Full wwPDB EM Validation Report ⓘ

May 18, 2026 – 05:13 pm BST

PDB ID	:	9HYF / pdb_00009hyf
EMDB ID	:	EMD-52502
Title	:	Cryo-EM structure of the C. elegans UBR4/KCMF1 complex (composite map)
Authors	:	Grabarczyk, D.B.; Clausen, T.
Deposited on	:	2025-01-09
Resolution	:	3.00 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:

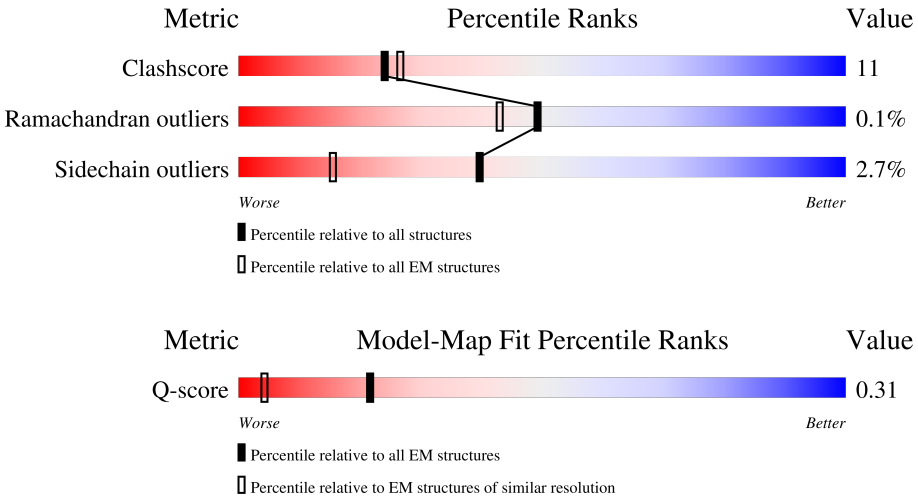
EMDB validation analysis	:	0.0.1.dev132
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

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 3.00 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)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	14081 (2.50 - 3.50)

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	3861	71% 23% • 5%
1	B	3861	70% 24% • 5%
2	C	515	11% 53% 15% 31%
2	D	515	11% 53% 15% 31%

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 64398 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 UBR-type domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	3655	Total 29401	C 18666	N 5003	O 5526	S 206	0	0
1	B	3655	Total 29401	C 18666	N 5003	O 5526	S 206	0	0

- Molecule 2 is a protein called E3 ubiquitin-protein ligase kcmf-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	C	353	Total 2789	C 1751	N 470	O 547	S 21	0	0
2	D	353	Total 2789	C 1751	N 470	O 547	S 21	0	0

- Molecule 3 is ZINC ION (CCD ID: ZN) (formula: Zn).

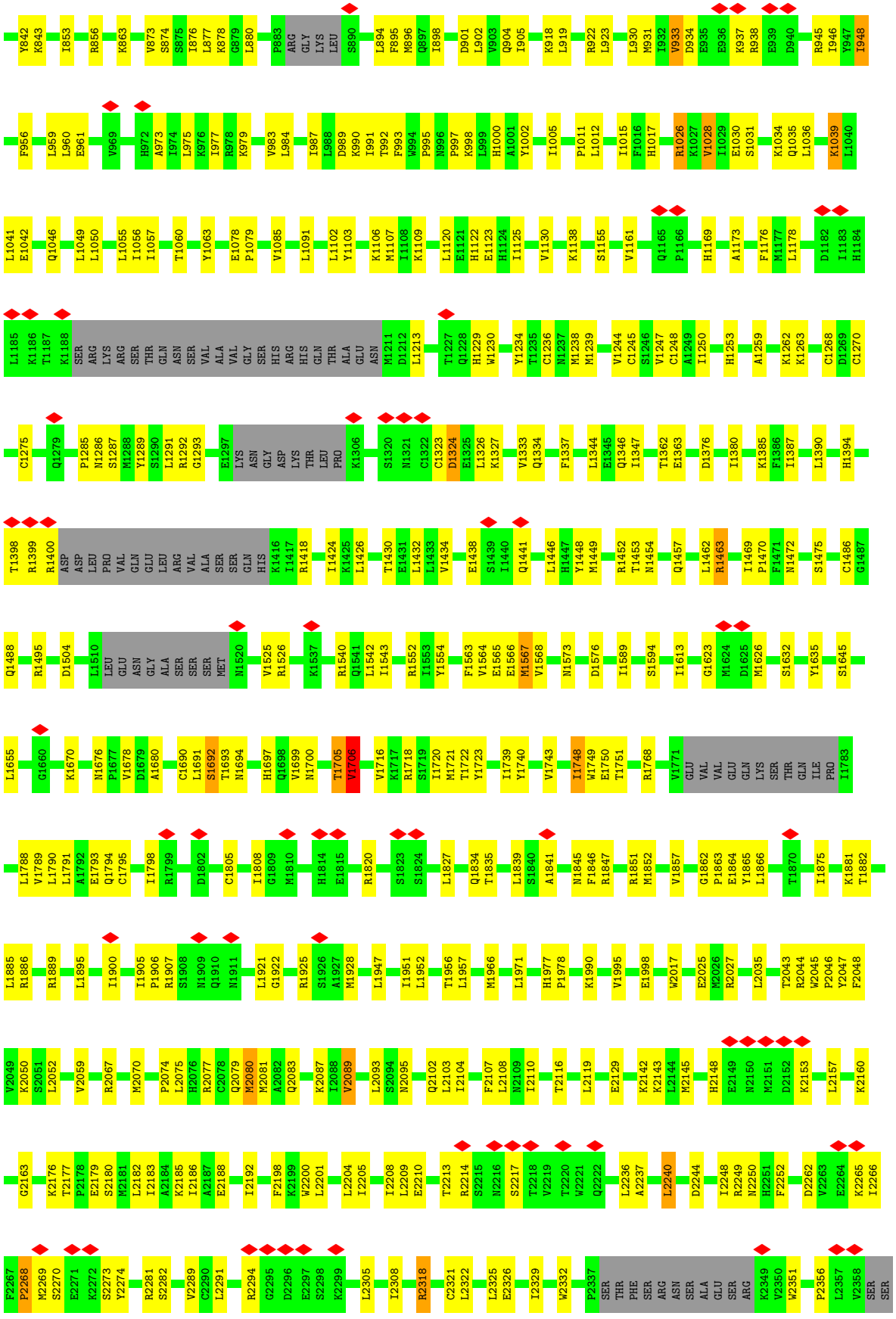
Mol	Chain	Residues	Atoms		AltConf
3	A	5	Total 5	Zn 5	0
3	C	4	Total 4	Zn 4	0
3	B	5	Total 5	Zn 5	0
3	D	4	Total 4	Zn 4	0

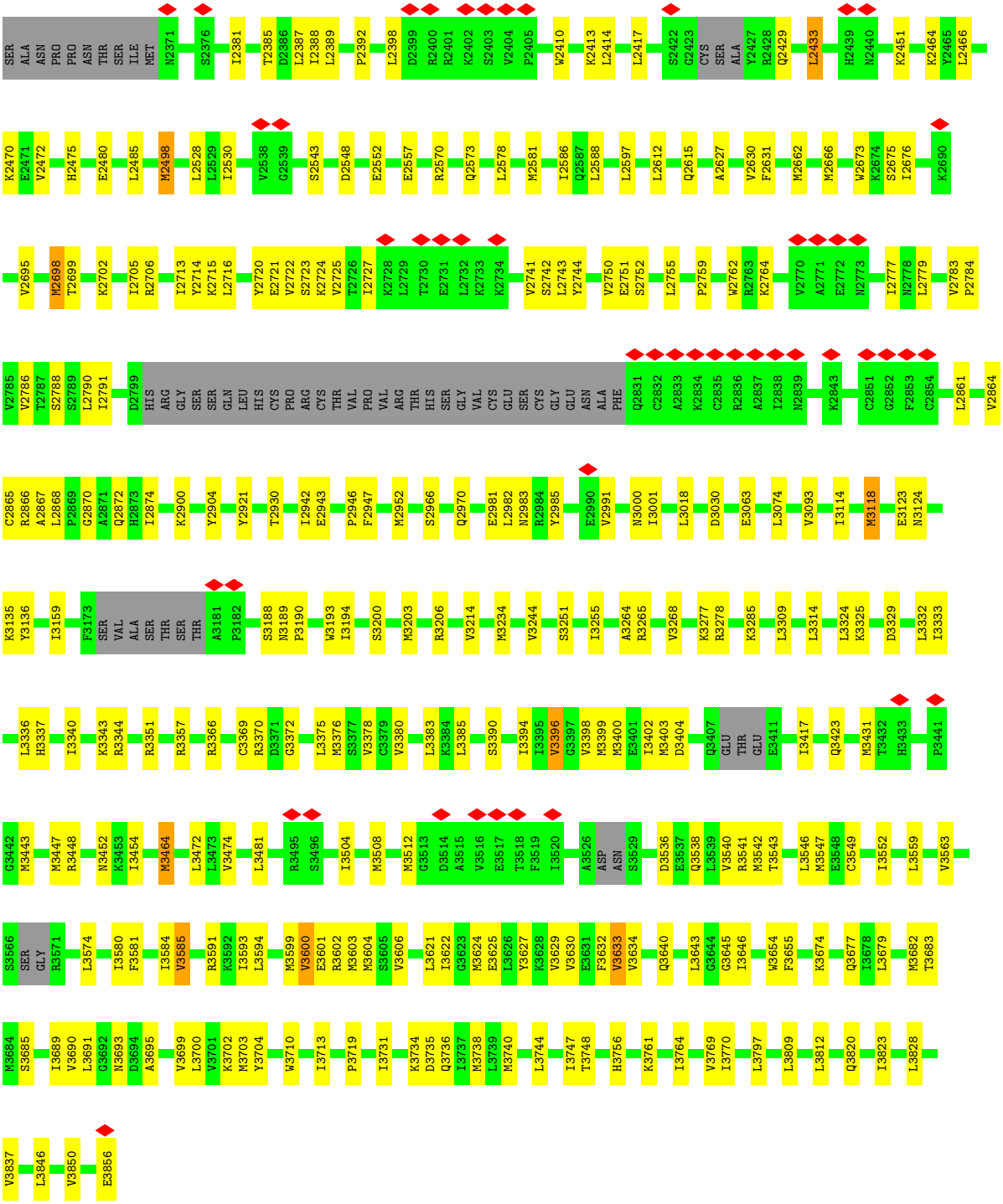
3 Residue-property plots (i)

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

- Molecule 1: UBR-type domain-containing protein

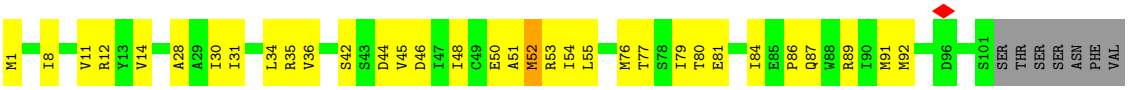
Chain A:

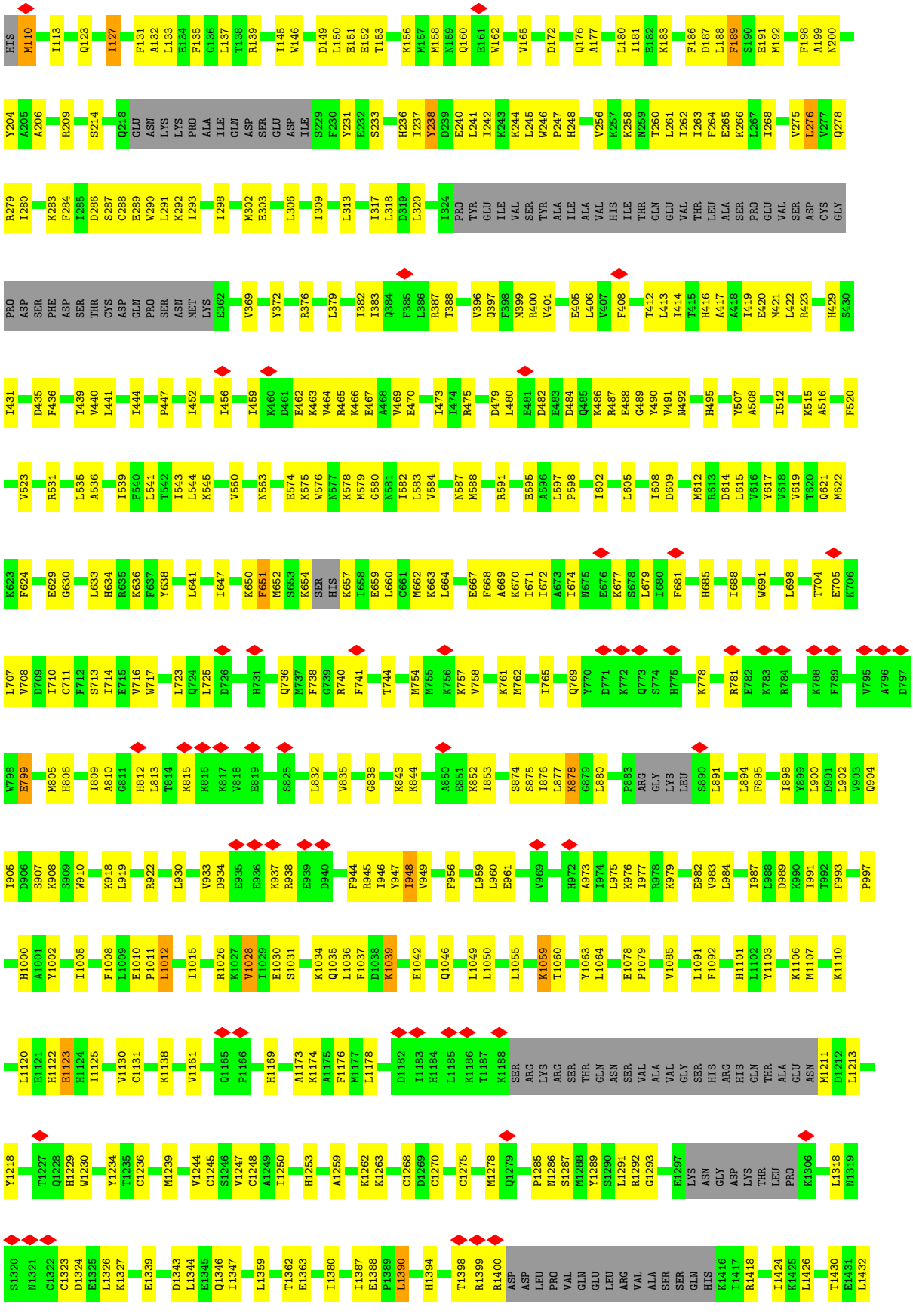


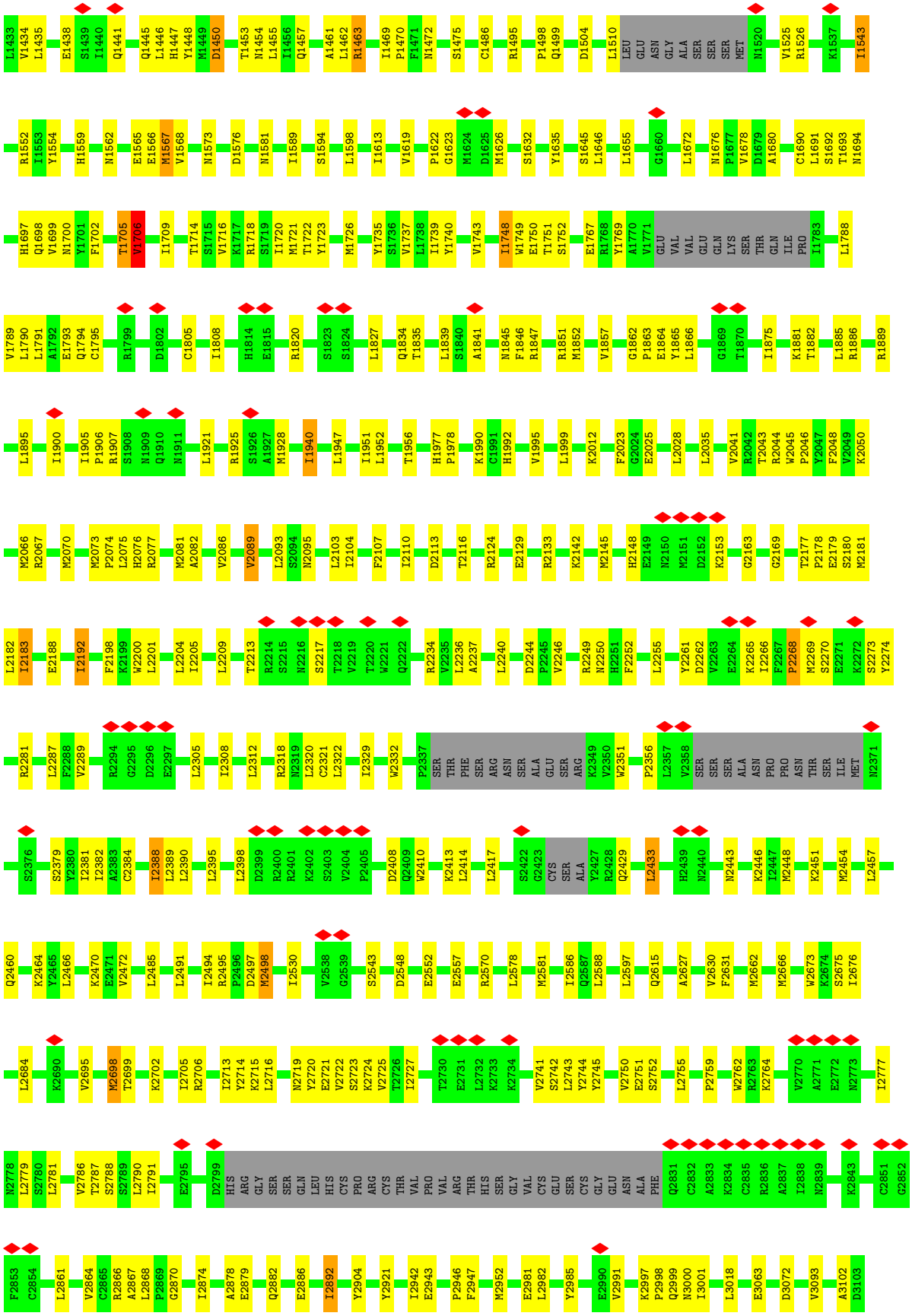


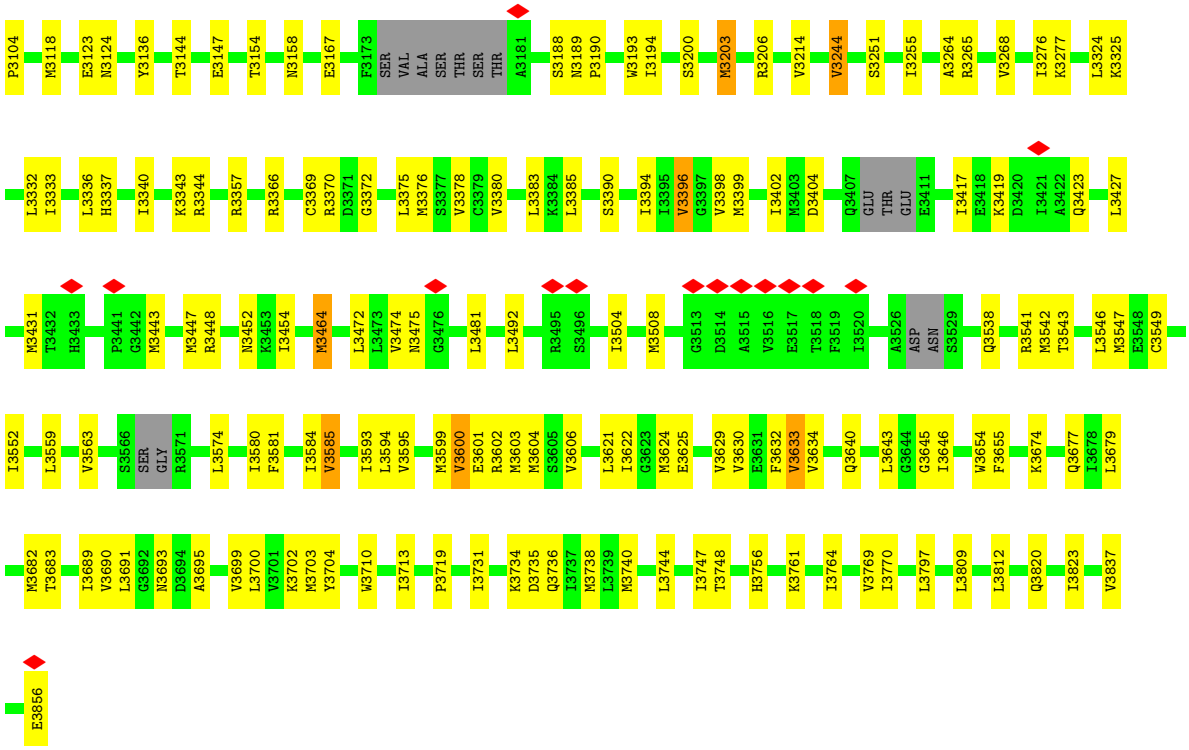
• Molecule 1: UBR-type domain-containing protein

Chain B:



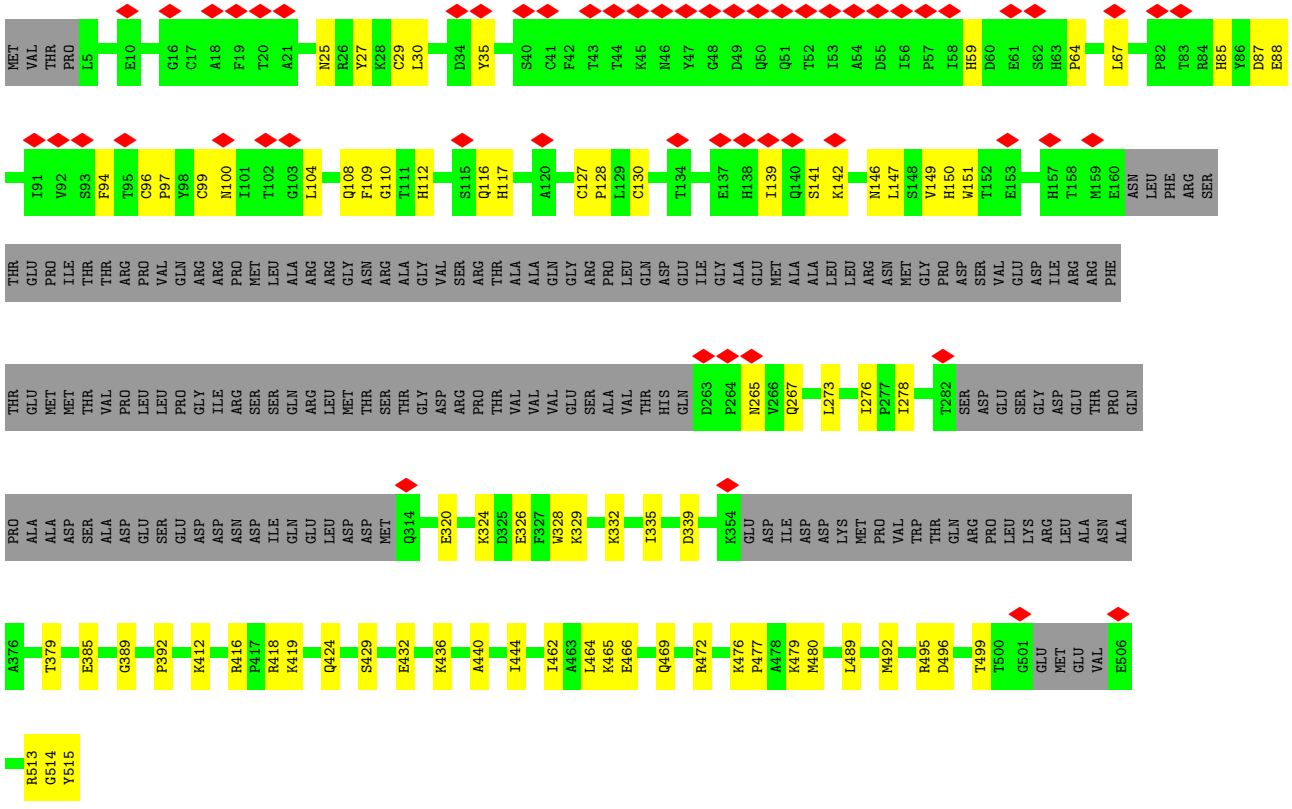






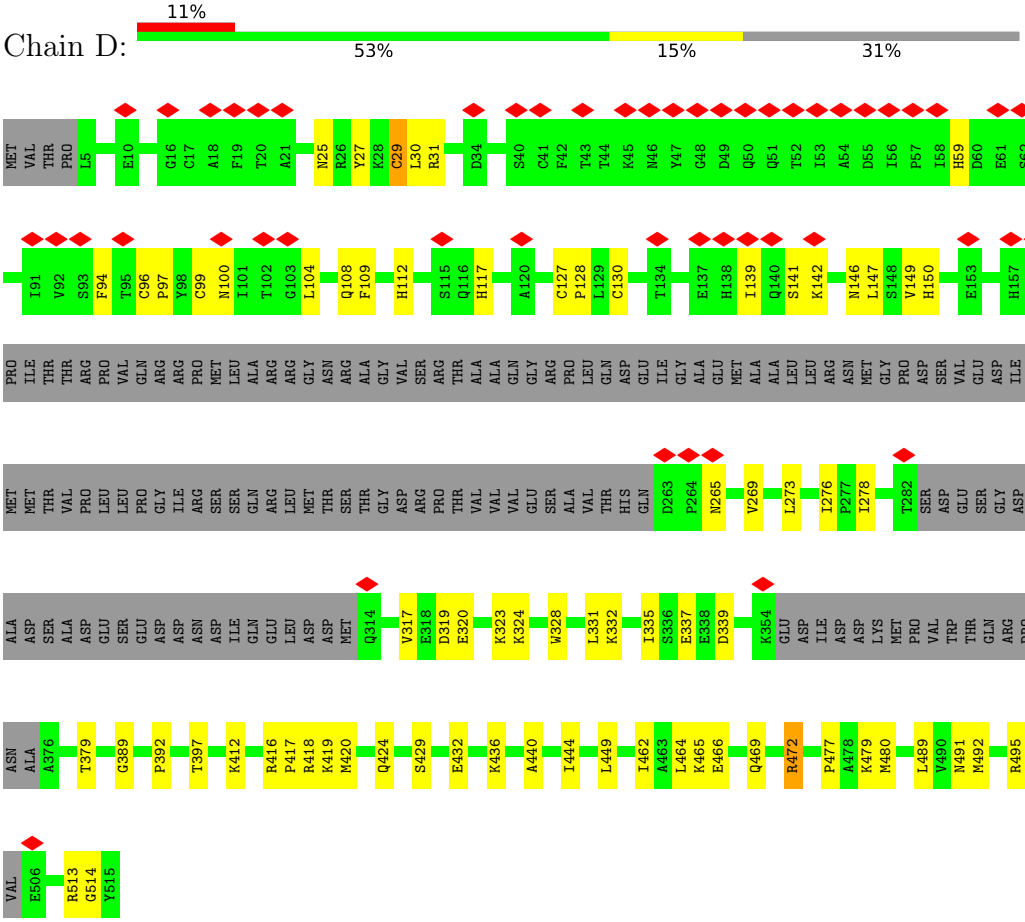
• Molecule 2: E3 ubiquitin-protein ligase kcmf-1

Chain C:



• Molecule 2: E3 ubiquitin-protein ligase kcmf-1

Chain D:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	691759	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	0.054	Depositor
Minimum map value	0.000	Depositor
Average map value	0.010	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.0104	Depositor
Map size (Å)	486.912, 486.912, 486.912	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.268, 1.268, 1.268	Depositor

5 Model quality

5.1 Standard geometry

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
1	A	0.16	0/29920	0.37	0/40398
1	B	0.17	1/29920 (0.0%)	0.39	0/40398
2	C	0.16	0/2851	0.29	0/3868
2	D	0.17	0/2851	0.30	0/3868
All	All	0.17	1/65542 (0.0%)	0.37	0/88532

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
1	B	0	1
All	All	0	2

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	1450	ASP	CA-CB	5.83	1.61	1.53

There are no bond angle outliers.

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1705	THR	Peptide
1	B	1705	THR	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	29401	0	29674	653	0
1	B	29401	0	29674	673	0
2	C	2789	0	2696	58	0
2	D	2789	0	2696	50	0
3	A	5	0	0	0	0
3	B	5	0	0	0	0
3	C	4	0	0	0	0
3	D	4	0	0	0	0
All	All	64398	0	64740	1397	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 11.

All (1397) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2321:CYS:HA	1:A:2388:ILE:HD11	1.47	0.93
1:B:2093:LEU:HD11	1:B:2104:ILE:HD11	1.54	0.90
1:B:2329:ILE:HD12	1:B:2413:LYS:HE2	1.55	0.89
1:B:2205:ILE:HG23	1:B:2236:LEU:HD11	1.57	0.87
2:C:29:CYS:SG	2:C:59:HIS:CE1	2.68	0.86
1:A:2093:LEU:HD11	1:A:2104:ILE:HD11	1.56	0.86
1:A:2205:ILE:HG23	1:A:2236:LEU:HD11	1.59	0.84
1:B:387:ARG:HG3	1:B:421:MET:HE1	1.61	0.83
1:B:1236:CYS:SG	1:B:1253:HIS:HE1	2.02	0.82
1:A:3000:ASN:HD21	2:D:489:LEU:HD22	1.43	0.81
1:B:3703:MET:HE1	1:B:3744:LEU:HD13	1.61	0.80
2:C:489:LEU:HD22	1:B:3000:ASN:HD21	1.47	0.80
1:B:298:ILE:O	1:B:302:MET:HB3	1.81	0.80
1:B:989:ASP:HB3	1:B:1028:VAL:HG23	1.64	0.79
1:A:1236:CYS:SG	1:A:1253:HIS:HE1	2.04	0.79
1:A:612:MET:HE3	1:A:612:MET:H	1.46	0.79
1:A:619:VAL:HG21	1:A:664:LEU:HD22	1.63	0.79
1:A:1552:ARG:HG2	1:A:1566:GLU:HG3	1.63	0.78
1:A:298:ILE:O	1:A:302:MET:HB3	1.83	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2724:LYS:HB3	1:B:2864:VAL:HB	1.66	0.78
1:A:989:ASP:HB3	1:A:1028:VAL:HG23	1.66	0.78
1:A:3703:MET:HE1	1:A:3744:LEU:HD13	1.66	0.78
1:A:3447:MET:HE3	1:A:3472:LEU:HD12	1.64	0.78
1:A:2724:LYS:HB3	1:A:2864:VAL:HB	1.66	0.77
1:A:3581:PHE:O	1:A:3585:VAL:HB	1.83	0.77
1:B:3581:PHE:O	1:B:3585:VAL:HB	1.85	0.77
1:B:3447:MET:HE3	1:B:3472:LEU:HD12	1.67	0.76
1:A:420:GLU:HA	1:A:423:ARG:HE	1.50	0.75
1:A:2142:LYS:HA	1:A:2145:MET:HG2	1.67	0.75
1:B:302:MET:HG3	1:B:306:LEU:HG	1.69	0.75
1:A:302:MET:HG3	1:A:306:LEU:HG	1.69	0.74
1:B:1791:LEU:HD21	1:B:1851:ARG:HB3	1.69	0.73
1:B:11:VAL:HG21	1:B:48:ILE:HG22	1.70	0.73
1:A:2070:MET:HA	1:A:2081:MET:HE1	1.69	0.72
1:B:3634:VAL:HG21	1:B:3689:ILE:HG12	1.69	0.72
1:B:1835:THR:HB	1:B:1906:PRO:HG3	1.72	0.72
1:B:2318:ARG:HG2	1:B:2410:TRP:HZ2	1.54	0.72
1:B:473:ILE:HD12	1:B:516:ALA:HB2	1.70	0.72
1:B:1030:GLU:O	1:B:1034:LYS:HG2	1.88	0.72
1:A:1835:THR:HB	1:A:1906:PRO:HG3	1.72	0.71
1:B:741:PHE:HE1	1:B:898:ILE:HD13	1.55	0.71
1:A:473:ILE:HD12	1:A:516:ALA:HB2	1.71	0.71
1:B:612:MET:HE3	1:B:612:MET:H	1.54	0.71
1:A:1791:LEU:HD21	1:A:1851:ARG:HB3	1.72	0.71
1:B:898:ILE:O	1:B:902:LEU:HD12	1.91	0.71
1:B:880:LEU:HD13	1:B:944:PHE:HZ	1.55	0.70
1:B:2460:GLN:O	1:B:2464:LYS:HG3	1.91	0.70
1:A:261:LEU:HD21	1:A:298:ILE:HG22	1.73	0.70
1:A:387:ARG:HE	1:B:113:ILE:HD12	1.56	0.70
1:A:1247:VAL:HG22	1:A:1285:PRO:HG3	1.74	0.70
1:B:685:HIS:CD2	1:B:805:MET:HE2	2.27	0.70
1:B:2318:ARG:HG2	1:B:2410:TRP:CZ2	2.26	0.70
1:A:741:PHE:HE1	1:A:898:ILE:HD13	1.56	0.70
1:A:1012:LEU:HD23	1:A:1091:LEU:HD21	1.74	0.69
1:B:50:GLU:HA	1:B:53:ARG:HG2	1.73	0.69
1:A:1705:THR:HG22	1:A:1706:VAL:HG23	1.74	0.69
1:B:261:LEU:HD21	1:B:298:ILE:HG22	1.75	0.69
1:B:1247:VAL:HG22	1:B:1285:PRO:HG3	1.74	0.69
1:A:598:PRO:HB3	1:A:621:GLN:HG2	1.73	0.69
1:A:901:ASP:HA	1:A:904:GLN:HG2	1.74	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3585:VAL:HG13	1:A:3633:VAL:HG23	1.74	0.69
1:A:3603:MET:HG2	1:A:3630:VAL:HG21	1.75	0.69
1:B:1705:THR:HG22	1:B:1706:VAL:HG23	1.73	0.68
1:B:3452:ASN:HA	1:B:3464:MET:HE1	1.75	0.68
1:A:3452:ASN:HA	1:A:3464:MET:HE1	1.76	0.68
1:B:900:LEU:O	1:B:904:GLN:HG2	1.93	0.68
1:B:1012:LEU:HD23	1:B:1091:LEU:HD21	1.75	0.68
1:B:2148:HIS:HE1	1:B:2153:LYS:HD2	1.57	0.68
1:B:276:LEU:O	1:B:280:ILE:HG12	1.93	0.68
1:A:291:LEU:HB2	1:A:293:ILE:HD11	1.75	0.67
1:A:633:LEU:HA	1:A:636:LYS:HG2	1.77	0.67
1:A:2148:HIS:HE1	1:A:2153:LYS:HD2	1.59	0.67
1:A:3734:LYS:HG3	1:A:3738:MET:HE3	1.77	0.67
1:B:3594:LEU:HB3	1:B:3599:MET:HE2	1.77	0.67
1:B:3063:GLU:HG2	1:B:3093:VAL:HG22	1.77	0.67
1:A:276:LEU:O	1:A:280:ILE:HG12	1.93	0.67
1:B:3699:VAL:HA	1:B:3702:LYS:HE3	1.75	0.67
1:A:3699:VAL:HA	1:A:3702:LYS:HE3	1.76	0.67
1:B:268:ILE:HD13	1:B:309:ILE:HD11	1.76	0.66
1:A:1426:LEU:HD12	1:A:1430:THR:HB	1.77	0.66
1:B:1947:LEU:O	1:B:1951:ILE:HG13	1.95	0.66
1:A:3683:THR:HG23	1:A:3747:ILE:HG13	1.78	0.66
1:A:3731:ILE:HG23	1:A:3735:ASP:HB2	1.78	0.66
1:B:1865:TYR:HB2	1:B:1905:ILE:HB	1.77	0.66
1:B:3713:ILE:HG13	1:B:3738:MET:SD	2.36	0.66
1:A:268:ILE:HD13	1:A:309:ILE:HD11	1.76	0.66
1:B:624:PHE:HZ	1:B:633:LEU:HD11	1.61	0.66
1:A:3324:LEU:HD22	1:A:3366:ARG:HH21	1.60	0.66
1:A:461:ASP:HB3	1:A:464:VAL:HG22	1.76	0.66
1:A:744:THR:HA	1:A:838:GLY:HA3	1.77	0.66
1:B:486:LYS:HD2	1:B:487:ARG:N	2.11	0.65
1:B:1447:HIS:HB3	1:B:1462:LEU:HD12	1.76	0.65
1:B:3324:LEU:HD22	1:B:3366:ARG:HH21	1.61	0.65
1:A:1865:TYR:HB2	1:A:1905:ILE:HB	1.77	0.65
1:A:3713:ILE:HG13	1:A:3738:MET:SD	2.36	0.65
1:B:1286:ASN:H	1:B:1790:LEU:HD13	1.61	0.65
1:B:2124:ARG:HD2	1:B:2234:ARG:HG2	1.79	0.65
2:D:273:LEU:HB2	2:D:392:PRO:HG2	1.77	0.65
1:A:1947:LEU:O	1:A:1951:ILE:HG13	1.95	0.65
1:B:387:ARG:HA	1:B:421:MET:SD	2.37	0.65
1:B:778:LYS:HZ3	1:B:781:ARG:HD2	1.60	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:273:LEU:HB2	2:C:392:PRO:HG2	1.77	0.65
1:B:3443:MET:HE3	1:B:3443:MET:HA	1.79	0.65
2:D:127:CYS:HB3	2:D:130:CYS:SG	2.36	0.65
1:A:50:GLU:HA	1:A:53:ARG:HG2	1.78	0.65
1:B:3683:THR:HG23	1:B:3747:ILE:HG13	1.77	0.65
2:C:127:CYS:HB3	2:C:130:CYS:SG	2.36	0.65
1:B:685:HIS:HD2	1:B:805:MET:HE2	1.60	0.65
1:A:2079:GLN:HE21	1:A:2083:GLN:HE21	1.45	0.65
1:A:2698:MET:HE3	1:A:2699:THR:HG23	1.79	0.65
1:B:3734:LYS:HG3	1:B:3738:MET:HE3	1.79	0.64
1:B:3118:MET:SD	1:B:3190:PRO:HB2	2.37	0.64
1:B:3144:THR:HG22	1:B:3147:GLU:HG3	1.80	0.64
1:A:11:VAL:HG21	1:A:48:ILE:HG22	1.80	0.64
1:A:2045:TRP:CD1	1:A:2095:ASN:HD22	2.16	0.64
1:A:3063:GLU:HG2	1:A:3093:VAL:HG22	1.77	0.64
2:C:99:CYS:SG	2:C:112:HIS:HE1	2.15	0.64
1:B:619:VAL:HG21	1:B:664:LEU:HD22	1.78	0.64
1:B:3595:VAL:HG23	1:B:3599:MET:HE3	1.78	0.64
1:A:1286:ASN:H	1:A:1790:LEU:HD13	1.63	0.64
1:A:1795:CYS:HB3	1:A:1921:LEU:HB3	1.80	0.64
1:A:3736:GLN:O	1:A:3740:MET:HG2	1.97	0.64
1:A:3634:VAL:HG21	1:A:3689:ILE:HG12	1.80	0.64
1:B:2070:MET:HE1	1:B:2082:ALA:HB2	1.80	0.64
1:A:778:LYS:HZ3	1:A:781:ARG:HD2	1.61	0.63
1:B:3731:ILE:HG23	1:B:3735:ASP:HB2	1.78	0.63
1:B:2698:MET:HE3	1:B:2699:THR:HG23	1.81	0.63
1:A:276:LEU:HD23	1:A:279:ARG:HH12	1.64	0.63
1:A:1034:LYS:HG2	1:A:1103:TYR:HD2	1.64	0.63
1:B:598:PRO:HB3	1:B:621:GLN:HG2	1.80	0.63
1:A:399:MET:HE3	1:A:422:LEU:HD22	1.79	0.63
1:B:584:VAL:O	1:B:588:MET:HG2	1.98	0.63
1:B:3736:GLN:O	1:B:3740:MET:HG2	1.99	0.63
1:B:276:LEU:HD23	1:B:279:ARG:HH12	1.64	0.62
1:B:2142:LYS:O	1:B:2145:MET:HB2	1.99	0.62
1:B:3654:TRP:HE1	1:B:3682:MET:HG3	1.64	0.62
1:B:3704:TYR:HB3	1:B:3769:VAL:HG21	1.80	0.62
2:C:335:ILE:HD12	2:C:339:ASP:HB3	1.80	0.62
1:A:1:MET:HA	1:A:1:MET:HE2	1.81	0.62
1:A:2706:ARG:HG3	1:A:2752:SER:HB2	1.81	0.62
1:A:2464:LYS:HZ3	1:A:2480:GLU:HG3	1.64	0.62
1:B:3343:LYS:HG2	1:B:3357:ARG:HD2	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1400:ARG:HB3	1:B:1438:GLU:HB2	1.82	0.62
1:A:383:ILE:HD13	1:A:414:ILE:HG23	1.81	0.62
1:B:487:ARG:HA	1:B:490:TYR:CD1	2.34	0.62
1:B:516:ALA:O	1:B:520:PHE:HB2	2.00	0.62
1:B:383:ILE:HD13	1:B:414:ILE:HG23	1.82	0.62
1:B:1426:LEU:HD12	1:B:1430:THR:HB	1.81	0.62
1:B:2209:LEU:O	1:B:2213:THR:HG23	2.00	0.62
1:A:3343:LYS:HG2	1:A:3357:ARG:HD2	1.81	0.62
1:B:1795:CYS:HB3	1:B:1921:LEU:HB3	1.82	0.62
2:D:94:PHE:HD2	2:D:128:PRO:HB2	1.66	0.61
1:A:50:GLU:O	1:A:54:ILE:HG12	1.99	0.61
1:A:2104:ILE:HD12	1:A:2204:LEU:HD13	1.80	0.61
1:B:668:PHE:O	1:B:672:ILE:HG22	2.00	0.61
2:C:94:PHE:HD2	2:C:128:PRO:HB2	1.65	0.61
1:B:313:LEU:O	1:B:317:ILE:HG12	2.01	0.61
1:B:579:MET:HE2	1:B:579:MET:N	2.16	0.61
1:B:1462:LEU:H	1:B:1846:PHE:HZ	1.49	0.61
1:A:88:TRP:O	1:A:92:MET:HB3	2.00	0.61
1:A:758:VAL:HG23	1:A:894:LEU:HD11	1.82	0.61
1:A:3704:TYR:HB3	1:A:3769:VAL:HG21	1.80	0.61
1:A:2201:LEU:O	1:A:2205:ILE:HG12	2.01	0.61
1:B:2095:ASN:HD21	1:B:2163:GLY:H	1.47	0.61
1:A:1462:LEU:H	1:A:1846:PHE:HZ	1.49	0.61
1:A:2209:LEU:O	1:A:2213:THR:HG23	2.01	0.61
1:B:3508:MET:HE3	1:B:3508:MET:HA	1.83	0.61
1:A:2095:ASN:HD21	1:A:2163:GLY:H	1.49	0.60
1:B:1390:LEU:HD23	1:B:1748:ILE:HB	1.83	0.60
1:B:2706:ARG:HG3	1:B:2752:SER:HB2	1.82	0.60
1:A:206:ALA:HA	1:A:209:ARG:HE	1.66	0.60
1:A:440:VAL:O	1:A:444:ILE:HG12	2.01	0.60
1:A:3599:MET:HE1	1:A:3633:VAL:HG21	1.82	0.60
1:B:3585:VAL:HG13	1:B:3633:VAL:HG23	1.83	0.60
1:A:290:TRP:HA	1:B:123:GLN:NE2	2.16	0.60
1:A:3118:MET:SD	1:A:3190:PRO:HB2	2.42	0.60
1:A:2727:ILE:HB	1:A:2777:ILE:HB	1.84	0.60
1:B:584:VAL:HA	1:B:588:MET:HE3	1.83	0.60
1:B:905:ILE:HD13	1:B:908:LYS:HZ1	1.67	0.60
1:B:1324:ASP:HA	1:B:1327:LYS:HG3	1.83	0.60
1:B:2201:LEU:O	1:B:2205:ILE:HG12	2.01	0.60
1:B:2727:ILE:HB	1:B:2777:ILE:HB	1.84	0.60
2:D:335:ILE:HD12	2:D:339:ASP:HB3	1.84	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1400:ARG:HB3	1:A:1438:GLU:HB2	1.82	0.60
2:C:30:LEU:HB3	2:C:97:PRO:HB3	1.84	0.59
1:B:1952:LEU:O	1:B:1956:THR:HG23	2.02	0.59
2:C:513:ARG:HH11	2:C:514:GLY:H	1.49	0.59
1:B:484:ASP:HB3	1:B:487:ARG:HE	1.67	0.59
1:B:580:GLY:O	1:B:584:VAL:HG23	2.02	0.59
1:A:482:ASP:HB2	1:A:487:ARG:HH12	1.66	0.59
1:B:987:ILE:HG13	1:B:991:ILE:HD11	1.85	0.59
1:B:3543:THR:O	1:B:3547:MET:HG2	2.02	0.59
1:A:983:VAL:O	1:A:987:ILE:HG22	2.03	0.59
1:A:2548:ASP:O	1:A:2552:GLU:HG3	2.02	0.59
1:A:303:GLU:HA	1:A:306:LEU:HB2	1.82	0.59
1:B:584:VAL:HG22	1:B:617:TYR:HD2	1.67	0.59
1:A:2262:ASP:HB3	1:A:2265:LYS:HG2	1.85	0.59
1:B:1244:VAL:HG12	1:B:1270:CYS:HB2	1.85	0.59
2:D:99:CYS:SG	2:D:112:HIS:HE1	2.20	0.59
1:B:624:PHE:CZ	1:B:633:LEU:HD11	2.38	0.59
1:B:2329:ILE:HG12	1:B:2417:LEU:HD13	1.84	0.58
1:A:580:GLY:O	1:A:584:VAL:HG23	2.03	0.58
1:B:1120:LEU:HD13	1:B:1347:ILE:HG22	1.85	0.58
1:B:2043:THR:HB	1:B:2183:ILE:HD11	1.85	0.58
2:D:513:ARG:HH11	2:D:514:GLY:H	1.50	0.58
1:A:3600:VAL:O	1:A:3604:MET:HG2	2.03	0.58
1:B:2329:ILE:HD11	1:B:2417:LEU:HB2	1.84	0.58
1:A:1788:LEU:O	1:A:1791:LEU:HB3	2.03	0.58
1:A:162:TRP:CG	1:A:266:LYS:HZ1	2.20	0.58
1:A:2268:PRO:O	1:A:2269:MET:HE2	2.03	0.58
1:A:3332:LEU:HD22	1:A:3378:VAL:HG21	1.86	0.58
1:A:3417:ILE:HD13	1:A:3454:ILE:HD11	1.85	0.58
1:B:761:LYS:HD3	1:B:894:LEU:HB2	1.86	0.58
1:B:2548:ASP:O	1:B:2552:GLU:HG3	2.04	0.58
1:A:2108:LEU:HD11	1:A:2208:ILE:HG12	1.86	0.58
1:A:2722:VAL:HG21	1:A:2790:LEU:HD11	1.85	0.58
1:B:758:VAL:O	1:B:762:MET:HG2	2.04	0.58
1:A:486:LYS:HD2	1:A:487:ARG:N	2.18	0.58
1:A:758:VAL:O	1:A:762:MET:HG2	2.03	0.58
1:A:987:ILE:HG13	1:A:991:ILE:HD11	1.85	0.58
1:B:303:GLU:HA	1:B:306:LEU:HB2	1.85	0.58
1:B:576:TRP:HH2	1:B:602:ILE:H	1.51	0.58
1:A:1488:GLN:H	1:A:1488:GLN:CD	2.12	0.58
1:B:744:THR:HA	1:B:838:GLY:HA3	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:516:ALA:O	1:A:520:PHE:HB2	2.04	0.57
1:A:1432:LEU:HD11	1:A:1446:LEU:HD12	1.85	0.57
1:B:930:LEU:HD21	1:B:945:ARG:HB3	1.86	0.57
1:A:369:VAL:O	1:A:372:TYR:HB3	2.04	0.57
1:B:2722:VAL:HG21	1:B:2790:LEU:HD11	1.85	0.57
1:B:3399:MET:HA	1:B:3402:ILE:HD12	1.86	0.57
1:B:1448:TYR:HB2	1:B:1463:ARG:HB2	1.86	0.57
1:A:3417:ILE:HD11	1:A:3443:MET:HE1	1.87	0.57
1:B:945:ARG:O	1:B:949:VAL:HG23	2.04	0.57
1:A:245:LEU:HD12	1:A:245:LEU:O	2.05	0.57
1:A:2070:MET:HG2	1:A:2119:LEU:HD13	1.86	0.57
2:C:265:ASN:HD22	1:B:2943:GLU:HG2	1.69	0.57
1:B:1:MET:HE2	1:B:1:MET:HA	1.86	0.57
1:B:1788:LEU:O	1:B:1791:LEU:HB3	2.04	0.57
1:A:400:ARG:HB2	1:A:439:ILE:HG22	1.87	0.57
1:A:3563:VAL:HA	1:A:3574:LEU:HD11	1.86	0.57
1:A:2318:ARG:HG2	1:A:2410:TRP:CZ2	2.39	0.57
1:A:3508:MET:HA	1:A:3508:MET:HE3	1.87	0.57
1:B:1120:LEU:HD12	1:B:1123:GLU:HB2	1.87	0.57
1:B:1895:LEU:HD21	1:B:1900:ILE:HG23	1.87	0.57
1:B:2046:PRO:O	1:B:2050:LYS:HE2	2.05	0.57
1:B:3372:GLY:HA3	1:B:3542:MET:HE1	1.85	0.57
1:A:2145:MET:HE3	1:A:2145:MET:HA	1.87	0.57
1:B:2262:ASP:HB3	1:B:2265:LYS:HG2	1.86	0.57
1:A:3114:ILE:HG22	1:A:3118:MET:HE2	1.87	0.57
1:B:704:THR:HA	1:B:707:LEU:HD12	1.87	0.57
1:B:1432:LEU:HD11	1:B:1446:LEU:HD12	1.87	0.57
1:B:1552:ARG:HG2	1:B:1566:GLU:HG3	1.85	0.57
1:A:1895:LEU:HD21	1:A:1900:ILE:HG23	1.87	0.56
1:A:2305:LEU:HD22	1:A:2398:LEU:HD11	1.87	0.56
1:A:3691:LEU:HB3	1:A:3756:HIS:HB3	1.86	0.56
1:B:983:VAL:O	1:B:987:ILE:HG22	2.05	0.56
1:A:286:ASP:O	1:A:290:TRP:HD1	1.88	0.56
1:A:379:LEU:HD23	1:A:414:ILE:HD13	1.87	0.56
1:A:584:VAL:HG22	1:A:617:TYR:HD2	1.69	0.56
2:C:278:ILE:HG13	2:C:389:GLY:HA2	1.87	0.56
1:B:960:LEU:HD13	1:B:977:ILE:HG21	1.86	0.56
1:B:1031:SER:O	1:B:1035:GLN:HG2	2.05	0.56
1:B:3563:VAL:HA	1:B:3574:LEU:HD11	1.86	0.56
2:D:30:LEU:HB3	2:D:97:PRO:HB3	1.86	0.56
1:A:2217:SER:HB3	1:A:2274:TYR:HB3	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3325:LYS:HZ3	1:B:3370:ARG:HE	1.52	0.56
1:A:420:GLU:HA	1:A:423:ARG:NE	2.19	0.56
1:B:579:MET:HA	1:B:582:ILE:HG12	1.88	0.56
1:B:652:MET:N	1:B:652:MET:HE2	2.20	0.56
1:B:2321:CYS:HA	1:B:2388:ILE:HD11	1.87	0.56
1:A:741:PHE:O	1:A:747:MET:HE3	2.06	0.56
1:A:1078:GLU:HG3	1:A:1079:PRO:HD3	1.87	0.56
1:A:1230:TRP:HZ2	1:A:1262:LYS:HE2	1.70	0.56
1:A:1287:SER:HB3	1:A:1793:GLU:HB2	1.87	0.56
1:B:51:ALA:O	1:B:55:LEU:HG	2.05	0.56
1:B:1424:ILE:HD12	1:B:1432:LEU:HD23	1.88	0.56
1:B:3398:VAL:O	1:B:3402:ILE:HG13	2.06	0.56
1:B:3417:ILE:HD13	1:B:3454:ILE:HD11	1.88	0.56
1:B:663:LYS:O	1:B:667:GLU:HG2	2.05	0.56
1:B:1287:SER:HB3	1:B:1793:GLU:HB2	1.87	0.56
1:B:3474:VAL:HG22	1:B:3504:ILE:HG12	1.88	0.56
1:A:286:ASP:O	1:A:290:TRP:CD1	2.59	0.56
1:A:3325:LYS:HZ3	1:A:3370:ARG:HH21	1.53	0.56
1:A:3543:THR:O	1:A:3547:MET:HG2	2.06	0.56
1:A:3563:VAL:HG21	1:A:3606:VAL:HG13	1.88	0.56
2:C:432:GLU:HG2	2:C:436:LYS:HE3	1.88	0.56
1:B:379:LEU:HD23	1:B:414:ILE:HD13	1.88	0.56
1:B:717:TRP:HH2	1:B:799:GLU:HB3	1.70	0.56
2:D:29:CYS:SG	2:D:59:HIS:HE1	2.18	0.56
1:A:717:TRP:HH2	1:A:799:GLU:HB3	1.71	0.56
1:A:741:PHE:CE1	1:A:898:ILE:HD13	2.37	0.56
1:B:440:VAL:O	1:B:444:ILE:HG12	2.06	0.56
1:A:264:PHE:CE1	1:A:268:ILE:HG13	2.41	0.56
1:A:383:ILE:HD12	1:A:417:ALA:HB3	1.88	0.56
1:B:805:MET:O	1:B:809:ILE:HG12	2.06	0.56
1:B:1380:ILE:HD13	1:B:1709:ILE:HB	1.87	0.56
1:B:1623:GLY:HA3	1:B:1626:MET:HE3	1.87	0.56
1:A:2713:ILE:HG12	1:A:2791:ILE:HG12	1.88	0.55
1:A:3474:VAL:HG22	1:A:3504:ILE:HG12	1.88	0.55
1:A:3600:VAL:HG12	1:A:3646:ILE:HG22	1.88	0.55
1:B:1230:TRP:HZ2	1:B:1262:LYS:HE2	1.70	0.55
1:A:209:ARG:HH22	1:A:238:TYR:HA	1.71	0.55
1:A:574:GLU:HG2	1:A:575:LYS:N	2.21	0.55
1:A:1469:ILE:HG13	1:A:1470:PRO:HD2	1.87	0.55
1:A:1475:SER:HB3	1:A:1486:CYS:HB2	1.88	0.55
1:A:2043:THR:HB	1:A:2183:ILE:HD11	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:209:ARG:HH22	1:B:238:TYR:HA	1.71	0.55
1:B:1469:ILE:HG13	1:B:1470:PRO:HD2	1.88	0.55
1:A:584:VAL:HA	1:A:588:MET:HE3	1.89	0.55
1:A:1270:CYS:SG	1:A:1275:CYS:HB3	2.47	0.55
1:B:1498:PRO:HG2	1:B:1499:GLN:NE2	2.21	0.55
1:B:2268:PRO:O	1:B:2269:MET:HE2	2.07	0.55
1:A:1120:LEU:HD12	1:A:1123:GLU:HB3	1.87	0.55
1:A:2464:LYS:NZ	1:A:2480:GLU:HG3	2.21	0.55
1:B:2451:LYS:HA	1:B:2498:MET:HE1	1.87	0.55
1:A:667:GLU:HA	1:A:670:LYS:HE3	1.89	0.55
1:A:1952:LEU:O	1:A:1956:THR:HG23	2.06	0.55
1:A:3594:LEU:HB3	1:A:3599:MET:SD	2.47	0.55
1:A:241:LEU:O	1:A:245:LEU:HB3	2.06	0.55
1:A:408:PHE:HZ	1:A:447:PRO:HD2	1.71	0.55
1:A:1002:TYR:HD2	1:A:1049:LEU:HD13	1.72	0.55
1:B:539:ILE:O	1:B:543:ILE:HG23	2.07	0.55
1:B:634:HIS:HB3	1:B:638:TYR:CE1	2.42	0.55
1:A:1623:GLY:HA3	1:A:1626:MET:HE3	1.87	0.55
1:A:2252:PHE:CG	1:A:2308:ILE:HD11	2.42	0.55
1:B:238:TYR:O	1:B:242:ILE:HG22	2.06	0.55
1:B:408:PHE:HZ	1:B:447:PRO:HD2	1.72	0.55
1:B:2305:LEU:HD22	1:B:2398:LEU:HD11	1.88	0.55
1:B:1789:VAL:HA	1:B:1886:ARG:HE	1.72	0.55
1:B:3383:LEU:HD11	1:B:3399:MET:HE3	1.89	0.55
2:D:278:ILE:HG13	2:D:389:GLY:HA2	1.88	0.55
1:A:387:ARG:NH2	1:B:113:ILE:H	2.05	0.55
1:A:3546:LEU:HB3	1:A:3547:MET:HE2	1.89	0.55
1:A:3770:ILE:HG12	1:A:3812:LEU:HD13	1.89	0.55
1:B:369:VAL:O	1:B:372:TYR:HB3	2.06	0.55
1:B:843:LYS:HE3	1:B:843:LYS:HA	1.89	0.55
1:A:652:MET:HE2	1:A:652:MET:N	2.23	0.54
1:A:1244:VAL:HG12	1:A:1270:CYS:HB2	1.89	0.54
1:B:245:LEU:O	1:B:245:LEU:HD12	2.07	0.54
1:A:1495:ARG:HB3	1:A:1504:ASP:HB2	1.89	0.54
1:B:399:MET:HE3	1:B:422:LEU:HD22	1.89	0.54
1:B:619:VAL:HA	1:B:622:MET:HE1	1.88	0.54
1:B:894:LEU:O	1:B:898:ILE:HG22	2.07	0.54
1:B:3691:LEU:HB3	1:B:3756:HIS:HB3	1.89	0.54
2:C:25:ASN:HB3	2:C:67:LEU:HD11	1.90	0.54
1:B:279:ARG:O	1:B:283:LYS:HG2	2.07	0.54
1:A:1041:LEU:HD21	1:A:1107:MET:HE3	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2874:ILE:HB	1:A:2985:TYR:CD2	2.42	0.54
1:A:3333:ILE:HB	1:A:3378:VAL:HB	1.89	0.54
1:B:2178:PRO:HA	1:B:2181:MET:HG2	1.88	0.54
1:A:243:LYS:HA	1:A:290:TRP:CZ3	2.42	0.54
1:A:713:SER:O	1:A:716:VAL:HG12	2.08	0.54
1:A:874:SER:O	1:A:878:LYS:HD2	2.07	0.54
1:A:1454:ASN:HD22	1:A:1457:GLN:HB2	1.73	0.54
1:A:2451:LYS:HA	1:A:2498:MET:HE1	1.88	0.54
1:B:1525:VAL:HG12	1:B:1526:ARG:HG2	1.90	0.54
1:A:938:ARG:HH21	1:A:997:PRO:HD3	1.73	0.54
1:A:3654:TRP:HE1	1:A:3682:MET:HG3	1.71	0.54
1:B:723:LEU:HD11	1:B:738:PHE:CE1	2.43	0.54
1:B:3770:ILE:HG12	1:B:3812:LEU:HD13	1.89	0.54
1:A:806:HIS:CE1	1:A:842:TYR:HE2	2.26	0.54
1:A:2943:GLU:HG2	2:D:265:ASN:HD22	1.72	0.54
1:A:3448:ARG:HB2	1:A:3481:LEU:HB3	1.89	0.54
1:B:1078:GLU:HG3	1:B:1079:PRO:HD3	1.88	0.54
1:B:2179:GLU:HA	1:B:2182:LEU:HD12	1.89	0.54
1:B:3337:HIS:HA	1:B:3340:ILE:HG12	1.90	0.54
1:B:3621:LEU:HA	1:B:3624:MET:SD	2.47	0.54
1:A:670:LYS:HD2	1:A:671:ILE:N	2.23	0.54
1:A:2389:LEU:HG	1:A:2433:LEU:HD12	1.90	0.54
1:B:1567:MET:HB3	1:B:1613:ILE:HG23	1.88	0.54
1:B:1691:LEU:HD21	1:B:1720:ILE:HD13	1.88	0.54
1:B:76:MET:HA	1:B:79:ILE:HG12	1.90	0.53
1:B:591:ARG:HH21	1:B:595:GLU:HB3	1.73	0.53
1:B:2725:VAL:HB	1:B:2779:LEU:HB2	1.90	0.53
2:D:25:ASN:HB3	2:D:67:LEU:HD11	1.89	0.53
1:A:286:ASP:HB3	1:A:290:TRP:HE1	1.73	0.53
1:A:584:VAL:O	1:A:588:MET:HG2	2.08	0.53
1:B:633:LEU:HA	1:B:636:LYS:HG2	1.91	0.53
1:A:539:ILE:O	1:A:543:ILE:HG23	2.07	0.53
1:B:1218:TYR:HD2	1:B:1278:MET:HE1	1.73	0.53
1:B:2217:SER:HB3	1:B:2274:TYR:HB3	1.90	0.53
1:B:2495:ARG:HH21	1:B:2497:ASP:CG	2.16	0.53
2:D:465:LYS:O	2:D:469:GLN:HB3	2.08	0.53
1:A:31:ILE:O	1:A:35:ARG:HG2	2.08	0.53
1:A:290:TRP:HA	1:B:123:GLN:HE22	1.73	0.53
1:A:896:MET:HA	1:A:896:MET:HE2	1.89	0.53
1:B:264:PHE:CE1	1:B:268:ILE:HG13	2.43	0.53
1:B:482:ASP:HB2	1:B:487:ARG:HH12	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1573:ASN:HB3	1:B:1594:SER:HB2	1.91	0.53
1:A:591:ARG:HH21	1:A:595:GLU:HB3	1.74	0.53
1:A:805:MET:O	1:A:809:ILE:HG12	2.09	0.53
1:B:31:ILE:O	1:B:35:ARG:HG2	2.08	0.53
1:B:938:ARG:HH21	1:B:997:PRO:HD3	1.73	0.53
1:B:2713:ILE:HG12	1:B:2791:ILE:HG12	1.89	0.53
1:B:3574:LEU:HB3	1:B:3622:ILE:HG21	1.90	0.53
1:A:207:LEU:HD13	1:A:263:ILE:HG21	1.89	0.53
1:A:484:ASP:HB3	1:A:487:ARG:HE	1.73	0.53
1:A:3574:LEU:HB3	1:A:3622:ILE:HG21	1.90	0.53
1:B:383:ILE:HD12	1:B:417:ALA:HB3	1.91	0.53
1:B:484:ASP:CB	1:B:487:ARG:HE	2.21	0.53
1:B:2104:ILE:HD12	1:B:2204:LEU:HD13	1.89	0.53
1:A:238:TYR:O	1:A:242:ILE:HG22	2.07	0.53
1:A:472:THR:HG22	1:A:476:MET:HE1	1.90	0.53
1:A:704:THR:HA	1:A:707:LEU:HD12	1.90	0.53
1:B:975:LEU:O	1:B:979:LYS:HG2	2.09	0.53
1:A:1120:LEU:HD13	1:A:1347:ILE:HG22	1.90	0.53
1:A:1563:PHE:CE2	1:A:1566:GLU:HB2	2.43	0.53
1:A:3621:LEU:HA	1:A:3624:MET:SD	2.48	0.53
1:B:1454:ASN:HD22	1:B:1457:GLN:HB2	1.73	0.53
1:A:1691:LEU:HD21	1:A:1720:ILE:HD13	1.91	0.53
1:A:3398:VAL:O	1:A:3402:ILE:HG13	2.08	0.53
2:C:424:GLN:HE21	2:C:429:SER:HA	1.73	0.53
1:B:638:TYR:HB3	1:B:641:LEU:HD12	1.91	0.53
1:B:3102:ALA:HB2	2:D:424:GLN:HE21	1.73	0.53
1:A:1525:VAL:HG12	1:A:1526:ARG:HG2	1.90	0.53
1:A:2326:GLU:HB3	1:A:2413:LYS:HE2	1.91	0.53
1:B:465:ARG:HD2	1:B:507:TYR:CD1	2.44	0.53
1:A:145:ILE:HG13	1:A:146:TRP:CD1	2.43	0.52
1:B:158:MET:HE2	1:B:158:MET:N	2.24	0.52
1:B:762:MET:HE2	1:B:762:MET:N	2.24	0.52
1:A:176:GLN:O	1:A:180:LEU:HG	2.08	0.52
1:A:754:MET:O	1:A:757:LYS:HG3	2.10	0.52
1:A:960:LEU:HD21	1:A:1017:HIS:CD2	2.45	0.52
1:A:2725:VAL:HB	1:A:2779:LEU:HB2	1.91	0.52
1:B:2041:VAL:HG11	1:B:2048:PHE:CD1	2.44	0.52
2:D:432:GLU:HG2	2:D:436:LYS:HE3	1.91	0.52
1:A:1789:VAL:HA	1:A:1886:ARG:HE	1.74	0.52
2:C:465:LYS:O	2:C:469:GLN:HB3	2.09	0.52
1:B:2874:ILE:HD12	1:B:2879:GLU:HB3	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3447:MET:HE2	1:B:3481:LEU:HA	1.91	0.52
1:A:313:LEU:O	1:A:317:ILE:HG12	2.10	0.52
1:A:1292:ARG:HA	1:A:1928:MET:HA	1.92	0.52
1:A:3351:ARG:HD3	1:B:2892:ILE:HD13	1.90	0.52
1:B:1292:ARG:HA	1:B:1928:MET:HA	1.91	0.52
1:A:314:VAL:HA	1:A:317:ILE:HG12	1.92	0.52
1:A:379:LEU:HA	1:A:382:ILE:HG22	1.92	0.52
1:A:1543:ILE:HG23	1:A:1554:TYR:HB2	1.91	0.52
1:A:2721:GLU:HG3	1:A:2786:VAL:HG22	1.92	0.52
1:B:1039:LYS:HA	1:B:1042:GLU:HG3	1.92	0.52
1:A:279:ARG:O	1:A:283:LYS:HG2	2.10	0.52
1:A:396:VAL:HG11	1:A:435:ASP:HB3	1.91	0.52
1:A:1380:ILE:HD11	1:A:1670:LYS:HE3	1.90	0.52
1:B:704:THR:O	1:B:707:LEU:HB2	2.09	0.52
1:B:705:GLU:O	1:B:708:VAL:HG22	2.10	0.52
1:B:713:SER:O	1:B:716:VAL:HG12	2.09	0.52
1:B:2045:TRP:CD1	1:B:2095:ASN:HD22	2.27	0.52
1:A:206:ALA:HA	1:A:209:ARG:NE	2.25	0.52
1:A:1323:CYS:O	1:A:1326:LEU:HB2	2.10	0.52
1:A:3337:HIS:HA	1:A:3340:ILE:HG12	1.92	0.52
1:B:672:ILE:HD11	1:B:714:ILE:HG13	1.92	0.52
1:B:2414:LEU:HD21	1:B:2433:LEU:HB3	1.91	0.52
1:B:2695:VAL:HG22	1:B:2864:VAL:HG22	1.92	0.52
1:A:1031:SER:HA	1:A:1034:LYS:HD2	1.92	0.52
1:A:132:ALA:HB1	1:A:137:LEU:HD22	1.93	0.51
1:A:2662:MET:HE3	1:A:2666:MET:HE3	1.91	0.51
1:A:3601:GLU:HG3	1:A:3602:ARG:N	2.24	0.51
1:A:292:LYS:HE3	1:B:42:SER:O	2.10	0.51
2:C:146:ASN:HB3	2:C:149:VAL:HG12	1.93	0.51
1:B:492:ASN:HB3	1:B:535:LEU:HD21	1.90	0.51
1:B:480:LEU:HD12	1:B:520:PHE:HE1	1.76	0.51
1:B:1173:ALA:HA	1:B:1178:LEU:HD12	1.92	0.51
1:B:2662:MET:HE3	1:B:2666:MET:HE3	1.91	0.51
1:B:3448:ARG:HB2	1:B:3481:LEU:HB3	1.91	0.51
1:B:3625:GLU:O	1:B:3629:VAL:HG23	2.10	0.51
1:A:1176:PHE:HB3	1:A:2044:ARG:HH21	1.75	0.51
1:B:76:MET:O	1:B:80:THR:HG23	2.11	0.51
1:B:464:VAL:HA	1:B:467:GLU:OE2	2.10	0.51
1:B:3713:ILE:HA	1:B:3738:MET:HE1	1.92	0.51
1:A:199:ALA:HB1	1:A:245:LEU:HD11	1.92	0.51
1:A:488:GLU:HA	1:A:491:VAL:HG22	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1244:VAL:HB	1:A:1248:CYS:HB2	1.93	0.51
1:A:1852:MET:HE2	1:A:1886:ARG:HG2	1.91	0.51
1:A:2270:SER:HB3	1:A:2273:SER:HB3	1.91	0.51
1:A:2699:THR:HA	1:A:2702:LYS:HD3	1.92	0.51
1:A:2727:ILE:HG12	1:A:2861:LEU:HD12	1.91	0.51
1:A:3685:SER:O	1:A:3689:ILE:HG13	2.11	0.51
1:B:495:HIS:CE1	1:B:539:ILE:HG12	2.46	0.51
1:A:52:MET:HA	1:A:55:LEU:HG	1.92	0.51
1:A:484:ASP:N	1:A:487:ARG:HH21	2.08	0.51
1:A:495:HIS:CE1	1:A:539:ILE:HG12	2.45	0.51
1:A:1046:GLN:O	1:A:1050:LEU:HG	2.10	0.51
1:B:2076:HIS:CD2	1:B:2077:ARG:HG2	2.46	0.51
1:B:3599:MET:SD	1:B:3633:VAL:HG11	2.50	0.51
1:A:3337:HIS:CD2	2:C:480:MET:HE1	2.45	0.51
1:A:3337:HIS:HD2	2:C:480:MET:HE1	1.76	0.51
1:B:397:GLN:O	1:B:401:VAL:HG22	2.10	0.51
1:B:574:GLU:HG2	1:B:575:LYS:N	2.25	0.51
1:A:465:ARG:HD2	1:A:507:TYR:CD1	2.46	0.51
1:A:934:ASP:HB2	1:A:937:LYS:HG2	1.93	0.51
1:A:1324:ASP:HA	1:A:1327:LYS:HG3	1.93	0.51
1:A:2179:GLU:HA	1:A:2182:LEU:HD12	1.92	0.51
1:A:3332:LEU:HD21	1:A:3375:LEU:HG	1.93	0.51
1:B:934:ASP:HB2	1:B:937:LYS:HG2	1.93	0.51
1:B:1291:LEU:HD13	1:B:1794:GLN:HB3	1.92	0.51
1:B:1495:ARG:HB3	1:B:1504:ASP:HB2	1.92	0.51
1:B:1495:ARG:HH21	1:B:2356:PRO:HD3	1.76	0.51
1:B:2705:ILE:HG23	1:B:2714:TYR:CE1	2.46	0.51
1:B:2721:GLU:HG3	1:B:2786:VAL:HG22	1.92	0.51
1:A:397:GLN:O	1:A:401:VAL:HG22	2.11	0.51
1:A:605:LEU:HA	1:A:651:PHE:CE2	2.45	0.51
1:A:1213:LEU:HB3	1:A:1285:PRO:HG2	1.92	0.51
1:A:2705:ILE:HG23	1:A:2714:TYR:CE1	2.46	0.51
1:A:3203:MET:HB3	1:A:3206:ARG:NH2	2.26	0.51
1:A:3447:MET:HE2	1:A:3481:LEU:HA	1.93	0.51
1:A:3448:ARG:HA	1:A:3481:LEU:HD22	1.93	0.51
1:B:1598:LEU:HB3	1:B:1619:VAL:HG22	1.92	0.51
1:B:2073:MET:HG3	1:B:2074:PRO:HD2	1.93	0.51
1:B:2237:ALA:HB1	1:B:2289:VAL:HG21	1.93	0.51
1:B:2252:PHE:CG	1:B:2308:ILE:HD11	2.46	0.51
1:B:2727:ILE:HG12	1:B:2861:LEU:HD12	1.92	0.51
1:B:3599:MET:O	1:B:3603:MET:HG3	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:704:THR:O	1:A:707:LEU:HB2	2.11	0.51
1:A:1390:LEU:HD23	1:A:1748:ILE:HB	1.93	0.51
1:A:2744:TYR:HB2	1:A:2791:ILE:HB	1.93	0.51
1:B:1011:PRO:O	1:B:1015:ILE:HG13	2.11	0.51
1:B:2699:THR:HA	1:B:2702:LYS:HD3	1.93	0.51
1:A:761:LYS:HD3	1:A:894:LEU:HD12	1.93	0.50
1:A:1102:LEU:O	1:A:1106:LYS:HG3	2.11	0.50
1:A:3399:MET:HA	1:A:3402:ILE:HD12	1.94	0.50
1:A:3625:GLU:O	1:A:3629:VAL:HG23	2.11	0.50
1:A:3734:LYS:O	1:A:3738:MET:HE2	2.12	0.50
1:B:379:LEU:HA	1:B:382:ILE:HG22	1.93	0.50
1:B:396:VAL:HG11	1:B:435:ASP:HB3	1.92	0.50
1:B:605:LEU:HA	1:B:651:PHE:CE2	2.46	0.50
1:B:738:PHE:O	1:B:741:PHE:HB3	2.11	0.50
1:B:1543:ILE:HG23	1:B:1554:TYR:HB2	1.92	0.50
1:B:3336:LEU:HD21	1:B:3398:VAL:HG11	1.93	0.50
1:B:3538:GLN:O	1:B:3542:MET:HG2	2.12	0.50
2:D:146:ASN:HB3	2:D:149:VAL:HG12	1.93	0.50
1:A:492:ASN:HB3	1:A:535:LEU:HD21	1.92	0.50
1:A:712:PHE:O	1:A:715:GLU:HB3	2.10	0.50
1:B:2270:SER:HB3	1:B:2273:SER:HB3	1.93	0.50
1:B:2866:ARG:HD3	1:B:2867:ALA:N	2.26	0.50
1:A:252:LYS:HE3	1:A:253:ASP:OD2	2.11	0.50
1:B:2107:PHE:HA	1:B:2110:ILE:HD12	1.92	0.50
1:A:541:LEU:HD22	1:A:597:LEU:HD23	1.93	0.50
1:A:930:LEU:HD21	1:A:945:ARG:HB3	1.94	0.50
1:A:975:LEU:O	1:A:979:LYS:HG2	2.11	0.50
1:B:214:SER:HA	1:B:231:TYR:OH	2.10	0.50
1:B:1690:CYS:SG	1:B:1700:ASN:HB2	2.51	0.50
1:B:1767:GLU:OE2	1:B:1769:TYR:HB2	2.12	0.50
1:B:30:ILE:O	1:B:34:LEU:HG	2.11	0.50
1:B:1176:PHE:HB3	1:B:2044:ARG:HH21	1.75	0.50
1:B:1213:LEU:HB3	1:B:1285:PRO:HG2	1.92	0.50
1:B:3251:SER:O	1:B:3255:ILE:HG12	2.11	0.50
1:A:158:MET:N	1:A:158:MET:HE2	2.27	0.50
1:A:3251:SER:O	1:A:3255:ILE:HG12	2.11	0.50
1:B:2744:TYR:HB2	1:B:2791:ILE:HB	1.92	0.50
1:A:214:SER:HA	1:A:231:TYR:OH	2.12	0.50
1:A:1424:ILE:HD12	1:A:1432:LEU:HD23	1.94	0.50
1:A:1573:ASN:HB3	1:A:1594:SER:HB2	1.93	0.50
1:B:3538:GLN:HG3	1:B:3541:ARG:HE	1.75	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3820:GLN:HE22	1:B:3856:GLU:HB2	1.77	0.50
1:A:482:ASP:HB2	1:A:487:ARG:HH22	1.76	0.50
1:A:1259:ALA:HB1	1:A:1882:THR:HB	1.93	0.50
1:B:400:ARG:HE	1:B:401:VAL:HG13	1.77	0.50
1:B:1323:CYS:O	1:B:1326:LEU:HB2	2.12	0.50
1:B:1475:SER:HB3	1:B:1486:CYS:HB2	1.93	0.50
1:B:2067:ARG:HG3	1:B:2110:ILE:HG12	1.94	0.50
1:B:3601:GLU:HG3	1:B:3602:ARG:N	2.25	0.50
1:A:3820:GLN:HE22	1:A:3856:GLU:HB2	1.77	0.50
1:B:2389:LEU:HD21	1:B:2429:GLN:HB3	1.92	0.50
1:B:3385:LEU:HD22	2:D:479:LYS:HE3	1.94	0.50
1:A:189:PHE:HD1	1:A:192:MET:HE1	1.77	0.49
1:A:1034:LYS:HG2	1:A:1103:TYR:CD2	2.45	0.49
1:A:2318:ARG:HG2	1:A:2410:TRP:HZ2	1.77	0.49
1:B:482:ASP:CB	1:B:487:ARG:HH22	2.24	0.49
1:B:2874:ILE:HG12	1:B:2981:GLU:OE2	2.12	0.49
1:A:400:ARG:HE	1:A:401:VAL:HG13	1.76	0.49
1:A:2325:LEU:HD11	1:A:2417:LEU:HD22	1.94	0.49
1:B:647:ILE:HA	1:B:650:LYS:HG2	1.94	0.49
1:B:1737:VAL:HG22	1:B:1748:ILE:HG23	1.94	0.49
1:A:123:GLN:NE2	1:B:290:TRP:HA	2.28	0.49
1:A:436:PHE:CZ	1:A:459:ILE:HG12	2.47	0.49
1:A:1031:SER:O	1:A:1035:GLN:HG3	2.12	0.49
1:B:132:ALA:HB1	1:B:137:LEU:HD22	1.93	0.49
1:A:2543:SER:HB3	1:A:2588:LEU:HD21	1.94	0.49
1:A:3719:PRO:HD3	1:A:3734:LYS:HE2	1.94	0.49
2:C:492:MET:HE1	1:B:2991:VAL:HG11	1.94	0.49
1:B:1244:VAL:HB	1:B:1248:CYS:HB2	1.94	0.49
1:B:1705:THR:HG22	1:B:1706:VAL:H	1.77	0.49
1:B:3809:LEU:HD22	1:B:3823:ILE:HD13	1.95	0.49
1:A:133:LEU:HD12	1:A:192:MET:HG3	1.95	0.49
1:A:520:PHE:HA	1:A:523:VAL:HG12	1.95	0.49
1:A:3559:LEU:O	1:A:3563:VAL:HG23	2.13	0.49
1:B:2145:MET:HE1	1:B:2192:ILE:HG12	1.95	0.49
1:A:199:ALA:HB1	1:A:245:LEU:CD1	2.43	0.49
1:A:520:PHE:CZ	1:A:536:ALA:HA	2.47	0.49
1:A:576:TRP:HZ3	1:A:602:ILE:HG22	1.77	0.49
1:A:612:MET:HA	1:A:615:LEU:HD12	1.95	0.49
1:A:1434:VAL:HG12	1:A:1446:LEU:HD13	1.94	0.49
1:A:2702:LYS:HD2	1:A:2705:ILE:HD11	1.94	0.49
1:A:3214:VAL:HA	1:A:3255:ILE:HD11	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3417:ILE:HD12	1:A:3431:MET:HE1	1.94	0.49
1:A:3423:GLN:HE21	1:A:3512:MET:HE1	1.77	0.49
2:D:130:CYS:HB3	2:D:142:LYS:HG2	1.95	0.49
1:A:1705:THR:HG22	1:A:1706:VAL:H	1.76	0.49
1:A:2107:PHE:HA	1:A:2110:ILE:HD12	1.94	0.49
1:A:3679:LEU:HA	1:A:3682:MET:HB2	1.94	0.49
1:A:3731:ILE:HG22	1:A:3736:GLN:HG2	1.95	0.49
1:B:630:GLY:O	1:B:633:LEU:HD12	2.13	0.49
1:B:1259:ALA:HB1	1:B:1882:THR:HB	1.94	0.49
1:A:318:LEU:HD21	1:A:405:GLU:HG3	1.95	0.49
1:A:956:PHE:CD2	1:A:977:ILE:HD13	2.48	0.49
1:A:2866:ARG:HD3	1:A:2867:ALA:N	2.26	0.49
2:C:29:CYS:HB2	2:C:35:TYR:HB3	1.95	0.49
1:B:1037:PHE:HB2	1:B:1092:PHE:HE2	1.77	0.49
1:B:3203:MET:HB3	1:B:3206:ARG:NH2	2.27	0.49
1:A:264:PHE:CE2	1:A:284:PHE:HB2	2.47	0.49
1:A:1718:ARG:HH21	1:A:1740:TYR:HD2	1.61	0.49
1:A:2318:ARG:HA	1:A:2321:CYS:HB2	1.95	0.49
1:A:2723:SER:HB3	1:A:2784:PRO:HB3	1.95	0.49
2:C:440:ALA:O	2:C:444:ILE:HG13	2.12	0.49
1:B:149:ASP:HB3	1:B:152:GLU:HG2	1.94	0.49
1:B:918:LYS:O	1:B:922:ARG:HG2	2.11	0.49
1:B:1234:TYR:CD2	1:B:1239:MET:HE3	2.48	0.49
1:B:2244:ASP:OD1	1:B:2246:VAL:HG22	2.12	0.49
1:A:576:TRP:HH2	1:A:602:ILE:H	1.57	0.49
1:A:647:ILE:HA	1:A:650:LYS:HG2	1.95	0.49
1:A:1846:PHE:HD1	1:A:1925:ARG:HH12	1.61	0.49
1:A:2414:LEU:HD21	1:A:2433:LEU:HB3	1.94	0.49
2:C:112:HIS:O	2:C:117:HIS:HB3	2.13	0.49
1:B:2318:ARG:HB2	1:B:2318:ARG:NH1	2.28	0.49
2:D:440:ALA:O	2:D:444:ILE:HG13	2.12	0.49
1:A:418:ALA:O	1:A:421:MET:HG2	2.13	0.48
1:A:579:MET:HE2	1:A:579:MET:N	2.27	0.48
1:A:3690:VAL:HG21	1:A:3700:LEU:HD22	1.95	0.48
1:B:959:LEU:HD21	1:B:973:ALA:HB1	1.94	0.48
1:B:3719:PRO:HD3	1:B:3734:LYS:HE2	1.95	0.48
1:A:30:ILE:O	1:A:34:LEU:HG	2.13	0.48
1:A:663:LYS:O	1:A:667:GLU:HG2	2.13	0.48
1:A:1026:ARG:O	1:A:1030:GLU:HG3	2.13	0.48
1:A:1291:LEU:HD13	1:A:1794:GLN:HB3	1.94	0.48
1:A:1690:CYS:SG	1:A:1700:ASN:HB2	2.53	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2046:PRO:O	1:A:2050:LYS:HG3	2.13	0.48
1:B:487:ARG:HA	1:B:490:TYR:HD1	1.78	0.48
1:B:531:ARG:NH1	1:B:531:ARG:HB2	2.29	0.48
1:B:3417:ILE:HD12	1:B:3431:MET:HE1	1.94	0.48
1:A:738:PHE:O	1:A:741:PHE:HB3	2.14	0.48
1:A:742:TRP:HA	1:A:742:TRP:CE3	2.48	0.48
1:A:2385:THR:HA	1:A:2388:ILE:HG22	1.94	0.48
1:B:3448:ARG:HA	1:B:3481:LEU:HD22	1.95	0.48
1:B:3559:LEU:O	1:B:3563:VAL:HG23	2.13	0.48
1:A:139:ARG:NH2	1:A:151:GLU:H	2.12	0.48
1:A:741:PHE:CD1	1:A:895:PHE:HE1	2.31	0.48
1:A:1173:ALA:HA	1:A:1178:LEU:HD12	1.94	0.48
1:A:3761:LYS:HA	1:A:3764:ILE:HD12	1.96	0.48
1:B:46:ASP:O	1:B:50:GLU:HG2	2.13	0.48
1:B:436:PHE:CE1	1:B:459:ILE:HG12	2.48	0.48
1:B:544:LEU:HD12	1:B:563:ASN:H	1.78	0.48
1:B:2705:ILE:HG23	1:B:2714:TYR:HE1	1.78	0.48
1:B:3679:LEU:HA	1:B:3682:MET:HB2	1.94	0.48
1:B:3734:LYS:O	1:B:3738:MET:HE2	2.12	0.48
1:A:1721:MET:HB3	1:A:1739:ILE:O	2.14	0.48
1:A:3713:ILE:HA	1:A:3738:MET:HE1	1.95	0.48
1:B:264:PHE:CE2	1:B:284:PHE:HB2	2.48	0.48
1:B:3547:MET:HE1	1:B:3552:ILE:HD11	1.96	0.48
1:A:835:VAL:HG23	1:A:842:TYR:HD1	1.77	0.48
1:B:133:LEU:HD12	1:B:192:MET:HG3	1.95	0.48
1:B:241:LEU:O	1:B:245:LEU:HB3	2.13	0.48
1:B:591:ARG:HE	1:B:595:GLU:HB3	1.78	0.48
1:B:619:VAL:HG11	1:B:664:LEU:HD22	1.95	0.48
1:B:754:MET:O	1:B:757:LYS:HG3	2.13	0.48
1:B:1750:GLU:HG3	1:B:1751:THR:O	2.13	0.48
1:B:3214:VAL:HA	1:B:3255:ILE:HD11	1.95	0.48
1:B:3563:VAL:HG21	1:B:3606:VAL:HG13	1.95	0.48
2:D:85:HIS:CE1	2:D:87:ASP:HB2	2.49	0.48
2:D:419:LYS:H	2:D:419:LYS:HG2	1.39	0.48
1:A:686:GLU:HA	1:A:805:MET:HB3	1.96	0.48
1:A:1245:CYS:HB3	1:A:1268:CYS:HB2	1.96	0.48
1:A:2067:ARG:HG3	1:A:2110:ILE:HG12	1.94	0.48
1:B:318:LEU:HD21	1:B:405:GLU:HG3	1.96	0.48
1:B:1101:HIS:NE2	1:B:1318:LEU:HD21	2.29	0.48
1:B:1270:CYS:SG	1:B:1275:CYS:HB3	2.54	0.48
1:B:3396:VAL:O	1:B:3580:ILE:HD11	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:679:LEU:H	1:A:679:LEU:HD22	1.78	0.48
1:A:3538:GLN:HG3	1:A:3541:ARG:HE	1.79	0.48
2:C:85:HIS:HB3	2:C:88:GLU:HB3	1.95	0.48
1:B:654:LYS:HZ3	1:B:657:LYS:HD2	1.78	0.48
1:B:3594:LEU:CB	1:B:3599:MET:HE2	2.43	0.48
2:D:328:TRP:NE1	2:D:332:LYS:HE2	2.29	0.48
1:A:704:THR:HG21	1:A:815:LYS:HE2	1.96	0.48
1:A:1966:MET:HE2	1:A:1966:MET:HA	1.96	0.48
1:A:3603:MET:HE1	1:A:3627:TYR:HA	1.95	0.48
1:A:487:ARG:HA	1:A:490:TYR:CD1	2.49	0.48
1:A:632:GLU:HG3	1:A:636:LYS:HE3	1.95	0.48
1:A:876:ILE:HD11	1:A:895:PHE:CD1	2.49	0.48
1:A:1863:PRO:HG2	1:A:1875:ILE:HD11	1.96	0.48
1:B:579:MET:O	1:B:583:LEU:HG	2.14	0.48
1:B:1722:THR:HG22	1:B:1739:ILE:HB	1.96	0.48
1:B:1990:LYS:HB2	1:B:1990:LYS:HE2	1.67	0.48
1:B:3332:LEU:HB3	1:B:3378:VAL:HG21	1.94	0.48
2:D:130:CYS:SG	2:D:150:HIS:CE1	3.07	0.48
2:D:472:ARG:HD2	2:D:472:ARG:HA	1.59	0.48
1:A:172:ASP:O	1:A:176:GLN:HG2	2.14	0.47
1:A:3547:MET:HE1	1:A:3552:ILE:HD11	1.95	0.47
1:B:465:ARG:HH11	1:B:465:ARG:HG2	1.78	0.47
1:B:520:PHE:HA	1:B:523:VAL:HG12	1.96	0.47
1:B:3344:ARG:HH21	1:B:3394:ILE:HD11	1.78	0.47
1:A:2237:ALA:HB1	1:A:2289:VAL:HG21	1.96	0.47
1:A:2759:PRO:HA	1:A:2762:TRP:CE2	2.49	0.47
2:C:130:CYS:HB3	2:C:142:LYS:HG2	1.96	0.47
1:B:482:ASP:HB2	1:B:487:ARG:HH22	1.79	0.47
1:B:3277:LYS:HG3	2:D:477:PRO:HB3	1.95	0.47
2:D:328:TRP:CD1	2:D:332:LYS:HE2	2.48	0.47
1:B:14:VAL:CG1	1:B:54:ILE:HD11	2.44	0.47
1:B:991:ILE:HD12	1:B:991:ILE:H	1.78	0.47
1:B:1721:MET:HB3	1:B:1739:ILE:O	2.15	0.47
1:B:3731:ILE:HG22	1:B:3736:GLN:HG2	1.96	0.47
2:D:139:ILE:HG22	2:D:141:SER:H	1.78	0.47
1:A:991:ILE:H	1:A:991:ILE:HD12	1.79	0.47
1:A:2466:LEU:O	1:A:2470:LYS:HG2	2.14	0.47
1:B:1125:ILE:HG13	1:B:1130:VAL:HG23	1.95	0.47
1:B:3332:LEU:HD22	1:B:3378:VAL:HG21	1.94	0.47
1:B:3603:MET:SD	1:B:3630:VAL:HG21	2.55	0.47
1:A:429:HIS:CE1	1:A:431:ILE:HG13	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1448:TYR:HB2	1:A:1463:ARG:HB2	1.97	0.47
1:A:2695:VAL:HG22	1:A:2864:VAL:HG22	1.94	0.47
1:B:659:GLU:HA	1:B:662:MET:HE3	1.96	0.47
1:B:1059:LYS:HE2	1:B:1131:CYS:SG	2.54	0.47
1:B:3547:MET:SD	1:B:3593:ILE:HG21	2.55	0.47
2:D:85:HIS:HB3	2:D:88:GLU:HB3	1.95	0.47
1:A:51:ALA:O	1:A:55:LEU:HG	2.14	0.47
1:A:3396:VAL:O	1:A:3580:ILE:HD11	2.14	0.47
1:A:3809:LEU:HD22	1:A:3823:ILE:HD13	1.95	0.47
2:C:139:ILE:HG22	2:C:141:SER:H	1.80	0.47
1:B:28:ALA:HB1	1:B:92:MET:HE1	1.97	0.47
1:B:189:PHE:HD1	1:B:192:MET:HE1	1.79	0.47
1:B:2720:TYR:CE1	1:B:2867:ALA:HA	2.49	0.47
1:A:31:ILE:O	1:A:34:LEU:HD12	2.15	0.47
1:A:609:ASP:HA	1:A:663:LYS:NZ	2.30	0.47
1:A:894:LEU:O	1:A:898:ILE:HG22	2.15	0.47
1:A:2991:VAL:HG11	2:D:492:MET:HE1	1.96	0.47
1:B:87:GLN:O	1:B:91:MET:HG2	2.14	0.47
1:B:199:ALA:HB1	1:B:245:LEU:CD1	2.45	0.47
1:B:429:HIS:CE1	1:B:431:ILE:HG13	2.49	0.47
1:B:679:LEU:HD22	1:B:679:LEU:H	1.80	0.47
1:B:1346:GLN:OE1	1:B:1346:GLN:HA	2.15	0.47
1:B:1863:PRO:HG2	1:B:1875:ILE:HD11	1.97	0.47
1:B:3369:CYS:HB3	1:B:3370:ARG:NH1	2.29	0.47
1:A:482:ASP:CB	1:A:487:ARG:HH22	2.28	0.47
1:A:520:PHE:CE2	1:A:539:ILE:HB	2.49	0.47
1:A:2705:ILE:HG23	1:A:2714:TYR:HE1	1.79	0.47
1:B:36:VAL:HG12	1:B:84:ILE:HD13	1.96	0.47
1:B:52:MET:HA	1:B:55:LEU:HG	1.96	0.47
1:B:412:THR:HG23	1:B:413:LEU:HD22	1.96	0.47
1:B:1103:TYR:CD2	1:B:1107:MET:HE1	2.50	0.47
1:B:1390:LEU:HD13	1:B:1750:GLU:OE1	2.15	0.47
1:B:2985:TYR:CD1	1:B:2985:TYR:C	2.93	0.47
1:B:3193:TRP:CE2	1:B:3194:ILE:HG13	2.50	0.47
1:A:473:ILE:HA	1:A:476:MET:SD	2.54	0.47
1:A:1990:LYS:HB2	1:A:1990:LYS:HE2	1.68	0.47
1:A:3538:GLN:O	1:A:3541:ARG:HG2	2.14	0.47
2:C:476:LYS:HE3	2:C:476:LYS:HB2	1.76	0.47
1:B:240:GLU:O	1:B:244:LYS:HG2	2.13	0.47
1:B:256:VAL:O	1:B:260:THR:HG23	2.15	0.47
1:B:287:SER:HA	1:B:290:TRP:CD1	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:541:LEU:CD1	1:B:587:ASN:HD21	2.27	0.47
1:B:714:ILE:HG23	1:B:806:HIS:CE1	2.50	0.47
1:B:2466:LEU:O	1:B:2470:LYS:HG2	2.14	0.47
1:A:1567:MET:HB3	1:A:1613:ILE:HG23	1.97	0.47
1:A:2868:LEU:HG	1:A:2870:GLY:N	2.30	0.47
1:A:3375:LEU:HD13	1:A:3402:ILE:HG23	1.97	0.47
2:C:27:TYR:CZ	2:C:67:LEU:HD13	2.50	0.47
1:B:286:ASP:HA	1:B:289:GLU:OE1	2.15	0.47
1:B:520:PHE:CZ	1:B:536:ALA:HA	2.50	0.47
1:B:3600:VAL:HG12	1:B:3646:ILE:HG22	1.97	0.47
1:A:2244:ASP:O	1:A:2248:ILE:HG13	2.14	0.46
1:A:3536:ASP:O	1:A:3540:VAL:HG23	2.15	0.46
2:C:85:HIS:CE1	2:C:87:ASP:HB2	2.50	0.46
1:B:2759:PRO:HA	1:B:2762:TRP:CE2	2.49	0.46
1:A:651:PHE:C	1:A:652:MET:HE2	2.39	0.46
1:A:705:GLU:O	1:A:708:VAL:HG22	2.15	0.46
1:A:1039:LYS:HA	1:A:1042:GLU:HG3	1.98	0.46
2:C:328:TRP:NE1	2:C:332:LYS:HE2	2.31	0.46
1:B:379:LEU:O	1:B:383:ILE:HG12	2.15	0.46
1:B:576:TRP:HZ3	1:B:602:ILE:HG22	1.80	0.46
1:B:2946:PRO:HA	1:B:2947:PHE:HA	1.59	0.46
1:A:698:LEU:HG	1:A:812:HIS:CE1	2.51	0.46
1:A:2742:SER:HB3	1:A:2764:LYS:HE3	1.97	0.46
1:B:3761:LYS:HA	1:B:3764:ILE:HD12	1.96	0.46
1:A:186:PHE:HB3	1:A:189:PHE:CZ	2.51	0.46
1:A:877:LEU:HD23	1:A:877:LEU:HA	1.81	0.46
1:A:2142:LYS:O	1:A:2145:MET:HB2	2.14	0.46
1:A:2281:ARG:NH2	1:A:2387:LEU:HB2	2.31	0.46
2:C:424:GLN:NE2	2:C:429:SER:HA	2.30	0.46
1:A:1722:THR:HG22	1:A:1739:ILE:HB	1.96	0.46
1:A:2321:CYS:SG	1:A:2392:PRO:HG3	2.56	0.46
1:B:186:PHE:HB3	1:B:189:PHE:CZ	2.50	0.46
1:A:256:VAL:O	1:A:260:THR:HG23	2.14	0.46
1:A:317:ILE:HG23	1:A:376:ARG:CZ	2.46	0.46
1:A:584:VAL:HG22	1:A:617:TYR:CD2	2.48	0.46
1:A:630:GLY:O	1:A:633:LEU:HD12	2.16	0.46
1:A:2475:HIS:HA	1:A:2783:VAL:HB	1.98	0.46
1:A:2720:TYR:CE1	1:A:2867:ALA:HA	2.51	0.46
1:B:545:LYS:HE2	1:B:597:LEU:HD13	1.96	0.46
1:B:704:THR:HG21	1:B:815:LYS:HE2	1.96	0.46
1:B:1037:PHE:HB2	1:B:1092:PHE:CE2	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1846:PHE:HD1	1:B:1925:ARG:HH12	1.64	0.46
1:B:2742:SER:HB3	1:B:2764:LYS:HE3	1.97	0.46
1:B:2868:LEU:HG	1:B:2870:GLY:N	2.30	0.46
1:B:3690:VAL:HG21	1:B:3700:LEU:HD22	1.97	0.46
2:D:112:HIS:O	2:D:117:HIS:HB3	2.15	0.46
1:A:762:MET:HA	1:A:765:ILE:HG12	1.98	0.46
1:A:931:MET:HB3	1:A:990:LYS:HE3	1.96	0.46
1:A:1452:ARG:HG3	1:A:1768:ARG:HD3	1.98	0.46
1:B:669:ALA:HB2	1:B:710:ILE:HD13	1.98	0.46
1:B:2543:SER:HB3	1:B:2588:LEU:HD21	1.98	0.46
1:B:3154:THR:HB	1:B:3158:ASN:HD22	1.80	0.46
1:B:3695:ALA:O	1:B:3699:VAL:HG23	2.16	0.46
1:A:2329:ILE:HG12	1:A:2417:LEU:HD13	1.98	0.46
1:A:3203:MET:HB2	1:B:2921:TYR:CE1	2.51	0.46
1:B:2075:LEU:HD23	1:B:2075:LEU:H	1.79	0.46
1:B:2133:ARG:HH22	1:B:2169:GLY:HA3	1.81	0.46
1:B:2715:LYS:HD2	1:B:2751:GLU:HA	1.97	0.46
2:D:269:VAL:HB	2:D:397:THR:HG22	1.98	0.46
1:A:486:LYS:HD2	1:A:487:ARG:HG3	1.98	0.46
1:A:960:LEU:HD12	1:A:977:ILE:HG21	1.97	0.46
1:A:1750:GLU:HG3	1:A:1751:THR:O	2.15	0.46
1:B:1101:HIS:HD2	1:B:1318:LEU:HD11	1.81	0.46
1:B:1992:HIS:HB2	1:B:1999:LEU:HD12	1.98	0.46
1:B:2200:TRP:CD1	1:B:2200:TRP:H	2.34	0.46
1:B:2266:ILE:O	1:B:2273:SER:HB2	2.15	0.46
1:B:2702:LYS:HD2	1:B:2705:ILE:HD11	1.97	0.46
1:A:2185:LYS:HD2	1:A:2185:LYS:O	2.15	0.46
1:B:2249:ARG:NH2	1:B:2250:ASN:HB2	2.31	0.46
1:B:2389:LEU:HG	1:B:2433:LEU:HD12	1.98	0.46
1:B:3423:GLN:O	1:B:3427:LEU:HG	2.16	0.46
2:D:64:PRO:HG3	2:D:100:ASN:HB2	1.98	0.46
1:A:149:ASP:HB3	1:A:152:GLU:HG2	1.96	0.45
1:A:419:ILE:O	1:A:423:ARG:HG3	2.16	0.45
1:A:591:ARG:HE	1:A:595:GLU:HB3	1.80	0.45
1:A:1678:VAL:HG23	1:A:1691:LEU:C	2.41	0.45
1:A:2081:MET:HB3	1:A:2081:MET:HE2	1.58	0.45
1:A:3344:ARG:HH21	1:A:3394:ILE:HD11	1.81	0.45
1:B:1169:HIS:CD2	1:B:1990:LYS:HA	2.50	0.45
1:B:1245:CYS:HB3	1:B:1268:CYS:HB2	1.97	0.45
1:B:1952:LEU:HD23	1:B:1952:LEU:HA	1.75	0.45
1:B:3547:MET:N	1:B:3547:MET:HE2	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:27:TYR:CZ	2:D:67:LEU:HD13	2.51	0.45
1:A:452:ILE:O	1:A:456:ILE:HG12	2.16	0.45
1:A:3376:MET:O	1:A:3380:VAL:HG23	2.17	0.45
1:A:3710:TRP:HE3	1:A:3713:ILE:HG21	1.82	0.45
1:B:86:PRO:HA	1:B:89:ARG:HH12	1.81	0.45
1:B:320:LEU:HD11	1:B:372:TYR:HB2	1.97	0.45
1:B:875:SER:HA	1:B:878:LYS:HD2	1.98	0.45
1:B:948:ILE:HD13	1:B:948:ILE:HA	1.64	0.45
1:A:36:VAL:HG12	1:A:84:ILE:HD13	1.97	0.45
1:A:465:ARG:HH22	1:A:466:LYS:NZ	2.14	0.45
1:A:1691:LEU:HD13	1:A:1723:TYR:CE1	2.52	0.45
1:B:419:ILE:O	1:B:423:ARG:HG3	2.16	0.45
1:B:1174:LYS:HE2	1:B:1174:LYS:HB2	1.74	0.45
1:B:1229:HIS:CE1	1:B:1263:LYS:HD2	2.52	0.45
1:B:1718:ARG:HH21	1:B:1740:TYR:HD2	1.63	0.45
1:B:3390:SER:O	1:B:3394:ILE:HG13	2.16	0.45
1:A:1229:HIS:CE1	1:A:1263:LYS:HD2	2.51	0.45
1:A:2052:LEU:HD21	1:A:2059:VAL:HA	1.98	0.45
1:A:2145:MET:HE1	1:A:2192:ILE:HG12	1.98	0.45
1:A:3277:LYS:HG3	2:C:477:PRO:HB3	1.99	0.45
1:B:139:ARG:NH2	1:B:151:GLU:H	2.14	0.45
1:B:832:LEU:HA	1:B:835:VAL:HG12	1.98	0.45
1:B:2188:GLU:OE2	1:B:2188:GLU:HA	2.17	0.45
1:B:3332:LEU:HD21	1:B:3375:LEU:HG	1.98	0.45
2:D:97:PRO:HD2	2:D:147:LEU:HD22	1.98	0.45
1:A:412:THR:HG23	1:A:413:LEU:HD22	1.98	0.45
1:A:631:MET:O	1:A:635:ARG:HG2	2.17	0.45
1:A:737:MET:HE3	1:A:895:PHE:CD2	2.51	0.45
1:A:2200:TRP:H	1:A:2200:TRP:CD1	2.34	0.45
1:A:3630:VAL:O	1:A:3634:VAL:HG23	2.17	0.45
2:C:416:ARG:HE	2:C:418:ARG:HD3	1.80	0.45
1:B:979:LYS:O	1:B:982:GLU:HG3	2.16	0.45
1:B:3337:HIS:ND1	2:D:480:MET:HE1	2.31	0.45
1:B:3581:PHE:HA	1:B:3584:ILE:HG22	1.99	0.45
1:A:87:GLN:O	1:A:91:MET:HG2	2.17	0.45
1:A:2266:ILE:O	1:A:2273:SER:HB2	2.17	0.45
1:A:2946:PRO:HA	1:A:2947:PHE:HA	1.58	0.45
1:A:3193:TRP:CE2	1:A:3194:ILE:HG13	2.50	0.45
1:B:598:PRO:HG2	1:B:624:PHE:CD2	2.52	0.45
1:B:612:MET:HA	1:B:615:LEU:HD12	1.99	0.45
1:B:651:PHE:C	1:B:652:MET:HE2	2.41	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:688:ILE:HG13	1:B:691:TRP:CE3	2.52	0.45
1:B:1399:ARG:HH21	1:B:1743:VAL:HG23	1.82	0.45
1:B:1691:LEU:HD13	1:B:1723:TYR:CE1	2.51	0.45
1:B:3200:SER:O	1:B:3206:ARG:HD3	2.16	0.45
1:A:379:LEU:O	1:A:383:ILE:HG12	2.17	0.45
1:A:711:CYS:SG	1:A:809:ILE:HG21	2.57	0.45
1:A:1106:LYS:HB3	1:A:1106:LYS:HE3	1.70	0.45
1:A:1390:LEU:HD13	1:A:1750:GLU:OE1	2.17	0.45
1:A:3390:SER:O	1:A:3394:ILE:HG13	2.16	0.45
1:B:1504:ASP:HB3	1:B:2351:TRP:CE2	2.51	0.45
1:B:3674:LYS:O	1:B:3677:GLN:HG3	2.17	0.45
1:A:464:VAL:O	1:A:467:GLU:HG3	2.16	0.45
1:A:1564:VAL:HG12	1:A:1565:GLU:OE1	2.17	0.45
1:A:1857:VAL:HB	1:A:1862:GLY:HA3	1.99	0.45
2:C:130:CYS:SG	2:C:150:HIS:CE1	3.09	0.45
1:B:45:VAL:HA	1:B:48:ILE:HD11	1.99	0.45
1:B:465:ARG:HH22	1:B:466:LYS:NZ	2.14	0.45
1:B:629:GLU:O	1:B:633:LEU:HG	2.17	0.45
1:A:512:ILE:HA	1:A:515:LYS:HZ2	1.82	0.45
1:A:1125:ILE:HG13	1:A:1130:VAL:HG23	1.98	0.45
1:A:2715:LYS:HD2	1:A:2751:GLU:HA	1.98	0.45
1:A:2868:LEU:HG	1:A:2870:GLY:H	1.81	0.45
1:A:3372:GLY:H	1:A:3541:ARG:NH2	2.14	0.45
1:A:3674:LYS:O	1:A:3677:GLN:HG3	2.17	0.45
2:C:64:PRO:HG3	2:C:100:ASN:HB2	1.99	0.45
1:B:488:GLU:HA	1:B:491:VAL:HG22	1.98	0.45
1:B:1692:SER:HB2	1:B:1698:GLN:HE21	1.81	0.45
1:B:3018:LEU:HD12	1:B:3018:LEU:HA	1.84	0.45
1:B:3325:LYS:HZ3	1:B:3370:ARG:NE	2.15	0.45
1:A:670:LYS:O	1:A:674:ILE:HG13	2.17	0.45
1:A:918:LYS:O	1:A:922:ARG:HG2	2.16	0.45
1:A:998:LYS:HE3	1:A:998:LYS:O	2.17	0.45
1:A:3400:MET:HA	1:A:3403:MET:HG3	1.99	0.45
1:A:3695:ALA:O	1:A:3699:VAL:HG23	2.17	0.45
2:C:97:PRO:HD2	2:C:147:LEU:HD22	1.99	0.45
1:B:172:ASP:O	1:B:176:GLN:HG2	2.17	0.45
1:B:1250:ILE:HD13	1:B:1790:LEU:HG	1.99	0.45
1:A:286:ASP:HA	1:A:289:GLU:OE1	2.17	0.44
1:A:1441:GLN:HB3	1:A:1472:ASN:HB2	1.99	0.44
1:A:2074:PRO:HG2	1:A:2077:ARG:HG3	1.99	0.44
1:A:2985:TYR:CD1	1:A:2985:TYR:C	2.95	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3383:LEU:HD11	1:A:3399:MET:HE3	1.98	0.44
1:A:3547:MET:HE2	1:A:3547:MET:N	2.32	0.44
1:B:475:ARG:HH21	1:B:479:ASP:N	2.15	0.44
1:B:1010:GLU:HB2	1:B:1011:PRO:HD3	1.99	0.44
1:B:1432:LEU:HD13	1:B:1448:TYR:CE2	2.52	0.44
1:B:2261:TYR:HD1	1:B:2320:LEU:HD22	1.82	0.44
1:B:2982:LEU:HD23	1:B:2982:LEU:HA	1.81	0.44
1:A:1334:GLN:O	1:A:1337:PHE:HB3	2.17	0.44
1:A:2475:HIS:HD1	1:A:2475:HIS:C	2.25	0.44
1:A:3585:VAL:HG12	1:A:3632:PHE:CE2	2.52	0.44
1:B:520:PHE:CE2	1:B:539:ILE:HB	2.52	0.44
1:B:762:MET:HA	1:B:765:ILE:HG12	1.99	0.44
1:B:1034:LYS:HB3	1:B:1103:TYR:CE2	2.52	0.44
1:B:3600:VAL:O	1:B:3604:MET:HG2	2.17	0.44
1:B:3710:TRP:HE3	1:B:3713:ILE:HG21	1.81	0.44
1:A:42:SER:O	1:B:292:LYS:HE3	2.17	0.44
1:A:736:GLN:O	1:A:740:ARG:HG2	2.17	0.44
1:A:742:TRP:HZ3	1:A:743:LYS:HZ3	1.64	0.44
1:A:1394:HIS:CE1	1:A:1398:THR:HG22	2.52	0.44
1:A:1504:ASP:HB3	1:A:2351:TRP:CE2	2.52	0.44
1:B:1291:LEU:HA	1:B:1791:LEU:HD13	2.00	0.44
1:B:1394:HIS:CE1	1:B:1398:THR:HG22	2.52	0.44
1:B:1845:ASN:HA	1:B:1847:ARG:NH1	2.32	0.44
1:B:3380:VAL:HA	1:B:3383:LEU:HB2	1.99	0.44
1:A:948:ILE:HD13	1:A:948:ILE:HA	1.71	0.44
1:A:1122:HIS:O	1:A:1125:ILE:HG22	2.17	0.44
1:A:3336:LEU:HD21	1:A:3398:VAL:HG11	1.98	0.44
1:A:3369:CYS:HB3	1:A:3370:ARG:NH1	2.32	0.44
1:A:3538:GLN:HA	1:A:3541:ARG:HG2	2.00	0.44
1:B:44:ASP:O	1:B:48:ILE:HG12	2.18	0.44
1:B:956:PHE:CD1	1:B:977:ILE:HD13	2.53	0.44
1:A:32:TYR:HB3	1:A:92:MET:HE3	2.00	0.44
1:A:258:LYS:O	1:A:262:ILE:HG22	2.18	0.44
1:A:475:ARG:O	1:A:475:ARG:HD3	2.17	0.44
1:A:3332:LEU:HB3	1:A:3378:VAL:HG21	1.99	0.44
1:A:3547:MET:SD	1:A:3593:ILE:HG21	2.57	0.44
1:B:1046:GLN:O	1:B:1050:LEU:HG	2.17	0.44
1:B:1808:ILE:HG22	1:B:1834:GLN:HG2	2.00	0.44
1:B:3265:ARG:HB3	2:D:464:LEU:HD23	2.00	0.44
1:B:3380:VAL:HG11	1:B:3549:CYS:HB2	1.99	0.44
1:A:3734:LYS:O	1:A:3738:MET:HG2	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:441:LEU:HA	1:B:444:ILE:HG12	2.00	0.44
1:B:1002:TYR:CD2	1:B:1049:LEU:HD22	2.53	0.44
1:B:1455:LEU:HD22	1:B:1735:TYR:CE2	2.53	0.44
1:B:3630:VAL:O	1:B:3634:VAL:HG23	2.17	0.44
2:D:320:GLU:HB3	2:D:324:LYS:NZ	2.33	0.44
2:D:412:LYS:HB2	2:D:412:LYS:HE2	1.58	0.44
1:A:633:LEU:O	1:A:637:PHE:HB3	2.17	0.44
1:A:880:LEU:HA	1:A:880:LEU:HD23	1.76	0.44
1:A:2322:LEU:HD23	1:A:2322:LEU:HA	1.78	0.44
1:A:3136:TYR:CE1	2:C:436:LYS:HD3	2.52	0.44
1:A:3581:PHE:HA	1:A:3584:ILE:HG22	1.99	0.44
1:B:400:ARG:HB2	1:B:439:ILE:HG22	1.99	0.44
1:B:436:PHE:CZ	1:B:459:ILE:HG12	2.52	0.44
1:B:2035:LEU:HD11	1:B:2081:MET:HB2	2.00	0.44
1:B:2177:THR:H	1:B:2180:SER:HB2	1.83	0.44
1:B:2868:LEU:HG	1:B:2870:GLY:H	1.83	0.44
1:B:3585:VAL:HG12	1:B:3632:PHE:CE2	2.52	0.44
1:A:695:ILE:HD12	1:A:695:ILE:H	1.82	0.44
1:A:1805:CYS:HB2	1:A:1839:LEU:HD23	2.00	0.44
1:A:3265:ARG:HB3	2:C:464:LEU:HD23	1.99	0.44
1:A:3447:MET:HE2	1:A:3481:LEU:HD23	1.99	0.44
1:A:2528:LEU:HD23	1:A:2528:LEU:HA	1.87	0.44
1:A:3385:LEU:HD22	2:C:479:LYS:HE3	1.99	0.44
1:B:1244:VAL:HG11	1:B:1253:HIS:CD2	2.53	0.44
1:A:236:HIS:O	1:A:240:GLU:HG2	2.19	0.43
1:A:260:THR:O	1:A:263:ILE:HG22	2.18	0.43
1:A:1678:VAL:HA	1:A:1692:SER:HA	2.00	0.43
1:A:1808:ILE:HG22	1:A:1834:GLN:HG2	1.99	0.43
1:A:2249:ARG:HH12	1:A:2250:ASN:HA	1.83	0.43
1:A:3591:ARG:HG2	1:A:3633:VAL:HG22	2.00	0.43
2:C:472:ARG:HD2	2:C:472:ARG:HA	1.64	0.43
1:B:469:VAL:HG11	1:B:508:ALA:HB2	1.99	0.43
1:B:470:GLU:O	1:B:473:ILE:HG12	2.18	0.43
1:B:670:LYS:O	1:B:674:ILE:HG13	2.17	0.43
1:B:959:LEU:HD22	1:B:977:ILE:HD11	2.00	0.43
1:B:1461:ALA:HA	1:B:1846:PHE:CZ	2.53	0.43
1:A:416:HIS:O	1:A:420:GLU:HG3	2.18	0.43
1:A:619:VAL:O	1:A:622:MET:HE2	2.18	0.43
1:A:933:VAL:HG12	1:A:993:PHE:CD1	2.53	0.43
1:A:2047:TYR:CE2	1:A:2186:ILE:HD12	2.52	0.43
1:A:2698:MET:HE2	1:A:2698:MET:HB3	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:698:LEU:HG	1:B:812:HIS:CE1	2.52	0.43
1:B:736:GLN:O	1:B:740:ARG:HG2	2.18	0.43
1:B:1122:HIS:O	1:B:1125:ILE:HG22	2.18	0.43
1:B:2066:MET:HE2	1:B:2066:MET:HB3	1.95	0.43
1:B:2557:GLU:HA	1:B:2557:GLU:OE1	2.18	0.43
1:B:3734:LYS:O	1:B:3738:MET:HG2	2.18	0.43
1:B:3748:THR:HG21	1:B:3812:LEU:HG	2.00	0.43
1:A:283:LYS:O	1:A:286:ASP:HB2	2.18	0.43
1:A:1250:ILE:HD13	1:A:1790:LEU:HG	2.00	0.43
1:A:1635:TYR:CE1	1:A:1655:LEU:HD22	2.53	0.43
1:A:2741:VAL:HG21	1:A:2777:ILE:HD13	2.00	0.43
1:A:3380:VAL:HG11	1:A:3549:CYS:HB2	2.01	0.43
1:B:162:TRP:CD2	1:B:266:LYS:NZ	2.86	0.43
1:B:417:ALA:O	1:B:421:MET:HG2	2.19	0.43
1:B:463:LYS:HB3	1:B:463:LYS:HE3	1.82	0.43
1:B:762:MET:HE1	1:B:894:LEU:HD22	2.01	0.43
1:B:1450:ASP:OD1	1:B:1450:ASP:O	2.35	0.43
1:B:2997:LYS:HD2	1:B:2998:PRO:O	2.17	0.43
1:A:263:ILE:O	1:A:266:LYS:HG3	2.18	0.43
1:A:648:PHE:O	1:A:652:MET:HG2	2.18	0.43
1:A:989:ASP:OD1	1:A:989:ASP:C	2.62	0.43
1:A:1000:HIS:HD1	1:A:1000:HIS:H	1.66	0.43
1:A:2673:TRP:O	1:A:2676:ILE:HG12	2.19	0.43
1:B:612:MET:HA	1:B:615:LEU:HB2	2.01	0.43
1:B:1293:GLY:HA3	1:B:1889:ARG:HG2	2.00	0.43
1:B:3574:LEU:HB2	1:B:3622:ILE:HD13	2.00	0.43
2:D:319:ASP:O	2:D:323:LYS:HG3	2.19	0.43
1:A:408:PHE:CZ	1:A:447:PRO:HD2	2.52	0.43
1:A:560:VAL:HG21	1:A:629:GLU:HG3	2.00	0.43
1:A:853:ILE:HD12	1:A:853:ILE:HA	1.91	0.43
1:A:1363:GLU:OE1	1:A:1363:GLU:HA	2.18	0.43
2:C:515:TYR:HA	1:B:2448:MET:HE1	2.00	0.43
1:B:127:ILE:HG23	1:B:131:PHE:CZ	2.53	0.43
1:B:520:PHE:CZ	1:B:539:ILE:HB	2.54	0.43
1:B:741:PHE:CE1	1:B:898:ILE:HD13	2.43	0.43
1:B:1857:VAL:HB	1:B:1862:GLY:HA3	2.00	0.43
1:B:2586:ILE:HD13	1:B:2597:LEU:HD23	2.01	0.43
1:B:2673:TRP:O	1:B:2676:ILE:HG12	2.18	0.43
1:A:608:ILE:HG13	1:A:663:LYS:HE2	2.00	0.43
1:A:1244:VAL:HG11	1:A:1253:HIS:CD2	2.53	0.43
1:A:1820:ARG:HA	1:A:1827:LEU:HB2	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:247:PRO:HD2	1:B:248:HIS:CE1	2.53	0.43
1:B:320:LEU:HD22	1:B:376:ARG:NH1	2.34	0.43
1:B:452:ILE:O	1:B:456:ILE:HG12	2.18	0.43
1:B:1387:ILE:HG22	1:B:1749:TRP:HE3	1.84	0.43
1:B:1805:CYS:HB2	1:B:1839:LEU:HD23	2.00	0.43
1:B:3376:MET:O	1:B:3380:VAL:HG23	2.18	0.43
2:D:104:LEU:HB3	2:D:108:GLN:HG3	2.01	0.43
1:A:1488:GLN:CD	1:A:1488:GLN:N	2.77	0.43
1:A:1866:LEU:HD12	1:A:1885:LEU:HD11	2.01	0.43
1:A:2188:GLU:OE1	1:A:2188:GLU:HA	2.18	0.43
1:A:2991:VAL:HG12	2:D:495:ARG:NH1	2.33	0.43
1:A:3580:ILE:O	1:A:3584:ILE:HG22	2.19	0.43
1:A:3797:LEU:HD22	1:A:3837:VAL:HG11	2.01	0.43
2:C:104:LEU:HB3	2:C:108:GLN:HG3	1.99	0.43
1:B:127:ILE:HD13	1:B:127:ILE:HA	1.89	0.43
1:B:160:GLN:HB3	1:B:162:TRP:CH2	2.54	0.43
1:B:877:LEU:HD23	1:B:877:LEU:HA	1.81	0.43
1:B:1678:VAL:HG23	1:B:1691:LEU:C	2.44	0.43
1:A:707:LEU:O	1:A:710:ILE:HB	2.17	0.43
1:A:1399:ARG:HH21	1:A:1743:VAL:HG23	1.84	0.43
1:A:1841:ALA:HB3	1:A:1900:ILE:HB	2.01	0.43
1:A:1925:ARG:HA	1:A:1928:MET:SD	2.59	0.43
1:A:2530:ILE:HD11	1:A:2581:MET:HB2	2.01	0.43
1:A:2557:GLU:OE1	1:A:2557:GLU:HA	2.18	0.43
1:A:3285:LYS:HB3	1:A:3285:LYS:HE2	1.74	0.43
1:B:1363:GLU:HA	1:B:1363:GLU:OE1	2.18	0.43
1:B:1925:ARG:HA	1:B:1928:MET:SD	2.58	0.43
1:A:76:MET:HA	1:A:79:ILE:HG12	1.99	0.43
1:A:240:GLU:O	1:A:244:LYS:HG2	2.19	0.43
1:A:395:ILE:HD11	1:A:421:MET:HG3	2.01	0.43
1:A:856:ARG:HA	1:A:856:ARG:HD2	1.67	0.43
1:A:2079:GLN:O	1:A:2083:GLN:HG3	2.19	0.43
1:A:2921:TYR:CE1	1:B:3203:MET:HB2	2.53	0.43
1:A:3574:LEU:HB2	1:A:3622:ILE:HD13	2.01	0.43
1:A:3748:THR:HG21	1:A:3812:LEU:HG	2.01	0.43
1:B:35:ARG:CZ	1:B:35:ARG:HA	2.48	0.43
1:B:723:LEU:HD21	1:B:738:PHE:HE1	1.84	0.43
1:B:852:LYS:O	1:B:852:LYS:HD3	2.19	0.43
1:B:1388:GLU:OE2	1:B:1752:SER:HA	2.18	0.43
1:B:1622:PRO:HG2	1:B:1646:LEU:HD11	2.01	0.43
1:A:959:LEU:HD21	1:A:973:ALA:HB1	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2180:SER:O	1:A:2183:ILE:HG22	2.18	0.43
1:B:31:ILE:O	1:B:34:LEU:HD12	2.19	0.43
1:B:145:ILE:HG13	1:B:146:TRP:CD1	2.54	0.43
1:B:177:ALA:O	1:B:181:ILE:HG12	2.18	0.43
1:B:406:LEU:HD21	1:B:414:ILE:HG22	2.01	0.43
1:B:463:LYS:O	1:B:467:GLU:HG3	2.19	0.43
1:A:486:LYS:HD3	1:A:490:TYR:CE1	2.54	0.42
1:A:1293:GLY:HA3	1:A:1889:ARG:HG2	2.01	0.42
1:A:2083:GLN:O	1:A:2087:LYS:HG3	2.18	0.42
1:A:2983:ASN:ND2	2:D:491:ASN:HB2	2.33	0.42
1:B:275:VAL:O	1:B:278:GLN:HG3	2.19	0.42
1:B:608:ILE:HG13	1:B:663:LYS:HE2	2.01	0.42
1:B:907:SER:HA	1:B:910:TRP:CE2	2.54	0.42
1:B:1234:TYR:CZ	1:B:1881:LYS:HA	2.53	0.42
1:B:3276:ILE:HD12	1:B:3276:ILE:HA	1.91	0.42
1:B:3797:LEU:HD22	1:B:3837:VAL:HG11	2.01	0.42
1:A:35:ARG:CZ	1:A:35:ARG:HA	2.49	0.42
1:A:1680:ALA:O	1:A:1690:CYS:HA	2.19	0.42
1:A:1998:GLU:OE1	1:A:1998:GLU:HA	2.19	0.42
1:A:2035:LEU:HD11	1:A:2081:MET:HB2	2.01	0.42
1:A:2872:GLN:O	1:A:2874:ILE:HD13	2.19	0.42
1:A:3538:GLN:HG2	1:A:3542:MET:CE	2.49	0.42
2:C:495:ARG:NH1	1:B:2991:VAL:HG12	2.33	0.42
1:B:139:ARG:HG2	1:B:150:LEU:HD12	2.00	0.42
1:B:512:ILE:HA	1:B:515:LYS:HZ2	1.84	0.42
1:B:874:SER:HB2	1:B:878:LYS:HE3	2.01	0.42
1:B:3333:ILE:HB	1:B:3378:VAL:HB	2.00	0.42
1:A:1169:HIS:CD2	1:A:1990:LYS:HA	2.54	0.42
1:A:2157:LEU:HD11	1:A:2176:LYS:HG3	2.01	0.42
2:C:385:GLU:OE1	2:C:385:GLU:HA	2.18	0.42
1:B:246:TRP:CG	1:B:247:PRO:HD3	2.54	0.42
1:B:609:ASP:HA	1:B:663:LYS:NZ	2.33	0.42
1:B:1791:LEU:HG	1:B:1852:MET:HE3	2.00	0.42
1:B:1841:ALA:HB3	1:B:1900:ILE:HB	2.00	0.42
1:B:2698:MET:SD	1:B:2861:LEU:HD23	2.60	0.42
1:B:3546:LEU:HB3	1:B:3547:MET:HE2	2.01	0.42
1:A:671:ILE:HD12	1:A:671:ILE:HA	1.83	0.42
1:A:1109:LYS:HB2	1:A:1333:VAL:HG22	2.01	0.42
1:A:1845:ASN:HA	1:A:1847:ARG:NH1	2.33	0.42
1:A:2102:GLN:OE1	1:A:2102:GLN:N	2.51	0.42
2:C:465:LYS:HE3	2:C:465:LYS:HB3	1.70	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:153:THR:O	1:B:156:LYS:HG2	2.19	0.42
1:B:560:VAL:HG21	1:B:629:GLU:HG3	2.01	0.42
1:B:575:LYS:HA	1:B:575:LYS:HD2	1.83	0.42
1:B:1441:GLN:HB3	1:B:1472:ASN:HB2	2.01	0.42
1:A:153:THR:O	1:A:156:LYS:HG2	2.19	0.42
1:A:153:THR:HA	1:A:156:LYS:HG2	2.02	0.42
1:A:462:GLU:HG3	1:A:465:ARG:NH2	2.34	0.42
1:A:1346:GLN:OE1	1:A:1346:GLN:HA	2.20	0.42
1:A:2017:TRP:HB3	1:A:2027:ARG:HH11	1.85	0.42
1:A:3599:MET:H	1:A:3599:MET:HG2	1.62	0.42
1:A:3710:TRP:O	1:A:3713:ILE:HG22	2.20	0.42
2:C:112:HIS:HA	2:C:116:GLN:OE1	2.19	0.42
2:C:412:LYS:HE2	2:C:412:LYS:HB2	1.59	0.42
1:B:2281:ARG:HA	1:B:2281:ARG:HD3	1.87	0.42
1:B:2389:LEU:CD2	1:B:2429:GLN:HB3	2.49	0.42
1:B:2741:VAL:HG21	1:B:2777:ILE:HD13	2.01	0.42
2:D:465:LYS:HB3	2:D:465:LYS:HE3	1.71	0.42
1:A:275:VAL:O	1:A:278:GLN:HG3	2.19	0.42
1:A:832:LEU:HA	1:A:835:VAL:HG12	2.01	0.42
1:A:1002:TYR:CD2	1:A:1049:LEU:HD13	2.52	0.42
1:A:1971:LEU:HD23	1:A:1971:LEU:HA	1.88	0.42
2:C:320:GLU:HB3	2:C:324:LYS:NZ	2.34	0.42
1:B:258:LYS:O	1:B:262:ILE:HG22	2.20	0.42
1:B:2332:TRP:HE1	1:B:2381:ILE:HG22	1.84	0.42
1:A:737:MET:HE3	1:A:895:PHE:CE2	2.54	0.42
1:A:1697:HIS:HB3	1:A:1716:VAL:O	2.20	0.42
1:A:3655:PHE:CD2	1:A:3699:VAL:HG12	2.55	0.42
2:C:424:GLN:HE21	2:C:429:SER:CA	2.32	0.42
1:B:131:PHE:HB3	1:B:135:PHE:CE2	2.54	0.42
1:B:131:PHE:N	1:B:131:PHE:CD1	2.86	0.42
1:B:657:LYS:O	1:B:660:LEU:HB2	2.20	0.42
1:B:1866:LEU:HD12	1:B:1885:LEU:HD11	2.02	0.42
1:B:2322:LEU:HG	1:B:2410:TRP:NE1	2.34	0.42
1:B:3419:LYS:HE2	1:B:3427:LEU:HB2	2.02	0.42
1:A:286:ASP:O	1:A:289:GLU:HB2	2.19	0.42
1:A:506:LYS:HD3	1:A:507:TYR:CD2	2.55	0.42
1:A:1056:ILE:HD12	1:A:1057:ILE:H	1.85	0.42
1:B:470:GLU:HA	1:B:473:ILE:HG12	2.02	0.42
1:B:738:PHE:HA	1:B:741:PHE:HB3	2.02	0.42
1:B:1559:HIS:CE1	1:B:1562:ASN:HD22	2.37	0.42
1:A:25:GLU:HG3	1:A:95:ILE:HD13	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:484:ASP:H	1:A:487:ARG:HH21	1.68	0.42
1:A:3188:SER:O	1:A:3189:ASN:C	2.63	0.42
1:A:3621:LEU:HD12	1:A:3622:ILE:HG13	2.02	0.42
1:A:3645:GLY:HA3	1:A:3693:ASN:HB2	2.01	0.42
1:B:291:LEU:HB2	1:B:293:ILE:HD11	2.01	0.42
1:B:989:ASP:OD1	1:B:989:ASP:C	2.63	0.42
1:B:3655:PHE:CD2	1:B:3699:VAL:HG12	2.54	0.42
2:C:515:TYR:HB2	1:B:2408:ASP:OD1	2.20	0.42
1:B:614:ASP:HA	1:B:617:TYR:HB2	2.02	0.42
1:B:1635:TYR:CE1	1:B:1655:LEU:HD22	2.55	0.42
1:B:1680:ALA:O	1:B:1690:CYS:HA	2.20	0.42
1:B:1852:MET:HE2	1:B:1886:ARG:HG2	2.02	0.42
1:A:439:ILE:O	1:A:443:VAL:HG23	2.20	0.41
1:A:1463:ARG:HG2	1:A:1847:ARG:CZ	2.48	0.41
1:A:1495:ARG:HH21	1:A:2356:PRO:HD3	1.84	0.41
1:B:188:LEU:HD23	1:B:191:GLU:CD	2.45	0.41
1:B:233:SER:O	1:B:237:ILE:HG12	2.19	0.41
1:B:1339:GLU:H	1:B:1339:GLU:HG2	1.74	0.41
1:B:1691:LEU:HD12	1:B:1699:VAL:HG13	2.02	0.41
1:B:2454:MET:HE2	1:B:2498:MET:HE2	2.02	0.41
1:B:3621:LEU:HD12	1:B:3622:ILE:HG13	2.01	0.41
2:D:424:GLN:OE1	2:D:429:SER:HA	2.19	0.41
1:A:131:PHE:HB3	1:A:135:PHE:CE2	2.55	0.41
1:A:188:LEU:HD11	1:B:187:ASP:O	2.19	0.41
1:A:931:MET:HA	1:A:990:LYS:HD2	2.02	0.41
1:A:992:THR:O	1:A:995:PRO:HD2	2.20	0.41
1:A:1676:ASN:HB3	1:A:1694:ASN:HD21	1.85	0.41
1:A:3200:SER:O	1:A:3206:ARG:HD3	2.19	0.41
2:C:326:GLU:HA	2:C:329:LYS:HD2	2.02	0.41
1:B:53:ARG:HB3	1:B:131:PHE:CD2	2.56	0.41
1:B:200:ASN:HB3	1:B:204:TYR:CE2	2.55	0.41
1:B:206:ALA:HA	1:B:209:ARG:NE	2.35	0.41
1:B:1359:LEU:HD22	1:B:2023:PHE:HE2	1.85	0.41
1:B:1632:SER:OG	1:B:1645:SER:HB3	2.20	0.41
1:B:1820:ARG:HA	1:B:1827:LEU:HB2	2.02	0.41
1:B:3123:GLU:HG2	1:B:3124:ASN:N	2.35	0.41
1:B:3603:MET:HA	1:B:3606:VAL:HB	2.02	0.41
1:A:32:TYR:CB	1:A:92:MET:HE3	2.50	0.41
1:A:658:ILE:C	1:A:662:MET:HE3	2.45	0.41
1:A:843:LYS:HE3	1:A:843:LYS:HA	2.02	0.41
1:A:1324:ASP:OD1	1:A:1324:ASP:N	2.52	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2389:LEU:HD22	1:A:2429:GLN:HB3	2.02	0.41
1:A:2389:LEU:O	1:A:2392:PRO:HD2	2.19	0.41
1:A:2966:SER:O	1:A:2970:GLN:HG2	2.19	0.41
1:A:3640:GLN:HA	1:A:3643:LEU:HD12	2.02	0.41
1:A:3704:TYR:CE2	1:A:3744:LEU:HD11	2.55	0.41
2:C:419:LYS:H	2:C:419:LYS:HG2	1.40	0.41
1:B:110:MET:HE3	1:B:110:MET:HB3	1.93	0.41
1:B:288:CYS:HA	1:B:293:ILE:HD12	2.01	0.41
1:B:667:GLU:HA	1:B:670:LYS:HG3	2.01	0.41
1:B:1418:ARG:HH11	1:B:1691:LEU:HD23	1.85	0.41
1:B:2086:VAL:O	1:B:2089:VAL:HG12	2.20	0.41
1:A:188:LEU:HD23	1:A:191:GLU:CD	2.46	0.41
1:A:1291:LEU:HD22	1:A:1794:GLN:HB3	2.02	0.41
1:A:1344:LEU:O	1:A:1347:ILE:HG12	2.20	0.41
1:A:1540:ARG:HB3	1:A:1542:LEU:HG	2.03	0.41
1:A:2570:ARG:HD2	1:A:2615:GLN:HE22	1.85	0.41
1:A:2586:ILE:HD13	1:A:2597:LEU:HD23	2.02	0.41
1:A:2722:VAL:HA	1:A:2865:CYS:SG	2.60	0.41
1:A:2874:ILE:HG12	1:A:2981:GLU:OE2	2.20	0.41
1:A:3018:LEU:HD12	1:A:3018:LEU:HA	1.86	0.41
1:A:3828:LEU:HD23	1:A:3828:LEU:HA	1.95	0.41
2:C:515:TYR:HD1	1:B:2448:MET:SD	2.43	0.41
1:B:199:ALA:HB1	1:B:245:LEU:HD11	2.01	0.41
1:B:880:LEU:HD13	1:B:944:PHE:CZ	2.44	0.41
1:B:907:SER:HB2	1:B:976:LYS:HD3	2.02	0.41
1:B:1697:HIS:HB3	1:B:1716:VAL:O	2.20	0.41
1:B:1977:HIS:CG	1:B:1978:PRO:HD2	2.55	0.41
1:B:3072:ASP:HB3	1:B:3104:PRO:HD2	2.03	0.41
2:D:96:CYS:HA	2:D:109:PHE:HE1	1.85	0.41
1:A:2017:TRP:HB3	1:A:2027:ARG:NH1	2.36	0.41
1:A:2198:PHE:CD1	1:A:2201:LEU:HD12	2.56	0.41
1:A:2982:LEU:HD23	1:A:2982:LEU:HA	1.82	0.41
1:A:3264:ALA:O	1:A:3268:VAL:HG23	2.21	0.41
1:A:3538:GLN:O	1:A:3542:MET:HG2	2.20	0.41
2:C:462:ILE:O	2:C:466:GLU:HG3	2.20	0.41
1:B:541:LEU:HD13	1:B:587:ASN:HD21	1.86	0.41
1:B:634:HIS:HB3	1:B:638:TYR:CZ	2.55	0.41
1:B:844:LYS:HD2	1:B:844:LYS:HA	1.68	0.41
1:B:1122:HIS:HB3	1:B:1125:ILE:HG22	2.03	0.41
1:B:1510:LEU:HD12	1:B:1510:LEU:HA	1.86	0.41
1:B:2209:LEU:HD23	1:B:2209:LEU:HA	1.83	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2570:ARG:NH2	1:B:2684:LEU:HB3	2.35	0.41
2:D:416:ARG:HE	2:D:418:ARG:HD3	1.85	0.41
1:A:654:LYS:HZ3	1:A:657:LYS:HD2	1.86	0.41
1:A:668:PHE:CZ	1:A:805:MET:HE1	2.56	0.41
1:A:688:ILE:HG13	1:A:691:TRP:CE3	2.55	0.41
1:A:1055:LEU:HD23	1:A:1138:LYS:HD3	2.02	0.41
1:A:1238:MET:O	1:A:1239:MET:HE2	2.21	0.41
1:A:1387:ILE:HG22	1:A:1749:TRP:HE3	1.85	0.41
1:A:2089:VAL:HG13	1:A:2103:LEU:HD21	2.03	0.41
1:A:2177:THR:H	1:A:2180:SER:HB2	1.85	0.41
1:A:3278:ARG:HA	1:A:3278:ARG:HD2	1.87	0.41
1:B:77:THR:HG23	1:B:81:GLU:OE1	2.21	0.41
1:B:938:ARG:HB2	1:B:993:PHE:CZ	2.55	0.41
1:B:2530:ILE:HD11	1:B:2581:MET:HB2	2.02	0.41
1:B:3188:SER:O	1:B:3189:ASN:C	2.63	0.41
2:D:417:PRO:HA	2:D:420:MET:HE3	2.03	0.41
1:A:691:TRP:O	1:A:695:ILE:HD12	2.21	0.41
2:C:96:CYS:HA	2:C:109:PHE:HE1	1.85	0.41
2:C:489:LEU:HD22	1:B:3000:ASN:ND2	2.25	0.41
1:B:236:HIS:O	1:B:240:GLU:HG2	2.21	0.41
1:B:489:GLY:HA2	1:B:492:ASN:ND2	2.35	0.41
1:B:1940:ILE:HD13	1:B:1940:ILE:HA	1.98	0.41
1:B:1951:ILE:HG13	1:B:1951:ILE:H	1.69	0.41
1:B:2627:ALA:O	1:B:2631:PHE:HB2	2.21	0.41
1:B:3136:TYR:CE1	2:D:436:LYS:HD3	2.56	0.41
1:B:3710:TRP:O	1:B:3713:ILE:HG22	2.19	0.41
2:D:462:ILE:O	2:D:466:GLU:HG3	2.21	0.41
1:A:453:ILE:H	1:A:453:ILE:HG12	1.67	0.41
1:A:677:LYS:HA	1:A:677:LYS:HD2	1.82	0.41
1:A:810:ALA:HA	1:A:813:LEU:HB2	2.03	0.41
1:A:2075:LEU:H	1:A:2075:LEU:HD23	1.84	0.41
1:A:2240:LEU:HD13	1:A:2240:LEU:HA	1.95	0.41
1:B:260:THR:O	1:B:263:ILE:HG22	2.20	0.41
1:B:462:GLU:HG3	1:B:465:ARG:NH2	2.35	0.41
1:B:1064:LEU:HB3	1:B:1131:CYS:SG	2.60	0.41
1:B:1344:LEU:O	1:B:1347:ILE:HG12	2.20	0.41
1:B:1435:LEU:HG	1:B:1445:GLN:HB2	2.03	0.41
1:B:1461:ALA:HA	1:B:1846:PHE:HZ	1.86	0.41
1:B:1672:LEU:HD22	1:B:1702:PHE:HE2	1.85	0.41
1:B:1676:ASN:HB3	1:B:1694:ASN:HD21	1.85	0.41
1:B:2443:ASN:O	1:B:2446:LYS:HG3	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2457:LEU:HD22	1:B:2491:LEU:HD21	2.03	0.41
1:B:2719:ASN:HD21	1:B:2786:VAL:HG12	1.85	0.41
1:B:2743:LEU:HD13	1:B:2779:LEU:HD13	2.03	0.41
1:B:2750:VAL:HG23	1:B:2755:LEU:HG	2.03	0.41
1:B:3640:GLN:HA	1:B:3643:LEU:HD12	2.02	0.41
1:B:3645:GLY:HA3	1:B:3693:ASN:HB2	2.01	0.41
1:A:288:CYS:SG	1:A:298:ILE:HG21	2.61	0.41
1:A:1234:TYR:CZ	1:A:1881:LYS:HA	2.55	0.41
1:A:2048:PHE:CD2	1:A:2048:PHE:C	2.99	0.41
1:A:2210:GLU:OE1	1:A:2214:ARG:HD2	2.21	0.41
1:A:2698:MET:SD	1:A:2861:LEU:HD23	2.61	0.41
1:A:2750:VAL:HG23	1:A:2755:LEU:HG	2.03	0.41
1:A:3846:LEU:O	1:A:3850:VAL:HG23	2.21	0.41
1:B:153:THR:HA	1:B:156:LYS:HG2	2.02	0.41
1:B:408:PHE:CZ	1:B:447:PRO:HD2	2.54	0.41
1:B:853:ILE:HD12	1:B:853:ILE:HA	1.92	0.41
1:B:1008:PHE:O	1:B:1011:PRO:HD2	2.20	0.41
1:B:1864:GLU:HG3	1:B:1907:ARG:HG3	2.03	0.41
1:B:2312:LEU:HD23	1:B:2312:LEU:HA	1.77	0.41
1:B:2570:ARG:HD2	1:B:2615:GLN:HE22	1.85	0.41
1:B:3475:ASN:HD22	1:B:3492:LEU:HG	1.86	0.41
1:B:3552:ILE:HD13	1:B:3552:ILE:N	2.36	0.41
1:B:3580:ILE:O	1:B:3584:ILE:HG22	2.20	0.41
1:B:3704:TYR:CE2	1:B:3744:LEU:HD11	2.55	0.41
1:A:127:ILE:HD13	1:A:127:ILE:HA	1.89	0.41
1:A:467:GLU:O	1:A:470:GLU:HG2	2.21	0.41
1:A:938:ARG:HB2	1:A:993:PHE:CE2	2.56	0.41
1:A:1292:ARG:HG2	1:A:1928:MET:HA	2.03	0.41
1:A:2236:LEU:HD12	1:A:2236:LEU:HA	1.84	0.41
1:A:2627:ALA:O	1:A:2631:PHE:HB2	2.21	0.41
1:A:3314:LEU:HD13	1:A:3324:LEU:HD13	2.03	0.41
1:B:467:GLU:HA	1:B:470:GLU:HG2	2.02	0.41
1:B:480:LEU:HD23	1:B:480:LEU:HA	1.91	0.41
1:B:891:LEU:HG	1:B:895:PHE:CE2	2.56	0.41
1:B:1055:LEU:HD23	1:B:1138:LYS:HD3	2.03	0.41
1:B:3264:ALA:O	1:B:3268:VAL:HG23	2.21	0.41
1:A:815:LYS:HD2	1:A:815:LYS:HA	1.82	0.40
1:A:1011:PRO:O	1:A:1015:ILE:HG13	2.22	0.40
1:A:1691:LEU:HD12	1:A:1699:VAL:HG13	2.02	0.40
1:A:2080:MET:HE2	1:A:2080:MET:N	2.37	0.40
1:A:2332:TRP:HE1	1:A:2381:ILE:HG22	1.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2900:LYS:HG2	1:A:2930:THR:HG23	2.03	0.40
1:A:3159:ILE:HD12	1:A:3159:ILE:HA	1.83	0.40
1:B:180:LEU:HA	1:B:183:LYS:NZ	2.37	0.40
1:B:668:PHE:HA	1:B:671:ILE:HG22	2.03	0.40
1:B:2745:TYR:HB2	1:B:2787:THR:HG21	2.03	0.40
1:B:3206:ARG:HD2	1:B:3244:VAL:O	2.22	0.40
1:B:3343:LYS:HB3	1:B:3343:LYS:HE3	1.89	0.40
2:D:31:ARG:HD2	2:D:63:HIS:CD2	2.56	0.40
1:A:246:TRP:CG	1:A:247:PRO:HD3	2.56	0.40
1:A:530:ILE:HG13	1:A:531:ARG:N	2.35	0.40
1:A:643:GLY:O	1:A:647:ILE:HG12	2.21	0.40
1:A:902:LEU:HA	1:A:905:ILE:HG22	2.03	0.40
1:A:1000:HIS:ND1	1:A:1000:HIS:N	2.69	0.40
1:A:1798:ILE:HD11	1:A:1922:GLY:HA3	2.03	0.40
1:A:1977:HIS:CG	1:A:1978:PRO:HD2	2.56	0.40
1:A:2294:ARG:HA	1:A:2294:ARG:HD2	1.85	0.40
1:A:2743:LEU:HD13	1:A:2779:LEU:HD13	2.03	0.40
2:C:110:GLY:HA3	2:C:151:TRP:CZ2	2.56	0.40
1:B:76:MET:SD	1:B:76:MET:C	3.05	0.40
1:B:973:ALA:O	1:B:977:ILE:HG12	2.21	0.40
1:B:1103:TYR:CG	1:B:1107:MET:HE1	2.56	0.40
1:B:1229:HIS:HA	1:B:1263:LYS:HA	2.04	0.40
1:B:1343:ASP:O	1:B:1347:ILE:HG23	2.22	0.40
1:B:1463:ARG:HG2	1:B:1847:ARG:CZ	2.51	0.40
1:B:2183:ILE:HA	1:B:2183:ILE:HD12	1.77	0.40
1:A:178:ALA:HB2	1:A:237:ILE:HG22	2.03	0.40
1:A:187:ASP:O	1:B:188:LEU:HD11	2.21	0.40
1:A:470:GLU:HA	1:A:473:ILE:HG12	2.02	0.40
1:A:1418:ARG:HH11	1:A:1691:LEU:HD23	1.86	0.40
1:A:1632:SER:OG	1:A:1645:SER:HB3	2.21	0.40
1:A:1864:GLU:HG3	1:A:1907:ARG:HG3	2.03	0.40
1:A:2160:LYS:HE2	1:A:2160:LYS:HB2	1.92	0.40
1:B:725:LEU:HD11	1:B:769:GLN:HG2	2.03	0.40
1:B:1120:LEU:HD12	1:B:1120:LEU:HA	1.85	0.40
1:B:2379:SER:HA	1:B:2382:ILE:HG22	2.03	0.40
1:B:2723:SER:C	1:B:2781:LEU:HB2	2.47	0.40
1:B:2759:PRO:HA	1:B:2762:TRP:CD2	2.57	0.40
1:A:160:GLN:HB3	1:A:162:TRP:CZ2	2.57	0.40
1:A:873:VAL:HA	1:A:876:ILE:HG22	2.03	0.40
1:A:1376:ASP:C	1:A:1376:ASP:OD1	2.64	0.40
1:A:3309:LEU:HD23	1:A:3309:LEU:HA	1.92	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:264:PHE:HE1	1:B:280:ILE:HD12	1.86	0.40
1:B:467:GLU:O	1:B:470:GLU:HG2	2.21	0.40
1:B:578:LYS:HB3	1:B:579:MET:HE2	2.03	0.40
1:B:668:PHE:HD2	1:B:710:ILE:HD12	1.86	0.40
1:B:810:ALA:HA	1:B:813:LEU:HB2	2.04	0.40
1:B:1106:LYS:O	1:B:1110:LYS:HD2	2.22	0.40
1:B:2089:VAL:HG22	1:B:2103:LEU:HD21	2.03	0.40
1:B:2198:PHE:CD1	1:B:2201:LEU:HD12	2.57	0.40
1:B:2716:LEU:HD12	1:B:2788:SER:HA	2.03	0.40
1:B:2878:ALA:O	1:B:2882:GLN:HG3	2.22	0.40
1:B:2892:ILE:H	1:B:2892:ILE:HG12	1.46	0.40
1:A:8:ILE:HG23	1:A:12:ARG:NH1	2.36	0.40
1:A:67:PHE:HB2	1:A:72:TRP:NE1	2.37	0.40
1:A:629:GLU:O	1:A:633:LEU:HG	2.21	0.40
1:A:2716:LEU:HD12	1:A:2788:SER:HA	2.03	0.40
1:A:3123:GLU:HG2	1:A:3124:ASN:N	2.37	0.40
1:A:3285:LYS:O	1:A:3285:LYS:HG2	2.21	0.40
2:C:29:CYS:SG	2:C:59:HIS:HE1	2.31	0.40
2:C:496:ASP:HB3	2:C:499:THR:HG23	2.03	0.40
1:B:8:ILE:HG23	1:B:12:ARG:NH1	2.36	0.40
1:B:420:GLU:HG3	1:B:423:ARG:HE	1.87	0.40
1:B:677:LYS:NZ	1:B:681:PHE:HB2	2.36	0.40
1:B:1434:VAL:HG12	1:B:1446:LEU:HD13	2.03	0.40
1:B:3538:GLN:HG2	1:B:3542:MET:HE2	2.04	0.40
1:B:3738:MET:SD	1:B:3738:MET:N	2.95	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	3617/3861 (94%)	3494 (97%)	120 (3%)	3 (0%)	48 80

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	B	3617/3861 (94%)	3489 (96%)	126 (4%)	2 (0%)	48 80
2	C	343/515 (67%)	328 (96%)	15 (4%)	0	100 100
2	D	343/515 (67%)	329 (96%)	14 (4%)	0	100 100
All	All	7920/8752 (90%)	7640 (96%)	275 (4%)	5 (0%)	49 80

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	743	LYS
1	A	2268	PRO
1	B	2268	PRO
1	A	1706	VAL
1	B	1706	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	3338/3522 (95%)	3251 (97%)	87 (3%)	40 72
1	B	3338/3522 (95%)	3241 (97%)	97 (3%)	37 70
2	C	314/455 (69%)	311 (99%)	3 (1%)	68 84
2	D	314/455 (69%)	306 (98%)	8 (2%)	42 72
All	All	7304/7954 (92%)	7109 (97%)	195 (3%)	40 71

All (195) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	52	MET
1	A	110	MET
1	A	165	VAL
1	A	189	PHE
1	A	198	PHE
1	A	238	TYR

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Mol	Chain	Res	Type
1	A	265	GLU
1	A	276	LEU
1	A	388	THR
1	A	416	HIS
1	A	455	VAL
1	A	588	MET
1	A	623	LYS
1	A	708	VAL
1	A	799	GLU
1	A	863	LYS
1	A	919	LEU
1	A	923	LEU
1	A	933	VAL
1	A	946	ILE
1	A	948	ILE
1	A	961	GLU
1	A	984	LEU
1	A	1005	ILE
1	A	1026	ARG
1	A	1028	VAL
1	A	1036	LEU
1	A	1039	LYS
1	A	1060	THR
1	A	1063	TYR
1	A	1085	VAL
1	A	1155	SER
1	A	1161	VAL
1	A	1289	TYR
1	A	1324	ASP
1	A	1362	THR
1	A	1385	LYS
1	A	1449	MET
1	A	1453	THR
1	A	1463	ARG
1	A	1567	MET
1	A	1568	VAL
1	A	1576	ASP
1	A	1589	ILE
1	A	1692	SER
1	A	1693	THR
1	A	1706	VAL
1	A	1748	ILE

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Mol	Chain	Res	Type
1	A	1957	LEU
1	A	1995	VAL
1	A	2025	GLU
1	A	2080	MET
1	A	2089	VAL
1	A	2116	THR
1	A	2129	GLU
1	A	2143	LYS
1	A	2240	LEU
1	A	2282	SER
1	A	2291	LEU
1	A	2318	ARG
1	A	2433	LEU
1	A	2472	VAL
1	A	2485	LEU
1	A	2498	MET
1	A	2573	GLN
1	A	2578	LEU
1	A	2612	LEU
1	A	2630	VAL
1	A	2675	SER
1	A	2698	MET
1	A	2904	TYR
1	A	2942	ILE
1	A	2952	MET
1	A	3001	ILE
1	A	3030	ASP
1	A	3074	LEU
1	A	3118	MET
1	A	3135	LYS
1	A	3234	MET
1	A	3244	VAL
1	A	3329	ASP
1	A	3396	VAL
1	A	3404	ASP
1	A	3464	MET
1	A	3585	VAL
1	A	3600	VAL
1	A	3633	VAL
2	C	267	GLN
2	C	276	ILE
2	C	379	THR

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Mol	Chain	Res	Type
1	B	52	MET
1	B	110	MET
1	B	127	ILE
1	B	165	VAL
1	B	189	PHE
1	B	198	PHE
1	B	238	TYR
1	B	265	GLU
1	B	276	LEU
1	B	388	THR
1	B	416	HIS
1	B	651	PHE
1	B	711	CYS
1	B	799	GLU
1	B	876	ILE
1	B	878	LYS
1	B	919	LEU
1	B	933	VAL
1	B	946	ILE
1	B	947	TYR
1	B	948	ILE
1	B	961	GLU
1	B	984	LEU
1	B	1000	HIS
1	B	1005	ILE
1	B	1012	LEU
1	B	1026	ARG
1	B	1028	VAL
1	B	1036	LEU
1	B	1039	LYS
1	B	1059	LYS
1	B	1060	THR
1	B	1063	TYR
1	B	1085	VAL
1	B	1123	GLU
1	B	1161	VAL
1	B	1211	MET
1	B	1289	TYR
1	B	1362	THR
1	B	1390	LEU
1	B	1453	THR
1	B	1463	ARG

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Mol	Chain	Res	Type
1	B	1543	ILE
1	B	1565	GLU
1	B	1567	MET
1	B	1568	VAL
1	B	1576	ASP
1	B	1581	ASN
1	B	1589	ILE
1	B	1693	THR
1	B	1706	VAL
1	B	1714	THR
1	B	1726	MET
1	B	1748	ILE
1	B	1940	ILE
1	B	1995	VAL
1	B	2012	LYS
1	B	2025	GLU
1	B	2028	LEU
1	B	2089	VAL
1	B	2113	ASP
1	B	2116	THR
1	B	2129	GLU
1	B	2183	ILE
1	B	2192	ILE
1	B	2240	LEU
1	B	2255	LEU
1	B	2287	LEU
1	B	2384	CYS
1	B	2388	ILE
1	B	2390	LEU
1	B	2395	LEU
1	B	2433	LEU
1	B	2472	VAL
1	B	2485	LEU
1	B	2494	ILE
1	B	2498	MET
1	B	2578	LEU
1	B	2630	VAL
1	B	2675	SER
1	B	2698	MET
1	B	2886	GLU
1	B	2892	ILE
1	B	2904	TYR

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Mol	Chain	Res	Type
1	B	2942	ILE
1	B	2952	MET
1	B	2999	GLN
1	B	3001	ILE
1	B	3167	GLU
1	B	3203	MET
1	B	3244	VAL
1	B	3396	VAL
1	B	3404	ASP
1	B	3464	MET
1	B	3585	VAL
1	B	3600	VAL
1	B	3633	VAL
2	D	29	CYS
2	D	276	ILE
2	D	317	VAL
2	D	331	LEU
2	D	337	GLU
2	D	379	THR
2	D	449	LEU
2	D	472	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (54) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	478	ASN
1	A	577	ASN
1	A	675	ASN
1	A	812	HIS
1	A	1025	ASN
1	A	1113	GLN
1	A	1122	HIS
1	A	1488	GLN
1	A	1522	ASN
1	A	1549	GLN
1	A	1634	HIS
1	A	1661	ASN
1	A	1814	HIS
1	A	2083	GLN
1	A	2095	ASN
1	A	2148	HIS
1	A	2301	ASN

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Mol	Chain	Res	Type
1	A	2439	HIS
1	A	2506	HIS
1	A	2937	ASN
1	A	2965	HIS
1	A	3000	ASN
1	A	3053	GLN
1	A	3192	GLN
1	A	3247	GLN
1	A	3292	ASN
1	A	3297	ASN
1	A	3468	ASN
1	B	478	ASN
1	B	581	ASN
1	B	685	HIS
1	B	1017	HIS
1	B	1025	ASN
1	B	1441	GLN
1	B	1499	GLN
1	B	1522	ASN
1	B	1559	HIS
1	B	1582	GLN
1	B	1634	HIS
1	B	1698	GLN
1	B	1754	ASN
1	B	1814	HIS
1	B	2076	HIS
1	B	2301	ASN
1	B	2506	HIS
1	B	2615	GLN
1	B	2937	ASN
1	B	2965	HIS
1	B	3000	ASN
1	B	3053	GLN
1	B	3247	GLN
1	B	3297	ASN
1	B	3468	ASN
2	D	133	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

Of 18 ligands modelled in this entry, 18 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

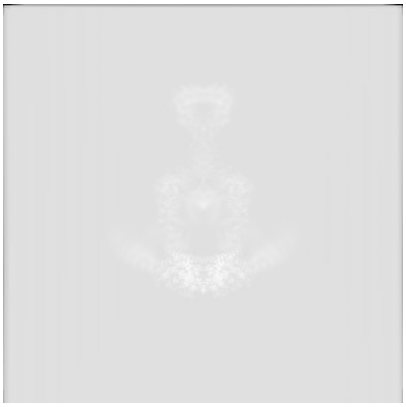
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-52502. These allow visual inspection of the internal detail of the map and identification of artifacts.

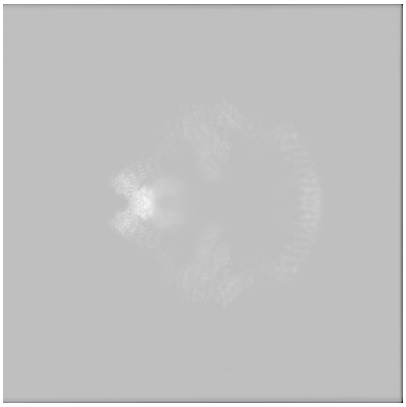
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

6.1.1 Primary map



X



Y

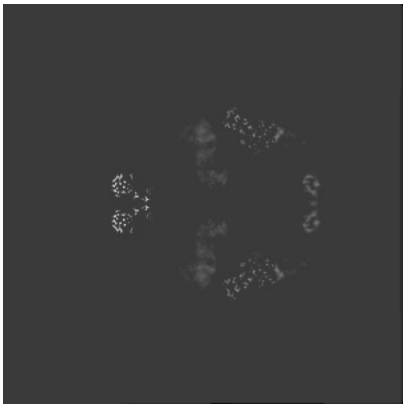
Z

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

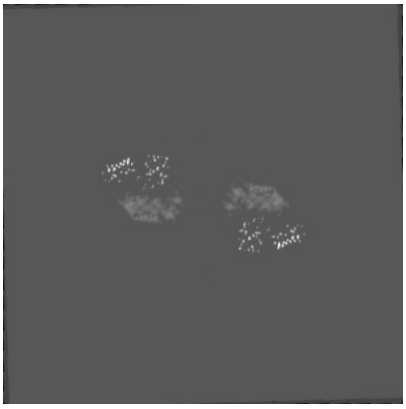
6.2 Central slices

6.2.1 Primary map

X Index: 192



Y Index: 192

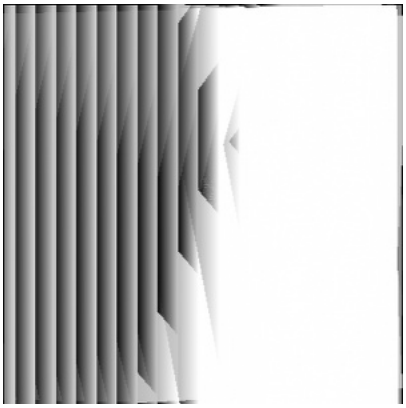


Z Index: 192

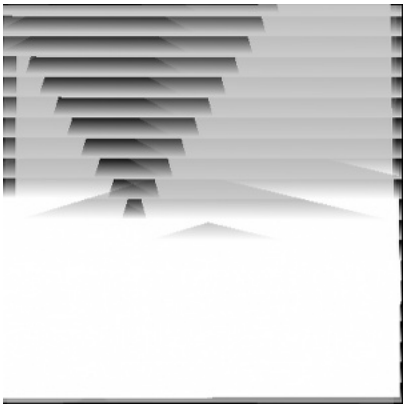
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

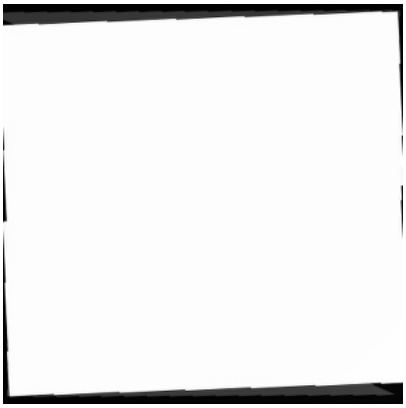
6.3.1 Primary map



X Index: 0



Y Index: 0

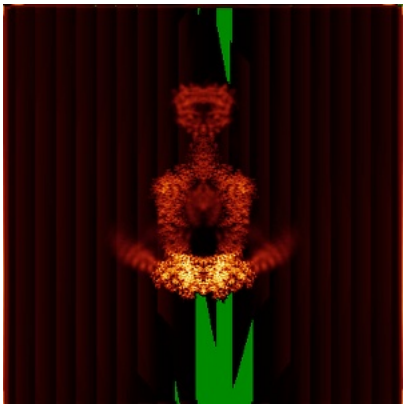


Z Index: 383

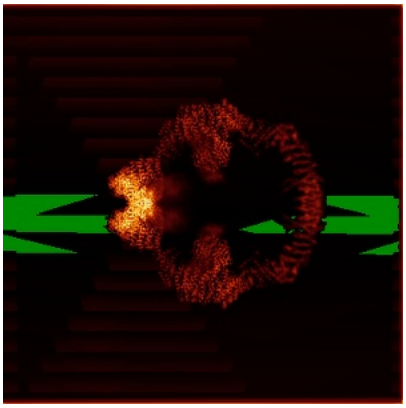
The images above show the largest variance slices of the map in three orthogonal directions.

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

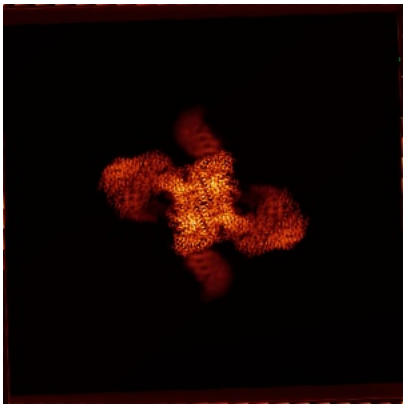
6.4.1 Primary map



X



Y

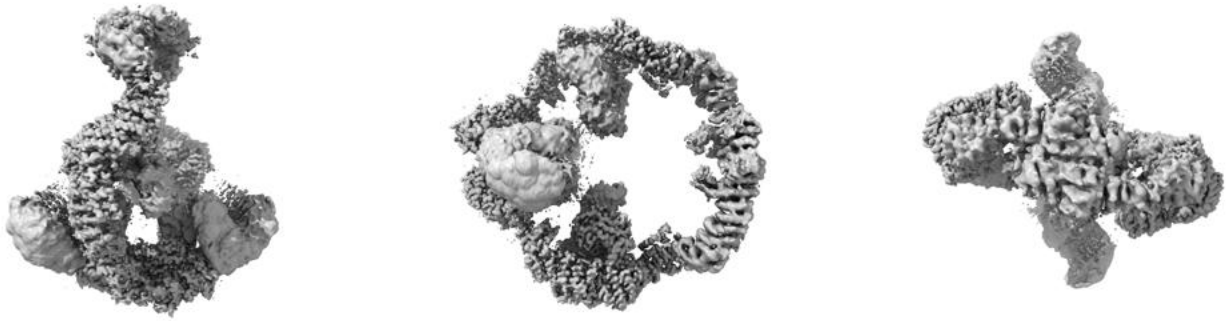


Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.0104. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

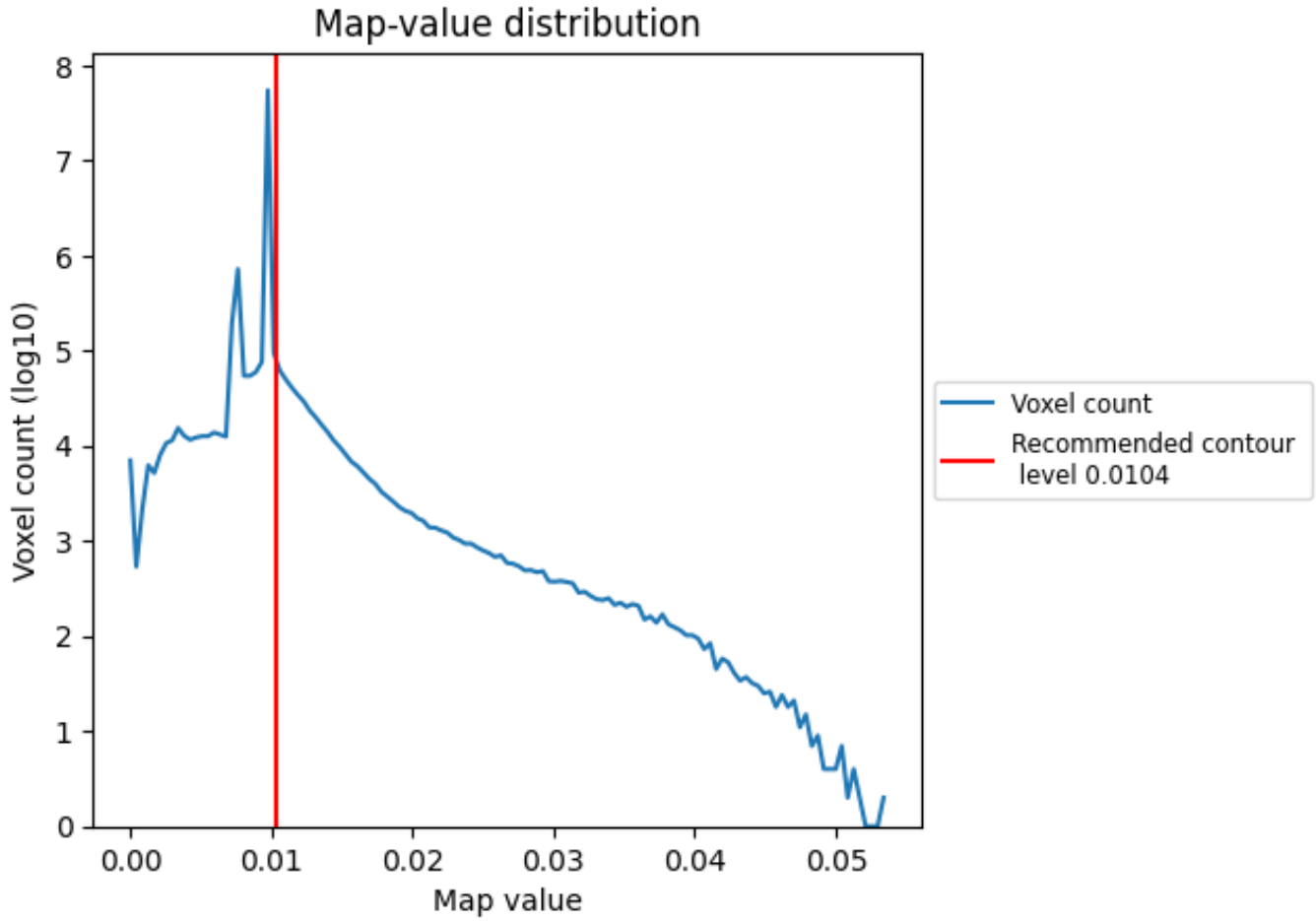
6.6 Mask visualisation (i)

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

7 Map analysis

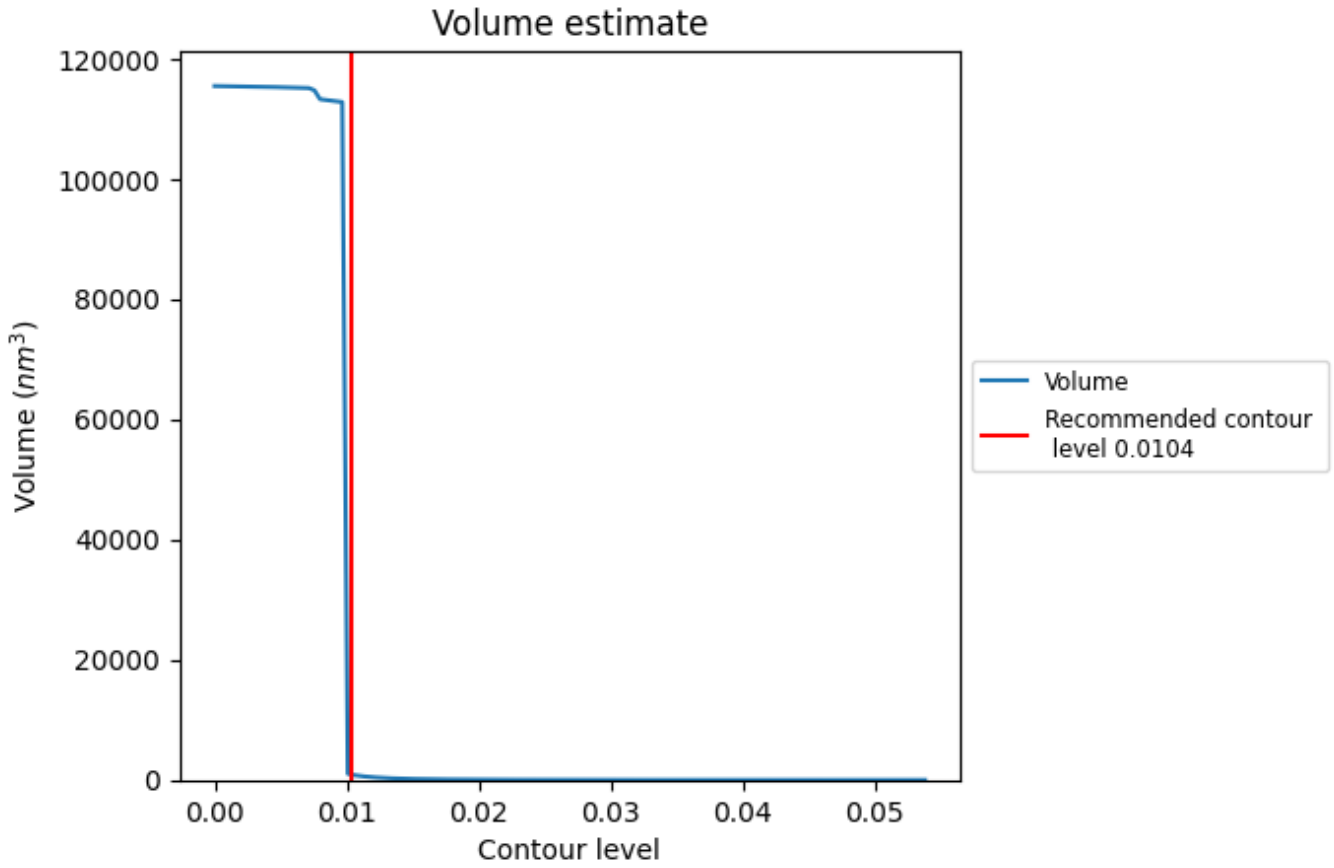
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

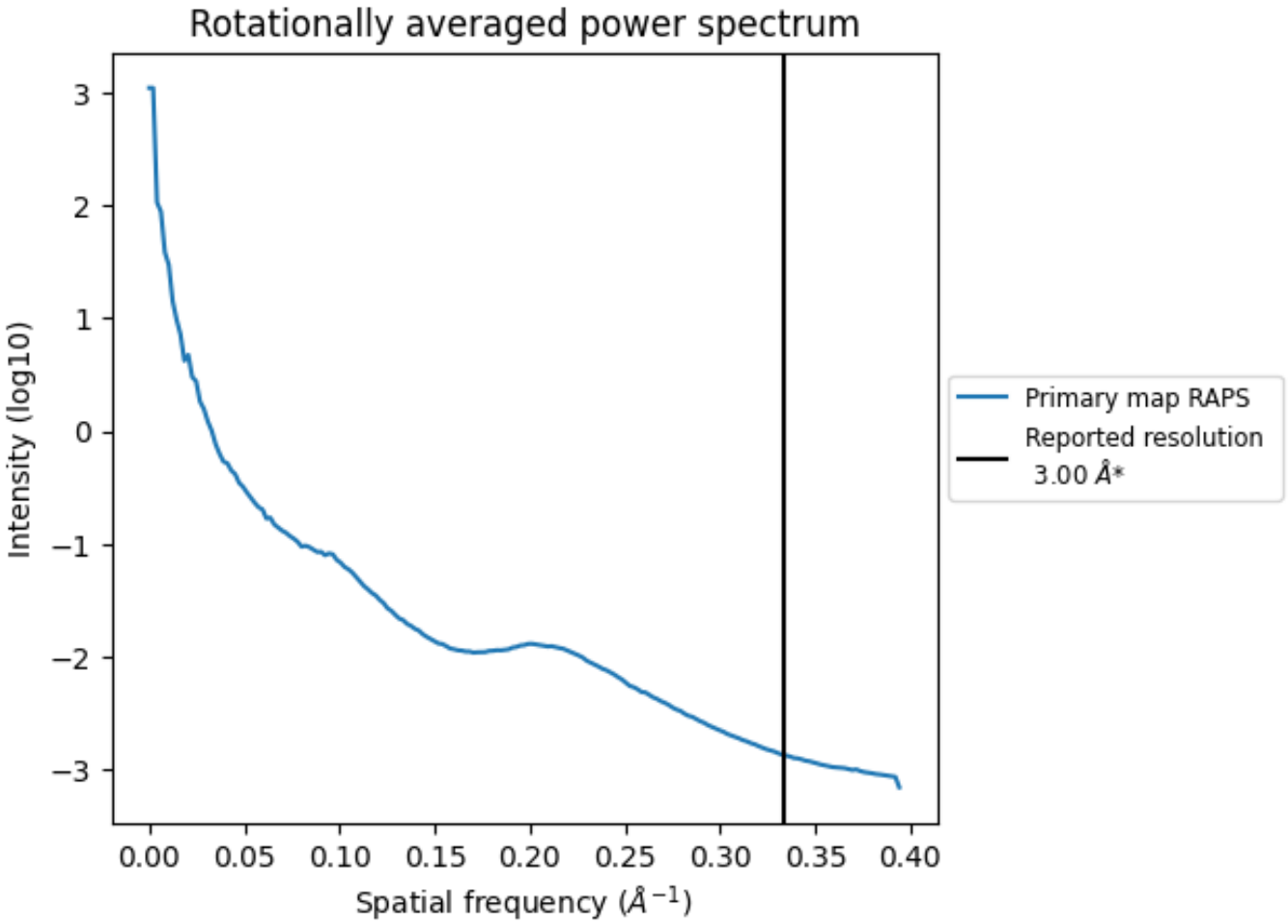
7.2 Volume estimate



The volume at the recommended contour level is 878 nm^3; this corresponds to an approximate mass of 793 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 0.333 Å^{-1}

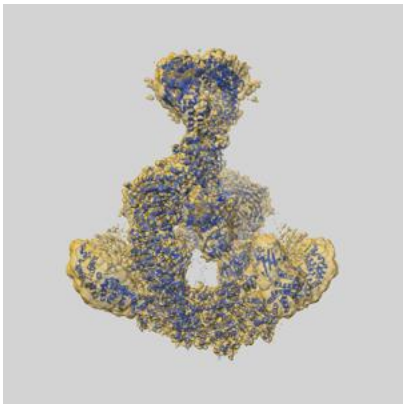
8 Fourier-Shell correlation

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

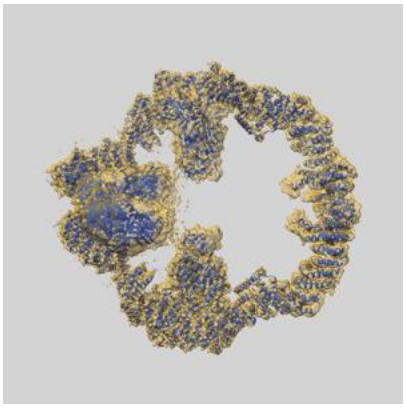
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-52502 and PDB model 9HYF. Per-residue inclusion information can be found in section 3 on page 4.

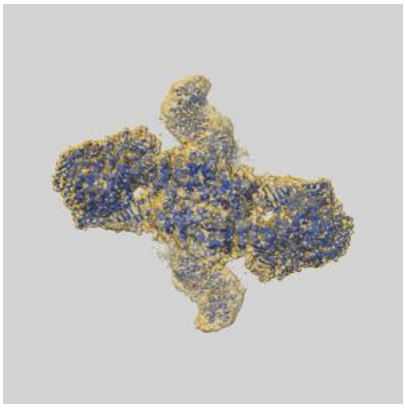
9.1 Map-model overlay



X



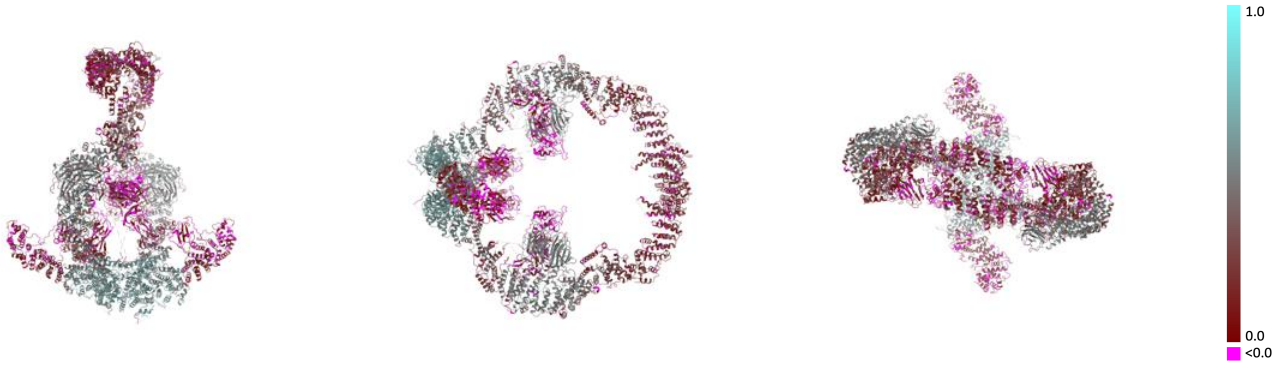
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.0104 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

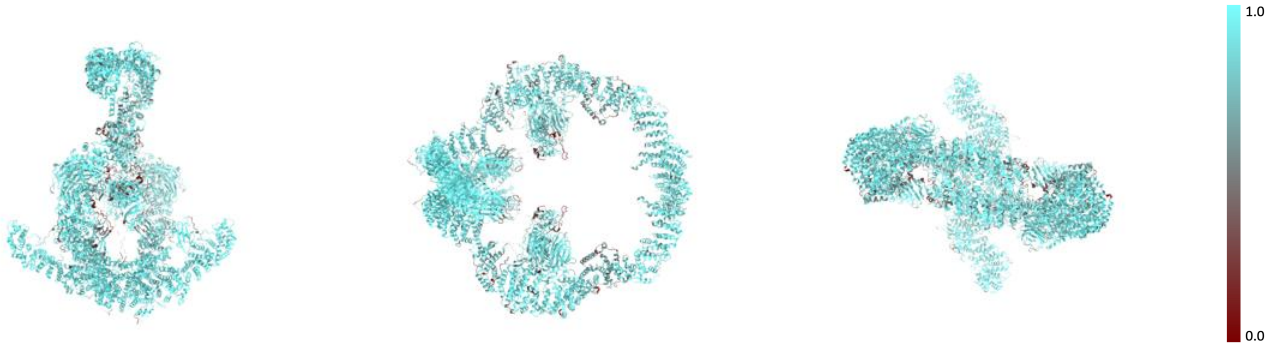
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

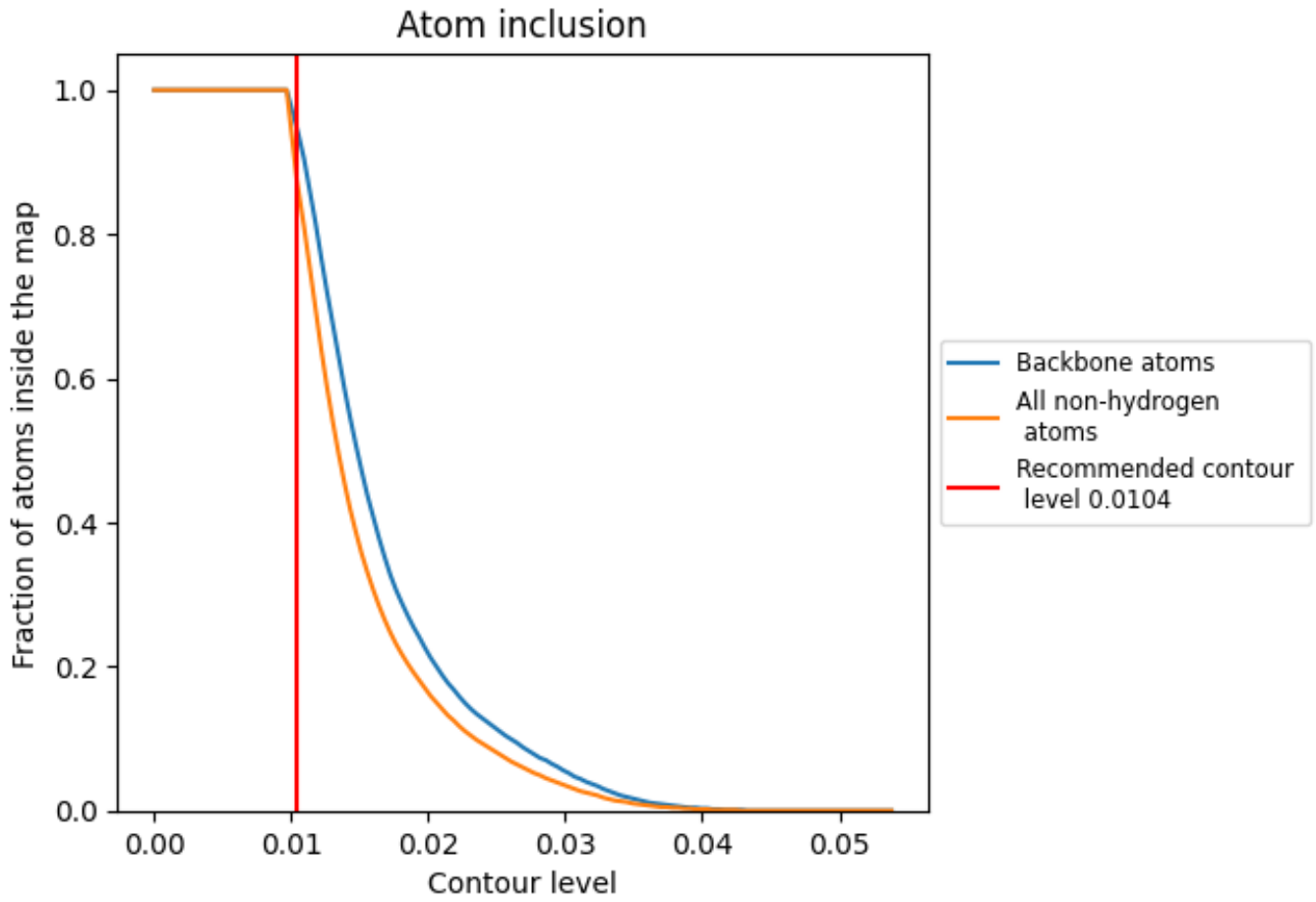
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0104).

9.4 Atom inclusion (i)



At the recommended contour level, 95% of all backbone atoms, 88% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.0104) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8760	0.3100
A	0.8840	0.3120
B	0.8840	0.3120
C	0.7950	0.2870
D	0.7950	0.2890