Full wwPDB X-ray Structure Validation Report (i)

Mar 1, 2026 – 05:54 PM UTC

PDB ID	:	6ANN / pdb_00006ann
Title	:	Structure of cyclic D-Leu-N-methyl-D-Phe-2-Abz-D-Ala at 0.76 Angstrom
Authors	:	Cameron, A.J.; Sarojini, V.; Squire, C.J.
Deposited on	:	2017-08-14
Resolution	:	0.76 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 (i) 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 (i)) were used in the production of this report:

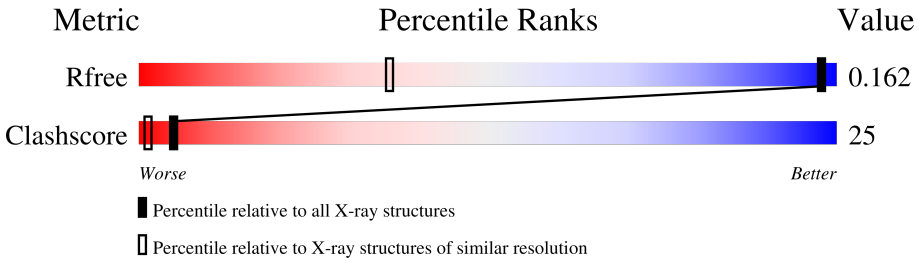
MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (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 0.76 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	1421 (1.00-0.54)
Clashscore	190562	1477 (1.00-0.54)

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	4	25% 25% 25% 25%
1	B	4	25% 25% 50%
1	C	4	25% 25% 50%
1	D	4	25% 25% 50%
1	E	4	25% 25% 50%

2 Entry composition

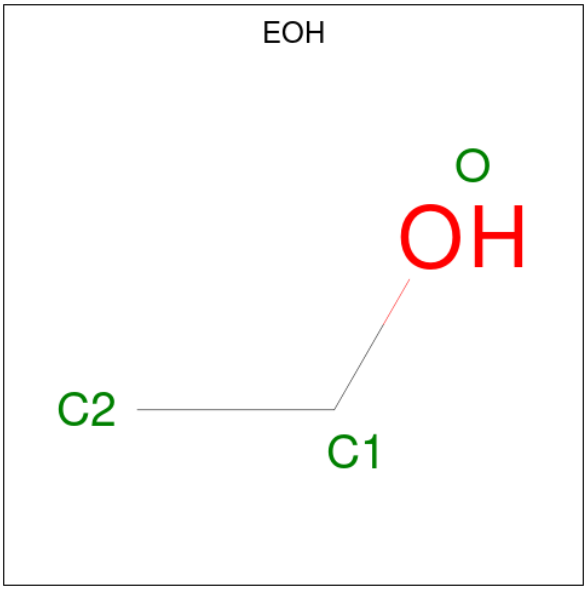
There are 3 unique types of molecules in this entry. The entry contains 454 atoms, of which 224 are hydrogens and 0 are deuteriums.

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 (with D amino acids) called cyclic DLE-ZAE-BE2-DAL.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	4	Total	C	H	N	O	0	1	0
			83	32	41	5	5			
1	B	4	Total	C	H	N	O	0	0	0
			65	26	31	4	4			
1	C	4	Total	C	H	N	O	0	4	0
			130	52	62	8	8			
1	D	4	Total	C	H	N	O	0	0	0
			66	26	32	4	4			
1	E	4	Total	C	H	N	O	0	1	0
			79	31	40	4	4			

- Molecule 2 is ETHANOL (CCD ID: EOH) (formula: C_2H_6O).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	H	O	0	0
			9	2	6	1		

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	B	1	Total C H O 9 2 6 1	0	0
2	D	1	Total C H O 9 2 6 1	0	0

- Molecule 3 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total O 1 1	0	0
3	B	1	Total O 1 1	0	0
3	D	1	Total O 1 1	0	0
3	E	1	Total O 1 1	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: cyclic DLE-ZAE-BE2-DAL

Chain A:

- Molecule 1: cyclic DLE-ZAE-BE2-DAL

Chain B:

- Molecule 1: cyclic DLE-ZAE-BE2-DAL

Chain C:

- Molecule 1: cyclic DLE-ZAE-BE2-DAL

Chain D:

- Molecule 1: cyclic DLE-ZAE-BE2-DAL

Chain E:

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	14.50Å 21.96Å 45.17Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	22.58 – 0.76 22.58 – 0.76	Depositor EDS
% Data completeness (in resolution range)	99.8 (22.58-0.76) 99.9 (22.58-0.76)	Depositor EDS
R_{merge}	0.14	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.20 (at 0.76Å)	Xtriage
Refinement program	REFMAC 5.8.0158	Depositor
R, R_{free}	0.144 , 0.157 0.144 , 0.162	Depositor DCC
R_{free} test set	962 reflections (5.20%)	wwPDB-VP
Wilson B-factor (Å^2)	4.3	Xtriage
Anisotropy	0.623	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.40 , 32.1	EDS
L-test for twinning[2]	$< \|L\| > = 0.46$, $< L^2 > = 0.29$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.97	EDS
Total number of atoms	454	wwPDB-VP
Average B, all atoms (Å^2)	5.0	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 35.89 % 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 5.4393e-04.*

[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: ZAE, DAL, DLE, BE2, EOH

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).

There are no protein, RNA or DNA chains available to summarize Z scores of covalent bonds and angles.

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	2
1	B	0	2
1	C	0	3
1	D	0	2
1	E	0	1
All	All	0	10

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (10) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1003	BE2	Mainchain,Peptide
1	B	2003	BE2	Mainchain,Peptide
1	C	3003[A]	BE2	Mainchain
1	C	3003[B]	BE2	Mainchain,Peptide
1	D	4003	BE2	Mainchain,Peptide
1	E	5003	BE2	Mainchain

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	42	41	39	4	0
1	B	34	31	29	2	0
1	C	68	62	58	2	0
1	D	34	32	29	2	0
1	E	39	40	39	2	0
2	A	3	6	6	1	0
2	B	3	6	6	0	0
2	D	3	6	6	0	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
3	D	1	0	0	0	0
3	E	1	0	0	0	0
All	All	230	224	212	11	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 25.

All (11) 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:1003:BE2:H5	2:A:1101:EOH:H22	1.97	0.47
1:B:2001:DLE:HA	1:B:2002:ZAE:H11	1.85	0.44
1:A:1001[B]:DLE:HA	1:A:1002:ZAE:H11	1.82	0.43
1:A:1001[B]:DLE:O	1:A:1002:ZAE:C	2.67	0.43
1:A:1001[A]:DLE:O	1:A:1002:ZAE:C	2.67	0.42
1:C:3001[A]:DLE:HA	1:C:3002[A]:ZAE:H11	1.58	0.42
1:E:5001[A]:DLE:HA	1:E:5002:ZAE:H11	1.82	0.42
1:C:3001[A]:DLE:O	1:C:3002[A]:ZAE:C	2.67	0.41
1:E:5001[B]:DLE:HA	1:E:5002:ZAE:H11	1.82	0.41
1:B:2001:DLE:HD12	1:D:4001:DLE:HD21	2.03	0.41
1:D:4001:DLE:HA	1:D:4002:ZAE:H11	1.80	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

There are no protein molecules in this entry.

5.3.2 Protein sidechains

There are no protein molecules in this entry.

5.3.3 RNA

There are no RNA molecules in this entry.

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

26 non-standard protein/DNA/RNA residues 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	$\#\|Z\| > 2$
1	ZAE	D	4002	1	11,12,13	0.95	0	13,14,16	1.55	3 (23%)
1	ZAE	E	5002	1	11,12,13	0.94	1 (9%)	13,14,16	1.18	0
1	ZAE	A	1002	1	11,12,13	1.51	2 (18%)	13,14,16	1.30	1 (7%)
1	ZAE	B	2002	1	11,12,13	0.90	0	13,14,16	1.22	2 (15%)
1	ZAE	C	3002[B]	1	11,12,13	0.55	0	13,14,16	1.73	4 (30%)
1	BE2	B	2003	1	9,9,10	1.12	0	9,11,13	1.93	4 (44%)
1	BE2	A	1003	1	9,9,10	1.21	1 (11%)	9,11,13	1.46	2 (22%)
1	BE2	C	3003[B]	1	9,9,10	1.00	0	9,11,13	1.92	3 (33%)
1	ZAE	C	3002[A]	1	11,12,13	0.77	0	13,14,16	1.55	3 (23%)
1	BE2	E	5003	1	9,9,10	1.40	2 (22%)	9,11,13	1.81	2 (22%)
1	BE2	D	4003	1	9,9,10	1.17	1 (11%)	9,11,13	1.36	2 (22%)
1	BE2	C	3003[A]	1	9,9,10	0.99	0	9,11,13	1.71	2 (22%)

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
1	ZAE	D	4002	1	-	0/5/8/10	0/1/1/1
1	ZAE	E	5002	1	-	0/5/8/10	0/1/1/1
1	ZAE	A	1002	1	-	0/5/8/10	0/1/1/1
1	ZAE	B	2002	1	-	0/5/8/10	0/1/1/1
1	ZAE	C	3002[B]	1	-	0/5/8/10	0/1/1/1
1	BE2	B	2003	1	-	2/2/2/4	0/1/1/1
1	BE2	A	1003	1	-	2/2/2/4	0/1/1/1
1	BE2	C	3003[B]	1	-	2/2/2/4	0/1/1/1
1	ZAE	C	3002[A]	1	-	0/5/8/10	0/1/1/1
1	BE2	E	5003	1	-	2/2/2/4	0/1/1/1
1	BE2	D	4003	1	-	2/2/2/4	0/1/1/1
1	BE2	C	3003[A]	1	-	2/2/2/4	0/1/1/1

All (7) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1002	ZAE	CE1-CD1	3.94	1.45	1.38
1	E	5003	BE2	C1-CA	-3.06	1.38	1.41
1	A	1003	BE2	C1-CA	2.70	1.44	1.41
1	D	4003	BE2	C5-C6	2.59	1.43	1.38
1	A	1002	ZAE	CD2-CG	2.39	1.43	1.38
1	E	5002	ZAE	CD2-CG	-2.03	1.34	1.38
1	E	5003	BE2	C1-C	2.02	1.51	1.47

All (28) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	3003[B]	BE2	C1-CA-N	-4.26	115.64	120.91
1	C	3002[B]	ZAE	CG-CB-CA	-3.43	108.63	113.51
1	C	3003[A]	BE2	C1-CA-N	-3.38	116.72	120.91
1	B	2003	BE2	CA-C1-C	-3.21	118.19	122.51
1	E	5003	BE2	C1-CA-N	-3.06	117.12	120.91
1	D	4002	ZAE	CG-CB-CA	-2.99	109.26	113.51
1	C	3002[A]	ZAE	CG-CB-CA	-2.98	109.27	113.51
1	C	3002[B]	ZAE	CZ-CE1-CD1	2.79	123.68	120.24
1	C	3002[A]	ZAE	CB-CA-N	2.67	114.41	110.48
1	E	5003	BE2	C5-C6-C1	-2.66	116.93	120.95

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1003	BE2	C1-CA-N	-2.66	117.62	120.91
1	B	2003	BE2	C1-CA-N	-2.56	117.73	120.91
1	C	3002[B]	ZAE	CE2-CZ-CE1	-2.46	116.50	119.87
1	C	3003[A]	BE2	CA-C1-C	-2.46	119.20	122.51
1	D	4002	ZAE	CZ-CE1-CD1	-2.39	117.29	120.24
1	D	4002	ZAE	CB-CA-N	2.34	113.92	110.48
1	C	3002[A]	ZAE	C10-N-CA	2.24	120.41	113.70
1	B	2002	ZAE	CB-CG-CD1	-2.24	116.74	120.90
1	C	3003[B]	BE2	C3-CA-N	2.24	124.49	120.11
1	D	4003	BE2	C1-CA-N	-2.23	118.14	120.91
1	A	1003	BE2	C3-CA-N	2.20	124.42	120.11
1	C	3002[B]	ZAE	CE1-CD1-CG	-2.19	117.53	120.61
1	D	4003	BE2	CA-C1-C	-2.11	119.67	122.51
1	A	1002	ZAE	C10-N-CA	2.11	120.00	113.70
1	B	2003	BE2	C6-C1-C	2.07	123.11	118.81
1	C	3003[B]	BE2	CA-C1-C	-2.06	119.73	122.51
1	B	2002	ZAE	CB-CA-N	2.03	113.47	110.48
1	B	2003	BE2	C4-C3-CA	-2.02	118.29	121.03

There are no chirality outliers.

All (12) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	1003	BE2	O-C-C1-CA
1	B	2003	BE2	O-C-C1-CA
1	C	3003[A]	BE2	O-C-C1-CA
1	C	3003[B]	BE2	O-C-C1-CA
1	D	4003	BE2	O-C-C1-CA
1	E	5003	BE2	O-C-C1-CA
1	B	2003	BE2	O-C-C1-C6
1	E	5003	BE2	O-C-C1-C6
1	C	3003[A]	BE2	O-C-C1-C6
1	A	1003	BE2	O-C-C1-C6
1	C	3003[B]	BE2	O-C-C1-C6
1	D	4003	BE2	O-C-C1-C6

There are no ring outliers.

6 monomers are involved in 10 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	D	4002	ZAE	1	0

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	E	5002	ZAE	2	0
1	A	1002	ZAE	3	0
1	B	2002	ZAE	1	0
1	A	1003	BE2	1	0
1	C	3002[A]	ZAE	2	0

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	EOH	D	4101	-	2,2,2	0.68	0	1,1,1	0.58	0
2	EOH	B	2101	-	2,2,2	0.74	0	1,1,1	0.38	0
2	EOH	A	1101	-	2,2,2	1.08	0	1,1,1	1.56	0

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	1101	EOH	1	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, 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	0/4	-	-	-	-
1	B	0/4	-	-	-	-
1	C	0/4	-	-	-	-
1	D	0/4	-	-	-	-
1	E	0/4	-	-	-	-
All	All	0/20	-	-	-	-

There are no RSRZ outliers to report.

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

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
1	DLE	C	3001[A]	8/9	0.97	0.07	4,5,7,7	18
1	DLE	C	3001[B]	8/9	0.97	0.07	2,4,6,6	18
1	DLE	A	1001[A]	8/9	0.98	0.06	2,4,5,6	18
1	DLE	A	1001[B]	8/9	0.98	0.06	2,3,4,5	18
1	ZAE	C	3002[A]	12/13	0.98	0.05	5,5,6,7	23
1	ZAE	C	3002[B]	12/13	0.98	0.05	5,6,7,7	23
1	DLE	E	5001[A]	8/9	0.99	0.05	2,4,7,8	14
1	DLE	E	5001[B]	8/9	0.99	0.05	2,5,6,6	14
1	ZAE	A	1002	12/13	0.99	0.04	2,4,6,7	0
1	ZAE	B	2002	12/13	0.99	0.04	2,3,7,7	0
1	DLE	B	2001	8/9	0.99	0.04	2,3,6,6	0
1	DLE	D	4001	8/9	0.99	0.06	3,6,14,14	0
1	ZAE	D	4002	12/13	0.99	0.04	3,5,6,7	0
1	ZAE	E	5002	12/13	0.99	0.04	3,6,7,8	0

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
1	BE2	A	1003	9/10	0.99	0.04	2,4,5,5	0
1	BE2	B	2003	9/10	0.99	0.04	2,3,3,4	0
1	BE2	C	3003[A]	9/10	0.99	0.04	2,3,4,4	14
1	BE2	C	3003[B]	9/10	0.99	0.04	2,3,3,4	14
1	BE2	D	4003	9/10	0.99	0.03	2,3,3,3	0
1	BE2	E	5003	9/10	0.99	0.03	3,6,7,8	0
1	DAL	B	2004	5/6	0.99	0.03	2,2,3,3	0
1	DAL	C	3004[A]	5/6	0.99	0.03	2,3,3,4	10
1	DAL	C	3004[B]	5/6	0.99	0.03	2,3,3,3	10
1	DAL	E	5004	5/6	0.99	0.03	2,3,3,3	0
1	DAL	D	4004	5/6	1.00	0.03	3,3,4,4	0
1	DAL	A	1004	5/6	1.00	0.03	2,2,3,3	0

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(Å^2)	Q<0.9
2	EOH	A	1101	3/3	0.91	0.11	9,12,20,23	0
2	EOH	D	4101	3/3	0.95	0.06	10,11,15,15	0
2	EOH	B	2101	3/3	0.98	0.06	6,7,9,9	0

6.5 Other polymers (i)

There are no such residues in this entry.