WORLDWIDE PDB
PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report ⓘ

Oct 30, 2023 – 02:49 PM JST

PDB ID	:	5B55
Title	:	Crystal structure of hydrogen sulfide-producing enzyme (Fn1055) D232N mutant in complexed with alpha-aminoacrylate intermediate: lysine-dimethylated form
Authors	:	Kezuka, Y.; Yoshida, Y.; Nonaka, T.
Deposited on	:	2016-04-22
Resolution	:	2.14 Å(reported)

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

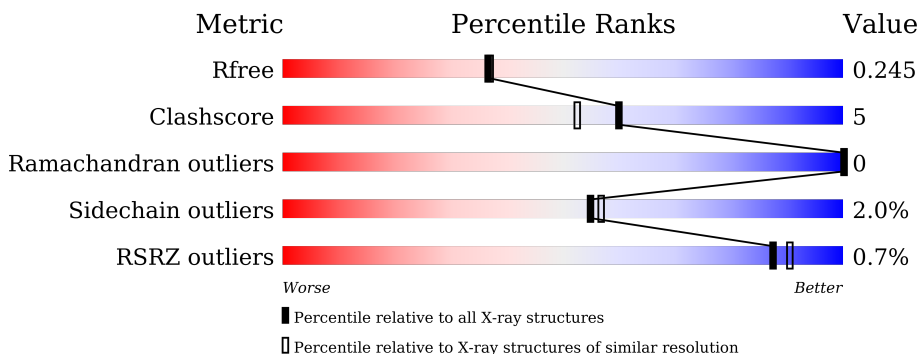|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

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 2.14 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		0.245
Clashscore		5
Ramachandran outliers		0
Sidechain outliers		2.0%
RSRZ outliers		0.7%

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	2523 (2.16-2.12)
Clashscore	141614	2653 (2.16-2.12)
Ramachandran outliers	138981	2618 (2.16-2.12)
Sidechain outliers	138945	2617 (2.16-2.12)
RSRZ outliers	127900	2485 (2.16-2.12)

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	340	88% 9% ··
1	B	340	% 87% 9% ··

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
3	0JO	B	402[B]	-	-	X	-

2 Entry composition ⓘ

There are 5 unique types of molecules in this entry. The entry contains 5684 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 Cysteine synthase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	334	Total	C	N	O	S	0	4	0
			2643	1702	435	493	13			
1	B	333	Total	C	N	O	S	0	2	0
			2636	1700	434	489	13			

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-3	GLY	-	expression tag	UNP Q8REP3
A	-2	PRO	-	expression tag	UNP Q8REP3
A	-1	LEU	-	expression tag	UNP Q8REP3
A	0	GLY	-	expression tag	UNP Q8REP3
A	1	SER	-	expression tag	UNP Q8REP3
A	232	ASN	ASP	engineered mutation	UNP Q8REP3
B	-3	GLY	-	expression tag	UNP Q8REP3
B	-2	PRO	-	expression tag	UNP Q8REP3
B	-1	LEU	-	expression tag	UNP Q8REP3
B	0	GLY	-	expression tag	UNP Q8REP3
B	1	SER	-	expression tag	UNP Q8REP3
B	232	ASN	ASP	engineered mutation	UNP Q8REP3

- Molecule 2 is PYRIDOXAL-5'-PHOSPHATE (three-letter code: PLP) (formula: $C_8H_{10}NO_6P$).
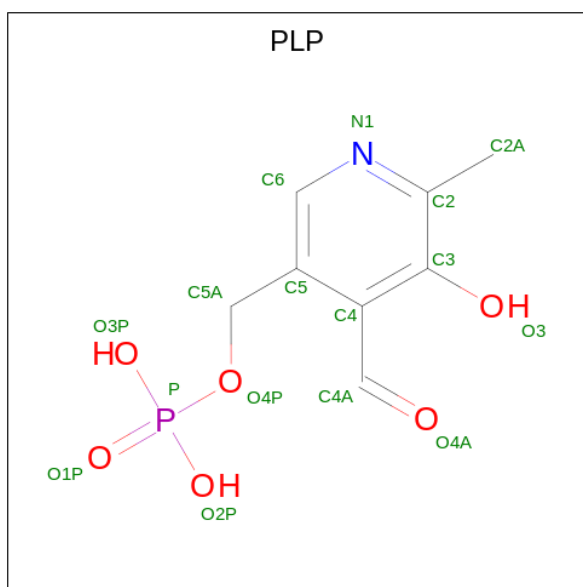
PLP

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	1
			15	8	1	5	1		
2	B	1	Total	C	N	O	P	0	1
			15	8	1	5	1		

- Molecule 3 is 2-{[(E)-{3-hydroxy-2-methyl-5-[(phosphonooxy)methyl]pyridin-4-yl}methylidene]amino}prop-2-enoic acid (three-letter code: 0JO) (formula: $C_{11}H_{13}N_2O_7P$).
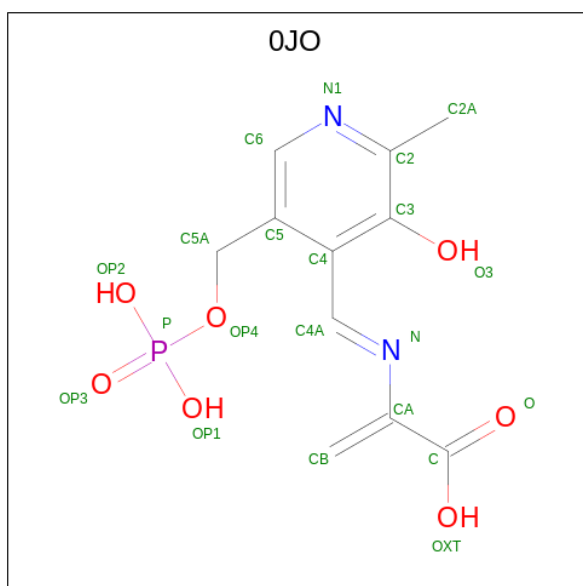
0JO
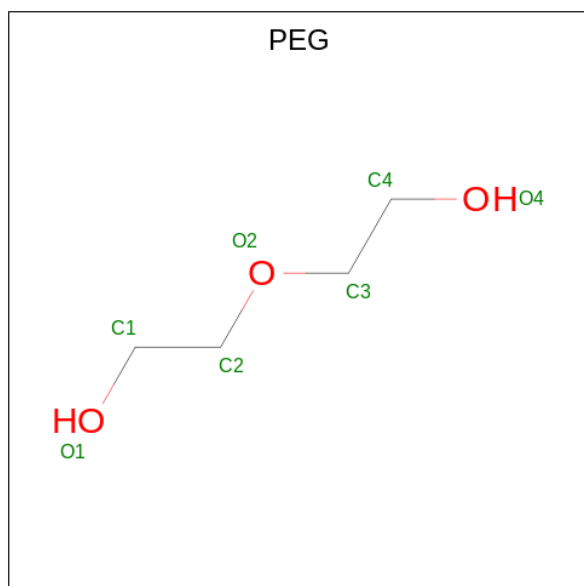
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	N	O	P	0	1
			21	11	2	7	1		

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	B	1	Total	C	N	O	P	0	1
			21	11	2	7	1		

- Molecule 4 is DI(HYDROXYETHYL)ETHER (three-letter code: PEG) (formula: $C_4H_{10}O_3$).

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total	C	O	0	0
			7	4	3		
4	B	1	Total	C	O	0	0
			7	4	3		

- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	169	Total	O	0	0
			169	169		
5	B	150	Total	O	0	0
			150	150		

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: Cysteine synthase
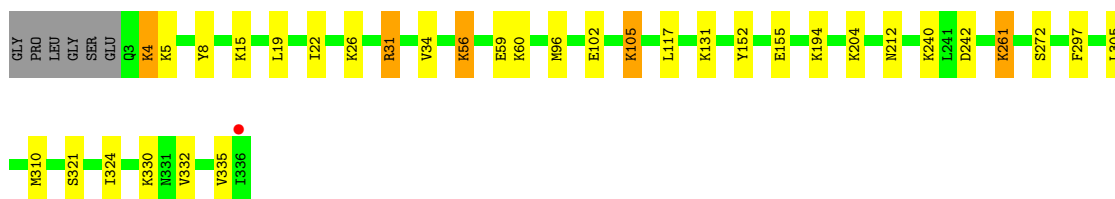
• Molecule 1: Cysteine synthase

4 Data and refinement statistics (i)

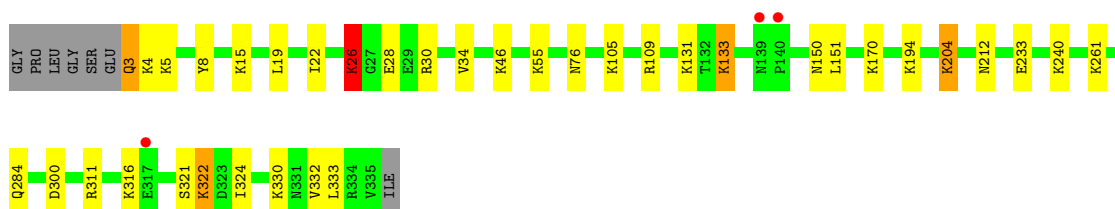| Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	191.05Å 57.13Å 94.29Å 90.00° 100.89° 90.00°	Depositor
Resolution (Å)	36.66 – 2.14 36.66 – 2.14	Depositor EDS
% Data completeness (in resolution range)	95.1 (36.66-2.14) 95.1 (36.66-2.14)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	6.90 (at 2.14Å)	Xtriage
Refinement program	REFMAC 5.8.0123	Depositor
R, R_{free}	0.201 , 0.237 0.208 , 0.245	Depositor DCC
R_{free} test set	2648 reflections (5.02%)	wwPDB-VP
Wilson B-factor (Å^2)	21.7	Xtriage
Anisotropy	0.709	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.33 , 46.3	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	0.93	EDS
Total number of atoms	5684	wwPDB-VP
Average B, all atoms (Å^2)	24.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.81% of the height of the origin peak. No significant pseudotranslation is detected.*

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[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: 0JO, MLY, PEG, PLP

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	0.86	0/2341	0.87	0/3181
1	B	0.83	1/2317 (0.0%)	0.85	1/3151 (0.0%)
All	All	0.85	1/4658 (0.0%)	0.86	1/6332 (0.0%)

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	B	0	1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	233	GLU	CD-OE1	5.36	1.31	1.25

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	300	ASP	CB-CG-OD1	5.65	123.39	118.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	26	MLY	Peptide

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	2643	0	2666	22	0
1	B	2636	0	2676	25	0
2	A	15	0	6	0	0
2	B	15	0	7	2	0
3	A	21	0	10	1	0
3	B	21	0	10	8	0
4	A	7	0	10	0	0
4	B	7	0	10	0	0
5	A	169	0	0	3	0
5	B	150	0	0	5	0
All	All	5684	0	5395	49	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 5.

All (49) 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:170:MLY:HH22	5:B:622:HOH:O	1.76	0.83
1:B:46[B]:LYS:NZ	3:B:402[B]:0JO:C4A	2.45	0.79
1:B:133:MLY:HH22	5:B:633:HOH:O	1.89	0.72
3:B:402[B]:0JO:H4	3:B:402[B]:0JO:OP3	1.90	0.72
1:B:204:MLY:HH22	5:B:638:HOH:O	1.92	0.69
1:B:46[B]:LYS:HZ1	3:B:402[B]:0JO:C4A	2.08	0.66
1:A:102:GLU:HA	1:A:105[B]:MLY:HE3	1.78	0.65
1:B:30:ARG:HH11	1:B:284:GLN:HE21	1.44	0.65
1:A:22:ILE:HD13	1:A:31:ARG:HB3	1.79	0.64
1:B:19:LEU:HD12	1:B:34:VAL:HG23	1.84	0.58
1:A:19:LEU:HD12	1:A:34[B]:VAL:HG23	1.84	0.58
1:A:22:ILE:HG12	1:A:330:MLY:HB3	1.88	0.56
1:B:76:ASN:ND2	2:B:401[A]:PLP:H2A1	2.22	0.54
1:A:105[B]:MLY:HD3	1:A:117:LEU:HD11	1.90	0.53
1:B:46[B]:LYS:CE	3:B:402[B]:0JO:N	2.72	0.52
1:B:3:GLN:HB2	5:B:629:HOH:O	2.08	0.52
1:B:46[B]:LYS:CE	3:B:402[B]:0JO:C4A	2.89	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:22:ILE:HG12	1:B:330:MLY:HB3	1.92	0.51
1:A:56:MLY:HH13	1:A:155:GLU:OE1	2.11	0.50
1:A:22:ILE:CD1	1:A:31:ARG:HB3	2.42	0.50
1:B:5:MLY:HA	1:B:8:TYR:CE2	2.47	0.49
1:B:46[B]:LYS:HZ1	3:B:402[B]:0JO:H4	1.78	0.49
1:B:46[B]:LYS:HZ3	3:B:402[B]:0JO:C4A	2.27	0.48
1:B:76:ASN:HD22	2:B:401[A]:PLP:H2A1	1.78	0.48
1:A:56:MLY:HD2	1:A:152:TYR:CE1	2.48	0.48
1:A:272:SER:HB2	5:A:619:HOH:O	2.15	0.46
1:A:4:MLY:H	1:A:4:MLY:CD	2.28	0.46
1:B:19:LEU:HD23	1:B:332:VAL:HG22	1.98	0.46
1:A:34[A]:VAL:HG11	1:A:297:PHE:CE1	2.51	0.46
1:A:19:LEU:HD23	1:A:332:VAL:HG22	1.97	0.46
1:B:26:MLY:HG2	1:B:26:MLY:O	2.16	0.46
1:B:322:MLY:CG	1:B:322:MLY:HH22	2.46	0.45
1:A:321:SER:HA	1:A:324:ILE:HD12	1.99	0.45
1:A:105[B]:MLY:CD	1:A:117:LEU:HD11	2.47	0.45
1:A:5:MLY:HA	1:A:8:TYR:CE2	2.53	0.44
1:B:46[B]:LYS:HE3	3:B:402[B]:0JO:N	2.33	0.44
1:A:261:MLY:HH23	1:A:324:ILE:O	2.18	0.44
1:A:59:GLU:HG3	5:A:525:HOH:O	2.17	0.43
3:A:402[B]:0JO:H4	3:A:402[B]:0JO:OP2	2.18	0.43
1:A:60:MLY:HE3	5:A:588:HOH:O	2.19	0.43
1:B:311:ARG:HD3	5:B:634:HOH:O	2.18	0.43
1:A:131:MLY:HD2	1:A:131:MLY:HH22	1.76	0.42
1:A:305:LEU:HD23	1:A:310:MET:HE3	2.02	0.42
1:B:321:SER:HA	1:B:324:ILE:HD12	2.02	0.42
1:A:96:MET:CE	1:A:105[B]:MLY:HG3	2.50	0.42
1:B:105:MLY:HE3	1:B:109:ARG:NH1	2.35	0.41
1:A:4:MLY:H	1:A:4:MLY:HD2	1.85	0.41
1:B:322:MLY:HH22	1:B:322:MLY:HG3	2.03	0.40
1:B:26:MLY:O	1:B:26:MLY:CG	2.68	0.40

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	299/340 (88%)	290 (97%)	9 (3%)	0	100	100
1	B	296/340 (87%)	288 (97%)	8 (3%)	0	100	100
All	All	595/680 (88%)	578 (97%)	17 (3%)	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	253/254 (100%)	249 (98%)	4 (2%)	62	65
1	B	250/254 (98%)	244 (98%)	6 (2%)	49	49
All	All	503/508 (99%)	493 (98%)	10 (2%)	55	57

All (10) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	31	ARG
1	A	212	ASN
1	A	242	ASP
1	A	335	VAL
1	B	3	GLN
1	B	28	GLU
1	B	150	ASN
1	B	151	LEU
1	B	212	ASN
1	B	333	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (11) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	3	GLN
1	A	11	ASN
1	A	76	ASN
1	A	147	GLN
1	A	285	ASN
1	B	3	GLN
1	B	138	ASN
1	B	139	ASN
1	B	147	GLN
1	B	150	ASN
1	B	284	GLN

5.3.3   RNA ⓘ

There are no RNA molecules in this entry.

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

74 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	MLY	B	105	1	7,8,11	0.58	0	3,8,13	0.53	0
1	MLY	B	197	1	7,8,11	0.54	0	3,8,13	0.10	0
1	MLY	B	261	1	9,10,11	0.91	0	6,11,13	1.61	1 (16%)
1	MLY	B	221	1	7,8,11	0.49	0	3,8,13	0.39	0
1	MLY	A	243	1	7,8,11	0.85	0	3,8,13	0.62	0
1	MLY	B	289	1	7,8,11	0.68	0	3,8,13	0.57	0
1	MLY	B	322	1	9,10,11	1.10	1 (11%)	6,11,13	1.35	1 (16%)
1	MLY	A	197	1	7,8,11	0.52	0	3,8,13	0.11	0
1	MLY	A	194	1	9,10,11	1.09	1 (11%)	6,11,13	2.02	1 (16%)
1	MLY	A	289	1	7,8,11	0.63	0	3,8,13	0.17	0
1	MLY	B	15	1	9,10,11	1.43	2 (22%)	6,11,13	0.36	0
1	MLY	B	302	1	7,8,11	0.97	0	3,8,13	0.61	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
1	MLY	A	56	1	9,10,11	0.99	0	6,11,13	2.38	1 (16%)
1	MLY	A	137	1	7,8,11	0.74	0	3,8,13	0.49	0
1	MLY	A	264	1	7,8,11	0.53	0	3,8,13	0.52	0
1	MLY	A	60	1	7,8,11	0.40	0	3,8,13	0.65	0
1	MLY	B	303	1	7,8,11	0.40	0	3,8,13	0.21	0
1	MLY	B	204	1	9,10,11	1.00	0	6,11,13	1.17	1 (16%)
1	MLY	A	240	1	9,10,11	1.25	1 (11%)	6,11,13	0.44	0
1	MLY	B	131[A]	-	9,10,11	1.47	1 (11%)	6,11,13	0.61	0
1	MLY	A	221	1	9,10,11	1.02	0	6,11,13	0.58	0
1	MLY	B	114	1	7,8,11	0.57	0	3,8,13	0.25	0
1	MLY	A	15	1	9,10,11	1.28	1 (11%)	6,11,13	0.76	0
1	MLY	B	131[B]	-	9,10,11	0.63	0	6,11,13	0.25	0
1	MLY	A	55	1	7,8,11	0.63	0	3,8,13	0.51	0
1	MLY	B	170	1	9,10,11	0.89	0	6,11,13	0.48	0
1	MLY	B	330	1	7,8,11	0.48	0	3,8,13	0.38	0
1	MLY	A	64	1	7,8,11	0.81	0	3,8,13	0.97	0
1	MLY	A	5	1	7,8,11	0.41	0	3,8,13	0.12	0
1	MLY	A	224	1	7,8,11	0.63	0	3,8,13	0.37	0
1	MLY	B	121	1	7,8,11	0.67	0	3,8,13	0.09	0
1	MLY	A	4	1	7,8,11	1.12	1 (14%)	3,8,13	1.53	1 (33%)
1	MLY	A	316	1	7,8,11	0.70	0	3,8,13	0.29	0
1	MLY	A	7	1	7,8,11	0.75	0	3,8,13	0.37	0
1	MLY	B	55	1	9,10,11	0.85	0	6,11,13	1.41	1 (16%)
1	MLY	A	322	1	7,8,11	0.52	0	3,8,13	0.14	0
1	MLY	B	56	1	9,10,11	0.79	0	6,11,13	0.49	0
1	MLY	B	137	1	7,8,11	0.40	0	3,8,13	0.61	0
1	MLY	A	327	1	7,8,11	0.51	0	3,8,13	0.50	0
1	MLY	B	327	1	7,8,11	0.33	0	3,8,13	0.46	0
1	MLY	A	314	1	7,8,11	0.57	0	3,8,13	0.12	0
1	MLY	A	65	1	7,8,11	0.65	0	3,8,13	0.60	0
1	MLY	B	7	1	7,8,11	0.66	0	3,8,13	0.26	0
1	MLY	A	170	1	7,8,11	0.64	0	3,8,13	0.05	0
1	MLY	A	114	1	7,8,11	0.40	0	3,8,13	0.19	0
1	MLY	A	330	1	7,8,11	0.73	0	3,8,13	0.43	0
1	MLY	B	4	1	7,8,11	1.38	1 (14%)	3,8,13	0.54	0
1	MLY	B	224	1	9,10,11	0.78	0	6,11,13	0.52	0
1	MLY	B	264	1	7,8,11	0.70	0	3,8,13	0.48	0
1	MLY	A	121	1	7,8,11	0.55	0	3,8,13	0.31	0
1	MLY	B	35	1	7,8,11	0.74	0	3,8,13	0.28	0
1	MLY	A	133	1	7,8,11	0.82	0	3,8,13	1.00	0
1	MLY	B	26	1	9,10,11	1.09	1 (11%)	6,11,13	0.36	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
1	MLY	B	286	1	9,10,11	0.85	0	6,11,13	0.31	0
1	MLY	A	302	1	7,8,11	0.42	0	3,8,13	0.64	0
1	MLY	B	243	1	7,8,11	0.62	0	3,8,13	0.60	0
1	MLY	A	35	1	7,8,11	0.80	0	3,8,13	0.23	0
1	MLY	A	26	1	9,10,11	1.36	2 (22%)	6,11,13	0.34	0
1	MLY	A	204	1	9,10,11	1.24	1 (11%)	6,11,13	1.21	1 (16%)
1	MLY	B	60	1	7,8,11	0.39	0	3,8,13	0.25	0
1	MLY	B	240	1	9,10,11	1.34	1 (11%)	6,11,13	0.87	1 (16%)
1	MLY	A	105[A]	-	9,10,11	1.33	1 (11%)	6,11,13	0.29	0
1	MLY	A	286	1	7,8,11	0.79	0	3,8,13	0.37	0
1	MLY	B	314	1	7,8,11	0.51	0	3,8,13	0.60	0
1	MLY	A	105[B]	-	9,10,11	1.23	1 (11%)	6,11,13	1.54	1 (16%)
1	MLY	A	261	1	9,10,11	0.84	0	6,11,13	1.71	1 (16%)
1	MLY	B	5	1	9,10,11	0.84	0	6,11,13	0.62	0
1	MLY	B	64	1	7,8,11	0.53	0	3,8,13	0.76	0
1	MLY	A	131	1	9,10,11	1.07	0	6,11,13	0.65	0
1	MLY	B	65	1	7,8,11	0.66	0	3,8,13	0.42	0
1	MLY	B	316	1	9,10,11	0.90	0	6,11,13	0.98	1 (16%)
1	MLY	B	194	1	9,10,11	1.33	1 (11%)	6,11,13	1.13	1 (16%)
1	MLY	A	303	1	7,8,11	0.74	0	3,8,13	0.19	0
1	MLY	B	133	1	9,10,11	1.41	1 (11%)	6,11,13	1.73	1 (16%)

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	MLY	B	105	1	-	0/6/7/11	-
1	MLY	B	197	1	-	2/6/7/11	-
1	MLY	B	261	1	-	3/8/9/11	-
1	MLY	B	221	1	-	2/6/7/11	-
1	MLY	A	243	1	-	4/6/7/11	-
1	MLY	B	289	1	-	1/6/7/11	-
1	MLY	B	322	1	-	3/8/9/11	-
1	MLY	A	197	1	-	1/6/7/11	-
1	MLY	A	194	1	-	2/8/9/11	-
1	MLY	A	289	1	-	0/6/7/11	-
1	MLY	B	15	1	-	1/8/9/11	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	MLY	B	302	1	-	0/6/7/11	-
1	MLY	A	56	1	-	4/8/9/11	-
1	MLY	A	137	1	-	0/6/7/11	-
1	MLY	A	264	1	-	0/6/7/11	-
1	MLY	A	60	1	-	2/6/7/11	-
1	MLY	B	303	1	-	0/6/7/11	-
1	MLY	B	204	1	-	2/8/9/11	-
1	MLY	A	240	1	-	2/8/9/11	-
1	MLY	B	131[A]	-	-	3/8/9/11	-
1	MLY	A	221	1	-	3/8/9/11	-
1	MLY	B	114	1	-	0/6/7/11	-
1	MLY	A	15	1	-	0/8/9/11	-
1	MLY	B	131[B]	-	-	4/8/9/11	-
1	MLY	A	55	1	-	0/6/7/11	-
1	MLY	B	170	1	-	2/8/9/11	-
1	MLY	B	330	1	-	1/6/7/11	-
1	MLY	A	64	1	-	0/6/7/11	-
1	MLY	A	5	1	-	1/6/7/11	-
1	MLY	A	224	1	-	0/6/7/11	-
1	MLY	B	121	1	-	2/6/7/11	-
1	MLY	A	4	1	-	3/6/7/11	-
1	MLY	A	316	1	-	0/6/7/11	-
1	MLY	A	7	1	-	1/6/7/11	-
1	MLY	B	55	1	-	3/8/9/11	-
1	MLY	A	322	1	-	2/6/7/11	-
1	MLY	B	56	1	-	2/8/9/11	-
1	MLY	B	137	1	-	0/6/7/11	-
1	MLY	A	327	1	-	1/6/7/11	-
1	MLY	B	327	1	-	1/6/7/11	-
1	MLY	A	314	1	-	1/6/7/11	-
1	MLY	A	65	1	-	0/6/7/11	-
1	MLY	B	7	1	-	1/6/7/11	-
1	MLY	A	170	1	-	2/6/7/11	-
1	MLY	A	114	1	-	0/6/7/11	-
1	MLY	A	330	1	-	1/6/7/11	-
1	MLY	B	4	1	-	2/6/7/11	-
1	MLY	B	224	1	-	0/8/9/11	-
1	MLY	B	264	1	-	2/6/7/11	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	MLY	A	121	1	-	1/6/7/11	-
1	MLY	B	35	1	-	0/6/7/11	-
1	MLY	A	133	1	-	0/6/7/11	-
1	MLY	B	26	1	-	2/8/9/11	-
1	MLY	B	286	1	-	1/8/9/11	-
1	MLY	A	302	1	-	1/6/7/11	-
1	MLY	B	243	1	-	2/6/7/11	-
1	MLY	A	35	1	-	0/6/7/11	-
1	MLY	A	26	1	-	2/8/9/11	-
1	MLY	A	204	1	-	2/8/9/11	-
1	MLY	B	60	1	-	2/6/7/11	-
1	MLY	B	240	1	-	4/8/9/11	-
1	MLY	A	105[A]	-	-	1/8/9/11	-
1	MLY	A	286	1	-	1/6/7/11	-
1	MLY	B	314	1	-	1/6/7/11	-
1	MLY	A	105[B]	-	-	4/8/9/11	-
1	MLY	A	261	1	-	3/8/9/11	-
1	MLY	B	5	1	-	1/8/9/11	-
1	MLY	B	64	1	-	0/6/7/11	-
1	MLY	A	131	1	-	2/8/9/11	-
1	MLY	B	65	1	-	0/6/7/11	-
1	MLY	B	316	1	-	2/8/9/11	-
1	MLY	B	194	1	-	0/8/9/11	-
1	MLY	A	303	1	-	0/6/7/11	-
1	MLY	B	133	1	-	2/8/9/11	-

All (18) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	131[A]	MLY	CE-NZ	3.72	1.59	1.46
1	B	133	MLY	CE-NZ	3.52	1.59	1.46
1	B	4	MLY	CB-CA	3.09	1.57	1.53
1	B	240	MLY	CE-NZ	2.99	1.57	1.46
1	A	204	MLY	CE-NZ	2.90	1.56	1.46
1	B	322	MLY	CE-NZ	2.78	1.56	1.46
1	A	105[B]	MLY	CB-CA	2.76	1.57	1.53
1	B	15	MLY	CE-NZ	2.68	1.56	1.46
1	B	26	MLY	CE-NZ	2.66	1.56	1.46
1	B	194	MLY	CE-NZ	2.64	1.55	1.46
1	A	105[A]	MLY	CE-NZ	2.63	1.55	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	240	MLY	CE-NZ	2.57	1.55	1.46
1	A	15	MLY	CE-NZ	2.49	1.55	1.46
1	A	26	MLY	CB-CA	2.43	1.56	1.53
1	B	15	MLY	CB-CA	2.39	1.56	1.53
1	A	194	MLY	CE-NZ	2.34	1.54	1.46
1	A	4	MLY	CB-CA	2.13	1.56	1.53
1	A	26	MLY	CE-NZ	2.12	1.54	1.46

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	56	MLY	CD-CE-NZ	5.74	129.32	113.79
1	A	194	MLY	CD-CE-NZ	4.81	126.81	113.79
1	B	133	MLY	CD-CE-NZ	4.22	125.20	113.79
1	A	105[B]	MLY	CD-CE-NZ	3.76	123.97	113.79
1	A	261	MLY	CD-CE-NZ	3.70	123.81	113.79
1	B	261	MLY	CD-CE-NZ	3.45	123.13	113.79
1	B	55	MLY	CD-CE-NZ	3.26	122.61	113.79
1	B	322	MLY	CD-CE-NZ	3.23	122.53	113.79
1	A	204	MLY	CD-CE-NZ	-2.94	105.83	113.79
1	B	204	MLY	CD-CE-NZ	2.83	121.46	113.79
1	A	4	MLY	CD-CG-CB	2.56	122.69	113.62
1	B	194	MLY	CD-CE-NZ	-2.30	107.55	113.79
1	B	316	MLY	CD-CE-NZ	2.15	119.62	113.79
1	B	240	MLY	CD-CE-NZ	2.11	119.48	113.79

There are no chirality outliers.

All (101) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	60	MLY	O-C-CA-CB
1	A	121	MLY	C-CA-CB-CG
1	A	131	MLY	O-C-CA-CB
1	A	170	MLY	C-CA-CB-CG
1	A	240	MLY	O-C-CA-CB
1	A	243	MLY	O-C-CA-CB
1	A	286	MLY	O-C-CA-CB
1	A	302	MLY	O-C-CA-CB
1	B	4	MLY	N-CA-CB-CG
1	B	4	MLY	C-CA-CB-CG
1	B	60	MLY	O-C-CA-CB
1	B	131[B]	MLY	C-CA-CB-CG

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Mol	Chain	Res	Type	Atoms
1	B	131[B]	MLY	O-C-CA-CB
1	B	197	MLY	O-C-CA-CB
1	B	240	MLY	O-C-CA-CB
1	B	243	MLY	O-C-CA-CB
1	A	105[B]	MLY	CD-CE-NZ-CH2
1	B	56	MLY	CD-CE-NZ-CH2
1	A	26	MLY	CD-CE-NZ-CH1
1	A	26	MLY	CD-CE-NZ-CH2
1	A	194	MLY	CD-CE-NZ-CH1
1	A	194	MLY	CD-CE-NZ-CH2
1	A	204	MLY	CD-CE-NZ-CH1
1	B	26	MLY	CD-CE-NZ-CH1
1	B	26	MLY	CD-CE-NZ-CH2
1	B	56	MLY	CD-CE-NZ-CH1
1	B	133	MLY	CD-CE-NZ-CH2
1	B	261	MLY	CD-CE-NZ-CH1
1	B	322	MLY	CD-CE-NZ-CH2
1	A	56	MLY	CG-CD-CE-NZ
1	A	131	MLY	CG-CD-CE-NZ
1	A	56	MLY	CD-CE-NZ-CH1
1	A	204	MLY	CD-CE-NZ-CH2
1	A	221	MLY	CD-CE-NZ-CH2
1	A	261	MLY	CD-CE-NZ-CH2
1	B	55	MLY	CD-CE-NZ-CH1
1	B	240	MLY	CD-CE-NZ-CH2
1	B	316	MLY	CD-CE-NZ-CH1
1	B	322	MLY	CD-CE-NZ-CH1
1	A	197	MLY	CA-CB-CG-CD
1	B	197	MLY	CA-CB-CG-CD
1	A	56	MLY	CD-CE-NZ-CH2
1	B	204	MLY	CD-CE-NZ-CH2
1	B	286	MLY	CG-CD-CE-NZ
1	B	131[B]	MLY	CG-CD-CE-NZ
1	B	55	MLY	CG-CD-CE-NZ
1	A	105[B]	MLY	CD-CE-NZ-CH1
1	A	261	MLY	CD-CE-NZ-CH1
1	B	133	MLY	CD-CE-NZ-CH1
1	B	261	MLY	CD-CE-NZ-CH2
1	A	314	MLY	CE-CD-CG-CB
1	A	105[A]	MLY	CD-CE-NZ-CH1
1	A	240	MLY	CD-CE-NZ-CH1
1	B	131[A]	MLY	CG-CD-CE-NZ

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Mol	Chain	Res	Type	Atoms
1	A	60	MLY	CA-CB-CG-CD
1	B	60	MLY	CA-CB-CG-CD
1	B	131[B]	MLY	CA-CB-CG-CD
1	B	327	MLY	CE-CD-CG-CB
1	A	56	MLY	CE-CD-CG-CB
1	A	5	MLY	CE-CD-CG-CB
1	A	7	MLY	CA-CB-CG-CD
1	B	5	MLY	CE-CD-CG-CB
1	A	327	MLY	CE-CD-CG-CB
1	A	105[B]	MLY	CG-CD-CE-NZ
1	A	322	MLY	CE-CD-CG-CB
1	B	7	MLY	CE-CD-CG-CB
1	B	240	MLY	CG-CD-CE-NZ
1	B	121	MLY	CA-CB-CG-CD
1	B	322	MLY	CE-CD-CG-CB
1	B	240	MLY	CD-CE-NZ-CH1
1	A	243	MLY	CE-CD-CG-CB
1	B	170	MLY	CG-CD-CE-NZ
1	B	131[A]	MLY	CE-CD-CG-CB
1	B	264	MLY	CE-CD-CG-CB
1	A	170	MLY	CE-CD-CG-CB
1	B	15	MLY	CD-CE-NZ-CH1
1	B	330	MLY	CE-CD-CG-CB
1	A	330	MLY	CE-CD-CG-CB
1	A	221	MLY	CA-CB-CG-CD
1	B	221	MLY	CA-CB-CG-CD
1	A	4	MLY	CG-CD-CE-NZ
1	A	322	MLY	CG-CD-CE-NZ
1	B	221	MLY	CE-CD-CG-CB
1	A	4	MLY	CE-CD-CG-CB
1	B	316	MLY	CG-CD-CE-NZ
1	B	264	MLY	CG-CD-CE-NZ
1	B	289	MLY	CG-CD-CE-NZ
1	B	314	MLY	CG-CD-CE-NZ
1	B	204	MLY	CG-CD-CE-NZ
1	A	243	MLY	CG-CD-CE-NZ
1	A	261	MLY	CG-CD-CE-NZ
1	A	221	MLY	CE-CD-CG-CB
1	B	121	MLY	C-CA-CB-CG
1	A	105[B]	MLY	CE-CD-CG-CB
1	B	55	MLY	CE-CD-CG-CB
1	B	261	MLY	CG-CD-CE-NZ

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Mol	Chain	Res	Type	Atoms
1	B	131[A]	MLY	CD-CE-NZ-CH1
1	B	170	MLY	CD-CE-NZ-CH2
1	A	4	MLY	N-CA-CB-CG
1	A	243	MLY	N-CA-CB-CG
1	B	243	MLY	N-CA-CB-CG

There are no ring outliers.

16 monomers are involved in 23 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	B	105	MLY	1	0
1	B	322	MLY	2	0
1	A	56	MLY	2	0
1	A	60	MLY	1	0
1	B	204	MLY	1	0
1	B	170	MLY	1	0
1	B	330	MLY	1	0
1	A	5	MLY	1	0
1	A	4	MLY	2	0
1	A	330	MLY	1	0
1	B	26	MLY	2	0
1	A	105[B]	MLY	4	0
1	A	261	MLY	1	0
1	B	5	MLY	1	0
1	A	131	MLY	1	0
1	B	133	MLY	1	0

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

6 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	#$|Z| > 2$
4	PEG	A	403	-	6,6,6	0.67	0	5,5,5	0.73	0
2	PLP	B	401[A]	1	15,15,16	1.27	2 (13%)	20,22,23	1.92	6 (30%)
3	0JO	A	402[B]	-	20,21,21	1.87	6 (30%)	23,30,30	1.97	3 (13%)
3	0JO	B	402[B]	-	20,21,21	2.13	6 (30%)	23,30,30	2.39	9 (39%)
4	PEG	B	403	-	6,6,6	0.95	0	5,5,5	0.60	0
2	PLP	A	401[A]	1	15,15,16	0.91	0	20,22,23	2.02	5 (25%)

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
4	PEG	A	403	-	-	2/4/4/4	-
2	PLP	B	401[A]	1	-	0/6/6/8	0/1/1/1
3	0JO	A	402[B]	-	-	0/10/15/15	0/1/1/1
3	0JO	B	402[B]	-	-	1/10/15/15	0/1/1/1
4	PEG	B	403	-	-	2/4/4/4	-
2	PLP	A	401[A]	1	-	0/6/6/8	0/1/1/1

All (14) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	402[B]	0JO	C4-C4A	4.41	1.55	1.46
3	B	402[B]	0JO	C3-C2	-4.13	1.36	1.40
3	A	402[B]	0JO	P-OP1	-3.95	1.39	1.54
3	B	402[B]	0JO	OXT-C	-3.95	1.19	1.30
3	A	402[B]	0JO	C4-C4A	3.77	1.53	1.46
2	B	401[A]	PLP	C2-N1	3.20	1.39	1.33
3	B	402[B]	0JO	C4A-N	2.97	1.32	1.28
3	A	402[B]	0JO	CA-N	2.74	1.47	1.36
3	A	402[B]	0JO	OXT-C	-2.69	1.22	1.30
2	B	401[A]	PLP	C6-N1	2.54	1.39	1.34
3	A	402[B]	0JO	C4-C5	-2.52	1.38	1.42
3	B	402[B]	0JO	CA-N	2.48	1.46	1.36
3	B	402[B]	0JO	P-OP1	-2.43	1.45	1.54
3	A	402[B]	0JO	P-OP3	-2.11	1.43	1.50

All (23) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	A	402[B]	0JO	C5-C4-C4A	-5.54	112.45	121.56
2	A	401[A]	PLP	O4P-C5A-C5	5.43	119.69	109.35
3	B	402[B]	0JO	C3-C4-C4A	5.11	129.93	120.41
3	B	402[B]	0JO	C5-C4-C4A	-4.80	113.66	121.56
3	A	402[B]	0JO	C3-C4-C4A	4.77	129.31	120.41
2	B	401[A]	PLP	O4P-C5A-C5	4.58	118.09	109.35
3	B	402[B]	0JO	C2A-C2-C3	-4.56	115.25	120.89
2	A	401[A]	PLP	C4A-C4-C5	-4.06	116.75	120.94
3	A	402[B]	0JO	C4-C3-C2	-3.50	118.02	120.19
2	B	401[A]	PLP	C4A-C4-C5	-3.37	117.47	120.94
3	B	402[B]	0JO	O3-C3-C4	3.27	128.38	119.60
2	A	401[A]	PLP	C6-C5-C4	3.22	120.69	118.16
3	B	402[B]	0JO	C4-C4A-N	-3.13	115.60	123.19
2	B	401[A]	PLP	O3P-P-O2P	3.12	119.56	107.64
2	B	401[A]	PLP	C5-C6-N1	-3.02	118.79	123.82
3	B	402[B]	0JO	C2A-C2-N1	2.88	123.29	117.67
3	B	402[B]	0JO	O3-C3-C2	-2.59	111.84	117.49
3	B	402[B]	0JO	C3-C4-C5	-2.42	116.41	118.26
2	A	401[A]	PLP	O3P-P-O1P	2.28	119.61	110.68
2	B	401[A]	PLP	C6-C5-C4	2.18	119.87	118.16
3	B	402[B]	0JO	OP2-P-OP1	2.13	115.78	107.64
2	A	401[A]	PLP	C4A-C4-C3	2.13	124.11	120.50
2	B	401[A]	PLP	C3-C4-C5	2.12	121.03	118.74

There are no chirality outliers.
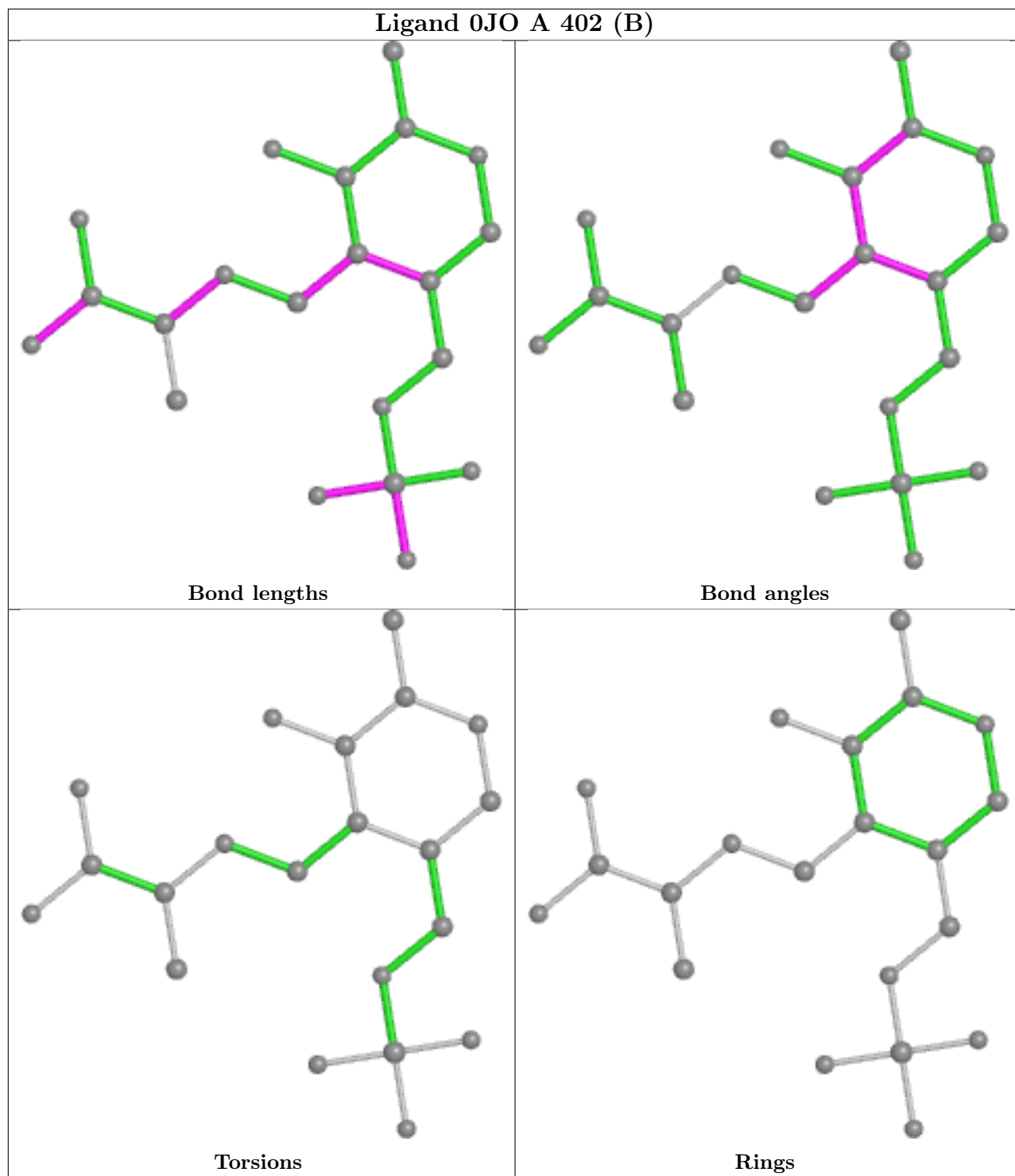
All (5) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	B	403	PEG	O1-C1-C2-O2
4	A	403	PEG	O2-C3-C4-O4
4	A	403	PEG	O1-C1-C2-O2
3	B	402[B]	0JO	C4-C4A-N-CA
4	B	403	PEG	O2-C3-C4-O4

There are no ring outliers.

3 monomers are involved in 11 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	401[A]	PLP	2	0
3	A	402[B]	0JO	1	0
3	B	402[B]	0JO	8	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 0JO A 402 (B)

Bond lengths

Bond angles

Torsions

Rings

Ligand 0JO B 402 (B)

Bond lengths

Bond angles

Torsions

Rings
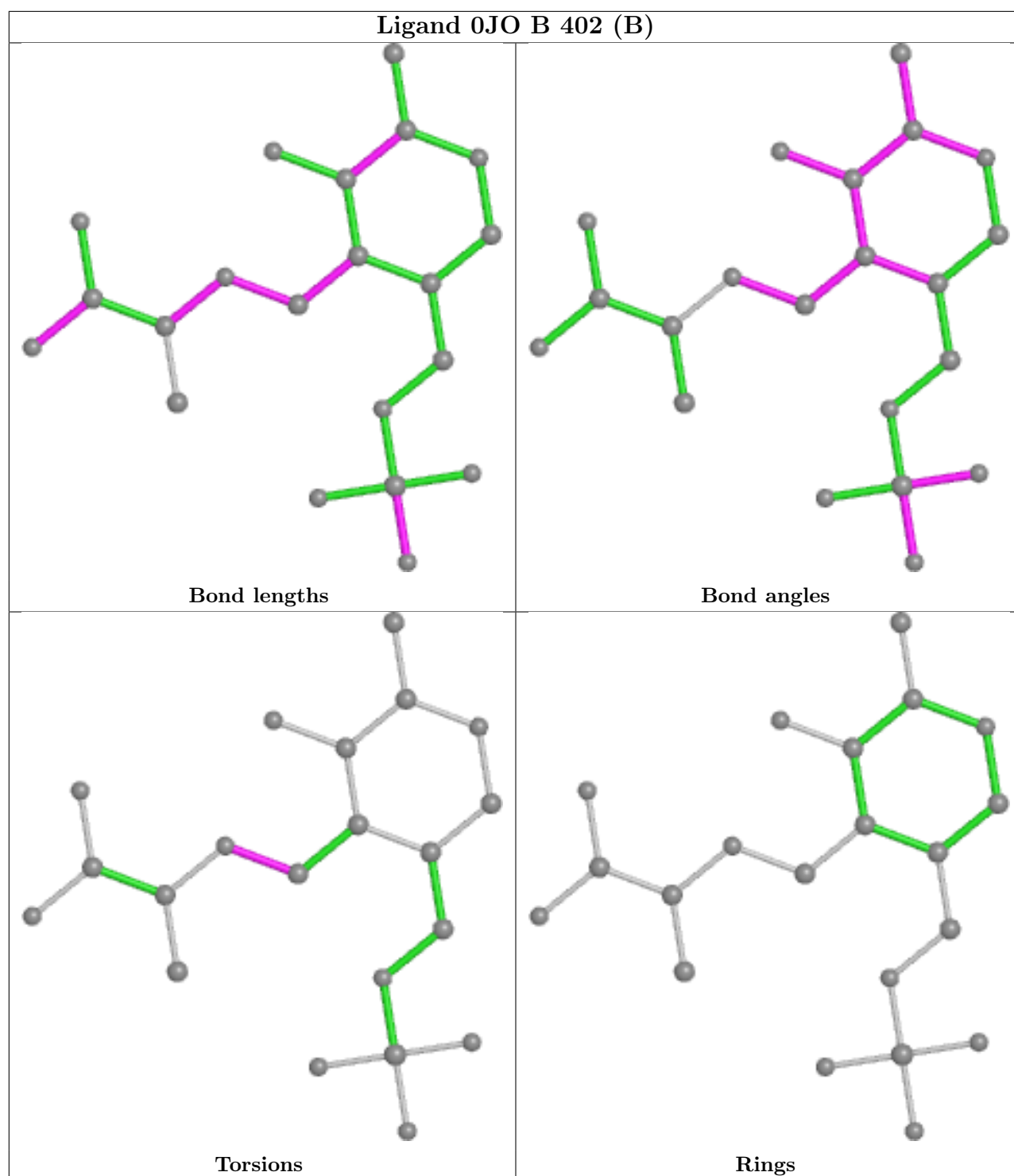
5.7 Other polymers ⓘ

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	298/340 (87%)	-0.31	1 (0%)	94	95	11, 19, 36, 66	0
1	B	297/340 (87%)	-0.16	3 (1%)	82	86	12, 22, 42, 67	0
All	All	595/680 (87%)	-0.23	4 (0%)	87	90	11, 20, 41, 67	0

All (4) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	140	PRO	4.1
1	A	336	ILE	3.4
1	B	139	ASN	2.7
1	B	317	GLU	2.3

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, 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
1	MLY	B	4	9/12	0.78	0.27	40,53,66,67	0
1	MLY	A	4	9/12	0.79	0.27	38,55,61,62	0
1	MLY	A	121	9/12	0.83	0.23	42,51,62,62	0
1	MLY	A	5	9/12	0.84	0.16	33,40,51,52	0
1	MLY	B	7	9/12	0.86	0.19	28,32,52,53	0
1	MLY	B	121	9/12	0.87	0.20	38,44,60,65	0
1	MLY	B	243	9/12	0.87	0.24	30,33,54,55	0
1	MLY	A	286	9/12	0.88	0.19	21,24,45,47	0
1	MLY	B	60	9/12	0.88	0.18	39,40,56,57	0
1	MLY	B	137	9/12	0.89	0.28	45,51,74,76	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($Å^2$)	Q<0.9
1	MLY	B	197	9/12	0.89	0.15	23,29,48,50	0
1	MLY	A	314	9/12	0.89	0.32	45,51,71,75	0
1	MLY	A	289	9/12	0.90	0.12	18,21,32,36	0
1	MLY	B	131[A]	11/12	0.90	0.17	31,33,36,37	8
1	MLY	B	131[B]	11/12	0.90	0.17	31,32,34,34	8
1	MLY	B	133	11/12	0.90	0.15	30,38,49,52	0
1	MLY	A	316	9/12	0.90	0.12	35,42,47,49	0
1	MLY	B	26	11/12	0.90	0.17	32,45,60,62	0
1	MLY	B	221	9/12	0.90	0.21	26,33,58,64	0
1	MLY	A	327	9/12	0.90	0.15	22,25,46,50	0
1	MLY	B	314	9/12	0.90	0.23	33,44,62,67	0
1	MLY	B	316	11/12	0.90	0.23	37,42,51,51	0
1	MLY	A	224	9/12	0.91	0.19	25,29,52,56	0
1	MLY	B	64	9/12	0.91	0.17	40,47,57,57	0
1	MLY	A	60	9/12	0.91	0.13	22,24,38,44	0
1	MLY	A	26	11/12	0.91	0.18	20,28,51,55	0
1	MLY	A	105[B]	11/12	0.92	0.20	15,18,23,24	8
1	MLY	B	204	11/12	0.92	0.18	22,25,49,49	0
1	MLY	B	5	11/12	0.92	0.14	33,39,53,59	0
1	MLY	A	105[A]	11/12	0.92	0.20	15,19,29,30	8
1	MLY	B	289	9/12	0.92	0.21	26,31,58,65	0
1	MLY	B	65	9/12	0.92	0.30	35,50,71,74	0
1	MLY	B	105	9/12	0.92	0.14	19,23,43,48	0
1	MLY	B	194	11/12	0.93	0.11	17,21,31,31	0
1	MLY	A	133	9/12	0.93	0.11	15,20,37,41	0
1	MLY	A	170	9/12	0.93	0.17	22,30,47,50	0
1	MLY	A	204	11/12	0.93	0.19	18,23,50,54	0
1	MLY	A	221	11/12	0.93	0.14	23,29,47,49	0
1	MLY	B	286	11/12	0.93	0.13	30,36,47,48	0
1	MLY	B	55	11/12	0.93	0.14	20,25,42,46	0
1	MLY	A	322	9/12	0.93	0.16	26,29,53,56	0
1	MLY	A	7	9/12	0.93	0.17	27,35,49,50	0
1	MLY	A	197	9/12	0.94	0.14	24,27,45,52	0
1	MLY	A	114	9/12	0.94	0.13	16,20,42,46	0
1	MLY	B	114	9/12	0.94	0.16	24,29,45,46	0
1	MLY	A	65	9/12	0.94	0.20	21,27,39,41	0
1	MLY	B	224	11/12	0.94	0.14	29,38,44,46	0
1	MLY	B	240	11/12	0.94	0.16	26,31,46,47	0
1	MLY	A	56	11/12	0.94	0.11	16,21,40,41	0
1	MLY	B	264	9/12	0.94	0.14	18,21,44,51	0
1	MLY	B	56	11/12	0.94	0.18	25,29,32,32	0
1	MLY	A	264	9/12	0.94	0.12	21,24,40,45	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
1	MLY	B	303	9/12	0.94	0.18	14,14,15,15	0
1	MLY	A	15	11/12	0.94	0.14	13,20,43,44	0
1	MLY	B	170	11/12	0.94	0.12	19,23,33,34	0
1	MLY	B	327	9/12	0.94	0.18	22,26,45,48	0
1	MLY	A	330	9/12	0.95	0.10	19,22,39,40	0
1	MLY	B	261	11/12	0.95	0.10	14,19,34,34	0
1	MLY	A	64	9/12	0.95	0.13	19,24,37,40	0
1	MLY	A	137	9/12	0.95	0.13	21,22,44,49	0
1	MLY	A	303	9/12	0.95	0.16	13,13,14,15	0
1	MLY	A	55	9/12	0.95	0.08	17,18,31,36	0
1	MLY	A	243	9/12	0.95	0.20	29,35,61,64	0
1	MLY	A	261	11/12	0.95	0.12	15,21,36,36	0
1	MLY	B	322	11/12	0.95	0.13	26,30,47,48	0
1	MLY	A	131	11/12	0.95	0.12	20,24,43,46	0
1	MLY	A	302	9/12	0.96	0.18	13,14,15,16	0
1	MLY	B	15	11/12	0.96	0.13	15,22,55,56	0
1	MLY	A	240	11/12	0.96	0.12	18,25,37,39	0
1	MLY	A	194	11/12	0.96	0.10	21,26,36,38	0
1	MLY	B	330	9/12	0.96	0.16	21,23,42,51	0
1	MLY	A	35	9/12	0.97	0.13	13,13,14,15	0
1	MLY	B	302	9/12	0.97	0.13	12,13,14,16	0
1	MLY	B	35	9/12	0.98	0.11	13,14,16,16	0

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.
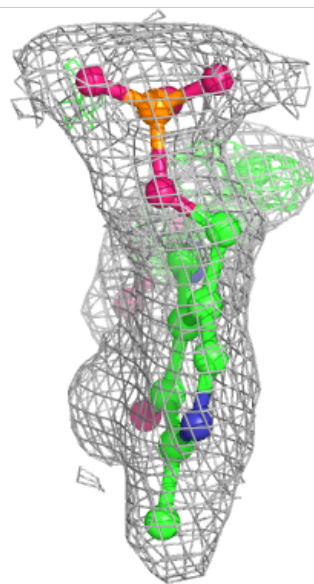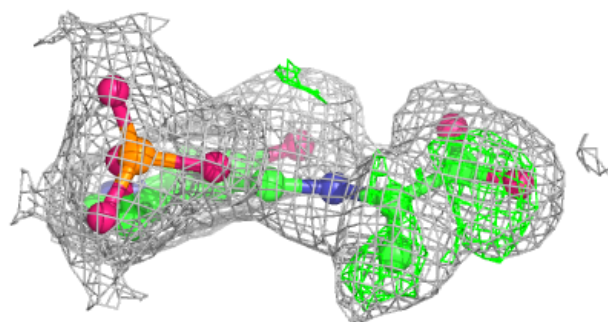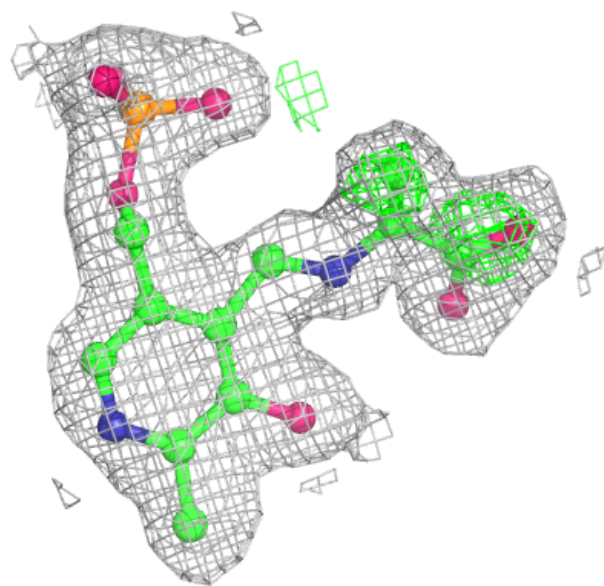
6.4 Ligands ⓘ

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.
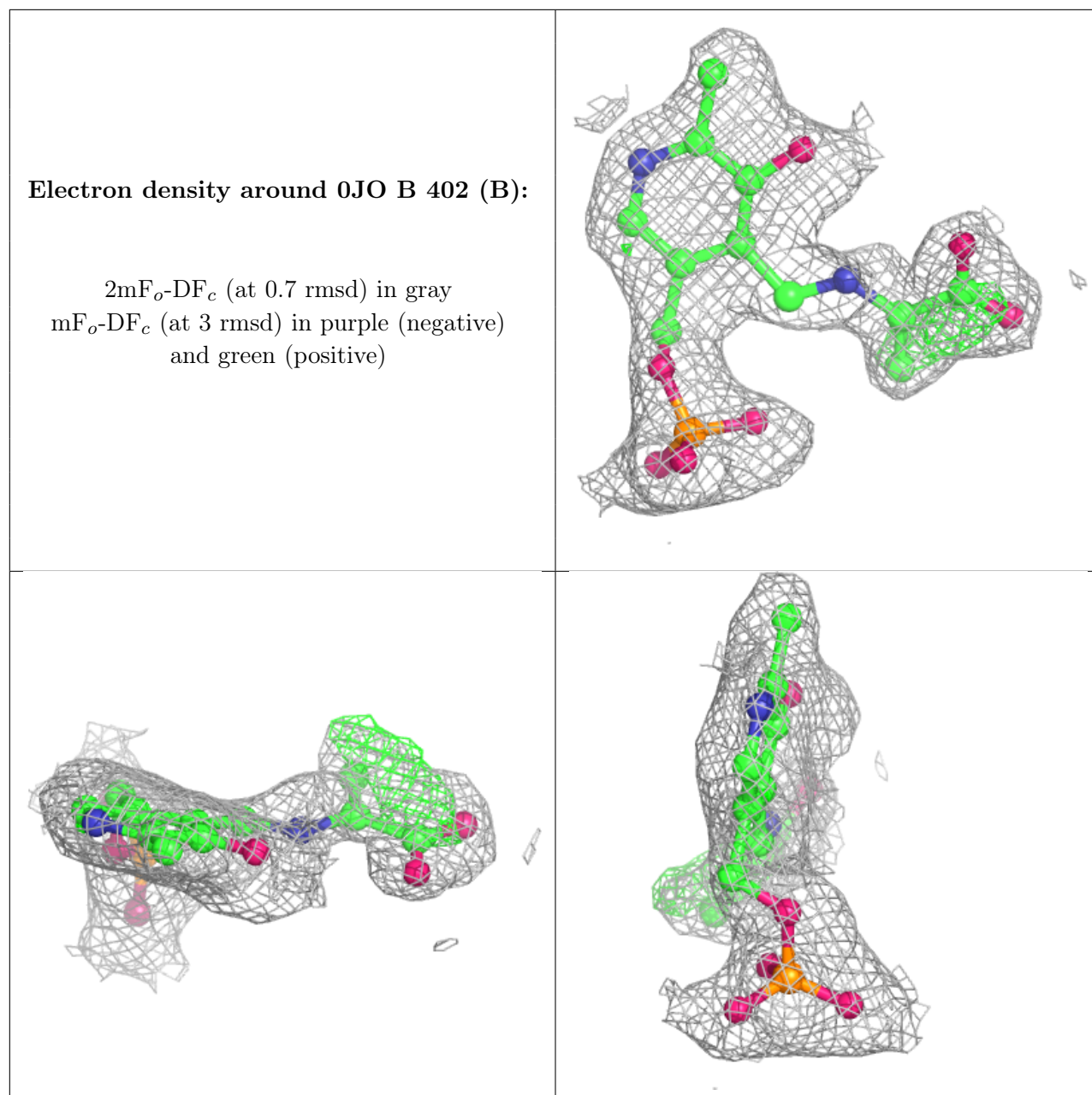
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
4	PEG	A	403	7/7	0.57	0.30	58,69,77,78	0
4	PEG	B	403	7/7	0.75	0.32	43,53,54,55	0
3	0JO	A	402[B]	21/21	0.95	0.16	7,14,16,16	21
3	0JO	B	402[B]	21/21	0.96	0.21	7,14,16,17	21
2	PLP	A	401[A]	15/16	0.98	0.11	7,8,8,8	15
2	PLP	B	401[A]	15/16	0.98	0.14	9,10,11,11	15

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 0JO A 402 (B):

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

Electron density around 0JO B 402 (B):

$2mF_o$-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.