



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 9, 2026 – 04:41 PM UTC

PDB ID : 5VXE / pdb_00005vxe
Title : Crystal structure of Xanthomonas campestris OleA E117A bound with Cerulenin
Authors : Jensen, M.R.; Wilmot, C.M.
Deposited on : 2017-05-23
Resolution : 1.66 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

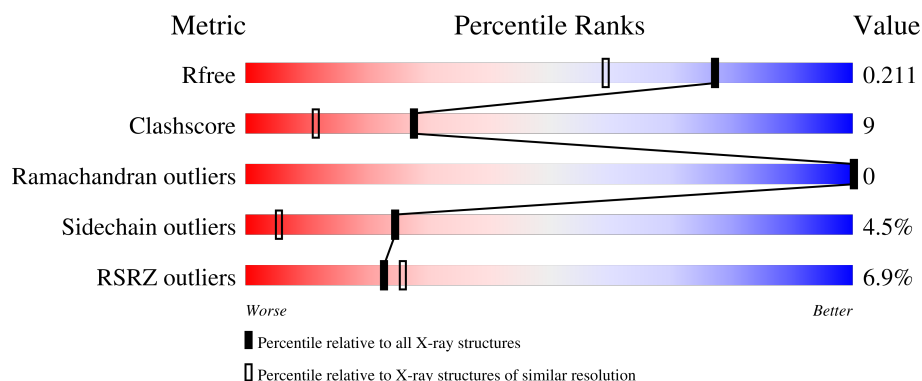
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.66 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	2563 (1.66-1.66)
Clashscore	190562	2662 (1.66-1.66)
Ramachandran outliers	187476	2621 (1.66-1.66)
Sidechain outliers	187428	2621 (1.66-1.66)
RSRZ outliers	180081	2564 (1.66-1.66)

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 $\leq 5\%$. 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	358	

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	CER	A	401[A]	-	-	X	-

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 2709 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.

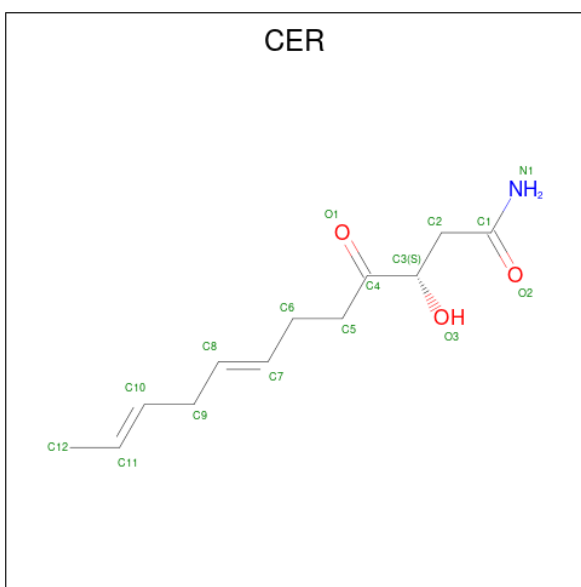
- Molecule 1 is a protein called 3-oxoacyl-[ACP] synthase III.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	332	Total	C	N	O	S	0	8	0
			2577	1620	453	490	14			

There are 21 discrepancies between the modelled and reference sequences:

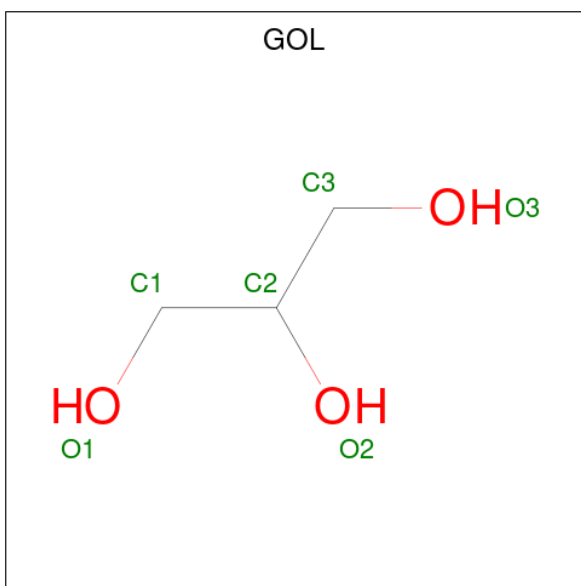
Chain	Residue	Modelled	Actual	Comment	Reference
A	1	MET	-	initiating methionine	UNP Q8PDX2
A	2	GLY	-	expression tag	UNP Q8PDX2
A	3	SER	-	expression tag	UNP Q8PDX2
A	4	SER	-	expression tag	UNP Q8PDX2
A	5	HIS	-	expression tag	UNP Q8PDX2
A	6	HIS	-	expression tag	UNP Q8PDX2
A	7	HIS	-	expression tag	UNP Q8PDX2
A	8	HIS	-	expression tag	UNP Q8PDX2
A	9	HIS	-	expression tag	UNP Q8PDX2
A	10	HIS	-	expression tag	UNP Q8PDX2
A	11	SER	-	expression tag	UNP Q8PDX2
A	12	SER	-	expression tag	UNP Q8PDX2
A	13	GLY	-	expression tag	UNP Q8PDX2
A	14	LEU	-	expression tag	UNP Q8PDX2
A	15	VAL	-	expression tag	UNP Q8PDX2
A	16	PRO	-	expression tag	UNP Q8PDX2
A	17	ARG	-	expression tag	UNP Q8PDX2
A	18	GLY	-	expression tag	UNP Q8PDX2
A	19	SER	-	expression tag	UNP Q8PDX2
A	20	HIS	-	expression tag	UNP Q8PDX2
A	117	ALA	GLU	engineered mutation	UNP Q8PDX2

- Molecule 2 is (2S, 3R)-3-HYDROXY-4-OXO-7,10-TRANS,TRANS-DODECADIENAMIDE (CCD ID: CER) (formula: C₁₂H₁₉NO₃).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	N	O	0	1
			16	12	1	3		

- Molecule 3 is GLYCEROL (CCD ID: GOL) (formula: $C_3H_8O_3$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	0
			6	3	3		

- Molecule 4 is MANGANESE (II) ION (CCD ID: MN) (formula: Mn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	1	Total 1	Mn 1	0	0

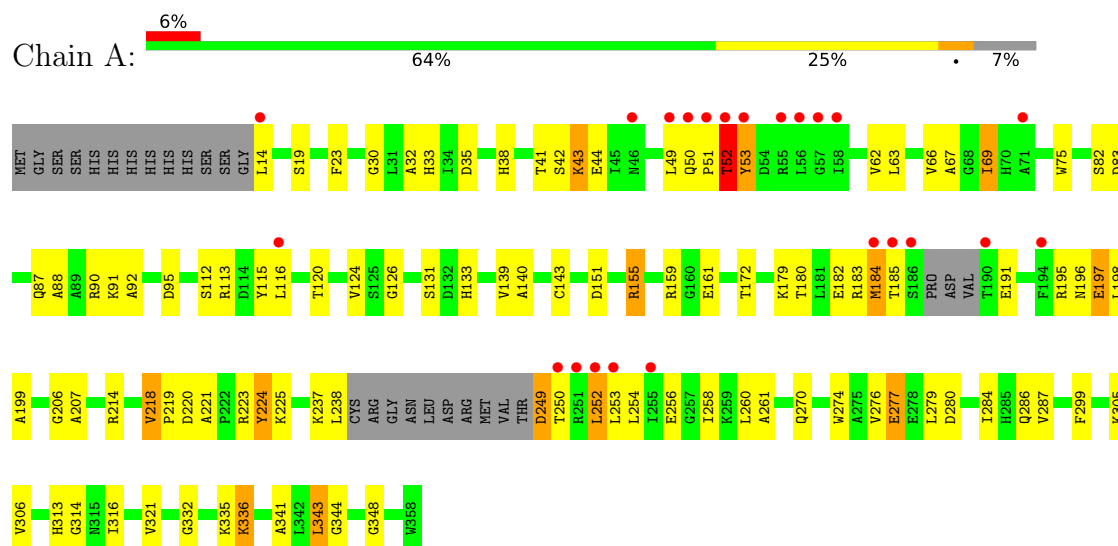
- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	109	Total 109	O 109	0	1

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: 3-oxoacyl-[ACP] synthase III



4 Data and refinement statistics

Property	Value	Source
Space group	P 32 2 1	Depositor
Cell constants a, b, c, α , β , γ	89.97Å 89.97Å 69.58Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	50.00 – 1.66 50.00 – 1.66	Depositor EDS
% Data completeness (in resolution range)	99.2 (50.00-1.66) 99.4 (50.00-1.66)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.01 (at 1.66Å)	Xtriage
Refinement program	REFMAC 5.8.0158	Depositor
R, R_{free}	0.174 , 0.210 0.185 , 0.211	Depositor DCC
R_{free} test set	1925 reflections (4.95%)	wwPDB-VP
Wilson B-factor (Å ²)	21.7	Xtriage
Anisotropy	0.103	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.37 , 42.2	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.34$	Xtriage
Estimated twinning fraction	0.022 for -h,-k,l	Xtriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	2709	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 4.54% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ 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: GOL, MN, CER

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	2.01	57/2618 (2.2%)	1.64	25/3542 (0.7%)

All (57) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	139	VAL	N-CA	9.44	1.57	1.46
1	A	316	ILE	N-CA	8.29	1.56	1.46
1	A	52	THR	CA-C	7.42	1.62	1.52
1	A	43	LYS	N-CA	7.20	1.55	1.46
1	A	124	VAL	CA-CB	7.17	1.62	1.54
1	A	313	HIS	N-CA	7.02	1.54	1.45
1	A	286	GLN	N-CA	7.01	1.54	1.46
1	A	112	SER	C-O	-6.94	1.15	1.23
1	A	126	GLY	C-O	6.89	1.32	1.23
1	A	237	LYS	CA-C	6.70	1.62	1.52
1	A	321	VAL	CA-C	6.67	1.58	1.52
1	A	274	TRP	N-CA	6.35	1.54	1.46
1	A	341	ALA	CA-CB	-6.27	1.45	1.53
1	A	286	GLN	CA-C	-6.24	1.45	1.52
1	A	261	ALA	C-O	-6.20	1.16	1.24
1	A	42	SER	CA-C	6.17	1.61	1.52
1	A	33	HIS	CA-C	-6.16	1.45	1.52
1	A	75	TRP	CA-C	6.06	1.60	1.52
1	A	258	ILE	CA-CB	6.05	1.62	1.54
1	A	218	VAL	CA-C	-6.01	1.46	1.52
1	A	343	LEU	CA-CB	-6.00	1.43	1.53
1	A	83	ASP	C-O	-5.99	1.17	1.24
1	A	225	LYS	C-O	-5.98	1.16	1.24
1	A	256	GLU	N-CA	5.91	1.53	1.46
1	A	270	GLN	C-O	-5.88	1.16	1.24
1	A	180	THR	C-O	5.80	1.31	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	30	GLY	CA-C	-5.79	1.45	1.51
1	A	155	ARG	NE-CZ	-5.77	1.26	1.33
1	A	82	SER	CA-CB	-5.73	1.44	1.53
1	A	196	ASN	C-O	-5.68	1.17	1.24
1	A	87	GLN	C-O	5.62	1.30	1.24
1	A	67	ALA	N-CA	5.61	1.53	1.46
1	A	172	THR	CB-OG1	5.61	1.52	1.43
1	A	199	ALA	CA-C	5.58	1.60	1.52
1	A	19	SER	N-CA	-5.58	1.38	1.46
1	A	33	HIS	C-O	5.58	1.30	1.23
1	A	88	ALA	N-CA	-5.51	1.39	1.46
1	A	52	THR	C-O	5.51	1.31	1.24
1	A	95	ASP	N-CA	-5.50	1.39	1.46
1	A	280	ASP	CA-C	-5.49	1.45	1.52
1	A	88	ALA	C-N	-5.48	1.26	1.33
1	A	197	GLU	N-CA	5.47	1.53	1.46
1	A	38	HIS	CA-C	5.43	1.59	1.52
1	A	140	ALA	C-O	5.40	1.30	1.24
1	A	316	ILE	CA-C	5.39	1.59	1.52
1	A	332	GLY	C-O	-5.39	1.16	1.23
1	A	224	TYR	CE1-CZ	-5.30	1.25	1.38
1	A	207	ALA	CA-C	-5.30	1.46	1.52
1	A	299	PHE	C-O	-5.26	1.17	1.24
1	A	344	GLY	N-CA	5.26	1.50	1.45
1	A	306	VAL	CA-C	-5.20	1.48	1.53
1	A	182	GLU	CA-C	5.14	1.59	1.52
1	A	116	LEU	C-O	5.08	1.30	1.24
1	A	92	ALA	C-N	-5.07	1.27	1.33
1	A	35	ASP	C-O	5.04	1.30	1.24
1	A	38	HIS	C-O	-5.03	1.17	1.24
1	A	223	ARG	NE-CZ	5.00	1.38	1.33

All (25) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	66	VAL	N-CA-C	-9.19	102.84	111.48
1	A	252	LEU	N-CA-C	7.36	119.09	111.14
1	A	332	GLY	N-CA-C	-7.02	104.08	114.90
1	A	90	ARG	NE-CZ-NH2	-6.33	113.50	119.20
1	A	179	LYS	N-CA-C	6.00	117.81	111.28
1	A	172	THR	OG1-CB-CG2	5.90	121.10	109.30
1	A	336	LYS	N-CA-CB	5.81	118.49	109.48

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	23	PHE	O-C-N	5.80	129.85	123.01
1	A	53	TYR	N-CA-C	-5.76	104.91	111.07
1	A	287	VAL	N-CA-C	-5.63	106.97	111.81
1	A	343	LEU	N-CA-C	5.62	117.38	108.79
1	A	254	LEU	N-CA-C	5.56	117.15	111.14
1	A	206	GLY	CA-C-O	-5.55	116.17	121.83
1	A	161	GLU	N-CA-C	-5.45	105.50	111.82
1	A	69	ILE	CA-CB-CG2	5.42	119.71	110.50
1	A	120	THR	N-CA-C	-5.34	105.45	111.28
1	A	214	ARG	CD-NE-CZ	5.32	131.85	124.40
1	A	159	ARG	NE-CZ-NH1	-5.18	116.32	121.50
1	A	159	ARG	NE-CZ-NH2	5.15	123.84	119.20
1	A	218	VAL	CA-C-N	-5.12	114.49	119.76
1	A	218	VAL	C-N-CA	-5.12	114.49	119.76
1	A	225	LYS	CD-CE-NZ	-5.07	95.69	111.90
1	A	260	LEU	O-C-N	5.02	127.44	122.12
1	A	348	GLY	CA-C-N	5.01	130.72	121.70
1	A	348	GLY	C-N-CA	5.01	130.72	121.70

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	2577	0	2600	45	0
2	A	16	0	19	8	0
3	A	6	0	8	0	0
4	A	1	0	0	0	0
5	A	109	0	0	3	0
All	All	2709	0	2627	47	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 9.

All (47) 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:143[A]:CYS:SG	2:A:401[A]:CER:H21	1.31	1.62
1:A:143[A]:CYS:SG	2:A:401[A]:CER:C2	2.18	1.31
2:A:401[A]:CER:C4	2:A:401[A]:CER:HN11	1.39	1.18
1:A:151[B]:ASP:OD2	1:A:155:ARG:NH2	1.98	0.97
2:A:401[A]:CER:C4	2:A:401[A]:CER:N1	2.18	0.92
1:A:143[A]:CYS:HG	2:A:401[A]:CER:H21	1.36	0.90
1:A:151[A]:ASP:OD1	1:A:224:TYR:OH	1.90	0.89
1:A:62:VAL:HG11	1:A:198:LEU:HD13	1.64	0.79
1:A:131:SER:OG	1:A:133[B]:HIS:CE1	2.37	0.76
1:A:305:LYS:HE3	5:A:501:HOH:O	1.84	0.76
1:A:143[A]:CYS:SG	2:A:401[A]:CER:C1	2.74	0.75
1:A:131:SER:HG	1:A:133[B]:HIS:CE1	2.14	0.62
1:A:249:ASP:N	1:A:249:ASP:OD1	2.30	0.62
1:A:218:VAL:HG12	1:A:221:ALA:HB2	1.81	0.62
1:A:41:THR:HG1	1:A:44:GLU:HG3	1.69	0.57
1:A:277:GLU:H	1:A:277:GLU:CD	2.13	0.57
1:A:41:THR:OG1	1:A:44:GLU:HG3	2.03	0.57
1:A:183:ARG:HD2	1:A:197:GLU:OE2	2.04	0.57
1:A:53:TYR:OH	1:A:62:VAL:HG12	2.05	0.56
1:A:52:THR:HG21	1:A:185:THR:HA	1.86	0.56
1:A:62:VAL:HG11	1:A:198:LEU:HD22	1.88	0.55
1:A:191:GLU:O	1:A:195:ARG:HG3	2.06	0.55
1:A:62:VAL:CG1	1:A:198:LEU:HD22	2.39	0.53
1:A:62:VAL:HG13	1:A:63:LEU:N	2.23	0.52
1:A:49:LEU:HD22	1:A:184:MET:HG3	1.92	0.52
1:A:62:VAL:HG11	1:A:198:LEU:CD1	2.38	0.51
1:A:131:SER:HG	1:A:133[B]:HIS:CG	2.29	0.51
1:A:143[A]:CYS:CB	2:A:401[A]:CER:H21	2.33	0.51
1:A:184:MET:O	1:A:185:THR:HG23	2.11	0.50
1:A:155:ARG:NH1	5:A:502:HOH:O	2.45	0.49
1:A:252:LEU:O	1:A:253:LEU:C	2.52	0.49
1:A:343:LEU:C	1:A:343:LEU:HD12	2.37	0.49
1:A:113:ARG:NH1	5:A:504:HOH:O	2.46	0.49
1:A:218:VAL:HG12	1:A:218:VAL:O	2.15	0.47
1:A:113:ARG:NE	1:A:115:TYR:O	2.40	0.46
1:A:279:LEU:HD23	1:A:279:LEU:HA	1.84	0.44
1:A:49:LEU:CD2	1:A:184:MET:HG3	2.47	0.44
1:A:218:VAL:CG1	1:A:221:ALA:HB2	2.47	0.43
1:A:69:ILE:HD12	1:A:314:GLY:HA2	2.01	0.43
1:A:195:ARG:HA	1:A:198:LEU:HD12	2.01	0.42
1:A:184:MET:HB3	1:A:197:GLU:OE1	2.20	0.42
1:A:218:VAL:O	1:A:219:PRO:C	2.62	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:284[A]:ILE:HG21	1:A:284[A]:ILE:HD13	1.79	0.42
1:A:143[A]:CYS:SG	2:A:401[A]:CER:C3	3.01	0.41
1:A:32:ALA:HB1	1:A:91:LYS:HG2	2.02	0.41
1:A:50:GLN:HB3	1:A:51:PRO:HD3	2.02	0.40
1:A:62:VAL:CG1	1:A:63:LEU:N	2.83	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	334/358 (93%)	320 (96%)	14 (4%)	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	274/289 (95%)	262 (96%)	12 (4%)	25 6

All (12) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	14	LEU

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Mol	Chain	Res	Type
1	A	43	LYS
1	A	52	THR
1	A	184	MET
1	A	220	ASP
1	A	238	LEU
1	A	249	ASP
1	A	250	THR
1	A	276	VAL
1	A	277	GLU
1	A	335	LYS
1	A	336	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

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](#)

Of 3 ligands modelled in this entry, 1 is monoatomic - leaving 2 for Mogul analysis.

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
3	GOL	A	402	-	5,5,5	0.92	0	5,5,5	1.34	1 (20%)
2	CER	A	401[A]	-	15,15,15	1.43	2 (13%)	15,17,17	2.15	5 (33%)

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
3	GOL	A	402	-	-	4/4/4/4	-
2	CER	A	401[A]	-	-	4/16/16/16	-

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	401[A]	CER	C3-C4	-3.92	1.46	1.53
2	A	401[A]	CER	O3-C3	-2.69	1.37	1.42

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	401[A]	CER	O2-C1-C2	5.21	131.75	120.87
2	A	401[A]	CER	C5-C6-C7	-4.06	103.75	112.57
2	A	401[A]	CER	O2-C1-N1	-2.68	115.37	122.53
2	A	401[A]	CER	O1-C4-C5	2.36	125.68	121.68
2	A	401[A]	CER	O1-C4-C3	-2.35	117.66	120.07
3	A	402	GOL	O3-C3-C2	2.04	119.56	110.38

There are no chirality outliers.

All (8) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	401[A]	CER	C4-C5-C6-C7
3	A	402	GOL	O1-C1-C2-C3
3	A	402	GOL	C1-C2-C3-O3
2	A	401[A]	CER	N1-C1-C2-C3
3	A	402	GOL	O1-C1-C2-O2
2	A	401[A]	CER	O2-C1-C2-C3
3	A	402	GOL	O2-C2-C3-O3
2	A	401[A]	CER	C11-C10-C9-C8

There are no ring outliers.

1 monomer is involved in 8 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	401[A]	CER	8	0

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, 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(Å ²)	Q<0.9
1	A	332/358 (92%)	0.30	23 (6%)	23 26	8, 28, 74, 93	8 (2%)

All (23) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	53	TYR	5.3
1	A	116	LEU	4.7
1	A	190	THR	4.0
1	A	250	THR	4.0
1	A	14	LEU	3.8
1	A	56	LEU	3.8
1	A	185	THR	3.3
1	A	251	ARG	3.1
1	A	57	GLY	3.1
1	A	186	SER	3.1
1	A	58	ILE	2.9
1	A	253	LEU	2.8
1	A	255	ILE	2.6
1	A	252	LEU	2.5
1	A	52	THR	2.4
1	A	55	ARG	2.4
1	A	51	PRO	2.4
1	A	49	LEU	2.3
1	A	46	ASN	2.1
1	A	184	MET	2.1
1	A	50	GLN	2.1
1	A	194	PHE	2.0
1	A	71	ALA	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, 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($\text{\AA}^2$)	Q<0.9
3	GOL	A	402	6/6	0.88	0.14	38,48,55,56	0
2	CER	A	401[A]	16/16	0.91	0.14	16,30,38,38	16
4	MN	A	403	1/1	0.95	0.04	25,25,25,25	1

6.5 Other polymers [i](#)

There are no such residues in this entry.