



Full wwPDB EM Validation Report ⓘ

May 13, 2025 – 03:03 pm BST

PDB ID : 9QVM / pdb_00009qvm
EMDB ID : EMD-53399
Title : Cryo-EM reconstruction of the NEDD1 anchor protein and CDK5RAP2 bound to the gamma-tubulin ring complex
Authors : Munoz-Hernandez, H.; Xu, Y.; Wieczorek, M.
Deposited on : 2025-04-11
Resolution : 6.80 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

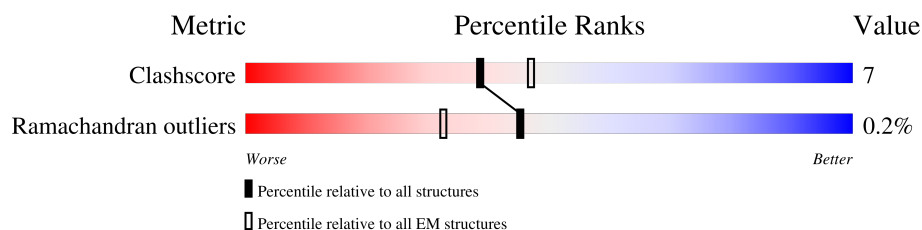
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 6.80 Å.

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




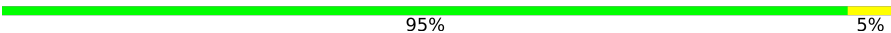























Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835

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 $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	B	907	
1	D	907	
1	F	907	
1	H	907	
1	N	907	
1	r	907	
1	s	907	
1	t	907	
1	u	907	

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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	
10	p	158	
11	w	1663	
11	x	1663	

2 Entry composition [i](#)

There are 11 unique types of molecules in this entry. The entry contains 88888 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	C	N	O	0	0
			3256	1942	657	657		
1	F	657	Total	C	N	O	0	0
			3256	1942	657	657		
1	H	656	Total	C	N	O	0	0
			3252	1940	656	656		
1	r	113	Total	C	N	O	0	0
			562	336	113	113		
1	s	115	Total	C	N	O	0	0
			572	342	115	115		
1	t	120	Total	C	N	O	0	0
			597	357	120	120		
1	u	120	Total	C	N	O	0	0
			597	357	120	120		
1	v	129	Total	C	N	O	0	0
			642	384	129	129		
1	B	644	Total	C	N	O	0	0
			3192	1904	644	644		
1	N	630	Total	C	N	O	0	0
			3123	1863	630	630		

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

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

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Mol	Chain	Residues	Atoms				AltConf	Trace
2	T	82	Total	C	N	O	0	0
			406	242	82	82		
2	U	82	Total	C	N	O	0	0
			406	242	82	82		

- Molecule 3 is a protein called Protein NEDD1.

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

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

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

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

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

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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	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		
7	M	771	Total	C	N	O	0	0
			3828	2286	771	771		

- Molecule 8 is a protein called TUBGCP6 protein.

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

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

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

- Molecule 10 is a protein called Mitotic-spindle organizing protein 2B.

Mol	Chain	Residues	Atoms				AltConf	Trace
10	p	56	Total	C	N	O	0	0
			277	165	56	56		

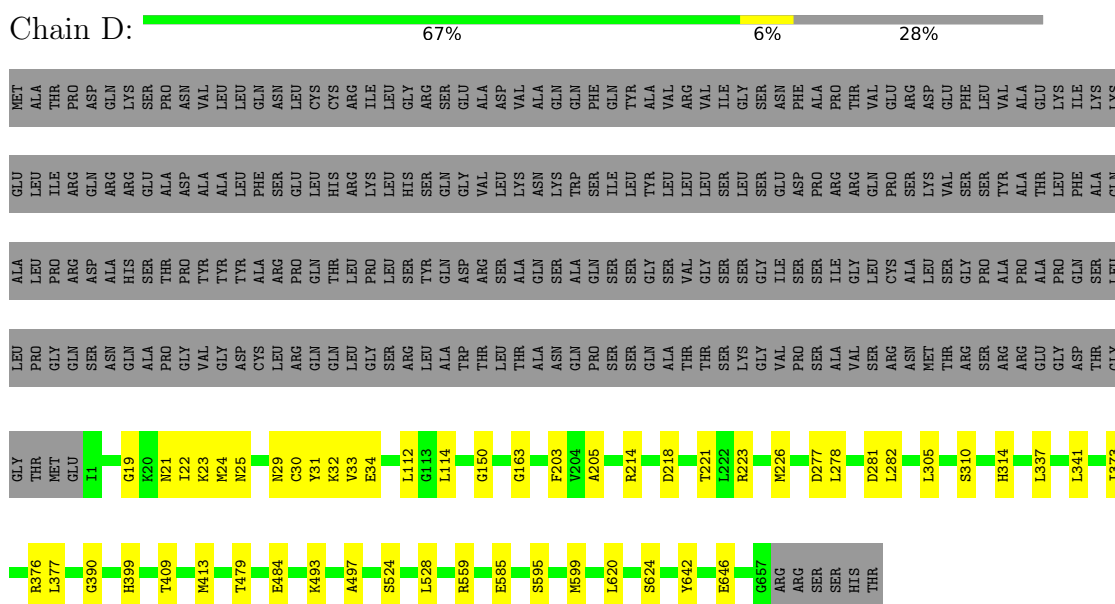
- Molecule 11 is a protein called CDK5 regulatory subunit-associated protein 2.

Mol	Chain	Residues	Atoms				AltConf	Trace
11	x	33	Total	C	N	O	0	0
			165	99	33	33		
11	w	33	Total	C	N	O	0	0
			165	99	33	33		

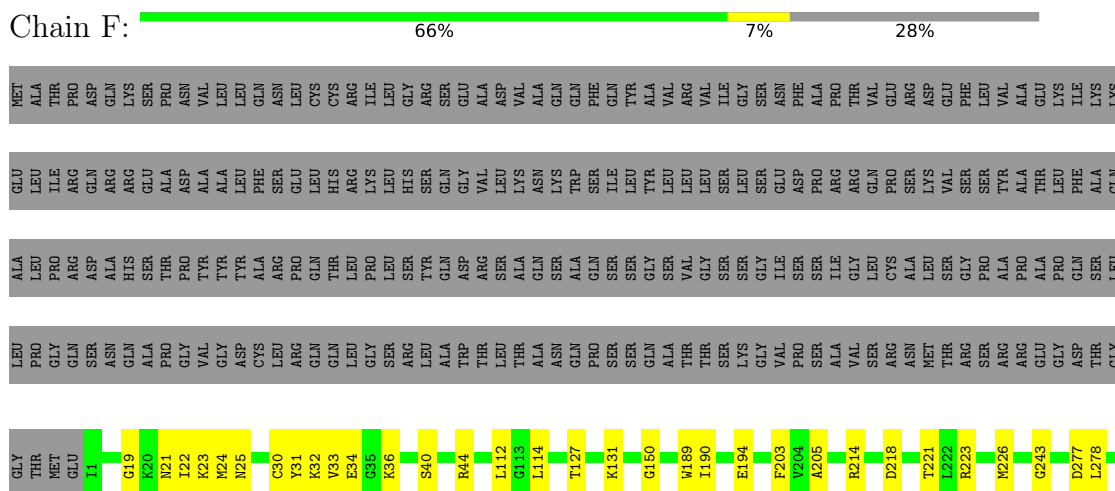
3 Residue-property plots

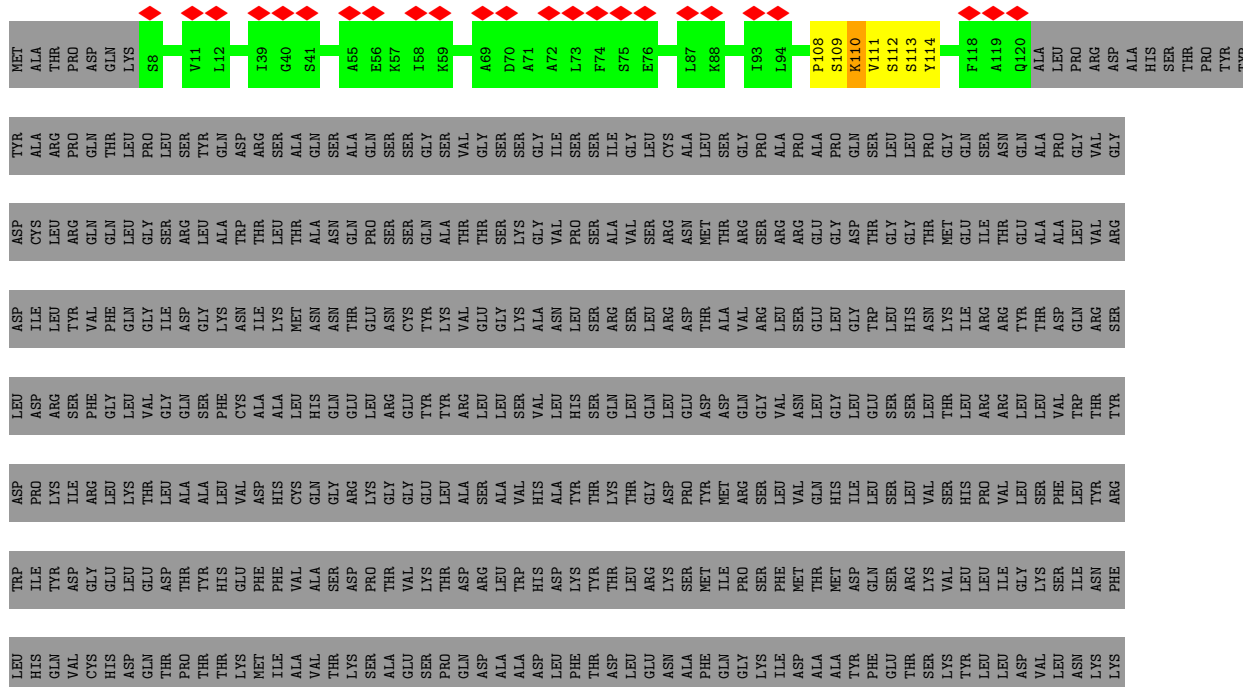
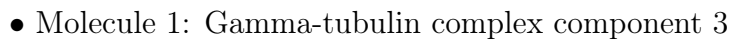
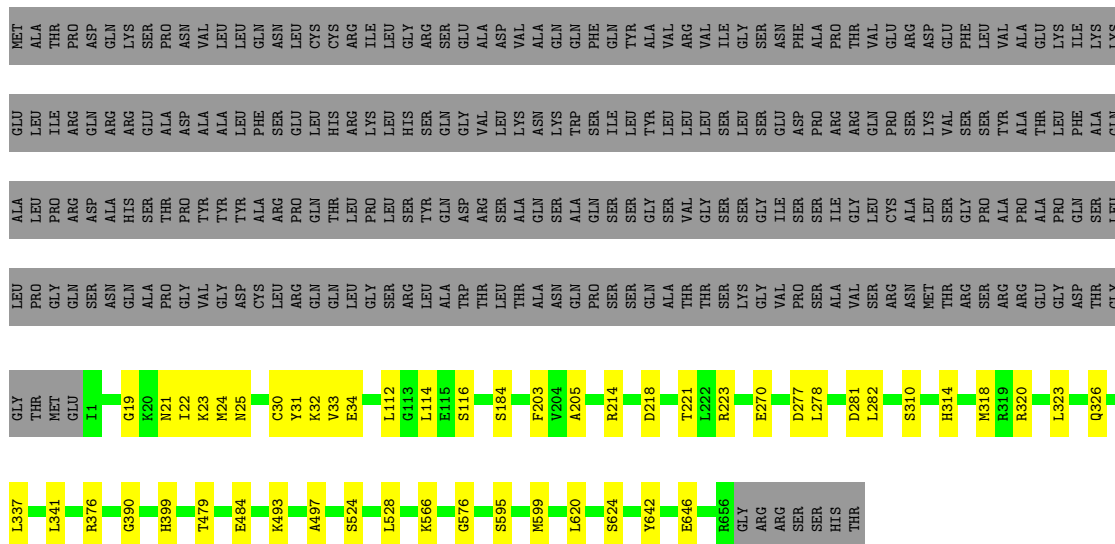
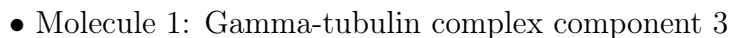
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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

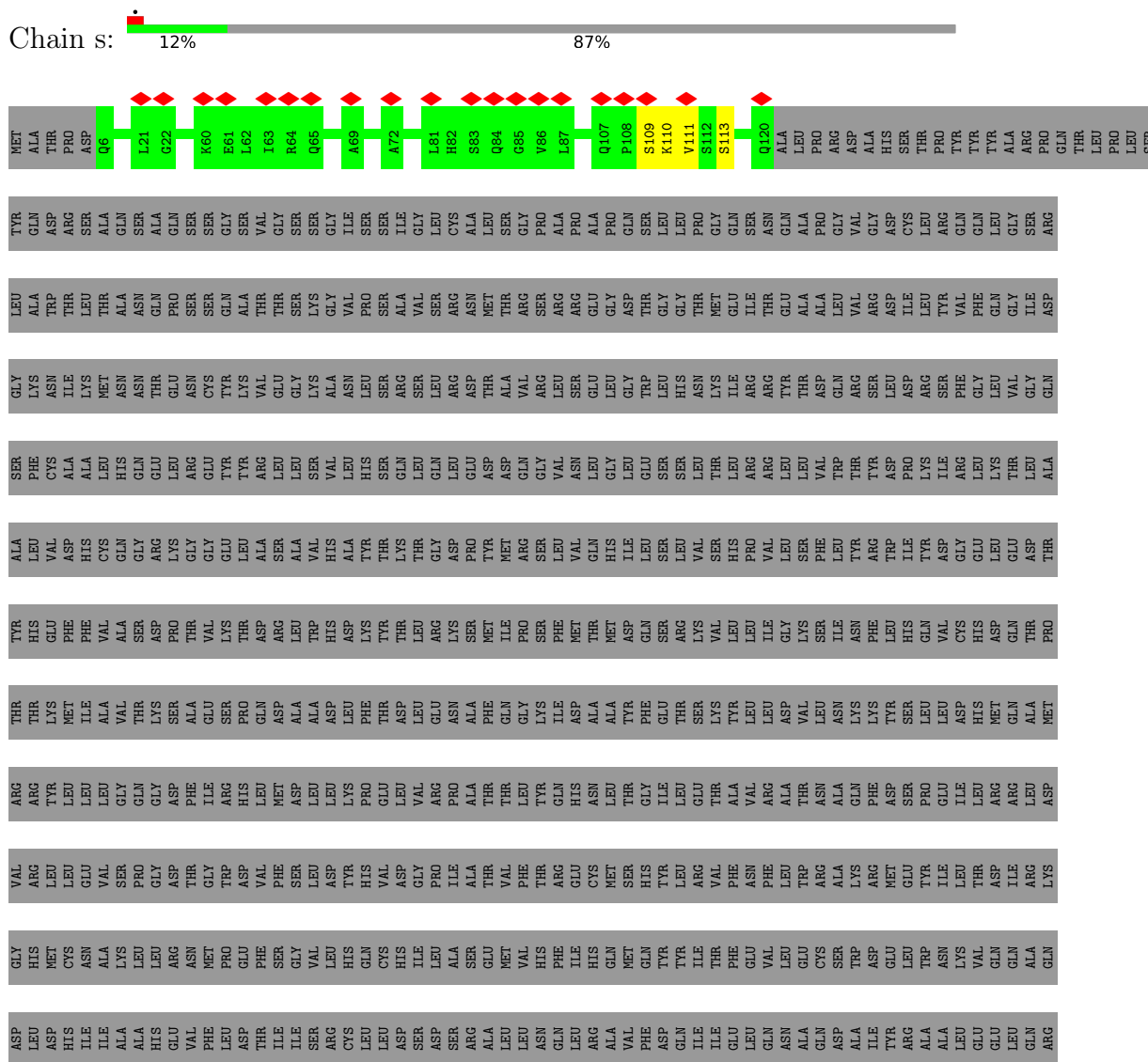


• Molecule 1: Gamma-tubulin complex component 3





- Molecule 1: Gamma-tubulin complex component 3



[illegible]

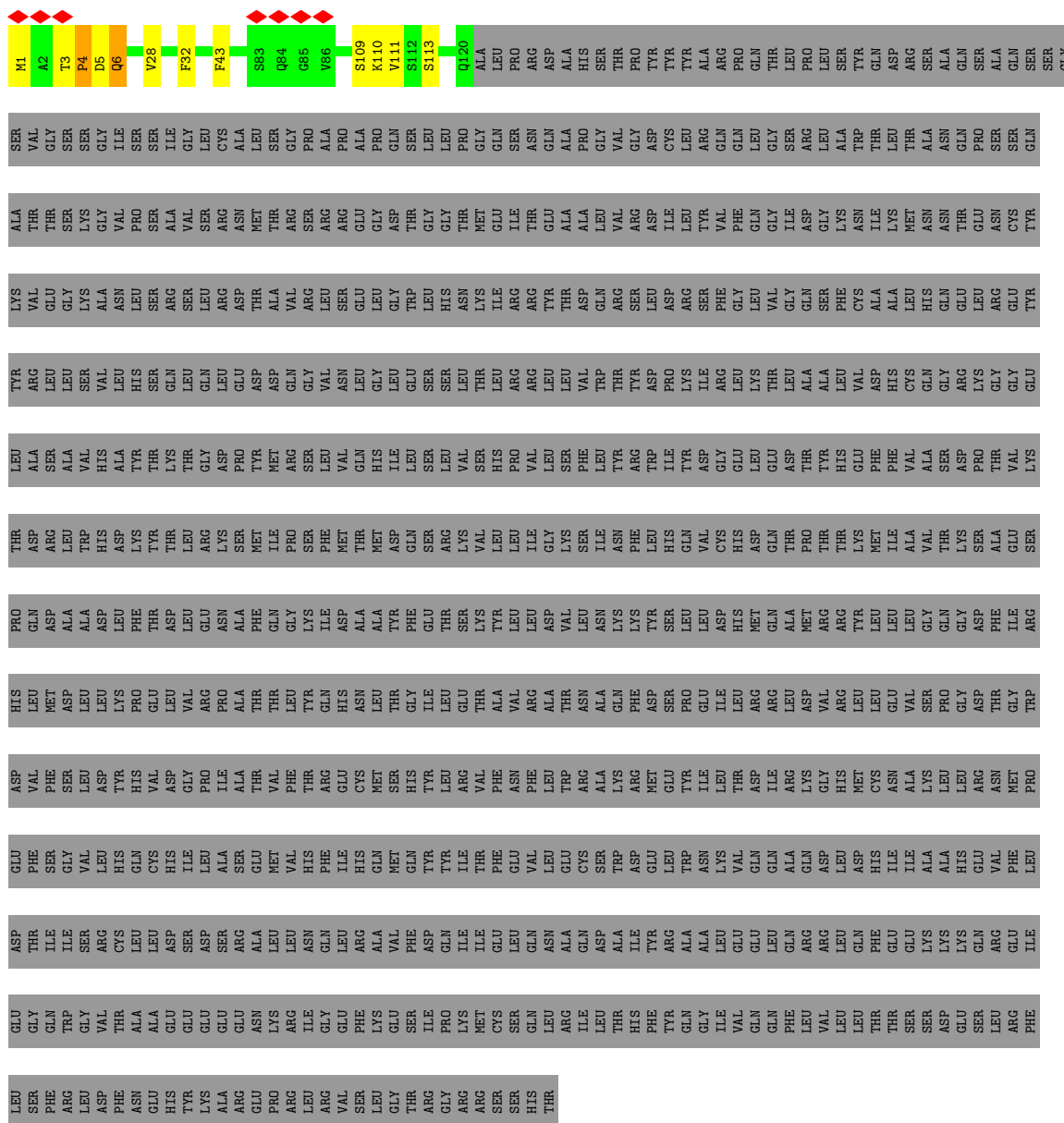
- Molecule 1: Gamma-tubulin complex component 3

Chain t: 12% . 87%

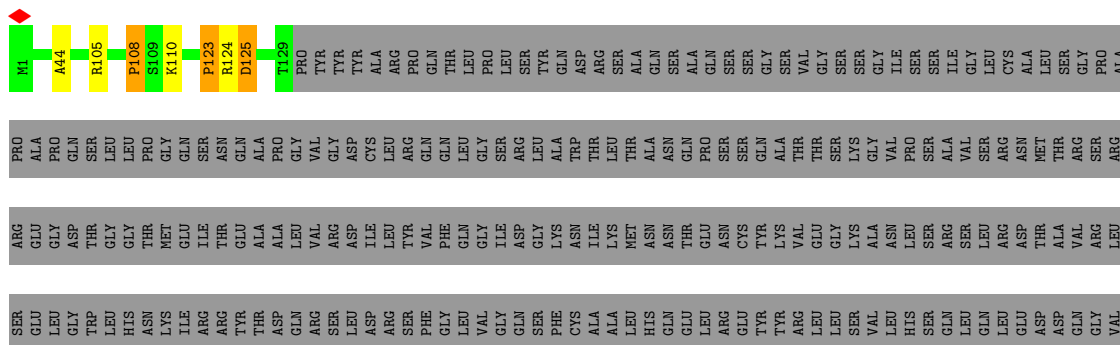
PHE	THR	CYS	HIS	THR	LYS	LEU	ASP	ALA	LEU	ASN	VAL	ILE
	ALA	LEU	CYS	GLN	PRO	PHE	LYS	THR	HIS	LEU	PRO	SER
	GLU	LEU	GLY	GLY	GLU	THR	THR	THR	SER	SER	SER	SER
	ASP	ASP	HIS	ILE	VAL	LEU	THR	LYS	GLN	ARG	ALA	ILE
	GLU	ASP	LEU	PRO	ARG	GLU	ARG	GLY	LEU	SER	VAL	GLY
	ALA	SER	ALA	ILE	PRO	ASN	LYS	ASP	GLN	LEU	SER	LEU
	GLU	ARG	SER	ALA	ALA	ALA	SER	PRO	GLU	ARG	ASN	CYS
	ASN	ALA	GLU	GLU	THR	PHE	MET	THR	ASP	THR	MET	ALA
	PRO	LEU	MET	VAL	THR	GLN	ILE	MET	ASP	ALA	THR	LEU
	GLU	LEU	VAL	VAL	LEU	GLY	PRO	THR	VAL	VAL	ARG	GLY
K88	ILE	ASN	HIS	THR	PRO	GLU	ASP	PRO	GLU	ASN	VAL	ILE
	GLU	ARG	ILE	ALA	ALA	ASN	LYS	THR	LEU	ASP	ARG	CYS
	ASN	ALA	HIS	THR	THR	LEU	SER	THR	GLU	ASN	ALA	ALA
	GLU	VAL	GLN	THR	GLY	THR	ASP	ALA	LEU	THR	SER	LEU
	GLY	GLY	GLY	ARG	GLY	ASN	GLY	VAL	LEU	ARG	PRO	ALA
	VAL	LEU	ILE	THR	HIS	ASN	MET	THR	GLU	ARG	PRO	ALA
	GLY	ARG	HIS	CYS	ASN	ALA	THR	GLN	LEU	SER	ALA	ALA
	GLY	ALA	GLN	ARG	GLY	THR	ASP	ILE	LEU	GLY	PRO	GLY
	VAL	LEU	GLN	PHE	GLY	ALA	ASP	MET	THR	THR	ARG	GLY
	GLY	ARG	ILE	THR	GLY	THR	THR	THR	LEU	GLY	LEU	LEU
S109	THR	CYS	HIS	THR	LYS	LEU	ASP	GLN	LEU	GLY	THR	ALA
	ALA	LEU	CYS	THR	PRO	THR	ILE	MET	ASP	THR	MET	LEU
	GLU	LEU	GLN	VAL	LEU	GLY	PRO	THR	VAL	VAL	ARG	GLY
	ASP	ASP	HIS	ILE	THR	ASN	SER	SER	GLY	SER	PRO	PRO
	GLU	GLN	PHE	ARG	GLY	LEU	PHE	SER	VAL	ARG	ALA	ALA
	GLY	LEU	ILE	THR	HIS	ASN	THR	GLY	GLY	ARG	PRO	ALA
	VAL	LEU	GLY	GLY	GLY	THR	MET	VAL	ASN	SER	PRO	ALA
	GLY	ARG	ILE	THR	GLY	THR	THR	GLN	LEU	ARG	ALA	ALA
	GLY	ALA	GLY	THR	GLY	THR	ASP	ILE	LEU	GLY	GLY	GLY
	GLY	ILE	THR	THR	GLY	SER	ASP	THR	THR	GLY	LEU	LEU
L117	THR	CYS	HIS	THR	LYS	LEU	ASP	GLN	LEU	GLY	THR	ALA
	ALA	LEU	CYS	THR	PRO	THR	ILE	MET	ASP	THR	MET	LEU
	GLU	LEU	GLN	VAL	LEU	GLY	PRO	THR	VAL	VAL	ARG	GLY
	ASP	ASP	HIS	ILE	THR	ASN	SER	SER	GLY	SER	PRO	PRO
	GLU	GLN	PHE	ARG	GLY	LEU	PHE	SER	VAL	ARG	ALA	ALA
	GLY	LEU	ILE	THR	HIS	ASN	THR	GLY	GLY	ARG	PRO	ALA
	VAL	LEU	GLY	GLY	GLY	THR	MET	VAL	ASN	SER	PRO	ALA
	GLY	ARG	ILE	THR	GLY	THR	THR	GLN	LEU	ARG	ALA	ALA
	GLY	ALA	GLY	THR	GLY	THR	ASP	ILE	LEU	GLY	GLY	GLY
	GLY	ILE	THR	THR	GLY	SER	ASP	THR	THR	GLY	LEU	LEU
F118	THR	CYS	HIS	THR	LYS	LEU	ASP	GLN	LEU	GLY	THR	ALA
	ALA	LEU	CYS	THR	PRO	THR	ILE	MET	ASP	THR	MET	LEU
	GLU	LEU	GLN	VAL	LEU	GLY	PRO	THR	VAL	VAL	ARG	GLY
	ASP	ASP	HIS	ILE	THR	ASN	SER	SER	GLY	SER	PRO	PRO
	GLU	GLN	PHE	ARG	GLY	LEU	PHE	SER	VAL	ARG	ALA	ALA
	GLY	LEU	ILE	THR	HIS	ASN	THR	GLY	GLY	ARG	PRO	ALA
	VAL	LEU	GLY	GLY	GLY	THR	MET	VAL	ASN	SER	PRO	ALA
	GLY	ARG	ILE	THR	GLY	THR	THR	GLN	LEU	ARG	ALA	ALA
	GLY	ALA	GLY	THR	GLY	THR	ASP	ILE	LEU	GLY	GLY	GLY
	GLY	ILE	THR	THR	GLY	SER	ASP	THR	THR	GLY	LEU	LEU
A119	THR	CYS	HIS	THR	LYS	LEU	ASP	GLN	LEU	GLY	THR	ALA
	ALA	LEU	CYS	THR	PRO	THR	ILE	MET	ASP	THR	MET	LEU
	GLU	LEU	GLN	VAL	LEU	GLY	PRO	THR	VAL	VAL	ARG	GLY
	ASP	ASP	HIS	ILE	THR	ASN	SER	SER	GLY	SER	PRO	PRO
	GLU	GLN	PHE	ARG	GLY	LEU	PHE	SER	VAL	ARG	ALA	ALA
	GLY	LEU	ILE	THR	HIS	ASN	THR	GLY	GLY	ARG	PRO	ALA
	VAL	LEU	GLY	GLY	GLY	THR	MET	VAL	ASN	SER	PRO	ALA
	GLY	ARG	ILE	THR	GLY	THR	THR	GLN	LEU	ARG	ALA	ALA
	GLY	ALA	GLY	THR	GLY	THR	ASP	ILE	LEU	GLY	GLY	GLY
	GLY	ILE	THR	THR	GLY	SER	ASP	THR	THR	GLY	LEU	LEU
Q120	THR	CYS	HIS	THR	LYS	LEU	ASP	GLN	LEU	GLY	THR	ALA
	ALA	LEU	CYS	THR	PRO	THR	ILE	MET	ASP	THR	MET	LEU
	GLU	LEU	GLN	VAL	LEU	GLY	PRO	THR	VAL	VAL	ARG	GLY
	ASP	ASP	HIS	ILE	THR	ASN	SER	SER	GLY	SER	PRO	PRO
	GLU	GLN	PHE	ARG	GLY	LEU	PHE	SER	VAL	ARG	ALA	ALA
	GLY	LEU	ILE	THR	HIS	ASN	THR	GLY	GLY	ARG	PRO	ALA
	VAL	LEU	GLY	GLY	GLY	THR	MET	VAL	ASN	SER	PRO	ALA
	GLY	ARG	ILE	THR	GLY	THR	THR	GLN	LEU	ARG	ALA	ALA
	GLY	ALA	GLY	THR	GLY	THR	ASP	ILE	LEU	GLY	GLY	GLY
	GLY	ILE	THR	THR	GLY	SER	ASP	THR	THR	GLY	LEU	LEU

- Molecule 1: Gamma-tubulin complex component 3

Chain u:  12% 87%



- Molecule 1: Gamma-tubulin complex component 3



[illegible]

- Molecule 1: Gamma-tubulin complex component 3

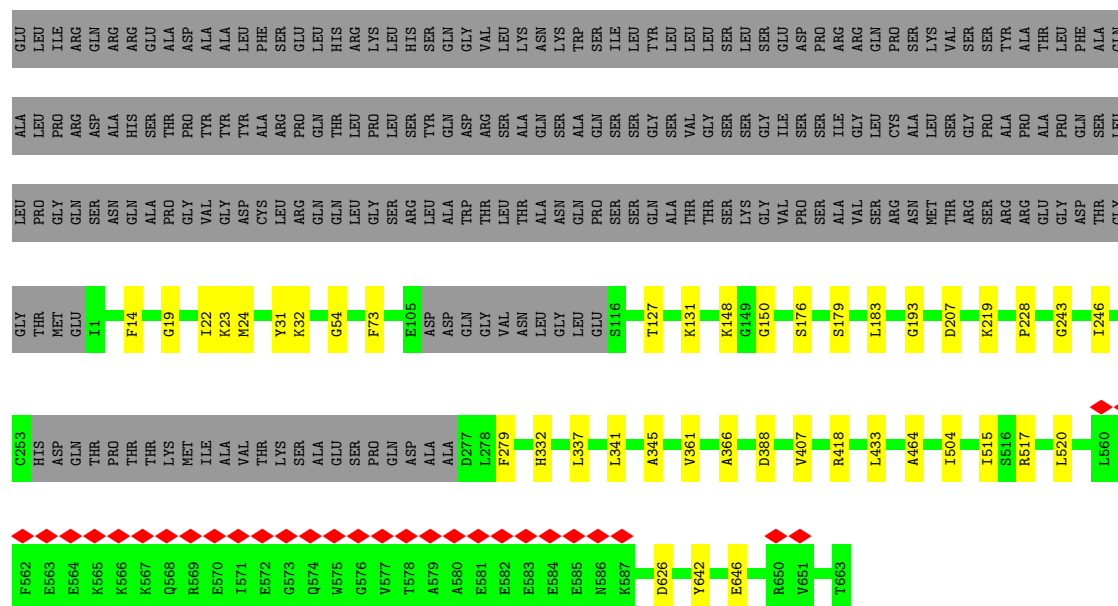
Chain B:  67% . 29%

GLU	THR	GLY	LEU	ALA	GLU	MET
SER	THR	THR	PRO	LEU	LEU	ALA
PRO	MET	GLY	GLY	PRO	ILE	THR
Q273	GLU	GLN	GLN	ASP	ARG	PRO
F286	I1	SER	SER	ALA	ARG	GLN
	K23	ASN	GLN	HIS	ARG	GLN
I290	M24	GLN	GLN	ALA	SER	SER
S310	Y31	PRO	PRO	THR	ALA	PRO
H314	K32	VAL	VAL	TYR	ALA	VAL
L337	L112	GLY	GLY	TYR	ALA	LEU
L341	G113	ASP	ASP	ALA	PHE	LEU
G390	L114	CYS	CYS	ARG	SER	ASN
S524	E115	LEU	LEU	PRO	GLU	GLU
L528	S116	ARG	GLN	GLN	LEU	CYS
K566	S118	GLN	GLN	THR	HIS	CYS
G576	G150	LEU	LEU	LEU	ARG	ARG
S595	S154	SER	SER	PRO	ILE	LEU
M599	Y159	LEU	LEU	SER	HIS	GLY
L620	T162	TRP	ALA	GLN	SER	ARG
S624	G163	THR	ALA	ASP	GLY	GLU
K556	D164	THR	THR	ARG	VAL	GLU
GLY	R168	ALA	ALA	ALA	LYS	VAL
ARG	S179	ASN	ASN	SER	ASN	ARG
ARG	L183	GLN	GLN	ALA	LEU	VAL
SER	F203	GLN	GLN	GLY	TYR	ALA
SER	V204	ALA	ALA	SER	LEU	VAL
SER	A205	THR	THR	VAL	LEU	ARG
SER	T221	SER	SER	GLY	ILE	VAL
SER	L222	LYS	LYS	SER	LEU	GLY
SER	R223	GLY	GLY	GLY	SER	SER
HIS	M226	VAL	VAL	ILE	ASN	ASN
THR	D255	PRO	PRO	SER	ASP	PHE
	T260	SER	SER	SER	PRO	ALA
LYS	MET	THR	MET	ILE	ARG	PRO
MET	MET	ARG	SER	GLY	ARG	THR
ILE	ILE	SER	SER	PRO	GLN	VAL
ALA	ALA	ARG	ARG	ALA	ALA	ALA
VAL	VAL	GLU	GLU	PRO	THR	GLU
THR	THR	GLY	GLY	ASP	LEU	LYS
LYS	LYS	ASP	GLN	PHE	ILE	ILE
SER	SER	THR	THR	ALA	PHE	LYS
ALA	ALA	GLY	GLY	SER	GLN	LYS
		THR	THR	THR	ALA	THR
		GLU	GLU	GLU	THR	GLU
		ASP	ASP	ASP	ASP	ASP
		GLU	GLU	GLU	GLU	GLU
		ASN	ASN	ASN	ASN	ASN
		PRO	PRO	PRO	PRO	PRO
		THR	THR	THR	THR	THR
		VAL	VAL	VAL	VAL	VAL
		ARG	ARG	CYS	PRO	ARG
		ASN	ASN	ALA	SER	GLU
		MET	MET	LEU	LYS	ASP
		THR	THR	LEU	VAL	GLU
		ARG	ARG	GLY	SER	PHE
		SER	SER	PRO	SER	LEU
		SER	SER	ALA	TYR	VAL
		ILE	ILE	PRO	ALA	ALA
		VAL	VAL	GLU	THR	GLU
		THR	THR	PRO	LEU	LYS
		LYS	LYS	GLN	PHE	ILE
		SER	SER	SER	ALA	LYS
		ALA	ALA	THR	GLN	THR
		GLY	GLY	THR	THR	GLY

- Molecule 1: Gamma-tubulin complex component 3

Chain N:  65% 5% 31%

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



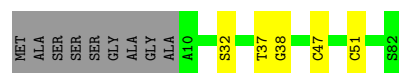
• Molecule 2: Mitotic-spindle organizing protein 1

Chain O: 95% 5%



• Molecule 2: Mitotic-spindle organizing protein 1

Chain P: 83% 6% 11%



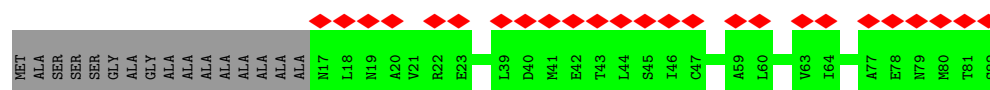
• Molecule 2: Mitotic-spindle organizing protein 1

Chain Q: 18% 80% 20%



• Molecule 2: Mitotic-spindle organizing protein 1

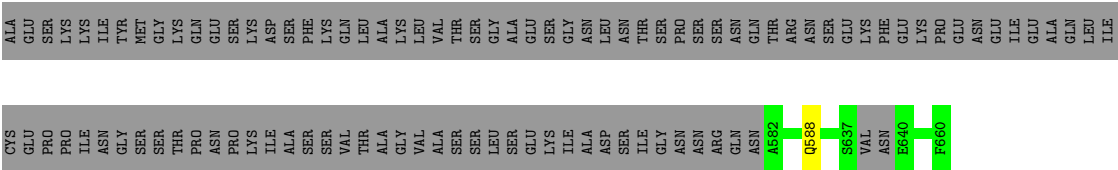
Chain R: 30% 80% 20%



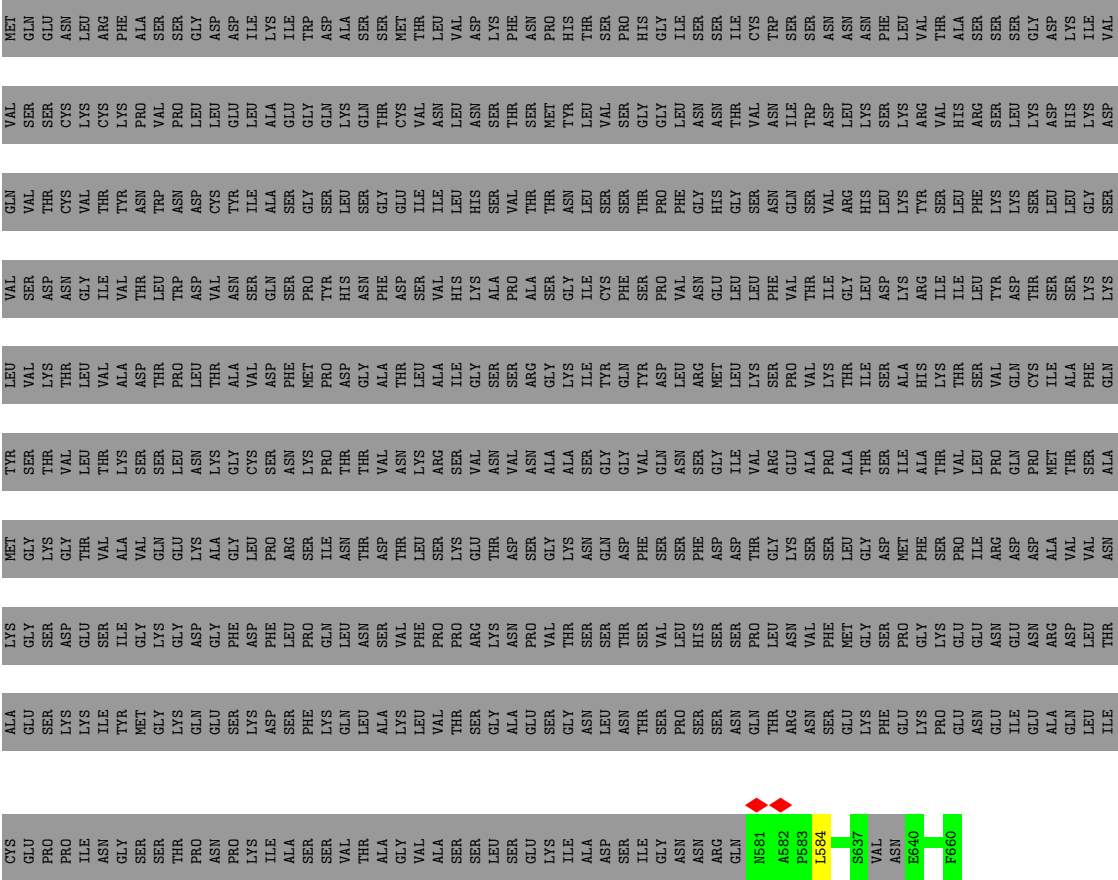
• Molecule 2: Mitotic-spindle organizing protein 1

Chain S: 18% 80% 20%

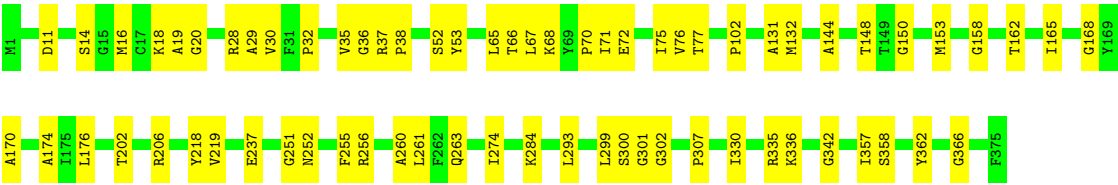
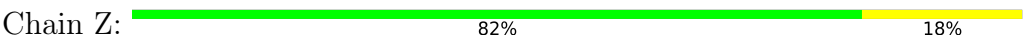
[illegible][illegible]



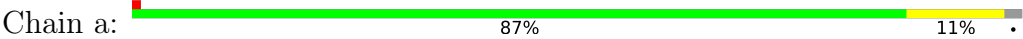
• Molecule 3: Protein NEDD1

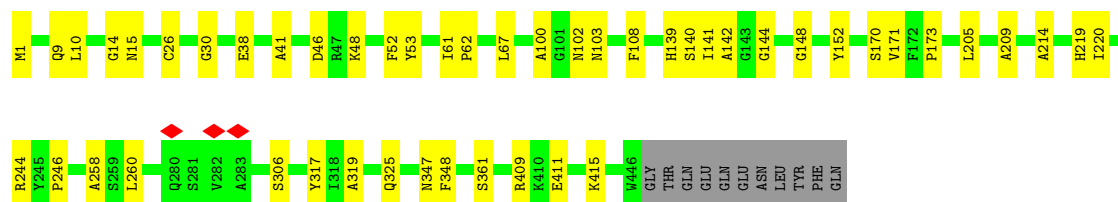


• Molecule 4: Actin, cytoplasmic 1, N-terminally processed



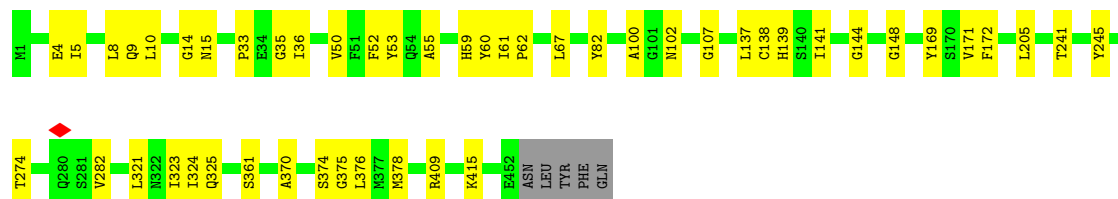
• Molecule 5: Tubulin gamma-1 chain





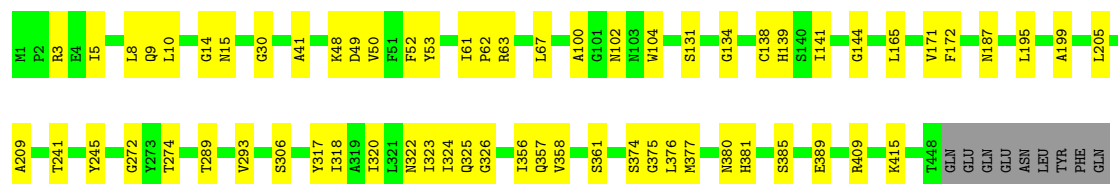
- Molecule 5: Tubulin gamma-1 chain

Chain b: 88% 11% .



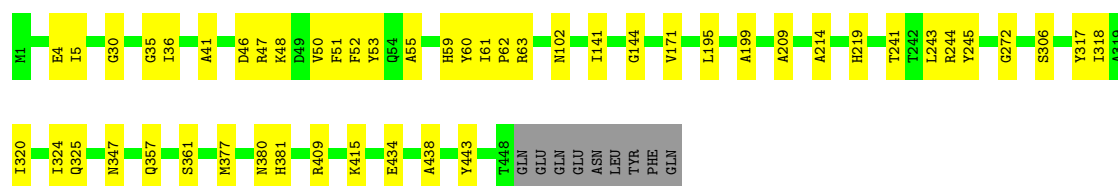
- Molecule 5: Tubulin gamma-1 chain

Chain c: 84% 14% .



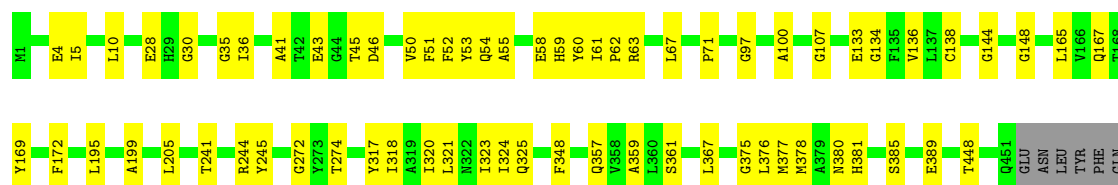
- Molecule 5: Tubulin gamma-1 chain

Chain e: 87% 11% .

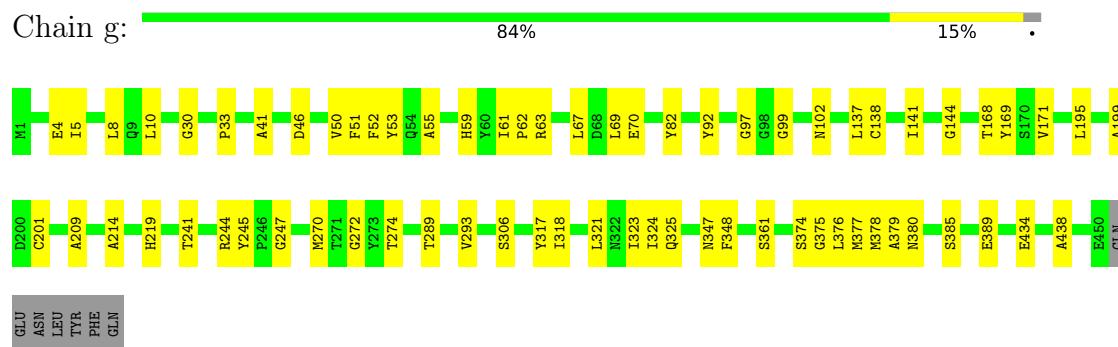


- Molecule 5: Tubulin gamma-1 chain

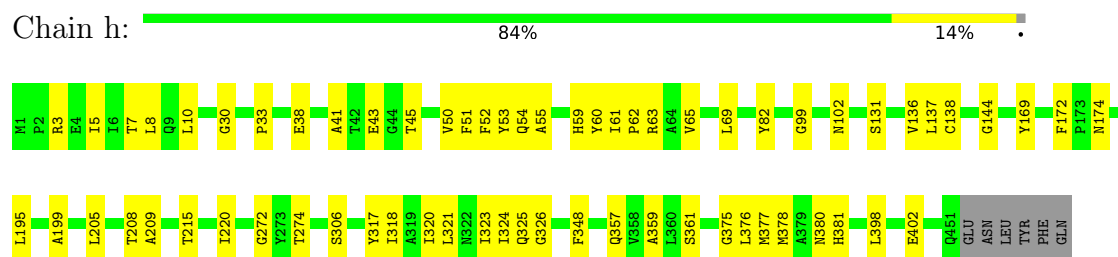
Chain f: 84% 15% .



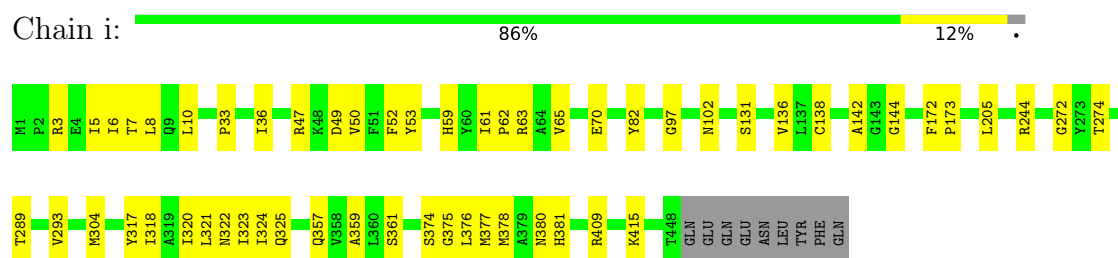
- Molecule 5: Tubulin gamma-1 chain



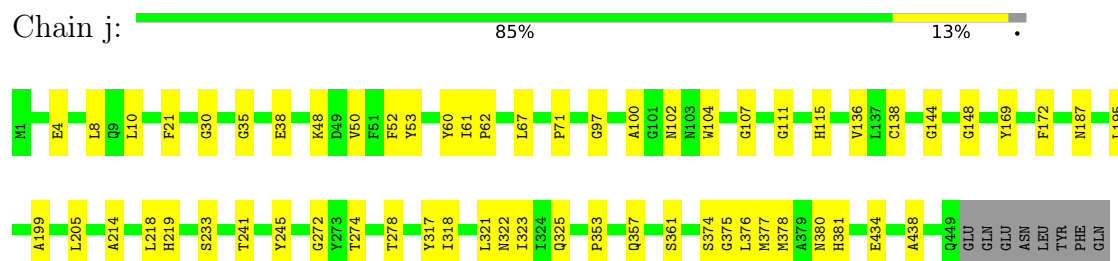
- Molecule 5: Tubulin gamma-1 chain



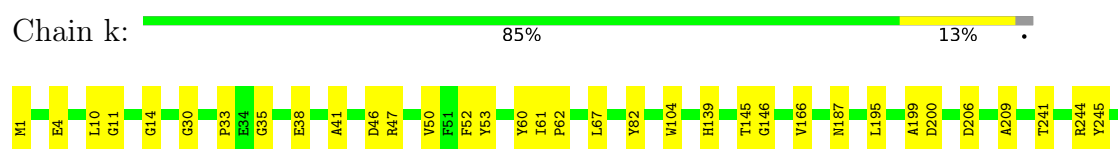
- Molecule 5: Tubulin gamma-1 chain



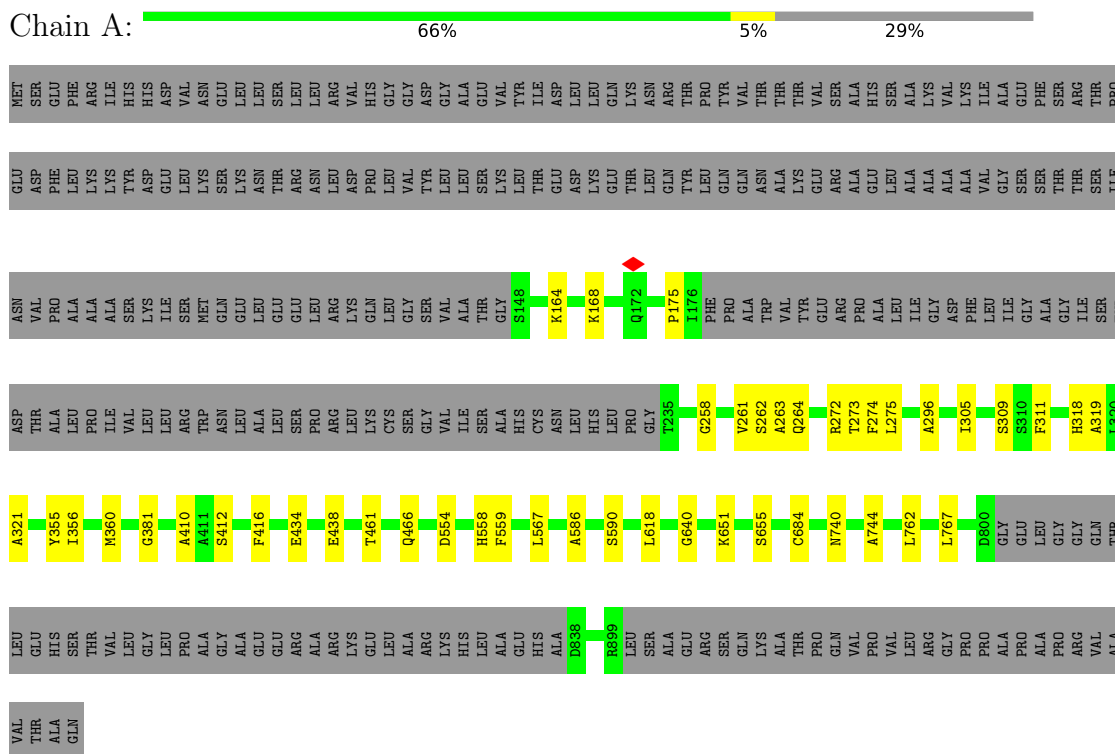
- Molecule 5: Tubulin gamma-1 chain



- Molecule 5: Tubulin gamma-1 chain

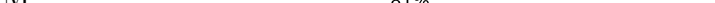


- Chain C:  66% 5% 30%



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

ALA	ARG	F548	SER	ASN	GLU	MET
LYS	HIS	L567	PRO	VAL	ASP	SER
LEU	HIS	L567	LEU	ALA	LEU	PHE
ALA	ALA	D600	CYS	ALA	LYS	ARG
GLU	HIS	A619	SER	SER	TYR	ILE
HIS	HIS	A619	GLY	LYS	ASP	HIS
D338	D338	Q624	VAL	ILE	GLU	HIS
		Q624	ILE	SER	LEU	ASP
		G640	SER	MET	LEU	ASN
		G640	ALA	GLN	SER	GLU
		Y648	HIS	GLU	LYS	LEU
		K651	CYS	LEU	ASN	LEU
		K651	ASN	GLU	THR	SER
		S855		GLU	ARG	LEU
		A701	D248	LEU	ASN	ARG
		A701	L249	ARG	LEU	VAL
		A705	V252	LYS	ASP	VAL
		A705	L253	GLN	PRO	HIS
		M726	S262	GLY	LEU	GLY
		E731	A263	SER	TYR	ASP
		N740	Q264	VAL	LEU	GLY
		A744	T273	ALA	LEU	ALA
			F274	THR	SER	GLU
			L275	GLY	VAL	VAL
				GLY	LYS	VAL
				S148	TYR	TYR
				S170	THR	ILE
				Q172	GLU	ASP
				G171	ASP	LEU
				A179	LEU	LEU
					GLN	ASN
				E183	LEU	ARG
					TYR	THR
				I192	THR	THR
				ILE	LEU	PRO
				GLY	GLN	TYR
				ALA	VAL	VAL
				GLY	ASN	THR
				ALA	THR	THR
				ILE	ALA	ALA
				SER	LYS	VAL
				THR	THR	SER
				F416	ARG	ALA
					ASP	HIS
				M436	GLU	SER
				V437	THR	HIS
				E438	ALA	SER
				E439	LEU	LEU
				H440	ALA	ALA
					ILE	VAL
					VAL	LYS
					LEU	ILE
					LEU	ALA
					LEU	ALA
					ARG	GLY
					TRP	SER
					ASN	THR
					LEU	THR
					LEU	ARG
					ALA	SER
					LEU	THR
					LEU	PRO
					LEU	THR
					LEU	PRO

- Chain M:  81% 17%

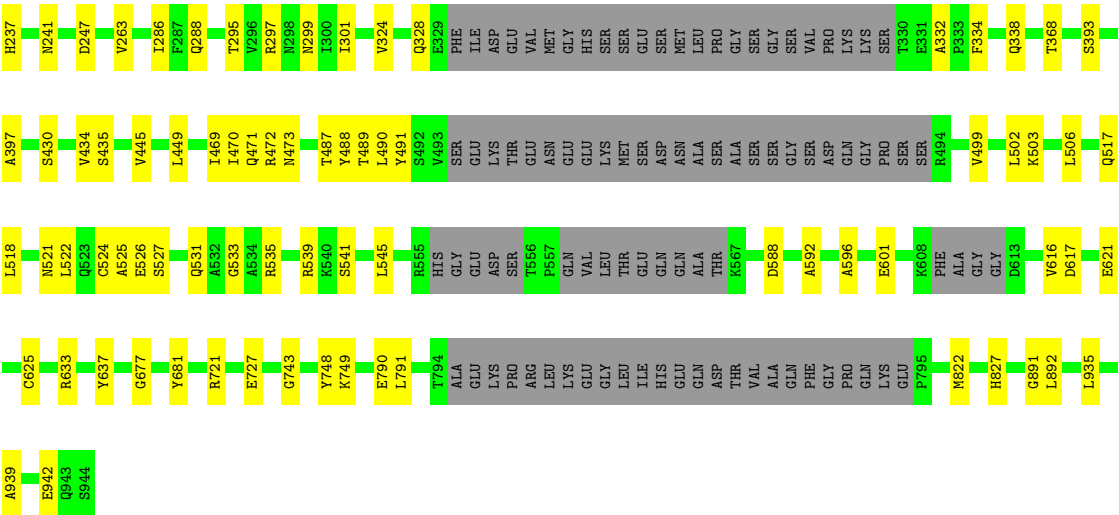
[illegible]

- Chain L:  50% . 46%

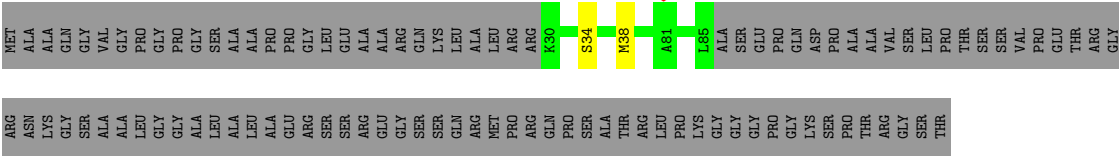
SER	VAL	THR	PRO	ASP	VAL	ASP	L282	R295	E309	P310	L312	T313	E314	V345	E349	C350	E351	N358	V363	V364	S365	A366	T367	F368	S369	C371	A376	F377	V379	K380	R381	G392	C406	P417	A481	C487	G488	G489	C529	T533	M534	S554	
H1	K20	T21	H22	L82	A86	E106	V110	L113	L117	G121	P122	L179	E183	T210	S213	L214	F215	G216	A217	L232	G243	V252	ASP	GLN	TRP	GLU	ASP	GLU	GLY	PHE	GLN	SER	ALA	SER	ASN	LEU	THR	PRO	ASP	SER	GLN	SER	GLU

- Molecule 9: Gamma-tubulin complex component 5

THR	PRO	ASN	GLY	GLU	GLY	SER	GLY	GLU	GLU	GLU	GLU	ASN	ASP	GLN	GLN	PRO	LEU	SER	ARG	GLY	ASP	SER	GLY	ILE	GLN	VAL	ASP	ARG	THR	PRO	LEU	GLY	GLU	GLN	ASN	ARG	LYS	LEU	ASP	CYS	ILE	SER	TRP	LYS	ASP	GLY	GLU	P210	L216	V220	V221	H222	Q223	T226
MET	ALA	ARG	GLY	P6	P7	W8	S9	G25	P35	F50	H51	R52	D55	I74	S120	S125	TYR	VAL	GLU	THR	PRO	ARG	ASN	LYS	GLU	VAL	GLY	GLU	LYS	ASP	ASP	PHE	ASP	TRP	GLY	LYS	TYR	LEU	MET	GLU	ASP	GLU	MET	ASP	ILE	GLY	PRO	TYR	MET	ASP				



• Molecule 10: Mitotic-spindle organizing protein 2B



• Molecule 11: CDK5 regulatory subunit-associated protein 2



- Molecule 11: CDK5 regulatory subunit-associated protein 2

98%





4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	71778	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 ($e^-/\text{\AA}^2$)	62	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2400	Depositor
Magnification	130000	Depositor
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.310	Depositor
Minimum map value	-0.073	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.016	Depositor
Recommended contour level	0.0363	Depositor
Map size (\AA)	541.44, 541.44, 541.44	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.41, 1.41, 1.41	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	B	0.15	0/3190	0.35	0/4446
1	D	0.19	0/3255	0.38	0/4538
1	F	0.20	0/3255	0.38	0/4538
1	H	0.23	0/3251	0.37	0/4533
1	N	0.14	0/3120	0.36	0/4347
1	r	0.11	0/561	0.39	0/782
1	s	0.12	0/571	0.41	0/796
1	t	0.15	0/596	0.53	0/831
1	u	0.15	0/596	0.52	0/831
1	v	0.22	0/640	0.45	0/891
2	O	0.24	0/405	0.38	0/563
2	P	0.25	0/362	0.45	0/504
2	Q	0.10	0/327	0.32	0/455
2	R	0.12	0/327	0.30	0/455
2	S	0.09	0/327	0.23	0/455
2	T	0.19	0/405	0.44	0/563
2	U	0.15	0/405	0.43	0/563
3	V	0.12	0/382	0.32	0/531
3	W	0.12	0/393	0.34	0/548
3	X	0.12	0/388	0.30	0/541
3	Y	0.13	0/387	0.30	0/538
4	Z	0.14	0/1846	0.37	0/2566
5	a	0.11	0/2203	0.38	0/3067
5	b	0.13	0/2232	0.38	0/3107
5	c	0.13	0/2212	0.39	0/3079
5	d	0.14	0/2226	0.40	0/3097
5	e	0.13	0/2212	0.39	0/3079
5	f	0.13	0/2227	0.37	0/3100
5	g	0.15	0/2222	0.39	0/3093
5	h	0.16	0/2227	0.39	0/3100
5	i	0.15	0/2212	0.42	0/3079
5	j	0.13	0/2217	0.36	0/3086
5	k	0.13	0/2212	0.42	0/3079
5	l	0.13	0/2207	0.38	0/3072

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
5	m	0.13	0/2212	0.41	0/3079
5	n	0.11	0/2257	0.38	0/3142
6	I	0.20	0/3024	0.43	1/4209 (0.0%)
6	K	0.18	0/3034	0.42	0/4223
7	A	0.14	0/3261	0.36	0/4548
7	C	0.17	0/3241	0.37	0/4520
7	E	0.19	0/3364	0.37	0/4691
7	G	0.19	0/3364	0.37	0/4691
7	M	0.17	0/3823	0.51	0/5330
8	L	0.17	0/4846	0.42	0/6741
9	J	0.23	1/4182 (0.0%)	0.43	0/5834
10	p	0.14	0/276	0.48	0/383
11	w	0.17	0/164	0.39	0/228
11	x	0.17	0/164	0.39	0/228
All	All	0.17	1/88810 (0.0%)	0.40	1/123700 (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

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
9	J	120	SER	C-O	-8.57	1.19	1.23

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	I	80	GLY	N-CA-C	-5.26	101.40	112.04

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
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	22	0
1	D	3256	0	1450	30	0
1	F	3256	0	1450	34	0
1	H	3252	0	1447	28	0
1	N	3123	0	1382	23	0
1	r	562	0	254	4	0
1	s	572	0	258	0	0
1	t	597	0	273	4	0
1	u	597	0	273	5	0
1	v	642	0	295	6	0
2	O	406	0	217	3	0
2	P	363	0	185	6	0
2	Q	328	0	153	0	0
2	R	328	0	150	0	0
2	S	328	0	150	0	0
2	T	406	0	217	2	0
2	U	406	0	217	6	0
3	V	384	0	164	1	0
3	W	394	0	169	4	0
3	X	389	0	165	3	0
3	Y	389	0	166	1	0
4	Z	1847	0	848	40	0
5	a	2204	0	971	33	0
5	b	2233	0	984	30	0
5	c	2213	0	976	39	0
5	d	2228	0	981	46	0
5	e	2213	0	976	32	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	f	2228	0	982	40	0
5	g	2223	0	980	41	0
5	h	2228	0	982	40	0
5	i	2213	0	976	36	0
5	j	2218	0	978	35	0
5	k	2213	0	976	37	0
5	l	2208	0	974	25	0
5	m	2213	0	976	14	0
5	n	2258	0	994	17	0
6	I	3027	0	1327	33	0
6	K	3037	0	1331	24	0
7	A	3264	0	1445	29	0
7	C	3244	0	1438	24	0
7	E	3367	0	1492	26	0
7	G	3367	0	1492	23	0
7	M	3828	0	1691	10	0
8	L	4851	0	2185	42	0
9	J	4186	0	1817	46	0
10	p	277	0	133	1	0
11	w	165	0	65	0	0
11	x	165	0	65	0	0
All	All	88888	0	39487	906	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 7.

All (906) 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:F:24:MET:HA	1:F:31:TYR:HA	1.52	0.92
5:a:30:GLY:HA3	5:a:41:ALA:HB2	1.53	0.90
8:L:243:GLY:HA2	7:A:355:TYR:HA	1.56	0.88
5:k:46:ASP:HA	5:k:245:TYR:HA	1.57	0.87
5:m:30:GLY:HA3	5:m:41:ALA:HB2	1.57	0.86
1:H:24:MET:HA	1:H:31:TYR:HA	1.55	0.86
4:Z:150:GLY:HA2	4:Z:293:LEU:HA	1.56	0.86
5:k:30:GLY:HA3	5:k:41:ALA:HB2	1.60	0.84
8:L:369:SER:O	8:L:378:VAL:N	2.11	0.82
4:Z:144:ALA:HB2	4:Z:342:GLY:HA2	1.61	0.82
1:D:24:MET:HA	1:D:31:TYR:HA	1.59	0.81
2:P:38:GLY:H	8:L:122:PRO:HA	1.44	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:24:MET:HA	1:N:31:TYR:HA	1.64	0.80
5:e:46:ASP:HA	5:e:244:ARG:HA	1.64	0.79
9:J:541:SER:O	9:J:545:LEU:N	2.12	0.79
5:d:30:GLY:HA3	5:d:41:ALA:HB2	1.64	0.79
5:c:195:LEU:HA	5:c:199:ALA:HB3	1.64	0.78
5:d:317:TYR:HA	5:d:381:HIS:HA	1.66	0.77
9:J:263:VAL:N	9:J:299:ASN:O	2.15	0.77
7:M:53:ILE:O	7:M:57:SER:N	2.16	0.77
1:D:376:ARG:O	1:D:399:HIS:N	2.17	0.76
5:h:318:ILE:N	5:h:380:ASN:O	2.19	0.76
5:i:53:TYR:O	5:i:61:ILE:N	2.18	0.76
5:e:317:TYR:HA	5:e:381:HIS:HA	1.67	0.76
5:l:317:TYR:HA	5:l:381:HIS:HA	1.68	0.74
1:B:24:MET:HA	1:B:31:TYR:HA	1.68	0.74
5:j:53:TYR:O	5:j:61:ILE:N	2.17	0.74
5:d:107:GLY:HA3	5:d:148:GLY:HA3	1.70	0.74
7:E:262:SER:O	7:E:275:LEU:N	2.21	0.73
5:j:318:ILE:N	5:j:380:ASN:O	2.21	0.73
7:C:263:ALA:HA	7:C:274:PHE:HA	1.70	0.73
1:t:4:PRO:O	1:t:6:GLN:N	2.19	0.73
1:N:418:ARG:HA	9:J:74:ILE:HA	1.71	0.73
5:k:318:ILE:N	5:k:380:ASN:O	2.21	0.73
9:J:332:ALA:HB1	9:J:338:GLN:HA	1.69	0.73
7:C:262:SER:O	7:C:275:LEU:N	2.21	0.73
5:l:409:ARG:HA	5:l:415:LYS:HA	1.70	0.72
5:e:141:ILE:N	5:e:171:VAL:O	2.21	0.72
5:h:8:LEU:O	5:h:138:CYS:N	2.19	0.72
7:G:264:GLN:N	7:G:273:THR:O	2.23	0.72
1:F:620:LEU:O	1:F:624:SER:N	2.22	0.72
7:C:438:GLU:N	7:C:461:THR:O	2.18	0.72
5:e:195:LEU:HA	5:e:199:ALA:HB3	1.70	0.72
1:B:620:LEU:O	1:B:624:SER:N	2.23	0.72
7:G:262:SER:O	7:G:275:LEU:N	2.21	0.71
7:G:263:ALA:HA	7:G:274:PHE:HA	1.71	0.71
9:J:470:ILE:HA	9:J:490:LEU:HA	1.73	0.71
6:K:654:TYR:O	6:K:659:GLY:N	2.18	0.71
5:n:166:VAL:O	5:n:200:ASP:N	2.20	0.71
5:f:317:TYR:HA	5:f:381:HIS:HA	1.73	0.71
7:E:438:GLU:N	7:E:461:THR:O	2.19	0.71
1:H:277:ASP:O	1:H:281:ASP:N	2.22	0.71
5:l:57:ASP:N	5:m:287:LYS:O	2.19	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:h:53:TYR:O	5:h:61:ILE:N	2.22	0.70
5:f:324:ILE:O	5:f:361:SER:N	2.23	0.70
5:i:318:ILE:N	5:i:380:ASN:O	2.24	0.70
5:c:318:ILE:N	5:c:380:ASN:O	2.23	0.70
1:N:515:ILE:O	1:N:520:LEU:N	2.23	0.70
1:H:23:LYS:O	1:H:32:LYS:N	2.18	0.70
7:E:263:ALA:HA	7:E:274:PHE:HA	1.73	0.70
1:D:595:SER:O	1:D:599:MET:N	2.20	0.70
5:k:4:GLU:HA	5:k:50:VAL:HA	1.72	0.70
5:k:195:LEU:HA	5:k:199:ALA:HB3	1.72	0.70
6:I:294:THR:O	6:I:296:LYS:N	2.23	0.70
7:A:412:SER:O	7:A:416:PHE:N	2.19	0.70
5:a:141:ILE:N	5:a:171:VAL:O	2.26	0.69
7:A:559:PHE:HA	7:A:586:ALA:HB1	1.75	0.69
5:a:102:ASN:HA	5:a:144:GLY:HA2	1.74	0.69
7:C:264:GLN:N	7:C:273:THR:O	2.26	0.69
5:b:274:THR:O	5:b:375:GLY:N	2.26	0.69
5:h:324:ILE:O	5:h:361:SER:N	2.26	0.69
1:F:23:LYS:O	1:F:32:LYS:N	2.18	0.68
5:g:274:THR:N	5:g:375:GLY:O	2.26	0.68
1:D:203:PHE:O	1:D:223:ARG:N	2.26	0.68
4:Z:132:MET:O	4:Z:357:ILE:N	2.25	0.68
5:a:53:TYR:N	5:a:61:ILE:O	2.22	0.68
5:c:317:TYR:HA	5:c:381:HIS:HA	1.76	0.68
5:e:272:GLY:O	5:e:377:MET:N	2.26	0.68
5:g:318:ILE:N	5:g:380:ASN:O	2.26	0.68
7:E:264:GLN:N	7:E:273:THR:O	2.27	0.68
5:d:274:THR:O	5:d:375:GLY:N	2.26	0.68
6:I:400:ALA:O	6:I:405:LEU:N	2.23	0.68
5:f:53:TYR:O	5:f:61:ILE:N	2.26	0.68
5:h:5:ILE:N	5:h:50:VAL:O	2.23	0.68
8:L:554:ILE:HA	8:L:575:LEU:HA	1.74	0.68
5:g:5:ILE:N	5:g:50:VAL:O	2.23	0.67
1:t:1:MET:H2	9:J:247:ASP:HA	1.59	0.67
5:g:385:SER:O	5:g:389:GLU:N	2.20	0.67
1:D:205:ALA:N	1:D:221:THR:O	2.21	0.67
4:Z:261:LEU:O	4:Z:274:ILE:N	2.26	0.67
5:b:53:TYR:O	5:b:61:ILE:N	2.24	0.67
1:F:455:GLY:HA2	5:f:448:THR:HA	1.77	0.67
6:I:382:THR:O	6:I:448:GLY:N	2.27	0.67
1:H:337:LEU:O	1:H:341:LEU:N	2.22	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:f:318:ILE:N	5:f:380:ASN:O	2.28	0.67
7:A:164:LYS:O	7:A:168:LYS:N	2.27	0.67
5:j:274:THR:N	5:j:375:GLY:O	2.28	0.67
6:K:294:THR:O	6:K:296:LYS:N	2.24	0.67
1:D:205:ALA:O	1:D:221:THR:N	2.21	0.66
1:H:376:ARG:O	1:H:399:HIS:N	2.27	0.66
5:c:141:ILE:N	5:c:171:VAL:O	2.24	0.66
8:L:345:VAL:N	8:L:382:GLY:O	2.21	0.66
4:Z:237:GLU:HA	4:Z:251:GLY:HA2	1.78	0.66
5:f:274:THR:O	5:f:375:GLY:N	2.25	0.66
5:l:30:GLY:HA3	5:l:41:ALA:HB2	1.76	0.66
5:m:134:GLY:HA3	5:m:165:LEU:O	1.95	0.66
9:J:822:MET:O	9:J:827:HIS:N	2.27	0.66
5:c:385:SER:O	5:c:389:GLU:N	2.18	0.66
1:v:123:PRO:O	1:v:125:ASP:N	2.23	0.66
1:F:21:ASN:O	1:F:34:GLU:N	2.20	0.66
5:g:195:LEU:HA	5:g:199:ALA:HB3	1.78	0.66
1:H:278:LEU:HA	1:H:282:LEU:HA	1.76	0.66
4:Z:36:GLY:HA2	4:Z:67:LEU:HA	1.76	0.66
5:g:168:THR:N	5:g:201:CYS:O	2.28	0.66
7:A:567:LEU:O	7:A:640:GLY:N	2.29	0.66
10:p:34:SER:O	10:p:38:MET:N	2.22	0.66
5:g:141:ILE:N	5:g:171:VAL:O	2.22	0.65
8:L:210:THR:O	8:L:215:PHE:N	2.26	0.65
4:Z:252:ASN:O	4:Z:256:ARG:N	2.19	0.65
5:j:53:TYR:N	5:j:61:ILE:O	2.25	0.65
1:D:23:LYS:O	1:D:32:LYS:N	2.18	0.65
5:e:434:GLU:O	5:e:438:ALA:N	2.27	0.65
5:g:53:TYR:O	5:g:61:ILE:N	2.26	0.65
5:i:272:GLY:HA2	5:i:304:MET:H	1.61	0.65
4:Z:37:ARG:HA	4:Z:52:SER:HA	1.79	0.65
5:h:323:ILE:O	5:h:376:LEU:N	2.26	0.65
1:H:184:SER:HA	1:H:270:GLU:CB	2.26	0.65
7:G:248:ASP:O	7:G:252:VAL:N	2.26	0.65
4:Z:38:PRO:HA	4:Z:65:LEU:HA	1.78	0.65
5:f:320:ILE:O	5:f:357:GLN:N	2.28	0.65
5:i:53:TYR:N	5:i:61:ILE:O	2.24	0.65
5:j:323:ILE:O	5:j:376:LEU:N	2.29	0.65
5:d:272:GLY:N	5:d:377:MET:O	2.29	0.65
9:J:288:GLN:N	9:J:295:THR:O	2.26	0.65
6:K:400:ALA:O	6:K:405:LEU:N	2.27	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:277:ASP:O	1:D:281:ASP:N	2.26	0.64
5:f:323:ILE:HA	5:f:359:ALA:HB3	1.80	0.64
9:J:469:ILE:O	9:J:491:TYR:N	2.25	0.64
9:J:588:ASP:O	9:J:592:ALA:N	2.24	0.64
7:E:651:LYS:O	7:E:655:SER:N	2.30	0.64
1:D:524:SER:O	1:D:528:LEU:N	2.24	0.64
5:h:54:GLN:HA	5:h:60:TYR:HA	1.80	0.64
5:i:8:LEU:O	5:i:138:CYS:N	2.18	0.64
5:j:107:GLY:HA3	5:j:148:GLY:HA3	1.79	0.64
5:k:53:TYR:O	5:k:61:ILE:N	2.26	0.64
6:K:532:GLN:O	6:K:537:GLU:N	2.24	0.64
9:J:621:GLU:O	9:J:625:CYS:N	2.30	0.64
2:P:32:SER:HA	8:L:121:GLY:HA3	1.79	0.64
5:i:323:ILE:O	5:i:376:LEU:N	2.26	0.64
2:O:32:SER:O	2:O:36:ASN:N	2.31	0.63
5:g:8:LEU:O	5:g:138:CYS:N	2.20	0.63
5:j:4:GLU:HA	5:j:50:VAL:HA	1.81	0.63
8:L:406:CYS:HA	8:L:481:ALA:HB2	1.79	0.63
5:g:46:ASP:HA	5:g:244:ARG:HA	1.79	0.63
1:N:23:LYS:O	1:N:32:LYS:N	2.24	0.63
1:F:277:ASP:O	1:F:281:ASP:N	2.26	0.63
1:D:278:LEU:HA	1:D:282:LEU:HA	1.79	0.63
1:B:179:SER:O	1:B:183:LEU:N	2.20	0.63
5:d:209:ALA:HB2	5:d:306:SER:H	1.63	0.63
5:c:8:LEU:O	5:c:138:CYS:N	2.17	0.63
5:d:323:ILE:O	5:d:376:LEU:N	2.26	0.63
9:J:525:ALA:O	9:J:527:SER:N	2.31	0.63
9:J:502:LEU:O	9:J:506:LEU:N	2.31	0.63
7:A:264:GLN:N	7:A:273:THR:O	2.30	0.63
5:f:323:ILE:N	5:f:376:LEU:O	2.32	0.62
5:j:272:GLY:N	5:j:377:MET:O	2.30	0.62
2:O:56:ASN:O	2:O:60:LEU:N	2.21	0.62
5:l:53:TYR:O	5:l:61:ILE:N	2.30	0.62
1:D:620:LEU:O	1:D:624:SER:N	2.32	0.62
8:L:588:LEU:O	8:L:592:ALA:N	2.31	0.62
1:v:105:ARG:HA	1:v:108:PRO:N	2.14	0.62
1:N:19:GLY:N	1:N:22:ILE:O	2.31	0.62
6:I:18:THR:N	6:I:26:GLN:O	2.31	0.62
1:F:205:ALA:N	1:F:221:THR:O	2.26	0.62
5:g:30:GLY:HA3	5:g:41:ALA:HB2	1.82	0.62
5:g:323:ILE:O	5:g:376:LEU:N	2.27	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:J:473:ASN:N	9:J:487:THR:O	2.32	0.62
5:g:10:LEU:N	5:g:138:CYS:O	2.28	0.62
6:K:157:VAL:O	6:K:161:SER:N	2.31	0.62
9:J:518:LEU:O	9:J:522:LEU:N	2.31	0.62
5:e:53:TYR:O	5:e:61:ILE:N	2.24	0.62
9:J:288:GLN:O	9:J:295:THR:N	2.20	0.62
9:J:791:LEU:HA	9:J:892:LEU:H	1.65	0.62
5:n:134:GLY:HA3	5:n:165:LEU:O	1.99	0.62
1:H:205:ALA:N	1:H:221:THR:O	2.27	0.61
4:Z:131:ALA:HA	4:Z:358:SER:HA	1.82	0.61
8:L:367:THR:O	8:L:380:LYS:N	2.25	0.61
1:F:203:PHE:O	1:F:223:ARG:N	2.34	0.61
5:b:323:ILE:O	5:b:376:LEU:N	2.28	0.61
5:g:324:ILE:O	5:g:361:SER:N	2.32	0.61
5:m:317:TYR:HA	5:m:381:HIS:HA	1.82	0.61
1:B:595:SER:O	1:B:599:MET:N	2.24	0.61
5:e:317:TYR:N	5:e:347:ASN:O	2.34	0.61
5:m:52:PHE:HA	5:m:62:PRO:HA	1.83	0.61
1:B:524:SER:O	1:B:528:LEU:N	2.27	0.61
5:b:325:GLN:N	5:b:374:SER:O	2.25	0.61
5:g:53:TYR:N	5:g:61:ILE:O	2.27	0.61
5:h:30:GLY:HA3	5:h:41:ALA:HB2	1.81	0.61
5:h:172:PHE:N	5:h:205:LEU:O	2.33	0.61
5:e:5:ILE:N	5:e:50:VAL:O	2.24	0.61
5:e:318:ILE:N	5:e:380:ASN:O	2.32	0.61
5:f:272:GLY:N	5:f:377:MET:O	2.33	0.61
1:u:4:PRO:O	1:u:6:GLN:N	2.34	0.61
1:B:310:SER:O	1:B:314:HIS:N	2.26	0.61
9:J:216:LEU:O	9:J:220:VAL:N	2.29	0.61
9:J:445:VAL:O	9:J:449:LEU:N	2.19	0.61
5:h:10:LEU:N	5:h:138:CYS:O	2.31	0.61
5:d:434:GLU:O	5:d:438:ALA:N	2.31	0.61
7:E:436:MET:O	7:E:463:VAL:N	2.31	0.61
5:i:274:THR:N	5:i:375:GLY:O	2.32	0.61
1:D:25:ASN:N	1:D:30:CYS:O	2.29	0.60
5:f:172:PHE:N	5:f:205:LEU:O	2.34	0.60
5:f:385:SER:O	5:f:389:GLU:N	2.23	0.60
9:J:471:GLN:N	9:J:489:THR:O	2.29	0.60
7:A:309:SER:HA	7:A:318:HIS:HA	1.82	0.60
5:k:272:GLY:O	5:k:377:MET:N	2.27	0.60
1:B:23:LYS:O	1:B:32:LYS:N	2.21	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:337:LEU:O	1:F:341:LEU:N	2.20	0.60
9:J:472:ARG:HA	9:J:488:TYR:HA	1.83	0.60
5:b:137:LEU:O	5:b:169:TYR:N	2.26	0.60
5:e:53:TYR:N	5:e:61:ILE:O	2.30	0.60
5:h:317:TYR:HA	5:h:381:HIS:HA	1.83	0.60
5:h:320:ILE:O	5:h:357:GLN:N	2.32	0.60
5:a:317:TYR:N	5:a:347:ASN:O	2.25	0.60
5:d:141:ILE:N	5:d:171:VAL:O	2.31	0.60
1:H:203:PHE:O	1:H:223:ARG:N	2.33	0.60
5:h:323:ILE:N	5:h:376:LEU:O	2.35	0.60
6:K:1:MET:O	6:K:5:LEU:N	2.32	0.60
7:C:438:GLU:O	7:C:461:THR:N	2.21	0.60
6:K:253:SER:O	6:K:256:GLN:N	2.30	0.60
7:G:179:ALA:O	7:G:183:GLU:N	2.34	0.60
5:i:325:GLN:N	5:i:374:SER:O	2.27	0.59
5:k:166:VAL:O	5:k:200:ASP:N	2.29	0.59
1:H:620:LEU:O	1:H:624:SER:N	2.35	0.59
6:K:384:PRO:N	6:K:448:GLY:HA3	2.17	0.59
6:I:157:VAL:O	6:I:161:SER:N	2.35	0.59
5:b:100:ALA:HB3	5:b:144:GLY:HA3	1.84	0.59
5:c:10:LEU:N	5:c:138:CYS:O	2.33	0.59
5:i:5:ILE:N	5:i:50:VAL:O	2.36	0.59
5:k:434:GLU:O	5:k:438:ALA:N	2.35	0.59
9:J:237:HIS:O	9:J:241:ASN:N	2.35	0.59
9:J:334:PHE:O	9:J:338:GLN:N	2.30	0.59
6:I:269:PRO:O	6:I:273:ALA:N	2.30	0.59
5:b:35:GLY:O	5:b:60:TYR:N	2.35	0.59
1:H:320:ARG:O	1:H:326:GLN:N	2.25	0.59
5:b:53:TYR:N	5:b:61:ILE:O	2.27	0.59
6:K:358:LYS:O	6:K:364:GLY:N	2.31	0.59
7:G:438:GLU:N	7:G:461:THR:O	2.26	0.59
5:h:52:PHE:HA	5:h:62:PRO:HA	1.85	0.59
4:Z:70:PRO:O	4:Z:77:THR:N	2.31	0.59
5:a:46:ASP:HA	5:a:244:ARG:HA	1.85	0.59
5:b:10:LEU:HA	5:b:67:LEU:O	2.03	0.59
1:B:337:LEU:O	1:B:341:LEU:N	2.22	0.59
8:L:560:TYR:O	8:L:568:TYR:HA	2.03	0.59
5:i:317:TYR:HA	5:i:381:HIS:HA	1.85	0.59
6:K:20:ASN:O	6:K:24:GLY:N	2.32	0.59
5:i:172:PHE:N	5:i:205:LEU:O	2.30	0.58
1:H:341:LEU:HA	1:H:390:GLY:HA3	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:E:356:ILE:O	7:E:360:MET:N	2.25	0.58
2:P:47:CYS:O	2:P:51:CYS:N	2.32	0.58
5:h:274:THR:O	5:h:375:GLY:N	2.30	0.58
7:C:726:MET:O	7:C:731:GLU:N	2.33	0.58
1:H:25:ASN:N	1:H:30:CYS:O	2.33	0.58
1:D:214:ARG:O	1:D:218:ASP:N	2.32	0.58
5:h:55:ALA:N	5:h:59:HIS:O	2.35	0.58
5:e:272:GLY:N	5:e:377:MET:O	2.35	0.58
5:m:321:LEU:HA	5:m:356:ILE:HA	1.85	0.58
1:N:14:PHE:HA	1:N:54:GLY:HA3	1.86	0.58
4:Z:37:ARG:O	4:Z:66:THR:N	2.33	0.58
5:i:323:ILE:N	5:i:376:LEU:O	2.36	0.58
5:d:53:TYR:O	5:d:61:ILE:N	2.27	0.58
5:d:324:ILE:O	5:d:361:SER:N	2.36	0.58
1:F:25:ASN:N	1:F:30:CYS:O	2.28	0.57
5:m:318:ILE:N	5:m:380:ASN:O	2.35	0.57
5:d:318:ILE:N	5:d:380:ASN:O	2.36	0.57
5:b:36:ILE:HA	5:b:59:HIS:HA	1.85	0.57
9:J:430:SER:O	9:J:434:VAL:N	2.29	0.57
1:F:376:ARG:O	1:F:399:HIS:N	2.33	0.57
5:c:241:THR:O	5:c:245:TYR:N	2.31	0.57
5:e:48:LYS:O	5:e:52:PHE:N	2.25	0.57
5:f:51:PHE:O	5:f:63:ARG:N	2.36	0.57
6:K:604:ASP:O	6:K:608:ALA:N	2.28	0.57
7:G:726:MET:O	7:G:731:GLU:N	2.32	0.57
9:J:471:GLN:O	9:J:489:THR:N	2.33	0.57
5:g:209:ALA:HB1	5:g:306:SER:H	1.69	0.57
5:d:323:ILE:N	5:d:376:LEU:O	2.38	0.57
6:I:20:ASN:O	6:I:24:GLY:N	2.32	0.57
5:a:1:MET:N	7:A:558:HIS:O	2.36	0.57
5:c:53:TYR:N	5:c:61:ILE:O	2.36	0.57
5:c:326:GLY:N	5:c:361:SER:O	2.31	0.57
5:h:195:LEU:HA	5:h:199:ALA:HB3	1.86	0.57
7:M:262:SER:O	7:M:275:LEU:N	2.33	0.57
5:a:141:ILE:H	5:a:171:VAL:C	2.11	0.57
5:f:35:GLY:O	5:f:60:TYR:N	2.32	0.57
5:f:52:PHE:HA	5:f:62:PRO:HA	1.85	0.57
5:f:107:GLY:HA3	5:f:148:GLY:HA3	1.86	0.57
5:k:47:ARG:N	5:k:244:ARG:O	2.32	0.57
7:C:381:GLY:HA3	7:C:466:GLN:O	2.04	0.57
1:F:214:ARG:O	1:F:218:ASP:N	2.32	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:Z:35:VAL:N	4:Z:68:LYS:O	2.30	0.57
5:f:274:THR:N	5:f:375:GLY:O	2.35	0.57
5:d:53:TYR:N	5:d:61:ILE:O	2.30	0.57
1:N:337:LEU:O	1:N:341:LEU:N	2.23	0.57
8:L:113:LEU:O	8:L:117:LEU:N	2.38	0.57
8:L:556:VAL:HA	8:L:573:TYR:HA	1.87	0.57
7:C:567:LEU:O	7:C:640:GLY:N	2.38	0.57
5:j:317:TYR:HA	5:j:381:HIS:HA	1.86	0.56
5:l:53:TYR:N	5:l:61:ILE:O	2.27	0.56
7:G:381:GLY:HA3	7:G:466:GLN:O	2.05	0.56
5:f:323:ILE:O	5:f:376:LEU:N	2.31	0.56
7:C:436:MET:O	7:C:463:VAL:N	2.36	0.56
1:v:123:PRO:C	1:v:125:ASP:H	2.10	0.56
7:C:567:LEU:HA	7:C:640:GLY:HA3	1.86	0.56
7:A:438:GLU:O	7:A:461:THR:N	2.37	0.56
1:D:150:GLY:HA3	1:D:226:MET:HA	1.86	0.56
5:m:55:ALA:HB1	5:m:217:ARG:HA	1.87	0.56
1:N:361:VAL:HA	1:N:366:ALA:HB3	1.87	0.56
7:G:436:MET:O	7:G:463:VAL:N	2.32	0.56
2:T:53:GLN:O	1:r:112:SER:HA	2.06	0.56
7:G:438:GLU:O	7:G:461:THR:N	2.31	0.56
5:h:272:GLY:N	5:h:377:MET:O	2.36	0.56
5:d:51:PHE:O	5:d:63:ARG:N	2.35	0.56
5:j:172:PHE:N	5:j:205:LEU:O	2.38	0.56
5:l:35:GLY:O	5:l:60:TYR:N	2.23	0.56
7:E:264:GLN:H	7:E:274:PHE:HA	1.71	0.56
7:E:412:SER:O	7:E:416:PHE:N	2.25	0.56
1:H:19:GLY:N	1:H:22:ILE:O	2.38	0.56
4:Z:302:GLY:HA2	4:Z:336:LYS:HA	1.88	0.56
5:b:14:GLY:HA3	5:b:139:HIS:HA	1.88	0.56
5:f:241:THR:O	5:f:245:TYR:N	2.31	0.56
6:K:74:SER:HA	6:K:200:HIS:HA	1.88	0.56
1:N:642:TYR:O	1:N:646:GLU:N	2.24	0.56
5:d:5:ILE:N	5:d:50:VAL:O	2.27	0.56
8:L:553:MET:O	8:L:576:ILE:N	2.29	0.56
5:e:30:GLY:HA3	5:e:41:ALA:HB2	1.88	0.56
5:j:322:ASN:N	5:j:357:GLN:O	2.26	0.56
5:d:320:ILE:O	5:d:357:GLN:N	2.36	0.56
7:E:381:GLY:HA3	7:E:466:GLN:O	2.06	0.55
5:a:140:SER:HA	5:a:171:VAL:H	1.70	0.55
5:k:317:TYR:N	5:k:347:ASN:O	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:j:35:GLY:O	5:j:60:TYR:N	2.39	0.55
7:E:567:LEU:O	7:E:640:GLY:N	2.39	0.55
5:c:3:ARG:HA	5:c:131:SER:O	2.06	0.55
5:d:36:ILE:HA	5:d:59:HIS:HA	1.87	0.55
8:L:555:GLN:O	8:L:574:VAL:N	2.28	0.55
5:b:324:ILE:O	5:b:361:SER:N	2.40	0.55
4:Z:132:MET:N	4:Z:357:ILE:O	2.37	0.55
5:j:321:LEU:N	5:j:378:MET:O	2.28	0.55
5:d:48:LYS:O	5:d:52:PHE:N	2.26	0.55
5:j:323:ILE:N	5:j:376:LEU:O	2.36	0.55
7:M:436:MET:O	7:M:463:VAL:N	2.34	0.55
1:H:566:LYS:HA	1:H:576:GLY:O	2.07	0.55
8:L:557:ASN:N	8:L:572:GLY:O	2.39	0.55
1:F:479:THR:O	1:F:484:GLU:N	2.39	0.54
5:j:218:LEU:HA	5:j:278:THR:HA	1.89	0.54
1:F:22:ILE:HA	1:F:33:VAL:HA	1.89	0.54
5:l:209:ALA:HB2	5:l:306:SER:N	2.23	0.54
1:B:203:PHE:O	1:B:223:ARG:N	2.36	0.54
6:I:399:SER:O	6:I:403:VAL:N	2.39	0.54
6:I:415:HIS:O	6:I:455:SER:N	2.29	0.54
5:k:317:TYR:O	5:k:348:PHE:HA	2.08	0.54
5:m:317:TYR:O	5:m:349:ILE:N	2.40	0.54
6:K:413:LEU:O	6:K:456:TYR:HA	2.07	0.54
5:d:321:LEU:N	5:d:378:MET:O	2.30	0.54
7:M:264:GLN:N	7:M:273:THR:O	2.32	0.54
5:c:104:TRP:CB	5:c:187:ASN:HA	2.38	0.54
1:H:214:ARG:O	1:H:218:ASP:N	2.35	0.54
4:Z:36:GLY:O	4:Z:53:TYR:N	2.28	0.54
5:a:171:VAL:HA	5:a:205:LEU:O	2.07	0.54
5:b:172:PHE:N	5:b:205:LEU:O	2.40	0.54
5:d:323:ILE:HA	5:d:359:ALA:HB3	1.90	0.54
5:h:326:GLY:N	5:h:361:SER:O	2.33	0.54
5:g:4:GLU:HA	5:g:50:VAL:HA	1.88	0.54
5:g:241:THR:O	5:g:245:TYR:N	2.37	0.54
1:D:305:LEU:O	1:D:310:SER:N	2.41	0.54
5:e:36:ILE:HA	5:e:59:HIS:HA	1.90	0.54
5:f:46:ASP:HA	5:f:244:ARG:HA	1.90	0.54
1:F:566:LYS:HA	1:F:576:GLY:O	2.08	0.53
4:Z:165:ILE:HA	4:Z:170:ALA:HA	1.88	0.53
5:b:141:ILE:N	5:b:171:VAL:O	2.27	0.53
5:c:14:GLY:HA3	5:c:139:HIS:HA	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:i:7:THR:O	5:i:65:VAL:N	2.30	0.53
1:B:341:LEU:HA	1:B:390:GLY:HA3	1.90	0.53
5:d:30:GLY:O	5:d:38:GLU:N	2.28	0.53
6:I:151:CYS:N	6:I:202:GLU:O	2.42	0.53
5:b:5:ILE:N	5:b:50:VAL:O	2.39	0.53
5:b:321:LEU:N	5:b:378:MET:O	2.34	0.53
5:c:30:GLY:HA3	5:c:41:ALA:HB2	1.90	0.53
5:g:52:PHE:HA	5:g:62:PRO:HA	1.89	0.53
5:h:30:GLY:O	5:h:38:GLU:N	2.29	0.53
5:i:52:PHE:HA	5:i:63:ARG:H	1.73	0.53
5:d:241:THR:O	5:d:245:TYR:N	2.34	0.53
7:G:397:ASP:O	7:G:401:GLN:N	2.37	0.53
5:j:30:GLY:O	5:j:38:GLU:N	2.22	0.53
7:A:319:ALA:HB1	7:A:410:ALA:HB1	1.90	0.53
6:I:16:ILE:O	6:I:28:SER:N	2.25	0.53
5:c:102:ASN:HA	5:c:144:GLY:N	2.23	0.53
8:L:612:HIS:O	8:L:616:TRP:N	2.41	0.53
7:C:651:LYS:O	7:C:655:SER:N	2.39	0.53
5:c:272:GLY:N	5:c:377:MET:O	2.42	0.53
5:d:325:GLN:N	5:d:374:SER:O	2.27	0.53
1:H:524:SER:O	1:H:528:LEU:N	2.27	0.53
4:Z:202:THR:O	4:Z:206:ARG:N	2.34	0.53
5:b:8:LEU:O	5:b:138:CYS:N	2.23	0.53
5:k:30:GLY:O	5:k:38:GLU:N	2.26	0.53
1:v:105:ARG:O	1:v:110:LYS:N	2.42	0.53
5:f:4:GLU:HA	5:f:50:VAL:HA	1.91	0.53
7:M:191:PHE:HA	7:M:255:GLY:O	2.09	0.53
4:Z:11:ASP:N	4:Z:18:LYS:O	2.34	0.53
5:c:323:ILE:O	5:c:376:LEU:N	2.31	0.53
5:j:434:GLU:O	5:j:438:ALA:N	2.34	0.53
7:E:248:ASP:O	7:E:252:VAL:N	2.34	0.53
1:F:341:LEU:O	1:F:391:TRP:N	2.37	0.52
5:i:52:PHE:HA	5:i:62:PRO:HA	1.91	0.52
9:J:677:GLY:O	9:J:681:TYR:CB	2.56	0.52
5:b:102:ASN:HA	5:b:144:GLY:N	2.24	0.52
1:B:162:THR:HA	7:A:311:PHE:CB	2.39	0.52
1:F:205:ALA:O	1:F:221:THR:N	2.24	0.52
5:h:137:LEU:O	5:h:169:TYR:N	2.22	0.52
5:j:52:PHE:HA	5:j:62:PRO:HA	1.91	0.52
8:L:311:TYR:O	8:L:314:GLU:N	2.35	0.52
5:b:241:THR:O	5:b:245:TYR:N	2.36	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:i:10:LEU:N	5:i:138:CYS:O	2.41	0.52
5:l:104:TRP:CB	5:l:187:ASN:HA	2.40	0.52
7:E:249:LEU:O	7:E:253:LEU:N	2.33	0.52
5:i:320:ILE:O	5:i:357:GLN:N	2.35	0.52
1:B:116:SER:HA	8:L:232:LEU:H	1.74	0.52
9:J:535:ARG:O	9:J:539:ARG:N	2.42	0.52
1:F:112:LEU:C	1:F:114:LEU:H	2.17	0.52
5:j:8:LEU:O	5:j:138:CYS:N	2.21	0.52
7:M:585:LEU:O	7:M:589:MET:CB	2.58	0.52
1:B:154:SER:HA	1:B:229:SER:H	1.75	0.52
5:d:4:GLU:HA	5:d:50:VAL:HA	1.91	0.52
8:L:1652:SER:HA	8:L:1756:GLY:HA3	1.90	0.52
5:n:6:ILE:O	5:n:136:VAL:N	2.26	0.51
6:K:6:LEU:O	6:K:10:SER:N	2.42	0.51
9:J:286:ILE:O	9:J:297:ARG:N	2.37	0.51
1:F:278:LEU:HA	1:F:282:LEU:HA	1.91	0.51
5:g:272:GLY:N	5:g:377:MET:O	2.40	0.51
1:H:21:ASN:O	1:H:34:GLU:N	2.28	0.51
5:b:9:GLN:CB	5:b:15:ASN:HA	2.41	0.51
5:h:323:ILE:HA	5:h:359:ALA:HB3	1.93	0.51
5:i:102:ASN:HA	5:i:144:GLY:N	2.26	0.51
5:k:317:TYR:HA	5:k:381:HIS:HA	1.93	0.51
4:Z:16:MET:HA	4:Z:32:PRO:HA	1.92	0.51
1:D:341:LEU:HA	1:D:390:GLY:HA3	1.93	0.51
1:F:493:LYS:O	1:F:497:ALA:N	2.43	0.51
2:U:2:ALA:HB1	6:I:44:ARG:HA	1.91	0.51
7:E:701:ALA:O	7:E:705:ALA:N	2.43	0.51
7:E:740:ASN:O	7:E:744:ALA:N	2.44	0.51
1:D:21:ASN:O	1:D:34:GLU:N	2.26	0.51
5:i:6:ILE:HA	5:i:63:ARG:O	2.10	0.51
7:A:263:ALA:HA	7:A:274:PHE:HA	1.92	0.51
5:g:52:PHE:HA	5:g:63:ARG:H	1.75	0.51
7:C:454:LYS:O	7:C:459:ARG:N	2.43	0.51
2:P:37:THR:N	8:L:121:GLY:O	2.29	0.51
4:Z:20:GLY:HA3	4:Z:28:ARG:H	1.76	0.51
5:i:409:ARG:HA	5:i:415:LYS:HA	1.92	0.51
4:Z:72:GLU:N	4:Z:75:ILE:O	2.37	0.51
8:L:529:CYS:O	8:L:533:THR:N	2.34	0.51
5:e:241:THR:O	5:e:245:TYR:N	2.30	0.51
5:g:317:TYR:N	5:g:347:ASN:O	2.44	0.51
1:D:337:LEU:O	1:D:341:LEU:N	2.28	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:a:209:ALA:HB2	5:a:306:SER:N	2.25	0.50
5:c:209:ALA:HB2	5:c:306:SER:H	1.76	0.50
5:e:209:ALA:HB2	5:e:306:SER:H	1.76	0.50
9:J:499:VAL:O	9:J:503:LYS:N	2.43	0.50
5:e:409:ARG:HA	5:e:415:LYS:HA	1.92	0.50
5:j:241:THR:O	5:j:245:TYR:N	2.32	0.50
6:I:343:LEU:O	6:I:348:SER:N	2.44	0.50
5:a:214:ALA:O	5:a:219:HIS:N	2.45	0.50
1:B:286:PHE:O	1:B:290:ILE:N	2.34	0.50
5:d:272:GLY:O	5:d:377:MET:N	2.39	0.50
1:F:19:GLY:N	1:F:22:ILE:O	2.44	0.50
1:H:112:LEU:C	1:H:114:LEU:H	2.20	0.50
8:L:566:LYS:HA	8:L:1606:ILE:HA	1.92	0.50
5:f:317:TYR:O	5:f:348:PHE:HA	2.12	0.50
5:g:102:ASN:HA	5:g:144:GLY:N	2.26	0.50
5:g:323:ILE:N	5:g:376:LEU:O	2.43	0.50
5:k:241:THR:O	5:k:245:TYR:N	2.32	0.50
7:A:762:LEU:O	7:A:767:LEU:N	2.43	0.50
5:c:325:GLN:N	5:c:374:SER:O	2.36	0.50
5:f:30:GLY:HA3	5:f:41:ALA:HB2	1.94	0.50
5:h:317:TYR:O	5:h:348:PHE:HA	2.11	0.50
5:d:10:LEU:HA	5:d:67:LEU:O	2.12	0.50
7:A:740:ASN:O	7:A:744:ALA:N	2.44	0.50
5:f:53:TYR:N	5:f:61:ILE:O	2.32	0.50
5:d:52:PHE:HA	5:d:62:PRO:HA	1.94	0.50
1:D:479:THR:O	1:D:484:GLU:N	2.43	0.50
5:e:209:ALA:HB2	5:e:306:SER:N	2.26	0.50
1:H:22:ILE:HA	1:H:33:VAL:HA	1.92	0.50
4:Z:153:MET:O	4:Z:300:SER:N	2.42	0.50
5:a:52:PHE:HA	5:a:62:PRO:HA	1.93	0.50
9:J:324:VAL:O	9:J:328:GLN:N	2.43	0.50
1:F:320:ARG:O	1:F:326:GLN:N	2.33	0.49
5:j:8:LEU:N	5:j:136:VAL:O	2.25	0.49
5:k:10:LEU:O	5:k:146:GLY:HA2	2.12	0.49
1:N:193:GLY:HA3	1:N:246:ILE:CB	2.42	0.49
7:C:157:LYS:HA	7:C:313:TYR:HA	1.93	0.49
5:j:21:PHE:HA	5:j:233:SER:CB	2.42	0.49
1:B:112:LEU:C	1:B:114:LEU:H	2.20	0.49
7:A:438:GLU:N	7:A:461:THR:O	2.31	0.49
3:W:637:SER:O	3:W:639:ASN:N	2.45	0.49
4:Z:162:THR:N	4:Z:176:LEU:O	2.34	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:19:GLY:N	1:D:22:ILE:O	2.46	0.49
5:b:323:ILE:N	5:b:376:LEU:O	2.45	0.49
5:e:35:GLY:O	5:e:60:TYR:N	2.46	0.49
1:F:409:THR:O	1:F:413:MET:N	2.23	0.49
1:F:40:SER:O	1:F:44:ARG:N	2.40	0.49
1:F:305:LEU:O	1:F:310:SER:N	2.45	0.49
1:H:595:SER:O	1:H:599:MET:N	2.31	0.49
5:a:409:ARG:HA	5:a:415:LYS:HA	1.93	0.49
5:g:55:ALA:N	5:g:59:HIS:O	2.44	0.49
7:E:726:MET:O	7:E:731:GLU:N	2.38	0.49
5:i:36:ILE:HA	5:i:59:HIS:HA	1.94	0.49
5:j:102:ASN:HA	5:j:144:GLY:N	2.28	0.49
1:N:73:PHE:HA	1:N:148:LYS:CB	2.42	0.49
5:d:326:GLY:N	5:d:361:SER:O	2.37	0.49
9:J:435:SER:CB	9:J:617:ASP:HA	2.42	0.49
9:J:522:LEU:O	9:J:524:CYS:N	2.46	0.49
4:Z:260:ALA:HA	4:Z:263:GLN:O	2.13	0.49
5:c:323:ILE:N	5:c:376:LEU:O	2.44	0.49
5:l:318:ILE:N	5:l:380:ASN:O	2.44	0.49
1:N:193:GLY:HA2	1:N:243:GLY:HA2	1.95	0.49
7:C:356:ILE:O	7:C:360:MET:N	2.31	0.49
7:C:440:HIS:N	7:C:459:ARG:O	2.39	0.49
6:I:417:THR:O	6:I:453:GLY:N	2.37	0.49
5:g:137:LEU:O	5:g:169:TYR:N	2.31	0.49
1:r:112:SER:C	1:r:114:TYR:H	2.21	0.49
9:J:517:GLN:O	9:J:521:ASN:CB	2.61	0.49
7:A:305:ILE:HA	7:A:321:ALA:HB1	1.95	0.49
1:F:524:SER:O	1:F:528:LEU:N	2.27	0.49
5:c:274:THR:N	5:c:375:GLY:O	2.46	0.49
1:H:205:ALA:O	1:H:221:THR:N	2.24	0.48
5:f:10:LEU:HA	5:f:67:LEU:O	2.13	0.48
5:g:247:GLY:O	7:G:553:GLY:HA3	2.12	0.48
7:C:571:VAL:N	7:C:638:LEU:O	2.46	0.48
5:l:8:LEU:HA	5:l:65:VAL:O	2.13	0.48
1:N:207:ASP:N	1:N:219:LYS:O	2.31	0.48
7:E:567:LEU:HA	7:E:640:GLY:HA3	1.96	0.48
5:c:48:LYS:O	5:c:52:PHE:N	2.29	0.48
5:g:214:ALA:O	5:g:219:HIS:N	2.47	0.48
1:B:566:LYS:HA	1:B:576:GLY:O	2.12	0.48
7:A:651:LYS:O	7:A:655:SER:N	2.46	0.48
2:U:6:GLY:HA2	6:I:27:VAL:O	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:Z:301:GLY:N	4:Z:335:ARG:O	2.47	0.48
5:l:28:GLU:HA	5:l:367:LEU:CB	2.42	0.48
8:L:349:GLU:O	8:L:351:GLU:N	2.47	0.48
1:F:595:SER:O	1:F:599:MET:N	2.34	0.48
5:j:195:LEU:HA	5:j:199:ALA:HB3	1.95	0.48
7:G:249:LEU:O	7:G:253:LEU:N	2.32	0.48
8:L:406:CYS:HA	8:L:481:ALA:CB	2.42	0.48
1:F:150:GLY:HA3	1:F:226:MET:HA	1.95	0.48
5:e:51:PHE:O	5:e:63:ARG:N	2.46	0.48
1:r:112:SER:C	1:r:114:TYR:N	2.72	0.48
9:J:721:ARG:O	9:J:749:LYS:N	2.36	0.48
9:J:935:LEU:O	9:J:939:ALA:N	2.46	0.48
5:f:195:LEU:HA	5:f:199:ALA:HB3	1.96	0.48
6:K:343:LEU:O	6:K:348:SER:N	2.47	0.48
7:G:725:MET:O	7:G:730:MET:N	2.36	0.48
5:a:246:PRO:CB	7:A:554:ASP:H	2.26	0.48
5:e:55:ALA:N	5:e:59:HIS:O	2.45	0.48
5:l:36:ILE:HA	5:l:58:GLU:O	2.14	0.48
7:C:164:LYS:HA	7:C:432:TYR:HA	1.96	0.48
5:c:172:PHE:N	5:c:205:LEU:O	2.46	0.48
5:e:320:ILE:O	5:e:357:GLN:N	2.43	0.48
5:h:8:LEU:N	5:h:136:VAL:O	2.25	0.48
5:l:7:THR:HA	5:l:136:VAL:O	2.13	0.48
1:N:127:THR:O	1:N:131:LYS:N	2.40	0.48
1:B:164:ASP:O	1:B:168:ARG:N	2.36	0.47
9:J:596:ALA:O	9:J:601:GLU:N	2.35	0.47
7:E:179:ALA:O	7:E:183:GLU:N	2.46	0.47
8:L:295:ARG:H	9:J:368:THR:CB	2.26	0.47
5:k:274:THR:O	5:k:375:GLY:N	2.47	0.47
5:k:322:ASN:N	5:k:357:GLN:O	2.33	0.47
1:N:193:GLY:CA	1:N:243:GLY:HA2	2.45	0.47
5:a:214:ALA:O	5:a:220:ILE:N	2.35	0.47
6:K:150:GLY:HA2	6:K:202:GLU:HA	1.95	0.47
7:C:602:LYS:N	7:C:647:ASP:O	2.27	0.47
7:A:356:ILE:O	7:A:360:MET:N	2.33	0.47
7:A:618:LEU:HA	7:A:767:LEU:O	2.15	0.47
6:I:206:LYS:N	6:I:258:SER:O	2.45	0.47
6:I:380:LEU:HA	6:I:448:GLY:HA3	1.97	0.47
5:e:4:GLU:HA	5:e:50:VAL:HA	1.96	0.47
5:h:33:PRO:O	5:h:82:TYR:HA	2.14	0.47
6:K:207:GLN:HA	6:K:257:PHE:HA	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:d:8:LEU:HA	5:d:65:VAL:O	2.14	0.47
5:d:14:GLY:HA3	5:d:139:HIS:HA	1.95	0.47
5:b:4:GLU:HA	5:b:50:VAL:HA	1.95	0.47
5:f:71:PRO:N	5:f:97:GLY:HA2	2.30	0.47
5:n:317:TYR:N	5:n:347:ASN:O	2.46	0.47
2:U:2:ALA:CB	6:I:44:ARG:HA	2.44	0.47
5:l:322:ASN:HA	5:l:377:MET:HA	1.96	0.47
5:n:7:THR:O	5:n:64:ALA:HA	2.14	0.47
9:J:633:ARG:HA	9:J:637:TYR:CB	2.44	0.47
7:A:381:GLY:HA3	7:A:466:GLN:O	2.14	0.47
3:W:656:LEU:HA	3:X:657:ARG:HA	1.96	0.47
5:l:52:PHE:HA	5:l:62:PRO:HA	1.97	0.47
5:d:172:PHE:N	5:d:205:LEU:O	2.48	0.47
8:L:371:CYS:N	8:L:376:ALA:O	2.38	0.47
5:i:272:GLY:N	5:i:377:MET:O	2.44	0.47
1:N:176:SER:CB	1:N:279:PHE:HA	2.45	0.47
8:L:358:ASN:O	8:L:363:VAL:N	2.42	0.47
5:a:260:LEU:HA	5:a:319:ALA:HB3	1.96	0.47
7:E:600:ASP:O	7:E:648:TYR:HA	2.15	0.47
1:D:642:TYR:O	1:D:646:GLU:N	2.39	0.46
5:e:52:PHE:HA	5:e:62:PRO:HA	1.97	0.46
5:g:272:GLY:O	5:g:377:MET:N	2.39	0.46
5:d:100:ALA:HB1	5:d:103:ASN:O	2.15	0.46
1:F:190:ILE:O	1:F:243:GLY:N	2.48	0.46
4:Z:18:LYS:HA	4:Z:30:VAL:HA	1.98	0.46
4:Z:148:THR:O	4:Z:168:GLY:N	2.26	0.46
5:j:325:GLN:HA	5:j:361:SER:O	2.15	0.46
1:r:108:PRO:O	1:r:110:LYS:N	2.48	0.46
1:N:150:GLY:HA2	1:N:228:PRO:HA	1.96	0.46
5:d:43:GLU:C	5:d:45:THR:H	2.23	0.46
1:H:479:THR:O	1:H:484:GLU:N	2.47	0.46
5:i:49:ASP:HA	5:i:52:PHE:O	2.16	0.46
5:n:14:GLY:HA3	5:n:139:HIS:HA	1.97	0.46
6:K:385:THR:H	6:K:388:THR:CB	2.29	0.46
7:C:740:ASN:O	7:C:744:ALA:N	2.49	0.46
9:J:790:GLU:O	9:J:891:GLY:HA3	2.15	0.46
6:I:358:LYS:O	6:I:364:GLY:N	2.46	0.46
5:b:100:ALA:HB3	5:b:144:GLY:CA	2.46	0.46
1:B:150:GLY:HA3	1:B:226:MET:HA	1.98	0.46
5:f:138:CYS:HA	5:f:169:TYR:O	2.16	0.46
5:k:351:TRP:O	6:K:662:GLY:HA3	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:J:727:GLU:O	9:J:743:GLY:HA3	2.16	0.46
1:D:373:ILE:O	1:D:377:LEU:N	2.45	0.46
3:X:584:LEU:HA	3:Y:584:LEU:H	1.80	0.46
7:G:571:VAL:H	7:G:637:ALA:HB1	1.81	0.46
6:I:6:LEU:O	6:I:10:SER:N	2.47	0.46
5:a:100:ALA:CB	5:a:148:GLY:HA3	2.45	0.46
5:c:10:LEU:HA	5:c:67:LEU:O	2.16	0.46
5:c:322:ASN:O	5:c:358:VAL:HA	2.16	0.46
5:k:324:ILE:HA	5:k:375:GLY:HA2	1.98	0.46
5:l:202:VAL:O	5:l:268:PHE:HA	2.16	0.46
5:l:320:ILE:O	5:l:356:ILE:HA	2.15	0.46
1:N:433:LEU:O	1:N:464:ALA:HB1	2.15	0.46
7:A:272:ARG:N	7:A:296:ALA:HB1	2.30	0.46
3:W:649:LEU:HA	3:X:650:ARG:HA	1.98	0.46
4:Z:162:THR:O	4:Z:176:LEU:N	2.36	0.46
5:c:5:ILE:N	5:c:50:VAL:O	2.41	0.46
5:h:53:TYR:N	5:h:61:ILE:O	2.38	0.46
6:I:206:LYS:O	6:I:258:SER:N	2.38	0.46
1:H:493:LYS:O	1:H:497:ALA:N	2.49	0.46
5:c:52:PHE:HA	5:c:63:ARG:H	1.81	0.46
5:j:325:GLN:N	5:j:374:SER:O	2.30	0.46
5:a:142:ALA:HB2	5:a:173:PRO:N	2.32	0.46
5:b:55:ALA:N	5:b:59:HIS:O	2.49	0.46
5:m:4:GLU:HA	5:m:50:VAL:HA	1.96	0.46
1:D:163:GLY:HA3	7:C:315:GLN:HA	1.97	0.45
1:D:559:ARG:HA	1:D:585:GLU:HA	1.97	0.45
5:g:325:GLN:O	5:g:374:SER:N	2.38	0.45
5:i:33:PRO:O	5:i:82:TYR:HA	2.16	0.45
5:j:111:GLY:O	5:j:115:HIS:N	2.49	0.45
5:k:316:CYS:O	5:k:382:THR:N	2.29	0.45
6:I:194:GLY:HA3	6:I:284:GLN:HA	1.98	0.45
5:c:134:GLY:HA3	5:c:165:LEU:O	2.16	0.45
5:g:270:MET:N	5:g:379:ALA:O	2.37	0.45
5:j:71:PRO:N	5:j:97:GLY:HA2	2.31	0.45
5:k:35:GLY:O	5:k:60:TYR:N	2.50	0.45
5:n:7:THR:N	5:n:63:ARG:O	2.29	0.45
5:d:274:THR:N	5:d:375:GLY:O	2.39	0.45
7:A:262:SER:O	7:A:275:LEU:N	2.33	0.45
5:f:43:GLU:C	5:f:45:THR:H	2.24	0.45
5:j:100:ALA:HB3	5:j:144:GLY:C	2.42	0.45
5:j:138:CYS:HA	5:j:169:TYR:O	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:E:397:ASP:O	7:E:401:GLN:N	2.40	0.45
4:Z:174:ALA:HA	4:Z:284:LYS:CB	2.46	0.45
5:a:30:GLY:O	5:a:38:GLU:N	2.30	0.45
5:n:136:VAL:HA	5:n:167:GLN:O	2.16	0.45
5:d:321:LEU:O	5:d:378:MET:N	2.33	0.45
4:Z:19:ALA:N	4:Z:29:ALA:O	2.29	0.45
5:f:134:GLY:HA3	5:f:165:LEU:O	2.16	0.45
5:h:3:ARG:HA	5:h:131:SER:O	2.17	0.45
1:N:517:ARG:HA	1:N:626:ASP:CB	2.47	0.45
7:G:740:ASN:O	7:G:744:ALA:N	2.50	0.45
6:I:496:ALA:O	6:I:500:GLN:N	2.36	0.45
5:d:28:GLU:HA	5:d:367:LEU:CB	2.46	0.45
8:L:179:LEU:O	8:L:183:GLU:N	2.49	0.45
1:H:310:SER:O	1:H:314:HIS:N	2.35	0.45
1:H:642:TYR:O	1:H:646:GLU:N	2.46	0.45
5:c:49:ASP:HA	5:c:52:PHE:O	2.17	0.45
5:l:61:ILE:HA	5:l:85:LEU:O	2.17	0.45
5:d:8:LEU:O	5:d:138:CYS:N	2.21	0.45
8:L:627:ILE:H	8:L:1479:SER:CB	2.30	0.45
9:J:263:VAL:O	9:J:301:ILE:N	2.32	0.45
5:c:9:GLN:CB	5:c:15:ASN:HA	2.47	0.45
5:h:51:PHE:O	5:h:63:ARG:N	2.39	0.45
6:K:18:THR:N	6:K:26:GLN:O	2.50	0.45
7:E:438:GLU:O	7:E:461:THR:N	2.29	0.45
5:f:28:GLU:HA	5:f:367:LEU:CB	2.47	0.45
5:k:206:ASP:CB	5:k:306:SER:H	2.29	0.45
7:G:636:LEU:O	7:G:638:LEU:N	2.50	0.45
2:U:32:SER:O	2:U:36:ASN:N	2.50	0.44
5:g:434:GLU:O	5:g:438:ALA:N	2.43	0.44
5:h:102:ASN:HA	5:h:144:GLY:N	2.32	0.44
5:d:10:LEU:N	5:d:138:CYS:O	2.46	0.44
6:I:338:GLU:HA	6:I:551:ARG:O	2.17	0.44
5:g:69:LEU:CB	5:g:99:GLY:HA2	2.47	0.44
5:n:1:MET:N	1:N:332:HIS:O	2.50	0.44
8:L:213:SER:O	8:L:217:ALA:N	2.51	0.44
7:E:544:ILE:O	7:E:548:PHE:N	2.50	0.44
5:h:7:THR:O	5:h:65:VAL:N	2.27	0.44
8:L:106:GLU:O	8:L:110:VAL:N	2.45	0.44
8:L:557:ASN:O	8:L:572:GLY:HA2	2.18	0.44
5:e:47:ARG:N	5:e:243:LEU:O	2.50	0.44
5:i:289:THR:O	5:i:293:VAL:N	2.31	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:j:353:PRO:CB	9:J:942:GLU:H	2.30	0.44
1:B:205:ALA:N	1:B:221:THR:O	2.33	0.44
5:d:3:ARG:HA	5:d:131:SER:O	2.18	0.44
7:C:412:SER:O	7:C:416:PHE:N	2.28	0.44
6:I:532:GLN:O	6:I:537:GLU:N	2.40	0.44
1:t:112:SER:C	1:t:114:TYR:H	2.26	0.44
9:J:393:SER:HA	9:J:397:ALA:HB3	2.00	0.44
6:I:359:ASP:HA	6:I:364:GLY:HA3	1.99	0.44
2:O:56:ASN:CB	1:v:44:ALA:H	2.31	0.44
5:e:214:ALA:O	5:e:219:HIS:N	2.51	0.44
5:e:325:GLN:HA	5:e:361:SER:O	2.18	0.44
5:i:322:ASN:O	5:i:359:ALA:N	2.32	0.44
5:i:325:GLN:HA	5:i:361:SER:O	2.18	0.44
5:l:262:PRO:HA	8:L:1663:HIS:CB	2.47	0.44
1:D:112:LEU:C	1:D:114:LEU:H	2.25	0.44
1:H:318:MET:O	1:H:323:LEU:N	2.45	0.44
4:Z:71:ILE:HA	4:Z:76:VAL:HA	2.00	0.44
5:e:52:PHE:HA	5:e:63:ARG:H	1.81	0.44
6:I:212:GLY:HA3	6:I:252:PRO:HA	2.00	0.44
2:P:38:GLY:H	8:L:122:PRO:CA	2.23	0.44
5:f:5:ILE:N	5:f:50:VAL:O	2.30	0.44
5:a:108:PHE:HA	5:a:152:TYR:HA	2.00	0.43
5:i:142:ALA:HB2	5:i:173:PRO:CB	2.48	0.43
1:B:249:LEU:O	1:B:255:ASP:N	2.29	0.43
5:h:69:LEU:CB	5:h:99:GLY:HA2	2.47	0.43
7:C:439:GLU:HA	7:C:460:TYR:HA	2.00	0.43
5:c:52:PHE:HA	5:c:62:PRO:HA	1.99	0.43
5:c:289:THR:O	5:c:293:VAL:N	2.32	0.43
5:c:322:ASN:N	5:c:357:GLN:O	2.32	0.43
7:A:586:ALA:O	7:A:590:SER:N	2.52	0.43
4:Z:219:VAL:N	4:Z:307:PRO:O	2.43	0.43
7:G:544:ILE:O	7:G:548:PHE:N	2.51	0.43
1:D:25:ASN:O	1:D:29:ASN:N	2.51	0.43
5:h:321:LEU:O	5:h:378:MET:N	2.36	0.43
5:n:53:TYR:O	5:n:61:ILE:N	2.44	0.43
8:L:365:SER:N	8:L:368:PHE:O	2.51	0.43
1:F:310:SER:O	1:F:314:HIS:N	2.33	0.43
5:j:104:TRP:CB	5:j:187:ASN:HA	2.49	0.43
5:l:10:LEU:C	5:l:146:GLY:HA2	2.43	0.43
1:D:22:ILE:HA	1:D:33:VAL:HA	2.00	0.43
5:a:9:GLN:CB	5:a:15:ASN:HA	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:g:325:GLN:HA	5:g:361:SER:O	2.17	0.43
5:i:8:LEU:HA	5:i:65:VAL:O	2.19	0.43
1:N:179:SER:O	1:N:183:LEU:N	2.35	0.43
4:Z:299:LEU:N	4:Z:330:ILE:O	2.40	0.43
5:c:100:ALA:HB3	5:c:144:GLY:HA3	2.01	0.43
5:l:70:GLU:HA	5:l:99:GLY:HA2	2.00	0.43
7:G:264:GLN:H	7:G:274:PHE:HA	1.83	0.43
7:G:619:ALA:HB1	7:G:624:GLN:C	2.44	0.43
1:D:310:SER:O	1:D:314:HIS:N	2.36	0.43
5:a:317:TYR:O	5:a:348:PHE:HA	2.19	0.43
5:c:324:ILE:O	5:c:361:SER:N	2.51	0.43
5:e:102:ASN:C	5:e:144:GLY:HA3	2.44	0.43
1:u:3:THR:O	1:u:4:PRO:C	2.62	0.43
7:G:701:ALA:O	7:G:705:ALA:N	2.52	0.43
8:L:82:LEU:O	8:L:86:ALA:N	2.42	0.43
6:I:207:GLN:HA	6:I:257:PHE:HA	2.01	0.43
6:I:413:LEU:O	6:I:456:TYR:HA	2.19	0.43
1:D:493:LYS:O	1:D:497:ALA:N	2.52	0.43
5:a:139:HIS:O	5:a:170:SER:HA	2.18	0.43
6:K:421:HIS:N	6:K:441:PRO:O	2.48	0.43
1:N:407:VAL:HA	1:N:504:ILE:HA	2.01	0.43
5:b:409:ARG:HA	5:b:415:LYS:HA	2.01	0.42
5:c:324:ILE:HA	5:c:375:GLY:HA2	2.01	0.42
5:g:289:THR:O	5:g:293:VAL:N	2.33	0.42
5:i:321:LEU:O	5:i:378:MET:N	2.34	0.42
5:l:323:ILE:N	5:l:376:LEU:O	2.48	0.42
5:n:5:ILE:N	5:n:50:VAL:O	2.52	0.42
7:G:604:ASP:O	7:G:645:SER:N	2.49	0.42
6:K:338:GLU:HA	6:K:551:ARG:O	2.19	0.42
5:a:14:GLY:HA3	5:a:139:HIS:HA	2.01	0.42
5:a:26:CYS:O	5:a:30:GLY:N	2.53	0.42
5:h:321:LEU:N	5:h:378:MET:O	2.28	0.42
5:h:398:LEU:O	5:h:402:GLU:N	2.53	0.42
5:j:48:LYS:O	5:j:52:PHE:N	2.33	0.42
7:A:381:GLY:N	7:A:434:GLU:HA	2.34	0.42
5:c:53:TYR:O	5:c:61:ILE:N	2.37	0.42
5:f:55:ALA:N	5:f:59:HIS:O	2.49	0.42
5:f:136:VAL:HA	5:f:167:GLN:O	2.19	0.42
5:g:321:LEU:N	5:g:378:MET:O	2.27	0.42
5:k:11:GLY:N	5:k:67:LEU:O	2.52	0.42
5:k:33:PRO:O	5:k:82:TYR:HA	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:E:170:SER:C	7:E:172:GLN:H	2.27	0.42
7:M:426:GLY:HA2	7:M:482:GLY:HA2	2.02	0.42
1:D:409:THR:O	1:D:413:MET:N	2.28	0.42
5:a:10:LEU:HA	5:a:67:LEU:O	2.19	0.42
5:k:52:PHE:HA	5:k:62:PRO:HA	2.00	0.42
5:d:385:SER:CB	5:d:432:ILE:HA	2.49	0.42
4:Z:144:ALA:HB2	4:Z:342:GLY:CA	2.42	0.42
5:c:320:ILE:O	5:c:356:ILE:HA	2.20	0.42
5:m:205:LEU:HA	5:m:304:MET:O	2.20	0.42
1:N:345:ALA:N	1:N:388:ASP:O	2.48	0.42
5:d:138:CYS:HA	5:d:169:TYR:O	2.20	0.42
4:Z:362:TYR:O	4:Z:366:GLY:N	2.45	0.42
5:e:438:ALA:HA	5:e:443:TYR:CB	2.50	0.42
5:g:70:GLU:HA	5:g:97:GLY:HA2	2.01	0.42
5:h:215:THR:HA	5:h:220:ILE:O	2.19	0.42
5:l:10:LEU:HA	5:l:67:LEU:O	2.19	0.42
6:K:269:PRO:O	6:K:273:ALA:N	2.38	0.42
8:L:487:CYS:C	8:L:489:GLY:H	2.28	0.42
7:M:194:GLY:O	7:M:194:GLY:N	2.53	0.42
2:P:38:GLY:N	8:L:122:PRO:HA	2.24	0.42
5:a:258:ALA:HB2	7:A:684:CYS:HA	2.01	0.42
5:i:8:LEU:N	5:i:136:VAL:O	2.30	0.42
5:i:47:ARG:N	5:i:244:ARG:O	2.53	0.42
5:j:10:LEU:HA	5:j:67:LEU:O	2.20	0.42
5:n:259:SER:O	5:n:319:ALA:HB1	2.20	0.42
7:A:305:ILE:O	7:A:321:ALA:HB1	2.19	0.42
1:F:34:GLU:C	1:F:36:LYS:H	2.28	0.42
5:b:52:PHE:HA	5:b:62:PRO:HA	2.02	0.42
5:f:4:GLU:O	5:f:133:GLU:N	2.35	0.42
7:E:381:GLY:HA3	7:E:466:GLN:C	2.45	0.42
5:g:33:PRO:O	5:g:82:TYR:HA	2.19	0.41
5:n:11:GLY:N	5:n:67:LEU:O	2.52	0.41
5:d:324:ILE:HA	5:d:375:GLY:HA2	2.02	0.41
5:k:14:GLY:HA3	5:k:139:HIS:HA	2.02	0.41
1:u:1:MET:O	1:u:3:THR:N	2.53	0.41
7:C:616:ARG:HA	7:C:628:MET:CB	2.50	0.41
1:F:189:TRP:HA	1:F:194:GLU:O	2.21	0.41
4:Z:14:SER:CB	4:Z:158:GLY:H	2.33	0.41
5:a:214:ALA:HB1	5:a:220:ILE:CB	2.51	0.41
5:c:409:ARG:HA	5:c:415:LYS:HA	2.02	0.41
5:k:104:TRP:CB	5:k:187:ASN:HA	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:a:411:GLU:O	5:a:415:LYS:N	2.53	0.41
5:k:53:TYR:N	5:k:61:ILE:O	2.40	0.41
5:m:55:ALA:CB	5:n:217:ARG:HA	2.50	0.41
1:u:28:VAL:O	1:u:32:PHE:N	2.40	0.41
5:j:214:ALA:O	5:j:219:HIS:N	2.53	0.41
3:W:584:LEU:H	3:V:588:GLN:CB	2.33	0.41
4:Z:102:PRO:HA	4:Z:131:ALA:O	2.20	0.41
5:f:54:GLN:HA	5:f:60:TYR:HA	2.02	0.41
5:g:317:TYR:O	5:g:348:PHE:HA	2.20	0.41
1:B:205:ALA:O	1:B:221:THR:N	2.35	0.41
5:d:447:GLY:H	5:d:452:GLU:N	2.19	0.41
7:C:619:ALA:HB1	7:C:624:GLN:C	2.44	0.41
2:U:3:SER:HA	6:I:43:ASN:CB	2.51	0.41
5:f:100:ALA:HB3	5:f:144:GLY:C	2.44	0.41
5:d:136:VAL:HA	5:d:167:GLN:O	2.21	0.41
5:f:36:ILE:HA	5:f:58:GLU:O	2.21	0.41
5:g:67:LEU:HA	5:g:92:TYR:O	2.21	0.41
5:h:209:ALA:HB2	5:h:306:SER:H	1.85	0.41
5:h:325:GLN:HA	5:h:361:SER:O	2.20	0.41
5:i:70:GLU:HA	5:i:97:GLY:O	2.21	0.41
5:m:7:THR:HA	5:m:136:VAL:O	2.19	0.41
7:M:634:THR:C	7:M:636:LEU:H	2.29	0.41
5:a:48:LYS:O	5:a:52:PHE:N	2.30	0.41
5:b:282:VAL:O	5:b:370:ALA:HB1	2.20	0.41
5:e:324:ILE:O	5:e:361:SER:N	2.38	0.41
5:i:3:ARG:HA	5:i:131:SER:O	2.20	0.41
1:B:159:TYR:HA	7:A:175:PRO:HA	2.03	0.41
5:d:137:LEU:O	5:d:169:TYR:N	2.54	0.41
7:G:606:MET:N	7:G:643:ALA:O	2.34	0.41
9:J:223:GLN:O	9:J:226:THR:N	2.50	0.41
9:J:531:GLN:C	9:J:533:GLY:H	2.29	0.41
1:H:114:LEU:C	1:H:116:SER:N	2.78	0.41
2:U:10:ALA:HB2	6:I:29:GLN:HA	2.03	0.41
5:k:1:MET:N	6:K:371:ALA:HB1	2.36	0.41
5:k:10:LEU:O	5:k:14:GLY:HA3	2.21	0.41
7:M:893:TYR:O	7:M:897:LEU:N	2.45	0.41
4:Z:218:TYR:O	4:Z:255:PHE:HA	2.21	0.40
5:b:33:PRO:O	5:b:82:TYR:HA	2.21	0.40
5:b:107:GLY:HA3	5:b:148:GLY:HA3	2.03	0.40
5:k:11:GLY:HA3	5:k:145:THR:C	2.46	0.40
5:k:409:ARG:HA	5:k:415:LYS:HA	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:k:438:ALA:HA	5:k:443:TYR:CB	2.51	0.40
5:n:209:ALA:HB1	5:n:303:VAL:O	2.21	0.40
8:L:20:LYS:O	8:L:22:HIS:N	2.54	0.40
7:A:258:GLY:N	7:A:261:VAL:O	2.49	0.40
7:E:619:ALA:HB1	7:E:624:GLN:C	2.46	0.40
1:F:127:THR:O	1:F:131:LYS:N	2.50	0.40
5:h:174:ASN:HA	5:h:208:THR:H	1.86	0.40
5:k:291:LEU:HA	5:k:336:SER:HA	2.03	0.40
1:F:382:LEU:N	1:F:393:VAL:O	2.47	0.40
5:a:325:GLN:HA	5:a:361:SER:O	2.21	0.40
5:i:324:ILE:HA	5:i:375:GLY:HA2	2.03	0.40
5:i:325:GLN:O	5:i:374:SER:N	2.31	0.40
5:m:53:TYR:N	5:m:61:ILE:O	2.43	0.40
5:n:252:ASP:O	5:n:256:LEU:N	2.51	0.40
1:v:123:PRO:C	1:v:125:ASP:N	2.77	0.40
6:I:386:ALA:N	6:I:421:HIS:H	2.19	0.40
2:T:59:ALA:HB2	1:u:43:PHE:CB	2.52	0.40
5:h:324:ILE:N	5:h:359:ALA:O	2.31	0.40
5:l:357:GLN:HA	8:L:1671:VAL:HA	2.02	0.40
8:L:1677:ALA:O	8:L:1682:HIS:N	2.54	0.40
9:J:721:ARG:O	9:J:748:TYR:HA	2.21	0.40
7:E:440:HIS:O	7:E:459:ARG:HA	2.21	0.40
4:Z:19:ALA:O	4:Z:28:ARG:N	2.54	0.40
5:a:100:ALA:HB1	5:a:103:ASN:O	2.22	0.40
5:b:100:ALA:HB3	5:b:144:GLY:C	2.46	0.40
5:f:321:LEU:O	5:f:378:MET:N	2.48	0.40
5:f:325:GLN:HA	5:f:361:SER:O	2.21	0.40
5:g:51:PHE:O	5:g:63:ARG:N	2.49	0.40
5:h:43:GLU:C	5:h:45:THR:H	2.30	0.40
5:k:166:VAL:H	5:k:200:ASP:CB	2.35	0.40
5:k:209:ALA:HB2	5:k:306:SER:N	2.36	0.40
1:t:112:SER:C	1:t:114:TYR:N	2.79	0.40
6:I:212:GLY:H	6:I:253:SER:H	1.69	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	640/907 (71%)	629 (98%)	11 (2%)	0	100	100
1	D	655/907 (72%)	642 (98%)	13 (2%)	0	100	100
1	F	655/907 (72%)	645 (98%)	10 (2%)	0	100	100
1	H	654/907 (72%)	641 (98%)	13 (2%)	0	100	100
1	N	624/907 (69%)	618 (99%)	6 (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%)	104 (88%)	8 (7%)	6 (5%)	1	15
1	u	118/907 (13%)	103 (87%)	8 (7%)	7 (6%)	1	13
1	v	125/907 (14%)	111 (89%)	10 (8%)	4 (3%)	3	21
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	43
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%)	438 (98%)	8 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	d	448/457 (98%)	441 (98%)	7 (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%)	437 (98%)	8 (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%)	588 (97%)	17 (3%)	1 (0%)	44	78
6	K	608/667 (91%)	589 (97%)	15 (2%)	4 (1%)	19	57
7	A	651/930 (70%)	641 (98%)	10 (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	763/930 (82%)	744 (98%)	18 (2%)	1 (0%)	48	83
8	L	972/1811 (54%)	922 (95%)	46 (5%)	4 (0%)	30	68
9	J	834/1024 (81%)	807 (97%)	23 (3%)	4 (0%)	25	64
10	p	54/158 (34%)	53 (98%)	1 (2%)	0	100	100
11	w	31/1663 (2%)	31 (100%)	0	0	100	100
11	x	31/1663 (2%)	31 (100%)	0	0	100	100
All	All	17795/31360 (57%)	17385 (98%)	370 (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	t	5	ASP
1	t	111	VAL
1	u	5	ASP

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Mol	Chain	Res	Type
1	v	108	PRO
6	K	295	ARG
8	L	351	GLU
6	I	295	ARG
1	r	111	VAL
1	r	113	SER
1	s	111	VAL
1	s	113	SER
1	t	109	SER
1	t	113	SER
1	u	6	GLN
1	u	109	SER
1	u	111	VAL
1	v	124	ARG
6	K	447	SER
8	L	417	PRO
9	J	221	VAL
1	u	110	LYS
1	u	113	SER
6	K	250	LEU
8	L	1454	GLN
9	J	223	GLN
9	J	526	GLU
1	r	110	LYS
1	s	110	LYS
1	t	6	GLN
1	t	110	LYS
1	v	125	ASP
6	K	445	PRO
7	M	635	GLU
1	u	4	PRO
1	v	123	PRO
8	L	309	GLU
9	J	616	VAL

5.3.2 Protein sidechains ⓘ

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

5.3.3 RNA ⓘ

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	9.43
1	L	123:PRO	C	124:GLN	N	5.75
1	L	311:TYR	C	312:LEU	N	3.96

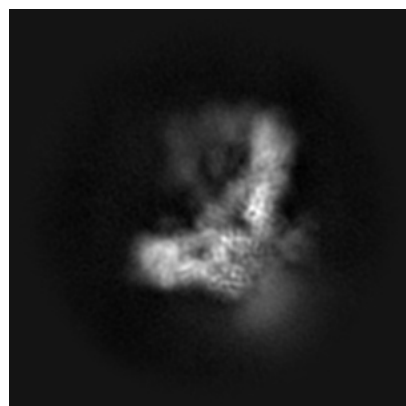
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-53399. These allow visual inspection of the internal detail of the map and identification of artifacts.

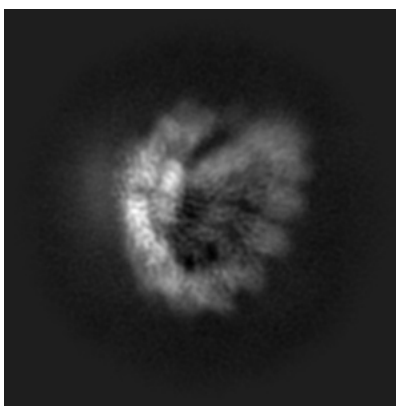
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

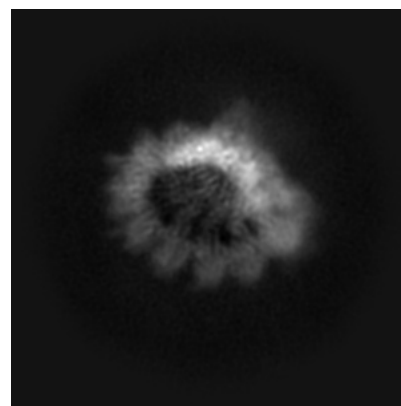
6.1.1 Primary map



X

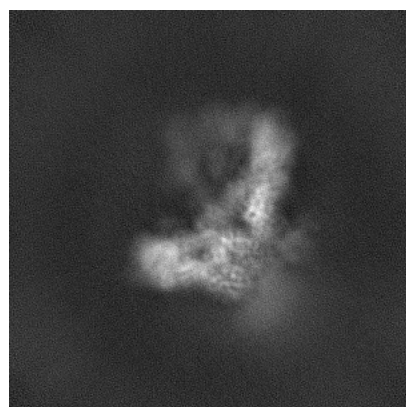


Y

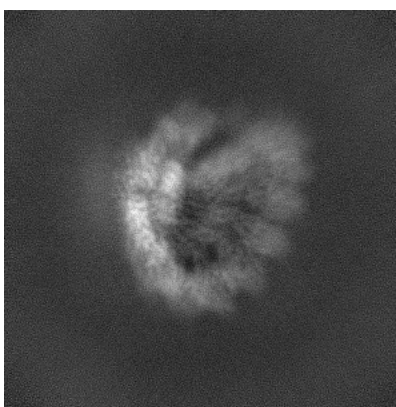


Z

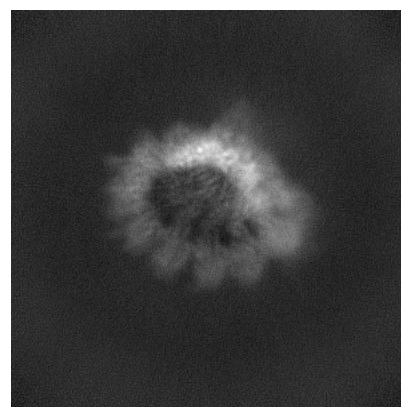
6.1.2 Raw map



X



Y

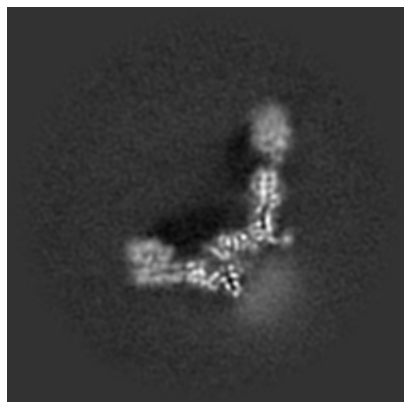


Z

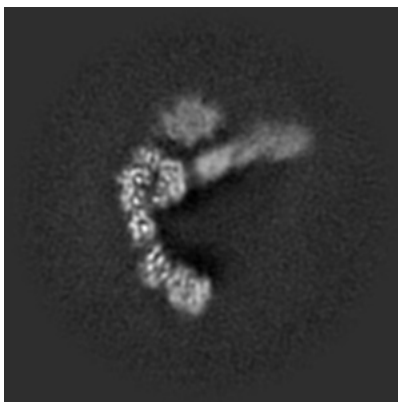
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

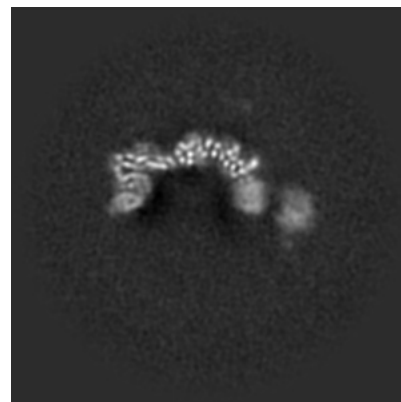
6.2.1 Primary map



X Index: 192

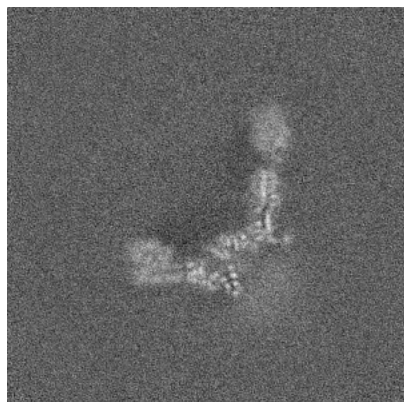


Y Index: 192

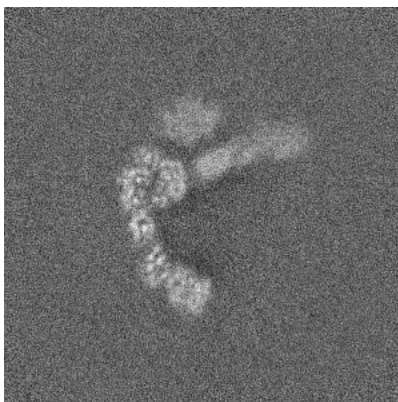


Z Index: 192

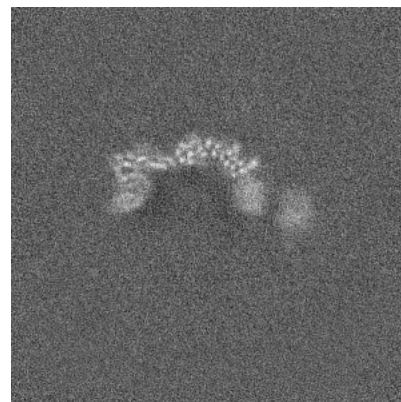
6.2.2 Raw map



X Index: 192



Y Index: 192

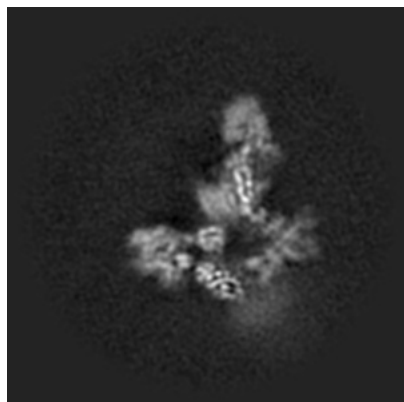


Z Index: 192

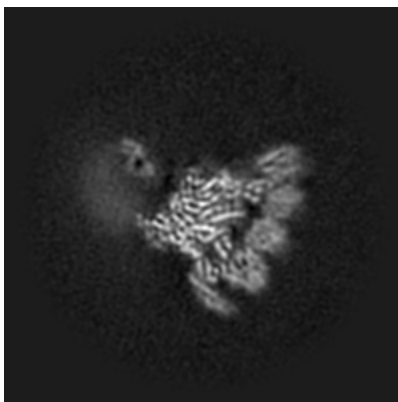
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

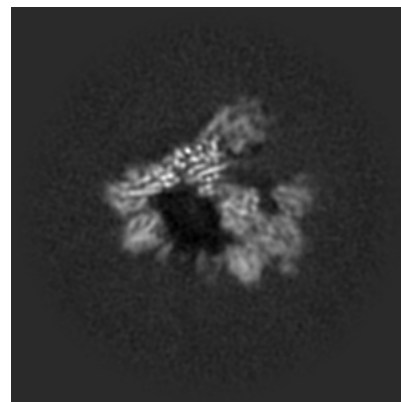
6.3.1 Primary map



X Index: 226

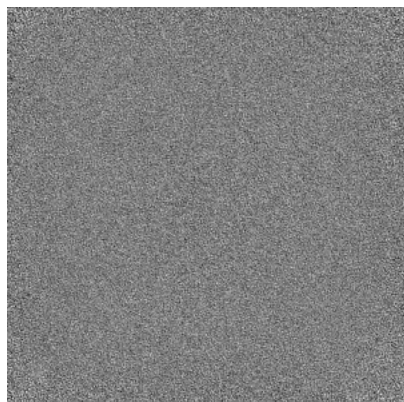


Y Index: 242

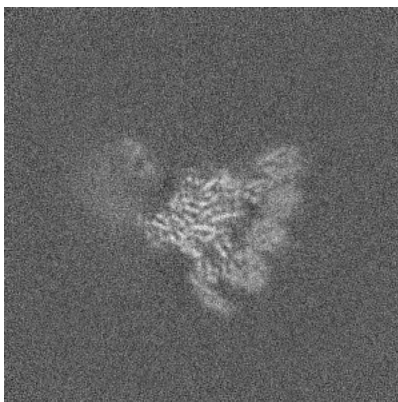


Z Index: 162

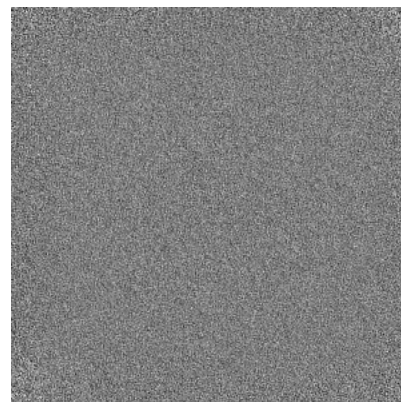
6.3.2 Raw map



X Index: 0



Y Index: 242

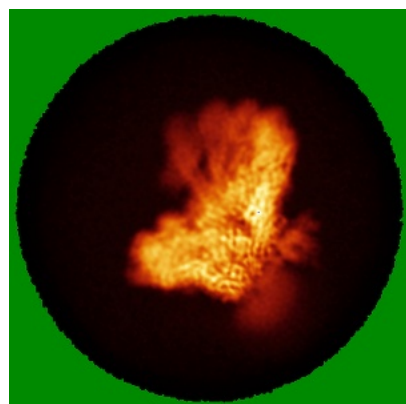


Z Index: 0

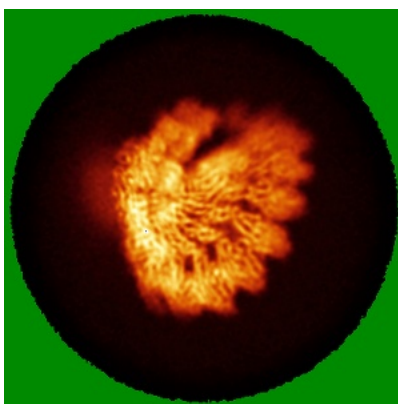
The images above show the largest variance slices of the map in three orthogonal directions.

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

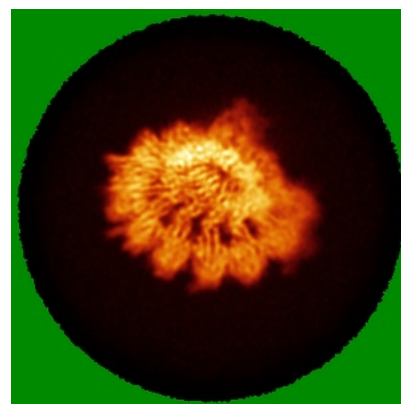
6.4.1 Primary map



X

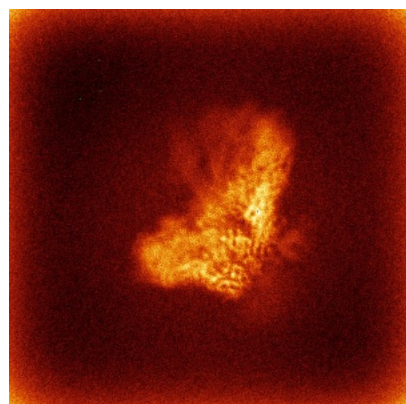


Y

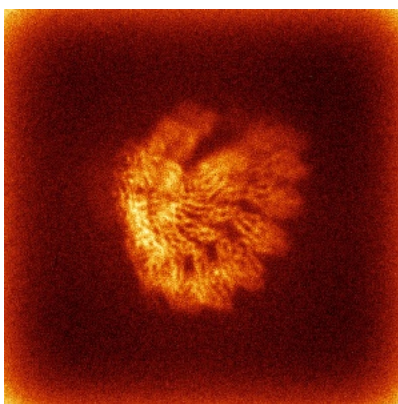


Z

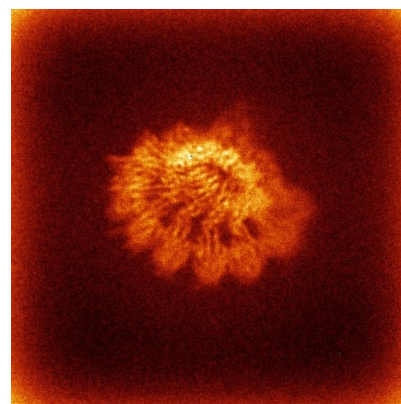
6.4.2 Raw map



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.

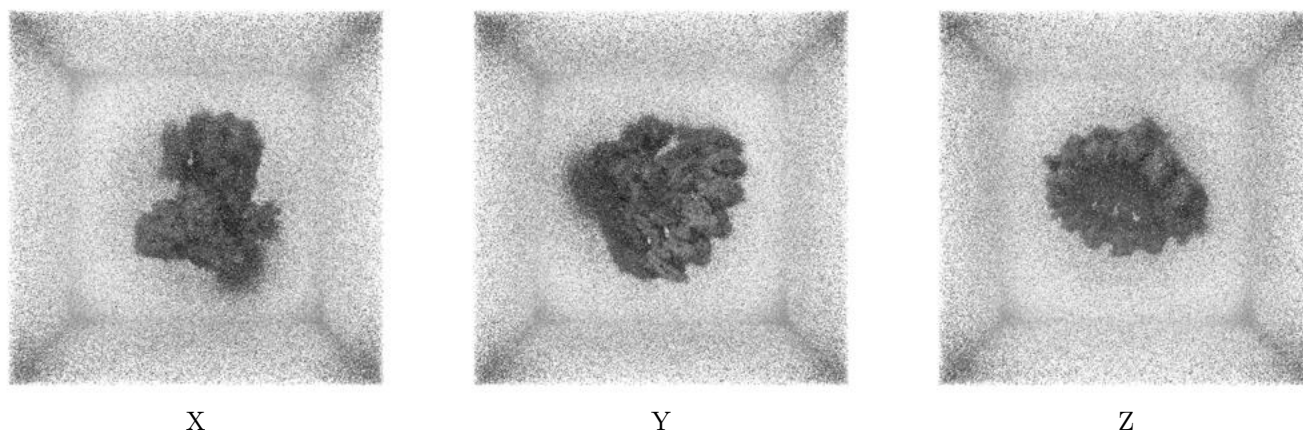
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0363. 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



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.

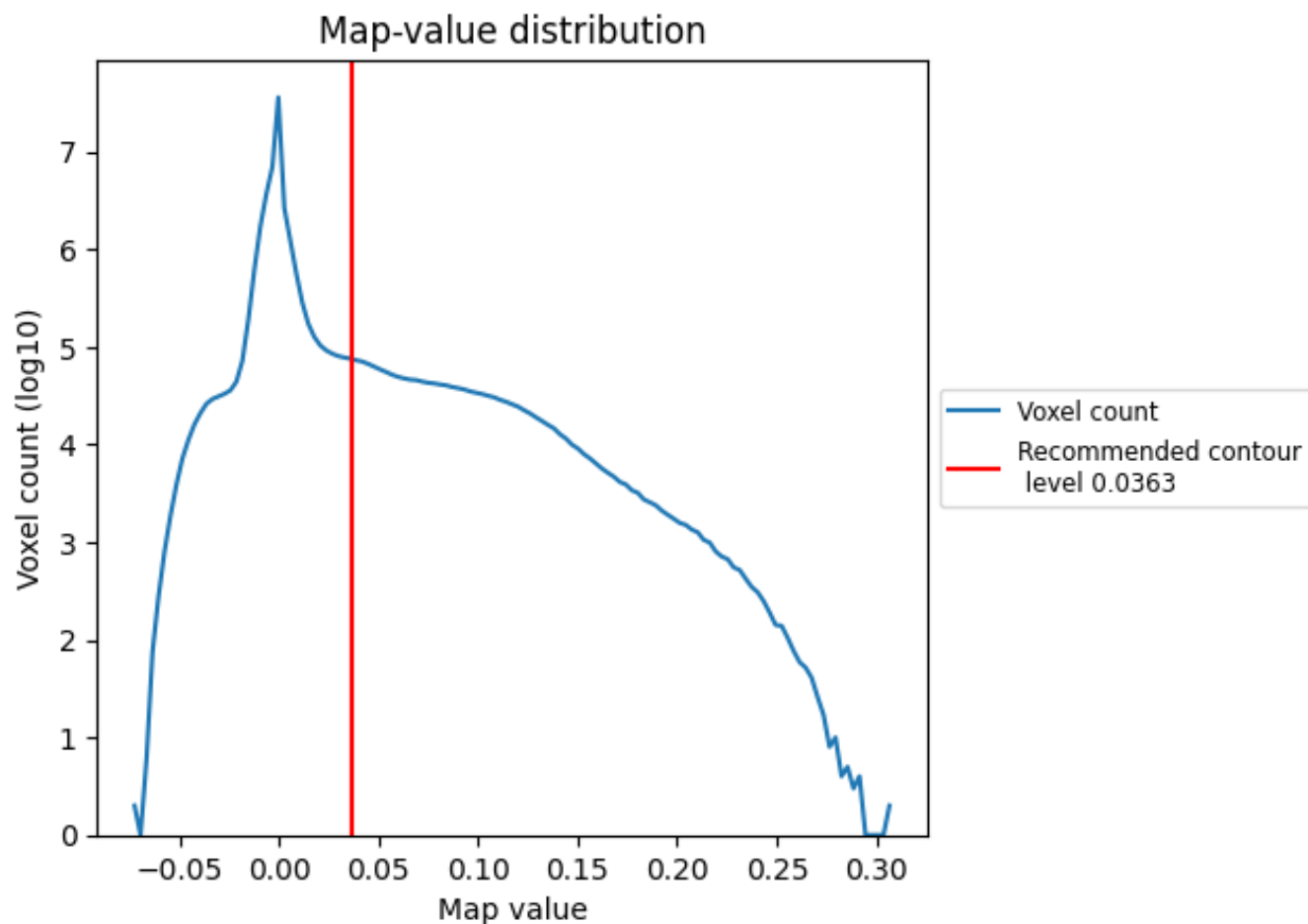
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

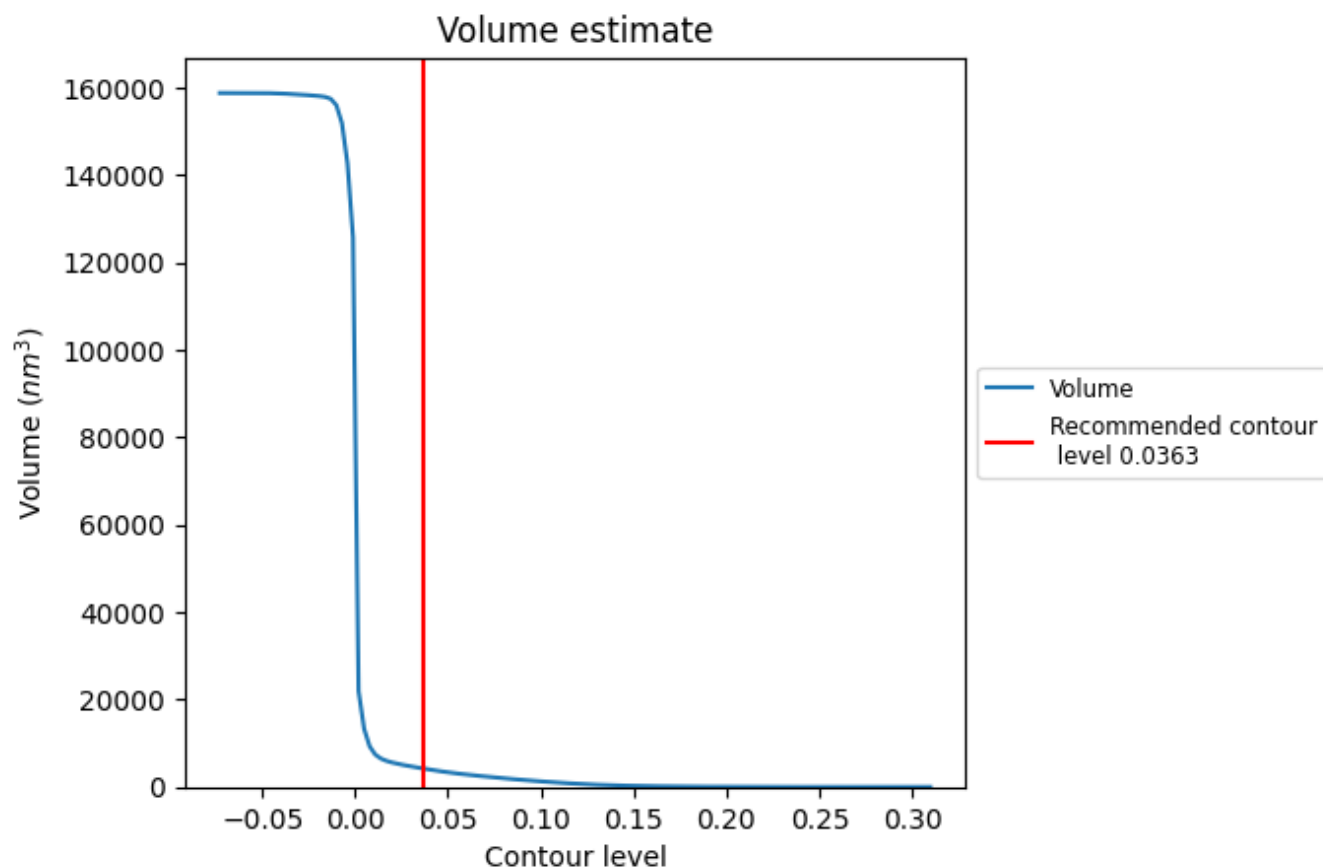
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

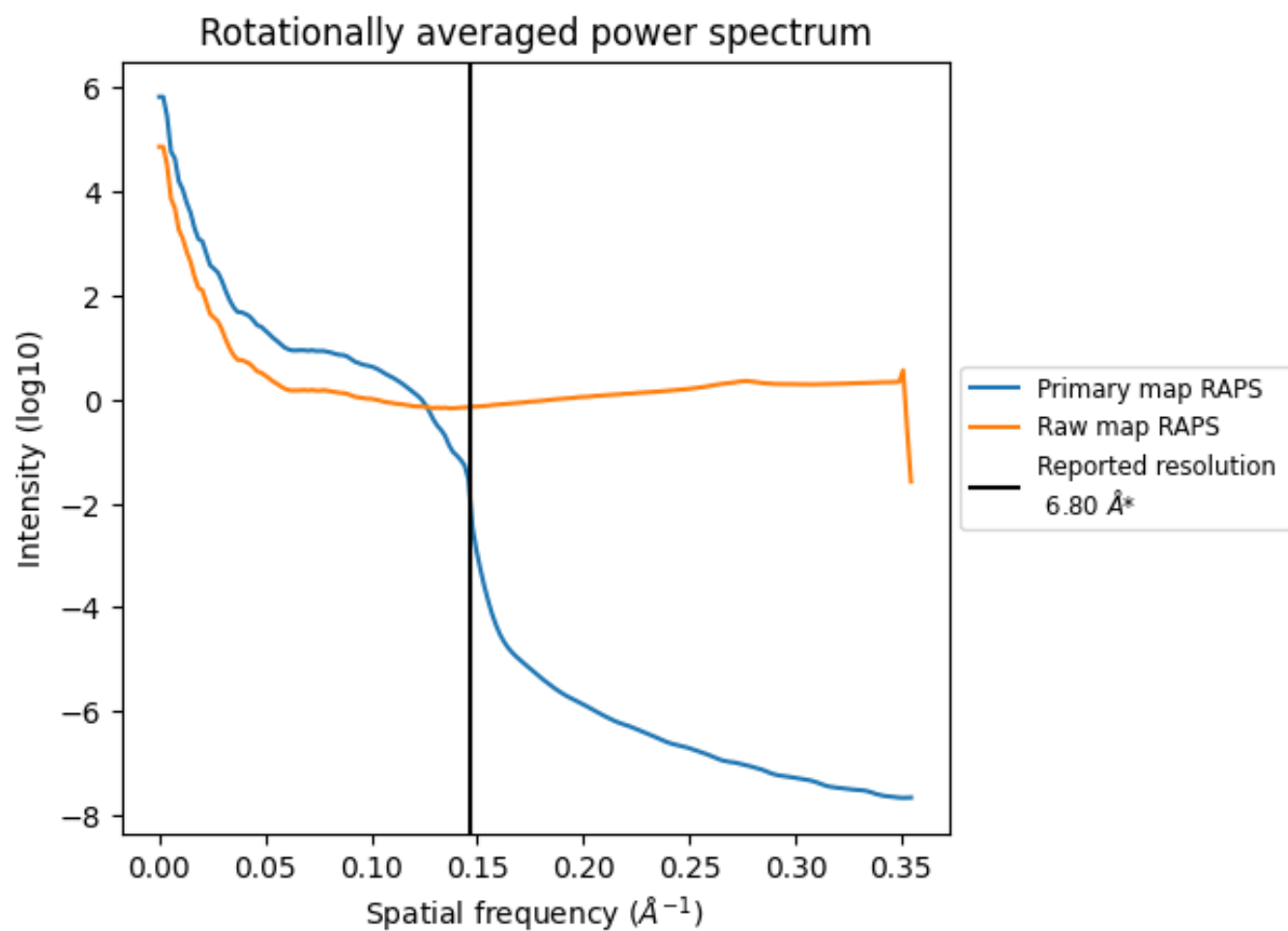
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 4247 nm^3 ; this corresponds to an approximate mass of 3836 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 ⓘ

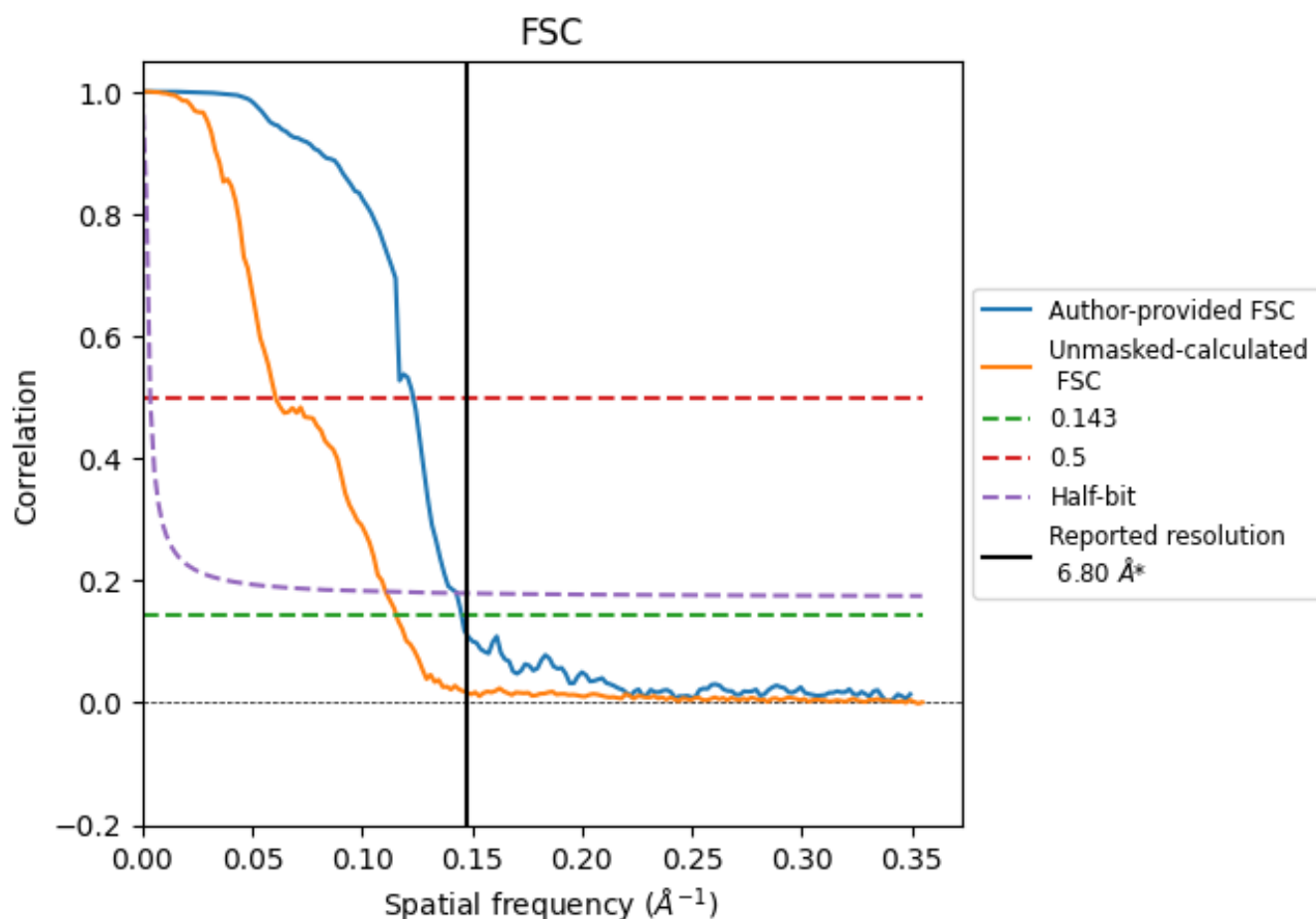


*Reported resolution corresponds to spatial frequency of 0.147 \AA^{-1}

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.147 \AA^{-1}

8.2 Resolution estimates [i](#)

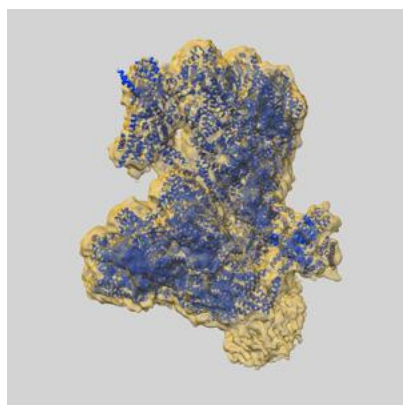
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	6.80	-	-
Author-provided FSC curve	6.89	8.12	7.00
Unmasked-calculated*	8.66	16.47	9.03

*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 8.66 differs from the reported value 6.8 by more than 10 %

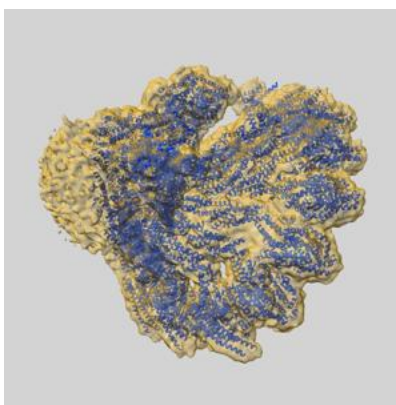
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-53399 and PDB model 9QVM. Per-residue inclusion information can be found in section [3](#) on page [11](#).

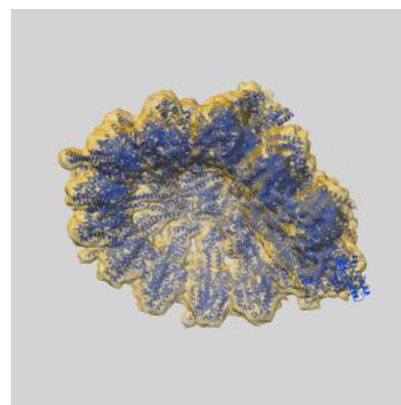
9.1 Map-model overlay [i](#)



X



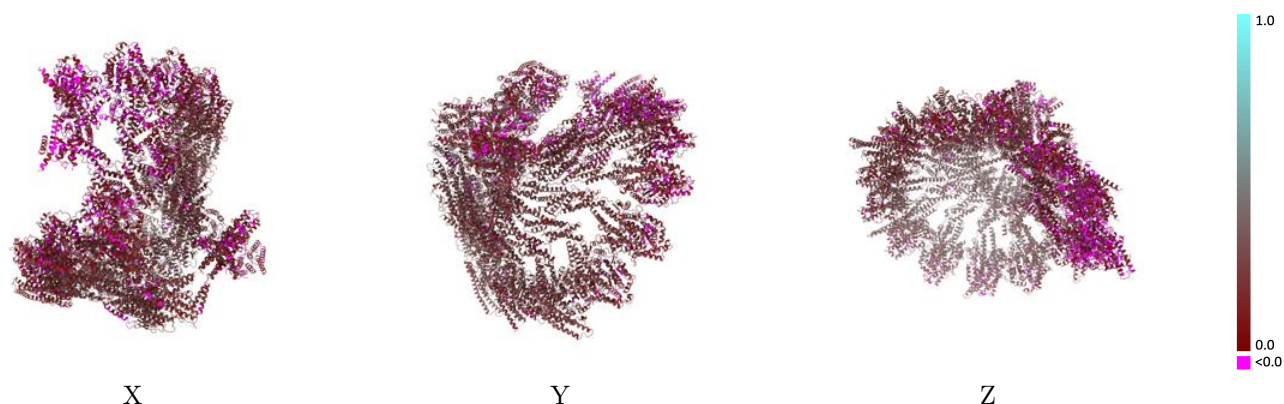
Y



Z

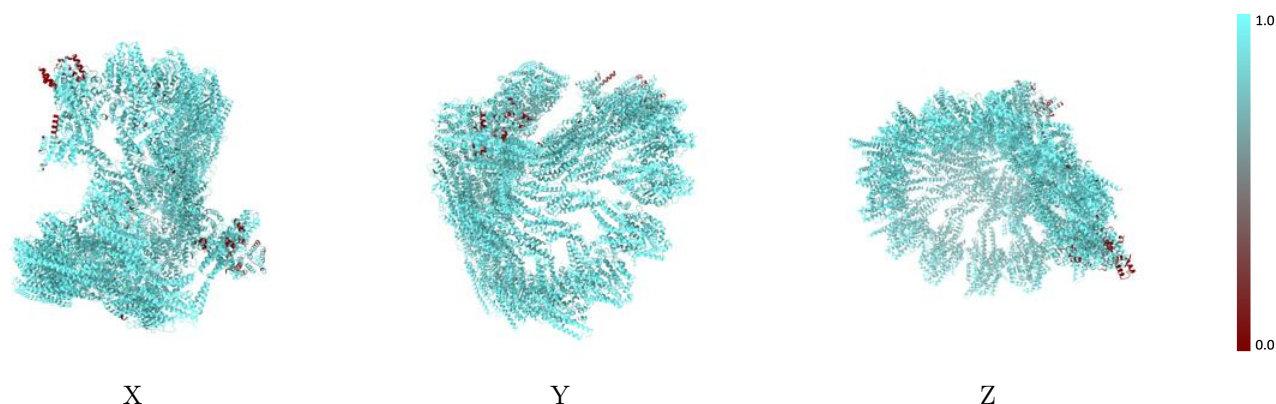
The images above show the 3D surface view of the map at the recommended contour level 0.0363 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



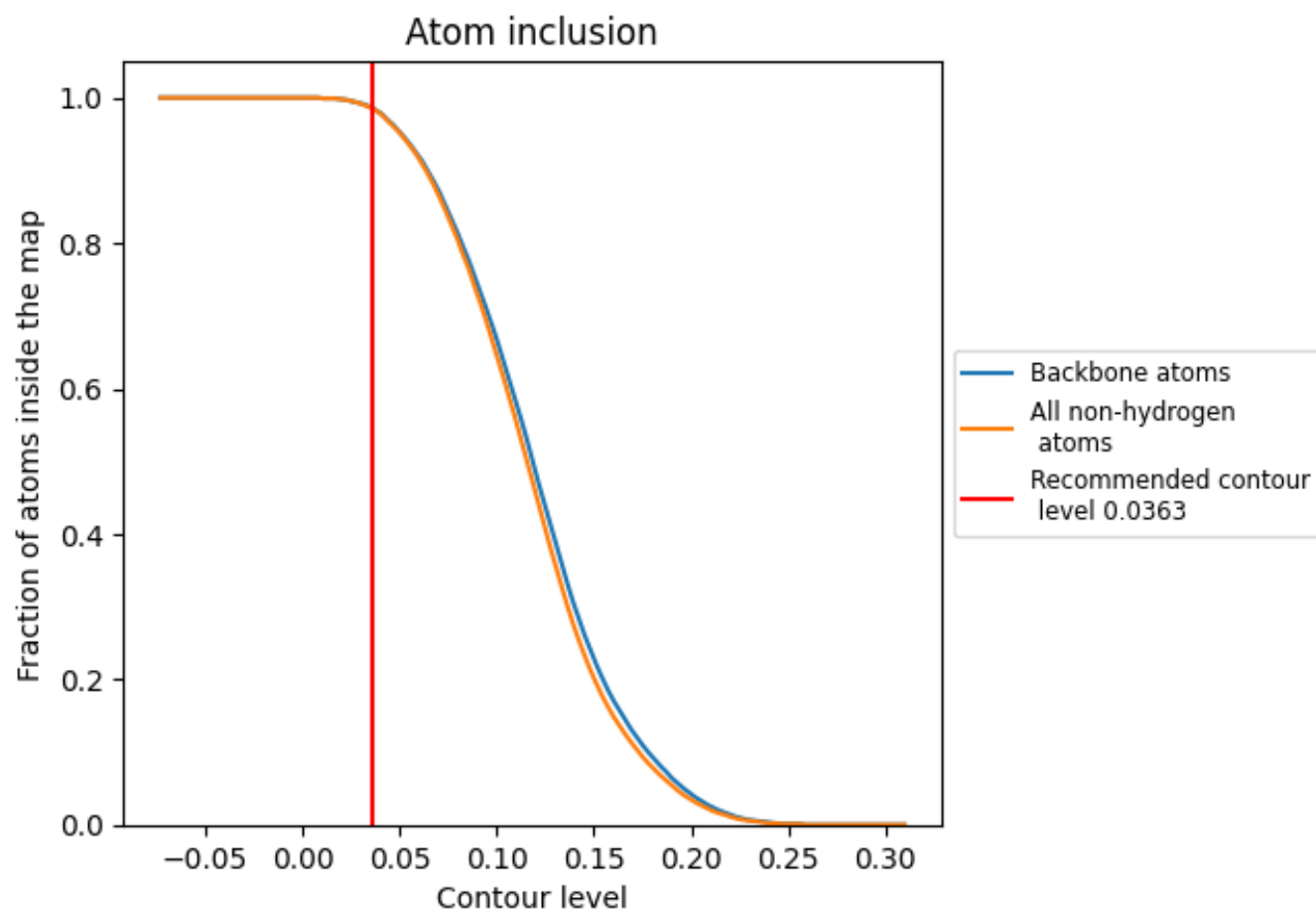
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0363).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 99% of all backbone atoms, 98% 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 (0.0363) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9850	 0.1810
A	 0.9980	 0.1670
B	 0.9990	 0.2170
C	 0.9980	 0.2310
D	 1.0000	 0.2400
E	 1.0000	 0.2550
F	 1.0000	 0.2570
G	 1.0000	 0.2510
H	 1.0000	 0.2560
I	 1.0000	 0.2520
J	 0.9870	 0.2070
K	 1.0000	 0.2300
L	 0.9980	 0.2100
M	 0.9880	 0.1210
N	 0.9530	 0.0820
O	 0.9900	 0.2590
P	 1.0000	 0.2590
Q	 0.7710	 0.0330
R	 0.6130	 0.1020
S	 0.7620	 0.1030
T	 0.9110	 0.2020
U	 0.9850	 0.1790
V	 0.9920	 0.1510
W	 1.0000	 0.2040
X	 0.9950	 0.1320
Y	 0.9740	 0.1970
Z	 1.0000	 0.2150
a	 0.9910	 0.0950
b	 0.9980	 0.1290
c	 1.0000	 0.1680
d	 1.0000	 0.1630
e	 1.0000	 0.1830
f	 1.0000	 0.2120
g	 1.0000	 0.2070
h	 1.0000	 0.2320



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Chain	Atom inclusion	Q-score
i	 1.0000	 0.1910
j	 1.0000	 0.1530
k	 0.9970	 0.0910
l	 0.9990	 0.0750
m	 0.9870	 0.0420
n	 0.8470	 0.0060
p	 0.9680	 0.0310
r	 0.7600	 0.0880
s	 0.7990	 0.0730
t	 0.9670	 0.1490
u	 0.9300	 0.1730
v	 0.9950	 0.2670
w	 1.0000	 0.0810
x	 1.0000	 0.0940