



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 1, 2016 – 06:30 PM GMT

PDB ID : 4LSG
Title : Structure of Mouse P-Glycoprotein
Authors : Chang, G.; Szewczyk, P.
Deposited on : 2013-07-22
Resolution : 3.80 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
<http://wwpdb.org/validation/2016/XrayValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467
Mogul : 1.7 (RC4), CSD as536be (2015)
Xtriage (Phenix) : 1.9-1692
EDS : rb-20026688
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)
Refmac : 5.8.0135
CCP4 : 6.5.0
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : trunk26865

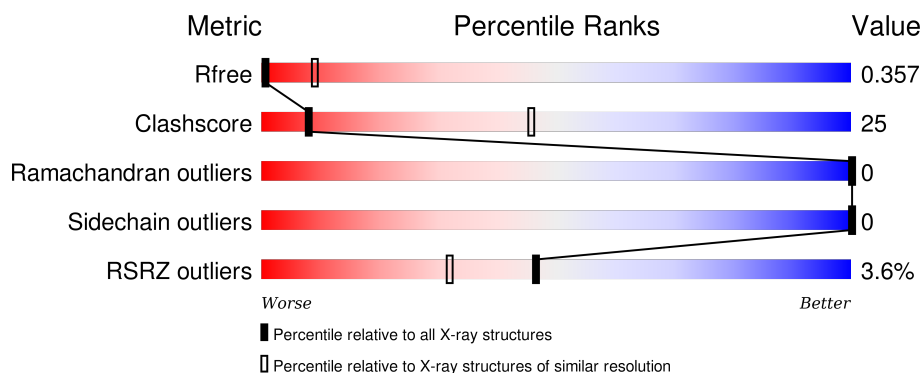
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.80 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}	91344	1317 (4.10-3.50)
Clashscore	102246	1458 (4.10-3.50)
Ramachandran outliers	100387	1397 (4.10-3.50)
Sidechain outliers	100360	1392 (4.10-3.50)
RSRZ outliers	91569	1325 (4.10-3.50)

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

Mol	Chain	Length	Quality of chain
1	A	1284	<div> <div>4%</div> <div>54%</div> <div>38%</div> <div>8%</div> </div>
1	B	1284	<div> <div>3%</div> <div>55%</div> <div>37%</div> <div>8%</div> </div>

2 Entry composition [i](#)

There are 2 unique types of molecules in this entry. The entry contains 18352 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 Multidrug resistance protein 1A.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	1182	Total	C	N	O	S	0	0	0
			9170	5895	1552	1686	37			
1	B	1182	Total	C	N	O	S	0	0	0
			9170	5895	1552	1686	37			

There are 18 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	952	ALA	CYS	ENGINEERED MUTATION	UNP P21447
A	1277	LEU	-	EXPRESSION TAG	UNP P21447
A	1278	GLU	-	EXPRESSION TAG	UNP P21447
A	1279	HIS	-	EXPRESSION TAG	UNP P21447
A	1280	HIS	-	EXPRESSION TAG	UNP P21447
A	1281	HIS	-	EXPRESSION TAG	UNP P21447
A	1282	HIS	-	EXPRESSION TAG	UNP P21447
A	1283	HIS	-	EXPRESSION TAG	UNP P21447
A	1284	HIS	-	EXPRESSION TAG	UNP P21447
B	952	ALA	CYS	ENGINEERED MUTATION	UNP P21447
B	1277	LEU	-	EXPRESSION TAG	UNP P21447
B	1278	GLU	-	EXPRESSION TAG	UNP P21447
B	1279	HIS	-	EXPRESSION TAG	UNP P21447
B	1280	HIS	-	EXPRESSION TAG	UNP P21447
B	1281	HIS	-	EXPRESSION TAG	UNP P21447
B	1282	HIS	-	EXPRESSION TAG	UNP P21447
B	1283	HIS	-	EXPRESSION TAG	UNP P21447
B	1284	HIS	-	EXPRESSION TAG	UNP P21447

- Molecule 2 is MERCURY (II) ION (three-letter code: HG) (formula: Hg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	B	6	Total	Hg	0	0
			6	6		

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	6	Total	Hg	0	0
			6	6		



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	97.54Å 115.43Å 378.86Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	19.98 – 3.80 19.98 – 3.80	Depositor EDS
% Data completeness (in resolution range)	96.0 (19.98-3.80) 96.1 (19.98-3.80)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	11.69 (at 3.82Å)	Xtriage
Refinement program	PHENIX (phenix.refine: 1.8.2_1309)	Depositor
R, R_{free}	0.336 , 0.357 0.335 , 0.357	Depositor DCC
R_{free} test set	4202 reflections (10.22%)	DCC
Wilson B-factor (Å ²)	133.9	Xtriage
Anisotropy	0.338	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.22 , 19.3	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.33$	Xtriage
Outliers	1 of 41131 reflections (0.002%)	Xtriage
F_o, F_c correlation	0.87	EDS
Total number of atoms	18352	wwPDB-VP
Average B, all atoms (Å ²)	102.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.39% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.375 respectively for untwinned datasets, and 0.333, 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: HG

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	0.35	1/9338 (0.0%)	0.64	4/12625 (0.0%)
1	B	0.34	2/9338 (0.0%)	0.63	3/12625 (0.0%)
All	All	0.35	3/18676 (0.0%)	0.64	7/25250 (0.0%)

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	689	PRO	N-CD	5.25	1.55	1.47
1	A	689	PRO	N-CD	5.22	1.55	1.47
1	B	1121	CYS	CB-SG	5.10	1.91	1.82

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	688	VAL	C-N-CD	5.65	140.26	128.40
1	A	688	VAL	C-N-CD	5.55	140.06	128.40
1	B	270	LEU	CA-CB-CG	5.44	127.82	115.30
1	B	232	LEU	CA-CB-CG	-5.42	102.83	115.30
1	A	270	LEU	CA-CB-CG	5.41	127.75	115.30
1	A	232	LEU	CA-CB-CG	-5.31	103.08	115.30
1	A	371	ILE	CB-CA-C	-5.17	101.27	111.60

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	9170	0	9338	471	0
1	B	9170	0	9338	451	0
2	A	6	0	0	0	0
2	B	6	0	0	0	0
All	All	18352	0	18676	916	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 25.

All (916) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:132:TRP:CD1	1:B:183:GLY:HA3	1.53	1.42
1:A:1019:THR:CG2	1:A:1101:ASN:HA	1.50	1.41
1:A:132:TRP:CD1	1:A:183:GLY:HA3	1.59	1.36
1:B:1017:TYR:CE2	1:B:1019:THR:HG23	1.65	1.30
1:B:133:CYS:SG	1:B:934:PHE:HD2	1.63	1.21
1:B:132:TRP:HZ2	1:B:179:ASN:ND2	1.39	1.20
1:B:995:ALA:O	1:B:998:THR:HG22	1.41	1.15
1:B:1017:TYR:CE2	1:B:1019:THR:CG2	2.31	1.14
1:A:979:PHE:O	1:A:982:MET:HG2	1.44	1.14
1:A:384:ILE:HG22	1:A:546:LYS:HG3	1.29	1.13
1:A:107:MET:HE2	1:A:958:TYR:CG	1.82	1.13
1:B:132:TRP:CD1	1:B:183:GLY:CA	2.32	1.13
1:B:979:PHE:O	1:B:982:MET:HG2	1.46	1.12
1:B:991:ALA:HB1	1:B:992:PRO:HD2	1.29	1.09
1:B:107:MET:SD	1:B:958:TYR:CE2	2.45	1.09
1:A:1019:THR:HG23	1:A:1101:ASN:HA	1.08	1.08
1:B:300:LEU:HD21	1:B:763:PHE:HB2	1.36	1.07
1:A:132:TRP:CD1	1:A:183:GLY:CA	2.37	1.07
1:A:107:MET:CE	1:A:958:TYR:CD2	2.36	1.07
1:A:107:MET:SD	1:A:954:ARG:CD	2.43	1.06
1:A:300:LEU:HD21	1:A:763:PHE:HB2	1.37	1.06
1:B:970:VAL:HG23	1:B:971:LEU:HD22	1.37	1.06
1:A:133:CYS:SG	1:A:934:PHE:HD2	1.79	1.05
1:A:970:VAL:HG23	1:A:971:LEU:HD22	1.39	1.05
1:A:107:MET:HE2	1:A:958:TYR:CD2	1.94	1.03
1:B:382:ASP:C	1:B:384:ILE:HD12	1.77	1.03
1:B:132:TRP:CZ2	1:B:179:ASN:ND2	2.27	1.02

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1019:THR:HG23	1:A:1101:ASN:CA	1.91	1.01
1:B:1024:PRO:O	1:B:1027:LEU:HD13	1.60	1.00
1:B:133:CYS:SG	1:B:934:PHE:CD2	2.54	0.99
1:A:107:MET:SD	1:A:954:ARG:HD2	2.03	0.98
1:B:382:ASP:O	1:B:384:ILE:HD12	1.61	0.98
1:B:1017:TYR:HE2	1:B:1019:THR:HG23	1.29	0.97
1:B:786:TYR:CE1	1:B:790:LYS:NZ	2.31	0.97
1:B:132:TRP:HD1	1:B:183:GLY:HA3	1.23	0.97
1:A:132:TRP:HZ2	1:A:179:ASN:ND2	1.64	0.96
1:A:107:MET:HE3	1:A:958:TYR:CD2	2.00	0.94
1:A:107:MET:CE	1:A:958:TYR:CB	2.45	0.93
1:B:213:VAL:HG11	1:B:312:TYR:HD2	1.34	0.92
1:B:132:TRP:CE3	1:B:133:CYS:HA	2.04	0.92
1:A:1019:THR:HG21	1:A:1101:ASN:HA	1.50	0.92
1:A:132:TRP:HD1	1:A:183:GLY:HA3	1.17	0.91
1:A:107:MET:CE	1:A:958:TYR:CG	2.52	0.91
1:B:384:ILE:O	1:B:384:ILE:HG22	1.67	0.91
1:B:384:ILE:HG22	1:B:546:LYS:HG3	1.52	0.91
1:A:1017:TYR:CE1	1:A:1019:THR:HB	2.05	0.90
1:A:163:ASP:HB2	1:A:167:LEU:HB2	1.53	0.90
1:A:281:LYS:HD3	1:A:782:LYS:HE2	1.54	0.89
1:B:107:MET:SD	1:B:958:TYR:CD2	2.66	0.89
1:B:281:LYS:HD3	1:B:782:LYS:HE2	1.55	0.89
1:B:132:TRP:HE3	1:B:133:CYS:HA	1.34	0.89
1:B:163:ASP:HB2	1:B:167:LEU:HB2	1.53	0.88
1:A:1017:TYR:HE1	1:A:1019:THR:HB	1.40	0.87
1:A:132:TRP:HZ2	1:A:179:ASN:HD21	1.17	0.87
1:B:1017:TYR:HE2	1:B:1019:THR:CG2	1.77	0.87
1:A:132:TRP:CE3	1:A:133:CYS:HA	2.10	0.87
1:B:132:TRP:HE3	1:B:133:CYS:CA	1.88	0.86
1:A:740:PRO:HG2	1:A:741:PRO:HD3	1.57	0.86
1:A:107:MET:HE3	1:A:958:TYR:HD2	1.36	0.85
1:B:995:ALA:O	1:B:998:THR:CG2	2.23	0.85
1:B:714:ALA:HB1	1:B:833:PHE:HB2	1.60	0.83
1:A:107:MET:SD	1:A:954:ARG:HD3	2.17	0.82
1:B:991:ALA:HB1	1:B:992:PRO:CD	2.10	0.82
1:A:714:ALA:HB1	1:A:833:PHE:HB2	1.61	0.82
1:A:133:CYS:SG	1:A:934:PHE:CD2	2.71	0.82
1:A:878:GLN:HG3	1:A:934:PHE:HE1	1.44	0.82
1:A:1024:PRO:O	1:A:1027:LEU:HD13	1.79	0.82
1:A:930:LYS:HD2	1:A:934:PHE:CZ	2.15	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:270:LEU:HG	1:A:790:LYS:HD2	1.63	0.81
1:A:921:GLN:HE22	1:B:479:THR:HG22	1.45	0.81
1:B:213:VAL:HG11	1:B:312:TYR:CD2	2.16	0.81
1:A:1018:SER:O	1:A:1019:THR:HG22	1.80	0.81
1:B:969:ASN:H	1:B:972:LEU:HD13	1.46	0.80
1:A:384:ILE:CG2	1:A:546:LYS:HG3	2.11	0.80
1:B:168:ASN:HA	1:B:171:LEU:HB2	1.64	0.80
1:A:159:PHE:CE1	1:A:900:PHE:CD2	2.70	0.79
1:A:132:TRP:HE3	1:A:133:CYS:CA	1.95	0.79
1:B:132:TRP:HB2	1:B:184:ASP:H	1.49	0.78
1:B:270:LEU:HG	1:B:790:LYS:HD2	1.66	0.78
1:A:969:ASN:H	1:A:972:LEU:HD13	1.47	0.78
1:A:991:ALA:HB1	1:A:992:PRO:HD2	1.65	0.78
1:A:168:ASN:HA	1:A:171:LEU:HB2	1.65	0.77
1:B:132:TRP:HB2	1:B:184:ASP:N	2.00	0.77
1:A:107:MET:HE1	1:A:958:TYR:CB	2.16	0.76
1:A:107:MET:HE2	1:A:958:TYR:CB	2.13	0.76
1:B:688:VAL:C	1:B:690:PRO:HD2	2.06	0.76
1:B:688:VAL:HG23	1:B:690:PRO:HD2	1.66	0.76
1:A:1019:THR:CG2	1:A:1101:ASN:CA	2.47	0.75
1:A:966:THR:HG23	1:A:968:GLU:H	1.51	0.75
1:A:132:TRP:HE3	1:A:133:CYS:HA	1.49	0.75
1:A:132:TRP:CZ2	1:A:179:ASN:OD1	2.40	0.74
1:B:700:ASN:O	1:B:704:TRP:N	2.21	0.74
1:A:384:ILE:HG22	1:A:546:LYS:CG	2.15	0.74
1:B:382:ASP:O	1:B:384:ILE:CD1	2.35	0.73
1:A:267:LYS:HA	1:A:270:LEU:HD22	1.69	0.73
1:B:930:LYS:HD2	1:B:934:PHE:CZ	2.23	0.73
1:B:979:PHE:O	1:B:982:MET:CG	2.32	0.73
1:B:966:THR:HG23	1:B:968:GLU:H	1.53	0.73
1:A:700:ASN:O	1:A:704:TRP:N	2.20	0.73
1:B:267:LYS:HA	1:B:270:LEU:HD22	1.70	0.73
1:B:65:PRO:HB2	1:B:202:ILE:HD12	1.70	0.73
1:B:370:SER:O	1:B:371:ILE:HG13	1.88	0.72
1:B:1037:VAL:HG12	1:B:1051:GLY:H	1.54	0.72
1:A:463:ARG:O	1:A:543:ARG:NH2	2.21	0.72
1:B:132:TRP:CZ2	1:B:179:ASN:CG	2.62	0.72
1:B:1017:TYR:CD2	1:B:1019:THR:HG23	2.24	0.72
1:A:686:GLU:OE1	1:A:813:ARG:NH1	2.22	0.72
1:B:1076:VAL:HG13	1:B:1194:LEU:HD13	1.70	0.72
1:B:132:TRP:HZ2	1:B:179:ASN:CG	1.92	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:878:GLN:HG3	1:A:934:PHE:CE1	2.25	0.71
1:B:433:VAL:HG13	1:B:549:LEU:HD23	1.72	0.71
1:B:991:ALA:CB	1:B:992:PRO:HD2	2.16	0.71
1:B:1040:TYR:O	1:B:1042:THR:N	2.23	0.71
1:B:687:ASP:HA	1:B:1003:HIS:CE1	2.26	0.71
1:A:433:VAL:HG13	1:A:549:LEU:HD23	1.73	0.70
1:A:60:HIS:ND1	1:A:128:GLN:OE1	2.25	0.70
1:B:1017:TYR:CE2	1:B:1019:THR:HG21	2.26	0.70
1:A:1040:TYR:O	1:A:1042:THR:N	2.24	0.70
1:B:979:PHE:C	1:B:982:MET:HG2	2.12	0.70
1:A:1037:VAL:HG12	1:A:1051:GLY:H	1.56	0.70
1:B:696:ILE:HG13	1:B:697:LEU:H	1.56	0.70
1:B:384:ILE:O	1:B:546:LYS:HG3	1.92	0.69
1:B:696:ILE:HG13	1:B:697:LEU:N	2.05	0.69
1:A:107:MET:CE	1:A:954:ARG:HD2	2.23	0.69
1:A:159:PHE:CE1	1:A:900:PHE:CE2	2.81	0.69
1:A:272:ARG:O	1:A:276:ASN:ND2	2.25	0.69
1:B:272:ARG:O	1:B:276:ASN:ND2	2.24	0.69
1:A:837:ALA:HB1	1:A:982:MET:HE1	1.74	0.69
1:A:740:PRO:HG2	1:A:741:PRO:CD	2.22	0.69
1:A:1100:LEU:HD23	1:A:1105:LEU:HB2	1.73	0.68
1:B:70:ILE:HD13	1:B:113:TYR:HB3	1.75	0.68
1:A:132:TRP:HB2	1:A:184:ASP:H	1.58	0.68
1:B:969:ASN:HA	1:B:972:LEU:HB2	1.76	0.68
1:B:159:PHE:CE1	1:B:900:PHE:CD2	2.82	0.68
1:A:756:LEU:HA	1:A:760:ILE:HD13	1.75	0.68
1:A:65:PRO:HB2	1:A:202:ILE:HD12	1.73	0.68
1:A:979:PHE:C	1:A:982:MET:HG2	2.14	0.68
1:B:1144:ALA:HA	1:B:1186:LEU:HD11	1.73	0.68
1:A:76:ASP:HB2	1:A:326:GLN:HG2	1.75	0.68
1:A:1048:VAL:HG21	1:A:1074:THR:HG21	1.76	0.68
1:A:1076:VAL:HG13	1:A:1194:LEU:HD13	1.74	0.68
1:B:543:ARG:NH2	1:B:905:SER:O	2.26	0.68
1:A:979:PHE:O	1:A:982:MET:CG	2.32	0.68
1:A:70:ILE:HD13	1:A:113:TYR:HB3	1.75	0.68
1:A:837:ALA:HB1	1:A:982:MET:CE	2.24	0.68
1:B:756:LEU:HA	1:B:760:ILE:HD13	1.74	0.68
1:B:306:TYR:HD2	1:B:754:LEU:HD21	1.59	0.67
1:A:107:MET:CE	1:A:958:TYR:HB3	2.24	0.67
1:B:1024:PRO:O	1:B:1027:LEU:CD1	2.41	0.67
1:A:382:ASP:O	1:A:384:ILE:HG12	1.93	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:132:TRP:CZ2	1:B:179:ASN:OD1	2.48	0.67
1:A:851:TRP:O	1:A:853:LEU:N	2.22	0.66
1:A:688:VAL:C	1:A:690:PRO:HD2	2.15	0.66
1:A:962:GLN:O	1:A:963:GLN:NE2	2.25	0.66
1:B:696:ILE:HD13	1:B:994:TYR:OH	1.94	0.66
1:A:1110:GLY:HA3	1:A:1193:LEU:HA	1.78	0.65
1:A:306:TYR:HD2	1:A:754:LEU:HD21	1.61	0.65
1:A:220:VAL:HG12	1:A:301:LEU:HD13	1.77	0.65
1:A:132:TRP:CE3	1:A:133:CYS:CA	2.76	0.65
1:A:798:SER:HA	1:A:802:ASP:H	1.62	0.65
1:B:1204:THR:OG1	1:B:1205:GLU:N	2.30	0.65
1:B:224:SER:HB3	1:B:301:LEU:HD12	1.77	0.65
1:A:224:SER:HB3	1:A:301:LEU:HD12	1.78	0.65
1:A:132:TRP:HZ2	1:A:179:ASN:CG	2.01	0.65
1:A:132:TRP:CZ2	1:A:179:ASN:ND2	2.56	0.65
1:B:384:ILE:HG22	1:B:546:LYS:CG	2.27	0.65
1:A:1017:TYR:HD1	1:A:1018:SER:H	1.46	0.64
1:A:107:MET:CE	1:A:958:TYR:HB2	2.27	0.64
1:A:687:ASP:HA	1:A:1003:HIS:CE1	2.31	0.64
1:A:1118:LEU:HD21	1:A:1180:ILE:HG21	1.78	0.64
1:A:962:GLN:HG2	1:A:962:GLN:O	1.98	0.64
1:B:1100:LEU:HD23	1:B:1105:LEU:HB2	1.79	0.64
1:B:484:ILE:HG23	1:B:542:VAL:HG21	1.79	0.64
1:B:901:ARG:O	1:B:904:VAL:HG12	1.98	0.63
1:B:1048:VAL:HG21	1:B:1074:THR:HG21	1.78	0.63
1:A:1144:ALA:HA	1:A:1186:LEU:HD11	1.79	0.63
1:B:543:ARG:HH12	1:B:905:SER:HA	1.64	0.63
1:A:930:LYS:HD2	1:A:934:PHE:CE2	2.33	0.63
1:B:384:ILE:CG2	1:B:384:ILE:O	2.40	0.63
1:A:1063:ALA:HB3	1:A:1239:ILE:HA	1.80	0.63
1:A:486:TYR:HB3	1:A:908:ARG:HH21	1.62	0.63
1:B:687:ASP:HA	1:B:1003:HIS:HE1	1.63	0.63
1:B:1118:LEU:HD21	1:B:1180:ILE:HG21	1.80	0.62
1:B:50:MET:HG3	1:B:131:PHE:CE1	2.34	0.62
1:B:820:GLN:HB3	1:B:997:ALA:HA	1.80	0.62
1:A:210:LEU:HB2	1:A:331:PHE:CD2	2.35	0.62
1:B:156:ILE:HG12	1:B:439:LEU:O	2.00	0.62
1:B:220:VAL:HG12	1:B:301:LEU:HD13	1.82	0.62
1:B:355:ARG:HG2	1:B:359:TYR:HD2	1.63	0.62
1:A:281:LYS:HB3	1:A:782:LYS:HG3	1.82	0.62
1:B:479:THR:OG1	1:B:482:GLU:N	2.26	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:92:SER:OG	1:A:96:LYS:NZ	2.32	0.61
1:B:995:ALA:C	1:B:998:THR:HG22	2.20	0.61
1:B:845:ILE:O	1:B:848:ILE:HG12	2.00	0.61
1:A:921:GLN:HG3	1:B:517:ASP:HB3	1.83	0.61
1:B:369:PRO:O	1:B:371:ILE:HG12	2.00	0.61
1:A:132:TRP:HB2	1:A:184:ASP:N	2.14	0.61
1:B:281:LYS:HB3	1:B:782:LYS:HG3	1.81	0.61
1:A:796:ASP:OD1	1:A:796:ASP:N	2.34	0.61
1:B:1057:LYS:H	1:B:1060:GLN:HE21	1.47	0.61
1:B:508:PHE:HE2	1:B:534:ARG:HD2	1.66	0.61
1:B:550:LEU:HD23	1:B:569:LEU:HD13	1.83	0.61
1:A:550:LEU:HD23	1:A:569:LEU:HD13	1.83	0.61
1:B:1110:GLY:HA3	1:B:1193:LEU:HA	1.82	0.61
1:B:686:GLU:OE1	1:B:813:ARG:NH1	2.34	0.60
1:A:949:TYR:HD1	1:A:953:PHE:HE2	1.48	0.60
1:B:798:SER:HA	1:B:802:ASP:H	1.65	0.60
1:A:849:TYR:HE1	1:A:972:LEU:HD23	1.66	0.60
1:A:107:MET:HE1	1:A:958:TYR:HB3	1.83	0.60
1:B:308:LEU:HD21	1:B:312:TYR:HE2	1.66	0.60
1:A:901:ARG:O	1:A:904:VAL:HG12	2.01	0.60
1:B:76:ASP:HB2	1:B:326:GLN:HG2	1.83	0.60
1:A:786:TYR:O	1:A:790:LYS:HG2	2.02	0.60
1:B:692:SER:OG	1:B:696:ILE:HG23	2.02	0.60
1:B:132:TRP:HE3	1:B:133:CYS:N	2.00	0.60
1:A:716:ILE:HD11	1:A:765:THR:HB	1.83	0.60
1:B:796:ASP:OD1	1:B:796:ASP:N	2.35	0.60
1:B:949:TYR:HD1	1:B:953:PHE:HE2	1.50	0.60
1:B:355:ARG:HG2	1:B:359:TYR:CD2	2.37	0.59
1:A:969:ASN:HA	1:A:972:LEU:HB2	1.84	0.59
1:B:385:GLN:O	1:B:450:ASP:OD1	2.20	0.59
1:A:384:ILE:HG22	1:A:384:ILE:O	2.02	0.59
1:B:382:ASP:HA	1:B:384:ILE:HD11	1.84	0.59
1:B:792:MET:HE1	1:B:810:LEU:HB3	1.84	0.59
1:A:484:ILE:HG23	1:A:542:VAL:HG21	1.84	0.59
1:B:306:TYR:CD2	1:B:754:LEU:HD21	2.38	0.59
1:B:369:PRO:O	1:B:371:ILE:HG23	2.03	0.59
1:A:861:VAL:HG11	1:A:980:GLY:HA3	1.85	0.59
1:A:107:MET:HE1	1:A:958:TYR:HB2	1.83	0.59
1:A:355:ARG:HG2	1:A:359:TYR:HD2	1.67	0.59
1:B:210:LEU:HB2	1:B:331:PHE:CD2	2.38	0.59
1:A:1204:THR:OG1	1:A:1205:GLU:N	2.35	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:471:GLN:OE1	1:B:471:GLN:N	2.36	0.58
1:B:1039:ASN:ND2	1:B:1047:PRO:HG3	2.18	0.58
1:A:50:MET:HG3	1:A:131:PHE:CE1	2.39	0.58
1:B:132:TRP:CH2	1:B:179:ASN:OD1	2.56	0.58
1:A:132:TRP:CZ2	1:A:179:ASN:CG	2.77	0.58
1:B:849:TYR:HE1	1:B:972:LEU:HD23	1.68	0.58
1:A:278:GLU:HA	1:A:782:LYS:HD3	1.86	0.58
1:A:845:ILE:O	1:A:848:ILE:HG12	2.03	0.58
1:B:994:TYR:O	1:B:994:TYR:CD2	2.56	0.58
1:B:484:ILE:HG21	1:B:496:ILE:HG13	1.86	0.58
1:B:527:LEU:H	1:B:527:LEU:HD23	1.69	0.58
1:A:355:ARG:HG2	1:A:359:TYR:CD2	2.39	0.58
1:B:306:TYR:CZ	1:B:724:PHE:HE1	2.21	0.58
1:B:50:MET:HG3	1:B:131:PHE:HE1	1.67	0.58
1:B:777:GLY:HA3	1:B:822:LYS:HG3	1.86	0.58
1:B:308:LEU:HD21	1:B:312:TYR:CE2	2.39	0.58
1:A:1193:LEU:HD12	1:A:1218:ARG:HB3	1.85	0.57
1:B:1214:LEU:O	1:B:1218:ARG:HG2	2.04	0.57
1:A:753:LEU:O	1:A:757:ILE:HB	2.04	0.57
1:A:1100:LEU:HD11	1:A:1104:TRP:HZ3	1.68	0.57
1:A:362:PHE:HA	1:A:365:ILE:HB	1.85	0.57
1:B:122:LEU:HD13	1:B:943:ALA:HB2	1.85	0.57
1:B:786:TYR:O	1:B:790:LYS:HG2	2.04	0.57
1:B:753:LEU:O	1:B:757:ILE:HB	2.04	0.57
1:A:711:ILE:O	1:A:715:ILE:HG12	2.04	0.57
1:A:371:ILE:O	1:A:371:ILE:HG13	2.04	0.57
1:A:132:TRP:HD1	1:A:183:GLY:CA	1.97	0.57
1:B:906:LEU:HG	1:B:909:GLU:HG3	1.86	0.57
1:A:361:VAL:O	1:A:365:ILE:N	2.25	0.57
1:A:466:ILE:HG23	1:A:549:LEU:HD13	1.87	0.57
1:B:1052:LEU:HD13	1:B:1242:ILE:HD13	1.86	0.57
1:A:1176:GLN:N	1:A:1176:GLN:OE1	2.37	0.57
1:A:211:THR:HG23	1:A:331:PHE:CE2	2.40	0.57
1:A:484:ILE:HG21	1:A:496:ILE:HG13	1.87	0.57
1:A:1039:ASN:ND2	1:A:1047:PRO:HG3	2.20	0.57
1:B:979:PHE:HA	1:B:982:MET:HG2	1.87	0.57
1:B:359:TYR:HA	1:B:362:PHE:HB2	1.86	0.57
1:A:1122:SER:HB3	1:A:1125:GLU:HG2	1.86	0.57
1:B:849:TYR:HD2	1:B:854:THR:HG1	1.53	0.57
1:B:1037:VAL:HG22	1:B:1087:ALA:HB3	1.87	0.57
1:B:1130:GLY:HA2	1:B:1134:ARG:HB2	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:849:TYR:CE1	1:B:972:LEU:HD23	2.40	0.56
1:A:471:GLN:N	1:A:471:GLN:OE1	2.36	0.56
1:B:961:THR:HA	1:B:965:MET:HB3	1.86	0.56
1:B:382:ASP:HA	1:B:384:ILE:CD1	2.35	0.56
1:B:994:TYR:HA	1:B:997:ALA:HB3	1.87	0.56
1:A:257:ILE:HG12	1:A:800:PHE:CD1	2.40	0.56
1:B:480:ILE:HG12	1:B:518:THR:HG23	1.87	0.56
1:B:711:ILE:O	1:B:715:ILE:HG12	2.04	0.56
1:B:1043:ARG:HH12	1:B:1086:MET:HE1	1.71	0.56
1:A:777:GLY:HA3	1:A:822:LYS:HG3	1.86	0.56
1:A:966:THR:CG2	1:A:968:GLU:HG2	2.36	0.56
1:B:856:LEU:HD21	1:B:951:ALA:HB1	1.86	0.56
1:B:716:ILE:HD11	1:B:765:THR:HB	1.88	0.56
1:B:159:PHE:CE1	1:B:900:PHE:CE2	2.93	0.56
1:B:1100:LEU:HD11	1:B:1104:TRP:HZ3	1.71	0.56
1:A:816:ASN:O	1:A:820:GLN:HG2	2.05	0.56
1:A:384:ILE:CG2	1:A:546:LYS:CG	2.81	0.56
1:A:527:LEU:H	1:A:527:LEU:HD23	1.70	0.56
1:B:966:THR:CG2	1:B:968:GLU:HG2	2.36	0.56
1:B:979:PHE:CA	1:B:982:MET:HG2	2.37	0.55
1:A:792:MET:HE1	1:A:810:LEU:HB3	1.87	0.55
1:A:331:PHE:O	1:A:334:VAL:HB	2.06	0.55
1:A:390:PHE:HE2	1:A:432:THR:HB	1.71	0.55
1:A:834:GLN:HA	1:A:837:ALA:HB3	1.89	0.55
1:A:111:ALA:HA	1:A:114:TYR:CE2	2.41	0.55
1:A:508:PHE:HE2	1:A:534:ARG:HD2	1.69	0.55
1:A:1061:THR:HA	1:A:1223:CYS:SG	2.46	0.55
1:B:466:ILE:HG23	1:B:549:LEU:HD13	1.87	0.55
1:A:853:LEU:HD11	1:A:973:VAL:HG22	1.87	0.55
1:B:1063:ALA:HB3	1:B:1239:ILE:HA	1.87	0.55
1:A:147:PHE:CD1	1:A:365:ILE:HG23	2.42	0.55
1:A:306:TYR:CD2	1:A:754:LEU:HD21	2.42	0.55
1:A:486:TYR:O	1:A:907:THR:OG1	2.20	0.55
1:B:978:VAL:O	1:B:982:MET:N	2.38	0.55
1:B:361:VAL:O	1:B:365:ILE:N	2.26	0.55
1:A:155:GLU:OE1	1:A:373:SER:OG	2.23	0.55
1:A:442:PRO:HG2	1:A:455:ARG:HH21	1.71	0.55
1:B:1129:TYR:CE2	1:B:1184:ARG:HD2	2.42	0.55
1:A:1052:LEU:HD13	1:A:1242:ILE:HD13	1.89	0.55
1:A:437:GLN:HB2	1:A:439:LEU:HD23	1.88	0.55
1:A:906:LEU:HG	1:A:909:GLU:HG3	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:81:VAL:HG22	1:B:99:MET:HB3	1.89	0.55
1:A:765:THR:O	1:A:769:GLN:HG2	2.08	0.54
1:A:308:LEU:HD21	1:A:312:TYR:HE2	1.71	0.54
1:A:885:GLU:HB3	1:A:923:PRO:HG3	1.89	0.54
1:B:816:ASN:O	1:B:820:GLN:HG2	2.07	0.54
1:A:1129:TYR:CE2	1:A:1184:ARG:HD2	2.42	0.54
1:A:1048:VAL:HG23	1:A:1049:LEU:HD22	1.88	0.54
1:B:834:GLN:HA	1:B:837:ALA:HB3	1.89	0.54
1:A:1110:GLY:N	1:A:1192:ILE:O	2.41	0.54
1:A:978:VAL:O	1:A:982:MET:N	2.41	0.54
1:B:468:VAL:HG22	1:B:549:LEU:HB2	1.90	0.54
1:A:156:ILE:HG12	1:A:439:LEU:O	2.08	0.54
1:A:308:LEU:CD2	1:A:312:TYR:CE2	2.91	0.54
1:A:107:MET:SD	1:A:954:ARG:CG	2.95	0.54
1:A:186:ILE:HD11	1:A:351:PHE:CD1	2.43	0.54
1:B:533:GLN:O	1:B:537:ILE:HG13	2.08	0.54
1:A:1043:ARG:HH12	1:A:1086:MET:HE1	1.72	0.54
1:A:39:PHE:CE1	1:A:355:ARG:HA	2.43	0.54
1:A:308:LEU:HD21	1:A:312:TYR:CE2	2.43	0.54
1:B:1120:ASP:HB2	1:B:1164:ARG:HH21	1.72	0.54
1:A:461:TYR:O	1:A:465:ILE:HG12	2.08	0.53
1:B:111:ALA:HA	1:B:114:TYR:CE2	2.42	0.53
1:B:155:GLU:OE1	1:B:373:SER:OG	2.25	0.53
1:A:543:ARG:NH2	1:A:904:VAL:O	2.40	0.53
1:A:231:ILE:HG21	1:A:290:THR:HB	1.90	0.53
1:B:993:ASP:O	1:B:994:TYR:HB3	2.09	0.53
1:B:1110:GLY:N	1:B:1192:ILE:O	2.41	0.53
1:A:1120:ASP:HB2	1:A:1164:ARG:HH21	1.72	0.53
1:B:132:TRP:CG	1:B:183:GLY:CA	2.91	0.53
1:A:100:PHE:CE2	1:A:962:GLN:HB2	2.42	0.53
1:A:234:SER:O	1:A:238:LYS:HG3	2.08	0.53
1:A:129:VAL:HG21	1:A:938:PHE:HB3	1.90	0.53
1:B:278:GLU:HA	1:B:782:LYS:HD3	1.90	0.53
1:B:543:ARG:NH1	1:B:905:SER:HA	2.22	0.53
1:A:492:THR:OG1	1:B:910:GLN:OE1	2.20	0.53
1:B:1048:VAL:HG23	1:B:1049:LEU:HD22	1.90	0.53
1:A:1010:LYS:HG2	1:A:1011:THR:H	1.74	0.53
1:A:1106:ARG:HA	1:A:1109:LEU:HD12	1.90	0.53
1:A:209:LYS:O	1:A:213:VAL:HG23	2.09	0.53
1:A:359:TYR:HA	1:A:362:PHE:HB2	1.89	0.53
1:A:1130:GLY:HA2	1:A:1134:ARG:HB2	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:687:ASP:HA	1:A:1003:HIS:HE1	1.72	0.53
1:B:1010:LYS:HG2	1:B:1011:THR:H	1.74	0.53
1:A:797:VAL:HG21	1:A:1013:GLU:OE2	2.08	0.53
1:B:267:LYS:O	1:B:270:LEU:HB2	2.09	0.53
1:B:362:PHE:HA	1:B:365:ILE:HB	1.89	0.53
1:B:1176:GLN:OE1	1:B:1176:GLN:N	2.38	0.53
1:B:797:VAL:HG21	1:B:1013:GLU:OE2	2.08	0.53
1:B:258:ARG:HH21	1:B:801:ASP:HA	1.74	0.53
1:A:1235:ASN:OD1	1:A:1235:ASN:N	2.39	0.53
1:B:147:PHE:CD1	1:B:365:ILE:HG23	2.44	0.52
1:A:612:MET:HA	1:A:619:PHE:HB2	1.92	0.52
1:A:453:ASP:OD1	1:A:454:ILE:N	2.42	0.52
1:A:884:LYS:O	1:A:887:GLU:HB3	2.09	0.52
1:B:74:MET:HB2	1:B:110:TYR:HE1	1.74	0.52
1:B:1151:HIS:HA	1:B:1154:ILE:HB	1.91	0.52
1:A:107:MET:SD	1:A:954:ARG:HG2	2.50	0.52
1:A:740:PRO:CD	1:A:741:PRO:HD2	2.39	0.52
1:B:437:GLN:HB2	1:B:439:LEU:HD23	1.90	0.52
1:B:331:PHE:O	1:B:334:VAL:HB	2.10	0.52
1:B:765:THR:O	1:B:769:GLN:HG2	2.08	0.52
1:A:308:LEU:CD2	1:A:312:TYR:HE2	2.22	0.52
1:B:257:ILE:HG12	1:B:800:PHE:CD1	2.44	0.52
1:A:50:MET:HG3	1:A:131:PHE:HE1	1.73	0.52
1:A:1037:VAL:HG22	1:A:1087:ALA:HB3	1.92	0.52
1:B:234:SER:O	1:B:238:LYS:HG3	2.09	0.52
1:B:970:VAL:HG23	1:B:971:LEU:CD2	2.25	0.52
1:A:1023:LYS:HB2	1:A:1026:MET:HG3	1.91	0.52
1:B:906:LEU:HA	1:B:909:GLU:HG2	1.92	0.52
1:B:406:LEU:HD12	1:B:600:GLY:O	2.10	0.52
1:B:878:GLN:HG3	1:B:934:PHE:HE1	1.75	0.52
1:B:39:PHE:CE1	1:B:355:ARG:HA	2.45	0.52
1:A:1064:LEU:HB3	1:A:1226:ILE:HA	1.92	0.52
1:A:306:TYR:CZ	1:A:724:PHE:HE1	2.27	0.52
1:A:1181:ALA:HA	1:A:1184:ARG:HE	1.73	0.52
1:B:231:ILE:HG21	1:B:290:THR:HB	1.92	0.52
1:B:382:ASP:CA	1:B:384:ILE:HD12	2.40	0.52
1:B:1106:ARG:HA	1:B:1109:LEU:HD12	1.91	0.52
1:B:186:ILE:HD11	1:B:351:PHE:CD1	2.46	0.51
1:B:461:TYR:O	1:B:465:ILE:HG12	2.10	0.51
1:B:480:ILE:HG12	1:B:518:THR:CG2	2.41	0.51
1:B:562:GLU:OE1	1:B:584:ARG:NH1	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:798:SER:OG	1:A:1041:PRO:HG2	2.11	0.51
1:A:1033:PHE:HD1	1:A:1036:VAL:HG21	1.75	0.51
1:B:215:LEU:O	1:B:219:PRO:HD3	2.10	0.51
1:A:242:ALA:HB2	1:A:283:LEU:HD12	1.93	0.51
1:A:74:MET:HB2	1:A:110:TYR:HE1	1.74	0.51
1:A:740:PRO:CG	1:A:741:PRO:CD	2.89	0.51
1:B:806:THR:O	1:B:810:LEU:HG	2.10	0.51
1:A:236:THR:HA	1:A:287:LYS:HE2	1.92	0.51
1:B:107:MET:HA	1:B:110:TYR:HD2	1.76	0.51
1:B:1124:ALA:HB2	1:B:1161:TYR:HB3	1.92	0.51
1:B:382:ASP:C	1:B:384:ILE:CD1	2.67	0.51
1:A:100:PHE:HE2	1:A:962:GLN:HB2	1.76	0.51
1:B:995:ALA:O	1:B:999:VAL:HG23	2.11	0.51
1:A:534:ARG:HA	1:A:537:ILE:HD12	1.93	0.51
1:A:1018:SER:O	1:A:1019:THR:CG2	2.55	0.51
1:A:518:THR:HG23	1:A:518:THR:O	2.11	0.51
1:A:132:TRP:HE3	1:A:133:CYS:N	2.08	0.50
1:B:1033:PHE:HD1	1:B:1036:VAL:HG21	1.76	0.50
1:A:384:ILE:HD13	1:A:384:ILE:N	2.26	0.50
1:B:211:THR:HG23	1:B:331:PHE:CE2	2.47	0.50
1:B:467:GLY:HA3	1:B:545:PRO:HG3	1.93	0.50
1:B:998:THR:HG23	1:B:999:VAL:N	2.26	0.50
1:B:975:SER:O	1:B:978:VAL:HG12	2.11	0.50
1:A:267:LYS:O	1:A:270:LEU:HB2	2.11	0.50
1:A:39:PHE:HE1	1:A:358:ALA:HB3	1.76	0.50
1:A:374:PHE:HD1	1:A:376:LYS:H	1.58	0.50
1:B:242:ALA:HB2	1:B:283:LEU:HD12	1.93	0.50
1:B:132:TRP:CD1	1:B:183:GLY:HA2	2.39	0.50
1:B:453:ASP:OD1	1:B:454:ILE:N	2.44	0.50
1:A:200:PHE:CE2	1:A:215:LEU:HD21	2.46	0.50
1:A:132:TRP:O	1:A:136:ALA:HB3	2.12	0.50
1:B:994:TYR:O	1:B:994:TYR:CG	2.64	0.50
1:A:840:GLY:O	1:A:844:ILE:HG12	2.12	0.50
1:A:927:ALA:HA	1:A:930:LYS:HG2	1.93	0.50
1:A:384:ILE:HD11	1:A:461:TYR:OH	2.11	0.50
1:A:1038:PHE:HB3	1:A:1049:LEU:HD23	1.94	0.50
1:A:1151:HIS:HA	1:A:1154:ILE:HB	1.94	0.50
1:B:104:GLU:HG3	1:B:107:MET:HE2	1.94	0.49
1:A:159:PHE:CZ	1:A:900:PHE:CE2	3.00	0.49
1:A:902:THR:HA	1:A:908:ARG:HE	1.76	0.49
1:B:236:THR:HA	1:B:287:LYS:HE2	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:905:SER:C	1:B:907:THR:H	2.13	0.49
1:A:533:GLN:O	1:A:537:ILE:HG13	2.12	0.49
1:B:884:LYS:O	1:B:887:GLU:HB3	2.12	0.49
1:A:1124:ALA:HB2	1:A:1161:TYR:HB3	1.94	0.49
1:B:415:SER:HA	1:B:577:THR:HG22	1.94	0.49
1:A:122:LEU:HD13	1:A:943:ALA:HB2	1.94	0.49
1:A:979:PHE:CA	1:A:982:MET:HG2	2.42	0.49
1:A:258:ARG:HH21	1:A:801:ASP:HA	1.77	0.49
1:B:457:ILE:HD11	1:B:462:LEU:HD13	1.93	0.49
1:B:927:ALA:HA	1:B:930:LYS:HG2	1.93	0.49
1:B:845:ILE:HG22	1:B:849:TYR:CE1	2.47	0.49
1:B:282:ARG:HA	1:B:285:ILE:HG22	1.94	0.49
1:A:910:GLN:OE1	1:B:492:THR:OG1	2.26	0.49
1:A:562:GLU:OE1	1:A:584:ARG:NH1	2.44	0.49
1:A:406:LEU:HD12	1:A:600:GLY:O	2.13	0.49
1:A:1100:LEU:HD11	1:A:1104:TRP:CZ3	2.48	0.49
1:A:819:ALA:O	1:A:822:LYS:HB3	2.12	0.49
1:B:1032:GLN:HB2	1:B:1091:PHE:HB2	1.93	0.49
1:B:1235:ASN:N	1:B:1235:ASN:OD1	2.40	0.49
1:B:178:ILE:HG12	1:B:358:ALA:HB2	1.94	0.49
1:A:1214:LEU:O	1:A:1218:ARG:HG2	2.13	0.49
1:B:1097:ILE:HG23	1:B:1105:LEU:HD22	1.95	0.49
1:B:1064:LEU:HB3	1:B:1226:ILE:HA	1.94	0.49
1:A:107:MET:HA	1:A:110:TYR:HD2	1.77	0.49
1:A:74:MET:HB2	1:A:110:TYR:CE1	2.48	0.49
1:B:34:SER:HA	1:B:38:MET:HB2	1.94	0.49
1:B:1023:LYS:HB2	1:B:1026:MET:HG3	1.95	0.49
1:A:139:GLN:O	1:A:143:ILE:HG12	2.12	0.49
1:A:715:ILE:HD12	1:A:836:ILE:HG13	1.94	0.49
1:B:590:ASN:OD1	1:B:590:ASN:N	2.40	0.49
1:A:257:ILE:HG12	1:A:800:PHE:CG	2.48	0.49
1:B:518:THR:O	1:B:518:THR:HG23	2.13	0.49
1:A:34:SER:HA	1:A:38:MET:HB2	1.94	0.49
1:A:857:LEU:HD11	1:A:977:ILE:HG13	1.95	0.49
1:A:468:VAL:HG22	1:A:549:LEU:HB2	1.94	0.49
1:B:756:LEU:O	1:B:760:ILE:HB	2.12	0.49
1:A:252:GLU:HG3	1:A:253:VAL:N	2.27	0.49
1:A:1084:ASP:HB3	1:A:1098:LYS:NZ	2.27	0.49
1:B:311:TRP:HZ3	1:B:748:SER:HA	1.78	0.49
1:A:132:TRP:HB2	1:A:184:ASP:HB3	1.94	0.48
1:A:979:PHE:HA	1:A:982:MET:HG2	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:270:LEU:CG	1:B:790:LYS:HD2	2.41	0.48
1:A:1024:PRO:O	1:A:1027:LEU:CD1	2.56	0.48
1:B:852:GLN:HG3	1:B:955:PHE:CE2	2.48	0.48
1:B:486:TYR:O	1:B:907:THR:OG1	2.26	0.48
1:B:128:GLN:O	1:B:131:PHE:HB3	2.13	0.48
1:B:902:THR:HA	1:B:908:ARG:HE	1.78	0.48
1:A:413:VAL:HG11	1:A:419:VAL:HG11	1.95	0.48
1:B:39:PHE:HE1	1:B:358:ALA:HB3	1.78	0.48
1:A:806:THR:O	1:A:810:LEU:HG	2.13	0.48
1:B:471:GLN:HB3	1:B:552:GLU:HB2	1.95	0.48
1:B:819:ALA:O	1:B:822:LYS:HB3	2.13	0.48
1:B:1084:ASP:HB3	1:B:1098:LYS:NZ	2.29	0.48
1:B:74:MET:HB2	1:B:110:TYR:CE1	2.48	0.48
1:A:790:LYS:HD3	1:A:790:LYS:N	2.29	0.48
1:A:178:ILE:HG12	1:A:358:ALA:HB2	1.94	0.48
1:B:1038:PHE:CD2	1:B:1049:LEU:HD23	2.48	0.48
1:B:252:GLU:HG3	1:B:253:VAL:N	2.28	0.48
1:A:132:TRP:CD1	1:A:183:GLY:HA2	2.42	0.48
1:A:71:PHE:HA	1:A:74:MET:HG2	1.94	0.48
1:B:71:PHE:HA	1:B:74:MET:HG2	1.95	0.48
1:A:333:SER:HA	1:A:336:ILE:HG12	1.95	0.48
1:B:837:ALA:HB1	1:B:982:MET:HE1	1.95	0.48
1:A:282:ARG:HA	1:A:285:ILE:HG22	1.96	0.48
1:B:689:PRO:N	1:B:690:PRO:CD	2.76	0.48
1:A:756:LEU:O	1:A:760:ILE:HB	2.12	0.48
1:A:733:GLY:HA2	1:A:967:PHE:HB2	1.95	0.48
1:A:849:TYR:CE1	1:A:972:LEU:HD23	2.46	0.48
1:A:1040:TYR:OH	1:A:1074:THR:HG22	2.13	0.48
1:B:534:ARG:HA	1:B:537:ILE:HD12	1.96	0.48
1:A:232:LEU:HD23	1:A:232:LEU:HA	1.67	0.48
1:B:1017:TYR:CZ	1:B:1019:THR:HG21	2.49	0.48
1:B:384:ILE:CG2	1:B:546:LYS:CG	2.91	0.48
1:B:786:TYR:CD1	1:B:790:LYS:NZ	2.71	0.48
1:A:1071:GLY:H	1:A:1074:THR:HG23	1.79	0.48
1:A:905:SER:C	1:A:907:THR:H	2.17	0.48
1:B:1181:ALA:HA	1:B:1184:ARG:HE	1.78	0.48
1:B:374:PHE:HD1	1:B:376:LYS:H	1.59	0.48
1:A:1038:PHE:HB3	1:A:1049:LEU:HB2	1.96	0.48
1:B:480:ILE:CG1	1:B:518:THR:CG2	2.91	0.48
1:B:421:LEU:HD13	1:B:579:ILE:HG13	1.96	0.48
1:B:837:ALA:HB1	1:B:982:MET:CE	2.43	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:976:ALA:HA	1:B:979:PHE:CD2	2.50	0.47
1:B:1176:GLN:O	1:B:1180:ILE:HG13	2.14	0.47
1:B:330:VAL:O	1:B:333:SER:HB2	2.14	0.47
1:B:132:TRP:O	1:B:136:ALA:HB3	2.14	0.47
1:A:1097:ILE:HG23	1:A:1105:LEU:HD22	1.96	0.47
1:B:463:ARG:NH1	1:B:903:VAL:HG22	2.29	0.47
1:B:332:PHE:O	1:B:335:LEU:HB2	2.14	0.47
1:B:156:ILE:HG22	1:B:160:ASP:OD2	2.14	0.47
1:B:1057:LYS:HB2	1:B:1060:GLN:NE2	2.29	0.47
1:B:333:SER:HA	1:B:336:ILE:HG12	1.95	0.47
1:A:467:GLY:HA3	1:A:545:PRO:HG3	1.95	0.47
1:B:172:THR:O	1:B:175:VAL:HG22	2.14	0.47
1:B:370:SER:O	1:B:371:ILE:CG1	2.58	0.47
1:B:1040:TYR:OH	1:B:1074:THR:HG22	2.13	0.47
1:A:1033:PHE:HB2	1:A:1054:LEU:H	1.78	0.47
1:A:784:LEU:O	1:A:788:VAL:HG23	2.15	0.47
1:A:806:THR:HG23	1:A:809:ALA:H	1.78	0.47
1:A:784:LEU:HG	1:A:821:VAL:HG21	1.96	0.47
1:B:314:THR:HG22	1:B:735:PHE:HE2	1.80	0.47
1:A:768:LEU:O	1:A:772:THR:HG23	2.14	0.47
1:A:721:GLN:O	1:A:724:PHE:HB3	2.15	0.47
1:B:139:GLN:O	1:B:143:ILE:HG12	2.15	0.47
1:B:1137:SER:HB3	1:B:1140:GLU:HB3	1.96	0.47
1:A:813:ARG:HD3	1:A:817:ASP:OD2	2.14	0.47
1:B:208:TRP:O	1:B:211:THR:OG1	2.31	0.47
1:A:215:LEU:O	1:A:219:PRO:HD3	2.14	0.47
1:A:878:GLN:CG	1:A:934:PHE:HE1	2.20	0.47
1:B:999:VAL:HG12	1:B:1003:HIS:NE2	2.29	0.47
1:A:175:VAL:HA	1:A:178:ILE:HG13	1.96	0.47
1:B:688:VAL:HG23	1:B:690:PRO:CD	2.42	0.47
1:B:1038:PHE:HB3	1:B:1049:LEU:HB2	1.96	0.47
1:B:1038:PHE:HD2	1:B:1049:LEU:HD23	1.80	0.47
1:A:1234:GLN:HA	1:A:1253:HIS:CD2	2.50	0.47
1:A:818:ALA:HA	1:A:821:VAL:HG22	1.96	0.47
1:B:92:SER:OG	1:B:96:LYS:NZ	2.46	0.47
1:A:785:ARG:HG2	1:A:814:LEU:O	2.15	0.47
1:A:332:PHE:CD1	1:A:335:LEU:HD12	2.49	0.47
1:B:785:ARG:HG2	1:B:814:LEU:O	2.15	0.47
1:A:311:TRP:HB2	1:A:751:PHE:CD1	2.50	0.47
1:B:129:VAL:HG21	1:B:938:PHE:HB3	1.96	0.47
1:B:1051:GLY:HA3	1:B:1246:LYS:NZ	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:538:ALA:O	1:B:542:VAL:HG23	2.15	0.47
1:B:1060:GLN:HB2	1:B:1237:ASP:CG	2.35	0.47
1:A:862:PRO:O	1:A:866:ILE:HG13	2.14	0.47
1:A:311:TRP:HZ3	1:A:748:SER:HA	1.80	0.47
1:A:320:LYS:HB3	1:A:322:TYR:CD1	2.49	0.47
1:A:1092:LEU:HD21	1:A:1100:LEU:HD13	1.97	0.47
1:B:466:ILE:HG12	1:B:547:ILE:HD12	1.97	0.47
1:B:1071:GLY:H	1:B:1074:THR:HG23	1.80	0.47
1:B:306:TYR:HE2	1:B:754:LEU:HD11	1.79	0.47
1:B:806:THR:HG23	1:B:809:ALA:H	1.80	0.47
1:A:696:ILE:HG13	1:A:828:ARG:HH21	1.80	0.47
1:B:1202:LEU:HB3	1:B:1207:GLU:HG2	1.97	0.47
1:B:293:ILE:HG12	1:B:767:PHE:HD1	1.79	0.47
1:B:312:TYR:O	1:B:316:LEU:HG	2.14	0.47
1:A:172:THR:O	1:A:175:VAL:HG22	2.15	0.47
1:A:1176:GLN:O	1:A:1180:ILE:HG13	2.15	0.47
1:B:813:ARG:HD3	1:B:817:ASP:OD2	2.15	0.47
1:B:949:TYR:CD1	1:B:953:PHE:HE2	2.30	0.47
1:B:1032:GLN:HB3	1:B:1091:PHE:HD1	1.80	0.47
1:A:1050:GLN:H	1:A:1245:GLY:HA3	1.80	0.47
1:B:840:GLY:O	1:B:844:ILE:HG12	2.14	0.47
1:A:1137:SER:HB3	1:A:1140:GLU:HB3	1.96	0.47
1:B:1062:LEU:HD12	1:B:1224:ILE:HG23	1.96	0.47
1:B:1050:GLN:H	1:B:1245:GLY:HA3	1.80	0.46
1:B:1038:PHE:HB3	1:B:1049:LEU:HD23	1.97	0.46
1:A:327:VAL:HB	1:A:331:PHE:CE1	2.50	0.46
1:A:1018:SER:C	1:A:1019:THR:HG22	2.36	0.46
1:A:1104:TRP:HE1	1:A:1108:GLN:HE22	1.62	0.46
1:B:856:LEU:O	1:B:860:ILE:HG12	2.14	0.46
1:B:862:PRO:O	1:B:866:ILE:HG13	2.14	0.46
1:B:129:VAL:HG11	1:B:934:PHE:O	2.16	0.46
1:B:132:TRP:CE3	1:B:133:CYS:N	2.82	0.46
1:B:930:LYS:HD2	1:B:934:PHE:CE2	2.49	0.46
1:B:107:MET:HA	1:B:110:TYR:CD2	2.50	0.46
1:B:358:ALA:O	1:B:362:PHE:N	2.48	0.46
1:B:688:VAL:CG2	1:B:690:PRO:HD2	2.41	0.46
1:A:1142:VAL:HA	1:A:1161:TYR:OH	2.15	0.46
1:A:435:LEU:HD23	1:A:440:TYR:HB2	1.97	0.46
1:A:725:SER:HB3	1:A:975:SER:OG	2.15	0.46
1:A:1032:GLN:HB2	1:A:1091:PHE:HB2	1.97	0.46
1:B:768:LEU:O	1:B:772:THR:HG23	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:949:TYR:CD1	1:A:953:PHE:HE2	2.31	0.46
1:A:159:PHE:CD1	1:A:900:PHE:CD2	3.02	0.46
1:A:1159:ASP:HB3	1:A:1162:ASN:HB2	1.98	0.46
1:A:132:TRP:CE3	1:A:133:CYS:N	2.84	0.46
1:B:1122:SER:HB3	1:B:1125:GLU:HG2	1.98	0.46
1:B:306:TYR:CD1	1:B:332:PHE:HE1	2.33	0.46
1:B:721:GLN:O	1:B:724:PHE:HB3	2.16	0.46
1:B:480:ILE:CG1	1:B:518:THR:HG23	2.44	0.46
1:A:856:LEU:O	1:A:860:ILE:HG12	2.14	0.46
1:B:922:ILE:HB	1:B:923:PRO:HD3	1.98	0.46
1:B:315:SER:O	1:B:320:LYS:HG3	2.15	0.46
1:A:1038:PHE:CD2	1:A:1049:LEU:HD23	2.51	0.46
1:A:453:ASP:HB3	1:A:456:THR:HG23	1.98	0.46
1:B:896:ALA:HB2	1:B:916:TYR:HE2	1.81	0.46
1:B:784:LEU:O	1:B:788:VAL:HG23	2.16	0.46
1:A:603:VAL:HG23	1:A:604:GLU:H	1.81	0.46
1:A:921:GLN:NE2	1:B:479:THR:HG22	2.22	0.46
1:A:327:VAL:O	1:A:331:PHE:HD1	1.99	0.46
1:B:715:ILE:HD12	1:B:836:ILE:HG13	1.97	0.46
1:A:332:PHE:O	1:A:335:LEU:HB2	2.15	0.46
1:A:254:LEU:HB2	1:A:807:THR:HG23	1.98	0.46
1:A:421:LEU:HD13	1:A:579:ILE:HG13	1.98	0.46
1:A:590:ASN:OD1	1:A:590:ASN:N	2.39	0.46
1:B:351:PHE:O	1:B:355:ARG:HB2	2.16	0.46
1:A:1091:PHE:CE2	1:A:1096:GLU:HG2	2.51	0.46
1:B:784:LEU:HG	1:B:821:VAL:HG21	1.98	0.46
1:B:818:ALA:HA	1:B:821:VAL:HG22	1.98	0.46
1:A:740:PRO:HD2	1:A:741:PRO:HD2	1.98	0.45
1:B:147:PHE:CE2	1:B:171:LEU:HB3	2.51	0.45
1:B:459:VAL:O	1:B:463:ARG:HG2	2.16	0.45
1:A:689:PRO:N	1:A:690:PRO:CD	2.80	0.45
1:B:1064:LEU:HB3	1:B:1226:ILE:HG22	1.96	0.45
1:A:1158:PRO:O	1:A:1163:THR:OG1	2.34	0.45
1:A:107:MET:HA	1:A:110:TYR:CD2	2.52	0.45
1:B:460:ARG:HA	1:B:906:LEU:HD13	1.98	0.45
1:A:538:ALA:O	1:A:542:VAL:HG23	2.16	0.45
1:A:1032:GLN:HB3	1:A:1091:PHE:HD1	1.80	0.45
1:A:208:TRP:O	1:A:212:LEU:HG	2.16	0.45
1:A:487:GLY:O	1:A:907:THR:HG21	2.15	0.45
1:A:906:LEU:HA	1:A:909:GLU:HG2	1.98	0.45
1:A:392:ASN:N	1:A:409:LEU:O	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:198:GLY:O	1:A:202:ILE:HG13	2.16	0.45
1:B:332:PHE:CD1	1:B:335:LEU:HD12	2.51	0.45
1:A:697:LEU:HD23	1:A:828:ARG:CZ	2.46	0.45
1:B:1068:SER:OG	1:B:1069:GLY:N	2.49	0.45
1:A:837:ALA:HB1	1:A:982:MET:HE2	1.98	0.45
1:B:697:LEU:HD23	1:B:828:ARG:CZ	2.47	0.45
1:B:232:LEU:HD23	1:B:232:LEU:HA	1.66	0.45
1:B:132:TRP:HD1	1:B:183:GLY:CA	2.04	0.45
1:A:1022:LEU:HG	1:A:1104:TRP:CE2	2.52	0.45
1:B:460:ARG:O	1:B:464:GLU:HG3	2.16	0.45
1:B:332:PHE:HD1	1:B:335:LEU:HD12	1.82	0.45
1:B:1022:LEU:HG	1:B:1104:TRP:NE1	2.31	0.45
1:B:852:GLN:HG3	1:B:955:PHE:HE2	1.81	0.45
1:A:509:ILE:HD13	1:A:516:PHE:CE1	2.52	0.45
1:B:699:LEU:HD11	1:B:1005:ILE:HG12	1.99	0.45
1:B:733:GLY:HA2	1:B:967:PHE:HB2	1.99	0.45
1:A:81:VAL:HG22	1:A:99:MET:HB3	1.99	0.45
1:A:147:PHE:CE2	1:A:171:LEU:HB3	2.52	0.45
1:A:688:VAL:HG23	1:A:690:PRO:HD2	1.99	0.45
1:A:156:ILE:HG22	1:A:160:ASP:OD2	2.16	0.45
1:A:231:ILE:HG23	1:A:235:PHE:CD2	2.52	0.45
1:B:397:TYR:O	1:B:399:SER:N	2.48	0.45
1:A:358:ALA:O	1:A:362:PHE:N	2.50	0.45
1:B:1120:ASP:OD1	1:B:1120:ASP:N	2.50	0.45
1:B:861:VAL:HB	1:B:862:PRO:HD3	1.98	0.45
1:A:1057:LYS:O	1:A:1060:GLN:HG2	2.17	0.45
1:A:129:VAL:HG11	1:A:934:PHE:O	2.16	0.45
1:A:845:ILE:HG22	1:A:849:TYR:CE1	2.52	0.45
1:B:463:ARG:HH12	1:B:903:VAL:HG22	1.82	0.45
1:A:1239:ILE:HD13	1:A:1253:HIS:N	2.32	0.45
1:A:327:VAL:HB	1:A:331:PHE:HE1	1.82	0.45
1:B:382:ASP:CA	1:B:384:ILE:CD1	2.95	0.45
1:B:281:LYS:HD2	1:B:778:GLU:HG2	1.98	0.45
1:B:175:VAL:HA	1:B:178:ILE:HG13	1.99	0.45
1:A:468:VAL:HB	1:A:904:VAL:HG21	1.99	0.45
1:B:1142:VAL:HA	1:B:1161:TYR:OH	2.16	0.45
1:A:813:ARG:O	1:A:817:ASP:HB2	2.17	0.44
1:A:306:TYR:HE2	1:A:754:LEU:HD11	1.82	0.44
1:B:780:LEU:O	1:B:784:LEU:HB2	2.17	0.44
1:B:603:VAL:HG23	1:B:604:GLU:N	2.33	0.44
1:A:100:PHE:HA	1:A:103:LEU:HB2	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:861:VAL:HB	1:A:862:PRO:HD3	2.00	0.44
1:B:1234:GLN:HA	1:B:1253:HIS:CD2	2.52	0.44
1:B:257:ILE:HG12	1:B:800:PHE:CG	2.51	0.44
1:B:1005:ILE:HA	1:B:1008:ILE:HG22	1.99	0.44
1:A:423:GLY:HA3	1:A:429:LYS:HD2	1.98	0.44
1:B:311:TRP:HB2	1:B:751:PHE:CD1	2.52	0.44
1:A:330:VAL:O	1:A:333:SER:HB2	2.17	0.44
1:A:158:TRP:CD1	1:A:159:PHE:N	2.86	0.44
1:A:820:GLN:HB3	1:A:997:ALA:HA	1.99	0.44
1:A:390:PHE:O	1:A:410:ASN:HA	2.18	0.44
1:B:1054:LEU:HD11	1:B:1240:VAL:HG11	1.99	0.44
1:A:856:LEU:HD21	1:A:951:ALA:HB1	1.98	0.44
1:B:1158:PRO:O	1:B:1163:THR:OG1	2.34	0.44
1:A:415:SER:HA	1:A:577:THR:HG22	1.99	0.44
1:A:1081:ARG:HB2	1:A:1105:LEU:HD23	1.98	0.44
1:B:1193:LEU:HD12	1:B:1218:ARG:HB3	1.99	0.44
1:A:603:VAL:HG23	1:A:604:GLU:N	2.32	0.44
1:A:460:ARG:O	1:A:464:GLU:HG3	2.17	0.44
1:A:773:PHE:HA	1:A:776:ALA:HB3	2.00	0.44
1:B:718:GLY:HA2	1:B:837:ALA:HB2	2.00	0.44
1:A:780:LEU:O	1:A:784:LEU:HB2	2.18	0.44
1:B:603:VAL:HG23	1:B:604:GLU:H	1.81	0.44
1:A:925:ARG:HA	1:B:514:HIS:ND1	2.32	0.44
1:B:308:LEU:CD2	1:B:312:TYR:CE2	3.01	0.44
1:A:459:VAL:O	1:A:463:ARG:HG2	2.17	0.44
1:A:810:LEU:O	1:A:813:ARG:HB2	2.17	0.44
1:B:158:TRP:CD1	1:B:159:PHE:N	2.86	0.44
1:A:211:THR:HG23	1:A:331:PHE:CD2	2.53	0.44
1:B:790:LYS:N	1:B:790:LYS:HD3	2.32	0.44
1:A:1068:SER:OG	1:A:1069:GLY:N	2.50	0.44
1:B:306:TYR:CD1	1:B:332:PHE:CE1	3.06	0.44
1:A:902:THR:OG1	1:A:908:ARG:HB2	2.18	0.44
1:B:232:LEU:HD11	1:B:291:ALA:HA	2.00	0.44
1:B:390:PHE:HE2	1:B:432:THR:HB	1.82	0.44
1:A:718:GLY:HA2	1:A:837:ALA:HB2	2.00	0.43
1:A:970:VAL:HG23	1:A:971:LEU:CD2	2.27	0.43
1:A:128:GLN:O	1:A:131:PHE:HB3	2.18	0.43
1:A:1063:ALA:HB3	1:A:1239:ILE:HG13	1.98	0.43
1:B:231:ILE:HG23	1:B:235:PHE:CD2	2.53	0.43
1:B:521:GLY:N	1:B:526:GLN:OE1	2.33	0.43
1:A:1221:ARG:HD3	1:A:1221:ARG:HA	1.85	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:854:THR:HG22	1:A:858:LEU:HD23	1.99	0.43
1:B:132:TRP:CG	1:B:183:GLY:HA2	2.52	0.43
1:B:878:GLN:HG3	1:B:934:PHE:CE1	2.54	0.43
1:B:810:LEU:O	1:B:813:ARG:HB2	2.17	0.43
1:B:1239:ILE:HD13	1:B:1253:HIS:N	2.33	0.43
1:A:1064:LEU:HB3	1:A:1226:ILE:HG22	2.00	0.43
1:B:243:TYR:CE2	1:B:815:ALA:HB2	2.54	0.43
1:B:275:ASN:O	1:B:278:GLU:HB3	2.18	0.43
1:B:1039:ASN:OD1	1:B:1045:SER:OG	2.36	0.43
1:B:419:VAL:HG12	1:B:578:THR:O	2.18	0.43
1:A:273:TYR:CE2	1:A:277:LEU:HD11	2.53	0.43
1:A:379:HIS:HB3	1:A:457:ILE:HA	1.99	0.43
1:A:1020:GLN:HB2	1:A:1101:ASN:N	2.33	0.43
1:B:316:LEU:HA	1:B:320:LYS:HB2	2.00	0.43
1:B:1022:LEU:HG	1:B:1104:TRP:CE2	2.54	0.43
1:A:419:VAL:HG12	1:A:578:THR:O	2.18	0.43
1:A:293:ILE:HG12	1:A:767:PHE:HD1	1.83	0.43
1:B:574:GLU:HG3	1:B:574:GLU:O	2.18	0.43
1:B:285:ILE:HB	1:B:778:GLU:OE2	2.19	0.43
1:B:508:PHE:O	1:B:512:LEU:HB2	2.19	0.43
1:A:1039:ASN:OD1	1:A:1045:SER:OG	2.36	0.43
1:B:397:TYR:C	1:B:399:SER:H	2.21	0.43
1:B:435:LEU:HD23	1:B:440:TYR:HB2	2.00	0.43
1:B:734:VAL:HG21	1:B:746:GLN:HG3	2.00	0.43
1:A:314:THR:HG22	1:A:735:PHE:HE2	1.82	0.43
1:A:466:ILE:HG12	1:A:547:ILE:HD12	1.99	0.43
1:B:1100:LEU:HD11	1:B:1104:TRP:CZ3	2.51	0.43
1:B:979:PHE:HA	1:B:982:MET:CG	2.48	0.43
1:A:200:PHE:HE2	1:A:215:LEU:HD21	1.82	0.43
1:A:1050:GLN:O	1:A:1246:LYS:HD2	2.18	0.43
1:A:1150:ILE:HB	1:A:1179:ARG:HB3	2.00	0.43
1:B:1150:ILE:HB	1:B:1179:ARG:HB3	2.00	0.43
1:B:392:ASN:N	1:B:409:LEU:O	2.52	0.43
1:A:111:ALA:HA	1:A:114:TYR:HE2	1.83	0.43
1:B:221:LEU:HD23	1:B:301:LEU:HB3	2.01	0.43
1:B:1033:PHE:HB2	1:B:1054:LEU:H	1.83	0.43
1:A:419:VAL:HG23	1:A:593:VAL:HG13	2.00	0.43
1:A:232:LEU:HD11	1:A:291:ALA:HA	2.01	0.43
1:A:384:ILE:HD11	1:A:461:TYR:HH	1.84	0.43
1:A:281:LYS:HD2	1:A:778:GLU:HG2	2.00	0.43
1:B:1061:THR:N	1:B:1237:ASP:OD1	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:413:VAL:HG11	1:B:419:VAL:HG11	2.01	0.43
1:B:431:THR:O	1:B:435:LEU:HG	2.19	0.43
1:A:699:LEU:HD11	1:A:1005:ILE:HG12	2.00	0.43
1:A:397:TYR:C	1:A:399:SER:H	2.22	0.43
1:A:574:GLU:HG3	1:A:574:GLU:O	2.18	0.43
1:A:867:ALA:HA	1:A:870:VAL:HG12	2.01	0.43
1:B:121:VAL:HA	1:B:124:VAL:HG22	2.01	0.43
1:B:813:ARG:O	1:B:817:ASP:HB2	2.18	0.43
1:A:1062:LEU:HD12	1:A:1224:ILE:HG23	2.01	0.43
1:A:992:PRO:O	1:A:994:TYR:N	2.51	0.42
1:A:1074:THR:O	1:A:1078:LEU:HG	2.18	0.42
1:A:962:GLN:O	1:A:963:GLN:HG2	2.19	0.42
1:B:611:LEU:HD23	1:B:618:TYR:CG	2.54	0.42
1:A:471:GLN:HB3	1:A:552:GLU:HB2	2.00	0.42
1:B:1091:PHE:CE2	1:B:1096:GLU:HG2	2.54	0.42
1:A:1101:ASN:HB3	1:A:1104:TRP:HB3	2.01	0.42
1:B:111:ALA:HA	1:B:114:TYR:HE2	1.82	0.42
1:B:900:PHE:O	1:B:903:VAL:HG12	2.19	0.42
1:A:211:THR:HG22	1:A:334:VAL:HG21	2.01	0.42
1:A:716:ILE:O	1:A:720:LEU:HB2	2.19	0.42
1:A:797:VAL:HG13	1:A:797:VAL:O	2.19	0.42
1:B:389:GLU:HB2	1:B:448:SER:HB3	2.01	0.42
1:B:1173:SER:OG	1:B:1174:GLY:N	2.52	0.42
1:B:946:TYR:O	1:B:950:ALA:N	2.48	0.42
1:A:285:ILE:HB	1:A:778:GLU:OE2	2.19	0.42
1:A:1181:ALA:HA	1:A:1184:ARG:NE	2.33	0.42
1:A:457:ILE:HD11	1:A:462:LEU:HD13	2.02	0.42
1:A:298:ALA:O	1:A:302:ILE:HG13	2.19	0.42
1:B:703:GLU:HB3	1:B:783:ARG:HD2	2.00	0.42
1:A:734:VAL:HG21	1:A:746:GLN:HG3	2.01	0.42
1:A:396:SER:HB2	1:A:404:GLN:HA	2.00	0.42
1:B:429:LYS:HB2	1:B:429:LYS:HE2	1.78	0.42
1:A:1038:PHE:HD2	1:A:1049:LEU:HD23	1.84	0.42
1:B:1057:LYS:H	1:B:1060:GLN:NE2	2.16	0.42
1:B:961:THR:HG22	1:B:961:THR:O	2.20	0.42
1:A:155:GLU:HB3	1:A:156:ILE:H	1.56	0.42
1:A:1060:GLN:HB2	1:A:1237:ASP:CG	2.39	0.42
1:B:500:VAL:O	1:B:505:ALA:N	2.46	0.42
1:A:745:ARG:HD2	1:A:745:ARG:HA	1.83	0.42
1:B:725:SER:HB3	1:B:975:SER:OG	2.19	0.42
1:A:278:GLU:OE2	1:A:782:LYS:NZ	2.43	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1043:ARG:HH12	1:A:1086:MET:CE	2.32	0.42
1:B:713:CYS:SG	1:B:768:LEU:HB3	2.60	0.42
1:A:1173:SER:OG	1:A:1174:GLY:N	2.53	0.42
1:A:911:LYS:O	1:A:915:MET:HG3	2.20	0.42
1:B:972:LEU:O	1:B:975:SER:HB2	2.20	0.42
1:A:711:ILE:HD11	1:A:832:ILE:HG21	2.02	0.42
1:A:189:PHE:CZ	1:A:348:ILE:HD11	2.55	0.42
1:B:509:ILE:HD13	1:B:516:PHE:CE1	2.54	0.42
1:B:132:TRP:CB	1:B:184:ASP:H	2.27	0.42
1:A:71:PHE:HE1	1:A:953:PHE:CZ	2.37	0.42
1:A:270:LEU:CG	1:A:790:LYS:HD2	2.41	0.42
1:A:531:GLN:O	1:A:535:ILE:HG13	2.20	0.42
1:A:896:ALA:HB2	1:A:916:TYR:HE2	1.84	0.42
1:B:163:ASP:OD2	1:B:167:LEU:HD13	2.20	0.42
1:A:993:ASP:O	1:A:994:TYR:C	2.58	0.42
1:A:1091:PHE:HE2	1:A:1096:GLU:HG2	1.85	0.42
1:A:1191:HIS:CD2	1:A:1221:ARG:HE	2.38	0.42
1:B:1175:GLY:O	1:B:1179:ARG:HG3	2.20	0.42
1:B:688:VAL:HG21	1:B:1006:ARG:NH1	2.35	0.42
1:A:777:GLY:CA	1:A:822:LYS:HG3	2.50	0.42
1:A:922:ILE:HB	1:A:923:PRO:HD3	2.01	0.42
1:A:1120:ASP:N	1:A:1120:ASP:OD1	2.53	0.42
1:B:821:VAL:HG11	1:B:1004:ILE:HG21	2.02	0.42
1:A:110:TYR:O	1:A:114:TYR:HD2	2.03	0.41
1:A:163:ASP:OD2	1:A:167:LEU:HD13	2.20	0.41
1:B:198:GLY:O	1:B:202:ILE:HG13	2.20	0.41
1:A:853:LEU:HD21	1:A:973:VAL:HG22	2.01	0.41
1:B:797:VAL:HG13	1:B:797:VAL:O	2.20	0.41
1:A:406:LEU:HD11	1:A:409:LEU:HG	2.02	0.41
1:A:121:VAL:HA	1:A:124:VAL:HG22	2.02	0.41
1:A:930:LYS:CD	1:A:934:PHE:CE2	3.00	0.41
1:B:903:VAL:HG23	1:B:909:GLU:OE2	2.20	0.41
1:B:684:LEU:HD22	1:B:809:ALA:HB2	2.02	0.41
1:B:1063:ALA:HB3	1:B:1239:ILE:HG13	2.02	0.41
1:B:1011:THR:HG23	1:B:1011:THR:O	2.20	0.41
1:A:821:VAL:HG11	1:A:1004:ILE:HG21	2.01	0.41
1:B:273:TYR:CE2	1:B:277:LEU:HD11	2.54	0.41
1:B:911:LYS:O	1:B:915:MET:HG3	2.20	0.41
1:B:1005:ILE:O	1:B:1008:ILE:HG22	2.21	0.41
1:A:157:GLY:O	1:A:161:VAL:HG22	2.20	0.41
1:B:867:ALA:HA	1:B:870:VAL:HG12	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:132:TRP:CH2	1:A:179:ASN:OD1	2.72	0.41
1:B:515:GLN:O	1:B:518:THR:HG22	2.21	0.41
1:A:1202:LEU:HB3	1:A:1207:GLU:HG2	2.01	0.41
1:A:1138:TYR:O	1:A:1141:ILE:HG12	2.20	0.41
1:B:971:LEU:HA	1:B:971:LEU:HD13	1.92	0.41
1:A:969:ASN:N	1:A:972:LEU:HD13	2.25	0.41
1:B:1050:GLN:O	1:B:1246:LYS:HD2	2.21	0.41
1:A:792:MET:HE1	1:A:810:LEU:HD22	2.03	0.41
1:A:1234:GLN:HG2	1:A:1253:HIS:CD2	2.55	0.41
1:A:214:ILE:HA	1:A:217:ILE:HG12	2.03	0.41
1:A:1115:GLU:HA	1:A:1116:PRO:HD2	1.87	0.41
1:B:320:LYS:HB3	1:B:322:TYR:CD1	2.55	0.41
1:B:468:VAL:HB	1:B:904:VAL:HG21	2.01	0.41
1:B:1074:THR:O	1:B:1078:LEU:HG	2.20	0.41
1:A:1011:THR:HG23	1:A:1011:THR:O	2.20	0.41
1:A:1054:LEU:HD11	1:A:1240:VAL:HG11	2.02	0.41
1:A:845:ILE:HA	1:A:845:ILE:HD13	1.95	0.41
1:A:174:ASP:O	1:A:178:ILE:HG13	2.21	0.41
1:A:716:ILE:CD1	1:A:765:THR:HB	2.48	0.41
1:B:716:ILE:O	1:B:720:LEU:HB2	2.21	0.41
1:B:1196:ASP:CG	1:B:1226:ILE:HD11	2.41	0.41
1:A:1119:PHE:O	1:A:1126:ASN:ND2	2.44	0.41
1:B:846:SER:HA	1:B:849:TYR:CD2	2.55	0.41
1:B:217:ILE:HD12	1:B:305:SER:HA	2.02	0.41
1:B:1181:ALA:HA	1:B:1184:ARG:NE	2.35	0.41
1:A:1067:SER:OG	1:A:1068:SER:N	2.53	0.41
1:B:157:GLY:O	1:B:161:VAL:HG22	2.20	0.41
1:B:528:SER:O	1:B:532:LYS:HG3	2.21	0.41
1:B:310:PHE:HD1	1:B:310:PHE:HA	1.69	0.41
1:B:773:PHE:HA	1:B:776:ALA:HB3	2.01	0.41
1:B:110:TYR:O	1:B:114:TYR:HD2	2.03	0.41
1:A:970:VAL:HG23	1:A:971:LEU:N	2.36	0.41
1:B:696:ILE:CG1	1:B:828:ARG:HH21	2.33	0.41
1:B:1061:THR:HA	1:B:1223:CYS:SG	2.61	0.41
1:A:370:SER:OG	1:A:371:ILE:N	2.54	0.41
1:B:1234:GLN:HG2	1:B:1253:HIS:NE2	2.36	0.41
1:B:257:ILE:HG21	1:B:800:PHE:CD1	2.56	0.41
1:A:1196:ASP:CG	1:A:1226:ILE:HD11	2.40	0.41
1:B:298:ALA:O	1:B:302:ILE:HG13	2.20	0.41
1:A:285:ILE:HB	1:A:778:GLU:CD	2.41	0.41
1:A:1192:ILE:HA	1:A:1222:THR:O	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1234:GLN:HG2	1:A:1253:HIS:NE2	2.35	0.41
1:A:480:ILE:HG12	1:A:518:THR:HG23	2.02	0.41
1:A:857:LEU:HD13	1:A:976:ALA:HB3	2.02	0.41
1:A:416:GLY:H	1:A:577:THR:HG22	1.86	0.41
1:A:1017:TYR:CD1	1:A:1018:SER:N	2.86	0.40
1:B:969:ASN:CA	1:B:972:LEU:HB2	2.49	0.40
1:A:1111:ILE:HA	1:A:1194:LEU:HB2	2.02	0.40
1:A:1005:ILE:HA	1:A:1008:ILE:HG22	2.03	0.40
1:A:163:ASP:O	1:A:164:VAL:HG22	2.21	0.40
1:B:163:ASP:O	1:B:164:VAL:HG22	2.22	0.40
1:B:827:SER:O	1:B:831:VAL:HG23	2.21	0.40
1:A:793:LEU:HA	1:A:793:LEU:HD12	1.94	0.40
1:B:1081:ARG:HB2	1:B:1105:LEU:HD23	2.03	0.40
1:A:397:TYR:O	1:A:399:SER:N	2.47	0.40
1:A:1019:THR:HG21	1:A:1101:ASN:CA	2.35	0.40
1:A:257:ILE:HG21	1:A:800:PHE:CD1	2.56	0.40
1:A:537:ILE:HD11	1:A:565:VAL:HG13	2.03	0.40
1:B:902:THR:OG1	1:B:908:ARG:HB2	2.22	0.40
1:B:254:LEU:HB2	1:B:807:THR:HG23	2.03	0.40
1:A:971:LEU:HD13	1:A:971:LEU:HA	1.88	0.40
1:B:217:ILE:HG21	1:B:308:LEU:HD22	2.04	0.40
1:A:275:ASN:O	1:A:278:GLU:HB3	2.21	0.40
1:A:351:PHE:O	1:A:355:ARG:HB2	2.20	0.40
1:B:327:VAL:HB	1:B:331:PHE:CE1	2.57	0.40
1:B:1053:SER:O	1:B:1054:LEU:HD13	2.22	0.40
1:A:827:SER:O	1:A:831:VAL:HG23	2.21	0.40
1:B:745:ARG:HD2	1:B:745:ARG:HA	1.84	0.40
1:A:88:SER:OG	1:A:89:THR:N	2.55	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	1178/1284 (92%)	1069 (91%)	109 (9%)	0	100	100
1	B	1178/1284 (92%)	1069 (91%)	109 (9%)	0	100	100
All	All	2356/2568 (92%)	2138 (91%)	218 (9%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains ⓘ

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	975/1064 (92%)	975 (100%)	0	100	100
1	B	975/1064 (92%)	975 (100%)	0	100	100
All	All	1950/2128 (92%)	1950 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (10) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	179	ASN
1	A	700	ASN
1	A	918	GLN
1	A	1108	GLN
1	A	1253	HIS
1	B	434	GLN
1	B	700	ASN
1	B	1060	GLN
1	B	1108	GLN
1	B	1253	HIS

5.3.3 RNA ⓘ

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 12 ligands modelled in this entry, 12 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

6.1 Protein, DNA and RNA chains

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	1182/1284 (92%)	-0.03	46 (3%) 43 29	48, 98, 147, 186	0
1	B	1182/1284 (92%)	-0.03	38 (3%) 51 35	50, 103, 148, 189	0
All	All	2364/2568 (92%)	-0.03	84 (3%) 46 32	48, 100, 147, 189	0

All (84) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	33	VAL	5.5
1	A	1044	PRO	5.0
1	B	598	ASP	4.5
1	A	963	GLN	4.5
1	A	964	LEU	4.5
1	A	623	MET	4.4
1	B	876	SER	4.4
1	A	312	TYR	4.2
1	B	839	LEU	3.9
1	A	1132	ASN	3.8
1	B	1221	ARG	3.6
1	B	1132	ASN	3.5
1	A	685	ASP	3.4
1	B	1196	ASP	3.4
1	B	802	ASP	3.3
1	A	574	GLU	3.3
1	B	112	TYR	3.2
1	B	368	LYS	3.2
1	A	1162	ASN	3.2
1	A	737	ASN	3.2
1	B	105	GLU	3.1
1	A	400	ARG	3.1
1	A	966	THR	3.0
1	A	278	GLU	3.0

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Mol	Chain	Res	Type	RSRZ
1	A	1133	SER	3.0
1	B	852	GLN	3.0
1	B	1046	ILE	2.8
1	B	34	SER	2.7
1	B	87	ASN	2.7
1	B	522	GLU	2.7
1	A	86	LYS	2.7
1	A	1083	TYR	2.7
1	B	1260	LYS	2.6
1	B	1220	GLY	2.6
1	A	1136	VAL	2.6
1	B	583	HIS	2.6
1	A	969	ASN	2.6
1	A	1170	THR	2.6
1	B	626	THR	2.6
1	B	1156	SER	2.5
1	B	97	ARG	2.5
1	A	1045	SER	2.5
1	B	1069	GLY	2.5
1	A	33	VAL	2.5
1	A	90	ASN	2.4
1	A	876	SER	2.4
1	A	343	GLN	2.4
1	B	425	SER	2.4
1	B	687	ASP	2.4
1	A	1069	GLY	2.4
1	A	444	ASP	2.4
1	A	1219	GLU	2.4
1	A	626	THR	2.3
1	B	424	ASN	2.3
1	B	1012	PRO	2.3
1	A	684	LEU	2.2
1	A	360	GLU	2.2
1	A	598	ASP	2.2
1	A	967	PHE	2.2
1	B	85	SER	2.2
1	A	850	GLY	2.2
1	B	386	GLY	2.2
1	A	159	PHE	2.2
1	A	823	GLY	2.2
1	A	44	TRP	2.2
1	A	744	GLN	2.2

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Mol	Chain	Res	Type	RSRZ
1	A	37	THR	2.2
1	A	1129	TYR	2.1
1	A	702	THR	2.1
1	B	525	ALA	2.1
1	A	76	ASP	2.1
1	A	525	ALA	2.1
1	A	1046	ILE	2.1
1	B	104	GLU	2.1
1	A	1221	ARG	2.1
1	A	1168	LYS	2.1
1	B	601	VAL	2.1
1	B	367	ASN	2.1
1	B	993	ASP	2.1
1	B	1068	SER	2.0
1	B	1024	PRO	2.0
1	B	1133	SER	2.0
1	B	851	TRP	2.0
1	A	842	GLY	2.0

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

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

6.3 Carbohydrates [i](#)

There are no carbohydrates in this entry.

6.4 Ligands [i](#)

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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. 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	LLDF	B-factors(Å ²)	Q<0.9
2	HG	A	1303	1/1	0.94	0.10	-1.32	146,146,146,146	0
2	HG	B	1303	1/1	0.96	0.07	-1.65	146,146,146,146	0
2	HG	A	1306	1/1	0.90	0.15	-1.73	146,146,146,146	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors(\AA^2)	Q<0.9
2	HG	A	1305	1/1	0.93	0.06	-1.92	146,146,146,146	0
2	HG	A	1304	1/1	0.92	0.22	-	146,146,146,146	0
2	HG	B	1302	1/1	0.56	0.32	-	109,109,109,109	1
2	HG	B	1301	1/1	0.89	0.08	-	146,146,146,146	0
2	HG	B	1306	1/1	0.95	0.11	-	146,146,146,146	0
2	HG	A	1301	1/1	0.92	0.13	-	146,146,146,146	0
2	HG	A	1302	1/1	0.86	0.38	-	166,166,166,166	1
2	HG	B	1304	1/1	0.86	0.29	-	146,146,146,146	0
2	HG	B	1305	1/1	0.98	0.08	-	146,146,146,146	0

6.5 Other polymers [i](#)

There are no such residues in this entry.