Full wwPDB X-ray Structure Validation Report ⓘ

Jan 27, 2024 – 01:32 PM EST

PDB ID	:	1BI8
Title	:	MECHANISM OF G1 CYCLIN DEPENDENT KINASE INHIBITION FROM THE STRUCTURES CDK6-P19INK4D INHIBITOR COMPLEX
Authors	:	Russo, A.A.; Tong, L.; Lee, J.O.; Jeffrey, P.D.; Pavletich, N.P.
Deposited on	:	1998-06-22
Resolution	:	2.80 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
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:

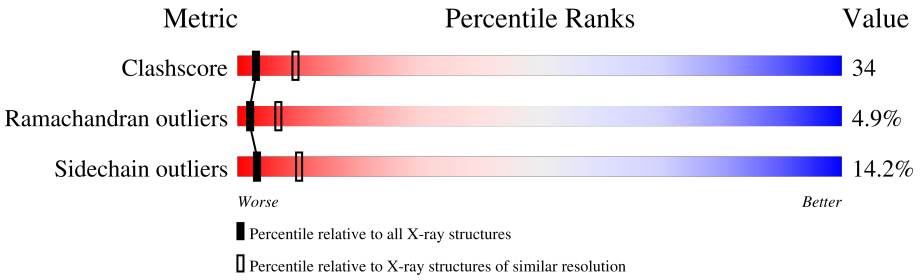
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	NOT EXECUTED
EDS	:	NOT EXECUTED
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.80 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	141614	3569 (2.80-2.80)
Ramachandran outliers	138981	3498 (2.80-2.80)
Sidechain outliers	138945	3500 (2.80-2.80)

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%

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	A	326	32% 39% 9% • 19%
1	C	326	32% 39% 9% • 19%
2	B	166	40% 48% • • 7%
2	D	166	40% 48% • • 7%

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 6538 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 CYCLIN-DEPENDENT KINASE 6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	264	Total	C	N	O	S	0	0	0
			2113	1360	365	380	8			
1	C	264	Total	C	N	O	S	0	0	0
			2113	1360	365	380	8			

- Molecule 2 is a protein called CYCLIN-DEPENDENT KINASE INHIBITOR.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	155	Total	C	N	O	S	0	0	0
			1156	715	219	220	2			
2	D	155	Total	C	N	O	S	0	0	0
			1156	715	219	220	2			

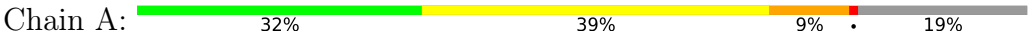
3 Residue-property plots (i)

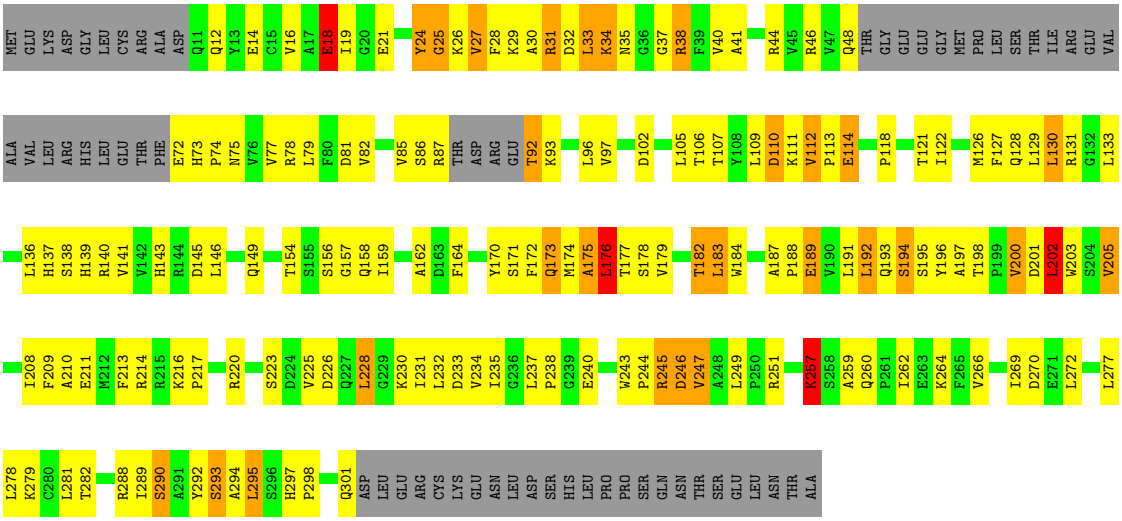
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded 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. 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.

Note EDS was not executed.

• Molecule 1: CYCLIN-DEPENDENT KINASE 6

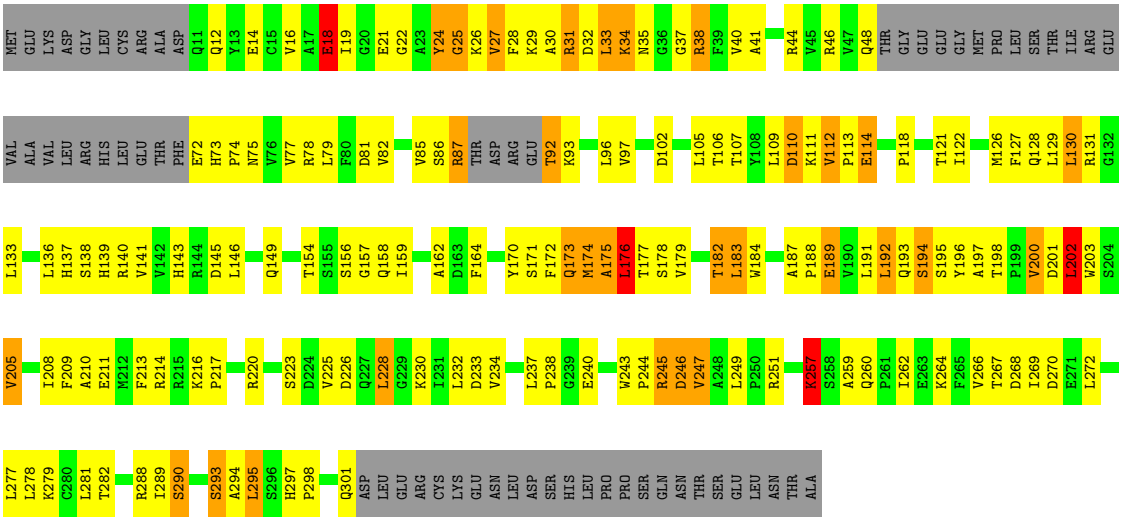
Chain A:





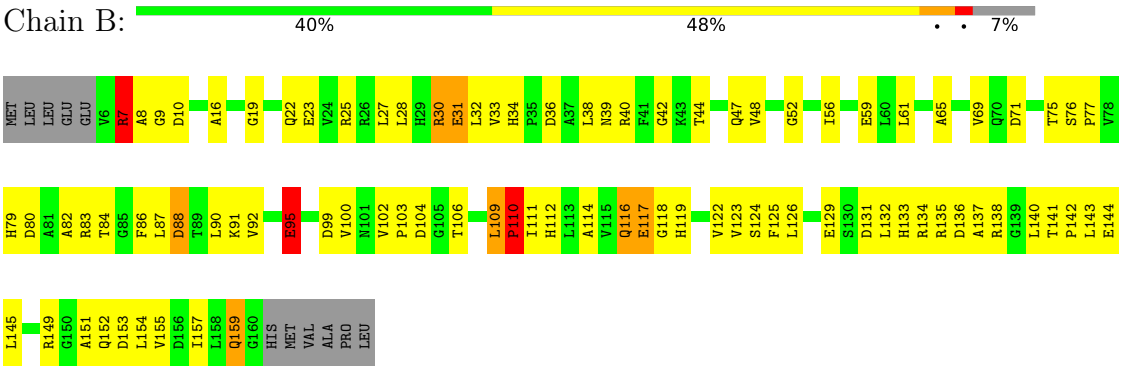
• Molecule 1: CYCLIN-DEPENDENT KINASE 6

Chain C:



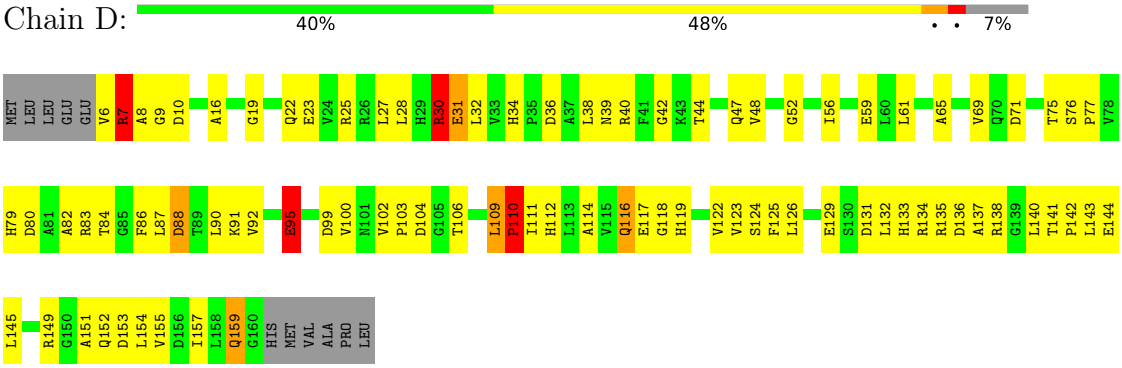
• Molecule 2: CYCLIN-DEPENDENT KINASE INHIBITOR

Chain B:



• Molecule 2: CYCLIN-DEPENDENT KINASE INHIBITOR

Chain D:



4 Data and refinement statistics (i)

Xtriage (Phenix) and EDS were not executed - this section is therefore incomplete.

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	96.86Å 116.06Å 131.49Å 90.00° 110.63° 90.00°	Depositor
Resolution (Å)	10.00 – 2.80	Depositor
% Data completeness (in resolution range)	85.0 (10.00-2.80)	Depositor
R_{merge}	(Not available)	Depositor
R_{sym}	0.06	Depositor
Refinement program	X-PLOR 3.8	Depositor
R, R_{free}	0.255 , 0.308	Depositor
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	6538	wwPDB-VP
Average B, all atoms (Å^2)	54.0	wwPDB-VP

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	0.87	1/2160 (0.0%)	1.05	5/2924 (0.2%)
1	C	0.87	1/2160 (0.0%)	1.05	5/2924 (0.2%)
2	B	0.68	0/1172	0.88	0/1590
2	D	0.68	0/1172	0.88	0/1590
All	All	0.81	2/6664 (0.0%)	0.99	10/9028 (0.1%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	18	GLU	CG-CD	6.23	1.61	1.51
1	C	18	GLU	CG-CD	6.22	1.61	1.51

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	202	LEU	CA-CB-CG	-8.78	95.10	115.30
1	A	202	LEU	CA-CB-CG	-8.77	95.12	115.30
1	A	176	LEU	CA-CB-CG	6.60	130.48	115.30
1	C	176	LEU	CA-CB-CG	6.59	130.45	115.30
1	A	228	LEU	CA-CB-CG	-5.39	102.89	115.30
1	C	228	LEU	CA-CB-CG	-5.39	102.91	115.30
1	A	182	THR	N-CA-C	5.09	124.74	111.00
1	C	182	THR	N-CA-C	5.09	124.74	111.00
1	A	24	TYR	N-CA-C	-5.04	97.39	111.00
1	C	24	TYR	N-CA-C	-5.03	97.41	111.00

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	2113	0	2136	155	9
1	C	2113	0	2136	155	11
2	B	1156	0	1164	81	0
2	D	1156	0	1164	81	0
All	All	6538	0	6600	447	11

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 34.

All (447) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:292:TYR:CE1	1:C:87:ARG:HD2	1.61	1.34
1:A:292:TYR:OH	1:C:87:ARG:HG3	1.42	1.18
1:A:292:TYR:CE1	1:C:87:ARG:CD	2.38	1.06
1:C:192:LEU:HG	1:C:247:VAL:HG21	1.50	0.93
1:C:31:ARG:HG3	1:C:31:ARG:HH11	1.34	0.91
1:A:192:LEU:HG	1:A:247:VAL:HG21	1.50	0.91
1:A:31:ARG:HG3	1:A:31:ARG:HH11	1.34	0.91
1:A:292:TYR:HE1	1:C:87:ARG:HD2	1.22	0.90
1:A:257:LYS:HE2	1:A:257:LYS:HA	1.54	0.90
1:C:257:LYS:HE2	1:C:257:LYS:HA	1.54	0.89
1:A:216:LYS:HD2	1:A:217:PRO:HD2	1.60	0.84
1:C:73:HIS:HD2	1:C:75:ASN:H	1.25	0.84
1:C:216:LYS:HD2	1:C:217:PRO:HD2	1.60	0.83
1:A:73:HIS:HD2	1:A:75:ASN:H	1.25	0.82
1:C:12:GLN:HB2	1:C:34:LYS:HG3	1.61	0.82
2:B:109:LEU:HB2	2:B:110:PRO:HD2	1.62	0.82
2:D:109:LEU:HB2	2:D:110:PRO:HD2	1.62	0.81
1:A:12:GLN:HB2	1:A:34:LYS:HG3	1.61	0.81
1:A:197:ALA:O	1:A:200:VAL:HB	1.80	0.81
1:C:197:ALA:O	1:C:200:VAL:HB	1.80	0.81
1:A:146:LEU:O	1:A:208:ILE:HD11	1.81	0.80
1:C:146:LEU:O	1:C:208:ILE:HD11	1.81	0.80
1:A:292:TYR:OH	1:C:87:ARG:CG	2.27	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:278:LEU:O	1:A:282:THR:HG23	1.84	0.77
1:C:278:LEU:O	1:C:282:THR:HG23	1.84	0.77
1:A:292:TYR:CZ	1:C:87:ARG:HG3	2.19	0.76
2:D:91:LYS:O	2:D:95:GLU:HG2	1.85	0.76
2:B:91:LYS:O	2:B:95:GLU:HG2	1.85	0.75
1:C:130:LEU:HB3	1:C:295:LEU:HD13	1.69	0.74
1:C:173:GLN:H	1:C:173:GLN:HE21	1.36	0.74
1:A:130:LEU:HB3	1:A:295:LEU:HD13	1.69	0.74
1:C:31:ARG:HD3	1:C:37:GLY:O	1.89	0.73
1:C:31:ARG:HH11	1:C:31:ARG:CG	2.02	0.73
1:A:31:ARG:HD3	1:A:37:GLY:O	1.89	0.72
2:B:106:THR:O	2:B:137:ALA:HB2	1.90	0.72
1:A:143:HIS:HD2	1:A:145:ASP:H	1.38	0.71
2:D:106:THR:O	2:D:137:ALA:HB2	1.90	0.70
1:A:31:ARG:HH11	1:A:31:ARG:CG	2.02	0.70
1:A:173:GLN:H	1:A:173:GLN:HE21	1.36	0.70
1:C:26:LYS:HZ3	2:D:40:ARG:HH22	1.39	0.70
2:B:131:ASP:OD2	2:B:134:ARG:HG2	1.92	0.70
1:C:272:LEU:HD13	1:C:298:PRO:O	1.92	0.69
1:A:26:LYS:HZ3	2:B:40:ARG:HH22	1.40	0.69
2:D:131:ASP:OD2	2:D:134:ARG:HG2	1.92	0.69
1:A:272:LEU:HD13	1:A:298:PRO:O	1.92	0.69
1:C:143:HIS:HD2	1:C:145:ASP:H	1.38	0.69
1:C:143:HIS:CD2	1:C:145:ASP:H	2.12	0.68
1:A:143:HIS:CD2	1:A:145:ASP:H	2.12	0.67
2:D:151:ALA:CB	2:D:154:LEU:HD12	2.25	0.67
2:B:151:ALA:CB	2:B:154:LEU:HD12	2.25	0.66
2:D:69:VAL:O	2:D:76:SER:HB3	1.96	0.65
1:A:209:PHE:CE1	1:A:213:PHE:HE2	2.15	0.65
2:B:69:VAL:O	2:B:76:SER:HB3	1.96	0.65
1:C:209:PHE:CE1	1:C:213:PHE:HE2	2.15	0.64
1:C:216:LYS:HD2	1:C:217:PRO:CD	2.28	0.64
1:C:192:LEU:HD13	1:C:228:LEU:HD11	1.80	0.64
1:A:38:ARG:HA	2:B:83:ARG:NH1	2.13	0.64
1:C:272:LEU:HD22	1:C:298:PRO:HB2	1.80	0.63
1:C:240:GLU:HA	1:C:251:ARG:HD3	1.81	0.63
1:A:192:LEU:HD13	1:A:228:LEU:HD11	1.80	0.63
1:A:272:LEU:HD22	1:A:298:PRO:HB2	1.80	0.63
1:A:216:LYS:HD2	1:A:217:PRO:CD	2.28	0.62
1:C:189:GLU:HB3	1:C:195:SER:HB3	1.81	0.62
2:D:151:ALA:HB1	2:D:154:LEU:HD12	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:38:ARG:HA	2:D:83:ARG:NH1	2.13	0.62
1:C:107:THR:O	1:C:111:LYS:HB2	1.99	0.62
1:A:12:GLN:CB	1:A:34:LYS:HG3	2.30	0.62
1:A:189:GLU:HB3	1:A:195:SER:HB3	1.81	0.62
1:C:48:GLN:O	1:C:92:THR:N	2.33	0.62
1:A:107:THR:O	1:A:111:LYS:HB2	1.99	0.62
1:A:240:GLU:HA	1:A:251:ARG:HD3	1.81	0.61
2:B:116:GLN:HG2	2:B:145:LEU:HD21	1.82	0.61
1:A:48:GLN:O	1:A:92:THR:N	2.33	0.61
1:A:260:GLN:NE2	1:A:264:LYS:HD3	2.15	0.61
1:C:105:LEU:O	1:C:109:LEU:HG	2.01	0.61
1:C:122:ILE:O	1:C:126:MET:HB2	2.01	0.61
2:B:80:ASP:OD1	2:B:83:ARG:NH2	2.34	0.61
2:B:151:ALA:HB1	2:B:154:LEU:HD12	1.82	0.61
1:A:122:ILE:O	1:A:126:MET:HB2	2.01	0.60
1:C:75:ASN:HD21	1:C:131:ARG:NH2	1.99	0.60
2:B:7:ARG:H	2:B:7:ARG:HD2	1.66	0.60
2:D:80:ASP:OD1	2:D:83:ARG:NH2	2.34	0.60
1:C:260:GLN:NE2	1:C:264:LYS:HD3	2.15	0.60
2:B:153:ASP:O	2:B:157:ILE:HG13	2.02	0.60
2:D:7:ARG:H	2:D:7:ARG:HD2	1.66	0.60
1:A:217:PRO:HB2	1:A:220:ARG:HD2	1.84	0.60
1:A:192:LEU:HG	1:A:247:VAL:CG2	2.30	0.59
2:D:16:ALA:HA	2:D:56:ILE:HD13	1.84	0.59
1:C:192:LEU:HG	1:C:247:VAL:CG2	2.30	0.59
1:C:12:GLN:CB	1:C:34:LYS:HG3	2.30	0.59
1:A:75:ASN:HD21	1:A:131:ARG:NH2	1.99	0.59
2:D:124:SER:HA	2:D:157:ILE:HG21	1.84	0.59
1:A:31:ARG:CG	1:A:31:ARG:NH1	2.65	0.59
1:A:105:LEU:O	1:A:109:LEU:HG	2.01	0.59
2:B:124:SER:HA	2:B:157:ILE:HG21	1.84	0.59
2:D:116:GLN:HG2	2:D:145:LEU:HD21	1.82	0.59
1:A:143:HIS:HE1	1:A:162:ALA:O	1.85	0.59
1:A:173:GLN:H	1:A:173:GLN:NE2	2.01	0.59
2:D:153:ASP:O	2:D:157:ILE:HG13	2.02	0.58
1:C:143:HIS:HE1	1:C:162:ALA:O	1.85	0.58
2:B:16:ALA:HA	2:B:56:ILE:HD13	1.84	0.58
2:D:10:ASP:OD1	2:D:39:ASN:HB2	2.03	0.58
1:A:266:VAL:HG21	1:A:277:LEU:HD21	1.86	0.58
2:B:151:ALA:O	2:B:155:VAL:HG23	2.04	0.58
1:C:217:PRO:HB2	1:C:220:ARG:HD2	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:151:ALA:O	2:D:155:VAL:HG23	2.04	0.58
1:A:292:TYR:CE1	1:C:87:ARG:CG	2.86	0.57
2:B:38:LEU:HD13	2:B:42:GLY:HA2	1.86	0.57
1:C:238:PRO:O	1:C:251:ARG:NH1	2.38	0.57
1:A:292:TYR:CZ	1:C:87:ARG:CD	2.88	0.57
1:C:138:SER:O	1:C:139:HIS:HB2	2.04	0.57
1:A:220:ARG:HH11	1:A:220:ARG:HG3	1.70	0.57
1:A:26:LYS:NZ	2:B:40:ARG:HH22	2.02	0.57
1:A:203:TRP:HB2	1:A:288:ARG:NH1	2.19	0.57
2:B:10:ASP:OD1	2:B:39:ASN:HB2	2.03	0.57
1:A:138:SER:O	1:A:139:HIS:HB2	2.04	0.57
1:A:238:PRO:O	1:A:251:ARG:NH1	2.38	0.57
1:C:203:TRP:HB2	1:C:288:ARG:NH1	2.19	0.57
1:C:266:VAL:HG21	1:C:277:LEU:HD21	1.86	0.57
2:B:109:LEU:HB2	2:B:110:PRO:CD	2.33	0.56
1:C:26:LYS:NZ	2:D:40:ARG:HH22	2.02	0.56
1:C:220:ARG:HG3	1:C:220:ARG:HH11	1.70	0.56
2:D:22:GLN:CD	2:D:22:GLN:H	2.09	0.56
1:A:46:ARG:NH2	1:A:48:GLN:HA	2.21	0.56
1:C:46:ARG:NH2	1:C:48:GLN:HA	2.21	0.56
2:D:38:LEU:HD13	2:D:42:GLY:HA2	1.87	0.56
1:A:193:GLN:HA	1:A:196:TYR:OH	2.06	0.56
1:C:202:LEU:HD22	1:C:289:ILE:HG23	1.88	0.56
1:C:193:GLN:HA	1:C:196:TYR:OH	2.06	0.55
1:A:290:SER:HB3	1:A:293:SER:OG	2.07	0.55
2:D:109:LEU:HB2	2:D:110:PRO:CD	2.33	0.55
1:A:292:TYR:CZ	1:C:87:ARG:CG	2.89	0.55
2:B:22:GLN:CD	2:B:22:GLN:H	2.09	0.55
2:B:123:VAL:HG11	2:B:154:LEU:HD22	1.88	0.55
2:B:76:SER:HB2	2:B:77:PRO:HD2	1.89	0.55
2:B:141:THR:OG1	2:B:144:GLU:HG3	2.07	0.55
1:C:173:GLN:H	1:C:173:GLN:NE2	2.01	0.55
1:C:290:SER:HB3	1:C:293:SER:OG	2.07	0.55
2:D:80:ASP:O	2:D:84:THR:HG23	2.06	0.55
1:A:72:GLU:HG2	1:A:78:ARG:HH11	1.72	0.55
1:A:172:PHE:HD2	1:A:178:SER:O	1.90	0.55
1:A:173:GLN:HE21	1:A:173:GLN:N	2.05	0.55
2:B:80:ASP:O	2:B:84:THR:HG23	2.06	0.55
2:D:76:SER:HB2	2:D:77:PRO:HD2	1.88	0.55
1:A:202:LEU:HD22	1:A:289:ILE:HG23	1.88	0.54
1:A:272:LEU:O	1:A:297:HIS:HE1	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:172:PHE:HD2	1:C:178:SER:O	1.90	0.54
1:C:272:LEU:O	1:C:297:HIS:HE1	1.90	0.54
2:D:141:THR:OG1	2:D:144:GLU:HG3	2.07	0.54
2:B:109:LEU:O	2:B:112:HIS:HB2	2.07	0.54
1:C:72:GLU:HG2	1:C:78:ARG:HH11	1.72	0.54
1:C:183:LEU:HD12	1:C:191:LEU:HD21	1.90	0.54
1:A:292:TYR:CE1	1:C:87:ARG:HG3	2.41	0.54
2:D:109:LEU:O	2:D:112:HIS:HB2	2.07	0.54
2:D:123:VAL:HG11	2:D:154:LEU:HD22	1.88	0.54
1:A:183:LEU:HD12	1:A:191:LEU:HD21	1.90	0.54
1:A:245:ARG:HG3	1:A:246:ASP:N	2.23	0.54
1:A:86:SER:HB3	1:A:93:LYS:HD3	1.90	0.53
1:C:31:ARG:CG	1:C:31:ARG:NH1	2.65	0.53
1:A:136:LEU:HD22	1:A:141:VAL:HB	1.90	0.53
1:C:234:VAL:HG11	1:C:262:ILE:HD13	1.90	0.53
1:C:86:SER:HB3	1:C:93:LYS:HD3	1.90	0.53
1:C:211:GLU:HA	1:C:214:ARG:HB2	1.91	0.53
1:C:245:ARG:HG3	1:C:246:ASP:N	2.23	0.53
1:A:216:LYS:CD	1:A:217:PRO:HD2	2.36	0.53
1:A:211:GLU:HA	1:A:214:ARG:HB2	1.91	0.53
1:C:40:VAL:HG21	1:C:97:VAL:HG12	1.91	0.53
1:A:79:LEU:HD12	1:A:97:VAL:O	2.08	0.53
1:A:234:VAL:HG11	1:A:262:ILE:HD13	1.90	0.53
2:B:159:GLN:CA	2:B:159:GLN:HE21	2.22	0.53
1:C:19:ILE:HD12	1:C:27:VAL:HG22	1.91	0.53
1:A:40:VAL:HG21	1:A:97:VAL:HG12	1.91	0.52
1:C:79:LEU:HD12	1:C:97:VAL:O	2.08	0.52
1:C:173:GLN:OE1	1:C:220:ARG:NH2	2.43	0.52
1:C:216:LYS:CD	1:C:217:PRO:HD2	2.36	0.52
1:C:46:ARG:HH22	1:C:48:GLN:HA	1.75	0.52
1:A:46:ARG:HH22	1:A:48:GLN:HA	1.75	0.52
1:A:19:ILE:HD12	1:A:27:VAL:HG22	1.91	0.52
1:A:72:GLU:HG2	1:A:78:ARG:NH1	2.25	0.52
1:A:217:PRO:HB2	1:A:220:ARG:CD	2.39	0.52
1:C:136:LEU:HD22	1:C:141:VAL:HB	1.90	0.52
1:C:272:LEU:CD2	1:C:298:PRO:HB2	2.40	0.52
2:B:7:ARG:O	2:B:10:ASP:N	2.42	0.52
1:C:12:GLN:HB2	1:C:34:LYS:CG	2.38	0.52
1:C:143:HIS:HD2	1:C:145:ASP:N	2.07	0.52
1:C:217:PRO:HB2	1:C:220:ARG:CD	2.39	0.52
2:D:7:ARG:O	2:D:10:ASP:N	2.42	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:272:LEU:CD2	1:A:298:PRO:HB2	2.40	0.51
2:B:10:ASP:OD2	2:B:40:ARG:NH1	2.43	0.51
1:A:173:GLN:OE1	1:A:220:ARG:NH2	2.43	0.51
1:A:257:LYS:HA	1:A:257:LYS:CE	2.33	0.51
1:C:72:GLU:HG2	1:C:78:ARG:NH1	2.25	0.51
1:C:74:PRO:HB2	1:C:158:GLN:HE22	1.75	0.51
2:D:38:LEU:HD23	2:D:44:THR:HG22	1.92	0.51
1:A:74:PRO:HB2	1:A:158:GLN:HE22	1.75	0.51
2:B:76:SER:CB	2:B:77:PRO:HD2	2.40	0.51
2:D:10:ASP:OD2	2:D:40:ARG:NH1	2.43	0.51
2:D:91:LYS:HD3	2:D:125:PHE:CE1	2.46	0.51
2:D:159:GLN:CA	2:D:159:GLN:HE21	2.22	0.51
1:C:173:GLN:HE21	1:C:173:GLN:N	2.05	0.51
2:B:25:ARG:HG2	2:B:59:GLU:HG2	1.93	0.51
2:B:91:LYS:HD3	2:B:125:PHE:CE1	2.46	0.51
2:B:38:LEU:HD13	2:B:42:GLY:CA	2.41	0.51
2:B:82:ALA:O	2:B:119:HIS:HD2	1.94	0.51
2:B:38:LEU:HD23	2:B:44:THR:HG22	1.92	0.50
1:A:164:PHE:N	1:A:164:PHE:CD1	2.79	0.50
2:D:38:LEU:HD13	2:D:42:GLY:CA	2.41	0.50
1:A:189:GLU:OE2	1:A:288:ARG:NH1	2.45	0.50
2:D:76:SER:CB	2:D:77:PRO:HD2	2.40	0.50
1:C:164:PHE:CD1	1:C:164:PHE:N	2.80	0.50
2:D:25:ARG:HG2	2:D:59:GLU:HG2	1.93	0.50
2:D:91:LYS:C	2:D:95:GLU:HG2	2.32	0.50
1:C:189:GLU:OE2	1:C:288:ARG:NH1	2.45	0.50
1:A:188:PRO:O	1:A:192:LEU:HB2	2.11	0.50
1:C:188:PRO:O	1:C:192:LEU:HB2	2.11	0.50
1:C:118:PRO:O	1:C:121:THR:N	2.45	0.50
1:A:118:PRO:O	1:A:121:THR:N	2.45	0.49
1:C:130:LEU:CD2	1:C:294:ALA:HB3	2.42	0.49
1:A:130:LEU:CD2	1:A:294:ALA:HB3	2.42	0.49
1:C:211:GLU:OE1	1:C:217:PRO:HA	2.12	0.49
2:D:44:THR:O	2:D:47:GLN:HB2	2.12	0.49
1:A:292:TYR:HH	1:C:87:ARG:HG3	1.64	0.49
1:C:257:LYS:HA	1:C:257:LYS:CE	2.33	0.49
2:B:91:LYS:C	2:B:95:GLU:HG2	2.32	0.49
2:D:132:LEU:O	2:D:142:PRO:HD2	2.13	0.49
1:A:19:ILE:HD12	1:A:27:VAL:CG2	2.43	0.49
1:A:272:LEU:O	1:A:297:HIS:CE1	2.66	0.49
1:C:19:ILE:HD12	1:C:27:VAL:CG2	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:21:GLU:HA	1:A:26:LYS:HA	1.95	0.49
1:A:28:PHE:O	1:A:41:ALA:HA	2.13	0.49
2:B:44:THR:O	2:B:47:GLN:HB2	2.12	0.49
1:A:112:VAL:HB	1:A:113:PRO:HD2	1.95	0.49
1:A:143:HIS:HD2	1:A:145:ASP:N	2.07	0.49
2:B:90:LEU:HD22	2:B:122:VAL:HG13	1.94	0.49
1:C:21:GLU:HA	1:C:26:LYS:HA	1.95	0.49
1:C:112:VAL:HB	1:C:113:PRO:HD2	1.95	0.49
1:C:272:LEU:O	1:C:297:HIS:CE1	2.66	0.49
1:C:170:TYR:CD2	1:C:184:TRP:HH2	2.31	0.48
2:D:90:LEU:HD22	2:D:122:VAL:HG13	1.94	0.48
1:A:211:GLU:OE1	1:A:217:PRO:HA	2.12	0.48
2:B:132:LEU:O	2:B:142:PRO:HD2	2.13	0.48
2:D:82:ALA:O	2:D:119:HIS:HD2	1.94	0.48
1:A:12:GLN:HB2	1:A:34:LYS:CG	2.38	0.48
1:C:12:GLN:O	1:C:34:LYS:HB2	2.14	0.48
1:A:12:GLN:O	1:A:34:LYS:HB2	2.14	0.48
1:A:279:LYS:O	1:A:289:ILE:HG22	2.13	0.48
1:C:279:LYS:O	1:C:289:ILE:HG22	2.13	0.48
2:D:132:LEU:O	2:D:141:THR:HB	2.14	0.48
1:A:213:PHE:CE1	1:A:269:ILE:HA	2.49	0.48
2:D:40:ARG:HH11	2:D:40:ARG:HG2	1.79	0.48
1:C:213:PHE:CE1	1:C:269:ILE:HA	2.49	0.48
1:A:209:PHE:CE1	1:A:213:PHE:CE2	3.01	0.47
2:B:132:LEU:O	2:B:141:THR:HB	2.14	0.47
1:C:28:PHE:O	1:C:41:ALA:HA	2.13	0.47
1:A:170:TYR:CD2	1:A:184:TRP:HH2	2.32	0.47
1:C:18:GLU:HG3	1:C:18:GLU:O	2.15	0.47
2:D:143:LEU:HD12	2:D:143:LEU:O	2.15	0.47
2:D:38:LEU:HB3	2:D:42:GLY:HA2	1.96	0.47
1:A:213:PHE:CZ	1:A:269:ILE:HG13	2.50	0.47
2:B:88:ASP:O	2:B:92:VAL:HG23	2.15	0.47
2:D:34:HIS:CD2	2:D:36:ASP:HB2	2.50	0.47
2:B:109:LEU:HD21	2:B:134:ARG:HB2	1.96	0.47
2:B:136:ASP:HB3	2:B:140:LEU:H	1.80	0.47
2:B:143:LEU:HD12	2:B:143:LEU:O	2.15	0.47
1:C:223:SER:H	1:C:226:ASP:HB3	1.80	0.47
2:D:109:LEU:HD21	2:D:134:ARG:HB2	1.96	0.47
2:D:136:ASP:N	2:D:140:LEU:O	2.47	0.47
2:D:136:ASP:HB3	2:D:140:LEU:H	1.80	0.47
1:A:230:LYS:HA	1:A:233:ASP:OD2	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:40:ARG:HG2	2:B:40:ARG:HH11	1.79	0.47
1:C:213:PHE:CZ	1:C:269:ILE:HG13	2.50	0.47
1:A:223:SER:H	1:A:226:ASP:HB3	1.80	0.47
1:C:139:HIS:O	1:C:141:VAL:HG23	2.15	0.47
1:A:130:LEU:O	1:A:133:LEU:HB3	2.15	0.47
2:B:34:HIS:CD2	2:B:36:ASP:HB2	2.50	0.47
1:C:172:PHE:O	1:C:177:THR:HG23	2.15	0.47
1:C:230:LYS:HA	1:C:233:ASP:OD2	2.15	0.47
2:D:88:ASP:O	2:D:92:VAL:HG23	2.15	0.47
1:A:149:GLN:N	1:A:149:GLN:OE1	2.49	0.46
2:B:52:GLY:HA2	2:B:86:PHE:CG	2.51	0.46
2:B:38:LEU:HB3	2:B:42:GLY:HA2	1.96	0.46
2:B:111:ILE:HD13	2:B:132:LEU:CD2	2.46	0.46
1:C:149:GLN:OE1	1:C:149:GLN:N	2.49	0.46
2:D:52:GLY:HA2	2:D:86:PHE:CG	2.51	0.46
1:A:172:PHE:O	1:A:177:THR:HG23	2.16	0.46
1:A:18:GLU:HG3	1:A:18:GLU:O	2.15	0.46
2:B:76:SER:OG	2:B:79:HIS:CD2	2.69	0.46
1:C:130:LEU:O	1:C:133:LEU:HB3	2.15	0.46
1:A:139:HIS:O	1:A:141:VAL:HG23	2.15	0.46
2:B:87:LEU:HD13	2:B:90:LEU:HD23	1.98	0.46
2:D:111:ILE:HD13	2:D:132:LEU:CD2	2.45	0.46
2:D:123:VAL:HG21	2:D:154:LEU:HD22	1.98	0.46
2:B:136:ASP:OD2	2:B:138:ARG:HB2	2.16	0.46
2:D:102:VAL:HA	2:D:103:PRO:HD3	1.66	0.46
2:D:136:ASP:OD2	2:D:138:ARG:HB2	2.16	0.46
1:C:18:GLU:HA	1:C:28:PHE:CD1	2.51	0.46
1:C:32:ASP:HB3	1:C:38:ARG:HG3	1.98	0.46
1:A:243:TRP:CD1	1:A:244:PRO:HD2	2.51	0.45
2:B:136:ASP:N	2:B:140:LEU:O	2.47	0.45
1:A:29:LYS:NZ	2:B:48:VAL:O	2.47	0.45
1:A:18:GLU:HA	1:A:28:PHE:CD1	2.51	0.45
1:A:137:HIS:HE1	1:A:201:ASP:OD2	2.00	0.45
1:C:138:SER:O	1:C:139:HIS:CB	2.65	0.45
2:D:27:LEU:HA	2:D:31:GLU:CB	2.46	0.45
2:D:61:LEU:HD12	2:D:92:VAL:HG12	1.98	0.45
2:D:76:SER:OG	2:D:79:HIS:CD2	2.69	0.45
1:C:136:LEU:HA	1:C:136:LEU:HD23	1.49	0.45
1:C:209:PHE:CE1	1:C:213:PHE:CE2	3.01	0.45
1:A:192:LEU:HB3	1:A:194:SER:OG	2.17	0.45
2:B:27:LEU:HA	2:B:31:GLU:CB	2.46	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:32:ASP:HB3	1:A:38:ARG:HG3	1.98	0.45
1:A:232:LEU:HD22	1:A:237:LEU:HA	1.99	0.45
1:A:260:GLN:HE22	1:A:264:LYS:HD3	1.82	0.45
1:A:278:LEU:O	1:A:282:THR:CG2	2.61	0.45
1:C:202:LEU:HA	1:C:205:VAL:HG13	1.99	0.45
1:C:278:LEU:O	1:C:282:THR:CG2	2.61	0.45
1:A:18:GLU:OE1	1:A:26:LYS:NZ	2.50	0.45
1:A:127:PHE:CE2	1:A:131:ARG:HD3	2.52	0.45
1:C:192:LEU:HB3	1:C:194:SER:OG	2.16	0.45
2:B:123:VAL:HG21	2:B:154:LEU:HD22	1.98	0.45
1:C:243:TRP:CD1	1:C:244:PRO:HD2	2.51	0.45
2:B:61:LEU:HD12	2:B:92:VAL:HG12	1.98	0.44
2:D:87:LEU:HD13	2:D:90:LEU:HD23	1.98	0.44
1:C:85:VAL:HG12	1:C:85:VAL:O	2.17	0.44
1:C:127:PHE:CE2	1:C:131:ARG:HD3	2.52	0.44
1:C:137:HIS:HE1	1:C:201:ASP:OD2	2.00	0.44
1:A:292:TYR:HE1	1:C:87:ARG:CD	2.00	0.44
2:B:27:LEU:HA	2:B:31:GLU:HB3	2.00	0.44
1:C:16:VAL:HG22	1:C:29:LYS:O	2.18	0.44
1:C:75:ASN:HD21	1:C:131:ARG:CZ	2.30	0.44
1:C:173:GLN:O	1:C:173:GLN:HG2	2.18	0.44
1:A:75:ASN:HD21	1:A:131:ARG:CZ	2.30	0.44
1:A:173:GLN:HG2	1:A:173:GLN:O	2.18	0.44
1:A:225:VAL:HG23	1:A:249:LEU:HD13	2.00	0.44
1:C:74:PRO:HB2	1:C:158:GLN:NE2	2.33	0.44
1:C:266:VAL:HG21	1:C:277:LEU:CD2	2.48	0.44
1:A:74:PRO:HB2	1:A:158:GLN:NE2	2.33	0.43
1:A:202:LEU:HA	1:A:205:VAL:HG13	1.99	0.43
2:B:102:VAL:HA	2:B:103:PRO:HD3	1.66	0.43
1:C:18:GLU:OE1	1:C:26:LYS:NZ	2.50	0.43
1:C:40:VAL:CG2	1:C:97:VAL:HG12	2.48	0.43
1:A:210:ALA:O	1:A:214:ARG:HG3	2.19	0.43
1:A:264:LYS:HB2	1:A:264:LYS:HE2	1.83	0.43
1:C:228:LEU:HA	1:C:228:LEU:HD23	1.77	0.43
1:A:30:ALA:HB3	1:A:40:VAL:CG1	2.48	0.43
1:A:266:VAL:HG21	1:A:277:LEU:CD2	2.48	0.43
1:C:33:LEU:O	1:C:35:ASN:N	2.52	0.43
2:D:114:ALA:O	2:D:118:GLY:N	2.50	0.43
1:A:16:VAL:HG22	1:A:29:LYS:O	2.18	0.43
1:A:75:ASN:OD1	1:A:128:GLN:HB3	2.19	0.43
1:C:31:ARG:HG3	1:C:31:ARG:NH1	2.14	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:31:ARG:NH2	2:B:80:ASP:OD1	2.50	0.43
1:A:40:VAL:CG2	1:A:97:VAL:HG12	2.48	0.43
1:A:200:VAL:HG12	1:A:201:ASP:N	2.34	0.43
1:C:200:VAL:HG12	1:C:201:ASP:N	2.34	0.43
1:C:210:ALA:O	1:C:214:ARG:HG3	2.19	0.43
1:C:225:VAL:HG23	1:C:249:LEU:HD13	2.00	0.43
2:D:159:GLN:HE21	2:D:159:GLN:HA	1.84	0.43
1:A:85:VAL:HG12	1:A:85:VAL:O	2.17	0.43
2:D:27:LEU:HA	2:D:31:GLU:HB3	2.00	0.43
1:A:146:LEU:HD12	1:A:146:LEU:HA	1.79	0.43
1:C:30:ALA:HB3	1:C:40:VAL:CG1	2.48	0.43
1:C:75:ASN:HA	1:C:159:ILE:O	2.19	0.43
2:D:111:ILE:HD13	2:D:132:LEU:HD21	2.01	0.43
1:C:232:LEU:HD22	1:C:237:LEU:HA	1.99	0.43
2:B:159:GLN:HE21	2:B:159:GLN:HA	1.84	0.42
1:A:33:LEU:O	1:A:35:ASN:N	2.52	0.42
2:B:100:VAL:CG1	2:B:126:LEU:HD22	2.49	0.42
2:D:99:ASP:O	2:D:102:VAL:HG12	2.19	0.42
1:A:289:ILE:HD11	1:A:294:ALA:HA	2.01	0.42
2:B:99:ASP:O	2:B:102:VAL:HG12	2.19	0.42
1:C:75:ASN:OD1	1:C:128:GLN:HB3	2.19	0.42
2:D:76:SER:OG	2:D:79:HIS:HD2	2.03	0.42
1:A:137:HIS:O	1:A:140:ARG:HA	2.20	0.42
1:C:289:ILE:HD11	1:C:294:ALA:HA	2.01	0.42
1:C:24:TYR:O	1:C:25:GLY:O	2.37	0.42
1:C:82:VAL:HG13	1:C:96:LEU:CD2	2.50	0.42
1:C:137:HIS:O	1:C:140:ARG:HA	2.20	0.42
2:D:9:GLY:HA3	2:D:38:LEU:O	2.20	0.42
1:A:26:LYS:HZ3	2:B:40:ARG:NH2	2.13	0.42
1:A:82:VAL:HG13	1:A:96:LEU:CD2	2.50	0.42
1:A:129:LEU:O	1:A:133:LEU:HB2	2.20	0.42
1:C:19:ILE:N	1:C:27:VAL:O	2.51	0.42
2:D:19:GLY:HA2	2:D:56:ILE:HD12	2.02	0.42
2:D:100:VAL:CG1	2:D:126:LEU:HD22	2.49	0.42
1:A:24:TYR:O	1:A:25:GLY:O	2.37	0.42
2:B:87:LEU:HD12	2:B:87:LEU:O	2.19	0.42
1:C:106:THR:O	1:C:110:ASP:HB3	2.20	0.42
1:A:133:LEU:CD2	1:A:205:VAL:HG11	2.50	0.42
1:A:154:THR:O	1:A:157:GLY:N	2.53	0.42
1:A:75:ASN:HA	1:A:159:ILE:O	2.19	0.42
1:A:138:SER:O	1:A:139:HIS:CB	2.65	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:26:LYS:HZ3	2:D:40:ARG:NH2	2.12	0.42
1:C:129:LEU:O	1:C:133:LEU:HB2	2.19	0.42
1:C:133:LEU:CD2	1:C:205:VAL:HG11	2.50	0.42
1:C:154:THR:O	1:C:157:GLY:N	2.53	0.42
2:D:87:LEU:HD12	2:D:87:LEU:O	2.19	0.42
2:B:28:LEU:O	2:B:32:LEU:HA	2.20	0.42
1:C:29:LYS:NZ	2:D:48:VAL:O	2.47	0.42
1:A:12:GLN:CG	1:A:34:LYS:HG3	2.50	0.41
1:C:38:ARG:HA	2:D:83:ARG:HH11	1.84	0.41
1:A:106:THR:O	1:A:110:ASP:HB3	2.20	0.41
1:A:228:LEU:HD23	1:A:228:LEU:HA	1.77	0.41
2:B:38:LEU:CD2	2:B:44:THR:HG22	2.50	0.41
1:C:267:THR:O	1:C:268:ASP:HB2	2.20	0.41
2:B:7:ARG:HG2	2:B:8:ALA:H	1.85	0.41
2:B:76:SER:OG	2:B:79:HIS:HD2	2.03	0.41
1:C:220:ARG:HG3	1:C:220:ARG:NH1	2.35	0.41
1:C:269:ILE:HG12	1:C:270:ASP:N	2.35	0.41
1:A:38:ARG:HA	2:B:83:ARG:HH11	1.85	0.41
1:A:231:ILE:HG22	1:A:235:ILE:HG12	2.02	0.41
1:C:146:LEU:HD12	1:C:146:LEU:HA	1.79	0.41
2:B:9:GLY:HA3	2:B:38:LEU:O	2.20	0.41
2:B:109:LEU:N	2:B:109:LEU:HD23	2.36	0.41
2:B:111:ILE:HD13	2:B:132:LEU:HD21	2.01	0.41
1:A:170:TYR:CD2	1:A:184:TRP:CH2	3.09	0.41
1:A:220:ARG:HG3	1:A:220:ARG:NH1	2.35	0.41
2:B:100:VAL:HG11	2:B:126:LEU:HD22	2.03	0.41
2:B:114:ALA:O	2:B:118:GLY:N	2.50	0.41
2:D:109:LEU:N	2:D:109:LEU:HD23	2.36	0.41
1:A:269:ILE:HG12	1:A:270:ASP:N	2.35	0.41
2:D:38:LEU:CD2	2:D:44:THR:HG22	2.50	0.41
2:B:19:GLY:HA2	2:B:56:ILE:HD12	2.02	0.41
1:C:260:GLN:HE22	1:C:264:LYS:HD3	1.82	0.41
2:D:100:VAL:HG11	2:D:126:LEU:HD22	2.03	0.41
1:A:73:HIS:HA	1:A:74:PRO:HD2	1.95	0.41
1:A:187:ALA:HA	1:A:203:TRP:CD1	2.55	0.41
1:A:245:ARG:O	1:A:246:ASP:C	2.59	0.41
1:A:297:HIS:HA	1:A:298:PRO:HD3	1.94	0.41
2:B:19:GLY:HA2	2:B:56:ILE:CD1	2.51	0.41
2:B:87:LEU:HA	2:B:90:LEU:HB3	2.03	0.41
1:C:12:GLN:CG	1:C:34:LYS:HG3	2.50	0.41
1:C:33:LEU:H	1:C:33:LEU:HG	1.60	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:187:ALA:HA	1:C:203:TRP:CD1	2.55	0.41
2:D:87:LEU:HA	2:D:90:LEU:HB3	2.03	0.41
2:D:7:ARG:HG2	2:D:8:ALA:H	1.85	0.41
1:C:170:TYR:CD2	1:C:184:TRP:CH2	3.09	0.40
1:C:226:ASP:O	1:C:230:LYS:HG2	2.21	0.40
2:D:19:GLY:HA2	2:D:56:ILE:CD1	2.51	0.40
2:B:40:ARG:NH1	2:B:40:ARG:HG2	2.36	0.40
2:D:28:LEU:O	2:D:32:LEU:HA	2.20	0.40
2:D:76:SER:HB2	2:D:77:PRO:CD	2.52	0.40
2:B:27:LEU:O	2:B:33:VAL:HG23	2.21	0.40
2:B:117:GLU:OE1	2:B:117:GLU:HA	2.22	0.40
2:D:6:VAL:HB	2:D:38:LEU:O	2.22	0.40
2:D:30:ARG:HH11	2:D:30:ARG:CB	2.35	0.40
2:D:40:ARG:NH1	2:D:40:ARG:HG2	2.36	0.40

All (11) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:175:ALA:CB	1:C:175:ALA:CB[2_755]	0.74	1.46
1:A:175:ALA:CB	1:C:175:ALA:N[1_455]	1.56	0.64
1:A:301:GLN:NE2	1:C:301:GLN:NE2[3_455]	1.58	0.62
1:A:175:ALA:CA	1:C:174:MET:CG[1_455]	1.74	0.46
1:A:175:ALA:CA	1:C:174:MET:SD[1_455]	1.84	0.36
1:A:175:ALA:CB	1:C:175:ALA:CB[1_455]	1.89	0.31
1:A:175:ALA:CB	1:C:174:MET:SD[1_455]	2.06	0.14
1:A:175:ALA:CB	1:C:175:ALA:CA[1_455]	2.07	0.13
1:A:246:ASP:O	1:C:22:GLY:O[2_655]	2.15	0.05
1:C:175:ALA:CA	1:C:175:ALA:CB[2_755]	2.17	0.03
1:A:175:ALA:C	1:C:174:MET:SD[1_455]	2.19	0.01

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	258/326 (79%)	217 (84%)	28 (11%)	13 (5%)	2 6
1	C	258/326 (79%)	217 (84%)	28 (11%)	13 (5%)	2 6
2	B	153/166 (92%)	124 (81%)	22 (14%)	7 (5%)	2 7
2	D	153/166 (92%)	124 (81%)	22 (14%)	7 (5%)	2 7
All	All	822/984 (84%)	682 (83%)	100 (12%)	40 (5%)	2 7

All (40) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	25	GLY
1	A	38	ARG
1	A	175	ALA
1	A	245	ARG
1	A	247	VAL
1	A	257	LYS
1	A	259	ALA
2	B	7	ARG
1	C	25	GLY
1	C	38	ARG
1	C	175	ALA
1	C	245	ARG
1	C	247	VAL
1	C	257	LYS
1	C	259	ALA
2	D	7	ARG
2	B	65	ALA
2	D	65	ALA
1	A	174	MET
1	A	281	LEU
2	B	31	GLU
1	C	174	MET
1	C	281	LEU
2	D	31	GLU
1	A	34	LYS
1	A	176	LEU
2	B	30	ARG
1	C	34	LYS
2	D	30	ARG
2	B	95	GLU
1	C	176	LEU

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Mol	Chain	Res	Type
2	D	95	GLU
1	A	246	ASP
2	B	152	GLN
1	C	246	ASP
2	D	152	GLN
1	A	114	GLU
2	B	110	PRO
1	C	114	GLU
2	D	110	PRO

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	233/289 (81%)	200 (86%)	33 (14%)	3	10
1	C	233/289 (81%)	200 (86%)	33 (14%)	3	10
2	B	120/130 (92%)	103 (86%)	17 (14%)	3	10
2	D	120/130 (92%)	103 (86%)	17 (14%)	3	10
All	All	706/838 (84%)	606 (86%)	100 (14%)	3	10

All (100) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	14	GLU
1	A	18	GLU
1	A	27	VAL
1	A	31	ARG
1	A	33	LEU
1	A	44	ARG
1	A	77	VAL
1	A	81	ASP
1	A	87	ARG
1	A	92	THR
1	A	102	ASP
1	A	110	ASP

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Mol	Chain	Res	Type
1	A	112	VAL
1	A	114	GLU
1	A	130	LEU
1	A	156	SER
1	A	171	SER
1	A	173	GLN
1	A	176	LEU
1	A	179	VAL
1	A	182	THR
1	A	183	LEU
1	A	189	GLU
1	A	192	LEU
1	A	194	SER
1	A	198	THR
1	A	200	VAL
1	A	202	LEU
1	A	205	VAL
1	A	257	LYS
1	A	290	SER
1	A	293	SER
1	A	295	LEU
2	B	7	ARG
2	B	23	GLU
2	B	30	ARG
2	B	71	ASP
2	B	75	THR
2	B	88	ASP
2	B	95	GLU
2	B	104	ASP
2	B	109	LEU
2	B	110	PRO
2	B	116	GLN
2	B	117	GLU
2	B	129	GLU
2	B	133	HIS
2	B	135	ARG
2	B	149	ARG
2	B	159	GLN
1	C	14	GLU
1	C	18	GLU
1	C	27	VAL
1	C	31	ARG

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Mol	Chain	Res	Type
1	C	33	LEU
1	C	44	ARG
1	C	77	VAL
1	C	81	ASP
1	C	87	ARG
1	C	92	THR
1	C	102	ASP
1	C	110	ASP
1	C	112	VAL
1	C	114	GLU
1	C	130	LEU
1	C	156	SER
1	C	171	SER
1	C	173	GLN
1	C	176	LEU
1	C	179	VAL
1	C	182	THR
1	C	183	LEU
1	C	189	GLU
1	C	192	LEU
1	C	194	SER
1	C	198	THR
1	C	200	VAL
1	C	202	LEU
1	C	205	VAL
1	C	257	LYS
1	C	290	SER
1	C	293	SER
1	C	295	LEU
2	D	7	ARG
2	D	23	GLU
2	D	30	ARG
2	D	71	ASP
2	D	75	THR
2	D	88	ASP
2	D	95	GLU
2	D	104	ASP
2	D	109	LEU
2	D	110	PRO
2	D	116	GLN
2	D	117	GLU
2	D	129	GLU

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Mol	Chain	Res	Type
2	D	133	HIS
2	D	135	ARG
2	D	149	ARG
2	D	159	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (26) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	11	GLN
1	A	12	GLN
1	A	73	HIS
1	A	75	ASN
1	A	137	HIS
1	A	143	HIS
1	A	158	GLN
1	A	173	GLN
1	A	260	GLN
2	B	79	HIS
2	B	116	GLN
2	B	148	GLN
2	B	159	GLN
1	C	11	GLN
1	C	12	GLN
1	C	73	HIS
1	C	75	ASN
1	C	137	HIS
1	C	143	HIS
1	C	158	GLN
1	C	173	GLN
1	C	260	GLN
2	D	79	HIS
2	D	116	GLN
2	D	148	GLN
2	D	159	GLN

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 monosaccharides in this entry.

5.6 Ligand geometry (i)

There are no ligands in this entry.

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

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

6.4 Ligands

EDS was not executed - this section is therefore empty.

6.5 Other polymers

EDS was not executed - this section is therefore empty.