Full wwPDB X-ray Structure Validation Report ⓘ

Nov 15, 2023 – 01:01 AM JST

PDB ID	:	6IQN
Title	:	Crystal structure of TrkA kinase with ligand
Authors	:	Noritaka, F.
Deposited on	:	2018-11-08
Resolution	:	2.54 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:

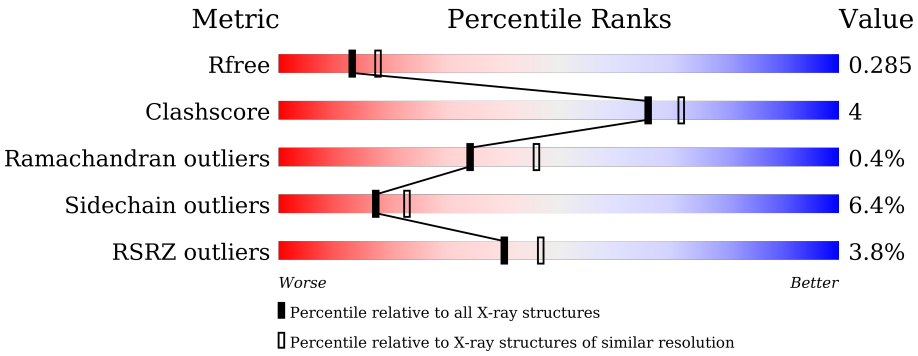
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber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

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

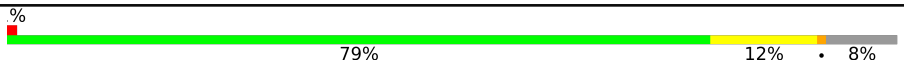
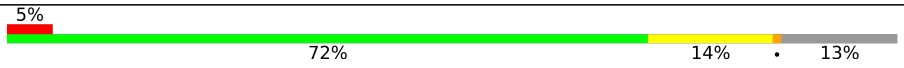
The reported resolution of this entry is 2.54 Å.

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	1284 (2.56-2.52)
Clashscore	141614	1332 (2.56-2.52)
Ramachandran outliers	138981	1315 (2.56-2.52)
Sidechain outliers	138945	1315 (2.56-2.52)
RSRZ outliers	127900	1272 (2.56-2.52)

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

Mol	Chain	Length	Quality of chain
1	A	296	
1	B	296	

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 4391 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.

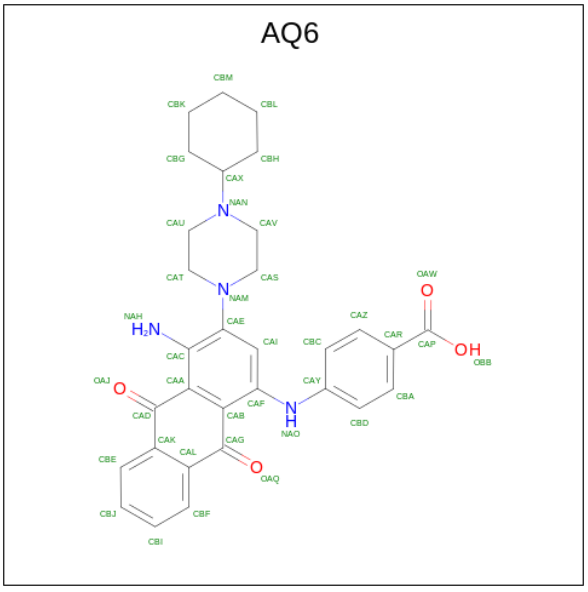
- Molecule 1 is a protein called High affinity nerve growth factor receptor.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	272	Total	C	N	O	S	0	0	0
			2167	1392	389	372	14			
1	B	258	Total	C	N	O	S	0	0	0
			2055	1321	371	350	13			

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	501	SER	-	expression tag	UNP P04629
B	501	SER	-	expression tag	UNP P04629

- Molecule 2 is 4-[[4-azanyl-3-(4-cyclohexylpiperazin-1-yl)-9,10-bis(oxidanylidene)anthracen-1-yl]amino]benzoic acid (three-letter code: AQ6) (formula: $C_{31}H_{32}N_4O_4$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	N	O	0	0
			39	31	4	4		

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	B	1	Total	C	N	O	0	0
			39	31	4	4		

- Molecule 3 is water.

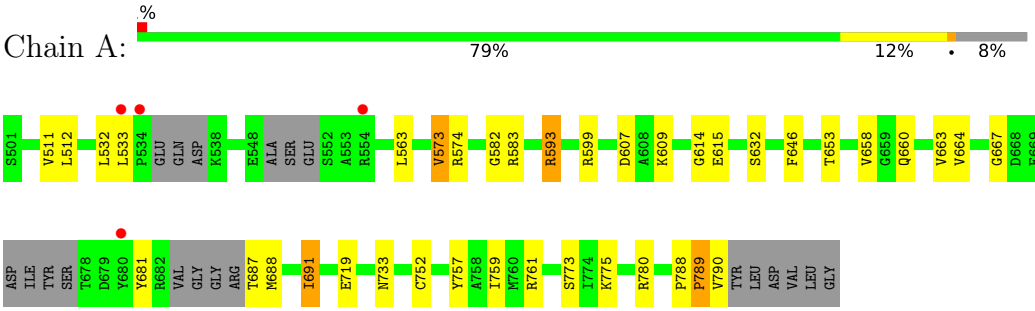
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	58	Total	O	0	0
			58	58		
3	B	33	Total	O	0	0
			33	33		

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.

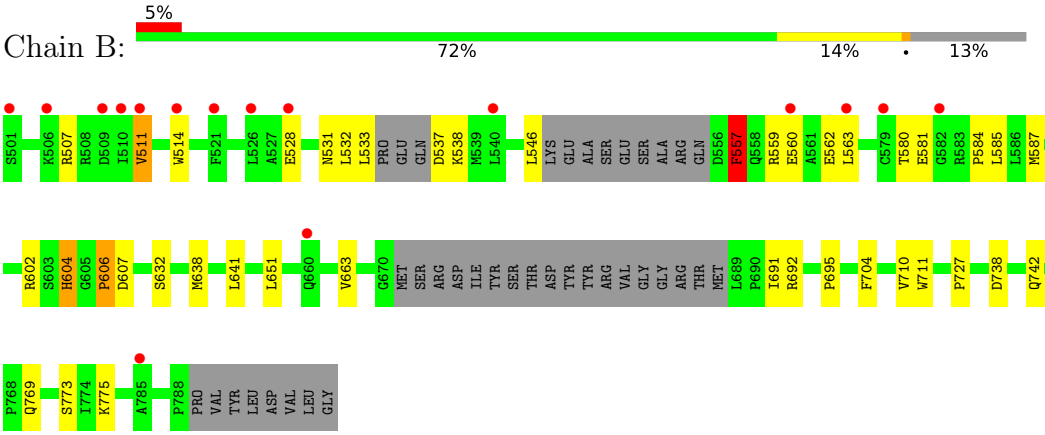
• Molecule 1: High affinity nerve growth factor receptor

Chain A:



• Molecule 1: High affinity nerve growth factor receptor

Chain B:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 41 21 2	Depositor
Cell constants a, b, c, α, β, γ	90.84Å 90.84Å 197.11Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	66.79 – 2.54 66.79 – 2.54	Depositor EDS
% Data completeness (in resolution range)	99.1 (66.79-2.54) 99.1 (66.79-2.54)	Depositor EDS
R_{merge}	0.35	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.74 (at 2.55Å)	Xtriage
Refinement program	REFMAC 5.8.0135	Depositor
R, R_{free}	0.225 , 0.287 0.229 , 0.285	Depositor DCC
R_{free} test set	1369 reflections (4.90%)	wwPDB-VP
Wilson B-factor (Å^2)	47.1	Xtriage
Anisotropy	0.629	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.35 , 40.5	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	0.94	EDS
Total number of atoms	4391	wwPDB-VP
Average B, all atoms (Å^2)	64.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.70% 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: AQ6

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	1.07	5/2220 (0.2%)	1.02	5/3004 (0.2%)
1	B	0.94	1/2105 (0.0%)	0.96	5/2846 (0.2%)
All	All	1.01	6/4325 (0.1%)	0.99	10/5850 (0.2%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	B	0	1

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	790	VAL	N-CA	5.82	1.57	1.46
1	A	790	VAL	CA-C	5.60	1.67	1.52
1	A	632	SER	CB-OG	-5.39	1.35	1.42
1	A	733	ASN	CB-CG	5.37	1.63	1.51
1	A	614	GLY	C-O	-5.33	1.15	1.23
1	B	704	PHE	C-O	-5.15	1.13	1.23

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	599	ARG	NE-CZ-NH2	-8.88	115.86	120.30
1	B	604	HIS	N-CA-C	-7.81	89.92	111.00
1	A	790	VAL	CA-C-O	6.79	134.36	120.10
1	A	599	ARG	NE-CZ-NH1	6.64	123.62	120.30
1	A	607	ASP	CB-CG-OD2	-6.61	112.35	118.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	593	ARG	NE-CZ-NH2	-6.57	117.02	120.30
1	B	587	MET	CG-SD-CE	6.44	110.50	100.20
1	B	593	ARG	NE-CZ-NH1	5.67	123.14	120.30
1	B	557	PHE	CB-CG-CD1	5.29	124.50	120.80
1	A	599	ARG	CG-CD-NE	-5.27	100.73	111.80

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	751	ALA	Peptide

5.2 Too-close contacts (i)

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	2167	0	2158	15	0
1	B	2055	0	2059	17	0
2	A	39	0	0	2	0
2	B	39	0	0	0	0
3	A	58	0	0	0	0
3	B	33	0	0	0	0
All	All	4391	0	4217	34	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 4.

All (34) 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:593:ARG:NH2	1:A:615:GLU:OE2	2.11	0.83
1:A:573:VAL:CG2	1:A:667:GLY:HA2	2.18	0.74
1:B:738:ASP:O	1:B:742:GLN:HG2	1.96	0.66
1:B:559:ARG:O	1:B:562:GLU:HG3	1.97	0.64
1:A:759:ILE:HD11	1:A:780:ARG:HG3	1.80	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:580:THR:HG22	1:B:585:LEU:HD22	1.81	0.62
1:A:563:LEU:HD11	1:A:646:PHE:CE2	2.36	0.59
2:A:801:AQ6:OAQ	2:A:801:AQ6:NAO	2.34	0.59
1:B:511:VAL:HG23	1:B:528:GLU:HB2	1.86	0.58
1:B:767:GLU:HB3	1:B:769:GLN:NE2	2.18	0.58
1:B:507:ARG:NE	1:B:581:GLU:O	2.34	0.58
1:B:532:LEU:O	1:B:533:LEU:HD23	2.06	0.56
1:B:507:ARG:NH2	1:B:584:PRO:O	2.41	0.53
1:B:638:MET:SD	1:B:651:LEU:HD22	2.51	0.50
1:A:681:TYR:CB	1:A:691:ILE:HD13	2.42	0.50
1:B:537:ASP:OD1	1:B:538:LYS:N	2.45	0.47
1:B:638:MET:HE2	1:B:641:LEU:HD12	1.96	0.46
1:B:695:PRO:HB3	1:B:711:TRP:CD2	2.50	0.46
1:A:582:GLY:O	1:A:583:ARG:NH1	2.49	0.46
1:A:653:THR:OG1	1:A:719:GLU:OE1	2.32	0.45
1:A:563:LEU:HD11	1:A:646:PHE:HE2	1.82	0.45
1:A:593:ARG:NH1	1:A:660:GLN:OE1	2.50	0.44
1:B:557:PHE:CD1	1:B:557:PHE:C	2.91	0.44
1:B:607:ASP:OD1	1:B:607:ASP:N	2.30	0.44
1:A:681:TYR:HB2	1:A:691:ILE:HD13	1.99	0.43
2:A:801:AQ6:OAJ	2:A:801:AQ6:NAH	2.52	0.43
1:B:602:ARG:O	1:B:604:HIS:O	2.36	0.43
1:A:573:VAL:HG22	1:A:667:GLY:HA2	1.98	0.43
1:A:757:TYR:CE2	1:A:761:ARG:HD3	2.55	0.42
1:B:546:LEU:HD12	1:B:546:LEU:C	2.40	0.42
1:B:692:ARG:HB3	1:B:727:PRO:HB2	2.01	0.41
1:A:532:LEU:O	1:A:533:LEU:HD23	2.20	0.41
1:A:788:PRO:HA	1:A:789:PRO:HD3	2.00	0.41
1:A:658:VAL:HG22	1:A:664:VAL:HG22	2.03	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	262/296 (88%)	251 (96%)	10 (4%)	1 (0%)	34	46
1	B	250/296 (84%)	240 (96%)	9 (4%)	1 (0%)	34	46
All	All	512/592 (86%)	491 (96%)	19 (4%)	2 (0%)	34	46

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	606	PRO
1	A	789	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	226/248 (91%)	213 (94%)	13 (6%)	20	26
1	B	214/248 (86%)	199 (93%)	15 (7%)	15	19
All	All	440/496 (89%)	412 (94%)	28 (6%)	17	23

All (28) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	511	VAL
1	A	512	LEU
1	A	573	VAL
1	A	574	ARG
1	A	593	ARG
1	A	609	LYS
1	A	663	VAL
1	A	687	THR
1	A	688	MET
1	A	691	ILE
1	A	752	CYS
1	A	773	SER
1	A	775	LYS
1	B	511	VAL

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Mol	Chain	Res	Type
1	B	514	TRP
1	B	531	ASN
1	B	557	PHE
1	B	560	GLU
1	B	563	LEU
1	B	593	ARG
1	B	596	ASP
1	B	606	PRO
1	B	632	SER
1	B	663	VAL
1	B	691	ILE
1	B	710	VAL
1	B	773	SER
1	B	775	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	770	GLN

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)

2 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	$\#\|Z\| > 2$
2	AQ6	A	801	-	44,44,44	1.96	17 (38%)	63,64,64	2.39	17 (26%)
2	AQ6	B	801	-	44,44,44	1.48	6 (13%)	63,64,64	2.31	20 (31%)

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
2	AQ6	A	801	-	-	5/16/50/50	0/6/6/6
2	AQ6	B	801	-	-	6/16/50/50	0/6/6/6

All (23) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	801	AQ6	CBH-CAX	5.05	1.65	1.52
2	B	801	AQ6	CAK-CAD	-4.61	1.38	1.48
2	A	801	AQ6	CBG-CAX	-3.33	1.43	1.52
2	B	801	AQ6	CAL-CAG	-3.28	1.41	1.48
2	A	801	AQ6	CAK-CAD	-3.25	1.41	1.48
2	A	801	AQ6	CAR-CAP	-3.06	1.42	1.49
2	A	801	AQ6	CBL-CBM	3.03	1.63	1.51
2	A	801	AQ6	CAS-CAV	-3.01	1.40	1.51
2	B	801	AQ6	CAR-CAP	-2.91	1.43	1.49
2	A	801	AQ6	CAI-CAF	2.84	1.44	1.39
2	A	801	AQ6	CAL-CAG	-2.81	1.42	1.48
2	A	801	AQ6	CAU-NAN	-2.80	1.41	1.47
2	A	801	AQ6	OAW-CAP	2.73	1.30	1.22
2	B	801	AQ6	CBL-CBH	-2.73	1.46	1.53
2	A	801	AQ6	CBM-CBK	2.73	1.62	1.51
2	A	801	AQ6	CBE-CAK	-2.59	1.35	1.39
2	A	801	AQ6	CAT-CAU	2.39	1.60	1.51
2	A	801	AQ6	CAB-CAG	-2.38	1.42	1.47
2	A	801	AQ6	CAT-NAM	2.19	1.50	1.46
2	B	801	AQ6	CAE-NAM	-2.16	1.36	1.41
2	A	801	AQ6	CAE-NAM	-2.16	1.36	1.41
2	B	801	AQ6	CAC-NAH	-2.08	1.30	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	801	AQ6	CBL-CBH	2.06	1.58	1.53

All (37) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	801	AQ6	CAI-CAE-CAC	-9.77	114.87	122.86
2	B	801	AQ6	CAI-CAE-CAC	-8.84	115.62	122.86
2	B	801	AQ6	CAV-NAN-CAU	-6.20	97.74	109.08
2	A	801	AQ6	CAV-NAN-CAU	5.65	119.40	109.08
2	A	801	AQ6	CAT-NAM-CAE	5.25	128.72	116.27
2	A	801	AQ6	CAV-NAN-CAX	-4.96	98.67	112.64
2	A	801	AQ6	CBK-CBG-CAX	-4.92	101.03	110.82
2	A	801	AQ6	CAU-CAT-NAM	4.79	120.00	110.70
2	B	801	AQ6	CAV-CAS-NAM	-4.48	102.00	110.70
2	B	801	AQ6	CAU-NAN-CAX	4.22	124.54	112.64
2	B	801	AQ6	CAS-NAM-CAE	3.97	125.68	116.27
2	A	801	AQ6	CAA-CAC-NAH	-3.75	117.36	122.65
2	A	801	AQ6	CAB-CAF-NAO	-3.60	116.59	120.52
2	B	801	AQ6	CAI-CAE-NAM	-3.43	117.45	122.52
2	A	801	AQ6	CAB-CAA-CAC	-3.42	118.00	119.95
2	B	801	AQ6	CAA-CAB-CAF	-3.42	117.46	119.74
2	B	801	AQ6	CAC-CAE-NAM	3.32	126.90	120.85
2	B	801	AQ6	OAQ-CAG-CAL	-3.30	116.07	120.91
2	B	801	AQ6	CAT-NAM-CAE	3.03	123.45	116.27
2	B	801	AQ6	CBA-CBD-CAY	3.03	123.80	120.30
2	B	801	AQ6	OAJ-CAD-CAK	-2.90	116.66	120.91
2	A	801	AQ6	CBC-CAY-CBD	-2.89	115.08	119.03
2	B	801	AQ6	OBB-CAP-CAR	2.89	122.34	114.85
2	B	801	AQ6	CBC-CAY-CBD	-2.79	115.22	119.03
2	B	801	AQ6	CAB-CAA-CAC	-2.68	118.42	119.95
2	A	801	AQ6	CBA-CBD-CAY	2.68	123.39	120.30
2	B	801	AQ6	CAV-NAN-CAX	-2.52	105.55	112.64
2	B	801	AQ6	CBM-CBK-CBG	-2.49	106.33	111.42
2	A	801	AQ6	CAI-CAF-NAO	2.47	126.18	121.05
2	A	801	AQ6	CAU-NAN-CAX	2.42	119.47	112.64
2	B	801	AQ6	CBC-CAZ-CAR	2.25	123.39	120.78
2	B	801	AQ6	CAA-CAC-NAH	-2.24	119.49	122.65
2	A	801	AQ6	CAC-CAA-CAD	2.23	122.71	120.52
2	B	801	AQ6	CBC-CAY-NAO	2.18	127.95	120.64
2	A	801	AQ6	OAQ-CAG-CAB	-2.15	117.95	121.43
2	A	801	AQ6	CBC-CAY-NAO	2.11	127.72	120.64
2	A	801	AQ6	CAY-NAO-CAF	-2.06	121.29	126.66

There are no chirality outliers.

All (11) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	B	801	AQ6	OAW-CAP-CAR-CAZ
2	B	801	AQ6	OAW-CAP-CAR-CBA
2	B	801	AQ6	OBB-CAP-CAR-CAZ
2	B	801	AQ6	OBB-CAP-CAR-CBA
2	A	801	AQ6	OAW-CAP-CAR-CAZ
2	B	801	AQ6	CAC-CAE-NAM-CAS
2	A	801	AQ6	OAW-CAP-CAR-CBA
2	A	801	AQ6	OBB-CAP-CAR-CAZ
2	A	801	AQ6	OBB-CAP-CAR-CBA
2	A	801	AQ6	CAC-CAE-NAM-CAT
2	B	801	AQ6	CAI-CAE-NAM-CAS

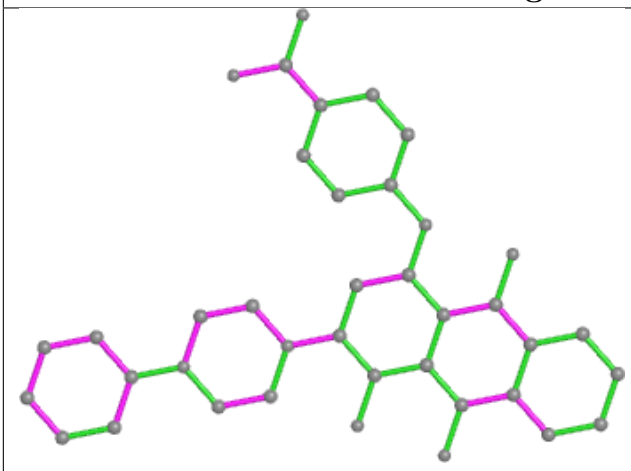
There are no ring outliers.

1 monomer is involved in 2 short contacts:

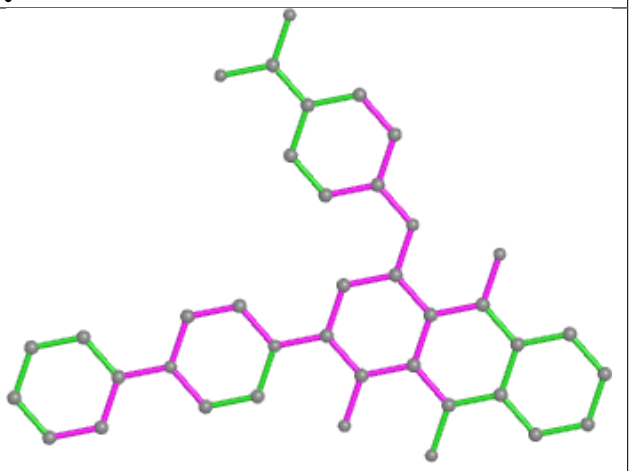
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	801	AQ6	2	0

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 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.

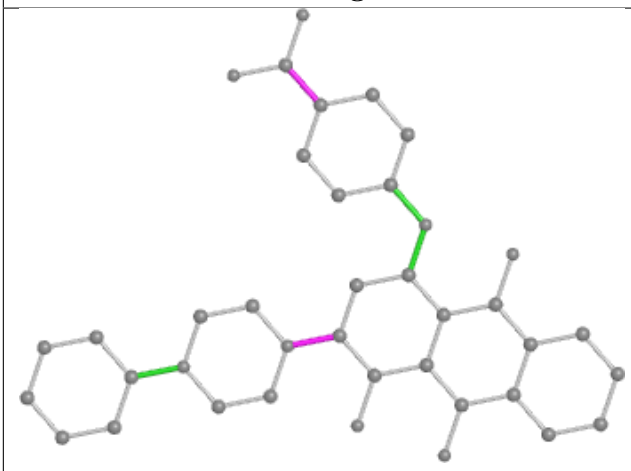
Ligand AQ6 A 801



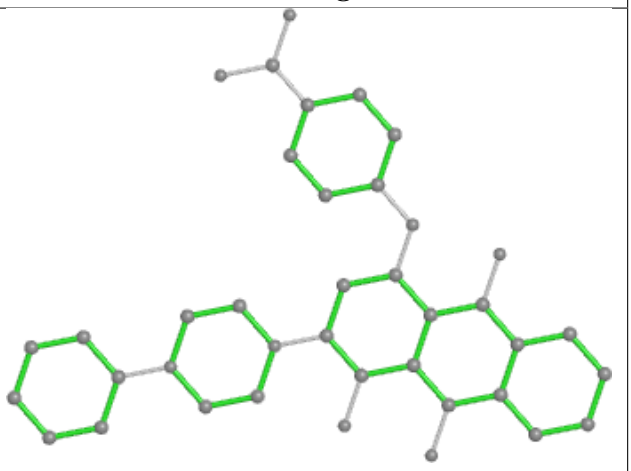
Bond lengths



Bond angles

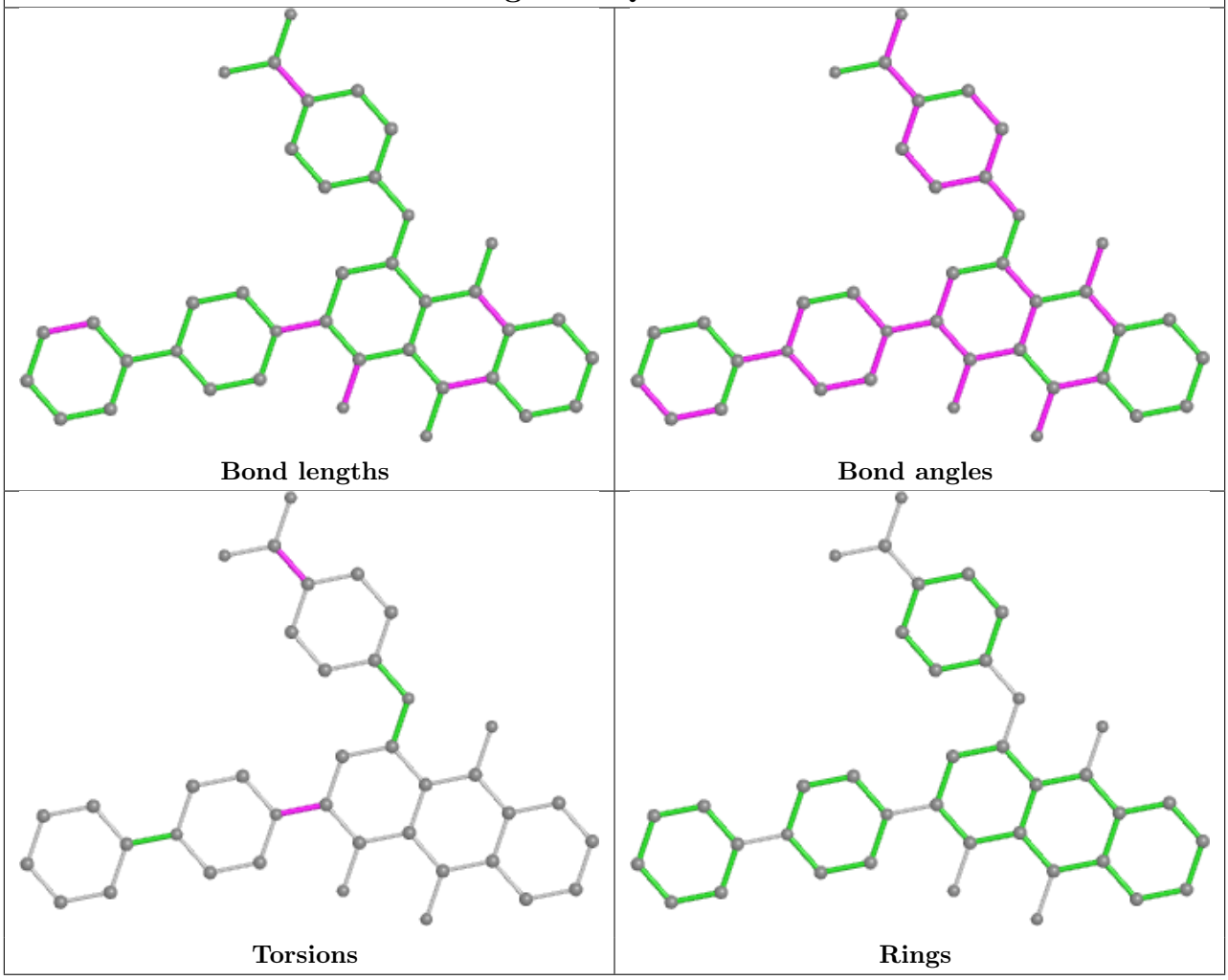


Torsions



Rings

Ligand AQ6 B 801



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	A	272/296 (91%)	0.50	4 (1%) 73 79	36, 54, 87, 113	0
1	B	258/296 (87%)	0.76	16 (6%) 20 24	37, 68, 115, 132	0
All	All	530/592 (89%)	0.63	20 (3%) 40 47	36, 61, 105, 132	0

All (20) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	511	VAL	4.0
1	B	560	GLU	3.5
1	A	533	LEU	3.3
1	B	582	GLY	3.3
1	B	785	ALA	3.2
1	B	506	LYS	3.2
1	B	579	CYS	3.0
1	B	510	ILE	3.0
1	B	526	LEU	3.0
1	A	534	PRO	2.8
1	B	563	LEU	2.7
1	B	540	LEU	2.6
1	A	680	TYR	2.5
1	B	509	ASP	2.3
1	B	660	GLN	2.3
1	B	514	TRP	2.3
1	B	501	SER	2.2
1	A	554	ARG	2.1
1	B	521	PHE	2.1
1	B	528	GLU	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 monosaccharides in this entry.

6.4 Ligands (i)

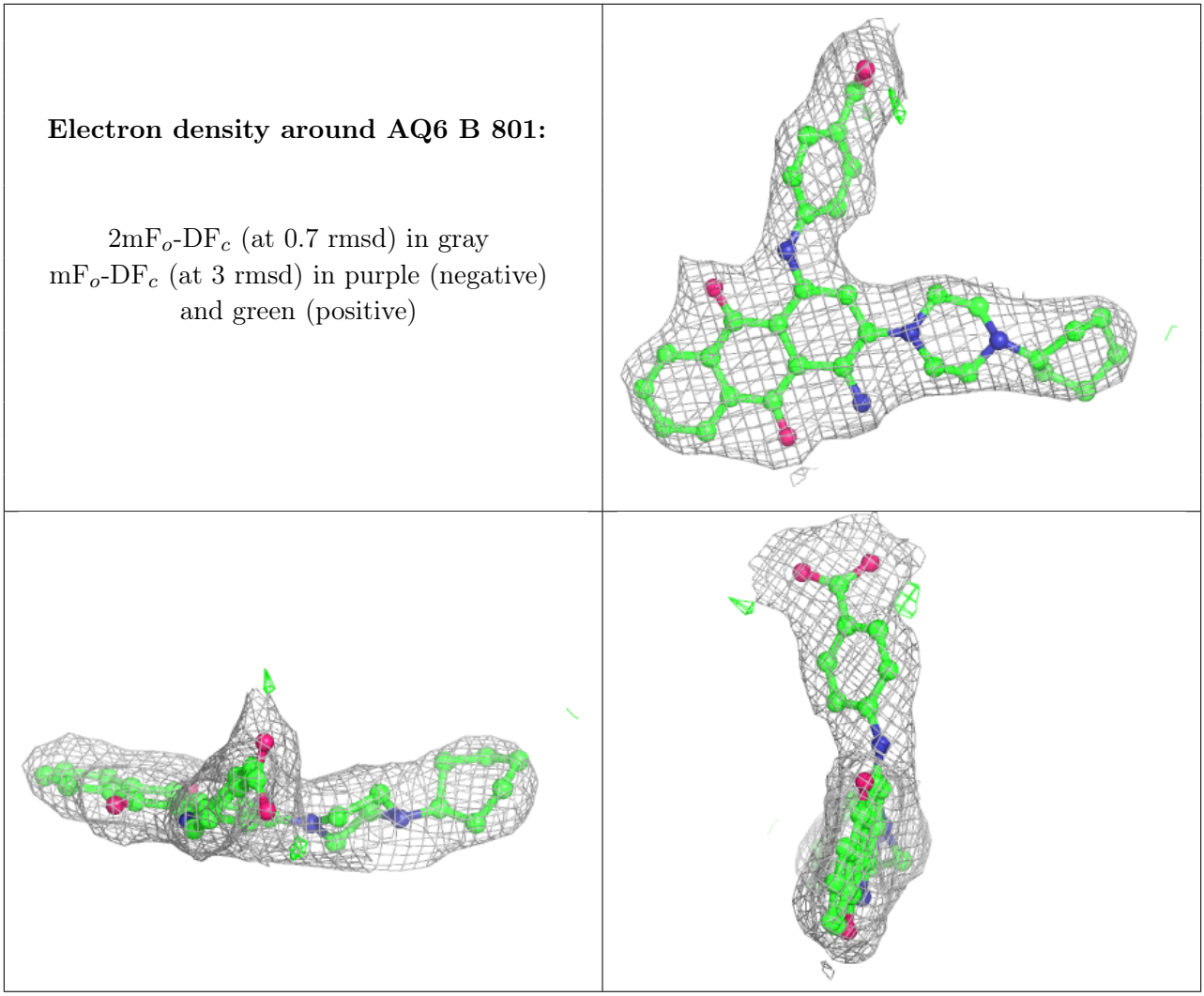
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' 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	AQ6	B	801	39/39	0.95	0.17	49,56,64,67	0
2	AQ6	A	801	39/39	0.97	0.17	37,41,44,45	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.

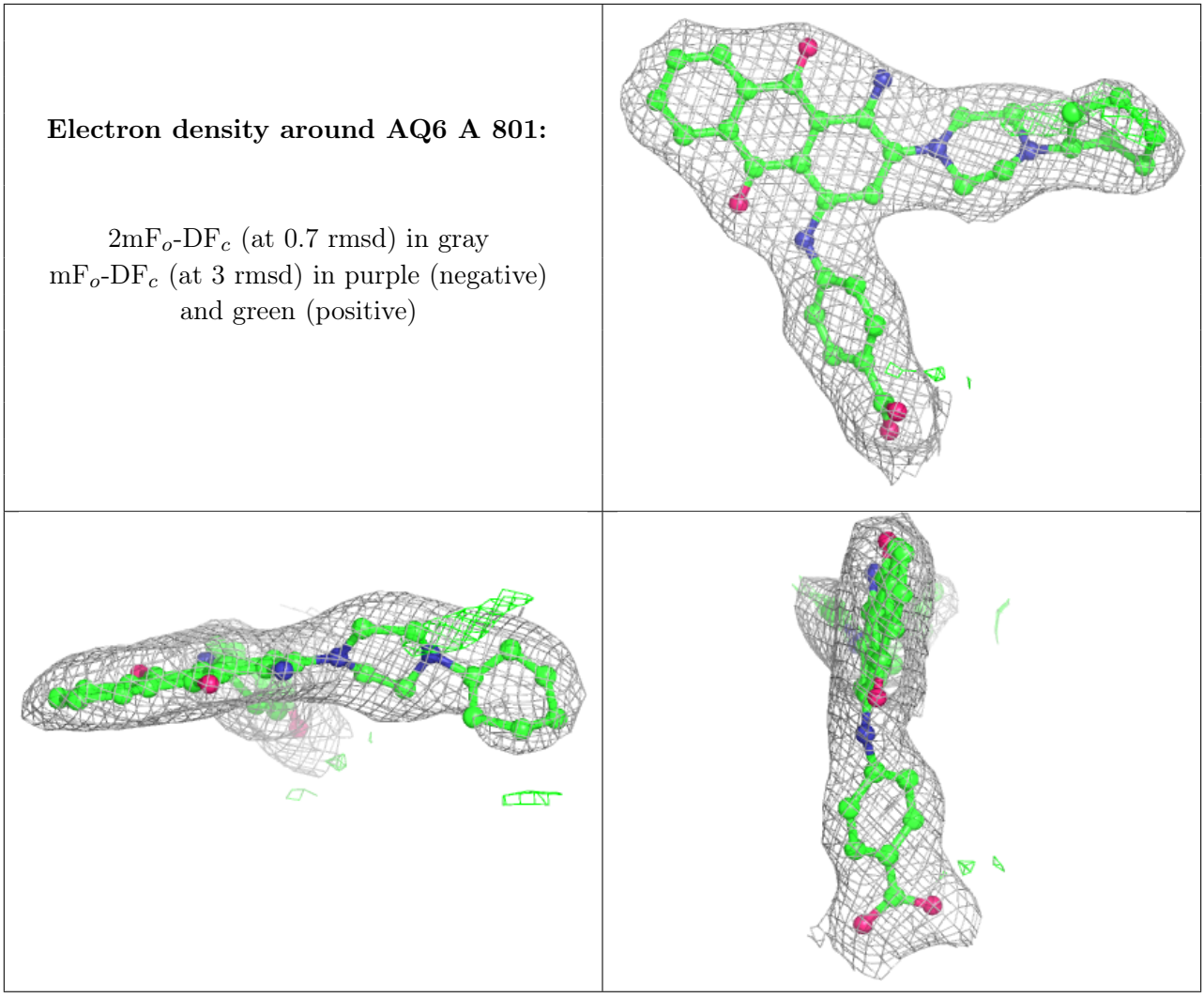
Electron density around AQ6 B 801:

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



Electron density around AQ6 A 801:

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



6.5 Other polymers

There are no such residues in this entry.