



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 15, 2017 – 03:54 am GMT

PDB ID : 4OYF
Title : Crystal structure of GLTPH R397A IN Sodium-bound state
Authors : Boudker, O.; Oh, S.; Verdon, G.; Serio, R.
Deposited on : 2014-02-11
Resolution : 3.41 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
Xtriage (Phenix) : 1.9-1692
EDS : trunk28620
Percentile statistics : 20161228.v01 (using entries in the PDB archive December 28th 2016)
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) : recalc28949

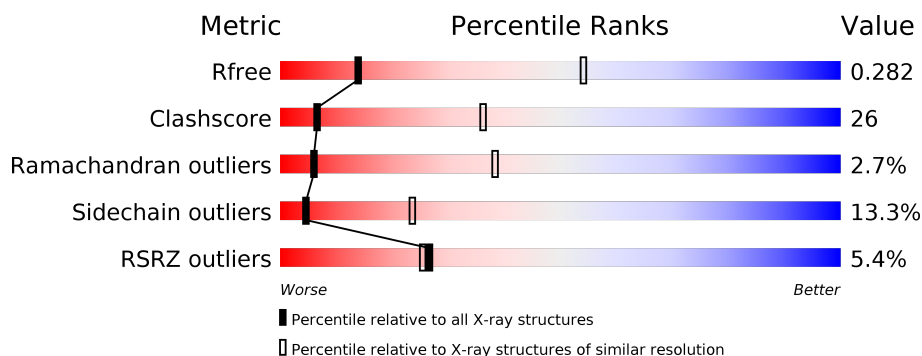
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.41 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}	100719	1074 (3.50-3.34)
Clashscore	112137	1179 (3.50-3.34)
Ramachandran outliers	110173	1147 (3.50-3.34)
Sidechain outliers	110143	1148 (3.50-3.34)
RSRZ outliers	101464	1100 (3.50-3.34)

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	422	<div> <div>8%</div> <div> <div>52%</div> <div>36%</div> <div>6%</div> <div>5%</div> </div> </div>
1	B	422	<div> <div>3%</div> <div> <div>49%</div> <div>39%</div> <div>6%</div> <div>5%</div> </div> </div>
1	C	422	<div> <div>4%</div> <div> <div>51%</div> <div>37%</div> <div>5%</div> <div>5%</div> </div> </div>
1	D	422	<div> <div>4%</div> <div> <div>53%</div> <div>35%</div> <div>6%</div> <div>5%</div> </div> </div>
1	E	422	<div> <div>8%</div> <div> <div>51%</div> <div>37%</div> <div>6%</div> <div>5%</div> </div> </div>
1	F	422	<div> <div>3%</div> <div> <div>49%</div> <div>39%</div> <div>6%</div> <div>5%</div> </div> </div>

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	NA	A	501	-	-	-	X
2	NA	B	501	-	-	-	X
2	NA	C	501	-	-	-	X
2	NA	D	501	-	-	-	X
2	NA	E	501	-	-	-	X
2	NA	F	501	-	-	-	X

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 17592 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 GLUTAMATE SYMPORT PROTEIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	399	Total	C	N	O	S	0	0	0
			2930	1926	470	517	17			
1	B	399	Total	C	N	O	S	0	0	0
			2930	1926	470	517	17			
1	C	399	Total	C	N	O	S	0	0	0
			2930	1926	470	517	17			
1	D	399	Total	C	N	O	S	0	0	0
			2930	1926	470	517	17			
1	E	399	Total	C	N	O	S	0	0	0
			2930	1926	470	517	17			
1	F	399	Total	C	N	O	S	0	0	0
			2930	1926	470	517	17			

- Molecule 2 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	D	1	Total	Na	0	0
			1	1		
2	E	1	Total	Na	0	0
			1	1		
2	B	1	Total	Na	0	0
			1	1		
2	C	1	Total	Na	0	0
			1	1		
2	A	1	Total	Na	0	0
			1	1		
2	F	1	Total	Na	0	0
			1	1		

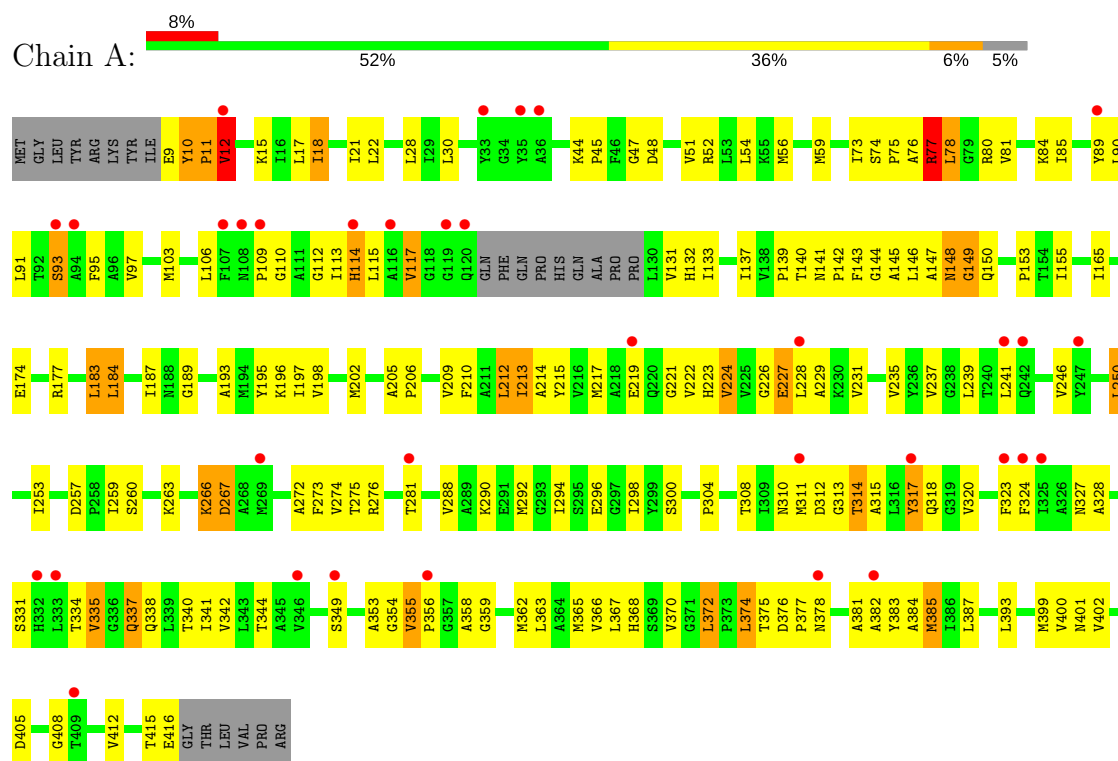
- Molecule 3 is water.

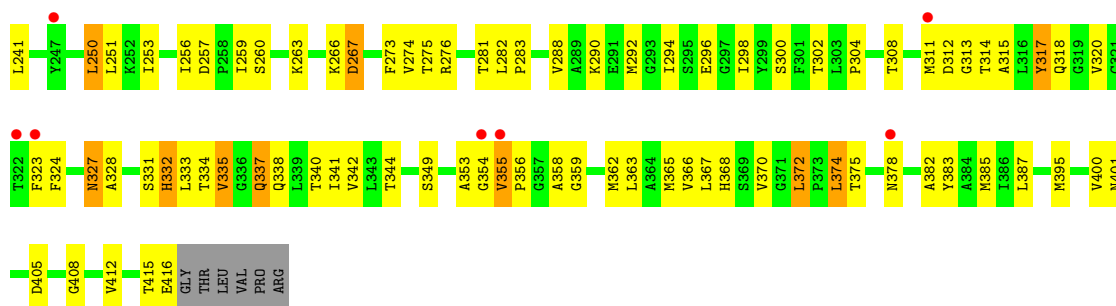
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	1	Total 1	O 1	0	0
3	B	1	Total 1	O 1	0	0
3	C	1	Total 1	O 1	0	0
3	D	1	Total 1	O 1	0	0
3	E	1	Total 1	O 1	0	0
3	F	1	Total 1	O 1	0	0

3 Residue-property plots

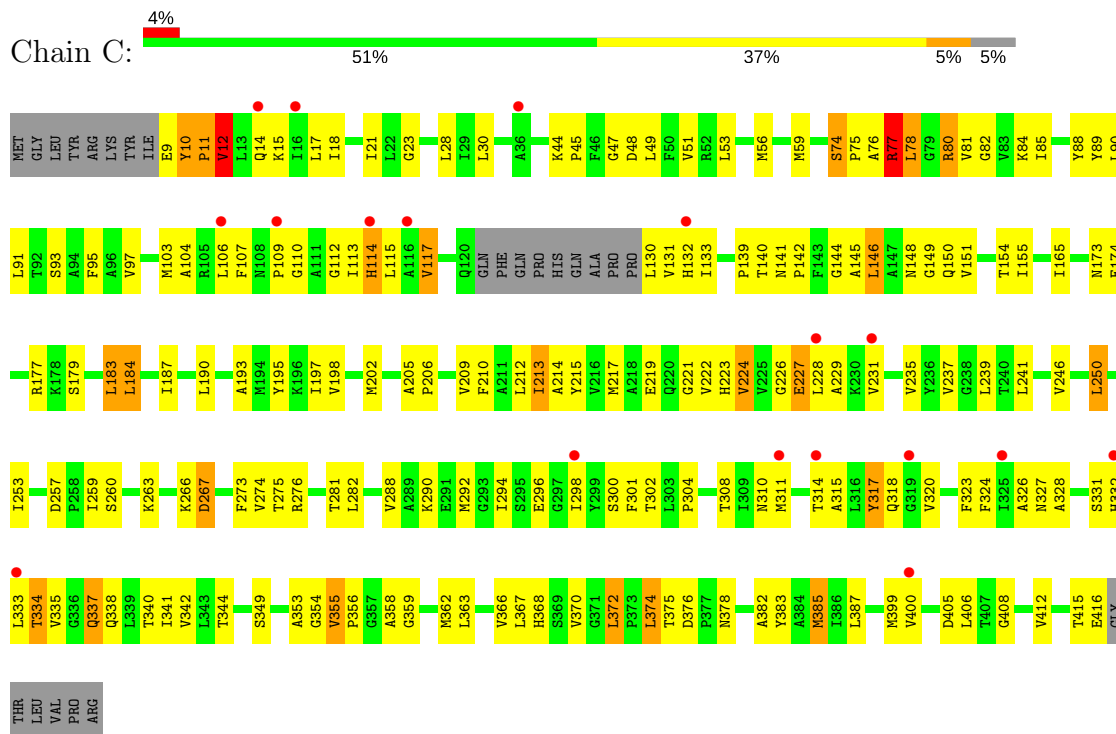
These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: GLUTAMATE SYMPORT PROTEIN

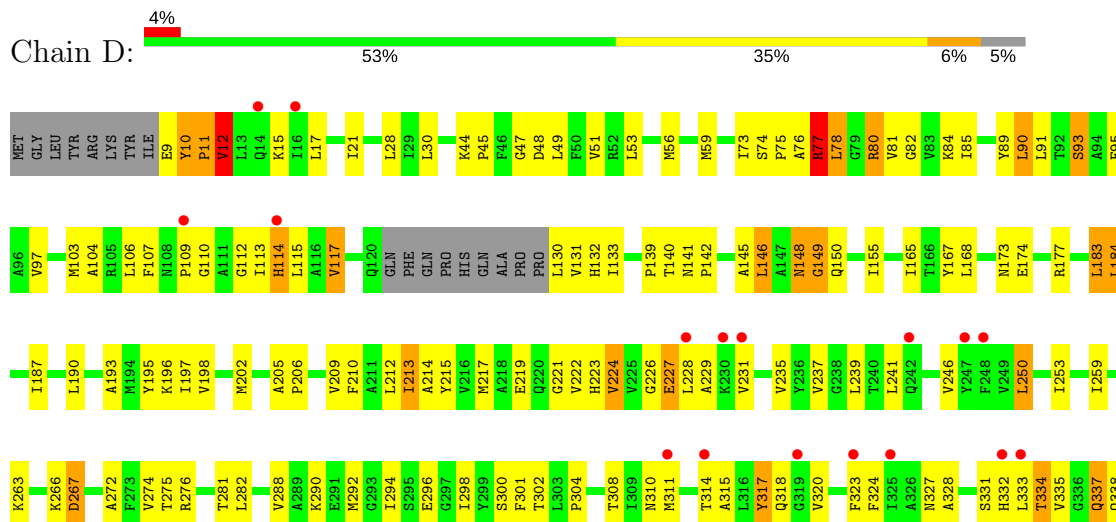




• Molecule 1: GLUTAMATE SYMPORT PROTEIN

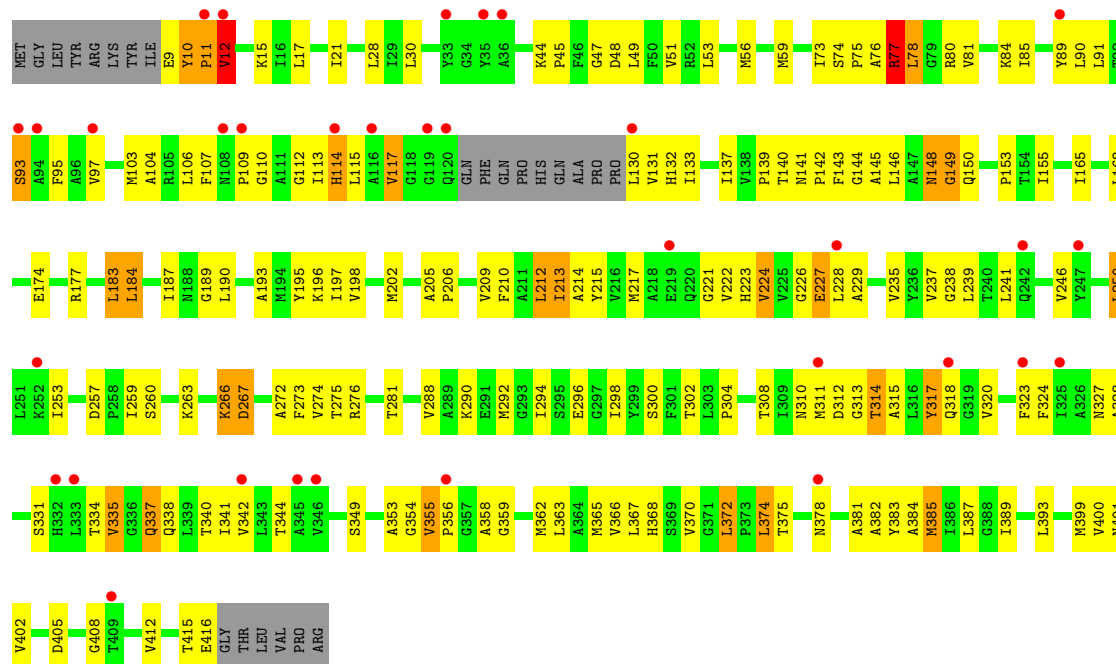


• Molecule 1: GLUTAMATE SYMPORT PROTEIN

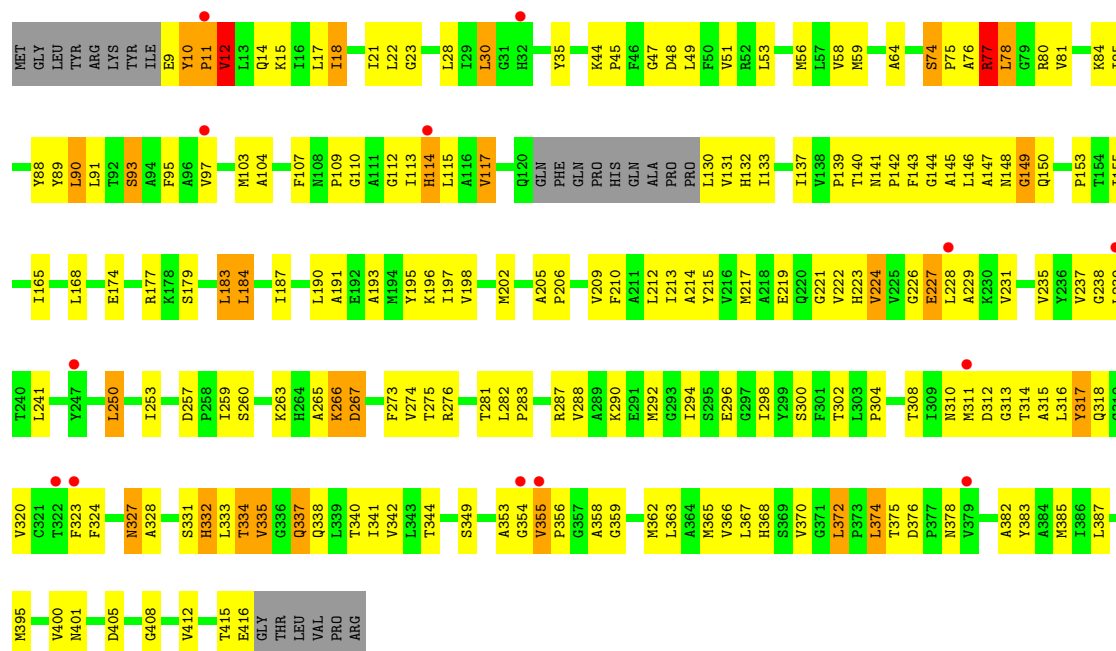




• Molecule 1: GLUTAMATE SYMPORT PROTEIN



• Molecule 1: GLUTAMATE SYMPORT PROTEIN



4 Data and refinement statistics

Property	Value	Source
Space group	P 31	Depositor
Cell constants a, b, c, α , β , γ	110.58Å 110.58Å 306.92Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	12.00 – 3.41 11.99 – 3.41	Depositor EDS
% Data completeness (in resolution range)	88.7 (12.00-3.41) 88.7 (11.99-3.41)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.75 (at 3.43Å)	Xtriage
Refinement program	REFMAC 5.7.0029	Depositor
R, R_{free}	0.284 , 0.293 0.272 , 0.282	Depositor DCC
R_{free} test set	2506 reflections (5.31%)	DCC
Wilson B-factor (Å ²)	69.2	Xtriage
Anisotropy	0.609	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 136.3	EDS
L-test for twinning ²	$\langle L \rangle = 0.46$, $\langle L^2 \rangle = 0.29$	Xtriage
Estimated twinning fraction	0.064 for -h,-k,l 0.359 for h,-h-k,-l 0.064 for -k,-h,-l	Xtriage
F_o, F_c correlation	0.86	EDS
Total number of atoms	17592	wwPDB-VP
Average B, all atoms (Å ²)	152.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.51% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

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	0.48	0/2983	0.68	0/4067
1	B	0.55	0/2983	0.71	0/4067
1	C	0.54	0/2983	0.70	0/4067
1	D	0.54	0/2983	0.71	0/4067
1	E	0.47	0/2983	0.67	0/4067
1	F	0.56	0/2983	0.72	0/4067
All	All	0.52	0/17898	0.70	0/24402

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2930	0	3077	165	0
1	B	2930	0	3077	161	0
1	C	2930	0	3077	168	0
1	D	2930	0	3077	169	0
1	E	2930	0	3077	163	0
1	F	2930	0	3077	171	0
2	A	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
2	E	1	0	0	0	0
2	F	1	0	0	0	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
3	C	1	0	0	0	0
3	D	1	0	0	0	0
3	E	1	0	0	0	0
3	F	1	0	0	0	0
All	All	17592	0	18462	949	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 26.

All (949) 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:D:113:ILE:HG21	1:D:328:ALA:CA	1.63	1.28
1:C:113:ILE:HG21	1:C:328:ALA:CA	1.65	1.25
1:B:113:ILE:HG21	1:B:328:ALA:CA	1.64	1.24
1:A:113:ILE:HG21	1:A:328:ALA:CA	1.67	1.24
1:F:113:ILE:HG21	1:F:328:ALA:CA	1.65	1.23
1:E:113:ILE:HG21	1:E:328:ALA:CA	1.67	1.23
1:D:113:ILE:CG2	1:D:328:ALA:HA	1.70	1.22
1:C:113:ILE:CG2	1:C:328:ALA:HA	1.72	1.20
1:E:165:ILE:HG21	1:E:184:LEU:HD23	1.23	1.20
1:B:113:ILE:CG2	1:B:328:ALA:HA	1.72	1.18
1:A:113:ILE:CG2	1:A:328:ALA:HA	1.73	1.17
1:F:113:ILE:CG2	1:F:328:ALA:HA	1.73	1.17
1:E:113:ILE:CG2	1:E:328:ALA:HA	1.75	1.15
1:B:165:ILE:HG21	1:B:184:LEU:HD23	1.19	1.14
1:A:165:ILE:HG21	1:A:184:LEU:HD23	1.28	1.13
1:C:165:ILE:HG21	1:C:184:LEU:HD23	1.22	1.09
1:F:165:ILE:HG21	1:F:184:LEU:HD23	1.20	1.08
1:D:165:ILE:HG21	1:D:184:LEU:HD23	1.14	1.06
1:A:209:VAL:HG13	1:A:274:VAL:HG21	1.49	0.95
1:E:209:VAL:HG13	1:E:274:VAL:HG21	1.49	0.94
1:F:209:VAL:HG13	1:F:274:VAL:HG21	1.51	0.92
1:B:209:VAL:HG13	1:B:274:VAL:HG21	1.53	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:209:VAL:HG13	1:D:274:VAL:HG21	1.54	0.89
1:C:209:VAL:HG13	1:C:274:VAL:HG21	1.54	0.88
1:E:113:ILE:HG21	1:E:328:ALA:HA	0.91	0.87
1:C:112:GLY:O	1:F:114:HIS:NE2	2.08	0.87
1:D:288:VAL:O	1:D:292:MET:HG3	1.76	0.86
1:A:113:ILE:HG21	1:A:328:ALA:HA	0.89	0.85
1:B:114:HIS:NE2	1:D:112:GLY:O	2.09	0.85
1:E:114:HIS:CD2	1:E:114:HIS:H	1.96	0.84
1:A:114:HIS:H	1:A:114:HIS:CD2	1.96	0.84
1:F:113:ILE:HG21	1:F:328:ALA:HA	0.88	0.82
1:C:288:VAL:O	1:C:292:MET:HG3	1.80	0.82
1:B:113:ILE:HG21	1:B:328:ALA:HA	0.87	0.81
1:C:354:GLY:O	1:C:356:PRO:HD2	1.80	0.81
1:B:113:ILE:CG2	1:B:328:ALA:CA	2.45	0.81
1:F:81:VAL:HG21	1:F:298:ILE:HD12	1.62	0.81
1:D:114:HIS:H	1:D:114:HIS:CD2	1.96	0.81
1:D:113:ILE:HG21	1:D:328:ALA:HA	0.86	0.80
1:F:113:ILE:CG2	1:F:328:ALA:CA	2.46	0.80
1:B:81:VAL:HG21	1:B:298:ILE:HD12	1.62	0.80
1:B:239:LEU:HB3	1:B:400:VAL:HG21	1.63	0.80
1:C:113:ILE:HG21	1:C:328:ALA:HA	0.87	0.80
1:B:114:HIS:CD2	1:B:114:HIS:H	1.97	0.80
1:F:114:HIS:H	1:F:114:HIS:CD2	1.98	0.80
1:F:239:LEU:HB3	1:F:400:VAL:HG21	1.63	0.80
1:C:114:HIS:H	1:C:114:HIS:CD2	1.97	0.80
1:C:114:HIS:NE2	1:F:112:GLY:O	2.14	0.79
1:B:288:VAL:O	1:B:292:MET:HG3	1.83	0.79
1:A:112:GLY:O	1:E:114:HIS:NE2	2.15	0.79
1:D:113:ILE:CG2	1:D:328:ALA:CA	2.43	0.78
1:B:112:GLY:O	1:D:114:HIS:NE2	2.15	0.78
1:A:114:HIS:NE2	1:E:112:GLY:O	2.17	0.77
1:D:354:GLY:O	1:D:356:PRO:HD2	1.84	0.77
1:E:9:GLU:HG3	1:E:10:TYR:CD1	2.20	0.77
1:D:165:ILE:HG21	1:D:184:LEU:CD2	2.07	0.76
1:C:84:LYS:HZ2	1:C:415:THR:HG21	1.50	0.76
1:A:113:ILE:CG2	1:A:328:ALA:CA	2.47	0.76
1:A:9:GLU:HG3	1:A:10:TYR:CD1	2.21	0.76
1:A:81:VAL:HG21	1:A:298:ILE:HD12	1.68	0.76
1:F:288:VAL:O	1:F:292:MET:HG3	1.86	0.76
1:C:113:ILE:CG2	1:C:328:ALA:CA	2.46	0.76
1:E:81:VAL:HG21	1:E:298:ILE:HD12	1.68	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:239:LEU:HB3	1:E:400:VAL:HG21	1.67	0.75
1:B:354:GLY:O	1:B:356:PRO:HD2	1.86	0.75
1:D:84:LYS:HZ2	1:D:415:THR:HG21	1.51	0.75
1:E:113:ILE:CG2	1:E:328:ALA:CA	2.48	0.75
1:C:239:LEU:HB3	1:C:400:VAL:HG21	1.68	0.75
1:B:165:ILE:HG21	1:B:184:LEU:CD2	2.11	0.74
1:B:195:TYR:O	1:B:198:VAL:HG12	1.87	0.74
1:C:81:VAL:HG21	1:C:298:ILE:HD12	1.69	0.74
1:D:113:ILE:HG21	1:D:328:ALA:CB	2.17	0.74
1:D:239:LEU:HB3	1:D:400:VAL:HG21	1.68	0.74
1:B:113:ILE:HG21	1:B:328:ALA:CB	2.18	0.74
1:F:113:ILE:HG21	1:F:328:ALA:CB	2.18	0.73
1:D:81:VAL:HG21	1:D:298:ILE:HD12	1.71	0.73
1:A:195:TYR:O	1:A:198:VAL:HG12	1.88	0.73
1:D:9:GLU:HG3	1:D:10:TYR:CD1	2.23	0.73
1:D:12:VAL:H	1:D:15:LYS:HB2	1.54	0.72
1:D:195:TYR:O	1:D:198:VAL:HG12	1.88	0.72
1:C:9:GLU:HG3	1:C:10:TYR:CD1	2.23	0.72
1:E:84:LYS:HZ2	1:E:415:THR:HG21	1.54	0.72
1:F:12:VAL:H	1:F:15:LYS:HB2	1.53	0.72
1:B:112:GLY:HA2	1:B:113:ILE:C	2.09	0.72
1:B:9:GLU:HG3	1:B:10:TYR:CD1	2.23	0.72
1:B:12:VAL:H	1:B:15:LYS:HB2	1.53	0.72
1:C:113:ILE:HG21	1:C:328:ALA:CB	2.20	0.72
1:D:113:ILE:HG22	1:D:113:ILE:O	1.88	0.72
1:A:84:LYS:HZ2	1:A:415:THR:HG21	1.54	0.71
1:C:113:ILE:HG22	1:C:113:ILE:O	1.89	0.71
1:F:112:GLY:HA2	1:F:113:ILE:C	2.09	0.71
1:A:239:LEU:HB3	1:A:400:VAL:HG21	1.71	0.71
1:E:113:ILE:HG21	1:E:328:ALA:CB	2.19	0.71
1:E:195:TYR:O	1:E:198:VAL:HG12	1.90	0.71
1:B:110:GLY:HA3	1:B:327:ASN:HB3	1.72	0.71
1:C:12:VAL:H	1:C:15:LYS:HB2	1.55	0.71
1:F:110:GLY:HA3	1:F:327:ASN:HB3	1.72	0.71
1:B:77:ARG:HE	1:B:416:GLU:HG2	1.56	0.71
1:D:354:GLY:C	1:D:356:PRO:HD2	2.11	0.71
1:A:112:GLY:HA2	1:A:113:ILE:C	2.12	0.70
1:C:112:GLY:HA2	1:C:113:ILE:C	2.12	0.70
1:C:354:GLY:C	1:C:356:PRO:HD2	2.11	0.70
1:A:113:ILE:HG21	1:A:328:ALA:CB	2.20	0.70
1:E:112:GLY:HA2	1:E:113:ILE:C	2.12	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:354:GLY:O	1:F:356:PRO:HD2	1.91	0.70
1:E:78:LEU:HA	1:E:81:VAL:HG12	1.72	0.70
1:F:9:GLU:HG3	1:F:10:TYR:CD1	2.25	0.70
1:A:12:VAL:H	1:A:15:LYS:HB2	1.55	0.70
1:C:81:VAL:HG23	1:C:412:VAL:CG1	2.22	0.69
1:E:12:VAL:H	1:E:15:LYS:HB2	1.56	0.69
1:A:224:VAL:O	1:A:229:ALA:HB2	1.93	0.69
1:B:354:GLY:C	1:B:356:PRO:HD2	2.13	0.69
1:B:81:VAL:HG23	1:B:412:VAL:CG1	2.23	0.69
1:C:131:VAL:HG13	1:C:132:HIS:N	2.06	0.69
1:B:113:ILE:HG22	1:B:113:ILE:O	1.91	0.69
1:E:113:ILE:O	1:E:113:ILE:HG22	1.93	0.69
1:A:78:LEU:HA	1:A:81:VAL:HG12	1.73	0.69
1:B:78:LEU:HA	1:B:81:VAL:HG12	1.75	0.69
1:B:110:GLY:HA3	1:B:327:ASN:CB	2.24	0.68
1:F:113:ILE:HG22	1:F:113:ILE:O	1.92	0.68
1:C:84:LYS:NZ	1:C:415:THR:CG2	2.56	0.68
1:E:288:VAL:O	1:E:292:MET:HG3	1.92	0.68
1:A:354:GLY:O	1:A:356:PRO:HD2	1.93	0.68
1:B:76:ALA:O	1:B:77:ARG:HB2	1.92	0.68
1:E:250:LEU:HA	1:E:253:ILE:HG22	1.74	0.68
1:E:81:VAL:HG23	1:E:412:VAL:CG1	2.23	0.68
1:F:77:ARG:HE	1:F:416:GLU:HG2	1.59	0.68
1:F:81:VAL:HG23	1:F:412:VAL:CG1	2.24	0.68
1:E:224:VAL:O	1:E:229:ALA:HB2	1.94	0.68
1:A:81:VAL:HG23	1:A:412:VAL:CG1	2.23	0.68
1:A:113:ILE:HG22	1:A:113:ILE:O	1.93	0.68
1:A:354:GLY:C	1:A:356:PRO:HD2	2.14	0.68
1:D:193:ALA:O	1:D:197:ILE:HG13	1.93	0.68
1:F:110:GLY:HA3	1:F:327:ASN:CB	2.24	0.68
1:D:112:GLY:HA2	1:D:113:ILE:C	2.15	0.68
1:E:354:GLY:C	1:E:356:PRO:HD2	2.15	0.68
1:F:76:ALA:O	1:F:77:ARG:HB2	1.92	0.68
1:E:354:GLY:O	1:E:356:PRO:HD2	1.94	0.67
1:E:47:GLY:HA3	1:E:212:LEU:HD23	1.77	0.67
1:F:354:GLY:C	1:F:356:PRO:HD2	2.15	0.67
1:D:84:LYS:NZ	1:D:415:THR:CG2	2.58	0.67
1:B:250:LEU:HA	1:B:253:ILE:HG22	1.75	0.67
1:B:131:VAL:HG13	1:B:132:HIS:N	2.10	0.67
1:D:131:VAL:HG13	1:D:132:HIS:N	2.08	0.67
1:D:81:VAL:HG23	1:D:412:VAL:CG1	2.26	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:84:LYS:HZ2	1:F:415:THR:HG21	1.58	0.66
1:F:131:VAL:HG13	1:F:132:HIS:N	2.11	0.66
1:A:250:LEU:HA	1:A:253:ILE:HG22	1.76	0.66
1:F:165:ILE:HG21	1:F:184:LEU:CD2	2.13	0.66
1:A:141:ASN:HD22	1:A:144:GLY:H	1.44	0.65
1:C:195:TYR:O	1:C:198:VAL:HG12	1.95	0.65
1:D:77:ARG:HE	1:D:416:GLU:HG2	1.60	0.65
1:C:193:ALA:O	1:C:197:ILE:HG13	1.95	0.65
1:B:84:LYS:HZ2	1:B:415:THR:HG21	1.60	0.65
1:C:250:LEU:HA	1:C:253:ILE:HG22	1.78	0.65
1:D:250:LEU:HA	1:D:253:ILE:HG22	1.78	0.65
1:F:47:GLY:HA3	1:F:212:LEU:HD23	1.79	0.65
1:B:47:GLY:HA3	1:B:212:LEU:HD23	1.78	0.64
1:C:110:GLY:HA3	1:C:327:ASN:CB	2.27	0.64
1:F:193:ALA:O	1:F:197:ILE:HG13	1.97	0.64
1:B:183:LEU:O	1:B:187:ILE:HG13	1.97	0.64
1:E:110:GLY:HA3	1:E:327:ASN:HB3	1.78	0.64
1:F:250:LEU:HA	1:F:253:ILE:HG22	1.78	0.64
1:B:358:ALA:O	1:B:362:MET:HG3	1.96	0.64
1:B:193:ALA:O	1:B:197:ILE:HG13	1.97	0.64
1:A:288:VAL:O	1:A:292:MET:HG3	1.97	0.64
1:C:76:ALA:O	1:C:77:ARG:HB2	1.96	0.64
1:E:110:GLY:HA3	1:E:327:ASN:CB	2.28	0.64
1:F:195:TYR:O	1:F:198:VAL:HG12	1.98	0.64
1:D:110:GLY:HA3	1:D:327:ASN:HB3	1.78	0.64
1:E:131:VAL:HG13	1:E:132:HIS:N	2.13	0.64
1:F:78:LEU:HA	1:F:81:VAL:HG12	1.78	0.64
1:E:213:ILE:HD12	1:E:214:ALA:H	1.63	0.64
1:E:317:TYR:HD1	1:E:317:TYR:C	2.01	0.64
1:C:110:GLY:HA3	1:C:327:ASN:HB3	1.78	0.64
1:A:317:TYR:HD1	1:A:317:TYR:C	2.02	0.63
1:C:47:GLY:HA3	1:C:212:LEU:HD23	1.79	0.63
1:D:110:GLY:HA3	1:D:327:ASN:CB	2.28	0.63
1:F:183:LEU:O	1:F:187:ILE:HG13	1.98	0.63
1:C:84:LYS:NZ	1:C:415:THR:HG21	2.11	0.63
1:D:84:LYS:NZ	1:D:415:THR:HG21	2.12	0.63
1:A:110:GLY:HA3	1:A:327:ASN:HB3	1.80	0.63
1:C:77:ARG:HE	1:C:416:GLU:HG2	1.62	0.63
1:D:198:VAL:O	1:D:202:MET:HG2	1.98	0.63
1:F:141:ASN:HD22	1:F:144:GLY:H	1.47	0.63
1:A:77:ARG:HE	1:A:416:GLU:HG2	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:358:ALA:O	1:F:362:MET:HG3	1.98	0.62
1:A:47:GLY:HA3	1:A:212:LEU:HD23	1.81	0.62
1:B:275:THR:O	1:B:276:ARG:HB2	1.99	0.62
1:F:275:THR:O	1:F:276:ARG:HB2	1.99	0.62
1:A:131:VAL:HG13	1:A:132:HIS:N	2.15	0.62
1:C:78:LEU:HA	1:C:81:VAL:HG12	1.81	0.62
1:C:221:GLY:O	1:C:224:VAL:HG23	1.99	0.62
1:D:76:ALA:O	1:D:77:ARG:HB2	1.98	0.62
1:A:110:GLY:HA3	1:A:327:ASN:CB	2.30	0.62
1:C:317:TYR:HD1	1:C:317:TYR:C	2.03	0.62
1:D:56:MET:HB2	1:E:139:PRO:O	1.99	0.62
1:C:77:ARG:HH21	1:C:416:GLU:HG3	1.65	0.61
1:A:221:GLY:O	1:A:223:HIS:N	2.34	0.61
1:D:47:GLY:HA3	1:D:212:LEU:HD23	1.82	0.61
1:D:78:LEU:HA	1:D:81:VAL:HG12	1.82	0.61
1:E:358:ALA:O	1:E:362:MET:HG3	1.99	0.61
1:F:224:VAL:O	1:F:229:ALA:HB2	2.00	0.60
1:C:84:LYS:HZ1	1:C:415:THR:CG2	2.14	0.60
1:E:221:GLY:O	1:E:223:HIS:N	2.35	0.60
1:E:317:TYR:CD1	1:E:317:TYR:C	2.75	0.60
1:C:114:HIS:CD2	1:F:112:GLY:O	2.54	0.60
1:D:224:VAL:O	1:D:229:ALA:HB2	2.00	0.60
1:A:317:TYR:C	1:A:317:TYR:CD1	2.75	0.60
1:B:221:GLY:O	1:B:223:HIS:N	2.35	0.60
1:C:224:VAL:O	1:C:229:ALA:HB2	2.00	0.60
1:D:317:TYR:C	1:D:317:TYR:HD1	2.05	0.60
1:A:141:ASN:ND2	1:A:144:GLY:H	2.00	0.60
1:A:44:LYS:HD2	1:A:215:TYR:CE1	2.37	0.60
1:C:165:ILE:HG21	1:C:184:LEU:CD2	2.15	0.60
1:E:77:ARG:HE	1:E:416:GLU:HG2	1.67	0.60
1:D:44:LYS:HD2	1:D:215:TYR:CE1	2.37	0.60
1:F:81:VAL:HG23	1:F:412:VAL:HG12	1.83	0.60
1:B:224:VAL:O	1:B:229:ALA:HB2	2.01	0.59
1:B:317:TYR:C	1:B:317:TYR:HD1	2.05	0.59
1:C:131:VAL:CG1	1:C:132:HIS:N	2.65	0.59
1:C:81:VAL:HG23	1:C:412:VAL:HG12	1.82	0.59
1:E:275:THR:O	1:E:276:ARG:HB2	2.02	0.59
1:C:317:TYR:C	1:C:317:TYR:CD1	2.76	0.59
1:A:213:ILE:HD12	1:A:214:ALA:H	1.67	0.59
1:A:317:TYR:OH	1:A:359:GLY:HA3	2.02	0.59
1:D:213:ILE:HD12	1:D:214:ALA:H	1.67	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:81:VAL:HG23	1:A:412:VAL:HG11	1.85	0.59
1:C:198:VAL:O	1:C:202:MET:HG2	2.02	0.59
1:B:84:LYS:NZ	1:B:415:THR:CG2	2.66	0.59
1:D:221:GLY:O	1:D:224:VAL:HG23	2.02	0.59
1:D:84:LYS:HZ1	1:D:415:THR:CG2	2.16	0.59
1:D:77:ARG:HH21	1:D:416:GLU:HG3	1.67	0.59
1:B:317:TYR:OH	1:B:359:GLY:HA3	2.03	0.59
1:E:76:ALA:O	1:E:77:ARG:HB2	2.00	0.59
1:F:317:TYR:C	1:F:317:TYR:HD1	2.06	0.59
1:E:81:VAL:HG23	1:E:412:VAL:HG11	1.85	0.59
1:F:84:LYS:NZ	1:F:415:THR:CG2	2.66	0.58
1:B:334:THR:OG1	1:B:337:GLN:HB2	2.03	0.58
1:B:81:VAL:HG23	1:B:412:VAL:HG11	1.85	0.58
1:A:76:ALA:O	1:A:77:ARG:HB2	2.01	0.58
1:B:112:GLY:O	1:D:114:HIS:CD2	2.56	0.58
1:B:48:ASP:O	1:B:51:VAL:N	2.37	0.58
1:C:44:LYS:HD2	1:C:215:TYR:CE1	2.39	0.58
1:C:81:VAL:HG23	1:C:412:VAL:HG11	1.85	0.58
1:D:408:GLY:O	1:D:412:VAL:HG23	2.02	0.58
1:E:81:VAL:HG23	1:E:412:VAL:HG12	1.85	0.58
1:B:213:ILE:HD12	1:B:214:ALA:H	1.67	0.58
1:B:221:GLY:O	1:B:224:VAL:HG23	2.04	0.58
1:A:81:VAL:HG23	1:A:412:VAL:HG12	1.85	0.58
1:B:81:VAL:HG23	1:B:412:VAL:HG12	1.85	0.58
1:A:358:ALA:O	1:A:362:MET:HG3	2.02	0.58
1:D:131:VAL:CG1	1:D:132:HIS:N	2.67	0.58
1:B:198:VAL:O	1:B:202:MET:HG2	2.02	0.58
1:E:15:LYS:HE3	1:E:206:PRO:HG3	1.85	0.58
1:F:221:GLY:O	1:F:224:VAL:HG23	2.04	0.58
1:A:275:THR:O	1:A:276:ARG:HB2	2.03	0.58
1:D:317:TYR:C	1:D:317:TYR:CD1	2.77	0.57
1:A:408:GLY:O	1:A:412:VAL:HG23	2.04	0.57
1:B:317:TYR:C	1:B:317:TYR:CD1	2.78	0.57
1:B:80:ARG:NH1	1:B:416:GLU:OE2	2.38	0.57
1:E:198:VAL:O	1:E:202:MET:HG2	2.04	0.57
1:F:141:ASN:ND2	1:F:144:GLY:H	2.02	0.57
1:B:408:GLY:O	1:B:412:VAL:HG23	2.04	0.57
1:F:221:GLY:O	1:F:223:HIS:N	2.38	0.57
1:F:317:TYR:OH	1:F:359:GLY:HA3	2.04	0.57
1:E:317:TYR:OH	1:E:359:GLY:HA3	2.03	0.57
1:C:112:GLY:O	1:F:114:HIS:CD2	2.57	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:213:ILE:HD12	1:C:214:ALA:H	1.70	0.57
1:F:48:ASP:O	1:F:51:VAL:N	2.38	0.57
1:C:334:THR:OG1	1:C:337:GLN:HB2	2.04	0.57
1:C:275:THR:O	1:C:276:ARG:HB2	2.04	0.57
1:E:408:GLY:O	1:E:412:VAL:HG23	2.05	0.56
1:E:80:ARG:NH1	1:E:416:GLU:OE2	2.38	0.56
1:F:317:TYR:CD1	1:F:317:TYR:C	2.79	0.56
1:E:56:MET:HB2	1:F:139:PRO:O	2.04	0.56
1:B:131:VAL:CG1	1:B:132:HIS:N	2.68	0.56
1:D:275:THR:O	1:D:276:ARG:HB2	2.04	0.56
1:E:44:LYS:HD2	1:E:215:TYR:CE1	2.40	0.56
1:B:239:LEU:HB3	1:B:400:VAL:CG2	2.33	0.56
1:D:334:THR:OG1	1:D:337:GLN:HB2	2.05	0.56
1:E:239:LEU:HB3	1:E:400:VAL:CG2	2.36	0.56
1:B:114:HIS:CD2	1:D:112:GLY:O	2.59	0.56
1:C:296:GLU:O	1:C:300:SER:HB2	2.05	0.56
1:D:358:ALA:O	1:D:362:MET:HG3	2.05	0.56
1:E:84:LYS:NZ	1:E:415:THR:CG2	2.69	0.56
1:F:239:LEU:HB3	1:F:400:VAL:CG2	2.33	0.56
1:D:205:ALA:N	1:D:206:PRO:HD2	2.20	0.56
1:F:334:THR:OG1	1:F:337:GLN:HB2	2.06	0.56
1:D:221:GLY:O	1:D:223:HIS:N	2.39	0.56
1:E:334:THR:OG1	1:E:337:GLN:HB2	2.06	0.55
1:D:80:ARG:NH1	1:D:416:GLU:OE2	2.39	0.55
1:A:84:LYS:NZ	1:A:415:THR:CG2	2.70	0.55
1:C:221:GLY:O	1:C:223:HIS:N	2.39	0.55
1:D:174:GLU:OE1	1:D:177:ARG:NE	2.40	0.55
1:F:131:VAL:CG1	1:F:132:HIS:N	2.69	0.55
1:A:141:ASN:HD22	1:A:144:GLY:N	2.04	0.55
1:D:81:VAL:HG23	1:D:412:VAL:HG11	1.86	0.55
1:D:85:ILE:HG13	1:D:89:TYR:CE1	2.41	0.55
1:F:81:VAL:HG23	1:F:412:VAL:HG11	1.89	0.55
1:E:155:ILE:HD11	1:E:304:PRO:HB2	1.89	0.55
1:A:139:PRO:O	1:C:56:MET:HB2	2.07	0.55
1:A:334:THR:OG1	1:A:337:GLN:HB2	2.07	0.55
1:A:15:LYS:HE3	1:A:206:PRO:HG3	1.89	0.55
1:B:141:ASN:ND2	1:B:144:GLY:H	2.05	0.55
1:F:84:LYS:NZ	1:F:415:THR:HG21	2.21	0.55
1:B:141:ASN:HD22	1:B:144:GLY:H	1.55	0.55
1:C:59:MET:CE	1:C:146:LEU:HD23	2.37	0.55
1:F:205:ALA:N	1:F:206:PRO:HD2	2.22	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:77:ARG:HH21	1:A:416:GLU:HG3	1.72	0.54
1:C:226:GLY:O	1:C:228:LEU:N	2.40	0.54
1:F:80:ARG:NH1	1:F:416:GLU:OE2	2.40	0.54
1:B:205:ALA:N	1:B:206:PRO:HD2	2.22	0.54
1:F:198:VAL:O	1:F:202:MET:HG2	2.07	0.54
1:F:97:VAL:HB	1:F:342:VAL:HG13	1.88	0.54
1:C:281:THR:HG22	1:C:281:THR:O	2.06	0.54
1:C:358:ALA:O	1:C:362:MET:HG3	2.07	0.54
1:C:354:GLY:C	1:C:356:PRO:CD	2.75	0.54
1:D:81:VAL:HG23	1:D:412:VAL:HG12	1.88	0.54
1:E:109:PRO:O	1:E:227:GLU:OE1	2.26	0.54
1:E:221:GLY:O	1:E:224:VAL:HG23	2.08	0.54
1:A:221:GLY:O	1:A:224:VAL:HG23	2.07	0.54
1:B:84:LYS:NZ	1:B:415:THR:HG21	2.22	0.54
1:D:49:LEU:O	1:D:53:LEU:HD12	2.08	0.54
1:F:213:ILE:HD12	1:F:214:ALA:H	1.71	0.54
1:A:80:ARG:NH1	1:A:416:GLU:OE2	2.41	0.54
1:C:174:GLU:OE1	1:C:177:ARG:NE	2.41	0.54
1:D:308:THR:HB	1:D:353:ALA:HB1	1.89	0.54
1:C:80:ARG:NH1	1:C:416:GLU:OE2	2.40	0.53
1:A:56:MET:HB2	1:B:139:PRO:O	2.08	0.53
1:B:97:VAL:HB	1:B:342:VAL:HG13	1.90	0.53
1:D:281:THR:HG22	1:D:281:THR:O	2.07	0.53
1:F:317:TYR:HA	1:F:320:VAL:HG12	1.90	0.53
1:D:226:GLY:O	1:D:228:LEU:N	2.41	0.53
1:E:84:LYS:HZ2	1:E:415:THR:CG2	2.21	0.53
1:A:103:MET:HE1	1:A:237:VAL:CG1	2.39	0.53
1:D:317:TYR:OH	1:D:359:GLY:HA3	2.09	0.53
1:E:131:VAL:CG1	1:E:132:HIS:N	2.72	0.53
1:A:281:THR:O	1:A:281:THR:HG22	2.09	0.53
1:C:155:ILE:HD11	1:C:304:PRO:HB2	1.90	0.53
1:C:84:LYS:HZ1	1:C:415:THR:HG22	1.74	0.53
1:D:165:ILE:HD11	1:D:183:LEU:CD2	2.39	0.53
1:C:115:LEU:C	1:C:115:LEU:HD12	2.28	0.53
1:D:9:GLU:HB3	1:D:15:LYS:NZ	2.24	0.53
1:A:84:LYS:HZ2	1:A:415:THR:CG2	2.21	0.52
1:C:335:VAL:HA	1:C:338:GLN:NE2	2.24	0.52
1:C:85:ILE:HG13	1:C:89:TYR:CE1	2.44	0.52
1:A:165:ILE:HD11	1:A:183:LEU:CD2	2.38	0.52
1:B:115:LEU:C	1:B:115:LEU:HD12	2.30	0.52
1:B:213:ILE:HD12	1:B:214:ALA:N	2.23	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:56:MET:HB2	1:C:139:PRO:O	2.09	0.52
1:D:354:GLY:C	1:D:356:PRO:CD	2.77	0.52
1:A:198:VAL:O	1:A:202:MET:HG2	2.09	0.52
1:A:205:ALA:N	1:A:206:PRO:HD2	2.25	0.52
1:B:226:GLY:O	1:B:228:LEU:N	2.42	0.52
1:B:81:VAL:CG2	1:B:298:ILE:HD12	2.37	0.52
1:C:49:LEU:O	1:C:53:LEU:HD12	2.10	0.52
1:E:338:GLN:O	1:E:341:ILE:HB	2.09	0.52
1:A:131:VAL:CG1	1:A:132:HIS:N	2.73	0.52
1:A:239:LEU:HB3	1:A:400:VAL:CG2	2.40	0.52
1:D:89:TYR:CD2	1:D:310:ASN:HB2	2.44	0.52
1:C:77:ARG:HE	1:C:416:GLU:CG	2.22	0.52
1:D:115:LEU:C	1:D:115:LEU:HD12	2.29	0.52
1:D:213:ILE:HD12	1:D:214:ALA:N	2.25	0.52
1:B:103:MET:HE1	1:B:237:VAL:CG1	2.39	0.52
1:D:146:LEU:HD22	1:E:143:PHE:CE1	2.45	0.52
1:E:141:ASN:HD22	1:E:144:GLY:H	1.57	0.52
1:E:103:MET:HE1	1:E:237:VAL:CG1	2.40	0.52
1:C:317:TYR:OH	1:C:359:GLY:HA3	2.10	0.52
1:D:318:GLN:OE1	1:D:363:LEU:N	2.43	0.52
1:F:81:VAL:CG2	1:F:298:ILE:HD12	2.38	0.52
1:B:113:ILE:HG22	1:B:328:ALA:O	2.11	0.51
1:D:292:MET:HE2	1:D:294:ILE:HD11	1.91	0.51
1:B:109:PRO:O	1:B:227:GLU:OE1	2.27	0.51
1:C:174:GLU:OE1	1:C:177:ARG:CZ	2.58	0.51
1:F:115:LEU:HD12	1:F:115:LEU:C	2.31	0.51
1:F:142:PRO:O	1:F:145:ALA:HB3	2.10	0.51
1:A:10:TYR:HB3	1:A:11:PRO:CD	2.40	0.51
1:B:44:LYS:HD2	1:B:215:TYR:CE1	2.46	0.51
1:C:183:LEU:O	1:C:187:ILE:HG13	2.10	0.51
1:A:59:MET:CE	1:A:146:LEU:HD23	2.40	0.51
1:A:382:ALA:HA	1:A:385:MET:HG3	1.92	0.51
1:B:317:TYR:HA	1:B:320:VAL:HG12	1.92	0.51
1:C:15:LYS:HE3	1:C:206:PRO:HG3	1.91	0.51
1:C:317:TYR:HA	1:C:320:VAL:HG12	1.93	0.51
1:E:281:THR:O	1:E:281:THR:HG22	2.11	0.51
1:F:226:GLY:O	1:F:228:LEU:N	2.43	0.51
1:F:113:ILE:HG22	1:F:328:ALA:O	2.11	0.51
1:C:205:ALA:N	1:C:206:PRO:HD2	2.25	0.51
1:D:174:GLU:OE1	1:D:177:ARG:CZ	2.58	0.51
1:E:165:ILE:HD11	1:E:183:LEU:CD2	2.40	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:281:THR:O	1:F:281:THR:HG22	2.08	0.51
1:F:155:ILE:HD11	1:F:304:PRO:HB2	1.93	0.51
1:A:109:PRO:O	1:A:227:GLU:OE1	2.29	0.51
1:A:48:ASP:O	1:A:51:VAL:N	2.44	0.51
1:B:338:GLN:O	1:B:341:ILE:HB	2.10	0.51
1:B:354:GLY:C	1:B:356:PRO:CD	2.79	0.51
1:D:142:PRO:O	1:D:145:ALA:HB3	2.11	0.51
1:D:183:LEU:O	1:D:187:ILE:HG13	2.10	0.51
1:E:221:GLY:C	1:E:223:HIS:H	2.14	0.51
1:B:15:LYS:HE3	1:B:206:PRO:HG3	1.92	0.51
1:C:10:TYR:HB3	1:C:11:PRO:CD	2.41	0.51
1:C:89:TYR:CD2	1:C:310:ASN:HB2	2.45	0.51
1:D:296:GLU:O	1:D:300:SER:HB2	2.10	0.51
1:F:382:ALA:HA	1:F:385:MET:HG3	1.93	0.51
1:B:221:GLY:C	1:B:223:HIS:H	2.15	0.51
1:C:213:ILE:HD12	1:C:214:ALA:N	2.26	0.51
1:B:281:THR:HG22	1:B:281:THR:O	2.09	0.51
1:D:335:VAL:HA	1:D:338:GLN:NE2	2.26	0.51
1:F:213:ILE:HD12	1:F:214:ALA:N	2.25	0.51
1:F:103:MET:HE1	1:F:237:VAL:CG1	2.40	0.51
1:D:10:TYR:HB3	1:D:11:PRO:CD	2.41	0.51
1:E:77:ARG:HH21	1:E:416:GLU:HG3	1.76	0.51
1:E:146:LEU:HD22	1:F:143:PHE:CE1	2.46	0.51
1:F:298:ILE:O	1:F:302:THR:HG23	2.11	0.51
1:B:113:ILE:CG2	1:B:328:ALA:O	2.59	0.50
1:C:9:GLU:HB3	1:C:15:LYS:NZ	2.26	0.50
1:E:10:TYR:HB3	1:E:11:PRO:CD	2.41	0.50
1:C:97:VAL:HB	1:C:342:VAL:HG13	1.93	0.50
1:F:408:GLY:O	1:F:412:VAL:HG23	2.11	0.50
1:A:221:GLY:C	1:A:223:HIS:H	2.14	0.50
1:A:338:GLN:O	1:A:341:ILE:HB	2.11	0.50
1:D:113:ILE:HG22	1:D:328:ALA:O	2.11	0.50
1:D:266:LYS:HG2	1:D:267:ASP:N	2.26	0.50
1:D:84:LYS:HZ1	1:D:415:THR:HG22	1.76	0.50
1:E:205:ALA:N	1:E:206:PRO:HD2	2.27	0.50
1:E:273:PHE:HB2	1:E:399:MET:HB2	1.94	0.50
1:F:10:TYR:HB3	1:F:11:PRO:CD	2.41	0.50
1:A:193:ALA:O	1:A:197:ILE:HG13	2.11	0.50
1:B:266:LYS:HG2	1:B:267:ASP:N	2.26	0.50
1:D:77:ARG:HE	1:D:416:GLU:CG	2.23	0.50
1:F:109:PRO:O	1:F:227:GLU:OE1	2.28	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:113:ILE:CG2	1:F:328:ALA:O	2.60	0.50
1:F:15:LYS:HE3	1:F:206:PRO:HG3	1.93	0.50
1:C:239:LEU:HB3	1:C:400:VAL:CG2	2.38	0.50
1:C:318:GLN:OE1	1:C:363:LEU:N	2.44	0.50
1:D:15:LYS:HE3	1:D:206:PRO:HG3	1.92	0.50
1:E:84:LYS:NZ	1:E:415:THR:HG21	2.25	0.50
1:A:133:ILE:N	1:A:133:ILE:HD12	2.27	0.50
1:B:335:VAL:HA	1:B:338:GLN:NE2	2.27	0.50
1:D:338:GLN:O	1:D:341:ILE:HB	2.11	0.50
1:F:76:ALA:O	1:F:77:ARG:CB	2.58	0.50
1:A:362:MET:O	1:A:365:MET:HB2	2.11	0.50
1:D:239:LEU:HB3	1:D:400:VAL:CG2	2.38	0.50
1:A:10:TYR:HB3	1:A:11:PRO:HD2	1.94	0.50
1:A:226:GLY:O	1:A:228:LEU:N	2.45	0.50
1:D:317:TYR:HA	1:D:320:VAL:HG12	1.94	0.50
1:B:84:LYS:HZ1	1:B:415:THR:CG2	2.25	0.50
1:E:115:LEU:HD12	1:E:115:LEU:C	2.32	0.50
1:A:143:PHE:CE1	1:C:146:LEU:HD22	2.47	0.49
1:D:113:ILE:CG2	1:D:328:ALA:O	2.60	0.49
1:D:97:VAL:HB	1:D:342:VAL:HG13	1.94	0.49
1:E:382:ALA:HA	1:E:385:MET:HG3	1.93	0.49
1:A:273:PHE:HB2	1:A:399:MET:HB2	1.95	0.49
1:B:298:ILE:O	1:B:302:THR:HG23	2.12	0.49
1:B:77:ARG:HH21	1:B:416:GLU:HG3	1.77	0.49
1:C:308:THR:HB	1:C:353:ALA:HB1	1.94	0.49
1:E:97:VAL:HB	1:E:342:VAL:HG13	1.92	0.49
1:D:109:PRO:O	1:D:227:GLU:OE1	2.30	0.49
1:E:272:ALA:HB2	1:E:402:VAL:HG21	1.92	0.49
1:A:374:LEU:HD11	1:A:383:TYR:CD1	2.48	0.49
1:B:10:TYR:HB3	1:B:11:PRO:CD	2.42	0.49
1:B:209:VAL:HG22	1:B:274:VAL:HG11	1.94	0.49
1:C:235:VAL:O	1:C:239:LEU:HG	2.13	0.49
1:E:213:ILE:HD12	1:E:214:ALA:N	2.27	0.49
1:A:354:GLY:C	1:A:356:PRO:CD	2.81	0.49
1:C:165:ILE:HD11	1:C:183:LEU:CD2	2.42	0.49
1:C:266:LYS:HG2	1:C:267:ASP:N	2.28	0.49
1:E:292:MET:CE	1:E:294:ILE:HD11	2.43	0.49
1:A:381:ALA:O	1:A:384:ALA:HB3	2.12	0.49
1:B:366:VAL:O	1:B:370:VAL:N	2.45	0.49
1:F:354:GLY:C	1:F:356:PRO:CD	2.81	0.49
1:F:95:PHE:CD2	1:F:95:PHE:C	2.86	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:95:PHE:CD2	1:B:95:PHE:C	2.86	0.49
1:D:219:GLU:OE2	1:D:219:GLU:HA	2.13	0.49
1:D:235:VAL:O	1:D:239:LEU:HG	2.13	0.49
1:E:48:ASP:O	1:E:51:VAL:N	2.46	0.49
1:F:174:GLU:OE1	1:F:177:ARG:NE	2.46	0.49
1:F:77:ARG:HH21	1:F:416:GLU:HG3	1.77	0.49
1:A:155:ILE:HD11	1:A:304:PRO:HB2	1.95	0.49
1:E:141:ASN:ND2	1:E:144:GLY:H	2.11	0.49
1:F:59:MET:CE	1:F:146:LEU:HD23	2.43	0.49
1:C:44:LYS:N	1:C:45:PRO:HD2	2.28	0.49
1:E:10:TYR:HB3	1:E:11:PRO:HD2	1.95	0.49
1:E:354:GLY:C	1:E:356:PRO:CD	2.82	0.49
1:C:113:ILE:HG22	1:C:328:ALA:O	2.13	0.48
1:A:114:HIS:CD2	1:A:114:HIS:N	2.73	0.48
1:B:85:ILE:HG13	1:B:89:TYR:CE1	2.48	0.48
1:E:174:GLU:OE1	1:E:177:ARG:NE	2.45	0.48
1:E:226:GLY:O	1:E:228:LEU:N	2.46	0.48
1:E:259:ILE:HD12	1:E:259:ILE:N	2.28	0.48
1:E:317:TYR:HA	1:E:320:VAL:HG12	1.95	0.48
1:B:137:ILE:O	1:B:153:PRO:HA	2.13	0.48
1:B:59:MET:CE	1:B:146:LEU:HD23	2.44	0.48
1:B:165:ILE:HD11	1:B:183:LEU:CD2	2.43	0.48
1:C:77:ARG:HG2	1:C:80:ARG:NH2	2.29	0.48
1:B:210:PHE:O	1:B:213:ILE:HD12	2.13	0.48
1:C:10:TYR:HB3	1:C:11:PRO:HD2	1.96	0.48
1:C:109:PRO:O	1:C:227:GLU:OE1	2.31	0.48
1:D:10:TYR:HB3	1:D:11:PRO:HD2	1.96	0.48
1:E:17:LEU:O	1:E:21:ILE:HG12	2.13	0.48
1:A:112:GLY:O	1:E:114:HIS:CD2	2.67	0.48
1:D:17:LEU:O	1:D:21:ILE:HG12	2.13	0.48
1:F:110:GLY:CA	1:F:327:ASN:HB3	2.41	0.48
1:F:335:VAL:HA	1:F:338:GLN:NE2	2.29	0.48
1:B:17:LEU:O	1:B:21:ILE:HG12	2.13	0.48
1:D:282:LEU:HD21	1:D:304:PRO:HA	1.96	0.48
1:A:213:ILE:HD12	1:A:214:ALA:N	2.28	0.48
1:B:367:LEU:HD22	1:B:372:LEU:HD12	1.96	0.48
1:E:296:GLU:O	1:E:300:SER:HB2	2.14	0.48
1:F:209:VAL:HG22	1:F:274:VAL:HG11	1.96	0.48
1:F:266:LYS:HG2	1:F:267:ASP:N	2.28	0.48
1:A:115:LEU:C	1:A:115:LEU:HD12	2.34	0.48
1:A:113:ILE:HG22	1:A:328:ALA:O	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:374:LEU:HD11	1:B:383:TYR:CD1	2.49	0.48
1:F:165:ILE:HD11	1:F:183:LEU:CD2	2.43	0.48
1:B:382:ALA:HA	1:B:385:MET:HG3	1.96	0.48
1:C:113:ILE:CG2	1:C:328:ALA:O	2.62	0.48
1:E:174:GLU:OE1	1:E:177:ARG:CZ	2.61	0.48
1:A:81:VAL:CG2	1:A:298:ILE:HD12	2.42	0.48
1:E:311:MET:HB2	1:E:349:SER:HB2	1.95	0.48
1:F:174:GLU:OE1	1:F:177:ARG:CZ	2.62	0.48
1:F:317:TYR:HA	1:F:320:VAL:CG1	2.44	0.48
1:F:84:LYS:HZ1	1:F:415:THR:CG2	2.26	0.48
1:C:74:SER:HB3	1:C:77:ARG:HG3	1.96	0.47
1:D:103:MET:HE1	1:D:237:VAL:CG1	2.44	0.47
1:D:374:LEU:HD11	1:D:383:TYR:CD1	2.49	0.47
1:E:292:MET:HE2	1:E:294:ILE:HD11	1.96	0.47
1:E:81:VAL:CG2	1:E:298:ILE:HD12	2.42	0.47
1:F:221:GLY:C	1:F:223:HIS:H	2.18	0.47
1:A:183:LEU:O	1:A:187:ILE:HG13	2.14	0.47
1:A:17:LEU:O	1:A:21:ILE:HG12	2.13	0.47
1:B:110:GLY:CA	1:B:327:ASN:HB3	2.41	0.47
1:E:193:ALA:O	1:E:197:ILE:HG13	2.14	0.47
1:F:366:VAL:O	1:F:370:VAL:N	2.46	0.47
1:A:311:MET:HB2	1:A:349:SER:HB2	1.96	0.47
1:B:155:ILE:HD11	1:B:304:PRO:HB2	1.96	0.47
1:B:308:THR:HB	1:B:353:ALA:HB1	1.96	0.47
1:C:374:LEU:HD11	1:C:383:TYR:CD1	2.50	0.47
1:E:113:ILE:HG22	1:E:328:ALA:O	2.14	0.47
1:F:44:LYS:HD2	1:F:215:TYR:CE1	2.50	0.47
1:F:17:LEU:O	1:F:21:ILE:HG12	2.14	0.47
1:A:77:ARG:HE	1:A:416:GLU:CG	2.26	0.47
1:B:89:TYR:O	1:B:93:SER:HB2	2.15	0.47
1:D:130:LEU:CB	1:D:133:ILE:HD13	2.44	0.47
1:E:110:GLY:HA3	1:E:327:ASN:HB2	1.96	0.47
1:A:131:VAL:HG21	1:C:45:PRO:HB3	1.96	0.47
1:A:335:VAL:HA	1:A:338:GLN:NE2	2.30	0.47
1:C:142:PRO:O	1:C:145:ALA:HB3	2.15	0.47
1:C:415:THR:HG22	1:C:415:THR:O	2.15	0.47
1:D:9:GLU:HB3	1:D:15:LYS:HZ3	1.79	0.47
1:E:113:ILE:CG2	1:E:328:ALA:CB	2.89	0.47
1:F:85:ILE:HG13	1:F:89:TYR:CE1	2.49	0.47
1:F:367:LEU:HD22	1:F:372:LEU:HD12	1.97	0.47
1:A:141:ASN:ND2	1:A:143:PHE:HB2	2.30	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:174:GLU:OE1	1:A:177:ARG:NE	2.47	0.47
1:A:113:ILE:CG2	1:A:328:ALA:CB	2.89	0.47
1:A:9:GLU:HB3	1:A:15:LYS:NZ	2.30	0.47
1:B:263:LYS:O	1:B:266:LYS:HD3	2.15	0.47
1:F:374:LEU:HD11	1:F:383:TYR:CD1	2.50	0.47
1:A:174:GLU:OE1	1:A:177:ARG:CZ	2.62	0.47
1:C:81:VAL:CG2	1:C:298:ILE:HD12	2.43	0.47
1:C:363:LEU:O	1:C:366:VAL:HG22	2.15	0.47
1:C:366:VAL:O	1:C:370:VAL:N	2.46	0.47
1:D:155:ILE:HD11	1:D:304:PRO:HB2	1.96	0.47
1:D:382:ALA:HA	1:D:385:MET:HG3	1.95	0.47
1:A:114:HIS:CD2	1:E:112:GLY:O	2.68	0.47
1:E:59:MET:CE	1:E:146:LEU:HD23	2.45	0.47
1:F:59:MET:SD	1:F:149:GLY:O	2.72	0.47
1:B:113:ILE:CG2	1:B:328:ALA:CB	2.88	0.47
1:B:77:ARG:HE	1:B:416:GLU:CG	2.25	0.47
1:E:133:ILE:HD12	1:E:133:ILE:N	2.30	0.47
1:F:362:MET:O	1:F:365:MET:HB2	2.15	0.47
1:B:174:GLU:OE1	1:B:177:ARG:NE	2.48	0.47
1:B:317:TYR:HA	1:B:320:VAL:CG1	2.45	0.47
1:B:117:VAL:HG21	1:B:378:ASN:HB2	1.97	0.47
1:B:117:VAL:HG23	1:B:378:ASN:HD22	1.79	0.47
1:D:77:ARG:HG2	1:D:80:ARG:NH2	2.30	0.47
1:E:235:VAL:O	1:E:239:LEU:HG	2.15	0.47
1:F:308:THR:HB	1:F:353:ALA:HB1	1.97	0.47
1:F:81:VAL:CG2	1:F:412:VAL:HG11	2.45	0.47
1:C:110:GLY:HA3	1:C:327:ASN:HB2	1.97	0.47
1:F:9:GLU:HB3	1:F:15:LYS:NZ	2.31	0.46
1:A:93:SER:HA	1:A:312:ASP:OD1	2.16	0.46
1:D:139:PRO:O	1:F:56:MET:HB2	2.15	0.46
1:D:383:TYR:CE2	1:D:387:LEU:CD1	2.99	0.46
1:C:17:LEU:O	1:C:21:ILE:HG12	2.15	0.46
1:C:81:VAL:CG2	1:C:412:VAL:HG11	2.45	0.46
1:F:113:ILE:CG2	1:F:328:ALA:CB	2.88	0.46
1:F:77:ARG:HE	1:F:416:GLU:CG	2.25	0.46
1:A:113:ILE:CG2	1:A:328:ALA:O	2.63	0.46
1:C:221:GLY:C	1:C:223:HIS:H	2.18	0.46
1:E:257:ASP:OD2	1:E:260:SER:N	2.43	0.46
1:F:273:PHE:CE1	1:F:395:MET:HB3	2.50	0.46
1:A:383:TYR:CE2	1:A:387:LEU:CD1	2.98	0.46
1:D:113:ILE:CG2	1:D:328:ALA:CB	2.86	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:113:ILE:CG2	1:E:328:ALA:O	2.63	0.46
1:A:308:THR:HB	1:A:353:ALA:HB1	1.96	0.46
1:B:47:GLY:HA3	1:B:212:LEU:CD2	2.43	0.46
1:C:130:LEU:CB	1:C:133:ILE:HD13	2.45	0.46
1:D:263:LYS:O	1:D:266:LYS:HD3	2.16	0.46
1:E:374:LEU:HD11	1:E:383:TYR:CD1	2.51	0.46
1:B:231:VAL:O	1:B:235:VAL:HG23	2.15	0.46
1:C:76:ALA:O	1:C:77:ARG:CB	2.63	0.46
1:A:142:PRO:O	1:A:145:ALA:HB3	2.16	0.46
1:A:296:GLU:O	1:A:300:SER:HB2	2.16	0.46
1:A:97:VAL:HB	1:A:342:VAL:HG13	1.96	0.46
1:F:117:VAL:HG23	1:F:378:ASN:HD22	1.79	0.46
1:A:257:ASP:OD2	1:A:260:SER:N	2.44	0.46
1:B:318:GLN:OE1	1:B:363:LEU:N	2.49	0.46
1:F:93:SER:HA	1:F:312:ASP:OD1	2.16	0.46
1:A:317:TYR:HA	1:A:320:VAL:HG12	1.98	0.46
1:A:73:ILE:HD12	1:A:73:ILE:HA	1.86	0.46
1:B:81:VAL:CG2	1:B:412:VAL:HG11	2.46	0.46
1:C:338:GLN:O	1:C:341:ILE:HB	2.16	0.46
1:D:415:THR:O	1:D:415:THR:HG22	2.16	0.46
1:E:335:VAL:HA	1:E:338:GLN:NE2	2.31	0.46
1:B:78:LEU:CA	1:B:81:VAL:HG12	2.44	0.45
1:C:47:GLY:HA3	1:C:212:LEU:CD2	2.46	0.45
1:E:89:TYR:CD2	1:E:310:ASN:HB2	2.51	0.45
1:E:130:LEU:CB	1:E:133:ILE:HD13	2.46	0.45
1:D:183:LEU:HD13	1:F:190:LEU:N	2.32	0.45
1:B:110:GLY:HA3	1:B:327:ASN:HB2	1.95	0.45
1:C:110:GLY:CA	1:C:327:ASN:HB3	2.46	0.45
1:A:131:VAL:HG21	1:C:45:PRO:CB	2.46	0.45
1:E:318:GLN:OE1	1:E:363:LEU:N	2.49	0.45
1:B:259:ILE:HD12	1:B:259:ILE:N	2.30	0.45
1:C:97:VAL:HG22	1:C:315:ALA:O	2.16	0.45
1:D:168:LEU:HD11	1:F:193:ALA:N	2.31	0.45
1:B:104:ALA:O	1:B:107:PHE:O	2.33	0.45
1:C:103:MET:HE1	1:C:237:VAL:CG1	2.47	0.45
1:D:209:VAL:HG22	1:D:274:VAL:HG11	1.98	0.45
1:D:317:TYR:HA	1:D:320:VAL:CG1	2.47	0.45
1:D:117:VAL:HG21	1:D:378:ASN:HB2	1.97	0.45
1:E:317:TYR:CD2	1:E:393:LEU:HB3	2.52	0.45
1:F:10:TYR:HB3	1:F:11:PRO:HD2	1.97	0.45
1:B:10:TYR:HB3	1:B:11:PRO:HD2	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:142:PRO:O	1:B:145:ALA:HB3	2.17	0.45
1:B:257:ASP:OD2	1:B:260:SER:N	2.44	0.45
1:B:9:GLU:HB3	1:B:15:LYS:NZ	2.32	0.45
1:C:408:GLY:O	1:C:412:VAL:HG23	2.16	0.45
1:D:221:GLY:C	1:D:223:HIS:H	2.19	0.45
1:D:81:VAL:CG2	1:D:298:ILE:HD12	2.45	0.45
1:D:110:GLY:CA	1:D:327:ASN:HB3	2.47	0.45
1:E:266:LYS:HG2	1:E:267:ASP:N	2.32	0.45
1:F:231:VAL:O	1:F:235:VAL:HG23	2.16	0.45
1:F:259:ILE:HD12	1:F:259:ILE:N	2.30	0.45
1:F:383:TYR:CE2	1:F:387:LEU:CD1	3.00	0.45
1:A:110:GLY:HA3	1:A:327:ASN:HB2	1.99	0.45
1:A:89:TYR:CD2	1:A:310:ASN:HB2	2.52	0.45
1:A:327:ASN:HA	1:A:327:ASN:HD22	1.63	0.45
1:B:296:GLU:O	1:B:300:SER:HB2	2.17	0.45
1:E:141:ASN:HD22	1:E:144:GLY:N	2.15	0.45
1:D:110:GLY:HA3	1:D:327:ASN:HB2	1.98	0.45
1:D:59:MET:CE	1:D:146:LEU:HD23	2.46	0.45
1:D:45:PRO:HB3	1:E:131:VAL:HG21	1.98	0.45
1:C:219:GLU:OE2	1:C:219:GLU:HA	2.17	0.45
1:E:383:TYR:CE2	1:E:387:LEU:CD1	2.99	0.45
1:F:338:GLN:O	1:F:341:ILE:HB	2.17	0.45
1:B:174:GLU:OE1	1:B:177:ARG:CZ	2.65	0.45
1:D:97:VAL:HG22	1:D:315:ALA:O	2.17	0.45
1:D:366:VAL:O	1:D:370:VAL:N	2.48	0.45
1:D:367:LEU:HD22	1:D:372:LEU:HD12	1.97	0.45
1:E:130:LEU:HB2	1:E:133:ILE:HD13	1.98	0.45
1:E:9:GLU:HB3	1:E:15:LYS:NZ	2.32	0.45
1:F:104:ALA:O	1:F:107:PHE:O	2.34	0.45
1:F:235:VAL:O	1:F:239:LEU:HG	2.17	0.45
1:F:117:VAL:HG21	1:F:378:ASN:HB2	1.98	0.45
1:B:147:ALA:O	1:C:141:ASN:ND2	2.50	0.44
1:C:382:ALA:HA	1:C:385:MET:HG3	1.98	0.44
1:D:209:VAL:O	1:D:213:ILE:HG13	2.16	0.44
1:E:183:LEU:O	1:E:187:ILE:HG13	2.17	0.44
1:E:77:ARG:HE	1:E:416:GLU:CG	2.28	0.44
1:F:292:MET:HE2	1:F:294:ILE:HD11	1.99	0.44
1:F:296:GLU:O	1:F:300:SER:HB2	2.18	0.44
1:E:308:THR:HB	1:E:353:ALA:HB1	1.98	0.44
1:B:93:SER:HA	1:B:312:ASP:OD1	2.18	0.44
1:C:226:GLY:C	1:C:228:LEU:N	2.71	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:246:VAL:O	1:C:250:LEU:HB2	2.18	0.44
1:C:263:LYS:O	1:C:266:LYS:HD3	2.17	0.44
1:C:95:PHE:C	1:C:95:PHE:CD2	2.90	0.44
1:F:47:GLY:HA3	1:F:212:LEU:CD2	2.44	0.44
1:A:146:LEU:HD22	1:B:143:PHE:CE1	2.52	0.44
1:A:9:GLU:HB3	1:A:15:LYS:HZ3	1.83	0.44
1:B:292:MET:HE2	1:B:294:ILE:HD11	1.99	0.44
1:C:292:MET:HE2	1:C:294:ILE:HD11	1.98	0.44
1:C:48:ASP:O	1:C:51:VAL:N	2.50	0.44
1:D:17:LEU:HD13	1:D:17:LEU:HA	1.80	0.44
1:E:314:THR:HG21	1:E:362:MET:CE	2.47	0.44
1:E:389:ILE:HD12	1:E:389:ILE:HA	1.91	0.44
1:A:367:LEU:HD22	1:A:372:LEU:HD12	1.99	0.44
1:A:193:ALA:N	1:B:168:LEU:HD11	2.32	0.44
1:B:18:ILE:O	1:B:22:LEU:HB3	2.17	0.44
1:C:104:ALA:O	1:C:107:PHE:O	2.36	0.44
1:C:296:GLU:O	1:C:300:SER:CB	2.65	0.44
1:D:363:LEU:O	1:D:366:VAL:HG22	2.18	0.44
1:E:327:ASN:HD22	1:E:327:ASN:HA	1.63	0.44
1:E:367:LEU:HD22	1:E:372:LEU:HD12	1.99	0.44
1:F:18:ILE:O	1:F:22:LEU:HB3	2.18	0.44
1:F:333:LEU:HD23	1:F:333:LEU:HA	1.89	0.44
1:C:113:ILE:CG2	1:C:328:ALA:CB	2.88	0.44
1:C:367:LEU:HD22	1:C:372:LEU:HD12	1.98	0.44
1:D:130:LEU:HB2	1:D:133:ILE:HD13	2.00	0.44
1:E:93:SER:HA	1:E:312:ASP:OD1	2.18	0.44
1:E:45:PRO:CB	1:F:131:VAL:HG21	2.47	0.44
1:F:137:ILE:O	1:F:153:PRO:HA	2.18	0.44
1:F:332:HIS:CD2	1:F:332:HIS:H	2.36	0.44
1:A:272:ALA:HB2	1:A:402:VAL:HG21	1.98	0.44
1:A:76:ALA:O	1:A:77:ARG:CB	2.66	0.44
1:B:103:MET:HG3	1:B:238:GLY:HA2	2.00	0.44
1:B:190:LEU:N	1:C:183:LEU:HD13	2.33	0.44
1:B:362:MET:O	1:B:365:MET:HB2	2.18	0.44
1:C:117:VAL:HG21	1:C:378:ASN:HB2	1.98	0.44
1:D:272:ALA:HB2	1:D:402:VAL:HG21	1.99	0.44
1:D:76:ALA:O	1:D:77:ARG:CB	2.65	0.44
1:E:73:ILE:HD12	1:E:73:ILE:HA	1.88	0.44
1:F:282:LEU:HD21	1:F:304:PRO:HA	1.99	0.44
1:A:44:LYS:N	1:A:45:PRO:HD2	2.33	0.44
1:E:298:ILE:O	1:E:302:THR:HG23	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:193:ALA:N	1:F:168:LEU:HD11	2.32	0.44
1:F:213:ILE:HG13	1:F:213:ILE:H	1.62	0.44
1:A:209:VAL:O	1:A:213:ILE:HG13	2.17	0.43
1:C:117:VAL:HG23	1:C:378:ASN:HD22	1.82	0.43
1:C:141:ASN:ND2	1:C:144:GLY:H	2.16	0.43
1:C:215:TYR:O	1:C:219:GLU:HG2	2.18	0.43
1:C:298:ILE:O	1:C:302:THR:HG23	2.18	0.43
1:D:173:ASN:OD1	1:D:173:ASN:C	2.56	0.43
1:D:210:PHE:HA	1:D:213:ILE:HD11	2.00	0.43
1:E:110:GLY:CA	1:E:327:ASN:HB3	2.47	0.43
1:F:89:TYR:CD2	1:F:310:ASN:HB2	2.53	0.43
1:A:235:VAL:O	1:A:239:LEU:HG	2.18	0.43
1:A:266:LYS:HG2	1:A:267:ASP:N	2.33	0.43
1:A:366:VAL:O	1:A:370:VAL:N	2.50	0.43
1:C:210:PHE:HA	1:C:213:ILE:HD11	2.00	0.43
1:C:282:LEU:HD21	1:C:304:PRO:HA	2.00	0.43
1:D:104:ALA:O	1:D:107:PHE:O	2.36	0.43
1:D:215:TYR:O	1:D:219:GLU:HG2	2.18	0.43
1:D:117:VAL:HG23	1:D:378:ASN:HD22	1.82	0.43
1:D:44:LYS:N	1:D:45:PRO:HD2	2.33	0.43
1:E:366:VAL:O	1:E:370:VAL:N	2.50	0.43
1:A:292:MET:HE2	1:A:294:ILE:HD11	2.01	0.43
1:B:332:HIS:H	1:B:332:HIS:CD2	2.37	0.43
1:C:17:LEU:HA	1:C:17:LEU:HD13	1.80	0.43
1:C:317:TYR:HA	1:C:320:VAL:CG1	2.49	0.43
1:F:110:GLY:HA3	1:F:327:ASN:HB2	1.97	0.43
1:F:263:LYS:O	1:F:266:LYS:HD3	2.19	0.43
1:B:59:MET:SD	1:B:149:GLY:O	2.76	0.43
1:D:226:GLY:C	1:D:228:LEU:N	2.72	0.43
1:D:95:PHE:CD2	1:D:95:PHE:C	2.91	0.43
1:E:209:VAL:O	1:E:213:ILE:HG13	2.18	0.43
1:F:318:GLN:OE1	1:F:363:LEU:N	2.51	0.43
1:A:97:VAL:HG22	1:A:315:ALA:O	2.18	0.43
1:C:141:ASN:HD22	1:C:144:GLY:H	1.65	0.43
1:D:47:GLY:HA3	1:D:212:LEU:CD2	2.49	0.43
1:D:73:ILE:HG13	1:D:77:ARG:HD2	2.01	0.43
1:E:45:PRO:HB3	1:F:131:VAL:HG21	1.99	0.43
1:B:210:PHE:HA	1:B:213:ILE:HD11	2.00	0.43
1:B:324:PHE:C	1:B:324:PHE:CD2	2.91	0.43
1:D:318:GLN:OE1	1:D:363:LEU:CA	2.66	0.43
1:B:49:LEU:O	1:B:53:LEU:HD12	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:311:MET:HB2	1:F:349:SER:HB2	2.00	0.43
1:A:263:LYS:O	1:A:266:LYS:HD3	2.19	0.43
1:F:49:LEU:O	1:F:53:LEU:HD12	2.17	0.43
1:A:95:PHE:C	1:A:95:PHE:CD2	2.91	0.43
1:F:53:LEU:O	1:F:56:MET:HB3	2.19	0.43
1:A:77:ARG:NE	1:A:416:GLU:HG2	2.33	0.43
1:B:213:ILE:H	1:B:213:ILE:HG13	1.64	0.43
1:B:383:TYR:CE2	1:B:387:LEU:CD1	3.02	0.43
1:D:193:ALA:N	1:E:168:LEU:HD11	2.34	0.43
1:E:381:ALA:O	1:E:384:ALA:HB3	2.19	0.43
1:E:47:GLY:HA3	1:E:212:LEU:CD2	2.46	0.43
1:B:209:VAL:O	1:B:213:ILE:HG13	2.19	0.42
1:D:259:ILE:N	1:D:259:ILE:HD12	2.34	0.42
1:F:103:MET:HG3	1:F:238:GLY:HA2	2.01	0.42
1:A:317:TYR:CD2	1:A:393:LEU:HB3	2.54	0.42
1:B:226:GLY:C	1:B:228:LEU:N	2.72	0.42
1:B:333:LEU:HA	1:B:333:LEU:HD23	1.92	0.42
1:F:130:LEU:CB	1:F:133:ILE:HD13	2.49	0.42
1:F:313:GLY:N	1:F:401:ASN:OD1	2.52	0.42
1:F:324:PHE:CD2	1:F:324:PHE:C	2.92	0.42
1:A:259:ILE:N	1:A:259:ILE:HD12	2.35	0.42
1:C:318:GLN:OE1	1:C:363:LEU:CA	2.67	0.42
1:D:246:VAL:O	1:D:250:LEU:HB2	2.20	0.42
1:A:110:GLY:CA	1:A:327:ASN:HB3	2.48	0.42
1:B:97:VAL:HG22	1:B:315:ALA:O	2.18	0.42
1:C:209:VAL:O	1:C:213:ILE:HG13	2.18	0.42
1:C:88:TYR:CD1	1:C:89:TYR:N	2.87	0.42
1:F:257:ASP:OD2	1:F:260:SER:N	2.47	0.42
1:F:30:LEU:O	1:F:35:TYR:HB2	2.19	0.42
1:B:221:GLY:C	1:B:223:HIS:N	2.73	0.42
1:B:77:ARG:NE	1:B:416:GLU:HG2	2.29	0.42
1:D:112:GLY:O	1:D:227:GLU:HG3	2.20	0.42
1:E:263:LYS:O	1:E:266:LYS:HD3	2.20	0.42
1:E:313:GLY:N	1:E:401:ASN:OD1	2.52	0.42
1:E:318:GLN:OE1	1:E:363:LEU:CA	2.68	0.42
1:F:74:SER:HB3	1:F:77:ARG:HG3	2.02	0.42
1:A:314:THR:HG21	1:A:362:MET:CE	2.50	0.42
1:B:235:VAL:O	1:B:239:LEU:HG	2.20	0.42
1:E:78:LEU:CA	1:E:81:VAL:HG12	2.43	0.42
1:F:219:GLU:OE2	1:F:219:GLU:HA	2.20	0.42
1:E:49:LEU:O	1:E:53:LEU:HD12	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:95:PHE:C	1:E:95:PHE:CD2	2.92	0.42
1:A:137:ILE:O	1:A:153:PRO:HA	2.20	0.42
1:A:54:LEU:HD23	1:A:54:LEU:HA	1.86	0.42
1:C:333:LEU:HA	1:C:333:LEU:HD23	1.88	0.42
1:C:406:LEU:HD23	1:C:406:LEU:HA	1.88	0.42
1:D:212:LEU:HD12	1:D:274:VAL:HG13	2.00	0.42
1:E:81:VAL:CG2	1:E:412:VAL:HG11	2.48	0.42
1:E:85:ILE:HG13	1:E:89:TYR:CE1	2.55	0.42
1:F:88:TYR:C	1:F:88:TYR:CD1	2.92	0.42
1:A:183:LEU:HD13	1:C:190:LEU:N	2.35	0.42
1:A:231:VAL:O	1:A:235:VAL:HG23	2.20	0.42
1:A:81:VAL:CG2	1:A:412:VAL:HG11	2.49	0.42
1:D:141:ASN:ND2	1:F:147:ALA:O	2.52	0.42
1:D:174:GLU:OE1	1:D:177:ARG:HD2	2.20	0.42
1:D:311:MET:HB2	1:D:349:SER:HB2	2.00	0.42
1:A:114:HIS:O	1:E:226:GLY:HA3	2.19	0.42
1:E:117:VAL:HG21	1:E:378:ASN:HB2	2.01	0.42
1:A:141:ASN:HD21	1:A:143:PHE:HB2	1.84	0.42
1:A:45:PRO:CB	1:B:131:VAL:HG21	2.49	0.42
1:C:117:VAL:HG21	1:C:376:ASP:OD2	2.19	0.42
1:D:12:VAL:N	1:D:15:LYS:HB2	2.30	0.42
1:D:210:PHE:O	1:D:213:ILE:HD12	2.18	0.42
1:D:324:PHE:C	1:D:324:PHE:CD2	2.93	0.42
1:E:189:GLY:N	1:F:179:SER:HB3	2.35	0.42
1:F:117:VAL:HG21	1:F:376:ASP:OD2	2.20	0.42
1:A:17:LEU:HD13	1:A:17:LEU:HA	1.76	0.41
1:A:205:ALA:O	1:A:209:VAL:HG23	2.20	0.41
1:C:212:LEU:HD12	1:C:274:VAL:HG13	2.00	0.41
1:C:231:VAL:O	1:C:235:VAL:HG23	2.19	0.41
1:D:117:VAL:HG21	1:D:376:ASP:OD2	2.20	0.41
1:D:333:LEU:HD23	1:D:333:LEU:HA	1.88	0.41
1:D:45:PRO:CB	1:E:131:VAL:HG21	2.50	0.41
1:E:142:PRO:O	1:E:145:ALA:HB3	2.20	0.41
1:B:23:GLY:HA2	1:B:210:PHE:CE2	2.55	0.41
1:C:259:ILE:HD12	1:C:259:ILE:N	2.35	0.41
1:F:97:VAL:HG22	1:F:315:ALA:O	2.19	0.41
1:A:133:ILE:N	1:A:133:ILE:CD1	2.84	0.41
1:A:148:ASN:O	1:A:149:GLY:C	2.57	0.41
1:A:292:MET:CE	1:A:294:ILE:HD11	2.51	0.41
1:A:85:ILE:HD13	1:A:412:VAL:HG21	2.02	0.41
1:B:282:LEU:HD21	1:B:304:PRO:HA	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:30:LEU:O	1:B:35:TYR:HB2	2.19	0.41
1:B:88:TYR:CD1	1:B:88:TYR:C	2.93	0.41
1:D:103:MET:CE	1:D:237:VAL:HB	2.50	0.41
1:D:113:ILE:CG2	1:D:328:ALA:C	2.89	0.41
1:D:296:GLU:O	1:D:300:SER:CB	2.68	0.41
1:D:82:GLY:HA2	1:D:301:PHE:HE2	1.85	0.41
1:D:401:ASN:O	1:D:405:ASP:OD1	2.38	0.41
1:D:90:LEU:HA	1:D:90:LEU:HD12	1.89	0.41
1:E:141:ASN:ND2	1:E:143:PHE:HB2	2.36	0.41
1:E:210:PHE:HA	1:E:213:ILE:HD11	2.02	0.41
1:E:324:PHE:C	1:E:324:PHE:CD2	2.93	0.41
1:F:58:VAL:HG22	1:F:283:PRO:HD3	2.02	0.41
1:A:324:PHE:C	1:A:324:PHE:CD2	2.93	0.41
1:A:85:ILE:HG13	1:A:89:TYR:CE1	2.56	0.41
1:B:311:MET:HB2	1:B:349:SER:HB2	2.02	0.41
1:C:311:MET:HB2	1:C:349:SER:HB2	2.01	0.41
1:C:84:LYS:NZ	1:C:415:THR:HG22	2.30	0.41
1:E:148:ASN:O	1:E:149:GLY:C	2.57	0.41
1:E:190:LEU:N	1:F:183:LEU:HD13	2.34	0.41
1:E:205:ALA:O	1:E:209:VAL:HG23	2.20	0.41
1:E:210:PHE:O	1:E:213:ILE:HD12	2.20	0.41
1:E:292:MET:HE2	1:E:294:ILE:CD1	2.50	0.41
1:F:85:ILE:HD13	1:F:412:VAL:HG21	2.02	0.41
1:A:318:GLN:OE1	1:A:363:LEU:N	2.53	0.41
1:C:130:LEU:HB2	1:C:133:ILE:HD13	2.02	0.41
1:C:133:ILE:N	1:C:133:ILE:HD12	2.34	0.41
1:C:326:ALA:HB1	1:C:333:LEU:HG	2.01	0.41
1:D:48:ASP:O	1:D:51:VAL:N	2.53	0.41
1:A:117:VAL:HG21	1:A:378:ASN:HB2	2.02	0.41
1:A:147:ALA:O	1:B:141:ASN:ND2	2.54	0.41
1:A:189:GLY:N	1:B:179:SER:HB3	2.36	0.41
1:B:58:VAL:HG22	1:B:283:PRO:HD3	2.02	0.41
1:C:131:VAL:CG1	1:C:132:HIS:H	2.33	0.41
1:C:151:VAL:O	1:C:154:THR:HB	2.20	0.41
1:C:23:GLY:HA2	1:C:210:PHE:CE2	2.56	0.41
1:D:298:ILE:O	1:D:302:THR:HG23	2.20	0.41
1:E:104:ALA:O	1:E:107:PHE:O	2.39	0.41
1:E:363:LEU:O	1:E:366:VAL:HG22	2.21	0.41
1:E:78:LEU:HA	1:E:81:VAL:CG1	2.48	0.41
1:A:383:TYR:CE2	1:A:387:LEU:HD13	2.56	0.41
1:B:251:LEU:HD22	1:B:256:ILE:HG23	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:292:MET:CE	1:D:294:ILE:HD11	2.50	0.41
1:D:406:LEU:HD23	1:D:406:LEU:HA	1.91	0.41
1:E:246:VAL:O	1:E:250:LEU:HB2	2.20	0.41
1:E:362:MET:O	1:E:365:MET:HB2	2.20	0.41
1:E:97:VAL:HG22	1:E:315:ALA:O	2.21	0.41
1:F:210:PHE:O	1:F:213:ILE:HD12	2.20	0.41
1:A:246:VAL:O	1:A:250:LEU:HB2	2.20	0.41
1:C:332:HIS:CD2	1:C:332:HIS:H	2.38	0.41
1:D:148:ASN:O	1:D:149:GLY:C	2.58	0.41
1:E:103:MET:HG3	1:E:238:GLY:HA2	2.01	0.41
1:F:226:GLY:C	1:F:228:LEU:N	2.74	0.41
1:A:78:LEU:CA	1:A:81:VAL:HG12	2.45	0.41
1:A:193:ALA:CA	1:B:168:LEU:HD11	2.50	0.41
1:C:324:PHE:C	1:C:324:PHE:CD2	2.94	0.41
1:D:231:VAL:O	1:D:235:VAL:HG23	2.20	0.41
1:F:210:PHE:HA	1:F:213:ILE:HD11	2.02	0.41
1:F:239:LEU:HD23	1:F:316:LEU:HD13	2.03	0.41
1:A:103:MET:CE	1:A:237:VAL:HB	2.51	0.41
1:A:117:VAL:HG21	1:A:376:ASP:OD2	2.20	0.41
1:B:313:GLY:N	1:B:401:ASN:OD1	2.54	0.41
1:B:273:PHE:CE1	1:B:395:MET:HB3	2.56	0.41
1:D:89:TYR:O	1:D:93:SER:HB2	2.21	0.41
1:F:14:GLN:O	1:F:17:LEU:N	2.54	0.41
1:A:209:VAL:HG22	1:A:274:VAL:HG11	2.03	0.41
1:A:210:PHE:O	1:A:213:ILE:HD12	2.20	0.41
1:A:52:ARG:NH2	1:B:136:ASP:HA	2.36	0.41
1:B:20:LEU:C	1:B:20:LEU:HD23	2.41	0.41
1:E:137:ILE:O	1:E:153:PRO:HA	2.21	0.41
1:F:198:VAL:CG1	1:F:287:ARG:HD3	2.50	0.41
1:F:90:LEU:HD12	1:F:90:LEU:HA	1.95	0.41
1:F:89:TYR:O	1:F:93:SER:HB2	2.21	0.41
1:A:376:ASP:HA	1:A:377:PRO:HD3	1.95	0.40
1:B:130:LEU:CB	1:B:133:ILE:HD13	2.51	0.40
1:C:112:GLY:O	1:C:227:GLU:HG3	2.22	0.40
1:C:383:TYR:CE2	1:C:387:LEU:CD1	3.05	0.40
1:C:88:TYR:HD1	1:C:89:TYR:N	2.20	0.40
1:A:226:GLY:HA3	1:E:114:HIS:O	2.21	0.40
1:F:130:LEU:HB2	1:F:133:ILE:HD13	2.03	0.40
1:F:64:ALA:HB1	1:F:191:ALA:HB2	2.03	0.40
1:F:209:VAL:O	1:F:213:ILE:HG13	2.22	0.40
1:F:265:ALA:HA	1:F:288:VAL:HG11	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:9:GLU:HB3	1:B:15:LYS:HZ3	1.86	0.40
1:C:14:GLN:O	1:C:17:LEU:N	2.54	0.40
1:C:257:ASP:OD2	1:C:260:SER:N	2.42	0.40
1:C:82:GLY:HA2	1:C:301:PHE:HE2	1.86	0.40
1:F:235:VAL:HG22	1:F:320:VAL:HG11	2.04	0.40
1:F:259:ILE:HD12	1:F:259:ILE:H	1.86	0.40
1:C:141:ASN:HD22	1:C:144:GLY:N	2.18	0.40
1:C:273:PHE:HB2	1:C:399:MET:HB2	2.02	0.40
1:D:332:HIS:H	1:D:332:HIS:CD2	2.39	0.40
1:E:383:TYR:CE2	1:E:387:LEU:HD13	2.56	0.40
1:F:23:GLY:HA2	1:F:210:PHE:CE2	2.56	0.40
1:F:44:LYS:N	1:F:45:PRO:HD2	2.37	0.40
1:A:18:ILE:O	1:A:22:LEU:HB3	2.21	0.40
1:A:313:GLY:N	1:A:401:ASN:OD1	2.54	0.40
1:B:189:GLY:N	1:C:179:SER:HB3	2.37	0.40
1:F:221:GLY:C	1:F:223:HIS:N	2.75	0.40
1:A:219:GLU:OE2	1:A:219:GLU:HA	2.22	0.40
1:B:219:GLU:HA	1:B:219:GLU:OE2	2.22	0.40
1:C:173:ASN:C	1:C:173:ASN:OD1	2.60	0.40
1:C:226:GLY:O	1:C:229:ALA:N	2.40	0.40
1:D:167:TYR:CD1	1:D:167:TYR:N	2.89	0.40
1:D:292:MET:HE2	1:D:294:ILE:CD1	2.51	0.40
1:D:44:LYS:HD2	1:D:215:TYR:CD1	2.57	0.40
1:D:190:LEU:N	1:E:183:LEU:HD13	2.37	0.40
1:E:317:TYR:HA	1:E:320:VAL:CG1	2.51	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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	395/422 (94%)	352 (89%)	33 (8%)	10 (2%)	6 39

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	395/422 (94%)	353 (89%)	31 (8%)	11 (3%)	6	37
1	C	395/422 (94%)	356 (90%)	27 (7%)	12 (3%)	5	36
1	D	395/422 (94%)	356 (90%)	27 (7%)	12 (3%)	5	36
1	E	395/422 (94%)	358 (91%)	27 (7%)	10 (2%)	6	39
1	F	395/422 (94%)	355 (90%)	30 (8%)	10 (2%)	6	39
All	All	2370/2532 (94%)	2130 (90%)	175 (7%)	65 (3%)	6	38

All (65) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	10	TYR
1	A	12	VAL
1	A	77	ARG
1	B	10	TYR
1	B	12	VAL
1	B	77	ARG
1	C	10	TYR
1	C	12	VAL
1	C	77	ARG
1	C	355	VAL
1	D	10	TYR
1	D	12	VAL
1	D	77	ARG
1	D	355	VAL
1	E	10	TYR
1	E	12	VAL
1	E	77	ARG
1	F	10	TYR
1	F	12	VAL
1	F	77	ARG
1	A	149	GLY
1	A	222	VAL
1	A	227	GLU
1	A	355	VAL
1	B	149	GLY
1	B	222	VAL
1	B	227	GLU
1	B	355	VAL
1	C	149	GLY
1	C	222	VAL

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Mol	Chain	Res	Type
1	C	227	GLU
1	D	149	GLY
1	D	222	VAL
1	D	227	GLU
1	E	149	GLY
1	E	222	VAL
1	E	227	GLU
1	E	355	VAL
1	F	149	GLY
1	F	222	VAL
1	F	227	GLU
1	F	355	VAL
1	A	150	GLN
1	B	150	GLN
1	E	150	GLN
1	A	75	PRO
1	C	80	ARG
1	C	150	GLN
1	D	146	LEU
1	E	75	PRO
1	B	49	LEU
1	C	146	LEU
1	D	80	ARG
1	F	150	GLN
1	A	11	PRO
1	B	11	PRO
1	B	75	PRO
1	C	75	PRO
1	D	75	PRO
1	D	150	GLN
1	F	75	PRO
1	C	11	PRO
1	D	11	PRO
1	E	11	PRO
1	F	11	PRO

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	304/330 (92%)	262 (86%)	42 (14%)	4	22
1	B	304/330 (92%)	263 (86%)	41 (14%)	4	23
1	C	304/330 (92%)	265 (87%)	39 (13%)	5	25
1	D	304/330 (92%)	265 (87%)	39 (13%)	5	25
1	E	304/330 (92%)	263 (86%)	41 (14%)	4	23
1	F	304/330 (92%)	263 (86%)	41 (14%)	4	23
All	All	1824/1980 (92%)	1581 (87%)	243 (13%)	4	23

All (243) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	12	VAL
1	A	18	ILE
1	A	28	LEU
1	A	30	LEU
1	A	74	SER
1	A	77	ARG
1	A	78	LEU
1	A	90	LEU
1	A	91	LEU
1	A	93	SER
1	A	106	LEU
1	A	114	HIS
1	A	117	VAL
1	A	140	THR
1	A	148	ASN
1	A	183	LEU
1	A	184	LEU
1	A	196	LYS
1	A	212	LEU
1	A	213	ILE
1	A	217	MET
1	A	224	VAL
1	A	241	LEU
1	A	250	LEU
1	A	266	LYS
1	A	267	ASP
1	A	290	LYS
1	A	314	THR

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Mol	Chain	Res	Type
1	A	317	TYR
1	A	323	PHE
1	A	331	SER
1	A	335	VAL
1	A	337	GLN
1	A	340	THR
1	A	344	THR
1	A	355	VAL
1	A	368	HIS
1	A	372	LEU
1	A	374	LEU
1	A	375	THR
1	A	385	MET
1	A	405	ASP
1	B	12	VAL
1	B	28	LEU
1	B	30	LEU
1	B	74	SER
1	B	77	ARG
1	B	78	LEU
1	B	90	LEU
1	B	91	LEU
1	B	93	SER
1	B	95	PHE
1	B	114	HIS
1	B	117	VAL
1	B	140	THR
1	B	148	ASN
1	B	151	VAL
1	B	152	LEU
1	B	183	LEU
1	B	184	LEU
1	B	196	LYS
1	B	217	MET
1	B	224	VAL
1	B	241	LEU
1	B	250	LEU
1	B	267	ASP
1	B	290	LYS
1	B	314	THR
1	B	317	TYR
1	B	323	PHE

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Mol	Chain	Res	Type
1	B	327	ASN
1	B	331	SER
1	B	332	HIS
1	B	335	VAL
1	B	337	GLN
1	B	340	THR
1	B	344	THR
1	B	355	VAL
1	B	368	HIS
1	B	372	LEU
1	B	374	LEU
1	B	375	THR
1	B	405	ASP
1	C	12	VAL
1	C	18	ILE
1	C	28	LEU
1	C	30	LEU
1	C	74	SER
1	C	77	ARG
1	C	78	LEU
1	C	90	LEU
1	C	91	LEU
1	C	93	SER
1	C	106	LEU
1	C	114	HIS
1	C	117	VAL
1	C	140	THR
1	C	148	ASN
1	C	183	LEU
1	C	184	LEU
1	C	213	ILE
1	C	217	MET
1	C	224	VAL
1	C	241	LEU
1	C	250	LEU
1	C	267	ASP
1	C	290	LYS
1	C	314	THR
1	C	317	TYR
1	C	323	PHE
1	C	331	SER
1	C	334	THR

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Mol	Chain	Res	Type
1	C	337	GLN
1	C	340	THR
1	C	344	THR
1	C	355	VAL
1	C	368	HIS
1	C	372	LEU
1	C	374	LEU
1	C	375	THR
1	C	385	MET
1	C	405	ASP
1	D	12	VAL
1	D	28	LEU
1	D	30	LEU
1	D	74	SER
1	D	77	ARG
1	D	78	LEU
1	D	90	LEU
1	D	91	LEU
1	D	93	SER
1	D	106	LEU
1	D	114	HIS
1	D	117	VAL
1	D	140	THR
1	D	148	ASN
1	D	183	LEU
1	D	184	LEU
1	D	196	LYS
1	D	213	ILE
1	D	217	MET
1	D	224	VAL
1	D	241	LEU
1	D	250	LEU
1	D	267	ASP
1	D	290	LYS
1	D	314	THR
1	D	317	TYR
1	D	323	PHE
1	D	331	SER
1	D	334	THR
1	D	337	GLN
1	D	340	THR
1	D	344	THR

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Mol	Chain	Res	Type
1	D	355	VAL
1	D	368	HIS
1	D	372	LEU
1	D	374	LEU
1	D	375	THR
1	D	385	MET
1	D	405	ASP
1	E	12	VAL
1	E	28	LEU
1	E	30	LEU
1	E	74	SER
1	E	77	ARG
1	E	78	LEU
1	E	90	LEU
1	E	91	LEU
1	E	93	SER
1	E	106	LEU
1	E	114	HIS
1	E	117	VAL
1	E	140	THR
1	E	148	ASN
1	E	183	LEU
1	E	184	LEU
1	E	196	LYS
1	E	212	LEU
1	E	213	ILE
1	E	217	MET
1	E	224	VAL
1	E	241	LEU
1	E	250	LEU
1	E	266	LYS
1	E	267	ASP
1	E	290	LYS
1	E	314	THR
1	E	317	TYR
1	E	323	PHE
1	E	331	SER
1	E	335	VAL
1	E	337	GLN
1	E	340	THR
1	E	344	THR
1	E	355	VAL

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Mol	Chain	Res	Type
1	E	368	HIS
1	E	372	LEU
1	E	374	LEU
1	E	375	THR
1	E	385	MET
1	E	405	ASP
1	F	12	VAL
1	F	18	ILE
1	F	28	LEU
1	F	30	LEU
1	F	74	SER
1	F	77	ARG
1	F	78	LEU
1	F	90	LEU
1	F	91	LEU
1	F	93	SER
1	F	114	HIS
1	F	117	VAL
1	F	140	THR
1	F	148	ASN
1	F	183	LEU
1	F	184	LEU
1	F	196	LYS
1	F	217	MET
1	F	224	VAL
1	F	241	LEU
1	F	250	LEU
1	F	266	LYS
1	F	267	ASP
1	F	290	LYS
1	F	314	THR
1	F	317	TYR
1	F	323	PHE
1	F	327	ASN
1	F	331	SER
1	F	332	HIS
1	F	334	THR
1	F	335	VAL
1	F	337	GLN
1	F	340	THR
1	F	344	THR
1	F	355	VAL

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Mol	Chain	Res	Type
1	F	368	HIS
1	F	372	LEU
1	F	374	LEU
1	F	375	THR
1	F	405	ASP

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (27) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	40	HIS
1	A	114	HIS
1	A	141	ASN
1	A	327	ASN
1	A	332	HIS
1	B	40	HIS
1	B	141	ASN
1	B	327	ASN
1	B	332	HIS
1	C	40	HIS
1	C	114	HIS
1	C	141	ASN
1	C	327	ASN
1	C	332	HIS
1	D	40	HIS
1	D	114	HIS
1	D	141	ASN
1	D	327	ASN
1	D	332	HIS
1	E	40	HIS
1	E	141	ASN
1	E	327	ASN
1	E	332	HIS
1	F	40	HIS
1	F	141	ASN
1	F	327	ASN
1	F	332	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 6 ligands modelled in this entry, 6 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	399/422 (94%)	0.69	34 (8%) 11 13	98, 159, 220, 284	0
1	B	399/422 (94%)	0.56	14 (3%) 44 41	85, 144, 207, 267	0
1	C	399/422 (94%)	0.60	18 (4%) 34 31	90, 146, 205, 266	0
1	D	399/422 (94%)	0.55	17 (4%) 36 33	85, 144, 205, 262	0
1	E	399/422 (94%)	0.73	33 (8%) 12 14	101, 163, 222, 286	0
1	F	399/422 (94%)	0.53	13 (3%) 47 43	84, 144, 207, 266	0
All	All	2394/2532 (94%)	0.61	129 (5%) 26 25	84, 151, 212, 286	0

All (129) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	247	TYR	5.4
1	E	93	SER	4.8
1	F	114	HIS	4.7
1	E	247	TYR	4.2
1	B	323	PHE	4.0
1	A	120	GLN	3.9
1	E	333	LEU	3.8
1	A	93	SER	3.8
1	A	409	THR	3.7
1	E	323	PHE	3.7
1	C	311	MET	3.6
1	D	311	MET	3.6
1	C	114	HIS	3.5
1	E	345	ALA	3.4
1	E	94	ALA	3.4
1	E	109	PRO	3.4
1	C	109	PRO	3.3
1	E	311	MET	3.3
1	F	323	PHE	3.3

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Mol	Chain	Res	Type	RSRZ
1	D	114	HIS	3.3
1	E	114	HIS	3.2
1	B	354	GLY	3.2
1	E	108	ASN	3.2
1	A	332	HIS	3.2
1	D	109	PRO	3.1
1	B	214	ALA	3.1
1	E	409	THR	3.1
1	C	16	ILE	3.1
1	B	114	HIS	3.1
1	B	355	VAL	3.0
1	A	333	LEU	3.0
1	F	11	PRO	3.0
1	F	247	TYR	3.0
1	A	35	TYR	3.0
1	A	114	HIS	3.0
1	E	97	VAL	2.9
1	F	311	MET	2.9
1	E	89	TYR	2.9
1	E	332	HIS	2.9
1	A	116	ALA	2.9
1	A	219	GLU	2.9
1	B	247	TYR	2.8
1	D	14	GLN	2.8
1	C	228	LEU	2.8
1	A	242	GLN	2.8
1	A	323	PHE	2.8
1	C	319	GLY	2.8
1	A	119	GLY	2.7
1	A	12	VAL	2.7
1	A	108	ASN	2.7
1	F	322	THR	2.7
1	E	116	ALA	2.7
1	E	325	ILE	2.7
1	E	12	VAL	2.6
1	A	356	PRO	2.6
1	D	16	ILE	2.6
1	D	319	GLY	2.6
1	A	378	ASN	2.6
1	A	36	ALA	2.6
1	F	354	GLY	2.5
1	B	322	THR	2.5

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Mol	Chain	Res	Type	RSRZ
1	C	333	LEU	2.5
1	A	89	TYR	2.5
1	E	342	VAL	2.5
1	C	400	VAL	2.5
1	D	231	VAL	2.4
1	E	378	ASN	2.4
1	C	231	VAL	2.4
1	F	97	VAL	2.3
1	A	325	ILE	2.3
1	E	120	GLN	2.3
1	E	35	TYR	2.3
1	A	311	MET	2.3
1	C	132	HIS	2.3
1	E	242	GLN	2.3
1	B	239	LEU	2.3
1	B	378	ASN	2.3
1	E	356	PRO	2.3
1	E	318	GLN	2.3
1	A	382	ALA	2.3
1	F	239	LEU	2.3
1	E	11	PRO	2.3
1	D	248	PHE	2.3
1	F	355	VAL	2.3
1	A	228	LEU	2.3
1	A	317	TYR	2.3
1	A	241	LEU	2.2
1	C	14	GLN	2.2
1	D	228	LEU	2.2
1	C	325	ILE	2.2
1	E	252	LYS	2.2
1	A	324	PHE	2.2
1	B	230	LYS	2.2
1	D	332	HIS	2.2
1	A	107	PHE	2.2
1	B	311	MET	2.2
1	C	116	ALA	2.2
1	A	281	THR	2.2
1	C	332	HIS	2.1
1	B	12	VAL	2.1
1	D	230	LYS	2.1
1	B	11	PRO	2.1
1	E	346	VAL	2.1

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Mol	Chain	Res	Type	RSRZ
1	C	36	ALA	2.1
1	D	247	TYR	2.1
1	D	325	ILE	2.1
1	D	333	LEU	2.1
1	F	379	VAL	2.1
1	E	119	GLY	2.1
1	A	109	PRO	2.1
1	E	219	GLU	2.1
1	C	298	ILE	2.1
1	C	106	LEU	2.1
1	E	228	LEU	2.1
1	E	33	TYR	2.1
1	D	314	THR	2.1
1	D	323	PHE	2.0
1	A	349	SER	2.0
1	F	228	LEU	2.0
1	E	130	LEU	2.0
1	B	32	HIS	2.0
1	F	32	HIS	2.0
1	A	94	ALA	2.0
1	E	36	ALA	2.0
1	A	269	MET	2.0
1	C	314	THR	2.0
1	D	242	GLN	2.0
1	A	33	TYR	2.0
1	A	346	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 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(\AA^2)	Q<0.9
2	NA	E	501	1/1	0.96	1.36	9.32	226,226,226,226	0
2	NA	A	501	1/1	0.96	1.04	8.48	247,247,247,247	0
2	NA	D	501	1/1	0.92	0.88	4.38	114,114,114,114	0
2	NA	F	501	1/1	0.95	0.79	4.26	92,92,92,92	0
2	NA	B	501	1/1	0.93	0.56	2.41	91,91,91,91	0
2	NA	C	501	1/1	0.94	0.50	1.27	97,97,97,97	0

6.5 Other polymers [i](#)

There are no such residues in this entry.