WORLDWIDE wwPDB PROTEIN DATA BANK

Full wwPDB EM Validation Report ⓘ

Jul 14, 2024 – 08:21 am BST

PDB ID	:	8AUK
EMDB ID	:	EMD-15672
Title	:	Cryo-EM structure of human BIRC6 in complex with HTRA2.
Authors	:	Ehrmann, J.F.; Grabarczyk, D.B.; Clausen, T.
Deposited on	:	2022-08-25
Resolution	:	6.20 Å(reported)
Based on initial models	:	8ATU, 7VGE

The following versions of software and data (see references ⓘ) were used in the production of this report:
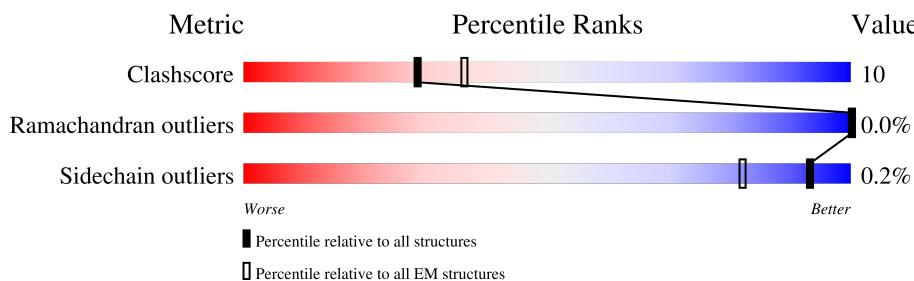
|		
EMDB validation analysis	:	0.0.1.dev92
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.37.1

1   Overall quality at a glance   ⓘ

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

The reported resolution of this entry is 6.20 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	Percentile Ranks	Value
Clashscore		10
Ramachandran outliers		0.0%
Sidechain outliers		0.2%

Worse   *Better*

▮ Percentile relative to all structures

▯ Percentile relative to all EM structures

Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=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	4867	10% — 43% / 15% / 42%
1	B	4867	9% — 43% / 15% / 42%
2	C	325	27% — 43% / 12% / 45%
2	D	325	29% — 43% / 13% / 43%
2	E	325	20% — 38% / 14% / 47%

2 Entity composition ⓘ

There are 3 unique types of molecules in this entry. The entry contains 47811 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 Baculoviral IAP repeat-containing protein 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	2832	Total	C	N	O	S	0	0
			21902	14002	3699	4050	151		
1	B	2832	Total	C	N	O	S	0	0
			21902	14002	3699	4050	151		

There are 22 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1332	VAL	LEU	conflict	UNP Q9NR09
A	4858	SER	-	expression tag	UNP Q9NR09
A	4859	ALA	-	expression tag	UNP Q9NR09
A	4860	TRP	-	expression tag	UNP Q9NR09
A	4861	SER	-	expression tag	UNP Q9NR09
A	4862	HIS	-	expression tag	UNP Q9NR09
A	4863	PRO	-	expression tag	UNP Q9NR09
A	4864	GLN	-	expression tag	UNP Q9NR09
A	4865	PHE	-	expression tag	UNP Q9NR09
A	4866	GLU	-	expression tag	UNP Q9NR09
A	4867	LYS	-	expression tag	UNP Q9NR09
B	1332	VAL	LEU	conflict	UNP Q9NR09
B	4858	SER	-	expression tag	UNP Q9NR09
B	4859	ALA	-	expression tag	UNP Q9NR09
B	4860	TRP	-	expression tag	UNP Q9NR09
B	4861	SER	-	expression tag	UNP Q9NR09
B	4862	HIS	-	expression tag	UNP Q9NR09
B	4863	PRO	-	expression tag	UNP Q9NR09
B	4864	GLN	-	expression tag	UNP Q9NR09
B	4865	PHE	-	expression tag	UNP Q9NR09
B	4866	GLU	-	expression tag	UNP Q9NR09
B	4867	LYS	-	expression tag	UNP Q9NR09

- Molecule 2 is a protein called Serine protease HTRA2, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	D	185	Total 1382	C 873	N 239	O 268	S 2	0	0
2	E	173	Total 1291	C 815	N 223	O 251	S 2	0	0
2	C	179	Total 1332	C 843	N 229	O 258	S 2	0	0

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D	306	ALA	SER	engineered mutation	UNP O43464
E	306	ALA	SER	engineered mutation	UNP O43464
C	306	ALA	SER	engineered mutation	UNP O43464
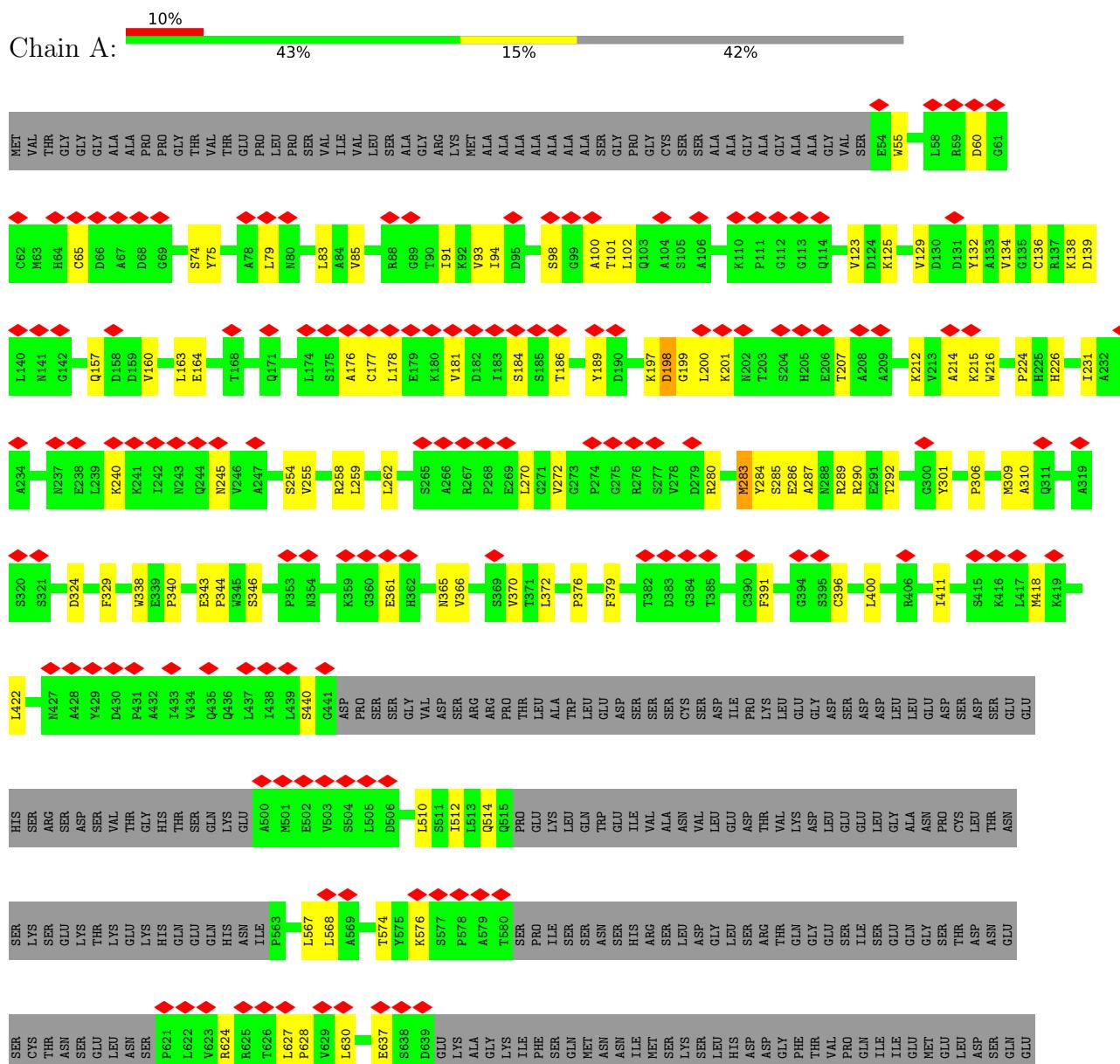
- Molecule 3 is ZINC ION (three-letter code: ZN) (formula: Zn).
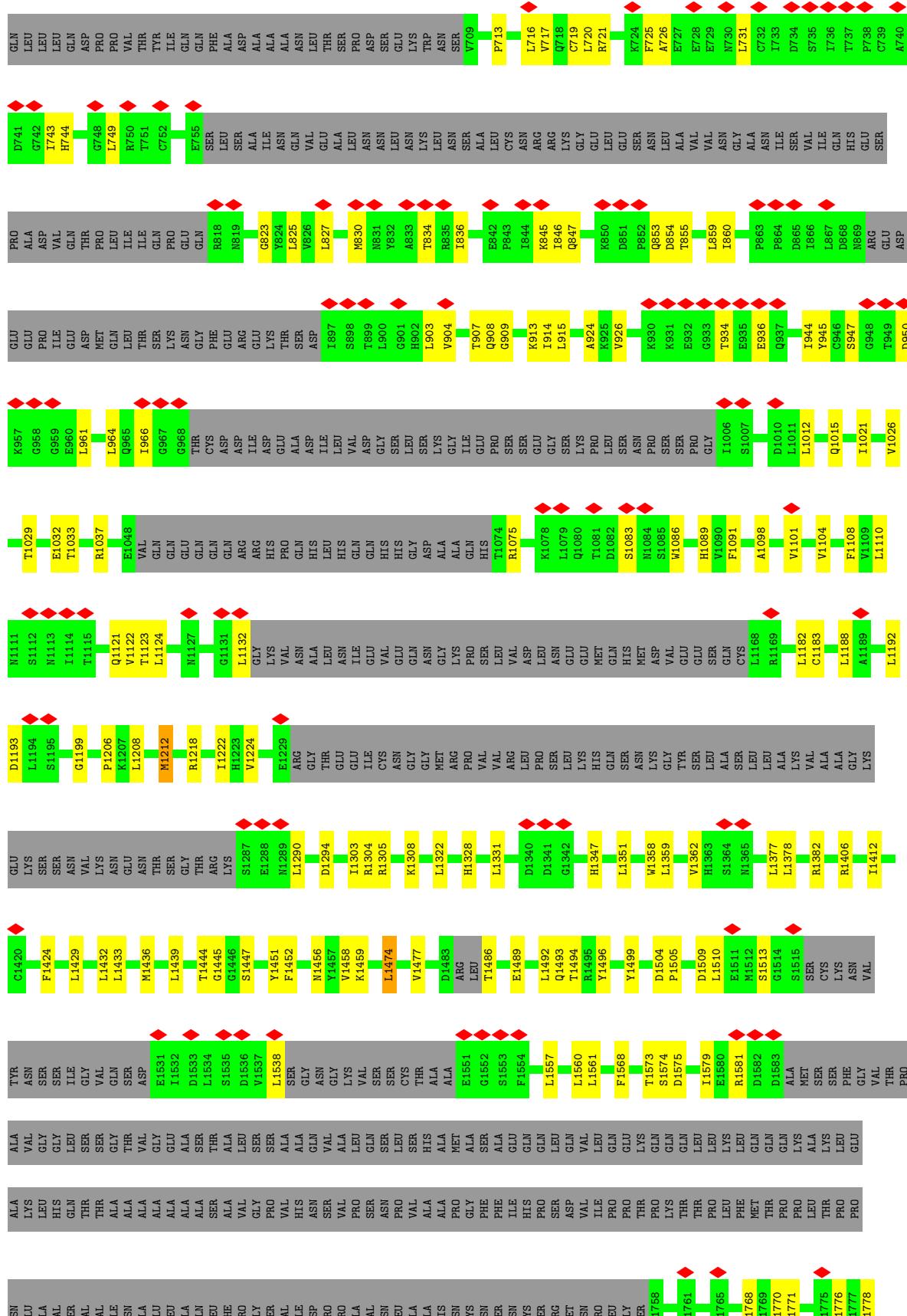
Mol	Chain	Residues	Atoms		AltConf
3	A	1	Total 1	Zn 1	0
3	B	1	Total 1	Zn 1	0
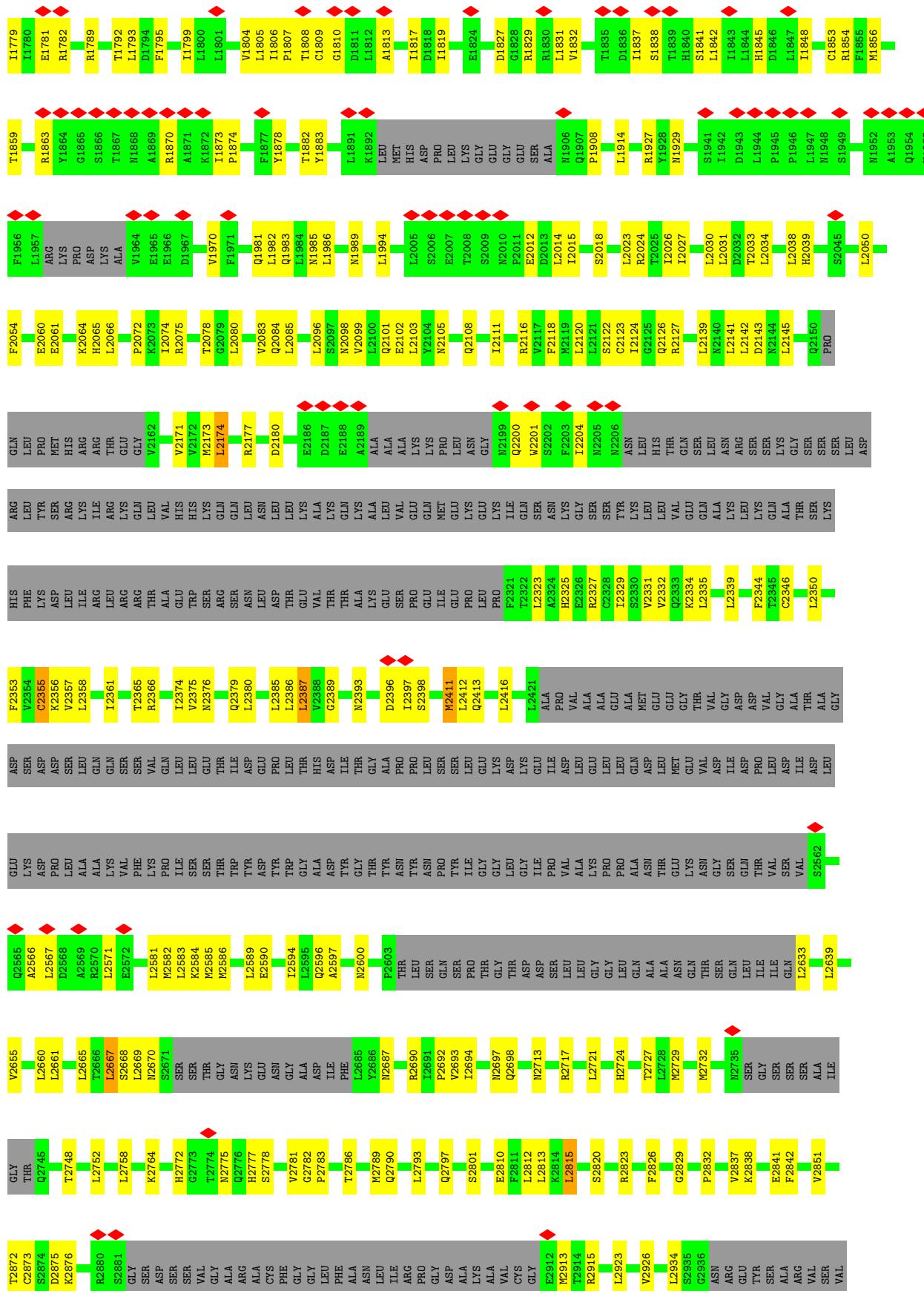
3 Residue-property plots ⓘ
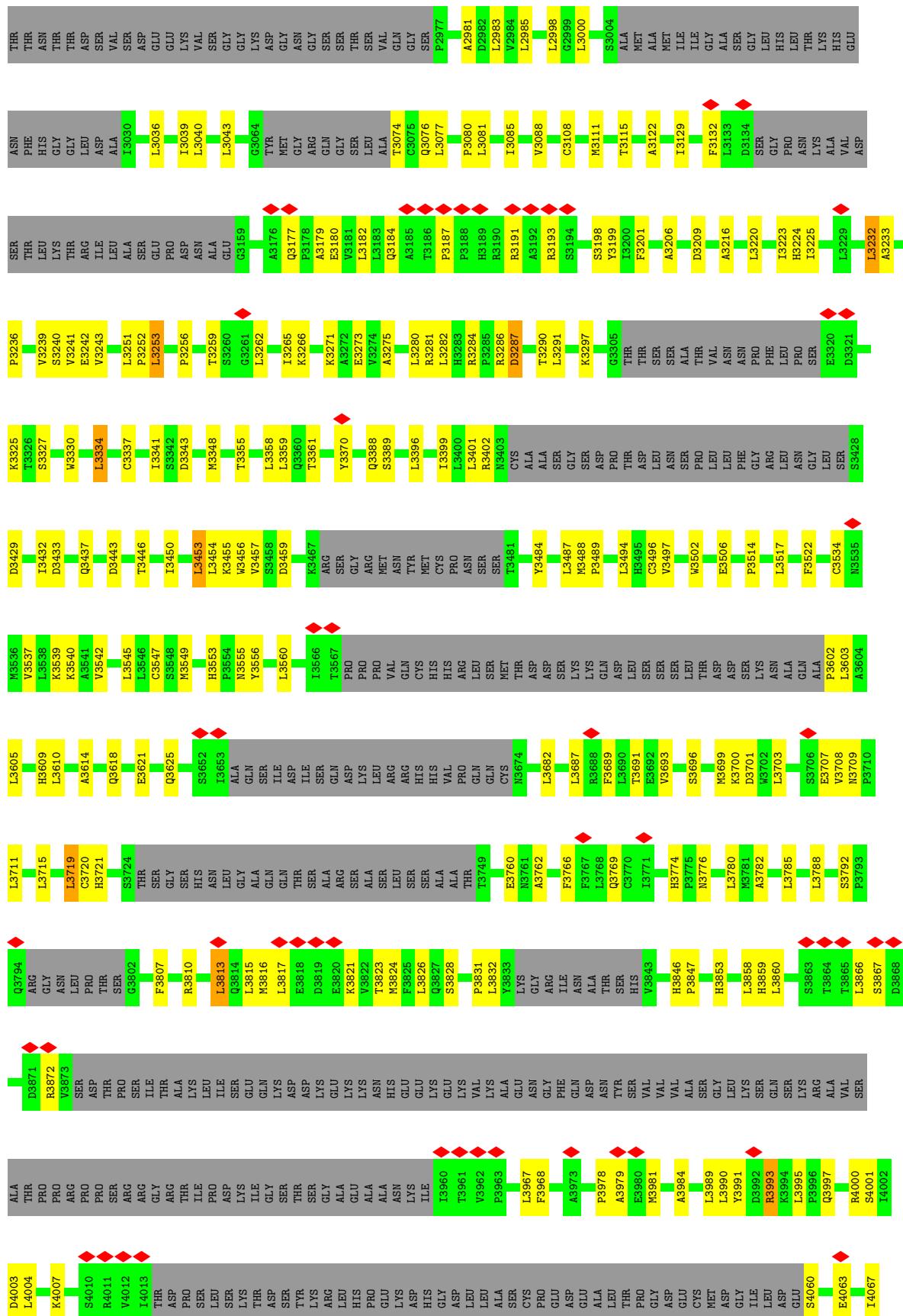
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: Baculoviral IAP repeat-containing protein 6

Q4072 V4073 F4074 A4075 G4078 G4079 L4080 A4084 E4085 R4086 L4087 PRO MET LEU TYR PRO GLU VAL ILE GLN VAL SER ALA PRO VAL VAL THR SER THR GLN GLU LYS PRO LYS ASP SER ASP GLN PHE GLU TRP VAL THR ILE GLU GLN SER GLY LEU VAL TYR GLU ALA PRO

GLU THR VAL ALA ALA GLU PRO PRO PRO ILE LYS SER ALA VAL GLN THR MET SER PRO I4153 P4154 A4155 H4156 S4157 L4158 F4161 L4165 R4166 L4167 P4168 A4171 E4172 V4173 L4174 L4175 K4176 E4177 R4178 K4179 H4180 A4181 Q4182 C4183 L4184 L4185 R4186 L4187 V4188 L4189 G4190 VAL THR ASP ASP GLY GLU GLY GLY

SER HIS ILE LEU GLN SER PRO SER ALA ASN V4208 L4209 P4210 T4211 L4212 R4218 L4226 D4230 G4231 L4234 R4235 L4244 I4247 L4248 A4253 L4254 S4255 H4256 H4257 S4258 P4259 R4260 V4261 P4262 ASN SER SER VAL ASN GLN THR GLU PRO GLN VAL SER SER SER HIS ASN PRO THR SER

THR GLU GLU GLN GLN LEU GLY TRP ALA LYS GLY THR GLY PHE GLY THR GLY SER THR ALA SER THR TRP ASP VAL GLU GLN ALA LEU THR LYS GLY R4314 L4315 E4316 E4317 E4318 H4319 V4320 T4321 C4322 L4323 L4324 Q4325 N4332 P4333 V4334 S4335 S4336 ALA VAL ASN GLY GLU ALA GLN SER SER HIS

GLU THR ARG GLY Q4351 N4352 A4355 L4356 L4361 E4362 L4363 L4364 S4365 Q4366 S4367 C4368 L4369 I4370 P4371 A4372 M4373 S4374 S4375 Y4376 L4377 R4378 N4379 ASP SER VAL LEU ASP MET ALA ARG HIS VAL P4390 L4391 Y4392 R4393 A4394 L4395 L4396 E4397 L4398 L4399 R4400 A4403 S4404 A4407 M4408 V4409 P4410 P4414

L4415 SER THR GLU ASN GLY GLU GLU GLU GLU GLN SER GLU CYS Q4430 G4434 T4435 L4436 L4437 A4438 K4439 M4440 K4441 T4442 C4443 V4444 D4445 THR TYR THR ASN ARG LEU ARG SER LYS ARG GLY ASN VAL LYS THR GLY VAL LYS SER THR GLY VAL LYS PRO ASP ALA SER ASP GLN GLU PRO GLY LEU THR LEU

L4477 V4478 P4479 D4480 I4481 Q4482 K4483 T4484 A4485 E4486 Y4489 A4490 T4493 S4494 L4495 R4496 GLN ALA ASN GLN GLU LYS LYS LEU GLY GLU TYR SER LYS LYS ALA ALA MET LYS PRO LYS PRO LEU VAL SER VAL LEU LYS SER LEU GLU LEU LYS SER GLY THR SER THR SER SER VAL PHE ASP

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

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

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

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

GLN TYR SER SER ASP LYS ARG VAL GLY THR MET SER HIS ALA ALA LEU LYS ARG HIS THR ALA LEU LYS TRP ALA HIS ALA THR VAL GLU MET ALA GLN CYS GLU TRP ILE ALA ASP ILE GLN LEU ASP ASP PRO GLU VAL MET ALA THR THR GLY ALA GLU THR LEU

MET HIS ASP GLN VAL LYS PRO SER SER SER LYS GLU LEU PRO SER ASP PHE GLN LEU SER ALA TRP SER HIS PRO GLN PHE GLU LYS

• Molecule 1: Baculoviral IAP repeat-containing protein 6

Chain B:

9%
43%   15%   42%

MET VAL THR GLY GLY ALA ALA PRO PRO GLY THR VAL THR GLU GLU PRO LEU PRO SER VAL ILE VAL LEU SER ALA GLY ARG LYS MET ALA ALA ALA ALA SER GLY PRO GLY CYS SER SER ALA ALA GLY ALA ALA ALA VAL GLY VAL E54 W55 L56 V57 L58 A67

• Molecule 2: Serine protease HTRA2, mitochondrial

Chain D:

29%

43%   13%   43%

• Molecule 2: Serine protease HTRA2, mitochondrial

Chain E:

20%

38%   14%   47%

• Molecule 2: Serine protease HTRA2, mitochondrial

4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	15780	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 $(e^-/\text{Å}^2)$	60	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	Not provided	
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	0.013	Depositor
Minimum map value	-0.003	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.00423	Depositor
Map size (Å)	425.87997, 425.87997, 425.87997	wwPDB
Map dimensions	364, 364, 364	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.17, 1.17, 1.17	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

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	0.31	1/22313 (0.0%)	0.68	33/30313 (0.1%)
1	B	0.30	0/22313	0.67	28/30313 (0.1%)
2	C	0.36	0/1351	0.69	2/1840 (0.1%)
2	D	0.34	0/1402	0.73	1/1911 (0.1%)
2	E	0.37	0/1309	0.70	1/1783 (0.1%)
All	All	0.31	1/48688 (0.0%)	0.68	65/66160 (0.1%)

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
2	E	0	1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	2355	CYS	CB-SG	-5.39	1.73	1.81

All (65) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	3111	MET	CA-CB-CG	10.72	131.52	113.30
1	A	2411	MET	CB-CG-SD	-8.15	87.96	112.40
1	A	4399	LEU	CB-CG-CD2	-8.03	97.35	111.00
1	A	2411	MET	CA-CB-CG	7.85	126.65	113.30
1	A	283	MET	CA-CB-CG	7.40	125.89	113.30
1	B	1512	MET	CA-CB-CG	7.11	125.38	113.30
1	B	2732	MET	CG-SD-CE	7.02	111.43	100.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	1994	LEU	CA-CB-CG	-6.74	99.80	115.30
1	B	3253	LEU	CA-CB-CG	6.73	130.79	115.30
2	D	203	ARG	CA-CB-CG	6.47	127.64	113.40
1	A	3287	ASP	CB-CG-OD1	6.46	124.12	118.30
1	A	2815	LEU	CA-CB-CG	6.27	129.71	115.30
1	A	1492	LEU	CA-CB-CG	6.20	129.56	115.30
1	B	2387	LEU	CB-CG-CD2	6.19	121.52	111.00
1	A	1212	MET	CA-CB-CG	6.15	123.75	113.30
1	A	3813	LEU	CB-CG-CD2	-6.12	100.61	111.00
1	B	2813	LEU	CA-CB-CG	6.11	129.35	115.30
1	A	3719	LEU	CB-CG-CD2	6.05	121.29	111.00
1	A	1982	LEU	CA-CB-CG	5.98	129.06	115.30
1	A	2411	MET	CG-SD-CE	5.95	109.72	100.20
2	C	155	GLU	CA-CB-CG	5.92	126.42	113.40
1	A	830	MET	CB-CG-SD	-5.85	94.86	112.40
1	A	2567	LEU	CA-CB-CG	5.84	128.73	115.30
1	A	3251	LEU	CA-CB-CG	5.83	128.72	115.30
1	A	3253	LEU	CA-CB-CG	5.79	128.61	115.30
1	A	2386	LEU	CA-CB-CG	5.74	128.50	115.30
1	A	2633	LEU	CA-CB-CG	5.70	128.41	115.30
1	A	2571	LEU	CA-CB-CG	5.67	128.35	115.30
1	A	3453	LEU	CA-CB-CG	5.62	128.22	115.30
1	A	3682	LEU	CA-CB-CG	5.62	128.22	115.30
1	B	2411	MET	CG-SD-CE	-5.61	91.22	100.20
1	B	2589	LEU	CA-CB-CG	5.58	128.13	115.30
1	A	2387	LEU	CB-CG-CD2	5.58	120.48	111.00
1	A	4184	LEU	CA-CB-CG	5.57	128.12	115.30
1	B	4165	LEU	CA-CB-CG	5.57	128.12	115.30
1	B	198	ASP	CB-CG-OD1	5.55	123.29	118.30
1	A	2174	LEU	CA-CB-CG	5.53	128.01	115.30
1	A	198	ASP	CB-CG-OD1	5.51	123.26	118.30
1	A	2667	LEU	CB-CG-CD1	-5.43	101.77	111.00
1	B	2633	LEU	CA-CB-CG	5.41	127.75	115.30
2	C	155	GLU	N-CA-CB	5.38	120.29	110.60
1	B	1979	GLN	CA-CB-CG	5.36	125.19	113.40
1	B	1875	LEU	CA-CB-CG	5.34	127.58	115.30
1	B	3487	LEU	CA-CB-CG	5.30	127.49	115.30
1	B	2174	LEU	CA-CB-CG	5.29	127.47	115.30
1	B	2397	ILE	CG1-CB-CG2	-5.23	99.89	111.40
1	A	3610	LEU	CA-CB-CG	5.20	127.25	115.30
1	B	3034	ASP	CB-CG-OD1	5.18	122.97	118.30
1	A	3719	LEU	CA-CB-CG	5.18	127.21	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	3191	ARG	CB-CG-CD	5.17	125.05	111.60
1	A	3232	LEU	CA-CB-CG	5.17	127.19	115.30
1	B	2812	LEU	CA-CB-CG	5.15	127.15	115.30
1	B	3488	MET	CA-CB-CG	5.14	122.05	113.30
1	B	2581	LEU	CA-CB-CG	5.12	127.07	115.30
1	B	3453	LEU	CA-CB-CG	5.11	127.06	115.30
1	B	3232	LEU	CA-CB-CG	5.10	127.03	115.30
2	E	266	LEU	CB-CG-CD2	5.09	119.66	111.00
1	A	3334	LEU	CA-CB-CG	5.09	127.00	115.30
1	A	1474	LEU	CA-CB-CG	5.08	126.98	115.30
1	A	2385	LEU	CA-CB-CG	5.08	126.97	115.30
1	B	1377	LEU	CA-CB-CG	5.06	126.94	115.30
1	B	2342	MET	CG-SD-CE	5.05	108.28	100.20
1	B	2719	TRP	CA-CB-CG	5.04	123.27	113.70
1	B	2146	LEU	CA-CB-CG	5.02	126.84	115.30
1	A	2355	CYS	CA-CB-SG	5.01	123.02	114.00

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	E	340	GLU	Peptide

5.2   Too-close contacts ⓘ

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	21902	0	22313	462	0
1	B	21902	0	22313	501	0
2	C	1332	0	1346	26	0
2	D	1382	0	1399	30	0
2	E	1291	0	1298	35	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
All	All	47811	0	48669	1007	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 10.

All (1007) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2359:ALA:HB2	1:B:2411:MET:HG3	1.66	0.77
1:A:3810:ARG:HA	1:A:3813:LEU:HD12	1.66	0.77
1:B:2075:ARG:HG2	1:B:2120:LEU:HD22	1.68	0.76
1:B:1556:SER:HB2	1:B:1843:ILE:HG21	1.67	0.75
1:A:2397:ILE:HD12	1:B:3325:LYS:HB2	1.69	0.75
1:B:1124:LEU:HB3	1:B:1183:CYS:HB3	1.67	0.74
1:A:2717:ARG:HH21	1:B:3253:LEU:HD13	1.53	0.73
1:A:1091:PHE:HB2	1:A:1222:ILE:HB	1.72	0.72
1:B:1378:LEU:HB3	1:B:1382:ARG:HH21	1.53	0.72
1:B:1923:ASP:OD1	1:B:1927:ARG:NH1	2.23	0.72
1:B:1806:ILE:HB	1:B:1842:LEU:HB3	1.71	0.72
1:A:98:SER:OG	1:A:212:LYS:NZ	2.23	0.72
1:A:1806:ILE:HB	1:A:1842:LEU:HB3	1.72	0.71
1:B:2389:GLY:HA2	1:B:2655:VAL:HA	1.72	0.71
1:A:3224:HIS:HB2	1:A:3297:LYS:HG2	1.72	0.71
2:C:218:ALA:HB1	2:C:232:LEU:HD21	1.71	0.71
1:A:2122:SER:O	1:A:2177:ARG:NH2	2.24	0.71
1:B:4370:ILE:HA	1:B:4373:MET:HE3	1.70	0.71
1:B:1557:LEU:HD12	1:B:1560:LEU:HD21	1.72	0.71
1:B:3709:ASN:HD21	1:B:3780:LEU:HD21	1.56	0.70
1:B:2692:PRO:HB3	1:B:2728:LEU:HD23	1.73	0.70
1:A:3817:LEU:HD21	1:A:4185:LEU:HD22	1.74	0.70
1:A:3709:ASN:HD21	1:A:3780:LEU:HD21	1.56	0.69
1:A:1439:LEU:HB3	1:A:2026:ILE:HD11	1.73	0.69
1:B:1782:ARG:O	1:B:1789:ARG:NH2	2.25	0.69
1:A:2099:VAL:O	1:A:2103:LEU:HB2	1.92	0.69
1:A:3325:LYS:HB2	1:B:2397:ILE:HD12	1.74	0.69
2:E:148:ASN:ND2	2:C:255:GLU:OE1	2.26	0.69
1:A:4072:GLN:HE21	1:A:4178:ARG:HD2	1.58	0.69
1:B:2716:LEU:HA	1:B:2719:TRP:HD1	1.58	0.69
1:A:2396:ASP:HA	1:B:3271:LYS:HE2	1.74	0.69
1:A:1853:CYS:SG	1:A:1854:ARG:N	2.66	0.68
1:A:1378:LEU:HB3	1:A:1382:ARG:HH21	1.58	0.68
2:E:253:GLN:HE21	2:E:277:SER:HA	1.58	0.68
1:B:2878:MET:SD	1:B:2880:ARG:NH1	2.66	0.68
1:B:2171:VAL:HA	1:B:2174:LEU:HD12	1.73	0.68
1:A:3700:LYS:NZ	1:A:3769:GLN:O	2.28	0.67
1:B:1818:ASP:OD1	1:B:1830:ARG:NH1	2.27	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:568:LEU:HD11	1:B:630:LEU:HB3	1.76	0.67
1:A:1101:VAL:HG22	1:A:1212:MET:HG2	1.76	0.67
1:B:4260:ARG:NH2	1:B:4364:LEU:O	2.26	0.67
1:B:3184:GLN:HB2	1:B:3187:PRO:HG3	1.77	0.67
1:B:3220:LEU:HD12	1:B:3223:ILE:HD11	1.76	0.67
1:B:1385:LEU:HD21	1:B:1428:LEU:HD23	1.77	0.66
1:A:4072:GLN:HB3	1:A:4175:LEU:HD22	1.77	0.66
2:E:188:ALA:HB3	2:E:192:LEU:HB3	1.75	0.66
1:A:1098:ALA:HB2	1:A:1218:ARG:HE	1.60	0.66
1:A:1406:ARG:HH21	1:A:1848:ILE:HB	1.60	0.66
1:B:98:SER:OG	1:B:212:LYS:NZ	2.28	0.66
1:B:157:GLN:HB3	1:B:226:HIS:HB3	1.75	0.66
1:B:3700:LYS:NZ	1:B:3769:GLN:O	2.28	0.66
1:B:2387:LEU:O	1:B:2393:ASN:ND2	2.29	0.66
1:B:2820:SER:HB3	1:B:2826:PHE:HD2	1.61	0.65
1:A:1505:PRO:O	1:A:1985:ASN:ND2	2.29	0.65
1:A:3534:CYS:HA	1:A:3539:LYS:HD2	1.78	0.65
1:B:1093:LEU:HD23	1:B:1303:ILE:HD11	1.77	0.65
1:A:3494:LEU:HD12	1:A:3545:LEU:HD11	1.78	0.65
1:A:2346:CYS:HB3	1:A:2350:LEU:HD11	1.78	0.65
1:B:211:HIS:NE2	1:B:1044:PRO:O	2.29	0.65
1:A:1474:LEU:HD21	1:A:2034:LEU:HD11	1.78	0.65
1:B:3810:ARG:HA	1:B:3813:LEU:HD12	1.78	0.65
1:A:2101:GLN:NE2	1:A:2102:GLU:OE1	2.30	0.65
1:B:1091:PHE:HB2	1:B:1222:ILE:HB	1.78	0.65
1:B:2335:LEU:HD11	1:B:2354:VAL:HB	1.78	0.65
1:A:2772:HIS:ND1	1:B:2873:CYS:O	2.30	0.65
1:A:1124:LEU:HB3	1:A:1183:CYS:HB3	1.77	0.65
1:A:60:ASP:HB3	1:A:1132:LEU:HD12	1.77	0.64
1:A:3826:LEU:HD23	1:A:3832:LEU:HD13	1.78	0.64
2:D:251:VAL:O	2:D:279:GLN:NE2	2.29	0.64
1:A:1305:ARG:HH22	1:A:1308:LYS:HE3	1.62	0.64
1:A:2376:ASN:OD1	1:A:2379:GLN:NE2	2.31	0.64
1:B:3462:ARG:HG3	1:B:3524:LEU:HD21	1.79	0.64
1:B:4161:PHE:HE1	1:B:4213:PRO:HG3	1.63	0.64
1:A:568:LEU:HD11	1:A:630:LEU:HB3	1.79	0.64
1:A:2667:LEU:O	1:A:2670:ASN:ND2	2.31	0.64
1:A:3547:CYS:SG	1:A:3846:HIS:NE2	2.69	0.64
1:A:1771:GLN:OE1	1:A:1983:GLN:NE2	2.31	0.64
1:A:1494:THR:HG21	1:A:2111:ILE:HG22	1.78	0.64
1:A:2084:GLN:NE2	1:A:2600:ASN:O	2.31	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1444:THR:HG22	1:A:1447:SER:H	1.61	0.64
1:B:343:GLU:HG2	1:B:346:SER:H	1.63	0.64
2:D:157:THR:HG21	2:D:311:VAL:HG11	1.79	0.64
1:B:1101:VAL:HA	1:B:1305:ARG:HE	1.63	0.63
1:A:3236:PRO:HG3	1:A:3282:LEU:HD23	1.81	0.63
1:B:254:SER:HB2	1:B:370:VAL:HG11	1.80	0.63
1:A:3396:LEU:HA	1:A:3399:ILE:HG12	1.81	0.63
1:B:285:SER:HA	1:B:366:VAL:HB	1.79	0.63
1:B:1813:ALA:HB2	1:B:1863:ARG:HA	1.80	0.63
1:B:2787:GLN:NE2	1:B:2791:GLU:OE2	2.31	0.63
1:A:3209:ASP:HB3	1:A:3281:ARG:HE	1.64	0.63
1:A:3989:LEU:HB3	1:A:3993:ARG:HH21	1.61	0.63
1:B:3225:ILE:HB	1:B:3265:ILE:HB	1.81	0.62
1:A:4260:ARG:NH2	1:A:4364:LEU:O	2.32	0.62
2:E:162:VAL:HG21	2:E:193:ILE:HD13	1.80	0.62
1:A:157:GLN:HB3	1:A:226:HIS:HB3	1.80	0.62
1:A:178:LEU:HD21	1:A:197:LYS:HZ1	1.64	0.62
1:A:3867:SER:HB3	1:A:3979:ALA:HB1	1.81	0.62
1:B:1015:GLN:HG3	1:B:1021:ILE:HD13	1.81	0.62
1:A:2665:LEU:O	1:A:2669:LEU:HB2	1.99	0.62
1:B:1494:THR:HG21	1:B:2111:ILE:HG22	1.82	0.62
1:A:1486:THR:OG1	1:A:1489:GLU:OE1	2.16	0.62
1:B:2342:MET:HG3	1:B:2351:LEU:HD21	1.82	0.62
1:B:3191:ARG:HD3	2:E:266:LEU:HD22	1.82	0.62
1:A:827:LEU:HB3	1:A:845:LYS:HB3	1.81	0.62
1:B:1829:ARG:HH21	1:B:1851:PRO:HB2	1.64	0.62
1:A:1575:ASP:OD2	1:A:1782:ARG:NH2	2.33	0.62
1:A:3233:ALA:HB2	1:B:3232:LEU:HD21	1.80	0.62
1:B:3198:SER:HA	1:B:3291:LEU:O	1.99	0.62
1:A:2389:GLY:HA2	1:A:2655:VAL:HA	1.81	0.62
1:A:1206:PRO:HB3	1:A:1322:LEU:HD22	1.81	0.61
1:B:1561:LEU:HB3	1:B:1989:ASN:HD22	1.64	0.61
1:B:854:ASP:HA	1:B:907:THR:HB	1.82	0.61
1:B:3494:LEU:HD12	1:B:3545:LEU:HD11	1.82	0.61
1:B:3681:ASP:OD1	1:B:3755:GLN:NE2	2.33	0.61
1:A:3488:MET:HE3	1:B:2107:GLU:HG2	1.82	0.61
1:A:2752:LEU:HG	1:A:2758:LEU:HD22	1.83	0.61
1:A:3262:LEU:HD11	1:B:3286:ARG:HH21	1.65	0.61
1:B:3127:SER:HA	1:B:3130:MET:HE1	1.82	0.61
1:A:3701:ASP:OD1	1:A:3774:HIS:NE2	2.29	0.61
1:A:75:TYR:HB2	1:A:944:ILE:HD12	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1816:SER:HB2	1:B:1830:ARG:NH2	2.16	0.61
1:A:1510:LEU:HB3	1:A:1560:LEU:HB2	1.81	0.60
1:B:1456:ASN:HA	1:B:1459:LYS:HD3	1.82	0.60
2:D:200:VAL:HG11	2:D:232:LEU:HD11	1.82	0.60
1:B:2352:LEU:HD21	1:B:2403:TRP:HB3	1.83	0.60
1:A:3111:MET:HE3	1:A:3334:LEU:HD11	1.82	0.60
1:A:3792:SER:O	1:A:4086:ARG:NH2	2.35	0.60
1:A:2781:VAL:HG13	1:A:2832:PRO:HB3	1.84	0.60
1:A:3179:ALA:HB1	1:A:3182:LEU:HD12	1.83	0.60
1:B:3688:ARG:HH22	1:B:3762:ALA:HA	1.67	0.60
1:A:177:CYS:HA	1:A:181:VAL:HB	1.84	0.60
1:B:55:TRP:HB3	1:B:924:ALA:HB2	1.84	0.60
1:B:3396:LEU:HA	1:B:3399:ILE:HG12	1.83	0.60
1:A:343:GLU:HG2	1:A:346:SER:H	1.65	0.60
2:E:319:GLY:HA2	2:E:333:ILE:O	2.01	0.60
1:A:3433:ASP:O	1:A:3437:GLN:NE2	2.35	0.60
1:B:1811:ASP:O	1:B:1863:ARG:NH1	2.35	0.60
1:A:3489:PRO:HB2	1:A:3494:LEU:HD21	1.84	0.59
1:A:1493:GLN:HG2	1:A:1499:TYR:HA	1.85	0.59
1:A:1782:ARG:O	1:A:1789:ARG:NH2	2.35	0.59
1:A:3252:PRO:O	1:B:2717:ARG:NE	2.27	0.59
2:D:204:ARG:HD3	2:D:219:VAL:HG13	1.84	0.59
1:A:2813:LEU:HD12	1:A:2851:VAL:HG11	1.82	0.59
1:A:1813:ALA:HB2	1:A:1863:ARG:HA	1.85	0.59
1:A:2200:GLN:NE2	1:A:2413:GLN:OE1	2.36	0.59
1:A:3243:VAL:HG13	1:A:3253:LEU:HD21	1.85	0.59
1:B:1328:HIS:HA	1:B:1331:LEU:HD12	1.85	0.59
1:B:3867:SER:HB3	1:B:3979:ALA:HB1	1.84	0.59
2:D:162:VAL:HG21	2:D:193:ILE:HD13	1.84	0.59
1:A:3220:LEU:HD21	1:A:3223:ILE:HD11	1.85	0.58
1:B:411:ILE:HD12	1:B:422:LEU:HD12	1.85	0.58
1:A:3224:HIS:HE1	1:A:3266:LYS:HE3	1.68	0.58
1:A:3271:LYS:HE2	1:B:2396:ASP:HA	1.83	0.58
1:B:75:TYR:HB2	1:B:944:ILE:HD12	1.84	0.58
1:B:3402:ARG:NH2	1:B:3459:ASP:OD2	2.36	0.58
1:B:2412:LEU:HB3	1:B:2667:LEU:HD11	1.84	0.58
1:A:2139:LEU:HD13	1:A:2142:LEU:HD12	1.85	0.58
1:A:3815:LEU:HG	1:A:3816:MET:HE3	1.86	0.58
1:B:1475:THR:HB	1:B:1479:ARG:HH21	1.68	0.58
1:B:1568:PHE:HB3	1:B:1793:LEU:HD11	1.85	0.58
1:B:2323:LEU:HB3	1:B:2327:ARG:HH12	1.68	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1830:ARG:NH2	1:B:1832:VAL:O	2.36	0.58
2:E:303:PHE:HA	2:E:306:ALA:HB2	1.85	0.58
1:A:1026:VAL:HG21	1:A:1351:LEU:HD22	1.85	0.58
1:B:2813:LEU:HD11	1:B:2856:ILE:HG22	1.85	0.58
1:B:2813:LEU:HA	1:B:2816:ILE:HG12	1.85	0.58
1:A:3184:GLN:HB2	1:A:3187:PRO:HG3	1.86	0.58
1:B:395:SER:HG	1:B:514:GLN:H	1.49	0.58
1:B:1504:ASP:O	1:B:1981:GLN:NE2	2.37	0.57
1:B:3220:LEU:HD23	1:B:3275:ALA:HB3	1.85	0.57
1:A:1561:LEU:HB3	1:A:1989:ASN:HD22	1.69	0.57
1:A:945:TYR:OH	1:A:950:ASP:OD1	2.22	0.57
1:A:1504:ASP:O	1:A:1981:GLN:NE2	2.35	0.57
1:A:2375:VAL:HG21	1:A:2380:LEU:HD13	1.85	0.57
1:A:2838:LYS:HA	1:A:2841:GLU:HG2	1.87	0.57
2:C:192:LEU:HD11	2:C:231:THR:HB	1.87	0.57
1:A:3402:ARG:NH2	1:A:3459:ASP:OD2	2.37	0.57
1:B:2381:GLU:OE2	1:B:2645:LYS:NZ	2.37	0.57
1:A:3236:PRO:O	1:A:3259:THR:OG1	2.20	0.57
1:A:1037:ARG:HH22	1:A:1075:ARG:HB3	1.69	0.57
2:D:319:GLY:HA2	2:D:333:ILE:O	2.05	0.57
1:A:1538:LEU:HG	1:A:2126:GLN:HG2	1.87	0.57
1:A:3517:LEU:HD13	1:A:3549:MET:HG2	1.87	0.57
1:B:3062:ALA:HB2	1:B:3106:LEU:HD21	1.87	0.57
1:A:2180:ASP:OD1	1:A:2356:LYS:NZ	2.36	0.57
1:A:55:TRP:HE1	1:A:966:ILE:HG23	1.68	0.57
1:A:1804:VAL:HG12	1:A:1878:TYR:HD1	1.69	0.56
2:D:143:PRO:HB2	2:E:313:LEU:HB3	1.87	0.56
1:B:2664:TRP:HE3	1:B:2665:LEU:HD22	1.71	0.56
1:A:280:ARG:HA	1:A:283:MET:HB3	1.87	0.56
1:A:3327:SER:HA	1:A:3330:TRP:HD1	1.70	0.56
1:B:2766:LEU:HD12	1:B:2836:GLN:HG3	1.87	0.56
2:D:252:ARG:HB2	2:D:255:GLU:HG2	1.86	0.56
1:B:1412:ILE:HD13	1:B:1424:PHE:HB3	1.87	0.56
1:B:1836:ASP:OD1	1:B:1839:THR:OG1	2.23	0.56
1:B:2646:LEU:HB3	1:B:2660:LEU:HD11	1.87	0.56
1:A:3224:HIS:CE1	1:A:3266:LYS:HG2	2.40	0.56
1:B:945:TYR:OH	1:B:950:ASP:OD1	2.24	0.56
1:B:3243:VAL:HG13	1:B:3253:LEU:HD21	1.87	0.56
1:A:3199:TYR:HB3	1:A:3291:LEU:HD13	1.87	0.56
1:A:3687:LEU:HB3	1:A:3762:ALA:HB1	1.88	0.56
1:B:3179:ALA:HB1	1:B:3182:LEU:HD12	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:207:THR:HA	1:B:214:ALA:HB2	1.87	0.56
2:D:144:ARG:NH2	2:E:255:GLU:OE2	2.39	0.56
1:B:2769:THR:HG23	1:B:2771:PRO:HD3	1.88	0.56
2:C:206:VAL:HG13	2:C:218:ALA:HB3	1.88	0.56
1:B:93:VAL:O	1:B:102:LEU:N	2.37	0.56
1:B:1486:THR:OG1	1:B:1489:GLU:OE1	2.20	0.56
1:B:3450:ILE:HA	1:B:3453:LEU:HG	1.88	0.56
2:C:292:VAL:HG22	2:C:337:ARG:HH12	1.70	0.56
1:A:1089:HIS:HB2	1:A:1224:VAL:HB	1.87	0.55
1:A:1328:HIS:HA	1:A:1331:LEU:HD12	1.87	0.55
1:B:2927:ASN:HB2	1:B:3039:ILE:HG12	1.87	0.55
1:A:2323:LEU:HD12	1:A:2327:ARG:HH12	1.71	0.55
1:A:2823:ARG:HH12	1:B:2764:LYS:HE3	1.72	0.55
1:A:4235:ARG:HD3	1:A:4356:LEU:HD21	1.88	0.55
1:B:137:ARG:NH2	1:B:148:THR:O	2.40	0.55
1:B:163:LEU:HD11	1:B:255:VAL:HG13	1.87	0.55
1:B:829:LYS:HD2	1:B:844:ILE:HD11	1.88	0.55
1:B:4173:VAL:HG11	1:B:4220:LEU:HB2	1.87	0.55
2:E:185:PHE:HB3	2:E:309:PRO:HD3	1.88	0.55
1:B:2595:LEU:HD13	1:B:2598:LEU:HD21	1.87	0.55
2:D:335:SER:HA	2:D:338:LEU:HD13	1.88	0.55
1:B:4155:ALA:HA	1:B:4158:LEU:HD12	1.88	0.55
1:A:285:SER:HA	1:A:366:VAL:HB	1.88	0.55
1:A:286:GLU:OE1	1:A:289:ARG:NH2	2.40	0.55
1:A:440:SER:HA	1:A:721:ARG:HH22	1.71	0.55
1:B:1343:GLN:NE2	1:B:1344:ILE:O	2.39	0.55
1:B:3792:SER:O	1:B:4086:ARG:NH2	2.40	0.55
1:A:2873:CYS:O	1:B:2772:HIS:ND1	2.39	0.55
1:B:3720:CYS:SG	1:B:3721:HIS:N	2.79	0.55
1:B:3990:LEU:HA	1:B:3993:ARG:HG2	1.88	0.55
1:A:2139:LEU:HD12	1:A:2331:VAL:HG11	1.87	0.55
1:B:3453:LEU:HD13	1:B:3497:VAL:HG13	1.89	0.55
2:D:212:SER:OG	2:D:214:ASP:OD1	2.23	0.55
1:A:411:ILE:HD11	1:A:567:LEU:HD22	1.88	0.55
1:A:2374:ILE:HG22	1:A:2375:VAL:HG13	1.88	0.55
1:B:3636:VAL:HG13	1:B:3711:LEU:HD12	1.89	0.55
1:B:1092:GLU:OE2	1:B:1219:SER:OG	2.26	0.54
1:B:2143:ASP:O	1:B:2334:LYS:NZ	2.36	0.54
1:A:1429:LEU:HD13	1:A:1458:VAL:HG23	1.89	0.54
1:A:2566:ALA:O	1:A:2584:LYS:NZ	2.36	0.54
1:A:3453:LEU:HD13	1:A:3497:VAL:HG13	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1510:LEU:HB3	1:B:1560:LEU:HB2	1.87	0.54
2:D:220:VAL:HA	2:D:232:LEU:HG	1.88	0.54
1:A:163:LEU:HD11	1:A:255:VAL:HG13	1.88	0.54
1:A:1032:GLU:OE2	1:A:1305:ARG:NH1	2.40	0.54
1:A:4324:LEU:HD22	1:A:4398:LEU:HD22	1.89	0.54
2:D:202:ASP:O	2:D:203:ARG:HD3	2.07	0.54
1:A:3198:SER:HA	1:A:3291:LEU:O	2.07	0.54
1:A:3232:LEU:HD21	1:B:3233:ALA:HB2	1.89	0.54
1:B:123:VAL:O	1:B:125:LYS:NZ	2.37	0.54
1:B:164:GLU:HG2	1:B:258:ARG:HH22	1.72	0.54
2:D:313:LEU:HB3	2:C:143:PRO:HB2	1.89	0.54
1:A:2075:ARG:HG2	1:A:2120:LEU:HD22	1.88	0.54
2:E:163:TYR:HB3	2:E:209:ARG:HB3	1.88	0.54
1:A:123:VAL:O	1:A:125:LYS:NZ	2.36	0.54
1:A:280:ARG:NE	1:A:329:PHE:O	2.41	0.54
1:A:3402:ARG:HE	1:A:3456:TRP:HD1	1.54	0.54
1:B:309:MET:HA	1:B:344:PRO:HB3	1.89	0.54
1:A:2143:ASP:O	1:A:2334:LYS:NZ	2.35	0.54
1:B:3778:GLN:HG2	1:B:4070:PRO:HG3	1.89	0.54
1:A:309:MET:HA	1:A:344:PRO:HB3	1.89	0.54
1:A:1568:PHE:HB3	1:A:1793:LEU:HD11	1.90	0.54
1:A:2039:HIS:HB2	1:A:2597:ALA:HB2	1.89	0.54
1:A:4325:GLN:NE2	1:A:4397:GLU:OE1	2.32	0.54
1:B:1788:ARG:HH12	1:B:1790:PHE:HB2	1.73	0.54
1:B:1883:TYR:HE1	1:B:1908:PRO:HG2	1.73	0.54
1:B:2727:THR:O	1:B:2730:THR:OG1	2.23	0.54
1:B:4364:LEU:HD11	1:B:4369:LEU:HD23	1.90	0.53
1:A:3286:ARG:NH1	1:B:3260:SER:O	2.42	0.53
1:A:4361:LEU:HA	1:A:4408:MET:HE1	1.89	0.53
1:B:2105:ASN:HA	1:B:2167:MET:HE1	1.90	0.53
1:B:2687:ASN:HB3	1:B:2690:ARG:HG3	1.90	0.53
2:D:192:LEU:HD11	2:D:231:THR:HB	1.89	0.53
1:A:245:ASN:ND2	1:A:361:GLU:OE1	2.41	0.53
1:A:717:VAL:HG11	1:A:836:ILE:HG21	1.89	0.53
1:A:3180:GLU:O	1:A:3184:GLN:NE2	2.40	0.53
1:B:440:SER:HA	1:B:721:ARG:HH22	1.73	0.53
1:A:2713:ASN:HB2	1:B:2869:HIS:CE1	2.44	0.53
1:B:1121:GLN:OE1	1:B:1123:THR:OG1	2.25	0.53
1:B:3224:HIS:HE1	1:B:3266:LYS:HE3	1.74	0.53
1:A:3450:ILE:HA	1:A:3453:LEU:HG	1.91	0.53
1:B:2585:MET:HA	1:B:2588:THR:HG22	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3866:LEU:HD13	1:A:3967:LEU:HD12	1.91	0.53
1:A:4332:ASN:ND2	1:A:4335:SER:OG	2.42	0.53
1:A:1452:PHE:O	1:A:1456:ASN:ND2	2.42	0.53
1:B:1849:PRO:O	1:B:2570:ARG:NH1	2.42	0.53
1:B:2084:GLN:NE2	1:B:2600:ASN:O	2.42	0.53
2:E:182:GLY:HA3	2:E:199:VAL:HG13	1.90	0.53
1:A:576:LYS:HE3	1:A:624:ARG:HE	1.74	0.53
2:D:216:TYR:HD2	2:D:234:ILE:HD12	1.73	0.53
1:A:1433:LEU:HA	1:A:1436:MET:HG2	1.90	0.53
1:A:2038:LEU:HD21	1:A:2085:LEU:HD12	1.91	0.53
1:A:3129:ILE:HD12	1:A:3132:PHE:HE1	1.74	0.53
1:A:3191:ARG:HE	2:E:331:PHE:HD2	1.57	0.53
1:B:4080:LEU:HD12	1:B:4165:LEU:HB2	1.91	0.53
1:B:1012:LEU:HA	1:B:1015:GLN:HE22	1.74	0.53
1:A:2387:LEU:O	1:A:2393:ASN:ND2	2.35	0.52
1:B:1493:GLN:O	1:B:2116:ARG:NH2	2.41	0.52
1:B:3618:GLN:HE22	1:B:3693:VAL:HA	1.74	0.52
1:B:4158:LEU:HA	1:B:4161:PHE:CE2	2.44	0.52
1:A:164:GLU:HG2	1:A:258:ARG:HH22	1.73	0.52
2:E:148:ASN:HD21	2:C:255:GLU:HA	1.74	0.52
1:B:245:ASN:ND2	1:B:361:GLU:OE1	2.42	0.52
2:D:279:GLN:N	2:D:279:GLN:OE1	2.41	0.52
1:A:1771:GLN:HE22	1:A:1983:GLN:HG2	1.75	0.52
1:A:2655:VAL:HG11	1:A:2660:LEU:HD12	1.92	0.52
1:A:3537:VAL:HA	1:A:3540:LYS:HD2	1.92	0.52
1:A:3785:LEU:HA	1:A:3788:LEU:HG	1.92	0.52
1:A:4441:LYS:HE3	1:A:4482:GLN:HG2	1.92	0.52
1:B:2359:ALA:HA	1:B:2415:ILE:HD11	1.92	0.52
1:B:2813:LEU:HD13	1:B:2851:VAL:HG11	1.91	0.52
1:B:272:VAL:HG22	1:B:292:THR:HG22	1.89	0.52
1:B:3534:CYS:HA	1:B:3539:LYS:HD3	1.92	0.52
1:B:3614:ALA:O	1:B:3618:GLN:NE2	2.36	0.52
1:A:4161:PHE:HD2	1:A:4188:VAL:HG21	1.75	0.52
1:B:855:THR:HB	1:B:908:GLN:HB2	1.92	0.52
1:B:1331:LEU:O	1:B:1334:THR:OG1	2.19	0.52
1:B:1776:GLN:HE21	1:B:1875:LEU:HB2	1.73	0.52
1:A:2820:SER:HB3	1:A:2826:PHE:HD2	1.75	0.52
1:A:3824:MET:HG3	1:A:3860:LEU:HD12	1.90	0.52
1:B:198:ASP:HA	1:B:201:LYS:HE3	1.91	0.52
1:A:1290:LEU:HD22	1:A:1294:ASP:HB3	1.92	0.52
1:A:3618:GLN:HE22	1:A:3693:VAL:HA	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3811:LEU:HD11	1:B:3815:LEU:HD22	1.91	0.52
1:B:3967:LEU:HD13	1:B:4004:LEU:HD13	1.92	0.52
2:E:252:ARG:N	2:E:255:GLU:OE2	2.42	0.52
1:B:2039:HIS:HB2	1:B:2597:ALA:HB2	1.92	0.52
1:A:716:LEU:HD21	1:A:719:CYS:HB2	1.92	0.51
1:A:2080:LEU:HA	1:A:2083:VAL:HG22	1.92	0.51
1:B:3206:ALA:O	1:B:3284:ARG:N	2.42	0.51
1:A:254:SER:HB2	1:A:370:VAL:HG11	1.91	0.51
1:B:1290:LEU:HD22	1:B:1294:ASP:HB3	1.91	0.51
1:B:2380:LEU:HD21	1:B:2639:LEU:HD23	1.93	0.51
1:A:3287:ASP:OD2	1:B:3263:THR:N	2.42	0.51
1:A:396:CYS:HB3	1:A:512:ILE:HG22	1.91	0.51
1:A:726:ALA:HA	1:A:731:LEU:HD12	1.92	0.51
1:B:1781:GLU:OE1	1:B:1781:GLU:N	2.43	0.51
1:A:306:PRO:O	1:A:310:ALA:HB2	2.11	0.51
1:A:947:SER:O	1:A:1218:ARG:NH1	2.44	0.51
1:B:55:TRP:HE1	1:B:966:ILE:HG23	1.75	0.51
1:B:1089:HIS:HB2	1:B:1224:VAL:HB	1.91	0.51
1:A:198:ASP:HA	1:A:201:LYS:HE3	1.92	0.51
1:B:2665:LEU:O	1:B:2669:LEU:HB2	2.11	0.51
1:A:914:ILE:HB	1:A:924:ALA:HB3	1.93	0.51
1:A:2344:PHE:HE2	1:B:3115:THR:HA	1.75	0.51
1:A:3239:VAL:HG22	1:A:3282:LEU:HG	1.93	0.51
1:A:3281:ARG:HH11	1:B:2783:PRO:HG2	1.75	0.51
1:B:726:ALA:HA	1:B:731:LEU:HD12	1.91	0.51
1:B:3115:THR:HG21	1:B:3361:THR:HB	1.93	0.51
1:A:630:LEU:HD12	1:A:720:LEU:HD22	1.93	0.51
1:B:859:LEU:HB2	1:B:903:LEU:HD11	1.93	0.51
1:B:4252:SER:OG	1:B:4368:CYS:SG	2.68	0.51
1:A:2693:VAL:HG23	1:A:2694:ILE:HD12	1.92	0.51
1:B:3327:SER:HA	1:B:3330:TRP:HD1	1.75	0.51
2:E:163:TYR:OH	2:E:181:ASN:ND2	2.43	0.51
1:A:2692:PRO:HG2	1:A:2732:MET:SD	2.51	0.51
1:B:914:ILE:HB	1:B:924:ALA:HB3	1.93	0.51
1:B:1582:ASP:N	1:B:1775:HIS:O	2.43	0.51
1:B:3187:PRO:HB2	1:B:3189:HIS:CE1	2.46	0.51
1:B:4364:LEU:HD23	1:B:4411:LEU:HD13	1.92	0.51
2:C:162:VAL:HG21	2:C:193:ILE:HD13	1.93	0.51
1:A:853:GLN:HE21	1:A:909:GLY:HA3	1.76	0.50
1:A:3076:GLN:OE1	1:A:3076:GLN:N	2.41	0.50
1:B:1503:PHE:HZ	1:B:1936:GLU:HB2	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1812:LEU:O	1:B:1838:SER:OG	2.26	0.50
1:B:1817:ILE:O	1:B:1830:ARG:NH1	2.42	0.50
1:B:2346:CYS:HB3	1:B:2350:LEU:HD11	1.91	0.50
1:B:2416:LEU:HD21	1:B:2693:VAL:HG21	1.92	0.50
2:E:205:ARG:HH21	2:E:219:VAL:HA	1.76	0.50
1:A:3388:GLN:OE1	1:A:3389:SER:OG	2.28	0.50
1:A:3821:LYS:HD3	1:A:3859:HIS:HB3	1.94	0.50
1:A:4175:LEU:HA	1:A:4178:ARG:HH21	1.74	0.50
1:B:396:CYS:HB3	1:B:512:ILE:HG22	1.92	0.50
1:B:4441:LYS:HE3	1:B:4482:GLN:HG2	1.93	0.50
1:A:1477:VAL:HB	1:A:2027:ILE:HD11	1.93	0.50
1:A:3984:ALA:HB1	1:A:4067:ILE:H	1.76	0.50
2:D:188:ALA:HB3	2:D:192:LEU:HB3	1.93	0.50
1:A:1817:ILE:HG23	1:A:1831:LEU:HB2	1.94	0.50
1:A:2790:GLN:HB2	1:A:2838:LYS:HD3	1.92	0.50
1:B:239:LEU:HD23	1:B:242:ILE:HD11	1.94	0.50
1:B:4260:ARG:NH1	1:B:4367:SER:O	2.44	0.50
2:D:236:THR:HG22	2:D:237:LYS:H	1.77	0.50
1:A:1015:GLN:HG3	1:A:1021:ILE:HD13	1.93	0.50
1:A:1122:VAL:HG22	1:A:1224:VAL:HG22	1.94	0.50
1:A:2332:VAL:HG13	1:A:2358:LEU:HD11	1.93	0.50
1:B:280:ARG:HA	1:B:283:MET:HB3	1.94	0.50
1:B:2174:LEU:HA	1:B:2177:ARG:NH1	2.27	0.50
1:B:3701:ASP:OD1	1:B:3774:HIS:NE2	2.33	0.50
1:B:3711:LEU:HD23	1:B:3715:LEU:HD23	1.93	0.50
1:A:1778:ILE:HB	1:A:1873:ILE:HB	1.94	0.50
1:A:2810:GLU:HG2	1:A:2851:VAL:HG13	1.93	0.50
1:B:4252:SER:HG	1:B:4368:CYS:HG	1.56	0.50
1:A:139:ASP:OD1	1:A:139:ASP:N	2.43	0.50
1:A:207:THR:HA	1:A:214:ALA:HB2	1.94	0.50
1:B:1798:PRO:HD3	1:B:1854:ARG:HE	1.77	0.50
1:B:2135:LEU:HD13	1:B:2138:LEU:HD11	1.93	0.50
1:B:2349:ASP:N	1:B:2349:ASP:OD1	2.44	0.50
1:B:3076:GLN:OE1	1:B:3076:GLN:N	2.42	0.50
1:B:3189:HIS:NE2	1:B:3295:GLN:HB2	2.27	0.50
1:B:3454:LEU:HA	1:B:3457:VAL:HG12	1.94	0.50
1:A:4155:ALA:HA	1:A:4158:LEU:HD12	1.92	0.50
1:B:3341:ILE:HG22	1:B:3343:ASP:H	1.77	0.50
2:E:194:VAL:HG21	2:E:338:LEU:HD21	1.93	0.50
1:A:2412:LEU:HB3	1:A:2667:LEU:HD11	1.93	0.50
1:A:3967:LEU:HD13	1:A:4004:LEU:HD13	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:154:VAL:HG23	1:B:263:LEU:HD13	1.94	0.50
1:A:93:VAL:O	1:A:102:LEU:N	2.43	0.49
1:A:1496:TYR:CZ	1:A:1970:VAL:HG21	2.47	0.49
1:A:1781:GLU:OE1	1:A:1781:GLU:N	2.44	0.49
1:A:1832:VAL:HG21	1:A:2566:ALA:HB1	1.93	0.49
1:B:2038:LEU:HD21	1:B:2085:LEU:HD12	1.93	0.49
1:B:2041:SER:O	1:B:2044:HIS:ND1	2.43	0.49
1:B:2080:LEU:HA	1:B:2083:VAL:HG22	1.95	0.49
2:C:157:THR:HG21	2:C:311:VAL:HG11	1.94	0.49
2:C:296:GLN:HA	2:C:330:SER:O	2.12	0.49
1:B:411:ILE:HD11	1:B:567:LEU:HD22	1.95	0.49
1:B:1377:LEU:O	1:B:1381:THR:OG1	2.22	0.49
1:B:1806:ILE:HG21	1:B:1815:LEU:HD21	1.94	0.49
1:A:2724:HIS:O	1:A:2727:THR:OG1	2.27	0.49
1:A:2729:MET:SD	1:A:2748:THR:OG1	2.67	0.49
1:A:2764:LYS:HE3	1:B:2823:ARG:HH12	1.77	0.49
1:A:1121:GLN:OE1	1:A:1123:THR:OG1	2.30	0.49
1:A:3242:GLU:HG2	1:A:3252:PRO:HA	1.95	0.49
1:B:2355:CYS:HB3	1:B:2411:MET:SD	2.51	0.49
1:B:2582:MET:HA	1:B:2585:MET:HG3	1.94	0.49
1:A:1573:THR:HG22	1:A:1574:SER:H	1.78	0.49
1:A:3614:ALA:HB2	1:A:3689:PHE:CD1	2.47	0.49
1:B:1194:LEU:HD21	1:B:2584:LYS:HG2	1.95	0.49
1:A:1012:LEU:HA	1:A:1015:GLN:HE22	1.78	0.49
1:A:1110:LEU:HD21	1:A:1188:LEU:HD21	1.94	0.49
1:A:2066:LEU:HD22	1:A:2078:THR:HG21	1.94	0.49
1:B:716:LEU:HD21	1:B:719:CYS:HB2	1.94	0.49
1:B:1573:THR:HG22	1:B:1574:SER:H	1.78	0.49
1:B:2385:LEU:HD12	1:B:2389:GLY:HA3	1.94	0.49
1:B:3402:ARG:HE	1:B:3456:TRP:HD1	1.61	0.49
1:B:3550:CYS:HB3	1:B:3557:PHE:HB2	1.94	0.49
1:B:3698:ILE:HG23	1:B:3699:MET:HE2	1.95	0.49
1:A:1436:MET:HA	1:A:1439:LEU:HD23	1.94	0.49
1:B:2174:LEU:HD23	1:B:2177:ARG:HH12	1.78	0.49
1:B:132:TYR:HB3	1:B:379:PHE:HE1	1.77	0.49
1:B:211:HIS:CE1	1:B:1047:VAL:HG12	2.48	0.49
1:B:1120:ILE:HG23	1:B:1188:LEU:HB2	1.95	0.49
1:B:1581:ARG:HA	1:B:1776:GLN:HA	1.95	0.49
1:B:1770:LEU:HD13	1:B:1986:LEU:HD11	1.94	0.49
1:A:2697:ASN:OD1	1:A:2698:GLN:N	2.46	0.48
1:A:3241:VAL:HG12	1:A:3280:LEU:HD13	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:147:ASP:OD2	1:B:218:THR:OG1	2.24	0.48
1:B:567:LEU:HB2	1:B:635:ILE:HD11	1.95	0.48
1:B:1037:ARG:HH22	1:B:1075:ARG:HB3	1.78	0.48
1:B:2724:HIS:O	1:B:2727:THR:OG1	2.31	0.48
1:A:132:TYR:HB3	1:A:379:PHE:HE1	1.77	0.48
1:A:3782:ALA:HA	1:A:4074:PHE:HD1	1.78	0.48
1:B:1402:HIS:CE1	1:B:1406:ARG:HD2	2.48	0.48
1:B:2800:LEU:HD12	1:B:2808:PHE:HB2	1.95	0.48
1:B:3239:VAL:HG22	1:B:3282:LEU:HG	1.95	0.48
1:B:3866:LEU:HD13	1:B:3967:LEU:HD12	1.95	0.48
2:E:323:MET:N	2:E:323:MET:SD	2.86	0.48
1:A:1432:LEU:HD22	1:A:1451:TYR:HE1	1.78	0.48
1:A:1557:LEU:HD12	1:A:1845:HIS:HD2	1.78	0.48
1:A:2066:LEU:HD21	1:A:2074:ILE:HG13	1.94	0.48
1:A:2786:THR:HA	1:A:2789:MET:HG3	1.95	0.48
1:A:3823:THR:O	1:A:4001:SER:HA	2.13	0.48
1:B:2383:LEU:HD11	1:B:2408:LEU:HD11	1.93	0.48
1:B:2393:ASN:HA	1:B:2398:SER:HA	1.95	0.48
2:E:319:GLY:CA	2:E:333:ILE:O	2.61	0.48
1:A:2998:LEU:HD13	1:A:3036:LEU:HD22	1.96	0.48
1:A:3454:LEU:HA	1:A:3457:VAL:HG12	1.95	0.48
1:A:4260:ARG:NH1	1:A:4367:SER:O	2.47	0.48
1:B:176:ALA:O	1:B:181:VAL:N	2.44	0.48
1:B:576:LYS:HE3	1:B:624:ARG:HE	1.78	0.48
1:B:630:LEU:HB2	1:B:720:LEU:HB3	1.95	0.48
2:D:268:ASN:ND2	2:E:277:SER:OG	2.46	0.48
1:A:1412:ILE:HD13	1:A:1424:PHE:HB3	1.95	0.48
1:A:3720:CYS:SG	1:A:3721:HIS:N	2.86	0.48
1:A:3813:LEU:HD11	1:B:1927:ARG:HH21	1.78	0.48
1:B:1510:LEU:HD13	1:B:1982:LEU:HD11	1.95	0.48
1:B:2374:ILE:HG22	1:B:2375:VAL:HG13	1.96	0.48
1:B:3537:VAL:HA	1:B:3540:LYS:HD2	1.93	0.48
1:A:3707:GLU:HG2	1:A:3708:VAL:HG23	1.95	0.48
1:B:2370:HIS:ND1	1:B:2419:GLU:HG3	2.28	0.48
1:A:1807:PRO:HG2	1:A:1874:PRO:HB2	1.94	0.48
1:A:2998:LEU:HG	1:A:3081:LEU:HB2	1.96	0.48
1:A:3429:ASP:HA	1:A:3432:ILE:HD12	1.94	0.48
1:B:825:LEU:HB2	1:B:847:GLN:HB3	1.94	0.48
1:B:1023:THR:HA	1:B:1026:VAL:HG12	1.96	0.48
1:A:749:LEU:O	1:A:823:GLY:HA3	2.14	0.48
1:A:725:PHE:HE2	1:A:846:ILE:HD13	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1083:SER:HA	1:A:1086:TRP:HB3	1.95	0.48
1:A:2141:LEU:O	1:A:2145:LEU:HB2	2.14	0.48
1:A:2365:THR:O	1:A:2366:ARG:NH1	2.47	0.48
1:A:3605:LEU:HG	1:A:3609:HIS:HB2	1.96	0.48
1:B:2692:PRO:HG3	1:B:2728:LEU:HB3	1.96	0.48
1:A:1581:ARG:HH11	1:A:1776:GLN:HE21	1.62	0.48
1:A:2030:LEU:O	1:A:2033:THR:OG1	2.26	0.48
1:A:2120:LEU:O	1:A:2124:ILE:HG12	2.13	0.48
1:A:3484:TYR:HA	1:A:3487:LEU:HG	1.96	0.48
1:B:1432:LEU:HD22	1:B:1451:TYR:HE1	1.78	0.48
1:B:2998:LEU:HG	1:B:3081:LEU:HB2	1.95	0.48
1:B:3429:ASP:HA	1:B:3432:ILE:HD12	1.96	0.48
1:B:4331:ILE:HG21	1:B:4402:ILE:HA	1.96	0.48
1:A:94:ILE:HA	1:A:101:THR:HA	1.96	0.47
1:A:129:VAL:HG22	1:A:134:VAL:HG22	1.95	0.47
1:A:2934:LEU:HD13	1:A:2983:LEU:HD11	1.95	0.47
1:B:2098:ASN:HD22	1:B:2101:GLN:HE21	1.62	0.47
1:B:3389:SER:HB2	1:B:3392:ILE:HG12	1.96	0.47
1:A:289:ARG:O	1:A:292:THR:OG1	2.31	0.47
1:A:1108:PHE:CZ	1:A:1199:GLY:HA3	2.49	0.47
1:A:2201:TRP:CD2	1:A:2356:LYS:HG3	2.49	0.47
1:A:3262:LEU:HD23	1:B:3287:ASP:HB2	1.96	0.47
1:A:3522:PHE:CZ	1:A:3560:LEU:HB2	2.49	0.47
1:B:2662:GLN:HB3	1:B:2721:LEU:HD21	1.95	0.47
1:B:3242:GLU:OE2	1:B:3281:ARG:NH1	2.47	0.47
2:D:208:VAL:HG11	2:D:234:ILE:HG21	1.97	0.47
1:A:630:LEU:HB2	1:A:720:LEU:HB3	1.96	0.47
1:A:3225:ILE:HB	1:A:3265:ILE:HB	1.97	0.47
1:B:3124:SER:OG	1:B:3125:MET:N	2.47	0.47
1:B:3489:PRO:HB2	1:B:3494:LEU:HD21	1.96	0.47
1:A:160:VAL:HA	1:A:224:PRO:HA	1.95	0.47
1:B:94:ILE:HA	1:B:101:THR:HA	1.96	0.47
1:B:1779:ILE:HD11	1:B:1872:LYS:HG2	1.95	0.47
1:B:3379:GLU:HA	1:B:3434:ILE:HD11	1.97	0.47
1:B:3432:ILE:HG23	1:B:3496:CYS:HB2	1.95	0.47
1:A:176:ALA:O	1:A:181:VAL:N	2.47	0.47
1:A:411:ILE:HD12	1:A:422:LEU:HD12	1.97	0.47
1:A:1029:THR:HG22	1:A:1358:TRP:CE3	2.49	0.47
1:A:2014:LEU:O	1:A:2018:SER:OG	2.28	0.47
1:A:3191:ARG:NH1	2:E:323:MET:O	2.45	0.47
1:B:356:PRO:HB2	1:B:363:THR:HG22	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2777:HIS:CD2	1:B:2778:SER:H	2.33	0.47
1:A:136:CYS:H	1:A:418:MET:HE2	1.80	0.47
1:A:859:LEU:HB2	1:A:903:LEU:HD11	1.95	0.47
1:A:1779:ILE:HD11	1:A:1870:ARG:HE	1.79	0.47
1:B:725:PHE:HE2	1:B:846:ILE:HD13	1.79	0.47
1:B:934:THR:HG23	1:B:936:GLU:H	1.80	0.47
1:B:3774:HIS:CE1	1:B:3776:ASN:HB2	2.50	0.47
1:A:860:ILE:HG13	1:A:904:VAL:HB	1.96	0.47
1:A:1445:GLY:HA3	1:A:1509:ASP:HB3	1.97	0.47
1:A:2204:ILE:HD12	1:A:2356:LYS:HD2	1.97	0.47
1:A:4247:ILE:HG13	1:A:4323:LEU:HG	1.96	0.47
1:B:630:LEU:HD12	1:B:720:LEU:HD22	1.96	0.47
1:B:1047:VAL:O	1:B:1078:LYS:N	2.31	0.47
1:B:2719:TRP:HB3	1:B:2765:PHE:HE1	1.80	0.47
1:B:3236:PRO:HG3	1:B:3282:LEU:HD23	1.96	0.47
1:B:3538:LEU:O	1:B:3542:VAL:HG23	2.15	0.47
1:B:3817:LEU:HD11	1:B:4185:LEU:HD22	1.97	0.47
1:A:3358:LEU:HG	1:A:3359:LEU:HD22	1.96	0.47
1:A:2061:GLU:OE2	1:A:2065:HIS:NE2	2.48	0.47
1:A:3115:THR:HG21	1:A:3361:THR:HB	1.97	0.47
1:B:1335:LEU:HD21	1:B:1353:LEU:HD11	1.97	0.47
1:B:3443:ASP:OD1	1:B:3446:THR:OG1	2.25	0.47
1:B:3547:CYS:HB2	1:B:3616:SER:HA	1.97	0.47
1:A:85:VAL:HG22	1:A:91:ILE:HG12	1.97	0.47
1:A:4003:ASP:OD1	1:A:4003:ASP:N	2.48	0.47
1:B:912:VAL:HB	1:B:926:VAL:HB	1.97	0.47
1:B:3108:CYS:HB3	1:B:3355:THR:HG21	1.97	0.47
1:A:834:THR:HG23	1:A:836:ILE:H	1.79	0.46
1:B:510:LEU:HD22	1:B:567:LEU:HD11	1.96	0.46
1:B:2413:GLN:NE2	1:B:2666:THR:O	2.42	0.46
2:D:204:ARG:HB2	2:D:220:VAL:H	1.80	0.46
2:E:191:GLY:HA2	2:E:240:LEU:HD12	1.97	0.46
1:B:1204:THR:HG21	1:B:2575:LEU:HD21	1.96	0.46
1:B:2655:VAL:HG11	1:B:2660:LEU:HD12	1.97	0.46
1:B:3707:GLU:HG2	1:B:3708:VAL:HG23	1.97	0.46
1:A:1827:ASP:OD1	1:A:1827:ASP:N	2.49	0.46
1:A:2393:ASN:HA	1:A:2398:SER:HA	1.97	0.46
1:A:2668:SER:HB3	1:A:2692:PRO:CB	2.45	0.46
1:A:1456:ASN:HA	1:A:1459:LYS:HD3	1.98	0.46
1:A:4084:ALA:HB2	1:A:4165:LEU:HD11	1.97	0.46
1:B:1206:PRO:HB3	1:B:1322:LEU:HD13	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1493:GLN:HG2	1:B:1499:TYR:HA	1.98	0.46
1:B:1771:GLN:HE22	1:B:1983:GLN:HG2	1.79	0.46
1:A:186:THR:HG21	1:A:231:ILE:HA	1.98	0.46
1:A:1810:GLY:HA2	1:A:1838:SER:HA	1.97	0.46
1:A:2793:LEU:HD13	1:A:2842:PHE:CD2	2.51	0.46
1:A:3828:SER:HB3	1:A:3832:LEU:HD21	1.97	0.46
1:B:2325:HIS:CE1	1:B:2329:ILE:HD11	2.50	0.46
1:B:3218:VAL:HG23	1:B:3220:LEU:HD22	1.98	0.46
1:A:510:LEU:HD22	1:A:567:LEU:HD11	1.97	0.46
1:A:2096:LEU:HD23	1:A:2096:LEU:HA	1.84	0.46
1:A:4153:ILE:HG23	1:A:4210:PRO:HG3	1.96	0.46
1:B:287:ALA:HA	1:B:290:ARG:HE	1.81	0.46
1:B:1409:ALA:HB1	1:B:2582:MET:SD	2.56	0.46
1:B:1830:ARG:NH2	1:B:1833:VAL:HG22	2.31	0.46
1:B:1101:VAL:HA	1:B:1305:ARG:NE	2.31	0.46
1:A:2355:CYS:SG	1:A:2411:MET:HG3	2.56	0.46
1:A:283:MET:SD	1:A:289:ARG:HG2	2.56	0.46
1:A:855:THR:HB	1:A:908:GLN:HG2	1.98	0.46
1:B:2665:LEU:HD21	1:B:2725:SER:HB3	1.97	0.46
2:C:271:THR:HG21	2:C:300:ALA:O	2.16	0.46
1:A:324:ASP:OD2	1:A:338:TRP:N	2.47	0.46
1:A:1809:CYS:H	1:A:1837:ILE:HG22	1.80	0.46
1:A:3978:PRO:HD2	1:A:3981:MET:SD	2.56	0.46
1:B:1467:SER:HB2	1:B:2050:LEU:HD13	1.96	0.46
1:B:2370:HIS:HD2	1:B:2633:LEU:HG	1.81	0.46
1:B:2812:LEU:HD13	1:B:2843:THR:HG23	1.98	0.46
1:A:1193:ASP:HA	1:A:2581:LEU:HD11	1.98	0.45
1:A:3858:LEU:HD13	1:A:3872:ARG:HH22	1.80	0.45
2:C:194:VAL:HG21	2:C:338:LEU:HD21	1.98	0.45
1:A:134:VAL:HG11	1:A:400:LEU:HD21	1.98	0.45
1:A:934:THR:HG23	1:A:936:GLU:H	1.80	0.45
1:A:2123:CYS:SG	1:A:2127:ARG:NH2	2.89	0.45
1:B:211:HIS:CD2	1:B:1044:PRO:HA	2.51	0.45
1:B:1041:THR:OG1	1:B:1092:GLU:HB3	2.16	0.45
1:B:1108:PHE:CZ	1:B:1199:GLY:HA3	2.51	0.45
1:B:1410:LEU:HD21	1:B:2579:ALA:HB2	1.98	0.45
1:B:2387:LEU:HD22	1:B:2663:LEU:HD12	1.98	0.45
1:B:3129:ILE:HA	1:B:3132:PHE:CE2	2.51	0.45
1:B:3177:GLN:N	1:B:3177:GLN:OE1	2.49	0.45
1:B:3223:ILE:HD12	1:B:3298:LEU:HD23	1.98	0.45
1:A:2783:PRO:HG3	1:B:3207:TRP:CD1	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3831:PRO:HB3	1:A:3853:HIS:CE1	2.51	0.45
1:B:1105:ASP:OD2	1:B:1304:ARG:NH2	2.43	0.45
1:B:2115:ASP:OD1	1:B:2116:ARG:N	2.47	0.45
1:B:2335:LEU:HG	1:B:2358:LEU:HD12	1.99	0.45
1:A:2105:ASN:HB2	1:A:2108:GLN:HB2	1.98	0.45
1:A:2122:SER:OG	1:A:2177:ARG:NE	2.49	0.45
1:A:2325:HIS:CE1	1:A:2329:ILE:HD11	2.50	0.45
1:A:2582:MET:O	1:A:2586:MET:HG2	2.15	0.45
1:A:3036:LEU:HA	1:A:3039:ILE:HG22	1.99	0.45
1:A:3199:TYR:O	1:A:3290:THR:HA	2.16	0.45
1:A:4255:SER:O	1:A:4257:HIS:ND1	2.46	0.45
1:B:2068:ILE:HG21	1:B:2110:LEU:HD21	1.99	0.45
1:B:2578:GLN:HA	1:B:2581:LEU:HG	1.98	0.45
1:B:3002:ASN:ND2	1:B:3321:ASP:OD2	2.49	0.45
1:B:3824:MET:HG3	1:B:3860:LEU:HD12	1.98	0.45
2:E:186:VAL:HG22	2:E:193:ILE:HG12	1.99	0.45
1:A:2687:ASN:HB3	1:A:2690:ARG:HG3	1.98	0.45
1:A:2812:LEU:HA	1:A:2815:LEU:HG	1.99	0.45
1:A:3240:SER:HB3	1:A:3256:PRO:HG3	1.98	0.45
1:B:1810:GLY:HA2	1:B:1838:SER:HA	1.98	0.45
1:A:240:LYS:NZ	1:A:284:TYR:OH	2.33	0.45
1:A:2872:THR:HG22	1:A:3000:LEU:HD22	1.97	0.45
1:B:240:LYS:NZ	1:B:284:TYR:OH	2.46	0.45
1:B:1935:LEU:HG	1:B:1973:ALA:HB1	1.97	0.45
1:B:3196:ALA:HB3	1:B:3294:SER:HA	1.99	0.45
2:D:186:VAL:HG22	2:D:193:ILE:HG12	1.98	0.45
1:A:1770:LEU:HD13	1:A:1986:LEU:HD11	1.98	0.45
1:A:1819:ILE:HB	1:A:1853:CYS:SG	2.56	0.45
1:A:2923:LEU:HA	1:A:2926:VAL:HG22	1.99	0.45
1:B:1440:PRO:HG3	1:B:2015:ILE:HG12	1.99	0.45
1:B:1788:ARG:NH1	1:B:1790:PHE:HB2	2.31	0.45
1:B:2719:TRP:HH2	1:B:2764:LYS:HB3	1.82	0.45
1:A:74:SER:HB2	1:A:83:LEU:HB2	1.98	0.45
1:A:3085:ILE:HA	1:A:3088:VAL:HG12	1.99	0.45
1:A:3760:GLU:HG3	1:A:3810:ARG:HH12	1.82	0.45
1:B:1444:THR:HG22	1:B:1447:SER:H	1.81	0.45
1:B:3192:ALA:HB1	1:B:3228:HIS:CE1	2.51	0.45
1:A:2050:LEU:HD12	1:A:2054:PHE:HE2	1.82	0.45
1:A:3432:ILE:HG23	1:A:3496:CYS:HB2	1.99	0.45
1:A:4078:GLY:HA2	1:A:4080:LEU:HD23	1.99	0.45
1:B:347:GLU:OE1	1:B:350:ARG:NH1	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1771:GLN:OE1	1:B:1983:GLN:NE2	2.50	0.45
1:B:1819:ILE:HG22	1:B:1856:MET:HG2	1.99	0.45
1:B:3769:GLN:O	1:B:3772:SER:OG	2.33	0.45
1:A:2875:ASP:HA	1:B:2715:LEU:HD11	1.99	0.45
1:A:3719:LEU:HD22	1:A:3807:PHE:CG	2.52	0.45
1:A:3774:HIS:CE1	1:A:3776:ASN:HB2	2.51	0.45
2:C:160:ALA:HB3	2:C:243:LEU:HG	1.98	0.45
1:A:2118:PHE:CZ	1:A:2173:MET:HG3	2.52	0.44
1:A:3216:ALA:HB1	1:B:2203:PHE:HA	1.98	0.44
1:B:74:SER:HB2	1:B:83:LEU:HB2	1.98	0.44
1:B:2863:VAL:HG11	1:B:2926:VAL:HG11	2.00	0.44
1:B:2998:LEU:HD11	1:B:3080:PRO:HB2	1.98	0.44
1:B:4435:THR:O	1:B:4439:LYS:HG3	2.17	0.44
1:A:163:LEU:HD12	1:A:259:LEU:HD21	1.99	0.44
1:B:134:VAL:HG11	1:B:400:LEU:HD21	1.99	0.44
1:B:1114:ILE:HD11	1:B:1295:LEU:HG	1.99	0.44
1:B:1827:ASP:OD1	1:B:1827:ASP:N	2.50	0.44
1:B:3177:GLN:HE21	1:B:3198:SER:H	1.65	0.44
1:B:3635:LEU:HB2	1:B:3686:ILE:HD11	2.00	0.44
1:A:627:LEU:HD12	1:A:628:PRO:HD2	1.99	0.44
1:A:1792:THR:HA	1:A:1856:MET:O	2.18	0.44
1:A:1804:VAL:HG12	1:A:1878:TYR:CD1	2.51	0.44
1:A:3191:ARG:HE	2:E:331:PHE:HB2	1.82	0.44
1:B:4247:ILE:HG13	1:B:4323:LEU:HG	2.00	0.44
2:C:256:PHE:HB2	2:C:313:LEU:HD11	1.98	0.44
1:A:65:CYS:SG	1:A:94:ILE:HD11	2.57	0.44
1:B:2029:TYR:O	1:B:2033:THR:HG23	2.18	0.44
2:E:257:VAL:HG12	2:E:312:ASN:HA	1.98	0.44
1:A:391:PHE:HA	1:A:510:LEU:HD12	2.00	0.44
1:A:2876:LYS:HG3	1:B:2715:LEU:HG	1.98	0.44
1:B:574:THR:HG22	1:B:624:ARG:HD2	1.99	0.44
1:A:2072:PRO:O	1:A:2116:ARG:NH2	2.50	0.44
1:A:2366:ARG:HD3	1:A:2366:ARG:HA	1.80	0.44
1:A:4244:LEU:HA	1:A:4247:ILE:HG22	2.00	0.44
1:B:3242:GLU:HG2	1:B:3252:PRO:HA	2.00	0.44
1:A:1557:LEU:HD22	1:A:1805:LEU:HD12	1.99	0.44
1:A:2582:MET:HA	1:A:2585:MET:HG3	1.98	0.44
1:A:2717:ARG:HB3	1:B:2876:LYS:NZ	2.33	0.44
1:A:2829:GLY:HA2	1:A:2915:ARG:HH12	1.82	0.44
1:B:3199:TYR:O	1:B:3290:THR:HA	2.18	0.44
1:A:1914:LEU:HD12	1:A:1994:LEU:HB3	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3860:LEU:HD11	1:A:3872:ARG:HH21	1.83	0.44
1:B:3224:HIS:ND1	1:B:3266:LYS:HG2	2.33	0.44
2:E:198:HIS:HE1	2:E:322:THR:HG23	1.83	0.44
1:A:2782:GLY:O	1:A:2786:THR:HG23	2.18	0.44
1:B:514:GLN:HA	1:B:837:VAL:HG21	1.99	0.44
1:B:2094:GLN:NE2	1:B:2098:ASN:OD1	2.38	0.44
1:B:2139:LEU:HD11	1:B:2327:ARG:HD2	2.00	0.44
1:B:3388:GLN:OE1	1:B:3389:SER:OG	2.33	0.44
2:E:294:TYR:HB3	2:E:331:PHE:HB3	2.00	0.44
1:A:306:PRO:O	1:A:310:ALA:CB	2.67	0.43
1:A:1795:PHE:HB3	1:A:1799:ILE:HD12	1.99	0.43
1:A:2998:LEU:HD11	1:A:3080:PRO:HB2	2.00	0.43
1:A:3696:SER:HB2	1:A:3699:MET:HG2	1.99	0.43
1:B:3191:ARG:HA	2:E:303:PHE:CE2	2.52	0.43
1:A:1929:ASN:HB3	1:B:3810:ARG:NH1	2.32	0.43
1:A:2416:LEU:HD11	1:A:2639:LEU:HD11	2.00	0.43
1:A:2729:MET:HA	1:A:2732:MET:HG2	1.99	0.43
1:A:4335:SER:OG	1:A:4400:ARG:NH2	2.44	0.43
1:B:1538:LEU:HG	1:B:2126:GLN:HG2	2.00	0.43
1:B:2834:ASP:OD1	1:B:2834:ASP:N	2.51	0.43
1:B:4255:SER:O	1:B:4257:HIS:ND1	2.51	0.43
2:C:312:ASN:HD21	2:C:316:GLU:HB2	1.83	0.43
1:A:287:ALA:HA	1:A:290:ARG:HE	1.83	0.43
1:A:2335:LEU:HD22	1:A:2358:LEU:HD13	1.99	0.43
1:B:3826:LEU:HB2	1:B:3856:ARG:HB2	2.00	0.43
1:B:3862:VAL:HA	1:B:3983:LEU:HB2	2.00	0.43
2:D:274:ILE:HD13	2:C:272:SER:HB3	2.00	0.43
1:A:1182:LEU:HD13	1:A:1208:LEU:HD12	2.00	0.43
1:A:3081:LEU:O	1:A:3085:ILE:HG12	2.18	0.43
1:A:3209:ASP:HB3	1:A:3281:ARG:NE	2.33	0.43
1:A:3691:THR:HG22	1:A:3766:PHE:HA	2.00	0.43
1:B:2116:ARG:HA	1:B:2119:MET:HE3	2.01	0.43
1:B:3335:HIS:CG	1:B:3377:ASN:HB3	2.53	0.43
2:D:236:THR:HG21	2:D:240:LEU:HD21	2.00	0.43
2:C:337:ARG:O	2:C:340:GLU:HG3	2.19	0.43
1:A:215:LYS:HD2	1:A:215:LYS:HA	1.80	0.43
1:A:2668:SER:HB3	1:A:2692:PRO:HB3	2.00	0.43
1:A:3621:GLU:O	1:A:3625:GLN:HG3	2.17	0.43
1:B:1029:THR:HG22	1:B:1358:TRP:CE3	2.54	0.43
1:B:1817:ILE:HG22	1:B:1832:VAL:HB	2.00	0.43
1:B:2365:THR:O	1:B:2366:ARG:NH1	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2657:LEU:HD11	1:B:2704:PHE:HE1	1.84	0.43
2:D:234:ILE:HD11	2:D:240:LEU:HD11	2.01	0.43
1:A:396:CYS:HB2	1:A:514:GLN:HB2	2.00	0.43
1:A:1808:THR:N	1:A:1841:SER:OG	2.52	0.43
1:A:4410:PRO:HA	1:A:4495:LEU:HD21	2.01	0.43
1:B:391:PHE:HA	1:B:510:LEU:HD12	2.00	0.43
1:B:1359:LEU:HA	1:B:1362:VAL:HG22	2.00	0.43
1:B:3081:LEU:O	1:B:3085:ILE:HG12	2.18	0.43
1:B:3199:TYR:HB3	1:B:3291:LEU:HB2	2.01	0.43
1:B:3866:LEU:HA	1:B:3869:VAL:HG22	2.00	0.43
1:A:1789:ARG:O	1:A:1859:THR:HA	2.19	0.43
1:A:2039:HIS:NE2	1:A:2596:GLN:OE1	2.51	0.43
1:A:4226:LEU:HD22	1:A:4355:ALA:HB1	2.00	0.43
1:B:1481:LEU:HD11	1:B:2065:HIS:O	2.19	0.43
1:B:1537:VAL:O	1:B:2127:ARG:NH2	2.48	0.43
1:B:1566:LEU:HD22	1:B:1799:ILE:HG21	2.00	0.43
1:B:2793:LEU:HB3	1:B:2842:PHE:CE2	2.53	0.43
1:B:3358:LEU:HG	1:B:3359:LEU:HD22	2.01	0.43
1:B:4361:LEU:HA	1:B:4411:LEU:HD11	2.01	0.43
1:A:1347:HIS:O	1:A:1351:LEU:HG	2.19	0.43
1:A:2060:GLU:HG2	1:A:2064:LYS:NZ	2.34	0.43
1:A:3206:ALA:O	1:A:3284:ARG:N	2.50	0.43
1:A:3711:LEU:HD23	1:A:3715:LEU:HD23	1.99	0.43
1:A:3817:LEU:HA	1:A:4182:GLN:HE22	1.83	0.43
1:A:4260:ARG:HG2	1:A:4367:SER:O	2.19	0.43
1:B:129:VAL:HG22	1:B:134:VAL:HG22	2.00	0.43
1:B:199:GLY:HA3	1:B:219:VAL:HG13	2.01	0.43
1:B:2138:LEU:HD13	1:B:2175:VAL:HG12	2.01	0.43
1:B:3990:LEU:HB3	1:B:3995:LEU:HD22	2.01	0.43
1:B:4060:SER:N	1:B:4063:GLU:OE1	2.52	0.43
2:E:254:GLY:H	2:E:275:VAL:HB	1.84	0.43
2:C:244:PRO:HG2	2:C:316:GLU:HA	2.00	0.43
1:A:3177:GLN:OE1	1:A:3177:GLN:N	2.52	0.43
1:A:3555:ASN:OD1	1:A:3555:ASN:N	2.52	0.43
1:A:3968:PHE:CE2	1:A:4007:LYS:HD2	2.54	0.43
1:B:4237:MET:O	1:B:4241:ILE:HG12	2.18	0.43
1:A:200:LEU:HD23	1:A:200:LEU:HA	1.83	0.43
1:A:1359:LEU:HD13	1:A:1377:LEU:HD22	2.00	0.43
1:A:1477:VAL:HG13	1:A:2023:LEU:HD22	2.01	0.43
1:A:2171:VAL:HA	1:A:2174:LEU:HG	2.00	0.43
1:A:2985:LEU:HG	1:A:3043:LEU:HD11	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3273:GLU:OE1	1:A:3275:ALA:HB2	2.19	0.43
1:A:3703:LEU:HD22	1:A:3708:VAL:HG11	2.00	0.43
1:A:4171:ALA:HA	1:A:4174:LEU:HB3	2.00	0.43
1:B:1121:GLN:HE21	1:B:1225:LYS:HB3	1.84	0.43
1:A:1015:GLN:HE21	1:A:1021:ILE:HG21	1.84	0.42
1:A:1883:TYR:OH	1:A:1908:PRO:O	2.33	0.42
1:A:3122:ALA:HB2	1:A:3370:TYR:CE1	2.54	0.42
1:B:396:CYS:HB2	1:B:514:GLN:HB2	2.01	0.42
1:B:1374:ASN:HA	1:B:1377:LEU:HG	2.01	0.42
1:B:1914:LEU:HA	1:B:1917:MET:HG2	1.99	0.42
1:B:2368:THR:HG21	1:B:2418:GLY:HA3	2.00	0.42
1:B:3164:ALA:HA	1:B:3298:LEU:HD12	2.01	0.42
1:B:3813:LEU:HD23	1:B:4189:LEU:HD22	2.01	0.42
2:D:255:GLU:OE1	2:C:148:ASN:ND2	2.52	0.42
1:A:1513:SER:HA	1:A:1805:LEU:HD11	1.99	0.42
1:A:2783:PRO:HG2	1:B:3281:ARG:HD3	2.00	0.42
1:B:1429:LEU:HD13	1:B:1458:VAL:HG23	1.99	0.42
1:B:1498:LEU:HD21	1:B:1974:TYR:CG	2.54	0.42
1:B:1498:LEU:HD11	1:B:1974:TYR:CD2	2.54	0.42
1:B:2981:ALA:HA	1:B:2984:VAL:HG12	2.00	0.42
1:A:79:LEU:HD11	1:A:139:ASP:HB3	2.01	0.42
1:A:272:VAL:HG21	1:A:292:THR:HA	2.01	0.42
1:A:2012:GLU:HA	1:A:2015:ILE:HB	1.99	0.42
1:A:3846:HIS:CG	1:A:3847:PRO:HD2	2.54	0.42
1:B:834:THR:HG23	1:B:836:ILE:H	1.84	0.42
1:B:1172:PRO:HA	1:B:1175:GLU:HB2	2.00	0.42
1:B:1975:GLN:HA	1:B:1978:ILE:HG22	2.01	0.42
1:B:2324:ALA:H	1:B:2327:ARG:NH2	2.16	0.42
1:B:3108:CYS:HA	1:B:3111:MET:HG2	2.00	0.42
1:B:3336:HIS:O	1:B:3340:HIS:HB2	2.19	0.42
1:B:3499:ALA:HB1	1:B:3850:GLY:HA2	2.00	0.42
1:A:2027:ILE:HG22	1:A:2031:LEU:HD23	1.99	0.42
1:A:2590:GLU:O	1:A:2594:ILE:HG12	2.19	0.42
1:B:100:ALA:HB3	1:B:212:LYS:HZ2	1.84	0.42
1:B:1337:ARG:HH21	1:B:1349:GLN:HE22	1.67	0.42
1:B:2730:THR:HG21	1:B:2796:LEU:HD22	2.02	0.42
1:B:2786:THR:HA	1:B:2789:MET:HG3	2.01	0.42
1:B:3169:ILE:HD12	1:B:3183:LEU:HD21	2.00	0.42
1:A:365:ASN:OD1	1:A:365:ASN:N	2.52	0.42
1:A:1033:THR:HA	1:A:1304:ARG:HG3	2.01	0.42
1:A:3108:CYS:HB3	1:A:3355:THR:HG21	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3177:GLN:HE21	1:A:3198:SER:H	1.66	0.42
1:B:3085:ILE:HA	1:B:3088:VAL:HG12	2.00	0.42
1:B:3125:MET:O	1:B:3129:ILE:HG13	2.20	0.42
1:A:100:ALA:HB3	1:A:212:LYS:HZ1	1.85	0.42
1:B:73:LEU:HB3	1:B:944:ILE:HD13	2.01	0.42
1:B:1412:ILE:HG21	1:B:1457:TYR:HE2	1.85	0.42
1:B:1966:GLU:O	1:B:1969:ARG:HG2	2.20	0.42
1:B:2066:LEU:HD22	1:B:2078:THR:HG21	2.02	0.42
1:B:3498:ALA:HB2	1:B:3545:LEU:HD23	2.02	0.42
2:E:312:ASN:HD21	2:E:316:GLU:HB2	1.85	0.42
1:A:3201:PHE:CE2	1:A:3284:ARG:HA	2.55	0.42
1:A:3287:ASP:HB3	1:B:3262:LEU:HD23	2.02	0.42
1:A:3337:CYS:HB3	1:A:3348:MET:HE3	2.02	0.42
1:A:3502:TRP:O	1:A:3506:GLU:HG2	2.20	0.42
1:A:4409:VAL:HG12	1:A:4495:LEU:HD22	2.01	0.42
1:B:929:PRO:HG2	1:B:938:ASP:HB3	2.01	0.42
1:B:1347:HIS:O	1:B:1351:LEU:HG	2.20	0.42
1:B:1819:ILE:HG12	1:B:1831:LEU:HD21	2.01	0.42
1:B:1830:ARG:HH21	1:B:1833:VAL:HG22	1.84	0.42
1:B:2726:LEU:HB3	1:B:2792:PHE:CE1	2.55	0.42
1:B:4358:SER:O	1:B:4361:LEU:HB3	2.20	0.42
1:A:1799:ILE:HG23	1:A:1882:THR:HA	2.02	0.42
1:A:2717:ARG:HD2	1:B:2876:LYS:HE2	2.02	0.42
1:B:1405:ALA:HA	1:B:1454:LEU:HD11	2.00	0.42
1:B:1829:ARG:CZ	1:B:1892:LYS:HE2	2.50	0.42
1:B:2177:ARG:HG3	1:B:2178:LEU:N	2.34	0.42
1:B:2562:SER:OG	1:B:2563:VAL:N	2.52	0.42
1:B:2826:PHE:HE1	1:B:2836:GLN:HG2	1.83	0.42
1:B:2923:LEU:HA	1:B:2926:VAL:HG22	2.01	0.42
1:B:4409:VAL:HG12	1:B:4495:LEU:HD22	2.01	0.42
2:E:305:ASN:HB2	2:E:321:ASN:HD22	1.83	0.42
2:C:163:TYR:HB3	2:C:209:ARG:HB3	2.02	0.42
1:A:102:LEU:HD22	1:A:216:TRP:CD1	2.55	0.42
1:A:854:ASP:HA	1:A:907:THR:HB	2.02	0.42
1:A:1927:ARG:NH2	1:B:4189:LEU:O	2.53	0.42
1:A:3443:ASP:OD1	1:A:3446:THR:OG1	2.25	0.42
1:B:102:LEU:HD22	1:B:216:TRP:CD1	2.55	0.42
1:B:225:HIS:NE2	1:B:259:LEU:O	2.49	0.42
1:B:1092:GLU:OE1	1:B:1127:ASN:ND2	2.53	0.42
1:B:2366:ARG:HA	1:B:2366:ARG:HD3	1.81	0.42
1:B:2411:MET:HE2	1:B:2411:MET:HB2	1.74	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2755:ASP:N	1:B:2755:ASP:OD1	2.41	0.42
1:B:2756:PRO:O	1:B:2760:HIS:ND1	2.50	0.42
1:B:3224:HIS:HB2	1:B:3297:LYS:HE2	2.00	0.42
1:A:825:LEU:HB2	1:A:847:GLN:HB3	2.02	0.42
1:A:926:VAL:HG21	1:A:964:LEU:HD13	2.02	0.42
1:B:1309:THR:HG23	1:B:1311:ILE:H	1.85	0.42
1:B:1441:ALA:HB2	1:B:2014:LEU:HD13	2.02	0.42
1:B:2659:SER:HA	1:B:2662:GLN:HG2	2.02	0.42
1:B:2768:GLY:HA3	1:B:2831:GLY:HA2	2.02	0.42
1:A:98:SER:HG	1:A:212:LYS:NZ	2.17	0.41
1:A:1768:HIS:HA	1:A:1771:GLN:HG2	2.02	0.41
1:A:1883:TYR:HE1	1:A:1908:PRO:HG2	1.84	0.41
1:A:2586:MET:HA	1:A:2589:LEU:HG	2.02	0.41
1:A:4060:SER:N	1:A:4063:GLU:OE1	2.52	0.41
1:B:93:VAL:HG11	1:B:216:TRP:CH2	2.55	0.41
1:B:1181:ILE:HG23	1:B:1367:PRO:HB2	2.02	0.41
1:B:2696:LEU:HD23	1:B:2696:LEU:HA	1.84	0.41
1:B:4362:GLU:O	1:B:4365:SER:OG	2.31	0.41
1:A:270:LEU:HD12	1:A:270:LEU:HA	1.88	0.41
1:A:3687:LEU:O	1:A:3691:THR:HG23	2.20	0.41
1:B:2114:GLN:O	1:B:2118:PHE:HB2	2.20	0.41
1:B:2139:LEU:HA	1:B:2142:LEU:HD12	2.02	0.41
1:B:2174:LEU:HD23	1:B:2177:ARG:HH22	1.84	0.41
1:B:2575:LEU:O	1:B:2578:GLN:NE2	2.53	0.41
1:A:961:LEU:HD23	1:A:961:LEU:HA	1.93	0.41
1:A:4167:LEU:HA	1:A:4168:PRO:HD2	1.94	0.41
1:A:4184:LEU:HD11	1:A:4212:LEU:HB3	2.02	0.41
1:B:1359:LEU:HD13	1:B:1377:LEU:HD22	2.03	0.41
1:B:1426:PRO:HD3	1:B:1461:GLU:HG3	2.02	0.41
1:B:1557:LEU:HB3	1:B:1560:LEU:HD11	2.02	0.41
1:B:1817:ILE:HD12	1:B:1857:LYS:O	2.21	0.41
1:B:2063:PHE:HD1	1:B:2067:CYS:HG	1.67	0.41
1:B:2122:SER:HA	1:B:2177:ARG:CZ	2.51	0.41
1:B:2172:VAL:HG23	1:B:2357:VAL:HG11	2.02	0.41
1:B:3719:LEU:HD13	1:B:3807:PHE:HD2	1.85	0.41
1:B:3991:TYR:CE1	1:B:3997:GLN:HA	2.55	0.41
1:B:4324:LEU:HG	1:B:4398:LEU:HD22	2.02	0.41
2:E:204:ARG:HG3	2:E:220:VAL:HB	2.01	0.41
2:C:221:THR:H	2:C:232:LEU:HA	1.85	0.41
1:A:2204:ILE:HD13	1:A:2353:PHE:CZ	2.56	0.41
1:B:263:LEU:HD23	1:B:266:ALA:HB2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1043:PRO:HD3	1:B:1090:VAL:O	2.20	0.41
1:B:1489:GLU:O	1:B:1493:GLN:HG3	2.21	0.41
1:B:2985:LEU:HA	1:B:2985:LEU:HD23	1.73	0.41
1:B:3967:LEU:HD22	1:B:4004:LEU:HB3	2.03	0.41
1:B:3968:PHE:CE2	1:B:4007:LYS:HD2	2.55	0.41
1:B:4214:PHE:HB3	1:B:4326:VAL:HG21	2.02	0.41
1:B:198:ASP:HA	1:B:201:LYS:HG2	2.02	0.41
1:B:2135:LEU:HA	1:B:2138:LEU:HG	2.01	0.41
1:B:2859:VAL:O	1:B:2863:VAL:HG12	2.20	0.41
1:A:2339:LEU:HD11	1:A:2411:MET:HE1	2.02	0.41
1:A:3401:LEU:HD13	1:A:3456:TRP:CD2	2.56	0.41
1:A:3991:TYR:CE1	1:A:3997:GLN:HA	2.56	0.41
1:B:354:ASN:OD1	1:B:359:LYS:NZ	2.41	0.41
1:B:1568:PHE:HA	1:B:1793:LEU:HD21	2.02	0.41
1:B:2697:ASN:OD1	1:B:2698:GLN:N	2.54	0.41
1:B:3401:LEU:HD13	1:B:3456:TRP:CD2	2.56	0.41
1:B:4410:PRO:HA	1:B:4495:LEU:HD21	2.02	0.41
1:A:3455:LYS:HE3	1:A:3455:LYS:HB3	1.93	0.41
1:A:3621:GLU:OE1	1:A:3621:GLU:N	2.47	0.41
1:B:365:ASN:OD1	1:B:365:ASN:N	2.53	0.41
1:B:1966:GLU:O	1:B:1970:VAL:HG23	2.20	0.41
1:B:2705:LEU:HD23	1:B:2705:LEU:HA	1.91	0.41
1:B:3618:GLN:HB2	1:B:3846:HIS:NE2	2.36	0.41
1:B:3718:LEU:O	1:B:3722:SER:HB3	2.21	0.41
2:C:301:ILE:HD12	2:C:330:SER:HB3	2.03	0.41
1:A:743:ILE:HG23	1:A:744:HIS:CD2	2.56	0.41
1:A:1359:LEU:HA	1:A:1362:VAL:HG22	2.02	0.41
1:A:2661:LEU:HB2	1:A:2721:LEU:HD23	2.02	0.41
1:A:3341:ILE:HG22	1:A:3343:ASP:H	1.86	0.41
1:A:3522:PHE:CE2	1:A:3556:TYR:HB3	2.56	0.41
1:A:4396:LEU:HB3	1:A:4484:THR:HG21	2.03	0.41
1:B:58:LEU:HB2	1:B:965:GLN:HB3	2.02	0.41
1:B:1505:PRO:HB3	1:B:1928:TYR:CE2	2.56	0.41
1:B:2856:ILE:HA	1:B:2859:VAL:HG12	2.03	0.41
2:C:320:VAL:O	2:C:332:ALA:HA	2.21	0.41
1:A:129:VAL:HG21	1:A:391:PHE:CG	2.56	0.41
1:A:138:LYS:HZ2	1:A:372:LEU:HB3	1.85	0.41
1:A:262:LEU:HA	1:A:376:PRO:HG3	2.03	0.41
1:A:272:VAL:HG22	1:A:292:THR:HG22	2.02	0.41
1:A:301:TYR:HB3	1:A:340:PRO:HA	2.02	0.41
1:A:913:LYS:HB3	1:A:915:LEU:HD11	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1579:ILE:HG12	1:A:1778:ILE:HG13	2.02	0.41
1:A:2098:ASN:O	1:A:2101:GLN:HG3	2.21	0.41
1:A:2669:LEU:HD12	1:A:2669:LEU:HA	1.93	0.41
1:A:2777:HIS:CD2	1:A:2778:SER:H	2.39	0.41
1:A:2837:VAL:HG11	1:A:2913:MET:HE2	2.03	0.41
1:A:3040:LEU:HA	1:A:3040:LEU:HD23	1.84	0.41
1:A:4230:ASP:OD1	1:A:4231:GLY:N	2.54	0.41
1:B:1392:CYS:O	1:B:1396:ALA:HB3	2.21	0.41
1:B:1768:HIS:HA	1:B:1771:GLN:HG2	2.03	0.41
1:B:1817:ILE:HD11	1:B:1856:MET:SD	2.61	0.41
1:B:2122:SER:HA	1:B:2177:ARG:NH2	2.35	0.41
1:B:2411:MET:O	1:B:2415:ILE:HG12	2.20	0.41
1:B:2726:LEU:HB3	1:B:2792:PHE:HE1	1.85	0.41
2:D:211:LEU:HA	2:D:264:PHE:HE2	1.85	0.41
2:D:326:THR:HB	2:D:329:ILE:HB	2.02	0.41
1:A:637:GLU:HG2	1:A:713:PRO:HG2	2.03	0.41
1:A:2797:GLN:O	1:A:2801:SER:OG	2.25	0.41
1:A:3074:THR:N	1:B:2394:ARG:HE	2.19	0.41
1:A:3602:PRO:HB2	1:A:3603:LEU:H	1.69	0.41
1:A:4319:HIS:O	1:A:4323:LEU:HD13	2.20	0.41
1:B:511:SER:O	1:B:568:LEU:N	2.44	0.41
1:B:1110:LEU:HB3	1:B:1114:ILE:HD12	2.03	0.41
1:B:1394:PHE:HE2	1:B:1439:LEU:HA	1.86	0.41
1:B:2061:GLU:OE2	1:B:2065:HIS:NE2	2.54	0.41
1:A:198:ASP:OD1	1:A:199:GLY:N	2.54	0.40
1:A:574:THR:HG22	1:A:624:ARG:HD2	2.02	0.40
1:B:1927:ARG:O	1:B:1930:LEU:HG	2.21	0.40
1:B:2357:VAL:O	1:B:2361:ILE:HG12	2.21	0.40
1:B:3180:GLU:O	1:B:3184:GLN:NE2	2.54	0.40
1:A:859:LEU:HA	1:A:904:VAL:O	2.21	0.40
1:A:2775:ASN:HB3	1:A:2777:HIS:CE1	2.56	0.40
1:A:3514:PRO:HB3	1:A:3553:HIS:NE2	2.35	0.40
1:A:3813:LEU:HD21	1:B:1927:ARG:HH21	1.86	0.40
1:A:3858:LEU:HD13	1:A:3872:ARG:NH2	2.37	0.40
1:A:3990:LEU:HB3	1:A:3995:LEU:HD22	2.04	0.40
1:B:1560:LEU:HD22	1:B:1879:TYR:CD2	2.56	0.40
2:C:294:TYR:HB3	2:C:331:PHE:HB3	2.03	0.40
1:A:2583:LEU:HA	1:A:2586:MET:HG2	2.03	0.40
1:A:3077:LEU:HA	1:A:3081:LEU:HD23	2.03	0.40
1:B:732:CYS:HB3	1:B:752:CYS:HB2	2.03	0.40
1:B:1428:LEU:O	1:B:1432:LEU:HG	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1772:PRO:HA	1:B:1773:PRO:HD2	1.97	0.40
1:B:2171:VAL:O	1:B:2175:VAL:HG22	2.22	0.40
1:B:3240:SER:HB3	1:B:3256:PRO:HG3	2.02	0.40
1:B:3623:ILE:HD12	1:B:3623:ILE:HA	1.93	0.40
2:D:253:GLN:NE2	2:C:270:ILE:HD13	2.36	0.40
2:E:246:GLY:N	2:E:317:VAL:O	2.51	0.40
2:C:194:VAL:HA	2:C:230:ALA:O	2.22	0.40
1:A:184:SER:HA	1:A:189:TYR:CD2	2.56	0.40
1:A:2981:ALA:HB1	1:A:3043:LEU:HD12	2.03	0.40
1:A:2985:LEU:HD23	1:A:2985:LEU:HA	1.78	0.40
1:A:3539:LYS:HA	1:A:3542:VAL:HG22	2.03	0.40
1:A:4373:MET:HG3	1:A:4395:LEU:HD11	2.03	0.40
1:B:1979:GLN:NE2	1:B:1983:GLN:HE22	2.20	0.40
1:B:3635:LEU:HD13	1:B:3686:ILE:HD11	2.02	0.40
1:A:1104:VAL:HG23	1:A:1303:ILE:HG13	2.03	0.40
1:A:1188:LEU:HG	1:A:1192:LEU:HD21	2.04	0.40
1:A:2357:VAL:O	1:A:2361:ILE:HG12	2.21	0.40
1:B:945:TYR:HD1	1:B:952:LEU:HD23	1.86	0.40
1:B:1328:HIS:CD2	1:B:1359:LEU:HD22	2.57	0.40
1:B:2103:LEU:HD13	1:B:2103:LEU:HA	1.87	0.40
1:B:3085:ILE:HD12	1:B:3333:LEU:HD21	2.04	0.40
1:B:3226:GLN:HB2	1:B:3295:GLN:H	1.86	0.40
1:B:3350:SER:HB3	1:B:3388:GLN:NE2	2.37	0.40
1:B:3514:PRO:HB3	1:B:3553:HIS:NE2	2.36	0.40
1:B:3848:MET:HG3	1:B:3849:TYR:CD1	2.57	0.40
2:E:206:VAL:HG23	2:E:218:ALA:HB3	2.04	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	2740/4867 (56%)	2670 (97%)	69 (2%)	1 (0%)	100	100
1	B	2740/4867 (56%)	2670 (97%)	70 (3%)	0	100	100
2	C	171/325 (53%)	166 (97%)	5 (3%)	0	100	100
2	D	179/325 (55%)	165 (92%)	13 (7%)	1 (1%)	25	66
2	E	165/325 (51%)	154 (93%)	11 (7%)	0	100	100
All	All	5995/10709 (56%)	5825 (97%)	168 (3%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	4315	LEU
2	D	142	SER

5.3.2　Protein sidechains ⓘ

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	2493/4225 (59%)	2488 (100%)	5 (0%)	93	96
1	B	2493/4225 (59%)	2489 (100%)	4 (0%)	93	96
2	C	144/269 (54%)	144 (100%)	0	100	100
2	D	150/269 (56%)	147 (98%)	3 (2%)	55	74
2	E	140/269 (52%)	140 (100%)	0	100	100
All	All	5420/9257 (59%)	5408 (100%)	12 (0%)	93	96

All (12) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1829	ARG
1	A	2024	ARG
1	A	3193	ARG
1	A	3993	ARG
1	A	4000	ARG
1	B	1829	ARG

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Mol	Chain	Res	Type
1	B	3193	ARG
1	B	3821	LYS
1	B	4000	ARG
2	D	203	ARG
2	D	205	ARG
2	D	247	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (49) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	244	GLN
1	A	744	HIS
1	A	848	HIS
1	A	1376	ASN
1	A	1771	GLN
1	A	1929	ASN
1	A	1983	GLN
1	A	1989	ASN
1	A	2200	GLN
1	A	2325	HIS
1	A	2379	GLN
1	A	2670	ASN
1	A	2931	GLN
1	A	3224	HIS
1	A	3283	HIS
1	A	3335	HIS
1	A	3377	ASN
1	A	3519	GLN
1	A	3697	HIS
1	A	3709	ASN
1	A	3769	GLN
1	A	3814	GLN
1	A	3853	HIS
1	A	4072	GLN
1	A	4332	ASN
1	A	4351	GLN
1	B	1121	GLN
1	B	1323	GLN
1	B	1333	ASN
1	B	1776	GLN
1	B	1913	HIS
1	B	1929	ASN

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Mol	Chain	Res	Type
1	B	1979	GLN
1	B	1989	ASN
1	B	2101	GLN
1	B	2790	GLN
1	B	3228	HIS
1	B	3609	HIS
1	B	3859	HIS
1	B	4072	GLN
1	B	4245	HIS
2	D	181	ASN
2	D	253	GLN
2	E	146	GLN
2	E	148	ASN
2	E	253	GLN
2	E	321	ASN
2	C	196	ASN
2	C	198	HIS

5.3.3　RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5　Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6　Ligand geometry ⓘ

Of 2 ligands modelled in this entry, 2 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7　Other polymers ⓘ

There are no such residues in this entry.

5.8　Polymer linkage issues ⓘ

There are no chain breaks in this entry.
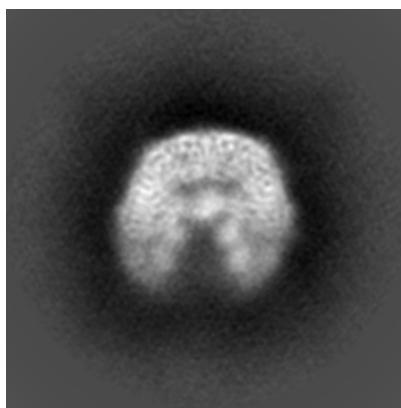
6 Map visualisation (i)

This section contains visualisations of the EMDB entry EMD-15672. These allow visual inspection of the internal detail of the map and identification of artifacts.
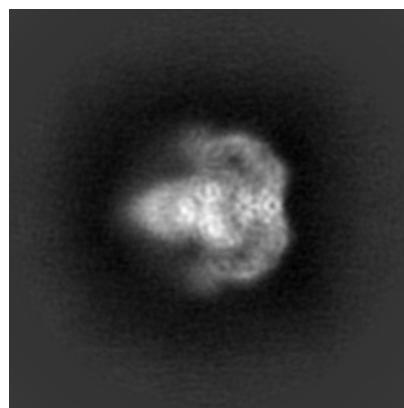
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections (i)
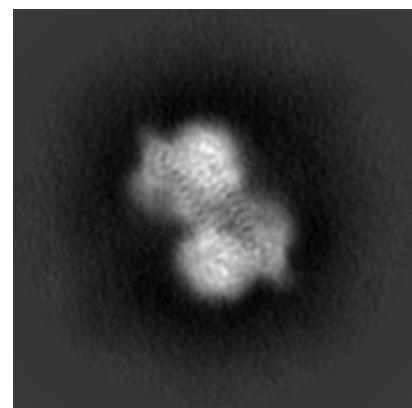
6.1.1 Primary map
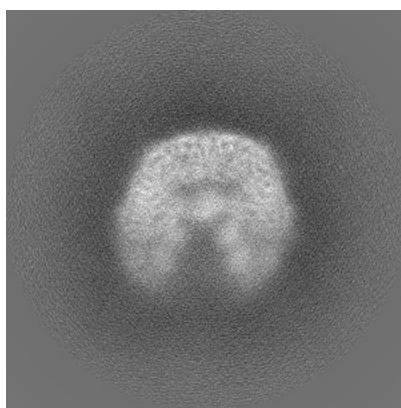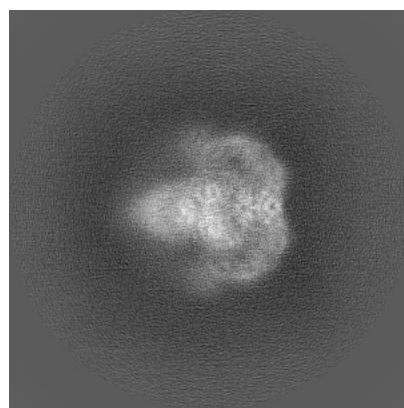
| X | Y | Z |
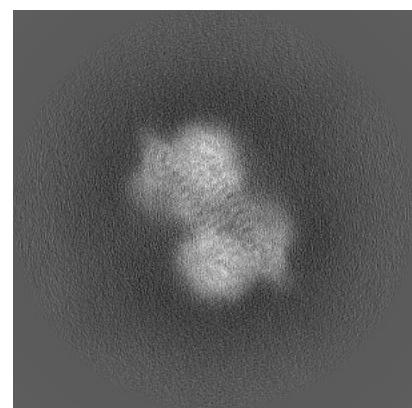
6.1.2 Raw map

| X | Y | Z |
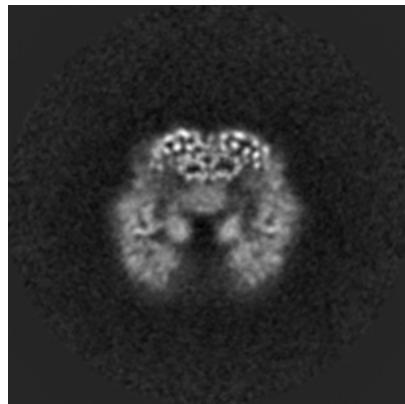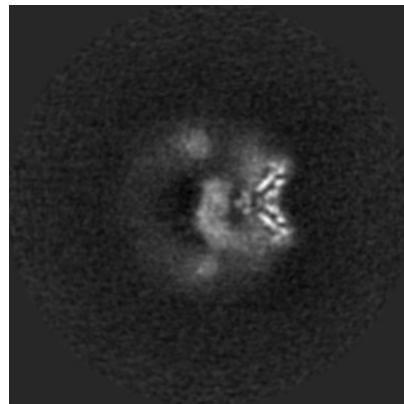
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ
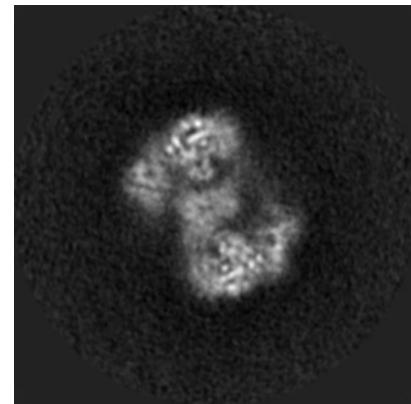
6.2.1 Primary map
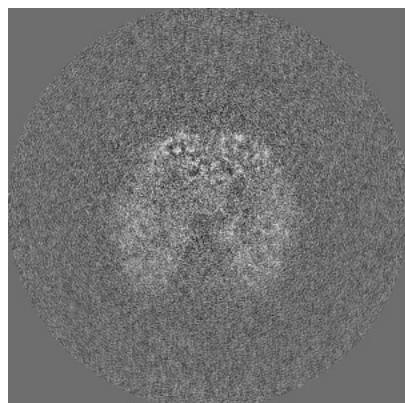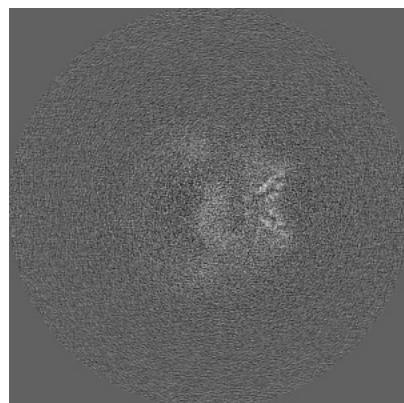
| X Index: 182 | Y Index: 182 | Z Index: 182 |
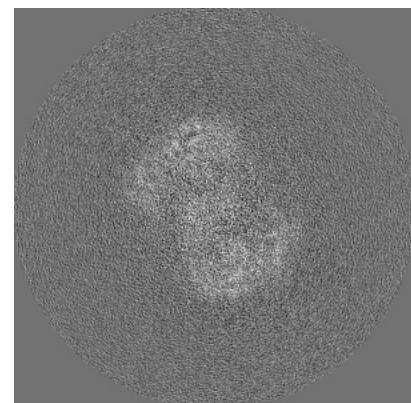
6.2.2 Raw map
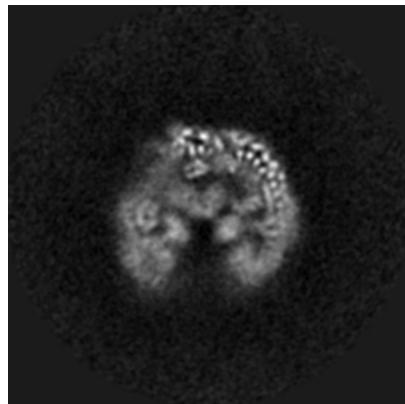
| X Index: 182 | Y Index: 182 | Z Index: 182 |
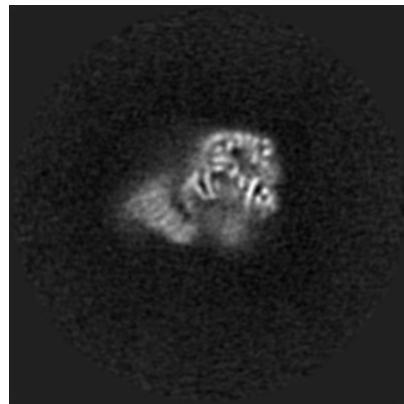
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices ⓘ
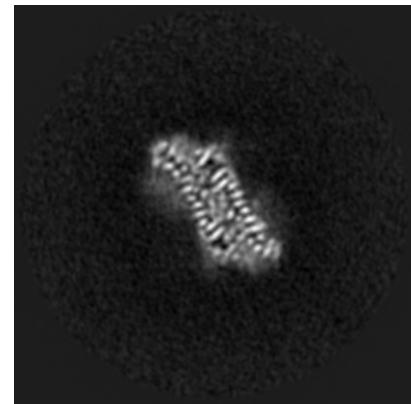
6.3.1 Primary map

X Index: 174
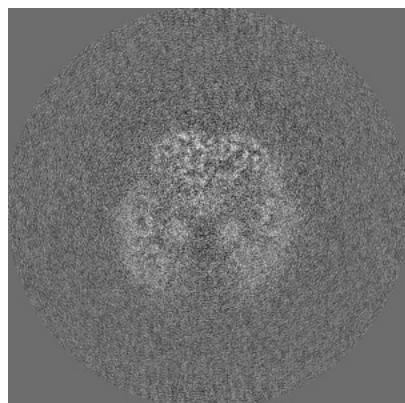
Y Index: 138
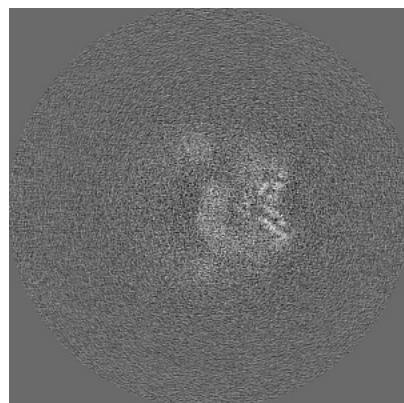
Z Index: 235
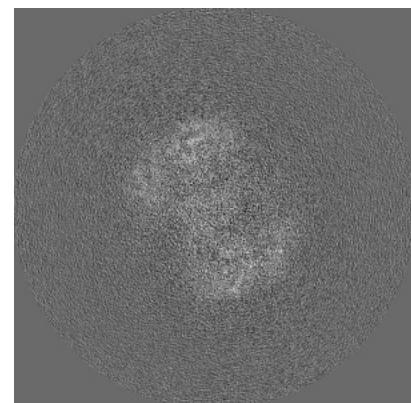
6.3.2 Raw map

X Index: 181

Y Index: 181
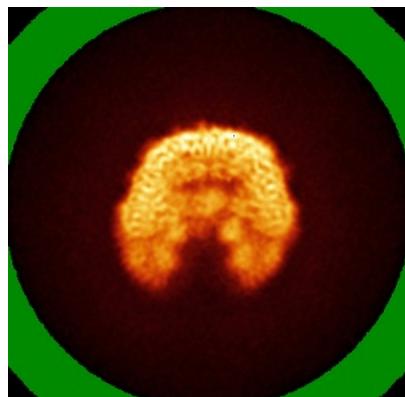
Z Index: 183
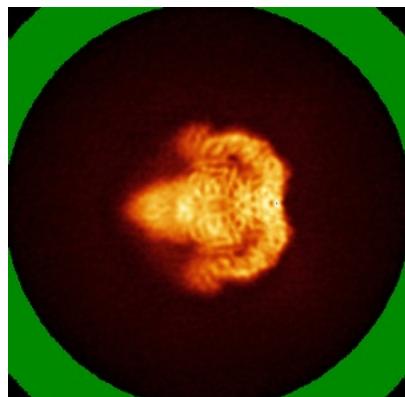
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) ⓘ
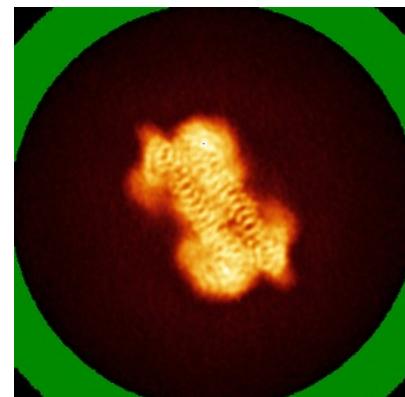
6.4.1 Primary map
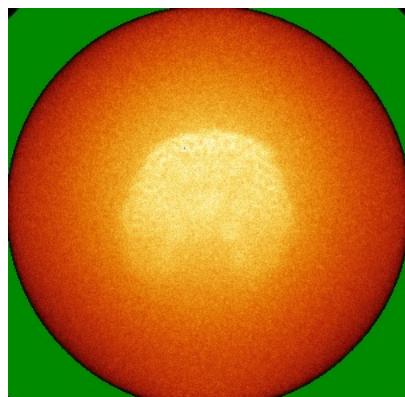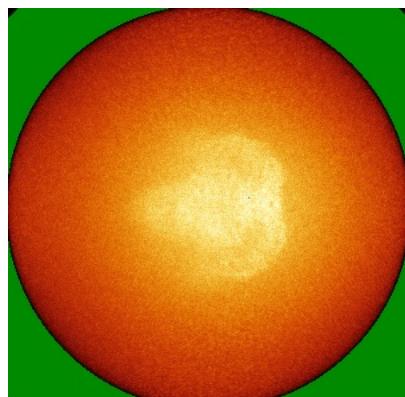
| X | Y | Z |
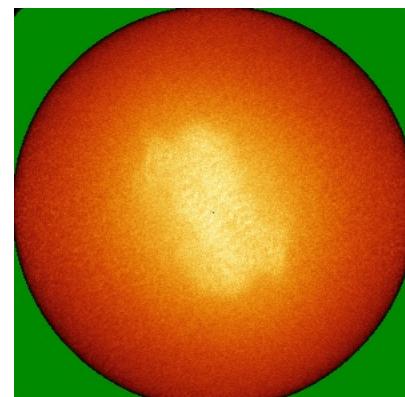
6.4.2 Raw map

| X | Y | Z |
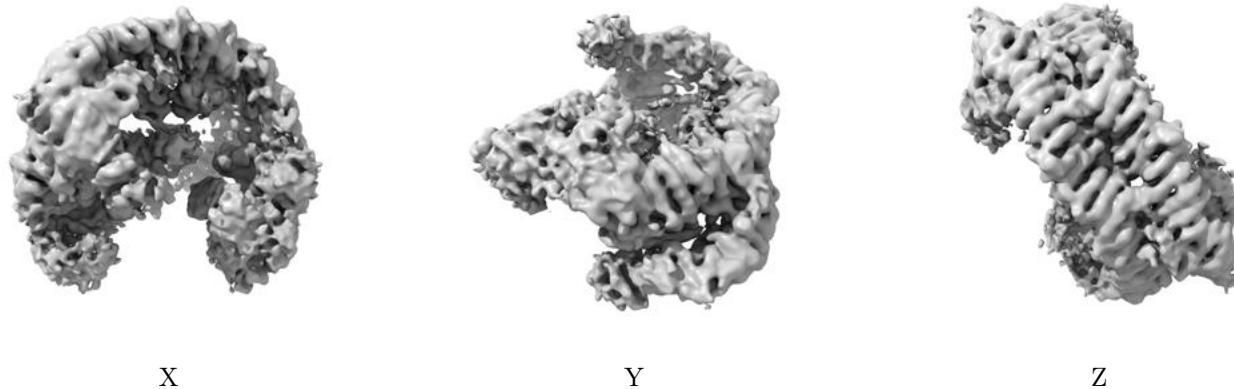
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.
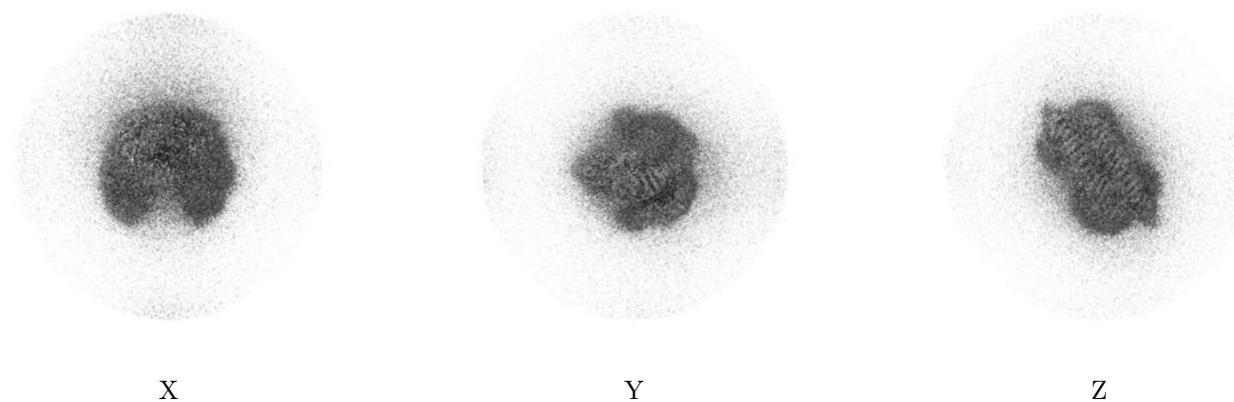
6.5 Orthogonal surface views ⓘ

6.5.1 Primary map

X	Y	Z

The images above show the 3D surface view of the map at the recommended contour level 0.00423. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map

X	Y	Z

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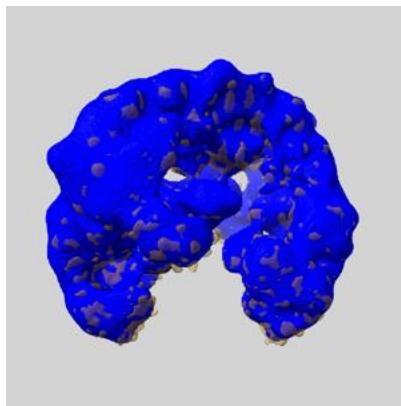
6.6   Mask visualisation ⓘ

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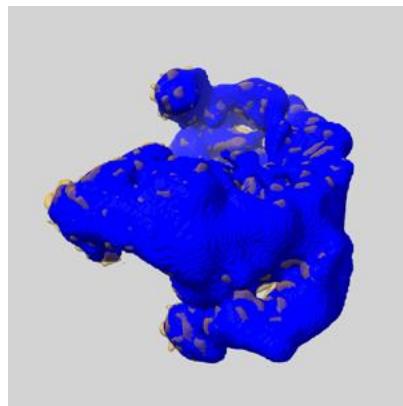
A mask typically either:

- Encompasses the whole structure

- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure
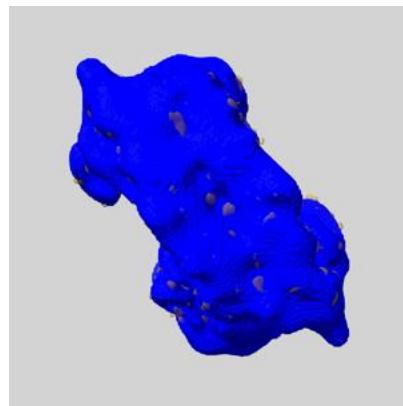
6.6.1   emd_15672_msk_1.map ⓘ

X   Y   Z
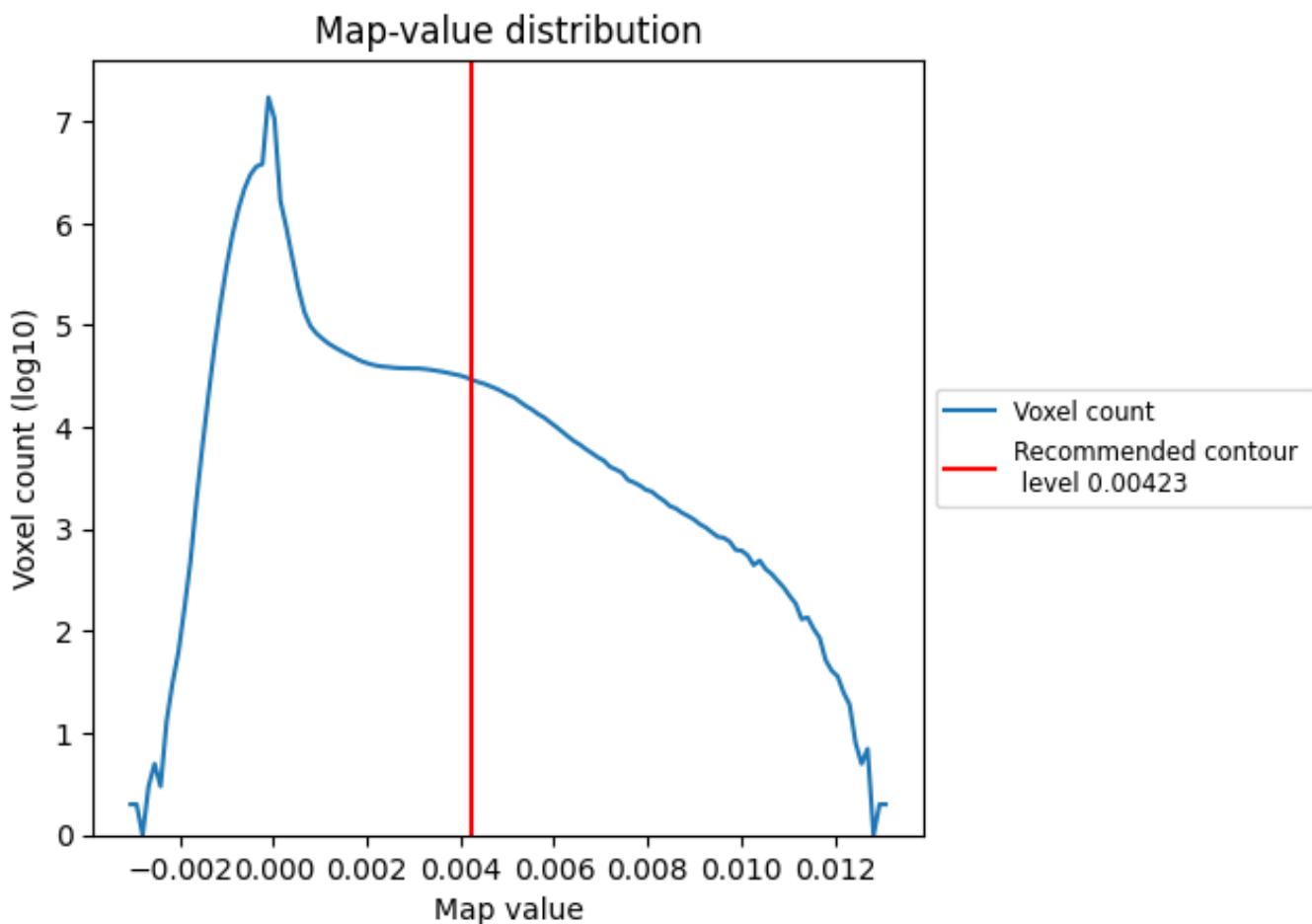
7 Map analysis ⓘ
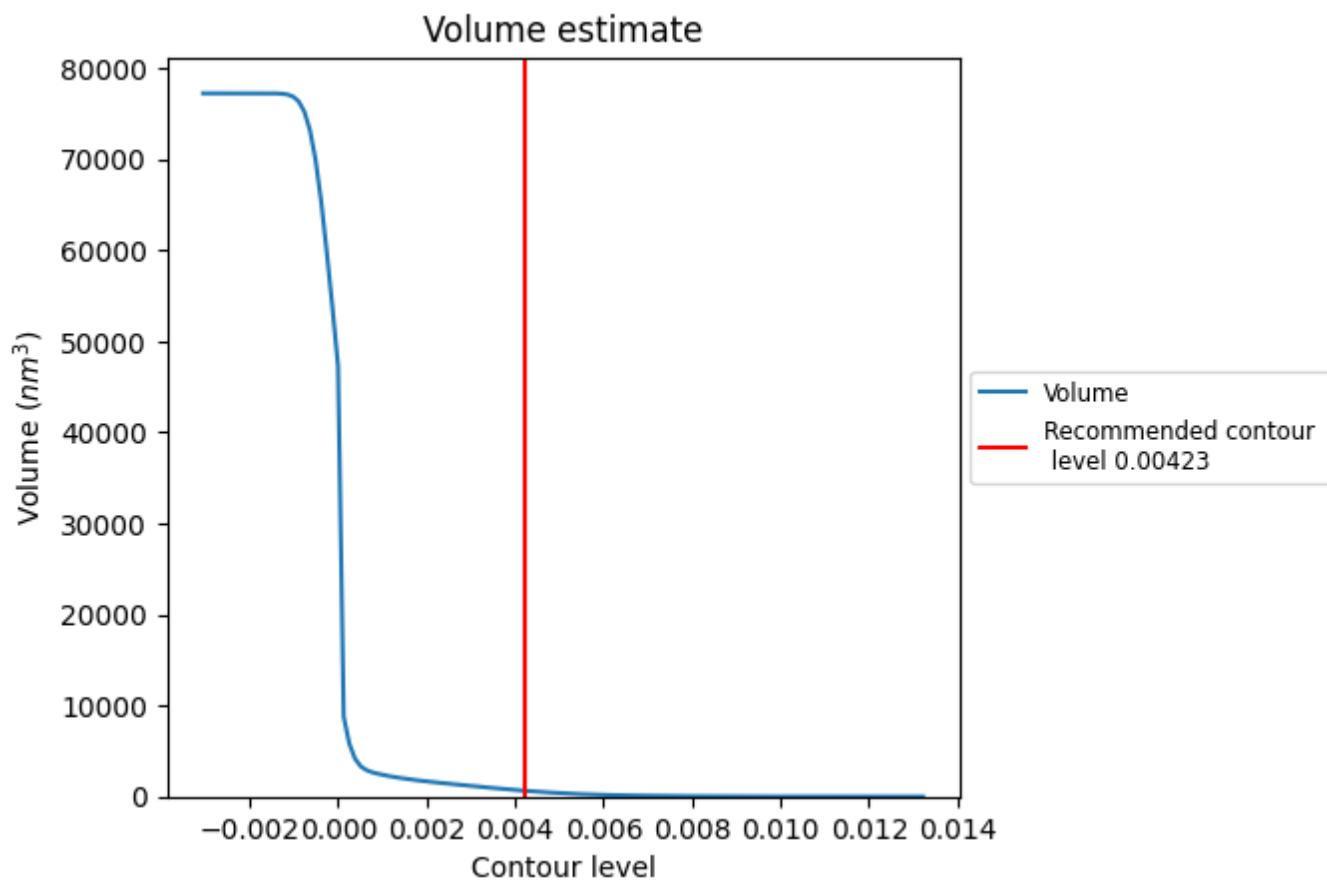
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution ⓘ

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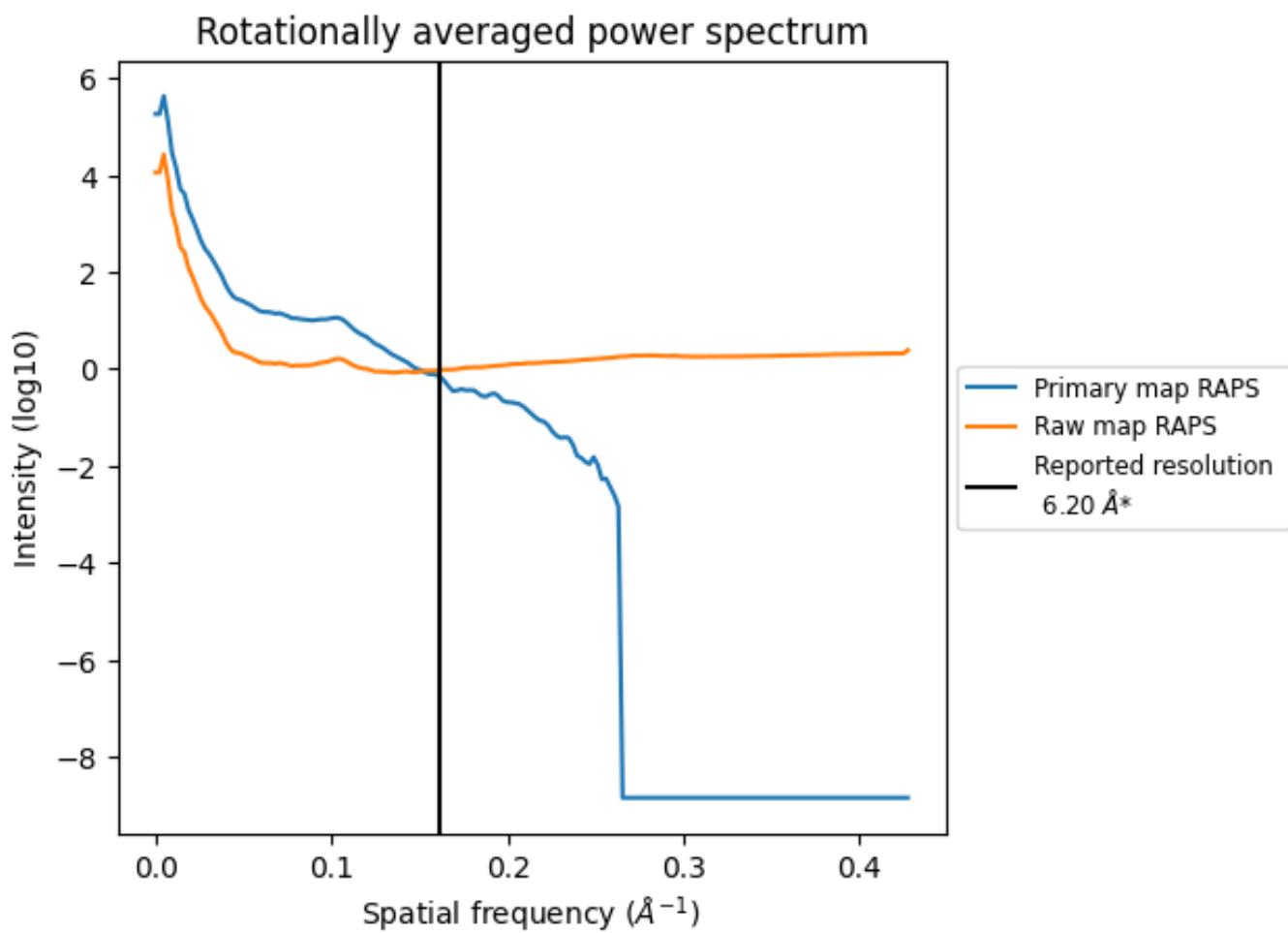
7.2 Volume estimate ⓘ

The volume at the recommended contour level is 634 nm^3; this corresponds to an approximate mass of 572 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3　Rotationally averaged power spectrum ⓘ
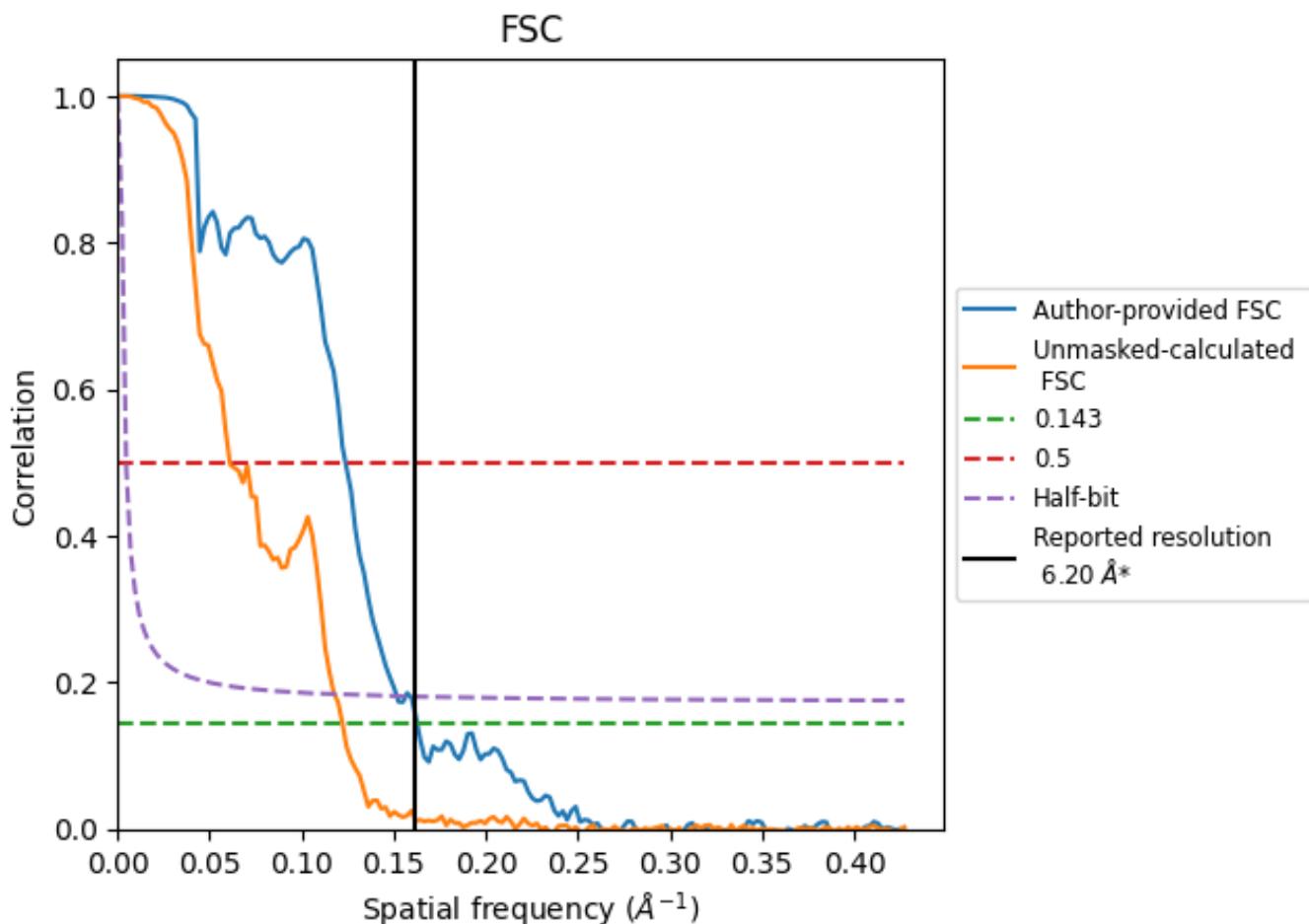
*Reported resolution corresponds to spatial frequency of 0.161 Å^{-1}

8 Fourier-Shell correlation (i)

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

8.1 FSC (i)

*Reported resolution corresponds to spatial frequency of 0.161 Å^{-1}

8.2   Resolution estimates (i)
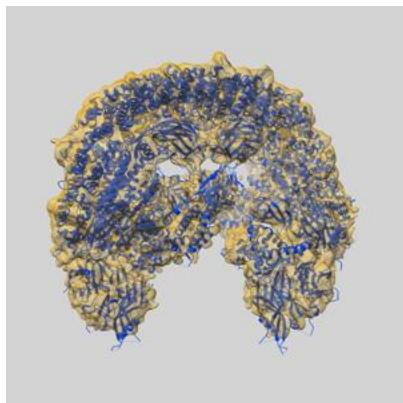
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	6.20	-	-
Author-provided FSC curve	6.15	8.08	6.59
Unmasked-calculated*	8.18	16.42	8.49

*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 8.18 differs from the reported value 6.2 by more than 10 %
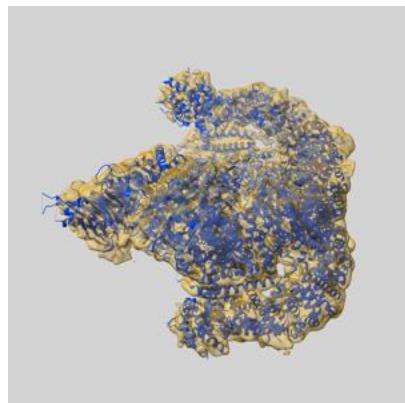
9　Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-15672 and PDB model 8AUK. Per-residue inclusion information can be found in section 3 on page 5.
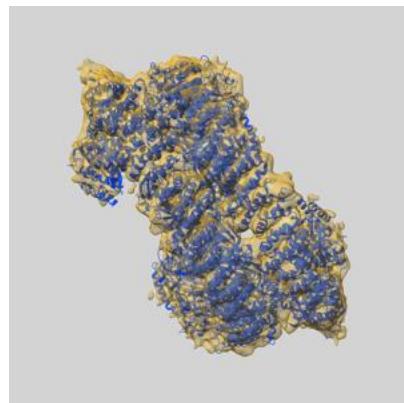
9.1　Map-model overlay ⓘ
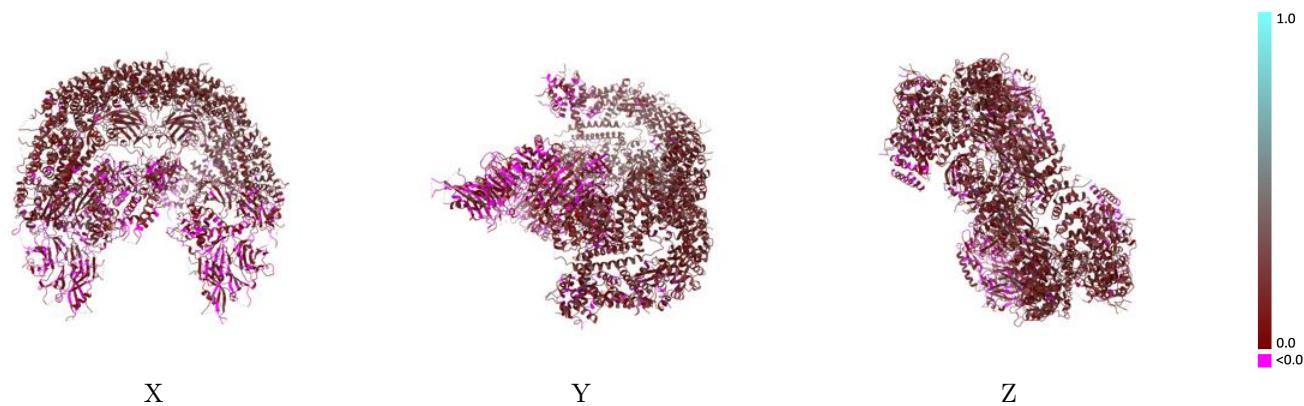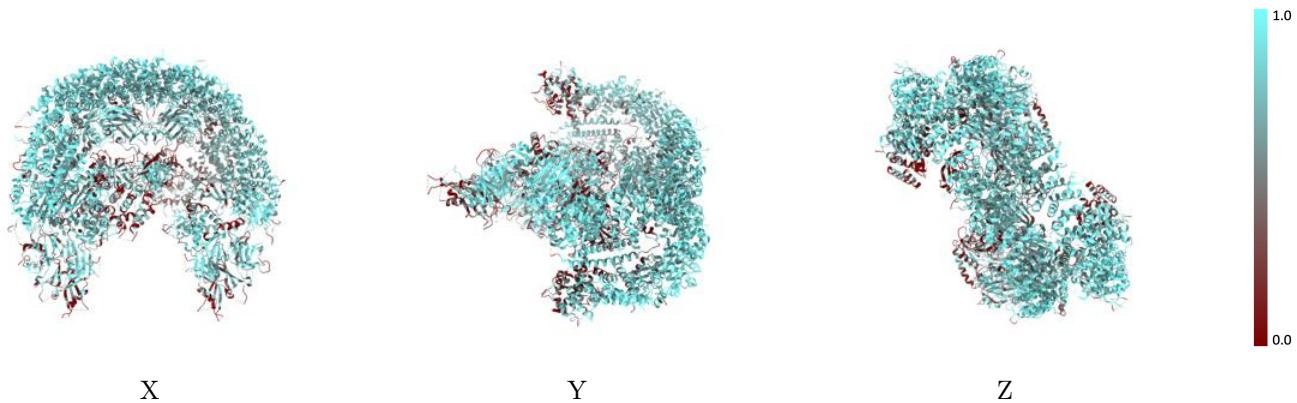
X	Y	Z

The images above show the 3D surface view of the map at the recommended contour level 0.00423 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 ⓘ

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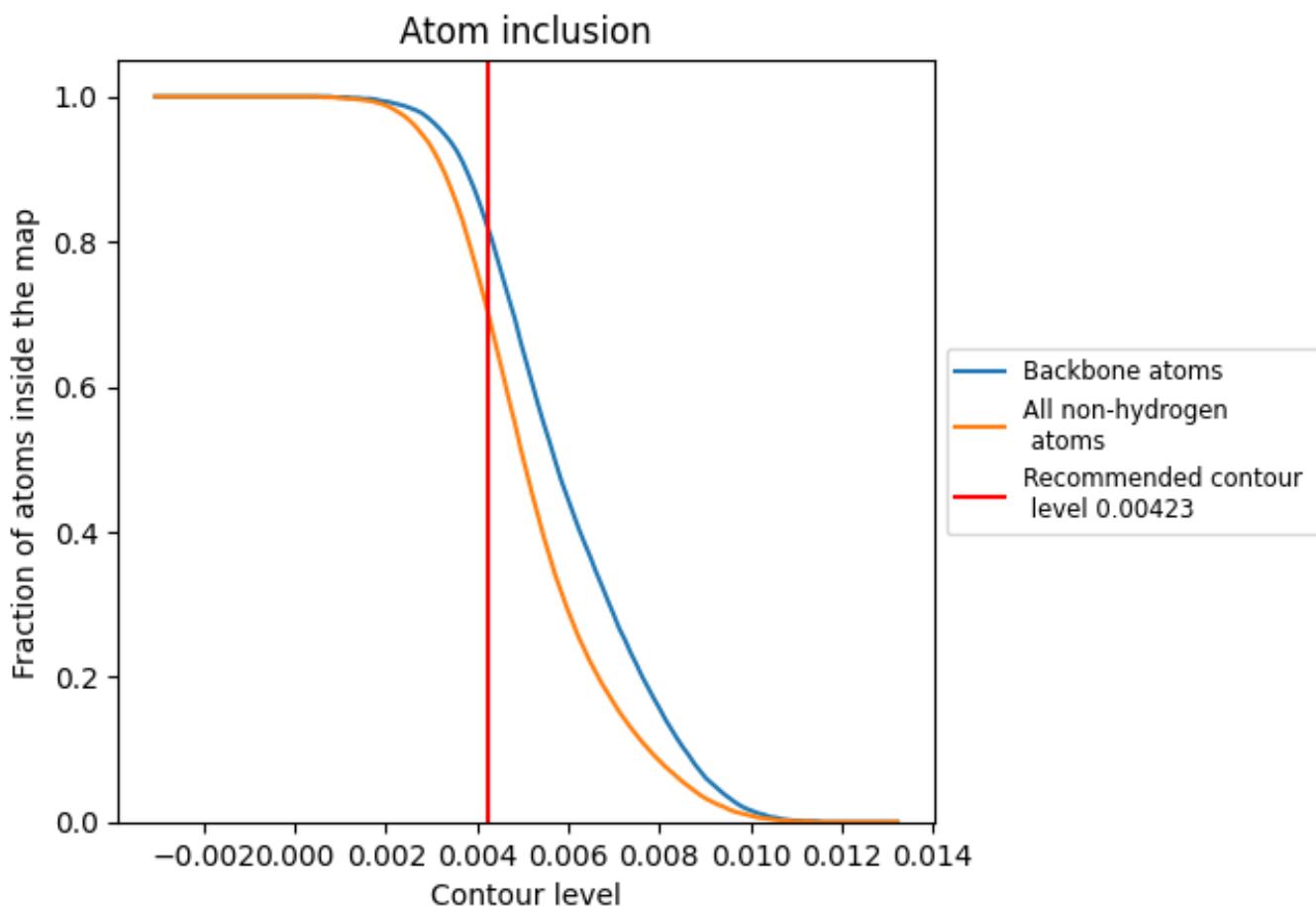
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3 Atom inclusion mapped to coordinate model ⓘ

X   Y   Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.00423).

9.4 Atom inclusion ⓘ

Atom inclusion

At the recommended contour level, 82% of all backbone atoms, 70% 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 (0.00423) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7050	0.1390
A	0.7200	0.1440
B	0.7310	0.1420
C	0.4560	0.0720
D	0.4480	0.0890
E	0.5370	0.1050

1.0

0.0

<0.0