Full wwPDB X-ray Structure Validation Report ⓘ

Nov 15, 2021 – 11:03 am GMT

PDB ID	:	7AYA
Title	:	Crystal structure of CK2 bound by compound 9
Authors	:	Ferguson, A.; Collie, G.W.
Deposited on	:	2020-11-11
Resolution	:	2.45 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 following versions of software and data (see references ⓘ) were used in the production of this report:

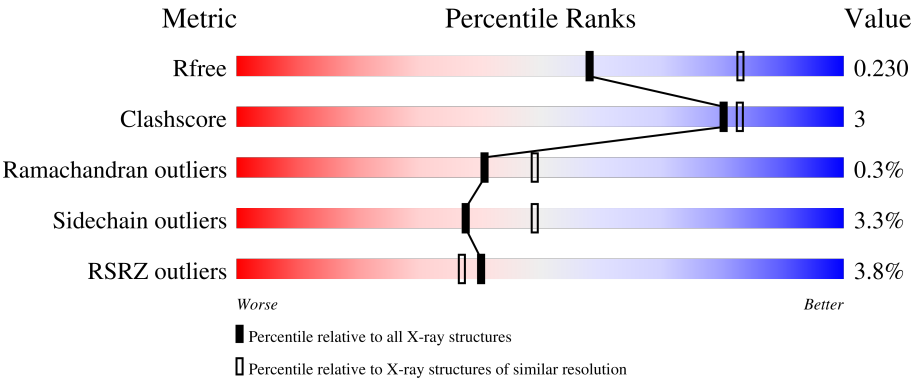
MolProbity	:	4.02b-467
Mogul	:	1.8.4 (270009), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.23.2
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0267
CCP4	:	7.1.010 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.23.2

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 2.45 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	1544 (2.48-2.44)
Clashscore	141614	1613 (2.48-2.44)
Ramachandran outliers	138981	1598 (2.48-2.44)
Sidechain outliers	138945	1598 (2.48-2.44)
RSRZ outliers	127900	1523 (2.48-2.44)

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	342	4% 89% 8% ·
1	B	342	3% 85% 9% · 5%

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	EDO	A	417	-	-	-	X

2 Entry composition (i)

There are 5 unique types of molecules in this entry. The entry contains 5998 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.

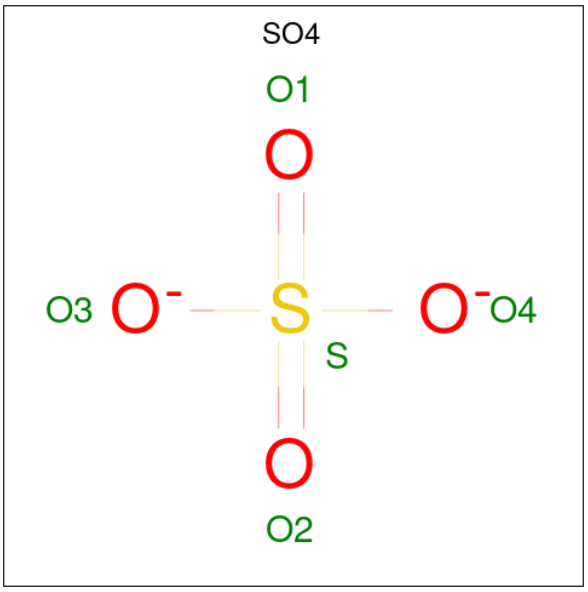
- Molecule 1 is a protein called Casein kinase II subunit alpha.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	331	Total	C	N	O	S	0	1	0
			2801	1794	494	502	11			
1	B	326	Total	C	N	O	S	0	0	0
			2754	1766	483	494	11			

There are 12 discrepancies between the modelled and reference sequences:

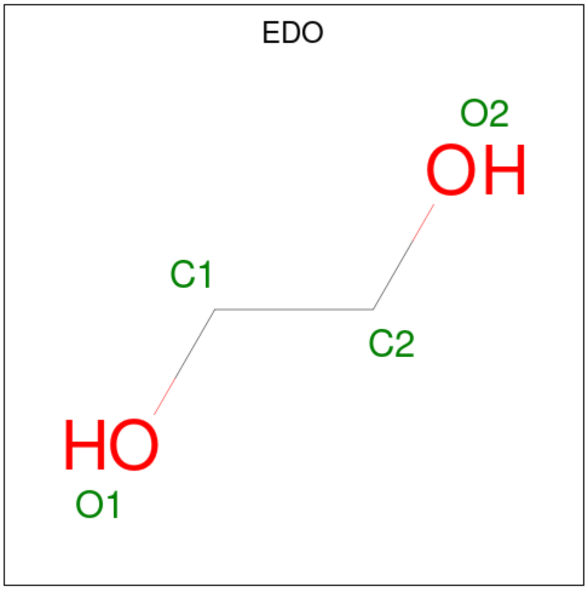
Chain	Residue	Modelled	Actual	Comment	Reference
A	337	HIS	-	expression tag	UNP P68400
A	338	HIS	-	expression tag	UNP P68400
A	339	HIS	-	expression tag	UNP P68400
A	340	HIS	-	expression tag	UNP P68400
A	341	HIS	-	expression tag	UNP P68400
A	342	HIS	-	expression tag	UNP P68400
B	337	HIS	-	expression tag	UNP P68400
B	338	HIS	-	expression tag	UNP P68400
B	339	HIS	-	expression tag	UNP P68400
B	340	HIS	-	expression tag	UNP P68400
B	341	HIS	-	expression tag	UNP P68400
B	342	HIS	-	expression tag	UNP P68400

- Molecule 2 is SULFATE ION (three-letter code: SO4) (formula: O_4S).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total O S 5 4 1	0	0
2	A	1	Total O S 5 4 1	0	0
2	A	1	Total O S 5 4 1	0	0
2	A	1	Total O S 5 4 1	0	0
2	A	1	Total O S 5 4 1	0	0
2	A	1	Total O S 5 4 1	0	0
2	B	1	Total O S 5 4 1	0	0
2	B	1	Total O S 5 4 1	0	0
2	B	1	Total O S 5 4 1	0	0
2	B	1	Total O S 5 4 1	0	0

- Molecule 3 is 1,2-ETHANEDIOL (three-letter code: EDO) (formula: $C_2H_6O_2$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total C O 4 2 2	0	0
3	A	1	Total C O 4 2 2	0	0
3	A	1	Total C O 4 2 2	0	0
3	A	1	Total C O 4 2 2	0	0
3	A	1	Total C O 4 2 2	0	0
3	A	1	Total C O 4 2 2	0	0
3	A	1	Total C O 4 2 2	0	0
3	A	1	Total C O 4 2 2	0	0
3	A	1	Total C O 4 2 2	0	0
3	A	1	Total C O 4 2 2	0	0
3	A	1	Total C O 4 2 2	0	0
3	A	1	Total C O 4 2 2	0	0
3	B	1	Total C O 4 2 2	0	0
3	B	1	Total C O 4 2 2	0	0

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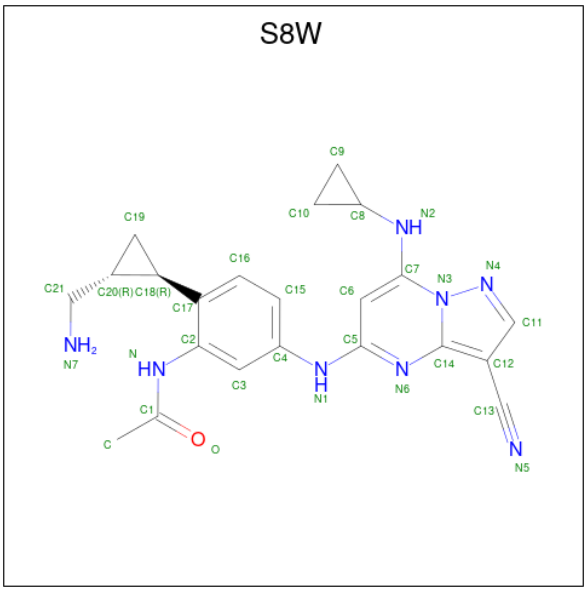
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	B	1	Total C O 4 2 2	0	0
3	B	1	Total C O 4 2 2	0	0
3	B	1	Total C O 4 2 2	0	0
3	B	1	Total C O 4 2 2	0	0
3	B	1	Total C O 4 2 2	0	0
3	B	1	Total C O 4 2 2	0	0
3	B	1	Total C O 4 2 2	0	0
3	B	1	Total C O 4 2 2	0	0
3	B	1	Total C O 4 2 2	0	0
3	B	1	Total C O 4 2 2	0	0
3	B	1	Total C O 4 2 2	0	0
3	B	1	Total C O 4 2 2	0	0

- Molecule 4 is {N}-[2-[(1 {R},2 {R})-2-(aminomethyl)cyclopropyl]-5-[[3-cyano-7-(cyclopropylamino)pyrazolo[1,5-a]pyrimidin-5-yl]amino]phenyl]ethanamide (three-letter code: S8W) (formula: $C_{22}H_{24}N_8O$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total C N O 31 22 8 1	0	0
4	B	1	Total C N O 31 22 8 1	0	0

- Molecule 5 is water.

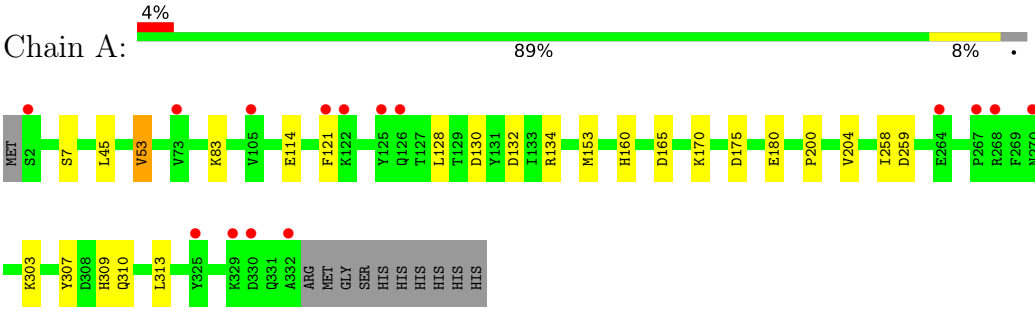
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	106	Total O 106 106	0	0
5	B	121	Total O 121 121	0	0

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.

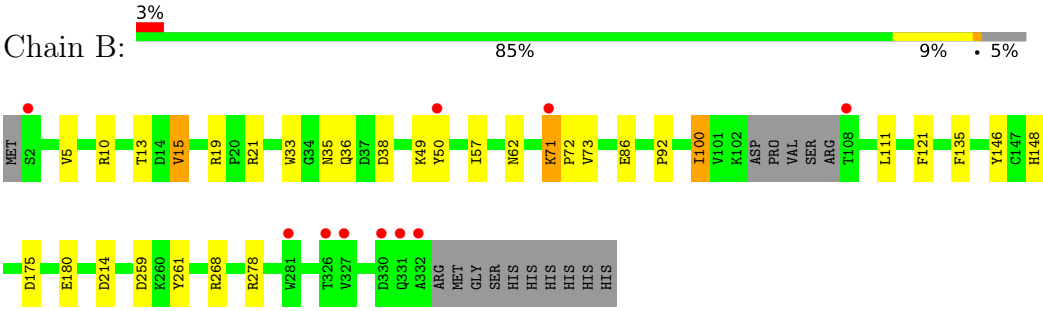
• Molecule 1: Casein kinase II subunit alpha

Chain A:



• Molecule 1: Casein kinase II subunit alpha

Chain B:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 43 21 2	Depositor
Cell constants a, b, c, α, β, γ	127.14Å 127.14Å 124.75Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	89.05 – 2.45 89.04 – 2.45	Depositor EDS
% Data completeness (in resolution range)	100.0 (89.05-2.45) 100.0 (89.04-2.45)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.15 (at 2.45Å)	Xtriage
Refinement program	BUSTER 2.11.7	Depositor
R, R_{free}	0.191 , 0.229 0.192 , 0.230	Depositor DCC
R_{free} test set	1896 reflections (4.97%)	wwPDB-VP
Wilson B-factor (Å^2)	37.5	Xtriage
Anisotropy	0.381	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	0.012 for -h,-l,-k 0.000 for l,-k,h	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	5998	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 11.72% 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, EDO, S8W

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	0.53	0/2879	0.69	0/3894
1	B	0.51	0/2827	0.70	0/3821
All	All	0.52	0/5706	0.70	0/7715

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2801	0	2748	11	0
1	B	2754	0	2696	20	0
2	A	30	0	0	0	0
2	B	20	0	0	0	0
3	A	48	0	72	2	0
3	B	56	0	84	8	0
4	A	31	0	0	0	0
4	B	31	0	0	0	0
5	A	106	0	0	0	0
5	B	121	0	0	2	0
All	All	5998	0	5600	31	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 3.

All (31) 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:169:ARG:HD2	3:B:412:EDO:H12	1.67	0.77
1:B:10:ARG:H	3:B:409:EDO:H22	1.63	0.63
1:B:10:ARG:N	3:B:409:EDO:H22	2.15	0.61
1:A:160:HIS:HB3	3:A:412:EDO:H21	1.82	0.60
1:B:100:ILE:HD13	1:B:111:LEU:HD23	1.87	0.57
1:B:19:ARG:HD2	5:B:568:HOH:O	2.08	0.53
1:B:10:ARG:HG2	3:B:409:EDO:H12	1.90	0.52
1:B:49:LYS:H	3:B:411:EDO:H12	1.77	0.49
1:B:148:HIS:HE1	1:B:214:ASP:OD2	1.96	0.49
1:A:130:ASP:O	1:A:134:ARG:HG3	2.13	0.49
1:A:200:PRO:HG2	1:A:307:TYR:HA	1.96	0.47
1:B:15:VAL:HG13	5:B:568:HOH:O	2.15	0.47
1:B:121:PHE:HE2	1:B:160:HIS:CD2	2.33	0.46
1:B:35:ASN:O	1:B:38:ASP:HB2	2.16	0.46
1:B:135:PHE:CG	3:B:412:EDO:H21	2.52	0.45
1:A:204:VAL:HG11	1:A:258:ILE:HD11	1.99	0.45
1:A:7:SER:OG	1:A:309:HIS:HE1	2.00	0.45
1:B:71:LYS:HD2	1:B:72:PRO:HD3	1.98	0.45
1:B:33:TRP:CZ3	1:B:100:ILE:HD11	2.52	0.44
1:B:278:ARG:H	3:B:416:EDO:C2	2.31	0.44
1:A:128:LEU:HD22	1:A:132:ASP:HB3	2.02	0.41
1:A:310:GLN:HA	3:A:409:EDO:H12	2.02	0.41
1:A:83:LYS:HA	1:A:83:LYS:HD2	1.93	0.41
1:B:278:ARG:H	3:B:416:EDO:H22	1.85	0.41
1:A:303:LYS:HB3	1:A:313:LEU:HG	2.03	0.41
1:B:100:ILE:HD13	1:B:111:LEU:CD2	2.49	0.41
1:A:45:LEU:HB2	1:A:53:VAL:HG23	2.03	0.40
1:A:165:ASP:HB3	1:A:170:LYS:HB3	2.03	0.40
1:B:50:TYR:HB3	1:B:73:VAL:HG22	2.02	0.40
1:B:5:VAL:HB	1:B:261:TYR:HA	2.02	0.40
1:B:92:PRO:HD2	1:B:146:TYR:CG	2.57	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	330/342 (96%)	318 (96%)	11 (3%)	1 (0%)	41 49
1	B	322/342 (94%)	310 (96%)	11 (3%)	1 (0%)	41 49
All	All	652/684 (95%)	628 (96%)	22 (3%)	2 (0%)	41 49

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	175	ASP
1	B	175	ASP

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	305/314 (97%)	297 (97%)	8 (3%)	46 58
1	B	299/314 (95%)	287 (96%)	12 (4%)	31 41
All	All	604/628 (96%)	584 (97%)	20 (3%)	38 49

All (20) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	53	VAL
1	A	114	GLU
1	A	121	PHE
1	A	153	MET

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Mol	Chain	Res	Type
1	A	180	GLU
1	A	259	ASP
1	A	275	ARG
1	A	290	GLN
1	B	13	THR
1	B	15	VAL
1	B	21	ARG
1	B	36	GLN
1	B	57	ILE
1	B	62	ASN
1	B	71	LYS
1	B	86	GLU
1	B	100	ILE
1	B	180	GLU
1	B	259	ASP
1	B	268	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (9) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	16	ASN
1	A	18	HIS
1	A	35	ASN
1	A	309	HIS
1	B	16	ASN
1	B	126	GLN
1	B	148	HIS
1	B	186	GLN
1	B	276	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 (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

38 ligands are modelled in this entry.

There are no bond length outliers.

There are no bond angle outliers.

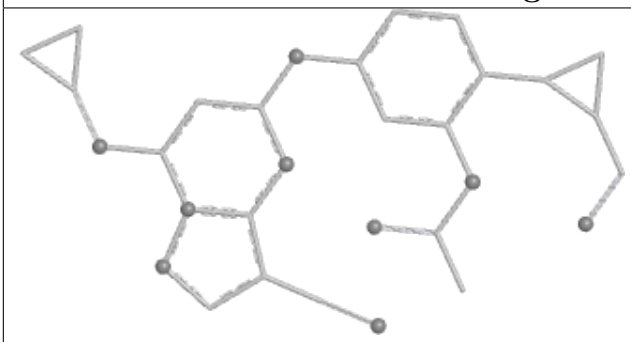
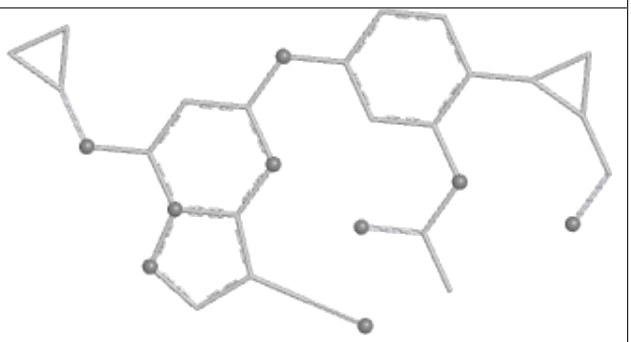
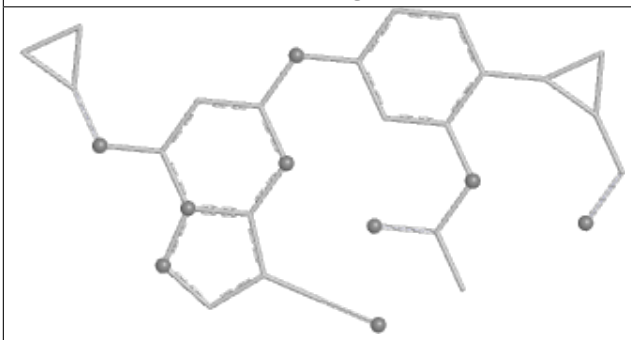
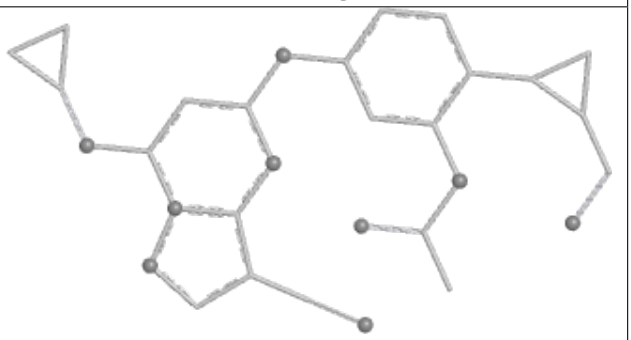
There are no chirality outliers.

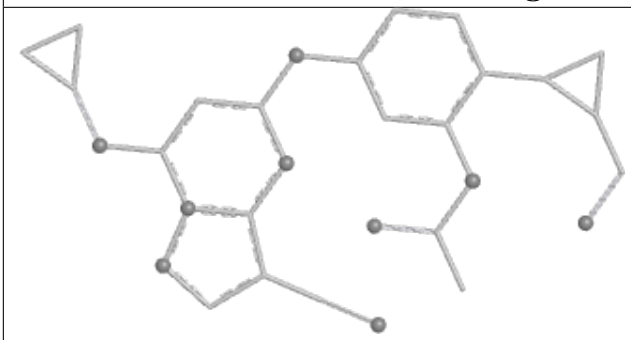
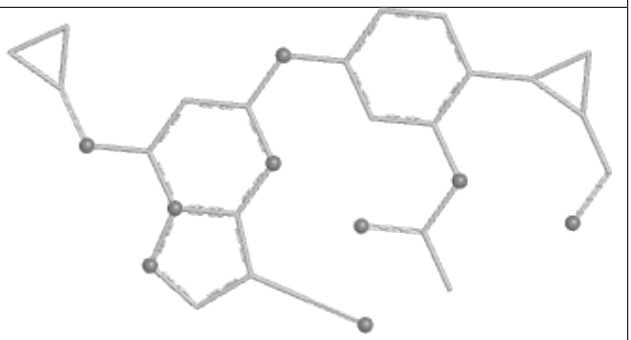
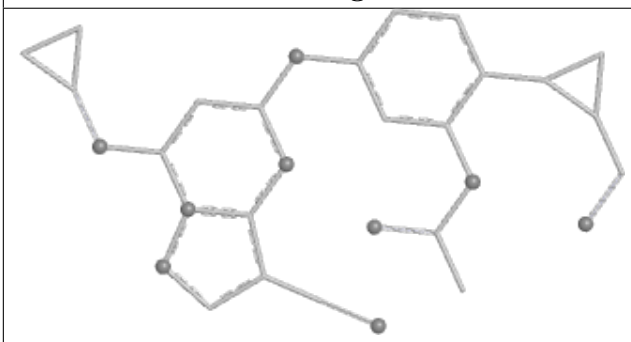
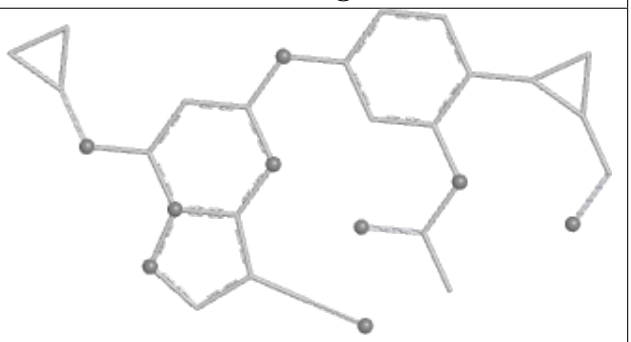
There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

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 S8W A 419	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand S8W B 419	
 Bond lengths	 Bond angles
 Torsions	 Rings

5.7 Other polymers

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	331/342 (96%)	0.37	15 (4%)	33	30	21, 35, 66, 83	0
1	B	326/342 (95%)	0.39	10 (3%)	49	45	21, 35, 62, 83	0
All	All	657/684 (96%)	0.38	25 (3%)	40	37	21, 35, 64, 83	0

All (25) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	2	SER	5.8
1	A	2	SER	4.2
1	A	330	ASP	3.8
1	A	332	ALA	3.5
1	B	50	TYR	3.5
1	A	270	ASN	3.4
1	B	71	LYS	3.0
1	A	325	TYR	2.9
1	B	331	GLN	2.8
1	A	121	PHE	2.8
1	B	332	ALA	2.8
1	A	125	TYR	2.7
1	A	267	PRO	2.7
1	B	330	ASP	2.6
1	B	327	VAL	2.6
1	A	329	LYS	2.6
1	A	122	LYS	2.5
1	A	105	VAL	2.4
1	A	268	ARG	2.3
1	B	281	TRP	2.3
1	A	126	GLN	2.2
1	B	326	THR	2.2
1	A	264	GLU	2.1
1	B	108	THR	2.1

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Mol	Chain	Res	Type	RSRZ
1	A	73	VAL	2.0

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

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

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 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
3	EDO	A	414	4/4	0.58	0.28	54,57,60,62	0
3	EDO	A	416	4/4	0.67	0.29	79,79,79,80	0
3	EDO	A	409	4/4	0.71	0.32	42,47,50,51	0
3	EDO	A	417	4/4	0.74	0.44	58,59,59,60	0
3	EDO	A	413	4/4	0.79	0.21	55,56,57,57	0
3	EDO	B	413	4/4	0.80	0.23	53,55,58,59	0
3	EDO	B	412	4/4	0.81	0.19	46,47,50,52	0
3	EDO	A	418	4/4	0.82	0.32	66,68,69,70	0
3	EDO	A	415	4/4	0.83	0.32	50,51,52,53	0
3	EDO	B	415	4/4	0.83	0.23	63,63,63,63	0
3	EDO	B	409	4/4	0.84	0.25	31,38,40,42	0
3	EDO	B	418	4/4	0.85	0.15	62,62,62,62	0
2	SO4	B	404	5/5	0.86	0.24	119,120,120,120	0
3	EDO	A	408	4/4	0.87	0.27	50,51,51,52	0
3	EDO	B	416	4/4	0.87	0.22	40,45,51,55	0
3	EDO	B	417	4/4	0.87	0.22	40,42,45,48	0
3	EDO	B	411	4/4	0.87	0.32	57,58,61,64	0
3	EDO	B	410	4/4	0.88	0.19	53,53,55,57	0
3	EDO	B	406	4/4	0.89	0.24	55,56,58,59	0
3	EDO	A	407	4/4	0.90	0.21	46,47,49,51	0
3	EDO	A	411	4/4	0.90	0.16	46,48,50,54	0
2	SO4	B	402	5/5	0.90	0.25	116,117,117,118	0

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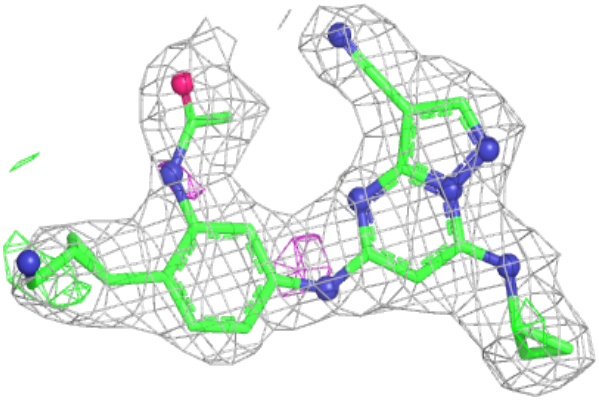
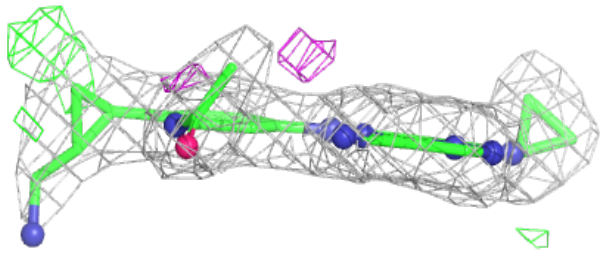
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	EDO	B	408	4/4	0.91	0.26	47,48,49,49	0
3	EDO	A	412	4/4	0.91	0.20	55,56,57,57	0
2	SO4	A	406	5/5	0.91	0.30	84,85,86,87	0
3	EDO	B	414	4/4	0.91	0.20	53,55,57,59	0
3	EDO	B	407	4/4	0.92	0.23	45,47,49,52	0
2	SO4	B	403	5/5	0.92	0.22	101,102,103,103	0
4	S8W	B	419	31/31	0.92	0.18	23,30,41,48	0
3	EDO	A	410	4/4	0.93	0.25	34,38,43,48	0
4	S8W	A	419	31/31	0.94	0.17	27,34,47,49	0
2	SO4	A	403	5/5	0.94	0.21	85,85,86,87	0
2	SO4	A	404	5/5	0.96	0.21	52,55,56,59	0
2	SO4	A	405	5/5	0.96	0.15	81,81,83,83	0
2	SO4	A	402	5/5	0.96	0.16	61,62,63,64	0
2	SO4	B	401	5/5	0.97	0.17	53,53,55,57	0
2	SO4	A	401	5/5	0.97	0.21	59,59,61,64	0
3	EDO	B	405	4/4	0.97	0.28	37,40,43,46	0

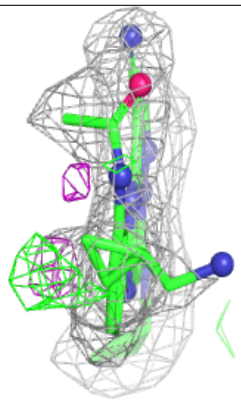
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around S8W B 419:

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

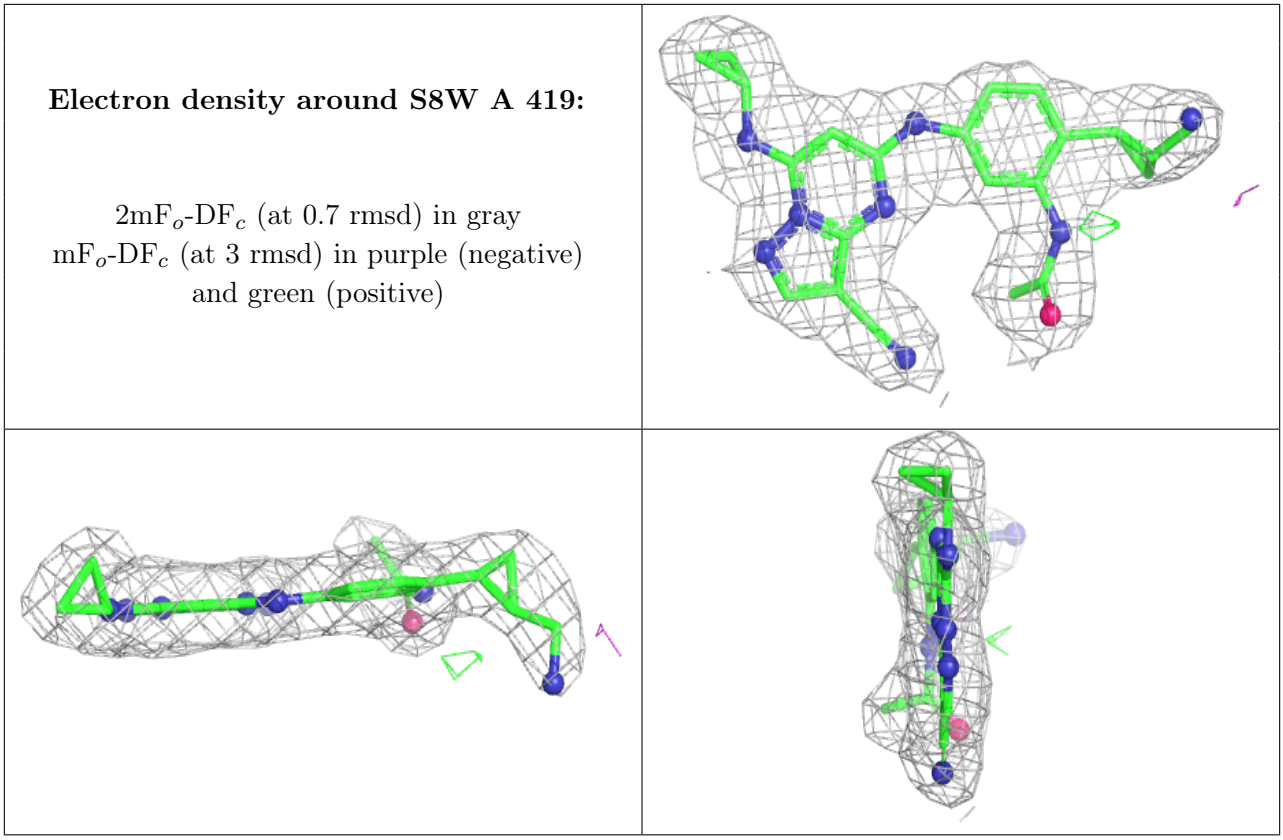






Electron density around S8W A 419:

$2mF_o$-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.