Full wwPDB EM Validation Report

Jun 10, 2025 – 11:29 AM JST

PDB ID	:	9IOZ / pdb_00009ioz
EMDB ID	:	EMD-60750
Title	:	Structure of the bacteriophage T5 tail tip complex
Authors	:	Peng, Y.N.; Liu, H.R.
Deposited on	:	2024-07-10
Resolution	:	3.90 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:

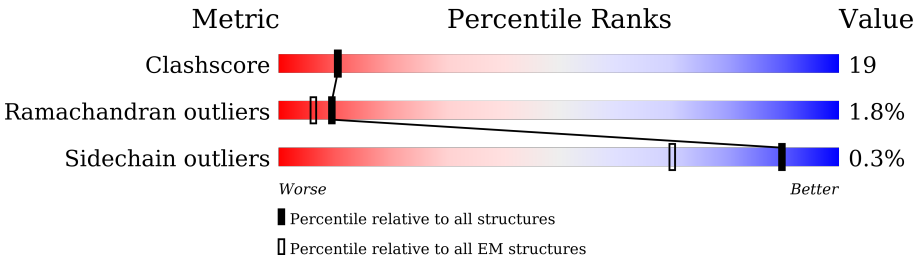
EMDB validation analysis	:	0.0.1.dev118
MolProbity	:	4-5-2 with Phenix2.0rc1
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.43.1

1 Overall quality at a glance

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

The reported resolution of this entry is 3.90 Å.

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



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

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=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	298	5% 67% 31%
1	B	298	5% 64% 34%
1	C	298	5% 69% 28%
2	D	204	58% 42%
2	E	204	67% 32%
2	F	204	62% 38%
2	G	204	56% 44%
2	H	204	59% 41%

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Mol	Chain	Length	Quality of chain
2	I	204	
3	J	949	
3	K	949	
3	L	949	

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 36407 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Baseplate tube protein p140.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	293	Total	C	N	O	S	0	0
			2379	1526	388	456	9		
1	B	293	Total	C	N	O	S	0	0
			2379	1526	388	456	9		
1	C	293	Total	C	N	O	S	0	0
			2379	1526	388	456	9		

- Molecule 2 is a protein called Distal tail protein pb9.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	D	204	Total	C	N	O	S	0	0
			1609	1030	264	312	3		
2	E	204	Total	C	N	O	S	0	0
			1609	1030	264	312	3		
2	F	204	Total	C	N	O	S	0	0
			1609	1030	264	312	3		
2	G	204	Total	C	N	O	S	0	0
			1609	1030	264	312	3		
2	H	204	Total	C	N	O	S	0	0
			1609	1030	264	312	3		
2	I	204	Total	C	N	O	S	0	0
			1609	1030	264	312	3		

- Molecule 3 is a protein called Baseplate hub protein pb3.

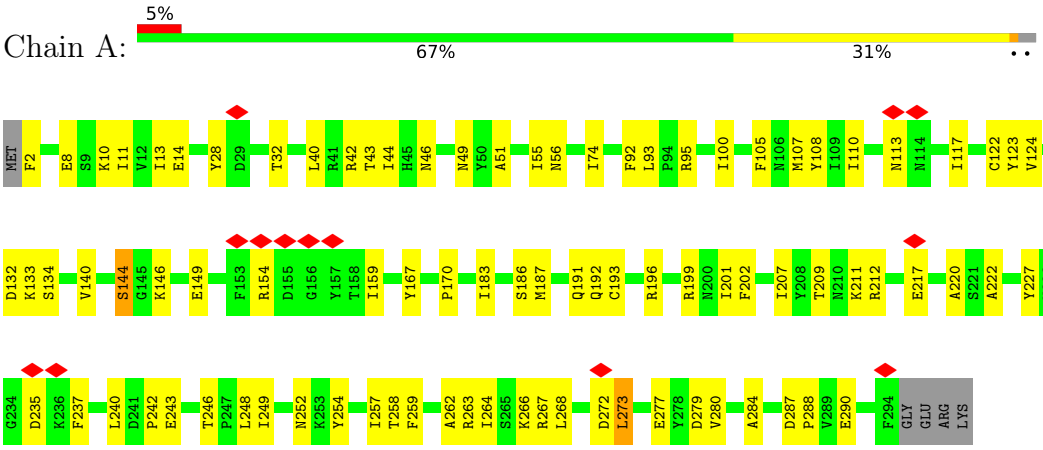
Mol	Chain	Residues	Atoms					AltConf	Trace
3	J	816	Total	C	N	O	S	0	0
			6536	4151	1098	1278	9		
3	K	816	Total	C	N	O	S	0	0
			6536	4151	1098	1278	9		
3	L	817	Total	C	N	O	S	0	0
			6544	4155	1100	1280	9		

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: Baseplate tube protein p140

Chain A:

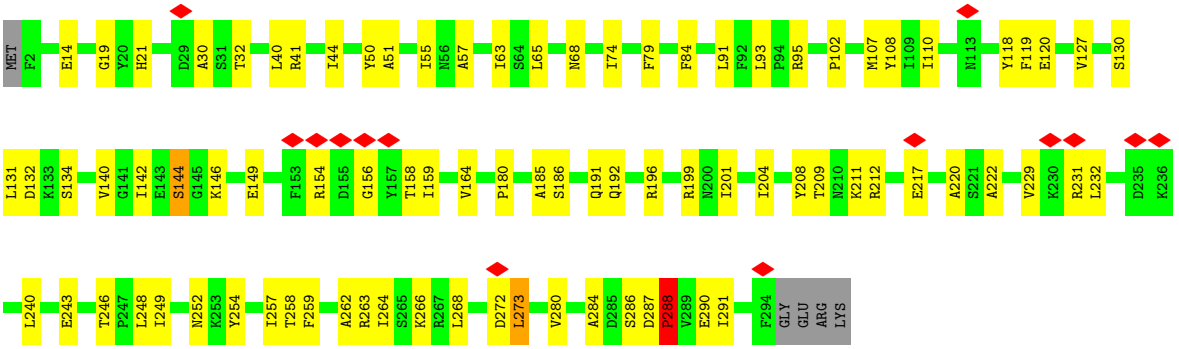


• Molecule 1: Baseplate tube protein p140

Chain B:

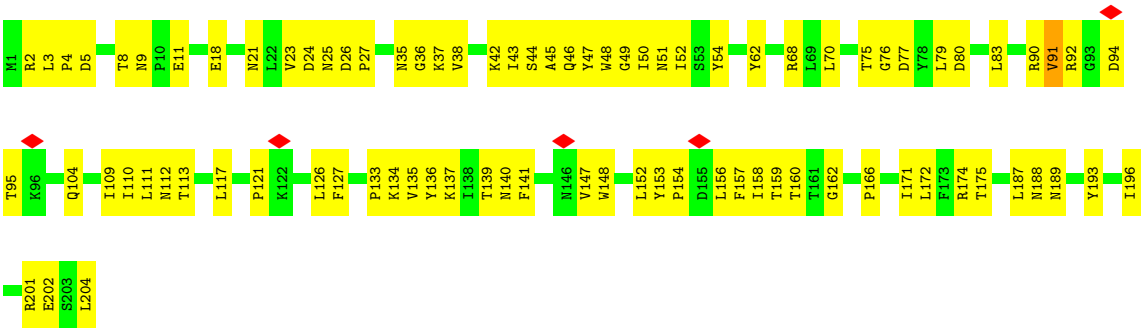
• Molecule 1: Baseplate tube protein p140

Chain C:



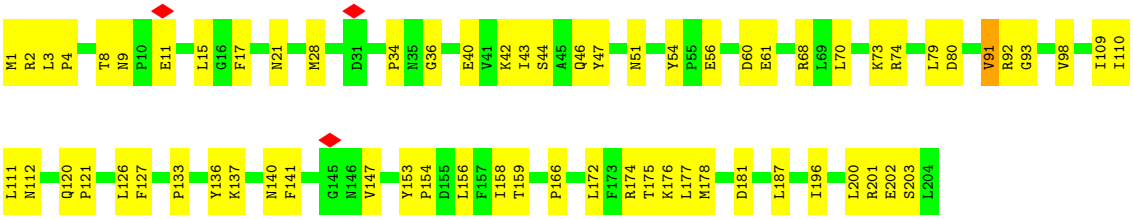
• Molecule 2: Distal tail protein pb9

Chain D:



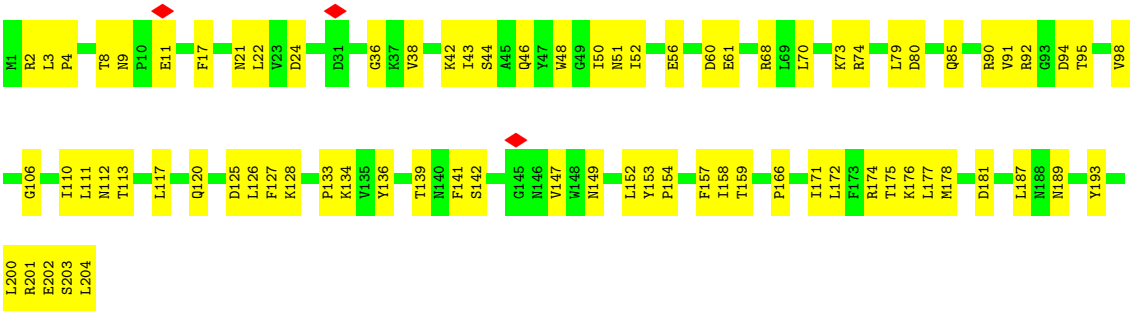
• Molecule 2: Distal tail protein pb9

Chain E:



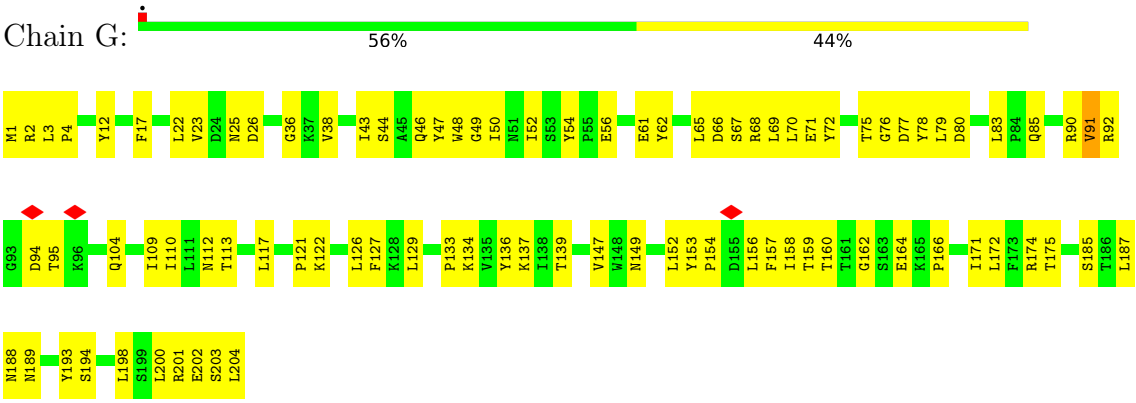
• Molecule 2: Distal tail protein pb9

Chain F:



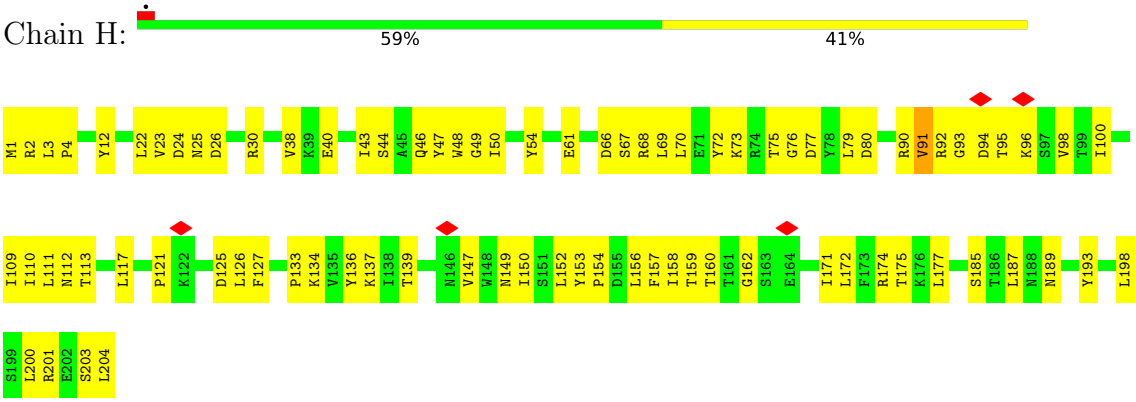
• Molecule 2: Distal tail protein pb9

Chain G:



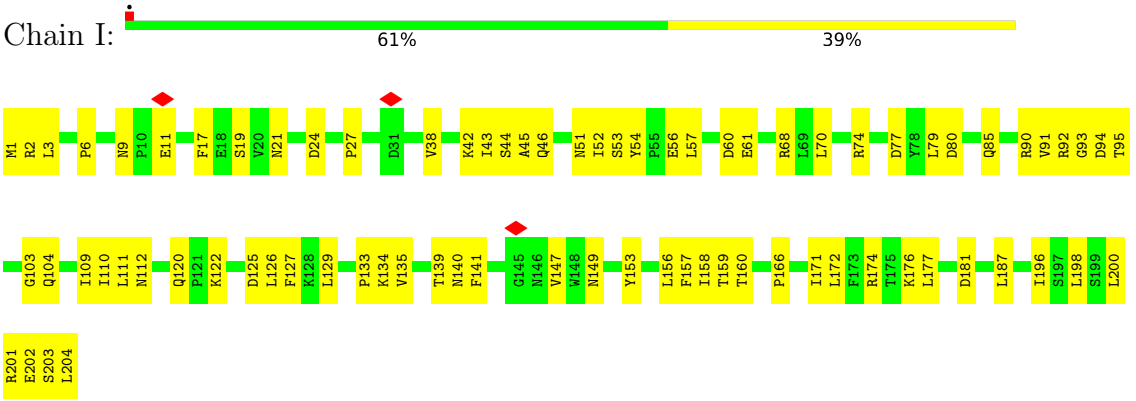
• Molecule 2: Distal tail protein pb9

Chain H:



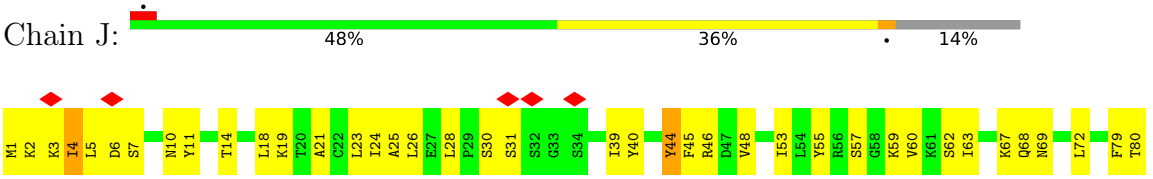
• Molecule 2: Distal tail protein pb9

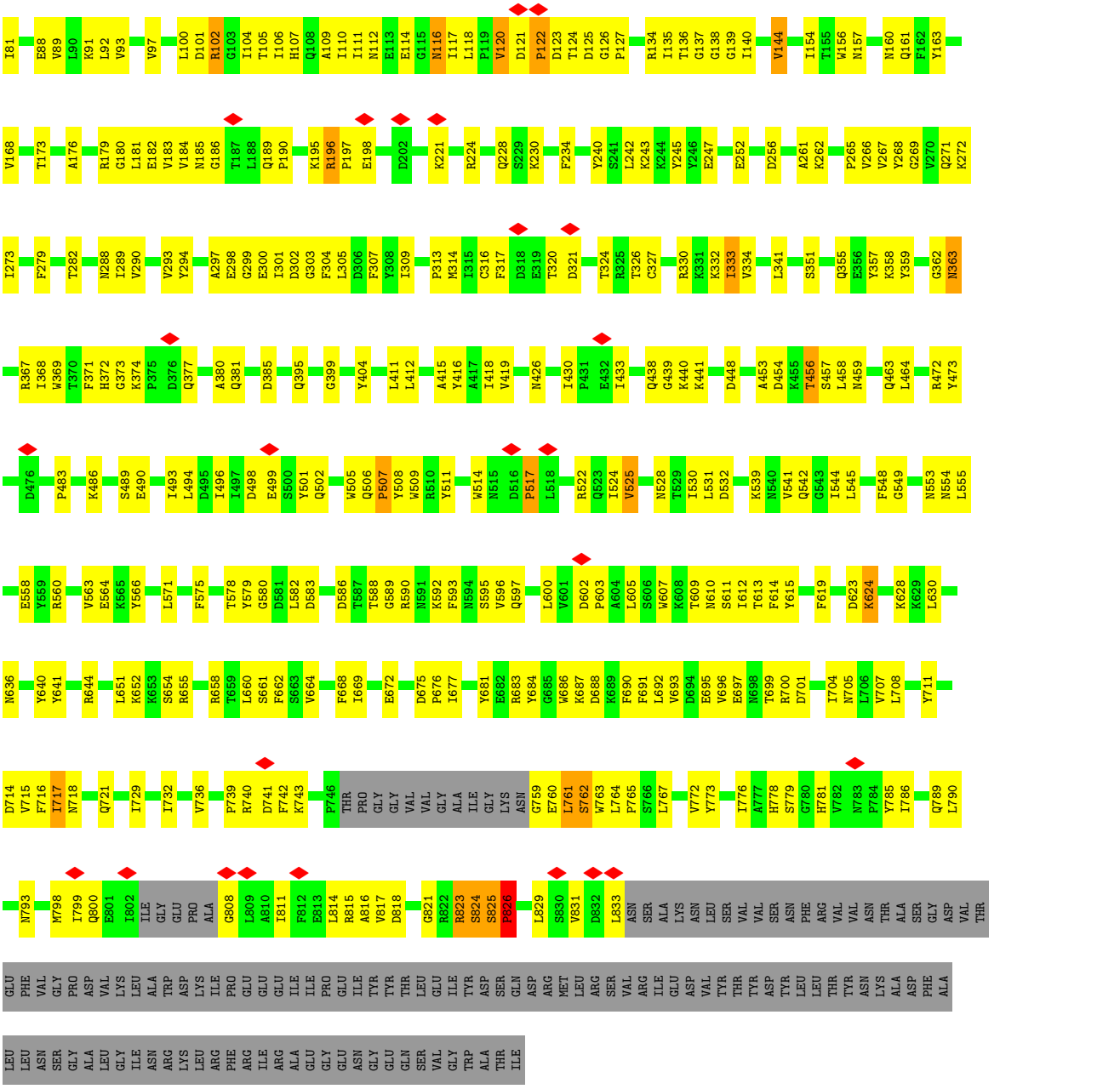
Chain I:



• Molecule 3: Baseplate hub protein pb3

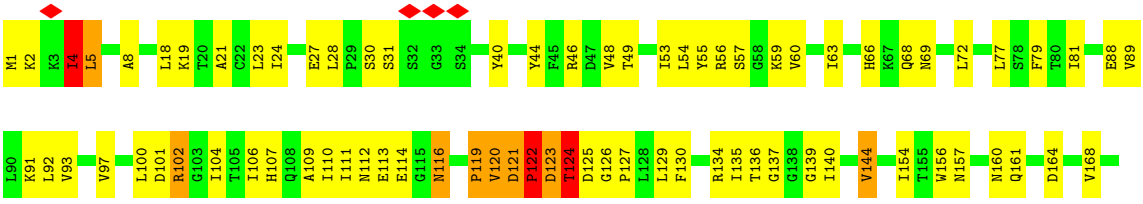
Chain J:

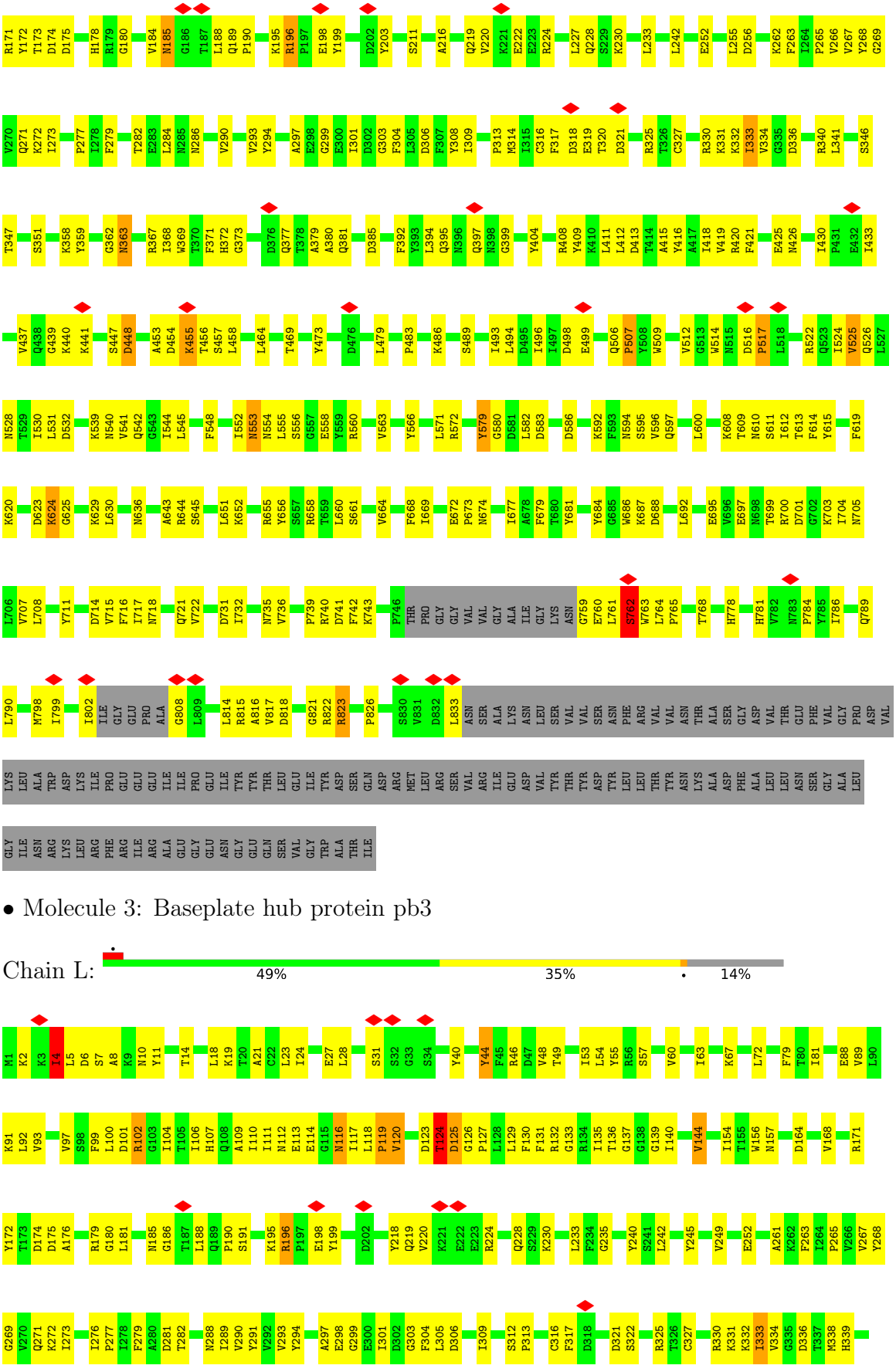




• Molecule 3: Baseplate hub protein pb3

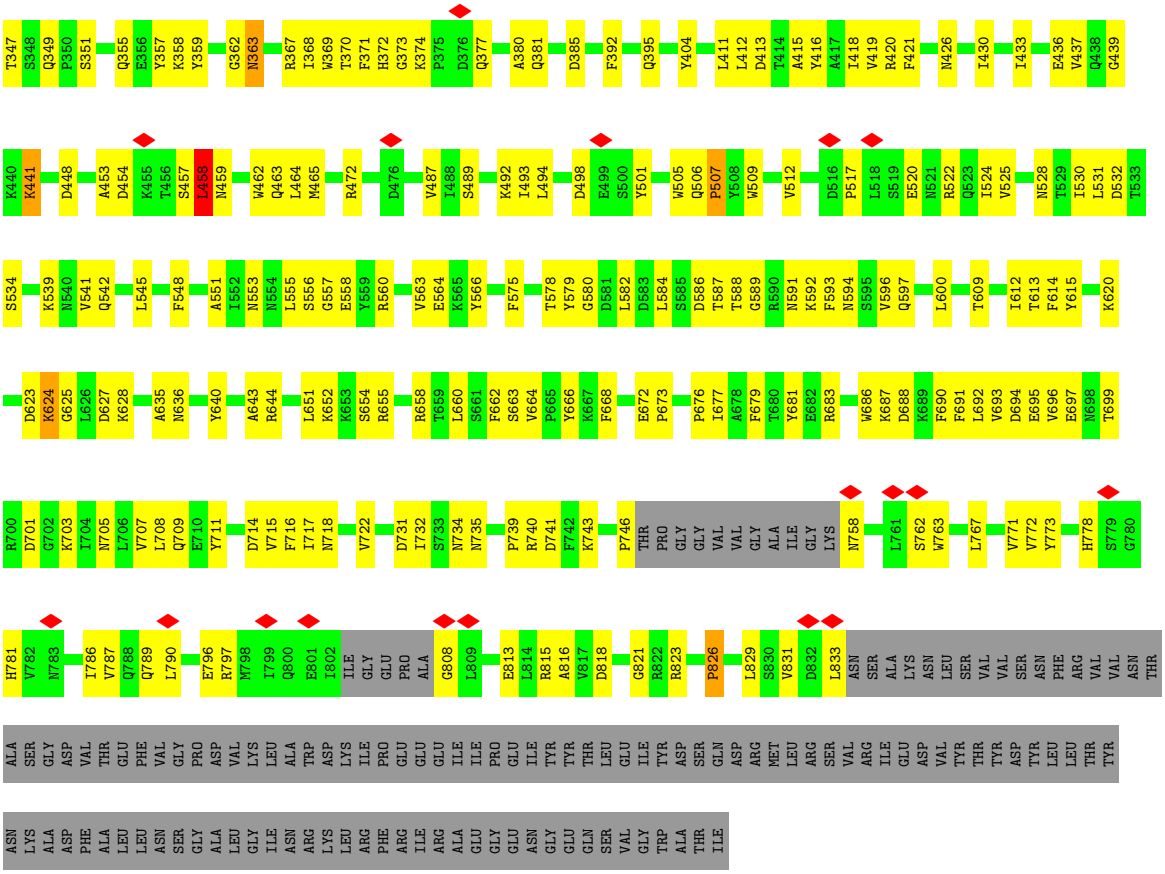
Chain K:





• Molecule 3: Baseplate hub protein pb3

Chain L:


T347 S348 Q349 P350 S351 Q355 E356 Y357 K358 Y359 G362 N363 R367 I368 W369 T370 F371 H372 G373 K374 P375 D376 Q377 A380 Q381 D385 F392 Q395 Y404 L411 L412 D413 T414 A415 Y416 A417 I418 V419 R420 F421 N426 I430 I433 E436 V437 D438 G439
K440 K441 D448 A453 D454 K455 T456 S457 L458 N459 W462 Q463 L464 M465 R472 D476 V487 I488 S489 K492 I493 L494 D498 E499 S500 Y501 W505 Q506 P507 Y508 W509 V512 D516 P517 L518 S519 E520 N521 R522 Q523 I524 V525 N528 T529 I530 L531 D532 T533
S534 K539 N540 V541 Q542 L545 F548 A551 I552 N553 N554 L555 S556 G557 E558 Y559 R560 V563 E564 K565 Y566 F575 T578 Y579 G580 D581 L582 D583 L584 S585 D586 T587 T588 G589 R590 N591 K592 F593 N594 S595 V596 Q597 L600 T609 I612 T613 F614 Y615 K620
D623 K624 G625 L626 D627 K628 A635 N636 Y640 A643 R644 L651 K652 K653 S654 R655 R658 T659 L660 S661 F662 S663 V664 P665 Y666 K667 F668 E672 P673 P676 I677 A678 F679 T680 Y681 E682 R683 W686 K687 D688 K689 F690 F691 L692 V693 D694 E695 V696 E697 N698 T699
R700 D701 G702 K703 I704 N705 L706 V707 L708 Q709 E710 Y711 D714 V715 F716 I717 N718 V722 D731 I732 S733 N734 N735 P739 R740 D741 F742 K743 P746 THR PRO GLY GLY VAL VAL GLY ALA ILE GLY LYS N758 L761 S762 W763 L767 V771 V772 Y773 H778 S779 G780
H781 V782 N783 I786 V787 Q788 Q789 L790 E796 R797 W798 I799 Q800 E801 I802 ILE GLY GLU PRO ALA G808 L809 E813 L814 R815 A816 V817 D818 G821 R822 R823 P826 L829 S830 V831 D832 L833 ASN SER ALA LYS ASN LEU SER VAL VAL SER ASN PHE ARG VAL VAL ASN THR
ALA SER GLY ASP VAL THR GLU PHE VAL GLY PRO ASP VAL LYS LEU ALA TRP ASP LYS ILE PRO GLU GLU GLU ILE ILE PRO GLU ILE TYR TYR THR LEU GLU ILE TYR ASP SER GLN ASP ARG MET LEU ARG SER VAL ARG ILE GLU ASP VAL TYR THR TYR ASP TYR LEU LEU THR TYR
ASN LYS ALA ASP PHE ALA LEU LEU ASN SER GLY ALA LEU GLY ILE ASN ARG LYS LEU ARG PHE ARG ILE ARG ALA GLU GLY GLU ASN GLY GLU GLN SER VAL GLY TRP ALA THR ILE

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	30589	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	32	Depositor
Minimum defocus (nm)	1600	Depositor
Maximum defocus (nm)	2200	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.124	Depositor
Minimum map value	-0.094	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.007	Depositor
Recommended contour level	0.02	Depositor
Map size (Å)	260.0, 260.0, 260.0	wwPDB
Map dimensions	200, 200, 200	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.3, 1.3, 1.3	Depositor

5 Model quality

5.1 Standard geometry

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	A	0.31	1/2439 (0.0%)	0.51	2/3314 (0.1%)
1	B	0.31	1/2439 (0.0%)	0.50	2/3314 (0.1%)
1	C	0.30	1/2439 (0.0%)	0.52	3/3314 (0.1%)
2	D	0.24	0/1648	0.48	0/2239
2	E	0.24	0/1648	0.50	0/2239
2	F	0.24	0/1648	0.51	0/2239
2	G	0.31	0/1648	0.50	0/2239
2	H	0.22	0/1648	0.48	0/2239
2	I	0.24	0/1648	0.50	0/2239
3	J	0.33	1/6678 (0.0%)	0.66	6/9054 (0.1%)
3	K	0.36	1/6678 (0.0%)	0.66	4/9054 (0.0%)
3	L	0.35	1/6686 (0.0%)	0.67	10/9065 (0.1%)
All	All	0.32	6/37247 (0.0%)	0.59	27/50549 (0.1%)

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	K	453	ALA	CA-C	-7.98	1.45	1.52
3	L	453	ALA	CA-C	-6.62	1.44	1.52
1	B	144	SER	CA-C	-6.54	1.45	1.52
1	C	144	SER	CA-C	-5.77	1.45	1.52
1	A	144	SER	CA-C	-5.46	1.46	1.52
3	J	453	ALA	CA-C	-5.30	1.45	1.52

All (27) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	144	SER	N-CA-C	8.45	123.39	112.41
1	A	144	SER	N-CA-C	7.33	122.26	112.30
3	L	454	ASP	N-CA-C	7.26	120.77	109.07
3	J	760	GLU	N-CA-C	-7.25	101.68	111.54
1	B	144	SER	N-CA-C	7.20	122.09	112.30
3	L	312	SER	CA-C-N	-6.88	113.71	120.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	L	312	SER	C-N-CA	-6.88	113.71	120.52
3	K	124	THR	N-CA-C	-6.45	101.32	110.35
3	L	507	PRO	N-CA-C	-6.44	101.53	111.13
1	C	144	SER	CB-CA-C	-6.23	100.93	111.02
3	L	506	GLN	CA-C-N	-6.22	114.36	120.52
3	L	506	GLN	C-N-CA	-6.22	114.36	120.52
3	L	453	ALA	N-CA-C	-6.21	104.33	112.41
3	K	123	ASP	N-CA-C	-5.94	102.13	110.50
3	K	762	SER	N-CA-C	5.93	123.44	110.80
1	B	288	PRO	N-CA-C	5.81	124.44	112.47
3	J	824	SER	N-CA-C	5.80	118.41	109.07
1	C	288	PRO	N-CA-C	5.58	123.96	112.47
3	L	124	THR	N-CA-C	-5.52	102.23	110.23
3	J	453	ALA	N-CA-C	-5.47	105.40	113.61
3	L	453	ALA	CA-C-N	-5.34	115.63	123.00
3	L	453	ALA	C-N-CA	-5.34	115.63	123.00
3	K	4	ILE	N-CA-C	5.27	120.30	109.34
3	J	826	PRO	N-CA-C	5.15	123.08	112.47
3	J	717	ILE	CA-C-N	5.07	131.21	121.54
3	J	717	ILE	C-N-CA	5.07	131.21	121.54
1	A	235	ASP	N-CA-C	-5.02	108.42	114.75

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2379	0	2298	67	0
1	B	2379	0	2298	79	0
1	C	2379	0	2298	69	0
2	D	1609	0	1590	70	0
2	E	1609	0	1590	55	0
2	F	1609	0	1590	65	0
2	G	1609	0	1590	79	0
2	H	1609	0	1590	69	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	I	1609	0	1590	69	0
3	J	6536	0	6383	291	0
3	K	6536	0	6383	271	0
3	L	6544	0	6389	271	0
All	All	36407	0	35589	1334	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 19.

All (1334) 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)
3:K:553:ASN:O	3:K:553:ASN:ND2	2.03	0.90
3:J:176:ALA:HA	3:J:181:LEU:HD23	1.55	0.87
3:J:121:ASP:HB3	3:J:122:PRO:HD2	1.58	0.84
3:K:23:LEU:HB2	3:K:107:HIS:HB2	1.59	0.84
2:D:133:PRO:HB3	2:D:174:ARG:HD3	1.58	0.83
3:L:553:ASN:ND2	3:L:673:PRO:HG2	1.96	0.81
3:L:23:LEU:HB2	3:L:107:HIS:HB2	1.62	0.81
3:L:815:ARG:HE	3:L:826:PRO:HG3	1.46	0.79
3:J:369:TRP:HB2	3:J:418:ILE:HB	1.64	0.78
3:J:168:VAL:HG21	3:K:242:LEU:HD12	1.66	0.77
3:L:338:MET:HE1	3:L:370:THR:HG21	1.64	0.77
3:J:815:ARG:HE	3:J:826:PRO:HG3	1.51	0.76
3:K:198:GLU:HB3	3:K:412:LEU:HD13	1.65	0.76
3:K:553:ASN:HD22	3:K:553:ASN:C	1.90	0.76
3:J:776:ILE:HB	3:J:785:TYR:HB2	1.68	0.76
2:F:21:ASN:HB3	2:F:51:ASN:HB2	1.68	0.75
3:J:23:LEU:HB2	3:J:107:HIS:HB2	1.68	0.75
3:K:512:VAL:O	3:K:528:ASN:ND2	2.20	0.74
2:G:36:GLY:O	2:I:201:ARG:NH1	2.20	0.74
2:I:42:LYS:HB3	3:L:19:LYS:HG2	1.67	0.74
1:B:32:THR:HG22	1:C:268:LEU:H	1.53	0.74
3:K:136:THR:HB	3:L:589:GLY:HA3	1.69	0.74
2:D:2:ARG:NH1	2:D:8:THR:OG1	2.21	0.74
3:J:102:ARG:NH1	3:K:623:ASP:O	2.21	0.73
3:J:695:GLU:HB2	3:J:707:VAL:HB	1.70	0.73
1:C:248:LEU:HD11	1:C:264:ILE:HD11	1.71	0.73
2:I:92:ARG:HG2	2:I:93:GLY:H	1.54	0.73
3:K:137:GLY:HA2	3:K:157:ASN:HB2	1.70	0.73
1:A:95:ARG:NH2	1:A:284:ALA:O	2.22	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:695:GLU:HB2	3:K:707:VAL:HB	1.70	0.72
3:K:72:LEU:HD23	3:K:545:LEU:HD12	1.71	0.72
1:C:95:ARG:NH2	1:C:284:ALA:O	2.21	0.72
3:J:377:GLN:NE2	3:J:411:LEU:O	2.23	0.72
3:K:102:ARG:NH1	3:L:623:ASP:O	2.23	0.72
3:K:168:VAL:HG21	3:L:242:LEU:HD12	1.72	0.71
2:E:3:LEU:HD12	2:E:4:PRO:HD2	1.72	0.71
3:J:181:LEU:HD12	3:J:189:GLN:HB3	1.72	0.71
3:K:101:ASP:OD1	3:K:134:ARG:NH1	2.23	0.71
3:L:362:GLY:HA3	3:L:826:PRO:HG2	1.70	0.71
1:B:224:LEU:HB2	1:B:278:TYR:HB2	1.71	0.71
3:J:692:LEU:HD12	3:J:711:TYR:HD2	1.54	0.71
3:K:68:GLN:NE2	3:K:552:ILE:O	2.23	0.71
1:B:248:LEU:HD11	1:B:264:ILE:HD11	1.72	0.71
1:B:257:ILE:HG13	1:B:291:ILE:HG13	1.73	0.71
3:L:228:GLN:HA	3:L:252:GLU:HA	1.73	0.71
3:L:176:ALA:HA	3:L:181:LEU:HG	1.73	0.71
2:E:21:ASN:HB3	2:E:51:ASN:HB2	1.73	0.71
2:I:24:ASP:OD1	2:I:46:GLN:NE2	2.24	0.71
3:J:362:GLY:HA3	3:J:826:PRO:HG2	1.73	0.70
3:K:303:GLY:HA2	3:K:372:HIS:CE1	2.26	0.70
3:J:242:LEU:HD12	3:L:168:VAL:HG21	1.71	0.70
3:L:137:GLY:HA2	3:L:157:ASN:HB2	1.72	0.70
3:J:303:GLY:HA2	3:J:372:HIS:CE1	2.26	0.70
3:L:368:ILE:HG12	3:L:419:VAL:HG22	1.73	0.70
3:L:371:PHE:HE2	3:L:380:ALA:HB2	1.55	0.70
1:A:32:THR:HG22	1:B:268:LEU:H	1.56	0.70
2:E:42:LYS:HB2	3:K:19:LYS:HG2	1.72	0.70
3:J:101:ASP:OD1	3:J:134:ARG:NH1	2.25	0.69
3:J:765:PRO:HG3	3:J:798:MET:HE1	1.74	0.69
2:E:201:ARG:NH1	2:E:202:GLU:O	2.25	0.69
3:K:230:LYS:HD2	3:K:265:PRO:HG3	1.73	0.69
2:G:126:LEU:HB3	2:G:171:ILE:HD11	1.74	0.69
3:J:137:GLY:HA2	3:J:157:ASN:HB2	1.72	0.69
3:L:439:GLY:HA3	3:L:457:SER:HB3	1.75	0.69
1:A:127:VAL:HG22	1:A:140:VAL:HG12	1.73	0.69
2:D:112:ASN:HB3	2:D:147:VAL:HG22	1.75	0.69
3:K:109:ALA:HA	3:K:127:PRO:HB3	1.75	0.69
1:C:257:ILE:HG13	1:C:291:ILE:HG13	1.75	0.69
3:J:506:GLN:HG2	3:J:514:TRP:CZ2	2.28	0.68
3:J:72:LEU:HD23	3:J:545:LEU:HD12	1.75	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:171:ARG:NH2	3:L:298:GLU:OE1	2.26	0.68
3:L:494:LEU:HD21	3:L:563:VAL:HG21	1.75	0.68
2:E:109:ILE:HD11	2:E:156:LEU:HD21	1.75	0.68
3:J:605:LEU:HG	3:J:729:ILE:HB	1.76	0.68
3:L:369:TRP:HB2	3:L:418:ILE:HB	1.73	0.68
1:B:55:ILE:HD11	1:C:263:ARG:HD3	1.75	0.68
1:A:268:LEU:H	1:C:32:THR:HG22	1.59	0.68
3:K:595:SER:HB2	3:K:629:LYS:HG2	1.74	0.68
3:K:171:ARG:NH1	3:K:413:ASP:O	2.21	0.68
1:B:249:ILE:HG23	1:B:258:THR:HG22	1.76	0.68
2:F:42:LYS:HB3	3:J:19:LYS:HG2	1.75	0.67
2:F:153:TYR:HB2	2:G:70:LEU:HB3	1.76	0.67
3:L:524:ILE:HG22	3:L:525:VAL:HG23	1.77	0.67
3:L:743:LYS:H	3:L:762:SER:HB2	1.58	0.67
2:D:36:GLY:O	2:F:201:ARG:NH1	2.27	0.67
3:K:736:VAL:HA	3:K:768:THR:HG21	1.75	0.67
2:D:24:ASP:OD2	2:F:73:LYS:NZ	2.28	0.67
2:G:4:PRO:HD3	2:G:68:ARG:HD2	1.77	0.67
2:I:52:ILE:HB	2:I:198:LEU:HB2	1.77	0.67
3:K:31:SER:HB3	3:K:97:VAL:HA	1.77	0.67
3:L:109:ALA:HA	3:L:127:PRO:HB3	1.77	0.67
1:A:44:ILE:HD11	2:E:187:LEU:HD23	1.74	0.67
2:G:43:ILE:HG22	2:G:44:SER:H	1.59	0.67
2:G:109:ILE:HD11	2:G:156:LEU:HD21	1.77	0.67
3:J:332:LYS:HG3	3:J:507:PRO:HB3	1.76	0.66
3:L:303:GLY:HA2	3:L:372:HIS:CE1	2.30	0.66
2:I:112:ASN:HB3	2:I:147:VAL:HG22	1.76	0.66
3:J:614:PHE:HZ	3:J:644:ARG:HG3	1.60	0.66
1:A:187:MET:HE3	1:A:257:ILE:HD13	1.76	0.66
3:J:614:PHE:CZ	3:J:644:ARG:HG3	2.30	0.66
3:L:72:LEU:HD23	3:L:545:LEU:HD12	1.78	0.66
3:J:464:LEU:HD11	3:J:541:VAL:HG13	1.77	0.66
3:L:818:ASP:OD1	3:L:821:GLY:N	2.29	0.66
1:C:154:ARG:NH1	1:C:158:THR:OG1	2.29	0.66
3:L:695:GLU:HB3	3:L:707:VAL:HB	1.77	0.66
3:J:267:VAL:HG21	3:J:273:ILE:HD13	1.77	0.66
3:J:305:LEU:HD21	3:J:511:TYR:CE1	2.31	0.66
1:C:249:ILE:HG23	1:C:258:THR:HG22	1.77	0.65
3:K:316:CYS:HB3	3:K:327:CYS:HB2	1.78	0.65
3:K:79:PHE:HB2	3:K:156:TRP:HB2	1.78	0.65
3:K:524:ILE:HG22	3:K:525:VAL:HG23	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:113:THR:HG21	2:H:117:LEU:HD12	1.79	0.65
3:K:377:GLN:NE2	3:K:411:LEU:O	2.27	0.65
3:K:528:ASN:N	3:K:636:ASN:O	2.27	0.65
3:K:597:GLN:HG3	3:K:613:THR:HG22	1.79	0.65
3:K:784:PRO:HD2	3:L:790:LEU:HB3	1.78	0.65
3:J:301:ILE:HG22	3:J:303:GLY:H	1.61	0.65
1:B:95:ARG:NH2	1:B:284:ALA:O	2.20	0.65
1:C:44:ILE:HD11	2:I:187:LEU:HD23	1.78	0.65
3:J:459:ASN:HA	3:J:463:GLN:HE21	1.60	0.65
2:F:46:GLN:H	2:F:157:PHE:HZ	1.45	0.64
2:I:176:LYS:HG3	2:I:203:SER:HB3	1.80	0.64
3:J:739:PRO:HB3	3:J:763:TRP:HB2	1.79	0.64
3:L:512:VAL:O	3:L:528:ASN:ND2	2.30	0.64
3:K:301:ILE:HG22	3:K:303:GLY:H	1.62	0.64
2:I:46:GLN:H	2:I:157:PHE:HZ	1.45	0.64
2:D:140:ASN:OD1	2:D:141:PHE:N	2.30	0.64
2:D:109:ILE:HD11	2:D:156:LEU:HD21	1.78	0.64
3:K:743:LYS:H	3:K:762:SER:HB2	1.61	0.64
3:K:358:LYS:HE3	3:K:367:ARG:HH12	1.61	0.64
2:I:80:ASP:HB3	2:I:172:LEU:HD23	1.79	0.64
3:K:104:ILE:HD11	3:K:135:ILE:HD12	1.80	0.64
3:L:92:LEU:HD21	3:L:139:GLY:HA2	1.80	0.64
2:I:46:GLN:HE22	2:I:153:TYR:HE2	1.45	0.64
3:J:368:ILE:HG12	3:J:419:VAL:HG22	1.79	0.64
3:J:681:TYR:HE1	3:J:683:ARG:HB2	1.61	0.63
1:B:222:ALA:HB3	1:B:280:VAL:HB	1.80	0.63
3:K:608:LYS:NZ	3:K:731:ASP:OD2	2.24	0.63
3:K:739:PRO:HB3	3:K:763:TRP:HB2	1.80	0.63
2:H:4:PRO:HD3	2:H:68:ARG:HD2	1.79	0.63
3:L:79:PHE:HB2	3:L:156:TRP:HB2	1.80	0.63
3:L:596:VAL:HB	3:L:651:LEU:HD12	1.79	0.63
3:J:304:PHE:N	3:J:351:SER:OG	2.32	0.63
2:I:57:LEU:HD12	2:I:196:ILE:HD13	1.79	0.62
1:C:120:GLU:OE2	1:C:146:LYS:NZ	2.30	0.62
3:J:628:LYS:HE3	3:L:100:LEU:HD12	1.81	0.62
1:C:199:ARG:HB3	2:G:189:ASN:ND2	2.15	0.62
2:H:43:ILE:HG22	2:H:44:SER:H	1.64	0.62
3:K:571:LEU:HB2	3:K:677:ILE:HG22	1.81	0.62
3:L:23:LEU:HD21	3:L:48:VAL:HG13	1.81	0.62
1:A:55:ILE:HD11	1:B:263:ARG:HD3	1.80	0.62
3:J:808:GLY:HA2	3:J:833:LEU:HB2	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:498:ASP:OD1	3:K:718:ASN:ND2	2.32	0.62
3:L:377:GLN:NE2	3:L:411:LEU:O	2.28	0.62
2:D:18:GLU:HG3	2:F:189:ASN:HD21	1.64	0.62
1:B:154:ARG:NH1	1:B:158:THR:OG1	2.33	0.62
2:H:112:ASN:HB3	2:H:147:VAL:HG22	1.82	0.62
3:K:92:LEU:HD21	3:K:139:GLY:HA2	1.82	0.62
3:K:692:LEU:HD12	3:K:711:TYR:HD2	1.62	0.62
3:L:24:ILE:HG12	3:L:106:ILE:HG12	1.81	0.62
2:D:126:LEU:HB3	2:D:171:ILE:HD11	1.80	0.62
3:K:101:ASP:O	3:K:102:ARG:HB2	1.98	0.62
2:E:178:MET:HE3	2:E:201:ARG:HD3	1.81	0.62
3:K:30:SER:O	3:K:102:ARG:NH2	2.32	0.62
3:K:325:ARG:HD3	3:K:735:ASN:HD22	1.65	0.62
1:C:130:SER:HA	1:C:186:SER:HA	1.80	0.62
3:J:498:ASP:OD1	3:J:718:ASN:ND2	2.33	0.62
3:J:524:ILE:HG22	3:J:525:VAL:HG23	1.81	0.62
3:L:294:TYR:HE2	3:L:433:ILE:HD12	1.65	0.62
3:K:325:ARG:NE	3:K:327:CYS:SG	2.73	0.61
3:L:592:LYS:HE2	3:L:655:ARG:NH1	2.15	0.61
2:D:46:GLN:H	2:D:157:PHE:HZ	1.48	0.61
1:C:264:ILE:HG12	1:C:280:VAL:HG22	1.82	0.61
3:K:369:TRP:HB2	3:K:418:ILE:HB	1.81	0.61
1:C:63:ILE:HG21	1:C:107:MET:HE1	1.82	0.61
3:J:790:LEU:HD21	3:L:786:ILE:HD11	1.82	0.61
3:L:741:ASP:O	3:L:763:TRP:HA	2.01	0.61
2:E:73:LYS:NZ	2:H:24:ASP:OD2	2.30	0.61
2:E:110:ILE:HG13	2:E:110:ILE:O	2.00	0.61
3:J:459:ASN:HA	3:J:463:GLN:NE2	2.15	0.61
3:K:124:THR:O	3:K:126:GLY:N	2.34	0.61
3:L:198:GLU:HB3	3:L:412:LEU:HD13	1.83	0.61
3:J:303:GLY:HA2	3:J:372:HIS:HE1	1.66	0.61
1:B:259:PHE:HB3	1:B:262:ALA:HB2	1.82	0.61
3:J:68:GLN:NE2	3:J:554:ASN:OD1	2.21	0.61
3:J:615:TYR:CD1	3:L:180:GLY:HA2	2.36	0.61
3:K:21:ALA:O	3:K:109:ALA:N	2.34	0.61
3:K:306:ASP:OD2	3:K:331:LYS:NZ	2.32	0.61
3:L:304:PHE:N	3:L:351:SER:OG	2.33	0.61
3:K:195:LYS:O	3:K:196:ARG:HG2	2.01	0.60
3:K:294:TYR:HE2	3:K:433:ILE:HD12	1.65	0.60
1:A:259:PHE:HB3	1:A:262:ALA:HB2	1.83	0.60
3:L:363:ASN:HA	3:L:426:ASN:HD22	1.66	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:70:LEU:HB3	2:I:153:TYR:HB2	1.82	0.60
1:B:36:GLU:OE1	1:C:263:ARG:NH2	2.33	0.60
3:K:692:LEU:HD12	3:K:711:TYR:CD2	2.37	0.60
3:K:818:ASP:OD1	3:K:821:GLY:N	2.35	0.60
2:H:160:THR:HG22	2:H:162:GLY:H	1.66	0.60
3:K:24:ILE:HG12	3:K:106:ILE:HG12	1.84	0.60
3:K:506:GLN:O	3:K:507:PRO:C	2.43	0.60
1:C:199:ARG:HB3	2:G:189:ASN:HD21	1.67	0.60
2:D:4:PRO:HD3	2:D:68:ARG:HD2	1.82	0.60
2:H:133:PRO:HB3	2:H:174:ARG:HD3	1.83	0.60
3:J:67:LYS:HB2	3:J:697:GLU:HG3	1.83	0.60
3:L:271:GLN:HG2	3:L:530:ILE:HD11	1.84	0.60
1:C:259:PHE:HB3	1:C:262:ALA:HB2	1.82	0.60
2:F:134:LYS:HG3	2:F:202:GLU:OE2	2.00	0.60
3:K:741:ASP:O	3:K:763:TRP:HA	2.02	0.60
3:L:21:ALA:O	3:L:109:ALA:N	2.35	0.60
3:L:297:ALA:HB3	3:L:301:ILE:HD11	1.83	0.60
3:L:458:LEU:HD12	3:L:462:TRP:HD1	1.66	0.60
3:K:27:GLU:OE2	3:L:624:LYS:NZ	2.34	0.60
2:G:80:ASP:HB3	2:G:172:LEU:HB3	1.83	0.60
2:F:85:GLN:HG2	2:G:187:LEU:HD13	1.84	0.59
2:G:160:THR:HG22	2:G:162:GLY:H	1.67	0.59
3:J:21:ALA:O	3:J:109:ALA:N	2.32	0.59
3:J:697:GLU:HB3	3:J:705:ASN:HB2	1.84	0.59
3:K:18:LEU:HD12	3:K:110:ILE:HD12	1.84	0.59
3:L:316:CYS:HB3	3:L:327:CYS:HB2	1.83	0.59
3:J:18:LEU:HD12	3:J:110:ILE:HD12	1.84	0.59
3:J:230:LYS:HD2	3:J:265:PRO:HG3	1.83	0.59
1:A:40:LEU:HD12	1:A:51:ALA:HB2	1.85	0.59
1:B:41:ARG:O	1:B:48:THR:OG1	2.20	0.59
3:J:816:ALA:O	3:J:823:ARG:HA	2.03	0.59
3:L:120:VAL:HG12	3:L:126:GLY:O	2.01	0.59
3:L:269:GLY:H	3:L:457:SER:HB2	1.67	0.59
2:D:43:ILE:HG22	2:D:44:SER:H	1.67	0.59
2:G:112:ASN:HB3	2:G:147:VAL:HG22	1.85	0.59
3:K:540:ASN:O	3:K:544:ILE:HD12	2.03	0.59
1:B:230:LYS:HE2	1:B:237:PHE:HD2	1.65	0.59
2:H:126:LEU:HB3	2:H:171:ILE:HD11	1.83	0.59
3:J:593:PHE:HD1	3:J:628:LYS:HG2	1.68	0.59
3:K:304:PHE:N	3:K:351:SER:OG	2.34	0.59
3:K:367:ARG:HB3	3:K:420:ARG:HB3	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:306:ASP:OD2	3:L:331:LYS:NZ	2.28	0.59
1:A:49:ASN:ND2	1:B:218:MET:HB3	2.17	0.59
3:L:597:GLN:HG3	3:L:613:THR:HG22	1.85	0.59
2:G:153:TYR:HB3	2:G:154:PRO:HD3	1.85	0.59
2:I:109:ILE:HD11	2:I:156:LEU:HD21	1.84	0.59
3:L:367:ARG:HB2	3:L:420:ARG:HB3	1.84	0.59
3:J:23:LEU:HD21	3:J:48:VAL:HG13	1.85	0.58
3:L:49:THR:HG22	3:L:54:LEU:HA	1.84	0.58
3:L:459:ASN:HA	3:L:463:GLN:HE21	1.67	0.58
3:L:743:LYS:HA	3:L:829:LEU:HD11	1.85	0.58
3:K:677:ILE:HD11	3:K:708:LEU:HD21	1.85	0.58
1:A:8:GLU:OE1	1:A:113:ASN:ND2	2.36	0.58
2:G:69:LEU:O	2:G:72:TYR:HB3	2.03	0.58
3:J:700:ARG:O	3:J:700:ARG:NH1	2.37	0.58
3:J:815:ARG:HG2	3:J:826:PRO:HD3	1.84	0.58
3:L:371:PHE:CE2	3:L:380:ALA:HB2	2.37	0.58
1:C:127:VAL:HG22	1:C:140:VAL:HG23	1.85	0.58
3:J:316:CYS:HB3	3:J:327:CYS:HB2	1.85	0.58
2:H:67:SER:O	2:I:139:THR:OG1	2.21	0.58
3:J:282:THR:HG22	3:J:290:VAL:HG22	1.84	0.58
3:K:89:VAL:O	3:K:93:VAL:HG22	2.04	0.58
3:K:256:ASP:O	3:L:609:THR:OG1	2.22	0.58
3:L:303:GLY:HA2	3:L:372:HIS:HE1	1.66	0.58
2:E:47:TYR:CD2	2:E:201:ARG:HG3	2.39	0.58
3:J:198:GLU:HB3	3:J:412:LEU:HD13	1.86	0.58
3:J:578:THR:OG1	3:J:579:TYR:N	2.34	0.58
3:K:123:ASP:O	3:K:124:THR:C	2.47	0.58
3:K:164:ASP:OD2	3:L:628:LYS:NZ	2.36	0.58
2:G:187:LEU:HB2	2:G:193:TYR:CE1	2.39	0.57
3:J:89:VAL:O	3:J:93:VAL:HG22	2.04	0.57
3:J:374:LYS:HB2	3:J:377:GLN:HB3	1.84	0.57
3:K:368:ILE:HG12	3:K:419:VAL:HG22	1.84	0.57
2:F:24:ASP:OD1	2:F:46:GLN:NE2	2.37	0.57
2:I:21:ASN:HB3	2:I:51:ASN:HB2	1.85	0.57
3:K:199:TYR:OH	3:K:413:ASP:HB2	2.04	0.57
3:L:219:GLN:O	3:L:224:ARG:NH2	2.36	0.57
3:L:528:ASN:N	3:L:636:ASN:O	2.29	0.57
2:D:70:LEU:HD13	2:E:153:TYR:CD2	2.40	0.57
2:G:133:PRO:HB3	2:G:174:ARG:HD3	1.86	0.57
3:L:104:ILE:HD11	3:L:135:ILE:HD12	1.85	0.57
3:L:301:ILE:HG22	3:L:303:GLY:H	1.68	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:31:SER:HB2	3:J:97:VAL:HA	1.86	0.57
3:K:371:PHE:CZ	3:K:380:ALA:HB2	2.40	0.57
3:J:818:ASP:OD1	3:J:821:GLY:N	2.38	0.57
3:K:816:ALA:O	3:K:823:ARG:HA	2.05	0.57
3:K:582:LEU:HD11	3:K:660:LEU:HD23	1.85	0.57
2:H:187:LEU:HB2	2:H:193:TYR:HE1	1.69	0.57
3:J:741:ASP:O	3:J:763:TRP:HA	2.04	0.57
3:J:67:LYS:NZ	3:J:695:GLU:OE1	2.33	0.56
3:L:195:LYS:O	3:L:196:ARG:HG2	2.05	0.56
3:L:297:ALA:H	3:L:415:ALA:HB3	1.69	0.56
2:G:113:THR:HG21	2:G:117:LEU:HD12	1.88	0.56
1:A:149:GLU:OE1	1:B:240:LEU:HG	2.04	0.56
1:A:263:ARG:HD3	1:C:55:ILE:HD11	1.88	0.56
1:C:222:ALA:HB3	1:C:280:VAL:HB	1.86	0.56
2:D:136:TYR:CG	2:D:152:LEU:HD23	2.41	0.56
3:K:40:TYR:CD1	3:K:53:ILE:HG21	2.41	0.56
3:K:697:GLU:HB3	3:K:705:ASN:HB2	1.87	0.56
3:L:2:LYS:NZ	3:L:120:VAL:HG23	2.19	0.56
2:D:26:ASP:OD2	2:D:42:LYS:NZ	2.38	0.56
3:J:439:GLY:HA3	3:J:457:SER:CB	2.36	0.56
3:J:623:ASP:O	3:L:102:ARG:NH1	2.38	0.56
1:C:74:ILE:HD11	1:C:159:ILE:HG22	1.87	0.56
3:J:677:ILE:HD11	3:J:708:LEU:HD21	1.87	0.56
3:L:281:ASP:OD1	3:L:282:THR:N	2.35	0.56
3:L:652:LYS:HE3	3:L:715:VAL:HA	1.87	0.56
2:G:46:GLN:H	2:G:157:PHE:HZ	1.53	0.56
2:G:110:ILE:HG12	2:G:149:ASN:HB3	1.86	0.56
3:J:499:GLU:HA	3:J:522:ARG:HH12	1.71	0.56
1:C:154:ARG:NH1	1:C:156:GLY:O	2.39	0.56
2:E:112:ASN:HB3	2:E:147:VAL:HG22	1.86	0.56
2:E:176:LYS:HG3	2:E:203:SER:HB2	1.87	0.56
3:J:298:GLU:HG2	3:J:472:ARG:HH21	1.71	0.56
1:A:131:LEU:HB3	1:A:170:PRO:HB3	1.88	0.56
1:C:30:ALA:HB2	1:C:63:ILE:HG13	1.88	0.56
2:G:127:PHE:N	2:G:136:TYR:O	2.36	0.56
2:I:104:GLN:NE2	2:I:110:ILE:H	2.03	0.56
3:K:560:ARG:HE	3:K:672:GLU:CD	2.14	0.56
1:A:199:ARG:O	2:H:189:ASN:ND2	2.35	0.56
2:H:109:ILE:HD11	2:H:156:LEU:HD21	1.88	0.56
3:K:233:LEU:HD22	3:K:609:THR:HG22	1.88	0.56
3:L:381:GLN:O	3:L:385:ASP:HB2	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:133:PRO:HB3	2:E:174:ARG:HG3	1.88	0.56
3:J:509:TRP:HB2	3:J:514:TRP:HE1	1.69	0.56
1:B:149:GLU:OE1	1:C:240:LEU:HG	2.06	0.55
2:H:47:TYR:CD2	2:H:201:ARG:HG3	2.41	0.55
3:K:303:GLY:HA2	3:K:372:HIS:HE1	1.69	0.55
3:K:620:LYS:HG2	3:K:625:GLY:HA2	1.87	0.55
3:K:297:ALA:H	3:K:415:ALA:HB3	1.71	0.55
3:L:268:TYR:HE2	3:L:531:LEU:HD12	1.71	0.55
3:L:79:PHE:HE1	3:L:106:ILE:HD11	1.69	0.55
3:J:590:ARG:HG3	3:L:164:ASP:HA	1.89	0.55
3:J:761:LEU:HB2	3:J:798:MET:O	2.07	0.55
3:L:113:GLU:HB2	3:L:114:GLU:OE1	2.06	0.55
3:L:374:LYS:HB2	3:L:377:GLN:HB3	1.88	0.55
2:G:43:ILE:O	2:G:44:SER:OG	2.24	0.55
3:J:506:GLN:O	3:J:507:PRO:C	2.49	0.55
3:J:107:HIS:HB3	3:J:127:PRO:HB2	1.88	0.55
3:K:815:ARG:HE	3:K:826:PRO:HG3	1.71	0.55
3:L:89:VAL:O	3:L:93:VAL:HG22	2.06	0.55
3:L:778:HIS:HB2	3:L:781:HIS:HB2	1.88	0.55
1:B:74:ILE:HD11	1:B:159:ILE:HG22	1.89	0.55
2:G:175:THR:HA	2:G:202:GLU:HA	1.89	0.55
2:I:1:MET:HE1	2:I:68:ARG:HB3	1.89	0.55
2:E:43:ILE:HG22	2:E:44:SER:H	1.70	0.55
2:E:127:PHE:HE1	2:E:166:PRO:HB3	1.72	0.55
2:I:127:PHE:HE1	2:I:166:PRO:HB3	1.72	0.55
3:J:439:GLY:HA3	3:J:457:SER:HB2	1.89	0.55
3:K:290:VAL:HG21	3:K:430:ILE:HD11	1.89	0.55
3:K:700:ARG:O	3:K:700:ARG:NH1	2.40	0.55
1:C:79:PHE:HB2	1:C:91:LEU:HD13	1.89	0.55
3:J:528:ASN:N	3:J:636:ASN:O	2.36	0.55
3:K:301:ILE:HG22	3:K:303:GLY:N	2.21	0.55
2:F:3:LEU:HB2	2:F:79:LEU:HD22	1.88	0.55
3:J:30:SER:O	3:J:102:ARG:NH2	2.40	0.55
3:J:371:PHE:CE2	3:J:380:ALA:HB2	2.42	0.55
3:J:619:PHE:HD2	3:J:655:ARG:HE	1.54	0.54
3:K:664:VAL:HB	3:K:668:PHE:HD2	1.72	0.54
2:D:47:TYR:CD2	2:D:201:ARG:HG3	2.42	0.54
2:G:77:ASP:OD1	2:G:78:TYR:N	2.38	0.54
2:G:109:ILE:HG12	2:G:156:LEU:HD11	1.90	0.54
2:H:73:LYS:NZ	2:I:24:ASP:OD2	2.38	0.54
3:J:395:GLN:HE21	3:J:404:TYR:HB3	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:652:LYS:HE3	3:K:715:VAL:HA	1.90	0.54
3:L:322:SER:OG	3:L:330:ARG:NH2	2.38	0.54
1:A:117:ILE:HD13	1:B:270:PHE:HZ	1.72	0.54
2:E:178:MET:HE1	2:H:38:VAL:HG11	1.88	0.54
2:F:46:GLN:HE22	2:F:153:TYR:HE2	1.53	0.54
2:I:43:ILE:HG22	2:I:44:SER:H	1.72	0.54
3:J:640:TYR:OH	3:J:644:ARG:NH1	2.40	0.54
3:J:676:PRO:HB3	3:J:690:PHE:CZ	2.42	0.54
3:L:465:MET:HE2	3:L:487:VAL:HG11	1.88	0.54
2:F:110:ILE:HG13	2:F:110:ILE:O	2.07	0.54
2:G:62:TYR:OH	2:G:185:SER:OG	2.24	0.54
3:K:489:SER:O	3:K:493:ILE:HG12	2.07	0.54
2:H:133:PRO:HG3	2:H:174:ARG:NH1	2.23	0.54
2:H:187:LEU:HB2	2:H:193:TYR:CE1	2.42	0.54
3:L:459:ASN:HA	3:L:463:GLN:NE2	2.23	0.54
1:B:154:ARG:NH1	1:B:156:GLY:O	2.40	0.54
2:F:43:ILE:HG22	2:F:44:SER:H	1.72	0.54
3:J:297:ALA:H	3:J:415:ALA:HB3	1.73	0.54
3:K:381:GLN:O	3:K:385:ASP:HB2	2.08	0.54
3:L:67:LYS:HE2	3:L:695:GLU:OE2	2.08	0.54
2:E:28:MET:HE3	2:E:40:GLU:HB2	1.90	0.54
3:J:596:VAL:HB	3:J:651:LEU:HD12	1.89	0.54
3:K:314:MET:HE1	3:K:368:ILE:HD12	1.89	0.54
3:L:31:SER:HB2	3:L:97:VAL:HA	1.89	0.54
3:L:171:ARG:NH1	3:L:413:ASP:O	2.40	0.54
2:D:160:THR:HG22	2:D:162:GLY:H	1.72	0.54
2:H:2:ARG:H	2:H:80:ASP:HB2	1.72	0.54
3:J:486:LYS:HE3	3:J:560:ARG:HH22	1.73	0.54
3:J:440:LYS:NZ	3:J:473:TYR:OH	2.41	0.54
3:J:759:GLY:HA2	3:J:800:GLN:O	2.07	0.54
3:K:808:GLY:HA2	3:K:833:LEU:HB2	1.88	0.54
1:A:132:ASP:O	1:A:134:SER:N	2.41	0.54
2:D:3:LEU:HD21	2:D:54:TYR:OH	2.08	0.54
2:F:134:LYS:HD3	2:F:204:LEU:HD22	1.90	0.54
2:G:136:TYR:CG	2:G:152:LEU:HD23	2.44	0.54
2:I:104:GLN:HE22	2:I:110:ILE:HB	1.73	0.54
1:A:240:LEU:HG	1:C:149:GLU:OE1	2.07	0.53
1:B:130:SER:HA	1:B:186:SER:HA	1.90	0.53
2:E:34:PRO:HG3	3:K:579:TYR:O	2.08	0.53
2:F:126:LEU:HB3	2:F:171:ILE:HD11	1.90	0.53
2:H:109:ILE:HG12	2:H:156:LEU:HD11	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:314:MET:HE1	3:J:368:ILE:HD12	1.90	0.53
3:K:592:LYS:HG3	3:K:655:ARG:HA	1.90	0.53
3:L:325:ARG:NE	3:L:327:CYS:SG	2.81	0.53
2:E:70:LEU:HD11	2:H:137:LYS:HE3	1.89	0.53
2:H:187:LEU:HD13	2:I:85:GLN:HG2	1.90	0.53
3:J:506:GLN:O	3:J:508:TYR:N	2.41	0.53
3:K:121:ASP:CB	3:K:122:PRO:HD2	2.38	0.53
3:L:578:THR:HG22	3:L:664:VAL:HG12	1.90	0.53
2:G:134:LYS:HD3	2:G:204:LEU:HD22	1.88	0.53
2:G:137:LYS:HE3	2:I:70:LEU:HD11	1.88	0.53
3:K:765:PRO:HG3	3:K:798:MET:HE1	1.90	0.53
1:A:130:SER:HA	1:A:186:SER:HA	1.91	0.53
3:J:179:ARG:HE	3:J:181:LEU:HD21	1.73	0.53
3:J:358:LYS:HD3	3:J:367:ARG:HH12	1.72	0.53
3:J:560:ARG:HD3	3:J:672:GLU:OE2	2.09	0.53
3:L:339:HIS:ND1	3:L:349:GLN:OE1	2.40	0.53
3:L:421:PHE:HZ	3:L:433:ILE:HD11	1.74	0.53
2:D:94:ASP:OD1	2:D:95:THR:N	2.41	0.53
2:E:3:LEU:HB2	2:E:79:LEU:HD22	1.91	0.53
3:L:681:TYR:HE1	3:L:683:ARG:HB2	1.72	0.53
3:L:739:PRO:HB3	3:L:763:TRP:HB2	1.90	0.53
1:C:146:LYS:HD3	1:C:209:THR:HG21	1.91	0.53
2:E:2:ARG:NH1	2:E:8:THR:OG1	2.41	0.53
2:E:74:ARG:HD3	2:H:139:THR:HG21	1.91	0.53
2:I:2:ARG:O	2:I:68:ARG:NH1	2.40	0.53
2:I:92:ARG:HG2	2:I:93:GLY:N	2.21	0.53
3:J:24:ILE:HG12	3:J:106:ILE:HG12	1.90	0.53
3:J:140:ILE:HD13	3:J:154:ILE:HG12	1.91	0.53
3:J:772:VAL:HG13	3:J:773:TYR:CD1	2.44	0.53
3:J:772:VAL:HG13	3:J:773:TYR:HD1	1.73	0.53
2:F:133:PRO:HB3	2:F:174:ARG:HD2	1.91	0.53
2:H:94:ASP:OD1	2:H:95:THR:N	2.42	0.53
3:J:619:PHE:HB3	3:J:655:ARG:HH21	1.73	0.53
3:L:179:ARG:NH1	3:L:191:SER:OG	2.41	0.53
3:L:317:PHE:O	3:L:321:ASP:HB2	2.09	0.53
1:B:264:ILE:HG12	1:B:280:VAL:HG22	1.91	0.53
2:G:94:ASP:OD1	2:G:95:THR:N	2.42	0.53
3:J:566:TYR:HB2	3:J:716:PHE:CD2	2.44	0.53
1:A:74:ILE:HD11	1:A:159:ILE:HG22	1.91	0.53
2:E:4:PRO:HD3	2:E:68:ARG:HD2	1.91	0.53
2:I:133:PRO:HB3	2:I:174:ARG:HG3	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:501:TYR:HB3	3:J:721:GLN:HE21	1.73	0.53
3:K:572:ARG:NH1	3:K:572:ARG:HB2	2.24	0.53
3:L:489:SER:O	3:L:493:ILE:HG12	2.09	0.53
3:J:1:MET:HE3	3:J:1:MET:HA	1.91	0.53
3:K:669:ILE:HD12	3:K:704:ILE:HD11	1.91	0.53
3:L:101:ASP:O	3:L:102:ARG:HB2	2.09	0.53
3:L:299:GLY:HA2	3:L:373:GLY:HA3	1.91	0.53
3:L:677:ILE:HD11	3:L:708:LEU:HD11	1.91	0.53
2:F:79:LEU:O	2:F:175:THR:N	2.42	0.52
2:G:47:TYR:CD2	2:G:201:ARG:HG3	2.44	0.52
3:J:496:ILE:HG13	3:J:524:ILE:HD12	1.91	0.52
1:C:196:ARG:NH1	2:F:61:GLU:OE1	2.41	0.52
2:H:1:MET:N	2:H:80:ASP:OD1	2.42	0.52
3:J:293:VAL:HG22	3:J:418:ILE:HG12	1.91	0.52
1:C:132:ASP:O	1:C:134:SER:N	2.43	0.52
3:J:79:PHE:HE1	3:J:106:ILE:HD11	1.73	0.52
3:J:761:LEU:HB3	3:J:799:ILE:HA	1.92	0.52
3:L:555:LEU:HD11	3:L:696:VAL:HB	1.90	0.52
3:L:566:TYR:HB2	3:L:716:PHE:CD2	2.44	0.52
1:A:133:LYS:N	1:A:167:TYR:OH	2.42	0.52
1:C:131:LEU:HD22	1:C:252:ASN:ND2	2.25	0.52
1:C:180:PRO:HB3	1:C:232:LEU:HD13	1.92	0.52
3:J:395:GLN:O	3:J:399:GLY:N	2.35	0.52
3:J:506:GLN:HE22	3:J:641:TYR:HD2	1.56	0.52
3:K:4:ILE:O	3:K:8:ALA:HB3	2.09	0.52
3:K:54:LEU:HD12	3:K:56:ARG:HH12	1.74	0.52
3:L:40:TYR:CD1	3:L:53:ILE:HG21	2.44	0.52
3:J:68:GLN:OE1	3:J:553:ASN:HA	2.10	0.52
3:J:489:SER:O	3:J:493:ILE:HG12	2.09	0.52
1:A:248:LEU:HD11	1:A:264:ILE:HD11	1.91	0.52
3:J:109:ALA:HA	3:J:127:PRO:HB3	1.91	0.52
3:J:623:ASP:O	3:J:624:LYS:HB2	2.09	0.52
3:J:761:LEU:HD13	3:J:799:ILE:HG12	1.92	0.52
2:F:9:ASN:HB2	2:F:11:GLU:OE2	2.09	0.52
2:G:26:ASP:OD1	2:G:46:GLN:HG3	2.10	0.52
3:J:40:TYR:CD1	3:J:53:ILE:HG21	2.44	0.52
3:L:48:VAL:O	3:L:55:TYR:HB2	2.10	0.52
2:H:127:PHE:N	2:H:136:TYR:O	2.29	0.52
3:J:761:LEU:CB	3:J:799:ILE:HA	2.40	0.52
1:C:131:LEU:N	1:C:185:ALA:O	2.37	0.52
3:J:48:VAL:O	3:J:55:TYR:HB2	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:134:LYS:HD3	2:D:204:LEU:HD22	1.90	0.51
3:K:267:VAL:HG21	3:K:273:ILE:HD13	1.92	0.51
1:B:146:LYS:HB2	1:B:209:THR:HB	1.91	0.51
1:B:272:ASP:O	1:B:273:LEU:HB2	2.09	0.51
3:K:269:GLY:O	3:K:439:GLY:N	2.44	0.51
1:A:14:GLU:HG2	1:A:154:ARG:HH21	1.75	0.51
3:J:294:TYR:CE2	3:J:433:ILE:HD13	2.45	0.51
3:J:829:LEU:HB3	3:J:831:VAL:HG13	1.92	0.51
3:K:309:ILE:HD13	3:K:359:TYR:HE2	1.75	0.51
3:K:332:LYS:O	3:K:333:ILE:HB	2.09	0.51
3:L:111:ILE:HG22	3:L:112:ASN:O	2.11	0.51
1:B:11:ILE:HG21	1:B:65:LEU:HD21	1.93	0.51
1:C:118:TYR:CE2	1:C:120:GLU:HG2	2.45	0.51
2:H:92:ARG:HG2	2:H:93:GLY:H	1.75	0.51
3:J:28:LEU:HD22	3:J:91:LYS:HD2	1.93	0.51
3:J:230:LYS:HD2	3:J:265:PRO:CG	2.41	0.51
3:J:736:VAL:HG13	3:J:824:SER:HB3	1.92	0.51
3:L:464:LEU:HD11	3:L:541:VAL:HG13	1.91	0.51
3:L:816:ALA:O	3:L:823:ARG:HA	2.09	0.51
2:F:98:VAL:HG11	2:F:111:LEU:HD12	1.91	0.51
2:I:103:GLY:HA2	2:I:160:THR:HB	1.91	0.51
3:L:124:THR:O	3:L:126:GLY:N	2.42	0.51
1:A:93:LEU:HD22	1:C:50:TYR:HE1	1.76	0.51
1:B:146:LYS:HD3	1:B:209:THR:HG21	1.93	0.51
1:C:287:ASP:O	1:C:288:PRO:C	2.54	0.51
2:G:75:THR:HG22	2:G:77:ASP:H	1.75	0.51
2:H:94:ASP:OD1	2:H:96:LYS:N	2.40	0.51
3:K:614:PHE:CZ	3:K:644:ARG:HG3	2.46	0.51
1:A:10:LYS:HB2	1:A:110:ILE:HG13	1.91	0.51
3:K:49:THR:HG22	3:K:54:LEU:HA	1.91	0.51
3:K:121:ASP:HB3	3:K:122:PRO:HD2	1.92	0.51
3:K:660:LEU:HB2	3:K:708:LEU:HB2	1.93	0.51
3:L:2:LYS:HZ2	3:L:120:VAL:HG23	1.76	0.51
2:D:137:LYS:HE3	2:F:70:LEU:HD11	1.93	0.51
3:K:496:ILE:HG13	3:K:524:ILE:HD12	1.91	0.51
3:L:363:ASN:HA	3:L:426:ASN:ND2	2.25	0.51
3:L:563:VAL:HG22	3:L:564:GLU:H	1.76	0.51
3:L:620:LYS:HG2	3:L:625:GLY:HA2	1.93	0.51
3:L:808:GLY:HA2	3:L:833:LEU:HB2	1.93	0.51
1:A:243:GLU:OE1	1:A:266:LYS:NZ	2.43	0.51
1:B:127:VAL:HG22	1:B:140:VAL:HG23	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:38:VAL:HG11	2:F:178:MET:HE1	1.94	0.51
3:J:300:GLU:HG2	3:J:441:LYS:HG3	1.92	0.51
3:L:267:VAL:HG21	3:L:273:ILE:HD13	1.93	0.51
3:L:746:PRO:HA	3:L:758:ASN:CG	2.36	0.51
1:B:108:TYR:HB3	1:B:110:ILE:HG23	1.92	0.50
1:C:40:LEU:HD12	1:C:51:ALA:HB2	1.93	0.50
2:E:177:LEU:HD23	2:E:200:LEU:HD21	1.93	0.50
3:J:583:ASP:HB2	3:J:661:SER:HB2	1.92	0.50
3:K:28:LEU:HD22	3:K:91:LYS:HD2	1.94	0.50
3:L:332:LYS:HG3	3:L:507:PRO:HB3	1.93	0.50
1:A:287:ASP:OD1	1:A:287:ASP:N	2.44	0.50
2:D:18:GLU:HG3	2:F:189:ASN:ND2	2.27	0.50
2:D:187:LEU:HB2	2:D:193:TYR:HE1	1.75	0.50
2:E:98:VAL:HG21	2:E:111:LEU:HD12	1.93	0.50
3:J:582:LEU:HD12	3:J:662:PHE:HB3	1.94	0.50
3:K:66:HIS:HB2	3:K:77:LEU:HD11	1.93	0.50
2:E:136:TYR:HD1	2:E:154:PRO:HB2	1.75	0.50
2:G:133:PRO:HG3	2:G:174:ARG:NH1	2.26	0.50
3:J:490:GLU:OE2	3:J:563:VAL:HG12	2.12	0.50
3:J:681:TYR:CE1	3:J:683:ARG:HB2	2.44	0.50
3:J:692:LEU:HD12	3:J:711:TYR:CD2	2.40	0.50
3:L:498:ASP:OD1	3:L:718:ASN:ND2	2.44	0.50
1:A:249:ILE:HG23	1:A:258:THR:HG22	1.91	0.50
1:C:93:LEU:HD13	1:C:220:ALA:HB2	1.93	0.50
3:J:555:LEU:HD11	3:J:696:VAL:HB	1.93	0.50
3:K:174:ASP:OD1	3:K:175:ASP:N	2.44	0.50
3:K:595:SER:O	3:K:630:LEU:N	2.44	0.50
3:L:279:PHE:HB3	3:L:293:VAL:HB	1.94	0.50
3:L:309:ILE:HD13	3:L:359:TYR:HE2	1.76	0.50
3:L:612:ILE:HG12	3:L:640:TYR:CE2	2.46	0.50
2:I:94:ASP:OD1	2:I:95:THR:N	2.45	0.50
3:K:555:LEU:HD11	3:K:673:PRO:HD3	1.94	0.50
3:K:594:ASN:OD1	3:K:655:ARG:NH2	2.44	0.50
3:L:421:PHE:CZ	3:L:433:ILE:HD11	2.47	0.50
1:A:240:LEU:HD22	1:A:268:LEU:HD11	1.93	0.50
1:B:192:GLN:HB2	1:B:217:GLU:HB3	1.92	0.50
2:E:9:ASN:HB2	2:E:11:GLU:OE2	2.11	0.50
2:F:3:LEU:HD12	2:F:4:PRO:HD2	1.92	0.50
3:J:138:GLY:HA2	3:K:586:ASP:H	1.77	0.50
3:J:301:ILE:HG22	3:J:303:GLY:N	2.25	0.50
3:J:341:LEU:HD21	3:J:359:TYR:HB2	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:778:HIS:HB2	3:J:781:HIS:HB2	1.92	0.50
3:K:216:ALA:O	3:K:224:ARG:NH1	2.45	0.50
3:K:499:GLU:OE2	3:K:522:ARG:NH2	2.35	0.50
3:L:132:ARG:HD2	3:L:557:GLY:O	2.12	0.50
2:E:120:GLN:HG3	2:E:141:PHE:CE1	2.46	0.50
3:K:268:TYR:HE2	3:K:531:LEU:HD12	1.77	0.50
3:K:299:GLY:HA2	3:K:373:GLY:HA3	1.93	0.50
3:K:358:LYS:HE3	3:K:367:ARG:NH1	2.25	0.50
3:L:321:ASP:OD1	3:L:732:ILE:HG22	2.12	0.50
1:B:199:ARG:O	2:D:189:ASN:ND2	2.44	0.50
3:K:363:ASN:HA	3:K:426:ASN:ND2	2.26	0.50
3:L:174:ASP:OD1	3:L:175:ASP:N	2.43	0.50
1:B:240:LEU:HD22	1:B:268:LEU:HD11	1.93	0.50
3:J:321:ASP:OD1	3:J:732:ILE:HG22	2.12	0.50
3:J:669:ILE:HD12	3:J:704:ILE:HD11	1.93	0.50
1:B:131:LEU:N	1:B:185:ALA:O	2.35	0.49
2:H:134:LYS:HD2	2:H:204:LEU:HD22	1.94	0.49
3:J:302:ASP:HB2	3:J:438:GLN:O	2.11	0.49
3:J:332:LYS:O	3:J:333:ILE:HB	2.11	0.49
3:J:558:GLU:O	3:J:560:ARG:HG3	2.12	0.49
3:K:135:ILE:HD11	3:K:156:TRP:CE3	2.46	0.49
3:L:140:ILE:CD1	3:L:154:ILE:HG12	2.42	0.49
3:L:358:LYS:HB3	3:L:367:ARG:HD2	1.94	0.49
1:C:131:LEU:HD22	1:C:252:ASN:HD22	1.77	0.49
1:C:243:GLU:OE2	1:C:266:LYS:NZ	2.43	0.49
3:J:234:PHE:O	3:J:245:TYR:OH	2.20	0.49
3:J:652:LYS:HE3	3:J:715:VAL:HA	1.94	0.49
3:K:23:LEU:HD21	3:K:48:VAL:HG13	1.92	0.49
3:K:600:LEU:HD13	3:K:612:ILE:HD13	1.93	0.49
3:J:195:LYS:O	3:J:196:ARG:HG2	2.12	0.49
3:K:319:GLU:OE2	3:K:330:ARG:NH2	2.40	0.49
3:J:558:GLU:C	3:J:560:ARG:HG3	2.37	0.49
3:K:464:LEU:HD21	3:K:552:ILE:HD11	1.93	0.49
3:L:301:ILE:HG22	3:L:303:GLY:N	2.28	0.49
1:B:224:LEU:HB3	1:B:226:PHE:HE1	1.78	0.49
2:H:43:ILE:O	2:H:44:SER:OG	2.28	0.49
2:I:120:GLN:HG3	2:I:141:PHE:CE2	2.46	0.49
3:J:124:THR:O	3:J:126:GLY:N	2.46	0.49
3:J:555:LEU:HD12	3:J:672:GLU:HA	1.94	0.49
3:J:571:LEU:HB2	3:J:677:ILE:HG22	1.95	0.49
3:K:440:LYS:H	3:K:457:SER:HB3	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:619:PHE:HB3	3:K:655:ARG:HH22	1.77	0.49
2:D:111:LEU:HD23	2:D:111:LEU:H	1.77	0.49
2:H:69:LEU:O	2:H:72:TYR:HB3	2.12	0.49
3:J:189:GLN:CD	3:K:722:VAL:HG11	2.38	0.49
3:J:269:GLY:O	3:J:439:GLY:N	2.46	0.49
3:K:24:ILE:HD11	3:K:63:ILE:HD11	1.95	0.49
3:L:294:TYR:O	3:L:416:TYR:HA	2.13	0.49
3:L:301:ILE:HD12	3:L:415:ALA:HB2	1.95	0.49
2:F:2:ARG:NH1	2:F:8:THR:OG1	2.46	0.49
2:F:111:LEU:HD23	2:F:111:LEU:H	1.78	0.49
2:I:126:LEU:HB3	2:I:171:ILE:HD11	1.95	0.49
3:J:363:ASN:HA	3:J:426:ASN:ND2	2.27	0.49
1:A:272:ASP:O	1:A:273:LEU:HB2	2.12	0.49
2:D:174:ARG:HH12	2:D:204:LEU:HA	1.77	0.49
2:G:36:GLY:HA3	2:I:204:LEU:HD21	1.95	0.49
2:G:43:ILE:HG22	2:G:44:SER:N	2.28	0.49
2:I:54:TYR:HB2	2:I:196:ILE:O	2.13	0.49
3:L:623:ASP:O	3:L:624:LYS:HB2	2.13	0.49
3:J:268:TYR:HE2	3:J:531:LEU:HD12	1.77	0.49
3:K:600:LEU:HD21	3:K:643:ALA:HB3	1.95	0.49
1:B:191:GLN:HG2	1:B:193:CYS:SG	2.53	0.49
3:J:560:ARG:NH1	3:J:672:GLU:OE1	2.43	0.49
3:J:743:LYS:H	3:J:762:SER:HB2	1.77	0.49
3:K:454:ASP:O	3:K:455:LYS:HB2	2.11	0.49
3:L:79:PHE:CE1	3:L:106:ILE:HD11	2.48	0.49
3:L:660:LEU:HD13	3:L:691:PHE:CE2	2.48	0.49
1:C:146:LYS:HB2	1:C:209:THR:HB	1.94	0.48
3:K:188:LEU:O	3:K:190:PRO:HD3	2.13	0.48
3:K:271:GLN:HG2	3:K:530:ILE:HD11	1.95	0.48
3:K:623:ASP:O	3:K:624:LYS:HB2	2.13	0.48
3:L:28:LEU:HD22	3:L:91:LYS:HD2	1.95	0.48
3:L:582:LEU:HD12	3:L:662:PHE:HB3	1.95	0.48
1:C:21:HIS:HB2	1:C:158:THR:HG21	1.94	0.48
1:C:102:PRO:HB3	1:C:191:GLN:HE22	1.78	0.48
1:C:287:ASP:OD1	1:C:287:ASP:N	2.46	0.48
2:F:4:PRO:HD3	2:F:68:ARG:HD2	1.94	0.48
3:L:313:PRO:HG2	3:L:317:PHE:CZ	2.48	0.48
2:D:201:ARG:NH1	2:D:202:GLU:O	2.47	0.48
2:E:80:ASP:HB3	2:E:172:LEU:HB3	1.94	0.48
2:G:104:GLN:NE2	2:G:110:ILE:H	2.12	0.48
2:G:153:TYR:HB2	2:I:70:LEU:HD13	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:121:ASP:O	3:J:123:ASP:N	2.47	0.48
3:J:589:GLY:HA3	3:L:136:THR:HB	1.94	0.48
3:J:623:ASP:OD1	3:L:100:LEU:HD23	2.12	0.48
3:J:824:SER:O	3:J:825:SER:C	2.55	0.48
3:K:761:LEU:O	3:K:763:TRP:N	2.46	0.48
3:L:664:VAL:HB	3:L:668:PHE:HD2	1.78	0.48
1:A:49:ASN:HD22	1:B:218:MET:HB3	1.75	0.48
3:K:531:LEU:HD21	3:K:544:ILE:HD11	1.95	0.48
3:L:185:ASN:OD1	3:L:186:GLY:N	2.47	0.48
3:L:269:GLY:O	3:L:439:GLY:N	2.47	0.48
2:F:2:ARG:HH11	2:F:2:ARG:HG2	1.77	0.48
2:H:26:ASP:OD1	2:H:46:GLN:HG3	2.14	0.48
2:H:48:TRP:CZ2	2:H:137:LYS:HG3	2.49	0.48
2:I:110:ILE:HD12	2:I:149:ASN:OD1	2.14	0.48
3:J:660:LEU:HB2	3:J:708:LEU:HB2	1.96	0.48
3:K:325:ARG:HD3	3:K:735:ASN:ND2	2.27	0.48
3:L:129:LEU:HB2	3:L:556:SER:O	2.13	0.48
3:J:109:ALA:HB1	3:J:116:ASN:OD1	2.13	0.48
3:J:597:GLN:HG3	3:J:613:THR:HG22	1.95	0.48
3:J:763:TRP:NE1	3:J:798:MET:SD	2.86	0.48
3:K:282:THR:HG22	3:K:290:VAL:HG22	1.95	0.48
3:K:464:LEU:HD11	3:K:541:VAL:HG13	1.94	0.48
1:A:267:ARG:NH1	1:A:277:GLU:OE1	2.46	0.48
2:D:90:ARG:O	2:D:92:ARG:N	2.47	0.48
2:E:111:LEU:H	2:E:111:LEU:HD23	1.78	0.48
2:F:120:GLN:HG3	2:F:141:PHE:CE1	2.49	0.48
2:I:111:LEU:HD23	2:I:111:LEU:H	1.78	0.48
3:J:506:GLN:O	3:J:506:GLN:HG3	2.13	0.48
3:J:595:SER:O	3:J:630:LEU:N	2.46	0.48
3:K:4:ILE:HD12	3:K:4:ILE:HA	1.73	0.48
3:K:341:LEU:HD21	3:K:359:TYR:HB2	1.96	0.48
1:A:56:ASN:O	1:A:207:ILE:HA	2.14	0.48
2:D:158:ILE:HG12	2:D:159:THR:O	2.13	0.48
3:J:660:LEU:HD13	3:J:691:PHE:CE2	2.49	0.48
3:K:272:LYS:HD2	3:K:308:TYR:CE2	2.48	0.48
3:L:120:VAL:HG13	3:L:123:ASP:HB3	1.96	0.48
3:L:679:PHE:CE2	3:L:681:TYR:HB2	2.48	0.48
3:L:697:GLU:HB3	3:L:705:ASN:HB2	1.95	0.48
1:B:132:ASP:O	1:B:134:SER:N	2.47	0.48
3:J:664:VAL:HB	3:J:668:PHE:HD2	1.78	0.48
3:L:426:ASN:HD21	3:L:815:ARG:NE	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:127:PHE:HE1	2:D:166:PRO:HB3	1.78	0.48
2:E:1:MET:HE2	2:E:68:ARG:O	2.13	0.48
2:E:46:GLN:NE2	2:E:153:TYR:CE2	2.78	0.48
2:H:43:ILE:HG22	2:H:44:SER:N	2.29	0.48
3:J:266:VAL:HG21	3:J:473:TYR:CD2	2.48	0.48
3:J:4:ILE:O	3:J:5:LEU:HB2	2.14	0.47
3:K:539:LYS:HA	3:K:542:GLN:HG2	1.96	0.47
3:L:699:THR:HG22	3:L:701:ASP:H	1.79	0.47
1:B:174:THR:HG22	1:B:248:LEU:HG	1.95	0.47
1:C:258:THR:OG1	1:C:290:GLU:HG2	2.14	0.47
2:D:117:LEU:HB2	2:D:148:TRP:HH2	1.80	0.47
3:J:79:PHE:HZ	3:J:104:ILE:HG21	1.79	0.47
3:J:104:ILE:HD11	3:J:135:ILE:HD12	1.96	0.47
3:J:111:ILE:HG22	3:J:112:ASN:O	2.14	0.47
3:J:144:VAL:HG23	3:K:580:GLY:HA2	1.96	0.47
3:J:243:LYS:O	3:J:247:GLU:HG2	2.14	0.47
3:K:5:LEU:HD12	3:K:119:PRO:HA	1.97	0.47
3:K:173:THR:OG1	3:K:262:LYS:HB3	2.14	0.47
3:L:545:LEU:HD13	3:L:551:ALA:HA	1.96	0.47
1:B:92:PHE:CD1	1:B:290:GLU:HB3	2.49	0.47
2:G:48:TRP:CZ2	2:G:137:LYS:HG3	2.49	0.47
2:H:134:LYS:NZ	2:H:154:PRO:HB3	2.30	0.47
3:J:651:LEU:O	3:J:654:SER:OG	2.23	0.47
3:L:48:VAL:HG21	3:L:111:ILE:HD11	1.95	0.47
3:L:545:LEU:HD23	3:L:548:PHE:CZ	2.48	0.47
3:L:600:LEU:O	3:L:609:THR:HA	2.14	0.47
1:A:146:LYS:HD3	1:A:209:THR:HG21	1.95	0.47
1:B:42:ARG:HE	1:B:47:ARG:HB3	1.79	0.47
3:J:326:THR:HG23	3:J:825:SER:HB2	1.95	0.47
3:K:421:PHE:HZ	3:K:433:ILE:HD11	1.80	0.47
3:K:614:PHE:HZ	3:K:644:ARG:HG3	1.79	0.47
3:L:135:ILE:HD11	3:L:156:TRP:CE3	2.49	0.47
2:D:135:VAL:HG13	2:D:171:ILE:HD12	1.97	0.47
2:G:187:LEU:HD23	2:G:188:ASN:O	2.15	0.47
2:H:75:THR:HG22	2:H:76:GLY:N	2.29	0.47
2:H:80:ASP:HB3	2:H:172:LEU:HB3	1.96	0.47
2:H:177:LEU:HD21	2:H:198:LEU:HD22	1.96	0.47
3:J:545:LEU:HD23	3:J:548:PHE:CZ	2.50	0.47
3:L:578:THR:OG1	3:L:579:TYR:N	2.48	0.47
1:A:146:LYS:HB2	1:A:209:THR:HB	1.97	0.47
2:D:48:TRP:CZ2	2:D:137:LYS:HG3	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:77:ASP:N	2:D:77:ASP:OD1	2.46	0.47
2:F:127:PHE:HE1	2:F:166:PRO:HB3	1.80	0.47
2:G:201:ARG:NH1	2:G:202:GLU:O	2.47	0.47
3:J:279:PHE:HB3	3:J:293:VAL:HB	1.95	0.47
3:K:111:ILE:HG22	3:K:112:ASN:O	2.14	0.47
3:K:619:PHE:HB3	3:K:655:ARG:NH2	2.29	0.47
3:L:218:TYR:HB2	3:L:430:ILE:HD12	1.96	0.47
1:A:240:LEU:HA	1:A:266:LYS:HD2	1.97	0.47
1:B:267:ARG:NH1	1:B:277:GLU:OE1	2.48	0.47
2:D:25:ASN:HA	2:F:181:ASP:O	2.15	0.47
2:F:176:LYS:HG3	2:F:203:SER:HB2	1.97	0.47
2:G:50:ILE:HG22	2:G:52:ILE:HG13	1.97	0.47
2:G:126:LEU:CB	2:G:171:ILE:HD11	2.45	0.47
2:H:158:ILE:HG12	2:H:159:THR:O	2.14	0.47
3:J:79:PHE:CE1	3:J:106:ILE:HD11	2.50	0.47
3:J:539:LYS:HA	3:J:542:GLN:HG2	1.97	0.47
3:K:2:LYS:NZ	3:K:120:VAL:HG13	2.30	0.47
3:K:48:VAL:O	3:K:55:TYR:HB2	2.15	0.47
3:K:395:GLN:HE21	3:K:404:TYR:HB3	1.79	0.47
3:K:483:PRO:HD3	3:K:558:GLU:HB3	1.96	0.47
1:A:242:PRO:HG2	1:C:55:ILE:HG21	1.96	0.47
2:D:139:THR:HG21	2:F:74:ARG:HD3	1.95	0.47
2:D:204:LEU:HD11	2:E:36:GLY:HA3	1.96	0.47
3:K:66:HIS:CD2	3:K:555:LEU:HD23	2.50	0.47
3:K:69:ASN:HB3	3:K:695:GLU:HG2	1.95	0.47
3:K:100:LEU:HD23	3:L:628:LYS:HD2	1.97	0.47
3:L:558:GLU:O	3:L:560:ARG:HG3	2.14	0.47
3:L:815:ARG:HG2	3:L:826:PRO:HD3	1.97	0.47
1:A:192:GLN:N	1:A:217:GLU:O	2.48	0.47
1:B:168:SER:OG	1:B:252:ASN:OD1	2.25	0.47
1:B:198:ASP:OD1	1:B:208:TYR:OH	2.31	0.47
2:H:1:MET:HE2	2:H:1:MET:HB3	1.69	0.47
2:H:77:ASP:OD1	2:H:77:ASP:N	2.45	0.47
3:J:18:LEU:HD23	3:J:18:LEU:H	1.80	0.47
3:J:46:ARG:O	3:J:57:SER:OG	2.33	0.47
3:J:596:VAL:HG12	3:J:614:PHE:HD2	1.80	0.47
3:K:100:LEU:HD22	3:L:623:ASP:OD2	2.14	0.47
3:L:282:THR:HG22	3:L:290:VAL:HG22	1.96	0.47
1:A:100:ILE:HD12	1:A:100:ILE:H	1.80	0.47
2:D:126:LEU:CB	2:D:171:ILE:HD11	2.44	0.47
3:J:59:LYS:HB3	3:J:81:ILE:HG23	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:610:ASN:OD1	3:J:611:SER:N	2.47	0.47
3:L:81:ILE:HD12	3:L:156:TRP:HD1	1.80	0.47
1:B:56:ASN:O	1:B:207:ILE:HA	2.15	0.46
2:D:43:ILE:O	2:D:44:SER:OG	2.28	0.46
2:D:104:GLN:HE22	2:D:110:ILE:HB	1.80	0.46
3:K:421:PHE:CZ	3:K:433:ILE:HD11	2.49	0.46
3:L:240:TYR:HB3	3:L:245:TYR:HB2	1.97	0.46
2:I:3:LEU:HB2	2:I:79:LEU:HD22	1.97	0.46
2:I:134:LYS:HG2	2:I:135:VAL:H	1.79	0.46
3:J:313:PRO:HG2	3:J:317:PHE:CE2	2.50	0.46
3:J:549:GLY:O	3:J:563:VAL:HG23	2.15	0.46
1:A:49:ASN:ND2	1:B:218:MET:HE2	2.30	0.46
1:B:287:ASP:O	1:B:288:PRO:C	2.56	0.46
2:G:129:LEU:HD22	2:G:164:GLU:HB3	1.97	0.46
3:J:44:TYR:CG	3:J:45:PHE:N	2.83	0.46
3:K:313:PRO:HG2	3:K:317:PHE:CE2	2.51	0.46
2:D:104:GLN:NE2	2:D:110:ILE:H	2.14	0.46
2:H:111:LEU:HD21	2:H:150:ILE:HD12	1.97	0.46
3:J:798:MET:SD	3:J:798:MET:N	2.87	0.46
3:L:11:TYR:CG	3:L:117:ILE:HD13	2.50	0.46
3:L:411:LEU:HD12	3:L:416:TYR:CG	2.50	0.46
2:F:17:PHE:HE1	2:F:52:ILE:HD13	1.79	0.46
2:G:134:LYS:HG3	2:G:202:GLU:OE1	2.15	0.46
3:J:135:ILE:HD11	3:J:156:TRP:CE3	2.50	0.46
3:J:228:GLN:HA	3:J:252:GLU:HA	1.97	0.46
3:L:188:LEU:O	3:L:190:PRO:HD3	2.16	0.46
3:L:714:ASP:O	3:L:717:ILE:HG22	2.15	0.46
1:A:131:LEU:HD13	1:A:187:MET:HE1	1.98	0.46
2:D:62:TYR:HE1	2:D:196:ILE:HG21	1.80	0.46
2:F:142:SER:OG	2:F:149:ASN:OD1	2.25	0.46
3:K:645:SER:HB3	3:K:721:GLN:NE2	2.31	0.46
3:L:277:PRO:HG3	3:L:294:TYR:HE1	1.80	0.46
3:L:575:PHE:HE1	3:L:582:LEU:HB2	1.80	0.46
2:E:181:ASP:O	2:H:25:ASN:HA	2.15	0.46
2:F:50:ILE:HG22	2:F:52:ILE:HG13	1.96	0.46
2:H:185:SER:N	2:I:21:ASN:OD1	2.48	0.46
3:J:120:VAL:CG1	3:J:123:ASP:HB3	2.45	0.46
3:J:586:ASP:OD1	3:J:658:ARG:HG2	2.16	0.46
3:J:677:ILE:HD11	3:J:708:LEU:HD11	1.97	0.46
3:K:211:SER:OG	3:K:277:PRO:O	2.27	0.46
3:L:301:ILE:HG21	3:L:437:VAL:HG13	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:652:LYS:NZ	3:L:714:ASP:O	2.42	0.46
3:L:692:LEU:HD22	3:L:711:TYR:CD2	2.51	0.46
1:C:201:ILE:HG12	2:G:187:LEU:HD22	1.98	0.46
2:F:187:LEU:HD13	2:F:193:TYR:CE1	2.50	0.46
2:H:46:GLN:H	2:H:157:PHE:HZ	1.64	0.46
2:I:3:LEU:HD12	2:I:79:LEU:HD13	1.98	0.46
3:J:294:TYR:O	3:J:416:TYR:HA	2.15	0.46
3:K:53:ILE:H	3:K:53:ILE:HD12	1.81	0.46
3:L:660:LEU:HD21	3:L:686:TRP:HZ3	1.79	0.46
1:A:2:PHE:HD2	1:B:231:ARG:HG2	1.81	0.46
1:A:191:GLN:HG2	1:A:193:CYS:SG	2.56	0.46
1:B:179:LEU:HB3	1:B:226:PHE:HE2	1.80	0.46
1:C:201:ILE:O	1:C:204:ILE:HG12	2.16	0.46
2:E:91:VAL:HG22	2:E:121:PRO:HG3	1.98	0.46
3:J:101:ASP:O	3:J:102:ARG:HB2	2.16	0.46
3:J:221:LYS:HA	3:J:224:ARG:HH11	1.80	0.46
3:K:228:GLN:HA	3:K:252:GLU:HA	1.98	0.46
3:K:279:PHE:HD2	3:K:293:VAL:HG23	1.80	0.46
3:K:294:TYR:CE2	3:K:433:ILE:HD12	2.49	0.46
3:L:220:VAL:C	3:L:224:ARG:HH21	2.24	0.46
2:F:48:TRP:HB2	2:F:202:GLU:OE1	2.16	0.46
2:H:90:ARG:O	2:H:92:ARG:N	2.49	0.46
3:J:612:ILE:HG12	3:J:640:TYR:CE2	2.50	0.46
3:J:786:ILE:HD11	3:K:790:LEU:HD22	1.97	0.46
3:L:4:ILE:O	3:L:8:ALA:HB3	2.15	0.46
3:L:88:GLU:HA	3:L:91:LYS:HZ1	1.80	0.46
3:L:539:LYS:HA	3:L:542:GLN:HG2	1.97	0.46
2:E:140:ASN:OD1	2:E:141:PHE:N	2.48	0.45
2:F:17:PHE:HD1	2:F:52:ILE:HG23	1.81	0.45
2:F:112:ASN:HA	2:F:147:VAL:HA	1.98	0.45
2:G:54:TYR:HE2	2:G:65:LEU:HD21	1.80	0.45
2:I:2:ARG:H	2:I:80:ASP:HB2	1.81	0.45
2:I:112:ASN:HA	2:I:147:VAL:HA	1.97	0.45
3:K:28:LEU:HD23	3:K:28:LEU:HA	1.80	0.45
3:K:129:LEU:HB2	3:K:556:SER:O	2.16	0.45
3:L:458:LEU:HD13	3:L:459:ASN:H	1.81	0.45
2:I:140:ASN:OD1	2:I:141:PHE:N	2.49	0.45
3:J:298:GLU:HG2	3:J:472:ARG:NH2	2.31	0.45
3:J:426:ASN:HD21	3:J:815:ARG:NE	2.14	0.45
3:K:220:VAL:HG12	3:K:222:GLU:H	1.82	0.45
3:K:610:ASN:OD1	3:K:611:SER:N	2.48	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:72:LEU:HD12	3:L:72:LEU:O	2.17	0.45
3:L:509:TRP:CZ3	3:L:517:PRO:HD3	2.51	0.45
3:L:673:PRO:HA	3:L:693:VAL:HG23	1.98	0.45
2:D:75:THR:HG22	2:D:76:GLY:N	2.31	0.45
3:J:140:ILE:HG13	3:K:684:TYR:CE1	2.52	0.45
3:J:355:GLN:HA	3:J:357:TYR:CE1	2.52	0.45
3:J:580:GLY:HA2	3:L:144:VAL:HG23	1.98	0.45
3:K:441:LYS:O	3:K:441:LYS:HG3	2.16	0.45
3:L:271:GLN:HG2	3:L:530:ILE:CD1	2.46	0.45
1:C:79:PHE:HB3	1:C:84:PHE:CD2	2.52	0.45
2:H:126:LEU:CB	2:H:171:ILE:HD11	2.46	0.45
3:J:101:ASP:CG	3:J:102:ARG:H	2.24	0.45
3:J:271:GLN:HG3	3:J:272:LYS:N	2.30	0.45
3:J:603:PRO:HG3	3:J:607:TRP:CZ3	2.51	0.45
3:L:6:ASP:OD1	3:L:7:SER:N	2.49	0.45
1:A:92:PHE:CD1	1:A:290:GLU:HG2	2.52	0.45
1:B:196:ARG:HD2	2:E:56:GLU:O	2.16	0.45
2:F:106:GLY:HA3	3:J:114:GLU:HG3	1.99	0.45
2:F:128:LYS:HE2	2:F:171:ILE:HG22	1.97	0.45
3:K:180:GLY:HA2	3:L:615:TYR:CD1	2.51	0.45
3:K:395:GLN:O	3:K:399:GLY:N	2.39	0.45
3:L:110:ILE:HD11	3:L:666:TYR:HE2	1.81	0.45
2:I:158:ILE:HG12	2:I:159:THR:O	2.17	0.45
3:K:46:ARG:O	3:K:57:SER:OG	2.34	0.45
3:K:317:PHE:O	3:K:321:ASP:HB2	2.16	0.45
3:K:494:LEU:HD21	3:K:563:VAL:HG11	1.98	0.45
3:K:566:TYR:HB2	3:K:716:PHE:CD2	2.51	0.45
3:L:412:LEU:HA	3:L:412:LEU:HD23	1.77	0.45
3:L:560:ARG:HE	3:L:672:GLU:CD	2.23	0.45
3:L:586:ASP:OD1	3:L:658:ARG:HG2	2.17	0.45
3:L:771:VAL:HG13	3:L:789:GLN:NE2	2.31	0.45
2:H:90:ARG:NH2	2:H:125:ASP:OD1	2.36	0.45
3:J:268:TYR:HA	3:J:439:GLY:HA2	1.97	0.45
3:K:277:PRO:HG3	3:K:294:TYR:HE1	1.82	0.45
3:L:294:TYR:CE2	3:L:433:ILE:HD12	2.50	0.45
1:A:93:LEU:HD13	1:A:220:ALA:HB2	1.98	0.45
1:B:65:LEU:HD23	1:B:67:ILE:HD11	1.98	0.45
1:C:196:ARG:HD2	2:F:56:GLU:O	2.17	0.45
1:C:201:ILE:HG23	2:G:187:LEU:HD22	1.99	0.45
2:F:36:GLY:HA3	2:G:204:LEU:HD11	1.99	0.45
2:G:22:LEU:HD23	2:G:50:ILE:HG12	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:136:TYR:CG	2:H:152:LEU:HD13	2.52	0.45
2:H:175:THR:OG1	2:H:200:LEU:HD23	2.17	0.45
3:J:592:LYS:HG3	3:L:100:LEU:HD21	1.98	0.45
1:A:252:ASN:C	1:A:254:TYR:H	2.24	0.45
1:C:57:ALA:HB2	1:C:208:TYR:HB3	1.99	0.45
2:I:134:LYS:HD3	2:I:204:LEU:HD22	1.99	0.45
3:K:586:ASP:OD1	3:K:658:ARG:HG2	2.17	0.45
3:K:600:LEU:O	3:K:609:THR:HA	2.17	0.45
3:L:588:THR:OG1	3:L:592:LYS:HD2	2.17	0.45
1:B:63:ILE:HD11	1:B:119:PHE:CZ	2.52	0.45
3:J:69:ASN:HB3	3:J:695:GLU:HG2	1.98	0.45
3:J:304:PHE:HB3	3:J:307:PHE:HE1	1.82	0.45
3:J:553:ASN:OD1	3:J:553:ASN:O	2.35	0.45
3:K:140:ILE:CD1	3:K:154:ILE:HG12	2.47	0.45
3:K:655:ARG:O	3:K:655:ARG:HD3	2.17	0.45
3:K:714:ASP:O	3:K:717:ILE:HG22	2.17	0.45
3:L:118:LEU:HA	3:L:125:ASP:O	2.17	0.45
3:L:230:LYS:HD3	3:L:265:PRO:HG3	1.98	0.45
3:L:501:TYR:HB2	3:L:505:TRP:HE1	1.83	0.45
1:C:19:GLY:HA3	1:C:154:ARG:NH2	2.32	0.44
2:G:1:MET:HB3	2:G:1:MET:HE2	1.69	0.44
2:G:158:ILE:HG12	2:G:159:THR:O	2.17	0.44
2:I:2:ARG:HD3	2:I:172:LEU:HD21	1.99	0.44
3:J:271:GLN:HG2	3:J:530:ILE:HD11	1.98	0.44
3:J:578:THR:O	3:J:579:TYR:CD1	2.70	0.44
3:K:672:GLU:O	3:K:674:ASN:N	2.50	0.44
3:L:578:THR:O	3:L:579:TYR:CD1	2.70	0.44
2:D:26:ASP:OD1	2:D:46:GLN:HG3	2.17	0.44
2:D:117:LEU:HD12	2:D:148:TRP:HZ2	1.81	0.44
2:E:126:LEU:HD23	2:E:137:LYS:HG2	1.99	0.44
2:F:158:ILE:HG12	2:F:159:THR:O	2.17	0.44
3:J:24:ILE:HD11	3:J:63:ILE:HD11	1.99	0.44
3:J:28:LEU:HD11	3:J:39:ILE:HG12	1.98	0.44
3:J:183:VAL:HG12	3:J:183:VAL:O	2.17	0.44
3:J:256:ASP:OD2	3:K:608:LYS:HE3	2.17	0.44
3:L:54:LEU:HD23	3:L:54:LEU:H	1.83	0.44
3:L:694:ASP:OD2	3:L:709:GLN:HB2	2.17	0.44
1:B:93:LEU:HD13	1:B:220:ALA:HB2	1.98	0.44
2:G:12:TYR:HB3	2:G:61:GLU:HG2	1.99	0.44
2:G:90:ARG:O	2:G:92:ARG:N	2.51	0.44
2:H:3:LEU:HD21	2:H:54:TYR:OH	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:90:ARG:HH21	2:I:125:ASP:CG	2.25	0.44
2:I:92:ARG:HG3	2:I:92:ARG:HH11	1.82	0.44
3:J:288:ASN:OD1	3:J:289:ILE:N	2.51	0.44
3:K:109:ALA:HB1	3:K:116:ASN:OD1	2.17	0.44
3:L:355:GLN:HA	3:L:357:TYR:CE1	2.52	0.44
1:B:196:ARG:NH1	2:E:61:GLU:OE1	2.50	0.44
2:G:38:VAL:HG23	2:I:201:ARG:NH1	2.32	0.44
2:H:203:SER:OG	2:I:38:VAL:HG22	2.17	0.44
3:K:59:LYS:HB3	3:K:81:ILE:HG23	1.98	0.44
3:K:144:VAL:HG23	3:L:580:GLY:HA2	1.99	0.44
3:K:196:ARG:HG2	3:K:199:TYR:HD2	1.83	0.44
3:K:271:GLN:HG3	3:K:272:LYS:N	2.33	0.44
3:K:421:PHE:CZ	3:K:430:ILE:HG23	2.52	0.44
3:L:304:PHE:CZ	3:L:415:ALA:HB1	2.53	0.44
2:I:27:PRO:HD2	2:I:45:ALA:O	2.18	0.44
3:J:740:ARG:HD3	3:J:767:LEU:HD21	2.00	0.44
3:K:1:MET:SD	3:K:571:LEU:HD11	2.58	0.44
3:K:362:GLY:HA3	3:K:826:PRO:HG2	1.99	0.44
3:L:196:ARG:HD3	3:L:199:TYR:CE1	2.53	0.44
2:D:127:PHE:N	2:D:136:TYR:O	2.35	0.44
2:F:60:ASP:OD1	2:F:61:GLU:N	2.50	0.44
2:F:90:ARG:O	2:F:92:ARG:N	2.50	0.44
2:F:113:THR:HG21	2:F:117:LEU:HD12	2.00	0.44
3:J:595:SER:HB3	3:J:614:PHE:O	2.18	0.44
3:K:66:HIS:NE2	3:K:554:ASN:O	2.48	0.44
3:K:687:LYS:O	3:K:688:ASP:C	2.61	0.44
3:L:120:VAL:CG1	3:L:123:ASP:HB3	2.47	0.44
3:L:600:LEU:HD21	3:L:643:ALA:HB3	1.98	0.44
1:B:40:LEU:HD12	1:B:51:ALA:HB2	1.99	0.44
1:C:243:GLU:OE1	1:C:246:THR:HG21	2.18	0.44
1:C:272:ASP:O	1:C:273:LEU:HB2	2.18	0.44
2:D:43:ILE:HG22	2:D:44:SER:N	2.31	0.44
2:H:3:LEU:HD12	2:H:79:LEU:HD13	1.98	0.44
3:J:92:LEU:HD21	3:J:139:GLY:HA2	2.00	0.44
3:J:309:ILE:HD13	3:J:359:TYR:HE2	1.81	0.44
3:J:494:LEU:HD11	3:J:563:VAL:HG21	1.99	0.44
3:K:592:LYS:HB2	3:K:592:LYS:HE3	1.75	0.44
3:L:325:ARG:HD3	3:L:735:ASN:ND2	2.33	0.44
1:A:13:ILE:HD11	1:A:107:MET:HE2	1.99	0.44
1:A:14:GLU:O	1:A:105:PHE:HB2	2.18	0.44
1:C:95:ARG:NH1	1:C:286:SER:O	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:300:GLU:H	3:J:373:GLY:CA	2.30	0.44
3:J:381:GLN:O	3:J:385:ASP:HB2	2.17	0.44
3:K:266:VAL:HG21	3:K:473:TYR:CD2	2.53	0.44
3:L:10:ASN:O	3:L:14:THR:HG23	2.18	0.44
3:L:829:LEU:HB3	3:L:831:VAL:HG13	2.00	0.44
1:A:49:ASN:HD21	1:B:218:MET:HE2	1.83	0.44
2:F:139:THR:OG1	2:G:71:GLU:HB2	2.18	0.44
2:I:9:ASN:HB2	2:I:11:GLU:OE1	2.18	0.44
3:J:26:LEU:HD12	3:J:104:ILE:HG12	2.00	0.44
3:J:693:VAL:HA	3:J:708:LEU:HD23	1.99	0.44
3:K:332:LYS:HG2	3:K:507:PRO:HB3	1.99	0.44
3:K:514:TRP:HZ3	3:K:526:GLN:HE22	1.65	0.44
3:K:679:PHE:CE2	3:K:681:TYR:HB2	2.53	0.44
3:L:271:GLN:HG3	3:L:272:LYS:N	2.33	0.44
1:A:43:THR:HG1	1:A:46:ASN:H	1.60	0.43
2:D:121:PRO:HD2	2:D:141:PHE:CE1	2.53	0.43
2:I:90:ARG:O	2:I:92:ARG:N	2.51	0.43
3:J:1:MET:SD	3:J:571:LEU:HD11	2.58	0.43
3:J:173:THR:OG1	3:J:262:LYS:HB3	2.18	0.43
3:J:357:TYR:HB3	3:J:358:LYS:H	1.64	0.43
3:K:195:LYS:O	3:K:199:TYR:HD2	2.00	0.43
3:K:219:GLN:O	3:K:224:ARG:NH2	2.51	0.43
3:L:172:TYR:HA	3:L:263:PHE:HA	2.00	0.43
3:L:771:VAL:HG13	3:L:789:GLN:HE22	1.83	0.43
1:B:45:HIS:NE2	2:D:5:ASP:OD2	2.51	0.43
1:B:243:GLU:OE1	1:B:246:THR:HG21	2.18	0.43
2:D:117:LEU:HD12	2:D:148:TRP:CZ2	2.53	0.43
2:I:109:ILE:HD13	2:I:129:LEU:HD21	2.00	0.43
3:J:290:VAL:HG21	3:J:430:ILE:HD11	1.99	0.43
3:K:439:GLY:HA3	3:K:457:SER:CB	2.48	0.43
3:K:817:VAL:HG22	3:K:823:ARG:HG2	1.99	0.43
3:L:24:ILE:HD11	3:L:63:ILE:HD11	1.99	0.43
3:L:593:PHE:HD1	3:L:628:LYS:HG2	1.82	0.43
1:A:196:ARG:HD2	2:I:56:GLU:O	2.17	0.43
1:C:192:GLN:N	1:C:217:GLU:O	2.50	0.43
2:F:80:ASP:HB3	2:F:172:LEU:HD23	1.99	0.43
2:G:139:THR:HG21	2:I:74:ARG:HD3	1.99	0.43
3:K:760:GLU:CD	3:K:802:ILE:HD11	2.44	0.43
3:L:27:GLU:HG2	3:L:102:ARG:HG2	1.99	0.43
3:L:762:SER:HA	3:L:797:ARG:HE	1.83	0.43
1:A:201:ILE:HD12	2:I:17:PHE:HB2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:21:HIS:HB2	1:B:158:THR:HG21	2.01	0.43
1:B:119:PHE:HB3	1:B:144:SER:HB2	2.01	0.43
1:B:253:LYS:O	1:B:253:LYS:HG2	2.18	0.43
1:B:263:ARG:HH22	1:B:281:ILE:HD12	1.83	0.43
2:E:54:TYR:HB2	2:E:196:ILE:O	2.17	0.43
2:G:3:LEU:HD12	2:G:79:LEU:HD13	2.00	0.43
3:J:160:ASN:OD1	3:J:161:GLN:N	2.48	0.43
3:J:483:PRO:HD3	3:J:558:GLU:HB3	1.99	0.43
3:K:68:GLN:NE2	3:K:553:ASN:HA	2.33	0.43
3:K:525:VAL:HG11	3:K:548:PHE:HB2	2.00	0.43
3:L:230:LYS:NZ	3:L:261:ALA:O	2.48	0.43
3:L:620:LYS:NZ	3:L:627:ASP:OD1	2.45	0.43
2:D:2:ARG:HA	2:D:80:ASP:O	2.17	0.43
2:D:9:ASN:HB2	2:D:11:GLU:OE1	2.18	0.43
2:D:35:ASN:ND2	2:D:37:LYS:HG3	2.33	0.43
2:D:127:PHE:CE1	2:D:166:PRO:HB3	2.53	0.43
2:H:30:ARG:HG2	2:H:40:GLU:HG2	2.01	0.43
3:K:113:GLU:HB3	3:K:114:GLU:OE1	2.18	0.43
3:L:120:VAL:HG13	3:L:120:VAL:O	2.19	0.43
3:L:492:LYS:HE2	3:L:492:LYS:HB2	1.87	0.43
3:L:563:VAL:HG22	3:L:564:GLU:N	2.33	0.43
1:A:222:ALA:HB3	1:A:280:VAL:HB	2.01	0.43
1:B:11:ILE:HD11	1:B:28:TYR:CG	2.53	0.43
1:B:183:ILE:HD11	1:B:227:TYR:CD1	2.54	0.43
2:D:83:LEU:HD23	2:D:83:LEU:HA	1.85	0.43
2:I:60:ASP:OD1	2:I:61:GLU:N	2.51	0.43
3:J:196:ARG:HE	3:J:198:GLU:HB2	1.84	0.43
3:K:172:TYR:HA	3:K:263:PHE:HA	1.99	0.43
3:K:761:LEU:HB3	3:K:799:ILE:HA	1.99	0.43
3:K:786:ILE:HD11	3:L:790:LEU:HD11	2.01	0.43
3:L:109:ALA:HB1	3:L:116:ASN:OD1	2.19	0.43
3:L:332:LYS:O	3:L:333:ILE:HB	2.18	0.43
1:B:123:TYR:CE1	1:B:193:CYS:HB2	2.54	0.43
2:D:187:LEU:HD23	2:D:188:ASN:O	2.19	0.43
2:G:17:PHE:HD1	2:G:54:TYR:HE1	1.67	0.43
2:H:98:VAL:HG22	2:H:113:THR:HG22	2.00	0.43
3:J:89:VAL:HG23	3:J:140:ILE:HD11	2.01	0.43
3:J:195:LYS:HD3	3:J:472:ARG:HA	2.01	0.43
3:K:160:ASN:OD1	3:K:161:GLN:N	2.47	0.43
3:L:421:PHE:CZ	3:L:430:ILE:HG23	2.53	0.43
1:A:124:VAL:O	1:A:191:GLN:NE2	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:263:ARG:NH1	1:A:279:ASP:OD2	2.50	0.43
1:B:2:PHE:HD2	1:C:231:ARG:HG2	1.83	0.43
2:D:50:ILE:HG22	2:D:52:ILE:HG13	1.99	0.43
3:J:699:THR:HG22	3:J:701:ASP:H	1.84	0.43
3:J:717:ILE:O	3:J:718:ASN:OD1	2.37	0.43
3:J:761:LEU:C	3:J:763:TRP:H	2.26	0.43
3:K:79:PHE:CE1	3:K:106:ILE:HD11	2.53	0.43
3:K:592:LYS:HD3	3:K:655:ARG:HD3	1.99	0.43
3:L:21:ALA:HB2	3:L:44:TYR:CD1	2.53	0.43
3:L:288:ASN:OD1	3:L:289:ILE:N	2.50	0.43
3:L:465:MET:CE	3:L:487:VAL:HG11	2.49	0.43
1:A:233:VAL:HG12	1:A:237:PHE:HA	2.01	0.43
1:C:211:LYS:HB2	1:C:211:LYS:HE2	1.79	0.43
1:C:252:ASN:C	1:C:254:TYR:H	2.27	0.43
2:E:70:LEU:HD13	2:H:153:TYR:HB2	2.01	0.43
2:G:52:ILE:N	2:G:198:LEU:O	2.51	0.43
2:H:90:ARG:HH21	2:H:125:ASP:CG	2.23	0.43
3:J:3:LYS:O	3:J:4:ILE:HB	2.18	0.43
3:J:602:ASP:HB3	3:J:605:LEU:HD13	2.00	0.43
3:J:687:LYS:O	3:J:688:ASP:C	2.61	0.43
3:L:118:LEU:N	3:L:119:PRO:HD3	2.34	0.43
3:L:336:ASP:HA	3:L:347:THR:O	2.19	0.43
3:L:594:ASN:O	3:L:651:LEU:HD11	2.19	0.43
1:A:183:ILE:HD11	1:A:227:TYR:CE1	2.54	0.43
1:B:192:GLN:N	1:B:217:GLU:O	2.52	0.43
1:C:63:ILE:HG23	1:C:142:ILE:HB	2.01	0.43
1:C:102:PRO:HB3	1:C:191:GLN:NE2	2.34	0.43
2:E:79:LEU:N	2:E:175:THR:O	2.52	0.43
2:G:134:LYS:NZ	2:G:154:PRO:HB3	2.34	0.43
3:J:185:ASN:OD1	3:J:186:GLY:N	2.52	0.43
3:J:779:SER:HG	3:J:811:ILE:H	1.65	0.43
3:K:742:PHE:CZ	3:K:814:LEU:HD11	2.54	0.43
3:L:687:LYS:O	3:L:688:ASP:C	2.61	0.43
1:B:201:ILE:HD13	2:E:17:PHE:HB2	2.00	0.42
1:C:41:ARG:HH12	2:G:61:GLU:CD	2.26	0.42
2:D:21:ASN:HB3	2:D:51:ASN:HB2	2.01	0.42
2:E:2:ARG:O	2:E:68:ARG:NH1	2.52	0.42
2:F:94:ASP:OD1	2:F:95:THR:N	2.52	0.42
3:J:789:GLN:OE1	3:J:798:MET:HE2	2.19	0.42
3:K:486:LYS:HE3	3:K:560:ARG:HH22	1.83	0.42
3:K:516:ASP:HA	3:K:517:PRO:HD2	1.65	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:298:GLU:HB3	3:L:472:ARG:NH2	2.34	0.42
3:L:426:ASN:HA	3:L:823:ARG:HD3	2.00	0.42
2:E:11:GLU:H	2:E:11:GLU:CD	2.27	0.42
2:E:112:ASN:HA	2:E:147:VAL:HA	2.01	0.42
2:F:90:ARG:HH21	2:F:125:ASP:CG	2.28	0.42
3:J:11:TYR:CG	3:J:117:ILE:HD13	2.54	0.42
3:J:240:TYR:HB3	3:J:245:TYR:HB2	2.01	0.42
3:J:458:LEU:HD23	3:J:458:LEU:HA	1.85	0.42
3:J:509:TRP:CZ3	3:J:517:PRO:HD3	2.54	0.42
3:J:628:LYS:NZ	3:L:164:ASP:OD2	2.53	0.42
3:J:675:ASP:HA	3:J:676:PRO:HD3	1.88	0.42
2:E:15:LEU:O	2:E:54:TYR:HE1	2.02	0.42
2:E:60:ASP:OD1	2:E:61:GLU:N	2.49	0.42
2:F:21:ASN:OD1	2:G:185:SER:N	2.52	0.42
2:H:75:THR:HG22	2:H:76:GLY:H	1.84	0.42
2:I:109:ILE:HD12	2:I:127:PHE:HE2	1.85	0.42
3:J:10:ASN:O	3:J:14:THR:HG23	2.19	0.42
3:J:532:ASP:OD1	3:J:532:ASP:N	2.53	0.42
3:J:554:ASN:HA	3:J:558:GLU:O	2.19	0.42
3:K:279:PHE:HB3	3:K:293:VAL:HB	2.01	0.42
3:L:106:ILE:O	3:L:130:PHE:N	2.51	0.42
3:L:676:PRO:HB3	3:L:690:PHE:CE1	2.54	0.42
3:L:690:PHE:HD2	3:L:711:TYR:O	2.02	0.42
2:E:92:ARG:HG3	2:E:93:GLY:N	2.35	0.42
2:E:127:PHE:CE1	2:E:166:PRO:HB3	2.53	0.42
2:E:136:TYR:CD1	2:E:154:PRO:HB2	2.53	0.42
3:J:100:LEU:HD22	3:K:623:ASP:OD2	2.19	0.42
3:J:600:LEU:O	3:J:609:THR:HA	2.19	0.42
3:K:583:ASP:HB2	3:K:661:SER:HB2	2.02	0.42
1:A:264:ILE:HG12	1:A:280:VAL:HG22	2.01	0.42
1:B:229:VAL:HG23	1:B:229:VAL:O	2.19	0.42
2:F:85:GLN:OE1	2:G:193:TYR:OH	2.32	0.42
2:G:127:PHE:HE1	2:G:166:PRO:HB3	1.84	0.42
3:J:72:LEU:HD12	3:J:72:LEU:O	2.19	0.42
3:J:588:THR:O	3:J:592:LYS:HG2	2.20	0.42
3:L:230:LYS:HE2	3:L:276:ILE:HD11	2.00	0.42
3:L:772:VAL:HG13	3:L:773:TYR:CD1	2.55	0.42
1:A:243:GLU:OE2	1:A:246:THR:HG21	2.19	0.42
1:B:14:GLU:OE2	1:B:154:ARG:NE	2.38	0.42
1:C:65:LEU:HB2	1:C:140:VAL:HG13	2.01	0.42
2:G:3:LEU:HD21	2:G:54:TYR:OH	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:23:VAL:N	2:H:49:GLY:O	2.46	0.42
3:J:502:GLN:H	3:J:505:TRP:NE1	2.17	0.42
3:K:284:LEU:C	3:K:286:ASN:H	2.26	0.42
3:K:740:ARG:NH2	3:K:764:LEU:HD13	2.34	0.42
3:L:395:GLN:NE2	3:L:404:TYR:HB3	2.34	0.42
3:L:740:ARG:HD3	3:L:767:LEU:HD21	2.00	0.42
1:A:202:PHE:CE2	2:I:6:PRO:HD2	2.55	0.42
2:G:122:LYS:HE2	2:G:122:LYS:HB2	1.84	0.42
2:H:91:VAL:HG22	2:H:121:PRO:HG3	2.02	0.42
3:J:136:THR:HG21	3:J:163:TYR:CD2	2.55	0.42
3:J:230:LYS:NZ	3:J:261:ALA:HA	2.34	0.42
3:K:294:TYR:O	3:K:416:TYR:HA	2.19	0.42
3:K:509:TRP:HB2	3:K:514:TRP:HE1	1.84	0.42
3:L:123:ASP:O	3:L:124:THR:C	2.62	0.42
3:L:763:TRP:HZ2	3:L:787:VAL:HG11	1.83	0.42
1:A:11:ILE:HD11	1:A:28:TYR:CG	2.55	0.42
1:B:61:SER:OG	1:B:144:SER:OG	2.34	0.42
2:F:44:SER:O	3:J:45:PHE:HB3	2.20	0.42
2:G:2:ARG:H	2:G:80:ASP:HB2	1.83	0.42
2:G:91:VAL:HG22	2:G:121:PRO:HG3	2.02	0.42
3:J:2:LYS:NZ	3:J:120:VAL:HG13	2.35	0.42
3:J:6:ASP:OD1	3:J:7:SER:N	2.53	0.42
3:J:531:LEU:HD11	3:J:544:ILE:HD11	2.01	0.42
3:K:822:ARG:O	3:K:823:ARG:HB2	2.19	0.42
3:L:281:ASP:OD2	3:L:392:PHE:HB3	2.19	0.42
3:L:587:THR:OG1	3:L:591:ASN:OD1	2.24	0.42
2:G:104:GLN:HE22	2:G:110:ILE:HB	1.85	0.42
2:G:175:THR:OG1	2:G:200:LEU:HD23	2.20	0.42
3:J:742:PHE:CE2	3:J:814:LEU:HD13	2.55	0.42
3:J:765:PRO:HG2	3:J:793:ASN:O	2.20	0.42
3:J:817:VAL:HG22	3:J:823:ARG:HE	1.85	0.42
3:K:106:ILE:O	3:K:130:PHE:N	2.49	0.42
3:K:184:VAL:O	3:K:185:ASN:OD1	2.38	0.42
2:F:11:GLU:H	2:F:11:GLU:CD	2.27	0.42
2:I:19:SER:OG	2:I:53:SER:OG	2.34	0.42
2:I:177:LEU:HD23	2:I:200:LEU:HD21	2.02	0.42
3:K:273:ILE:HD11	3:K:437:VAL:HG21	2.02	0.42
3:K:318:ASP:OD1	3:K:332:LYS:HD3	2.19	0.42
3:K:458:LEU:HD23	3:K:458:LEU:HA	1.73	0.42
3:K:532:ASP:OD1	3:K:532:ASP:N	2.51	0.42
1:B:168:SER:OG	1:B:252:ASN:O	2.38	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:68:ASN:HB3	1:C:164:VAL:HG13	2.01	0.41
2:D:91:VAL:HG22	2:D:121:PRO:HG3	2.01	0.41
2:E:176:LYS:HG3	2:E:203:SER:CB	2.49	0.41
2:H:110:ILE:HG12	2:H:149:ASN:HB3	2.01	0.41
3:J:433:ILE:HD12	3:J:433:ILE:H	1.85	0.41
3:K:59:LYS:HD3	3:K:88:GLU:HG3	2.01	0.41
3:K:411:LEU:HD12	3:K:416:TYR:CG	2.55	0.41
2:E:127:PHE:N	2:E:136:TYR:O	2.36	0.41
2:F:38:VAL:HG22	2:G:203:SER:OG	2.19	0.41
2:G:164:GLU:HA	2:G:164:GLU:OE2	2.19	0.41
3:K:394:LEU:HA	3:K:397:GLN:HB3	2.02	0.41
3:L:305:LEU:O	3:L:436:GLU:HB2	2.20	0.41
3:L:520:GLU:OE1	3:L:522:ARG:N	2.51	0.41
1:B:79:PHE:HB3	1:B:84:PHE:CD2	2.55	0.41
2:D:27:PRO:HD2	2:D:45:ALA:O	2.21	0.41
2:D:113:THR:HG21	2:D:117:LEU:HG	2.02	0.41
2:H:156:LEU:HD23	2:H:156:LEU:HA	1.93	0.41
3:K:340:ARG:HG3	3:K:346:SER:HA	2.02	0.41
3:K:371:PHE:HZ	3:K:380:ALA:HB2	1.83	0.41
3:L:796:GLU:HG3	3:L:797:ARG:N	2.35	0.41
1:B:102:PRO:HB3	1:B:191:GLN:HE22	1.85	0.41
2:F:126:LEU:CB	2:F:171:ILE:HD11	2.49	0.41
2:H:66:ASP:O	2:H:70:LEU:HG	2.20	0.41
3:J:81:ILE:HG21	3:J:88:GLU:HG3	2.03	0.41
3:J:120:VAL:HG12	3:J:123:ASP:HB3	2.03	0.41
3:J:180:GLY:HA2	3:K:615:TYR:CD1	2.55	0.41
3:K:69:ASN:HB3	3:K:695:GLU:CG	2.50	0.41
3:K:72:LEU:HD12	3:K:72:LEU:O	2.20	0.41
3:K:203:TYR:HB3	3:K:408:ARG:HG2	2.02	0.41
3:K:660:LEU:HD21	3:K:686:TRP:HZ3	1.84	0.41
3:K:778:HIS:HB2	3:K:781:HIS:HB2	2.03	0.41
3:L:242:LEU:HD23	3:L:242:LEU:HA	1.92	0.41
1:A:122:CYS:SG	1:A:144:SER:HB2	2.61	0.41
2:D:2:ARG:NH1	2:D:8:THR:HG1	2.15	0.41
2:D:80:ASP:HB3	2:D:172:LEU:HB3	2.02	0.41
2:I:134:LYS:HG2	2:I:135:VAL:N	2.36	0.41
3:J:317:PHE:O	3:J:321:ASP:HB2	2.20	0.41
3:J:740:ARG:NH2	3:J:764:LEU:HD13	2.35	0.41
3:K:447:SER:O	3:K:448:ASP:HB2	2.20	0.41
3:L:532:ASP:N	3:L:532:ASP:OD1	2.52	0.41
3:L:640:TYR:OH	3:L:644:ARG:NH1	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:66:ASP:O	2:G:67:SER:C	2.61	0.41
2:H:100:ILE:HG22	2:H:160:THR:HG21	2.03	0.41
3:J:182:GLU:HG3	3:K:615:TYR:O	2.20	0.41
3:J:486:LYS:CE	3:J:560:ARG:HH22	2.32	0.41
3:K:189:GLN:NE2	3:L:722:VAL:HB	2.36	0.41
3:K:271:GLN:HG2	3:K:530:ILE:CD1	2.49	0.41
3:K:516:ASP:O	3:K:517:PRO:C	2.63	0.41
3:K:596:VAL:HG12	3:K:614:PHE:HB2	2.03	0.41
3:L:263:PHE:HB2	3:L:534:SER:HB3	2.02	0.41
1:B:224:LEU:HB3	1:B:226:PHE:CE1	2.56	0.41
1:C:108:TYR:HB3	1:C:110:ILE:HG23	2.01	0.41
1:C:229:VAL:HG23	1:C:229:VAL:O	2.20	0.41
2:I:201:ARG:HD3	2:I:202:GLU:O	2.21	0.41
3:J:660:LEU:HD21	3:J:686:TRP:HZ3	1.86	0.41
3:K:178:HIS:NE2	3:K:199:TYR:HD1	2.18	0.41
3:K:195:LYS:HG2	3:L:627:ASP:OD2	2.20	0.41
3:K:336:ASP:HA	3:K:347:THR:O	2.21	0.41
3:L:279:PHE:HD2	3:L:293:VAL:HG23	1.85	0.41
3:L:813:GLU:OE1	3:L:815:ARG:NH2	2.54	0.41
1:B:84:PHE:HA	1:B:94:PRO:HD3	2.03	0.41
1:B:291:ILE:O	1:B:291:ILE:HG23	2.21	0.41
1:B:293:PHE:HB3	1:B:294:PHE:H	1.68	0.41
2:D:79:LEU:O	2:D:175:THR:N	2.52	0.41
2:D:156:LEU:HD23	2:D:156:LEU:HA	1.91	0.41
2:F:85:GLN:HG2	2:G:187:LEU:CD1	2.51	0.41
3:J:196:ARG:HA	3:J:197:PRO:HD3	1.98	0.41
3:K:379:ALA:HB2	3:K:409:TYR:O	2.21	0.41
3:L:290:VAL:HG21	3:L:430:ILE:HD11	2.02	0.41
3:L:579:TYR:HE2	3:L:703:LYS:HE3	1.85	0.41
1:C:14:GLU:OE2	1:C:154:ARG:NE	2.41	0.41
2:D:187:LEU:HB2	2:D:193:TYR:CE1	2.54	0.41
2:F:2:ARG:O	2:F:68:ARG:NH1	2.54	0.41
2:G:23:VAL:N	2:G:49:GLY:O	2.40	0.41
2:G:25:ASN:HA	2:I:181:ASP:O	2.21	0.41
2:G:83:LEU:HD13	2:G:85:GLN:HE21	1.86	0.41
3:J:62:SER:N	3:J:80:THR:OG1	2.53	0.41
3:J:355:GLN:HA	3:J:357:TYR:HE1	1.86	0.41
3:J:499:GLU:HA	3:J:522:ARG:NH1	2.35	0.41
3:J:575:PHE:HE1	3:J:582:LEU:HB2	1.85	0.41
3:J:684:TYR:HE1	3:L:140:ILE:HG13	1.86	0.41
3:K:320:THR:HB	3:K:732:ILE:HG21	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:544:ILE:HG22	3:K:548:PHE:CE2	2.56	0.41
3:K:789:GLN:NE2	3:K:789:GLN:HA	2.36	0.41
3:L:18:LEU:HD23	3:L:18:LEU:H	1.86	0.41
3:L:268:TYR:HA	3:L:439:GLY:HA2	2.02	0.41
3:L:596:VAL:HG12	3:L:614:PHE:HB2	2.03	0.41
1:A:108:TYR:HB3	1:A:110:ILE:HG23	2.02	0.41
1:B:40:LEU:HD23	1:B:42:ARG:HG3	2.03	0.41
2:D:80:ASP:HB3	2:D:172:LEU:HD23	2.03	0.41
2:F:22:LEU:HD23	2:F:50:ILE:HG12	2.03	0.41
2:F:177:LEU:HD23	2:F:200:LEU:HD21	2.03	0.41
2:I:11:GLU:H	2:I:11:GLU:CD	2.28	0.41
3:J:118:LEU:HG	3:J:125:ASP:O	2.21	0.41
3:K:759:GLY:O	3:K:760:GLU:HB2	2.20	0.41
3:L:46:ARG:O	3:L:57:SER:OG	2.39	0.41
3:L:172:TYR:HE2	3:L:174:ASP:HB2	1.86	0.41
3:L:233:LEU:HA	3:L:249:VAL:HG11	2.03	0.41
3:L:235:GLY:N	3:L:635:ALA:HB2	2.35	0.41
1:A:40:LEU:HD23	1:A:42:ARG:HG2	2.03	0.40
1:B:19:GLY:HA3	1:B:154:ARG:NH2	2.35	0.40
2:D:23:VAL:N	2:D:49:GLY:O	2.48	0.40
2:H:22:LEU:HD23	2:H:50:ILE:HG12	2.02	0.40
2:I:77:ASP:OD1	2:I:77:ASP:C	2.64	0.40
3:J:316:CYS:SG	3:J:330:ARG:HD3	2.62	0.40
3:K:594:ASN:O	3:K:651:LEU:HD11	2.20	0.40
3:K:699:THR:HG22	3:K:701:ASP:H	1.87	0.40
3:L:113:GLU:H	3:L:113:GLU:HG2	1.76	0.40
3:L:291:TYR:CE1	3:L:420:ARG:HB2	2.56	0.40
3:L:731:ASP:OD2	3:L:734:ASN:ND2	2.54	0.40
1:C:119:PHE:HB3	1:C:144:SER:HB2	2.03	0.40
1:C:291:ILE:HG23	1:C:291:ILE:O	2.21	0.40
2:G:56:GLU:HG2	2:G:194:SER:HB3	2.02	0.40
2:G:75:THR:HG22	2:G:76:GLY:N	2.36	0.40
2:H:201:ARG:HD3	2:I:38:VAL:HG11	2.03	0.40
3:J:298:GLU:CG	3:J:299:GLY:H	2.35	0.40
3:J:652:LYS:NZ	3:J:714:ASP:O	2.39	0.40
3:J:761:LEU:O	3:J:763:TRP:N	2.54	0.40
3:K:425:GLU:HG3	3:L:790:LEU:O	2.21	0.40
3:K:486:LYS:HG2	3:K:560:ARG:CZ	2.52	0.40
3:K:579:TYR:HE2	3:K:703:LYS:HE3	1.86	0.40
1:A:211:LYS:HE2	1:A:211:LYS:HB2	1.83	0.40
1:A:229:VAL:HG23	1:A:229:VAL:O	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:158:ILE:HG12	2:E:159:THR:O	2.21	0.40
3:J:294:TYR:HE2	3:J:433:ILE:HD13	1.86	0.40
3:J:304:PHE:CE1	3:J:415:ALA:HB1	2.56	0.40
3:J:588:THR:HG21	3:L:99:PHE:CZ	2.57	0.40
3:K:101:ASP:CG	3:K:102:ARG:H	2.29	0.40
3:K:139:GLY:HA3	3:L:584:LEU:HD23	2.02	0.40
3:K:227:LEU:HD12	3:K:255:LEU:HD12	2.03	0.40
3:K:469:THR:HG21	3:K:479:LEU:HD13	2.04	0.40
3:L:651:LEU:O	3:L:654:SER:OG	2.35	0.40
1:A:123:TYR:CE1	1:A:193:CYS:HB2	2.56	0.40
2:D:153:TYR:HB3	2:D:154:PRO:HD3	2.03	0.40
2:F:136:TYR:CE1	2:F:154:PRO:HB2	2.57	0.40
2:F:136:TYR:CG	2:F:152:LEU:HD13	2.57	0.40
2:H:12:TYR:HB3	2:H:61:GLU:HG2	2.02	0.40
2:I:122:LYS:HE2	2:I:122:LYS:HB2	1.93	0.40
3:J:184:VAL:CG2	3:J:190:PRO:HG2	2.52	0.40
3:J:619:PHE:HB3	3:J:655:ARG:NH2	2.36	0.40
3:K:81:ILE:HD12	3:K:156:TRP:HD1	1.86	0.40
3:K:392:PHE:HB2	3:K:395:GLN:CD	2.45	0.40
3:L:579:TYR:HD2	3:L:663:SER:HB2	1.86	0.40
2:H:80:ASP:HB3	2:H:172:LEU:HD23	2.04	0.40
2:H:134:LYS:HZ1	2:H:154:PRO:HB3	1.86	0.40
3:J:25:ALA:HB3	3:J:105:THR:HB	2.04	0.40
3:J:320:THR:O	3:J:324:THR:HG23	2.22	0.40
3:J:563:VAL:HG22	3:J:564:GLU:N	2.36	0.40
3:J:690:PHE:HE1	3:J:692:LEU:HG	1.87	0.40
3:K:18:LEU:H	3:K:18:LEU:HD23	1.86	0.40
3:K:304:PHE:CE1	3:K:415:ALA:HB1	2.56	0.40
3:K:595:SER:HB3	3:K:614:PHE:O	2.22	0.40
3:K:656:TYR:HD1	3:K:656:TYR:HA	1.70	0.40
3:K:798:MET:HE3	3:K:798:MET:HB3	1.94	0.40
3:L:131:PHE:CE2	3:L:133:GLY:HA3	2.56	0.40
3:L:313:PRO:HG2	3:L:317:PHE:CE2	2.57	0.40
3:L:692:LEU:HD22	3:L:711:TYR:HD2	1.86	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	291/298 (98%)	261 (90%)	27 (9%)	3 (1%)	13	46
1	B	291/298 (98%)	258 (89%)	30 (10%)	3 (1%)	13	46
1	C	291/298 (98%)	259 (89%)	29 (10%)	3 (1%)	13	46
2	D	202/204 (99%)	186 (92%)	15 (7%)	1 (0%)	25	60
2	E	202/204 (99%)	180 (89%)	21 (10%)	1 (0%)	25	60
2	F	202/204 (99%)	179 (89%)	22 (11%)	1 (0%)	25	60
2	G	202/204 (99%)	180 (89%)	21 (10%)	1 (0%)	25	60
2	H	202/204 (99%)	185 (92%)	16 (8%)	1 (0%)	25	60
2	I	202/204 (99%)	180 (89%)	21 (10%)	1 (0%)	25	60
3	J	810/949 (85%)	676 (84%)	111 (14%)	23 (3%)	4	28
3	K	810/949 (85%)	673 (83%)	112 (14%)	25 (3%)	3	26
3	L	811/949 (86%)	685 (84%)	107 (13%)	19 (2%)	5	31
All	All	4516/4965 (91%)	3902 (86%)	532 (12%)	82 (2%)	9	35

All (82) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	288	PRO
1	B	288	PRO
1	C	288	PRO
3	J	4	ILE
3	J	44	TYR
3	J	102	ARG
3	J	122	PRO
3	J	448	ASP
3	J	507	PRO
3	J	517	PRO
3	J	624	LYS
3	K	4	ILE

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Mol	Chain	Res	Type
3	K	44	TYR
3	K	102	ARG
3	K	122	PRO
3	K	448	ASP
3	K	455	LYS
3	K	507	PRO
3	K	517	PRO
3	K	579	TYR
3	K	624	LYS
3	K	762	SER
3	L	4	ILE
3	L	44	TYR
3	L	102	ARG
3	L	125	ASP
3	L	448	ASP
3	L	624	LYS
3	J	334	VAL
3	J	363	ASN
3	K	5	LEU
3	K	333	ILE
3	K	334	VAL
3	K	363	ASN
3	L	333	ILE
3	L	334	VAL
3	L	363	ASN
1	B	212	ARG
1	C	212	ARG
2	F	91	VAL
3	J	196	ARG
3	J	333	ILE
3	J	454	ASP
3	J	456	THR
3	J	762	SER
3	K	125	ASP
1	A	212	ARG
2	D	91	VAL
2	G	91	VAL
2	H	91	VAL
2	I	91	VAL
3	J	116	ASN
3	K	116	ASN
3	L	5	LEU

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Mol	Chain	Res	Type
3	L	116	ASN
3	L	196	ARG
1	A	273	LEU
1	C	273	LEU
3	J	120	VAL
3	J	825	SER
3	K	119	PRO
3	K	120	VAL
3	K	823	ARG
3	L	119	PRO
3	L	441	LYS
1	B	273	LEU
2	E	91	VAL
3	J	823	ARG
3	K	185	ASN
3	K	196	ARG
3	L	458	LEU
3	K	60	VAL
3	L	120	VAL
3	L	826	PRO
3	J	60	VAL
3	J	826	PRO
3	L	60	VAL
3	K	525	VAL
3	J	144	VAL
3	J	525	VAL
3	K	144	VAL
3	L	144	VAL

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	268/273 (98%)	268 (100%)	0	100 100
1	B	268/273 (98%)	267 (100%)	1 (0%)	89 91
1	C	268/273 (98%)	268 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
2	D	181/181 (100%)	181 (100%)	0	100 100
2	E	181/181 (100%)	181 (100%)	0	100 100
2	F	181/181 (100%)	181 (100%)	0	100 100
2	G	181/181 (100%)	181 (100%)	0	100 100
2	H	181/181 (100%)	181 (100%)	0	100 100
2	I	181/181 (100%)	181 (100%)	0	100 100
3	J	723/834 (87%)	721 (100%)	2 (0%)	91 92
3	K	723/834 (87%)	717 (99%)	6 (1%)	79 84
3	L	724/834 (87%)	720 (99%)	4 (1%)	84 88
All	All	4060/4407 (92%)	4047 (100%)	13 (0%)	90 92

All (13) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	288	PRO
3	J	456	THR
3	J	761	LEU
3	K	4	ILE
3	K	121	ASP
3	K	122	PRO
3	K	124	THR
3	K	456	THR
3	K	553	ASN
3	L	4	ILE
3	L	124	THR
3	L	441	LYS
3	L	458	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (36) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	49	ASN
1	A	112	HIS
1	C	113	ASN
2	D	104	GLN
2	E	46	GLN
2	E	104	GLN
2	F	189	ASN

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Mol	Chain	Res	Type
2	G	46	GLN
2	G	104	GLN
2	I	46	GLN
2	I	51	ASN
2	I	104	GLN
3	J	107	HIS
3	J	207	HIS
3	J	506	GLN
3	J	526	GLN
3	J	540	ASN
3	J	553	ASN
3	J	594	ASN
3	J	721	GLN
3	J	800	GLN
3	K	143	ASN
3	K	157	ASN
3	K	397	GLN
3	K	515	ASN
3	K	540	ASN
3	K	639	ASN
3	L	108	GLN
3	L	143	ASN
3	L	353	HIS
3	L	515	ASN
3	L	521	ASN
3	L	540	ASN
3	L	636	ASN
3	L	788	GLN
3	L	792	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 oligosaccharides in this entry.

5.6 Ligand geometry

There are no ligands in this entry.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

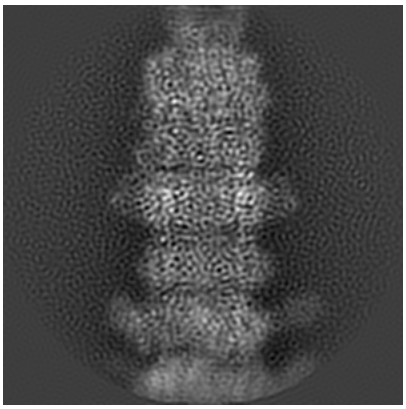
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-60750. These allow visual inspection of the internal detail of the map and identification of artifacts.

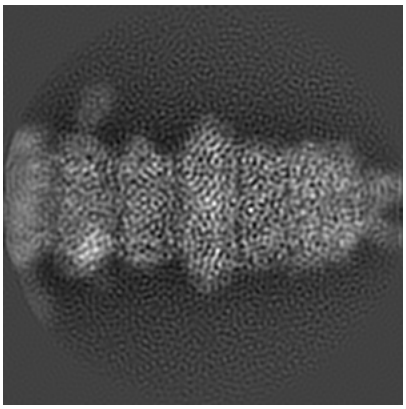
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

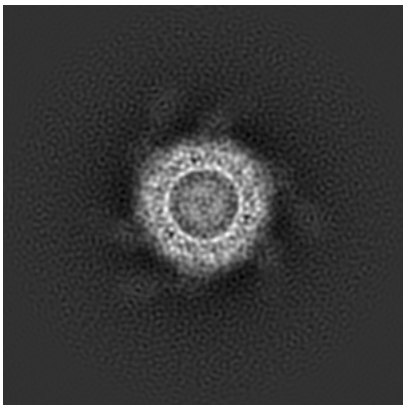
6.1.1 Primary map



X

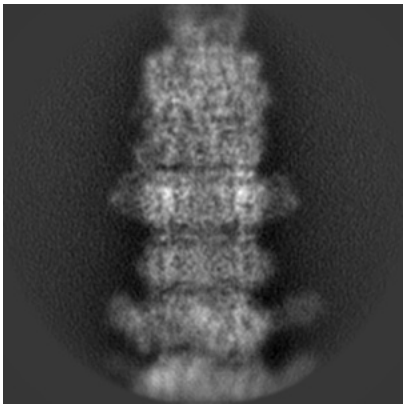


Y

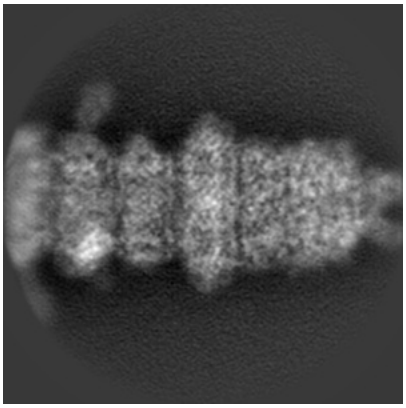


Z

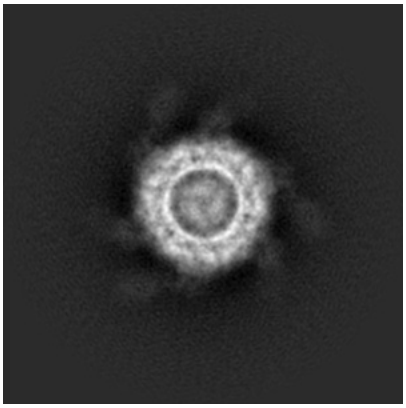
6.1.2 Raw map



X



Y

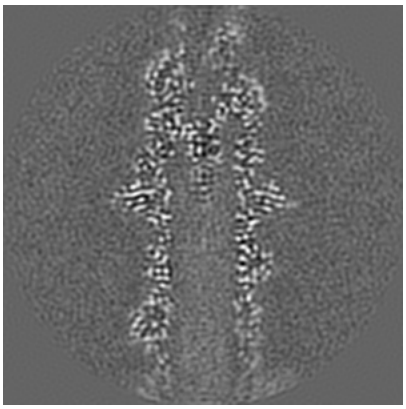


Z

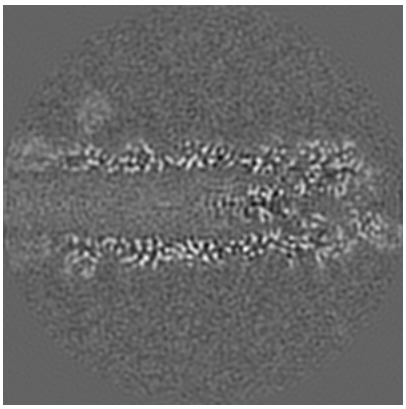
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

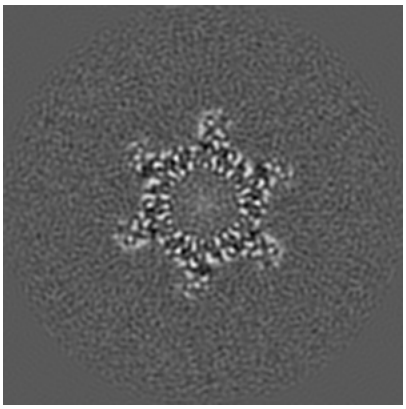
6.2.1 Primary map



X Index: 100

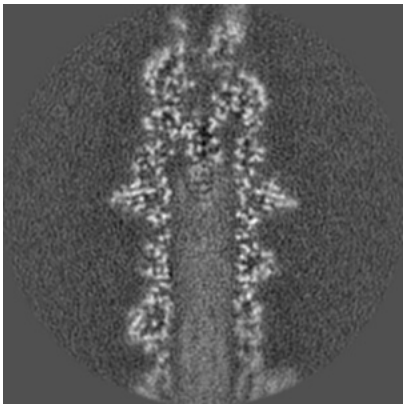


Y Index: 100

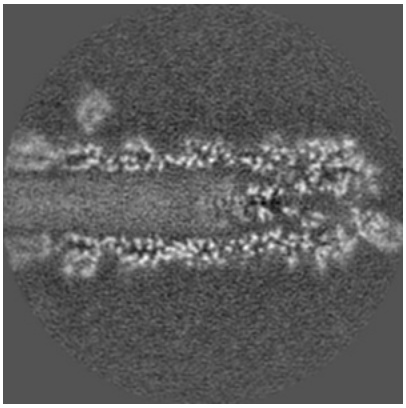


Z Index: 100

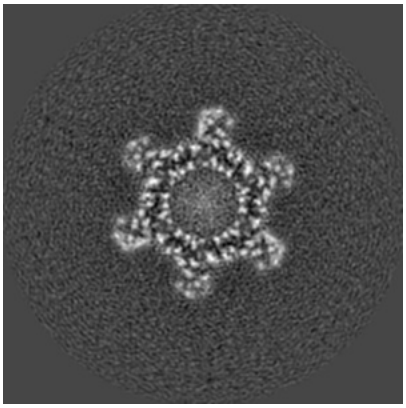
6.2.2 Raw map



X Index: 100



Y Index: 100

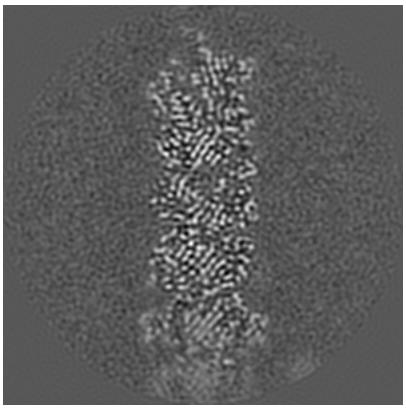


Z Index: 100

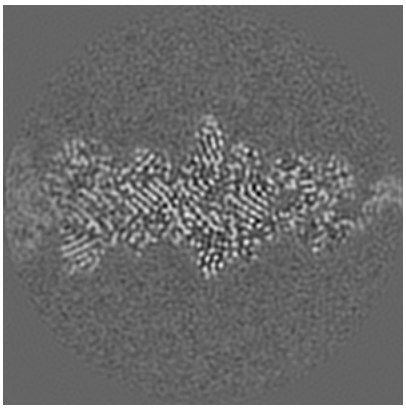
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

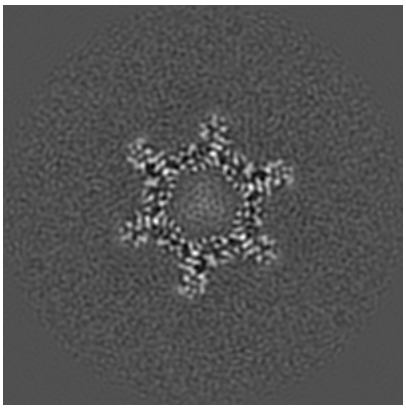
6.3.1 Primary map



X Index: 118

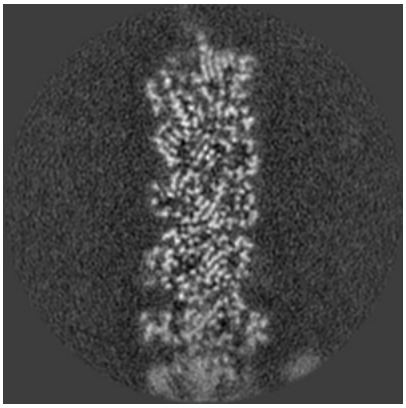


Y Index: 118

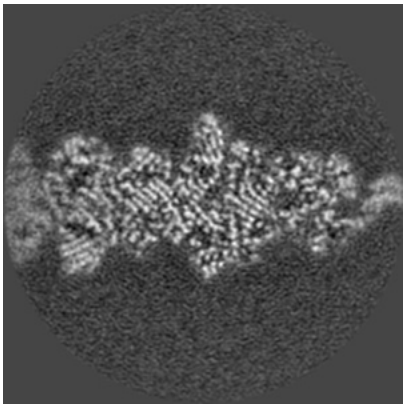


Z Index: 104

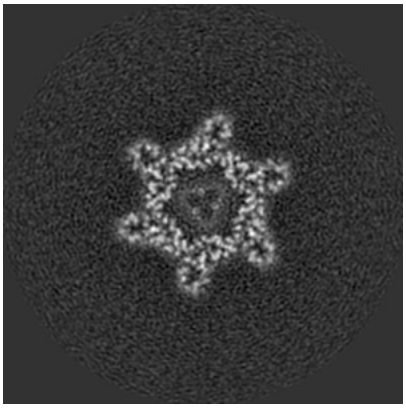
6.3.2 Raw map



X Index: 119



Y Index: 118

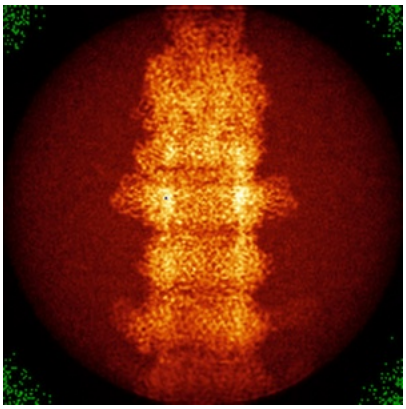


Z Index: 106

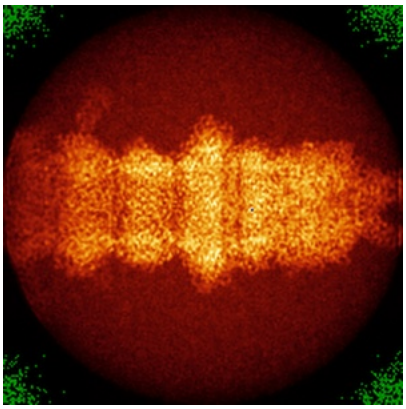
The images above show the largest variance slices of the map in three orthogonal directions.

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

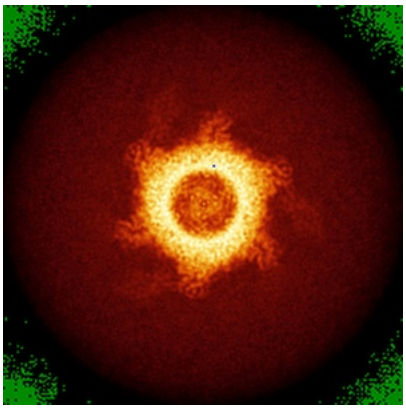
6.4.1 Primary map



X

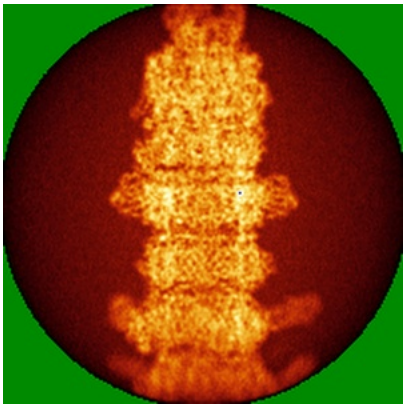


Y

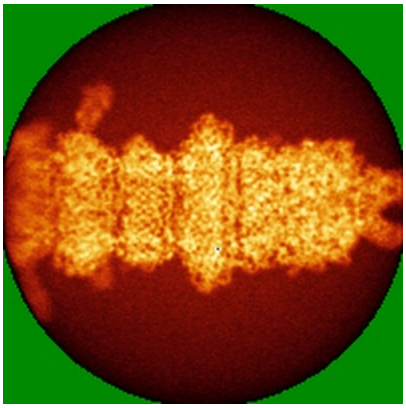


Z

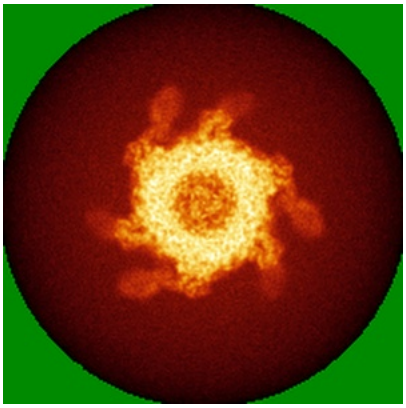
6.4.2 Raw map



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 0.02. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map

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.

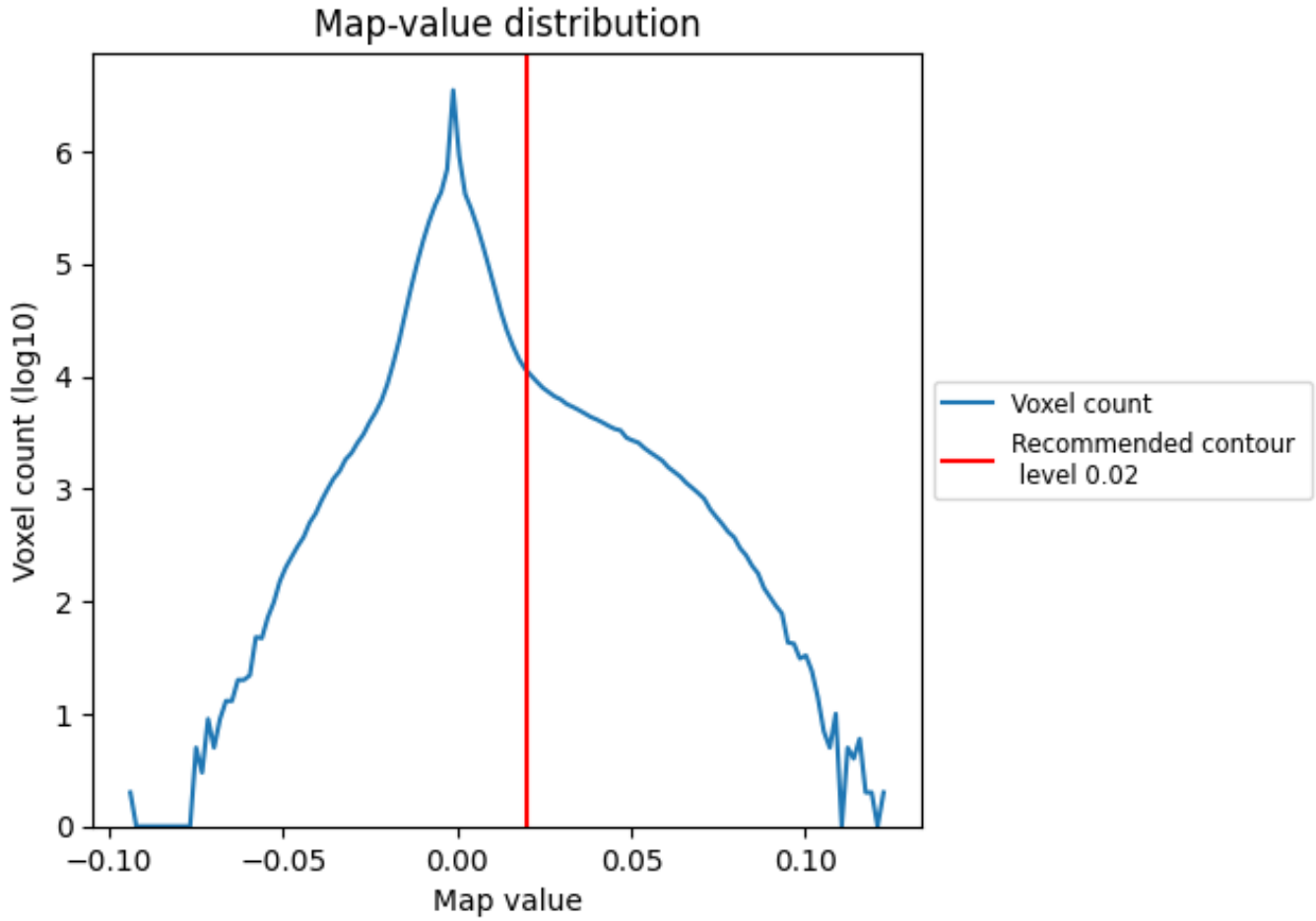
6.6 Mask visualisation (i)

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

7 Map analysis

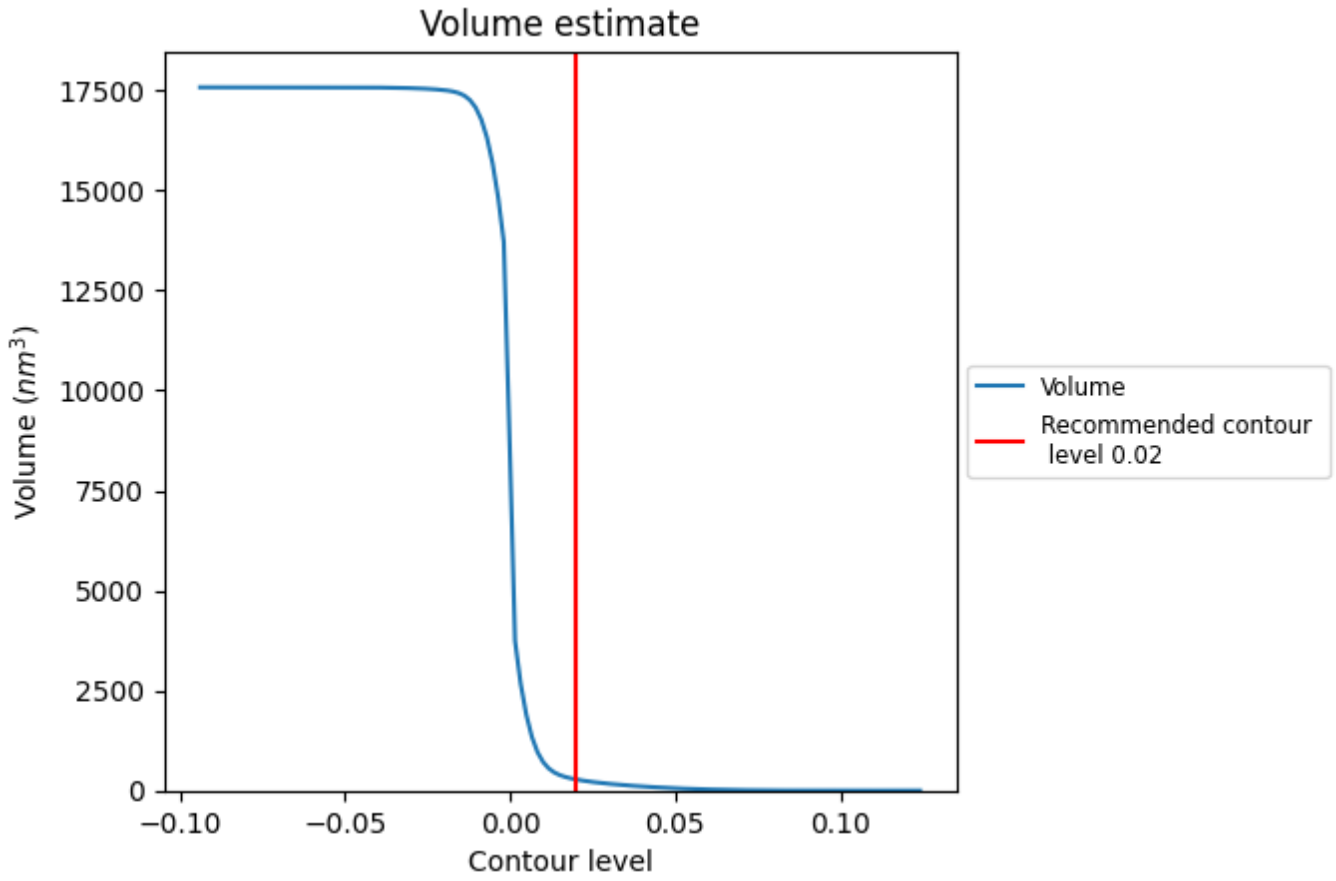
This section contains the results of statistical analysis of the map.

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.

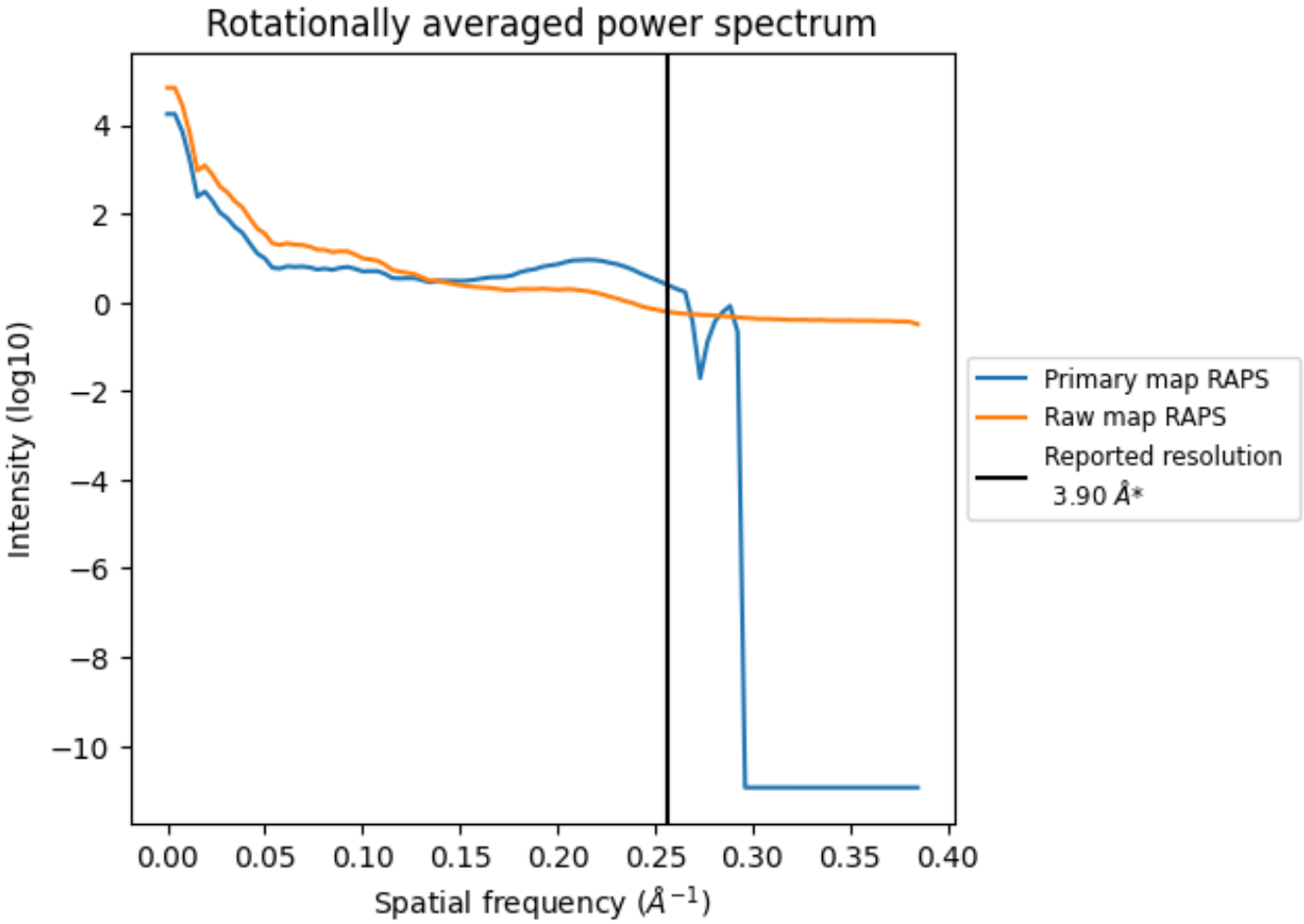
7.2 Volume estimate (i)



The volume at the recommended contour level is 279 nm^3; this corresponds to an approximate mass of 252 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)

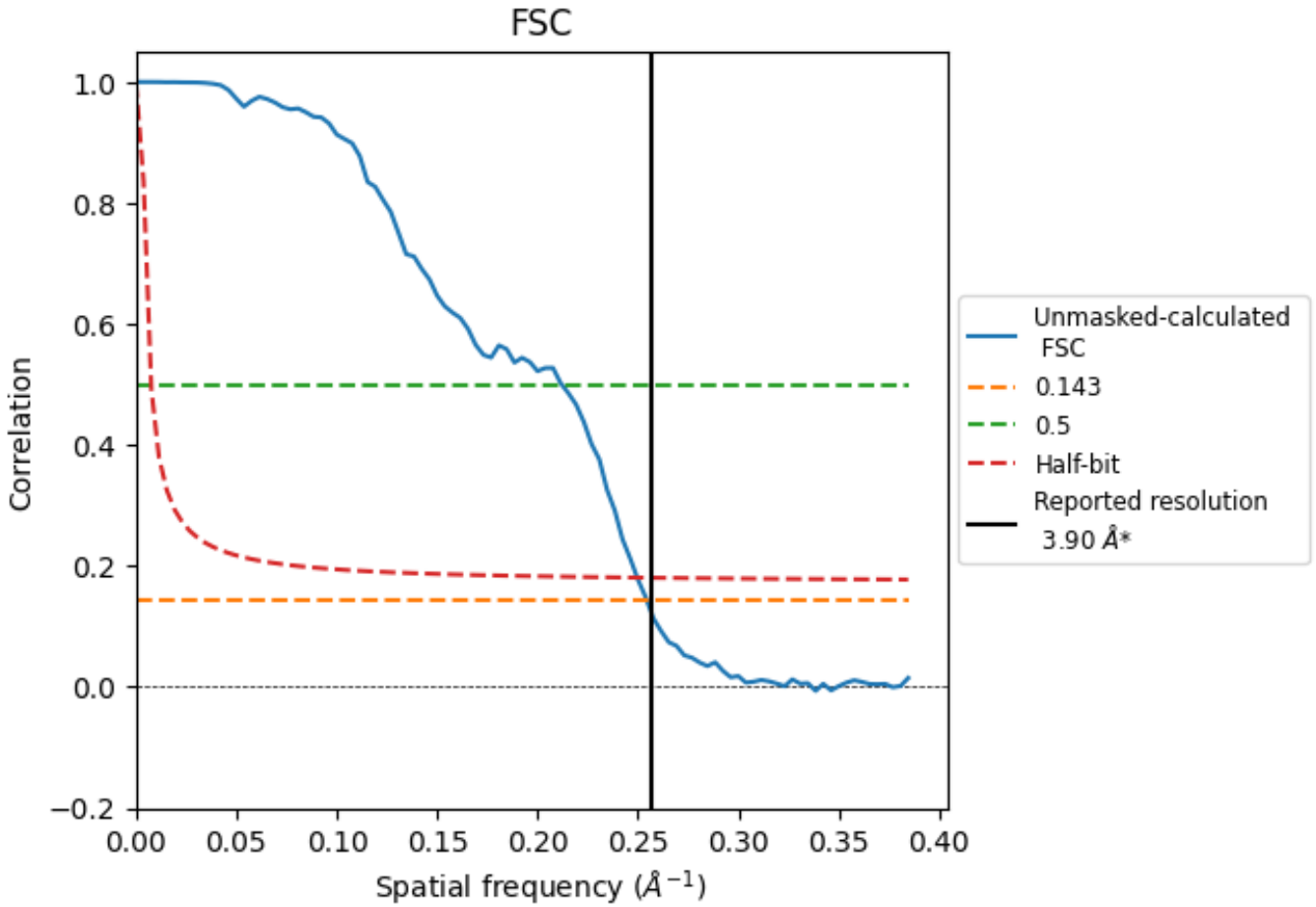


*Reported resolution corresponds to spatial frequency of 0.256 Å^{-1}

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 0.256 Å^{-1}

8.2 Resolution estimates (i)

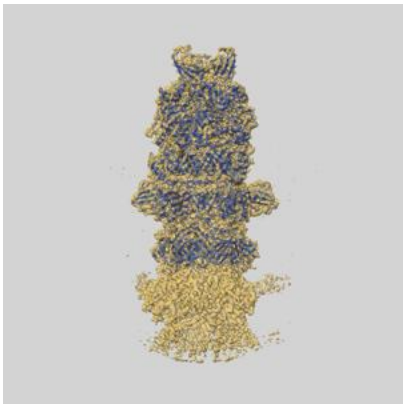
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.90	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.93	4.72	4.00

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

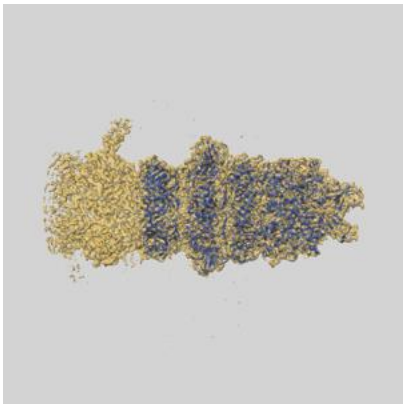
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-60750 and PDB model 9IOZ. Per-residue inclusion information can be found in section 3 on page 5.

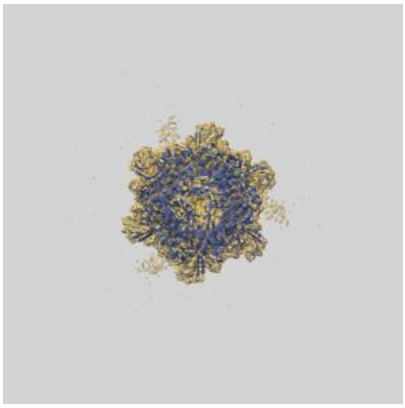
9.1 Map-model overlay



X



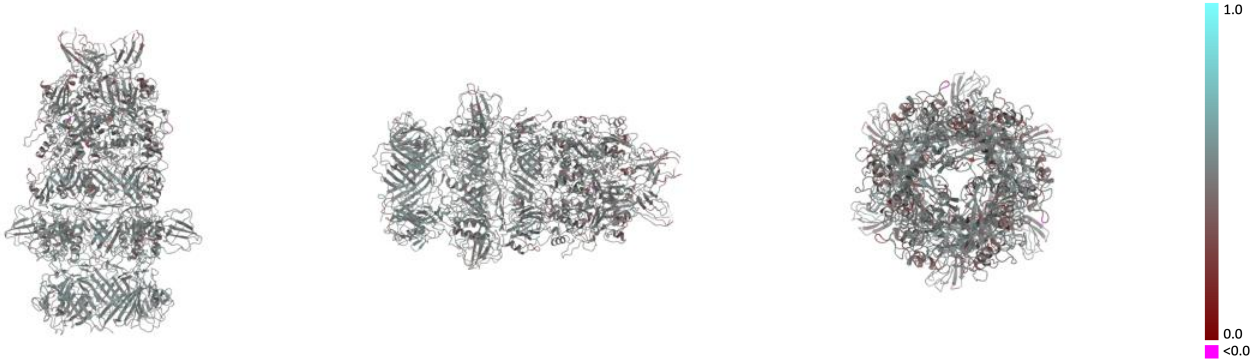
Y



Z

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

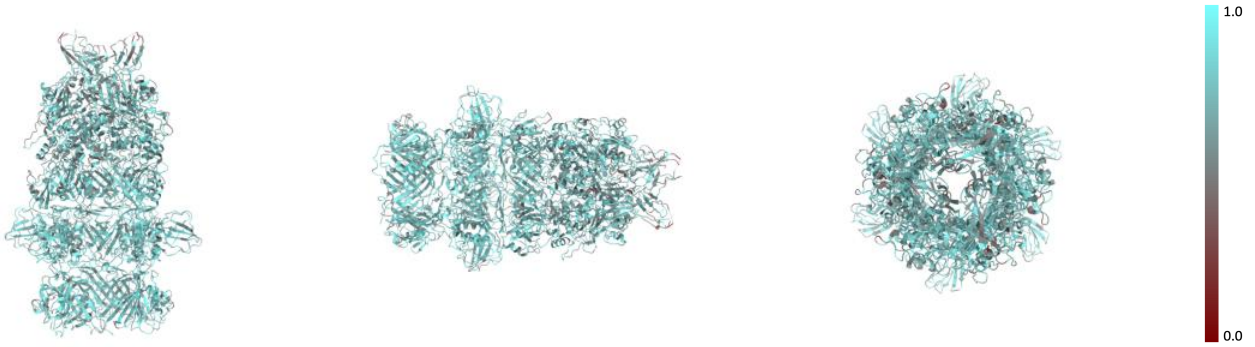
9.2 Q-score mapped to coordinate model



X Y Z

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

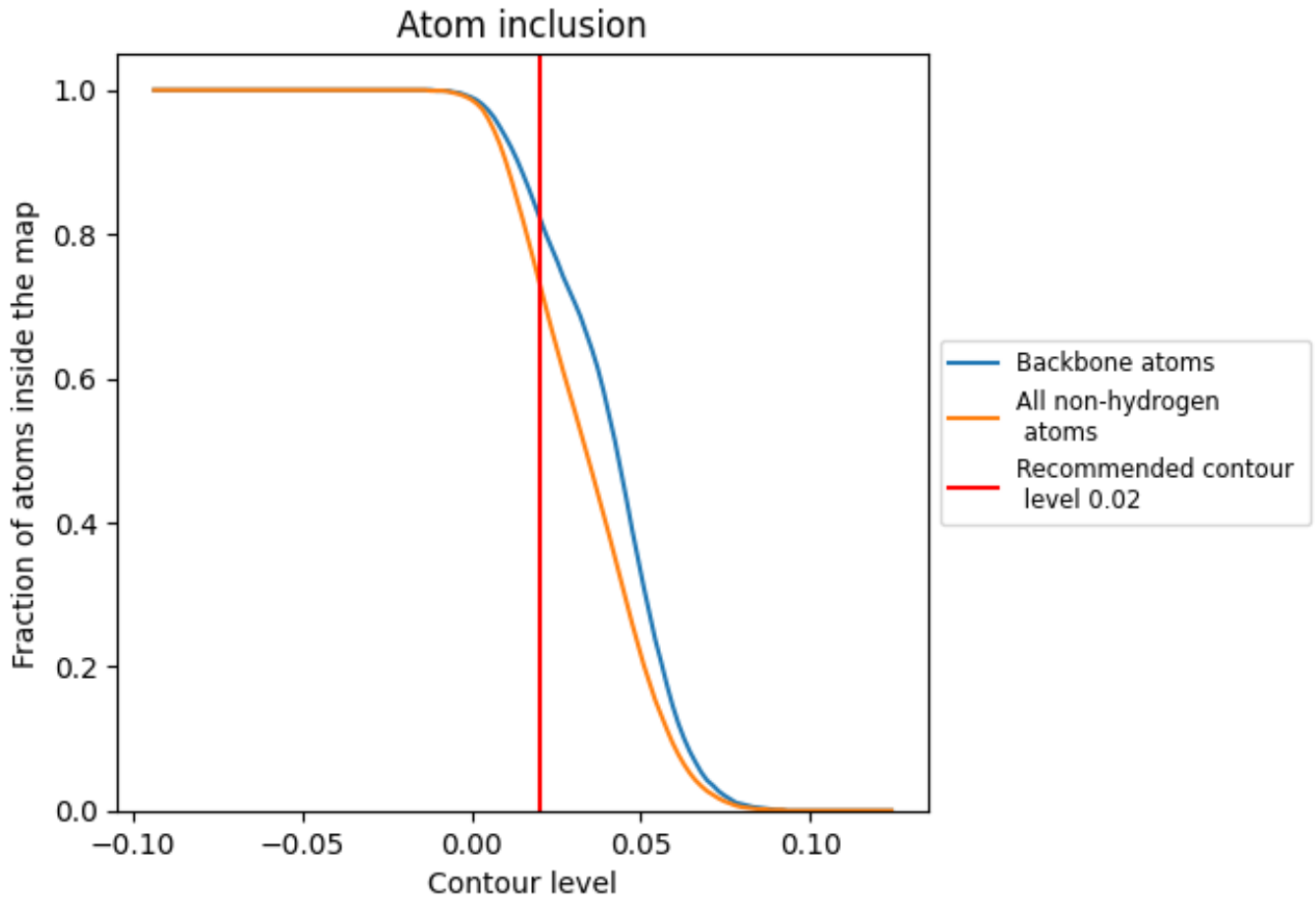
9.3 Atom inclusion mapped to coordinate model



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.02).

9.4 Atom inclusion (i)



At the recommended contour level, 82% of all backbone atoms, 73% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

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

Chain	Atom inclusion	Q-score
All	0.7330	0.4860
A	0.7440	0.5000
B	0.7390	0.5010
C	0.7400	0.5020
D	0.7600	0.5030
E	0.7580	0.4900
F	0.7610	0.4910
G	0.7650	0.5000
H	0.7650	0.5000
I	0.7670	0.4910
J	0.7210	0.4750
K	0.7130	0.4750
L	0.7140	0.4750