Full wwPDB EM Validation Report

Aug 7, 2023 – 03:08 PM EDT

PDB ID	:	5VHS
EMDB ID	:	EMD-8684
Title	:	Conformational Landscape of the p28-Bound Human Proteasome Regulatory Particle
Authors	:	Lu, Y.; Wu, J.; Dong, Y.; Chen, S.; Sun, S.; Ma, Y.B.; Ouyang, Q.; Finley, D.; Kirschner, M.W.; Mao, Y.
Deposited on	:	2017-04-13
Resolution	:	8.80 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 (i) 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 (i)) were used in the production of this report:

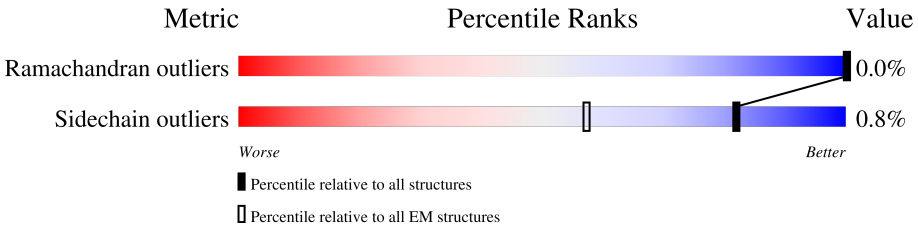
EMDB validation analysis	:	0.0.1.dev50
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35

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 8.80 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.



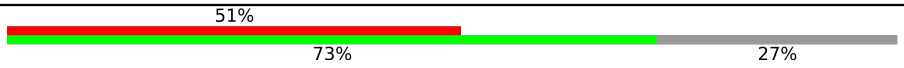
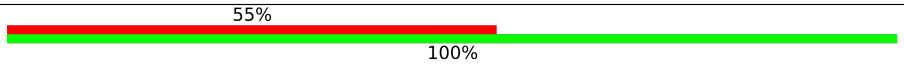
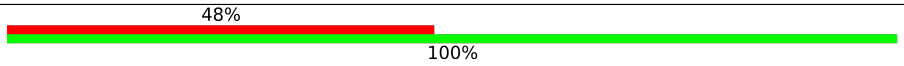
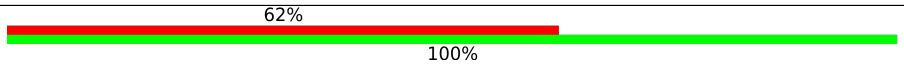
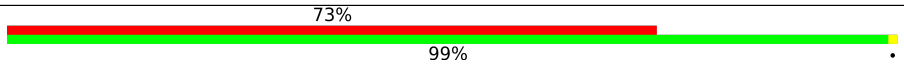
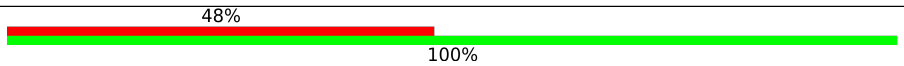
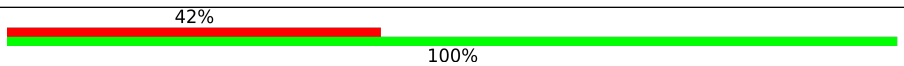
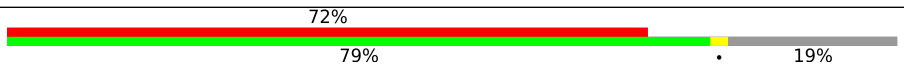
Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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	352	73% 95%
2	B	341	74% 92% 7%
3	C	385	76% 90% 9%
4	D	368	73% 89% 10%
5	E	379	70% 82% 17%
6	F	380	71% 88% 11%
7	U	935	48% 80% 20%
8	V	488	32% 54% 46%
9	W	456	49% 85% 14%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
10	X	385	
11	Y	378	
12	Z	286	
13	a	374	
14	b	191	
15	c	287	
16	d	257	
17	e	33	
18	f	784	

2 Entry composition

There are 19 unique types of molecules in this entry. The entry contains 47840 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 26S proteasome regulatory subunit 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	338	2665	1682	470	496	17	0	0

- Molecule 2 is a protein called 26S proteasome regulatory subunit 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	317	2476	1557	421	487	11	0	0

- Molecule 3 is a protein called 26S proteasome regulatory subunit 8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	349	2752	1724	502	512	14	0	0

- Molecule 4 is a protein called 26S proteasome regulatory subunit 6B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D	332	2649	1677	466	497	9	0	0

- Molecule 5 is a protein called 26S proteasome regulatory subunit 10B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	E	313	2493	1566	448	464	15	0	0

- Molecule 6 is a protein called 26S proteasome regulatory subunit 6A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	F	339	2647	1673	460	498	16	0	0

- Molecule 7 is a protein called 26S proteasome non-ATPase regulatory subunit 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	U	751	Total	C	N	O	S	0	0
			5829	3696	1001	1088	44		

- Molecule 8 is a protein called 26S proteasome non-ATPase regulatory subunit 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	V	262	Total	C	N	O	S	0	0
			2129	1360	377	385	7		

- Molecule 9 is a protein called 26S proteasome non-ATPase regulatory subunit 12.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	W	391	Total	C	N	O	S	0	0
			3206	2040	545	600	21		

- Molecule 10 is a protein called 26S proteasome non-ATPase regulatory subunit 11.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	X	280	Total	C	N	O	S	0	0
			2221	1414	373	425	9		

- Molecule 11 is a protein called 26S proteasome non-ATPase regulatory subunit 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	Y	378	Total	C	N	O	S	0	0
			3115	1987	533	578	17		

- Molecule 12 is a protein called 26S proteasome non-ATPase regulatory subunit 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	Z	286	Total	C	N	O	S	0	0
			2281	1457	392	427	5		

- Molecule 13 is a protein called 26S proteasome non-ATPase regulatory subunit 13.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	a	374	Total	C	N	O	S	0	0
			3003	1915	511	562	15		

- Molecule 14 is a protein called 26S proteasome non-ATPase regulatory subunit 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	b	191	Total	C	N	O	S	0	0
			1458	910	261	279	8		

- Molecule 15 is a protein called 26S proteasome non-ATPase regulatory subunit 14.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	c	287	Total	C	N	O	S	0	0
			2260	1430	389	422	19		

- Molecule 16 is a protein called 26S proteasome non-ATPase regulatory subunit 8.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	d	176	Total	C	N	O	S	0	0
			1452	943	232	272	5		

- Molecule 17 is a protein called 26S proteasome complex subunit SEM1.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	e	33	Total	C	N	O	S	0	0
			283	172	46	64	1		

- Molecule 18 is a protein called 26S proteasome non-ATPase regulatory subunit 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	f	636	Total	C	N	O	S	0	0
			4920	3110	830	945	35		

- Molecule 19 is ZINC ION (three-letter code: ZN) (formula: Zn).

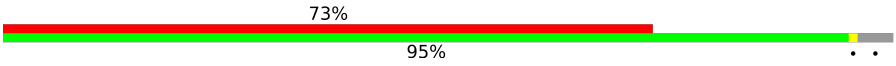
Mol	Chain	Residues	Atoms		AltConf
19	c	1	Total	Zn	0
			1	1	

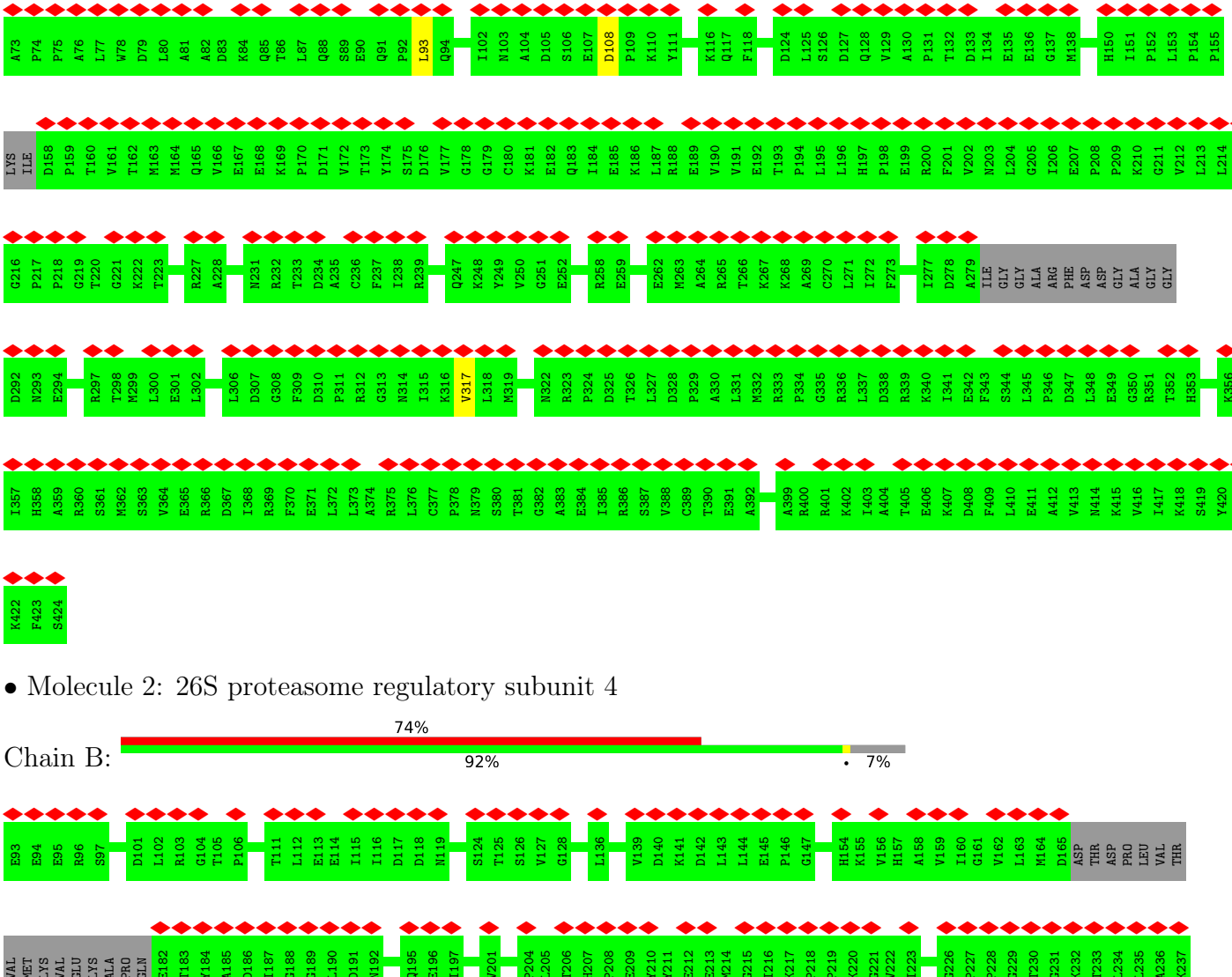
3 Residue-property plots (i)

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: 26S proteasome regulatory subunit 7

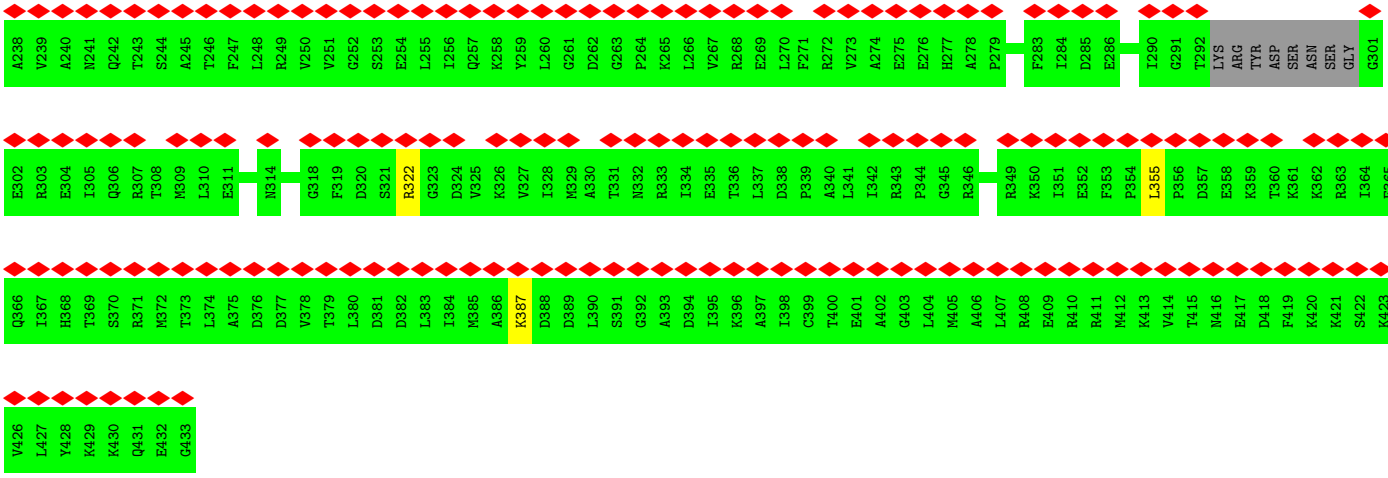
Chain A:



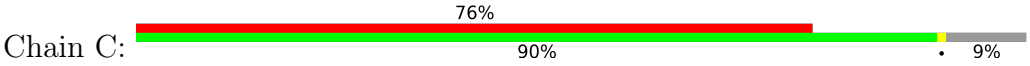


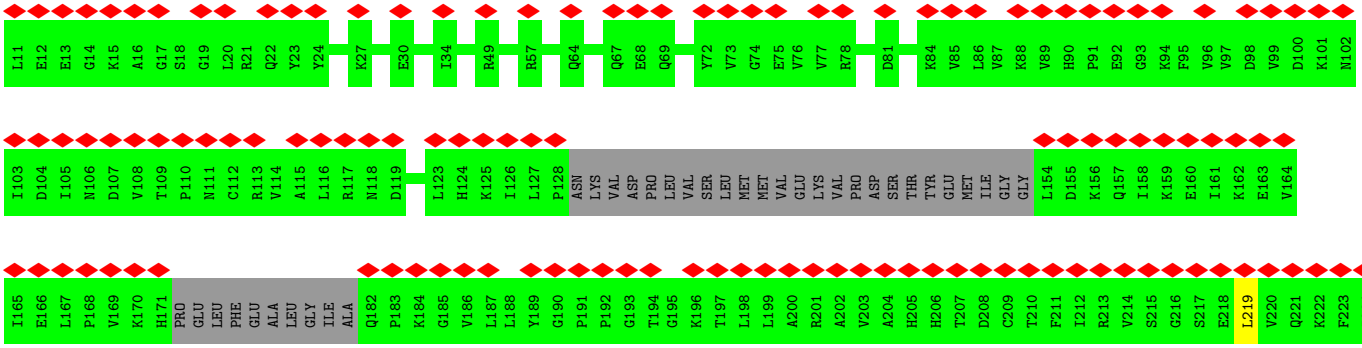
• Molecule 2: 26S proteasome regulatory subunit 4

Chain B:

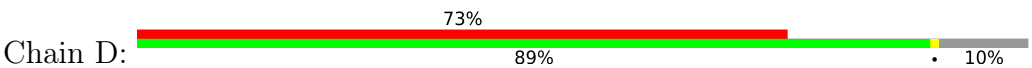


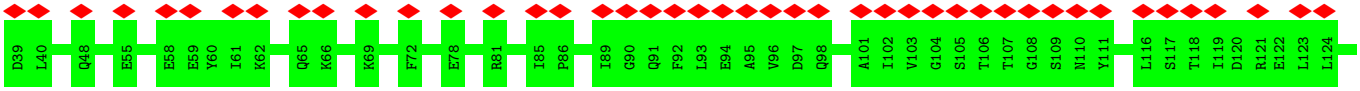
• Molecule 3: 26S proteasome regulatory subunit 8

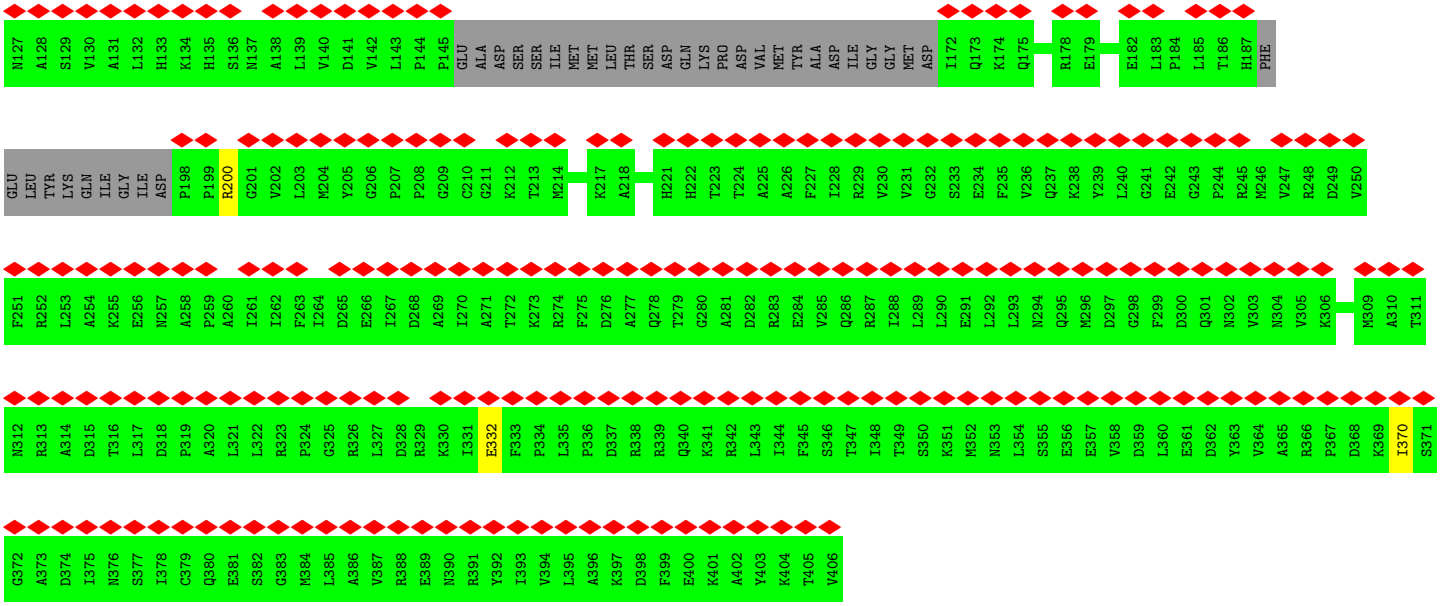




• Molecule 4: 26S proteasome regulatory subunit 6B

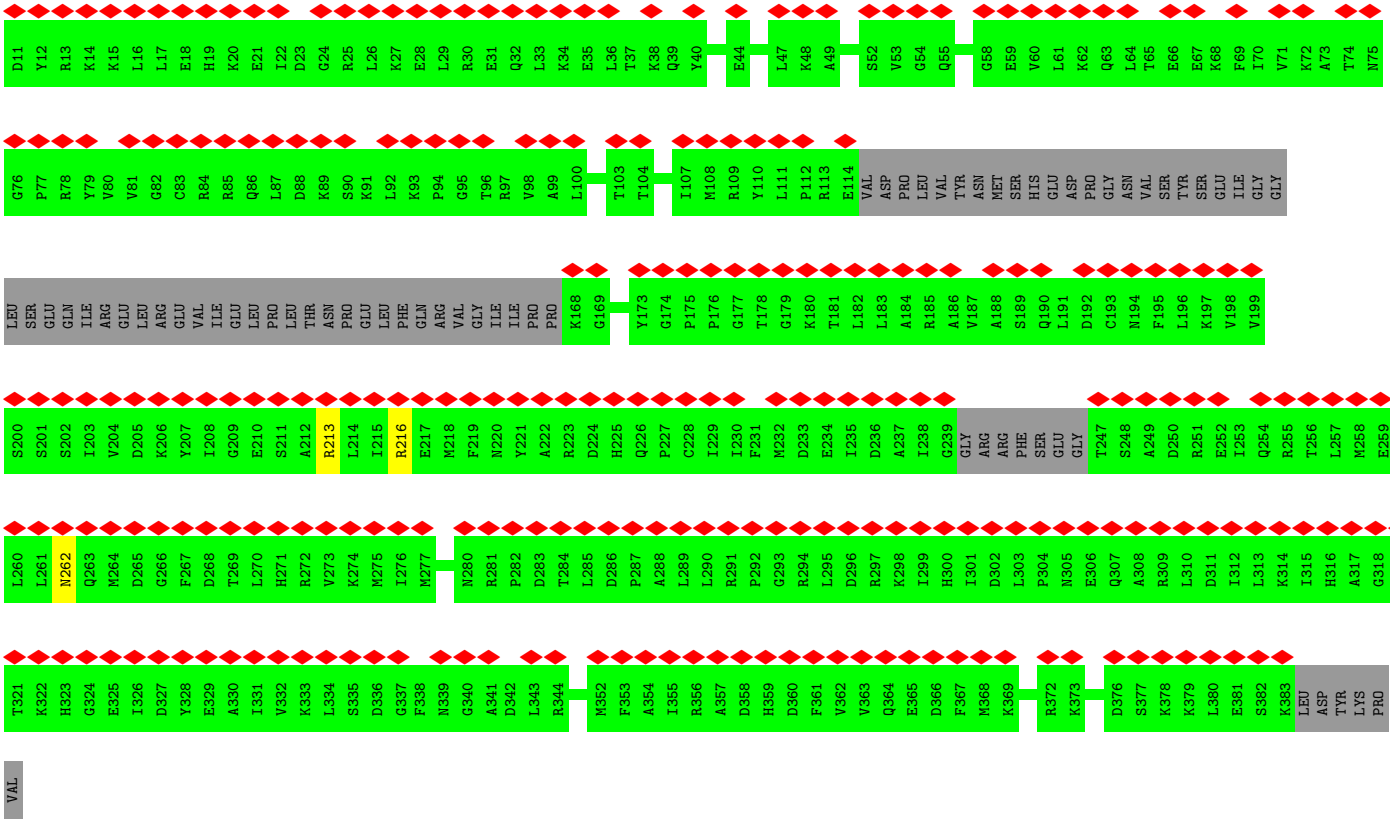






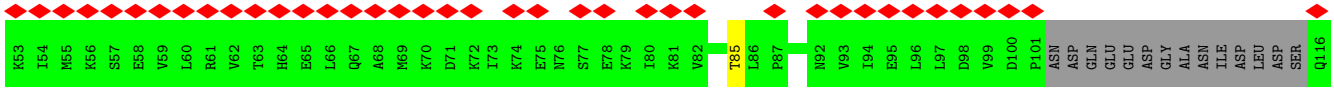
• Molecule 5: 26S proteasome regulatory subunit 10B

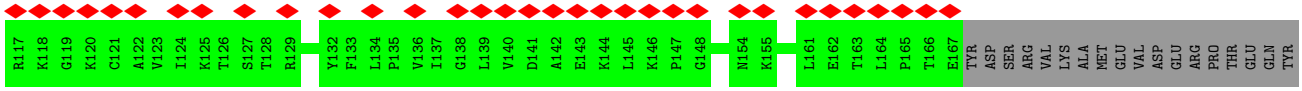
Chain E:

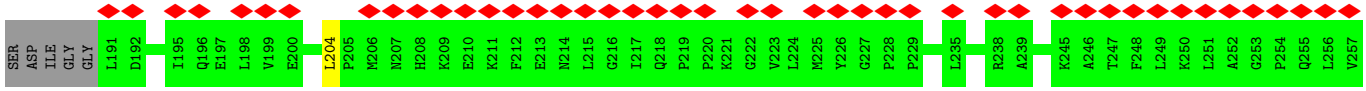


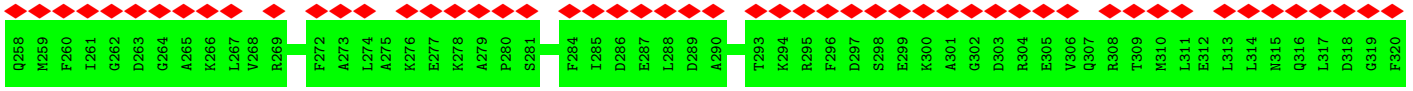
• Molecule 6: 26S proteasome regulatory subunit 6A

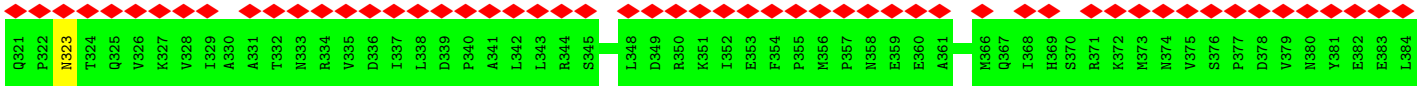
Chain F:

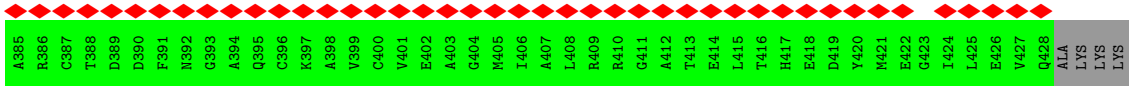






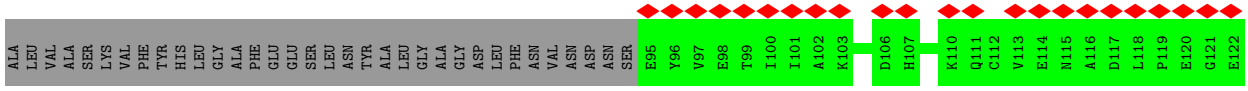


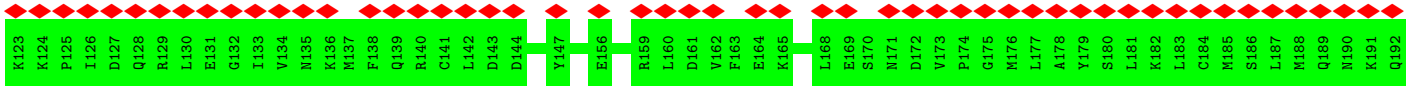


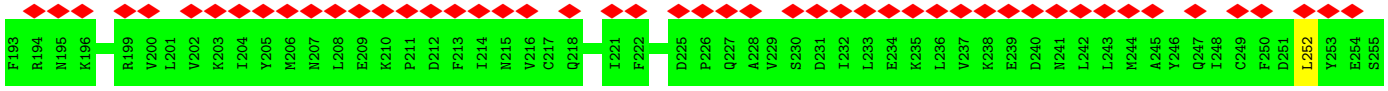


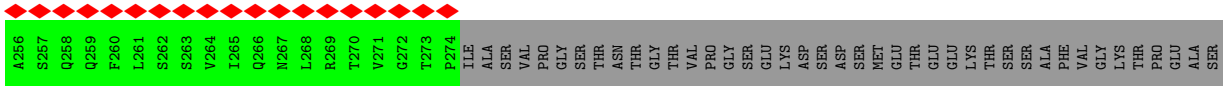
• Molecule 7: 26S proteasome non-ATPase regulatory subunit 1

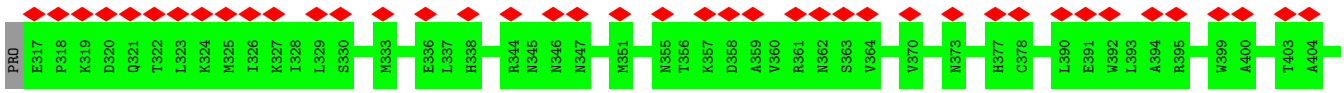
Chain U:

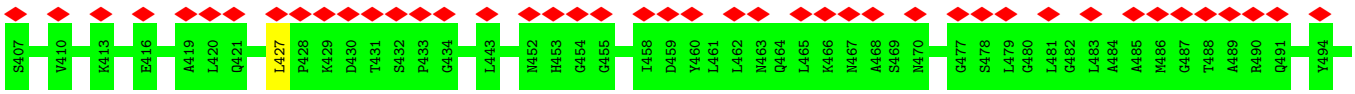


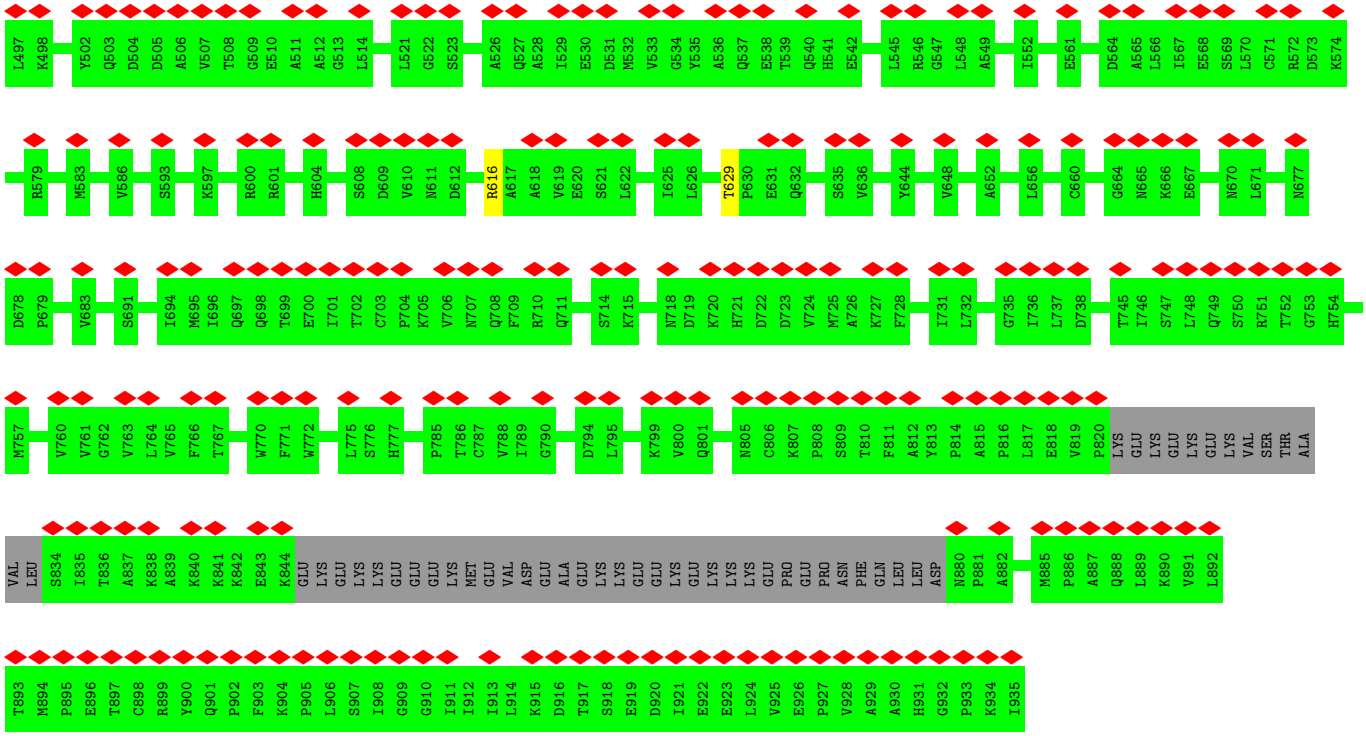






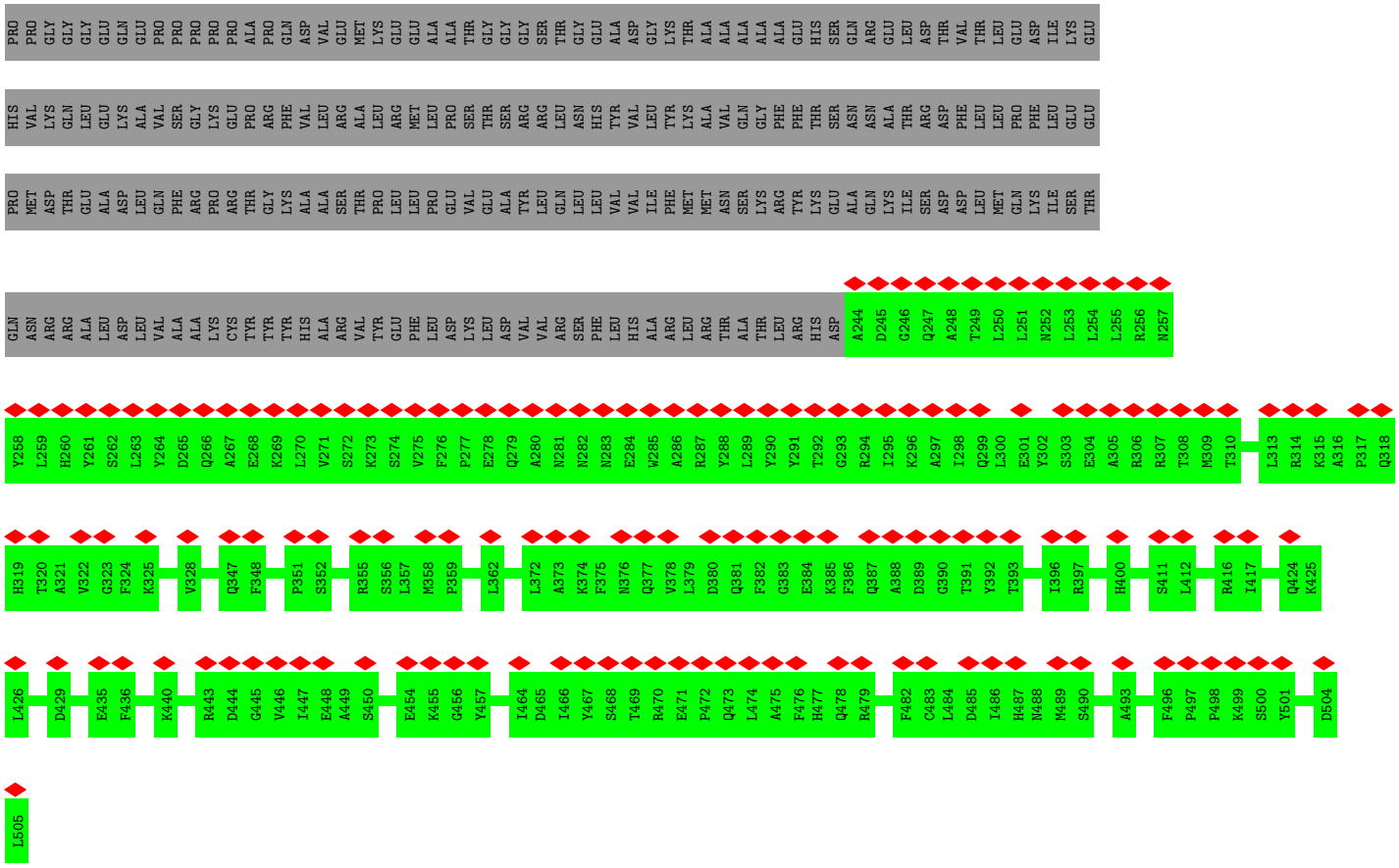






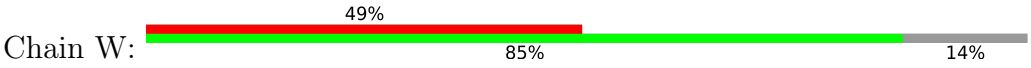
• Molecule 8: 26S proteasome non-ATPase regulatory subunit 3

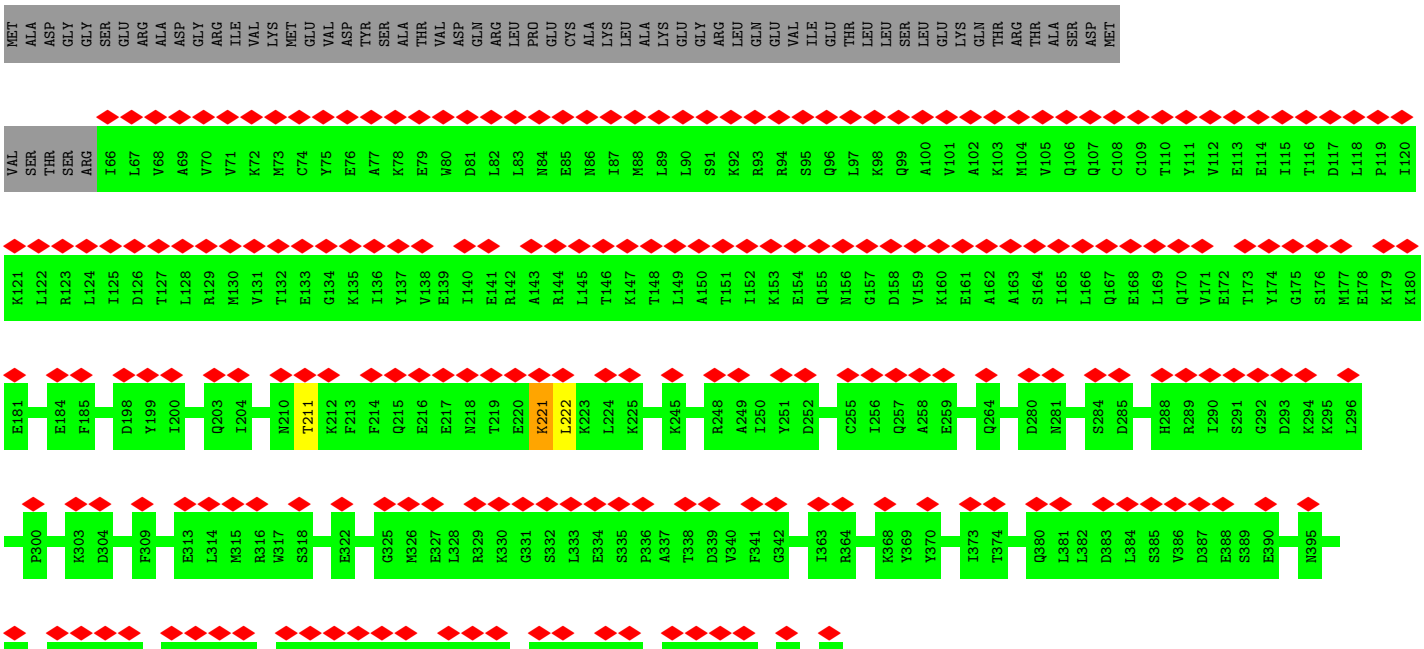
Chain V:



• Molecule 9: 26S proteasome non-ATPase regulatory subunit 12

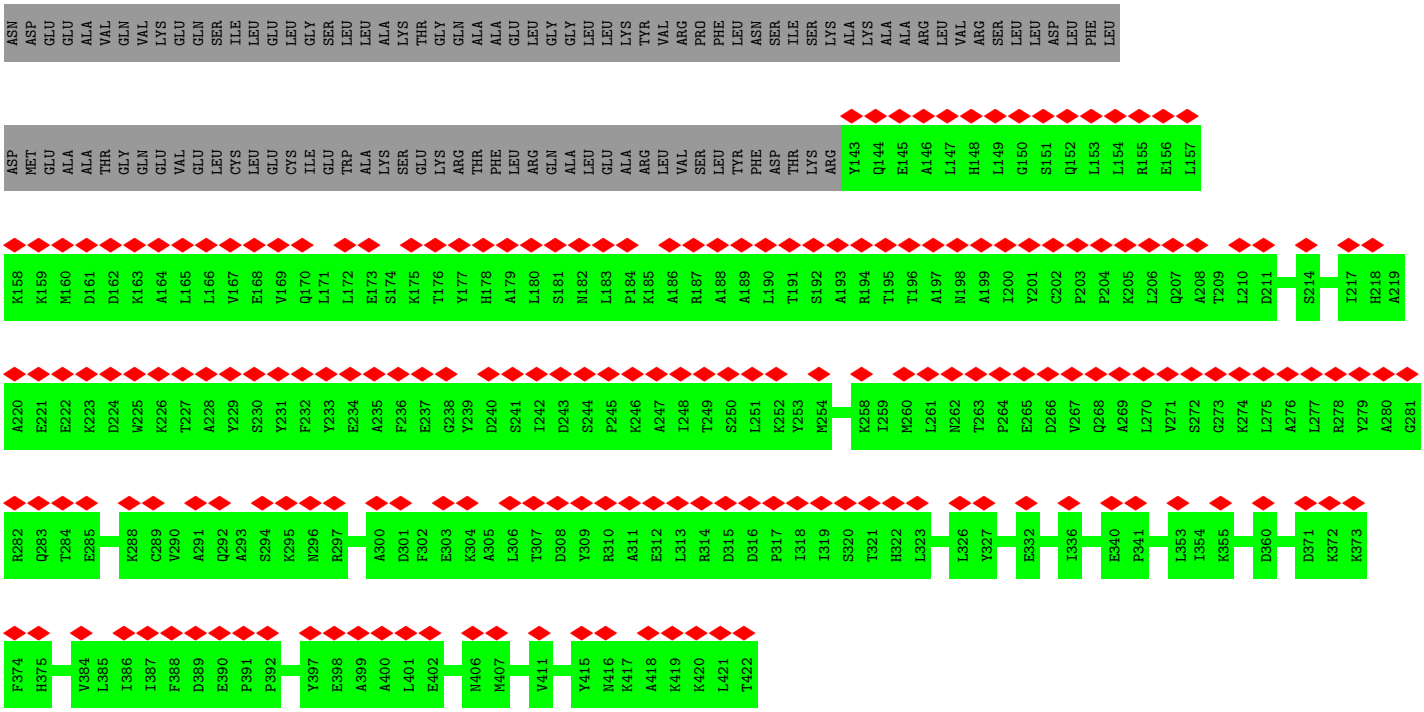
Chain W:





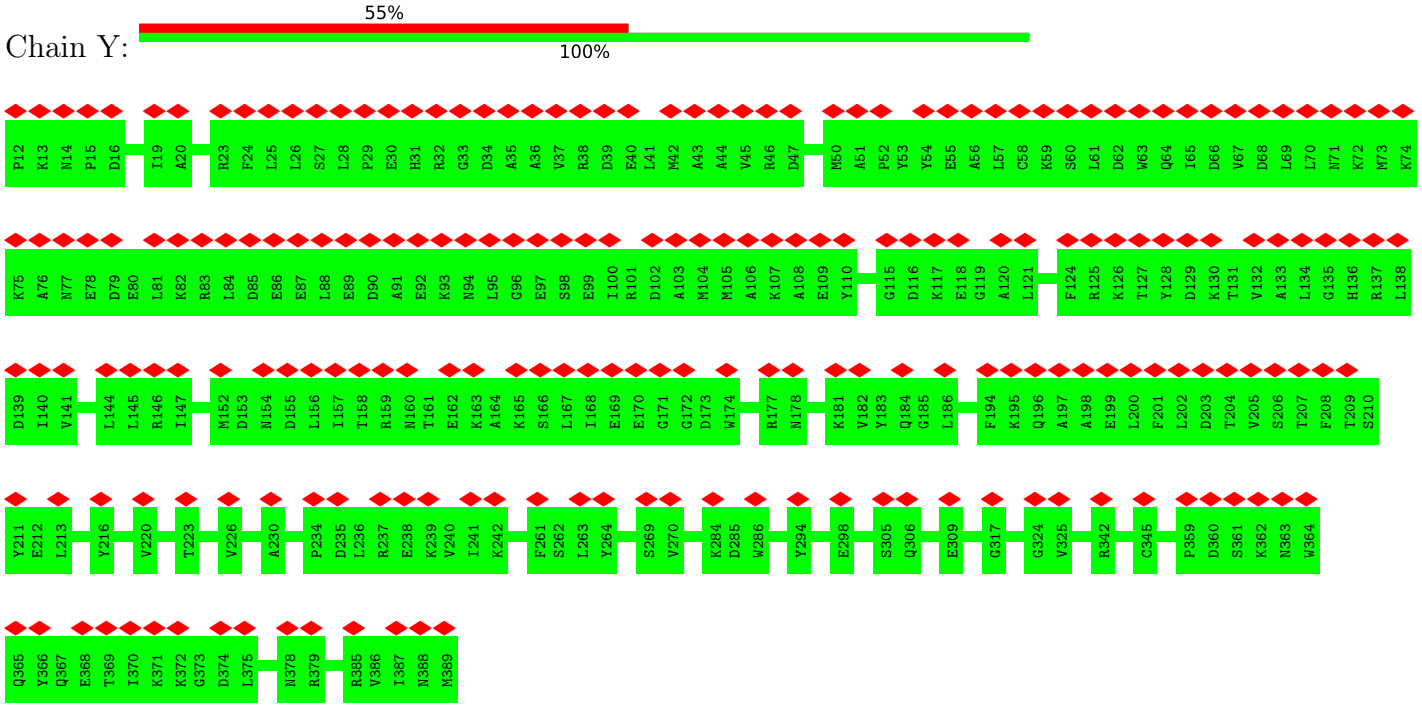
• Molecule 10: 26S proteasome non-ATPase regulatory subunit 11

Chain X:



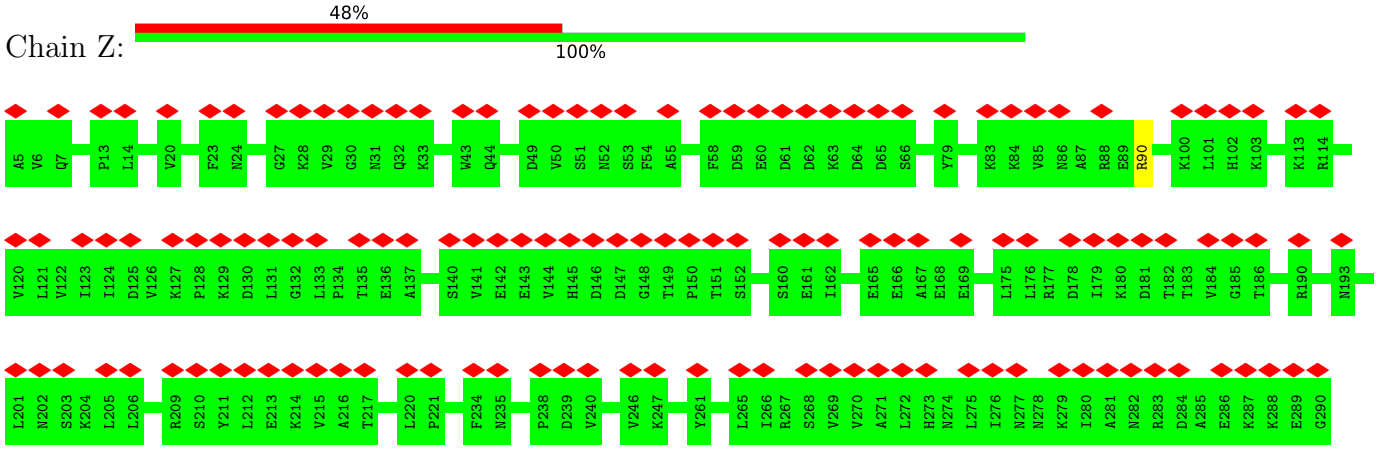
• Molecule 11: 26S proteasome non-ATPase regulatory subunit 6

Chain Y:



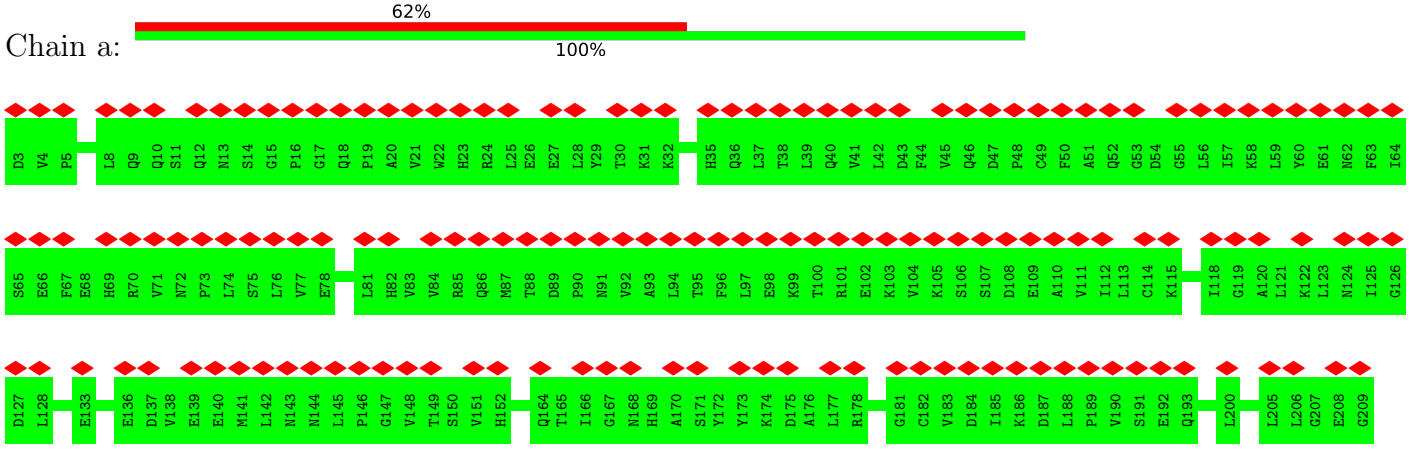
• Molecule 12: 26S proteasome non-ATPase regulatory subunit 7

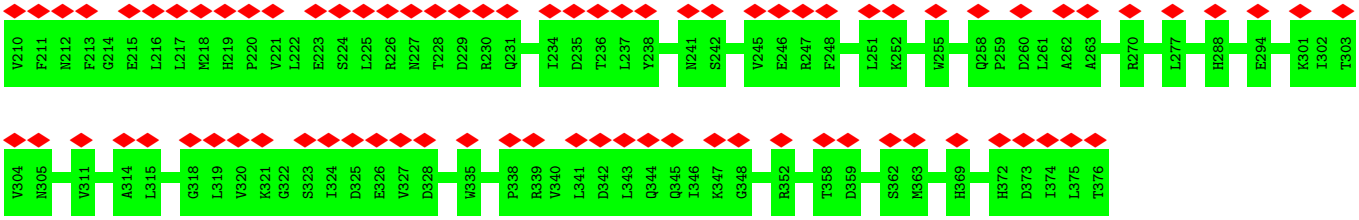
Chain Z:



• Molecule 13: 26S proteasome non-ATPase regulatory subunit 13

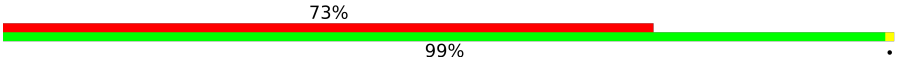
Chain a:

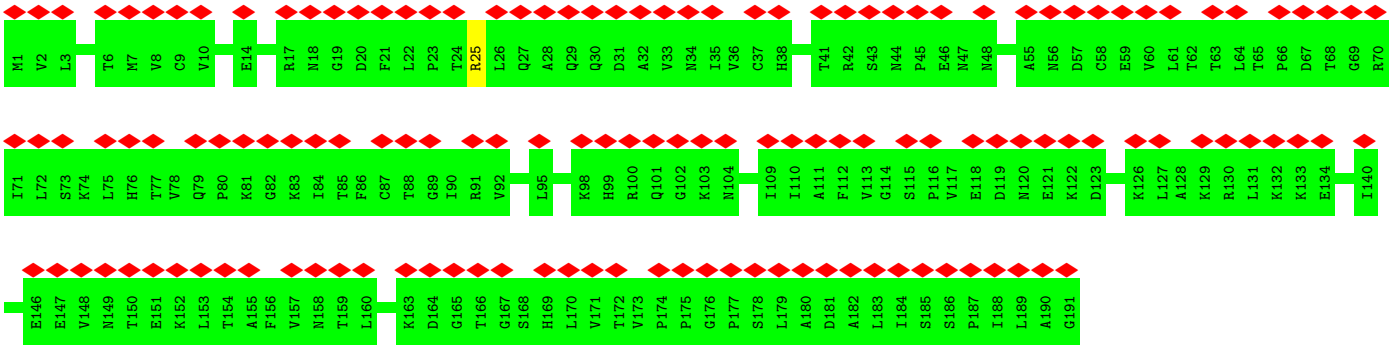




• Molecule 14: 26S proteasome non-ATPase regulatory subunit 4

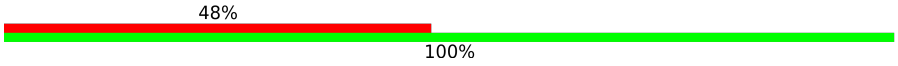
Chain b:

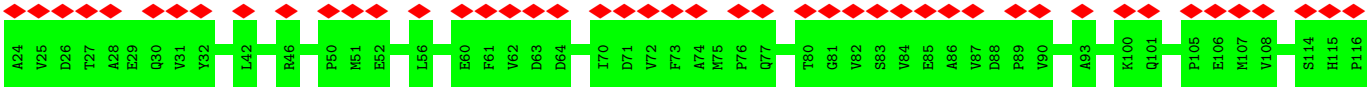


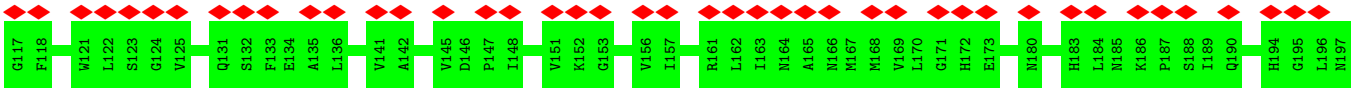


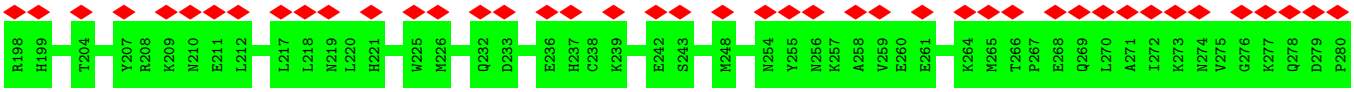
• Molecule 15: 26S proteasome non-ATPase regulatory subunit 14

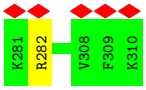
Chain c:





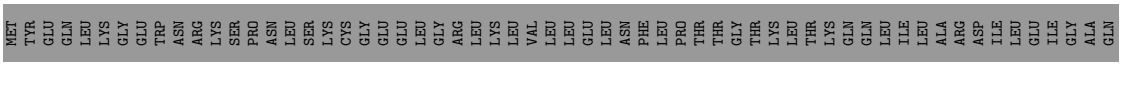


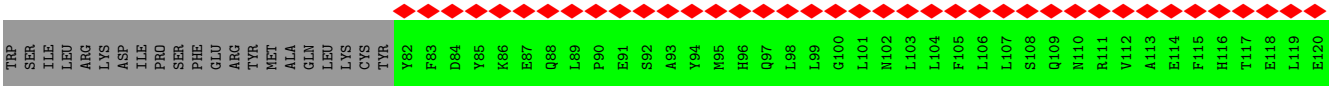


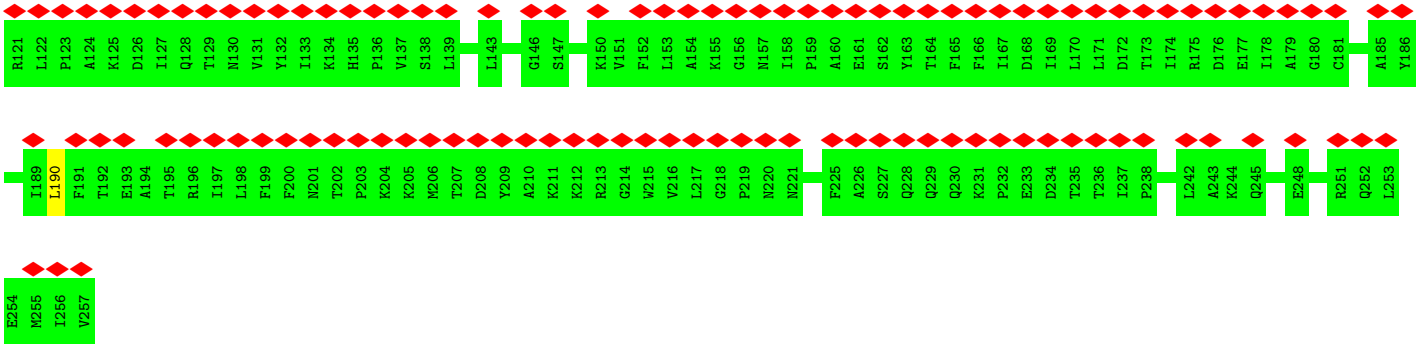


• Molecule 16: 26S proteasome non-ATPase regulatory subunit 8

Chain d:

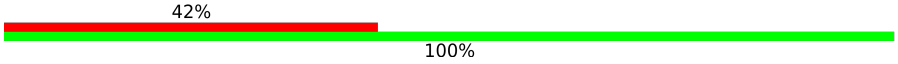


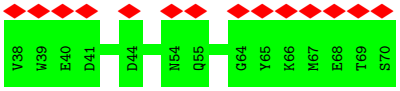




• Molecule 17: 26S proteasome complex subunit SEM1

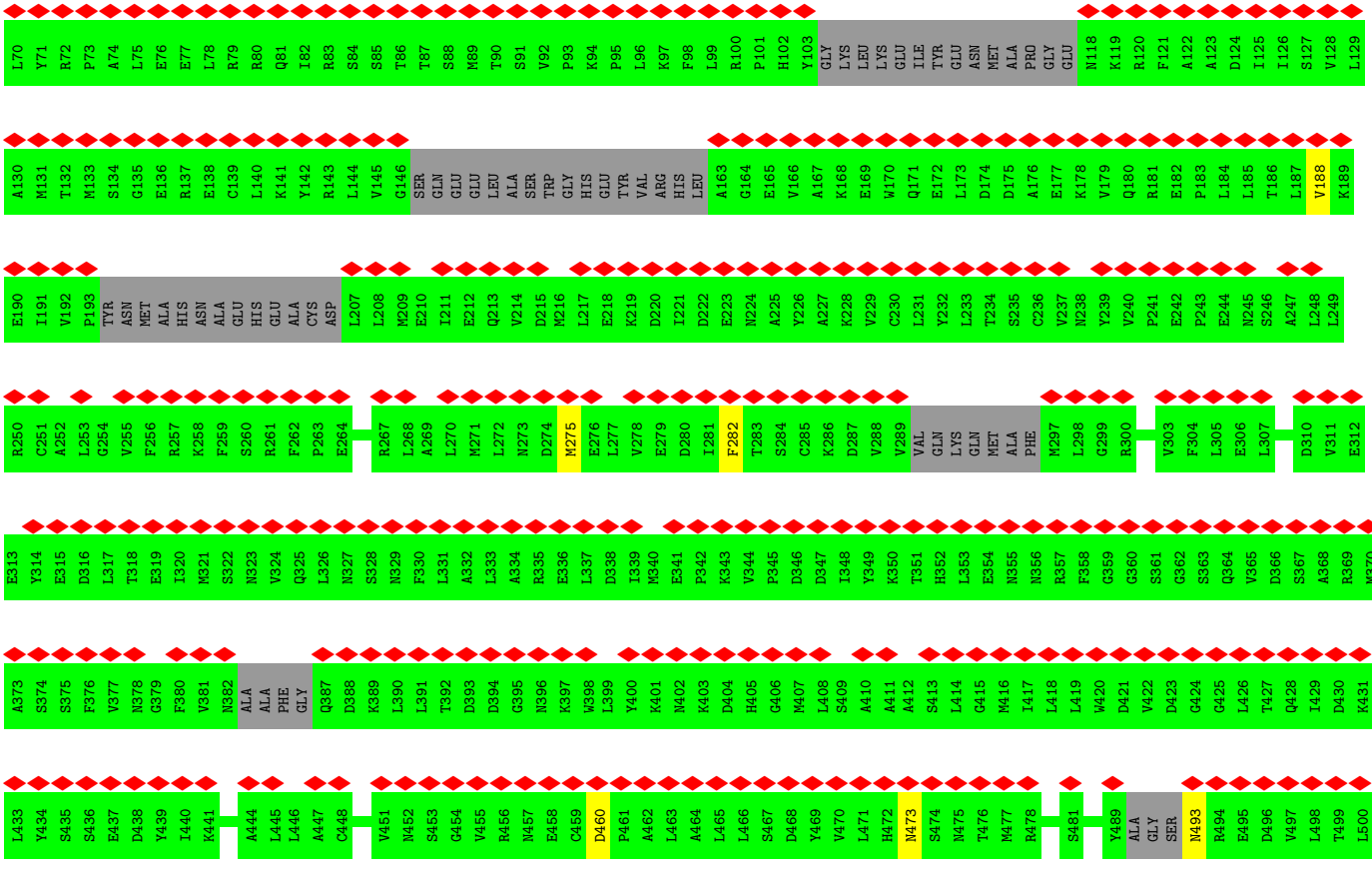
Chain e:

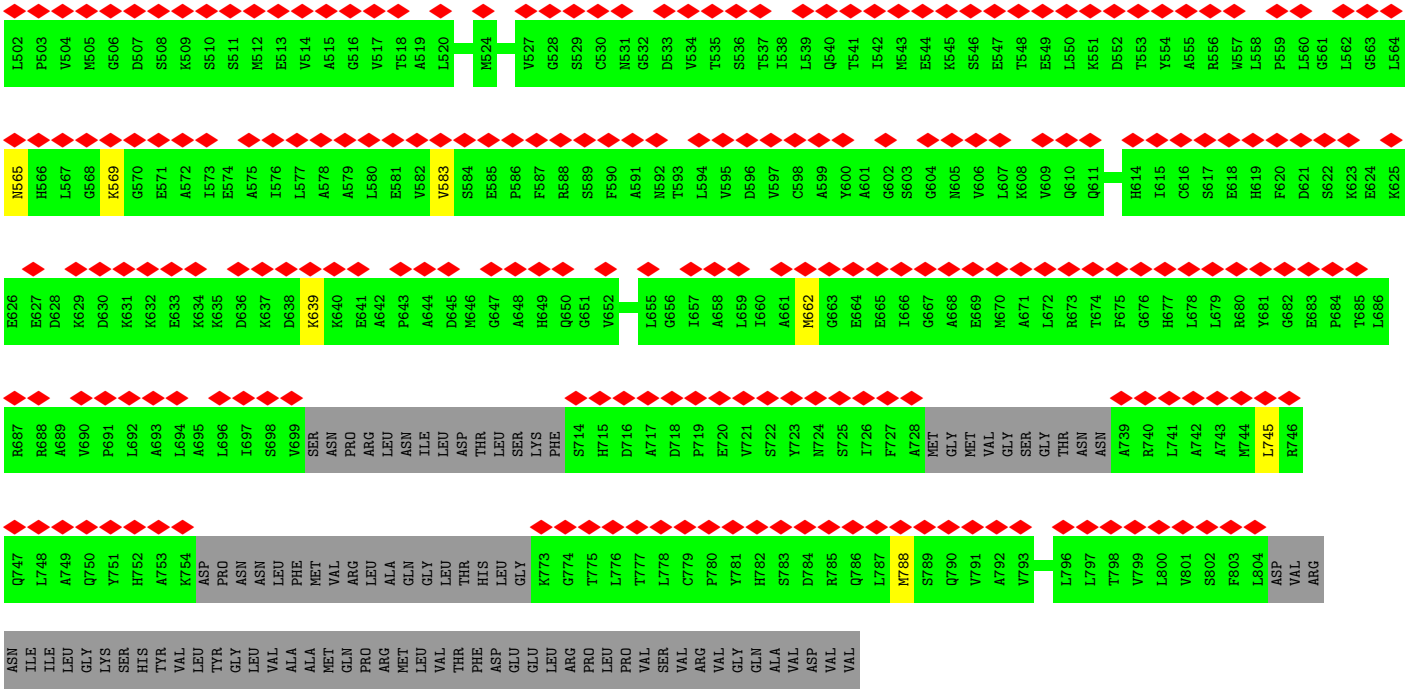




• Molecule 18: 26S proteasome non-ATPase regulatory subunit 2

Chain f:




L502 P503 V504 M505 G506 D507 S508 K509 S510 S511 M512 E513 V514 A515 G516 V517 T518 A519 L520 M524 V527 G528 S529 C530 N531 G532 D533 V534 T535 S536 T537 I538 L539 Q540 T541 I542 M543 E544 K545 S546 E547 T548 E549 L550 K551 D552 T553 Y554 A555 R556 W557 L558 P559 L560 G561 L562 G563 L564
N565 H566 L567 G568 K569 G570 E571 A572 I573 E574 A575 I576 L577 A578 A579 L580 E581 V582 V583 S584 E585 P586 F587 R588 S589 F590 A591 N592 T593 L594 V595 D596 V597 C598 A599 Y600 A601 G602 S603 G604 N605 V606 L607 K608 V609 Q610 Q611 H614 I615 G616 S617 E618 H619 F620 D621 S622 K623 E624 K625
E626 E627 D628 K629 D630 K631 K632 E633 K634 K635 D636 K637 D638 K639 K640 E641 A642 P643 A644 D645 M646 G647 A648 H649 Q650 G651 V652 L655 G656 I657 A658 L659 I660 A661 M662 G663 E664 E665 I666 G667 A668 E669 M670 A671 L672 R673 T674 F675 G676 H677 L678 L679 R680 Y681 G682 E683 P684 T685 L686
R687 R688 A689 V690 P691 L692 A693 L694 A695 L696 I697 S698 V699 SER ASN PRO ARG LEU ASN ILE LEU ASP THR LEU SER LYS PHE S714 H715 D716 A717 D718 P719 E720 V721 S722 Y723 N724 S725 I726 F727 A728 MET GLY MET VAL GLY SER GLY THR ASN ASN A739 R740 L741 A742 A743 M744 L745 R746
Q747 L748 A749 Q750 Y751 H752 A753 K754 ASP PRO ASN ASN LEU PHE MET VAL ARG LEU ALA GLN GLY LEU THR HIS LEU GLY K773 G774 T775 L776 T777 L778 C779 P780 Y781 H782 S783 D784 R785 Q786 L787 M788 S789 Q790 V791 A792 V793 L796 L797 T798 V799 L800 V801 S802 F803 L804 ASP VAL ARG
ASN ILE ILE LEU LEU GLY LYS SER HIS TYR VAL LEU LEU TYR GLY LEU VAL ALA ALA MET GLN PRO ARG MET LEU LEU VAL THR PHE ASP GLU GLU LEU ARG PRO LEU PRO VAL SER VAL ARG VAL GLY GLN ALA VAL ASP VAL VAL

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	21885	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TECNAI ARCTICA	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.009	Depositor
Minimum map value	-0.003	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.004	Depositor
Map size (Å)	258.0, 258.0, 258.0	wwPDB
Map dimensions	300, 300, 300	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.86, 0.86, 0.86	Depositor

5 Model quality

5.1 Standard geometry

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

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	0.23	0/2710	0.42	0/3659
2	B	0.23	0/2509	0.42	0/3383
3	C	0.23	0/2784	0.41	0/3737
4	D	0.24	0/2690	0.41	1/3630 (0.0%)
5	E	0.23	0/2525	0.40	0/3387
6	F	0.23	0/2681	0.41	0/3611
7	U	0.23	0/5930	0.40	0/8021
8	V	0.23	0/2170	0.39	0/2929
9	W	0.24	0/3251	0.41	1/4370 (0.0%)
10	X	0.23	0/2255	0.36	0/3041
11	Y	0.23	0/3173	0.37	0/4273
12	Z	0.23	0/2324	0.39	0/3150
13	a	0.23	0/3061	0.37	0/4144
14	b	0.23	0/1478	0.40	0/2001
15	c	0.23	0/2302	0.39	0/3110
16	d	0.24	0/1486	0.37	0/2010
17	e	0.21	0/289	0.41	0/389
18	f	0.24	0/4989	0.42	0/6729
All	All	0.23	0/48607	0.40	2/65574 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
9	W	221	LYS	C-N-CA	5.92	136.51	121.70
4	D	332	GLU	C-N-CA	5.16	134.59	121.70

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	332/352 (94%)	299 (90%)	33 (10%)	0	100	100
2	B	311/341 (91%)	271 (87%)	40 (13%)	0	100	100
3	C	343/385 (89%)	323 (94%)	20 (6%)	0	100	100
4	D	326/368 (89%)	315 (97%)	11 (3%)	0	100	100
5	E	307/379 (81%)	290 (94%)	17 (6%)	0	100	100
6	F	333/380 (88%)	311 (93%)	22 (7%)	0	100	100
7	U	743/935 (80%)	716 (96%)	27 (4%)	0	100	100
8	V	260/488 (53%)	237 (91%)	23 (9%)	0	100	100
9	W	387/456 (85%)	359 (93%)	26 (7%)	2 (0%)	29	69
10	X	276/385 (72%)	269 (98%)	7 (2%)	0	100	100
11	Y	376/378 (100%)	359 (96%)	17 (4%)	0	100	100
12	Z	284/286 (99%)	272 (96%)	12 (4%)	0	100	100
13	a	372/374 (100%)	351 (94%)	21 (6%)	0	100	100
14	b	189/191 (99%)	175 (93%)	14 (7%)	0	100	100
15	c	285/287 (99%)	277 (97%)	8 (3%)	0	100	100
16	d	174/257 (68%)	160 (92%)	14 (8%)	0	100	100
17	e	31/33 (94%)	28 (90%)	3 (10%)	0	100	100
18	f	616/784 (79%)	556 (90%)	60 (10%)	0	100	100
All	All	5945/7059 (84%)	5568 (94%)	375 (6%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
9	W	221	LYS
9	W	222	LEU

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	293/300 (98%)	290 (99%)	3 (1%)	76 86
2	B	276/298 (93%)	273 (99%)	3 (1%)	73 84
3	C	302/333 (91%)	298 (99%)	4 (1%)	69 81
4	D	290/321 (90%)	288 (99%)	2 (1%)	84 90
5	E	273/333 (82%)	270 (99%)	3 (1%)	73 84
6	F	291/326 (89%)	288 (99%)	3 (1%)	76 86
7	U	639/798 (80%)	635 (99%)	4 (1%)	86 92
8	V	231/422 (55%)	231 (100%)	0	100 100
9	W	361/416 (87%)	360 (100%)	1 (0%)	92 95
10	X	243/331 (73%)	243 (100%)	0	100 100
11	Y	334/334 (100%)	334 (100%)	0	100 100
12	Z	257/257 (100%)	256 (100%)	1 (0%)	91 94
13	a	334/334 (100%)	334 (100%)	0	100 100
14	b	167/167 (100%)	166 (99%)	1 (1%)	86 92
15	c	252/252 (100%)	251 (100%)	1 (0%)	91 94
16	d	158/231 (68%)	157 (99%)	1 (1%)	86 92
17	e	31/31 (100%)	31 (100%)	0	100 100
18	f	538/660 (82%)	525 (98%)	13 (2%)	49 69
All	All	5270/6144 (86%)	5230 (99%)	40 (1%)	82 89

All (40) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	93	LEU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	108	ASP
1	A	317	VAL
2	B	322	ARG
2	B	355	LEU
2	B	387	LYS
3	C	219	LEU
3	C	248	MET
3	C	293	MET
3	C	311	ILE
4	D	200	ARG
4	D	370	ILE
5	E	213	ARG
5	E	216	ARG
5	E	262	ASN
6	F	85	THR
6	F	204	LEU
6	F	323	ASN
7	U	252	LEU
7	U	427	LEU
7	U	616	ARG
7	U	629	THR
9	W	211	THR
12	Z	90	ARG
14	b	25	ARG
15	c	282	ARG
16	d	190	LEU
18	f	188	VAL
18	f	275	MET
18	f	282	PHE
18	f	460	ASP
18	f	473	ASN
18	f	493	ASN
18	f	565	ASN
18	f	569	LYS
18	f	583	VAL
18	f	639	LYS
18	f	662	MET
18	f	745	LEU
18	f	788	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (62) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	197	HIS
1	A	293	ASN
2	B	131	HIS
2	B	193	GLN
3	C	22	GLN
3	C	278	ASN
3	C	279	GLN
3	C	296	ASN
3	C	337	ASN
4	D	65	GLN
4	D	74	HIS
4	D	133	HIS
4	D	187	HIS
5	E	45	ASN
5	E	262	ASN
5	E	263	GLN
5	E	316	HIS
5	E	364	GLN
6	F	323	ASN
7	U	247	GLN
7	U	259	GLN
7	U	267	ASN
7	U	340	GLN
7	U	415	HIS
7	U	421	GLN
7	U	453	HIS
7	U	754	HIS
7	U	801	GLN
8	V	329	HIS
8	V	477	HIS
8	V	488	ASN
9	W	218	ASN
9	W	236	HIS
9	W	257	GLN
10	X	349	HIS
10	X	406	ASN
11	Y	14	ASN
11	Y	178	ASN
11	Y	367	GLN
12	Z	194	GLN
12	Z	231	GLN
12	Z	282	ASN
13	a	35	HIS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
13	a	152	HIS
14	b	29	GLN
14	b	34	ASN
14	b	76	HIS
15	c	183	HIS
15	c	241	ASN
15	c	254	ASN
15	c	256	ASN
16	d	252	GLN
18	f	102	HIS
18	f	180	GLN
18	f	273	ASN
18	f	301	HIS
18	f	325	GLN
18	f	329	ASN
18	f	475	ASN
18	f	493	ASN
18	f	540	GLN
18	f	610	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no monosaccharides in this entry.

5.6 Ligand geometry

Of 1 ligands modelled in this entry, 1 is monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (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
9	W	1
10	X	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	W	205:ILE	C	206:SER	N	3.21
1	X	311:ALA	C	312:GLU	N	3.20

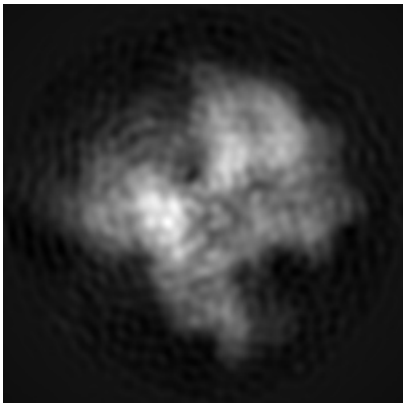
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-8684. These allow visual inspection of the internal detail of the map and identification of artifacts.

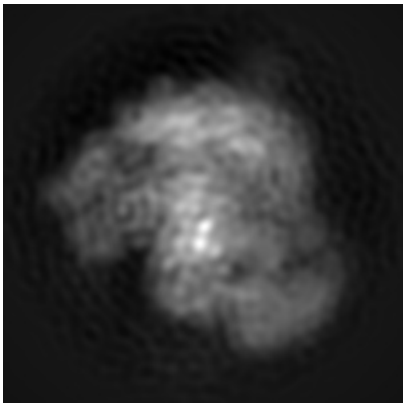
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

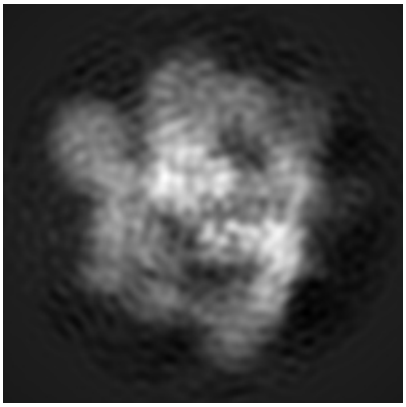
6.1.1 Primary map



X



Y

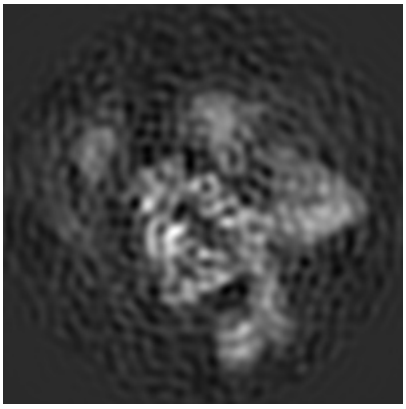


Z

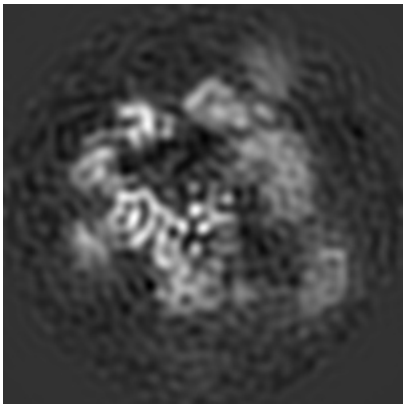
The images above show the map projected in three orthogonal directions.

6.2 Central slices

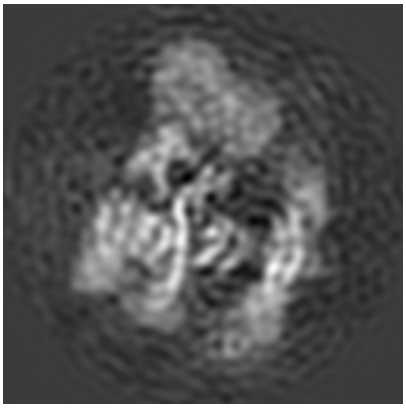
6.2.1 Primary map



X Index: 150



Y Index: 150

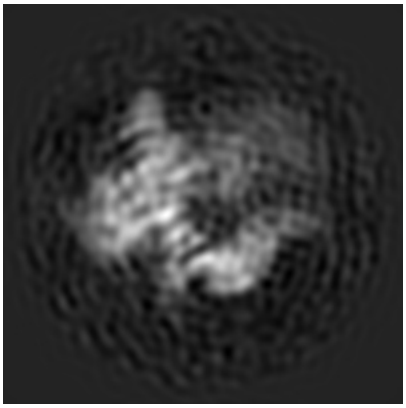


Z Index: 150

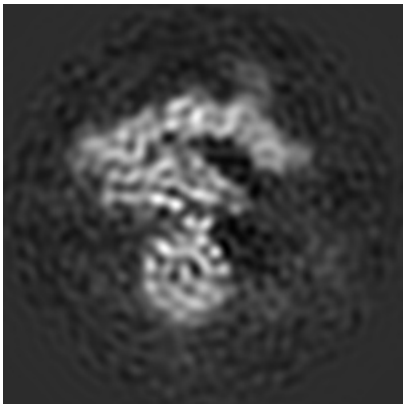
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

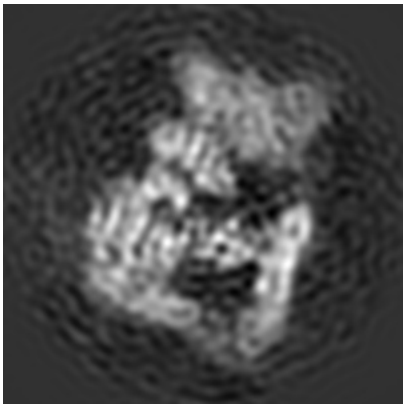
6.3.1 Primary map



X Index: 209



Y Index: 128

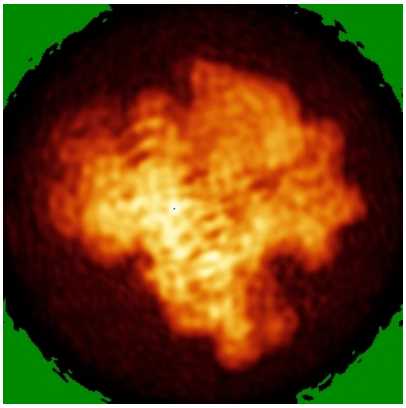


Z Index: 135

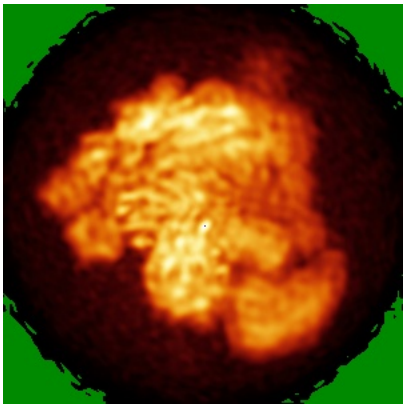
The images above show the largest variance slices of the map in three orthogonal directions.

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

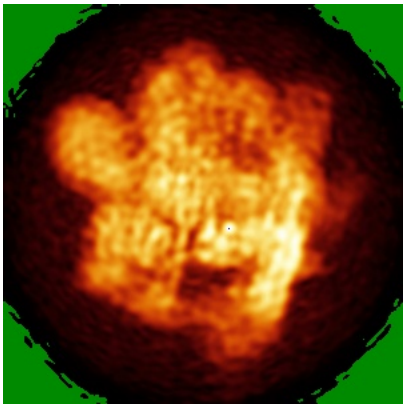
6.4.1 Primary map



X



Y

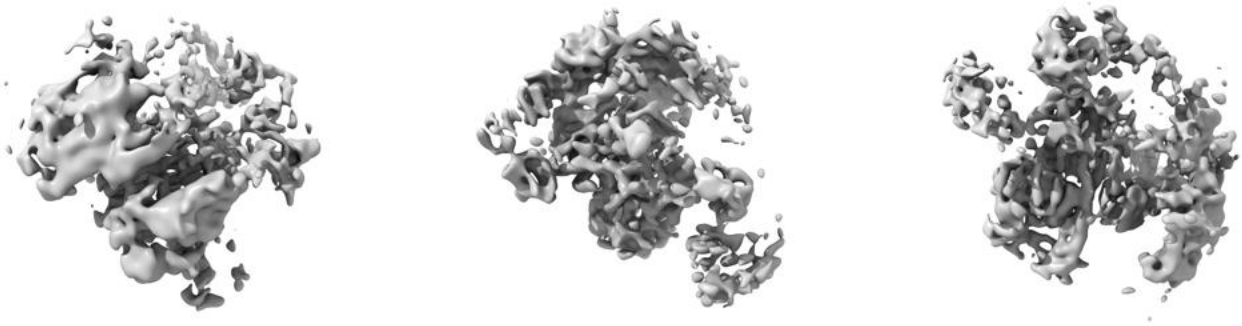


Z

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.

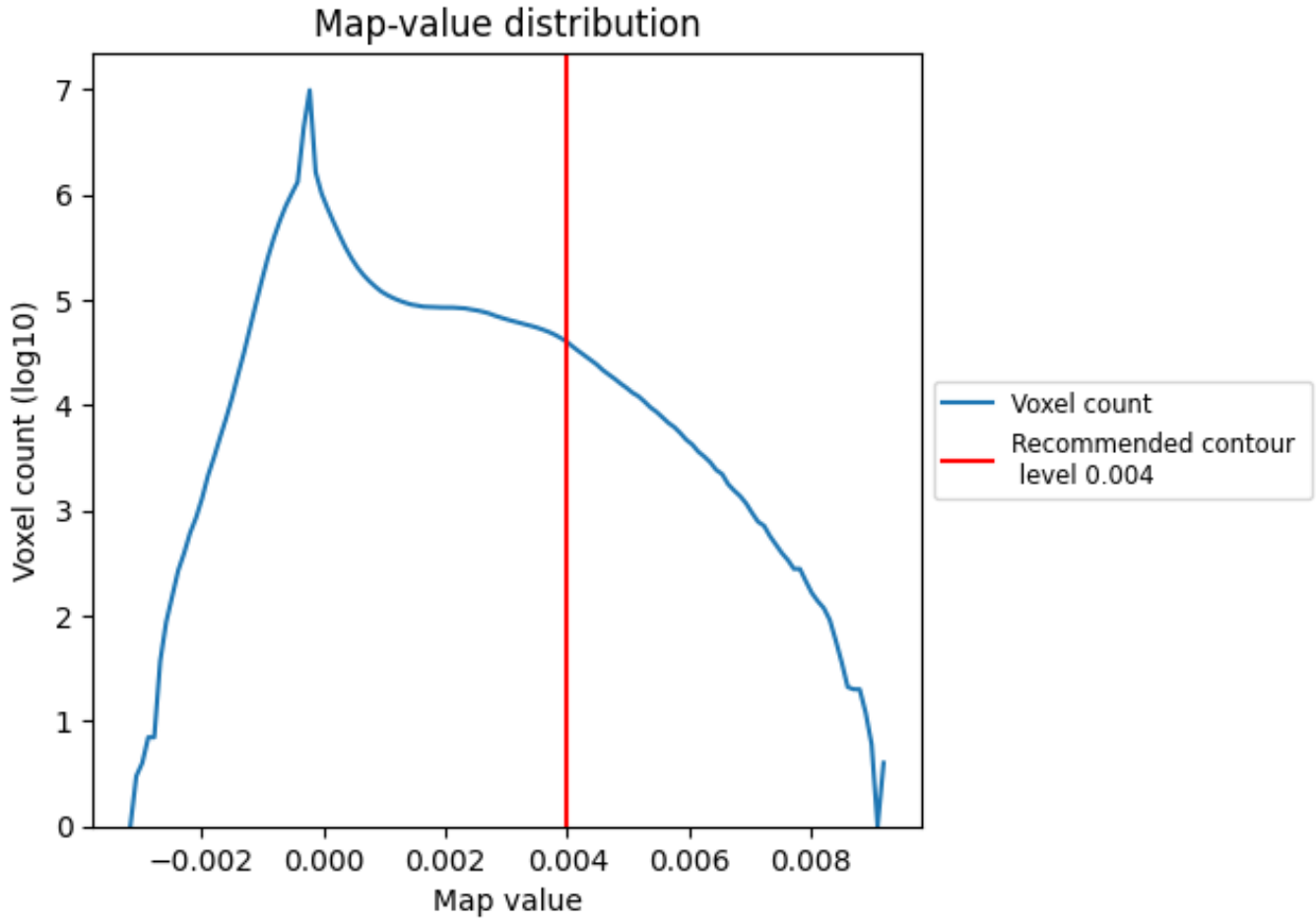
6.6 Mask visualisation (i)

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

7 Map analysis

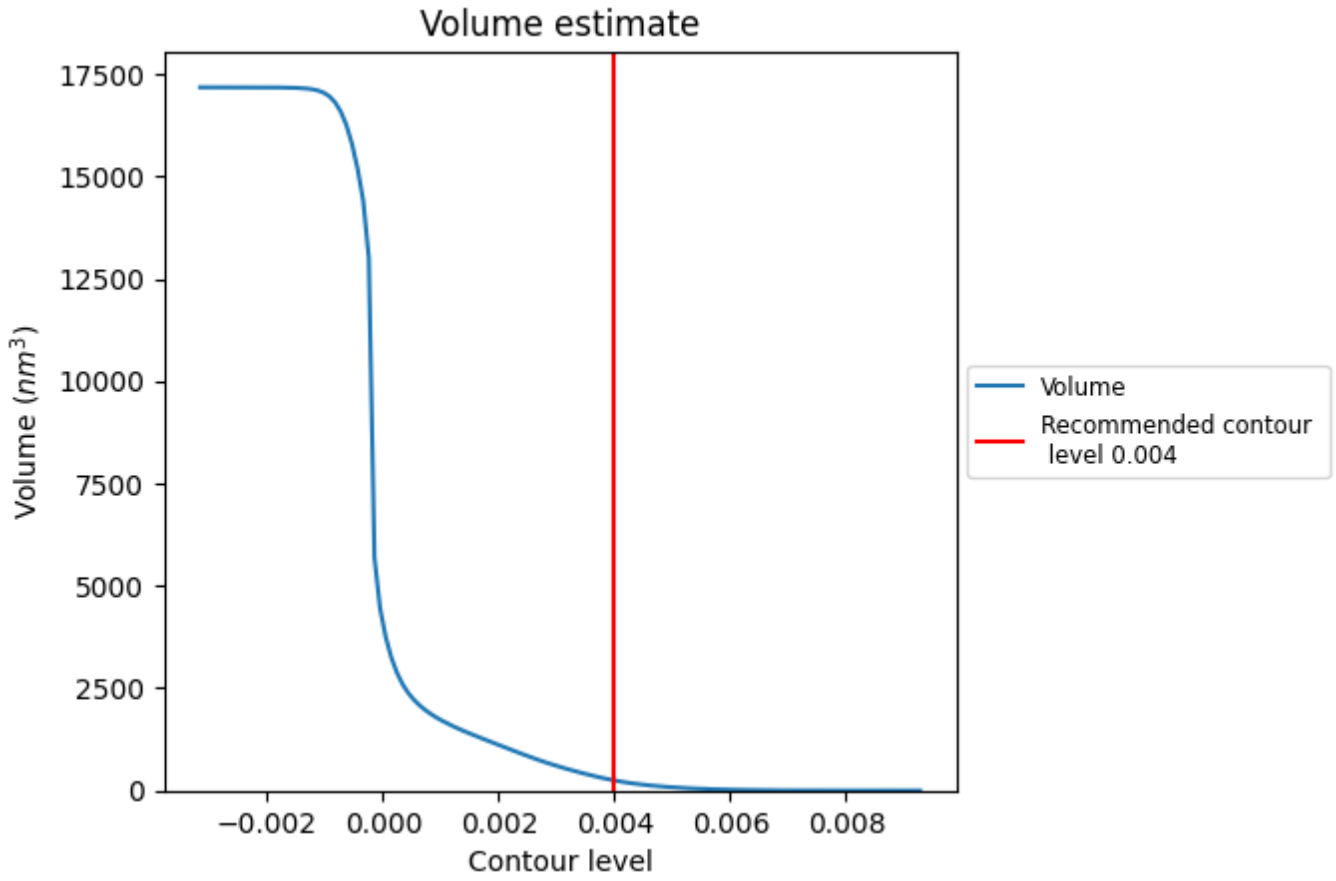
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

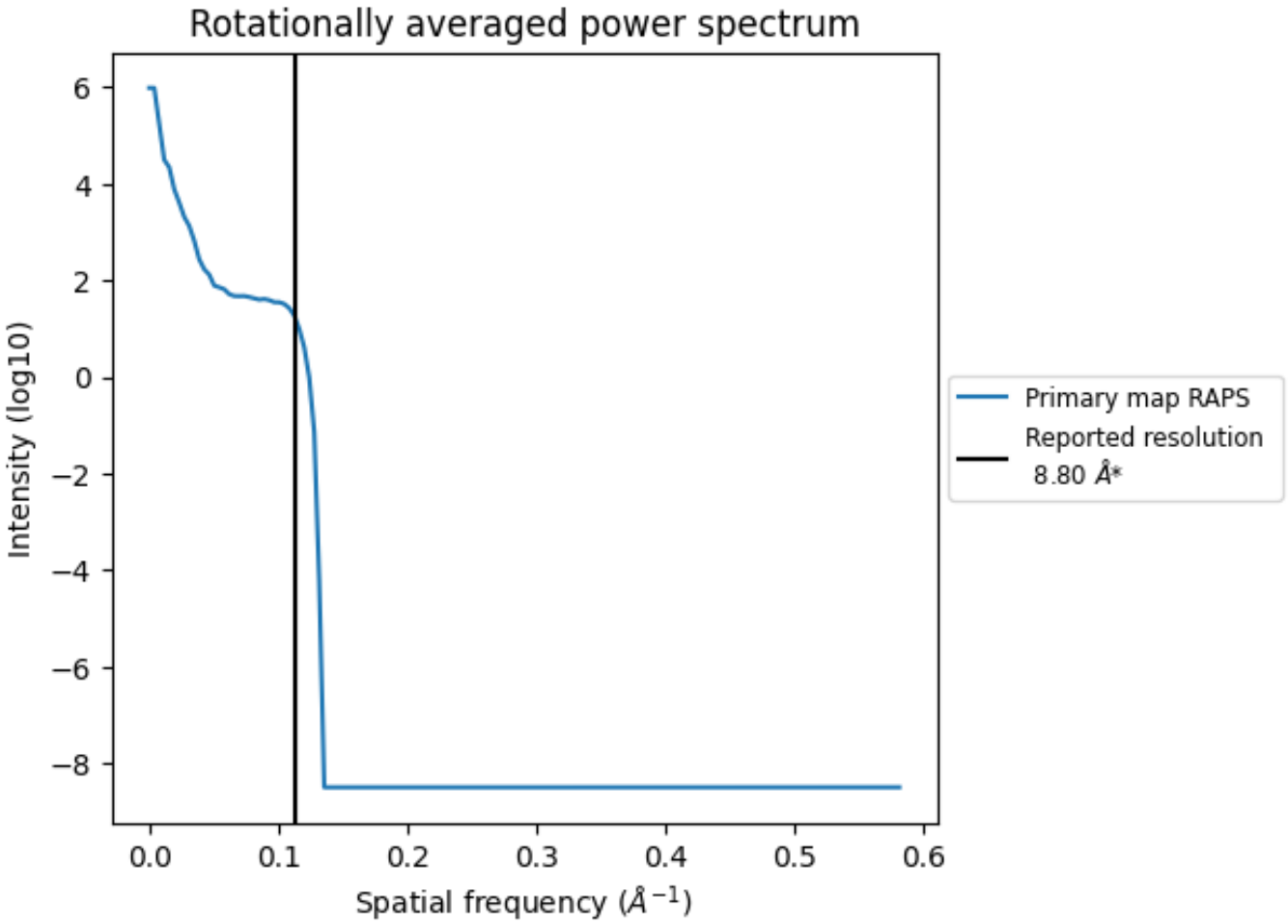
7.2 Volume estimate



The volume at the recommended contour level is 248 nm^3; this corresponds to an approximate mass of 224 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 0.114 Å^{-1}

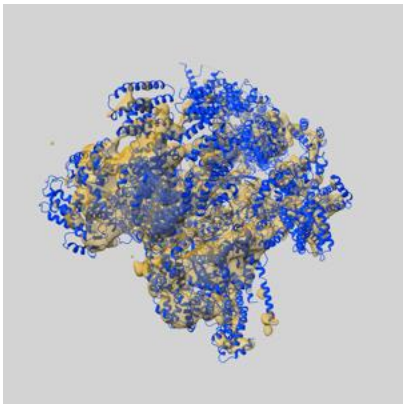
8 Fourier-Shell correlation (i)

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

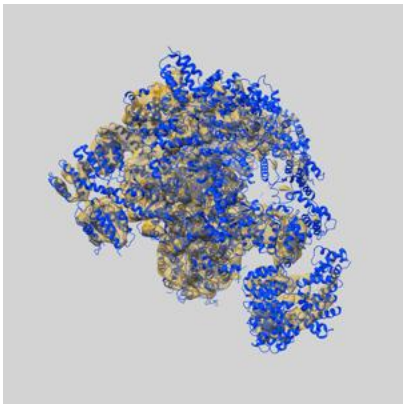
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-8684 and PDB model 5VHS. Per-residue inclusion information can be found in section 3 on page 7.

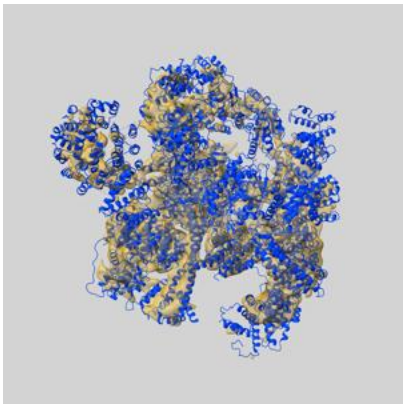
9.1 Map-model overlay



X



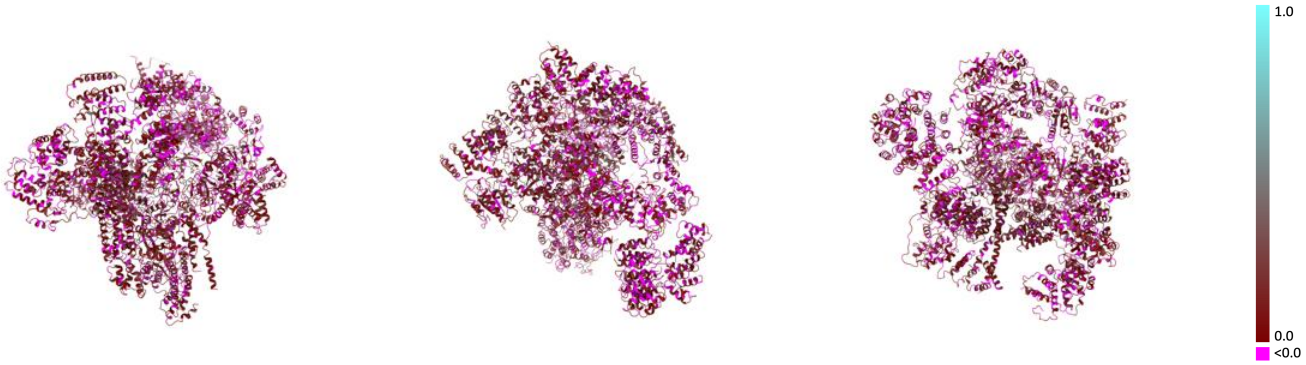
Y



Z

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

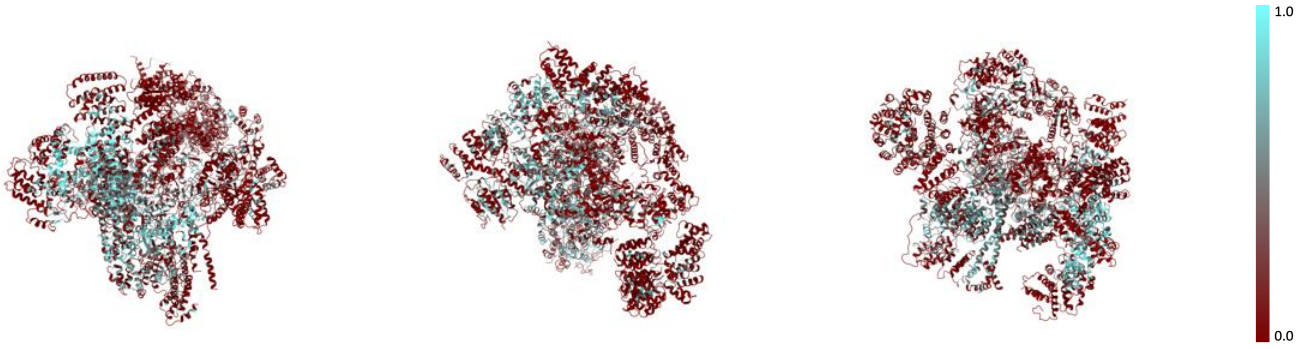
9.2 Q-score mapped to coordinate model (i)



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.

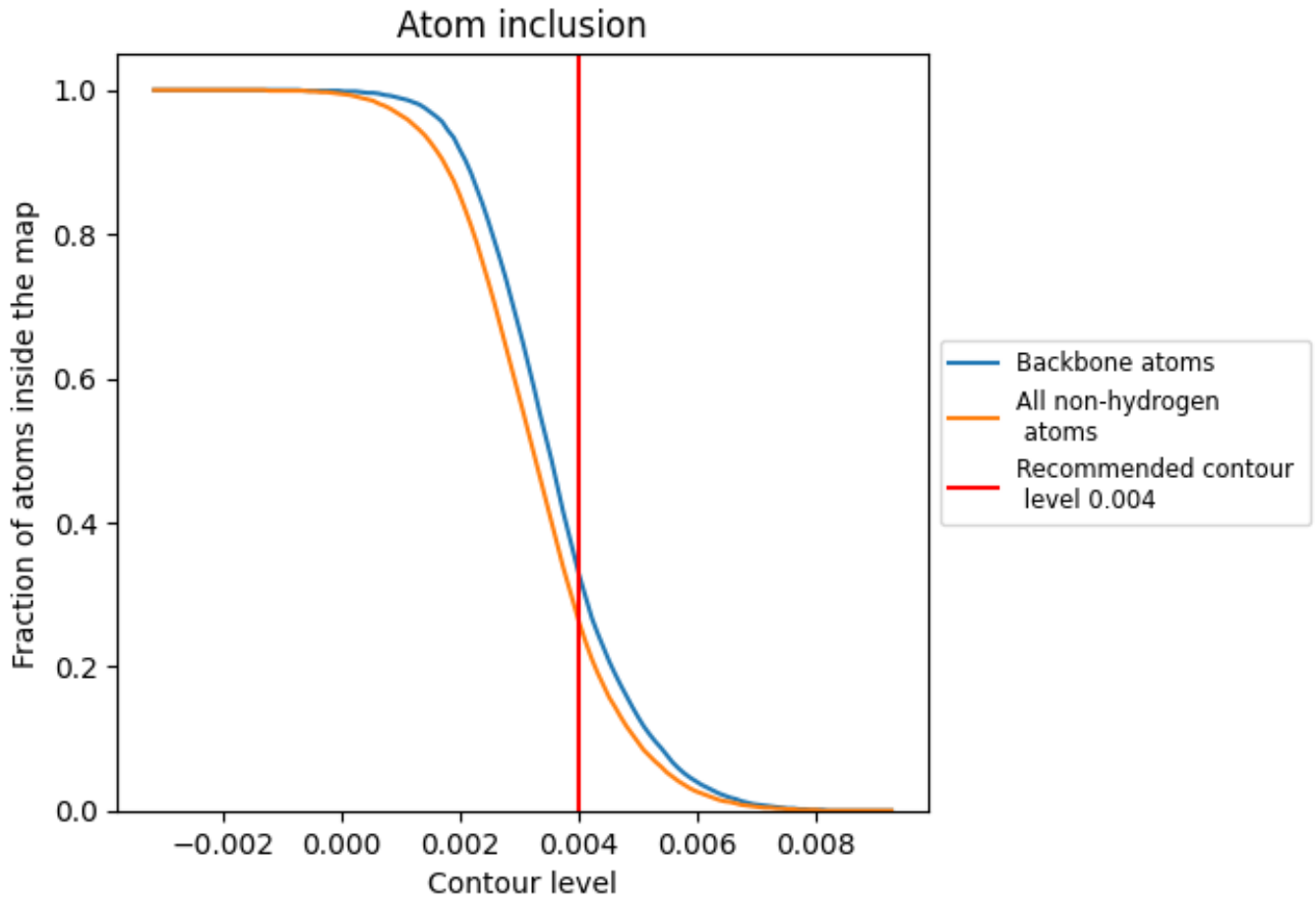
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.004).

9.4 Atom inclusion (i)



At the recommended contour level, 33% of all backbone atoms, 26% 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	0.2640	0.0810
A	0.2060	0.0660
B	0.1870	0.0520
C	0.1350	0.0890
D	0.1710	0.0710
E	0.1210	0.0800
F	0.1970	0.0870
U	0.3520	0.0840
V	0.3630	0.0530
W	0.3720	0.1050
X	0.2600	0.0780
Y	0.4020	0.0940
Z	0.4240	0.1220
a	0.3310	0.1080
b	0.2460	0.0840
c	0.4200	0.1130
d	0.1420	0.0550
e	0.5290	0.1110
f	0.1040	0.0460