WORLDWIDE PDB PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report ⓘ

May 29, 2020 – 03:23 am BST

PDB ID	:	3PJZ
Title	:	Crystal Structure of the Potassium Transporter TrkH from Vibrio para-haemolyticus
Authors	:	Cao, Y.; Jin, X.; Huang, H.; Levin, E.J.; Zhou, M.; New York Consortium on Membrane Protein Structure (NYCOMPS)
Deposited on	:	2010-11-10
Resolution	:	3.51 Å(reported)

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 (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 3.51 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.
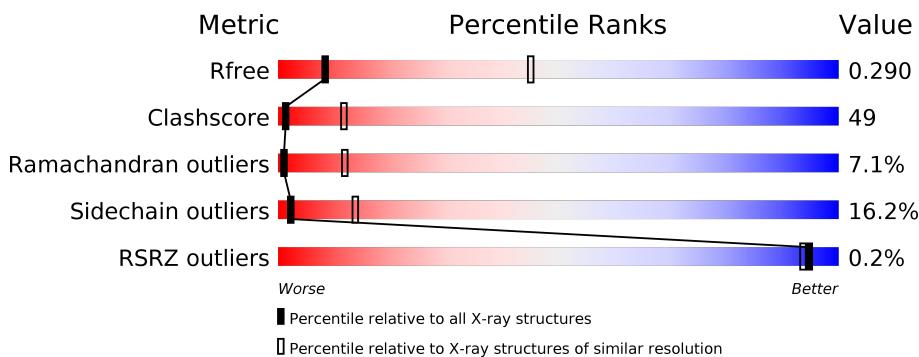
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1659 (3.60-3.40)
Clashscore	141614	1036 (3.58-3.42)
Ramachandran outliers	138981	1005 (3.58-3.42)
Sidechain outliers	138945	1006 (3.58-3.42)
RSRZ outliers	127900	1559 (3.60-3.40)

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 <=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	494	32% 49% 13% 5%
1	B	494	32% 50% 13% 5%
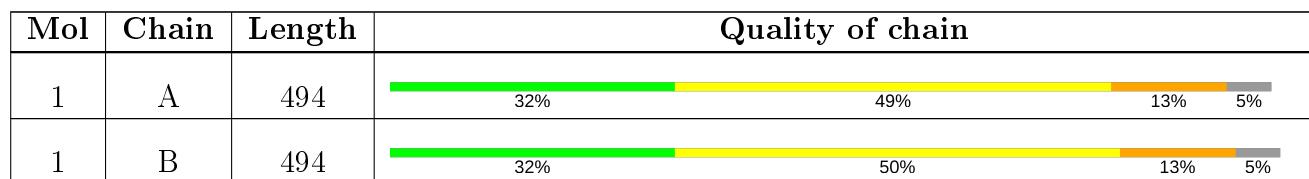
2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 7242 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 Potassium uptake protein TrkH.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	468	Total	C	N	O	S	0	0	0
			3620	2421	574	607	18			
1	B	468	Total	C	N	O	S	0	0	0
			3620	2421	574	607	18			

There are 18 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	486	ALA	-	EXPRESSION TAG	UNP Q87TN7
A	487	ALA	-	EXPRESSION TAG	UNP Q87TN7
A	488	ALA	-	EXPRESSION TAG	UNP Q87TN7
A	489	GLU	-	EXPRESSION TAG	UNP Q87TN7
A	490	ASN	-	EXPRESSION TAG	UNP Q87TN7
A	491	LEU	-	EXPRESSION TAG	UNP Q87TN7
A	492	TYR	-	EXPRESSION TAG	UNP Q87TN7
A	493	PHE	-	EXPRESSION TAG	UNP Q87TN7
A	494	GLN	-	EXPRESSION TAG	UNP Q87TN7
B	486	ALA	-	EXPRESSION TAG	UNP Q87TN7
B	487	ALA	-	EXPRESSION TAG	UNP Q87TN7
B	488	ALA	-	EXPRESSION TAG	UNP Q87TN7
B	489	GLU	-	EXPRESSION TAG	UNP Q87TN7
B	490	ASN	-	EXPRESSION TAG	UNP Q87TN7
B	491	LEU	-	EXPRESSION TAG	UNP Q87TN7
B	492	TYR	-	EXPRESSION TAG	UNP Q87TN7
B	493	PHE	-	EXPRESSION TAG	UNP Q87TN7
B	494	GLN	-	EXPRESSION TAG	UNP Q87TN7

- Molecule 2 is POTASSIUM ION (three-letter code: K) (formula: K).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	B	1	Total	K	0	0
			1	1		

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	1	Total 1	K 1	0	0

3 Residue-property plots (i)

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: Potassium uptake protein TrkH
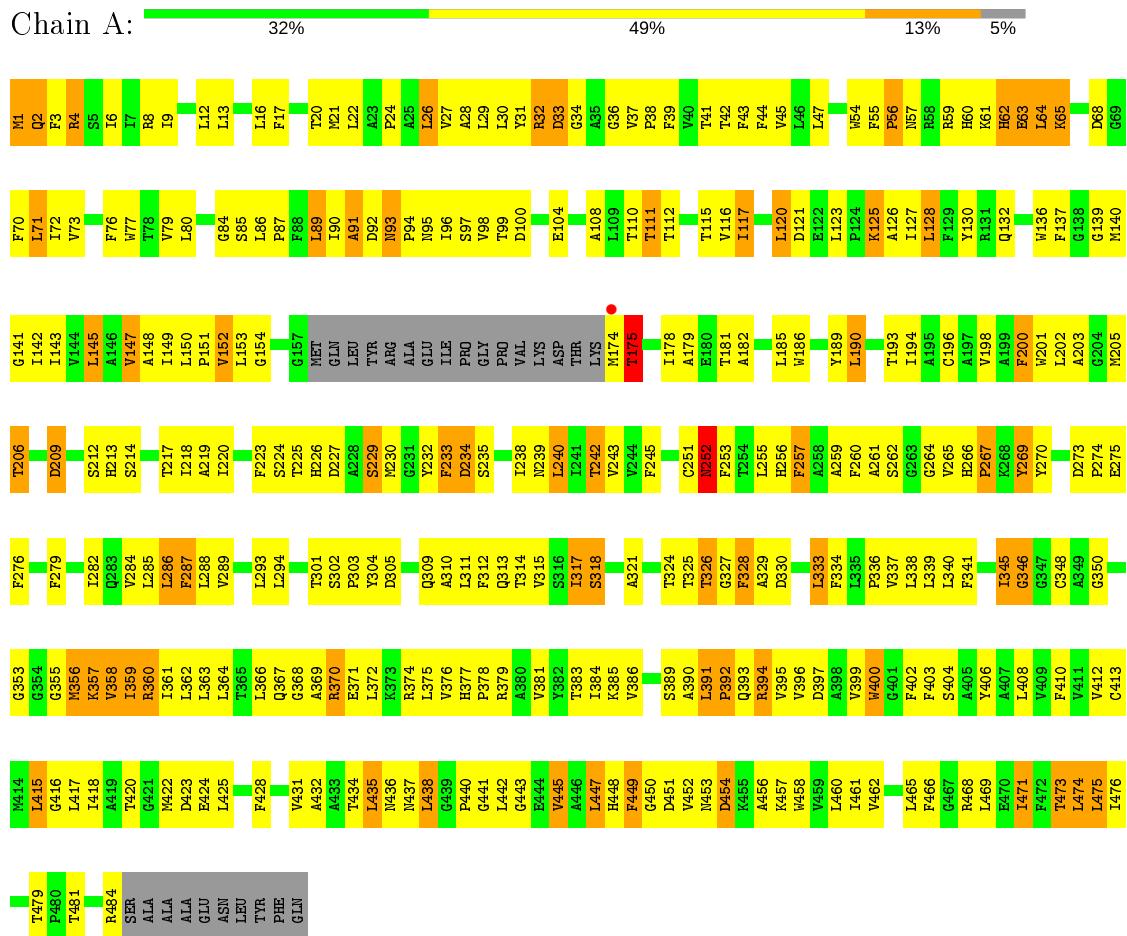
- Molecule 1: Potassium uptake protein TrkH
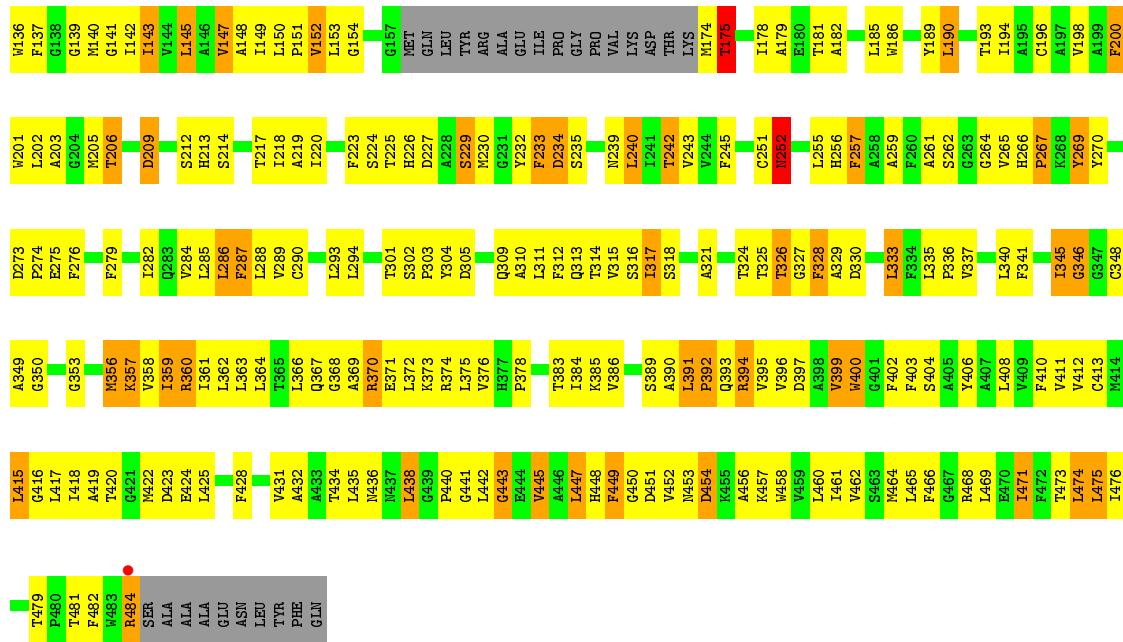
4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	91.49Å　97.41Å　195.65Å 90.00°　90.00°　90.00°	Depositor
Resolution (Å)	14.99 – 3.51 44.54 – 3.51	Depositor EDS
% Data completeness (in resolution range)	85.7 (14.99-3.51) 85.6 (44.54-3.51)	Depositor EDS
R_{merge}	0.12	Depositor
R_{sym}	(Not available)	Depositor
$<I/\sigma(I)>$ [1]	18.32 (at 3.48Å)	Xtriage
Refinement program	PHENIX 1.6.4_486	Depositor
R, R_{free}	0.249 , 0.299 0.242 , 0.290	Depositor DCC
R_{free} test set	1008 reflections (5.21%)	wwPDB-VP
Wilson B-factor (Å^2)	63.6	Xtriage
Anisotropy	0.083	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.24 , 47.8	EDS
L-test for twinning [2]	$<|L|> = 0.45$, $<L^2> = 0.27$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.85	EDS
Total number of atoms	7242	wwPDB-VP
Average B, all atoms (Å^2)	60.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.65% of the height of the origin peak. No significant pseudotranslation is detected.*

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[1]Intensities estimated from amplitudes.

[2]Theoretical values of $<|L|>$, $<L^2>$ 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: K

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	0.44	0/3723	0.61	0/5073
1	B	0.43	0/3723	0.60	0/5073
All	All	0.44	0/7446	0.60	0/10146

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (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	3620	0	3696	367	0
1	B	3620	0	3696	370	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
All	All	7242	0	7392	712	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 49.

All (712) 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:136:TRP:HE1	1:A:193:THR:HG21	0.97	1.12
1:B:136:TRP:HE1	1:B:193:THR:HG21	0.95	1.06
1:B:93:ASN:HB2	1:B:94:PRO:HD3	1.40	1.04
1:B:132:GLN:HG3	1:B:212:SER:HB2	1.38	1.04
1:A:93:ASN:HB2	1:A:94:PRO:HD3	1.41	1.00
1:B:363:LEU:HB3	1:B:367:GLN:HE21	1.27	1.00
1:A:132:GLN:HG3	1:A:212:SER:HB2	1.41	1.00
1:A:117:ILE:HD11	1:A:120:LEU:HB3	1.45	0.99
1:A:363:LEU:HB3	1:A:367:GLN:HE21	1.27	0.98
1:B:136:TRP:NE1	1:B:193:THR:HG21	1.79	0.97
1:B:117:ILE:HD11	1:B:120:LEU:HB3	1.44	0.96
1:A:206:THR:HG23	1:A:209:ASP:HB2	1.48	0.95
1:A:370:ARG:HH12	1:A:392:PRO:HB3	1.28	0.95
1:B:370:ARG:HH12	1:B:392:PRO:HB3	1.27	0.95
1:A:417:LEU:O	1:A:420:THR:HG22	1.67	0.94
1:B:206:THR:HG23	1:B:209:ASP:HB2	1.48	0.94
1:A:136:TRP:NE1	1:A:193:THR:HG21	1.83	0.94
1:B:147:VAL:HG11	1:B:181:THR:HG21	1.47	0.93
1:A:147:VAL:HG11	1:A:181:THR:HG21	1.51	0.92
1:B:61:LYS:HB3	1:B:64:LEU:HD21	1.50	0.91
1:B:363:LEU:HB3	1:B:367:GLN:NE2	1.85	0.91
1:B:97:SER:HB3	1:B:100:ASP:HB2	1.53	0.89
1:A:363:LEU:HB3	1:A:367:GLN:NE2	1.88	0.87
1:A:420:THR:HG23	1:A:453:ASN:HD22	1.39	0.86
1:A:61:LYS:HB3	1:A:64:LEU:HD21	1.54	0.86
1:B:136:TRP:HE1	1:B:193:THR:CG2	1.84	0.86
1:A:337:VAL:HG11	1:B:418:ILE:HD12	1.55	0.86
1:B:417:LEU:O	1:B:420:THR:HG22	1.76	0.85
1:B:420:THR:HG23	1:B:453:ASN:HD22	1.40	0.84
1:A:97:SER:HB3	1:A:100:ASP:HB2	1.60	0.84
1:A:136:TRP:HE1	1:A:193:THR:CG2	1.87	0.83
1:B:417:LEU:HD11	1:B:460:LEU:HD21	1.60	0.82
1:B:125:LYS:H	1:B:125:LYS:HD3	1.43	0.81
1:B:186:TRP:NE1	1:B:190:LEU:HD23	1.96	0.80
1:B:198:VAL:O	1:B:202:LEU:HD13	1.81	0.80
1:A:125:LYS:H	1:A:125:LYS:HD3	1.45	0.80
1:B:41:THR:O	1:B:45:VAL:HG23	1.82	0.79
1:A:128:LEU:HD11	1:A:225:THR:HA	1.64	0.79
1:A:186:TRP:NE1	1:A:190:LEU:HD23	1.97	0.79
1:A:2:GLN:NE2	1:A:61:LYS:HD3	1.98	0.79
1:B:383:THR:O	1:B:385:LYS:HG3	1.84	0.78
1:A:256:HIS:HD2	1:A:270:TYR:OH	1.67	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:213:HIS:CE1	1:B:225:THR:HG23	2.19	0.77
1:A:362:LEU:O	1:A:366:LEU:HD13	1.84	0.77
1:B:43:PHE:O	1:B:47:LEU:HB2	1.84	0.77
1:A:213:HIS:CE1	1:A:225:THR:HG23	2.21	0.76
1:B:440:PRO:HB2	1:B:442:LEU:CD2	2.15	0.76
1:A:385:LYS:HG2	1:A:389:SER:HA	1.67	0.74
1:A:200:PHE:HZ	1:A:242:THR:HG23	1.53	0.74
1:B:214:SER:HA	1:B:217:THR:HG22	1.69	0.74
1:A:275:GLU:HG3	1:A:359:ILE:HG23	1.69	0.74
1:B:145:LEU:O	1:B:149:ILE:HB	1.86	0.74
1:A:214:SER:HA	1:A:217:THR:HG22	1.70	0.74
1:B:128:LEU:HD11	1:B:225:THR:HA	1.69	0.74
1:B:2:GLN:NE2	1:B:61:LYS:HD3	2.02	0.74
1:B:121:ASP:OD2	1:B:227:ASP:HB2	1.88	0.74
1:B:125:LYS:HD3	1:B:125:LYS:N	2.03	0.74
1:A:125:LYS:HD3	1:A:125:LYS:N	2.02	0.73
1:A:28:ALA:HB2	1:A:126:ALA:HB2	1.71	0.73
1:A:357:LYS:H	1:A:357:LYS:HD2	1.52	0.73
1:A:41:THR:O	1:A:45:VAL:HG23	1.87	0.73
1:A:145:LEU:O	1:A:149:ILE:HB	1.89	0.73
1:B:39:PHE:CE2	1:B:87:PRO:HB3	2.25	0.72
1:B:213:HIS:HE1	1:B:225:THR:HG23	1.53	0.72
1:A:337:VAL:HG21	1:B:418:ILE:HD13	1.69	0.72
1:B:220:ILE:HG22	1:B:220:ILE:O	1.90	0.72
1:A:220:ILE:HG22	1:A:220:ILE:O	1.90	0.72
1:A:265:VAL:O	1:A:269:TYR:HD2	1.73	0.72
1:A:334:PHE:CD1	1:B:419:ALA:HB2	2.25	0.72
1:B:410:PHE:CE1	1:B:431:VAL:HG23	2.25	0.72
1:B:385:LYS:HG2	1:B:389:SER:HA	1.71	0.71
1:A:104:GLU:HG3	1:A:104:GLU:O	1.89	0.71
1:A:417:LEU:HD11	1:A:460:LEU:HD21	1.72	0.71
1:A:440:PRO:HB2	1:A:442:LEU:CD2	2.20	0.71
1:B:200:PHE:HZ	1:B:242:THR:HG23	1.54	0.71
1:B:38:PRO:HG2	1:B:91:ALA:HB2	1.73	0.71
1:B:8:ARG:O	1:B:12:LEU:HD23	1.91	0.71
1:B:256:HIS:HD2	1:B:270:TYR:OH	1.74	0.71
1:A:39:PHE:CE2	1:A:87:PRO:HB3	2.25	0.71
1:B:265:VAL:O	1:B:269:TYR:HD2	1.74	0.71
1:A:383:THR:O	1:A:385:LYS:HG3	1.90	0.70
1:A:410:PHE:CE1	1:A:431:VAL:HG23	2.26	0.70
1:A:43:PHE:O	1:A:47:LEU:HB2	1.92	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:117:ILE:CD1	1:B:120:LEU:HB3	2.21	0.70
1:B:125:LYS:H	1:B:125:LYS:CD	2.03	0.70
1:B:93:ASN:HB2	1:B:94:PRO:CD	2.19	0.70
1:A:198:VAL:O	1:A:202:LEU:HD13	1.91	0.70
1:A:121:ASP:OD2	1:A:227:ASP:HB2	1.91	0.70
1:A:125:LYS:H	1:A:125:LYS:CD	2.04	0.70
1:A:345:ILE:HG22	1:A:346:GLY:N	2.06	0.70
1:A:309:GLN:O	1:A:313:GLN:HG2	1.91	0.70
1:A:141:GLY:O	1:A:145:LEU:HB2	1.91	0.69
1:B:362:LEU:O	1:B:366:LEU:HD13	1.90	0.69
1:A:117:ILE:CD1	1:A:120:LEU:HB3	2.22	0.69
1:A:93:ASN:HB2	1:A:94:PRO:CD	2.19	0.69
1:B:28:ALA:HB2	1:B:126:ALA:HB2	1.75	0.69
1:B:186:TRP:HE1	1:B:190:LEU:HD23	1.58	0.69
1:A:186:TRP:HE1	1:A:190:LEU:HD23	1.57	0.69
1:A:255:LEU:HB3	1:A:270:TYR:HE1	1.58	0.69
1:A:252:ASN:C	1:A:252:ASN:HD22	1.94	0.69
1:B:309:GLN:O	1:B:313:GLN:HG2	1.92	0.69
1:B:255:LEU:HB3	1:B:270:TYR:HE1	1.58	0.68
1:A:213:HIS:HE1	1:A:225:THR:HG23	1.57	0.68
1:B:255:LEU:HB3	1:B:270:TYR:CE1	2.29	0.67
1:B:141:GLY:O	1:B:145:LEU:HB2	1.94	0.67
1:A:364:LEU:HD21	1:A:400:TRP:HB3	1.76	0.67
1:B:32:ARG:HE	1:B:32:ARG:H	1.42	0.67
1:A:294:LEU:HD12	1:A:310:ALA:HB2	1.75	0.67
1:A:374:ARG:NE	1:B:394:ARG:HH21	1.92	0.67
1:A:255:LEU:HB3	1:A:270:TYR:CE1	2.30	0.67
1:B:194:ILE:O	1:B:198:VAL:HG12	1.96	0.66
1:A:239:ASN:O	1:A:243:VAL:HG12	1.95	0.66
1:A:450:GLY:O	1:A:452:VAL:N	2.25	0.66
1:B:364:LEU:HD21	1:B:400:TRP:HB3	1.78	0.66
1:B:438:LEU:HD22	1:B:440:PRO:HD2	1.78	0.66
1:B:27:VAL:HG13	1:B:31:TYR:HD2	1.60	0.66
1:B:441:GLY:O	1:B:442:LEU:HB2	1.94	0.66
1:A:441:GLY:O	1:A:442:LEU:HB2	1.95	0.66
1:B:214:SER:HA	1:B:217:THR:CG2	2.26	0.66
1:A:285:LEU:O	1:A:289:VAL:HG23	1.95	0.66
1:A:28:ALA:HB2	1:A:126:ALA:CB	2.26	0.66
1:A:194:ILE:O	1:A:198:VAL:HG12	1.96	0.66
1:B:357:LYS:HD2	1:B:357:LYS:H	1.60	0.65
1:B:252:ASN:HD22	1:B:252:ASN:C	1.99	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:275:GLU:OE1	1:B:359:ILE:HG12	1.97	0.65
1:A:345:ILE:HG22	1:A:346:GLY:H	1.60	0.65
1:A:214:SER:HA	1:A:217:THR:CG2	2.26	0.65
1:A:370:ARG:NH1	1:A:392:PRO:HB3	2.09	0.65
1:A:420:THR:HG23	1:A:453:ASN:ND2	2.10	0.65
1:B:104:GLU:O	1:B:104:GLU:HG3	1.96	0.65
1:A:438:LEU:HD22	1:A:440:PRO:HD2	1.79	0.64
1:B:294:LEU:HD12	1:B:310:ALA:HB2	1.78	0.64
1:B:345:ILE:HG22	1:B:346:GLY:N	2.12	0.64
1:B:469:LEU:HD12	1:B:474:LEU:HB2	1.80	0.64
1:B:370:ARG:HD3	1:B:384:ILE:HG23	1.79	0.63
1:A:94:PRO:HG2	1:A:127:ILE:HG13	1.80	0.63
1:A:265:VAL:O	1:A:269:TYR:CD2	2.52	0.63
1:A:55:PHE:C	1:A:57:ASN:H	2.02	0.63
1:A:27:VAL:HG13	1:A:31:TYR:HD2	1.63	0.63
1:A:32:ARG:H	1:A:32:ARG:HE	1.46	0.63
1:A:370:ARG:HH12	1:A:392:PRO:CB	2.07	0.62
1:A:256:HIS:CD2	1:A:270:TYR:OH	2.51	0.62
1:A:376:VAL:O	1:A:378:PRO:HD3	1.99	0.62
1:A:370:ARG:HD3	1:A:384:ILE:HG23	1.80	0.62
1:B:90:ILE:O	1:B:92:ASP:N	2.31	0.62
1:A:8:ARG:O	1:A:12:LEU:HD23	1.99	0.62
1:B:28:ALA:HB2	1:B:126:ALA:CB	2.29	0.62
1:B:94:PRO:HG2	1:B:127:ILE:HG13	1.81	0.62
1:B:376:VAL:O	1:B:378:PRO:HD3	2.00	0.62
1:B:239:ASN:O	1:B:243:VAL:HG12	1.99	0.61
1:B:265:VAL:O	1:B:269:TYR:CD2	2.53	0.61
1:A:2:GLN:HA	1:A:2:GLN:HE21	1.64	0.61
1:B:450:GLY:O	1:B:452:VAL:N	2.28	0.61
1:B:55:PHE:C	1:B:57:ASN:H	2.03	0.61
1:A:403:PHE:CE2	1:B:403:PHE:CE2	2.88	0.61
1:B:38:PRO:HG2	1:B:91:ALA:CB	2.29	0.61
1:B:285:LEU:O	1:B:289:VAL:HG23	2.00	0.61
1:B:108:ALA:HA	1:B:223:PHE:CE2	2.35	0.61
1:B:2:GLN:HG3	1:B:64:LEU:HD22	1.83	0.61
1:B:6:ILE:HG23	1:B:72:ILE:CD1	2.30	0.61
1:A:458:TRP:O	1:A:462:VAL:HG12	2.00	0.61
1:B:96:ILE:HG13	1:B:100:ASP:HB3	1.83	0.60
1:A:90:ILE:O	1:A:92:ASP:N	2.33	0.60
1:A:77:TRP:CD1	1:A:469:LEU:HD21	2.37	0.60
1:B:390:ALA:C	1:B:392:PRO:HD3	2.21	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:340:LEU:HD11	1:B:432:ALA:HB1	1.83	0.60
1:B:77:TRP:CD1	1:B:469:LEU:HD21	2.37	0.60
1:B:370:ARG:NH1	1:B:392:PRO:HB3	2.09	0.60
1:A:182:ALA:HA	1:A:185:LEU:HD12	1.84	0.60
1:A:76:PHE:CE1	1:A:80:LEU:HD22	2.37	0.60
1:B:279:PHE:HB2	1:B:358:VAL:HG21	1.83	0.60
1:B:2:GLN:HE21	1:B:2:GLN:HA	1.66	0.60
1:A:279:PHE:HB2	1:A:358:VAL:HG21	1.83	0.60
1:B:31:TYR:HB3	1:B:125:LYS:HG3	1.84	0.60
1:B:420:THR:HG23	1:B:453:ASN:ND2	2.13	0.59
1:A:390:ALA:C	1:A:392:PRO:HD3	2.22	0.59
1:A:337:VAL:HG11	1:B:418:ILE:CD1	2.29	0.59
1:B:243:VAL:HG21	1:B:311:LEU:CD1	2.32	0.59
1:B:76:PHE:CE1	1:B:80:LEU:HD22	2.38	0.59
1:A:275:GLU:OE1	1:A:359:ILE:HG12	2.01	0.59
1:B:38:PRO:HB3	1:B:90:ILE:CG2	2.33	0.59
1:A:282:ILE:O	1:A:286:LEU:HB2	2.02	0.59
1:A:38:PRO:HG2	1:A:91:ALA:HB2	1.83	0.59
1:A:371:GLU:O	1:A:375:LEU:HD23	2.02	0.59
1:B:434:THR:HG21	1:B:460:LEU:O	2.03	0.59
1:A:264:GLY:HA2	1:A:266:HIS:CD2	2.37	0.59
1:B:370:ARG:HH12	1:B:392:PRO:CB	2.08	0.59
1:A:6:ILE:HG23	1:A:72:ILE:CD1	2.34	0.58
1:A:436:ASN:N	1:A:436:ASN:HD22	2.01	0.58
1:B:4:ARG:HD3	1:B:61:LYS:HZ2	1.68	0.58
1:A:31:TYR:HB3	1:A:125:LYS:HG3	1.86	0.58
1:A:108:ALA:HA	1:A:223:PHE:CE2	2.38	0.58
1:A:420:THR:HG21	1:A:456:ALA:HB2	1.83	0.58
1:B:121:ASP:OD1	1:B:226:HIS:HA	2.04	0.58
1:B:390:ALA:C	1:B:391:LEU:HD23	2.24	0.58
1:B:396:VAL:HG13	1:B:397:ASP:N	2.19	0.58
1:B:471:ILE:CG2	1:B:475:LEU:HD12	2.34	0.58
1:B:93:ASN:CB	1:B:94:PRO:HD3	2.26	0.58
1:B:345:ILE:HG22	1:B:346:GLY:H	1.67	0.58
1:B:371:GLU:O	1:B:375:LEU:HD23	2.04	0.58
1:B:70:PHE:HE1	1:B:476:ILE:HD13	1.67	0.58
1:A:70:PHE:HE1	1:A:476:ILE:HD13	1.68	0.57
1:A:93:ASN:CB	1:A:94:PRO:HD3	2.27	0.57
1:A:376:VAL:C	1:A:378:PRO:HD3	2.25	0.57
1:A:469:LEU:HD12	1:A:474:LEU:HB2	1.86	0.57
1:B:264:GLY:HA2	1:B:266:HIS:CD2	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:182:ALA:HA	1:B:185:LEU:HD12	1.85	0.57
1:A:150:LEU:HG	1:A:154:GLY:O	2.05	0.57
1:A:38:PRO:HB3	1:A:90:ILE:CG2	2.34	0.57
1:B:37:VAL:N	1:B:38:PRO:CD	2.67	0.57
1:B:59:ARG:HD3	1:B:61:LYS:HE3	1.87	0.57
1:A:96:ILE:HG13	1:A:100:ASP:HB3	1.87	0.57
1:B:256:HIS:CD2	1:B:270:TYR:OH	2.56	0.57
1:B:436:ASN:HD22	1:B:436:ASN:N	2.03	0.57
1:A:243:VAL:HG21	1:A:311:LEU:CD1	2.35	0.57
1:A:385:LYS:HG2	1:A:389:SER:CA	2.35	0.57
1:A:457:LYS:O	1:A:461:ILE:HG13	2.05	0.57
1:A:418:ILE:HD12	1:B:337:VAL:HG11	1.87	0.57
1:A:123:LEU:HB2	1:A:128:LEU:HD23	1.87	0.56
1:A:37:VAL:N	1:A:38:PRO:CD	2.67	0.56
1:B:275:GLU:HG3	1:B:359:ILE:HG23	1.85	0.56
1:A:148:ALA:HB2	1:A:178:ILE:CD1	2.35	0.56
1:A:59:ARG:HD3	1:A:61:LYS:HE3	1.87	0.56
1:A:312:PHE:CE2	1:A:325:THR:HG23	2.40	0.56
1:B:417:LEU:HD11	1:B:460:LEU:CD2	2.34	0.56
1:A:121:ASP:OD1	1:A:226:HIS:HA	2.06	0.56
1:B:123:LEU:HB2	1:B:128:LEU:HD23	1.87	0.56
1:B:471:ILE:HG22	1:B:475:LEU:HD12	1.88	0.56
1:A:2:GLN:HG3	1:A:64:LEU:HD22	1.87	0.56
1:A:96:ILE:HG23	1:A:97:SER:O	2.06	0.56
1:A:21:MET:HG3	1:A:42:THR:HG22	1.88	0.56
1:B:390:ALA:O	1:B:392:PRO:HD3	2.06	0.56
1:A:70:PHE:HE2	1:A:152:VAL:HB	1.71	0.55
1:A:16:LEU:HD13	1:A:16:LEU:O	2.06	0.55
1:A:372:LEU:O	1:A:375:LEU:HB2	2.05	0.55
1:A:4:ARG:HD3	1:A:61:LYS:NZ	2.21	0.55
1:A:4:ARG:HD3	1:A:61:LYS:HZ2	1.71	0.55
1:B:372:LEU:O	1:B:375:LEU:HB2	2.05	0.55
1:B:147:VAL:CG1	1:B:181:THR:HG21	2.29	0.55
1:A:230:MET:HE3	1:A:242:THR:HG21	1.89	0.55
1:A:391:LEU:O	1:A:393:GLN:N	2.39	0.55
1:B:282:ILE:O	1:B:286:LEU:HB2	2.05	0.55
1:B:420:THR:HG21	1:B:456:ALA:HB2	1.89	0.55
1:A:205:MET:HG2	1:A:232:TYR:OH	2.05	0.55
1:B:206:THR:HG23	1:B:209:ASP:CB	2.32	0.55
1:A:425:LEU:HD12	1:B:425:LEU:HB2	1.88	0.55
1:A:434:THR:HG21	1:A:460:LEU:O	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:458:TRP:O	1:B:462:VAL:HG12	2.06	0.55
1:B:70:PHE:HE2	1:B:152:VAL:HB	1.72	0.54
1:B:38:PRO:HB3	1:B:90:ILE:HG22	1.89	0.54
1:B:213:HIS:CE1	1:B:225:THR:H	2.24	0.54
1:B:196:CYS:HB3	1:B:214:SER:OG	2.07	0.54
1:B:313:GLN:O	1:B:315:VAL:N	2.40	0.54
1:A:98:VAL:HG13	1:A:99:THR:N	2.22	0.54
1:B:148:ALA:HB2	1:B:178:ILE:CD1	2.37	0.54
1:B:150:LEU:HG	1:B:154:GLY:O	2.07	0.54
1:B:313:GLN:C	1:B:315:VAL:H	2.11	0.54
1:B:97:SER:HB3	1:B:100:ASP:CB	2.33	0.54
1:A:287:PHE:CD1	1:A:311:LEU:HD23	2.43	0.54
1:B:230:MET:HE3	1:B:242:THR:HG21	1.89	0.54
1:B:287:PHE:CD1	1:B:311:LEU:HD23	2.41	0.54
1:B:2:GLN:CB	1:B:64:LEU:HD13	2.37	0.54
1:B:243:VAL:HG21	1:B:311:LEU:HD11	1.88	0.54
1:B:96:ILE:HG23	1:B:97:SER:O	2.08	0.54
1:A:110:THR:HG22	1:A:110:THR:O	2.08	0.54
1:A:84:GLY:HA2	1:A:130:TYR:OH	2.08	0.54
1:B:39:PHE:CE2	1:B:87:PRO:CB	2.90	0.54
1:A:147:VAL:CG1	1:A:181:THR:HG21	2.33	0.54
1:B:147:VAL:HG11	1:B:181:THR:CG2	2.30	0.54
1:A:466:PHE:CE1	1:A:474:LEU:HD21	2.43	0.54
1:B:22:LEU:HD21	1:B:43:PHE:CD1	2.43	0.54
1:A:390:ALA:C	1:A:391:LEU:HD23	2.27	0.54
1:A:340:LEU:CD2	1:A:428:PHE:HE2	2.21	0.54
1:A:63:GLU:O	1:A:64:LEU:HB2	2.08	0.53
1:A:38:PRO:HG2	1:A:91:ALA:CB	2.37	0.53
1:A:465:LEU:O	1:A:469:LEU:HG	2.08	0.53
1:B:391:LEU:HD23	1:B:391:LEU:N	2.22	0.53
1:B:4:ARG:HD3	1:B:61:LYS:NZ	2.23	0.53
1:A:61:LYS:O	1:A:64:LEU:HD21	2.08	0.53
1:B:120:LEU:H	1:B:120:LEU:HD23	1.74	0.53
1:B:457:LYS:O	1:B:461:ILE:HG13	2.08	0.53
1:A:243:VAL:HG21	1:A:311:LEU:HD11	1.89	0.53
1:B:2:GLN:OE1	1:B:64:LEU:HD22	2.09	0.53
1:B:363:LEU:O	1:B:367:GLN:HG3	2.09	0.53
1:B:466:PHE:CE1	1:B:474:LEU:HD21	2.44	0.53
1:B:340:LEU:HD11	1:B:432:ALA:CB	2.39	0.53
1:A:252:ASN:ND2	1:A:252:ASN:C	2.62	0.53
1:B:12:LEU:O	1:B:16:LEU:HB2	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:28:ALA:CB	1:B:36:GLY:HA3	2.39	0.53
1:A:425:LEU:HB2	1:B:425:LEU:HD12	1.90	0.53
1:A:368:GLY:O	1:A:371:GLU:HB2	2.09	0.53
1:B:266:HIS:ND1	1:B:267:PRO:HD3	2.24	0.53
1:B:84:GLY:HA2	1:B:130:TYR:OH	2.08	0.53
1:A:148:ALA:HB2	1:A:178:ILE:HD11	1.91	0.52
1:B:91:ALA:C	1:B:93:ASN:H	2.11	0.52
1:A:225:THR:OG1	1:A:226:HIS:N	2.43	0.52
1:A:39:PHE:CE2	1:A:87:PRO:CB	2.91	0.52
1:B:289:VAL:O	1:B:293:LEU:HG	2.09	0.52
1:A:205:MET:SD	1:A:209:ASP:O	2.67	0.52
1:B:368:GLY:O	1:B:371:GLU:HB2	2.10	0.52
1:A:390:ALA:O	1:A:392:PRO:HD3	2.10	0.52
1:B:98:VAL:HG13	1:B:99:THR:N	2.24	0.52
1:A:396:VAL:HG13	1:A:397:ASP:N	2.24	0.52
1:A:468:ARG:HA	1:A:468:ARG:HE	1.75	0.52
1:A:196:CYS:HB3	1:A:214:SER:OG	2.09	0.52
1:A:456:ALA:O	1:A:460:LEU:HG	2.10	0.52
1:B:225:THR:OG1	1:B:226:HIS:N	2.42	0.52
1:B:469:LEU:HB3	1:B:473:THR:OG1	2.10	0.52
1:A:139:GLY:O	1:A:142:ILE:HG22	2.09	0.52
1:A:357:LYS:N	1:A:357:LYS:HD2	2.23	0.52
1:B:4:ARG:HD2	1:B:4:ARG:H	1.73	0.52
1:B:59:ARG:HD3	1:B:61:LYS:CE	2.40	0.52
1:B:86:LEU:HB3	1:B:87:PRO:HD3	1.92	0.52
1:A:394:ARG:HH21	1:B:374:ARG:NE	2.08	0.51
1:A:12:LEU:HD21	1:A:54:TRP:CD1	2.46	0.51
1:A:32:ARG:HB2	1:A:125:LYS:HE3	1.91	0.51
1:A:153:LEU:O	1:A:153:LEU:HD12	2.10	0.51
1:A:38:PRO:HB3	1:A:90:ILE:HG22	1.92	0.51
1:B:110:THR:HG23	1:B:468:ARG:HD2	1.93	0.51
1:A:28:ALA:CB	1:A:36:GLY:HA3	2.40	0.51
1:A:418:ILE:HD13	1:B:337:VAL:HG21	1.92	0.51
1:A:59:ARG:HD3	1:A:61:LYS:CE	2.40	0.51
1:A:147:VAL:HG11	1:A:181:THR:CG2	2.34	0.51
1:A:193:THR:HG22	1:A:218:ILE:HG13	1.92	0.51
1:A:86:LEU:HB3	1:A:87:PRO:HD3	1.93	0.51
1:B:266:HIS:N	1:B:267:PRO:CD	2.74	0.51
1:A:87:PRO:O	1:A:91:ALA:HB3	2.10	0.51
1:B:418:ILE:HD11	1:B:424:GLU:HG3	1.93	0.51
1:A:266:HIS:N	1:A:267:PRO:CD	2.74	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:391:LEU:HD23	1:A:391:LEU:N	2.26	0.50
1:A:462:VAL:O	1:A:462:VAL:HG22	2.10	0.50
1:B:39:PHE:CD2	1:B:87:PRO:HB3	2.46	0.50
1:B:462:VAL:O	1:B:462:VAL:HG22	2.11	0.50
1:A:337:VAL:O	1:A:341:PHE:HD2	1.94	0.50
1:A:374:ARG:CZ	1:B:394:ARG:HH21	2.23	0.50
1:B:27:VAL:HG13	1:B:31:TYR:CD2	2.44	0.50
1:B:30:LEU:C	1:B:30:LEU:HD13	2.32	0.50
1:B:385:LYS:HG2	1:B:389:SER:CA	2.41	0.50
1:A:117:ILE:HG13	1:A:117:ILE:O	2.10	0.50
1:A:363:LEU:O	1:A:367:GLN:HG3	2.12	0.50
1:B:70:PHE:CE1	1:B:476:ILE:HD13	2.46	0.50
1:B:63:GLU:O	1:B:64:LEU:HB2	2.12	0.50
1:A:2:GLN:CB	1:A:64:LEU:HD13	2.41	0.50
1:A:59:ARG:HD3	1:A:61:LYS:NZ	2.27	0.50
1:B:117:ILE:O	1:B:117:ILE:HG13	2.11	0.50
1:A:266:HIS:O	1:A:269:TYR:HB2	2.12	0.50
1:A:2:GLN:OE1	1:A:64:LEU:HD22	2.12	0.50
1:B:2:GLN:HB3	1:B:64:LEU:HD13	1.92	0.50
1:B:391:LEU:O	1:B:393:GLN:N	2.44	0.50
1:A:174:MET:O	1:A:175:THR:HG23	2.12	0.50
1:A:70:PHE:CE1	1:A:476:ILE:HD13	2.46	0.50
1:B:317:ILE:HD12	1:B:442:LEU:HG	1.94	0.50
1:A:408:LEU:O	1:A:412:VAL:HG23	2.12	0.50
1:B:345:ILE:N	1:B:345:ILE:HD12	2.26	0.50
1:B:98:VAL:HG13	1:B:99:THR:H	1.77	0.50
1:A:345:ILE:N	1:A:345:ILE:HD12	2.27	0.49
1:B:110:THR:HG22	1:B:110:THR:O	2.11	0.49
1:A:200:PHE:CZ	1:A:242:THR:HG23	2.41	0.49
1:A:340:LEU:HD11	1:A:432:ALA:HB1	1.93	0.49
1:B:453:ASN:O	1:B:456:ALA:HB3	2.11	0.49
1:A:458:TRP:CE3	1:A:461:ILE:HD12	2.47	0.49
1:A:2:GLN:HE22	1:A:61:LYS:HD3	1.76	0.49
1:A:91:ALA:C	1:A:93:ASN:H	2.16	0.49
1:B:262:SER:HB3	1:B:265:VAL:HG11	1.94	0.49
1:A:313:GLN:O	1:A:315:VAL:N	2.45	0.49
1:A:452:VAL:HG23	1:A:453:ASN:O	2.12	0.49
1:B:174:MET:O	1:B:175:THR:HG23	2.13	0.49
1:B:214:SER:CA	1:B:217:THR:HG22	2.41	0.49
1:B:266:HIS:CG	1:B:267:PRO:HD3	2.47	0.49
1:B:376:VAL:C	1:B:378:PRO:HD3	2.32	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:214:SER:CA	1:A:217:THR:HG22	2.40	0.49
1:A:471:ILE:CG2	1:A:475:LEU:HD12	2.43	0.49
1:B:59:ARG:HD3	1:B:61:LYS:NZ	2.28	0.49
1:B:87:PRO:O	1:B:91:ALA:HB3	2.13	0.49
1:A:39:PHE:CZ	1:A:130:TYR:HB2	2.48	0.49
1:B:32:ARG:HB2	1:B:125:LYS:HE3	1.94	0.49
1:B:312:PHE:CE2	1:B:325:THR:HG23	2.47	0.49
1:B:452:VAL:HG23	1:B:453:ASN:O	2.12	0.49
1:A:22:LEU:HD21	1:A:43:PHE:CD1	2.47	0.49
1:B:108:ALA:CB	1:B:223:PHE:HE2	2.25	0.49
1:B:474:LEU:C	1:B:474:LEU:HD23	2.33	0.49
1:A:13:LEU:HD13	1:A:76:PHE:HD1	1.77	0.49
1:A:289:VAL:O	1:A:293:LEU:HG	2.12	0.49
1:A:39:PHE:CD2	1:A:87:PRO:HB3	2.47	0.49
1:A:213:HIS:CE1	1:A:225:THR:H	2.30	0.49
1:B:150:LEU:N	1:B:151:PRO:CD	2.76	0.49
1:B:262:SER:HB3	1:B:265:VAL:CG1	2.43	0.49
1:B:287:PHE:C	1:B:287:PHE:CD2	2.86	0.49
1:A:313:GLN:C	1:A:315:VAL:H	2.15	0.49
1:A:317:ILE:HD12	1:A:442:LEU:HG	1.95	0.49
1:B:152:VAL:HG23	1:B:153:LEU:H	1.78	0.49
1:A:233:PHE:C	1:A:235:SER:H	2.16	0.48
1:B:189:TYR:O	1:B:193:THR:HG23	2.12	0.48
1:B:21:MET:HG3	1:B:42:THR:HG22	1.95	0.48
1:B:205:MET:HG2	1:B:232:TYR:OH	2.12	0.48
1:B:55:PHE:HB3	1:B:56:PRO:HD3	1.95	0.48
1:A:70:PHE:CE2	1:A:152:VAL:HB	2.48	0.48
1:A:302:SER:O	1:A:304:TYR:N	2.46	0.48
1:B:200:PHE:CZ	1:B:242:THR:HG23	2.42	0.48
1:A:262:SER:HB3	1:A:265:VAL:HG11	1.96	0.48
1:B:148:ALA:HB2	1:B:178:ILE:HD11	1.93	0.48
1:B:468:ARG:HE	1:B:468:ARG:HA	1.78	0.48
1:B:4:ARG:HD2	1:B:4:ARG:N	2.28	0.48
1:A:340:LEU:HD11	1:A:432:ALA:CB	2.44	0.48
1:B:139:GLY:O	1:B:142:ILE:HG22	2.14	0.48
1:B:196:CYS:HB2	1:B:245:PHE:CD1	2.49	0.48
1:A:12:LEU:O	1:A:16:LEU:HB2	2.13	0.48
1:A:259:ALA:HB1	1:A:266:HIS:HB3	1.95	0.48
1:B:12:LEU:HD21	1:B:54:TRP:CD1	2.48	0.48
1:B:2:GLN:HB2	1:B:68:ASP:OD2	2.12	0.48
1:B:396:VAL:CG1	1:B:397:ASP:N	2.76	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:16:LEU:HD13	1:B:16:LEU:O	2.14	0.48
1:B:369:ALA:O	1:B:371:GLU:N	2.47	0.48
1:A:424:GLU:OE1	1:B:425:LEU:HD11	2.14	0.48
1:A:410:PHE:CZ	1:A:431:VAL:HG23	2.48	0.48
1:B:196:CYS:HB2	1:B:245:PHE:CE1	2.48	0.48
1:A:110:THR:HG23	1:A:468:ARG:HD2	1.95	0.47
1:A:30:LEU:C	1:A:30:LEU:HD13	2.34	0.47
1:B:302:SER:O	1:B:304:TYR:N	2.47	0.47
1:B:3:PHE:O	1:B:6:ILE:HB	2.14	0.47
1:A:150:LEU:N	1:A:151:PRO:CD	2.78	0.47
1:A:152:VAL:HG23	1:A:153:LEU:H	1.79	0.47
1:A:266:HIS:ND1	1:A:267:PRO:HD3	2.29	0.47
1:A:345:ILE:O	1:A:346:GLY:O	2.32	0.47
1:A:97:SER:HB3	1:A:100:ASP:CB	2.40	0.47
1:B:327:GLY:O	1:B:328:PHE:HB2	2.14	0.47
1:B:318:SER:O	1:B:346:GLY:HA3	2.14	0.47
1:B:364:LEU:CD2	1:B:400:TRP:HB3	2.44	0.47
1:A:425:LEU:HD11	1:B:424:GLU:OE1	2.14	0.47
1:A:196:CYS:HB2	1:A:245:PHE:CE1	2.48	0.47
1:A:266:HIS:CG	1:A:267:PRO:HD3	2.49	0.47
1:A:471:ILE:HG22	1:A:475:LEU:HD12	1.96	0.47
1:A:4:ARG:HD2	1:A:4:ARG:N	2.30	0.47
1:A:55:PHE:HB3	1:A:56:PRO:HD3	1.95	0.47
1:A:262:SER:HB3	1:A:265:VAL:CG1	2.45	0.47
1:A:425:LEU:O	1:A:428:PHE:HB3	2.13	0.47
1:A:326:THR:HG22	1:A:328:PHE:H	1.80	0.47
1:A:438:LEU:HD22	1:A:440:PRO:CD	2.44	0.47
1:B:213:HIS:HE1	1:B:225:THR:H	1.62	0.47
1:A:27:VAL:HG13	1:A:31:TYR:CD2	2.47	0.47
1:A:403:PHE:HE2	1:B:403:PHE:CE2	2.31	0.47
1:A:137:PHE:O	1:A:140:MET:N	2.45	0.47
1:A:2:GLN:HB3	1:A:64:LEU:HD13	1.97	0.47
1:A:318:SER:O	1:A:346:GLY:HA3	2.15	0.47
1:B:345:ILE:O	1:B:346:GLY:O	2.32	0.47
1:A:70:PHE:HZ	1:B:375:LEU:HD12	1.80	0.47
1:A:4:ARG:HD2	1:A:4:ARG:H	1.79	0.47
1:A:2:GLN:HE22	1:A:61:LYS:CE	2.27	0.47
1:A:63:GLU:O	1:A:64:LEU:CB	2.62	0.47
1:B:4:ARG:CD	1:B:4:ARG:H	2.27	0.47
1:A:47:LEU:O	1:A:47:LEU:HD13	2.15	0.47
1:B:205:MET:SD	1:B:209:ASP:O	2.73	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:89:LEU:HD21	1:B:98:VAL:HG23	1.96	0.46
1:A:360:ARG:HH11	1:A:360:ARG:HG3	1.80	0.46
1:A:393:GLN:O	1:A:397:ASP:OD2	2.33	0.46
1:A:196:CYS:HB2	1:A:245:PHE:CD1	2.51	0.46
1:A:327:GLY:O	1:A:328:PHE:HB2	2.15	0.46
1:A:55:PHE:C	1:A:57:ASN:N	2.68	0.46
1:B:410:PHE:CZ	1:B:431:VAL:HG23	2.51	0.46
1:B:438:LEU:HD22	1:B:440:PRO:CD	2.44	0.46
1:B:13:LEU:HD13	1:B:76:PHE:HD1	1.80	0.46
1:B:85:SER:O	1:B:89:LEU:HB2	2.16	0.46
1:A:220:ILE:HG23	1:A:321:ALA:HA	1.97	0.46
1:A:449:PHE:HA	1:A:452:VAL:CG1	2.46	0.46
1:B:39:PHE:CZ	1:B:130:TYR:HB2	2.51	0.46
1:B:465:LEU:O	1:B:469:LEU:HG	2.15	0.46
1:B:55:PHE:C	1:B:57:ASN:N	2.69	0.46
1:A:120:LEU:HA	1:A:123:LEU:HG	1.98	0.46
1:B:445:VAL:HG13	1:B:447:LEU:HD21	1.98	0.46
1:B:266:HIS:O	1:B:269:TYR:HB2	2.16	0.46
1:B:359:ILE:O	1:B:360:ARG:C	2.54	0.46
1:B:33:ASP:HB2	1:B:125:LYS:HE2	1.97	0.46
1:B:408:LEU:O	1:B:412:VAL:HG23	2.15	0.46
1:A:2:GLN:HB2	1:A:68:ASP:OD2	2.16	0.45
1:A:317:ILE:CD1	1:A:339:LEU:HB3	2.46	0.45
1:A:62:HIS:O	1:A:64:LEU:HG	2.17	0.45
1:B:1:MET:HB3	1:B:3:PHE:CE2	2.51	0.45
1:A:55:PHE:O	1:A:57:ASN:N	2.49	0.45
1:B:116:VAL:HG12	1:B:450:GLY:H	1.81	0.45
1:B:456:ALA:O	1:B:460:LEU:HG	2.16	0.45
1:B:61:LYS:O	1:B:64:LEU:HD21	2.16	0.45
1:A:243:VAL:HG23	1:A:315:VAL:HG11	1.98	0.45
1:A:338:LEU:HA	1:B:415:LEU:HD21	1.98	0.45
1:A:61:LYS:O	1:A:62:HIS:O	2.34	0.45
1:B:6:ILE:HG23	1:B:72:ILE:HD11	1.97	0.45
1:A:33:ASP:HB3	1:A:34:GLY:H	1.49	0.45
1:B:326:THR:HG22	1:B:328:PHE:H	1.81	0.45
1:A:3:PHE:O	1:A:6:ILE:HB	2.16	0.45
1:B:193:THR:HG22	1:B:218:ILE:HG13	1.97	0.45
1:B:360:ARG:HH11	1:B:360:ARG:HG3	1.81	0.45
1:A:341:PHE:CE1	1:B:411:VAL:HG22	2.52	0.45
1:B:436:ASN:ND2	1:B:436:ASN:N	2.65	0.45
1:B:2:GLN:HE22	1:B:61:LYS:CE	2.28	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:189:TYR:O	1:A:193:THR:HG23	2.17	0.45
1:A:364:LEU:HD11	1:A:403:PHE:HB2	1.99	0.45
1:A:116:VAL:HG12	1:A:450:GLY:H	1.81	0.45
1:A:120:LEU:H	1:A:120:LEU:HD23	1.81	0.45
1:A:206:THR:HG23	1:A:209:ASP:CB	2.33	0.45
1:A:453:ASN:O	1:A:456:ALA:HB3	2.17	0.45
1:B:6:ILE:HD13	1:B:71:LEU:HD22	1.99	0.45
1:A:17:PHE:O	1:A:20:THR:HG23	2.16	0.45
1:B:115:THR:CG2	1:B:117:ILE:O	2.65	0.45
1:B:200:PHE:O	1:B:203:ALA:HB3	2.17	0.45
1:B:252:ASN:ND2	1:B:252:ASN:C	2.66	0.45
1:B:357:LYS:N	1:B:357:LYS:HD2	2.28	0.45
1:B:420:THR:CG2	1:B:453:ASN:HD22	2.22	0.45
1:B:63:GLU:O	1:B:64:LEU:CB	2.65	0.45
1:B:70:PHE:CE2	1:B:152:VAL:HB	2.49	0.45
1:A:224:SER:CB	1:A:229:SER:HA	2.47	0.45
1:A:273:ASP:HA	1:A:274:PRO:HD3	1.79	0.45
1:A:31:TYR:O	1:A:32:ARG:C	2.55	0.45
1:A:376:VAL:CG2	1:B:476:ILE:HD11	2.47	0.45
1:B:259:ALA:HB1	1:B:266:HIS:HB3	1.98	0.45
1:B:337:VAL:O	1:B:341:PHE:HD2	1.98	0.45
1:B:356:MET:CB	1:B:402:PHE:HE2	2.30	0.45
1:B:367:GLN:OE1	1:B:396:VAL:HG23	2.16	0.45
1:B:425:LEU:O	1:B:428:PHE:HB3	2.17	0.45
1:A:219:ALA:O	1:A:220:ILE:C	2.55	0.45
1:B:153:LEU:HD12	1:B:153:LEU:O	2.17	0.45
1:B:233:PHE:C	1:B:235:SER:H	2.19	0.45
1:B:284:VAL:O	1:B:288:LEU:HD23	2.17	0.45
1:B:361:ILE:O	1:B:362:LEU:C	2.55	0.45
1:A:336:PRO:O	1:A:339:LEU:N	2.50	0.44
1:A:345:ILE:CG2	1:A:346:GLY:H	2.19	0.44
1:B:364:LEU:HD11	1:B:403:PHE:HB2	1.99	0.44
1:B:73:VAL:CG1	1:B:145:LEU:HD11	2.48	0.44
1:A:385:LYS:HB3	1:A:389:SER:H	1.82	0.44
1:A:474:LEU:C	1:A:474:LEU:HD23	2.36	0.44
1:B:6:ILE:HG23	1:B:72:ILE:HD13	1.99	0.44
1:B:38:PRO:CG	1:B:91:ALA:HB2	2.42	0.44
1:A:233:PHE:O	1:A:235:SER:N	2.48	0.44
1:A:287:PHE:CD2	1:A:287:PHE:C	2.91	0.44
1:A:6:ILE:HG23	1:A:72:ILE:HD11	1.99	0.44
1:B:468:ARG:HA	1:B:468:ARG:NE	2.33	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:252:ASN:HD22	1:A:253:PHE:N	2.15	0.44
1:A:360:ARG:HH11	1:A:360:ARG:CG	2.31	0.44
1:A:86:LEU:HD12	1:A:86:LEU:HA	1.52	0.44
1:B:120:LEU:HA	1:B:123:LEU:HG	1.99	0.44
1:B:220:ILE:HG23	1:B:321:ALA:HA	1.98	0.44
1:B:31:TYR:O	1:B:32:ARG:C	2.56	0.44
1:B:370:ARG:CZ	1:B:374:ARG:NH2	2.81	0.44
1:A:425:LEU:HD11	1:B:424:GLU:HB3	2.00	0.44
1:A:1:MET:HB3	1:A:3:PHE:CE2	2.53	0.44
1:A:445:VAL:HG13	1:A:447:LEU:HD21	1.98	0.44
1:B:17:PHE:O	1:B:20:THR:HG23	2.17	0.44
1:B:37:VAL:N	1:B:38:PRO:HD3	2.33	0.44
1:B:61:LYS:O	1:B:62:HIS:O	2.35	0.44
1:A:418:ILE:HD11	1:A:424:GLU:HG3	1.98	0.44
1:B:302:SER:C	1:B:304:TYR:H	2.21	0.44
1:A:62:HIS:ND1	1:A:175:THR:HG21	2.33	0.44
1:A:37:VAL:N	1:A:38:PRO:HD3	2.32	0.44
1:B:108:ALA:HB2	1:B:223:PHE:HE2	1.83	0.44
1:B:2:GLN:CG	1:B:64:LEU:HD22	2.46	0.44
1:B:363:LEU:CB	1:B:367:GLN:HE21	2.13	0.44
1:A:112:THR:OG1	1:A:437:ASN:ND2	2.43	0.44
1:A:334:PHE:HA	1:B:418:ILE:HG22	1.98	0.44
1:A:469:LEU:HB3	1:A:473:THR:OG1	2.17	0.44
1:B:110:THR:CG2	1:B:468:ARG:HD2	2.48	0.44
1:B:360:ARG:HH11	1:B:360:ARG:CG	2.31	0.44
1:A:276:PHE:C	1:A:276:PHE:CD2	2.92	0.44
1:A:468:ARG:HA	1:A:468:ARG:NE	2.32	0.44
1:B:233:PHE:O	1:B:235:SER:N	2.48	0.44
1:A:252:ASN:HA	1:A:350:GLY:O	2.18	0.43
1:A:367:GLN:OE1	1:A:396:VAL:HG23	2.17	0.43
1:A:377:HIS:HA	1:A:379:ARG:NH2	2.32	0.43
1:A:420:THR:CG2	1:A:453:ASN:HD22	2.20	0.43
1:A:4:ARG:CD	1:A:4:ARG:H	2.30	0.43
1:B:224:SER:CB	1:B:229:SER:HA	2.48	0.43
1:B:26:LEU:O	1:B:26:LEU:HD13	2.18	0.43
1:B:340:LEU:CD2	1:B:428:PHE:HE2	2.31	0.43
1:A:240:LEU:HD22	1:A:240:LEU:HA	1.79	0.43
1:A:317:ILE:HD13	1:A:339:LEU:HB3	2.00	0.43
1:A:333:LEU:HD13	1:B:418:ILE:HG23	2.00	0.43
1:A:33:ASP:HB2	1:A:125:LYS:HE2	2.00	0.43
1:A:396:VAL:CG1	1:A:397:ASP:N	2.81	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:403:PHE:CE2	1:B:403:PHE:HE2	2.34	0.43
1:A:413:CYS:HB3	1:A:431:VAL:CG1	2.48	0.43
1:A:415:LEU:HA	1:A:415:LEU:HD12	1.73	0.43
1:B:122:GLU:O	1:B:123:LEU:HD23	2.18	0.43
1:B:393:GLN:O	1:B:397:ASP:OD2	2.36	0.43
1:A:355:GLY:O	1:A:357:LYS:N	2.51	0.43
1:A:345:ILE:HG13	1:A:361:ILE:HG13	1.99	0.43
1:A:6:ILE:HD13	1:A:71:LEU:HD22	2.00	0.43
1:B:369:ALA:O	1:B:370:ARG:C	2.55	0.43
1:A:359:ILE:O	1:A:360:ARG:C	2.56	0.43
1:A:381:VAL:HG12	1:A:381:VAL:O	2.18	0.43
1:A:98:VAL:HG13	1:A:99:THR:H	1.81	0.43
1:B:186:TRP:HE1	1:B:190:LEU:CD2	2.28	0.43
1:B:219:ALA:O	1:B:220:ILE:C	2.57	0.43
1:B:257:PHE:CD1	1:B:261:ALA:HB2	2.53	0.43
1:A:120:LEU:O	1:A:128:LEU:HD21	2.17	0.43
1:A:364:LEU:CD2	1:A:400:TRP:HB3	2.45	0.43
1:A:418:ILE:HD11	1:A:424:GLU:HA	2.00	0.43
1:B:150:LEU:N	1:B:151:PRO:HD2	2.34	0.43
1:B:445:VAL:HG13	1:B:447:LEU:CD2	2.48	0.43
1:B:92:ASP:HA	1:B:95:ASN:HA	2.01	0.43
1:A:150:LEU:N	1:A:151:PRO:HD2	2.34	0.43
1:A:417:LEU:HD11	1:A:460:LEU:CD2	2.44	0.43
1:B:449:PHE:HA	1:B:452:VAL:CG1	2.49	0.43
1:A:436:ASN:N	1:A:436:ASN:ND2	2.64	0.43
1:B:111:THR:OG1	1:B:111:THR:O	2.36	0.43
1:B:143:ILE:HG12	1:B:143:ILE:H	1.62	0.43
1:B:64:LEU:O	1:B:65:LYS:HB2	2.19	0.43
1:A:201:TRP:HE3	1:A:202:LEU:HD12	1.84	0.43
1:A:420:THR:CG2	1:A:456:ALA:HB2	2.49	0.43
1:B:179:ALA:C	1:B:181:THR:H	2.22	0.43
1:B:333:LEU:O	1:B:336:PRO:HD2	2.19	0.43
1:B:273:ASP:HA	1:B:274:PRO:HD3	1.82	0.43
1:B:356:MET:HB3	1:B:402:PHE:HE2	1.83	0.43
1:B:413:CYS:HB3	1:B:431:VAL:CG1	2.49	0.43
1:A:257:PHE:CD1	1:A:261:ALA:HB2	2.54	0.43
1:A:406:TYR:CZ	1:A:435:LEU:HD22	2.54	0.43
1:B:137:PHE:O	1:B:140:MET:N	2.49	0.43
1:B:276:PHE:C	1:B:276:PHE:CD2	2.91	0.42
1:B:79:VAL:HG12	1:B:80:LEU:N	2.34	0.42
1:A:43:PHE:HD2	1:A:44:PHE:CD2	2.36	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:116:VAL:HB	1:A:450:GLY:HA2	2.01	0.42
1:B:150:LEU:C	1:B:152:VAL:H	2.22	0.42
1:B:201:TRP:HE3	1:B:202:LEU:HD12	1.84	0.42
1:B:440:PRO:HB2	1:B:442:LEU:HD23	1.99	0.42
1:B:461:ILE:HA	1:B:464:MET:CE	2.49	0.42
1:A:259:ALA:O	1:A:260:PHE:CD1	2.73	0.42
1:B:373:LYS:C	1:B:375:LEU:H	2.22	0.42
1:A:108:ALA:CB	1:A:223:PHE:HE2	2.32	0.42
1:A:275:GLU:CG	1:A:359:ILE:HG23	2.44	0.42
1:A:355:GLY:O	1:A:357:LYS:HD2	2.20	0.42
1:A:110:THR:CG2	1:A:468:ARG:HD2	2.48	0.42
1:B:94:PRO:HG3	1:B:124:PRO:HG2	2.02	0.42
1:B:47:LEU:O	1:B:47:LEU:HD13	2.20	0.42
1:A:442:LEU:HD13	1:A:442:LEU:HA	1.83	0.42
1:B:62:HIS:ND1	1:B:175:THR:HG21	2.34	0.42
1:A:425:LEU:HB2	1:B:425:LEU:HB2	2.01	0.42
1:B:55:PHE:O	1:B:57:ASN:N	2.52	0.42
1:A:205:MET:HE3	1:A:238:ILE:HD13	2.01	0.42
1:B:418:ILE:HD11	1:B:424:GLU:HA	2.01	0.42
1:A:6:ILE:HG23	1:A:72:ILE:HD13	2.02	0.42
1:B:116:VAL:HB	1:B:450:GLY:HA2	2.01	0.42
1:B:21:MET:C	1:B:24:PRO:HD2	2.39	0.42
1:B:252:ASN:HA	1:B:350:GLY:O	2.19	0.42
1:B:416:GLY:O	1:B:420:THR:HB	2.20	0.42
1:A:418:ILE:HG23	1:B:333:LEU:HD13	2.02	0.42
1:B:434:THR:HG22	1:B:464:MET:N	2.35	0.42
1:B:406:TYR:HA	1:B:471:ILE:CD1	2.49	0.42
1:A:302:SER:C	1:A:304:TYR:H	2.22	0.41
1:A:356:MET:CB	1:A:402:PHE:HE2	2.33	0.41
1:B:108:ALA:HA	1:B:223:PHE:HE2	1.82	0.41
1:A:179:ALA:C	1:A:181:THR:H	2.24	0.41
1:A:454:ASP:O	1:A:457:LYS:HB2	2.21	0.41
1:A:466:PHE:CE1	1:A:474:LEU:CD2	3.04	0.41
1:B:185:LEU:O	1:B:186:TRP:C	2.58	0.41
1:B:243:VAL:HG21	1:B:311:LEU:HD13	2.02	0.41
1:B:99:THR:HG22	1:B:458:TRP:NE1	2.36	0.41
1:B:49:CYS:O	1:B:52:MET:HB3	2.20	0.41
1:A:363:LEU:CB	1:A:367:GLN:HE21	2.15	0.41
1:A:384:ILE:HD11	1:A:396:VAL:HB	2.01	0.41
1:A:462:VAL:HA	1:A:465:LEU:HD12	2.02	0.41
1:A:64:LEU:O	1:A:65:LYS:HB2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:345:ILE:CG2	1:B:346:GLY:H	2.25	0.41
1:A:205:MET:HG2	1:A:232:TYR:CZ	2.56	0.41
1:A:416:GLY:O	1:A:420:THR:HB	2.20	0.41
1:A:340:LEU:HD23	1:A:428:PHE:HE2	1.85	0.41
1:B:345:ILE:HG13	1:B:361:ILE:HG13	2.01	0.41
1:A:73:VAL:CG1	1:A:145:LEU:HD11	2.50	0.41
1:B:290:CYS:SG	1:B:335:LEU:HD22	2.60	0.41
1:B:91:ALA:C	1:B:93:ASN:N	2.74	0.41
1:A:200:PHE:HD1	1:A:200:PHE:HA	1.75	0.41
1:A:26:LEU:HD22	1:A:26:LEU:HA	1.83	0.41
1:A:317:ILE:O	1:A:317:ILE:HG13	2.21	0.41
1:A:80:LEU:HD12	1:A:80:LEU:N	2.35	0.41
1:B:240:LEU:HD22	1:B:240:LEU:HA	1.83	0.41
1:B:349:ALA:HB2	1:B:359:ILE:HD11	2.03	0.41
1:A:302:SER:C	1:A:304:TYR:N	2.74	0.41
1:B:134:LEU:HD23	1:B:134:LEU:HA	1.84	0.41
1:B:22:LEU:HD11	1:B:43:PHE:CE1	2.56	0.41
1:B:454:ASP:O	1:B:457:LYS:HB2	2.21	0.41
1:A:284:VAL:O	1:A:288:LEU:HD23	2.21	0.41
1:B:86:LEU:HD12	1:B:86:LEU:HA	1.48	0.41
1:A:111:THR:O	1:A:111:THR:OG1	2.37	0.41
1:A:186:TRP:HE1	1:A:190:LEU:CD2	2.30	0.41
1:A:200:PHE:O	1:A:203:ALA:HB3	2.20	0.41
1:A:288:LEU:HD13	1:A:288:LEU:HA	1.93	0.41
1:A:357:LYS:CD	1:A:357:LYS:H	2.28	0.41
1:A:369:ALA:O	1:A:370:ARG:C	2.59	0.41
1:B:452:VAL:O	1:B:453:ASN:C	2.59	0.41
1:A:445:VAL:HG13	1:A:447:LEU:CD2	2.51	0.41
1:A:85:SER:O	1:A:89:LEU:HB2	2.20	0.41
1:A:89:LEU:HD21	1:A:98:VAL:HG23	2.03	0.41
1:A:54:TRP:O	1:A:54:TRP:CG	2.74	0.41
1:B:257:PHE:CE1	1:B:261:ALA:HB2	2.56	0.41
1:B:442:LEU:O	1:B:443:GLY:O	2.39	0.41
1:B:67:ARG:NH2	1:B:484:ARG:HG3	2.35	0.41
1:A:2:GLN:CG	1:A:64:LEU:HD22	2.51	0.40
1:B:6:ILE:CD1	1:B:71:LEU:HD22	2.50	0.40
1:A:359:ILE:O	1:A:362:LEU:N	2.54	0.40
1:A:360:ARG:O	1:A:364:LEU:HB2	2.21	0.40
1:A:79:VAL:HG12	1:A:80:LEU:N	2.35	0.40
1:A:92:ASP:HA	1:A:95:ASN:HA	2.02	0.40
1:B:399:VAL:O	1:B:402:PHE:HB3	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:115:THR:CG2	1:A:117:ILE:O	2.70	0.40
1:B:23:ALA:N	1:B:24:PRO:CD	2.85	0.40
1:B:67:ARG:HA	1:B:482:PHE:HE1	1.87	0.40
1:B:72:ILE:HD13	1:B:72:ILE:HA	1.88	0.40
1:A:24:PRO:HB2	1:A:39:PHE:CE1	2.56	0.40
1:A:257:PHE:CE1	1:A:261:ALA:HB2	2.56	0.40
1:A:406:TYR:CD2	1:A:471:ILE:HD11	2.56	0.40
1:B:316:SER:O	1:B:321:ALA:HB3	2.22	0.40
1:B:458:TRP:CE3	1:B:461:ILE:HD12	2.57	0.40
1:B:120:LEU:O	1:B:128:LEU:HD21	2.22	0.40
1:B:190:LEU:HD12	1:B:194:ILE:HD12	2.04	0.40
1:B:200:PHE:HD1	1:B:200:PHE:HA	1.76	0.40
1:B:43:PHE:HD2	1:B:44:PHE:CD2	2.40	0.40
1:B:450:GLY:O	1:B:457:LYS:HE2	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	464/494 (94%)	337 (73%)	93 (20%)	34 (7%)	1	11
1	B	464/494 (94%)	338 (73%)	94 (20%)	32 (7%)	1	12
All	All	928/988 (94%)	675 (73%)	187 (20%)	66 (7%)	1	12

All (66) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	62	HIS
1	A	91	ALA
1	A	175	THR
1	A	267	PRO

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Mol	Chain	Res	Type
1	A	329	ALA
1	A	346	GLY
1	A	392	PRO
1	A	445	VAL
1	A	449	PHE
1	A	451	ASP
1	B	62	HIS
1	B	91	ALA
1	B	175	THR
1	B	267	PRO
1	B	329	ALA
1	B	346	GLY
1	B	392	PRO
1	B	445	VAL
1	B	449	PHE
1	B	451	ASP
1	A	32	ARG
1	A	229	SER
1	A	234	ASP
1	A	314	THR
1	A	356	MET
1	A	357	LYS
1	A	399	VAL
1	A	422	MET
1	A	443	GLY
1	B	32	ARG
1	B	229	SER
1	B	234	ASP
1	B	314	THR
1	B	399	VAL
1	B	422	MET
1	B	443	GLY
1	A	63	GLU
1	A	252	ASN
1	B	63	GLU
1	B	252	ASN
1	B	356	MET
1	B	370	ARG
1	A	303	PRO
1	A	348	CYS
1	A	370	ARG
1	B	303	PRO

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Mol	Chain	Res	Type
1	B	328	PHE
1	B	357	LYS
1	A	328	PHE
1	A	345	ILE
1	A	353	GLY
1	B	345	ILE
1	B	348	CYS
1	A	64	LEU
1	A	152	VAL
1	B	64	LEU
1	B	152	VAL
1	B	353	GLY
1	A	56	PRO
1	A	471	ILE
1	B	471	ILE
1	A	358	VAL
1	B	56	PRO
1	B	147	VAL
1	A	93	ASN
1	A	147	VAL

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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	380/401 (95%)	318 (84%)	62 (16%)	2	13
1	B	380/401 (95%)	319 (84%)	61 (16%)	2	14
All	All	760/802 (95%)	637 (84%)	123 (16%)	2	14

All (123) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1	MET
1	A	2	GLN
1	A	4	ARG

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Mol	Chain	Res	Type
1	A	9	ILE
1	A	26	LEU
1	A	29	LEU
1	A	33	ASP
1	A	60	HIS
1	A	65	LYS
1	A	71	LEU
1	A	89	LEU
1	A	111	THR
1	A	117	ILE
1	A	120	LEU
1	A	125	LYS
1	A	128	LEU
1	A	143	ILE
1	A	145	LEU
1	A	175	THR
1	A	190	LEU
1	A	200	PHE
1	A	206	THR
1	A	209	ASP
1	A	233	PHE
1	A	234	ASP
1	A	240	LEU
1	A	242	THR
1	A	251	CYS
1	A	252	ASN
1	A	257	PHE
1	A	269	TYR
1	A	286	LEU
1	A	287	PHE
1	A	301	THR
1	A	305	ASP
1	A	317	ILE
1	A	318	SER
1	A	324	THR
1	A	326	THR
1	A	330	ASP
1	A	333	LEU
1	A	359	ILE
1	A	360	ARG
1	A	386	VAL
1	A	391	LEU

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Mol	Chain	Res	Type
1	A	394	ARG
1	A	395	VAL
1	A	400	TRP
1	A	404	SER
1	A	415	LEU
1	A	423	ASP
1	A	435	LEU
1	A	438	LEU
1	A	447	LEU
1	A	448	HIS
1	A	454	ASP
1	A	473	THR
1	A	474	LEU
1	A	475	LEU
1	A	479	THR
1	A	481	THR
1	A	484	ARG
1	B	1	MET
1	B	2	GLN
1	B	4	ARG
1	B	9	ILE
1	B	26	LEU
1	B	29	LEU
1	B	33	ASP
1	B	60	HIS
1	B	65	LYS
1	B	71	LEU
1	B	78	THR
1	B	89	LEU
1	B	111	THR
1	B	117	ILE
1	B	120	LEU
1	B	125	LYS
1	B	128	LEU
1	B	143	ILE
1	B	145	LEU
1	B	175	THR
1	B	190	LEU
1	B	200	PHE
1	B	206	THR
1	B	209	ASP
1	B	233	PHE

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Mol	Chain	Res	Type
1	B	234	ASP
1	B	240	LEU
1	B	242	THR
1	B	251	CYS
1	B	252	ASN
1	B	257	PHE
1	B	269	TYR
1	B	286	LEU
1	B	287	PHE
1	B	301	THR
1	B	305	ASP
1	B	317	ILE
1	B	324	THR
1	B	326	THR
1	B	330	ASP
1	B	333	LEU
1	B	359	ILE
1	B	360	ARG
1	B	386	VAL
1	B	391	LEU
1	B	394	ARG
1	B	395	VAL
1	B	400	TRP
1	B	404	SER
1	B	415	LEU
1	B	423	ASP
1	B	435	LEU
1	B	438	LEU
1	B	447	LEU
1	B	448	HIS
1	B	454	ASP
1	B	474	LEU
1	B	475	LEU
1	B	479	THR
1	B	481	THR
1	B	484	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (22) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	2	GLN
1	A	60	HIS

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Mol	Chain	Res	Type
1	A	95	ASN
1	A	132	GLN
1	A	226	HIS
1	A	252	ASN
1	A	256	HIS
1	A	367	GLN
1	A	436	ASN
1	A	437	ASN
1	A	453	ASN
1	B	2	GLN
1	B	60	HIS
1	B	95	ASN
1	B	132	GLN
1	B	226	HIS
1	B	252	ASN
1	B	256	HIS
1	B	367	GLN
1	B	436	ASN
1	B	437	ASN
1	B	453	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)

Of 2 ligands modelled in this entry, 2 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (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	468/494 (94%)	-0.59	1 (0%)	95	93	17, 53, 112, 179	0
1	B	468/494 (94%)	-0.53	1 (0%)	95	93	18, 53, 115, 178	0
All	All	936/988 (94%)	-0.56	2 (0%)	95	93	17, 53, 113, 179	0

All (2) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	174	MET	4.2
1	B	484	ARG	2.3

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)

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(Å^2)	Q<0.9
2	K	A	501	1/1	0.97	0.09	41,41,41,41	0
2	K	B	501	1/1	0.97	0.04	49,49,49,49	0

6.5 Other polymers (i)

There are no such residues in this entry.