



Full wwPDB EM Validation Report ⓘ

Sep 3, 2024 – 04:27 PM JST

PDB ID : 8XKU
EMDB ID : EMD-38425
Title : Cryo-EM structure of the Ycf2-FtsHi motor complex from Arabidopsis in ATP-bound state
Authors : Liang, K.; Zhan, X.; Xu, Q.; Wu, J.; Yan, Z.
Deposited on : 2023-12-24
Resolution : 3.20 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.dev112
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
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) : 2.38.2

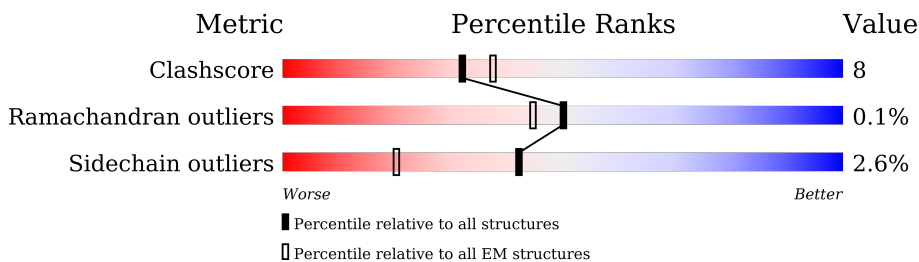
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.20 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.










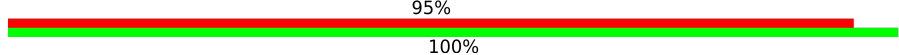

Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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	855	
2	B	1008	
3	C	1320	
4	D	2294	
5	E	946	
6	F	876	
7	G	396	
8	H	348	

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Mol	Chain	Length	Quality of chain
9	I	403	
9	J	403	
10	K	80	
11	L	18	
12	M	11	
13	N	37	
14	O	17	
15	P	19	
16	R	328	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
18	ATP	A	902	-	-	X	-
18	ATP	B	1103	-	-	X	-
20	PX2	B	1104	-	-	X	-

2 Entry composition [i](#)

There are 20 unique types of molecules in this entry. The entry contains 45544 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 Probable inactive ATP-dependent zinc metalloprotease FTSHI 4, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	730	5841	3718	1000	1103	20	0	0

- Molecule 2 is a protein called ATP-dependent zinc metalloprotease FTSH 12, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	845	6879	4404	1195	1251	29	0	0

- Molecule 3 is a protein called Probable inactive ATP-dependent zinc metalloprotease FTSHI 5, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	921	7494	4775	1299	1386	34	0	0

- Molecule 4 is a protein called Protein Ycf2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D	805	6659	4314	1145	1173	27	0	0

- Molecule 5 is a protein called Probable inactive ATP-dependent zinc metalloprotease FTSHI 1, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	E	498	3881	2451	690	729	11	0	0

- Molecule 6 is a protein called Probable inactive ATP-dependent zinc metalloprotease FTSHI 2, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	F	478	3744	2356	667	701	20	0	0

- Molecule 7 is a protein called AtTam46.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	G	285	2375	1615	370	379	11	0	0

- Molecule 8 is a protein called At4g28210.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	H	54	459	310	76	72	1	0	0

- Molecule 9 is a protein called Malate dehydrogenase, chloroplastic.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	I	317	2363	1503	396	457	7	0	0
9	J	317	2363	1503	396	457	7	0	0

- Molecule 10 is a protein called Aspartyl/glutamyl-tRNA (Asn/Gln) amidotransferase subunit B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	K	67	555	359	98	97	1	0	0

- Molecule 11 is a protein called UNK.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	L	18	131	89	21	20	1	0	0

- Molecule 12 is a protein called UNK.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
12	M	11	84	59	13	12	0	0

- Molecule 13 is a protein called UNK.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	N	37	246	159	45	41	1	0	0

- Molecule 14 is a protein called UNK.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
14	O	17	132	89	25	18	0	0

- Molecule 15 is a protein called UNK.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
15	P	19	95	57	19	19	0	0

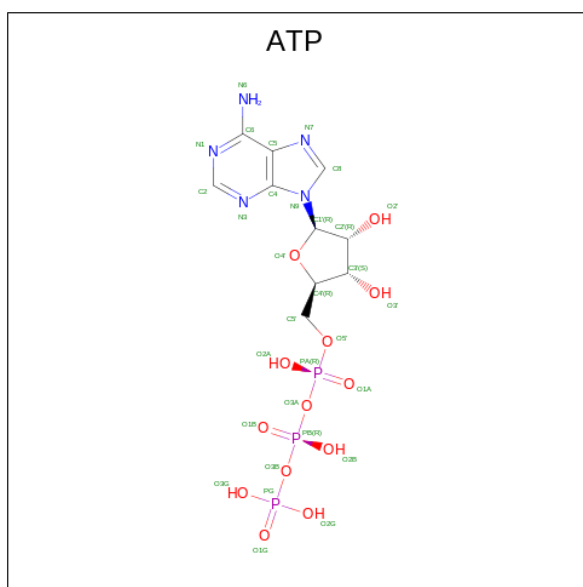
- Molecule 16 is a protein called Embryo defective 2737.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	R	267	2151	1371	367	397	16	0	0

- Molecule 17 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
17	A	1	1	1	0
17	B	1	1	1	0

- Molecule 18 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula: C₁₀H₁₆N₅O₁₃P₃).

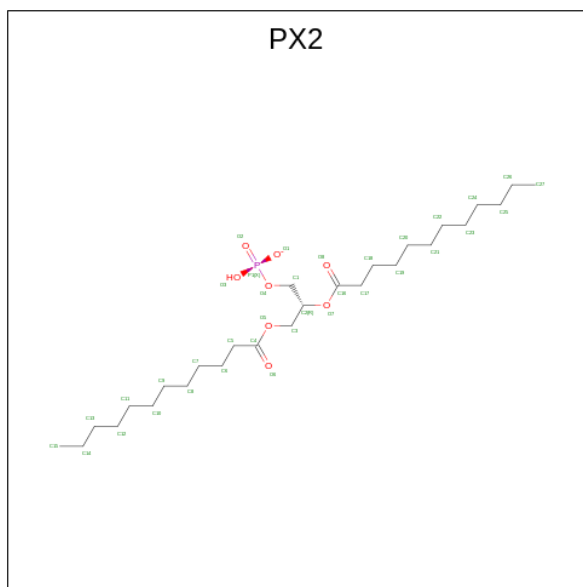


Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
18	A	1	31	10	5	13	3	0
18	B	1	31	10	5	13	3	0

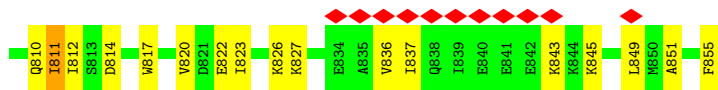
- Molecule 19 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
			Total	Zn	
19	B	1	1	1	0
19	R	2	2	2	0

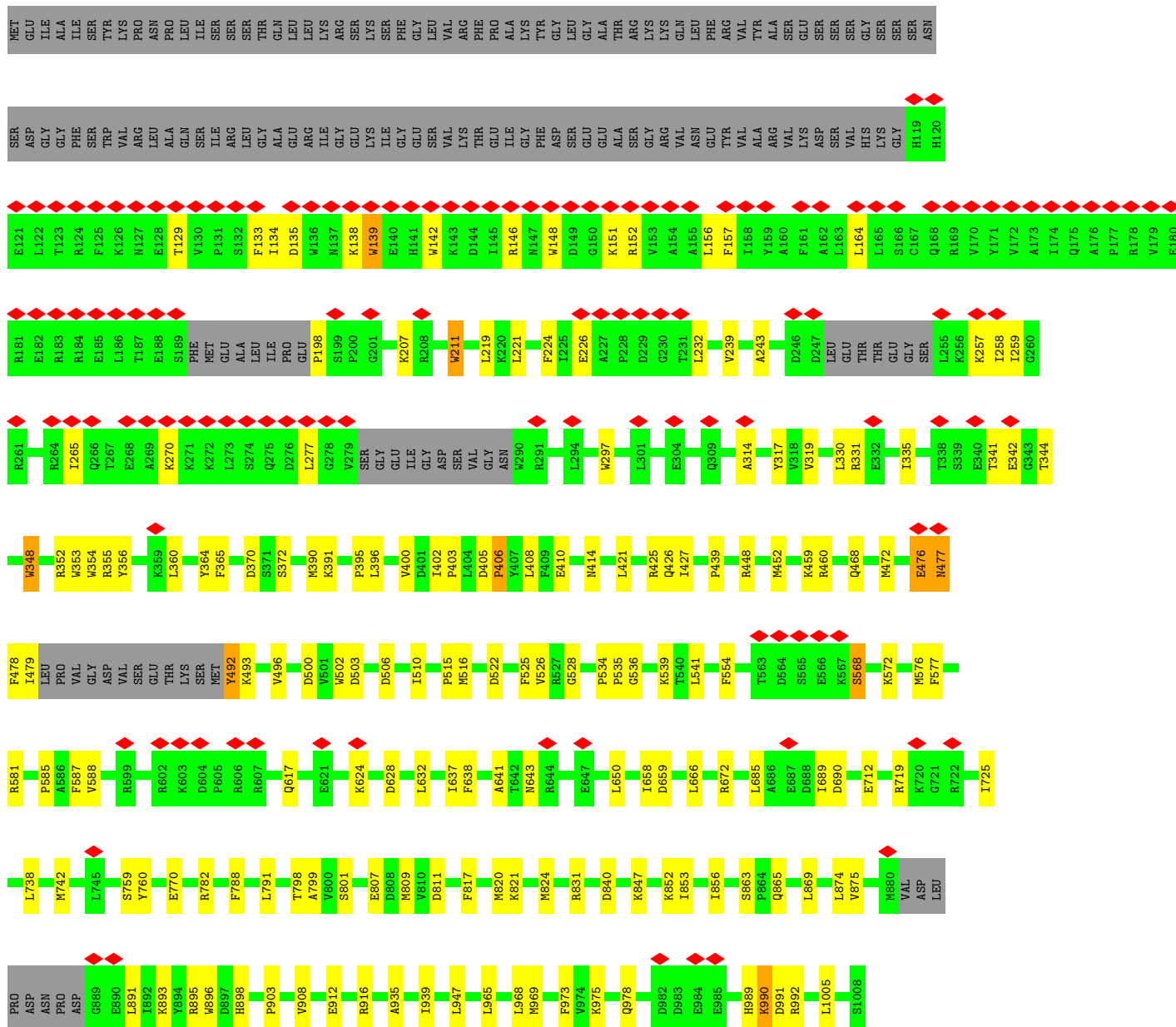
- Molecule 20 is 1,2-DILAUROYL-SN-GLYCERO-3-PHOSPHATE (three-letter code: PX2) (formula: C₂₇H₅₂O₈P).



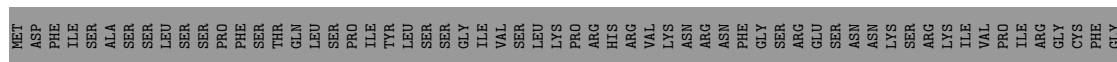
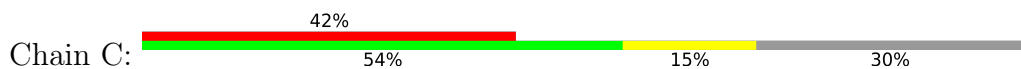
Mol	Chain	Residues	Atoms				AltConf
			Total	C	O	P	
20	B	1	25	16	8	1	0

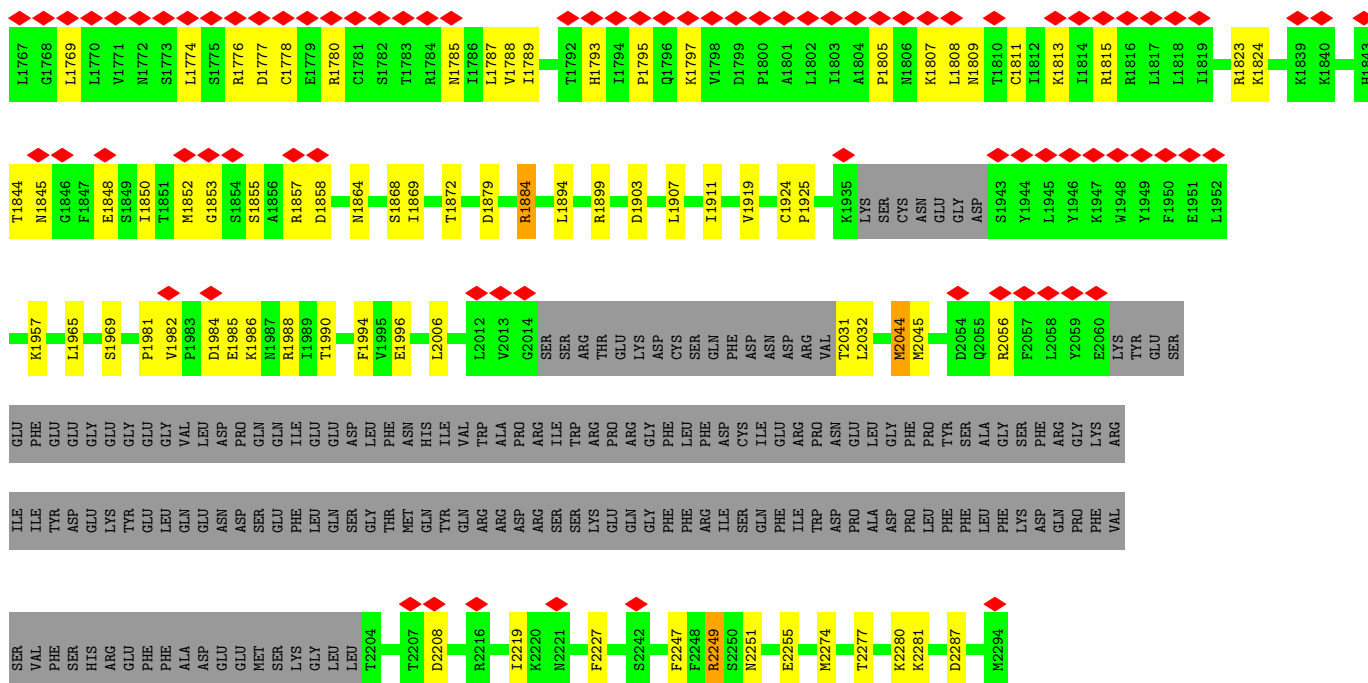


• Molecule 2: ATP-dependent zinc metalloprotease FTSH 12, chloroplastic

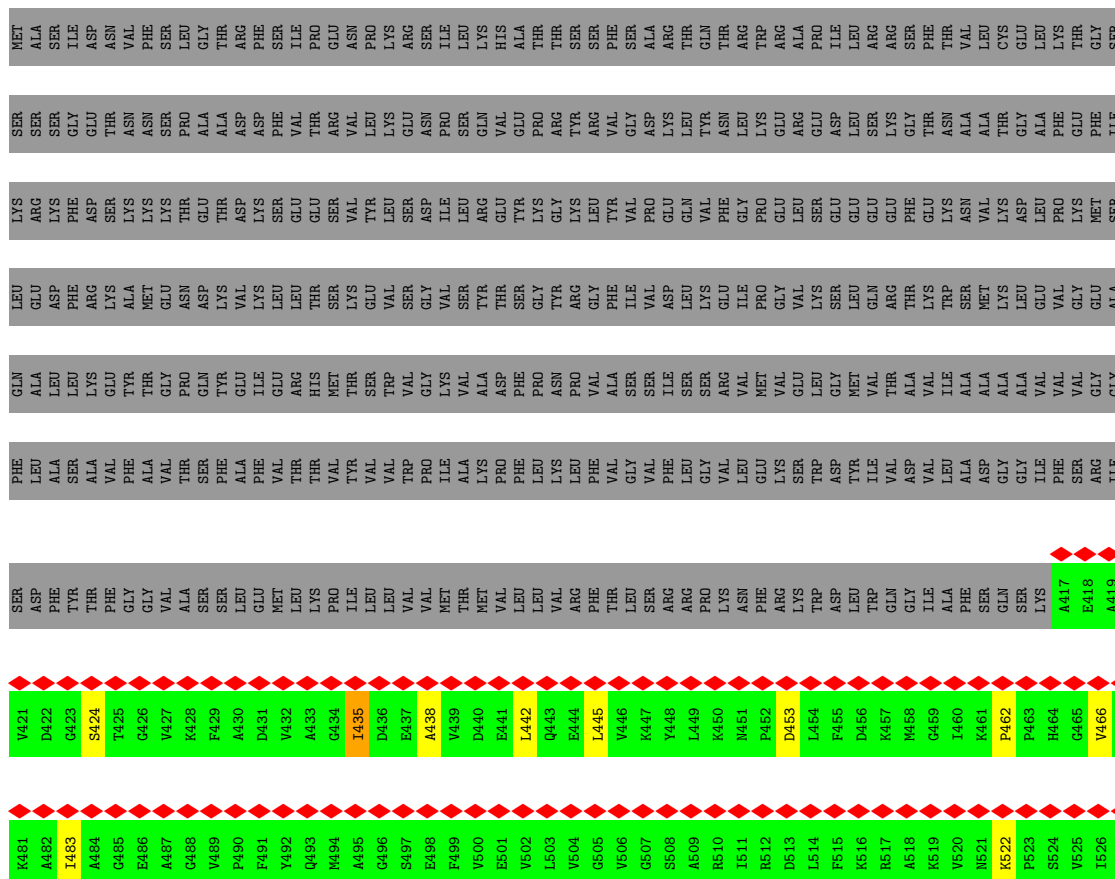


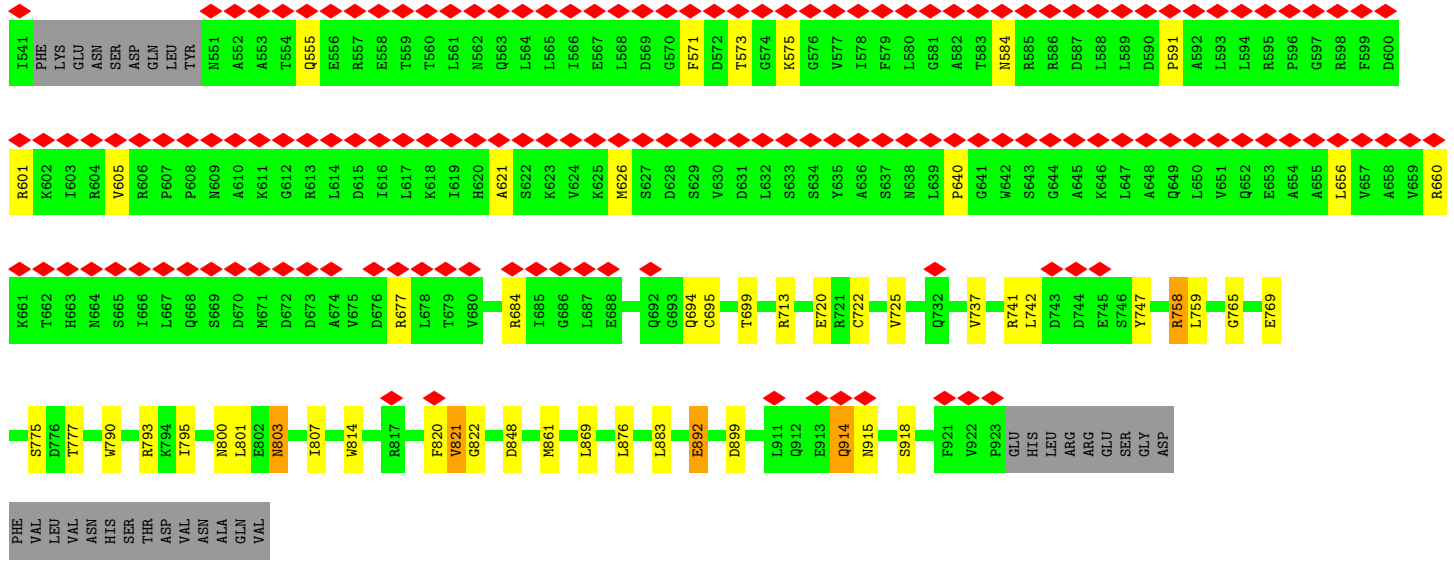
• Molecule 3: Probable inactive ATP-dependent zinc metalloprotease FTSHI 5, chloroplastic



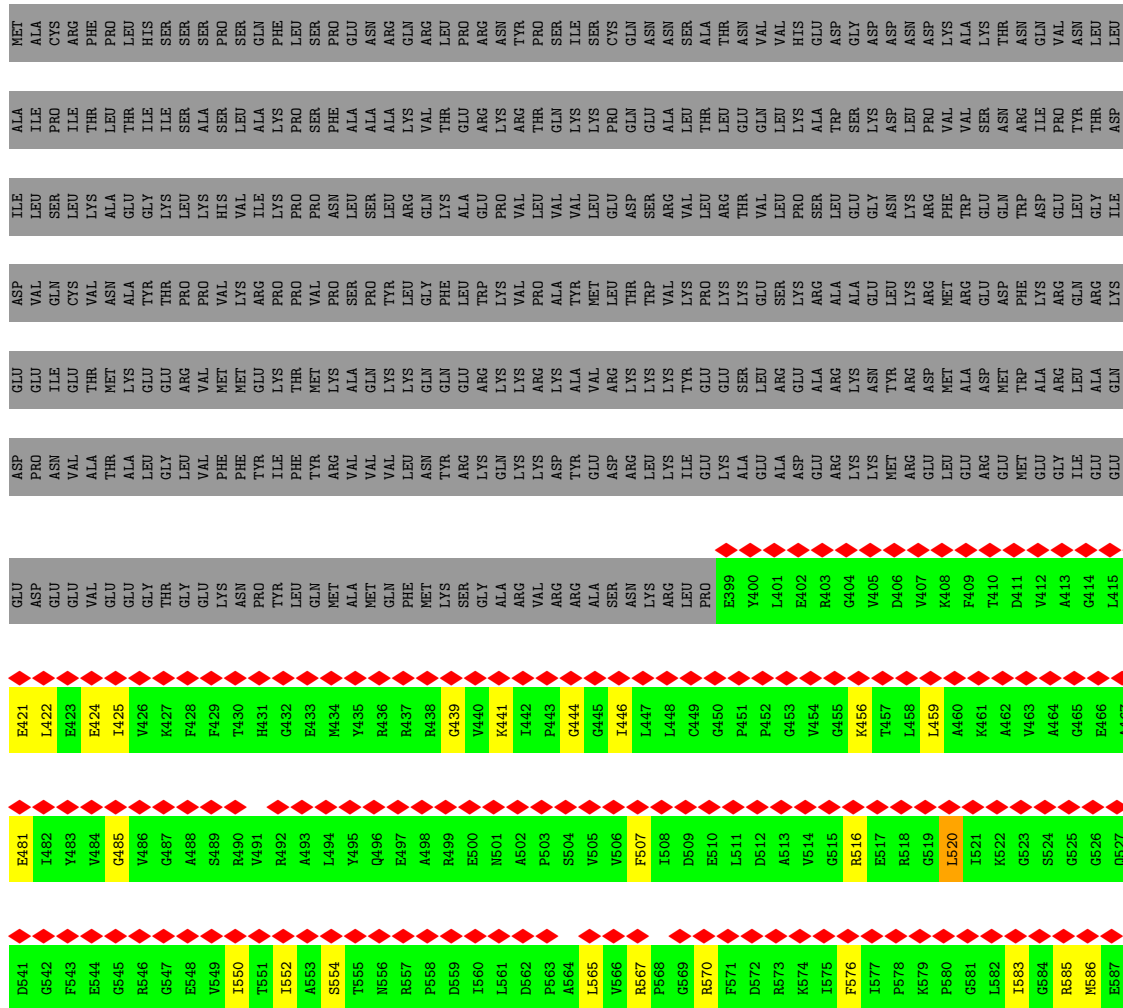


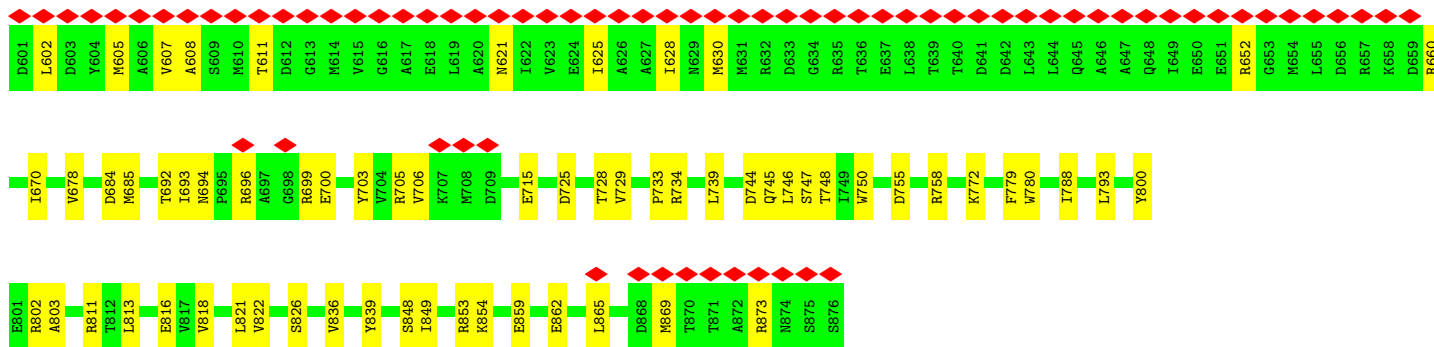
● Molecule 5: Probable inactive ATP-dependent zinc metalloprotease FTSHI 1, chloroplastic



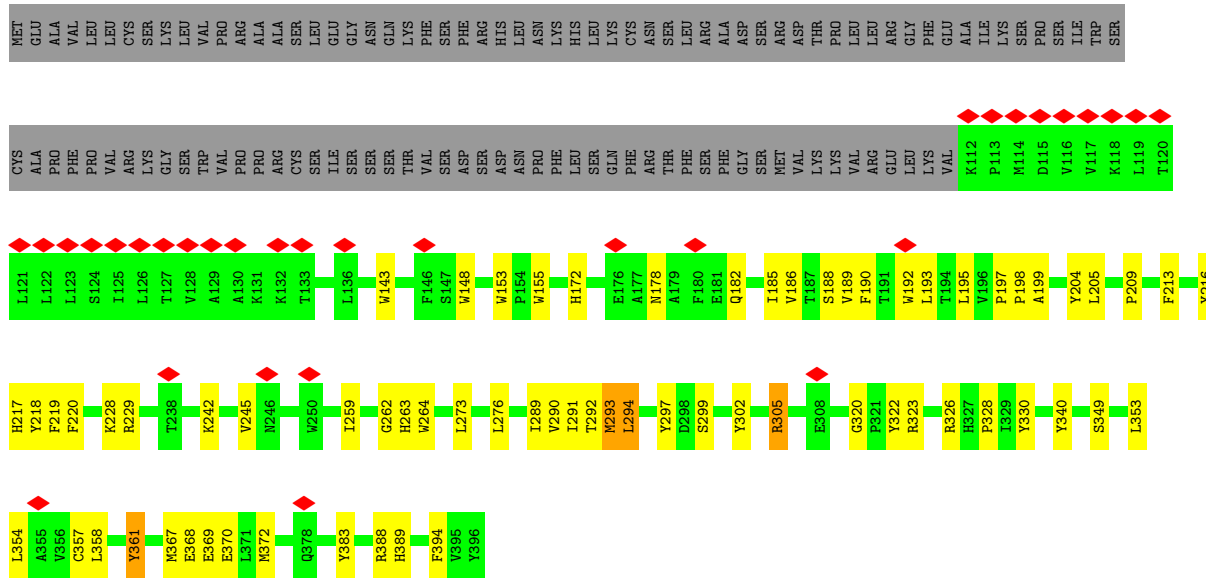


● Molecule 6: Probable inactive ATP-dependent zinc metalloprotease FTSHI 2, chloroplastic

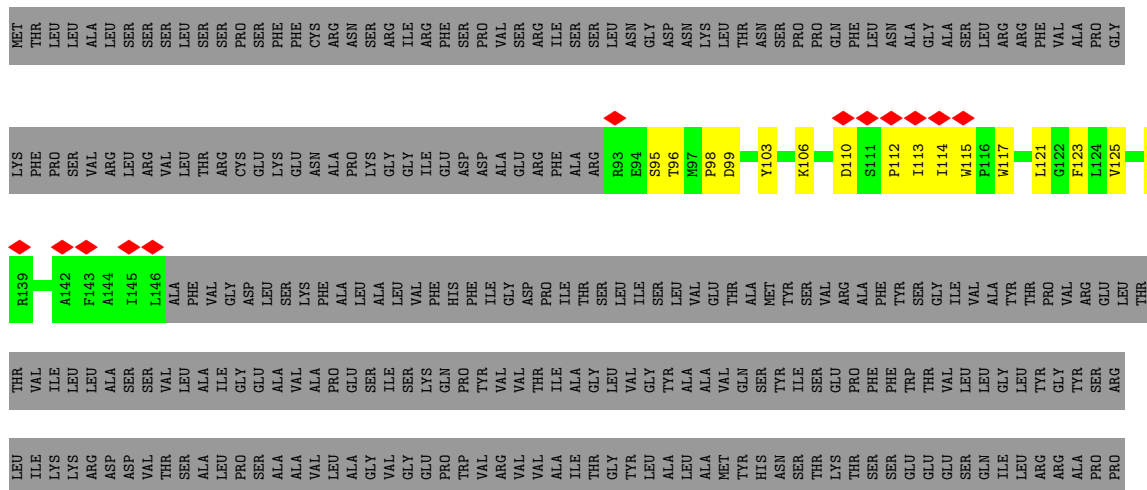


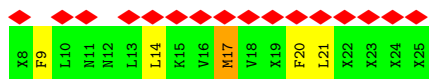
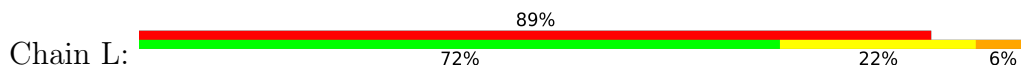


• Molecule 7: AtTam46

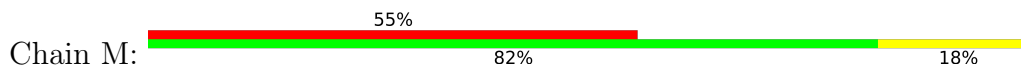


• Molecule 8: At4g28210

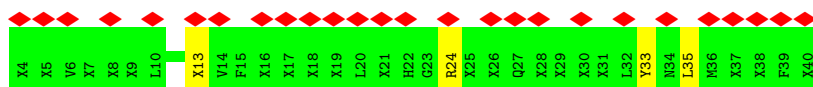
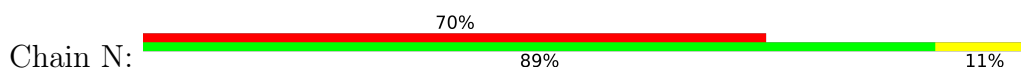




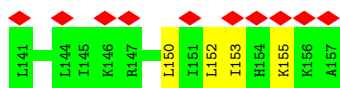
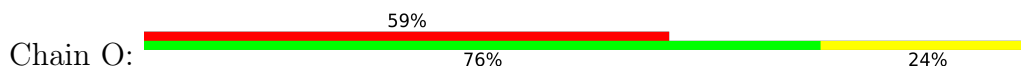
• Molecule 12: UNK



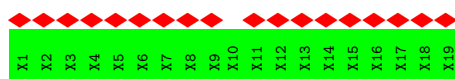
• Molecule 13: UNK



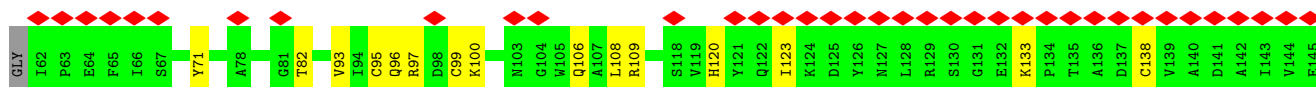
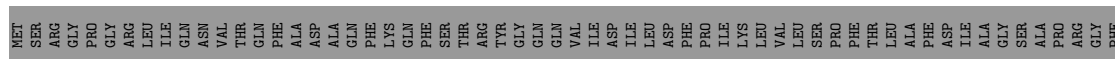
• Molecule 14: UNK

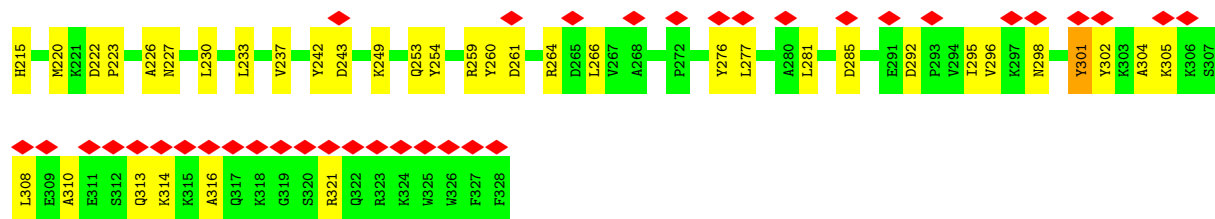


• Molecule 15: UNK



• Molecule 16: Embryo defective 2737





4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	738896	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 ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	1400	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.115	Depositor
Minimum map value	-0.021	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.002	Depositor
Recommended contour level	0.009	Depositor
Map size (Å)	391.32, 391.32, 391.32	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.087, 1.087, 1.087	Depositor

5 Model quality i

5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: MG, PX2, ZN, ATP

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	0.26	0/5952	0.55	4/8038 (0.0%)
2	B	0.30	1/7022 (0.0%)	0.62	5/9460 (0.1%)
3	C	0.25	0/7627	0.55	3/10262 (0.0%)
4	D	0.26	0/6804	0.55	1/9177 (0.0%)
5	E	0.24	0/3953	0.49	1/5357 (0.0%)
6	F	0.25	0/3798	0.57	0/5115
7	G	0.29	0/2470	0.59	2/3375 (0.1%)
8	H	0.27	0/477	0.50	0/651
9	I	0.25	0/2399	0.46	0/3261
9	J	0.25	0/2399	0.47	0/3261
10	K	0.28	0/570	0.69	2/772 (0.3%)
11	L	0.37	0/101	1.02	2/133 (1.5%)
12	M	0.26	0/74	0.55	0/99
13	N	0.26	0/142	0.72	0/179
14	O	0.23	0/132	0.61	0/175
16	R	0.27	0/2206	0.52	0/2986
All	All	0.26	1/46126 (0.0%)	0.56	20/62301 (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	A	0	1
2	B	0	3
4	D	0	2
5	E	0	1
All	All	0	7

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	406	PRO	CG-CD	-10.20	1.17	1.50

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	406	PRO	CA-N-CD	-12.63	93.82	111.50
2	B	406	PRO	N-CD-CG	-11.01	86.69	103.20
2	B	522	ASP	CB-CG-OD2	9.70	127.03	118.30
7	G	294	LEU	CA-CB-CG	8.76	135.44	115.30
10	K	54	ASP	CB-CG-OD1	8.54	125.99	118.30
11	L	17	MET	CB-CG-SD	8.04	136.51	112.40
7	G	293	MET	CA-CB-CG	7.54	126.13	113.30
10	K	72	ASP	CB-CG-OD2	6.59	124.23	118.30
3	C	876	LEU	CA-CB-CG	6.45	130.14	115.30
2	B	406	PRO	CA-CB-CG	-6.36	91.91	104.00
4	D	1659	LYS	CA-CB-CG	5.68	125.90	113.40
2	B	522	ASP	CB-CG-OD1	-5.58	113.28	118.30
5	E	435	ILE	CG1-CB-CG2	-5.43	99.46	111.40
1	A	120	MET	CA-CB-CG	5.40	122.47	113.30
1	A	263	ASP	CB-CG-OD2	5.35	123.12	118.30
1	A	497	LEU	CA-CB-CG	5.34	127.58	115.30
1	A	494	LEU	CA-CB-CG	5.20	127.26	115.30
11	L	17	MET	CA-CB-CG	5.16	122.08	113.30
3	C	601	LEU	CA-CB-CG	5.03	126.86	115.30
3	C	1049	MET	CA-CB-CG	5.03	121.85	113.30

There are no chirality outliers.

All (7) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	811	ILE	Peptide
2	B	476	GLU	Peptide
2	B	477	ASN	Peptide
2	B	990	LYS	Peptide
4	D	1982	VAL	Peptide
4	D	495	SER	Peptide
5	E	803	ASN	Peptide

5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen

atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	5841	0	5858	150	0
2	B	6879	0	6912	165	0
3	C	7494	0	7625	128	0
4	D	6659	0	6763	139	0
5	E	3881	0	3926	42	0
6	F	3744	0	3823	68	0
7	G	2375	0	2353	51	0
8	H	459	0	455	10	0
9	I	2363	0	2437	29	0
9	J	2363	0	2437	34	0
10	K	555	0	561	12	0
11	L	131	0	123	3	0
12	M	84	0	97	1	0
13	N	246	0	175	5	0
14	O	132	0	161	5	0
15	P	95	0	21	0	0
16	R	2151	0	2123	54	0
17	A	1	0	0	0	0
17	B	1	0	0	0	0
18	A	31	0	12	33	0
18	B	31	0	12	19	0
19	B	1	0	0	0	0
19	R	2	0	0	0	0
20	B	25	0	23	32	0
All	All	45544	0	45897	766	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 8.

All (766) 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:B:354:TRP:CZ2	20:B:1104:PX2:H33	1.28	1.65
2:B:354:TRP:CE2	20:B:1104:PX2:H33	1.11	1.59
2:B:354:TRP:CH2	20:B:1104:PX2:C16	1.89	1.53
2:B:354:TRP:CZ2	20:B:1104:PX2:C18	1.94	1.48
2:B:354:TRP:CE2	20:B:1104:PX2:C18	1.98	1.46
2:B:496:VAL:HG21	18:B:1103:ATP:N6	1.18	1.41
2:B:354:TRP:CZ2	20:B:1104:PX2:C16	2.15	1.29

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:496:VAL:CG2	18:B:1103:ATP:N6	2.02	1.21
2:B:354:TRP:CZ2	20:B:1104:PX2:C17	2.24	1.21
2:B:354:TRP:NE1	20:B:1104:PX2:H37	1.58	1.16
2:B:354:TRP:CZ2	20:B:1104:PX2:O8	1.99	1.15
2:B:496:VAL:CG2	18:B:1103:ATP:HN62	1.61	1.13
1:A:496:ILE:HD12	18:A:902:ATP:C6	1.85	1.11
2:B:354:TRP:NE1	20:B:1104:PX2:H33	1.68	1.08
2:B:643:ASN:HD21	18:B:1103:ATP:PG	1.76	1.07
2:B:643:ASN:ND2	18:B:1103:ATP:O1G	1.88	1.06
2:B:354:TRP:CH2	20:B:1104:PX2:C17	2.37	1.05
1:A:496:ILE:CD1	18:A:902:ATP:C6	2.39	1.05
2:B:354:TRP:CD1	20:B:1104:PX2:H37	1.94	1.02
2:B:354:TRP:CH2	20:B:1104:PX2:O8	2.09	0.99
1:A:496:ILE:HD11	18:A:902:ATP:C5	2.00	0.97
1:A:532:GLN:HE22	18:A:902:ATP:C1'	1.79	0.95
2:B:496:VAL:HG21	18:B:1103:ATP:HN62	1.15	0.92
2:B:492:TYR:N	18:B:1103:ATP:N1	2.20	0.89
2:B:354:TRP:HH2	20:B:1104:PX2:C16	1.70	0.88
2:B:354:TRP:CD1	20:B:1104:PX2:C20	2.56	0.88
16:R:226:ALA:O	16:R:230:LEU:HB2	1.75	0.87
2:B:539:LYS:NZ	18:B:1103:ATP:O1B	2.06	0.87
1:A:532:GLN:NE2	18:A:902:ATP:H1'	1.88	0.87
1:A:361:GLY:CA	18:A:902:ATP:O1A	2.23	0.86
2:B:354:TRP:NE1	20:B:1104:PX2:C20	2.40	0.85
1:A:532:GLN:HE22	18:A:902:ATP:H1'	1.40	0.85
1:A:361:GLY:HA2	18:A:902:ATP:O1A	1.75	0.84
2:B:354:TRP:HZ2	20:B:1104:PX2:O8	1.61	0.84
2:B:354:TRP:CE2	20:B:1104:PX2:C19	2.63	0.82
1:A:532:GLN:OE1	18:A:902:ATP:H1'	1.81	0.81
7:G:357:CYS:O	7:G:361:TYR:HB2	1.83	0.79
1:A:496:ILE:HD11	18:A:902:ATP:C6	2.15	0.79
4:D:1644:ILE:O	4:D:1789:ILE:HA	1.82	0.78
1:A:787:GLY:HA2	1:A:800:THR:O	1.84	0.78
2:B:643:ASN:ND2	18:B:1103:ATP:PG	2.55	0.77
2:B:354:TRP:CH2	20:B:1104:PX2:O7	2.36	0.77
1:A:229:PHE:HB3	14:O:155:LYS:HG3	1.67	0.77
1:A:397:VAL:HG11	1:A:443:ILE:HG12	1.67	0.77
1:A:532:GLN:CD	18:A:902:ATP:H1'	2.05	0.77
2:B:496:VAL:HG21	18:B:1103:ATP:HN61	0.96	0.76
2:B:354:TRP:CD1	20:B:1104:PX2:C21	2.68	0.76
2:B:426:GLN:HB2	4:D:92:ILE:HG23	1.70	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:496:ILE:CD1	18:A:902:ATP:C5	2.66	0.73
3:C:587:MET:SD	3:C:587:MET:N	2.62	0.73
1:A:790:THR:O	1:A:797:GLY:HA2	1.89	0.72
1:A:496:ILE:HD11	18:A:902:ATP:C4	2.23	0.72
4:D:1015:VAL:HG12	4:D:1017:PRO:HD2	1.71	0.72
2:B:354:TRP:CH2	20:B:1104:PX2:H30	2.26	0.71
1:A:496:ILE:HD12	18:A:902:ATP:N6	2.05	0.70
4:D:1734:ILE:HB	4:D:1769:LEU:HD22	1.73	0.70
2:B:935:ALA:HB1	2:B:968:LEU:HD12	1.74	0.69
1:A:169:ASN:ND2	14:O:153:ILE:O	2.26	0.69
2:B:139:TRP:HE1	16:R:304:ALA:HB3	1.57	0.69
1:A:542:THR:HG21	1:A:550:ILE:HA	1.75	0.68
2:B:496:VAL:HG23	18:B:1103:ATP:HN62	1.56	0.68
2:B:354:TRP:HE1	20:B:1104:PX2:H37	1.57	0.67
9:I:94:ILE:HD11	9:I:309:MET:HB3	1.77	0.67
14:O:150:LEU:HD22	16:R:95:CYS:HA	1.76	0.67
1:A:475:ARG:NH2	18:B:1103:ATP:O3A	2.28	0.67
3:C:1008:ALA:HB2	3:C:1063:LEU:HD13	1.77	0.67
3:C:500:VAL:HG23	11:L:21:LEU:HD12	1.77	0.67
1:A:301:ARG:NH2	1:A:387:GLU:OE1	2.27	0.67
7:G:388:ARG:O	7:G:388:ARG:NH1	2.25	0.66
1:A:497:LEU:HD21	1:A:520:ALA:HB2	1.77	0.66
2:B:330:LEU:HD11	16:R:233:LEU:HD13	1.76	0.66
2:B:410:GLU:HG2	4:D:1032:ARG:HD3	1.77	0.66
9:J:146:ASP:HA	9:J:149:LYS:HE3	1.78	0.66
3:C:822:ILE:HG22	3:C:950:PHE:HB2	1.78	0.66
9:J:155:VAL:HG12	9:J:157:PRO:HD3	1.78	0.65
4:D:134:ARG:NH1	16:R:213:TYR:OH	2.28	0.65
7:G:273:LEU:HD23	7:G:276:LEU:HD21	1.79	0.65
9:I:146:ASP:HA	9:I:149:LYS:HE3	1.77	0.65
9:J:262:THR:HA	9:J:379:LEU:HB2	1.78	0.65
9:I:155:VAL:HG12	9:I:157:PRO:HD3	1.79	0.65
1:A:849:LEU:HG	7:G:182:GLN:HB3	1.77	0.64
1:A:383:THR:OG1	6:F:535:GLN:NE2	2.30	0.64
4:D:1649:SER:HB2	4:D:1793:HIS:HB3	1.79	0.64
5:E:445:LEU:HD11	5:E:466:VAL:HG21	1.80	0.64
1:A:843:LYS:HE3	1:A:845:LYS:HE2	1.80	0.64
1:A:691:ARG:HG3	1:A:693:GLN:HE22	1.62	0.64
3:C:820:VAL:HG22	3:C:948:ARG:HB2	1.80	0.64
7:G:354:LEU:O	7:G:358:LEU:HB2	1.98	0.64
1:A:694:ARG:NH2	2:B:896:TRP:O	2.31	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:536:GLY:O	18:B:1103:ATP:H8	1.80	0.63
3:C:1240:ALA:HA	3:C:1291:LEU:HD11	1.81	0.63
4:D:1372:VAL:HG11	16:R:82:THR:HG21	1.81	0.63
2:B:414:ASN:HB3	4:D:1029:LYS:HG3	1.81	0.63
3:C:1201:TRP:HE1	5:E:777:THR:HG1	1.44	0.63
1:A:827:LYS:HG2	4:D:1919:VAL:HA	1.81	0.63
3:C:312:ARG:NH2	4:D:1319:LEU:O	2.28	0.62
7:G:326:ARG:NH2	7:G:388:ARG:O	2.32	0.62
1:A:387:GLU:HA	6:F:485:GLY:HA3	1.81	0.62
2:B:581:ARG:NH2	2:B:617:GLN:OE1	2.33	0.62
4:D:1774:LEU:HD13	4:D:1807:LYS:HB3	1.80	0.62
1:A:680:THR:O	2:B:847:LYS:NZ	2.31	0.62
4:D:1644:ILE:HB	4:D:1789:ILE:HG22	1.81	0.62
6:F:692:THR:OG1	6:F:694:ASN:ND2	2.32	0.62
1:A:532:GLN:HE22	18:A:902:ATP:C2'	2.11	0.62
5:E:807:ILE:HD11	6:F:793:LEU:HD22	1.80	0.62
2:B:535:PRO:HB3	18:B:1103:ATP:O1G	2.00	0.62
2:B:493:LYS:HA	2:B:541:LEU:HD21	1.82	0.62
4:D:15:GLU:HG2	4:D:18:ARG:HH12	1.64	0.62
16:R:298:ASN:HB3	16:R:301:TYR:HB2	1.82	0.61
9:J:84:LYS:HB3	9:J:112:HIS:HE1	1.65	0.61
1:A:305:ILE:HG21	1:A:400:LEU:HD13	1.81	0.61
7:G:188:SER:O	7:G:192:TRP:HB3	2.01	0.61
1:A:421:GLY:HA2	1:A:440:LEU:HD11	1.82	0.61
2:B:875:VAL:HG12	2:B:903:PRO:HA	1.81	0.61
20:B:1104:PX2:O6	7:G:155:TRP:CE3	2.54	0.61
3:C:237:ARG:NH1	3:C:277:GLU:OE2	2.34	0.60
3:C:578:CYS:SG	13:N:24:ARG:NH2	2.74	0.60
4:D:111:ILE:HG22	4:D:113:MET:H	1.66	0.60
4:D:1805:PRO:O	4:D:1809:ASN:ND2	2.34	0.60
1:A:504:LYS:NZ	6:F:439:GLY:O	2.34	0.60
16:R:264:ARG:HA	16:R:281:LEU:HD11	1.84	0.60
3:C:844:PRO:HG2	3:C:879:VAL:HG12	1.82	0.60
1:A:116:ARG:NE	2:B:364:TYR:OH	2.34	0.60
1:A:151:SER:HA	1:A:154:MET:HE3	1.84	0.60
1:A:676:LEU:O	1:A:680:THR:OG1	2.17	0.60
5:E:442:LEU:HD13	5:E:483:ILE:HD11	1.82	0.60
4:D:1658:VAL:HG13	4:D:1659:LYS:HD3	1.84	0.60
9:I:307:LEU:HB3	9:J:100:LEU:HD13	1.82	0.60
1:A:583:ARG:NH1	1:A:659:CYS:SG	2.75	0.59
9:I:304:SER:OG	9:I:305:ALA:N	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:N:13:UNK:O	16:R:259:ARG:NH1	2.34	0.59
1:A:179:PRO:HB2	1:A:197:ILE:HD11	1.84	0.59
2:B:139:TRP:HA	2:B:142:TRP:HB2	1.83	0.59
3:C:943:PRO:HG3	5:E:660:ARG:HH21	1.67	0.59
2:B:354:TRP:NE1	20:B:1104:PX2:C18	2.39	0.59
2:B:989:HIS:HD2	2:B:991:ASP:HA	1.67	0.59
3:C:539:VAL:HG23	3:C:554:ASP:HA	1.84	0.59
16:R:171:CYS:HB2	16:R:175:GLY:H	1.67	0.59
3:C:1178:ASN:ND2	3:C:1181:SER:OG	2.35	0.59
1:A:735:ASP:OD1	6:F:853:ARG:NH2	2.36	0.59
2:B:1005:LEU:HD13	9:J:248:ILE:HD13	1.85	0.59
9:J:112:HIS:HB3	9:J:138:PHE:HE2	1.67	0.59
2:B:791:LEU:HD13	2:B:947:LEU:HD23	1.85	0.59
5:E:435:ILE:HG22	5:E:438:ALA:HB3	1.85	0.59
1:A:364:LEU:HD22	18:A:902:ATP:H2'	1.84	0.58
2:B:425:ARG:NH1	4:D:94:ASN:O	2.35	0.58
3:C:536:ASP:HA	4:D:1323:LEU:HA	1.84	0.58
1:A:464:ASN:OD1	18:A:902:ATP:O3G	2.20	0.58
5:E:453:ASP:OD2	5:E:453:ASP:N	2.36	0.58
6:F:422:LEU:HD11	6:F:459:LEU:HD21	1.85	0.58
9:I:153:VAL:HG22	9:I:194:PHE:HB2	1.83	0.58
3:C:882:PHE:HD1	3:C:927:MET:HB3	1.68	0.58
3:C:506:ASN:O	3:C:510:SER:N	2.36	0.58
6:F:739:LEU:O	6:F:811:ARG:NH2	2.37	0.58
9:J:167:THR:HG23	9:J:169:ASP:H	1.68	0.58
9:J:103:LYS:NZ	9:J:131:THR:OG1	2.28	0.57
4:D:140:LEU:HD22	16:R:253:GLN:HE22	1.69	0.57
1:A:384:ASP:O	1:A:396:ARG:NH1	2.37	0.57
1:A:613:ILE:HG21	6:F:715:GLU:HB3	1.86	0.57
4:D:134:ARG:HH12	4:D:135:LEU:HD23	1.69	0.57
5:E:720:GLU:OE2	5:E:758:ARG:NH1	2.37	0.57
1:A:128:LEU:HD11	7:G:143:TRP:HD1	1.69	0.57
6:F:703:TYR:OH	6:F:705:ARG:NH2	2.38	0.57
16:R:96:GLN:O	16:R:189:ARG:NH1	2.37	0.57
8:H:114:ILE:HD12	8:H:117:TRP:HZ3	1.70	0.57
1:A:100:LEU:HA	1:A:103:MET:HG2	1.87	0.57
1:A:796:ILE:HD11	9:I:247:LEU:HG	1.86	0.57
1:A:810:GLN:NE2	1:A:814:ASP:OD1	2.38	0.57
2:B:354:TRP:CZ3	20:B:1104:PX2:H30	2.39	0.57
18:A:902:ATP:H4'	6:F:567:ARG:HH22	1.69	0.57
4:D:31:THR:O	4:D:1545:ARG:NH1	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:182:GLN:HA	7:G:185:ILE:HD12	1.87	0.57
1:A:790:THR:OG1	1:A:805:ARG:NH1	2.34	0.57
1:A:169:ASN:HD22	14:O:152:LEU:HB3	1.69	0.56
2:B:448:ARG:HH11	4:D:1368:HIS:HA	1.70	0.56
3:C:575:MET:HB2	3:C:580:ILE:HB	1.87	0.56
9:I:286:VAL:O	9:I:290:ASN:ND2	2.38	0.56
4:D:1380:GLN:O	16:R:71:TYR:OH	2.23	0.56
2:B:365:PHE:HE2	2:B:408:LEU:HD11	1.70	0.56
7:G:262:GLY:HA3	7:G:353:LEU:HD21	1.87	0.56
3:C:821:LEU:HD11	3:C:930:THR:HG23	1.88	0.56
9:I:185:ALA:O	9:I:189:ASN:ND2	2.38	0.56
5:E:694:GLN:O	5:E:694:GLN:NE2	2.39	0.56
2:B:479:ILE:HB	2:B:554:PHE:HB3	1.86	0.56
2:B:672:ARG:NH2	2:B:807:GLU:OE2	2.39	0.56
3:C:1120:LEU:HG	3:C:1133:THR:HG23	1.88	0.56
3:C:211:LYS:HA	3:C:214:LYS:HD2	1.88	0.56
3:C:866:VAL:HA	3:C:869:LEU:HD12	1.86	0.56
4:D:104:TYR:O	16:R:203:TYR:OH	2.24	0.55
4:D:1748:ILE:HG23	4:D:1787:LEU:HB2	1.88	0.55
4:D:61:LEU:HD13	4:D:1546:ILE:HD11	1.88	0.55
3:C:533:ILE:HD11	3:C:584:VAL:HG22	1.86	0.55
4:D:138:SER:HA	4:D:142:LEU:HD12	1.89	0.55
1:A:496:ILE:CD1	18:A:902:ATP:N1	2.69	0.55
1:A:481:LYS:NZ	2:B:712:GLU:OE2	2.37	0.55
16:R:106:GLN:HE22	16:R:187:GLN:HG2	1.71	0.55
3:C:576:LEU:HD12	13:N:35:LEU:HD21	1.89	0.55
3:C:595:SER:OG	3:C:596:LEU:N	2.39	0.55
5:E:803:ASN:OD1	6:F:734:ARG:NH2	2.39	0.55
2:B:259:ILE:HD12	2:B:270:LYS:HE2	1.89	0.55
4:D:1844:THR:HG22	4:D:1845:ASN:H	1.71	0.55
2:B:624:LYS:HA	4:D:1535:VAL:HG11	1.88	0.55
7:G:330:TYR:HB3	7:G:361:TYR:HD1	1.71	0.55
2:B:536:GLY:HA2	18:B:1103:ATP:O5'	2.08	0.54
18:A:902:ATP:H4'	6:F:567:ARG:NH2	2.22	0.54
3:C:604:THR:HA	3:C:607:VAL:HG22	1.89	0.54
3:C:886:PHE:HB3	3:C:930:THR:HG22	1.88	0.54
3:C:1297:ASN:H	5:E:775:SER:HB3	1.73	0.54
9:J:102:ILE:HG23	9:J:108:VAL:HG21	1.89	0.54
2:B:390:MET:SD	2:B:391:LYS:N	2.81	0.54
2:B:798:THR:OG1	2:B:799:ALA:N	2.40	0.54
3:C:943:PRO:HG2	5:E:656:LEU:HD13	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:759:SER:OG	2:B:760:TYR:N	2.41	0.54
16:R:194:ASP:N	16:R:194:ASP:OD1	2.36	0.54
4:D:499:ASP:OD1	4:D:499:ASP:N	2.40	0.54
6:F:813:LEU:HD11	6:F:836:VAL:HA	1.90	0.54
1:A:428:ASP:OD1	1:A:428:ASP:N	2.39	0.54
3:C:467:LYS:NZ	10:K:65:SER:O	2.40	0.54
1:A:786:PRO:O	9:J:311:TYR:OH	2.21	0.54
18:A:902:ATP:O5'	6:F:567:ARG:NH2	2.41	0.54
2:B:354:TRP:HH2	20:B:1104:PX2:O7	1.81	0.54
6:F:417:LYS:O	6:F:420:LEU:HB2	2.08	0.54
4:D:1565:GLY:HA2	4:D:1824:LYS:HG2	1.89	0.53
6:F:422:LEU:HA	6:F:425:ILE:HD12	1.90	0.53
2:B:427:ILE:HG22	4:D:92:ILE:HG22	1.90	0.53
5:E:640:PRO:HG3	5:E:741:ARG:HD3	1.91	0.53
2:B:500:ASP:HB3	4:D:1894:LEU:HD22	1.89	0.53
1:A:216:TRP:HA	1:A:219:LEU:HB2	1.90	0.53
1:A:652:MET:SD	1:A:652:MET:N	2.82	0.53
2:B:588:VAL:HG23	2:B:638:PHE:HA	1.90	0.53
2:B:916:ARG:NH2	9:J:327:ASP:OD1	2.41	0.53
1:A:500:HIS:NE2	1:A:532:GLN:OE1	2.41	0.53
1:A:811:ILE:HD13	4:D:2255:GLU:HG3	1.91	0.53
2:B:396:LEU:HD11	4:D:539:GLU:HG3	1.91	0.53
4:D:1584:HIS:NE2	4:D:1785:ASN:O	2.40	0.53
7:G:195:LEU:HD22	7:G:205:LEU:HD13	1.91	0.53
1:A:608:THR:HB	1:A:743:ILE:HG22	1.90	0.53
4:D:50:ARG:HH22	7:G:229:ARG:HH12	1.57	0.53
4:D:540:ILE:HA	4:D:543:ILE:HD12	1.90	0.53
3:C:384:SER:HB3	16:R:276:TYR:HD2	1.73	0.53
1:A:334:ILE:HG12	1:A:341:PHE:HD2	1.73	0.53
4:D:1568:MET:HG3	4:D:1569:ILE:HD12	1.91	0.53
4:D:2044:MET:SD	4:D:2045:MET:N	2.82	0.53
6:F:456:LYS:HD3	6:F:554:SER:HB2	1.91	0.53
1:A:569:GLY:HA3	6:F:576:PHE:HB3	1.91	0.52
6:F:747:SER:OG	6:F:748:THR:N	2.41	0.52
3:C:1201:TRP:NE1	5:E:777:THR:OG1	2.39	0.52
4:D:60:ILE:HD11	4:D:1587:TYR:CG	2.44	0.52
1:A:489:SER:OG	1:A:490:LYS:N	2.42	0.52
1:A:851:ALA:O	1:A:855:PHE:N	2.43	0.52
9:J:299:LYS:HB3	9:J:302:ALA:HB3	1.89	0.52
2:B:164:LEU:HD12	16:R:316:ALA:HA	1.90	0.52
2:B:414:ASN:HD22	4:D:1032:ARG:HE	1.58	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:1036:TRP:O	3:C:1040:THR:OG1	2.22	0.52
5:E:725:VAL:HG13	5:E:737:VAL:HG22	1.91	0.52
6:F:421:GLU:O	6:F:424:GLU:HB2	2.10	0.52
7:G:368:GLU:O	7:G:372:MET:HG2	2.09	0.52
16:R:168:CYS:HB3	16:R:171:CYS:SG	2.49	0.52
4:D:1857:ARG:NH1	4:D:1858:ASP:OD1	2.42	0.52
1:A:338:ASP:O	1:A:342:GLN:HB2	2.10	0.52
1:A:836:VAL:HG23	1:A:837:ILE:HG23	1.92	0.52
2:B:895:ARG:NH1	4:D:1996:GLU:OE2	2.40	0.52
5:E:800:ASN:O	6:F:734:ARG:NH1	2.43	0.52
9:J:153:VAL:HG22	9:J:194:PHE:HB2	1.92	0.52
16:R:108:LEU:N	16:R:177:MET:O	2.43	0.52
1:A:378:PHE:HB2	1:A:412:ILE:HG22	1.92	0.52
3:C:881:ILE:HG23	3:C:926:LEU:HA	1.91	0.52
1:A:128:LEU:HD11	7:G:143:TRP:CD1	2.45	0.52
1:A:148:ILE:O	1:A:205:ASP:N	2.34	0.52
2:B:129:THR:O	2:B:133:PHE:N	2.39	0.51
2:B:539:LYS:HD2	2:B:641:ALA:HB1	1.92	0.51
5:E:759:LEU:HD23	5:E:861:MET:HG3	1.91	0.51
2:B:360:LEU:HB3	2:B:400:VAL:HG22	1.92	0.51
4:D:1029:LYS:HG2	4:D:1032:ARG:HH21	1.75	0.51
6:F:746:LEU:HB3	6:F:750:TRP:HZ2	1.76	0.51
6:F:660:ARG:NH1	6:F:700:GLU:OE1	2.44	0.51
2:B:468:GLN:HG3	2:B:472:MET:HE3	1.90	0.51
9:I:102:ILE:HG23	9:I:108:VAL:HG21	1.92	0.51
5:E:462:PRO:HD2	5:E:573:THR:HB	1.91	0.51
5:E:466:VAL:HG22	5:E:601:ARG:HB2	1.93	0.51
1:A:315:PHE:HE2	1:A:329:GLN:HG3	1.75	0.51
2:B:354:TRP:CD2	20:B:1104:PX2:H34	2.46	0.51
2:B:515:PRO:HA	2:B:525:PHE:HZ	1.76	0.51
3:C:979:LEU:HD23	3:C:1060:LYS:HE3	1.92	0.51
4:D:57:ILE:HG23	4:D:1553:LEU:HD23	1.93	0.51
5:E:869:LEU:HD22	5:E:876:LEU:HD22	1.92	0.51
7:G:189:VAL:HA	7:G:192:TRP:HE3	1.76	0.51
2:B:585:PRO:HD3	2:B:632:LEU:HD11	1.93	0.51
4:D:503:GLU:OE2	16:R:249:LYS:NZ	2.29	0.51
2:B:991:ASP:N	2:B:991:ASP:OD1	2.44	0.51
4:D:1642:ARG:NH1	4:D:1778:CYS:O	2.44	0.51
9:J:293:THR:HA	9:J:296:VAL:HG22	1.93	0.51
16:R:261:ASP:HA	16:R:264:ARG:HB3	1.93	0.51
9:I:299:LYS:HB3	9:I:302:ALA:HB3	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:J:371:TYR:HA	9:J:374:LYS:HE3	1.93	0.50
2:B:354:TRP:NE1	20:B:1104:PX2:C19	2.71	0.50
3:C:417:LEU:HD12	3:C:438:TRP:HE1	1.75	0.50
3:C:1119:ASN:HA	3:C:1268:LEU:O	2.11	0.50
8:H:112:PRO:HB2	8:H:117:TRP:HH2	1.76	0.50
1:A:789:VAL:HA	1:A:798:PHE:O	2.10	0.50
2:B:536:GLY:O	18:B:1103:ATP:C8	2.64	0.50
1:A:388:MET:SD	1:A:388:MET:N	2.84	0.50
2:B:224:PHE:HB3	2:B:232:LEU:HD12	1.93	0.50
1:A:338:ASP:O	1:A:342:GLN:CB	2.59	0.50
2:B:973:PHE:HA	4:D:1986:LYS:HD3	1.92	0.50
2:B:341:THR:HG23	2:B:344:THR:HB	1.93	0.50
18:A:902:ATP:C5'	6:F:567:ARG:HH22	2.25	0.50
4:D:112:PRO:HB3	4:D:132:ILE:HD12	1.92	0.50
4:D:140:LEU:HD13	16:R:253:GLN:OE1	2.12	0.49
4:D:1677:PHE:HE1	4:D:1737:GLN:HE22	1.59	0.49
5:E:476:LYS:NZ	5:E:584:ASN:OD1	2.42	0.49
1:A:326:ARG:HG2	2:B:719:ARG:HH21	1.78	0.49
2:B:354:TRP:O	7:G:153:TRP:NE1	2.45	0.49
2:B:335:ILE:HD11	16:R:237:VAL:HA	1.95	0.49
2:B:372:SER:OG	4:D:1020:ARG:O	2.30	0.49
3:C:220:LEU:O	3:C:224:MET:HG3	2.11	0.49
7:G:190:PHE:CD1	7:G:216:TYR:HB3	2.47	0.49
7:G:299:SER:HB3	7:G:328:PRO:HG2	1.93	0.49
10:K:34:ASP:OD1	10:K:37:ARG:NH1	2.45	0.49
3:C:1017:ASP:N	3:C:1017:ASP:OD1	2.44	0.49
4:D:2006:LEU:HD13	4:D:2249:ARG:HB3	1.93	0.49
4:D:2277:THR:HA	4:D:2280:LYS:HE2	1.94	0.49
3:C:1215:ALA:HB2	5:E:814:TRP:HB3	1.95	0.49
6:F:585:ARG:NH2	6:F:608:ALA:O	2.45	0.49
9:J:185:ALA:O	9:J:189:ASN:ND2	2.41	0.49
2:B:207:LYS:HD3	2:B:239:VAL:HG11	1.94	0.49
10:K:62:LEU:HB3	16:R:249:LYS:HE2	1.95	0.49
1:A:352:VAL:HG23	1:A:458:LEU:HD11	1.93	0.49
2:B:526:VAL:HG13	2:B:659:ASP:HB2	1.95	0.49
20:B:1104:PX2:O5	7:G:199:ALA:HB1	2.13	0.49
3:C:532:ARG:NH1	3:C:550:GLU:OE1	2.45	0.49
4:D:1879:ASP:OD1	4:D:1879:ASP:N	2.37	0.49
6:F:628:ILE:O	6:F:630:MET:N	2.45	0.49
1:A:532:GLN:NE2	18:A:902:ATP:C1'	2.52	0.49
3:C:463:GLN:HG2	3:C:467:LYS:HZ1	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:1113:ASN:ND2	3:C:1287:GLU:OE2	2.37	0.49
6:F:583:ILE:HA	6:F:586:MET:HG2	1.93	0.49
7:G:330:TYR:HB3	7:G:361:TYR:CD1	2.48	0.49
9:I:103:LYS:NZ	9:I:131:THR:OG1	2.34	0.49
1:A:124:TRP:CD2	7:G:143:TRP:HB3	2.48	0.49
10:K:76:ALA:O	10:K:80:LYS:NZ	2.32	0.49
2:B:135:ASP:HA	2:B:138:LYS:HG3	1.95	0.49
3:C:772:ARG:NH2	3:C:847:ASN:O	2.40	0.49
3:C:1005:GLU:OE1	4:D:1601:ARG:NH2	2.36	0.49
9:J:179:VAL:HG11	9:J:205:THR:HG23	1.95	0.49
4:D:1533:PHE:HB3	4:D:1733:TYR:HE1	1.77	0.48
1:A:701:VAL:HG13	6:F:780:TRP:HB3	1.94	0.48
2:B:354:TRP:CE2	20:B:1104:PX2:C17	2.75	0.48
4:D:1011:TRP:CD2	4:D:1012:LEU:HG	2.48	0.48
1:A:497:LEU:HD13	1:A:516:LEU:HB3	1.95	0.48
1:A:820:VAL:HA	1:A:823:ILE:HG22	1.95	0.48
3:C:1109:LEU:HD11	3:C:1273:LEU:HB3	1.96	0.48
4:D:1903:ASP:N	4:D:1903:ASP:OD1	2.47	0.48
4:D:1984:ASP:OD2	4:D:1986:LYS:NZ	2.44	0.48
6:F:670:ILE:HG12	6:F:818:VAL:HG21	1.96	0.48
3:C:531:ALA:O	3:C:582:THR:HA	2.14	0.48
4:D:140:LEU:HD21	16:R:230:LEU:HD21	1.94	0.48
4:D:1985:GLU:HB3	4:D:1988:ARG:HD2	1.94	0.48
6:F:848:SER:OG	6:F:849:ILE:N	2.45	0.48
2:B:690:ASP:OD1	2:B:690:ASP:N	2.46	0.48
9:J:230:LEU:HD22	9:J:309:MET:HG2	1.96	0.48
16:R:100:LYS:HA	16:R:100:LYS:HD3	1.72	0.48
1:A:789:VAL:HG21	9:I:101:LEU:HD22	1.96	0.48
2:B:221:LEU:HD11	2:B:317:TYR:HB3	1.95	0.48
4:D:1343:ARG:HD2	4:D:1347:VAL:HG11	1.94	0.48
9:J:286:VAL:O	9:J:290:ASN:ND2	2.39	0.48
3:C:828:THR:HG22	3:C:993:ARG:HG2	1.96	0.48
3:C:1240:ALA:HB2	3:C:1291:LEU:HD21	1.95	0.48
5:E:476:LYS:HG2	5:E:605:VAL:HG21	1.96	0.48
5:E:713:ARG:NH2	5:E:899:ASP:OD1	2.46	0.48
5:E:820:PHE:O	5:E:822:GLY:N	2.46	0.48
5:E:914:GLN:CD	5:E:914:GLN:H	2.17	0.48
2:B:226:GLU:HB3	2:B:314:ALA:HB1	1.95	0.48
2:B:402:ILE:HD12	2:B:403:PRO:HD2	1.95	0.48
3:C:506:ASN:O	3:C:510:SER:CA	2.61	0.48
6:F:694:ASN:ND2	6:F:826:SER:OG	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:352:ARG:NE	7:G:204:TYR:HB3	2.28	0.48
3:C:1105:ALA:HB2	3:C:1120:LEU:HD21	1.95	0.48
4:D:2208:ASP:OD1	4:D:2208:ASP:N	2.43	0.48
9:J:257:GLY:N	9:J:262:THR:O	2.41	0.48
1:A:319:ALA:O	18:A:902:ATP:N6	2.35	0.48
4:D:1884:ARG:NH1	4:D:2287:ASP:OD2	2.46	0.47
16:R:120:HIS:HB3	16:R:163:LEU:HB2	1.95	0.47
1:A:170:TYR:OH	16:R:197:GLU:OE1	2.29	0.47
1:A:220:HIS:HA	1:A:223:ILE:HG22	1.96	0.47
2:B:355:ARG:HG2	2:B:356:TYR:H	1.80	0.47
3:C:505:TYR:HH	3:C:510:SER:HG	1.61	0.47
3:C:599:GLN:HA	3:C:602:LEU:HD12	1.95	0.47
4:D:2031:THR:OG1	4:D:2032:LEU:N	2.47	0.47
6:F:444:GLY:HA2	6:F:550:ILE:HD12	1.95	0.47
10:K:52:PRO:HB3	10:K:56:TYR:HD2	1.80	0.47
3:C:498:ARG:NH2	16:R:243:ASP:OD2	2.43	0.47
1:A:777:ARG:HD3	2:B:912:GLU:HB2	1.96	0.47
3:C:254:LYS:O	3:C:258:LYS:NZ	2.44	0.47
4:D:1869:ILE:O	4:D:1872:THR:OG1	2.26	0.47
6:F:652:ARG:HE	6:F:696:ARG:HD2	1.78	0.47
6:F:652:ARG:HH22	6:F:699:ARG:HH11	1.62	0.47
2:B:198:PRO:HD3	2:B:297:TRP:HE1	1.79	0.47
3:C:1101:ALA:HB1	3:C:1120:LEU:HD23	1.95	0.47
5:E:621:ALA:HB1	5:E:626:MET:HG3	1.96	0.47
6:F:744:ASP:OD1	6:F:745:GLN:NE2	2.48	0.47
3:C:1261:GLU:HA	3:C:1264:GLU:HG2	1.96	0.47
4:D:1813:LYS:HD3	4:D:1815:ARG:HH12	1.79	0.47
9:I:141:PRO:O	9:I:144:LEU:HB2	2.14	0.47
16:R:220:MET:O	16:R:254:TYR:OH	2.30	0.47
1:A:822:GLU:O	1:A:826:LYS:HG2	2.15	0.47
3:C:506:ASN:O	3:C:510:SER:HA	2.14	0.47
4:D:1597:CYS:SG	4:D:1598:LEU:N	2.88	0.47
9:I:102:ILE:O	9:I:105:SER:OG	2.32	0.47
6:F:733:PRO:HB2	6:F:750:TRP:HB3	1.96	0.47
16:R:266:LEU:HG	16:R:277:LEU:HD13	1.96	0.47
4:D:494:ARG:HH11	10:K:31:LEU:HA	1.79	0.47
4:D:2219:ILE:HD12	4:D:2219:ILE:H	1.80	0.47
6:F:472:PHE:O	6:F:507:PHE:N	2.44	0.47
7:G:320:GLY:O	7:G:323:ARG:HG2	2.15	0.47
1:A:215:VAL:O	1:A:219:LEU:N	2.48	0.46
1:A:640:ILE:HD13	1:A:718:LYS:HG2	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:175:LEU:HA	3:C:178:VAL:HG22	1.96	0.46
3:C:810:GLN:HE21	3:C:921:GLN:HB2	1.80	0.46
7:G:349:SER:O	7:G:353:LEU:HG	2.15	0.46
1:A:214:ASP:O	1:A:217:LYS:HB3	2.15	0.46
1:A:504:LYS:HE3	1:A:535:LEU:HB3	1.97	0.46
1:A:746:ASP:OD1	1:A:746:ASP:N	2.47	0.46
9:J:111:LEU:HB3	9:J:135:VAL:HG22	1.97	0.46
16:R:171:CYS:O	16:R:174:THR:OG1	2.29	0.46
2:B:421:LEU:HB2	4:D:105:LEU:HD21	1.96	0.46
3:C:512:TRP:CE2	3:C:549:LYS:HD3	2.50	0.46
3:C:766:ILE:HD11	3:C:865:ASN:HA	1.97	0.46
4:D:494:ARG:HG2	10:K:31:LEU:HD13	1.98	0.46
4:D:1325:SER:OG	4:D:1326:GLU:N	2.48	0.46
4:D:1852:MET:HG3	4:D:1925:PRO:HG2	1.97	0.46
6:F:818:VAL:O	6:F:822:VAL:HG23	2.15	0.46
8:H:110:ASP:OD1	8:H:110:ASP:N	2.47	0.46
16:R:310:ALA:O	16:R:313:GLN:HG3	2.14	0.46
1:A:845:LYS:NZ	7:G:178:ASN:OD1	2.41	0.46
6:F:693:ILE:HG23	6:F:821:LEU:HD22	1.96	0.46
6:F:725:ASP:O	6:F:728:THR:HB	2.14	0.46
2:B:782:ARG:HH22	2:B:809:MET:HB2	1.80	0.46
3:C:180:VAL:O	3:C:184:THR:HG23	2.15	0.46
3:C:312:ARG:HA	3:C:315:VAL:HG22	1.97	0.46
3:C:1040:THR:HG22	3:C:1042:VAL:H	1.80	0.46
3:C:1177:GLU:O	4:D:1957:LYS:NZ	2.39	0.46
4:D:1608:TYR:HA	4:D:1611:ILE:HD12	1.97	0.46
4:D:1823:ARG:NE	4:D:1848:GLU:OE2	2.45	0.46
5:E:555:GLN:HE22	6:F:481:GLU:HG3	1.81	0.46
5:E:795:ILE:HG23	5:E:801:LEU:HD12	1.98	0.46
7:G:197:PRO:HG3	7:G:264:TRP:CE2	2.50	0.46
1:A:93:ARG:HB3	2:B:258:ILE:HD11	1.97	0.46
1:A:532:GLN:NE2	18:A:902:ATP:O2'	2.49	0.46
2:B:348:TRP:CZ2	4:D:532:SER:HB2	2.51	0.46
1:A:249:SER:HA	1:A:252:LEU:HG	1.98	0.46
2:B:738:LEU:HD23	2:B:788:PHE:HE1	1.80	0.46
2:B:989:HIS:CD2	2:B:991:ASP:HA	2.49	0.46
3:C:388:LYS:HB2	16:R:276:TYR:CG	2.51	0.46
4:D:45:HIS:ND1	4:D:47:GLU:OE2	2.49	0.46
18:A:902:ATP:C4'	6:F:567:ARG:HH22	2.28	0.46
2:B:528:GLY:HA3	2:B:658:ILE:HA	1.98	0.46
2:B:643:ASN:ND2	18:B:1103:ATP:O3G	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:2044:MET:SD	4:D:2045:MET:HG2	2.56	0.46
2:B:331:ARG:O	2:B:331:ARG:NE	2.49	0.45
4:D:1594:ASN:ND2	4:D:1600:GLU:HG2	2.31	0.45
4:D:1813:LYS:HB3	4:D:1813:LYS:HE3	1.77	0.45
6:F:755:ASP:HA	6:F:758:ARG:HG2	1.97	0.45
4:D:1911:ILE:HD12	4:D:2274:MET:HG2	1.98	0.45
7:G:302:TYR:HE2	7:G:320:GLY:HA3	1.81	0.45
2:B:151:LYS:HB2	2:B:151:LYS:HE2	1.79	0.45
3:C:571:LEU:HG	3:C:575:MET:HE3	1.99	0.45
4:D:1358:LEU:HD11	16:R:93:VAL:HG11	1.98	0.45
1:A:240:THR:O	1:A:244:THR:OG1	2.29	0.45
2:B:352:ARG:HE	7:G:204:TYR:HB3	1.80	0.45
3:C:972:MET:HE1	3:C:1001:PRO:HB3	1.99	0.45
4:D:495:SER:O	4:D:497:PHE:N	2.50	0.45
6:F:869:MET:O	6:F:873:ARG:HG3	2.16	0.45
3:C:208:GLU:HA	3:C:211:LYS:HG2	1.97	0.45
3:C:1008:ALA:O	3:C:1011:SER:OG	2.32	0.45
4:D:134:ARG:NH1	4:D:135:LEU:HD23	2.31	0.45
4:D:494:ARG:NH1	10:K:34:ASP:HB3	2.31	0.45
7:G:228:LYS:HB3	7:G:228:LYS:HE3	1.68	0.45
8:H:114:ILE:HA	8:H:117:TRP:CZ3	2.52	0.45
16:R:296:VAL:HG11	16:R:302:TYR:HB2	1.97	0.45
1:A:817:TRP:HA	1:A:820:VAL:HG12	1.96	0.45
2:B:587:PHE:HD1	2:B:637:ILE:HB	1.81	0.45
4:D:2281:LYS:HZ1	8:H:98:PRO:HA	1.81	0.45
9:I:84:LYS:HG2	9:I:110:THR:HB	1.99	0.45
16:R:281:LEU:HB3	16:R:295:ILE:HD11	1.97	0.45
1:A:411:ILE:HD12	1:A:458:LEU:HD23	1.99	0.45
1:A:653:PHE:O	1:A:657:ASN:ND2	2.43	0.45
2:B:689:ILE:HD11	2:B:725:ILE:HG22	1.99	0.45
3:C:470:LEU:HD23	10:K:68:VAL:HB	1.99	0.45
5:E:522:LYS:HE2	5:E:575:LYS:HB3	1.99	0.45
3:C:238:ALA:HB2	3:C:281:ILE:HG21	1.97	0.45
4:D:494:ARG:NH1	10:K:31:LEU:HD12	2.31	0.45
9:I:155:VAL:HG22	9:I:196:HIS:HB2	1.99	0.45
1:A:520:ALA:HA	1:A:523:THR:HG22	1.99	0.45
2:B:632:LEU:H	4:D:15:GLU:HG3	1.82	0.45
3:C:308:ILE:HD13	4:D:1319:LEU:HA	1.98	0.45
3:C:830:LYS:NZ	3:C:930:THR:O	2.43	0.45
3:C:972:MET:HA	4:D:1601:ARG:CZ	2.47	0.45
1:A:335:LEU:HD23	1:A:335:LEU:HA	1.87	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:423:LYS:HG3	1:A:470:ASP:HB3	1.99	0.44
1:A:455:SER:O	1:A:455:SER:OG	2.33	0.44
2:B:139:TRP:NE1	16:R:304:ALA:HB3	2.28	0.44
16:R:147:ARG:O	16:R:147:ARG:NE	2.49	0.44
4:D:1609:GLN:HE21	4:D:1613:TYR:HD2	1.66	0.44
5:E:601:ARG:HH21	6:F:628:ILE:HD11	1.82	0.44
3:C:194:GLU:HG3	3:C:196:ALA:H	1.82	0.44
3:C:1210:TYR:HD2	3:C:1219:LEU:HB2	1.83	0.44
4:D:34:ASN:HB3	4:D:1545:ARG:HH22	1.81	0.44
16:R:198:PRO:HG2	16:R:200:TRP:CZ2	2.52	0.44
9:I:335:PHE:HA	9:I:347:ALA:HA	1.99	0.44
2:B:370:ASP:OD2	4:D:1032:ARG:NH2	2.49	0.44
2:B:459:LYS:HE2	2:B:459:LYS:HB2	1.84	0.44
2:B:809:MET:HG2	2:B:891:LEU:HD21	1.99	0.44
3:C:1166:ILE:O	3:C:1170:MET:HG2	2.18	0.44
4:D:1643:SER:HB2	4:D:1788:VAL:HB	2.00	0.44
6:F:779:PHE:HE2	6:F:788:ILE:HD11	1.83	0.44
1:A:777:ARG:HG2	2:B:908:VAL:HG22	2.00	0.44
18:A:902:ATP:C4'	6:F:567:ARG:NH2	2.81	0.44
3:C:602:LEU:HD23	4:D:1320:HIS:CE1	2.53	0.44
6:F:678:VAL:HG12	6:F:729:VAL:HG22	2.00	0.44
7:G:326:ARG:NH1	7:G:369:GLU:OE2	2.51	0.44
9:I:112:HIS:HE1	9:I:136:ARG:HD3	1.82	0.44
1:A:475:ARG:HH21	18:B:1103:ATP:PB	2.41	0.44
2:B:820:MET:HB2	2:B:856:ILE:HG23	1.99	0.44
3:C:379:ASP:N	3:C:379:ASP:OD1	2.51	0.44
3:C:1171:LEU:HD11	3:C:1255:LEU:HG	1.99	0.44
4:D:1584:HIS:CD2	4:D:1785:ASN:HB2	2.53	0.44
4:D:1647:ILE:HG12	4:D:1795:PRO:HB3	2.00	0.44
7:G:245:VAL:HG11	7:G:368:GLU:HA	1.99	0.44
3:C:828:THR:HA	3:C:993:ARG:HB3	1.99	0.44
7:G:193:LEU:HD21	7:G:259:ILE:HG22	2.00	0.44
1:A:594:LEU:HD23	1:A:594:LEU:HA	1.85	0.44
2:B:528:GLY:HA3	2:B:658:ILE:HD13	2.00	0.44
3:C:237:ARG:O	3:C:241:ILE:HG12	2.18	0.44
3:C:534:ARG:HE	3:C:539:VAL:HG12	1.83	0.44
3:C:1091:ARG:HH12	3:C:1095:PHE:HB2	1.82	0.44
4:D:1907:LEU:O	4:D:1911:ILE:HG12	2.17	0.44
7:G:259:ILE:O	7:G:263:HIS:ND1	2.49	0.44
9:I:157:PRO:HA	9:I:198:ILE:HB	2.00	0.44
4:D:1657:LEU:HD23	4:D:1657:LEU:HA	1.85	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:725:ASP:OD1	6:F:802:ARG:NH1	2.51	0.43
8:H:113:ILE:HG22	8:H:115:TRP:HZ3	1.82	0.43
9:I:253:PRO:HB2	9:I:266:LEU:HB2	2.00	0.43
1:A:464:ASN:ND2	18:A:902:ATP:O3G	2.50	0.43
2:B:811:ASP:HB3	4:D:1899:ARG:HD3	2.00	0.43
4:D:77:ILE:HA	4:D:80:VAL:HG12	2.00	0.43
9:I:83:TYR:HD1	9:I:152:ASN:HD22	1.65	0.43
9:J:208:ILE:HG12	9:J:394:ALA:HB2	2.00	0.43
2:B:354:TRP:CD2	20:B:1104:PX2:C19	3.01	0.43
3:C:509:LYS:NZ	3:C:511:ARG:HH21	2.15	0.43
4:D:1850:ILE:HD13	4:D:1884:ARG:HE	1.83	0.43
6:F:734:ARG:HG2	6:F:800:TYR:HE2	1.83	0.43
1:A:355:HIS:CE1	1:A:484:ARG:HB3	2.53	0.43
2:B:516:MET:HG3	4:D:14:ARG:HB2	2.00	0.43
2:B:643:ASN:CG	18:B:1103:ATP:O1G	2.54	0.43
2:B:978:GLN:N	2:B:978:GLN:OE1	2.52	0.43
3:C:212:LEU:O	3:C:216:ILE:HG13	2.19	0.43
3:C:461:LYS:O	3:C:465:GLU:HG2	2.18	0.43
6:F:516:ARG:HD3	6:F:520:LEU:HD11	2.01	0.43
3:C:1006:SER:O	4:D:1609:GLN:HG3	2.18	0.43
6:F:684:ASP:HB3	6:F:685:MET:HE3	2.01	0.43
6:F:859:GLU:O	6:F:862:GLU:HG3	2.19	0.43
1:A:216:TRP:HZ2	2:B:403:PRO:HB2	1.83	0.43
1:A:263:ASP:OD2	1:A:264:SER:N	2.52	0.43
2:B:770:GLU:OE1	2:B:801:SER:OG	2.32	0.43
2:B:817:PHE:HE1	4:D:1990:THR:HB	1.83	0.43
2:B:863:SER:HB3	2:B:895:ARG:HH22	1.84	0.43
2:B:1005:LEU:HD23	2:B:1005:LEU:HA	1.87	0.43
5:E:820:PHE:HB3	5:E:821:VAL:H	1.64	0.43
6:F:590:GLN:O	6:F:594:ARG:HG2	2.18	0.43
10:K:75:LEU:HD12	10:K:75:LEU:HA	1.89	0.43
16:R:97:ARG:HA	16:R:189:ARG:HH11	1.84	0.43
2:B:460:ARG:HG3	4:D:16:ILE:HD11	2.00	0.43
2:B:869:LEU:HD22	2:B:874:LEU:HD21	2.01	0.43
4:D:35:SER:OG	4:D:1547:ASP:OD2	2.29	0.43
4:D:1780:ARG:HD2	4:D:1780:ARG:HA	1.72	0.43
6:F:865:LEU:O	6:F:869:MET:HE2	2.19	0.43
9:J:222:LYS:HA	9:J:357:LEU:HD12	2.00	0.43
2:B:353:TRP:CZ2	2:B:354:TRP:HD1	2.37	0.43
2:B:990:LYS:HE2	4:D:1981:PRO:HB3	2.00	0.43
4:D:1911:ILE:HG23	4:D:2274:MET:HG2	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:1957:LYS:HA	4:D:1957:LYS:HD3	1.67	0.43
4:D:2281:LYS:NZ	8:H:99:ASP:H	2.17	0.43
5:E:660:ARG:HH22	5:E:677:ARG:HH12	1.67	0.43
6:F:565:LEU:HD23	6:F:565:LEU:HA	1.88	0.43
6:F:728:THR:HG23	6:F:803:ALA:HB2	2.00	0.43
1:A:464:ASN:OD1	18:A:902:ATP:PG	2.77	0.43
3:C:517:MET:O	3:C:520:PRO:HD2	2.18	0.43
3:C:1275:ARG:O	3:C:1279:GLU:HG2	2.19	0.43
7:G:198:PRO:HB2	7:G:205:LEU:HD21	2.01	0.43
9:J:374:LYS:HA	9:J:377:GLU:HG3	2.00	0.43
1:A:148:ILE:HG22	1:A:204:VAL:HG13	2.01	0.43
1:A:361:GLY:C	18:A:902:ATP:O1A	2.57	0.43
1:A:361:GLY:N	18:A:902:ATP:O1A	2.50	0.43
1:A:685:PHE:HZ	1:A:700:LEU:HB3	1.83	0.43
2:B:405:ASP:N	2:B:405:ASP:OD1	2.51	0.43
3:C:190:LYS:HA	3:C:190:LYS:HD3	1.77	0.43
3:C:474:LEU:HD23	3:C:474:LEU:HA	1.86	0.43
4:D:7:LYS:HD2	4:D:7:LYS:HA	1.78	0.43
4:D:1652:THR:HG21	4:D:1857:ARG:HE	1.84	0.43
5:E:537:ARG:HH21	5:E:591:PRO:HG3	1.84	0.43
6:F:585:ARG:HE	6:F:608:ALA:HB1	1.84	0.43
1:A:130:THR:HA	1:A:135:LEU:HB2	2.00	0.42
1:A:378:PHE:HZ	1:A:407:TYR:HD1	1.66	0.42
1:A:780:ILE:HD11	9:J:271:LYS:HB3	2.00	0.42
3:C:1115:ASP:HB3	3:C:1137:LYS:HA	2.00	0.42
3:C:1204:ASP:OD1	3:C:1204:ASP:N	2.51	0.42
1:A:320:GLY:N	1:A:322:GLU:OE2	2.51	0.42
3:C:188:VAL:HA	3:C:193:GLY:H	1.85	0.42
16:R:123:ILE:HG23	16:R:148:ALA:HB1	2.00	0.42
1:A:124:TRP:CE2	7:G:143:TRP:HB3	2.54	0.42
1:A:208:PRO:HG2	16:R:109:ARG:HH21	1.84	0.42
3:C:169:ASP:HA	3:C:172:ARG:HD2	2.01	0.42
7:G:289:ILE:O	7:G:292:THR:OG1	2.36	0.42
16:R:93:VAL:HG12	16:R:192:ALA:HB2	2.01	0.42
1:A:536:ASN:ND2	6:F:441:LYS:HB2	2.34	0.42
3:C:221:TYR:HB3	3:C:225:ARG:HH21	1.84	0.42
3:C:470:LEU:HA	3:C:473:LYS:HG2	2.01	0.42
3:C:1052:ASN:OD1	3:C:1057:ASN:ND2	2.49	0.42
9:J:148:LEU:HB3	9:J:190:CYS:SG	2.59	0.42
9:J:335:PHE:HA	9:J:347:ALA:HA	2.00	0.42
16:R:260:TYR:CD2	16:R:285:ASP:HB3	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:843:LYS:HD2	1:A:843:LYS:HA	1.77	0.42
3:C:1222:GLY:HA3	5:E:848:ASP:HB3	2.01	0.42
7:G:305:ARG:O	7:G:305:ARG:NH1	2.51	0.42
9:J:154:VAL:HG11	9:J:186:VAL:HG21	2.01	0.42
1:A:165:MET:SD	1:A:223:ILE:HD13	2.59	0.42
18:A:902:ATP:O2G	6:F:570:ARG:NH2	2.41	0.42
2:B:142:TRP:O	2:B:148:TRP:NE1	2.49	0.42
3:C:516:PRO:O	3:C:519:VAL:HB	2.19	0.42
4:D:1924:CYS:HA	4:D:1925:PRO:HD3	1.93	0.42
5:E:915:ASN:O	5:E:918:SER:OG	2.35	0.42
16:R:223:PRO:O	16:R:227:ASN:HB2	2.20	0.42
1:A:314:THR:OG1	1:A:315:PHE:N	2.52	0.42
2:B:650:LEU:HD12	2:B:650:LEU:HA	1.89	0.42
5:E:695:CYS:O	5:E:699:THR:OG1	2.33	0.42
6:F:607:VAL:O	6:F:611:THR:HG22	2.20	0.42
7:G:186:VAL:HG11	7:G:220:PHE:CZ	2.55	0.42
7:G:262:GLY:HA3	7:G:353:LEU:CD2	2.50	0.42
7:G:389:HIS:CE1	7:G:394:PHE:HA	2.55	0.42
9:J:229:THR:HB	9:J:312:ALA:HB1	2.02	0.42
1:A:418:ASP:OD1	1:A:418:ASP:N	2.51	0.42
1:A:713:ARG:NH1	1:A:717:GLU:OE2	2.51	0.42
1:A:845:LYS:HA	1:A:845:LYS:HD3	1.85	0.42
2:B:134:ILE:O	2:B:138:LYS:N	2.53	0.42
2:B:406:PRO:HB3	16:R:211:TYR:HA	2.02	0.42
20:B:1104:PX2:O6	7:G:155:TRP:CZ3	2.72	0.42
3:C:801:ALA:O	3:C:804:GLN:NE2	2.44	0.42
1:A:238:VAL:HG22	2:B:439:PRO:HG2	2.02	0.42
1:A:497:LEU:HB2	1:A:516:LEU:HD12	2.02	0.42
2:B:257:LYS:HD2	2:B:257:LYS:HA	1.77	0.42
2:B:685:LEU:HB3	2:B:689:ILE:HG13	2.01	0.42
3:C:401:LEU:HD12	3:C:401:LEU:HA	1.85	0.42
3:C:936:ILE:HB	3:C:941:ARG:HD3	2.01	0.42
4:D:1379:LEU:HD12	4:D:1379:LEU:HA	1.88	0.42
8:H:121:LEU:O	8:H:125:VAL:HG22	2.20	0.42
4:D:50:ARG:HG3	4:D:51:LYS:HG3	2.01	0.42
4:D:558:PRO:HA	4:D:1052:PHE:CD2	2.55	0.42
4:D:1588:LEU:HD23	4:D:1588:LEU:HA	1.89	0.42
4:D:1852:MET:HB3	4:D:1853:GLY:H	1.68	0.42
7:G:259:ILE:HD13	7:G:259:ILE:HA	1.91	0.42
9:I:357:LEU:HD23	9:I:357:LEU:HA	1.90	0.42
1:A:110:ALA:HA	4:D:546:ILE:HG23	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:634:ASP:N	1:A:634:ASP:OD1	2.53	0.41
1:A:707:LEU:HG	1:A:772:LEU:HD21	2.01	0.41
2:B:452:MET:HE3	4:D:1371:PHE:HD2	1.84	0.41
2:B:824:MET:SD	2:B:853:ILE:HG23	2.60	0.41
3:C:539:VAL:HG21	3:C:552:TYR:CZ	2.55	0.41
3:C:1187:LYS:HB2	3:C:1187:LYS:HE3	1.67	0.41
3:C:1253:ARG:HH21	3:C:1280:ASN:HA	1.85	0.41
4:D:1864:ASN:O	4:D:1868:SER:OG	2.33	0.41
4:D:2247:PHE:O	4:D:2251:ASN:ND2	2.40	0.41
5:E:765:GLY:O	5:E:769:GLU:HG2	2.20	0.41
6:F:685:MET:HB2	6:F:706:VAL:HG21	2.02	0.41
9:J:173:ASN:O	9:J:177:ASN:ND2	2.40	0.41
1:A:444:LEU:HD22	1:A:478:ARG:HD3	2.01	0.41
3:C:1019:LEU:HD12	4:D:1610:THR:HG21	2.02	0.41
8:H:95:SER:OG	8:H:96:THR:N	2.52	0.41
9:I:255:ILE:HD11	9:I:264:LEU:HD23	2.02	0.41
9:J:296:VAL:HG12	9:J:304:SER:HA	2.03	0.41
12:M:9:VAL:HG11	16:R:222:ASP:HB2	2.02	0.41
4:D:1776:ARG:HA	4:D:1776:ARG:HD2	1.90	0.41
10:K:14:GLU:OE1	10:K:14:GLU:N	2.52	0.41
11:L:14:LEU:HD12	11:L:14:LEU:HA	1.85	0.41
16:R:95:CYS:O	16:R:189:ARG:N	2.40	0.41
1:A:849:LEU:HD12	7:G:172:HIS:CE1	2.56	0.41
3:C:938:GLU:HA	3:C:941:ARG:HG2	2.01	0.41
4:D:21:LYS:O	4:D:22:ASN:ND2	2.53	0.41
5:E:892:GLU:H	5:E:892:GLU:HG3	1.62	0.41
7:G:209:PRO:HG2	7:G:273:LEU:HD11	2.02	0.41
9:J:84:LYS:HB3	9:J:112:HIS:CE1	2.51	0.41
13:N:24:ARG:HD2	13:N:24:ARG:HA	1.70	0.41
1:A:92:LEU:HD12	2:B:277:LEU:HD22	2.02	0.41
1:A:512:LYS:HB3	1:A:512:LYS:HE2	1.86	0.41
2:B:221:LEU:HD13	2:B:319:VAL:HG12	2.02	0.41
2:B:506:ASP:O	2:B:510:ILE:HG23	2.20	0.41
2:B:534:PRO:HG2	2:B:666:LEU:HG	2.01	0.41
2:B:568:SER:O	2:B:568:SER:OG	2.35	0.41
3:C:227:LEU:HA	3:C:227:LEU:HD23	1.79	0.41
3:C:1120:LEU:HB2	3:C:1268:LEU:HB2	2.02	0.41
9:I:176:ALA:HA	9:I:179:VAL:HG12	2.02	0.41
16:R:99:CYS:SG	16:R:100:LYS:N	2.90	0.41
2:B:572:LYS:O	2:B:576:MET:HG3	2.20	0.41
3:C:892:VAL:HG12	3:C:937:ASP:HA	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:212:TRP:HA	1:A:215:VAL:HB	2.02	0.41
2:B:355:ARG:HH22	2:B:395:PRO:HB2	1.85	0.41
4:D:50:ARG:HH12	7:G:229:ARG:NH1	2.17	0.41
4:D:1343:ARG:HB3	4:D:1344:SER:H	1.65	0.41
11:L:21:LEU:HD23	11:L:21:LEU:HA	1.95	0.41
2:B:821:LYS:HB3	2:B:821:LYS:HE2	1.82	0.41
3:C:246:LEU:O	3:C:250:LYS:HG2	2.20	0.41
3:C:601:LEU:HA	3:C:604:THR:HG22	2.02	0.41
3:C:849:GLU:HG2	3:C:852:GLU:HG2	2.01	0.41
3:C:996:GLU:O	3:C:1000:VAL:HG23	2.21	0.41
5:E:775:SER:O	5:E:775:SER:OG	2.37	0.41
7:G:291:ILE:HG13	7:G:292:THR:N	2.36	0.41
1:A:100:LEU:HD22	2:B:265:ILE:HG21	2.02	0.41
1:A:231:VAL:HG12	14:O:155:LYS:HG2	2.03	0.41
1:A:328:LEU:HD23	1:A:328:LEU:HA	1.94	0.41
1:A:497:LEU:HD13	1:A:516:LEU:HD12	2.02	0.41
2:B:156:LEU:HG	16:R:308:LEU:HD11	2.01	0.41
2:B:852:LYS:HE2	2:B:856:ILE:HD11	2.02	0.41
2:B:939:ILE:HG12	2:B:965:LEU:HD13	2.03	0.41
3:C:562:PHE:HD2	3:C:565:PHE:HB2	1.85	0.41
3:C:941:ARG:NH1	3:C:946:MET:HG2	2.36	0.41
4:D:1597:CYS:SG	4:D:1598:LEU:HD23	2.61	0.41
6:F:446:ILE:HD11	6:F:552:ILE:HG12	2.03	0.41
6:F:621:ASN:O	6:F:625:ILE:HG13	2.21	0.41
6:F:854:LYS:HA	6:F:854:LYS:HD2	1.85	0.41
9:I:295:VAL:HG11	9:I:305:ALA:HB2	2.02	0.41
9:I:340:LEU:HB3	9:I:365:LEU:HD12	2.03	0.41
1:A:126:ARG:O	1:A:130:THR:OG1	2.29	0.41
2:B:572:LYS:HB3	2:B:572:LYS:HE2	1.82	0.41
3:C:411:LYS:HE3	3:C:411:LYS:HB2	1.81	0.41
5:E:790:TRP:O	5:E:793:ARG:HB2	2.21	0.41
7:G:367:MET:O	7:G:370:GLU:HG3	2.20	0.41
1:A:326:ARG:O	1:A:330:GLU:HG2	2.22	0.40
3:C:229:LYS:HA	3:C:229:LYS:HD2	1.94	0.40
3:C:1016:THR:HG23	4:D:1610:THR:HG23	2.02	0.40
4:D:496:PHE:CZ	13:N:24:ARG:HG2	2.56	0.40
6:F:419:ARG:HA	6:F:422:LEU:HB2	2.03	0.40
6:F:816:GLU:HG3	6:F:839:TYR:CZ	2.56	0.40
7:G:322:TYR:O	7:G:383:TYR:OH	2.29	0.40
16:R:301:TYR:O	16:R:305:LYS:HB3	2.21	0.40
1:A:157:LEU:O	1:A:222:GLN:NE2	2.42	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:496:ILE:HG13	18:A:902:ATP:C2	2.57	0.40
1:A:517:GLN:O	1:A:521:GLU:HG2	2.21	0.40
2:B:587:PHE:CD1	2:B:637:ILE:HB	2.56	0.40
2:B:990:LYS:H	2:B:990:LYS:HG2	1.57	0.40
3:C:509:LYS:HZ2	3:C:511:ARG:HH21	1.68	0.40
1:A:691:ARG:HG3	1:A:693:GLN:NE2	2.33	0.40
2:B:865:GLN:O	4:D:1988:ARG:NE	2.54	0.40
3:C:229:LYS:HE3	3:C:233:LEU:HG	2.02	0.40
3:C:410:LYS:HA	3:C:410:LYS:HD2	1.89	0.40
3:C:463:GLN:HG2	3:C:467:LYS:NZ	2.36	0.40
4:D:1645:LEU:HB2	4:D:1808:LEU:HG	2.04	0.40
5:E:742:LEU:HB2	5:E:747:TYR:HE1	1.87	0.40
9:J:335:PHE:HD2	9:J:347:ALA:HB2	1.86	0.40
1:A:254:LEU:HD22	8:H:138:TRP:CH2	2.56	0.40
1:A:476:LYS:HD2	1:A:476:LYS:HA	1.79	0.40
2:B:211:TRP:HB3	2:B:243:ALA:HB1	2.03	0.40
9:I:82:SER:O	9:I:82:SER:OG	2.33	0.40
3:C:255:LEU:HD11	3:C:260:ALA:HB3	2.02	0.40
7:G:290:VAL:O	7:G:294:LEU:HG	2.22	0.40
9:I:173:ASN:O	9:I:177:ASN:ND2	2.43	0.40
16:R:310:ALA:O	16:R:314:LYS:HG3	2.21	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	724/855 (85%)	691 (95%)	31 (4%)	2 (0%)	37	69
2	B	833/1008 (83%)	798 (96%)	33 (4%)	2 (0%)	44	75
3	C	911/1320 (69%)	890 (98%)	21 (2%)	0	100	100
4	D	775/2294 (34%)	719 (93%)	56 (7%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	E	494/946 (52%)	478 (97%)	15 (3%)	1 (0%)	44	75
6	F	476/876 (54%)	460 (97%)	16 (3%)	0	100	100
7	G	283/396 (72%)	272 (96%)	11 (4%)	0	100	100
8	H	52/348 (15%)	51 (98%)	1 (2%)	0	100	100
9	I	315/403 (78%)	310 (98%)	5 (2%)	0	100	100
9	J	315/403 (78%)	309 (98%)	6 (2%)	0	100	100
10	K	65/80 (81%)	59 (91%)	6 (9%)	0	100	100
11	L	12/18 (67%)	11 (92%)	1 (8%)	0	100	100
12	M	8/11 (73%)	5 (62%)	3 (38%)	0	100	100
13	N	17/37 (46%)	13 (76%)	4 (24%)	0	100	100
14	O	15/17 (88%)	11 (73%)	4 (27%)	0	100	100
16	R	265/328 (81%)	252 (95%)	13 (5%)	0	100	100
All	All	5560/9340 (60%)	5329 (96%)	226 (4%)	5 (0%)	50	80

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	478	PHE
5	E	821	VAL
1	A	208	PRO
2	B	477	ASN
1	A	812	ILE

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	628/744 (84%)	621 (99%)	7 (1%)	70	86
2	B	734/872 (84%)	711 (97%)	23 (3%)	35	66
3	C	817/1177 (69%)	793 (97%)	24 (3%)	37	67

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	D	753/2151 (35%)	731 (97%)	22 (3%)	37	67
5	E	422/817 (52%)	414 (98%)	8 (2%)	52	76
6	F	399/757 (53%)	395 (99%)	4 (1%)	73	87
7	G	246/347 (71%)	235 (96%)	11 (4%)	23	56
8	H	46/287 (16%)	43 (94%)	3 (6%)	14	45
9	I	261/332 (79%)	258 (99%)	3 (1%)	70	86
9	J	261/332 (79%)	257 (98%)	4 (2%)	60	81
10	K	62/73 (85%)	60 (97%)	2 (3%)	34	65
11	L	12/12 (100%)	9 (75%)	3 (25%)	0	2
12	M	9/9 (100%)	8 (89%)	1 (11%)	5	22
13	N	16/16 (100%)	15 (94%)	1 (6%)	15	46
14	O	14/15 (93%)	14 (100%)	0	100	100
16	R	236/286 (82%)	226 (96%)	10 (4%)	25	58
All	All	4916/8227 (60%)	4790 (97%)	126 (3%)	42	70

All (126) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	270	TYR
1	A	398	LYS
1	A	467	ASP
1	A	586	TYR
1	A	631	ARG
1	A	788	ARG
1	A	807	MET
2	B	139	TRP
2	B	146	ARG
2	B	152	ARG
2	B	157	PHE
2	B	211	TRP
2	B	219	LEU
2	B	342	GLU
2	B	348	TRP
2	B	476	GLU
2	B	492	TYR
2	B	502	TRP
2	B	503	ASP

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Mol	Chain	Res	Type
2	B	568	SER
2	B	577	PHE
2	B	628	ASP
2	B	742	MET
2	B	831	ARG
2	B	840	ASP
2	B	893	LYS
2	B	898	HIS
2	B	969	MET
2	B	975	LYS
2	B	992	ARG
3	C	169	ASP
3	C	231	ARG
3	C	280	LYS
3	C	409	MET
3	C	438	TRP
3	C	449	LYS
3	C	453	LEU
3	C	473	LYS
3	C	496	ARG
3	C	609	ARG
3	C	788	SER
3	C	812	MET
3	C	940	LEU
3	C	958	MET
3	C	974	ARG
3	C	991	LEU
3	C	1014	LEU
3	C	1046	MET
3	C	1048	LYS
3	C	1049	MET
3	C	1114	PHE
3	C	1182	SER
3	C	1224	ASN
3	C	1290	PHE
4	D	43	PHE
4	D	44	PHE
4	D	494	ARG
4	D	1319	LEU
4	D	1321	ASN
4	D	1368	HIS
4	D	1594	ASN

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Mol	Chain	Res	Type
4	D	1598	LEU
4	D	1666	TYR
4	D	1678	LEU
4	D	1777	ASP
4	D	1797	LYS
4	D	1811	CYS
4	D	1855	SER
4	D	1884	ARG
4	D	1965	LEU
4	D	1969	SER
4	D	1994	PHE
4	D	2044	MET
4	D	2056	ARG
4	D	2227	PHE
4	D	2249	ARG
5	E	424	SER
5	E	571	PHE
5	E	684	ARG
5	E	722	CYS
5	E	758	ARG
5	E	883	LEU
5	E	892	GLU
5	E	914	GLN
6	F	520	LEU
6	F	602	LEU
6	F	605	MET
6	F	772	LYS
7	G	148	TRP
7	G	213	PHE
7	G	217	HIS
7	G	218	TYR
7	G	219	PHE
7	G	242	LYS
7	G	293	MET
7	G	297	TYR
7	G	305	ARG
7	G	340	TYR
7	G	361	TYR
8	H	103	TYR
8	H	106	LYS
8	H	123	PHE
9	I	150	ASP

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Mol	Chain	Res	Type
9	I	166	MET
9	I	374	LYS
9	J	120	LYS
9	J	150	ASP
9	J	163	LYS
9	J	374	LYS
10	K	54	ASP
10	K	79	PHE
11	L	9	PHE
11	L	17	MET
11	L	20	PHE
12	M	13	LYS
13	N	33	TYR
16	R	133	LYS
16	R	138	CYS
16	R	196	MET
16	R	203	TYR
16	R	209	MET
16	R	215	HIS
16	R	242	TYR
16	R	292	ASP
16	R	301	TYR
16	R	321	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (9) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	169	ASN
2	B	643	ASN
2	B	773	HIS
2	B	989	HIS
3	C	1178	ASN
4	D	1555	HIS
4	D	1609	GLN
4	D	1975	GLN
7	G	282	ASN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 8 ligands modelled in this entry, 5 are monoatomic - leaving 3 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
18	ATP	A	902	17	26,33,33	0.88	0	31,52,52	1.85	5 (16%)
18	ATP	B	1103	17	26,33,33	0.89	0	31,52,52	1.85	6 (19%)
20	PX2	B	1104	-	24,24,35	1.98	7 (29%)	28,29,40	2.65	14 (50%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
18	ATP	A	902	17	-	3/18/38/38	0/3/3/3
18	ATP	B	1103	17	-	3/18/38/38	0/3/3/3
20	PX2	B	1104	-	-	9/26/26/37	-

All (7) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
20	B	1104	PX2	O5-C4	4.57	1.46	1.33
20	B	1104	PX2	O7-C2	-4.23	1.36	1.46
20	B	1104	PX2	O8-C16	-4.11	1.10	1.22

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
20	B	1104	PX2	P1-O3	-3.09	1.43	1.54
20	B	1104	PX2	O6-C4	-2.76	1.14	1.22
20	B	1104	PX2	P1-O1	-2.23	1.46	1.54
20	B	1104	PX2	C17-C16	-2.22	1.44	1.50

All (25) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
20	B	1104	PX2	O7-C16-C17	4.69	121.61	111.50
20	B	1104	PX2	C19-C18-C17	-4.62	96.59	113.19
20	B	1104	PX2	O5-C4-C5	4.57	126.24	111.91
18	A	902	ATP	PB-O3B-PG	-4.41	117.69	132.83
18	B	1103	ATP	PB-O3B-PG	-4.40	117.73	132.83
18	A	902	ATP	PA-O3A-PB	-4.28	118.13	132.83
18	B	1103	ATP	PA-O3A-PB	-4.28	118.15	132.83
20	B	1104	PX2	C3-O5-C4	4.01	131.99	117.12
18	B	1103	ATP	C3'-C2'-C1'	3.99	106.98	100.98
18	A	902	ATP	C3'-C2'-C1'	3.99	106.98	100.98
20	B	1104	PX2	O1-P1-O4	-3.73	96.81	106.73
20	B	1104	PX2	O7-C16-O8	-3.64	114.91	123.70
20	B	1104	PX2	O5-C4-O6	-3.64	114.41	123.59
20	B	1104	PX2	O7-C2-C3	-3.61	95.33	108.40
18	B	1103	ATP	N3-C2-N1	-3.53	123.16	128.68
18	A	902	ATP	N3-C2-N1	-3.52	123.18	128.68
20	B	1104	PX2	O4-P1-O2	3.37	115.94	106.47
20	B	1104	PX2	C8-C7-C6	-2.88	99.82	114.42
18	B	1103	ATP	N6-C6-N1	2.72	124.21	118.57
18	A	902	ATP	N6-C6-N1	2.71	124.21	118.57
20	B	1104	PX2	C7-C6-C5	-2.66	103.64	113.19
20	B	1104	PX2	C2-O7-C16	2.64	124.30	117.79
20	B	1104	PX2	P1-O4-C1	2.51	125.21	118.30
20	B	1104	PX2	O1-P1-O2	2.36	119.93	110.68
18	B	1103	ATP	C5-C6-N6	-2.02	117.28	120.35

There are no chirality outliers.

All (15) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
18	A	902	ATP	C5'-O5'-PA-O1A
18	B	1103	ATP	C5'-O5'-PA-O1A
20	B	1104	PX2	C1-O4-P1-O1
20	B	1104	PX2	C1-O4-P1-O2

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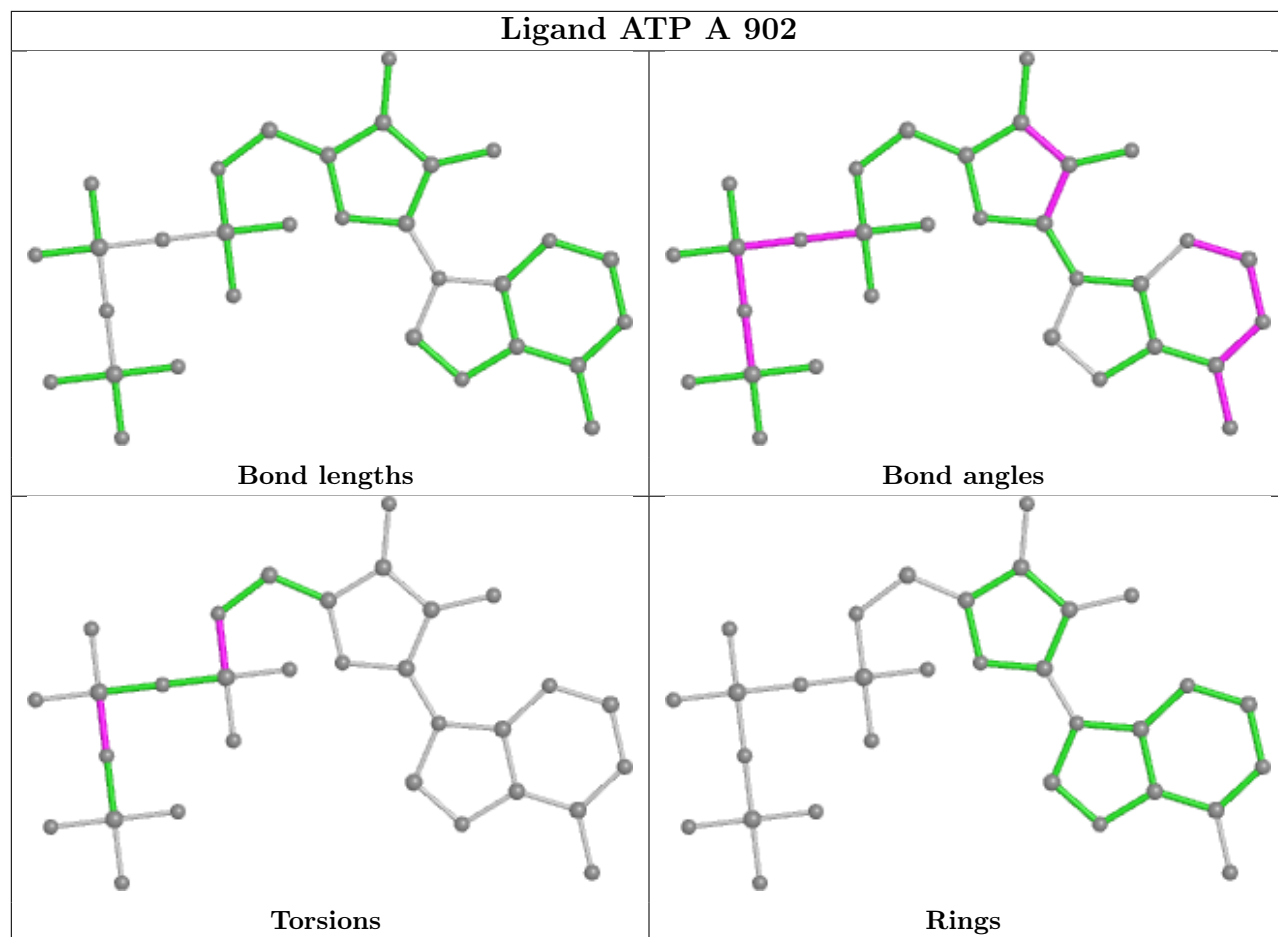
Mol	Chain	Res	Type	Atoms
20	B	1104	PX2	C1-O4-P1-O3
20	B	1104	PX2	C4-C5-C6-C7
20	B	1104	PX2	O8-C16-O7-C2
20	B	1104	PX2	C17-C16-O7-C2
20	B	1104	PX2	C7-C8-C9-C10
20	B	1104	PX2	O6-C4-O5-C3
20	B	1104	PX2	C5-C4-O5-C3
18	A	902	ATP	C5'-O5'-PA-O3A
18	B	1103	ATP	C5'-O5'-PA-O3A
18	A	902	ATP	PG-O3B-PB-O1B
18	B	1103	ATP	PG-O3B-PB-O1B

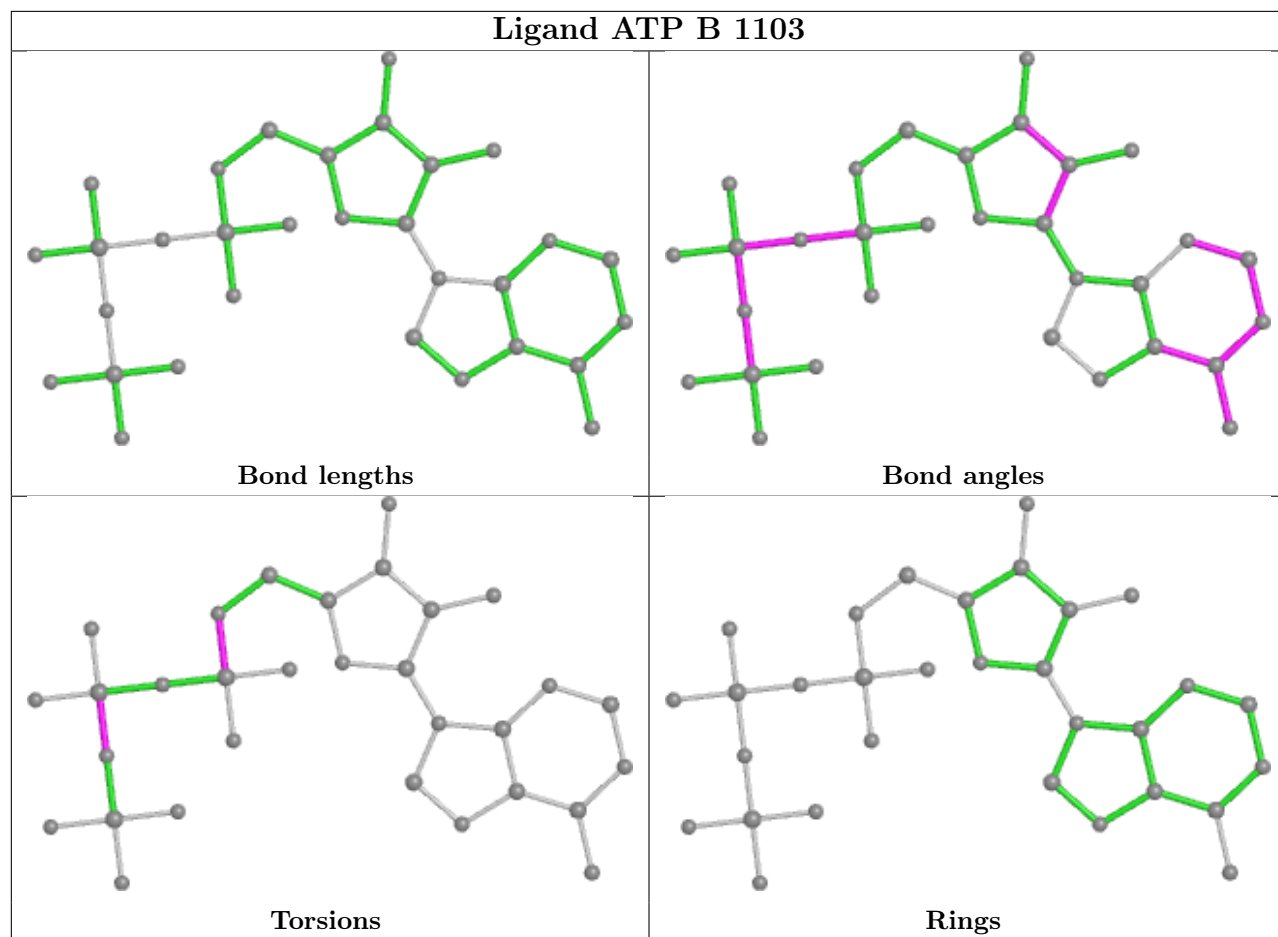
There are no ring outliers.

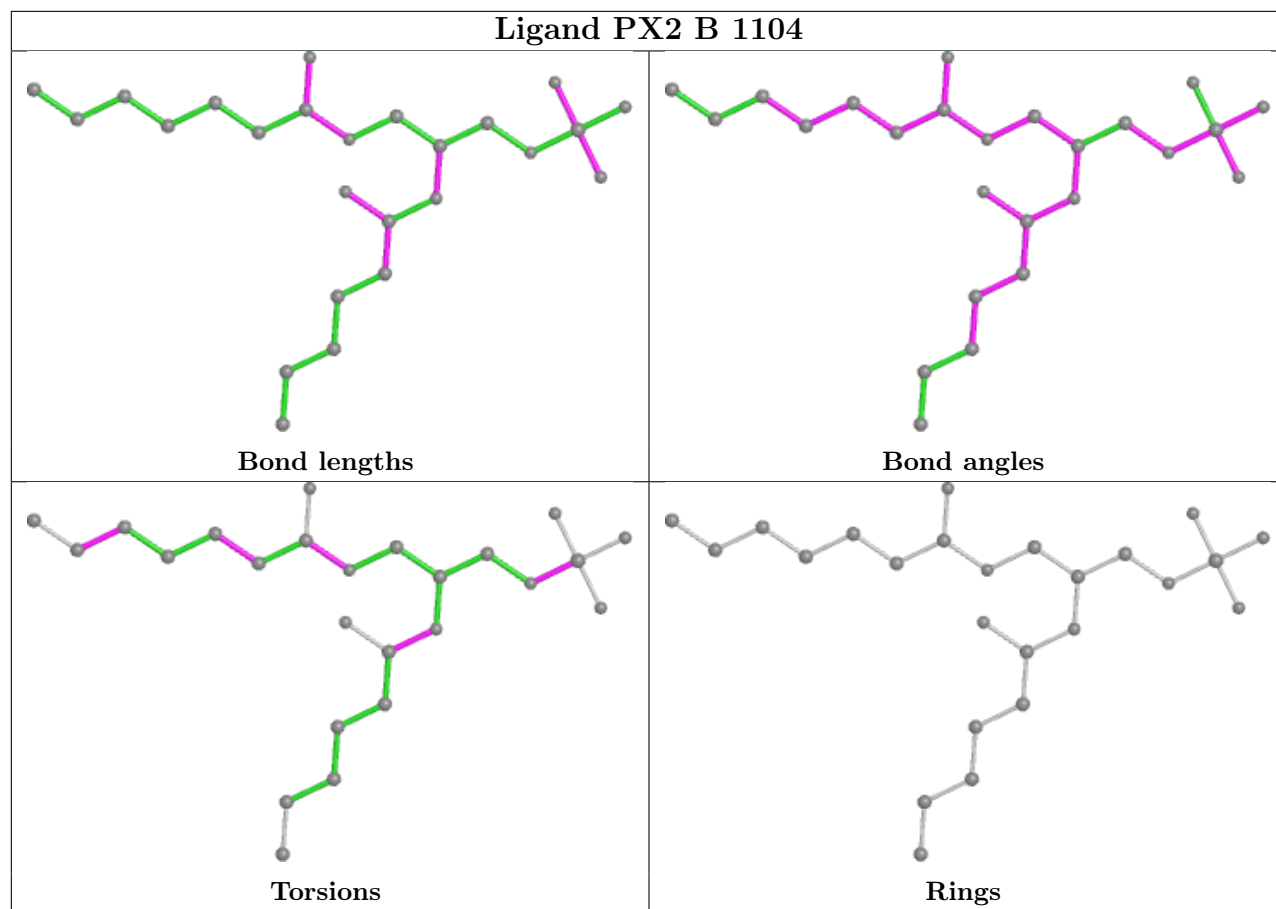
3 monomers are involved in 84 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
18	A	902	ATP	33	0
18	B	1103	ATP	19	0
20	B	1104	PX2	32	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.







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.

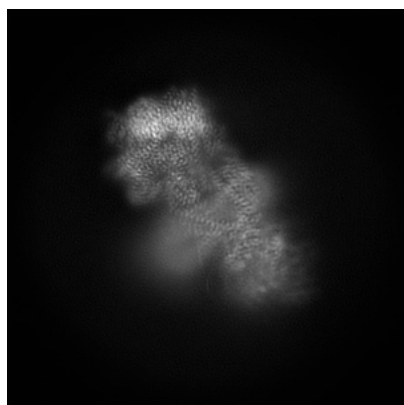
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-38425. These allow visual inspection of the internal detail of the map and identification of artifacts.

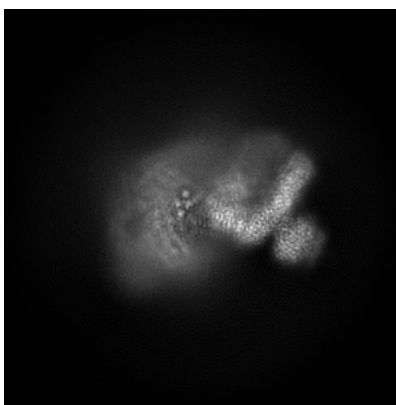
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

6.1.1 Primary map



X



Y

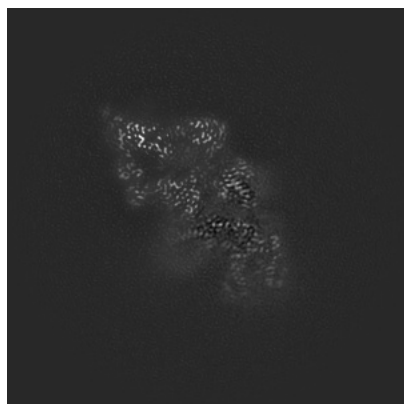


Z

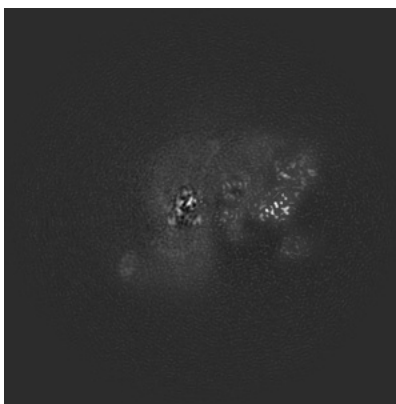
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

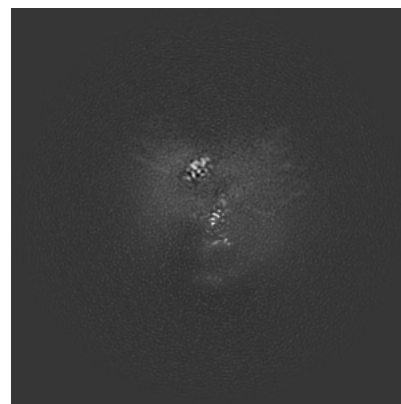
6.2.1 Primary map



X Index: 180



Y Index: 180

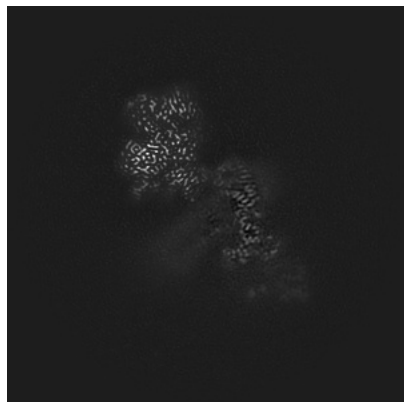


Z Index: 180

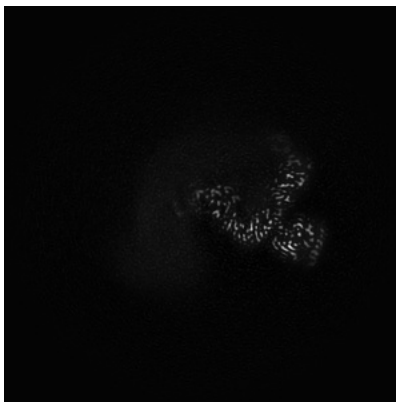
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

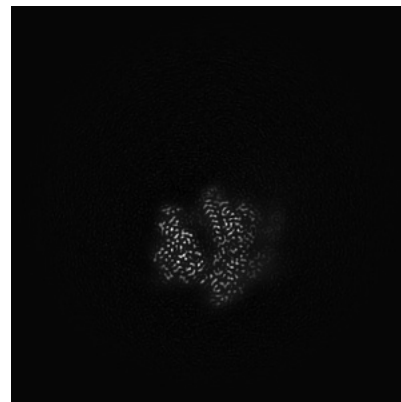
6.3.1 Primary map



X Index: 163



Y Index: 156

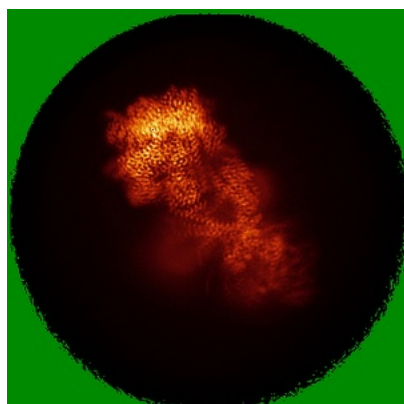


Z Index: 254

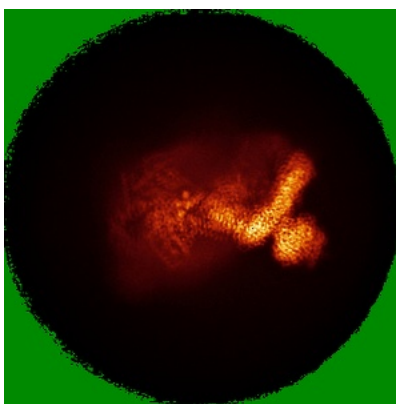
The images above show the largest variance slices of the map in three orthogonal directions.

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

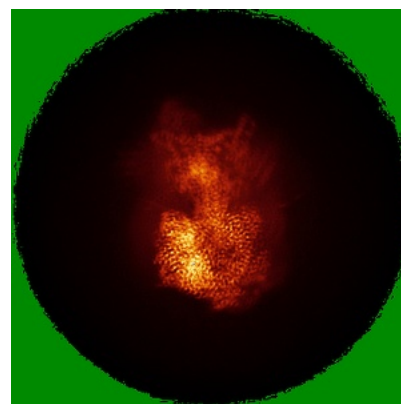
6.4.1 Primary map



X



Y

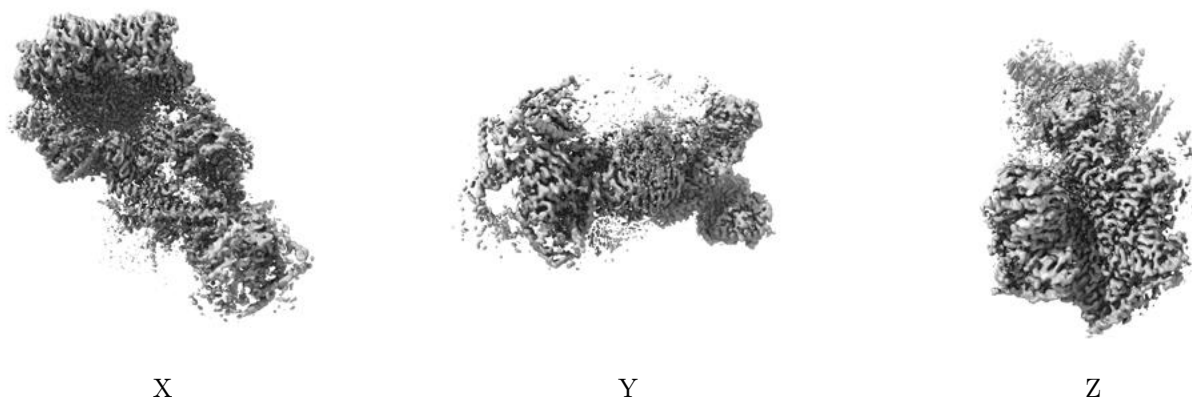


Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.009. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

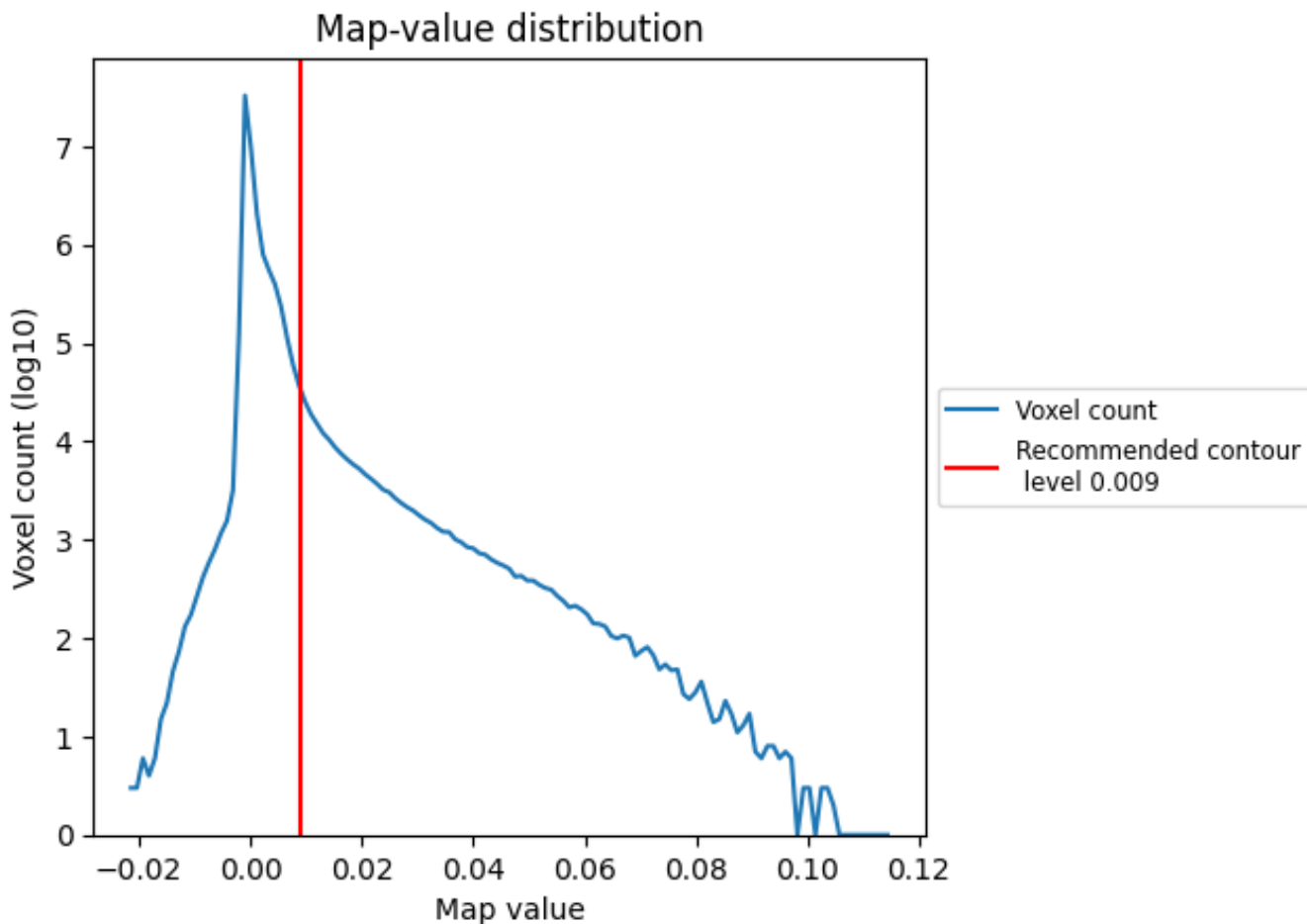
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

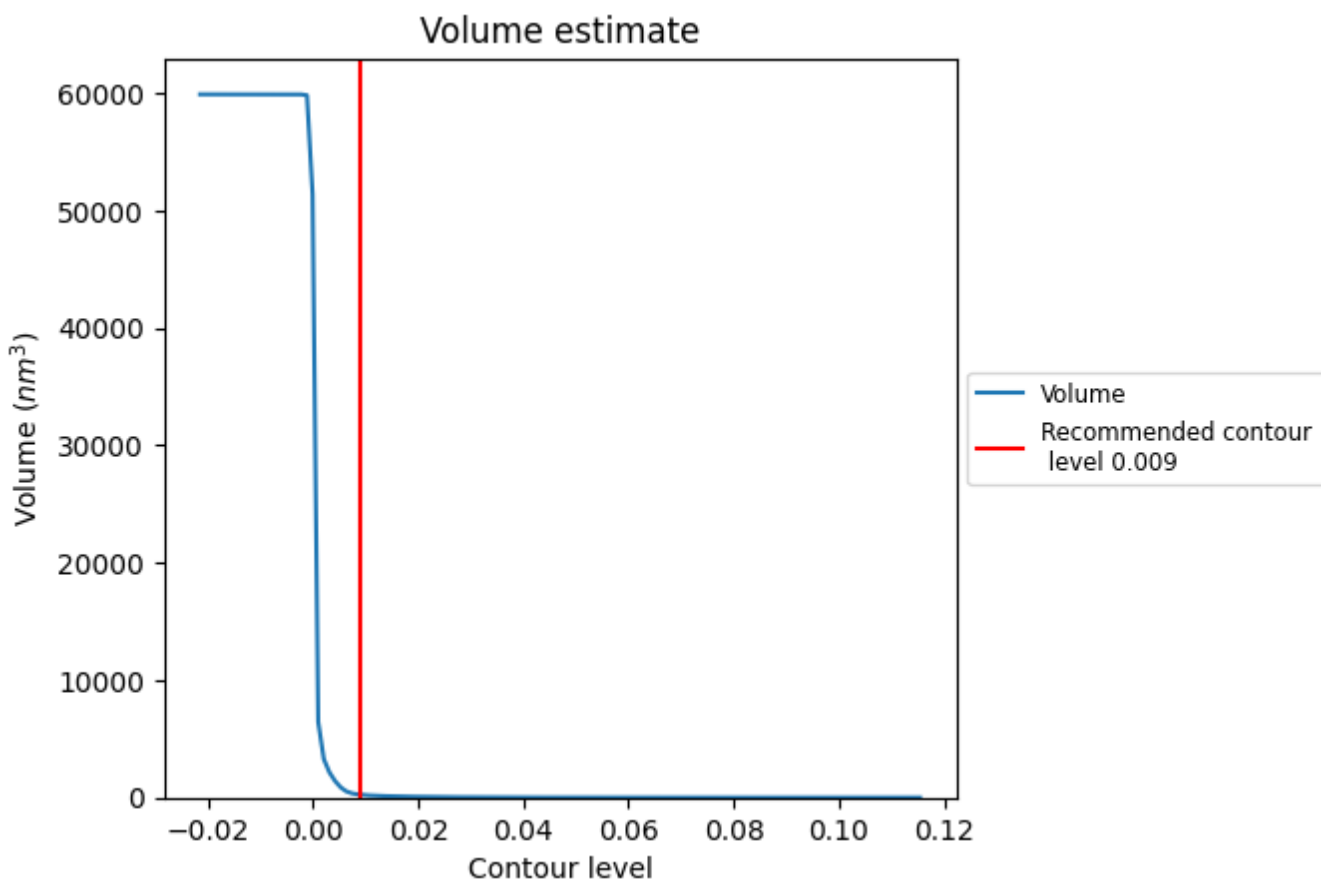
This section contains the results of statistical analysis of the map.

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.

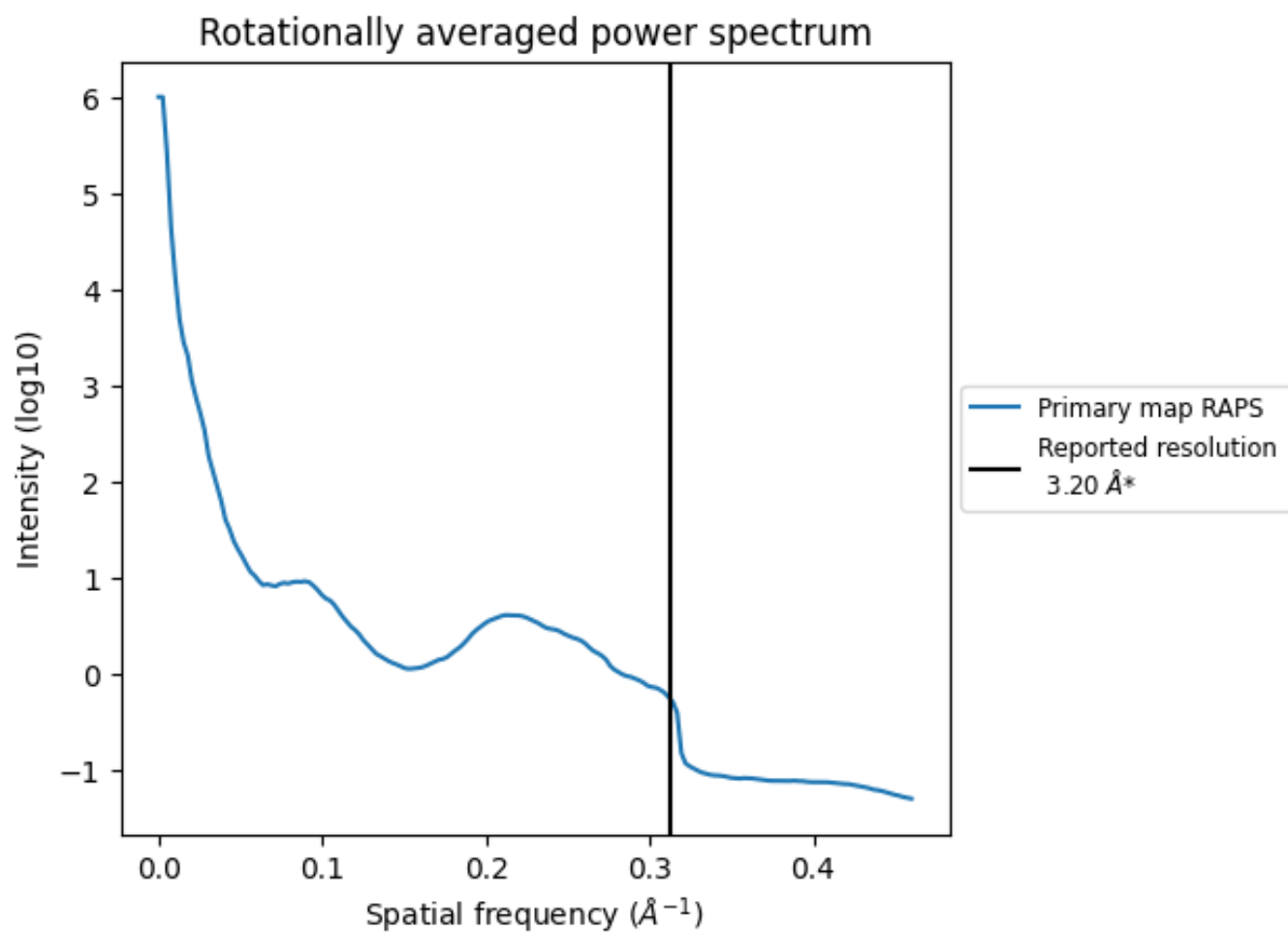
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 249 nm³; this corresponds to an approximate mass of 225 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 0.312 Å⁻¹

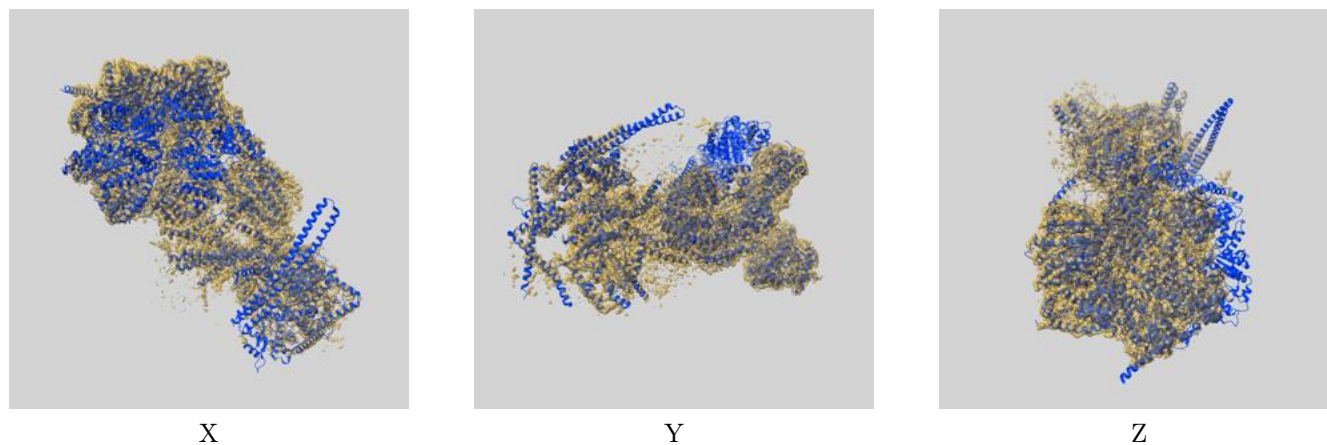
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

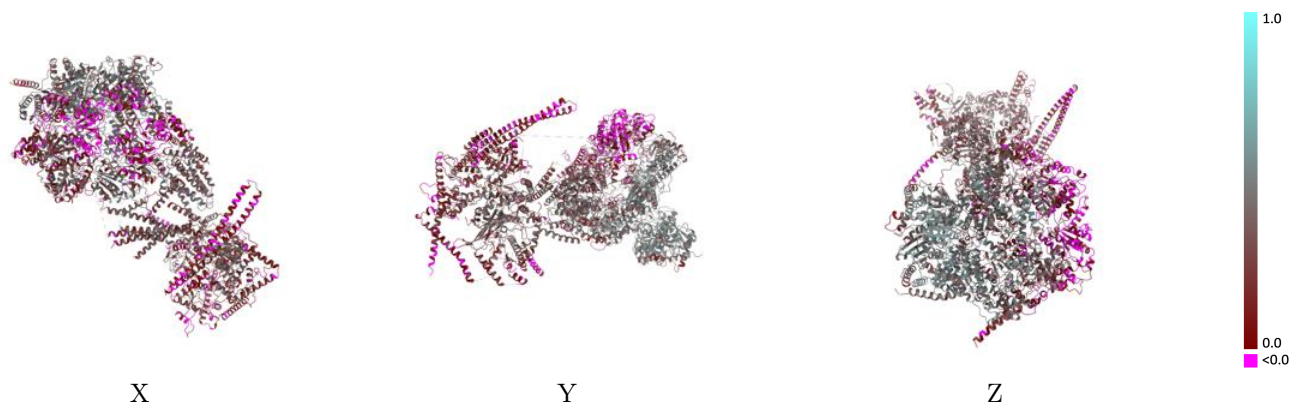
This section contains information regarding the fit between EMDB map EMD-38425 and PDB model 8XKU. Per-residue inclusion information can be found in section [3](#) on page [9](#).

9.1 Map-model overlay [i](#)



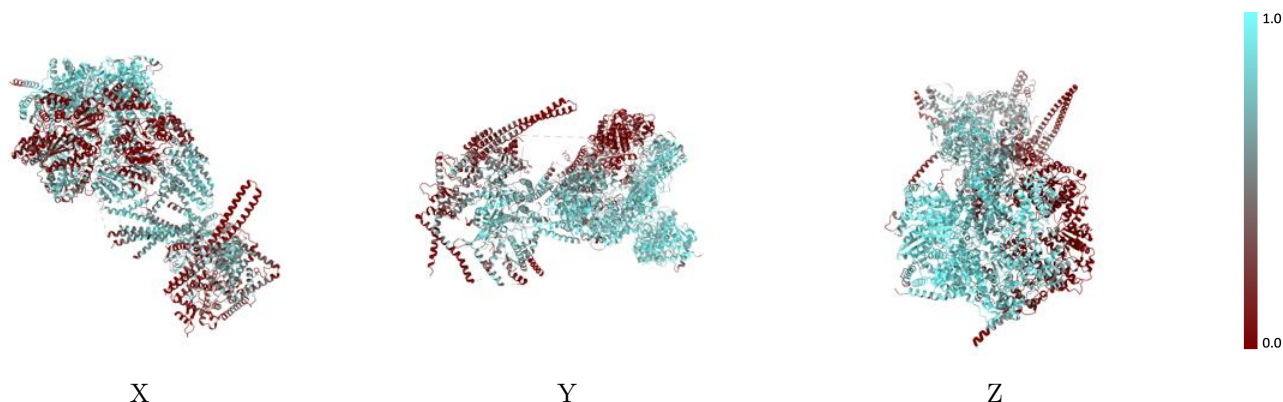
The images above show the 3D surface view of the map at the recommended contour level 0.009 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



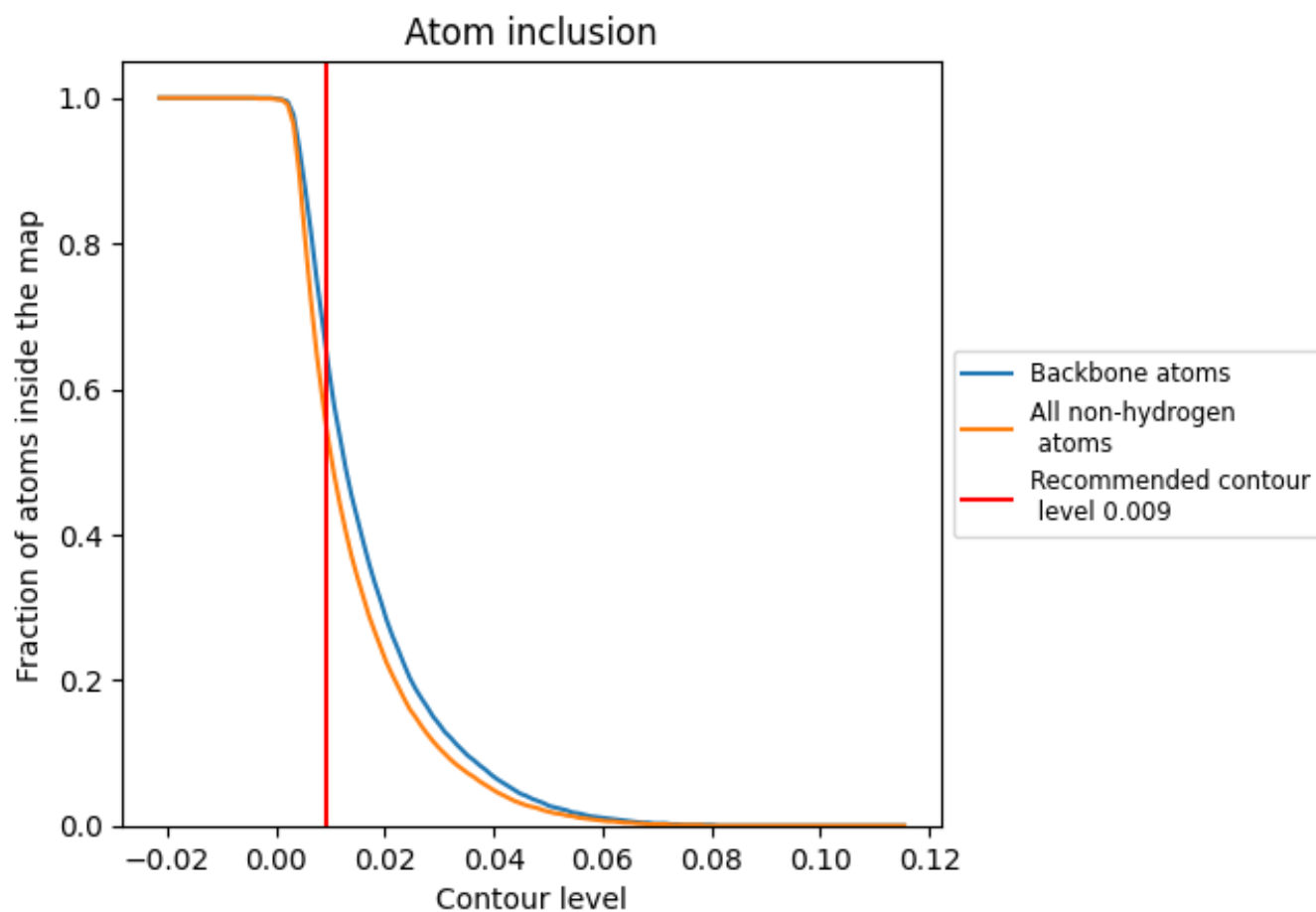
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.009).





































9.4 Atom inclusion [i](#)



At the recommended contour level, 66% of all backbone atoms, 56% 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 (0.009) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5580	 0.3040
A	 0.6090	 0.3260
B	 0.7080	 0.3600
C	 0.3380	 0.2030
D	 0.5830	 0.3230
E	 0.4010	 0.2060
F	 0.3870	 0.2610
G	 0.7150	 0.3440
H	 0.6660	 0.3500
I	 0.8660	 0.4610
J	 0.8700	 0.4660
K	 0.3460	 0.2390
L	 0.1680	 0.1950
M	 0.3610	 0.2750
N	 0.2880	 0.2530
O	 0.3540	 0.3120
P	 0.1160	 0.1110
R	 0.4750	 0.2460

