



Full wwPDB EM Validation Report ⓘ

Apr 22, 2024 – 10:50 AM EDT

PDB ID : 8U84
EMDB ID : EMD-42008
Title : KCTD5/Cullin3/Gbeta1gamma2 Complex: State D From Composite RE-
LION Multi-body Refinement Map
Authors : Kuntz, D.A.; Nguyen, D.M.; Narayanan, N.; Prive, G.G.
Deposited on : 2023-09-15
Resolution : 3.88 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

EMDB validation analysis : 0.0.1.dev92
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36.2

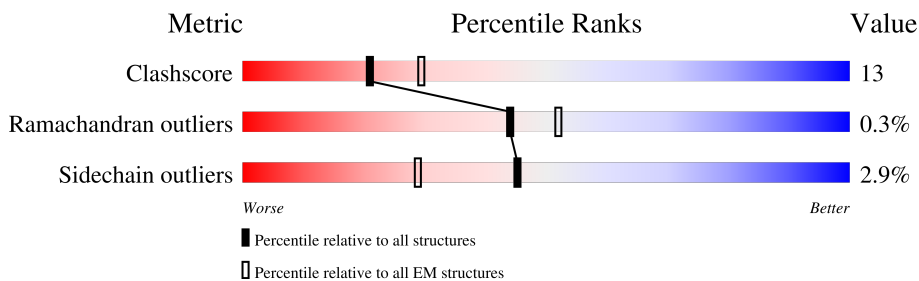
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.88 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	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. 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	K1	234	
1	K2	234	
1	K3	234	
1	K4	234	
1	K5	234	
2	C1	381	
2	C2	381	
2	C3	381	

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Mol	Chain	Length	Quality of chain
2	C4	381	<p>38% 63% 27% 6%</p>
2	C5	381	<p>17% 62% 30% 6%</p>
3	B1	340	<p>73% 26%</p>
3	B2	340	<p>70% 29% 6%</p>
3	B3	340	<p>71% 28% 6%</p>
3	B4	340	<p>72% 26% 6%</p>
3	B5	340	<p>77% 22% 6%</p>
4	G1	71	<p>70% 18% 11%</p>
4	G2	71	<p>70% 18% 11%</p>
4	G3	71	<p>61% 28% 11%</p>
4	G4	71	<p>72% 15% 11%</p>
4	G5	71	<p>63% 24% 11%</p>

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 37885 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 BTB/POZ domain-containing protein KCTD5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	K1	194	1558	979	265	308	6	0	0
1	K2	194	1558	979	265	308	6	0	0
1	K3	194	1558	979	265	308	6	0	0
1	K4	194	1558	979	265	308	6	0	0
1	K5	194	1558	979	265	308	6	0	0

- Molecule 2 is a protein called Cullin-3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	C1	358	2932	1844	509	555	24	0	0
2	C2	358	2932	1844	509	555	24	0	0
2	C3	358	2932	1844	509	555	24	0	0
2	C4	358	2932	1844	509	555	24	0	0
2	C5	358	2932	1844	509	555	24	0	0

- Molecule 3 is a protein called Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	B1	339	2607	1607	468	511	21	0	0
3	B2	339	2607	1607	468	511	21	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
3	B3	339	Total	C	N	O	S	0	0
			2607	1607	468	511	21		
3	B4	339	Total	C	N	O	S	0	0
			2607	1607	468	511	21		
3	B5	339	Total	C	N	O	S	0	0
			2607	1607	468	511	21		

- Molecule 4 is a protein called Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-2.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	G1	63	Total	C	N	O	S	0	0
			480	297	85	94	4		
4	G2	63	Total	C	N	O	S	0	0
			480	297	85	94	4		
4	G3	63	Total	C	N	O	S	0	0
			480	297	85	94	4		
4	G4	63	Total	C	N	O	S	0	0
			480	297	85	94	4		
4	G5	63	Total	C	N	O	S	0	0
			480	297	85	94	4		

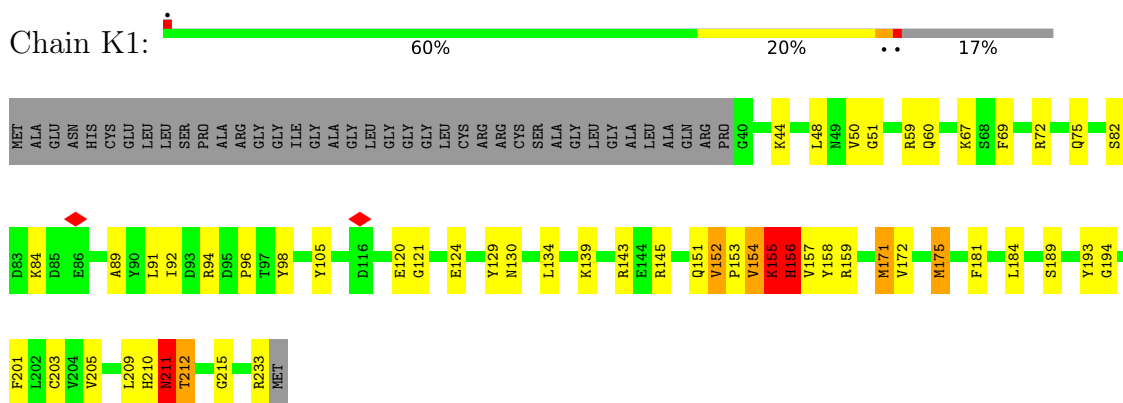
There are 5 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
G1	68	SER	CYS	engineered mutation	UNP P59768
G2	68	SER	CYS	engineered mutation	UNP P59768
G3	68	SER	CYS	engineered mutation	UNP P59768
G4	68	SER	CYS	engineered mutation	UNP P59768
G5	68	SER	CYS	engineered mutation	UNP P59768

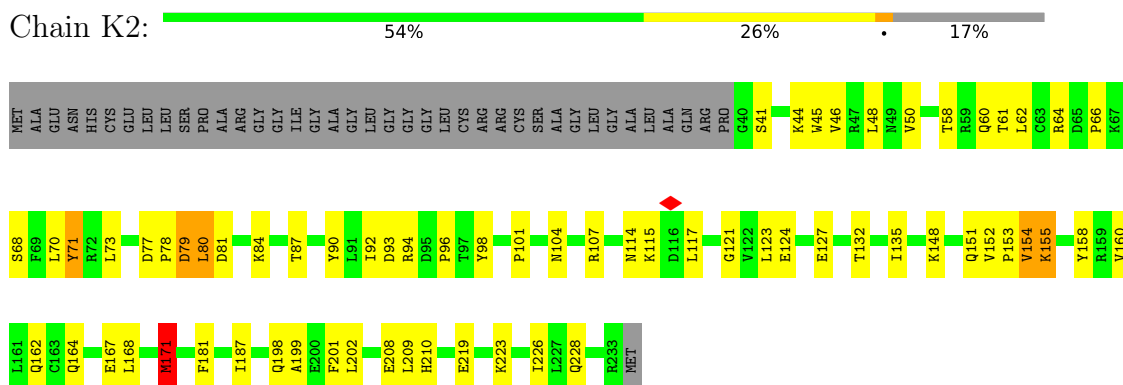
3 Residue-property plots [i](#)

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.

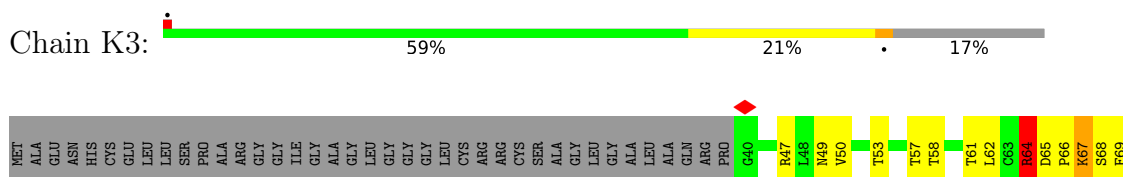
- Molecule 1: BTB/POZ domain-containing protein KCTD5

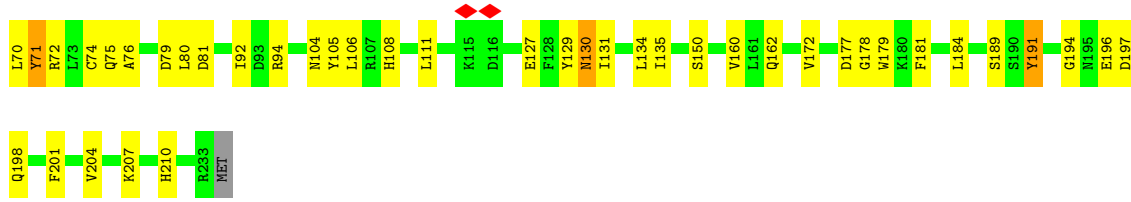


- Molecule 1: BTB/POZ domain-containing protein KCTD5

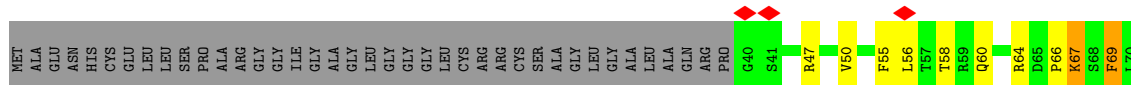


- Molecule 1: BTB/POZ domain-containing protein KCTD5

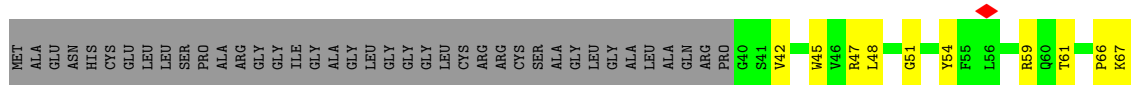




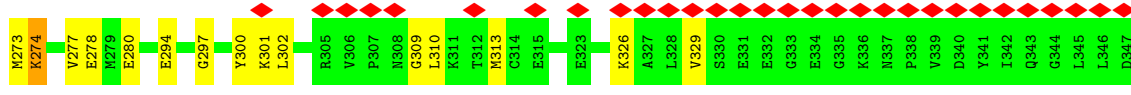
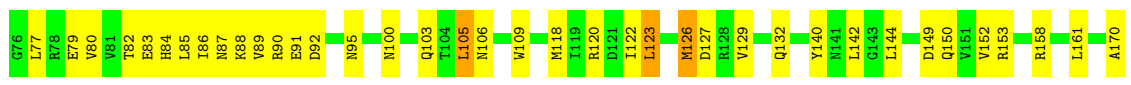
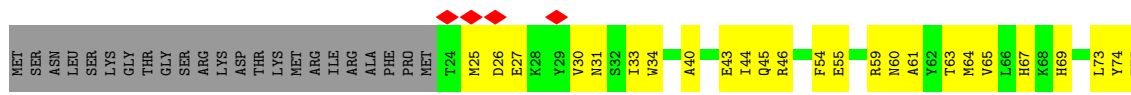
• Molecule 1: BTB/POZ domain-containing protein KCTD5

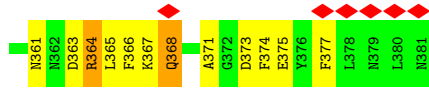


• Molecule 1: BTB/POZ domain-containing protein KCTD5

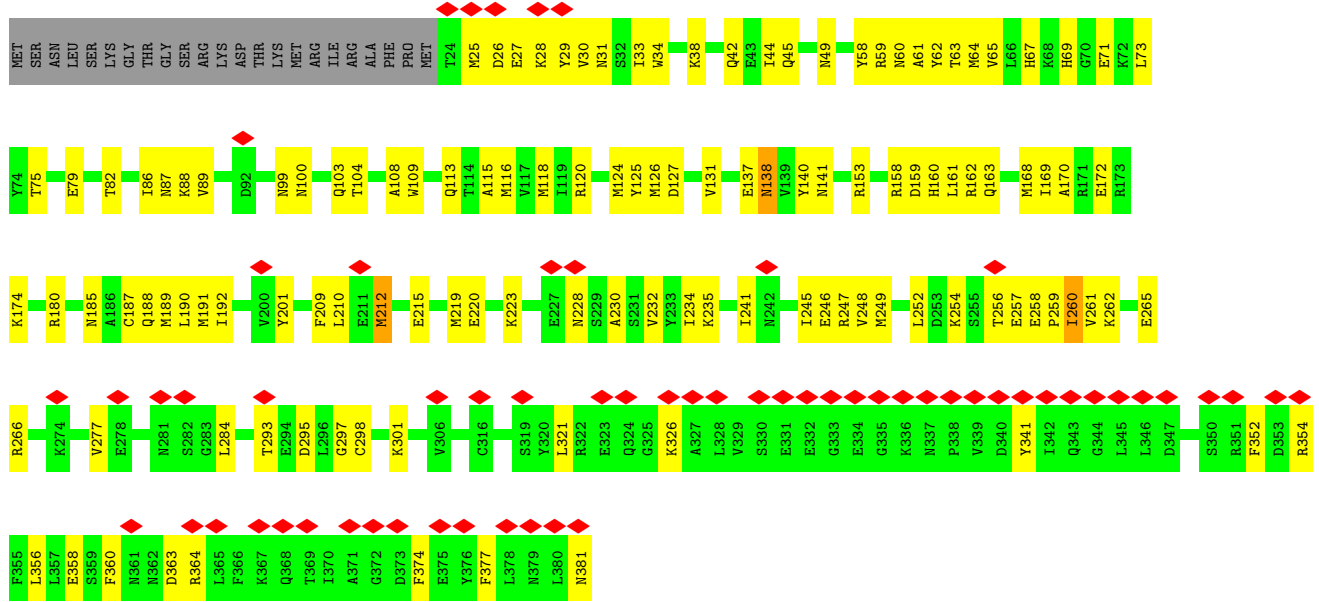


• Molecule 2: Cullin-3

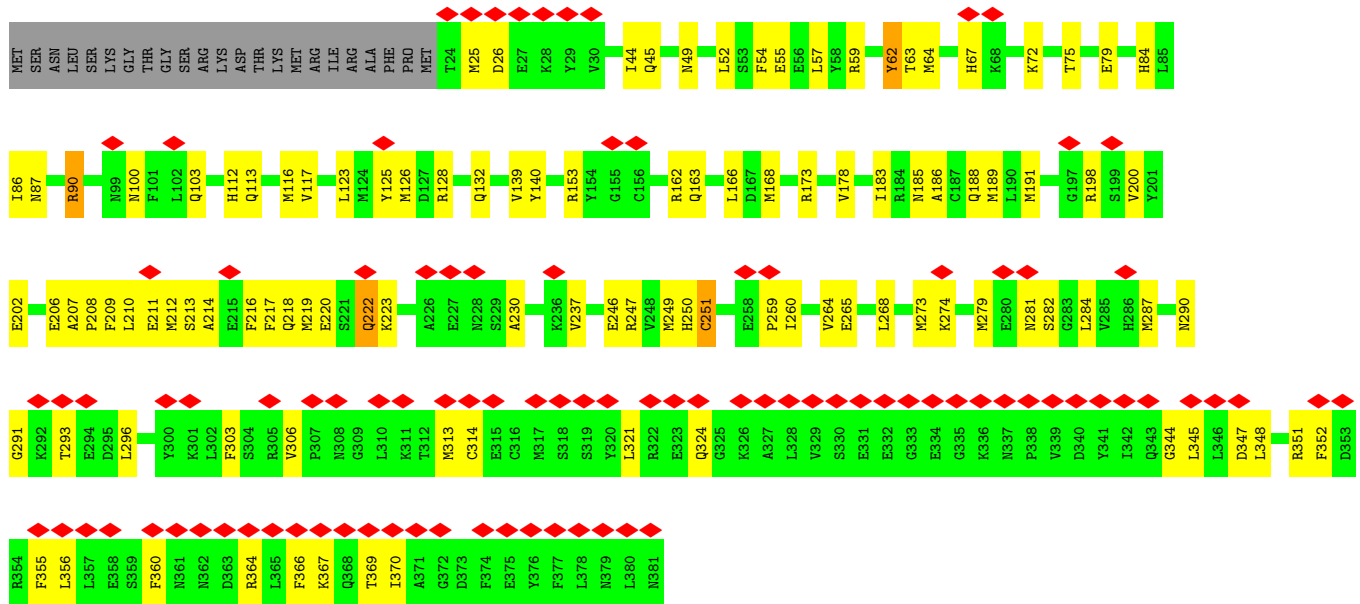




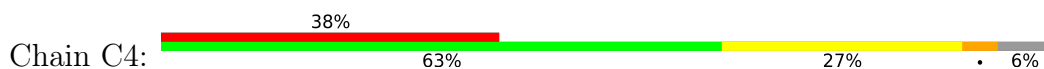
• Molecule 2: Cullin-3

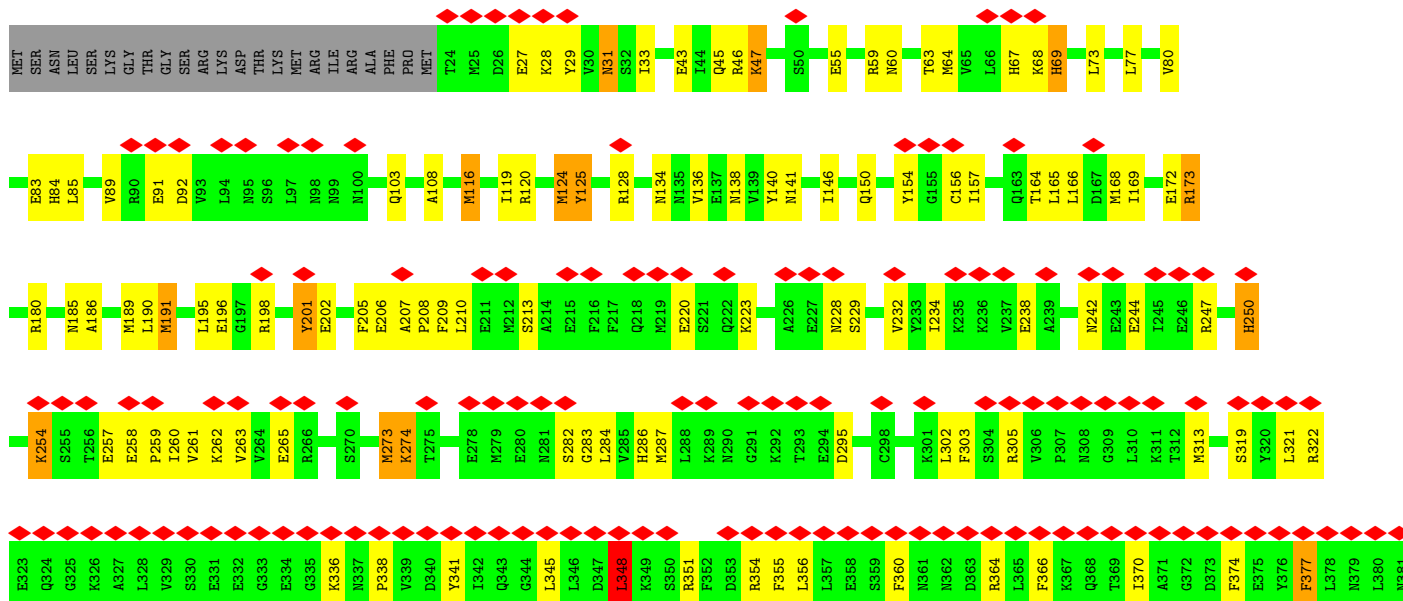


• Molecule 2: Cullin-3

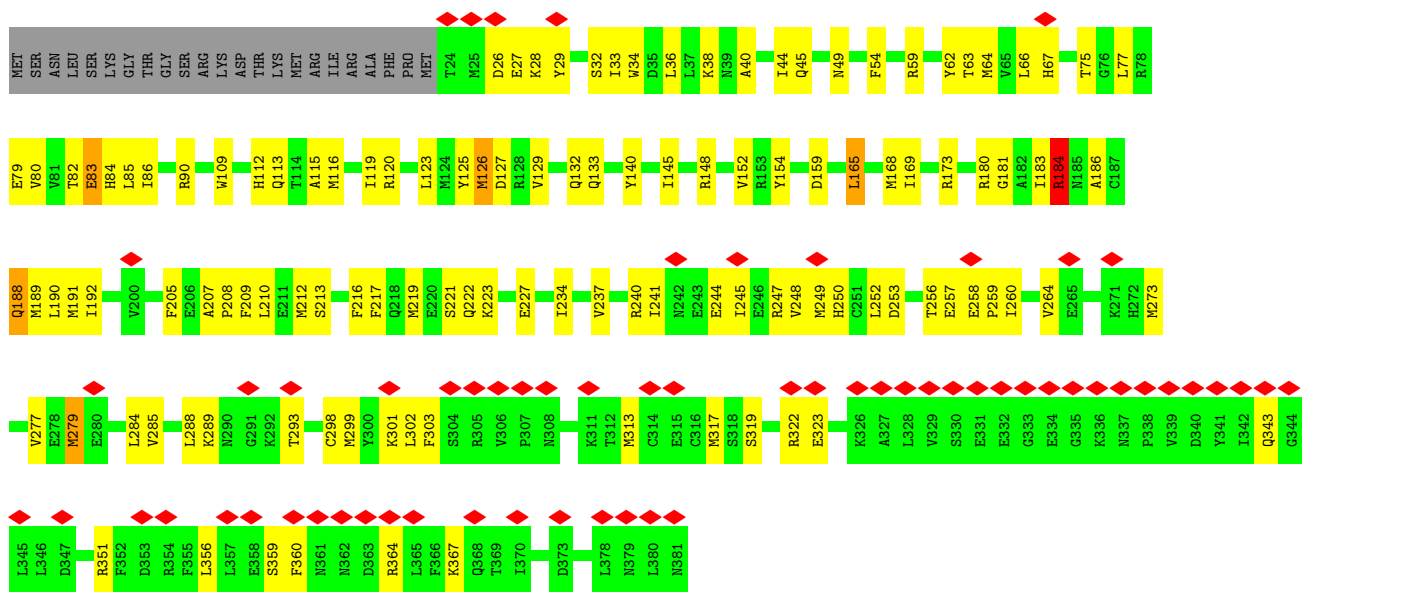


• Molecule 2: Cullin-3

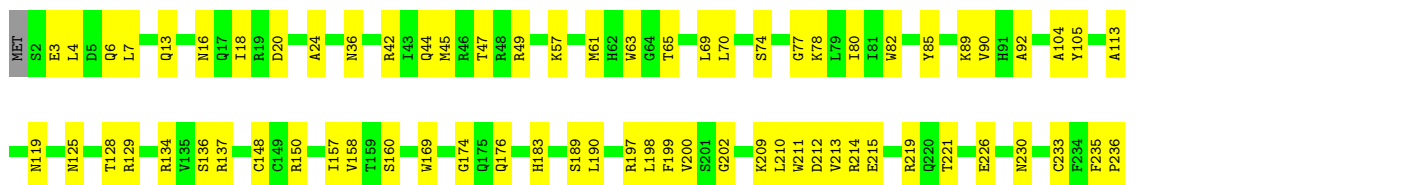
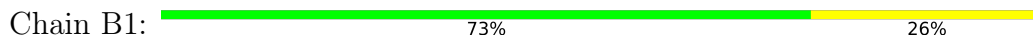




• Molecule 2: Cullin-3

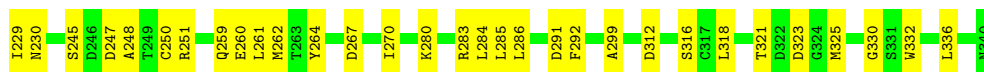
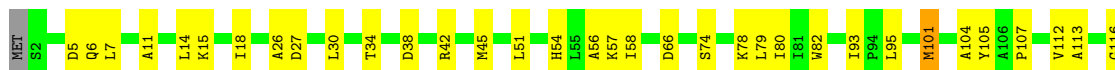


• Molecule 3: Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-1





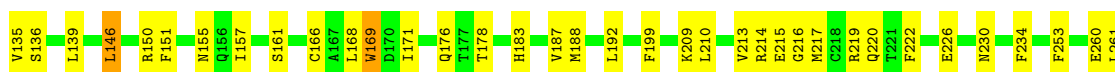
• Molecule 3: Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-1



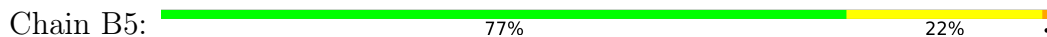
• Molecule 3: Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-1

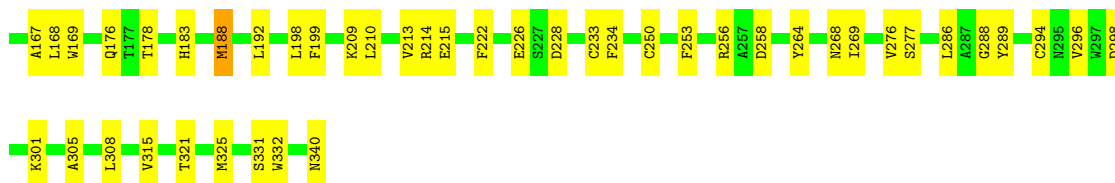


• Molecule 3: Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-1

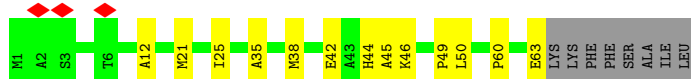


• Molecule 3: Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-1





• Molecule 4: Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-2



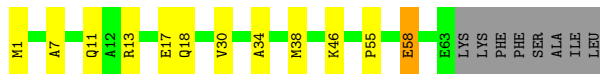
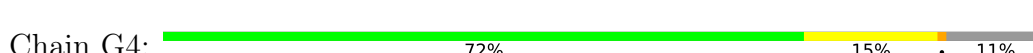
• Molecule 4: Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-2



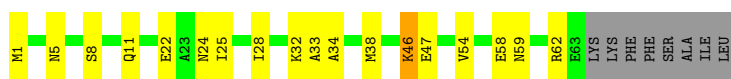
• Molecule 4: Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-2



• Molecule 4: Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-2



• Molecule 4: Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-2



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	48895	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	49.35	Depositor
Minimum defocus (nm)	250	Depositor
Maximum defocus (nm)	1500	Depositor
Magnification	Not provided	
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	24.246	Depositor
Minimum map value	-6.303	Depositor
Average map value	0.002	Depositor
Map value standard deviation	1.100	Depositor
Recommended contour level	3.5	Depositor
Map size (\AA)	333.72, 333.72, 333.72	wwPDB
Map dimensions	324, 324, 324	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.03, 1.03, 1.03	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	K1	0.29	0/1587	0.57	0/2144
1	K2	0.29	0/1587	0.59	1/2144 (0.0%)
1	K3	0.28	0/1587	0.56	0/2144
1	K4	0.27	0/1587	0.55	0/2144
1	K5	0.28	0/1587	0.57	0/2144
2	C1	0.29	0/2976	0.58	1/3996 (0.0%)
2	C2	0.27	0/2976	0.56	0/3996
2	C3	0.26	0/2976	0.56	0/3996
2	C4	0.27	0/2976	0.58	1/3996 (0.0%)
2	C5	0.28	0/2976	0.57	0/3996
3	B1	0.26	0/2654	0.56	0/3597
3	B2	0.26	0/2654	0.57	0/3597
3	B3	0.26	0/2654	0.57	0/3597
3	B4	0.27	0/2654	0.58	1/3597 (0.0%)
3	B5	0.27	0/2654	0.56	0/3597
4	G1	0.27	0/486	0.55	0/656
4	G2	0.26	0/486	0.52	0/656
4	G3	0.27	0/486	0.55	0/656
4	G4	0.26	0/486	0.53	0/656
4	G5	0.26	0/486	0.58	0/656
All	All	0.27	0/38515	0.57	4/51965 (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
1	K3	0	1
2	C5	0	1
All	All	0	2

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B4	38	ASP	CB-CG-OD1	6.64	124.28	118.30
1	K2	171	MET	CA-CB-CG	6.09	123.65	113.30
2	C4	348	LEU	CA-CB-CG	5.92	128.91	115.30
2	C1	123	LEU	CA-CB-CG	5.72	128.45	115.30

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	C5	184	ARG	Sidechain
1	K3	64	ARG	Sidechain

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	K1	1558	0	1531	44	0
1	K2	1558	0	1531	55	0
1	K3	1558	0	1531	52	0
1	K4	1558	0	1531	33	0
1	K5	1558	0	1531	53	0
2	C1	2932	0	2918	105	0
2	C2	2932	0	2918	91	0
2	C3	2932	0	2918	78	0
2	C4	2932	0	2918	87	0
2	C5	2932	0	2918	94	0
3	B1	2607	0	2510	64	0
3	B2	2607	0	2510	67	0
3	B3	2607	0	2510	70	0
3	B4	2607	0	2510	65	0
3	B5	2607	0	2510	50	0
4	G1	480	0	488	10	0
4	G2	480	0	488	12	0
4	G3	480	0	488	20	0
4	G4	480	0	488	8	0
4	G5	480	0	488	11	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	37885	0	37235	1001	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 13.

All (1001) 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:K3:66:PRO:HA	1:K3:71:TYR:HD2	1.35	0.89
1:K5:105:TYR:HB2	1:K5:111:LEU:HB3	1.51	0.89
3:B1:89:LYS:HD3	3:B1:92:ALA:HB2	1.55	0.88
1:K2:151:GLN:HG2	1:K2:154:VAL:HA	1.57	0.87
1:K3:66:PRO:HA	1:K3:71:TYR:CD2	2.10	0.86
3:B3:335:PHE:HB2	3:B3:337:LYS:HZ1	1.42	0.82
1:K2:162:GLN:HE22	1:K2:199:ALA:HA	1.44	0.81
1:K3:135:ILE:HG21	2:C3:128:ARG:HH12	1.44	0.81
4:G3:14:LYS:HZ1	4:G3:18:GLN:HB2	1.46	0.81
3:B1:104:ALA:HB3	3:B1:113:ALA:HB3	1.62	0.80
2:C5:285:VAL:HA	2:C5:288:LEU:HD12	1.63	0.79
1:K4:160:VAL:HG22	1:K4:204:VAL:HG22	1.63	0.79
3:B3:43:ILE:HD11	3:B3:305:ALA:HB1	1.65	0.79
2:C2:64:MET:HG2	2:C2:73:LEU:HD13	1.66	0.78
2:C5:184:ARG:CZ	2:C5:184:ARG:HA	2.14	0.78
3:B3:65:THR:HG21	3:B3:107:PRO:HA	1.65	0.78
2:C4:238:GLU:O	2:C4:242:ASN:ND2	2.16	0.77
1:K2:151:GLN:NE2	1:K2:209:LEU:O	2.18	0.77
2:C2:172:GLU:HB3	2:C2:247:ARG:HH12	1.49	0.77
4:G1:42:GLU:O	4:G1:46:LYS:NZ	2.16	0.76
3:B3:104:ALA:HB3	3:B3:113:ALA:HB3	1.66	0.76
2:C2:99:ASN:ND2	2:C2:103:GLN:OE1	2.18	0.76
2:C1:178:VAL:H	2:C1:180:ARG:HH12	1.33	0.75
1:K1:67:LYS:NZ	1:K1:130:ASN:O	2.20	0.75
2:C4:202:GLU:HA	2:C4:206:GLU:HB3	1.67	0.75
3:B4:29:THR:HB	3:B4:32:GLN:HE22	1.51	0.74
3:B1:80:ILE:HG23	3:B1:89:LYS:HG3	1.68	0.74
1:K1:152:VAL:HB	1:K2:148:LYS:HG3	1.71	0.73
2:C1:27:GLU:O	2:C1:31:ASN:ND2	2.22	0.73
2:C5:298:CYS:HA	2:C5:301:LYS:HE2	1.71	0.73
2:C2:116:MET:HG3	2:C2:120:ARG:HH21	1.54	0.72
2:C5:210:LEU:HD21	2:C5:259:PRO:HB2	1.71	0.72
2:C3:321:LEU:HD12	2:C3:348:LEU:HD21	1.72	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C3:116:MET:HE1	2:C3:139:VAL:HG22	1.71	0.71
3:B4:79:LEU:HG	3:B4:95:LEU:HD11	1.72	0.71
1:K2:151:GLN:CG	1:K2:154:VAL:HA	2.21	0.71
1:K4:160:VAL:HG23	1:K5:172:VAL:HG11	1.72	0.70
1:K5:171:MET:O	1:K5:175:MET:HB3	1.90	0.70
1:K1:184:LEU:HD11	1:K1:201:PHE:HB3	1.73	0.70
3:B2:112:VAL:HG12	3:B2:124:TYR:HB2	1.73	0.70
2:C1:188:GLN:HA	2:C1:191:MET:HG2	1.72	0.70
2:C2:34:TRP:CZ3	2:C2:73:LEU:HD12	2.27	0.70
1:K2:41:SER:HA	1:K2:46:VAL:HG12	1.73	0.70
3:B2:104:ALA:HB3	3:B2:113:ALA:HB3	1.74	0.70
2:C2:298:CYS:HA	2:C2:301:LYS:HD3	1.74	0.69
1:K3:69:PHE:HB3	1:K3:129:TYR:HD1	1.57	0.69
2:C3:153:ARG:HH22	2:C3:200:VAL:HA	1.57	0.69
1:K4:64:ARG:NH1	1:K4:105:TYR:O	2.26	0.69
2:C5:184:ARG:NH2	2:C5:253:ASP:OD1	2.24	0.69
2:C3:112:HIS:ND1	2:C3:113:GLN:OE1	2.26	0.69
3:B2:101:MET:SD	3:B2:101:MET:N	2.66	0.69
3:B3:101:MET:SD	3:B3:101:MET:N	2.65	0.69
1:K3:64:ARG:HH11	1:K3:106:LEU:HA	1.58	0.68
2:C4:60:ASN:O	2:C4:64:MET:HG2	1.93	0.68
2:C4:319:SER:HA	2:C4:322:ARG:HD2	1.76	0.68
4:G3:11:GLN:HA	4:G3:14:LYS:HB3	1.75	0.68
2:C5:180:ARG:HA	2:C5:183:ILE:HD12	1.75	0.68
2:C1:248:VAL:HA	2:C1:252:LEU:HB2	1.76	0.68
1:K2:78:PRO:HB2	2:C2:49:ASN:ND2	2.07	0.67
3:B2:58:ILE:HD13	3:B2:336:LEU:HG	1.75	0.67
2:C1:371:ALA:O	2:C1:375:GLU:HG2	1.93	0.67
2:C3:250:HIS:HD2	2:C3:251:CYS:HB2	1.58	0.67
2:C1:364:ARG:HH21	2:C1:365:LEU:HD12	1.59	0.67
4:G2:59:ASN:HD21	4:G2:62:ARG:HE	1.42	0.67
1:K1:155:LYS:HG2	1:K1:211:ASN:HB2	1.77	0.66
3:B2:11:ALA:O	3:B2:15:LYS:HG3	1.96	0.66
2:C1:84:HIS:HE1	2:C1:88:LYS:HD3	1.59	0.66
1:K2:73:LEU:HD22	1:K2:80:LEU:HD11	1.77	0.66
3:B1:215:GLU:OE2	3:B1:215:GLU:N	2.28	0.66
1:K2:151:GLN:HE22	1:K2:208:GLU:HB2	1.60	0.66
2:C2:258:GLU:HB2	2:C2:259:PRO:HD3	1.76	0.66
2:C4:172:GLU:HG3	2:C4:247:ARG:HE	1.61	0.66
2:C4:254:LYS:HA	2:C4:254:LYS:HE2	1.78	0.66
1:K1:120:GLU:OE2	1:K1:145:ARG:NH2	2.29	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C4:234:ILE:HG12	2:C4:302:LEU:HD13	1.77	0.65
3:B1:189:SER:HB2	3:B1:202:GLY:H	1.61	0.65
4:G5:8:SER:HB2	4:G5:11:GLN:HE21	1.61	0.65
2:C1:83:GLU:O	2:C1:87:ASN:ND2	2.29	0.65
2:C2:89:VAL:HG22	2:C2:108:ALA:HB1	1.78	0.65
3:B4:44:GLN:O	3:B4:46:ARG:NH1	2.30	0.65
1:K1:84:LYS:H	1:K1:89:ALA:H	1.45	0.65
2:C1:44:ILE:HD11	2:C1:118:MET:HB3	1.79	0.65
2:C4:321:LEU:HD22	2:C4:370:ILE:HD12	1.79	0.65
2:C2:25:MET:HE2	2:C2:27:GLU:HB3	1.79	0.65
2:C2:27:GLU:HA	2:C2:30:VAL:HB	1.78	0.65
2:C4:173:ARG:HH22	2:C4:209:PHE:HE1	1.45	0.65
2:C5:181:GLY:HA2	2:C5:184:ARG:HG2	1.78	0.65
3:B2:51:LEU:HB2	3:B2:336:LEU:HB2	1.79	0.64
2:C4:287:MET:SD	2:C4:295:ASP:HB3	2.36	0.64
2:C5:45:GLN:HB3	2:C5:84:HIS:CE1	2.32	0.64
2:C5:293:THR:OG1	2:C5:359:SER:OG	2.13	0.64
2:C1:25:MET:SD	2:C1:26:ASP:N	2.70	0.64
4:G4:11:GLN:OE1	4:G4:11:GLN:N	2.24	0.64
3:B4:253:PHE:HA	3:B4:260:GLU:HA	1.80	0.64
2:C1:300:TYR:OH	2:C1:363:ASP:OD2	2.15	0.64
2:C3:173:ARG:HH12	2:C3:213:SER:HA	1.63	0.64
2:C5:234:ILE:HG23	2:C5:302:LEU:HD22	1.79	0.63
3:B5:269:ILE:HG12	3:B5:289:TYR:CE1	2.33	0.63
2:C3:324:GLN:OE1	2:C3:348:LEU:HD22	1.98	0.63
3:B2:286:LEU:HG	3:B2:318:LEU:HD13	1.80	0.63
1:K2:152:VAL:HB	1:K2:153:PRO:HD3	1.80	0.63
1:K4:97:THR:HG23	1:K4:98:TYR:HD2	1.63	0.62
2:C1:45:GLN:HB3	2:C1:84:HIS:CD2	2.34	0.62
2:C5:221:SER:OG	2:C5:222:GLN:OE1	2.14	0.62
2:C1:220:GLU:HA	2:C1:223:LYS:HG2	1.81	0.62
2:C4:173:ARG:NH1	2:C4:244:GLU:OE1	2.32	0.62
1:K1:189:SER:H	1:K1:194:GLY:HA2	1.64	0.62
3:B5:188:MET:SD	3:B5:188:MET:N	2.72	0.62
2:C4:259:PRO:HA	2:C4:262:LYS:HG2	1.82	0.62
2:C3:246:GLU:HG2	2:C3:250:HIS:CE1	2.35	0.62
3:B2:144:GLY:HA3	3:B2:162:GLY:HA3	1.82	0.62
2:C5:184:ARG:HD3	2:C5:250:HIS:O	2.00	0.62
2:C4:103:GLN:N	2:C4:103:GLN:OE1	2.33	0.62
1:K4:94:ARG:NH2	1:K4:124:GLU:OE1	2.32	0.61
3:B1:230:ASN:ND2	3:B1:273:ILE:O	2.30	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C1:364:ARG:NH2	2:C1:368:GLN:OE1	2.33	0.61
2:C2:241:ILE:O	2:C2:245:ILE:HG12	2.01	0.61
1:K5:127:GLU:HA	1:K5:135:ILE:HD11	1.82	0.61
2:C4:220:GLU:HA	2:C4:223:LYS:HE3	1.82	0.61
3:B3:76:ASP:OD2	3:B3:78:LYS:NZ	2.34	0.61
3:B4:29:THR:O	3:B4:32:GLN:NE2	2.33	0.61
4:G1:45:ALA:HB3	4:G1:46:LYS:HZ2	1.62	0.61
2:C1:91:GLU:O	2:C1:95:ASN:ND2	2.34	0.61
1:K2:153:PRO:HD2	1:K2:210:HIS:CD2	2.36	0.61
2:C1:221:SER:OG	2:C1:222:GLN:NE2	2.34	0.61
2:C4:250:HIS:C	2:C4:250:HIS:HD1	2.05	0.61
3:B4:79:LEU:HD11	3:B4:114:CYS:HB3	1.82	0.61
3:B5:57:LYS:HB3	3:B5:332:TRP:CD1	2.35	0.60
3:B5:65:THR:HG21	3:B5:107:PRO:HA	1.81	0.60
2:C2:160:HIS:O	2:C2:163:GLN:NE2	2.34	0.60
3:B2:5:ASP:OD1	3:B2:6:GLN:N	2.35	0.60
2:C5:40:ALA:O	2:C5:44:ILE:HG12	2.01	0.60
3:B2:259:GLN:NE2	4:G2:30:VAL:HG22	2.16	0.60
2:C2:169:ILE:HG12	2:C2:209:PHE:HE1	1.66	0.60
2:C2:249:MET:N	2:C2:249:MET:HE2	2.16	0.60
2:C5:145:ILE:HD13	4:G5:1:MET:H2	1.66	0.60
2:C3:250:HIS:CD2	2:C3:251:CYS:HB2	2.35	0.60
2:C4:164:THR:O	2:C4:168:MET:HG3	2.00	0.60
3:B3:30:LEU:HB3	4:G3:38:MET:HE1	1.83	0.60
2:C1:109:TRP:CD2	2:C1:189:MET:HG3	2.37	0.60
2:C4:338:PRO:HA	2:C4:341:TYR:CE2	2.36	0.60
4:G5:22:GLU:HA	4:G5:25:ILE:HD12	1.84	0.60
1:K4:94:ARG:HD2	1:K5:108:HIS:NE2	2.16	0.60
3:B3:250:CYS:HB3	3:B3:264:TYR:HB2	1.82	0.60
4:G3:25:ILE:O	4:G3:27:ARG:NH1	2.34	0.60
2:C1:25:MET:SD	2:C1:27:GLU:N	2.73	0.60
3:B4:43:ILE:HD11	3:B4:284:LEU:HD21	1.83	0.60
3:B4:199:PHE:HD2	3:B4:213:VAL:HG12	1.67	0.60
1:K5:66:PRO:C	1:K5:68:SER:H	2.05	0.59
2:C2:59:ARG:O	2:C2:63:THR:HG22	2.02	0.59
2:C3:265:GLU:HB3	2:C3:306:VAL:HG12	1.84	0.59
3:B2:79:LEU:HB2	3:B2:93:ILE:HB	1.84	0.59
3:B2:259:GLN:HE22	3:B2:261:LEU:HD23	1.67	0.59
2:C1:92:ASP:HA	2:C1:95:ASN:HD21	1.67	0.59
2:C1:126:MET:SD	2:C1:127:ASP:N	2.76	0.59
2:C1:353:ASP:O	2:C1:357:LEU:HG	2.01	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B3:79:LEU:HG	3:B3:95:LEU:HD21	1.84	0.59
4:G3:34:ALA:O	4:G3:38:MET:HG3	2.01	0.59
1:K4:69:PHE:HZ	2:C4:55:GLU:HA	1.67	0.59
3:B2:321:THR:OG1	3:B2:323:ASP:OD1	2.19	0.59
1:K4:64:ARG:NE	2:C3:26:ASP:OD1	2.33	0.59
3:B5:176:GLN:CD	3:B5:176:GLN:H	2.06	0.59
4:G1:35:ALA:HA	4:G1:38:MET:HG3	1.84	0.59
2:C5:184:ARG:HA	2:C5:184:ARG:NH1	2.18	0.59
2:C2:190:LEU:HG	2:C2:201:TYR:HD2	1.65	0.59
2:C4:59:ARG:O	2:C4:63:THR:HG23	2.03	0.59
3:B4:114:CYS:SG	3:B4:122:SER:HB2	2.43	0.58
2:C5:29:TYR:O	2:C5:33:ILE:HG22	2.03	0.58
2:C2:58:TYR:O	2:C2:62:TYR:HD2	1.86	0.58
2:C1:33:ILE:HD11	2:C1:60:ASN:HA	1.84	0.58
2:C4:154:TYR:HE1	2:C4:156:CYS:HB3	1.69	0.58
1:K3:71:TYR:O	1:K3:74:CYS:HB2	2.02	0.58
1:K3:75:GLN:HG2	1:K3:76:ALA:H	1.69	0.58
3:B2:250:CYS:HB3	3:B2:264:TYR:HB2	1.85	0.58
3:B3:124:TYR:HD2	3:B3:135:VAL:HA	1.68	0.58
1:K3:69:PHE:HB3	1:K3:129:TYR:CD1	2.39	0.58
1:K3:104:ASN:O	1:K3:108:HIS:ND1	2.37	0.58
2:C3:52:LEU:HB2	2:C3:57:LEU:HD21	1.85	0.58
4:G3:34:ALA:HA	4:G3:37:LEU:HD12	1.85	0.58
2:C1:363:ASP:O	2:C1:367:LYS:HG2	2.03	0.58
3:B4:146:LEU:HA	3:B4:161:SER:HA	1.86	0.58
2:C5:253:ASP:HB2	2:C5:256:THR:HG23	1.85	0.58
1:K2:48:LEU:HD11	1:K2:92:ILE:HD12	1.86	0.58
3:B5:169:TRP:HA	3:B5:176:GLN:HA	1.85	0.58
4:G3:14:LYS:NZ	4:G3:18:GLN:HB2	2.17	0.58
2:C4:80:VAL:O	2:C4:83:GLU:HG2	2.04	0.58
3:B5:153:ASP:OD2	3:B5:155:ASN:N	2.37	0.58
1:K1:181:PHE:HD1	1:K1:203:CYS:HG	1.52	0.57
3:B5:198:LEU:HD13	3:B5:210:LEU:HD21	1.85	0.57
1:K2:219:GLU:OE2	3:B3:129:ARG:NH2	2.37	0.57
1:K3:58:THR:O	1:K3:61:THR:OG1	2.22	0.57
1:K5:143:ARG:HD2	1:K5:214:TYR:HA	1.86	0.57
1:K2:167:GLU:N	1:K2:167:GLU:OE1	2.37	0.57
2:C1:239:ALA:HA	2:C1:242:ASN:HD22	1.70	0.57
2:C2:188:GLN:O	2:C2:192:ILE:HG22	2.04	0.57
3:B3:297:TRP:HA	3:B3:305:ALA:H	1.68	0.57
2:C2:260:ILE:HG13	2:C2:261:VAL:N	2.18	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C4:29:TYR:O	2:C4:33:ILE:HG22	2.04	0.57
3:B1:119:ASN:HD21	3:B2:129:ARG:HH11	1.51	0.57
3:B4:57:LYS:HD2	3:B4:332:TRP:CG	2.39	0.57
2:C3:123:LEU:HB3	2:C3:126:MET:HE3	1.87	0.57
2:C4:228:ASN:ND2	2:C4:232:VAL:HG13	2.20	0.57
2:C3:219:MET:HA	2:C3:222:GLN:HG3	1.86	0.57
3:B4:226:GLU:N	3:B4:226:GLU:OE1	2.38	0.56
2:C1:86:ILE:HG23	2:C1:90:ARG:HH21	1.67	0.56
2:C5:79:GLU:O	2:C5:83:GLU:HG3	2.05	0.56
4:G5:46:LYS:HD2	4:G5:47:GLU:N	2.20	0.56
3:B4:14:LEU:O	3:B4:18:ILE:HG12	2.06	0.56
2:C1:129:VAL:O	2:C1:132:GLN:NE2	2.38	0.56
2:C4:45:GLN:HB2	2:C4:84:HIS:CE1	2.41	0.56
3:B2:228:ASP:N	3:B2:228:ASP:OD1	2.37	0.56
2:C3:59:ARG:O	2:C3:63:THR:HG22	2.06	0.56
2:C4:185:ASN:O	2:C4:189:MET:HG3	2.05	0.56
2:C4:210:LEU:HD22	2:C4:263:VAL:HG11	1.88	0.56
3:B1:198:LEU:HD13	3:B1:210:LEU:HD11	1.86	0.56
2:C1:192:ILE:HG13	2:C1:193:LEU:N	2.20	0.56
3:B2:26:ALA:HA	4:G2:30:VAL:HG21	1.87	0.56
4:G5:54:VAL:HB	4:G5:58:GLU:OE1	2.06	0.56
4:G5:59:ASN:HD21	4:G5:62:ARG:HD2	1.71	0.56
2:C2:262:LYS:HA	2:C2:265:GLU:HG3	1.87	0.56
2:C5:66:LEU:HD21	2:C5:125:TYR:HE2	1.70	0.56
2:C5:209:PHE:HA	2:C5:212:MET:HG2	1.87	0.56
3:B5:226:GLU:OE2	3:B5:226:GLU:N	2.38	0.56
3:B1:160:SER:H	3:B1:190:LEU:HD12	1.71	0.55
3:B1:176:GLN:OE1	3:B1:176:GLN:N	2.35	0.55
3:B1:212:ASP:OD2	3:B1:219:ARG:NH2	2.38	0.55
1:K4:211:ASN:ND2	3:B4:96:ARG:O	2.37	0.55
2:C2:248:VAL:HG21	2:C2:260:ILE:HD13	1.88	0.55
1:K5:179:TRP:CE2	1:K5:207:LYS:HD2	2.41	0.55
2:C1:356:LEU:O	2:C1:361:ASN:N	2.39	0.55
2:C2:210:LEU:HD21	2:C2:259:PRO:HB2	1.88	0.55
2:C5:33:ILE:HA	2:C5:36:LEU:HD12	1.89	0.55
3:B2:74:SER:HB2	3:B2:78:LYS:HG2	1.87	0.55
3:B3:325:MET:O	3:B3:340:ASN:ND2	2.38	0.55
1:K2:158:TYR:CE2	1:K3:181:PHE:HB3	2.42	0.55
3:B1:57:LYS:HB3	3:B1:332:TRP:CD1	2.41	0.55
2:C1:238:GLU:O	2:C1:242:ASN:ND2	2.40	0.55
2:C3:281:ASN:OD1	2:C3:282:SER:N	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B3:16:ASN:HA	3:B3:19:ARG:HE	1.70	0.55
1:K2:132:THR:HA	1:K2:135:ILE:HD12	1.88	0.55
2:C1:152:VAL:HG21	2:C1:193:LEU:HD13	1.89	0.55
2:C1:234:ILE:HG23	2:C1:302:LEU:HD22	1.88	0.55
2:C3:185:ASN:HA	2:C3:188:GLN:HE21	1.71	0.55
3:B5:169:TRP:CE2	3:B5:176:GLN:HB3	2.42	0.55
1:K3:67:LYS:HB2	1:K3:130:ASN:O	2.06	0.55
1:K4:67:LYS:NZ	2:C3:25:MET:SD	2.80	0.55
1:K5:97:THR:HG23	1:K5:98:TYR:CD1	2.42	0.55
2:C4:73:LEU:O	2:C4:77:LEU:N	2.32	0.55
3:B2:204:CYS:HA	3:B2:228:ASP:HB3	1.88	0.55
3:B3:99:TRP:HD1	3:B4:131:GLY:HA3	1.72	0.55
1:K2:94:ARG:NH2	1:K2:124:GLU:OE2	2.40	0.55
2:C2:220:GLU:HA	2:C2:223:LYS:HZ2	1.72	0.55
2:C4:173:ARG:NH2	2:C4:213:SER:OG	2.30	0.55
3:B1:325:MET:HB3	4:G1:49:PRO:HD2	1.87	0.55
3:B2:280:LYS:HE2	3:B2:323:ASP:O	2.06	0.55
3:B5:104:ALA:HB3	3:B5:113:ALA:HB3	1.89	0.55
1:K2:228:GLN:HE21	3:B2:117:LEU:HD12	1.71	0.54
2:C2:61:ALA:O	2:C2:65:VAL:HG23	2.07	0.54
2:C3:63:THR:O	2:C3:67:HIS:HD2	1.90	0.54
3:B3:138:GLU:N	3:B3:138:GLU:OE1	2.40	0.54
3:B4:16:ASN:HA	3:B4:19:ARG:HE	1.72	0.54
2:C2:42:GLN:NE2	2:C2:45:GLN:OE1	2.39	0.54
1:K1:50:VAL:HA	1:K1:92:ILE:HG23	1.89	0.54
1:K2:107:ARG:HD3	2:C1:59:ARG:HH22	1.72	0.54
2:C1:67:HIS:HB2	2:C1:69:HIS:CE1	2.43	0.54
2:C1:77:LEU:HA	2:C1:80:VAL:HG12	1.89	0.54
1:K2:123:LEU:O	1:K2:127:GLU:HG2	2.07	0.54
2:C3:230:ALA:HB2	2:C3:279:MET:HG2	1.90	0.54
3:B2:101:MET:SD	3:B2:116:GLY:HA2	2.47	0.54
3:B3:20:ASP:O	3:B3:24:ALA:N	2.39	0.54
3:B2:42:ARG:HH22	3:B2:45:MET:HB3	1.73	0.54
4:G4:34:ALA:O	4:G4:38:MET:HG3	2.07	0.54
2:C1:34:TRP:HA	2:C1:64:MET:HE3	1.88	0.54
2:C1:230:ALA:O	2:C1:234:ILE:HG12	2.08	0.54
2:C4:125:TYR:HA	2:C4:128:ARG:HE	1.72	0.54
3:B4:155:ASN:HA	3:B4:171:ILE:HB	1.89	0.54
3:B5:93:ILE:HD13	3:B5:133:VAL:HG11	1.89	0.54
1:K1:156:HIS:HB3	1:K1:158:TYR:CE2	2.42	0.54
1:K2:48:LEU:HG	1:K2:50:VAL:HG23	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K5:93:ASP:O	2:C5:59:ARG:NH2	2.41	0.54
2:C5:247:ARG:O	2:C5:252:LEU:N	2.41	0.54
3:B5:321:THR:OG1	3:B5:325:MET:N	2.40	0.54
2:C4:303:PHE:HD2	2:C4:313:MET:HE3	1.73	0.54
2:C5:66:LEU:HD21	2:C5:125:TYR:CE2	2.43	0.54
2:C5:26:ASP:HA	2:C5:29:TYR:CZ	2.44	0.53
3:B5:101:MET:N	3:B5:101:MET:SD	2.81	0.53
1:K1:98:TYR:CZ	1:K1:121:GLY:HA3	2.44	0.53
2:C3:303:PHE:HA	2:C3:306:VAL:HG22	1.90	0.53
1:K5:48:LEU:O	1:K5:54:TYR:HA	2.09	0.53
1:K5:127:GLU:HB2	2:C5:62:TYR:OH	2.09	0.53
3:B2:248:ALA:HB2	3:B2:270:ILE:HA	1.89	0.53
3:B5:121:CYS:HB3	3:B5:139:LEU:HB2	1.91	0.53
2:C4:91:GLU:OE1	2:C4:91:GLU:N	2.35	0.53
2:C4:259:PRO:O	2:C4:263:VAL:HG12	2.07	0.53
4:G3:18:GLN:NE2	4:G3:22:GLU:OE2	2.41	0.53
1:K2:78:PRO:HB2	2:C2:49:ASN:HD21	1.73	0.53
1:K4:84:LYS:HD2	1:K4:91:LEU:HD11	1.89	0.53
2:C5:129:VAL:HA	2:C5:132:GLN:HE22	1.74	0.53
3:B5:5:ASP:O	3:B5:9:GLN:HG2	2.09	0.53
1:K4:50:VAL:O	1:K4:96:PRO:HB3	2.09	0.53
1:K5:51:GLY:HA3	1:K5:96:PRO:HD3	1.88	0.53
3:B5:199:PHE:HD1	3:B5:213:VAL:HG12	1.74	0.53
2:C4:284:LEU:HA	2:C4:287:MET:HB2	1.91	0.53
3:B3:249:THR:HA	3:B3:265:SER:HB2	1.90	0.53
1:K3:189:SER:H	1:K3:194:GLY:HA2	1.73	0.53
2:C1:274:LYS:HE2	2:C1:274:LYS:H	1.73	0.53
2:C5:248:VAL:HG23	2:C5:260:ILE:HD11	1.91	0.53
1:K1:158:TYR:CE1	1:K2:181:PHE:HB3	2.44	0.53
2:C3:166:LEU:HD21	2:C3:208:PRO:HB2	1.90	0.53
2:C5:319:SER:O	2:C5:323:GLU:HG3	2.08	0.53
3:B1:226:GLU:OE1	3:B1:226:GLU:N	2.42	0.53
1:K1:69:PHE:HB3	1:K1:129:TYR:HD1	1.73	0.52
1:K3:160:VAL:HG22	1:K3:204:VAL:HG22	1.91	0.52
3:B2:113:ALA:HA	3:B2:122:SER:O	2.09	0.52
1:K3:105:TYR:CD2	1:K3:134:LEU:HD21	2.44	0.52
1:K3:198:GLN:NE2	3:B3:52:ARG:HD2	2.24	0.52
2:C1:90:ARG:NH2	2:C1:150:GLN:HB3	2.24	0.52
3:B3:99:TRP:CD1	3:B4:131:GLY:HA3	2.44	0.52
1:K1:91:LEU:HD13	1:K2:45:TRP:CD1	2.44	0.52
1:K2:60:GLN:N	1:K2:60:GLN:OE1	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C3:222:GLN:OE1	2:C3:223:LYS:N	2.42	0.52
3:B2:57:LYS:HD2	3:B2:332:TRP:HB3	1.91	0.52
3:B3:101:MET:SD	3:B3:116:GLY:HA2	2.49	0.52
1:K3:57:THR:HG21	1:K3:62:LEU:HD21	1.92	0.52
2:C5:80:VAL:HA	2:C5:83:GLU:OE1	2.10	0.52
4:G4:13:ARG:O	4:G4:17:GLU:HG2	2.09	0.52
1:K3:191:TYR:HE1	1:K3:196:GLU:HB2	1.74	0.52
3:B3:147:SER:HB2	3:B3:188:MET:HA	1.91	0.52
1:K4:184:LEU:HD11	1:K4:201:PHE:HB3	1.92	0.52
3:B2:146:LEU:HD23	3:B2:161:SER:HB3	1.91	0.52
2:C4:374:PHE:HA	2:C4:377:PHE:CD2	2.45	0.52
2:C1:30:VAL:HG11	2:C1:69:HIS:CE1	2.44	0.52
2:C2:277:VAL:HG13	2:C2:284:LEU:HB3	1.92	0.52
2:C3:163:GLN:HA	2:C3:166:LEU:HD12	1.91	0.52
3:B3:49:ARG:HE	4:G3:61:PHE:HA	1.73	0.52
4:G3:19:LEU:HA	4:G3:22:GLU:HB2	1.92	0.52
1:K2:124:GLU:OE1	1:K3:108:HIS:NE2	2.43	0.52
1:K3:189:SER:N	1:K3:194:GLY:HA2	2.25	0.52
1:K4:83:ASP:HA	1:K4:91:LEU:H	1.75	0.52
1:K5:145:ARG:O	1:K5:149:THR:HG23	2.10	0.52
2:C1:374:PHE:HA	2:C1:377:PHE:CE1	2.45	0.52
2:C4:43:GLU:HG3	2:C4:46:ARG:HH21	1.75	0.52
2:C5:186:ALA:HA	2:C5:189:MET:HE3	1.91	0.52
1:K4:169:THR:HB	3:B3:55:LEU:HD23	1.91	0.51
2:C4:89:VAL:O	2:C4:92:ASP:OD2	2.29	0.51
3:B4:315:VAL:HA	3:B4:331:SER:HA	1.92	0.51
1:K2:152:VAL:HB	1:K2:153:PRO:CD	2.40	0.51
2:C1:246:GLU:HG2	2:C1:250:HIS:CE1	2.44	0.51
3:B1:200:VAL:HB	3:B1:210:LEU:HD12	1.92	0.51
3:B2:225:HIS:CE1	3:B2:251:ARG:HG3	2.45	0.51
2:C2:168:MET:SD	2:C2:168:MET:N	2.84	0.51
2:C3:220:GLU:HA	2:C3:223:LYS:HE3	1.91	0.51
3:B3:335:PHE:HB2	3:B3:337:LYS:NZ	2.22	0.51
1:K1:155:LYS:HE2	1:K1:211:ASN:H	1.75	0.51
2:C3:260:ILE:O	2:C3:264:VAL:HG23	2.09	0.51
2:C5:284:LEU:HD13	2:C5:299:MET:HG3	1.91	0.51
1:K1:172:VAL:O	1:K1:175:MET:HB3	2.11	0.51
1:K5:66:PRO:HA	1:K5:71:TYR:CG	2.45	0.51
2:C1:85:LEU:HB3	2:C1:90:ARG:HH22	1.76	0.51
2:C1:178:VAL:H	2:C1:180:ARG:NH1	2.06	0.51
2:C2:62:TYR:OH	2:C2:124:MET:HB2	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C3:185:ASN:O	2:C3:189:MET:HG3	2.10	0.51
2:C5:75:THR:O	2:C5:79:GLU:HG2	2.10	0.51
3:B2:78:LYS:HG3	3:B2:80:ILE:HD11	1.93	0.51
3:B4:30:LEU:O	3:B4:34:THR:N	2.31	0.51
3:B4:188:MET:SD	3:B4:230:ASN:HA	2.51	0.51
1:K4:105:TYR:CE2	1:K4:134:LEU:HB2	2.46	0.51
2:C5:34:TRP:O	2:C5:38:LYS:HG2	2.11	0.51
2:C2:235:LYS:NZ	2:C2:295:ASP:HA	2.26	0.51
3:B1:254:ASP:HB2	3:B1:261:LEU:HG	1.92	0.51
1:K5:128:PHE:HA	2:C5:62:TYR:CE2	2.46	0.51
1:K5:164:GLN:HB3	1:K5:198:GLN:HA	1.92	0.51
2:C3:64:MET:HE3	2:C3:72:LYS:HB3	1.93	0.51
3:B1:47:THR:HG21	3:B1:337:LYS:HD3	1.92	0.51
3:B2:230:ASN:H	3:B2:245:SER:HA	1.76	0.51
3:B3:313:ASN:OD1	3:B3:314:ARG:N	2.40	0.51
3:B4:294:CYS:SG	3:B4:308:LEU:HB2	2.51	0.51
1:K4:66:PRO:HA	1:K4:71:TYR:CG	2.45	0.51
2:C2:257:GLU:O	2:C2:261:VAL:HG13	2.09	0.51
2:C2:326:LYS:HA	2:C2:326:LYS:HE3	1.92	0.51
2:C2:374:PHE:HA	2:C2:377:PHE:CE1	2.46	0.51
2:C5:288:LEU:O	2:C5:351:ARG:NH1	2.43	0.51
1:K2:187:ILE:HD11	1:K2:202:LEU:HD21	1.92	0.50
2:C1:188:GLN:O	2:C1:189:MET:C	2.49	0.50
2:C3:173:ARG:HG2	2:C3:247:ARG:HH22	1.76	0.50
2:C4:67:HIS:HB2	2:C4:69:HIS:CE1	2.46	0.50
3:B4:47:THR:HA	3:B4:338:ILE:O	2.10	0.50
3:B5:315:VAL:HA	3:B5:331:SER:HA	1.93	0.50
2:C3:207:ALA:O	2:C3:211:GLU:HG2	2.11	0.50
2:C3:217:PHE:CZ	2:C3:264:VAL:HG22	2.45	0.50
2:C5:186:ALA:O	2:C5:190:LEU:HG	2.10	0.50
1:K1:94:ARG:HA	1:K1:94:ARG:HH11	1.76	0.50
2:C5:223:LYS:O	2:C5:227:GLU:HG2	2.12	0.50
2:C1:246:GLU:CG	2:C1:250:HIS:CE1	2.95	0.50
2:C4:154:TYR:HD1	2:C4:157:ILE:H	1.59	0.50
2:C5:109:TRP:CZ2	2:C5:192:ILE:HD11	2.47	0.50
2:C5:165:LEU:O	2:C5:169:ILE:HG22	2.11	0.50
2:C4:351:ARG:HG2	2:C4:355:PHE:CE2	2.47	0.50
2:C5:180:ARG:HD2	2:C5:250:HIS:CE1	2.46	0.50
3:B5:142:HIS:CD2	3:B5:161:SER:HB3	2.46	0.50
2:C2:25:MET:HE2	2:C2:27:GLU:H	1.77	0.50
3:B1:247:ASP:O	3:B1:272:GLY:HA2	2.10	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K3:135:ILE:HG21	2:C3:128:ARG:NH1	2.22	0.50
2:C2:62:TYR:CE1	2:C2:125:TYR:HB2	2.46	0.50
1:K4:225:LYS:O	1:K4:229:GLU:HG3	2.12	0.50
2:C1:120:ARG:NH1	2:C1:127:ASP:HB2	2.27	0.50
2:C4:282:SER:HB2	2:C4:286:HIS:CE1	2.47	0.50
3:B2:147:SER:HB2	3:B2:188:MET:HA	1.94	0.50
1:K1:157:VAL:HG12	1:K1:209:LEU:HD22	1.93	0.50
2:C3:162:ARG:O	2:C3:166:LEU:HG	2.12	0.50
3:B4:267:ASP:OD2	3:B4:267:ASP:N	2.45	0.50
1:K2:68:SER:HB2	1:K2:70:LEU:HD23	1.93	0.49
2:C4:303:PHE:HD2	2:C4:313:MET:CE	2.25	0.49
3:B4:67:SER:HB3	3:B4:322:ASP:H	1.77	0.49
2:C2:363:ASP:OD2	2:C2:364:ARG:N	2.44	0.49
1:K1:153:PRO:C	1:K1:155:LYS:H	2.15	0.49
2:C5:123:LEU:HB3	2:C5:126:MET:SD	2.52	0.49
3:B2:284:LEU:HD21	4:G2:51:LEU:HD21	1.95	0.49
3:B5:100:VAL:HA	3:B5:116:GLY:HA2	1.94	0.49
1:K2:46:VAL:HG21	1:K2:62:LEU:HD11	1.93	0.49
2:C3:168:MET:SD	2:C3:178:VAL:HB	2.52	0.49
3:B1:158:VAL:HG22	3:B1:190:LEU:HD11	1.93	0.49
3:B5:215:GLU:OE2	3:B5:215:GLU:N	2.45	0.49
4:G2:58:GLU:OE1	4:G2:58:GLU:N	2.40	0.49
2:C1:106:ASN:ND2	2:C1:185:ASN:HD22	2.10	0.49
2:C1:280:GLU:OE2	2:C1:280:GLU:N	2.46	0.49
2:C2:82:THR:O	2:C2:86:ILE:HG12	2.12	0.49
3:B2:215:GLU:OE1	3:B2:217:MET:HG3	2.13	0.49
3:B5:4:LEU:O	3:B5:8:ARG:HG2	2.12	0.49
2:C4:92:ASP:OD2	2:C4:92:ASP:N	2.44	0.49
2:C5:82:THR:O	2:C5:86:ILE:HG12	2.13	0.49
3:B1:3:GLU:O	3:B1:6:GLN:HG3	2.13	0.49
3:B5:57:LYS:HB3	3:B5:332:TRP:CG	2.48	0.49
3:B5:294:CYS:SG	3:B5:308:LEU:HB2	2.52	0.49
2:C3:356:LEU:HD23	2:C3:360:PHE:HB2	1.95	0.49
3:B4:215:GLU:HG3	3:B4:216:GLY:N	2.28	0.49
2:C1:59:ARG:O	2:C1:63:THR:HG23	2.12	0.49
2:C3:274:LYS:O	2:C3:274:LYS:NZ	2.40	0.49
2:C5:184:ARG:O	2:C5:188:GLN:HG3	2.12	0.49
2:C5:188:GLN:O	2:C5:192:ILE:HG12	2.13	0.49
3:B3:236:PRO:O	3:B3:237:ASN:ND2	2.40	0.49
3:B5:233:CYS:HB2	3:B5:276:VAL:HG23	1.93	0.49
2:C2:160:HIS:HA	2:C2:163:GLN:HE21	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B1:262:MET:CE	3:B1:302:ALA:HB2	2.43	0.49
3:B2:54:HIS:CE1	3:B2:80:ILE:HD13	2.48	0.49
3:B4:261:LEU:HD22	4:G4:30:VAL:HG13	1.94	0.49
1:K2:77:ASP:OD1	1:K2:77:ASP:N	2.45	0.49
2:C5:277:VAL:HG13	2:C5:285:VAL:HG23	1.95	0.49
3:B3:14:LEU:HD13	4:G3:19:LEU:HB2	1.95	0.49
1:K2:152:VAL:H	1:K2:210:HIS:CD2	2.30	0.48
2:C3:314:CYS:SG	2:C3:369:THR:HG21	2.53	0.48
3:B1:36:ASN:OD1	3:B1:36:ASN:N	2.46	0.48
1:K1:72:ARG:HH21	1:K1:75:GLN:HB2	1.77	0.48
2:C5:77:LEU:HA	2:C5:80:VAL:HG12	1.94	0.48
3:B3:14:LEU:O	3:B3:18:ILE:HG12	2.13	0.48
3:B3:256:ARG:HE	4:G3:28:ILE:HG21	1.78	0.48
1:K5:66:PRO:C	1:K5:68:SER:N	2.66	0.48
2:C5:120:ARG:HE	2:C5:140:TYR:HD1	1.61	0.48
3:B3:67:SER:HB3	3:B3:322:ASP:H	1.78	0.48
1:K1:69:PHE:HB3	1:K1:129:TYR:CD1	2.49	0.48
1:K3:184:LEU:HD11	1:K3:201:PHE:HB3	1.96	0.48
2:C3:321:LEU:HD13	2:C3:352:PHE:CE1	2.49	0.48
2:C4:302:LEU:HA	2:C4:305:ARG:HD3	1.95	0.48
2:C3:202:GLU:HA	2:C3:206:GLU:HB3	1.96	0.48
3:B2:30:LEU:O	3:B2:34:THR:OG1	2.30	0.48
2:C5:288:LEU:HB3	2:C5:351:ARG:HH22	1.76	0.48
3:B4:199:PHE:CD2	3:B4:213:VAL:HG12	2.49	0.48
3:B5:75:GLN:N	3:B5:75:GLN:OE1	2.46	0.48
3:B5:222:PHE:HB3	3:B5:253:PHE:CD1	2.48	0.48
3:B5:298:ASP:HB3	3:B5:301:LYS:HB2	1.94	0.48
1:K4:50:VAL:HB	1:K4:55:PHE:CE1	2.49	0.48
2:C2:153:ARG:CZ	2:C2:158:ARG:HH21	2.27	0.48
3:B4:121:CYS:HB3	3:B4:139:LEU:HB2	1.95	0.48
4:G2:17:GLU:HA	4:G2:20:LYS:HZ3	1.78	0.48
1:K1:181:PHE:HB3	1:K5:158:TYR:CE2	2.49	0.48
2:C3:303:PHE:HD2	2:C3:313:MET:SD	2.36	0.48
3:B2:267:ASP:OD1	3:B2:267:ASP:N	2.45	0.48
2:C2:75:THR:O	2:C2:79:GLU:HG2	2.13	0.48
2:C3:249:MET:SD	2:C3:249:MET:N	2.86	0.48
2:C4:261:VAL:O	2:C4:265:GLU:HG2	2.12	0.48
3:B2:195:ASP:O	3:B2:196:THR:OG1	2.31	0.48
3:B4:65:THR:HG21	3:B4:107:PRO:HA	1.94	0.48
3:B4:292:PHE:HA	3:B4:314:ARG:HA	1.96	0.48
1:K5:42:VAL:O	1:K5:59:ARG:NH2	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K5:78:PRO:HG2	2:C5:49:ASN:HD21	1.78	0.48
2:C5:132:GLN:NE2	2:C5:133:GLN:HG2	2.29	0.48
2:C1:152:VAL:O	2:C1:158:ARG:HB2	2.14	0.47
2:C1:273:MET:SD	2:C1:273:MET:N	2.87	0.47
2:C1:273:MET:O	2:C1:277:VAL:HG23	2.14	0.47
3:B1:199:PHE:CE1	3:B1:211:TRP:HB2	2.49	0.47
3:B3:183:HIS:HA	3:B3:209:LYS:NZ	2.29	0.47
1:K5:179:TRP:NE1	1:K5:207:LYS:HD2	2.29	0.47
2:C4:46:ARG:O	2:C4:47:LYS:HB2	2.13	0.47
1:K2:66:PRO:HA	1:K2:71:TYR:HD2	1.79	0.47
1:K4:105:TYR:CG	1:K4:134:LEU:HD13	2.50	0.47
2:C1:80:VAL:HA	2:C1:83:GLU:OE1	2.14	0.47
3:B1:197:ARG:HD3	3:B1:214:ARG:NH1	2.30	0.47
1:K5:167:GLU:HG3	1:K5:171:MET:HE3	1.96	0.47
2:C5:234:ILE:HA	2:C5:237:VAL:HG12	1.97	0.47
1:K1:139:LYS:O	1:K1:143:ARG:HG3	2.13	0.47
2:C2:30:VAL:HG11	2:C2:69:HIS:CD2	2.49	0.47
2:C2:185:ASN:O	2:C2:189:MET:HG3	2.14	0.47
2:C2:249:MET:HB3	2:C2:254:LYS:HE3	1.97	0.47
2:C3:216:PHE:O	2:C3:219:MET:HE3	2.15	0.47
3:B5:8:ARG:HG3	3:B5:9:GLN:OE1	2.14	0.47
2:C1:100:ASN:O	2:C1:103:GLN:N	2.47	0.47
2:C2:109:TRP:CZ2	2:C2:192:ILE:HD13	2.49	0.47
2:C3:356:LEU:HG	2:C3:360:PHE:HD2	1.79	0.47
2:C5:148:ARG:HA	2:C5:152:VAL:HG22	1.97	0.47
2:C5:288:LEU:C	2:C5:351:ARG:HH22	2.18	0.47
2:C5:313:MET:O	2:C5:317:MET:HG2	2.14	0.47
3:B3:30:LEU:HB3	4:G3:38:MET:CE	2.45	0.47
3:B3:67:SER:HB2	3:B3:321:THR:HB	1.95	0.47
3:B4:123:ILE:O	3:B4:136:SER:N	2.45	0.47
2:C1:55:GLU:OE1	2:C1:55:GLU:N	2.39	0.47
2:C1:82:THR:O	2:C1:86:ILE:HG12	2.15	0.47
2:C4:345:LEU:O	2:C4:348:LEU:HD12	2.14	0.47
3:B3:200:VAL:HG22	3:B3:232:ILE:HD13	1.96	0.47
3:B3:267:ASP:OD1	3:B3:267:ASP:N	2.45	0.47
4:G3:59:ASN:HD21	4:G3:62:ARG:HE	1.62	0.47
1:K2:160:VAL:HG23	1:K3:172:VAL:HG11	1.96	0.47
1:K3:104:ASN:HB3	1:K3:108:HIS:HE1	1.80	0.47
2:C2:109:TRP:HZ2	2:C2:192:ILE:HD13	1.79	0.47
3:B3:3:GLU:HB2	3:B3:6:GLN:NE2	2.30	0.47
3:B4:280:LYS:HB2	3:B4:324:GLY:HA3	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K1:159:ARG:HH21	3:B1:77:GLY:HA3	1.80	0.47
1:K3:67:LYS:HG3	1:K3:131:ILE:HD12	1.97	0.47
1:K3:105:TYR:CE2	1:K3:134:LEU:HD21	2.50	0.47
1:K5:166:GLU:H	1:K5:166:GLU:CD	2.16	0.47
2:C2:116:MET:CE	2:C2:140:TYR:HA	2.45	0.47
2:C3:117:VAL:HG12	2:C3:140:TYR:HE2	1.79	0.47
3:B2:147:SER:CB	3:B2:188:MET:HA	2.45	0.47
3:B2:172:GLU:OE2	3:B2:172:GLU:N	2.48	0.47
3:B5:277:SER:OG	3:B5:286:LEU:HB2	2.15	0.47
1:K2:114:ASN:OD1	1:K2:115:LYS:N	2.47	0.47
2:C4:28:LYS:HD2	2:C4:28:LYS:O	2.15	0.47
3:B3:160:SER:HB3	3:B3:190:LEU:HG	1.97	0.47
3:B3:260:GLU:OE1	3:B3:262:MET:N	2.48	0.47
3:B4:60:ALA:HB2	3:B4:101:MET:O	2.15	0.47
3:B5:168:LEU:HB3	3:B5:178:THR:OG1	2.14	0.47
1:K1:82:SER:HB3	1:K1:91:LEU:H	1.80	0.46
1:K3:80:LEU:HD21	2:C3:55:GLU:OE1	2.14	0.46
2:C1:85:LEU:HA	2:C1:89:VAL:HG22	1.97	0.46
1:K2:93:ASP:HB2	2:C2:59:ARG:HH12	1.78	0.46
1:K3:79:ASP:HB3	2:C3:54:PHE:HB2	1.97	0.46
1:K4:95:ASP:OD1	1:K4:98:TYR:HB2	2.15	0.46
2:C4:116:MET:HG2	2:C4:140:TYR:CD2	2.50	0.46
2:C4:282:SER:HB2	2:C4:286:HIS:ND1	2.29	0.46
3:B1:209:LYS:HG2	3:B1:221:THR:HG23	1.96	0.46
3:B5:114:CYS:SG	3:B5:122:SER:HB2	2.55	0.46
3:B5:167:ALA:HB3	3:B5:169:TRP:CZ3	2.49	0.46
2:C1:44:ILE:HD11	2:C1:118:MET:CB	2.45	0.46
2:C4:89:VAL:HG11	2:C4:150:GLN:HB3	1.98	0.46
3:B5:79:LEU:HG	3:B5:95:LEU:HD21	1.97	0.46
2:C1:64:MET:HB3	2:C1:73:LEU:HD22	1.98	0.46
2:C1:239:ALA:HA	2:C1:242:ASN:ND2	2.30	0.46
2:C1:248:VAL:HG12	2:C1:254:LYS:NZ	2.30	0.46
2:C5:112:HIS:ND1	2:C5:113:GLN:OE1	2.29	0.46
2:C5:145:ILE:HD13	4:G5:1:MET:N	2.30	0.46
3:B1:199:PHE:HD1	3:B1:213:VAL:HG12	1.81	0.46
3:B3:150:ARG:O	3:B3:157:ILE:HG13	2.15	0.46
4:G3:28:ILE:HG23	4:G3:32:LYS:HE2	1.96	0.46
2:C1:123:LEU:HG	2:C1:126:MET:SD	2.56	0.46
2:C1:297:GLY:O	2:C1:301:LYS:HG2	2.14	0.46
2:C1:326:LYS:HA	2:C1:329:VAL:HG22	1.97	0.46
2:C5:356:LEU:HA	2:C5:360:PHE:HD2	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B3:325:MET:HE2	3:B3:325:MET:HA	1.97	0.46
1:K3:62:LEU:HA	1:K3:106:LEU:HD11	1.97	0.46
2:C2:109:TRP:CH2	2:C2:192:ILE:HG21	2.50	0.46
2:C4:190:LEU:HB3	2:C4:201:TYR:HB2	1.96	0.46
2:C5:123:LEU:HD22	2:C5:126:MET:HG3	1.96	0.46
2:C5:173:ARG:NH2	2:C5:213:SER:OG	2.48	0.46
3:B3:184:THR:HB	3:B3:205:ASP:HB3	1.97	0.46
1:K2:223:LYS:HA	1:K2:226:ILE:HD12	1.97	0.46
1:K3:69:PHE:HZ	2:C3:55:GLU:HA	1.81	0.46
1:K5:94:ARG:NH1	1:K5:125:GLU:OE1	2.49	0.46
2:C3:183:ILE:HD12	2:C3:251:CYS:SG	2.55	0.46
2:C4:196:GLU:N	2:C4:196:GLU:OE1	2.49	0.46
2:C4:356:LEU:HD23	2:C4:366:PHE:HB3	1.97	0.46
2:C5:64:MET:HA	2:C5:67:HIS:CD2	2.50	0.46
3:B1:233:CYS:SG	3:B1:277:SER:HA	2.55	0.46
3:B3:311:HIS:NE2	3:B3:337:LYS:HG2	2.31	0.46
3:B4:79:LEU:HD12	3:B4:95:LEU:HD21	1.97	0.46
3:B5:183:HIS:CE1	3:B5:209:LYS:HB2	2.50	0.46
3:B5:288:GLY:HA2	3:B5:294:CYS:HB2	1.97	0.46
3:B5:296:VAL:O	3:B5:305:ALA:N	2.49	0.46
1:K3:81:ASP:OD1	1:K3:81:ASP:N	2.49	0.46
2:C1:74:TYR:CE1	2:C1:142:LEU:HD22	2.50	0.46
2:C3:84:HIS:HA	2:C3:87:ASN:OD1	2.15	0.46
2:C4:124:MET:SD	2:C4:124:MET:N	2.89	0.46
3:B2:157:ILE:HG23	3:B2:169:TRP:HB2	1.97	0.46
1:K1:105:TYR:CD1	1:K1:134:LEU:HB2	2.50	0.46
1:K1:154:VAL:O	1:K1:156:HIS:N	2.49	0.46
1:K3:127:GLU:HA	1:K3:135:ILE:HD11	1.98	0.46
1:K5:61:THR:HG21	1:K5:107:ARG:HG2	1.97	0.46
1:K5:66:PRO:O	1:K5:68:SER:N	2.49	0.46
2:C1:326:LYS:N	2:C1:326:LYS:HD2	2.31	0.46
3:B2:291:ASP:OD1	3:B2:292:PHE:N	2.49	0.46
1:K4:92:ILE:HD11	1:K4:128:PHE:CE2	2.51	0.45
2:C4:180:ARG:HB3	2:C4:250:HIS:ND1	2.31	0.45
2:C5:217:PHE:CE2	2:C5:264:VAL:HG22	2.51	0.45
3:B2:27:ASP:H	4:G2:30:VAL:HB	1.81	0.45
3:B3:27:ASP:OD1	3:B3:28:ALA:N	2.49	0.45
3:B4:106:ALA:HB2	3:B4:111:TYR:HB2	1.97	0.45
1:K1:51:GLY:HA3	1:K1:96:PRO:HD3	1.98	0.45
1:K2:98:TYR:CE2	1:K2:121:GLY:HA3	2.52	0.45
1:K3:105:TYR:HB2	1:K3:111:LEU:HB3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K5:108:HIS:CD2	2:C4:59:ARG:HD2	2.51	0.45
2:C1:202:GLU:HA	2:C1:206:GLU:OE1	2.17	0.45
2:C2:354:ARG:HG2	2:C2:358:GLU:OE2	2.16	0.45
2:C3:356:LEU:HA	2:C3:360:PHE:HB2	1.99	0.45
2:C5:273:MET:SD	2:C5:303:PHE:HE2	2.39	0.45
2:C5:288:LEU:HB3	2:C5:351:ARG:NH2	2.32	0.45
2:C3:62:TYR:CE1	2:C3:125:TYR:HB2	2.51	0.45
3:B4:304:ARG:NH1	3:B4:304:ARG:HA	2.32	0.45
2:C1:43:GLU:HA	2:C1:46:ARG:HH21	1.81	0.45
2:C1:178:VAL:O	2:C1:180:ARG:NH1	2.50	0.45
2:C2:28:LYS:O	2:C2:31:ASN:ND2	2.49	0.45
3:B2:107:PRO:HD3	3:B2:151:PHE:HB3	1.99	0.45
3:B3:318:LEU:HD21	3:B3:329:THR:HG22	1.98	0.45
3:B4:57:LYS:HD2	3:B4:332:TRP:CD2	2.52	0.45
4:G5:28:ILE:HG22	4:G5:32:LYS:HD2	1.97	0.45
1:K4:97:THR:HG23	1:K4:98:TYR:CD2	2.49	0.45
2:C2:131:VAL:HG22	2:C2:138:ASN:HA	1.99	0.45
2:C3:209:PHE:HA	2:C3:212:MET:HE2	1.99	0.45
3:B2:7:LEU:HD13	4:G2:12:ALA:HB3	1.99	0.45
3:B5:22:ARG:NE	3:B5:258:ASP:O	2.49	0.45
3:B5:64:GLY:HA2	3:B5:105:TYR:CD2	2.51	0.45
2:C2:33:ILE:HD11	2:C2:60:ASN:HA	1.99	0.45
2:C5:116:MET:O	2:C5:120:ARG:HG2	2.16	0.45
3:B2:251:ARG:HD3	3:B2:260:GLU:OE1	2.16	0.45
3:B2:330:GLY:HA2	3:B2:336:LEU:HD23	1.99	0.45
3:B3:288:GLY:HA2	3:B3:294:CYS:SG	2.57	0.45
1:K1:67:LYS:O	1:K1:67:LYS:HG3	2.17	0.45
1:K2:44:LYS:N	1:K2:44:LYS:HD3	2.31	0.45
2:C1:120:ARG:HA	2:C1:120:ARG:NE	2.31	0.45
2:C2:159:ASP:O	2:C2:163:GLN:HG3	2.17	0.45
2:C4:258:GLU:HA	2:C4:261:VAL:HG12	1.99	0.45
3:B1:85:TYR:CZ	4:G1:60:PRO:HB2	2.51	0.45
3:B2:14:LEU:HB3	4:G2:19:LEU:HB3	1.99	0.45
3:B3:200:VAL:HG12	3:B3:234:PHE:CE2	2.51	0.45
3:B4:292:PHE:O	3:B4:311:HIS:HB2	2.17	0.45
1:K3:177:ASP:OD1	3:B3:132:ASN:ND2	2.48	0.45
2:C2:161:LEU:HD12	2:C2:162:ARG:N	2.32	0.45
2:C5:115:ALA:O	2:C5:119:ILE:HG12	2.16	0.45
2:C5:132:GLN:HE21	2:C5:133:GLN:HG2	1.82	0.45
3:B1:20:ASP:O	3:B1:24:ALA:N	2.40	0.45
3:B1:183:HIS:HA	3:B1:209:LYS:HE3	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C2:63:THR:O	2:C2:67:HIS:NE2	2.49	0.45
2:C2:187:CYS:O	2:C2:191:MET:HG2	2.17	0.45
2:C2:212:MET:O	2:C2:215:GLU:HG3	2.17	0.45
2:C2:321:LEU:HD13	2:C2:352:PHE:CD2	2.52	0.45
2:C4:85:LEU:HD22	2:C4:146:ILE:HG22	1.98	0.45
3:B3:315:VAL:HG22	3:B3:331:SER:OG	2.17	0.45
1:K4:193:TYR:CG	1:K4:193:TYR:O	2.70	0.45
2:C1:85:LEU:HD23	2:C1:89:VAL:HG21	1.98	0.45
2:C2:25:MET:CE	2:C2:27:GLU:H	2.30	0.45
2:C4:92:ASP:OD1	2:C4:108:ALA:HB1	2.17	0.45
2:C5:165:LEU:HD21	2:C5:183:ILE:HG12	1.98	0.45
3:B2:186:ASP:H	3:B2:204:CYS:HB2	1.81	0.45
3:B3:59:TYR:CZ	3:B3:75:GLN:HG2	2.52	0.45
1:K5:47:ARG:NE	1:K5:89:ALA:HB2	2.32	0.44
2:C1:40:ALA:O	2:C1:44:ILE:HG22	2.16	0.44
2:C2:219:MET:O	2:C2:223:LYS:HG2	2.17	0.44
3:B1:150:ARG:O	3:B1:157:ILE:HG13	2.17	0.44
3:B4:20:ASP:HA	3:B4:23:LYS:HG2	1.99	0.44
3:B4:169:TRP:CE2	3:B4:176:GLN:HB3	2.53	0.44
4:G5:34:ALA:O	4:G5:38:MET:HG2	2.18	0.44
1:K1:193:TYR:CG	1:K1:194:GLY:N	2.84	0.44
2:C2:230:ALA:O	2:C2:234:ILE:HG12	2.17	0.44
3:B5:51:LEU:HD12	3:B5:51:LEU:H	1.82	0.44
2:C2:266:ARG:HD2	2:C2:266:ARG:HA	1.79	0.44
2:C4:141:ASN:OD1	2:C4:195:LEU:HD11	2.17	0.44
3:B2:18:ILE:HD12	4:G2:22:GLU:HG2	1.98	0.44
3:B3:251:ARG:HB3	3:B3:260:GLU:OE2	2.17	0.44
2:C4:173:ARG:HA	2:C4:173:ARG:HD3	1.81	0.44
2:C4:191:MET:O	2:C4:195:LEU:N	2.38	0.44
2:C4:257:GLU:HA	2:C4:260:ILE:HD12	1.98	0.44
2:C5:216:PHE:HD1	2:C5:219:MET:HE3	1.83	0.44
3:B4:124:TYR:HA	3:B4:135:VAL:HA	1.99	0.44
1:K1:121:GLY:O	1:K1:124:GLU:HG3	2.18	0.44
1:K2:98:TYR:CE1	1:K2:117:LEU:HB3	2.52	0.44
1:K3:94:ARG:HD2	1:K3:94:ARG:HA	1.90	0.44
1:K3:130:ASN:O	1:K3:130:ASN:OD1	2.35	0.44
3:B3:123:ILE:O	3:B3:136:SER:OG	2.27	0.44
1:K2:198:GLN:H	1:K2:198:GLN:CD	2.20	0.44
1:K3:191:TYR:HB3	1:K3:197:ASP:CG	2.38	0.44
1:K4:94:ARG:HG3	1:K4:128:PHE:CE2	2.53	0.44
2:C1:173:ARG:HH12	2:C1:213:SER:HA	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C3:86:ILE:HG23	2:C3:90:ARG:HH21	1.81	0.44
2:C4:209:PHE:CE2	2:C4:260:ILE:HD13	2.53	0.44
2:C4:283:GLY:H	2:C4:286:HIS:HB3	1.82	0.44
3:B1:137:ARG:HH21	3:B1:174:GLY:HA3	1.81	0.44
1:K4:47:ARG:HE	1:K4:56:LEU:HD11	1.83	0.44
2:C2:127:ASP:OD1	2:C2:138:ASN:HB2	2.17	0.44
2:C4:73:LEU:HD23	2:C4:77:LEU:HB2	1.98	0.44
2:C4:85:LEU:O	2:C4:89:VAL:N	2.42	0.44
3:B2:248:ALA:HB2	3:B2:270:ILE:HD12	2.00	0.44
3:B3:49:ARG:HB2	3:B3:338:ILE:HB	2.00	0.44
3:B3:59:TYR:HH	3:B3:99:TRP:HZ3	1.63	0.44
2:C2:30:VAL:HG21	2:C2:69:HIS:CD2	2.52	0.44
2:C3:364:ARG:HA	2:C3:367:LYS:HG2	2.00	0.44
2:C5:126:MET:SD	2:C5:127:ASP:N	2.90	0.44
2:C5:205:PHE:C	2:C5:208:PRO:HD2	2.38	0.44
3:B3:327:VAL:HG12	3:B3:339:TRP:HB2	1.99	0.44
2:C1:100:ASN:OD1	2:C1:103:GLN:HB2	2.18	0.44
2:C1:129:VAL:HA	2:C1:132:GLN:HE22	1.82	0.44
4:G3:59:ASN:ND2	4:G3:62:ARG:HE	2.16	0.44
2:C3:287:MET:HA	2:C3:290:ASN:ND2	2.33	0.43
2:C5:59:ARG:O	2:C5:63:THR:HG23	2.18	0.43
3:B1:80:ILE:HG21	3:B1:82:TRP:CE2	2.52	0.43
3:B1:197:ARG:HB3	3:B1:214:ARG:HH12	1.83	0.43
3:B1:235:PHE:CD1	3:B1:236:PRO:HD2	2.53	0.43
3:B4:166:CYS:SG	3:B4:187:VAL:HG11	2.58	0.43
3:B5:228:ASP:OD1	3:B5:228:ASP:N	2.50	0.43
1:K1:48:LEU:HG	1:K1:50:VAL:HG23	2.01	0.43
1:K4:92:ILE:HD11	1:K4:128:PHE:HE2	1.81	0.43
1:K5:105:TYR:CE2	1:K5:134:LEU:HB2	2.53	0.43
2:C1:170:ALA:O	2:C1:174:LYS:HG2	2.18	0.43
4:G3:54:VAL:HG12	4:G3:58:GLU:HB3	2.00	0.43
1:K1:60:GLN:N	1:K1:60:GLN:CD	2.72	0.43
1:K1:72:ARG:HG2	2:C1:54:PHE:CE2	2.54	0.43
1:K5:98:TYR:HD2	1:K5:122:VAL:HG23	1.82	0.43
2:C1:149:ASP:HA	2:C1:153:ARG:HB2	2.00	0.43
2:C1:300:TYR:CZ	2:C1:310:LEU:HD22	2.52	0.43
2:C1:309:GLY:O	2:C1:313:MET:HG2	2.17	0.43
2:C2:190:LEU:HG	2:C2:201:TYR:CD2	2.51	0.43
2:C3:207:ALA:HB3	2:C3:208:PRO:HD3	2.00	0.43
2:C4:27:GLU:O	2:C4:31:ASN:ND2	2.51	0.43
2:C5:241:ILE:O	2:C5:245:ILE:HG12	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B2:56:ALA:HB3	3:B2:74:SER:HB3	1.99	0.43
1:K2:98:TYR:CZ	1:K2:121:GLY:HA3	2.53	0.43
3:B1:57:LYS:HB2	3:B1:57:LYS:HE2	1.82	0.43
3:B1:125:ASN:HB2	3:B1:136:SER:HB3	1.99	0.43
4:G4:55:PRO:HD2	4:G4:58:GLU:OE2	2.18	0.43
1:K4:111:LEU:HD22	1:K4:134:LEU:HD11	1.99	0.43
2:C5:85:LEU:O	2:C5:90:ARG:HG3	2.19	0.43
3:B1:49:ARG:HH22	4:G1:63:GLU:H	1.65	0.43
3:B1:212:ASP:HB3	3:B1:215:GLU:OE2	2.19	0.43
4:G3:49:PRO:HB3	4:G3:54:VAL:HG21	2.00	0.43
1:K1:44:LYS:HA	1:K1:59:ARG:HH21	1.83	0.43
1:K5:152:VAL:HB	1:K5:153:PRO:HD3	2.00	0.43
2:C1:248:VAL:HG12	2:C1:254:LYS:HZ1	1.83	0.43
2:C2:100:ASN:O	2:C2:104:THR:HG23	2.18	0.43
3:B4:183:HIS:HA	3:B4:209:LYS:HE2	1.99	0.43
1:K3:50:VAL:HA	1:K3:92:ILE:HG23	2.00	0.43
1:K5:175:MET:CE	1:K5:179:TRP:HB2	2.48	0.43
2:C3:210:LEU:HD21	2:C3:259:PRO:HB2	1.99	0.43
2:C4:67:HIS:O	2:C4:68:LYS:HB2	2.18	0.43
2:C4:166:LEU:HA	2:C4:169:ILE:HG12	2.01	0.43
3:B1:70:LEU:HD12	3:B1:82:TRP:HB2	2.00	0.43
3:B3:4:LEU:HB3	3:B3:8:ARG:HH21	1.83	0.43
3:B4:287:ALA:N	3:B4:295:ASN:O	2.52	0.43
2:C1:61:ALA:O	2:C1:65:VAL:HG23	2.18	0.43
2:C1:86:ILE:CG2	2:C1:90:ARG:HH21	2.32	0.43
2:C2:29:TYR:O	2:C2:33:ILE:HG22	2.18	0.43
2:C2:297:GLY:O	2:C2:301:LYS:HG3	2.19	0.43
3:B1:325:MET:HA	4:G1:50:LEU:HG	2.00	0.43
3:B2:42:ARG:HD2	3:B2:42:ARG:HA	1.84	0.43
4:G3:11:GLN:O	4:G3:15:LEU:N	2.33	0.43
1:K1:98:TYR:CE2	1:K1:121:GLY:HA3	2.54	0.43
1:K3:150:SER:O	1:K3:210:HIS:HA	2.19	0.43
1:K4:98:TYR:HE1	1:K4:118:ALA:O	2.02	0.43
1:K5:184:LEU:HD11	1:K5:201:PHE:HB3	2.01	0.43
2:C1:256:THR:O	2:C1:259:PRO:HD2	2.19	0.43
2:C4:116:MET:HA	2:C4:119:ILE:HG22	2.00	0.43
2:C5:240:ARG:O	2:C5:244:GLU:HG2	2.18	0.43
2:C5:248:VAL:HG21	2:C5:257:GLU:OE1	2.19	0.43
3:B1:316:SER:HB2	3:B1:332:TRP:CD1	2.53	0.43
3:B3:152:LEU:HD21	3:B3:213:VAL:HG11	2.00	0.43
1:K2:58:THR:O	1:K2:61:THR:OG1	2.29	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K2:201:PHE:O	1:K2:202:LEU:HD23	2.19	0.43
1:K3:80:LEU:HD23	1:K3:80:LEU:HA	1.79	0.43
2:C1:77:LEU:HD22	2:C1:123:LEU:HD11	2.01	0.43
2:C1:118:MET:O	2:C1:122:ILE:HG12	2.18	0.43
2:C1:207:ALA:HB3	2:C1:208:PRO:HD3	2.00	0.43
2:C3:237:VAL:HG23	2:C3:268:LEU:HD13	2.01	0.43
2:C4:165:LEU:O	2:C4:169:ILE:HG12	2.18	0.43
3:B1:70:LEU:HD12	3:B1:70:LEU:O	2.19	0.43
3:B2:79:LEU:HG	3:B2:95:LEU:HD11	2.01	0.43
3:B5:63:TRP:CZ3	3:B5:321:THR:HG22	2.54	0.43
1:K5:68:SER:HA	1:K5:129:TYR:O	2.19	0.42
1:K5:93:ASP:O	1:K5:94:ARG:HD2	2.19	0.42
2:C1:188:GLN:O	2:C1:191:MET:N	2.52	0.42
2:C3:214:ALA:O	2:C3:218:GLN:HG2	2.18	0.42
2:C3:168:MET:SD	2:C3:183:ILE:HD11	2.59	0.42
2:C3:287:MET:HE3	2:C3:296:LEU:HA	2.01	0.42
2:C3:345:LEU:O	2:C3:348:LEU:HB3	2.19	0.42
3:B4:313:ASN:ND2	3:B4:332:TRP:HB3	2.34	0.42
1:K2:155:LYS:HG3	1:K3:178:GLY:H	1.83	0.42
2:C1:105:LEU:HD22	2:C1:161:LEU:HD11	2.01	0.42
2:C2:67:HIS:HB2	2:C2:69:HIS:CD2	2.54	0.42
2:C2:87:ASN:OD1	2:C2:88:LYS:N	2.52	0.42
2:C2:246:GLU:OE2	2:C2:247:ARG:HG3	2.19	0.42
2:C4:229:SER:HB2	2:C4:282:SER:OG	2.20	0.42
2:C4:273:MET:HB3	2:C4:274:LYS:HD2	2.01	0.42
2:C5:129:VAL:O	2:C5:132:GLN:NE2	2.52	0.42
3:B2:285:LEU:HB2	3:B2:299:ALA:HB2	1.99	0.42
3:B3:182:GLY:O	3:B3:209:LYS:NZ	2.44	0.42
3:B4:150:ARG:O	3:B4:157:ILE:HG13	2.19	0.42
1:K2:93:ASP:HB2	2:C2:59:ARG:HH22	1.84	0.42
1:K5:167:GLU:O	1:K5:170:GLN:HB3	2.19	0.42
2:C1:300:TYR:HE1	2:C1:366:PHE:CE1	2.37	0.42
2:C2:170:ALA:O	2:C2:174:LYS:HG3	2.20	0.42
2:C4:258:GLU:HB2	2:C4:259:PRO:HD3	2.01	0.42
3:B2:54:HIS:CE1	3:B2:82:TRP:HE1	2.36	0.42
3:B2:202:GLY:HA3	3:B2:229:ILE:HB	2.01	0.42
3:B3:315:VAL:HA	3:B3:331:SER:HA	2.02	0.42
3:B3:336:LEU:C	3:B3:337:LYS:HD3	2.40	0.42
3:B4:286:LEU:HA	3:B4:296:VAL:HA	2.02	0.42
3:B4:304:ARG:HD2	3:B4:307:VAL:HG23	2.02	0.42
1:K1:171:MET:SD	1:K1:172:VAL:HG23	2.60	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C2:71:GLU:O	2:C2:75:THR:OG1	2.35	0.42
2:C3:63:THR:O	2:C3:67:HIS:CD2	2.70	0.42
2:C5:258:GLU:N	2:C5:259:PRO:HD2	2.35	0.42
3:B4:219:ARG:HG3	3:B4:220:GLN:HG3	2.02	0.42
1:K1:210:HIS:O	1:K1:211:ASN:C	2.57	0.42
1:K2:155:LYS:HB2	1:K2:210:HIS:HB2	2.02	0.42
2:C3:366:PHE:O	2:C3:370:ILE:HG23	2.19	0.42
3:B4:113:ALA:HB2	3:B4:151:PHE:CZ	2.53	0.42
3:B4:215:GLU:HG3	3:B4:216:GLY:H	1.84	0.42
3:B4:222:PHE:CD2	3:B4:253:PHE:HB3	2.54	0.42
3:B5:152:LEU:HD23	3:B5:192:LEU:HD11	2.00	0.42
4:G3:19:LEU:O	4:G3:23:ALA:N	2.50	0.42
4:G5:5:ASN:CG	4:G5:5:ASN:O	2.57	0.42
1:K1:60:GLN:CD	1:K1:60:GLN:H	2.23	0.42
1:K2:155:LYS:HD3	1:K3:177:ASP:HB3	2.01	0.42
2:C1:294:GLU:CD	2:C1:294:GLU:H	2.23	0.42
2:C2:26:ASP:OD1	2:C2:69:HIS:NE2	2.41	0.42
2:C2:27:GLU:OE2	2:C2:31:ASN:HB3	2.20	0.42
2:C2:34:TRP:CZ2	2:C2:38:LYS:HD2	2.54	0.42
2:C2:228:ASN:HB3	2:C2:232:VAL:HB	2.01	0.42
2:C2:301:LYS:HB2	2:C2:301:LYS:HE2	1.84	0.42
2:C5:207:ALA:HA	2:C5:210:LEU:HD12	2.01	0.42
3:B1:63:TRP:CZ2	3:B1:70:LEU:HD23	2.54	0.42
3:B1:169:TRP:CZ2	3:B1:176:GLN:HB3	2.55	0.42
3:B1:278:PHE:CE1	3:B1:285:LEU:HD13	2.55	0.42
3:B3:254:ASP:HB2	3:B3:261:LEU:HD21	2.02	0.42
3:B5:256:ARG:HH12	4:G5:33:ALA:HA	1.85	0.42
1:K5:147:SER:HB2	1:K5:210:HIS:HB3	2.01	0.42
1:K5:164:GLN:HG2	1:K5:167:GLU:OE2	2.20	0.42
2:C3:344:GLY:HA2	2:C3:347:ASP:OD2	2.20	0.42
2:C4:165:LEU:HB3	2:C4:205:PHE:CE1	2.54	0.42
2:C5:343:GLN:H	2:C5:343:GLN:HG2	1.68	0.42
3:B1:199:PHE:CD1	3:B1:213:VAL:HG12	2.55	0.42
1:K3:179:TRP:CD2	1:K3:207:LYS:HB2	2.55	0.42
1:K5:47:ARG:HE	1:K5:89:ALA:HB2	1.85	0.42
3:B1:148:CYS:O	3:B1:160:SER:OG	2.28	0.42
3:B1:200:VAL:HA	3:B1:210:LEU:HA	2.00	0.42
3:B1:250:CYS:SG	3:B1:251:ARG:N	2.93	0.42
3:B3:228:ASP:N	3:B3:228:ASP:OD1	2.51	0.42
3:B5:13:GLN:NE2	3:B5:14:LEU:HG	2.34	0.42
1:K2:50:VAL:O	1:K2:96:PRO:HG3	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K4:110:LYS:HA	1:K4:110:LYS:HD2	1.96	0.42
1:K5:123:LEU:O	1:K5:126:ALA:HB3	2.19	0.42
2:C2:188:GLN:HA	2:C2:191:MET:HG2	2.02	0.42
3:B4:327:VAL:HG13	3:B4:339:TRP:HB2	2.02	0.42
1:K3:72:ARG:NH1	1:K3:76:ALA:O	2.52	0.41
1:K3:191:TYR:HB3	1:K3:197:ASP:OD2	2.19	0.41
1:K5:95:ASP:HB2	1:K5:97:THR:HG22	2.01	0.41
2:C2:109:TRP:NE1	2:C2:113:GLN:OE1	2.53	0.41
1:K3:64:ARG:NH1	1:K3:106:LEU:HA	2.31	0.41
2:C2:58:TYR:CZ	2:C2:62:TYR:CZ	3.08	0.41
2:C3:186:ALA:HA	2:C3:189:MET:HG3	2.03	0.41
2:C5:319:SER:HA	2:C5:322:ARG:NE	2.34	0.41
3:B1:65:THR:HA	3:B1:322:ASP:OD2	2.20	0.41
3:B2:38:ASP:O	3:B2:283:ARG:NH2	2.52	0.41
3:B2:165:THR:HG22	3:B2:167:ALA:H	1.86	0.41
3:B3:188:MET:HE3	3:B3:188:MET:H	1.85	0.41
3:B3:215:GLU:OE1	3:B3:219:ARG:NH2	2.53	0.41
3:B4:214:ARG:HD3	3:B4:214:ARG:N	2.35	0.41
1:K3:105:TYR:CG	1:K3:134:LEU:HD21	2.55	0.41
3:B1:4:LEU:HA	3:B1:7:LEU:HB2	2.02	0.41
3:B1:13:GLN:O	3:B1:16:ASN:HB3	2.20	0.41
3:B1:266:HIS:HB3	3:B1:268:ASN:H	1.84	0.41
3:B2:170:ASP:HB2	3:B2:177:THR:CG2	2.51	0.41
3:B3:48:ARG:N	3:B3:338:ILE:O	2.44	0.41
1:K1:152:VAL:HG13	1:K1:153:PRO:HD3	2.02	0.41
1:K1:181:PHE:HA	1:K1:205:VAL:HG12	2.03	0.41
1:K3:198:GLN:HE21	3:B3:52:ARG:HD2	1.84	0.41
2:C3:75:THR:O	2:C3:79:GLU:HG2	2.20	0.41
2:C4:351:ARG:HA	2:C4:354:ARG:HG2	2.01	0.41
2:C5:33:ILE:HD13	2:C5:33:ILE:HG21	1.82	0.41
3:B2:223:THR:HG22	3:B2:224:GLY:H	1.84	0.41
3:B5:250:CYS:HB3	3:B5:264:TYR:HB2	2.01	0.41
4:G4:1:MET:SD	4:G4:7:ALA:HA	2.60	0.41
1:K2:58:THR:HB	1:K2:61:THR:HG23	2.03	0.41
1:K2:80:LEU:HG	1:K2:90:TYR:CE1	2.56	0.41
1:K3:67:LYS:H	1:K3:67:LYS:HG2	1.55	0.41
1:K5:72:ARG:HD2	2:C5:54:PHE:CE2	2.55	0.41
2:C2:44:ILE:HG22	2:C2:115:ALA:HB1	2.03	0.41
2:C5:165:LEU:HD23	2:C5:165:LEU:HA	1.89	0.41
1:K4:94:ARG:HD2	1:K5:108:HIS:HE2	1.84	0.41
1:K5:163:CYS:O	1:K5:201:PHE:HB2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C3:44:ILE:HA	2:C3:49:ASN:OD1	2.21	0.41
2:C4:120:ARG:NH1	2:C4:124:MET:HG3	2.36	0.41
3:B1:129:ARG:HA	3:B1:129:ARG:HD2	1.91	0.41
3:B4:169:TRP:CZ2	3:B4:176:GLN:HB3	2.56	0.41
3:B4:284:LEU:HD23	3:B4:296:VAL:HG21	2.03	0.41
1:K2:164:GLN:O	1:K2:168:LEU:HB2	2.21	0.41
1:K3:68:SER:C	1:K3:70:LEU:N	2.74	0.41
1:K5:78:PRO:HG2	2:C5:49:ASN:ND2	2.36	0.41
1:K5:124:GLU:HA	1:K5:127:GLU:OE2	2.21	0.41
1:K5:175:MET:HE1	1:K5:179:TRP:HB2	2.03	0.41
2:C2:190:LEU:O	2:C2:190:LEU:HD12	2.21	0.41
2:C1:140:TYR:O	2:C1:144:LEU:HD22	2.20	0.41
2:C1:189:MET:HE2	2:C1:189:MET:HB2	1.84	0.41
2:C1:363:ASP:OD1	2:C1:364:ARG:N	2.54	0.41
2:C2:137:GLU:HB3	2:C2:141:ASN:HB2	2.03	0.41
2:C3:284:LEU:HD12	2:C3:287:MET:HE2	2.03	0.41
2:C3:366:PHE:HA	2:C3:369:THR:HG22	2.02	0.41
2:C4:207:ALA:HB3	2:C4:208:PRO:HD3	2.03	0.41
3:B1:7:LEU:HD13	4:G1:12:ALA:HB3	2.03	0.41
3:B1:128:THR:HG21	3:B1:134:ARG:HB3	2.02	0.41
3:B2:177:THR:OG1	3:B2:178:THR:N	2.54	0.41
3:B3:16:ASN:O	3:B3:20:ASP:N	2.42	0.41
4:G1:21:MET:O	4:G1:25:ILE:HG23	2.20	0.41
1:K2:84:LYS:HD3	1:K2:87:THR:OG1	2.21	0.41
1:K4:58:THR:HG23	1:K4:60:GLN:OE1	2.20	0.41
1:K5:106:LEU:HD12	1:K5:106:LEU:O	2.21	0.41
1:K5:169:THR:HA	1:K5:172:VAL:HB	2.03	0.41
2:C1:109:TRP:CE3	2:C1:189:MET:HG3	2.56	0.41
2:C1:174:LYS:HA	2:C1:174:LYS:HD3	1.81	0.41
2:C1:246:GLU:CG	2:C1:250:HIS:HE1	2.34	0.41
2:C3:45:GLN:HB3	2:C3:84:HIS:CE1	2.55	0.41
2:C3:291:GLY:HA2	2:C3:351:ARG:NH2	2.36	0.41
2:C4:120:ARG:HH12	2:C4:124:MET:HG3	1.85	0.41
2:C5:364:ARG:O	2:C5:367:LYS:HG2	2.20	0.41
3:B1:74:SER:OG	3:B1:78:LYS:HG2	2.21	0.41
3:B2:325:MET:HA	4:G2:49:PRO:HG2	2.03	0.41
3:B4:314:ARG:O	3:B4:332:TRP:N	2.50	0.41
3:B5:325:MET:CE	3:B5:340:ASN:HD21	2.33	0.41
4:G4:46:LYS:H	4:G4:46:LYS:CD	2.33	0.41
2:C1:240:ARG:O	2:C1:244:GLU:HG2	2.21	0.41
2:C2:169:ILE:HG23	2:C2:212:MET:SD	2.61	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C2:254:LYS:HA	2:C2:254:LYS:HD3	1.66	0.41
2:C2:356:LEU:HD12	2:C2:360:PHE:HB2	2.02	0.41
2:C3:100:ASN:O	2:C3:103:GLN:HG3	2.20	0.41
2:C4:356:LEU:HG	2:C4:360:PHE:CE2	2.56	0.41
2:C5:28:LYS:NZ	2:C5:32:SER:OG	2.54	0.41
3:B3:188:MET:H	3:B3:188:MET:CE	2.34	0.41
3:B4:44:GLN:HB2	3:B4:46:ARG:HH12	1.84	0.41
1:K1:152:VAL:N	1:K1:153:PRO:HD2	2.35	0.40
2:C2:293:THR:HG21	2:C2:358:GLU:OE1	2.22	0.40
2:C3:45:GLN:HB3	2:C3:84:HIS:CG	2.56	0.40
2:C3:191:MET:SD	2:C3:198:ARG:NH1	2.94	0.40
2:C3:293:THR:HA	2:C3:296:LEU:HD12	2.03	0.40
2:C4:43:GLU:HA	2:C4:46:ARG:HE	1.85	0.40
2:C4:47:LYS:HA	2:C4:47:LYS:HD2	1.86	0.40
3:B1:57:LYS:HD2	3:B1:332:TRP:CD2	2.56	0.40
3:B1:261:LEU:HD23	3:B1:261:LEU:HA	1.96	0.40
3:B4:210:LEU:O	3:B4:219:ARG:N	2.54	0.40
4:G2:41:CYS:O	4:G2:45:ALA:N	2.54	0.40
1:K3:49:ASN:HA	1:K3:53:THR:O	2.21	0.40
1:K5:54:TYR:HE1	1:K5:87:THR:HG21	1.85	0.40
2:C1:326:LYS:NZ	2:C1:377:PHE:HB3	2.35	0.40
2:C2:256:THR:O	2:C2:260:ILE:HG23	2.22	0.40
2:C4:186:ALA:HA	2:C4:189:MET:CE	2.52	0.40
2:C4:198:ARG:O	2:C4:202:GLU:HG3	2.21	0.40
2:C5:79:GLU:O	2:C5:82:THR:OG1	2.32	0.40
2:C5:90:ARG:HB3	2:C5:90:ARG:CZ	2.51	0.40
2:C5:234:ILE:HD13	2:C5:299:MET:SD	2.60	0.40
3:B2:66:ASP:OD1	3:B2:66:ASP:N	2.50	0.40
3:B3:209:LYS:HB3	3:B3:218:CYS:SG	2.61	0.40
3:B4:192:LEU:HD23	3:B4:199:PHE:HB3	2.02	0.40
3:B5:286:LEU:HD13	3:B5:296:VAL:HB	2.03	0.40
4:G1:46:LYS:HD3	4:G1:46:LYS:N	2.37	0.40
1:K1:212:THR:O	1:K1:215:GLY:N	2.54	0.40
1:K2:101:PRO:HA	1:K2:104:ASN:HB3	2.02	0.40
1:K2:167:GLU:O	1:K2:171:MET:SD	2.80	0.40
1:K3:75:GLN:OE1	1:K3:75:GLN:N	2.54	0.40
1:K5:45:TRP:O	1:K5:45:TRP:CD1	2.75	0.40
1:K5:47:ARG:NH1	1:K5:47:ARG:HB3	2.36	0.40
2:C1:75:THR:O	2:C1:79:GLU:HG2	2.21	0.40
2:C1:373:ASP:HB3	2:C1:377:PHE:CE2	2.56	0.40
2:C3:351:ARG:HH21	2:C3:355:PHE:HZ	1.68	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C5:109:TRP:HZ2	2:C5:192:ILE:HD11	1.86	0.40
2:C5:289:LYS:HE3	2:C5:289:LYS:HB3	1.86	0.40
3:B1:42:ARG:HD3	3:B1:44:GLN:HG2	2.02	0.40
3:B4:112:VAL:HG23	3:B4:124:TYR:HB2	2.03	0.40
2:C1:235:LYS:HE2	2:C1:235:LYS:HB3	1.97	0.40
2:C1:243:GLU:O	2:C1:247:ARG:HG2	2.21	0.40
2:C5:62:TYR:O	2:C5:66:LEU:HG	2.22	0.40
2:C5:319:SER:O	2:C5:322:ARG:HG2	2.22	0.40
3:B1:18:ILE:HD13	3:B1:18:ILE:HA	1.92	0.40
3:B1:69:LEU:HD22	3:B1:90:VAL:HG21	2.03	0.40
3:B2:191:SER:O	3:B2:199:PHE:HA	2.22	0.40
3:B2:316:SER:HB2	3:B2:332:TRP:CD1	2.56	0.40
3:B4:30:LEU:HB2	4:G4:38:MET:HE1	2.02	0.40
3:B4:46:ARG:O	3:B4:339:TRP:HA	2.22	0.40
1:K1:151:GLN:HB3	1:K1:155:LYS:NZ	2.37	0.40
1:K4:69:PHE:CZ	2:C4:55:GLU:HA	2.52	0.40
2:C1:192:ILE:O	2:C1:195:LEU:N	2.54	0.40
2:C1:277:VAL:HG12	2:C1:278:GLU:CD	2.42	0.40
2:C4:134:ASN:HB2	2:C4:136:VAL:HG22	2.04	0.40
3:B2:200:VAL:HA	3:B2:210:LEU:HA	2.04	0.40
3:B2:247:ASP:N	3:B2:247:ASP:OD1	2.53	0.40
3:B3:95:LEU:HD22	3:B3:124:TYR:HE1	1.86	0.40
3:B4:168:LEU:HB3	3:B4:178:THR:HB	2.03	0.40
3:B5:142:HIS:CD2	3:B5:146:LEU:HG	2.57	0.40
3:B5:146:LEU:HD12	3:B5:146:LEU:H	1.87	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	K1	192/234 (82%)	177 (92%)	11 (6%)	4 (2%)	7 39

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	K2	192/234 (82%)	175 (91%)	14 (7%)	3 (2%)	9	44
1	K3	192/234 (82%)	177 (92%)	15 (8%)	0	100	100
1	K4	192/234 (82%)	180 (94%)	12 (6%)	0	100	100
1	K5	192/234 (82%)	176 (92%)	15 (8%)	1 (0%)	29	67
2	C1	356/381 (93%)	335 (94%)	21 (6%)	0	100	100
2	C2	356/381 (93%)	344 (97%)	11 (3%)	1 (0%)	41	75
2	C3	356/381 (93%)	343 (96%)	13 (4%)	0	100	100
2	C4	356/381 (93%)	347 (98%)	8 (2%)	1 (0%)	41	75
2	C5	356/381 (93%)	343 (96%)	12 (3%)	1 (0%)	41	75
3	B1	337/340 (99%)	316 (94%)	21 (6%)	0	100	100
3	B2	337/340 (99%)	320 (95%)	17 (5%)	0	100	100
3	B3	337/340 (99%)	318 (94%)	19 (6%)	0	100	100
3	B4	337/340 (99%)	318 (94%)	19 (6%)	0	100	100
3	B5	337/340 (99%)	315 (94%)	22 (6%)	0	100	100
4	G1	61/71 (86%)	59 (97%)	2 (3%)	0	100	100
4	G2	61/71 (86%)	56 (92%)	5 (8%)	0	100	100
4	G3	61/71 (86%)	58 (95%)	3 (5%)	0	100	100
4	G4	61/71 (86%)	55 (90%)	5 (8%)	1 (2%)	9	44
4	G5	61/71 (86%)	60 (98%)	1 (2%)	0	100	100
All	All	4730/5130 (92%)	4472 (94%)	246 (5%)	12 (0%)	44	75

All (12) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	K1	154	VAL
1	K1	211	ASN
1	K2	79	ASP
4	G4	58	GLU
2	C2	341	TYR
1	K5	67	LYS
1	K2	81	ASP
1	K1	155	LYS
1	K1	156	HIS
2	C5	279	MET
1	K2	154	VAL

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Mol	Chain	Res	Type
2	C4	47	LYS

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	K1	175/200 (88%)	167 (95%)	8 (5%)	27	55
1	K2	175/200 (88%)	169 (97%)	6 (3%)	37	62
1	K3	175/200 (88%)	167 (95%)	8 (5%)	27	55
1	K4	175/200 (88%)	171 (98%)	4 (2%)	50	71
1	K5	175/200 (88%)	173 (99%)	2 (1%)	73	84
2	C1	326/346 (94%)	314 (96%)	12 (4%)	34	60
2	C2	326/346 (94%)	318 (98%)	8 (2%)	47	69
2	C3	326/346 (94%)	320 (98%)	6 (2%)	59	77
2	C4	326/346 (94%)	309 (95%)	17 (5%)	23	53
2	C5	326/346 (94%)	314 (96%)	12 (4%)	34	60
3	B1	282/283 (100%)	277 (98%)	5 (2%)	59	77
3	B2	282/283 (100%)	275 (98%)	7 (2%)	47	69
3	B3	282/283 (100%)	273 (97%)	9 (3%)	39	63
3	B4	282/283 (100%)	275 (98%)	7 (2%)	47	69
3	B5	282/283 (100%)	277 (98%)	5 (2%)	59	77
4	G1	51/58 (88%)	50 (98%)	1 (2%)	55	74
4	G2	51/58 (88%)	51 (100%)	0	100	100
4	G3	51/58 (88%)	51 (100%)	0	100	100
4	G4	51/58 (88%)	50 (98%)	1 (2%)	55	74
4	G5	51/58 (88%)	49 (96%)	2 (4%)	32	59
All	All	4170/4435 (94%)	4050 (97%)	120 (3%)	45	65

All (120) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	K1	152	VAL
1	K1	155	LYS
1	K1	156	HIS
1	K1	171	MET
1	K1	175	MET
1	K1	211	ASN
1	K1	212	THR
1	K1	233	ARG
1	K2	64	ARG
1	K2	71	TYR
1	K2	79	ASP
1	K2	80	LEU
1	K2	155	LYS
1	K2	171	MET
1	K3	47	ARG
1	K3	64	ARG
1	K3	65	ASP
1	K3	67	LYS
1	K3	71	TYR
1	K3	130	ASN
1	K3	162	GLN
1	K3	191	TYR
1	K4	67	LYS
1	K4	69	PHE
1	K4	71	TYR
1	K4	171	MET
1	K5	104	ASN
1	K5	108	HIS
2	C1	105	LEU
2	C1	126	MET
2	C1	188	GLN
2	C1	192	ILE
2	C1	196	GLU
2	C1	206	GLU
2	C1	240	ARG
2	C1	242	ASN
2	C1	249	MET
2	C1	274	LYS
2	C1	364	ARG
2	C1	368	GLN
2	C2	118	MET
2	C2	126	MET
2	C2	138	ASN

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Mol	Chain	Res	Type
2	C2	180	ARG
2	C2	212	MET
2	C2	252	LEU
2	C2	260	ILE
2	C2	381	ASN
2	C3	62	TYR
2	C3	90	ARG
2	C3	132	GLN
2	C3	222	GLN
2	C3	251	CYS
2	C3	273	MET
2	C4	31	ASN
2	C4	69	HIS
2	C4	116	MET
2	C4	124	MET
2	C4	125	TYR
2	C4	138	ASN
2	C4	173	ARG
2	C4	191	MET
2	C4	201	TYR
2	C4	250	HIS
2	C4	254	LYS
2	C4	273	MET
2	C4	274	LYS
2	C4	336	LYS
2	C4	348	LEU
2	C4	364	ARG
2	C4	377	PHE
2	C5	27	GLU
2	C5	83	GLU
2	C5	126	MET
2	C5	154	TYR
2	C5	159	ASP
2	C5	165	LEU
2	C5	168	MET
2	C5	184	ARG
2	C5	188	GLN
2	C5	191	MET
2	C5	249	MET
2	C5	279	MET
3	B1	45	MET
3	B1	61	MET

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Mol	Chain	Res	Type
3	B1	105	TYR
3	B1	286	LEU
3	B1	325	MET
3	B2	101	MET
3	B2	105	TYR
3	B2	188	MET
3	B2	217	MET
3	B2	226	GLU
3	B2	262	MET
3	B2	312	ASP
3	B3	45	MET
3	B3	101	MET
3	B3	114	CYS
3	B3	188	MET
3	B3	234	PHE
3	B3	262	MET
3	B3	270	ILE
3	B3	286	LEU
3	B3	292	PHE
3	B4	38	ASP
3	B4	52	ARG
3	B4	146	LEU
3	B4	169	TRP
3	B4	217	MET
3	B4	234	PHE
3	B4	286	LEU
3	B5	101	MET
3	B5	188	MET
3	B5	214	ARG
3	B5	234	PHE
3	B5	268	ASN
4	G1	44	HIS
4	G4	18	GLN
4	G5	24	ASN
4	G5	46	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (32) such sidechains are listed below:

Mol	Chain	Res	Type
1	K1	104	ASN
1	K1	151	GLN
1	K1	211	ASN

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Mol	Chain	Res	Type
1	K2	151	GLN
1	K2	162	GLN
2	C1	31	ASN
2	C1	69	HIS
2	C1	95	ASN
2	C1	103	GLN
2	C1	106	ASN
2	C1	110	ASN
2	C1	188	GLN
2	C1	222	GLN
2	C1	242	ASN
2	C1	250	HIS
2	C1	272	HIS
2	C2	84	HIS
2	C2	163	GLN
2	C3	103	GLN
2	C3	188	GLN
2	C3	250	HIS
2	C4	138	ASN
2	C4	228	ASN
2	C4	272	HIS
2	C5	272	HIS
3	B3	311	HIS
3	B5	13	GLN
3	B5	142	HIS
3	B5	176	GLN
3	B5	340	ASN
4	G5	11	GLN
4	G5	18	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides 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](#)

There are no chain breaks in this entry.

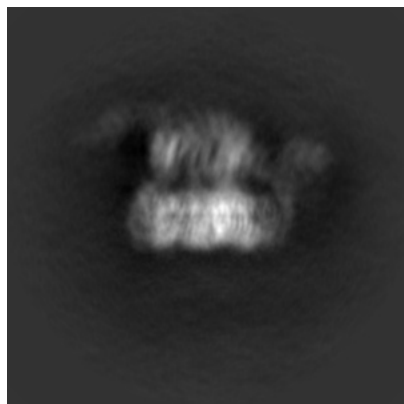
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-42008. These allow visual inspection of the internal detail of the map and identification of artifacts.

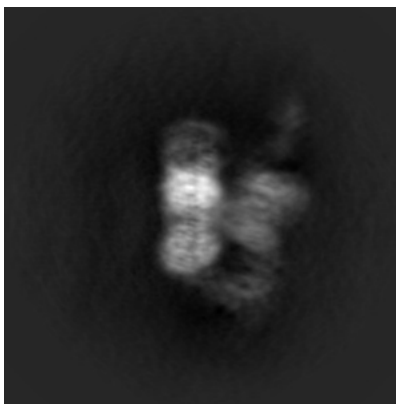
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

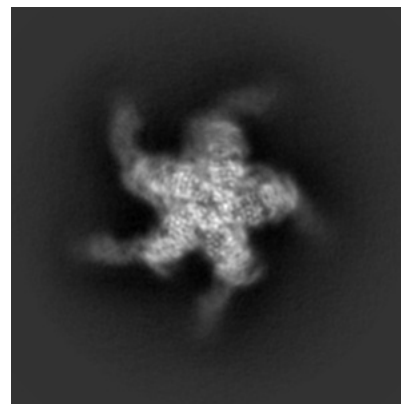
6.1.1 Primary map



X

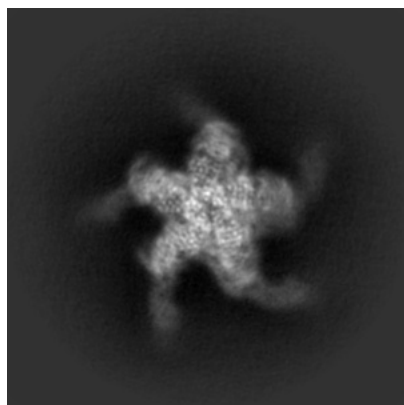


Y

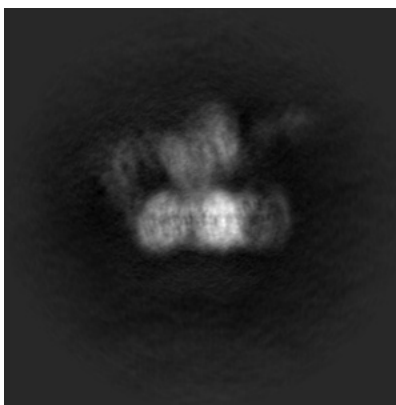


Z

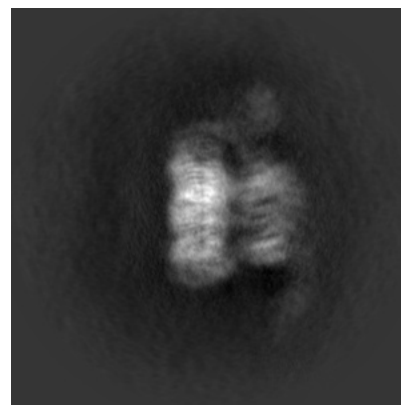
6.1.2 Raw map



X



Y

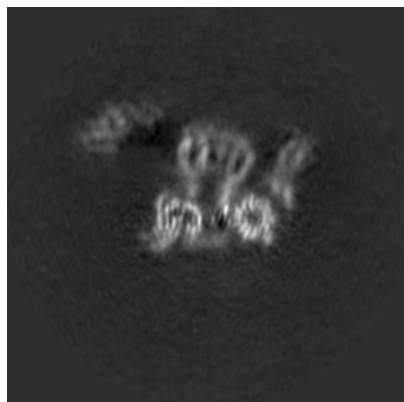


Z

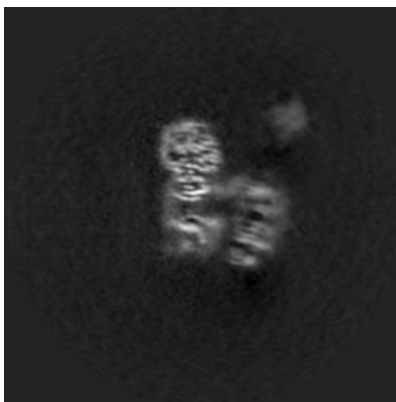
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

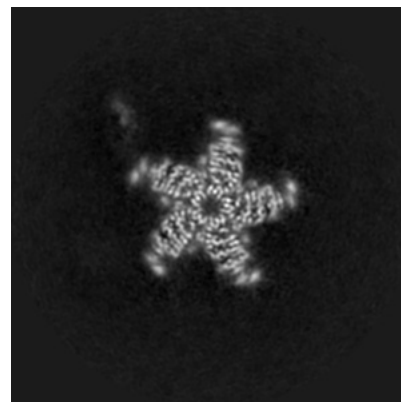
6.2.1 Primary map



X Index: 162

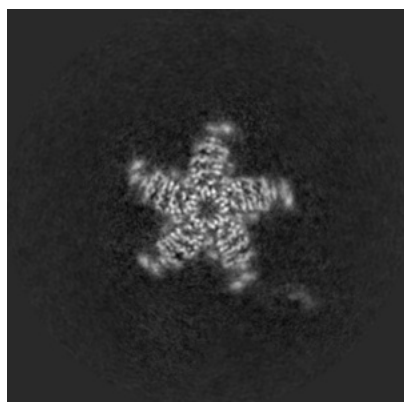


Y Index: 162

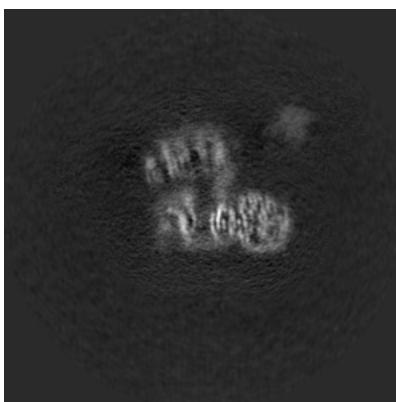


Z Index: 162

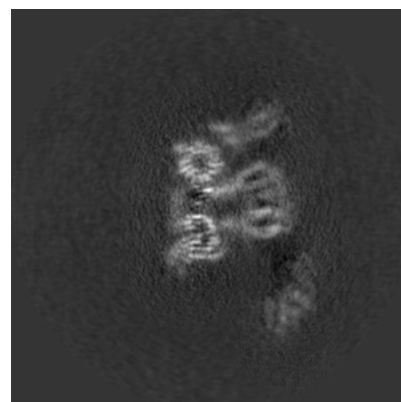
6.2.2 Raw map



X Index: 162



Y Index: 162

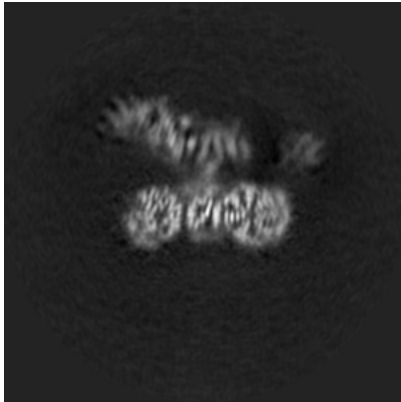


Z Index: 162

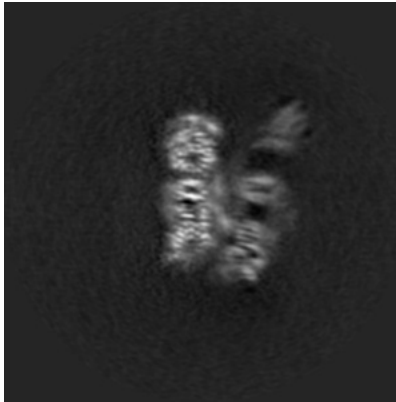
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

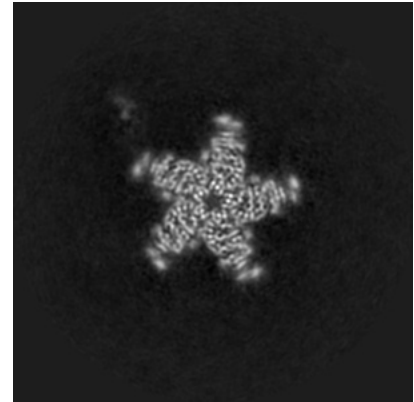
6.3.1 Primary map



X Index: 177

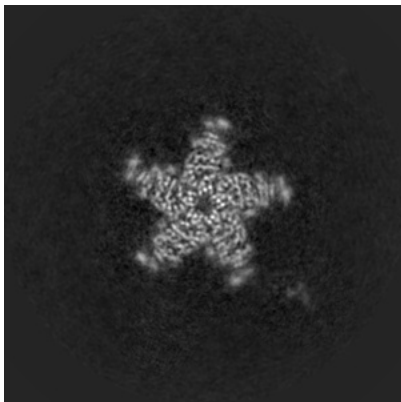


Y Index: 172

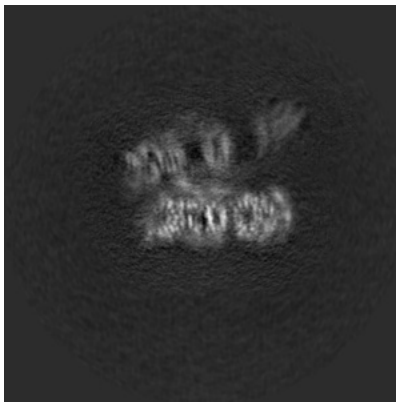


Z Index: 160

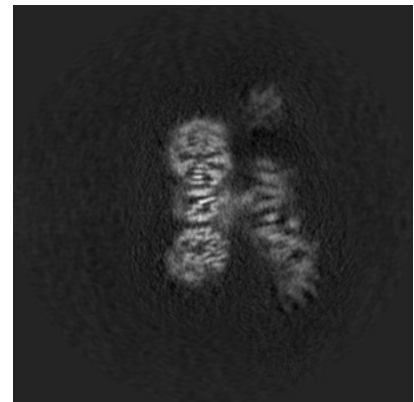
6.3.2 Raw map



X Index: 160



Y Index: 172

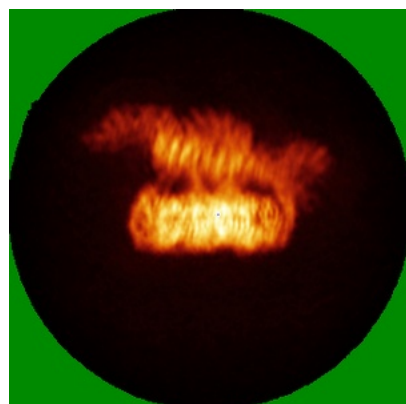


Z Index: 177

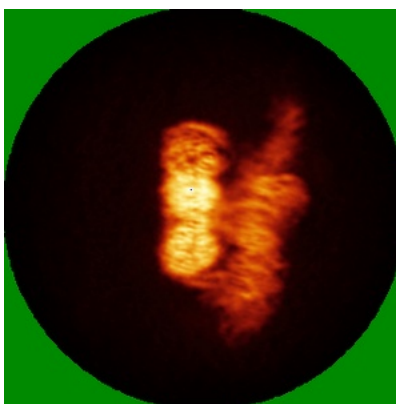
The images above show the largest variance slices of the map in three orthogonal directions.

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

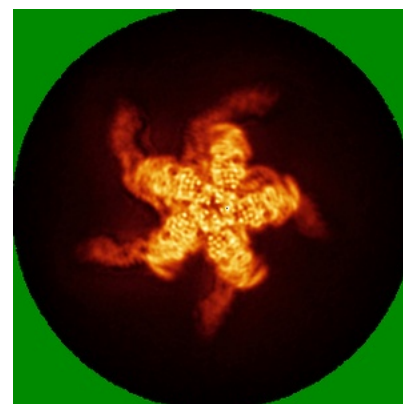
6.4.1 Primary map



X

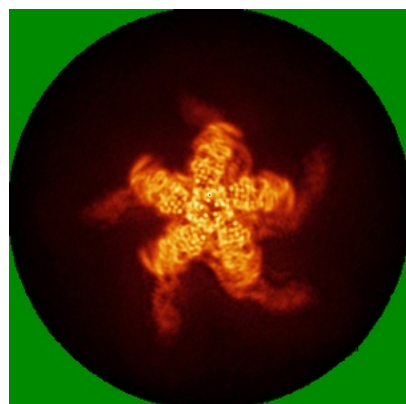


Y

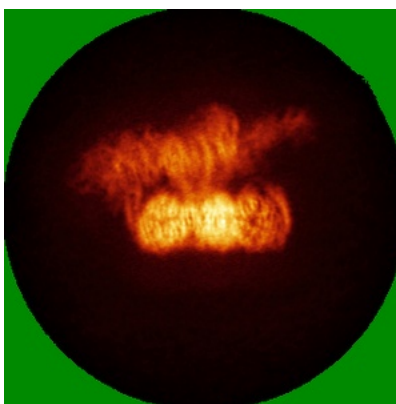


Z

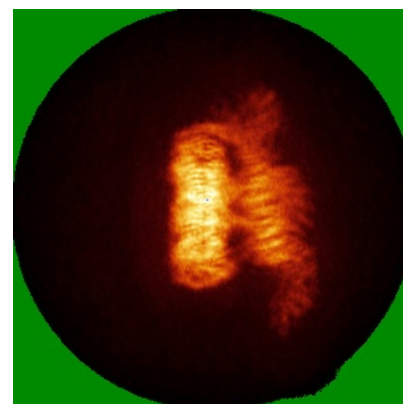
6.4.2 Raw map



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.

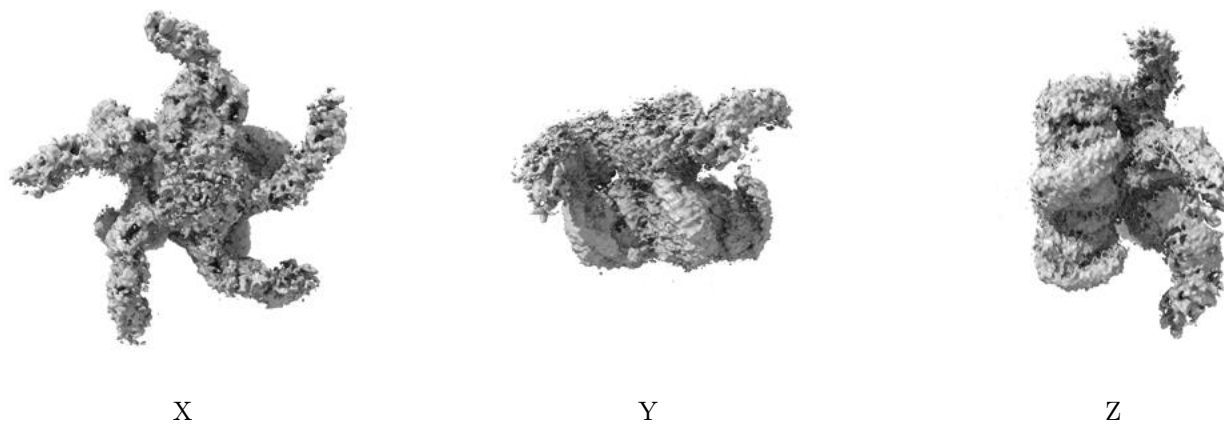
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 3.5. 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.

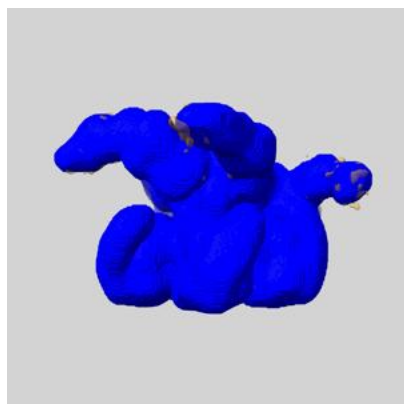
6.6 Mask visualisation [i](#)

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

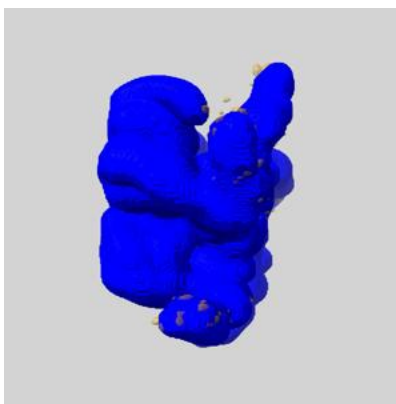
A mask typically either:

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

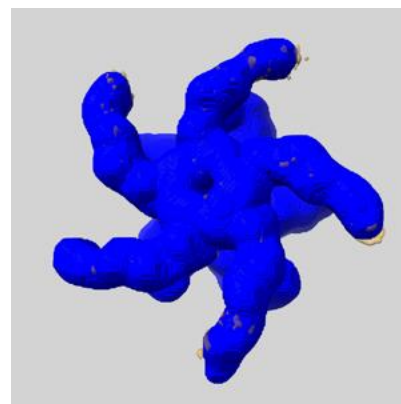
6.6.1 emd_42008_msk_1.map [i](#)



X



Y

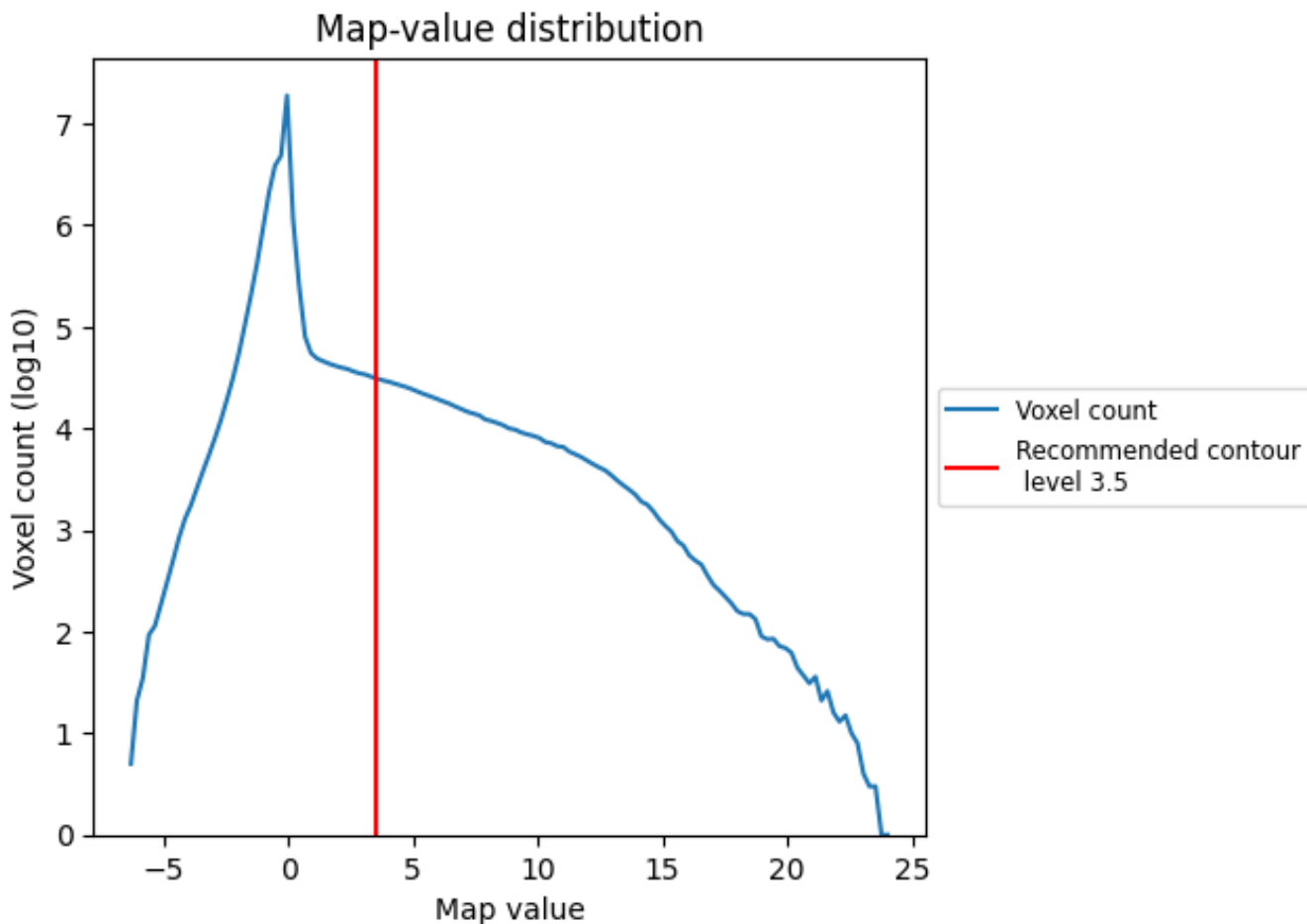


Z

7 Map analysis [i](#)

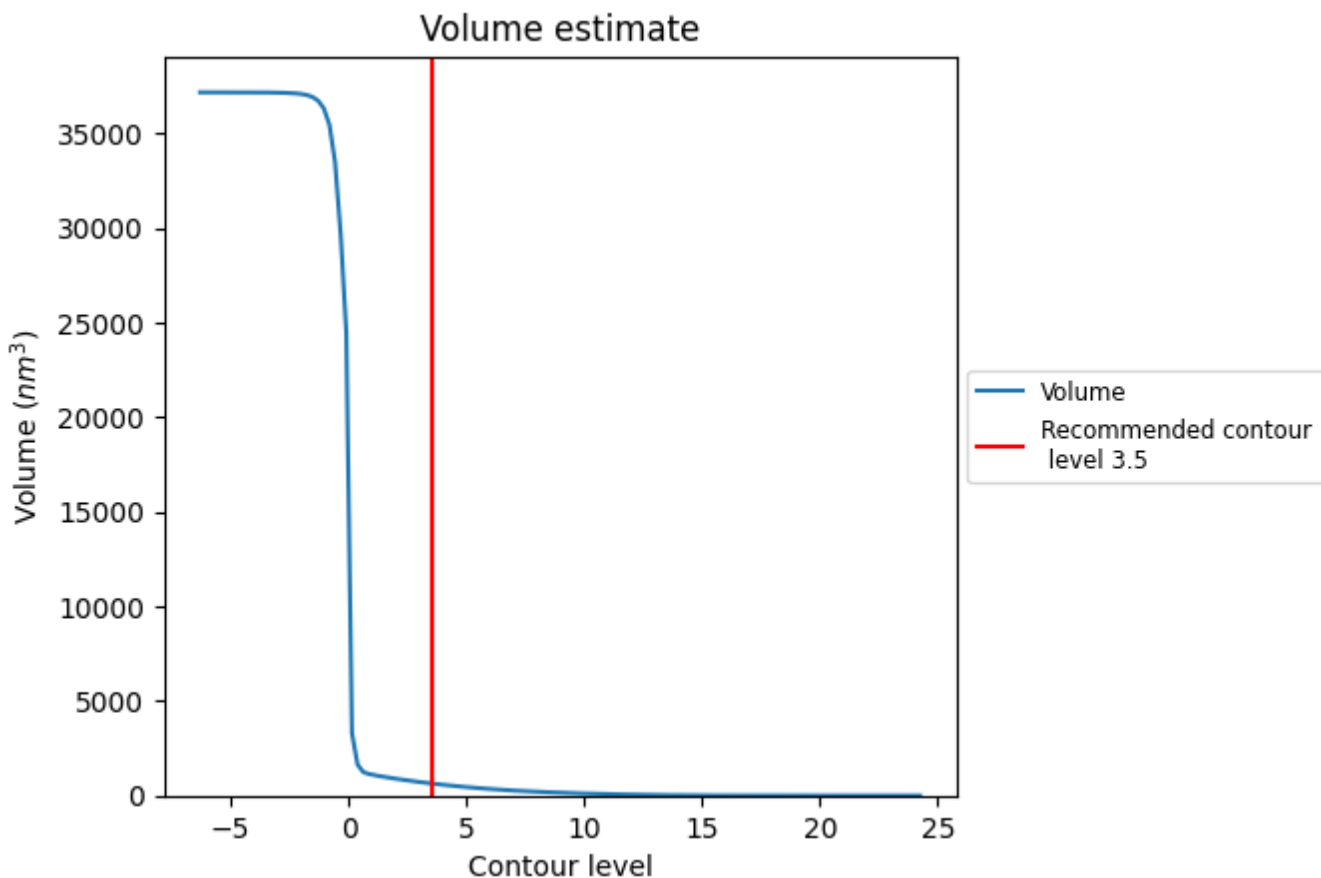
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

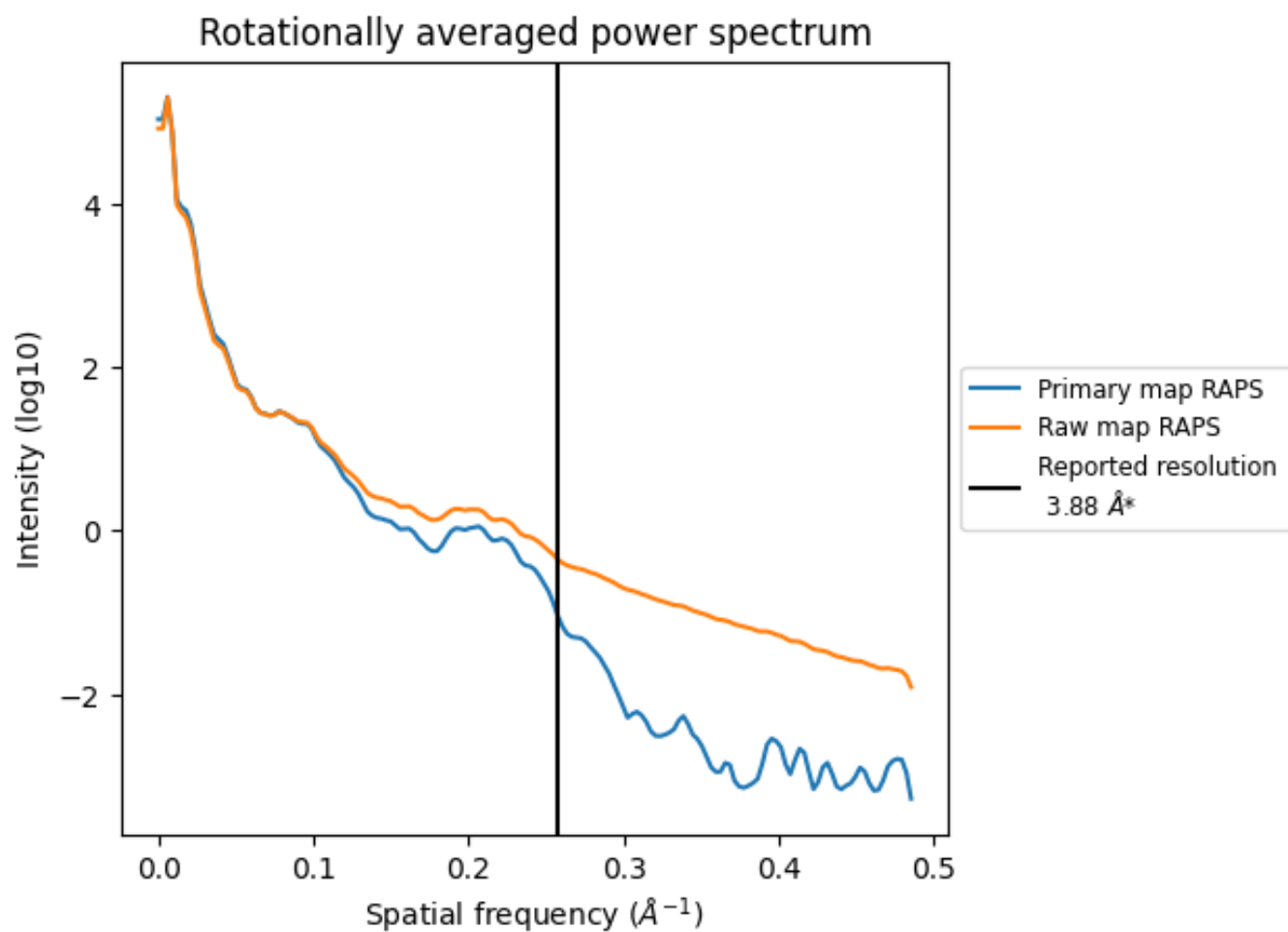
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 639 nm³; this corresponds to an approximate mass of 578 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](#)

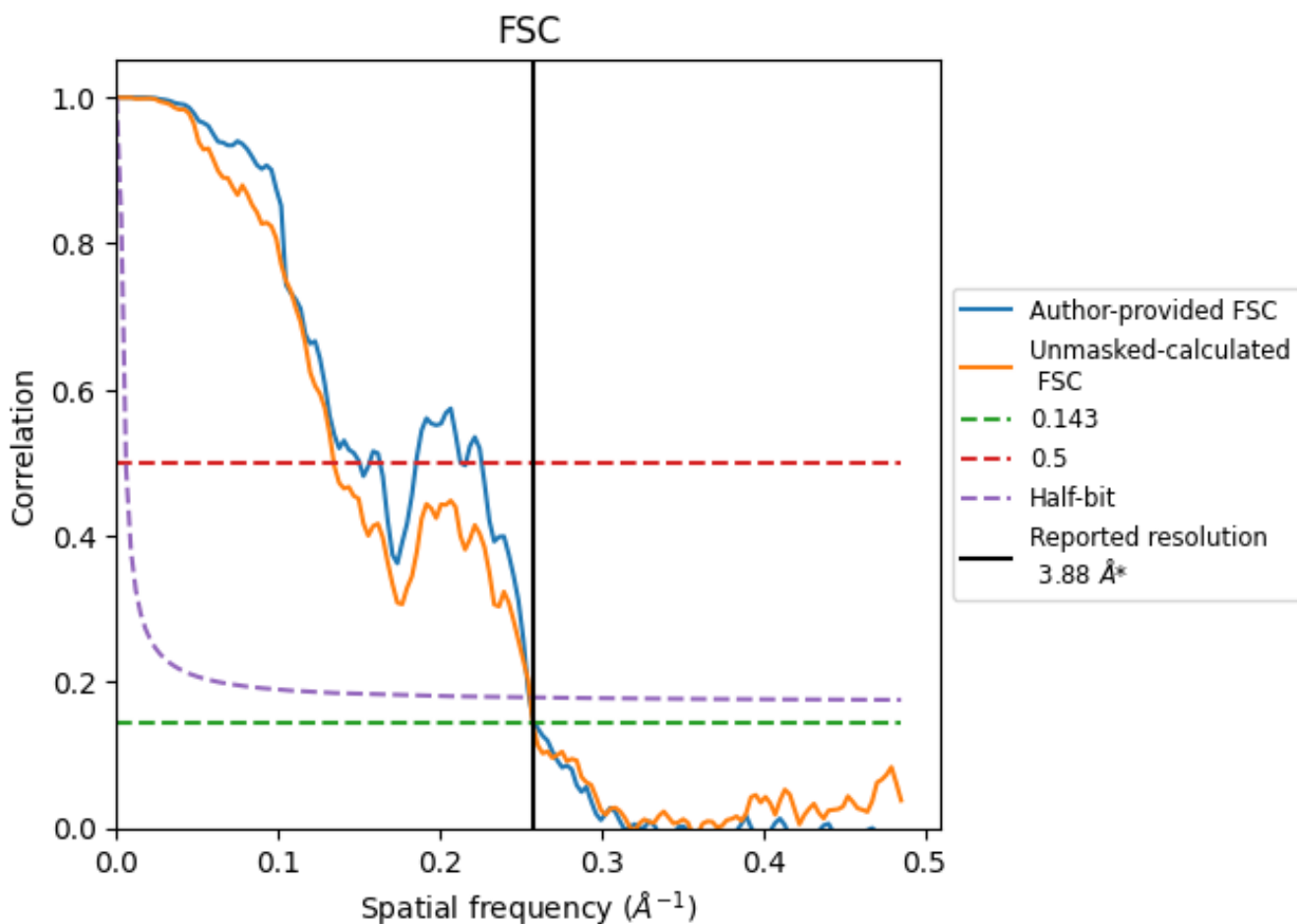


*Reported resolution corresponds to spatial frequency of 0.258 Å⁻¹

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 0.258 Å⁻¹

8.2 Resolution estimates [i](#)

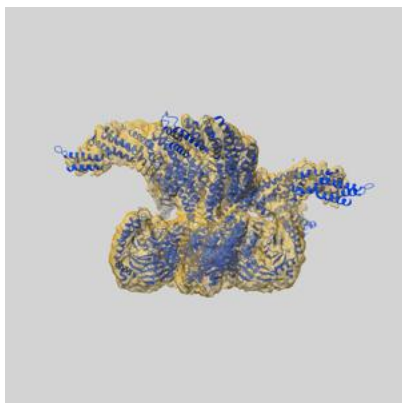
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.88	-	-
Author-provided FSC curve	3.86	6.66	3.92
Unmasked-calculated*	3.88	7.43	3.91

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

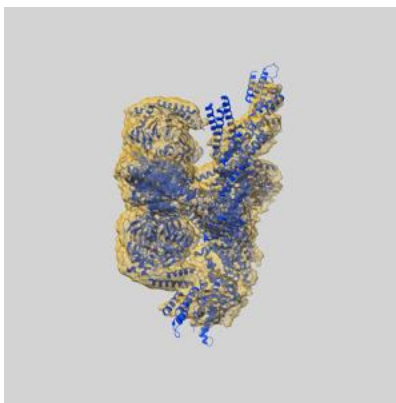
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-42008 and PDB model 8U84. Per-residue inclusion information can be found in section 3 on page 6.

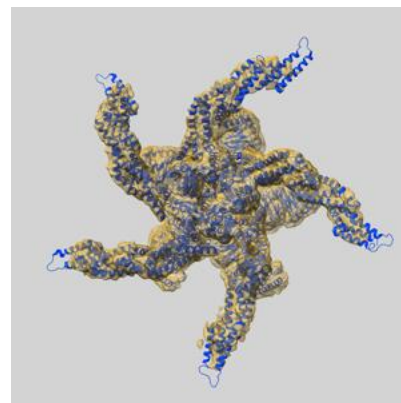
9.1 Map-model overlay [i](#)



X



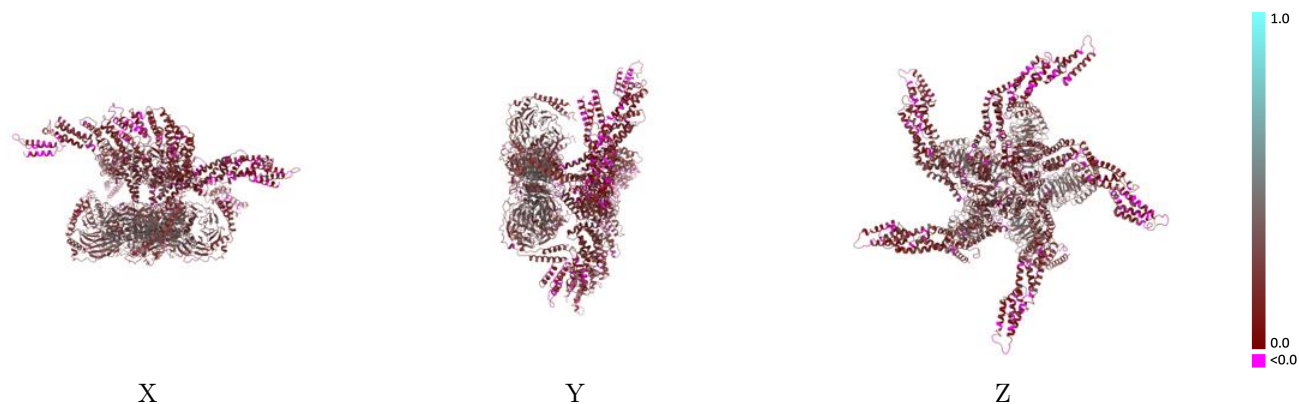
Y



Z

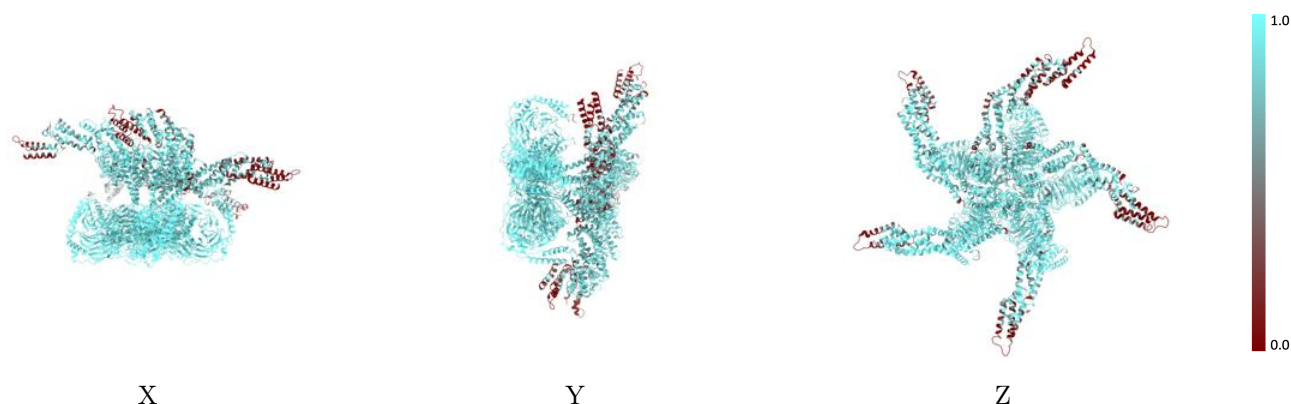
The images above show the 3D surface view of the map at the recommended contour level 3.5 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



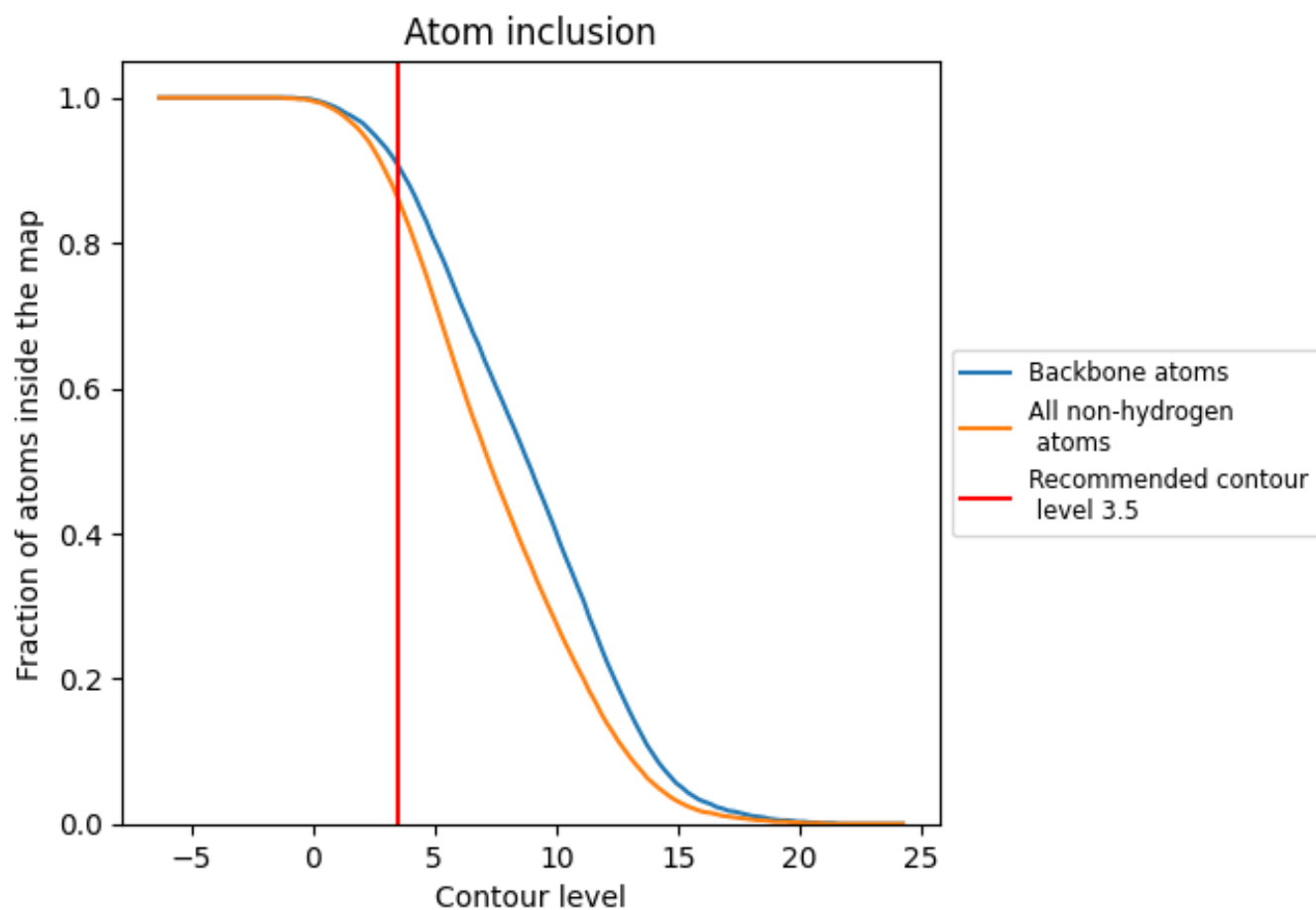
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (3.5).











































9.4 Atom inclusion [i](#)



At the recommended contour level, 91% of all backbone atoms, 86% 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 (3.5) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8610	 0.2270
B1	 0.9940	 0.3130
B2	 0.9910	 0.3140
B3	 0.9950	 0.3160
B4	 0.9940	 0.3050
B5	 0.9950	 0.3150
C1	 0.7940	 0.1890
C2	 0.7400	 0.1600
C3	 0.6350	 0.1380
C4	 0.5230	 0.1100
C5	 0.7230	 0.1650
G1	 0.9430	 0.2260
G2	 0.9730	 0.2250
G3	 0.9430	 0.2420
G4	 0.9870	 0.1950
G5	 0.9870	 0.2200
K1	 0.9510	 0.2460
K2	 0.9530	 0.2400
K3	 0.9470	 0.2250
K4	 0.9000	 0.1990
K5	 0.9430	 0.2190

