Full wwPDB X-ray Structure Validation Report ⓘ

Dec 2, 2023 – 02:59 pm GMT

PDB ID	:	1UU0
Title	:	Histidinol-phosphate aminotransferase (HisC) from Thermotoga maritima (Apo-form)
Authors	:	Vega, M.C.; Fernandez, F.J.; Lehmann, F.; Wilmanns, M.
Deposited on	:	2003-12-12
Resolution	:	2.85 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

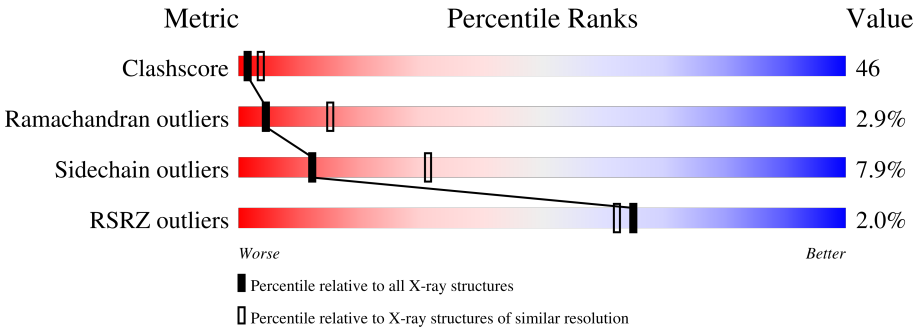
MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	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 2.85 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))
Clashscore	141614	3438 (2.90-2.82)
Ramachandran outliers	138981	3348 (2.90-2.82)
Sidechain outliers	138945	3351 (2.90-2.82)
RSRZ outliers	127900	3103 (2.90-2.82)

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	335	37% 56% 5%
1	B	335	36% 51% 7% 6%
1	C	335	5% 33% 53% 6% 7%
1	D	335	32% 58% 8%

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	PO4	C	1333	-	-	X	-

2 Entry composition (i)

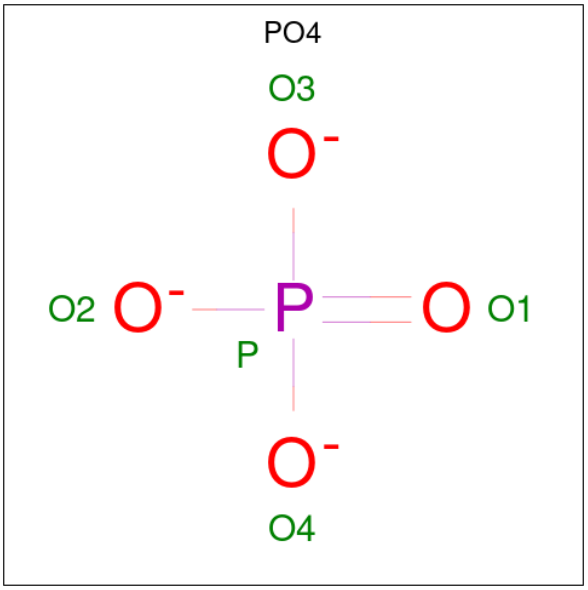
There are 3 unique types of molecules in this entry. The entry contains 10752 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 HISTIDINOL-PHOSPHATE AMINOTRANSFERASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	329	Total	C	N	O	S	0	0	1
			2719	1748	459	503	9			
1	B	315	Total	C	N	O	S	0	0	0
			2606	1677	438	482	9			
1	C	312	Total	C	N	O	S	0	0	1
			2570	1652	434	475	9			
1	D	329	Total	C	N	O	S	0	0	0
			2728	1754	460	505	9			

- Molecule 2 is PHOSPHATE ION (three-letter code: PO4) (formula: O_4P).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	O	P		0	0
			5	4	1			
2	B	1	Total	O	P		0	0
			5	4	1			

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	C	1	Total O P 5 4 1	0	0
2	D	1	Total O P 5 4 1	0	0

- Molecule 3 is water.

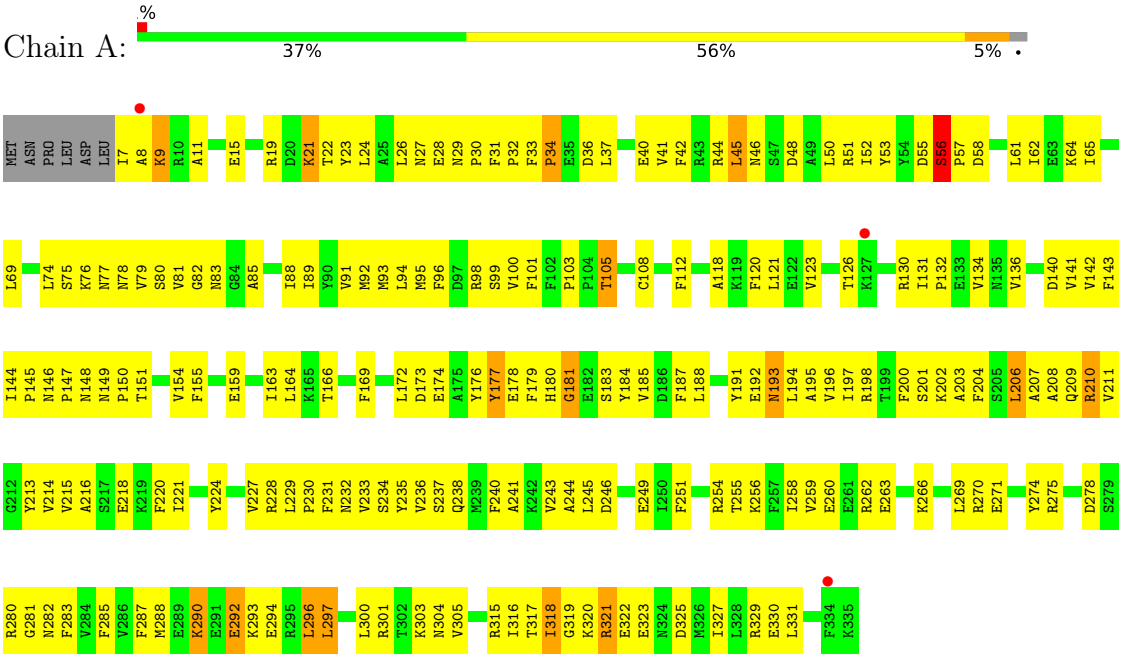
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	26	Total O 26 26	0	0
3	B	34	Total O 34 34	0	0
3	C	8	Total O 8 8	0	0
3	D	41	Total O 41 41	0	0

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.

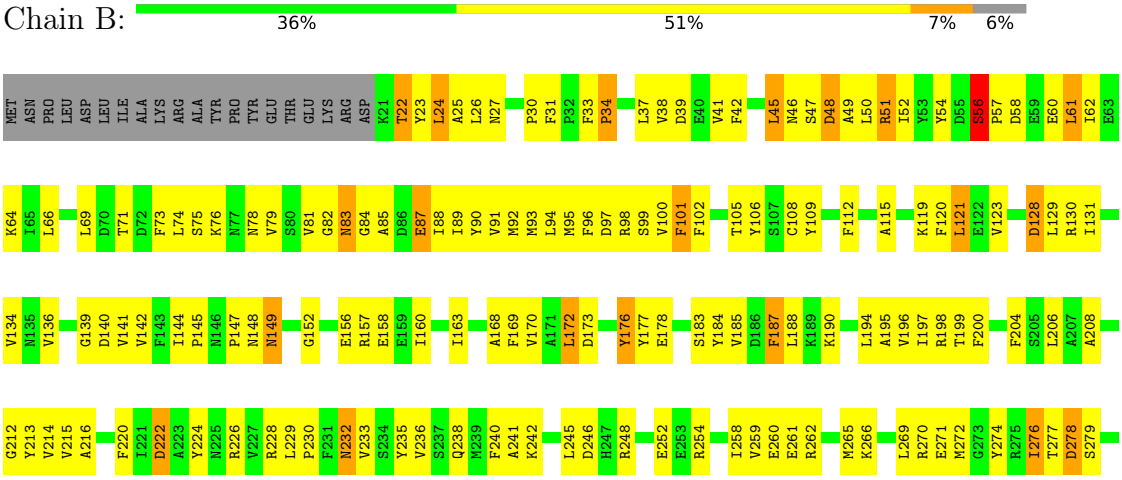
• Molecule 1: HISTIDINOL-PHOSPHATE AMINOTRANSFERASE

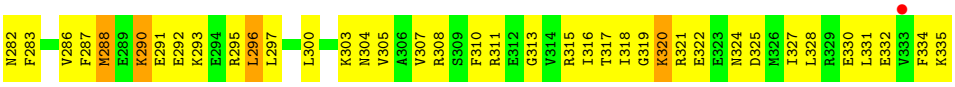
Chain A:



• Molecule 1: HISTIDINOL-PHOSPHATE AMINOTRANSFERASE

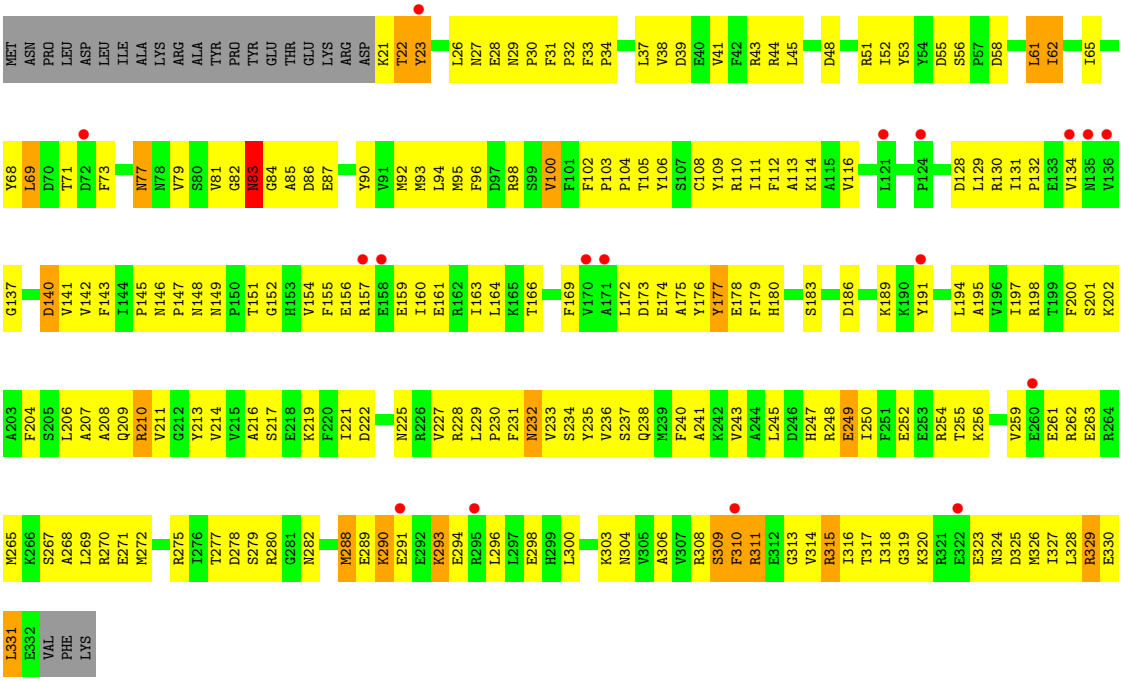
Chain B:





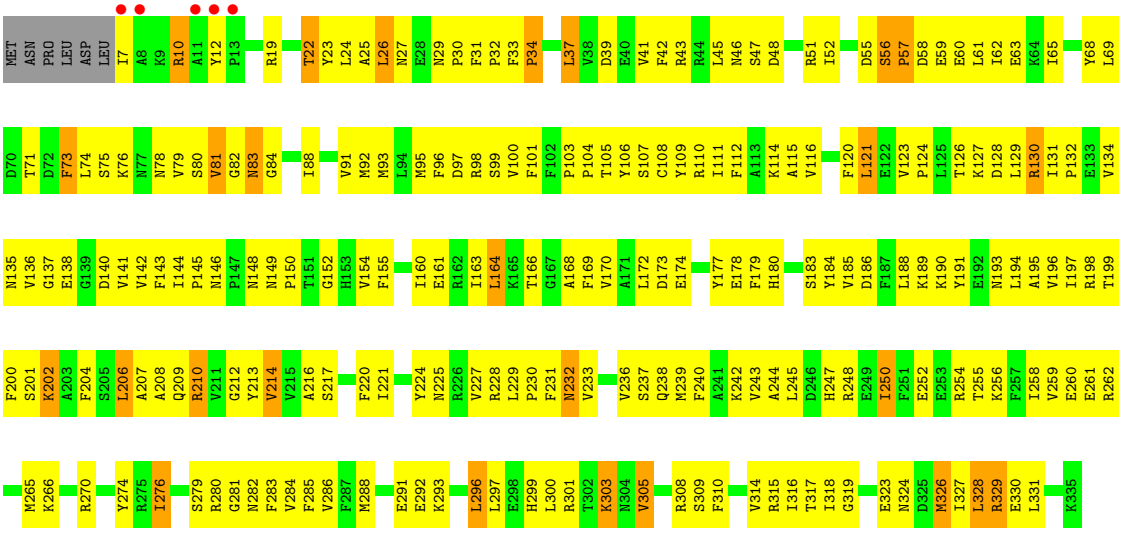
• Molecule 1: HISTIDINOL-PHOSPHATE AMINOTRANSFERASE

Chain C:



• Molecule 1: HISTIDINOL-PHOSPHATE AMINOTRANSFERASE

Chain D:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α, β, γ	183.83Å 139.80Å 53.41Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	24.11 – 2.85 24.11 – 2.85	Depositor EDS
% Data completeness (in resolution range)	88.4 (24.11-2.85) 88.3 (24.11-2.85)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	6.47 (at 2.84Å)	Xtriage
Refinement program	CNS 1.1	Depositor
R, R_{free}	0.221 , 0.284 0.222 , (Not available)	Depositor DCC
R_{free} test set	No test flags present.	wwPDB-VP
Wilson B-factor (Å^2)	42.5	Xtriage
Anisotropy	0.289	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.24 , 36.4	EDS
L-test for twinning[2]	$< \|L\| > = 0.40$, $< L^2 > = 0.23$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.90	EDS
Total number of atoms	10752	wwPDB-VP
Average B, all atoms (Å^2)	42.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.10% 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: PO4

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	0.45	0/2778	0.68	1/3746 (0.0%)
1	B	0.56	1/2662 (0.0%)	0.69	1/3587 (0.0%)
1	C	0.40	0/2625	0.60	0/3540
1	D	0.46	0/2787	0.66	0/3755
All	All	0.47	1/10852 (0.0%)	0.66	2/14628 (0.0%)

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	B	0	1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	95	MET	CG-SD	7.39	2.00	1.81

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	56	SER	C-N-CD	6.14	141.31	128.40
1	B	56	SER	C-N-CD	5.04	139.00	128.40

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	176	TYR	Sidechain

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	2719	0	2691	250	0
1	B	2606	0	2583	272	0
1	C	2570	0	2546	237	0
1	D	2728	0	2704	283	0
2	A	5	0	0	0	0
2	B	5	0	0	0	0
2	C	5	0	0	2	0
2	D	5	0	0	0	0
3	A	26	0	0	0	0
3	B	34	0	0	2	0
3	C	8	0	0	1	0
3	D	41	0	0	1	0
All	All	10752	0	10524	983	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 46.

All (983) 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:93:MET:SD	1:B:93:MET:CE	2.03	1.47
1:D:24:LEU:HD13	1:D:327:ILE:HD11	1.21	1.12
1:B:71:THR:HG21	1:B:74:LEU:HD12	1.36	1.05
1:B:224:TYR:CE2	1:B:228:ARG:HD3	1.97	1.00
1:B:142:VAL:HG21	1:B:163:ILE:HG21	1.45	0.98
1:B:319:GLY:H	1:B:324:ASN:HD21	1.12	0.98
1:D:137:GLY:HA2	1:D:166:THR:HG22	1.46	0.97
1:A:75:SER:H	1:A:78:ASN:HD22	1.11	0.96
1:C:327:ILE:HG13	1:C:328:LEU:H	1.27	0.96
1:A:227:VAL:HA	1:B:115:ALA:HB1	1.46	0.95
1:A:58:ASP:H	1:A:238:GLN:HE22	1.04	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:228:ARG:HE	1:C:232:ASN:HD21	1.01	0.93
1:D:24:LEU:CD1	1:D:327:ILE:HD11	1.96	0.93
1:B:131:ILE:HG21	1:B:163:ILE:HD11	1.49	0.92
1:D:146:ASN:HD22	1:D:155:PHE:H	1.14	0.91
1:A:193:ASN:HD22	1:A:193:ASN:H	1.16	0.90
1:D:30:PRO:HG3	1:D:258:ILE:HD11	1.53	0.90
1:C:290:LYS:HE3	1:C:290:LYS:HA	1.54	0.89
1:B:22:THR:HG23	1:B:305:VAL:HA	1.54	0.89
1:C:228:ARG:HE	1:C:232:ASN:ND2	1.70	0.89
1:B:89:ILE:HD13	1:B:109:TYR:HE1	1.37	0.89
1:A:163:ILE:O	1:A:166:THR:HB	1.73	0.88
1:A:230:PRO:HD3	1:B:112:PHE:HE1	1.38	0.88
1:B:145:PRO:O	1:B:148:ASN:HA	1.73	0.88
1:C:327:ILE:HG13	1:C:328:LEU:N	1.89	0.88
1:A:88:ILE:HD13	1:A:214:VAL:HG22	1.53	0.87
1:B:276:ILE:HD13	1:B:276:ILE:H	1.39	0.85
1:A:258:ILE:HG23	1:A:318:ILE:HG21	1.55	0.84
1:B:106:TYR:CE2	1:B:108:CYS:HB2	2.13	0.84
1:C:56:SER:OG	1:C:233:VAL:HG22	1.79	0.83
1:A:188:LEU:HD22	1:A:194:LEU:HD23	1.59	0.83
1:B:79:VAL:HG22	1:B:215:VAL:HG12	1.61	0.82
1:C:236:VAL:HG23	1:D:209:GLN:NE2	1.94	0.82
1:A:150:PRO:HB2	1:A:315:ARG:HG3	1.60	0.82
1:A:19:ARG:HG3	1:A:19:ARG:HH11	1.45	0.82
1:C:92:MET:HB2	1:C:143:PHE:HZ	1.43	0.82
1:A:131:ILE:HG21	1:A:163:ILE:HD11	1.61	0.82
1:C:209:GLN:HE22	1:D:236:VAL:HG22	1.44	0.82
1:C:228:ARG:NE	1:C:232:ASN:HD21	1.78	0.82
1:D:56:SER:HB3	1:D:57:PRO:HD3	1.60	0.81
1:A:230:PRO:HD3	1:B:112:PHE:CE1	2.16	0.81
1:C:236:VAL:H	1:D:209:GLN:HE22	1.29	0.80
1:C:323:GLU:O	1:C:326:MET:HB2	1.80	0.80
1:C:262:ARG:HB3	1:C:318:ILE:CD1	2.11	0.80
1:B:91:VAL:HG21	1:B:224:TYR:CE1	2.17	0.80
1:B:93:MET:HE1	1:B:112:PHE:HB3	1.64	0.79
1:C:320:LYS:H	1:C:323:GLU:HG3	1.47	0.79
1:B:319:GLY:N	1:B:324:ASN:HD21	1.80	0.79
1:C:177:TYR:CD2	1:C:183:SER:HB3	2.18	0.78
1:D:100:VAL:CG1	1:D:142:VAL:HG22	2.14	0.78
1:A:9:LYS:HB2	1:A:9:LYS:NZ	1.98	0.78
1:C:172:LEU:HD22	1:C:194:LEU:HD11	1.66	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:93:MET:HE1	1:D:112:PHE:CB	2.13	0.78
1:B:93:MET:HE1	1:B:112:PHE:CB	2.14	0.78
1:D:128:ASP:OD2	1:D:130:ARG:HG2	1.83	0.78
1:B:258:ILE:HG21	1:B:282:ASN:HB2	1.65	0.78
1:B:276:ILE:H	1:B:276:ILE:CD1	1.96	0.78
1:A:61:LEU:HD23	1:A:238:GLN:HE21	1.50	0.77
1:D:323:GLU:O	1:D:326:MET:HB2	1.85	0.77
1:B:270:ARG:HG2	1:B:276:ILE:CD1	2.15	0.77
1:C:209:GLN:HE22	1:D:236:VAL:CG2	1.98	0.77
1:D:96:PHE:CD2	1:D:141:VAL:HB	2.20	0.77
1:A:58:ASP:H	1:A:238:GLN:NE2	1.81	0.77
1:B:57:PRO:HB2	1:B:62:ILE:HD11	1.66	0.76
1:D:68:TYR:HA	1:D:248:ARG:HH22	1.49	0.76
1:C:201:SER:OG	1:C:207:ALA:HA	1.86	0.76
1:B:56:SER:HB3	1:B:57:PRO:HD2	1.68	0.75
1:B:265:MET:CE	1:B:324:ASN:HB3	2.16	0.75
1:B:270:ARG:CG	1:B:276:ILE:HD11	2.16	0.75
1:D:179:PHE:HE1	1:D:202:LYS:HB3	1.51	0.75
1:B:270:ARG:HG2	1:B:276:ILE:HD11	1.67	0.75
1:B:30:PRO:HG2	1:B:31:PHE:CD1	2.22	0.74
1:B:56:SER:HB3	1:B:57:PRO:CD	2.18	0.74
1:D:121:LEU:HD22	1:D:123:VAL:HG23	1.68	0.74
1:D:146:ASN:ND2	1:D:155:PHE:H	1.86	0.74
1:B:319:GLY:H	1:B:324:ASN:ND2	1.84	0.74
1:B:58:ASP:HB2	1:B:238:GLN:OE1	1.87	0.74
1:A:27:ASN:O	1:A:202:LYS:HD2	1.87	0.74
1:A:58:ASP:N	1:A:238:GLN:HE22	1.82	0.74
1:C:293:LYS:HD3	1:C:294:GLU:N	2.03	0.74
1:A:23:TYR:O	1:A:24:LEU:HD23	1.88	0.74
1:D:233:VAL:HG12	1:D:238:GLN:HG3	1.69	0.74
1:C:106:TYR:HB3	1:C:109:TYR:CE1	2.23	0.73
1:D:100:VAL:HG13	1:D:142:VAL:HG22	1.68	0.73
1:D:276:ILE:HD13	1:D:276:ILE:H	1.53	0.73
1:B:58:ASP:O	1:B:62:ILE:HD12	1.88	0.73
1:A:154:VAL:HG11	1:A:180:HIS:CD2	2.23	0.73
1:A:211:VAL:HG22	1:A:237:SER:HB3	1.69	0.73
1:A:41:VAL:CG2	1:A:243:VAL:HG21	2.19	0.73
1:B:62:ILE:HD13	3:B:2004:HOH:O	1.87	0.73
1:D:144:ILE:HD12	1:D:170:VAL:HG13	1.70	0.73
1:C:152:GLY:O	1:C:279:SER:HA	1.89	0.73
1:C:65:ILE:HG22	1:C:245:LEU:HD11	1.71	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:262:ARG:HD3	1:D:281:GLY:O	1.89	0.72
1:C:52:ILE:HD12	1:D:19:ARG:NH1	2.04	0.72
1:D:316:ILE:CG2	1:D:327:ILE:HD13	2.19	0.72
1:C:34:PRO:O	1:C:38:VAL:HG23	1.89	0.72
1:C:98:ARG:HG3	1:C:140:ASP:HB3	1.71	0.72
1:C:262:ARG:CB	1:C:318:ILE:HD11	2.20	0.71
1:B:34:PRO:HD3	1:B:254:ARG:HH12	1.53	0.71
1:A:99:SER:HB3	1:A:143:PHE:HE2	1.53	0.71
1:D:30:PRO:CG	1:D:258:ILE:HD11	2.20	0.71
1:B:89:ILE:HD13	1:B:109:TYR:CE1	2.24	0.71
1:B:91:VAL:CG2	1:B:224:TYR:HE1	2.02	0.71
1:B:288:MET:HG3	1:B:293:LYS:HB2	1.73	0.71
1:C:52:ILE:HD12	1:D:19:ARG:HH12	1.55	0.71
1:B:91:VAL:CG2	1:B:224:TYR:CE1	2.74	0.71
1:A:293:LYS:HG2	1:A:297:LEU:CD2	2.21	0.70
1:C:131:ILE:HG12	1:C:155:PHE:CD2	2.26	0.70
1:C:148:ASN:O	1:C:152:GLY:HA2	1.91	0.70
1:A:172:LEU:CD2	1:A:184:TYR:HB2	2.21	0.70
1:A:108:CYS:HB3	1:A:112:PHE:CE2	2.26	0.70
1:A:262:ARG:NH1	1:A:280:ARG:HA	2.06	0.70
1:B:148:ASN:O	1:B:152:GLY:N	2.24	0.70
1:D:30:PRO:HB3	1:D:319:GLY:HA2	1.73	0.70
1:C:103:PRO:HA	1:C:105:THR:N	2.07	0.70
1:C:262:ARG:HB3	1:C:318:ILE:HD11	1.73	0.70
1:D:316:ILE:HG21	1:D:327:ILE:HD13	1.74	0.70
1:A:216:ALA:HB3	1:A:221:ILE:CD1	2.21	0.69
1:C:172:LEU:CD2	1:C:194:LEU:HD11	2.22	0.69
1:D:58:ASP:OD1	1:D:238:GLN:NE2	2.25	0.69
1:D:252:GLU:O	1:D:256:LYS:HG2	1.92	0.69
1:D:266:LYS:O	1:D:270:ARG:HG3	1.92	0.69
1:A:208:ALA:HB3	1:B:50:LEU:HA	1.72	0.69
1:D:93:MET:HE1	1:D:112:PHE:HB3	1.73	0.69
1:D:137:GLY:CA	1:D:166:THR:HG22	2.22	0.69
1:D:274:TYR:CE2	1:D:331:LEU:HD22	2.28	0.69
1:B:71:THR:CG2	1:B:74:LEU:HD12	2.20	0.69
1:B:100:VAL:HB	1:B:142:VAL:HG12	1.76	0.68
1:C:232:ASN:ND2	1:C:232:ASN:H	1.90	0.68
1:A:294:GLU:HA	1:A:297:LEU:HB2	1.75	0.68
1:B:22:THR:HG21	1:B:305:VAL:HG22	1.74	0.68
1:C:309:SER:O	1:C:310:PHE:HB2	1.93	0.68
1:D:95:MET:HG2	1:D:227:VAL:HG21	1.76	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:229:LEU:HD21	1:B:90:TYR:HB2	1.74	0.67
1:D:88:ILE:HD13	1:D:214:VAL:HG22	1.77	0.67
1:A:50:LEU:HA	1:B:208:ALA:HB3	1.75	0.67
1:B:259:VAL:HG23	1:B:260:GLU:N	2.08	0.67
1:C:148:ASN:HD22	1:C:151:THR:HG22	1.60	0.67
1:A:48:ASP:OD2	1:A:51:ARG:HD3	1.93	0.67
1:B:83:ASN:HB3	1:B:87:GLU:HG3	1.76	0.66
1:C:262:ARG:HB3	1:C:318:ILE:HD13	1.75	0.66
1:D:126:THR:HG22	1:D:127:LYS:H	1.59	0.66
1:A:56:SER:OG	1:A:57:PRO:HD2	1.95	0.66
1:A:293:LYS:HG2	1:A:297:LEU:HD22	1.76	0.66
1:D:60:GLU:HA	1:D:63:GLU:OE1	1.96	0.66
1:D:233:VAL:CG1	1:D:238:GLN:HG3	2.25	0.66
1:D:34:PRO:HG2	1:D:37:LEU:HB2	1.77	0.66
1:D:73:PHE:CE2	1:D:189:LYS:HG3	2.31	0.66
1:A:27:ASN:HA	1:A:317:THR:CG2	2.26	0.66
1:B:98:ARG:HG3	1:B:119:LYS:HG2	1.77	0.66
1:A:64:LYS:HE3	1:A:246:ASP:OD1	1.95	0.66
1:D:30:PRO:HG3	1:D:258:ILE:CD1	2.26	0.65
1:C:250:ILE:O	1:C:254:ARG:HG3	1.96	0.65
1:D:29:ASN:HB2	1:D:202:LYS:O	1.97	0.65
1:A:96:PHE:CG	1:A:141:VAL:HB	2.32	0.65
1:B:141:VAL:HA	1:B:169:PHE:O	1.96	0.65
1:D:29:ASN:OD1	1:D:30:PRO:HD2	1.97	0.65
1:D:96:PHE:CG	1:D:141:VAL:HB	2.31	0.65
1:A:228:ARG:HD2	1:A:232:ASN:ND2	2.11	0.65
1:A:227:VAL:HA	1:B:115:ALA:CB	2.25	0.65
1:A:9:LYS:HB2	1:A:9:LYS:HZ2	1.61	0.65
1:B:200:PHE:HA	1:B:204:PHE:HD2	1.62	0.65
1:D:172:LEU:CD2	1:D:184:TYR:HB2	2.26	0.65
1:B:145:PRO:HA	1:B:173:ASP:HB3	1.79	0.65
1:C:96:PHE:CD2	1:C:141:VAL:HB	2.31	0.65
1:B:290:LYS:H	1:B:290:LYS:HE3	1.62	0.65
1:B:142:VAL:CG2	1:B:170:VAL:HG22	2.26	0.64
1:B:27:ASN:HA	1:B:317:THR:CG2	2.28	0.64
1:C:227:VAL:HA	1:D:115:ALA:HB1	1.79	0.64
1:A:98:ARG:NH2	1:A:140:ASP:OD1	2.30	0.64
1:A:142:VAL:HG22	1:A:144:ILE:HD11	1.80	0.64
1:B:149:ASN:HD22	1:B:149:ASN:H	1.45	0.64
1:B:56:SER:CB	1:B:57:PRO:CD	2.76	0.64
1:B:98:ARG:HB3	1:B:140:ASP:OD1	1.98	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:277:THR:O	1:B:279:SER:N	2.30	0.64
1:A:179:PHE:CE2	1:A:282:ASN:HB3	2.33	0.64
1:D:59:GLU:O	1:D:63:GLU:HG3	1.97	0.64
1:B:99:SER:O	1:B:120:PHE:HA	1.97	0.64
1:D:164:LEU:HD13	1:D:170:VAL:CG2	2.27	0.64
1:A:88:ILE:HG21	1:A:214:VAL:HG22	1.79	0.63
1:C:94:LEU:HD21	1:C:116:VAL:HB	1.80	0.63
1:C:82:GLY:O	1:C:84:GLY:N	2.28	0.63
1:D:93:MET:CE	1:D:112:PHE:HB3	2.29	0.63
1:C:200:PHE:HB3	1:C:206:LEU:HD12	1.80	0.63
1:C:303:LYS:HE2	1:C:330:GLU:HB3	1.81	0.63
1:A:201:SER:HA	1:A:207:ALA:N	2.12	0.63
1:A:30:PRO:HG2	1:A:31:PHE:CD1	2.33	0.63
1:A:96:PHE:CD2	1:A:141:VAL:HB	2.34	0.63
1:C:200:PHE:HA	1:C:204:PHE:HD2	1.61	0.63
1:D:259:VAL:HG23	1:D:260:GLU:N	2.13	0.63
1:C:90:TYR:OH	1:D:227:VAL:O	2.14	0.63
1:C:303:LYS:CE	1:C:330:GLU:HB3	2.29	0.63
1:B:184:TYR:O	1:B:187:PHE:HB2	1.98	0.63
1:D:150:PRO:HB2	1:D:315:ARG:HB2	1.80	0.63
1:D:179:PHE:CE1	1:D:202:LYS:HB3	2.34	0.63
1:C:173:ASP:HA	1:C:197:ILE:HB	1.81	0.63
1:D:95:MET:CG	1:D:227:VAL:HG21	2.29	0.63
1:A:27:ASN:HA	1:A:317:THR:HG23	1.80	0.62
1:D:100:VAL:HG23	1:D:121:LEU:HB3	1.80	0.62
1:A:234:SER:HB2	1:A:237:SER:H	1.65	0.62
1:D:163:ILE:O	1:D:166:THR:HB	1.99	0.62
1:D:270:ARG:HG2	1:D:276:ILE:HD11	1.79	0.62
1:A:123:VAL:HG21	1:A:134:VAL:HG11	1.82	0.62
1:B:296:LEU:HD12	1:B:297:LEU:N	2.13	0.62
1:B:324:ASN:HD22	1:B:324:ASN:N	1.96	0.62
1:C:163:ILE:HD12	1:C:163:ILE:C	2.20	0.62
1:C:56:SER:O	1:C:238:GLN:NE2	2.32	0.62
1:A:19:ARG:HH11	1:A:19:ARG:CG	2.13	0.62
1:D:92:MET:HG2	1:D:95:MET:HE3	1.81	0.62
1:B:327:ILE:HG22	1:B:328:LEU:N	2.15	0.62
1:D:98:ARG:HB3	1:D:140:ASP:OD1	1.99	0.62
1:D:88:ILE:HD12	1:D:197:ILE:HG23	1.82	0.62
1:A:88:ILE:HD13	1:A:214:VAL:CG2	2.27	0.61
1:D:88:ILE:O	1:D:92:MET:HG3	1.99	0.61
1:C:65:ILE:O	1:C:69:LEU:HD13	2.00	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:91:VAL:HA	1:A:94:LEU:HD12	1.82	0.61
1:C:179:PHE:CE2	1:C:282:ASN:HB3	2.35	0.61
1:C:255:THR:O	1:C:259:VAL:HG13	2.00	0.61
1:D:103:PRO:HA	1:D:104:PRO:C	2.19	0.61
1:C:207:ALA:O	1:C:210:ARG:HD2	2.00	0.61
1:C:236:VAL:HG21	1:D:240:PHE:CE2	2.36	0.61
1:D:145:PRO:HA	1:D:173:ASP:HB3	1.83	0.61
1:D:288:MET:HB2	1:D:293:LYS:HB2	1.82	0.61
1:C:48:ASP:HA	1:D:32:PRO:HB3	1.82	0.61
1:B:34:PRO:HD3	1:B:254:ARG:NH1	2.16	0.61
1:B:85:ALA:HB2	1:B:199:THR:HB	1.83	0.60
1:B:292:GLU:O	1:B:295:ARG:HB2	2.01	0.60
1:D:108:CYS:HA	1:D:111:ILE:HG12	1.83	0.60
1:C:163:ILE:O	1:C:166:THR:HG22	2.01	0.60
1:A:241:ALA:O	1:A:245:LEU:HG	2.02	0.60
1:B:198:ARG:HB2	1:B:213:TYR:CZ	2.36	0.60
1:C:204:PHE:O	1:C:206:LEU:HG	2.01	0.60
1:B:136:VAL:HG22	1:B:168:ALA:HB2	1.83	0.60
1:B:232:ASN:HD22	1:B:233:VAL:N	1.99	0.60
1:D:68:TYR:HB2	1:D:245:LEU:HD22	1.84	0.60
1:B:81:VAL:HA	1:B:213:TYR:HA	1.84	0.60
1:B:149:ASN:HD22	1:B:149:ASN:N	2.00	0.60
1:C:327:ILE:O	1:C:331:LEU:HD22	2.02	0.60
1:D:106:TYR:CE1	1:D:108:CYS:HB2	2.36	0.60
1:A:204:PHE:HA	1:A:251:PHE:CD2	2.37	0.60
1:B:60:GLU:HG2	1:B:242:LYS:HD2	1.83	0.60
1:D:68:TYR:HA	1:D:248:ARG:NH2	2.16	0.59
1:A:322:GLU:HG2	1:A:323:GLU:H	1.68	0.59
1:A:34:PRO:HB2	1:A:37:LEU:HB2	1.84	0.59
1:A:228:ARG:NH1	1:A:229:LEU:O	2.35	0.59
1:B:74:LEU:HD23	1:B:78:ASN:HB3	1.85	0.59
1:D:110:ARG:O	1:D:114:LYS:HG2	2.01	0.59
1:A:193:ASN:HD22	1:A:193:ASN:N	1.88	0.59
1:B:169:PHE:HZ	1:B:195:ALA:HB2	1.67	0.59
1:A:69:LEU:HD13	1:A:74:LEU:CD1	2.33	0.59
1:B:238:GLN:O	1:B:242:LYS:HG3	2.03	0.59
1:C:105:THR:HA	1:C:149:ASN:O	2.02	0.59
1:D:56:SER:HB2	1:D:231:PHE:HA	1.85	0.59
1:A:32:PRO:HB2	1:B:47:SER:OG	2.02	0.59
1:D:12:TYR:HD2	1:D:111:ILE:HG22	1.67	0.59
1:B:261:GLU:OE2	1:B:321:ARG:NH1	2.36	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:178:GLU:HG2	1:A:203:ALA:CB	2.32	0.59
1:B:22:THR:CG2	1:B:305:VAL:HG22	2.33	0.59
1:B:108:CYS:HB3	1:B:112:PHE:CE2	2.37	0.59
1:D:99:SER:O	1:D:120:PHE:HA	2.03	0.59
1:D:136:VAL:HG23	1:D:166:THR:HG21	1.85	0.58
1:A:280:ARG:HG3	1:A:280:ARG:HH11	1.69	0.58
1:C:92:MET:O	1:C:95:MET:HG2	2.03	0.58
1:C:219:LYS:HD3	1:D:7:ILE:HD11	1.85	0.58
1:D:145:PRO:HG2	1:D:148:ASN:ND2	2.17	0.58
1:A:174:GLU:OE1	1:A:183:SER:HB2	2.04	0.58
1:B:46:ASN:O	1:B:49:ALA:HB3	2.04	0.58
1:D:121:LEU:HD22	1:D:123:VAL:CG2	2.33	0.58
1:B:266:LYS:HZ1	1:B:278:ASP:HA	1.69	0.58
1:C:62:ILE:O	1:C:65:ILE:HG12	2.03	0.58
1:D:45:LEU:HD23	1:D:46:ASN:N	2.19	0.58
1:A:40:GLU:O	1:A:44:ARG:HG3	2.04	0.58
1:A:58:ASP:HB3	1:A:238:GLN:NE2	2.19	0.58
1:B:200:PHE:CZ	1:B:241:ALA:HB1	2.39	0.58
1:C:290:LYS:HE3	1:C:290:LYS:CA	2.31	0.58
1:A:53:TYR:HB3	1:A:231:PHE:CE2	2.38	0.58
1:A:259:VAL:HG23	1:A:260:GLU:N	2.19	0.58
1:A:296:LEU:HD11	1:A:331:LEU:HD21	1.86	0.58
1:B:147:PRO:HD2	1:B:176:TYR:HB2	1.86	0.58
1:B:172:LEU:CD1	1:B:184:TYR:HB2	2.34	0.58
1:D:23:TYR:OH	1:D:26:LEU:HD22	2.04	0.58
1:D:329:ARG:HG2	1:D:329:ARG:HH21	1.68	0.58
1:A:290:LYS:HE2	1:C:250:ILE:HD12	1.86	0.58
1:D:137:GLY:N	1:D:168:ALA:HB2	2.19	0.57
1:B:71:THR:HG21	1:B:74:LEU:CD1	2.25	0.57
1:D:197:ILE:N	1:D:197:ILE:HD12	2.20	0.57
1:A:75:SER:H	1:A:78:ASN:ND2	1.92	0.57
1:B:71:THR:OG1	1:B:74:LEU:HB2	2.04	0.57
1:B:83:ASN:HB3	1:B:87:GLU:CG	2.34	0.57
1:B:321:ARG:HG2	1:B:321:ARG:HH11	1.69	0.57
1:D:62:ILE:HG21	1:D:76:LYS:HG3	1.87	0.57
1:D:101:PHE:CD2	1:D:109:TYR:HB3	2.39	0.57
1:A:300:LEU:HD22	1:A:305:VAL:HG11	1.87	0.57
1:B:41:VAL:HG11	1:B:240:PHE:CE2	2.39	0.57
1:C:33:PHE:CD1	1:C:34:PRO:HD2	2.39	0.57
1:D:276:ILE:HD13	1:D:276:ILE:N	2.19	0.57
1:A:194:LEU:HG	1:A:195:ALA:N	2.19	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:316:ILE:HG21	1:C:327:ILE:HD13	1.86	0.57
1:B:75:SER:O	1:B:78:ASN:HB2	2.05	0.57
1:D:177:TYR:CE2	1:D:183:SER:HB3	2.39	0.57
1:A:256:LYS:O	1:A:259:VAL:HG22	2.05	0.57
1:B:30:PRO:HB2	1:B:320:LYS:HD2	1.87	0.56
1:B:58:ASP:HB3	1:B:61:LEU:HB2	1.87	0.56
1:B:169:PHE:CZ	1:B:195:ALA:HB2	2.40	0.56
1:D:179:PHE:CD1	1:D:282:ASN:HB3	2.40	0.56
1:D:197:ILE:HD12	1:D:197:ILE:H	1.71	0.56
1:A:50:LEU:HD12	1:B:33:PHE:HB3	1.88	0.56
1:A:56:SER:O	1:A:58:ASP:N	2.39	0.56
1:A:147:PRO:HD2	1:A:176:TYR:HB2	1.87	0.56
1:A:164:LEU:HD11	1:A:194:LEU:HB2	1.88	0.56
1:C:231:PHE:HB2	1:D:210:ARG:HE	1.70	0.56
1:D:109:TYR:CZ	1:D:143:PHE:HB3	2.40	0.56
1:A:95:MET:SD	1:A:224:TYR:HA	2.45	0.56
1:C:202:LYS:HD2	1:C:282:ASN:HD21	1.71	0.56
1:D:93:MET:HE1	1:D:112:PHE:HB2	1.87	0.56
1:D:190:LYS:HG3	1:D:191:TYR:CD1	2.40	0.56
1:D:207:ALA:O	1:D:210:ARG:HD2	2.06	0.56
1:C:160:ILE:O	1:C:164:LEU:HB2	2.04	0.56
1:C:267:SER:HA	1:C:270:ARG:HG2	1.88	0.56
1:A:56:SER:CB	1:A:57:PRO:CD	2.84	0.56
1:B:196:VAL:HB	1:B:215:VAL:CG2	2.36	0.56
1:B:262:ARG:O	1:B:266:LYS:HG3	2.06	0.56
1:D:296:LEU:HD22	1:D:296:LEU:O	2.05	0.56
1:D:41:VAL:HG13	1:D:243:VAL:HG21	1.88	0.56
1:D:56:SER:CB	1:D:57:PRO:HD3	2.32	0.56
1:D:239:MET:HE3	1:D:242:LYS:HE3	1.88	0.56
1:B:101:PHE:N	1:B:101:PHE:CD1	2.74	0.56
1:D:100:VAL:HG11	1:D:142:VAL:HG22	1.88	0.56
1:B:87:GLU:OE1	1:B:229:LEU:HD23	2.06	0.56
1:B:88:ILE:HD12	1:B:197:ILE:HG23	1.88	0.56
1:C:65:ILE:HG22	1:C:245:LEU:CD1	2.35	0.56
1:A:9:LYS:HD3	1:A:9:LYS:O	2.06	0.55
1:C:308:ARG:O	1:C:309:SER:HB3	2.06	0.55
1:D:202:LYS:N	1:D:202:LYS:HD2	2.21	0.55
1:B:30:PRO:HB3	1:B:319:GLY:HA2	1.87	0.55
1:B:172:LEU:HD11	1:B:184:TYR:HB2	1.86	0.55
1:C:23:TYR:CD2	1:C:23:TYR:C	2.79	0.55
1:C:37:LEU:O	1:C:41:VAL:HG23	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:56:SER:O	1:C:58:ASP:N	2.35	0.55
1:D:105:THR:HG1	1:D:109:TYR:HD2	1.55	0.55
1:A:32:PRO:O	1:A:254:ARG:NH1	2.35	0.55
1:B:276:ILE:HD13	1:B:276:ILE:N	2.11	0.55
1:C:225:ASN:OD1	1:C:228:ARG:NH1	2.39	0.55
1:B:272:MET:HE1	1:B:332:GLU:N	2.22	0.55
1:A:185:VAL:HG22	1:A:196:VAL:HG11	1.89	0.55
1:B:200:PHE:O	1:B:204:PHE:HB2	2.07	0.55
1:B:321:ARG:NH1	1:B:321:ARG:HG2	2.21	0.55
1:C:217:SER:O	1:C:221:ILE:HG12	2.07	0.55
1:C:309:SER:OG	1:C:310:PHE:N	2.37	0.55
1:D:198:ARG:HB2	1:D:213:TYR:CZ	2.42	0.55
1:B:134:VAL:HG23	1:B:136:VAL:HB	1.87	0.55
1:B:276:ILE:CD1	1:B:276:ILE:N	2.64	0.55
1:C:141:VAL:HA	1:C:169:PHE:O	2.07	0.55
1:D:112:PHE:O	1:D:116:VAL:HG22	2.05	0.55
1:D:236:VAL:HG23	1:D:237:SER:N	2.21	0.55
1:D:258:ILE:HG21	1:D:282:ASN:HB2	1.89	0.55
1:A:30:PRO:HB3	1:A:319:GLY:HA2	1.88	0.55
1:A:148:ASN:ND2	1:A:151:THR:OG1	2.33	0.55
1:B:232:ASN:HD22	1:B:233:VAL:H	1.55	0.55
1:C:31:PHE:HB3	1:C:254:ARG:CZ	2.37	0.55
1:D:262:ARG:O	1:D:266:LYS:HG3	2.07	0.55
1:D:303:LYS:HA	1:D:303:LYS:HE3	1.88	0.55
1:B:183:SER:CB	1:B:198:ARG:HH21	2.20	0.55
1:D:108:CYS:SG	1:D:111:ILE:HD11	2.47	0.55
1:A:55:ASP:O	1:A:56:SER:O	2.24	0.55
1:B:27:ASN:HA	1:B:317:THR:HG23	1.87	0.55
1:D:216:ALA:H	1:D:221:ILE:HD11	1.72	0.55
1:D:161:GLU:HA	1:D:164:LEU:HB2	1.88	0.54
1:A:227:VAL:CA	1:B:115:ALA:HB1	2.28	0.54
1:D:288:MET:HE1	1:D:292:GLU:HG2	1.89	0.54
1:C:92:MET:HB2	1:C:143:PHE:CZ	2.34	0.54
1:C:96:PHE:CE2	1:C:141:VAL:HB	2.43	0.54
1:D:39:ASP:O	1:D:42:PHE:HB3	2.07	0.54
1:D:73:PHE:HZ	1:D:186:ASP:HA	1.72	0.54
1:A:41:VAL:HG23	1:A:243:VAL:HG21	1.86	0.54
1:A:146:ASN:HD22	1:A:155:PHE:H	1.55	0.54
1:A:178:GLU:CD	1:A:178:GLU:H	2.10	0.54
1:A:236:VAL:HG11	1:B:236:VAL:HG11	1.88	0.54
1:C:208:ALA:HB2	1:D:52:ILE:O	2.06	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:185:VAL:HA	1:A:196:VAL:HG21	1.90	0.54
1:B:88:ILE:HG23	1:B:224:TYR:CE1	2.42	0.54
1:B:270:ARG:HG2	1:B:276:ILE:HD12	1.88	0.54
1:C:23:TYR:HB2	1:C:306:ALA:H	1.72	0.54
1:C:86:ASP:HB3	1:D:229:LEU:HD22	1.89	0.54
1:A:179:PHE:CZ	1:A:282:ASN:HB3	2.43	0.54
1:B:39:ASP:O	1:B:42:PHE:HB3	2.08	0.54
1:B:200:PHE:HZ	1:B:245:LEU:HD11	1.71	0.54
1:C:294:GLU:C	1:C:296:LEU:H	2.11	0.54
1:D:32:PRO:O	1:D:254:ARG:NH2	2.40	0.54
1:D:61:LEU:HD13	1:D:242:LYS:HG3	1.90	0.54
1:A:26:LEU:HB2	1:A:28:GLU:OE1	2.08	0.54
1:B:105:THR:HG22	1:B:148:ASN:OD1	2.07	0.54
1:B:200:PHE:HE2	1:B:245:LEU:HG	1.72	0.54
1:B:296:LEU:HD12	1:B:296:LEU:C	2.28	0.54
1:C:106:TYR:HB3	1:C:109:TYR:CD1	2.42	0.54
1:B:56:SER:HB2	1:B:230:PRO:O	2.07	0.54
1:B:145:PRO:O	1:B:148:ASN:CA	2.52	0.54
1:B:177:TYR:CD2	1:B:183:SER:HB2	2.43	0.54
1:B:200:PHE:CZ	1:B:245:LEU:HD11	2.42	0.54
1:A:283:PHE:CD2	1:A:315:ARG:HD3	2.43	0.54
1:B:26:LEU:O	1:B:27:ASN:HB2	2.07	0.54
1:A:61:LEU:CD2	1:A:238:GLN:HE21	2.20	0.53
1:B:75:SER:H	1:B:78:ASN:HB2	1.73	0.53
1:B:204:PHE:O	1:B:206:LEU:HG	2.08	0.53
1:C:309:SER:HA	1:C:313:GLY:O	2.08	0.53
1:D:111:ILE:HG13	1:D:112:PHE:HD2	1.73	0.53
1:A:146:ASN:ND2	1:A:155:PHE:H	2.06	0.53
1:C:250:ILE:O	1:C:250:ILE:HG22	2.08	0.53
1:D:91:VAL:HG21	1:D:224:TYR:CE1	2.44	0.53
1:D:99:SER:HA	1:D:141:VAL:CG1	2.38	0.53
1:A:56:SER:HB2	1:A:57:PRO:CD	2.38	0.53
1:B:248:ARG:O	1:B:252:GLU:HG3	2.07	0.53
1:C:23:TYR:C	1:C:23:TYR:HD2	2.11	0.53
1:C:61:LEU:HD13	1:C:61:LEU:O	2.08	0.53
1:C:229:LEU:O	1:C:232:ASN:ND2	2.41	0.53
1:D:126:THR:HG22	1:D:127:LYS:N	2.23	0.53
1:C:58:ASP:HB2	1:C:238:GLN:HE22	1.73	0.53
1:C:315:ARG:CB	1:C:315:ARG:HH11	2.21	0.53
1:D:12:TYR:CD2	1:D:111:ILE:HG22	2.44	0.53
1:D:262:ARG:HD2	1:D:279:SER:O	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:15:GLU:OE2	1:C:43:ARG:HD2	2.09	0.53
1:B:34:PRO:HB2	1:B:37:LEU:HG	1.90	0.53
1:B:47:SER:C	1:B:49:ALA:H	2.11	0.53
1:B:81:VAL:HG22	1:B:82:GLY:N	2.24	0.53
1:C:179:PHE:HE2	1:C:282:ASN:HD22	1.55	0.53
1:C:186:ASP:O	1:C:189:LYS:HG3	2.08	0.53
1:C:309:SER:HA	1:C:314:VAL:HA	1.91	0.53
1:A:123:VAL:HG21	1:A:134:VAL:CG1	2.38	0.53
1:D:23:TYR:CE2	1:D:26:LEU:HD22	2.43	0.53
1:D:297:LEU:HD21	1:D:309:SER:HB2	1.91	0.53
1:A:56:SER:O	1:A:238:GLN:NE2	2.42	0.53
1:A:249:GLU:CD	1:A:249:GLU:H	2.12	0.53
1:A:145:PRO:O	1:A:148:ASN:HA	2.09	0.53
1:A:224:TYR:CE2	1:A:228:ARG:HD3	2.44	0.53
1:C:41:VAL:CG2	1:C:243:VAL:HG21	2.38	0.53
1:D:185:VAL:HG13	1:D:188:LEU:HD12	1.92	0.52
1:D:199:THR:OG1	1:D:200:PHE:N	2.43	0.52
1:A:24:LEU:CD1	1:A:327:ILE:HD11	2.40	0.52
1:C:29:ASN:HB2	1:C:202:LYS:O	2.09	0.52
1:C:81:VAL:HA	1:C:213:TYR:HA	1.91	0.52
1:B:74:LEU:CD2	1:B:78:ASN:HB3	2.39	0.52
1:B:93:MET:HE1	1:B:112:PHE:HB2	1.89	0.52
1:B:106:TYR:HB2	1:B:149:ASN:HD21	1.74	0.52
1:A:193:ASN:H	1:A:193:ASN:ND2	1.95	0.52
1:B:216:ALA:HB3	1:B:220:PHE:HD2	1.75	0.52
1:B:222:ASP:O	1:B:226:ARG:HG3	2.09	0.52
1:C:324:ASN:C	1:C:326:MET:H	2.12	0.52
1:A:316:ILE:HD12	1:A:316:ILE:N	2.25	0.52
1:B:254:ARG:O	1:B:258:ILE:HG12	2.09	0.52
1:B:334:PHE:CD2	1:B:335:LYS:HG2	2.43	0.52
1:C:30:PRO:HB3	1:C:319:GLY:HA2	1.91	0.52
1:A:99:SER:HB3	1:A:143:PHE:CE2	2.40	0.52
1:A:210:ARG:N	1:A:210:ARG:HD2	2.24	0.52
1:C:231:PHE:HB2	1:D:210:ARG:NE	2.25	0.52
1:D:237:SER:O	1:D:240:PHE:N	2.42	0.52
1:D:73:PHE:N	1:D:73:PHE:CD1	2.78	0.52
1:A:23:TYR:HE2	1:A:26:LEU:HD12	1.74	0.51
1:A:69:LEU:HD13	1:A:74:LEU:HD13	1.92	0.51
1:A:266:LYS:O	1:A:270:ARG:HG3	2.10	0.51
1:C:236:VAL:HG23	1:D:209:GLN:CD	2.30	0.51
1:C:296:LEU:O	1:C:300:LEU:HG	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:259:VAL:CG2	1:D:260:GLU:N	2.73	0.51
1:A:74:LEU:HD11	1:A:215:VAL:HG11	1.92	0.51
1:A:173:ASP:HA	1:A:197:ILE:HB	1.93	0.51
1:C:288:MET:CE	1:C:296:LEU:HD11	2.40	0.51
1:D:23:TYR:HE2	1:D:26:LEU:HB2	1.75	0.51
1:D:217:SER:O	1:D:221:ILE:HG12	2.10	0.51
1:B:64:LYS:HD3	1:B:246:ASP:OD1	2.11	0.51
1:B:64:LYS:HE2	1:B:246:ASP:OD1	2.11	0.51
1:B:142:VAL:HG23	1:B:170:VAL:HG13	1.92	0.51
1:C:52:ILE:CG2	1:C:53:TYR:N	2.72	0.51
1:D:56:SER:HB3	1:D:57:PRO:CD	2.34	0.51
1:D:128:ASP:CG	1:D:130:ARG:HG2	2.31	0.51
1:A:200:PHE:CE2	1:A:245:LEU:HD21	2.45	0.51
1:A:316:ILE:HD12	1:A:316:ILE:H	1.76	0.51
1:B:96:PHE:CZ	1:B:169:PHE:CG	2.99	0.51
1:B:128:ASP:O	1:B:130:ARG:HG2	2.11	0.51
1:C:100:VAL:O	1:C:142:VAL:HA	2.11	0.51
1:C:232:ASN:ND2	1:C:232:ASN:N	2.59	0.51
1:D:92:MET:HG2	1:D:95:MET:CE	2.39	0.51
1:D:100:VAL:CG2	1:D:121:LEU:HB3	2.40	0.51
1:A:141:VAL:O	1:A:141:VAL:HG13	2.11	0.51
1:B:265:MET:HB2	1:B:328:LEU:HD11	1.92	0.51
1:C:82:GLY:C	1:C:84:GLY:N	2.64	0.51
1:C:103:PRO:HA	1:C:104:PRO:C	2.28	0.51
1:C:201:SER:CB	1:C:207:ALA:HA	2.41	0.51
1:C:315:ARG:HH11	1:C:315:ARG:CG	2.24	0.51
1:D:51:ARG:HG2	1:D:52:ILE:HG23	1.91	0.51
1:D:100:VAL:O	1:D:142:VAL:HA	2.10	0.51
1:D:152:GLY:O	1:D:279:SER:HA	2.10	0.51
1:A:75:SER:C	1:A:77:ASN:H	2.12	0.51
1:B:23:TYR:O	1:B:24:LEU:HD13	2.11	0.51
1:B:259:VAL:CG2	1:B:260:GLU:N	2.73	0.51
1:D:134:VAL:HG23	1:D:136:VAL:HG22	1.92	0.51
1:D:206:LEU:HD21	1:D:240:PHE:HB3	1.93	0.51
1:A:229:LEU:HD21	1:B:90:TYR:CB	2.41	0.51
1:B:236:VAL:O	1:B:240:PHE:HD2	1.93	0.51
1:C:108:CYS:HA	1:C:111:ILE:HB	1.92	0.51
1:A:209:GLN:OE1	1:B:236:VAL:HG23	2.10	0.51
1:A:227:VAL:HG13	1:B:115:ALA:O	2.10	0.51
1:C:109:TYR:CE2	1:C:143:PHE:HB3	2.45	0.51
1:C:172:LEU:HD23	1:C:195:ALA:O	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:303:LYS:HD2	1:A:330:GLU:OE1	2.11	0.51
1:C:82:GLY:C	1:C:84:GLY:H	2.13	0.51
1:C:157:ARG:O	1:C:161:GLU:HG3	2.11	0.51
1:C:262:ARG:HB2	1:C:318:ILE:HD11	1.91	0.51
1:C:275:ARG:HB3	1:C:275:ARG:NH1	2.26	0.51
1:D:258:ILE:HG23	1:D:318:ILE:HB	1.92	0.51
1:A:142:VAL:HG11	1:A:163:ILE:HG21	1.91	0.50
1:B:287:PHE:O	1:B:288:MET:HB3	2.11	0.50
1:A:134:VAL:HG23	1:A:136:VAL:HG23	1.92	0.50
1:A:258:ILE:HG23	1:A:318:ILE:CG2	2.34	0.50
1:D:12:TYR:CE1	1:D:114:LYS:NZ	2.79	0.50
1:D:179:PHE:CE1	1:D:282:ASN:HB3	2.46	0.50
1:D:262:ARG:HA	1:D:318:ILE:HD11	1.94	0.50
1:B:141:VAL:O	1:B:141:VAL:HG13	2.11	0.50
1:C:58:ASP:CB	1:C:238:GLN:HE22	2.25	0.50
1:C:58:ASP:CB	1:C:238:GLN:NE2	2.74	0.50
1:D:100:VAL:HG13	1:D:142:VAL:HA	1.93	0.50
1:D:258:ILE:O	1:D:262:ARG:N	2.41	0.50
1:A:19:ARG:CG	1:A:19:ARG:NH1	2.74	0.50
1:A:259:VAL:HB	1:A:262:ARG:NH2	2.27	0.50
1:B:71:THR:HB	1:B:73:PHE:CE1	2.46	0.50
1:B:91:VAL:O	1:B:94:LEU:HB2	2.11	0.50
1:B:288:MET:HB2	1:B:292:GLU:HG3	1.92	0.50
1:C:37:LEU:HD22	1:C:247:HIS:CD2	2.46	0.50
1:C:315:ARG:HH11	1:C:315:ARG:HB3	1.76	0.50
1:B:270:ARG:CG	1:B:276:ILE:CD1	2.83	0.50
1:C:262:ARG:HG3	1:C:263:GLU:N	2.26	0.50
1:D:150:PRO:HG3	1:D:310:PHE:CD2	2.45	0.50
1:D:228:ARG:NE	1:D:232:ASN:HD21	2.09	0.50
1:B:131:ILE:HG21	1:B:163:ILE:CD1	2.31	0.50
1:C:71:THR:HB	1:C:73:PHE:CE1	2.46	0.50
1:D:201:SER:OG	1:D:207:ALA:HA	2.11	0.50
1:A:174:GLU:HG3	1:A:196:VAL:HG13	1.93	0.50
1:B:100:VAL:HG13	1:B:121:LEU:HB3	1.94	0.50
1:B:290:LYS:HE3	1:B:290:LYS:N	2.25	0.50
1:C:179:PHE:HE2	1:C:202:LYS:HB3	1.77	0.50
1:D:228:ARG:HG2	1:D:228:ARG:HH11	1.76	0.50
1:B:81:VAL:HG22	1:B:82:GLY:H	1.77	0.49
1:D:250:ILE:HG22	1:D:254:ARG:HH11	1.77	0.49
1:D:99:SER:O	1:D:121:LEU:N	2.42	0.49
1:D:261:GLU:HG2	1:D:324:ASN:ND2	2.27	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:320:LYS:O	1:A:321:ARG:C	2.49	0.49
1:D:150:PRO:O	1:D:285:PHE:HB2	2.12	0.49
1:A:91:VAL:O	1:A:94:LEU:N	2.31	0.49
1:A:220:PHE:O	1:A:221:ILE:C	2.49	0.49
1:B:229:LEU:N	1:B:229:LEU:HD22	2.27	0.49
1:C:201:SER:HA	1:C:207:ALA:N	2.28	0.49
1:D:99:SER:HA	1:D:141:VAL:HG13	1.95	0.49
1:B:92:MET:CE	1:B:169:PHE:HE1	2.26	0.49
1:B:308:ARG:HG2	1:B:310:PHE:CE2	2.47	0.49
1:C:131:ILE:HG13	1:C:159:GLU:HB3	1.93	0.49
1:C:145:PRO:O	1:C:148:ASN:HA	2.12	0.49
1:C:211:VAL:HG11	1:C:241:ALA:HB2	1.95	0.49
1:B:170:VAL:O	1:B:194:LEU:HD12	2.12	0.49
1:D:26:LEU:HD13	1:D:308:ARG:NH2	2.28	0.49
1:A:7:ILE:HD12	1:A:8:ALA:H	1.78	0.48
1:B:269:LEU:HD21	1:B:331:LEU:HD13	1.95	0.48
1:B:316:ILE:O	1:B:316:ILE:HD12	2.13	0.48
1:C:52:ILE:HG22	1:C:53:TYR:N	2.27	0.48
1:B:102:PHE:HD1	1:B:123:VAL:O	1.95	0.48
1:A:95:MET:HG2	1:A:227:VAL:HG21	1.95	0.48
1:A:210:ARG:HD2	1:A:210:ARG:H	1.77	0.48
1:A:300:LEU:HD22	1:A:305:VAL:CG1	2.43	0.48
1:C:160:ILE:O	1:C:164:LEU:N	2.46	0.48
1:D:88:ILE:CD1	1:D:197:ILE:HG23	2.43	0.48
1:D:300:LEU:HB3	1:D:305:VAL:O	2.13	0.48
1:A:99:SER:HA	1:A:141:VAL:O	2.12	0.48
1:C:29:ASN:OD1	1:C:30:PRO:HD2	2.13	0.48
1:C:303:LYS:O	1:C:304:ASN:HB2	2.12	0.48
1:D:137:GLY:O	1:D:168:ALA:HA	2.14	0.48
1:D:141:VAL:HG13	1:D:141:VAL:O	2.13	0.48
1:A:169:PHE:CE2	1:A:220:PHE:CD1	3.02	0.48
1:B:93:MET:CE	1:B:93:MET:CG	2.91	0.48
1:B:276:ILE:HG22	1:B:286:VAL:HG22	1.94	0.48
1:C:58:ASP:HB2	1:C:238:GLN:NE2	2.28	0.48
1:D:150:PRO:HG3	1:D:310:PHE:CG	2.48	0.48
1:A:21:LYS:HB2	1:A:304:ASN:HB3	1.96	0.48
1:A:131:ILE:HG13	1:A:155:PHE:CE2	2.48	0.48
1:A:259:VAL:CG2	1:A:260:GLU:N	2.76	0.48
1:B:319:GLY:CA	1:B:324:ASN:HD21	2.27	0.48
1:C:195:ALA:HA	1:C:216:ALA:HB2	1.95	0.48
1:A:33:PHE:HB3	1:B:50:LEU:HD12	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:79:VAL:HG12	1:A:80:SER:N	2.29	0.48
1:C:48:ASP:O	1:C:51:ARG:HG2	2.13	0.48
1:C:194:LEU:HG	1:C:195:ALA:N	2.29	0.48
1:D:73:PHE:CZ	1:D:186:ASP:HA	2.49	0.48
1:B:262:ARG:HD3	1:B:266:LYS:HD2	1.94	0.48
1:B:269:LEU:CD2	1:B:331:LEU:HD13	2.44	0.48
1:C:328:LEU:HD12	1:C:329:ARG:N	2.29	0.48
1:D:34:PRO:HG3	1:D:37:LEU:HD22	1.95	0.48
1:D:276:ILE:HG22	1:D:286:VAL:HA	1.96	0.48
1:A:7:ILE:HD12	1:A:8:ALA:N	2.29	0.48
1:A:169:PHE:HA	1:A:193:ASN:O	2.14	0.48
1:C:85:ALA:N	2:C:1333:PO4:O1	2.47	0.48
1:C:86:ASP:HB3	1:D:229:LEU:CD2	2.44	0.48
1:C:172:LEU:HD23	1:C:172:LEU:H	1.79	0.48
1:D:56:SER:HG	1:D:232:ASN:H	1.62	0.48
1:D:174:GLU:OE1	1:D:184:TYR:N	2.47	0.48
1:A:91:VAL:HG23	1:A:92:MET:N	2.29	0.48
1:A:179:PHE:CD2	1:A:282:ASN:HB3	2.49	0.48
1:A:263:GLU:OE2	1:A:266:LYS:HE2	2.14	0.48
1:D:30:PRO:HG2	1:D:31:PHE:N	2.28	0.48
1:A:282:ASN:O	1:A:318:ILE:HB	2.14	0.47
1:C:325:ASP:O	1:C:329:ARG:HB3	2.13	0.47
1:A:29:ASN:HB2	1:A:202:LYS:O	2.15	0.47
1:B:156:GLU:HG3	1:B:158:GLU:OE2	2.13	0.47
1:C:146:ASN:HD21	1:C:154:VAL:HG13	1.79	0.47
1:D:33:PHE:CD1	1:D:206:LEU:HD13	2.49	0.47
1:D:256:LYS:O	1:D:259:VAL:HG22	2.15	0.47
1:D:303:LYS:O	1:D:305:VAL:HG12	2.13	0.47
1:B:324:ASN:ND2	1:B:324:ASN:N	2.62	0.47
1:C:33:PHE:O	1:D:47:SER:HB2	2.14	0.47
1:D:154:VAL:HG11	1:D:180:HIS:NE2	2.29	0.47
1:A:230:PRO:HB2	1:A:231:PHE:CD1	2.50	0.47
1:B:24:LEU:HD23	1:B:327:ILE:HD13	1.96	0.47
1:B:27:ASN:ND2	1:B:283:PHE:CD1	2.83	0.47
1:B:73:PHE:HE2	1:B:188:LEU:HB2	1.79	0.47
1:C:221:ILE:HG22	1:C:225:ASN:HD21	1.80	0.47
1:C:256:LYS:HA	1:C:259:VAL:HG22	1.97	0.47
1:A:83:ASN:CG	1:B:83:ASN:ND2	2.67	0.47
1:A:172:LEU:HD21	1:A:184:TYR:HB2	1.94	0.47
1:B:69:LEU:CD1	1:B:215:VAL:HG11	2.45	0.47
1:B:303:LYS:O	1:B:304:ASN:HB2	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:92:MET:HA	1:C:95:MET:HG2	1.96	0.47
1:C:294:GLU:C	1:C:296:LEU:N	2.68	0.47
1:D:22:THR:O	1:D:305:VAL:HA	2.14	0.47
1:D:248:ARG:O	1:D:252:GLU:HG3	2.13	0.47
1:B:34:PRO:O	1:B:38:VAL:HG23	2.15	0.47
1:C:53:TYR:OH	1:D:202:LYS:HE3	2.14	0.47
1:C:288:MET:HE1	1:C:296:LEU:HD11	1.96	0.47
1:C:320:LYS:O	1:C:323:GLU:HB2	2.14	0.47
1:A:322:GLU:HG2	1:A:323:GLU:N	2.29	0.47
1:C:129:LEU:N	1:C:129:LEU:HD12	2.30	0.47
1:C:130:ARG:HD2	1:C:159:GLU:OE2	2.15	0.47
1:D:194:LEU:HG	1:D:195:ALA:N	2.27	0.47
1:D:105:THR:HA	1:D:149:ASN:O	2.14	0.47
1:D:126:THR:OG1	1:D:130:ARG:HG3	2.14	0.47
1:B:265:MET:HE1	1:B:324:ASN:HB3	1.96	0.47
1:B:266:LYS:HZ2	1:B:279:SER:N	2.12	0.47
1:A:91:VAL:CG2	1:A:92:MET:N	2.77	0.47
1:A:198:ARG:CB	1:A:213:TYR:CZ	2.98	0.47
1:B:321:ARG:HD2	3:B:2033:HOH:O	2.15	0.47
1:A:178:GLU:HG2	1:A:203:ALA:HB1	1.96	0.46
1:A:234:SER:HA	1:B:208:ALA:O	2.14	0.46
1:A:287:PHE:O	1:A:288:MET:CG	2.63	0.46
1:B:82:GLY:O	1:B:84:GLY:N	2.47	0.46
1:B:160:ILE:N	1:B:160:ILE:HD12	2.31	0.46
1:B:229:LEU:HB2	1:B:232:ASN:HB3	1.97	0.46
1:D:168:ALA:O	1:D:193:ASN:ND2	2.48	0.46
1:A:325:ASP:O	1:A:329:ARG:HG3	2.15	0.46
1:D:255:THR:O	1:D:259:VAL:HG13	2.15	0.46
1:C:32:PRO:HB3	1:D:48:ASP:HA	1.97	0.46
1:C:94:LEU:CD2	1:C:116:VAL:HB	2.45	0.46
1:D:144:ILE:HD12	1:D:170:VAL:CG1	2.42	0.46
1:D:198:ARG:CB	1:D:213:TYR:CZ	2.98	0.46
1:D:250:ILE:HG22	1:D:254:ARG:NH1	2.30	0.46
1:A:287:PHE:O	1:A:288:MET:HG2	2.16	0.46
1:B:149:ASN:H	1:B:149:ASN:ND2	2.10	0.46
1:C:77:ASN:C	1:C:77:ASN:HD22	2.18	0.46
1:C:174:GLU:C	1:C:176:TYR:H	2.18	0.46
1:D:200:PHE:HA	1:D:204:PHE:HD2	1.80	0.46
1:D:265:MET:HE2	1:D:284:VAL:HG21	1.98	0.46
1:C:248:ARG:O	1:C:252:GLU:HB2	2.16	0.46
1:C:329:ARG:HG2	1:C:329:ARG:HH11	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:331:LEU:HD12	1:C:331:LEU:HA	1.82	0.46
1:D:262:ARG:NH2	1:D:280:ARG:C	2.69	0.46
1:A:278:ASP:OD2	1:A:280:ARG:NH2	2.48	0.46
1:A:293:LYS:O	1:A:297:LEU:HD22	2.16	0.46
1:B:48:ASP:O	1:B:51:ARG:HG2	2.16	0.46
1:B:54:TYR:CE2	1:B:235:TYR:HD1	2.34	0.46
1:D:56:SER:O	1:D:238:GLN:NE2	2.49	0.46
1:D:276:ILE:N	1:D:276:ILE:CD1	2.79	0.46
1:B:51:ARG:HG3	1:B:52:ILE:N	2.31	0.46
1:B:270:ARG:HD3	1:B:276:ILE:HD11	1.98	0.46
1:B:287:PHE:O	1:B:288:MET:CB	2.63	0.46
1:B:292:GLU:O	1:B:295:ARG:N	2.49	0.46
1:C:277:THR:HG22	1:C:278:ASP:N	2.31	0.46
1:D:136:VAL:O	1:D:166:THR:CG2	2.64	0.46
1:A:32:PRO:HB3	1:B:48:ASP:HA	1.97	0.46
1:D:65:ILE:HG21	1:D:79:VAL:HG11	1.98	0.46
1:A:155:PHE:O	1:A:184:TYR:OH	2.29	0.45
1:C:267:SER:HA	1:C:270:ARG:CG	2.45	0.45
1:C:324:ASN:C	1:C:326:MET:N	2.69	0.45
1:A:154:VAL:CG1	1:A:180:HIS:CD2	2.95	0.45
1:B:31:PHE:CD1	1:B:31:PHE:N	2.85	0.45
1:C:44:ARG:O	1:C:44:ARG:HG2	2.16	0.45
1:D:7:ILE:N	1:D:7:ILE:HD13	2.32	0.45
1:B:82:GLY:N	1:B:212:GLY:O	2.45	0.45
1:B:327:ILE:HG22	1:B:328:LEU:HD12	1.98	0.45
1:C:211:VAL:CG2	1:C:237:SER:HB3	2.46	0.45
1:D:88:ILE:HD12	1:D:197:ILE:CG2	2.46	0.45
1:B:160:ILE:N	1:B:160:ILE:CD1	2.80	0.45
1:C:58:ASP:H	1:C:238:GLN:HE22	1.64	0.45
1:C:179:PHE:CZ	1:C:282:ASN:HB3	2.51	0.45
1:B:47:SER:C	1:B:49:ALA:N	2.69	0.45
1:D:23:TYR:CE2	1:D:26:LEU:HB2	2.51	0.45
1:D:198:ARG:HB2	1:D:213:TYR:CE1	2.52	0.45
1:A:33:PHE:CD1	1:A:206:LEU:HD13	2.52	0.45
1:A:78:ASN:O	1:A:216:ALA:N	2.49	0.45
1:D:81:VAL:HG12	1:D:82:GLY:H	1.82	0.45
1:D:105:THR:OG1	1:D:106:TYR:N	2.49	0.45
1:A:46:ASN:OD1	1:A:48:ASP:N	2.50	0.45
1:A:177:TYR:O	1:A:178:GLU:C	2.54	0.45
1:B:51:ARG:HG3	1:B:52:ILE:HG23	1.99	0.45
1:B:196:VAL:O	1:B:214:VAL:HA	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:22:THR:O	1:C:22:THR:HG23	2.17	0.45
1:C:100:VAL:HG23	1:C:142:VAL:HG12	1.99	0.45
1:A:42:PHE:CD2	1:B:42:PHE:HB2	2.52	0.45
1:A:201:SER:HA	1:A:207:ALA:CA	2.47	0.45
1:A:285:PHE:HE2	1:A:287:PHE:CD2	2.35	0.45
1:B:322:GLU:HA	1:B:322:GLU:OE1	2.17	0.45
1:C:262:ARG:NH2	1:C:280:ARG:HA	2.32	0.45
1:D:55:ASP:O	1:D:56:SER:C	2.55	0.45
1:D:308:ARG:HG2	1:D:315:ARG:NH2	2.31	0.45
1:A:164:LEU:HG	1:A:191:TYR:CD2	2.51	0.45
1:B:269:LEU:O	1:B:274:TYR:HB2	2.16	0.45
1:A:56:SER:CB	1:A:57:PRO:HD2	2.47	0.45
1:A:74:LEU:CD1	1:A:215:VAL:HG11	2.46	0.45
1:B:144:ILE:HD11	1:B:163:ILE:CD1	2.47	0.45
1:C:178:GLU:O	1:C:255:THR:HG21	2.17	0.45
1:B:23:TYR:O	1:B:24:LEU:CD1	2.65	0.44
1:B:316:ILE:HD12	1:B:316:ILE:C	2.38	0.44
1:C:21:LYS:O	1:C:21:LYS:HD3	2.17	0.44
1:C:147:PRO:HG2	1:C:180:HIS:HB2	1.99	0.44
1:D:247:HIS:O	1:D:250:ILE:HG12	2.17	0.44
1:A:58:ASP:CB	1:A:238:GLN:NE2	2.81	0.44
1:A:89:ILE:O	1:A:93:MET:HG3	2.18	0.44
1:C:232:ASN:HA	1:D:83:ASN:ND2	2.33	0.44
1:D:26:LEU:HD13	1:D:308:ARG:HH21	1.82	0.44
1:D:30:PRO:HG2	1:D:31:PHE:H	1.81	0.44
1:D:41:VAL:HG23	1:D:42:PHE:N	2.31	0.44
1:D:61:LEU:CD2	1:D:238:GLN:HG2	2.48	0.44
1:A:301:ARG:HG3	1:D:42:PHE:CZ	2.53	0.44
1:B:197:ILE:HD12	1:B:197:ILE:N	2.31	0.44
1:B:270:ARG:CD	1:B:276:ILE:HD11	2.47	0.44
1:C:236:VAL:HG21	1:D:240:PHE:HE2	1.81	0.44
1:C:328:LEU:HA	1:C:331:LEU:HD22	1.99	0.44
1:D:169:PHE:CZ	1:D:220:PHE:CD1	3.06	0.44
1:A:56:SER:HB3	1:A:231:PHE:HA	1.99	0.44
1:D:45:LEU:HD23	1:D:45:LEU:C	2.38	0.44
1:A:85:ALA:O	1:A:89:ILE:HG12	2.18	0.44
1:A:204:PHE:HB3	1:A:206:LEU:HD22	1.99	0.44
1:C:210:ARG:HH12	2:C:1333:PO4:P	2.41	0.44
1:C:327:ILE:CG1	1:C:328:LEU:N	2.69	0.44
1:D:25:ALA:O	1:D:26:LEU:HD13	2.17	0.44
1:D:103:PRO:HA	1:D:105:THR:N	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:160:ILE:HG22	1:D:164:LEU:HD22	1.99	0.44
1:A:94:LEU:HD21	1:B:94:LEU:HD21	2.00	0.44
1:A:283:PHE:HB2	1:A:316:ILE:O	2.18	0.44
1:D:71:THR:OG1	1:D:74:LEU:HD23	2.17	0.44
1:A:45:LEU:HD11	1:A:50:LEU:HD21	2.00	0.44
1:A:100:VAL:O	1:A:142:VAL:HA	2.18	0.44
1:A:255:THR:O	1:A:259:VAL:HG13	2.18	0.44
1:D:56:SER:HB2	1:D:230:PRO:O	2.17	0.44
1:A:61:LEU:O	1:A:65:ILE:HG13	2.18	0.44
1:A:82:GLY:HA3	1:A:88:ILE:HG13	2.00	0.44
1:A:19:ARG:HH21	1:B:52:ILE:HB	1.83	0.43
1:A:46:ASN:OD1	1:A:46:ASN:C	2.56	0.43
1:A:131:ILE:HG13	1:A:155:PHE:CD2	2.53	0.43
1:C:92:MET:HA	1:C:95:MET:CG	2.48	0.43
1:C:159:GLU:O	1:C:163:ILE:HG13	2.18	0.43
1:C:309:SER:O	1:C:310:PHE:CB	2.63	0.43
1:B:142:VAL:HG21	1:B:163:ILE:CG2	2.32	0.43
1:C:177:TYR:CE2	1:C:183:SER:HB3	2.53	0.43
1:D:166:THR:HG22	1:D:166:THR:O	2.17	0.43
1:A:75:SER:O	1:A:77:ASN:N	2.52	0.43
1:A:148:ASN:CG	1:A:149:ASN:N	2.71	0.43
1:B:296:LEU:O	1:B:300:LEU:HG	2.18	0.43
1:D:80:SER:HG	1:D:224:TYR:HE2	1.63	0.43
1:B:97:ASP:HB3	1:B:139:GLY:O	2.17	0.43
1:C:33:PHE:HD2	1:C:38:VAL:HG22	1.82	0.43
1:C:174:GLU:O	1:C:176:TYR:N	2.52	0.43
1:B:83:ASN:O	1:B:87:GLU:HB2	2.19	0.43
1:B:178:GLU:H	1:B:178:GLU:CD	2.22	0.43
1:C:32:PRO:CB	1:D:48:ASP:HA	2.49	0.43
1:C:209:GLN:NE2	1:D:236:VAL:CG2	2.76	0.43
1:C:209:GLN:NE2	1:D:236:VAL:HG22	2.20	0.43
1:C:247:HIS:C	1:C:249:GLU:H	2.22	0.43
1:D:75:SER:OG	1:D:78:ASN:ND2	2.51	0.43
1:A:145:PRO:HA	1:A:173:ASP:O	2.17	0.43
1:A:164:LEU:HG	1:A:191:TYR:CG	2.54	0.43
1:A:216:ALA:HB3	1:A:221:ILE:HD12	1.99	0.43
1:D:68:TYR:OH	1:D:178:GLU:HG3	2.18	0.43
1:D:179:PHE:CG	1:D:282:ASN:HB3	2.52	0.43
1:B:269:LEU:HD13	1:B:286:VAL:CG2	2.48	0.43
1:B:317:THR:HG22	1:B:318:ILE:N	2.33	0.43
1:D:23:TYR:HE2	1:D:26:LEU:HD22	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:190:LYS:HE2	1:D:191:TYR:CZ	2.54	0.43
1:A:236:VAL:O	1:A:240:PHE:HD2	2.01	0.43
1:A:262:ARG:NH1	1:A:280:ARG:CA	2.79	0.43
1:A:275:ARG:HD3	1:A:287:PHE:HB2	2.01	0.43
1:B:92:MET:CE	1:B:169:PHE:CE1	3.02	0.43
1:D:84:GLY:N	1:D:210:ARG:O	2.52	0.43
1:D:137:GLY:O	1:D:138:GLU:C	2.56	0.43
1:B:88:ILE:HA	1:B:91:VAL:HG22	2.01	0.43
1:B:136:VAL:HG22	1:B:168:ALA:CB	2.49	0.43
1:C:293:LYS:HD3	1:C:293:LYS:C	2.39	0.43
1:D:239:MET:O	1:D:243:VAL:HG22	2.17	0.43
1:D:274:TYR:CZ	1:D:331:LEU:HD22	2.53	0.43
1:A:95:MET:HE1	1:A:220:PHE:CZ	2.54	0.43
1:A:185:VAL:HG22	1:A:196:VAL:HG21	2.01	0.43
1:A:323:GLU:O	1:A:327:ILE:HD13	2.19	0.43
1:B:76:LYS:C	1:B:78:ASN:H	2.22	0.43
1:C:156:GLU:N	1:C:159:GLU:OE1	2.52	0.43
1:C:191:TYR:N	1:C:191:TYR:CD1	2.86	0.43
1:C:236:VAL:HG12	1:C:240:PHE:CE2	2.54	0.43
1:D:26:LEU:HD12	1:D:26:LEU:HA	1.84	0.43
1:A:45:LEU:CD1	1:A:235:TYR:HE2	2.32	0.42
1:A:262:ARG:O	1:A:266:LYS:HG3	2.18	0.42
1:A:269:LEU:HD23	1:A:274:TYR:CD1	2.54	0.42
1:B:58:ASP:HB3	1:B:61:LEU:H	1.84	0.42
1:B:60:GLU:HG2	1:B:242:LYS:CD	2.48	0.42
1:B:102:PHE:CE2	1:B:131:ILE:HG23	2.53	0.42
1:C:109:TYR:CE1	1:C:145:PRO:HD3	2.54	0.42
1:C:142:VAL:HG23	1:C:142:VAL:O	2.20	0.42
1:A:88:ILE:CG2	1:A:214:VAL:HG22	2.49	0.42
1:B:157:ARG:NH1	1:B:187:PHE:CZ	2.88	0.42
1:C:102:PHE:HA	1:C:103:PRO:HD2	1.97	0.42
1:C:265:MET:HA	1:C:268:ALA:HB3	2.00	0.42
1:A:33:PHE:O	1:A:34:PRO:C	2.57	0.42
1:A:130:ARG:HB3	1:A:159:GLU:OE2	2.18	0.42
1:A:200:PHE:HB3	1:A:206:LEU:HD23	2.01	0.42
1:C:112:PHE:CZ	1:D:229:LEU:HD23	2.54	0.42
1:C:316:ILE:HG21	1:C:327:ILE:CD1	2.48	0.42
1:A:74:LEU:HD22	1:A:78:ASN:HB2	2.01	0.42
1:A:81:VAL:HG22	1:A:233:VAL:HG21	2.01	0.42
1:A:82:GLY:HA3	1:A:88:ILE:CG1	2.49	0.42
1:A:92:MET:O	1:A:96:PHE:HD2	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:200:PHE:CE2	1:B:241:ALA:HB1	2.53	0.42
1:C:27:ASN:HA	1:C:317:THR:CG2	2.49	0.42
1:D:33:PHE:CE2	1:D:37:LEU:HB3	2.54	0.42
1:A:75:SER:C	1:A:77:ASN:N	2.72	0.42
1:A:228:ARG:HD2	1:A:232:ASN:HD22	1.84	0.42
1:B:87:GLU:O	1:B:91:VAL:N	2.43	0.42
1:C:68:TYR:HH	1:C:204:PHE:HZ	1.68	0.42
1:C:228:ARG:NE	1:C:232:ASN:ND2	2.49	0.42
1:D:24:LEU:HB3	1:D:317:THR:O	2.19	0.42
1:D:27:ASN:HA	1:D:317:THR:CG2	2.50	0.42
1:D:31:PHE:CD1	1:D:254:ARG:HD2	2.54	0.42
1:D:131:ILE:CG2	1:D:132:PRO:HD2	2.50	0.42
1:D:243:VAL:HG23	1:D:244:ALA:N	2.35	0.42
1:A:300:LEU:HB3	1:A:305:VAL:HB	2.02	0.42
1:B:45:LEU:HD22	1:B:236:VAL:HG22	2.02	0.42
1:B:69:LEU:HD13	1:B:215:VAL:HG11	2.01	0.42
1:B:92:MET:HE3	1:B:220:PHE:CZ	2.55	0.42
1:C:198:ARG:HG3	1:C:198:ARG:HH11	1.85	0.42
1:D:262:ARG:HA	1:D:318:ILE:CD1	2.50	0.42
1:A:198:ARG:HG3	1:A:213:TYR:CE1	2.55	0.42
1:A:243:VAL:HG23	1:A:244:ALA:N	2.34	0.42
1:B:259:VAL:HG23	1:B:260:GLU:H	1.80	0.42
1:B:266:LYS:O	1:B:270:ARG:HG3	2.20	0.42
1:D:60:GLU:O	1:D:63:GLU:HB2	2.19	0.42
1:D:164:LEU:HD12	1:D:164:LEU:HA	1.88	0.42
1:A:188:LEU:HD22	1:A:194:LEU:CD2	2.41	0.42
1:A:188:LEU:HD13	1:A:188:LEU:HA	1.90	0.42
1:A:194:LEU:CG	1:A:195:ALA:N	2.83	0.42
1:C:198:ARG:HD2	1:C:213:TYR:OH	2.20	0.42
1:C:235:TYR:HB2	1:D:208:ALA:HB1	2.01	0.42
1:D:297:LEU:HD11	1:D:314:VAL:HG11	2.02	0.42
1:B:22:THR:HG23	1:B:305:VAL:CA	2.38	0.42
1:B:31:PHE:HB3	1:B:254:ARG:CZ	2.50	0.42
1:B:229:LEU:N	1:B:229:LEU:CD2	2.83	0.42
1:B:307:VAL:HG11	1:B:316:ILE:HG22	2.01	0.42
1:C:83:ASN:HB3	1:C:87:GLU:HB2	2.02	0.42
1:C:109:TYR:OH	1:C:173:ASP:HB3	2.20	0.42
1:D:24:LEU:HD13	1:D:327:ILE:CD1	2.16	0.42
1:D:69:LEU:HD21	1:D:213:TYR:HE1	1.84	0.42
1:A:51:ARG:HG3	1:A:52:ILE:N	2.34	0.41
1:A:57:PRO:HB2	1:A:62:ILE:HD11	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:258:ILE:HG12	1:A:318:ILE:HG21	2.02	0.41
1:B:57:PRO:HD2	1:B:228:ARG:NH1	2.35	0.41
1:B:261:GLU:O	1:B:265:MET:HG2	2.20	0.41
1:C:79:VAL:HA	1:C:214:VAL:O	2.20	0.41
1:D:232:ASN:OD1	1:D:232:ASN:N	2.53	0.41
1:A:146:ASN:HA	1:A:147:PRO:C	2.39	0.41
1:A:224:TYR:CZ	1:A:228:ARG:HD3	2.55	0.41
1:B:47:SER:O	1:B:49:ALA:N	2.54	0.41
1:B:265:MET:CB	1:B:328:LEU:HD11	2.49	0.41
1:C:27:ASN:HB2	1:C:202:LYS:NZ	2.35	0.41
1:C:41:VAL:HG23	1:C:243:VAL:HG21	2.02	0.41
1:C:69:LEU:N	1:C:69:LEU:CD1	2.82	0.41
1:C:141:VAL:HG22	1:C:142:VAL:N	2.35	0.41
1:D:137:GLY:CA	1:D:168:ALA:HB2	2.50	0.41
1:D:148:ASN:HB2	1:D:155:PHE:CE1	2.55	0.41
1:D:254:ARG:O	1:D:258:ILE:HG12	2.20	0.41
1:D:291:GLU:OE1	1:D:291:GLU:HA	2.20	0.41
1:D:296:LEU:HD22	1:D:300:LEU:HG	2.02	0.41
1:A:148:ASN:HB2	1:A:155:PHE:CE1	2.55	0.41
1:A:235:TYR:HB2	1:B:208:ALA:HB1	2.02	0.41
1:A:301:ARG:NH1	1:D:42:PHE:O	2.54	0.41
1:B:213:TYR:N	1:B:213:TYR:CD2	2.87	0.41
1:C:112:PHE:O	1:C:116:VAL:HG22	2.21	0.41
1:D:327:ILE:O	1:D:328:LEU:C	2.58	0.41
1:A:50:LEU:HA	1:B:208:ALA:CB	2.49	0.41
1:A:77:ASN:HB3	1:A:218:GLU:HG3	2.03	0.41
1:A:103:PRO:HA	1:A:105:THR:N	2.35	0.41
1:A:230:PRO:CD	1:B:112:PHE:CE1	2.95	0.41
1:B:25:ALA:O	1:B:315:ARG:NH1	2.53	0.41
1:B:145:PRO:CA	1:B:173:ASP:HB3	2.49	0.41
1:D:261:GLU:HA	1:D:261:GLU:OE1	2.19	0.41
1:D:270:ARG:NH1	3:D:2029:HOH:O	2.52	0.41
1:A:74:LEU:HA	1:A:74:LEU:HD23	1.79	0.41
1:A:78:ASN:O	1:A:215:VAL:HA	2.21	0.41
1:A:241:ALA:O	1:A:244:ALA:HB3	2.20	0.41
1:A:281:GLY:C	1:A:283:PHE:H	2.24	0.41
1:A:296:LEU:HD22	1:A:300:LEU:HG	2.01	0.41
1:B:26:LEU:HD21	1:B:308:ARG:NH2	2.35	0.41
1:B:51:ARG:HG3	1:B:52:ILE:H	1.84	0.41
1:B:296:LEU:C	1:B:296:LEU:CD1	2.88	0.41
1:C:26:LEU:HB2	1:C:28:GLU:HG3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:98:ARG:O	1:D:141:VAL:HG12	2.21	0.41
1:D:144:ILE:O	1:D:172:LEU:HA	2.20	0.41
1:D:206:LEU:HD12	1:D:206:LEU:HA	1.91	0.41
1:A:55:ASP:O	1:A:56:SER:C	2.59	0.41
1:A:118:ALA:O	1:A:120:PHE:HD1	2.03	0.41
1:A:136:VAL:O	1:A:166:THR:CG2	2.68	0.41
1:A:148:ASN:HB2	1:A:155:PHE:HE1	1.86	0.41
1:B:58:ASP:CB	1:B:61:LEU:HB2	2.51	0.41
1:B:330:GLU:OE2	1:B:330:GLU:HA	2.20	0.41
1:C:31:PHE:HB3	1:C:254:ARG:NH1	2.36	0.41
1:C:56:SER:HG	1:C:233:VAL:HG22	1.80	0.41
1:D:123:VAL:HA	1:D:124:PRO:HD3	1.89	0.41
1:D:160:ILE:CG2	1:D:164:LEU:HD22	2.50	0.41
1:A:169:PHE:CZ	1:A:195:ALA:HB2	2.55	0.41
1:B:48:ASP:O	1:B:51:ARG:CG	2.68	0.41
1:B:57:PRO:CD	1:B:228:ARG:NH1	2.84	0.41
1:B:66:LEU:HD21	1:B:75:SER:C	2.41	0.41
1:B:149:ASN:ND2	1:B:149:ASN:O	2.53	0.41
1:B:286:VAL:O	1:B:313:GLY:HA3	2.21	0.41
1:C:174:GLU:C	1:C:176:TYR:N	2.74	0.41
1:C:209:GLN:HE22	1:D:236:VAL:HG21	1.81	0.41
1:C:290:LYS:HE2	1:C:291:GLU:HG3	2.02	0.41
1:C:315:ARG:CG	1:C:315:ARG:NH1	2.82	0.41
1:D:88:ILE:HD11	1:D:212:GLY:O	2.19	0.41
1:D:92:MET:HA	1:D:95:MET:CE	2.51	0.41
1:D:164:LEU:HD13	1:D:170:VAL:HG21	2.02	0.41
1:B:98:ARG:HD3	1:B:119:LYS:HD3	2.01	0.41
1:C:26:LEU:C	1:C:28:GLU:H	2.24	0.41
1:D:174:GLU:HB3	1:D:177:TYR:HB2	2.03	0.41
1:A:50:LEU:CD1	1:B:33:PHE:HB3	2.50	0.41
1:B:56:SER:OG	1:B:232:ASN:ND2	2.54	0.41
1:B:98:ARG:HB2	1:B:119:LYS:HD2	2.02	0.41
1:B:185:VAL:HG22	1:B:196:VAL:HG21	2.02	0.41
1:C:147:PRO:CG	1:C:180:HIS:HB2	2.51	0.41
1:C:310:PHE:O	1:C:311:ARG:HB3	2.21	0.41
1:D:225:ASN:HD22	1:D:228:ARG:NH1	2.19	0.41
1:A:64:LYS:CE	1:A:246:ASP:OD1	2.65	0.41
1:A:150:PRO:CB	1:A:315:ARG:HG3	2.42	0.41
1:C:26:LEU:N	1:C:26:LEU:HD22	2.35	0.41
1:D:327:ILE:O	1:D:330:GLU:N	2.54	0.41
1:A:83:ASN:CG	1:B:83:ASN:HD22	2.25	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:102:PHE:O	1:B:105:THR:HG23	2.20	0.40
1:D:24:LEU:CA	1:D:317:THR:HB	2.51	0.40
1:B:54:TYR:CD2	1:B:235:TYR:HD1	2.39	0.40
1:B:149:ASN:N	1:B:149:ASN:ND2	2.68	0.40
1:C:102:PHE:O	1:C:105:THR:HB	2.21	0.40
1:C:230:PRO:HD2	3:C:2007:HOH:O	2.20	0.40
1:C:234:SER:O	1:C:237:SER:HB2	2.21	0.40
1:C:265:MET:O	1:C:269:LEU:HD12	2.21	0.40
1:C:269:LEU:HD23	1:C:272:MET:SD	2.60	0.40
1:A:180:HIS:O	1:A:181:GLY:C	2.59	0.40
1:B:145:PRO:HG2	1:B:148:ASN:OD1	2.21	0.40
1:B:261:GLU:CG	1:B:324:ASN:OD1	2.70	0.40
1:C:23:TYR:HB2	1:C:306:ALA:N	2.35	0.40
1:C:93:MET:HE1	1:C:113:ALA:HB2	2.03	0.40
1:D:37:LEU:HA	1:D:37:LEU:HD12	1.85	0.40
1:D:172:LEU:O	1:D:196:VAL:HA	2.21	0.40
1:D:236:VAL:CG2	1:D:237:SER:N	2.84	0.40
1:D:254:ARG:NH1	1:D:254:ARG:HG3	2.36	0.40
1:C:110:ARG:O	1:C:113:ALA:HB3	2.22	0.40
1:C:137:GLY:O	1:C:166:THR:O	2.40	0.40
1:C:303:LYS:NZ	1:C:330:GLU:HB3	2.36	0.40
1:D:24:LEU:HA	1:D:317:THR:HB	2.04	0.40
1:D:57:PRO:HD3	1:D:228:ARG:NH2	2.37	0.40
1:D:150:PRO:HB3	1:D:310:PHE:CZ	2.56	0.40
1:D:283:PHE:CD1	1:D:283:PHE:N	2.90	0.40
1:D:308:ARG:HG3	1:D:310:PHE:CE2	2.57	0.40
1:A:207:ALA:HB3	1:B:51:ARG:O	2.21	0.40
1:C:128:ASP:C	1:C:129:LEU:HD12	2.42	0.40
1:D:239:MET:HE3	1:D:242:LYS:CE	2.51	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	327/335 (98%)	281 (86%)	34 (10%)	12 (4%)	3 11
1	B	313/335 (93%)	267 (85%)	38 (12%)	8 (3%)	5 17
1	C	310/335 (92%)	248 (80%)	51 (16%)	11 (4%)	3 12
1	D	327/335 (98%)	291 (89%)	30 (9%)	6 (2%)	8 25
All	All	1277/1340 (95%)	1087 (85%)	153 (12%)	37 (3%)	4 15

All (37) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	11	ALA
1	A	56	SER
1	B	56	SER
1	B	288	MET
1	C	310	PHE
1	A	181	GLY
1	A	210	ARG
1	A	290	LYS
1	A	292	GLU
1	B	83	ASN
1	B	129	LEU
1	B	291	GLU
1	C	132	PRO
1	C	210	ARG
1	C	309	SER
1	D	10	ARG
1	D	83	ASN
1	A	76	LYS
1	A	321	ARG
1	B	278	ASP
1	C	175	ALA
1	D	250	ILE
1	A	45	LEU
1	A	177	TYR
1	B	48	ASP
1	C	22	THR
1	C	311	ARG
1	C	329	ARG
1	D	326	MET
1	D	34	PRO
1	C	83	ASN
1	D	57	PRO
1	A	34	PRO

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Mol	Chain	Res	Type
1	C	62	ILE
1	A	132	PRO
1	B	34	PRO
1	C	134	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	294/301 (98%)	277 (94%)	17 (6%)	20 46
1	B	283/301 (94%)	261 (92%)	22 (8%)	12 32
1	C	279/301 (93%)	255 (91%)	24 (9%)	10 27
1	D	295/301 (98%)	267 (90%)	28 (10%)	8 23
All	All	1151/1204 (96%)	1060 (92%)	91 (8%)	12 31

All (91) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	9	LYS
1	A	21	LYS
1	A	22	THR
1	A	36	ASP
1	A	101	PHE
1	A	105	THR
1	A	121	LEU
1	A	126	THR
1	A	187	PHE
1	A	192	GLU
1	A	193	ASN
1	A	206	LEU
1	A	271	GLU
1	A	292	GLU
1	A	296	LEU
1	A	297	LEU
1	A	318	ILE

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Mol	Chain	Res	Type
1	B	22	THR
1	B	24	LEU
1	B	45	LEU
1	B	51	ARG
1	B	61	LEU
1	B	87	GLU
1	B	101	PHE
1	B	121	LEU
1	B	128	ASP
1	B	149	ASN
1	B	172	LEU
1	B	187	PHE
1	B	190	LYS
1	B	222	ASP
1	B	232	ASN
1	B	271	GLU
1	B	276	ILE
1	B	290	LYS
1	B	296	LEU
1	B	311	ARG
1	B	320	LYS
1	B	325	ASP
1	C	23	TYR
1	C	39	ASP
1	C	45	LEU
1	C	55	ASP
1	C	61	LEU
1	C	69	LEU
1	C	77	ASN
1	C	83	ASN
1	C	100	VAL
1	C	114	LYS
1	C	140	ASP
1	C	177	TYR
1	C	222	ASP
1	C	232	ASN
1	C	249	GLU
1	C	261	GLU
1	C	271	GLU
1	C	288	MET
1	C	289	GLU
1	C	290	LYS

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Mol	Chain	Res	Type
1	C	293	LYS
1	C	298	GLU
1	C	315	ARG
1	C	331	LEU
1	D	10	ARG
1	D	22	THR
1	D	26	LEU
1	D	37	LEU
1	D	43	ARG
1	D	56	SER
1	D	73	PHE
1	D	81	VAL
1	D	97	ASP
1	D	107	SER
1	D	121	LEU
1	D	129	LEU
1	D	130	ARG
1	D	135	ASN
1	D	164	LEU
1	D	202	LYS
1	D	206	LEU
1	D	210	ARG
1	D	214	VAL
1	D	232	ASN
1	D	276	ILE
1	D	296	LEU
1	D	299	HIS
1	D	301	ARG
1	D	303	LYS
1	D	305	VAL
1	D	328	LEU
1	D	329	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (33) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	77	ASN
1	A	78	ASN
1	A	83	ASN
1	A	146	ASN
1	A	149	ASN
1	A	193	ASN

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Mol	Chain	Res	Type
1	A	238	GLN
1	A	304	ASN
1	B	83	ASN
1	B	149	ASN
1	B	232	ASN
1	B	324	ASN
1	C	46	ASN
1	C	77	ASN
1	C	146	ASN
1	C	148	ASN
1	C	180	HIS
1	C	193	ASN
1	C	209	GLN
1	C	232	ASN
1	C	238	GLN
1	C	282	ASN
1	C	304	ASN
1	D	78	ASN
1	D	83	ASN
1	D	135	ASN
1	D	146	ASN
1	D	148	ASN
1	D	149	ASN
1	D	209	GLN
1	D	225	ASN
1	D	238	GLN
1	D	304	ASN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

4 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
2	PO4	B	1336	-	4,4,4	1.71	1 (25%)	6,6,6	0.44	0
2	PO4	A	1336	-	4,4,4	1.99	3 (75%)	6,6,6	0.42	0
2	PO4	C	1333	-	4,4,4	1.71	1 (25%)	6,6,6	0.45	0
2	PO4	D	1336	-	4,4,4	1.78	3 (75%)	6,6,6	0.39	0

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	1336	PO4	P-O4	-2.28	1.47	1.54
2	A	1336	PO4	P-O2	-2.26	1.47	1.54
2	B	1336	PO4	P-O3	-2.24	1.47	1.54
2	A	1336	PO4	P-O3	-2.08	1.48	1.54
2	D	1336	PO4	P-O2	-2.08	1.48	1.54
2	D	1336	PO4	P-O3	-2.06	1.48	1.54
2	C	1333	PO4	P-O2	-2.01	1.48	1.54
2	D	1336	PO4	P-O4	-2.00	1.48	1.54

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	C	1333	PO4	2	0

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, 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	329/335 (98%)	-0.45	3 (0%)	84 84	9, 32, 76, 94	0
1	B	315/335 (94%)	-0.45	1 (0%)	94 94	6, 28, 62, 85	0
1	C	312/335 (93%)	0.27	17 (5%)	25 21	17, 66, 93, 96	0
1	D	329/335 (98%)	-0.40	5 (1%)	73 72	7, 33, 71, 96	0
All	All	1285/1340 (95%)	-0.26	26 (2%)	65 62	6, 35, 87, 96	0

All (26) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	12	TYR	5.5
1	C	157	ARG	4.9
1	C	291	GLU	4.7
1	D	11	ALA	3.7
1	A	334	PHE	3.5
1	C	310	PHE	3.3
1	A	8	ALA	3.3
1	C	171	ALA	3.0
1	A	127	LYS	3.0
1	C	121	LEU	3.0
1	B	333	VAL	2.9
1	C	72	ASP	2.7
1	C	136	VAL	2.5
1	D	8	ALA	2.5
1	C	135	ASN	2.5
1	C	322	GLU	2.5
1	D	7	ILE	2.4
1	D	13	PRO	2.4
1	C	23	TYR	2.3
1	C	124	PRO	2.3
1	C	260	GLU	2.3

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Mol	Chain	Res	Type	RSRZ
1	C	158	GLU	2.2
1	C	170	VAL	2.1
1	C	295	ARG	2.1
1	C	191	TYR	2.0
1	C	134	VAL	2.0

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

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

6.3 Carbohydrates (i)

There are no 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	PO4	C	1333	5/5	0.97	0.15	31,32,34,34	0
2	PO4	B	1336	5/5	0.98	0.12	14,18,18,19	0
2	PO4	A	1336	5/5	0.98	0.14	33,34,35,36	0
2	PO4	D	1336	5/5	0.98	0.09	15,16,19,20	0

6.5 Other polymers (i)

There are no such residues in this entry.