Full wwPDB EM Validation Report ⓘ

Dec 19, 2022 – 11:10 am GMT

PDB ID	:	7NKX
EMDB ID	:	EMD-12449
Title	:	RNA polymerase II-Spt4/5-nucleosome-Chd1 structure
Authors	:	Farnung, L.; Ochmann, M.; Engeholm, M.; Cramer, P.
Deposited on	:	2021-02-19
Resolution	:	2.90 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*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

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

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

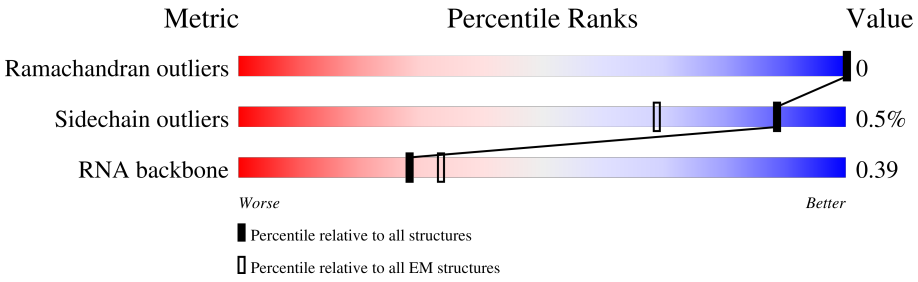
EMDB validation analysis	:	0.0.1.dev43
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)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

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.90 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	A	1733	45% 80% · 19%
2	B	1224	46% 90% · 9%
3	C	318	28% 82% · 17%
4	E	215	41% 98% ·
5	F	155	30% 55% · 44%
6	H	146	36% 90% · 9%
7	I	122	77% 95% · ·
8	J	70	30% 93% 7%

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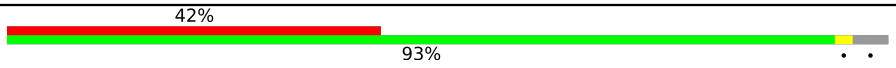
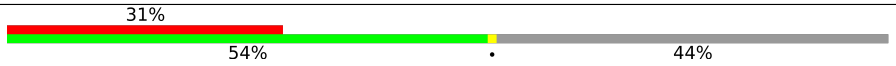
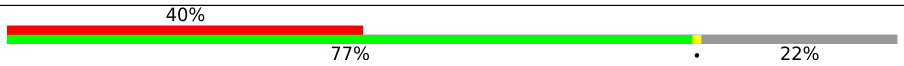
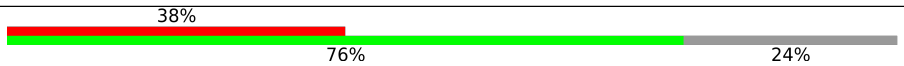
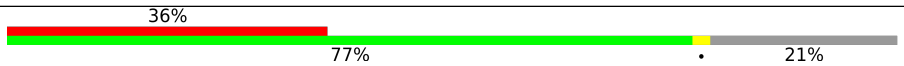
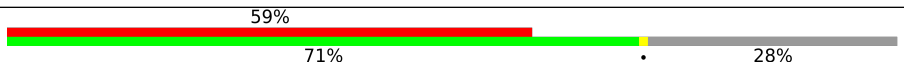
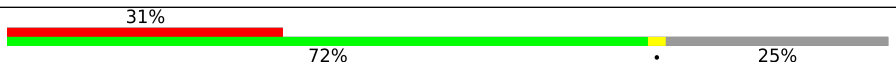
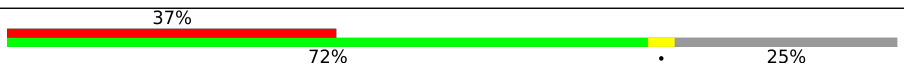
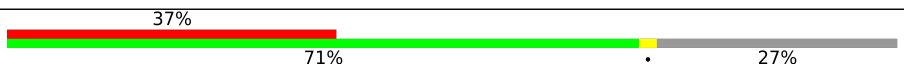
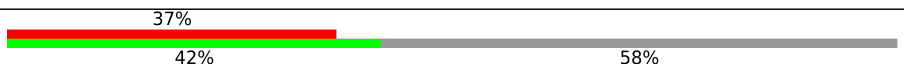
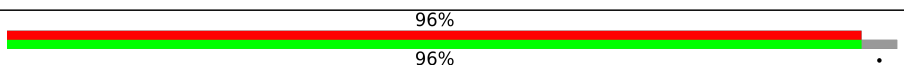
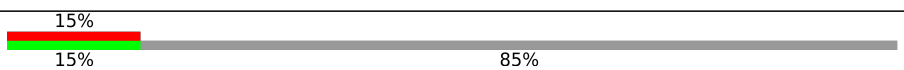
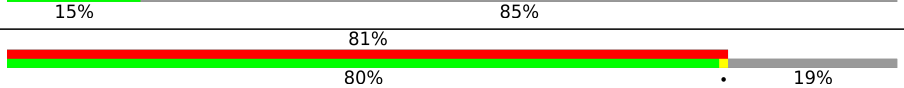
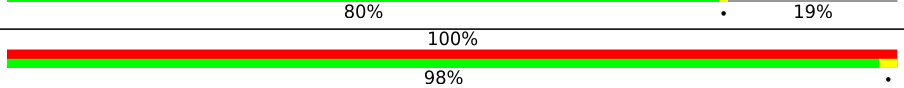
Mol	Chain	Length	Quality of chain
9	K	120	
10	L	70	
11	a	136	
11	e	136	
12	b	103	
12	f	103	
13	c	130	
13	g	130	
14	d	123	
14	h	123	
15	T	185	
16	N	176	
17	W	1468	
18	P	69	
19	Y	102	
20	Z	1066	
21	D	221	
22	G	171	

2 Entry composition (i)

There are 26 unique types of molecules in this entry. The entry contains 49720 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	1409	11086	6984	1940	2100	62	0	0

- 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	1116	8865	5611	1559	1640	55	0	0

- 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	265	2086	1312	347	414	13	0	0

- Molecule 4 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		
4	E	214	1752	1111	309	321	11	0	0

- Molecule 5 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		
5	F	87	705	451	119	132	3	0	0

- Molecule 6 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		
6	H	133	1068	673	180	211	4	0	0

- Molecule 7 is a protein called DNA-directed RNA polymerase II subunit RPB9.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	I	119	Total	C	N	O	S	0	0
			971	596	179	186	10		

- Molecule 8 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC5.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	J	65	Total	C	N	O	S	0	0
			532	339	93	94	6		

- Molecule 9 is a protein called DNA-directed RNA polymerase II subunit RPB11.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	K	115	Total	C	N	O	S	0	1
			920	590	157	171	2		

- Molecule 10 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC4.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	L	44	Total	C	N	O	S	0	0
			351	217	70	60	4		

- Molecule 11 is a protein called Histone H3.2.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	a	76	Total	C	N	O	S	0	0
			620	393	115	109	3		
11	e	97	Total	C	N	O	S	0	0
			801	504	155	139	3		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
a	102	ALA	GLY	conflict	UNP P84233
e	102	ALA	GLY	conflict	UNP P84233

- Molecule 12 is a protein called Histone H4.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	b	80	Total	C	N	O	S	0	0
			638	401	125	111	1		

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Mol	Chain	Residues	Atoms					AltConf	Trace
12	f	78	Total	C	N	O	S	0	0
			619	391	120	107	1		

- Molecule 13 is a protein called Histone H2A type 1.

Mol	Chain	Residues	Atoms				AltConf	Trace
13	c	103	Total	C	N	O	0	0
			795	501	155	139		
13	g	93	Total	C	N	O	0	0
			718	450	142	126		

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
c	99	ARG	GLY	conflict	UNP P06897
c	123	SER	ALA	conflict	UNP P06897
g	99	ARG	GLY	conflict	UNP P06897
g	123	SER	ALA	conflict	UNP P06897

- Molecule 14 is a protein called Histone H2B 1.1.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	d	92	Total	C	N	O	S	0	0
			719	453	129	135	2		
14	h	93	Total	C	N	O	S	0	0
			726	457	130	137	2		

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
d	0	MET	-	initiating methionine	UNP P02281
d	29	THR	SER	conflict	UNP P02281
h	0	MET	-	initiating methionine	UNP P02281
h	29	THR	SER	conflict	UNP P02281

- Molecule 15 is a DNA chain called DNA (139-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
15	T	139	Total	C	N	O	P	0	0
			2834	1346	526	824	138		

- Molecule 16 is a DNA chain called DNA (128-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
16	N	128	Total	C	N	O	P	0	0
			2640	1251	486	775	128		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
17	W	622	Total	C	N	O	S	0	0
			5129	3254	900	953	22		

- Molecule 18 is a RNA chain called RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	P	16	Total	C	N	O	P	0	0
			330	148	49	117	16		

- Molecule 19 is a protein called Chromatin elongation factor SPT4.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	Y	98	Total	C	N	O	S	0	0
			739	461	126	142	10		

- Molecule 20 is a protein called Transcription elongation factor SPT5.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	Z	156	Total	C	N	O	S	0	0
			1252	804	224	221	3		

There are 5 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Z	-2	SER	-	expression tag	UNP P27692
Z	-1	ASN	-	expression tag	UNP P27692
Z	0	ALA	-	expression tag	UNP P27692
Z	376	LEU	LYS	conflict	UNP P27692
Z	377	GLU	SER	conflict	UNP P27692

- Molecule 21 is a protein called DNA-directed RNA polymerase II subunit RPB4.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	D	180	Total	C	N	O	S	0	0
			1444	893	257	291	3		

- Molecule 22 is a protein called DNA-directed RNA polymerase II subunit RPB7.

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

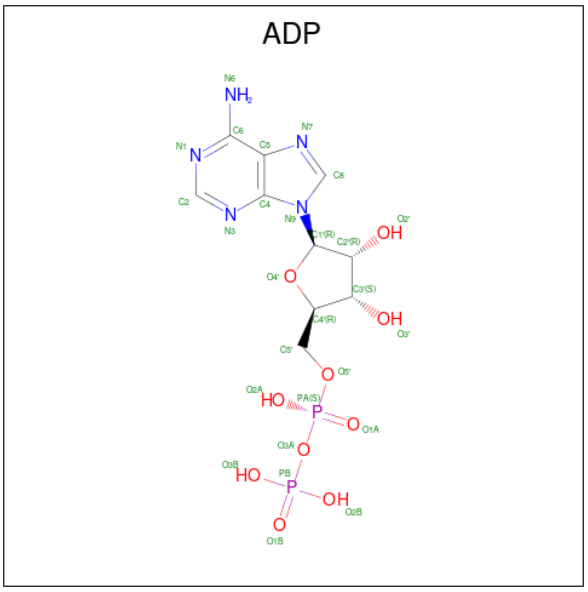
- Molecule 23 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
23	A	2	Total	Zn	0
			2	2	
23	B	1	Total	Zn	0
			1	1	
23	C	1	Total	Zn	0
			1	1	
23	I	2	Total	Zn	0
			2	2	
23	J	1	Total	Zn	0
			1	1	
23	L	1	Total	Zn	0
			1	1	

- Molecule 24 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

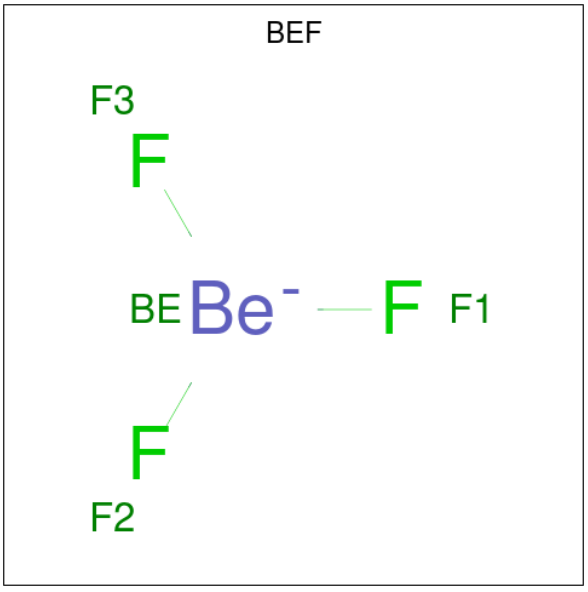
Mol	Chain	Residues	Atoms		AltConf
24	A	1	Total	Mg	0
			1	1	

- Molecule 25 is ADENOSINE-5'-DIPHOSPHATE (three-letter code: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$).



Mol	Chain	Residues	Atoms					AltConf
25	W	1	Total	C	N	O	P	0
			27	10	5	10	2	

- Molecule 26 is BERYLLIUM TRIFLUORIDE ION (three-letter code: BEF) (formula: BeF_3).



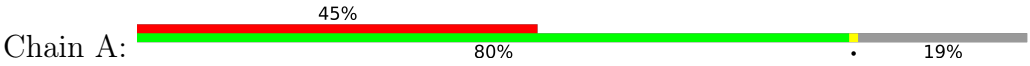
Mol	Chain	Residues	Atoms			AltConf
26	W	1	Total	Be	F	0
			4	1	3	

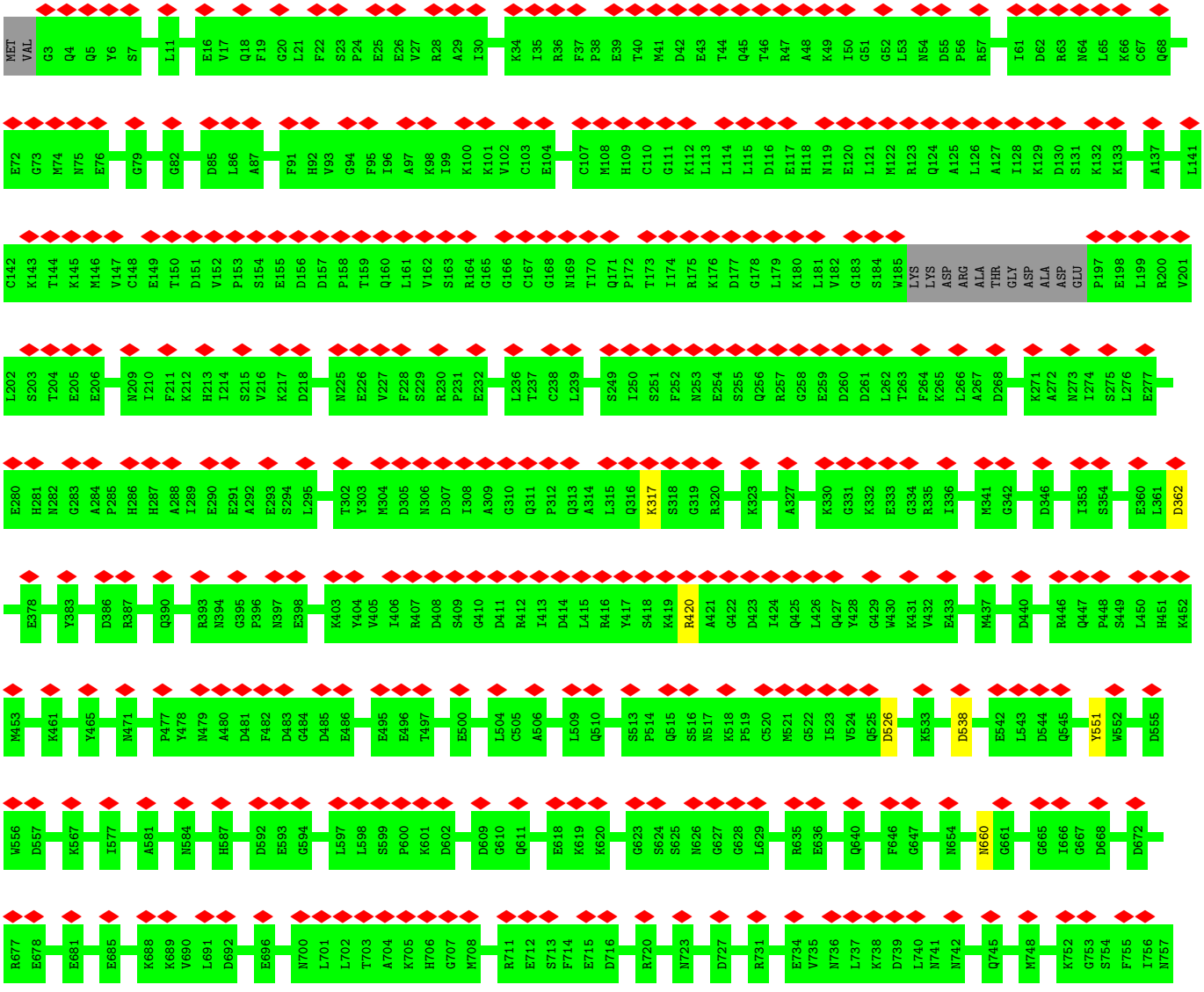
3 Residue-property plots (i)

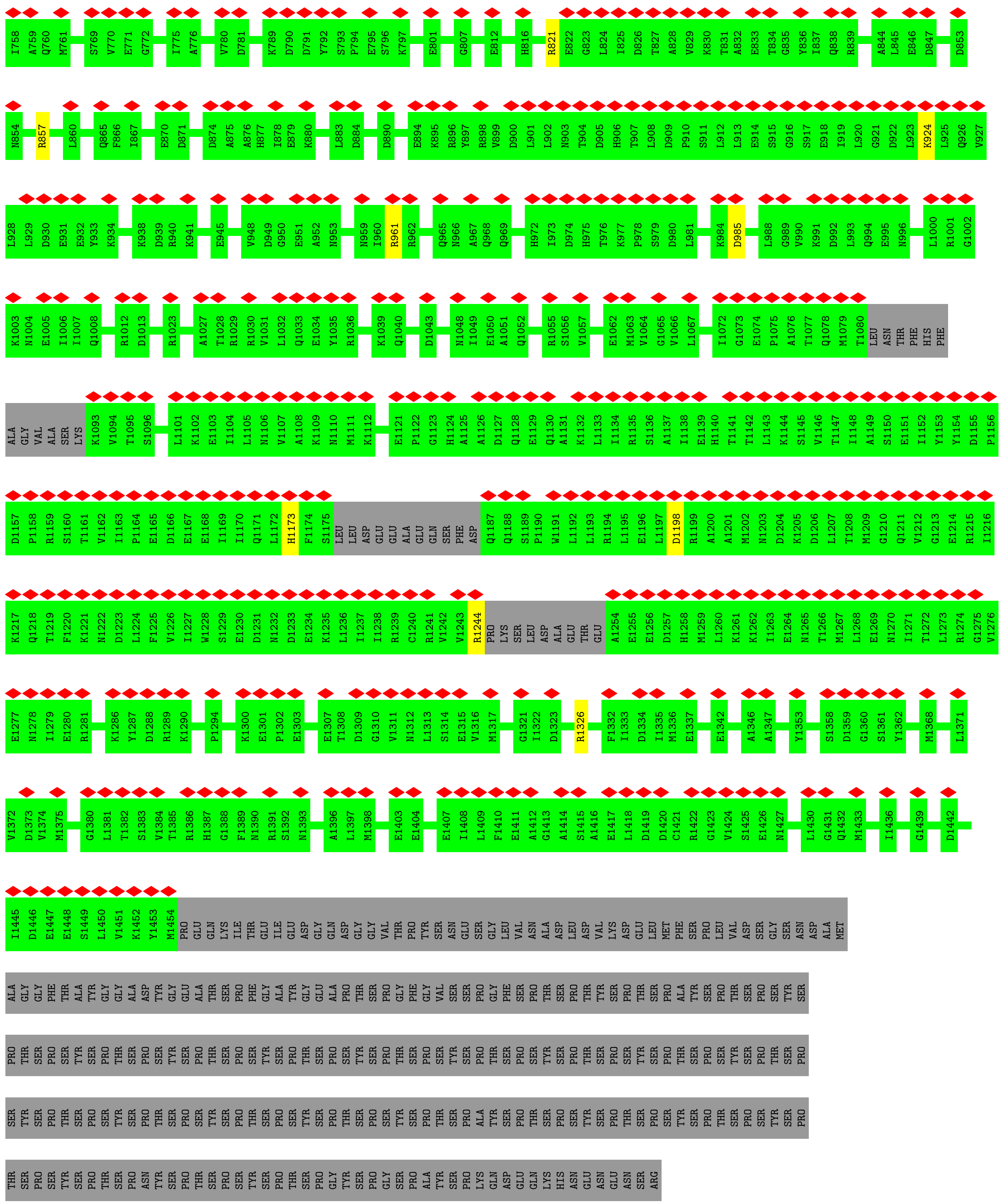
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

- Molecule 1: DNA-directed RNA polymerase II subunit RPB1

Chain A:

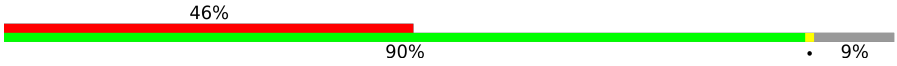


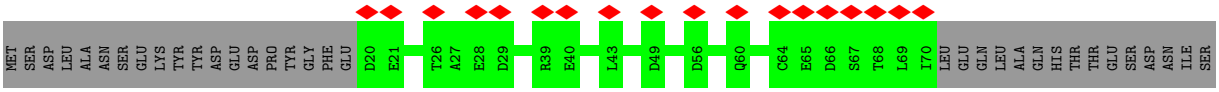


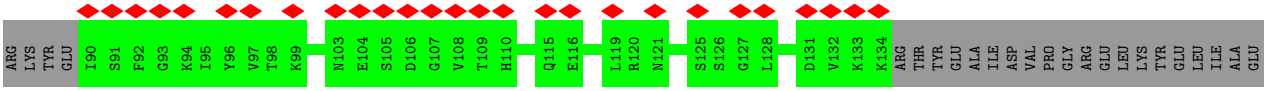


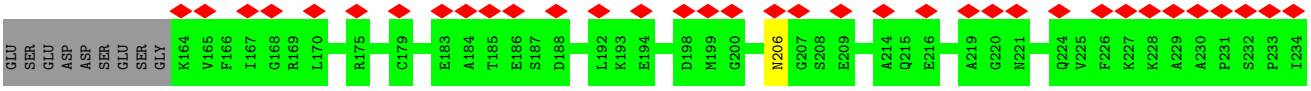
• Molecule 2: DNA-directed RNA polymerase II subunit RPB2

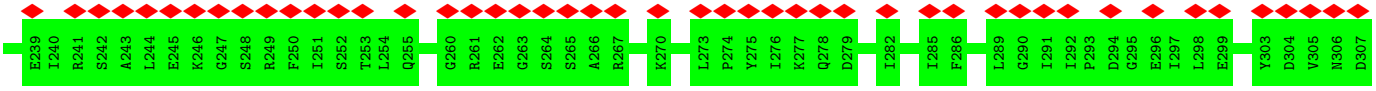
Chain B:

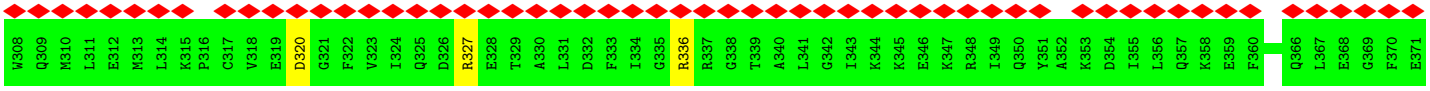

46%
90%
9%

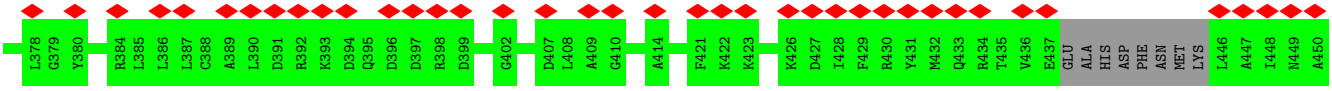

MET SER ASP LEU ALA ASN SER GLU LYS TYR TYR ASP GLU ASP PRO TYR GLY PHE GLU D20 E21 T26 A27 E28 D29 R39 E40 L43 D49 D56 Q60 C64 E65 D66 S67 T68 L69 I70 LEU GLU GLN LEU ALA GLN HIS THR THR GLU SER ASP ASN ILE SER

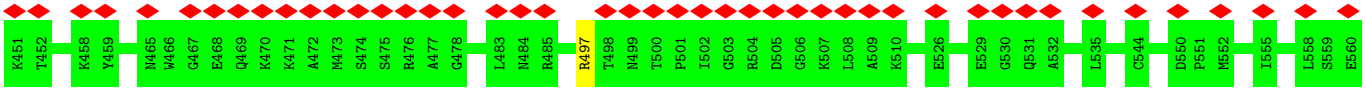

ARG LYS TYR GLU I90 S91 F92 G93 K94 I95 Y96 V97 T98 K99 N103 E104 S105 D106 G107 V108 T109 H110 Q115 E116 L119 R120 N121 S125 S126 G127 L128 D131 V132 K133 K134 ARG THR TYR GLU ALA ILE ASP VAL PRO GLY ARG GLU LEU LYS TYR GLU LEU ILE ALA GLU


GLU SER GLU ASP ASP SER GLU SER GLY K164 V165 F166 I167 G168 R169 L170 R175 C179 E183 A184 T185 E186 S187 D188 L192 K193 E194 D198 M199 G200 N206 G207 S208 E209 A214 Q215 E216 A219 G220 N221 Q224 V225 F226 K227 K228 A229 A230 P231 S232 P233 I234


E239 I240 R241 S242 A243 L244 E245 K246 G247 S248 R249 F250 I251 S252 T253 L254 Q255 G260 R261 E262 G263 S264 S265 A266 R267 K270 L273 P274 Y275 I276 K277 Q278 D279 I282 I285 F286 L289 G290 I291 I292 P293 D294 G295 E296 I297 L298 E299 Y303 D304 V305 N306 D307


W308 Q309 H310 L311 E312 M313 L314 K315 P316 C317 V318 E319 D320 G321 F322 V323 I324 Q325 D326 R327 E328 T329 A330 L331 D332 F333 I334 G335 R336 R337 G338 T339 A340 L341 G342 I343 K344 K345 E346 K347 R348 I349 Q350 Y351 A352 K353 D354 I355 L356 Q357 K358 E359 F360 Q366 L367 E368 G369 F370 E371


L378 G379 Y380 R384 L385 L386 L387 C388 A389 L390 D391 R392 K393 D394 Q395 D396 D397 R398 D399 G402 D407 L408 A409 G410 A414 F421 K422 K423 K426 D427 I428 F429 R430 Y431 M432 Q433 R434 T435 V436 E437 GLU ALA HIS ASP PHE ASN MET LYS L446 A447 I448 N449 A450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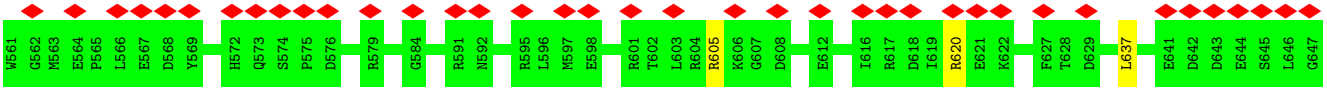
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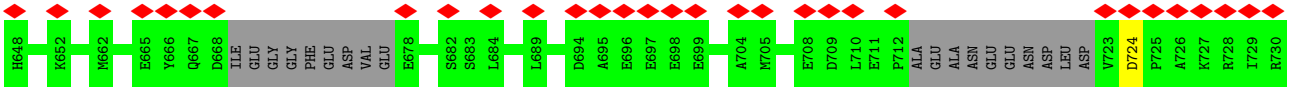
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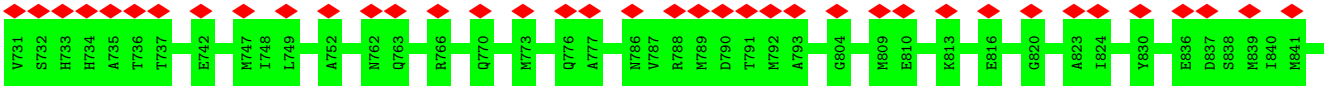
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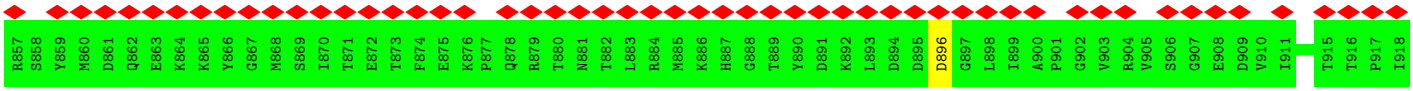
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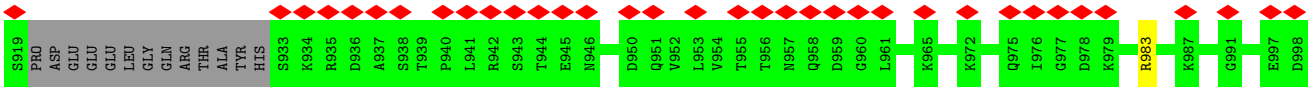
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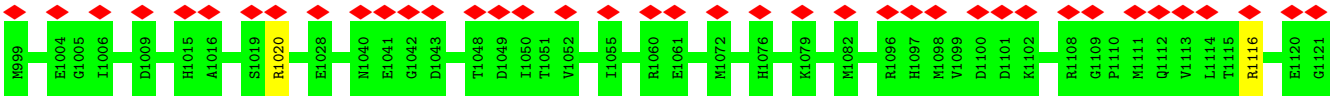
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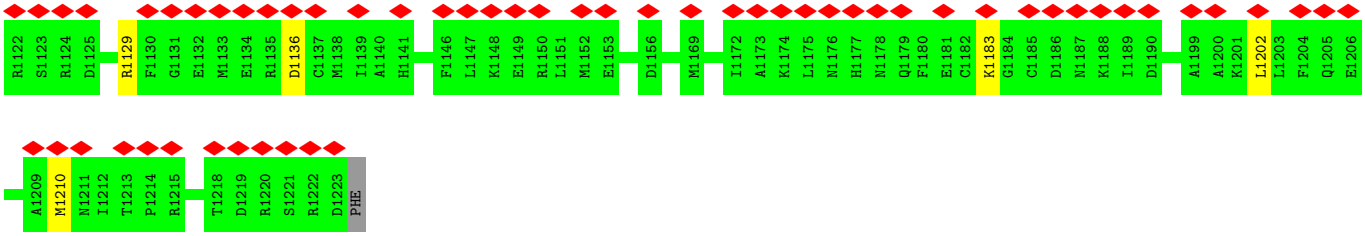
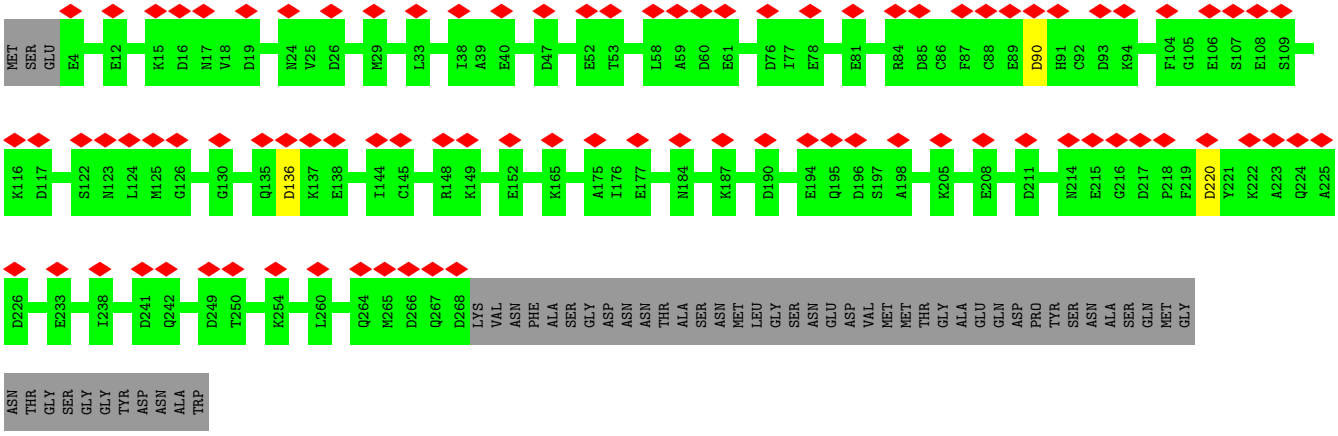


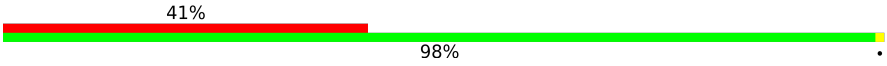
• Molecule 3: DNA-directed RNA polymerase II subunit RPB3

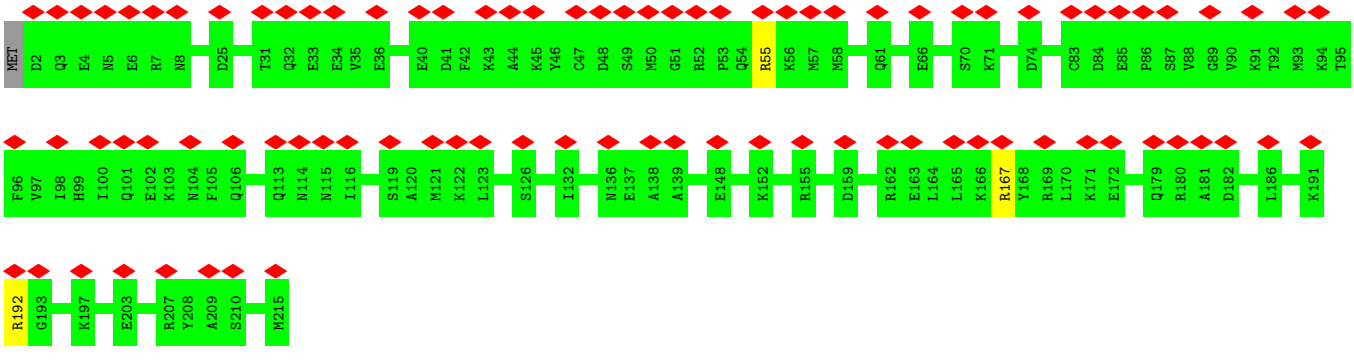
Chain C:



• Molecule 4: DNA-directed RNA polymerases I, II, and III subunit RPABC1

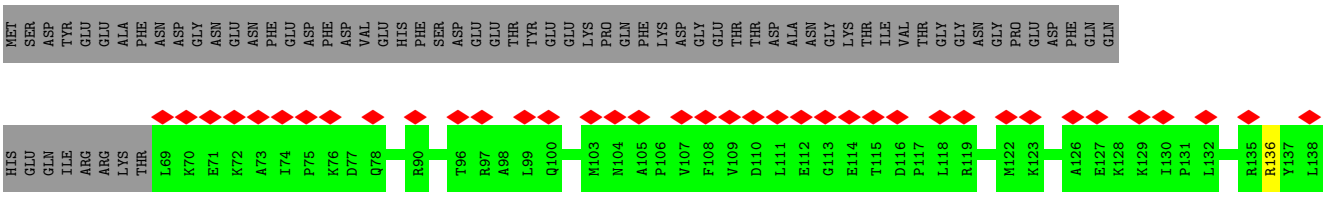
Chain E:

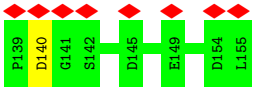




• Molecule 5: DNA-directed RNA polymerases I, II, and III subunit RPABC2

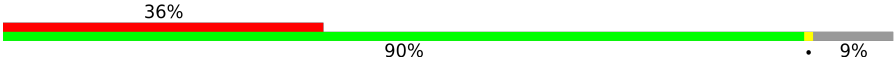
Chain F:

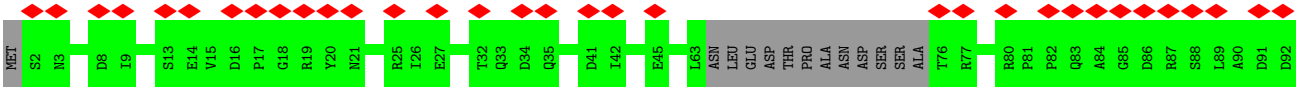


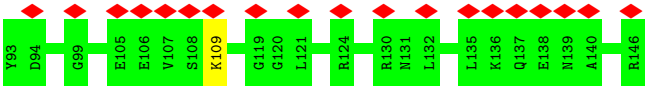


• Molecule 6: DNA-directed RNA polymerases I, II, and III subunit RPABC3

Chain H:

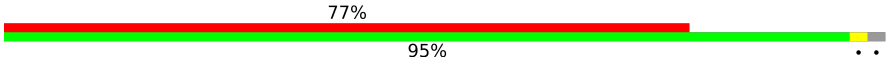


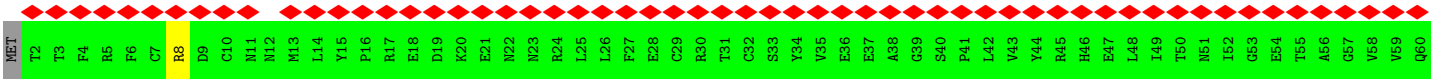


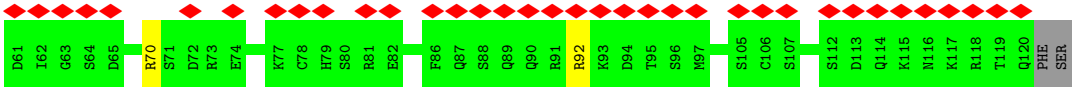


• Molecule 7: DNA-directed RNA polymerase II subunit RPB9

Chain I:

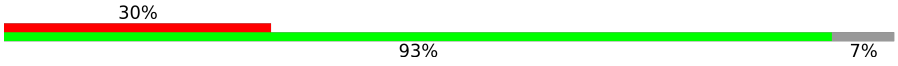


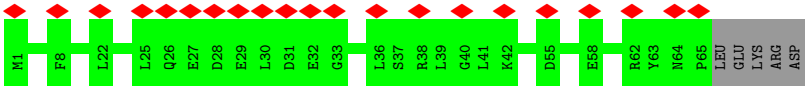




• Molecule 8: DNA-directed RNA polymerases I, II, and III subunit RPABC5

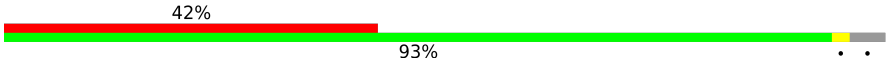
Chain J:

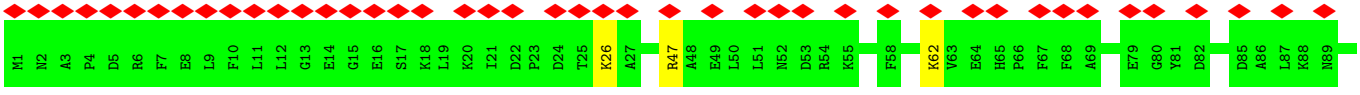


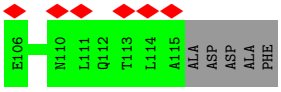


• Molecule 9: DNA-directed RNA polymerase II subunit RPB11

Chain K:



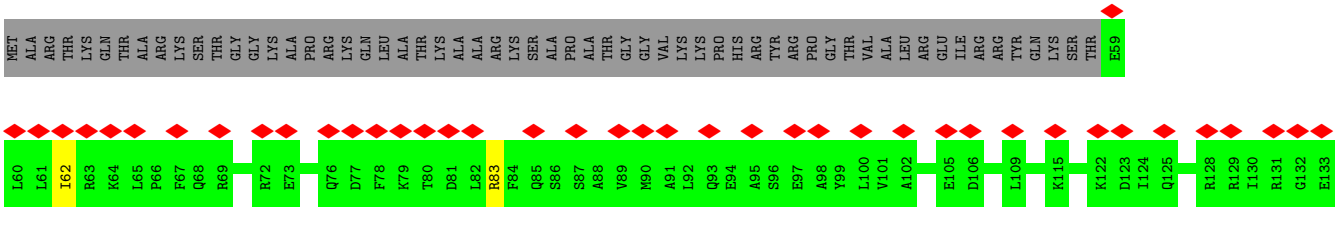




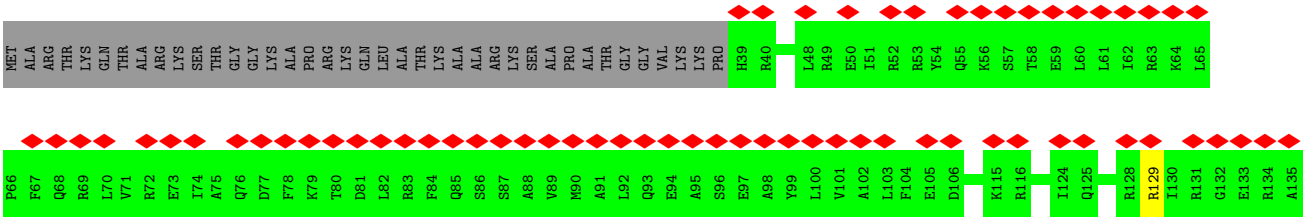
• Molecule 10: DNA-directed RNA polymerases I, II, and III subunit RPABC4

Chain L:

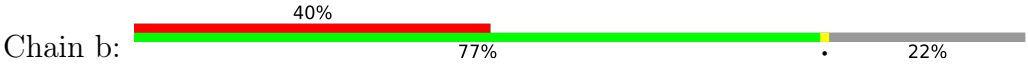
• Molecule 11: Histone H3.2

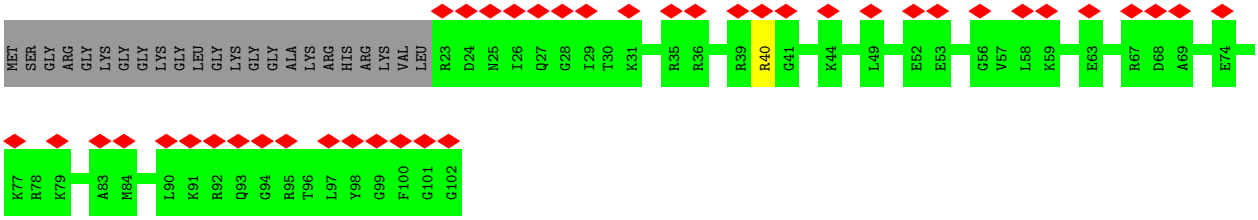


• Molecule 11: Histone H3.2

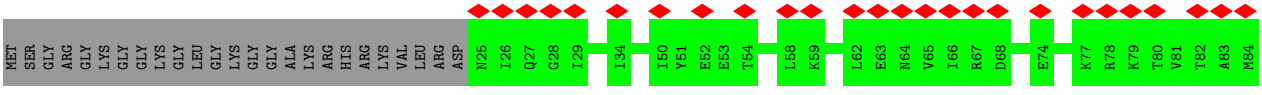


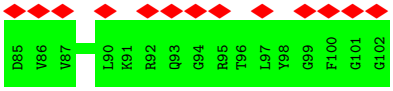
• Molecule 12: Histone H4





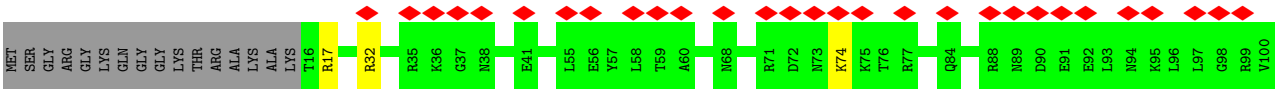
• Molecule 12: Histone H4

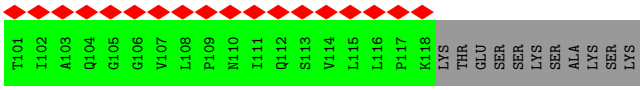




• Molecule 13: Histone H2A type 1

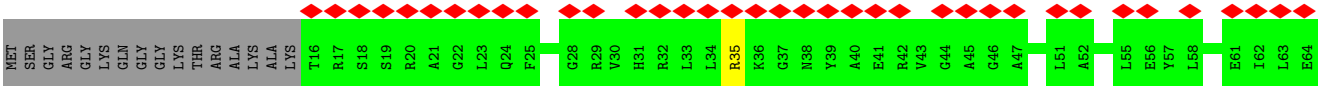
Chain c:

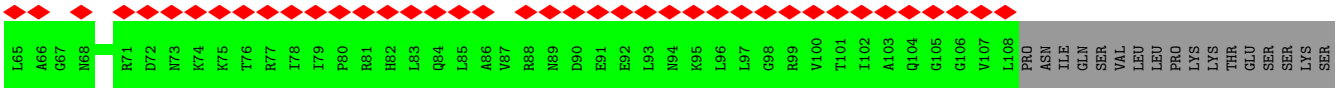




• Molecule 13: Histone H2A type 1

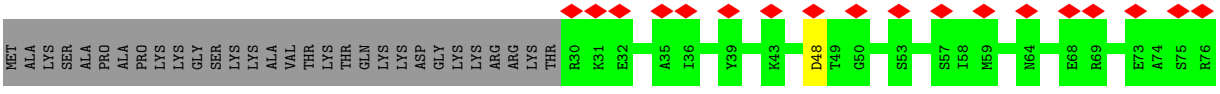
Chain g:

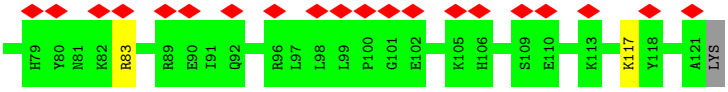




• Molecule 14: Histone H2B 1.1

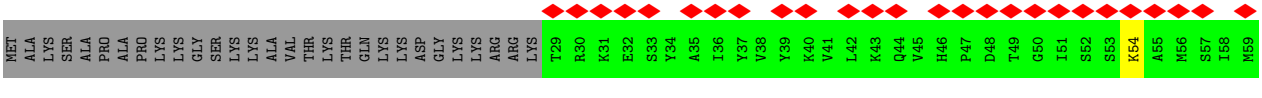
Chain d:

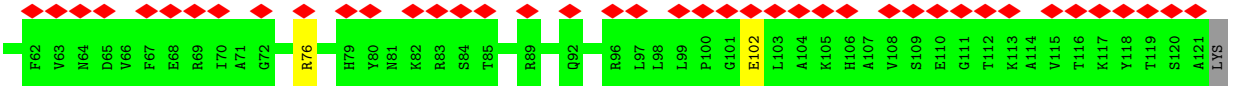




• Molecule 14: Histone H2B 1.1

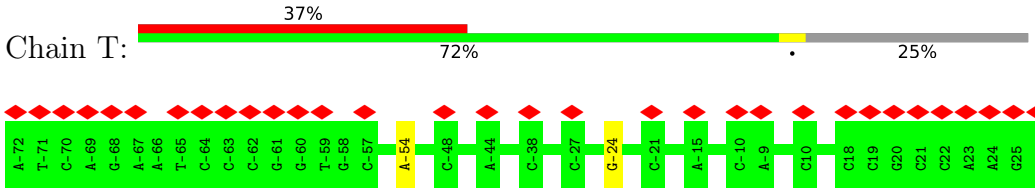
Chain h:

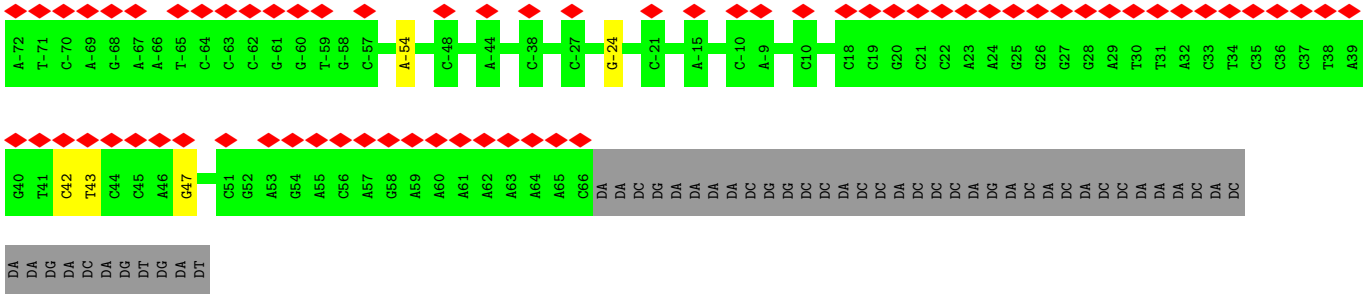




• Molecule 15: DNA (139-MER)

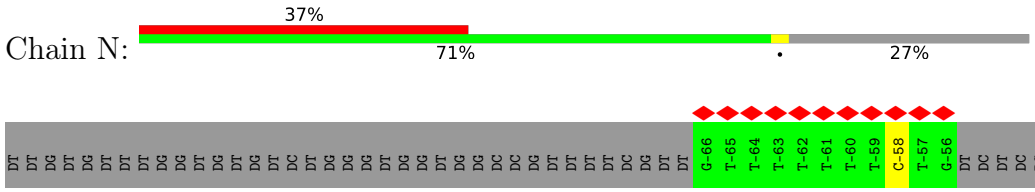
Chain T:

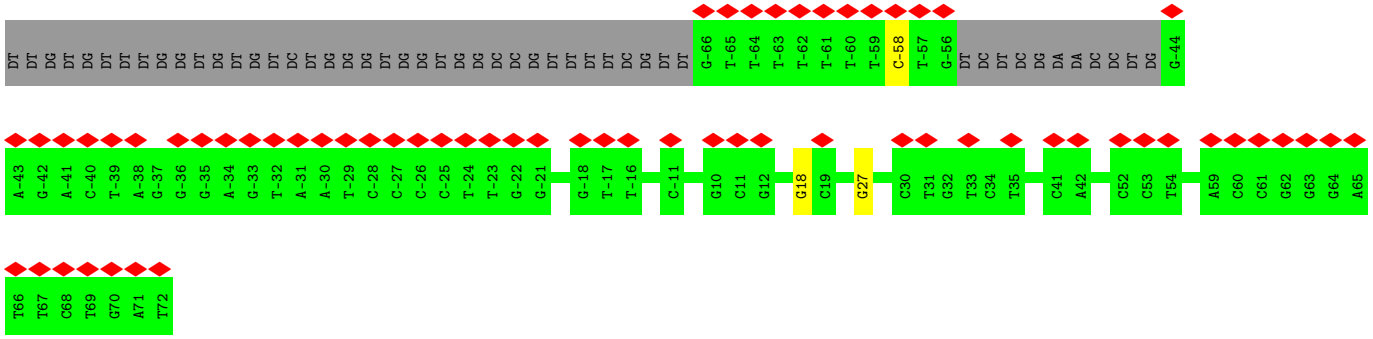




• Molecule 16: DNA (128-MER)

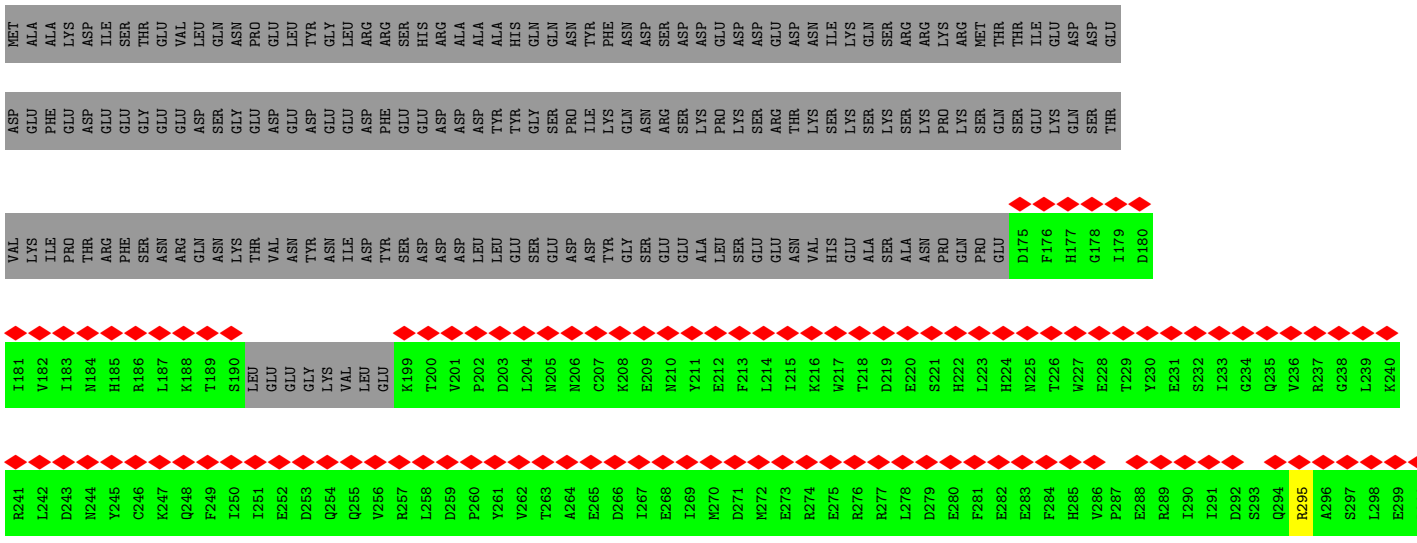
Chain N:

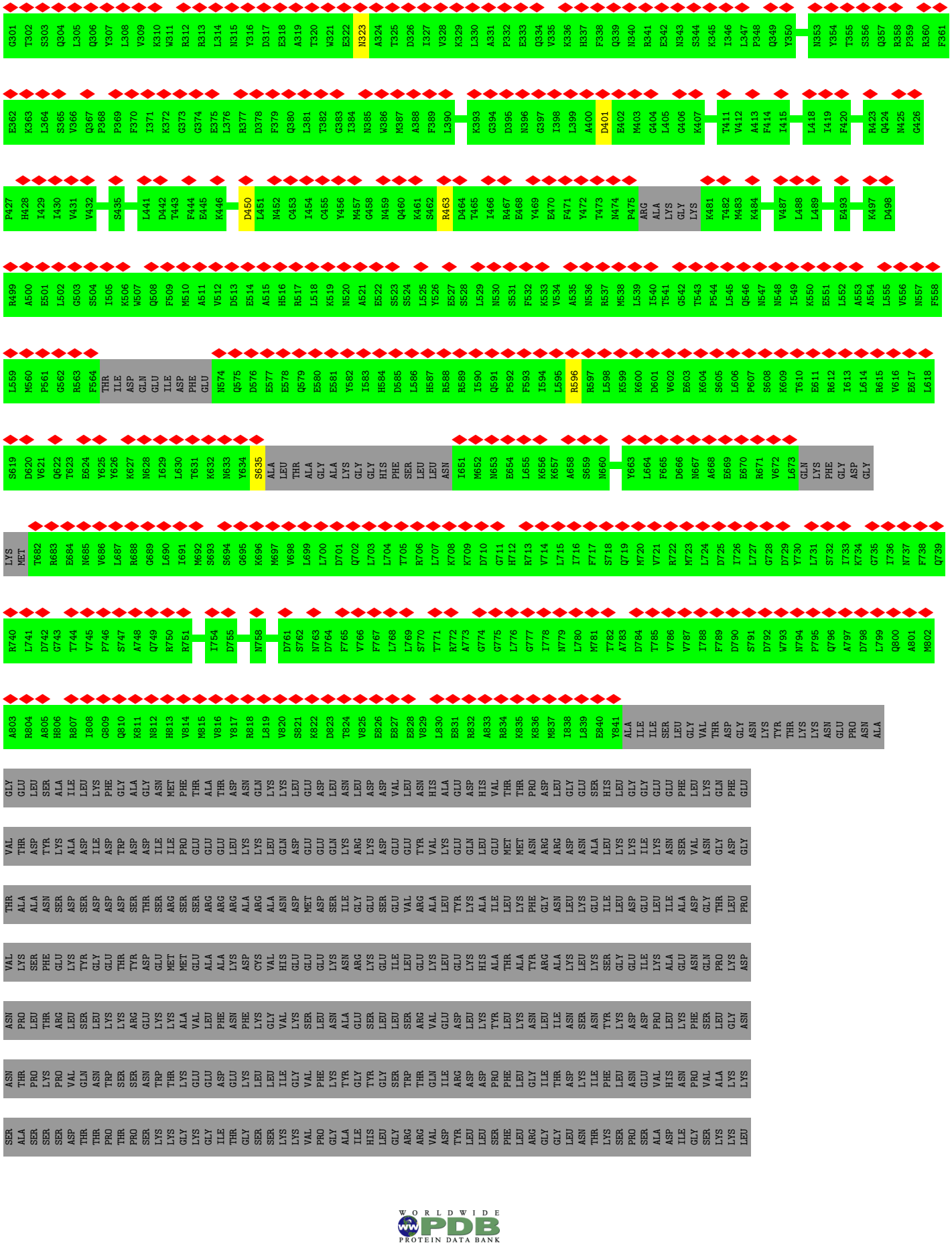




• Molecule 17: Chromo domain-containing protein 1

Chain W:

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S619 D620 V621 Q622 T623 E624 Y625 Y626 K627 N628 I629 L630 T631 K632 N633 Y634 S635 ALA LEU THR ALA GLY ALA LYS GLY GLY HIS PHE SER LEU LEU ASN I651 M652 N653 E654 L655 K656 K657 A658 S659 N660 Y663 L664 F665 D666 N667 A668 E669 E670 R671 V672 L673 GLN LYS PHE GLY ASP GLY
LYS MET T682 R683 E684 N685 V686 L687 R688 G689 L690 I691 M692 S693 S694 G695 K696 M697 V698 L699 L700 D701 Q702 L703 L704 T705 R706 L707 K708 K709 D710 G711 H712 R713 Y714 L715 I716 F717 S718 Q719 M720 V721 R722 M723 L724 D725 I726 L727 G728 D729 Y730 L731 S732 I733 K734 G735 I736 N737 F738 Q739
R740 L741 D742 G743 T744 V745 P746 S747 A748 Q749 R750 R751 I754 D755 M758 D761 S762 N763 D764 F765 V766 F767 L768 L769 S770 T771 R772 A773 G774 G775 L776 G777 I778 N779 L780 M781 T782 A783 D784 T785 V786 V787 I788 F789 D790 S791 D792 W793 N794 P795 Q796 A797 D798 L799 Q800 A801 M802
A803 R804 A805 H806 R807 I808 G809 Q810 K811 N812 H813 V814 M815 V816 Y817 R818 L819 V820 S821 K822 D823 T824 V825 E826 E827 E828 V829 L830 E831 R832 A833 R834 K835 K836 M837 I838 L839 E840 Y841 ALA ILE ILE SER LEU GLY VAL THR ASP GLY ASN LYS TYR THR LYS LYS ASN GLU PRO ASN ALA
GLY GLU LEU SER ALA ILE LEU LYS PHE GLY ALA GLY ASN MET PHE THR ALA THR ASP ASN GLN LYS LYS LEU GLU ASP ASP LEU ASN LEU ASP ASP VAL LEU LEU ASN HIS ALA GLU ASP HIS VAL THR THR PRO ASP LEU GLY GLU SER HIS LEU LEU GLY GLY GLU GLU PHE LEU LYS GLN PHE GLU
VAL THR ASP TYR LYS ALA ASP ILE ASP TRP ASP ASP ILE ILE PRO GLU GLU GLU LEU LYS LYS LEU GLN ASP GLU GLU LEU LYS ASP GLU GLU TYR VAL LYS GLU GLN LEU GLU MET MET ASN ARG ARG ASP ASN ALA LEU LYS LYS ILE LYS ASN SER VAL ASN GLY ASP GLY
THR ALA ALA ASN SER ASP SER ASP ASP SER THR SER ARG SER SER ARG ARG ARG ALA ARG ALA ASN ASP MET ASP SER ILE GLY GLU SER GLU VAL ARG ALA LEU TYR LYS ALA ILE LEU LYS PHE GLY ASN LEU LYS GLU ILE LEU ASP GLU LEU ILE ALA ASP GLY THR LEU PRO
VAL LYS SER PHE GLU LYS TYR GLY GLU THR TYR ASP GLU MET MET GLU ALA ALA LYS ASP CYS VAL HIS GLU GLU GLU LYS ASN ARG LYS GLU ILE LEU GLU LYS LEU GLU LYS HIS ALA THR ALA TYR ARG ALA LYS LEU LYS SER GLY GLU ILE LYS ALA GLU ASN GLN PRO LYS ASP
ASN PRO LEU THR ARG LEU SER LEU LYS LYS ARG GLU LYS LYS ALA VAL LEU PHE ASN PHE LYS GLY VAL LYS SER LEU ASN ALA GLU SER LEU GLU LEU SER ARG VAL GLU ASP LEU LYS TYR LEU LYS ASN LEU ILE ASN SER ASN TYR LYS ASP ASP PRO LEU LYS PHE SER LEU GLY ASN
ASN THR PRO LYS PRO VAL GLN ASN TRP SER SER ASN TRP THR LYS GLU GLU ASP GLU LYS LEU LEU ILE GLY VAL PHE PRO LYS TYR GLY TYR GLY SER ASN ARG ILE ASP PRO PHE LEU GLY ILE THR ASP LYS ILE PHE LEU ASN VAL PRO GLU ALA LYS LYS
SER ALA SER SER ASP THR THR PRO THR PRO SER LYS LYS GLY LYS GLY ILE THR GLY SER SER LYS LYS VAL PRO GLY ALA ILE HIS LEU GLY ARG ARG VAL ASP TYR LEU LEU SER PHE LEU ARG GLY GLY LEU ASN THR LYS SER PRO SER ALA ASP ILE GLY SER LYS LYS LEU

PRO THR GLY PRO SER LYS LYS ARG GLN ARG LYS PRO ALA ASN HIS SER LYS SER MET THR PRO GLU ILE THR SER SER GLU PRO ALA ASN GLY PRO PRO SER LYS ARG MET LYS ALA LEU PRO LYS GLY PRO ALA ALA LEU ILE ASN ASN THR ARG LEU SER PRO ASN SER PRO THR PRO

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

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

THR GLU SER GLN LYS LYS

- Molecule 18: RNA

Chain P: 12% | 16% | 7% | 77%

U U A U C A C U G U C U U G U G U U U G G U G U G C U G G G U G G U G G C C C G U U U U C G U U G U U U U U31 U32 U33 C34 U35 G36 U37

C38 U39 U46

- Molecule 19: Chromatin elongation factor SPT4

Chain Y: 96% | 96%

MET SER S3 E4 R5 A6 C7 M8 L9 C10 G11 I12 V13 Q14 T15 T16 N17 E18 F19 N20 R21 D22 G23 C24 P25 N26 C27 Q28 G29 I30 F31 E32 E33 A34 G35 V36 S37 T38 M39 E40 C41 T42 S43 P44 S45 F46 E47 G48 L49 V50 G51 M52 C53 K54 P55 T56 K57 S58 W59 V60

A61 K62 W63 L64 S65 V66 D67 H68 S69 I70 A71 G72 M73 Y74 A75 I76 K77 V78 D79 G80 R81 L82 P83 A84 E85 V86 V87 E88 L89 L90 P91 H92 Y93 K94 P95 R96 D97 G98 S99 Q100 VAL GLU

- Molecule 20: Transcription elongation factor SPT5

Chain Z: 15% | 15% | 85%

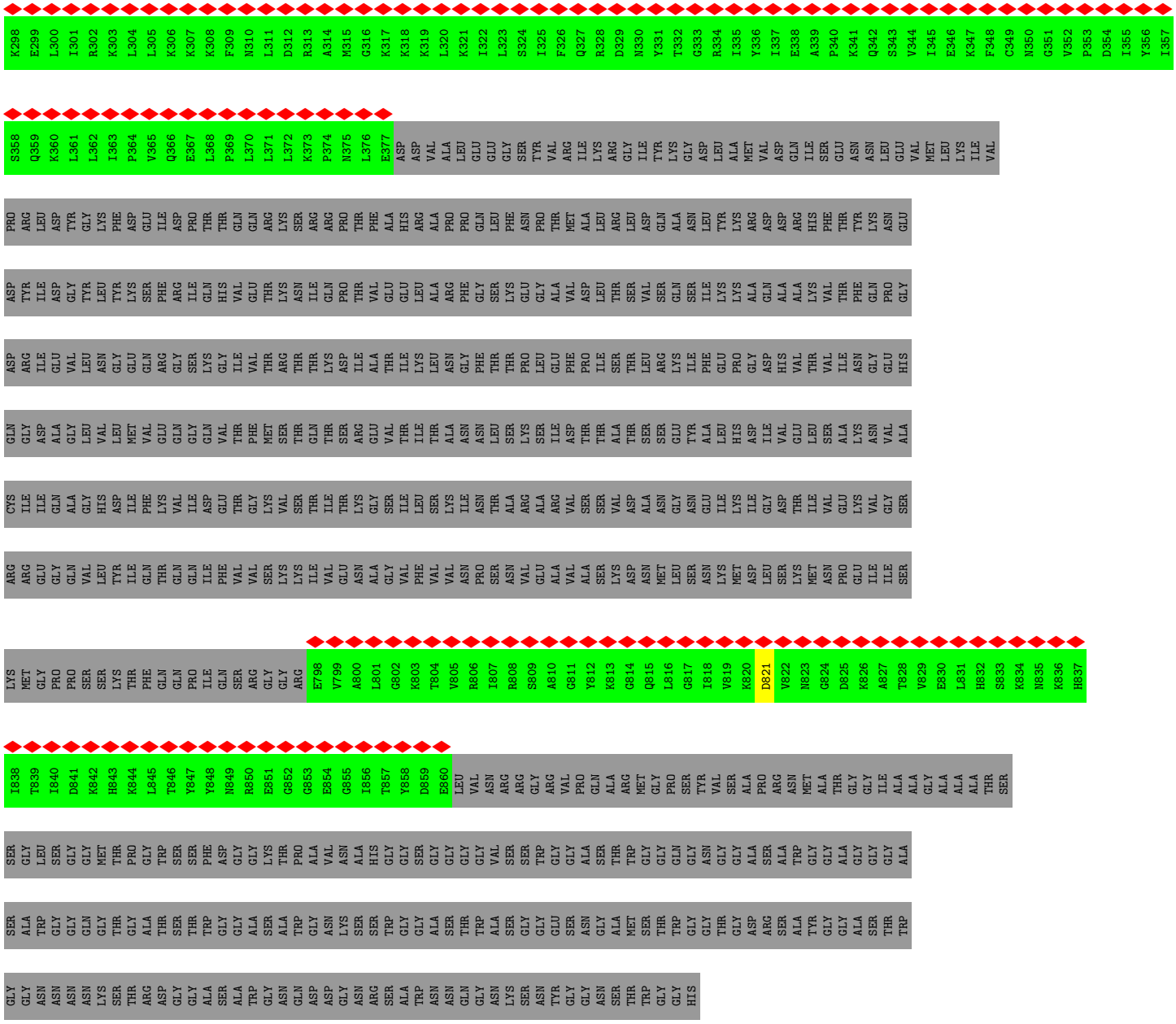
SER ASN ALA MET SER ASP ASN SER ASP THR ASN VAL SER MET GLN ASP HIS ASP GLN GLN PHE ALA ASP PRO VAL VAL VAL PRO GLN SER THR ASP THR LYS ASP GLU ASN THR SER ASP LYS ASP THR VAL ASP SER GLY ASN VAL THR THR THR GLU SER THR GLU ARG ALA GLU SER

THR SER ASN ILE PRO PRO LEU ASP GLY GLU GLU LYS GLU ALA LYS SER GLU PRO GLN GLN PRO GLU ASP ASN ALA GLU THR ALA ALA THR GLU GLN VAL SER SER ASN GLY PRO ALA THR ASP ASP ALA GLN ALA THR LEU ASN THR ASP SER SER GLU ALA ASN GLU ILE VAL LYS

LYS GLU GLU GLY SER ASP GLU ARG LYS ARG PRO ARG GLU GLU ASP THR LYS ASN SER ASP GLY ASP THR LYS ASP GLU GLY ASP ASN LYS ASP GLU ASP ASP ASP GLU ASP ASP ASP ASP ASP ASP ASP ASP GLU ASP ASP ASP GLU ALA PRO THR LYS ARG ARG ARG GLN GLU ARG

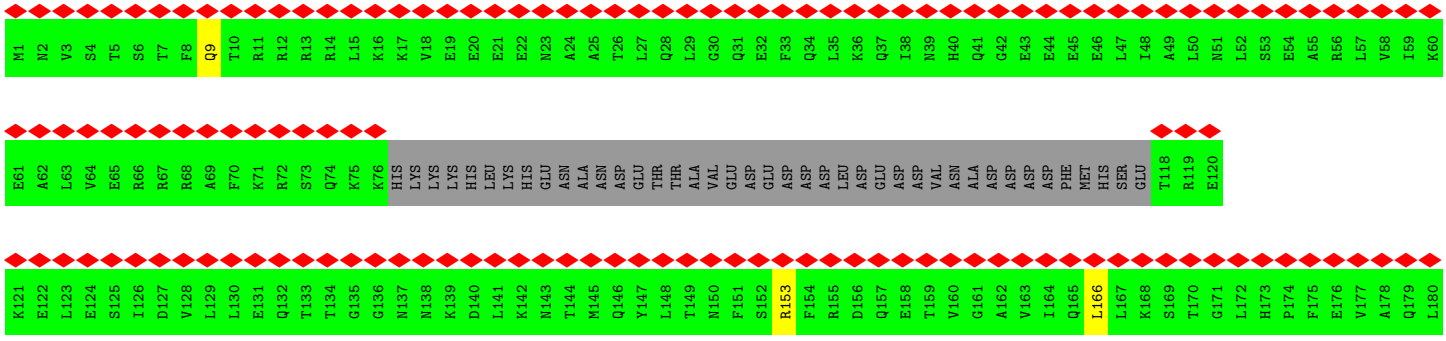
ASN ARG PHE LEU ASP ILE GLU ALA GLU VAL SER ASP ASP GLU ASP GLU ASP GLU ASP GLU GLU ASP SER GLU LEU VAL ARG GLU GLY PHE ILE THR HIS GLY ASP ASP GLU ASP ASP GLU ALA SER ALA PRO GLY ALA ARG ARG ASP ASP ARG LEU HIS ARG GLN LEU ASP GLN ASP LEU

ASN LYS THR SER GLU GLU ASP ALA GLN ARG LEU ALA LYS GLU LEU ARG GLU ARG TYR GLY ARG SER SER SER LYS GLN TYR ARG ALA ALA ALA GLN ASP GLY TYR VAL PRO GLN ARG PHE LEU LEU PRO SER VAL ASP THR A285 T286 I287 W288 G289 V290 R291 C292 R293 P294 G295 K296 E297



• Molecule 21: DNA-directed RNA polymerase II subunit RPB4

Chain D:



G181 S182 L183 A184 C185 D186 T187 A188 D189 E190 A191 K192 T193 L194 I195 P196 S197 L198 N199 N200 K201 I202 S203 D204 D205 E206 L207 E208 R209 I210 L211 K212 E213 L214 S215 N216 L217 E218 T219 L220 Y221

• Molecule 22: DNA-directed RNA polymerase II subunit RPB7

Chain G: 100% 98%

M1 F2 F3 I4 K5 D6 L7 S8 L9 N10 I11 T12 L13 H14 P15 S16 F17 F18 G19 P20 R21 M22 K23 Q24 Y25 L26 K27 T28 K29 L30 L31 E32 E33 V34 E35 G36 S37 C38 T39 G40 K41 F42 G43 Y44 I45 L46 C47 V48 L49 D50 Y51 D52 N53 I54 D55 I56 Q57 R58 G59 R60

I61 L62 P63 T64 D65 G66 S67 A68 E69 F70 N71 V72 K73 Y74 R75 A76 V77 V78 F79 G80 P81 F82 K83 G84 E85 V86 V87 D88 G89 T90 V91 V92 S93 C94 S95 Q96 H97 G98 F99 E100 V101 Q102 V103 G104 P105 M106 K107 V108 F109 V110 T111 K112 H113 L114 M115 P116 Q117 D118 L119 T120

F121 N122 A123 G124 S125 N126 P127 P128 S129 Y130 Q131 S132 S133 E134 D135 V136 I137 T138 I139 K140 S141 R142 I143 R144 V145 K146 I147 E148 G149 C150 I151 S152 Q153 V154 S155 S156 I157 H158 A159 I160 G161 S162 I163 K164 E165 D166 Y167 L168 G169 A170 I171

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	30876	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 ($e^-/Å^2$)	39	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.072	Depositor
Minimum map value	-0.023	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.02	Depositor
Map size (Å)	419.99997, 419.99997, 419.99997	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.05, 1.05, 1.05	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: ZN, MG, ADP, BEF

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	0.39	1/11284 (0.0%)	0.73	11/15258 (0.1%)
2	B	0.40	0/9037	0.74	13/12184 (0.1%)
3	C	0.40	0/2124	0.70	2/2879 (0.1%)
4	E	0.40	0/1788	0.74	4/2406 (0.2%)
5	F	0.48	0/717	0.84	2/967 (0.2%)
6	H	0.44	0/1086	0.73	0/1470
7	I	0.41	0/989	0.80	2/1331 (0.2%)
8	J	0.44	0/541	0.70	0/727
9	K	0.46	0/938	0.84	3/1267 (0.2%)
10	L	0.44	0/353	0.89	0/468
11	a	0.39	0/627	0.83	2/841 (0.2%)
11	e	0.43	0/812	0.85	2/1088 (0.2%)
12	b	0.39	0/645	0.85	1/862 (0.1%)
12	f	0.40	0/626	0.76	0/837
13	c	0.44	0/805	0.82	1/1088 (0.1%)
13	g	0.42	0/726	0.78	1/979 (0.1%)
14	d	0.41	0/730	0.83	2/983 (0.2%)
14	h	0.40	0/737	0.77	1/993 (0.1%)
15	T	0.89	1/3179 (0.0%)	1.04	6/4900 (0.1%)
16	N	0.88	0/2961	1.03	5/4571 (0.1%)
17	W	0.37	0/5230	0.71	3/7057 (0.0%)
18	P	0.54	0/365	0.95	0/564
19	Y	0.33	0/755	0.64	0/1021
20	Z	0.38	0/1271	0.73	1/1702 (0.1%)
21	D	0.37	0/1454	0.76	1/1949 (0.1%)
22	G	0.44	0/1368	0.95	2/1844 (0.1%)
All	All	0.49	2/51148 (0.0%)	0.80	65/70236 (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
3	C	0	1
11	a	0	1
13	c	0	1
14	h	0	1
All	All	0	4

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
15	T	-24	DG	C3'-O3'	5.94	1.51	1.44
1	A	551	TYR	CD2-CE2	-5.40	1.31	1.39

All (65) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	1129	ARG	NE-CZ-NH2	-8.28	116.16	120.30
16	N	27	DG	O4'-C1'-N9	7.63	113.34	108.00
14	d	83	ARG	NE-CZ-NH2	-7.44	116.58	120.30
11	a	83	ARG	NE-CZ-NH1	7.33	123.96	120.30
4	E	167	ARG	CG-CD-NE	-7.21	96.67	111.80
17	W	401	ASP	CB-CG-OD2	6.80	124.42	118.30
4	E	167	ARG	NE-CZ-NH2	-6.74	116.93	120.30
15	T	-24	DG	P-O3'-C3'	6.71	127.75	119.70
1	A	362	ASP	CB-CG-OD1	6.63	124.27	118.30
5	F	136	ARG	NE-CZ-NH2	-6.55	117.02	120.30
15	T	42	DC	O4'-C1'-N1	6.53	112.57	108.00
1	A	538	ASP	CB-CG-OD1	6.52	124.17	118.30
3	C	136	ASP	CB-CG-OD1	6.50	124.15	118.30
16	N	-58	DC	O4'-C1'-N1	6.45	112.51	108.00
5	F	140	ASP	CB-CG-OD2	6.41	124.07	118.30
20	Z	821	ASP	CB-CG-OD2	6.34	124.01	118.30
16	N	18	DG	O5'-P-OP2	-6.25	100.08	105.70
11	a	83	ARG	NE-CZ-NH2	-6.25	117.18	120.30
15	T	47	DG	C4'-C3'-C2'	-6.18	97.54	103.10
1	A	526	ASP	CB-CG-OD1	6.08	123.77	118.30
2	B	1210	MET	CA-CB-CG	6.04	123.57	113.30
1	A	857	ARG	CG-CD-NE	6.04	124.49	111.80
22	G	60	ARG	CA-CB-CG	5.97	126.54	113.40
1	A	985	ASP	CB-CG-OD1	5.96	123.67	118.30
14	d	48	ASP	CB-CG-OD2	5.87	123.58	118.30
2	B	1136	ASP	CB-CG-OD2	5.82	123.54	118.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
17	W	450	ASP	CB-CG-OD2	5.80	123.52	118.30
12	b	40	ARG	NE-CZ-NH2	-5.79	117.41	120.30
2	B	497	ARG	NE-CZ-NH1	5.75	123.17	120.30
9	K	47	ARG	NE-CZ-NH1	5.68	123.14	120.30
7	I	92	ARG	NE-CZ-NH1	5.67	123.13	120.30
9	K	62	LYS	CD-CE-NZ	-5.63	98.75	111.70
1	A	551	TYR	CB-CG-CD2	-5.62	117.63	121.00
16	N	27	DG	C1'-O4'-C4'	-5.61	104.49	110.10
16	N	18	DG	O4'-C4'-C3'	-5.59	102.26	104.50
2	B	320	ASP	CB-CG-OD1	5.57	123.31	118.30
11	e	129	ARG	NE-CZ-NH1	5.56	123.08	120.30
13	g	35	ARG	NE-CZ-NH1	5.55	123.07	120.30
7	I	70	ARG	NE-CZ-NH1	5.54	123.07	120.30
2	B	327	ARG	NE-CZ-NH1	5.53	123.07	120.30
22	G	165	GLU	CB-CA-C	5.53	121.45	110.40
2	B	983	ARG	NE-CZ-NH1	5.51	123.05	120.30
4	E	55	ARG	NE-CZ-NH1	5.50	123.05	120.30
15	T	-24	DG	O4'-C1'-N9	5.44	111.81	108.00
1	A	961	ARG	NE-CZ-NH1	5.43	123.01	120.30
1	A	857	ARG	NE-CZ-NH2	5.40	123.00	120.30
2	B	1116	ARG	NE-CZ-NH1	5.34	122.97	120.30
3	C	220	ASP	CB-CG-OD2	5.33	123.10	118.30
15	T	-54	DA	O4'-C1'-N9	-5.32	104.28	108.00
2	B	1202	LEU	CA-CB-CG	5.25	127.38	115.30
2	B	620	ARG	NE-CZ-NH2	-5.24	117.68	120.30
17	W	596	ARG	NE-CZ-NH1	5.21	122.90	120.30
4	E	192	ARG	NE-CZ-NH1	5.20	122.90	120.30
2	B	896	ASP	CB-CG-OD2	5.20	122.98	118.30
2	B	724	ASP	CB-CG-OD1	5.19	122.97	118.30
14	h	76	ARG	NE-CZ-NH1	5.12	122.86	120.30
13	c	32	ARG	CA-CB-CG	5.09	124.61	113.40
11	e	129	ARG	CG-CD-NE	5.08	122.48	111.80
1	A	821	ARG	NE-CZ-NH1	5.06	122.83	120.30
21	D	166	LEU	CB-CG-CD1	5.05	119.58	111.00
9	K	26	LYS	CA-CB-CG	5.04	124.48	113.40
2	B	637	LEU	CA-CB-CG	5.03	126.88	115.30
1	A	1326	ARG	NE-CZ-NH1	5.03	122.81	120.30
1	A	1198	ASP	CB-CG-OD2	5.01	122.81	118.30
15	T	43	DT	N3-C4-O4	5.00	122.90	119.90

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
3	C	90	ASP	Peptide
11	a	62	ILE	Peptide
13	c	74	LYS	Peptide
14	h	102	GLU	Peptide

5.2 Too-close contacts (i)

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

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	1399/1733 (81%)	1315 (94%)	84 (6%)	0	100	100
2	B	1102/1224 (90%)	1047 (95%)	55 (5%)	0	100	100
3	C	263/318 (83%)	242 (92%)	21 (8%)	0	100	100
4	E	212/215 (99%)	207 (98%)	5 (2%)	0	100	100
5	F	85/155 (55%)	79 (93%)	6 (7%)	0	100	100
6	H	129/146 (88%)	115 (89%)	14 (11%)	0	100	100
7	I	117/122 (96%)	106 (91%)	11 (9%)	0	100	100
8	J	63/70 (90%)	59 (94%)	4 (6%)	0	100	100
9	K	113/120 (94%)	109 (96%)	4 (4%)	0	100	100
10	L	42/70 (60%)	40 (95%)	2 (5%)	0	100	100
11	a	74/136 (54%)	71 (96%)	3 (4%)	0	100	100
11	e	95/136 (70%)	92 (97%)	3 (3%)	0	100	100
12	b	78/103 (76%)	77 (99%)	1 (1%)	0	100	100
12	f	76/103 (74%)	74 (97%)	2 (3%)	0	100	100
13	c	101/130 (78%)	93 (92%)	8 (8%)	0	100	100
13	g	91/130 (70%)	89 (98%)	2 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
14	d	90/123 (73%)	87 (97%)	3 (3%)	0	100	100
14	h	91/123 (74%)	88 (97%)	3 (3%)	0	100	100
17	W	610/1468 (42%)	584 (96%)	26 (4%)	0	100	100
19	Y	96/102 (94%)	91 (95%)	5 (5%)	0	100	100
20	Z	152/1066 (14%)	142 (93%)	10 (7%)	0	100	100
21	D	176/221 (80%)	159 (90%)	17 (10%)	0	100	100
22	G	169/171 (99%)	159 (94%)	10 (6%)	0	100	100
All	All	5424/8185 (66%)	5125 (94%)	299 (6%)	0	100	100

There are no Ramachandran outliers to report.

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	1232/1520 (81%)	1226 (100%)	6 (0%)	88	96
2	B	967/1061 (91%)	962 (100%)	5 (0%)	88	96
3	C	233/274 (85%)	233 (100%)	0	100	100
4	E	196/197 (100%)	196 (100%)	0	100	100
5	F	77/137 (56%)	77 (100%)	0	100	100
6	H	117/128 (91%)	116 (99%)	1 (1%)	78	93
7	I	113/116 (97%)	112 (99%)	1 (1%)	78	93
8	J	60/65 (92%)	60 (100%)	0	100	100
9	K	99/102 (97%)	99 (100%)	0	100	100
10	L	39/57 (68%)	39 (100%)	0	100	100
11	a	66/111 (60%)	66 (100%)	0	100	100
11	e	84/111 (76%)	84 (100%)	0	100	100
12	b	65/79 (82%)	65 (100%)	0	100	100
12	f	63/79 (80%)	63 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
13	c	82/102 (80%)	81 (99%)	1 (1%)	71 91
13	g	72/102 (71%)	72 (100%)	0	100 100
14	d	78/103 (76%)	77 (99%)	1 (1%)	69 90
14	h	79/103 (77%)	78 (99%)	1 (1%)	69 90
17	W	567/1313 (43%)	563 (99%)	4 (1%)	84 95
19	Y	82/87 (94%)	82 (100%)	0	100 100
20	Z	136/878 (16%)	136 (100%)	0	100 100
21	D	161/200 (80%)	159 (99%)	2 (1%)	71 91
22	G	152/152 (100%)	151 (99%)	1 (1%)	84 95
All	All	4820/7077 (68%)	4797 (100%)	23 (0%)	89 96

All (23) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	317	LYS
1	A	420	ARG
1	A	660	ASN
1	A	924	LYS
1	A	1173	HIS
1	A	1244	ARG
2	B	206	ASN
2	B	336	ARG
2	B	605	ARG
2	B	1020	ARG
2	B	1183	LYS
6	H	109	LYS
7	I	8	ARG
13	c	17	ARG
14	d	117	LYS
14	h	54	LYS
17	W	295	ARG
17	W	323	ASN
17	W	463	ARG
17	W	635	SER
21	D	9	GLN
21	D	153	ARG
22	G	164	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14)

such sidechains are listed below:

Mol	Chain	Res	Type
1	A	515	GLN
1	A	660	ASN
1	A	767	GLN
1	A	768	GLN
2	B	763	GLN
2	B	767	ASN
2	B	1195	HIS
3	C	188	HIS
6	H	137	GLN
14	d	60	ASN
17	W	385	ASN
17	W	579	GLN
21	D	31	GLN
21	D	150	ASN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
18	P	15/69 (21%)	4 (26%)	2 (13%)

All (4) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
18	P	35	U
18	P	36	G
18	P	37	U
18	P	39	U

All (2) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
18	P	36	G
18	P	38	C

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 11 ligands modelled in this entry, 9 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	$\#\|Z\| > 2$
26	BEF	W	1502	17	0,3,3	-	-	-		
25	ADP	W	1501	-	24,29,29	0.92	1 (4%)	29,45,45	1.51	5 (17%)

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
25	ADP	W	1501	-	-	3/12/32/32	0/3/3/3

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
25	W	1501	ADP	C5-C4	2.22	1.46	1.40

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
25	W	1501	ADP	N3-C2-N1	-3.79	122.76	128.68
25	W	1501	ADP	C3'-C2'-C1'	3.32	105.98	100.98
25	W	1501	ADP	PA-O3A-PB	-2.99	122.57	132.83
25	W	1501	ADP	O5'-C5'-C4'	2.62	118.01	108.99
25	W	1501	ADP	C4-C5-N7	-2.40	106.90	109.40

There are no chirality outliers.

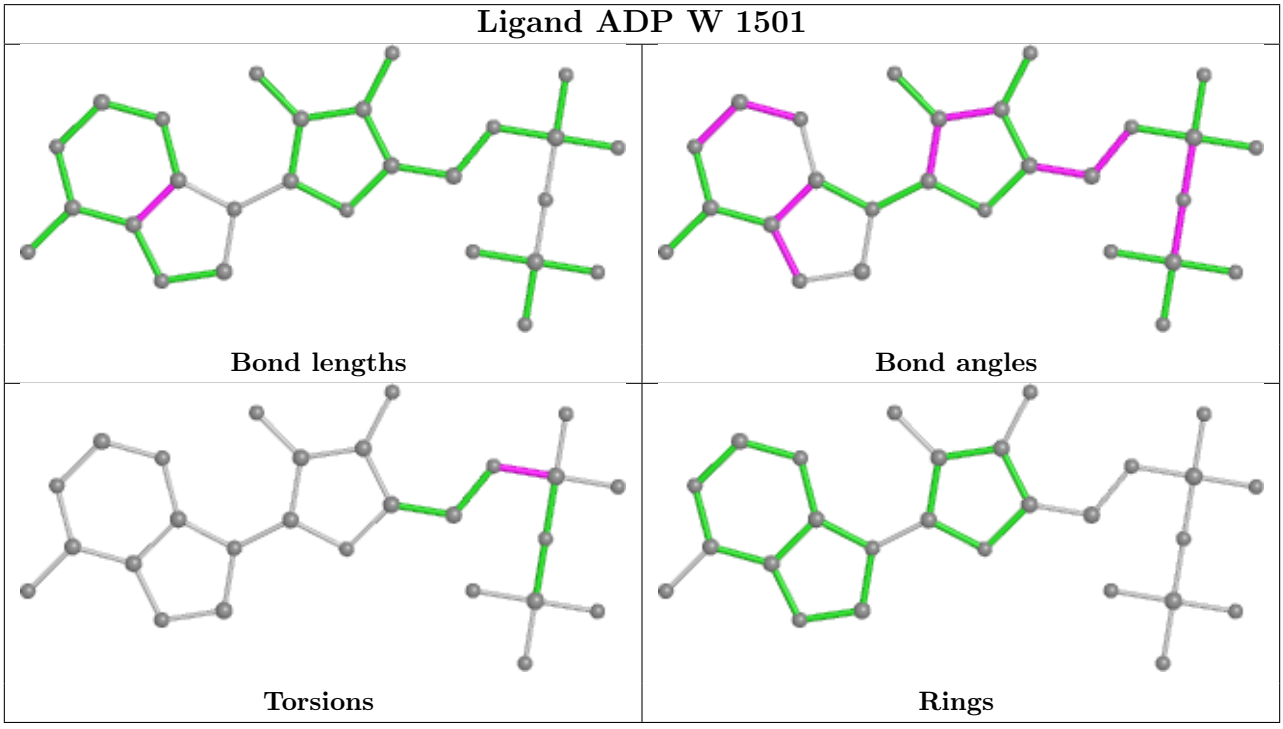
All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
25	W	1501	ADP	C5'-O5'-PA-O1A
25	W	1501	ADP	C5'-O5'-PA-O2A
25	W	1501	ADP	C5'-O5'-PA-O3A

There are no ring outliers.

No monomer is involved in short contacts.

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



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

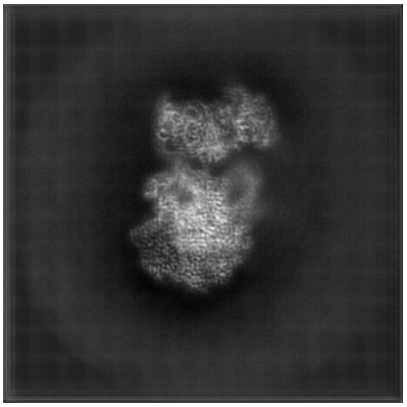
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-12449. These allow visual inspection of the internal detail of the map and identification of artifacts.

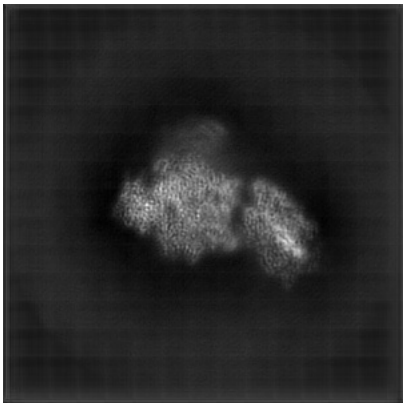
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

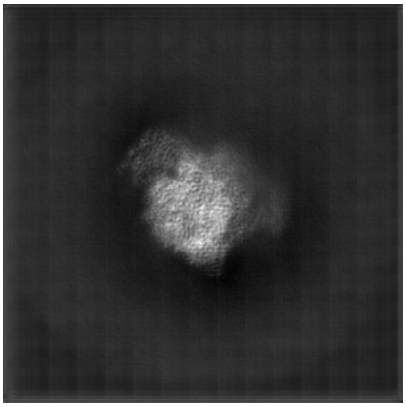
6.1.1 Primary map



X



Y



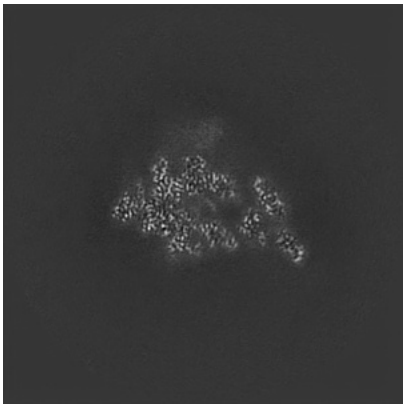
Z

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

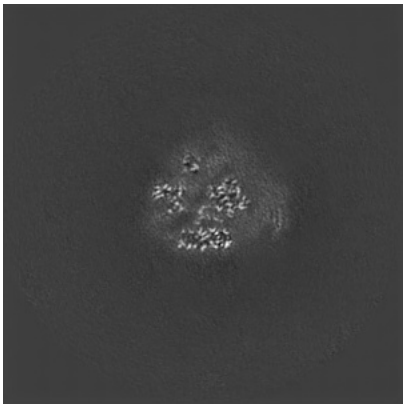
6.2 Central slices

6.2.1 Primary map

X Index: 200



Y Index: 200

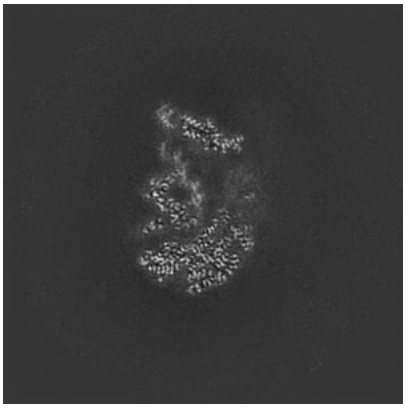


Z Index: 200

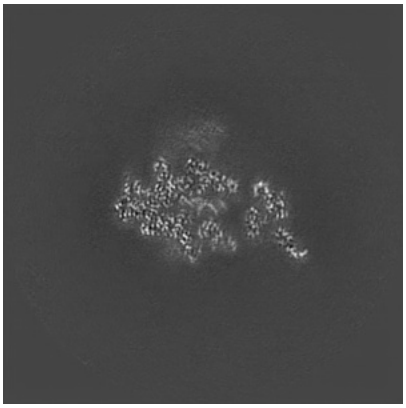
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

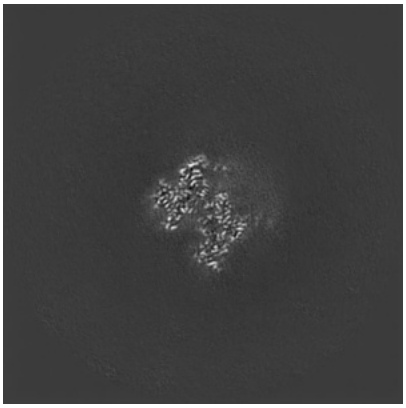
6.3.1 Primary map



X Index: 198



Y Index: 195



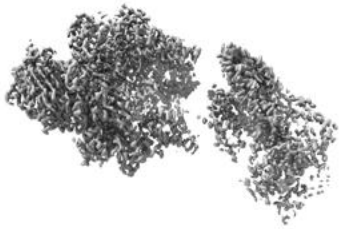
Z Index: 176

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

6.4 Orthogonal surface views (i)

6.4.1 Primary map

X



Y

Z

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

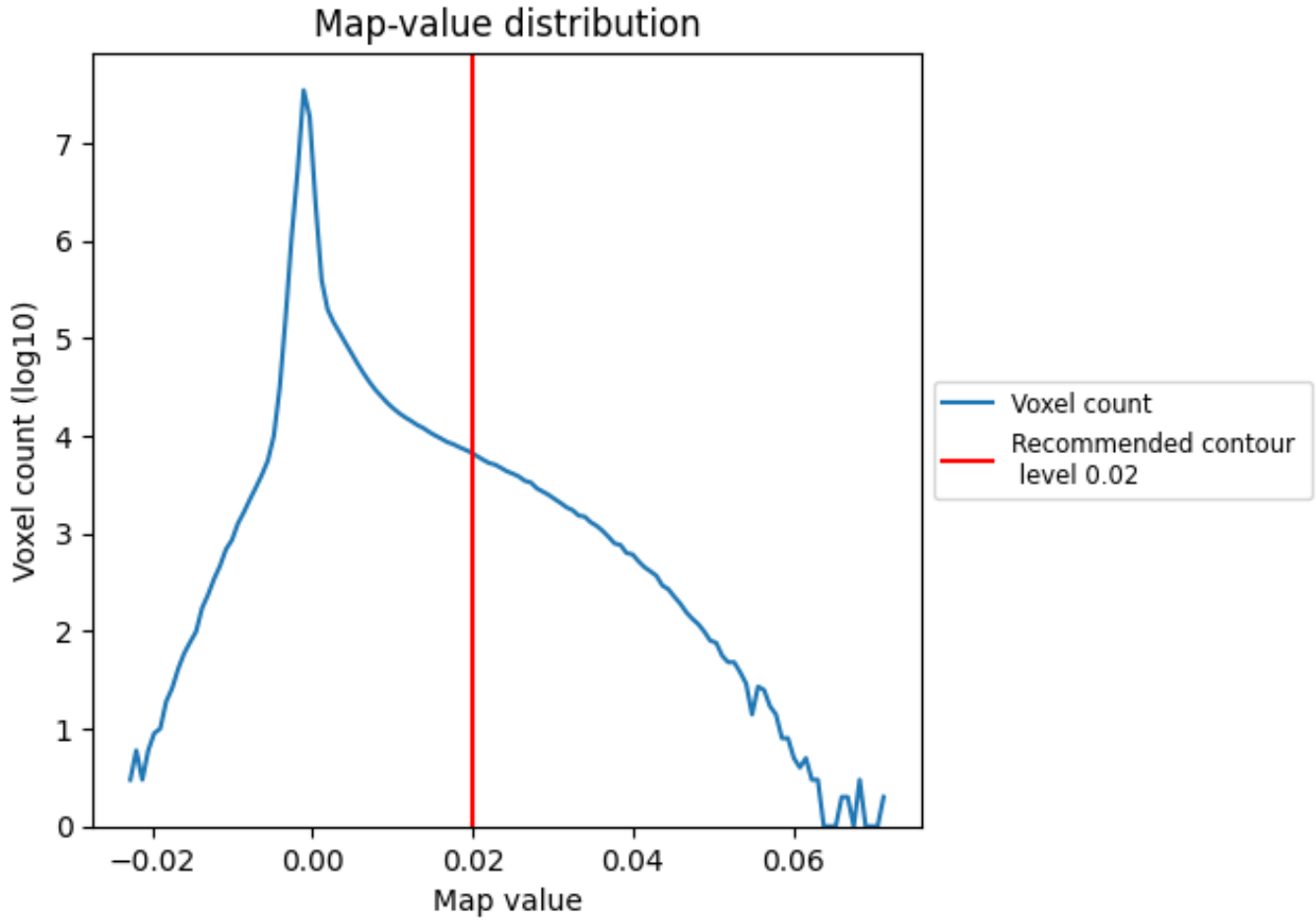
6.5 Mask visualisation (i)

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

7 Map analysis

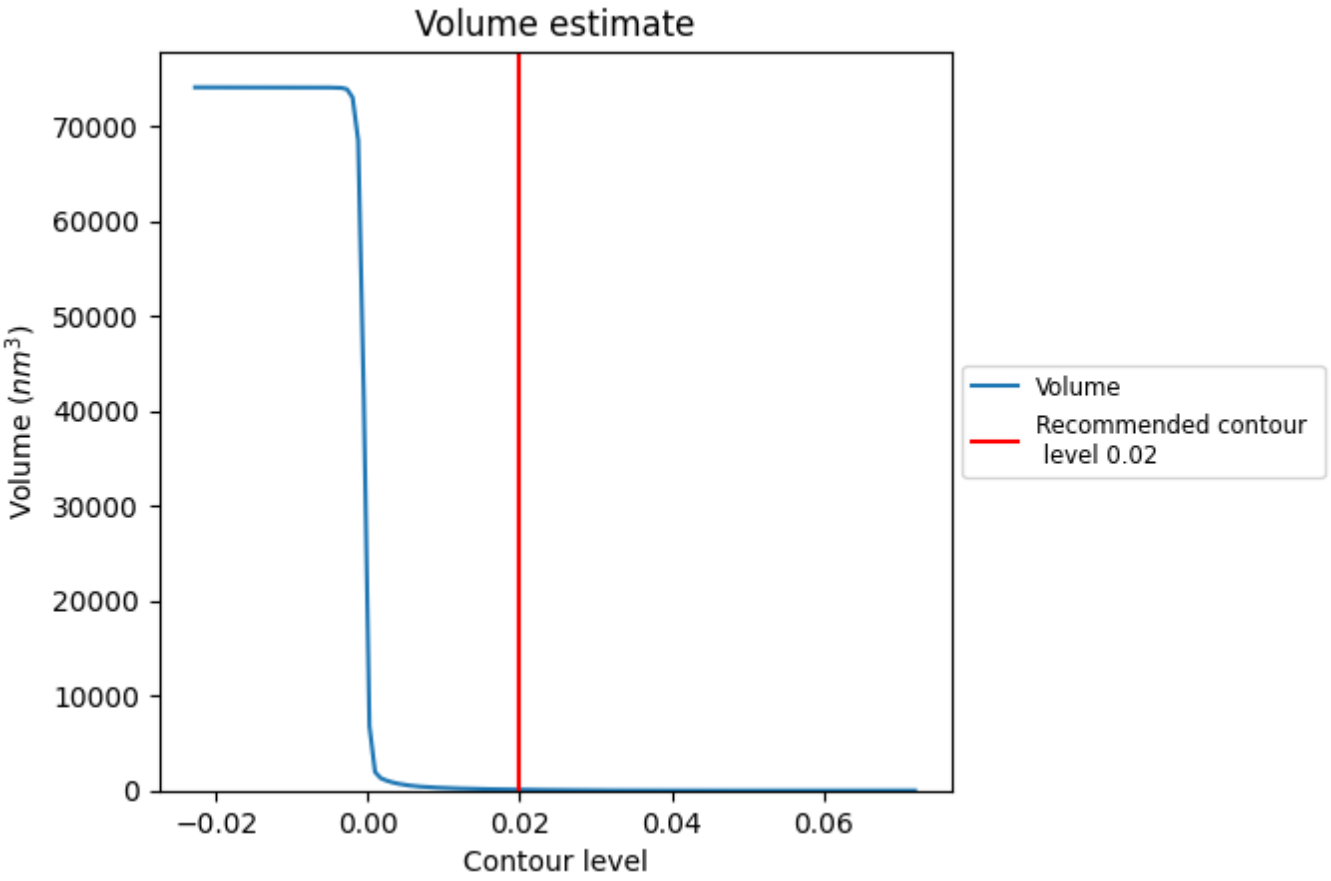
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

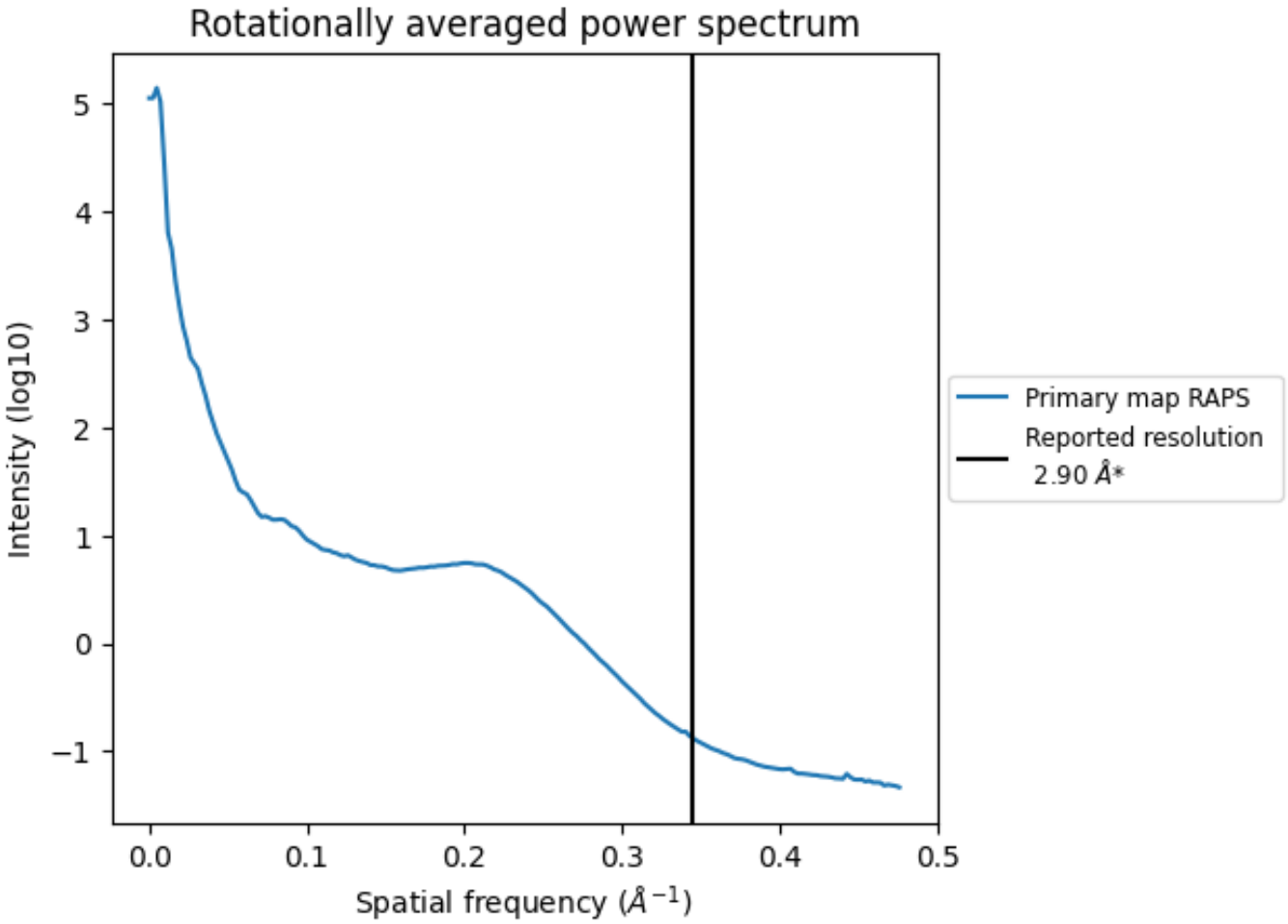
7.2 Volume estimate (i)



The volume at the recommended contour level is 94 nm^3; this corresponds to an approximate mass of 85 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 0.345 $Å^{-1}$

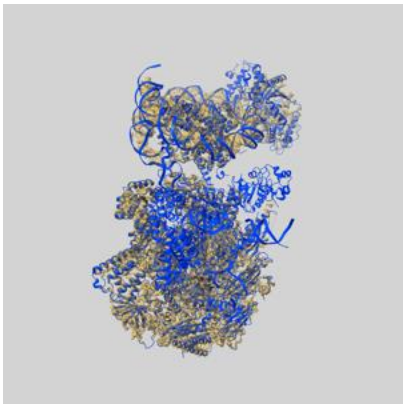
8 Fourier-Shell correlation (i)

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

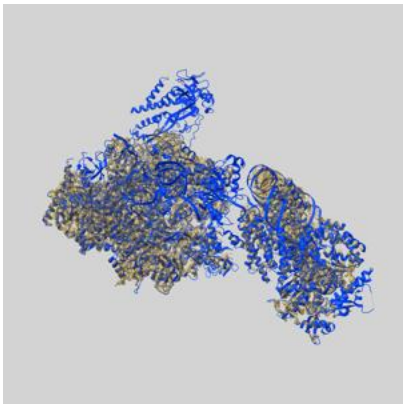
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-12449 and PDB model 7NKX. Per-residue inclusion information can be found in section 3 on page 10.

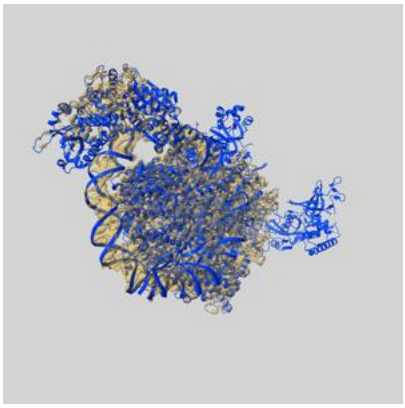
9.1 Map-model overlay



X



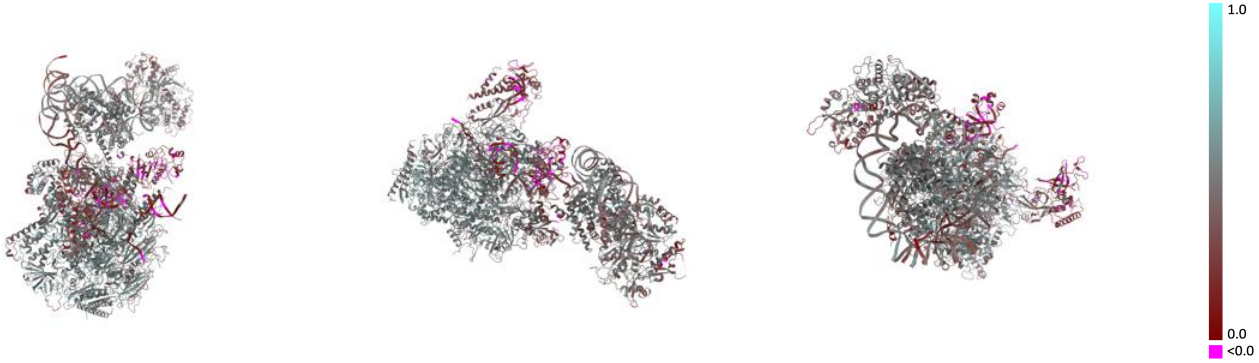
Y



Z

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

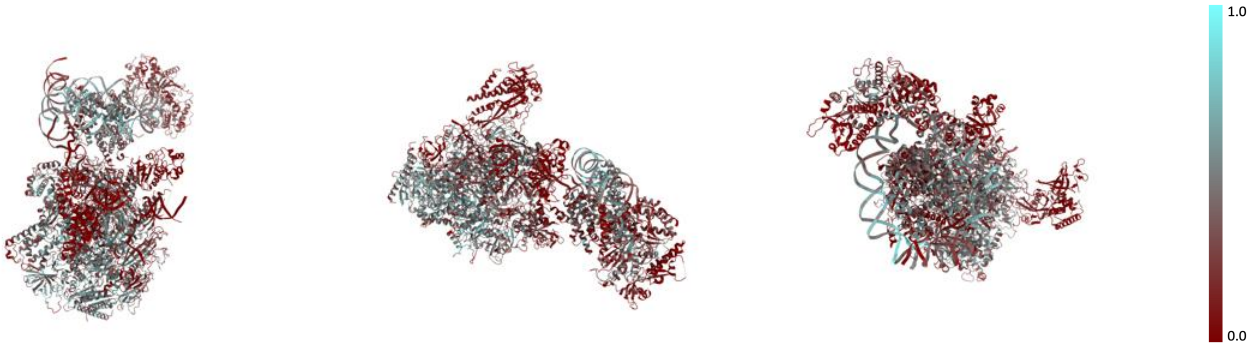
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

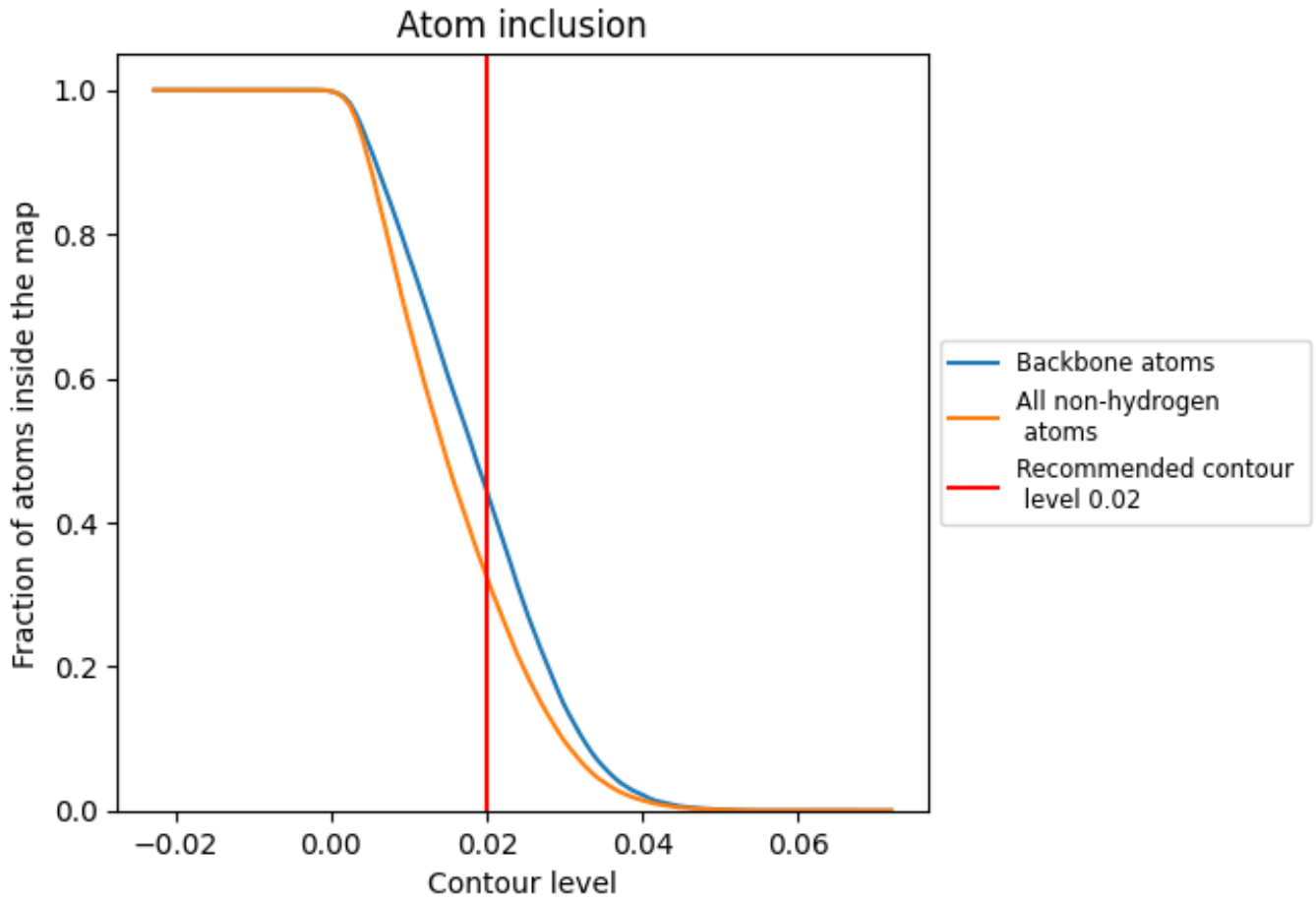
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.02).

9.4 Atom inclusion (i)



At the recommended contour level, 44% of all backbone atoms, 32% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

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

Chain	Atom inclusion	Q-score
All	0.3243	0.4440
A	0.3644	0.4840
B	0.3895	0.5010
C	0.4920	0.5190
D	0.0000	0.2480
E	0.4529	0.4830
F	0.3916	0.4980
G	0.0030	0.2450
H	0.4635	0.4980
I	0.1934	0.3710
J	0.5513	0.5330
K	0.4146	0.5120
L	0.2743	0.4640
N	0.3917	0.3710
P	0.3182	0.3410
T	0.3878	0.3770
W	0.1681	0.4200
Y	0.0000	0.1590
Z	0.0008	0.2830
a	0.3661	0.4880
b	0.3971	0.5000
c	0.4130	0.4830
d	0.4330	0.4630
e	0.3117	0.4710
f	0.4118	0.4980
g	0.1890	0.4410
h	0.2779	0.4460