Full wwPDB X-ray Structure Validation Report (i)

Oct 17, 2023 – 03:14 AM EDT

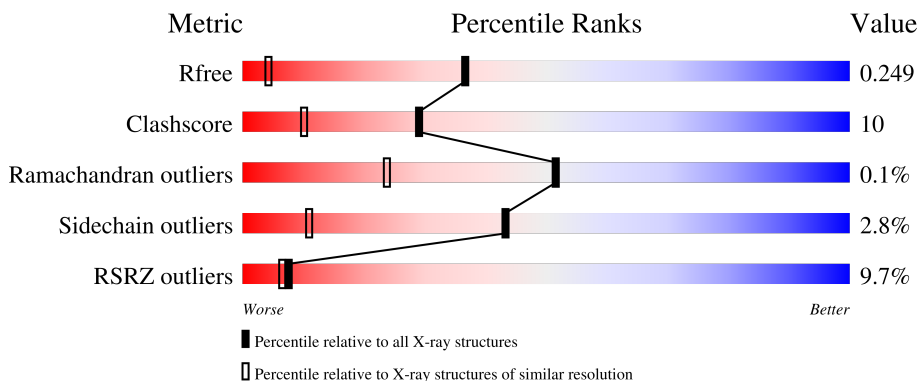|		
PDB ID	:	1PP0
Title	:	volvatoxin A2 in monoclinic crystal
Authors	:	Lin, S.-C.; Lo, Y.-C.; Lin, J.-Y.; Liaw, Y.-C.
Deposited on	:	2003-06-16
Resolution	:	1.42 Å(reported)

1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 1.42 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	Percentile Ranks	Value
Rfree		0.249
Clashscore		10
Ramachandran outliers		0.1%
Sidechain outliers		2.8%
RSRZ outliers		9.7%

Worse   *Better*

▌ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R$_{free}$	130704	2579 (1.44-1.40)
Clashscore	141614	2696 (1.44-1.40)
Ramachandran outliers	138981	2632 (1.44-1.40)
Sidechain outliers	138945	2631 (1.44-1.40)
RSRZ outliers	127900	2528 (1.44-1.40)

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	199	11% / 72% / 23% · ·
1	B	199	9% / 79% / 16% · ·
1	C	199	8% / 83% / 14% · ·
1	D	199	11% / 81% / 15% · ·

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard

residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

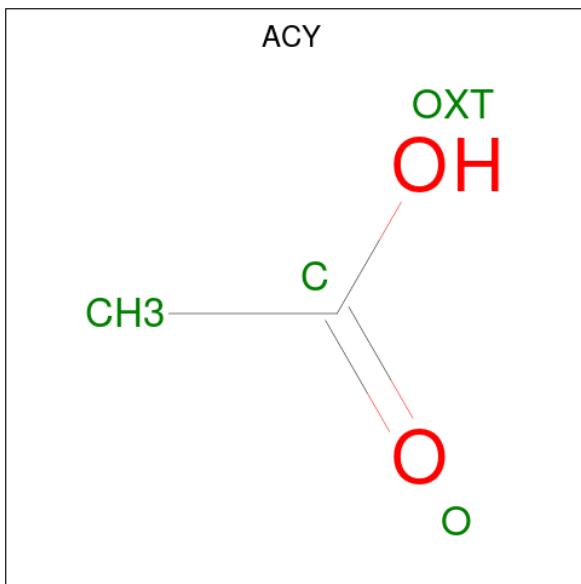| Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	ACY	B	4008	-	-	X	-

2 Entry composition ⓘ

There are 3 unique types of molecules in this entry. The entry contains 6956 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 volvatoxin A2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	191	Total	C	N	O	S	0	0	0
			1527	994	237	295	1			
1	B	194	Total	C	N	O	S	0	0	0
			1547	1004	241	301	1			
1	C	194	Total	C	N	O	S	0	0	0
			1547	1004	241	301	1			
1	D	191	Total	C	N	O	S	0	0	0
			1527	994	237	295	1			

- Molecule 2 is ACETIC ACID (three-letter code: ACY) (formula: $C_2H_4O_2$).

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	C	O	0	0
			4	2	2		
2	A	1	Total	C	O	0	0
			4	2	2		

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total 4	C 2	O 2	0	0
2	A	1	Total 4	C 2	O 2	0	0
2	A	1	Total 4	C 2	O 2	0	0
2	B	1	Total 4	C 2	O 2	0	0
2	B	1	Total 4	C 2	O 2	0	0
2	B	1	Total 4	C 2	O 2	0	0
2	C	1	Total 4	C 2	O 2	0	0
2	D	1	Total 4	C 2	O 2	0	0
2	D	1	Total 4	C 2	O 2	0	0
2	D	1	Total 4	C 2	O 2	0	0
2	D	1	Total 4	C 2	O 2	0	0

- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	170	Total 170	O 170	0	0
3	B	204	Total 204	O 204	0	0
3	C	199	Total 199	O 199	0	0
3	D	183	Total 183	O 183	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: volvatoxin A2
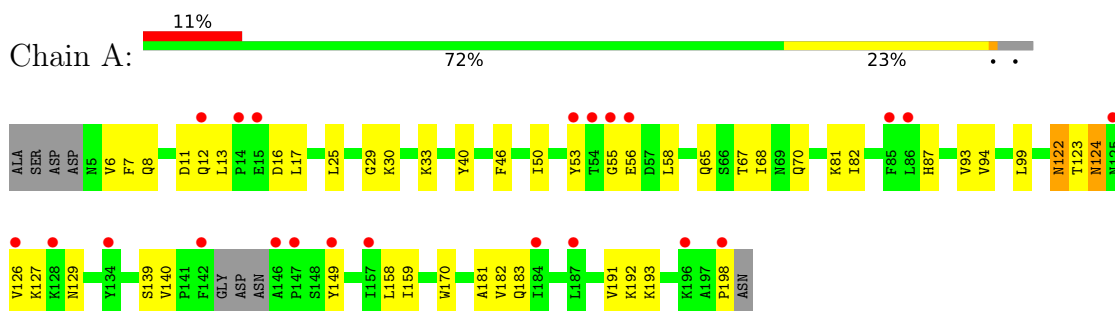
- Molecule 1: volvatoxin A2
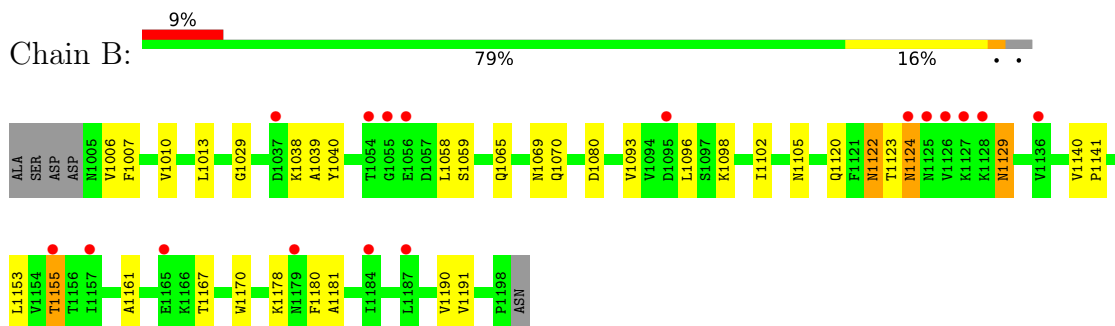
- Molecule 1: volvatoxin A2

- Molecule 1: volvatoxin A2

4 Data and refinement statistics ⓘ
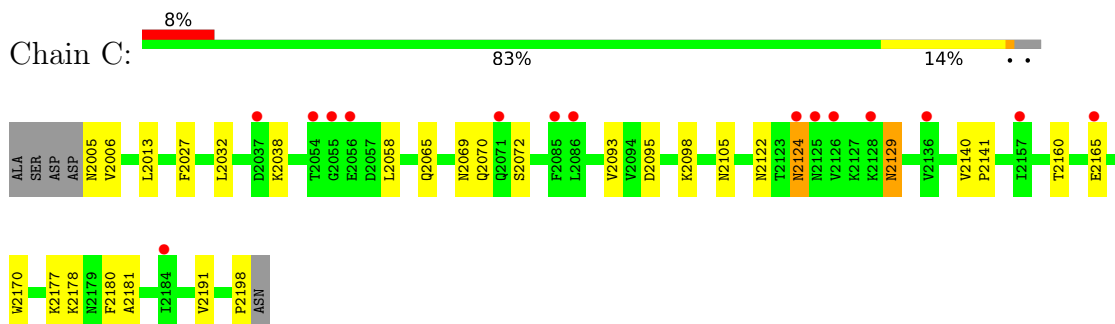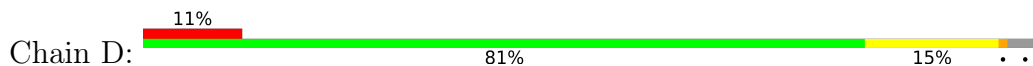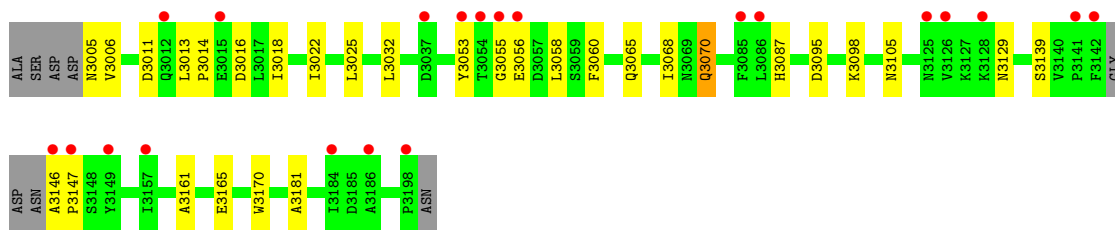
Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	153.98Å 57.48Å 114.63Å 90.00° 119.39° 90.00°	Depositor
Resolution (Å)	29.85 – 1.42 29.85 – 1.40	Depositor EDS
% Data completeness (in resolution range)	82.7 (29.85-1.42) 80.5 (29.85-1.40)	Depositor EDS
R_{merge}	0.04	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	3.26 (at 1.40Å)	Xtriage
Refinement program	CNS	Depositor
R, R_{free}	0.229 , 0.255 0.223 , 0.249	Depositor DCC
R_{free} test set	6898 reflections (4.70%)	wwPDB-VP
Wilson B-factor (Å^2)	21.7	Xtriage
Anisotropy	0.117	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.40 , 57.2	EDS
L-test for twinning [2]	$< |L| > = 0.50$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	6956	wwPDB-VP
Average B, all atoms (Å^2)	30.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 61.91 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 1.2204e-05. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

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[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 ⓘ

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

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	0.36	0/1563	0.59	0/2120
1	B	0.37	0/1584	0.60	0/2150
1	C	0.36	0/1584	0.60	0/2150
1	D	0.37	0/1563	0.60	0/2120
All	All	0.36	0/6294	0.60	0/8540

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

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	1527	0	1501	41	0
1	B	1547	0	1515	35	0
1	C	1547	0	1515	22	0
1	D	1527	0	1501	23	0
2	A	20	0	15	3	0
2	B	12	0	9	2	0
2	C	4	0	3	0	0
2	D	16	0	12	1	0
3	A	170	0	0	7	1

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	204	0	0	4	1
3	C	199	0	0	3	0
3	D	183	0	0	4	0
All	All	6956	0	6071	118	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 10.

All (118) 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:2105:ASN:HB3	3:C:5712:HOH:O	1.64	0.97
1:A:94:VAL:HG21	1:A:99:LEU:HD22	1.54	0.88
1:A:65:GLN:HE21	1:B:1065:GLN:NE2	1.72	0.87
1:C:2070:GLN:HG3	1:C:2181:ALA:HB2	1.55	0.86
1:A:12:GLN:HA	3:A:5552:HOH:O	1.78	0.84
1:B:1010:VAL:HG12	2:B:4008:ACY:H2	1.66	0.76
2:A:4012:ACY:C	3:A:5194:HOH:O	2.35	0.75
1:D:3070:GLN:H	1:D:3070:GLN:HE21	1.33	0.74
1:A:124:ASN:C	1:A:124:ASN:HD22	1.94	0.71
1:A:33:LYS:HE3	3:A:5619:HOH:O	1.92	0.70
1:B:1070:GLN:HG3	1:B:1181:ALA:HB2	1.73	0.69
1:A:6:VAL:HG23	1:A:7:PHE:HD2	1.58	0.68
1:B:1098:LYS:HE2	3:B:5671:HOH:O	1.93	0.68
1:D:3005:ASN:HA	3:D:5516:HOH:O	1.93	0.68
1:A:94:VAL:CG2	1:A:99:LEU:HB2	2.25	0.66
1:B:1093:VAL:HA	1:B:1140:VAL:HG21	1.82	0.61
1:B:1038:LYS:HE2	1:B:1122:ASN:ND2	2.15	0.61
1:D:3087:HIS:HD2	3:D:5036:HOH:O	1.84	0.60
3:A:5359:HOH:O	1:D:3087:HIS:HE1	1.84	0.60
1:B:1039:ALA:H	1:B:1120:GLN:NE2	1.99	0.60
1:D:3105:ASN:HB3	3:D:5637:HOH:O	2.01	0.60
1:B:1124:ASN:HB3	1:B:1129:ASN:ND2	2.17	0.59
1:B:1096:LEU:C	1:B:1096:LEU:HD13	2.23	0.58
1:A:159:ILE:HD13	1:A:182:VAL:HG13	1.83	0.58
1:D:3146:ALA:N	1:D:3147:PRO:HD2	2.19	0.58
1:A:70:GLN:HG3	1:A:181:ALA:HB2	1.85	0.58
1:B:1105:ASN:HB3	3:B:5740:HOH:O	2.03	0.58
1:A:53:TYR:CE2	1:A:58:LEU:HB3	2.38	0.58
1:C:2129:ASN:HD22	1:C:2129:ASN:C	2.08	0.57
1:C:2105:ASN:ND2	3:C:5459:HOH:O	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:3165:GLU:H	2:D:4001:ACY:H3	1.71	0.56
1:A:67:THR:OG1	1:A:183:GLN:NE2	2.38	0.56
1:C:2178:LYS:HB2	1:C:2180:PHE:CE2	2.40	0.56
1:D:3053:TYR:CE2	1:D:3058:LEU:HB3	2.42	0.55
1:D:3070:GLN:H	1:D:3070:GLN:NE2	2.04	0.55
1:B:1006:VAL:HG21	1:B:1029:GLY:HA2	1.89	0.55
1:B:1006:VAL:HG23	1:B:1007:PHE:HD2	1.71	0.55
1:A:53:TYR:CZ	1:A:55:GLY:HA3	2.44	0.53
1:C:2093:VAL:HA	1:C:2140:VAL:HG21	1.90	0.53
1:A:8:GLN:NE2	2:A:4004:ACY:OXT	2.42	0.53
1:C:2070:GLN:CG	1:C:2181:ALA:HB2	2.35	0.53
1:D:3068:ILE:HD11	3:D:5276:HOH:O	2.09	0.52
1:A:122:ASN:HD22	1:A:123:THR:H	1.57	0.52
1:D:3018:ILE:O	1:D:3022:ILE:HG12	2.10	0.52
1:B:1070:GLN:HE21	1:B:1181:ALA:CB	2.23	0.52
1:D:3053:TYR:CZ	1:D:3055:GLY:HA3	2.45	0.52
1:B:1167:THR:HG23	3:B:5656:HOH:O	2.10	0.51
1:C:2124:ASN:HB3	1:C:2129:ASN:ND2	2.25	0.51
1:B:1129:ASN:C	1:B:1129:ASN:HD22	2.13	0.51
1:C:2006:VAL:HG13	1:C:2032:LEU:HD22	1.93	0.51
1:A:65:GLN:HG2	1:B:1065:GLN:HB3	1.93	0.50
1:B:1058:LEU:HD12	1:B:1191:VAL:HG22	1.93	0.50
1:C:2177:LYS:HD2	3:C:5648:HOH:O	2.11	0.50
1:A:94:VAL:HG21	1:A:99:LEU:HB2	1.93	0.50
1:B:1070:GLN:H	1:B:1070:GLN:CD	2.14	0.49
1:A:124:ASN:ND2	1:A:127:LYS:H	2.11	0.49
1:B:1038:LYS:HE2	1:B:1122:ASN:HD21	1.78	0.49
1:A:11:ASP:HB3	1:A:139:SER:HB2	1.95	0.48
1:B:1080:ASP:CG	3:B:5715:HOH:O	2.50	0.48
1:B:1122:ASN:ND2	1:B:1123:THR:H	2.11	0.48
1:A:6:VAL:HG21	1:A:29:GLY:HA2	1.94	0.48
1:A:68:ILE:HD12	1:A:68:ILE:N	2.29	0.48
1:B:1153:LEU:HG	1:B:1155:THR:HG22	1.96	0.48
1:B:1010:VAL:HG11	1:B:1102:ILE:HD13	1.95	0.47
1:D:3014:PRO:HB2	1:D:3016:ASP:OD1	2.14	0.47
1:A:122:ASN:ND2	1:A:123:THR:H	2.13	0.47
1:C:2013:LEU:HD23	1:C:2141:PRO:HD3	1.96	0.47
1:D:3011:ASP:HB3	1:D:3139:SER:HB2	1.96	0.47
1:A:124:ASN:HD21	1:A:126:VAL:HB	1.79	0.46
1:C:2027:PHE:CD1	1:C:2198:PRO:HD2	2.50	0.46
1:B:1010:VAL:CG1	2:B:4008:ACY:H2	2.41	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:2095:ASP:OD1	1:C:2098:LYS:HB2	2.15	0.46
1:B:1070:GLN:HE21	1:B:1181:ALA:HB2	1.80	0.46
1:B:1122:ASN:HD22	1:B:1123:THR:H	1.64	0.46
1:A:58:LEU:HD12	1:A:191:VAL:HG22	1.98	0.45
1:C:2072:SER:OG	1:C:2177:LYS:HE3	2.17	0.45
1:D:3095:ASP:HB3	1:D:3098:LYS:HB3	1.98	0.45
1:A:124:ASN:C	1:A:124:ASN:ND2	2.67	0.45
1:A:87:HIS:HE1	3:A:5359:HOH:O	1.99	0.45
1:A:16:ASP:CG	1:A:17:LEU:HD22	2.37	0.45
1:B:1039:ALA:H	1:B:1120:GLN:HE21	1.65	0.45
1:C:2058:LEU:HD12	1:C:2191:VAL:HG22	1.98	0.45
1:D:3070:GLN:HE21	1:D:3070:GLN:N	2.10	0.45
1:D:3070:GLN:CD	1:D:3181:ALA:HB2	2.37	0.45
1:D:3013:LEU:HD11	1:D:3139:SER:HB3	1.99	0.45
1:A:6:VAL:HG23	1:A:7:PHE:CD2	2.46	0.44
1:A:94:VAL:HG21	1:A:99:LEU:CD2	2.37	0.44
1:D:3129:ASN:HB2	1:D:3161:ALA:O	2.18	0.44
1:D:3006:VAL:HG13	1:D:3032:LEU:HD22	1.98	0.44
1:B:1124:ASN:HB3	1:B:1129:ASN:HD21	1.82	0.44
1:B:1178:LYS:HB2	1:B:1180:PHE:CE2	2.53	0.44
1:C:2038:LYS:HE2	1:C:2122:ASN:OD1	2.17	0.44
1:A:17:LEU:CD1	1:A:193:LYS:HB2	2.48	0.44
1:A:149:TYR:CE1	1:A:192:LYS:HB2	2.53	0.43
1:B:1129:ASN:HB2	1:B:1161:ALA:O	2.17	0.43
1:C:2069:ASN:HB2	1:D:3060:PHE:CD2	2.53	0.43
1:A:81:LYS:HB3	3:A:5344:HOH:O	2.18	0.43
1:C:2129:ASN:C	1:C:2129:ASN:ND2	2.70	0.43
1:A:13:LEU:HD11	1:A:139:SER:HB3	2.01	0.43
1:B:1013:LEU:HD23	1:B:1141:PRO:HD3	2.00	0.43
1:C:2058:LEU:CD1	1:C:2191:VAL:HG22	2.49	0.43
1:C:2070:GLN:OE1	1:C:2070:GLN:N	2.48	0.42
1:B:1058:LEU:CD1	1:B:1191:VAL:HG22	2.49	0.42
1:C:2065:GLN:HB3	1:D:3065:GLN:HG2	2.02	0.42
1:A:30:LYS:NZ	1:A:198:PRO:O	2.53	0.42
1:B:1040:TYR:OH	1:B:1122:ASN:HB2	2.21	0.41
1:A:46:PHE:CZ	1:A:50:ILE:HD11	2.56	0.41
1:A:93:VAL:HA	1:A:140:VAL:HG21	2.03	0.41
1:A:127:LYS:HG2	3:A:5733:HOH:O	2.19	0.41
1:A:40:TYR:OH	1:A:122:ASN:HB2	2.20	0.41
1:B:1059:SER:OG	1:B:1190:VAL:HB	2.20	0.41
1:A:82:ILE:HD11	1:A:159:ILE:HD11	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1129:ASN:ND2	1:B:1129:ASN:C	2.74	0.41
1:D:3146:ALA:N	1:D:3147:PRO:CD	2.83	0.41
1:A:124:ASN:HB3	1:A:129:ASN:OD1	2.20	0.40
1:C:2160:THR:HB	1:C:2181:ALA:HB3	2.04	0.40
1:A:158:LEU:HD11	2:A:4005:ACY:H3	2.04	0.40
1:A:158:LEU:HB3	1:A:183:GLN:HB3	2.03	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)
3:A:5232:HOH:O	3:B:5360:HOH:O[4_546]	2.11	0.09

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	187/199 (94%)	180 (96%)	6 (3%)	1 (0%)	29	8
1	B	192/199 (96%)	188 (98%)	4 (2%)	0	100	100
1	C	192/199 (96%)	189 (98%)	3 (2%)	0	100	100
1	D	187/199 (94%)	181 (97%)	6 (3%)	0	100	100
All	All	758/796 (95%)	738 (97%)	19 (2%)	1 (0%)	51	24

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	56	GLU

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	169/175 (97%)	165 (98%)	4 (2%)	49	15
1	B	171/175 (98%)	165 (96%)	6 (4%)	36	7
1	C	171/175 (98%)	166 (97%)	5 (3%)	42	10
1	D	169/175 (97%)	165 (98%)	4 (2%)	49	15
All	All	680/700 (97%)	661 (97%)	19 (3%)	43	11

All (19) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	25	LEU
1	A	122	ASN
1	A	124	ASN
1	A	170	TRP
1	B	1069	ASN
1	B	1122	ASN
1	B	1124	ASN
1	B	1129	ASN
1	B	1155	THR
1	B	1170	TRP
1	C	2005	ASN
1	C	2124	ASN
1	C	2129	ASN
1	C	2165	GLU
1	C	2170	TRP
1	D	3025	LEU
1	D	3056	GLU
1	D	3070	GLN
1	D	3170	TRP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (33) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	12	GLN
1	A	52	ASN
1	A	71	GLN
1	A	87	HIS
1	A	122	ASN
1	A	124	ASN
1	A	183	GLN
1	B	1005	ASN
1	B	1036	GLN
1	B	1065	GLN
1	B	1069	ASN
1	B	1070	GLN
1	B	1071	GLN
1	B	1105	ASN
1	B	1120	GLN
1	B	1122	ASN
1	B	1124	ASN
1	B	1129	ASN
1	B	1145	ASN
1	C	2005	ASN
1	C	2105	ASN
1	C	2109	ASN
1	C	2124	ASN
1	C	2129	ASN
1	C	2183	GLN
1	D	3036	GLN
1	D	3052	ASN
1	D	3065	GLN
1	D	3070	GLN
1	D	3071	GLN
1	D	3073	GLN
1	D	3087	HIS
1	D	3125	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 monosaccharides in this entry.

5.6 Ligand geometry ⓘ

13 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#$|Z| > 2$	Counts	RMSZ	#$|Z| > 2$
2	ACY	A	4012	-	3,3,3	1.21	0	3,3,3	1.67	1 (33%)
2	ACY	A	4003	-	3,3,3	1.19	0	3,3,3	1.65	1 (33%)
2	ACY	B	4002	-	3,3,3	1.22	0	3,3,3	1.62	1 (33%)
2	ACY	D	4013	-	3,3,3	1.22	0	3,3,3	1.68	1 (33%)
2	ACY	B	4008	-	3,3,3	1.18	0	3,3,3	1.65	1 (33%)
2	ACY	D	4010	-	3,3,3	1.18	0	3,3,3	1.66	1 (33%)
2	ACY	D	4001	-	3,3,3	1.37	1 (33%)	3,3,3	1.61	1 (33%)
2	ACY	B	4007	-	3,3,3	1.12	0	3,3,3	1.64	1 (33%)
2	ACY	A	4004	-	3,3,3	1.22	0	3,3,3	1.70	1 (33%)
2	ACY	D	4009	-	3,3,3	1.22	0	3,3,3	1.61	1 (33%)
2	ACY	A	4011	-	3,3,3	1.21	0	3,3,3	1.66	1 (33%)
2	ACY	A	4005	-	3,3,3	1.22	0	3,3,3	1.66	1 (33%)
2	ACY	C	4006	-	3,3,3	1.19	0	3,3,3	1.63	1 (33%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	4001	ACY	O-C	2.07	1.31	1.22

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	4004	ACY	O-C-CH3	-2.34	113.24	122.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	D	4013	ACY	O-C-CH3	-2.31	113.32	122.33
2	A	4012	ACY	O-C-CH3	-2.30	113.38	122.33
2	A	4005	ACY	O-C-CH3	-2.29	113.40	122.33
2	D	4010	ACY	O-C-CH3	-2.29	113.41	122.33
2	B	4008	ACY	O-C-CH3	-2.29	113.43	122.33
2	A	4011	ACY	O-C-CH3	-2.28	113.44	122.33
2	A	4003	ACY	O-C-CH3	-2.28	113.47	122.33
2	B	4007	ACY	O-C-CH3	-2.26	113.53	122.33
2	B	4002	ACY	O-C-CH3	-2.25	113.58	122.33
2	C	4006	ACY	O-C-CH3	-2.24	113.61	122.33
2	D	4009	ACY	O-C-CH3	-2.23	113.66	122.33
2	D	4001	ACY	O-C-CH3	-2.22	113.70	122.33

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

5 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	4012	ACY	1	0
2	B	4008	ACY	2	0
2	D	4001	ACY	1	0
2	A	4004	ACY	1	0
2	A	4005	ACY	1	0

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, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å²)	Q<0.9
1	A	191/199 (95%)	0.76	22 (11%)	4	4	16, 26, 53, 82	0
1	B	194/199 (97%)	0.65	17 (8%)	10	8	15, 25, 46, 65	0
1	C	194/199 (97%)	0.61	15 (7%)	13	12	15, 24, 47, 67	0
1	D	191/199 (95%)	0.74	21 (10%)	5	4	16, 25, 53, 72	0
All	All	770/796 (96%)	0.69	75 (9%)	7	6	15, 25, 51, 82	0

All (75) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	146	ALA	10.0
1	C	2126	VAL	9.3
1	B	1126	VAL	9.3
1	D	3146	ALA	7.7
1	D	3142	PHE	7.2
1	C	2125	ASN	6.5
1	A	54	THR	6.5
1	A	126	VAL	6.5
1	D	3054	THR	6.4
1	D	3126	VAL	6.2
1	A	56	GLU	6.0
1	B	1125	ASN	5.2
1	D	3147	PRO	4.9
1	B	1054	THR	4.9
1	D	3125	ASN	4.8
1	A	147	PRO	4.8
1	B	1056	GLU	4.6
1	A	125	ASN	4.5
1	B	1128	LYS	4.4
1	D	3128	LYS	4.4
1	D	3056	GLU	4.3

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Mol	Chain	Res	Type	RSRZ
1	B	1055	GLY	4.1
1	A	142	PHE	4.0
1	C	2055	GLY	3.9
1	D	3012	GLN	3.7
1	B	1037	ASP	3.4
1	A	55	GLY	3.4
1	A	12	GLN	3.3
1	C	2128	LYS	3.3
1	C	2056	GLU	3.2
1	A	128	LYS	3.1
1	C	2184	ILE	3.1
1	D	3141	PRO	3.0
1	D	3198	PRO	3.0
1	B	1184	ILE	3.0
1	D	3055	GLY	2.9
1	A	53	TYR	2.8
1	C	2037	ASP	2.8
1	C	2054	THR	2.7
1	B	1127	LYS	2.7
1	A	198	PRO	2.7
1	B	1157	ILE	2.6
1	C	2157	ILE	2.6
1	D	3184	ILE	2.6
1	D	3157	ILE	2.5
1	B	1124	ASN	2.5
1	D	3015	GLU	2.5
1	A	196	LYS	2.5
1	B	1165	GLU	2.5
1	A	14	PRO	2.4
1	A	157	ILE	2.4
1	A	184	ILE	2.3
1	B	1179	ASN	2.3
1	D	3149	TYR	2.3
1	B	1095	ASP	2.2
1	A	15	GLU	2.2
1	A	149	TYR	2.2
1	D	3053	TYR	2.2
1	D	3186	ALA	2.2
1	D	3085	PHE	2.2
1	A	86	LEU	2.2
1	D	3037	ASP	2.2
1	C	2124	ASN	2.2

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Mol	Chain	Res	Type	RSRZ
1	B	1187	LEU	2.2
1	A	134	TYR	2.2
1	B	1155	THR	2.1
1	C	2086	LEU	2.1
1	A	85	PHE	2.1
1	A	187	LEU	2.1
1	D	3086	LEU	2.1
1	C	2136	VAL	2.1
1	C	2085	PHE	2.1
1	C	2165	GLU	2.0
1	C	2071	GLN	2.0
1	B	1136	VAL	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 ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	ACY	D	4013	4/4	0.49	0.29	116,116,116,116	0
2	ACY	D	4001	4/4	0.64	0.15	34,37,41,42	0
2	ACY	A	4004	4/4	0.73	0.19	68,68,70,71	0
2	ACY	A	4005	4/4	0.75	0.32	81,82,82,83	0
2	ACY	B	4007	4/4	0.75	0.17	43,44,46,47	0
2	ACY	A	4012	4/4	0.78	0.19	46,46,48,49	0
2	ACY	B	4008	4/4	0.78	0.24	74,74,75,75	0
2	ACY	D	4009	4/4	0.82	0.16	38,40,41,44	0
2	ACY	A	4003	4/4	0.84	0.13	40,41,44,48	0
2	ACY	A	4011	4/4	0.84	0.15	55,56,57,57	0
2	ACY	C	4006	4/4	0.88	0.12	32,33,34,41	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	ACY	D	4010	4/4	0.91	0.23	53,53,53,54	0
2	ACY	B	4002	4/4	0.94	0.10	31,32,34,37	0

6.5 Other polymers ⓘ

There are no such residues in this entry.