Full wwPDB X-ray Structure Validation Report ⓘ

Jun 24, 2025 – 02:53 pm BST

PDB ID	:	5OTO / pdb_00005oto
Title	:	The crystal structure of CK2alpha in complex with compound 30
Authors	:	Brear, P.; De Fusco, C.; Iegre, J.; Yoshida, M.; Mitchell, S.; Rossmann, M.; Carro, L.; Sore, H.; Hyvonen, M.; Spring, D.
Deposited on	:	2017-08-22
Resolution	:	1.51 Å(reported)

The following versions of software and data (see references ⓘ) were used in the production of this report:

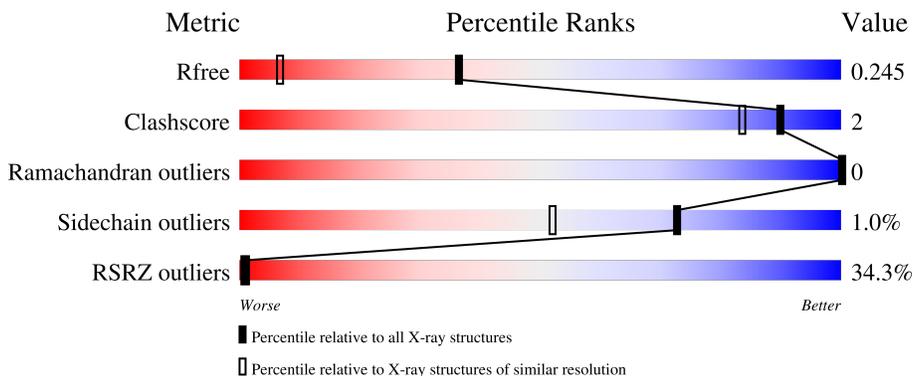|		
MolProbity	:	4-5-2 with Phenix2.0rc1
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	2.0rc1
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.003 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.44

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 1.51 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	Percentile Ranks	Value
Rfree		0.245
Clashscore		2
Ramachandran outliers		0
Sidechain outliers		1.0%
RSRZ outliers		34.3%

Worse   *Better*

▮ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R$_{free}$	164625	5293 (1.54-1.50)
Clashscore	180529	5759 (1.54-1.50)
Ramachandran outliers	177936	5653 (1.54-1.50)
Sidechain outliers	177891	5650 (1.54-1.50)
RSRZ outliers	164620	5293 (1.54-1.50)

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	352	11% / 88% / 5% / 7%
1	B	352	52% / 88% / · / 8%

WORLDWIDE
wwPDB
PROTEIN DATA BANK

2 Entry composition ⓘ

There are 5 unique types of molecules in this entry. The entry contains 6094 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
			Total	C	N	O	S			
1	B	324	2763	1770	485	497	11	0	3	0
			Total	C	N	O	S			
1	A	327	2802	1793	491	507	11	0	6	0

There are 50 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-22	GLY	-	expression tag	UNP P68400
B	-21	SER	-	expression tag	UNP P68400
B	-20	MET	-	expression tag	UNP P68400
B	-19	ASP	-	expression tag	UNP P68400
B	-18	ILE	-	expression tag	UNP P68400
B	-17	GLU	-	expression tag	UNP P68400
B	-16	PHE	-	expression tag	UNP P68400
B	-15	ASP	-	expression tag	UNP P68400
B	-14	ASP	-	expression tag	UNP P68400
B	-13	ASP	-	expression tag	UNP P68400
B	-12	ALA	-	expression tag	UNP P68400
B	-11	ASP	-	expression tag	UNP P68400
B	-10	ASP	-	expression tag	UNP P68400
B	-9	ASP	-	expression tag	UNP P68400
B	-8	GLY	-	expression tag	UNP P68400
B	-7	SER	-	expression tag	UNP P68400
B	-6	GLY	-	expression tag	UNP P68400
B	-5	SER	-	expression tag	UNP P68400
B	-4	GLY	-	expression tag	UNP P68400
B	-3	SER	-	expression tag	UNP P68400
B	-2	GLY	-	expression tag	UNP P68400
B	-1	SER	-	expression tag	UNP P68400
B	0	GLY	-	expression tag	UNP P68400
B	1	SER	-	expression tag	UNP P68400
B	21	SER	ARG	engineered mutation	UNP P68400

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Chain	Residue	Modelled	Actual	Comment	Reference
A	-22	GLY	-	expression tag	UNP P68400
A	-21	SER	-	expression tag	UNP P68400
A	-20	MET	-	expression tag	UNP P68400
A	-19	ASP	-	expression tag	UNP P68400
A	-18	ILE	-	expression tag	UNP P68400
A	-17	GLU	-	expression tag	UNP P68400
A	-16	PHE	-	expression tag	UNP P68400
A	-15	ASP	-	expression tag	UNP P68400
A	-14	ASP	-	expression tag	UNP P68400
A	-13	ASP	-	expression tag	UNP P68400
A	-12	ALA	-	expression tag	UNP P68400
A	-11	ASP	-	expression tag	UNP P68400
A	-10	ASP	-	expression tag	UNP P68400
A	-9	ASP	-	expression tag	UNP P68400
A	-8	GLY	-	expression tag	UNP P68400
A	-7	SER	-	expression tag	UNP P68400
A	-6	GLY	-	expression tag	UNP P68400
A	-5	SER	-	expression tag	UNP P68400
A	-4	GLY	-	expression tag	UNP P68400
A	-3	SER	-	expression tag	UNP P68400
A	-2	GLY	-	expression tag	UNP P68400
A	-1	SER	-	expression tag	UNP P68400
A	0	GLY	-	expression tag	UNP P68400
A	1	SER	-	expression tag	UNP P68400
A	21	SER	ARG	engineered mutation	UNP P68400

- Molecule 2 is ACETATE ION (CCD ID: ACT) (formula: $C_2H_3O_2$).
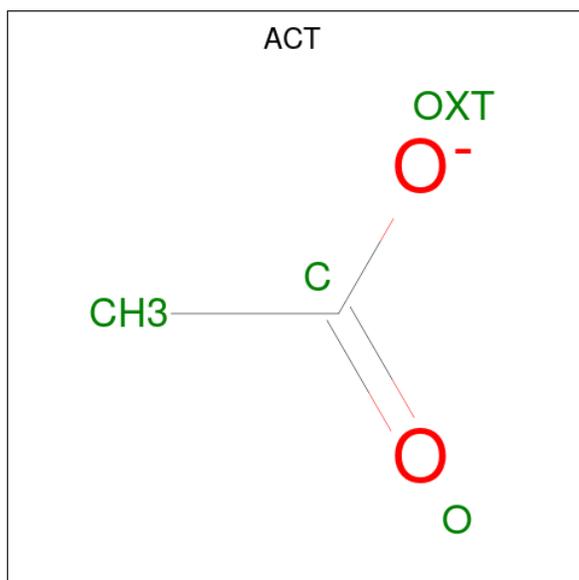
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	B	1	Total 4	C 2	O 2	0	0
2	B	1	Total 4	C 2	O 2	0	0
2	A	1	Total 4	C 2	O 2	0	0
2	A	1	Total 4	C 2	O 2	0	0
2	A	1	Total 4	C 2	O 2	0	0
2	A	1	Total 4	C 2	O 2	0	0
2	A	1	Total 4	C 2	O 2	0	0

- Molecule 3 is 2-(5-chloranyl-1 {H}-benzimidazol-2-yl)- {N}-[[3-chloranyl-4-(2-ethylphenyl)phenyl]methyl]ethanamine (CCD ID: AQW) (formula: $C_{24}H_{23}Cl_2N_3$).
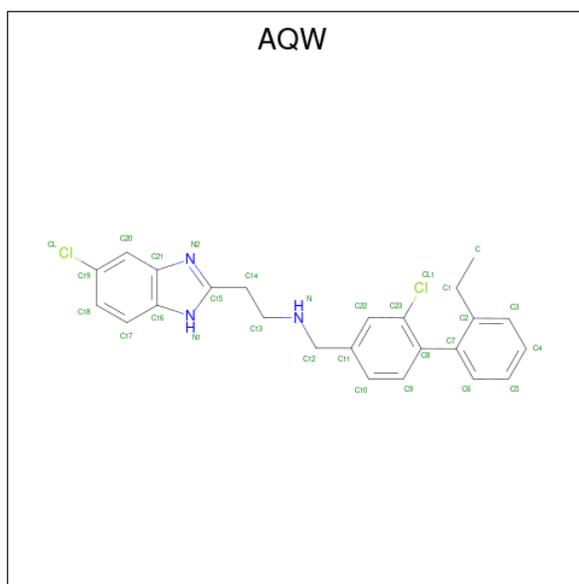
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	B	1	Total 29	C 24	Cl 2	N 3	0	0
3	A	1	Total 58	C 48	Cl 4	N 6	0	1

- Molecule 4 is PHOSPHATE ION (CCD ID: PO4) (formula: O_4P).
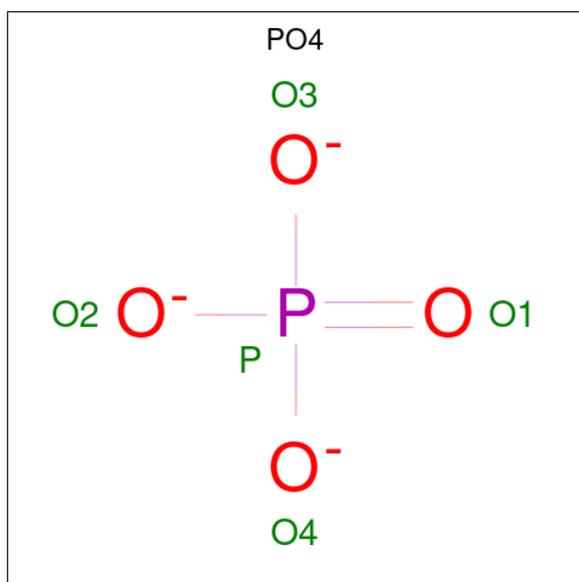
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	B	1	Total 5	O 4	P 1	0	0
4	A	1	Total 5	O 4	P 1	0	0

• Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	B	111	Total 111	O 111	0	0
5	A	293	Total 293	O 293	0	0

3 Residue-property plots ⓘ

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

• Molecule 1: Casein kinase II subunit alpha

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, α, β, γ	65.48Å 69.54Å 337.21Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	168.60 – 1.51 168.60 – 1.51	Depositor EDS
% Data completeness (in resolution range)	93.9 (168.60-1.51) 93.9 (168.60-1.51)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.68 (at 1.51Å)	Xtriage
Refinement program	BUSTER 2.10.1	Depositor
R, R_{free}	0.239 , 0.253 0.245 , 0.245	Depositor DCC
R_{free} test set	6153 reflections (5.07%)	wwPDB-VP
Wilson B-factor (Å^2)	20.3	Xtriage
Anisotropy	0.479	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 36.4	EDS
L-test for twinning[2]	$< |L| > = 0.49, < L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	6094	wwPDB-VP
Average B, all atoms (Å^2)	38.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 6.85% of the height of the origin peak. No significant pseudotranslation is detected.*

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[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 (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: AQW, PO4, ACT

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	0.97	1/2877 (0.0%)	1.05	4/3893 (0.1%)
1	B	0.88	1/2838 (0.0%)	1.15	1/3839 (0.0%)
All	All	0.93	2/5715 (0.0%)	1.10	5/7732 (0.1%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	22	GLU	C-O	-5.43	1.17	1.24
1	B	22	GLU	C-O	-5.03	1.18	1.24

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	124	LEU	CA-C-N	5.57	127.75	120.28
1	A	124	LEU	C-N-CA	5.57	127.75	120.28
1	A	233	PHE	CA-CB-CG	5.47	119.28	113.80
1	A	24	TRP	N-CA-C	5.33	119.93	113.38
1	B	24	TRP	N-CA-C	5.01	120.24	113.72

There are no chirality outliers.

There are no planarity outliers.

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	2802	0	2735	12	0
1	B	2763	0	2702	7	0
2	A	20	0	15	1	0
2	B	8	0	6	0	0
3	A	58	0	0	2	0
3	B	29	0	0	1	0
4	A	5	0	0	0	0
4	B	5	0	0	0	0
5	A	293	0	0	3	0
5	B	111	0	0	0	0
All	All	6094	0	5458	19	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 2.

All (19) 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:163:MET:HE2	1:A:174:ILE:HG21	1.55	0.88
1:A:237:ASP:OD2	5:A:501:HOH:O	1.91	0.87
1:A:225:MET:HE3	3:A:406[B]:AQW:CL1	2.36	0.62
1:A:163:MET:HE2	1:A:174:ILE:CG2	2.29	0.59
1:B:120:ASP:OD2	1:B:123:GLN:HG3	2.03	0.58
1:A:225:MET:CE	3:A:406[B]:AQW:CL1	2.90	0.57
1:B:120:ASP:HB3	1:B:123:GLN:OE1	2.08	0.53
1:A:279:LYS:HB3	1:A:283:ARG:HD3	1.95	0.48
1:B:258:ILE:HA	1:B:263:ILE:HD12	1.98	0.46
1:B:120:ASP:HB3	1:B:123:GLN:CD	2.42	0.45
1:B:73:VAL:HG23	1:B:74:LYS:HD2	1.99	0.44
1:A:133:ILE:HD12	1:A:292:LEU:HD22	1.99	0.43
1:A:40:GLN:HB3	1:A:57:ILE:HG22	2.00	0.43
1:A:103:ASP:OD2	1:A:105:VAL:HG23	2.19	0.43
1:A:213:LEU:CD1	5:A:506:HOH:O	2.67	0.42
1:A:213:LEU:HD11	5:A:506:HOH:O	2.20	0.41
1:A:286:HIS:HE1	2:A:403:ACT:OXT	2.02	0.41
1:B:162:VAL:HG11	3:B:403:AQW:CL1	2.57	0.41
1:B:303:LYS:HB3	1:B:313:LEU:HG	2.03	0.41

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	331/352 (94%)	325 (98%)	6 (2%)	0	100	100
1	B	325/352 (92%)	318 (98%)	7 (2%)	0	100	100
All	All	656/704 (93%)	643 (98%)	13 (2%)	0	100	100

There are no Ramachandran outliers to report.

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	307/319 (96%)	305 (99%)	2 (1%)	81	66
1	B	302/319 (95%)	298 (99%)	4 (1%)	65	39
All	All	609/638 (96%)	603 (99%)	6 (1%)	73	52

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

Mol	Chain	Res	Type
1	B	64	LYS
1	B	70	LEU
1	B	258	ILE
1	B	282	GLU
1	A	57	ILE
1	A	70	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14)

such sidechains are listed below:

Mol	Chain	Res	Type
1	B	29	HIS
1	B	168	HIS
1	B	186	GLN
1	B	207	GLN
1	B	236	HIS
1	B	270	ASN
1	A	115	HIS
1	A	160	HIS
1	A	168	HIS
1	A	186	GLN
1	A	236	HIS
1	A	262	ASN
1	A	270	ASN
1	A	286	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

12 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	PO4	A	407	-	4,4,4	2.55	1 (25%)	6,6,6	0.56	0
2	ACT	A	404	-	3,3,3	0.99	0	3,3,3	0.92	0
2	ACT	A	403	-	3,3,3	1.13	0	3,3,3	0.92	0
3	AQW	A	406[A]	-	30,32,32	0.57	0	37,44,44	0.52	0
2	ACT	A	401	-	3,3,3	1.28	0	3,3,3	1.08	0
3	AQW	B	403	-	30,32,32	0.56	0	37,44,44	0.51	0
2	ACT	B	401	-	3,3,3	0.99	0	3,3,3	0.98	0
2	ACT	B	402	-	3,3,3	1.08	0	3,3,3	0.94	0
2	ACT	A	405	-	3,3,3	1.00	0	3,3,3	1.03	0
2	ACT	A	402	-	3,3,3	1.13	0	3,3,3	0.86	0
3	AQW	A	406[B]	-	30,32,32	0.57	0	37,44,44	0.54	0
4	PO4	B	404	-	4,4,4	2.49	1 (25%)	6,6,6	0.55	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
3	AQW	A	406[A]	-	-	2/13/13/13	0/4/4/4
3	AQW	A	406[B]	-	-	1/13/13/13	0/4/4/4
3	AQW	B	403	-	-	1/13/13/13	0/4/4/4

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	B	404	PO4	P-O1	4.17	1.60	1.50
4	A	407	PO4	P-O1	4.11	1.60	1.50

There are no bond angle outliers.

There are no chirality outliers.

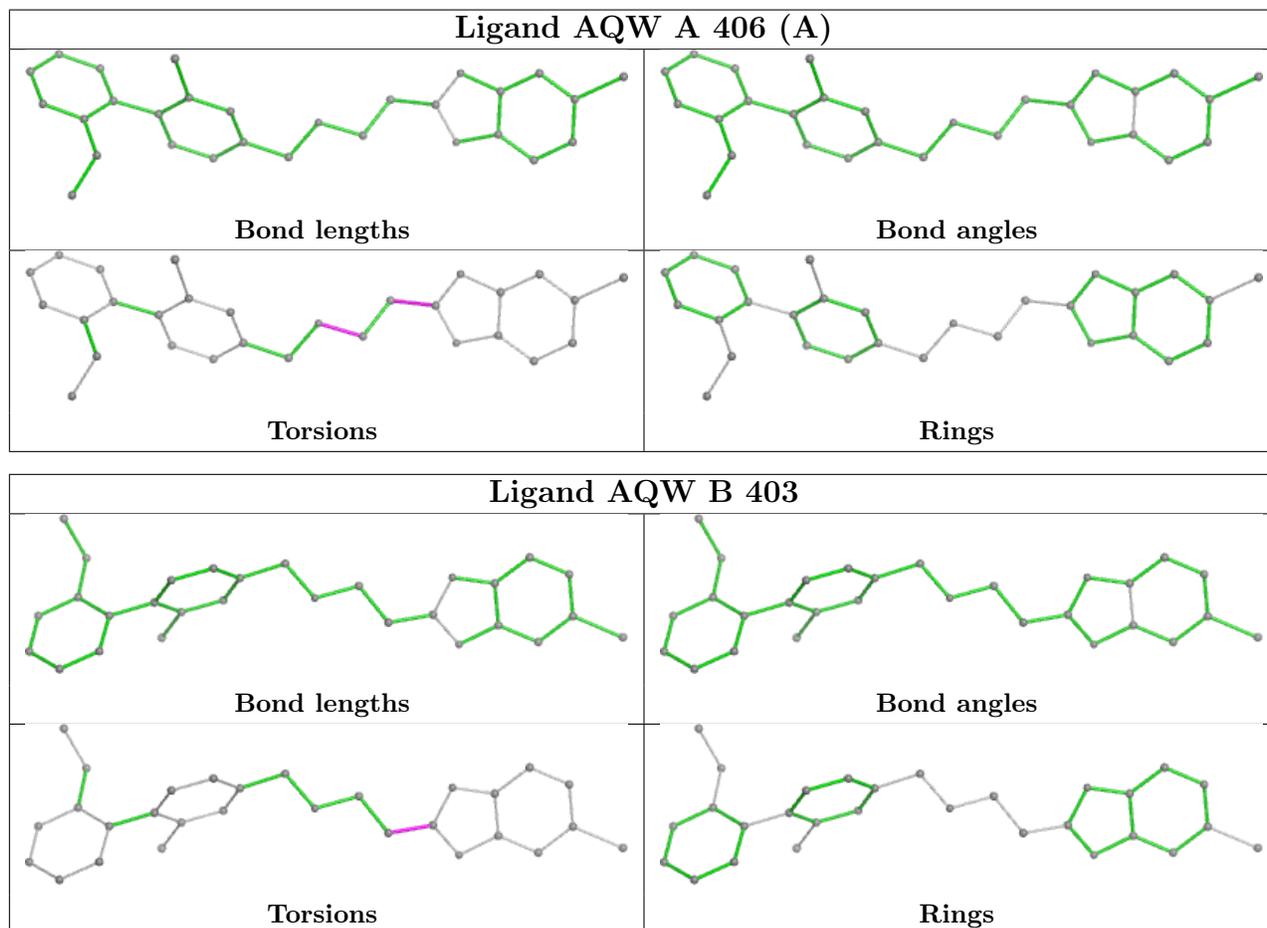All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	B	403	AQW	C13-C14-C15-N2
3	A	406[A]	AQW	C13-C14-C15-N2
3	A	406[B]	AQW	C13-C14-C15-N2
3	A	406[A]	AQW	C14-C13-N-C12

There are no ring outliers.

3 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	403	ACT	1	0
3	B	403	AQW	1	0
3	A	406[B]	AQW	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 AQW A 406 (A)

Bond lengths

Bond angles

Torsions

Rings

Ligand AQW B 403

Bond lengths

Bond angles

Torsions

Rings

Ligand AQW A 406 (B)

Bond lengths	Bond angles
Torsions	Rings
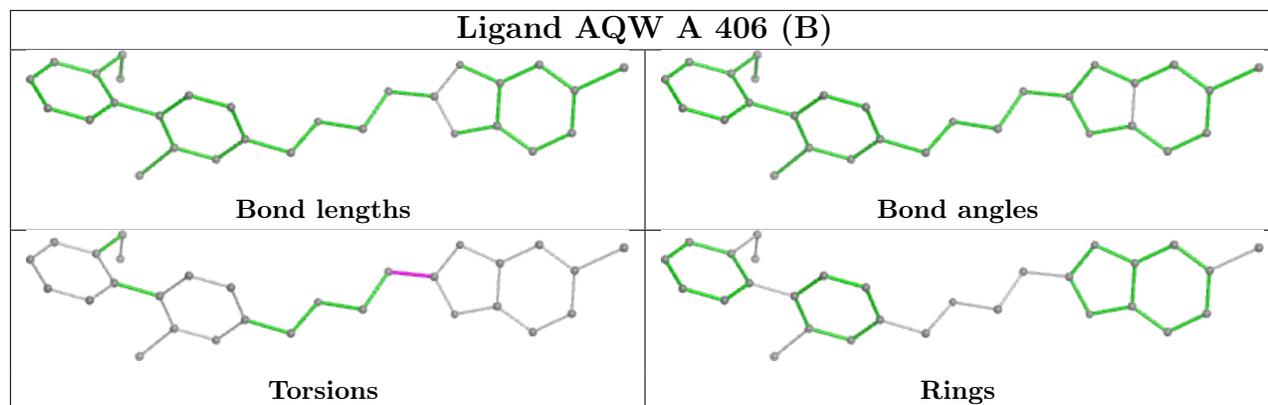
5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å²)	Q<0.9
1	A	327/352 (92%)	0.64	39 (11%)	10	11	8, 23, 52, 80	6 (1%)
1	B	324/352 (92%)	2.46	184 (56%)	0	0	16, 45, 80, 107	3 (0%)
All	All	651/704 (92%)	1.55	223 (34%)	1	1	8, 33, 73, 107	9 (1%)

All (223) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	327	VAL	8.6
1	B	121	PHE	7.9
1	B	124	LEU	7.7
1	A	328	VAL	7.0
1	B	281	TRP	6.4
1	A	50	TYR	6.2
1	A	125	TYR	6.2
1	A	121	PHE	6.1
1	B	284	PHE	6.1
1	B	307	TYR	6.0
1	B	233	PHE	6.0
1	B	273	LEU	5.9
1	B	248	VAL	5.8
1	B	249	LEU	5.7
1	B	245	ILE	5.6
1	B	255	TYR	5.6
1	B	216	TRP	5.6
1	B	125	TYR	5.5
1	B	263	ILE	5.5
1	B	305	LEU	5.5
1	B	269	PHE	5.5
1	B	300	PHE	5.5
1	B	298	LEU	5.4
1	A	124	LEU	5.4

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Mol	Chain	Res	Type	RSRZ
1	B	254	LEU	5.4
1	B	257	TYR	5.3
1	B	116	VAL	5.3
1	B	128	LEU	5.2
1	B	5	VAL	5.2
1	B	258	ILE	5.2
1	B	323	TYR	5.1
1	B	293	VAL	5.0
1	B	265	LEU	5.0
1	B	50	TYR	5.0
1	B	73	VAL	4.9
1	B	279	LYS	4.9
1	B	285	VAL	4.9
1	B	46	GLY	4.9
1	B	324	PHE	4.8
1	B	292	LEU	4.8
1	B	227	PHE	4.8
1	B	251	THR	4.7
1	B	45	LEU	4.7
1	B	232	PHE	4.6
1	B	242	LEU	4.5
1	B	272	ILE	4.5
1	B	276	HIS	4.4
1	B	301	LEU	4.4
1	B	66	VAL	4.4
1	B	53	VAL	4.3
1	B	297	ALA	4.3
1	B	4	PRO	4.3
1	B	267	PRO	4.2
1	B	123	GLN	4.2
1	B	129	THR	4.1
1	B	304	LEU	4.1
1	A	73	VAL	4.1
1	B	57	ILE	4.0
1	B	243	VAL	4.0
1	B	31	VAL	4.0
1	B	42	VAL	4.0
1	B	222	LEU	3.9
1	B	72	PRO	3.9
1	B	71	LYS	3.9
1	A	117	ASN	3.8
1	B	54	PHE	3.8

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Mol	Chain	Res	Type	RSRZ
1	B	48	GLY	3.8
1	B	206	TYR	3.8
1	B	117	ASN	3.8
1	A	116	VAL	3.8
1	B	282	GLU	3.8
1	B	127	THR	3.7
1	B	274	GLY	3.7
1	B	325	TYR	3.7
1	A	49	LYS	3.6
1	B	226	ILE	3.6
1	B	283	ARG	3.6
1	A	118	ASN	3.6
1	A	2	SER	3.6
1	B	131	TYR	3.6
1	A	57	ILE	3.5
1	B	280	ARG	3.5
1	A	105	VAL	3.5
1	B	224	SER	3.5
1	B	74	LYS	3.5
1	B	261	TYR	3.5
1	B	122	LYS	3.5
1	B	322	PRO	3.4
1	B	119	THR	3.4
1	A	74	LYS	3.4
1	A	59	ILE	3.3
1	A	71	LYS	3.3
1	B	11	VAL	3.3
1	B	43	ARG	3.3
1	B	246	ALA	3.3
1	B	260	LYS	3.3
1	B	8	ARG	3.3
1	A	126	GLN	3.2
1	B	59	ILE	3.2
1	B	286	HIS	3.2
1	B	275	ARG	3.2
1	B	291	HIS	3.2
1	B	204	VAL	3.2
1	A	31	VAL	3.2
1	B	278	ARG	3.1
1	B	135	PHE	3.1
1	B	313	LEU	3.1
1	B	17	THR	3.1

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Mol	Chain	Res	Type	RSRZ
1	A	122	LYS	3.1
1	B	239	TYR	3.1
1	B	33	TRP	3.1
1	B	70	LEU	3.1
1	A	33	TRP	3.1
1	B	51	SER	3.1
1	B	44	LYS	3.1
1	B	247	LYS	3.1
1	B	133	ILE	3.1
1	B	318	ALA	3.1
1	B	49	LYS	3.1
1	B	295	PRO	3.0
1	A	123	GLN	3.0
1	B	41	LEU	3.0
1	B	28	SER	3.0
1	A	75	LYS	3.0
1	B	220	CYS	3.0
1	B	259	ASP	3.0
1	B	166	HIS	2.9
1	B	321	HIS	2.9
1	B	30	VAL	2.9
1	B	289	ASN	2.9
1	B	126	GLN	2.9
1	A	19[A]	ARG	2.9
1	B	288	GLU	2.9
1	A	47	ARG	2.9
1	A	191	ARG	2.9
1	B	203	LEU	2.9
1	B	60	THR	2.9
1	B	225	MET	2.8
1	B	75	LYS	2.8
1	B	202	LEU	2.8
1	B	266	ASP	2.8
1	B	299	ASP	2.8
1	B	287	SER	2.7
1	B	308	ASP	2.7
1	B	311[A]	SER	2.7
1	B	213	LEU	2.7
1	B	134	ARG	2.7
1	B	6	PRO	2.7
1	B	170	LYS	2.7
1	B	219	GLY	2.7

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Mol	Chain	Res	Type	RSRZ
1	B	250	GLY	2.7
1	B	296	GLU	2.6
1	B	78	ILE	2.6
1	B	120	ASP	2.6
1	B	130	ASP	2.6
1	B	62	ASN	2.6
1	A	128	LEU	2.6
1	B	231	PRO	2.6
1	B	9	ALA	2.6
1	B	253	ASP	2.6
1	B	315	ALA	2.6
1	B	69	ILE	2.6
1	B	185	GLY	2.5
1	A	271	ASP	2.5
1	B	228	ARG	2.5
1	B	182	TYR	2.5
1	B	316	ARG	2.5
1	B	223	ALA	2.5
1	B	205	ASP	2.5
1	B	256	ASP	2.5
1	A	72	PRO	2.5
1	B	290	GLN	2.5
1	B	314	THR	2.5
1	B	320	GLU	2.5
1	B	229	LYS	2.4
1	A	30	VAL	2.4
1	B	98	ALA	2.4
1	B	268	ARG	2.4
1	B	306	ARG	2.4
1	A	283	ARG	2.4
1	B	115	HIS	2.4
1	B	271	ASP	2.4
1	B	19[A]	ARG	2.3
1	B	211	TYR	2.3
1	B	238	ASN	2.3
1	B	270	ASN	2.3
1	B	277	SER	2.3
1	B	326	THR	2.3
1	B	190	VAL	2.3
1	B	252	GLU	2.3
1	B	264	GLU	2.3
1	B	118	ASN	2.3

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Mol	Chain	Res	Type	RSRZ
1	B	164	ILE	2.3
1	A	70	LEU	2.3
1	B	184	PRO	2.2
1	A	41	LEU	2.2
1	B	64	LYS	2.2
1	B	171	LEU	2.2
1	B	47	ARG	2.2
1	B	169	ARG	2.2
1	B	196	TYR	2.2
1	B	262	ASN	2.2
1	A	114	GLU	2.2
1	A	42	VAL	2.2
1	B	77	LYS	2.2
1	A	258	ILE	2.2
1	B	294	SER	2.1
1	B	141	LEU	2.1
1	B	68	LYS	2.1
1	B	236	HIS	2.1
1	A	100	ILE	2.1
1	B	168	HIS	2.1
1	B	186	GLN	2.1
1	B	197	PHE	2.1
1	B	24	TRP	2.1
1	B	52	GLU	2.1
1	A	327	VAL	2.0
1	B	27	GLU	2.0
1	A	230	GLU	2.0
1	A	264	GLU	2.0
1	B	107	ARG	2.0
1	B	200	PRO	2.0
1	B	191	ARG	2.0

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 oligosaccharides in this entry.

6.4 Ligands (i)

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

| Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	ACT	A	405	4/4	0.70	0.24	39,39,41,45	0
3	AQW	B	403	29/29	0.75	0.20	56,65,69,74	0
3	AQW	A	406[A]	29/29	0.81	0.14	16,21,31,37	29
3	AQW	A	406[B]	29/29	0.81	0.14	55,58,71,74	29
2	ACT	A	403	4/4	0.82	0.16	38,42,43,44	0
4	PO4	A	407	5/5	0.87	0.12	36,37,39,40	0
2	ACT	B	402	4/4	0.88	0.12	31,33,36,37	0
4	PO4	B	404	5/5	0.89	0.11	46,46,47,48	0
2	ACT	B	401	4/4	0.89	0.12	43,43,44,45	0
2	ACT	A	404	4/4	0.92	0.11	32,33,37,37	0
2	ACT	A	401	4/4	0.96	0.07	21,22,23,25	0
2	ACT	A	402	4/4	0.96	0.08	27,31,32,32	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 AQW B 403:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
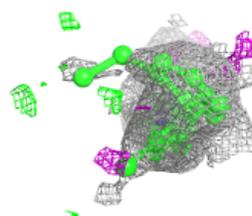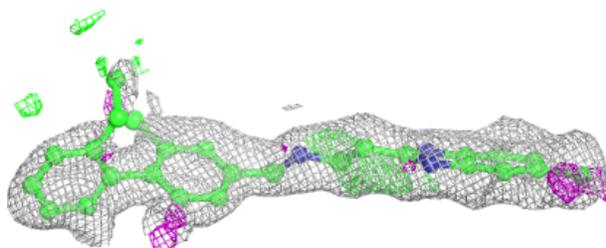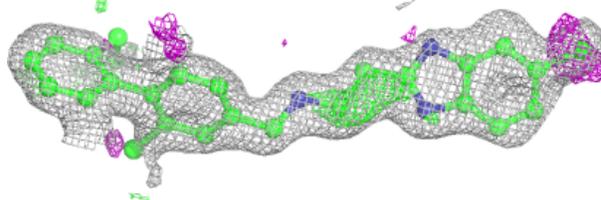and green (positive)
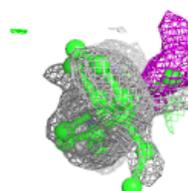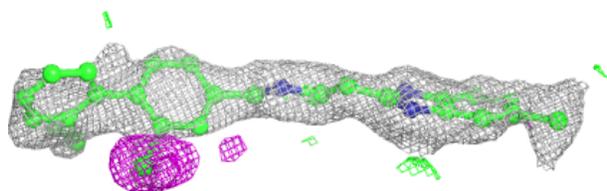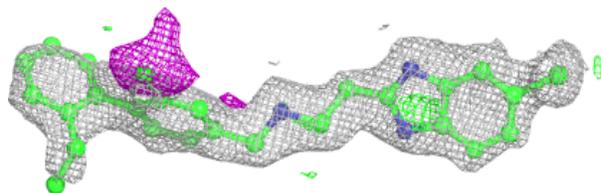
Electron density around AQW A 406 (A):

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)
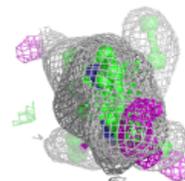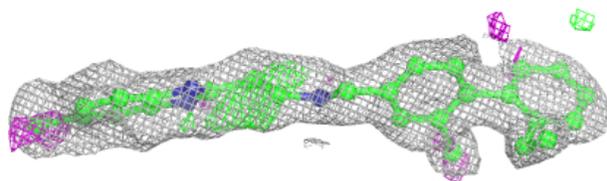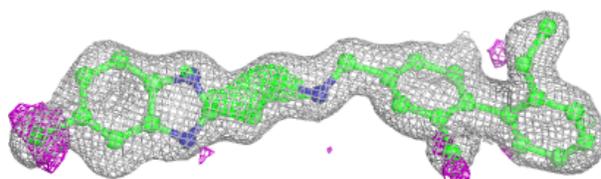
Electron density around AQW A 406 (B):

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

6.5 Other polymers ⓘ

There are no such residues in this entry.