



# Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 12:52 PM UTC

PDB ID : 9H79 / pdb\_00009h79  
Title : Crystal structure of Thrombin in complex with a Chlorothiophene-based inhibitor, CP2, discovered by a novel rapid nanoscale library screening.  
Authors : Chinellato, M.; Zsolt, B.; Angelini, A.; Heinis, C.; Cendron, L.  
Deposited on : 2024-10-27  
Resolution : 3.00 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](mailto: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>.

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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

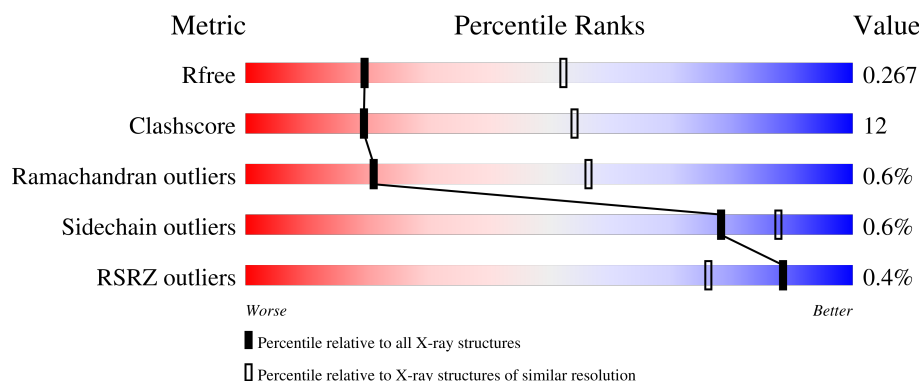
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.00 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	2672 (3.00-3.00)
Clashscore	190562	2977 (3.00-3.00)
Ramachandran outliers	187476	2877 (3.00-3.00)
Sidechain outliers	187428	2880 (3.00-3.00)
RSRZ outliers	180081	2671 (3.00-3.00)

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  $\geq 3$ , 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	49	
1	C	49	
1	E	49	
1	G	49	
2	B	259	

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Mol	Chain	Length	Quality of chain
2	D	259	<div><div>%</div><div><div></div><div>68%</div><div>30%</div><div></div></div><div></div></div>
2	F	259	<div><div></div><div>71%</div><div>27%</div><div></div></div> <div></div>
2	H	259	<div><div></div><div>68%</div><div>29%</div><div></div></div> <div></div>

## 2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 9428 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.

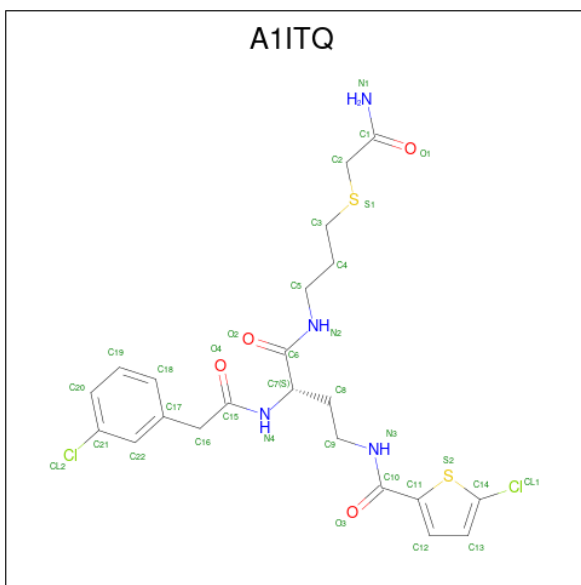
- Molecule 1 is a protein called Thrombin light chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	30	Total	C	N	O	S	0	0	0
			243	151	39	52	1			
1	C	30	Total	C	N	O	S	0	0	0
			243	151	39	52	1			
1	E	30	Total	C	N	O	S	0	0	0
			243	151	39	52	1			
1	G	30	Total	C	N	O	S	0	0	0
			243	151	39	52	1			

- Molecule 2 is a protein called Prothrombin.

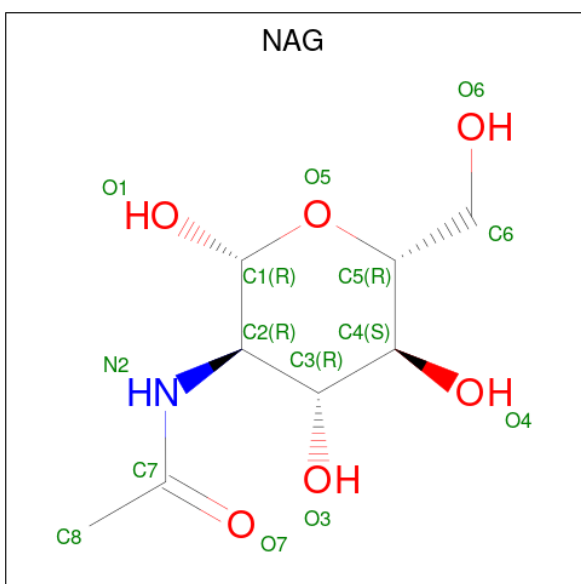
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	258	Total	C	N	O	S	0	0	0
			2083	1329	369	371	14			
2	D	254	Total	C	N	O	S	0	0	0
			2059	1315	364	366	14			
2	F	256	Total	C	N	O	S	0	0	0
			2072	1322	367	369	14			
2	H	251	Total	C	N	O	S	0	0	0
			2029	1294	359	362	14			

- Molecule 3 is {N}-[(3 {S})-4-[3-(2-azanyl-2-oxidanylidene-ethyl)sulfanylpropylamino]-3-[2-(3-chlorophenyl)ethanoylamino]-4-oxidanylidene-butyl]-5-chloranyl-thiophene-2-carboxamide (CCD ID: A1ITQ) (formula: C<sub>22</sub>H<sub>26</sub>Cl<sub>2</sub>N<sub>4</sub>O<sub>4</sub>S<sub>2</sub>) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
3	B	1	Total	C	Cl	N	O	S	0	0
			34	22	2	4	4	2		
3	D	1	Total	C	Cl	N	O	S	0	0
			34	22	2	4	4	2		
3	F	1	Total	C	Cl	N	O	S	0	0
			34	22	2	4	4	2		
3	H	1	Total	C	Cl	N	O	S	0	0
			34	22	2	4	4	2		

- Molecule 4 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula:  $C_8H_{15}NO_6$ ).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	B	1	Total	C	N	O	0	0
			14	8	1	5		
4	D	1	Total	C	N	O	0	0
			14	8	1	5		
4	F	1	Total	C	N	O	0	0
			14	8	1	5		

- Molecule 5 is SODIUM ION (CCD ID: NA) (formula: Na).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	B	1	Total	Na	0	0
			1	1		
5	F	1	Total	Na	0	0
			1	1		
5	H	1	Total	Na	0	0
			1	1		

- Molecule 6 is water.

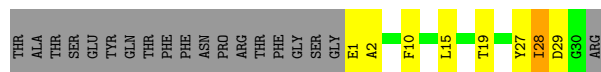
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	B	7	Total	O	0	0
			7	7		
6	D	7	Total	O	0	0
			7	7		
6	F	11	Total	O	0	0
			11	11		
6	H	7	Total	O	0	0
			7	7		

### 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.

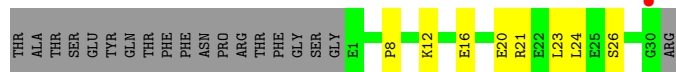
- Molecule 1: Thrombin light chain

Chain A: 



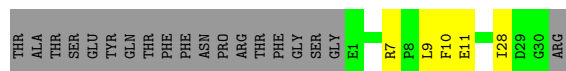
- Molecule 1: Thrombin light chain

Chain C: 



- Molecule 1: Thrombin light chain

Chain E: 



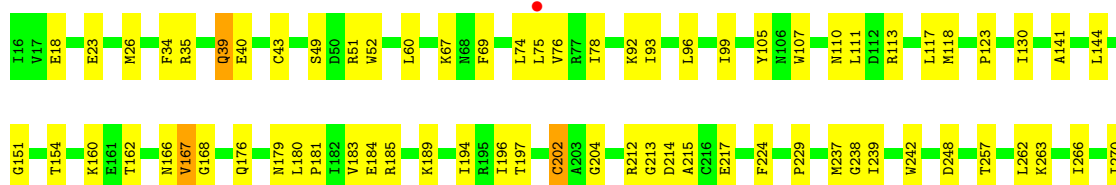
- Molecule 1: Thrombin light chain

Chain G: 



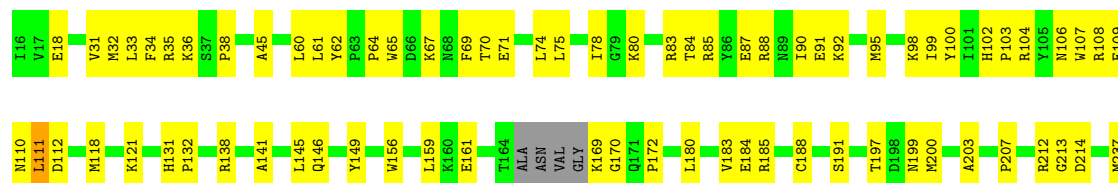
- Molecule 2: Prothrombin

Chain B: 

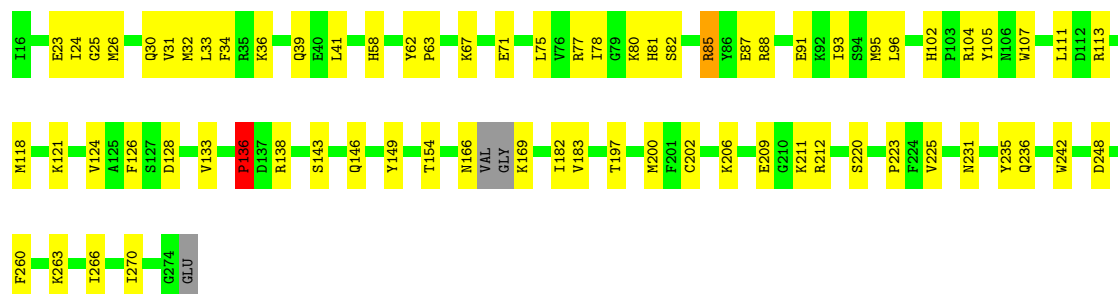




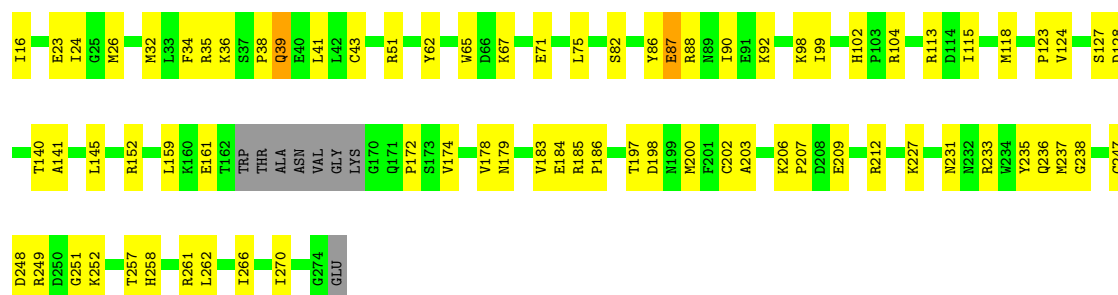
• Molecule 2: Prothrombin



• Molecule 2: Prothrombin



• Molecule 2: Prothrombin





## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	75.70Å 85.33Å 214.28Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	44.37 – 3.00 44.37 – 3.00	Depositor EDS
% Data completeness (in resolution range)	97.8 (44.37-3.00) 97.7 (44.37-3.00)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.44 (at 3.01Å)	Xtriage
Refinement program	PHENIX (1.20.1_4487: ???)	Depositor
R, $R_{free}$	0.204 , 0.266 0.205 , 0.267	Depositor DCC
$R_{free}$ test set	1409 reflections (4.93%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	68.8	Xtriage
Anisotropy	0.148	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.32 , 57.0	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.50$ , $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.93	EDS
Total number of atoms	9428	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	65.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.43% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical 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: NAG, A1ITQ, NA

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
1	A	0.18	0/245	0.52	0/326
1	C	0.13	0/245	0.40	0/326
1	E	0.16	0/245	0.52	0/326
1	G	0.13	0/245	0.40	0/326
2	B	0.17	0/2138	0.46	0/2891
2	D	0.22	0/2113	0.48	0/2855
2	F	0.18	0/2126	0.49	2/2873 (0.1%)
2	H	0.17	0/2081	0.40	0/2811
All	All	0.18	0/9438	0.46	2/12734 (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
2	D	0	1
2	F	0	3
All	All	0	4

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	F	136	PRO	N-CA-C	6.98	123.34	111.68
2	F	136	PRO	N-CA-CB	-5.89	97.44	103.15

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	D	185	ARG	Sidechain
2	F	138	ARG	Sidechain
2	F	85	ARG	Sidechain
2	F	88	ARG	Sidechain

## 5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	243	0	238	6	0
1	C	243	0	238	4	0
1	E	243	0	239	7	0
1	G	243	0	238	14	0
2	B	2083	0	2057	45	0
2	D	2059	0	2033	51	0
2	F	2072	0	2045	53	0
2	H	2029	0	2004	48	0
3	B	34	0	0	1	0
3	D	34	0	0	2	0
3	F	34	0	0	0	0
3	H	34	0	0	0	0
4	B	14	0	13	0	0
4	D	14	0	13	3	0
4	F	14	0	13	0	0
5	B	1	0	0	0	0
5	F	1	0	0	0	0
5	H	1	0	0	0	0
6	B	7	0	0	0	0
6	D	7	0	0	0	0
6	F	11	0	0	0	0
6	H	7	0	0	0	0
All	All	9428	0	9131	214	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 12.

All (214) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:65:TRP:CZ2	3:D:301:A1ITQ:CL2	2.59	0.92
2:D:71:GLU:HG2	2:D:98:LYS:HA	1.57	0.84
2:B:75:LEU:HD13	2:B:93:ILE:HG23	1.64	0.80
2:D:159:LEU:HD21	2:D:172:PRO:HB3	1.64	0.79
2:H:185:ARG:NH2	2:H:197:THR:O	2.20	0.75
2:D:65:TRP:CH2	3:D:301:A1ITQ:CL2	2.77	0.75
2:D:18:GLU:HG3	2:D:212:ARG:HB2	1.68	0.75
2:B:185:ARG:NH2	2:B:197:THR:O	2.21	0.74
2:D:87:GLU:HB3	2:D:90:ILE:HB	1.70	0.74
2:H:99:ILE:HG12	2:H:118:MET:HG2	1.69	0.74
2:H:35:ARG:HD3	2:H:38:PRO:HD2	1.69	0.74
2:H:161:GLU:HB2	2:H:247:CYS:HB2	1.72	0.72
2:D:71:GLU:HG3	2:D:99:ILE:HG12	1.70	0.71
1:A:28:ILE:HG13	1:A:29:ASP:H	1.56	0.71
2:F:36:LYS:HG2	2:F:75:LEU:HD23	1.71	0.71
2:F:30:GLN:NE2	2:F:154:THR:OG1	2.25	0.70
2:H:34:PHE:HE2	2:H:39:GLN:HG3	1.58	0.69
2:B:212:ARG:NH2	2:B:248:ASP:O	2.27	0.67
2:F:80:LYS:HG2	2:F:91:GLU:HG3	1.76	0.67
1:A:1:GLU:HG3	1:A:2:ALA:H	1.59	0.66
2:B:117:LEU:HD11	2:B:266:ILE:HG23	1.77	0.66
2:D:61:LEU:HD21	4:D:302:NAG:H83	1.77	0.66
2:B:74:LEU:HD11	2:B:96:LEU:HD11	1.78	0.65
2:D:83:ARG:HB2	2:D:156:TRP:CD1	2.32	0.65
2:H:207:PRO:HG3	2:H:251:GLY:H	1.62	0.65
2:F:105:TYR:CZ	2:F:107:TRP:HB3	2.33	0.64
1:A:10:PHE:HA	1:A:15:LEU:HB2	1.79	0.63
2:B:35:ARG:HD2	2:B:40:GLU:HG2	1.82	0.62
2:B:189:LYS:HG2	2:B:196:ILE:HD11	1.81	0.62
2:H:87:GLU:HB3	2:H:90:ILE:HB	1.80	0.62
2:D:36:LYS:HG2	2:D:75:LEU:HD23	1.81	0.62
2:B:144:LEU:HD21	2:B:229:PRO:HD3	1.82	0.61
2:B:18:GLU:HG3	2:B:212:ARG:HB2	1.83	0.61
1:C:8:PRO:HA	1:C:12:LYS:HD2	1.83	0.61
1:G:6:LEU:HD21	2:H:233:ARG:HG2	1.83	0.61
2:B:49:SER:HB3	2:B:52:TRP:HB2	1.83	0.60
4:D:302:NAG:O7	4:D:302:NAG:O3	2.16	0.60
2:F:166:ASN:HB3	2:F:169:LYS:N	2.16	0.59
2:F:62:TYR:H	2:F:67:LYS:HB2	1.67	0.59
2:F:33:LEU:HD13	2:F:118:MET:HE1	1.83	0.59
2:B:34:PHE:CE2	2:B:39:GLN:HG3	2.37	0.58
2:D:106:ASN:ND2	2:D:108:ARG:O	2.36	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:98:LYS:HB3	2:D:100:TYR:CE1	2.38	0.58
2:F:197:THR:HG23	2:F:200:MET:HE3	1.86	0.57
1:E:9:LEU:HG	2:F:128:ASP:HB3	1.85	0.57
1:C:21:ARG:HH12	1:C:24:LEU:HD22	1.70	0.56
2:B:167:VAL:HG13	2:B:168:GLY:H	1.71	0.56
2:F:24:ILE:H	2:F:24:ILE:HD12	1.71	0.56
2:H:249:ARG:HB2	2:H:252:LYS:HB2	1.86	0.56
2:D:197:THR:HG23	2:D:200:MET:HE3	1.87	0.56
1:A:27:TYR:CD2	2:B:229:PRO:HG3	2.41	0.55
2:F:266:ILE:O	2:F:270:ILE:HG12	2.07	0.55
2:D:83:ARG:HD3	2:D:156:TRP:HB3	1.89	0.55
2:B:263:LYS:HA	2:B:266:ILE:HD12	1.89	0.54
1:G:19:THR:HB	2:H:179:ASN:HD21	1.72	0.54
1:A:19:THR:HB	2:B:179:ASN:HD21	1.73	0.54
2:F:71:GLU:H	2:F:71:GLU:CD	2.17	0.53
2:H:183:VAL:HG23	2:H:203:ALA:HA	1.91	0.53
1:G:17:ASP:CG	1:G:20:GLU:HB2	2.33	0.53
2:D:35:ARG:HG2	2:D:38:PRO:O	2.09	0.52
1:E:9:LEU:HD13	2:F:25:GLY:HA3	1.90	0.52
2:F:223:PRO:HB2	2:F:225:VAL:HG13	1.90	0.52
2:D:33:LEU:HD13	2:D:118:MET:HE1	1.92	0.52
2:H:159:LEU:HD21	2:H:172:PRO:HB3	1.90	0.52
2:F:183:VAL:HB	2:F:202:CYS:SG	2.51	0.51
2:F:212:ARG:NH2	2:F:248:ASP:O	2.43	0.51
2:B:183:VAL:HB	2:B:202:CYS:SG	2.51	0.51
2:F:77:ARG:HE	2:F:80:LYS:HD2	1.74	0.51
2:H:24:ILE:HD12	2:H:24:ILE:H	1.76	0.50
2:F:32:MET:HG2	2:F:41:LEU:HD13	1.91	0.50
2:D:84:THR:OG1	2:D:85:ARG:NH1	2.44	0.50
2:H:258:HIS:CG	2:H:261:ARG:HG3	2.46	0.50
2:B:75:LEU:HD13	2:B:93:ILE:CG2	2.38	0.50
1:G:9:LEU:HG	2:H:128:ASP:HB3	1.92	0.50
2:F:85:ARG:HG3	2:F:85:ARG:HH11	1.76	0.50
2:D:18:GLU:HB2	2:D:213:GLY:HA2	1.94	0.49
1:G:9:LEU:HA	1:G:13:LYS:HD3	1.94	0.49
2:D:138:ARG:HA	2:D:260:PHE:CZ	2.48	0.49
2:B:180:LEU:HD22	2:B:204:GLY:HA2	1.94	0.49
2:H:86:TYR:O	2:H:88:ARG:N	2.45	0.49
2:D:102:HIS:CD2	2:D:104:ARG:H	2.31	0.49
1:G:19:THR:HB	2:H:179:ASN:ND2	2.28	0.49
2:H:36:LYS:HG3	2:H:75:LEU:HD23	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:223:PRO:HA	2:F:236:GLN:HE21	1.78	0.48
2:D:64:PRO:HD3	2:D:107:TRP:CE3	2.47	0.48
2:F:111:LEU:HD12	2:F:242:TRP:HB3	1.95	0.48
2:D:62:TYR:CE2	2:D:64:PRO:HB2	2.47	0.48
2:H:141:ALA:O	2:H:145:LEU:HB2	2.13	0.48
2:H:16:ILE:HG21	2:H:178:VAL:HB	1.96	0.48
2:H:197:THR:HG23	2:H:200:MET:HE3	1.94	0.48
2:B:110:ASN:O	2:B:111:LEU:HB2	2.13	0.48
2:B:76:VAL:HG13	2:B:96:LEU:HD21	1.95	0.48
2:F:149:TYR:O	2:F:182:ILE:HG13	2.14	0.48
2:F:206:LYS:HB2	2:F:209:GLU:HG3	1.94	0.48
2:D:60:LEU:HD13	2:D:99:ILE:CG2	2.43	0.48
2:D:69:PHE:CD1	2:D:74:LEU:HD21	2.48	0.48
2:D:183:VAL:HG23	2:D:203:ALA:HA	1.95	0.48
2:H:62:TYR:HD2	2:H:65:TRP:HB2	1.79	0.48
1:E:7:ARG:O	1:E:11:GLU:N	2.44	0.48
2:D:141:ALA:O	2:D:145:LEU:HB2	2.14	0.48
2:H:266:ILE:O	2:H:270:ILE:HG13	2.14	0.47
2:B:51:ARG:HE	2:B:123:PRO:HG3	1.80	0.47
2:B:113:ARG:HG2	2:B:262:LEU:HD21	1.96	0.47
2:D:31:VAL:HG13	2:D:78:ILE:HD13	1.95	0.47
4:D:302:NAG:HO3	4:D:302:NAG:C7	2.21	0.47
1:E:7:ARG:N	1:E:11:GLU:HB2	2.30	0.47
2:B:18:GLU:HB2	2:B:213:GLY:HA2	1.96	0.47
2:H:113:ARG:HG2	2:H:262:LEU:HD21	1.96	0.47
2:D:180:LEU:HD11	2:D:214:ASP:HA	1.96	0.47
2:D:188:CYS:O	2:D:191:SER:OG	2.27	0.47
2:D:87:GLU:O	2:D:91:GLU:HG2	2.14	0.46
2:B:23:GLU:O	2:B:26:MET:HB2	2.15	0.46
2:D:106:ASN:OD1	2:D:108:ARG:HG3	2.16	0.46
2:F:102:HIS:CE1	2:F:113:ARG:HD2	2.50	0.46
2:B:151:GLY:HA3	2:B:224:PHE:CE1	2.51	0.46
2:D:161:GLU:HB2	2:D:247:CYS:HB2	1.97	0.46
2:D:31:VAL:HB	2:D:45:ALA:HB3	1.97	0.46
2:F:121:LYS:HB2	2:F:121:LYS:HE2	1.71	0.46
1:G:17:ASP:HB2	2:H:26:MET:HE3	1.98	0.46
2:B:217:GLU:HG2	3:B:301:A1ITQ:C9	2.45	0.46
2:F:34:PHE:CD2	2:F:77:ARG:HG3	2.51	0.46
2:H:32:MET:HG3	2:H:41:LEU:HD13	1.98	0.46
2:F:36:LYS:NZ	2:F:95:MET:SD	2.78	0.46
2:H:198:ASP:HB2	2:H:261:ARG:NH2	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:154:THR:HA	2:B:176:GLN:O	2.17	0.45
1:G:23:LEU:O	1:G:26:SER:OG	2.31	0.45
2:D:141:ALA:HA	2:D:237:MET:HE1	1.97	0.45
2:D:70:THR:HG22	2:D:71:GLU:H	1.82	0.45
2:D:184:GLU:H	2:D:184:GLU:CD	2.25	0.45
2:F:34:PHE:HD2	2:F:77:ARG:HG3	1.82	0.45
2:H:115:ILE:HD11	2:H:266:ILE:HD11	1.99	0.45
2:F:133:VAL:HG11	2:F:236:GLN:HB2	1.98	0.45
1:G:8:PRO:HB2	2:H:128:ASP:HA	1.99	0.45
1:A:27:TYR:CE2	2:B:229:PRO:HG3	2.51	0.44
2:F:143:SER:O	2:F:146:GLN:NE2	2.47	0.44
2:F:32:MET:SD	2:F:34:PHE:HE2	2.40	0.44
2:F:32:MET:HB3	2:F:77:ARG:HB2	1.99	0.44
2:F:58:HIS:CE1	2:F:220:SER:HB3	2.53	0.44
1:G:2:ALA:O	2:H:233:ARG:NH2	2.47	0.44
1:G:8:PRO:HG2	2:H:127:SER:O	2.18	0.44
2:H:184:GLU:H	2:H:184:GLU:CD	2.23	0.44
2:D:67:LYS:HE2	2:D:67:LYS:HB3	1.75	0.44
2:F:71:GLU:HB3	2:F:96:LEU:O	2.18	0.44
2:B:214:ASP:OD1	2:B:215:ALA:N	2.51	0.44
2:F:63:PRO:HG2	2:F:107:TRP:CE2	2.53	0.43
2:B:141:ALA:HA	2:B:237:MET:HE1	2.01	0.43
1:C:23:LEU:O	1:C:26:SER:OG	2.36	0.43
2:D:92:LYS:HA	2:D:92:LYS:HD3	1.62	0.43
1:E:7:ARG:HB2	1:E:11:GLU:OE1	2.17	0.43
2:F:67:LYS:HB3	2:F:67:LYS:HE3	1.67	0.43
2:B:60:LEU:HD13	2:B:99:ILE:HG21	2.00	0.43
1:E:7:ARG:HB3	1:E:10:PHE:HB2	2.00	0.43
2:F:32:MET:SD	2:F:80:LYS:HD3	2.59	0.43
2:F:34:PHE:HE1	2:F:39:GLN:HE21	1.66	0.43
2:F:95:MET:HE3	2:F:121:LYS:NZ	2.34	0.43
2:B:92:LYS:HD3	2:B:92:LYS:HA	1.77	0.43
2:H:231:ASN:ND2	2:H:235:TYR:OH	2.51	0.43
2:F:23:GLU:O	2:F:26:MET:HB2	2.18	0.43
2:H:71:GLU:HG2	2:H:98:LYS:HA	1.99	0.43
2:B:238:GLY:HA2	2:B:257:THR:O	2.19	0.43
2:D:32:MET:SD	2:D:34:PHE:HE1	2.42	0.43
2:H:82:SER:HA	2:H:174:VAL:HA	1.99	0.43
2:D:88:ARG:O	2:D:88:ARG:HG3	2.18	0.43
2:F:31:VAL:HG13	2:F:78:ILE:HG12	2.01	0.42
1:G:20:GLU:OE2	2:H:227:LYS:HE2	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:81:HIS:HB3	2:F:87:GLU:OE1	2.19	0.42
2:F:124:VAL:HG23	2:F:126:PHE:HE1	1.84	0.42
2:B:239:ILE:HB	2:B:257:THR:HB	2.02	0.42
2:D:95:MET:HG3	2:D:121:LYS:HD2	2.01	0.42
2:D:207:PRO:HG3	2:D:251:GLY:H	1.85	0.42
2:F:80:LYS:HE3	2:F:80:LYS:HB3	1.88	0.42
2:H:51:ARG:HE	2:H:123:PRO:HG3	1.84	0.42
2:B:52:TRP:CE2	2:B:270:ILE:HG12	2.55	0.42
2:D:110:ASN:O	2:D:200:MET:HE1	2.19	0.42
2:H:62:TYR:H	2:H:67:LYS:HB2	1.83	0.42
2:B:78:ILE:HG22	2:B:130:ILE:HG12	2.01	0.42
2:F:80:LYS:NZ	2:F:87:GLU:HG2	2.34	0.42
2:H:236:GLN:NE2	2:H:238:GLY:O	2.39	0.42
2:B:34:PHE:HE2	2:B:39:GLN:HG3	1.83	0.42
2:B:67:LYS:HE3	2:B:69:PHE:HE2	1.84	0.42
2:D:103:PRO:HD3	2:D:265:TRP:NE1	2.33	0.42
2:D:169:LYS:HB2	2:D:170:GLY:H	1.70	0.42
2:F:231:ASN:ND2	2:F:235:TYR:OH	2.52	0.42
2:H:185:ARG:HB3	2:H:186:PRO:HD3	2.00	0.42
2:H:212:ARG:HB3	2:H:248:ASP:OD2	2.19	0.41
2:F:136:PRO:HG2	2:F:260:PHE:HB2	2.02	0.41
2:B:160:LYS:NZ	2:B:162:THR:O	2.51	0.41
2:D:80:LYS:HB3	2:D:80:LYS:HE3	1.79	0.41
2:F:75:LEU:HD13	2:F:93:ILE:HG23	2.01	0.41
2:F:211:LYS:HE2	2:F:211:LYS:HB3	1.71	0.41
2:H:92:LYS:HG2	2:H:124:VAL:HG23	2.01	0.41
2:B:105:TYR:CZ	2:B:107:TRP:HB3	2.55	0.41
2:F:82:SER:N	2:F:87:GLU:OE1	2.52	0.41
2:F:102:HIS:CE1	2:F:104:ARG:HB2	2.56	0.41
1:C:16:GLU:HA	1:C:20:GLU:OE2	2.20	0.41
2:B:99:ILE:HG12	2:B:118:MET:HG2	2.03	0.41
2:B:180:LEU:HA	2:B:181:PRO:HD3	1.90	0.41
2:B:184:GLU:H	2:B:184:GLU:CD	2.29	0.41
2:D:112:ASP:OD1	2:D:199:ASN:ND2	2.47	0.41
2:H:238:GLY:HA2	2:H:257:THR:O	2.21	0.41
2:B:194:ILE:HD13	2:B:194:ILE:HA	1.96	0.41
2:H:140:THR:HG22	2:H:237:MET:HE1	2.02	0.41
2:B:111:LEU:HD12	2:B:242:TRP:HB3	2.03	0.40
2:F:263:LYS:HA	2:F:266:ILE:HD12	2.03	0.40
2:H:102:HIS:CD2	2:H:104:ARG:H	2.39	0.40
2:D:110:ASN:O	2:D:111:LEU:HB2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:28:ILE:HD13	1:E:28:ILE:HA	1.88	0.40
2:F:107:TRP:HA	2:F:111:LEU:HD23	2.03	0.40
1:G:17:ASP:OD1	2:H:152:ARG:NH2	2.50	0.40
1:G:18:LYS:HB2	2:H:23:GLU:OE2	2.21	0.40
2:D:70:THR:HG22	2:D:71:GLU:N	2.37	0.40
2:D:131:HIS:CG	2:D:132:PRO:HD2	2.56	0.40
2:D:146:GLN:HG3	2:D:149:TYR:CE2	2.57	0.40
2:H:206:LYS:HB2	2:H:209:GLU:HG3	2.04	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	28/49 (57%)	26 (93%)	1 (4%)	1 (4%)	2	16
1	C	28/49 (57%)	27 (96%)	1 (4%)	0	100	100
1	E	28/49 (57%)	23 (82%)	5 (18%)	0	100	100
1	G	28/49 (57%)	26 (93%)	2 (7%)	0	100	100
2	B	256/259 (99%)	240 (94%)	13 (5%)	3 (1%)	10	40
2	D	250/259 (96%)	236 (94%)	13 (5%)	1 (0%)	30	65
2	F	252/259 (97%)	233 (92%)	19 (8%)	0	100	100
2	H	247/259 (95%)	228 (92%)	17 (7%)	2 (1%)	16	50
All	All	1117/1232 (91%)	1039 (93%)	71 (6%)	7 (1%)	21	56

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	39	GLN
2	B	166	ASN

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Mol	Chain	Res	Type
2	H	39	GLN
2	H	87	GLU
2	D	109	GLU
1	A	28	ILE
2	B	167	VAL

### 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	27/43 (63%)	27 (100%)	0	100	100
1	C	27/43 (63%)	27 (100%)	0	100	100
1	E	27/43 (63%)	27 (100%)	0	100	100
1	G	27/43 (63%)	27 (100%)	0	100	100
2	B	224/225 (100%)	222 (99%)	2 (1%)	70	85
2	D	222/225 (99%)	221 (100%)	1 (0%)	81	89
2	F	223/225 (99%)	222 (100%)	1 (0%)	84	90
2	H	219/225 (97%)	217 (99%)	2 (1%)	70	85
All	All	996/1072 (93%)	990 (99%)	6 (1%)	78	88

All (6) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	B	43	CYS
2	B	202	CYS
2	D	111	LEU
2	F	136	PRO
2	H	43	CYS
2	H	202	CYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
2	D	272	GLN
2	F	30	GLN
2	F	258	HIS
2	H	146	GLN
2	H	179	ASN

### 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 oligosaccharides in this entry.

### 5.6 Ligand geometry [i](#)

Of 10 ligands modelled in this entry, 3 are monoatomic - leaving 7 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	A1ITQ	F	301	-	34,35,35	2.40	9 (26%)	41,45,45	3.26	13 (31%)
4	NAG	B	302	2	14,14,15	0.31	0	17,19,21	0.61	0
3	A1ITQ	H	301	-	34,35,35	2.40	10 (29%)	41,45,45	3.10	9 (21%)
3	A1ITQ	B	301	-	34,35,35	2.37	9 (26%)	41,45,45	3.39	12 (29%)
3	A1ITQ	D	301	-	34,35,35	2.27	10 (29%)	41,45,45	2.83	9 (21%)
4	NAG	F	302	2	14,14,15	0.70	1 (7%)	17,19,21	1.09	2 (11%)
4	NAG	D	302	2	14,14,15	0.35	0	17,19,21	1.15	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	A1ITQ	F	301	-	-	6/31/31/31	0/2/2/2
4	NAG	B	302	2	-	2/6/23/26	0/1/1/1
3	A1ITQ	H	301	-	-	7/31/31/31	0/2/2/2
3	A1ITQ	B	301	-	-	3/31/31/31	0/2/2/2
3	A1ITQ	D	301	-	-	5/31/31/31	0/2/2/2
4	NAG	F	302	2	-	0/6/23/26	0/1/1/1
4	NAG	D	302	2	-	4/6/23/26	0/1/1/1

All (39) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	F	301	A1ITQ	C10-N3	7.41	1.46	1.33
3	B	301	A1ITQ	C10-N3	7.40	1.46	1.33
3	H	301	A1ITQ	C10-N3	7.35	1.46	1.33
3	D	301	A1ITQ	C10-N3	6.80	1.45	1.33
3	H	301	A1ITQ	C15-N4	5.89	1.46	1.34
3	F	301	A1ITQ	C15-N4	5.39	1.45	1.34
3	D	301	A1ITQ	C15-N4	5.33	1.45	1.34
3	B	301	A1ITQ	C15-N4	5.27	1.45	1.34
3	D	301	A1ITQ	C6-N2	4.88	1.45	1.33
3	F	301	A1ITQ	C6-N2	4.74	1.44	1.33
3	B	301	A1ITQ	C6-N2	4.54	1.44	1.33
3	H	301	A1ITQ	C6-N2	4.44	1.44	1.33
3	F	301	A1ITQ	C1-N1	4.13	1.46	1.32
3	H	301	A1ITQ	C1-N1	3.95	1.45	1.32
3	B	301	A1ITQ	C1-N1	3.95	1.45	1.32
3	B	301	A1ITQ	C10-C11	3.94	1.56	1.48
3	D	301	A1ITQ	C1-N1	3.82	1.45	1.32
3	H	301	A1ITQ	C10-C11	3.70	1.56	1.48
3	F	301	A1ITQ	C10-C11	3.70	1.56	1.48
3	H	301	A1ITQ	C14-CL1	3.70	1.79	1.71
3	F	301	A1ITQ	C14-CL1	3.63	1.79	1.71
3	B	301	A1ITQ	C14-CL1	3.61	1.79	1.71
3	B	301	A1ITQ	C13-C14	3.50	1.40	1.35
3	F	301	A1ITQ	C13-C14	3.42	1.40	1.35
3	H	301	A1ITQ	C13-C14	3.34	1.40	1.35
3	D	301	A1ITQ	C13-C14	3.29	1.40	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	301	A1ITQ	C14-CL1	3.14	1.78	1.71
3	D	301	A1ITQ	O3-C10	-2.81	1.18	1.23
3	D	301	A1ITQ	O4-C15	-2.58	1.18	1.23
3	D	301	A1ITQ	C11-S2	-2.54	1.68	1.73
4	F	302	NAG	O5-C1	2.54	1.48	1.43
3	F	301	A1ITQ	O4-C15	-2.48	1.18	1.23
3	D	301	A1ITQ	O2-C6	-2.47	1.18	1.23
3	B	301	A1ITQ	O4-C15	-2.46	1.18	1.23
3	H	301	A1ITQ	O3-C10	-2.43	1.19	1.23
3	F	301	A1ITQ	O3-C10	-2.41	1.19	1.23
3	H	301	A1ITQ	O4-C15	-2.41	1.18	1.23
3	B	301	A1ITQ	O3-C10	-2.22	1.19	1.23
3	H	301	A1ITQ	O2-C6	-2.19	1.19	1.23

All (46) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	301	A1ITQ	C14-S2-C11	15.37	101.06	90.76
3	F	301	A1ITQ	C14-S2-C11	14.42	100.42	90.76
3	H	301	A1ITQ	C14-S2-C11	14.42	100.42	90.76
3	D	301	A1ITQ	C14-S2-C11	12.60	99.20	90.76
3	B	301	A1ITQ	C13-C14-S2	-7.96	106.04	113.30
3	H	301	A1ITQ	C13-C14-S2	-7.64	106.33	113.30
3	D	301	A1ITQ	C13-C14-S2	-7.54	106.42	113.30
3	F	301	A1ITQ	C13-C14-S2	-7.46	106.49	113.30
3	F	301	A1ITQ	C3-S1-C2	5.28	110.42	101.72
3	H	301	A1ITQ	CL1-C14-S2	5.10	127.77	119.72
3	B	301	A1ITQ	CL1-C14-S2	5.02	127.65	119.72
3	F	301	A1ITQ	CL1-C14-S2	4.93	127.50	119.72
3	B	301	A1ITQ	C3-S1-C2	4.85	109.71	101.72
3	D	301	A1ITQ	CL1-C14-S2	4.77	127.24	119.72
3	B	301	A1ITQ	C12-C11-S2	-4.74	103.60	110.49
3	F	301	A1ITQ	C10-C11-S2	4.42	128.75	117.18
3	B	301	A1ITQ	C11-C10-N3	4.38	122.32	117.09
3	F	301	A1ITQ	C12-C11-S2	-4.37	104.13	110.49
3	H	301	A1ITQ	C12-C11-S2	-4.28	104.26	110.49
3	H	301	A1ITQ	C10-C11-S2	4.23	128.23	117.18
3	B	301	A1ITQ	C10-C11-S2	4.15	128.04	117.18
3	D	301	A1ITQ	C3-S1-C2	4.08	108.45	101.72
3	H	301	A1ITQ	C11-C10-N3	3.93	121.78	117.09
3	F	301	A1ITQ	C11-C10-N3	3.86	121.70	117.09
3	B	301	A1ITQ	O3-C10-N3	-3.46	117.10	123.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	301	A1ITQ	C10-C11-S2	3.45	126.22	117.18
3	H	301	A1ITQ	O3-C10-N3	-3.35	117.30	123.35
4	D	302	NAG	C1-O5-C5	3.31	116.62	112.19
3	H	301	A1ITQ	C3-S1-C2	3.29	107.14	101.72
3	B	301	A1ITQ	C16-C15-N4	3.24	120.92	115.88
3	D	301	A1ITQ	C16-C15-N4	3.22	120.89	115.88
3	F	301	A1ITQ	C16-C15-N4	3.14	120.76	115.88
3	F	301	A1ITQ	O3-C10-N3	-2.88	118.15	123.35
3	D	301	A1ITQ	C11-C10-N3	2.79	120.42	117.09
3	D	301	A1ITQ	C12-C11-S2	-2.72	106.53	110.49
4	F	302	NAG	C1-C2-N2	2.71	114.70	110.43
4	F	302	NAG	C1-O5-C5	2.50	115.53	112.19
3	B	301	A1ITQ	O4-C15-N4	-2.45	118.81	122.95
3	H	301	A1ITQ	C16-C15-N4	2.41	119.63	115.88
3	F	301	A1ITQ	C7-C6-N2	2.28	121.43	116.54
3	D	301	A1ITQ	O4-C15-N4	-2.16	119.29	122.95
3	B	301	A1ITQ	C5-N2-C6	-2.16	118.66	122.55
3	F	301	A1ITQ	O2-C6-N2	-2.12	118.50	122.98
3	B	301	A1ITQ	C1-C2-S1	-2.07	107.27	113.81
3	F	301	A1ITQ	O4-C15-N4	-2.05	119.48	122.95
3	F	301	A1ITQ	C5-N2-C6	-2.05	118.87	122.55

There are no chirality outliers.

All (27) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	B	301	A1ITQ	C7-C8-C9-N3
3	B	301	A1ITQ	S1-C3-C4-C5
3	B	301	A1ITQ	C1-C2-S1-C3
3	D	301	A1ITQ	C7-C8-C9-N3
3	D	301	A1ITQ	S1-C3-C4-C5
3	D	301	A1ITQ	C1-C2-S1-C3
3	F	301	A1ITQ	N1-C1-C2-S1
3	F	301	A1ITQ	C7-C8-C9-N3
3	F	301	A1ITQ	C1-C2-S1-C3
3	H	301	A1ITQ	C7-C8-C9-N3
3	H	301	A1ITQ	C3-C4-C5-N2
3	H	301	A1ITQ	S1-C3-C4-C5
3	H	301	A1ITQ	C1-C2-S1-C3
4	D	302	NAG	O5-C5-C6-O6
4	B	302	NAG	C4-C5-C6-O6
4	D	302	NAG	C4-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
4	B	302	NAG	O5-C5-C6-O6
3	F	301	A1ITQ	S1-C3-C4-C5
3	F	301	A1ITQ	O1-C1-C2-S1
4	D	302	NAG	C3-C2-N2-C7
3	D	301	A1ITQ	C3-C4-C5-N2
3	H	301	A1ITQ	N2-C6-C7-C8
3	H	301	A1ITQ	O2-C6-C7-C8
3	H	301	A1ITQ	O2-C6-C7-N4
3	D	301	A1ITQ	C4-C3-S1-C2
4	D	302	NAG	C1-C2-N2-C7
3	F	301	A1ITQ	C3-C4-C5-N2

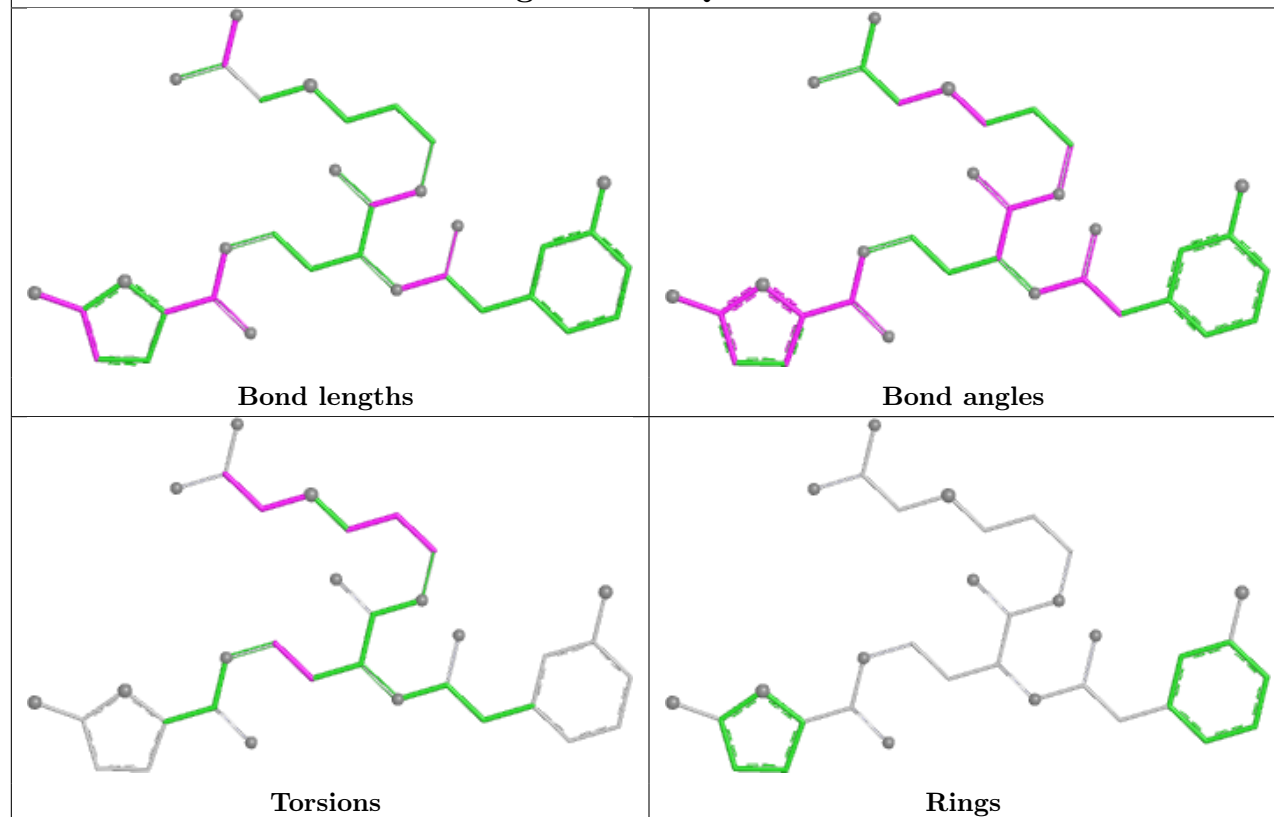
There are no ring outliers.

3 monomers are involved in 6 short contacts:

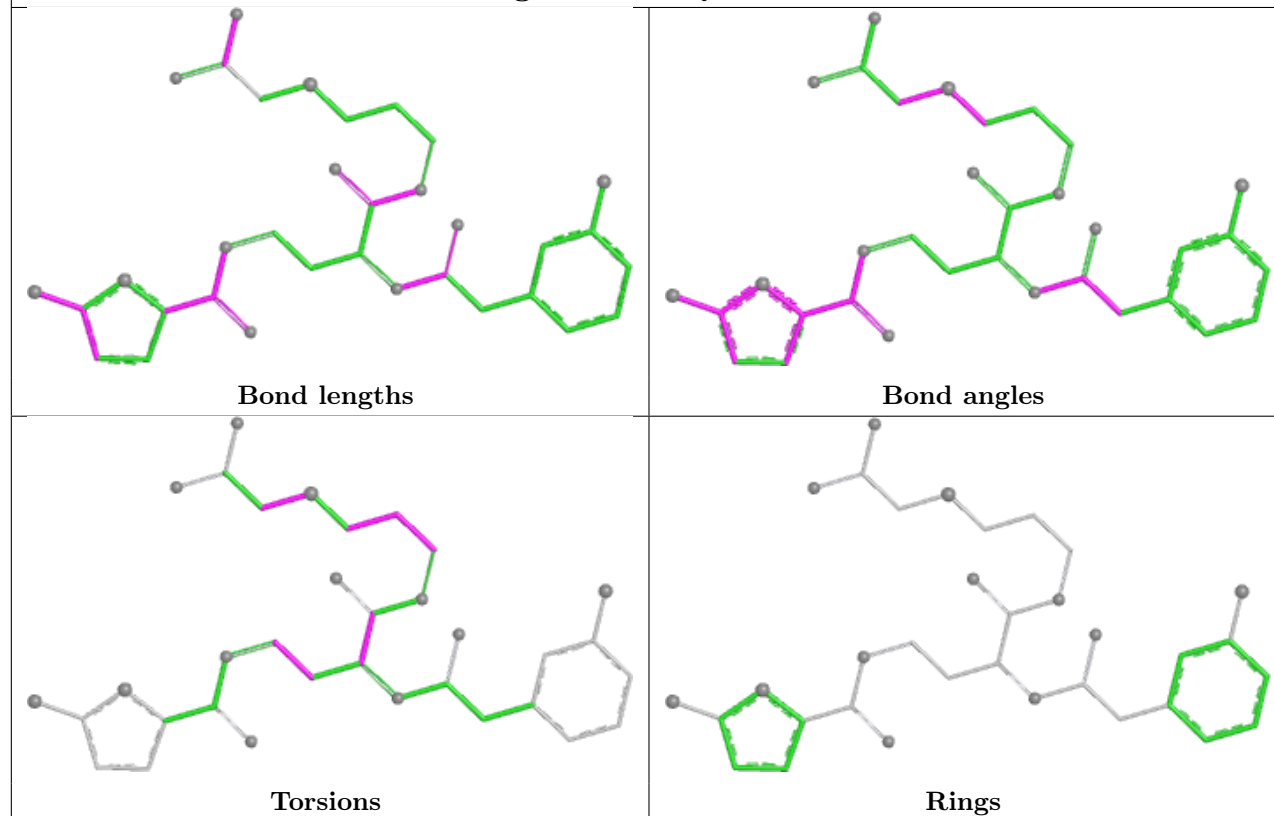
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	301	A1ITQ	1	0
3	D	301	A1ITQ	2	0
4	D	302	NAG	3	0

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 A1ITQ F 301

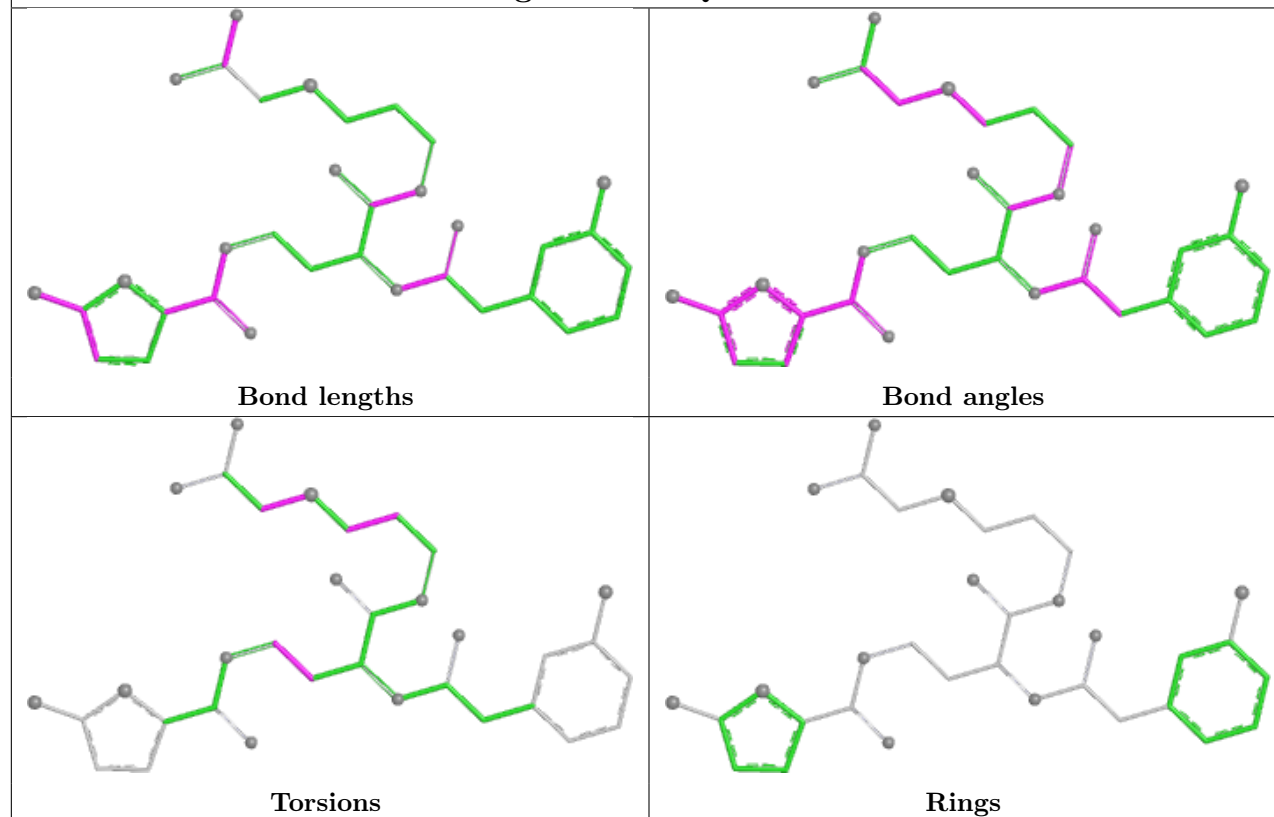


## Ligand A1ITQ H 301

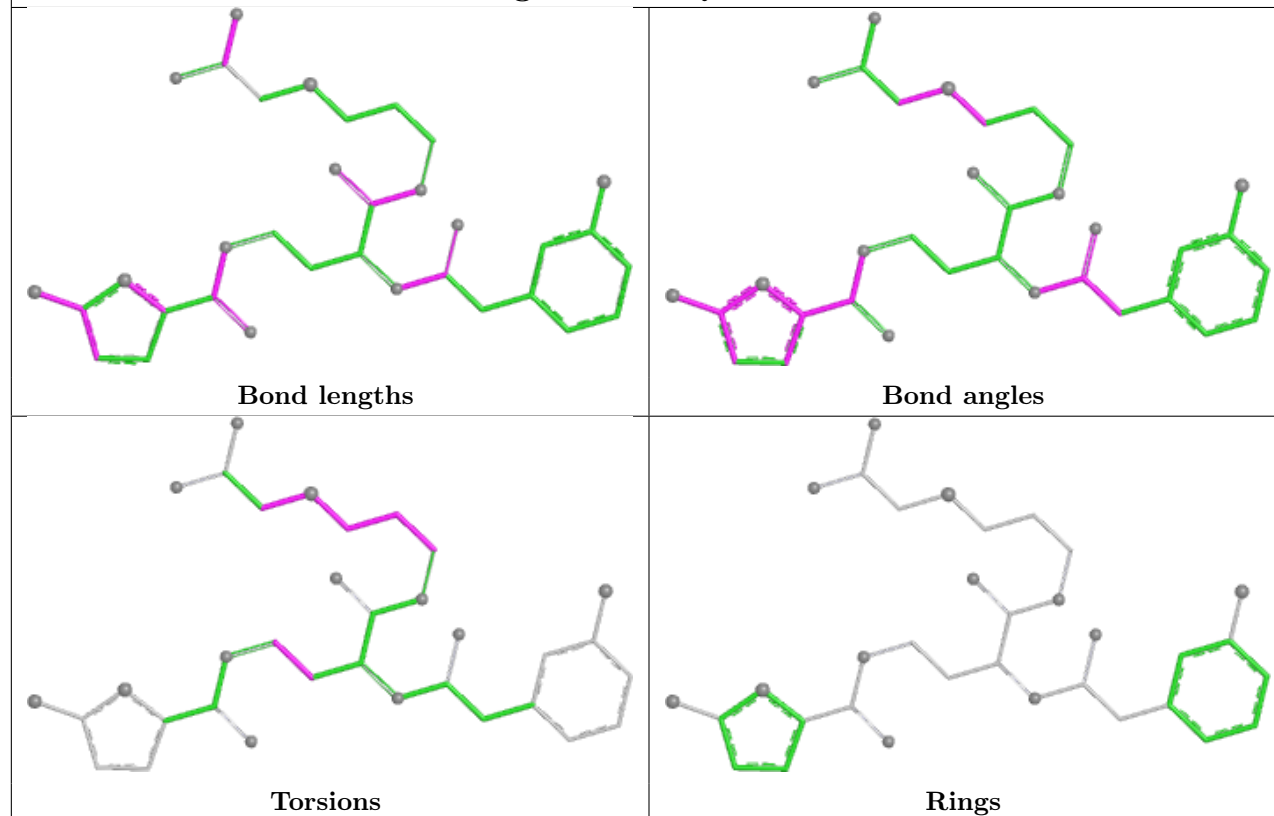




## Ligand A1ITQ B 301



## Ligand A1ITQ D 301



## 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 [i](#)

### 6.1 Protein, DNA and RNA chains [i](#)

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, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	30/49 (61%)	-0.22	0 <span>100</span> <span>100</span>	38, 49, 103, 110	0
1	C	30/49 (61%)	-0.20	1 (3%) 49 <span>28</span>	44, 57, 93, 113	0
1	E	30/49 (61%)	0.50	0 <span>100</span> <span>100</span>	62, 86, 107, 134	0
1	G	30/49 (61%)	0.09	0 <span>100</span> <span>100</span>	71, 83, 123, 132	0
2	B	258/259 (99%)	-0.43	1 (0%) <span>88</span> <span>76</span>	32, 45, 71, 182	0
2	D	254/259 (98%)	-0.11	2 (0%) <span>82</span> <span>64</span>	37, 59, 94, 113	0
2	F	256/259 (98%)	0.08	0 <span>100</span> <span>100</span>	34, 66, 103, 140	0
2	H	251/259 (96%)	-0.06	0 <span>100</span> <span>100</span>	54, 73, 93, 118	0
All	All	1139/1232 (92%)	-0.11	4 (0%) <span>88</span> <span>76</span>	32, 63, 98, 182	0

All (4) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	30	GLY	2.6
2	D	273	PHE	2.3
2	B	75	LEU	2.1
2	D	274	GLY	2.1

### 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

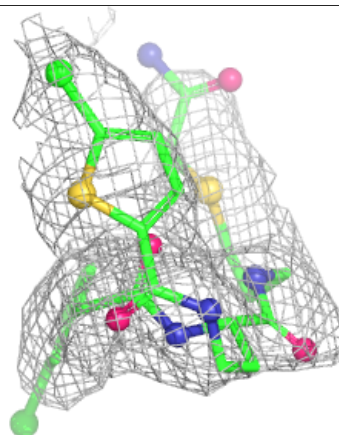
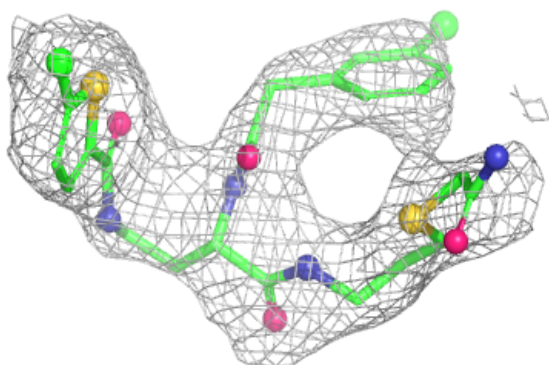
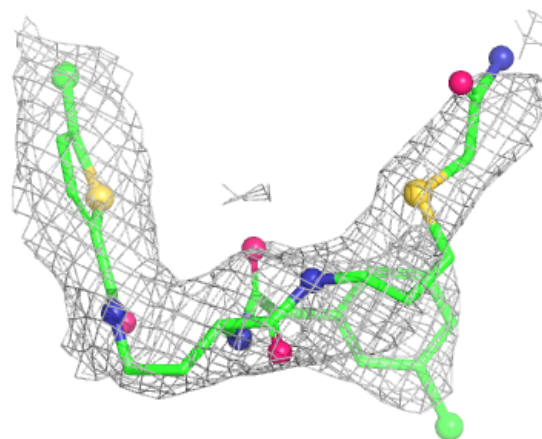
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
4	NAG	F	302	14/15	0.45	0.15	105,135,142,153	0
4	NAG	D	302	14/15	0.62	0.12	94,120,130,143	0
4	NAG	B	302	14/15	0.84	0.10	72,76,98,104	0
5	NA	H	302	1/1	0.87	0.07	79,79,79,79	0
3	A1ITQ	H	301	34/34	0.88	0.11	60,81,99,115	0
3	A1ITQ	D	301	34/34	0.91	0.14	49,75,105,162	34
5	NA	B	303	1/1	0.92	0.06	45,45,45,45	0
5	NA	F	303	1/1	0.93	0.06	42,42,42,42	0
3	A1ITQ	F	301	34/34	0.93	0.11	50,66,89,149	0
3	A1ITQ	B	301	34/34	0.94	0.09	38,47,65,68	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.

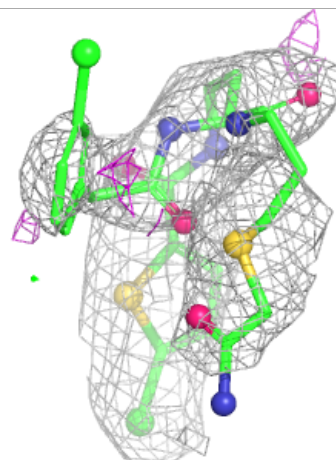
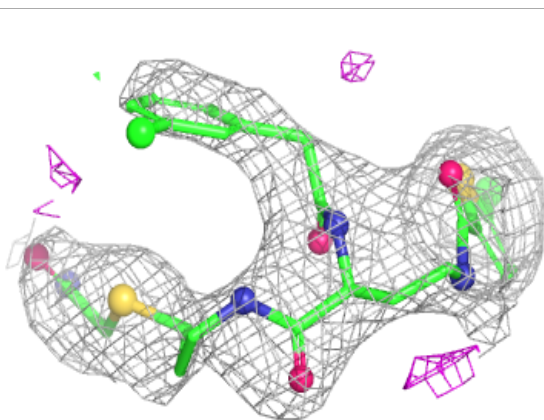
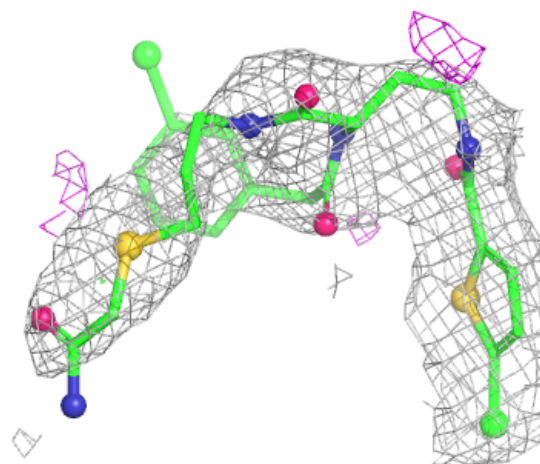
**Electron density around A1ITQ H 301:**

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



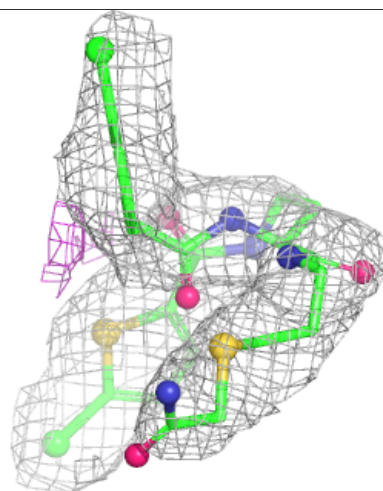
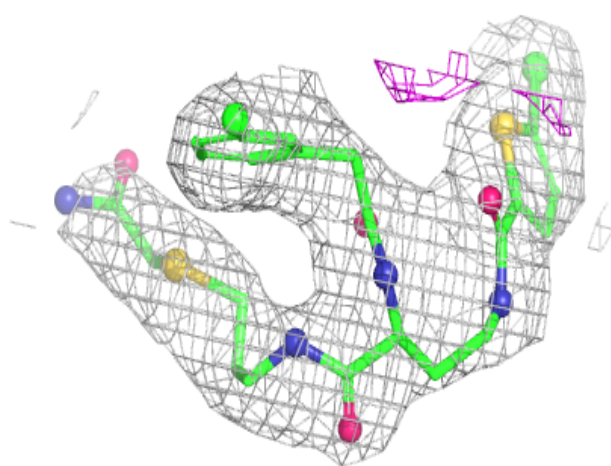
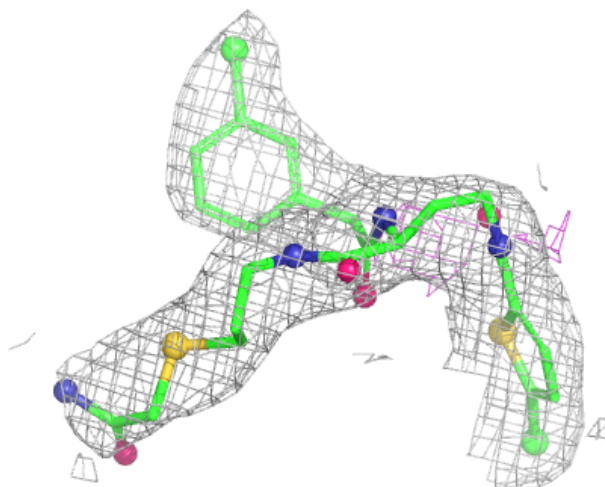
**Electron density around A1ITQ D 301:**

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



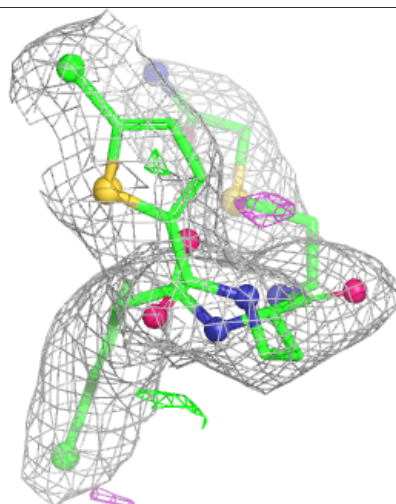
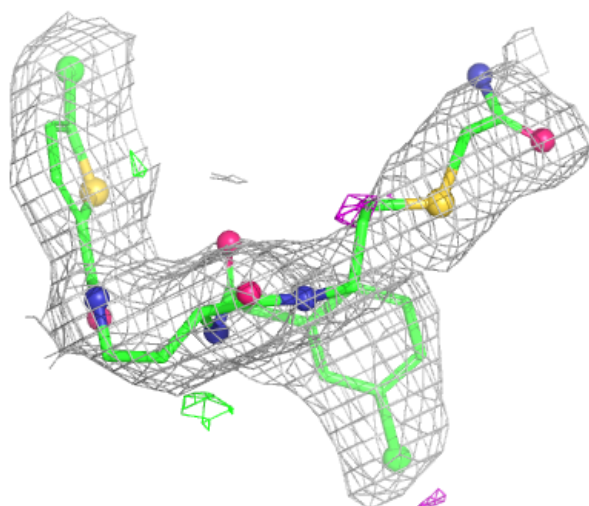
**Electron density around A1ITQ F 301:**

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



**Electron density around A1ITQ B 301:**

$2mF_o-DF_c$  (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.