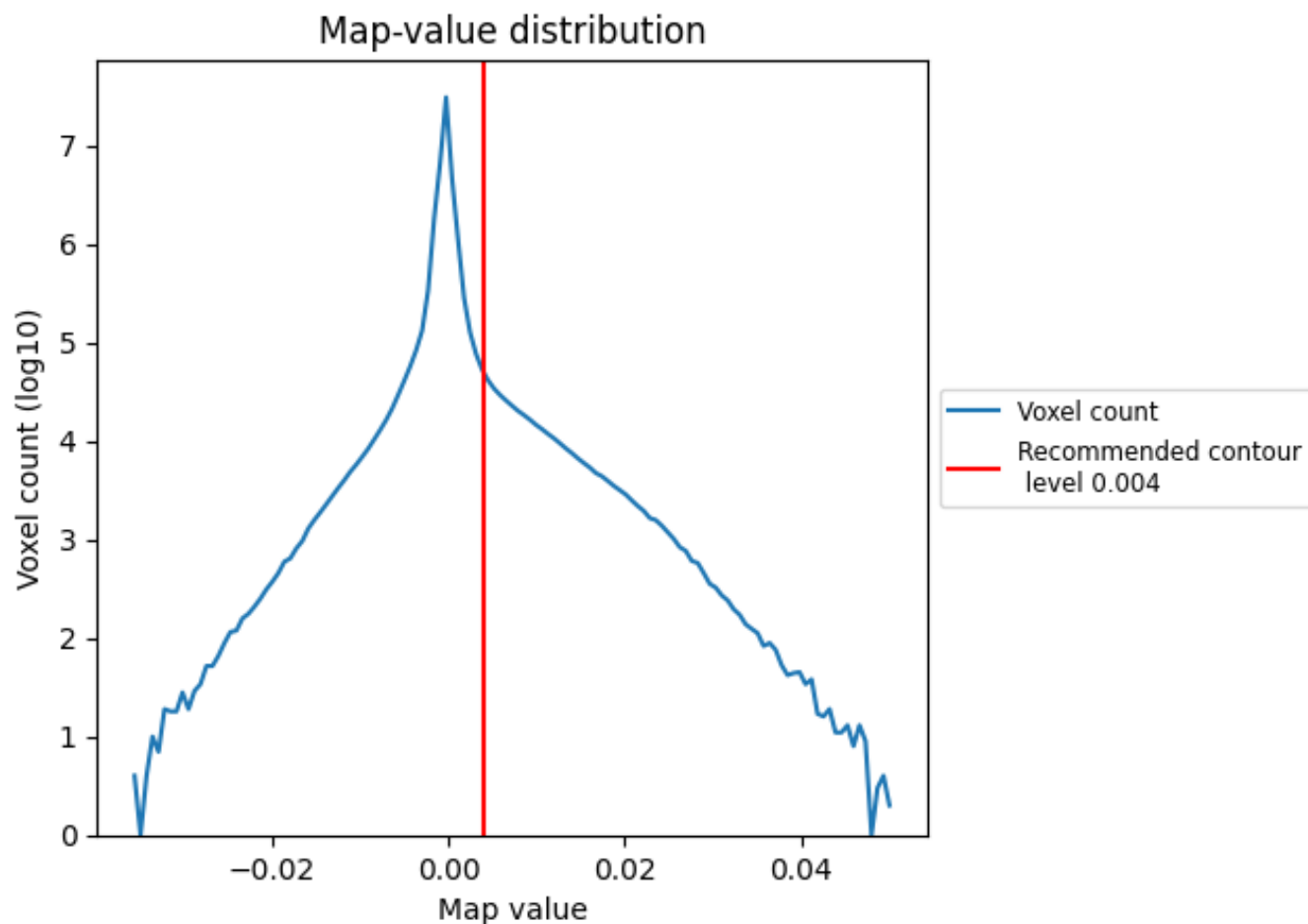


Z

## 7 Map analysis [i](#)

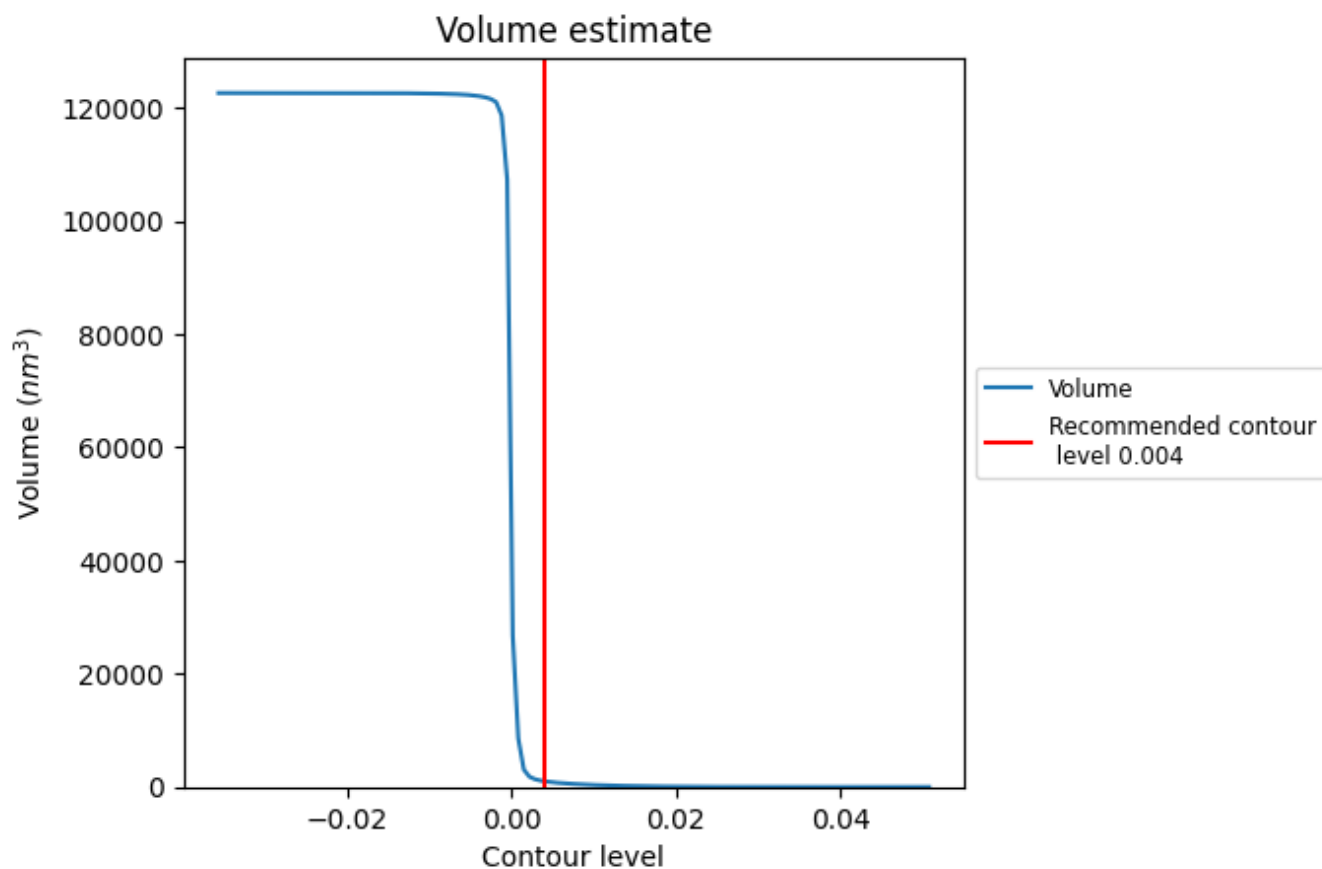
This section contains the results of statistical analysis of the map.

### 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.

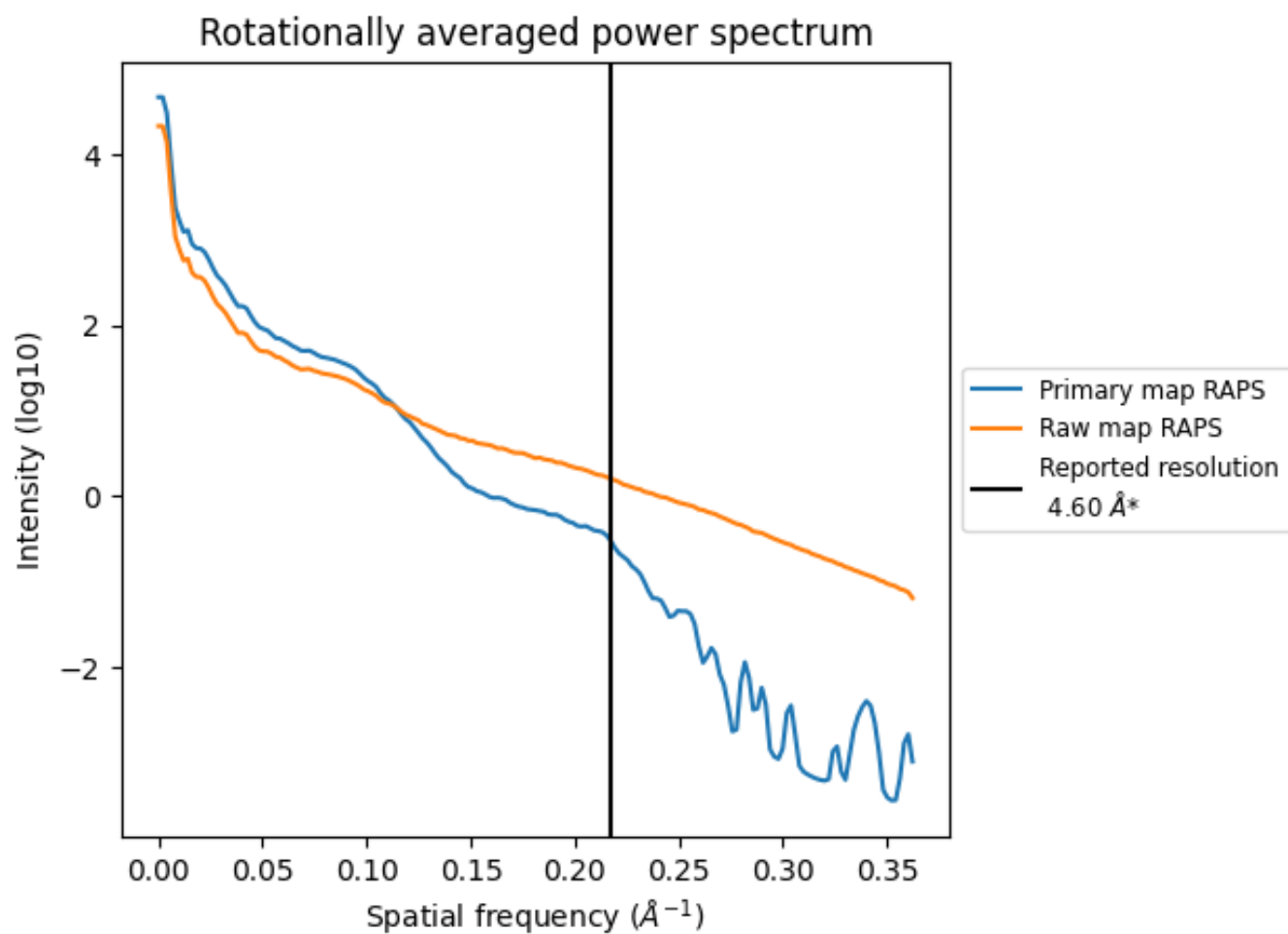
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1005  $\text{nm}^3$ ; this corresponds to an approximate mass of 908 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

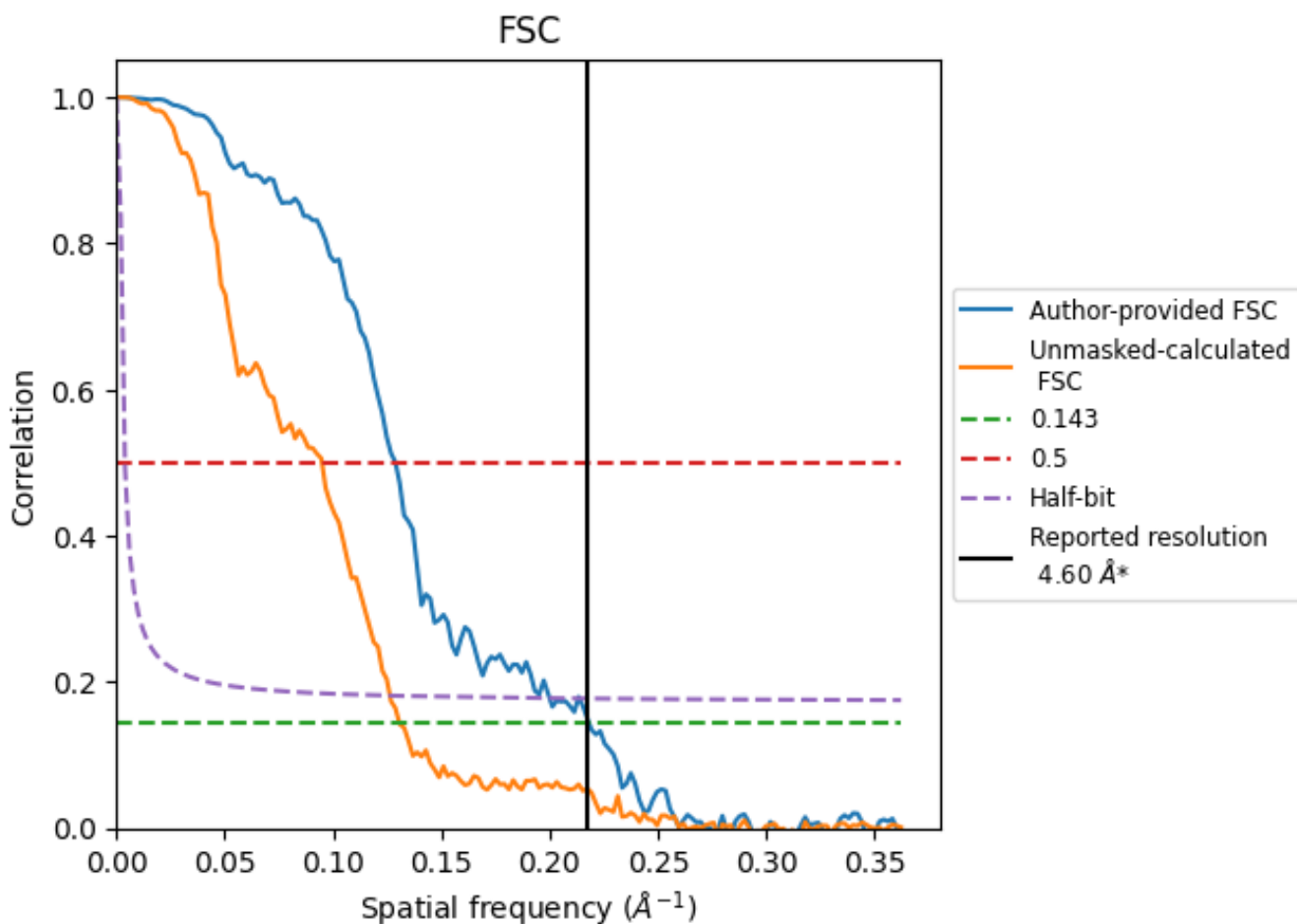


\*Reported resolution corresponds to spatial frequency of 0.217 Å<sup>-1</sup>

## 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 0.217 Å<sup>-1</sup>

## 8.2 Resolution estimates [i](#)

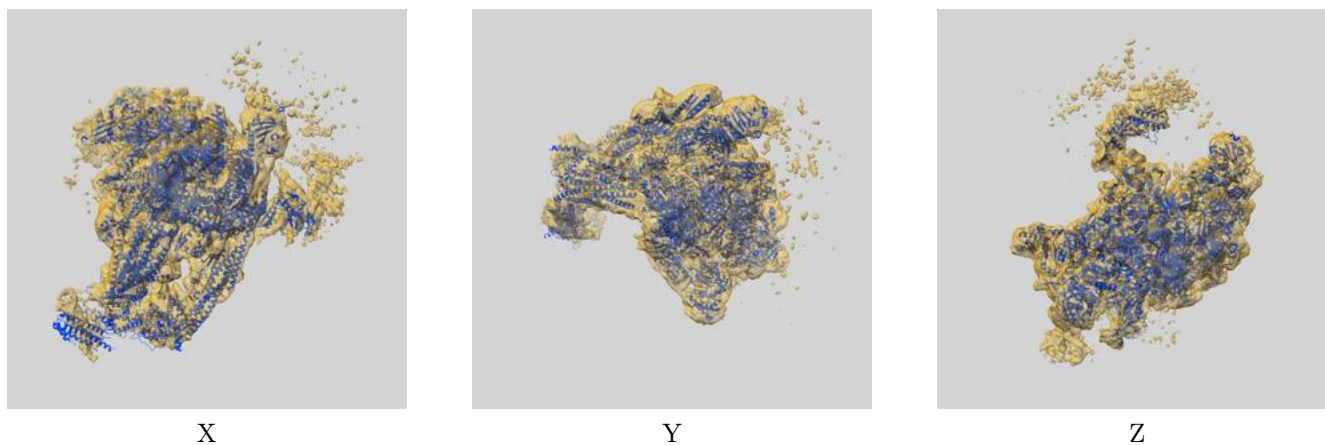
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.60	-	-
Author-provided FSC curve	4.58	7.76	5.00
Unmasked-calculated*	7.65	10.54	7.92

\*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 7.65 differs from the reported value 4.6 by more than 10 %

## 9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-26544 and PDB model 7UIF. Per-residue inclusion information can be found in section 3 on page 9.

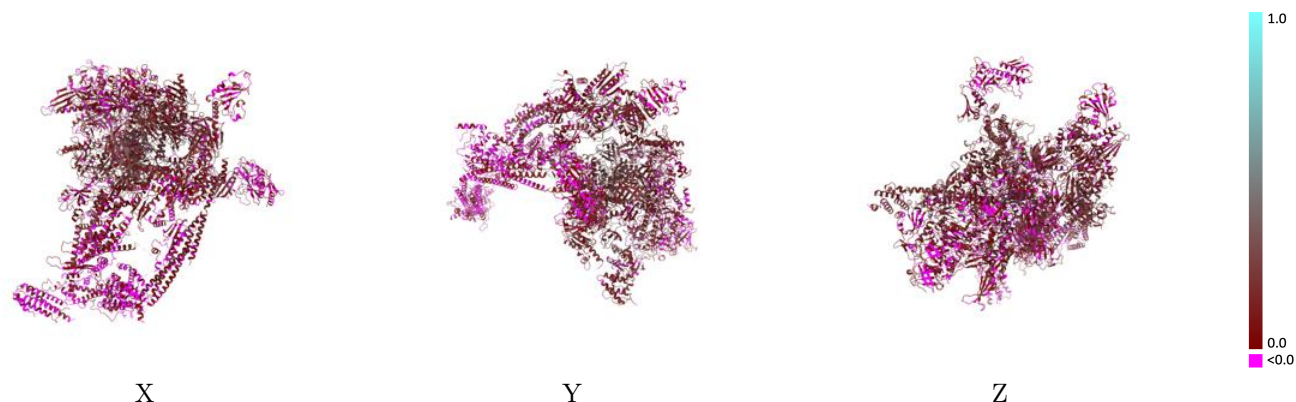
### 9.1 Map-model overlay [i](#)



The images above show the 3D surface view of the map at the recommended contour level 0.004 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.

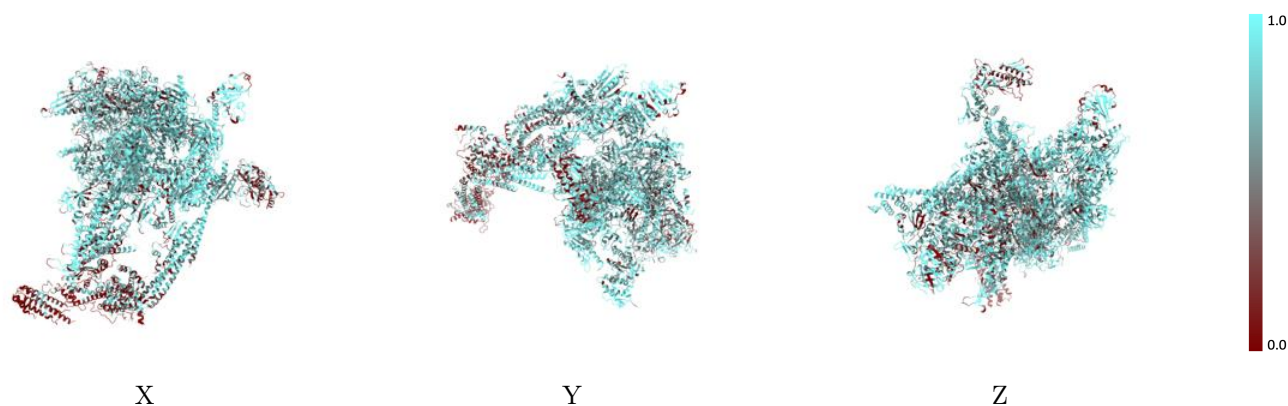


## 9.2 Q-score mapped to coordinate model [i](#)



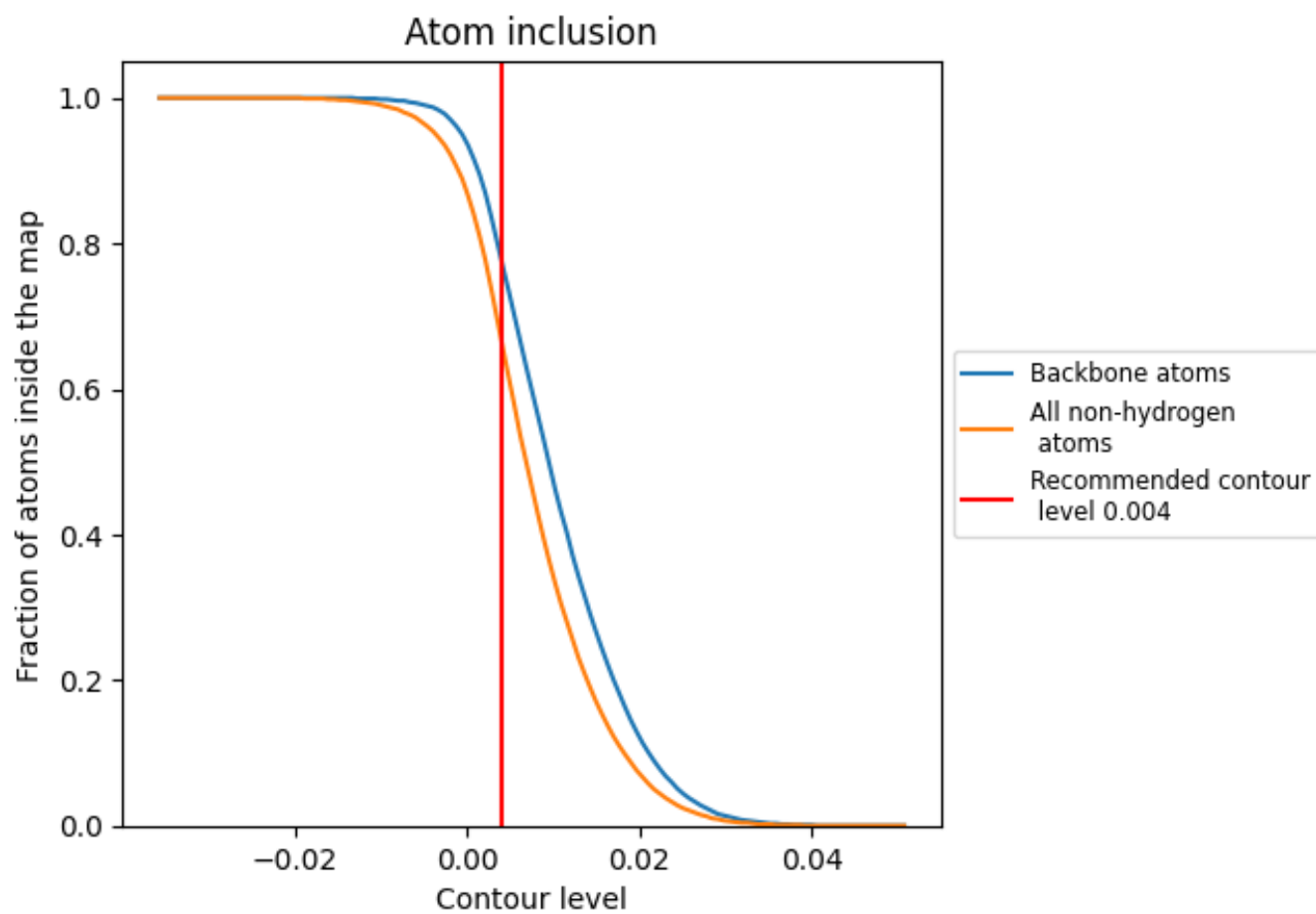
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.004).





































































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 78% of all backbone atoms, 67% 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 (0.004) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6660	 0.1270
A	 0.7460	 0.2120
B	 0.6400	 0.1190
C	 0.7500	 0.1590
D	 0.6820	 0.0850
E	 0.8280	 0.1850
F	 0.7780	 0.2120
G	 0.7350	 0.1250
H	 0.8210	 0.2300
I	 0.7460	 0.1490
J	 0.5930	 0.0660
K	 0.7780	 0.2310
L	 0.6830	 0.0900
M	 0.7960	 0.2840
P	 0.6520	 0.0890
Q	 0.5050	 0.0270
S	 0.7260	 0.1410
a	 0.5300	 0.0480
d	 0.5980	 0.0650
f	 0.4640	 0.0360
g	 0.5340	 0.0110
h	 0.5950	 0.0450
i	 0.7770	 0.1330
j	 0.2830	 0.0210
k	 0.7530	 0.1220
n	 0.6590	 0.0750
q	 0.6910	 0.1120
r	 0.7730	 0.2220
s	 0.0890	 0.0160
t	 0.7820	 0.2000
u	 0.6690	 0.0670
v	 0.6410	 0.0800
w	 0.4040	 -0.0340
z	 0.3330	 0.0140

