Full wwPDB X-ray Structure Validation Report (i)

Oct 19, 2022 – 10:30 pm BST

PDB ID	:	7QHW
Title	:	TTBK1 kinase domain in complex with inhibitor 29
Authors	:	Nozal, V.; Liehta, D.
Deposited on	:	2021-12-14
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 (i) 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 (i)) were used in the production of this report:

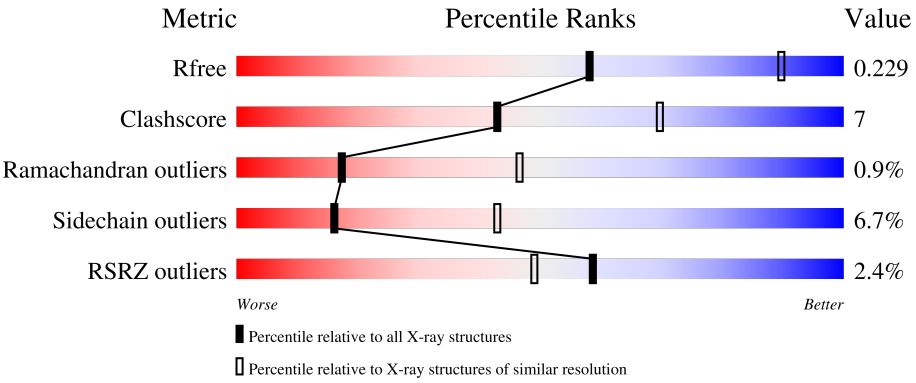
MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.31.2
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0267
CCP4	:	7.1.010 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.2

1 Overall quality at a glance (i)

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 <=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	AAA	293	4% 77% 20% .
1	CCC	293	82% 17% .

2 Entry composition

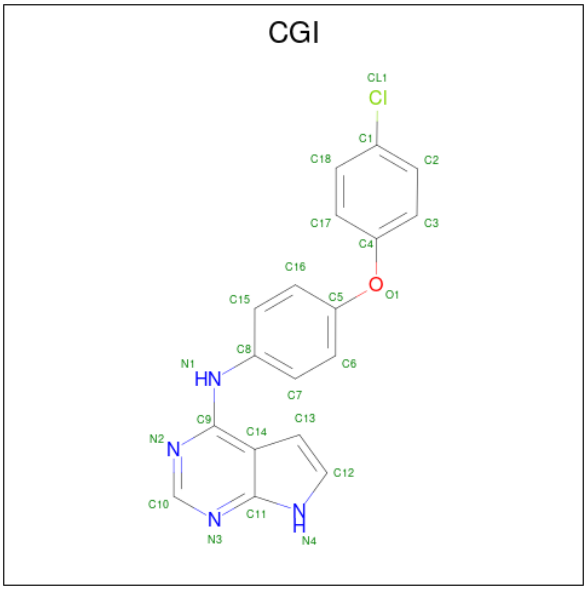
There are 5 unique types of molecules in this entry. The entry contains 4948 atoms, of which 24 are hydrogens and 0 are deuteriums.

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 Tau-tubulin kinase 1.

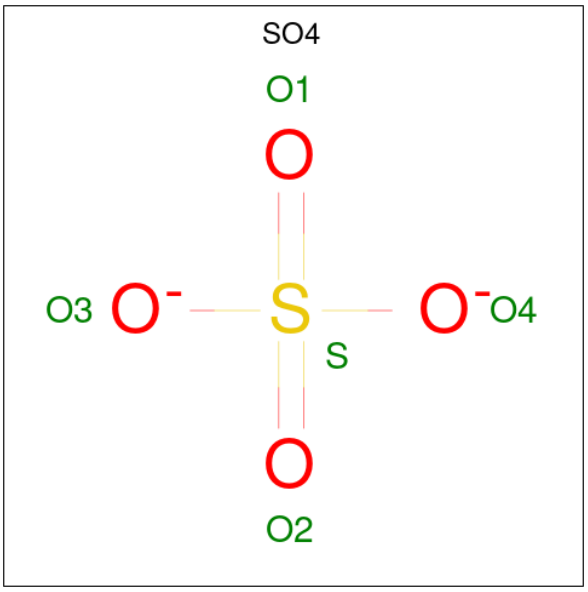
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	AAA	293	Total	C	N	O	S	0	0	0
			2385	1521	429	420	15			
1	CCC	292	Total	C	N	O	S	0	0	0
			2380	1518	428	419	15			

- Molecule 2 is {N}-[4-(4-chloranylphenoxy)phenyl]-7 {H}-pyrrolo[2,3-d]pyrimidin-4-amine (three-letter code: CGI) (formula: $C_{18}H_{13}ClN_4O$) (labeled as "Ligand of Interest" by depositor).



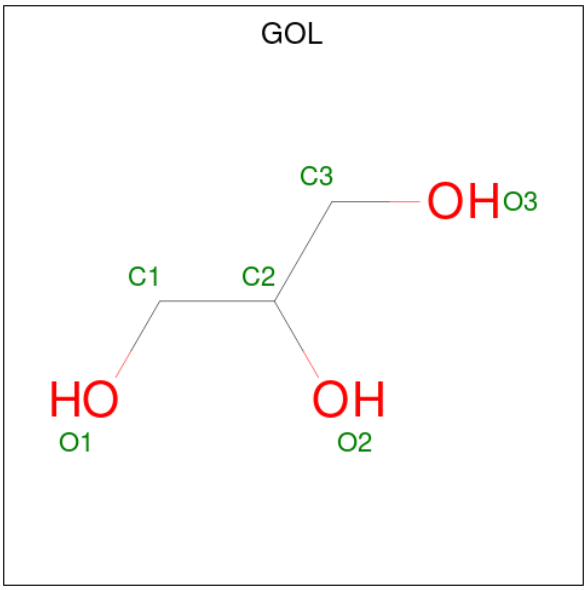
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	AAA	1	Total	C	Cl	N	O	0	0
			24	18	1	4	1		
2	CCC	1	Total	C	Cl	N	O	0	0
			24	18	1	4	1		

- Molecule 3 is SULFATE ION (three-letter code: SO4) (formula: O_4S).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	AAA	1	Total O S 5 4 1	0	0
3	CCC	1	Total O S 5 4 1	0	0
3	CCC	1	Total O S 5 4 1	0	0
3	CCC	1	Total O S 5 4 1	0	0

- Molecule 4 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	AAA	1	Total	C	H	O	0	0
			14	3	8	3		
4	AAA	1	Total	C	H	O	0	0
			14	3	8	3		
4	AAA	1	Total	C	H	O	0	0
			14	3	8	3		

- Molecule 5 is water.

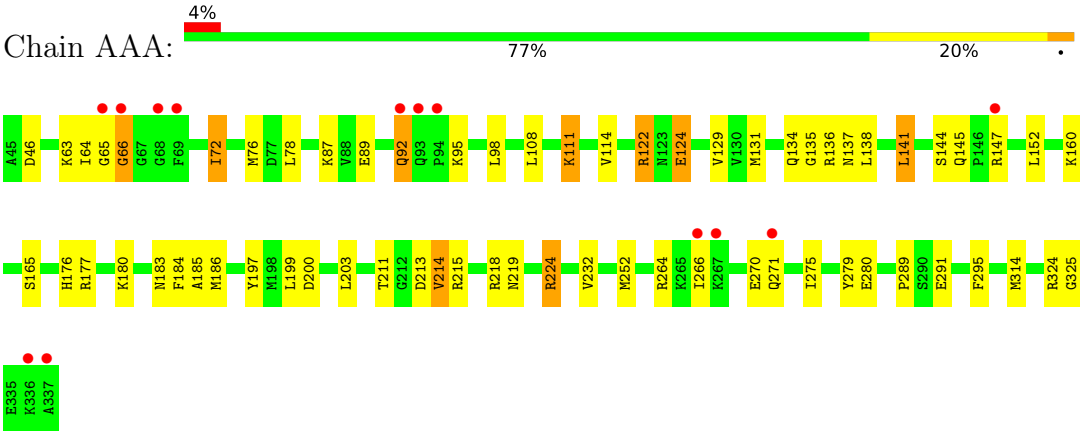
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	AAA	31	Total	O	0	0
			31	31		
5	CCC	42	Total	O	0	0
			42	42		

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.

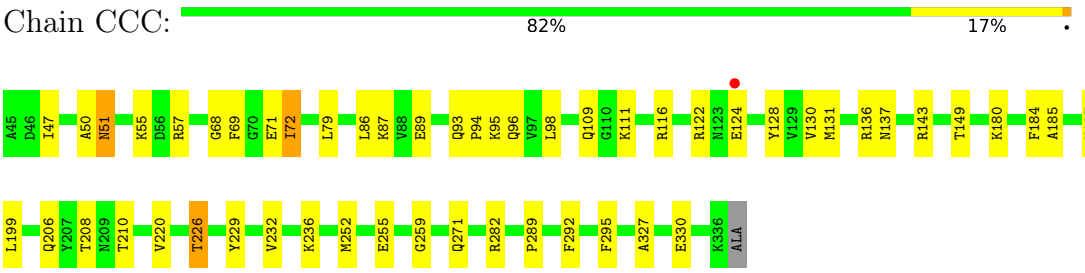
• Molecule 1: Tau-tubulin kinase 1

Chain AAA:



• Molecule 1: Tau-tubulin kinase 1

Chain CCC:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	126.12Å 108.46Å 110.31Å 90.00° 94.51° 90.00°	Depositor
Resolution (Å)	48.69 – 2.80 48.64 – 2.80	Depositor EDS
% Data completeness (in resolution range)	99.5 (48.69-2.80) 99.5 (48.64-2.80)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.45 (at 2.81Å)	Xtriage
Refinement program	REFMAC 5.8.0267	Depositor
R, R_{free}	0.200 , 0.229 0.200 , 0.229	Depositor DCC
R_{free} test set	1887 reflections (5.18%)	wwPDB-VP
Wilson B-factor (Å^2)	65.1	Xtriage
Anisotropy	0.013	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	(Not available) , (Not available)	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	4948	wwPDB-VP
Average B, all atoms (Å^2)	68.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.03% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: SO4, GOL, CGI

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	AAA	0.30	0/2437	0.62	0/3274
1	CCC	0.25	0/2432	0.53	0/3267
All	All	0.28	0/4869	0.58	0/6541

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	AAA	2385	0	2406	43	0
1	CCC	2380	0	2401	23	0
2	AAA	24	0	0	1	0
2	CCC	24	0	0	0	0
3	AAA	5	0	0	0	0
3	CCC	15	0	0	1	0
4	AAA	18	24	24	1	0
5	AAA	31	0	0	6	0
5	CCC	42	0	0	2	0
All	All	4924	24	4831	66	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 7.

All (66) 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:AAA:266:ILE:H	1:AAA:266:ILE:HD12	1.46	0.81
1:AAA:185:ALA:HB2	1:AAA:199:LEU:HD11	1.69	0.73
1:AAA:72:ILE:HD12	1:AAA:87:LYS:HB2	1.71	0.72
1:AAA:95:LYS:NZ	1:AAA:224:ARG:HD3	2.08	0.68
1:AAA:87:LYS:HB3	5:AAA:508:HOH:O	1.97	0.65
1:AAA:160:LYS:HG3	1:AAA:314:MET:SD	2.36	0.64
1:AAA:92:GLN:O	1:AAA:92:GLN:HG2	1.98	0.64
1:AAA:324:ARG:HD2	5:AAA:501:HOH:O	1.98	0.63
1:AAA:129:VAL:HB	5:AAA:508:HOH:O	1.97	0.63
1:AAA:64:ILE:O	2:AAA:401:CGI:C16	2.48	0.62
1:AAA:135:GLY:HA3	5:AAA:506:HOH:O	1.99	0.62
1:AAA:176:HIS:O	1:AAA:177:ARG:HB2	2.00	0.62
1:AAA:275:ILE:O	1:AAA:279:TYR:HB2	2.00	0.62
1:CCC:50:ALA:O	1:CCC:51:ASN:HB2	1.99	0.62
1:CCC:327:ALA:HB3	1:CCC:330:GLU:HG3	1.83	0.61
1:CCC:69:PHE:HE1	1:CCC:95:LYS:HD3	1.65	0.61
1:AAA:108:LEU:O	1:AAA:111:LYS:HB2	2.02	0.59
1:CCC:89:GLU:HG2	1:CCC:98:LEU:HD22	1.86	0.58
1:AAA:266:ILE:HG21	1:AAA:271:GLN:HB2	1.87	0.56
1:CCC:229:TYR:OH	1:CCC:255:GLU:OE1	2.21	0.56
1:AAA:138:LEU:HD12	1:AAA:184:PHE:HB2	1.89	0.54
1:CCC:185:ALA:HB2	1:CCC:199:LEU:HD11	1.90	0.54
1:AAA:76:MET:HG2	1:AAA:78:LEU:HD23	1.91	0.52
1:AAA:266:ILE:H	1:AAA:266:ILE:CD1	2.20	0.51
1:AAA:95:LYS:HZ1	1:AAA:224:ARG:HD3	1.76	0.51
1:AAA:218:ARG:HH22	4:AAA:404:GOL:H2	1.76	0.51
1:AAA:137:ASN:O	1:AAA:141:LEU:HB2	2.11	0.51
1:AAA:183:ASN:OD1	1:AAA:200:ASP:HB3	2.09	0.51
1:AAA:95:LYS:HZ2	1:AAA:224:ARG:HD3	1.74	0.51
1:CCC:143:ARG:NH1	3:CCC:404:SO4:O1	2.44	0.51
1:CCC:180:LYS:HD3	1:CCC:226:THR:OG1	2.11	0.50
1:CCC:72:ILE:HD12	1:CCC:87:LYS:HG3	1.94	0.50
1:CCC:206:GLN:HG2	1:CCC:208:THR:O	2.12	0.49
1:AAA:136:ARG:HA	5:AAA:509:HOH:O	2.13	0.49
1:AAA:180:LYS:HE2	1:AAA:183:ASN:ND2	2.28	0.49
1:CCC:86:LEU:HD12	1:CCC:130:VAL:HG22	1.94	0.49
1:AAA:108:LEU:HB3	1:AAA:114:VAL:HG11	1.95	0.48
1:AAA:213:ASP:O	1:AAA:214:VAL:HB	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:CCC:232:VAL:CG1	1:CCC:236:LYS:HE3	2.44	0.47
1:AAA:134:GLN:NE2	1:AAA:134:GLN:HA	2.29	0.47
1:CCC:137:ASN:HA	1:CCC:185:ALA:HA	1.97	0.47
1:AAA:65:GLY:HA3	1:AAA:66:GLY:HA3	1.80	0.46
1:AAA:213:ASP:O	1:AAA:214:VAL:CB	2.63	0.46
1:AAA:89:GLU:HG2	1:AAA:98:LEU:HD22	1.97	0.46
1:CCC:68:GLY:HA2	5:CCC:519:HOH:O	2.16	0.46
1:CCC:184:PHE:HA	1:CCC:197:TYR:O	2.17	0.45
1:AAA:266:ILE:HD12	1:AAA:266:ILE:N	2.24	0.45
1:CCC:96:GLN:HB3	5:CCC:502:HOH:O	2.15	0.45
1:CCC:289:PRO:O	1:CCC:292:PHE:HB2	2.16	0.45
1:AAA:46:ASP:OD1	1:AAA:63:LYS:HD3	2.17	0.44
1:AAA:122:ARG:NH1	5:AAA:505:HOH:O	2.51	0.44
1:CCC:93:GLN:HG2	1:CCC:94:PRO:HD2	1.99	0.44
1:AAA:145:GLN:NE2	1:AAA:145:GLN:HA	2.33	0.43
1:CCC:87:LYS:O	1:CCC:128:TYR:HA	2.18	0.43
1:CCC:109:GLN:HE22	1:CCC:116:ARG:HA	1.84	0.43
1:AAA:136:ARG:NH2	1:AAA:144:SER:OG	2.44	0.43
1:CCC:47:ILE:HG13	1:CCC:71:GLU:OE2	2.20	0.42
1:CCC:149:THR:HG22	1:CCC:259:GLY:CA	2.50	0.42
1:AAA:162:ILE:HD13	1:AAA:252:MET:CE	2.50	0.42
1:AAA:162:ILE:HD13	1:AAA:252:MET:HE1	2.01	0.41
1:AAA:124:GLU:H	1:AAA:124:GLU:HG3	1.63	0.41
1:AAA:184:PHE:HA	1:AAA:197:TYR:O	2.20	0.41
1:AAA:134:GLN:HA	1:AAA:134:GLN:HE21	1.86	0.41
1:AAA:186:MET:HG3	1:AAA:334:TRP:CZ2	2.56	0.40
1:AAA:152:LEU:HD23	1:AAA:289:PRO:HG3	2.04	0.40
1:CCC:124:GLU:H	1:CCC:124:GLU:HG2	1.70	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	AAA	291/293 (99%)	277 (95%)	11 (4%)	3 (1%)	15	44
1	CCC	290/293 (99%)	278 (96%)	10 (3%)	2 (1%)	22	53
All	All	581/586 (99%)	555 (96%)	21 (4%)	5 (1%)	17	46

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	AAA	214	VAL
1	CCC	51	ASN
1	CCC	57	ARG
1	AAA	66	GLY
1	AAA	325	GLY

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	AAA	254/254 (100%)	234 (92%)	20 (8%)	12	34
1	CCC	254/254 (100%)	240 (94%)	14 (6%)	21	52
All	All	508/508 (100%)	474 (93%)	34 (7%)	16	43

All (34) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	AAA	72	ILE
1	AAA	92	GLN
1	AAA	111	LYS
1	AAA	122	ARG
1	AAA	124	GLU
1	AAA	131	MET
1	AAA	141	LEU
1	AAA	147	ARG
1	AAA	165	SER
1	AAA	203	LEU
1	AAA	211	THR

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Mol	Chain	Res	Type
1	AAA	215	ARG
1	AAA	219	ASN
1	AAA	224	ARG
1	AAA	232	VAL
1	AAA	264	ARG
1	AAA	270	GLU
1	AAA	280	GLU
1	AAA	291	GLU
1	AAA	295	PHE
1	CCC	55	LYS
1	CCC	72	ILE
1	CCC	79	LEU
1	CCC	111	LYS
1	CCC	122	ARG
1	CCC	131	MET
1	CCC	136	ARG
1	CCC	210	THR
1	CCC	220	VAL
1	CCC	226	THR
1	CCC	252	MET
1	CCC	271	GLN
1	CCC	282	ARG
1	CCC	295	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

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)

9 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
4	GOL	AAA	403	-	5,5,5	0.11	0	5,5,5	0.26	0
3	SO4	CCC	404	-	4,4,4	0.35	0	6,6,6	0.09	0
4	GOL	AAA	405	-	5,5,5	0.13	0	5,5,5	0.36	0
2	CGI	AAA	401	-	25,27,27	0.61	0	30,37,37	0.92	2 (6%)
3	SO4	CCC	403	-	4,4,4	0.37	0	6,6,6	0.06	0
2	CGI	CCC	401	-	25,27,27	0.61	0	30,37,37	0.79	1 (3%)
4	GOL	AAA	404	-	5,5,5	0.14	0	5,5,5	0.20	0
3	SO4	AAA	402	-	4,4,4	0.36	0	6,6,6	0.09	0
3	SO4	CCC	402	-	4,4,4	0.38	0	6,6,6	0.08	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	GOL	AAA	403	-	-	0/4/4/4	-
2	CGI	AAA	401	-	-	2/8/8/8	0/4/4/4
4	GOL	AAA	404	-	-	0/4/4/4	-
2	CGI	CCC	401	-	-	0/8/8/8	0/4/4/4
4	GOL	AAA	405	-	-	2/4/4/4	-

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	AAA	401	CGI	C14-C9-N2	-3.02	118.86	121.35
2	CCC	401	CGI	C14-C9-N2	-2.76	119.07	121.35
2	AAA	401	CGI	C10-N2-C9	2.13	118.41	116.59

There are no chirality outliers.

All (4) torsion outliers are listed below:

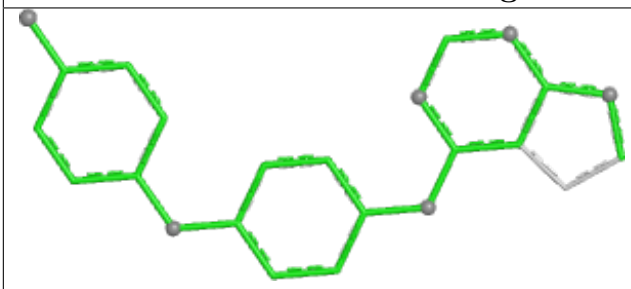
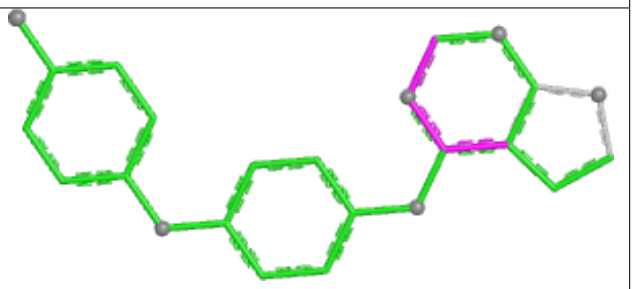
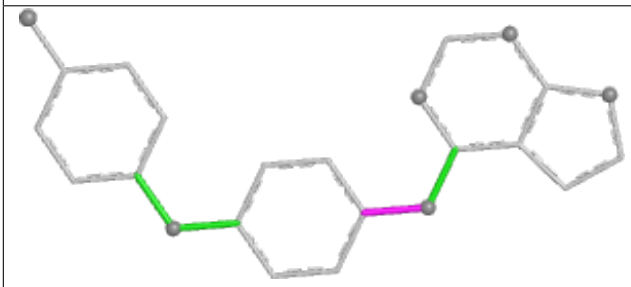
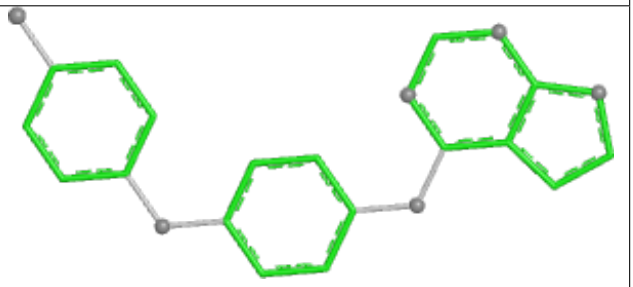
Mol	Chain	Res	Type	Atoms
4	AAA	405	GOL	C1-C2-C3-O3
4	AAA	405	GOL	O2-C2-C3-O3
2	AAA	401	CGI	C7-C8-N1-C9
2	AAA	401	CGI	C15-C8-N1-C9

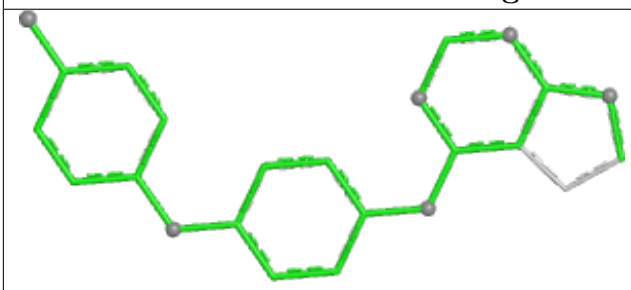
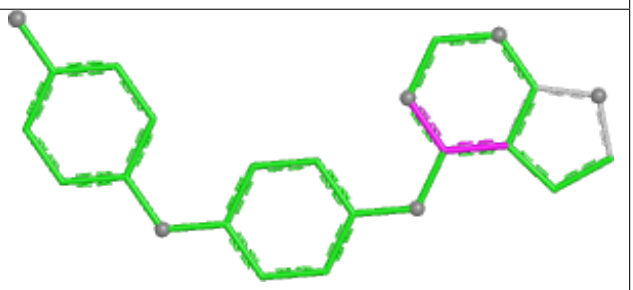
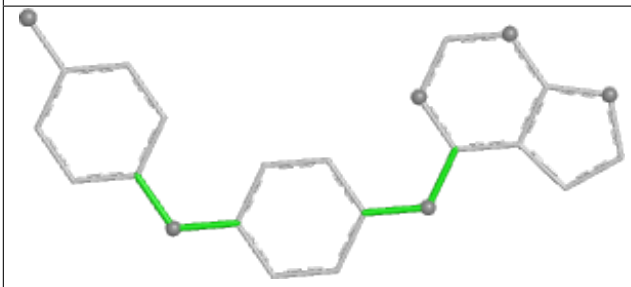
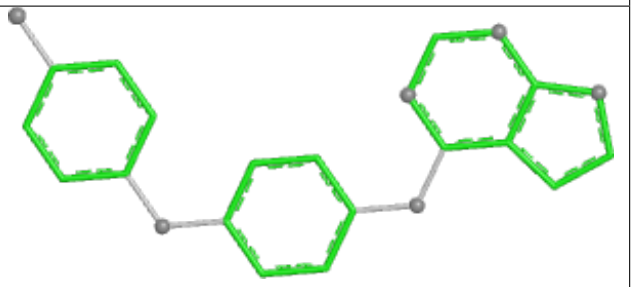
There are no ring outliers.

3 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	CCC	404	SO4	1	0
2	AAA	401	CGI	1	0
4	AAA	404	GOL	1	0

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

Ligand CGI AAA 401	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand CGI CCC 401	
 Bond lengths	 Bond angles
 Torsions	 Rings

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, 95^{th} 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	AAA	293/293 (100%)	0.05	13 (4%) 34 24	43, 68, 115, 137	0
1	CCC	292/293 (99%)	0.04	1 (0%) 94 93	33, 59, 98, 116	0
All	All	585/586 (99%)	0.04	14 (2%) 59 49	33, 64, 109, 137	0

All (14) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	AAA	337	ALA	4.4
1	AAA	68	GLY	4.1
1	AAA	69	PHE	3.7
1	AAA	92	GLN	3.7
1	AAA	65	GLY	2.9
1	AAA	267	LYS	2.9
1	AAA	93	GLN	2.5
1	AAA	271	GLN	2.5
1	AAA	336	LYS	2.4
1	AAA	147	ARG	2.3
1	CCC	124	GLU	2.3
1	AAA	66	GLY	2.3
1	AAA	94	PRO	2.2
1	AAA	266	ILE	2.2

6.2 Non-standard residues in protein, DNA, RNA chains

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

6.3 Carbohydrates

There are no monosaccharides in this entry.

6.4 Ligands (i)

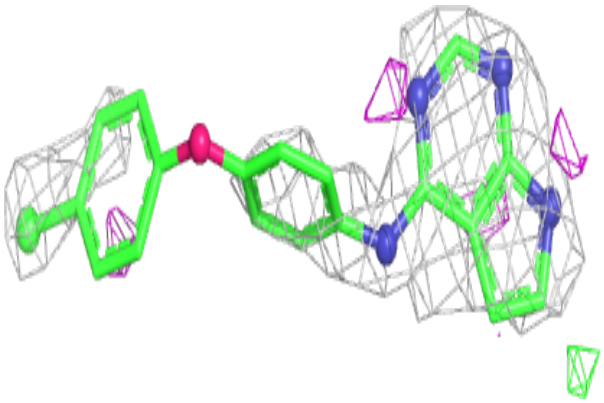
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9'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

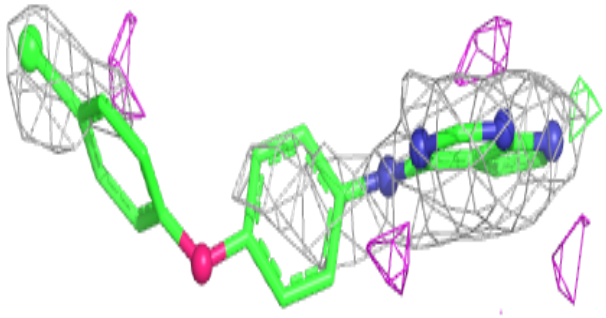
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	CGI	AAA	401	24/24	0.80	0.46	109,139,164,166	0
4	GOL	AAA	405	6/6	0.82	0.26	78,86,89,89	0
3	SO4	AAA	402	5/5	0.86	0.40	128,128,133,134	0
3	SO4	CCC	403	5/5	0.91	0.26	100,106,110,112	0
2	CGI	CCC	401	24/24	0.91	0.30	74,88,115,123	0
4	GOL	AAA	404	6/6	0.92	0.20	52,54,60,62	0
4	GOL	AAA	403	6/6	0.93	0.19	75,77,80,82	0
3	SO4	CCC	404	5/5	0.95	0.17	91,92,96,100	0
3	SO4	CCC	402	5/5	0.97	0.15	56,57,59,62	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 CGI AAA 401:

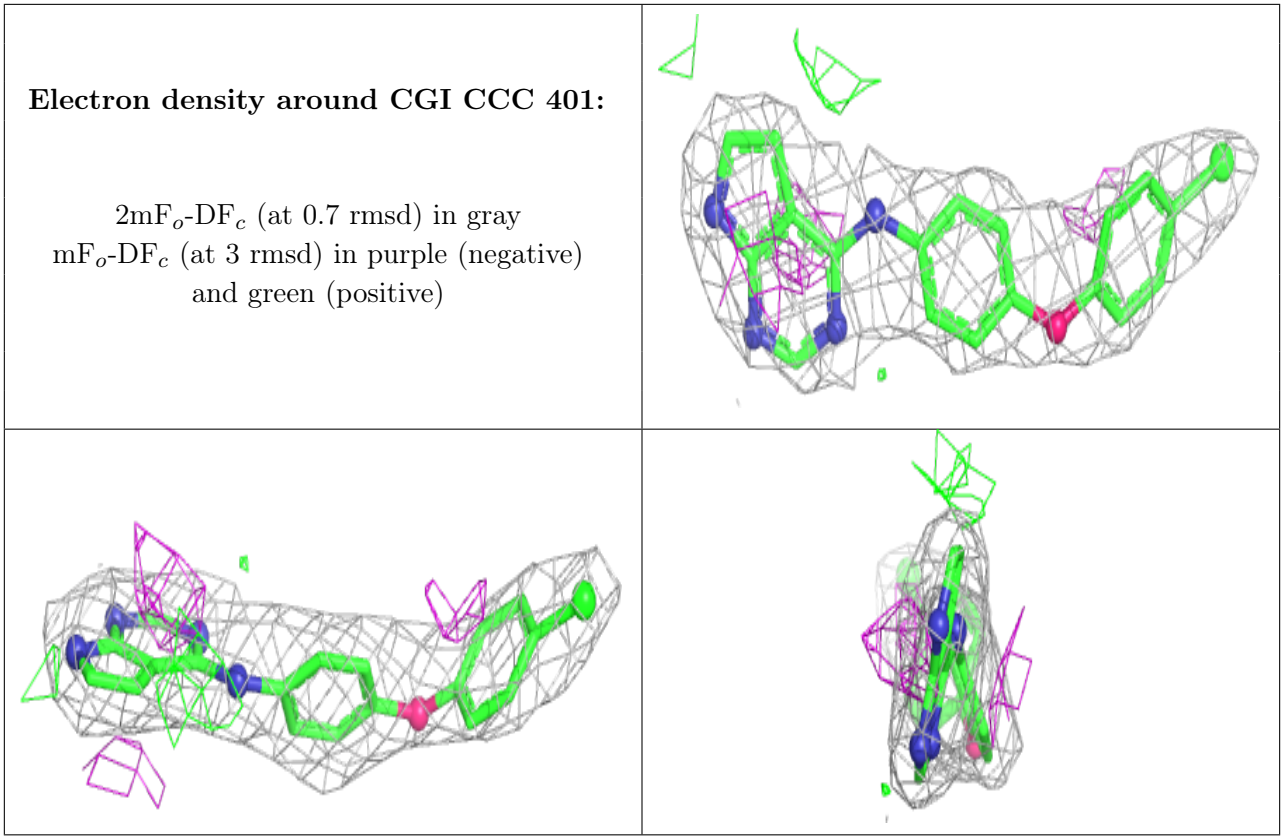
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)





Electron density around CGI CCC 401:

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



6.5 Other polymers (i)

There are no such residues in this entry.