Full wwPDB X-ray Structure Validation Report ⓘ

Mar 9, 2026 – 05:39 PM UTC

PDB ID	:	7HZX / pdb_00007hzx
Title	:	PanDDA analysis group deposition – Crystal structure of Enterococcus faecium VatD in complex with ZINC000000164888
Authors	:	Asthana, P.; Fraser, J.S.
Deposited on	:	2025-01-25
Resolution	:	2.36 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:

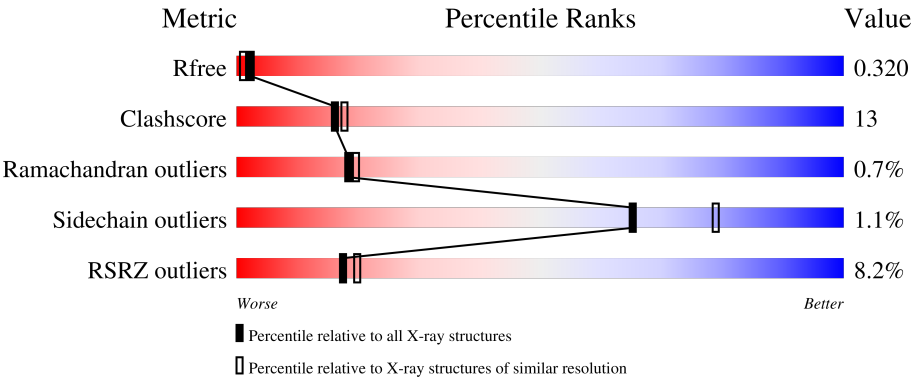
MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (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 2.36 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	1596 (2.36-2.36)
Clashscore	190562	1663 (2.36-2.36)
Ramachandran outliers	187476	1646 (2.36-2.36)
Sidechain outliers	187428	1646 (2.36-2.36)
RSRZ outliers	180081	1598 (2.36-2.36)

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	209	5% 67% 28%
1	B	209	11% 70% 26%
1	C	209	7% 69% 26%

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 10714 atoms, of which 5347 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.

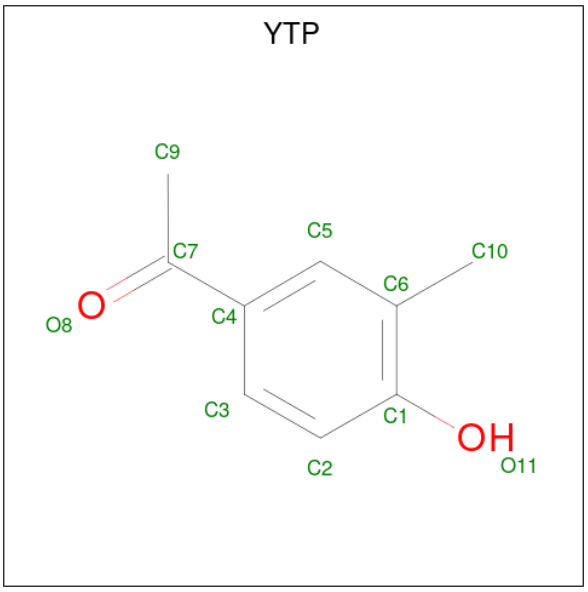
- Molecule 1 is a protein called Streptogramin A acetyltransferase.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	203	Total	C	H	N	O	S	0	14	0
			3416	1105	1705	284	314	8			
1	B	203	Total	C	H	N	O	S	0	43	0
			3860	1247	1929	320	353	11			
1	C	202	Total	C	H	N	O	S	0	12	0
			3361	1083	1683	281	306	8			

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1	GLY	-	expression tag	UNP P50870
B	1	GLY	-	expression tag	UNP P50870
C	1	GLY	-	expression tag	UNP P50870

- Molecule 2 is 1-(4-hydroxy-3-methylphenyl)ethanone (CCD ID: YTP) (formula: $C_9H_{10}O_2$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	H	O	0	0
			21	9	10	2		
2	B	1	Total	C	H	O	0	0
			21	9	10	2		
2	C	1	Total	C	H	O	0	0
			21	9	10	2		

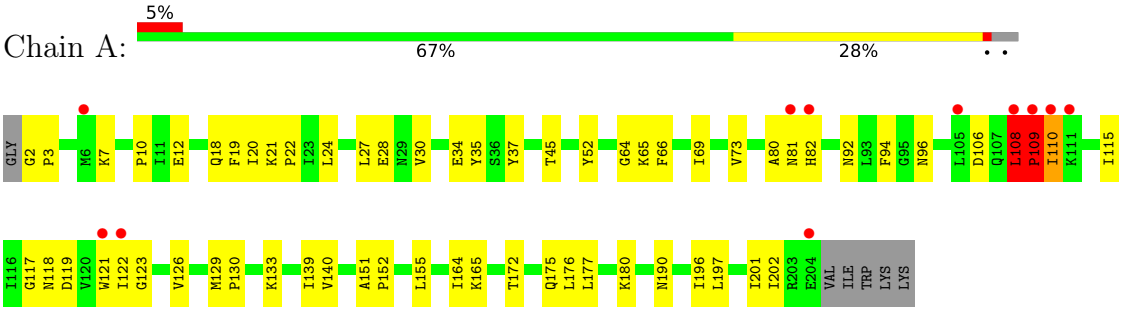
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	4	Total	O	0	4
			4	4		
3	B	5	Total	O	0	5
			5	5		
3	C	5	Total	O	0	5
			5	5		

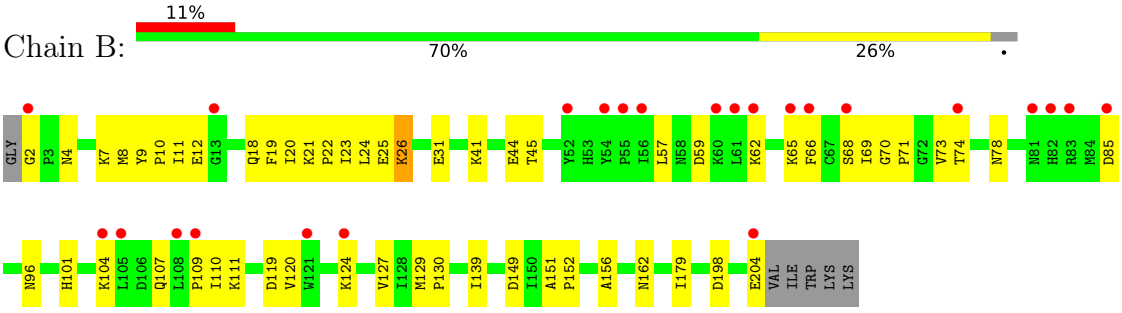
3 Residue-property plots (i)

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.

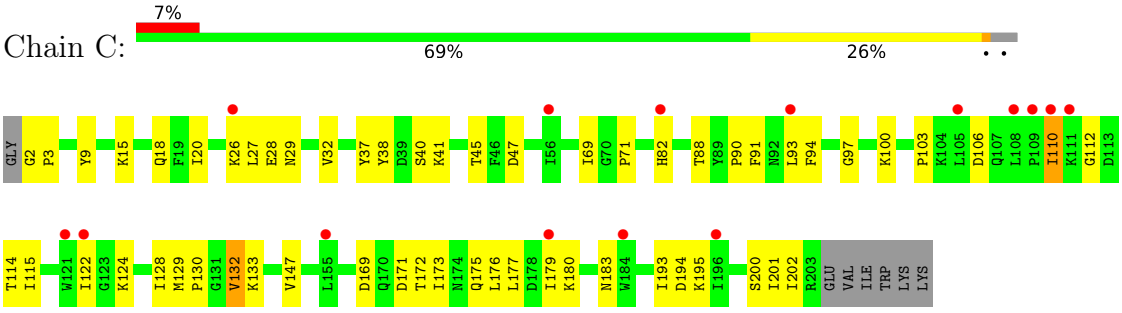
• Molecule 1: Streptogramin A acetyltransferase



• Molecule 1: Streptogramin A acetyltransferase



• Molecule 1: Streptogramin A acetyltransferase



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	44.08Å 102.73Å 146.52Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	48.47 – 2.36 48.47 – 2.36	Depositor EDS
% Data completeness (in resolution range)	94.2 (48.47-2.36) 94.1 (48.47-2.36)	Depositor EDS
R_{merge}	0.15	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.42 (at 2.37Å)	Xtriage
Refinement program	PHENIX 1.20.1_4487	Depositor
R, R_{free}	0.229 , 0.320 0.229 , 0.320	Depositor DCC
R_{free} test set	1336 reflections (4.74%)	wwPDB-VP
Wilson B-factor (Å^2)	44.0	Xtriage
Anisotropy	0.175	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.35 , 34.8	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.34$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	10714	wwPDB-VP
Average B, all atoms (Å^2)	61.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.13% 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

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

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	0.80	5/1779 (0.3%)	0.91	6/2412 (0.2%)
1	B	0.61	0/1999	0.76	0/2709
1	C	0.67	1/1740 (0.1%)	0.81	0/2358
All	All	0.70	6/5518 (0.1%)	0.83	6/7479 (0.1%)

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	109	PRO	N-CA	9.73	1.59	1.47
1	A	108	LEU	C-O	-8.03	1.14	1.24
1	A	109	PRO	CG-CD	6.60	1.73	1.50
1	A	109	PRO	CA-CB	6.49	1.62	1.53
1	C	128	ILE	C-N	-5.54	1.24	1.33
1	A	108	LEU	C-N	-5.49	1.21	1.33

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	109	PRO	N-CD-CG	-7.17	92.45	103.20
1	A	108	LEU	O-C-N	-6.38	113.98	121.32
1	A	109	PRO	CA-C-N	-5.61	111.88	121.97
1	A	109	PRO	C-N-CA	-5.61	111.88	121.97
1	A	108	LEU	CA-C-N	5.21	126.35	119.84
1	A	108	LEU	C-N-CA	5.21	126.35	119.84

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	1711	1705	1685	47	0
1	B	1931	1929	1912	49	0
1	C	1678	1683	1664	42	0
2	A	11	10	10	0	0
2	B	11	10	10	0	0
2	C	11	10	10	0	0
3	A	4	0	0	0	0
3	B	5	0	0	4	0
3	C	5	0	0	4	0
All	All	5367	5347	5291	130	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 13.

All (130) 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:109:PRO:O	1:A:110:ILE:O	1.88	0.90
1:A:109:PRO:O	1:A:110:ILE:C	2.15	0.86
1:A:82[B]:HIS:H	1:A:82[B]:HIS:CD2	1.98	0.79
1:C:2:GLY:N	3:C:401[B]:HOH:O	2.19	0.74
1:C:179:ILE:HD11	1:C:201:ILE:HD12	1.69	0.72
1:B:149:ASP:OD2	3:B:401[B]:HOH:O	2.10	0.69
1:C:169:ASP:OD2	1:C:172:THR:OG1	2.09	0.69
1:A:122[B]:ILE:O	1:A:140:VAL:O	2.11	0.68
1:B:57[B]:LEU:HD22	1:B:110:ILE:HD11	1.75	0.68
1:A:115:ILE:HD12	1:A:133:LYS:HE2	1.76	0.67
1:C:15:LYS:O	1:C:15:LYS:HD3	1.94	0.67
1:A:2:GLY:N	1:A:190:ASN:HD21	1.95	0.65
1:B:20:ILE:CG2	1:B:24:LEU:HD22	2.26	0.65
1:B:109:PRO:HD2	3:B:404[B]:HOH:O	1.97	0.64
1:C:129:MET:HE3	1:C:130:PRO:HD3	1.80	0.63
1:B:71[B]:PRO:HG2	1:B:124[B]:LYS:HG2	1.80	0.63
1:B:23:ILE:HG22	1:B:24:LEU:CD1	2.29	0.63
1:B:10:PRO:HG3	1:B:19:PHE:CD2	2.36	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:103:PRO:HG3	3:C:405[B]:HOH:O	2.03	0.57
1:C:195:LYS:HB3	1:C:201:ILE:HG23	1.86	0.57
1:A:52:TYR:CD1	1:A:80:ALA:HB2	2.40	0.57
1:C:71:PRO:HG2	1:C:124[B]:LYS:HG3	1.88	0.56
1:C:69:ILE:HD13	1:C:122[B]:ILE:HG13	1.88	0.56
1:C:195:LYS:HG2	1:C:200:SER:OG	2.05	0.56
1:C:28:GLU:O	1:C:29:ASN:HB2	2.06	0.55
1:B:129:MET:HB3	1:B:130:PRO:CD	2.37	0.55
1:C:20:ILE:CG2	1:C:32:VAL:HG11	2.37	0.54
1:B:66[B]:PHE:O	1:B:119:ASP:HA	2.07	0.54
1:A:139:ILE:HB	1:A:155:LEU:HD23	1.90	0.53
1:B:20:ILE:HG23	1:B:24:LEU:HD22	1.89	0.53
1:C:132:VAL:C	1:C:133:LYS:HD3	2.34	0.53
1:A:24:LEU:HD23	1:A:30:VAL:HG11	1.91	0.52
1:B:204:GLU:O	1:B:204:GLU:CG	2.58	0.52
1:A:64:GLY:HA3	1:A:117:GLY:O	2.09	0.52
1:B:111:LYS:HD2	1:B:130:PRO:HB2	1.91	0.52
1:A:12:GLU:HA	1:A:12:GLU:OE1	2.09	0.52
1:A:164:ILE:HG22	1:A:165:LYS:HB3	1.92	0.51
1:B:74[B]:THR:OG1	1:B:127:VAL:HG22	2.09	0.51
1:B:23:ILE:HG22	1:B:24:LEU:HD13	1.93	0.51
1:A:65:LYS:N	1:A:118:ASN:OD1	2.34	0.51
1:B:25:GLU:O	1:B:26:LYS:CB	2.59	0.50
1:B:10:PRO:HG3	1:B:19:PHE:CE2	2.47	0.50
1:B:8:MET:HE3	1:B:23:ILE:CG1	2.42	0.50
1:B:41:LYS:HB3	3:B:402[B]:HOH:O	2.11	0.50
1:A:96:ASN:HB3	1:B:2:GLY:O	2.10	0.50
1:A:129:MET:HB3	1:A:130:PRO:CD	2.41	0.50
1:B:69[B]:ILE:N	1:B:69[B]:ILE:HD13	2.27	0.50
1:B:85[B]:ASP:OD1	1:B:85[B]:ASP:N	2.40	0.50
1:A:66:PHE:O	1:A:119:ASP:HA	2.12	0.49
1:C:175:GLN:OE1	1:C:202:ILE:HB	2.11	0.49
1:C:82[B]:HIS:CE1	3:C:403[B]:HOH:O	2.67	0.48
1:A:82[B]:HIS:H	1:A:82[B]:HIS:HD2	1.54	0.47
1:A:196:ILE:HG13	1:A:201:ILE:HD13	1.96	0.47
1:B:21:LYS:N	1:B:22:PRO:HD2	2.30	0.47
1:C:18:GLN:O	1:C:37:TYR:HA	2.15	0.47
1:C:26:LYS:HG2	1:C:27:LEU:HD22	1.96	0.47
1:C:175:GLN:O	1:C:179:ILE:HG23	2.14	0.47
1:C:129:MET:HG3	1:C:147:VAL:HG12	1.97	0.47
1:A:197:LEU:HD21	1:C:91:PHE:CD2	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3:PRO:HG3	1:C:94:PHE:HB3	1.97	0.46
1:A:18:GLN:HE22	1:A:45:THR:HA	1.80	0.46
1:A:82[B]:HIS:HE1	1:B:139:ILE:HG21	1.81	0.45
1:B:4:ASN:HB3	1:B:7:LYS:HG3	1.98	0.45
1:C:110:ILE:HG23	1:C:112:GLY:H	1.80	0.45
1:B:25:GLU:HG3	1:B:26:LYS:HG2	1.97	0.45
1:C:82[A]:HIS:HD2	1:C:88:THR:O	1.99	0.45
1:B:101:HIS:HD2	1:C:194:ASP:OD1	1.99	0.45
1:B:104:LYS:HG3	1:B:107:GLN:OE1	2.17	0.45
1:B:8:MET:HE2	1:B:9:TYR:CE2	2.52	0.45
1:B:71[B]:PRO:HG2	1:B:124[B]:LYS:CG	2.45	0.45
1:C:20:ILE:HG22	1:C:32:VAL:HG11	1.98	0.44
1:C:45:THR:HB	1:C:47:ASP:OD1	2.17	0.44
1:B:23:ILE:HG22	1:B:24:LEU:HD12	1.99	0.44
1:C:69:ILE:CD1	1:C:122[B]:ILE:HG13	2.47	0.44
1:B:109:PRO:CD	3:B:404[B]:HOH:O	2.60	0.44
1:C:169:ASP:OD1	1:C:171:ASP:N	2.51	0.44
1:B:151:ALA:HB1	1:B:152:PRO:CD	2.48	0.43
1:C:103:PRO:CG	3:C:405[B]:HOH:O	2.64	0.43
1:A:10:PRO:HG3	1:A:19:PHE:CE2	2.53	0.43
1:A:82[B]:HIS:CD2	1:A:82[B]:HIS:N	2.73	0.43
1:A:175:GLN:OE1	1:A:202:ILE:HB	2.19	0.43
1:B:68[B]:SER:C	1:B:69[B]:ILE:HD13	2.44	0.43
1:C:9:TYR:CE1	1:C:15:LYS:O	2.72	0.43
1:A:123[B]:GLY:O	1:A:126:VAL:HG23	2.19	0.43
1:C:114:THR:O	1:C:115:ILE:HD13	2.18	0.43
1:A:20:ILE:HG22	1:A:24:LEU:HD22	2.01	0.42
1:C:97:GLY:O	1:C:100:LYS:HD3	2.18	0.42
1:A:27:LEU:HD12	1:A:27:LEU:HA	1.75	0.42
1:B:18:GLN:NE2	1:B:44:GLU:O	2.51	0.42
1:B:59[B]:ASP:CG	1:B:78[B]:ASN:HD22	2.24	0.42
1:C:173:ILE:HG22	1:C:177:LEU:HD12	2.01	0.42
1:B:31:GLU:O	1:B:62[B]:LYS:HA	2.19	0.42
1:A:7:LYS:HD3	1:A:7:LYS:HA	1.79	0.42
1:A:121[A]:TRP:CZ3	1:C:82[A]:HIS:HB2	2.55	0.42
1:A:151:ALA:HB1	1:A:152:PRO:CD	2.50	0.42
1:B:65[B]:LYS:HB2	1:B:66[B]:PHE:HD1	1.85	0.42
1:A:177:LEU:O	1:A:180:LYS:HG2	2.20	0.42
1:A:69:ILE:CD1	1:A:122[B]:ILE:HG12	2.50	0.42
1:B:129:MET:HB3	1:B:130:PRO:HD2	2.01	0.41
1:A:129:MET:HB3	1:A:130:PRO:HD2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:73:VAL:HG21	1:A:122[A]:ILE:HG22	2.02	0.41
1:A:106:ASP:OD1	1:A:106:ASP:N	2.54	0.41
1:B:25:GLU:O	1:B:26:LYS:CG	2.69	0.41
1:B:101:HIS:CG	1:C:193:ILE:HG21	2.56	0.41
1:C:90:PRO:HB2	1:C:93:LEU:HD13	2.03	0.41
1:A:34:GLU:O	1:A:35:TYR:HB2	2.19	0.41
1:A:81[B]:ASN:HB2	1:A:109:PRO:HG2	2.03	0.41
1:B:18:GLN:HE22	1:B:45:THR:HA	1.86	0.41
1:C:38:TYR:CE2	1:C:40:SER:HA	2.56	0.41
1:A:69:ILE:HD13	1:A:122[B]:ILE:HG12	2.02	0.41
1:B:9:TYR:O	1:B:11:ILE:N	2.53	0.41
1:C:106:ASP:OD2	1:C:106:ASP:N	2.54	0.41
1:C:180:LYS:HB3	1:C:183:ASN:HD22	1.85	0.41
1:C:172:THR:O	1:C:176:LEU:HG	2.21	0.41
1:A:21:LYS:HB3	1:A:22:PRO:HD3	2.02	0.41
1:B:156:ALA:HA	1:B:162:ASN:O	2.21	0.41
1:B:20:ILE:HD13	1:B:20:ILE:HG21	1.81	0.40
1:B:25:GLU:O	1:B:26:LYS:HB2	2.21	0.40
1:A:21:LYS:HB3	1:A:22:PRO:CD	2.51	0.40
1:B:70[B]:GLY:O	1:B:73[B]:VAL:HG23	2.21	0.40
1:A:73:VAL:HG21	1:A:122[B]:ILE:CG2	2.51	0.40
1:A:92:ASN:C	1:A:94:PHE:H	2.28	0.40
1:A:108:LEU:HB3	1:A:109:PRO:HD3	2.03	0.40
1:A:172:THR:HG22	1:A:176:LEU:CD1	2.51	0.40
1:B:96:ASN:HD22	1:C:3:PRO:HB3	1.86	0.40
1:A:18:GLN:O	1:A:37[B]:TYR:HA	2.21	0.40
1:A:172:THR:O	1:A:176:LEU:HD12	2.22	0.40
1:B:198:ASP:OD1	1:B:198:ASP:C	2.64	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	215/209 (103%)	195 (91%)	17 (8%)	3 (1%)	9 7
1	B	244/209 (117%)	232 (95%)	11 (4%)	1 (0%)	30 34
1	C	212/209 (101%)	198 (93%)	14 (7%)	0	100 100
All	All	671/627 (107%)	625 (93%)	42 (6%)	4 (1%)	18 24

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	110	ILE
1	B	26	LYS
1	A	109	PRO
1	A	108	LEU

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	190/182 (104%)	189 (100%)	1 (0%)	81 89
1	B	213/182 (117%)	210 (99%)	3 (1%)	59 73
1	C	185/182 (102%)	183 (99%)	2 (1%)	65 79
All	All	588/546 (108%)	582 (99%)	6 (1%)	65 81

All (6) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	28	GLU
1	B	12	GLU
1	B	120	VAL
1	B	179	ILE
1	C	110	ILE
1	C	132	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	29	ASN
1	B	96	ASN
1	B	101	HIS
1	B	143	ASN
1	B	166	GLN
1	B	170	GLN
1	C	107	GLN
1	C	192	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 oligosaccharides in this entry.

5.6 Ligand geometry (i)

3 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	YTP	A	301	-	11,11,11	1.72	3 (27%)	15,15,15	1.42	3 (20%)
2	YTP	B	301	-	11,11,11	2.20	2 (18%)	15,15,15	0.93	1 (6%)
2	YTP	C	301	-	11,11,11	1.52	1 (9%)	15,15,15	1.20	1 (6%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the

Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	YTP	A	301	-	-	0/4/4/4	0/1/1/1
2	YTP	B	301	-	-	3/4/4/4	0/1/1/1
2	YTP	C	301	-	-	0/4/4/4	0/1/1/1

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	301	YTP	C5-C6	-5.41	1.32	1.39
2	C	301	YTP	C1-C6	-3.75	1.35	1.40
2	B	301	YTP	C4-C7	3.56	1.56	1.49
2	A	301	YTP	C4-C7	2.79	1.55	1.49
2	A	301	YTP	O11-C1	2.27	1.40	1.36
2	A	301	YTP	C5-C6	-2.13	1.36	1.39

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	C	301	YTP	C2-C3-C4	-3.63	116.92	120.80
2	A	301	YTP	O8-C7-C4	3.38	126.56	119.92
2	A	301	YTP	C5-C6-C1	2.61	120.38	117.64
2	A	301	YTP	O8-C7-C9	-2.43	115.02	120.19
2	B	301	YTP	C3-C2-C1	-2.06	118.44	120.50

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	B	301	YTP	C5-C4-C7-O8
2	B	301	YTP	C3-C4-C7-O8
2	B	301	YTP	C3-C4-C7-C9

There are no ring outliers.

No monomer is involved in short contacts.

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	203/209 (97%)	0.47	11 (5%) 31 37	18, 57, 96, 142	11 (5%)
1	B	203/209 (97%)	0.72	24 (11%) 9 10	17, 50, 102, 133	40 (19%)
1	C	202/209 (96%)	0.59	15 (7%) 20 23	21, 59, 104, 136	9 (4%)
All	All	608/627 (96%)	0.59	50 (8%) 17 20	17, 56, 101, 142	60 (9%)

All (50) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	82[A]	HIS	21.9
1	B	82[A]	HIS	18.9
1	C	82[A]	HIS	9.3
1	C	121[A]	TRP	7.8
1	B	121[A]	TRP	7.3
1	B	108	LEU	4.9
1	C	108	LEU	4.1
1	B	105	LEU	4.0
1	C	105	LEU	4.0
1	A	110	ILE	3.8
1	B	109	PRO	3.8
1	B	83[A]	ARG	3.7
1	B	65[A]	LYS	3.7
1	C	155[A]	LEU	3.6
1	A	121[A]	TRP	3.5
1	B	124[A]	LYS	3.4
1	B	56[A]	ILE	3.3
1	C	109	PRO	3.2
1	B	62[A]	LYS	2.9
1	B	60[A]	LYS	2.9
1	A	108	LEU	2.8
1	A	122[A]	ILE	2.8
1	B	2	GLY	2.7

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Mol	Chain	Res	Type	RSRZ
1	B	68[A]	SER	2.7
1	C	196	ILE	2.6
1	C	110	ILE	2.6
1	B	61[A]	LEU	2.6
1	B	54[A]	TYR	2.6
1	A	105	LEU	2.5
1	A	109	PRO	2.5
1	B	66[A]	PHE	2.5
1	B	85[A]	ASP	2.5
1	A	111	LYS	2.5
1	C	111	LYS	2.4
1	C	122[A]	ILE	2.4
1	C	179	ILE	2.3
1	B	74[A]	THR	2.3
1	C	26	LYS	2.3
1	B	52[A]	TYR	2.2
1	A	6	MET	2.2
1	A	81[A]	ASN	2.2
1	C	56	ILE	2.1
1	B	81[A]	ASN	2.1
1	A	204	GLU	2.1
1	B	55[A]	PRO	2.1
1	B	204	GLU	2.1
1	C	93	LEU	2.1
1	B	13	GLY	2.1
1	C	184	TRP	2.1
1	B	104	LYS	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)

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, 95^{th} 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	YTP	A	301	11/11	0.95	0.11	16,43,54,54	21
2	YTP	B	301	11/11	0.95	0.09	19,36,50,50	0
2	YTP	C	301	11/11	0.96	0.08	21,45,56,56	0

6.5 Other polymers (i)

There are no such residues in this entry.