



Full wwPDB X-ray Structure Validation Report ⓘ

Jun 11, 2024 – 10:31 PM EDT

PDB ID : 6NCT
Title : Structure of p110alpha/niSH2 - vector data collection
Authors : Miller, M.S.; Maheshwari, S.; Amzel, L.M.; Gabelli, S.B.
Deposited on : 2018-12-12
Resolution : 3.35 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 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:

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.36.2
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) : 2.36.2

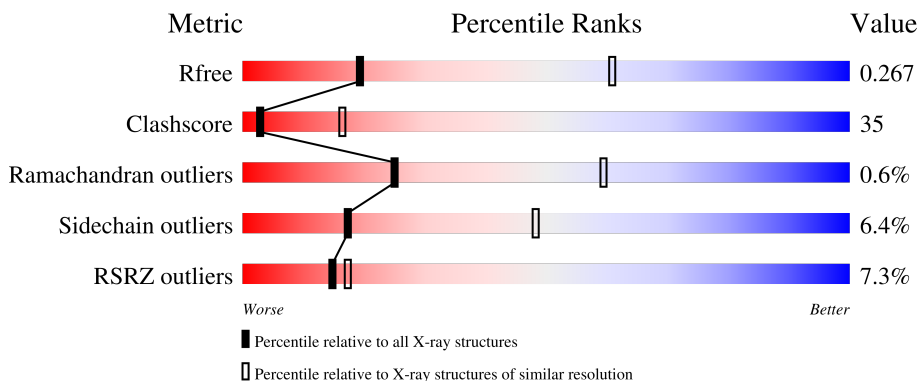
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.35 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	1558 (3.42-3.30)
Clashscore	141614	1627 (3.42-3.30)
Ramachandran outliers	138981	1599 (3.42-3.30)
Sidechain outliers	138945	1598 (3.42-3.30)
RSRZ outliers	127900	1507 (3.42-3.30)

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 of 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	1096	
2	B	279	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
4	SO4	A	1303	-	-	-	X

2 Entry composition i

There are 4 unique types of molecules in this entry. The entry contains 10493 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 Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit alpha isoform.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	1039	8504	5440	1452	1543	69	0	0	0

There are 28 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-27	MET	-	expression tag	UNP P42336
A	-26	SER	-	expression tag	UNP P42336
A	-25	TYR	-	expression tag	UNP P42336
A	-24	TYR	-	expression tag	UNP P42336
A	-23	HIS	-	expression tag	UNP P42336
A	-22	HIS	-	expression tag	UNP P42336
A	-21	HIS	-	expression tag	UNP P42336
A	-20	HIS	-	expression tag	UNP P42336
A	-19	HIS	-	expression tag	UNP P42336
A	-18	HIS	-	expression tag	UNP P42336
A	-17	ASP	-	expression tag	UNP P42336
A	-16	TYR	-	expression tag	UNP P42336
A	-15	ASP	-	expression tag	UNP P42336
A	-14	ILE	-	expression tag	UNP P42336
A	-13	PRO	-	expression tag	UNP P42336
A	-12	THR	-	expression tag	UNP P42336
A	-11	THR	-	expression tag	UNP P42336
A	-10	GLU	-	expression tag	UNP P42336
A	-9	ASN	-	expression tag	UNP P42336
A	-8	LEU	-	expression tag	UNP P42336
A	-7	TYR	-	expression tag	UNP P42336
A	-6	PHE	-	expression tag	UNP P42336
A	-5	GLN	-	expression tag	UNP P42336
A	-4	GLY	-	expression tag	UNP P42336
A	-3	ALA	-	expression tag	UNP P42336
A	-2	MET	-	expression tag	UNP P42336

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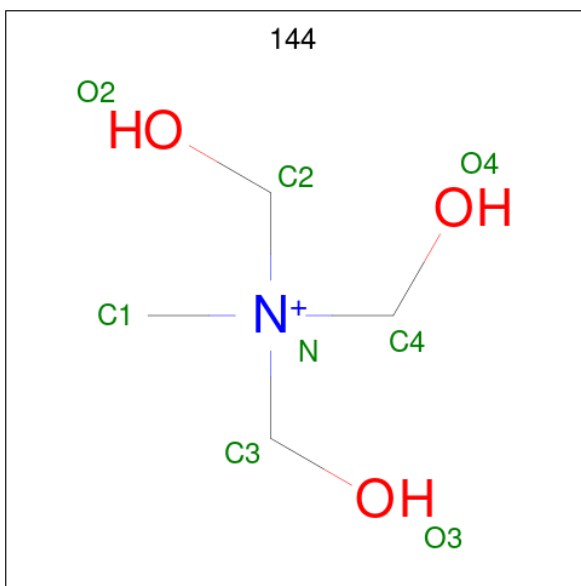
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Chain	Residue	Modelled	Actual	Comment	Reference
A	-1	GLY	-	expression tag	UNP P42336
A	0	SER	-	expression tag	UNP P42336

- Molecule 2 is a protein called Phosphatidylinositol 3-kinase regulatory subunit alpha.

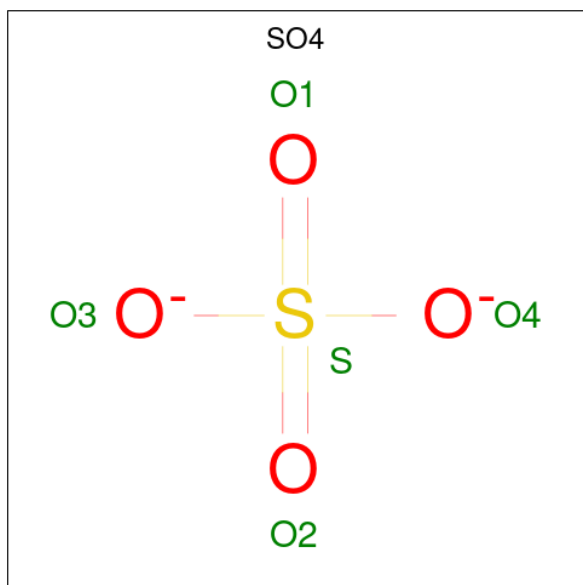
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	225	1958	1233	343	376	6	0	0	0

- Molecule 3 is TRIS-HYDROXYMETHYL-METHYL-AMMONIUM (three-letter code: 144) (formula: $C_4H_{12}NO_3$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
3	A	1	8	4	1	3	0	0
3	B	1	8	4	1	3	0	0

- Molecule 4 is SULFATE ION (three-letter code: SO4) (formula: O_4S).

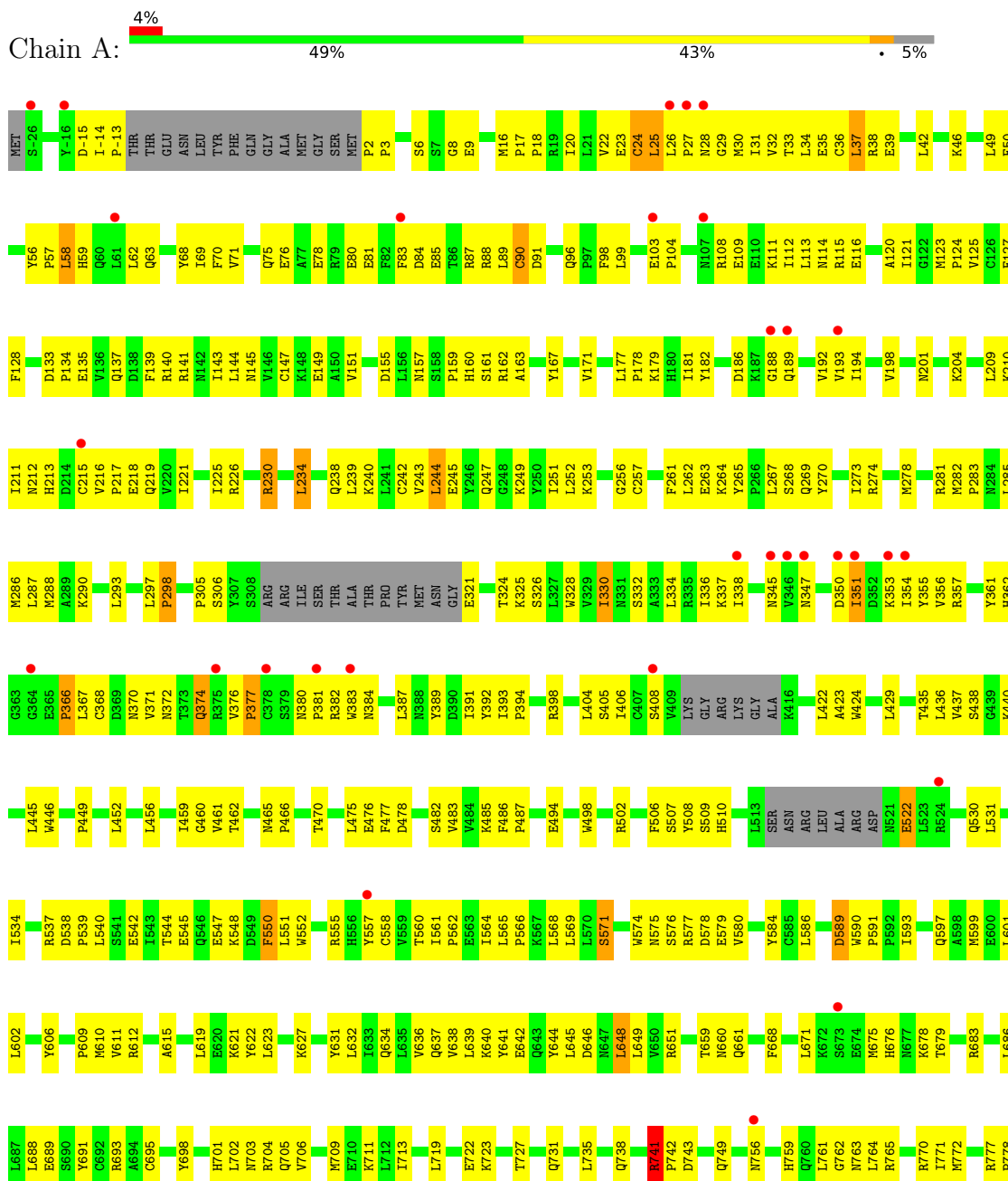


Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total	O	S	0	0
			5	4	1		
4	A	1	Total	O	S	0	0
			5	4	1		
4	A	1	Total	O	S	0	0
			5	4	1		

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 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: Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit alpha isoform



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	115.36Å 117.72Å 151.33Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	49.54 – 3.35 49.54 – 3.35	Depositor EDS
% Data completeness (in resolution range)	96.4 (49.54-3.35) 96.4 (49.54-3.35)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.44 (at 3.33Å)	Xtrriage
Refinement program	REFMAC 5.8.0238	Depositor
R, R_{free}	0.199 , 0.271 0.213 , 0.267	Depositor DCC
R_{free} test set	1462 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å ²)	113.1	Xtrriage
Anisotropy	0.355	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.31 , 110.5	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtrriage
Estimated twinning fraction	0.017 for k,h,-l	Xtrriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	10493	wwPDB-VP
Average B, all atoms (Å ²)	133.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.58% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical 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](#)

Bond lengths and bond angles in the following residue types are not validated in this section: SO4, 144

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	0.79	1/8703 (0.0%)	1.02	0/11766
2	B	0.73	0/1984	0.96	0/2645
All	All	0.78	1/10687 (0.0%)	1.01	0/14411

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	741	ARG	C-N	8.09	1.49	1.34

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	8504	0	8471	572	0
2	B	1958	0	1908	180	0
3	A	8	0	12	0	0
3	B	8	0	12	0	0
4	A	15	0	0	0	0
All	All	10493	0	10403	729	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 35.

All (729) 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:602:LEU:HA	1:A:612:ARG:NH1	1.46	1.25
1:A:764:LEU:HD12	1:A:783:TRP:CD1	1.75	1.20
1:A:761:LEU:HD21	1:A:797:ASN:ND2	1.63	1.14
1:A:761:LEU:CD2	1:A:797:ASN:HD22	1.61	1.12
2:B:379:LYS:CE	2:B:419:LYS:HE2	1.79	1.11
1:A:988:TYR:CD2	1:A:1039:PHE:CD2	2.44	1.06
1:A:761:LEU:HD21	1:A:797:ASN:HD22	0.89	1.06
1:A:31:ILE:HD11	2:B:531:LEU:HD13	1.35	1.05
1:A:910:ILE:HA	1:A:1025:THR:HG21	1.39	1.04
1:A:645:LEU:CD2	1:A:683:ARG:HG2	1.87	1.04
1:A:764:LEU:CD1	1:A:783:TRP:NE1	2.21	1.03
2:B:379:LYS:NZ	2:B:419:LYS:CE	2.24	0.99
1:A:988:TYR:CE2	1:A:1039:PHE:CD2	2.50	0.98
1:A:16:MET:SD	1:A:90:CYS:HB3	2.04	0.97
1:A:988:TYR:CE2	1:A:1039:PHE:HD2	1.82	0.97
1:A:108:ARG:O	1:A:112:ILE:HG12	1.64	0.96
1:A:24:CYS:SG	1:A:49:LEU:HD13	2.06	0.96
2:B:379:LYS:HE2	2:B:419:LYS:HE2	1.48	0.95
2:B:358:ARG:HG2	2:B:359:ASP:H	1.31	0.95
2:B:431:TYR:CE1	2:B:433:GLN:HB2	2.02	0.94
1:A:57:PRO:HB3	2:B:524:ILE:CD1	1.96	0.94
2:B:501:GLN:OE1	2:B:528:TYR:HD1	1.48	0.94
1:A:2:PRO:HG2	1:A:3:PRO:HD2	1.50	0.93
2:B:379:LYS:NZ	2:B:419:LYS:HE3	1.85	0.92
1:A:834:LEU:HD22	1:A:924:LYS:CE	2.01	0.91
2:B:379:LYS:CE	2:B:419:LYS:CE	2.50	0.90
1:A:408:SER:HB3	1:A:422:LEU:HD11	1.54	0.90
1:A:602:LEU:HA	1:A:612:ARG:HH11	1.12	0.89
1:A:353:LYS:HA	1:A:377:PRO:HB3	1.55	0.89
2:B:511:LYS:N	2:B:511:LYS:HE2	1.87	0.89
2:B:379:LYS:HZ1	2:B:419:LYS:HE3	1.37	0.88
1:A:764:LEU:HD12	1:A:783:TRP:NE1	1.84	0.88
2:B:519:LYS:HB3	2:B:523:ARG:HH12	1.38	0.88
2:B:379:LYS:NZ	2:B:419:LYS:HE2	1.88	0.88
1:A:764:LEU:CD1	1:A:783:TRP:CD1	2.56	0.87
2:B:379:LYS:HE2	2:B:419:LYS:CE	2.03	0.87
1:A:988:TYR:CD2	1:A:1039:PHE:CE2	2.62	0.87
1:A:351:ILE:HG21	1:A:408:SER:HB2	1.57	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:885:ASN:ND2	1:A:893:ALA:CB	2.38	0.86
1:A:1043:MET:SD	1:A:1047:HIS:HE1	1.99	0.86
2:B:343:VAL:CG1	2:B:356:LEU:HD11	2.04	0.86
1:A:910:ILE:HA	1:A:1025:THR:CG2	2.06	0.86
1:A:24:CYS:SG	1:A:49:LEU:CD1	2.64	0.85
1:A:486:PHE:CD1	1:A:487:PRO:HD2	2.11	0.85
1:A:540:LEU:HD11	1:A:1019:ILE:HG22	1.58	0.85
2:B:333:TRP:HA	2:B:429:SER:OG	1.77	0.84
1:A:30:MET:SD	1:A:57:PRO:O	2.35	0.84
1:A:709:MET:O	1:A:713:ILE:HG13	1.77	0.83
2:B:563:MET:O	2:B:567:LYS:HB2	1.78	0.83
2:B:413:LEU:HG	2:B:420:LEU:CD1	2.08	0.82
2:B:333:TRP:HH2	2:B:405:ILE:HG13	1.42	0.82
1:A:2:PRO:CG	1:A:3:PRO:HD2	2.10	0.82
1:A:128:PHE:HB3	1:A:140:ARG:NH1	1.93	0.82
2:B:511:LYS:HG2	2:B:518:GLU:N	1.95	0.81
2:B:392:PHE:CE1	2:B:416:TYR:CD2	2.68	0.81
1:A:648:LEU:H	1:A:648:LEU:HD12	1.43	0.81
1:A:59:HIS:O	1:A:62:LEU:HG	1.81	0.81
1:A:602:LEU:HA	1:A:612:ARG:HH12	1.43	0.81
1:A:904:TYR:CD1	1:A:931:HIS:HD2	1.99	0.80
1:A:251:ILE:HG21	1:A:262:LEU:CD2	2.11	0.80
2:B:343:VAL:HG13	2:B:356:LEU:HD11	1.61	0.80
1:A:851:VAL:HG11	1:A:924:LYS:HZ3	1.46	0.80
1:A:602:LEU:CA	1:A:612:ARG:NH1	2.39	0.79
1:A:772:MET:HE2	1:A:772:MET:HA	1.64	0.79
2:B:333:TRP:CH2	2:B:405:ILE:HG13	2.17	0.79
1:A:57:PRO:HB3	2:B:524:ILE:HD11	1.65	0.79
2:B:333:TRP:CZ2	2:B:405:ILE:HG21	2.17	0.78
2:B:330:ASP:O	2:B:334:TYR:HB3	1.84	0.78
1:A:128:PHE:HB3	1:A:140:ARG:HH11	1.49	0.78
1:A:328:TRP:CE2	1:A:577:ARG:HD2	2.18	0.78
1:A:702:LEU:O	1:A:706:VAL:HG23	1.84	0.78
1:A:538:ASP:HA	1:A:996:ASN:HD21	1.48	0.77
1:A:24:CYS:SG	1:A:49:LEU:HD22	2.23	0.77
1:A:885:ASN:HD22	1:A:893:ALA:CB	1.96	0.77
1:A:545:GLU:OE2	2:B:379:LYS:HB3	1.84	0.77
1:A:167:TYR:HE1	1:A:297:LEU:HD21	1.51	0.76
1:A:367:LEU:HD22	1:A:391:ILE:CG2	2.16	0.76
1:A:135:GLU:OE1	1:A:644:TYR:HB3	1.86	0.76
1:A:764:LEU:HD13	1:A:783:TRP:NE1	2.00	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:823:ILE:HD13	1:A:994:HIS:CG	2.21	0.75
2:B:431:TYR:HE1	2:B:433:GLN:HB2	1.49	0.75
1:A:506:PHE:HB3	1:A:508:TYR:HE1	1.50	0.75
2:B:413:LEU:HG	2:B:420:LEU:CB	2.16	0.75
1:A:209:LEU:HD12	1:A:209:LEU:C	2.08	0.75
1:A:16:MET:CE	1:A:89:LEU:HD22	2.16	0.74
2:B:379:LYS:HZ3	2:B:419:LYS:CE	1.97	0.74
1:A:841:ILE:HD12	1:A:841:ILE:O	1.88	0.73
1:A:602:LEU:HD22	1:A:612:ARG:CD	2.18	0.73
1:A:2:PRO:HB2	1:A:3:PRO:CD	2.17	0.73
1:A:590:TRP:CD1	1:A:591:PRO:HD2	2.22	0.73
1:A:508:TYR:CE2	1:A:510:HIS:CD2	2.77	0.73
2:B:521:ILE:HD13	2:B:521:ILE:H	1.52	0.73
1:A:645:LEU:HD21	1:A:683:ARG:HG2	1.69	0.73
1:A:834:LEU:CD2	1:A:924:LYS:CE	2.66	0.73
1:A:959:ASP:O	1:A:962:ILE:HG12	1.89	0.73
1:A:285:LEU:N	1:A:285:LEU:HD23	2.04	0.72
1:A:24:CYS:SG	1:A:49:LEU:CD2	2.77	0.72
2:B:356:LEU:HD13	2:B:356:LEU:C	2.09	0.72
1:A:540:LEU:HD11	1:A:1019:ILE:CG2	2.18	0.72
1:A:16:MET:HE1	1:A:89:LEU:HD22	1.70	0.72
1:A:874:SER:HB3	1:A:959:ASP:OD1	1.89	0.72
1:A:545:GLU:HA	1:A:548:LYS:HD2	1.70	0.72
2:B:343:VAL:HG12	2:B:347:LEU:HD12	1.71	0.72
1:A:57:PRO:HB3	2:B:524:ILE:HD13	1.72	0.71
1:A:440:LYS:HA	1:A:475:LEU:O	1.89	0.71
1:A:35:GLU:O	1:A:35:GLU:HG3	1.91	0.71
1:A:539:PRO:HD3	1:A:996:ASN:HD22	1.56	0.71
1:A:834:LEU:HD22	1:A:924:LYS:HE2	1.71	0.71
1:A:904:TYR:CG	1:A:931:HIS:HD2	2.09	0.71
1:A:351:ILE:CD1	1:A:408:SER:OG	2.39	0.70
1:A:851:VAL:HG11	1:A:924:LYS:NZ	2.06	0.70
1:A:57:PRO:CG	2:B:524:ILE:HG12	2.22	0.70
1:A:1052:THR:OG1	1:A:1053:THR:HG23	1.91	0.70
2:B:358:ARG:HG2	2:B:359:ASP:N	2.04	0.70
1:A:29:GLY:HA3	2:B:501:GLN:HB2	1.73	0.70
1:A:508:TYR:CD2	1:A:510:HIS:HD2	2.10	0.70
2:B:457:GLN:O	2:B:461:ARG:HG3	1.92	0.70
1:A:719:LEU:HA	1:A:723:LYS:HB2	1.74	0.69
1:A:336:ILE:HD12	1:A:389:TYR:CZ	2.27	0.69
1:A:823:ILE:HD13	1:A:994:HIS:CD2	2.28	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:333:TRP:CH2	2:B:405:ILE:HG21	2.26	0.69
1:A:749:GLN:O	1:A:762:GLY:HA2	1.93	0.69
2:B:404:LEU:O	2:B:404:LEU:HD12	1.94	0.68
1:A:178:PRO:HG2	1:A:181:ILE:HD12	1.75	0.68
1:A:538:ASP:HA	1:A:996:ASN:ND2	2.07	0.68
1:A:772:MET:HA	1:A:772:MET:CE	2.23	0.68
1:A:437:VAL:HG13	1:A:477:PHE:CD2	2.29	0.68
2:B:443:GLU:O	2:B:447:LYS:N	2.24	0.68
1:A:885:ASN:ND2	1:A:893:ALA:HB2	2.08	0.68
1:A:610:MET:CE	1:A:610:MET:HA	2.24	0.67
1:A:334:LEU:HA	1:A:393:ILE:HD11	1.75	0.67
1:A:610:MET:HA	1:A:610:MET:HE2	1.75	0.67
1:A:910:ILE:CA	1:A:1025:THR:HG21	2.18	0.67
1:A:68:TYR:HB3	1:A:103:GLU:CG	2.25	0.67
2:B:456:PHE:CE1	2:B:460:SER:HB3	2.28	0.67
1:A:120:ALA:HB2	1:A:703:ASN:OD1	1.95	0.67
1:A:121:ILE:HD11	1:A:689:GLU:HA	1.76	0.67
1:A:2:PRO:CB	1:A:3:PRO:CD	2.72	0.67
1:A:508:TYR:CD2	1:A:510:HIS:CD2	2.83	0.67
1:A:836:TYR:CE1	1:A:932:ILE:HG22	2.30	0.67
2:B:358:ARG:CG	2:B:359:ASP:H	2.08	0.67
2:B:392:PHE:HE1	2:B:416:TYR:CD2	2.12	0.67
1:A:2:PRO:HB2	1:A:3:PRO:HD3	1.76	0.67
2:B:413:LEU:HG	2:B:420:LEU:HB3	1.76	0.67
1:A:791:GLU:OE1	1:A:791:GLU:N	2.24	0.66
1:A:602:LEU:HD22	1:A:612:ARG:HD3	1.78	0.66
1:A:602:LEU:O	1:A:638:VAL:HG22	1.96	0.66
2:B:558:GLU:OE2	2:B:562:ARG:HG3	1.96	0.66
2:B:510:GLU:HB2	2:B:511:LYS:NZ	2.10	0.66
1:A:218:GLU:HB2	1:A:264:LYS:HE2	1.77	0.66
1:A:534:ILE:HA	1:A:537:ARG:CD	2.25	0.66
1:A:1025:THR:HG22	1:A:1026:LEU:HD23	1.78	0.66
1:A:351:ILE:HG12	1:A:408:SER:OG	1.96	0.66
1:A:177:LEU:CD2	1:A:274:ARG:CZ	2.73	0.66
2:B:501:GLN:OE1	2:B:528:TYR:CD1	2.40	0.65
1:A:251:ILE:HG21	1:A:262:LEU:HD21	1.78	0.65
2:B:507:GLU:O	2:B:507:GLU:HG2	1.95	0.65
1:A:506:PHE:HB3	1:A:508:TYR:CE1	2.31	0.65
1:A:16:MET:HG3	1:A:38:ARG:HG3	1.77	0.65
1:A:834:LEU:CD2	1:A:924:LYS:NZ	2.59	0.65
1:A:885:ASN:HB3	1:A:889:ILE:HG22	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:16:MET:SD	1:A:90:CYS:CB	2.83	0.65
1:A:671:LEU:HB2	1:A:688:LEU:HD21	1.78	0.65
2:B:333:TRP:HA	2:B:429:SER:CB	2.27	0.65
2:B:483:ALA:O	2:B:486:ALA:HB3	1.97	0.65
1:A:139:PHE:CD2	1:A:645:LEU:HB3	2.32	0.65
2:B:338:ILE:HB	2:B:342:GLU:CD	2.16	0.65
2:B:379:LYS:HZ3	2:B:419:LYS:HE2	1.60	0.65
1:A:263:GLU:HG2	1:A:265:TYR:CE2	2.32	0.64
1:A:32:VAL:HG23	1:A:56:TYR:CE2	2.32	0.64
1:A:89:LEU:C	1:A:89:LEU:HD23	2.17	0.64
1:A:885:ASN:ND2	1:A:893:ALA:HB1	2.10	0.64
1:A:345:ASN:HD22	2:B:557:ARG:HG2	1.63	0.64
2:B:413:LEU:CG	2:B:420:LEU:HB3	2.28	0.64
1:A:245:GLU:O	1:A:249:LYS:HE3	1.97	0.64
1:A:904:TYR:CG	1:A:931:HIS:CD2	2.85	0.64
1:A:337:LYS:HB3	1:A:476:GLU:HB3	1.80	0.64
1:A:405:SER:HB2	1:A:423:ALA:O	1.97	0.64
1:A:602:LEU:HD22	1:A:612:ARG:HD2	1.80	0.64
2:B:501:GLN:CD	2:B:528:TYR:HD1	2.01	0.64
1:A:57:PRO:HG3	2:B:524:ILE:HG12	1.81	0.63
1:A:367:LEU:HD22	1:A:391:ILE:HG21	1.79	0.63
1:A:584:TYR:CD2	1:A:610:MET:HG3	2.34	0.63
1:A:873:ASN:O	1:A:876:THR:HG23	1.98	0.63
1:A:929:LEU:C	1:A:929:LEU:HD23	2.19	0.63
1:A:988:TYR:HD2	1:A:1039:PHE:CE2	2.13	0.63
1:A:793:LEU:HG	1:A:794:PHE:CD2	2.33	0.63
1:A:561:ILE:O	1:A:564:ILE:HG22	1.99	0.62
1:A:908:THR:HG21	1:A:954:PHE:HB2	1.81	0.62
2:B:342:GLU:HA	2:B:345:GLU:HG2	1.81	0.62
1:A:39:GLU:N	1:A:39:GLU:OE1	2.33	0.62
1:A:68:TYR:HB3	1:A:103:GLU:HG2	1.80	0.62
1:A:62:LEU:HD12	1:A:62:LEU:O	1.99	0.62
1:A:599:MET:HB3	1:A:1004:MET:CE	2.29	0.62
1:A:108:ARG:HD3	1:A:111:LYS:HD2	1.81	0.62
1:A:833:MET:O	1:A:835:PRO:HD3	1.98	0.62
1:A:851:VAL:CG1	1:A:924:LYS:NZ	2.62	0.62
1:A:436:LEU:C	1:A:436:LEU:HD13	2.20	0.62
1:A:834:LEU:CD2	1:A:924:LYS:HE2	2.29	0.62
2:B:413:LEU:HG	2:B:420:LEU:HD13	1.80	0.62
2:B:355:PHE:HD2	2:B:426:TYR:O	1.82	0.62
1:A:508:TYR:HE2	1:A:510:HIS:CD2	2.17	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:508:TYR:HD2	1:A:510:HIS:HD2	1.48	0.61
2:B:432:GLN:OE1	2:B:432:GLN:HA	1.99	0.61
2:B:510:GLU:HB2	2:B:511:LYS:HZ1	1.65	0.61
1:A:140:ARG:O	1:A:144:LEU:HD11	1.99	0.61
1:A:904:TYR:HB3	1:A:931:HIS:NE2	2.16	0.61
1:A:719:LEU:HD13	1:A:771:ILE:CD1	2.31	0.61
1:A:910:ILE:HG23	1:A:1026:LEU:HD21	1.82	0.61
1:A:356:VAL:HB	1:A:372:ASN:HD21	1.65	0.61
1:A:177:LEU:HD11	1:A:268:SER:CB	2.30	0.61
2:B:347:LEU:CD1	2:B:371:THR:HG21	2.31	0.61
1:A:764:LEU:CD1	1:A:783:TRP:CE2	2.84	0.60
2:B:406:ASN:HA	2:B:409:ARG:HD3	1.81	0.60
1:A:139:PHE:HD2	1:A:645:LEU:HB3	1.66	0.60
1:A:217:PRO:HB3	1:A:252:LEU:HD12	1.82	0.60
2:B:441:ASN:OD1	2:B:444:ALA:HB2	2.01	0.60
1:A:962:ILE:HG13	1:A:963:VAL:N	2.16	0.60
1:A:542:GLU:HG2	2:B:340:ARG:HD3	1.82	0.60
1:A:599:MET:O	1:A:1004:MET:HE3	2.00	0.60
1:A:764:LEU:HD12	1:A:783:TRP:CG	2.33	0.60
1:A:383:TRP:O	1:A:383:TRP:CD1	2.54	0.60
1:A:950:GLU:HG2	1:A:1038:TYR:OH	2.01	0.60
2:B:333:TRP:HE3	2:B:333:TRP:O	1.84	0.60
1:A:46:LYS:HG2	1:A:50:PHE:CE2	2.35	0.60
2:B:473:THR:O	2:B:477:ILE:HG13	2.01	0.60
1:A:157:ASN:HB3	1:A:161:SER:HB2	1.83	0.60
1:A:698:TYR:CD1	1:A:701:HIS:HB2	2.37	0.60
1:A:143:ILE:HG13	1:A:143:ILE:O	2.01	0.60
1:A:189:GLN:HB3	1:A:210:LYS:HE3	1.83	0.60
2:B:343:VAL:HG11	2:B:356:LEU:HD11	1.80	0.60
2:B:567:LYS:HB3	2:B:568:PRO:HD3	1.84	0.59
1:A:128:PHE:CD1	1:A:686:LEU:HD21	2.37	0.59
1:A:338:ILE:HD13	1:A:338:ILE:N	2.18	0.59
2:B:559:ILE:HD13	2:B:559:ILE:N	2.17	0.59
1:A:345:ASN:ND2	2:B:557:ARG:HG2	2.17	0.59
1:A:602:LEU:O	1:A:638:VAL:CG2	2.51	0.59
1:A:904:TYR:CD1	1:A:931:HIS:CD2	2.87	0.59
2:B:392:PHE:CE1	2:B:416:TYR:CE2	2.90	0.59
1:A:78:GLU:HG3	1:A:124:PRO:HG3	1.84	0.59
1:A:192:VAL:HG13	1:A:283:PRO:HB2	1.85	0.59
1:A:770:ARG:HG3	1:A:772:MET:HE1	1.85	0.59
1:A:144:LEU:HD21	1:A:305:PRO:HG3	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:668:PHE:CE2	1:A:702:LEU:HD22	2.38	0.59
1:A:764:LEU:HD13	1:A:783:TRP:HE1	1.66	0.59
1:A:961:LEU:HD22	1:A:977:PHE:HE2	1.68	0.59
1:A:632:LEU:HD12	1:A:632:LEU:O	2.02	0.59
1:A:84:ASP:HB3	1:A:87:ARG:HG3	1.85	0.58
1:A:698:TYR:O	1:A:701:HIS:N	2.36	0.58
1:A:719:LEU:HD13	1:A:771:ILE:HD11	1.83	0.58
2:B:519:LYS:HB3	2:B:523:ARG:NH1	2.16	0.58
1:A:263:GLU:CG	1:A:265:TYR:CE2	2.86	0.58
1:A:602:LEU:HD13	1:A:649:LEU:HD22	1.85	0.58
1:A:1043:MET:SD	1:A:1047:HIS:CE1	2.89	0.58
2:B:369:THR:HG23	2:B:382:LYS:HA	1.84	0.58
1:A:39:GLU:H	1:A:39:GLU:CD	2.06	0.58
1:A:177:LEU:HD11	1:A:268:SER:HB2	1.85	0.58
1:A:534:ILE:HA	1:A:537:ARG:HD3	1.85	0.58
1:A:606:TYR:O	1:A:612:ARG:NH2	2.37	0.58
1:A:956:LEU:HD11	1:A:980:PHE:CZ	2.39	0.57
2:B:449:LEU:CD2	2:B:580:TYR:HB3	2.34	0.57
1:A:177:LEU:HD23	1:A:274:ARG:CZ	2.35	0.57
1:A:209:LEU:HD13	1:A:211:ILE:HG13	1.86	0.57
1:A:268:SER:HA	1:A:273:ILE:HG21	1.86	0.57
1:A:268:SER:HA	1:A:273:ILE:CG2	2.35	0.57
2:B:333:TRP:HB3	2:B:429:SER:HB3	1.85	0.57
2:B:510:GLU:HB2	2:B:511:LYS:HE2	1.87	0.57
1:A:619:LEU:N	1:A:619:LEU:HD23	2.20	0.57
2:B:405:ILE:N	2:B:405:ILE:HD13	2.19	0.57
1:A:9:GLU:OE2	1:A:16:MET:HG2	2.04	0.57
1:A:1040:MET:HE2	1:A:1052:THR:HA	1.87	0.57
1:A:163:ALA:HA	1:A:297:LEU:HD11	1.86	0.57
1:A:2:PRO:CB	1:A:3:PRO:HD2	2.34	0.56
1:A:806:ASP:OD2	1:A:808:ARG:NH1	2.37	0.56
2:B:442:ILE:HG23	2:B:584:LEU:HD21	1.87	0.56
2:B:501:GLN:O	2:B:505:SER:N	2.36	0.56
1:A:85:GLU:OE2	1:A:85:GLU:HA	2.04	0.56
1:A:325:LYS:HD2	1:A:330:ILE:HD11	1.87	0.56
1:A:576:SER:O	1:A:580:VAL:HG23	2.05	0.56
2:B:379:LYS:CD	2:B:419:LYS:HE2	2.36	0.56
1:A:16:MET:CG	1:A:38:ARG:HG3	2.35	0.56
1:A:544:THR:OG1	1:A:547:GLU:HG2	2.06	0.56
1:A:351:ILE:HD13	1:A:408:SER:OG	2.05	0.56
1:A:459:ILE:HG23	1:A:641:TYR:OH	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1044:ASN:HB2	1:A:1051:TRP:HB2	1.87	0.56
2:B:442:ILE:HG23	2:B:584:LEU:CD2	2.36	0.56
1:A:325:LYS:HD2	1:A:330:ILE:CD1	2.36	0.56
2:B:343:VAL:HG13	2:B:356:LEU:CD1	2.35	0.56
1:A:351:ILE:CG1	1:A:408:SER:OG	2.54	0.56
1:A:367:LEU:CD2	1:A:391:ILE:HG21	2.36	0.56
1:A:1012:GLU:OE1	1:A:1012:GLU:N	2.31	0.55
1:A:31:ILE:HD11	2:B:531:LEU:CD1	2.24	0.55
1:A:347:ASN:ND2	2:B:561:LYS:HG2	2.21	0.55
1:A:800:ILE:HG13	1:A:850:VAL:HG23	1.88	0.55
1:A:939:ASP:CG	1:A:939:ASP:O	2.44	0.55
1:A:438:SER:HA	1:A:477:PHE:HB3	1.87	0.55
1:A:141:ARG:O	1:A:144:LEU:CD1	2.55	0.55
1:A:709:MET:HE2	1:A:841:ILE:HG12	1.88	0.55
1:A:590:TRP:CD1	1:A:591:PRO:CD	2.90	0.55
2:B:413:LEU:O	2:B:420:LEU:HB2	2.06	0.55
1:A:534:ILE:O	1:A:537:ARG:HB2	2.07	0.55
1:A:540:LEU:CD1	1:A:1019:ILE:HG22	2.35	0.55
1:A:759:HIS:CD2	1:A:794:PHE:CZ	2.94	0.55
2:B:413:LEU:CD2	2:B:420:LEU:HD13	2.37	0.55
1:A:58:LEU:N	1:A:58:LEU:CD1	2.69	0.55
1:A:831:LEU:HD22	1:A:903:GLY:CA	2.37	0.55
1:A:937:PHE:CD1	1:A:938:LEU:HG	2.42	0.55
2:B:356:LEU:HD13	2:B:356:LEU:O	2.07	0.55
1:A:140:ARG:O	1:A:144:LEU:CD1	2.55	0.55
1:A:181:ILE:HG12	1:A:278:MET:SD	2.46	0.55
1:A:668:PHE:CD2	1:A:702:LEU:HD22	2.42	0.55
2:B:369:THR:HA	2:B:383:ILE:HG13	1.89	0.55
2:B:413:LEU:HB3	2:B:420:LEU:HB3	1.88	0.55
1:A:593:ILE:HD12	1:A:597:GLN:HB3	1.89	0.54
1:A:602:LEU:HB3	1:A:638:VAL:HG11	1.88	0.54
2:B:563:MET:O	2:B:567:LYS:CB	2.53	0.54
1:A:243:VAL:O	1:A:247:GLN:HB2	2.07	0.54
1:A:336:ILE:HD12	1:A:389:TYR:CE1	2.41	0.54
2:B:510:GLU:HB2	2:B:511:LYS:CE	2.37	0.54
1:A:215:CYS:SG	1:A:219:GLN:HB2	2.47	0.54
1:A:281:ARG:HH11	1:A:282:MET:H	1.54	0.54
1:A:565:LEU:N	1:A:566:PRO:CD	2.71	0.54
1:A:792:LEU:HD22	1:A:792:LEU:N	2.23	0.54
2:B:456:PHE:HE1	2:B:460:SER:HB3	1.71	0.54
1:A:557:TYR:O	1:A:560:THR:OG1	2.21	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:911:LEU:O	1:A:937:PHE:O	2.24	0.54
1:A:141:ARG:O	1:A:144:LEU:HD12	2.08	0.54
2:B:510:GLU:C	2:B:511:LYS:HE2	2.28	0.54
1:A:128:PHE:CE1	1:A:686:LEU:CD2	2.91	0.54
1:A:243:VAL:HG12	1:A:247:GLN:HE21	1.73	0.54
1:A:356:VAL:CG2	1:A:406:ILE:HG12	2.37	0.54
1:A:551:LEU:HD21	1:A:564:ILE:HD11	1.90	0.54
1:A:636:VAL:O	1:A:639:LEU:HB2	2.08	0.54
1:A:16:MET:SD	1:A:38:ARG:HG3	2.48	0.54
1:A:17:PRO:O	1:A:38:ARG:HB2	2.07	0.54
1:A:115:ARG:O	1:A:115:ARG:HG2	2.08	0.54
1:A:461:VAL:HG11	1:A:679:THR:HB	1.90	0.54
1:A:83:PHE:HD2	1:A:113:LEU:HD13	1.73	0.53
1:A:293:LEU:HD12	1:A:293:LEU:O	2.09	0.53
1:A:1017:ASP:O	1:A:1020:ALA:HB3	2.08	0.53
1:A:83:PHE:CD2	1:A:113:LEU:HD13	2.44	0.53
1:A:238:GLN:OE1	1:A:238:GLN:HA	2.08	0.53
2:B:404:LEU:HD12	2:B:404:LEU:C	2.29	0.53
1:A:580:VAL:HG12	1:A:584:TYR:CE1	2.43	0.53
2:B:449:LEU:HB3	2:B:580:TYR:HB3	1.91	0.53
2:B:529:ASP:O	2:B:530:LYS:C	2.47	0.53
1:A:31:ILE:O	1:A:31:ILE:HG22	2.09	0.53
1:A:355:TYR:HB3	1:A:374:GLN:HA	1.89	0.53
1:A:1013:LEU:N	1:A:1013:LEU:HD23	2.24	0.53
1:A:1054:LYS:O	1:A:1055:MET:HG3	2.09	0.53
1:A:719:LEU:CD1	1:A:771:ILE:HD11	2.39	0.53
1:A:1002:PHE:HB3	1:A:1019:ILE:HG12	1.90	0.53
1:A:159:PRO:O	1:A:160:HIS:C	2.46	0.53
1:A:253:LYS:HD3	1:A:286:MET:HE2	1.90	0.53
1:A:905:CYS:SG	1:A:1043:MET:CE	2.97	0.53
1:A:398:ARG:HH11	1:A:398:ARG:HG3	1.73	0.52
1:A:976:GLU:O	1:A:979:ARG:HB2	2.09	0.52
1:A:765:ARG:NH1	1:A:796:ASN:HD21	2.06	0.52
2:B:456:PHE:CD2	2:B:577:ARG:NH1	2.77	0.52
1:A:63:GLN:HB2	1:A:68:TYR:HE2	1.73	0.52
1:A:424:TRP:CE2	1:A:446:TRP:HB2	2.45	0.52
1:A:602:LEU:HD21	1:A:615:ALA:HB3	1.91	0.52
1:A:568:LEU:O	1:A:568:LEU:HG	2.10	0.52
2:B:413:LEU:CG	2:B:420:LEU:HD13	2.38	0.52
1:A:545:GLU:OE2	2:B:379:LYS:CB	2.55	0.52
2:B:413:LEU:HG	2:B:420:LEU:HD12	1.89	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:602:LEU:CD2	1:A:612:ARG:HD3	2.39	0.52
2:B:501:GLN:HG2	2:B:505:SER:HB3	1.92	0.52
1:A:-14:ILE:N	1:A:-13:PRO:HD2	2.25	0.52
2:B:356:LEU:CD1	2:B:371:THR:HB	2.40	0.52
1:A:251:ILE:HD13	1:A:262:LEU:HD22	1.90	0.51
1:A:601:LEU:HA	1:A:606:TYR:CD2	2.46	0.51
2:B:335:TRP:HB2	2:B:338:ILE:HG12	1.91	0.51
1:A:338:ILE:HD11	1:A:387:LEU:HD12	1.93	0.51
2:B:509:ILE:HG22	2:B:509:ILE:O	2.09	0.51
1:A:376:VAL:HB	1:A:381:PRO:HA	1.91	0.51
1:A:-15:ASP:CG	1:A:-13:PRO:HD2	2.31	0.51
1:A:23:GLU:HG2	1:A:33:THR:HG23	1.91	0.51
1:A:937:PHE:HD1	1:A:938:LEU:HG	1.75	0.51
2:B:340:ARG:HB2	2:B:340:ARG:CZ	2.41	0.51
1:A:424:TRP:CZ3	1:A:460:GLY:HA3	2.45	0.51
1:A:209:LEU:HD12	1:A:209:LEU:O	2.10	0.51
1:A:645:LEU:HD22	1:A:683:ARG:HG2	1.83	0.51
2:B:583:TRP:CZ3	2:B:584:LEU:HB2	2.46	0.51
1:A:22:VAL:N	1:A:34:LEU:O	2.42	0.50
1:A:602:LEU:CA	1:A:612:ARG:HH12	2.14	0.50
1:A:834:LEU:HD21	1:A:924:LYS:NZ	2.26	0.50
2:B:456:PHE:HD2	2:B:577:ARG:NH1	2.09	0.50
1:A:209:LEU:CD1	1:A:211:ILE:HG13	2.41	0.50
2:B:398:PHE:HE1	2:B:407:HIS:ND1	2.10	0.50
1:A:240:LYS:O	1:A:244:LEU:HD13	2.11	0.50
1:A:446:TRP:CD2	1:A:465:ASN:HB2	2.47	0.50
1:A:821:GLU:OE1	1:A:833:MET:O	2.29	0.50
1:A:211:ILE:HG22	1:A:212:ASN:O	2.11	0.50
1:A:435:THR:OG1	1:A:485:LYS:HE2	2.11	0.50
1:A:452:LEU:HD12	1:A:452:LEU:O	2.11	0.50
1:A:778:PRO:HB3	1:A:802:LYS:HG3	1.93	0.50
1:A:772:MET:HB2	1:A:778:PRO:HG2	1.94	0.50
1:A:929:LEU:HD23	1:A:930:PHE:N	2.25	0.50
2:B:449:LEU:HD22	2:B:580:TYR:HB3	1.92	0.50
1:A:921:ILE:HD11	1:A:931:HIS:HE1	1.76	0.50
1:A:1021:TYR:O	1:A:1021:TYR:HD1	1.94	0.50
1:A:539:PRO:HD3	1:A:996:ASN:ND2	2.25	0.50
1:A:552:TRP:HA	1:A:552:TRP:CE3	2.47	0.50
1:A:660:ASN:OD1	1:A:660:ASN:C	2.50	0.50
1:A:124:PRO:HG2	1:A:127:GLU:HB2	1.92	0.50
1:A:834:LEU:HD22	1:A:924:LYS:HE3	1.88	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:194:ILE:HD12	1:A:194:ILE:N	2.27	0.49
1:A:906:VAL:O	1:A:910:ILE:HG13	2.12	0.49
1:A:392:TYR:HB3	1:A:394:PRO:HD2	1.95	0.49
1:A:-15:ASP:OD1	1:A:-14:ILE:N	2.43	0.49
1:A:934:PHE:CD1	1:A:934:PHE:N	2.80	0.49
1:A:1014:GLN:OE1	1:A:1014:GLN:HA	2.13	0.49
1:A:542:GLU:OE2	1:A:542:GLU:HA	2.12	0.49
1:A:874:SER:HA	1:A:959:ASP:OD1	2.11	0.49
2:B:457:GLN:O	2:B:461:ARG:CG	2.58	0.49
2:B:584:LEU:HD12	2:B:585:THR:H	1.78	0.49
1:A:39:GLU:HG3	1:A:742:PRO:HG3	1.94	0.49
1:A:910:ILE:CG2	1:A:1026:LEU:HD21	2.43	0.49
2:B:356:LEU:HD12	2:B:371:THR:HB	1.94	0.49
1:A:370:ASN:C	1:A:370:ASN:OD1	2.51	0.49
1:A:855:HIS:N	1:A:855:HIS:CD2	2.81	0.49
1:A:962:ILE:HG13	1:A:963:VAL:H	1.78	0.49
2:B:357:VAL:HG23	2:B:357:VAL:O	2.11	0.49
1:A:977:PHE:HE1	1:A:981:GLN:HE21	1.59	0.49
2:B:476:GLU:HB3	2:B:480:LYS:NZ	2.27	0.49
1:A:955:VAL:O	1:A:955:VAL:HG12	2.12	0.49
1:A:894:ILE:O	1:A:898:THR:OG1	2.23	0.49
1:A:905:CYS:SG	1:A:1043:MET:HE3	2.53	0.49
1:A:921:ILE:HD11	1:A:931:HIS:CE1	2.47	0.49
1:A:404:LEU:HD12	1:A:404:LEU:C	2.34	0.48
1:A:63:GLN:HB2	1:A:68:TYR:CE2	2.48	0.48
1:A:461:VAL:O	1:A:461:VAL:HG13	2.13	0.48
2:B:332:GLU:OE1	2:B:429:SER:O	2.30	0.48
2:B:358:ARG:O	2:B:359:ASP:HB2	2.12	0.48
2:B:501:GLN:CD	2:B:528:TYR:CD1	2.85	0.48
1:A:58:LEU:N	1:A:58:LEU:HD12	2.29	0.48
1:A:179:LYS:N	1:A:179:LYS:HD3	2.28	0.48
1:A:251:ILE:CG2	1:A:262:LEU:CD2	2.86	0.48
1:A:253:LYS:HD2	1:A:288:MET:HE3	1.95	0.48
1:A:305:PRO:HB3	1:A:693:ARG:HD3	1.96	0.48
1:A:817:ILE:HD13	1:A:904:TYR:HE1	1.78	0.48
2:B:333:TRP:CE3	2:B:333:TRP:C	2.87	0.48
2:B:446:GLY:HA2	2:B:449:LEU:HG	1.94	0.48
1:A:574:TRP:CZ3	1:A:580:VAL:HG13	2.48	0.48
1:A:705:GLN:O	1:A:709:MET:HG2	2.13	0.48
1:A:26:LEU:HB3	1:A:27:PRO:HD2	1.95	0.48
1:A:209:LEU:C	1:A:209:LEU:CD1	2.81	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:528:TYR:O	2:B:531:LEU:HB3	2.13	0.48
1:A:367:LEU:HD22	1:A:391:ILE:HG22	1.96	0.48
1:A:975:ARG:CZ	1:A:979:ARG:HH21	2.27	0.48
2:B:401:VAL:O	2:B:404:LEU:HB3	2.14	0.48
1:A:380:ASN:N	1:A:381:PRO:HD3	2.29	0.48
1:A:568:LEU:O	1:A:568:LEU:CG	2.62	0.48
1:A:435:THR:OG1	1:A:485:LYS:HG2	2.13	0.48
1:A:937:PHE:CE1	1:A:1002:PHE:HE1	2.32	0.48
1:A:534:ILE:HD11	1:A:547:GLU:OE1	2.13	0.47
1:A:634:GLN:OE1	1:A:634:GLN:N	2.45	0.47
1:A:639:LEU:HD23	1:A:639:LEU:HA	1.67	0.47
2:B:584:LEU:HG	2:B:585:THR:N	2.29	0.47
1:A:128:PHE:CB	1:A:140:ARG:NH1	2.71	0.47
1:A:133:ASP:OD1	1:A:134:PRO:HD2	2.15	0.47
1:A:759:HIS:CD2	1:A:794:PHE:HZ	2.32	0.47
1:A:960:PHE:N	1:A:960:PHE:CD1	2.82	0.47
1:A:1040:MET:HE2	1:A:1052:THR:CA	2.43	0.47
1:A:367:LEU:HD12	1:A:368:CYS:O	2.14	0.47
1:A:456:LEU:HD12	1:A:456:LEU:HA	1.72	0.47
1:A:609:PRO:O	1:A:612:ARG:HB3	2.14	0.47
1:A:659:THR:O	1:A:659:THR:HG22	2.13	0.47
2:B:449:LEU:HB3	2:B:580:TYR:CD2	2.49	0.47
1:A:177:LEU:HD21	1:A:274:ARG:NH2	2.30	0.47
1:A:25:LEU:CD1	1:A:25:LEU:N	2.77	0.47
1:A:193:VAL:CG2	1:A:282:MET:HE3	2.44	0.47
1:A:362:HIS:CE1	1:A:574:TRP:CD2	3.03	0.47
1:A:599:MET:HE3	1:A:631:TYR:CD2	2.49	0.47
1:A:1044:ASN:CB	1:A:1051:TRP:HB2	2.44	0.47
2:B:407:HIS:C	2:B:407:HIS:CD2	2.88	0.47
2:B:413:LEU:HB3	2:B:420:LEU:O	2.14	0.47
2:B:426:TYR:HB3	2:B:428:VAL:HG23	1.95	0.47
1:A:108:ARG:HB3	1:A:111:LYS:HB2	1.97	0.47
1:A:831:LEU:HD23	1:A:899:ARG:O	2.15	0.47
1:A:874:SER:CB	1:A:959:ASP:OD1	2.61	0.47
1:A:16:MET:SD	1:A:90:CYS:CA	3.03	0.47
1:A:68:TYR:HB3	1:A:103:GLU:HA	1.96	0.47
1:A:831:LEU:HD22	1:A:903:GLY:HA2	1.97	0.47
1:A:905:CYS:SG	1:A:1043:MET:HE1	2.55	0.47
1:A:915:ASP:OD1	1:A:951:ARG:NH1	2.48	0.47
1:A:186:ASP:OD1	1:A:189:GLN:HB2	2.15	0.46
1:A:321:GLU:N	1:A:321:GLU:OE1	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:780:TRP:CD1	1:A:780:TRP:C	2.89	0.46
1:A:251:ILE:HG22	1:A:252:LEU:N	2.29	0.46
1:A:257:CYS:HA	1:A:787:ASP:OD2	2.15	0.46
1:A:534:ILE:O	1:A:537:ARG:CB	2.63	0.46
1:A:590:TRP:CG	1:A:591:PRO:CD	2.99	0.46
1:A:770:ARG:HG3	1:A:772:MET:CE	2.46	0.46
1:A:904:TYR:CE2	1:A:930:PHE:HA	2.50	0.46
2:B:478:GLN:HA	2:B:481:ARG:HB2	1.97	0.46
1:A:817:ILE:HG22	1:A:835:PRO:HB3	1.97	0.46
2:B:413:LEU:CB	2:B:420:LEU:HB3	2.45	0.46
1:A:63:GLN:N	1:A:68:TYR:OH	2.48	0.46
1:A:226:ARG:O	1:A:230:ARG:HG3	2.15	0.46
1:A:28:ASN:HD22	1:A:30:MET:CE	2.29	0.46
1:A:356:VAL:HB	1:A:372:ASN:ND2	2.30	0.46
1:A:383:TRP:O	1:A:383:TRP:HD1	1.97	0.46
1:A:642:GLU:HB3	1:A:683:ARG:HH22	1.81	0.46
2:B:416:TYR:CD1	2:B:416:TYR:O	2.68	0.46
1:A:116:GLU:HB3	1:A:703:ASN:HD21	1.80	0.46
1:A:522:GLU:O	1:A:522:GLU:OE1	2.33	0.46
1:A:114:ASN:OD1	1:A:114:ASN:C	2.54	0.46
1:A:177:LEU:CD2	1:A:274:ARG:NH2	2.79	0.46
1:A:552:TRP:HA	1:A:552:TRP:HE3	1.78	0.46
1:A:645:LEU:HD23	1:A:683:ARG:HG2	1.87	0.46
1:A:908:THR:HG21	1:A:954:PHE:CB	2.46	0.46
1:A:57:PRO:CB	2:B:524:ILE:CD1	2.83	0.46
1:A:256:GLY:HA2	1:A:787:ASP:HB2	1.98	0.46
1:A:1021:TYR:O	1:A:1021:TYR:CD1	2.69	0.46
1:A:32:VAL:HG23	1:A:56:TYR:CZ	2.51	0.46
1:A:144:LEU:HD12	1:A:144:LEU:H	1.80	0.46
1:A:612:ARG:HD3	1:A:612:ARG:HA	1.79	0.46
1:A:639:LEU:O	1:A:683:ARG:NH2	2.49	0.46
1:A:114:ASN:OD1	1:A:114:ASN:O	2.34	0.46
1:A:508:TYR:O	1:A:508:TYR:CD1	2.69	0.46
1:A:558:CYS:HB3	1:A:564:ILE:CG2	2.46	0.46
1:A:857:ILE:O	1:A:860:ILE:HB	2.16	0.46
1:A:623:LEU:HA	1:A:623:LEU:HD12	1.64	0.45
2:B:392:PHE:HE1	2:B:416:TYR:CG	2.33	0.45
1:A:24:CYS:SG	1:A:49:LEU:HD11	2.55	0.45
1:A:32:VAL:HG11	1:A:49:LEU:HD11	1.99	0.45
1:A:234:LEU:HD12	1:A:239:LEU:HA	1.99	0.45
2:B:347:LEU:CD1	2:B:371:THR:CG2	2.94	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:98:PHE:CD1	1:A:98:PHE:C	2.89	0.45
1:A:465:ASN:HD21	1:A:470:THR:HG21	1.80	0.45
1:A:544:THR:O	1:A:548:LYS:HG3	2.15	0.45
2:B:483:ALA:HB3	2:B:545:LEU:HD21	1.98	0.45
1:A:678:LYS:NZ	2:B:478:GLN:HE22	2.13	0.45
1:A:735:LEU:HD22	1:A:771:ILE:HG13	1.98	0.45
1:A:976:GLU:OE1	1:A:979:ARG:NH1	2.49	0.45
1:A:1043:MET:O	1:A:1047:HIS:ND1	2.38	0.45
1:A:128:PHE:CD1	1:A:686:LEU:CD2	2.99	0.45
2:B:408:TYR:CE1	2:B:413:LEU:HA	2.50	0.45
2:B:431:TYR:CZ	2:B:433:GLN:HB2	2.49	0.45
1:A:17:PRO:HG2	1:A:20:ILE:HB	1.99	0.45
1:A:952:VAL:HG12	1:A:955:VAL:HG23	1.98	0.45
2:B:544:ARG:O	2:B:547:GLU:HG2	2.16	0.45
1:A:209:LEU:HD11	1:A:211:ILE:CD1	2.47	0.45
1:A:89:LEU:HD23	1:A:89:LEU:O	2.17	0.45
1:A:251:ILE:CD1	1:A:290:LYS:HG2	2.47	0.45
1:A:353:LYS:HA	1:A:377:PRO:CB	2.37	0.45
1:A:979:ARG:O	1:A:982:GLU:HB2	2.17	0.45
1:A:71:VAL:HG23	1:A:81:GLU:HA	1.98	0.45
2:B:426:TYR:HB3	2:B:428:VAL:CG2	2.47	0.45
1:A:88:ARG:HD2	1:A:743:ASP:HB3	1.98	0.45
1:A:243:VAL:HG12	1:A:247:GLN:NE2	2.32	0.45
1:A:89:LEU:C	1:A:89:LEU:CD2	2.85	0.44
1:A:960:PHE:N	1:A:960:PHE:HD1	2.15	0.44
1:A:961:LEU:HD22	1:A:977:PHE:CE2	2.50	0.44
2:B:392:PHE:CD1	2:B:416:TYR:CE2	3.05	0.44
1:A:772:MET:CE	1:A:772:MET:CA	2.95	0.44
1:A:977:PHE:HE1	1:A:981:GLN:NE2	2.15	0.44
1:A:1037:GLU:O	1:A:1041:LYS:HG3	2.17	0.44
2:B:573:LEU:N	2:B:573:LEU:HD23	2.33	0.44
2:B:413:LEU:HD21	2:B:420:LEU:HD13	1.98	0.44
1:A:357:ARG:HG3	1:A:371:VAL:HG12	2.00	0.44
1:A:569:LEU:HD13	1:A:611:VAL:HG21	1.98	0.44
2:B:333:TRP:CB	2:B:429:SER:HB3	2.47	0.44
2:B:487:PHE:O	2:B:488:ASN:C	2.56	0.44
1:A:57:PRO:CB	2:B:524:ILE:HD13	2.43	0.44
1:A:691:TYR:CE1	1:A:695:CYS:HB3	2.53	0.44
2:B:334:TYR:HA	2:B:357:VAL:CG2	2.48	0.44
1:A:540:LEU:CB	1:A:1023:ARG:HD2	2.47	0.44
1:A:575:ASN:OD1	1:A:576:SER:N	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:808:ARG:HA	1:A:811:MET:HB2	1.98	0.44
1:A:881:LEU:C	1:A:881:LEU:HD23	2.38	0.44
2:B:392:PHE:CD1	2:B:393:SER:N	2.85	0.44
1:A:251:ILE:CG2	1:A:252:LEU:N	2.80	0.44
1:A:498:TRP:CH2	1:A:502:ARG:HD2	2.53	0.44
1:A:552:TRP:CZ3	1:A:555:ARG:HD3	2.52	0.44
1:A:1003:SER:HA	1:A:1019:ILE:CD1	2.47	0.44
2:B:362:THR:HB	2:B:365:HIS:HB2	2.00	0.44
2:B:372:LEU:HD12	2:B:379:LYS:HB2	2.00	0.44
2:B:333:TRP:CZ2	2:B:405:ILE:CG2	2.97	0.44
1:A:242:CYS:O	1:A:243:VAL:C	2.55	0.44
1:A:376:VAL:HG11	1:A:380:ASN:O	2.18	0.44
1:A:376:VAL:N	1:A:377:PRO:CD	2.80	0.44
1:A:465:ASN:HA	1:A:466:PRO:HD3	1.92	0.44
1:A:42:LEU:HD23	1:A:42:LEU:HA	1.85	0.43
1:A:568:LEU:HA	1:A:571:SER:OG	2.18	0.43
1:A:627:LYS:HD2	1:A:627:LYS:HA	1.82	0.43
2:B:343:VAL:CG1	2:B:356:LEU:CD1	2.89	0.43
1:A:215:CYS:SG	1:A:219:GLN:CB	3.05	0.43
1:A:354:ILE:HG12	1:A:408:SER:CB	2.48	0.43
1:A:882:LYS:O	1:A:885:ASN:O	2.36	0.43
1:A:123:MET:CE	1:A:675:MET:CE	2.96	0.43
1:A:561:ILE:O	1:A:562:PRO:C	2.56	0.43
1:A:806:ASP:OD1	1:A:808:ARG:HG2	2.19	0.43
2:B:398:PHE:HE1	2:B:407:HIS:CG	2.35	0.43
2:B:384:PHE:CD1	2:B:392:PHE:HA	2.53	0.43
2:B:445:VAL:CG1	2:B:583:TRP:CZ3	3.01	0.43
1:A:449:PRO:HG2	1:A:452:LEU:HG	2.01	0.43
1:A:599:MET:HB3	1:A:1004:MET:HE1	1.98	0.43
1:A:610:MET:CE	1:A:610:MET:CA	2.93	0.43
1:A:939:ASP:HB3	1:A:1021:TYR:CD2	2.54	0.43
1:A:68:TYR:HB3	1:A:103:GLU:HG3	1.99	0.43
1:A:405:SER:HA	1:A:424:TRP:HA	2.01	0.43
1:A:841:ILE:HD12	1:A:841:ILE:C	2.39	0.43
1:A:8:GLY:O	1:A:75:GLN:NE2	2.52	0.43
1:A:70:PHE:CD1	1:A:99:LEU:HB3	2.53	0.43
1:A:350:ASP:OD2	2:B:565:SER:HB3	2.19	0.43
1:A:461:VAL:HB	1:A:640:LYS:HE3	2.00	0.43
1:A:565:LEU:N	1:A:566:PRO:HD2	2.33	0.43
1:A:823:ILE:CG2	1:A:994:HIS:CD2	3.01	0.43
1:A:121:ILE:HD11	1:A:689:GLU:CA	2.46	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:361:TYR:HA	1:A:366:PRO:HD3	2.00	0.43
1:A:910:ILE:O	1:A:1025:THR:HG21	2.19	0.43
1:A:1003:SER:HA	1:A:1019:ILE:HD11	2.00	0.43
1:A:534:ILE:O	1:A:537:ARG:CG	2.67	0.43
1:A:18:PRO:O	1:A:38:ARG:N	2.47	0.43
1:A:178:PRO:CG	1:A:181:ILE:HD12	2.48	0.43
1:A:251:ILE:CG2	1:A:262:LEU:HD23	2.48	0.43
1:A:542:GLU:CG	2:B:340:ARG:HD3	2.49	0.43
1:A:881:LEU:HD23	1:A:881:LEU:O	2.18	0.43
1:A:977:PHE:O	1:A:980:PHE:HB3	2.19	0.43
1:A:1021:TYR:CD1	1:A:1021:TYR:C	2.92	0.43
2:B:445:VAL:HG11	2:B:583:TRP:CH2	2.54	0.43
1:A:91:ASP:OD1	1:A:711:LYS:NZ	2.51	0.42
1:A:328:TRP:CZ2	1:A:577:ARG:HD2	2.54	0.42
1:A:382:ARG:O	1:A:384:ASN:ND2	2.52	0.42
2:B:362:THR:HB	2:B:365:HIS:CB	2.49	0.42
2:B:596:GLU:HG2	2:B:597:TRP:CD2	2.54	0.42
1:A:562:PRO:HB2	1:A:593:ILE:HG22	2.00	0.42
1:A:762:GLY:O	1:A:763:ASN:C	2.57	0.42
1:A:934:PHE:H	1:A:934:PHE:HD1	1.63	0.42
1:A:71:VAL:HG23	1:A:80:GLU:C	2.40	0.42
1:A:147:CYS:O	1:A:151:VAL:HG23	2.20	0.42
1:A:552:TRP:HZ2	1:A:579:GLU:HG2	1.84	0.42
1:A:956:LEU:N	1:A:956:LEU:HD23	2.35	0.42
1:A:961:LEU:HA	1:A:964:ILE:HD12	2.02	0.42
2:B:456:PHE:CD1	2:B:570:LEU:HD11	2.55	0.42
2:B:466:LEU:HD23	2:B:466:LEU:N	2.34	0.42
1:A:713:ILE:HG12	1:A:801:PHE:HZ	1.85	0.42
1:A:836:TYR:CZ	1:A:932:ILE:HG22	2.53	0.42
1:A:69:ILE:HD11	1:A:83:PHE:HA	2.01	0.42
1:A:145:ASN:O	1:A:149:GLU:HG3	2.18	0.42
1:A:239:LEU:O	1:A:239:LEU:HD22	2.19	0.42
1:A:324:THR:OG1	1:A:482:SER:HB3	2.20	0.42
1:A:621:LYS:HE2	1:A:622:TYR:HE1	1.84	0.42
1:A:1017:ASP:O	1:A:1020:ALA:CB	2.68	0.42
1:A:162:ARG:HH21	1:A:298:PRO:C	2.22	0.42
1:A:841:ILE:HD11	1:A:845:VAL:HG12	2.02	0.42
1:A:1047:HIS:O	1:A:1048:HIS:HB3	2.20	0.42
2:B:382:LYS:O	2:B:392:PHE:HB3	2.19	0.42
1:A:68:TYR:HA	1:A:104:PRO:HD3	2.01	0.42
1:A:76:GLU:O	1:A:78:GLU:N	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:534:ILE:O	1:A:537:ARG:HG3	2.19	0.42
1:A:764:LEU:HD12	1:A:783:TRP:CE2	2.50	0.42
1:A:756:ASN:C	1:A:756:ASN:OD1	2.58	0.42
2:B:329:GLN:O	2:B:329:GLN:CD	2.58	0.42
1:A:171:VAL:HG22	1:A:269:GLN:HG2	2.00	0.42
1:A:586:LEU:HD23	1:A:586:LEU:N	2.35	0.42
1:A:648:LEU:H	1:A:648:LEU:CD1	2.14	0.42
1:A:354:ILE:HG12	1:A:408:SER:HB2	2.02	0.42
1:A:446:TRP:CH2	1:A:465:ASN:HA	2.55	0.42
1:A:540:LEU:HD12	1:A:999:ILE:HD12	2.02	0.42
1:A:676:HIS:CD2	1:A:843:ASP:HB2	2.55	0.42
1:A:829:LEU:HG	1:A:831:LEU:HD12	2.02	0.42
2:B:441:ASN:HB3	2:B:444:ALA:HB3	2.02	0.42
1:A:163:ALA:CA	1:A:297:LEU:HD11	2.47	0.41
1:A:177:LEU:HD21	1:A:274:ARG:CZ	2.49	0.41
1:A:216:VAL:HB	1:A:217:PRO:CD	2.50	0.41
1:A:507:SER:OG	1:A:508:TYR:N	2.52	0.41
1:A:531:LEU:HD21	1:A:550:PHE:HE1	1.84	0.41
1:A:646:ASP:OD2	1:A:651:ARG:NH2	2.47	0.41
2:B:542:ARG:O	2:B:545:LEU:HB3	2.20	0.41
1:A:429:LEU:HD23	1:A:429:LEU:HA	1.89	0.41
1:A:904:TYR:HB3	1:A:931:HIS:CD2	2.55	0.41
2:B:510:GLU:OE1	2:B:511:LYS:NZ	2.52	0.41
1:A:370:ASN:OD1	1:A:387:LEU:HD22	2.21	0.41
1:A:875:HIS:HA	1:A:962:ILE:HD12	2.02	0.41
1:A:951:ARG:HG2	1:A:952:VAL:N	2.34	0.41
2:B:417:ASN:HB3	2:B:420:LEU:HD11	2.03	0.41
1:A:32:VAL:CG2	1:A:56:TYR:CE2	3.02	0.41
1:A:351:ILE:CG2	1:A:408:SER:HB2	2.39	0.41
1:A:565:LEU:HD23	1:A:590:TRP:CH2	2.55	0.41
1:A:69:ILE:HG12	1:A:70:PHE:H	1.86	0.41
1:A:939:ASP:HB3	1:A:1021:TYR:CE2	2.56	0.41
2:B:416:TYR:CD1	2:B:416:TYR:C	2.90	0.41
2:B:456:PHE:CD1	2:B:456:PHE:C	2.92	0.41
1:A:345:ASN:HD22	2:B:557:ARG:CG	2.30	0.41
1:A:465:ASN:ND2	1:A:470:THR:HG21	2.34	0.41
1:A:824:TRP:HZ3	1:A:833:MET:SD	2.43	0.41
2:B:406:ASN:HA	2:B:409:ARG:HB2	2.03	0.41
1:A:261:PHE:HA	1:A:270:TYR:CE2	2.56	0.41
1:A:356:VAL:HG23	1:A:383:TRP:HZ2	1.86	0.41
1:A:599:MET:HE3	1:A:631:TYR:HD2	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:777:ARG:N	1:A:778:PRO:CD	2.84	0.41
1:A:1052:THR:OG1	1:A:1053:THR:N	2.53	0.41
1:A:16:MET:SD	1:A:90:CYS:HA	2.61	0.41
1:A:83:PHE:CZ	1:A:112:ILE:HG22	2.56	0.41
1:A:188:GLY:HA2	1:A:213:HIS:HD2	1.86	0.41
1:A:738:GLN:HE22	1:A:741:ARG:HE	1.67	0.41
1:A:916:ARG:HE	1:A:916:ARG:HA	1.85	0.41
1:A:1019:ILE:CG2	1:A:1019:ILE:O	2.69	0.41
2:B:333:TRP:HE3	2:B:333:TRP:C	2.24	0.41
1:A:221:ILE:O	1:A:225:ILE:HG12	2.21	0.41
1:A:374:GLN:H	1:A:374:GLN:HG2	1.57	0.41
1:A:959:ASP:O	1:A:962:ILE:CG1	2.64	0.41
2:B:335:TRP:CD1	2:B:335:TRP:N	2.88	0.41
2:B:455:GLN:HE21	2:B:573:LEU:HD13	1.86	0.41
1:A:6:SER:H	2:B:479:MET:HE1	1.87	0.40
1:A:128:PHE:CE1	1:A:686:LEU:HD21	2.55	0.40
1:A:508:TYR:HD2	1:A:510:HIS:CD2	2.28	0.40
1:A:62:LEU:HD12	1:A:62:LEU:C	2.41	0.40
1:A:445:LEU:HD23	1:A:445:LEU:N	2.36	0.40
1:A:542:GLU:HB3	2:B:380:LEU:HD22	2.02	0.40
1:A:589:ASP:OD1	1:A:589:ASP:N	2.53	0.40
1:A:834:LEU:HD21	1:A:924:LYS:HZ1	1.87	0.40
1:A:956:LEU:HD11	1:A:980:PHE:HZ	1.84	0.40
1:A:565:LEU:HD23	1:A:590:TRP:CZ2	2.55	0.40
1:A:602:LEU:N	1:A:602:LEU:HD23	2.37	0.40
1:A:808:ARG:HA	1:A:811:MET:CB	2.52	0.40
2:B:455:GLN:O	2:B:459:LYS:N	2.38	0.40
1:A:37:LEU:HD22	1:A:37:LEU:HA	1.92	0.40
1:A:287:LEU:HD23	1:A:287:LEU:HA	1.88	0.40
1:A:356:VAL:HG23	1:A:406:ILE:HG12	2.04	0.40
1:A:599:MET:HB3	1:A:1004:MET:HE3	2.02	0.40
1:A:637:GLN:C	1:A:639:LEU:N	2.74	0.40
1:A:719:LEU:HB3	1:A:731:GLN:HE21	1.86	0.40
1:A:1023:ARG:NH1	2:B:341:GLU:OE2	2.53	0.40
1:A:1032:GLU:O	1:A:1036:LEU:HG	2.21	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 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	1027/1096 (94%)	955 (93%)	65 (6%)	7 (1%)	22	56
2	B	201/279 (72%)	186 (92%)	15 (8%)	0	100	100
All	All	1228/1375 (89%)	1141 (93%)	80 (6%)	7 (1%)	25	59

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	201	ASN
1	A	918	ASN
1	A	530	GLN
1	A	874	SER
1	A	198	VAL
1	A	298	PRO
1	A	377	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	953/999 (95%)	896 (94%)	57 (6%)	19	50
2	B	215/259 (83%)	197 (92%)	18 (8%)	11	37
All	All	1168/1258 (93%)	1093 (94%)	75 (6%)	17	48

All (75) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	24	CYS
1	A	25	LEU
1	A	36	CYS
1	A	37	LEU
1	A	58	LEU
1	A	90	CYS
1	A	96	GLN
1	A	109	GLU
1	A	125	VAL
1	A	137	GLN
1	A	155	ASP
1	A	182	TYR
1	A	204	LYS
1	A	230	ARG
1	A	234	LEU
1	A	244	LEU
1	A	267	LEU
1	A	306	SER
1	A	326	SER
1	A	330	ILE
1	A	332	SER
1	A	351	ILE
1	A	366	PRO
1	A	374	GLN
1	A	462	THR
1	A	478	ASP
1	A	483	VAL
1	A	494	GLU
1	A	509	SER
1	A	522	GLU
1	A	550	PHE
1	A	571	SER
1	A	578	ASP
1	A	589	ASP
1	A	648	LEU
1	A	661	GLN
1	A	704	ARG
1	A	722	GLU
1	A	727	THR
1	A	741	ARG
1	A	790	SER
1	A	799	ILE
1	A	808	ARG

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Mol	Chain	Res	Type
1	A	855	HIS
1	A	860	ILE
1	A	871	GLN
1	A	874	SER
1	A	917	HIS
1	A	921	ILE
1	A	939	ASP
1	A	951	ARG
1	A	955	VAL
1	A	971	CYS
1	A	978	GLU
1	A	1021	TYR
1	A	1031	THR
1	A	1052	THR
2	B	332	GLU
2	B	356	LEU
2	B	381	ILE
2	B	403	GLU
2	B	404	LEU
2	B	405	ILE
2	B	406	ASN
2	B	450	HIS
2	B	456	PHE
2	B	459	LYS
2	B	465	ARG
2	B	475	GLN
2	B	498	CYS
2	B	509	ILE
2	B	511	LYS
2	B	521	ILE
2	B	578	ASP
2	B	583	TRP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (25) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	-21	HIS
1	A	28	ASN
1	A	75	GLN
1	A	213	HIS
1	A	247	GLN
1	A	362	HIS

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Mol	Chain	Res	Type
1	A	372	ASN
1	A	384	ASN
1	A	444	ASN
1	A	510	HIS
1	A	630	GLN
1	A	731	GLN
1	A	738	GLN
1	A	759	HIS
1	A	797	ASN
1	A	809	GLN
1	A	855	HIS
1	A	885	ASN
1	A	931	HIS
1	A	994	HIS
1	A	996	ASN
1	A	1042	GLN
2	B	455	GLN
2	B	475	GLN
2	B	564	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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

5 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
4	SO4	A	1303	-	4,4,4	0.39	0	6,6,6	0.10	0
4	SO4	A	1304	-	4,4,4	0.36	0	6,6,6	0.10	0
3	144	A	1301	-	1,7,7	0.03	0	3,9,9	0.40	0
3	144	B	1201	-	1,7,7	0.03	0	3,9,9	0.21	0
4	SO4	A	1302	-	4,4,4	0.37	0	6,6,6	0.04	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	144	B	1201	-	-	0/0/9/9	-
3	144	A	1301	-	-	0/0/9/9	-

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 [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

6.1 Protein, DNA and RNA chains

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	1039/1096 (94%)	0.29	47 (4%) 33 36	59, 114, 187, 257	0
2	B	225/279 (80%)	0.92	45 (20%) 1 1	30, 190, 250, 283	0
All	All	1264/1375 (91%)	0.40	92 (7%) 15 17	30, 123, 218, 283	0

All (92) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	-26	SER	7.1
2	B	527	ASN	6.2
1	A	869	ALA	5.9
2	B	442	ILE	5.4
1	A	354	ILE	5.2
2	B	405	ILE	4.8
2	B	526	HIS	4.5
1	A	378	CYS	4.5
2	B	335	TRP	4.5
2	B	406	ASN	4.2
1	A	347	ASN	4.0
2	B	504	TYR	3.9
1	A	524	ARG	3.9
1	A	346	VAL	3.8
2	B	501	GLN	3.6
1	A	351	ILE	3.5
2	B	365	HIS	3.4
2	B	582	MET	3.4
2	B	358	ARG	3.4
2	B	428	VAL	3.3
2	B	449	LEU	3.2
2	B	337	ASP	3.2
1	A	353	LYS	3.1
1	A	350	ASP	3.1

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Mol	Chain	Res	Type	RSRZ
1	A	28	ASN	3.1
2	B	346	LYS	3.1
2	B	494	PHE	3.1
1	A	936	HIS	3.1
1	A	935	GLY	3.0
1	A	381	PRO	3.0
1	A	375	ARG	3.0
2	B	433	GLN	3.0
1	A	838	CYS	3.0
2	B	356	LEU	2.9
2	B	595	ASN	2.8
2	B	364	MET	2.8
1	A	408	SER	2.8
1	A	811	MET	2.8
1	A	1055	MET	2.8
2	B	430	LYS	2.8
1	A	27	PRO	2.7
2	B	359	ASP	2.7
2	B	585	THR	2.7
1	A	188	GLY	2.7
1	A	383	TRP	2.6
2	B	336	GLY	2.6
2	B	523	ARG	2.6
1	A	557	TYR	2.5
2	B	338	ILE	2.5
2	B	397	THR	2.5
1	A	26	LEU	2.5
2	B	446	GLY	2.5
1	A	837	GLY	2.5
1	A	215	CYS	2.4
1	A	871	GLN	2.4
1	A	810	ASP	2.4
2	B	441	ASN	2.4
2	B	333	TRP	2.4
2	B	508	TYR	2.4
2	B	586	GLN	2.4
2	B	431	TYR	2.4
1	A	193	VAL	2.3
1	A	809	GLN	2.3
2	B	503	ARG	2.3
1	A	806	ASP	2.3
1	A	364	GLY	2.3

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Mol	Chain	Res	Type	RSRZ
1	A	868	GLY	2.3
1	A	933	ASP	2.3
2	B	521	ILE	2.2
2	B	334	TYR	2.2
2	B	579	GLN	2.2
1	A	840	SER	2.2
2	B	331	ALA	2.2
1	A	61	LEU	2.2
2	B	372	LEU	2.2
2	B	439	GLU	2.2
2	B	463	TYR	2.2
1	A	103	GLU	2.2
1	A	1008	SER	2.1
1	A	338	ILE	2.1
1	A	345	ASN	2.1
1	A	673	SER	2.1
2	B	505	SER	2.1
2	B	410	ASN	2.1
1	A	83	PHE	2.1
1	A	189	GLN	2.1
2	B	556	TYR	2.0
1	A	756	ASN	2.0
2	B	528	TYR	2.0
1	A	870	LEU	2.0
1	A	-16	TYR	2.0
1	A	107	ASN	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 monosaccharides in this entry.

6.4 Ligands [\(i\)](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
4	SO4	A	1303	5/5	0.47	0.53	203,205,223,246	0
4	SO4	A	1302	5/5	0.78	0.26	215,217,224,233	0
3	144	B	1201	8/8	0.78	0.31	139,171,184,186	0
3	144	A	1301	8/8	0.80	0.20	139,163,171,175	0
4	SO4	A	1304	5/5	0.84	0.24	184,189,211,213	0

6.5 Other polymers [i](#)

There are no such residues in this entry.