



Full wwPDB X-ray Structure Validation Report ⓘ

May 25, 2020 – 05:47 pm BST

PDB ID : 4WWO
Title : Crystal structure of human PI3K-gamma in complex with phenylquinoline inhibitor N-{(1S)-1-[8-chloro-2-(3-fluorophenyl)quinolin-3-yl]ethyl}-9H-purin-6-amine
Authors : Whittington, D.A.; Tang, J.; Yakowec, P.
Deposited on : 2014-11-11
Resolution : 2.30 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 : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.11
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) : 2.11

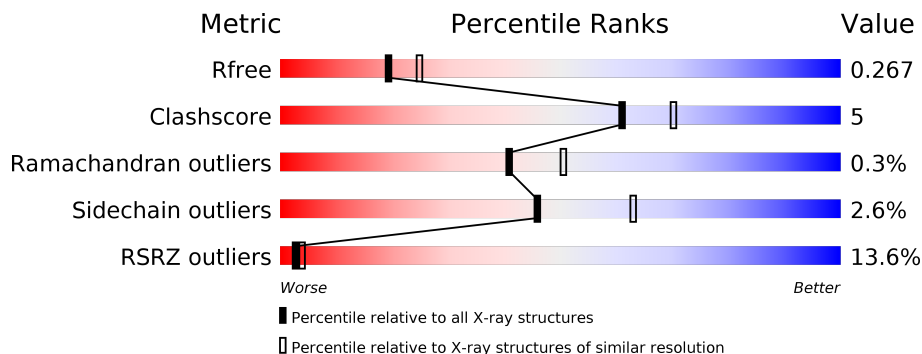
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.30 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	5042 (2.30-2.30)
Clashscore	141614	5643 (2.30-2.30)
Ramachandran outliers	138981	5575 (2.30-2.30)
Sidechain outliers	138945	5575 (2.30-2.30)
RSRZ outliers	127900	4938 (2.30-2.30)

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 on 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 $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	959	

2 Entry composition [i](#)

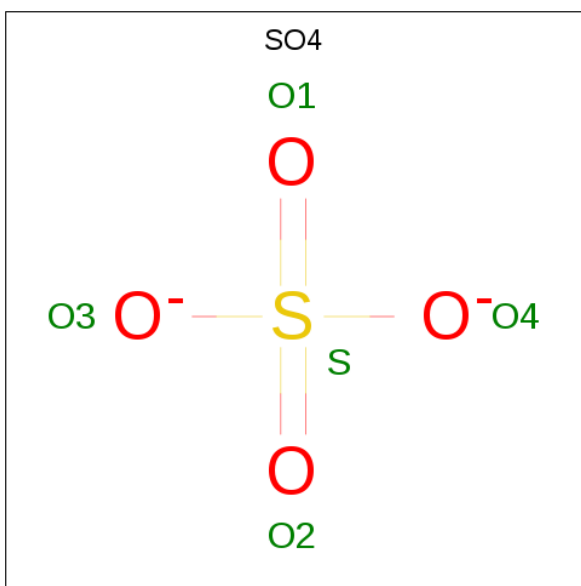
There are 4 unique types of molecules in this entry. The entry contains 6732 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit gamma isoform.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	814	6594	4239	1125	1196	34	0	0	0

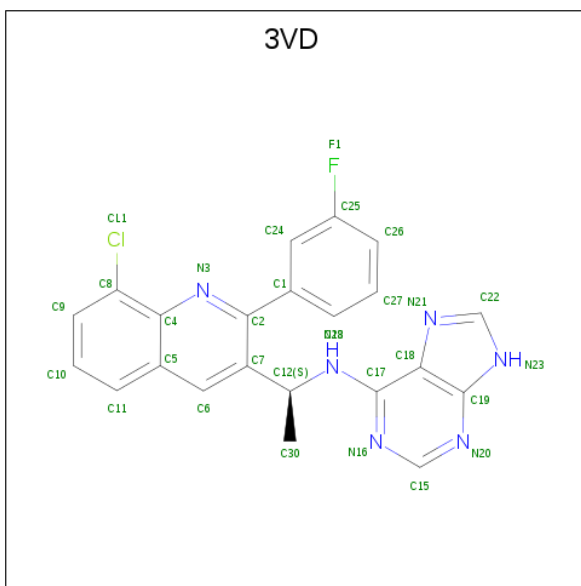
- Molecule 2 is SULFATE ION (three-letter code: SO4) (formula: O₄S).



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

- Molecule 3 is N-((1S)-1-[8-chloro-2-(3-fluorophenyl)quinolin-3-yl]ethyl)-9H-purin-6-amine

(three-letter code: 3VD) (formula: C₂₂H₁₆ClFN₆).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	Cl	F	N		
3	A	1	30	22	1	1	6	0	0

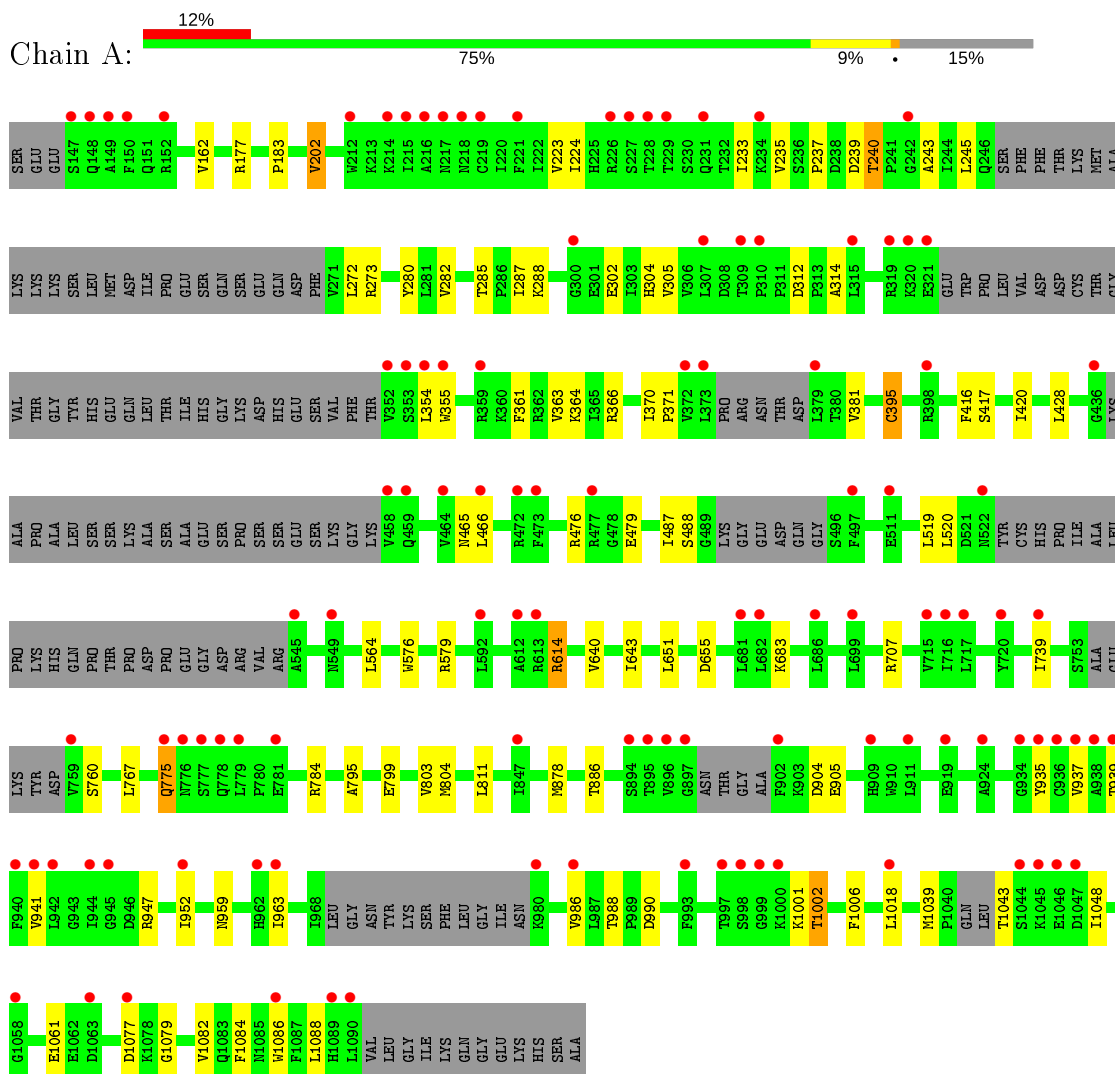
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	88	Total	O	0	0
			88	88		

3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA 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: Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit gamma isoform



4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	145.90Å 68.17Å 107.38Å 90.00° 95.39° 90.00°	Depositor
Resolution (Å)	30.00 – 2.30 28.81 – 2.30	Depositor EDS
% Data completeness (in resolution range)	99.5 (30.00-2.30) 99.6 (28.81-2.30)	Depositor EDS
R_{merge}	0.05	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.21 (at 2.31Å)	Xtrriage
Refinement program	REFMAC	Depositor
R, R_{free}	0.219 , 0.274 0.215 , 0.267	Depositor DCC
R_{free} test set	2350 reflections (5.03%)	wwPDB-VP
Wilson B-factor (Å ²)	61.2	Xtrriage
Anisotropy	0.024	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 58.6	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	6732	wwPDB-VP
Average B, all atoms (Å ²)	80.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.17% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: 3VD, SO4

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	1/6732 (0.0%)	0.60	0/9104

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	355	TRP	CD2-CE2	5.45	1.47	1.41

There are no bond angle outliers.

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	6594	0	6647	60	0
2	A	20	0	0	0	0
3	A	30	0	16	1	0
4	A	88	0	0	1	0
All	All	6732	0	6663	60	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 5.

All (60) 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:767:LEU:HD22	1:A:803:VAL:HG23	1.50	0.91
1:A:272:LEU:HB3	1:A:305:VAL:HG21	1.55	0.86
1:A:1018:LEU:HD22	1:A:1061:GLU:OE1	1.87	0.74
1:A:947:ARG:NH2	1:A:963:ILE:O	2.24	0.71
1:A:240:THR:HG23	1:A:243:ALA:H	1.56	0.71
1:A:202:VAL:CG2	1:A:285:THR:HG21	2.23	0.69
1:A:223:VAL:O	1:A:305:VAL:HG12	1.97	0.65
1:A:162:VAL:HG12	1:A:177:ARG:HD2	1.79	0.65
1:A:202:VAL:HG21	1:A:285:THR:HG21	1.79	0.64
1:A:767:LEU:HD22	1:A:803:VAL:CG2	2.24	0.64
1:A:272:LEU:HD22	1:A:305:VAL:HG11	1.79	0.64
1:A:361:PHE:HA	1:A:420:ILE:HD11	1.81	0.62
1:A:363:VAL:HG23	1:A:520:LEU:HD23	1.81	0.62
1:A:366:ARG:NH1	1:A:479:GLU:OE1	2.38	0.56
1:A:803:VAL:HG22	1:A:811:LEU:HD23	1.89	0.55
1:A:1002:THR:HG22	1:A:1006:PHE:CD2	2.42	0.54
1:A:280:TYR:HB3	1:A:282:VAL:HG23	1.90	0.53
1:A:272:LEU:HD22	1:A:305:VAL:CG1	2.38	0.53
1:A:651:LEU:HD22	1:A:655:ASP:HB3	1.90	0.53
1:A:576:TRP:CZ3	1:A:579:ARG:HD2	2.44	0.52
1:A:370:ILE:HD12	1:A:371:PRO:HD2	1.91	0.51
1:A:937:VAL:O	1:A:941:VAL:HG23	2.12	0.50
1:A:245:LEU:HD11	1:A:272:LEU:HG	1.93	0.49
1:A:1082:VAL:HG12	1:A:1086:TRP:CD1	2.48	0.48
1:A:1001:LYS:O	1:A:1002:THR:HG23	2.13	0.48
1:A:739:ILE:HD12	1:A:739:ILE:C	2.34	0.48
1:A:202:VAL:HG22	1:A:285:THR:HG21	1.94	0.47
1:A:366:ARG:NH1	1:A:519:LEU:HB2	2.29	0.47
1:A:804:MET:HB2	3:A:1205:3VD:C9	2.45	0.46
1:A:466:LEU:HD11	1:A:476:ARG:HD3	1.96	0.46
1:A:273:ARG:O	1:A:305:VAL:HG23	2.15	0.46
1:A:237:PRO:HA	1:A:287:ILE:HD11	1.97	0.46
1:A:361:PHE:HA	1:A:420:ILE:CD1	2.46	0.46
1:A:904:ASP:O	1:A:990:ASP:HA	2.16	0.46
1:A:224:ILE:HD12	1:A:233:ILE:HD13	1.97	0.46
1:A:1002:THR:HG22	1:A:1006:PHE:CE2	2.50	0.45
1:A:235:VAL:HG13	1:A:239:ASP:HB2	1.99	0.45
1:A:767:LEU:CD2	1:A:803:VAL:HG23	2.35	0.45
1:A:935:TYR:O	1:A:939:THR:HG23	2.16	0.45
1:A:287:ILE:HD12	1:A:288:LYS:N	2.32	0.45
1:A:302:GLU:HG3	1:A:304:HIS:NE2	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:233:ILE:HG22	1:A:235:VAL:HG23	1.99	0.44
1:A:952:ILE:HD11	1:A:986:VAL:HG21	1.98	0.44
1:A:162:VAL:CG1	1:A:177:ARG:HD2	2.47	0.44
1:A:312:ASP:OD2	1:A:314:ALA:HB3	2.17	0.44
1:A:395:CYS:SG	1:A:417:SER:OG	2.75	0.43
1:A:614:ARG:HG2	1:A:614:ARG:O	2.17	0.43
1:A:1084:PHE:CZ	1:A:1088:LEU:HD11	2.53	0.43
1:A:272:LEU:CB	1:A:305:VAL:HG21	2.39	0.42
1:A:428:LEU:HD22	1:A:465:ASN:HB3	2.01	0.42
1:A:640:VAL:O	1:A:643:ILE:HG12	2.18	0.42
1:A:487:ILE:CG2	1:A:488:SER:N	2.82	0.41
1:A:683:LYS:NZ	4:A:1374:HOH:O	2.36	0.41
1:A:487:ILE:HG22	1:A:488:SER:N	2.35	0.41
1:A:361:PHE:HD2	1:A:416:PHE:CD1	2.39	0.41
1:A:564:LEU:HD11	1:A:1048:ILE:HG22	2.02	0.41
1:A:775:GLN:OE1	1:A:795:ALA:HB1	2.20	0.41
1:A:878:MET:HB2	1:A:878:MET:HE2	2.00	0.41
1:A:476:ARG:HG2	1:A:520:LEU:HD12	2.03	0.41
1:A:364:LYS:HB3	1:A:519:LEU:HB3	2.01	0.41

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	792/959 (83%)	761 (96%)	29 (4%)	2 (0%)	41 50

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	1079	GLY
1	A	760	SER

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	732/857 (85%)	713 (97%)	19 (3%)	46 63

All (19) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	183	PRO
1	A	202	VAL
1	A	240	THR
1	A	354	LEU
1	A	381	VAL
1	A	395	CYS
1	A	614	ARG
1	A	707	ARG
1	A	775	GLN
1	A	784	ARG
1	A	799	GLU
1	A	886	THR
1	A	905	GLU
1	A	959	ASN
1	A	988	THR
1	A	1002	THR
1	A	1039	MET
1	A	1043	THR
1	A	1077	ASP

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	846	GLN
1	A	959	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

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

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

5 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	SO4	A	1204	-	4,4,4	0.41	0	6,6,6	0.24	0
2	SO4	A	1201	-	4,4,4	0.38	0	6,6,6	0.14	0
2	SO4	A	1203	-	4,4,4	0.40	0	6,6,6	0.26	0
3	3VD	A	1205	-	30,34,34	2.03	3 (10%)	34,49,49	2.02	13 (38%)
2	SO4	A	1202	-	4,4,4	0.40	0	6,6,6	0.31	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	3VD	A	1205	-	-	4/12/12/12	0/5/5/5

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	1205	3VD	C1-C2	-9.14	1.38	1.49
3	A	1205	3VD	C19-N20	-2.36	1.33	1.37
3	A	1205	3VD	C7-C12	2.16	1.54	1.52

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	1205	3VD	C15-N16-C17	5.39	121.21	116.59
3	A	1205	3VD	N20-C15-N16	-4.09	122.29	128.68
3	A	1205	3VD	C4-C8-CL1	3.59	122.26	118.97
3	A	1205	3VD	C30-C12-C7	-3.28	106.88	111.60
3	A	1205	3VD	C15-N20-C19	2.64	119.63	113.45
3	A	1205	3VD	C5-C4-N3	-2.48	119.35	122.64
3	A	1205	3VD	C9-C8-C4	-2.48	119.19	121.03
3	A	1205	3VD	C19-C18-N21	-2.46	106.83	109.40
3	A	1205	3VD	C26-C25-C24	-2.37	120.21	123.29
3	A	1205	3VD	C24-C1-C2	-2.36	115.61	120.15
3	A	1205	3VD	C2-N3-C4	2.16	121.59	118.12
3	A	1205	3VD	N13-C17-N16	2.11	121.27	118.06
3	A	1205	3VD	C28-C1-C2	2.02	123.81	120.61

There are no chirality outliers.

All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	1205	3VD	C24-C1-C2-C7
3	A	1205	3VD	C28-C1-C2-C7
3	A	1205	3VD	C28-C1-C2-N3
3	A	1205	3VD	C24-C1-C2-N3

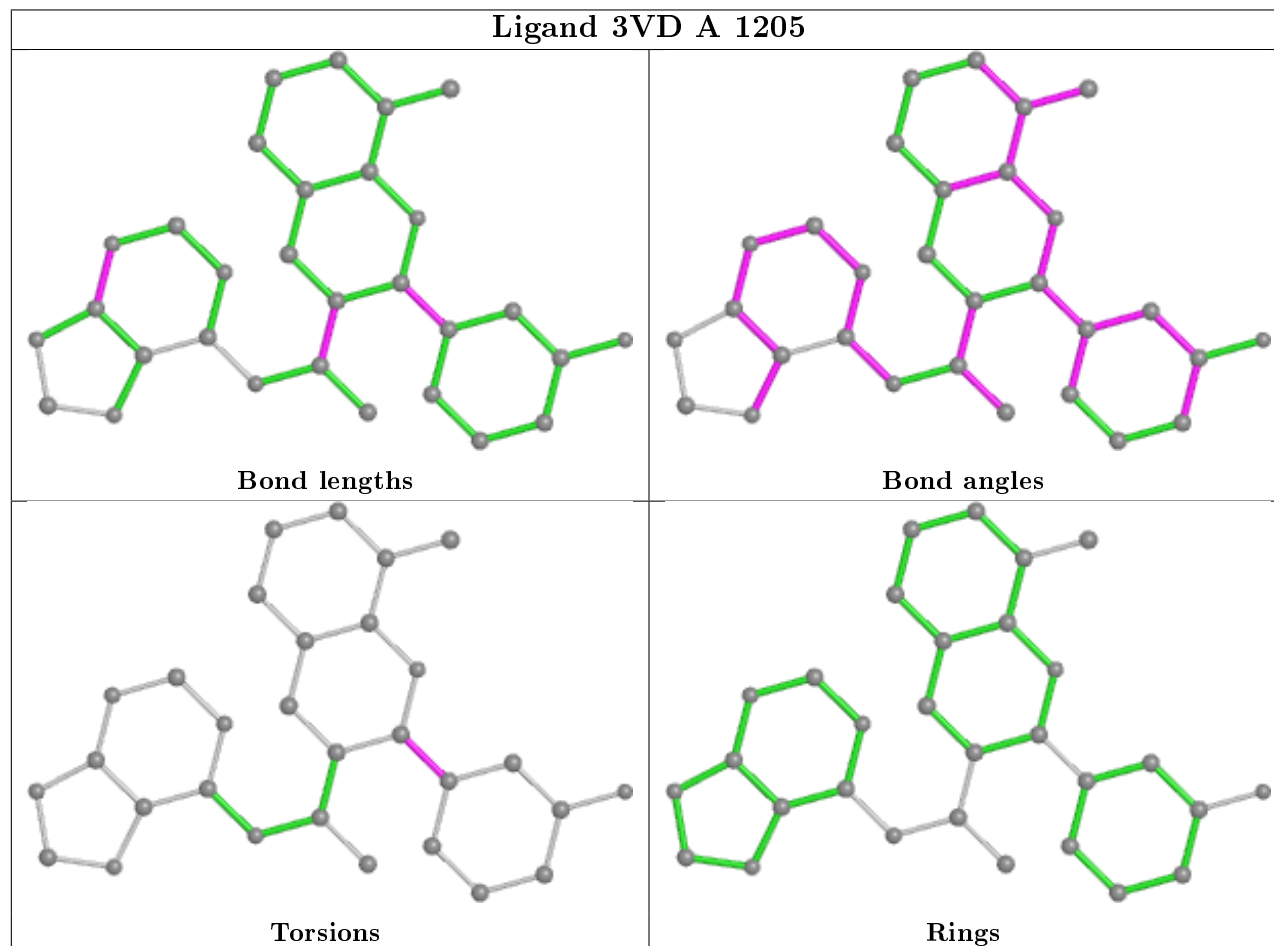
There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	1205	3VD	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 than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be

highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



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, 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(Å ²)	Q<0.9
1	A	814/959 (84%)	0.84	111 (13%) 3 4	37, 76, 133, 178	0

All (111) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	216	ALA	9.0
1	A	895	THR	8.4
1	A	226	ARG	7.7
1	A	228	THR	7.3
1	A	458	VAL	7.2
1	A	545	ALA	6.9
1	A	980	LYS	6.5
1	A	1089	HIS	6.3
1	A	511	GLU	6.0
1	A	777	SER	5.8
1	A	231	GLN	5.7
1	A	152	ARG	5.4
1	A	1058	GLY	5.2
1	A	999	GLY	5.1
1	A	993	PHE	5.1
1	A	221	PHE	5.1
1	A	778	GLN	5.0
1	A	759	VAL	4.9
1	A	147	SER	4.9
1	A	937	VAL	4.6
1	A	379	LEU	4.6
1	A	894	SER	4.4
1	A	352	VAL	4.3
1	A	217	ASN	4.2
1	A	779	LEU	4.2
1	A	1000	LYS	4.2
1	A	227	SER	4.2

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Mol	Chain	Res	Type	RSRZ
1	A	613	ARG	4.1
1	A	986	VAL	4.1
1	A	938	ALA	4.0
1	A	353	SER	4.0
1	A	234	LYS	4.0
1	A	896	VAL	3.9
1	A	355	TRP	3.9
1	A	776	ASN	3.9
1	A	1077	ASP	3.9
1	A	1090	LEU	3.9
1	A	149	ALA	3.8
1	A	717	LEU	3.8
1	A	310	PRO	3.7
1	A	315	LEU	3.7
1	A	215	ILE	3.7
1	A	150	PHE	3.6
1	A	497	PHE	3.6
1	A	436	GLY	3.6
1	A	320	LYS	3.5
1	A	945	GLY	3.5
1	A	229	THR	3.4
1	A	1044	SER	3.4
1	A	998	SER	3.4
1	A	148	GLN	3.3
1	A	522	ASN	3.3
1	A	941	VAL	3.2
1	A	359	ARG	3.2
1	A	473	PHE	3.1
1	A	720	TYR	3.0
1	A	716	ILE	3.0
1	A	936	CYS	3.0
1	A	939	THR	2.9
1	A	300	GLY	2.9
1	A	319	ARG	2.9
1	A	307	LEU	2.8
1	A	944	ILE	2.8
1	A	942	LEU	2.7
1	A	781	GLU	2.7
1	A	354	LEU	2.7
1	A	373	LEU	2.7
1	A	459	GLN	2.7
1	A	592	LEU	2.7

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Mol	Chain	Res	Type	RSRZ
1	A	715	VAL	2.7
1	A	699	LEU	2.6
1	A	924	ALA	2.6
1	A	739	ILE	2.6
1	A	466	LEU	2.6
1	A	911	LEU	2.6
1	A	935	TYR	2.6
1	A	682	LEU	2.6
1	A	686	LEU	2.6
1	A	775	GLN	2.6
1	A	549	ASN	2.5
1	A	309	THR	2.5
1	A	1046	GLU	2.4
1	A	464	VAL	2.4
1	A	897	GLY	2.4
1	A	372	VAL	2.4
1	A	472	ARG	2.3
1	A	934	GLY	2.3
1	A	212	TRP	2.3
1	A	997	THR	2.3
1	A	902	PHE	2.3
1	A	1063	ASP	2.3
1	A	1047	ASP	2.2
1	A	847	ILE	2.2
1	A	940	PHE	2.2
1	A	321	GLU	2.2
1	A	1045	LYS	2.2
1	A	952	ILE	2.2
1	A	919	GLU	2.2
1	A	214	LYS	2.1
1	A	218	ASN	2.1
1	A	962	HIS	2.1
1	A	612	ALA	2.1
1	A	219	CYS	2.1
1	A	1018	LEU	2.0
1	A	1086	TRP	2.0
1	A	963	ILE	2.0
1	A	909	HIS	2.0
1	A	681	LEU	2.0
1	A	242	GLY	2.0
1	A	398	ARG	2.0
1	A	477	ARG	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](#)

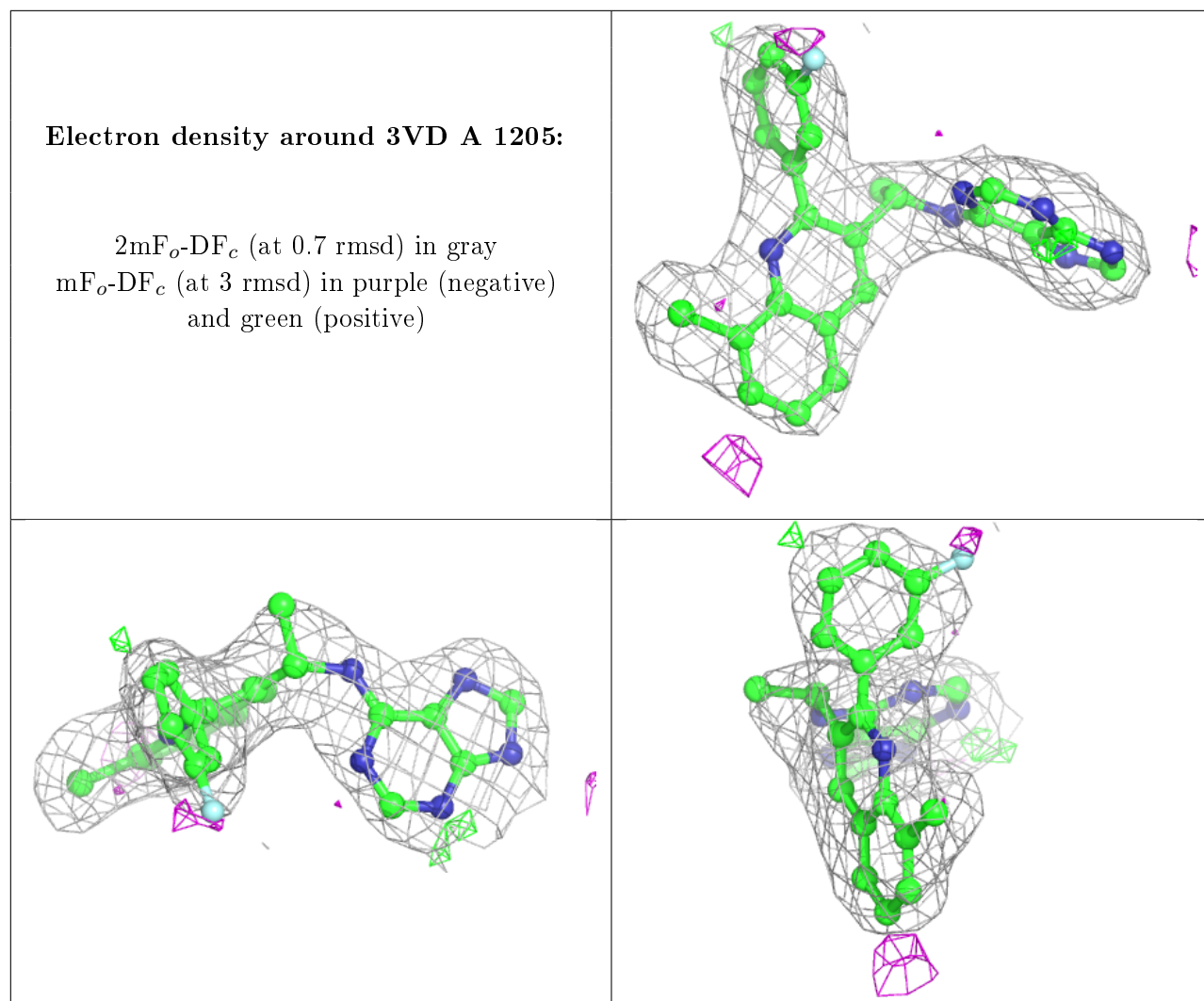
There are no carbohydrates in this entry.

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(\AA^2)	Q<0.9
2	SO4	A	1204	5/5	0.88	0.15	77,85,109,112	0
3	3VD	A	1205	30/30	0.93	0.13	54,64,77,95	0
2	SO4	A	1203	5/5	0.94	0.15	78,79,91,102	0
2	SO4	A	1202	5/5	0.95	0.18	61,65,85,87	0
2	SO4	A	1201	5/5	0.96	0.15	68,86,90,90	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.



6.5 Other polymers [i](#)

There are no such residues in this entry.