Full wwPDB EM Validation Report ⓘ

May 24, 2025 – 07:46 am BST

PDB ID	:	9QVN / pdb_00009qvn
EMDB ID	:	EMD-53400
Title	:	Cryo-EM reconstruction of the NEDD1 anchor protein bound to the gamma-tubulin ring complex
Authors	:	Munoz-Hernandez, H.; Xu, Y.; Wieczorek, M.
Deposited on	:	2025-04-11
Resolution	:	4.70 Å(reported)
Based on initial model	:	.

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:

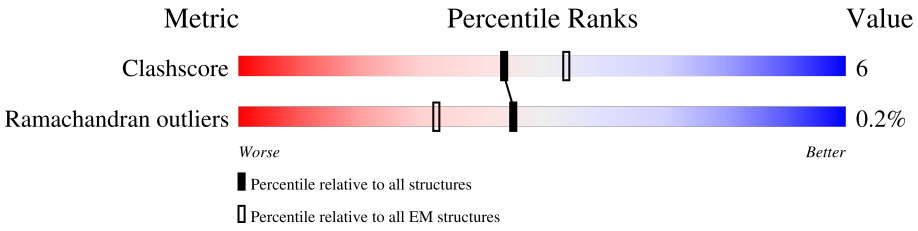
EMDB validation analysis	:	0.0.1.dev118
MolProbity	:	4-5-2 with Phenix2.0rc1
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.43.1

1 Overall quality at a glance

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

The reported resolution of this entry is 4.70 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835

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	B	907	66% 5% 29%
1	D	907	68% 28%
1	F	907	66% 6% 28%
1	H	907	67% 5% 28%
1	N	907	42% 66% 31%
1	r	907	12% 12% 88%
1	s	907	13% 12% 87%
1	t	907	7% 12% 87%
1	u	907	6% 12% 87%

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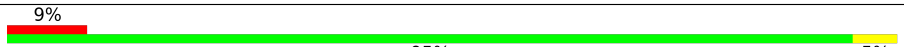
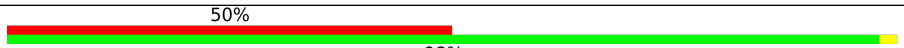
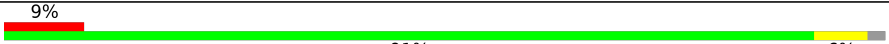
Mol	Chain	Length	Quality of chain
1	v	907	
2	O	82	
2	P	82	
2	Q	82	
2	R	82	
2	S	82	
2	T	82	
2	U	82	
3	V	660	
3	W	660	
3	X	660	
3	Y	660	
4	Z	375	
5	a	457	
5	b	457	
5	c	457	
5	d	457	
5	e	457	
5	f	457	
5	g	457	
5	h	457	
5	i	457	
5	j	457	
5	k	457	
5	l	457	

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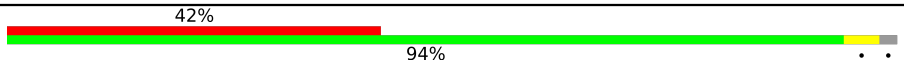
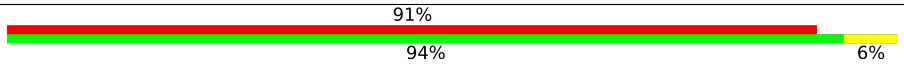
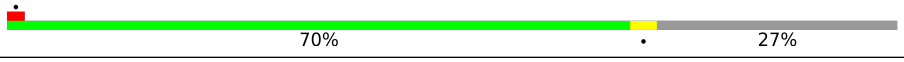
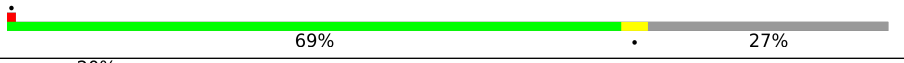
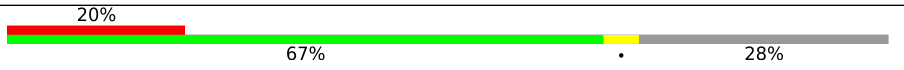
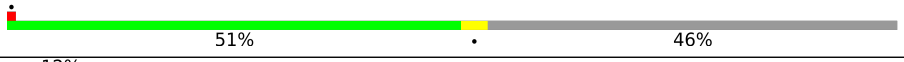
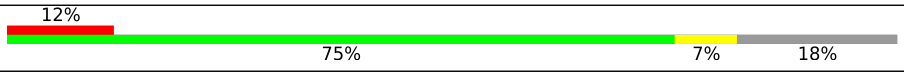
Mol	Chain	Length	Quality of chain
5	m	457	
5	n	457	
6	I	667	
6	K	667	
7	A	930	
7	C	930	
7	E	930	
7	G	930	
7	M	930	
8	L	1811	
9	J	1024	

2 Entry composition (i)

There are 9 unique types of molecules in this entry. The entry contains 87756 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 Gamma-tubulin complex component 3.

Mol	Chain	Residues	Atoms				AltConf	Trace
1	D	657	Total 3256	C 1942	N 657	O 657	0	0
1	F	657	Total 3256	C 1942	N 657	O 657	0	0
1	H	656	Total 3252	C 1940	N 656	O 656	0	0
1	r	113	Total 562	C 336	N 113	O 113	0	0
1	s	115	Total 572	C 342	N 115	O 115	0	0
1	t	120	Total 597	C 357	N 120	O 120	0	0
1	u	120	Total 597	C 357	N 120	O 120	0	0
1	v	129	Total 642	C 384	N 129	O 129	0	0
1	B	644	Total 3192	C 1904	N 644	O 644	0	0
1	N	630	Total 3123	C 1863	N 630	O 630	0	0

- Molecule 2 is a protein called Mitotic-spindle organizing protein 1.

Mol	Chain	Residues	Atoms				AltConf	Trace
2	P	73	Total 363	C 217	N 73	O 73	0	0
2	R	66	Total 328	C 196	N 66	O 66	0	0
2	S	66	Total 328	C 196	N 66	O 66	0	0
2	T	82	Total 406	C 242	N 82	O 82	0	0
2	U	82	Total 406	C 242	N 82	O 82	0	0

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Mol	Chain	Residues	Atoms				AltConf	Trace
2	O	82	Total 406	C 242	N 82	O 82	0	0
2	Q	66	Total 328	C 196	N 66	O 66	0	0

- Molecule 3 is a protein called Protein NEDD1.

Mol	Chain	Residues	Atoms				AltConf	Trace
3	W	79	Total 394	C 236	N 79	O 79	0	0
3	X	78	Total 389	C 233	N 78	O 78	0	0
3	V	77	Total 384	C 230	N 77	O 77	0	0
3	Y	78	Total 389	C 233	N 78	O 78	0	0

- Molecule 4 is a protein called Actin, cytoplasmic 1, N-terminally processed.

Mol	Chain	Residues	Atoms				AltConf	Trace
4	Z	375	Total 1847	C 1097	N 375	O 375	0	0

- Molecule 5 is a protein called Tubulin gamma-1 chain.

Mol	Chain	Residues	Atoms				AltConf	Trace
5	a	446	Total 2204	C 1312	N 446	O 446	0	0
5	b	452	Total 2233	C 1329	N 452	O 452	0	0
5	c	448	Total 2213	C 1317	N 448	O 448	0	0
5	e	448	Total 2213	C 1317	N 448	O 448	0	0
5	f	451	Total 2228	C 1326	N 451	O 451	0	0
5	g	450	Total 2223	C 1323	N 450	O 450	0	0
5	h	451	Total 2228	C 1326	N 451	O 451	0	0
5	i	448	Total 2213	C 1317	N 448	O 448	0	0

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Mol	Chain	Residues	Atoms				AltConf	Trace
5	j	449	Total	C	N	O	0	0
			2218	1320	449	449		
5	k	448	Total	C	N	O	0	0
			2213	1317	448	448		
5	l	447	Total	C	N	O	0	0
			2208	1314	447	447		
5	m	448	Total	C	N	O	0	0
			2213	1317	448	448		
5	n	457	Total	C	N	O	0	0
			2258	1344	457	457		
5	d	451	Total	C	N	O	0	0
			2228	1326	451	451		

There are 84 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
a	452	GLU	-	expression tag	UNP P23258
a	453	ASN	-	expression tag	UNP P23258
a	454	LEU	-	expression tag	UNP P23258
a	455	TYR	-	expression tag	UNP P23258
a	456	PHE	-	expression tag	UNP P23258
a	457	GLN	-	expression tag	UNP P23258
b	452	GLU	-	expression tag	UNP P23258
b	453	ASN	-	expression tag	UNP P23258
b	454	LEU	-	expression tag	UNP P23258
b	455	TYR	-	expression tag	UNP P23258
b	456	PHE	-	expression tag	UNP P23258
b	457	GLN	-	expression tag	UNP P23258
c	452	GLU	-	expression tag	UNP P23258
c	453	ASN	-	expression tag	UNP P23258
c	454	LEU	-	expression tag	UNP P23258
c	455	TYR	-	expression tag	UNP P23258
c	456	PHE	-	expression tag	UNP P23258
c	457	GLN	-	expression tag	UNP P23258
e	452	GLU	-	expression tag	UNP P23258
e	453	ASN	-	expression tag	UNP P23258
e	454	LEU	-	expression tag	UNP P23258
e	455	TYR	-	expression tag	UNP P23258
e	456	PHE	-	expression tag	UNP P23258
e	457	GLN	-	expression tag	UNP P23258
f	452	GLU	-	expression tag	UNP P23258
f	453	ASN	-	expression tag	UNP P23258
f	454	LEU	-	expression tag	UNP P23258

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Chain	Residue	Modelled	Actual	Comment	Reference
f	455	TYR	-	expression tag	UNP P23258
f	456	PHE	-	expression tag	UNP P23258
f	457	GLN	-	expression tag	UNP P23258
g	452	GLU	-	expression tag	UNP P23258
g	453	ASN	-	expression tag	UNP P23258
g	454	LEU	-	expression tag	UNP P23258
g	455	TYR	-	expression tag	UNP P23258
g	456	PHE	-	expression tag	UNP P23258
g	457	GLN	-	expression tag	UNP P23258
h	452	GLU	-	expression tag	UNP P23258
h	453	ASN	-	expression tag	UNP P23258
h	454	LEU	-	expression tag	UNP P23258
h	455	TYR	-	expression tag	UNP P23258
h	456	PHE	-	expression tag	UNP P23258
h	457	GLN	-	expression tag	UNP P23258
i	452	GLU	-	expression tag	UNP P23258
i	453	ASN	-	expression tag	UNP P23258
i	454	LEU	-	expression tag	UNP P23258
i	455	TYR	-	expression tag	UNP P23258
i	456	PHE	-	expression tag	UNP P23258
i	457	GLN	-	expression tag	UNP P23258
j	452	GLU	-	expression tag	UNP P23258
j	453	ASN	-	expression tag	UNP P23258
j	454	LEU	-	expression tag	UNP P23258
j	455	TYR	-	expression tag	UNP P23258
j	456	PHE	-	expression tag	UNP P23258
j	457	GLN	-	expression tag	UNP P23258
k	452	GLU	-	expression tag	UNP P23258
k	453	ASN	-	expression tag	UNP P23258
k	454	LEU	-	expression tag	UNP P23258
k	455	TYR	-	expression tag	UNP P23258
k	456	PHE	-	expression tag	UNP P23258
k	457	GLN	-	expression tag	UNP P23258
l	452	GLU	-	expression tag	UNP P23258
l	453	ASN	-	expression tag	UNP P23258
l	454	LEU	-	expression tag	UNP P23258
l	455	TYR	-	expression tag	UNP P23258
l	456	PHE	-	expression tag	UNP P23258
l	457	GLN	-	expression tag	UNP P23258
m	452	GLU	-	expression tag	UNP P23258
m	453	ASN	-	expression tag	UNP P23258
m	454	LEU	-	expression tag	UNP P23258

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Chain	Residue	Modelled	Actual	Comment	Reference
m	455	TYR	-	expression tag	UNP P23258
m	456	PHE	-	expression tag	UNP P23258
m	457	GLN	-	expression tag	UNP P23258
n	452	GLU	-	expression tag	UNP P23258
n	453	ASN	-	expression tag	UNP P23258
n	454	LEU	-	expression tag	UNP P23258
n	455	TYR	-	expression tag	UNP P23258
n	456	PHE	-	expression tag	UNP P23258
n	457	GLN	-	expression tag	UNP P23258
d	452	GLU	-	expression tag	UNP P23258
d	453	ASN	-	expression tag	UNP P23258
d	454	LEU	-	expression tag	UNP P23258
d	455	TYR	-	expression tag	UNP P23258
d	456	PHE	-	expression tag	UNP P23258
d	457	GLN	-	expression tag	UNP P23258

- Molecule 6 is a protein called Gamma-tubulin complex component 4.

Mol	Chain	Residues	Atoms				AltConf	Trace
6	K	614	Total	C	N	O	0	0
			3037	1809	614	614		
6	I	612	Total	C	N	O	0	0
			3027	1803	612	612		

- Molecule 7 is a protein called Isoform 3 of Gamma-tubulin complex component 2.

Mol	Chain	Residues	Atoms				AltConf	Trace
7	G	678	Total	C	N	O	0	0
			3367	2011	678	678		
7	M	665	Total	C	N	O	0	0
			3303	1973	665	665		
7	C	653	Total	C	N	O	0	0
			3244	1938	653	653		
7	A	657	Total	C	N	O	0	0
			3264	1950	657	657		
7	E	678	Total	C	N	O	0	0
			3367	2011	678	678		

- Molecule 8 is a protein called TUBGCP6 protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
8	L	982	Total 4851	C 2887	N 982	O 982	0	0

- Molecule 9 is a protein called Gamma-tubulin complex component 5.

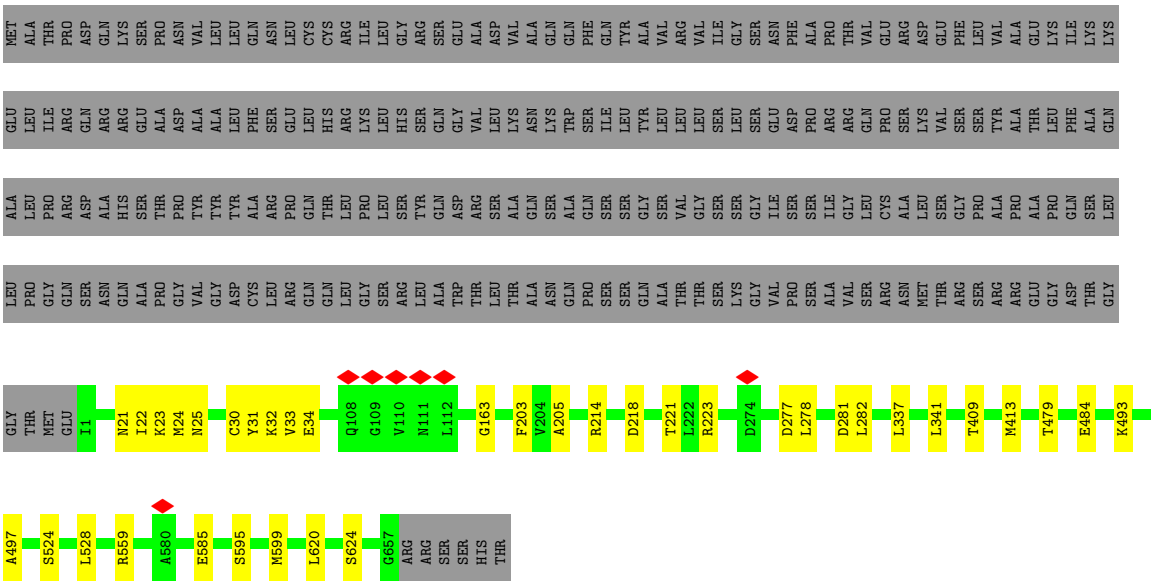
Mol	Chain	Residues	Atoms				AltConf	Trace
9	J	842	Total 4186	C 2502	N 842	O 842	0	0

3 Residue-property plots (i)

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

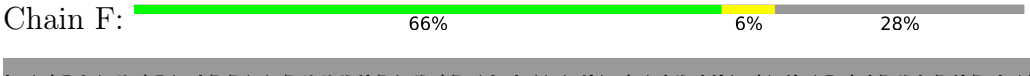
• Molecule 1: Gamma-tubulin complex component 3

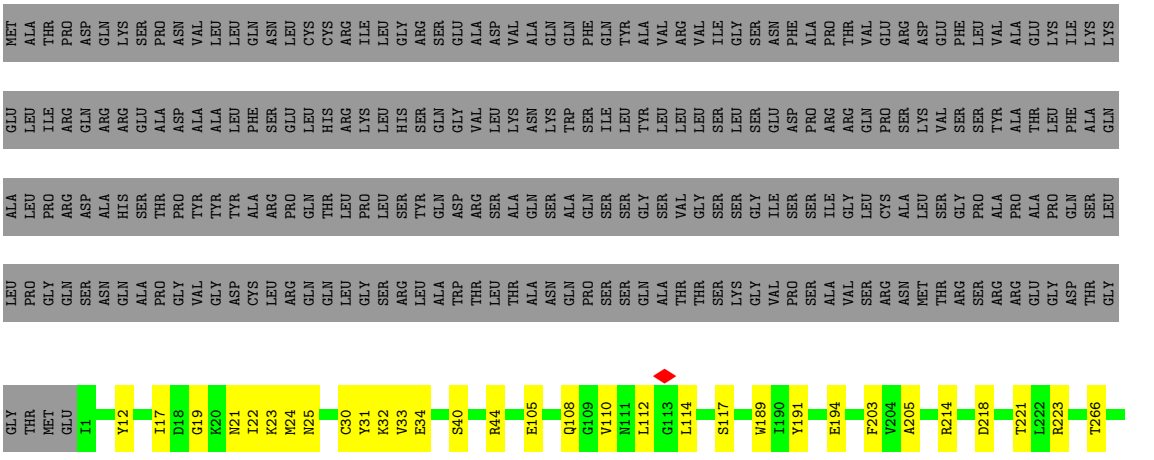
Chain D:

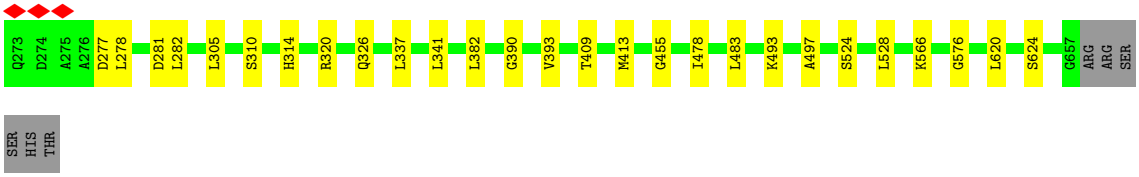


• Molecule 1: Gamma-tubulin complex component 3

Chain F:

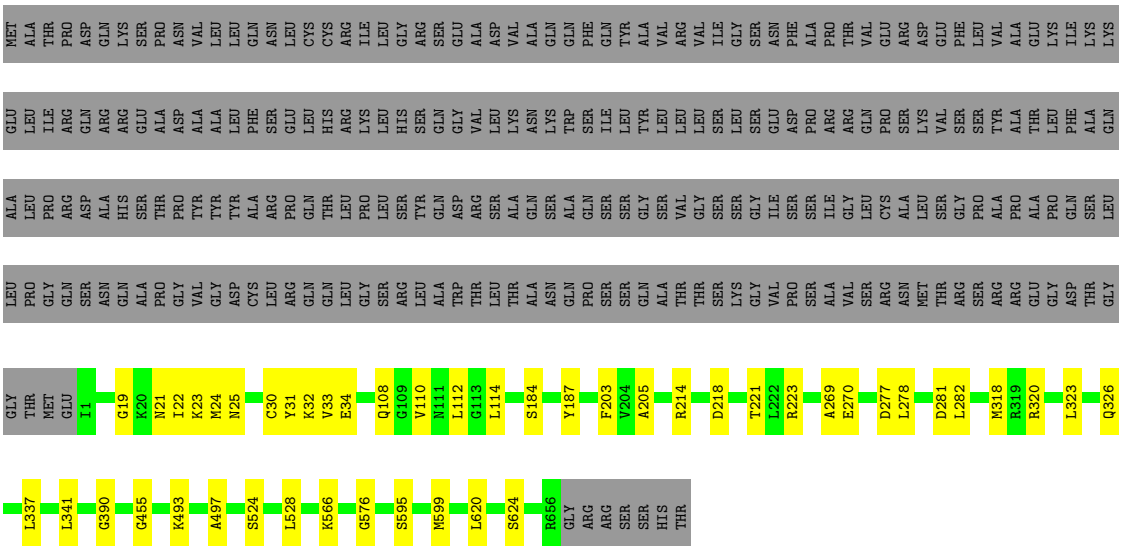






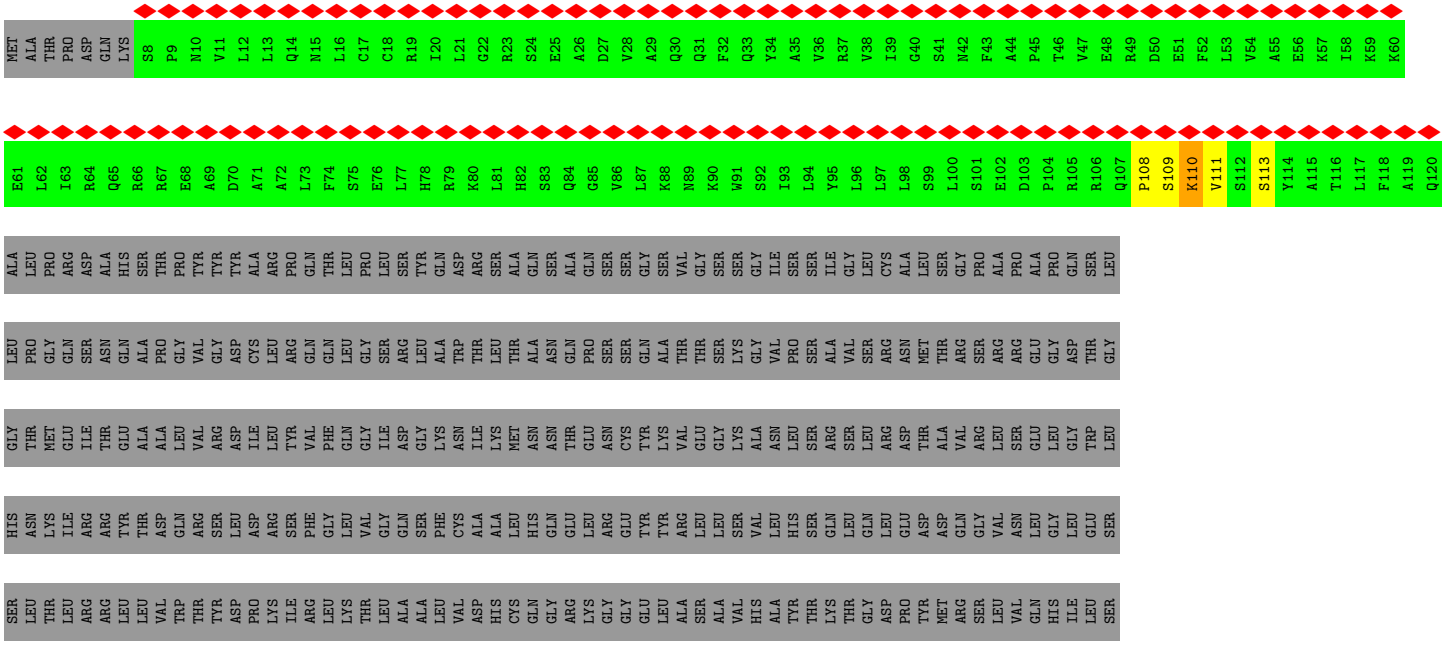
• Molecule 1: Gamma-tubulin complex component 3

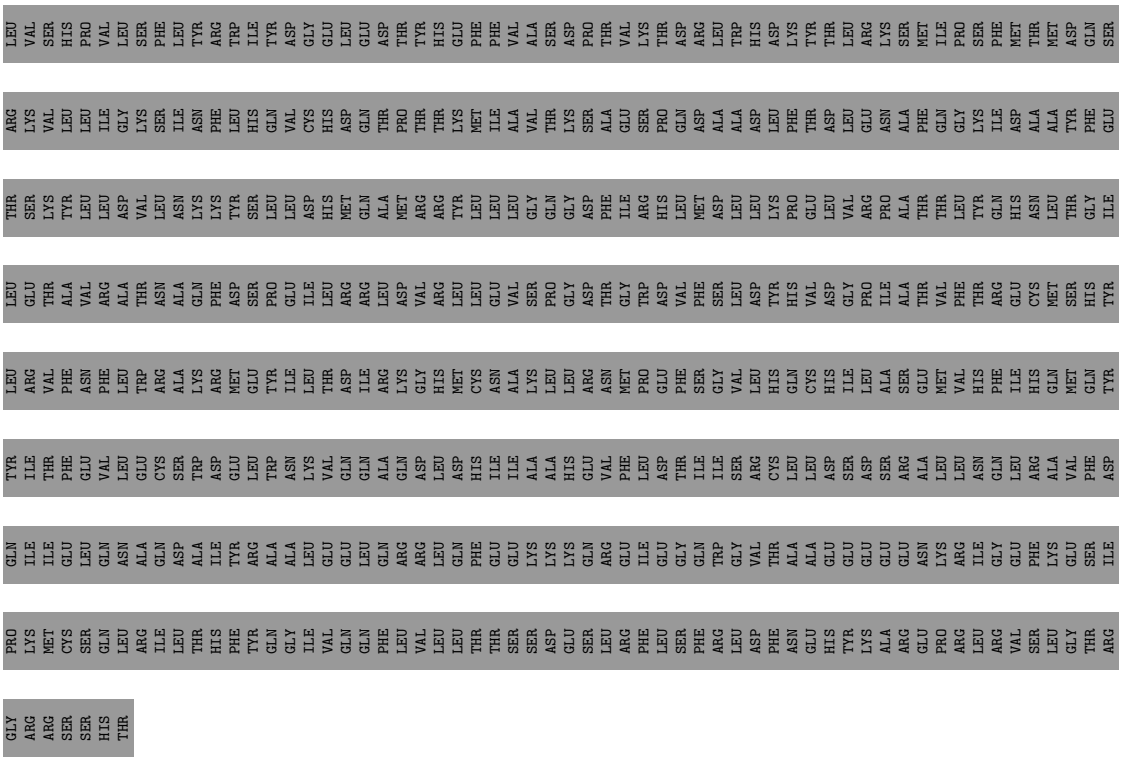
Chain H:



• Molecule 1: Gamma-tubulin complex component 3

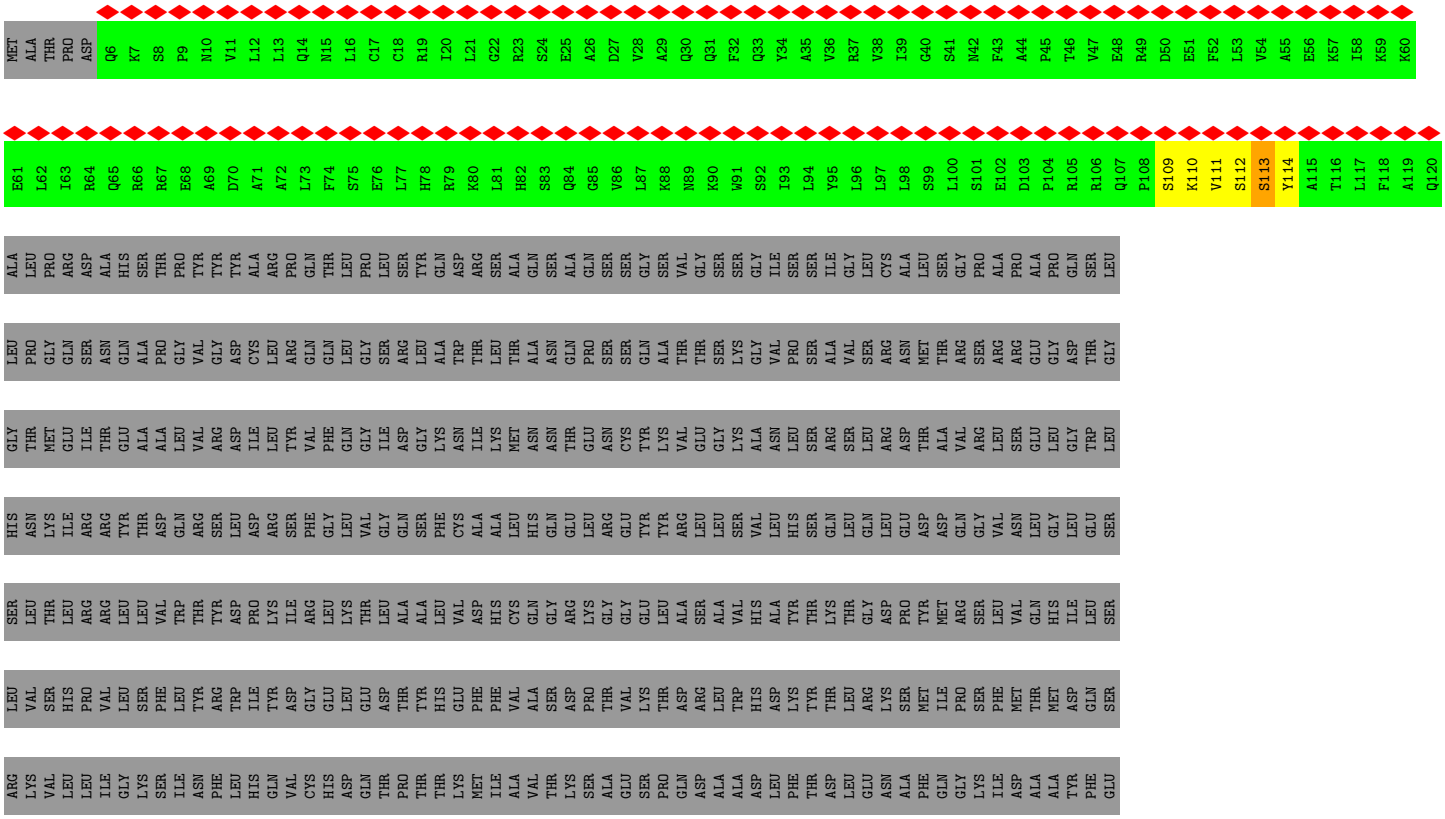
Chain r:





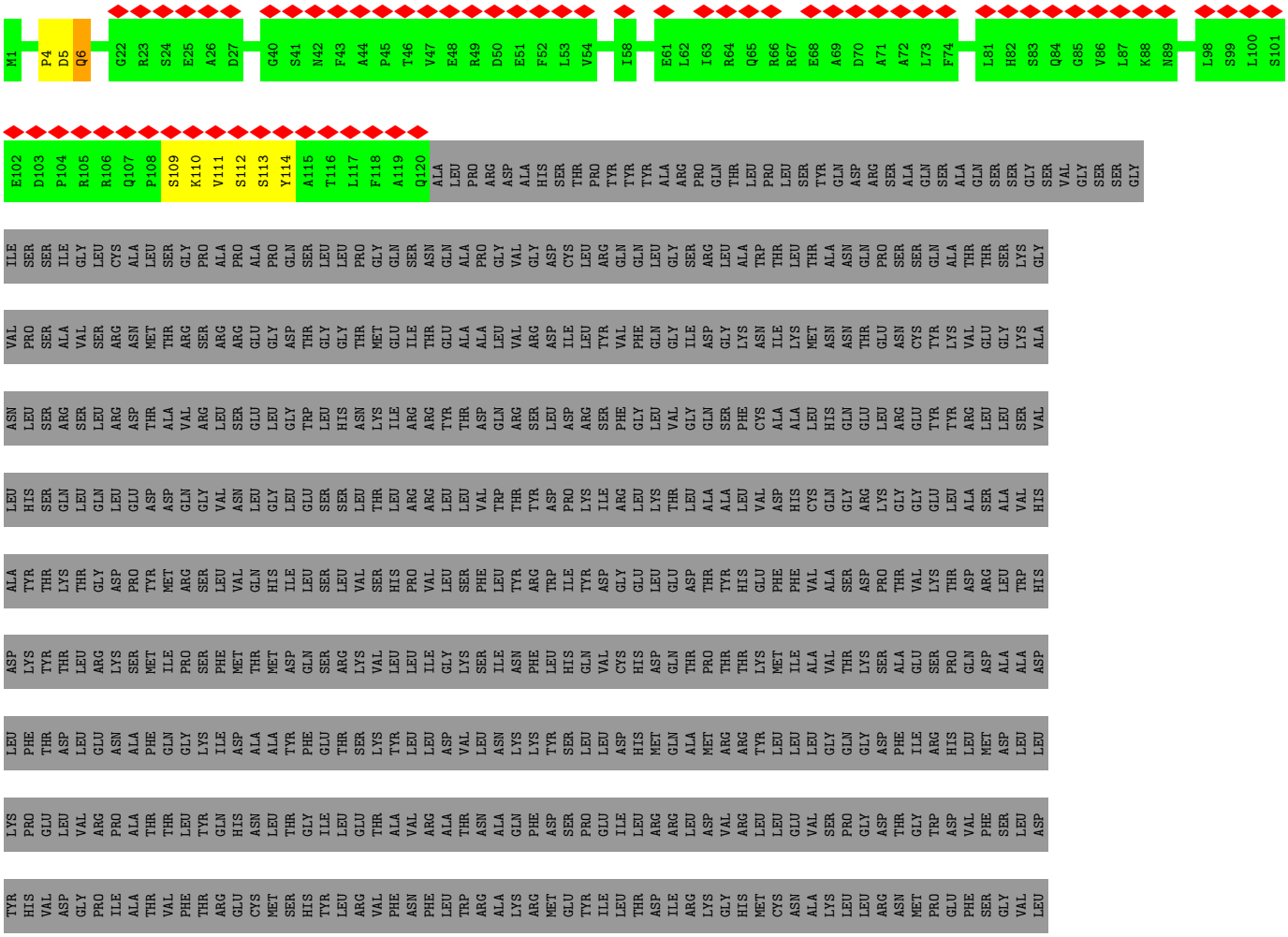
- Molecule 1: Gamma-tubulin complex component 3

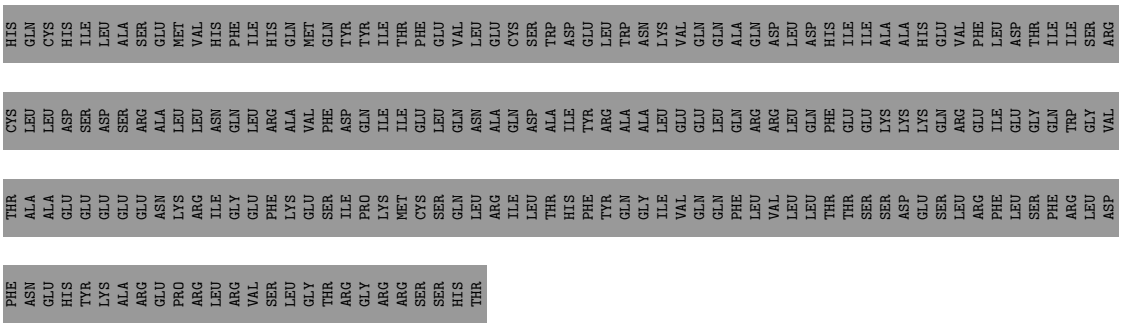
Chain s:



• Molecule 1: Gamma-tubulin complex component 3

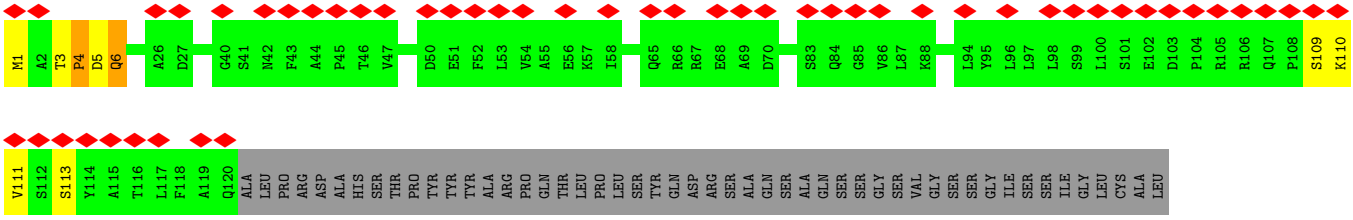
Chain t:

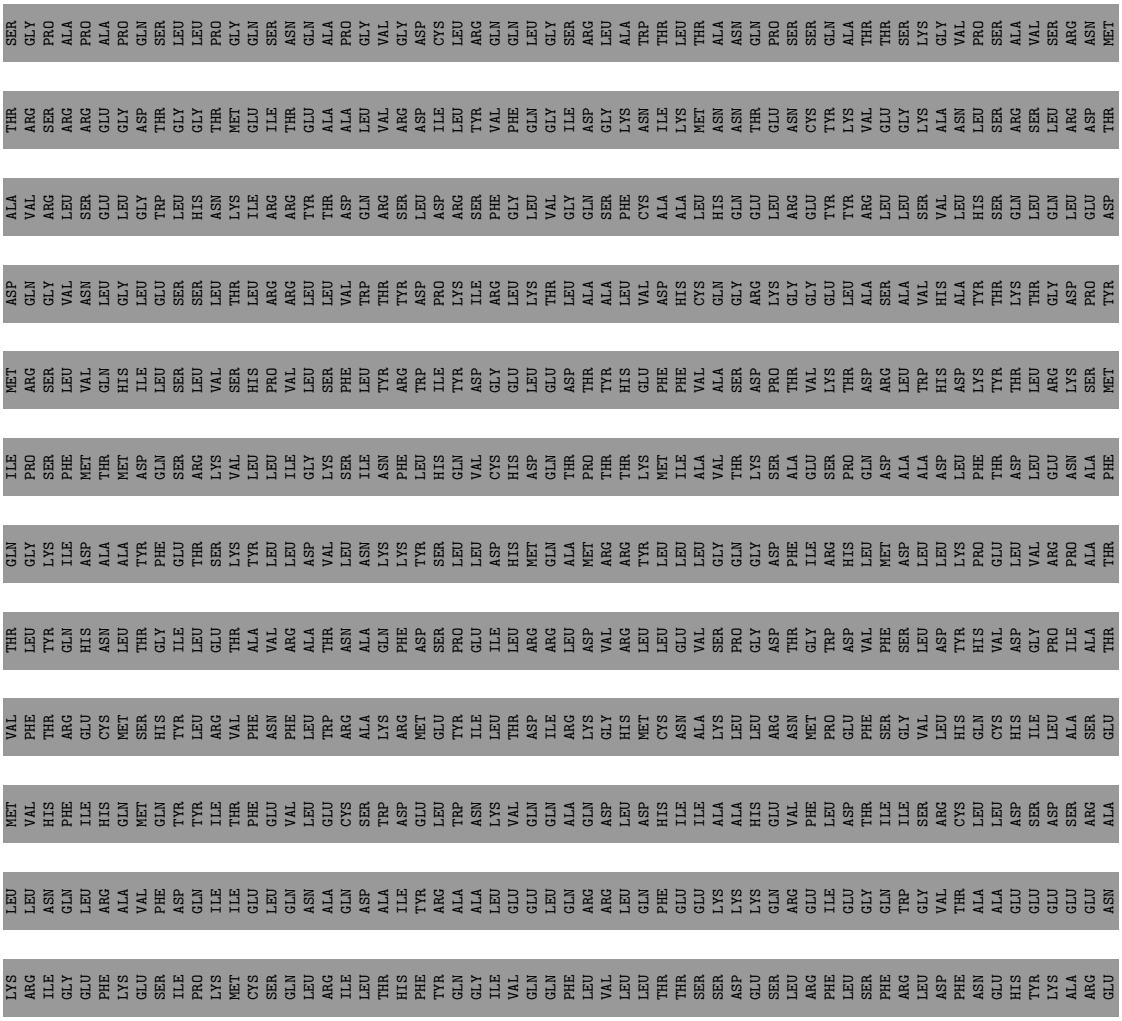




• Molecule 1: Gamma-tubulin complex component 3

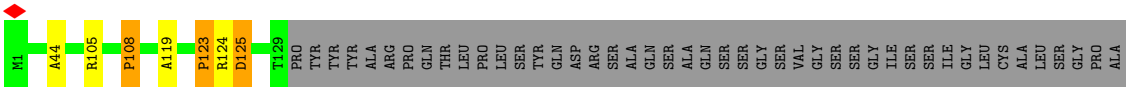
Chain u: 6% 12% 87%

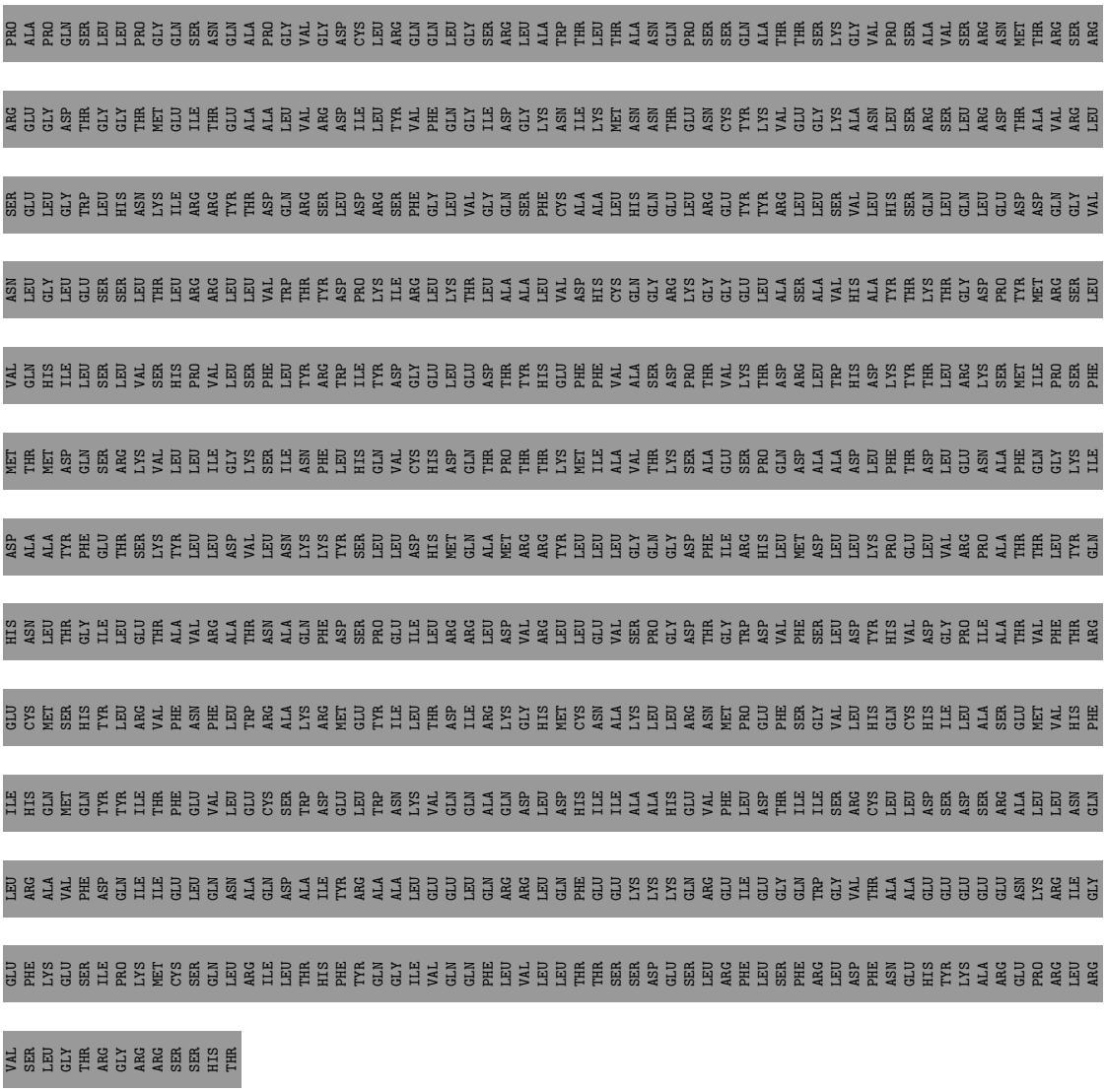




• Molecule 1: Gamma-tubulin complex component 3

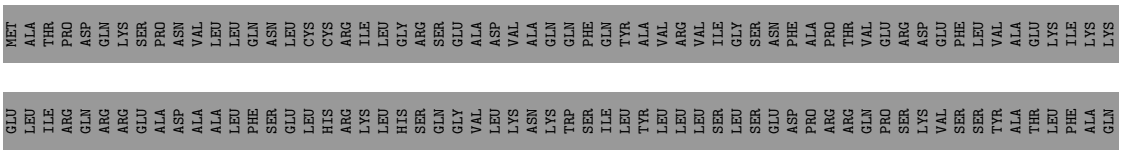
Chain v:

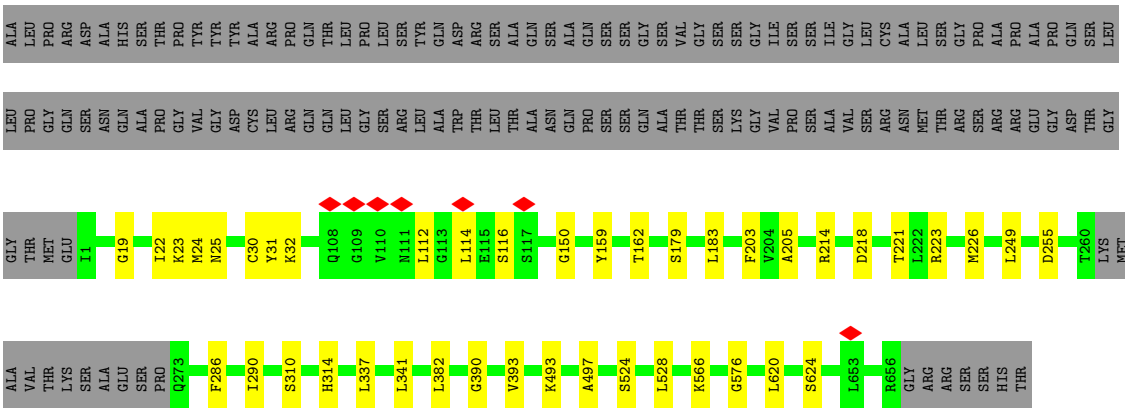




• Molecule 1: Gamma-tubulin complex component 3

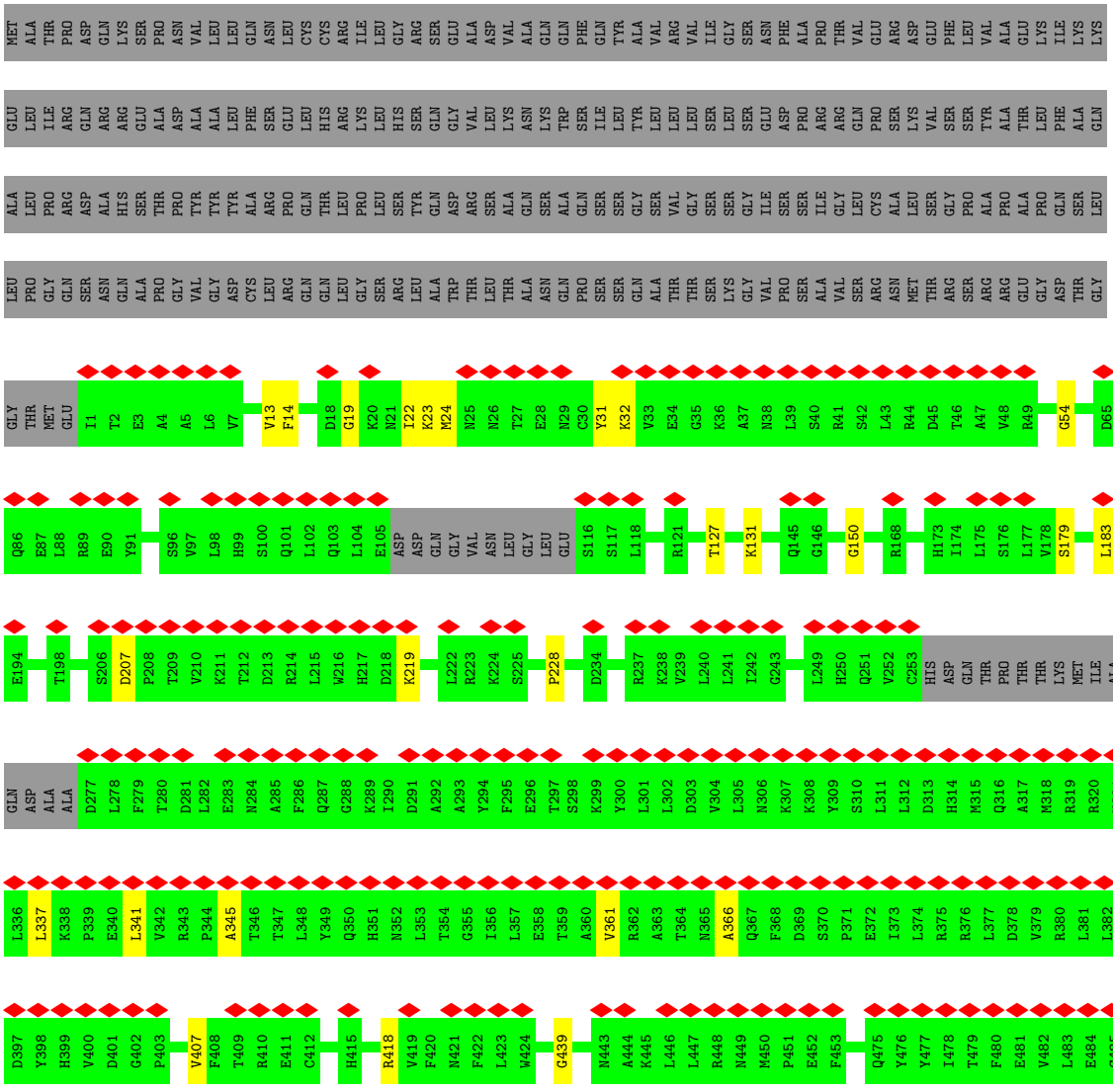
Chain B:

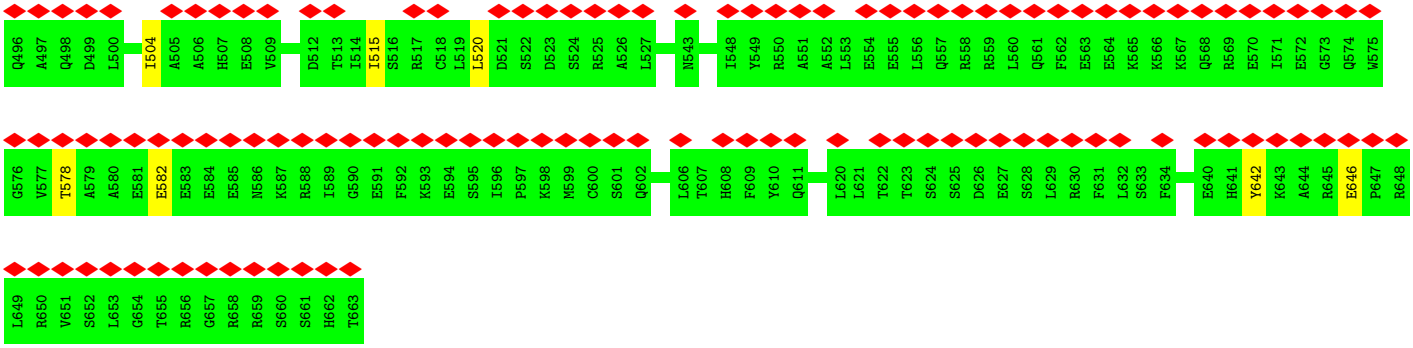




• Molecule 1: Gamma-tubulin complex component 3

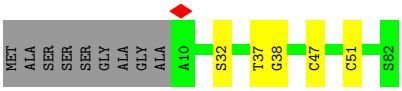
Chain N:





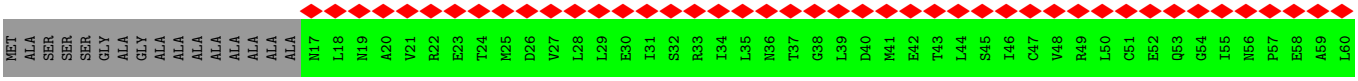
• Molecule 2: Mitotic-spindle organizing protein 1

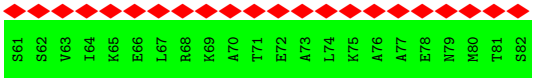
Chain P:



• Molecule 2: Mitotic-spindle organizing protein 1

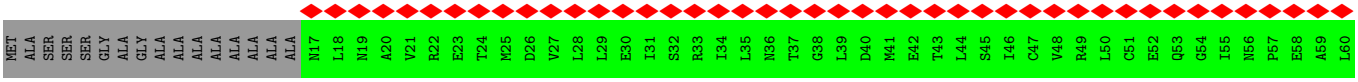
Chain R:

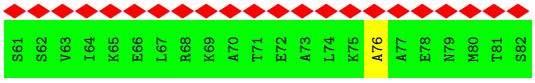




• Molecule 2: Mitotic-spindle organizing protein 1

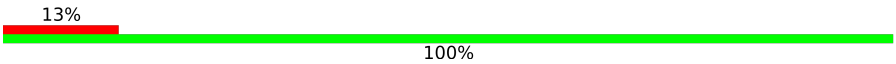
Chain S:

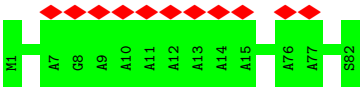




• Molecule 2: Mitotic-spindle organizing protein 1

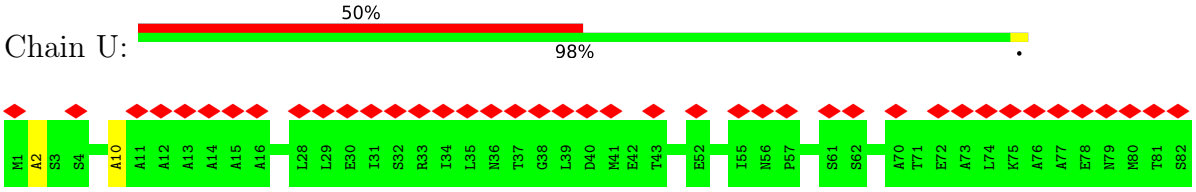
Chain T:





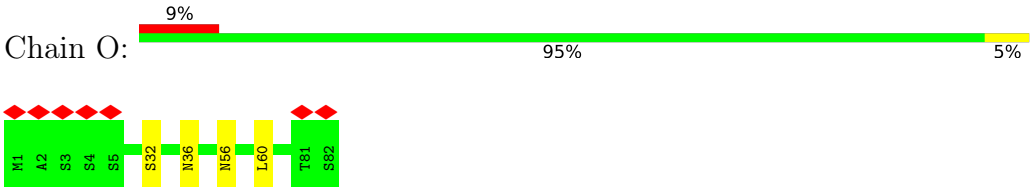
• Molecule 2: Mitotic-spindle organizing protein 1

Chain U:



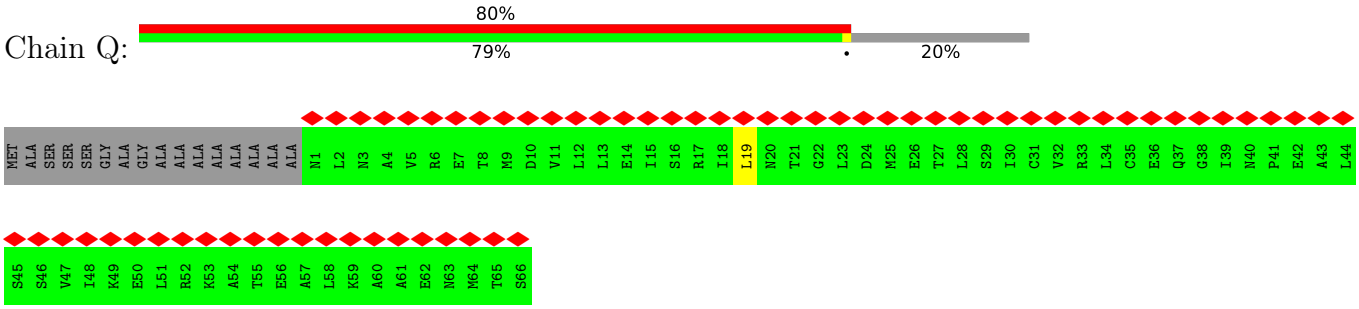
• Molecule 2: Mitotic-spindle organizing protein 1

Chain O:



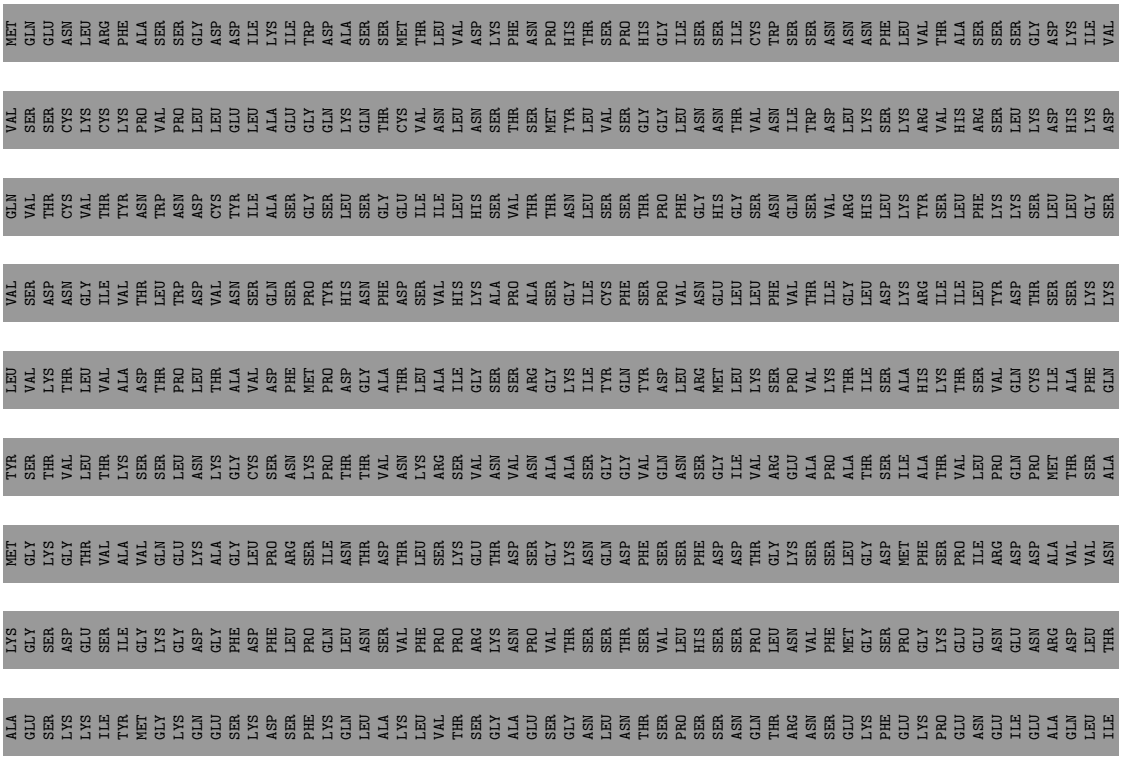
• Molecule 2: Mitotic-spindle organizing protein 1

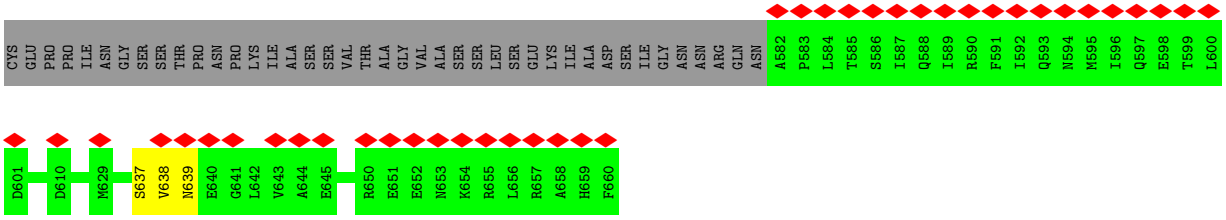
Chain Q:



• Molecule 3: Protein NEDD1

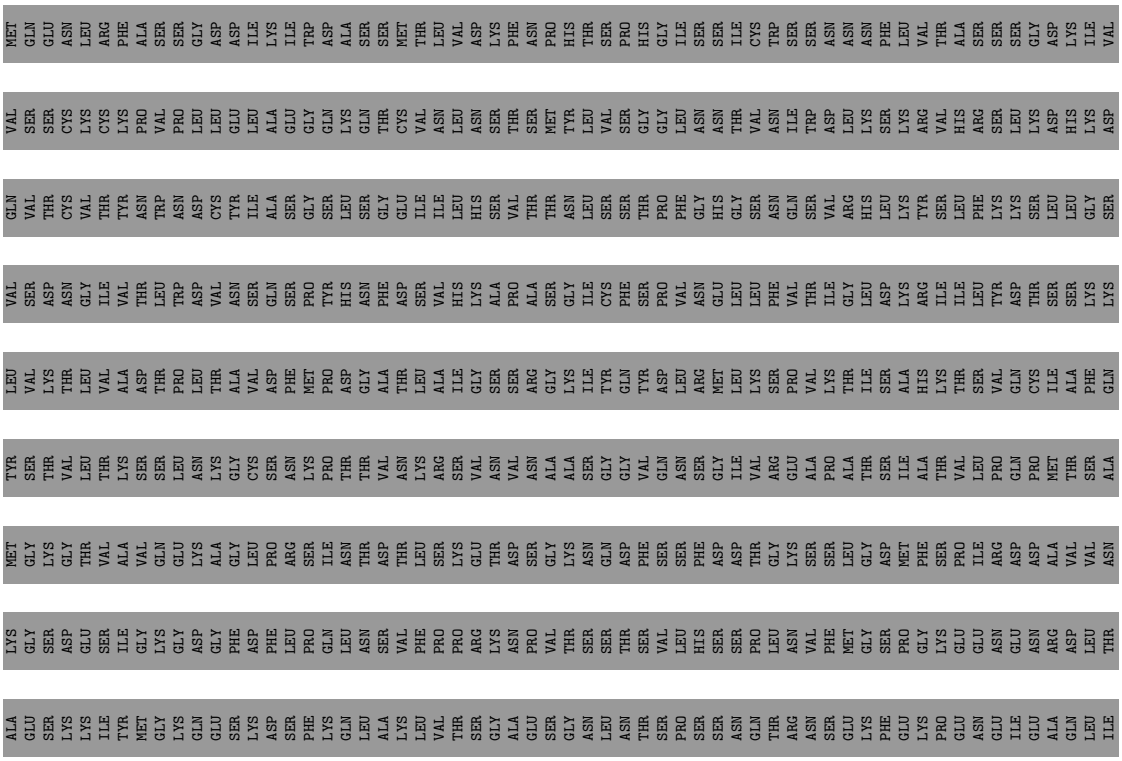
Chain W:





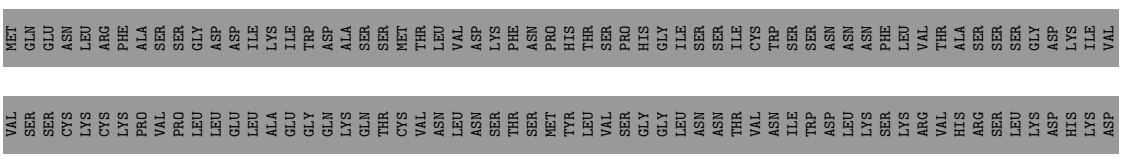
• Molecule 3: Protein NEDD1

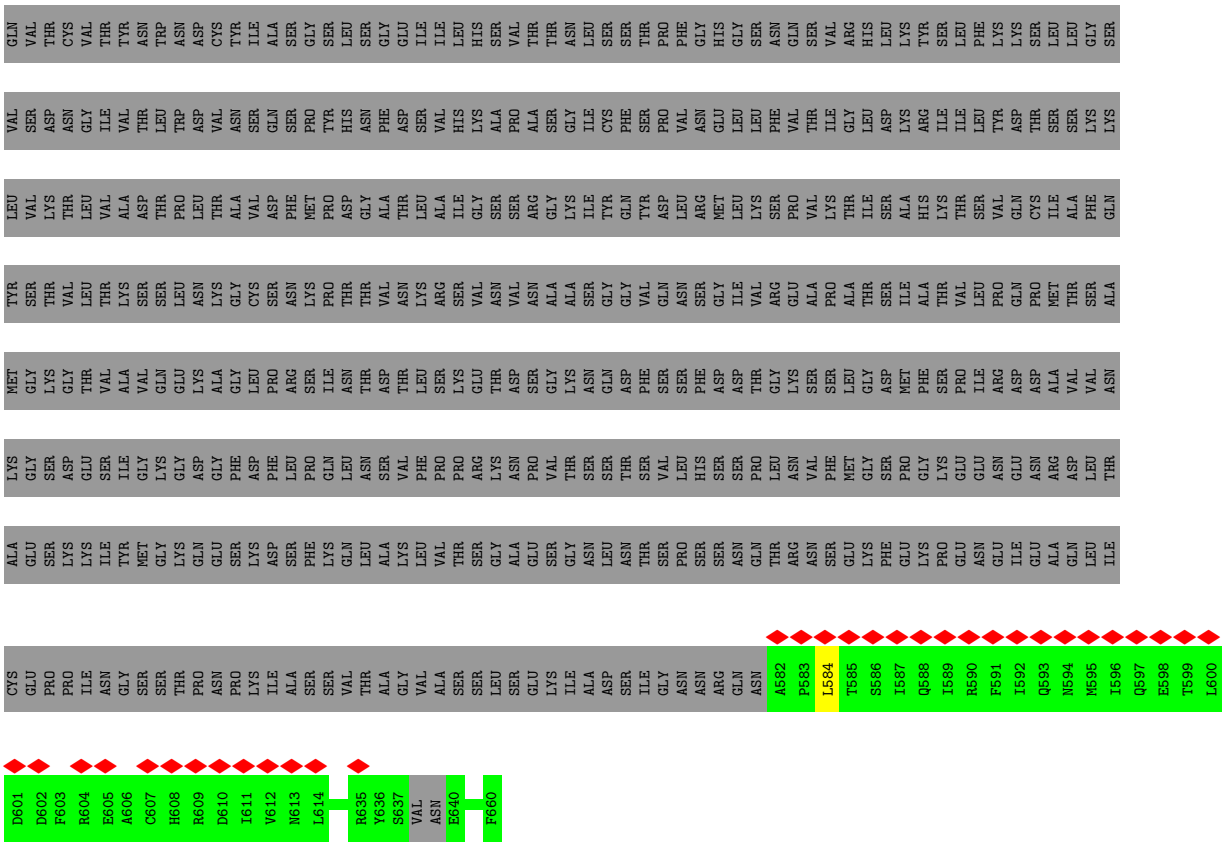
Chain X:



• Molecule 3: Protein NEDD1

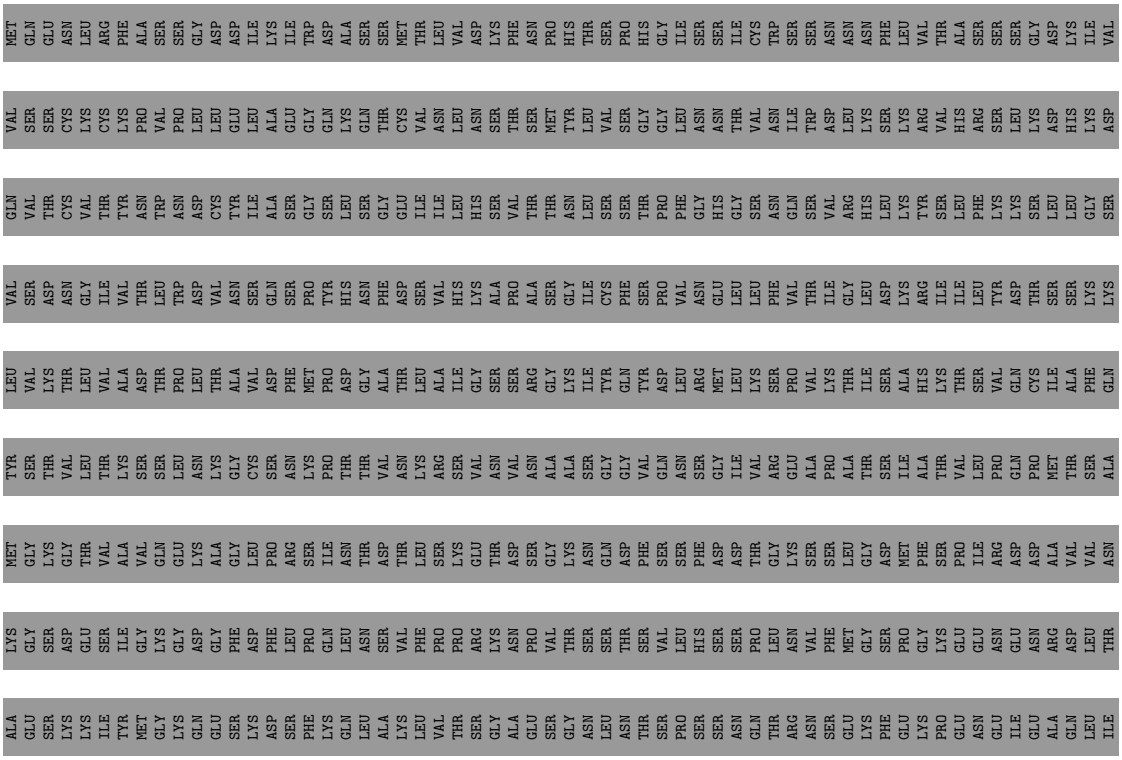
Chain V:

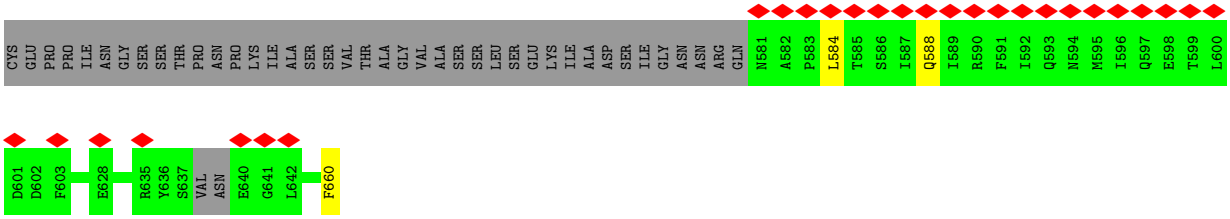




• Molecule 3: Protein NEDD1

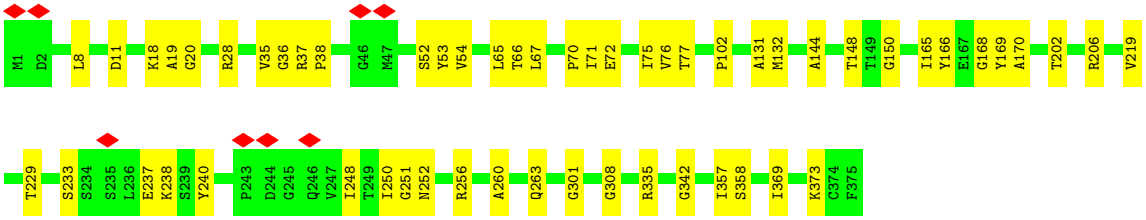
Chain Y:





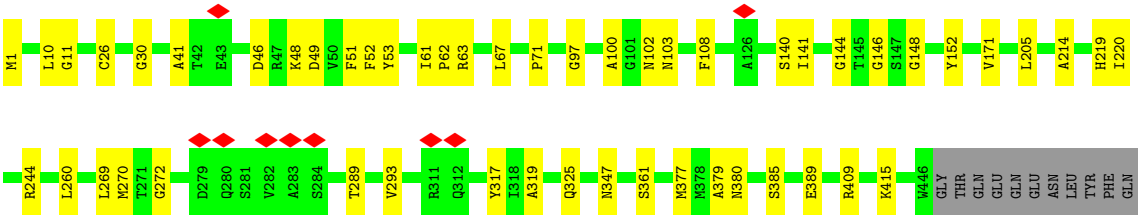
• Molecule 4: Actin, cytoplasmic 1, N-terminally processed

Chain Z:



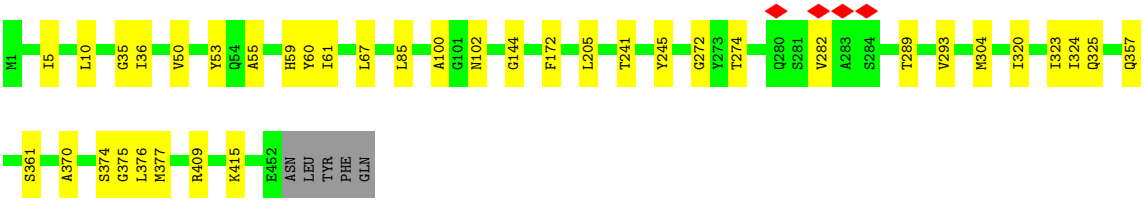
• Molecule 5: Tubulin gamma-1 chain

Chain a:



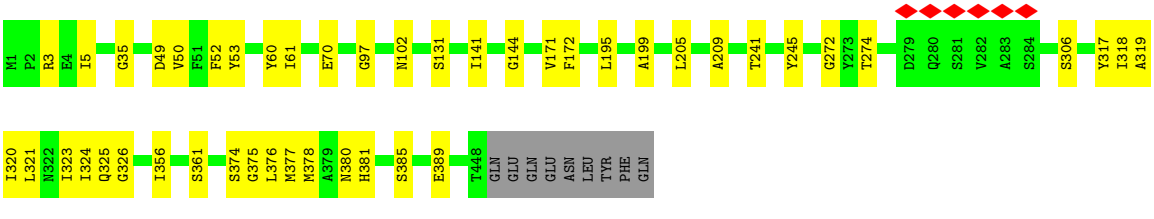
• Molecule 5: Tubulin gamma-1 chain

Chain b:



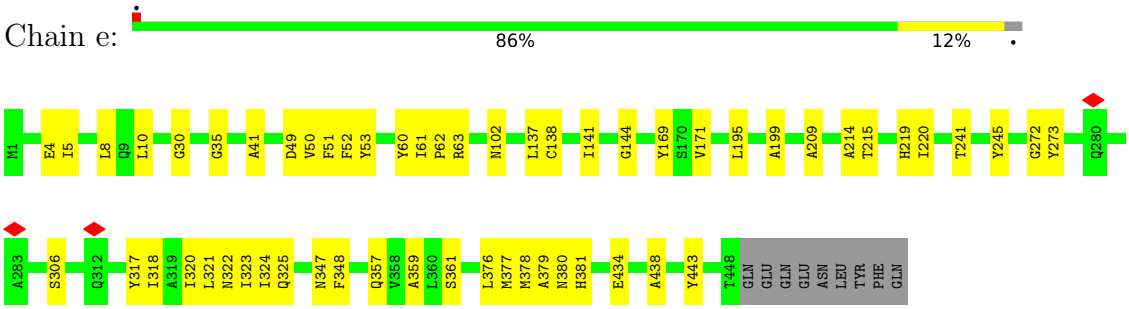
• Molecule 5: Tubulin gamma-1 chain

Chain c:



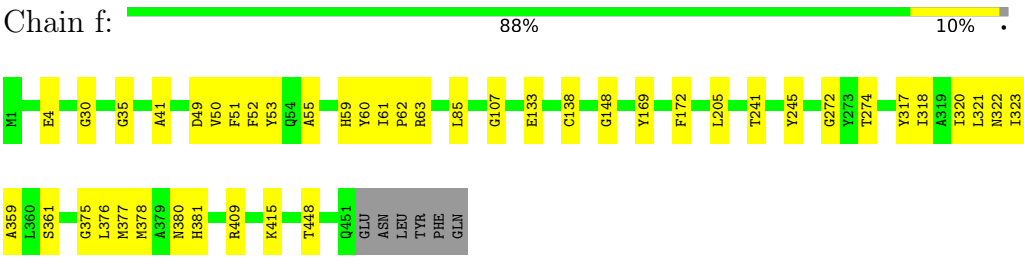
• Molecule 5: Tubulin gamma-1 chain

Chain e:



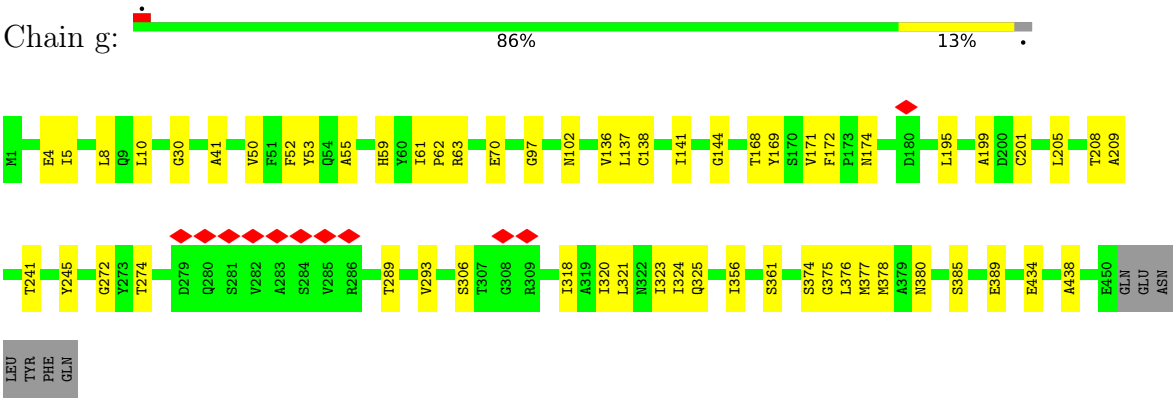
• Molecule 5: Tubulin gamma-1 chain

Chain f:



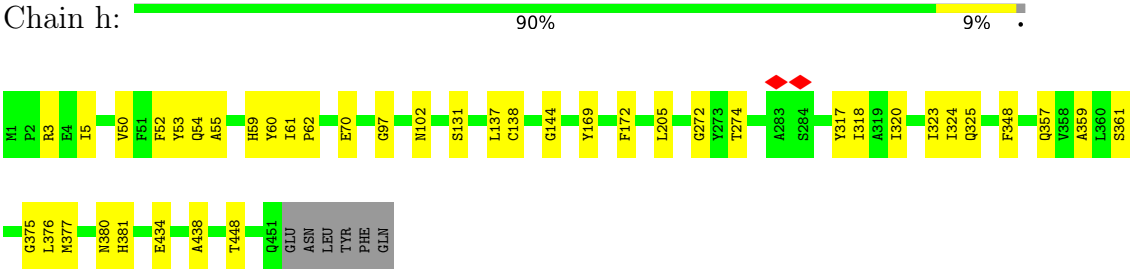
• Molecule 5: Tubulin gamma-1 chain

Chain g:



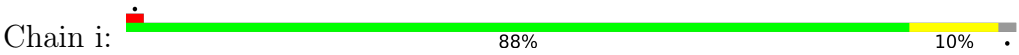
• Molecule 5: Tubulin gamma-1 chain

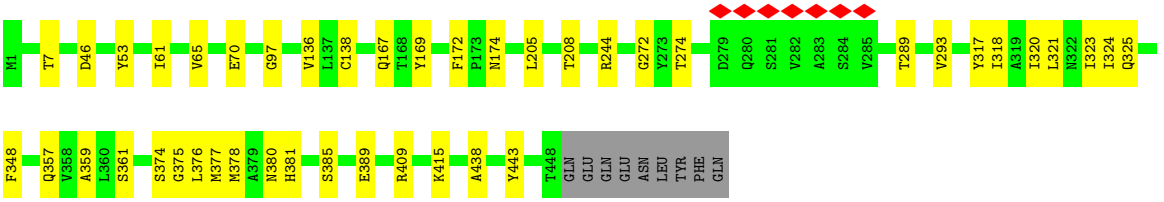
Chain h:



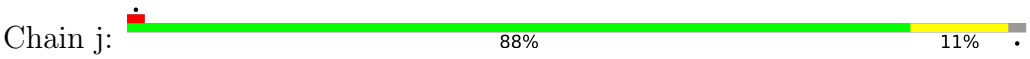
• Molecule 5: Tubulin gamma-1 chain

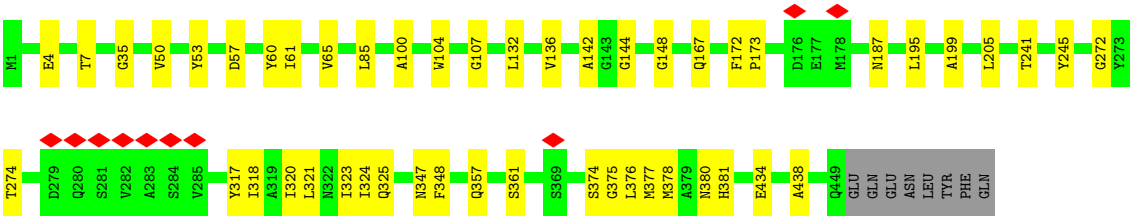
Chain i:



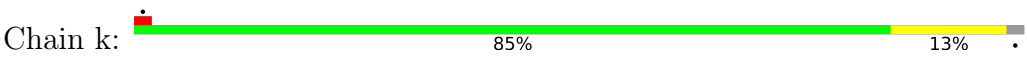


• Molecule 5: Tubulin gamma-1 chain

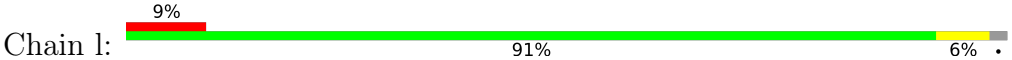


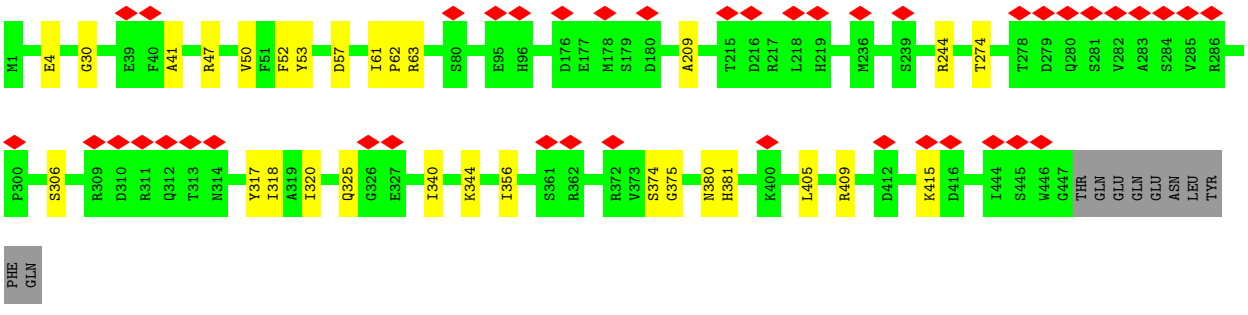


• Molecule 5: Tubulin gamma-1 chain

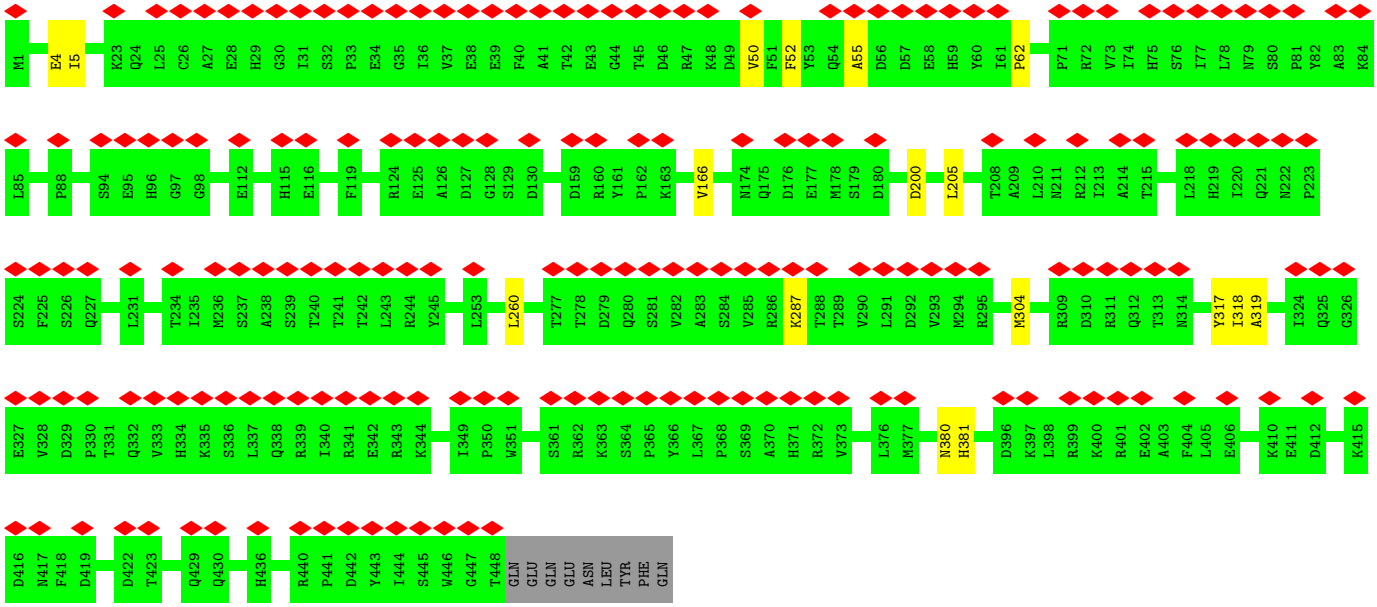


• Molecule 5: Tubulin gamma-1 chain



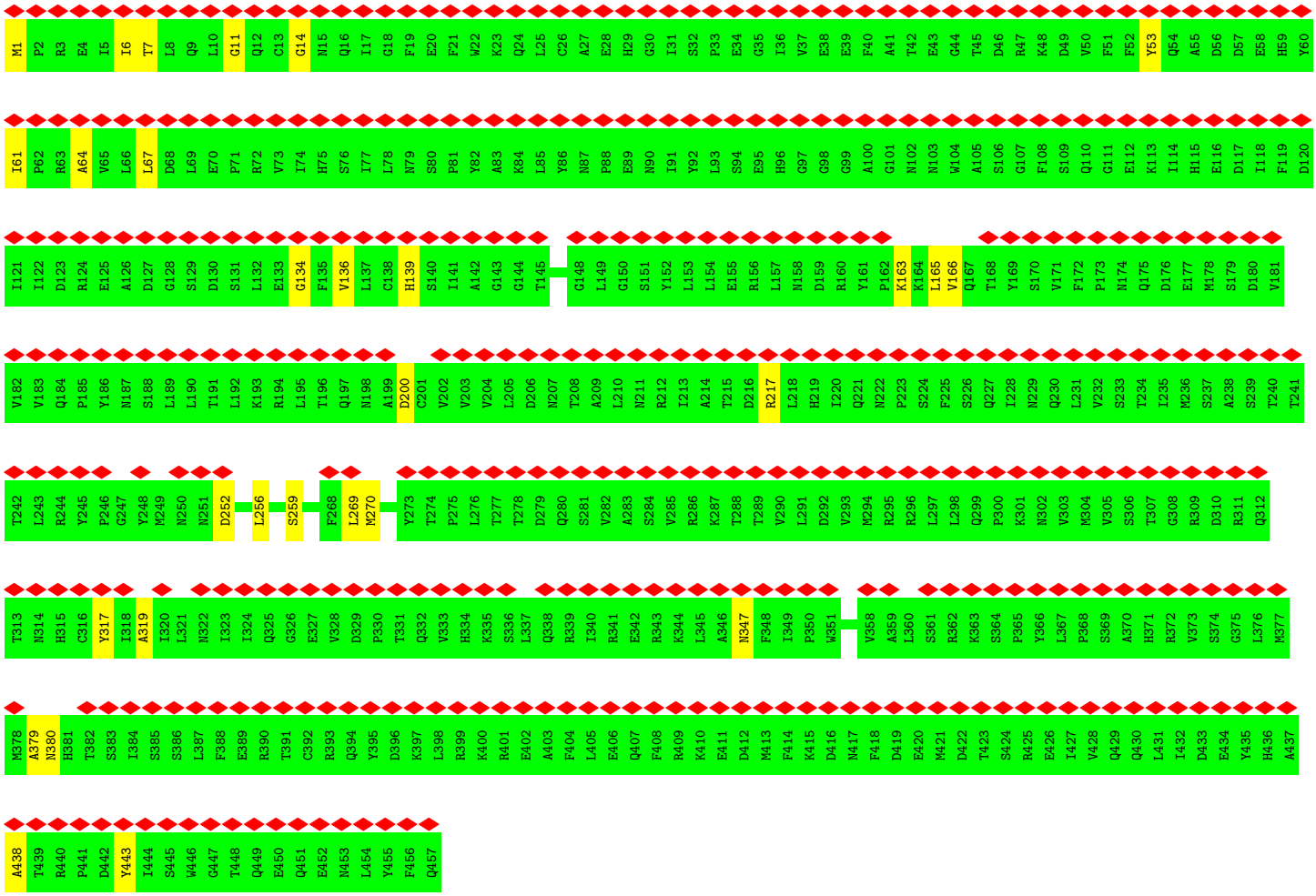


• Molecule 5: Tubulin gamma-1 chain



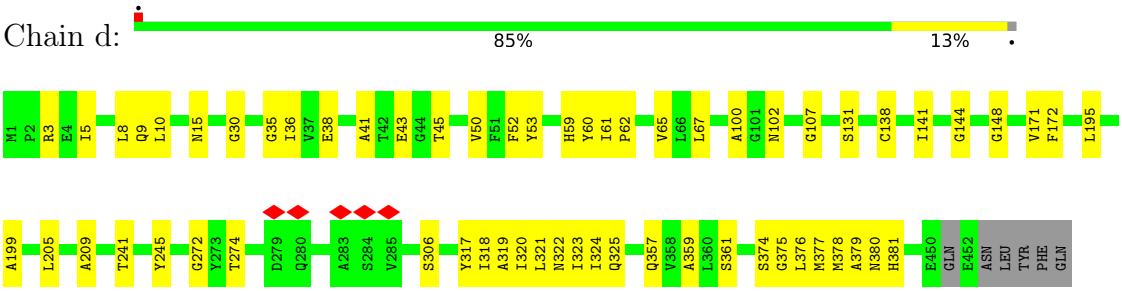
• Molecule 5: Tubulin gamma-1 chain

Chain n:



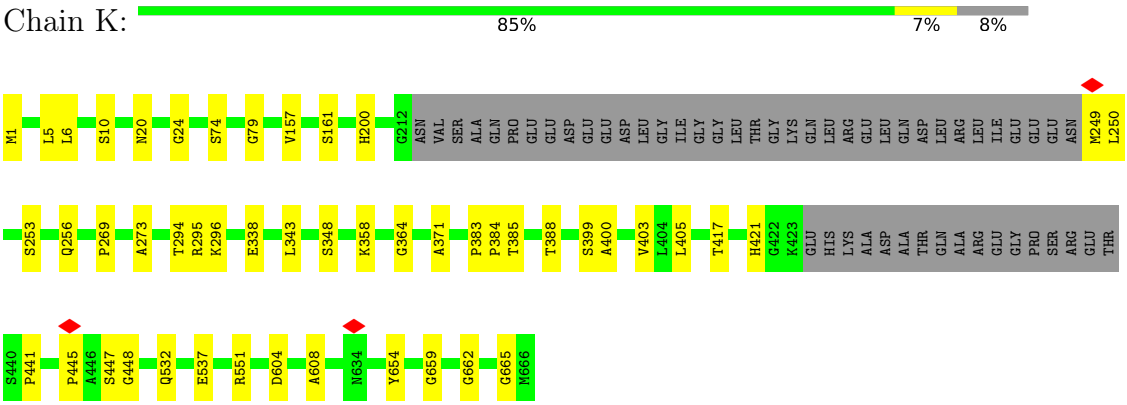
• Molecule 5: Tubulin gamma-1 chain

Chain d:



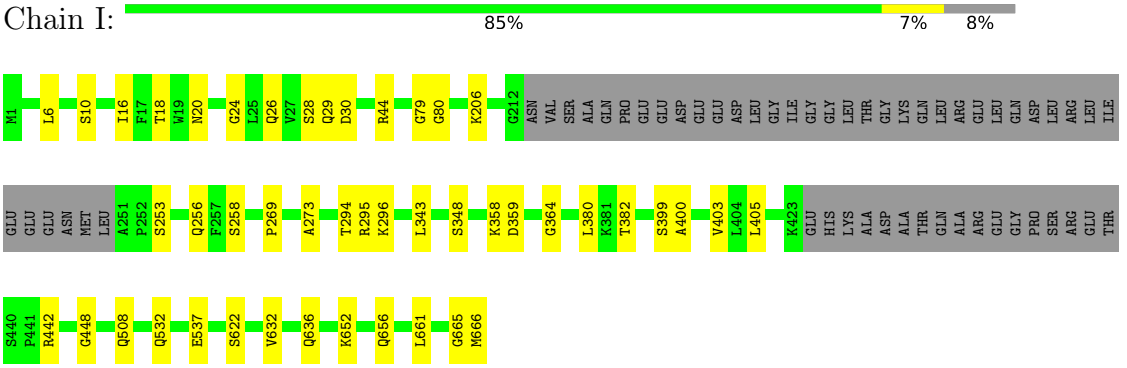
• Molecule 6: Gamma-tubulin complex component 4

Chain K:



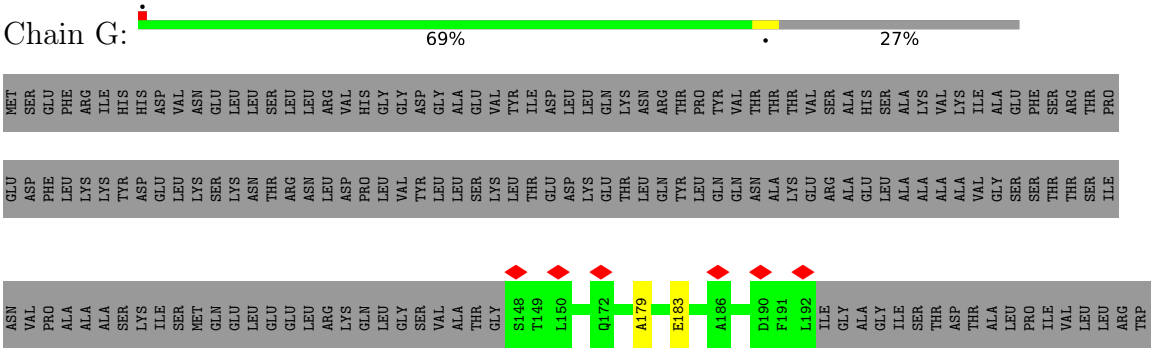
• Molecule 6: Gamma-tubulin complex component 4

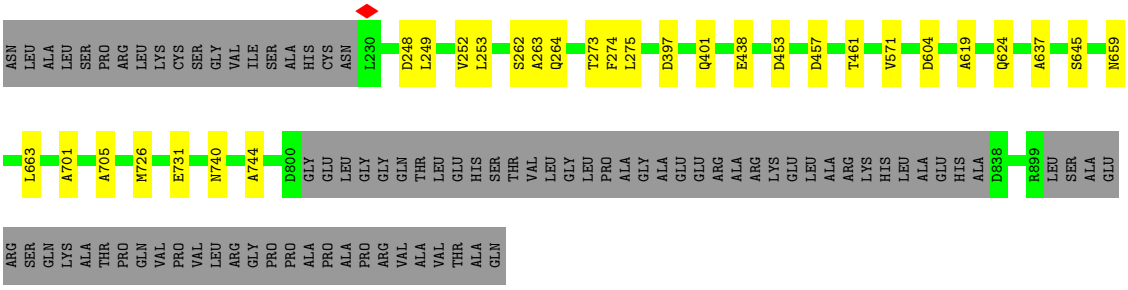
Chain I:



• Molecule 7: Isoform 3 of Gamma-tubulin complex component 2

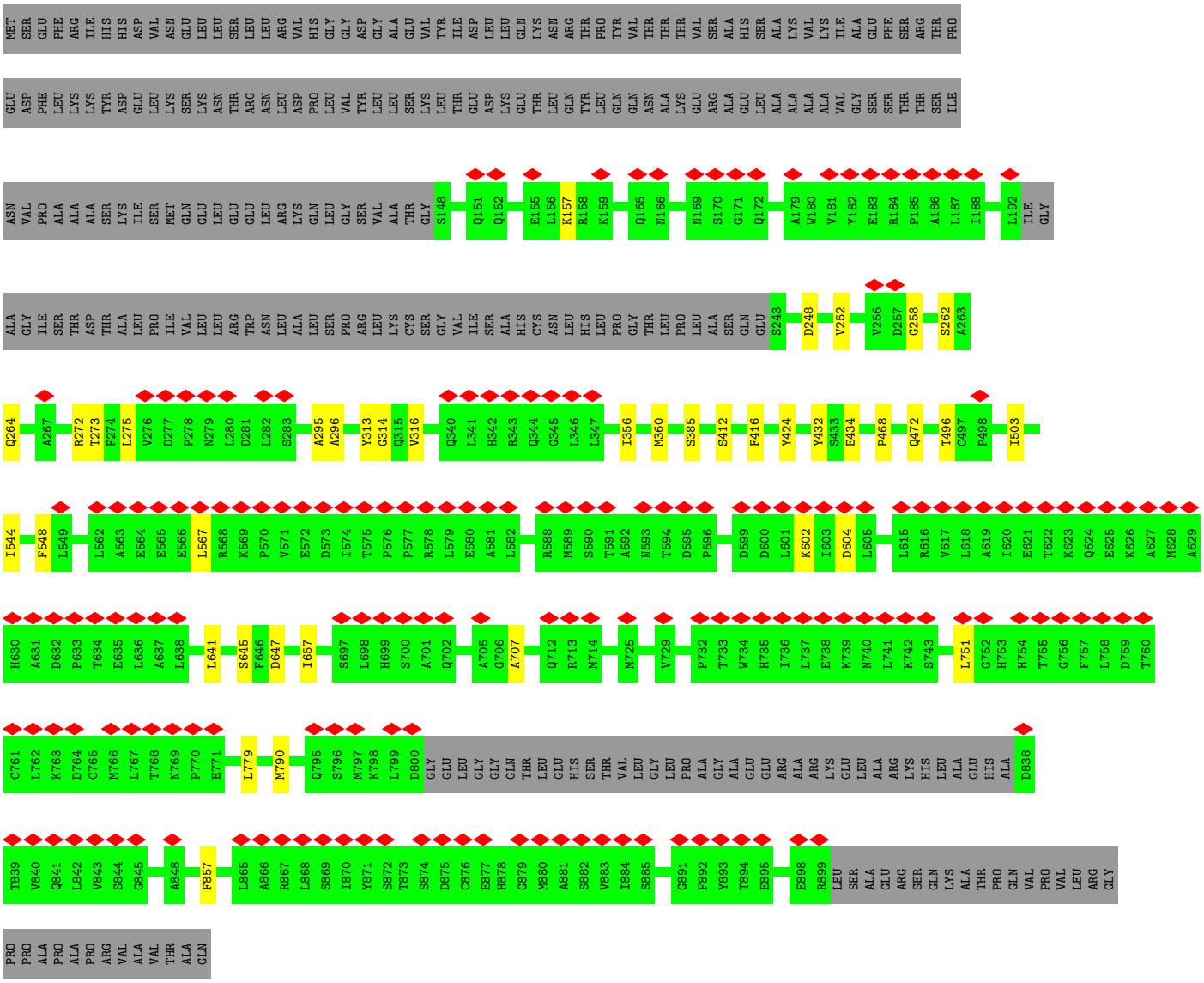
Chain G:





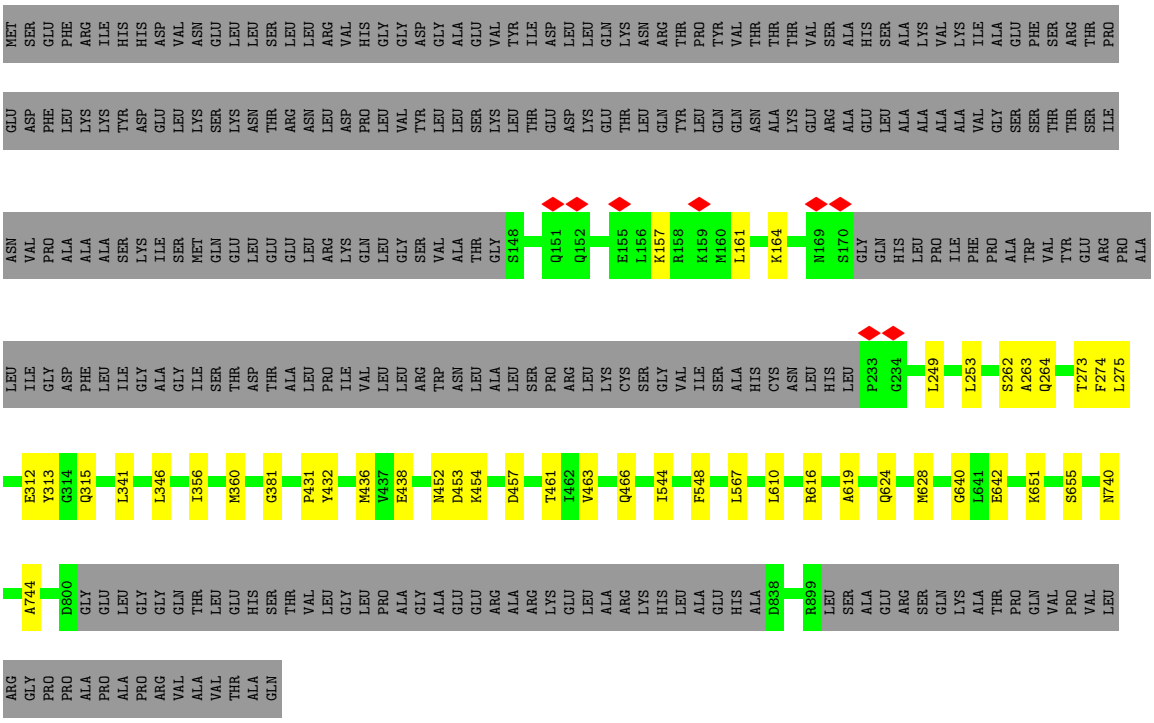
• Molecule 7: Isoform 3 of Gamma-tubulin complex component 2

Chain M:



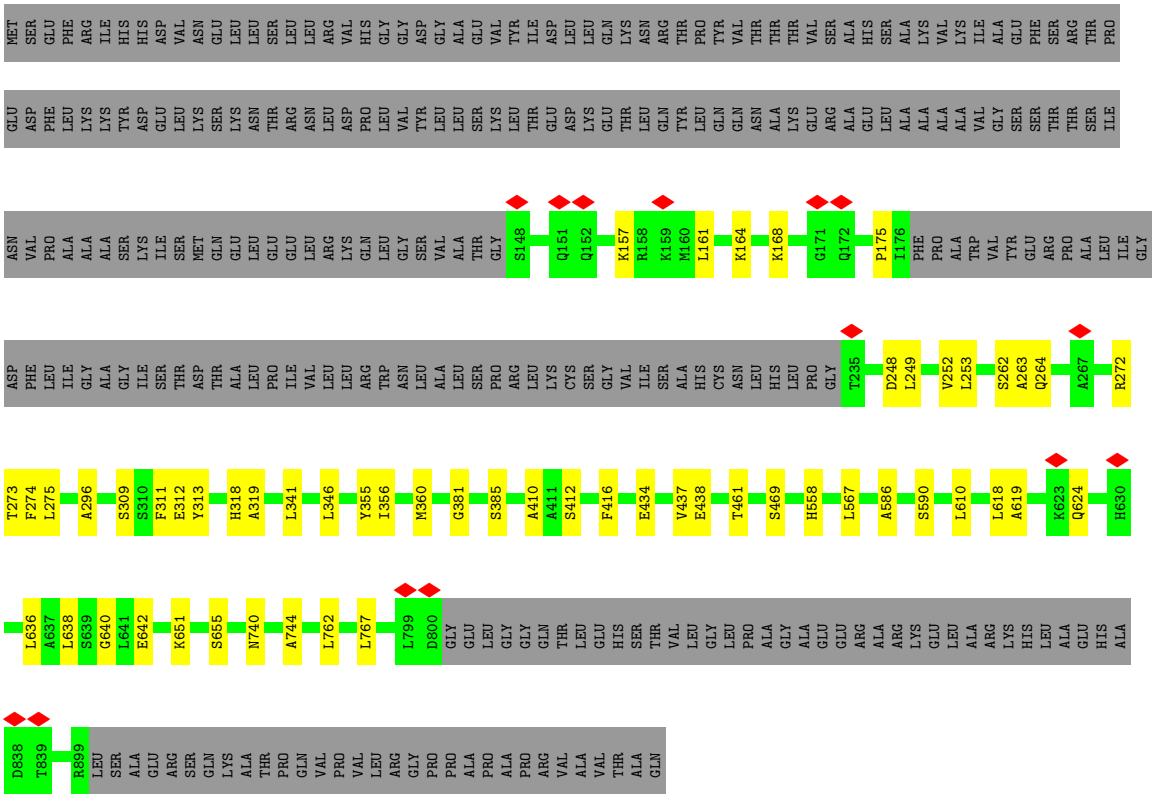
• Molecule 7: Isoform 3 of Gamma-tubulin complex component 2

Chain C:



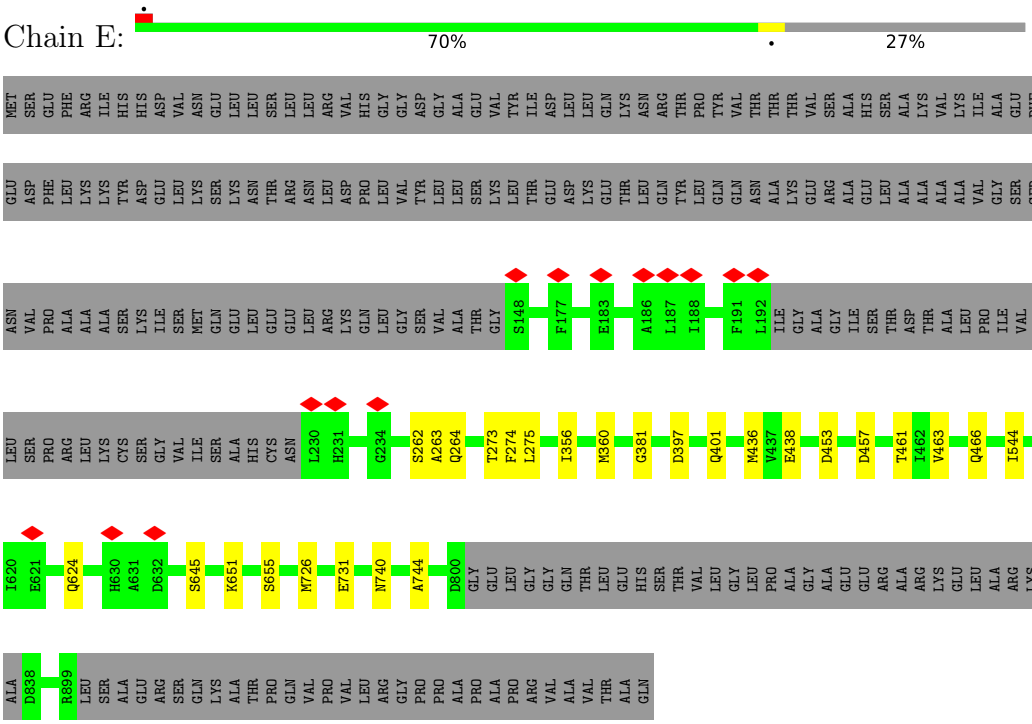
• Molecule 7: Isoform 3 of Gamma-tubulin complex component 2

Chain A:



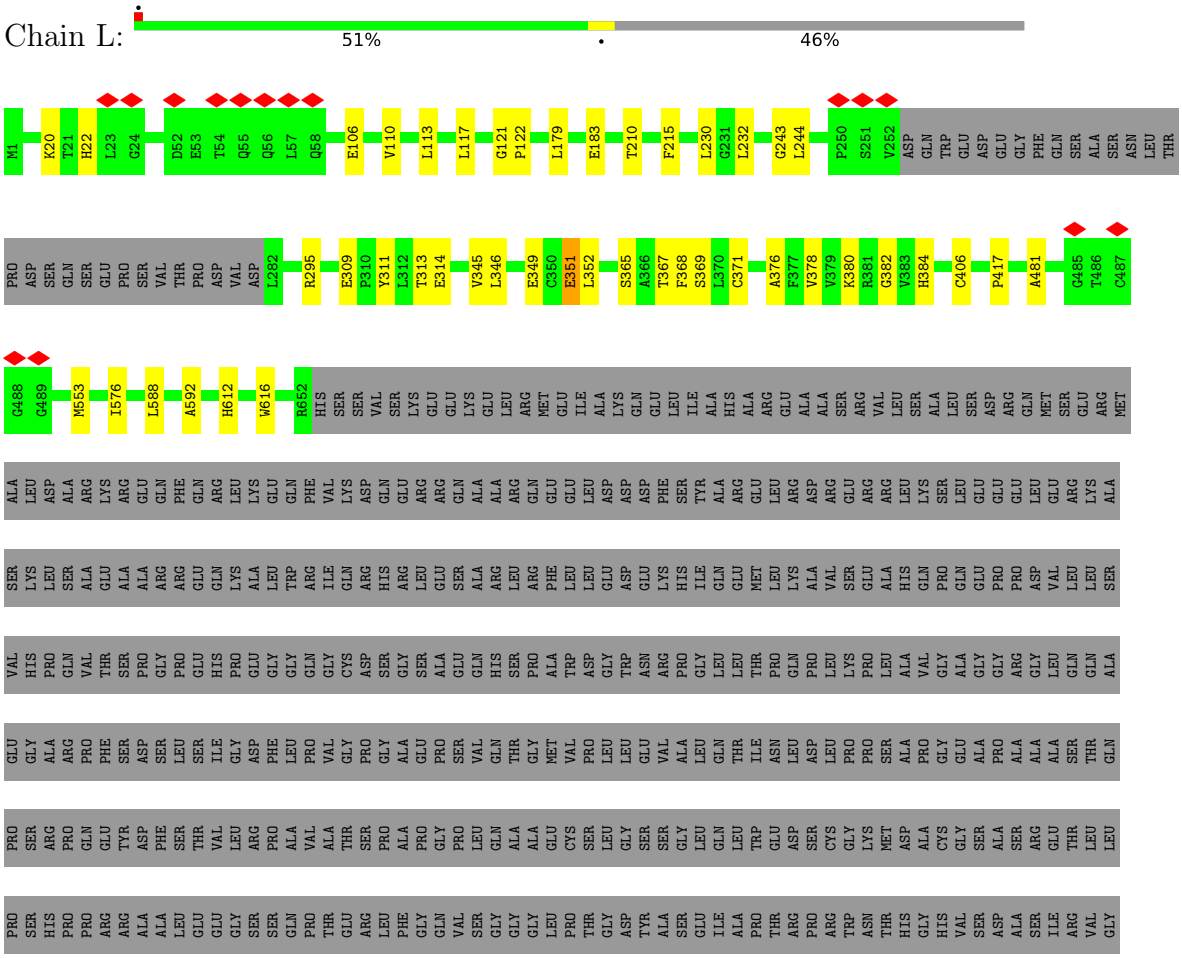
• Molecule 7: Isoform 3 of Gamma-tubulin complex component 2

Chain E:



• Molecule 8: TUBGCP6 protein

Chain L:



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

ALA PRO THR ARG PRO ARG TRP ASN THR HIS GLY HIS VAL SER ASN ALA SER ILE ARG VAL GLY GLU ASN VAL SER ASP VAL ALA PRO THR ARG PRO ARG TRP ASN THR HIS GLY HIS VAL SER ASP ALA SER ILE SER LEU GLY GLU SER VAL SER ASP MET ALA PRO ALA ARG PRO ARG

TRP ASN THR HIS GLY HIS VAL SER ASP ALA SER ILE SER LEU GLY GLU SER VAL SER ASP MET ALA PRO THR ARG PRO ARG TRP ASN THR HIS GLY HIS VAL SER ASP THR SER ILE ARG VAL GLY GLU ASN VAL SER ASP VAL ALA PRO ILE ARG SER ARG CYS ASN THR HIS GLY HIS

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

ALA LEU SER LEU GLY ALA GLN SER ALA VAL LEU ASP CYS GLY PRO ARG LEU PRO VAL GLU VAL GLY PRO SER LEU SER SER PRO SER SER GLY CYS GLY GLU GLY SER ILE SER VAL GLY GLU ASN VAL SER ASP VAL ALA PRO THR GLN PRO TRP TRP PRO ASN THR PRO GLY ASP SER

VAL SER GLU GLU LEU GLY PRO GLY ARG SER GLY ASP THR GLU ASP LEU SER PRO ASN TRP PRO LEU ASN SER GLN GLU ASP THR ALA ALA GLN SER SER PRO GLY ARG GLY GLU GLU ALA GLU ALA SER ALA ALA GLU ALA GLN GLY GLY GLU GLN ALA TYR LEU ALA GLY LEU ALA GLY

GLN TYR HIS LEU GLU ARG TYR PRO ASP SER TYR GLU SER MET SER GLU PRO PRO ILE ALA HIS LEU LEU ARG PRO VAL LEU PRO ARG ALA PHE ALA PHE PRO VAL ASP P1453 Q1454 A1459 L1558 G1564 K1577 A1584 C1593 S1652 P1754 R1755 G1756 A1811

• Molecule 9: Gamma-tubulin complex component 5

Chain J: 12% 75% 7% 18%

MET ALA ARG HIS GLY P6 P7 W8 S9 R10 L11 D12 A13 Q14 Q15 E16 R17 D18 V19 R20 E21 L22 V23 R24 G25 V26 A27 G28 L29 Q30 D31 E32 A33 D34 P35 N36 F37 Q38 L39 A40 L41 N42 F43 A44 W45 S46 N47 F48 R49 F50 H51 R52 F53 L54 D55 V56 N57 S58 H59 K60

I61 E62 K63 T64 I65 E66 G67 I68 Y69 E70 K71 F72 V73 I74 D77 L78 S79 K80 A81 A82 S83 W84 K85 R86 L87 T88 E89 E90 F91 L92 N93 A94 P95 L96 P97 S98 I99 K100 E101 I102 K103 T104 D105 A106 H107 Y108 S109 I110 L111 S112 L113 L114 L115 C116 L117 S118 D119 S120 P121

S122 N123 S124 S125 TYR VAL GLU THR PRO ARG ASN LYS GLU VAL GLU LYS LYS ASP ASP PHE ASP TRP GLY LYS TYR LEU MET GLU ASP GLU GLU MET ASP ILE GLY PRO TYR MET ASP THR PRO ASN TRP SER GLU GLU SER GLU GLU GLU ASN ASP GLN GLN PRO LEU SER ARG GLU ASP

SER GLY ILE GLN VAL ASP ARG THR PRO LEU GLU GLU GLN ASP GLN ASN ARG LYS LEU ASP PRO CYS ILE SER TRP LYS ASP GLU P210 L216 V220 V221 H222 Q223 T226 H237 N241 V263 Q288 T295 N299 V324 Q328 E329 PHE ILE ASP GLU VAL

MET GLY HIS SER SER GLU SER MET LEU PRO GLY SER GLY SER VAL PRO LYS LYS SER T330 E331 A332 P333 F334 Q338 T368 S430 V434 I469 I470 Q471 R472 N473 T487 Y488 T489 L490 Y491 S492 V493 SER GLU LYS THR GLU ASN GLU GLU LYS MET SER ASP ASN ALA

SER ALA SER SER GLY SER ASP GLN GLY PRO SER SER R494 V499 L502 K503 L506 Q517 L518 N521 L522 Q523 C524 A525 E526 S527 T528 T529 C530 Q531 A532 G533 A534 R535 R539 K540 S541 L545 R555 HIS GLY GLU ASP SER T556 P557 GLN VAL LEU THR GLU GLN

GLN ALA THR K567 A577 L581 D588 A592 K608 PHE ALA GLY GLY D613 V616 E621 C625 Q626 T627 T631 R721 L722 S723 E727 G743 S747 Y748 K749 L791 T794 ALA GLU LYS PRO ARG LEU LYS GLU GLY LEU ILE HIS GLU GLN ASP

THR VAL ALA GLN PHE GLY PRO GLN LYS GLU P795 M822 H827 L892 L935 A939 S944

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	266675	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	60	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	3500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.796	Depositor
Minimum map value	-0.165	Depositor
Average map value	0.005	Depositor
Map value standard deviation	0.040	Depositor
Recommended contour level	0.15	Depositor
Map size (Å)	485.76, 485.76, 485.76	wwPDB
Map dimensions	368, 368, 368	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.32, 1.32, 1.32	Depositor

5 Model quality

5.1 Standard geometry

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	B	0.18	0/3190	0.34	0/4446
1	D	0.23	0/3255	0.37	0/4538
1	F	0.24	0/3255	0.36	0/4538
1	H	0.25	0/3251	0.36	0/4533
1	N	0.11	0/3120	0.33	0/4347
1	r	0.08	0/561	0.32	0/782
1	s	0.09	0/571	0.34	0/796
1	t	0.12	0/596	0.42	0/831
1	u	0.13	0/596	0.42	0/831
1	v	0.29	0/640	0.51	0/891
2	O	0.33	0/405	0.39	0/563
2	P	0.30	0/362	0.49	0/504
2	Q	0.12	0/327	0.40	0/455
2	R	0.09	0/327	0.28	0/455
2	S	0.07	0/327	0.20	0/455
2	T	0.15	0/405	0.33	0/563
2	U	0.11	0/405	0.34	0/563
3	V	0.11	0/382	0.28	0/531
3	W	0.11	0/393	0.32	0/548
3	X	0.10	0/388	0.25	0/541
3	Y	0.11	0/387	0.24	0/538
4	Z	0.16	0/1846	0.35	0/2566
5	a	0.12	0/2203	0.40	0/3067
5	b	0.14	0/2232	0.36	0/3107
5	c	0.15	0/2212	0.37	0/3079
5	d	0.15	0/2226	0.37	0/3097
5	e	0.15	0/2212	0.42	0/3079
5	f	0.16	0/2227	0.37	0/3100
5	g	0.15	0/2222	0.37	0/3093
5	h	0.16	0/2227	0.37	0/3100
5	i	0.14	0/2212	0.36	0/3079
5	j	0.13	0/2217	0.34	0/3086
5	k	0.12	0/2212	0.38	0/3079
5	l	0.11	0/2207	0.35	0/3072

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
5	m	0.10	0/2212	0.37	0/3079
5	n	0.10	0/2257	0.38	0/3142
6	I	0.23	0/3024	0.42	2/4209 (0.0%)
6	K	0.19	0/3034	0.40	1/4223 (0.0%)
7	A	0.17	0/3261	0.39	0/4548
7	C	0.23	0/3241	0.37	0/4520
7	E	0.23	0/3364	0.36	0/4691
7	G	0.23	0/3364	0.36	0/4691
7	M	0.11	0/3300	0.34	0/4602
8	L	0.18	0/4846	0.40	0/6741
9	J	0.21	0/4182	0.42	0/5834
All	All	0.18	0/87683	0.37	3/122133 (0.0%)

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	X	0	1
6	I	0	2
6	K	0	3
8	L	0	1
All	All	0	7

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	I	79	GLY	N-CA-C	-6.40	98.02	113.18
6	I	80	GLY	N-CA-C	-5.44	101.06	112.04
6	K	79	GLY	N-CA-C	-5.17	100.92	113.18

There are no chirality outliers.

All (7) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
6	I	442	ARG	Peptide
6	I	665	GLY	Peptide
6	K	249	MET	Peptide
6	K	417	THR	Peptide

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Mol	Chain	Res	Type	Group
6	K	665	GLY	Peptide
8	L	313	THR	Peptide
3	X	637	SER	Peptide

5.2 Too-close contacts (i)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	B	3192	0	1417	25	0
1	D	3256	0	1450	19	0
1	F	3256	0	1450	33	0
1	H	3252	0	1447	26	0
1	N	3123	0	1382	19	0
1	r	562	0	254	1	0
1	s	572	0	258	2	0
1	t	597	0	273	2	0
1	u	597	0	273	3	0
1	v	642	0	295	4	0
2	O	406	0	217	3	0
2	P	363	0	185	7	0
2	Q	328	0	153	1	0
2	R	328	0	150	0	0
2	S	328	0	150	1	0
2	T	406	0	217	0	0
2	U	406	0	217	4	0
3	V	384	0	164	1	0
3	W	394	0	169	1	0
3	X	389	0	165	1	0
3	Y	389	0	166	3	0
4	Z	1847	0	848	33	0
5	a	2204	0	971	34	0
5	b	2233	0	984	26	0
5	c	2213	0	976	26	0
5	d	2228	0	981	43	0
5	e	2213	0	976	40	0
5	f	2228	0	982	31	0
5	g	2223	0	980	36	0
5	h	2228	0	982	27	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	i	2213	0	976	31	0
5	j	2218	0	978	30	0
5	k	2213	0	976	39	0
5	l	2208	0	974	16	0
5	m	2213	0	976	10	0
5	n	2258	0	994	16	0
6	I	3027	0	1327	24	0
6	K	3037	0	1331	22	0
7	A	3264	0	1445	34	0
7	C	3244	0	1438	26	0
7	E	3367	0	1492	15	0
7	G	3367	0	1492	18	0
7	M	3303	0	1464	22	0
8	L	4851	0	2185	35	0
9	J	4186	0	1817	41	0
All	All	87756	0	38997	796	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 6.

All (796) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:24:MET:HA	1:H:31:TYR:HA	1.56	0.86
4:Z:237:GLU:HA	4:Z:251:GLY:HA2	1.58	0.84
4:Z:36:GLY:HA2	4:Z:67:LEU:HA	1.58	0.83
1:F:24:MET:HA	1:F:31:TYR:HA	1.59	0.83
1:D:24:MET:HA	1:D:31:TYR:HA	1.60	0.83
1:t:4:PRO:O	1:t:6:GLN:N	2.12	0.82
7:M:385:SER:HA	7:M:468:PRO:HA	1.62	0.81
1:B:24:MET:HA	1:B:31:TYR:HA	1.63	0.80
5:a:30:GLY:HA3	5:a:41:ALA:HB2	1.62	0.79
5:e:317:TYR:N	5:e:347:ASN:O	2.16	0.79
5:k:195:LEU:HA	5:k:199:ALA:HB3	1.65	0.78
7:C:262:SER:O	7:C:275:LEU:N	2.18	0.77
5:h:274:THR:O	5:h:375:GLY:N	2.16	0.76
5:i:318:ILE:N	5:i:380:ASN:O	2.18	0.76
7:E:262:SER:O	7:E:275:LEU:N	2.18	0.76
8:L:243:GLY:HA2	7:A:355:TYR:HA	1.68	0.76
5:b:323:ILE:O	5:b:376:LEU:N	2.16	0.75
1:N:642:TYR:O	1:N:646:GLU:N	2.19	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:k:4:GLU:HA	5:k:50:VAL:HA	1.69	0.74
5:g:318:ILE:N	5:g:380:ASN:O	2.21	0.74
5:a:102:ASN:HA	5:a:144:GLY:HA2	1.70	0.73
5:j:318:ILE:N	5:j:380:ASN:O	2.20	0.73
7:A:356:ILE:O	7:A:360:MET:N	2.19	0.73
1:D:277:ASP:O	1:D:281:ASP:N	2.19	0.73
2:P:38:GLY:H	8:L:122:PRO:HA	1.53	0.73
4:Z:36:GLY:N	4:Z:53:TYR:O	2.21	0.73
5:h:53:TYR:O	5:h:61:ILE:N	2.20	0.73
5:g:274:THR:N	5:g:375:GLY:O	2.22	0.72
7:C:264:GLN:N	7:C:273:THR:O	2.23	0.72
8:L:369:SER:O	8:L:378:VAL:N	2.23	0.72
1:H:524:SER:O	1:H:528:LEU:N	2.17	0.72
2:P:32:SER:HA	8:L:121:GLY:HA3	1.71	0.72
5:c:323:ILE:O	5:c:376:LEU:N	2.19	0.72
7:G:262:SER:O	7:G:275:LEU:N	2.20	0.71
9:J:822:MET:O	9:J:827:HIS:N	2.24	0.71
5:c:318:ILE:N	5:c:380:ASN:O	2.24	0.71
5:i:274:THR:N	5:i:375:GLY:O	2.23	0.71
5:f:4:GLU:HA	5:f:50:VAL:HA	1.73	0.71
5:k:318:ILE:N	5:k:380:ASN:O	2.24	0.71
1:N:24:MET:HA	1:N:31:TYR:HA	1.73	0.71
5:f:324:ILE:O	5:f:361:SER:N	2.24	0.70
5:k:272:GLY:O	5:k:377:MET:N	2.22	0.70
7:A:164:LYS:O	7:A:168:LYS:N	2.21	0.70
7:A:262:SER:O	7:A:275:LEU:N	2.22	0.70
5:h:318:ILE:N	5:h:380:ASN:O	2.22	0.70
1:v:123:PRO:O	1:v:125:ASP:N	2.20	0.70
1:N:19:GLY:N	1:N:22:ILE:O	2.25	0.70
5:d:107:GLY:HA3	5:d:148:GLY:HA3	1.73	0.70
5:i:323:ILE:O	5:i:376:LEU:N	2.24	0.70
1:u:4:PRO:O	1:u:6:GLN:N	2.25	0.70
5:g:70:GLU:HA	5:g:97:GLY:HA2	1.74	0.70
9:J:263:VAL:N	9:J:299:ASN:O	2.19	0.70
4:Z:36:GLY:O	4:Z:53:TYR:N	2.19	0.70
5:f:272:GLY:N	5:f:377:MET:O	2.25	0.69
5:l:409:ARG:HA	5:l:415:LYS:HA	1.74	0.69
1:N:515:ILE:O	1:N:520:LEU:N	2.24	0.69
5:l:317:TYR:HA	5:l:381:HIS:HA	1.74	0.69
5:e:141:ILE:N	5:e:171:VAL:O	2.19	0.69
1:F:524:SER:O	1:F:528:LEU:N	2.20	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:Z:37:ARG:O	4:Z:66:THR:N	2.24	0.69
7:E:264:GLN:N	7:E:273:THR:O	2.25	0.69
5:f:320:ILE:O	5:f:357:GLN:N	2.26	0.69
5:k:30:GLY:HA3	5:k:41:ALA:HB2	1.73	0.69
5:k:46:ASP:HA	5:k:245:TYR:HA	1.75	0.69
5:d:317:TYR:HA	5:d:381:HIS:HA	1.74	0.69
6:I:294:THR:O	6:I:296:LYS:N	2.25	0.69
9:J:791:LEU:HA	9:J:892:LEU:H	1.57	0.68
2:P:37:THR:N	8:L:121:GLY:O	2.17	0.68
5:d:324:ILE:O	5:d:361:SER:N	2.26	0.68
5:c:5:ILE:N	5:c:50:VAL:O	2.26	0.68
5:i:325:GLN:N	5:i:374:SER:O	2.23	0.68
1:B:203:PHE:O	1:B:223:ARG:N	2.26	0.68
1:B:286:PHE:O	1:B:290:ILE:N	2.22	0.68
5:d:321:LEU:N	5:d:378:MET:O	2.19	0.68
5:h:272:GLY:N	5:h:377:MET:O	2.27	0.68
5:h:324:ILE:O	5:h:361:SER:N	2.26	0.68
5:i:172:PHE:N	5:i:205:LEU:O	2.23	0.68
1:D:23:LYS:O	1:D:32:LYS:N	2.21	0.68
5:b:53:TYR:O	5:b:61:ILE:N	2.23	0.68
7:A:264:GLN:N	7:A:273:THR:O	2.27	0.68
5:d:323:ILE:O	5:d:376:LEU:N	2.24	0.68
5:e:53:TYR:O	5:e:61:ILE:N	2.24	0.67
5:k:317:TYR:HA	5:k:381:HIS:HA	1.76	0.67
5:d:30:GLY:HA3	5:d:41:ALA:HB2	1.76	0.67
7:C:438:GLU:N	7:C:461:THR:O	2.23	0.67
5:e:321:LEU:N	5:e:378:MET:O	2.19	0.67
5:c:274:THR:N	5:c:375:GLY:O	2.27	0.67
5:d:272:GLY:N	5:d:377:MET:O	2.27	0.67
7:M:157:LYS:HA	7:M:313:TYR:HA	1.74	0.67
5:d:318:ILE:N	5:d:380:ASN:O	2.28	0.67
1:H:277:ASP:O	1:H:281:ASP:N	2.23	0.67
1:H:278:LEU:HA	1:H:282:LEU:HA	1.76	0.67
5:e:317:TYR:HA	5:e:381:HIS:HA	1.75	0.67
5:k:324:ILE:HA	5:k:375:GLY:HA2	1.77	0.66
1:H:21:ASN:O	1:H:34:GLU:N	2.23	0.66
9:J:518:LEU:O	9:J:522:LEU:N	2.29	0.66
5:c:325:GLN:N	5:c:374:SER:O	2.24	0.66
5:a:141:ILE:N	5:a:171:VAL:O	2.28	0.66
1:D:203:PHE:O	1:D:223:ARG:N	2.28	0.66
9:J:471:GLN:N	9:J:489:THR:O	2.25	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:I:399:SER:O	6:I:403:VAL:N	2.29	0.66
5:f:53:TYR:O	5:f:61:ILE:N	2.24	0.66
1:B:620:LEU:O	1:B:624:SER:N	2.28	0.66
5:e:195:LEU:HA	5:e:199:ALA:HB3	1.77	0.66
8:L:367:THR:O	8:L:380:LYS:N	2.28	0.66
7:E:438:GLU:N	7:E:461:THR:O	2.26	0.66
5:h:54:GLN:HA	5:h:60:TYR:HA	1.76	0.66
7:E:651:LYS:O	7:E:655:SER:N	2.29	0.66
1:F:277:ASP:O	1:F:281:ASP:N	2.23	0.66
9:J:541:SER:O	9:J:545:LEU:N	2.18	0.65
5:b:274:THR:N	5:b:375:GLY:O	2.29	0.65
5:g:195:LEU:HA	5:g:199:ALA:HB3	1.77	0.65
1:N:23:LYS:O	1:N:32:LYS:N	2.21	0.65
7:C:164:LYS:HA	7:C:432:TYR:HA	1.77	0.65
1:D:620:LEU:O	1:D:624:SER:N	2.29	0.65
1:B:179:SER:O	1:B:183:LEU:N	2.19	0.65
6:K:400:ALA:O	6:K:405:LEU:N	2.28	0.65
5:h:320:ILE:O	5:h:357:GLN:N	2.28	0.65
1:F:205:ALA:N	1:F:221:THR:O	2.27	0.65
4:Z:238:LYS:N	4:Z:250:ILE:O	2.24	0.65
2:O:56:ASN:O	2:O:60:LEU:N	2.22	0.65
1:D:524:SER:O	1:D:528:LEU:N	2.22	0.65
5:g:323:ILE:O	5:g:376:LEU:N	2.29	0.65
9:J:470:ILE:HA	9:J:490:LEU:HA	1.78	0.65
4:Z:37:ARG:HA	4:Z:52:SER:HA	1.79	0.65
7:G:726:MET:O	7:G:731:GLU:N	2.26	0.65
1:F:203:PHE:O	1:F:223:ARG:N	2.29	0.65
1:v:105:ARG:HA	1:v:108:PRO:N	2.12	0.65
1:F:21:ASN:O	1:F:34:GLU:N	2.24	0.65
5:i:317:TYR:HA	5:i:381:HIS:HA	1.79	0.65
9:J:288:GLN:N	9:J:295:THR:O	2.27	0.65
5:b:324:ILE:O	5:b:361:SER:N	2.28	0.64
5:j:272:GLY:N	5:j:377:MET:O	2.29	0.64
6:K:253:SER:O	6:K:256:GLN:N	2.29	0.64
7:G:263:ALA:HA	7:G:274:PHE:HA	1.78	0.64
5:e:318:ILE:N	5:e:380:ASN:O	2.30	0.64
5:f:35:GLY:O	5:f:60:TYR:N	2.29	0.64
5:m:4:GLU:HA	5:m:50:VAL:HA	1.79	0.64
5:e:324:ILE:O	5:e:361:SER:N	2.27	0.64
5:d:53:TYR:O	5:d:61:ILE:N	2.21	0.64
1:B:524:SER:O	1:B:528:LEU:N	2.20	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:d:5:ILE:N	5:d:50:VAL:O	2.29	0.64
1:H:203:PHE:O	1:H:223:ARG:N	2.30	0.64
5:b:35:GLY:O	5:b:60:TYR:N	2.30	0.64
6:K:294:THR:O	6:K:296:LYS:N	2.27	0.64
7:C:356:ILE:O	7:C:360:MET:N	2.25	0.64
1:H:620:LEU:O	1:H:624:SER:N	2.30	0.64
4:Z:165:ILE:HA	4:Z:170:ALA:HA	1.79	0.64
5:g:53:TYR:O	5:g:61:ILE:N	2.27	0.64
1:H:205:ALA:N	1:H:221:THR:O	2.29	0.64
5:j:317:TYR:HA	5:j:381:HIS:HA	1.79	0.64
7:A:263:ALA:HA	7:A:274:PHE:HA	1.80	0.64
7:E:263:ALA:HA	7:E:274:PHE:HA	1.80	0.64
5:d:323:ILE:N	5:d:376:LEU:O	2.29	0.64
8:L:345:VAL:N	8:L:382:GLY:O	2.20	0.64
1:F:320:ARG:O	1:F:326:GLN:N	2.28	0.63
5:b:325:GLN:N	5:b:374:SER:O	2.22	0.63
5:k:323:ILE:N	5:k:376:LEU:O	2.32	0.63
1:B:23:LYS:O	1:B:32:LYS:N	2.22	0.63
7:C:263:ALA:HA	7:C:274:PHE:HA	1.78	0.63
7:C:651:LYS:O	7:C:655:SER:N	2.32	0.63
1:B:150:GLY:HA3	1:B:226:MET:HA	1.81	0.63
1:D:278:LEU:HA	1:D:282:LEU:HA	1.80	0.63
5:c:195:LEU:HA	5:c:199:ALA:HB3	1.80	0.63
5:e:53:TYR:N	5:e:61:ILE:O	2.25	0.63
5:f:318:ILE:N	5:f:380:ASN:O	2.30	0.62
1:D:21:ASN:O	1:D:34:GLU:N	2.27	0.62
9:J:588:ASP:O	9:J:592:ALA:N	2.24	0.62
7:G:264:GLN:N	7:G:273:THR:O	2.30	0.62
1:F:620:LEU:O	1:F:624:SER:N	2.33	0.62
5:j:323:ILE:O	5:j:376:LEU:N	2.29	0.62
5:j:274:THR:N	5:j:375:GLY:O	2.32	0.62
1:F:382:LEU:N	1:F:393:VAL:O	2.30	0.62
5:m:318:ILE:N	5:m:380:ASN:O	2.29	0.62
5:a:270:MET:N	5:a:379:ALA:O	2.30	0.62
5:a:272:GLY:O	5:a:377:MET:N	2.23	0.62
5:f:323:ILE:N	5:f:376:LEU:O	2.29	0.62
5:l:47:ARG:N	5:l:244:ARG:O	2.27	0.62
7:M:264:GLN:N	7:M:273:THR:O	2.25	0.62
7:C:436:MET:O	7:C:463:VAL:N	2.30	0.62
5:j:325:GLN:N	5:j:374:SER:O	2.25	0.62
7:M:707:ALA:HB1	7:M:790:MET:HA	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:E:453:ASP:O	7:E:457:ASP:N	2.20	0.62
5:e:35:GLY:O	5:e:60:TYR:N	2.31	0.62
5:d:36:ILE:HA	5:d:59:HIS:HA	1.82	0.62
5:c:317:TYR:HA	5:c:381:HIS:HA	1.81	0.62
6:K:604:ASP:O	6:K:608:ALA:N	2.25	0.61
9:J:621:GLU:O	9:J:625:CYS:N	2.33	0.61
5:e:272:GLY:O	5:e:377:MET:N	2.32	0.61
1:N:418:ARG:HA	9:J:74:ILE:HA	1.82	0.61
5:a:409:ARG:HA	5:a:415:LYS:HA	1.81	0.61
5:d:325:GLN:N	5:d:374:SER:O	2.25	0.61
1:H:184:SER:HA	1:H:270:GLU:CB	2.30	0.61
5:n:269:LEU:HA	5:n:380:ASN:HA	1.83	0.61
7:A:412:SER:O	7:A:416:PHE:N	2.21	0.61
2:O:32:SER:O	2:O:36:ASN:N	2.33	0.61
5:f:323:ILE:O	5:f:376:LEU:N	2.31	0.61
5:f:323:ILE:HA	5:f:359:ALA:HB3	1.82	0.61
5:n:166:VAL:O	5:n:200:ASP:N	2.28	0.61
6:I:269:PRO:O	6:I:273:ALA:N	2.27	0.61
5:g:324:ILE:O	5:g:361:SER:N	2.33	0.61
5:g:141:ILE:N	5:g:171:VAL:O	2.22	0.61
7:C:157:LYS:HA	7:C:313:TYR:HA	1.83	0.61
5:n:134:GLY:HA3	5:n:165:LEU:O	1.99	0.61
1:H:214:ARG:O	1:H:218:ASP:N	2.32	0.61
5:n:270:MET:N	5:n:379:ALA:O	2.34	0.61
5:i:272:GLY:N	5:i:377:MET:O	2.34	0.60
4:Z:132:MET:O	4:Z:357:ILE:N	2.34	0.60
4:Z:150:GLY:O	4:Z:165:ILE:N	2.31	0.60
6:I:400:ALA:O	6:I:405:LEU:N	2.32	0.60
5:f:317:TYR:HA	5:f:381:HIS:HA	1.84	0.60
1:v:123:PRO:C	1:v:125:ASP:H	2.07	0.60
8:L:113:LEU:O	8:L:117:LEU:N	2.35	0.60
5:k:53:TYR:O	5:k:61:ILE:N	2.31	0.60
6:K:654:TYR:O	6:K:659:GLY:N	2.22	0.60
9:J:502:LEU:O	9:J:506:LEU:N	2.35	0.60
5:c:53:TYR:O	5:c:61:ILE:N	2.29	0.60
5:m:317:TYR:HA	5:m:381:HIS:HA	1.83	0.60
5:n:317:TYR:N	5:n:347:ASN:O	2.35	0.60
1:F:23:LYS:O	1:F:32:LYS:N	2.29	0.60
5:h:5:ILE:N	5:h:50:VAL:O	2.33	0.60
1:B:205:ALA:N	1:B:221:THR:O	2.29	0.60
7:M:424:TYR:HA	7:M:496:THR:HA	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:c:385:SER:O	5:c:389:GLU:N	2.21	0.59
5:e:209:ALA:HB2	5:e:306:SER:H	1.66	0.59
6:K:384:PRO:N	6:K:448:GLY:HA3	2.17	0.59
1:D:205:ALA:N	1:D:221:THR:O	2.27	0.59
6:K:6:LEU:O	6:K:10:SER:N	2.36	0.59
9:J:288:GLN:O	9:J:295:THR:N	2.25	0.59
5:f:172:PHE:N	5:f:205:LEU:O	2.35	0.59
1:B:566:LYS:HA	1:B:576:GLY:O	2.03	0.59
2:U:2:ALA:HB1	6:I:44:ARG:HA	1.84	0.59
5:b:323:ILE:N	5:b:376:LEU:O	2.36	0.59
6:I:343:LEU:O	6:I:348:SER:N	2.36	0.59
5:l:53:TYR:N	5:l:61:ILE:O	2.33	0.58
1:B:382:LEU:N	1:B:393:VAL:O	2.33	0.58
4:Z:38:PRO:HA	4:Z:65:LEU:HA	1.85	0.58
5:a:53:TYR:N	5:a:61:ILE:O	2.27	0.58
7:E:397:ASP:O	7:E:401:GLN:N	2.33	0.58
5:e:320:ILE:O	5:e:357:GLN:N	2.34	0.58
5:b:409:ARG:HA	5:b:415:LYS:HA	1.85	0.58
5:e:323:ILE:N	5:e:376:LEU:O	2.32	0.58
5:h:52:PHE:HA	5:h:62:PRO:HA	1.86	0.58
5:k:434:GLU:O	5:k:438:ALA:N	2.34	0.58
5:d:321:LEU:O	5:d:378:MET:N	2.28	0.58
5:g:272:GLY:N	5:g:377:MET:O	2.36	0.58
6:I:382:THR:O	6:I:448:GLY:N	2.36	0.58
2:P:47:CYS:O	2:P:51:CYS:N	2.30	0.58
5:c:172:PHE:N	5:c:205:LEU:O	2.36	0.58
7:A:651:LYS:O	7:A:655:SER:N	2.37	0.58
1:D:559:ARG:HA	1:D:585:GLU:HA	1.86	0.58
5:c:272:GLY:N	5:c:377:MET:O	2.36	0.57
6:I:20:ASN:O	6:I:24:GLY:N	2.33	0.57
1:H:566:LYS:HA	1:H:576:GLY:O	2.04	0.57
5:e:52:PHE:HA	5:e:62:PRO:HA	1.86	0.57
5:h:323:ILE:HA	5:h:359:ALA:HB3	1.86	0.57
5:n:1:MET:N	1:N:332:HIS:O	2.36	0.57
5:d:10:LEU:HA	5:d:67:LEU:O	2.04	0.57
5:d:323:ILE:HA	5:d:359:ALA:HB3	1.86	0.57
9:J:216:LEU:O	9:J:220:VAL:N	2.33	0.57
5:j:324:ILE:O	5:j:361:SER:N	2.37	0.57
6:I:6:LEU:O	6:I:10:SER:N	2.38	0.57
4:Z:252:ASN:O	4:Z:256:ARG:N	2.21	0.57
4:Z:369:ILE:O	4:Z:373:LYS:N	2.21	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:J:334:PHE:O	9:J:338:GLN:N	2.32	0.57
5:f:321:LEU:O	5:f:378:MET:N	2.30	0.57
5:i:323:ILE:N	5:i:376:LEU:O	2.35	0.57
1:D:163:GLY:HA3	7:C:315:GLN:HA	1.85	0.56
5:g:4:GLU:HA	5:g:50:VAL:HA	1.87	0.56
5:g:5:ILE:N	5:g:50:VAL:O	2.24	0.56
5:b:289:THR:O	5:b:293:VAL:N	2.30	0.56
5:k:1:MET:N	6:K:371:ALA:HB1	2.20	0.56
4:Z:8:LEU:N	4:Z:102:PRO:O	2.30	0.56
5:h:323:ILE:O	5:h:376:LEU:N	2.28	0.56
1:B:116:SER:HA	8:L:232:LEU:H	1.69	0.56
9:J:237:HIS:O	9:J:241:ASN:N	2.34	0.56
4:Z:72:GLU:N	4:Z:75:ILE:O	2.34	0.56
4:Z:202:THR:O	4:Z:206:ARG:N	2.32	0.56
5:m:260:LEU:HA	5:m:319:ALA:HB3	1.86	0.56
6:K:1:MET:O	6:K:5:LEU:N	2.31	0.56
8:L:612:HIS:O	8:L:616:TRP:N	2.39	0.56
1:H:320:ARG:O	1:H:326:GLN:N	2.36	0.56
5:c:324:ILE:O	5:c:361:SER:N	2.38	0.56
5:f:272:GLY:O	5:f:377:MET:N	2.33	0.56
9:J:525:ALA:O	9:J:527:SER:N	2.39	0.56
5:c:326:GLY:N	5:c:361:SER:O	2.33	0.56
5:j:107:GLY:HA3	5:j:148:GLY:HA3	1.87	0.56
5:k:47:ARG:N	5:k:244:ARG:O	2.35	0.56
5:d:274:THR:O	5:d:375:GLY:N	2.26	0.56
3:X:584:LEU:HA	3:Y:584:LEU:H	1.70	0.56
4:Z:35:VAL:HA	4:Z:54:VAL:HA	1.87	0.56
1:N:337:LEU:O	1:N:341:LEU:N	2.21	0.56
5:d:274:THR:N	5:d:375:GLY:O	2.35	0.56
7:G:248:ASP:O	7:G:252:VAL:N	2.33	0.56
7:A:567:LEU:O	7:A:640:GLY:N	2.39	0.56
5:e:321:LEU:O	5:e:378:MET:N	2.30	0.56
5:d:241:THR:O	5:d:245:TYR:N	2.31	0.56
7:M:356:ILE:O	7:M:360:MET:N	2.30	0.56
1:F:278:LEU:HA	1:F:282:LEU:HA	1.88	0.55
1:H:23:LYS:O	1:H:32:LYS:N	2.25	0.55
5:g:8:LEU:O	5:g:138:CYS:N	2.24	0.55
7:A:385:SER:HA	7:A:469:SER:H	1.71	0.55
5:b:36:ILE:HA	5:b:59:HIS:HA	1.88	0.55
5:j:53:TYR:O	5:j:61:ILE:N	2.25	0.55
1:N:407:VAL:HA	1:N:504:ILE:HA	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:J:332:ALA:HB1	9:J:338:GLN:HA	1.87	0.55
5:k:11:GLY:N	5:k:67:LEU:O	2.40	0.55
5:k:166:VAL:O	5:k:200:ASP:N	2.32	0.55
4:Z:301:GLY:N	4:Z:335:ARG:O	2.39	0.55
5:e:137:LEU:O	5:e:169:TYR:N	2.31	0.55
6:I:18:THR:N	6:I:26:GLN:O	2.40	0.55
1:D:214:ARG:O	1:D:218:ASP:N	2.35	0.55
1:F:305:LEU:O	1:F:310:SER:N	2.40	0.55
1:F:566:LYS:HA	1:F:576:GLY:O	2.06	0.55
5:c:323:ILE:N	5:c:376:LEU:O	2.36	0.55
7:M:252:VAL:C	7:M:295:ALA:HB1	2.32	0.55
5:h:172:PHE:N	5:h:205:LEU:O	2.40	0.55
5:k:405:LEU:O	5:k:409:ARG:N	2.36	0.55
5:d:10:LEU:N	5:d:138:CYS:O	2.36	0.55
9:J:499:VAL:O	9:J:503:LYS:N	2.41	0.54
9:J:727:GLU:O	9:J:743:GLY:HA3	2.08	0.54
7:A:249:LEU:O	7:A:253:LEU:N	2.31	0.54
4:Z:70:PRO:O	4:Z:77:THR:N	2.32	0.54
1:B:159:TYR:HA	7:A:175:PRO:HA	1.88	0.54
1:D:409:THR:O	1:D:413:MET:N	2.25	0.54
5:h:3:ARG:HA	5:h:131:SER:O	2.07	0.54
5:i:325:GLN:O	5:i:374:SER:N	2.29	0.54
6:K:74:SER:HA	6:K:200:HIS:HA	1.89	0.54
5:b:274:THR:O	5:b:375:GLY:N	2.19	0.54
5:k:241:THR:O	5:k:245:TYR:N	2.35	0.54
7:C:740:ASN:O	7:C:744:ALA:N	2.41	0.54
1:H:318:MET:O	1:H:323:LEU:N	2.40	0.54
5:k:316:CYS:O	5:k:382:THR:N	2.25	0.54
5:l:30:GLY:HA3	5:l:41:ALA:HB2	1.89	0.54
1:F:409:THR:O	1:F:413:MET:N	2.25	0.54
5:a:100:ALA:CB	5:a:148:GLY:HA3	2.38	0.54
2:P:38:GLY:H	8:L:122:PRO:CA	2.20	0.54
6:K:358:LYS:O	6:K:364:GLY:N	2.38	0.54
7:A:319:ALA:HB1	7:A:410:ALA:HB1	1.90	0.53
4:Z:131:ALA:HA	4:Z:358:SER:HA	1.91	0.53
5:n:11:GLY:N	5:n:67:LEU:O	2.41	0.53
1:N:127:THR:O	1:N:131:LYS:N	2.39	0.53
5:c:241:THR:O	5:c:245:TYR:N	2.33	0.53
9:J:471:GLN:O	9:J:489:THR:N	2.37	0.53
5:b:241:THR:O	5:b:245:TYR:N	2.31	0.53
9:J:473:ASN:N	9:J:487:THR:O	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:b:55:ALA:N	5:b:59:HIS:O	2.40	0.53
7:E:726:MET:O	7:E:731:GLU:N	2.36	0.53
2:S:76:ALA:HB1	1:s:113:SER:HA	1.90	0.53
5:d:30:GLY:O	5:d:38:GLU:N	2.31	0.53
2:U:10:ALA:HB2	6:I:29:GLN:HA	1.91	0.53
5:b:172:PHE:N	5:b:205:LEU:O	2.40	0.53
5:f:138:CYS:HA	5:f:169:TYR:O	2.08	0.53
5:j:7:THR:O	5:j:65:VAL:N	2.26	0.53
5:d:320:ILE:O	5:d:357:GLN:N	2.35	0.53
7:G:438:GLU:O	7:G:461:THR:N	2.38	0.53
8:L:1577:LYS:N	8:L:1593:CYS:O	2.29	0.53
5:h:274:THR:N	5:h:375:GLY:O	2.38	0.52
1:N:13:VAL:O	1:N:54:GLY:HA3	2.08	0.52
7:G:438:GLU:N	7:G:461:THR:O	2.30	0.52
8:L:588:LEU:O	8:L:592:ALA:N	2.43	0.52
7:M:657:ILE:HA	7:M:751:LEU:HA	1.90	0.52
5:g:274:THR:O	5:g:375:GLY:N	2.27	0.52
5:i:317:TYR:O	5:i:348:PHE:HA	2.09	0.52
5:d:8:LEU:O	5:d:138:CYS:N	2.28	0.52
8:L:311:TYR:O	8:L:314:GLU:N	2.40	0.52
5:a:141:ILE:H	5:a:171:VAL:C	2.16	0.52
5:g:55:ALA:N	5:g:59:HIS:O	2.42	0.52
5:j:241:THR:O	5:j:245:TYR:N	2.34	0.52
2:P:32:SER:CA	8:L:121:GLY:HA3	2.39	0.52
5:i:289:THR:O	5:i:293:VAL:N	2.30	0.52
5:k:291:LEU:HA	5:k:336:SER:HA	1.92	0.52
5:k:324:ILE:O	5:k:361:SER:N	2.42	0.52
7:M:314:GLY:HA2	7:M:432:TYR:CB	2.39	0.52
9:J:535:ARG:O	9:J:539:ARG:N	2.41	0.52
4:Z:11:ASP:N	4:Z:18:LYS:O	2.33	0.52
5:f:321:LEU:N	5:f:378:MET:O	2.24	0.52
5:k:323:ILE:O	5:k:376:LEU:N	2.40	0.52
1:B:162:THR:HA	7:A:311:PHE:CB	2.40	0.52
5:d:141:ILE:N	5:d:171:VAL:O	2.30	0.52
6:I:532:GLN:O	6:I:537:GLU:N	2.34	0.52
1:D:479:THR:O	1:D:484:GLU:N	2.43	0.52
5:a:1:MET:N	7:A:558:HIS:O	2.40	0.52
1:r:108:PRO:O	1:r:110:LYS:N	2.43	0.52
9:J:721:ARG:O	9:J:749:LYS:N	2.41	0.52
6:K:20:ASN:O	6:K:24:GLY:N	2.33	0.51
5:j:172:PHE:N	5:j:205:LEU:O	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:g:168:THR:N	5:g:201:CYS:O	2.40	0.51
5:j:57:ASP:N	5:k:285:VAL:O	2.43	0.51
7:M:468:PRO:O	7:M:472:GLN:N	2.43	0.51
5:b:102:ASN:HA	5:b:144:GLY:N	2.25	0.51
5:i:324:ILE:O	5:i:361:SER:N	2.41	0.51
5:j:434:GLU:O	5:j:438:ALA:N	2.39	0.51
5:m:166:VAL:O	5:m:200:ASP:N	2.38	0.51
4:Z:144:ALA:HB2	4:Z:342:GLY:HA2	1.91	0.51
5:j:323:ILE:N	5:j:376:LEU:O	2.42	0.51
5:d:53:TYR:N	5:d:61:ILE:O	2.32	0.51
1:D:22:ILE:HA	1:D:33:VAL:HA	1.92	0.51
7:E:740:ASN:O	7:E:744:ALA:N	2.44	0.51
5:e:10:LEU:N	5:e:138:CYS:O	2.32	0.51
5:i:323:ILE:HA	5:i:359:ALA:HB3	1.93	0.51
8:L:106:GLU:O	8:L:110:VAL:N	2.40	0.51
2:U:2:ALA:CB	6:I:44:ARG:HA	2.40	0.51
5:g:385:SER:O	5:g:389:GLU:N	2.28	0.51
5:k:326:GLY:N	5:k:361:SER:O	2.44	0.51
7:A:586:ALA:O	7:A:590:SER:N	2.43	0.51
5:a:100:ALA:HB2	5:a:148:GLY:HA3	1.93	0.51
5:g:172:PHE:N	5:g:205:LEU:O	2.44	0.51
5:h:70:GLU:HA	5:h:97:GLY:HA2	1.93	0.51
6:K:343:LEU:O	6:K:348:SER:N	2.43	0.51
5:d:209:ALA:HB2	5:d:306:SER:H	1.75	0.51
5:e:8:LEU:O	5:e:138:CYS:N	2.32	0.50
7:G:571:VAL:H	7:G:637:ALA:HB1	1.76	0.50
9:J:430:SER:O	9:J:434:VAL:N	2.34	0.50
9:J:517:GLN:O	9:J:521:ASN:CB	2.58	0.50
5:a:10:LEU:HA	5:a:67:LEU:O	2.11	0.50
5:a:214:ALA:O	5:a:220:ILE:N	2.33	0.50
6:I:253:SER:O	6:I:256:GLN:N	2.44	0.50
1:H:112:LEU:C	1:H:114:LEU:H	2.19	0.50
5:a:317:TYR:N	5:a:347:ASN:O	2.30	0.50
1:H:205:ALA:O	1:H:221:THR:N	2.29	0.50
5:a:52:PHE:HA	5:a:62:PRO:HA	1.92	0.50
4:Z:20:GLY:HA3	4:Z:28:ARG:H	1.76	0.50
5:h:323:ILE:N	5:h:376:LEU:O	2.39	0.50
1:B:19:GLY:N	1:B:22:ILE:O	2.45	0.50
9:J:723:SER:N	9:J:747:SER:O	2.33	0.50
7:A:341:LEU:O	7:A:346:LEU:N	2.38	0.50
5:c:3:ARG:HA	5:c:131:SER:O	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:c:141:ILE:N	5:c:171:VAL:O	2.35	0.50
5:i:46:ASP:HA	5:i:244:ARG:O	2.12	0.50
1:F:310:SER:O	1:F:314:HIS:N	2.34	0.49
5:j:320:ILE:O	5:j:357:GLN:N	2.41	0.49
5:k:10:LEU:O	5:k:146:GLY:HA2	2.12	0.49
5:l:209:ALA:HB2	5:l:306:SER:N	2.27	0.49
5:n:6:ILE:O	5:n:136:VAL:N	2.30	0.49
5:n:163:LYS:HA	1:N:439:GLY:HA2	1.94	0.49
7:A:762:LEU:O	7:A:767:LEU:N	2.45	0.49
9:J:522:LEU:O	9:J:524:CYS:N	2.42	0.49
1:F:191:TYR:CB	1:F:266:THR:HA	2.43	0.49
5:k:35:GLY:O	5:k:60:TYR:N	2.45	0.49
7:C:619:ALA:HB1	7:C:624:GLN:C	2.38	0.49
2:U:10:ALA:HB2	6:I:30:ASP:H	1.77	0.49
5:a:48:LYS:O	5:a:52:PHE:N	2.24	0.49
5:f:325:GLN:HA	5:f:361:SER:O	2.13	0.49
5:h:55:ALA:N	5:h:59:HIS:O	2.44	0.49
5:k:14:GLY:CA	5:k:139:HIS:HA	2.42	0.49
1:N:578:THR:O	1:N:582:GLU:N	2.33	0.49
7:A:381:GLY:N	7:A:434:GLU:HA	2.28	0.49
5:h:53:TYR:N	5:h:61:ILE:O	2.40	0.49
8:L:295:ARG:H	9:J:368:THR:CB	2.26	0.49
1:F:341:LEU:HA	1:F:390:GLY:HA3	1.93	0.49
5:a:71:PRO:N	5:a:97:GLY:HA2	2.27	0.49
1:B:214:ARG:O	1:B:218:ASP:N	2.35	0.49
3:W:637:SER:O	3:W:639:ASN:N	2.46	0.49
5:f:322:ASN:O	5:f:359:ALA:N	2.24	0.49
5:n:14:GLY:HA3	5:n:139:HIS:HA	1.95	0.49
7:C:567:LEU:O	7:C:640:GLY:N	2.45	0.49
5:g:53:TYR:N	5:g:61:ILE:O	2.34	0.48
8:L:179:LEU:O	8:L:183:GLU:N	2.46	0.48
8:L:349:GLU:O	8:L:351:GLU:N	2.45	0.48
7:C:567:LEU:HA	7:C:640:GLY:HA3	1.95	0.48
1:D:595:SER:O	1:D:599:MET:N	2.30	0.48
5:a:269:LEU:HA	5:a:380:ASN:HA	1.95	0.48
5:e:4:GLU:HA	5:e:50:VAL:HA	1.94	0.48
1:B:341:LEU:HA	1:B:390:GLY:HA3	1.95	0.48
7:E:381:GLY:HA3	7:E:466:GLN:O	2.13	0.48
5:a:214:ALA:O	5:a:219:HIS:N	2.47	0.48
5:b:282:VAL:O	5:b:370:ALA:HB1	2.14	0.48
5:a:46:ASP:HA	5:a:244:ARG:HA	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:e:320:ILE:HA	5:e:379:ALA:HA	1.96	0.48
1:B:310:SER:O	1:B:314:HIS:N	2.33	0.48
1:F:22:ILE:HA	1:F:33:VAL:HA	1.94	0.48
1:F:205:ALA:O	1:F:221:THR:N	2.28	0.48
1:F:214:ARG:O	1:F:218:ASP:N	2.35	0.48
1:H:22:ILE:HA	1:H:33:VAL:HA	1.95	0.48
5:a:385:SER:O	5:a:389:GLU:N	2.27	0.48
5:h:272:GLY:O	5:h:377:MET:N	2.36	0.48
1:H:455:GLY:HA2	5:h:448:THR:HA	1.95	0.48
5:e:434:GLU:O	5:e:438:ALA:N	2.36	0.48
6:K:157:VAL:O	6:K:161:SER:N	2.47	0.48
1:F:112:LEU:C	1:F:114:LEU:H	2.22	0.48
1:H:595:SER:O	1:H:599:MET:N	2.35	0.48
4:Z:19:ALA:O	4:Z:28:ARG:N	2.47	0.48
5:e:438:ALA:HA	5:e:443:TYR:CB	2.44	0.48
5:g:241:THR:O	5:g:245:TYR:N	2.41	0.48
5:h:137:LEU:O	5:h:169:TYR:N	2.35	0.48
7:C:161:LEU:N	7:C:312:GLU:O	2.46	0.48
9:J:627:THR:O	9:J:631:THR:N	2.25	0.48
6:I:16:ILE:O	6:I:28:SER:N	2.26	0.48
1:H:25:ASN:N	1:H:30:CYS:O	2.39	0.48
5:c:53:TYR:N	5:c:61:ILE:O	2.41	0.48
5:g:274:THR:C	5:g:375:GLY:H	2.20	0.48
5:f:107:GLY:HA3	5:f:148:GLY:HA3	1.95	0.48
7:A:272:ARG:N	7:A:296:ALA:HB1	2.29	0.48
6:I:632:VAL:O	6:I:636:GLN:N	2.47	0.48
5:e:272:GLY:N	5:e:377:MET:O	2.43	0.47
5:d:35:GLY:O	5:d:60:TYR:N	2.47	0.47
7:E:619:ALA:HB1	7:E:624:GLN:C	2.39	0.47
7:M:157:LYS:HA	7:M:313:TYR:CA	2.44	0.47
5:a:289:THR:O	5:a:293:VAL:N	2.34	0.47
5:b:53:TYR:N	5:b:61:ILE:O	2.38	0.47
5:f:52:PHE:HA	5:f:62:PRO:HA	1.95	0.47
5:i:274:THR:O	5:i:375:GLY:N	2.33	0.47
5:n:259:SER:O	5:n:319:ALA:HB1	2.14	0.47
5:d:195:LEU:HA	5:d:199:ALA:HB3	1.96	0.47
7:A:618:LEU:HA	7:A:767:LEU:O	2.13	0.47
5:f:241:THR:O	5:f:245:TYR:N	2.36	0.47
5:k:8:LEU:O	5:k:138:CYS:N	2.35	0.47
7:G:740:ASN:O	7:G:744:ALA:N	2.48	0.47
8:L:244:LEU:N	7:A:355:TYR:O	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:k:317:TYR:O	5:k:348:PHE:HA	2.14	0.47
1:B:25:ASN:N	1:B:30:CYS:O	2.38	0.47
1:N:207:ASP:N	1:N:219:LYS:O	2.34	0.47
8:L:349:GLU:O	8:L:352:LEU:N	2.47	0.47
5:g:10:LEU:N	5:g:138:CYS:O	2.41	0.47
5:i:274:THR:C	5:i:375:GLY:H	2.20	0.47
5:j:4:GLU:HA	5:j:50:VAL:HA	1.97	0.47
5:m:55:ALA:HB1	5:n:217:ARG:HA	1.95	0.47
8:L:210:THR:O	8:L:215:PHE:N	2.36	0.47
7:E:436:MET:O	7:E:463:VAL:N	2.41	0.47
1:F:478:ILE:O	1:F:483:LEU:N	2.31	0.47
5:e:325:GLN:HA	5:e:361:SER:O	2.14	0.47
5:j:136:VAL:HA	5:j:167:GLN:O	2.14	0.47
9:J:469:ILE:O	9:J:491:TYR:N	2.30	0.47
7:A:309:SER:HA	7:A:318:HIS:HA	1.96	0.47
5:f:324:ILE:N	5:f:359:ALA:O	2.29	0.47
5:g:321:LEU:N	5:g:378:MET:O	2.24	0.47
5:g:434:GLU:O	5:g:438:ALA:N	2.44	0.47
5:i:324:ILE:HA	5:i:375:GLY:HA2	1.95	0.47
7:G:179:ALA:O	7:G:183:GLU:N	2.43	0.47
1:F:25:ASN:N	1:F:30:CYS:O	2.41	0.47
5:e:5:ILE:N	5:e:50:VAL:O	2.26	0.47
7:A:619:ALA:HB1	7:A:624:GLN:C	2.40	0.47
5:j:195:LEU:HA	5:j:199:ALA:HB3	1.97	0.47
5:k:322:ASN:HA	5:k:377:MET:HA	1.97	0.46
5:i:53:TYR:O	5:i:61:ILE:N	2.36	0.46
5:i:320:ILE:O	5:i:357:GLN:N	2.33	0.46
5:l:52:PHE:HA	5:l:63:ARG:H	1.81	0.46
1:B:493:LYS:O	1:B:497:ALA:N	2.49	0.46
5:d:320:ILE:HA	5:d:379:ALA:HA	1.98	0.46
7:A:610:LEU:H	7:A:642:GLU:CB	2.28	0.46
1:H:337:LEU:O	1:H:341:LEU:N	2.33	0.46
5:b:324:ILE:HA	5:b:375:GLY:HA2	1.97	0.46
5:c:321:LEU:O	5:c:378:MET:N	2.37	0.46
9:J:324:VAL:O	9:J:328:GLN:N	2.48	0.46
1:F:341:LEU:O	1:F:390:GLY:N	2.48	0.46
5:g:325:GLN:HA	5:g:361:SER:O	2.15	0.46
5:i:7:THR:O	5:i:65:VAL:N	2.29	0.46
5:k:11:GLY:HA2	5:k:68:ASP:HA	1.98	0.46
8:L:20:LYS:O	8:L:22:HIS:N	2.49	0.46
5:g:102:ASN:HA	5:g:144:GLY:N	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:i:409:ARG:HA	5:i:415:LYS:HA	1.97	0.46
5:j:317:TYR:N	5:j:347:ASN:O	2.47	0.46
5:l:52:PHE:HA	5:l:62:PRO:HA	1.98	0.46
6:K:269:PRO:O	6:K:273:ALA:N	2.39	0.46
7:G:397:ASP:O	7:G:401:GLN:N	2.39	0.46
5:g:325:GLN:N	5:g:374:SER:O	2.34	0.46
5:i:321:LEU:O	5:i:378:MET:N	2.33	0.46
5:j:4:GLU:O	5:j:132:LEU:HA	2.15	0.46
1:u:1:MET:O	1:u:3:THR:N	2.48	0.46
4:Z:144:ALA:HB2	4:Z:342:GLY:CA	2.46	0.46
5:c:102:ASN:HA	5:c:144:GLY:N	2.31	0.46
5:l:4:GLU:HA	5:l:50:VAL:HA	1.98	0.46
5:d:272:GLY:O	5:d:377:MET:N	2.44	0.46
4:Z:166:TYR:N	4:Z:169:TYR:O	2.31	0.46
5:f:51:PHE:O	5:f:63:ARG:N	2.43	0.46
5:k:14:GLY:HA3	5:k:139:HIS:HA	1.97	0.46
1:t:112:SER:C	1:t:114:TYR:H	2.24	0.46
1:N:179:SER:O	1:N:183:LEU:N	2.35	0.46
7:G:249:LEU:O	7:G:253:LEU:N	2.35	0.46
7:G:701:ALA:O	7:G:705:ALA:N	2.48	0.46
4:Z:240:TYR:N	4:Z:248:ILE:O	2.31	0.46
5:k:104:TRP:CB	5:k:187:ASN:HA	2.46	0.46
5:m:52:PHE:HA	5:m:62:PRO:HA	1.97	0.46
1:B:337:LEU:O	1:B:341:LEU:N	2.30	0.46
7:M:248:ASP:CB	7:M:258:GLY:HA3	2.46	0.46
7:A:248:ASP:O	7:A:252:VAL:N	2.34	0.45
5:a:52:PHE:HA	5:a:63:ARG:H	1.81	0.45
5:c:49:ASP:HA	5:c:52:PHE:O	2.16	0.45
1:B:566:LYS:HA	1:B:576:GLY:C	2.41	0.45
7:E:356:ILE:O	7:E:360:MET:N	2.35	0.45
5:h:317:TYR:O	5:h:348:PHE:HA	2.16	0.45
5:k:351:TRP:O	6:K:662:GLY:HA3	2.17	0.45
5:l:57:ASP:N	5:m:287:LYS:O	2.47	0.45
5:l:320:ILE:O	5:l:356:ILE:HA	2.16	0.45
1:B:249:LEU:O	1:B:255:ASP:N	2.30	0.45
7:G:619:ALA:HB1	7:G:624:GLN:C	2.41	0.45
7:M:262:SER:O	7:M:275:LEU:N	2.31	0.45
5:l:318:ILE:N	5:l:380:ASN:O	2.45	0.45
1:H:19:GLY:N	1:H:22:ILE:O	2.50	0.45
2:P:32:SER:CB	8:L:121:GLY:HA3	2.46	0.45
1:F:493:LYS:O	1:F:497:ALA:N	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:h:325:GLN:HA	5:h:361:SER:O	2.16	0.45
7:M:316:VAL:H	7:M:434:GLU:CB	2.30	0.45
7:C:164:LYS:HA	7:C:431:PRO:O	2.16	0.45
5:c:70:GLU:HA	5:c:97:GLY:O	2.16	0.45
5:j:317:TYR:O	5:j:348:PHE:HA	2.17	0.45
8:L:553:MET:O	8:L:576:ILE:N	2.26	0.45
5:m:5:ILE:N	5:m:50:VAL:O	2.42	0.45
6:I:359:ASP:HA	6:I:364:GLY:HA3	1.99	0.45
5:j:325:GLN:HA	5:j:361:SER:O	2.16	0.45
5:k:202:VAL:O	5:k:268:PHE:HA	2.17	0.45
5:b:61:ILE:HA	5:b:85:LEU:O	2.18	0.45
5:i:438:ALA:HA	5:i:443:TYR:CB	2.47	0.45
8:L:20:LYS:C	8:L:22:HIS:H	2.26	0.45
7:M:567:LEU:CB	7:M:641:LEU:H	2.30	0.45
5:b:100:ALA:HB3	5:b:144:GLY:HA3	1.99	0.44
5:l:274:THR:O	5:l:375:GLY:N	2.50	0.44
7:G:453:ASP:O	7:G:457:ASP:N	2.31	0.44
7:C:610:LEU:H	7:C:642:GLU:CB	2.30	0.44
5:a:49:ASP:HA	5:a:52:PHE:O	2.17	0.44
5:g:137:LEU:O	5:g:169:TYR:N	2.26	0.44
5:k:10:LEU:O	5:k:14:GLY:HA3	2.17	0.44
4:Z:148:THR:O	4:Z:168:GLY:N	2.29	0.44
5:f:55:ALA:N	5:f:59:HIS:O	2.47	0.44
5:n:53:TYR:O	5:n:61:ILE:N	2.39	0.44
6:K:383:PRO:HA	6:K:448:GLY:HA3	1.98	0.44
7:C:381:GLY:HA3	7:C:466:GLN:O	2.17	0.44
7:A:740:ASN:O	7:A:744:ALA:N	2.50	0.44
7:C:157:LYS:HA	7:C:313:TYR:CA	2.46	0.44
5:f:30:GLY:HA3	5:f:41:ALA:HB2	2.00	0.44
5:f:274:THR:O	5:f:375:GLY:N	2.42	0.44
3:V:584:LEU:H	3:Y:588:GLN:CB	2.30	0.44
7:M:604:ASP:N	7:M:645:SER:O	2.35	0.44
7:C:249:LEU:O	7:C:253:LEU:N	2.35	0.44
9:J:72:PHE:O	9:J:77:ASP:N	2.50	0.44
1:F:12:TYR:O	1:F:17:ILE:N	2.34	0.44
5:e:214:ALA:O	5:e:219:HIS:N	2.50	0.44
5:h:102:ASN:HA	5:h:144:GLY:N	2.32	0.44
5:h:434:GLU:O	5:h:438:ALA:N	2.39	0.44
5:d:172:PHE:N	5:d:205:LEU:O	2.50	0.44
5:d:325:GLN:O	5:d:374:SER:N	2.42	0.44
7:G:604:ASP:O	7:G:645:SER:N	2.49	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:438:GLU:N	7:A:461:THR:O	2.33	0.44
7:E:544:ILE:O	7:E:548:PHE:N	2.50	0.44
7:E:604:ASP:O	7:E:645:SER:N	2.47	0.44
1:D:25:ASN:N	1:D:30:CYS:O	2.41	0.44
5:b:320:ILE:O	5:b:357:GLN:N	2.51	0.44
5:c:319:ALA:O	5:c:380:ASN:N	2.39	0.44
5:g:52:PHE:HA	5:g:63:ARG:H	1.83	0.44
1:N:361:VAL:HA	1:N:366:ALA:HB3	1.99	0.44
1:F:108:GLN:C	1:F:110:VAL:H	2.25	0.44
5:e:49:ASP:HA	5:e:52:PHE:O	2.18	0.44
5:i:138:CYS:HA	5:i:169:TYR:O	2.18	0.44
5:n:7:THR:O	5:n:64:ALA:HA	2.17	0.44
7:C:262:SER:N	7:C:275:LEU:O	2.41	0.44
7:C:341:LEU:O	7:C:346:LEU:N	2.45	0.44
9:J:119:ASP:N	2:Q:19:LEU:O	2.31	0.44
5:g:320:ILE:O	5:g:356:ILE:HA	2.17	0.44
5:i:174:ASN:HA	5:i:208:THR:N	2.33	0.44
1:v:44:ALA:H	2:O:56:ASN:CB	2.31	0.44
6:K:532:GLN:O	6:K:537:GLU:N	2.40	0.44
8:L:346:LEU:HA	8:L:384:HIS:O	2.17	0.44
4:Z:71:ILE:HA	4:Z:76:VAL:HA	1.99	0.43
5:i:325:GLN:HA	5:i:361:SER:O	2.18	0.43
5:l:340:ILE:O	5:l:344:LYS:N	2.51	0.43
5:m:205:LEU:HA	5:m:304:MET:O	2.17	0.43
5:n:252:ASP:O	5:n:256:LEU:N	2.48	0.43
1:D:493:LYS:O	1:D:497:ALA:N	2.51	0.43
4:Z:150:GLY:N	4:Z:165:ILE:O	2.37	0.43
5:a:171:VAL:HA	5:a:205:LEU:O	2.18	0.43
6:K:338:GLU:HA	6:K:551:ARG:O	2.18	0.43
5:d:8:LEU:HA	5:d:65:VAL:O	2.19	0.43
7:C:452:ASN:O	7:C:454:LYS:N	2.50	0.43
4:Z:229:THR:O	4:Z:233:SER:N	2.49	0.43
5:e:209:ALA:HB2	5:e:306:SER:N	2.32	0.43
5:i:53:TYR:N	5:i:61:ILE:O	2.45	0.43
5:i:321:LEU:N	5:i:378:MET:O	2.28	0.43
6:K:421:HIS:N	6:K:441:PRO:O	2.47	0.43
7:M:416:PHE:CB	7:M:503:ILE:H	2.32	0.43
1:D:337:LEU:O	1:D:341:LEU:N	2.30	0.43
5:g:52:PHE:HA	5:g:62:PRO:HA	1.99	0.43
5:j:325:GLN:O	5:j:374:SER:N	2.23	0.43
8:L:371:CYS:N	8:L:376:ALA:O	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:108:GLN:C	1:H:110:VAL:H	2.27	0.43
5:a:108:PHE:HA	5:a:152:TYR:HA	2.01	0.43
5:e:52:PHE:HA	5:e:63:ARG:H	1.83	0.43
5:d:52:PHE:HA	5:d:62:PRO:HA	2.00	0.43
6:I:380:LEU:HA	6:I:448:GLY:HA3	2.00	0.43
8:L:406:CYS:HA	8:L:481:ALA:HB2	2.00	0.43
7:C:616:ARG:HA	7:C:628:MET:CB	2.48	0.43
4:Z:260:ALA:HA	4:Z:263:GLN:O	2.18	0.43
8:L:365:SER:N	8:L:368:PHE:O	2.51	0.43
7:M:272:ARG:N	7:M:296:ALA:HB1	2.34	0.43
5:e:241:THR:O	5:e:245:TYR:N	2.33	0.43
5:l:325:GLN:N	5:l:374:SER:O	2.42	0.43
5:a:260:LEU:HA	5:a:319:ALA:HB3	2.00	0.43
5:i:385:SER:O	5:i:389:GLU:N	2.27	0.43
5:k:409:ARG:HA	5:k:415:LYS:HA	2.01	0.43
5:d:319:ALA:O	5:d:380:ASN:N	2.38	0.43
7:A:438:GLU:O	7:A:461:THR:N	2.43	0.43
5:a:11:GLY:HA3	5:a:146:GLY:N	2.34	0.43
5:b:10:LEU:HA	5:b:67:LEU:O	2.19	0.43
5:b:272:GLY:N	5:b:377:MET:O	2.52	0.43
1:H:187:TYR:CB	1:H:269:ALA:HB3	2.49	0.42
1:F:337:LEU:O	1:F:341:LEU:N	2.25	0.42
5:a:140:SER:HA	5:a:171:VAL:H	1.85	0.42
5:f:49:ASP:HA	5:f:52:PHE:O	2.18	0.42
7:M:544:ILE:O	7:M:548:PHE:N	2.51	0.42
7:M:602:LYS:O	7:M:647:ASP:N	2.36	0.42
7:A:157:LYS:HA	7:A:313:TYR:CA	2.49	0.42
7:A:437:VAL:HA	7:A:461:THR:O	2.19	0.42
5:b:5:ILE:N	5:b:50:VAL:O	2.53	0.42
5:c:209:ALA:HB2	5:c:306:SER:H	1.84	0.42
5:g:289:THR:O	5:g:293:VAL:N	2.32	0.42
1:N:150:GLY:HA2	1:N:228:PRO:HA	2.01	0.42
7:G:659:ASN:O	7:G:663:LEU:N	2.30	0.42
8:L:1558:LEU:HA	8:L:1564:GLY:HA3	2.02	0.42
7:C:453:ASP:O	7:C:457:ASP:N	2.26	0.42
6:K:399:SER:O	6:K:403:VAL:N	2.45	0.42
5:d:9:GLN:CB	5:d:15:ASN:HA	2.48	0.42
9:J:223:GLN:O	9:J:226:THR:N	2.48	0.42
9:J:531:GLN:C	9:J:533:GLY:H	2.26	0.42
7:G:571:VAL:N	7:G:637:ALA:HB1	2.35	0.42
1:s:112:SER:C	1:s:114:TYR:H	2.26	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:d:325:GLN:HA	5:d:361:SER:O	2.20	0.42
6:I:358:LYS:O	6:I:364:GLY:N	2.51	0.42
1:F:40:SER:O	1:F:44:ARG:N	2.44	0.42
1:H:341:LEU:HA	1:H:390:GLY:HA3	2.00	0.42
5:a:26:CYS:O	5:a:30:GLY:N	2.53	0.42
5:f:61:ILE:HA	5:f:85:LEU:O	2.20	0.42
5:f:409:ARG:O	5:f:415:LYS:HA	2.20	0.42
5:g:174:ASN:HA	5:g:208:THR:H	1.84	0.42
5:d:322:ASN:O	5:d:359:ALA:N	2.29	0.42
5:c:320:ILE:O	5:c:356:ILE:HA	2.20	0.42
5:e:215:THR:O	5:e:219:HIS:HA	2.19	0.42
1:u:3:THR:O	1:u:4:PRO:C	2.63	0.42
6:I:206:LYS:O	6:I:258:SER:N	2.40	0.42
5:g:323:ILE:N	5:g:376:LEU:O	2.44	0.42
5:k:274:THR:O	5:k:375:GLY:N	2.53	0.42
5:e:51:PHE:O	5:e:63:ARG:N	2.50	0.42
5:l:405:LEU:O	5:l:409:ARG:N	2.44	0.42
9:J:577:ALA:O	9:J:581:LEU:N	2.31	0.42
7:A:157:LYS:HA	7:A:313:TYR:HA	2.02	0.42
5:e:102:ASN:C	5:e:144:GLY:HA3	2.45	0.41
5:e:214:ALA:O	5:e:220:ILE:N	2.37	0.41
5:j:142:ALA:HB2	5:j:173:PRO:CB	2.50	0.41
9:J:472:ARG:HA	9:J:488:TYR:HA	2.01	0.41
5:j:100:ALA:HB3	5:j:144:GLY:C	2.45	0.41
5:j:104:TRP:CB	5:j:187:ASN:HA	2.50	0.41
5:n:438:ALA:HA	5:n:443:TYR:CB	2.50	0.41
4:Z:219:VAL:O	4:Z:308:GLY:HA3	2.19	0.41
5:e:30:GLY:HA3	5:e:41:ALA:HB2	2.02	0.41
5:j:61:ILE:HA	5:j:85:LEU:O	2.20	0.41
1:F:455:GLY:HA2	5:f:448:THR:HA	2.02	0.41
5:g:30:GLY:HA3	5:g:41:ALA:HB2	2.02	0.41
5:e:322:ASN:O	5:e:359:ALA:N	2.33	0.41
1:N:14:PHE:HA	1:N:54:GLY:HA3	2.02	0.41
5:d:3:ARG:HA	5:d:131:SER:O	2.21	0.41
5:d:43:GLU:C	5:d:45:THR:H	2.29	0.41
1:H:493:LYS:O	1:H:497:ALA:N	2.53	0.41
5:e:317:TYR:O	5:e:348:PHE:HA	2.21	0.41
5:j:321:LEU:N	5:j:378:MET:O	2.34	0.41
8:L:311:TYR:HA	9:J:220:VAL:O	2.21	0.41
5:g:209:ALA:HB1	5:g:306:SER:H	1.86	0.41
8:L:1652:SER:HA	8:L:1756:GLY:HA3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:189:TRP:HA	1:F:194:GLU:O	2.20	0.41
5:a:51:PHE:O	5:a:63:ARG:N	2.50	0.41
5:c:35:GLY:O	5:c:60:TYR:N	2.54	0.41
5:g:8:LEU:N	5:g:136:VAL:O	2.28	0.41
5:i:70:GLU:HA	5:i:97:GLY:HA2	2.03	0.41
5:k:438:ALA:HA	5:k:443:TYR:CB	2.51	0.41
5:d:322:ASN:N	5:d:357:GLN:O	2.36	0.41
7:M:412:SER:O	7:M:416:PHE:N	2.34	0.41
7:M:779:LEU:HA	7:M:857:PHE:HA	2.03	0.41
7:C:544:ILE:O	7:C:548:PHE:N	2.54	0.41
7:A:161:LEU:N	7:A:312:GLU:O	2.53	0.41
6:I:508:GLN:O	6:I:666:MET:HA	2.21	0.41
6:I:652:LYS:O	6:I:656:GLN:N	2.39	0.41
1:F:105:GLU:CB	1:F:117:SER:HA	2.51	0.41
5:e:273:TYR:HA	5:e:376:LEU:HA	2.02	0.41
5:f:4:GLU:O	5:f:133:GLU:N	2.34	0.41
5:a:325:GLN:HA	5:a:361:SER:O	2.20	0.40
5:i:136:VAL:HA	5:i:167:GLN:O	2.21	0.40
1:B:112:LEU:C	1:B:114:LEU:H	2.28	0.40
6:K:385:THR:H	6:K:388:THR:CB	2.34	0.40
8:L:368:PHE:HA	8:L:378:VAL:O	2.21	0.40
9:J:723:SER:O	9:J:747:SER:N	2.26	0.40
5:e:324:ILE:N	5:e:359:ALA:O	2.33	0.40
5:j:35:GLY:O	5:j:60:TYR:N	2.31	0.40
5:k:206:ASP:CB	5:k:306:SER:H	2.34	0.40
5:a:11:GLY:HA3	5:a:146:GLY:HA2	2.04	0.40
5:b:325:GLN:HA	5:b:361:SER:O	2.22	0.40
5:h:138:CYS:HA	5:h:169:TYR:O	2.21	0.40
5:h:317:TYR:HA	5:h:381:HIS:HA	2.03	0.40
1:B:205:ALA:O	1:B:221:THR:N	2.30	0.40
1:N:345:ALA:N	1:N:388:ASP:O	2.48	0.40
5:b:272:GLY:HA2	5:b:304:MET:H	1.86	0.40
5:d:102:ASN:HA	5:d:144:GLY:N	2.37	0.40
7:A:636:LEU:O	7:A:638:LEU:N	2.55	0.40
1:F:19:GLY:N	1:F:22:ILE:O	2.54	0.40
5:a:100:ALA:HB1	5:a:103:ASN:O	2.22	0.40
5:d:100:ALA:HB3	5:d:144:GLY:C	2.46	0.40
3:Y:660:PHE:C	8:L:230:LEU:HA	2.47	0.40
9:J:935:LEU:O	9:J:939:ALA:N	2.55	0.40
6:I:622:SER:CB	6:I:661:LEU:H	2.35	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	640/907 (71%)	628 (98%)	12 (2%)	0	100	100
1	D	655/907 (72%)	644 (98%)	11 (2%)	0	100	100
1	F	655/907 (72%)	644 (98%)	11 (2%)	0	100	100
1	H	654/907 (72%)	642 (98%)	12 (2%)	0	100	100
1	N	624/907 (69%)	617 (99%)	7 (1%)	0	100	100
1	r	111/907 (12%)	102 (92%)	5 (4%)	4 (4%)	3	20
1	s	113/907 (12%)	104 (92%)	5 (4%)	4 (4%)	3	20
1	t	118/907 (13%)	103 (87%)	9 (8%)	6 (5%)	1	16
1	u	118/907 (13%)	103 (87%)	8 (7%)	7 (6%)	1	14
1	v	125/907 (14%)	111 (89%)	9 (7%)	5 (4%)	2	18
2	O	80/82 (98%)	80 (100%)	0	0	100	100
2	P	71/82 (87%)	71 (100%)	0	0	100	100
2	Q	64/82 (78%)	64 (100%)	0	0	100	100
2	R	64/82 (78%)	64 (100%)	0	0	100	100
2	S	64/82 (78%)	64 (100%)	0	0	100	100
2	T	80/82 (98%)	80 (100%)	0	0	100	100
2	U	80/82 (98%)	80 (100%)	0	0	100	100
3	V	73/660 (11%)	73 (100%)	0	0	100	100
3	W	77/660 (12%)	76 (99%)	0	1 (1%)	10	42
3	X	76/660 (12%)	75 (99%)	1 (1%)	0	100	100
3	Y	74/660 (11%)	73 (99%)	1 (1%)	0	100	100
4	Z	373/375 (100%)	365 (98%)	8 (2%)	0	100	100
5	a	444/457 (97%)	437 (98%)	7 (2%)	0	100	100
5	b	450/457 (98%)	442 (98%)	8 (2%)	0	100	100
5	c	446/457 (98%)	439 (98%)	7 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	d	448/457 (98%)	440 (98%)	8 (2%)	0	100	100
5	e	446/457 (98%)	438 (98%)	8 (2%)	0	100	100
5	f	449/457 (98%)	441 (98%)	8 (2%)	0	100	100
5	g	448/457 (98%)	440 (98%)	8 (2%)	0	100	100
5	h	449/457 (98%)	441 (98%)	8 (2%)	0	100	100
5	i	446/457 (98%)	438 (98%)	8 (2%)	0	100	100
5	j	447/457 (98%)	439 (98%)	8 (2%)	0	100	100
5	k	446/457 (98%)	438 (98%)	8 (2%)	0	100	100
5	l	445/457 (97%)	438 (98%)	7 (2%)	0	100	100
5	m	446/457 (98%)	438 (98%)	8 (2%)	0	100	100
5	n	455/457 (100%)	448 (98%)	7 (2%)	0	100	100
6	I	606/667 (91%)	586 (97%)	19 (3%)	1 (0%)	44	78
6	K	608/667 (91%)	589 (97%)	15 (2%)	4 (1%)	19	56
7	A	651/930 (70%)	640 (98%)	11 (2%)	0	100	100
7	C	647/930 (70%)	637 (98%)	10 (2%)	0	100	100
7	E	672/930 (72%)	661 (98%)	11 (2%)	0	100	100
7	G	672/930 (72%)	661 (98%)	11 (2%)	0	100	100
7	M	659/930 (71%)	650 (99%)	9 (1%)	0	100	100
8	L	972/1811 (54%)	923 (95%)	45 (5%)	4 (0%)	30	68
9	J	834/1024 (81%)	807 (97%)	23 (3%)	4 (0%)	25	64
All	All	17575/27876 (63%)	17174 (98%)	361 (2%)	40 (0%)	45	78

All (40) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	W	638	VAL
1	r	109	SER
1	s	109	SER
1	s	111	VAL
1	t	5	ASP
1	t	109	SER
1	t	111	VAL
1	u	5	ASP
1	u	111	VAL
1	v	108	PRO

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Mol	Chain	Res	Type
6	K	295	ARG
6	K	447	SER
8	L	351	GLU
6	I	295	ARG
1	r	111	VAL
1	r	113	SER
1	s	113	SER
1	t	6	GLN
1	t	113	SER
1	u	6	GLN
1	u	109	SER
1	u	113	SER
1	v	124	ARG
1	v	125	ASP
6	K	250	LEU
8	L	417	PRO
9	J	221	VAL
1	r	110	LYS
1	t	110	LYS
1	u	110	LYS
8	L	1454	GLN
9	J	223	GLN
9	J	526	GLU
1	s	110	LYS
6	K	445	PRO
1	u	4	PRO
1	v	119	ALA
1	v	123	PRO
8	L	309	GLU
9	J	616	VAL

5.3.2 Protein sidechains (i)

There are no protein residues with a non-rotameric sidechain to report in this entry.

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

There are no ligands in this entry.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
8	L	2
1	v	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	v	106:ARG	C	107:GLN	N	8.98
1	L	123:PRO	C	124:GLN	N	5.52
1	L	311:TYR	C	312:LEU	N	3.84

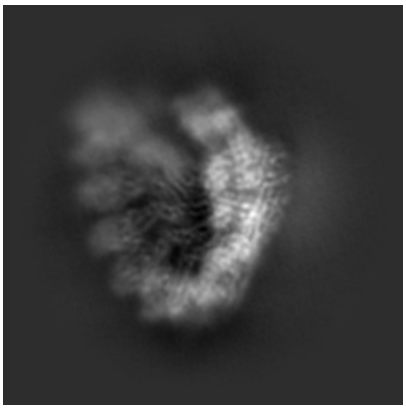
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-53400. These allow visual inspection of the internal detail of the map and identification of artifacts.

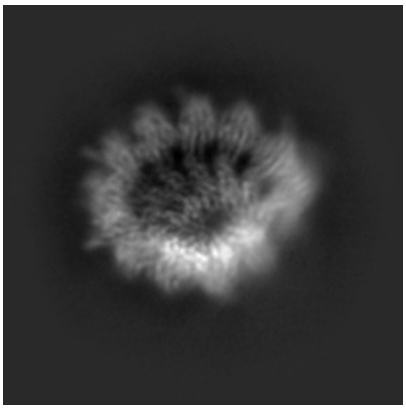
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

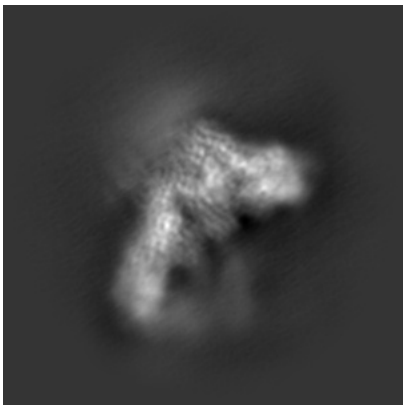
6.1.1 Primary map



X

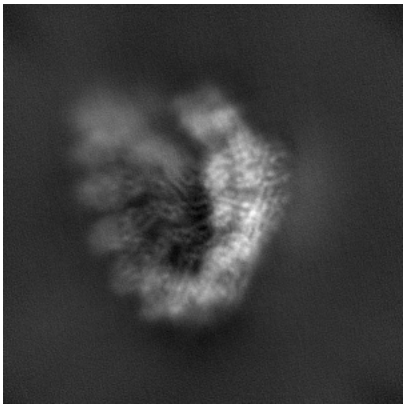


Y

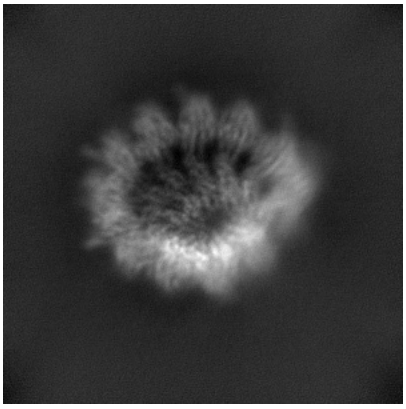


Z

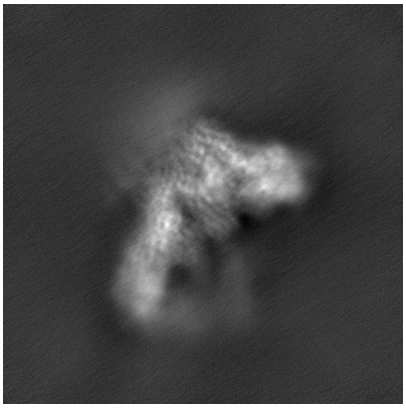
6.1.2 Raw map



X



Y

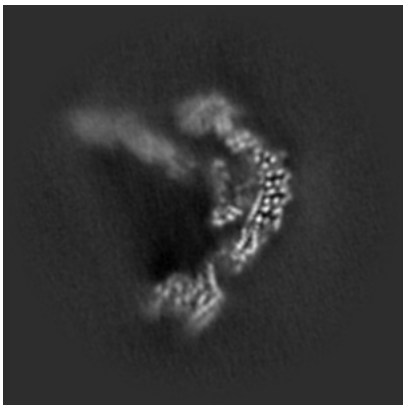


Z

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

6.2 Central slices (i)

6.2.1 Primary map



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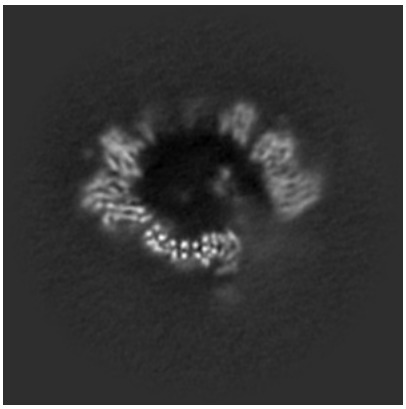
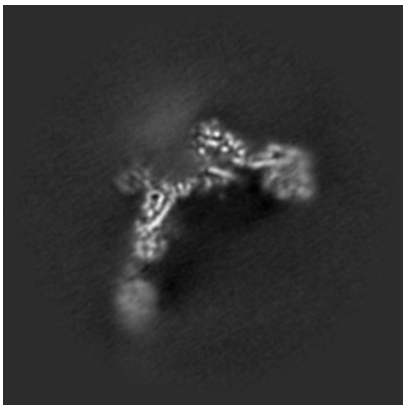
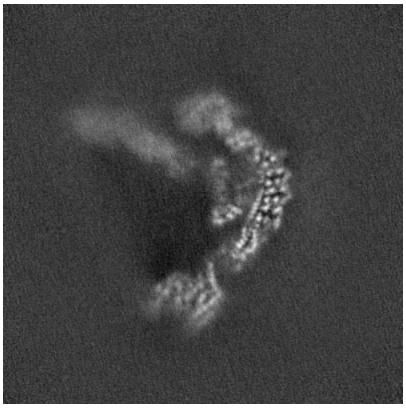


Y Index: 184

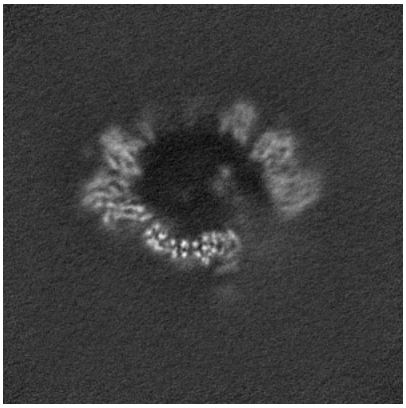


Z Index: 184

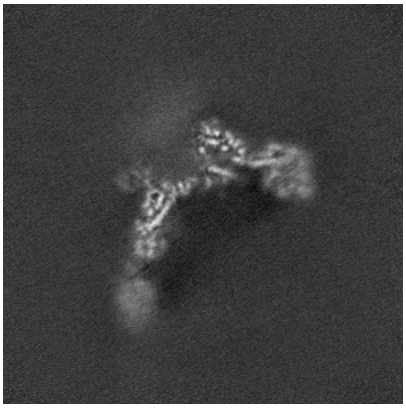
6.2.2 Raw map



X Index: 184



Y Index: 184

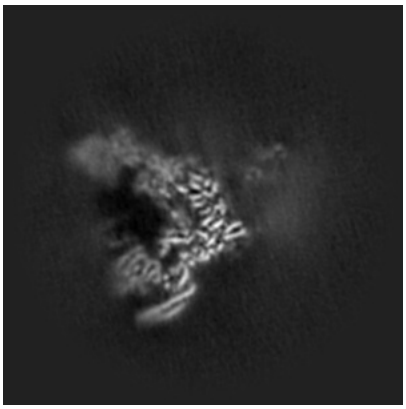


Z Index: 184

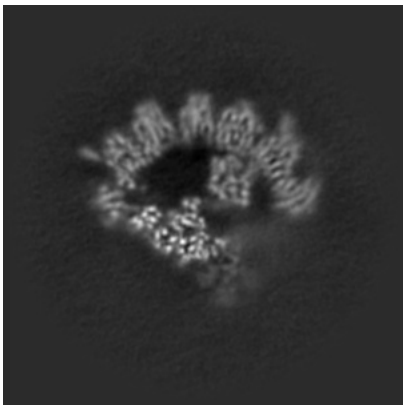
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

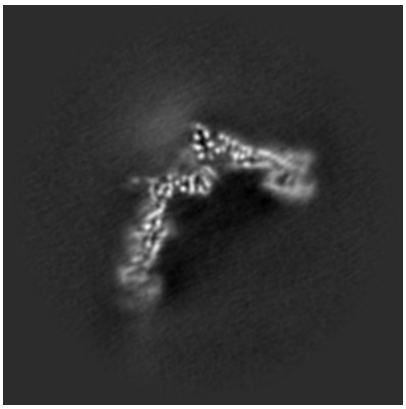
6.3.1 Primary map



X Index: 149

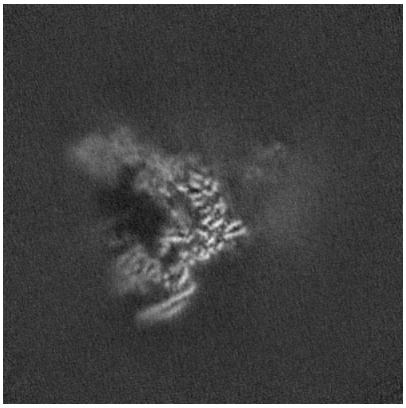


Y Index: 196

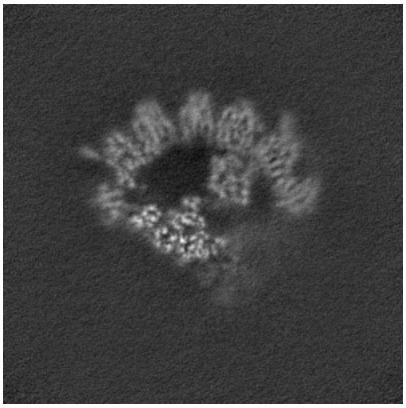


Z Index: 175

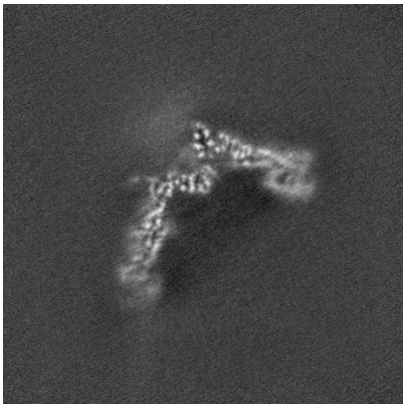
6.3.2 Raw map



X Index: 149



Y Index: 196

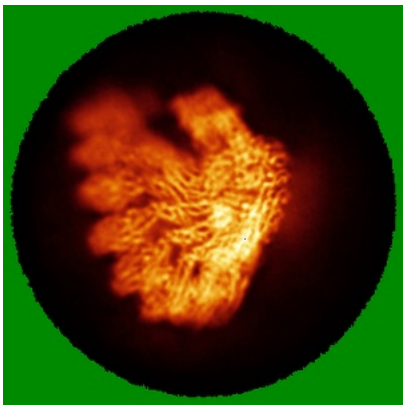


Z Index: 175

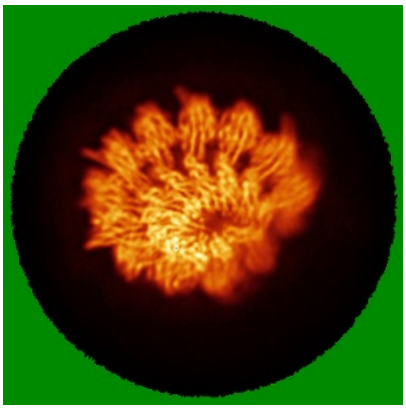
The images above show the largest variance slices of the map in three orthogonal directions.

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

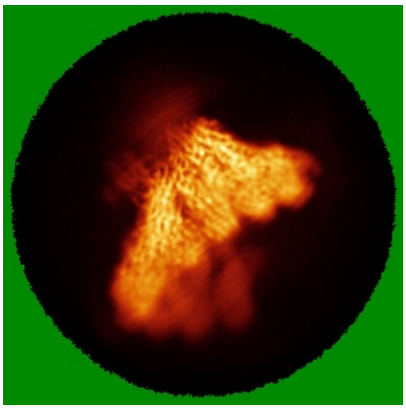
6.4.1 Primary map



X

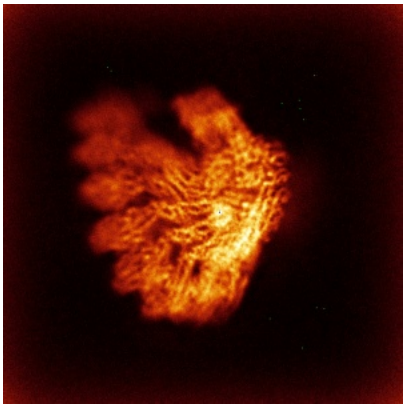


Y

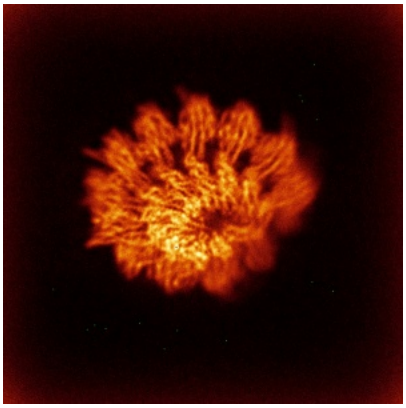


Z

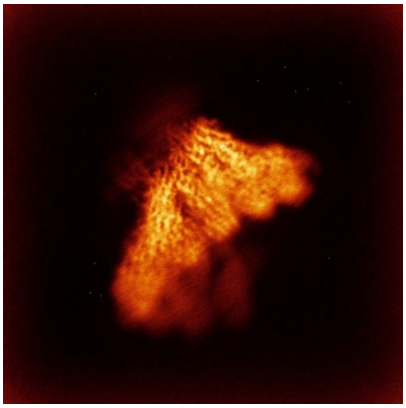
6.4.2 Raw map



X



Y

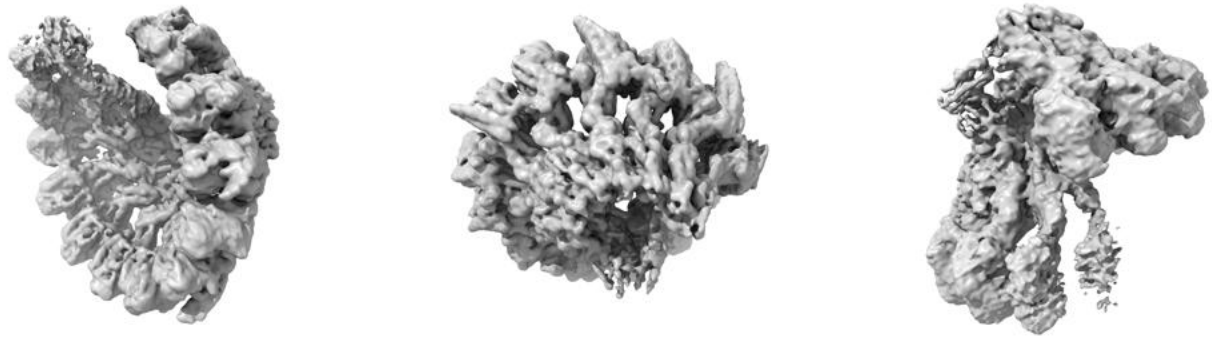


Z

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

6.5 Orthogonal surface views (i)

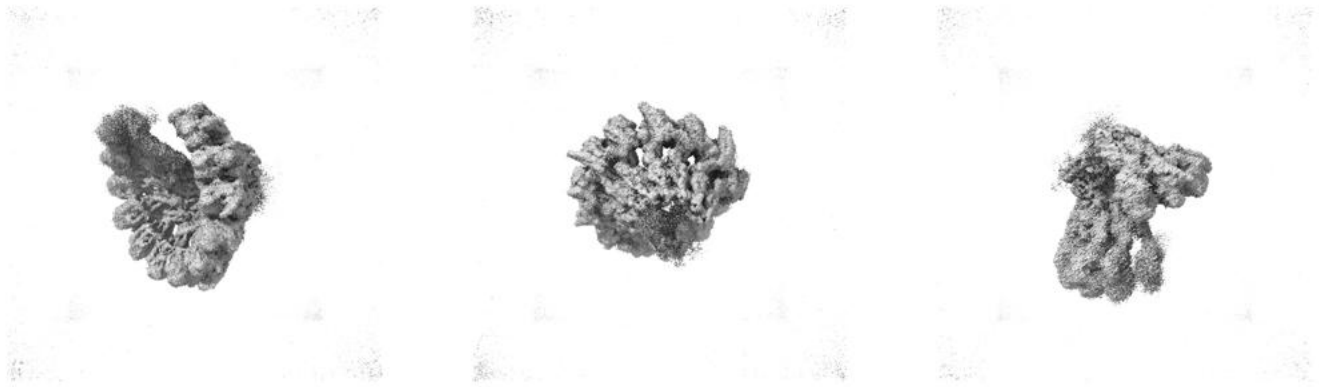
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.15. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

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

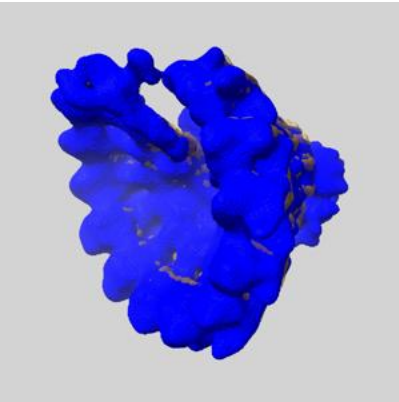
6.6 Mask visualisation (i)

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

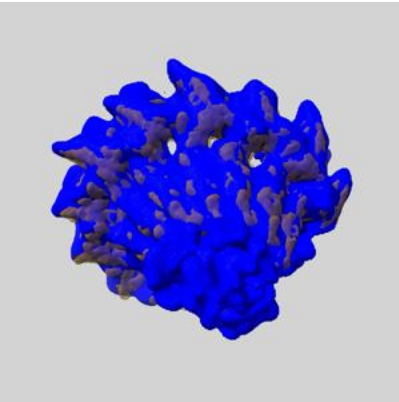
A mask typically either:

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

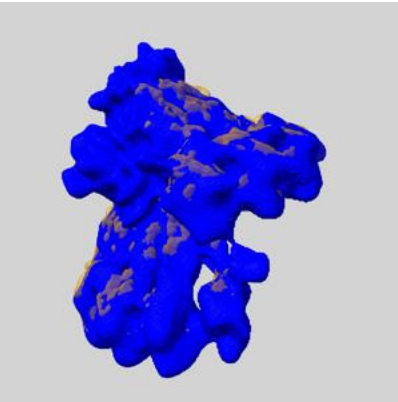
6.6.1 emd_53400_msk_1.map (i)



X



Y

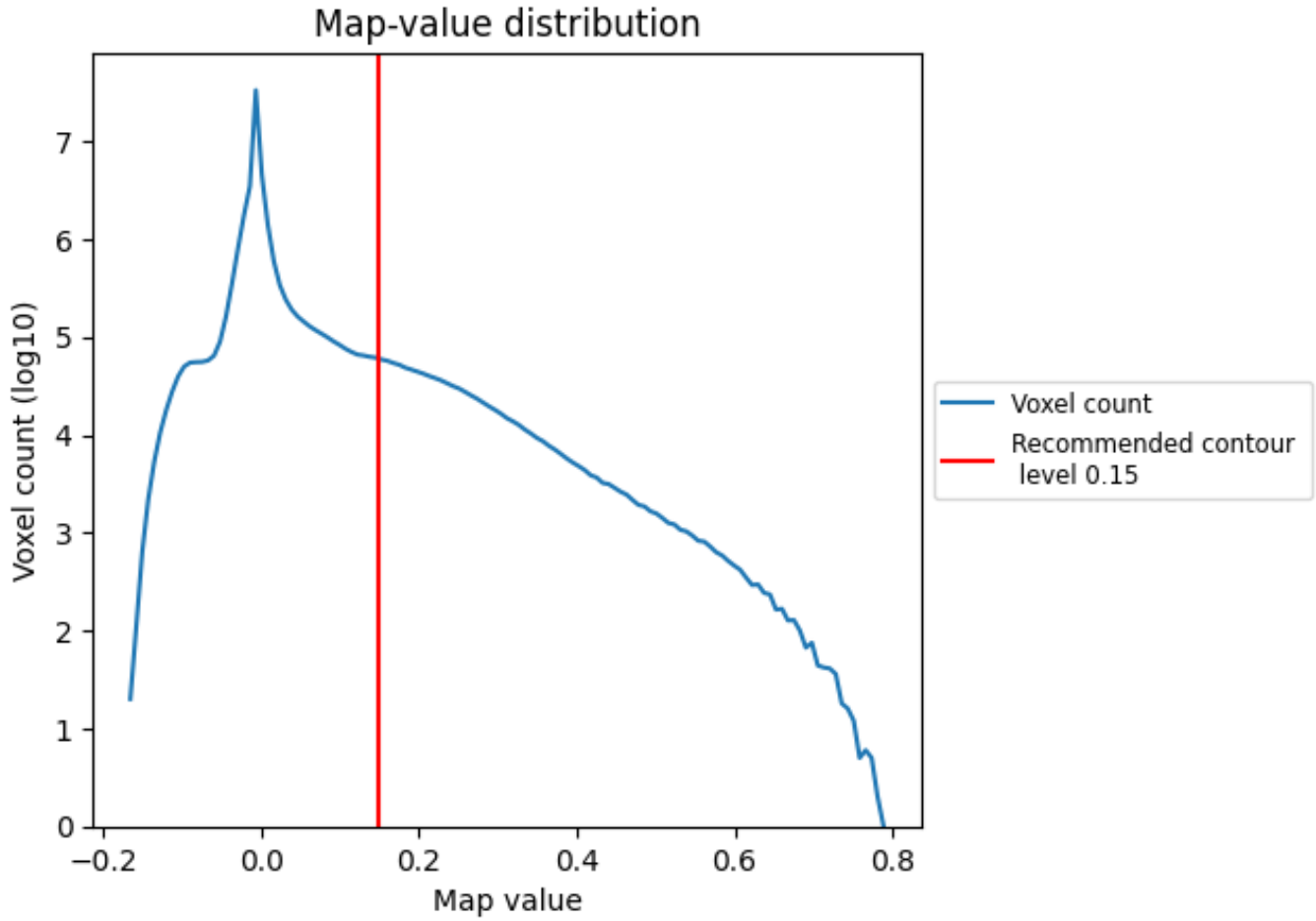


Z

7 Map analysis

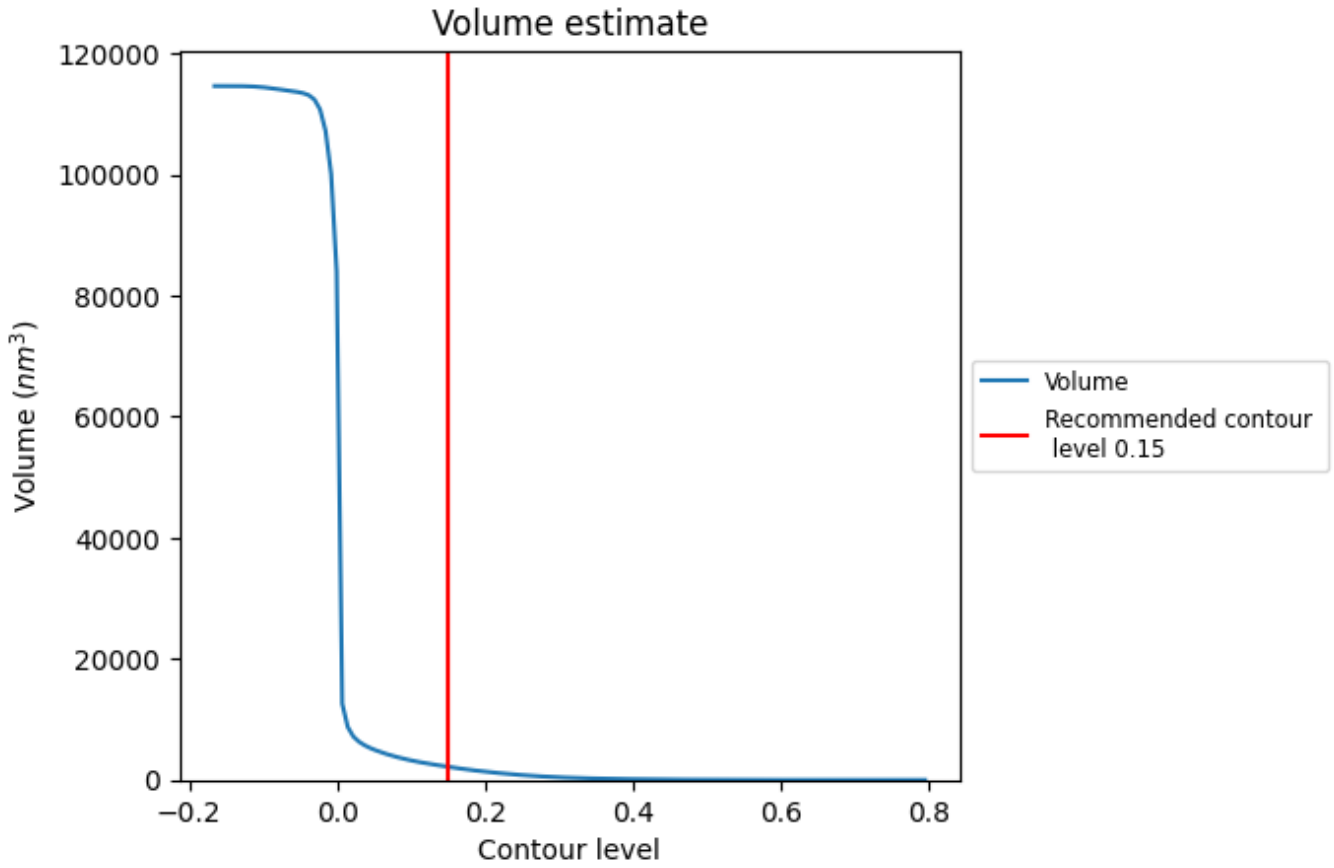
This section contains the results of statistical analysis of the map.

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.

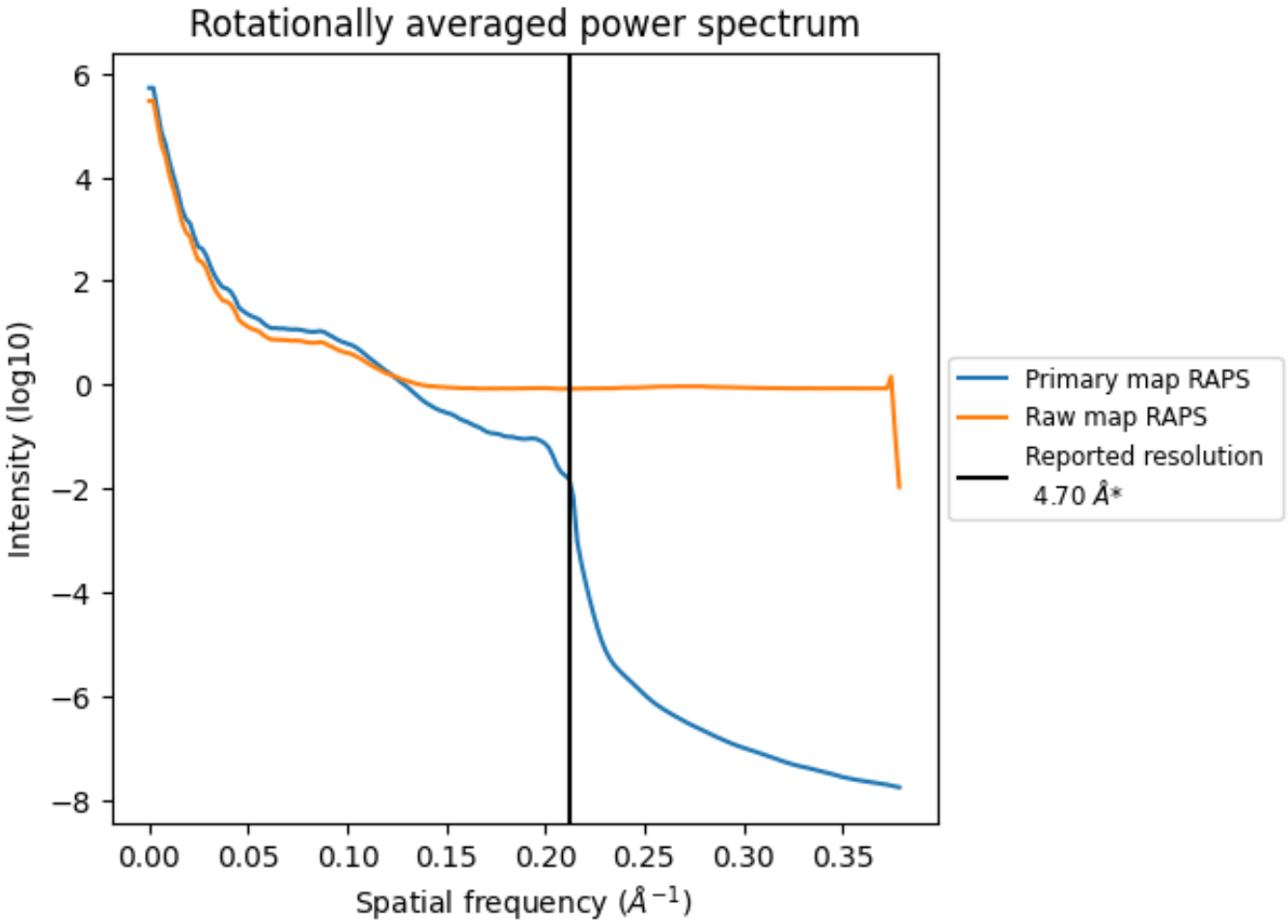
7.2 Volume estimate



The volume at the recommended contour level is 2190 nm^3; this corresponds to an approximate mass of 1978 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)

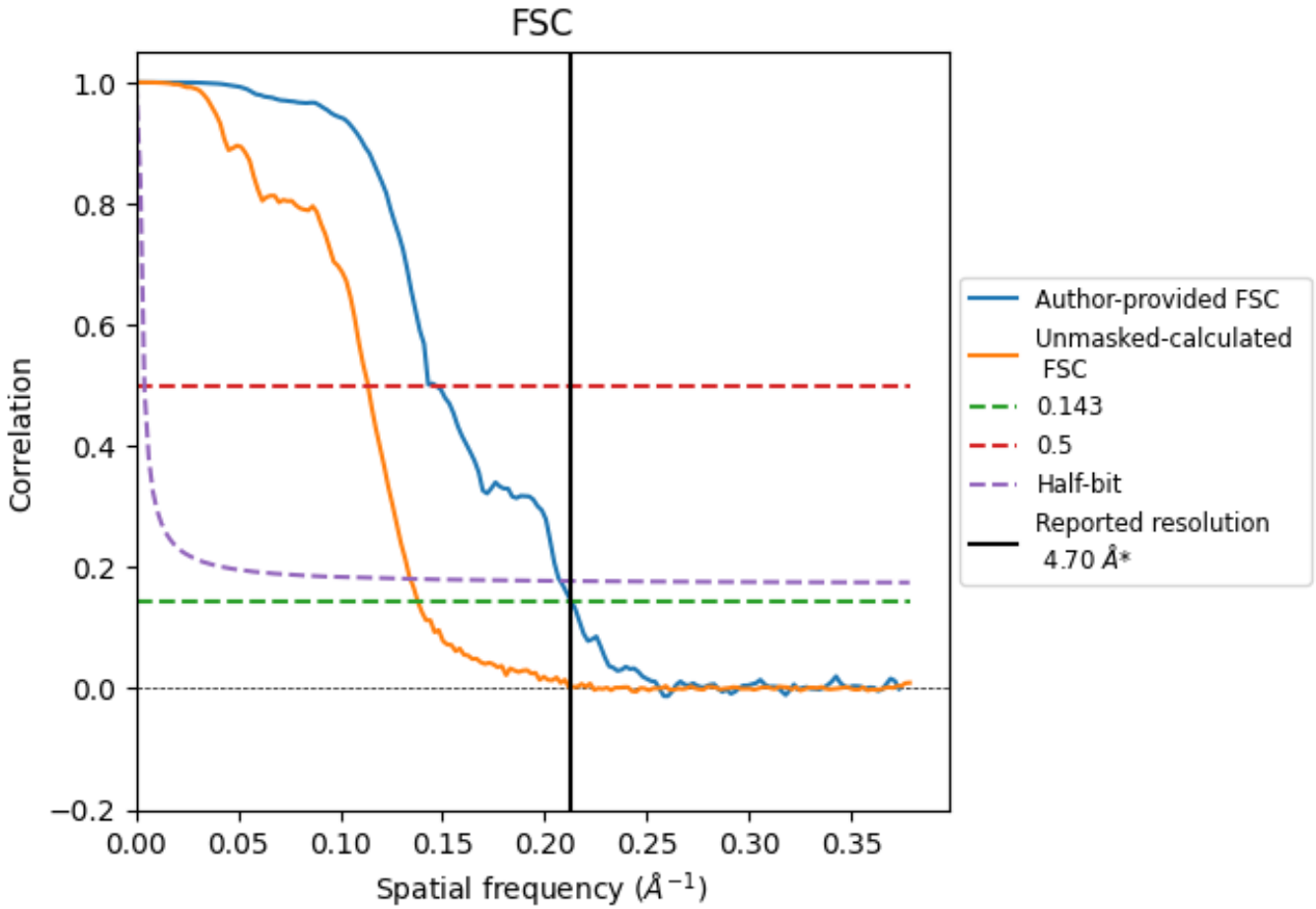


*Reported resolution corresponds to spatial frequency of 0.213 Å^{-1}

8 Fourier-Shell correlation

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.213 Å^{-1}

8.2 Resolution estimates (i)

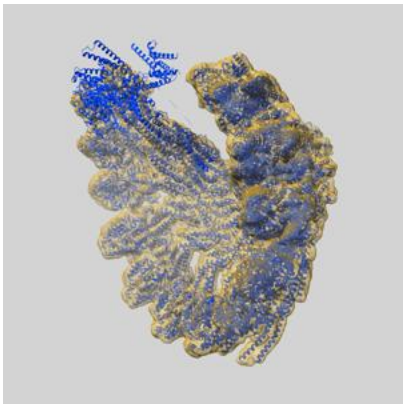
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.70	-	-
Author-provided FSC curve	4.69	6.82	4.81
Unmasked-calculated*	7.25	8.80	7.45

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 7.25 differs from the reported value 4.7 by more than 10 %

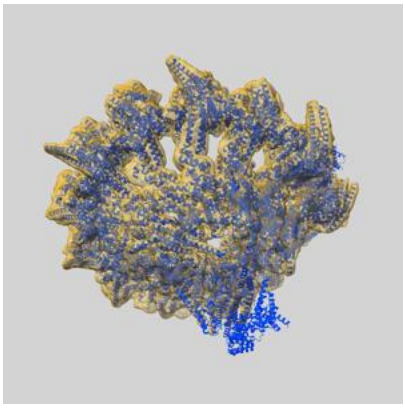
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-53400 and PDB model 9QVN. Per-residue inclusion information can be found in section 3 on page 11.

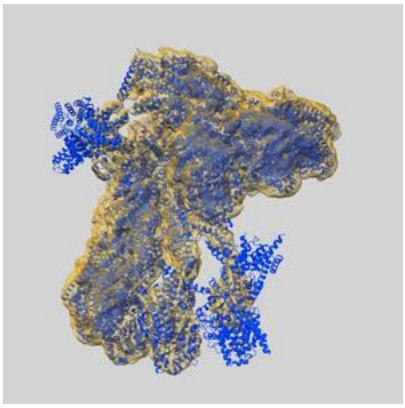
9.1 Map-model overlay



X



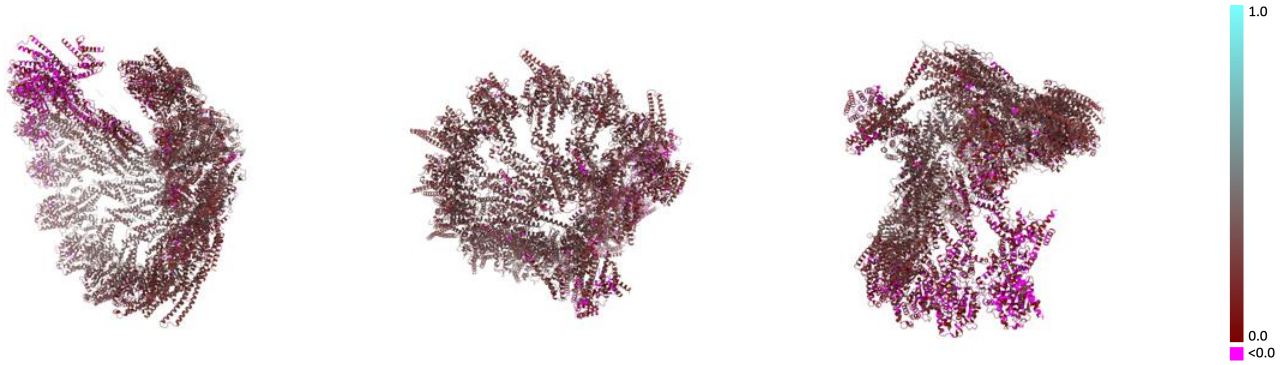
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.15 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.

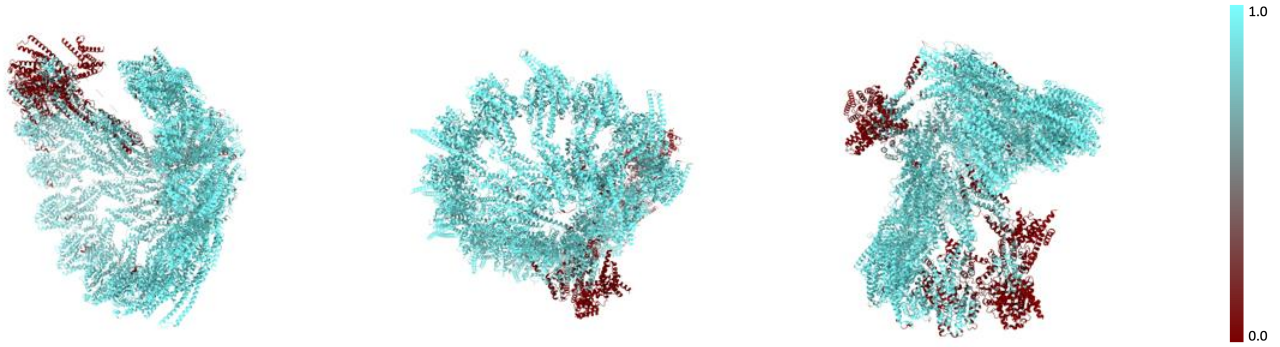
9.2 Q-score mapped to coordinate model (i)



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.

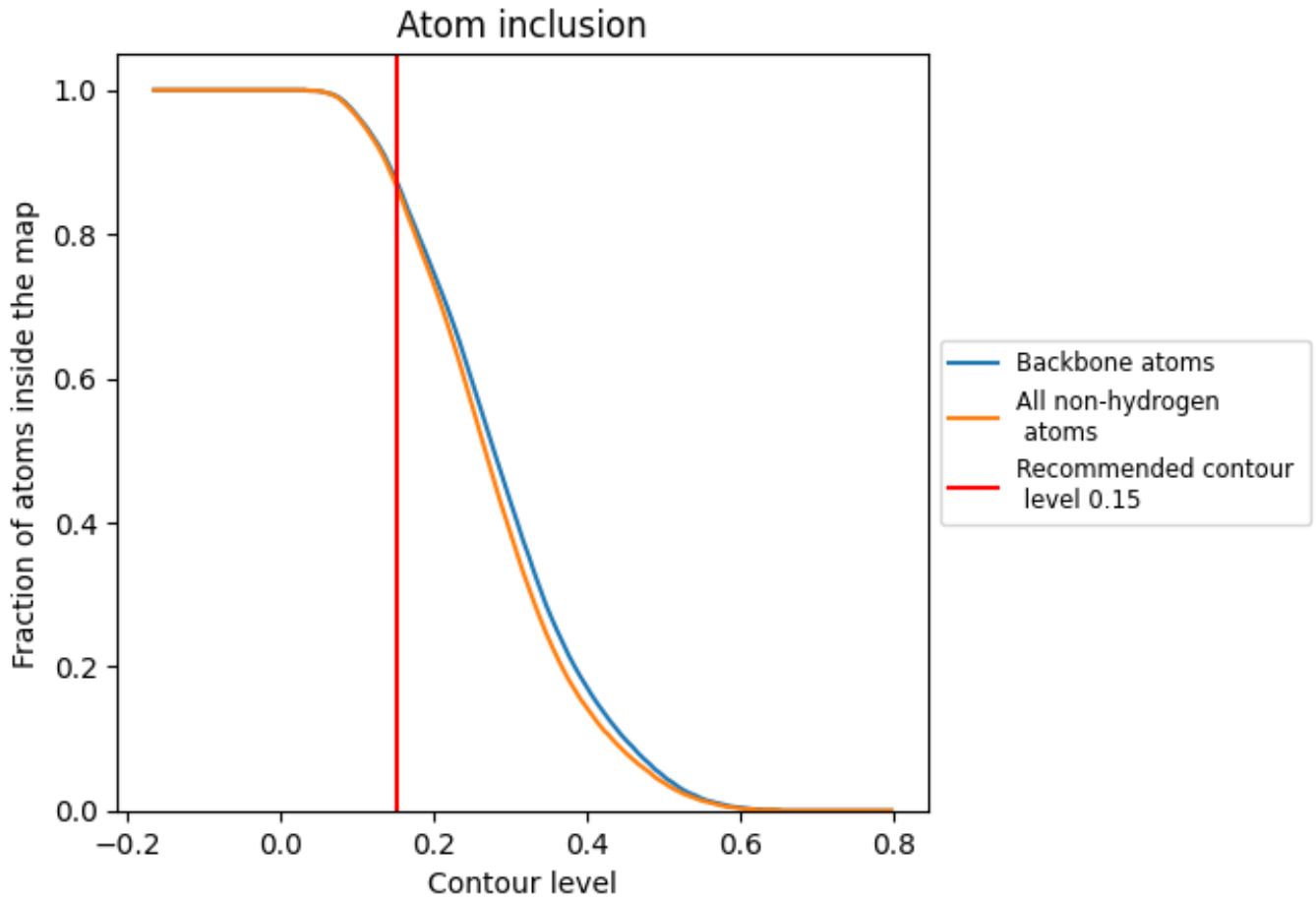
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.15).

9.4 Atom inclusion (i)



At the recommended contour level, 88% of all backbone atoms, 87% 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 (0.15) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8680	0.2270
A	0.9740	0.2350
B	0.9840	0.2660
C	0.9860	0.2760
D	0.9860	0.2780
E	0.9780	0.2830
F	0.9920	0.2860
G	0.9860	0.2790
H	0.9970	0.2950
I	0.9990	0.2850
J	0.8500	0.2510
K	0.9940	0.2540
L	0.9690	0.2470
M	0.7240	0.1350
N	0.4040	0.0870
O	0.8990	0.2870
P	0.9810	0.2800
Q	0.0000	0.0710
R	0.0000	0.1830
S	0.0000	0.1520
T	0.7780	0.2340
U	0.4700	0.2380
V	0.5650	0.2420
W	0.4310	0.2260
X	0.3910	0.2160
Y	0.5730	0.2340
Z	0.9720	0.2750
a	0.9740	0.1620
b	0.9840	0.2180
c	0.9820	0.2450
d	0.9860	0.2350
e	0.9890	0.2280
f	0.9970	0.2640
g	0.9730	0.2480
h	0.9920	0.2820

Continued on next page...

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Chain	Atom inclusion	Q-score
i	0.9830	0.2480
j	0.9770	0.2270
k	0.9720	0.1480
l	0.8940	0.1090
m	0.5730	0.0610
n	0.0860	0.0490
r	0.0000	0.1660
s	0.0090	0.1350
t	0.4120	0.2310
u	0.5490	0.2660
v	0.9910	0.3160