Full wwPDB X-ray Structure Validation Report ⓘ

Jun 15, 2024 – 07:26 AM EDT

PDB ID	:	1ZVS
Title	:	Crystal structure of the first class MHC mamu and Tat-Tl8 complex
Authors	:	Lou, Z.; Chu, F.; Gao, G.F.; Rao, Z.
Deposited on	:	2005-06-02
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:

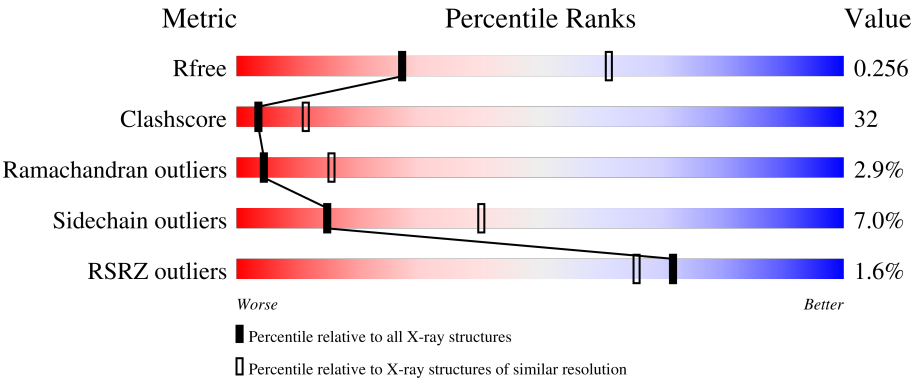
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.20.1
EDS	:	2.37.1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.37.1

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))
R_{free}	130704	3140 (2.80-2.80)
Clashscore	141614	3569 (2.80-2.80)
Ramachandran outliers	138981	3498 (2.80-2.80)
Sidechain outliers	138945	3500 (2.80-2.80)
RSRZ outliers	127900	3078 (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% 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	278	% 49% 44% 7%
1	D	278	3% 46% 47% 7%
2	B	99	58% 40%
2	E	99	47% 46% 6%
3	C	8	62% 38%

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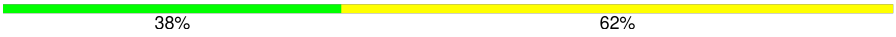
Mol	Chain	Length	Quality of chain
3	F	8	

2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 6605 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 MHC class I antigen.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	278	Total	C	N	O	S	0	0	0
			2264	1410	409	435	10			
1	D	278	Total	C	N	O	S	0	0	0
			2258	1407	406	435	10			

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	277	HIS	-	expression tag	GB 41393038
A	278	HIS	-	expression tag	GB 41393038
D	277	HIS	-	expression tag	GB 41393038
D	278	HIS	-	expression tag	GB 41393038

- Molecule 2 is a protein called Beta-2-microglobulin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	99	Total	C	N	O	S	0	0	0
			829	528	140	158	3			
2	E	99	Total	C	N	O	S	0	0	0
			829	528	140	158	3			

- Molecule 3 is a protein called Tat-Tl8.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
3	C	8	Total	C	N	O	0	0	0
			58	34	9	15			
3	F	8	Total	C	N	O	0	0	0
			58	34	9	15			

- Molecule 4 is water.

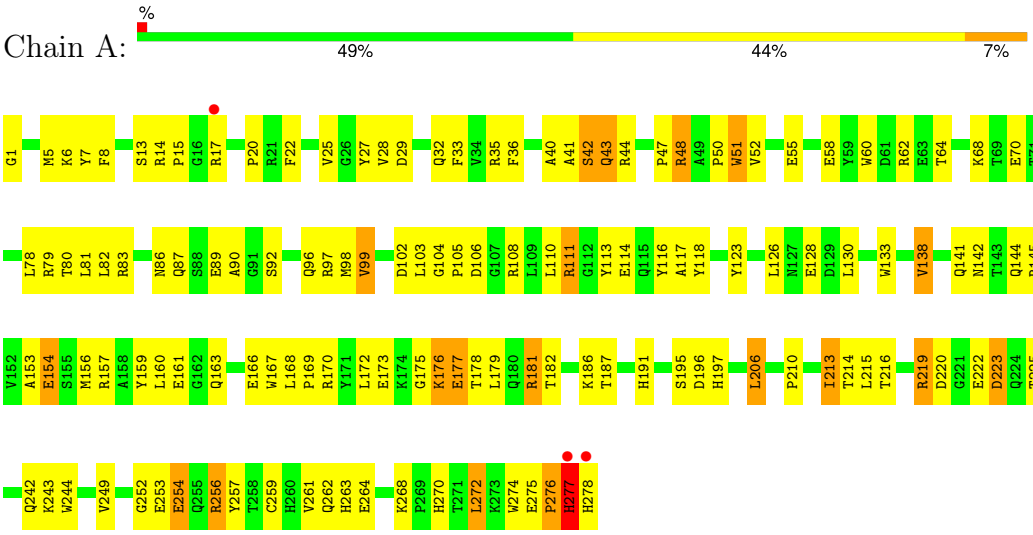
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	117	Total O 117 117	0	0
4	B	40	Total O 40 40	0	0
4	C	4	Total O 4 4	0	0
4	D	97	Total O 97 97	0	0
4	E	48	Total O 48 48	0	0
4	F	3	Total O 3 3	0	0

3 Residue-property plots

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.

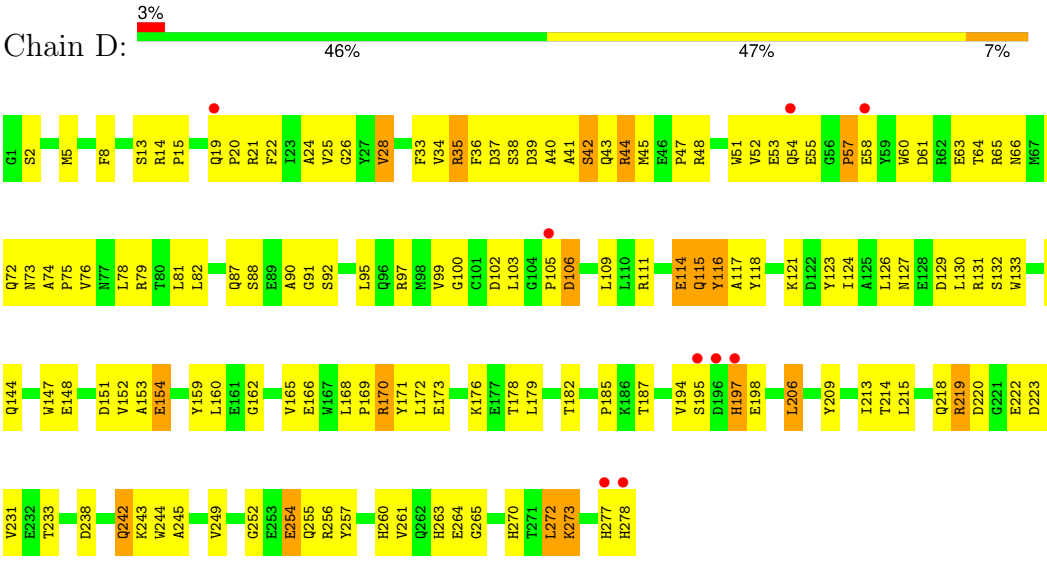
• Molecule 1: MHC class I antigen

Chain A:



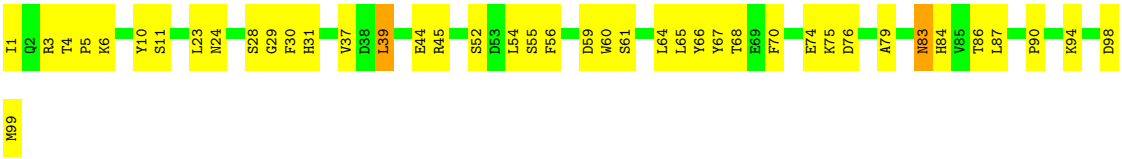
• Molecule 1: MHC class I antigen

Chain D:



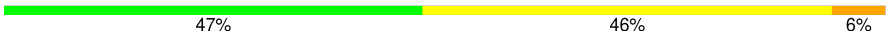
• Molecule 2: Beta-2-microglobulin

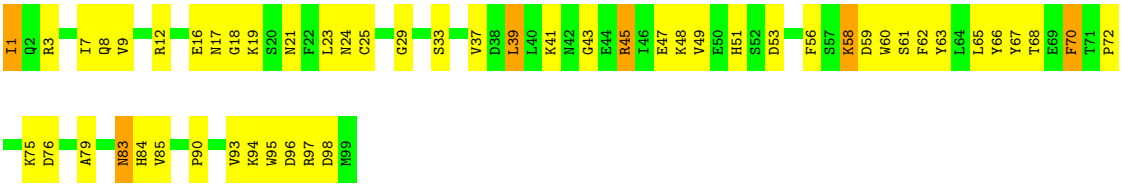
Chain B:



• Molecule 2: Beta-2-microglobulin

Chain E:



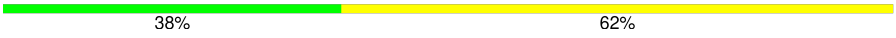


• Molecule 3: Tat-Tl8

Chain C:

• Molecule 3: Tat-Tl8

Chain F:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	I 4 2 2	Depositor
Cell constants a, b, c, α, β, γ	182.14Å 182.14Å 156.69Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	50.00 – 2.80 27.99 – 2.80	Depositor EDS
% Data completeness (in resolution range)	(Not available) (50.00-2.80) 96.5 (27.99-2.80)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.70 (at 2.80Å)	Xtriage
Refinement program	CNS	Depositor
R, R_{free}	0.217 , 0.257 0.217 , 0.256	Depositor DCC
R_{free} test set	1585 reflections (4.97%)	wwPDB-VP
Wilson B-factor (Å^2)	37.2	Xtriage
Anisotropy	0.431	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 58.9	EDS
L-test for twinning[2]	$< \|L\| > = 0.45$, $< L^2 > = 0.28$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.91	EDS
Total number of atoms	6605	wwPDB-VP
Average B, all atoms (Å^2)	38.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.29% 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	0.38	0/2329	0.64	0/3166
1	D	0.39	0/2323	0.63	1/3159 (0.0%)
2	B	0.47	0/852	0.73	1/1152 (0.1%)
2	E	0.42	0/852	0.67	0/1152
3	C	0.48	0/58	0.81	0/78
3	F	0.96	0/58	0.89	0/78
All	All	0.41	0/6472	0.66	2/8785 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	44	GLU	N-CA-C	-5.65	95.76	111.00
1	D	28	VAL	N-CA-C	-5.18	97.02	111.00

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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	2264	0	2117	155	0
1	D	2258	0	2106	159	1
2	B	829	0	794	32	0
2	E	829	0	794	62	0
3	C	58	0	56	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	F	58	0	56	8	0
4	A	117	0	0	24	0
4	B	40	0	0	6	0
4	C	4	0	0	0	0
4	D	97	0	0	16	0
4	E	48	0	0	9	0
4	F	3	0	0	0	0
All	All	6605	0	5923	387	1

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 32.

All (387) 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:181:ARG:NH2	1:D:88:SER:HB2	1.60	1.17
1:D:5:MET:HB2	1:D:168:LEU:HD13	1.38	1.04
2:E:58:LYS:H	2:E:58:LYS:HD2	1.24	1.02
1:D:33:PHE:HB2	1:D:52:VAL:HG21	1.50	0.92
1:A:215:LEU:HD22	1:A:261:VAL:HG22	1.53	0.91
1:A:44:ARG:HA	1:A:64:THR:HG23	1.52	0.91
1:A:274:TRP:CZ2	1:A:276:PRO:HB3	2.07	0.90
1:A:181:ARG:HH21	1:D:88:SER:HB2	1.33	0.90
1:D:44:ARG:HA	1:D:64:THR:HG23	1.52	0.89
1:A:178:THR:HA	1:A:181:ARG:HH11	1.41	0.84
1:A:106:ASP:OD2	1:A:108:ARG:HB2	1.76	0.84
1:A:14:ARG:HB2	1:A:17:ARG:HD2	1.61	0.83
2:E:45:ARG:HH11	2:E:45:ARG:HB2	1.43	0.83
1:A:181:ARG:CZ	1:D:88:SER:HB2	2.10	0.81
2:E:29:GLY:HA2	2:E:61:SER:HB3	1.63	0.81
1:D:13:SER:HB3	1:D:78:LEU:HD13	1.63	0.80
2:E:49:VAL:HG13	4:E:141:HOH:O	1.80	0.80
1:A:219:ARG:HD3	1:A:256:ARG:HD2	1.64	0.79
2:B:29:GLY:HA2	2:B:61:SER:HB2	1.62	0.79
1:D:47:PRO:HB3	1:D:60:TRP:CH2	2.18	0.79
1:D:61:ASP:O	1:D:65:ARG:HG2	1.83	0.78
1:A:276:PRO:HG2	1:A:277:HIS:H	1.47	0.78
1:D:162:GLY:O	1:D:166:GLU:HG2	1.84	0.78
1:A:181:ARG:NH1	1:A:181:ARG:HB2	1.99	0.77
1:D:57:PRO:HG2	1:D:58:GLU:H	1.49	0.77
1:A:177:GLU:O	1:A:181:ARG:HD3	1.84	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:178:THR:HA	1:A:181:ARG:NH1	2.00	0.77
1:A:8:PHE:HB3	2:B:56:PHE:CZ	2.19	0.76
1:A:187:THR:H	2:E:1:ILE:CG2	1.98	0.76
1:D:65:ARG:HA	1:D:68:LYS:HD2	1.66	0.76
2:B:39:LEU:HD23	2:B:68:THR:HG22	1.68	0.75
1:A:175:GLY:HA3	1:A:179:LEU:HD12	1.69	0.75
1:D:64:THR:O	1:D:68:LYS:HG3	1.87	0.75
1:D:206:LEU:HB3	1:D:242:GLN:HB3	1.68	0.74
1:A:28:VAL:HA	4:A:342:HOH:O	1.88	0.74
1:A:268:LYS:HG3	4:D:352:HOH:O	1.89	0.73
1:D:33:PHE:CD2	1:D:34:VAL:HG13	2.23	0.73
1:D:223:ASP:OD1	1:D:225:THR:HG23	1.89	0.73
2:E:58:LYS:H	2:E:58:LYS:CD	1.99	0.72
1:D:219:ARG:HG3	1:D:219:ARG:HH11	1.54	0.72
2:E:45:ARG:HB2	2:E:45:ARG:NH1	2.02	0.72
1:D:99:VAL:HG22	1:D:114:GLU:OE1	1.90	0.72
1:A:253:GLU:O	1:A:256:ARG:HB2	1.90	0.72
1:D:69:THR:O	1:D:72:GLN:HB2	1.89	0.71
1:A:75:PRO:O	1:A:79:ARG:HG3	1.91	0.71
1:D:37:ASP:HB3	1:D:40:ALA:HB2	1.73	0.71
1:D:195:SER:HB3	1:D:198:GLU:HB2	1.73	0.70
1:A:1:GLY:O	1:A:105:PRO:HA	1.91	0.70
1:D:219:ARG:HG3	1:D:219:ARG:NH1	2.06	0.70
1:A:42:SER:O	1:A:43:GLN:HB2	1.92	0.70
1:D:103:LEU:HD23	1:D:168:LEU:HD23	1.71	0.70
1:D:255:GLN:HE22	1:D:273:LYS:HD3	1.57	0.70
1:A:276:PRO:CG	1:A:277:HIS:H	2.04	0.69
2:E:16:GLU:O	2:E:18:GLY:N	2.26	0.69
1:A:130:LEU:O	1:A:157:ARG:HD3	1.91	0.69
1:D:218:GLN:HG3	1:D:260:HIS:HD2	1.56	0.69
1:A:44:ARG:HA	1:A:64:THR:CG2	2.24	0.68
1:A:70:GLU:OE2	3:C:5:SER:HB3	1.93	0.68
1:D:173:GLU:O	1:D:176:LYS:HB2	1.94	0.68
1:D:95:LEU:HG	4:D:297:HOH:O	1.94	0.67
1:D:44:ARG:HB3	4:D:354:HOH:O	1.95	0.67
1:A:181:ARG:CZ	1:A:181:ARG:CB	2.72	0.67
1:A:181:ARG:CZ	1:A:181:ARG:HB2	2.22	0.67
1:A:259:CYS:HB3	1:A:272:LEU:CD1	2.26	0.66
1:D:187:THR:HA	4:D:357:HOH:O	1.95	0.65
2:E:9:VAL:HG11	4:E:140:HOH:O	1.96	0.65
1:D:264:GLU:HB2	4:D:284:HOH:O	1.96	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:53:GLU:C	1:D:55:GLU:H	2.00	0.65
2:E:79:ALA:HA	4:E:140:HOH:O	1.96	0.65
1:D:166:GLU:O	1:D:169:PRO:HD2	1.97	0.64
1:D:72:GLN:O	1:D:75:PRO:HD2	1.97	0.64
1:A:8:PHE:HB3	2:B:56:PHE:CE1	2.32	0.64
1:A:130:LEU:HB3	1:A:157:ARG:HG3	1.79	0.64
1:D:144:GLN:O	1:D:148:GLU:HG3	1.98	0.64
1:D:252:GLY:N	1:D:254:GLU:OE2	2.29	0.64
1:A:114:GLU:HG2	1:A:156:MET:HG2	1.80	0.64
1:A:215:LEU:CD2	1:A:261:VAL:HG22	2.27	0.64
1:D:37:ASP:HB3	1:D:40:ALA:CB	2.27	0.64
1:A:110:LEU:O	1:A:111:ARG:HB3	1.96	0.64
1:D:44:ARG:NH1	1:D:64:THR:HG21	2.12	0.63
1:D:218:GLN:O	1:D:257:TYR:HA	1.97	0.63
1:A:96:GLN:HB3	4:A:386:HOH:O	1.98	0.63
1:D:35:ARG:HB3	1:D:48:ARG:HD3	1.81	0.63
1:D:159:TYR:CZ	3:F:3:PRO:HB3	2.33	0.63
1:D:74:ALA:HB3	1:D:75:PRO:HD3	1.80	0.62
1:A:167:TRP:CZ3	1:A:170:ARG:HD3	2.34	0.62
1:D:215:LEU:HD22	1:D:261:VAL:HG22	1.82	0.62
1:A:117:ALA:HB2	2:B:60:TRP:CE2	2.34	0.62
1:A:144:GLN:O	1:A:148:GLU:HG3	2.00	0.62
1:A:70:GLU:OE1	1:A:70:GLU:HA	2.00	0.62
2:B:24:ASN:HB3	2:B:65:LEU:HD11	1.82	0.61
2:B:29:GLY:HA2	2:B:61:SER:CB	2.30	0.61
1:D:147:TRP:CZ2	3:F:8:LEU:HD23	2.36	0.61
1:A:182:THR:HB	4:A:316:HOH:O	2.00	0.61
1:D:82:LEU:CD1	1:D:87:GLN:HB2	2.31	0.61
1:D:28:VAL:HG13	1:D:168:LEU:HD11	1.83	0.60
2:E:45:ARG:HG2	4:E:105:HOH:O	2.01	0.60
1:A:191:HIS:HB2	1:A:274:TRP:CE2	2.37	0.60
1:D:103:LEU:N	1:D:103:LEU:HD22	2.15	0.60
1:A:41:ALA:HA	4:A:325:HOH:O	2.01	0.60
1:A:178:THR:HB	4:A:343:HOH:O	2.02	0.60
2:B:75:LYS:HG3	2:B:76:ASP:H	1.66	0.60
1:D:102:ASP:C	1:D:103:LEU:HD22	2.23	0.59
1:D:209:TYR:HB3	4:D:295:HOH:O	2.01	0.59
1:A:25:VAL:HB	4:B:126:HOH:O	2.02	0.59
1:D:123:TYR:HE1	4:D:310:HOH:O	1.85	0.59
1:A:181:ARG:HH21	1:D:88:SER:CB	2.11	0.59
1:D:44:ARG:HB2	1:D:44:ARG:HH11	1.67	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:117:ALA:HB2	2:E:60:TRP:CE2	2.37	0.59
1:A:68:LYS:O	1:A:72:GLN:HG2	2.03	0.59
1:A:275:GLU:OE1	2:E:3:ARG:HD2	2.01	0.59
1:D:82:LEU:HD12	1:D:87:GLN:HB2	1.84	0.59
1:D:35:ARG:HG2	1:D:36:PHE:N	2.18	0.58
1:A:28:VAL:O	1:A:29:ASP:HB2	2.03	0.58
2:B:55:SER:HA	4:B:126:HOH:O	2.04	0.58
1:D:65:ARG:O	1:D:68:LYS:HB2	2.03	0.58
1:D:182:THR:HB	4:D:287:HOH:O	2.03	0.58
2:E:72:PRO:HB2	4:E:145:HOH:O	2.04	0.58
1:D:168:LEU:HB3	1:D:169:PRO:HD3	1.86	0.58
1:A:187:THR:OG1	2:E:1:ILE:HG22	2.03	0.58
1:D:159:TYR:CE1	3:F:3:PRO:HB3	2.39	0.58
1:A:166:GLU:O	1:A:169:PRO:HD2	2.04	0.57
1:D:65:ARG:HA	1:D:68:LYS:CD	2.35	0.57
1:A:97:ARG:N	4:A:386:HOH:O	2.36	0.57
1:D:37:ASP:O	1:D:40:ALA:HB3	2.05	0.57
1:A:48:ARG:HH11	1:A:48:ARG:HB3	1.69	0.57
2:B:84:HIS:CE1	2:B:86:THR:HG23	2.39	0.57
1:D:263:HIS:CD2	1:D:265:GLY:H	2.22	0.57
1:A:186:LYS:O	1:A:206:LEU:HD12	2.05	0.56
1:A:51:TRP:CZ3	1:A:52:VAL:HG22	2.40	0.56
1:A:97:ARG:NH2	1:A:99:VAL:HG11	2.20	0.56
1:A:219:ARG:HE	1:A:256:ARG:CZ	2.18	0.56
1:D:51:TRP:CZ2	1:D:179:LEU:HD11	2.40	0.56
1:D:129:ASP:O	1:D:131:ARG:HG3	2.06	0.56
1:D:151:ASP:HB3	1:D:154:GLU:OE2	2.06	0.56
1:A:92:SER:HB2	4:A:352:HOH:O	2.05	0.56
1:D:197:HIS:O	1:D:198:GLU:HG3	2.05	0.56
1:D:127:ASN:HD22	1:D:132:SER:C	2.09	0.56
1:D:47:PRO:O	1:D:48:ARG:HD2	2.06	0.56
2:B:5:PRO:HA	2:B:30:PHE:HB3	1.88	0.56
1:A:48:ARG:HB3	1:A:48:ARG:NH1	2.21	0.56
2:B:83:ASN:OD1	2:B:90:PRO:HG3	2.04	0.56
1:A:213:ILE:HD13	1:A:214:THR:H	1.69	0.55
1:A:6:LYS:HZ2	1:A:98:MET:CE	2.20	0.55
1:A:58:GLU:HB3	4:A:355:HOH:O	2.06	0.55
1:D:213:ILE:HG12	1:D:214:THR:H	1.71	0.55
1:D:55:GLU:CB	1:D:60:TRP:HE1	2.20	0.55
2:E:24:ASN:HB3	2:E:65:LEU:HD11	1.87	0.55
1:D:272:LEU:N	1:D:272:LEU:HD12	2.22	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:83:ASN:HD22	2:E:84:HIS:N	2.05	0.55
1:D:261:VAL:HB	1:D:270:HIS:HB2	1.89	0.55
1:D:63:GLU:CD	3:F:2:THR:HG22	2.27	0.55
1:A:210:PRO:O	1:A:263:HIS:HE1	1.91	0.54
1:D:25:VAL:HB	4:D:358:HOH:O	2.08	0.54
1:D:103:LEU:HD23	1:D:168:LEU:CD2	2.37	0.54
2:E:51:HIS:HA	2:E:65:LEU:O	2.08	0.54
1:A:187:THR:H	2:E:1:ILE:HG22	1.73	0.53
1:D:2:SER:OG	1:D:105:PRO:HD3	2.08	0.53
1:D:8:PHE:HB3	2:E:56:PHE:CE1	2.44	0.53
2:E:21:ASN:HB3	2:E:70:PHE:CE1	2.43	0.53
1:A:5:MET:HB2	1:A:168:LEU:HD13	1.91	0.53
1:A:82:LEU:HD12	1:A:87:GLN:HB2	1.89	0.53
1:A:40:ALA:HB3	4:A:307:HOH:O	2.09	0.53
1:D:52:VAL:HG12	1:D:60:TRP:CZ2	2.44	0.53
2:B:23:LEU:O	2:B:67:TYR:HA	2.09	0.53
1:A:277:HIS:HD2	1:A:278:HIS:CE1	2.26	0.53
1:A:168:LEU:HD13	4:A:342:HOH:O	2.07	0.53
1:A:153:ALA:HB3	4:A:370:HOH:O	2.09	0.53
1:A:130:LEU:HD22	1:A:160:LEU:HD12	1.91	0.52
1:D:57:PRO:CG	1:D:58:GLU:H	2.22	0.52
2:E:39:LEU:HD23	2:E:68:THR:CG2	2.39	0.52
1:A:142:ASN:HA	1:A:145:ARG:NH1	2.24	0.52
4:A:313:HOH:O	2:B:1:ILE:HG13	2.10	0.52
1:A:157:ARG:NH1	1:A:161:GLU:OE1	2.43	0.52
1:A:276:PRO:CG	1:A:277:HIS:N	2.70	0.52
2:B:4:THR:OG1	2:B:5:PRO:HD2	2.10	0.52
1:D:220:ASP:OD1	1:D:256:ARG:HD2	2.10	0.52
1:A:108:ARG:HA	4:A:351:HOH:O	2.10	0.52
1:A:108:ARG:HG3	4:A:312:HOH:O	2.09	0.52
1:A:276:PRO:HG2	1:A:277:HIS:N	2.22	0.52
1:D:51:TRP:CZ3	1:D:171:TYR:HB3	2.44	0.52
1:A:182:THR:HG21	1:A:264:GLU:HG3	1.91	0.51
1:D:45:MET:HG3	1:D:63:GLU:HB3	1.92	0.51
1:D:73:ASN:O	1:D:76:VAL:N	2.43	0.51
1:A:138:VAL:O	1:A:141:GLN:HG3	2.11	0.51
1:A:25:VAL:HG13	1:A:32:GLN:HG3	1.93	0.51
1:D:116:TYR:CD1	1:D:116:TYR:N	2.79	0.51
1:A:231:VAL:HG11	1:A:244:TRP:CZ2	2.46	0.51
1:D:19:GLN:HB3	1:D:20:PRO:CD	2.40	0.50
2:B:87:LEU:HB2	4:B:101:HOH:O	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:84:HIS:CE1	2:E:85:VAL:HG12	2.46	0.50
1:D:14:ARG:HH22	1:D:39:ASP:CG	2.15	0.50
1:D:15:PRO:HG2	1:D:90:ALA:O	2.12	0.50
1:A:186:LYS:HG3	4:A:324:HOH:O	2.11	0.50
2:E:56:PHE:HB2	2:E:61:SER:O	2.12	0.50
1:A:72:GLN:HA	1:A:72:GLN:NE2	2.27	0.50
1:D:137:ASP:OD1	1:D:139:ALA:HB3	2.12	0.50
1:D:147:TRP:HB3	1:D:152:VAL:HB	1.93	0.50
1:D:218:GLN:HG3	1:D:260:HIS:CD2	2.43	0.50
1:D:219:ARG:HH11	1:D:219:ARG:CG	2.18	0.50
2:E:83:ASN:HD22	2:E:84:HIS:H	1.60	0.50
1:A:168:LEU:HD12	1:A:168:LEU:O	2.12	0.49
1:D:219:ARG:HA	1:D:256:ARG:O	2.12	0.49
4:D:298:HOH:O	2:E:1:ILE:HA	2.12	0.49
1:A:138:VAL:HA	1:A:141:GLN:HG3	1.94	0.49
1:A:259:CYS:HB3	1:A:272:LEU:HD12	1.95	0.49
2:E:9:VAL:CG2	2:E:93:VAL:HG23	2.42	0.49
1:A:173:GLU:O	1:A:176:LYS:HB2	2.13	0.49
1:D:160:LEU:O	1:D:165:VAL:HG23	2.13	0.49
1:D:117:ALA:HB1	1:D:121:LYS:O	2.12	0.49
1:D:168:LEU:O	1:D:172:LEU:HG	2.13	0.49
1:D:194:VAL:HG23	1:D:195:SER:N	2.28	0.49
1:D:159:TYR:CE2	3:F:3:PRO:HB3	2.47	0.49
2:B:79:ALA:HB2	2:B:94:LYS:HA	1.95	0.48
1:D:55:GLU:HB3	1:D:60:TRP:HE1	1.77	0.48
1:D:105:PRO:O	1:D:106:ASP:HB3	2.12	0.48
1:D:48:ARG:HA	1:D:48:ARG:HH11	1.78	0.48
1:D:97:ARG:HH12	3:F:5:SER:HB3	1.78	0.48
2:E:29:GLY:HA2	2:E:61:SER:CB	2.39	0.48
1:A:25:VAL:CG1	1:A:27:TYR:CE1	2.97	0.48
1:D:52:VAL:O	1:D:55:GLU:HB2	2.12	0.48
2:E:96:ASP:O	2:E:98:ASP:N	2.46	0.48
1:A:272:LEU:HD12	1:A:272:LEU:H	1.77	0.48
1:D:53:GLU:O	1:D:55:GLU:N	2.41	0.48
1:A:82:LEU:HD12	1:A:82:LEU:HA	1.73	0.48
1:D:238:ASP:HB3	2:E:12:ARG:HD3	1.94	0.48
1:A:242:GLN:O	1:A:243:LYS:HB2	2.14	0.48
1:D:75:PRO:O	1:D:79:ARG:HG3	2.13	0.48
1:D:53:GLU:C	1:D:55:GLU:N	2.65	0.48
1:D:230:LEU:CD2	1:D:245:ALA:HB2	2.43	0.48
1:A:219:ARG:O	1:A:220:ASP:HB2	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:53:GLU:HB2	4:D:363:HOH:O	2.13	0.47
1:A:5:MET:HA	4:A:342:HOH:O	2.15	0.47
2:E:41:LYS:C	2:E:43:GLY:H	2.18	0.47
1:A:28:VAL:HG22	4:A:342:HOH:O	2.13	0.47
1:D:219:ARG:HD3	1:D:220:ASP:OD2	2.14	0.47
1:A:96:GLN:O	1:A:116:TYR:HA	2.13	0.47
1:D:147:TRP:HZ2	3:F:8:LEU:HD23	1.78	0.47
1:A:64:THR:HG22	1:A:68:LYS:HE2	1.97	0.47
1:A:97:ARG:HH21	1:A:99:VAL:HG11	1.79	0.47
2:B:3:ARG:HH21	2:B:61:SER:HB3	1.78	0.47
2:E:59:ASP:O	2:E:60:TRP:HB2	2.14	0.47
1:A:195:SER:OG	1:A:196:ASP:N	2.48	0.46
1:D:57:PRO:HG2	1:D:58:GLU:N	2.24	0.46
1:A:5:MET:C	1:A:6:LYS:HG2	2.35	0.46
1:A:6:LYS:NZ	1:A:98:MET:CE	2.78	0.46
1:A:197:HIS:HB2	4:A:364:HOH:O	2.14	0.46
1:A:213:ILE:HD13	1:A:214:THR:N	2.31	0.46
2:E:39:LEU:HD23	2:E:68:THR:HG22	1.96	0.46
1:A:25:VAL:CG1	1:A:27:TYR:HE1	2.27	0.46
1:D:178:THR:OG1	1:D:179:LEU:N	2.48	0.46
1:D:13:SER:O	1:D:92:SER:OG	2.31	0.46
1:D:133:TRP:HB2	1:D:144:GLN:HG3	1.97	0.46
1:A:48:ARG:HH11	1:A:48:ARG:CB	2.28	0.46
1:A:275:GLU:OE2	2:E:3:ARG:NH1	2.48	0.46
2:E:9:VAL:HG21	2:E:93:VAL:HG23	1.97	0.46
2:E:61:SER:HB2	4:E:128:HOH:O	2.16	0.46
1:A:102:ASP:O	1:A:103:LEU:HD12	2.16	0.46
2:B:3:ARG:NH2	2:B:59:ASP:OD2	2.49	0.46
1:D:48:ARG:NH1	1:D:48:ARG:HB3	2.31	0.46
1:A:15:PRO:HD2	4:A:352:HOH:O	2.15	0.45
1:A:181:ARG:HE	1:D:88:SER:CA	2.28	0.45
1:D:63:GLU:OE1	3:F:2:THR:HG22	2.16	0.45
1:D:65:ARG:O	1:D:68:LYS:N	2.48	0.45
1:A:74:ALA:HB3	1:A:75:PRO:CD	2.47	0.45
1:D:233:THR:OG1	1:D:243:LYS:HD2	2.16	0.45
1:A:35:ARG:HE	1:A:48:ARG:HE	1.64	0.45
1:A:168:LEU:O	1:A:172:LEU:HG	2.16	0.45
4:A:279:HOH:O	2:E:1:ILE:HG13	2.17	0.45
2:E:83:ASN:HB2	4:E:112:HOH:O	2.16	0.45
1:D:33:PHE:HB2	1:D:52:VAL:CG2	2.33	0.45
2:E:23:LEU:HB3	2:E:68:THR:HG22	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:130:LEU:HD22	1:A:160:LEU:CD1	2.46	0.45
2:E:67:TYR:CD1	2:E:67:TYR:N	2.84	0.45
2:B:6:LYS:HE3	2:B:6:LYS:HB2	1.83	0.45
1:D:115:GLN:HE21	1:D:115:GLN:HB3	1.54	0.45
1:D:51:TRP:CE2	1:D:179:LEU:HD11	2.52	0.45
2:E:94:LYS:HG2	4:E:142:HOH:O	2.16	0.45
1:A:13:SER:HB3	1:A:78:LEU:HD13	1.99	0.44
1:A:25:VAL:HG12	1:A:27:TYR:CE1	2.52	0.44
1:D:81:LEU:HD13	1:D:118:TYR:CD1	2.50	0.44
2:E:25:CYS:HB2	2:E:39:LEU:HD11	1.99	0.44
1:A:42:SER:O	1:A:43:GLN:CB	2.62	0.44
1:A:270:HIS:CE1	1:D:121:LYS:HD2	2.52	0.44
2:B:11:SER:HA	4:B:137:HOH:O	2.17	0.44
1:D:231:VAL:HG21	2:E:8:GLN:OE1	2.17	0.44
1:A:82:LEU:CD1	1:A:87:GLN:HB2	2.46	0.44
1:A:92:SER:HA	4:A:367:HOH:O	2.16	0.44
1:A:123:TYR:N	4:A:315:HOH:O	2.49	0.44
1:D:66:ASN:O	1:D:70:GLU:HB2	2.17	0.44
1:A:148:GLU:HA	4:A:294:HOH:O	2.18	0.44
1:A:249:VAL:HG12	1:A:257:TYR:CZ	2.53	0.44
1:A:223:ASP:OD2	1:A:225:THR:HG23	2.17	0.44
1:D:8:PHE:HD2	2:E:56:PHE:CE2	2.36	0.44
1:A:52:VAL:O	1:A:55:GLU:HG2	2.18	0.44
1:A:130:LEU:CB	1:A:157:ARG:HG3	2.47	0.44
1:D:198:GLU:HA	1:D:249:VAL:O	2.18	0.44
1:A:6:LYS:NZ	1:A:98:MET:SD	2.90	0.44
1:A:78:LEU:HG	4:A:380:HOH:O	2.17	0.44
1:D:109:LEU:HD11	1:D:111:ARG:O	2.18	0.44
2:E:47:GLU:C	2:E:49:VAL:H	2.21	0.44
1:D:249:VAL:HG12	1:D:257:TYR:CZ	2.53	0.43
1:A:32:GLN:NE2	1:A:35:ARG:HB2	2.34	0.43
1:A:169:PRO:HA	1:A:172:LEU:HD12	2.00	0.43
1:D:40:ALA:O	1:D:42:SER:N	2.52	0.43
1:D:55:GLU:OE2	1:D:170:ARG:NH1	2.51	0.43
1:D:21:ARG:NH2	1:D:37:ASP:OD2	2.43	0.43
1:D:230:LEU:HD21	1:D:245:ALA:HB2	2.01	0.43
1:D:255:GLN:HG2	4:D:282:HOH:O	2.18	0.43
1:D:82:LEU:HD21	1:D:88:SER:O	2.18	0.43
1:A:157:ARG:O	1:A:161:GLU:HG3	2.17	0.43
2:B:37:VAL:HB	2:B:66:TYR:CD2	2.53	0.43
1:D:38:SER:OG	1:D:39:ASP:N	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:50:PRO:O	1:A:52:VAL:N	2.52	0.43
1:A:7:TYR:CE1	3:C:2:THR:HG22	2.53	0.43
2:B:28:SER:HB3	4:B:139:HOH:O	2.19	0.43
1:D:8:PHE:CD1	1:D:8:PHE:N	2.87	0.43
2:E:37:VAL:HB	2:E:66:TYR:CE2	2.54	0.43
2:E:63:TYR:O	2:E:63:TYR:CD1	2.72	0.43
2:B:79:ALA:CB	2:B:94:LYS:HA	2.49	0.42
1:D:26:GLY:N	4:D:358:HOH:O	2.52	0.42
2:E:45:ARG:HH11	2:E:45:ARG:CB	2.24	0.42
1:A:36:PHE:CD1	1:A:36:PHE:C	2.91	0.42
1:D:103:LEU:CD2	1:D:168:LEU:HD23	2.45	0.42
1:A:187:THR:H	2:E:1:ILE:HG21	1.79	0.42
1:A:104:GLY:N	1:A:110:LEU:HD13	2.33	0.42
1:A:111:ARG:HD3	1:A:113:TYR:OH	2.19	0.42
1:A:274:TRP:CH2	1:A:276:PRO:HB3	2.52	0.42
1:D:206:LEU:HD11	4:D:307:HOH:O	2.19	0.42
2:E:39:LEU:HD12	2:E:39:LEU:HA	1.78	0.42
2:B:37:VAL:HB	2:B:66:TYR:CE2	2.55	0.42
1:D:44:ARG:HG3	1:D:64:THR:OG1	2.20	0.42
1:D:222:GLU:O	1:D:224:GLN:HG2	2.20	0.42
1:A:126:LEU:HD13	1:A:133:TRP:CH2	2.55	0.42
1:A:159:TYR:CE1	3:C:3:PRO:HB3	2.54	0.42
1:A:168:LEU:HB3	1:A:169:PRO:HD3	2.01	0.42
2:B:54:LEU:HA	2:B:64:LEU:CD2	2.50	0.42
1:A:252:GLY:C	1:A:254:GLU:H	2.23	0.42
2:B:54:LEU:HA	2:B:64:LEU:HD21	2.02	0.42
1:D:103:LEU:HD13	1:D:109:LEU:HA	2.00	0.42
1:A:25:VAL:CG1	1:A:32:GLN:HG3	2.49	0.41
2:E:47:GLU:O	2:E:49:VAL:N	2.53	0.41
2:E:56:PHE:CB	2:E:61:SER:O	2.68	0.41
2:E:59:ASP:OD1	2:E:61:SER:OG	2.25	0.41
1:A:72:GLN:HA	1:A:72:GLN:HE21	1.83	0.41
1:A:151:ASP:O	1:A:154:GLU:HB2	2.20	0.41
1:A:214:THR:HB	1:A:262:GLN:HB2	2.02	0.41
2:B:98:ASP:O	2:B:99:MET:HG2	2.21	0.41
1:D:277:HIS:O	1:D:278:HIS:HB2	2.20	0.41
4:D:298:HOH:O	2:E:1:ILE:HG12	2.20	0.41
1:A:81:LEU:HD13	1:A:118:TYR:CD1	2.56	0.41
1:D:47:PRO:HB3	1:D:60:TRP:HH2	1.76	0.41
1:D:82:LEU:HD12	1:D:82:LEU:HA	1.87	0.41
2:E:16:GLU:HG2	2:E:19:LYS:HD3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:37:VAL:HB	2:E:66:TYR:CZ	2.55	0.41
1:A:116:TYR:CD1	1:A:116:TYR:N	2.89	0.41
1:D:187:THR:OG1	1:D:272:LEU:HD21	2.20	0.41
1:A:62:ARG:HH21	1:A:163:GLN:NE2	2.17	0.41
1:A:128:GLU:O	1:A:128:GLU:HG3	2.21	0.41
1:D:22:PHE:CE2	1:D:24:ALA:HB2	2.56	0.41
1:D:99:VAL:CG2	1:D:114:GLU:OE1	2.66	0.41
1:A:233:THR:OG1	1:A:243:LYS:HD2	2.21	0.41
1:D:187:THR:HG21	1:D:261:VAL:HG11	2.02	0.41
1:D:263:HIS:HD2	1:D:265:GLY:H	1.65	0.41
2:B:10:TYR:CD1	2:B:10:TYR:N	2.88	0.41
2:B:39:LEU:HA	2:B:39:LEU:HD12	1.79	0.41
1:A:22:PHE:CZ	1:A:70:GLU:HB3	2.56	0.41
1:A:275:GLU:CD	2:E:3:ARG:HH11	2.23	0.41
2:B:67:TYR:CD1	2:B:67:TYR:N	2.88	0.41
1:D:185:PRO:HD3	1:D:263:HIS:CG	2.56	0.41
2:E:75:LYS:HG3	2:E:76:ASP:N	2.36	0.41
1:A:51:TRP:CE3	1:A:52:VAL:HG22	2.55	0.41
1:A:80:THR:HG23	1:A:83:ARG:HH12	1.85	0.40
1:D:126:LEU:HD21	1:D:130:LEU:HA	2.02	0.40
1:D:133:TRP:NE1	1:D:153:ALA:HB2	2.37	0.40
2:E:83:ASN:OD1	2:E:90:PRO:HG3	2.21	0.40
1:A:47:PRO:HB3	1:A:60:TRP:CH2	2.56	0.40
1:D:213:ILE:HG22	4:D:332:HOH:O	2.21	0.40
1:D:231:VAL:HG12	1:D:244:TRP:H	1.86	0.40
2:E:33:SER:HB3	2:E:62:PHE:CD1	2.57	0.40
2:E:95:TRP:N	4:E:140:HOH:O	2.54	0.40
2:B:31:HIS:HD2	4:B:117:HOH:O	2.05	0.40
1:D:15:PRO:HG2	1:D:91:GLY:O	2.22	0.40
1:D:28:VAL:HG23	1:D:33:PHE:CE1	2.56	0.40
2:E:93:VAL:HG23	2:E:93:VAL:O	2.21	0.40
1:A:72:GLN:O	1:A:75:PRO:HD2	2.21	0.40
1:D:99:VAL:HG12	1:D:100:GLY:N	2.36	0.40

All (1) 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:D:225:THR:OG1	1:D:225:THR:OG1[6_565]	2.18	0.02

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	276/278 (99%)	246 (89%)	20 (7%)	10 (4%)	3 11
1	D	276/278 (99%)	229 (83%)	40 (14%)	7 (2%)	5 19
2	B	97/99 (98%)	87 (90%)	8 (8%)	2 (2%)	7 23
2	E	97/99 (98%)	78 (80%)	16 (16%)	3 (3%)	4 14
3	C	6/8 (75%)	6 (100%)	0	0	100 100
3	F	6/8 (75%)	6 (100%)	0	0	100 100
All	All	758/770 (98%)	652 (86%)	84 (11%)	22 (3%)	4 15

All (22) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	276	PRO
1	A	277	HIS
1	D	42	SER
1	D	106	ASP
2	E	17	ASN
1	A	42	SER
1	A	43	GLN
1	A	51	TRP
1	A	111	ARG
2	B	52	SER
2	E	48	LYS
2	E	97	ARG
1	A	20	PRO
1	A	90	ALA
1	A	176	LYS
1	A	177	GLU
2	B	74	GLU
1	D	41	ALA
1	D	43	GLN
1	D	114	GLU

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Mol	Chain	Res	Type
1	D	54	GLN
1	D	57	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	237/237 (100%)	219 (92%)	18 (8%)	13 36
1	D	236/237 (100%)	220 (93%)	16 (7%)	16 42
2	B	94/94 (100%)	90 (96%)	4 (4%)	29 62
2	E	94/94 (100%)	86 (92%)	8 (8%)	10 31
3	C	7/7 (100%)	7 (100%)	0	100 100
3	F	7/7 (100%)	6 (86%)	1 (14%)	3 10
All	All	675/676 (100%)	628 (93%)	47 (7%)	15 40

All (47) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	33	PHE
1	A	48	ARG
1	A	86	ASN
1	A	89	GLU
1	A	99	VAL
1	A	138	VAL
1	A	154	GLU
1	A	181	ARG
1	A	206	LEU
1	A	213	ILE
1	A	216	THR
1	A	219	ARG
1	A	222	GLU
1	A	223	ASP
1	A	254	GLU
1	A	256	ARG

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Mol	Chain	Res	Type
1	A	272	LEU
1	A	277	HIS
2	B	39	LEU
2	B	45	ARG
2	B	70	PHE
2	B	83	ASN
1	D	35	ARG
1	D	44	ARG
1	D	69	THR
1	D	115	GLN
1	D	116	TYR
1	D	124	ILE
1	D	138	VAL
1	D	154	GLU
1	D	170	ARG
1	D	197	HIS
1	D	206	LEU
1	D	219	ARG
1	D	242	GLN
1	D	254	GLU
1	D	272	LEU
1	D	273	LYS
2	E	1	ILE
2	E	7	ILE
2	E	39	LEU
2	E	45	ARG
2	E	53	ASP
2	E	58	LYS
2	E	70	PHE
2	E	83	ASN
3	F	7	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (23) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	32	GLN
1	A	72	GLN
1	A	73	ASN
1	A	163	GLN
1	A	226	GLN
1	A	255	GLN
1	A	263	HIS

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Mol	Chain	Res	Type
1	A	277	HIS
2	B	13	HIS
1	D	19	GLN
1	D	32	GLN
1	D	66	ASN
1	D	72	GLN
1	D	87	GLN
1	D	96	GLN
1	D	115	GLN
1	D	127	ASN
1	D	141	GLN
1	D	255	GLN
1	D	260	HIS
1	D	262	GLN
1	D	263	HIS
2	E	83	ASN

5.3.3 RNA (i)

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

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	278/278 (100%)	-0.40	3 (1%) 80 75	10, 32, 56, 113	0
1	D	278/278 (100%)	-0.23	9 (3%) 47 37	15, 39, 71, 109	0
2	B	99/99 (100%)	-0.61	0 100 100	13, 26, 50, 69	0
2	E	99/99 (100%)	-0.43	0 100 100	22, 36, 57, 69	0
3	C	8/8 (100%)	-0.18	0 100 100	27, 41, 53, 53	0
3	F	8/8 (100%)	0.68	0 100 100	43, 53, 59, 60	0
All	All	770/770 (100%)	-0.36	12 (1%) 72 66	10, 35, 66, 113	0

All (12) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	277	HIS	4.3
1	D	277	HIS	3.8
1	A	278	HIS	3.6
1	D	196	ASP	3.3
1	D	278	HIS	3.0
1	A	17	ARG	2.7
1	D	19	GLN	2.6
1	D	54	GLN	2.4
1	D	197	HIS	2.3
1	D	105	PRO	2.2
1	D	58	GLU	2.1
1	D	195	SER	2.0

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

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

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

There are no ligands in this entry.

6.5 Other polymers (i)

There are no such residues in this entry.