



Full wwPDB X-ray Structure Validation Report ⓘ

Sep 22, 2022 – 03:27 pm BST

PDB ID : 7A3L
Title : Crystal structure of DPP8 in complex with a 4-oxo-b-lactam based inhibitor, A241
Authors : Ross, B.H.; Huber, R.
Deposited on : 2020-08-18
Resolution : 2.80 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at <http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity : 4.02b-467
Mogul : 1.8.4, CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.30
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0267
CCP4 : 7.1.010 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.30

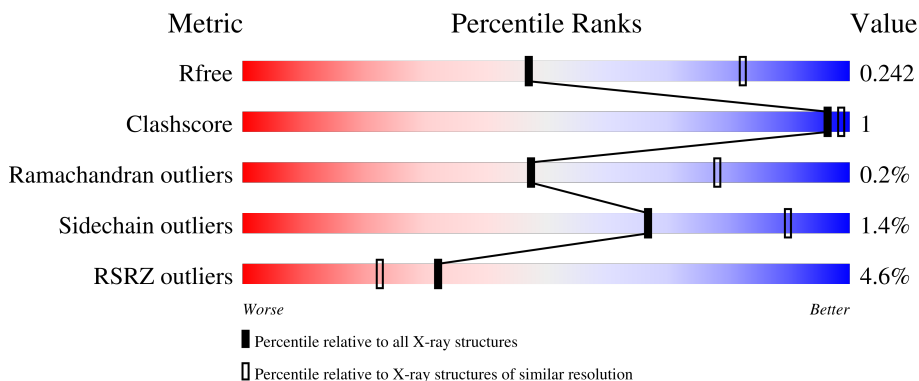
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.80 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}	130704	3140 (2.80-2.80)
Clashscore	141614	3569 (2.80-2.80)
Ramachandran outliers	138981	3498 (2.80-2.80)
Sidechain outliers	138945	3500 (2.80-2.80)
RSRZ outliers	127900	3078 (2.80-2.80)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	898	 5% 92% 5%
1	B	898	 3% 87% 5% 8%
1	C	898	 5% 91% 5%

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	GOL	A	902	-	-	-	X
3	GOL	C	902	-	-	-	X

2 Entry composition [i](#)

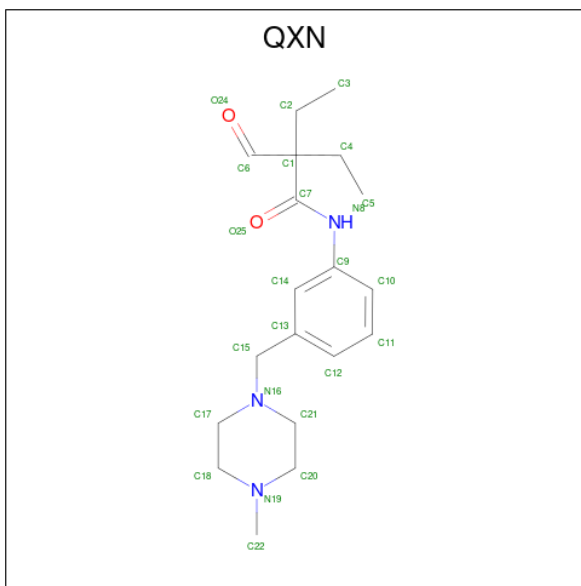
There are 6 unique types of molecules in this entry. The entry contains 20714 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Dipeptidyl peptidase 8.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	850	Total 6910	C 4436	N 1160	O 1285	S 29	0	0	0
1	B	826	Total 6717	C 4318	N 1125	O 1246	S 28	0	1	0
1	C	850	Total 6910	C 4436	N 1160	O 1285	S 29	0	0	0

- Molecule 2 is 2-ethyl-2-methanoyl- {N}-[3-[(4-methylpiperazin-1-yl)methyl]phenyl]butanamide (three-letter code: QXN) (formula: C₁₉H₂₉N₃O₂) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
2	A	1	Total 24	C 19	N 3	O 2	0	0
2	B	1	Total 24	C 19	N 3	O 2	0	0

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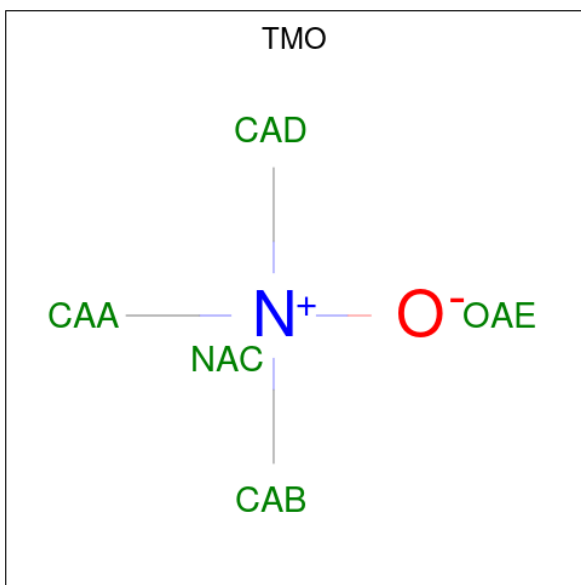
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
2	C	1	24	19	3	2	0	0

- Molecule 3 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).



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

- Molecule 4 is trimethylamine oxide (three-letter code: TMO) (formula: C_3H_9NO).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	A	1	Total	C	N	O	0	0
			5	3	1	1		
4	B	1	Total	C	N	O	0	0
			5	3	1	1		
4	B	1	Total	C	N	O	0	0
			5	3	1	1		
4	C	1	Total	C	N	O	0	0
			5	3	1	1		

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

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

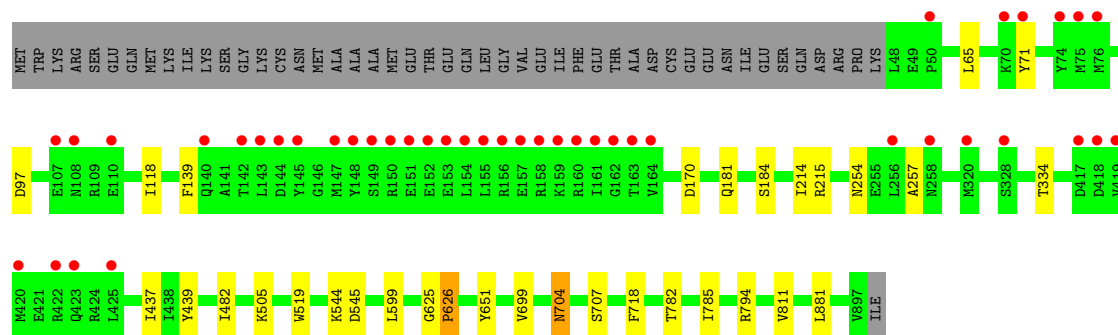
- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	17	Total	O	0	0
			17	17		
6	B	16	Total	O	0	0
			16	16		

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	C	13	Total	O	0	0
			13	13		



4 Data and refinement statistics

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, α , β , γ	164.03Å 252.78Å 261.24Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	44.07 – 2.80 44.07 – 2.80	Depositor EDS
% Data completeness (in resolution range)	100.0 (44.07-2.80) 100.0 (44.07-2.80)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.94 (at 2.81Å)	Xtriage
Refinement program	REFMAC 5.8.0238	Depositor
R, R_{free}	0.213 , 0.245 0.213 , 0.242	Depositor DCC
R_{free} test set	6645 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å ²)	75.4	Xtriage
Anisotropy	0.334	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	(Not available) , (Not available)	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.93	EDS
Total number of atoms	20714	wwPDB-VP
Average B, all atoms (Å ²)	80.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.65% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: CL, TMO, GOL, QXN

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	0.63	0/7102	0.70	0/9634
1	B	0.63	0/6907	0.70	0/9373
1	C	0.63	0/7102	0.70	0/9634
All	All	0.63	0/21111	0.70	0/28641

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	6910	0	6724	9	0
1	B	6717	0	6527	16	0
1	C	6910	0	6724	14	0
2	A	24	0	0	0	0
2	B	24	0	0	0	0
2	C	24	0	0	0	0
3	A	12	0	16	0	0
3	B	12	0	16	2	0
3	C	12	0	16	0	0
4	A	5	0	9	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	B	10	0	18	0	0
4	C	5	0	9	0	0
5	A	1	0	0	0	0
5	B	1	0	0	0	0
5	C	1	0	0	0	0
6	A	17	0	0	0	0
6	B	16	0	0	0	0
6	C	13	0	0	0	0
All	All	20714	0	20059	39	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 1.

All (39) 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:376:GLU:HG3	1:A:397:ARG:HB2	1.78	0.65
1:C:651:TYR:HB2	1:C:699:VAL:HB	1.87	0.55
1:C:334:THR:CG2	1:C:785:ILE:HA	2.36	0.54
1:A:657:GLN:HE21	1:A:657:GLN:HA	1.72	0.54
1:B:587:LYS:HZ1	3:B:902:GOL:C1	2.22	0.53
1:C:782:THR:HA	1:C:811:VAL:HG22	1.92	0.51
1:C:118:ILE:HD12	1:C:599:LEU:HD22	1.92	0.51
1:A:782:THR:HA	1:A:811:VAL:HG22	1.92	0.50
1:B:176:GLY:O	1:B:190:LYS:HA	2.12	0.50
1:B:376:GLU:HG3	1:B:397:ARG:HB2	1.93	0.49
1:B:118:ILE:HD12	1:B:599:LEU:CD2	2.43	0.48
1:B:587:LYS:HZ1	3:B:902:GOL:H12	1.78	0.48
1:B:240:ASN:O	1:B:244:ARG:HA	2.14	0.48
1:C:704:ASN:O	1:C:707:SER:OG	2.26	0.47
1:B:189:VAL:CG1	1:B:204:PRO:HA	2.45	0.47
1:B:400:THR:O	1:B:442:THR:HA	2.16	0.46
1:A:348:ILE:HG22	1:A:350:ILE:CD1	2.46	0.46
1:C:254:ASN:HD22	1:C:257:ALA:HB2	1.81	0.45
1:C:118:ILE:HD12	1:C:599:LEU:CD2	2.46	0.45
1:A:302:LEU:HD22	1:A:390:ALA:HB1	2.00	0.44
1:B:782:THR:HA	1:B:811:VAL:HG22	2.00	0.43
1:B:231:ILE:HG21	1:B:268:VAL:CG2	2.49	0.43
1:C:519:TRP:CG	1:C:544:LYS:HA	2.53	0.43
1:C:65:LEU:HD21	1:C:881:LEU:HD22	2.00	0.42
1:A:400:THR:O	1:A:442:THR:HA	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:83:PHE:CD1	1:B:585:ILE:HD13	2.53	0.42
1:A:446:TRP:CH2	1:A:716:GLY:HA2	2.55	0.42
1:B:211:CYS:HB3	1:B:232:HIS:CD2	2.55	0.42
1:C:181:GLN:NE2	1:C:215:ARG:O	2.52	0.42
1:B:302:LEU:HD22	1:B:390:ALA:HB1	2.01	0.41
1:B:351:ASP:OD1	1:B:351:ASP:C	2.59	0.41
1:B:184:SER:HA	1:B:214:ILE:CD1	2.50	0.41
1:C:184:SER:HA	1:C:214:ILE:CD1	2.50	0.41
1:C:625:GLY:O	1:C:626:PRO:C	2.59	0.41
1:A:376:GLU:HG3	1:A:397:ARG:CB	2.50	0.41
1:C:439:TYR:CE1	1:C:482:ILE:HD13	2.56	0.41
1:C:437:ILE:HB	1:C:505:LYS:HA	2.03	0.40
1:A:118:ILE:HD12	1:A:599:LEU:HD22	2.02	0.40
1:B:334:THR:CG2	1:B:785:ILE:HA	2.51	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	848/898 (94%)	805 (95%)	42 (5%)	1 (0%)	51 81
1	B	823/898 (92%)	787 (96%)	35 (4%)	1 (0%)	51 81
1	C	848/898 (94%)	803 (95%)	43 (5%)	2 (0%)	47 78
All	All	2519/2694 (94%)	2395 (95%)	120 (5%)	4 (0%)	47 78

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	139	PHE
1	A	453	PHE
1	B	445	ILE

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Mol	Chain	Res	Type
1	C	626	PRO

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	753/795 (95%)	740 (98%)	13 (2%)	60 87
1	B	733/795 (92%)	721 (98%)	12 (2%)	62 88
1	C	753/795 (95%)	746 (99%)	7 (1%)	78 94
All	All	2239/2385 (94%)	2207 (99%)	32 (1%)	67 90

All (32) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	131	SER
1	A	143	LEU
1	A	170	ASP
1	A	173	GLN
1	A	214	ILE
1	A	258	ASN
1	A	473	LYS
1	A	545	ASP
1	A	614	LYS
1	A	657	GLN
1	A	685	LYS
1	A	704	ASN
1	A	718	PHE
1	B	88	ARG
1	B	105	SER
1	B	131	SER
1	B	173	GLN
1	B	273	LEU
1	B	545	ASP
1	B	614	LYS
1	B	685	LYS

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Mol	Chain	Res	Type
1	B	704	ASN
1	B	718	PHE
1	B	821	GLU
1	B	829	HIS
1	C	71	TYR
1	C	97	ASP
1	C	170	ASP
1	C	545	ASP
1	C	704	ASN
1	C	718	PHE
1	C	794	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (25) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	89	ASN
1	A	111	ASN
1	A	123	ASN
1	A	200	GLN
1	A	258	ASN
1	A	423	GLN
1	A	657	GLN
1	A	858	GLN
1	A	882	HIS
1	B	111	ASN
1	B	123	ASN
1	B	199	GLN
1	B	258	ASN
1	B	858	GLN
1	C	89	ASN
1	C	111	ASN
1	C	140	GLN
1	C	199	GLN
1	C	200	GLN
1	C	254	ASN
1	C	403	GLN
1	C	423	GLN
1	C	837	HIS
1	C	858	GLN
1	C	882	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 16 ligands modelled in this entry, 3 are monoatomic - leaving 13 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	GOL	B	905	-	5,5,5	0.12	0	5,5,5	0.43	0
3	GOL	A	902	-	5,5,5	0.14	0	5,5,5	0.37	0
3	GOL	B	902	-	5,5,5	0.13	0	5,5,5	0.41	0
3	GOL	C	904	-	5,5,5	0.10	0	5,5,5	0.29	0
4	TMO	B	904	-	4,4,4	6.34	1 (25%)	6,6,6	0.22	0
3	GOL	C	902	-	5,5,5	0.12	0	5,5,5	0.30	0
3	GOL	A	904	-	5,5,5	0.12	0	5,5,5	0.31	0
2	QXN	A	901	1	23,25,25	0.68	0	30,34,34	0.97	1 (3%)
4	TMO	C	903	-	4,4,4	6.30	1 (25%)	6,6,6	0.24	0
2	QXN	C	901	1	23,25,25	0.69	0	30,34,34	1.01	1 (3%)
4	TMO	B	903	-	4,4,4	6.35	1 (25%)	6,6,6	0.20	0
4	TMO	A	903	-	4,4,4	6.16	1 (25%)	6,6,6	0.28	0
2	QXN	B	901	1	23,25,25	0.66	0	30,34,34	0.94	1 (3%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the

Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	GOL	B	905	-	-	4/4/4/4	-
3	GOL	A	902	-	-	4/4/4/4	-
3	GOL	B	902	-	-	2/4/4/4	-
3	GOL	C	904	-	-	2/4/4/4	-
3	GOL	C	902	-	-	0/4/4/4	-
3	GOL	A	904	-	-	2/4/4/4	-
2	QXN	A	901	1	-	2/20/33/33	0/2/2/2
2	QXN	C	901	1	-	3/20/33/33	0/2/2/2
2	QXN	B	901	1	-	3/20/33/33	0/2/2/2

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	B	903	TMO	OAE-NAC	-12.66	1.25	1.42
4	B	904	TMO	OAE-NAC	-12.65	1.25	1.42
4	C	903	TMO	OAE-NAC	-12.56	1.25	1.42
4	A	903	TMO	OAE-NAC	-12.30	1.25	1.42

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	901	QXN	C1-C7-N8	2.57	119.24	115.43
2	B	901	QXN	C1-C7-N8	2.39	118.98	115.43
2	A	901	QXN	C1-C7-N8	2.28	118.81	115.43

There are no chirality outliers.

All (22) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	901	QXN	C2-C1-C6-O24
2	A	901	QXN	C4-C1-C6-O24
2	B	901	QXN	C2-C1-C6-O24
2	B	901	QXN	C4-C1-C6-O24
2	C	901	QXN	C2-C1-C6-O24
3	A	902	GOL	O1-C1-C2-C3
3	A	902	GOL	C1-C2-C3-O3
3	A	902	GOL	O2-C2-C3-O3
3	B	902	GOL	C1-C2-C3-O3

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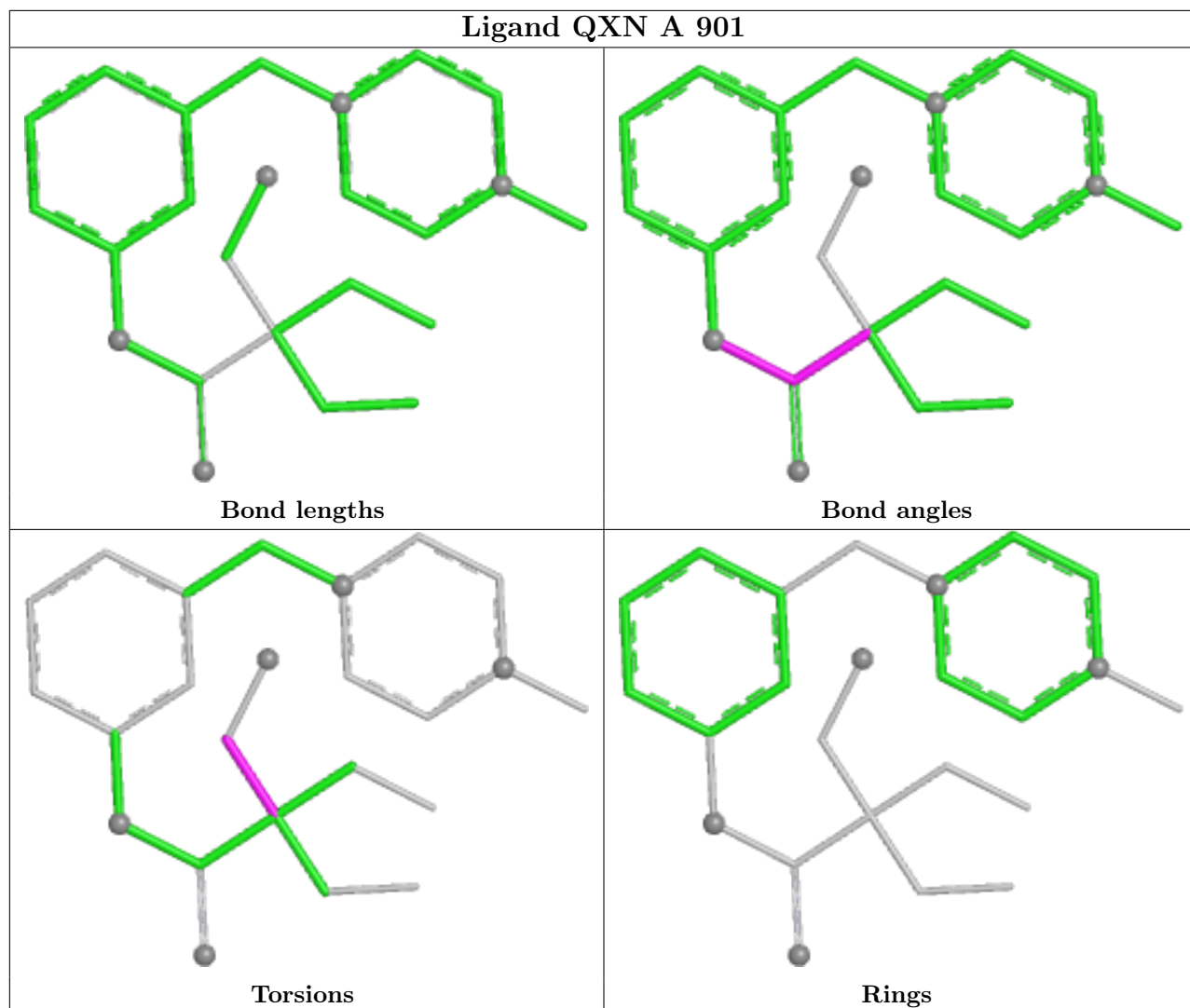
Mol	Chain	Res	Type	Atoms
3	B	905	GOL	O1-C1-C2-C3
3	B	905	GOL	C1-C2-C3-O3
3	B	902	GOL	O2-C2-C3-O3
3	A	904	GOL	O1-C1-C2-C3
3	C	904	GOL	C1-C2-C3-O3
3	A	902	GOL	O1-C1-C2-O2
3	A	904	GOL	O1-C1-C2-O2
3	B	905	GOL	O1-C1-C2-O2
3	B	905	GOL	O2-C2-C3-O3
3	C	904	GOL	O2-C2-C3-O3
2	C	901	QXN	C4-C1-C6-O24
2	C	901	QXN	C4-C1-C2-C3
2	B	901	QXN	C4-C1-C2-C3

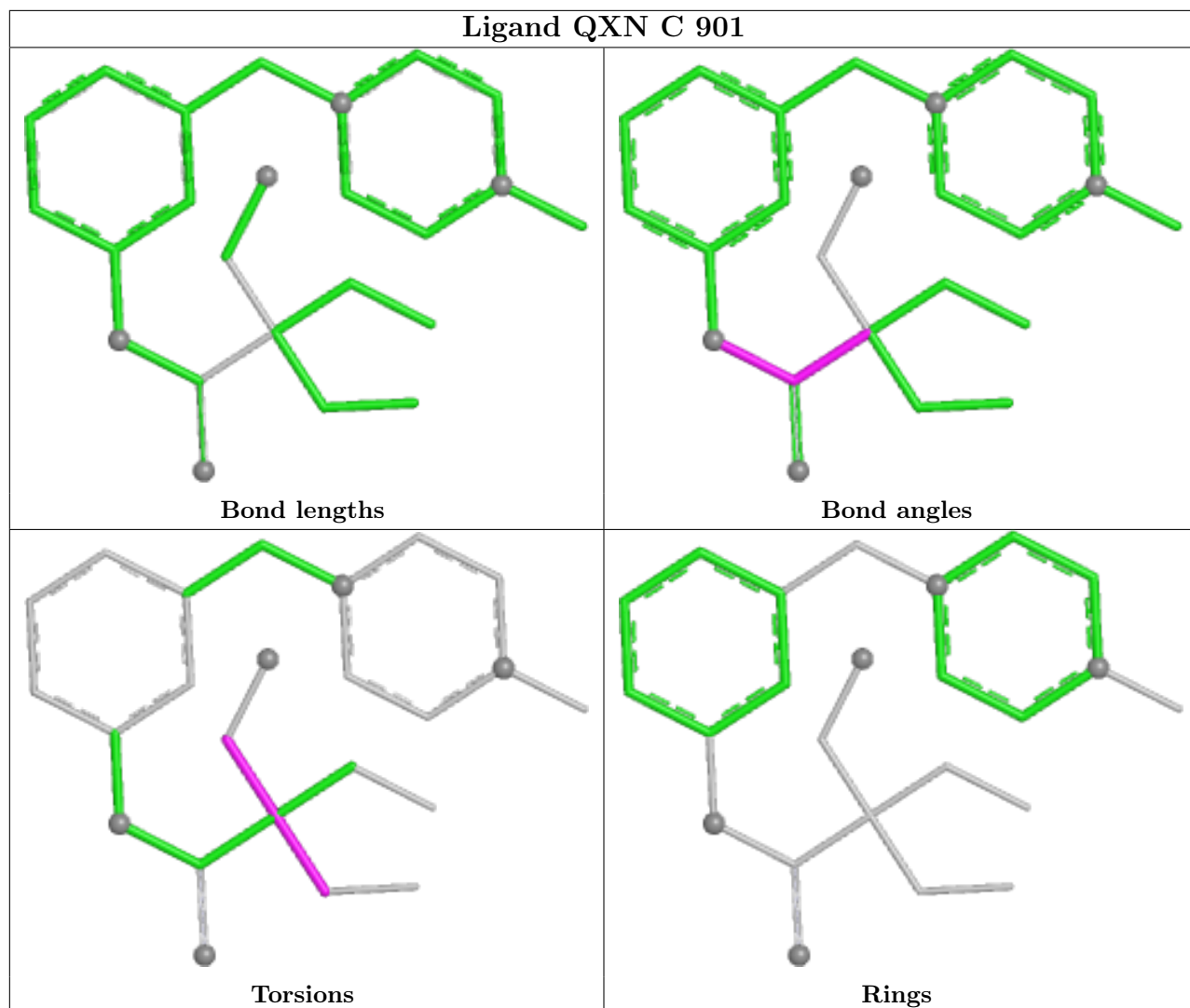
There are no ring outliers.

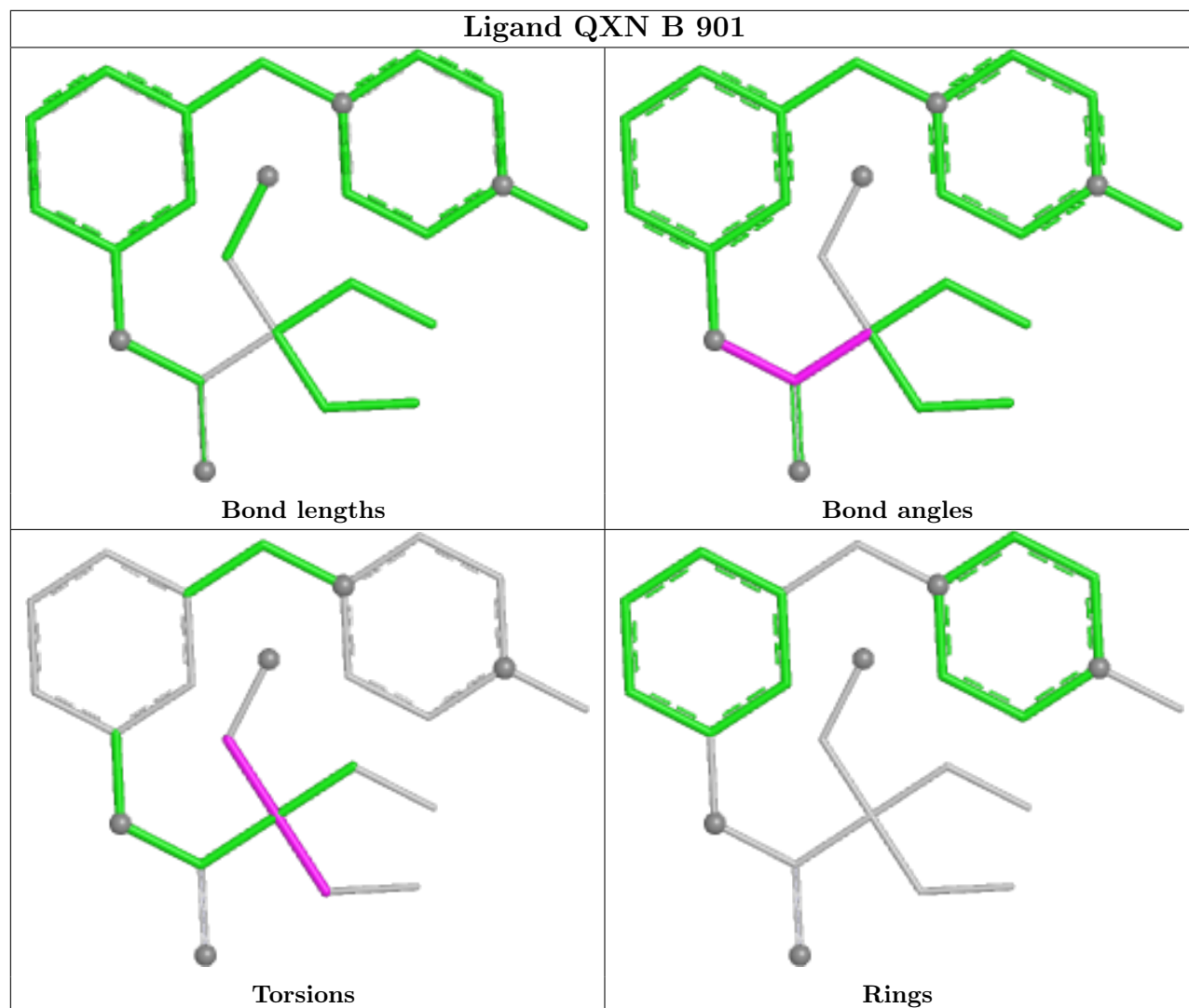
1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	902	GOL	2	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 than 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.







5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [\(i\)](#)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	850/898 (94%)	0.47	48 (5%) 24 16	51, 73, 128, 195	0
1	B	826/898 (91%)	0.32	26 (3%) 49 39	50, 70, 118, 156	0
1	C	850/898 (94%)	0.47	43 (5%) 28 19	51, 75, 136, 191	0
All	All	2526/2694 (93%)	0.42	117 (4%) 32 22	50, 73, 126, 195	0

All (117) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	74	TYR	9.0
1	A	148	TYR	7.4
1	A	150	ARG	6.8
1	C	75	MET	6.6
1	A	155	LEU	6.5
1	A	151	GLU	6.5
1	A	162	GLY	6.2
1	C	142	THR	5.9
1	C	155	LEU	5.9
1	B	108	ASN	5.8
1	A	149	SER	5.8
1	A	159	LYS	5.7
1	C	154	LEU	5.7
1	C	149	SER	5.4
1	C	159	LYS	5.4
1	C	71	TYR	5.4
1	A	161	ILE	5.3
1	A	163	THR	5.3
1	C	163	THR	5.3
1	A	154	LEU	5.3
1	A	147	MET	5.2
1	C	161	ILE	5.1
1	A	74	TYR	5.1

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Mol	Chain	Res	Type	RSRZ
1	C	156	ARG	4.9
1	A	157	GLU	4.8
1	C	147	MET	4.7
1	C	143	LEU	4.7
1	A	158	ARG	4.6
1	B	164	VAL	4.6
1	C	148	TYR	4.5
1	C	152	GLU	4.5
1	C	153	GLU	4.5
1	A	146	GLY	4.4
1	A	156	ARG	4.3
1	C	108	ASN	4.2
1	C	144	ASP	4.1
1	A	260	GLU	4.1
1	C	158	ARG	4.1
1	A	153	GLU	4.0
1	A	160	ARG	3.9
1	A	152	GLU	3.9
1	C	157	GLU	3.9
1	B	74	TYR	3.8
1	B	75	MET	3.8
1	C	145	TYR	3.8
1	B	487	LYS	3.8
1	B	71	TYR	3.8
1	B	73	GLY	3.8
1	A	71	TYR	3.7
1	A	258	ASN	3.6
1	A	420	MET	3.6
1	B	110	GLU	3.6
1	C	107	GLU	3.6
1	A	261	GLU	3.6
1	B	105	SER	3.6
1	A	495	SER	3.5
1	A	256	LEU	3.4
1	B	422	ARG	3.4
1	C	160	ARG	3.4
1	B	256	LEU	3.3
1	C	151	GLU	3.3
1	A	108	ASN	3.3
1	C	425	LEU	3.2
1	B	417	ASP	3.2
1	C	420	MET	3.1

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Mol	Chain	Res	Type	RSRZ
1	B	426	ILE	3.1
1	C	256	LEU	3.0
1	B	420	MET	3.0
1	C	150	ARG	3.0
1	A	76	MET	3.0
1	A	145	TYR	2.9
1	C	162	GLY	2.9
1	A	75	MET	2.9
1	A	142	THR	2.9
1	C	417	ASP	2.9
1	A	525	HIS	2.8
1	C	140	GLN	2.7
1	A	492	LYS	2.7
1	A	144	ASP	2.7
1	A	526	GLY	2.6
1	C	320	MET	2.6
1	C	110	GLU	2.6
1	B	76	MET	2.6
1	B	423	GLN	2.6
1	A	293	PRO	2.6
1	A	107	GLU	2.6
1	A	460	HIS	2.5
1	C	422	ARG	2.4
1	B	107	GLU	2.4
1	C	50	PRO	2.4
1	A	490	LYS	2.4
1	B	325	ARG	2.4
1	A	487	LYS	2.4
1	C	418	ASP	2.4
1	A	72	HIS	2.4
1	A	143	LEU	2.4
1	B	485	ILE	2.4
1	C	164	VAL	2.3
1	A	257	ALA	2.3
1	B	424	ARG	2.2
1	C	258	ASN	2.2
1	C	419	VAL	2.2
1	C	76	MET	2.2
1	C	70	LYS	2.2
1	B	365	ILE	2.2
1	B	868	ARG	2.2
1	B	777	ALA	2.2

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Mol	Chain	Res	Type	RSRZ
1	B	320	MET	2.2
1	A	422	ARG	2.2
1	A	140	GLN	2.1
1	C	423	GLN	2.1
1	A	496	GLY	2.1
1	A	106	GLY	2.1
1	B	659	GLY	2.1
1	A	115	TYR	2.1
1	B	856	ASP	2.0
1	C	328	SER	2.0

6.2 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

6.3 Carbohydrates [i](#)

There are no monosaccharides 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.

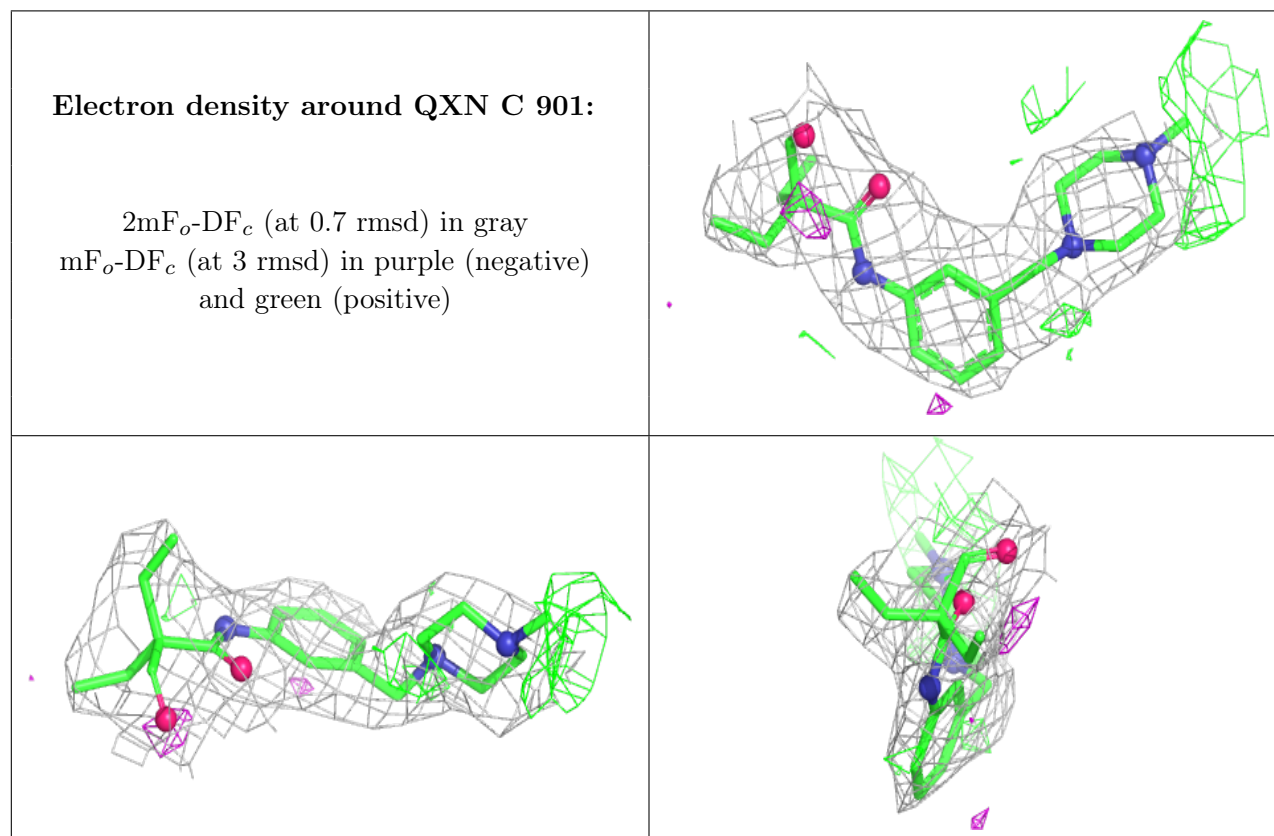
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
3	GOL	C	902	6/6	0.60	0.53	90,95,97,97	0
3	GOL	B	902	6/6	0.70	0.39	87,91,93,96	0
3	GOL	A	902	6/6	0.72	0.41	90,91,93,94	0
3	GOL	A	904	6/6	0.79	0.18	97,102,103,104	0
3	GOL	B	905	6/6	0.80	0.21	96,99,99,100	0
3	GOL	C	904	6/6	0.80	0.14	96,99,100,101	0
5	CL	A	905	1/1	0.84	0.19	87,87,87,87	0
4	TMO	B	904	5/5	0.85	0.74	104,104,105,106	0
4	TMO	C	903	5/5	0.87	0.65	98,99,101,101	0
2	QXN	C	901	24/24	0.87	0.45	66,102,131,134	0
5	CL	B	906	1/1	0.89	0.19	84,84,84,84	0
2	QXN	A	901	24/24	0.90	0.42	65,95,124,125	0
4	TMO	A	903	5/5	0.91	0.53	87,88,89,90	0

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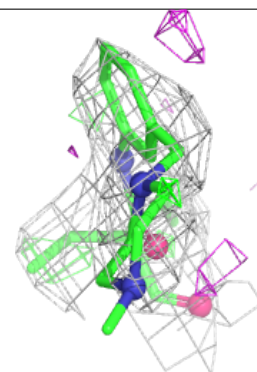
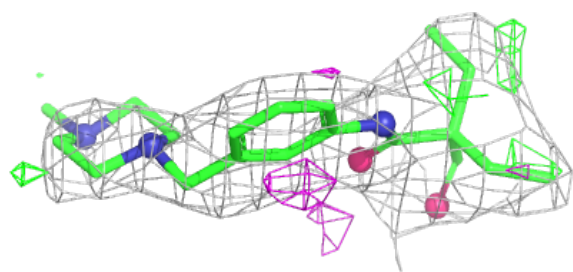
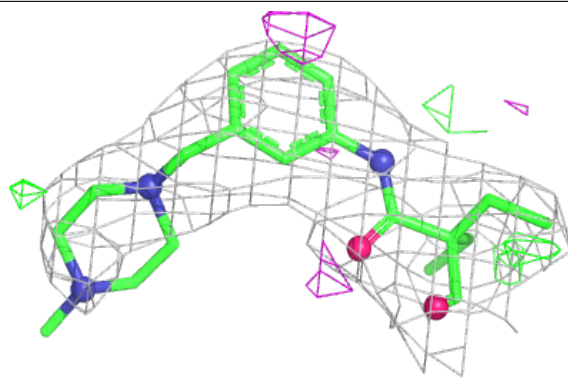
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
2	QXN	B	901	24/24	0.92	0.31	59,85,112,114	0
5	CL	C	905	1/1	0.92	0.07	92,92,92,92	0
4	TMO	B	903	5/5	0.93	0.24	98,99,101,102	0

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.

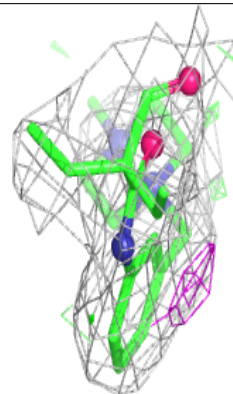
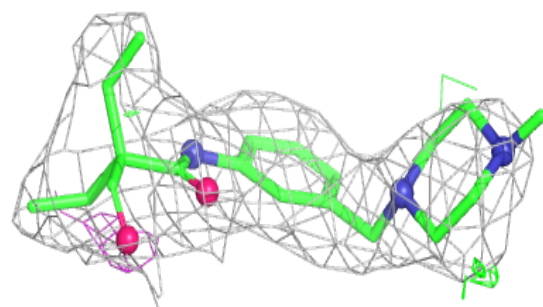
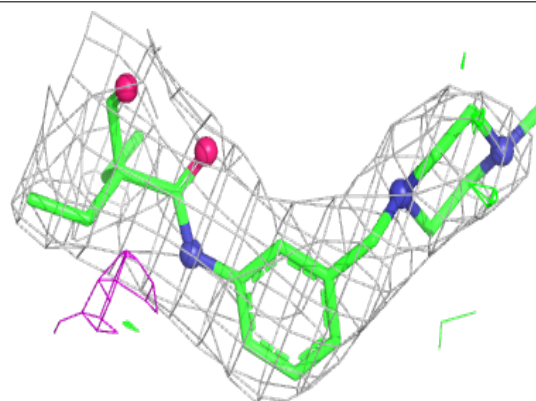


Electron density around QXN A 901:

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

**Electron density around QXN B 901:**

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



6.5 Other polymers [i](#)

There are no such residues in this entry.