



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 02:48 PM UTC

PDB ID : 3G6Z / pdb_00003g6z
Title : Design and Preparation of Potent, Non-Peptidic, Bioavailable Renin Inhibitors
Authors : Bezencon, O.; Bur, D.; Prade, L.; Weller, T.; Boss, C.; Fischli, W.
Deposited on : 2009-02-09
Resolution : 2.00 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 : 4-5-2 with Phenix2.0
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 2.0
EDS : 3.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4 : 9.0.010 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

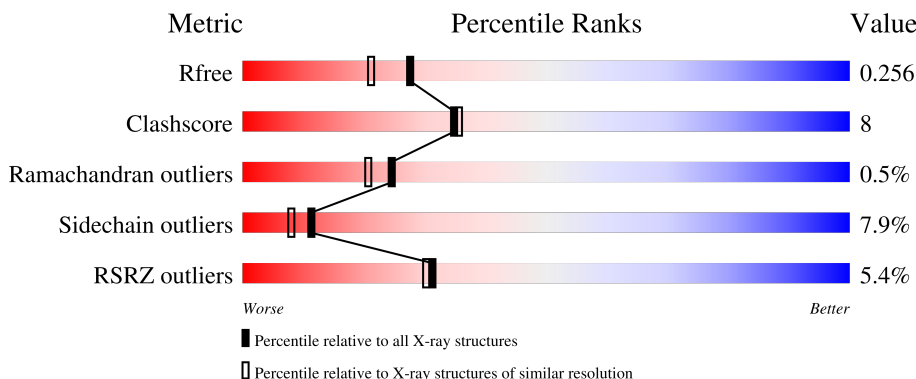
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.00 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	10052 (2.00-2.00)
Clashscore	190562	11152 (2.00-2.00)
Ramachandran outliers	187476	11031 (2.00-2.00)
Sidechain outliers	187428	11029 (2.00-2.00)
RSRZ outliers	180081	10067 (2.00-2.00)

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	341	7% 79% 17% ...
1	B	341	4% 79% 18% ..

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	NAG	A	344	X	-	-	-

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 5758 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.

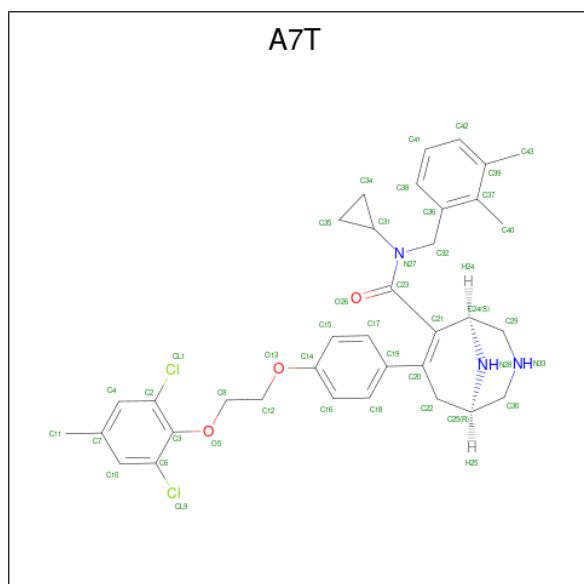
- Molecule 1 is a protein called Renin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	337	Total	C	N	O	S	0	1	0
			2609	1667	424	504	14			
1	B	334	Total	C	N	O	S	0	1	0
			2586	1651	421	500	14			

There are 2 discrepancies between the modelled and reference sequences:

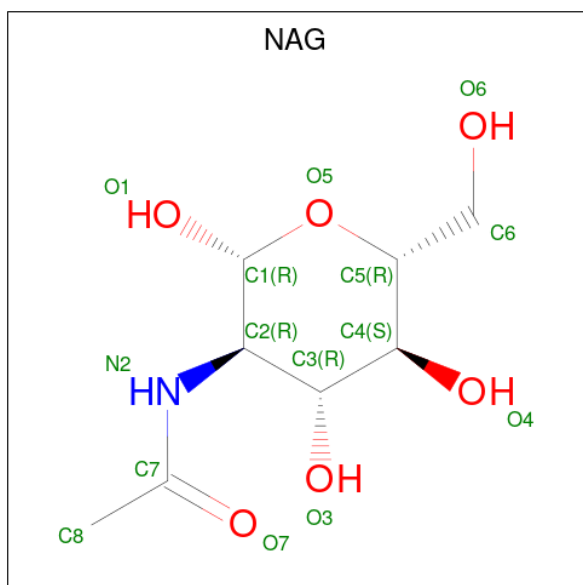
Chain	Residue	Modelled	Actual	Comment	Reference
A	341	HIS	-	expression tag	UNP P00797
B	341	HIS	-	expression tag	UNP P00797

- Molecule 2 is (1R,5S)-N-cyclopropyl-7-{4-[2-(2,6-dichloro-4-methylphenoxy)ethoxy]phenyl}-N-(2,3-dimethylbenzyl)-3,9-diazabicyclo[3.3.1]non-6-ene-6-carboxamide (CCD ID: A7T) (formula: C₃₅H₃₉Cl₂N₃O₃).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	Cl	N	O	
			43	35	2	3	3	
2	B	1	Total	C	Cl	N	O	
			43	35	2	3	3	

- 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	A	1	Total	C	N	O		
			14	8	1	5		
3	A	1	Total	C	N	O		
			14	8	1	5		
3	B	1	Total	C	N	O		
			14	8	1	5		

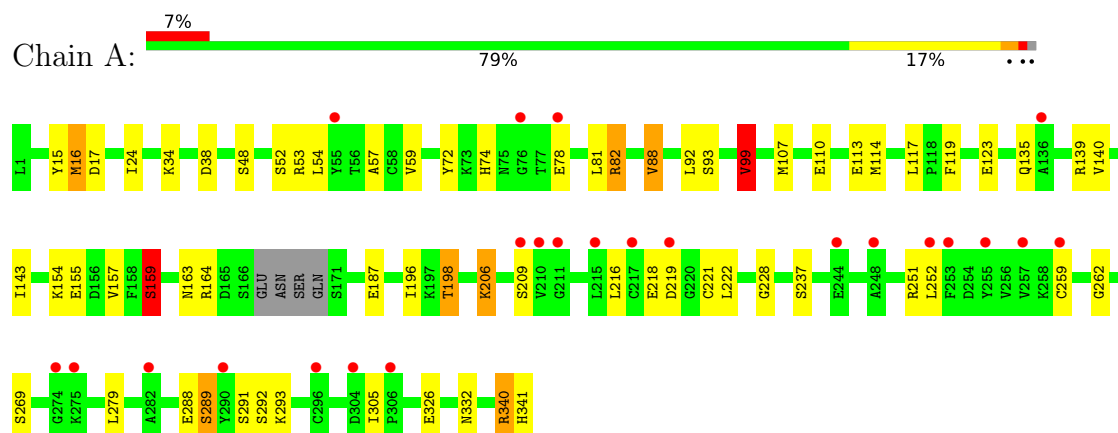
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	202	Total	O		
			202	202	0	0
4	B	233	Total	O		
			233	233	0	0

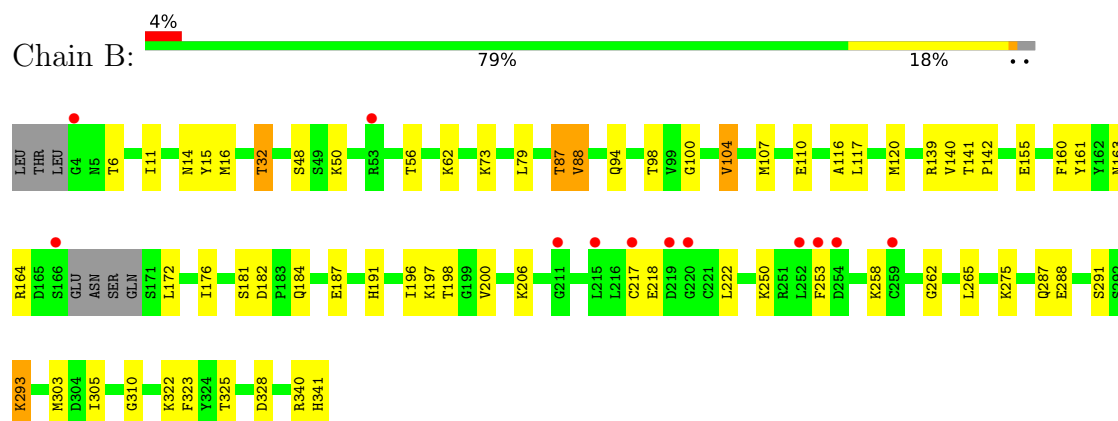
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: Renin



• Molecule 1: Renin



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	67.50Å 94.75Å 119.83Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	50.00 – 2.00 50.00 – 2.00	Depositor EDS
% Data completeness (in resolution range)	91.4 (50.00-2.00) 91.4 (50.00-2.00)	Depositor EDS
R_{merge}	0.12	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.60 (at 2.00Å)	Xtriage
Refinement program	REFMAC 5.2.0019	Depositor
R, R_{free}	0.195 , 0.258 0.194 , 0.256	Depositor DCC
R_{free} test set	2455 reflections (5.10%)	wwPDB-VP
Wilson B-factor (Å ²)	34.1	Xtriage
Anisotropy	0.063	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.36 , 50.8	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	5758	wwPDB-VP
Average B, all atoms (Å ²)	39.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.07% 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: A7T, NAG

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	0.71	0/2670	0.89	5/3620 (0.1%)
1	B	0.79	1/2647 (0.0%)	0.94	4/3588 (0.1%)
All	All	0.75	1/5317 (0.0%)	0.92	9/7208 (0.1%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	88	VAL	CA-CB	5.10	1.60	1.54

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	104	VAL	CB-CA-C	-8.29	96.37	110.71
1	A	99	VAL	CB-CA-C	-6.78	102.66	110.73
1	B	182	ASP	CA-C-N	6.24	125.92	119.56
1	B	182	ASP	C-N-CA	6.24	125.92	119.56
1	A	159	SER	N-CA-C	5.38	117.86	109.52
1	B	325	THR	N-CA-C	5.30	117.54	108.90
1	A	143	ILE	N-CA-C	5.13	115.85	110.62
1	A	305	ILE	CA-C-N	5.11	123.39	119.66
1	A	305	ILE	C-N-CA	5.11	123.39	119.66

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	2609	0	2541	45	0
1	B	2586	0	2510	34	0
2	A	43	0	39	2	0
2	B	43	0	39	1	0
3	A	28	0	26	1	0
3	B	14	0	13	0	0
4	A	202	0	0	9	0
4	B	233	0	0	9	0
All	All	5758	0	5168	79	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 (79) 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:191[A]:HIS:CD2	4:B:365:HOH:O	2.21	0.92
1:A:259:CYS:HB3	1:A:289:SER:O	1.72	0.89
1:A:154:LYS:HD3	4:A:420:HOH:O	1.82	0.79
1:A:187:GLU:HB3	1:A:340:ARG:HD3	1.64	0.79
1:B:155:GLU:HG3	4:B:397:HOH:O	1.89	0.71
1:B:250:LYS:O	1:B:250:LYS:HG3	1.89	0.71
1:B:98:THR:HG23	4:B:422:HOH:O	1.90	0.71
1:A:57:ALA:HB1	1:A:114:MET:CE	2.20	0.70
1:A:48:SER:HB2	1:A:110:GLU:HB3	1.75	0.68
1:B:32:THR:HG22	4:B:478:HOH:O	1.94	0.67
1:B:305:ILE:O	1:B:310:GLY:HA3	1.95	0.66
4:A:511:HOH:O	1:B:56:THR:HG21	1.95	0.65
1:B:191[A]:HIS:HD2	4:B:365:HOH:O	1.63	0.65
1:A:38:ASP:OD1	1:A:228:GLY:HA3	1.96	0.65
1:A:221:CYS:HB2	4:A:373:HOH:O	1.99	0.63
1:A:163:ASN:HD22	1:A:164:ARG:H	1.46	0.62
1:A:57:ALA:CB	1:A:114:MET:HE2	2.29	0.62
1:A:123:GLU:HG2	4:A:531:HOH:O	2.00	0.60
1:A:218:GLU:O	1:A:219:ASP:HB2	2.01	0.60
1:B:163:ASN:HD22	1:B:164:ARG:H	1.49	0.60
1:A:57:ALA:HB1	1:A:114:MET:HE2	1.85	0.58
1:A:57:ALA:HB1	1:A:114:MET:HE3	1.85	0.57
1:A:163:ASN:ND2	1:A:164:ARG:H	2.04	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:209:SER:HB2	1:A:269:SER:HB2	1.87	0.56
1:A:206:LYS:HD2	4:A:473:HOH:O	2.06	0.55
1:A:139:ARG:HD3	4:A:361:HOH:O	2.07	0.53
1:A:196:ILE:CD1	1:A:222:LEU:HD22	2.39	0.53
1:A:24:ILE:HG22	1:A:99:VAL:HG13	1.91	0.53
1:A:135:GLN:NE2	4:A:404:HOH:O	2.33	0.53
1:B:163:ASN:ND2	1:B:164:ARG:H	2.05	0.53
1:A:291:SER:OG	1:A:293:LYS:HD2	2.11	0.51
1:A:293:LYS:HD2	1:A:293:LYS:H	1.75	0.51
1:B:50:LYS:HE3	4:B:429:HOH:O	2.10	0.51
1:B:139:ARG:HD3	4:B:382:HOH:O	2.10	0.51
1:A:72:TYR:HE2	1:A:93:SER:HB3	1.76	0.51
1:B:48:SER:HB2	1:B:110:GLU:HB3	1.92	0.51
1:A:16:MET:O	1:A:17:ASP:HB2	2.11	0.51
1:A:82:ARG:HG2	1:A:82:ARG:O	2.11	0.50
1:A:163:ASN:ND2	1:A:341:HIS:HD2	2.10	0.50
1:A:107:MET:HE3	3:A:344:NAG:H82	1.95	0.49
1:A:114:MET:HE3	1:A:119:PHE:HB3	1.92	0.49
1:A:163:ASN:ND2	1:A:341:HIS:CD2	2.81	0.49
1:B:196:ILE:CD1	1:B:222:LEU:HD22	2.42	0.49
1:B:291:SER:OG	1:B:293:LYS:HD2	2.12	0.49
1:B:187:GLU:HG2	1:B:340:ARG:HE	1.79	0.48
1:B:262:GLY:HA3	1:B:287:GLN:HE22	1.79	0.48
1:A:154:LYS:HG2	1:A:155:GLU:HG2	1.97	0.47
1:B:98:THR:HG22	4:B:468:HOH:O	2.14	0.47
1:A:15:TYR:CD1	1:A:123:GLU:HG3	2.50	0.47
1:B:14:ASN:OD1	1:B:14:ASN:C	2.57	0.47
2:B:342:A7T:C19	2:B:342:A7T:H31	2.45	0.47
1:A:53:ARG:HG3	1:A:59:VAL:HG22	1.97	0.47
1:B:184:GLN:HE21	1:B:184:GLN:HA	1.79	0.47
1:B:11:ILE:HD12	1:B:172:LEU:HD11	1.96	0.47
1:A:34:LYS:NZ	1:B:56:THR:HG22	2.30	0.46
1:B:116:ALA:O	1:B:120:MET:HG2	2.15	0.46
1:A:78:GLU:HA	1:A:78:GLU:OE1	2.16	0.46
1:A:57:ALA:HB3	1:A:114:MET:HE2	1.97	0.46
1:B:328:ASP:OD1	1:B:328:ASP:C	2.58	0.46
1:B:160:PHE:CZ	1:B:176:ILE:HD12	2.52	0.45
1:A:159:SER:HB3	1:A:326:GLU:HA	1.98	0.45
1:B:164:ARG:HD2	4:B:432:HOH:O	2.16	0.45
1:A:34:LYS:HZ1	1:B:56:THR:HG22	1.81	0.45
1:B:217:CYS:SG	1:B:217:CYS:O	2.75	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:322:LYS:HG2	1:B:323:PHE:CE2	2.52	0.45
1:B:15:TYR:CE2	1:B:16:MET:HE2	2.53	0.44
1:B:161:TYR:OH	1:B:341:HIS:HD2	2.01	0.44
1:A:16:MET:HE1	1:B:87:THR:H	1.82	0.44
2:A:342:A7T:C18	2:A:342:A7T:C23	2.96	0.43
1:B:73:LYS:HB2	1:B:94:GLN:HB3	2.00	0.43
1:A:163:ASN:HD22	1:A:341:HIS:CD2	2.37	0.42
1:A:198:THR:HG23	1:A:332:ASN:OD1	2.19	0.42
1:B:141:THR:HA	1:B:142:PRO:HD3	1.78	0.42
1:A:74:HIS:CD2	4:A:369:HOH:O	2.73	0.42
1:A:81:LEU:HB3	1:A:88:VAL:HG13	2.00	0.42
1:A:16:MET:HE3	1:A:16:MET:HB3	1.97	0.42
2:A:342:A7T:H15	2:A:342:A7T:H12A	1.89	0.41
1:A:74:HIS:HD2	4:A:369:HOH:O	2.02	0.41
1:A:293:LYS:HD2	1:A:293:LYS:N	2.37	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	334/341 (98%)	322 (96%)	10 (3%)	2 (1%)	21	17
1	B	331/341 (97%)	321 (97%)	9 (3%)	1 (0%)	36	35
All	All	665/682 (98%)	643 (97%)	19 (3%)	3 (0%)	24	21

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	251	ARG
1	A	262	GLY
1	B	100	GLY

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	288/291 (99%)	266 (92%)	22 (8%)	12	9
1	B	285/291 (98%)	262 (92%)	23 (8%)	11	7
All	All	573/582 (98%)	528 (92%)	45 (8%)	11	8

All (45) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	16	MET
1	A	52	SER
1	A	54	LEU
1	A	82	ARG
1	A	88	VAL
1	A	92	LEU
1	A	99	VAL
1	A	113	GLU
1	A	117	LEU
1	A	140	VAL
1	A	157	VAL
1	A	159	SER
1	A	198	THR
1	A	206	LYS
1	A	216	LEU
1	A	237	SER
1	A	252	LEU
1	A	279	LEU
1	A	288	GLU
1	A	289	SER
1	A	292	SER
1	A	340	ARG
1	B	6	THR
1	B	32	THR
1	B	62	LYS
1	B	79	LEU
1	B	87	THR

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Mol	Chain	Res	Type
1	B	88	VAL
1	B	104	VAL
1	B	107	MET
1	B	117	LEU
1	B	140	VAL
1	B	181	SER
1	B	197	LYS
1	B	198	THR
1	B	200	VAL
1	B	206	LYS
1	B	218	GLU
1	B	253	PHE
1	B	258	LYS
1	B	265	LEU
1	B	275	LYS
1	B	288	GLU
1	B	293	LYS
1	B	303	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (19) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	135	GLN
1	A	150	GLN
1	A	163	ASN
1	A	175	GLN
1	A	185	HIS
1	A	194	ASN
1	A	202	GLN
1	A	287	GLN
1	A	301	HIS
1	A	331	ASN
1	A	341	HIS
1	B	135	GLN
1	B	163	ASN
1	B	175	GLN
1	B	184	GLN
1	B	194	ASN
1	B	202	GLN
1	B	287	GLN
1	B	341	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 ⓘ

5 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$
3	NAG	A	344	1	14,14,15	0.89	1 (7%)	17,19,21	1.75	6 (35%)
2	A7T	B	342	-	44,48,48	1.26	5 (11%)	59,69,69	2.56	14 (23%)
3	NAG	B	343	1	14,14,15	0.53	0	17,19,21	1.81	5 (29%)
2	A7T	A	342	-	44,48,48	1.41	7 (15%)	59,69,69	2.72	17 (28%)
3	NAG	A	343	1	14,14,15	0.64	0	17,19,21	0.95	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
3	NAG	A	344	1	1/1/5/7	2/6/23/26	0/1/1/1
2	A7T	B	342	-	-	2/27/51/51	0/6/6/6
3	NAG	B	343	1	-	2/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	A7T	A	342	-	-	4/27/51/51	0/6/6/6
3	NAG	A	343	1	-	4/6/23/26	0/1/1/1

All (13) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	342	A7T	C3-C2	4.15	1.49	1.41
2	A	342	A7T	C3-C6	3.90	1.48	1.41
2	A	342	A7T	C25-N28	-3.72	1.44	1.47
2	B	342	A7T	C3-C2	3.63	1.48	1.41
2	B	342	A7T	C3-C6	3.18	1.47	1.41
2	A	342	A7T	C6-CL9	2.84	1.80	1.73
2	B	342	A7T	C19-C20	2.83	1.53	1.49
2	A	342	A7T	C2-CL1	2.75	1.80	1.73
2	A	342	A7T	C22-C20	2.52	1.53	1.50
2	B	342	A7T	C6-CL9	2.48	1.79	1.73
3	A	344	NAG	C1-C2	2.33	1.55	1.52
2	B	342	A7T	C34-C31	2.17	1.53	1.48
2	A	342	A7T	C34-C31	2.10	1.53	1.48

All (43) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	342	A7T	C30-N33-C29	10.28	123.70	111.78
2	A	342	A7T	C34-C31-N27	-9.03	107.23	118.46
2	B	342	A7T	C30-N33-C29	8.22	121.31	111.78
2	A	342	A7T	C32-N27-C31	-8.17	110.27	118.34
2	B	342	A7T	C34-C31-N27	-7.70	108.88	118.46
2	B	342	A7T	C35-C31-N27	-7.44	109.21	118.46
2	B	342	A7T	C36-C32-N27	7.19	123.95	113.14
2	A	342	A7T	C36-C32-N27	5.91	122.03	113.14
2	A	342	A7T	C35-C31-N27	-5.66	111.42	118.46
2	B	342	A7T	C32-N27-C31	-5.15	113.25	118.34
2	B	342	A7T	C30-C25-C22	-4.69	107.25	112.68
2	B	342	A7T	C21-C23-N27	4.12	123.94	119.66
3	B	343	NAG	C4-C3-C2	3.92	116.76	111.02
3	B	343	NAG	C1-O5-C5	3.84	117.33	112.19
2	A	342	A7T	C21-C23-N27	3.24	123.02	119.66
2	B	342	A7T	C4-C7-C10	3.21	121.67	118.11
3	A	344	NAG	O5-C5-C4	-3.09	103.32	110.83
2	B	342	A7T	C25-C22-C20	3.05	115.78	110.20
2	B	342	A7T	C10-C6-CL9	3.02	123.40	118.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	342	A7T	C4-C7-C10	3.02	121.46	118.11
2	A	342	A7T	C36-C37-C39	2.98	120.72	119.29
2	B	342	A7T	C29-C24-C21	-2.97	109.07	112.25
2	A	342	A7T	C10-C6-C3	-2.72	118.28	122.48
3	A	344	NAG	O5-C1-C2	-2.65	107.19	111.29
3	A	344	NAG	C3-C4-C5	-2.63	105.46	110.23
2	B	342	A7T	C11-C7-C4	-2.56	117.45	120.92
2	A	342	A7T	C30-C25-C22	-2.55	109.73	112.68
3	A	344	NAG	C1-C2-N2	2.52	114.41	110.43
2	A	342	A7T	C3-C2-CL1	2.49	121.69	118.40
3	B	343	NAG	C3-C4-C5	2.48	114.73	110.23
3	B	343	NAG	O3-C3-C4	-2.43	104.64	110.38
2	A	342	A7T	C17-C19-C20	-2.30	118.04	121.00
3	A	344	NAG	C6-C5-C4	2.29	118.65	113.02
3	A	343	NAG	C1-O5-C5	2.29	115.26	112.19
3	A	344	NAG	C1-O5-C5	-2.22	109.22	112.19
2	A	342	A7T	C32-C36-C37	-2.18	116.64	120.54
2	A	342	A7T	C11-C7-C4	-2.17	117.98	120.92
2	A	342	A7T	C25-C22-C20	2.15	114.14	110.20
2	B	342	A7T	C16-C18-C19	2.09	123.04	120.80
2	A	342	A7T	C3-C6-CL9	2.08	121.14	118.40
2	A	342	A7T	C6-C10-C7	2.06	121.86	120.58
3	B	343	NAG	O5-C1-C2	-2.05	108.12	111.29
2	B	342	A7T	C32-N27-C23	2.04	122.65	116.97

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
3	A	344	NAG	C1

All (14) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	344	NAG	C8-C7-N2-C2
3	B	343	NAG	C4-C5-C6-O6
3	A	343	NAG	C8-C7-N2-C2
3	A	344	NAG	O7-C7-N2-C2
3	A	343	NAG	O5-C5-C6-O6
2	A	342	A7T	O13-C12-C8-O5
3	B	343	NAG	O5-C5-C6-O6
3	A	343	NAG	O7-C7-N2-C2
3	A	343	NAG	C4-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
2	B	342	A7T	O13-C12-C8-O5
2	B	342	A7T	C8-C12-O13-C14
2	A	342	A7T	C8-C12-O13-C14
2	A	342	A7T	C35-C31-N27-C23
2	A	342	A7T	C34-C31-N27-C23

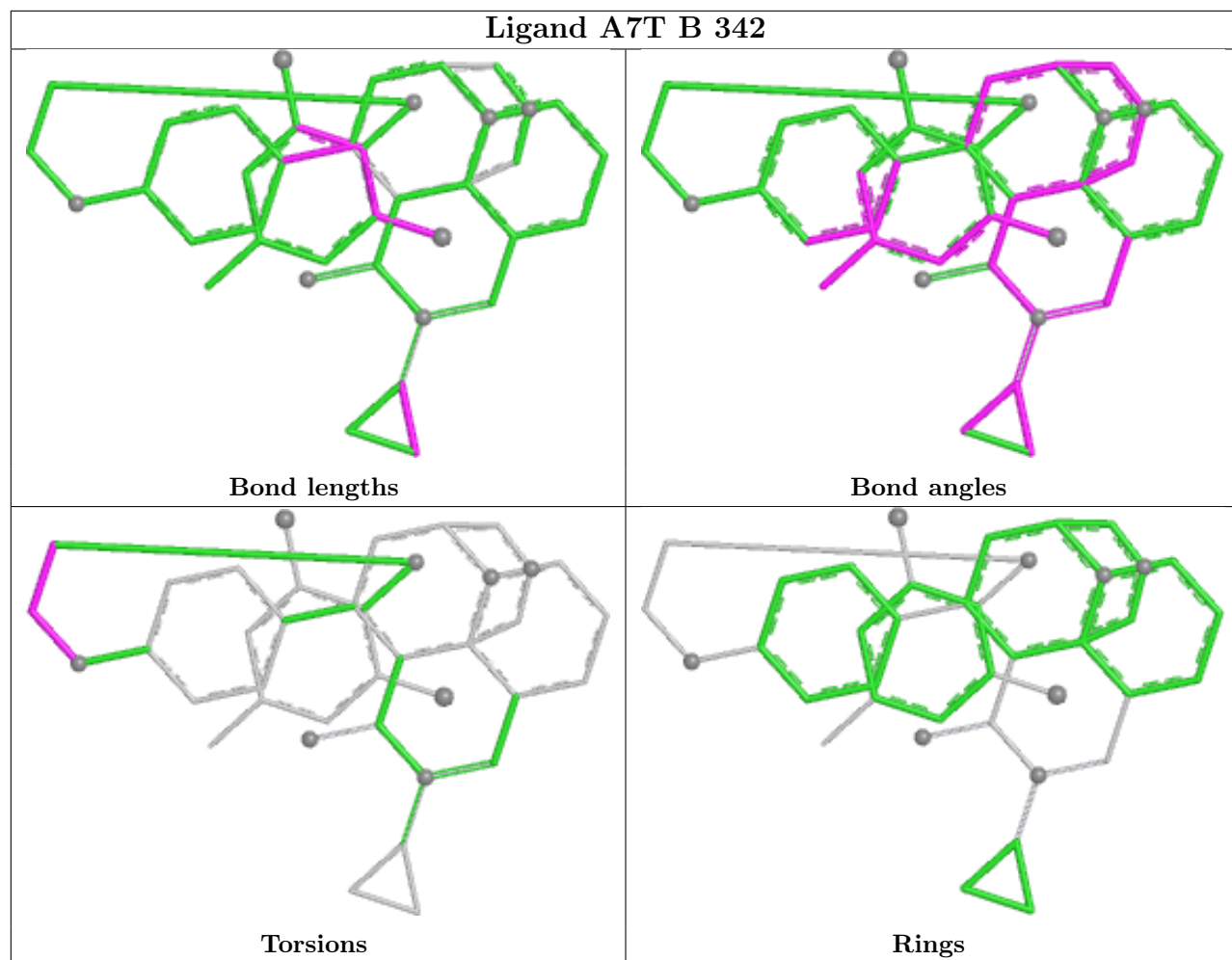
There are no ring outliers.

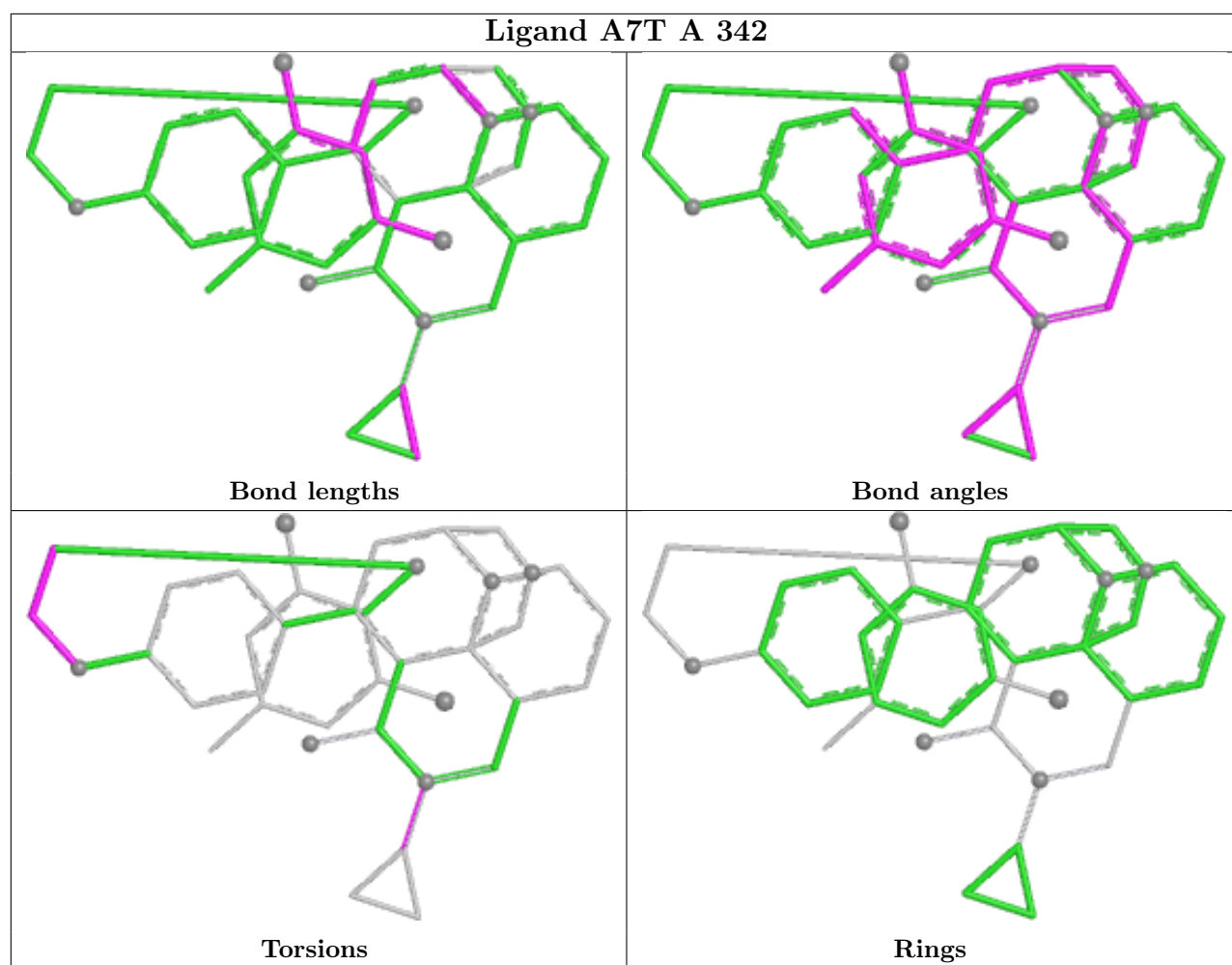
3 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	344	NAG	1	0
2	B	342	A7T	1	0
2	A	342	A7T	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.

Ligand A7T B 342





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	337/341 (98%)	0.52	24 (7%)	22 20	14, 40, 67, 77	1 (0%)
1	B	334/341 (97%)	0.13	12 (3%)	46 45	17, 32, 52, 66	1 (0%)
All	All	671/682 (98%)	0.32	36 (5%)	31 30	14, 37, 62, 77	2 (0%)

All (36) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	217	CYS	4.6
1	B	252	LEU	4.6
1	A	253	PHE	4.4
1	B	253	PHE	4.1
1	B	217	CYS	3.8
1	A	76	GLY	3.6
1	B	4	GLY	3.5
1	A	248	ALA	3.1
1	A	215	LEU	3.0
1	A	209	SER	2.9
1	A	244	GLU	2.8
1	A	210	VAL	2.8
1	A	259	CYS	2.7
1	A	275	LYS	2.6
1	A	257	VAL	2.5
1	B	254	ASP	2.5
1	B	215	LEU	2.5
1	A	55	TYR	2.5
1	A	252	LEU	2.4
1	A	304	ASP	2.4
1	A	219	ASP	2.4
1	B	220	GLY	2.3
1	A	296	CYS	2.3
1	A	211	GLY	2.3

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Mol	Chain	Res	Type	RSRZ
1	B	259	CYS	2.2
1	A	290	TYR	2.2
1	B	219	ASP	2.2
1	A	306	PRO	2.1
1	A	274	GLY	2.1
1	A	282	ALA	2.1
1	B	53	ARG	2.1
1	A	136	ALA	2.1
1	A	78	GLU	2.0
1	B	211	GLY	2.0
1	B	166	SER	2.0
1	A	255	TYR	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 oligosaccharides in this entry.

6.4 Ligands [i](#)

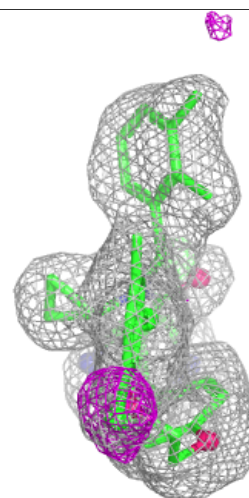
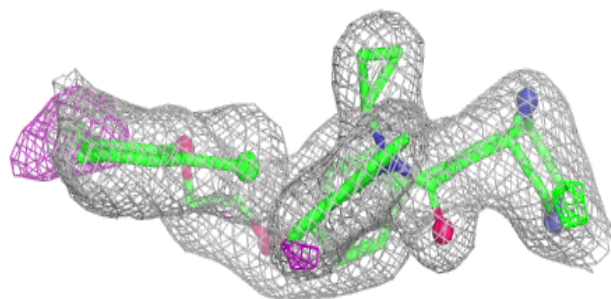
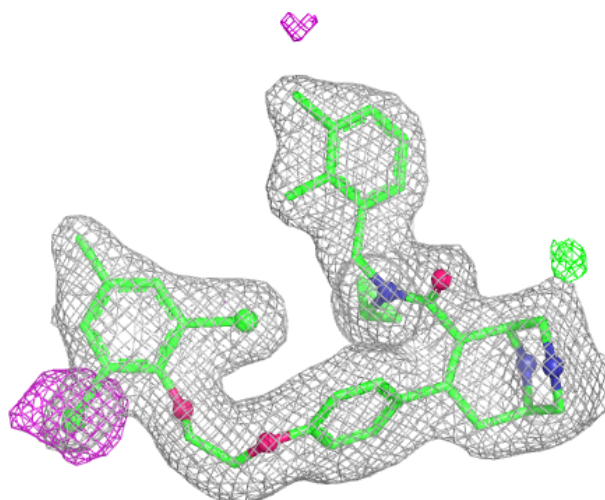
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
3	NAG	A	343	14/15	0.71	0.14	56,62,65,66	0
3	NAG	A	344	14/15	0.74	0.14	65,68,68,68	0
3	NAG	B	343	14/15	0.80	0.12	50,56,59,59	0
2	A7T	A	342	43/43	0.89	0.10	34,38,51,52	0
2	A7T	B	342	43/43	0.91	0.09	26,30,41,43	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.

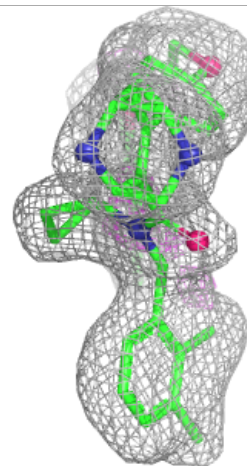
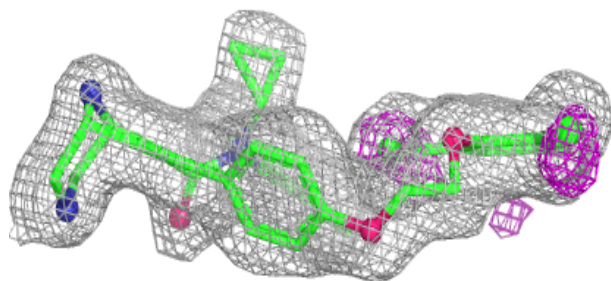
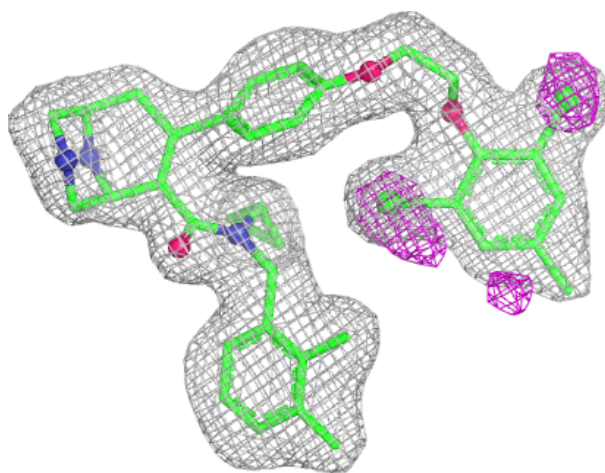
Electron density around A7T A 342:

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



Electron density around A7T B 342:

$2mF_o-DF_c$ (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.