Full wwPDB X-ray Structure Validation Report ⓘ

Mar 2, 2026 – 04:14 AM UTC

PDB ID	:	6UI1 / pdb_00006ui1
Title	:	Crystal structure of BoNT/A-LCHn domain in complex with VHH ciA-D12, ciA-B5, and ciA-H7
Authors	:	Lam, K.; Jin, R.
Deposited on	:	2019-09-29
Resolution	:	2.20 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:

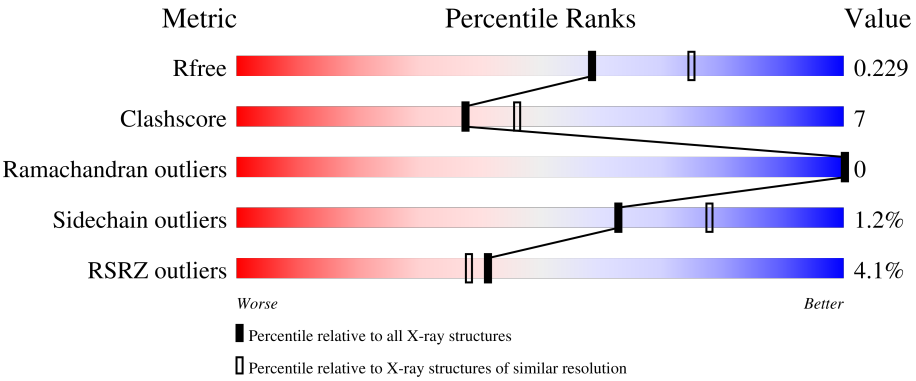
MolProbity	:	4-5-2 with Phenix2.0
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

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 2.20 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}	180053	6164 (2.20-2.20)
Clashscore	190562	6851 (2.20-2.20)
Ramachandran outliers	187476	6768 (2.20-2.20)
Sidechain outliers	187428	6769 (2.20-2.20)
RSRZ outliers	180081	6166 (2.20-2.20)

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	873	4% 84% 13%
2	B	123	4% 80% 13% 7%
3	C	134	2% 81% 10% 8%
4	D	130	2% 74% 16% 9%

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 10088 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 BoNT/A.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	851	Total	C	N	O	S	0	0	0
			6868	4420	1111	1317	20			

There are 5 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-1	GLY	-	expression tag	UNP Q7B8V4
A	0	PRO	-	expression tag	UNP Q7B8V4
A	224	GLN	GLU	conflict	UNP Q7B8V4
A	363	ALA	ARG	conflict	UNP Q7B8V4
A	366	PHE	TYR	conflict	UNP Q7B8V4

- Molecule 2 is a protein called ciA-H7.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	114	Total	C	N	O	S	0	0	0
			855	529	152	169	5			

- Molecule 3 is a protein called ciA-D12.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	C	123	Total	C	N	O	S	0	0	0
			933	590	159	179	5			

- Molecule 4 is a protein called ciA-B5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	D	118	Total	C	N	O	S	0	0	0
			908	568	161	174	5			

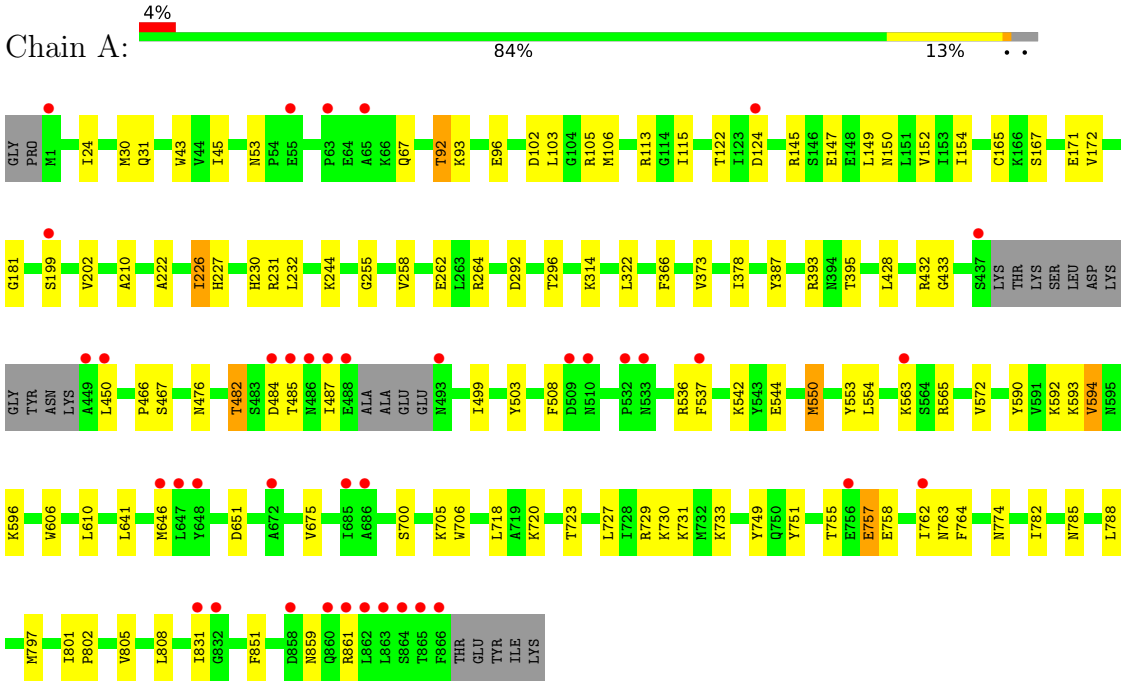
- Molecule 5 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	371	Total O 371 371	0	0
5	B	59	Total O 59 59	0	0
5	C	49	Total O 49 49	0	0
5	D	45	Total O 45 45	0	0

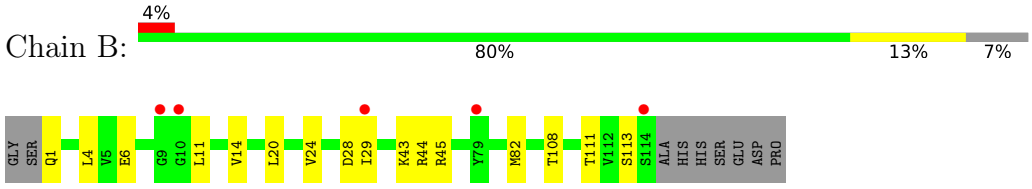
3 Residue-property plots (i)

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

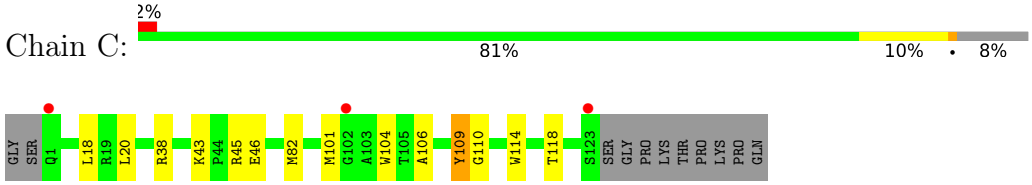
- Molecule 1: BoNT/A



- Molecule 2: ciA-H7

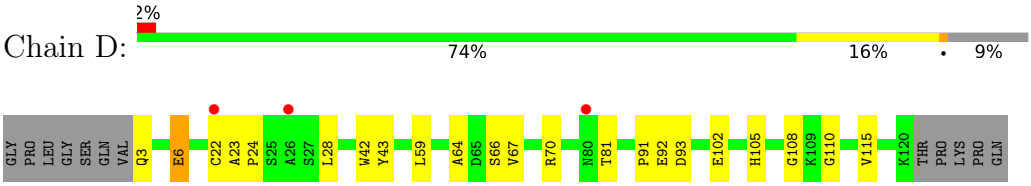


- Molecule 3: ciA-D12



- Molecule 4: ciA-B5

Chain D:


2%
74%
16%
9%
GLY PRO LEU GLY SER GLN VAL Q3 E6 C22 A23 P24 S25 A26 S27 L28 W42 Y43 L59 A64 D65 S66 V67 R70 N80 T81 P91 E92 D93 E102 H105 G108 K109 G110 V115 K120 THR PRO LYS PRO GLN

4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	141.04Å 89.36Å 143.69Å 90.00° 118.93° 90.00°	Depositor
Resolution (Å)	37.16 – 2.20 37.16 – 2.20	Depositor EDS
% Data completeness (in resolution range)	94.8 (37.16-2.20) 94.8 (37.16-2.20)	Depositor EDS
R_{merge}	0.05	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	3.42 (at 2.20Å)	Xtriage
Refinement program	PHENIX 1.9_1692, PHENIX 1.9_1692	Depositor
R, R_{free}	0.181 , 0.229 0.183 , 0.229	Depositor DCC
R_{free} test set	3775 reflections (4.75%)	wwPDB-VP
Wilson B-factor (Å^2)	29.8	Xtriage
Anisotropy	0.225	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.33 , 34.8	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.32$	Xtriage
Estimated twinning fraction	0.016 for h,-k,-h-l	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	10088	wwPDB-VP
Average B, all atoms (Å^2)	34.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.23% 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	0.56	0/7013	0.80	3/9500 (0.0%)
2	B	0.49	0/869	0.82	0/1170
3	C	0.53	0/954	0.75	1/1293 (0.1%)
4	D	0.50	0/931	0.77	0/1265
All	All	0.55	0/9767	0.79	4/13228 (0.0%)

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	C	109	TYR	N-CA-C	6.39	118.33	111.36
1	A	53	ASN	CA-C-N	5.65	125.77	119.32
1	A	53	ASN	C-N-CA	5.65	125.77	119.32
1	A	757	GLU	N-CA-C	-5.43	105.96	113.18

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	6868	0	6778	100	0
2	B	855	0	835	13	0
3	C	933	0	905	13	0
4	D	908	0	872	15	0
5	A	371	0	0	8	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	B	59	0	0	2	0
5	C	49	0	0	2	0
5	D	45	0	0	2	0
All	All	10088	0	9390	133	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 7.

All (133) 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:596:LYS:HZ1	1:A:606:TRP:CD1	1.65	1.14
1:A:482:THR:HG22	1:A:484:ASP:H	1.10	1.08
1:A:67:GLN:HE22	1:A:537:PHE:H	1.19	0.84
1:A:124:ASP:HB3	2:B:44:ARG:HA	1.60	0.83
1:A:482:THR:HG22	1:A:484:ASP:N	1.92	0.82
1:A:67:GLN:HE22	1:A:537:PHE:N	1.80	0.78
1:A:67:GLN:NE2	1:A:537:PHE:H	1.82	0.78
3:C:101:MET:SD	3:C:106:ALA:HA	2.26	0.74
3:C:106:ALA:O	3:C:110:GLY:HA2	1.89	0.73
1:A:729:ARG:NH1	5:A:902:HOH:O	2.21	0.72
1:A:106:MET:HE2	1:A:503:TYR:HD1	1.55	0.70
1:A:797:MET:HA	1:A:797:MET:HE2	1.74	0.68
1:A:596:LYS:NZ	1:A:606:TRP:CD1	2.53	0.68
1:A:705:LYS:NZ	5:A:904:HOH:O	2.28	0.66
1:A:67:GLN:HE22	1:A:536:ARG:HA	1.61	0.66
1:A:646:MET:HE2	1:A:651:ASP:HB3	1.78	0.64
1:A:476:ASN:ND2	1:A:675:VAL:O	2.31	0.63
1:A:482:THR:CG2	1:A:484:ASP:H	2.01	0.63
1:A:593:LYS:O	1:A:596:LYS:HG2	1.99	0.62
2:B:20:LEU:HG	2:B:82:MET:HE2	1.82	0.62
4:D:6:GLU:OE2	4:D:110:GLY:N	2.29	0.61
1:A:124:ASP:HB3	2:B:44:ARG:CA	2.29	0.61
1:A:258:VAL:HG21	1:A:366:PHE:CE1	2.36	0.61
1:A:590:TYR:O	1:A:594:VAL:HG23	2.01	0.60
1:A:171:GLU:HG3	1:A:172:VAL:HG23	1.84	0.60
2:B:24:VAL:HG21	2:B:29:ILE:HD11	1.84	0.60
3:C:38:ARG:NH1	5:C:202:HOH:O	2.35	0.59
1:A:802:PRO:HA	1:A:805:VAL:HG22	1.84	0.59
1:A:199:SER:HB3	1:A:733:LYS:HD2	1.86	0.58
1:A:106:MET:HE2	1:A:503:TYR:CD1	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:222:ALA:O	1:A:226:ILE:HG12	2.03	0.58
1:A:67:GLN:HE22	1:A:536:ARG:CA	2.16	0.58
1:A:67:GLN:NE2	1:A:536:ARG:HA	2.18	0.58
1:A:122:THR:OG1	2:B:43:LYS:NZ	2.35	0.57
1:A:729:ARG:HD2	1:A:785:ASN:OD1	2.04	0.57
4:D:64:ALA:HB3	4:D:67:VAL:HG22	1.88	0.56
1:A:751:TYR:OH	1:A:762:ILE:O	2.21	0.56
1:A:594:VAL:HG22	1:A:610:LEU:HD22	1.88	0.56
3:C:20:LEU:HG	3:C:82:MET:HE2	1.88	0.56
1:A:115:ILE:HD12	5:A:910:HOH:O	2.05	0.55
1:A:92:THR:HG22	3:C:104:TRP:CZ2	2.42	0.55
1:A:646:MET:HB3	1:A:651:ASP:HB3	1.89	0.54
4:D:3:GLN:N	5:D:201:HOH:O	2.39	0.54
1:A:244:LYS:HG3	1:A:467:SER:HB3	1.89	0.54
1:A:727:LEU:HG	1:A:731:LYS:HE2	1.88	0.54
1:A:292:ASP:O	1:A:296:THR:HG23	2.08	0.54
1:A:550:MET:HE3	1:A:731:LYS:HD2	1.89	0.54
1:A:755:THR:C	1:A:757:GLU:H	2.15	0.54
1:A:554:LEU:HD11	1:A:731:LYS:HB3	1.89	0.54
1:A:433:GLY:HA3	1:A:450:LEU:O	2.07	0.53
1:A:113:ARG:HD3	5:A:1051:HOH:O	2.07	0.53
1:A:797:MET:HE1	1:A:851:PHE:CD2	2.43	0.53
1:A:550:MET:HG2	1:A:641:LEU:HB3	1.92	0.52
1:A:96:GLU:HG3	3:C:104:TRP:NE1	2.24	0.52
1:A:487:ILE:HD12	1:A:700:SER:CB	2.40	0.52
4:D:92:GLU:H	4:D:92:GLU:CD	2.19	0.51
1:A:466:PRO:HG2	1:A:720:LYS:HG2	1.92	0.51
1:A:210:ALA:HB2	1:A:774:ASN:CG	2.36	0.51
1:A:590:TYR:CE2	1:A:594:VAL:HG21	2.45	0.51
4:D:66:SER:O	4:D:70:ARG:NH1	2.44	0.51
2:B:11:LEU:HD22	2:B:111:THR:HB	1.92	0.50
2:B:4:LEU:HG	2:B:24:VAL:HG22	1.92	0.50
4:D:43:TYR:OH	4:D:102:GLU:OE2	2.29	0.50
1:A:565:ARG:HB2	1:A:749:TYR:CE2	2.48	0.49
4:D:70:ARG:HD3	5:D:213:HOH:O	2.11	0.49
1:A:96:GLU:HG3	3:C:104:TRP:HE1	1.77	0.48
1:A:115:ILE:HD13	1:A:150:ASN:HD21	1.79	0.48
1:A:729:ARG:HG3	1:A:788:LEU:HD12	1.96	0.48
1:A:763:ASN:ND2	4:D:105:HIS:HB2	2.29	0.48
4:D:70:ARG:NH2	4:D:93:ASP:OD2	2.47	0.48
4:D:22:CYS:HB2	4:D:42:TRP:CZ2	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:43:TRP:HD1	1:A:149:LEU:HD11	1.78	0.47
1:A:255:GLY:HA3	1:A:537:PHE:CD1	2.50	0.47
1:A:387:TYR:N	3:C:109:TYR:O	2.42	0.47
1:A:167:SER:HB2	1:A:231:ARG:HH21	1.79	0.47
4:D:23:ALA:HB2	4:D:81:THR:HG22	1.96	0.47
1:A:762:ILE:O	1:A:764:PHE:N	2.48	0.46
3:C:101:MET:SD	3:C:106:ALA:CA	3.01	0.46
1:A:145:ARG:NH2	1:A:147:GLU:OE2	2.38	0.46
1:A:149:LEU:HD21	1:A:152:VAL:HG22	1.97	0.46
1:A:181:GLY:HA2	1:A:231:ARG:O	2.16	0.46
1:A:428:LEU:HD23	1:A:542:LYS:HG3	1.96	0.46
4:D:24:PRO:HB3	4:D:28:LEU:HD22	1.96	0.46
1:A:113:ARG:HH22	1:A:322:LEU:HD21	1.81	0.46
1:A:487:ILE:HD12	1:A:700:SER:HB2	1.97	0.45
1:A:43:TRP:HD1	1:A:149:LEU:CD1	2.29	0.45
1:A:314:LYS:NZ	5:A:915:HOH:O	2.35	0.45
3:C:43:LYS:NZ	5:C:209:HOH:O	2.50	0.45
4:D:92:GLU:OE1	4:D:92:GLU:N	2.38	0.45
1:A:105:ARG:HG2	1:A:508:PHE:CE1	2.51	0.44
1:A:758:GLU:OE2	5:A:901:HOH:O	2.21	0.44
1:A:167:SER:CB	1:A:231:ARG:HH21	2.31	0.44
3:C:118:THR:O	3:C:118:THR:HG23	2.17	0.44
1:A:797:MET:HE2	1:A:801:ILE:HG13	2.00	0.43
1:A:718:LEU:O	1:A:723:THR:HG23	2.18	0.43
2:B:14:VAL:HG23	2:B:113:SER:O	2.17	0.43
1:A:24:ILE:HG12	1:A:30:MET:SD	2.59	0.43
3:C:18:LEU:HB2	3:C:82:MET:HE3	2.00	0.43
1:A:550:MET:CG	1:A:641:LEU:HB3	2.49	0.43
1:A:751:TYR:CZ	1:A:764:PHE:HB3	2.54	0.43
1:A:487:ILE:HD12	1:A:700:SER:HB3	2.01	0.43
1:A:706:TRP:CE3	1:A:808:LEU:HD13	2.54	0.43
1:A:596:LYS:HZ1	1:A:606:TRP:NE1	2.08	0.42
2:B:1:GLN:HG2	5:B:249:HOH:O	2.18	0.42
1:A:93:LYS:NZ	1:A:378:ILE:O	2.49	0.42
1:A:482:THR:CG2	1:A:484:ASP:HB2	2.50	0.42
1:A:115:ILE:HG23	5:A:950:HOH:O	2.19	0.42
2:B:6:GLU:OE2	2:B:108:THR:HG23	2.19	0.42
1:A:393:ARG:O	1:A:395:THR:HG23	2.19	0.42
1:A:255:GLY:HA3	1:A:537:PHE:CG	2.55	0.42
1:A:106:MET:HE1	1:A:499:ILE:HG22	2.02	0.41
1:A:482:THR:HB	1:A:485:THR:OG1	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:706:TRP:CE2	1:A:808:LEU:HB3	2.55	0.41
2:B:29:ILE:HD13	2:B:29:ILE:HA	1.80	0.41
1:A:45:ILE:HB	1:A:154:ILE:HG22	2.01	0.41
4:D:91:PRO:HA	4:D:115:VAL:O	2.21	0.41
2:B:45:ARG:NH2	5:B:206:HOH:O	2.50	0.41
1:A:102:ASP:C	1:A:106:MET:HE3	2.45	0.41
1:A:230:HIS:CE1	1:A:264:ARG:HD3	2.56	0.41
1:A:553:TYR:CZ	1:A:572:VAL:HG21	2.56	0.41
1:A:594:VAL:HG22	1:A:610:LEU:CD2	2.49	0.41
1:A:103:LEU:HA	1:A:106:MET:HE3	2.02	0.41
1:A:227:HIS:NE2	1:A:262:GLU:OE2	2.52	0.41
1:A:730:LYS:NZ	5:A:936:HOH:O	2.49	0.41
2:B:28:ASP:O	2:B:29:ILE:HB	2.21	0.41
1:A:859:ASN:C	1:A:861:ARG:H	2.29	0.41
3:C:45:ARG:HD3	3:C:114:TRP:CZ3	2.56	0.41
1:A:67:GLN:HE22	1:A:536:ARG:C	2.28	0.40
1:A:432:ARG:HD3	1:A:544:GLU:HB3	2.03	0.40
1:A:592:LYS:HE3	1:A:592:LYS:HB2	1.78	0.40
4:D:6:GLU:OE2	4:D:108:GLY:C	2.64	0.40
1:A:181:GLY:HA3	1:A:232:LEU:O	2.22	0.40
1:A:202:VAL:HG12	1:A:782:ILE:HG13	2.04	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	845/873 (97%)	823 (97%)	22 (3%)	0	100	100
2	B	112/123 (91%)	111 (99%)	1 (1%)	0	100	100
3	C	121/134 (90%)	121 (100%)	0	0	100	100
4	D	116/130 (89%)	113 (97%)	3 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
All	All	1194/1260 (95%)	1168 (98%)	26 (2%)	0	100 100

There are no Ramachandran outliers to report.

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	763/786 (97%)	753 (99%)	10 (1%)	61 76
2	B	91/98 (93%)	91 (100%)	0	100 100
3	C	97/107 (91%)	96 (99%)	1 (1%)	68 81
4	D	99/110 (90%)	97 (98%)	2 (2%)	48 64
All	All	1050/1101 (95%)	1037 (99%)	13 (1%)	63 78

All (13) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	31	GLN
1	A	92	THR
1	A	165	CYS
1	A	226	ILE
1	A	373	VAL
1	A	482	THR
1	A	550	MET
1	A	563	LYS
1	A	594	VAL
1	A	831	ILE
3	C	46	GLU
4	D	6	GLU
4	D	59	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (11) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	26	ASN
1	A	67	GLN
1	A	315	ASN
1	A	402	ASN
1	A	527	GLN
1	A	533	ASN
1	A	722	ASN
1	A	774	ASN
2	B	109	GLN
3	C	3	GLN
3	C	30	ASN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no 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	851/873 (97%)	-0.04	39 (4%)	37	34	17, 32, 57, 93	0
2	B	114/123 (92%)	0.03	5 (4%)	39	36	23, 33, 50, 72	0
3	C	123/134 (91%)	0.00	3 (2%)	59	56	24, 35, 51, 79	0
4	D	118/130 (90%)	0.06	3 (2%)	58	55	26, 34, 52, 62	0
All	All	1206/1260 (95%)	-0.02	50 (4%)	41	38	17, 33, 54, 93	0

All (50) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	B	10	GLY	6.2
1	A	831	ILE	4.7
1	A	647	LEU	4.6
1	A	861	ARG	4.1
1	A	864	SER	4.0
4	D	22	CYS	3.8
1	A	493	ASN	3.7
1	A	685	ILE	3.7
1	A	488	GLU	3.7
1	A	865	THR	3.6
1	A	648	TYR	3.6
1	A	646	MET	3.5
1	A	449	ALA	3.5
1	A	756	GLU	3.2
1	A	485	THR	3.2
1	A	866	PHE	3.1
2	B	114	SER	3.0
4	D	80	ASN	2.9
3	C	1	GLN	2.9
1	A	487	ILE	2.9
1	A	437	SER	2.9

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Mol	Chain	Res	Type	RSRZ
1	A	509	ASP	2.9
1	A	862	LEU	2.8
1	A	1	MET	2.8
1	A	563	LYS	2.6
3	C	123	SER	2.6
1	A	672	ALA	2.6
1	A	537	PHE	2.6
1	A	858	ASP	2.6
1	A	860	GLN	2.5
1	A	486	ASN	2.5
2	B	9	GLY	2.5
2	B	29	ILE	2.5
1	A	124	ASP	2.5
1	A	532	PRO	2.4
1	A	863	LEU	2.4
1	A	484	ASP	2.4
1	A	510	ASN	2.3
3	C	102	GLY	2.3
1	A	199	SER	2.3
4	D	26	ALA	2.2
1	A	762	ILE	2.2
1	A	832	GLY	2.2
1	A	55	GLU	2.1
2	B	79	TYR	2.1
1	A	65	ALA	2.1
1	A	450	LEU	2.1
1	A	686	ALA	2.0
1	A	533	ASN	2.0
1	A	63	PRO	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 oligosaccharides 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.