Full wwPDB EM Validation Report

Mar 12, 2024 – 06:53 PM JST

PDB ID	:	8H33
EMDB ID	:	EMD-34449
Title	:	Cryo-EM Structure of the KBTBD2-Cul3-Rbx1 tetrameric complex
Authors	:	Hu, Y.; Mao, Q.; Chen, Z.; Sun, L.
Deposited on	:	2022-10-07
Resolution	:	7.86 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:

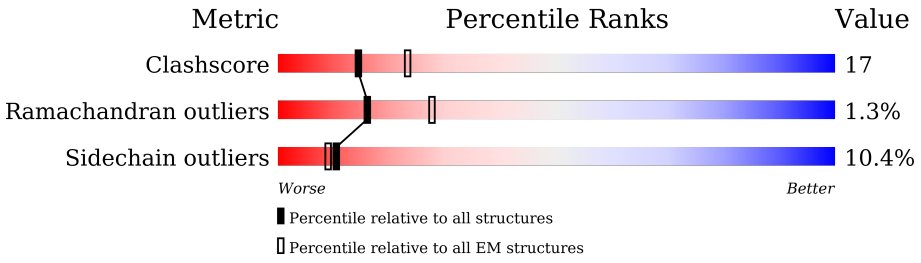
EMDB validation analysis	:	0.0.1.dev70
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

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 7.86 Å.

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



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

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=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	623	61% 27% • 10%
1	B	623	60% 27% • 11%
1	G	623	60% 27% • 10%
1	J	623	61% 26% • 11%
2	D	121	47% 25% •• 26%
2	E	121	• 40% 28% 5% • 26%
2	K	121	• 41% 27% • • 26%
2	L	121	38% 32% •• 26%

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Mol	Chain	Length	Quality of chain
3	C	776	60% 29% 7%
3	F	776	59% 29% 7%
3	H	776	58% 31% 7%
3	I	776	59% 30% 7%

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 43620 atoms, of which 72 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 Kelch repeat and BTB domain-containing protein 2.

Mol	Chain	Residues	Atoms						AltConf	Trace
1	A	562	Total	C	H	N	O	S	0	0
			4473	2842	18	746	832	35		
1	B	557	Total	C	H	N	O	S	0	0
			4464	2839	18	737	834	36		
1	G	562	Total	C	H	N	O	S	0	0
			4438	2820	18	743	823	34		
1	J	555	Total	C	H	N	O	S	0	0
			4482	2855	18	740	832	37		

- Molecule 2 is a protein called E3 ubiquitin-protein ligase RBX1.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	D	89	Total	C	N	O	S	0	0
			695	443	121	124	7		
2	K	89	Total	C	N	O	S	0	0
			737	466	135	127	9		
2	L	89	Total	C	N	O	S	0	0
			737	466	135	127	9		
2	E	89	Total	C	N	O	S	0	0
			737	466	135	127	9		

There are 52 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D	-12	HIS	-	expression tag	UNP P62877
D	-11	HIS	-	expression tag	UNP P62877
D	-10	HIS	-	expression tag	UNP P62877
D	-9	HIS	-	expression tag	UNP P62877
D	-8	HIS	-	expression tag	UNP P62877
D	-7	HIS	-	expression tag	UNP P62877
D	-6	GLU	-	expression tag	UNP P62877
D	-5	ASN	-	expression tag	UNP P62877
D	-4	LEU	-	expression tag	UNP P62877

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Chain	Residue	Modelled	Actual	Comment	Reference
D	-3	TYR	-	expression tag	UNP P62877
D	-2	PHE	-	expression tag	UNP P62877
D	-1	GLN	-	expression tag	UNP P62877
D	0	GLY	-	expression tag	UNP P62877
K	-12	HIS	-	expression tag	UNP P62877
K	-11	HIS	-	expression tag	UNP P62877
K	-10	HIS	-	expression tag	UNP P62877
K	-9	HIS	-	expression tag	UNP P62877
K	-8	HIS	-	expression tag	UNP P62877
K	-7	HIS	-	expression tag	UNP P62877
K	-6	GLU	-	expression tag	UNP P62877
K	-5	ASN	-	expression tag	UNP P62877
K	-4	LEU	-	expression tag	UNP P62877
K	-3	TYR	-	expression tag	UNP P62877
K	-2	PHE	-	expression tag	UNP P62877
K	-1	GLN	-	expression tag	UNP P62877
K	0	GLY	-	expression tag	UNP P62877
L	-12	HIS	-	expression tag	UNP P62877
L	-11	HIS	-	expression tag	UNP P62877
L	-10	HIS	-	expression tag	UNP P62877
L	-9	HIS	-	expression tag	UNP P62877
L	-8	HIS	-	expression tag	UNP P62877
L	-7	HIS	-	expression tag	UNP P62877
L	-6	GLU	-	expression tag	UNP P62877
L	-5	ASN	-	expression tag	UNP P62877
L	-4	LEU	-	expression tag	UNP P62877
L	-3	TYR	-	expression tag	UNP P62877
L	-2	PHE	-	expression tag	UNP P62877
L	-1	GLN	-	expression tag	UNP P62877
L	0	GLY	-	expression tag	UNP P62877
E	-12	HIS	-	expression tag	UNP P62877
E	-11	HIS	-	expression tag	UNP P62877
E	-10	HIS	-	expression tag	UNP P62877
E	-9	HIS	-	expression tag	UNP P62877
E	-8	HIS	-	expression tag	UNP P62877
E	-7	HIS	-	expression tag	UNP P62877
E	-6	GLU	-	expression tag	UNP P62877
E	-5	ASN	-	expression tag	UNP P62877
E	-4	LEU	-	expression tag	UNP P62877
E	-3	TYR	-	expression tag	UNP P62877
E	-2	PHE	-	expression tag	UNP P62877
E	-1	GLN	-	expression tag	UNP P62877

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Chain	Residue	Modelled	Actual	Comment	Reference
E	0	GLY	-	expression tag	UNP P62877

- Molecule 3 is a protein called Cullin-3.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	F	720	Total	C	N	O	S	0	0
			5651	3540	1003	1071	37		
3	H	720	Total	C	N	O	S	0	0
			5719	3589	1019	1073	38		
3	I	720	Total	C	N	O	S	0	0
			5722	3585	1013	1086	38		
3	C	720	Total	C	N	O	S	0	0
			5753	3613	1022	1081	37		

There are 32 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
F	-7	TRP	-	expression tag	UNP Q13618
F	-6	SER	-	expression tag	UNP Q13618
F	-5	HIS	-	expression tag	UNP Q13618
F	-4	PRO	-	expression tag	UNP Q13618
F	-3	GLN	-	expression tag	UNP Q13618
F	-2	PHE	-	expression tag	UNP Q13618
F	-1	GLU	-	expression tag	UNP Q13618
F	0	LYS	-	expression tag	UNP Q13618
H	-7	TRP	-	expression tag	UNP Q13618
H	-6	SER	-	expression tag	UNP Q13618
H	-5	HIS	-	expression tag	UNP Q13618
H	-4	PRO	-	expression tag	UNP Q13618
H	-3	GLN	-	expression tag	UNP Q13618
H	-2	PHE	-	expression tag	UNP Q13618
H	-1	GLU	-	expression tag	UNP Q13618
H	0	LYS	-	expression tag	UNP Q13618
I	-7	TRP	-	expression tag	UNP Q13618
I	-6	SER	-	expression tag	UNP Q13618
I	-5	HIS	-	expression tag	UNP Q13618
I	-4	PRO	-	expression tag	UNP Q13618
I	-3	GLN	-	expression tag	UNP Q13618
I	-2	PHE	-	expression tag	UNP Q13618
I	-1	GLU	-	expression tag	UNP Q13618
I	0	LYS	-	expression tag	UNP Q13618
C	-7	TRP	-	expression tag	UNP Q13618

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Chain	Residue	Modelled	Actual	Comment	Reference
C	-6	SER	-	expression tag	UNP Q13618
C	-5	HIS	-	expression tag	UNP Q13618
C	-4	PRO	-	expression tag	UNP Q13618
C	-3	GLN	-	expression tag	UNP Q13618
C	-2	PHE	-	expression tag	UNP Q13618
C	-1	GLU	-	expression tag	UNP Q13618
C	0	LYS	-	expression tag	UNP Q13618

- Molecule 4 is ZINC ION (three-letter code: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

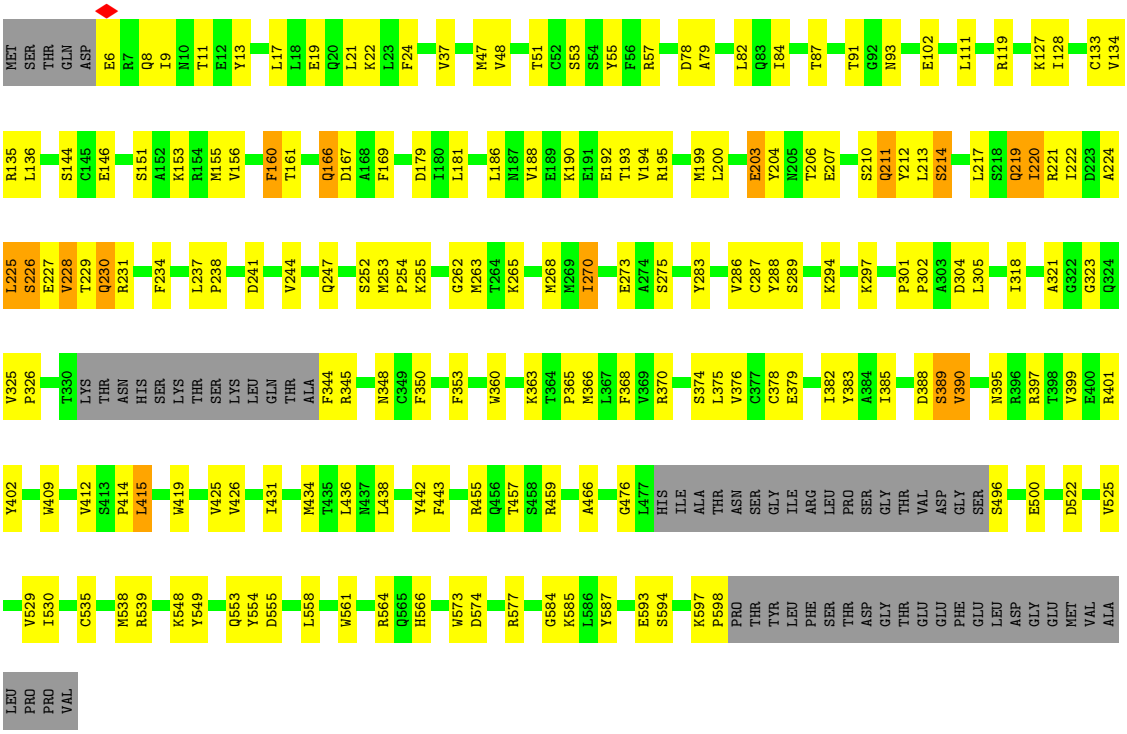
Mol	Chain	Residues	Atoms	AltConf
4	D	3	Total Zn 3 3	0
4	K	3	Total Zn 3 3	0
4	L	3	Total Zn 3 3	0
4	E	3	Total Zn 3 3	0

3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

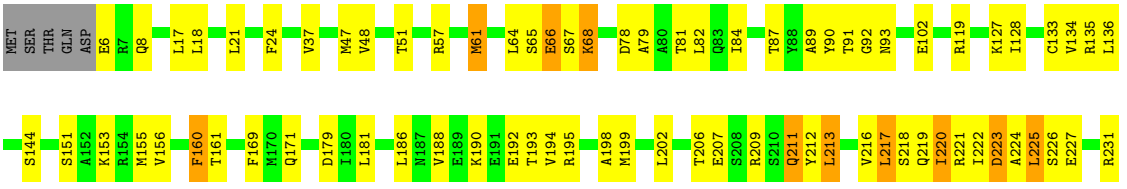
• Molecule 1: Kelch repeat and BTB domain-containing protein 2

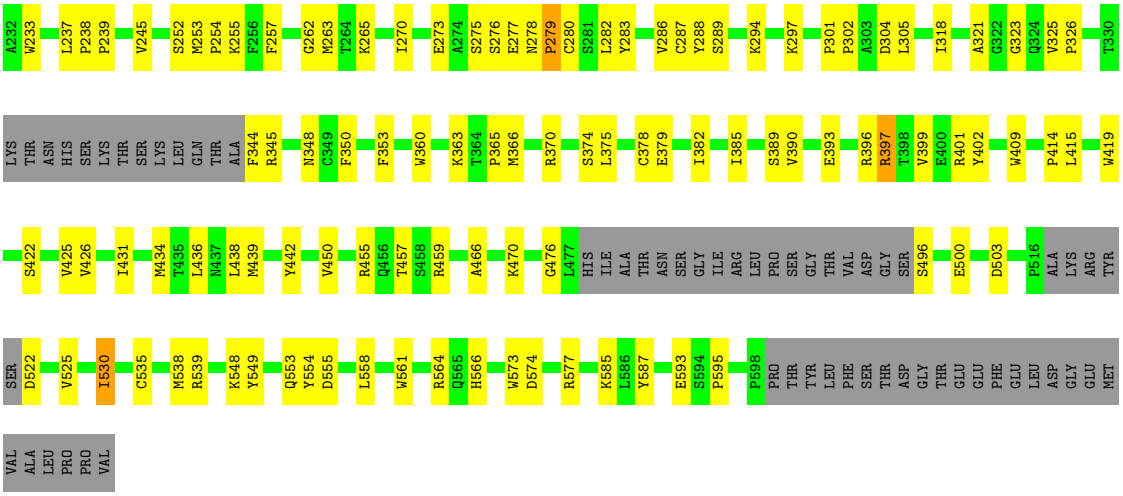
Chain A:



• Molecule 1: Kelch repeat and BTB domain-containing protein 2

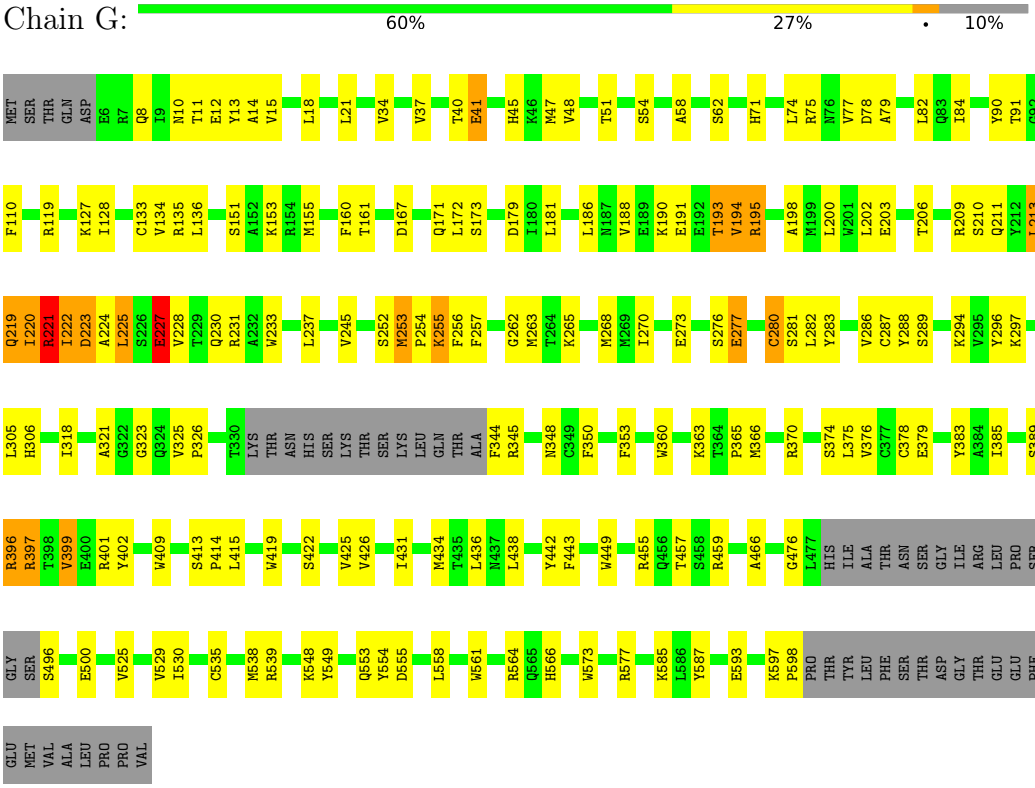
Chain B:





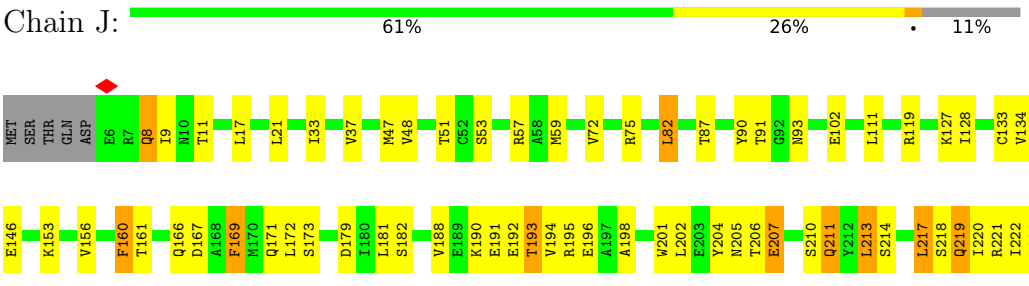
• Molecule 1: Kelch repeat and BTB domain-containing protein 2

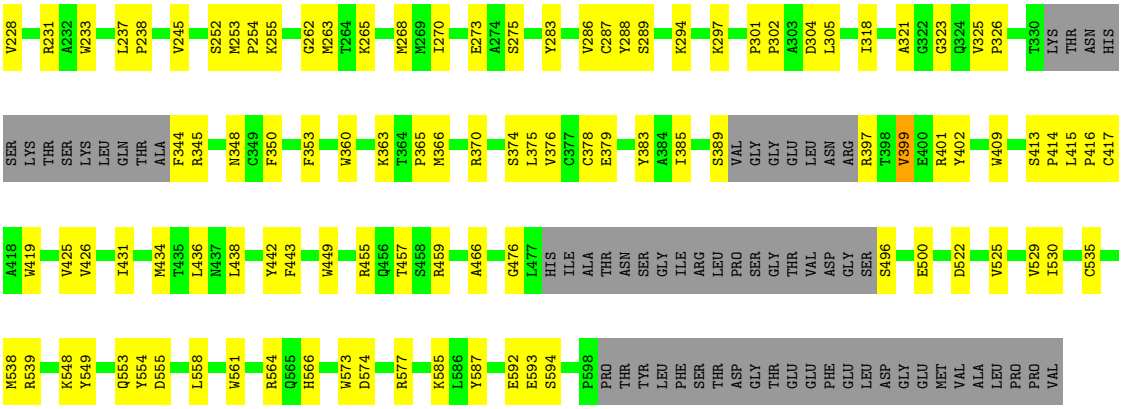
Chain G:



• Molecule 1: Kelch repeat and BTB domain-containing protein 2

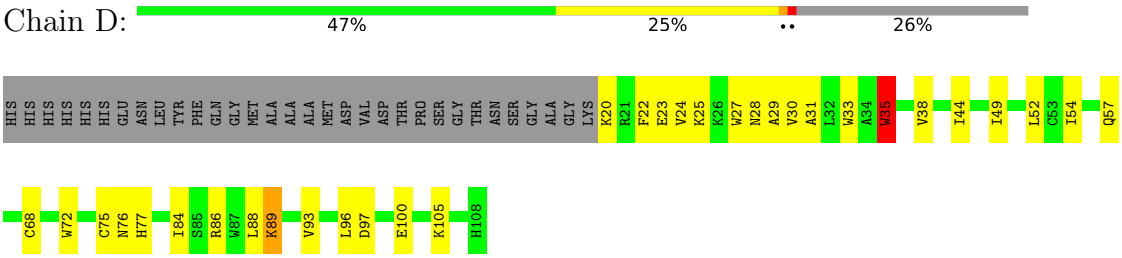
Chain J:





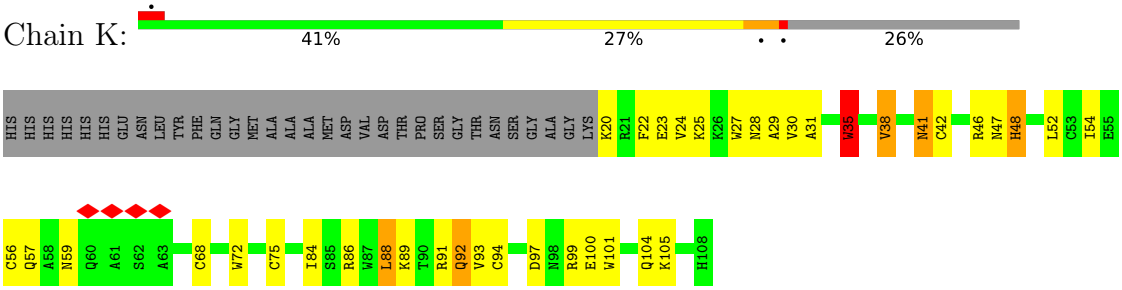
• Molecule 2: E3 ubiquitin-protein ligase RBX1

Chain D:



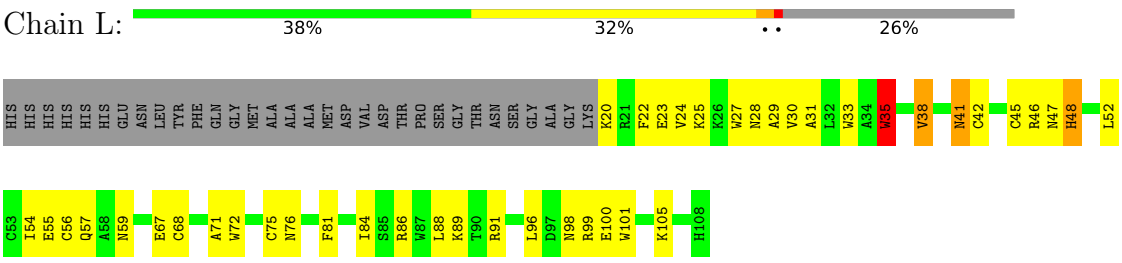
• Molecule 2: E3 ubiquitin-protein ligase RBX1

Chain K:



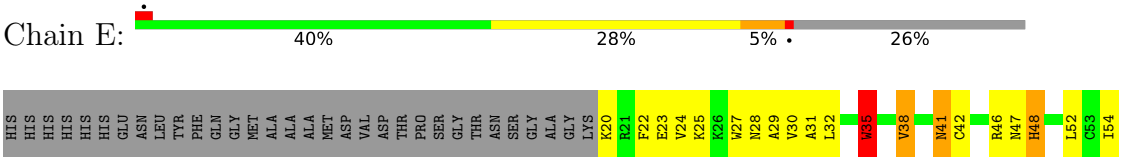
• Molecule 2: E3 ubiquitin-protein ligase RBX1

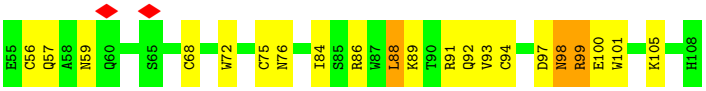
Chain L:



• Molecule 2: E3 ubiquitin-protein ligase RBX1

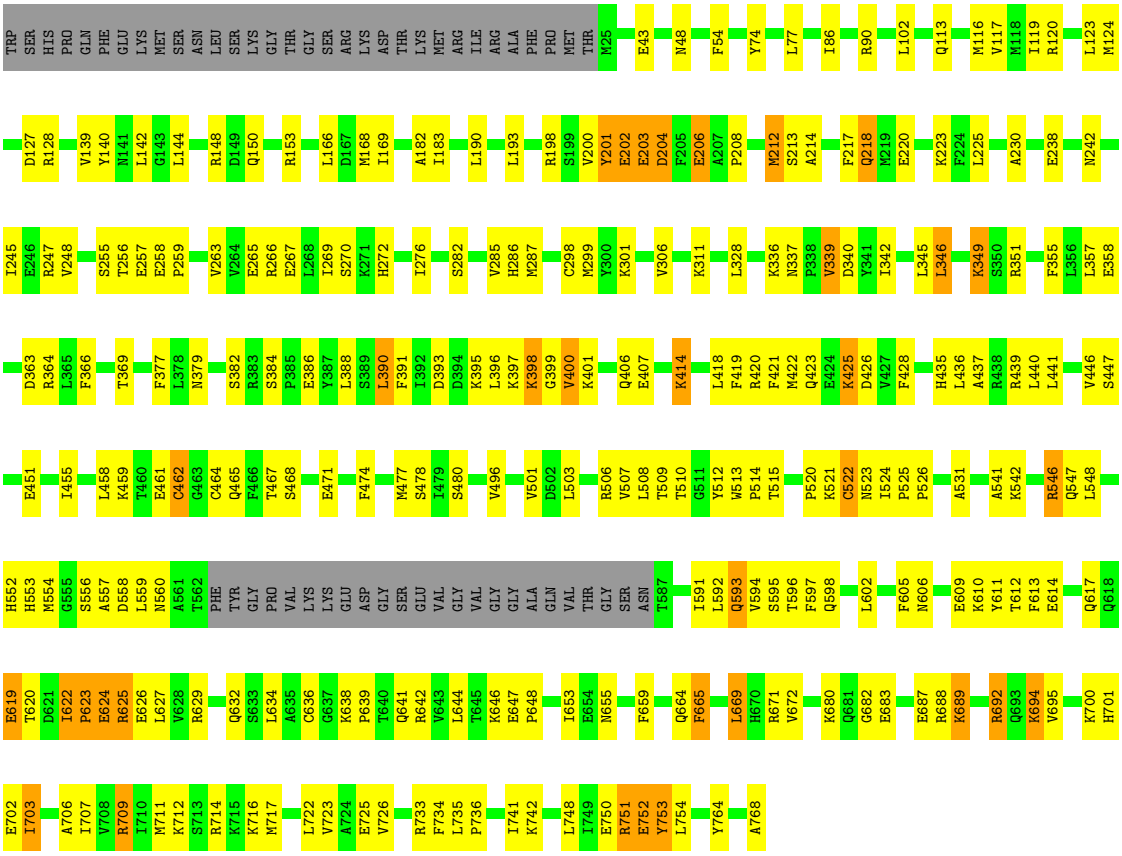
Chain E:





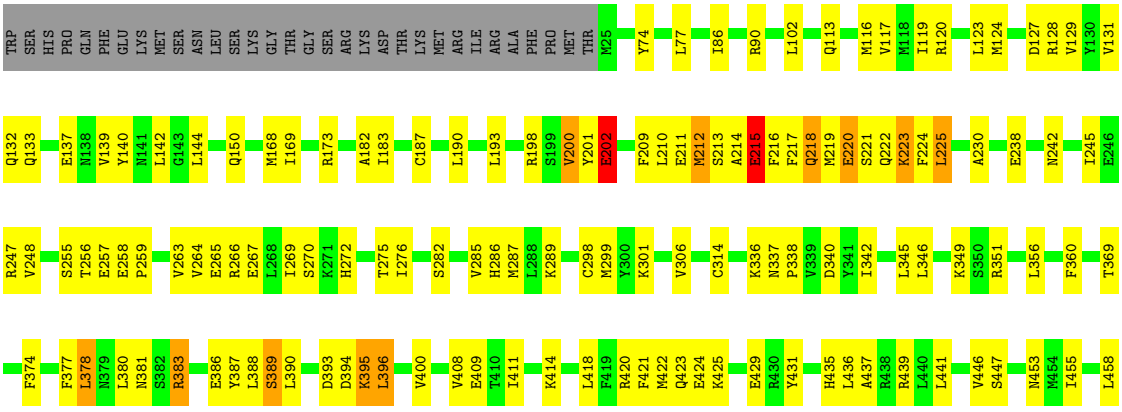
• Molecule 3: Cullin-3

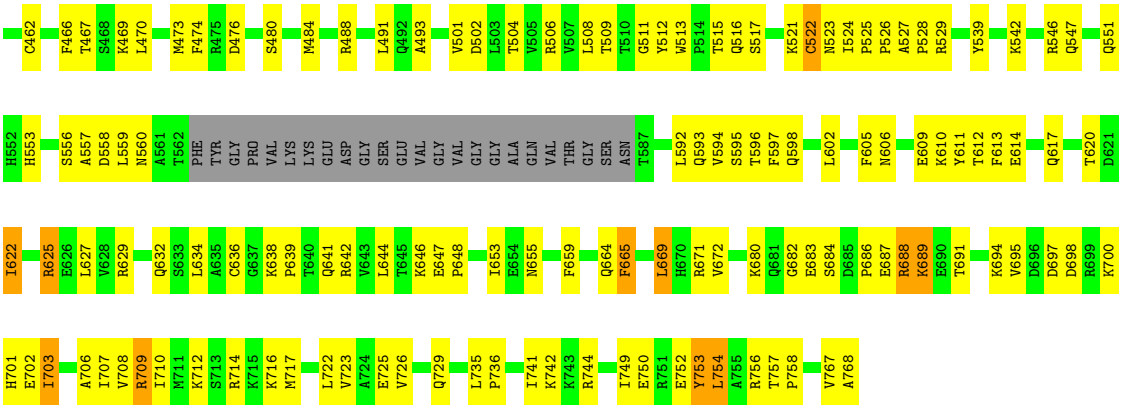
Chain F:



• Molecule 3: Cullin-3

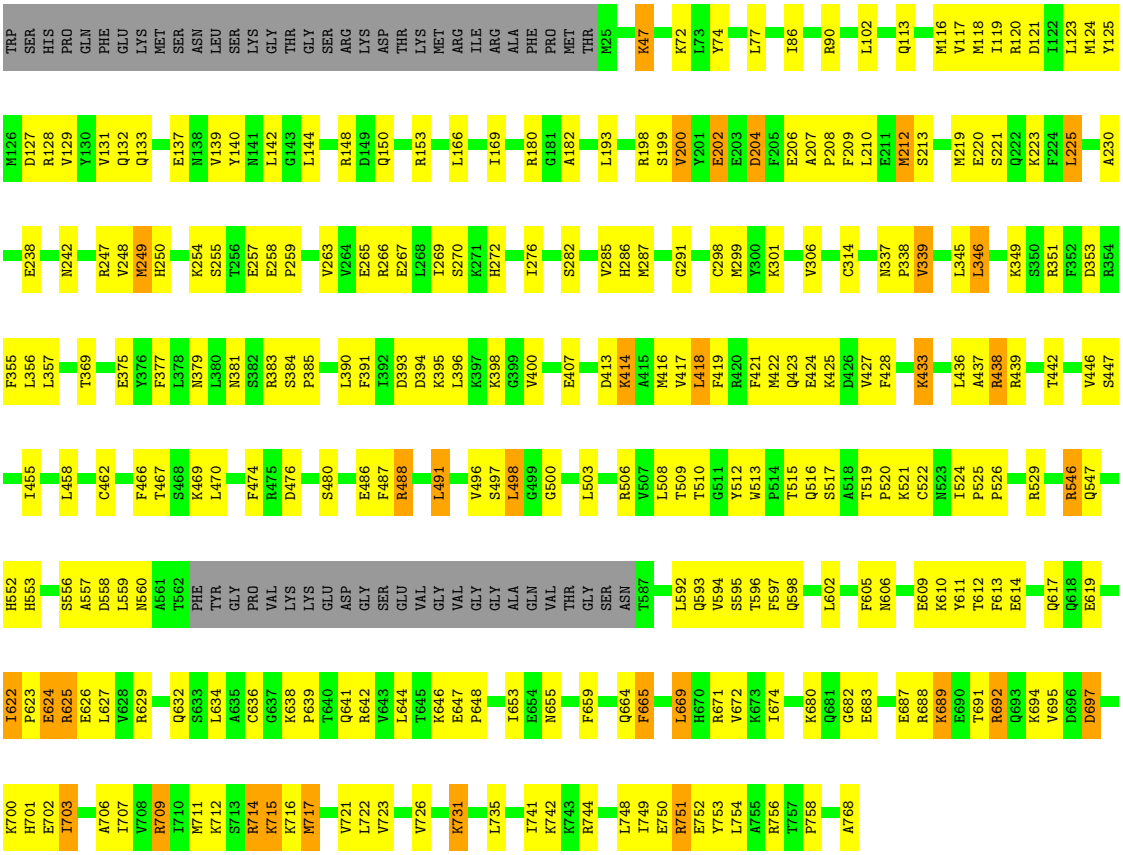
Chain H:





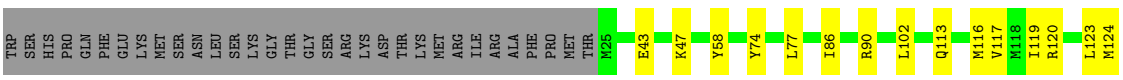
• Molecule 3: Cullin-3

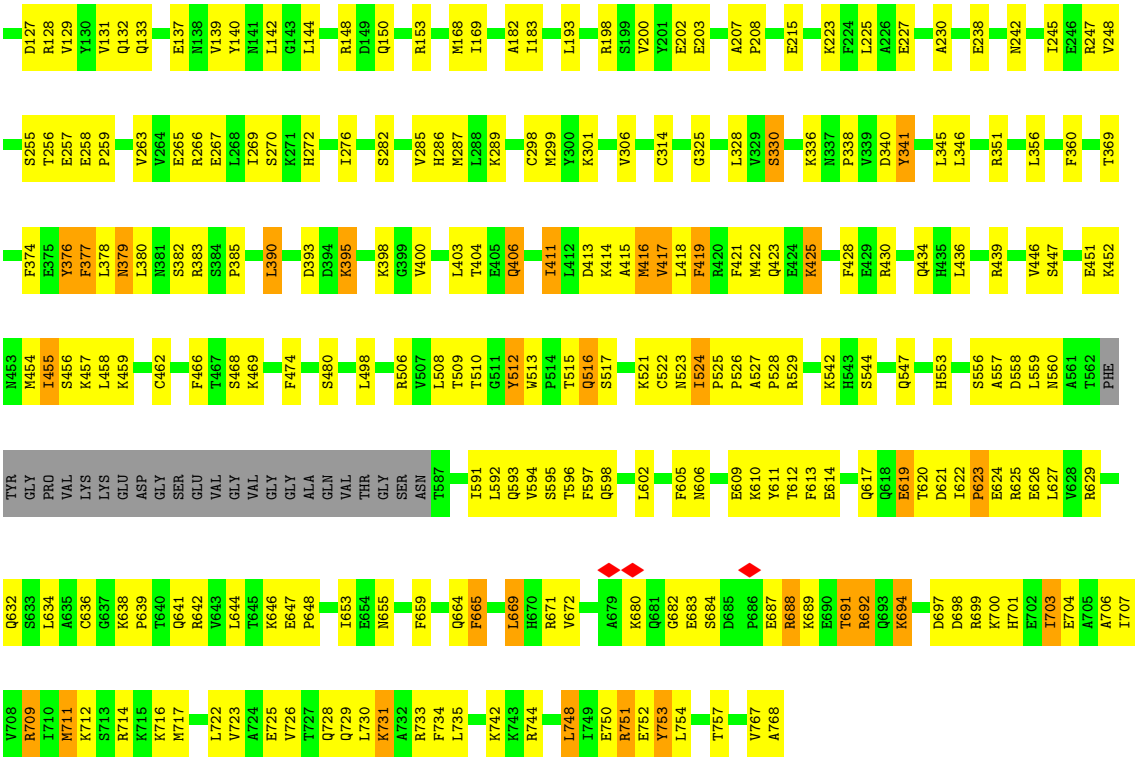
Chain I:



• Molecule 3: Cullin-3

Chain C:




D127 R128 V129 Y130 V131 Q132 Q133 E137 N138 V139 Y140 N141 L142 G143 L144 R148 D149 Q150 R153 M168 I169 A182 I183 L193 R198 S199 V200 Y201 E202 E203 A207 P208 E215 K223 F224 L225 A226 E227 A230 E238 N242 I245 E246 R247 V248
S255 T256 E257 E258 P259 V263 V264 E265 R266 E267 L268 I269 S270 K271 H272 I276 S282 V285 H286 M287 L288 K289 C298 M299 Y300 K301 V306 C314 G325 L328 V329 S330 K336 N337 P338 V339 D340 Y341 L345 L346 R351 L356 F360 T369
F374 E375 Y376 F377 L378 N379 L380 N381 S382 R383 S384 P385 L390 D393 D394 K395 K398 G399 V400 L403 T404 E405 Q406 I411 L412 D413 K414 A415 M416 V417 L418 F419 R420 F421 M422 Q423 E424 K425 F428 E429 R430 Q434 H435 L436 R439 V446 S447 E451 K452
N453 M454 I455 S456 K457 L458 K459 C462 F466 T467 S468 K469 F474 S480 L498 R506 V507 L508 T509 T510 G511 Y512 W513 P514 T515 Q516 S517 K521 C522 N523 I524 P525 P526 A527 P528 R529 K542 H543 S544 Q547 H553 S556 A557 D558 L559 N560 A561 T562 PHE
TYR GLY PRO VAL LYS LYS GLU ASP GLY SER GLU VAL GLY VAL GLY GLY ALA GLN VAL THR GLY SER ASN T587 I591 L592 Q593 V594 S595 T596 F597 Q598 L602 F605 N606 E609 K610 Y611 T612 F613 E614 Q617 Q618 E619 T620 D621 I622 P623 E624 R625 E626 L627 V628 R629
Q632 S633 L634 A635 C636 G637 K638 P639 T640 Q641 R642 V643 L644 T645 K646 E647 P648 I653 E654 N655 F659 Q664 F665 L669 H670 R671 V672 A679 K680 Q681 G682 E683 S684 D685 P686 E687 R688 K689 E690 T691 R692 Q693 K694 D697 D698 R699 K700 H701 E702 I703 E704 A705 A706 I707
V708 R709 I710 M711 K712 S713 R714 K715 K716 M717 L722 V723 A724 E725 V726 T727 Q728 Q729 L730 K731 A732 R733 F734 L735 K742 K743 R744 L748 I749 E750 R751 E752 Y753 L754 T757 V767 A768

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	50236	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 ($e^-/Å^2$)	45	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	2200	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	1.590	Depositor
Minimum map value	-0.001	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.027	Depositor
Recommended contour level	0.0001	Depositor
Map size (Å)	511.488, 511.488, 511.488	wwPDB
Map dimensions	192, 192, 192	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	2.664, 2.664, 2.664	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	0.39	0/4558	0.49	0/6191
1	B	0.40	0/4548	0.50	0/6172
1	G	0.43	0/4521	0.51	0/6146
1	J	0.40	0/4569	0.48	0/6201
2	D	0.59	0/715	0.62	0/973
2	E	0.57	0/759	0.61	0/1029
2	K	0.55	0/759	0.61	0/1029
2	L	0.55	0/759	0.61	0/1029
3	C	0.43	0/5840	0.52	0/7853
3	F	0.46	0/5728	0.53	0/7706
3	H	0.41	0/5806	0.52	0/7810
3	I	0.46	0/5802	0.54	0/7804
All	All	0.44	0/44364	0.52	0/59943

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

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	4455	18	4288	138	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	B	4446	18	4306	169	0
1	G	4420	18	4240	141	0
1	J	4464	18	4343	139	0
2	D	695	0	608	42	0
2	E	737	0	686	57	0
2	K	737	0	686	54	0
2	L	737	0	686	58	0
3	C	5753	0	5709	193	0
3	F	5651	0	5542	190	0
3	H	5719	0	5634	216	0
3	I	5722	0	5664	182	0
4	D	3	0	0	0	0
4	E	3	0	0	0	0
4	K	3	0	0	0	0
4	L	3	0	0	0	0
All	All	43548	72	42392	1479	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 17.

All (1479) 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:G:47:MET:CE	1:J:21:LEU:HD22	1.45	1.44
2:K:24:VAL:C	2:K:25:LYS:HE2	1.43	1.38
2:D:24:VAL:C	2:D:25:LYS:HE2	1.43	1.38
2:L:24:VAL:C	2:L:25:LYS:HE2	1.43	1.35
2:E:24:VAL:C	2:E:25:LYS:HE2	1.43	1.35
3:I:665:PHE:HD1	3:I:665:PHE:O	1.07	1.31
3:F:665:PHE:HD1	3:F:665:PHE:O	1.07	1.29
3:H:665:PHE:HD1	3:H:665:PHE:O	1.07	1.29
3:C:730:LEU:HD13	3:C:733:ARG:NH2	1.43	1.29
3:C:665:PHE:HD1	3:C:665:PHE:O	1.07	1.27
3:I:665:PHE:O	3:I:665:PHE:CD1	1.89	1.25
3:C:665:PHE:O	3:C:665:PHE:CD1	1.89	1.25
3:F:665:PHE:O	3:F:665:PHE:CD1	1.89	1.25
3:H:665:PHE:O	3:H:665:PHE:CD1	1.89	1.25
2:E:97:ASP:OD2	2:E:99:ARG:HG2	1.37	1.21
1:B:160:PHE:CE2	1:B:169:PHE:CE1	2.30	1.20
2:K:25:LYS:HE2	2:K:25:LYS:N	1.58	1.18
2:L:25:LYS:HE2	2:L:25:LYS:N	1.58	1.16

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:25:LYS:HE2	2:E:25:LYS:N	1.58	1.15
2:D:25:LYS:HE2	2:D:25:LYS:N	1.58	1.15
3:F:626:GLU:HA	3:F:629:ARG:HD2	1.25	1.13
3:I:626:GLU:HA	3:I:629:ARG:HD2	1.25	1.13
3:H:638:LYS:HD3	3:H:639:PRO:HD2	1.30	1.12
3:I:638:LYS:HD3	3:I:639:PRO:HD2	1.29	1.12
3:F:638:LYS:HD3	3:F:639:PRO:HD2	1.29	1.11
1:G:47:MET:HE2	1:J:21:LEU:CD2	1.80	1.10
3:C:638:LYS:HD3	3:C:639:PRO:HD2	1.29	1.09
3:I:455:ILE:HG22	3:I:470:LEU:HD21	1.34	1.08
3:H:346:LEU:HA	3:H:418:LEU:HD12	1.34	1.07
3:H:455:ILE:HG22	3:H:470:LEU:HD21	1.34	1.06
3:C:730:LEU:CD1	3:C:733:ARG:NH2	2.20	1.05
1:G:47:MET:HG2	1:J:21:LEU:CD2	1.87	1.04
3:H:470:LEU:HD11	3:H:474:PHE:CE2	1.93	1.04
3:I:470:LEU:HD11	3:I:474:PHE:CE2	1.93	1.03
1:G:47:MET:SD	1:J:21:LEU:HD22	1.97	1.03
2:K:28:ASN:OD1	2:K:28:ASN:O	1.76	1.02
1:G:47:MET:HG2	1:J:21:LEU:HD21	1.42	1.02
1:G:233:TRP:CH2	1:G:245:VAL:HA	1.95	1.02
1:B:233:TRP:CH2	1:B:245:VAL:HA	1.95	1.02
2:L:28:ASN:OD1	2:L:28:ASN:O	1.76	1.02
2:E:28:ASN:OD1	2:E:28:ASN:O	1.76	1.01
2:D:28:ASN:OD1	2:D:28:ASN:O	1.76	1.01
3:F:441:LEU:HB3	3:F:554:MET:SD	2.01	1.00
1:J:233:TRP:CH2	1:J:245:VAL:HA	1.95	1.00
3:H:560:ASN:HB2	2:K:25:LYS:HG2	1.43	1.00
3:I:560:ASN:HB2	2:L:25:LYS:HG2	1.43	1.00
2:D:25:LYS:HG2	3:F:560:ASN:HB2	1.43	0.99
1:B:233:TRP:HH2	1:B:245:VAL:HA	1.26	0.99
1:J:233:TRP:HH2	1:J:245:VAL:HA	1.26	0.99
1:G:379:GLU:HG3	1:G:379:GLU:O	1.63	0.99
1:G:233:TRP:HH2	1:G:245:VAL:HA	1.26	0.98
1:G:47:MET:HE2	1:J:21:LEU:HD22	1.01	0.98
1:B:233:TRP:HH2	1:B:245:VAL:CA	1.76	0.98
3:C:560:ASN:HB2	2:E:25:LYS:HG2	1.43	0.98
2:L:24:VAL:C	2:L:25:LYS:CE	2.32	0.98
1:J:233:TRP:HH2	1:J:245:VAL:CA	1.76	0.97
2:D:24:VAL:C	2:D:25:LYS:CE	2.32	0.97
1:B:379:GLU:HG3	1:B:379:GLU:O	1.63	0.97
1:G:233:TRP:HH2	1:G:245:VAL:CA	1.76	0.97

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:K:24:VAL:C	2:K:25:LYS:CE	2.32	0.97
1:J:379:GLU:O	1:J:379:GLU:HG3	1.63	0.96
2:E:24:VAL:C	2:E:25:LYS:CE	2.32	0.96
3:H:248:VAL:HG22	3:H:256:THR:HG23	1.46	0.96
3:I:263:VAL:HG22	3:I:267:GLU:OE2	1.66	0.96
1:A:190:LYS:HB2	1:A:192:GLU:OE2	1.65	0.96
1:B:65:SER:HA	1:B:68:LYS:NZ	1.81	0.96
1:B:160:PHE:CE2	1:B:169:PHE:CZ	2.53	0.96
3:I:524:ILE:HG12	3:I:525:PRO:HD2	1.46	0.96
2:L:23:GLU:O	2:L:25:LYS:HE3	1.65	0.96
1:G:47:MET:CE	1:J:21:LEU:CD2	2.40	0.95
2:E:23:GLU:O	2:E:25:LYS:HE3	1.65	0.95
1:J:233:TRP:CH2	1:J:245:VAL:HG22	2.02	0.95
3:C:451:GLU:HB3	3:C:474:PHE:CZ	2.02	0.95
3:F:263:VAL:HG22	3:F:267:GLU:OE2	1.65	0.95
2:K:23:GLU:O	2:K:25:LYS:HE3	1.65	0.95
3:C:263:VAL:HG22	3:C:267:GLU:OE2	1.66	0.95
1:B:65:SER:CA	1:B:68:LYS:HZ1	1.78	0.95
1:B:190:LYS:HB2	1:B:192:GLU:OE2	1.65	0.95
3:F:248:VAL:HG22	3:F:256:THR:HG23	1.46	0.95
2:D:23:GLU:O	2:D:25:LYS:HE3	1.65	0.95
1:B:233:TRP:CH2	1:B:245:VAL:HG22	2.02	0.94
1:A:379:GLU:O	1:A:379:GLU:HG3	1.63	0.94
1:G:110:PHE:O	3:I:125:TYR:CE1	2.20	0.94
3:H:263:VAL:HG22	3:H:267:GLU:OE2	1.66	0.94
3:C:248:VAL:HG22	3:C:256:THR:HG23	1.46	0.94
1:G:233:TRP:CH2	1:G:245:VAL:HG22	2.02	0.93
3:C:730:LEU:HD13	3:C:733:ARG:CZ	1.97	0.92
1:A:370:ARG:HG2	1:A:389:SER:HA	1.51	0.91
3:H:225:LEU:HD11	3:H:275:THR:HG21	1.48	0.91
2:L:72:TRP:HB2	2:L:105:LYS:HB3	1.52	0.90
1:A:51:THR:HG21	1:B:17:LEU:CD1	2.01	0.90
3:I:455:ILE:HG22	3:I:470:LEU:CD2	2.01	0.90
3:I:524:ILE:HG12	3:I:525:PRO:CD	2.02	0.90
1:G:21:LEU:HD22	1:J:47:MET:HE2	1.53	0.90
2:K:72:TRP:HB2	2:K:105:LYS:HB3	1.52	0.90
1:G:151:SER:O	1:G:155:MET:HG2	1.71	0.89
3:F:735:LEU:HD13	3:F:736:PRO:HD2	1.54	0.89
1:G:181:LEU:HD22	1:G:219:GLN:HB3	1.54	0.89
3:C:506:ARG:HB2	2:E:30:VAL:HG22	1.55	0.89
1:A:151:SER:O	1:A:155:MET:HG2	1.71	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:47:MET:CG	1:J:21:LEU:CD2	2.50	0.89
3:H:455:ILE:HG22	3:H:470:LEU:CD2	2.01	0.89
1:B:151:SER:O	1:B:155:MET:HG2	1.71	0.89
2:E:72:TRP:HB2	2:E:105:LYS:HB3	1.52	0.89
2:D:72:TRP:HB2	2:D:105:LYS:HB3	1.53	0.89
3:H:506:ARG:HB2	2:K:30:VAL:HG22	1.55	0.88
2:D:30:VAL:HG22	3:F:506:ARG:HB2	1.55	0.88
1:B:65:SER:HA	1:B:68:LYS:HZ1	1.38	0.87
3:H:735:LEU:HD13	3:H:736:PRO:HD2	1.54	0.87
1:B:233:TRP:NE1	1:B:237:LEU:HB3	1.89	0.87
3:I:506:ARG:HB2	2:L:30:VAL:HG22	1.55	0.87
2:E:97:ASP:OD2	2:E:99:ARG:CG	2.22	0.87
1:J:233:TRP:NE1	1:J:237:LEU:HB3	1.90	0.86
1:G:233:TRP:NE1	1:G:237:LEU:HB3	1.89	0.86
3:H:346:LEU:HD13	3:H:418:LEU:HB2	1.57	0.86
1:B:160:PHE:CE2	1:B:169:PHE:CD1	2.63	0.86
3:C:730:LEU:HD13	3:C:733:ARG:HH22	1.35	0.86
1:J:161:THR:HB	1:J:188:VAL:HG13	1.59	0.85
1:B:65:SER:CA	1:B:68:LYS:NZ	2.37	0.85
3:C:413:ASP:HA	3:C:457:LYS:HE2	1.58	0.85
1:A:161:THR:HB	1:A:188:VAL:HG13	1.59	0.85
3:I:198:ARG:HH21	3:I:202:GLU:HG3	1.40	0.85
1:B:160:PHE:CZ	1:B:169:PHE:CZ	2.65	0.84
3:H:346:LEU:HD11	3:H:414:LYS:O	1.75	0.84
1:B:161:THR:HB	1:B:188:VAL:HG13	1.59	0.84
3:C:248:VAL:HG22	3:C:256:THR:CG2	2.08	0.84
3:C:669:LEU:HG	3:C:671:ARG:H	1.43	0.83
3:F:669:LEU:HG	3:F:671:ARG:H	1.43	0.83
3:F:248:VAL:HG22	3:F:256:THR:CG2	2.08	0.83
3:I:127:ASP:O	3:I:131:VAL:HG22	1.79	0.83
2:K:41:ASN:HD21	2:K:46:ARG:CD	1.92	0.83
3:C:751:ARG:NH2	3:C:753:TYR:HD1	1.76	0.83
1:A:24:PHE:HZ	1:B:57:ARG:HH22	1.26	0.82
3:I:669:LEU:HG	3:I:671:ARG:H	1.43	0.82
3:C:127:ASP:O	3:C:131:VAL:HG22	1.79	0.82
3:H:248:VAL:HG22	3:H:256:THR:CG2	2.08	0.82
3:H:669:LEU:HG	3:H:671:ARG:H	1.42	0.82
2:L:41:ASN:HD21	2:L:46:ARG:CD	1.92	0.82
2:E:41:ASN:HD21	2:E:46:ARG:CD	1.92	0.81
3:H:346:LEU:HB2	3:H:418:LEU:HD13	1.63	0.81
1:J:190:LYS:HG3	1:J:193:THR:HG22	1.61	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:H:127:ASP:O	3:H:131:VAL:HG22	1.79	0.81
3:H:346:LEU:CA	3:H:418:LEU:HD12	2.11	0.81
3:F:503:LEU:HD21	3:F:531:ALA:HB1	1.62	0.80
1:J:397:ARG:HD2	1:J:417:CYS:HA	1.63	0.80
1:B:262:GLY:O	1:B:265:LYS:HG2	1.82	0.80
1:J:262:GLY:O	1:J:265:LYS:HG2	1.82	0.80
3:H:346:LEU:HA	3:H:418:LEU:CD1	2.10	0.80
1:A:262:GLY:O	1:A:265:LYS:HG2	1.82	0.79
1:B:64:LEU:O	1:B:68:LYS:CE	2.30	0.79
1:B:202:LEU:HD22	1:B:213:LEU:HA	1.65	0.79
1:B:160:PHE:HE2	1:B:169:PHE:CE1	1.95	0.79
1:G:262:GLY:O	1:G:265:LYS:HG2	1.82	0.79
3:H:225:LEU:HD11	3:H:275:THR:CG2	2.10	0.79
1:A:17:LEU:CD1	1:B:51:THR:HG21	2.12	0.78
3:C:526:PRO:HA	3:C:529:ARG:HB2	1.65	0.78
1:A:181:LEU:HD22	1:A:219:GLN:HB3	1.65	0.78
1:B:160:PHE:HE2	1:B:169:PHE:CD1	2.02	0.78
3:H:346:LEU:CA	3:H:418:LEU:CD1	2.61	0.78
1:G:390:VAL:HG12	1:G:393:GLU:HG3	1.66	0.78
1:J:397:ARG:HG3	1:J:415:LEU:O	1.84	0.78
3:H:526:PRO:HA	3:H:529:ARG:HB2	1.65	0.77
1:G:47:MET:SD	1:J:21:LEU:CD2	2.71	0.77
3:F:541:ALA:HB2	3:H:501:VAL:O	1.84	0.77
3:C:751:ARG:HH21	3:C:753:TYR:HD1	1.33	0.77
3:F:440:LEU:HB2	3:F:513:TRP:CZ3	2.19	0.77
1:B:390:VAL:HG12	1:B:393:GLU:HG3	1.66	0.76
3:C:451:GLU:CB	3:C:474:PHE:CZ	2.67	0.76
1:A:51:THR:HG21	1:B:17:LEU:HD11	1.67	0.76
1:G:110:PHE:O	3:I:125:TYR:HE1	1.68	0.76
3:F:225:LEU:HB2	3:F:272:HIS:CE1	2.20	0.76
1:J:397:ARG:HD2	1:J:416:PRO:O	1.86	0.76
2:E:23:GLU:HB3	2:E:25:LYS:HZ1	1.49	0.75
3:F:120:ARG:HG3	3:F:140:TYR:HB2	1.68	0.75
3:H:458:LEU:HB3	3:H:467:THR:HG22	1.69	0.75
3:I:437:ALA:HA	3:I:513:TRP:HZ3	1.51	0.75
3:F:754:LEU:HD11	3:F:764:TYR:HB3	1.68	0.75
1:G:58:ALA:HB1	3:I:121:ASP:HB3	1.69	0.75
2:D:28:ASN:O	2:D:28:ASN:CG	2.25	0.75
3:F:440:LEU:HB2	3:F:513:TRP:HZ3	1.51	0.75
2:K:46:ARG:CZ	2:K:46:ARG:O	2.35	0.74
3:I:509:THR:HB	3:I:512:TYR:HD2	1.51	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:480:SER:HB2	3:C:506:ARG:HE	1.52	0.74
3:H:124:MET:HA	3:H:127:ASP:HB2	1.70	0.74
2:L:46:ARG:O	2:L:46:ARG:CZ	2.35	0.74
3:F:509:THR:HB	3:F:512:TYR:HD2	1.53	0.74
3:C:124:MET:HA	3:C:127:ASP:HB2	1.70	0.74
3:H:480:SER:HB2	3:H:506:ARG:HE	1.52	0.74
1:J:397:ARG:HB2	1:J:415:LEU:HB2	1.69	0.74
3:I:124:MET:HA	3:I:127:ASP:HB2	1.70	0.74
3:C:393:ASP:HA	3:C:439:ARG:HH21	1.52	0.74
3:H:120:ARG:HG3	3:H:140:TYR:HB2	1.68	0.74
3:C:416:MET:SD	3:C:457:LYS:HE3	2.28	0.74
2:E:46:ARG:CZ	2:E:46:ARG:O	2.35	0.74
1:A:47:MET:HE1	1:B:21:LEU:HD22	1.68	0.74
2:K:28:ASN:O	2:K:28:ASN:CG	2.25	0.74
3:C:451:GLU:HG2	3:C:474:PHE:HZ	1.53	0.74
3:I:470:LEU:HD11	3:I:474:PHE:HE2	1.51	0.74
3:I:120:ARG:HG3	3:I:140:TYR:HB2	1.68	0.73
1:J:397:ARG:HD2	1:J:417:CYS:CA	2.17	0.73
3:I:458:LEU:HB3	3:I:467:THR:HG22	1.69	0.73
1:A:181:LEU:HD21	1:A:220:ILE:HD13	1.70	0.73
2:E:28:ASN:O	2:E:28:ASN:CG	2.25	0.73
3:F:124:MET:HA	3:F:127:ASP:HB2	1.70	0.73
3:C:120:ARG:HG3	3:C:140:TYR:HB2	1.68	0.72
2:L:41:ASN:HD21	2:L:46:ARG:HD3	1.54	0.72
1:J:228:VAL:O	1:J:228:VAL:HG22	1.87	0.72
3:H:342:ILE:HG13	3:H:388:LEU:HA	1.71	0.72
3:C:245:ILE:HA	3:C:248:VAL:HG12	1.72	0.72
2:K:41:ASN:HD21	2:K:46:ARG:HD3	1.54	0.72
3:I:480:SER:HB2	3:I:506:ARG:HE	1.52	0.72
1:G:202:LEU:HD22	1:G:213:LEU:HA	1.71	0.72
1:G:273:GLU:HA	1:G:283:TYR:HB3	1.72	0.72
2:D:23:GLU:HB3	2:D:25:LYS:HZ1	1.55	0.72
3:H:470:LEU:HD11	3:H:474:PHE:HE2	1.51	0.72
3:F:245:ILE:HA	3:F:248:VAL:HG12	1.72	0.71
3:H:346:LEU:CD1	3:H:418:LEU:HB2	2.19	0.71
1:J:221:ARG:HA	1:J:255:LYS:HE2	1.72	0.71
1:A:21:LEU:HD22	1:B:47:MET:HE2	1.72	0.71
3:C:638:LYS:HD3	3:C:639:PRO:CD	2.16	0.71
2:E:41:ASN:HD21	2:E:46:ARG:HD3	1.54	0.71
1:G:233:TRP:CD1	1:G:237:LEU:HB3	2.26	0.70
2:D:24:VAL:O	2:D:25:LYS:HE2	1.91	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:24:VAL:O	2:L:25:LYS:HE2	1.91	0.70
1:B:233:TRP:CH2	1:B:245:VAL:CG2	2.74	0.70
1:B:65:SER:C	1:B:68:LYS:NZ	2.44	0.70
1:J:233:TRP:CH2	1:J:245:VAL:CG2	2.74	0.70
3:H:389:SER:HB2	3:H:431:TYR:HB3	1.73	0.70
1:B:233:TRP:CD1	1:B:237:LEU:HB3	2.26	0.70
3:I:638:LYS:HD3	3:I:639:PRO:CD	2.16	0.70
2:E:24:VAL:O	2:E:25:LYS:HE2	1.91	0.70
3:H:245:ILE:HA	3:H:248:VAL:HG12	1.72	0.70
3:F:638:LYS:HD3	3:F:639:PRO:CD	2.16	0.69
1:B:379:GLU:O	1:B:379:GLU:CG	2.40	0.69
1:G:47:MET:CG	1:J:21:LEU:HD22	2.20	0.69
1:J:233:TRP:CD1	1:J:237:LEU:HB3	2.26	0.69
3:H:638:LYS:HD3	3:H:639:PRO:CD	2.16	0.69
2:L:23:GLU:HB3	2:L:25:LYS:HZ1	1.58	0.69
3:H:735:LEU:CD1	3:H:736:PRO:HD2	2.22	0.69
3:F:166:LEU:HD22	3:F:212:MET:HG3	1.73	0.69
3:F:735:LEU:CD1	3:F:736:PRO:HD2	2.22	0.69
3:H:123:LEU:HB3	3:H:139:VAL:HG11	1.75	0.69
3:C:198:ARG:HH21	3:C:202:GLU:HG3	1.57	0.69
3:I:425:LYS:NZ	3:I:462:CYS:SG	2.64	0.69
3:C:123:LEU:HB3	3:C:139:VAL:HG11	1.75	0.69
2:K:47:ASN:HD21	2:K:54:ILE:HG23	1.58	0.69
1:A:17:LEU:HD11	1:B:51:THR:HG21	1.75	0.68
3:C:751:ARG:NH2	3:C:753:TYR:CD1	2.59	0.68
3:I:470:LEU:HD12	3:I:470:LEU:O	1.94	0.68
1:A:47:MET:CE	1:B:21:LEU:HD22	2.24	0.68
1:G:233:TRP:CH2	1:G:245:VAL:CG2	2.74	0.68
2:K:23:GLU:HB3	2:K:25:LYS:HZ1	1.59	0.68
2:K:24:VAL:O	2:K:25:LYS:HE2	1.91	0.68
3:I:123:LEU:HB3	3:I:139:VAL:HG11	1.75	0.68
2:L:28:ASN:O	2:L:28:ASN:CG	2.25	0.68
3:H:470:LEU:HD12	3:H:470:LEU:O	1.94	0.68
2:L:47:ASN:HD21	2:L:54:ILE:HG23	1.58	0.68
1:G:91:THR:HG23	1:G:93:ASN:H	1.59	0.67
1:B:233:TRP:CH2	1:B:245:VAL:CA	2.64	0.67
1:G:220:ILE:HG23	1:G:224:ALA:HB2	1.76	0.67
1:B:91:THR:HG23	1:B:93:ASN:H	1.59	0.67
3:C:730:LEU:CD1	3:C:733:ARG:HH22	1.97	0.67
2:E:47:ASN:HD21	2:E:54:ILE:HG23	1.58	0.67
3:F:123:LEU:HB3	3:F:139:VAL:HG11	1.75	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:707:ILE:HB	3:C:726:VAL:HG21	1.76	0.67
1:G:378:CYS:HB2	1:G:426:VAL:HG21	1.77	0.67
1:A:379:GLU:O	1:A:379:GLU:CG	2.40	0.67
2:K:23:GLU:HB3	2:K:25:LYS:NZ	2.10	0.67
1:B:378:CYS:HB2	1:B:426:VAL:HG21	1.77	0.67
2:D:23:GLU:HB3	2:D:25:LYS:NZ	2.10	0.67
2:E:23:GLU:HB3	2:E:25:LYS:NZ	2.10	0.67
3:I:446:VAL:HG23	3:I:447:SER:N	2.10	0.66
3:H:425:LYS:NZ	3:H:462:CYS:SG	2.64	0.66
2:L:23:GLU:HB3	2:L:25:LYS:NZ	2.10	0.66
1:A:19:GLU:OE2	1:B:8:GLN:NE2	2.28	0.66
1:J:378:CYS:HB2	1:J:426:VAL:HG21	1.77	0.66
1:J:91:THR:HG23	1:J:93:ASN:H	1.59	0.66
3:F:455:ILE:HD12	3:F:471:GLU:HG2	1.78	0.66
2:L:25:LYS:N	2:L:25:LYS:CE	2.50	0.66
3:I:90:ARG:NH2	3:I:150:GLN:OE1	2.29	0.66
1:G:190:LYS:HG3	1:G:193:THR:HG22	1.78	0.66
3:F:426:ASP:HB3	3:F:734:PHE:CD2	2.30	0.66
3:H:446:VAL:HG23	3:H:447:SER:N	2.10	0.66
1:B:65:SER:O	1:B:68:LYS:NZ	2.29	0.66
3:C:446:VAL:HG23	3:C:447:SER:N	2.10	0.65
3:C:451:GLU:CG	3:C:474:PHE:HZ	2.09	0.65
1:G:397:ARG:HB2	1:G:415:LEU:HB2	1.78	0.65
3:F:437:ALA:CB	3:F:514:PRO:CG	2.74	0.65
1:A:200:LEU:HA	1:A:203:GLU:HB2	1.78	0.65
2:L:72:TRP:HB2	2:L:105:LYS:CB	2.25	0.65
1:A:378:CYS:HB2	1:A:426:VAL:HG21	1.77	0.65
1:G:225:LEU:HD12	1:G:230:GLN:NE2	2.11	0.65
3:F:446:VAL:HG23	3:F:447:SER:N	2.10	0.65
2:K:72:TRP:HB2	2:K:105:LYS:CB	2.25	0.65
1:G:436:LEU:O	1:G:455:ARG:NH2	2.30	0.65
3:C:90:ARG:NH2	3:C:150:GLN:OE1	2.29	0.65
1:J:436:LEU:O	1:J:455:ARG:NH2	2.30	0.65
3:C:374:PHE:HB3	3:C:421:PHE:CG	2.31	0.65
1:A:436:LEU:O	1:A:455:ARG:NH2	2.30	0.64
3:F:90:ARG:NH2	3:F:150:GLN:OE1	2.29	0.64
1:B:436:LEU:O	1:B:455:ARG:NH2	2.30	0.64
3:H:90:ARG:NH2	3:H:150:GLN:OE1	2.29	0.64
3:I:509:THR:HB	3:I:512:TYR:CD2	2.33	0.64
3:I:180:ARG:HH22	3:I:250:HIS:HB3	1.63	0.64
3:I:546:ARG:HB2	2:L:33:TRP:HB2	1.77	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:559:LEU:HD22	3:I:602:LEU:HD23	1.80	0.64
3:I:508:LEU:HD13	3:I:513:TRP:CE2	2.32	0.64
3:C:556:SER:HA	3:C:595:SER:HA	1.80	0.64
1:B:64:LEU:O	1:B:68:LYS:NZ	2.31	0.63
2:D:25:LYS:N	2:D:25:LYS:CE	2.50	0.63
3:C:559:LEU:HD22	3:C:602:LEU:HD23	1.80	0.63
1:G:379:GLU:O	1:G:379:GLU:CG	2.40	0.63
3:I:198:ARG:O	3:I:202:GLU:HB3	1.99	0.63
3:C:451:GLU:CB	3:C:474:PHE:HZ	2.10	0.63
2:D:72:TRP:HB2	2:D:105:LYS:CB	2.25	0.63
3:F:440:LEU:HB3	3:F:513:TRP:HH2	1.64	0.63
3:I:522:CYS:HB3	3:I:622:ILE:HB	1.80	0.63
3:H:559:LEU:HD22	3:H:602:LEU:HD23	1.80	0.63
3:C:451:GLU:HB3	3:C:474:PHE:HZ	1.59	0.63
1:A:289:SER:HG	1:A:294:LYS:H	1.47	0.63
3:F:622:ILE:HG12	3:F:627:LEU:HD13	1.81	0.62
2:K:23:GLU:O	2:K:25:LYS:CE	2.46	0.62
1:B:64:LEU:C	1:B:68:LYS:HZ1	2.02	0.62
1:G:47:MET:CG	1:J:21:LEU:HD21	2.21	0.62
1:B:65:SER:HA	1:B:68:LYS:HZ3	1.61	0.62
1:J:289:SER:HG	1:J:294:LYS:H	1.48	0.62
3:F:556:SER:HA	3:F:595:SER:HA	1.80	0.62
3:H:346:LEU:CD1	3:H:414:LYS:O	2.48	0.62
2:L:41:ASN:ND2	2:L:46:ARG:CD	2.62	0.62
3:C:638:LYS:CG	3:C:642:ARG:HG2	2.30	0.62
3:F:559:LEU:HD22	3:F:602:LEU:HD23	1.80	0.62
3:H:638:LYS:CG	3:H:642:ARG:HG2	2.30	0.62
1:J:233:TRP:CH2	1:J:245:VAL:CA	2.64	0.62
3:H:173:ARG:HH12	3:H:213:SER:HA	1.63	0.62
3:H:198:ARG:HH21	3:H:202:GLU:HG3	1.64	0.62
3:H:556:SER:HA	3:H:595:SER:HA	1.80	0.62
3:H:682:GLY:O	3:H:683:GLU:CD	2.38	0.62
2:E:23:GLU:O	2:E:25:LYS:CE	2.46	0.62
3:C:682:GLY:O	3:C:683:GLU:CD	2.38	0.62
1:J:182:SER:HB3	1:J:219:GLN:HG3	1.82	0.62
3:F:248:VAL:CG2	3:F:256:THR:HG23	2.28	0.62
3:I:556:SER:HA	3:I:595:SER:HA	1.80	0.62
3:C:683:GLU:O	3:C:683:GLU:HG2	2.00	0.62
3:H:683:GLU:O	3:H:683:GLU:HG2	2.00	0.62
3:I:682:GLY:O	3:I:683:GLU:CD	2.38	0.62
1:A:273:GLU:HA	1:A:283:TYR:HB3	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:426:ASP:HB3	3:F:734:PHE:HD2	1.65	0.61
2:E:72:TRP:HB2	2:E:105:LYS:CB	2.25	0.61
3:F:458:LEU:HB3	3:F:467:THR:HB	1.83	0.61
3:I:634:LEU:HB3	3:I:644:LEU:HD23	1.82	0.61
3:C:248:VAL:CG2	3:C:256:THR:HG23	2.28	0.61
3:C:509:THR:HB	3:C:512:TYR:HD2	1.64	0.61
3:C:560:ASN:HB2	2:E:25:LYS:CG	2.27	0.61
3:F:682:GLY:O	3:F:683:GLU:CD	2.38	0.61
3:F:598:GLN:HG2	3:F:634:LEU:HG	1.83	0.61
3:F:683:GLU:O	3:F:683:GLU:HG2	2.00	0.61
3:H:509:THR:HB	3:H:512:TYR:HD1	1.64	0.61
1:A:24:PHE:HZ	1:B:57:ARG:NH2	1.98	0.61
1:A:55:TYR:CE1	3:C:58:TYR:CB	2.84	0.61
3:H:560:ASN:HB2	2:K:25:LYS:CG	2.27	0.61
2:K:41:ASN:ND2	2:K:46:ARG:CD	2.62	0.61
3:I:683:GLU:HG2	3:I:683:GLU:O	2.00	0.61
2:L:23:GLU:O	2:L:25:LYS:CE	2.46	0.61
1:B:273:GLU:HA	1:B:283:TYR:HB3	1.82	0.61
3:F:638:LYS:CG	3:F:642:ARG:HG2	2.30	0.61
1:G:231:ARG:H	1:G:231:ARG:HD2	1.66	0.61
3:H:424:GLU:OE2	3:H:735:LEU:HD23	2.01	0.61
3:I:638:LYS:CG	3:I:642:ARG:HG2	2.30	0.61
3:H:220:GLU:HA	3:H:223:LYS:HB2	1.83	0.61
2:L:23:GLU:C	2:L:25:LYS:HE3	2.22	0.61
2:D:23:GLU:O	2:D:25:LYS:CE	2.46	0.61
2:K:25:LYS:HE2	2:K:25:LYS:CA	2.31	0.61
1:A:127:LYS:HG3	1:A:127:LYS:O	2.01	0.60
1:B:231:ARG:H	1:B:231:ARG:HD2	1.66	0.60
3:I:598:GLN:HG2	3:I:634:LEU:HG	1.83	0.60
2:E:25:LYS:HE2	2:E:25:LYS:CA	2.31	0.60
1:J:127:LYS:O	1:J:127:LYS:HG3	2.02	0.60
2:L:25:LYS:HE2	2:L:25:LYS:CA	2.32	0.60
1:G:186:LEU:HD13	1:G:194:VAL:HG11	1.83	0.60
3:H:598:GLN:HG2	3:H:634:LEU:HG	1.83	0.60
3:I:509:THR:HG23	2:L:76:ASN:ND2	2.17	0.60
1:J:231:ARG:H	1:J:231:ARG:HD2	1.66	0.60
3:F:634:LEU:HB3	3:F:644:LEU:HD23	1.82	0.60
3:H:346:LEU:HD13	3:H:418:LEU:CB	2.31	0.60
2:K:23:GLU:C	2:K:25:LYS:HE3	2.22	0.60
1:J:399:VAL:HG13	1:J:415:LEU:HD21	1.82	0.60
3:H:634:LEU:HB3	3:H:644:LEU:HD23	1.82	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:634:LEU:HB3	3:C:644:LEU:HD23	1.82	0.60
3:F:204:ASP:O	3:F:208:PRO:HD2	2.01	0.60
3:F:440:LEU:CB	3:F:513:TRP:CH2	2.85	0.60
3:I:385:PRO:HB3	3:I:428:PHE:HB2	1.83	0.60
3:C:451:GLU:HG2	3:C:474:PHE:CZ	2.36	0.60
1:J:273:GLU:HA	1:J:283:TYR:HB3	1.83	0.60
3:I:153:ARG:HH21	3:I:200:VAL:HG13	1.66	0.60
3:H:508:LEU:HD13	3:H:513:TRP:CE2	2.36	0.60
3:C:598:GLN:HG2	3:C:634:LEU:HG	1.83	0.60
1:A:153:LYS:HE3	1:A:179:ASP:OD1	2.02	0.60
3:F:437:ALA:HB2	3:F:514:PRO:CD	2.31	0.60
3:H:356:LEU:HD12	3:H:360:PHE:HB2	1.84	0.60
3:I:622:ILE:HG12	3:I:627:LEU:HD13	1.84	0.60
3:C:451:GLU:HB3	3:C:474:PHE:CE2	2.37	0.60
1:B:153:LYS:HE3	1:B:179:ASP:OD1	2.02	0.59
1:G:127:LYS:O	1:G:127:LYS:HG3	2.01	0.59
1:J:153:LYS:HE3	1:J:179:ASP:OD1	2.02	0.59
2:D:23:GLU:C	2:D:25:LYS:HE3	2.22	0.59
2:K:24:VAL:O	2:K:25:LYS:CE	2.49	0.59
2:E:41:ASN:ND2	2:E:46:ARG:CD	2.62	0.59
1:B:397:ARG:HB2	1:B:415:LEU:HB2	1.84	0.59
3:I:626:GLU:CA	3:I:629:ARG:HD2	2.18	0.59
2:E:23:GLU:C	2:E:25:LYS:HE3	2.22	0.59
2:E:25:LYS:N	2:E:25:LYS:CE	2.50	0.59
3:F:339:VAL:HA	3:F:391:PHE:HB2	1.84	0.59
1:A:57:ARG:HH22	1:B:24:PHE:HZ	1.49	0.59
3:F:217:PHE:HB2	3:F:267:GLU:OE1	2.03	0.59
3:H:641:GLN:HA	3:H:641:GLN:OE1	2.02	0.59
3:C:282:SER:HA	3:C:286:HIS:HB3	1.85	0.59
1:G:535:CYS:SG	1:G:564:ARG:NH1	2.76	0.59
2:K:25:LYS:N	2:K:25:LYS:CE	2.50	0.59
3:C:102:LEU:HD11	3:C:182:ALA:HB1	1.85	0.59
3:C:414:LYS:O	3:C:418:LEU:HG	2.03	0.59
1:G:289:SER:HG	1:G:294:LYS:H	1.49	0.59
3:I:641:GLN:OE1	3:I:641:GLN:HA	2.02	0.59
1:A:382:ILE:HB	1:A:402:TYR:HB3	1.85	0.59
1:G:127:LYS:O	1:G:127:LYS:CG	2.51	0.59
3:H:525:PRO:HB2	3:H:528:PRO:HG2	1.83	0.59
3:I:768:ALA:HB1	2:L:89:LYS:HB3	1.85	0.59
1:G:153:LYS:HE3	1:G:179:ASP:OD1	2.02	0.59
3:H:337:ASN:ND2	3:H:340:ASP:OD1	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:102:LEU:HD11	3:I:182:ALA:HB1	1.85	0.59
1:B:233:TRP:HE1	1:B:237:LEU:HB3	1.68	0.58
3:H:473:MET:SD	3:H:512:TYR:HB3	2.43	0.58
3:I:207:ALA:HB3	3:I:208:PRO:HD3	1.85	0.58
3:C:356:LEU:HD12	3:C:360:PHE:HB2	1.84	0.58
1:J:397:ARG:HD2	1:J:416:PRO:C	2.23	0.58
3:F:446:VAL:CG2	3:F:447:SER:N	2.67	0.58
3:H:282:SER:HA	3:H:286:HIS:HB3	1.85	0.58
3:F:626:GLU:CA	3:F:629:ARG:HD2	2.18	0.58
3:H:389:SER:HB2	3:H:431:TYR:CB	2.34	0.58
3:H:446:VAL:CG2	3:H:447:SER:N	2.66	0.58
3:F:102:LEU:HD11	3:F:182:ALA:HB1	1.85	0.58
1:A:186:LEU:HD13	1:A:194:VAL:HG11	1.85	0.58
1:A:207:GLU:HG3	1:A:238:PRO:HG3	1.85	0.58
1:B:127:LYS:O	1:B:127:LYS:HG3	2.01	0.58
1:B:535:CYS:SG	1:B:564:ARG:NH1	2.76	0.58
1:J:535:CYS:SG	1:J:564:ARG:NH1	2.76	0.58
3:F:43:GLU:OE2	3:F:48:ASN:ND2	2.32	0.58
3:F:706:ALA:HA	3:F:709:ARG:HH21	1.68	0.58
3:I:560:ASN:HB2	2:L:25:LYS:CG	2.27	0.58
2:E:24:VAL:O	2:E:25:LYS:CE	2.49	0.58
2:D:25:LYS:CG	3:F:560:ASN:HB2	2.27	0.58
3:H:238:GLU:O	3:H:242:ASN:ND2	2.32	0.58
3:I:282:SER:HA	3:I:286:HIS:HB3	1.85	0.58
1:B:186:LEU:HD13	1:B:194:VAL:HG11	1.86	0.58
1:B:382:ILE:HB	1:B:402:TYR:HB3	1.85	0.58
1:J:127:LYS:O	1:J:127:LYS:CG	2.51	0.58
1:B:289:SER:HG	1:B:294:LYS:H	1.51	0.58
3:F:349:LYS:HE2	3:F:421:PHE:HE2	1.69	0.58
3:H:102:LEU:HD11	3:H:182:ALA:HB1	1.85	0.58
3:I:238:GLU:O	3:I:242:ASN:ND2	2.32	0.58
1:A:127:LYS:O	1:A:127:LYS:CG	2.51	0.58
1:A:535:CYS:SG	1:A:564:ARG:NH1	2.76	0.58
1:B:459:ARG:HB3	1:B:476:GLY:HA3	1.86	0.58
3:I:446:VAL:CG2	3:I:447:SER:N	2.67	0.58
1:B:127:LYS:O	1:B:127:LYS:CG	2.51	0.58
1:J:233:TRP:HE1	1:J:237:LEU:HB3	1.69	0.58
3:F:700:LYS:O	3:F:703:ILE:HG12	2.04	0.58
2:L:35:TRP:HD1	2:L:75:CYS:O	1.87	0.58
1:A:55:TYR:HE1	3:C:58:TYR:CB	2.17	0.57
1:G:459:ARG:HB3	1:G:476:GLY:HA3	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:441:LEU:HD21	3:F:508:LEU:CD1	2.34	0.57
2:L:46:ARG:O	2:L:46:ARG:NE	2.37	0.57
3:C:641:GLN:HA	3:C:641:GLN:OE1	2.02	0.57
2:D:77:HIS:CD2	2:D:96:LEU:CD1	2.87	0.57
2:K:46:ARG:O	2:K:46:ARG:NE	2.37	0.57
3:C:446:VAL:CG2	3:C:447:SER:N	2.66	0.57
1:A:19:GLU:CD	1:B:8:GLN:HE21	2.06	0.57
2:D:35:TRP:HD1	2:D:75:CYS:O	1.86	0.57
2:L:38:VAL:HG12	2:L:41:ASN:N	2.18	0.57
3:C:509:THR:HG23	2:E:76:ASN:ND2	2.19	0.57
2:E:38:VAL:HG12	2:E:41:ASN:N	2.18	0.57
1:G:93:ASN:HD21	1:J:9:ILE:HG23	1.70	0.57
1:G:233:TRP:CZ3	1:G:245:VAL:HA	2.38	0.57
2:D:25:LYS:HE2	2:D:25:LYS:CA	2.32	0.57
2:L:24:VAL:O	2:L:25:LYS:CE	2.49	0.57
1:G:233:TRP:HE1	1:G:237:LEU:HB3	1.68	0.57
3:F:282:SER:HA	3:F:286:HIS:HB3	1.85	0.57
3:F:509:THR:HB	3:F:512:TYR:CD2	2.36	0.57
2:K:35:TRP:HD1	2:K:75:CYS:O	1.86	0.57
1:A:91:THR:HG23	1:A:93:ASN:H	1.69	0.57
3:F:440:LEU:HB3	3:F:513:TRP:CH2	2.39	0.57
3:H:346:LEU:CB	3:H:418:LEU:HD13	2.32	0.57
2:K:38:VAL:HG12	2:K:41:ASN:N	2.18	0.57
3:C:455:ILE:C	3:C:457:LYS:N	2.54	0.57
1:A:476:GLY:O	1:A:496:SER:N	2.38	0.57
3:F:337:ASN:HB3	3:F:340:ASP:HB2	1.85	0.57
3:F:641:GLN:HA	3:F:641:GLN:OE1	2.02	0.57
3:C:238:GLU:O	3:C:242:ASN:ND2	2.32	0.57
2:E:24:VAL:O	2:E:25:LYS:NZ	2.38	0.57
2:E:35:TRP:HD1	2:E:75:CYS:O	1.86	0.57
1:B:217:LEU:HG	1:B:225:LEU:HD11	1.86	0.57
3:F:446:VAL:CG2	3:F:447:SER:H	2.18	0.57
1:B:476:GLY:O	1:B:496:SER:N	2.38	0.57
3:H:245:ILE:HA	3:H:248:VAL:CG1	2.35	0.57
3:H:638:LYS:HG2	3:H:642:ARG:HG2	1.87	0.57
2:K:24:VAL:O	2:K:25:LYS:NZ	2.38	0.57
3:C:289:LYS:O	3:C:351:ARG:NH2	2.38	0.57
2:E:23:GLU:C	2:E:25:LYS:CE	2.73	0.57
2:L:23:GLU:C	2:L:25:LYS:CE	2.74	0.57
3:C:638:LYS:HG2	3:C:642:ARG:HG2	1.87	0.57
1:A:459:ARG:HB3	1:A:476:GLY:HA3	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:181:LEU:HD21	1:B:220:ILE:HD13	1.86	0.56
1:J:233:TRP:CZ3	1:J:245:VAL:HA	2.38	0.56
3:I:625:ARG:H	3:I:625:ARG:HH21	1.51	0.56
3:I:638:LYS:HG2	3:I:642:ARG:HG2	1.87	0.56
3:C:446:VAL:CG2	3:C:447:SER:H	2.18	0.56
1:J:379:GLU:O	1:J:379:GLU:CG	2.40	0.56
3:F:437:ALA:CB	3:F:514:PRO:HG3	2.35	0.56
1:B:525:VAL:HA	1:B:538:MET:HG2	1.88	0.56
1:J:476:GLY:O	1:J:496:SER:N	2.38	0.56
2:D:23:GLU:C	2:D:25:LYS:CE	2.74	0.56
3:F:638:LYS:HG2	3:F:642:ARG:HG2	1.87	0.56
3:H:289:LYS:O	3:H:351:ARG:NH2	2.38	0.56
3:I:612:THR:OG1	3:I:655:ASN:O	2.24	0.56
3:C:699:ARG:HE	3:C:734:PHE:HB2	1.70	0.56
1:G:286:VAL:HG11	1:G:573:TRP:HH2	1.71	0.56
2:D:24:VAL:O	2:D:25:LYS:CE	2.50	0.56
3:F:612:THR:OG1	3:F:655:ASN:O	2.24	0.56
3:H:383:ARG:HD3	3:H:387:TYR:CZ	2.40	0.56
3:C:557:ALA:HB3	3:C:594:VAL:HG23	1.88	0.56
2:E:46:ARG:O	2:E:46:ARG:NE	2.37	0.56
1:B:305:LEU:HD21	1:B:323:GLY:HA3	1.88	0.56
1:J:228:VAL:O	1:J:228:VAL:CG2	2.54	0.56
3:H:557:ALA:HB3	3:H:594:VAL:HG23	1.88	0.56
2:L:24:VAL:O	2:L:25:LYS:NZ	2.38	0.56
3:C:612:THR:OG1	3:C:655:ASN:O	2.24	0.56
1:G:525:VAL:HA	1:G:538:MET:HG2	1.88	0.56
1:J:166:GLN:HB2	1:J:169:PHE:HB3	1.88	0.56
2:D:24:VAL:O	2:D:25:LYS:NZ	2.38	0.56
1:A:234:PHE:O	1:A:237:LEU:HG	2.05	0.56
1:A:305:LEU:HD21	1:A:323:GLY:HA3	1.88	0.56
1:G:476:GLY:O	1:G:496:SER:N	2.38	0.56
1:J:459:ARG:HB3	1:J:476:GLY:HA3	1.86	0.56
3:H:612:THR:OG1	3:H:655:ASN:O	2.24	0.56
1:B:64:LEU:O	1:B:68:LYS:HE3	2.04	0.56
1:J:305:LEU:HD21	1:J:323:GLY:HA3	1.88	0.56
2:K:23:GLU:C	2:K:25:LYS:CE	2.74	0.56
3:C:245:ILE:HA	3:C:248:VAL:CG1	2.35	0.56
3:F:245:ILE:HA	3:F:248:VAL:CG1	2.35	0.56
3:F:682:GLY:O	3:F:683:GLU:CG	2.54	0.56
3:H:437:ALA:HA	3:H:513:TRP:HZ3	1.71	0.56
3:C:415:ALA:HA	3:C:418:LEU:HD12	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:27:TRP:CZ2	2:E:29:ALA:HB2	2.40	0.56
2:D:76:ASN:ND2	3:F:509:THR:HG23	2.21	0.55
2:K:27:TRP:CZ2	2:K:29:ALA:HB2	2.40	0.55
2:L:27:TRP:CZ2	2:L:29:ALA:HB2	2.40	0.55
3:H:446:VAL:CG2	3:H:447:SER:H	2.18	0.55
3:C:144:LEU:HD12	3:C:193:LEU:HA	1.88	0.55
1:A:254:PRO:O	1:A:255:LYS:HG2	2.06	0.55
3:F:144:LEU:HD12	3:F:193:LEU:HA	1.88	0.55
3:H:473:MET:HG2	3:H:512:TYR:HB3	1.87	0.55
3:H:682:GLY:O	3:H:683:GLU:CG	2.54	0.55
3:I:446:VAL:CG2	3:I:447:SER:H	2.18	0.55
3:I:682:GLY:O	3:I:683:GLU:CG	2.54	0.55
2:L:47:ASN:HD21	2:L:54:ILE:CG2	2.18	0.55
3:C:129:VAL:O	3:C:133:GLN:NE2	2.34	0.55
1:B:286:VAL:HG11	1:B:573:TRP:HH2	1.71	0.55
1:J:198:ALA:O	1:J:202:LEU:HG	2.06	0.55
1:J:397:ARG:CD	1:J:416:PRO:O	2.55	0.55
3:I:559:LEU:CD2	3:I:602:LEU:HD23	2.36	0.55
3:C:525:PRO:HB2	3:C:528:PRO:HG2	1.87	0.55
3:C:682:GLY:O	3:C:683:GLU:CG	2.54	0.55
1:B:233:TRP:HH2	1:B:245:VAL:N	2.04	0.55
1:B:254:PRO:O	1:B:255:LYS:HG2	2.06	0.55
1:J:254:PRO:O	1:J:255:LYS:HG2	2.06	0.55
3:F:557:ALA:HB3	3:F:594:VAL:HG23	1.88	0.55
3:F:559:LEU:CD2	3:F:602:LEU:HD23	2.36	0.55
2:K:47:ASN:HD21	2:K:54:ILE:CG2	2.18	0.55
3:I:129:VAL:O	3:I:133:GLN:NE2	2.34	0.55
3:I:144:LEU:HD12	3:I:193:LEU:HA	1.88	0.55
1:B:233:TRP:CZ3	1:B:245:VAL:HA	2.38	0.55
1:J:286:VAL:HG11	1:J:573:TRP:HH2	1.71	0.55
2:K:38:VAL:HG12	2:K:41:ASN:H	1.72	0.55
1:B:195:ARG:HB2	1:B:224:ALA:HB1	1.89	0.55
3:H:710:ILE:HG21	3:H:729:GLN:HE22	1.71	0.55
1:G:233:TRP:HH2	1:G:245:VAL:N	2.04	0.55
1:J:233:TRP:HH2	1:J:245:VAL:N	2.04	0.55
2:D:27:TRP:CZ2	2:D:29:ALA:HB2	2.40	0.55
3:F:717:MET:HB3	3:F:722:LEU:HG	1.89	0.55
3:H:717:MET:HB3	3:H:722:LEU:HG	1.89	0.55
2:L:71:ALA:HB2	2:L:81:PHE:HA	1.88	0.55
3:C:717:MET:HB3	3:C:722:LEU:HG	1.89	0.55
1:J:207:GLU:HG3	1:J:238:PRO:HG3	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:H:314:CYS:HB3	3:H:369:THR:HG21	1.89	0.55
3:H:409:GLU:OE2	3:H:453:ASN:ND2	2.40	0.55
3:C:314:CYS:HB3	3:C:369:THR:HG21	1.89	0.55
1:A:53:SER:OG	1:A:111:LEU:O	2.25	0.55
1:G:305:LEU:HD21	1:G:323:GLY:HA3	1.88	0.55
3:H:559:LEU:CD2	3:H:602:LEU:HD23	2.36	0.55
3:I:314:CYS:HB3	3:I:369:THR:HG21	1.89	0.55
3:I:418:LEU:O	3:I:422:MET:HG3	2.06	0.55
3:C:559:LEU:CD2	3:C:602:LEU:HD23	2.36	0.55
1:J:525:VAL:HA	1:J:538:MET:HG2	1.88	0.54
1:G:555:ASP:HB3	1:G:558:LEU:HB2	1.90	0.54
3:F:342:ILE:HG13	3:F:388:LEU:HA	1.89	0.54
3:H:144:LEU:HD12	3:H:193:LEU:HA	1.88	0.54
3:C:338:PRO:HA	3:C:341:TYR:HD2	1.72	0.54
3:C:641:GLN:OE1	3:C:664:GLN:HB3	2.08	0.54
1:J:53:SER:OG	1:J:111:LEU:O	2.25	0.54
3:I:751:ARG:NH2	2:L:55:GLU:HB3	2.22	0.54
2:E:84:ILE:HG12	2:E:101:TRP:CE2	2.43	0.54
1:A:525:VAL:HA	1:A:538:MET:HG2	1.88	0.54
3:H:346:LEU:HD11	3:H:414:LYS:C	2.28	0.54
3:H:641:GLN:OE1	3:H:664:GLN:HB3	2.08	0.54
2:E:47:ASN:HD21	2:E:54:ILE:CG2	2.18	0.54
1:B:555:ASP:HB3	1:B:558:LEU:HB2	1.90	0.54
3:H:768:ALA:HB1	2:K:89:LYS:HB3	1.90	0.54
3:I:557:ALA:HB3	3:I:594:VAL:HG23	1.88	0.54
3:F:638:LYS:HG3	3:F:639:PRO:O	2.08	0.54
3:H:466:PHE:HA	3:H:469:LYS:HG2	1.89	0.54
1:B:160:PHE:HE2	1:B:169:PHE:CG	2.25	0.54
3:H:622:ILE:HG12	3:H:627:LEU:HD13	1.89	0.54
3:I:466:PHE:HA	3:I:469:LYS:HG2	1.89	0.54
1:B:365:PRO:O	1:B:409:TRP:NE1	2.41	0.54
1:J:370:ARG:HG2	1:J:389:SER:HA	1.90	0.54
3:I:225:LEU:HB3	3:I:272:HIS:CE1	2.43	0.54
3:H:638:LYS:HG3	3:H:639:PRO:O	2.08	0.54
3:I:638:LYS:HG3	3:I:639:PRO:O	2.08	0.54
3:I:641:GLN:OE1	3:I:664:GLN:HB3	2.08	0.54
2:L:38:VAL:HG12	2:L:41:ASN:H	1.72	0.54
1:A:51:THR:CG2	1:B:17:LEU:CD1	2.82	0.53
1:A:286:VAL:HG11	1:A:573:TRP:HH2	1.71	0.53
1:G:10:ASN:HB2	1:G:14:ALA:H	1.74	0.53
3:C:638:LYS:HG3	3:C:639:PRO:O	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:365:PRO:O	1:J:409:TRP:NE1	2.41	0.53
3:F:153:ARG:HH21	3:F:200:VAL:HG13	1.74	0.53
1:G:161:THR:HB	1:G:188:VAL:HG13	1.90	0.53
2:D:93:VAL:HA	2:D:100:GLU:HA	1.91	0.53
3:F:440:LEU:CB	3:F:513:TRP:HH2	2.21	0.53
3:H:169:ILE:HD11	3:H:247:ARG:HD3	1.91	0.53
3:I:614:GLU:OE1	3:I:617:GLN:NE2	2.41	0.53
3:F:169:ILE:HD11	3:F:247:ARG:HD3	1.91	0.53
1:A:348:ASN:ND2	1:A:366:MET:O	2.42	0.53
1:G:370:ARG:HG2	1:G:389:SER:HA	1.90	0.53
3:F:625:ARG:H	3:F:625:ARG:HH21	1.55	0.53
2:L:41:ASN:ND2	2:L:46:ARG:HG2	2.24	0.53
1:G:365:PRO:O	1:G:409:TRP:NE1	2.41	0.53
3:F:614:GLU:OE1	3:F:617:GLN:NE2	2.41	0.53
3:H:393:ASP:HB2	3:H:435:HIS:NE2	2.24	0.53
3:I:166:LEU:HD11	3:I:208:PRO:HB3	1.90	0.53
3:C:614:GLU:OE1	3:C:617:GLN:NE2	2.41	0.53
2:E:41:ASN:ND2	2:E:46:ARG:HG2	2.24	0.53
2:D:77:HIS:CD2	2:D:96:LEU:HD12	2.44	0.53
1:A:13:TYR:OH	1:B:89:ALA:HA	2.08	0.53
3:F:641:GLN:OE1	3:F:664:GLN:HB3	2.08	0.53
3:C:506:ARG:O	2:E:31:ALA:N	2.35	0.53
1:A:555:ASP:HB3	1:A:558:LEU:HB2	1.90	0.53
1:B:431:ILE:HB	1:B:442:TYR:HB3	1.91	0.53
1:G:263:MET:SD	1:G:263:MET:N	2.82	0.53
1:J:414:PRO:O	1:J:449:TRP:NE1	2.42	0.53
3:F:116:MET:HA	3:F:119:ILE:HB	1.91	0.53
3:H:248:VAL:CG2	3:H:256:THR:HG23	2.27	0.53
2:E:38:VAL:HG12	2:E:41:ASN:H	1.72	0.53
1:B:548:LYS:NZ	1:B:549:TYR:O	2.42	0.52
3:H:346:LEU:N	3:H:418:LEU:CD1	2.71	0.52
3:H:506:ARG:O	2:K:31:ALA:N	2.34	0.52
3:I:606:ASN:HD21	2:L:22:PHE:HD2	1.57	0.52
3:C:626:GLU:HA	3:C:629:ARG:HH11	1.74	0.52
1:A:263:MET:SD	1:A:263:MET:N	2.83	0.52
1:A:365:PRO:O	1:A:409:TRP:NE1	2.41	0.52
1:J:548:LYS:NZ	1:J:549:TYR:O	2.42	0.52
1:J:555:ASP:HB3	1:J:558:LEU:HB2	1.90	0.52
3:H:190:LEU:HB3	3:H:201:TYR:HB2	1.90	0.52
3:I:116:MET:HA	3:I:119:ILE:HB	1.90	0.52
2:L:47:ASN:ND2	2:L:54:ILE:HG23	2.24	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:414:PRO:O	1:G:449:TRP:NE1	2.42	0.52
1:J:263:MET:SD	1:J:263:MET:N	2.83	0.52
3:H:116:MET:HA	3:H:119:ILE:HB	1.90	0.52
1:A:548:LYS:NZ	1:A:549:TYR:O	2.42	0.52
1:B:553:GLN:HB2	1:B:564:ARG:HB2	1.91	0.52
1:G:348:ASN:ND2	1:G:366:MET:O	2.42	0.52
2:D:22:PHE:HD2	3:F:606:ASN:HD21	1.57	0.52
2:D:33:TRP:HB2	3:F:546:ARG:HB2	1.92	0.52
3:H:441:LEU:HD21	3:H:508:LEU:HD11	1.91	0.52
2:K:41:ASN:ND2	2:K:46:ARG:HG2	2.24	0.52
3:C:509:THR:HB	3:C:512:TYR:CD2	2.44	0.52
1:J:228:VAL:HG23	1:J:231:ARG:HB2	1.91	0.52
3:H:606:ASN:HD21	2:K:22:PHE:HD1	1.57	0.52
3:H:614:GLU:OE1	3:H:617:GLN:NE2	2.41	0.52
3:H:708:VAL:HA	3:H:754:LEU:HD23	1.91	0.52
2:K:84:ILE:HG12	2:K:101:TRP:CE2	2.44	0.52
1:B:297:LYS:NZ	1:B:593:GLU:O	2.43	0.52
1:B:370:ARG:HG2	1:B:389:SER:HA	1.90	0.52
1:G:301:PRO:HG3	1:G:360:TRP:CE2	2.45	0.52
3:F:541:ALA:HB2	3:H:502:ASP:HA	1.91	0.52
3:H:700:LYS:O	3:H:703:ILE:HG12	2.09	0.52
3:C:116:MET:HA	3:C:119:ILE:HB	1.91	0.52
1:J:348:ASN:ND2	1:J:366:MET:O	2.42	0.52
3:F:522:CYS:HB2	3:F:622:ILE:HB	1.92	0.52
3:H:509:THR:HB	3:H:512:TYR:CD1	2.44	0.52
3:I:102:LEU:CD1	3:I:182:ALA:HB1	2.40	0.52
3:C:169:ILE:HD11	3:C:247:ARG:HD3	1.91	0.52
3:F:202:GLU:O	3:F:203:GLU:C	2.46	0.52
3:I:169:ILE:HD11	3:I:247:ARG:HD3	1.91	0.52
1:B:522:ASP:N	1:B:522:ASP:OD1	2.43	0.52
1:G:233:TRP:CH2	1:G:245:VAL:CA	2.65	0.52
3:C:102:LEU:CD1	3:C:182:ALA:HB1	2.40	0.52
1:B:348:ASN:ND2	1:B:366:MET:O	2.42	0.51
3:F:102:LEU:CD1	3:F:182:ALA:HB1	2.40	0.51
3:F:542:LYS:HA	3:H:488:ARG:CB	2.40	0.51
3:C:455:ILE:C	3:C:457:LYS:H	2.12	0.51
1:A:21:LEU:HD22	1:B:47:MET:CE	2.39	0.51
1:A:321:ALA:HB3	1:A:375:LEU:HD11	1.92	0.51
1:J:553:GLN:HB2	1:J:564:ARG:HB2	1.91	0.51
2:E:47:ASN:ND2	2:E:54:ILE:HG23	2.24	0.51
1:A:297:LYS:NZ	1:A:593:GLU:O	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:263:MET:SD	1:B:263:MET:N	2.82	0.51
1:B:374:SER:OG	1:B:385:ILE:O	2.28	0.51
1:J:301:PRO:HG3	1:J:360:TRP:CE2	2.45	0.51
3:H:102:LEU:CD1	3:H:182:ALA:HB1	2.40	0.51
3:H:129:VAL:O	3:H:133:GLN:NE2	2.34	0.51
1:A:553:GLN:HB2	1:A:564:ARG:HB2	1.91	0.51
1:B:301:PRO:HG3	1:B:360:TRP:CE2	2.45	0.51
1:G:553:GLN:HB2	1:G:564:ARG:HB2	1.91	0.51
3:H:221:SER:O	3:H:222:GLN:C	2.48	0.51
3:H:723:VAL:HG11	3:H:742:LYS:HZ3	1.76	0.51
1:A:301:PRO:HG3	1:A:360:TRP:CE2	2.45	0.51
1:G:297:LYS:NZ	1:G:593:GLU:O	2.42	0.51
1:G:321:ALA:HB3	1:G:375:LEU:HD11	1.92	0.51
1:G:374:SER:OG	1:G:385:ILE:O	2.28	0.51
1:J:161:THR:HB	1:J:188:VAL:CG1	2.37	0.51
1:G:548:LYS:NZ	1:G:549:TYR:O	2.42	0.51
1:J:275:SER:OG	1:J:573:TRP:NE1	2.44	0.51
3:F:437:ALA:HB2	3:F:514:PRO:CG	2.41	0.51
3:I:413:ASP:O	3:I:416:MET:HG3	2.10	0.51
3:C:245:ILE:CA	3:C:248:VAL:HG12	2.41	0.51
1:A:22:LYS:HE3	1:B:8:GLN:HE22	1.76	0.51
1:A:237:LEU:HD13	1:A:241:ASP:HB2	1.93	0.51
1:B:275:SER:OG	1:B:573:TRP:NE1	2.44	0.51
1:B:321:ALA:HB3	1:B:375:LEU:HD11	1.92	0.51
3:F:258:GLU:HB2	3:F:259:PRO:HD3	1.93	0.51
3:I:437:ALA:HA	3:I:513:TRP:CZ3	2.38	0.51
3:C:665:PHE:HD1	3:C:665:PHE:C	1.98	0.51
3:C:699:ARG:O	3:C:703:ILE:HG12	2.10	0.51
3:C:706:ALA:HA	3:C:709:ARG:HH21	1.76	0.51
2:E:23:GLU:CB	2:E:25:LYS:HZ1	2.19	0.51
1:B:275:SER:OG	1:B:574:ASP:O	2.25	0.51
1:G:54:SER:CB	3:I:128:ARG:HH22	2.24	0.51
3:F:419:PHE:CD2	3:F:461:GLU:HG2	2.45	0.51
3:H:298:CYS:HA	3:H:301:LYS:HG2	1.93	0.51
3:H:388:LEU:HD22	3:H:422:MET:SD	2.51	0.51
3:H:596:THR:O	3:H:596:THR:HG22	2.11	0.51
3:C:298:CYS:HA	3:C:301:LYS:HG2	1.93	0.51
3:I:258:GLU:HB2	3:I:259:PRO:HD3	1.93	0.50
1:A:237:LEU:HB2	1:A:238:PRO:HD2	1.94	0.50
3:H:455:ILE:CG2	3:H:470:LEU:HD21	2.24	0.50
3:I:298:CYS:HA	3:I:301:LYS:HG2	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:723:VAL:HG11	3:C:742:LYS:HZ3	1.77	0.50
1:B:65:SER:N	1:B:68:LYS:HZ1	2.07	0.50
3:H:522:CYS:HB2	3:H:622:ILE:HB	1.93	0.50
3:H:559:LEU:O	3:H:592:LEU:N	2.39	0.50
3:I:723:VAL:HG11	3:I:742:LYS:HZ3	1.77	0.50
3:C:606:ASN:HD21	2:E:22:PHE:HD2	1.57	0.50
3:C:596:THR:HG22	3:C:596:THR:O	2.12	0.50
1:A:275:SER:OG	1:A:573:TRP:NE1	2.44	0.50
1:J:321:ALA:HB3	1:J:375:LEU:HD11	1.92	0.50
3:F:238:GLU:O	3:F:242:ASN:ND2	2.32	0.50
3:F:596:THR:O	3:F:596:THR:HG22	2.12	0.50
3:I:626:GLU:HA	3:I:629:ARG:CD	2.18	0.50
2:E:20:LYS:HE3	2:E:23:GLU:HG2	1.93	0.50
3:F:496:VAL:HA	3:F:501:VAL:HA	1.94	0.50
3:I:446:VAL:HG23	3:I:447:SER:H	1.76	0.50
1:J:190:LYS:CG	1:J:193:THR:HG22	2.38	0.50
3:F:225:LEU:HB2	3:F:272:HIS:HE1	1.73	0.50
3:F:225:LEU:HD12	3:F:276:ILE:HD13	1.93	0.50
1:A:374:SER:OG	1:A:385:ILE:O	2.28	0.50
2:D:31:ALA:N	3:F:506:ARG:O	2.34	0.50
2:D:77:HIS:CD2	2:D:96:LEU:HD13	2.47	0.50
1:A:522:ASP:OD1	1:A:522:ASP:N	2.43	0.50
1:B:181:LEU:HD22	1:B:219:GLN:HB3	1.92	0.50
1:J:33:ILE:HD11	1:J:72:VAL:HG22	1.93	0.50
1:J:297:LYS:NZ	1:J:593:GLU:O	2.43	0.50
3:H:218:GLN:O	3:H:221:SER:HB3	2.12	0.50
3:H:706:ALA:HA	3:H:709:ARG:HH21	1.77	0.50
3:I:596:THR:HG22	3:I:596:THR:O	2.12	0.49
3:I:470:LEU:CD1	3:I:474:PHE:CE2	2.81	0.49
3:C:258:GLU:HB2	3:C:259:PRO:HD3	1.93	0.49
3:C:325:GLY:HA3	3:C:377:PHE:CD1	2.47	0.49
1:A:210:SER:HA	1:A:213:LEU:HB2	1.94	0.49
1:J:522:ASP:OD1	1:J:522:ASP:N	2.43	0.49
3:F:298:CYS:HA	3:F:301:LYS:HG2	1.93	0.49
3:H:255:SER:O	3:H:257:GLU:N	2.46	0.49
2:L:20:LYS:HE3	2:L:23:GLU:HG2	1.93	0.49
1:A:8:GLN:NE2	1:B:18:LEU:HB3	2.28	0.49
3:I:717:MET:HB3	3:I:722:LEU:H	1.77	0.49
1:G:431:ILE:HB	1:G:442:TYR:HB3	1.95	0.49
3:I:697:ASP:HA	3:I:700:LYS:HD2	1.94	0.49
3:F:477:MET:HE3	3:F:513:TRP:CZ2	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:K:20:LYS:HE3	2:K:23:GLU:HG2	1.94	0.49
1:G:422:SER:OG	1:G:434:MET:O	2.24	0.49
3:F:255:SER:O	3:F:257:GLU:N	2.46	0.49
2:L:84:ILE:HG12	2:L:101:TRP:CE2	2.48	0.49
1:J:374:SER:OG	1:J:385:ILE:O	2.28	0.49
3:H:128:ARG:O	3:H:132:GLN:HB2	2.13	0.49
3:H:258:GLU:HB2	3:H:259:PRO:HD3	1.93	0.49
3:H:559:LEU:HD11	2:K:22:PHE:HB3	1.95	0.49
3:I:506:ARG:O	2:L:31:ALA:N	2.35	0.49
3:C:451:GLU:O	3:C:455:ILE:HG22	2.13	0.49
2:E:35:TRP:CD1	2:E:75:CYS:O	2.65	0.49
1:A:399:VAL:HG12	1:A:414:PRO:HA	1.95	0.49
1:J:37:VAL:HG21	1:J:82:LEU:HD23	1.95	0.49
2:D:20:LYS:HE3	2:D:23:GLU:HG2	1.93	0.49
3:H:491:LEU:C	3:H:493:ALA:H	2.15	0.49
3:C:560:ASN:CB	2:E:25:LYS:HG2	2.31	0.49
1:A:212:TYR:C	1:A:214:SER:H	2.16	0.49
1:B:160:PHE:HE2	1:B:169:PHE:CE2	2.31	0.49
1:J:431:ILE:HB	1:J:442:TYR:HB3	1.95	0.49
2:K:35:TRP:CD1	2:K:75:CYS:O	2.65	0.49
1:A:9:ILE:HG23	1:B:93:ASN:HD21	1.78	0.48
1:J:268:MET:HB3	1:J:287:CYS:SG	2.53	0.48
3:C:559:LEU:HD11	2:E:22:PHE:HB3	1.95	0.48
1:A:161:THR:HB	1:A:188:VAL:CG1	2.37	0.48
3:C:446:VAL:HG23	3:C:447:SER:H	1.76	0.48
1:A:431:ILE:HB	1:A:442:TYR:HB3	1.95	0.48
1:B:455:ARG:NH1	1:B:500:GLU:OE2	2.46	0.48
1:G:455:ARG:NH1	1:G:500:GLU:OE2	2.46	0.48
1:J:48:VAL:HG21	1:J:90:TYR:CZ	2.49	0.48
3:F:77:LEU:HD22	3:F:123:LEU:HD22	1.95	0.48
3:F:626:GLU:HA	3:F:629:ARG:CD	2.18	0.48
3:H:598:GLN:HB3	3:H:634:LEU:HD11	1.95	0.48
2:K:47:ASN:ND2	2:K:54:ILE:HG23	2.24	0.48
3:I:700:LYS:O	3:I:703:ILE:HG12	2.13	0.48
3:I:711:MET:HA	3:I:714:ARG:HB2	1.95	0.48
3:C:255:SER:O	3:C:257:GLU:N	2.46	0.48
1:G:399:VAL:HG13	1:G:415:LEU:HD21	1.94	0.48
1:G:455:ARG:NH1	1:G:457:THR:O	2.47	0.48
3:F:245:ILE:CA	3:F:248:VAL:HG12	2.41	0.48
3:I:128:ARG:O	3:I:132:GLN:HB2	2.13	0.48
3:I:629:ARG:O	3:I:632:GLN:HG3	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:706:ALA:HA	3:I:709:ARG:HH21	1.77	0.48
2:L:27:TRP:CE2	2:L:29:ALA:HB2	2.49	0.48
3:C:128:ARG:O	3:C:132:GLN:HB2	2.13	0.48
1:A:144:SER:CB	3:C:133:GLN:HG2	2.44	0.48
2:D:27:TRP:CE2	2:D:29:ALA:HB2	2.49	0.48
3:H:77:LEU:HD22	3:H:123:LEU:HD22	1.95	0.48
1:G:18:LEU:HB3	1:J:8:GLN:NE2	2.28	0.48
1:G:529:VAL:O	1:G:530:ILE:HG13	2.14	0.48
1:J:455:ARG:NH1	1:J:457:THR:O	2.47	0.48
2:D:35:TRP:CD1	2:D:75:CYS:O	2.65	0.48
3:F:598:GLN:HB3	3:F:634:LEU:HD11	1.95	0.48
3:F:703:ILE:HB	3:F:741:ILE:HD13	1.95	0.48
3:H:214:ALA:HA	3:H:267:GLU:CD	2.34	0.48
3:I:614:GLU:HA	3:I:617:GLN:HG2	1.96	0.48
2:L:35:TRP:CD1	2:L:75:CYS:O	2.65	0.48
1:J:397:ARG:CD	1:J:417:CYS:HA	2.40	0.48
1:J:455:ARG:NH1	1:J:500:GLU:OE2	2.46	0.48
2:D:89:LYS:HB3	3:F:768:ALA:HB1	1.96	0.48
3:F:198:ARG:O	3:F:202:GLU:HB3	2.14	0.48
3:F:629:ARG:O	3:F:632:GLN:HG3	2.14	0.48
2:K:27:TRP:CE2	2:K:29:ALA:HB2	2.49	0.48
1:A:455:ARG:NH1	1:A:457:THR:O	2.47	0.48
1:J:413:SER:HB3	1:J:442:TYR:HE1	1.79	0.48
2:D:23:GLU:CB	2:D:25:LYS:HZ1	2.25	0.48
3:H:187:CYS:HB2	3:H:201:TYR:OH	2.14	0.48
3:H:614:GLU:HA	3:H:617:GLN:HG2	1.96	0.48
3:I:337:ASN:O	3:I:338:PRO:C	2.52	0.48
3:I:433:LYS:HB3	3:I:433:LYS:HE3	1.45	0.48
3:I:559:LEU:HD11	2:L:22:PHE:HB3	1.95	0.48
1:B:455:ARG:NH1	1:B:457:THR:O	2.47	0.48
1:G:318:ILE:HB	1:G:353:PHE:HB3	1.95	0.48
3:C:644:LEU:HD11	3:C:659:PHE:HB3	1.96	0.48
3:C:698:ASP:HA	3:C:701:HIS:CD2	2.48	0.48
1:A:368:PHE:HB3	1:A:389:SER:O	2.14	0.48
1:G:48:VAL:HG21	1:G:90:TYR:CZ	2.49	0.48
1:G:413:SER:HB3	1:G:442:TYR:HE1	1.79	0.48
1:G:434:MET:HE2	1:G:455:ARG:HG3	1.96	0.48
3:C:712:LYS:NZ	3:C:767:VAL:O	2.40	0.48
1:J:425:VAL:HB	1:J:466:ALA:HB2	1.96	0.47
1:J:529:VAL:O	1:J:530:ILE:HG13	2.14	0.47
3:F:393:ASP:HB2	3:F:435:HIS:CD2	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:559:LEU:O	3:F:592:LEU:N	2.39	0.47
3:F:644:LEU:HD11	3:F:659:PHE:HB3	1.96	0.47
3:H:458:LEU:HB3	3:H:467:THR:CG2	2.42	0.47
3:H:605:PHE:HE1	3:H:611:TYR:HB2	1.79	0.47
3:H:629:ARG:O	3:H:632:GLN:HG3	2.14	0.47
3:C:682:GLY:O	3:C:683:GLU:HG2	2.14	0.47
2:E:27:TRP:CE2	2:E:29:ALA:HB2	2.49	0.47
1:B:305:LEU:HB2	1:B:325:VAL:HB	1.96	0.47
1:G:37:VAL:HG13	1:G:77:VAL:HG23	1.96	0.47
1:G:47:MET:O	1:G:51:THR:HG23	2.15	0.47
3:F:614:GLU:HA	3:F:617:GLN:HG2	1.96	0.47
3:F:682:GLY:O	3:F:683:GLU:HG2	2.14	0.47
3:H:644:LEU:HD11	3:H:659:PHE:HB3	1.96	0.47
3:I:470:LEU:HD11	3:I:474:PHE:CD2	2.47	0.47
3:I:559:LEU:O	3:I:592:LEU:N	2.39	0.47
3:C:614:GLU:HA	3:C:617:GLN:HG2	1.96	0.47
3:C:629:ARG:O	3:C:632:GLN:HG3	2.14	0.47
3:F:420:ARG:HA	3:F:461:GLU:OE2	2.14	0.47
3:F:605:PHE:HE1	3:F:611:TYR:HB2	1.79	0.47
3:H:338:PRO:HB3	3:H:387:TYR:CG	2.48	0.47
3:I:689:LYS:HD2	3:I:689:LYS:HA	1.49	0.47
3:C:684:SER:O	3:C:688:ARG:HB2	2.14	0.47
1:G:305:LEU:HB2	1:G:325:VAL:HB	1.97	0.47
1:G:393:GLU:HB2	1:G:396:ARG:HA	1.95	0.47
1:J:305:LEU:HB2	1:J:325:VAL:HB	1.96	0.47
3:F:723:VAL:HG11	3:F:742:LYS:HZ3	1.79	0.47
3:H:346:LEU:CB	3:H:418:LEU:CD1	2.92	0.47
3:H:470:LEU:CD1	3:H:474:PHE:CE2	2.81	0.47
3:I:169:ILE:HG12	3:I:209:PHE:HE1	1.79	0.47
3:C:605:PHE:HE1	3:C:611:TYR:HB2	1.79	0.47
1:A:425:VAL:HB	1:A:466:ALA:HB2	1.96	0.47
1:A:529:VAL:O	1:A:530:ILE:HG13	2.14	0.47
1:G:51:THR:HG21	1:J:17:LEU:HD12	1.96	0.47
1:G:304:ASP:OD1	1:G:304:ASP:N	2.47	0.47
3:H:682:GLY:O	3:H:683:GLU:HG2	2.14	0.47
1:A:305:LEU:HB2	1:A:325:VAL:HB	1.96	0.47
1:A:455:ARG:NH1	1:A:500:GLU:OE2	2.46	0.47
1:G:350:PHE:HD2	1:G:363:LYS:HB2	1.80	0.47
3:F:214:ALA:HA	3:F:267:GLU:CD	2.34	0.47
3:H:712:LYS:NZ	3:H:767:VAL:O	2.40	0.47
3:I:47:LYS:HA	3:I:47:LYS:HD2	1.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:I:458:LEU:HB3	3:I:467:THR:CG2	2.41	0.47
3:C:345:LEU:HG	3:C:418:LEU:HD22	1.96	0.47
3:C:598:GLN:HB3	3:C:634:LEU:HD11	1.95	0.47
1:A:265:LYS:HD3	1:A:587:TYR:OH	2.15	0.47
1:A:318:ILE:HB	1:A:353:PHE:HB3	1.95	0.47
1:B:134:VAL:HG21	1:B:169:PHE:HA	1.96	0.47
1:B:160:PHE:CE2	1:B:169:PHE:CE2	3.02	0.47
1:B:304:ASP:OD1	1:B:304:ASP:N	2.47	0.47
1:B:530:ILE:HB	1:B:564:ARG:HH12	1.78	0.47
1:J:265:LYS:HD3	1:J:587:TYR:OH	2.15	0.47
1:J:318:ILE:HB	1:J:353:PHE:HB3	1.95	0.47
3:F:363:ASP:HB3	3:F:366:PHE:HD1	1.79	0.47
3:F:446:VAL:HG23	3:F:447:SER:H	1.76	0.47
3:F:609:GLU:HG3	3:F:610:LYS:H	1.80	0.47
3:I:77:LEU:HD22	3:I:123:LEU:HD22	1.95	0.47
3:I:339:VAL:HA	3:I:391:PHE:HD1	1.80	0.47
3:I:598:GLN:HB3	3:I:634:LEU:HD11	1.95	0.47
3:C:559:LEU:O	3:C:592:LEU:N	2.39	0.47
1:A:304:ASP:OD1	1:A:304:ASP:N	2.47	0.47
1:B:302:PRO:HG2	1:B:305:LEU:HB3	1.97	0.47
1:G:265:LYS:HD3	1:G:587:TYR:OH	2.15	0.47
3:I:682:GLY:O	3:I:683:GLU:HG2	2.14	0.47
1:A:195:ARG:HG3	1:A:224:ALA:HB1	1.97	0.47
1:B:390:VAL:CG1	1:B:393:GLU:HG3	2.43	0.47
1:G:227:GLU:HB3	1:G:228:VAL:H	1.63	0.47
2:D:22:PHE:HB3	3:F:559:LEU:HD11	1.95	0.47
3:F:398:LYS:HA	3:F:398:LYS:HD3	1.53	0.47
3:H:245:ILE:CA	3:H:248:VAL:HG12	2.41	0.47
3:I:609:GLU:HG3	3:I:610:LYS:H	1.80	0.47
3:C:374:PHE:O	3:C:421:PHE:HB3	2.15	0.47
1:A:144:SER:CB	3:C:129:VAL:HG23	2.45	0.47
1:A:326:PRO:HA	1:A:344:PHE:HA	1.97	0.47
1:B:425:VAL:HB	1:B:466:ALA:HB2	1.96	0.47
1:J:326:PRO:HA	1:J:344:PHE:HA	1.98	0.47
1:A:8:GLN:HE22	1:B:18:LEU:HB3	1.80	0.46
1:G:425:VAL:HB	1:G:466:ALA:HB2	1.96	0.46
1:J:202:LEU:HD22	1:J:213:LEU:HG	1.96	0.46
3:C:77:LEU:HD22	3:C:123:LEU:HD22	1.96	0.46
1:A:265:LYS:HE2	1:A:265:LYS:HA	1.98	0.46
1:B:265:LYS:HE2	1:B:265:LYS:HA	1.98	0.46
1:J:275:SER:OG	1:J:574:ASP:O	2.25	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:304:ASP:N	1:J:304:ASP:OD1	2.47	0.46
3:F:346:LEU:CD1	3:F:414:LYS:HB3	2.46	0.46
3:C:623:PRO:HB2	3:C:624:GLU:H	1.63	0.46
1:B:161:THR:HB	1:B:188:VAL:CG1	2.37	0.46
1:B:171:GLN:HA	1:B:171:GLN:OE1	2.15	0.46
1:B:265:LYS:HD3	1:B:587:TYR:OH	2.15	0.46
3:H:336:LYS:HE3	3:H:387:TYR:CE2	2.50	0.46
3:C:525:PRO:HB2	3:C:528:PRO:HD2	1.96	0.46
3:C:692:ARG:HA	3:C:692:ARG:HD3	1.66	0.46
1:J:353:PHE:HB2	1:J:360:TRP:CH2	2.51	0.46
3:I:644:LEU:HD11	3:I:659:PHE:HB3	1.96	0.46
3:C:393:ASP:HA	3:C:439:ARG:NH2	2.25	0.46
3:C:395:LYS:HA	3:C:395:LYS:HD3	1.70	0.46
1:B:318:ILE:HB	1:B:353:PHE:HB3	1.95	0.46
3:H:215:GLU:O	3:H:216:PHE:C	2.54	0.46
3:H:395:LYS:HA	3:H:395:LYS:HD3	1.59	0.46
3:I:605:PHE:HE1	3:I:611:TYR:HB2	1.79	0.46
3:C:646:LYS:HE3	3:C:659:PHE:HE1	1.80	0.46
1:J:434:MET:HE2	1:J:455:ARG:HG3	1.97	0.46
3:F:477:MET:HE3	3:F:513:TRP:CH2	2.51	0.46
3:H:429:GLU:HG2	3:H:466:PHE:HB3	1.98	0.46
3:I:509:THR:HG23	2:L:76:ASN:HD22	1.80	0.46
1:G:326:PRO:HA	1:G:344:PHE:HA	1.97	0.46
3:F:646:LYS:HE3	3:F:659:PHE:HE1	1.80	0.46
1:B:422:SER:OG	1:B:434:MET:O	2.24	0.46
1:B:434:MET:HE2	1:B:455:ARG:HG3	1.98	0.46
1:G:220:ILE:HG13	1:G:220:ILE:O	2.15	0.46
1:J:302:PRO:HG2	1:J:305:LEU:HB3	1.97	0.46
3:I:425:LYS:CE	3:I:462:CYS:SG	3.04	0.46
3:C:516:GLN:HE21	3:C:516:GLN:HB3	1.48	0.46
1:A:51:THR:HG21	1:B:17:LEU:HD13	1.93	0.46
1:A:302:PRO:HG2	1:A:305:LEU:HB3	1.97	0.46
1:B:301:PRO:HB2	1:B:302:PRO:HD3	1.98	0.46
1:B:353:PHE:HB2	1:B:360:TRP:CH2	2.51	0.46
1:G:265:LYS:HA	1:G:265:LYS:HE2	1.98	0.46
1:G:353:PHE:HB2	1:G:360:TRP:CH2	2.51	0.46
3:F:198:ARG:HH21	3:F:202:GLU:HG3	1.80	0.46
3:F:503:LEU:HD21	3:F:531:ALA:CB	2.39	0.46
3:H:703:ILE:HB	3:H:741:ILE:HD13	1.97	0.46
3:I:520:PRO:HG2	3:I:552:HIS:H	1.80	0.46
3:I:646:LYS:HE3	3:I:659:PHE:HE1	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:455:ILE:HA	3:C:458:LEU:HB2	1.98	0.46
3:C:723:VAL:HA	3:C:726:VAL:HG12	1.98	0.46
1:J:350:PHE:HD2	1:J:363:LYS:HB2	1.80	0.46
3:I:438:ARG:HD2	3:I:438:ARG:HA	1.52	0.46
3:C:207:ALA:HB3	3:C:208:PRO:HD3	1.98	0.46
3:C:215:GLU:OE1	3:C:215:GLU:N	2.49	0.46
3:F:148:ARG:HH11	3:F:200:VAL:HG21	1.81	0.45
3:H:723:VAL:HA	3:H:726:VAL:HG12	1.98	0.45
3:C:346:LEU:HD11	3:C:414:LYS:CB	2.46	0.45
3:C:609:GLU:HG3	3:C:610:LYS:H	1.80	0.45
1:A:265:LYS:CD	1:A:587:TYR:CZ	3.00	0.45
1:A:350:PHE:HD2	1:A:363:LYS:HB2	1.80	0.45
1:B:48:VAL:HG21	1:B:90:TYR:CZ	2.51	0.45
1:B:198:ALA:HB1	1:B:216:VAL:HG12	1.98	0.45
1:B:297:LYS:HZ3	1:B:595:PRO:HD3	1.80	0.45
1:B:350:PHE:HD2	1:B:363:LYS:HB2	1.80	0.45
1:J:402:TYR:HB2	1:J:409:TRP:CZ3	2.51	0.45
1:A:146:GLU:HG2	3:C:133:GLN:OE1	2.16	0.45
1:B:66:GLU:HG2	3:F:54:PHE:HB3	1.98	0.45
1:G:222:ILE:HG12	1:G:257:PHE:CD1	2.51	0.45
1:J:265:LYS:HA	1:J:265:LYS:HE2	1.98	0.45
3:H:609:GLU:HG3	3:H:610:LYS:H	1.80	0.45
1:A:353:PHE:HB2	1:A:360:TRP:CH2	2.51	0.45
1:B:265:LYS:HE2	1:B:585:LYS:HB3	1.99	0.45
3:H:425:LYS:CE	3:H:462:CYS:SG	3.04	0.45
3:I:560:ASN:CB	2:L:25:LYS:HG2	2.30	0.45
3:C:148:ARG:HH11	3:C:200:VAL:HG21	1.80	0.45
3:C:748:LEU:HD13	3:C:748:LEU:HA	1.75	0.45
2:E:88:LEU:HD22	2:E:88:LEU:HA	1.76	0.45
1:B:160:PHE:HE2	1:B:169:PHE:CZ	2.10	0.45
1:G:265:LYS:CD	1:G:587:TYR:CZ	3.00	0.45
1:G:301:PRO:HB2	1:G:302:PRO:HD3	1.99	0.45
3:H:560:ASN:CB	2:K:25:LYS:HG2	2.31	0.45
1:A:237:LEU:HB2	1:A:238:PRO:CD	2.46	0.45
1:A:434:MET:HE2	1:A:455:ARG:HG3	1.97	0.45
1:B:57:ARG:O	1:B:61:MET:HB2	2.17	0.45
1:B:128:ILE:HG12	1:B:136:LEU:HD21	1.99	0.45
1:J:287:CYS:SG	1:J:288:TYR:N	2.90	0.45
3:H:749:ILE:HD13	3:H:758:PRO:HD3	1.98	0.45
2:E:23:GLU:C	2:E:25:LYS:HZ1	2.20	0.45
1:A:37:VAL:HG21	1:A:82:LEU:HD23	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:156:VAL:O	1:B:160:PHE:HB3	2.17	0.45
1:B:231:ARG:HD2	1:B:231:ARG:N	2.32	0.45
1:J:265:LYS:CD	1:J:587:TYR:CZ	3.00	0.45
1:J:376:VAL:N	1:J:383:TYR:O	2.45	0.45
1:J:566:HIS:O	1:J:566:HIS:ND1	2.50	0.45
3:F:213:SER:O	3:F:214:ALA:C	2.55	0.45
3:F:440:LEU:HB2	3:F:513:TRP:CH2	2.50	0.45
3:F:520:PRO:HG2	3:F:552:HIS:H	1.81	0.45
3:H:473:MET:CG	3:H:512:TYR:HB3	2.47	0.45
3:C:223:LYS:HE3	3:C:227:GLU:HG3	1.99	0.45
1:A:287:CYS:SG	1:A:288:TYR:N	2.90	0.45
1:A:566:HIS:O	1:A:566:HIS:ND1	2.50	0.45
1:B:84:ILE:HA	1:B:87:THR:HG22	1.99	0.45
1:B:326:PRO:HA	1:B:344:PHE:HA	1.98	0.45
1:G:265:LYS:HE2	1:G:585:LYS:HB3	1.99	0.45
1:G:302:PRO:HG2	1:G:305:LEU:HB3	1.97	0.45
1:J:231:ARG:HD2	1:J:231:ARG:N	2.32	0.45
1:J:265:LYS:HE2	1:J:585:LYS:HB3	1.99	0.45
2:D:23:GLU:C	2:D:25:LYS:HZ1	2.20	0.45
3:F:689:LYS:HD2	3:F:689:LYS:HA	1.41	0.45
3:I:703:ILE:HB	3:I:741:ILE:HD13	1.99	0.45
2:L:23:GLU:CB	2:L:25:LYS:HZ1	2.28	0.45
2:L:41:ASN:HD21	2:L:46:ARG:HD2	1.79	0.45
3:C:419:PHE:HE1	3:C:425:LYS:HB2	1.82	0.45
1:G:128:ILE:HG23	1:G:136:LEU:HD21	1.99	0.45
1:J:156:VAL:O	1:J:160:PHE:HB3	2.17	0.45
3:F:425:LYS:HE2	3:F:425:LYS:HB3	1.37	0.45
3:F:714:ARG:NH1	3:F:725:GLU:OE2	2.50	0.45
3:H:213:SER:O	3:H:214:ALA:C	2.55	0.45
3:H:338:PRO:HB3	3:H:387:TYR:HA	1.99	0.45
3:I:723:VAL:HA	3:I:726:VAL:HG12	1.98	0.45
3:C:436:LEU:HD23	3:C:439:ARG:HH11	1.82	0.45
1:A:275:SER:OG	1:A:574:ASP:O	2.26	0.45
1:B:128:ILE:HG23	1:B:136:LEU:HD21	1.99	0.45
1:G:287:CYS:SG	1:G:288:TYR:N	2.90	0.45
1:J:539:ARG:HH22	1:J:577:ARG:HD3	1.82	0.45
3:F:230:ALA:HB2	3:F:276:ILE:HG13	1.99	0.45
3:F:694:LYS:HD2	3:F:694:LYS:HA	1.63	0.45
3:H:697:ASP:HA	3:H:700:LYS:HD2	1.98	0.45
3:I:714:ARG:HB3	3:I:715:LYS:H	1.61	0.45
3:C:455:ILE:HG12	3:C:459:LYS:HG2	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:265:LYS:CD	1:B:587:TYR:CZ	3.00	0.44
1:G:12:GLU:HA	1:G:15:VAL:CG2	2.47	0.44
1:G:255:LYS:HE2	1:G:255:LYS:HB2	1.70	0.44
2:D:25:LYS:HG2	3:F:560:ASN:CB	2.31	0.44
3:F:436:LEU:HD23	3:F:439:ARG:HH11	1.82	0.44
3:C:731:LYS:HD3	3:C:731:LYS:HA	1.49	0.44
1:A:376:VAL:N	1:A:383:TYR:O	2.45	0.44
3:F:440:LEU:CD1	3:F:513:TRP:CH2	3.00	0.44
2:K:23:GLU:C	2:K:25:LYS:HZ1	2.21	0.44
3:I:592:LEU:HD23	3:I:672:VAL:HG13	1.99	0.44
3:C:376:TYR:O	3:C:379:ASN:HB2	2.17	0.44
3:C:714:ARG:NH1	3:C:725:GLU:OE2	2.50	0.44
2:E:98:ASN:HD22	2:E:98:ASN:HA	1.58	0.44
1:B:566:HIS:O	1:B:566:HIS:ND1	2.50	0.44
1:G:62:SER:HA	3:I:118:MET:HG2	2.00	0.44
1:G:78:ASP:OD1	1:G:79:ALA:N	2.51	0.44
1:J:128:ILE:HG23	1:J:136:LEU:HD21	1.99	0.44
3:H:225:LEU:HB2	3:H:272:HIS:CE1	2.52	0.44
3:H:436:LEU:HD23	3:H:439:ARG:HH11	1.82	0.44
2:K:88:LEU:HD22	2:K:92:GLN:HA	1.98	0.44
3:I:396:LEU:HD23	3:I:439:ARG:NH1	2.33	0.44
1:B:287:CYS:SG	1:B:288:TYR:N	2.90	0.44
1:B:539:ARG:HH22	1:B:577:ARG:HD3	1.83	0.44
1:G:397:ARG:O	1:G:414:PRO:HB2	2.18	0.44
1:J:128:ILE:HG12	1:J:136:LEU:HD21	1.99	0.44
1:J:301:PRO:HB2	1:J:302:PRO:HD3	1.99	0.44
3:I:204:ASP:O	3:I:208:PRO:HD2	2.17	0.44
3:I:230:ALA:HB2	3:I:276:ILE:HG13	1.99	0.44
3:I:346:LEU:HD12	3:I:346:LEU:HA	1.73	0.44
3:I:476:ASP:OD1	3:I:508:LEU:HD22	2.17	0.44
3:I:692:ARG:HD3	3:I:692:ARG:HA	1.62	0.44
1:A:301:PRO:HB2	1:A:302:PRO:HD3	1.99	0.44
1:B:282:LEU:HD23	1:B:282:LEU:HA	1.78	0.44
1:G:287:CYS:N	1:G:296:TYR:O	2.41	0.44
1:G:566:HIS:O	1:G:566:HIS:ND1	2.50	0.44
3:F:692:ARG:HD3	3:F:692:ARG:HA	1.50	0.44
3:I:707:ILE:HG12	3:I:726:VAL:HG21	2.00	0.44
3:C:265:GLU:HB3	3:C:306:VAL:HG22	2.00	0.44
3:C:632:GLN:HB2	3:C:636:CYS:HB3	2.00	0.44
1:A:265:LYS:HE2	1:A:585:LYS:HB3	1.99	0.44
1:A:539:ARG:HH22	1:A:577:ARG:HD3	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:78:ASP:OD1	1:B:79:ALA:N	2.51	0.44
3:F:592:LEU:HD23	3:F:672:VAL:HG13	1.99	0.44
3:H:230:ALA:HB2	3:H:276:ILE:HG13	1.99	0.44
3:H:476:ASP:OD1	3:H:508:LEU:HD22	2.17	0.44
1:A:128:ILE:HG23	1:A:136:LEU:HD21	1.99	0.44
1:A:388:ASP:C	1:A:390:VAL:N	2.71	0.44
1:J:211:GLN:H	1:J:211:GLN:HG3	1.56	0.44
3:H:113:GLN:O	3:H:117:VAL:HG23	2.18	0.44
3:H:653:ILE:N	3:H:653:ILE:HD13	2.33	0.44
3:H:689:LYS:HD2	3:H:689:LYS:HA	1.65	0.44
3:H:714:ARG:NH1	3:H:725:GLU:OE2	2.50	0.44
3:I:498:LEU:HD13	3:I:498:LEU:HA	1.74	0.44
3:I:634:LEU:HD23	3:I:634:LEU:HA	1.79	0.44
3:C:338:PRO:HA	3:C:341:TYR:CD2	2.52	0.44
3:C:653:ILE:N	3:C:653:ILE:HD13	2.33	0.44
1:A:78:ASP:OD1	1:A:79:ALA:N	2.51	0.44
1:B:211:GLN:H	1:B:211:GLN:HG3	1.37	0.44
1:G:128:ILE:HG12	1:G:136:LEU:HD21	1.99	0.44
1:G:539:ARG:HH22	1:G:577:ARG:HD3	1.83	0.44
1:J:265:LYS:HD2	1:J:587:TYR:CZ	2.53	0.44
3:F:217:PHE:O	3:F:218:GLN:C	2.56	0.44
3:F:265:GLU:HB3	3:F:306:VAL:HG22	2.00	0.44
3:F:390:LEU:HD13	3:F:390:LEU:HA	1.80	0.44
3:F:622:ILE:HG12	3:F:627:LEU:HB2	2.00	0.44
3:H:345:LEU:HG	3:H:418:LEU:HD11	2.00	0.44
3:H:509:THR:HG22	3:H:511:GLY:H	1.83	0.44
3:H:592:LEU:HD23	3:H:672:VAL:HG13	1.99	0.44
3:H:684:SER:O	3:H:688:ARG:HB2	2.17	0.44
2:L:23:GLU:C	2:L:25:LYS:HZ1	2.20	0.44
3:C:230:ALA:HB2	3:C:276:ILE:HG13	1.99	0.44
1:B:37:VAL:HG21	1:B:82:LEU:HD23	1.99	0.44
1:B:265:LYS:HD2	1:B:587:TYR:CZ	2.53	0.44
3:H:632:GLN:HB2	3:H:636:CYS:HB3	2.00	0.44
3:I:731:LYS:HA	3:I:731:LYS:HD3	1.54	0.44
3:C:346:LEU:HD21	3:C:411:ILE:HA	2.00	0.44
2:E:47:ASN:O	2:E:48:HIS:HB2	2.18	0.44
1:A:128:ILE:HG12	1:A:136:LEU:HD21	1.99	0.43
1:A:415:LEU:H	1:A:415:LEU:HG	1.66	0.43
1:B:64:LEU:HB3	1:B:65:SER:H	1.61	0.43
1:G:58:ALA:HB1	3:I:121:ASP:CB	2.45	0.43
3:F:190:LEU:HB3	3:F:201:TYR:HB2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:H:349:LYS:HE3	3:H:421:PHE:CE2	2.52	0.43
3:H:396:LEU:HD13	3:H:396:LEU:HA	1.81	0.43
3:H:646:LYS:HE3	3:H:659:PHE:HE1	1.80	0.43
3:I:337:ASN:OD1	3:I:339:VAL:HG13	2.17	0.43
3:I:751:ARG:HD2	3:I:751:ARG:HA	1.44	0.43
1:A:156:VAL:O	1:A:160:PHE:HB3	2.17	0.43
1:A:265:LYS:HD2	1:A:587:TYR:CZ	2.53	0.43
1:G:390:VAL:CG1	1:G:393:GLU:HG3	2.43	0.43
1:J:181:LEU:HD21	1:J:220:ILE:HD13	1.99	0.43
3:F:113:GLN:O	3:F:117:VAL:HG23	2.18	0.43
3:F:425:LYS:N	3:F:733:ARG:O	2.50	0.43
3:F:653:ILE:N	3:F:653:ILE:HD13	2.33	0.43
3:F:751:ARG:HA	3:F:751:ARG:HD2	1.47	0.43
3:I:113:GLN:O	3:I:117:VAL:HG23	2.18	0.43
3:I:291:GLY:HA2	3:I:355:PHE:HZ	1.81	0.43
3:I:647:GLU:HB2	3:I:648:PRO:HD3	2.00	0.43
1:A:84:ILE:HA	1:A:87:THR:HG22	1.99	0.43
1:G:265:LYS:HD2	1:G:587:TYR:CZ	2.53	0.43
3:F:723:VAL:HA	3:F:726:VAL:HG12	1.98	0.43
3:F:752:GLU:HB2	3:F:753:TYR:H	1.52	0.43
3:H:707:ILE:HG12	3:H:726:VAL:HG21	2.00	0.43
3:C:86:ILE:HG23	3:C:90:ARG:HD2	2.00	0.43
3:C:153:ARG:HH21	3:C:200:VAL:HG13	1.83	0.43
3:C:225:LEU:HB3	3:C:272:HIS:CE1	2.53	0.43
3:C:592:LEU:HD23	3:C:672:VAL:HG13	1.99	0.43
1:A:22:LYS:NZ	1:B:6:GLU:OE1	2.51	0.43
1:G:13:TYR:CD2	1:G:13:TYR:C	2.92	0.43
3:H:86:ILE:HG23	3:H:90:ARG:HD2	2.00	0.43
3:H:470:LEU:HD11	3:H:474:PHE:CD2	2.47	0.43
3:I:86:ILE:HG23	3:I:90:ARG:HD2	2.00	0.43
3:C:508:LEU:HB3	3:C:513:TRP:CD1	2.54	0.43
3:C:526:PRO:O	3:C:529:ARG:HB2	2.18	0.43
3:C:527:ALA:HB3	3:C:528:PRO:HD3	2.00	0.43
1:A:133:CYS:SG	1:A:134:VAL:N	2.92	0.43
1:A:419:TRP:HZ2	1:A:438:LEU:HD23	1.84	0.43
1:B:160:PHE:HE2	1:B:169:PHE:CD2	2.37	0.43
1:J:133:CYS:SG	1:J:134:VAL:N	2.92	0.43
3:H:221:SER:HA	3:H:272:HIS:NE2	2.33	0.43
3:H:553:HIS:HA	3:H:597:PHE:CE1	2.53	0.43
3:I:414:LYS:HD3	3:I:414:LYS:HA	1.77	0.43
3:I:653:ILE:HD13	3:I:653:ILE:N	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:47:ASN:O	2:L:48:HIS:HB2	2.18	0.43
3:C:647:GLU:HB2	3:C:648:PRO:HD3	2.00	0.43
1:A:48:VAL:HA	1:A:51:THR:HG22	2.01	0.43
1:A:193:THR:HG23	1:A:194:VAL:N	2.33	0.43
1:A:270:ILE:HD11	1:A:584:GLY:HA3	2.00	0.43
1:J:48:VAL:HA	1:J:51:THR:HG22	2.01	0.43
1:J:233:TRP:HH2	1:J:245:VAL:CG2	2.25	0.43
3:F:647:GLU:HB2	3:F:648:PRO:HD3	2.00	0.43
3:F:707:ILE:HB	3:F:726:VAL:HG21	1.99	0.43
2:K:23:GLU:CB	2:K:25:LYS:HZ1	2.29	0.43
3:C:113:GLN:O	3:C:117:VAL:HG23	2.18	0.43
3:C:248:VAL:O	3:C:256:THR:HG21	2.18	0.43
3:F:269:ILE:HB	3:F:306:VAL:HG21	2.01	0.43
3:F:425:LYS:NZ	3:F:462:CYS:HB2	2.33	0.43
3:H:446:VAL:HG23	3:H:447:SER:H	1.76	0.43
3:H:647:GLU:HB2	3:H:648:PRO:HD3	2.00	0.43
3:I:423:GLN:HG2	3:I:424:GLU:H	1.83	0.43
3:C:414:LYS:HA	3:C:417:VAL:HB	2.00	0.43
3:C:634:LEU:HD23	3:C:634:LEU:HA	1.78	0.43
1:A:268:MET:HB3	1:A:287:CYS:SG	2.58	0.43
1:B:193:THR:HG23	1:B:194:VAL:N	2.34	0.43
1:G:233:TRP:HH2	1:G:245:VAL:CG2	2.25	0.43
3:H:265:GLU:HB3	3:H:306:VAL:HG22	2.00	0.43
3:H:423:GLN:HG2	3:H:424:GLU:H	1.83	0.43
3:I:553:HIS:HA	3:I:597:PHE:CE1	2.53	0.43
3:I:717:MET:HA	3:I:721:VAL:HB	2.00	0.43
1:G:133:CYS:SG	1:G:134:VAL:N	2.91	0.43
3:F:86:ILE:HG23	3:F:90:ARG:HD2	2.00	0.43
3:I:488:ARG:HA	3:I:488:ARG:HD2	1.49	0.43
3:I:715:LYS:HB2	3:I:722:LEU:HD21	2.00	0.43
2:L:52:LEU:HD12	2:L:56:CYS:HB3	2.01	0.43
3:C:346:LEU:CD2	3:C:411:ILE:HA	2.49	0.43
3:C:459:LYS:HZ1	3:C:468:SER:HA	1.84	0.43
3:C:553:HIS:HA	3:C:597:PHE:CE1	2.53	0.43
1:B:133:CYS:SG	1:B:134:VAL:N	2.91	0.42
1:G:268:MET:HB3	1:G:287:CYS:SG	2.59	0.42
1:J:297:LYS:HZ1	1:J:594:SER:HA	1.83	0.42
3:F:553:HIS:HA	3:F:597:PHE:CE1	2.53	0.42
3:H:74:TYR:OH	3:H:137:GLU:OE2	2.37	0.42
3:H:527:ALA:HB3	3:H:528:PRO:HD3	2.00	0.42
2:K:52:LEU:HD12	2:K:56:CYS:HB3	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:325:VAL:O	1:A:345:ARG:N	2.50	0.42
3:F:425:LYS:HA	3:F:428:PHE:HB3	2.00	0.42
3:H:269:ILE:HB	3:H:306:VAL:HG21	2.01	0.42
2:K:47:ASN:O	2:K:48:HIS:HB2	2.18	0.42
3:I:265:GLU:HB3	3:I:306:VAL:HG22	2.00	0.42
3:I:345:LEU:HD13	3:I:418:LEU:HD21	2.01	0.42
3:I:491:LEU:HD23	3:I:491:LEU:HA	1.79	0.42
3:I:714:ARG:HA	3:I:714:ARG:HD2	1.75	0.42
3:C:74:TYR:OH	3:C:137:GLU:OE2	2.37	0.42
3:C:691:THR:HA	3:C:694:LYS:HB2	2.01	0.42
1:A:376:VAL:O	1:A:383:TYR:N	2.38	0.42
1:B:286:VAL:HA	1:B:297:LYS:HA	2.01	0.42
3:F:541:ALA:CB	3:H:501:VAL:O	2.61	0.42
3:H:217:PHE:CE2	3:H:264:VAL:HG22	2.54	0.42
3:H:526:PRO:O	3:H:529:ARG:HB2	2.18	0.42
2:K:24:VAL:CA	2:K:25:LYS:HE2	2.41	0.42
3:I:632:GLN:HB2	3:I:636:CYS:HB3	2.00	0.42
1:A:402:TYR:HB2	1:A:409:TRP:CZ3	2.55	0.42
1:B:325:VAL:O	1:B:345:ARG:N	2.50	0.42
1:B:470:LYS:NZ	1:B:503:ASP:OD2	2.47	0.42
1:J:419:TRP:HZ2	1:J:438:LEU:HD23	1.84	0.42
3:F:632:GLN:HB2	3:F:636:CYS:HB3	2.00	0.42
3:H:248:VAL:O	3:H:256:THR:HG21	2.18	0.42
3:H:516:GLN:HE22	3:H:551:GLN:HG3	1.85	0.42
3:C:269:ILE:HB	3:C:306:VAL:HG21	2.01	0.42
3:C:711:MET:HG3	3:C:722:LEU:HD13	1.99	0.42
3:F:285:VAL:CG2	3:F:286:HIS:N	2.83	0.42
1:B:223:ASP:HB3	1:B:257:PHE:HE1	1.85	0.42
1:B:225:LEU:HD12	1:B:225:LEU:HA	1.82	0.42
1:B:402:TYR:HB2	1:B:409:TRP:CZ3	2.54	0.42
1:G:231:ARG:HD2	1:G:231:ARG:N	2.32	0.42
1:J:426:VAL:O	1:J:426:VAL:CG1	2.68	0.42
3:H:484:MET:SD	3:H:504:THR:HA	2.59	0.42
1:A:91:THR:HA	1:B:8:GLN:OE1	2.20	0.42
1:B:160:PHE:CD2	1:B:169:PHE:CD1	3.06	0.42
1:B:554:TYR:HB2	1:B:561:TRP:CD1	2.55	0.42
1:J:397:ARG:HD2	1:J:417:CYS:N	2.33	0.42
3:F:248:VAL:O	3:F:256:THR:HG21	2.18	0.42
3:F:441:LEU:O	3:F:554:MET:SD	2.77	0.42
3:I:74:TYR:OH	3:I:137:GLU:OE2	2.37	0.42
3:I:470:LEU:CD1	3:I:474:PHE:CD2	3.03	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:385:PRO:HB3	3:C:428:PHE:HB2	2.02	0.42
2:E:52:LEU:HD12	2:E:56:CYS:HB3	2.01	0.42
1:A:225:LEU:HD12	1:A:225:LEU:HA	1.68	0.42
1:A:554:TYR:HB2	1:A:561:TRP:CD1	2.55	0.42
1:G:325:VAL:O	1:G:345:ARG:N	2.50	0.42
1:G:376:VAL:N	1:G:383:TYR:O	2.45	0.42
3:F:451:GLU:HB3	3:F:474:PHE:CE2	2.55	0.42
3:H:287:MET:HE1	3:H:299:MET:SD	2.60	0.42
3:H:408:VAL:O	3:H:411:ILE:HG22	2.19	0.42
3:I:102:LEU:HD12	3:I:102:LEU:C	2.40	0.42
3:I:285:VAL:CG2	3:I:286:HIS:N	2.83	0.42
3:C:733:ARG:HD3	3:C:733:ARG:HA	1.82	0.42
1:A:225:LEU:HG	1:A:230:GLN:HE22	1.84	0.42
1:A:286:VAL:HA	1:A:297:LYS:HA	2.01	0.42
1:A:597:LYS:HA	1:A:598:PRO:HD2	1.91	0.42
1:G:280:CYS:HB3	1:G:281:SER:H	1.71	0.42
1:G:286:VAL:HA	1:G:297:LYS:HA	2.01	0.42
1:G:597:LYS:HA	1:G:598:PRO:HD2	1.91	0.42
1:J:217:LEU:HG	1:J:225:LEU:HD11	2.01	0.42
3:H:383:ARG:HE	3:H:383:ARG:HB2	1.33	0.42
3:I:212:MET:HE3	3:I:212:MET:HB3	1.79	0.42
1:G:221:ARG:HB3	1:G:255:LYS:HE2	2.02	0.42
1:G:539:ARG:HD3	1:G:549:TYR:CZ	2.55	0.42
1:J:325:VAL:O	1:J:345:ARG:N	2.50	0.42
3:F:102:LEU:HD12	3:F:102:LEU:C	2.40	0.42
3:F:593:GLN:HE21	3:F:593:GLN:HB3	1.71	0.42
3:H:102:LEU:HD12	3:H:102:LEU:C	2.40	0.42
3:H:212:MET:HE3	3:H:212:MET:HB3	1.68	0.42
3:H:217:PHE:HB2	3:H:267:GLU:OE1	2.20	0.42
3:H:470:LEU:CD1	3:H:474:PHE:CD2	3.03	0.42
3:I:419:PHE:O	3:I:422:MET:HB2	2.20	0.42
2:E:25:LYS:CE	2:E:25:LYS:CA	2.96	0.42
1:B:102:GLU:HG3	1:B:135:ARG:HH12	1.85	0.41
1:G:41:GLU:H	1:G:41:GLU:HG2	1.42	0.41
1:G:195:ARG:HE	1:G:195:ARG:HB3	1.61	0.41
3:I:526:PRO:HA	3:I:529:ARG:CB	2.49	0.41
3:I:638:LYS:HZ3	3:I:674:ILE:HG23	1.85	0.41
2:L:23:GLU:CB	2:L:25:LYS:NZ	2.83	0.41
3:C:102:LEU:HD12	3:C:102:LEU:C	2.40	0.41
3:C:430:ARG:HE	3:C:434:GLN:HE21	1.67	0.41
3:C:452:LYS:O	3:C:455:ILE:HG23	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:539:ARG:HD3	1:A:549:TYR:CZ	2.55	0.41
1:B:48:VAL:HA	1:B:51:THR:HG22	2.01	0.41
1:G:102:GLU:HG3	1:G:135:ARG:HH12	1.85	0.41
1:G:419:TRP:HZ2	1:G:438:LEU:HD23	1.84	0.41
1:J:87:THR:O	1:J:91:THR:HG22	2.20	0.41
3:F:400:VAL:CG1	3:F:401:LYS:N	2.83	0.41
3:H:285:VAL:HG23	3:H:286:HIS:N	2.35	0.41
3:H:285:VAL:CG2	3:H:286:HIS:N	2.83	0.41
3:I:455:ILE:CG2	3:I:470:LEU:HD21	2.24	0.41
3:I:500:GLY:HA2	3:I:503:LEU:HD23	2.01	0.41
3:C:406:GLN:H	3:C:406:GLN:HG3	1.38	0.41
1:G:554:TYR:HB2	1:G:561:TRP:CD1	2.55	0.41
1:J:539:ARG:HD3	1:J:549:TYR:CZ	2.55	0.41
3:F:285:VAL:HG23	3:F:286:HIS:N	2.35	0.41
3:F:508:LEU:HB3	3:F:513:TRP:CD1	2.55	0.41
3:I:269:ILE:HB	3:I:306:VAL:HG21	2.01	0.41
2:L:41:ASN:ND2	2:L:46:ARG:HD2	2.36	0.41
2:L:52:LEU:HD21	2:L:59:ASN:HA	2.03	0.41
3:C:700:LYS:HG2	3:C:744:ARG:HD2	2.02	0.41
1:A:22:LYS:HZ3	1:B:6:GLU:CD	2.22	0.41
1:G:45:HIS:CG	1:J:47:MET:HE1	2.55	0.41
2:D:84:ILE:HD12	2:D:84:ILE:HA	1.93	0.41
3:F:266:ARG:O	3:F:270:SER:HB2	2.21	0.41
3:F:709:ARG:HE	3:F:709:ARG:HB3	1.34	0.41
3:H:223:LYS:HB3	3:H:223:LYS:HE2	1.25	0.41
3:H:266:ARG:O	3:H:270:SER:HB2	2.21	0.41
3:I:285:VAL:HG23	3:I:286:HIS:N	2.35	0.41
3:I:287:MET:HE1	3:I:299:MET:SD	2.60	0.41
1:A:212:TYR:C	1:A:214:SER:N	2.74	0.41
1:J:286:VAL:HA	1:J:297:LYS:HA	2.01	0.41
1:J:554:TYR:HB2	1:J:561:TRP:CD1	2.55	0.41
3:H:224:PHE:O	3:H:225:LEU:C	2.59	0.41
3:H:374:PHE:O	3:H:378:LEU:HB2	2.20	0.41
3:H:625:ARG:H	3:H:625:ARG:HG2	1.50	0.41
3:I:221:SER:HB2	3:I:272:HIS:NE2	2.35	0.41
3:C:266:ARG:O	3:C:270:SER:HB2	2.21	0.41
3:C:285:VAL:CG2	3:C:286:HIS:N	2.83	0.41
3:C:287:MET:HE1	3:C:299:MET:SD	2.60	0.41
3:C:390:LEU:HD13	3:C:390:LEU:HA	1.75	0.41
2:E:52:LEU:HD21	2:E:59:ASN:HA	2.03	0.41
1:A:87:THR:O	1:A:91:THR:HG22	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:419:TRP:HZ2	1:B:438:LEU:HD23	1.84	0.41
3:F:74:TYR:CZ	3:F:142:LEU:HD22	2.56	0.41
3:I:393:ASP:O	3:I:394:ASP:C	2.59	0.41
2:L:41:ASN:ND2	2:L:46:ARG:CG	2.84	0.41
3:C:509:THR:C	2:E:32:LEU:HD11	2.41	0.41
1:A:426:VAL:O	1:A:426:VAL:CG1	2.68	0.41
1:B:212:TYR:O	1:B:216:VAL:HG23	2.20	0.41
1:G:426:VAL:O	1:G:426:VAL:CG1	2.68	0.41
2:D:23:GLU:CB	2:D:25:LYS:NZ	2.83	0.41
3:F:349:LYS:HE2	3:F:421:PHE:CE2	2.53	0.41
3:F:558:ASP:OD1	3:F:671:ARG:NH2	2.54	0.41
3:H:74:TYR:CZ	3:H:142:LEU:HD22	2.56	0.41
3:H:218:GLN:O	3:H:222:GLN:HG2	2.21	0.41
3:I:266:ARG:O	3:I:270:SER:HB2	2.21	0.41
3:C:558:ASP:OD1	3:C:671:ARG:NH2	2.54	0.41
3:H:480:SER:HB3	3:H:508:LEU:HD23	2.03	0.41
3:I:749:ILE:HD13	3:I:758:PRO:HD3	2.02	0.41
3:C:346:LEU:HD11	3:C:414:LYS:HB3	2.03	0.41
3:C:707:ILE:HG13	3:C:711:MET:HG2	2.02	0.41
1:A:102:GLU:HG3	1:A:135:ARG:HH12	1.85	0.41
1:A:457:THR:HG22	1:A:459:ARG:HG2	2.02	0.41
1:B:87:THR:O	1:B:91:THR:HG22	2.21	0.41
1:B:426:VAL:O	1:B:426:VAL:CG1	2.68	0.41
1:G:277:GLU:H	1:G:277:GLU:HG3	1.55	0.41
1:G:457:THR:HG22	1:G:459:ARG:HG2	2.02	0.41
1:J:297:LYS:HZ2	1:J:592:GLU:HG2	1.86	0.41
2:D:31:ALA:O	3:F:507:VAL:HA	2.21	0.41
3:F:346:LEU:HD12	3:F:346:LEU:HA	1.72	0.41
3:H:539:TYR:HE2	3:H:546:ARG:HB2	1.85	0.41
3:H:558:ASP:OD1	3:H:671:ARG:NH2	2.54	0.41
2:K:41:ASN:ND2	2:K:46:ARG:CG	2.84	0.41
3:I:480:SER:HB3	3:I:508:LEU:HD23	2.03	0.41
3:C:524:ILE:HG22	3:C:529:ARG:HG3	2.02	0.41
2:E:41:ASN:ND2	2:E:46:ARG:CG	2.84	0.41
2:E:41:ASN:ND2	2:E:46:ARG:HD2	2.36	0.41
3:F:752:GLU:H	3:F:752:GLU:HG2	1.60	0.41
3:H:682:GLY:C	3:H:683:GLU:OE1	2.60	0.41
2:K:52:LEU:HD21	2:K:59:ASN:HA	2.02	0.41
3:C:285:VAL:HG23	3:C:286:HIS:N	2.35	0.41
3:C:455:ILE:O	3:C:457:LYS:N	2.54	0.41
3:C:619:GLU:H	3:C:619:GLU:HG3	1.64	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:638:LYS:HG3	3:C:642:ARG:HG2	2.03	0.41
1:A:91:THR:HG23	1:A:93:ASN:HB3	2.03	0.40
1:A:226:SER:HB2	1:A:228:VAL:HG23	2.03	0.40
1:B:81:THR:O	1:B:84:ILE:HG22	2.21	0.40
1:B:238:PRO:HA	1:B:239:PRO:HD3	1.98	0.40
1:B:397:ARG:O	1:B:414:PRO:HB2	2.21	0.40
1:G:45:HIS:CD2	1:J:47:MET:CE	3.04	0.40
1:G:82:LEU:HD12	1:G:82:LEU:HA	1.84	0.40
1:G:402:TYR:HB2	1:G:409:TRP:CZ3	2.57	0.40
1:J:102:GLU:HG3	1:J:135:ARG:HH12	1.85	0.40
1:J:221:ARG:HG2	1:J:255:LYS:HG3	2.03	0.40
3:F:168:MET:SD	3:F:183:ILE:HD11	2.62	0.40
3:H:491:LEU:C	3:H:493:ALA:N	2.75	0.40
3:H:709:ARG:HE	3:H:709:ARG:HB3	1.37	0.40
3:H:752:GLU:HB3	3:H:753:TYR:H	1.72	0.40
3:I:558:ASP:OD1	3:I:671:ARG:NH2	2.54	0.40
3:I:682:GLY:C	3:I:683:GLU:OE1	2.60	0.40
2:L:45:CYS:HB2	2:L:54:ILE:HG12	2.04	0.40
1:B:282:LEU:HB3	1:B:283:TYR:CD2	2.56	0.40
1:B:457:THR:HG22	1:B:459:ARG:HG2	2.02	0.40
1:G:191:GLU:OE1	1:G:223:ASP:HB3	2.22	0.40
1:G:283:TYR:HB2	1:G:306:HIS:ND1	2.36	0.40
1:J:376:VAL:O	1:J:383:TYR:N	2.39	0.40
1:J:457:THR:HG22	1:J:459:ARG:HG2	2.02	0.40
3:F:619:GLU:H	3:F:619:GLU:HG3	1.68	0.40
3:H:512:TYR:CD2	2:K:104:GLN:NE2	2.88	0.40
3:H:703:ILE:HD11	3:H:744:ARG:HD3	2.03	0.40
2:K:23:GLU:CB	2:K:25:LYS:NZ	2.83	0.40
3:I:148:ARG:HH11	3:I:200:VAL:HG21	1.86	0.40
3:I:375:GLU:HA	3:I:421:PHE:O	2.21	0.40
3:I:638:LYS:HG2	3:I:642:ARG:HA	2.03	0.40
3:C:74:TYR:CZ	3:C:142:LEU:HD22	2.56	0.40
1:A:211:GLN:H	1:A:211:GLN:HG3	1.40	0.40
1:B:265:LYS:HD3	1:B:587:TYR:CZ	2.57	0.40
1:B:275:SER:O	1:B:276:SER:C	2.59	0.40
3:F:124:MET:O	3:F:128:ARG:HG2	2.22	0.40
3:F:287:MET:HE1	3:F:299:MET:SD	2.60	0.40
3:F:560:ASN:HA	3:F:591:ILE:HG13	2.03	0.40
3:F:634:LEU:HD23	3:F:634:LEU:HA	1.78	0.40
3:H:200:VAL:O	3:H:201:TYR:C	2.58	0.40
3:H:411:ILE:HD12	3:H:411:ILE:HA	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:H:634:LEU:HA	3:H:634:LEU:HD23	1.78	0.40
3:I:74:TYR:CZ	3:I:142:LEU:HD22	2.56	0.40
3:I:249:MET:H	3:I:249:MET:HG3	1.77	0.40
3:I:717:MET:HG2	3:I:722:LEU:HD12	2.02	0.40
3:C:124:MET:O	3:C:128:ARG:HG2	2.21	0.40
3:C:168:MET:SD	3:C:183:ILE:HD11	2.62	0.40
3:C:682:GLY:C	3:C:683:GLU:OE1	2.60	0.40
1:A:13:TYR:CE2	1:B:92:GLY:HA2	2.57	0.40
1:A:297:LYS:HZ1	1:A:594:SER:HA	1.85	0.40
1:B:539:ARG:HD3	1:B:549:TYR:CZ	2.55	0.40
1:G:198:ALA:HB1	1:G:216:VAL:HG11	2.03	0.40
1:J:190:LYS:HD3	1:J:192:GLU:HB2	2.02	0.40
3:F:311:LYS:HE3	3:F:311:LYS:HB3	1.90	0.40
3:F:638:LYS:HG2	3:F:642:ARG:HA	2.03	0.40
3:F:682:GLY:C	3:F:683:GLU:OE1	2.60	0.40
3:H:638:LYS:HG2	3:H:642:ARG:HA	2.03	0.40
1:A:166:GLN:HB2	1:A:169:PHE:HB3	2.04	0.40
1:A:244:VAL:O	1:A:247:GLN:HG3	2.21	0.40
1:G:225:LEU:HD12	1:G:230:GLN:HE22	1.83	0.40
3:F:414:LYS:HA	3:F:414:LYS:HD3	1.43	0.40
3:H:168:MET:SD	3:H:183:ILE:HD11	2.62	0.40
3:H:606:ASN:HD21	2:K:22:PHE:HB2	1.87	0.40
3:I:393:ASP:HA	3:I:439:ARG:HH21	1.87	0.40
3:I:700:LYS:HG2	3:I:744:ARG:HD2	2.04	0.40
3:C:560:ASN:HA	3:C:591:ILE:HG13	2.03	0.40
3:C:768:ALA:HB1	2:E:89:LYS:HB3	2.03	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	556/623 (89%)	509 (92%)	44 (8%)	3 (0%)	29	69
1	B	549/623 (88%)	506 (92%)	39 (7%)	4 (1%)	22	63
1	G	556/623 (89%)	495 (89%)	53 (10%)	8 (1%)	11	46
1	J	547/623 (88%)	495 (90%)	49 (9%)	3 (0%)	29	69
2	D	87/121 (72%)	61 (70%)	21 (24%)	5 (6%)	1	18
2	E	87/121 (72%)	59 (68%)	23 (26%)	5 (6%)	1	18
2	K	87/121 (72%)	60 (69%)	22 (25%)	5 (6%)	1	18
2	L	87/121 (72%)	62 (71%)	20 (23%)	5 (6%)	1	18
3	C	716/776 (92%)	629 (88%)	82 (12%)	5 (1%)	22	63
3	F	716/776 (92%)	610 (85%)	93 (13%)	13 (2%)	8	40
3	H	716/776 (92%)	615 (86%)	94 (13%)	7 (1%)	15	55
3	I	716/776 (92%)	620 (87%)	87 (12%)	9 (1%)	12	48
All	All	5420/6080 (89%)	4721 (87%)	627 (12%)	72 (1%)	16	48

All (72) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	390	VAL
1	B	279	PRO
1	G	221	ARG
2	D	68	CYS
3	F	400	VAL
3	F	464	CYS
3	F	465	GLN
3	F	526	PRO
3	F	623	PRO
3	H	200	VAL
2	K	68	CYS
3	I	200	VAL
3	I	623	PRO
2	L	68	CYS
2	E	68	CYS
1	G	227	GLU
1	G	254	PRO
3	F	203	GLU
3	F	204	ASP
3	F	399	GLY
3	F	510	THR
3	I	510	THR

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Mol	Chain	Res	Type
3	I	517	SER
3	C	330	SER
3	C	623	PRO
1	A	395	ASN
1	B	144	SER
1	J	252	SER
2	D	44	ILE
2	D	57	GLN
3	F	202	GLU
3	H	202	GLU
3	H	215	GLU
3	I	442	THR
3	I	624	GLU
2	L	57	GLN
3	C	510	THR
3	C	517	SER
1	B	252	SER
1	G	252	SER
1	G	256	PHE
1	G	276	SER
1	J	144	SER
1	J	207	GLU
2	D	35	TRP
2	D	38	VAL
3	F	624	GLU
3	H	400	VAL
3	H	753	TYR
2	K	35	TRP
2	K	38	VAL
2	K	57	GLN
3	I	204	ASP
2	L	35	TRP
2	L	38	VAL
2	E	35	TRP
2	E	38	VAL
2	E	57	GLN
1	B	207	GLU
3	F	206	GLU
3	F	525	PRO
3	H	517	SER
2	K	48	HIS
3	I	199	SER

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Mol	Chain	Res	Type
3	I	752	GLU
2	L	48	HIS
3	C	380	LEU
2	E	48	HIS
1	A	252	SER
1	G	220	ILE
3	H	686	PRO
1	G	253	MET

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	478/560 (85%)	446 (93%)	32 (7%)	16 41
1	B	485/560 (87%)	452 (93%)	33 (7%)	16 41
1	G	470/560 (84%)	427 (91%)	43 (9%)	9 29
1	J	491/560 (88%)	452 (92%)	39 (8%)	12 35
2	D	66/102 (65%)	58 (88%)	8 (12%)	5 20
2	E	78/102 (76%)	66 (85%)	12 (15%)	2 14
2	K	78/102 (76%)	66 (85%)	12 (15%)	2 14
2	L	78/102 (76%)	67 (86%)	11 (14%)	3 16
3	C	621/701 (89%)	542 (87%)	79 (13%)	4 18
3	F	597/701 (85%)	520 (87%)	77 (13%)	4 18
3	H	610/701 (87%)	556 (91%)	54 (9%)	9 30
3	I	617/701 (88%)	530 (86%)	87 (14%)	3 16
All	All	4669/5452 (86%)	4182 (90%)	487 (10%)	10 24

All (487) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	6	GLU
1	A	11	THR

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Mol	Chain	Res	Type
1	A	119	ARG
1	A	160	PHE
1	A	166	GLN
1	A	167	ASP
1	A	199	MET
1	A	203	GLU
1	A	204	TYR
1	A	206	THR
1	A	211	GLN
1	A	214	SER
1	A	217	LEU
1	A	219	GLN
1	A	220	ILE
1	A	221	ARG
1	A	222	ILE
1	A	225	LEU
1	A	226	SER
1	A	227	GLU
1	A	228	VAL
1	A	229	THR
1	A	230	GLN
1	A	231	ARG
1	A	253	MET
1	A	270	ILE
1	A	389	SER
1	A	397	ARG
1	A	401	ARG
1	A	412	VAL
1	A	415	LEU
1	A	443	PHE
1	B	61	MET
1	B	66	GLU
1	B	67	SER
1	B	68	LYS
1	B	119	ARG
1	B	160	PHE
1	B	199	MET
1	B	206	THR
1	B	209	ARG
1	B	211	GLN
1	B	213	LEU
1	B	217	LEU

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Mol	Chain	Res	Type
1	B	218	SER
1	B	220	ILE
1	B	221	ARG
1	B	222	ILE
1	B	223	ASP
1	B	225	LEU
1	B	226	SER
1	B	227	GLU
1	B	253	MET
1	B	270	ILE
1	B	277	GLU
1	B	278	ASN
1	B	279	PRO
1	B	280	CYS
1	B	396	ARG
1	B	397	ARG
1	B	399	VAL
1	B	401	ARG
1	B	439	MET
1	B	450	VAL
1	B	530	ILE
1	G	8	GLN
1	G	11	THR
1	G	34	VAL
1	G	40	THR
1	G	41	GLU
1	G	71	HIS
1	G	74	LEU
1	G	75	ARG
1	G	84	ILE
1	G	119	ARG
1	G	160	PHE
1	G	167	ASP
1	G	171	GLN
1	G	172	LEU
1	G	173	SER
1	G	193	THR
1	G	194	VAL
1	G	195	ARG
1	G	200	LEU
1	G	203	GLU
1	G	206	THR

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Mol	Chain	Res	Type
1	G	209	ARG
1	G	210	SER
1	G	211	GLN
1	G	213	LEU
1	G	218	SER
1	G	219	GLN
1	G	221	ARG
1	G	222	ILE
1	G	223	ASP
1	G	225	LEU
1	G	227	GLU
1	G	253	MET
1	G	255	LYS
1	G	270	ILE
1	G	277	GLU
1	G	280	CYS
1	G	282	LEU
1	G	396	ARG
1	G	397	ARG
1	G	399	VAL
1	G	401	ARG
1	G	443	PHE
1	J	8	GLN
1	J	11	THR
1	J	57	ARG
1	J	59	MET
1	J	75	ARG
1	J	82	LEU
1	J	119	ARG
1	J	146	GLU
1	J	160	PHE
1	J	167	ASP
1	J	169	PHE
1	J	171	GLN
1	J	172	LEU
1	J	173	SER
1	J	191	GLU
1	J	193	THR
1	J	194	VAL
1	J	195	ARG
1	J	196	GLU
1	J	201	TRP

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Mol	Chain	Res	Type
1	J	204	TYR
1	J	205	ASN
1	J	206	THR
1	J	210	SER
1	J	211	GLN
1	J	213	LEU
1	J	214	SER
1	J	217	LEU
1	J	218	SER
1	J	219	GLN
1	J	222	ILE
1	J	223	ASP
1	J	225	LEU
1	J	227	GLU
1	J	253	MET
1	J	270	ILE
1	J	399	VAL
1	J	401	ARG
1	J	443	PHE
2	D	35	TRP
2	D	49	ILE
2	D	52	LEU
2	D	54	ILE
2	D	86	ARG
2	D	88	LEU
2	D	89	LYS
2	D	97	ASP
3	F	201	TYR
3	F	206	GLU
3	F	212	MET
3	F	218	GLN
3	F	220	GLU
3	F	223	LYS
3	F	328	LEU
3	F	336	LYS
3	F	339	VAL
3	F	345	LEU
3	F	346	LEU
3	F	349	LYS
3	F	351	ARG
3	F	355	PHE
3	F	357	LEU

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Mol	Chain	Res	Type
3	F	358	GLU
3	F	364	ARG
3	F	369	THR
3	F	377	PHE
3	F	379	ASN
3	F	382	SER
3	F	384	SER
3	F	386	GLU
3	F	390	LEU
3	F	395	LYS
3	F	396	LEU
3	F	397	LYS
3	F	398	LYS
3	F	406	GLN
3	F	407	GLU
3	F	414	LYS
3	F	418	LEU
3	F	422	MET
3	F	423	GLN
3	F	425	LYS
3	F	459	LYS
3	F	462	CYS
3	F	468	SER
3	F	478	SER
3	F	480	SER
3	F	515	THR
3	F	521	LYS
3	F	522	CYS
3	F	523	ASN
3	F	524	ILE
3	F	546	ARG
3	F	547	GLN
3	F	548	LEU
3	F	593	GLN
3	F	613	PHE
3	F	619	GLU
3	F	620	THR
3	F	622	ILE
3	F	623	PRO
3	F	624	GLU
3	F	625	ARG
3	F	665	PHE

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Mol	Chain	Res	Type
3	F	669	LEU
3	F	680	LYS
3	F	687	GLU
3	F	688	ARG
3	F	689	LYS
3	F	692	ARG
3	F	694	LYS
3	F	695	VAL
3	F	701	HIS
3	F	702	GLU
3	F	703	ILE
3	F	709	ARG
3	F	711	MET
3	F	712	LYS
3	F	716	LYS
3	F	748	LEU
3	F	750	GLU
3	F	751	ARG
3	F	752	GLU
3	F	753	TYR
3	H	202	GLU
3	H	209	PHE
3	H	210	LEU
3	H	211	GLU
3	H	212	MET
3	H	215	GLU
3	H	218	GLN
3	H	219	MET
3	H	220	GLU
3	H	223	LYS
3	H	225	LEU
3	H	377	PHE
3	H	378	LEU
3	H	380	LEU
3	H	381	ASN
3	H	383	ARG
3	H	386	GLU
3	H	389	SER
3	H	390	LEU
3	H	394	ASP
3	H	395	LYS
3	H	396	LEU

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Mol	Chain	Res	Type
3	H	420	ARG
3	H	515	THR
3	H	521	LYS
3	H	522	CYS
3	H	523	ASN
3	H	524	ILE
3	H	542	LYS
3	H	547	GLN
3	H	593	GLN
3	H	613	PHE
3	H	620	THR
3	H	622	ILE
3	H	625	ARG
3	H	665	PHE
3	H	669	LEU
3	H	680	LYS
3	H	687	GLU
3	H	688	ARG
3	H	689	LYS
3	H	691	THR
3	H	694	LYS
3	H	695	VAL
3	H	698	ASP
3	H	701	HIS
3	H	702	GLU
3	H	703	ILE
3	H	709	ARG
3	H	716	LYS
3	H	750	GLU
3	H	754	LEU
3	H	756	ARG
3	H	757	THR
2	K	35	TRP
2	K	41	ASN
2	K	42	CYS
2	K	86	ARG
2	K	88	LEU
2	K	91	ARG
2	K	92	GLN
2	K	93	VAL
2	K	94	CYS
2	K	97	ASP

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Mol	Chain	Res	Type
2	K	99	ARG
2	K	100	GLU
3	I	47	LYS
3	I	72	LYS
3	I	202	GLU
3	I	206	GLU
3	I	210	LEU
3	I	212	MET
3	I	213	SER
3	I	219	MET
3	I	220	GLU
3	I	223	LYS
3	I	225	LEU
3	I	248	VAL
3	I	249	MET
3	I	254	LYS
3	I	255	SER
3	I	257	GLU
3	I	339	VAL
3	I	346	LEU
3	I	349	LYS
3	I	351	ARG
3	I	353	ASP
3	I	356	LEU
3	I	357	LEU
3	I	377	PHE
3	I	379	ASN
3	I	381	ASN
3	I	383	ARG
3	I	384	SER
3	I	390	LEU
3	I	395	LYS
3	I	398	LYS
3	I	400	VAL
3	I	407	GLU
3	I	414	LYS
3	I	417	VAL
3	I	418	LEU
3	I	427	VAL
3	I	433	LYS
3	I	436	LEU
3	I	438	ARG

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Mol	Chain	Res	Type
3	I	486	GLU
3	I	487	PHE
3	I	488	ARG
3	I	491	LEU
3	I	496	VAL
3	I	497	SER
3	I	498	LEU
3	I	515	THR
3	I	516	GLN
3	I	519	THR
3	I	521	LYS
3	I	546	ARG
3	I	547	GLN
3	I	593	GLN
3	I	613	PHE
3	I	619	GLU
3	I	622	ILE
3	I	624	GLU
3	I	625	ARG
3	I	665	PHE
3	I	669	LEU
3	I	680	LYS
3	I	687	GLU
3	I	688	ARG
3	I	689	LYS
3	I	691	THR
3	I	692	ARG
3	I	694	LYS
3	I	695	VAL
3	I	697	ASP
3	I	701	HIS
3	I	702	GLU
3	I	703	ILE
3	I	709	ARG
3	I	712	LYS
3	I	714	ARG
3	I	715	LYS
3	I	716	LYS
3	I	717	MET
3	I	731	LYS
3	I	735	LEU
3	I	748	LEU

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Mol	Chain	Res	Type
3	I	750	GLU
3	I	751	ARG
3	I	753	TYR
3	I	754	LEU
3	I	756	ARG
2	L	35	TRP
2	L	41	ASN
2	L	42	CYS
2	L	67	GLU
2	L	86	ARG
2	L	88	LEU
2	L	91	ARG
2	L	96	LEU
2	L	98	ASN
2	L	99	ARG
2	L	100	GLU
3	C	43	GLU
3	C	47	LYS
3	C	203	GLU
3	C	328	LEU
3	C	330	SER
3	C	336	LYS
3	C	340	ASP
3	C	341	TYR
3	C	376	TYR
3	C	377	PHE
3	C	378	LEU
3	C	379	ASN
3	C	382	SER
3	C	383	ARG
3	C	390	LEU
3	C	395	LYS
3	C	398	LYS
3	C	400	VAL
3	C	403	LEU
3	C	404	THR
3	C	406	GLN
3	C	411	ILE
3	C	416	MET
3	C	417	VAL
3	C	419	PHE
3	C	422	MET

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Mol	Chain	Res	Type
3	C	423	GLN
3	C	425	LYS
3	C	454	MET
3	C	455	ILE
3	C	456	SER
3	C	462	CYS
3	C	466	PHE
3	C	469	LYS
3	C	498	LEU
3	C	512	TYR
3	C	515	THR
3	C	516	GLN
3	C	521	LYS
3	C	522	CYS
3	C	523	ASN
3	C	524	ILE
3	C	542	LYS
3	C	544	SER
3	C	547	GLN
3	C	593	GLN
3	C	613	PHE
3	C	619	GLU
3	C	620	THR
3	C	621	ASP
3	C	622	ILE
3	C	625	ARG
3	C	627	LEU
3	C	665	PHE
3	C	669	LEU
3	C	680	LYS
3	C	687	GLU
3	C	688	ARG
3	C	689	LYS
3	C	691	THR
3	C	692	ARG
3	C	694	LYS
3	C	697	ASP
3	C	703	ILE
3	C	704	GLU
3	C	709	ARG
3	C	711	MET
3	C	716	LYS

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Mol	Chain	Res	Type
3	C	728	GLN
3	C	729	GLN
3	C	731	LYS
3	C	735	LEU
3	C	748	LEU
3	C	750	GLU
3	C	751	ARG
3	C	752	GLU
3	C	753	TYR
3	C	754	LEU
3	C	757	THR
2	E	35	TRP
2	E	41	ASN
2	E	42	CYS
2	E	86	ARG
2	E	88	LEU
2	E	91	ARG
2	E	92	GLN
2	E	93	VAL
2	E	94	CYS
2	E	98	ASN
2	E	99	ARG
2	E	100	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (64) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	8	GLN
1	A	230	GLN
1	A	356	GLN
1	A	357	GLN
1	B	8	GLN
1	B	69	GLN
1	B	93	ASN
1	B	166	GLN
1	B	356	GLN
1	B	357	GLN
1	G	8	GLN
1	G	230	GLN
1	G	356	GLN
1	G	357	GLN
1	J	8	GLN

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Mol	Chain	Res	Type
1	J	205	ASN
1	J	356	GLN
1	J	357	GLN
2	D	28	ASN
3	F	163	GLN
3	F	435	HIS
3	F	465	GLN
3	F	606	ASN
3	F	618	GLN
3	F	657	HIS
3	F	718	GLN
3	H	163	GLN
3	H	381	ASN
3	H	465	GLN
3	H	481	ASN
3	H	523	ASN
3	H	606	ASN
3	H	618	GLN
3	H	657	HIS
3	H	718	GLN
3	H	729	GLN
2	K	41	ASN
2	K	47	ASN
3	I	163	GLN
3	I	465	GLN
3	I	481	ASN
3	I	606	ASN
3	I	618	GLN
3	I	657	HIS
2	L	28	ASN
2	L	41	ASN
2	L	47	ASN
2	L	98	ASN
3	C	163	GLN
3	C	379	ASN
3	C	434	GLN
3	C	443	ASN
3	C	481	ASN
3	C	523	ASN
3	C	547	GLN
3	C	606	ASN
3	C	618	GLN

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Mol	Chain	Res	Type
3	C	657	HIS
3	C	718	GLN
3	C	728	GLN
2	E	28	ASN
2	E	41	ASN
2	E	47	ASN
2	E	98	ASN

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 12 ligands modelled in this entry, 12 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 (i)

There are no chain breaks in this entry.

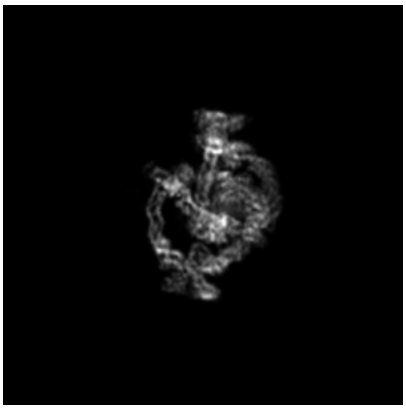
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-34449. These allow visual inspection of the internal detail of the map and identification of artifacts.

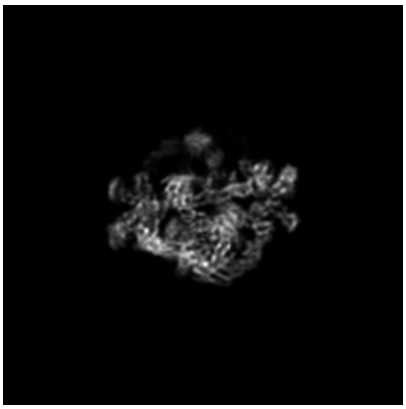
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

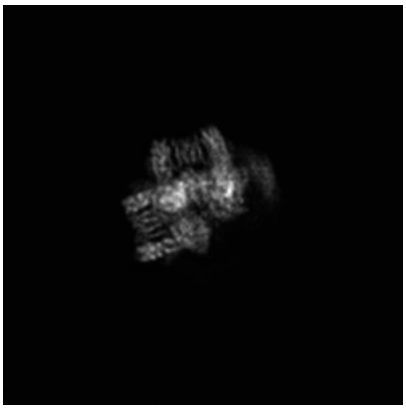
6.1.1 Primary map



X

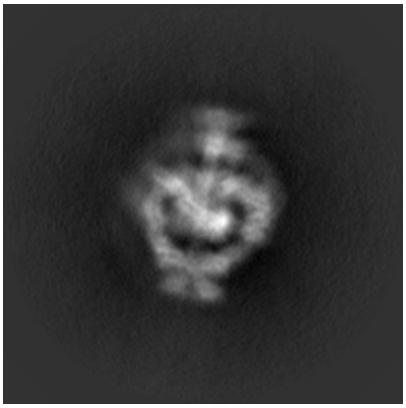


Y

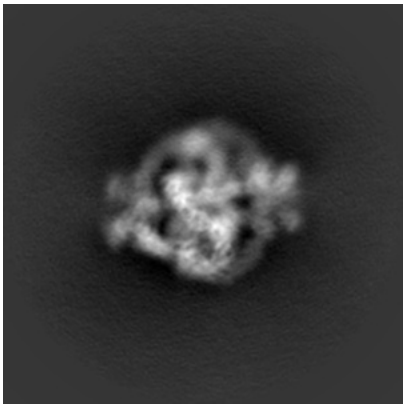


Z

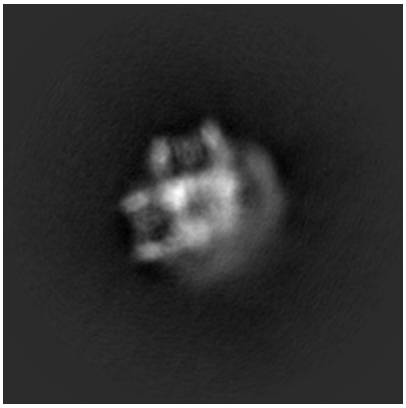
6.1.2 Raw map



X



Y



Z

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

6.2 Central slices (i)

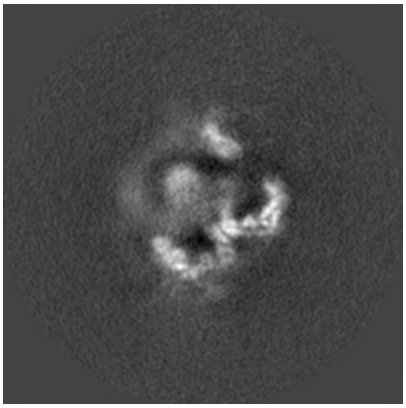
6.2.1 Primary map

X Index: 96

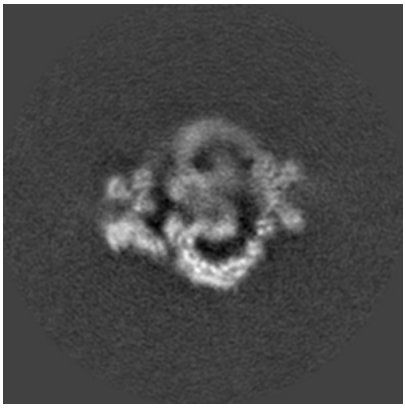
Y Index: 96

Z Index: 96

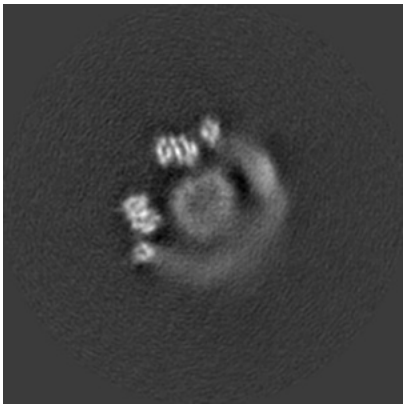
6.2.2 Raw map



X Index: 96



Y Index: 96

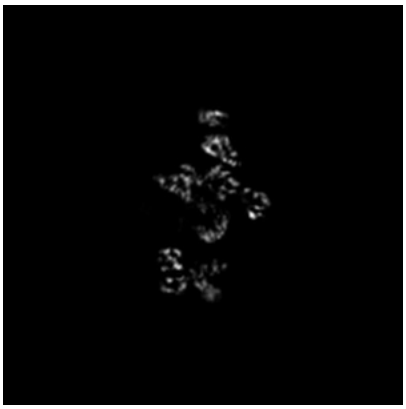


Z Index: 96

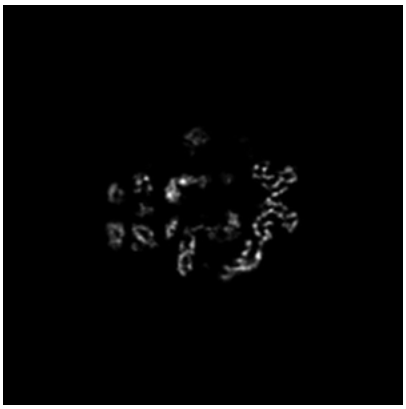
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

6.3.1 Primary map



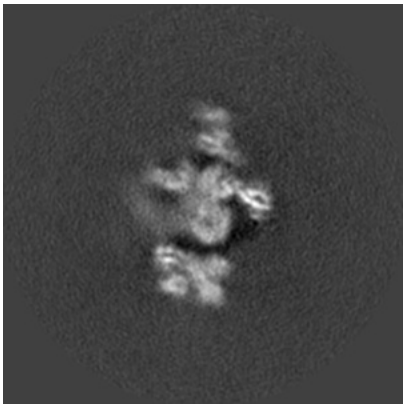
X Index: 86



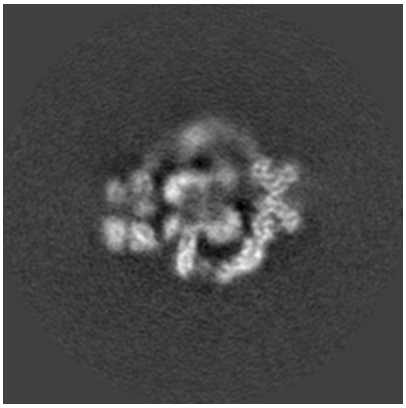
Y Index: 100

Z Index: 86

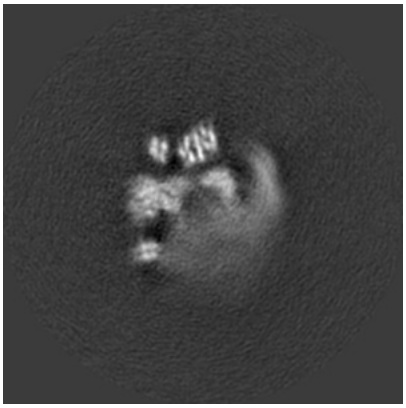
6.3.2 Raw map



X Index: 84



Y Index: 100

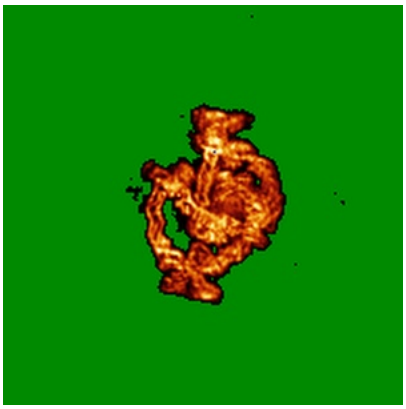


Z Index: 89

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

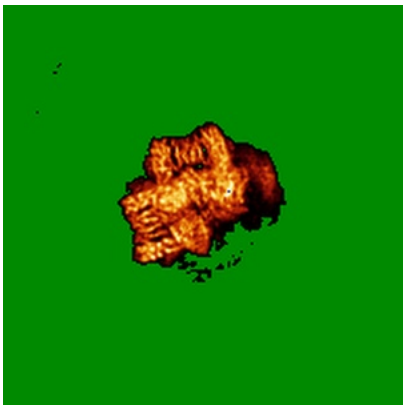
6.4 Orthogonal standard-deviation projections (False-color) (i)

6.4.1 Primary map



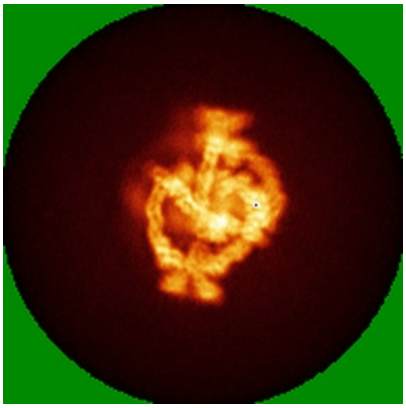
X

Y

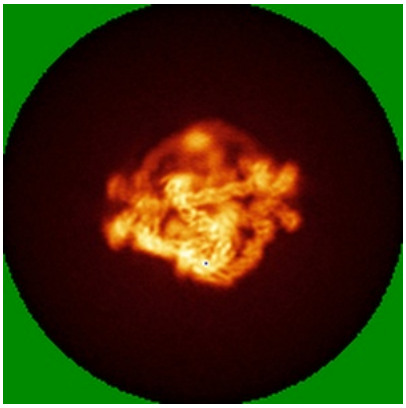


Z

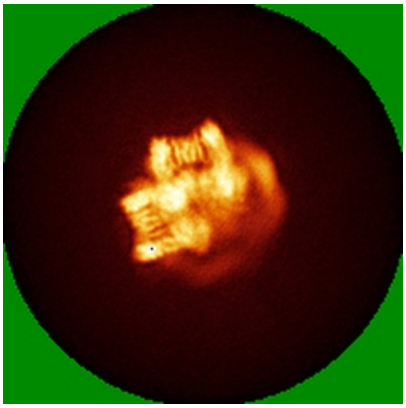
6.4.2 Raw map



X



Y



Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.0001. 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.

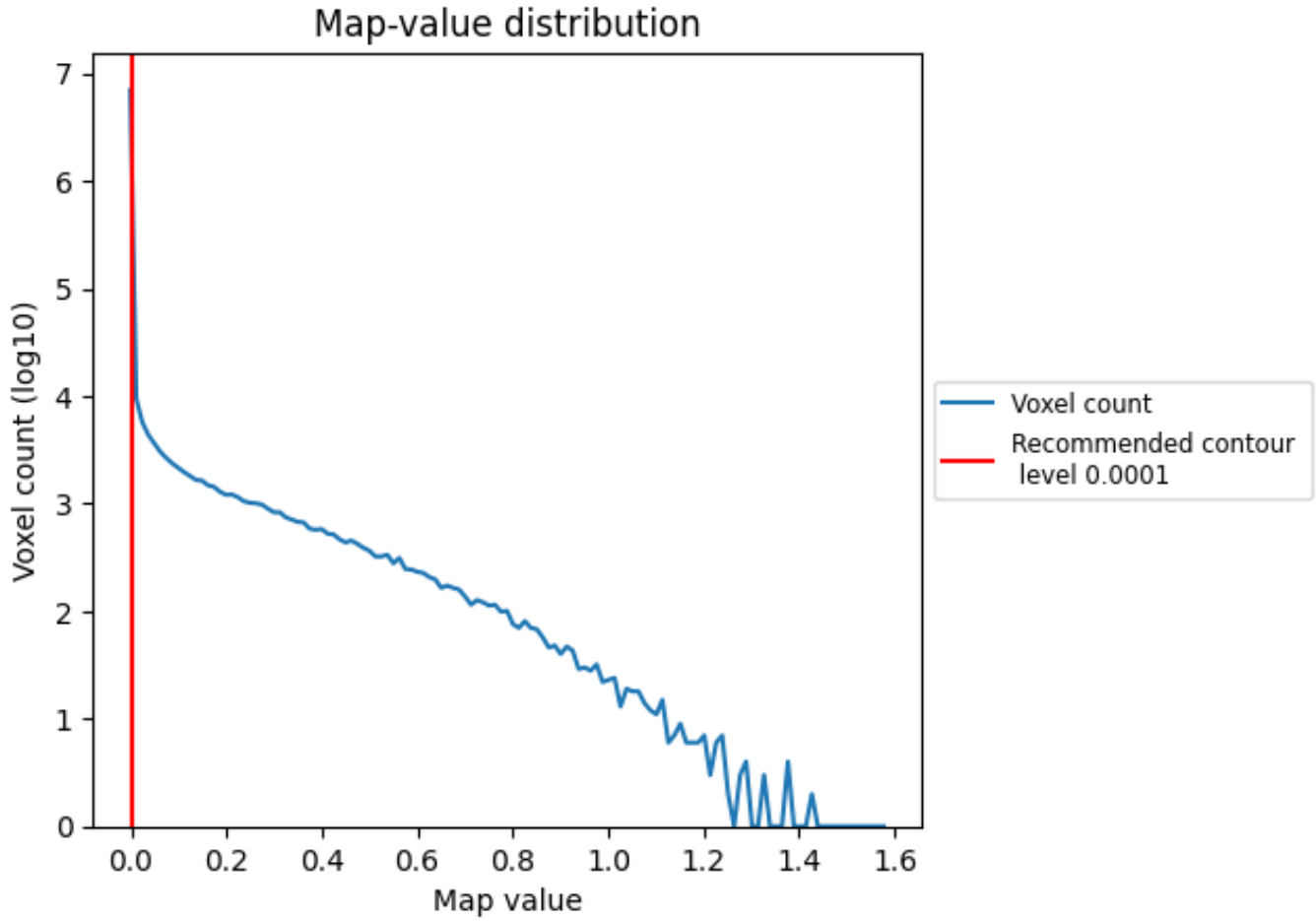
6.6 Mask visualisation (i)

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

7 Map analysis

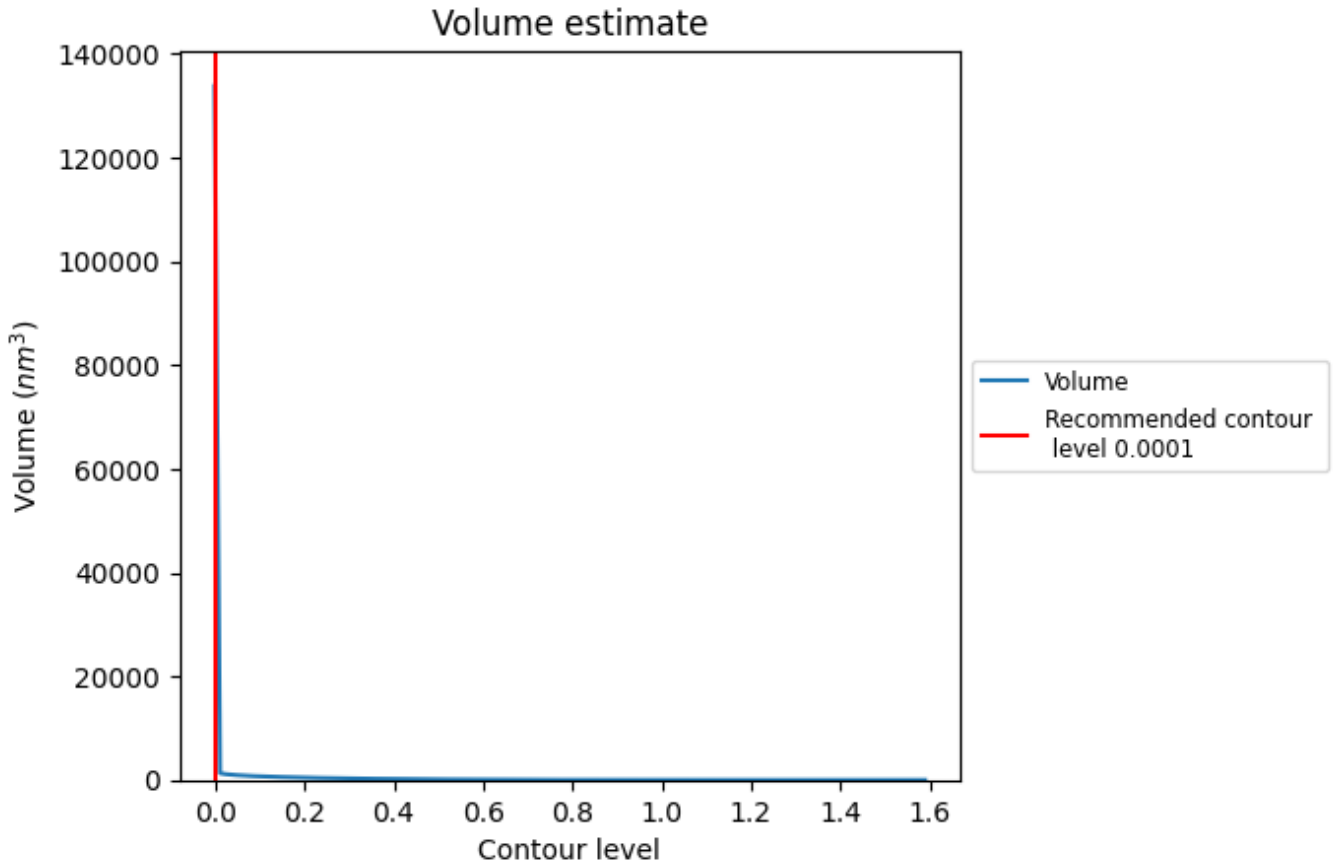
This section contains the results of statistical analysis of the map.

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.

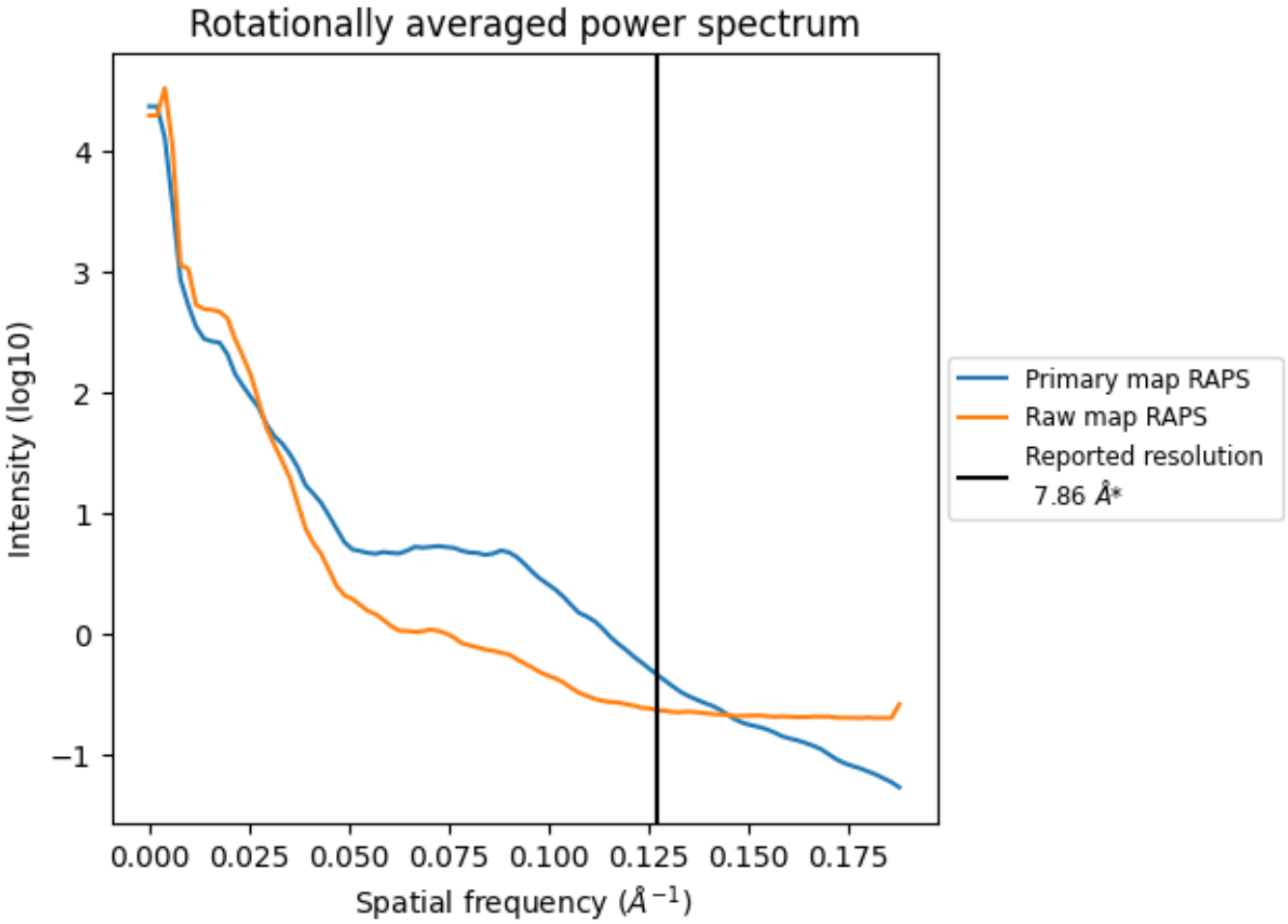
7.2 Volume estimate



The volume at the recommended contour level is 117945 nm^3; this corresponds to an approximate mass of 106543 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)

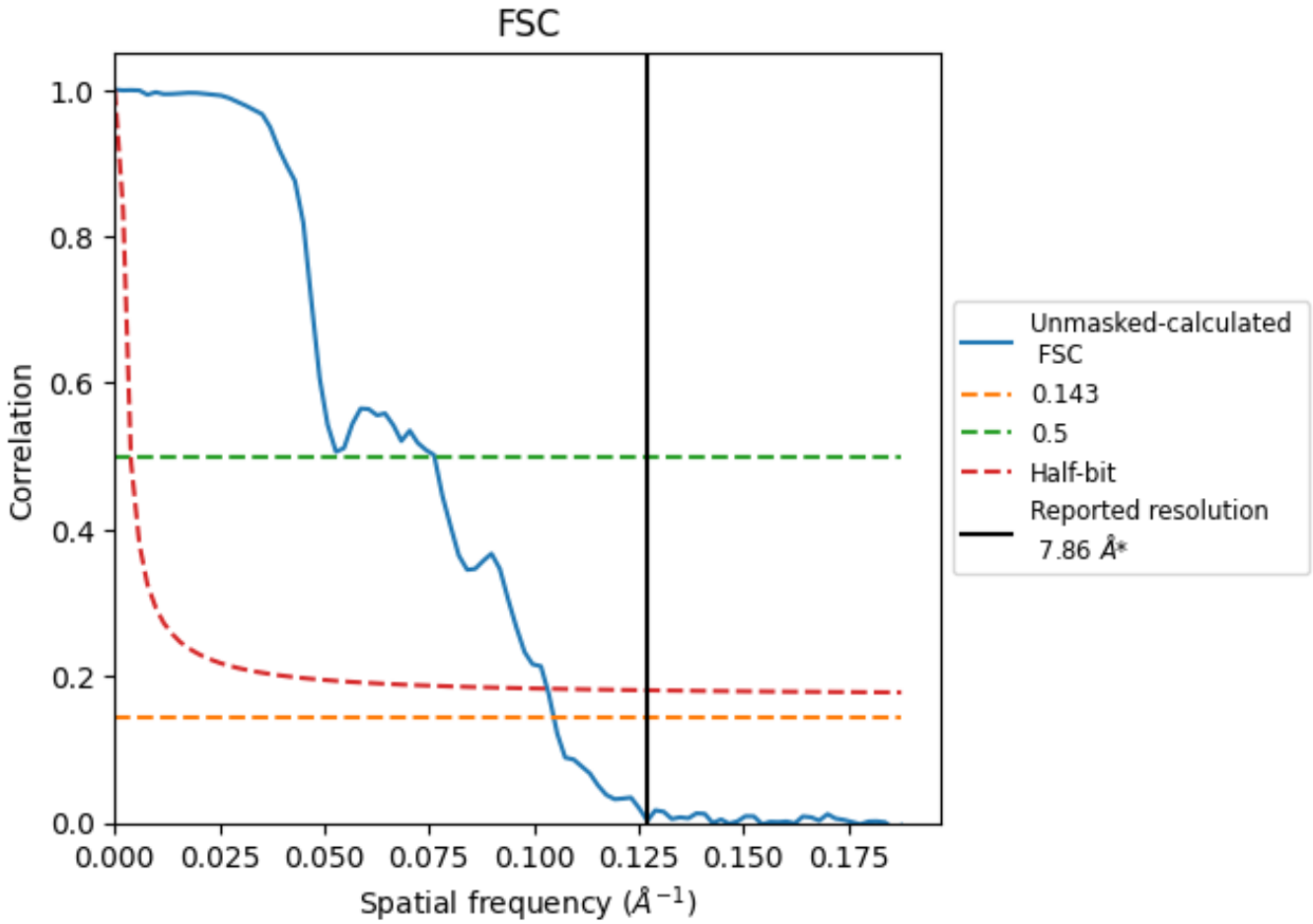


*Reported resolution corresponds to spatial frequency of 0.127 Å^{-1}

8 Fourier-Shell correlation

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



*Reported resolution corresponds to spatial frequency of 0.127 Å^{-1}

8.2 Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	7.86	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	9.54	13.11	9.69

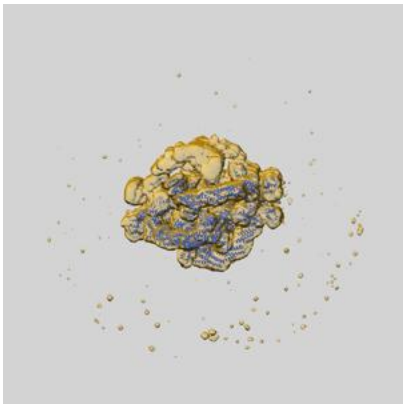
*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 9.54 differs from the reported value 7.86 by more than 10 %

9 Map-model fit

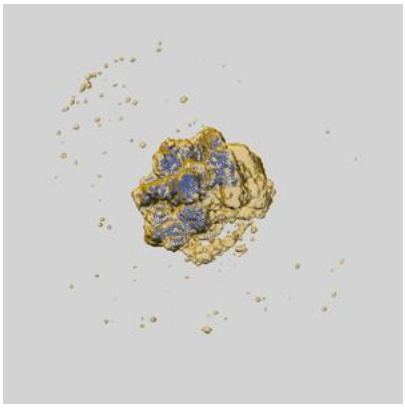
This section contains information regarding the fit between EMDB map EMD-34449 and PDB model 8H33. Per-residue inclusion information can be found in section 3 on page 8.

9.1 Map-model overlay

X



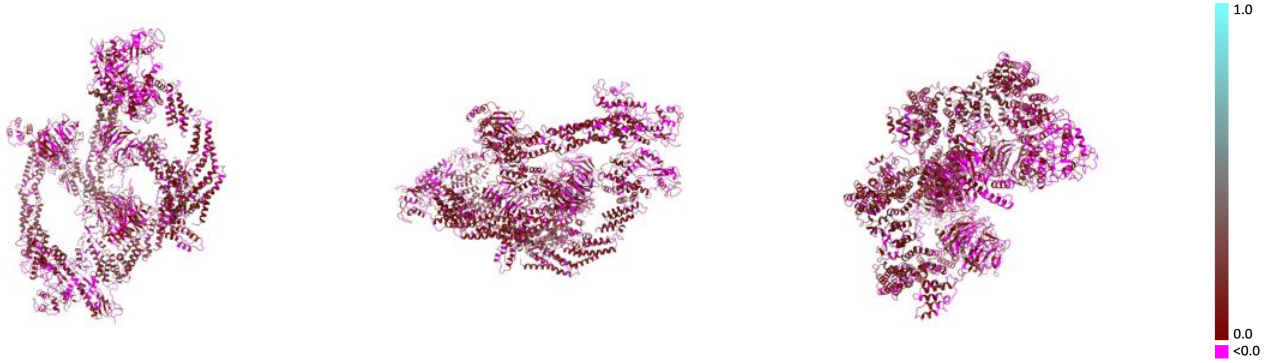
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.0001 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.

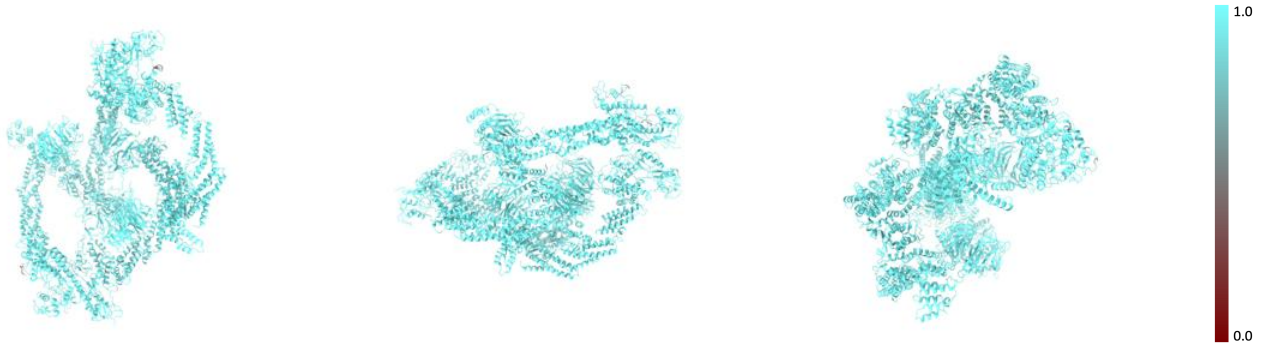
9.2 Q-score mapped to coordinate model (i)



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.

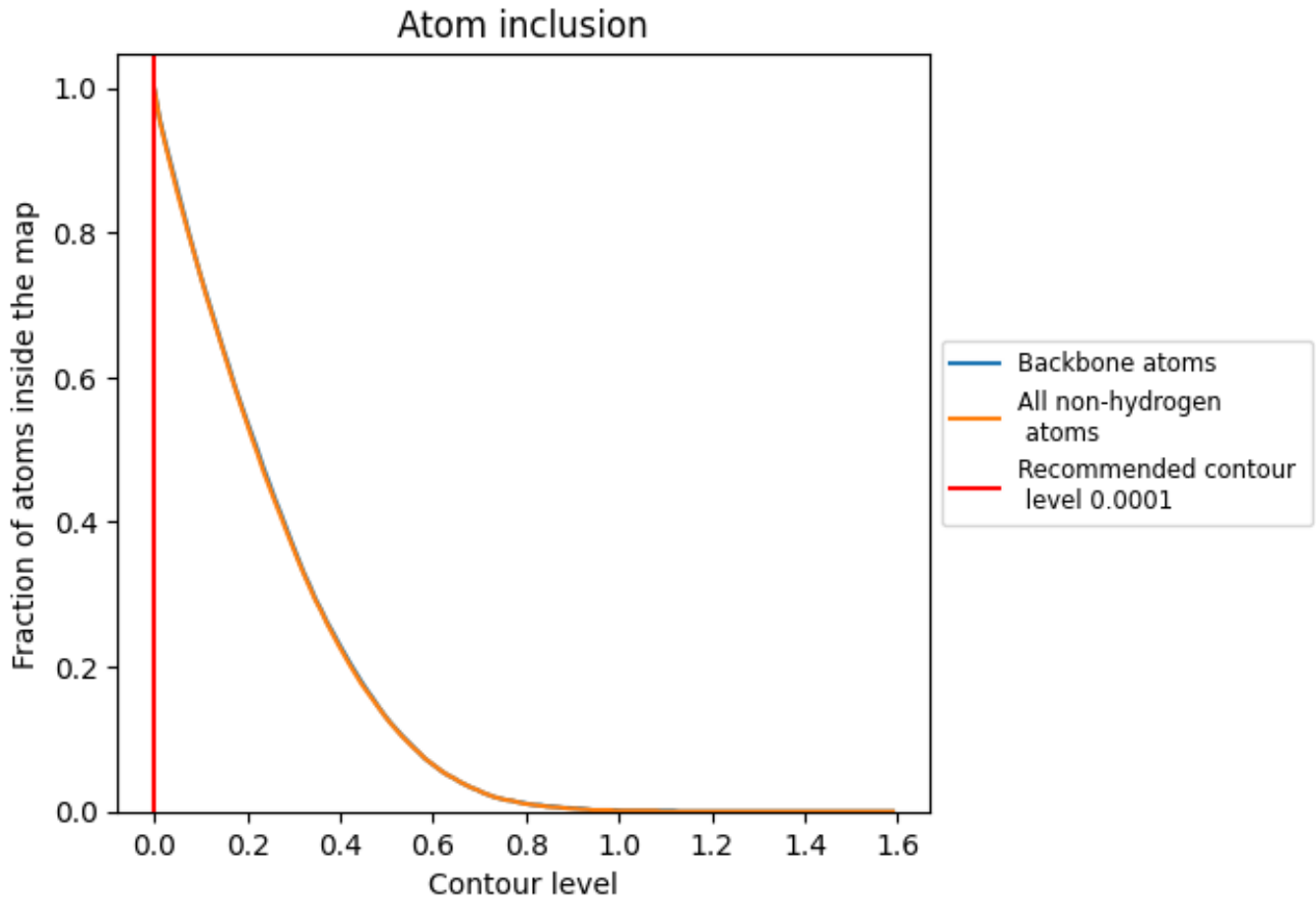
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.0001).

9.4 Atom inclusion (i)



At the recommended contour level, 100% of all backbone atoms, 100% 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 (0.0001) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9970	0.0700
A	0.9980	0.0850
B	0.9980	0.0790
C	0.9930	0.0520
D	0.9990	0.0320
E	0.9750	-0.0190
F	0.9980	0.0840
G	0.9990	0.0850
H	0.9990	0.0780
I	0.9990	0.0810
J	0.9970	0.0570
K	0.9670	0.0000
L	0.9990	0.0280