



Full wwPDB EM Validation Report ⓘ

Nov 10, 2024 – 04:01 am GMT

PDB ID : 8AIA
EMDB ID : EMD-15465
Title : Cryo-EM structure of crescentin filaments (wildtype, C1 symmetry and large box)
Authors : Liu, Y.; Lowe, J.
Deposited on : 2022-07-26
Resolution : 5.10 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.dev113
MolProbity : 4.02b-467
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) : 2.39

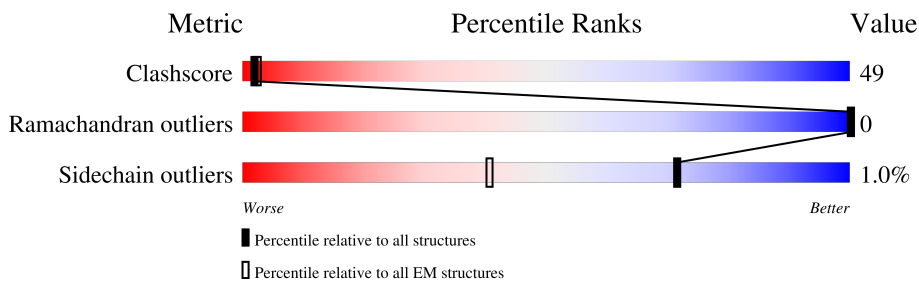
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 5.10 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
Sidechain outliers	206894	16415

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	A	457	9% 10% 82%
1	B	457	7% 11% 81%
1	G	457	13% 26% 60%
1	H	457	10% 29% 61%
1	K	457	6% 10% 84%
1	L	457	9% 10% 82%
1	M	457	9% 23% 68%
1	N	457	14% 20% 66%

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Mol	Chain	Length	Quality of chain
2	C	907	 90%
2	D	907	 88%
2	I	907	 88%
2	J	907	 88%

2 Entry composition [i](#)

There are 2 unique types of molecules in this entry. The entry contains 10962 atoms, of which 0 are hydrogens and 0 are deuteriums.

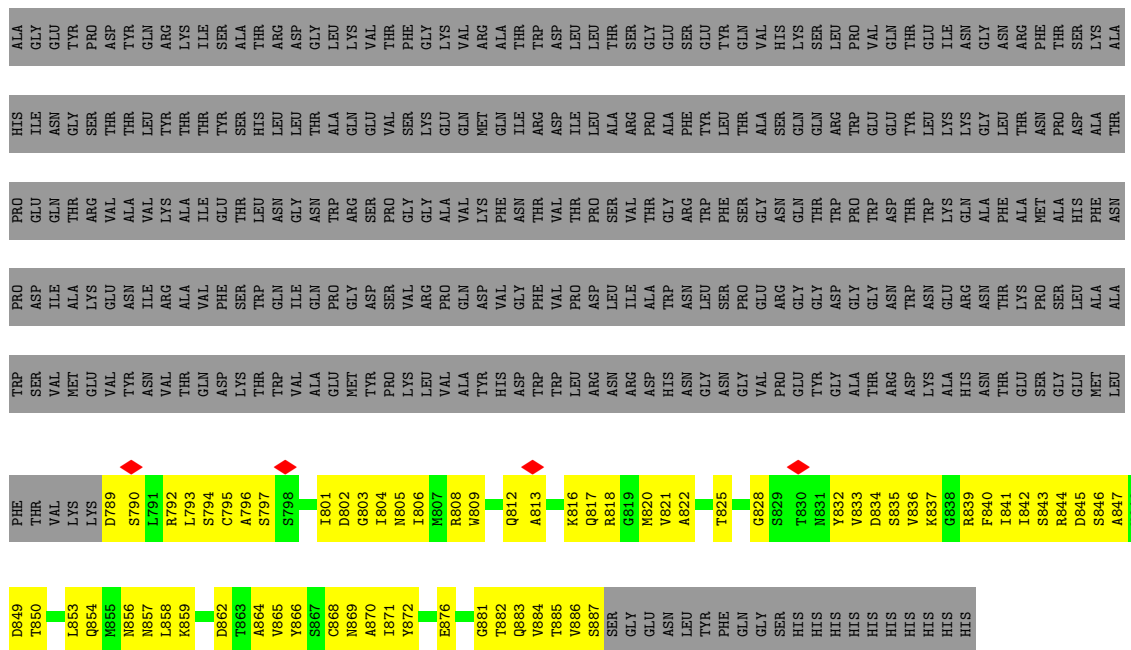
In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Crescentin.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	84	Total 655	C 390	N 134	O 130	S 1	0	0
1	B	85	Total 664	C 395	N 136	O 132	S 1	0	0
1	G	183	Total 1400	C 844	N 269	O 286	S 1	0	0
1	H	179	Total 1373	C 829	N 264	O 279	S 1	0	0
1	K	72	Total 556	C 341	N 104	O 110	S 1	0	0
1	L	84	Total 643	C 393	N 124	O 125	S 1	0	0
1	M	147	Total 1142	C 677	N 234	O 228	S 3	0	0
1	N	156	Total 1207	C 714	N 247	O 243	S 3	0	0

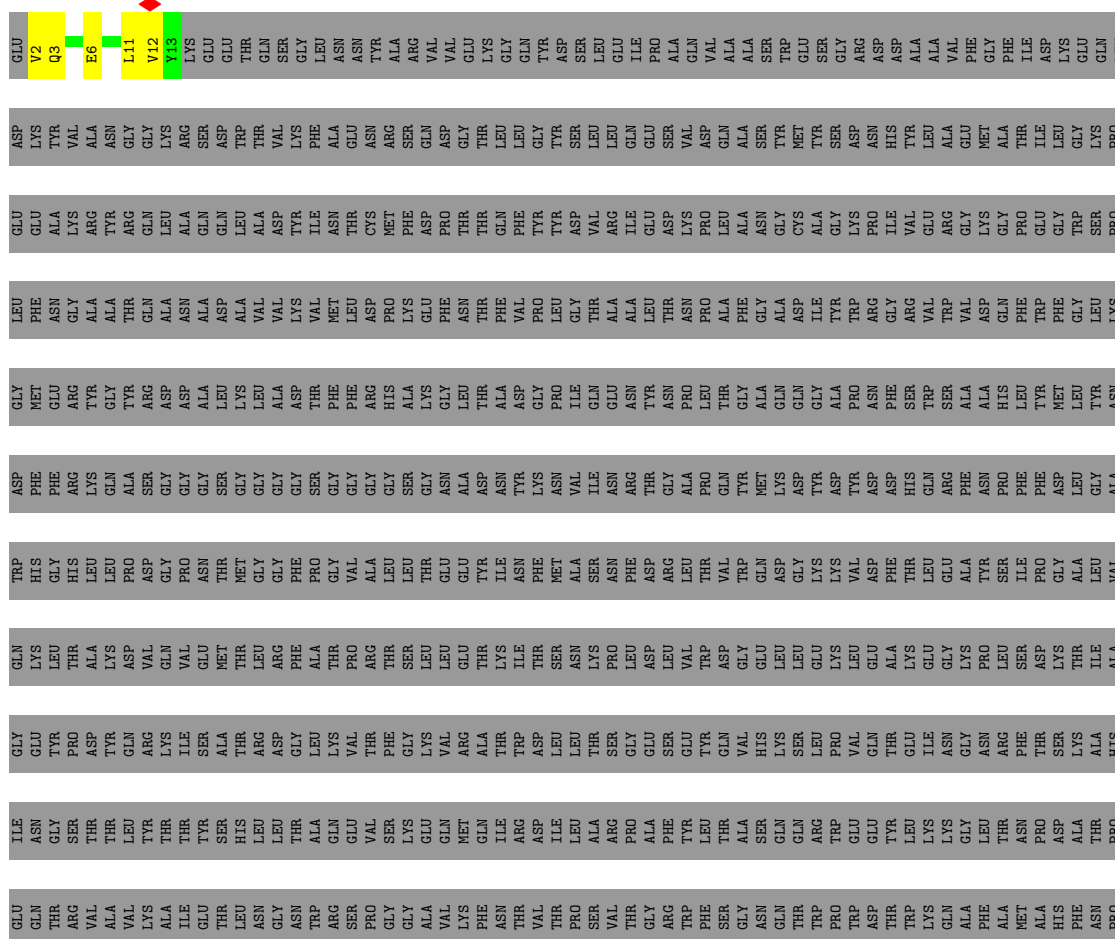
- Molecule 2 is a protein called Crescentin-specific megabody MB13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	D	112	Total 869	C 539	N 155	O 170	S 5	0	0
2	J	111	Total 860	C 534	N 154	O 167	S 5	0	0
2	C	94	Total 724	C 449	N 129	O 142	S 4	0	0
2	I	112	Total 869	C 539	N 155	O 170	S 5	0	0



• Molecule 2: Crescentin-specific megabody MB13

Chain J:  8%  88%

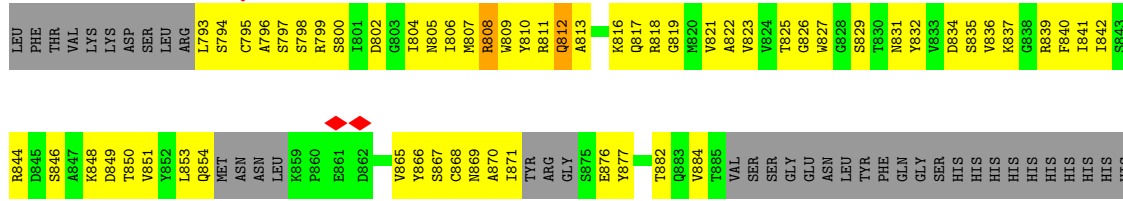


ASP	THR	D849	THR	ASP	THR
ILE	VAL	T850	VAL	ILE	VAL
ALA	MET	Y851	LYS	ALA	MET
LYS	GLU	Y852	LYS	LYS	GLU
GLU	VAL	D769	LYS	GLU	VAL
ASN	TYR	Q854	S790	ASN	TYR
ILE	ASN	M855	L791	ILE	ASN
ARG	VAL	M856	R792	ARG	VAL
ALA	THR	M857	L793	ALA	THR
ARG	THR	L858	L794	ARG	THR
ALA	GLN	C795	C795	ALA	GLN
VAL	VAL	A796	A796	VAL	VAL
PHE	ASP	S797	S797	PHE	ASP
ASP	ASP	T863	T863	ASP	ASP
THR	THR	A864	A864	THR	THR
TRP	TRP	V865	V865	TRP	TRP
GLN	GLN	R799	R799	GLN	GLN
ILE	ILE	S800	S800	ILE	ILE
ALA	ALA	I801	I801	ALA	ALA
PRO	PRO	D802	D802	PRO	PRO
GLY	GLY	C868	C868	GLY	GLY
LYS	LYS	N869	N869	LYS	LYS
ASP	ASP	G803	G803	ASP	ASP
SER	SER	I804	I804	SER	SER
VAL	VAL	N805	N805	VAL	VAL
ARG	ARG	M806	M806	ARG	ARG
GLU	GLU	R807	R807	GLU	GLU
PRO	PRO	W809	W809	PRO	PRO
VAL	VAL	Y810	Y810	VAL	VAL
ALA	ALA	R811	R811	ALA	ALA
GLN	GLN	Q812	Q812	GLN	GLN
ASP	ASP	K816	K816	ASP	ASP
VAL	VAL	Q817	Q817	VAL	VAL
GLY	GLY	R818	R818	GLY	GLY
ASP	ASP	G819	G819	ASP	ASP
ILE	ILE	M820	M820	ILE	ILE
ALA	ALA	S887	S887	ALA	ALA
TRP	TRP	SER	SER	TRP	TRP
ASN	ASN	Y821	Y821	ASN	ASN
ASN	ASN	A822	A822	ASN	ASN
LEU	LEU	V823	V823	LEU	LEU
SER	SER	V824	V824	SER	SER
PRO	PRO	T825	T825	PRO	PRO
GLU	GLU	G826	G826	GLU	GLU
VAL	VAL	W827	W827	VAL	VAL
ARG	ARG	N831	N831	ARG	ARG
GLY	GLY	Y832	Y832	GLY	GLY
LYS	LYS	V833	V833	LYS	LYS
ASP	ASP	D834	D834	ASP	ASP
GLY	GLY	S835	S835	GLY	GLY
ASN	ASN	V836	V836	ASN	ASN
TRP	TRP	K837	K837	TRP	TRP
LYS	LYS	G838	G838	LYS	LYS
ALA	ALA	R839	R839	ALA	ALA
ARG	ARG	F840	F840	ARG	ARG
ASN	ASN	I841	I841	ASN	ASN
THR	THR	I842	I842	THR	THR
LYS	LYS	S843	S843	LYS	LYS
PRO	PRO	R844	R844	PRO	PRO
SER	SER	D845	D845	SER	SER
LEU	LEU	S846	S846	LEU	LEU
ALA	ALA	A847	A847	ALA	ALA
LEU	LEU	K848	K848	LEU	LEU
PHE	PHE			PHE	PHE

Molecule 2: Crescentin-specific megabody MB13

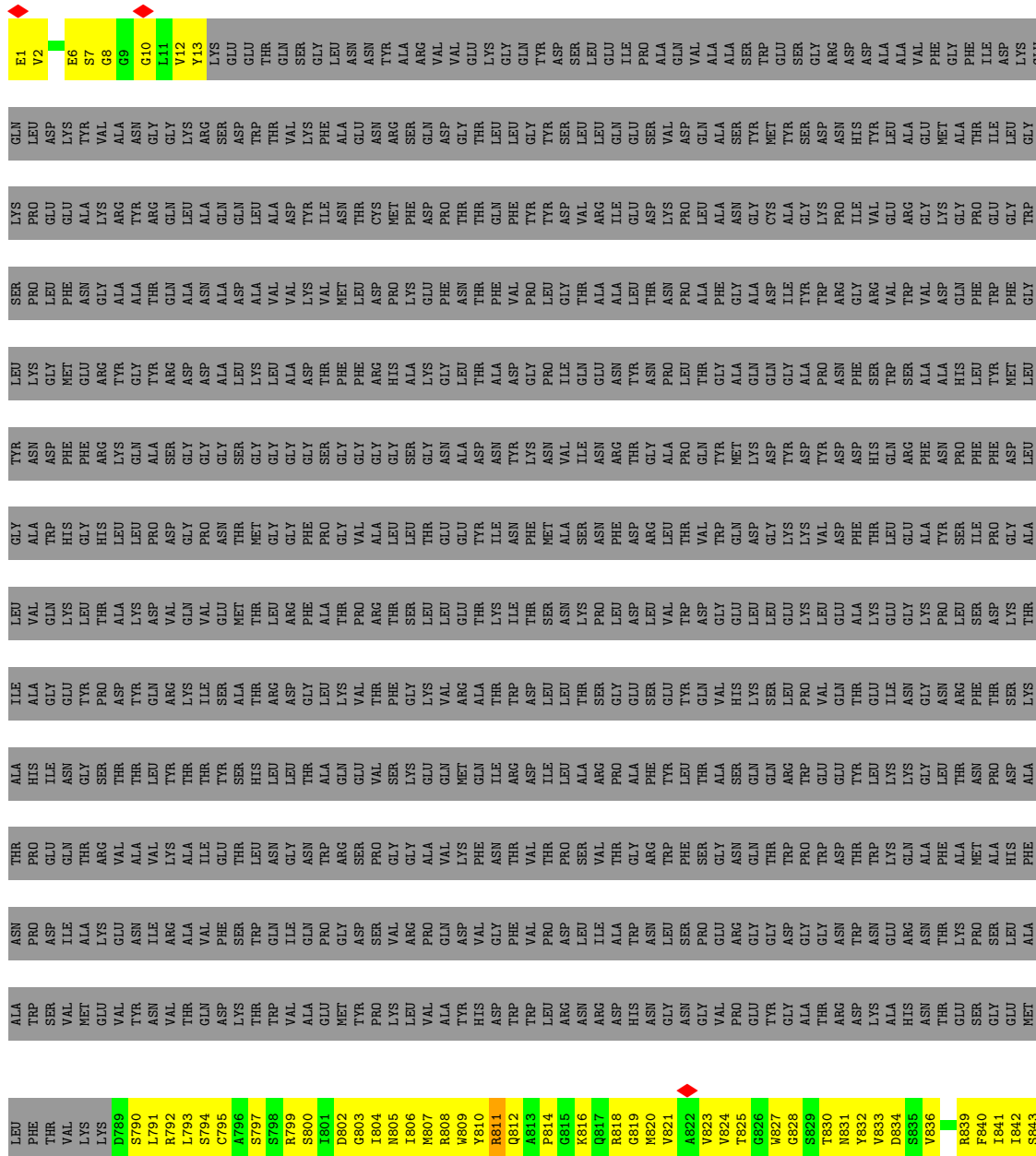


GLU	VAL	THR	VAL	GLU	VAL
V2	T850	D849	THR	V2	T850
Q3	Y851	T850	VAL	Q3	Y851
E6	Y852	D849	VAL	E6	Y852
G9	D853	D769	VAL	G9	D853
GLY	Q854	S790	VAL	GLY	Q854
LEU	M855	L791	ALA	LEU	M855
LEU	M856	R792	ASN	LEU	M856
VAL	M857	L793	ASN	VAL	M857
GLY	L858	L794	GLY	GLY	L858
VAL	C795	C795	VAL	VAL	C795
LYS	A796	A796	LYS	LYS	A796
ARG	S797	S797	ARG	ARG	S797
ASP	T863	T863	ASP	ASP	T863
THR	A864	A864	THR	THR	A864
GLU	V865	V865	GLU	GLU	V865
THR	R799	R799	THR	THR	R799
THR	S800	S800	THR	THR	S800
VAL	I801	I801	VAL	VAL	I801
VAL	D802	D802	VAL	VAL	D802
LYS	C868	C868	LYS	LYS	C868
PHE	N869	N869	PHE	PHE	N869
ALA	G803	G803	ALA	ALA	G803
ASN	I804	I804	ASN	ASN	I804
ASN	N805	N805	ASN	ASN	N805
THR	M806	M806	THR	THR	M806
THR	R807	R807	THR	THR	R807
CYS	W809	W809	CYS	CYS	W809
ASP	Y810	Y810	ASP	ASP	Y810
ARG	R811	R811	ARG	ARG	R811
ALA	Q812	Q812	ALA	ALA	Q812
THR	K816	K816	THR	THR	K816
THR	Q817	Q817	THR	THR	Q817
LYS	R818	R818	LYS	LYS	R818
GLN	G819	G819	GLN	GLN	G819
LEU	M820	M820	LEU	LEU	M820
GLY	S887	S887	GLY	GLY	S887
ILE	SER	SER	ILE	ILE	SER
LEU	Y821	Y821	LEU	LEU	Y821
PRO	A822	A822	PRO	PRO	A822
ALA	V823	V823	ALA	ALA	V823
ALA	V824	V824	ALA	ALA	V824
GLN	T825	T825	GLN	GLN	T825
VAL	G826	G826	VAL	VAL	G826
VAL	W827	W827	VAL	VAL	W827
THR	N831	N831	THR	THR	N831
TYR	Y832	Y832	TYR	TYR	Y832
MET	V833	V833	MET	MET	V833
TYR	D834	D834	TYR	TYR	D834
GLY	S835	S835	GLY	GLY	S835
ARG	V836	V836	ARG	ARG	V836
ASN	K837	K837	ASN	ASN	K837
ASP	G838	G838	ASP	ASP	G838
THR	R839	R839	THR	THR	R839
VAL	F840	F840	VAL	VAL	F840
ALA	I841	I841	ALA	ALA	I841
GLY	I842	I842	GLY	GLY	I842
ILE	S843	S843	ILE	ILE	S843
ALA	R844	R844	ALA	ALA	R844
THR	D845	D845	THR	THR	D845
GLY	S846	S846	GLY	GLY	S846
ILE	A847	A847	ILE	ILE	A847
LEU	K848	K848	LEU	LEU	K848
LYS			LYS	LYS	
GLY			GLY	GLY	
TRP			TRP	TRP	



• Molecule 2: Crescentin-specific megabody MB13

Chain I: 9% 88%



R844	D845	S846	A847	K848	D849	T850	V851	Y852	L853	Q854	M855	N856	N857	L858	K859	P860	E861	D862	T863	A864	V865	Y866	L867	N869	A870	I871	Y872	R873	E876	Y877	W878	T882	Q883	V884	T885	V886	S887	SER	GLY	GLU	ASN	LEU	LEU	TYR	PHE	GLN	GLY	SER	HIS	HIS	HIS	HIS	HIS	HIS	HIS	HIS	HIS	HIS	HIS
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4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	1101148	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 ($e^-/\text{\AA}^2$)	34	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	3500	Depositor
Magnification	75000	Depositor
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	2.057	Depositor
Minimum map value	-0.002	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.02	Depositor
Map size (Å)	972.0, 972.0, 972.0	wwPDB
Map dimensions	500, 500, 500	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.944, 1.944, 1.944	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	A	0.36	0/655	0.63	0/875
1	B	0.42	0/664	0.71	0/887
1	G	0.30	0/1407	0.58	0/1899
1	H	0.32	0/1380	0.56	0/1862
1	K	0.27	0/560	0.44	0/755
1	L	0.31	0/648	0.48	0/872
1	M	0.32	0/1143	0.56	0/1528
1	N	0.38	0/1208	0.65	1/1615 (0.1%)
2	C	0.45	0/734	0.63	1/988 (0.1%)
2	D	0.44	0/883	0.61	0/1192
2	I	0.46	0/883	0.63	0/1192
2	J	0.45	0/874	0.64	0/1180
All	All	0.37	0/11039	0.60	2/14845 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	N	403	ARG	CB-CG-CD	5.41	125.66	111.60
2	C	812	GLN	C-N-CA	-5.03	109.13	121.70

There are no chirality outliers.

There are no planarity outliers.

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	A	655	0	667	66	0
1	B	664	0	674	66	0
1	G	1400	0	1389	138	0
1	H	1373	0	1364	177	0
1	K	556	0	557	45	0
1	L	643	0	646	50	0
1	M	1142	0	1151	139	0
1	N	1207	0	1214	113	0
2	C	724	0	697	100	0
2	D	869	0	846	91	0
2	I	869	0	846	123	0
2	J	860	0	837	95	0
All	All	10962	0	10888	1060	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 49.

All (1060) 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)
2:C:802:ASP:OD1	2:C:844:ARG:HD3	1.52	1.09
2:C:866:TYR:H	2:C:884:VAL:HG21	1.28	0.99
2:J:832:TYR:HB2	2:J:836:VAL:HG21	1.42	0.98
2:I:805:ASN:HD21	2:I:872:TYR:HD1	1.01	0.97
1:N:296:LYS:NZ	1:N:300:MET:SD	2.39	0.95
2:C:808:ARG:CB	2:C:823:VAL:HA	1.96	0.94
1:A:367:LEU:HB3	1:B:367:LEU:HD22	1.50	0.93
2:C:804:ILE:HG21	2:C:807:MET:HB3	1.50	0.93
1:G:80:ARG:HA	1:G:83:GLU:HB2	1.51	0.93
2:C:808:ARG:HB3	2:C:823:VAL:HA	1.50	0.91
2:I:805:ASN:OD1	2:I:806:ILE:N	2.04	0.90
1:H:88:ILE:HD12	1:H:91:ARG:HD2	1.53	0.89
1:H:128:ARG:NH1	1:H:131:THR:OG1	2.07	0.88
2:C:805:ASN:HB3	2:C:871:ILE:O	1.75	0.87
1:M:437:ASP:OD1	1:M:440:ARG:NH1	2.08	0.87
2:J:863:THR:HG23	2:J:885:THR:HA	1.55	0.87
1:G:146:LEU:HG	1:H:146:LEU:HB3	1.54	0.86
1:A:358:ALA:O	1:A:362:GLU:HB2	1.76	0.85
2:I:792:ARG:HE	2:I:852:TYR:HA	1.39	0.85
2:D:790:SER:HA	2:D:856:ASN:HD21	1.42	0.83
1:H:181:LEU:O	1:H:184:GLN:NE2	2.12	0.82
1:M:322:ALA:O	1:M:326:ASN:N	2.11	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:797:SER:HB3	2:C:849:ASP:HB3	1.61	0.82
2:I:805:ASN:ND2	2:I:872:TYR:HD1	1.77	0.82
1:N:352:GLY:O	1:N:355:THR:OG1	1.98	0.82
1:G:148:ASN:O	1:G:152:GLN:N	2.12	0.81
1:K:93:ASN:OD1	1:K:96:GLN:NE2	2.13	0.81
2:I:805:ASN:O	2:I:806:ILE:HD13	1.79	0.81
1:G:173:HIS:HB3	1:M:331:ARG:HH21	1.46	0.81
2:J:792:ARG:HE	2:J:793:LEU:H	1.28	0.81
2:J:11:LEU:HD13	2:J:885:THR:H	1.44	0.81
2:I:6:GLU:HB3	2:I:793:LEU:HB3	1.61	0.80
1:H:209:LEU:O	1:H:213:ALA:N	2.15	0.80
1:H:73:VAL:HA	1:H:76:GLU:HB2	1.63	0.80
1:L:66:ILE:HA	1:L:69:ILE:HB	1.63	0.80
1:H:168:THR:O	1:H:172:GLU:N	2.15	0.80
1:M:403:ARG:HA	1:M:406:HIS:CD2	2.17	0.80
1:G:170:ARG:HA	1:G:173:HIS:HB2	1.62	0.80
1:N:354:ASP:OD1	1:N:357:ARG:NH2	2.15	0.80
1:G:87:LEU:O	1:G:91:ARG:N	2.15	0.80
2:C:809:TRP:HA	2:C:868:CYS:HA	1.64	0.79
1:N:288:GLU:HG2	1:N:289:THR:H	1.47	0.79
1:G:76:GLU:OE1	1:H:80:ARG:NH1	2.15	0.79
1:A:435:ARG:NH2	2:D:817:GLN:OE1	2.16	0.79
1:G:201:ARG:NH1	1:G:205:ASP:OD2	2.15	0.79
1:G:150:LEU:O	1:G:154:ASP:N	2.16	0.78
1:L:59:LEU:O	1:L:62:ILE:N	2.15	0.78
1:H:96:GLN:O	1:H:99:ARG:NH1	2.16	0.78
1:M:412:GLU:CB	2:I:873:ARG:HH11	1.98	0.77
1:H:45:ILE:HG12	1:L:70:ARG:HH11	1.47	0.77
2:I:848:LYS:NZ	2:I:850:THR:OG1	2.14	0.77
2:C:811:ARG:O	2:C:819:GLY:N	2.18	0.77
2:J:824:VAL:HG11	2:J:842:ILE:HG12	1.67	0.77
1:H:153:SER:HA	1:H:156:LYS:HE2	1.67	0.77
2:I:844:ARG:HA	2:I:851:VAL:HA	1.67	0.77
1:K:83:GLU:OE1	1:L:84:HIS:NE2	2.18	0.76
2:C:844:ARG:HA	2:C:851:VAL:HG12	1.67	0.76
1:H:46:HIS:HA	1:H:49:LEU:HB2	1.66	0.76
1:H:101:ILE:O	1:H:105:GLN:NE2	2.18	0.76
2:C:808:ARG:HB3	2:C:823:VAL:CA	2.15	0.76
1:H:143:ILE:O	1:H:147:ARG:N	2.18	0.76
1:A:389:ARG:HH21	1:A:392:LEU:HD22	1.51	0.76
2:C:808:ARG:O	2:C:869:ASN:N	2.18	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:789:ASP:N	2:J:855:MET:O	2.19	0.75
1:A:372:VAL:HG12	1:A:376:LYS:HZ1	1.50	0.75
2:I:805:ASN:O	2:I:806:ILE:CD1	2.33	0.75
1:G:175:VAL:HG21	1:H:170:ARG:HH12	1.50	0.75
1:M:383:GLU:O	1:M:387:GLN:NE2	2.19	0.75
1:H:54:ARG:HG2	1:H:58:HIS:CE1	2.22	0.75
2:D:862:ASP:HB2	2:D:886:VAL:HB	1.68	0.74
2:D:13:TYR:HA	2:D:887:SER:HB2	1.69	0.74
1:G:207:ALA:O	1:G:211:GLU:N	2.20	0.74
1:A:389:ARG:HH22	1:B:388:LEU:HD13	1.52	0.74
1:H:137:GLU:O	1:H:141:LEU:N	2.16	0.74
1:H:122:LEU:O	1:H:126:ASP:N	2.21	0.73
1:N:419:ARG:NH1	2:J:876:GLU:OE1	2.21	0.73
1:M:390:ALA:O	1:M:394:ALA:N	2.22	0.73
1:G:80:ARG:O	1:G:84:HIS:ND1	2.22	0.72
2:I:797:SER:OG	2:I:799:ARG:O	2.05	0.72
1:A:435:ARG:HH12	2:D:816:LYS:HB3	1.52	0.72
2:J:800:SER:HB2	2:J:873:ARG:HE	1.54	0.72
1:H:70:ARG:O	1:H:74:SER:N	2.22	0.72
1:G:101:ILE:O	1:G:105:GLN:N	2.22	0.72
2:D:7:SER:N	2:D:794:SER:O	2.22	0.72
2:C:808:ARG:HB3	2:C:823:VAL:HG23	1.71	0.72
1:G:99:ARG:O	1:G:103:LEU:N	2.21	0.72
1:H:60:LYS:HA	1:H:63:GLU:HG2	1.70	0.72
1:G:205:ASP:HA	1:G:208:LEU:HB3	1.71	0.72
1:H:123:GLY:O	1:H:127:ALA:N	2.22	0.72
1:M:337:ARG:HA	1:M:340:GLU:HB2	1.71	0.72
1:M:436:ARG:HH22	2:J:811:ARG:HH21	1.37	0.71
1:G:192:ARG:NE	1:G:196:GLU:OE2	2.24	0.71
1:L:114:ARG:O	1:L:118:ALA:N	2.20	0.71
2:J:812:GLN:HB2	2:J:818:ARG:HD3	1.72	0.71
1:G:102:ALA:HA	1:G:105:GLN:HB3	1.73	0.71
1:M:434:ALA:O	1:M:438:ARG:N	2.24	0.71
1:B:417:ILE:HD12	1:B:420:LEU:HD11	1.73	0.71
1:L:92:ALA:O	1:L:96:GLN:N	2.24	0.71
1:M:411:ALA:O	1:M:414:GLN:NE2	2.24	0.70
2:I:811:ARG:HB2	2:I:821:VAL:HG23	1.73	0.70
1:H:168:THR:HA	1:H:171:ILE:HG22	1.73	0.70
2:J:808:ARG:NH1	2:J:820:MET:SD	2.65	0.70
2:I:865:VAL:HA	2:I:883:GLN:HA	1.73	0.70
2:J:792:ARG:NH2	2:J:853:LEU:O	2.24	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:148:ASN:HA	1:G:151:LEU:HB2	1.73	0.70
1:G:63:GLU:HG2	1:G:64:PRO:HD3	1.72	0.69
1:K:87:LEU:HD22	1:L:87:LEU:HB3	1.73	0.69
2:D:869:ASN:OD1	2:D:870:ALA:N	2.25	0.69
2:J:818:ARG:NH1	2:J:865:VAL:O	2.25	0.69
2:C:835:SER:O	2:C:839:ARG:NH2	2.18	0.69
2:I:821:VAL:HG13	2:I:836:VAL:HG11	1.74	0.69
1:A:431:LEU:HD23	1:A:435:ARG:HB2	1.75	0.69
2:J:845:ASP:OD1	2:J:846:SER:N	2.25	0.69
2:C:812:GLN:HB3	2:C:818:ARG:HA	1.74	0.69
2:C:808:ARG:HB3	2:C:823:VAL:CB	2.23	0.69
1:M:344:ASP:O	1:M:348:GLN:N	2.22	0.69
2:J:805:ASN:OD1	2:J:873:ARG:NH2	2.26	0.69
2:J:835:SER:O	2:J:839:ARG:NE	2.17	0.69
2:C:808:ARG:CB	2:C:823:VAL:CA	2.71	0.69
1:K:102:ALA:O	1:K:106:ALA:N	2.23	0.69
1:N:288:GLU:O	1:N:291:THR:OG1	2.06	0.69
2:D:866:TYR:N	2:D:882:THR:O	2.25	0.69
1:M:412:GLU:HB3	2:I:873:ARG:HH11	1.57	0.69
1:N:294:ALA:O	1:N:297:LEU:N	2.26	0.69
2:I:7:SER:O	2:I:794:SER:N	2.19	0.69
1:B:417:ILE:HG12	2:C:806:ILE:HG21	1.75	0.68
1:G:151:LEU:HD13	1:N:355:THR:HG22	1.74	0.68
1:M:428:GLU:O	1:M:432:GLU:N	2.16	0.68
1:G:150:LEU:HD13	1:H:150:LEU:HA	1.75	0.68
1:H:70:ARG:HH21	1:L:45:ILE:HD13	1.57	0.68
1:B:432:GLU:OE1	1:B:435:ARG:NE	2.27	0.68
2:C:813:ALA:HB3	2:C:816:LYS:HD3	1.75	0.68
1:G:79:ALA:O	1:G:83:GLU:N	2.26	0.68
1:G:105:GLN:O	1:G:109:ARG:NH1	2.26	0.68
1:H:81:ARG:O	1:H:85:ALA:N	2.25	0.68
2:C:825:THR:HG22	2:C:827:TRP:H	1.59	0.68
1:G:169:ALA:O	1:G:173:HIS:N	2.26	0.68
1:M:428:GLU:HA	1:M:431:LEU:HB2	1.74	0.68
1:M:335:ARG:HA	1:M:338:ALA:HB3	1.75	0.68
2:J:863:THR:OG1	2:J:886:VAL:O	2.12	0.68
1:H:163:SER:HA	1:H:166:ASP:HB2	1.75	0.68
1:A:419:ARG:NH1	1:A:423:GLU:OE2	2.27	0.67
2:D:836:VAL:HG12	2:D:839:ARG:CZ	2.25	0.67
1:H:92:ALA:O	1:H:96:GLN:N	2.24	0.67
1:H:110:GLU:O	1:H:114:ARG:N	2.24	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:399:GLN:HB3	1:N:403:ARG:NH1	2.10	0.67
2:J:809:TRP:N	2:J:822:ALA:O	2.24	0.67
2:I:862:ASP:N	2:I:887:SER:O	2.26	0.67
1:L:45:ILE:HG13	1:L:46:HIS:H	1.59	0.67
1:B:417:ILE:HD11	2:C:806:ILE:HD13	1.77	0.67
1:H:148:ASN:O	1:H:152:GLN:N	2.24	0.67
1:B:399:GLN:HE22	1:B:403:ARG:HD3	1.59	0.67
1:G:44:THR:O	1:G:48:GLY:N	2.22	0.67
2:J:803:GLY:O	2:J:873:ARG:NH2	2.19	0.67
2:I:825:THR:O	2:I:844:ARG:NH2	2.28	0.67
2:D:804:ILE:HA	2:D:872:TYR:HE1	1.59	0.67
1:A:381:ALA:O	1:A:384:ARG:HG2	1.95	0.66
1:B:382:GLU:OE2	1:B:389:ARG:NH2	2.28	0.66
2:D:809:TRP:HZ3	2:D:853:LEU:HD22	1.59	0.66
1:H:40:GLN:HE21	1:K:70:ARG:HA	1.60	0.66
2:D:808:ARG:NH1	2:D:876:GLU:OE2	2.28	0.66
1:M:424:ALA:O	1:M:427:ALA:N	2.28	0.66
2:D:822:ALA:HA	2:D:832:TYR:HA	1.75	0.66
2:D:5:GLN:O	2:D:796:ALA:N	2.29	0.66
1:N:301:ASN:O	1:N:305:SER:OG	2.05	0.66
2:J:841:ILE:O	2:J:854:GLN:N	2.23	0.66
2:I:6:GLU:HG3	2:I:795:CYS:HA	1.76	0.66
1:H:42:TYR:HA	1:H:45:ILE:HD12	1.77	0.66
1:L:45:ILE:HG13	1:L:46:HIS:N	2.11	0.66
1:A:376:LYS:HB2	1:A:380:ARG:NH2	2.11	0.66
1:H:117:ALA:O	1:H:121:ALA:N	2.28	0.65
1:M:384:ARG:O	1:M:384:ARG:NH1	2.29	0.65
1:B:360:ALA:O	1:B:364:ALA:HB3	1.96	0.65
1:A:420:LEU:HD13	1:B:420:LEU:HD13	1.77	0.65
2:D:801:ILE:HG23	2:D:849:ASP:HB2	1.78	0.65
2:D:13:TYR:O	2:D:887:SER:N	2.27	0.65
1:H:167:ALA:O	1:H:171:ILE:N	2.28	0.65
1:L:72:PRO:O	1:L:75:GLN:NE2	2.30	0.65
1:M:392:LEU:HD11	1:N:388:LEU:HD12	1.79	0.65
1:H:62:ILE:HA	1:H:65:LEU:HD12	1.79	0.65
1:M:375:GLU:HA	1:M:378:LEU:HD23	1.78	0.65
1:N:393:ASP:O	1:N:396:GLN:HG3	1.97	0.65
1:G:34:SER:O	1:G:38:ILE:N	2.28	0.65
2:C:809:TRP:CE2	2:C:853:LEU:HB2	2.31	0.65
1:B:423:GLU:OE1	2:D:808:ARG:NH2	2.29	0.64
1:M:299:GLU:O	1:M:303:GLN:N	2.29	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:206:ASN:OD1	1:G:207:ALA:N	2.31	0.64
1:H:164:LEU:HD12	1:H:165:ARG:HE	1.61	0.64
1:G:205:ASP:O	1:G:209:LEU:N	2.22	0.64
1:G:197:ALA:O	1:G:201:ARG:N	2.30	0.64
2:C:804:ILE:CG2	2:C:807:MET:HB3	2.26	0.64
1:N:297:LEU:O	1:N:301:ASN:ND2	2.31	0.64
1:G:191:ARG:NH2	1:H:196:GLU:OE1	2.30	0.64
2:J:857:ASN:O	2:J:859:LYS:NZ	2.28	0.64
1:K:86:GLU:O	1:K:90:VAL:N	2.30	0.63
1:H:59:LEU:HD13	1:H:62:ILE:HD13	1.78	0.63
1:H:148:ASN:OD1	1:H:149:ALA:N	2.32	0.63
2:I:805:ASN:HD21	2:I:872:TYR:HA	1.63	0.63
1:H:175:VAL:O	1:H:178:VAL:N	2.32	0.63
1:G:88:ILE:O	1:G:92:ALA:N	2.30	0.63
1:G:118:ALA:O	1:G:122:LEU:N	2.32	0.63
1:H:72:PRO:HA	1:H:75:GLN:HG2	1.80	0.63
1:M:319:GLU:O	1:M:323:GLY:N	2.22	0.63
1:M:319:GLU:HA	1:M:322:ALA:HB3	1.79	0.63
2:C:9:GLY:HA3	2:C:793:LEU:HD23	1.81	0.63
1:B:386:GLN:HG3	1:B:389:ARG:HH12	1.63	0.63
1:H:52:ILE:HG13	1:H:53:GLY:N	2.14	0.62
2:D:809:TRP:NE1	2:D:868:CYS:SG	2.72	0.62
2:D:834:ASP:HA	2:D:837:LYS:HE3	1.81	0.62
1:H:152:GLN:HA	1:H:155:LEU:HD13	1.81	0.62
1:N:304:ILE:HG13	1:N:307:ARG:HD3	1.82	0.62
2:I:839:ARG:HB3	2:I:839:ARG:CZ	2.29	0.62
2:D:6:GLU:HA	2:D:795:CYS:HA	1.81	0.62
2:D:845:ASP:OD1	2:D:846:SER:N	2.32	0.62
1:N:375:GLU:O	1:N:379:LYS:HG2	1.99	0.62
2:J:825:THR:OG1	2:J:826:GLY:N	2.29	0.62
1:A:410:ILE:O	1:A:414:GLN:NE2	2.32	0.62
1:K:71:GLY:O	1:K:75:GLN:N	2.22	0.62
1:M:328:ALA:O	1:M:331:ARG:HG2	1.99	0.62
2:J:834:ASP:HA	2:J:837:LYS:NZ	2.14	0.62
2:D:789:ASP:O	2:D:856:ASN:ND2	2.33	0.62
1:H:91:ARG:O	1:H:95:ASP:N	2.30	0.62
1:M:346:LEU:HD13	1:M:349:ARG:HH22	1.64	0.62
1:B:403:ARG:NH1	1:B:407:GLU:OE1	2.33	0.62
1:G:34:SER:HB2	1:G:37:ALA:HB3	1.80	0.62
1:K:103:LEU:O	1:K:107:GLU:N	2.33	0.62
2:J:809:TRP:HA	2:J:868:CYS:HA	1.81	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:812:GLN:HB3	2:I:818:ARG:HA	1.81	0.61
1:G:115:LEU:HG	1:H:114:ARG:HH12	1.66	0.61
1:G:181:LEU:HA	1:G:184:GLN:CD	2.21	0.61
1:M:388:LEU:HB2	1:N:389:ARG:HH22	1.65	0.61
2:C:804:ILE:CG2	2:C:870:ALA:HB1	2.30	0.61
2:D:11:LEU:HD13	2:D:885:THR:HG21	1.82	0.61
1:G:128:ARG:O	1:G:132:GLN:NE2	2.32	0.61
1:M:378:LEU:HD22	1:N:378:LEU:HD21	1.81	0.61
1:A:431:LEU:O	1:A:435:ARG:N	2.30	0.61
2:D:11:LEU:HA	2:D:885:THR:HG21	1.81	0.61
2:D:840:PHE:HB3	2:D:853:LEU:HD11	1.82	0.61
1:H:144:ASP:HA	1:H:147:ARG:HD2	1.82	0.61
1:L:74:SER:O	1:L:78:GLU:N	2.27	0.61
1:G:126:ASP:OD1	1:G:127:ALA:N	2.33	0.61
2:I:12:VAL:O	2:I:886:VAL:HA	2.00	0.61
1:H:144:ASP:OD1	1:H:145:ARG:N	2.33	0.61
2:C:810:TYR:HE2	2:C:869:ASN:HD22	1.47	0.61
1:G:143:ILE:O	1:G:147:ARG:N	2.33	0.61
1:L:91:ARG:O	1:L:95:ASP:N	2.25	0.61
1:M:311:SER:O	1:M:314:GLN:NE2	2.33	0.61
1:M:435:ARG:HH21	1:N:431:LEU:HD11	1.66	0.61
2:J:792:ARG:NE	2:J:793:LEU:H	1.95	0.61
1:A:406:HIS:ND1	1:B:406:HIS:CE1	2.69	0.61
1:H:54:ARG:O	1:H:58:HIS:ND1	2.33	0.61
2:I:804:ILE:HG13	2:I:804:ILE:O	2.00	0.61
1:A:372:VAL:HG12	1:A:376:LYS:NZ	2.15	0.61
1:K:105:GLN:OE1	1:K:109:ARG:NH1	2.34	0.61
1:M:434:ALA:O	1:N:438:ARG:NH2	2.33	0.61
2:C:834:ASP:HA	2:C:837:LYS:HZ3	1.66	0.60
2:J:842:ILE:HA	2:J:853:LEU:HD12	1.83	0.60
1:A:435:ARG:HH22	2:D:816:LYS:HA	1.65	0.60
1:M:308:LEU:HG	1:N:308:LEU:HD11	1.83	0.60
2:J:812:GLN:NE2	2:J:816:LYS:O	2.33	0.60
2:C:808:ARG:HB3	2:C:823:VAL:CG2	2.31	0.60
1:A:385:ALA:O	1:A:389:ARG:NH1	2.34	0.60
1:H:45:ILE:O	1:H:49:LEU:N	2.31	0.60
2:C:810:TYR:N	2:C:867:SER:O	2.34	0.60
2:I:812:GLN:CB	2:I:818:ARG:HA	2.32	0.60
1:L:80:ARG:O	1:L:84:HIS:N	2.35	0.60
1:M:384:ARG:O	1:M:388:LEU:N	2.35	0.60
1:M:416:THR:HG22	2:I:806:ILE:HG12	1.84	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:840:PHE:CE1	2:J:855:MET:HG3	2.36	0.60
1:G:194:ASP:OD1	1:G:195:ALA:N	2.35	0.60
1:H:111:VAL:HA	1:H:114:ARG:HB3	1.84	0.60
1:M:359:THR:HA	1:M:362:GLU:HB2	1.84	0.60
2:D:805:ASN:HD21	2:D:871:ILE:HG23	1.66	0.60
1:G:206:ASN:O	1:G:210:GLY:N	2.33	0.60
1:M:435:ARG:HE	1:N:431:LEU:HD11	1.66	0.60
1:H:97:ALA:O	1:H:101:ILE:N	2.31	0.60
1:M:301:ASN:HD21	1:N:301:ASN:HD21	1.50	0.60
1:N:288:GLU:HG2	1:N:289:THR:N	2.17	0.60
2:C:826:GLY:HA2	2:C:844:ARG:HH22	1.67	0.60
1:G:147:ARG:NH1	1:N:359:THR:HG22	2.16	0.60
1:L:72:PRO:HA	1:L:75:GLN:HG3	1.83	0.60
1:M:319:GLU:OE1	1:N:315:GLN:NE2	2.34	0.60
1:G:170:ARG:HE	1:H:171:ILE:HG12	1.67	0.59
2:I:842:ILE:HD11	2:I:853:LEU:HD12	1.84	0.59
2:D:813:ALA:HB3	2:D:816:LYS:HD2	1.85	0.59
2:D:858:LEU:HB3	2:D:886:VAL:HG23	1.83	0.59
1:H:62:ILE:HA	1:H:65:LEU:HB2	1.83	0.59
2:C:796:ALA:HA	2:C:850:THR:HA	1.84	0.59
2:I:2:VAL:HG22	2:I:877:TYR:CZ	2.38	0.59
2:C:806:ILE:HG13	2:C:806:ILE:O	2.02	0.59
1:G:129:ARG:O	1:G:133:ASP:N	2.35	0.59
1:H:124:GLU:CD	1:N:380:ARG:HH21	2.04	0.59
1:H:142:GLU:HG3	1:H:146:LEU:HD12	1.85	0.59
2:I:13:TYR:O	2:I:887:SER:N	2.36	0.59
2:D:792:ARG:HE	2:D:792:ARG:HA	1.67	0.59
1:H:109:ARG:O	1:H:112:SER:OG	2.19	0.59
1:N:345:GLY:HA2	1:N:348:GLN:OE1	2.01	0.59
2:J:886:VAL:O	2:J:887:SER:OG	2.16	0.59
2:D:853:LEU:HG	2:D:854:GLN:H	1.67	0.59
1:M:298:GLU:O	1:M:302:GLY:N	2.30	0.59
1:M:377:ALA:O	1:M:380:ARG:NH1	2.36	0.59
2:I:805:ASN:ND2	2:I:872:TYR:CD1	2.62	0.59
2:D:804:ILE:HA	2:D:872:TYR:CE1	2.38	0.59
1:L:66:ILE:HG22	1:L:70:ARG:HG3	1.84	0.58
1:A:415:ALA:O	1:A:418:GLU:HG3	2.03	0.58
2:C:802:ASP:HB2	2:C:846:SER:HA	1.84	0.58
1:A:406:HIS:HD1	1:B:406:HIS:HE1	1.50	0.58
2:J:800:SER:O	2:J:873:ARG:NH1	2.35	0.58
1:G:147:ARG:HH22	1:N:359:THR:HA	1.68	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:399:GLN:HA	1:N:402:VAL:HG22	1.84	0.58
1:N:423:GLU:OE1	2:J:808:ARG:NH2	2.35	0.58
2:C:804:ILE:HG22	2:C:805:ASN:N	2.17	0.58
2:I:859:LYS:N	2:I:862:ASP:OD2	2.35	0.58
1:M:345:GLY:HA2	1:M:348:GLN:HB3	1.85	0.58
2:I:824:VAL:HG11	2:I:842:ILE:HG21	1.84	0.58
1:G:59:LEU:O	1:G:62:ILE:N	2.27	0.58
1:H:70:ARG:HA	1:H:73:VAL:HB	1.84	0.58
2:I:805:ASN:O	2:I:806:ILE:CG1	2.51	0.58
1:B:382:GLU:O	1:B:386:GLN:NE2	2.37	0.58
2:D:12:VAL:N	2:D:885:THR:OG1	2.35	0.58
1:N:351:ALA:O	1:N:355:THR:HG23	2.04	0.58
1:N:355:THR:O	1:N:359:THR:HG23	2.04	0.58
2:C:834:ASP:OD1	2:C:835:SER:N	2.37	0.58
2:D:869:ASN:ND2	2:D:876:GLU:OE2	2.31	0.58
1:H:152:GLN:HG2	1:H:156:LYS:NZ	2.19	0.58
1:N:371:ALA:O	1:N:374:GLN:N	2.37	0.58
1:M:305:SER:HA	1:M:308:LEU:HB2	1.86	0.57
1:B:386:GLN:HA	1:B:389:ARG:NH1	2.19	0.57
1:K:84:HIS:HA	1:K:87:LEU:HB2	1.85	0.57
2:I:845:ASP:N	2:I:850:THR:O	2.36	0.57
2:D:839:ARG:O	2:D:840:PHE:HD1	1.87	0.57
1:G:80:ARG:NH1	1:H:79:ALA:O	2.38	0.57
1:H:105:GLN:HA	1:H:108:GLU:HG3	1.85	0.57
1:M:334:ASP:O	1:M:337:ARG:NH1	2.38	0.57
1:N:309:ALA:O	1:N:312:SER:OG	2.20	0.57
2:J:2:VAL:HA	2:J:799:ARG:HD2	1.87	0.57
2:J:804:ILE:HG13	2:J:826:GLY:HA2	1.87	0.57
2:I:10:GLY:H	2:I:791:LEU:HD21	1.68	0.57
1:M:414:GLN:HB2	2:J:827:TRP:CZ2	2.40	0.57
1:N:422:SER:HA	2:I:831:ASN:ND2	2.20	0.57
2:J:792:ARG:HH22	2:J:854:GLN:HA	1.69	0.57
2:I:792:ARG:NH2	2:I:851:VAL:O	2.27	0.57
1:G:117:ALA:O	1:G:121:ALA:N	2.30	0.57
1:H:66:ILE:O	1:H:69:ILE:N	2.29	0.57
1:H:120:THR:HG22	1:N:384:ARG:NH2	2.19	0.57
2:I:799:ARG:HD2	2:I:800:SER:N	2.19	0.57
2:I:839:ARG:NH1	2:I:856:ASN:O	2.38	0.57
1:M:338:ALA:O	1:M:341:GLU:HG3	2.04	0.57
1:N:435:ARG:HH21	2:I:816:LYS:HA	1.70	0.57
2:C:804:ILE:HG23	2:C:870:ALA:HB1	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:836:VAL:HB	2:I:840:PHE:CD1	2.39	0.57
1:G:96:GLN:O	1:G:99:ARG:NH1	2.37	0.57
1:G:71:GLY:O	1:G:75:GLN:HB2	2.05	0.57
1:H:80:ARG:O	1:H:84:HIS:N	2.30	0.57
1:M:298:GLU:HA	1:M:301:ASN:HB2	1.87	0.57
2:J:3:GLN:HB3	2:J:798:SER:HB3	1.87	0.57
2:I:792:ARG:HG2	2:I:853:LEU:H	1.69	0.57
1:M:312:SER:O	1:M:316:LYS:N	2.35	0.56
2:C:808:ARG:N	2:C:869:ASN:O	2.34	0.56
2:C:882:THR:OG1	2:C:884:VAL:HG22	2.05	0.56
1:B:419:ARG:HG3	1:B:419:ARG:HH11	1.70	0.56
1:H:210:GLY:O	1:H:213:ALA:N	2.38	0.56
1:M:379:LYS:O	1:M:383:GLU:N	2.32	0.56
1:B:365:ASP:O	1:B:369:LYS:HD2	2.06	0.56
2:D:792:ARG:NH2	2:D:854:GLN:OE1	2.38	0.56
2:D:859:LYS:N	2:D:862:ASP:OD2	2.26	0.56
1:M:420:LEU:HA	1:M:423:GLU:CD	2.26	0.56
1:N:356:ALA:O	1:N:359:THR:OG1	2.19	0.56
2:C:832:TYR:OH	2:C:842:ILE:N	2.30	0.56
2:I:792:ARG:HH22	2:I:850:THR:HG22	1.70	0.56
2:D:821:VAL:O	2:D:833:VAL:N	2.38	0.56
1:N:400:ASP:OD1	1:N:404:ARG:NH1	2.36	0.56
1:H:62:ILE:HG13	1:H:65:LEU:HD12	1.88	0.56
1:B:383:GLU:HA	1:B:386:GLN:NE2	2.20	0.56
1:H:75:GLN:O	1:H:79:ALA:HB3	2.05	0.56
2:J:797:SER:H	2:J:849:ASP:HB3	1.71	0.56
2:I:805:ASN:O	2:I:806:ILE:HG12	2.05	0.56
2:I:859:LYS:O	2:I:861:GLU:N	2.38	0.56
1:M:346:LEU:HB3	1:N:346:LEU:HD13	1.88	0.56
1:A:360:ALA:HA	1:B:360:ALA:HB2	1.88	0.56
1:A:388:LEU:HD22	1:A:389:ARG:HH22	1.71	0.56
1:B:363:ARG:O	1:B:366:GLN:HG3	2.06	0.56
1:G:80:ARG:HH11	1:H:83:GLU:HG3	1.71	0.56
1:M:334:ASP:O	1:M:337:ARG:HD3	2.05	0.56
1:G:59:LEU:O	1:G:62:ILE:HG22	2.04	0.56
2:C:832:TYR:HE1	2:C:842:ILE:HG22	1.71	0.56
1:B:367:LEU:O	1:B:370:SER:OG	2.20	0.56
1:M:352:GLY:O	1:M:355:THR:OG1	2.17	0.56
1:M:303:GLN:HE22	1:M:307:ARG:HG3	1.71	0.55
1:M:406:HIS:HB2	1:N:406:HIS:CE1	2.41	0.55
2:I:802:ASP:O	2:I:804:ILE:HG23	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:312:SER:O	1:N:316:LYS:HG2	2.06	0.55
1:G:112:SER:O	1:G:116:ALA:N	2.35	0.55
1:G:153:SER:O	1:G:156:LYS:HB2	2.06	0.55
1:M:301:ASN:HA	1:M:304:ILE:HG22	1.89	0.55
2:J:822:ALA:HB1	2:J:832:TYR:HD1	1.72	0.55
2:D:802:ASP:OD1	2:D:844:ARG:NH2	2.39	0.55
1:G:152:GLN:O	1:G:155:LEU:HB2	2.06	0.55
1:H:71:GLY:O	1:H:74:SER:OG	2.17	0.55
2:J:869:ASN:ND2	2:J:879:GLY:H	2.05	0.55
2:J:836:VAL:HA	2:J:839:ARG:HG3	1.89	0.55
2:I:848:LYS:HG3	2:I:850:THR:OG1	2.07	0.55
1:M:303:GLN:OE1	1:M:307:ARG:NH2	2.39	0.55
1:M:318:VAL:HB	1:N:315:GLN:HE21	1.70	0.55
2:I:809:TRP:CE2	2:I:853:LEU:HD13	2.42	0.55
1:B:358:ALA:O	1:B:361:ILE:N	2.40	0.55
1:B:424:ALA:O	1:B:428:GLU:HB3	2.06	0.55
1:G:101:ILE:HG21	1:H:100:GLN:HE22	1.71	0.55
1:H:52:ILE:HG13	1:H:53:GLY:H	1.71	0.55
1:H:90:VAL:O	1:H:94:LEU:N	2.25	0.55
1:L:59:LEU:HG	1:L:63:GLU:OE1	2.07	0.55
1:N:391:ARG:HG2	1:N:395:MET:HE1	1.87	0.55
2:J:834:ASP:OD1	2:J:835:SER:N	2.40	0.55
2:I:839:ARG:NH1	2:I:858:LEU:HA	2.22	0.55
2:C:832:TYR:CE1	2:C:842:ILE:HG22	2.42	0.55
1:G:66:ILE:O	1:G:69:ILE:HG22	2.07	0.54
1:H:59:LEU:HA	1:H:62:ILE:HD13	1.89	0.54
1:N:385:ALA:O	1:N:389:ARG:HG2	2.07	0.54
2:J:809:TRP:CD1	2:J:853:LEU:HD22	2.42	0.54
2:J:836:VAL:O	2:J:839:ARG:N	2.30	0.54
1:A:401:GLN:NE2	1:A:402:VAL:HG23	2.22	0.54
2:D:797:SER:OG	2:D:849:ASP:HB3	2.07	0.54
2:D:841:ILE:O	2:D:853:LEU:HD12	2.07	0.54
1:H:69:ILE:O	1:H:70:ARG:NH1	2.41	0.54
1:M:416:THR:HG22	2:I:806:ILE:CG1	2.37	0.54
2:J:844:ARG:HB2	2:J:851:VAL:HG23	1.88	0.54
1:A:407:GLU:HA	1:A:410:ILE:HG12	1.89	0.54
1:G:155:LEU:HD11	1:N:348:GLN:HG3	1.89	0.54
1:H:40:GLN:NE2	1:K:74:SER:OG	2.40	0.54
1:H:62:ILE:O	1:H:66:ILE:HG12	2.08	0.54
2:I:845:ASP:O	2:I:850:THR:N	2.36	0.54
1:H:97:ALA:O	1:H:101:ILE:HG13	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:376:LYS:O	1:M:379:LYS:HG2	2.07	0.54
1:G:164:LEU:HD12	1:G:165:ARG:HG3	1.90	0.54
1:H:58:HIS:O	1:H:62:ILE:HD12	2.07	0.54
1:A:384:ARG:O	1:A:387:GLN:HG3	2.07	0.54
1:M:302:GLY:O	1:M:305:SER:OG	2.21	0.54
1:N:288:GLU:HG2	1:N:289:THR:HG23	1.90	0.54
2:C:808:ARG:HB2	2:C:823:VAL:HA	1.87	0.54
2:I:792:ARG:NH2	2:I:850:THR:HG22	2.23	0.54
1:G:93:ASN:HA	1:G:96:GLN:OE1	2.08	0.54
1:K:56:MET:SD	1:K:60:LYS:HG3	2.47	0.54
1:N:402:VAL:HA	1:N:405:ASP:OD2	2.07	0.54
2:I:836:VAL:HB	2:I:840:PHE:HB2	1.90	0.54
1:B:420:LEU:HD12	1:B:421:THR:N	2.23	0.53
1:G:143:ILE:O	1:G:147:ARG:HG3	2.08	0.53
1:H:72:PRO:O	1:H:76:GLU:N	2.42	0.53
1:G:37:ALA:O	1:G:41:ARG:NH1	2.40	0.53
1:N:321:ARG:O	1:N:325:LEU:HD13	2.08	0.53
2:I:792:ARG:NE	2:I:852:TYR:HA	2.18	0.53
1:N:414:GLN:NE2	2:I:827:TRP:CD2	2.77	0.53
2:C:811:ARG:HG3	2:C:866:TYR:CZ	2.43	0.53
2:I:809:TRP:CZ2	2:I:853:LEU:HB2	2.43	0.53
1:N:401:GLN:NE2	1:N:405:ASP:OD1	2.41	0.53
1:K:76:GLU:O	1:K:80:ARG:N	2.30	0.53
1:M:432:GLU:OE1	1:M:436:ARG:NE	2.42	0.53
2:J:811:ARG:HB3	2:J:866:TYR:CD1	2.43	0.53
1:G:174:LEU:HD21	1:H:171:ILE:HD11	1.90	0.53
1:M:388:LEU:HD12	1:M:389:ARG:N	2.23	0.53
1:G:41:ARG:NH1	1:K:78:GLU:OE2	2.42	0.53
2:I:802:ASP:N	2:I:849:ASP:OD2	2.41	0.53
2:I:825:THR:HG22	2:I:827:TRP:HD1	1.73	0.53
1:G:168:THR:O	1:G:172:GLU:N	2.30	0.53
1:L:110:GLU:O	1:L:114:ARG:HG2	2.07	0.53
2:C:882:THR:O	2:C:884:VAL:HG23	2.08	0.53
2:I:866:TYR:N	2:I:882:THR:O	2.34	0.53
2:D:795:CYS:O	2:D:850:THR:HA	2.09	0.53
1:G:97:ALA:HA	1:G:100:GLN:HG3	1.89	0.53
1:H:152:GLN:O	1:H:155:LEU:HB2	2.09	0.53
2:D:840:PHE:CD2	2:D:853:LEU:HD21	2.44	0.52
1:G:163:SER:O	1:G:167:ALA:N	2.28	0.52
1:M:416:THR:CG2	2:I:806:ILE:CG1	2.88	0.52
1:N:397:GLU:HA	1:N:400:ASP:OD2	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:848:LYS:HD2	2:J:848:LYS:O	2.09	0.52
1:B:361:ILE:O	1:B:365:ASP:HB2	2.10	0.52
1:G:179:GLU:HA	1:G:182:ARG:HD2	1.91	0.52
1:H:142:GLU:O	1:H:146:LEU:N	2.38	0.52
2:I:807:MET:HG3	2:I:869:ASN:O	2.09	0.52
2:D:812:GLN:HB2	2:D:818:ARG:HG2	1.91	0.52
1:G:83:GLU:HA	1:G:86:GLU:HG3	1.90	0.52
1:G:214:ALA:O	1:G:216:LEU:N	2.40	0.52
1:H:139:ASN:O	1:H:142:GLU:HG2	2.10	0.52
1:M:380:ARG:O	1:M:384:ARG:N	2.33	0.52
1:N:436:ARG:NH1	1:N:437:ASP:OD1	2.42	0.52
1:A:434:ALA:O	1:B:438:ARG:NH2	2.43	0.52
2:I:869:ASN:OD1	2:I:870:ALA:N	2.41	0.52
1:G:164:LEU:HD12	1:G:165:ARG:N	2.25	0.52
1:L:117:ALA:O	1:L:120:THR:OG1	2.24	0.52
2:I:828:GLY:H	2:I:844:ARG:HH22	1.56	0.52
1:H:38:ILE:HG22	1:H:40:GLN:HB3	1.91	0.52
1:K:104:ILE:HA	1:K:107:GLU:HB2	1.91	0.52
1:G:174:LEU:O	1:G:178:VAL:HG23	2.09	0.52
2:C:827:TRP:O	2:C:829:SER:N	2.42	0.52
2:I:809:TRP:CD2	2:I:853:LEU:HD13	2.45	0.52
1:A:416:THR:HG21	2:C:805:ASN:ND2	2.25	0.52
1:G:192:ARG:HD2	1:H:192:ARG:HE	1.74	0.52
1:M:312:SER:O	1:M:316:LYS:HG2	2.09	0.52
2:I:805:ASN:ND2	2:I:872:TYR:HA	2.23	0.52
1:B:432:GLU:O	1:B:435:ARG:HG3	2.10	0.52
1:G:111:VAL:O	1:G:115:LEU:N	2.33	0.52
1:M:371:ALA:O	1:M:374:GLN:N	2.43	0.52
1:G:90:VAL:HA	1:G:93:ASN:HB2	1.92	0.52
1:N:399:GLN:HB3	1:N:403:ARG:HH12	1.75	0.52
1:H:49:LEU:O	1:H:52:ILE:HG12	2.09	0.51
1:H:55:VAL:HA	1:H:58:HIS:ND1	2.25	0.51
1:B:365:ASP:HB3	1:B:369:LYS:NZ	2.25	0.51
1:G:96:GLN:O	1:G:99:ARG:HD3	2.10	0.51
2:J:801:ILE:HD12	2:J:849:ASP:HB2	1.92	0.51
1:H:44:THR:HG22	1:K:69:ILE:HG13	1.91	0.51
1:K:111:VAL:O	1:K:115:LEU:N	2.41	0.51
1:M:381:ALA:O	1:M:385:ALA:N	2.42	0.51
1:M:384:ARG:HH12	1:M:388:LEU:N	2.07	0.51
1:G:91:ARG:O	1:G:94:LEU:HG	2.10	0.51
1:H:189:ASP:O	1:H:192:ARG:HB2	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:100:GLN:NE2	1:L:104:ILE:HD13	2.24	0.51
1:M:339:LEU:HA	1:M:342:GLU:HG3	1.91	0.51
1:M:412:GLU:CB	2:I:873:ARG:NH1	2.71	0.51
1:M:417:ILE:HD11	1:N:417:ILE:HG12	1.92	0.51
2:J:836:VAL:O	2:J:839:ARG:HG3	2.10	0.51
1:G:180:GLY:O	1:G:184:GLN:HG3	2.10	0.51
1:M:403:ARG:HA	1:M:406:HIS:HD2	1.74	0.51
2:I:808:ARG:O	2:I:869:ASN:N	2.30	0.51
1:G:176:GLN:HA	1:G:179:GLU:OE2	2.10	0.51
2:C:6:GLU:HG2	2:C:794:SER:C	2.31	0.51
2:C:804:ILE:CG2	2:C:805:ASN:N	2.72	0.51
2:I:839:ARG:NE	2:I:857:ASN:O	2.44	0.51
1:B:381:ALA:HA	1:B:384:ARG:NH1	2.26	0.51
1:H:62:ILE:O	1:H:66:ILE:N	2.38	0.51
1:H:98:GLN:HA	1:H:101:ILE:HD12	1.92	0.51
1:H:161:ASP:O	1:H:164:LEU:HG	2.11	0.51
1:H:200:ALA:O	1:H:204:GLN:N	2.41	0.51
1:H:212:GLU:OE2	1:N:293:ARG:NH1	2.44	0.51
1:G:143:ILE:HD11	1:H:143:ILE:HG12	1.92	0.51
1:H:204:GLN:HE21	1:N:297:LEU:HD21	1.76	0.51
1:L:75:GLN:HA	1:L:78:GLU:HB3	1.93	0.51
1:M:435:ARG:HA	1:M:438:ARG:HB3	1.92	0.51
2:C:811:ARG:N	2:C:819:GLY:O	2.31	0.51
2:I:814:PRO:HG3	2:I:883:GLN:NE2	2.26	0.51
1:B:370:SER:O	1:B:374:GLN:OE1	2.28	0.51
1:M:406:HIS:HB2	1:N:406:HIS:NE2	2.25	0.51
2:I:869:ASN:ND2	2:I:876:GLU:OE2	2.30	0.51
1:H:54:ARG:HG2	1:H:58:HIS:HE1	1.73	0.50
1:K:76:GLU:HA	1:K:79:ALA:HB3	1.94	0.50
1:M:425:ALA:HB1	2:J:832:TYR:O	2.10	0.50
1:A:414:GLN:HA	1:A:417:ILE:HG12	1.92	0.50
1:M:299:GLU:HG2	1:M:300:MET:N	2.27	0.50
1:M:302:GLY:O	1:M:306:ALA:N	2.37	0.50
2:C:812:GLN:O	2:C:865:VAL:N	2.34	0.50
2:I:845:ASP:HB3	2:I:850:THR:HB	1.92	0.50
1:A:403:ARG:HA	1:A:406:HIS:CD2	2.47	0.50
1:B:384:ARG:O	1:B:387:GLN:HG3	2.11	0.50
1:G:35:THR:HA	1:G:38:ILE:HB	1.93	0.50
1:N:426:LEU:HD12	2:I:834:ASP:OD2	2.11	0.50
2:I:828:GLY:H	2:I:844:ARG:NH2	2.09	0.50
2:I:809:TRP:CH2	2:I:853:LEU:HD22	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:402:VAL:O	1:A:406:HIS:HD2	1.94	0.50
1:M:399:GLN:HB2	1:N:399:GLN:HG2	1.92	0.50
1:N:414:GLN:NE2	2:I:827:TRP:CE2	2.80	0.50
1:A:420:LEU:HD12	1:A:421:THR:N	2.26	0.50
2:J:809:TRP:HB2	2:J:822:ALA:HB3	1.93	0.50
2:D:825:THR:OG1	2:D:828:GLY:N	2.44	0.50
1:G:128:ARG:HG2	1:G:132:GLN:HE22	1.76	0.50
1:A:406:HIS:ND1	1:B:406:HIS:HE1	2.09	0.50
1:B:419:ARG:HH22	2:D:876:GLU:HB2	1.77	0.50
1:H:179:GLU:O	1:H:183:VAL:N	2.43	0.50
2:I:810:TYR:HA	2:I:820:MET:HA	1.94	0.50
1:L:100:GLN:HE21	1:L:104:ILE:HD13	1.76	0.50
1:N:328:ALA:O	1:N:331:ARG:HG3	2.12	0.50
2:C:808:ARG:HB2	2:C:822:ALA:C	2.33	0.50
1:A:359:THR:HG23	1:A:360:ALA:N	2.28	0.49
1:B:416:THR:HG22	2:D:805:ASN:HD22	1.75	0.49
2:D:812:GLN:HG3	2:D:817:GLN:O	2.12	0.49
1:G:60:LYS:HA	1:G:63:GLU:OE2	2.12	0.49
1:L:96:GLN:O	1:L:100:GLN:N	2.45	0.49
1:M:354:ASP:OD1	1:M:357:ARG:NE	2.35	0.49
2:J:841:ILE:HB	2:J:854:GLN:HB3	1.94	0.49
2:C:796:ALA:HB1	2:C:848:LYS:NZ	2.27	0.49
2:C:825:THR:HG22	2:C:827:TRP:HE3	1.77	0.49
1:B:380:ARG:HA	1:B:383:GLU:OE1	2.12	0.49
1:L:97:ALA:HA	1:L:100:GLN:HB3	1.93	0.49
1:A:388:LEU:HD22	1:B:388:LEU:HD13	1.93	0.49
2:D:834:ASP:O	2:D:837:LYS:HG2	2.12	0.49
1:M:307:ARG:O	1:M:311:SER:N	2.32	0.49
1:N:363:ARG:O	1:N:366:GLN:HG3	2.13	0.49
2:J:811:ARG:HB3	2:J:866:TYR:CE1	2.47	0.49
2:D:796:ALA:HA	2:D:850:THR:OG1	2.11	0.49
1:M:357:ARG:HD2	1:M:358:ALA:N	2.28	0.49
1:N:344:ASP:HA	1:N:347:ARG:NH1	2.28	0.49
1:B:414:GLN:NE2	1:B:418:GLU:OE2	2.44	0.49
1:G:150:LEU:HD12	1:G:153:SER:OG	2.12	0.49
1:G:174:LEU:HA	1:G:177:ASP:OD2	2.12	0.49
1:H:91:ARG:HA	1:H:94:LEU:HB2	1.93	0.49
1:K:94:LEU:O	1:K:98:GLN:N	2.42	0.49
2:J:3:GLN:H	2:J:799:ARG:HE	1.60	0.49
1:G:99:ARG:HA	1:G:102:ALA:HB3	1.95	0.49
1:M:400:ASP:O	1:M:404:ARG:HG2	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:173:HIS:HB3	1:M:331:ARG:NH2	2.22	0.49
1:M:432:GLU:OE2	1:M:435:ARG:NH1	2.45	0.49
2:J:812:GLN:O	2:J:864:ALA:HB1	2.11	0.49
2:C:795:CYS:O	2:C:850:THR:HA	2.12	0.49
1:A:417:ILE:O	1:A:421:THR:HG23	2.12	0.49
1:G:123:GLY:HA2	1:G:126:ASP:OD2	2.13	0.49
1:H:175:VAL:O	1:H:178:VAL:HG12	2.13	0.49
1:H:203:ASN:O	1:H:206:ASN:HB3	2.12	0.49
2:J:811:ARG:HH12	2:J:839:ARG:HH12	1.61	0.49
2:J:834:ASP:HA	2:J:837:LYS:HZ3	1.78	0.49
2:C:802:ASP:H	2:C:849:ASP:HB2	1.78	0.49
1:A:374:GLN:CD	1:B:374:GLN:HG3	2.33	0.49
1:A:388:LEU:HD22	1:A:389:ARG:NH2	2.28	0.49
1:H:86:GLU:HG3	1:H:87:LEU:HD12	1.94	0.49
1:H:207:ALA:O	1:H:211:GLU:N	2.38	0.49
1:G:171:ILE:HG23	1:H:170:ARG:NH1	2.28	0.49
1:M:310:ASP:O	1:M:314:GLN:HG3	2.13	0.48
1:B:410:ILE:O	1:B:413:LEU:HG	2.13	0.48
2:D:792:ARG:HA	2:D:792:ARG:NE	2.28	0.48
2:D:802:ASP:N	2:D:849:ASP:OD2	2.46	0.48
1:G:117:ALA:O	1:G:120:THR:OG1	2.18	0.48
1:L:45:ILE:O	1:L:49:LEU:HG	2.14	0.48
1:M:389:ARG:O	1:M:392:LEU:HB2	2.12	0.48
1:M:405:ASP:O	1:M:408:ALA:N	2.46	0.48
1:N:300:MET:O	1:N:304:ILE:HG22	2.13	0.48
2:J:836:VAL:HA	2:J:839:ARG:NE	2.28	0.48
2:I:807:MET:HA	2:I:870:ALA:HA	1.95	0.48
1:B:417:ILE:HG12	2:C:806:ILE:CG2	2.43	0.48
1:G:72:PRO:O	1:G:76:GLU:HG3	2.14	0.48
1:L:60:LYS:O	1:L:64:PRO:HG3	2.14	0.48
2:J:789:ASP:N	2:J:789:ASP:OD1	2.46	0.48
2:D:809:TRP:CD1	2:D:868:CYS:SG	3.06	0.48
1:H:185:ALA:HA	1:H:188:ILE:HD12	1.95	0.48
1:A:375:GLU:HB3	1:A:379:LYS:HZ3	1.78	0.48
1:B:407:GLU:HA	1:B:410:ILE:HD12	1.95	0.48
2:D:809:TRP:HD1	2:D:868:CYS:HA	1.78	0.48
1:G:73:VAL:O	1:G:76:GLU:HB2	2.13	0.48
1:M:417:ILE:HD13	1:M:420:LEU:HD12	1.96	0.48
1:M:422:SER:HA	2:J:831:ASN:HD22	1.77	0.48
1:M:431:LEU:HB3	1:N:431:LEU:HG	1.95	0.48
2:J:811:ARG:HD3	2:J:866:TYR:CE1	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:841:ILE:HG22	2:I:854:GLN:NE2	2.28	0.48
2:I:882:THR:HG23	2:I:884:VAL:HG23	1.95	0.48
1:G:96:GLN:HA	1:G:99:ARG:CZ	2.44	0.48
2:C:804:ILE:HG21	2:C:870:ALA:HB1	1.95	0.48
1:G:124:GLU:O	1:G:128:ARG:HB2	2.14	0.48
1:H:128:ARG:HH11	1:H:131:THR:HG1	1.61	0.48
2:C:812:GLN:N	2:C:865:VAL:O	2.30	0.48
1:B:406:HIS:HA	1:B:409:LYS:HG2	1.95	0.48
1:G:100:GLN:O	1:G:104:ILE:HG12	2.14	0.48
1:N:289:THR:O	1:N:293:ARG:HG2	2.13	0.48
2:C:848:LYS:O	2:C:848:LYS:HD3	2.14	0.48
1:G:59:LEU:HD12	1:G:62:ILE:CG2	2.44	0.48
2:J:811:ARG:HH12	2:J:839:ARG:HH22	1.62	0.48
2:J:812:GLN:HB2	2:J:818:ARG:CD	2.42	0.48
1:A:435:ARG:NH1	2:D:816:LYS:HB3	2.26	0.47
1:K:77:PHE:HB3	1:K:81:ARG:NH2	2.29	0.47
2:I:811:ARG:CZ	2:I:864:ALA:HA	2.43	0.47
1:K:84:HIS:O	1:K:88:ILE:HG12	2.14	0.47
1:L:66:ILE:HG22	1:L:70:ARG:HE	1.79	0.47
1:M:330:GLU:HA	1:M:333:LEU:HB3	1.96	0.47
2:J:790:SER:O	2:J:790:SER:OG	2.32	0.47
2:C:869:ASN:HD21	2:C:876:GLU:HG3	1.80	0.47
2:D:841:ILE:O	2:D:853:LEU:HA	2.14	0.47
1:G:186:GLN:O	1:G:189:ASP:HB2	2.14	0.47
1:H:70:ARG:NH1	1:H:73:VAL:HG21	2.29	0.47
1:N:390:ALA:O	1:N:393:ASP:HB2	2.14	0.47
2:J:797:SER:OG	2:J:801:ILE:HD13	2.15	0.47
2:C:2:VAL:HG21	2:C:877:TYR:CD2	2.48	0.47
2:I:859:LYS:O	2:I:862:ASP:N	2.43	0.47
1:G:96:GLN:HA	1:G:99:ARG:NE	2.29	0.47
1:K:56:MET:O	1:K:60:LYS:N	2.33	0.47
1:L:65:LEU:O	1:L:68:GLU:HG3	2.14	0.47
1:M:358:ALA:O	1:M:362:GLU:N	2.38	0.47
2:I:805:ASN:C	2:I:806:ILE:HG12	2.34	0.47
1:A:410:ILE:HG13	1:A:411:ALA:N	2.30	0.47
1:L:46:HIS:ND1	1:L:49:LEU:HD12	2.29	0.47
1:L:87:LEU:HA	1:L:90:VAL:HB	1.97	0.47
1:L:101:ILE:HG13	1:L:105:GLN:HG2	1.95	0.47
1:L:104:ILE:HD12	1:L:104:ILE:H	1.80	0.47
1:M:330:GLU:O	1:M:334:ASP:N	2.29	0.47
1:N:341:GLU:O	1:N:344:ASP:HB2	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:372:VAL:HG12	1:N:376:LYS:NZ	2.28	0.47
2:D:833:VAL:O	2:D:836:VAL:HG22	2.15	0.47
2:D:840:PHE:CG	2:D:853:LEU:HD21	2.50	0.47
1:H:120:THR:HG22	1:N:384:ARG:HH21	1.80	0.47
1:H:128:ARG:HH12	1:H:132:GLN:N	2.12	0.47
2:C:806:ILE:HG13	2:C:871:ILE:HD12	1.97	0.47
1:A:359:THR:HG23	1:A:360:ALA:H	1.80	0.47
1:A:379:LYS:O	1:A:382:GLU:HG2	2.15	0.47
1:B:383:GLU:HA	1:B:386:GLN:HE21	1.78	0.47
1:G:149:ALA:O	1:G:152:GLN:HG3	2.14	0.47
1:M:301:ASN:ND2	1:N:301:ASN:HD21	2.13	0.47
1:M:420:LEU:HD13	1:N:420:LEU:HD11	1.97	0.47
1:N:417:ILE:O	1:N:420:LEU:HG	2.15	0.47
2:J:809:TRP:CE3	2:J:868:CYS:HB3	2.49	0.47
1:A:402:VAL:O	1:A:406:HIS:CD2	2.68	0.47
1:A:406:HIS:HB2	1:B:406:HIS:CE1	2.50	0.47
2:D:836:VAL:O	2:D:839:ARG:N	2.39	0.47
1:G:74:SER:O	1:G:77:PHE:HB2	2.15	0.47
1:G:175:VAL:HG22	1:H:174:LEU:HG	1.97	0.47
1:H:173:HIS:ND1	1:H:174:LEU:HD22	2.30	0.47
1:M:386:GLN:HA	1:M:389:ARG:NH1	2.29	0.47
1:N:368:ALA:O	1:N:372:VAL:HG23	2.15	0.47
2:J:6:GLU:HG2	2:J:881:GLY:H	1.80	0.47
1:K:108:GLU:HA	1:K:111:VAL:HB	1.97	0.47
1:B:432:GLU:HA	1:B:435:ARG:HG3	1.97	0.47
1:H:152:GLN:HG2	1:H:156:LYS:HZ3	1.79	0.47
1:K:75:GLN:O	1:K:79:ALA:N	2.43	0.47
2:C:793:LEU:HB3	2:C:809:TRP:CH2	2.50	0.47
2:C:817:GLN:OE1	2:C:817:GLN:N	2.48	0.47
1:H:55:VAL:O	1:H:58:HIS:HB2	2.15	0.46
1:L:105:GLN:C	1:L:109:ARG:HH21	2.18	0.46
1:M:403:ARG:NH1	1:M:404:ARG:HB3	2.30	0.46
2:C:836:VAL:HB	2:C:840:PHE:HB2	1.97	0.46
1:A:388:LEU:HG	1:A:391:ARG:NH2	2.29	0.46
1:H:38:ILE:CG2	1:H:40:GLN:HB3	2.45	0.46
1:K:77:PHE:HB3	1:K:81:ARG:HH21	1.80	0.46
2:I:811:ARG:O	2:I:819:GLY:N	2.48	0.46
2:I:1:GLU:HA	2:I:877:TYR:HE1	1.80	0.46
2:I:825:THR:HG22	2:I:827:TRP:CD1	2.49	0.46
1:A:406:HIS:CE1	1:A:407:GLU:HG3	2.51	0.46
1:G:53:GLY:HA2	1:G:56:MET:CE	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:40:GLN:O	1:H:44:THR:HG23	2.14	0.46
1:K:81:ARG:HG3	1:K:84:HIS:CD2	2.50	0.46
1:M:385:ALA:HA	1:M:388:LEU:CD2	2.46	0.46
1:A:419:ARG:HH21	2:C:871:ILE:HG23	1.80	0.46
2:D:805:ASN:ND2	2:D:871:ILE:HG23	2.30	0.46
1:N:332:ALA:O	1:N:336:ILE:HG12	2.16	0.46
1:N:422:SER:HA	2:I:831:ASN:HD22	1.79	0.46
2:C:834:ASP:CA	2:C:837:LYS:HZ3	2.29	0.46
2:I:843:SER:O	2:I:852:TYR:N	2.29	0.46
1:H:70:ARG:HA	1:H:70:ARG:HH11	1.81	0.46
1:H:118:ALA:HA	1:H:121:ALA:HB3	1.98	0.46
2:J:855:MET:HG2	2:J:858:LEU:HD11	1.97	0.46
2:I:846:SER:C	2:I:849:ASP:H	2.18	0.46
1:B:371:ALA:HA	1:B:374:GLN:NE2	2.31	0.46
2:D:864:ALA:O	2:D:884:VAL:N	2.48	0.46
1:G:147:ARG:HH22	1:N:359:THR:CA	2.29	0.46
1:H:70:ARG:HA	1:H:70:ARG:HD3	1.71	0.46
1:H:124:GLU:OE1	1:N:380:ARG:NH2	2.47	0.46
1:B:372:VAL:C	1:B:376:LYS:HZ2	2.19	0.46
2:D:856:ASN:HA	2:D:858:LEU:HG	1.98	0.46
1:H:70:ARG:NH2	1:L:45:ILE:HG21	2.31	0.46
1:H:186:GLN:HG2	1:M:320:ARG:HH22	1.81	0.46
2:J:869:ASN:HD22	2:J:879:GLY:H	1.62	0.46
1:B:385:ALA:O	1:B:388:LEU:HG	2.16	0.46
1:H:160:LEU:HD23	1:H:164:LEU:HD23	1.97	0.46
2:C:802:ASP:CB	2:C:846:SER:HB2	2.46	0.46
2:C:808:ARG:HB2	2:C:822:ALA:O	2.15	0.46
1:A:434:ALA:HB1	1:B:438:ARG:HH22	1.80	0.46
1:H:202:ALA:O	1:H:206:ASN:N	2.49	0.46
1:K:110:GLU:O	1:K:114:ARG:N	2.36	0.46
1:M:410:ILE:O	1:M:414:GLN:HG3	2.16	0.46
1:M:416:THR:CG2	2:I:806:ILE:HG12	2.46	0.46
2:J:789:ASP:O	2:J:856:ASN:ND2	2.48	0.46
2:C:799:ARG:HG2	2:C:800:SER:H	1.81	0.46
2:C:802:ASP:HB2	2:C:846:SER:CA	2.46	0.46
2:D:793:LEU:HD11	2:D:866:TYR:HD2	1.81	0.45
1:G:108:GLU:HA	1:G:111:VAL:HG23	1.99	0.45
1:H:70:ARG:NH2	1:L:45:ILE:HD13	2.29	0.45
1:H:161:ASP:HA	1:H:164:LEU:HG	1.98	0.45
1:K:105:GLN:HA	1:K:108:GLU:HG2	1.97	0.45
1:L:47:GLY:O	1:L:51:SER:HB3	2.15	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:811:ARG:HG2	2:C:865:VAL:O	2.16	0.45
2:C:826:GLY:CA	2:C:844:ARG:HH22	2.28	0.45
1:G:181:LEU:CD1	1:H:181:LEU:HD22	2.46	0.45
1:K:119:GLU:O	1:K:122:LEU:HB2	2.16	0.45
1:N:372:VAL:HA	1:N:375:GLU:OE2	2.16	0.45
2:C:793:LEU:HB3	2:C:809:TRP:CZ3	2.51	0.45
1:H:38:ILE:HD12	1:H:41:ARG:NH2	2.31	0.45
1:M:412:GLU:HB2	2:I:873:ARG:HH11	1.77	0.45
2:C:811:ARG:HA	2:C:866:TYR:HA	1.99	0.45
1:A:379:LYS:O	1:A:380:ARG:C	2.53	0.45
2:I:7:SER:OG	2:I:8:GLY:N	2.48	0.45
1:A:372:VAL:HA	1:A:375:GLU:OE1	2.17	0.45
1:B:433:ALA:HA	1:B:436:ARG:HD2	1.98	0.45
1:M:421:THR:HG23	2:J:831:ASN:HD21	1.81	0.45
1:M:442:GLN:OE1	1:M:443:MET:HB2	2.16	0.45
1:N:426:LEU:HA	2:I:834:ASP:OD1	2.16	0.45
2:J:833:VAL:O	2:J:836:VAL:HG13	2.16	0.45
1:A:416:THR:HG21	2:C:805:ASN:CG	2.37	0.45
2:D:862:ASP:HB2	2:D:886:VAL:CB	2.42	0.45
1:H:51:SER:HB3	1:K:59:LEU:HD21	1.98	0.45
1:H:105:GLN:HA	1:H:108:GLU:CG	2.47	0.45
1:K:74:SER:HA	1:K:77:PHE:CD2	2.51	0.45
1:N:414:GLN:NE2	2:I:827:TRP:CG	2.84	0.45
2:J:840:PHE:HA	2:J:854:GLN:O	2.17	0.45
2:C:825:THR:CG2	2:C:827:TRP:H	2.28	0.45
2:I:2:VAL:HG21	2:I:872:TYR:HD2	1.81	0.45
2:I:832:TYR:HE2	2:I:842:ILE:HG12	1.81	0.45
1:H:41:ARG:HA	1:H:44:THR:HG23	1.99	0.45
1:H:52:ILE:HG22	1:L:63:GLU:HG3	1.98	0.45
1:H:60:LYS:O	1:H:63:GLU:HB2	2.17	0.45
1:A:376:LYS:HB2	1:A:380:ARG:HH21	1.80	0.45
1:A:394:ALA:HA	1:A:397:GLU:OE2	2.17	0.45
1:G:109:ARG:HH11	1:G:109:ARG:HG2	1.80	0.45
1:G:150:LEU:HD22	1:H:149:ALA:HB1	1.99	0.45
1:H:53:GLY:O	1:H:57:GLU:N	2.37	0.45
1:M:337:ARG:O	1:M:341:GLU:N	2.39	0.45
2:I:800:SER:HB2	2:I:803:GLY:HA3	1.99	0.45
1:B:423:GLU:OE2	2:D:808:ARG:NH1	2.49	0.45
1:G:127:ALA:HA	1:G:130:GLN:OE1	2.17	0.45
1:H:53:GLY:HA2	1:H:56:MET:HG3	1.98	0.45
1:M:357:ARG:O	1:M:361:ILE:HG12	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:424:ALA:HA	1:M:427:ALA:HB3	1.98	0.45
1:G:63:GLU:HG2	1:G:64:PRO:CD	2.43	0.45
1:G:167:ALA:HA	1:G:170:ARG:HG2	1.99	0.45
1:H:148:ASN:O	1:H:151:LEU:N	2.47	0.45
1:L:86:GLU:O	1:L:90:VAL:HG23	2.17	0.45
1:M:325:LEU:HD12	1:N:322:ALA:HB1	1.99	0.45
1:M:349:ARG:CZ	1:M:349:ARG:HB3	2.46	0.45
1:M:400:ASP:O	1:M:403:ARG:HD3	2.17	0.45
1:N:294:ALA:O	1:N:295:ASP:C	2.54	0.45
2:C:805:ASN:CB	2:C:871:ILE:O	2.58	0.44
2:C:841:ILE:HG22	2:C:854:GLN:HB3	2.00	0.44
2:I:811:ARG:NH2	2:I:864:ALA:HA	2.31	0.44
1:A:385:ALA:O	1:A:389:ARG:HG2	2.17	0.44
2:D:865:VAL:HA	2:D:883:GLN:HA	1.98	0.44
1:G:213:ALA:O	1:G:216:LEU:HB2	2.16	0.44
1:H:45:ILE:HG12	1:L:70:ARG:NH1	2.25	0.44
1:M:297:LEU:HB3	1:M:298:GLU:OE1	2.17	0.44
2:J:834:ASP:HA	2:J:837:LYS:HZ2	1.79	0.44
2:I:799:ARG:NH1	2:I:800:SER:HB3	2.32	0.44
1:A:371:ALA:O	1:A:375:GLU:OE1	2.36	0.44
2:D:843:SER:OG	2:D:844:ARG:N	2.49	0.44
1:G:58:HIS:CE1	1:L:52:ILE:HB	2.52	0.44
1:H:48:GLY:O	1:H:52:ILE:HG23	2.17	0.44
1:H:58:HIS:CE1	1:K:55:VAL:HA	2.52	0.44
1:H:156:LYS:HA	1:H:159:SER:OG	2.17	0.44
1:N:366:GLN:HA	1:N:369:LYS:NZ	2.33	0.44
1:A:363:ARG:HG2	1:A:367:LEU:CD1	2.48	0.44
2:D:858:LEU:C	2:D:859:LYS:HD3	2.38	0.44
1:H:103:LEU:HD12	1:H:104:ILE:HD13	1.99	0.44
1:H:201:ARG:O	1:H:204:GLN:HB3	2.17	0.44
1:K:86:GLU:O	1:K:90:VAL:HG22	2.17	0.44
2:C:812:GLN:CB	2:C:818:ARG:HA	2.46	0.44
1:H:153:SER:O	1:H:157:VAL:HG23	2.17	0.44
1:H:185:ALA:O	1:H:189:ASP:N	2.45	0.44
1:M:339:LEU:O	1:M:343:ALA:N	2.50	0.44
2:C:834:ASP:HA	2:C:837:LYS:HD3	2.00	0.44
1:N:388:LEU:HD13	1:N:388:LEU:HA	1.77	0.44
1:A:413:LEU:O	1:A:416:THR:OG1	2.35	0.44
2:D:806:ILE:HD12	2:D:806:ILE:H	1.82	0.44
1:G:53:GLY:HA2	1:G:56:MET:HE2	2.00	0.44
1:L:71:GLY:O	1:L:74:SER:OG	2.21	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:314:GLN:O	1:N:318:VAL:HG23	2.18	0.44
1:N:379:LYS:HA	1:N:379:LYS:HD3	1.88	0.44
2:J:789:ASP:N	2:J:856:ASN:HA	2.32	0.44
2:J:792:ARG:HE	2:J:793:LEU:N	2.04	0.44
2:I:811:ARG:HG2	2:I:865:VAL:H	1.82	0.44
2:I:812:GLN:H	2:I:865:VAL:HB	1.82	0.44
1:B:376:LYS:O	1:B:380:ARG:HG2	2.18	0.44
2:D:809:TRP:HA	2:D:868:CYS:HA	2.00	0.44
1:G:181:LEU:HD12	1:H:181:LEU:HD22	2.00	0.44
1:H:90:VAL:HG12	1:H:94:LEU:HD23	2.00	0.44
1:M:392:LEU:HD11	1:N:388:LEU:CD1	2.45	0.44
1:B:417:ILE:CG1	2:C:806:ILE:HG21	2.45	0.44
1:B:435:ARG:HD2	1:B:436:ARG:N	2.33	0.44
2:D:792:ARG:HD3	2:D:793:LEU:H	1.83	0.44
2:J:839:ARG:HD2	2:J:840:PHE:CD1	2.53	0.44
2:C:799:ARG:HG2	2:C:800:SER:N	2.32	0.44
2:I:808:ARG:HB3	2:I:823:VAL:HG23	2.00	0.44
2:D:836:VAL:HG11	2:D:840:PHE:CD2	2.53	0.43
1:G:84:HIS:O	1:G:88:ILE:HG13	2.18	0.43
1:M:418:GLU:HA	1:M:421:THR:HG22	2.00	0.43
2:C:808:ARG:HB2	2:C:823:VAL:CA	2.44	0.43
2:D:809:TRP:CD1	2:D:868:CYS:HA	2.52	0.43
2:J:835:SER:CB	2:J:839:ARG:HH11	2.31	0.43
1:K:94:LEU:O	1:K:98:GLN:HG2	2.17	0.43
1:L:72:PRO:HA	1:L:75:GLN:CG	2.46	0.43
1:M:380:ARG:H	1:M:380:ARG:HD3	1.83	0.43
1:N:302:GLY:O	1:N:305:SER:OG	2.36	0.43
2:J:801:ILE:CD1	2:J:849:ASP:HB2	2.49	0.43
2:I:805:ASN:OD1	2:I:871:ILE:O	2.35	0.43
2:I:811:ARG:HD3	2:I:812:GLN:N	2.33	0.43
2:D:802:ASP:HA	2:D:844:ARG:HH21	1.82	0.43
1:H:153:SER:O	1:H:157:VAL:N	2.42	0.43
1:M:339:LEU:HD12	1:N:336:ILE:HD12	2.00	0.43
1:A:392:LEU:HD11	1:B:391:ARG:NH1	2.34	0.43
1:G:100:GLN:O	1:G:104:ILE:N	2.46	0.43
1:G:127:ALA:O	1:G:131:THR:HG23	2.18	0.43
1:H:59:LEU:HA	1:H:62:ILE:CD1	2.48	0.43
1:H:155:LEU:O	1:H:159:SER:N	2.33	0.43
1:N:372:VAL:C	1:N:376:LYS:HZ3	2.22	0.43
2:J:802:ASP:O	2:J:804:ILE:N	2.52	0.43
2:J:811:ARG:O	2:J:818:ARG:HD3	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:814:PRO:HG3	2:I:883:GLN:HE22	1.82	0.43
2:D:793:LEU:HD11	2:D:866:TYR:CD2	2.53	0.43
2:D:820:MET:O	2:D:833:VAL:HG21	2.17	0.43
2:D:833:VAL:O	2:D:835:SER:N	2.51	0.43
1:G:175:VAL:O	1:G:178:VAL:N	2.51	0.43
1:H:45:ILE:HG22	1:H:49:LEU:HG	2.01	0.43
1:H:72:PRO:HB2	1:H:76:GLU:OE2	2.17	0.43
1:H:73:VAL:C	1:H:76:GLU:H	2.21	0.43
1:K:87:LEU:HA	1:K:90:VAL:HG22	2.01	0.43
1:L:63:GLU:N	1:L:64:PRO:HD2	2.33	0.43
1:M:312:SER:O	1:M:315:GLN:HB3	2.18	0.43
1:M:416:THR:HG21	2:I:806:ILE:HD11	2.01	0.43
2:C:795:CYS:HB3	2:C:851:VAL:HG22	2.01	0.43
2:C:865:VAL:HA	2:C:884:VAL:HG11	2.01	0.43
1:H:154:ASP:HA	1:H:157:VAL:HB	2.01	0.43
1:M:329:LEU:HD21	1:N:325:LEU:O	2.19	0.43
2:C:825:THR:C	2:C:827:TRP:N	2.70	0.43
2:I:808:ARG:NH1	2:I:810:TYR:OH	2.52	0.43
1:B:372:VAL:HA	1:B:375:GLU:OE2	2.18	0.43
2:D:7:SER:OG	2:D:794:SER:HB2	2.18	0.43
2:D:802:ASP:OD1	2:D:802:ASP:O	2.37	0.43
1:G:74:SER:HA	1:G:77:PHE:HD2	1.84	0.43
1:G:177:ASP:OD2	1:M:331:ARG:NH2	2.51	0.43
1:H:96:GLN:O	1:H:99:ARG:HD3	2.19	0.43
1:L:106:ALA:O	1:L:109:ARG:HG2	2.19	0.43
1:M:435:ARG:HH21	1:N:431:LEU:CD1	2.29	0.43
2:D:832:TYR:CZ	2:D:842:ILE:HG22	2.54	0.43
2:D:859:LYS:O	2:D:886:VAL:HG11	2.19	0.43
1:G:102:ALA:HA	1:G:105:GLN:CB	2.46	0.43
1:H:189:ASP:OD1	1:H:192:ARG:NH1	2.51	0.43
1:M:409:LYS:O	1:M:413:LEU:HD23	2.19	0.43
1:M:410:ILE:HG13	1:N:406:HIS:HE1	1.84	0.43
1:N:408:ALA:O	1:N:412:GLU:OE1	2.37	0.43
1:H:41:ARG:O	1:H:45:ILE:HG13	2.19	0.43
1:L:65:LEU:O	1:L:69:ILE:N	2.52	0.43
1:M:388:LEU:HD13	1:N:388:LEU:HG	2.00	0.43
2:J:796:ALA:HB1	2:J:848:LYS:HD2	2.01	0.43
1:A:358:ALA:O	1:A:362:GLU:CB	2.55	0.42
1:G:147:ARG:HH12	1:N:359:THR:HA	1.84	0.42
1:M:354:ASP:O	1:M:357:ARG:HG3	2.19	0.42
2:J:796:ALA:HB1	2:J:848:LYS:O	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:835:SER:O	2:D:839:ARG:NH1	2.51	0.42
1:H:129:ARG:O	1:H:132:GLN:HB2	2.19	0.42
1:N:423:GLU:CD	2:J:808:ARG:HH22	2.23	0.42
2:C:797:SER:CB	2:C:849:ASP:HB3	2.41	0.42
2:C:809:TRP:CD2	2:C:853:LEU:HB2	2.54	0.42
2:D:866:TYR:O	2:D:881:GLY:HA2	2.18	0.42
1:G:192:ARG:HD2	1:H:192:ARG:HH21	1.85	0.42
1:H:96:GLN:HA	1:H:99:ARG:NE	2.34	0.42
1:N:440:ARG:HA	1:N:443:MET:HG3	2.01	0.42
2:J:865:VAL:HA	2:J:882:THR:O	2.20	0.42
1:B:372:VAL:HA	1:B:375:GLU:CD	2.40	0.42
1:G:59:LEU:HD12	1:G:62:ILE:HG22	2.02	0.42
1:G:192:ARG:HB2	1:H:192:ARG:HE	1.85	0.42
2:J:809:TRP:CG	2:J:853:LEU:HD22	2.54	0.42
2:I:832:TYR:CE2	2:I:841:ILE:HA	2.54	0.42
1:A:420:LEU:HA	1:A:423:GLU:HB3	2.00	0.42
1:H:72:PRO:O	1:H:75:GLN:HG2	2.20	0.42
1:N:377:ALA:HA	1:N:380:ARG:CZ	2.49	0.42
2:C:795:CYS:HB2	2:C:809:TRP:CZ2	2.54	0.42
2:C:796:ALA:HB1	2:C:848:LYS:HZ3	1.83	0.42
2:C:832:TYR:O	2:C:837:LYS:NZ	2.45	0.42
2:I:824:VAL:HA	2:I:830:THR:HA	2.02	0.42
1:H:153:SER:O	1:H:156:LYS:N	2.53	0.42
1:H:161:ASP:OD1	1:H:164:LEU:HD21	2.20	0.42
1:B:371:ALA:O	1:B:374:GLN:N	2.52	0.42
1:G:83:GLU:HA	1:G:86:GLU:CG	2.49	0.42
1:H:40:GLN:NE2	1:K:74:SER:HG	2.16	0.42
2:I:790:SER:HA	2:I:854:GLN:HA	2.01	0.42
2:I:854:GLN:N	2:I:854:GLN:OE1	2.53	0.42
1:A:414:GLN:HA	1:A:417:ILE:CG1	2.50	0.42
1:G:171:ILE:HD11	1:H:167:ALA:HA	2.02	0.42
1:K:108:GLU:O	1:K:112:SER:N	2.35	0.42
1:M:435:ARG:O	1:M:438:ARG:HB3	2.19	0.42
1:N:371:ALA:O	1:N:372:VAL:C	2.58	0.42
2:J:836:VAL:HA	2:J:839:ARG:CG	2.49	0.42
2:C:812:GLN:HG3	2:C:865:VAL:HB	2.01	0.42
1:H:92:ALA:HA	1:H:95:ASP:HB3	2.02	0.42
1:K:111:VAL:HG21	1:L:108:GLU:HG3	2.02	0.42
1:M:386:GLN:HA	1:M:389:ARG:HH12	1.84	0.42
1:N:391:ARG:HG2	1:N:395:MET:CE	2.49	0.42
1:N:393:ASP:O	1:N:397:GLU:OE1	2.38	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:426:LEU:HD12	2:I:834:ASP:CG	2.40	0.42
2:J:810:TYR:N	2:J:867:SER:O	2.52	0.42
2:J:811:ARG:HA	2:J:865:VAL:O	2.20	0.42
1:K:98:GLN:O	1:K:101:ILE:HG22	2.20	0.42
1:M:435:ARG:NH2	1:N:431:LEU:HD11	2.34	0.42
2:I:7:SER:H	2:I:794:SER:N	2.18	0.42
1:A:388:LEU:HG	1:A:391:ARG:HH21	1.84	0.41
1:M:430:ALA:HA	1:M:433:ALA:HB3	2.02	0.41
2:J:796:ALA:HB2	2:J:850:THR:OG1	2.19	0.41
2:I:809:TRP:CZ3	2:I:853:LEU:HD22	2.54	0.41
1:A:417:ILE:HD13	1:A:420:LEU:HD21	2.02	0.41
1:B:406:HIS:HA	1:B:409:LYS:NZ	2.34	0.41
2:D:802:ASP:C	2:D:804:ILE:H	2.23	0.41
2:D:809:TRP:CZ3	2:D:853:LEU:HD22	2.47	0.41
1:K:55:VAL:O	1:K:59:LEU:HD12	2.20	0.41
1:N:378:LEU:HD13	1:N:378:LEU:HA	1.87	0.41
2:I:836:VAL:HB	2:I:840:PHE:CG	2.55	0.41
1:H:104:ILE:O	1:H:108:GLU:HG3	2.21	0.41
1:M:300:MET:HA	1:M:303:GLN:CB	2.50	0.41
1:M:384:ARG:HH12	1:M:387:GLN:C	2.24	0.41
1:A:441:LEU:HD12	1:A:441:LEU:HA	1.87	0.41
1:B:406:HIS:O	1:B:410:ILE:HG13	2.20	0.41
1:M:385:ALA:HA	1:M:388:LEU:HD23	2.03	0.41
1:M:385:ALA:O	1:M:389:ARG:NH1	2.54	0.41
2:J:807:MET:HB2	2:J:870:ALA:CB	2.51	0.41
2:J:812:GLN:OE1	2:J:818:ARG:HB2	2.20	0.41
2:C:832:TYR:OH	2:C:841:ILE:HD12	2.20	0.41
2:I:807:MET:HG2	2:I:808:ARG:N	2.35	0.41
1:A:389:ARG:NH1	1:B:388:LEU:HD22	2.34	0.41
1:A:416:THR:CG2	2:C:805:ASN:ND2	2.83	0.41
1:G:88:ILE:HA	1:G:91:ARG:HB2	2.03	0.41
2:J:810:TYR:CE1	2:J:869:ASN:HB2	2.55	0.41
2:J:858:LEU:HD23	2:J:858:LEU:HA	1.76	0.41
2:C:821:VAL:HG13	2:C:836:VAL:HG11	2.01	0.41
1:B:440:ARG:O	1:B:442:GLN:N	2.53	0.41
2:D:795:CYS:C	2:D:850:THR:HG23	2.41	0.41
1:L:66:ILE:HB	1:L:70:ARG:HH21	1.85	0.41
1:N:381:ALA:O	1:N:384:ARG:HB2	2.21	0.41
2:D:845:ASP:OD1	2:D:847:ALA:N	2.49	0.41
1:K:109:ARG:O	1:K:113:ALA:N	2.36	0.41
1:M:301:ASN:HD21	1:N:297:LEU:HD22	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:795:CYS:O	2:J:851:VAL:HG12	2.21	0.41
2:C:823:VAL:HG12	2:C:831:ASN:HD21	1.84	0.41
2:I:833:VAL:HG12	2:I:836:VAL:HG22	2.02	0.41
1:M:385:ALA:O	1:M:388:LEU:HG	2.21	0.41
2:D:839:ARG:NE	2:D:859:LYS:HZ3	2.19	0.41
1:H:38:ILE:HG23	1:K:77:PHE:HZ	1.85	0.41
1:H:168:THR:O	1:H:171:ILE:HG22	2.21	0.41
1:H:179:GLU:O	1:H:183:VAL:HG23	2.21	0.41
1:H:205:ASP:O	1:H:208:LEU:HB3	2.20	0.41
1:L:111:VAL:O	1:L:114:ARG:HB2	2.20	0.41
2:J:12:VAL:HG23	2:J:886:VAL:HA	2.03	0.41
2:C:3:GLN:HB2	2:C:798:SER:HB3	2.03	0.41
2:C:797:SER:HB2	2:C:799:ARG:O	2.21	0.41
2:I:818:ARG:HH22	2:I:878:TRP:HZ3	1.68	0.41
2:I:861:GLU:O	2:I:863:THR:N	2.54	0.41
2:D:857:ASN:O	2:D:859:LYS:NZ	2.54	0.41
1:G:69:ILE:O	1:G:73:VAL:HB	2.21	0.41
1:G:148:ASN:OD1	1:G:148:ASN:N	2.51	0.41
1:G:192:ARG:CG	1:H:192:ARG:HE	2.34	0.41
1:H:176:GLN:HA	1:H:179:GLU:OE2	2.21	0.41
1:K:84:HIS:NE2	1:L:84:HIS:HB2	2.36	0.41
1:M:354:ASP:O	1:M:357:ARG:NE	2.54	0.41
1:M:377:ALA:O	1:N:378:LEU:HD11	2.21	0.41
2:I:821:VAL:O	2:I:833:VAL:HG12	2.20	0.41
2:D:801:ILE:C	2:D:803:GLY:H	2.24	0.40
1:G:135:ALA:HA	1:G:138:ASP:HB2	2.03	0.40
1:G:205:ASP:CA	1:G:208:LEU:HB3	2.48	0.40
1:H:54:ARG:CZ	1:K:58:HIS:HB2	2.51	0.40
1:H:104:ILE:HG22	1:H:108:GLU:HG2	2.03	0.40
2:I:812:GLN:HB3	2:I:818:ARG:HG2	2.03	0.40
1:G:206:ASN:HA	1:G:209:LEU:HB2	2.02	0.40
1:H:73:VAL:O	1:H:76:GLU:N	2.53	0.40
1:K:95:ASP:O	1:K:99:ARG:HG2	2.21	0.40
1:L:66:ILE:O	1:L:70:ARG:N	2.34	0.40
1:M:371:ALA:O	1:M:374:GLN:HB2	2.21	0.40
1:G:100:GLN:O	1:G:103:LEU:HB3	2.21	0.40
1:G:201:ARG:O	1:G:204:GLN:NE2	2.54	0.40
1:H:128:ARG:O	1:H:131:THR:OG1	2.34	0.40
1:M:381:ALA:HA	1:M:384:ARG:HB2	2.02	0.40
1:N:379:LYS:O	1:N:383:GLU:OE1	2.39	0.40
1:B:415:ALA:HA	1:B:418:GLU:OE1	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:97:ALA:HA	1:G:100:GLN:HE21	1.86	0.40
1:H:139:ASN:O	1:H:143:ILE:HG13	2.21	0.40
2:C:807:MET:HB2	2:C:869:ASN:O	2.21	0.40
2:I:792:ARG:HH22	2:I:850:THR:CG2	2.34	0.40
1:B:379:LYS:O	1:B:383:GLU:OE1	2.38	0.40
2:D:808:ARG:HH11	2:D:869:ASN:ND2	2.19	0.40
1:G:160:LEU:HB3	1:H:160:LEU:HD21	2.04	0.40
1:G:205:ASP:OD1	1:G:208:LEU:HD13	2.21	0.40
1:M:377:ALA:HA	1:M:380:ARG:NE	2.36	0.40
1:N:389:ARG:HH21	1:N:392:LEU:CD1	2.34	0.40
1:N:418:GLU:O	1:N:421:THR:HG22	2.21	0.40
2:I:790:SER:O	2:I:790:SER:OG	2.33	0.40
2:I:802:ASP:O	2:I:804:ILE:N	2.54	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	A	82/457 (18%)	76 (93%)	6 (7%)	0	100	100
1	B	83/457 (18%)	72 (87%)	11 (13%)	0	100	100
1	G	181/457 (40%)	166 (92%)	15 (8%)	0	100	100
1	H	177/457 (39%)	166 (94%)	11 (6%)	0	100	100
1	K	70/457 (15%)	67 (96%)	3 (4%)	0	100	100
1	L	82/457 (18%)	78 (95%)	4 (5%)	0	100	100
1	M	145/457 (32%)	139 (96%)	6 (4%)	0	100	100
1	N	154/457 (34%)	151 (98%)	3 (2%)	0	100	100
2	C	86/907 (10%)	70 (81%)	16 (19%)	0	100	100
2	D	108/907 (12%)	88 (82%)	20 (18%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	I	108/907 (12%)	81 (75%)	27 (25%)	0	100	100
2	J	107/907 (12%)	80 (75%)	27 (25%)	0	100	100
All	All	1383/7284 (19%)	1234 (89%)	149 (11%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	62/345 (18%)	62 (100%)	0	100	100
1	B	63/345 (18%)	63 (100%)	0	100	100
1	G	140/345 (41%)	137 (98%)	3 (2%)	48	67
1	H	137/345 (40%)	136 (99%)	1 (1%)	81	87
1	K	55/345 (16%)	54 (98%)	1 (2%)	54	71
1	L	63/345 (18%)	63 (100%)	0	100	100
1	M	110/345 (32%)	107 (97%)	3 (3%)	40	59
1	N	116/345 (34%)	115 (99%)	1 (1%)	75	83
2	C	78/749 (10%)	77 (99%)	1 (1%)	65	77
2	D	94/749 (13%)	94 (100%)	0	100	100
2	I	94/749 (13%)	93 (99%)	1 (1%)	70	80
2	J	93/749 (12%)	93 (100%)	0	100	100
All	All	1105/5756 (19%)	1094 (99%)	11 (1%)	71	82

All (11) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	G	99	ARG
1	G	139	ASN
1	G	201	ARG
1	H	99	ARG

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	K	81	ARG
1	M	337	ARG
1	M	380	ARG
1	M	403	ARG
1	N	349	ARG
2	C	808	ARG
2	I	811	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (12) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	399	GLN
1	B	406	HIS
2	D	856	ASN
1	G	132	GLN
1	H	40	GLN
1	H	100	GLN
1	L	75	GLN
1	M	387	GLN
1	N	301	ASN
2	J	869	ASN
2	C	3	GLN
2	I	883	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 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](#)

There are no chain breaks in this entry.

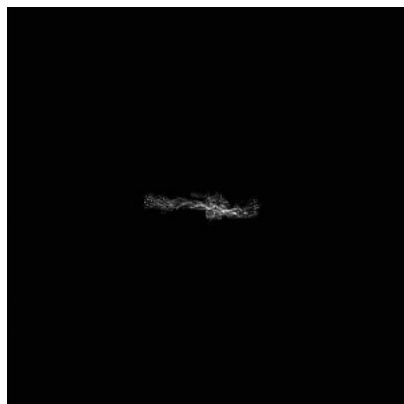
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-15465. These allow visual inspection of the internal detail of the map and identification of artifacts.

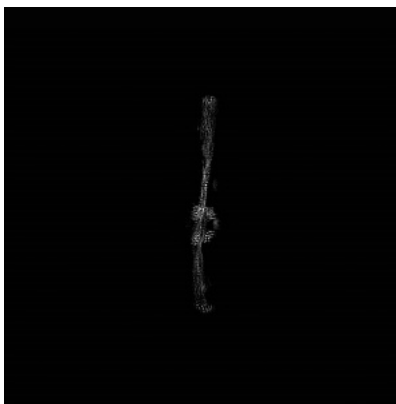
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

6.1.1 Primary map



X

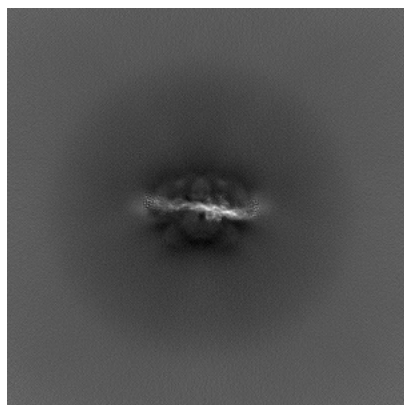


Y

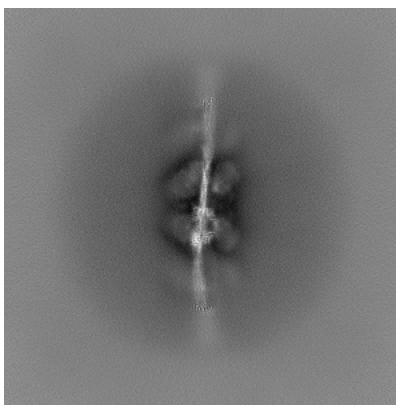


Z

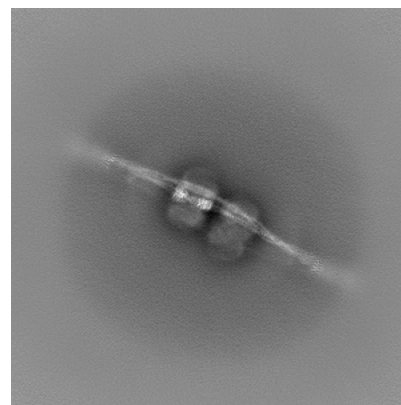
6.1.2 Raw map



X



Y

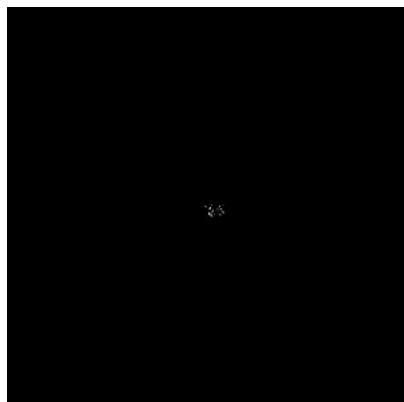


Z

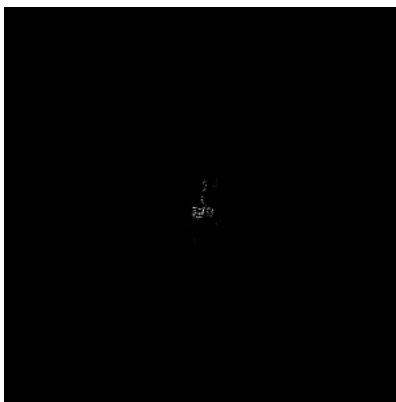
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

6.2.1 Primary map



X Index: 250

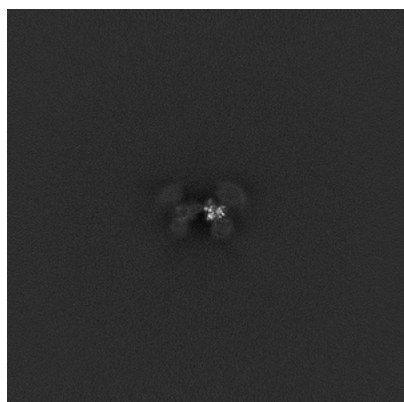


Y Index: 250

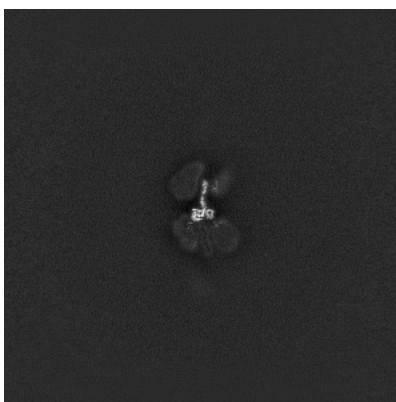


Z Index: 250

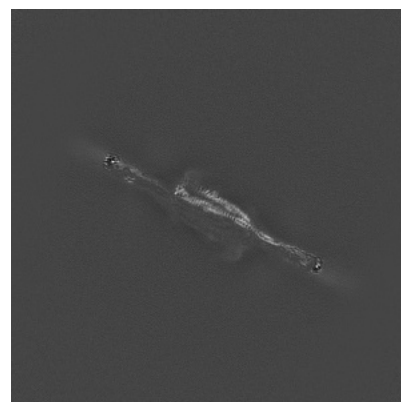
6.2.2 Raw map



X Index: 250



Y Index: 250

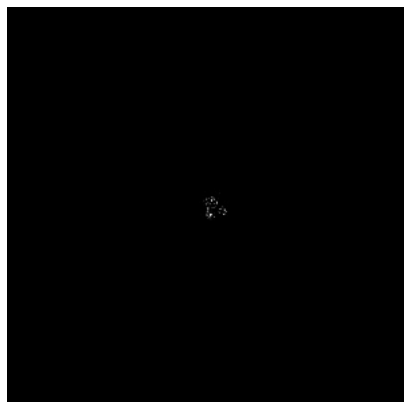


Z Index: 250

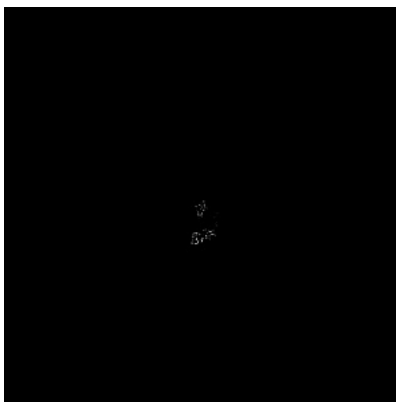
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

6.3.1 Primary map



X Index: 242

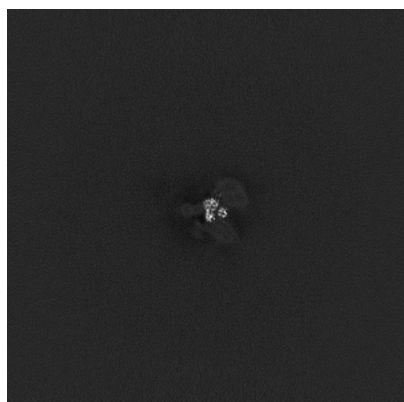


Y Index: 266

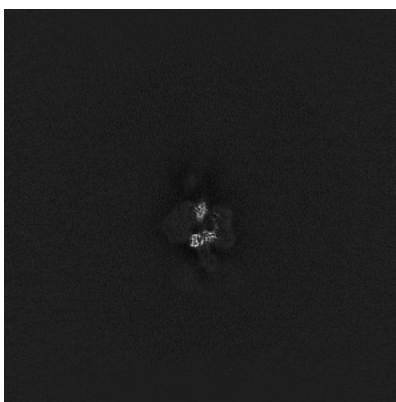


Z Index: 252

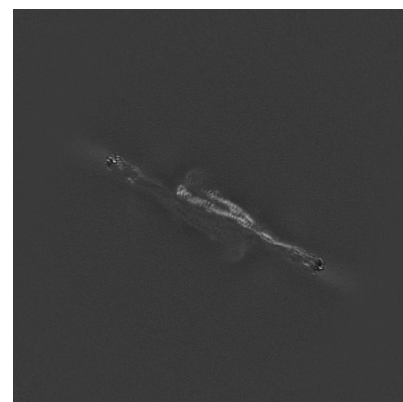
6.3.2 Raw map



X Index: 242



Y Index: 266

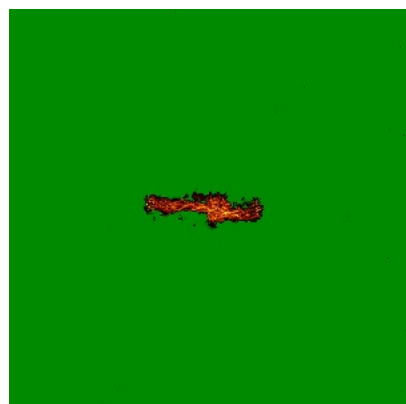


Z Index: 251

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

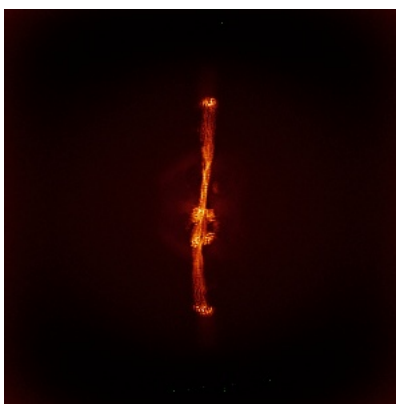


Z

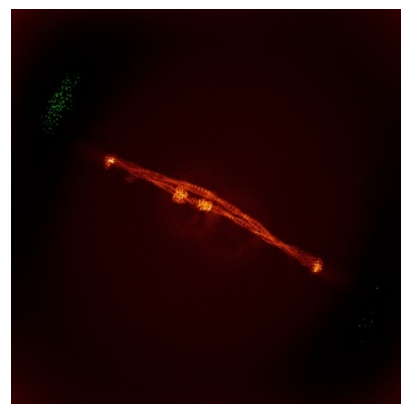
6.4.2 Raw map



X



Y

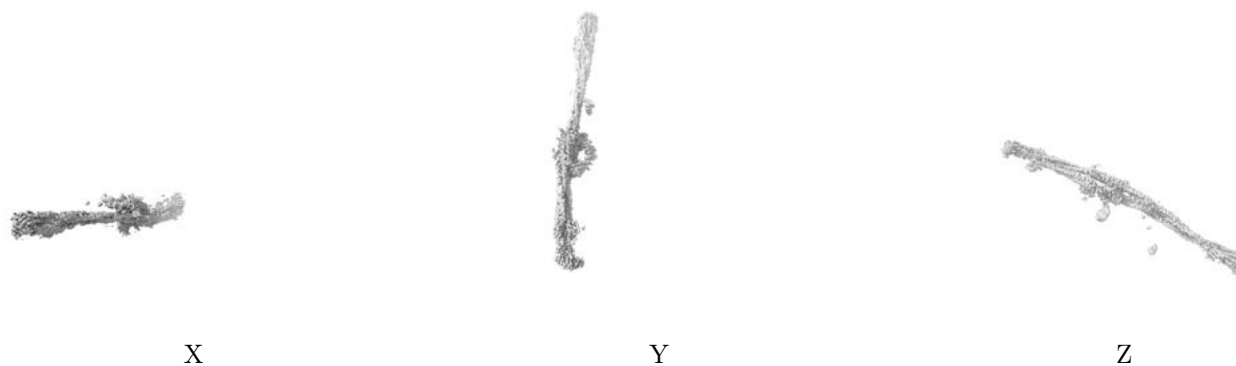


Z

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.

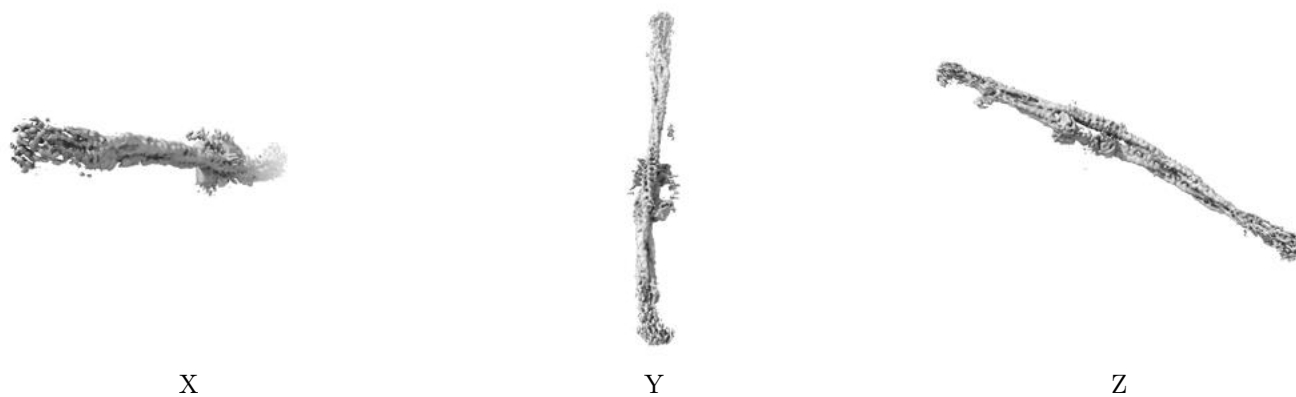
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.02. 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.

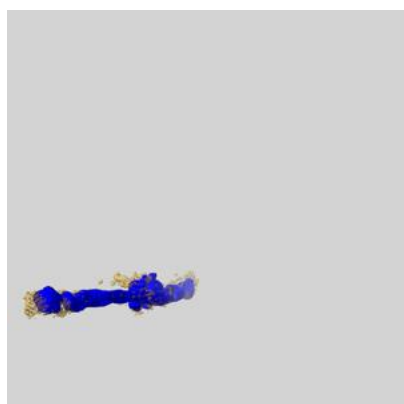
6.6 Mask visualisation [i](#)

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

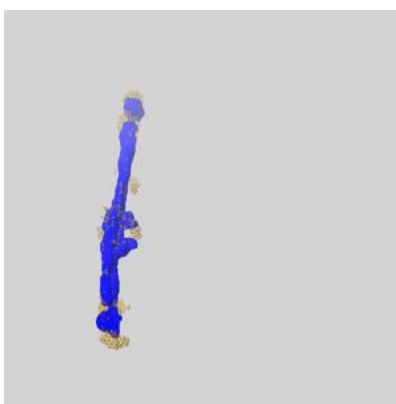
A mask typically either:

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

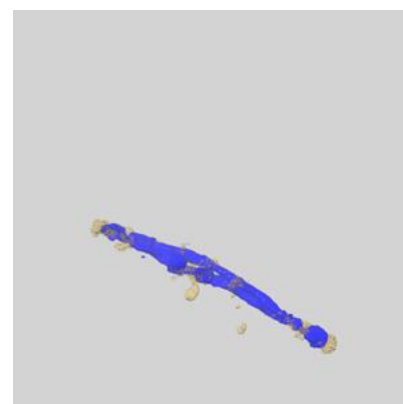
6.6.1 emd_15465_msk_1.map [i](#)



X



Y

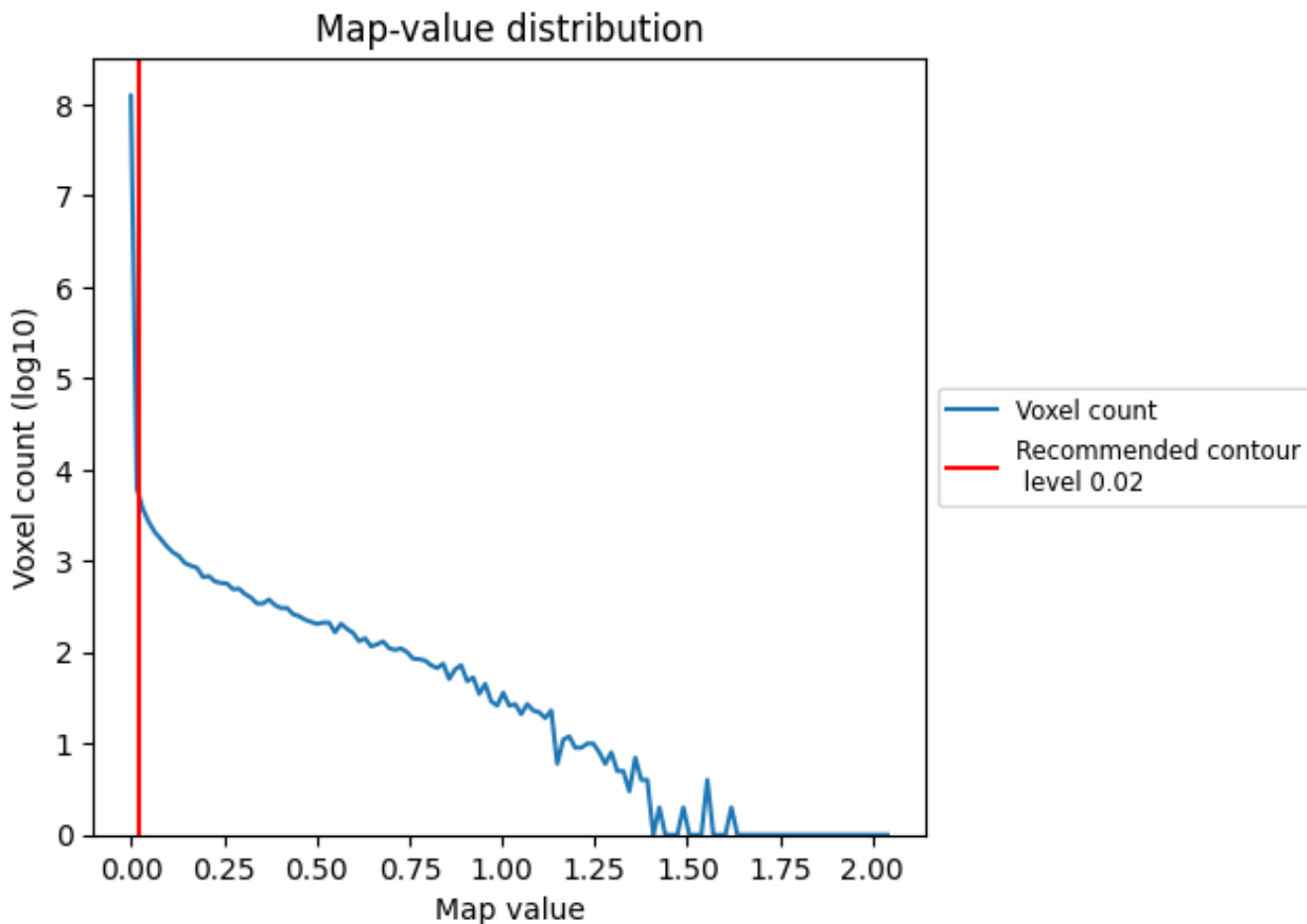


Z

7 Map analysis [i](#)

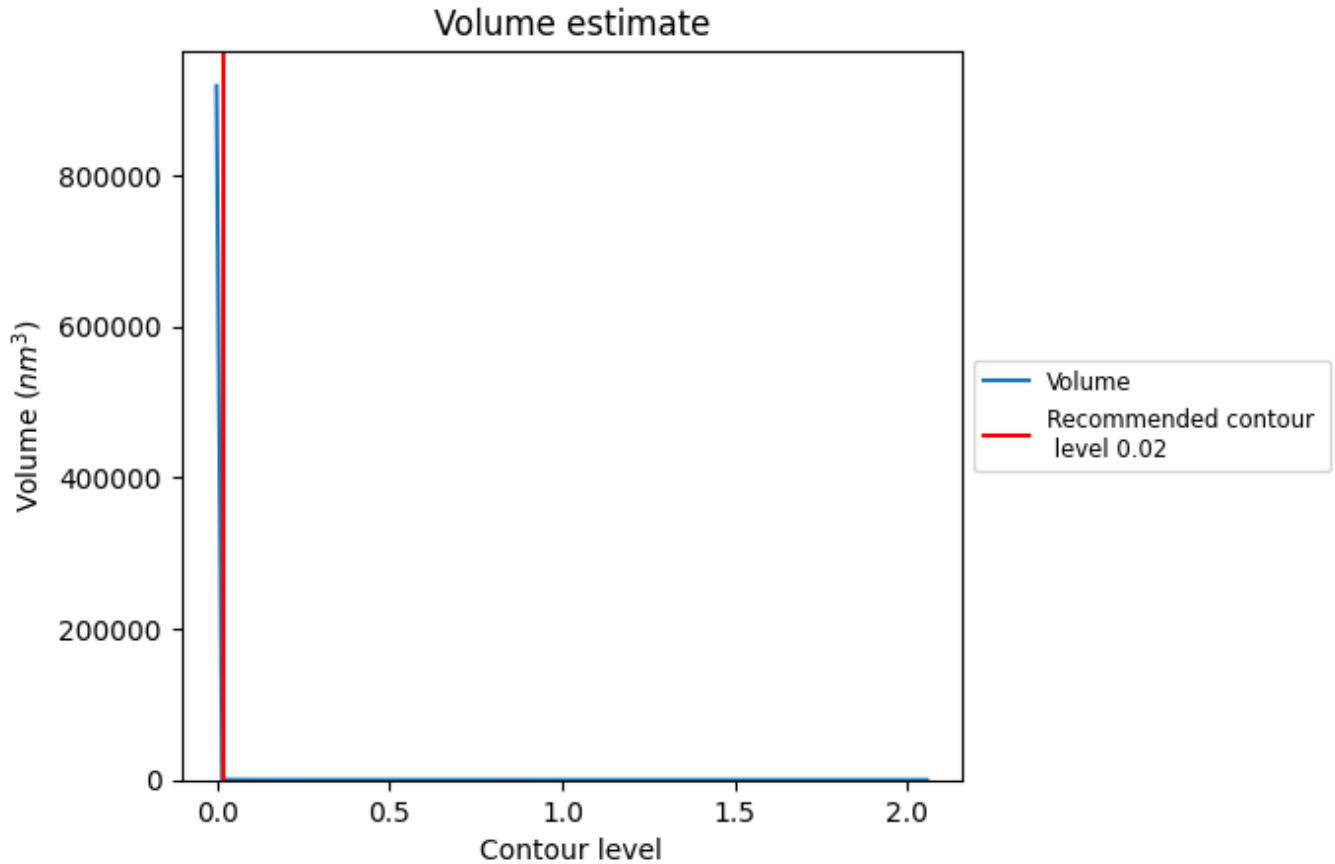
This section contains the results of statistical analysis of the map.

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.

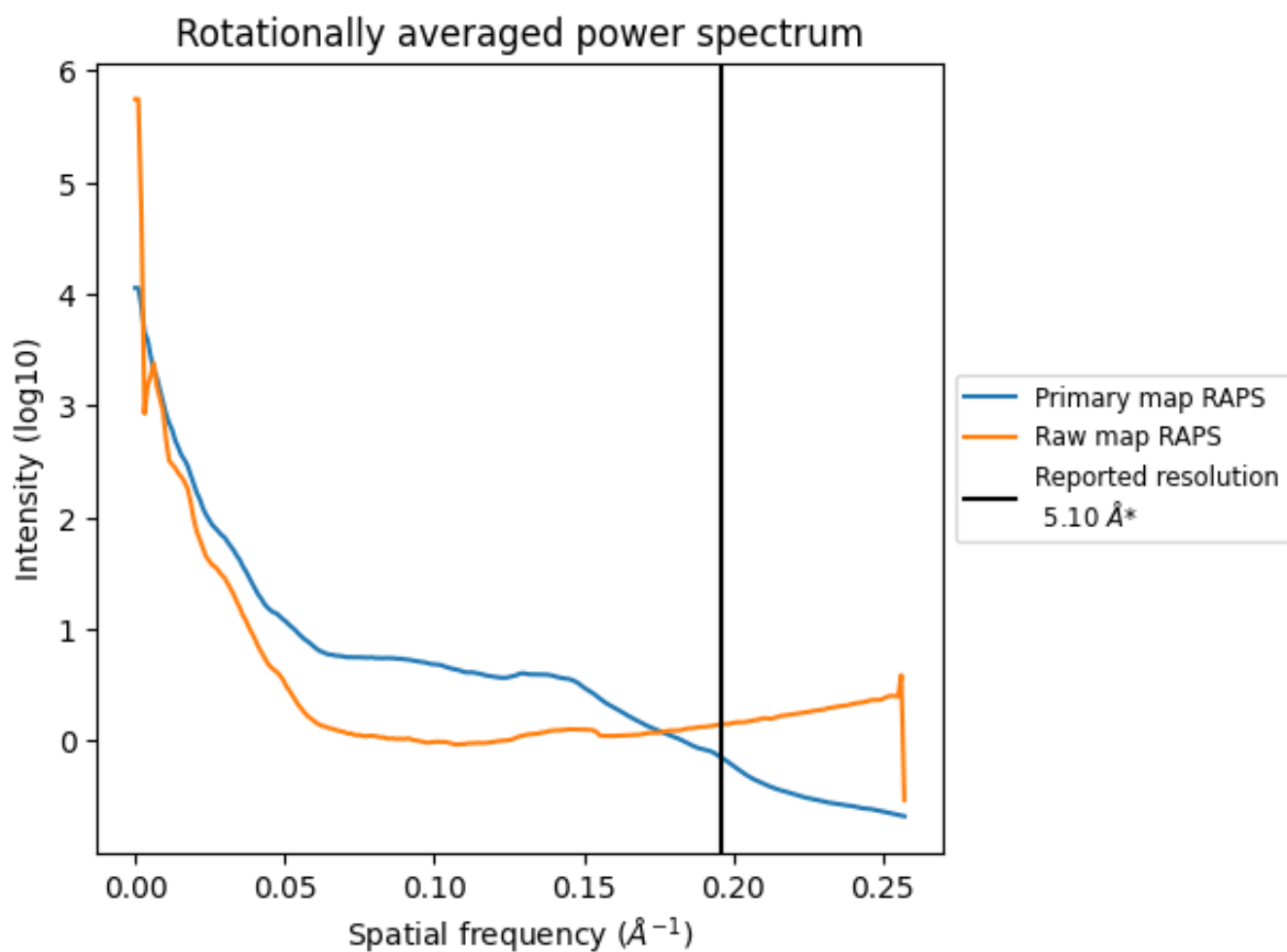
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 237 nm³; this corresponds to an approximate mass of 214 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

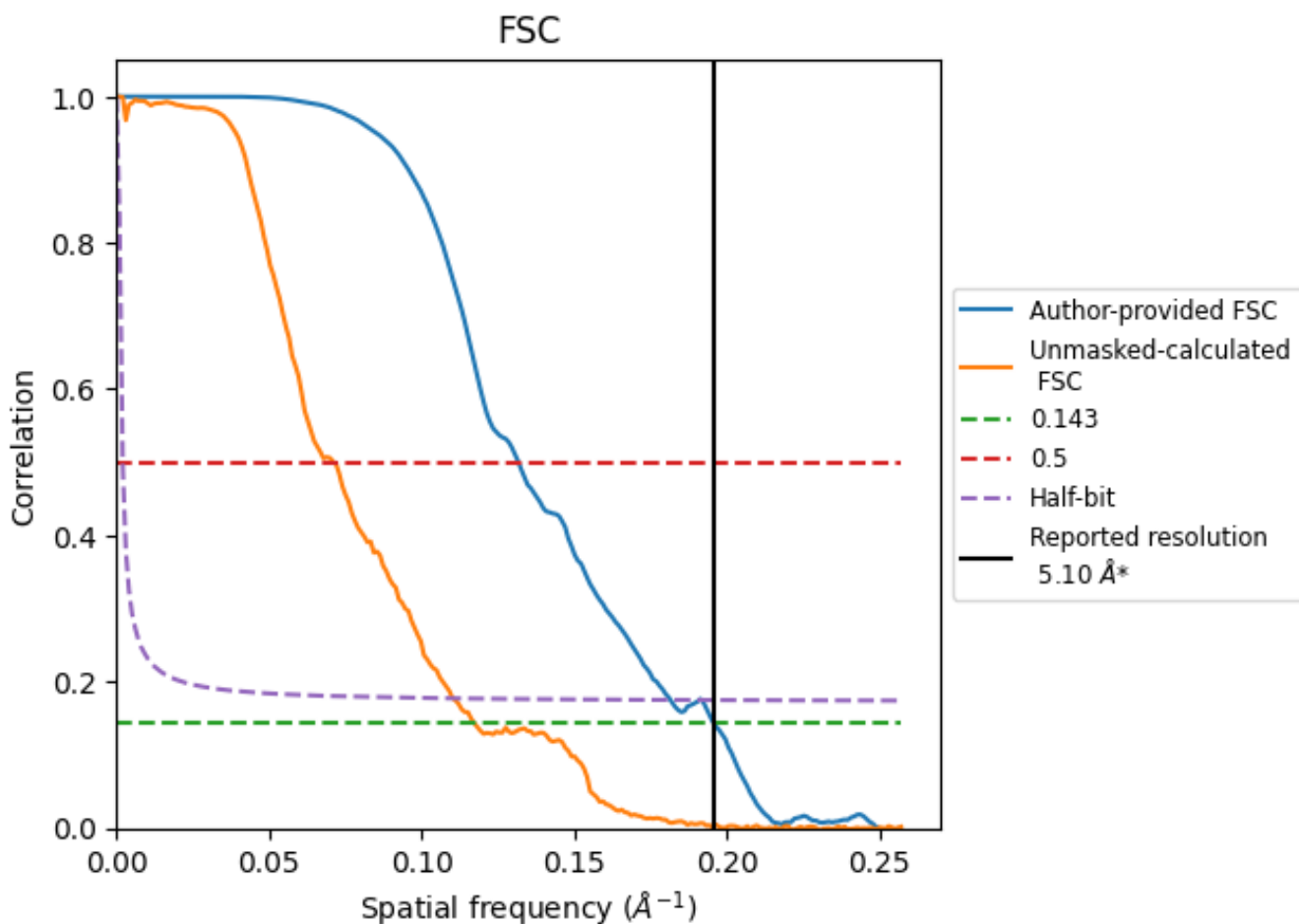


*Reported resolution corresponds to spatial frequency of 0.196 \AA^{-1}

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 0.196 Å⁻¹

8.2 Resolution estimates [i](#)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	5.10	-	-
Author-provided FSC curve	5.11	7.59	5.51
Unmasked-calculated*	8.53	14.04	9.07

*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 8.53 differs from the reported value 5.1 by more than 10 %

9 Map-model fit [i](#)

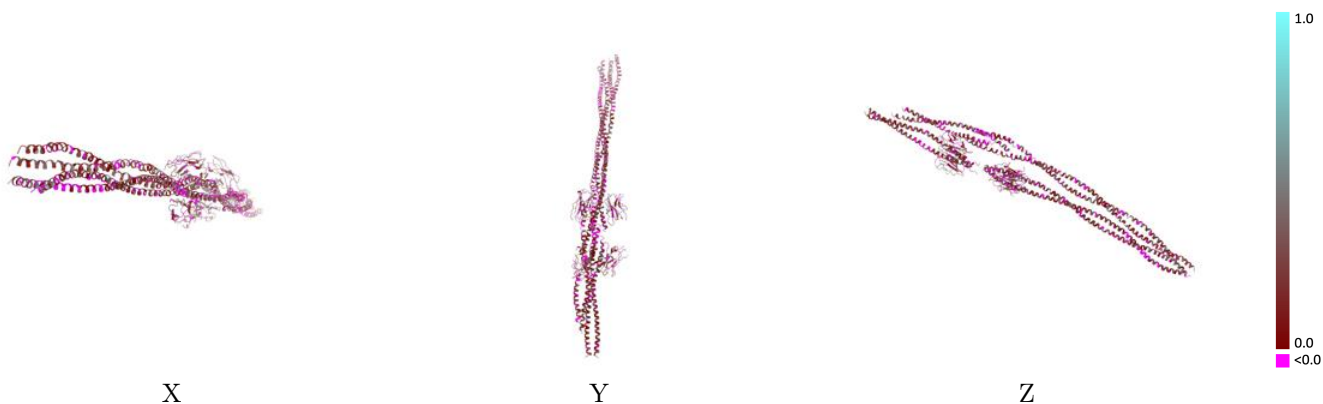
This section contains information regarding the fit between EMDB map EMD-15465 and PDB model 8AIA. Per-residue inclusion information can be found in section 3 on page 5.

9.1 Map-model overlay [i](#)



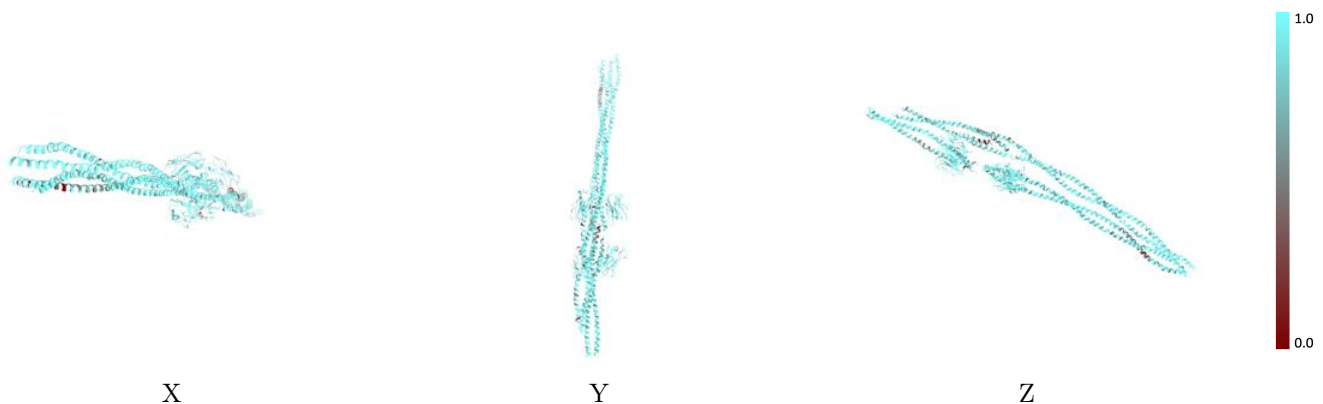
The images above show the 3D surface view of the map at the recommended contour level 0.02 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



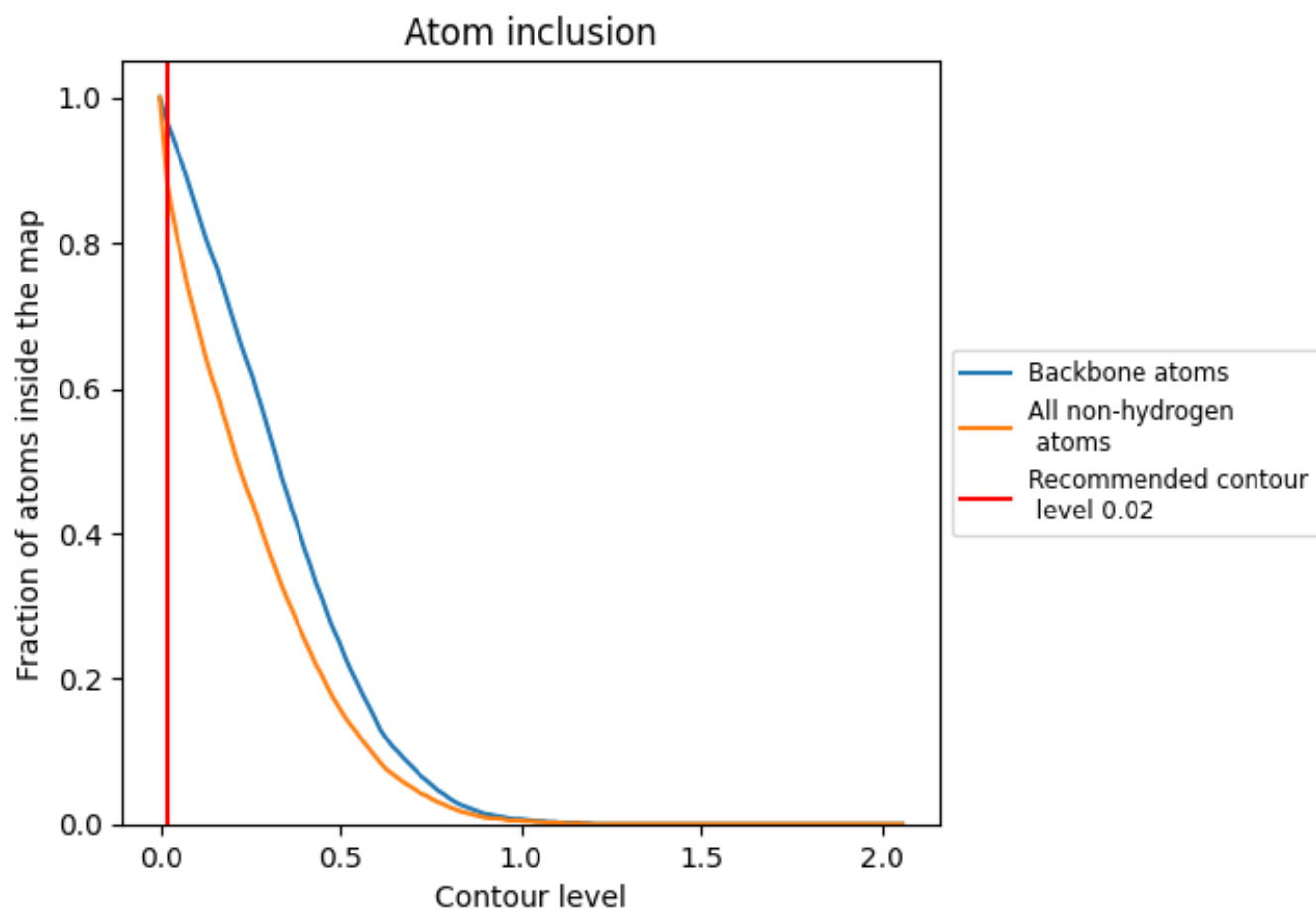
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.02).



























9.4 Atom inclusion [i](#)



At the recommended contour level, 96% of all backbone atoms, 88% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

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

Chain	Atom inclusion	Q-score
All	 0.8780	 0.1850
A	 0.8610	 0.1790
B	 0.9060	 0.1850
C	 0.8650	 0.2000
D	 0.8780	 0.2050
G	 0.9020	 0.1850
H	 0.8940	 0.2050
I	 0.8740	 0.1850
J	 0.8930	 0.2110
K	 0.7620	 0.1250
L	 0.8860	 0.1730
M	 0.9040	 0.1990
N	 0.8460	 0.1440

