Full wwPDB X-ray Structure Validation Report ⓘ

Sep 6, 2023 – 08:15 PM EDT

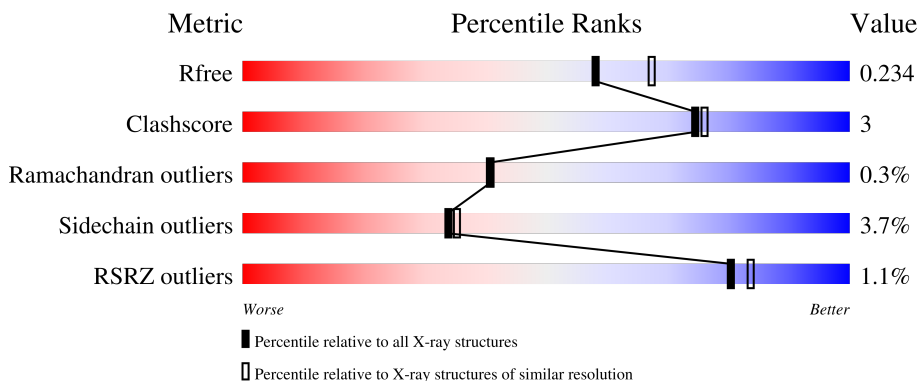|		
PDB ID	:	8SY0
Title	:	X-ray crystal structure of UDP- 2,3-diacetamido-2,3-dideoxy-glucuronic acid-2-epimerase from Thermus thermophilus strain HB27 in complex with its product UDP-2,3-diacetamido-2,3-dideoxy-d-mannuronic acid at pH 9
Authors	:	McKnight, J.O.; Thoden, J.B.; Holden, H.M.
Deposited on	:	2023-05-24
Resolution	:	2.10 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 2.10 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		0.234
Clashscore		3
Ramachandran outliers		0.3%
Sidechain outliers		3.7%
RSRZ outliers		1.1%

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	5197 (2.10-2.10)
Clashscore	141614	5710 (2.10-2.10)
Ramachandran outliers	138981	5647 (2.10-2.10)
Sidechain outliers	138945	5648 (2.10-2.10)
RSRZ outliers	127900	5083 (2.10-2.10)

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	373	89% 6% ·
1	B	373	84% 12% · ·

2 Entry composition ⓘ

There are 6 unique types of molecules in this entry. The entry contains 6078 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 UDP-2,3-diacetamido-2,3-dideoxy-glucuronic acid-2-epimerase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	358	Total 2832	C 1800	N 505	O 519	S 8	0	2	0
1	B	363	Total 2868	C 1822	N 514	O 524	S 8	0	2	0

There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	366	LEU	-	expression tag	UNP Q72KY0
A	367	GLU	-	expression tag	UNP Q72KY0
A	368	HIS	-	expression tag	UNP Q72KY0
A	369	HIS	-	expression tag	UNP Q72KY0
A	370	HIS	-	expression tag	UNP Q72KY0
A	371	HIS	-	expression tag	UNP Q72KY0
A	372	HIS	-	expression tag	UNP Q72KY0
A	373	HIS	-	expression tag	UNP Q72KY0
B	366	LEU	-	expression tag	UNP Q72KY0
B	367	GLU	-	expression tag	UNP Q72KY0
B	368	HIS	-	expression tag	UNP Q72KY0
B	369	HIS	-	expression tag	UNP Q72KY0
B	370	HIS	-	expression tag	UNP Q72KY0
B	371	HIS	-	expression tag	UNP Q72KY0
B	372	HIS	-	expression tag	UNP Q72KY0
B	373	HIS	-	expression tag	UNP Q72KY0

- Molecule 2 is (2 {S},3 {S},4 {R},5 {S},6 {R})-4,5-diacetamido-6-[[[(2 {R},3 {S},4 {R},5 {R })-5-[2,4-bis(oxidanylidene)pyrimidin-1-yl]-3,4-bis(oxidanyl)oxolan-2-yl]methoxy-oxidanyl -phosphoryl]oxy-oxidanyl-phosphoryl]oxy-3-oxidanyl-oxane-2-carboxylic acid (three-letter code: MJ3) (formula: $C_{19}H_{28}N_4O_{18}P_2$) (labeled as "Ligand of Interest" by depositor).
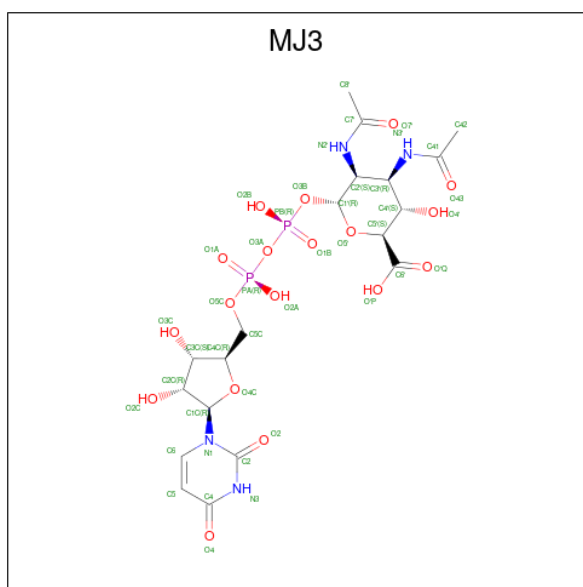
MJ3

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			43	19	4	18	2		
2	B	1	Total	C	N	O	P	0	0
			43	19	4	18	2		

- Molecule 3 is 1,2-ETHANEDIOL (three-letter code: EDO) (formula: $C_2H_6O_2$).

EDO

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

- Molecule 4 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	1	Total 1	Na 1	0	0
4	B	1	Total 1	Na 1	0	0

• Molecule 5 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	B	1	Total 1	Cl 1	0	0

• Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	160	Total 160	O 160	0	0
6	B	125	Total 125	O 125	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: UDP-2,3-diacetamido-2,3-dideoxy-glucuronic acid-2-epimerase

• Molecule 1: UDP-2,3-diacetamido-2,3-dideoxy-glucuronic acid-2-epimerase

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	56.34Å 128.61Å 58.93Å 90.00° 111.24° 90.00°	Depositor
Resolution (Å)	40.67 – 2.10 40.67 – 2.10	Depositor EDS
% Data completeness (in resolution range)	99.1 (40.67-2.10) 99.1 (40.67-2.10)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.08	Depositor
$< I/\sigma(I) >$ [1]	2.08 (at 2.10Å)	Xtriage
Refinement program	REFMAC 5.8.0403	Depositor
R, R_{free}	0.180 , 0.231 0.187 , 0.234	Depositor DCC
R_{free} test set	2215 reflections (4.91%)	wwPDB-VP
Wilson B-factor (Å^2)	19.9	Xtriage
Anisotropy	0.137	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 43.5	EDS
L-test for twinning[2]	$< |L| > = 0.49, < L^2 > = 0.32$	Xtriage
Estimated twinning fraction	0.033 for l,-k,h	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	6078	wwPDB-VP
Average B, all atoms (Å^2)	27.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.94% 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: CL, EDO, MJ3, NA

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	0.50	1/2894 (0.0%)	0.80	0/3923
1	B	0.49	1/2931 (0.0%)	0.80	0/3974
All	All	0.49	2/5825 (0.0%)	0.80	0/7897

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	4
1	B	0	3
All	All	0	7

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	211	GLU	CD-OE1	5.01	1.31	1.25
1	B	82	GLU	CD-OE2	-5.00	1.20	1.25

There are no bond angle outliers.

There are no chirality outliers.

All (7) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	159	ARG	Sidechain
1	A	246	ARG	Sidechain
1	A	26	ARG	Sidechain
1	A	336	ARG	Sidechain

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Group
1	B	159	ARG	Sidechain
1	B	218	ARG	Sidechain
1	B	278	ARG	Sidechain

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	2832	0	2863	10	0
1	B	2868	0	2898	27	0
2	A	43	0	0	0	0
2	B	43	0	0	1	0
3	A	4	0	6	0	0
4	A	1	0	0	0	0
4	B	1	0	0	0	0
5	B	1	0	0	0	0
6	A	160	0	0	1	0
6	B	125	0	0	3	0
All	All	6078	0	5767	37	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 3.

All (37) 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:B:304:GLU:OE1	6:B:501:HOH:O	2.02	0.76
1:B:146[A]:LEU:HD13	1:B:157:LEU:HD22	1.71	0.71
1:B:325:LYS:HE2	1:B:329:LEU:HG	1.79	0.64
1:B:92:TRP:HZ2	1:B:361:VAL:HG11	1.64	0.62
1:B:132:GLU:HG2	2:B:401:MJ3:C8'	2.31	0.60
1:B:146[A]:LEU:CD1	1:B:157:LEU:HD22	2.32	0.59
1:A:13:PRO:O	1:A:17:LYS:HG3	2.03	0.58
1:B:130:MET:HE1	1:B:306:GLU:OE1	2.07	0.55
1:B:290:GLU:HA	1:B:293:PHE:CD1	2.42	0.54
1:B:189:SER:HB3	1:B:272:MET:HG3	1.90	0.53

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:272:MET:HA	1:A:272:MET:HE2	1.91	0.52
1:B:130:MET:CE	1:B:132:GLU:OE2	2.58	0.51
6:A:649:HOH:O	1:B:159:ARG:HD2	2.10	0.51
1:B:205:ALA:HA	1:B:281:VAL:O	2.11	0.51
1:B:3:VAL:HG13	1:B:31:VAL:HG22	1.93	0.51
1:B:206:THR:O	1:B:282:THR:HA	2.11	0.50
1:B:216:GLN:HE22	1:B:220:ARG:HH11	1.61	0.49
1:B:208:HIS:O	1:B:242:ARG:NH2	2.44	0.49
1:A:290:GLU:HA	1:A:293:PHE:CD1	2.48	0.49
1:B:230:HIS:HA	1:B:233:VAL:O	2.14	0.47
1:B:50:PHE:O	1:B:54:LEU:HB2	2.15	0.46
1:A:172:ASP:OD1	1:A:174:MET:HB2	2.16	0.46
1:B:130:MET:HE3	1:B:132:GLU:OE2	2.16	0.45
1:B:360:LYS:O	1:B:360:LYS:HG3	2.16	0.45
1:A:42:TYR:OH	1:A:62:HIS:HB3	2.17	0.44
1:A:205:ALA:HA	1:A:281:VAL:O	2.18	0.43
1:B:316:ASN:HD22	1:B:317:TYR:H	1.66	0.43
1:B:92:TRP:CZ2	1:B:361:VAL:HG11	2.48	0.43
1:A:42:TYR:HD2	1:A:42:TYR:HA	1.64	0.43
1:B:6:LEU:C	1:B:6:LEU:HD23	2.40	0.42
1:B:130:MET:HE2	1:B:132:GLU:OE2	2.18	0.42
1:B:40:GLN:NE2	6:B:512:HOH:O	2.52	0.42
1:B:315:TRP:HB3	6:B:528:HOH:O	2.19	0.42
1:A:206:THR:O	1:A:282:THR:HA	2.21	0.41
1:A:179:LEU:HD12	1:A:179:LEU:HA	1.91	0.41
1:A:123:LEU:HD22	1:A:123:LEU:N	2.35	0.41
1:B:146[A]:LEU:HD13	1:B:157:LEU:CD2	2.46	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	358/373 (96%)	342 (96%)	15 (4%)	1 (0%)	41	41
1	B	363/373 (97%)	344 (95%)	18 (5%)	1 (0%)	41	41
All	All	721/746 (97%)	686 (95%)	33 (5%)	2 (0%)	41	41

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	29	PRO
1	B	120	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	298/311 (96%)	293 (98%)	5 (2%)	60	67
1	B	301/311 (97%)	284 (94%)	17 (6%)	21	18
All	All	599/622 (96%)	577 (96%)	22 (4%)	34	35

All (22) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	2	TRP
1	A	3	VAL
1	A	42	TYR
1	A	45	ASN
1	A	304	GLU
1	B	28	SER
1	B	52	GLU
1	B	128	ARG
1	B	198	GLN
1	B	216	GLN
1	B	217	GLU
1	B	218	ARG
1	B	232	GLU
1	B	237	PHE

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	B	248	GLU
1	B	281	VAL
1	B	304	GLU
1	B	316	ASN
1	B	325	LYS
1	B	336	ARG
1	B	343	ASP
1	B	352	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (9) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	45	ASN
1	A	48	GLN
1	A	216	GLN
1	B	40	GLN
1	B	216	GLN
1	B	276	ASN
1	B	288	GLN
1	B	316	ASN
1	B	352	GLN

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 ⓘ

Of 6 ligands modelled in this entry, 3 are monoatomic - leaving 3 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	EDO	A	402	-	3,3,3	0.38	0	2,2,2	0.34	0
2	MJ3	A	401	-	41,45,45	1.42	5 (12%)	58,68,68	1.51	8 (13%)
2	MJ3	B	401	-	41,45,45	1.52	6 (14%)	58,68,68	1.72	14 (24%)

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	EDO	A	402	-	-	1/1/1/1	-
2	MJ3	A	401	-	-	4/32/69/69	0/3/3/3
2	MJ3	B	401	-	-	6/32/69/69	0/3/3/3

All (11) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	401	MJ3	C5-C4	-5.76	1.30	1.43
2	A	401	MJ3	C5-C4	-5.22	1.32	1.43
2	B	401	MJ3	O7'-C7'	3.07	1.30	1.23
2	A	401	MJ3	C2-N1	2.94	1.43	1.38
2	A	401	MJ3	O'Q-C6'	2.72	1.30	1.22
2	B	401	MJ3	C7'-N2'	2.51	1.43	1.34
2	A	401	MJ3	C2-N3	-2.50	1.33	1.38
2	B	401	MJ3	O2-C2	2.48	1.27	1.23
2	B	401	MJ3	C4-N3	-2.34	1.34	1.38
2	A	401	MJ3	O2-C2	2.24	1.27	1.23
2	B	401	MJ3	C1'-C2'	2.09	1.56	1.53

All (22) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	401	MJ3	C5-C4-N3	5.35	122.84	114.84

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	401	MJ3	O7'-C7'-N2'	4.64	130.48	121.95
2	B	401	MJ3	C1'-C2'-N2'	-4.59	103.10	111.00
2	A	401	MJ3	C4-N3-C2	-3.99	121.31	126.58
2	B	401	MJ3	C4-N3-C2	-3.91	121.42	126.58
2	B	401	MJ3	C5-C4-N3	3.80	120.53	114.84
2	A	401	MJ3	C1'-C2'-N2'	-3.61	104.78	111.00
2	B	401	MJ3	O7'-C7'-C8'	-3.32	115.89	122.06
2	A	401	MJ3	O4-C4-C5	-2.93	120.01	125.16
2	B	401	MJ3	O5'-C1'-O3B	-2.72	107.81	111.36
2	B	401	MJ3	C6-N1-C2	-2.49	117.80	120.99
2	A	401	MJ3	PB-O3A-PA	-2.48	124.31	132.83
2	A	401	MJ3	O3A-PB-O3B	2.48	107.48	102.48
2	B	401	MJ3	C2C-C1C-N1	2.35	119.88	113.22
2	A	401	MJ3	O5'-C5'-C6'	2.30	112.07	105.88
2	B	401	MJ3	C1'-C2'-C3'	-2.29	103.65	110.08
2	B	401	MJ3	PB-O3A-PA	-2.19	125.30	132.83
2	B	401	MJ3	O43-C41-N3'	2.17	125.94	121.95
2	B	401	MJ3	O4-C4-N3	-2.09	116.24	119.31
2	B	401	MJ3	O'P-C6'-C5'	2.08	121.27	113.65
2	A	401	MJ3	O7'-C7'-C8'	-2.05	118.26	122.06
2	B	401	MJ3	N3-C2-N1	2.00	117.55	114.89

There are no chirality outliers.
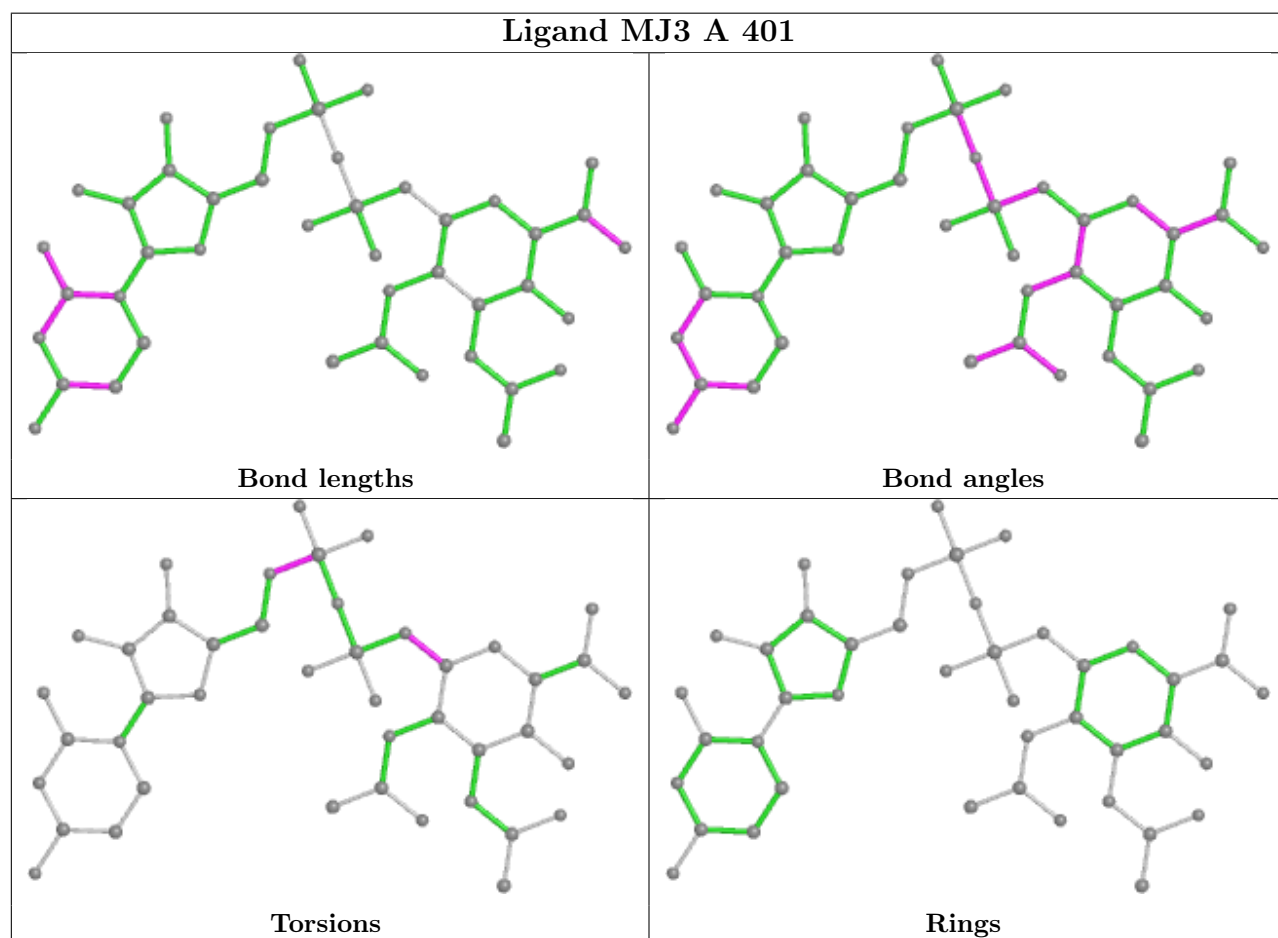
All (11) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	401	MJ3	C5C-O5C-PA-O1A
2	A	401	MJ3	O5'-C1'-O3B-PB
2	B	401	MJ3	O5'-C1'-O3B-PB
2	B	401	MJ3	C8'-C7'-N2'-C2'
2	B	401	MJ3	O7'-C7'-N2'-C2'
3	A	402	EDO	O1-C1-C2-O2
2	A	401	MJ3	C5C-O5C-PA-O3A
2	B	401	MJ3	C5C-O5C-PA-O3A
2	B	401	MJ3	C3'-C2'-N2'-C7'
2	B	401	MJ3	C1'-C2'-N2'-C7'
2	A	401	MJ3	C5C-O5C-PA-O2A

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	401	MJ3	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand MJ3 A 401

Bond lengths

Bond angles

Torsions

Rings

Ligand MJ3 B 401

Bond lengths | Bond angles

Torsions | Rings
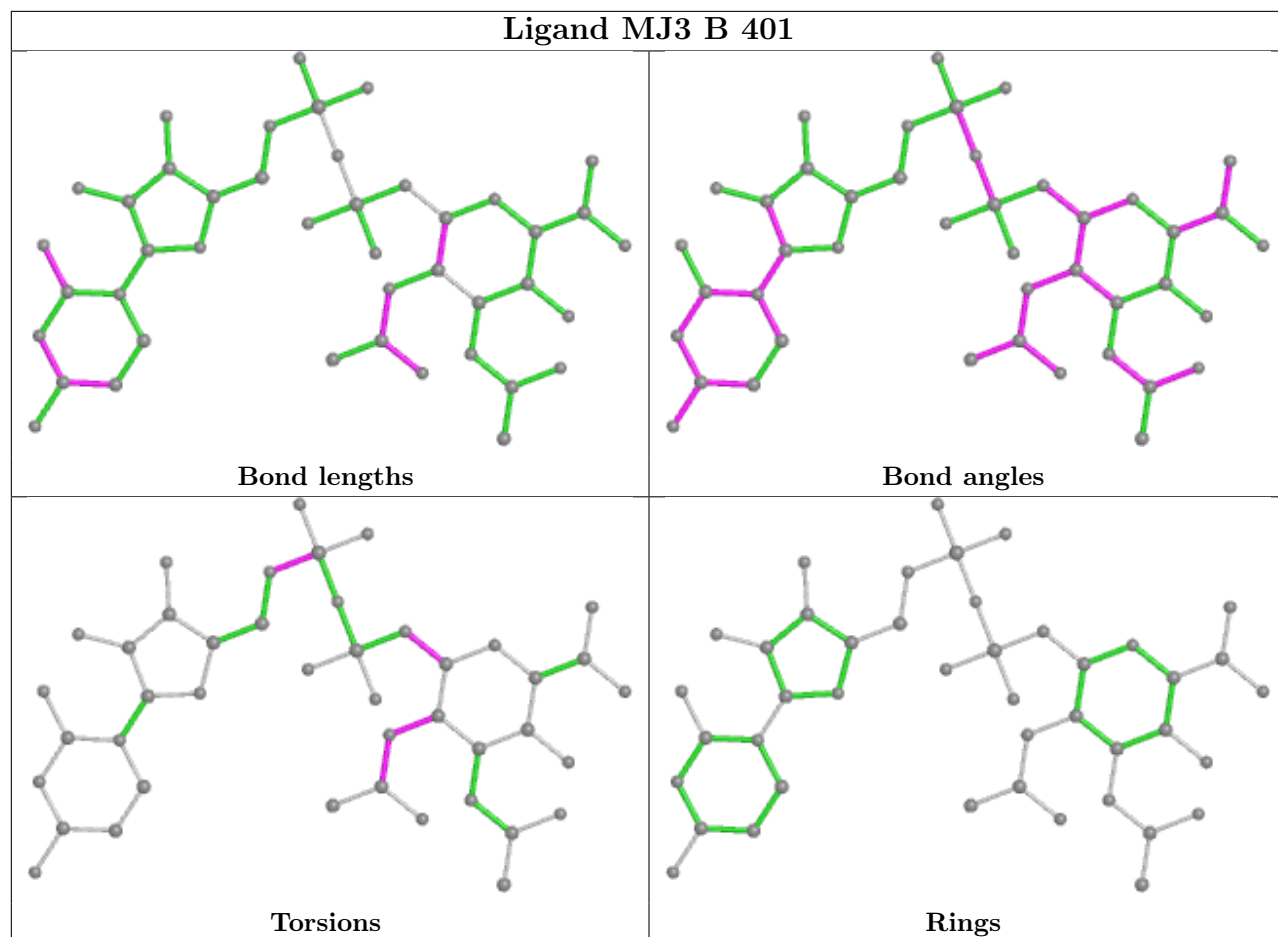
5.7 Other polymers ⓘ

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	358/373 (95%)	-0.41	4 (1%)	80	84	11, 23, 47, 71	0
1	B	363/373 (97%)	-0.26	4 (1%)	80	84	13, 25, 50, 77	0
All	All	721/746 (96%)	-0.33	8 (1%)	80	84	11, 24, 49, 77	0

All (8) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	2	TRP	3.2
1	B	363	ILE	3.2
1	A	42	TYR	3.0
1	A	30	GLY	2.9
1	B	1	MET	2.9
1	A	29	PRO	2.7
1	B	361	VAL	2.4
1	B	362	GLY	2.1

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.
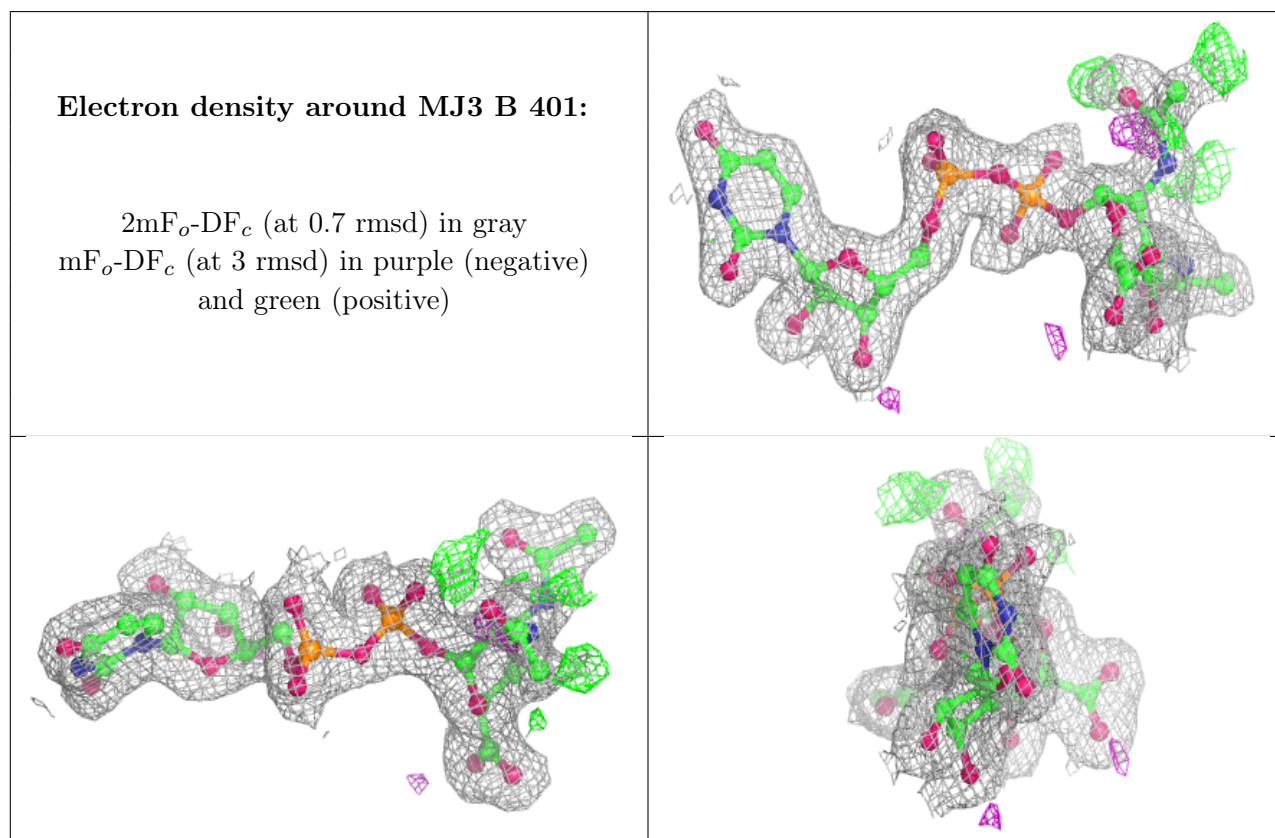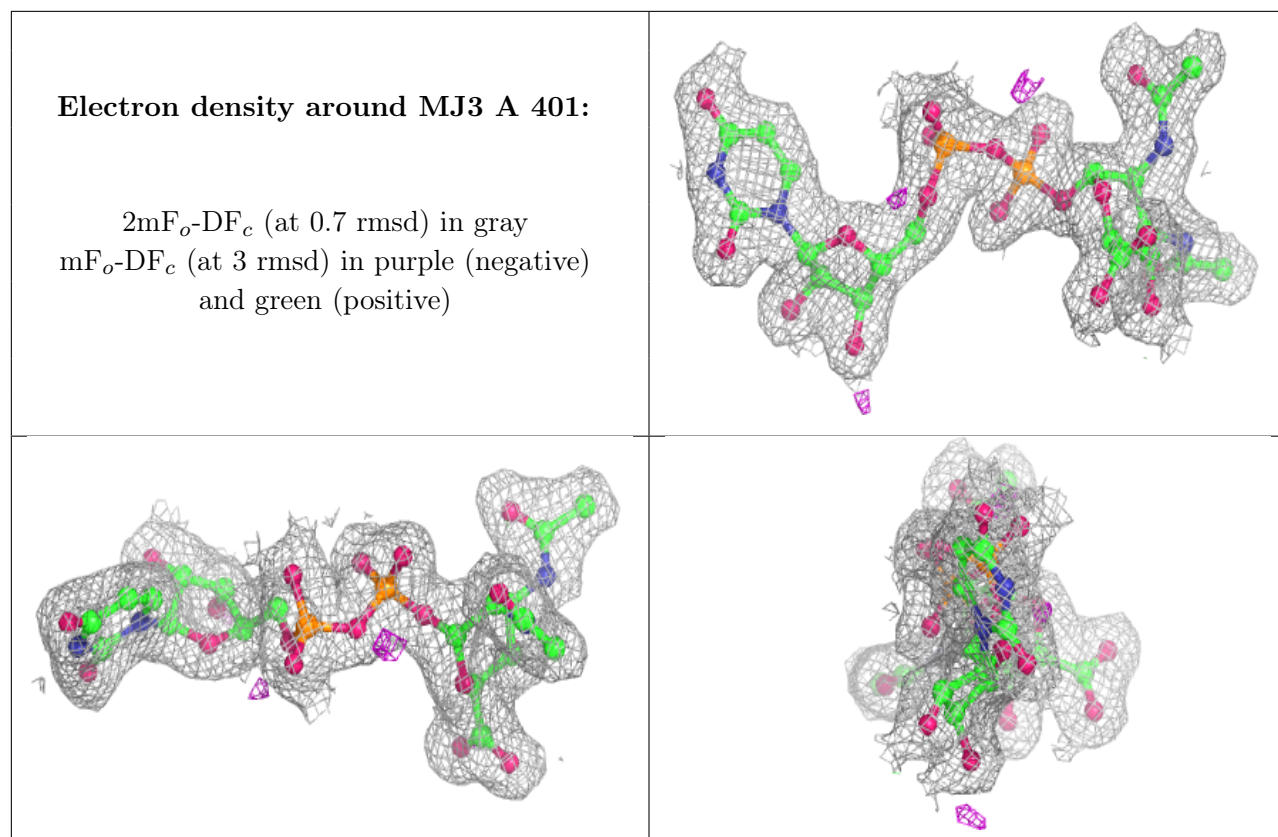
6.4 Ligands ⓘ

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
3	EDO	A	402	4/4	0.91	0.18	36,40,40,41	0
5	CL	B	402	1/1	0.93	0.05	39,39,39,39	0
4	NA	B	403	1/1	0.95	0.17	39,39,39,39	0
2	MJ3	B	401	43/43	0.97	0.13	12,16,31,38	0
4	NA	A	403	1/1	0.97	0.07	35,35,35,35	0
2	MJ3	A	401	43/43	0.98	0.10	12,14,16,17	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around MJ3 B 401:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative) and green (positive)

Electron density around MJ3 A 401:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

6.5 Other polymers ⓘ

There are no such residues in this entry.