



Full wwPDB X-ray Structure Validation Report ⓘ

May 23, 2020 – 07:17 pm BST

PDB ID : 5CJ5
Title : Structure of Mycobacterium thermoresistibile GlgE APO form at 3.13Å resolution
Authors : Mendes, V.; Blaszczyk, M.; Maranhã, A.; Empadinhas, N.; Blundell, T.L.
Deposited on : 2015-07-13
Resolution : 3.13 Å(reported)

This is a Full wwPDB X-ray Structure 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/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467
Xtriage (Phenix) : 1.13
EDS : 2.11
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.11

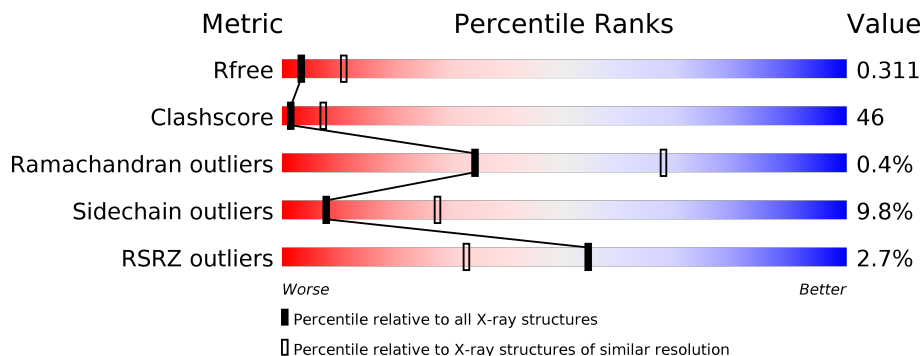
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.13 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)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1626 (3.18-3.10)
Clashscore	141614	1735 (3.18-3.10)
Ramachandran outliers	138981	1677 (3.18-3.10)
Sidechain outliers	138945	1677 (3.18-3.10)
RSRZ outliers	127900	1588 (3.18-3.10)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	698	 2% 35% 52% 7% 7%
1	B	698	 3% 32% 58% 7%

2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 10489 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, 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 Alpha-1,4-glucan:maltose-1-phosphate maltosyltransferase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	649	5104	3263	896	936	9	0	1	0
1	B	678	5385	3443	948	985	9	0	6	0

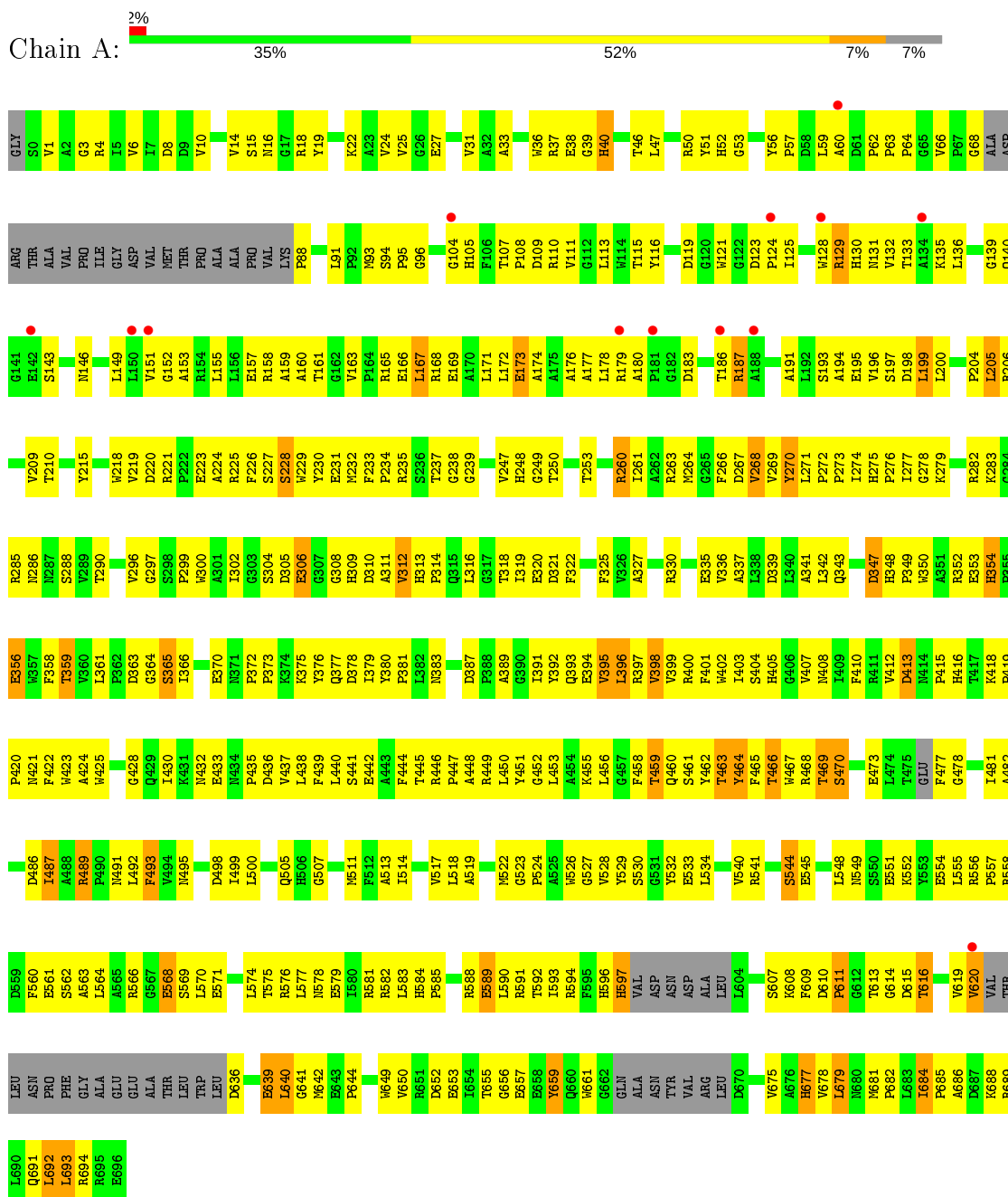
There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-1	GLY	-	expression tag	UNP G7CL00
A	0	SER	-	expression tag	UNP G7CL00
A	1	VAL	-	cloning artifact	UNP G7CL00
B	-1	GLY	-	expression tag	UNP G7CL00
B	0	SER	-	expression tag	UNP G7CL00
B	1	VAL	-	cloning artifact	UNP G7CL00

3 Residue-property plots

These plots are drawn for all protein, RNA and DNA 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 electron 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 dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). 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: Alpha-1,4-glucan:maltose-1-phosphate maltosyltransferase



4 Data and refinement statistics

Property	Value	Source
Space group	P 6	Depositor
Cell constants a, b, c, α , β , γ	197.64Å 197.64Å 105.62Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	171.16 – 3.13 171.16 – 3.13	Depositor EDS
% Data completeness (in resolution range)	100.0 (171.16-3.13) 100.0 (171.16-3.13)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.22	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.12 (at 3.13Å)	Xtriage
Refinement program	PHENIX	Depositor
R, R_{free}	0.259 , 0.308 0.255 , 0.311	Depositor DCC
R_{free} test set	2093 reflections (5.03%)	wwPDB-VP
Wilson B-factor (Å ²)	81.0	Xtriage
Anisotropy	0.146	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.35 , 193.8	EDS
L-test for twinning ²	$\langle L \rangle = 0.38$, $\langle L^2 \rangle = 0.21$	Xtriage
Estimated twinning fraction	0.467 for h,-h-k,-l	Xtriage
Reported twinning fraction	0.500 for h,-h-k,-l	Depositor
Outliers	0 of 41621 reflections	Xtriage
F_o, F_c correlation	0.85	EDS
Total number of atoms	10489	wwPDB-VP
Average B, all atoms (Å ²)	73.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.82% of the height of the origin peak. No significant pseudotranslation is detected.*

¹ Intensities estimated from amplitudes.

² Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality i

5.1 Standard geometry i

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	0.61	0/5262	0.87	5/7186 (0.1%)
1	B	0.61	1/5568 (0.0%)	0.87	10/7610 (0.1%)
All	All	0.61	1/10830 (0.0%)	0.87	15/14796 (0.1%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	300	TRP	CB-CG	5.12	1.59	1.50

All (15) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	692	LEU	CB-CG-CD2	-9.24	95.29	111.00
1	B	154	ARG	NE-CZ-NH1	-8.10	116.25	120.30
1	B	200	LEU	CA-CB-CG	7.85	133.35	115.30
1	A	570	LEU	CA-CB-CG	7.00	131.40	115.30
1	B	136	LEU	CA-CB-CG	6.81	130.97	115.30
1	B	200	LEU	CB-CG-CD2	-6.63	99.73	111.00
1	A	167	LEU	CA-CB-CG	6.48	130.20	115.30
1	A	199	LEU	CA-CB-CG	6.31	129.81	115.30
1	B	199	LEU	CA-CB-CG	6.15	129.45	115.30
1	B	168	ARG	NE-CZ-NH1	-6.03	117.28	120.30
1	B	156	LEU	CA-CB-CG	5.83	128.72	115.30
1	A	693	LEU	CA-CB-CG	5.80	128.64	115.30
1	B	158	ARG	CB-CA-C	-5.73	98.95	110.40
1	B	158	ARG	N-CA-CB	5.63	120.74	110.60
1	B	168	ARG	NE-CZ-NH2	5.47	123.03	120.30

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	5104	0	4910	436	2
1	B	5385	0	5209	541	2
All	All	10489	0	10119	948	2

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 46.

All (948) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:221:ARG:HH22	1:B:408:ASN:HB3	1.16	1.04
1:A:264:MET:HA	1:A:575:THR:HG22	1.40	1.01
1:B:270:TYR:HE2	1:B:339:ASP:HB2	1.21	1.00
1:B:550:SER:HG	1:B:553:TYR:HD2	1.09	0.94
1:B:651:ARG:HG3	1:B:658:GLU:HG2	1.47	0.94
1:A:652:ASP:HB3	1:A:656:GLY:H	1.34	0.92
1:B:299:PRO:HD2	1:B:552:LYS:HD2	1.51	0.92
1:B:607:SER:HB3	1:B:618:LEU:HD12	1.54	0.89
1:A:174:ALA:HA	1:A:177:ALA:HB3	1.55	0.88
1:A:109:ASP:OD2	1:A:110:ARG:NH1	2.07	0.88
1:B:121:TRP:HB3	1:B:209:VAL:HB	1.53	0.88
1:A:574:LEU:O	1:A:578:ASN:ND2	2.07	0.88
1:A:529:TYR:OH	1:A:551:GLU:OE1	1.92	0.87
1:A:239:GLY:O	1:A:247:VAL:N	2.08	0.86
1:A:151:VAL:O	1:A:155:LEU:N	2.09	0.86
1:A:299:PRO:HD2	1:A:552:LYS:HG3	1.57	0.86
1:B:664:ALA:C	1:B:665:ASN:HD22	1.80	0.85
1:B:270:TYR:CE2	1:B:339:ASP:HB2	2.11	0.85
1:A:263:ARG:NH2	1:A:571:GLU:OE1	2.08	0.84
1:A:442:GLU:HA	1:A:462:TYR:HB2	1.59	0.84
1:B:665:ASN:N	1:B:665:ASN:HD22	1.74	0.84
1:A:163:VAL:HG11	1:A:199:LEU:HD21	1.60	0.83
1:A:421:ASN:HD21	1:B:4:ARG:HA	1.41	0.83
1:B:121:TRP:HZ3	1:B:123:ASP:HB2	1.44	0.82
1:B:228:SER:HB3	1:B:266:PHE:HA	1.61	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:25:VAL:HG12	1:B:222:PRO:HG3	1.62	0.82
1:A:589:GLU:OE1	1:A:590:LEU:N	2.13	0.81
1:B:158:ARG:O	1:B:161:THR:OG1	1.99	0.81
1:A:394:GLU:OE2	1:A:397:ARG:NH2	2.10	0.81
1:B:464:TYR:HB3	1:B:467:TRP:HE3	1.45	0.81
1:B:619:VAL:HB	1:B:678:VAL:HG22	1.63	0.80
1:A:153:ALA:HB2	1:A:178:LEU:HD22	1.63	0.80
1:B:335:GLU:HB3	1:B:409:ILE:HD11	1.64	0.80
1:B:502:GLU:O	1:B:506:HIS:ND1	2.14	0.80
1:A:173:GLU:O	1:A:177:ALA:N	2.16	0.79
1:A:446:ARG:O	1:A:450:LEU:N	2.16	0.79
1:A:4:ARG:HA	1:B:421:ASN:HD21	1.48	0.78
1:A:19:TYR:HD1	1:A:59:LEU:HD23	1.49	0.78
1:B:24:VAL:HG23	1:B:489:ARG:HH22	1.47	0.78
1:A:39:GLY:H	1:B:417:THR:HA	1.50	0.77
1:B:304:SER:HA	1:B:347:ASP:HB3	1.66	0.76
1:B:461:SER:O	1:B:491:ASN:N	2.18	0.76
1:A:128:TRP:HA	1:A:131:ASN:HB2	1.68	0.76
1:B:536:GLU:OE1	1:B:556:ARG:NH2	2.20	0.75
1:A:157:GLU:OE1	1:A:179:ARG:NH1	2.14	0.75
1:B:160:ALA:HA	1:B:171:LEU:HD13	1.68	0.75
1:B:514:ILE:O	1:B:518:LEU:HD22	1.87	0.75
1:A:56:TYR:CD2	1:A:428:GLY:HA2	2.22	0.75
1:A:684:ILE:O	1:A:689:ARG:NH2	2.18	0.75
1:B:647:ARG:HA	1:B:661:TRP:O	1.87	0.75
1:A:228:SER:HB3	1:A:266:PHE:HA	1.68	0.74
1:A:393:GLN:HA	1:A:396:LEU:HD21	1.69	0.74
1:B:4:ARG:NH2	1:B:210:THR:OG1	2.20	0.74
1:B:368:TYR:HA	1:B:380:TYR:CD1	2.23	0.74
1:B:282:ARG:NH2	1:B:295:ASP:O	2.21	0.74
1:B:589:GLU:OE2	1:B:591:ARG:N	2.20	0.74
1:B:121:TRP:CZ3	1:B:123:ASP:HB2	2.23	0.73
1:A:50:ARG:HD3	1:A:88:PRO:HG3	1.70	0.73
1:B:165:ARG:HA	1:B:168:ARG:HD3	1.71	0.73
1:A:131:ASN:OD1	1:A:135:LYS:NZ	2.22	0.73
1:B:300:TRP:HB2	1:B:552:LYS:HZ3	1.52	0.73
1:A:125:ILE:HD11	1:A:205:LEU:HG	1.69	0.73
1:A:576:ARG:NH1	1:A:579:GLU:OE2	2.23	0.72
1:A:194:ALA:O	1:A:198:ASP:N	2.21	0.72
1:B:342:LEU:HD12	1:B:418:LYS:HD3	1.71	0.72
1:B:551:GLU:OE2	1:B:558:ARG:NH2	2.22	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:56:TYR:HB3	1:A:432:ASN:ND2	2.04	0.72
1:A:571:GLU:O	1:A:575:THR:HG23	1.90	0.72
1:B:276:PRO:HG2	1:B:307:GLY:HA3	1.72	0.72
1:B:178:LEU:HD13	1:B:187:ARG:HG2	1.70	0.72
1:A:350:TRP:HA	1:A:353:GLU:HB2	1.71	0.72
1:A:421:ASN:ND2	1:B:4:ARG:HA	2.05	0.72
1:B:10:VAL:HG13	1:B:33:ALA:HB2	1.72	0.72
1:B:649:TRP:CD1	1:B:660:GLN:HB2	2.25	0.72
1:B:549:ASN:O	1:B:556:ARG:NH1	2.23	0.71
1:A:652:ASP:HA	1:A:679:LEU:HD22	1.71	0.71
1:B:515:ARG:HD2	1:B:518:LEU:HD23	1.72	0.71
1:A:589:GLU:O	1:A:608:LYS:NZ	2.14	0.71
1:A:500:LEU:N	1:A:545:GLU:O	2.23	0.71
1:A:176:ALA:O	1:A:187:ARG:NH1	2.24	0.71
1:A:416:HIS:O	1:B:39:GLY:N	2.20	0.71
1:B:652:ASP:HB3	1:B:657:GLU:H	1.55	0.71
1:A:363:ASP:OD1	1:A:365:SER:N	2.24	0.70
1:B:361:LEU:N	1:B:365:SER:O	2.21	0.70
1:B:599:ASP:OD2	1:B:634:TRP:NE1	2.23	0.70
1:B:4:ARG:HB2	1:B:4:ARG:NH1	2.05	0.70
1:B:300:TRP:H	1:B:552:LYS:NZ	1.89	0.70
1:A:4:ARG:CA	1:B:421:ASN:HD21	2.04	0.70
1:B:240:TRP:CZ2	1:B:557:PRO:HB2	2.26	0.70
1:B:159:ALA:O	1:B:163:VAL:HG23	1.92	0.70
1:A:269:VAL:N	1:A:335:GLU:O	2.24	0.70
1:A:173:GLU:N	1:A:173:GLU:OE1	2.23	0.69
1:B:258:LEU:HA	1:B:261:ILE:HD12	1.74	0.69
1:A:279:LYS:NZ	1:A:305:ASP:OD1	2.26	0.69
1:B:411:ARG:NH1	1:B:413:ASP:OD2	2.26	0.69
1:B:464:TYR:HB3	1:B:467:TRP:CE3	2.27	0.69
1:A:226:PHE:HB2	1:A:588:ARG:HB3	1.75	0.69
1:B:439:PHE:O	1:B:459:THR:OG1	2.11	0.69
1:B:505:GLN:NE2	1:B:537:ASN:O	2.22	0.69
1:A:445:THR:H	1:A:450:LEU:HD12	1.58	0.69
1:B:484:LYS:NZ	1:B:484:LYS:HB2	2.08	0.69
1:A:96:GLY:HA2	1:A:694:ARG:NH1	2.08	0.68
1:B:18[B]:ARG:NH1	1:B:59:LEU:O	2.26	0.68
1:A:619:VAL:HG22	1:A:678:VAL:HG13	1.75	0.68
1:B:240:TRP:HB3	1:B:244:GLY:HA2	1.74	0.68
1:B:275:HIS:HB2	1:B:302:ILE:HD11	1.76	0.68
1:B:460:GLN:HG2	1:B:489:ARG:HB2	1.76	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:231:GLU:OE2	1:B:270:TYR:HD1	1.76	0.68
1:A:513:ALA:O	1:A:517:VAL:HG23	1.94	0.68
1:A:650:VAL:HG23	1:A:659:TYR:HD1	1.59	0.68
1:B:337:ALA:HB2	1:B:409:ILE:HB	1.76	0.68
1:B:243:GLU:O	1:B:245:ARG:NH1	2.27	0.68
1:B:414:ASN:ND2	1:B:442:GLU:O	2.26	0.68
1:B:7:ILE:HG23	1:B:35:VAL:HG12	1.76	0.67
1:B:350:TRP:HA	1:B:353:GLU:HB2	1.74	0.67
1:B:574:LEU:O	1:B:578:ASN:ND2	2.26	0.67
1:B:661:TRP:HB3	1:B:665:ASN:OD1	1.95	0.67
1:A:37:ARG:HH11	1:A:38:GLU:C	1.97	0.67
1:A:200:LEU:O	1:A:204:PRO:HG3	1.93	0.67
1:B:495:ASN:CG	1:B:529:TYR:HB3	2.15	0.67
1:A:461:SER:N	1:A:489:ARG:O	2.28	0.67
1:B:370:GLU:HA	1:B:376:TYR:HD2	1.57	0.67
1:A:221:ARG:NH1	1:A:436:ASP:O	2.27	0.67
1:A:652:ASP:OD2	1:A:677:HIS:CE1	2.48	0.67
1:B:156:LEU:O	1:B:160:ALA:N	2.26	0.67
1:B:4:ARG:HH22	1:B:209:VAL:C	1.98	0.67
1:B:312:VAL:HG21	1:B:318:THR:HA	1.76	0.67
1:B:340:LEU:N	1:B:411:ARG:O	2.17	0.67
1:B:235:ARG:NH2	1:B:273:PRO:O	2.26	0.67
1:A:440:LEU:HA	1:A:460:GLN:HB3	1.76	0.67
1:B:224:ALA:HB1	1:B:489:ARG:HH12	1.59	0.67
1:B:189:GLY:HA2	1:B:192:LEU:HD12	1.77	0.66
1:A:304:SER:OG	1:A:306:GLU:OE2	2.11	0.66
1:B:368:TYR:HA	1:B:380:TYR:HD1	1.59	0.66
1:A:614:GLY:HA2	1:A:689:ARG:HD3	1.76	0.66
1:B:576:ARG:NH1	1:B:579:GLU:OE2	2.28	0.66
1:A:230:TYR:HE1	1:A:232:MET:HB3	1.61	0.66
1:B:596:HIS:HB3	1:B:635:LEU:HA	1.76	0.66
1:B:305:ASP:N	1:B:347:ASP:OD1	2.29	0.66
1:A:652:ASP:HB3	1:A:656:GLY:N	2.09	0.66
1:A:652:ASP:HB3	1:A:657:GLU:H	1.59	0.66
1:A:596:HIS:ND1	1:A:636:ASP:HB3	2.11	0.66
1:B:370:GLU:HA	1:B:376:TYR:CD2	2.31	0.66
1:A:302:ILE:HD12	1:A:343:GLN:O	1.95	0.65
1:A:267:ASP:O	1:A:335:GLU:HB2	1.96	0.65
1:A:230:TYR:CE1	1:A:232:MET:HB3	2.30	0.65
1:A:4:ARG:HA	1:B:421:ASN:ND2	2.11	0.65
1:A:62:PRO:HG2	1:A:68:GLY:HA2	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:106:PHE:HE1	1:B:108:PRO:HG3	1.61	0.65
1:A:37:ARG:HD2	1:A:38:GLU:N	2.11	0.65
1:B:348:HIS:HD2	1:B:349:PRO:HD2	1.61	0.65
1:A:684:ILE:HG13	1:A:688:LYS:HD2	1.78	0.65
1:B:94:SER:O	1:B:103:HIS:N	2.24	0.65
1:A:158:ARG:HA	1:A:161:THR:HG23	1.79	0.65
1:A:276:PRO:HD3	1:A:312:VAL:C	2.18	0.65
1:A:358:PHE:HB3	1:A:366:ILE:HG12	1.79	0.65
1:A:277:ILE:O	1:A:304:SER:HB3	1.96	0.64
1:B:340:LEU:HD11	1:B:410:PHE:CD1	2.32	0.64
1:A:309:HIS:O	1:A:402:TRP:HZ2	1.80	0.64
1:A:507:GLY:HA3	1:A:511:MET:HB2	1.78	0.64
1:B:130:HIS:O	1:B:130:HIS:ND1	2.29	0.64
1:A:393:GLN:OE1	1:A:393:GLN:N	2.30	0.64
1:B:117:ARG:HB2	1:B:214:GLN:HE21	1.63	0.64
1:B:42:ALA:HB3	1:B:127:SER:HB3	1.77	0.64
1:B:616:THR:OG1	1:B:681:MET:HB2	1.97	0.64
1:A:286:ASN:ND2	1:A:549:ASN:OD1	2.29	0.64
1:A:563:ALA:O	1:A:568:GLU:N	2.26	0.64
1:B:94:SER:OG	1:B:694:ARG:NH2	2.31	0.64
1:A:574:LEU:HD23	1:A:577:LEU:HD12	1.80	0.63
1:A:250:THR:HA	1:A:316:LEU:HA	1.80	0.63
1:A:447:PRO:HA	1:A:450:LEU:HB3	1.80	0.63
1:A:1:VAL:HA	1:B:18[B]:ARG:HG2	1.80	0.63
1:A:500:LEU:HG	1:A:505:GLN:NE2	2.13	0.63
1:B:627:GLY:O	1:B:629:GLU:HG2	1.98	0.63
1:A:464:TYR:HB3	1:A:467:TRP:HZ3	1.64	0.63
1:B:0:SER:HG	1:B:9:ASP:H	1.45	0.63
1:A:540:VAL:HG13	1:A:541:ARG:HE	1.63	0.62
1:B:106:PHE:CE1	1:B:108:PRO:HG3	2.34	0.62
1:A:495:ASN:HD21	1:A:532:TYR:HB2	1.63	0.62
1:A:541:ARG:O	1:A:544:SER:OG	2.16	0.62
1:A:160:ALA:HB1	1:A:171:LEU:HD22	1.81	0.62
1:A:524:PRO:O	1:A:581:ARG:NH2	2.30	0.62
1:A:233:PHE:HB2	1:A:551:GLU:OE2	1.99	0.62
1:B:15:SER:OG	1:B:455:LYS:NZ	2.26	0.62
1:B:338:LEU:HD12	1:B:339:ASP:H	1.63	0.62
1:B:504:LEU:HD21	1:B:512:PHE:CD1	2.35	0.62
1:A:234:PRO:O	1:A:237:THR:OG1	2.16	0.62
1:A:464:TYR:HB3	1:A:467:TRP:CZ3	2.34	0.62
1:B:19:TYR:HA	1:B:59:LEU:HD23	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:665:ASN:N	1:B:665:ASN:ND2	2.44	0.62
1:B:151:VAL:O	1:B:155:LEU:N	2.33	0.62
1:A:343:GLN:HB3	1:A:379:ILE:HG21	1.82	0.62
1:B:240:TRP:CH2	1:B:557:PRO:HB2	2.34	0.62
1:A:288:SER:OG	1:A:290:THR:N	2.32	0.61
1:B:4:ARG:NH2	1:B:209:VAL:O	2.33	0.61
1:A:441:SER:O	1:A:462:TYR:N	2.32	0.61
1:B:313:HIS:CD2	1:B:315:GLN:H	2.18	0.61
1:A:19:TYR:CD1	1:A:59:LEU:HD23	2.35	0.61
1:A:493:PHE:CD1	1:A:527:GLY:HA3	2.35	0.61
1:A:116:TYR:N	1:A:215:TYR:O	2.33	0.61
1:A:439:PHE:HB2	1:A:459:THR:H	1.65	0.61
1:B:37:ARG:NH2	1:B:41:ASP:HB2	2.15	0.61
1:B:24:VAL:HG23	1:B:489:ARG:NH2	2.15	0.61
1:A:639:GLU:HA	1:A:692:LEU:CD2	2.30	0.61
1:B:490:PRO:HB2	1:B:492:LEU:HD21	1.82	0.61
1:A:194:ALA:HA	1:A:197:SER:HB2	1.82	0.61
1:A:277:ILE:HB	1:A:282:ARG:HH21	1.66	0.60
1:B:231:GLU:OE1	1:B:270:TYR:HB3	2.01	0.60
1:B:130:HIS:O	1:B:133:THR:OG1	2.11	0.60
1:B:157:GLU:OE2	1:B:179:ARG:NH2	2.34	0.60
1:B:161:THR:HA	1:B:168:ARG:NH2	2.16	0.60
1:A:39:GLY:N	1:B:417:THR:HA	2.16	0.60
1:B:471:LYS:HB2	1:B:623:LEU:HD11	1.84	0.60
1:A:3:GLY:C	1:B:421:ASN:HD21	2.05	0.60
1:B:29:VAL:HG13	1:B:106:PHE:O	2.00	0.60
1:B:596:HIS:HE2	1:B:607:SER:HG	1.48	0.60
1:A:24:VAL:HG11	1:A:225:ARG:HB2	1.83	0.60
1:A:313:HIS:HB3	1:A:316:LEU:HD12	1.84	0.60
1:A:393:GLN:HA	1:A:396:LEU:CD2	2.32	0.60
1:A:40:HIS:CE1	1:B:371:ASN:HD21	2.19	0.60
1:A:160:ALA:HB2	1:A:171:LEU:HD13	1.82	0.60
1:A:139:GLY:O	1:A:140:GLN:NE2	2.35	0.60
1:A:642:MET:SD	1:A:682:PRO:HB2	2.42	0.60
1:A:231:GLU:HB3	1:A:529:TYR:HA	1.84	0.60
1:A:652:ASP:CB	1:A:657:GLU:H	2.15	0.60
1:B:384:PHE:HA	1:B:391:ILE:HD12	1.83	0.59
1:B:641:GLY:HA3	1:B:684:ILE:HD12	1.82	0.59
1:A:419:PRO:O	1:A:422:PHE:HB3	2.02	0.59
1:A:53:GLY:O	1:A:113:LEU:N	2.27	0.59
1:A:60:ALA:O	1:A:62:PRO:HD3	2.02	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:639:GLU:OE2	1:A:692:LEU:HD21	2.02	0.59
1:B:168:ARG:O	1:B:171:LEU:N	2.27	0.59
1:A:342:LEU:N	1:A:343:GLN:OE1	2.36	0.59
1:A:38:GLU:HB2	1:B:418:LYS:N	2.17	0.59
1:A:238:GLY:HA3	1:A:247:VAL:O	2.03	0.59
1:B:503:SER:OG	1:B:504:LEU:N	2.36	0.59
1:A:260:ARG:HA	1:A:263:ARG:NH1	2.18	0.59
1:A:275:HIS:CD2	1:A:309:HIS:HA	2.38	0.59
1:B:396:LEU:HD12	1:B:426:LEU:HD12	1.84	0.59
1:B:117:ARG:CB	1:B:214:GLN:HE21	2.15	0.59
1:A:420:PRO:HA	1:A:423:TRP:HD1	1.66	0.59
1:B:441:SER:OG	1:B:460:GLN:O	2.19	0.58
1:A:18:ARG:HE	1:B:2:ALA:HB3	1.67	0.58
1:A:149:LEU:O	1:A:178:LEU:HD21	2.02	0.58
1:A:452:GLY:HA2	1:A:455:LYS:HD2	1.86	0.58
1:A:649:TRP:HA	1:A:659:TYR:O	2.04	0.58
1:A:136:LEU:HD12	1:A:140:GLN:O	2.04	0.58
1:B:30:PRO:HG3	1:B:693:LEU:HG	1.85	0.58
1:B:183:ASP:OD2	1:B:186:THR:N	2.19	0.58
1:B:285[A]:ARG:NH1	1:B:554:GLU:HG2	2.18	0.58
1:B:60:ALA:O	1:B:62:PRO:HD3	2.03	0.58
1:A:461:SER:O	1:A:491:ASN:N	2.32	0.58
1:B:117:ARG:HD3	1:B:214:GLN:HE21	1.69	0.58
1:B:348:HIS:HD2	1:B:349:PRO:CD	2.17	0.58
1:A:16:ASN:ND2	1:B:16:ASN:OD1	2.37	0.57
1:B:647:ARG:HE	1:B:660:GLN:HG2	1.67	0.57
1:B:402:TRP:HA	1:B:405:HIS:ND1	2.19	0.57
1:B:500:LEU:HD22	1:B:547:TYR:CE1	2.38	0.57
1:B:394:GLU:O	1:B:398:VAL:N	2.38	0.57
1:A:478:GLY:HA2	1:A:481:ILE:HG12	1.87	0.57
1:B:128:TRP:HZ2	1:B:149:LEU:HA	1.68	0.57
1:B:664:ALA:C	1:B:665:ASN:ND2	2.56	0.57
1:B:234:PRO:HD3	1:B:272:PRO:HG2	1.86	0.57
1:B:361:LEU:HD11	1:B:367:ALA:HB2	1.86	0.57
1:A:473:GLU:O	1:A:477:PHE:N	2.38	0.57
1:B:270:TYR:OH	1:B:411:ARG:NH2	2.37	0.57
1:B:348:HIS:CD2	1:B:349:PRO:HD2	2.39	0.57
1:A:564:LEU:HA	1:A:569:SER:OG	2.05	0.56
1:A:66:VAL:HG12	1:A:393:GLN:HE22	1.69	0.56
1:A:248:HIS:CD2	1:A:555:LEU:HD21	2.40	0.56
1:B:511:MET:HB2	1:B:625:PRO:HB3	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:541:ARG:HG2	1:A:544:SER:OG	2.04	0.56
1:A:499:ILE:HG23	1:A:545:GLU:CD	2.26	0.56
1:B:240:TRP:HA	1:B:247:VAL:HG13	1.87	0.56
1:A:152:GLY:HA2	1:A:155:LEU:HB3	1.86	0.56
1:B:399:VAL:HA	1:B:402:TRP:HD1	1.69	0.56
1:B:602:ALA:O	1:B:623:LEU:N	2.35	0.56
1:A:659:TYR:HE1	1:A:679:LEU:HD11	1.69	0.56
1:B:258:LEU:O	1:B:262:ALA:N	2.30	0.56
1:B:323:ASP:O	1:B:326:VAL:HG22	2.05	0.56
1:B:224:ALA:O	1:B:489:ARG:NH1	2.39	0.56
1:B:299:PRO:HD2	1:B:552:LYS:HZ2	1.70	0.56
1:B:610:ASP:OD2	1:B:613:THR:N	2.33	0.56
1:A:551:GLU:OE1	1:A:558:ARG:NH2	2.38	0.56
1:B:196:VAL:O	1:B:199:LEU:HB2	2.05	0.56
1:B:445:THR:OG1	1:B:446:ARG:N	2.39	0.56
1:A:318:THR:HG22	1:A:321:ASP:CG	2.26	0.56
1:A:37:ARG:NH1	1:A:39:GLY:O	2.34	0.56
1:A:171:LEU:HG	1:A:172:LEU:HG	1.88	0.56
1:A:191:ALA:C	1:A:196:VAL:HG11	2.26	0.56
1:A:428:GLY:C	1:A:432:ASN:HD22	2.09	0.56
1:B:415:PRO:HB3	1:B:423:TRP:CZ2	2.40	0.56
1:A:450:LEU:HD13	1:A:464:TYR:CE2	2.41	0.55
1:A:4:ARG:N	1:B:421:ASN:HD21	2.04	0.55
1:B:94:SER:OG	1:B:103:HIS:O	2.22	0.55
1:B:185:PHE:O	1:B:189:GLY:N	2.28	0.55
1:B:276:PRO:O	1:B:302:ILE:HD12	2.06	0.55
1:B:370:GLU:HG3	1:B:371:ASN:N	2.20	0.55
1:B:470:SER:OG	1:B:473:GLU:N	2.39	0.55
1:B:490:PRO:HB2	1:B:492:LEU:CD2	2.35	0.55
1:B:534:LEU:HD21	1:B:560:PHE:HA	1.88	0.55
1:A:398:VAL:O	1:A:401:PHE:HB3	2.06	0.55
1:B:163:VAL:HG12	1:B:164:PRO:HD2	1.88	0.55
1:B:393:GLN:N	1:B:393:GLN:OE1	2.36	0.55
1:B:650:VAL:O	1:B:658:GLU:HA	2.06	0.55
1:B:630:GLU:HB3	1:B:668:ARG:HB2	1.87	0.55
1:B:95:PRO:HA	1:B:102:PHE:HA	1.87	0.55
1:B:117:ARG:HD3	1:B:214:GLN:NE2	2.20	0.55
1:A:267:ASP:N	1:A:267:ASP:OD1	2.37	0.55
1:A:403:ILE:HD11	1:A:430:ILE:HD12	1.88	0.55
1:B:387:ASP:OD2	1:B:390:GLY:HA3	2.06	0.55
1:A:610:ASP:HB3	1:A:615:ASP:N	2.22	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:319:ILE:O	1:B:322:PHE:HB3	2.07	0.55
1:A:37:ARG:NH1	1:B:449:ARG:HH22	2.05	0.55
1:B:131:ASN:HD21	1:B:135:LYS:NZ	2.04	0.55
1:A:128:TRP:CH2	1:A:152:GLY:HA3	2.42	0.55
1:A:363:ASP:OD1	1:A:364:GLY:N	2.40	0.55
1:A:444:PHE:CZ	1:A:462:TYR:HD2	2.24	0.55
1:A:125:ILE:H	1:A:125:ILE:HD12	1.72	0.54
1:A:421:ASN:H	1:A:421:ASN:HD22	1.55	0.54
1:A:350:TRP:HB3	1:A:354:HIS:ND1	2.22	0.54
1:A:540:VAL:HG11	1:A:541:ARG:HH11	1.72	0.54
1:B:300:TRP:NE1	1:B:413:ASP:OD2	2.40	0.54
1:B:467:TRP:HB3	1:B:468:ARG:NH1	2.22	0.54
1:B:264:MET:O	1:B:575:THR:HA	2.07	0.54
1:A:283:LYS:NZ	1:A:376:TYR:HA	2.22	0.54
1:A:579:GLU:HA	1:A:582:ARG:CZ	2.37	0.54
1:B:50:ARG:HH21	1:B:214:GLN:HE22	1.56	0.54
1:A:359:THR:HG23	1:A:383:ASN:ND2	2.22	0.54
1:B:161:THR:HA	1:B:168:ARG:HH22	1.73	0.54
1:A:167:LEU:O	1:A:167:LEU:HD13	2.08	0.54
1:B:154:ARG:NH2	1:B:157:GLU:OE1	2.40	0.54
1:B:28:VAL:HG21	1:B:611:PRO:HB2	1.88	0.54
1:A:470:SER:N	1:A:473:GLU:OE1	2.26	0.54
1:B:209:VAL:HG22	1:B:211:ARG:NH2	2.23	0.54
1:B:262:ALA:HB2	1:B:332:LEU:HD13	1.88	0.54
1:B:481:ILE:HG13	1:B:482:ALA:N	2.22	0.54
1:B:585:PRO:O	1:B:588:ARG:HG3	2.08	0.54
1:B:630:GLU:HB3	1:B:668:ARG:HD3	1.89	0.54
1:A:235:ARG:HH11	1:A:277:ILE:HD11	1.73	0.54
1:B:117:ARG:NE	1:B:211:ARG:HB3	2.23	0.54
1:B:96:GLY:HA3	1:B:103:HIS:CE1	2.42	0.54
1:A:250:THR:HG23	1:A:316:LEU:O	2.08	0.54
1:A:370:GLU:HG3	1:A:375:LYS:HB3	1.89	0.54
1:A:639:GLU:HA	1:A:692:LEU:HD23	1.90	0.54
1:A:446:ARG:NE	1:B:100:ASP:OD1	2.40	0.54
1:B:36:TRP:HE3	1:B:37:ARG:O	1.89	0.54
1:A:235:ARG:O	1:A:249:GLY:N	2.41	0.53
1:B:109:ASP:OD1	1:B:109:ASP:N	2.33	0.53
1:B:230:TYR:HB2	1:B:266:PHE:CD1	2.42	0.53
1:B:620:VAL:HG13	1:B:677:HIS:HB2	1.90	0.53
1:A:350:TRP:O	1:A:354:HIS:N	2.41	0.53
1:A:650:VAL:HB	1:A:679:LEU:HD12	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:10:VAL:HG22	1:B:33:ALA:HB1	1.91	0.53
1:B:417:THR:OG1	1:B:418:LYS:HE3	2.07	0.53
1:B:463:THR:CG2	1:B:490:PRO:HB3	2.38	0.53
1:B:509:PRO:HA	1:B:512:PHE:CD1	2.43	0.53
1:A:121:TRP:HB3	1:A:209:VAL:HG22	1.90	0.53
1:A:415:PRO:HA	1:A:423:TRP:HZ2	1.74	0.53
1:B:250:THR:OG1	1:B:251:PHE:N	2.42	0.53
1:B:357:TRP:CD2	1:B:391:ILE:HG12	2.42	0.53
1:B:585:PRO:HA	1:B:588:ARG:HE	1.72	0.53
1:B:620:VAL:HG22	1:B:677:HIS:HB2	1.91	0.53
1:A:401:PHE:O	1:A:405:HIS:CD2	2.62	0.53
1:A:452:GLY:O	1:A:456:LEU:HD12	2.06	0.53
1:B:276:PRO:HD3	1:B:312:VAL:O	2.08	0.53
1:B:408:ASN:C	1:B:409:ILE:HG13	2.29	0.53
1:B:504:LEU:HD21	1:B:512:PHE:CG	2.44	0.53
1:B:236:SER:HB3	1:B:556:ARG:O	2.08	0.53
1:B:398:VAL:HG12	1:B:402:TRP:HE1	1.73	0.53
1:B:461:SER:N	1:B:489:ARG:O	2.41	0.53
1:B:4:ARG:HB2	1:B:4:ARG:HH11	1.70	0.53
1:B:579:GLU:O	1:B:583:LEU:HG	2.09	0.53
1:A:554:GLU:HG2	1:A:555:LEU:N	2.24	0.53
1:B:421:ASN:N	1:B:421:ASN:HD22	2.05	0.53
1:B:633:LEU:HD21	1:B:635:LEU:HD21	1.90	0.53
1:B:105:HIS:CE1	1:B:690:LEU:HD13	2.44	0.53
1:A:453:LEU:O	1:A:456:LEU:N	2.41	0.53
1:A:124:PRO:HG2	1:A:205:LEU:HD11	1.91	0.53
1:A:460:GLN:OE1	1:A:491:ASN:HB2	2.09	0.53
1:B:28:VAL:HA	1:B:107:THR:HG22	1.90	0.53
1:B:37:ARG:NH2	1:B:41:ASP:O	2.42	0.53
1:B:22:LYS:HE2	1:B:459:THR:O	2.09	0.53
1:B:586:ALA:HB3	1:B:617:VAL:HG22	1.91	0.53
1:A:37:ARG:NH1	1:A:39:GLY:C	2.62	0.53
1:B:151:VAL:HG23	1:B:155:LEU:HG	1.89	0.53
1:B:156:LEU:HD22	1:B:159:ALA:HB3	1.91	0.53
1:B:224:ALA:HB2	1:B:438:LEU:HD13	1.90	0.53
1:B:280:VAL:HG12	1:B:346:PRO:HG2	1.90	0.53
1:B:478:GLY:HA2	1:B:481:ILE:HG12	1.91	0.53
1:B:516:ALA:HB2	1:B:532:TYR:HE2	1.74	0.53
1:B:265:GLY:HA3	1:B:578:ASN:CB	2.39	0.53
1:A:6:VAL:HG21	1:A:36:TRP:CE2	2.43	0.53
1:A:37:ARG:HH12	1:A:39:GLY:C	2.13	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:423:TRP:CG	1:A:458:PHE:HZ	2.28	0.52
1:B:628:ALA:HB2	1:B:670:ASP:OD2	2.09	0.52
1:B:128:TRP:NE1	1:B:148:ASP:O	2.38	0.52
1:A:129:ARG:HB3	1:A:129:ARG:HH21	1.75	0.52
1:A:224:ALA:HB1	1:A:489:ARG:HH12	1.75	0.52
1:B:181:PRO:HA	1:B:187:ARG:CZ	2.40	0.52
1:B:47:LEU:HB2	1:B:93:MET:SD	2.49	0.52
1:A:395:VAL:O	1:A:399:VAL:HG23	2.09	0.52
1:B:320:GLU:N	1:B:320:GLU:OE2	2.35	0.52
1:B:408:ASN:HA	1:B:437:VAL:HG13	1.90	0.52
1:B:57:PRO:O	1:B:59:LEU:HD12	2.09	0.52
1:B:14:VAL:O	1:B:17:GLY:N	2.40	0.52
1:B:4:ARG:NH1	1:B:208:PHE:O	2.42	0.52
1:A:153:ALA:O	1:A:157:GLU:HG3	2.10	0.52
1:A:395:VAL:O	1:A:398:VAL:HG22	2.10	0.52
1:B:43:VAL:HG23	1:B:122:GLY:HA2	1.92	0.52
1:B:595:PHE:CD1	1:B:606:TYR:HB3	2.45	0.52
1:B:156:LEU:HD11	1:B:171:LEU:HD22	1.92	0.52
1:B:611:PRO:O	1:B:689:ARG:NE	2.42	0.52
1:A:272:PRO:HB3	1:A:300:TRP:CZ3	2.45	0.52
1:A:518:LEU:O	1:A:522:MET:N	2.27	0.52
1:A:585:PRO:HA	1:A:588:ARG:NE	2.24	0.52
1:A:610:ASP:OD2	1:A:613:THR:OG1	2.19	0.52
1:A:349:PRO:O	1:A:350:TRP:HD1	1.93	0.52
1:B:495:ASN:HD21	1:B:532:TYR:HB2	1.73	0.52
1:A:415:PRO:HA	1:A:423:TRP:CZ2	2.45	0.52
1:A:56:TYR:HD2	1:A:428:GLY:HA2	1.74	0.52
1:B:620:VAL:O	1:B:677:HIS:N	2.39	0.52
1:B:651:ARG:CG	1:B:658:GLU:HG2	2.31	0.52
1:B:8:ASP:N	1:B:34:THR:O	2.43	0.51
1:A:620:VAL:HG13	1:A:677:HIS:O	2.11	0.51
1:B:29:VAL:O	1:B:105:HIS:HA	2.10	0.51
1:B:173:GLU:HG3	1:B:174:ALA:H	1.74	0.51
1:B:264:MET:O	1:B:578:ASN:ND2	2.28	0.51
1:B:493:PHE:CE1	1:B:527:GLY:HA3	2.45	0.51
1:A:611:PRO:O	1:A:689:ARG:HD2	2.11	0.51
1:A:168:ARG:HA	1:A:171:LEU:HD23	1.93	0.51
1:A:492:LEU:HD12	1:A:519:ALA:HA	1.91	0.51
1:A:66:VAL:HG12	1:A:393:GLN:NE2	2.26	0.51
1:B:357:TRP:O	1:B:383:ASN:N	2.43	0.51
1:B:570:LEU:O	1:B:574:LEU:HD12	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:596:HIS:CE1	1:B:640:LEU:HG	2.45	0.51
1:A:320:GLU:OE1	1:A:320:GLU:N	2.43	0.51
1:B:125:ILE:HD12	1:B:125:ILE:H	1.74	0.51
1:B:124:PRO:HD2	1:B:125:ILE:HD12	1.93	0.51
1:B:231:GLU:OE2	1:B:493:PHE:CZ	2.64	0.51
1:B:6:VAL:O	1:B:35:VAL:HA	2.11	0.51
1:A:424:ALA:HB2	1:A:456:LEU:HD23	1.93	0.51
1:A:563:ALA:HB1	1:A:568:GLU:O	2.11	0.51
1:B:260:ARG:HA	1:B:263:ARG:NH1	2.26	0.51
1:B:277:ILE:HG21	1:B:299:PRO:HA	1.93	0.51
1:B:276:PRO:CG	1:B:307:GLY:HA3	2.40	0.51
1:B:19:TYR:CE2	1:B:456:LEU:HG	2.46	0.51
1:A:420:PRO:HA	1:A:423:TRP:CD1	2.45	0.51
1:B:129:ARG:O	1:B:132:VAL:HG22	2.10	0.51
1:A:14:VAL:HG23	1:A:19:TYR:HB2	1.93	0.50
1:B:277:ILE:O	1:B:304:SER:HB3	2.11	0.50
1:B:465:PHE:HB2	1:B:477:PHE:CE2	2.46	0.50
1:B:616:THR:OG1	1:B:681:MET:O	2.29	0.50
1:A:686:ALA:HA	1:A:689:ARG:NE	2.27	0.50
1:B:288:SER:OG	1:B:290:THR:OG1	2.27	0.50
1:B:50:ARG:O	1:B:114:TRP:HA	2.10	0.50
1:B:585:PRO:HA	1:B:588:ARG:NE	2.25	0.50
1:B:621:VAL:HG23	1:B:676:ALA:HB2	1.93	0.50
1:A:318:THR:OG1	1:A:319:ILE:N	2.39	0.50
1:B:131:ASN:HD21	1:B:135:LYS:CE	2.24	0.50
1:B:165:ARG:HA	1:B:168:ARG:CD	2.39	0.50
1:B:116:TYR:CE2	1:B:215:TYR:HB2	2.46	0.50
1:B:337:ALA:CB	1:B:409:ILE:HB	2.40	0.50
1:B:580:ILE:HA	1:B:583:LEU:HB2	1.93	0.50
1:B:691:GLN:OE1	1:B:694:ARG:HD2	2.12	0.50
1:A:481:ILE:HG13	1:A:482:ALA:N	2.26	0.50
1:A:579:GLU:HA	1:A:582:ARG:NH1	2.27	0.50
1:A:250:THR:HG23	1:A:316:LEU:C	2.32	0.50
1:A:396:LEU:H	1:A:396:LEU:HD23	1.77	0.50
1:A:442:GLU:HA	1:A:462:TYR:CB	2.38	0.50
1:A:452:GLY:O	1:A:455:LYS:HB2	2.11	0.50
1:A:433:GLU:O	1:A:435:PRO:HD3	2.12	0.50
1:A:616:THR:HB	1:A:681:MET:HB2	1.94	0.50
1:B:165:ARG:HA	1:B:168:ARG:CG	2.41	0.50
1:B:650:VAL:CG1	1:B:679:LEU:HD22	2.42	0.50
1:A:260:ARG:NH1	1:A:533:GLU:OE1	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:534:LEU:HD12	1:A:558:ARG:HD2	1.94	0.50
1:B:357:TRP:CD1	1:B:387:ASP:HB3	2.46	0.50
1:B:484:LYS:HB2	1:B:484:LYS:HZ2	1.75	0.50
1:A:445:THR:OG1	1:A:449:ARG:NH1	2.44	0.50
1:B:197:SER:HA	1:B:200:LEU:HD13	1.94	0.50
1:B:493:PHE:CZ	1:B:527:GLY:HA3	2.47	0.50
1:A:18:ARG:HE	1:B:2:ALA:CB	2.24	0.49
1:A:304:SER:HA	1:A:347:ASP:OD2	2.12	0.49
1:A:348:HIS:HE1	1:A:350:TRP:CD2	2.30	0.49
1:A:460:GLN:HG2	1:A:461:SER:H	1.76	0.49
1:B:394:GLU:O	1:B:398:VAL:HG23	2.11	0.49
1:A:327:ALA:O	1:A:330:ARG:HB2	2.12	0.49
1:A:596:HIS:HD1	1:A:636:ASP:HB3	1.77	0.49
1:B:274:ILE:HG22	1:B:316:LEU:HD13	1.95	0.49
1:A:173:GLU:CD	1:A:174:ALA:H	2.16	0.49
1:A:589:GLU:OE1	1:A:591:ARG:HG2	2.12	0.49
1:A:685:PRO:HD2	1:A:688:LYS:HD2	1.95	0.49
1:A:47:LEU:HB3	1:A:91:LEU:HB2	1.94	0.49
1:B:493:PHE:CD1	1:B:527:GLY:HA3	2.47	0.49
1:B:592:THR:HB	1:B:609:PHE:CE2	2.47	0.49
1:B:687:ASP:OD1	1:B:688:LYS:N	2.45	0.49
1:B:7:ILE:HG23	1:B:35:VAL:CG1	2.42	0.49
1:B:250:THR:HG22	1:B:253:THR:HG23	1.94	0.49
1:A:36:TRP:HB2	1:B:449:ARG:HG2	1.94	0.49
1:B:470:SER:HB3	1:B:473:GLU:OE1	2.12	0.49
1:B:465:PHE:HB2	1:B:477:PHE:CZ	2.48	0.49
1:A:46:THR:HB	1:A:119:ASP:HB2	1.94	0.49
1:A:171:LEU:HG	1:A:172:LEU:N	2.27	0.49
1:A:302:ILE:HD11	1:A:341:ALA:HB3	1.95	0.49
1:A:322:PHE:O	1:A:325:PHE:HB3	2.12	0.49
1:A:650:VAL:HG23	1:A:659:TYR:CD1	2.43	0.49
1:A:392:TYR:O	1:A:395:VAL:HG22	2.12	0.49
1:A:421:ASN:H	1:A:421:ASN:ND2	2.11	0.49
1:B:25:VAL:CG1	1:B:222:PRO:HG3	2.40	0.49
1:B:690:LEU:O	1:B:694:ARG:HG3	2.11	0.49
1:A:180:ALA:HB3	1:A:187:ARG:NH2	2.28	0.49
1:A:225:ARG:HH22	1:A:589:GLU:HG2	1.77	0.49
1:B:163:VAL:HB	1:B:171:LEU:HD11	1.95	0.49
1:B:346:PRO:HG3	1:B:380:TYR:CE2	2.47	0.49
1:B:414:ASN:ND2	1:B:442:GLU:OE2	2.46	0.49
1:A:318:THR:HG23	1:A:320:GLU:H	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:413:ASP:O	1:A:418:LYS:NZ	2.38	0.49
1:A:231:GLU:N	1:A:528:VAL:O	2.46	0.49
1:B:4:ARG:HB2	1:B:4:ARG:CZ	2.43	0.49
1:B:637:MET:HG3	1:B:644:PRO:HA	1.95	0.49
1:B:628:ALA:HB1	1:B:668:ARG:CZ	2.43	0.49
1:A:163:VAL:HG11	1:A:199:LEU:CD2	2.38	0.49
1:A:52:HIS:CE1	1:A:115:THR:HG22	2.48	0.49
1:B:410:PHE:HE2	1:B:437:VAL:HG11	1.78	0.49
1:A:609:PHE:HA	1:A:616:THR:HA	1.95	0.48
1:A:684:ILE:HA	1:A:684:ILE:HD12	1.64	0.48
1:A:193:SER:OG	1:A:196:VAL:HG12	2.13	0.48
1:B:198:ASP:HA	1:B:201:ALA:HB3	1.93	0.48
1:B:251:PHE:CD2	1:B:321:ASP:HB2	2.47	0.48
1:B:495:ASN:OD1	1:B:529:TYR:HB3	2.12	0.48
1:B:640:LEU:HA	1:B:640:LEU:HD23	1.71	0.48
1:A:540:VAL:CG1	1:A:541:ARG:HH11	2.27	0.48
1:A:52:HIS:O	1:A:113:LEU:HB3	2.13	0.48
1:A:25:VAL:HG12	1:A:219:VAL:HG12	1.95	0.48
1:A:678:VAL:C	1:A:679:LEU:HD23	2.33	0.48
1:B:168:ARG:HA	1:B:171:LEU:HD12	1.94	0.48
1:B:276:PRO:HD3	1:B:312:VAL:C	2.34	0.48
1:B:318:THR:HG23	1:B:320:GLU:OE2	2.13	0.48
1:B:422:PHE:CE2	1:B:426:LEU:HD22	2.49	0.48
1:A:579:GLU:HA	1:A:582:ARG:NH2	2.29	0.48
1:B:130:HIS:ND1	1:B:130:HIS:C	2.62	0.48
1:B:275:HIS:HB3	1:B:276:PRO:HD2	1.93	0.48
1:B:399:VAL:HA	1:B:402:TRP:CD1	2.48	0.48
1:B:439:PHE:HB3	1:B:458:PHE:HE1	1.78	0.48
1:A:270:TYR:HA	1:A:337:ALA:O	2.14	0.48
1:A:495:ASN:ND2	1:A:532:TYR:HB2	2.26	0.48
1:B:14:VAL:HB	1:B:19:TYR:O	2.14	0.48
1:B:403:ILE:HG23	1:B:407:VAL:O	2.13	0.48
1:B:224:ALA:CB	1:B:489:ARG:HH12	2.26	0.48
1:A:444:PHE:CE1	1:A:462:TYR:HB3	2.49	0.48
1:B:46:THR:HB	1:B:119:ASP:HB2	1.95	0.48
1:B:275:HIS:C	1:B:313:HIS:HB2	2.33	0.48
1:B:340:LEU:HD21	1:B:410:PHE:HD1	1.79	0.48
1:A:593:ILE:O	1:A:594:ARG:NH2	2.47	0.48
1:B:196:VAL:O	1:B:200:LEU:HD12	2.14	0.48
1:B:313:HIS:HD2	1:B:315:GLN:H	1.61	0.48
1:B:468:ARG:HB3	1:B:473:GLU:HB3	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:129:ARG:HG2	1:B:129:ARG:O	2.13	0.48
1:A:300:TRP:NE1	1:A:339:ASP:OD2	2.47	0.48
1:A:40:HIS:ND1	1:B:371:ASN:ND2	2.58	0.47
1:B:152:GLY:HA2	1:B:155:LEU:HB2	1.95	0.47
1:A:10:VAL:O	1:A:10:VAL:HG12	2.14	0.47
1:A:130:HIS:ND1	1:A:133:THR:OG1	2.46	0.47
1:A:195:GLU:HA	1:A:198:ASP:OD1	2.13	0.47
1:B:116:TYR:CE1	1:B:215:TYR:HD1	2.31	0.47
1:B:300:TRP:H	1:B:552:LYS:HZ3	1.61	0.47
1:B:494:VAL:HG12	1:B:519:ALA:HB3	1.94	0.47
1:B:529:TYR:HE1	1:B:547:TYR:CZ	2.31	0.47
1:A:10:VAL:HG22	1:A:33:ALA:HB2	1.97	0.47
1:A:273:PRO:HG2	1:A:300:TRP:HA	1.95	0.47
1:A:440:LEU:HD11	1:A:462:TYR:CD1	2.49	0.47
1:A:524:PRO:C	1:A:581:ARG:HH12	2.17	0.47
1:B:50:ARG:CZ	1:B:214:GLN:OE1	2.63	0.47
1:B:429:GLN:O	1:B:433:GLU:HG3	2.13	0.47
1:B:524:PRO:HG2	1:B:590:LEU:HD23	1.96	0.47
1:A:556:ARG:HA	1:A:556:ARG:HH11	1.79	0.47
1:B:363:ASP:OD1	1:B:365:SER:OG	2.25	0.47
1:B:586:ALA:HB2	1:B:615:ASP:O	2.13	0.47
1:A:239:GLY:HA2	1:A:557:PRO:HB3	1.96	0.47
1:A:639:GLU:HA	1:A:692:LEU:HD21	1.97	0.47
1:A:652:ASP:OD1	1:A:653:GLU:N	2.48	0.47
1:A:183:ASP:HB3	1:A:186:THR:OG1	2.15	0.47
1:A:276:PRO:HD3	1:A:312:VAL:O	2.14	0.47
1:B:175:ALA:O	1:B:179:ARG:HG3	2.14	0.47
1:B:637:MET:HB3	1:B:642:MET:O	2.15	0.47
1:A:129:ARG:O	1:A:132:VAL:HG12	2.13	0.47
1:A:596:HIS:NE2	1:A:607:SER:OG	2.47	0.47
1:B:439:PHE:HB3	1:B:458:PHE:CE1	2.49	0.47
1:A:223:GLU:O	1:A:227:SER:HB3	2.15	0.47
1:A:322:PHE:HE1	1:A:405:HIS:HB3	1.80	0.47
1:A:579:GLU:O	1:A:583:LEU:HG	2.15	0.47
1:B:513:ALA:O	1:B:517:VAL:HG13	2.15	0.47
1:B:596:HIS:HE1	1:B:640:LEU:HG	1.80	0.47
1:A:160:ALA:CB	1:A:171:LEU:HD22	2.44	0.47
1:A:271:LEU:O	1:A:339:ASP:HB2	2.15	0.47
1:A:50:ARG:HB2	1:A:88:PRO:HA	1.96	0.47
1:B:341:ALA:HB1	1:B:343:GLN:HE22	1.80	0.47
1:A:686:ALA:HA	1:A:689:ARG:HE	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:341:ALA:C	1:B:342:LEU:HD23	2.36	0.47
1:B:413:ASP:O	1:B:418:LYS:NZ	2.45	0.47
1:B:607:SER:HB3	1:B:618:LEU:CD1	2.35	0.47
1:A:549:ASN:HB3	1:A:554:GLU:OE1	2.15	0.47
1:B:14:VAL:C	1:B:17:GLY:H	2.17	0.47
1:A:14:VAL:CG2	1:A:19:TYR:HB2	2.45	0.46
1:A:440:LEU:HD21	1:A:462:TYR:CE1	2.50	0.46
1:A:296:VAL:HG11	1:A:555:LEU:HD21	1.97	0.46
1:A:264:MET:O	1:A:575:THR:HA	2.15	0.46
1:B:183:ASP:OD1	1:B:184:PRO:HD2	2.15	0.46
1:B:60:ALA:HB3	1:B:424:ALA:HB3	1.96	0.46
1:A:498:ASP:C	1:A:499:ILE:HD12	2.36	0.46
1:A:562:SER:O	1:A:566:ARG:N	2.30	0.46
1:A:657:GLU:HB3	1:A:659:TYR:CE2	2.50	0.46
1:B:159:ALA:C	1:B:162:GLY:H	2.18	0.46
1:B:236:SER:HB3	1:B:556:ARG:C	2.35	0.46
1:B:551:GLU:HB3	1:B:556:ARG:CG	2.45	0.46
1:B:264:MET:HA	1:B:575:THR:OG1	2.15	0.46
1:B:593:ILE:C	1:B:594:ARG:HG2	2.34	0.46
1:B:91:LEU:HB3	1:B:92:PRO:CD	2.45	0.46
1:A:327:ALA:HA	1:A:330:ARG:HB2	1.95	0.46
1:A:500:LEU:H	1:A:545:GLU:HB2	1.81	0.46
1:A:446:ARG:HE	1:B:100:ASP:CG	2.17	0.46
1:B:260:ARG:HH22	1:B:533:GLU:CD	2.18	0.46
1:B:652:ASP:CB	1:B:657:GLU:H	2.26	0.46
1:A:274:ILE:HD12	1:A:275:HIS:CE1	2.51	0.46
1:A:358:PHE:CD2	1:A:366:ILE:HD13	2.50	0.46
1:A:394:GLU:O	1:A:398:VAL:HG13	2.15	0.46
1:A:14:VAL:HG11	1:A:487:ILE:HG23	1.97	0.46
1:A:514:ILE:O	1:A:518:LEU:HD22	2.15	0.46
1:B:534:LEU:HD22	1:B:563:ALA:HB3	1.97	0.46
1:A:522:MET:O	1:A:524:PRO:HD3	2.16	0.46
1:B:421:ASN:N	1:B:421:ASN:ND2	2.64	0.46
1:B:648:PHE:HD2	1:B:650:VAL:HG23	1.81	0.46
1:A:129:ARG:O	1:A:133:THR:HG23	2.16	0.46
1:A:283:LYS:HE2	1:A:377:GLN:OE1	2.15	0.46
1:A:596:HIS:HE1	1:A:639:GLU:HG3	1.80	0.46
1:A:66:VAL:HG13	1:A:389:ALA:HA	1.96	0.46
1:B:152:GLY:O	1:B:155:LEU:HB2	2.16	0.46
1:B:322:PHE:O	1:B:325:PHE:HB3	2.15	0.46
1:B:398:VAL:O	1:B:402:TRP:NE1	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:597:HIS:O	1:B:634:TRP:HB2	2.16	0.46
1:A:402:TRP:HB2	1:A:410:PHE:HZ	1.80	0.46
1:A:444:PHE:CE1	1:A:463:THR:O	2.69	0.46
1:A:50:ARG:HG2	1:A:51:TYR:N	2.31	0.46
1:B:516:ALA:HB2	1:B:532:TYR:CE2	2.50	0.46
1:B:269:VAL:HG13	1:B:336:VAL:HA	1.97	0.46
1:B:551:GLU:HA	1:B:554:GLU:O	2.15	0.46
1:B:584:HIS:HA	1:B:585:PRO:HD3	1.62	0.46
1:A:318:THR:HG23	1:A:321:ASP:H	1.81	0.46
1:A:269:VAL:O	1:A:336:VAL:HA	2.15	0.46
1:B:593:ILE:HG13	1:B:608:LYS:HG2	1.97	0.46
1:B:684:ILE:O	1:B:689:ARG:HD3	2.15	0.46
1:A:146:ASN:OD1	1:A:146:ASN:O	2.34	0.46
1:A:448:ALA:HB1	1:B:34:THR:HG21	1.98	0.46
1:B:147:ASN:HA	1:B:150:LEU:HB2	1.98	0.46
1:B:19:TYR:HD2	1:B:59:LEU:HD23	1.80	0.46
1:A:108:PRO:HB2	1:A:219:VAL:HG11	1.97	0.45
1:A:358:PHE:CB	1:A:366:ILE:HG12	2.46	0.45
1:B:302:ILE:HG21	1:B:309:HIS:CE1	2.51	0.45
1:B:336:VAL:O	1:B:409:ILE:HD12	2.16	0.45
1:B:515:ARG:HA	1:B:515:ARG:HD2	1.74	0.45
1:B:471:LYS:O	1:B:475:THR:HG23	2.17	0.45
1:B:463:THR:HG21	1:B:490:PRO:HB3	1.97	0.45
1:B:507:GLY:O	1:B:625:PRO:HB2	2.16	0.45
1:B:594:ARG:HD2	1:B:639:GLU:HB3	1.99	0.45
1:A:180:ALA:O	1:A:187:ARG:HD2	2.16	0.45
1:A:584:HIS:HA	1:A:585:PRO:HD3	1.61	0.45
1:B:163:VAL:O	1:B:168:ARG:NH1	2.49	0.45
1:B:233:PHE:HE2	1:B:299:PRO:HG2	1.81	0.45
1:B:10:VAL:HA	1:B:33:ALA:HA	1.98	0.45
1:B:574:LEU:HA	1:B:577:LEU:HB2	1.97	0.45
1:B:628:ALA:HA	1:B:670:ASP:HA	1.97	0.45
1:B:383:ASN:O	1:B:391:ILE:HD11	2.16	0.45
1:A:177:ALA:O	1:A:187:ARG:HD3	2.16	0.45
1:A:260:ARG:HD2	1:A:560:PHE:CD2	2.51	0.45
1:A:361:LEU:HD12	1:A:365:SER:OG	2.16	0.45
1:A:492:LEU:HG	1:A:523:GLY:HA3	1.97	0.45
1:A:576:ARG:HD2	1:A:576:ARG:HA	1.79	0.45
1:B:265:GLY:HA3	1:B:578:ASN:HB3	1.97	0.45
1:B:509:PRO:HA	1:B:512:PHE:CE1	2.52	0.45
1:A:378:ASP:OD1	1:A:379:ILE:HG13	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:232:MET:O	1:B:271:LEU:HD23	2.16	0.45
1:B:368:TYR:HB3	1:B:380:TYR:HE1	1.82	0.45
1:A:238:GLY:O	1:A:247:VAL:HB	2.16	0.45
1:A:37:ARG:NH2	1:A:40:HIS:HA	2.31	0.45
1:A:540:VAL:HA	1:A:548:LEU:HD13	1.98	0.45
1:A:575:THR:O	1:A:579:GLU:N	2.49	0.45
1:B:275:HIS:HB2	1:B:302:ILE:CD1	2.46	0.45
1:B:277:ILE:HG12	1:B:277:ILE:H	1.59	0.45
1:B:292:ALA:HB3	1:B:295:ASP:OD1	2.16	0.45
1:B:340:LEU:HG	1:B:410:PHE:HB3	1.97	0.45
1:A:37:ARG:NH1	1:B:449:ARG:NH2	2.65	0.45
1:B:481:ILE:HG13	1:B:482:ALA:H	1.82	0.45
1:A:348:HIS:CE1	1:A:350:TRP:CD2	3.05	0.45
1:B:142:GLU:O	1:B:146:ASN:HB2	2.16	0.45
1:B:157:GLU:O	1:B:161:THR:HG23	2.16	0.45
1:B:116:TYR:O	1:B:214:GLN:HA	2.15	0.45
1:B:450:LEU:HD22	1:B:451:TYR:CE1	2.52	0.45
1:A:206:ARG:NH1	1:A:206:ARG:HB2	2.32	0.45
1:B:250:THR:N	1:B:253:THR:OG1	2.50	0.45
1:B:262:ALA:HB1	1:B:332:LEU:HD22	1.98	0.45
1:A:273:PRO:HG3	1:A:339:ASP:OD2	2.17	0.45
1:A:36:TRP:CG	1:B:449:ARG:HG2	2.51	0.45
1:A:396:LEU:HD12	1:A:400:ARG:HE	1.82	0.45
1:A:47:LEU:HB2	1:A:93:MET:SD	2.57	0.45
1:B:4:ARG:NH1	1:B:208:PHE:C	2.70	0.45
1:B:576:ARG:NE	1:B:580:ILE:HD11	2.32	0.45
1:A:159:ALA:O	1:A:163:VAL:HG13	2.17	0.44
1:A:684:ILE:HA	1:A:685:PRO:HD3	1.77	0.44
1:B:440:LEU:HD12	1:B:441:SER:N	2.31	0.44
1:B:589:GLU:OE2	1:B:590:LEU:N	2.50	0.44
1:B:414:ASN:N	1:B:442:GLU:OE2	2.49	0.44
1:A:650:VAL:HG21	1:A:661:TRP:CD2	2.52	0.44
1:B:19:TYR:CD1	1:B:455:LYS:HB3	2.53	0.44
1:B:59:LEU:HD12	1:B:59:LEU:N	2.32	0.44
1:A:268:VAL:HA	1:A:335:GLU:O	2.17	0.44
1:A:62:PRO:HG3	1:A:425:TRP:HD1	1.82	0.44
1:B:150:LEU:HD23	1:B:150:LEU:HA	1.69	0.44
1:B:515:ARG:HD2	1:B:518:LEU:CD2	2.45	0.44
1:B:558:ARG:HD2	1:B:558:ARG:N	2.33	0.44
1:B:593:ILE:HG12	1:B:608:LYS:NZ	2.32	0.44
1:A:56:TYR:HB3	1:A:432:ASN:CG	2.38	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:235:ARG:HB3	1:B:555:LEU:HD23	1.98	0.44
1:B:239:GLY:C	1:B:247:VAL:HG22	2.38	0.44
1:B:495:ASN:N	1:B:495:ASN:OD1	2.51	0.44
1:B:275:HIS:CB	1:B:302:ILE:HD11	2.46	0.44
1:B:251:PHE:CE1	1:B:322:PHE:HB2	2.52	0.44
1:B:683:LEU:O	1:B:684:ILE:HD13	2.17	0.44
1:A:460:GLN:HA	1:A:489:ARG:O	2.18	0.44
1:B:485:ALA:CB	1:B:590:LEU:HB2	2.48	0.44
1:A:350:TRP:CD1	1:A:354:HIS:HE1	2.35	0.44
1:A:402:TRP:HB2	1:A:410:PHE:CZ	2.53	0.44
1:B:221:ARG:HE	1:B:438:LEU:HD11	1.83	0.44
1:A:37:ARG:HD2	1:A:37:ARG:C	2.38	0.44
1:B:371:ASN:H	1:B:376:TYR:HE2	1.64	0.44
1:B:358:PHE:HD2	1:B:381:PRO:O	2.00	0.44
1:B:398:VAL:O	1:B:402:TRP:CD1	2.71	0.44
1:B:650:VAL:O	1:B:659:TYR:N	2.43	0.44
1:A:396:LEU:HD22	1:A:425:TRP:CZ3	2.53	0.43
1:A:514:ILE:HD11	1:A:675:VAL:HG21	2.00	0.43
1:A:500:LEU:N	1:A:545:GLU:HB2	2.33	0.43
1:B:196:VAL:HA	1:B:199:LEU:HD23	2.00	0.43
1:B:240:TRP:HD1	1:B:245:ARG:C	2.22	0.43
1:B:263:ARG:HB2	1:B:263:ARG:NH2	2.33	0.43
1:B:270:TYR:HA	1:B:337:ALA:O	2.17	0.43
1:A:300:TRP:CZ2	1:A:339:ASP:OD1	2.71	0.43
1:A:399:VAL:HA	1:A:402:TRP:HD1	1.83	0.43
1:A:224:ALA:HB2	1:A:438:LEU:HD13	1.99	0.43
1:A:440:LEU:HD11	1:A:462:TYR:HD1	1.83	0.43
1:A:487:ILE:HG13	1:A:487:ILE:H	1.67	0.43
1:A:650:VAL:HG21	1:A:661:TRP:CE3	2.52	0.43
1:B:156:LEU:HD21	1:B:171:LEU:HD22	1.99	0.43
1:B:359:THR:N	1:B:366:ILE:HD13	2.33	0.43
1:A:169:GLU:HA	1:A:172:LEU:HD12	1.99	0.43
1:A:641:GLY:HA3	1:A:684:ILE:HG12	1.99	0.43
1:B:120:GLY:O	1:B:209:VAL:HA	2.18	0.43
1:B:556:ARG:O	1:B:558:ARG:HD2	2.19	0.43
1:A:121:TRP:HZ3	1:A:123:ASP:OD1	2.02	0.43
1:B:0:SER:OG	1:B:9:ASP:N	2.41	0.43
1:B:107:THR:HA	1:B:108:PRO:HD3	1.78	0.43
1:B:27:GLU:O	1:B:108:PRO:HD2	2.18	0.43
1:B:300:TRP:HB2	1:B:552:LYS:NZ	2.26	0.43
1:B:474:LEU:HD21	1:B:515:ARG:HH12	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:180:ALA:HA	1:B:181:PRO:HD3	1.81	0.43
1:B:402:TRP:O	1:B:407:VAL:HG13	2.19	0.43
1:B:229:TRP:HE1	1:B:525:ALA:HB1	1.83	0.43
1:A:278:GLY:HA2	1:A:304:SER:HA	1.99	0.43
1:A:308:GLY:H	1:A:311:ALA:HB3	1.83	0.43
1:A:396:LEU:HD22	1:A:425:TRP:HZ3	1.82	0.43
1:A:451:TYR:O	1:A:455:LYS:HG3	2.18	0.43
1:A:442:GLU:HB2	1:A:462:TYR:CD2	2.53	0.43
1:B:154:ARG:NH1	1:B:157:GLU:HB3	2.33	0.43
1:A:153:ALA:CB	1:A:178:LEU:HD22	2.41	0.43
1:B:121:TRP:HB3	1:B:209:VAL:CB	2.37	0.43
1:B:158:ARG:O	1:B:161:THR:N	2.51	0.43
1:B:301:ALA:HB2	1:B:379:ILE:HD11	2.00	0.43
1:B:358:PHE:HB3	1:B:366:ILE:HG12	1.99	0.43
1:B:390:GLY:O	1:B:393:GLN:NE2	2.52	0.43
1:B:463:THR:C	1:B:465:PHE:H	2.21	0.43
1:B:47:LEU:HD13	1:B:93:MET:SD	2.59	0.43
1:A:448:ALA:HB3	1:B:100:ASP:OD2	2.18	0.43
1:B:224:ALA:CB	1:B:438:LEU:HD13	2.49	0.43
1:B:225:ARG:O	1:B:525:ALA:HB2	2.17	0.43
1:B:300:TRP:CD1	1:B:341:ALA:HB2	2.54	0.43
1:B:394:GLU:CD	1:B:397:ARG:HH21	2.22	0.43
1:B:637:MET:HG2	1:B:663:GLN:OE1	2.19	0.43
1:A:306:GLU:O	1:A:306:GLU:HG2	2.19	0.43
1:A:318:THR:HG23	1:A:320:GLU:N	2.34	0.43
1:A:401:PHE:O	1:A:404:SER:OG	2.33	0.43
1:A:592:THR:HB	1:A:609:PHE:CD2	2.53	0.43
1:A:652:ASP:O	1:A:656:GLY:HA2	2.19	0.43
1:A:94:SER:HA	1:A:95:PRO:HD2	1.91	0.43
1:B:260:ARG:NH1	1:B:571:GLU:OE1	2.52	0.43
1:B:441:SER:OG	1:B:461:SER:HA	2.19	0.43
1:B:522:MET:O	1:B:524:PRO:HD3	2.18	0.43
1:B:610:ASP:HB3	1:B:615:ASP:N	2.33	0.43
1:A:354:HIS:HB3	1:A:356:GLU:OE1	2.19	0.43
1:A:3:GLY:C	1:B:421:ASN:ND2	2.71	0.43
1:A:518:LEU:O	1:A:522:MET:HB2	2.18	0.43
1:A:594:ARG:HB3	1:A:596:HIS:CE1	2.54	0.43
1:B:178:LEU:HA	1:B:187:ARG:CG	2.49	0.43
1:B:313:HIS:HA	1:B:314:PRO:HD2	1.61	0.43
1:B:666:TYR:OH	1:B:668:ARG:HB3	2.19	0.43
1:A:399:VAL:HG13	1:A:410:PHE:CE2	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:229:TRP:CD1	1:B:526:TRP:O	2.72	0.42
1:B:475:THR:OG1	1:B:476:GLU:N	2.52	0.42
1:A:260:ARG:NH2	1:A:560:PHE:HB3	2.35	0.42
1:A:310:ASP:HA	1:A:402:TRP:CZ2	2.54	0.42
1:A:468:ARG:HA	1:A:473:GLU:OE2	2.18	0.42
1:B:125:ILE:HG21	1:B:200:LEU:HD21	2.01	0.42
1:B:229:TRP:N	1:B:229:TRP:CD1	2.87	0.42
1:B:493:PHE:CE2	1:B:527:GLY:HA3	2.54	0.42
1:B:501:HIS:ND1	1:B:503:SER:HB3	2.35	0.42
1:B:504:LEU:HD11	1:B:512:PHE:CE2	2.54	0.42
1:A:168:ARG:CA	1:A:171:LEU:HD23	2.49	0.42
1:A:261:ILE:HA	1:A:264:MET:CE	2.50	0.42
1:A:596:HIS:CE1	1:A:636:ASP:HB3	2.54	0.42
1:B:451:TYR:HE2	1:B:484:LYS:HZ1	1.67	0.42
1:A:499:ILE:HG23	1:A:545:GLU:OE2	2.20	0.42
1:A:597:HIS:N	1:A:597:HIS:ND1	2.67	0.42
1:B:155:LEU:HA	1:B:155:LEU:HD23	1.85	0.42
1:B:168:ARG:H	1:B:168:ARG:HG2	1.63	0.42
1:B:394:GLU:OE1	1:B:397:ARG:NH2	2.48	0.42
1:A:93:MET:SD	1:A:104:GLY:HA3	2.59	0.42
1:A:296:VAL:HG23	1:A:297:GLY:H	1.85	0.42
1:A:387:ASP:O	1:A:391:ILE:HG22	2.19	0.42
1:A:445:THR:OG1	1:A:446:ARG:N	2.53	0.42
1:B:26:GLY:N	1:B:108:PRO:O	2.37	0.42
1:B:135:LYS:O	1:B:140:GLN:HG2	2.19	0.42
1:B:276:PRO:HG2	1:B:307:GLY:CA	2.46	0.42
1:B:470:SER:O	1:B:473:GLU:N	2.49	0.42
1:A:113:LEU:HB2	1:A:218:TRP:CZ3	2.55	0.42
1:B:248:HIS:HE1	1:B:316:LEU:HG	1.84	0.42
1:B:685:PRO:HB2	1:B:687:ASP:OD1	2.18	0.42
1:A:10:VAL:HG22	1:A:33:ALA:CB	2.49	0.42
1:A:372:PRO:HA	1:A:373:PRO:HA	1.73	0.42
1:A:469:THR:N	1:A:473:GLU:OE1	2.42	0.42
1:B:142:GLU:O	1:B:142:GLU:HG2	2.19	0.42
1:B:24:VAL:HG13	1:B:222:PRO:HA	2.02	0.42
1:B:277:ILE:HG21	1:B:298:SER:O	2.19	0.42
1:A:105:HIS:CG	1:A:105:HIS:O	2.72	0.42
1:A:220:ASP:HB2	1:A:489:ARG:HH22	1.85	0.42
1:A:225:ARG:NH1	1:A:588:ARG:HB2	2.34	0.42
1:A:233:PHE:HA	1:A:234:PRO:HD3	1.87	0.42
1:A:22:LYS:N	1:A:486:ASP:O	2.37	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:693:LEU:O	1:A:693:LEU:HD13	2.20	0.42
1:B:284:GLY:O	1:B:553:TYR:HB3	2.20	0.42
1:B:652:ASP:CA	1:B:679:LEU:HD23	2.50	0.42
1:A:206:ARG:HB2	1:A:206:ARG:CZ	2.50	0.42
1:A:283:LYS:HZ3	1:A:376:TYR:HA	1.85	0.42
1:A:335:GLU:OE1	1:A:408:ASN:HB2	2.20	0.42
1:B:24:VAL:HG22	1:B:221:ARG:O	2.20	0.42
1:B:4:ARG:O	1:B:5:ILE:HD13	2.20	0.42
1:B:514:ILE:HD13	1:B:622:THR:O	2.20	0.42
1:B:618:LEU:O	1:B:678:VAL:HA	2.20	0.42
1:A:296:VAL:HG23	1:A:297:GLY:N	2.35	0.41
1:A:402:TRP:O	1:A:407:VAL:HG23	2.20	0.41
1:A:63:PRO:HB3	1:A:64:PRO:HD2	2.02	0.41
1:B:188:ALA:O	1:B:192:LEU:HG	2.20	0.41
1:B:250:THR:O	1:B:253:THR:OG1	2.36	0.41
1:B:651:ARG:NH2	1:B:656:GLY:HA2	2.35	0.41
1:B:648:PHE:O	1:B:660:GLN:HA	2.20	0.41
1:B:647:ARG:HB3	1:B:660:GLN:HG3	2.01	0.41
1:A:261:ILE:HA	1:A:264:MET:HE2	2.01	0.41
1:B:492:LEU:O	1:B:519:ALA:HB1	2.20	0.41
1:A:237:THR:HB	1:A:253:THR:HG22	2.02	0.41
1:A:313:HIS:HA	1:A:314:PRO:HD2	1.80	0.41
1:A:358:PHE:CG	1:A:366:ILE:HG21	2.55	0.41
1:B:130:HIS:CE1	1:B:134:ALA:HB2	2.56	0.41
1:B:221:ARG:NH2	1:B:408:ASN:O	2.53	0.41
1:B:301:ALA:HA	1:B:379:ILE:HD11	2.01	0.41
1:B:301:ALA:CB	1:B:379:ILE:HD11	2.50	0.41
1:A:36:TRP:HB2	1:B:449:ARG:CG	2.50	0.41
1:A:36:TRP:CD2	1:B:449:ARG:HG2	2.55	0.41
1:B:538:GLN:HA	1:B:539:PRO:HD3	1.90	0.41
1:B:264:MET:C	1:B:578:ASN:HD22	2.17	0.41
1:B:271:LEU:HA	1:B:272:PRO:HD2	1.67	0.41
1:B:440:LEU:HD13	1:B:460:GLN:HB3	2.02	0.41
1:B:464:TYR:O	1:B:467:TRP:N	2.53	0.41
1:A:341:ALA:C	1:A:342:LEU:HD23	2.41	0.41
1:A:57:PRO:O	1:A:59:LEU:HD12	2.19	0.41
1:B:234:PRO:HG3	1:B:274:ILE:HD12	2.02	0.41
1:B:37:ARG:HH22	1:B:41:ASP:HB2	1.84	0.41
1:B:434:ASN:HA	1:B:435:PRO:HD3	1.78	0.41
1:B:661:TRP:CB	1:B:665:ASN:OD1	2.67	0.41
1:A:158:ARG:O	1:A:158:ARG:HG2	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:165:ARG:NH2	1:A:166:GLU:OE1	2.53	0.41
1:A:652:ASP:OD2	1:A:677:HIS:ND1	2.53	0.41
1:B:196:VAL:O	1:B:199:LEU:N	2.54	0.41
1:B:288:SER:OG	1:B:290:THR:N	2.46	0.41
1:B:313:HIS:HD2	1:B:314:PRO:N	2.17	0.41
1:B:576:ARG:HD2	1:B:576:ARG:HA	1.89	0.41
1:B:684:ILE:HA	1:B:685:PRO:HD3	1.87	0.41
1:B:96:GLY:HA3	1:B:103:HIS:ND1	2.36	0.41
1:A:27:GLU:C	1:A:107:THR:HG23	2.40	0.41
1:A:3:GLY:HA3	1:A:210:THR:CG2	2.51	0.41
1:A:380:TYR:HA	1:A:381:PRO:HD3	1.82	0.41
1:B:412:VAL:HG21	1:B:439:PHE:HD2	1.84	0.41
1:A:279:LYS:NZ	1:A:306:GLU:OE2	2.54	0.41
1:A:398:VAL:O	1:A:402:TRP:CD1	2.74	0.41
1:A:412:VAL:O	1:A:442:GLU:HG3	2.20	0.41
1:A:441:SER:O	1:A:461:SER:HA	2.20	0.41
1:B:180:ALA:O	1:B:187:ARG:NE	2.49	0.41
1:B:504:LEU:HD11	1:B:512:PHE:CZ	2.56	0.41
1:B:593:ILE:HG12	1:B:608:LYS:HZ2	1.86	0.41
1:A:460:GLN:CG	1:A:461:SER:H	2.34	0.41
1:A:444:PHE:HZ	1:A:462:TYR:HD2	1.64	0.41
1:A:493:PHE:HA	1:A:527:GLY:O	2.20	0.41
1:A:248:HIS:HA	1:A:555:LEU:HD13	2.02	0.41
1:A:691:GLN:O	1:A:691:GLN:NE2	2.54	0.41
1:B:173:GLU:HG3	1:B:174:ALA:N	2.35	0.41
1:B:184:PRO:O	1:B:188:ALA:N	2.51	0.41
1:B:113:LEU:HB2	1:B:218:TRP:CE3	2.56	0.41
1:B:442:GLU:HA	1:B:462:TYR:CD2	2.55	0.41
1:A:238:GLY:HA3	1:A:248:HIS:C	2.41	0.41
1:A:299:PRO:CD	1:A:552:LYS:HG3	2.38	0.41
1:A:15:SER:HB3	1:B:0:SER:HB3	2.03	0.41
1:B:183:ASP:O	1:B:187:ARG:N	2.44	0.41
1:B:239:GLY:O	1:B:247:VAL:HG22	2.20	0.41
1:B:290:THR:H	1:B:290:THR:HG1	1.63	0.41
1:B:229:TRP:HB2	1:B:527:GLY:HA2	2.02	0.41
1:B:299:PRO:CD	1:B:552:LYS:HZ2	2.34	0.41
1:A:27:GLU:O	1:A:107:THR:HA	2.21	0.40
1:A:392:TYR:HB2	1:A:393:GLN:OE1	2.20	0.40
1:B:279:LYS:HE2	1:B:279:LYS:HB3	1.79	0.40
1:B:302:ILE:HA	1:B:302:ILE:HD12	1.69	0.40
1:B:463:THR:HG23	1:B:490:PRO:HB3	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:225:ARG:NH1	1:B:588:ARG:HB2	2.35	0.40
1:B:596:HIS:N	1:B:596:HIS:CD2	2.89	0.40
1:A:498:ASP:HB3	1:A:499:ILE:HD12	2.02	0.40
1:A:493:PHE:CG	1:A:527:GLY:HA3	2.56	0.40
1:B:383:ASN:HD22	1:B:386:ASN:H	1.69	0.40
1:B:650:VAL:HG12	1:B:679:LEU:HD22	2.02	0.40
1:A:229:TRP:HB2	1:A:526:TRP:O	2.22	0.40
1:A:541:ARG:HD3	1:A:541:ARG:HH21	1.74	0.40
1:A:500:LEU:HB3	1:A:545:GLU:C	2.41	0.40
1:B:116:TYR:CZ	1:B:215:TYR:HD1	2.39	0.40
1:B:124:PRO:HG2	1:B:125:ILE:HD12	2.03	0.40
1:B:344:CYS:SG	1:B:348:HIS:HB2	2.61	0.40
1:A:350:TRP:CD1	1:A:354:HIS:CE1	3.10	0.40
1:A:397:ARG:O	1:A:397:ARG:HG2	2.21	0.40
1:B:21:ALA:HB3	1:B:217:VAL:HG22	2.04	0.40
1:B:230:TYR:O	1:B:231:GLU:OE1	2.39	0.40
1:A:464:TYR:O	1:A:466:THR:N	2.54	0.40
1:A:640:LEU:HD11	1:A:681:MET:CE	2.51	0.40
1:B:253:THR:O	1:B:256:GLU:HB2	2.22	0.40
1:B:484:LYS:HB3	1:B:487:ILE:HG13	2.04	0.40

All (2) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:248:HIS:O	1:B:165:ARG:NH1[2_775]	2.04	0.16
1:A:143:SER:OG	1:B:142:GLU:OE1[1_554]	2.13	0.07

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 X-ray entries followed by that with respect to entries of similar resolution.

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	638/698 (91%)	575 (90%)	60 (9%)	3 (0%)	29	63
1	B	680/698 (97%)	616 (91%)	62 (9%)	2 (0%)	41	72
All	All	1318/1396 (94%)	1191 (90%)	122 (9%)	5 (0%)	34	67

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	465	PHE
1	B	433	GLU
1	A	611	PRO
1	B	625	PRO
1	A	644	PRO

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 X-ray entries followed by that with respect to entries of similar resolution.

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	525/566 (93%)	474 (90%)	51 (10%)	8	28
1	B	556/566 (98%)	501 (90%)	55 (10%)	8	27
All	All	1081/1132 (96%)	975 (90%)	106 (10%)	8	27

All (106) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	8	ASP
1	A	31	VAL
1	A	40	HIS
1	A	111	VAL
1	A	129	ARG
1	A	173	GLU
1	A	187	ARG
1	A	205	LEU
1	A	228	SER
1	A	260	ARG
1	A	268	VAL

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Mol	Chain	Res	Type
1	A	270	TYR
1	A	285	ARG
1	A	306	GLU
1	A	312	VAL
1	A	347	ASP
1	A	352	ARG
1	A	354	HIS
1	A	356	GLU
1	A	359	THR
1	A	365	SER
1	A	395	VAL
1	A	396	LEU
1	A	398	VAL
1	A	413	ASP
1	A	437	VAL
1	A	459	THR
1	A	463	THR
1	A	464	TYR
1	A	466	THR
1	A	469	THR
1	A	470	SER
1	A	487	ILE
1	A	489	ARG
1	A	493	PHE
1	A	530[A]	SER
1	A	530[B]	SER
1	A	544	SER
1	A	561	GLU
1	A	568	GLU
1	A	589	GLU
1	A	597	HIS
1	A	616	THR
1	A	620	VAL
1	A	639	GLU
1	A	640	LEU
1	A	655	THR
1	A	659	TYR
1	A	677	HIS
1	A	679	LEU
1	A	684	ILE
1	B	8	ASP
1	B	25	VAL

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Mol	Chain	Res	Type
1	B	29	VAL
1	B	66	VAL
1	B	101	VAL
1	B	130	HIS
1	B	140	GLN
1	B	168	ARG
1	B	183	ASP
1	B	209	VAL
1	B	211	ARG
1	B	228	SER
1	B	231	GLU
1	B	270	TYR
1	B	277	ILE
1	B	280	VAL
1	B	287	ASN
1	B	300	TRP
1	B	310	ASP
1	B	344	CYS
1	B	352	ARG
1	B	366	ILE
1	B	368	TYR
1	B	370	GLU
1	B	383	ASN
1	B	395	VAL
1	B	399	VAL
1	B	400	ARG
1	B	408	ASN
1	B	409	ILE
1	B	442	GLU
1	B	458	PHE
1	B	464	TYR
1	B	465	PHE
1	B	467	TRP
1	B	469	THR
1	B	470	SER
1	B	486	ASP
1	B	487	ILE
1	B	496	THR
1	B	517	VAL
1	B	518	LEU
1	B	561	GLU
1	B	594	ARG

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Mol	Chain	Res	Type
1	B	608	LYS
1	B	624	ASN
1	B	630	GLU
1	B	649	TRP
1	B	651	ARG
1	B	654	ILE
1	B	665	ASN
1	B	666	TYR
1	B	668	ARG
1	B	679	LEU
1	B	691	GLN

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (16) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	16	ASN
1	A	103	HIS
1	A	140	GLN
1	A	214	GLN
1	A	386	ASN
1	A	432	ASN
1	A	677	HIS
1	B	131	ASN
1	B	214	GLN
1	B	248	HIS
1	B	313	HIS
1	B	348	HIS
1	B	414	ASN
1	B	421	ASN
1	B	663	GLN
1	B	665	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	649/698 (92%)	-0.07	13 (2%) 65 46	33, 58, 140, 186	0
1	B	678/698 (97%)	-0.01	23 (3%) 45 24	36, 75, 117, 164	0
All	All	1327/1396 (95%)	-0.04	36 (2%) 54 32	33, 68, 130, 186	0

All (36) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	1	VAL	5.7
1	B	2	ALA	5.2
1	B	234	PRO	4.9
1	B	233	PHE	4.5
1	B	0	SER	4.2
1	A	188	ALA	3.6
1	A	181	PRO	3.5
1	B	297	GLY	3.5
1	B	249	GLY	3.4
1	B	369	ALA	3.4
1	B	216	GLY	3.3
1	B	63	PRO	3.3
1	B	325	PHE	3.2
1	A	186	THR	2.8
1	A	620	VAL	2.8
1	A	142	GLU	2.8
1	A	150	LEU	2.8
1	A	60	ALA	2.8
1	B	384	PHE	2.6
1	A	124	PRO	2.4
1	A	179	ARG	2.4
1	B	31	VAL	2.4
1	A	134	ALA	2.3
1	B	511	MET	2.3

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Mol	Chain	Res	Type	RSRZ
1	A	104	GLY	2.3
1	B	271	LEU	2.2
1	B	217	VAL	2.2
1	B	380	TYR	2.1
1	B	298	SER	2.1
1	B	3	GLY	2.1
1	A	128	TRP	2.1
1	B	418	LYS	2.1
1	B	521	THR	2.0
1	B	156	LEU	2.0
1	B	235	ARG	2.0
1	A	151	VAL	2.0

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

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

6.3 Carbohydrates [i](#)

There are no carbohydrates in this entry.

6.4 Ligands [i](#)

There are no ligands in this entry.

6.5 Other polymers [i](#)

There are no such residues in this entry.