Full wwPDB X-ray Structure Validation Report ⓘ

Oct 27, 2024 – 05:23 PM EDT

PDB ID	:	1QDM
Title	:	CRYSTAL STRUCTURE OF PROPHYTEPSIN, A ZYMOGEN OF A BARLEY VACUOLAR ASPARTIC PROTEINASE.
Authors	:	Kervinen, J.; Tobin, G.J.; Costa, J.; Waugh, D.S.; Wlodawer, A.; Zdanov, A.
Deposited on	:	1999-05-19
Resolution	:	2.30 Å(reported)

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

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

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

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

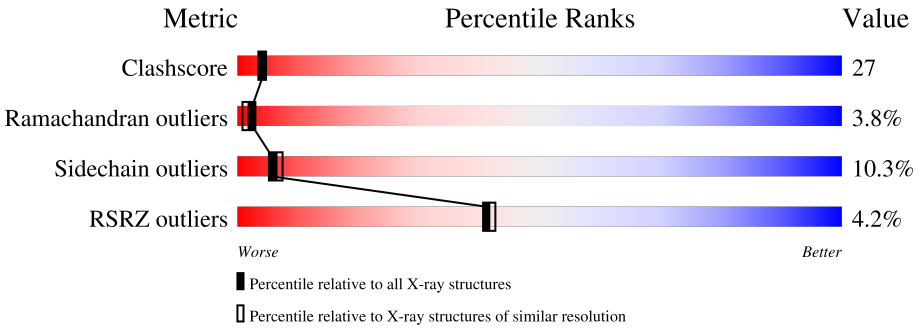
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.20.1
EDS	:	3.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.003 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

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 2.30 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	180529	6698 (2.30-2.30)
Ramachandran outliers	177936	6640 (2.30-2.30)
Sidechain outliers	177891	6640 (2.30-2.30)
RSRZ outliers	164620	5963 (2.30-2.30)

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	478	3% 53% 33% • 9%
1	B	478	3% 48% 37% 5% • 9%
1	C	478	6% 42% 41% 6% 10%

2 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 9336 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 PROPHYTEPSIN.

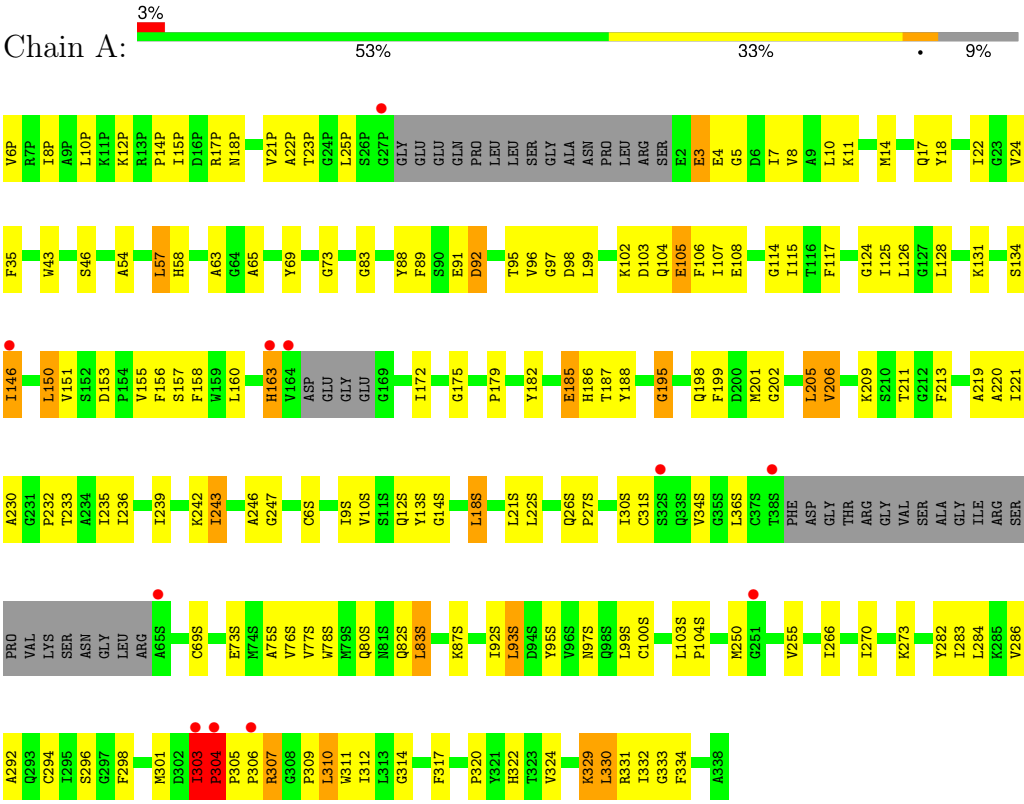
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	433	Total	C	N	O	S	0	0	3
			3127	2013	516	575	23			
1	B	433	Total	C	N	O	S	0	0	3
			3115	2005	515	573	22			
1	C	431	Total	C	N	O	S	0	0	4
			3094	1991	512	568	23			

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.

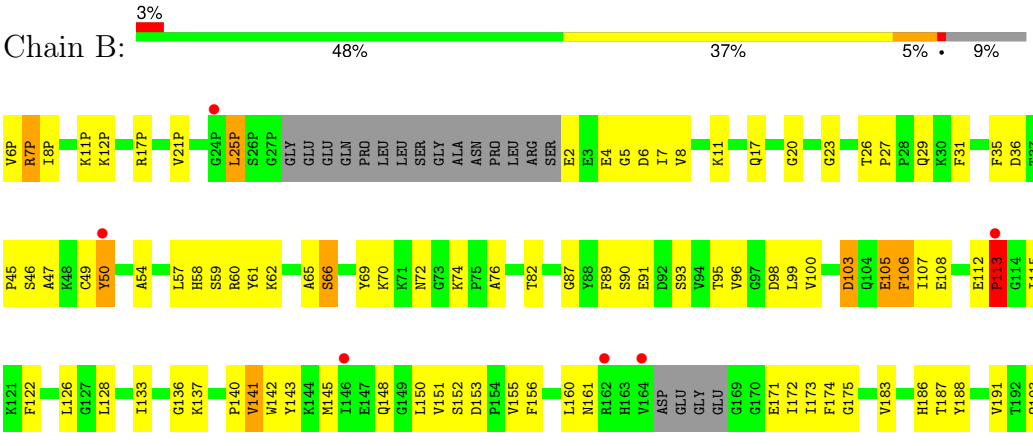
• Molecule 1: PROPHYTEPSIN

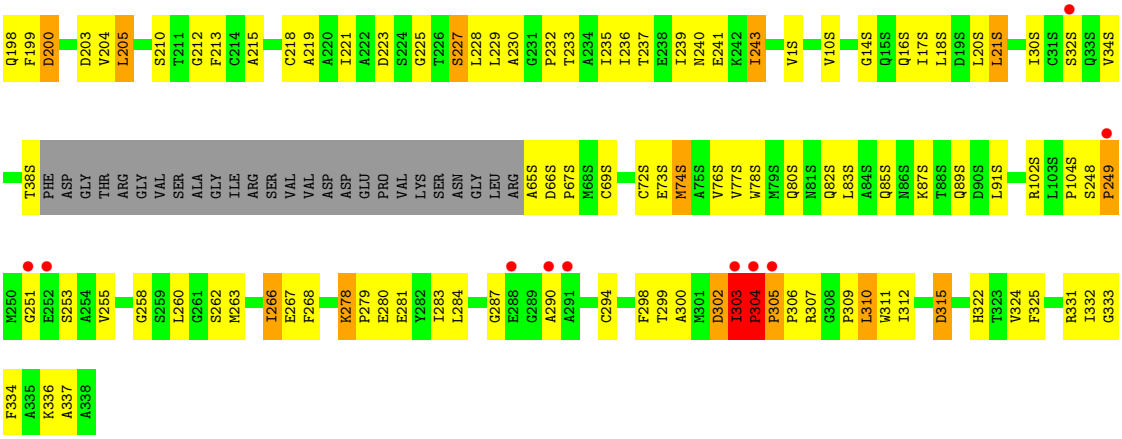
Chain A:



• Molecule 1: PROPHYTEPSIN

Chain B:





4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	66.00Å 160.90Å 81.40Å 90.00° 109.60° 90.00°	Depositor
Resolution (Å)	10.00 – 2.30 10.00 – 2.30	Depositor EDS
% Data completeness (in resolution range)	60.3 (10.00-2.30) 68.5 (10.00-2.30)	Depositor EDS
R_{merge}	0.06	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.06 (at 2.29Å)	Xtriage
Refinement program	X-PLOR	Depositor
R, R_{free}	0.224 , (Not available) 0.232 , (Not available)	Depositor DCC
R_{free} test set	No test flags present.	wwPDB-VP
Wilson B-factor (Å^2)	34.9	Xtriage
Anisotropy	0.273	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 74.0	EDS
L-test for twinning[2]	$< \|L\| > = 0.48$, $< L^2 > = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.92	EDS
Total number of atoms	9336	wwPDB-VP
Average B, all atoms (Å^2)	28.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 7.10% 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

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	0.58	0/3199	0.83	1/4349 (0.0%)
1	B	0.57	0/3187	0.84	4/4334 (0.1%)
1	C	0.55	0/3165	0.81	0/4303
All	All	0.56	0/9551	0.83	5/12986 (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	C	0	1

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	50	TYR	N-CA-C	6.29	128.00	111.00
1	B	49	CYS	N-CA-C	-6.04	94.68	111.00
1	A	195	GLY	N-CA-C	-5.87	98.43	113.10
1	B	302	ASP	N-CA-C	5.63	126.19	111.00
1	B	196	TYR	N-CA-C	-5.09	97.25	111.00

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	13(S)	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	3127	0	2960	149	0
1	B	3115	0	2933	155	0
1	C	3094	0	2905	186	0
All	All	9336	0	8798	484	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 27.

All (484) 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:C:23(P):THR:HG22	1:C:14:MET:SD	1.79	1.23
1:A:303:ILE:HB	1:A:309:PRO:HA	1.46	0.96
1:B:54:ALA:HB1	1:B:118:LEU:HD11	1.47	0.95
1:B:239:ILE:HG23	1:B:243:ILE:HD13	1.47	0.92
1:A:232:PRO:HG3	1:A:303:ILE:HG21	1.51	0.92
1:A:239:ILE:HG23	1:A:243:ILE:HD13	1.53	0.90
1:C:145:MET:HA	1:C:150:LEU:HD23	1.57	0.86
1:B:303:ILE:HG13	1:B:309:PRO:HG3	1.57	0.86
1:B:186:HIS:HE1	1:B:322:HIS:HD2	1.20	0.86
1:B:227:SER:HA	1:B:315:ASP:HB2	1.58	0.86
1:C:303:ILE:HD12	1:C:310:LEU:H	1.40	0.85
1:A:303:ILE:HG22	1:A:310:LEU:O	1.76	0.85
1:C:237:THR:HG21	1:C:78(S):TRP:CZ2	2.11	0.85
1:B:186:HIS:CE1	1:B:322:HIS:HD2	1.97	0.81
1:C:18(P):ASN:O	1:C:22(P):ALA:HB3	1.80	0.81
1:A:96:VAL:HG23	1:A:99:LEU:HD23	1.64	0.80
1:B:303:ILE:HD12	1:B:303:ILE:H	1.45	0.80
1:A:255:VAL:HG21	1:A:283:ILE:HD12	1.63	0.79
1:C:22(P):ALA:HB1	1:C:115:ILE:HD11	1.64	0.78
1:A:186:HIS:HE1	1:A:322:HIS:HD2	1.31	0.78
1:B:42:LEU:HD13	1:B:106:PHE:HB3	1.64	0.78
1:A:185:GLU:HG2	1:C:191:VAL:O	1.84	0.77
1:C:77(S):VAL:O	1:C:80(S):GLN:HG2	1.85	0.77
1:C:8(S):THR:HA	1:C:11(S):SER:HB3	1.67	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:303:ILE:HB	1:A:309:PRO:CA	2.16	0.75
1:A:46:SER:HB2	1:A:108:GLU:HB3	1.68	0.75
1:C:30(S):ILE:O	1:C:34(S):VAL:HB	1.87	0.74
1:A:232:PRO:HG3	1:A:303:ILE:CG2	2.16	0.74
1:C:32(S):SER:HA	1:C:37(S):CYS:HB2	1.68	0.74
1:A:6(P):VAL:HG21	1:A:99:LEU:HD21	1.68	0.74
1:B:12(P):LYS:HA	1:B:17:GLN:O	1.88	0.73
1:A:76(S):VAL:O	1:A:80(S):GLN:HG3	1.88	0.73
1:C:72(S):CYS:O	1:C:76(S):VAL:HG23	1.89	0.72
1:C:186:HIS:HE1	1:C:322:HIS:HD2	1.34	0.72
1:C:237:THR:HG21	1:C:78(S):TRP:HZ2	1.54	0.72
1:A:14(P):PRO:HA	1:A:17:GLN:HG2	1.70	0.72
1:A:22:ILE:HG21	1:A:126:LEU:HD12	1.72	0.72
1:B:62:LYS:HD3	1:B:65:ALA:HB2	1.72	0.71
1:C:148:GLN:HB2	1:C:150:LEU:HD22	1.71	0.71
1:B:20:GLY:HA3	1:B:35:PHE:HE1	1.53	0.71
1:B:221:ILE:HD12	1:B:310:LEU:HD21	1.73	0.71
1:B:303:ILE:H	1:B:303:ILE:CD1	2.03	0.71
1:C:31(S):CYS:HB2	1:C:76(S):VAL:HG21	1.71	0.71
1:B:203:ASP:HB2	1:B:215:ALA:HA	1.72	0.71
1:B:73(S):GLU:O	1:B:77(S):VAL:HG23	1.91	0.71
1:A:153:ASP:O	1:A:175:GLY:HA2	1.90	0.70
1:B:213:PHE:HB3	1:B:235:ILE:HD11	1.73	0.70
1:A:206:VAL:HG22	1:A:242:LYS:HD3	1.74	0.70
1:C:55:CYS:O	1:C:60:ARG:HD2	1.92	0.70
1:C:72:ASN:HB3	1:C:89:PHE:O	1.91	0.70
1:C:68(S):MET:O	1:C:72(S):CYS:HB3	1.92	0.69
1:C:116:THR:O	1:C:120:ALA:HB2	1.91	0.69
1:A:201:MET:HG2	1:A:202:GLY:H	1.57	0.69
1:C:286:VAL:HG22	1:C:295:ILE:HG12	1.72	0.69
1:A:27(S):PRO:HA	1:A:30(S):ILE:HD12	1.75	0.69
1:B:46:SER:HB2	1:B:108:GLU:HB3	1.74	0.68
1:B:239:ILE:O	1:B:243:ILE:HB	1.94	0.68
1:B:303:ILE:HA	1:B:309:PRO:HA	1.75	0.68
1:C:278:LYS:HE2	1:C:280:GLU:HB2	1.76	0.68
1:A:54:ALA:HA	1:A:57:LEU:CD2	2.24	0.68
1:A:6(P):VAL:HG11	1:A:99:LEU:CD2	2.24	0.67
1:B:8(P):ILE:HD12	1:B:174:PHE:HE1	1.59	0.67
1:B:26:THR:H	1:B:66:SER:HB2	1.58	0.67
1:A:24:VAL:HG12	1:A:31:PHE:CE1	2.31	0.66
1:C:282:TYR:HB2	1:C:298:PHE:CE2	2.31	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:194:LYS:HE3	1:B:194:LYS:N	2.11	0.66
1:B:17(S):ILE:HG23	1:B:30(S):ILE:HD11	1.77	0.66
1:C:139:VAL:HG12	1:C:143:TYR:HB2	1.77	0.66
1:A:73(S):GLU:O	1:A:77(S):VAL:HG23	1.94	0.65
1:A:18(S):LEU:HD12	1:A:93(S):LEU:HD13	1.78	0.65
1:C:186:HIS:HE1	1:C:322:HIS:CD2	2.14	0.65
1:A:317:PHE:O	1:A:320:PRO:HD2	1.97	0.65
1:C:232:PRO:O	1:C:236:ILE:HG12	1.96	0.65
1:A:157:SER:HB3	1:A:324:VAL:HG22	1.77	0.65
1:C:58:HIS:HE1	1:C:117:PHE:O	1.80	0.65
1:A:186:HIS:CE1	1:A:322:HIS:HD2	2.15	0.65
1:B:260:LEU:HA	1:B:263:MET:HG3	1.80	0.64
1:B:20:GLY:HA3	1:B:35:PHE:CE1	2.32	0.64
1:A:239:ILE:O	1:A:243:ILE:HB	1.98	0.63
1:B:95:THR:HA	1:B:99:LEU:O	1.97	0.63
1:A:232:PRO:O	1:A:236:ILE:HG12	1.99	0.63
1:C:212:GLY:O	1:C:214:CYS:N	2.31	0.63
1:C:26(S):GLN:O	1:C:30(S):ILE:HD13	1.99	0.63
1:C:21(S):LEU:HD12	1:C:83(S):LEU:HD21	1.81	0.62
1:A:213:PHE:HD1	1:A:77(S):VAL:HG11	1.63	0.62
1:A:21(P):VAL:O	1:A:25(P):LEU:HG	1.99	0.62
1:C:305:PRO:HB2	1:C:306:PRO:HD3	1.79	0.62
1:A:206:VAL:CG2	1:A:242:LYS:HD3	2.30	0.62
1:C:151:VAL:HG13	1:C:175:GLY:HA2	1.82	0.62
1:C:303:ILE:HD12	1:C:310:LEU:N	2.13	0.62
1:C:278:LYS:O	1:C:281:GLU:HB2	1.99	0.62
1:C:96:VAL:HG21	1:C:145:MET:HE2	1.81	0.62
1:A:303:ILE:HB	1:A:310:LEU:N	2.15	0.61
1:A:201:MET:HG2	1:A:202:GLY:N	2.15	0.61
1:B:304:PRO:HB2	1:B:307:ARG:HB2	1.81	0.61
1:C:205:LEU:HD23	1:C:210:SER:HA	1.83	0.61
1:B:303:ILE:HG13	1:B:309:PRO:CG	2.29	0.61
1:B:7(P):ARG:HG2	1:B:7(P):ARG:HH11	1.65	0.60
1:B:120:ALA:HB1	1:B:122:PHE:CE1	2.36	0.60
1:C:99:LEU:HG	1:C:150:LEU:HB3	1.84	0.60
1:B:141:VAL:O	1:B:145:MET:HG3	2.01	0.60
1:C:234:ALA:HB2	1:C:74(S):MET:HG2	1.83	0.60
1:A:229:LEU:HD12	1:A:298:PHE:CE1	2.36	0.59
1:C:82(S):GLN:HB3	1:C:92(S):ILE:HG23	1.83	0.59
1:B:5:GLY:O	1:B:7:ILE:HD12	2.01	0.59
1:C:96:VAL:HG21	1:C:145:MET:CE	2.30	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:102:LYS:H	1:C:148:GLN:HE22	1.48	0.59
1:B:266:ILE:HD11	1:B:268:PHE:CE1	2.38	0.59
1:C:286:VAL:CG2	1:C:295:ILE:HG12	2.32	0.59
1:C:305:PRO:HB2	1:C:306:PRO:CD	2.33	0.59
1:C:196:TYR:O	1:C:198:GLN:N	2.36	0.59
1:A:6(S):CYS:O	1:A:10(S):VAL:HG23	2.03	0.59
1:A:21(S):LEU:HD22	1:A:30(S):ILE:HD13	1.83	0.59
1:B:104(S):PRO:HG3	1:B:300:ALA:HB2	1.85	0.59
1:C:303:ILE:O	1:C:305:PRO:N	2.36	0.59
1:A:9(S):ILE:HD12	1:A:10(S):VAL:N	2.18	0.58
1:B:188:TYR:HB3	1:B:331:ARG:HE	1.68	0.58
1:B:21(S):LEU:HD13	1:B:30(S):ILE:HD13	1.84	0.58
1:C:303:ILE:O	1:C:303:ILE:HG22	2.03	0.58
1:C:232:PRO:HG3	1:C:303:ILE:CG1	2.33	0.58
1:B:1(S):VAL:HG13	1:B:248:SER:HA	1.85	0.58
1:C:199:PHE:HD1	1:C:200:ASP:O	1.87	0.58
1:B:241:GLU:HA	1:B:102(S):ARG:HH11	1.69	0.58
1:C:192:THR:O	1:C:193:GLN:HG2	2.02	0.58
1:C:148:GLN:HB2	1:C:150:LEU:CD2	2.33	0.57
1:A:103(S):LEU:HD13	1:A:104(S):PRO:HD2	1.85	0.57
1:B:284:LEU:O	1:B:294:CYS:HA	2.05	0.57
1:C:78:ILE:HD11	1:C:107:ILE:HD12	1.86	0.57
1:C:303:ILE:HG23	1:C:309:PRO:HA	1.86	0.57
1:A:12(P):LYS:HA	1:A:17:GLN:O	2.05	0.57
1:C:9(P):ALA:O	1:C:10(P):LEU:HD23	2.05	0.56
1:C:9(S):ILE:HA	1:C:13(S):TYR:HD1	1.68	0.56
1:C:278:LYS:O	1:C:281:GLU:N	2.38	0.56
1:B:186:HIS:HE1	1:B:322:HIS:CD2	2.12	0.56
1:B:278:LYS:HG3	1:B:281:GLU:HG3	1.86	0.56
1:C:230:ALA:HA	1:C:299:THR:O	2.04	0.56
1:C:21(S):LEU:HD23	1:C:30(S):ILE:HG12	1.86	0.56
1:C:282:TYR:HB2	1:C:298:PHE:HE2	1.70	0.56
1:A:36(S):LEU:O	1:A:69(S):CYS:HB2	2.06	0.56
1:B:7:ILE:HG12	1:B:312:ILE:HD11	1.88	0.56
1:C:232:PRO:HG3	1:C:303:ILE:HD11	1.87	0.56
1:C:18(S):LEU:O	1:C:22(S):LEU:HB2	2.06	0.56
1:B:8(P):ILE:HD11	1:B:96:VAL:CG1	2.36	0.56
1:B:8(P):ILE:HD11	1:B:96:VAL:HG12	1.86	0.56
1:A:303:ILE:CB	1:A:309:PRO:HA	2.29	0.56
1:B:303:ILE:O	1:B:305:PRO:N	2.39	0.55
1:A:6(P):VAL:HG11	1:A:99:LEU:HD22	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:140:PRO:O	1:B:143:TYR:HB2	2.06	0.55
1:B:17(S):ILE:HG23	1:B:30(S):ILE:CD1	2.36	0.55
1:C:71(S):ALA:HA	1:C:74(S):MET:HE2	1.87	0.55
1:A:284:LEU:O	1:A:294:CYS:HA	2.06	0.55
1:A:35:PHE:CE2	1:A:126:LEU:HD13	2.41	0.55
1:A:188:TYR:HB3	1:A:331:ARG:HD2	1.89	0.55
1:A:78(S):TRP:O	1:A:82(S):GLN:HG2	2.06	0.55
1:C:13(S):TYR:CG	1:C:36(S):LEU:HD11	2.41	0.55
1:B:76(S):VAL:O	1:B:80(S):GLN:HG3	2.06	0.55
1:B:74(S):MET:HG2	1:B:78(S):TRP:CZ2	2.42	0.55
1:C:242:LYS:HE2	1:C:95(S):TYR:OH	2.06	0.55
1:C:153:ASP:HB3	1:C:175:GLY:O	2.07	0.54
1:C:226:THR:HG23	1:C:314:GLY:HA3	1.90	0.54
1:C:76:ALA:HB1	1:C:107:ILE:HD13	1.88	0.54
1:C:239:ILE:O	1:C:243:ILE:HG12	2.07	0.54
1:A:22:ILE:HG22	1:A:96:VAL:HG12	1.89	0.54
1:A:58:HIS:HE1	1:A:117:PHE:O	1.89	0.54
1:B:35:PHE:CE2	1:B:126:LEU:HD13	2.42	0.54
1:C:31(S):CYS:O	1:C:34(S):VAL:HG12	2.08	0.54
1:A:88:TYR:HD1	1:A:89:PHE:O	1.91	0.54
1:A:83(S):LEU:HD13	1:A:92(S):ILE:HD11	1.90	0.54
1:C:287:GLY:O	1:C:292:ALA:N	2.41	0.54
1:C:17(S):ILE:HA	1:C:20(S):LEU:HD12	1.90	0.54
1:C:306:PRO:C	1:C:308:GLY:H	2.11	0.54
1:A:95:THR:HA	1:A:99:LEU:O	2.08	0.53
1:A:25:GLY:HA2	1:A:92:ASP:OD1	2.07	0.53
1:B:183:VAL:HB	1:B:336:LYS:O	2.07	0.53
1:A:305:PRO:O	1:A:307:ARG:N	2.41	0.53
1:A:83(S):LEU:HD13	1:A:92(S):ILE:CD1	2.38	0.53
1:B:186:HIS:CE1	1:B:322:HIS:CD2	2.89	0.53
1:C:230:ALA:HB1	1:C:301:MET:HB2	1.91	0.53
1:C:17(P):ARG:O	1:C:21(P):VAL:N	2.39	0.53
1:C:22:ILE:HG21	1:C:126:LEU:HD12	1.91	0.53
1:C:88(S):THR:O	1:C:91(S):LEU:HB2	2.09	0.53
1:C:88(S):THR:HA	1:C:92(S):ILE:HG13	1.90	0.53
1:B:140:PRO:HD2	1:B:143:TYR:CD1	2.44	0.52
1:B:8(P):ILE:HD12	1:B:174:PHE:CE1	2.42	0.52
1:B:46:SER:CB	1:B:108:GLU:HB3	2.39	0.52
1:C:186:HIS:HA	1:C:335:ALA:HB2	1.91	0.52
1:A:21(S):LEU:CD2	1:A:30(S):ILE:HD13	2.39	0.52
1:B:58:HIS:HE1	1:B:118:LEU:O	1.93	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:221:ILE:HB	1:A:312:ILE:HD13	1.91	0.52
1:B:205:LEU:HD22	1:B:205:LEU:N	2.24	0.52
1:C:10(P):LEU:HD21	1:C:172:ILE:HD11	1.92	0.52
1:A:12(S):GLN:HB3	1:A:13(S):TYR:CD1	2.44	0.52
1:A:31(S):CYS:HA	1:A:34(S):VAL:HG12	1.92	0.52
1:B:23:GLY:HA2	1:B:29:GLN:O	2.10	0.52
1:B:233:THR:OG1	1:B:300:ALA:HB1	2.09	0.52
1:C:12(P):LYS:HA	1:C:17:GLN:O	2.10	0.52
1:B:76:ALA:HB1	1:B:107:ILE:CD1	2.40	0.51
1:C:288:GLU:O	1:C:292:ALA:N	2.43	0.51
1:B:36:ASP:OD1	1:B:225:GLY:HA3	2.11	0.51
1:B:278:LYS:NZ	1:B:280:GLU:HB2	2.25	0.51
1:C:30(S):ILE:HG22	1:C:31(S):CYS:N	2.25	0.51
1:A:185:GLU:HB3	1:C:194:LYS:NZ	2.25	0.51
1:B:76:ALA:HB1	1:B:107:ILE:HD13	1.93	0.51
1:B:106:PHE:CD1	1:B:106:PHE:N	2.77	0.51
1:C:16(S):GLN:O	1:C:20(S):LEU:HG	2.11	0.51
1:C:54:ALA:HA	1:C:57:LEU:HD12	1.91	0.51
1:C:233:THR:O	1:C:237:THR:HG22	2.10	0.51
1:B:150:LEU:N	1:B:150:LEU:HD12	2.25	0.51
1:B:303:ILE:O	1:B:305:PRO:CD	2.59	0.51
1:B:263:MET:HB2	1:B:279:PRO:HG3	1.91	0.51
1:C:18(P):ASN:OD1	1:C:18(P):ASN:N	2.43	0.51
1:C:82(S):GLN:CB	1:C:92(S):ILE:HG23	2.41	0.51
1:B:115:ILE:O	1:B:119:VAL:HG22	2.11	0.51
1:A:236:ILE:HD12	1:A:298:PHE:HB3	1.93	0.51
1:A:213:PHE:CD1	1:A:77(S):VAL:HG11	2.45	0.50
1:B:17(P):ARG:HH22	1:B:287:GLY:HA3	1.74	0.50
1:B:16(S):GLN:OE1	1:B:34(S):VAL:HG13	2.11	0.50
1:A:18(S):LEU:HD22	1:A:22(S):LEU:HD11	1.93	0.50
1:A:303:ILE:HB	1:A:310:LEU:H	1.75	0.50
1:B:186:HIS:CE1	1:B:324:VAL:HG23	2.47	0.50
1:A:205:LEU:N	1:A:205:LEU:HD22	2.27	0.50
1:B:240:ASN:O	1:B:102(S):ARG:NH1	2.45	0.50
1:C:186:HIS:HB2	1:C:188:TYR:CE2	2.47	0.50
1:A:12(P):LYS:HD2	1:A:18:TYR:OH	2.12	0.50
1:B:151:VAL:HG13	1:B:175:GLY:HA2	1.94	0.50
1:B:26:THR:N	1:B:66:SER:HB2	2.27	0.49
1:B:87:GLY:HA3	1:B:108:GLU:O	2.13	0.49
1:B:213:PHE:CZ	1:B:303:ILE:HD11	2.47	0.49
1:C:12:ASN:OD1	1:C:14:MET:HB2	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:279:PRO:HA	1:C:282:TYR:CZ	2.47	0.49
1:A:3:GLU:O	1:A:5:GLY:N	2.45	0.49
1:B:153:ASP:O	1:B:175:GLY:HA2	2.13	0.49
1:B:89:PHE:HA	1:B:106:PHE:O	2.11	0.49
1:B:156:PHE:HA	1:B:173:ILE:O	2.13	0.49
1:C:178:ASP:O	1:C:181:HIS:HB2	2.13	0.49
1:C:275:PHE:HD2	1:C:321:TYR:CE1	2.30	0.49
1:B:305:PRO:HB2	1:B:306:PRO:HD3	1.94	0.49
1:C:199:PHE:HB3	1:C:332:ILE:HD12	1.95	0.49
1:A:303:ILE:HG13	1:A:309:PRO:CB	2.43	0.49
1:C:47:ALA:HB2	1:C:62:LYS:HG2	1.93	0.49
1:C:186:HIS:CE1	1:C:322:HIS:CD2	3.00	0.49
1:A:15(P):ILE:O	1:A:286:VAL:HG12	2.12	0.49
1:A:89:PHE:HA	1:A:106:PHE:O	2.13	0.49
1:C:303:ILE:HG23	1:C:309:PRO:CA	2.42	0.48
1:C:13(S):TYR:O	1:C:17(S):ILE:HG13	2.13	0.48
1:A:305:PRO:C	1:A:307:ARG:H	2.16	0.48
1:A:82(S):GLN:O	1:A:87(S):LYS:HB3	2.13	0.48
1:C:78:ILE:HD12	1:C:85:ILE:HD11	1.96	0.48
1:A:223:ASP:O	1:A:314:GLY:HA2	2.13	0.48
1:B:186:HIS:HA	1:B:334:PHE:O	2.14	0.48
1:C:122:PHE:CE2	1:C:125:ILE:HD11	2.49	0.48
1:C:177:MET:SD	1:C:324:VAL:HG21	2.53	0.48
1:C:303:ILE:CG2	1:C:309:PRO:HA	2.44	0.48
1:A:10(S):VAL:O	1:A:14(S):GLY:HA3	2.14	0.48
1:C:203:ASP:HB2	1:C:215:ALA:HA	1.96	0.48
1:A:43:TRP:HA	1:A:107:ILE:O	2.14	0.48
1:B:191:VAL:HA	1:B:198:GLN:O	2.14	0.48
1:C:7:ILE:O	1:C:10:LEU:HB2	2.14	0.48
1:B:303:ILE:CD1	1:B:303:ILE:N	2.75	0.47
1:B:266:ILE:HG12	1:B:298:PHE:HZ	1.78	0.47
1:C:101:VAL:CG1	1:C:144:LYS:HB2	2.44	0.47
1:C:315:ASP:HA	1:C:318:MET:HB2	1.95	0.47
1:A:198:GLN:HB2	1:A:220:ALA:O	2.13	0.47
1:C:99(S):LEU:HA	1:C:102(S):ARG:HG2	1.96	0.47
1:A:6(P):VAL:HG11	1:A:99:LEU:HD21	1.95	0.47
1:A:17(P):ARG:HH21	1:A:288:GLU:H	1.62	0.47
1:C:66(S):ASP:CB	1:C:67(S):PRO:HD3	2.45	0.47
1:B:263:MET:CE	1:B:283:ILE:HG13	2.45	0.47
1:A:12(P):LYS:HB2	1:A:18:TYR:CE1	2.49	0.47
1:A:153:ASP:HB2	1:A:155:VAL:HG12	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:291:ALA:HB3	1:B:65:ALA:HA	1.97	0.47
1:B:266:ILE:HG12	1:B:298:PHE:CZ	2.50	0.47
1:C:96:VAL:HG23	1:C:96:VAL:O	2.15	0.47
1:C:227:SER:O	1:C:316:VAL:HG23	2.15	0.47
1:A:10(P):LEU:HD12	1:A:160:LEU:CD2	2.45	0.47
1:B:21(P):VAL:O	1:B:25(P):LEU:HD22	2.14	0.47
1:C:22(P):ALA:O	1:C:115:ILE:HG12	2.15	0.47
1:C:13(S):TYR:O	1:C:17(S):ILE:N	2.44	0.47
1:B:90:SER:O	1:B:105:GLU:HA	2.15	0.47
1:A:186:HIS:CE1	1:A:322:HIS:CD2	3.01	0.47
1:B:6(P):VAL:HG13	1:B:99:LEU:HD23	1.96	0.47
1:B:45:PRO:HG2	1:B:59:SER:O	2.15	0.47
1:B:263:MET:HE2	1:B:283:ILE:HG13	1.96	0.46
1:B:11:LYS:HB3	1:B:11:LYS:NZ	2.30	0.46
1:B:236:ILE:HD12	1:B:298:PHE:HB3	1.95	0.46
1:C:17(S):ILE:HA	1:C:20(S):LEU:CD1	2.45	0.46
1:C:279:PRO:HG2	1:C:280:GLU:OE1	2.15	0.46
1:A:24:VAL:HG12	1:A:31:PHE:HE1	1.76	0.46
1:B:205:LEU:HD22	1:B:205:LEU:H	1.78	0.46
1:B:17(P):ARG:NH2	1:B:287:GLY:HA3	2.30	0.46
1:B:69:TYR:CG	1:B:70:LYS:N	2.83	0.46
1:B:199:PHE:HD1	1:B:200:ASP:O	1.99	0.46
1:C:65(S):ALA:O	1:C:69(S):CYS:HB2	2.16	0.46
1:C:266:ILE:HG23	1:C:282:TYR:CE2	2.50	0.46
1:A:179:PRO:HA	1:A:182:TYR:CZ	2.50	0.46
1:A:97(S):ASN:O	1:A:100(S):CYS:HB2	2.16	0.46
1:B:140:PRO:HB2	1:B:143:TYR:HD1	1.81	0.46
1:B:197:TRP:CD2	1:B:325:PHE:HD2	2.34	0.46
1:B:203:ASP:CG	1:B:210:SER:HG	2.18	0.46
1:C:244:GLY:HA2	1:C:102(S):ARG:HH22	1.80	0.46
1:A:273:LYS:HB3	1:A:273:LYS:HE2	1.58	0.46
1:B:96:VAL:O	1:B:98:ASP:N	2.47	0.46
1:B:187:THR:O	1:B:333:GLY:HA2	2.16	0.46
1:C:279:PRO:C	1:C:281:GLU:H	2.20	0.46
1:C:7(P):ARG:NH1	1:C:171:GLU:OE2	2.49	0.46
1:C:7(P):ARG:HA	1:C:172:ILE:O	2.15	0.46
1:C:3(S):SER:HB2	1:C:103(S):LEU:HG	1.97	0.46
1:C:36(S):LEU:O	1:C:69(S):CYS:HA	2.15	0.46
1:C:17(P):ARG:O	1:C:20(P):ARG:N	2.49	0.45
1:C:35:PHE:CE2	1:C:126:LEU:HD13	2.52	0.45
1:B:304:PRO:HA	1:B:305:PRO:HD2	1.70	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:19(P):SER:HA	1:C:23(P):THR:HG23	1.97	0.45
1:C:243:ILE:HG22	1:C:263:MET:HG2	1.99	0.45
1:B:93:SER:HB3	1:B:100:VAL:HG12	1.98	0.45
1:C:242:LYS:HA	1:C:242:LYS:HD3	1.73	0.45
1:C:243:ILE:HG22	1:C:264:PRO:HD2	1.99	0.45
1:A:23(P):THR:HA	1:A:14:MET:HE3	1.99	0.45
1:B:2:GLU:N	1:B:302:ASP:O	2.49	0.45
1:B:74:LYS:O	1:B:89:PHE:HD2	2.00	0.45
1:B:322:HIS:H	1:B:337:ALA:HB2	1.81	0.45
1:C:6(P):VAL:HG21	1:C:99:LEU:HD13	1.99	0.45
1:C:45:PRO:HG3	1:C:112:GLU:OE2	2.16	0.45
1:C:218:CYS:SG	1:C:309:PRO:HB2	2.56	0.45
1:A:303:ILE:O	1:A:304:PRO:C	2.55	0.45
1:B:112:GLU:N	1:B:113:PRO:HD2	2.32	0.45
1:C:228:LEU:HD23	1:C:299:THR:OG1	2.17	0.45
1:C:232:PRO:HG3	1:C:303:ILE:CD1	2.46	0.45
1:C:27(S):PRO:HA	1:C:30(S):ILE:HB	1.99	0.45
1:A:54:ALA:HA	1:A:57:LEU:HD23	1.99	0.45
1:A:124:GLY:O	1:A:125:ILE:HD13	2.16	0.45
1:B:65(S):ALA:O	1:B:69(S):CYS:N	2.47	0.45
1:B:278:LYS:HZ1	1:B:280:GLU:HB2	1.81	0.45
1:A:146:ILE:HA	1:A:151:VAL:HG22	1.97	0.45
1:C:327:TYR:O	1:C:330:LEU:HD12	2.17	0.45
1:C:99:LEU:HD21	1:C:151:VAL:HG23	1.98	0.45
1:C:76(S):VAL:O	1:C:80(S):GLN:HB3	2.17	0.45
1:B:228:LEU:HD23	1:B:299:THR:HG23	1.98	0.45
1:B:237:THR:HG21	1:B:78(S):TRP:CZ2	2.52	0.45
1:C:101:VAL:HG11	1:C:144:LYS:HB2	1.99	0.44
1:C:2(S):VAL:O	1:C:2(S):VAL:HG13	2.17	0.44
1:C:329:LYS:O	1:C:331:ARG:CZ	2.65	0.44
1:A:186:HIS:HE1	1:A:322:HIS:CD2	2.22	0.44
1:A:9(S):ILE:HD13	1:A:75(S):ALA:HB2	1.98	0.44
1:A:103(S):LEU:CD1	1:A:104(S):PRO:HD2	2.46	0.44
1:A:329:LYS:O	1:A:330:LEU:C	2.54	0.44
1:B:236:ILE:CD1	1:B:298:PHE:HB3	2.47	0.44
1:C:84:SER:O	1:C:113:PRO:HD2	2.17	0.44
1:C:241:GLU:HB2	1:C:102(S):ARG:HG3	1.99	0.44
1:A:10(P):LEU:HD12	1:A:160:LEU:HD21	1.99	0.44
1:B:142:TRP:CE3	1:B:174:PHE:HD2	2.34	0.44
1:B:322:HIS:N	1:B:337:ALA:HB2	2.32	0.44
1:B:241:GLU:HA	1:B:102(S):ARG:HD3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:17(P):ARG:NH2	1:A:287:GLY:HA3	2.33	0.44
1:B:332:ILE:N	1:B:332:ILE:HD12	2.33	0.44
1:C:141:VAL:O	1:C:145:MET:HG3	2.18	0.44
1:B:26:THR:HA	1:B:27:PRO:C	2.38	0.44
1:A:317:PHE:HE2	1:A:334:PHE:CD2	2.36	0.44
1:B:136:GLY:O	1:B:137:LYS:HB2	2.17	0.44
1:B:142:TRP:HE3	1:B:174:PHE:HD2	1.66	0.44
1:C:206:VAL:HG13	1:C:206:VAL:O	2.18	0.44
1:C:3(S):SER:HB3	1:C:6(S):CYS:HB3	1.99	0.44
1:A:22(P):ALA:HB1	1:A:115:ILE:HD11	2.00	0.43
1:A:22:ILE:HG21	1:A:126:LEU:CD1	2.46	0.43
1:B:99:LEU:HD12	1:B:150:LEU:HB3	2.00	0.43
1:C:23:GLY:HA2	1:C:29:GLN:O	2.18	0.43
1:C:317:PHE:C	1:C:319:GLY:H	2.21	0.43
1:A:131:LYS:O	1:A:134:SER:HB3	2.19	0.43
1:B:66(S):ASP:CB	1:B:67(S):PRO:HD3	2.48	0.43
1:C:8(P):ILE:HG23	1:C:172:ILE:HB	2.00	0.43
1:C:199:PHE:CE1	1:C:220:ALA:HB3	2.53	0.43
1:B:142:TRP:CZ3	1:B:151:VAL:HG21	2.53	0.43
1:C:6(P):VAL:HG11	1:C:98:ASP:HB2	2.00	0.43
1:C:130:PHE:HD1	1:C:195:GLY:H	1.62	0.43
1:C:36:ASP:O	1:C:128:LEU:N	2.47	0.43
1:A:156:PHE:CE2	1:A:158:PHE:HE1	2.37	0.43
1:B:263:MET:HE1	1:B:283:ILE:HD11	1.99	0.43
1:A:304:PRO:HD2	1:A:310:LEU:HD23	2.01	0.43
1:C:303:ILE:CG1	1:C:309:PRO:HA	2.47	0.43
1:B:133:ILE:HG12	1:B:195:GLY:O	2.19	0.43
1:B:16(S):GLN:O	1:B:20(S):LEU:HG	2.18	0.43
1:A:7:ILE:O	1:A:10:LEU:HB2	2.19	0.43
1:A:303:ILE:O	1:A:303:ILE:HG12	2.19	0.43
1:B:54:ALA:CB	1:B:118:LEU:HD11	2.32	0.43
1:B:303:ILE:HG13	1:B:309:PRO:CB	2.49	0.43
1:A:221:ILE:HB	1:A:312:ILE:CD1	2.49	0.43
1:C:18(S):LEU:O	1:C:22(S):LEU:N	2.49	0.43
1:A:12(P):LYS:HE2	1:A:14(P):PRO:HB3	2.00	0.42
1:A:303:ILE:HB	1:A:309:PRO:C	2.39	0.42
1:A:303:ILE:HG13	1:A:309:PRO:HB3	2.00	0.42
1:B:38:GLY:HA3	1:B:223:ASP:OD1	2.19	0.42
1:B:219:ALA:O	1:B:310:LEU:HA	2.19	0.42
1:C:229:LEU:HD23	1:C:314:GLY:H	1.83	0.42
1:A:198:GLN:HA	1:A:220:ALA:O	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:233:THR:HG23	1:A:104(S):PRO:HG3	2.00	0.42
1:B:69(S):CYS:O	1:B:72(S):CYS:N	2.52	0.42
1:A:34:ILE:HB	1:A:125:ILE:CD1	2.50	0.42
1:A:91:GLU:HG2	1:A:105:GLU:HA	2.02	0.42
1:A:201:MET:HG3	1:A:270:ILE:HG12	2.01	0.42
1:C:19(S):ASP:HA	1:C:22(S):LEU:HB2	2.00	0.42
1:A:22(P):ALA:HB1	1:A:115:ILE:CD1	2.49	0.42
1:A:255:VAL:CG2	1:A:283:ILE:HD12	2.42	0.42
1:C:27:PRO:HA	1:C:28:PRO:HD3	1.88	0.42
1:C:3(S):SER:HB3	1:C:6(S):CYS:CB	2.50	0.42
1:A:187:THR:O	1:A:333:GLY:HA2	2.19	0.42
1:B:11:LYS:HE2	1:B:223:ASP:OD2	2.19	0.42
1:B:248:SER:CB	1:B:249:PRO:HD2	2.49	0.42
1:C:61:TYR:CZ	1:C:63:ALA:HA	2.55	0.42
1:C:91:GLU:HA	1:C:104:GLN:O	2.20	0.42
1:B:106:PHE:N	1:B:106:PHE:HD1	2.17	0.42
1:C:6(P):VAL:CG2	1:C:99:LEU:HD13	2.50	0.42
1:A:6(S):CYS:O	1:A:9(S):ILE:HG13	2.18	0.42
1:B:148:GLN:HB2	1:B:150:LEU:HD13	2.01	0.42
1:C:179:PRO:HA	1:C:182:TYR:CE1	2.54	0.42
1:C:282:TYR:CB	1:C:298:PHE:HE2	2.32	0.42
1:A:63:ALA:HB1	1:A:69:TYR:CD1	2.54	0.42
1:A:96:VAL:O	1:A:97:GLY:C	2.58	0.42
1:A:163:HIS:ND1	1:A:163:HIS:N	2.67	0.42
1:A:13(S):TYR:HD2	1:A:34(S):VAL:HG22	1.85	0.42
1:A:199:PHE:CD2	1:A:332:ILE:HD12	2.55	0.41
1:A:301:MET:O	1:A:303:ILE:N	2.49	0.41
1:B:172:ILE:HG22	1:B:173:ILE:N	2.35	0.41
1:C:42:LEU:HD13	1:C:106:PHE:HB3	2.02	0.41
1:A:18(S):LEU:HD22	1:A:22(S):LEU:CD1	2.50	0.41
1:A:283:ILE:HD13	1:A:296:SER:HA	2.03	0.41
1:C:22:ILE:HG22	1:C:96:VAL:HG12	2.02	0.41
1:A:145:MET:HA	1:A:150:LEU:HD22	2.02	0.41
1:A:219:ALA:HB3	1:A:310:LEU:HB2	2.02	0.41
1:B:8(P):ILE:O	1:B:171:GLU:HA	2.20	0.41
1:B:148:GLN:HB2	1:B:150:LEU:CD1	2.50	0.41
1:B:4:GLU:O	1:B:304:PRO:HB3	2.19	0.41
1:C:15(S):GLN:N	1:C:93(S):LEU:HD21	2.34	0.41
1:A:23(P):THR:CA	1:A:14:MET:HE3	2.51	0.41
1:A:230:ALA:O	1:A:311:TRP:HA	2.20	0.41
1:B:31:PHE:CZ	1:B:61:TYR:HB2	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:57:LEU:HD12	1:B:57:LEU:HA	1.83	0.41
1:C:85:ILE:O	1:C:85:ILE:HG13	2.21	0.41
1:C:117:PHE:HA	1:C:120:ALA:HB2	2.02	0.41
1:A:26(S):GLN:HA	1:A:27(S):PRO:HD3	1.83	0.41
1:B:10(S):VAL:O	1:B:14(S):GLY:HA3	2.20	0.41
1:B:32(S):SER:HA	1:B:38(S):THR:N	2.36	0.41
1:B:85(S):GLN:O	1:B:85(S):GLN:HG2	2.19	0.41
1:C:16(P):ASP:O	1:C:20(P):ARG:CB	2.69	0.41
1:A:25:GLY:HA2	1:A:92:ASP:CG	2.41	0.41
1:A:209:LYS:HA	1:A:209:LYS:HD3	1.91	0.41
1:A:211:THR:HG21	1:A:235:ILE:HG23	2.02	0.41
1:C:15(P):ILE:HG23	1:C:19(P):SER:O	2.21	0.41
1:C:286:VAL:HG21	1:C:295:ILE:HG23	2.02	0.41
1:A:8:VAL:C	1:A:10:LEU:H	2.24	0.41
1:A:185:GLU:HB3	1:C:194:LYS:HZ2	1.86	0.41
1:B:229:LEU:O	1:B:298:PHE:HA	2.21	0.41
1:B:82(S):GLN:OE1	1:B:87(S):LYS:HE3	2.21	0.41
1:C:1(S):VAL:O	1:C:103(S):LEU:HB2	2.20	0.41
1:C:102(S):ARG:HE	1:C:102(S):ARG:HA	1.86	0.41
1:C:260:LEU:HD11	1:C:283:ILE:HG21	2.02	0.41
1:C:282:TYR:O	1:C:297:GLY:HA3	2.20	0.41
1:C:237:THR:HG23	1:C:238:GLU:N	2.35	0.41
1:A:8:VAL:O	1:A:11:LYS:HG3	2.21	0.40
1:A:65:ALA:HA	1:B:290:ALA:HB3	2.02	0.40
1:A:95(S):TYR:CE1	1:A:99(S):LEU:HD11	2.56	0.40
1:C:278:LYS:HG2	1:C:281:GLU:CD	2.40	0.40
1:A:141:VAL:O	1:A:145:MET:HG2	2.20	0.40
1:A:21(S):LEU:HD22	1:A:30(S):ILE:CD1	2.50	0.40
1:C:242:LYS:HB3	1:C:264:PRO:HG3	2.02	0.40
1:C:275:PHE:CD2	1:C:321:TYR:CE1	3.09	0.40
1:A:8(P):ILE:HB	1:A:172:ILE:HB	2.03	0.40
1:A:54:ALA:HA	1:A:57:LEU:HD22	2.01	0.40
1:A:83:GLY:HA2	1:A:114:GLY:HA3	2.03	0.40
1:B:8:VAL:HA	1:B:11:LYS:HG3	2.02	0.40
1:B:258:GLY:H	1:B:260:LEU:HD13	1.86	0.40
1:C:10(P):LEU:HD21	1:C:172:ILE:CD1	2.52	0.40
1:C:101:VAL:HG21	1:C:141:VAL:HG13	2.03	0.40
1:A:5:GLY:HA2	1:A:307:ARG:HG3	2.03	0.40
1:A:102:LYS:O	1:A:104:GLN:N	2.54	0.40
1:A:9(S):ILE:HD13	1:A:75(S):ALA:CB	2.51	0.40
1:C:25(P):LEU:HD12	1:C:25(P):LEU:HA	1.96	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:96:VAL:HG21	1:C:145:MET:HE1	2.03	0.40
1:C:156:PHE:HA	1:C:173:ILE:O	2.21	0.40
1:C:13(S):TYR:O	1:C:16(S):GLN:HB3	2.21	0.40
1:A:18(P):ASN:OD1	1:B:60:ARG:NH1	2.55	0.40
1:B:47:ALA:HB2	1:B:61:TYR:O	2.22	0.40
1:B:203:ASP:OD1	1:B:205:LEU:HD13	2.21	0.40
1:B:204:VAL:HA	1:B:267:GLU:O	2.21	0.40
1:B:230:ALA:O	1:B:311:TRP:HA	2.21	0.40
1:C:72:ASN:HB3	1:C:89:PHE:C	2.41	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	425/478 (89%)	375 (88%)	34 (8%)	16 (4%)	2	1
1	B	425/478 (89%)	373 (88%)	39 (9%)	13 (3%)	3	2
1	C	421/478 (88%)	355 (84%)	47 (11%)	19 (4%)	2	1
All	All	1271/1434 (89%)	1103 (87%)	120 (9%)	48 (4%)	2	1

All (48) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	4	GLU
1	A	246	ALA
1	A	289	GLY
1	A	306	PRO
1	B	113	PRO
1	B	249	PRO
1	B	305	PRO
1	C	161	ASN

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Mol	Chain	Res	Type
1	C	213	PHE
1	C	24(S)	GLU
1	C	30(S)	ILE
1	C	87(S)	LYS
1	A	3	GLU
1	A	73	GLY
1	A	247	GLY
1	A	250	MET
1	A	292	ALA
1	B	6	ASP
1	B	315	ASP
1	C	26(P)	SER
1	C	197	TRP
1	C	14(S)	GLY
1	C	318	MET
1	A	303	ILE
1	A	304	PRO
1	B	72	ASN
1	B	251	GLY
1	C	137	LYS
1	C	249	PRO
1	C	304	PRO
1	C	305	PRO
1	C	308	GLY
1	A	103	ASP
1	A	330	LEU
1	B	212	GLY
1	B	303	ILE
1	C	4	GLU
1	C	6	ASP
1	C	103	ASP
1	C	303	ILE
1	A	92	ASP
1	B	103	ASP
1	B	89(S)	GLN
1	B	253	SER
1	C	88(S)	THR
1	A	195	GLY
1	B	304	PRO
1	A	146	ILE

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	303/383 (79%)	280 (92%)	23 (8%)	11 14
1	B	299/383 (78%)	261 (87%)	38 (13%)	3 4
1	C	297/383 (78%)	265 (89%)	32 (11%)	5 6
All	All	899/1149 (78%)	806 (90%)	93 (10%)	6 7

All (93) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	57	LEU
1	A	98	ASP
1	A	105	GLU
1	A	128	LEU
1	A	141	VAL
1	A	144	LYS
1	A	150	LEU
1	A	163	HIS
1	A	185	GLU
1	A	205	LEU
1	A	206	VAL
1	A	224	SER
1	A	243	ILE
1	A	18(S)	LEU
1	A	83(S)	LEU
1	A	93(S)	LEU
1	A	266	ILE
1	A	282	TYR
1	A	303	ILE
1	A	304	PRO
1	A	307	ARG
1	A	310	LEU
1	A	329	LYS
1	B	7(P)	ARG
1	B	11(P)	LYS
1	B	25(P)	LEU

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Mol	Chain	Res	Type
1	B	42	LEU
1	B	50	TYR
1	B	66	SER
1	B	82	THR
1	B	91	GLU
1	B	103	ASP
1	B	105	GLU
1	B	106	PHE
1	B	113	PRO
1	B	128	LEU
1	B	141	VAL
1	B	152	SER
1	B	155	VAL
1	B	160	LEU
1	B	161	ASN
1	B	193	GLN
1	B	194	LYS
1	B	200	ASP
1	B	205	LEU
1	B	218	CYS
1	B	227	SER
1	B	232	PRO
1	B	243	ILE
1	B	18(S)	LEU
1	B	21(S)	LEU
1	B	74(S)	MET
1	B	83(S)	LEU
1	B	91(S)	LEU
1	B	255	VAL
1	B	262	SER
1	B	266	ILE
1	B	278	LYS
1	B	303	ILE
1	B	304	PRO
1	B	310	LEU
1	C	8(P)	ILE
1	C	18(P)	ASN
1	C	10	LEU
1	C	21	GLU
1	C	42	LEU
1	C	95	THR
1	C	98	ASP

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Mol	Chain	Res	Type
1	C	103	ASP
1	C	128	LEU
1	C	144	LYS
1	C	150	LEU
1	C	163	HIS
1	C	179	PRO
1	C	185	GLU
1	C	200	ASP
1	C	240	ASN
1	C	15(S)	GLN
1	C	21(S)	LEU
1	C	26(S)	GLN
1	C	31(S)	CYS
1	C	34(S)	VAL
1	C	72(S)	CYS
1	C	80(S)	GLN
1	C	83(S)	LEU
1	C	102(S)	ARG
1	C	266	ILE
1	C	284	LEU
1	C	286	VAL
1	C	302	ASP
1	C	304	PRO
1	C	310	LEU
1	C	336	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (19) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	58	HIS
1	A	79	GLN
1	A	148	GLN
1	A	186	HIS
1	A	322	HIS
1	B	148	GLN
1	B	186	HIS
1	B	15(S)	GLN
1	B	33(S)	GLN
1	B	322	HIS
1	C	58	HIS
1	C	148	GLN
1	C	186	HIS

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Mol	Chain	Res	Type
1	C	193	GLN
1	C	240	ASN
1	C	15(S)	GLN
1	C	33(S)	GLN
1	C	80(S)	GLN
1	C	322	HIS

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 oligosaccharides in this entry.

5.6 Ligand geometry

There are no ligands in this entry.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

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	433/478 (90%)	-0.15	12 (2%)	55	56	8, 24, 55, 91	0
1	B	433/478 (90%)	0.02	16 (3%)	45	47	7, 26, 62, 98	0
1	C	431/478 (90%)	0.12	27 (6%)	27	29	8, 26, 66, 86	0
All	All	1297/1434 (90%)	-0.01	55 (4%)	41	42	7, 26, 62, 98	0

All (55) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	303	ILE	6.3
1	B	113	PRO	5.3
1	C	22(P)	ALA	5.3
1	C	290	ALA	4.5
1	A	38(S)	THR	4.4
1	A	164	VAL	4.4
1	B	305	PRO	4.3
1	C	65(S)	ALA	4.3
1	B	303	ILE	4.3
1	C	27(P)	GLY	4.2
1	B	252	GLU	4.0
1	A	304	PRO	3.9
1	C	24(P)	GLY	3.9
1	B	251	GLY	3.8
1	C	38(S)	THR	3.7
1	A	303	ILE	3.5
1	A	306	PRO	3.3
1	C	23(P)	THR	3.2
1	B	164	VAL	3.1
1	A	163	HIS	3.0
1	B	162	ARG	3.0
1	A	287	GLY	2.9
1	C	36(S)	LEU	2.9

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Mol	Chain	Res	Type	RSRZ
1	C	14(S)	GLY	2.9
1	C	251	GLY	2.8
1	B	249	PRO	2.8
1	C	21(P)	VAL	2.8
1	C	37(S)	CYS	2.8
1	C	92(S)	ILE	2.7
1	B	50	TYR	2.7
1	C	25(P)	LEU	2.6
1	C	4(S)	GLN	2.6
1	A	251	GLY	2.6
1	A	65(S)	ALA	2.5
1	A	146	ILE	2.4
1	B	24(P)	GLY	2.4
1	B	290	ALA	2.4
1	C	66(S)	ASP	2.4
1	C	19(S)	ASP	2.3
1	C	163	HIS	2.3
1	C	91(S)	LEU	2.2
1	B	291	ALA	2.2
1	C	16(P)	ASP	2.2
1	C	32(S)	SER	2.2
1	B	146	ILE	2.2
1	A	27(P)	GLY	2.2
1	B	304	PRO	2.2
1	C	18(P)	ASN	2.1
1	C	286	VAL	2.1
1	A	32(S)	SER	2.1
1	B	32(S)	SER	2.1
1	C	34(S)	VAL	2.0
1	C	20(S)	LEU	2.0
1	B	288	GLU	2.0
1	C	85(S)	GLN	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

There are no ligands in this entry.

6.5 Other polymers

There are no such residues in this entry.