Full wwPDB X-ray Structure Validation Report ⓘ

Feb 4, 2024 – 04:33 AM EST

PDB ID	:	1P7B
Title	:	Crystal structure of an inward rectifier potassium channel
Authors	:	Kuo, A.; Gulbis, J.M.; Antcliff, J.F.; Rahman, T.; Lowe, E.D.; Zimmer, J.; Cuthbertson, J.; Ashcroft, F.M.; Ezaki, T.; Doyle, D.A.
Deposited on	:	2003-05-01
Resolution	:	3.65 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:

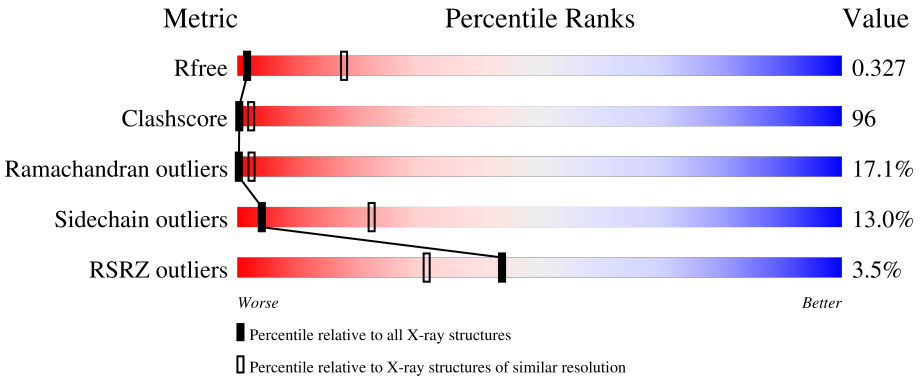
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

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 3.65 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	1557 (3.82-3.50)
Clashscore	141614	1037 (3.80-3.52)
Ramachandran outliers	138981	1004 (3.80-3.52)
Sidechain outliers	138945	1002 (3.80-3.52)
RSRZ outliers	127900	1441 (3.82-3.50)

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 <=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	333	3% 12% 46% 18% · 23%
1	B	333	3% 11% 47% 18% · 23%

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
2	K	A	402	-	-	-	X
2	K	A	404	-	-	-	X

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 4059 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 integral membrane channel and cytosolic domains.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	258	Total	C	N	O	S	0	0	0
			2024	1313	349	348	14			
1	B	258	Total	C	N	O	S	0	0	0
			2024	1313	349	348	14			

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

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	3	Total	K	0	0
			3	3		
2	B	1	Total	K	0	0
			1	1		

- Molecule 3 is water.

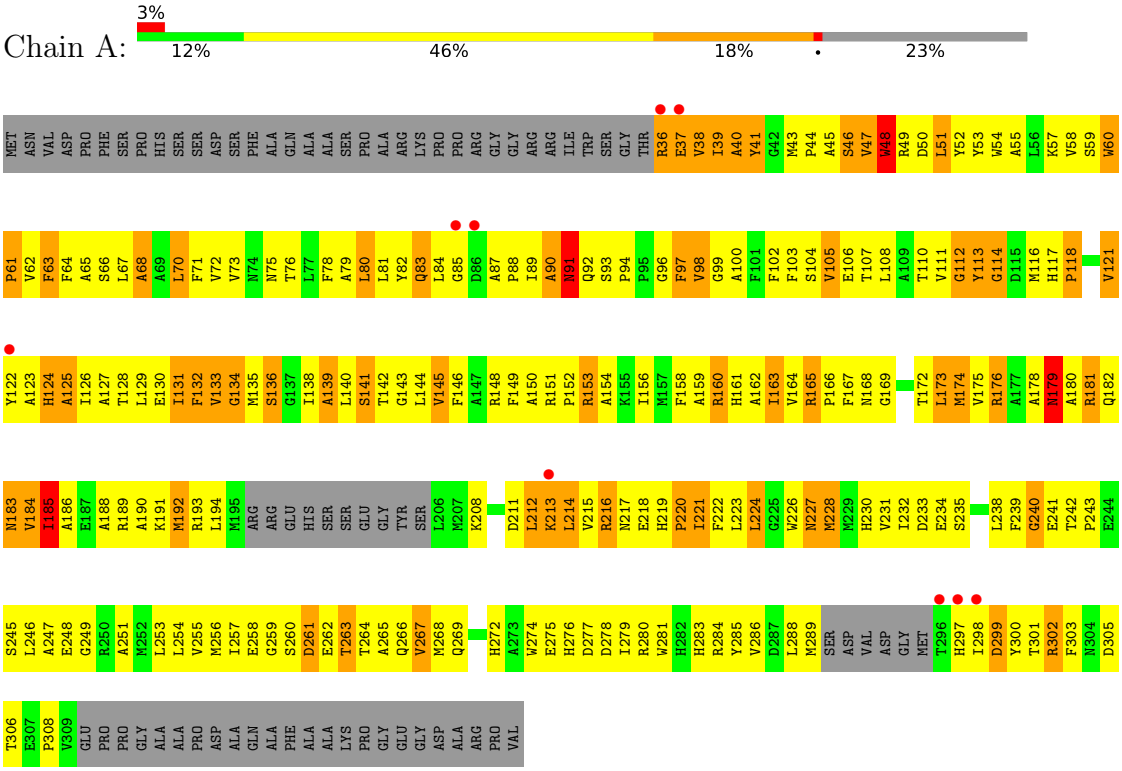
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	4	Total	O	0	0
			4	4		
3	B	3	Total	O	0	0
			3	3		

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.

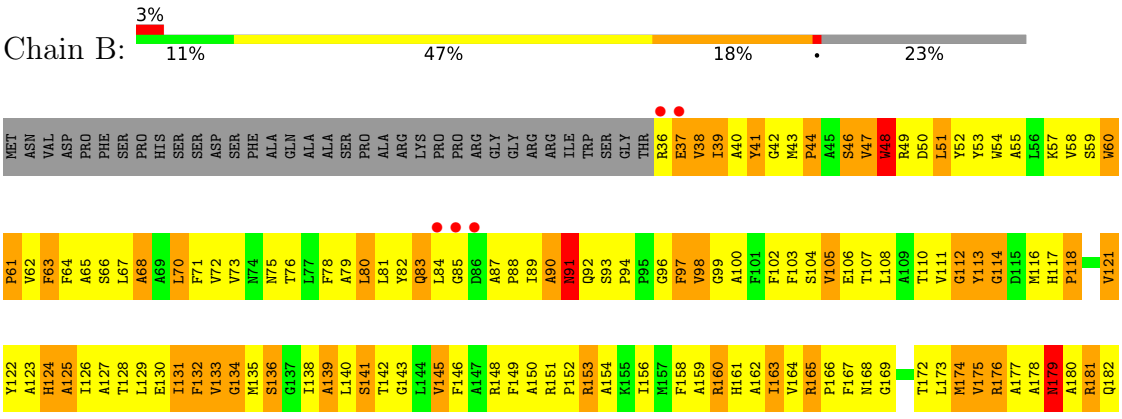
• Molecule 1: integral membrane channel and cytosolic domains

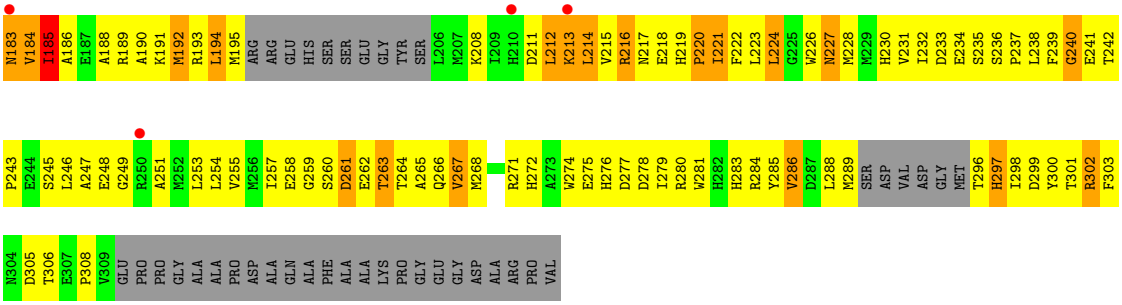
Chain A:



• Molecule 1: integral membrane channel and cytosolic domains

Chain B:




N183 V184 I185 A186 E187 A188 R189 A190 K191 M192 R193 L194 M195 ARG ARG GLU HIS SER SER GLU GLY TYR SER L206 M207 K208 I209 H210 D211 L212 K213 L214 V215 R216 N217 E218 H219 P220 I221 F222 L223 L224 G225 W226 N227 M228 M229 H230 V231 I232 D233 E234 S235 S236 P237 L238 F239 G240 E241 T242
P243 E244 S245 L246 A247 E248 G249 R250 A251 M252 L253 L254 V255 M256 I257 E258 G259 S260 D261 E262 T263 T264 A265 Q266 V267 M268 R271 H272 A273 W274 E275 H276 D277 D278 I279 R280 W281 H282 H283 R284 Y285 V286 D287 L288 M289 SER ASP VAL ASP GLY MET T296 H297 I298 D299 Y300 T301 R302 F303
N304 D305 T306 E307 P308 V309 GLU PRO PRO GLY ALA ALA PRO ASP ALA GLN ALA PHE ALA ALA LYS PRO GLY GLU GLY ASP ALA ARG PRO VAL

4 Data and refinement statistics (i)

Property	Value	Source
Space group	I 2 2 2	Depositor
Cell constants a, b, c, α, β, γ	92.84Å 105.62Å 258.63Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	7.50 – 3.65 19.95 – 3.65	Depositor EDS
% Data completeness (in resolution range)	100.0 (7.50-3.65) 100.0 (19.95-3.65)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	3.02 (at 3.62Å)	Xtriage
Refinement program	CNS	Depositor
R, R_{free}	0.295 , 0.329 0.295 , 0.327	Depositor DCC
R_{free} test set	725 reflections (5.02%)	wwPDB-VP
Wilson B-factor (Å^2)	127.3	Xtriage
Anisotropy	0.507	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.23 , 73.5	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.84	EDS
Total number of atoms	4059	wwPDB-VP
Average B, all atoms (Å^2)	89.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.45% of the height of the origin peak. No significant pseudotranslation is detected.*

[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

5.1 Standard geometry

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	0.98	4/2079 (0.2%)	1.19	12/2827 (0.4%)
1	B	1.02	5/2079 (0.2%)	1.17	10/2827 (0.4%)
All	All	1.00	9/4158 (0.2%)	1.18	22/5654 (0.4%)

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

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

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	42	GLY	C-N	11.42	1.60	1.34
1	B	41	TYR	C-N	-10.42	1.14	1.33
1	B	38	VAL	C-N	-9.58	1.12	1.34
1	A	38	VAL	C-N	-9.55	1.12	1.34
1	A	300	TYR	CB-CG	7.58	1.63	1.51
1	A	228	MET	CG-SD	-5.63	1.66	1.81
1	A	174	MET	CG-SD	5.33	1.95	1.81
1	B	44	PRO	N-CD	5.33	1.55	1.47
1	B	174	MET	CG-SD	5.14	1.94	1.81

All (22) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	38	VAL	CA-C-N	15.87	152.11	117.20
1	A	38	VAL	CA-C-N	15.85	152.08	117.20
1	B	38	VAL	C-N-CA	13.30	154.95	121.70
1	A	38	VAL	C-N-CA	13.29	154.93	121.70
1	B	38	VAL	O-C-N	-11.61	104.13	122.70
1	A	38	VAL	O-C-N	-11.60	104.13	122.70
1	B	38	VAL	CA-C-O	-10.49	98.07	120.10
1	A	38	VAL	CA-C-O	-10.48	98.09	120.10
1	B	297	HIS	O-C-N	8.17	135.77	122.70
1	A	297	HIS	O-C-N	8.14	135.72	122.70
1	B	41	TYR	CB-CG-CD2	-7.26	116.64	121.00
1	A	41	TYR	CB-CG-CD2	-7.22	116.67	121.00
1	B	41	TYR	CB-CG-CD1	6.87	125.12	121.00
1	A	41	TYR	CB-CG-CD1	6.84	125.11	121.00
1	A	37	GLU	C-N-CA	6.40	137.69	121.70
1	B	37	GLU	C-N-CA	6.39	137.69	121.70
1	B	41	TYR	CB-CA-C	-6.22	97.96	110.40
1	A	41	TYR	CB-CA-C	-6.21	97.99	110.40
1	A	299	ASP	O-C-N	-6.02	113.07	122.70
1	B	194	LEU	CA-CB-CG	5.86	128.78	115.30
1	A	194	LEU	CA-CB-CG	5.84	128.73	115.30
1	A	173	LEU	CA-CB-CG	5.01	126.83	115.30

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	38	VAL	Mainchain
1	B	38	VAL	Mainchain

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	2024	0	1973	409	2
1	B	2024	0	1973	407	2
2	A	3	0	0	0	0
2	B	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	A	4	0	0	0	0
3	B	3	0	0	2	0
All	All	4059	0	3946	766	2

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 96.

All (766) 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:190:ALA:CB	1:A:214:LEU:H	1.60	1.15
1:A:190:ALA:HB3	1:A:214:LEU:H	1.00	1.13
1:A:213:LYS:HB3	1:A:215:VAL:HG22	1.30	1.12
1:B:190:ALA:HB3	1:B:214:LEU:H	0.98	1.11
1:B:213:LYS:HB3	1:B:215:VAL:HG22	1.31	1.10
1:B:190:ALA:CB	1:B:214:LEU:H	1.64	1.08
1:A:190:ALA:HB1	1:A:214:LEU:HD13	1.36	1.08
1:B:213:LYS:O	1:B:216:ARG:N	1.88	1.05
1:B:190:ALA:HB1	1:B:214:LEU:HD13	1.34	1.05
1:A:214:LEU:O	1:A:228:MET:HB3	1.58	1.03
1:A:213:LYS:O	1:A:216:ARG:N	1.88	1.03
1:B:214:LEU:O	1:B:228:MET:HB3	1.58	1.01
1:B:165:ARG:CZ	1:B:284:ARG:HB2	1.89	1.01
1:B:179:ASN:ND2	1:B:183:ASN:HA	1.75	1.01
1:A:41:TYR:O	1:A:41:TYR:CD1	2.14	1.00
1:B:41:TYR:O	1:B:41:TYR:CD1	2.14	1.00
1:A:208:LYS:NZ	1:B:222:PHE:HB3	1.76	1.00
1:A:179:ASN:ND2	1:A:183:ASN:HA	1.77	0.99
1:A:185:ILE:HD13	1:A:185:ILE:O	1.63	0.99
1:A:190:ALA:HB3	1:A:214:LEU:N	1.79	0.98
1:A:189:ARG:HA	1:A:213:LYS:HG2	1.40	0.98
1:A:43:MET:HB2	1:A:44:PRO:HD2	1.46	0.98
1:B:213:LYS:O	1:B:215:VAL:N	1.97	0.97
1:A:128:THR:HG23	1:B:105:VAL:HG11	1.44	0.97
1:A:154:ALA:HB3	1:A:268:MET:SD	2.04	0.97
1:A:213:LYS:O	1:A:215:VAL:N	1.97	0.97
1:B:106:GLU:CD	1:B:113:TYR:HB2	1.85	0.97
1:B:185:ILE:HD13	1:B:185:ILE:O	1.63	0.96
1:B:213:LYS:C	1:B:215:VAL:H	1.69	0.96
1:B:190:ALA:HB3	1:B:214:LEU:N	1.80	0.96
1:A:106:GLU:CD	1:A:113:TYR:HB2	1.85	0.96

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:148:ARG:O	1:B:151:ARG:HG3	1.66	0.95
1:A:41:TYR:O	1:A:41:TYR:HD1	1.49	0.95
1:A:148:ARG:O	1:A:151:ARG:HG3	1.67	0.95
1:B:189:ARG:HA	1:B:213:LYS:HG2	1.48	0.94
1:B:213:LYS:CB	1:B:215:VAL:HG22	1.98	0.93
1:A:213:LYS:CB	1:A:215:VAL:HG22	1.98	0.93
1:B:215:VAL:CG2	1:B:219:HIS:HA	1.99	0.93
1:A:215:VAL:CG2	1:A:219:HIS:HA	2.00	0.92
1:B:41:TYR:O	1:B:41:TYR:HD1	1.49	0.91
1:A:173:LEU:HD12	1:A:174:MET:H	1.33	0.91
1:B:89:ILE:HG23	1:B:117:HIS:CD2	2.06	0.91
1:A:165:ARG:CZ	1:A:284:ARG:HB2	2.02	0.90
1:B:173:LEU:HD12	1:B:174:MET:H	1.33	0.90
1:A:89:ILE:HG23	1:A:117:HIS:CD2	2.07	0.90
1:B:289:MET:HG2	1:B:298:ILE:HG12	1.54	0.89
1:A:126:ILE:HG23	1:A:127:ALA:N	1.88	0.89
1:A:223:LEU:O	1:A:224:LEU:HG	1.73	0.89
1:A:213:LYS:C	1:A:215:VAL:H	1.68	0.88
1:B:223:LEU:O	1:B:224:LEU:HG	1.74	0.88
1:A:213:LYS:HB3	1:A:215:VAL:CG2	2.03	0.87
1:B:126:ILE:HG23	1:B:127:ALA:N	1.88	0.87
1:B:93:SER:OG	1:B:94:PRO:HD3	1.75	0.87
1:A:93:SER:OG	1:A:94:PRO:HD3	1.75	0.86
1:B:213:LYS:HB3	1:B:215:VAL:CG2	2.04	0.86
1:B:299:ASP:OD1	1:B:301:THR:HG23	1.74	0.86
1:B:92:GLN:HG2	1:B:93:SER:N	1.91	0.86
1:A:211:ASP:O	1:A:213:LYS:N	2.09	0.86
1:A:92:GLN:HG2	1:A:93:SER:H	1.41	0.85
1:A:92:GLN:HG2	1:A:93:SER:N	1.90	0.85
1:B:180:ALA:O	1:B:181:ARG:CG	2.24	0.85
1:A:208:LYS:HZ1	1:B:222:PHE:HB3	1.42	0.85
1:B:106:GLU:OE1	1:B:113:TYR:HB2	1.76	0.85
1:B:211:ASP:O	1:B:213:LYS:N	2.09	0.85
1:A:269:GLN:HE22	1:B:185:ILE:HG21	1.42	0.84
1:B:91:ASN:OD1	1:B:91:ASN:O	1.96	0.84
1:A:39:ILE:HD12	1:B:296:THR:N	1.93	0.84
1:A:180:ALA:O	1:A:181:ARG:CG	2.26	0.84
1:B:92:GLN:HG2	1:B:93:SER:H	1.41	0.83
1:B:188:ALA:O	1:B:215:VAL:HG11	1.79	0.83
1:A:91:ASN:OD1	1:A:91:ASN:O	1.96	0.83
1:A:106:GLU:OE1	1:A:113:TYR:HB2	1.76	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:215:VAL:O	1:B:218:GLU:N	2.12	0.83
1:A:215:VAL:O	1:A:218:GLU:N	2.12	0.82
1:A:188:ALA:O	1:A:215:VAL:HG11	1.78	0.82
1:A:215:VAL:O	1:A:217:ASN:N	2.13	0.82
1:A:134:GLY:O	1:A:138:ILE:HG13	1.79	0.82
1:B:154:ALA:HB3	1:B:268:MET:SD	2.20	0.81
1:A:153:ARG:HG2	1:A:153:ARG:HH11	1.45	0.81
1:A:89:ILE:HA	1:A:117:HIS:NE2	1.95	0.81
1:A:299:ASP:OD1	1:A:299:ASP:O	1.98	0.81
1:A:39:ILE:CD1	1:B:296:THR:O	2.29	0.81
1:B:153:ARG:HH11	1:B:153:ARG:HG2	1.45	0.81
1:B:215:VAL:O	1:B:217:ASN:N	2.13	0.81
1:B:134:GLY:O	1:B:138:ILE:HG13	1.80	0.80
1:A:124:HIS:HB3	1:B:102:PHE:CE2	2.17	0.80
1:A:49:ARG:NE	1:B:181:ARG:HH21	1.78	0.80
1:B:89:ILE:HA	1:B:117:HIS:NE2	1.96	0.80
1:B:193:ARG:O	1:B:251:ALA:HA	1.82	0.80
1:A:153:ARG:HG2	1:A:153:ARG:NH1	1.98	0.79
1:B:58:VAL:HG12	1:B:59:SER:N	1.98	0.79
1:B:186:ALA:HB1	1:B:258:GLU:O	1.83	0.78
1:A:37:GLU:OE2	1:B:224:LEU:CD2	2.31	0.78
1:A:156:ILE:HG21	1:A:257:ILE:HD12	1.66	0.78
1:A:58:VAL:HG12	1:A:59:SER:N	1.98	0.78
1:A:186:ALA:HB1	1:A:258:GLU:O	1.84	0.78
1:B:153:ARG:HG2	1:B:153:ARG:NH1	1.98	0.77
1:B:243:PRO:HG3	1:B:281:TRP:NE1	2.00	0.76
1:A:180:ALA:O	1:A:181:ARG:HG2	1.84	0.75
1:A:243:PRO:HG3	1:A:281:TRP:NE1	2.01	0.75
1:B:43:MET:HB2	1:B:44:PRO:CD	2.16	0.75
1:B:165:ARG:NH2	1:B:284:ARG:HB2	2.01	0.75
1:A:231:VAL:HG12	1:A:233:ASP:H	1.52	0.75
1:B:89:ILE:HD13	1:B:117:HIS:NE2	2.02	0.75
1:B:215:VAL:HG21	1:B:219:HIS:HA	1.69	0.75
1:B:180:ALA:O	1:B:181:ARG:HG2	1.83	0.74
1:B:159:ALA:O	1:B:161:HIS:N	2.20	0.74
1:B:231:VAL:HG12	1:B:233:ASP:H	1.52	0.74
1:A:193:ARG:HG3	1:A:208:LYS:HG2	1.70	0.74
1:A:54:TRP:O	1:A:58:VAL:HG23	1.87	0.74
1:B:116:MET:C	1:B:118:PRO:HD3	2.08	0.73
1:A:89:ILE:HD13	1:A:117:HIS:NE2	2.02	0.73
1:A:144:LEU:HD23	1:B:149:PHE:HE2	1.52	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:190:ALA:CB	1:B:214:LEU:HD13	2.16	0.73
1:A:215:VAL:HG21	1:A:219:HIS:HA	1.70	0.73
1:A:289:MET:HG2	1:A:298:ILE:HG12	1.69	0.73
1:A:116:MET:C	1:A:118:PRO:HD3	2.08	0.73
1:A:39:ILE:HD12	1:B:296:THR:O	1.87	0.72
1:A:159:ALA:O	1:A:161:HIS:N	2.21	0.72
1:B:84:LEU:HG	1:B:85:GLY:H	1.54	0.72
1:A:49:ARG:NE	1:B:181:ARG:NH2	2.36	0.72
1:A:84:LEU:HG	1:A:85:GLY:H	1.54	0.72
1:A:100:ALA:O	1:A:103:PHE:HB3	1.90	0.72
1:B:54:TRP:O	1:B:58:VAL:HG23	1.88	0.72
1:B:165:ARG:HG3	1:B:166:PRO:CD	2.20	0.72
1:A:43:MET:CB	1:A:44:PRO:HD2	2.18	0.72
1:B:286:VAL:HG11	1:B:305:ASP:HB2	1.70	0.71
1:A:189:ARG:HH12	1:B:220:PRO:CG	2.02	0.71
1:A:208:LYS:HZ1	1:B:222:PHE:CB	2.03	0.71
1:A:124:HIS:CE1	1:B:102:PHE:HB3	2.24	0.71
1:B:213:LYS:C	1:B:215:VAL:N	2.37	0.71
1:A:165:ARG:NH2	1:A:284:ARG:HB2	2.06	0.70
1:A:176:ARG:HD2	1:A:285:TYR:CD2	2.26	0.70
1:A:126:ILE:HG23	1:A:127:ALA:H	1.56	0.70
1:B:100:ALA:O	1:B:103:PHE:HB3	1.90	0.70
1:B:180:ALA:O	1:B:181:ARG:HG3	1.91	0.70
1:A:214:LEU:O	1:A:228:MET:CB	2.39	0.70
1:A:39:ILE:HG13	1:A:39:ILE:O	1.92	0.70
1:B:133:VAL:O	1:B:136:SER:N	2.24	0.70
1:A:40:ALA:HB3	1:B:297:HIS:CB	2.22	0.69
1:A:153:ARG:HH11	1:A:153:ARG:CG	2.05	0.69
1:A:165:ARG:HG3	1:A:166:PRO:CD	2.21	0.69
1:A:193:ARG:O	1:A:251:ALA:HA	1.92	0.69
1:B:176:ARG:HD2	1:B:285:TYR:CD2	2.26	0.69
1:B:126:ILE:HG23	1:B:127:ALA:H	1.57	0.69
1:A:173:LEU:HD21	1:A:253:LEU:CD1	2.22	0.69
1:B:173:LEU:HD12	1:B:174:MET:N	2.07	0.69
1:A:133:VAL:O	1:A:136:SER:N	2.26	0.69
1:A:104:SER:O	1:A:106:GLU:N	2.26	0.69
1:B:104:SER:O	1:B:106:GLU:N	2.26	0.69
1:B:175:VAL:HG11	1:B:274:TRP:CZ3	2.27	0.69
1:A:179:ASN:HD21	1:A:183:ASN:HA	1.56	0.68
1:B:153:ARG:HH11	1:B:153:ARG:CG	2.06	0.68
1:B:179:ASN:HD21	1:B:183:ASN:HA	1.54	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:104:SER:C	1:A:106:GLU:H	1.96	0.68
1:B:141:SER:O	1:B:145:VAL:HG23	1.93	0.68
1:B:104:SER:C	1:B:106:GLU:H	1.95	0.68
1:B:39:ILE:HG13	1:B:39:ILE:O	1.92	0.68
1:B:156:ILE:HG21	1:B:257:ILE:HD12	1.75	0.68
1:A:242:THR:H	1:A:245:SER:HB2	1.57	0.68
1:B:106:GLU:HA	1:B:111:VAL:HG12	1.76	0.68
1:B:118:PRO:HB2	1:B:124:HIS:NE2	2.08	0.68
1:B:126:ILE:CG2	1:B:127:ALA:N	2.56	0.68
1:A:173:LEU:HD12	1:A:174:MET:N	2.07	0.68
1:B:232:ILE:HG22	1:B:232:ILE:O	1.93	0.68
1:A:118:PRO:HB2	1:A:124:HIS:NE2	2.08	0.67
1:A:141:SER:O	1:A:145:VAL:HG23	1.93	0.67
1:A:180:ALA:O	1:A:181:ARG:HG3	1.93	0.67
1:A:103:PHE:O	1:A:106:GLU:HB3	1.94	0.67
1:A:106:GLU:HA	1:A:111:VAL:HG12	1.76	0.67
1:A:126:ILE:CG2	1:A:127:ALA:N	2.56	0.67
1:A:60:TRP:CD1	1:A:148:ARG:NH2	2.63	0.67
1:B:103:PHE:O	1:B:106:GLU:HB3	1.93	0.67
1:A:173:LEU:HD21	1:A:253:LEU:HD11	1.76	0.67
1:A:173:LEU:O	1:A:174:MET:HG2	1.95	0.67
1:B:242:THR:H	1:B:245:SER:HB2	1.57	0.67
1:A:58:VAL:CG1	1:A:62:VAL:HB	2.25	0.67
1:A:175:VAL:HG11	1:A:274:TRP:CZ3	2.30	0.67
1:A:208:LYS:HZ3	1:B:222:PHE:HB3	1.57	0.66
1:A:43:MET:HB2	1:A:44:PRO:CD	2.23	0.66
1:B:60:TRP:CD1	1:B:148:ARG:NH2	2.64	0.66
1:B:58:VAL:CG1	1:B:62:VAL:HB	2.26	0.66
1:A:232:ILE:O	1:A:232:ILE:HG22	1.94	0.66
1:A:59:SER:OG	1:A:62:VAL:HG23	1.96	0.66
1:B:193:ARG:HG3	1:B:208:LYS:HG2	1.77	0.66
1:A:213:LYS:C	1:A:215:VAL:N	2.37	0.66
1:A:242:THR:H	1:A:245:SER:CB	2.09	0.66
1:B:176:ARG:HD2	1:B:285:TYR:CE2	2.31	0.66
1:A:162:ALA:HB3	1:A:279:ILE:HA	1.78	0.66
1:B:162:ALA:HB3	1:B:279:ILE:HA	1.75	0.66
1:B:214:LEU:O	1:B:228:MET:CB	2.38	0.66
1:A:226:TRP:HD1	1:A:227:ASN:H	1.44	0.65
1:B:82:TYR:CE2	1:B:126:ILE:HG21	2.31	0.65
1:B:165:ARG:HG3	1:B:166:PRO:HD2	1.78	0.65
1:B:253:LEU:HD23	1:B:274:TRP:CE3	2.31	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:176:ARG:HD2	1:A:285:TYR:CE2	2.32	0.65
1:A:190:ALA:CB	1:A:214:LEU:HD13	2.20	0.65
1:B:261:ASP:OD2	1:B:264:THR:HB	1.96	0.65
1:A:75:ASN:ND2	1:A:105:VAL:HG22	2.11	0.65
1:A:253:LEU:HD23	1:A:274:TRP:CE3	2.32	0.65
1:B:173:LEU:O	1:B:174:MET:HG2	1.96	0.65
1:B:284:ARG:O	1:B:306:THR:HB	1.96	0.65
1:A:190:ALA:CB	1:A:214:LEU:N	2.46	0.65
1:A:60:TRP:HE1	1:A:148:ARG:HE	1.44	0.65
1:A:261:ASP:OD2	1:A:264:THR:HB	1.96	0.65
1:B:173:LEU:HD21	1:B:253:LEU:CD1	2.25	0.65
1:A:37:GLU:OE2	1:B:224:LEU:HD21	1.97	0.65
1:B:59:SER:OG	1:B:62:VAL:HG23	1.97	0.65
1:B:192:MET:HE1	1:B:238:LEU:HD21	1.77	0.65
1:B:75:ASN:ND2	1:B:105:VAL:HG22	2.11	0.64
1:B:253:LEU:HB3	1:B:274:TRP:HB2	1.78	0.64
1:A:253:LEU:HB3	1:A:274:TRP:HB2	1.78	0.64
1:B:226:TRP:HD1	1:B:227:ASN:H	1.45	0.64
1:B:242:THR:H	1:B:245:SER:CB	2.10	0.64
1:A:82:TYR:CE2	1:A:126:ILE:HG21	2.31	0.64
1:B:84:LEU:CG	1:B:85:GLY:H	2.11	0.64
1:B:299:ASP:OD1	1:B:301:THR:CG2	2.44	0.64
1:A:106:GLU:HG3	1:A:111:VAL:HG13	1.80	0.64
1:B:185:ILE:O	1:B:185:ILE:CD1	2.43	0.64
1:A:212:LEU:O	1:A:216:ARG:CB	2.46	0.64
1:B:212:LEU:O	1:B:216:ARG:CB	2.46	0.63
1:A:84:LEU:CG	1:A:85:GLY:H	2.11	0.63
1:A:185:ILE:O	1:A:185:ILE:CD1	2.43	0.63
1:A:269:GLN:HE22	1:B:185:ILE:CG2	2.11	0.63
1:A:94:PRO:HB2	1:A:99:GLY:CA	2.29	0.63
1:B:94:PRO:HB2	1:B:99:GLY:CA	2.29	0.63
1:B:226:TRP:HD1	1:B:227:ASN:N	1.97	0.63
1:A:89:ILE:HA	1:A:117:HIS:CE1	2.33	0.63
1:A:165:ARG:HG3	1:A:166:PRO:HD2	1.79	0.63
1:A:140:LEU:HD23	1:A:140:LEU:N	2.13	0.63
1:B:106:GLU:HG3	1:B:111:VAL:HG13	1.80	0.63
1:B:173:LEU:HD21	1:B:253:LEU:HD11	1.80	0.63
1:A:226:TRP:HD1	1:A:227:ASN:N	1.96	0.62
1:A:239:PHE:O	1:A:240:GLY:C	2.38	0.62
1:A:58:VAL:HG12	1:A:62:VAL:HB	1.81	0.62
1:B:89:ILE:HA	1:B:117:HIS:CE1	2.34	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:140:LEU:N	1:B:140:LEU:HD23	2.12	0.62
1:B:190:ALA:HB2	1:B:214:LEU:HB2	1.82	0.62
1:B:226:TRP:CD1	1:B:227:ASN:N	2.68	0.62
1:A:179:ASN:CG	1:A:183:ASN:HA	2.20	0.62
1:A:280:ARG:NH2	1:A:306:THR:OG1	2.33	0.62
1:B:180:ALA:C	1:B:181:ARG:HG3	2.20	0.62
1:A:123:ALA:O	1:A:126:ILE:HG22	2.00	0.62
1:B:60:TRP:HE1	1:B:148:ARG:HE	1.46	0.62
1:B:67:LEU:O	1:B:68:ALA:C	2.38	0.62
1:A:39:ILE:HG13	1:B:296:THR:O	2.00	0.62
1:B:179:ASN:CG	1:B:183:ASN:HA	2.20	0.62
1:B:215:VAL:HG23	1:B:219:HIS:HA	1.81	0.62
1:B:159:ALA:O	1:B:160:ARG:C	2.38	0.61
1:A:90:ALA:C	1:A:92:GLN:H	2.04	0.61
1:A:226:TRP:CD1	1:A:227:ASN:N	2.68	0.61
1:B:192:MET:CE	1:B:238:LEU:HD21	2.29	0.61
1:B:281:TRP:O	1:B:283:HIS:CD2	2.53	0.61
1:B:43:MET:HB2	1:B:44:PRO:HD2	1.81	0.61
1:B:90:ALA:C	1:B:92:GLN:H	2.04	0.61
1:B:133:VAL:HG12	1:B:134:GLY:N	2.15	0.61
1:B:246:LEU:O	1:B:249:GLY:N	2.29	0.61
1:B:302:ARG:HG3	1:B:305:ASP:OD2	2.00	0.61
1:B:81:LEU:HD23	1:B:126:ILE:CD1	2.31	0.61
1:A:165:ARG:HG3	1:A:166:PRO:N	2.15	0.61
1:A:281:TRP:O	1:A:283:HIS:CD2	2.53	0.61
1:B:123:ALA:O	1:B:126:ILE:HG22	2.00	0.61
1:B:165:ARG:HG3	1:B:166:PRO:N	2.14	0.61
1:A:192:MET:HE1	1:A:238:LEU:HD21	1.82	0.61
1:A:159:ALA:O	1:A:160:ARG:C	2.37	0.61
1:B:87:ALA:HB1	1:B:88:PRO:HD2	1.83	0.61
1:A:133:VAL:HG12	1:A:134:GLY:N	2.15	0.60
1:A:302:ARG:HG3	1:A:305:ASP:OD2	2.01	0.60
1:B:239:PHE:O	1:B:240:GLY:C	2.39	0.60
1:A:136:SER:HG	1:B:64:PHE:HE2	1.47	0.60
1:A:172:THR:HG22	1:A:231:VAL:HA	1.81	0.60
1:A:246:LEU:O	1:A:249:GLY:N	2.30	0.60
1:A:221:ILE:HG12	1:A:222:PHE:N	2.16	0.60
1:A:105:VAL:HG12	1:A:105:VAL:O	2.02	0.60
1:A:126:ILE:CG2	1:A:127:ALA:H	2.15	0.60
1:A:87:ALA:HB1	1:A:88:PRO:HD2	1.84	0.60
1:A:180:ALA:C	1:A:181:ARG:HG3	2.21	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:221:ILE:HG12	1:A:222:PHE:H	1.67	0.60
1:B:105:VAL:HG12	1:B:105:VAL:O	2.01	0.60
1:A:81:LEU:HD23	1:A:126:ILE:CD1	2.31	0.60
1:A:264:THR:HB	1:A:266:GLN:HG3	1.83	0.60
1:B:58:VAL:HG12	1:B:62:VAL:HB	1.82	0.60
1:B:221:ILE:HG12	1:B:222:PHE:N	2.17	0.60
1:A:67:LEU:O	1:A:68:ALA:C	2.38	0.60
1:A:184:VAL:CG2	1:A:223:LEU:HD22	2.32	0.60
1:B:83:GLN:NE2	1:B:97:PHE:N	2.50	0.60
1:B:126:ILE:CG2	1:B:127:ALA:H	2.15	0.60
1:A:124:HIS:HB3	1:B:102:PHE:CD2	2.37	0.59
1:A:219:HIS:N	1:A:220:PRO:HD3	2.16	0.59
1:B:58:VAL:CG1	1:B:59:SER:N	2.65	0.59
1:B:96:GLY:O	1:B:99:GLY:N	2.33	0.59
1:B:265:ALA:HA	3:B:404:HOH:O	2.01	0.59
1:A:193:ARG:HE	1:A:208:LYS:NZ	2.00	0.59
1:A:83:GLN:NE2	1:A:97:PHE:N	2.49	0.59
1:B:159:ALA:C	1:B:161:HIS:N	2.53	0.59
1:B:190:ALA:CB	1:B:214:LEU:N	2.50	0.59
1:B:212:LEU:O	1:B:216:ARG:CA	2.51	0.59
1:A:58:VAL:CG1	1:A:59:SER:N	2.65	0.59
1:A:215:VAL:HG23	1:A:219:HIS:HA	1.81	0.59
1:A:39:ILE:CG1	1:B:296:THR:O	2.51	0.59
1:A:89:ILE:HG23	1:A:117:HIS:HD2	1.64	0.59
1:A:192:MET:SD	1:A:193:ARG:N	2.75	0.59
1:A:212:LEU:O	1:A:216:ARG:CA	2.51	0.58
1:A:261:ASP:O	1:A:265:ALA:N	2.36	0.58
1:B:63:PHE:O	1:B:66:SER:N	2.36	0.58
1:B:192:MET:SD	1:B:193:ARG:N	2.76	0.58
1:B:219:HIS:N	1:B:220:PRO:HD3	2.16	0.58
1:A:67:LEU:O	1:A:70:LEU:N	2.36	0.58
1:A:189:ARG:NH1	1:B:220:PRO:HG2	2.18	0.58
1:B:88:PRO:O	1:B:89:ILE:HD13	2.03	0.58
1:B:219:HIS:N	1:B:220:PRO:CD	2.66	0.58
1:A:88:PRO:O	1:A:89:ILE:HD13	2.03	0.58
1:B:91:ASN:O	1:B:91:ASN:CG	2.41	0.58
1:B:148:ARG:HB3	1:B:151:ARG:NH1	2.19	0.58
1:B:288:LEU:HD21	1:B:303:PHE:HA	1.84	0.58
1:A:151:ARG:O	1:A:152:PRO:C	2.41	0.58
1:B:67:LEU:O	1:B:70:LEU:N	2.37	0.58
1:A:43:MET:CB	1:A:44:PRO:CD	2.80	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:219:HIS:N	1:A:220:PRO:CD	2.66	0.58
1:A:275:GLU:O	1:A:278:ASP:N	2.32	0.57
1:A:299:ASP:O	1:A:299:ASP:CG	2.43	0.57
1:A:96:GLY:O	1:A:99:GLY:N	2.33	0.57
1:A:100:ALA:O	1:A:104:SER:N	2.26	0.57
1:A:139:ALA:O	1:A:143:GLY:N	2.30	0.57
1:B:221:ILE:HG12	1:B:222:PHE:H	1.68	0.57
1:A:91:ASN:O	1:A:91:ASN:CG	2.42	0.57
1:B:264:THR:HB	1:B:266:GLN:HG3	1.85	0.57
1:A:60:TRP:HE1	1:A:148:ARG:NE	2.02	0.57
1:A:63:PHE:O	1:A:66:SER:N	2.37	0.57
1:A:159:ALA:C	1:A:161:HIS:N	2.54	0.57
1:A:36:ARG:NH2	1:A:45:ALA:CB	2.67	0.57
1:A:215:VAL:HB	1:A:218:GLU:O	2.05	0.57
1:B:261:ASP:O	1:B:265:ALA:N	2.37	0.57
1:A:125:ALA:O	1:A:128:THR:N	2.37	0.56
1:A:302:ARG:CG	1:A:305:ASP:OD2	2.52	0.56
1:B:43:MET:CB	1:B:44:PRO:CD	2.78	0.56
1:B:302:ARG:CG	1:B:305:ASP:OD2	2.52	0.56
1:B:190:ALA:CB	1:B:214:LEU:HB2	2.35	0.56
1:B:215:VAL:HB	1:B:218:GLU:O	2.04	0.56
1:A:148:ARG:HB3	1:A:151:ARG:NH1	2.19	0.56
1:B:275:GLU:O	1:B:278:ASP:HB2	2.05	0.56
1:A:60:TRP:NE1	1:A:148:ARG:NE	2.54	0.56
1:B:151:ARG:O	1:B:152:PRO:C	2.41	0.56
1:A:190:ALA:HB2	1:A:214:LEU:HB2	1.87	0.56
1:B:60:TRP:HE1	1:B:148:ARG:NE	2.03	0.56
1:A:154:ALA:CB	1:A:268:MET:SD	2.86	0.56
1:A:184:VAL:HG22	1:A:223:LEU:HD22	1.87	0.56
1:A:275:GLU:O	1:A:278:ASP:HB2	2.06	0.56
1:A:118:PRO:HB2	1:A:124:HIS:HE2	1.68	0.56
1:B:182:GLN:O	1:B:183:ASN:O	2.24	0.56
1:A:192:MET:SD	1:A:192:MET:C	2.84	0.56
1:A:121:VAL:O	1:A:124:HIS:N	2.38	0.55
1:A:231:VAL:HG12	1:A:233:ASP:OD2	2.06	0.55
1:B:184:VAL:CG2	1:B:223:LEU:HD22	2.37	0.55
1:A:40:ALA:CB	1:B:297:HIS:CB	2.84	0.55
1:A:219:HIS:HB2	1:A:220:PRO:HD3	1.88	0.55
1:A:256:MET:CE	1:B:185:ILE:CD1	2.85	0.55
1:B:190:ALA:HB1	1:B:214:LEU:CD1	2.23	0.55
1:B:82:TYR:C	1:B:84:LEU:H	2.10	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:219:HIS:HB2	1:B:220:PRO:HD3	1.88	0.55
1:B:220:PRO:O	1:B:221:ILE:HB	2.07	0.55
1:A:82:TYR:CE2	1:A:126:ILE:CG2	2.90	0.55
1:A:182:GLN:O	1:A:183:ASN:O	2.24	0.55
1:B:59:SER:OG	1:B:61:PRO:HD2	2.07	0.55
1:B:82:TYR:CE2	1:B:126:ILE:CG2	2.90	0.55
1:B:172:THR:HG22	1:B:231:VAL:HA	1.87	0.55
1:A:82:TYR:C	1:A:84:LEU:H	2.10	0.55
1:A:211:ASP:C	1:A:211:ASP:OD1	2.44	0.55
1:B:60:TRP:NE1	1:B:148:ARG:NE	2.55	0.55
1:B:125:ALA:O	1:B:128:THR:N	2.38	0.55
1:A:36:ARG:CZ	1:A:45:ALA:CB	2.86	0.54
1:B:63:PHE:O	1:B:66:SER:HB3	2.07	0.54
1:B:121:VAL:O	1:B:124:HIS:N	2.38	0.54
1:B:163:ILE:HD12	1:B:164:VAL:N	2.23	0.54
1:A:189:ARG:NH1	1:B:220:PRO:CG	2.69	0.54
1:B:104:SER:C	1:B:106:GLU:N	2.61	0.54
1:B:180:ALA:C	1:B:181:ARG:CG	2.76	0.54
1:B:208:LYS:HZ2	1:B:254:LEU:CD1	2.20	0.54
1:B:241:GLU:HG3	1:B:245:SER:HB3	1.90	0.54
1:B:275:GLU:O	1:B:278:ASP:N	2.32	0.54
1:B:231:VAL:HG12	1:B:233:ASP:OD2	2.08	0.54
1:B:211:ASP:OD1	1:B:211:ASP:C	2.46	0.54
1:A:72:VAL:HG12	1:A:73:VAL:N	2.22	0.54
1:A:162:ALA:O	1:A:163:ILE:HG22	2.08	0.54
1:A:154:ALA:N	1:A:268:MET:SD	2.80	0.54
1:A:184:VAL:HG23	1:A:185:ILE:H	1.73	0.54
1:A:220:PRO:O	1:A:221:ILE:HB	2.08	0.54
1:B:72:VAL:HG12	1:B:73:VAL:N	2.22	0.54
1:A:52:TYR:O	1:A:53:TYR:C	2.47	0.53
1:B:149:PHE:O	1:B:151:ARG:N	2.40	0.53
1:A:163:ILE:HD12	1:A:164:VAL:N	2.24	0.53
1:A:116:MET:HB2	1:A:118:PRO:HD3	1.90	0.53
1:A:154:ALA:H	1:A:268:MET:CE	2.21	0.53
1:B:162:ALA:O	1:B:163:ILE:HG22	2.09	0.53
1:B:192:MET:SD	1:B:192:MET:C	2.86	0.53
1:A:63:PHE:O	1:A:66:SER:HB3	2.08	0.53
1:A:98:VAL:HG12	1:A:98:VAL:O	2.08	0.53
1:B:116:MET:HB2	1:B:118:PRO:HD3	1.89	0.53
1:B:121:VAL:O	1:B:122:TYR:C	2.46	0.53
1:A:106:GLU:HA	1:A:111:VAL:CG1	2.39	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:89:ILE:HG23	1:B:117:HIS:HD2	1.64	0.53
1:B:106:GLU:HA	1:B:111:VAL:CG1	2.39	0.53
1:B:139:ALA:O	1:B:143:GLY:N	2.31	0.53
1:A:283:HIS:CD2	1:A:308:PRO:HA	2.44	0.53
1:B:167:PHE:O	1:B:169:GLY:N	2.41	0.53
1:A:59:SER:OG	1:A:61:PRO:HD2	2.09	0.53
1:A:190:ALA:HB1	1:A:214:LEU:CD1	2.24	0.53
1:B:89:ILE:CD1	1:B:117:HIS:NE2	2.71	0.53
1:B:98:VAL:O	1:B:98:VAL:HG12	2.07	0.53
1:B:58:VAL:HG12	1:B:59:SER:H	1.72	0.53
1:B:100:ALA:O	1:B:104:SER:N	2.27	0.53
1:B:215:VAL:HG23	1:B:219:HIS:ND1	2.24	0.53
1:A:269:GLN:HE21	1:B:262:GLU:HG2	1.74	0.53
1:B:92:GLN:HG2	1:B:93:SER:OG	2.09	0.53
1:A:49:ARG:HE	1:B:181:ARG:HH21	1.57	0.52
1:A:215:VAL:HG23	1:A:219:HIS:ND1	2.24	0.52
1:B:193:ARG:HE	1:B:208:LYS:NZ	2.07	0.52
1:A:68:ALA:O	1:A:71:PHE:N	2.43	0.52
1:B:107:THR:O	1:B:110:THR:N	2.42	0.52
1:B:175:VAL:HG11	1:B:274:TRP:CH2	2.44	0.52
1:A:61:PRO:O	1:A:62:VAL:C	2.46	0.52
1:A:89:ILE:CD1	1:A:117:HIS:NE2	2.71	0.52
1:A:48:TRP:HA	1:A:48:TRP:CE3	2.44	0.52
1:A:167:PHE:O	1:A:169:GLY:N	2.42	0.52
1:B:61:PRO:O	1:B:62:VAL:C	2.46	0.52
1:B:186:ALA:HB2	1:B:259:GLY:HA3	1.92	0.52
1:A:241:GLU:HG3	1:A:245:SER:HB3	1.91	0.52
1:B:52:TYR:O	1:B:53:TYR:C	2.47	0.52
1:B:61:PRO:C	1:B:63:PHE:N	2.62	0.52
1:B:68:ALA:O	1:B:71:PHE:N	2.42	0.52
1:A:79:ALA:C	1:A:81:LEU:H	2.13	0.52
1:A:52:TYR:O	1:A:55:ALA:HB3	2.10	0.52
1:B:165:ARG:CG	1:B:166:PRO:N	2.72	0.52
1:A:84:LEU:HG	1:A:85:GLY:N	2.24	0.51
1:A:85:GLY:HA3	1:A:122:TYR:CE2	2.45	0.51
1:A:97:PHE:C	1:A:99:GLY:H	2.13	0.51
1:A:149:PHE:O	1:A:151:ARG:N	2.43	0.51
1:A:192:MET:CE	1:A:238:LEU:HD21	2.39	0.51
1:B:85:GLY:HA3	1:B:122:TYR:CE2	2.45	0.51
1:A:165:ARG:CG	1:A:166:PRO:N	2.73	0.51
1:B:48:TRP:HA	1:B:48:TRP:CE3	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:79:ALA:C	1:B:81:LEU:H	2.14	0.51
1:B:163:ILE:HD12	1:B:163:ILE:C	2.30	0.51
1:B:48:TRP:HA	1:B:48:TRP:HE3	1.75	0.51
1:B:189:ARG:HH11	1:B:191:LYS:HZ1	1.58	0.51
1:B:221:ILE:CG1	1:B:222:PHE:H	2.24	0.51
1:B:52:TYR:O	1:B:55:ALA:HB3	2.10	0.51
1:B:176:ARG:HG2	1:B:303:PHE:CE1	2.45	0.51
1:A:58:VAL:HG12	1:A:59:SER:H	1.72	0.51
1:A:110:THR:O	1:A:110:THR:OG1	2.28	0.51
1:A:221:ILE:CG1	1:A:222:PHE:H	2.23	0.51
1:A:193:ARG:HE	1:A:208:LYS:HZ2	1.57	0.51
1:A:92:GLN:HG2	1:A:93:SER:OG	2.10	0.51
1:A:107:THR:O	1:A:110:THR:N	2.43	0.51
1:A:256:MET:CE	1:B:185:ILE:HD11	2.41	0.51
1:B:97:PHE:C	1:B:99:GLY:H	2.13	0.51
1:B:241:GLU:HG3	1:B:245:SER:CB	2.41	0.51
1:B:242:THR:O	1:B:245:SER:N	2.44	0.51
1:A:212:LEU:O	1:A:213:LYS:O	2.29	0.51
1:B:212:LEU:O	1:B:213:LYS:O	2.29	0.51
1:B:289:MET:HA	1:B:297:HIS:O	2.09	0.51
1:A:58:VAL:HG11	1:A:62:VAL:CG1	2.41	0.50
1:A:124:HIS:NE2	1:B:92:GLN:OE1	2.30	0.50
1:B:233:ASP:OD2	1:B:233:ASP:N	2.44	0.50
1:A:121:VAL:O	1:A:122:TYR:C	2.46	0.50
1:A:163:ILE:HD12	1:A:163:ILE:C	2.31	0.50
1:B:208:LYS:NZ	1:B:254:LEU:HD13	2.27	0.50
1:B:263:THR:O	1:B:263:THR:CG2	2.59	0.50
1:B:265:ALA:CA	3:B:404:HOH:O	2.59	0.50
1:A:176:ARG:CZ	1:A:285:TYR:HB3	2.42	0.50
1:A:189:ARG:HH12	1:B:220:PRO:HG3	1.76	0.50
1:A:239:PHE:O	1:A:241:GLU:N	2.44	0.50
1:B:51:LEU:O	1:B:52:TYR:C	2.49	0.50
1:A:144:LEU:CD2	1:B:149:PHE:HE2	2.23	0.50
1:A:124:HIS:CG	1:B:102:PHE:CD2	3.00	0.50
1:A:189:ARG:HH11	1:A:191:LYS:HZ1	1.59	0.50
1:A:241:GLU:HG3	1:A:245:SER:CB	2.41	0.50
1:B:212:LEU:O	1:B:216:ARG:HA	2.11	0.50
1:B:239:PHE:O	1:B:241:GLU:N	2.44	0.50
1:A:212:LEU:O	1:A:216:ARG:HA	2.12	0.50
1:A:288:LEU:O	1:A:299:ASP:OD1	2.30	0.50
1:B:165:ARG:HB2	1:B:283:HIS:O	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:48:TRP:HA	1:A:48:TRP:HE3	1.75	0.49
1:A:107:THR:CG2	1:A:131:ILE:HG13	2.42	0.49
1:B:58:VAL:HG11	1:B:62:VAL:CG1	2.42	0.49
1:B:84:LEU:HG	1:B:85:GLY:N	2.24	0.49
1:A:108:LEU:HD12	1:A:134:GLY:CA	2.42	0.49
1:A:242:THR:O	1:A:245:SER:N	2.45	0.49
1:A:190:ALA:CB	1:A:214:LEU:HB2	2.42	0.49
1:A:272:HIS:HD2	1:A:274:TRP:CZ2	2.31	0.49
1:B:108:LEU:HD12	1:B:134:GLY:CA	2.42	0.49
1:B:47:VAL:O	1:B:50:ASP:HB2	2.12	0.49
1:B:107:THR:CG2	1:B:131:ILE:HG13	2.43	0.49
1:B:133:VAL:O	1:B:134:GLY:C	2.51	0.49
1:B:184:VAL:HG23	1:B:185:ILE:H	1.77	0.49
1:A:65:ALA:O	1:A:66:SER:C	2.51	0.49
1:A:208:LYS:HZ1	1:A:254:LEU:HD13	1.78	0.49
1:A:173:LEU:HD21	1:A:253:LEU:HD13	1.92	0.49
1:B:261:ASP:OD2	1:B:264:THR:CB	2.61	0.49
1:A:208:LYS:NZ	1:A:254:LEU:HD13	2.28	0.48
1:B:107:THR:O	1:B:108:LEU:C	2.51	0.48
1:A:51:LEU:O	1:A:52:TYR:C	2.50	0.48
1:A:184:VAL:HG23	1:A:185:ILE:N	2.29	0.48
1:B:215:VAL:CG2	1:B:219:HIS:ND1	2.76	0.48
1:A:261:ASP:OD2	1:A:264:THR:CB	2.61	0.48
1:A:263:THR:CG2	1:A:263:THR:O	2.58	0.48
1:B:83:GLN:NE2	1:B:97:PHE:H	2.12	0.48
1:A:83:GLN:NE2	1:A:97:PHE:H	2.11	0.48
1:A:175:VAL:CG2	1:A:214:LEU:HD23	2.43	0.48
1:B:75:ASN:CG	1:B:105:VAL:HG22	2.33	0.48
1:B:110:THR:O	1:B:110:THR:OG1	2.30	0.48
1:A:215:VAL:CG2	1:A:219:HIS:ND1	2.76	0.48
1:A:233:ASP:OD2	1:A:233:ASP:N	2.44	0.48
1:A:256:MET:CE	1:B:185:ILE:HD12	2.43	0.48
1:A:163:ILE:HG13	1:A:174:MET:HB2	1.95	0.48
1:A:302:ARG:NH1	1:A:302:ARG:HB2	2.28	0.48
1:B:215:VAL:C	1:B:217:ASN:N	2.64	0.48
1:A:175:VAL:HG23	1:A:228:MET:HB2	1.95	0.48
1:B:97:PHE:C	1:B:99:GLY:N	2.67	0.48
1:B:272:HIS:HD2	1:B:274:TRP:CZ2	2.31	0.48
1:B:302:ARG:HB2	1:B:302:ARG:NH1	2.28	0.48
1:A:75:ASN:CG	1:A:105:VAL:HG22	2.33	0.48
1:A:246:LEU:O	1:A:248:GLU:N	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:246:LEU:HB3	1:A:251:ALA:HB3	1.94	0.48
1:A:301:THR:HG23	1:A:302:ARG:N	2.29	0.48
1:B:276:HIS:CG	1:B:277:ASP:N	2.82	0.48
1:A:83:GLN:HE22	1:A:97:PHE:N	2.11	0.48
1:A:133:VAL:O	1:A:134:GLY:C	2.53	0.48
1:A:190:ALA:HB2	1:A:214:LEU:H	1.66	0.48
1:A:215:VAL:C	1:A:217:ASN:N	2.64	0.48
1:A:221:ILE:CG1	1:A:222:PHE:N	2.77	0.48
1:B:65:ALA:O	1:B:66:SER:C	2.52	0.48
1:A:186:ALA:CB	1:A:258:GLU:O	2.60	0.47
1:B:83:GLN:HE22	1:B:97:PHE:N	2.11	0.47
1:A:264:THR:HG22	1:A:264:THR:O	2.14	0.47
1:B:84:LEU:CG	1:B:85:GLY:N	2.78	0.47
1:B:106:GLU:CA	1:B:111:VAL:HG12	2.44	0.47
1:B:130:GLU:O	1:B:131:ILE:C	2.53	0.47
1:A:60:TRP:CD1	1:A:148:ARG:CZ	2.97	0.47
1:A:76:THR:O	1:A:79:ALA:N	2.47	0.47
1:A:97:PHE:C	1:A:99:GLY:N	2.67	0.47
1:B:123:ALA:O	1:B:126:ILE:CG2	2.62	0.47
1:B:163:ILE:HG13	1:B:174:MET:HB2	1.95	0.47
1:B:246:LEU:HB3	1:B:251:ALA:HB3	1.95	0.47
1:A:256:MET:HE2	1:B:185:ILE:HD12	1.95	0.47
1:A:84:LEU:CG	1:A:85:GLY:N	2.77	0.47
1:A:94:PRO:HB2	1:A:99:GLY:HA2	1.97	0.47
1:A:123:ALA:O	1:A:126:ILE:CG2	2.62	0.47
1:A:180:ALA:C	1:A:181:ARG:CG	2.77	0.47
1:B:116:MET:C	1:B:118:PRO:CD	2.80	0.47
1:A:106:GLU:CA	1:A:111:VAL:HG12	2.45	0.47
1:B:107:THR:C	1:B:110:THR:H	2.18	0.47
1:B:141:SER:O	1:B:142:THR:C	2.52	0.47
1:B:159:ALA:C	1:B:161:HIS:H	2.18	0.47
1:B:208:LYS:NZ	1:B:254:LEU:CD1	2.78	0.47
1:A:98:VAL:O	1:A:102:PHE:HD1	1.98	0.47
1:A:175:VAL:HG11	1:A:274:TRP:CH2	2.49	0.47
1:A:184:VAL:C	1:A:185:ILE:HG22	2.35	0.47
1:A:208:LYS:HZ2	1:A:254:LEU:CD1	2.28	0.47
1:A:241:GLU:HG3	1:A:245:SER:OG	2.14	0.47
1:B:186:ALA:CB	1:B:258:GLU:O	2.58	0.47
1:B:246:LEU:O	1:B:248:GLU:N	2.48	0.47
1:B:50:ASP:O	1:B:53:TYR:HB3	2.15	0.47
1:A:112:GLY:HA3	1:B:111:VAL:O	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:186:ALA:HB2	1:A:259:GLY:HA3	1.97	0.47
1:A:276:HIS:CG	1:A:277:ASP:N	2.82	0.47
1:B:179:ASN:OD1	1:B:184:VAL:HG22	2.15	0.47
1:A:163:ILE:HG13	1:A:163:ILE:O	2.15	0.47
1:B:98:VAL:O	1:B:98:VAL:CG1	2.63	0.47
1:B:117:HIS:N	1:B:118:PRO:HD3	2.29	0.47
1:B:176:ARG:NH2	1:B:288:LEU:HD11	2.29	0.47
1:B:261:ASP:O	1:B:261:ASP:CG	2.53	0.47
1:A:50:ASP:O	1:A:53:TYR:HB3	2.15	0.46
1:B:59:SER:HG	1:B:62:VAL:HG23	1.80	0.46
1:B:221:ILE:CG1	1:B:222:PHE:N	2.77	0.46
1:A:116:MET:C	1:A:118:PRO:CD	2.81	0.46
1:A:151:ARG:O	1:A:152:PRO:O	2.33	0.46
1:A:107:THR:C	1:A:110:THR:H	2.18	0.46
1:A:256:MET:HE2	1:B:185:ILE:CD1	2.45	0.46
1:B:65:ALA:O	1:B:68:ALA:HB3	2.15	0.46
1:B:76:THR:O	1:B:79:ALA:N	2.48	0.46
1:B:158:PHE:CD1	1:B:158:PHE:N	2.83	0.46
1:B:173:LEU:HD21	1:B:253:LEU:HD13	1.95	0.46
1:A:103:PHE:O	1:A:106:GLU:N	2.48	0.46
1:A:124:HIS:O	1:A:125:ALA:C	2.53	0.46
1:B:243:PRO:HG3	1:B:281:TRP:CD1	2.51	0.46
1:B:81:LEU:HD23	1:B:126:ILE:HD12	1.98	0.46
1:B:98:VAL:O	1:B:102:PHE:HD1	1.99	0.46
1:B:184:VAL:C	1:B:185:ILE:HG22	2.35	0.46
1:B:241:GLU:HG3	1:B:245:SER:OG	2.15	0.46
1:A:46:SER:O	1:A:47:VAL:C	2.54	0.46
1:A:141:SER:O	1:A:142:THR:C	2.52	0.46
1:A:90:ALA:O	1:A:92:GLN:N	2.49	0.46
1:A:141:SER:C	1:A:143:GLY:N	2.68	0.46
1:A:158:PHE:N	1:A:158:PHE:CD1	2.83	0.46
1:B:60:TRP:CD1	1:B:148:ARG:CZ	2.98	0.46
1:B:167:PHE:C	1:B:169:GLY:N	2.69	0.46
1:A:98:VAL:O	1:A:98:VAL:CG1	2.63	0.46
1:A:107:THR:O	1:A:108:LEU:C	2.51	0.46
1:A:176:ARG:NH1	1:A:285:TYR:HB3	2.30	0.46
1:A:176:ARG:HG2	1:A:303:PHE:CE1	2.51	0.46
1:B:264:THR:O	1:B:264:THR:HG22	2.16	0.46
1:A:132:PHE:O	1:A:133:VAL:C	2.55	0.46
1:A:215:VAL:C	1:A:217:ASN:H	2.19	0.46
1:B:124:HIS:O	1:B:125:ALA:C	2.54	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:269:GLN:HE21	1:B:262:GLU:CG	2.29	0.45
1:B:141:SER:C	1:B:143:GLY:N	2.68	0.45
1:B:151:ARG:O	1:B:152:PRO:O	2.34	0.45
1:B:215:VAL:C	1:B:217:ASN:H	2.19	0.45
1:A:117:HIS:N	1:A:118:PRO:HD3	2.30	0.45
1:A:167:PHE:C	1:A:169:GLY:N	2.70	0.45
1:A:61:PRO:C	1:A:63:PHE:N	2.62	0.45
1:B:97:PHE:O	1:B:99:GLY:N	2.49	0.45
1:B:176:ARG:NH1	1:B:285:TYR:HB3	2.31	0.45
1:A:97:PHE:O	1:A:99:GLY:N	2.49	0.45
1:A:130:GLU:O	1:A:131:ILE:C	2.53	0.45
1:A:146:PHE:CD2	1:B:146:PHE:CZ	3.05	0.45
1:A:176:ARG:NH1	1:A:285:TYR:CB	2.80	0.45
1:A:144:LEU:HD23	1:B:149:PHE:CE2	2.43	0.45
1:A:178:ALA:O	1:A:179:ASN:O	2.34	0.45
1:A:193:ARG:CG	1:A:208:LYS:HG2	2.45	0.45
1:B:94:PRO:HB2	1:B:99:GLY:HA2	1.97	0.45
1:B:300:TYR:O	1:B:301:THR:C	2.53	0.45
1:A:96:GLY:O	1:A:97:PHE:C	2.55	0.45
1:A:261:ASP:O	1:A:261:ASP:CG	2.55	0.45
1:B:90:ALA:O	1:B:92:GLN:N	2.49	0.45
1:B:220:PRO:O	1:B:221:ILE:CB	2.65	0.45
1:B:261:ASP:OD1	1:B:263:THR:HB	2.17	0.45
1:B:57:LYS:HA	1:B:57:LYS:HD3	1.81	0.45
1:B:103:PHE:O	1:B:106:GLU:N	2.49	0.45
1:B:132:PHE:O	1:B:133:VAL:C	2.54	0.45
1:B:178:ALA:O	1:B:179:ASN:O	2.34	0.45
1:B:184:VAL:HG23	1:B:185:ILE:N	2.31	0.45
1:A:118:PRO:HB2	1:B:92:GLN:OE1	2.17	0.45
1:B:108:LEU:HD12	1:B:134:GLY:HA3	1.97	0.45
1:A:243:PRO:HG3	1:A:281:TRP:CD1	2.51	0.45
1:A:261:ASP:OD1	1:A:263:THR:HB	2.17	0.45
1:A:108:LEU:HD12	1:A:134:GLY:HA3	1.98	0.45
1:B:81:LEU:HB3	1:B:126:ILE:HD11	1.99	0.45
1:B:194:LEU:O	1:B:195:MET:CB	2.63	0.45
1:A:208:LYS:NZ	1:A:254:LEU:CD1	2.80	0.44
1:A:128:THR:HG23	1:B:105:VAL:CG1	2.32	0.44
1:B:96:GLY:O	1:B:97:PHE:C	2.56	0.44
1:B:80:LEU:CD2	1:B:97:PHE:CE1	3.00	0.44
1:B:184:VAL:HG22	1:B:223:LEU:HD22	1.98	0.44
1:A:36:ARG:CZ	1:A:45:ALA:HB2	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:80:LEU:CD2	1:A:97:PHE:CE1	3.00	0.44
1:A:220:PRO:O	1:A:221:ILE:CB	2.65	0.44
1:B:163:ILE:HG13	1:B:163:ILE:O	2.16	0.44
1:A:58:VAL:CG1	1:A:59:SER:H	2.29	0.44
1:A:103:PHE:O	1:A:106:GLU:CB	2.65	0.44
1:A:159:ALA:C	1:A:161:HIS:H	2.20	0.44
1:B:236:SER:HA	1:B:237:PRO:HD3	1.71	0.44
1:A:49:ARG:HD3	1:B:181:ARG:HE	1.82	0.44
1:A:151:ARG:C	1:A:152:PRO:O	2.56	0.44
1:B:78:PHE:CZ	1:B:130:GLU:HA	2.53	0.44
1:B:94:PRO:HB2	1:B:99:GLY:N	2.33	0.44
1:A:94:PRO:HB2	1:A:99:GLY:N	2.33	0.44
1:B:125:ALA:O	1:B:126:ILE:C	2.56	0.44
1:B:208:LYS:HZ1	1:B:254:LEU:HD13	1.82	0.44
1:A:61:PRO:O	1:A:63:PHE:N	2.51	0.43
1:B:58:VAL:CG1	1:B:59:SER:H	2.29	0.43
1:B:90:ALA:C	1:B:92:GLN:N	2.71	0.43
1:B:175:VAL:HG23	1:B:228:MET:HB2	1.99	0.43
1:B:46:SER:O	1:B:47:VAL:C	2.55	0.43
1:B:249:GLY:C	1:B:251:ALA:N	2.71	0.43
1:A:243:PRO:HG3	1:A:281:TRP:CE2	2.54	0.43
1:A:249:GLY:C	1:A:251:ALA:N	2.72	0.43
1:B:47:VAL:HB	1:B:48:TRP:H	1.63	0.43
1:B:163:ILE:HA	1:B:280:ARG:O	2.18	0.43
1:A:41:TYR:CD1	1:A:41:TYR:C	2.89	0.43
1:A:288:LEU:HD21	1:A:303:PHE:HA	2.00	0.43
1:B:234:GLU:O	1:B:235:SER:C	2.57	0.43
1:A:81:LEU:HB3	1:A:126:ILE:HD11	1.99	0.43
1:A:65:ALA:O	1:A:68:ALA:HB3	2.17	0.43
1:A:81:LEU:HD23	1:A:126:ILE:HD12	1.98	0.43
1:A:82:TYR:HB3	1:A:89:ILE:HG13	2.01	0.43
1:A:234:GLU:O	1:A:235:SER:C	2.56	0.43
1:A:132:PHE:HA	1:A:135:MET:HE3	2.00	0.43
1:B:48:TRP:O	1:B:51:LEU:N	2.49	0.43
1:B:112:GLY:O	1:B:114:GLY:N	2.52	0.43
1:B:238:LEU:HD23	1:B:238:LEU:HA	1.74	0.43
1:B:61:PRO:O	1:B:63:PHE:N	2.51	0.43
1:B:176:ARG:HG2	1:B:303:PHE:HE1	1.83	0.43
1:A:47:VAL:O	1:A:48:TRP:C	2.57	0.43
1:A:59:SER:HG	1:A:62:VAL:HG23	1.83	0.43
1:A:104:SER:C	1:A:106:GLU:N	2.61	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:54:TRP:O	1:A:55:ALA:C	2.57	0.42
1:A:212:LEU:HD23	1:A:216:ARG:CB	2.49	0.42
1:A:175:VAL:HG21	1:A:214:LEU:HD23	2.01	0.42
1:B:41:TYR:O	1:B:41:TYR:CG	2.65	0.42
1:B:118:PRO:CB	1:B:124:HIS:NE2	2.81	0.42
1:B:277:ASP:C	1:B:277:ASP:OD2	2.57	0.42
1:A:176:ARG:CD	1:A:285:TYR:CD2	2.98	0.42
1:A:277:ASP:OD2	1:A:277:ASP:C	2.58	0.42
1:B:103:PHE:O	1:B:106:GLU:CB	2.64	0.42
1:B:132:PHE:HA	1:B:135:MET:HE3	2.00	0.42
1:B:283:HIS:HA	1:B:308:PRO:HA	2.00	0.42
1:A:112:GLY:O	1:A:114:GLY:N	2.52	0.42
1:A:78:PHE:CZ	1:A:130:GLU:HA	2.53	0.42
1:A:90:ALA:C	1:A:92:GLN:N	2.71	0.42
1:A:176:ARG:HG2	1:A:303:PHE:HE1	1.84	0.42
1:A:213:LYS:HB2	1:A:215:VAL:HG22	1.96	0.42
1:B:54:TRP:O	1:B:55:ALA:C	2.57	0.42
1:B:92:GLN:O	1:B:93:SER:C	2.58	0.42
1:A:179:ASN:OD1	1:A:184:VAL:HG22	2.19	0.42
1:B:78:PHE:CD2	1:B:130:GLU:OE1	2.73	0.42
1:B:133:VAL:O	1:B:135:MET:N	2.53	0.42
1:B:175:VAL:CG2	1:B:214:LEU:HD23	2.50	0.42
1:A:57:LYS:HA	1:A:57:LYS:HD3	1.82	0.42
1:A:162:ALA:C	1:A:163:ILE:CG2	2.88	0.42
1:B:47:VAL:O	1:B:48:TRP:C	2.58	0.42
1:B:267:VAL:O	1:B:267:VAL:HG13	2.19	0.42
1:A:79:ALA:C	1:A:81:LEU:N	2.73	0.42
1:B:82:TYR:HB3	1:B:89:ILE:HG13	2.01	0.42
1:B:152:PRO:HA	1:B:266:GLN:OE1	2.19	0.42
1:B:213:LYS:HB2	1:B:215:VAL:HG22	1.96	0.42
1:A:118:PRO:CB	1:A:124:HIS:NE2	2.81	0.42
1:A:190:ALA:HB3	1:A:213:LYS:HA	2.00	0.42
1:B:112:GLY:O	1:B:113:TYR:C	2.58	0.42
1:B:212:LEU:HD23	1:B:216:ARG:CB	2.49	0.42
1:B:192:MET:CE	1:B:238:LEU:CD2	2.97	0.42
1:B:162:ALA:C	1:B:163:ILE:CG2	2.88	0.41
1:B:177:ALA:HA	1:B:303:PHE:HZ	1.84	0.41
1:A:92:GLN:O	1:A:93:SER:C	2.58	0.41
1:A:132:PHE:CE1	1:B:68:ALA:HA	2.54	0.41
1:B:79:ALA:C	1:B:81:LEU:N	2.73	0.41
1:B:94:PRO:HB3	1:B:98:VAL:HG12	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:243:PRO:HG3	1:B:281:TRP:CE2	2.55	0.41
1:A:125:ALA:O	1:A:126:ILE:C	2.56	0.41
1:A:219:HIS:CB	1:A:220:PRO:HD3	2.47	0.41
1:B:128:THR:O	1:B:129:LEU:C	2.58	0.41
1:B:176:ARG:CZ	1:B:285:TYR:HB3	2.51	0.41
1:B:193:ARG:HE	1:B:208:LYS:HZ2	1.68	0.41
1:A:163:ILE:HA	1:A:280:ARG:O	2.21	0.41
1:A:267:VAL:O	1:A:267:VAL:HG13	2.21	0.41
1:A:302:ARG:HG2	1:A:305:ASP:OD2	2.20	0.41
1:B:192:MET:O	1:B:192:MET:HG3	2.20	0.41
1:A:78:PHE:CD2	1:A:130:GLU:OE1	2.74	0.41
1:A:238:LEU:HD23	1:A:238:LEU:HA	1.74	0.41
1:B:286:VAL:CG1	1:B:305:ASP:O	2.69	0.41
1:A:43:MET:HE3	1:B:300:TYR:CD1	2.56	0.41
1:A:49:ARG:CZ	1:B:181:ARG:CZ	2.99	0.41
1:A:63:PHE:O	1:A:64:PHE:C	2.59	0.41
1:A:112:GLY:O	1:A:113:TYR:C	2.59	0.41
1:A:133:VAL:O	1:A:135:MET:N	2.54	0.41
1:A:190:ALA:CB	1:A:214:LEU:CD1	2.94	0.41
1:A:224:LEU:HD23	1:A:224:LEU:HA	1.87	0.41
1:B:71:PHE:CE1	1:B:108:LEU:HD23	2.56	0.41
1:A:128:THR:O	1:A:129:LEU:C	2.59	0.41
1:B:268:MET:O	1:B:268:MET:HG3	2.21	0.41
1:A:94:PRO:HB3	1:A:98:VAL:HG12	2.02	0.40
1:B:63:PHE:O	1:B:64:PHE:C	2.59	0.40
1:B:176:ARG:CD	1:B:285:TYR:CD2	3.01	0.40
1:A:79:ALA:O	1:A:81:LEU:N	2.54	0.40
1:A:142:THR:O	1:A:145:VAL:HB	2.21	0.40
1:A:146:PHE:HD2	1:B:146:PHE:CZ	2.38	0.40
1:A:289:MET:CG	1:A:298:ILE:HG12	2.46	0.40
1:B:49:ARG:C	1:B:51:LEU:N	2.75	0.40
1:B:176:ARG:HH22	1:B:288:LEU:HG	1.87	0.40
1:A:136:SER:OG	1:B:64:PHE:HE2	2.04	0.40
1:A:80:LEU:HD23	1:A:97:PHE:CE1	2.57	0.40
1:A:208:LYS:O	1:B:218:GLU:OE1	2.39	0.40
1:A:283:HIS:CE1	1:A:308:PRO:HD3	2.56	0.40
1:B:79:ALA:O	1:B:81:LEU:N	2.54	0.40
1:B:176:ARG:NH2	1:B:288:LEU:HG	2.37	0.40

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

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:224:LEU:CD2	1:B:37:GLU:OE2[2_665]	1.99	0.21
1:A:262:GLU:OE2	1:B:271:ARG:NE[2_665]	2.10	0.10

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	252/333 (76%)	154 (61%)	55 (22%)	43 (17%)	0	2
1	B	252/333 (76%)	153 (61%)	56 (22%)	43 (17%)	0	2
All	All	504/666 (76%)	307 (61%)	111 (22%)	86 (17%)	0	2

All (86) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	40	ALA
1	A	47	VAL
1	A	90	ALA
1	A	97	PHE
1	A	105	VAL
1	A	113	TYR
1	A	133	VAL
1	A	179	ASN
1	A	183	ASN
1	A	185	ILE
1	A	212	LEU
1	A	213	LYS
1	A	214	LEU
1	A	216	ARG
1	A	220	PRO
1	A	221	ILE
1	A	240	GLY
1	A	247	ALA
1	B	40	ALA

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Mol	Chain	Res	Type
1	B	47	VAL
1	B	90	ALA
1	B	97	PHE
1	B	105	VAL
1	B	113	TYR
1	B	133	VAL
1	B	179	ASN
1	B	183	ASN
1	B	185	ILE
1	B	212	LEU
1	B	213	LYS
1	B	214	LEU
1	B	216	ARG
1	B	220	PRO
1	B	221	ILE
1	B	240	GLY
1	B	247	ALA
1	A	48	TRP
1	A	63	PHE
1	A	80	LEU
1	A	150	ALA
1	A	160	ARG
1	A	168	ASN
1	A	181	ARG
1	A	184	VAL
1	A	224	LEU
1	B	48	TRP
1	B	63	PHE
1	B	80	LEU
1	B	150	ALA
1	B	160	ARG
1	B	168	ASN
1	B	181	ARG
1	B	224	LEU
1	A	61	PRO
1	A	91	ASN
1	A	131	ILE
1	A	132	PHE
1	B	61	PRO
1	B	91	ASN
1	B	131	ILE
1	B	132	PHE

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Mol	Chain	Res	Type
1	B	184	VAL
1	A	83	GLN
1	A	98	VAL
1	B	83	GLN
1	B	98	VAL
1	A	68	ALA
1	A	112	GLY
1	A	134	GLY
1	A	139	ALA
1	B	68	ALA
1	B	134	GLY
1	A	114	GLY
1	A	125	ALA
1	B	112	GLY
1	B	114	GLY
1	B	125	ALA
1	B	139	ALA
1	A	39	ILE
1	A	121	VAL
1	B	39	ILE
1	B	121	VAL
1	A	118	PRO
1	B	118	PRO
1	A	145	VAL
1	B	145	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	204/269 (76%)	178 (87%)	26 (13%)	4 23
1	B	204/269 (76%)	177 (87%)	27 (13%)	4 21
All	All	408/538 (76%)	355 (87%)	53 (13%)	4 22

All (53) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	36	ARG
1	A	46	SER
1	A	48	TRP
1	A	51	LEU
1	A	60	TRP
1	A	70	LEU
1	A	91	ASN
1	A	124	HIS
1	A	136	SER
1	A	141	SER
1	A	153	ARG
1	A	163	ILE
1	A	165	ARG
1	A	176	ARG
1	A	179	ASN
1	A	185	ILE
1	A	192	MET
1	A	227	ASN
1	A	230	HIS
1	A	255	VAL
1	A	260	SER
1	A	261	ASP
1	A	263	THR
1	A	267	VAL
1	A	286	VAL
1	A	302	ARG
1	B	36	ARG
1	B	46	SER
1	B	48	TRP
1	B	51	LEU
1	B	60	TRP
1	B	70	LEU
1	B	91	ASN
1	B	124	HIS
1	B	136	SER
1	B	141	SER
1	B	153	ARG
1	B	163	ILE
1	B	165	ARG
1	B	175	VAL
1	B	176	ARG
1	B	179	ASN
1	B	185	ILE

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Mol	Chain	Res	Type
1	B	192	MET
1	B	227	ASN
1	B	230	HIS
1	B	255	VAL
1	B	260	SER
1	B	261	ASP
1	B	263	THR
1	B	267	VAL
1	B	286	VAL
1	B	302	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	83	GLN
1	A	92	GLN
1	A	168	ASN
1	A	269	GLN
1	A	272	HIS
1	B	83	GLN
1	B	272	HIS
1	B	283	HIS

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)

Of 4 ligands modelled in this entry, 4 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	B	2
1	A	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	B	41:TYR	C	42:GLY	N	1.14
1	A	38:VAL	C	39:ILE	N	1.12
1	B	38:VAL	C	39:ILE	N	1.12

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, 95^{th} 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	258/333 (77%)	-0.04	9 (3%) 44 31	45, 89, 138, 159	0
1	B	258/333 (77%)	-0.03	9 (3%) 44 31	43, 89, 137, 157	0
All	All	516/666 (77%)	-0.04	18 (3%) 44 31	43, 89, 138, 159	0

All (18) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	85	GLY	9.0
1	A	36	ARG	6.4
1	A	297	HIS	5.9
1	B	36	ARG	5.2
1	B	37	GLU	4.9
1	B	84	LEU	4.2
1	A	86	ASP	4.0
1	B	86	ASP	3.9
1	A	298	ILE	3.7
1	B	250	ARG	3.7
1	B	213	LYS	3.4
1	A	296	THR	3.1
1	A	213	LYS	2.9
1	B	210	HIS	2.5
1	A	37	GLU	2.4
1	A	85	GLY	2.4
1	B	183	ASN	2.2
1	A	122	TYR	2.1

6.2 Non-standard residues in protein, DNA, RNA chains

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, 95^{th} 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	B	401	1/1	0.44	0.14	22,22,22,22	1
2	K	A	404	1/1	0.65	0.60	56,56,56,56	1
2	K	A	402	1/1	0.68	0.58	57,57,57,57	1
2	K	A	403	1/1	0.96	0.20	5,5,5,5	1

6.5 Other polymers (i)

There are no such residues in this entry.