Full wwPDB X-ray Structure Validation Report ⓘ

Apr 28, 2025 – 08:05 PM EDT

PDB ID	:	9D20 / pdb_00009d20
Title	:	Crystal structure of DLK1 in complex with ACVR2B
Authors	:	Ming, Q.; Antfolk, D.; Luca, V.C.
Deposited on	:	2024-08-08
Resolution	:	2.67 Å(reported)

The following versions of software and data (see references ⓘ) were used in the production of this report:

|		
MolProbity	:	4-5-2 with Phenix2.0rc1
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0rc1
EDS	:	3.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.006 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.43.1
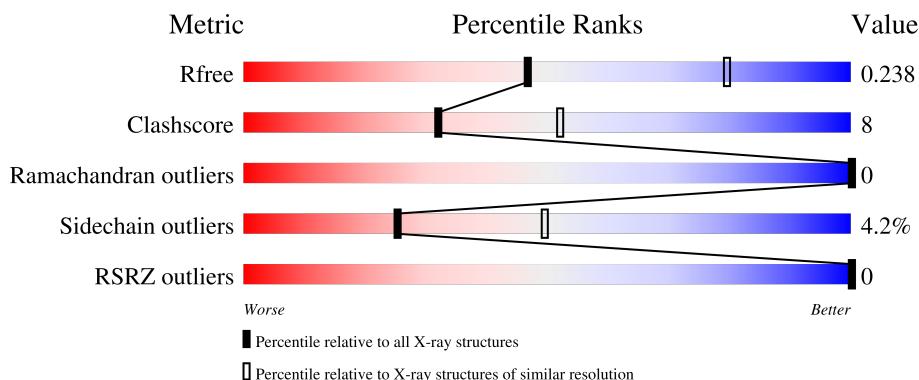
1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION
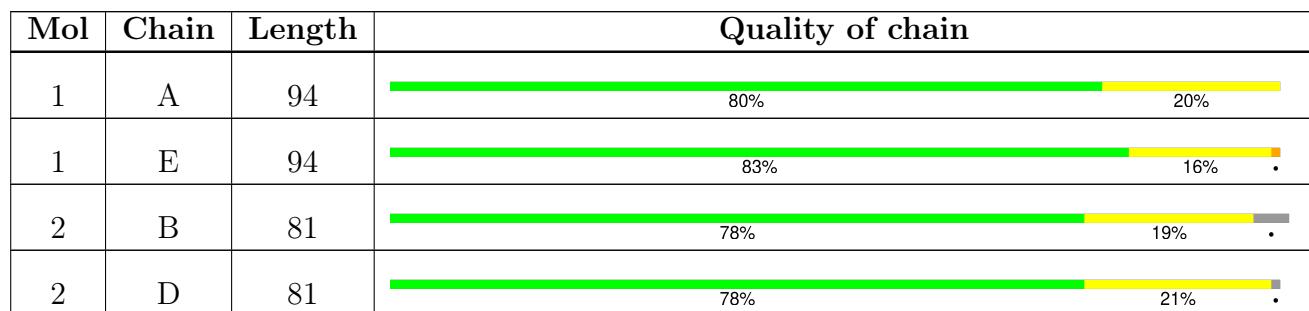
The reported resolution of this entry is 2.67 Å.

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		0.238
Clashscore		8
Ramachandran outliers		0
Sidechain outliers		4.2%
RSRZ outliers		0

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}	164625	4708 (2.70-2.66)
Clashscore	180529	5138 (2.70-2.66)
Ramachandran outliers	177936	5071 (2.70-2.66)
Sidechain outliers	177891	5071 (2.70-2.66)
RSRZ outliers	164620	4708 (2.70-2.66)

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 <=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	94	80% 20%
1	E	94	83% 16% •
2	B	81	78% 19% •
2	D	81	78% 21% •

WORLDWIDE PDB
PROTEIN DATA BANK

2 Entry composition ⓘ

There are 8 unique types of molecules in this entry. The entry contains 2776 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.
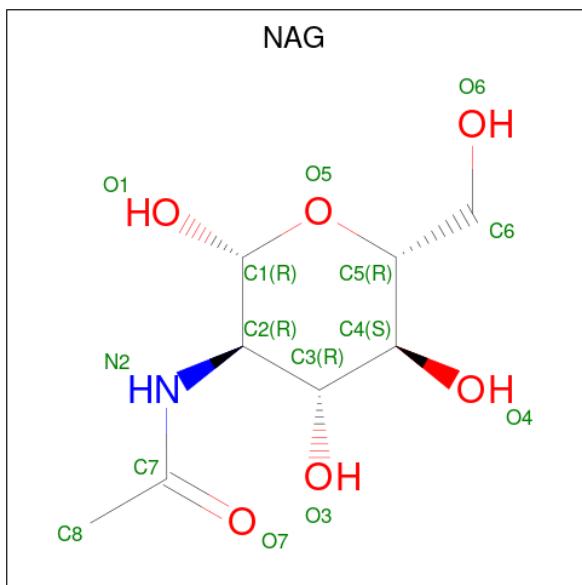
- Molecule 1 is a protein called Activin receptor type-2B.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	E	94	Total	C	N	O	S	0	0	0
			759	467	134	148	10			
1	A	94	Total	C	N	O	S	0	0	0
			747	461	133	143	10			

- Molecule 2 is a protein called Protein delta homolog 1.
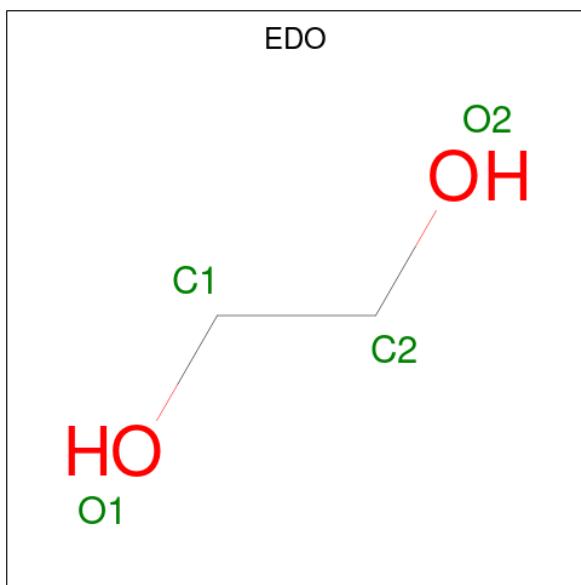
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	D	80	Total	C	N	O	S	0	0	0
			580	345	106	117	12			
2	B	78	Total	C	N	O	S	0	0	0
			539	321	97	109	12			

- Molecule 3 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: $C_8H_{15}NO_6$).
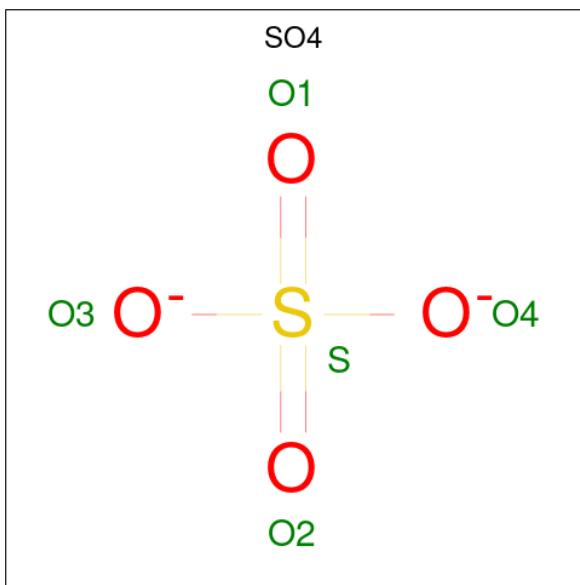
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	E	1	Total	C	N	O	0	0
			14	8	1	5		
3	E	1	Total	C	N	O	0	0
			14	8	1	5		
3	A	1	Total	C	N	O	0	0
			14	8	1	5		
3	A	1	Total	C	N	O	0	0
			14	8	1	5		

- Molecule 4 is 1,2-ETHANEDIOL (CCD ID: EDO) (formula: $C_2H_6O_2$).
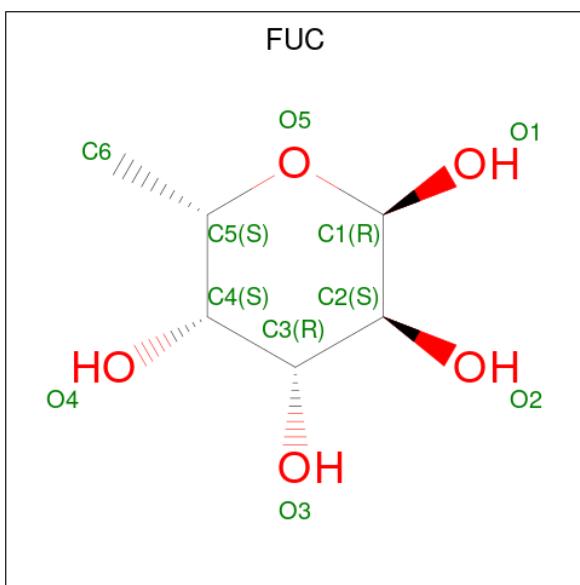
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	E	1	Total	C	O	0	0
			4	2	2		
4	D	1	Total	C	O	0	0
			4	2	2		
4	D	1	Total	C	O	0	0
			4	2	2		
4	A	1	Total	C	O	0	0
			4	2	2		

- Molecule 5 is SULFATE ION (CCD ID: SO4) (formula: O_4S).
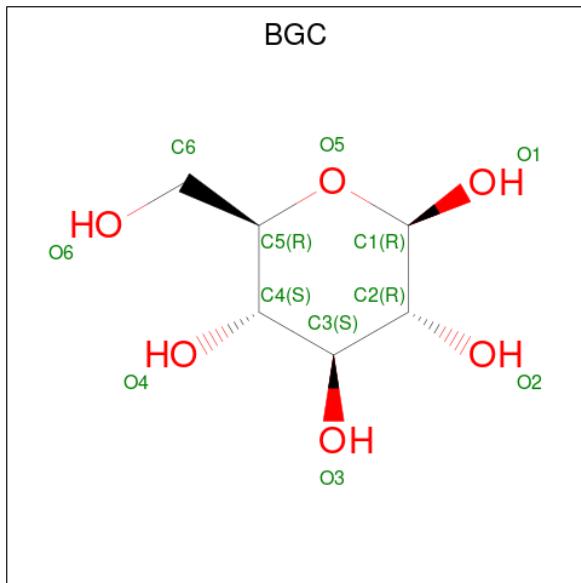
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	E	1	Total 5	O 4	S 1	0	0
5	E	1	Total 5	O 4	S 1	0	0
5	D	1	Total 5	O 4	S 1	0	0
5	A	1	Total 5	O 4	S 1	0	0
5	B	1	Total 5	O 4	S 1	0	0

- Molecule 6 is alpha-L-fucopyranose (CCD ID: FUC) (formula: $C_6H_{12}O_5$).

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	D	1	Total 10	C 6	O 4	0	0
6	B	1	Total 10	C 6	O 4	0	0

- Molecule 7 is beta-D-glucopyranose (CCD ID: BGC) (formula: $C_6H_{12}O_6$).

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
7	D	1	Total 11	C 6	O 5	0	0
7	B	1	Total 11	C 6	O 5	0	0
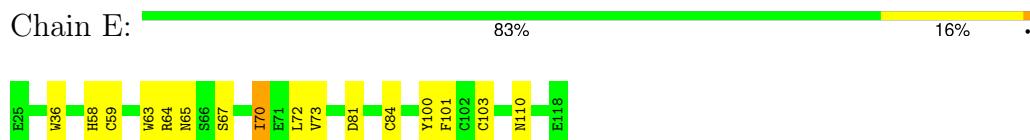
- Molecule 8 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	E	3	Total 3	O 3	0	0
8	D	2	Total 2	O 2	0	0
8	A	4	Total 4	O 4	0	0
8	B	3	Total 3	O 3	0	0
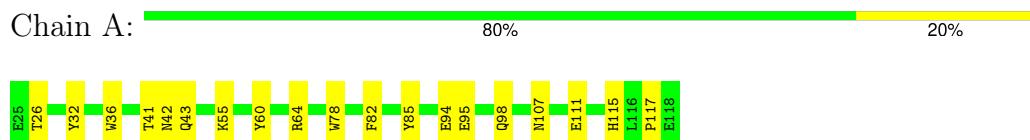
3 Residue-property plots ⓘ

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.
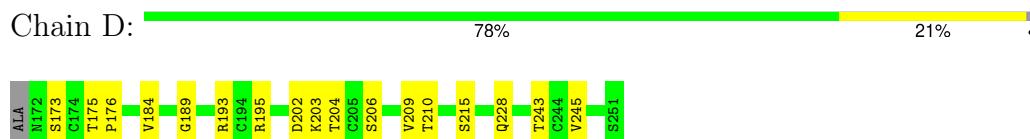
- Molecule 1: Activin receptor type-2B
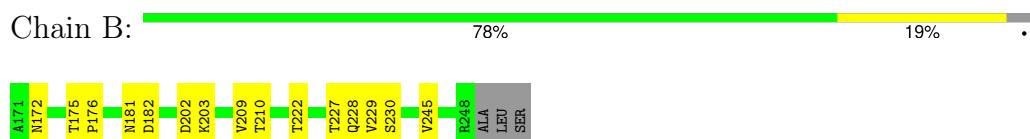
Chain E:

- Molecule 1: Activin receptor type-2B

Chain A:

- Molecule 2: Protein delta homolog 1

Chain D:

- Molecule 2: Protein delta homolog 1

Chain B:

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	120.98Å 52.97Å 97.99Å 90.00° 118.99° 90.00°	Depositor
Resolution (Å)	35.89 – 2.67 35.89 – 2.67	Depositor EDS
% Data completeness (in resolution range)	99.0 (35.89-2.67) 99.3 (35.89-2.67)	Depositor EDS
R_{merge}	0.05	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.83 (at 2.69Å)	Xtriage
Refinement program	PHENIX 1.13_2998	Depositor
R, R_{free}	0.212 , 0.242 0.214 , 0.238	Depositor DCC
R_{free} test set	776 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å^2)	74.8	Xtriage
Anisotropy	0.394	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 88.2	EDS
L-test for twinning [2]	$< |L| > = 0.49$, $< L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	2776	wwPDB-VP
Average B, all atoms (Å^2)	99.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 9.26% 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: NAG, SO4, EDO, BGC, FUC

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	0.16	0/765	0.39	0/1037
1	E	0.17	0/777	0.42	0/1052
2	B	0.19	0/549	0.45	0/750
2	D	0.20	0/590	0.45	0/799
All	All	0.18	0/2681	0.42	0/3638

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	747	0	645	13	0
1	E	759	0	659	12	0
2	B	539	0	463	9	0
2	D	580	0	528	9	0
3	A	28	0	26	1	0
3	E	28	0	26	4	0
4	A	4	0	6	0	0
4	D	8	0	12	0	0
4	E	4	0	6	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	A	5	0	0	0	0
5	B	5	0	0	1	0
5	D	5	0	0	1	0
5	E	10	0	0	1	0
6	B	10	0	10	0	0
6	D	10	0	10	0	0
7	B	11	0	10	0	0
7	D	11	0	10	1	0
8	A	4	0	0	0	0
8	B	3	0	0	0	0
8	D	2	0	0	0	0
8	E	3	0	0	0	0
All	All	2776	0	2411	41	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 8.

All (41) 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)
2:D:202:ASP:OD1	2:D:203:LYS:N	2.15	0.78
2:D:202:ASP:HB3	2:D:206:SER:H	1.49	0.77
1:E:65:ASN:HD22	3:E:201:NAG:H83	1.52	0.74
2:B:181:ASN:O	2:B:182:ASP:OD1	2.10	0.68
2:B:227:THR:HG23	2:B:229:VAL:H	1.65	0.60
1:E:63:TRP:HE1	3:E:201:NAG:H81	1.67	0.60
1:A:95:GLU:HA	1:A:117:PRO:HB3	1.82	0.59
1:A:64:ARG:NH1	1:A:98:GLN:OE1	2.37	0.57
1:A:26:THR:HG23	1:A:107:ASN:HA	1.86	0.57
1:A:42:ASN:OD1	3:A:202:NAG:N2	2.38	0.56
1:A:82:PHE:HE1	2:B:209:VAL:HG21	1.71	0.54
2:D:175:THR:HB	2:D:176:PRO:HD3	1.93	0.51
2:B:202:ASP:OD1	2:B:203:LYS:N	2.40	0.50
1:E:73:VAL:HG11	2:D:189:GLY:HA3	1.95	0.49
1:A:36:TRP:CD1	1:A:36:TRP:H	2.31	0.48
1:E:65:ASN:ND2	3:E:201:NAG:H83	2.24	0.48
1:E:65:ASN:HB3	1:E:100:TYR:CE1	2.49	0.47
1:A:60:TYR:HB3	1:A:78:TRP:HB2	1.96	0.47
2:B:181:ASN:C	2:B:182:ASP:OD1	2.58	0.47
2:D:204:THR:HG23	2:D:206:SER:HB3	1.97	0.46
3:E:202:NAG:O7	3:E:202:NAG:O3	2.27	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:67:SER:N	5:E:204:SO4:O3	2.49	0.46
2:B:228:GLN:NE2	5:B:803:SO4:O1	2.46	0.46
1:A:82:PHE:HA	1:A:85:TYR:CD1	2.51	0.45
1:E:58:HIS:HE1	1:E:81:ASP:H	1.65	0.45
1:A:32:TYR:HA	1:A:43:GLN:O	2.17	0.45
2:B:227:THR:HG22	2:B:230:SER:OG	2.17	0.45
2:B:172:ASN:HB3	2:B:175:THR:OG1	2.17	0.44
2:D:243:THR:HG23	2:D:245:VAL:HG13	1.99	0.44
1:E:101:PHE:CE2	1:E:103:CYS:HB2	2.53	0.44
1:A:115:HIS:NE2	1:A:117:PRO:HG3	2.32	0.44
1:E:64:ARG:O	1:E:70:ILE:HA	2.18	0.43
1:A:94:GLU:O	1:A:115:HIS:HE1	2.01	0.43
1:A:55:LYS:HD2	1:A:55:LYS:HA	1.89	0.43
2:D:228:GLN:N	5:D:1005:SO4:O3	2.49	0.42
1:A:36:TRP:HB2	1:A:41:THR:O	2.19	0.42
1:E:59:CYS:HB3	1:E:110:ASN:ND2	2.35	0.41
1:E:81:ASP:CG	2:D:195:ARG:HA	2.45	0.41
1:E:36:TRP:CD1	1:E:36:TRP:H	2.38	0.41
2:D:210:THR:HG22	7:D:1002:BGC:O2	2.21	0.41
2:B:175:THR:HB	2:B:176:PRO:HD3	2.03	0.41

There are no symmetry-related clashes.

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	92/94 (98%)	88 (96%)	4 (4%)	0	100	100
1	E	92/94 (98%)	86 (94%)	6 (6%)	0	100	100
2	B	76/81 (94%)	67 (88%)	9 (12%)	0	100	100
2	D	78/81 (96%)	72 (92%)	6 (8%)	0	100	100
All	All	338/350 (97%)	313 (93%)	25 (7%)	0	100	100

There are no Ramachandran outliers to report.

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	78/86 (91%)	77 (99%)	1 (1%)	65	84
1	E	81/86 (94%)	78 (96%)	3 (4%)	29	55
2	B	60/70 (86%)	57 (95%)	3 (5%)	20	42
2	D	68/70 (97%)	63 (93%)	5 (7%)	11	25
All	All	287/312 (92%)	275 (96%)	12 (4%)	25	49

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

Mol	Chain	Res	Type
1	E	70	ILE
1	E	72	LEU
1	E	84	CYS
2	D	173	SER
2	D	184	VAL
2	D	193	ARG
2	D	209	VAL
2	D	215	SER
1	A	111	GLU
2	B	210	THR
2	B	222	THR
2	B	245	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
1	E	58	HIS
1	E	96	ASN
1	A	43	GLN
1	A	115	HIS

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 ⓘ

17 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	$\#|Z| > 2$
5	SO4	A	204	-	4,4,4	0.25	0	6,6,6	0.09	0
7	BGC	B	802	2	11,11,12	1.69	2 (18%)	15,15,17	1.89	5 (33%)
6	FUC	D	1001	2	10,10,11	0.89	0	14,14,16	0.87	0
3	NAG	A	202	1	14,14,15	0.39	0	17,19,21	0.54	0
3	NAG	A	201	1	14,14,15	0.29	0	17,19,21	0.61	1 (5%)
4	EDO	A	203	-	3,3,3	0.43	0	2,2,2	0.39	0
5	SO4	E	205	-	4,4,4	0.23	0	6,6,6	0.10	0
4	EDO	D	1004	-	3,3,3	0.43	0	2,2,2	0.40	0
5	SO4	E	204	-	4,4,4	0.23	0	6,6,6	0.12	0
7	BGC	D	1002	2	11,11,12	1.77	3 (27%)	15,15,17	0.97	1 (6%)
5	SO4	B	803	-	4,4,4	0.24	0	6,6,6	0.09	0
6	FUC	B	801	2	10,10,11	0.68	0	14,14,16	0.80	0
5	SO4	D	1005	-	4,4,4	0.24	0	6,6,6	0.07	0
4	EDO	D	1003	-	3,3,3	0.43	0	2,2,2	0.36	0
4	EDO	E	203	-	3,3,3	0.40	0	2,2,2	0.49	0
3	NAG	E	202	1	14,14,15	0.77	0	17,19,21	0.51	0
3	NAG	E	201	1	14,14,15	0.56	0	17,19,21	0.68	1 (5%)

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
7	BGC	B	802	2	-	2/2/19/22	0/1/1/1
6	FUC	D	1001	2	-	-	0/1/1/1
3	NAG	A	202	1	-	2/6/23/26	0/1/1/1
3	NAG	A	201	1	-	2/6/23/26	0/1/1/1
4	EDO	A	203	-	-	0/1/1/1	-
4	EDO	D	1004	-	-	1/1/1/1	-
7	BGC	D	1002	2	-	2/2/19/22	0/1/1/1
6	FUC	B	801	2	-	-	0/1/1/1
4	EDO	D	1003	-	-	0/1/1/1	-
4	EDO	E	203	-	-	0/1/1/1	-
3	NAG	E	202	1	-	2/6/23/26	0/1/1/1
3	NAG	E	201	1	-	4/6/23/26	0/1/1/1

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	D	1002	BGC	O5-C1	4.50	1.51	1.43
7	B	802	BGC	O5-C1	4.15	1.50	1.43
7	B	802	BGC	C2-C3	-2.51	1.48	1.52
7	D	1002	BGC	C2-C3	-2.50	1.48	1.52
7	D	1002	BGC	O5-C5	2.28	1.47	1.43

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	B	802	BGC	C1-C2-C3	4.54	116.25	109.64
7	B	802	BGC	O3-C3-C2	-2.73	104.47	110.05
7	B	802	BGC	C2-C3-C4	2.66	115.55	110.86
7	B	802	BGC	O2-C2-C3	-2.40	105.19	110.15
7	D	1002	BGC	C1-O5-C5	2.18	115.11	112.19
7	B	802	BGC	O3-C3-C4	-2.07	105.50	110.38
3	E	201	NAG	C1-O5-C5	2.02	114.89	112.19
3	A	201	NAG	C1-O5-C5	2.00	114.87	112.19

There are no chirality outliers.

All (15) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	E	201	NAG	C4-C5-C6-O6
7	D	1002	BGC	O5-C5-C6-O6
7	D	1002	BGC	C4-C5-C6-O6
3	E	201	NAG	O5-C5-C6-O6
7	B	802	BGC	C4-C5-C6-O6
3	A	202	NAG	O5-C5-C6-O6
3	E	201	NAG	C8-C7-N2-C2
3	E	201	NAG	O7-C7-N2-C2
7	B	802	BGC	O5-C5-C6-O6
3	A	202	NAG	C4-C5-C6-O6
3	E	202	NAG	C3-C2-N2-C7
3	A	201	NAG	C4-C5-C6-O6
3	E	202	NAG	C1-C2-N2-C7
3	A	201	NAG	O5-C5-C6-O6
4	D	1004	EDO	O1-C1-C2-O2

There are no ring outliers.

7 monomers are involved in 9 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	202	NAG	1	0
5	E	204	SO4	1	0
7	D	1002	BGC	1	0
5	B	803	SO4	1	0
5	D	1005	SO4	1	0
3	E	202	NAG	1	0
3	E	201	NAG	3	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(Å^2)	Q<0.9
1	A	94/94 (100%)	-0.41	0	100	100	61, 92, 144, 180	0
1	E	94/94 (100%)	-0.55	0	100	100	61, 82, 127, 152	0
2	B	78/81 (96%)	-0.43	0	100	100	72, 108, 190, 211	0
2	D	80/81 (98%)	-0.37	0	100	100	73, 93, 126, 159	0
All	All	346/350 (98%)	-0.44	0	100	100	61, 93, 158, 211	0

There are no RSRZ outliers to report.

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
6	FUC	B	801	10/11	0.46	0.09	137,155,161,164	0
5	SO4	B	803	5/5	0.47	0.10	189,190,193,198	0
4	EDO	D	1003	4/4	0.56	0.10	98,99,104,106	0
4	EDO	D	1004	4/4	0.68	0.18	94,96,102,108	0

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
5	SO4	E	204	5/5	0.73	0.07	148,152,157,162	0
4	EDO	E	203	4/4	0.80	0.17	91,96,96,98	0
5	SO4	E	205	5/5	0.85	0.13	129,139,144,153	0
6	FUC	D	1001	10/11	0.85	0.10	101,112,119,123	0
5	SO4	D	1005	5/5	0.85	0.06	111,117,127,133	0
3	NAG	E	201	14/15	0.86	0.10	45,68,88,106	0
3	NAG	E	202	14/15	0.87	0.10	66,76,125,131	0
4	EDO	A	203	4/4	0.89	0.10	91,91,92,99	0
7	BGC	D	1002	11/12	0.89	0.09	70,93,124,133	0
7	BGC	B	802	11/12	0.90	0.09	76,84,105,115	0
5	SO4	A	204	5/5	0.92	0.07	117,123,126,127	0
3	NAG	A	202	14/15	0.93	0.07	59,80,100,101	0
3	NAG	A	201	14/15	0.96	0.06	56,81,99,109	0

6.5 Other polymers (i)

There are no such residues in this entry.