



# Full wwPDB X-ray Structure Validation Report ⓘ

Feb 1, 2016 – 07:55 AM GMT

PDB ID : 3CP9  
Title : Crystal structure of the VEGFR2 kinase domain in complex with a pyridone inhibitor  
Authors : Whittington, D.A.; Long, A.M.; Rose, P.; Gu, Y.; Zhao, H.  
Deposited on : 2008-03-31  
Resolution : 2.50 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](mailto:validation@mail.wwpdb.org)  
A user guide is available at  
<http://wwpdb.org/validation/2016/XrayValidationReportHelp>  
with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467  
Mogul : 1.7 (RC4), CSD as536be (2015)  
Xtriage (Phenix) : 1.9-1692  
EDS : rb-20026688  
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)  
Refmac : 5.8.0135  
CCP4 : 6.5.0  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : trunk26865

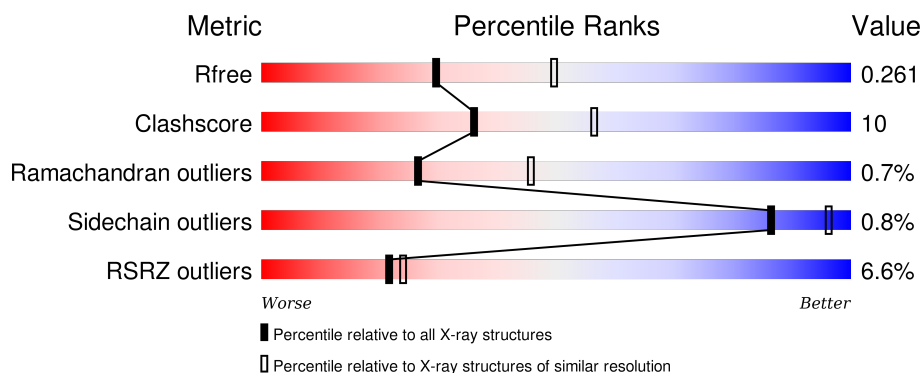
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

## *X-RAY DIFFRACTION*

The reported resolution of this entry is 2.50 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))
$R_{free}$	91344	3553 (2.50-2.50)
Clashscore	102246	4242 (2.50-2.50)
Ramachandran outliers	100387	4156 (2.50-2.50)
Sidechain outliers	100360	4158 (2.50-2.50)
RSRZ outliers	91569	3562 (2.50-2.50)

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 on the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria. 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	314	<div> <div>5%</div> <div>74%</div> <div>17%</div> <div>8%</div> </div>
1	B	314	<div> <div>7%</div> <div>64%</div> <div>21%</div> <div>•</div> <div>14%</div> </div>

## 2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 4669 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.

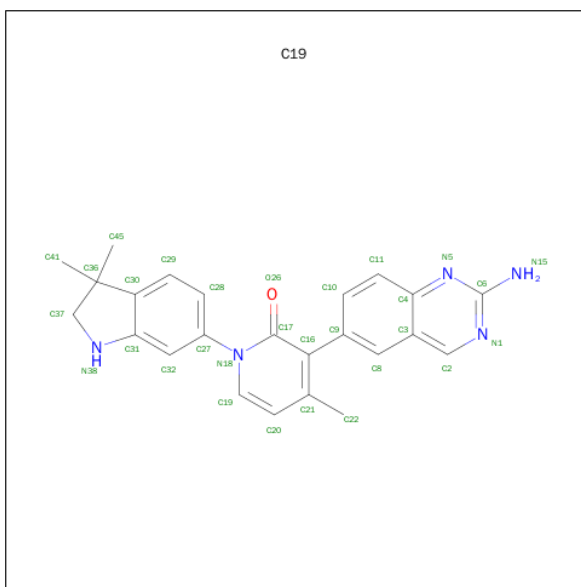
- Molecule 1 is a protein called Vascular endothelial growth factor receptor 2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	288	Total	C	N	O	S	0	0	0
			2330	1493	409	412	16			
1	B	269	Total	C	N	O	S	0	0	0
			2161	1392	374	379	16			

There are 10 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	817	ALA	CYS	engineered	UNP P35968
A	916	THR	VAL	engineered	UNP P35968
A	990	VAL	GLU	engineered	UNP P35968
A	1172	ARG	-	expression tag	UNP P35968
A	1173	HIS	-	expression tag	UNP P35968
A	1174	HIS	-	expression tag	UNP P35968
A	1175	HIS	-	expression tag	UNP P35968
A	1176	HIS	-	expression tag	UNP P35968
A	1177	HIS	-	expression tag	UNP P35968
A	1178	HIS	-	expression tag	UNP P35968

- Molecule 2 is 3-(2-AMINOQUINAZOLIN-6-YL)-1-(3,3-DIMETHYLINDOLIN-6-YL)-4-METHYLPYRIDIN-2(1H)-ONE (three-letter code: C19) (formula: C<sub>24</sub>H<sub>23</sub>N<sub>5</sub>O).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	N	O	0	0
			30	24	5	1		
2	B	1	Total	C	N	O	0	0
			30	24	5	1		

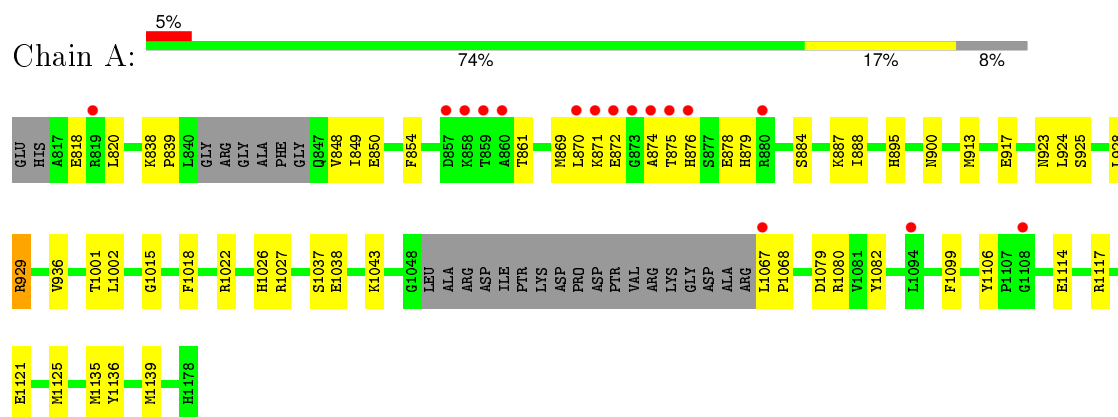
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	84	Total	O	0	0
			84	84		
3	B	34	Total	O	0	0
			34	34		

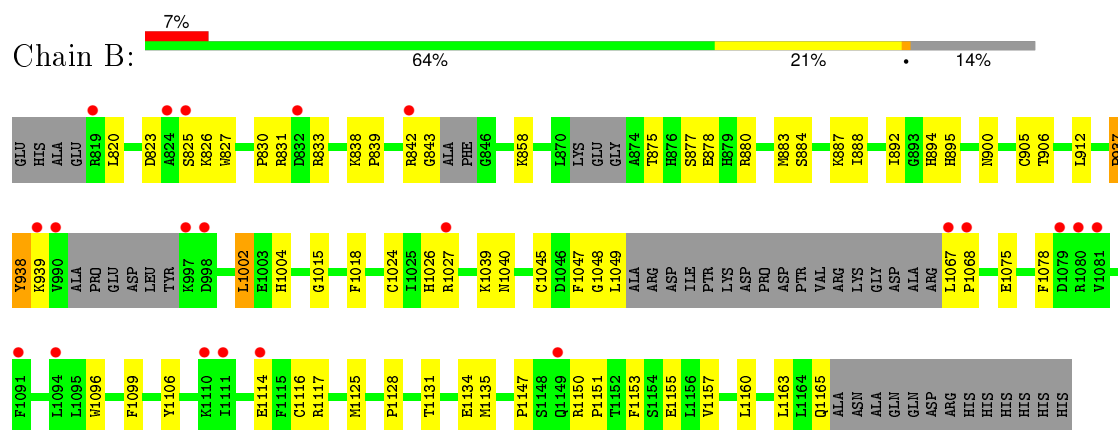
### 3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors 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 ( $\text{RSRZ} > 2$ ). 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: Vascular endothelial growth factor receptor 2



- Molecule 1: Vascular endothelial growth factor receptor 2



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	55.57Å 67.17Å 89.10Å 90.00° 93.08° 90.00°	Depositor
Resolution (Å)	30.00 – 2.50 28.73 – 2.50	Depositor EDS
% Data completeness (in resolution range)	100.0 (30.00-2.50) 100.0 (28.73-2.50)	Depositor EDS
$R_{merge}$	0.09	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	3.03 (at 2.51Å)	Xtriage
Refinement program	CNS	Depositor
R, $R_{free}$	0.211 , 0.263 0.210 , 0.261	Depositor DCC
$R_{free}$ test set	1341 reflections (5.87%)	DCC
Wilson B-factor (Å <sup>2</sup> )	37.3	Xtriage
Anisotropy	0.383	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.32 , 43.1	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.49$ , $\langle L^2 \rangle = 0.33$	Xtriage
Outliers	0 of 22848 reflections	Xtriage
$F_o, F_c$ correlation	0.94	EDS
Total number of atoms	4669	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	39.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.62% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  for acentric reflections are 0.5, 0.375 respectively for untwinned datasets, and 0.333, 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: C19

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	0.34	0/2390	0.61	0/3230
1	B	0.30	0/2211	0.58	0/2982
All	All	0.32	0/4601	0.60	0/6212

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	2330	0	2317	37	0
1	B	2161	0	2182	52	0
2	A	30	0	23	1	0
2	B	30	0	23	1	0
3	A	84	0	0	2	0
3	B	34	0	0	1	0
All	All	4669	0	4545	87	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 10.

All (87) 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:1114:GLU:HG2	1:B:1117:ARG:HH12	1.39	0.87
1:A:870:LEU:HD11	1:A:879:HIS:HA	1.57	0.87
1:B:843:GLY:HA3	1:B:1049:LEU:HB3	1.66	0.75
1:B:823:ASP:OD1	1:B:825:SER:HB3	1.95	0.67
1:A:838:LYS:HG2	3:A:84:HOH:O	1.97	0.65
1:B:1078:PHE:CZ	1:B:1116:CYS:HB3	2.35	0.61
1:B:1067:LEU:N	1:B:1068:PRO:HD2	2.13	0.61
1:B:1026:HIS:O	1:B:1027:ARG:HB2	2.00	0.60
1:B:820:LEU:HB2	1:B:887:LYS:HB3	1.84	0.59
1:B:826:LYS:HE2	1:B:827:TRP:CZ2	2.38	0.58
1:A:871:LYS:HG2	1:A:872:GLU:N	2.19	0.57
1:B:1153:PHE:O	1:B:1157:VAL:HG23	2.04	0.57
1:B:1047:PHE:O	1:B:1049:LEU:N	2.38	0.57
1:B:820:LEU:O	1:B:887:LYS:HD3	2.04	0.56
1:B:875:THR:HG22	1:B:877:SER:H	1.69	0.56
1:A:917:GLU:OE1	1:A:1043:LYS:HE3	2.06	0.56
1:A:854:PHE:HA	1:A:861:THR:O	2.06	0.56
1:A:869:MET:HB3	1:A:913:MET:HG2	1.87	0.55
1:B:1134:GLU:OE1	1:B:1134:GLU:N	2.38	0.55
1:B:877:SER:HA	1:B:880:ARG:HE	1.71	0.54
1:A:1026:HIS:O	1:A:1027:ARG:HB2	2.08	0.54
1:A:818:GLU:HB2	3:A:141:HOH:O	2.07	0.54
1:B:838:LYS:HB2	1:B:839:PRO:HD2	1.90	0.54
1:A:875:THR:HB	1:A:878:GLU:HG3	1.89	0.54
1:A:872:GLU:OE1	1:B:858:LYS:HD3	2.08	0.53
1:B:1114:GLU:HG2	1:B:1117:ARG:NH1	2.17	0.53
1:B:938:TYR:HD1	1:B:939:LYS:O	1.93	0.52
1:A:875:THR:HG22	1:A:876:HIS:N	2.24	0.52
1:A:1022:ARG:HG3	1:A:1022:ARG:HH21	1.74	0.52
1:B:875:THR:N	1:B:878:GLU:OE1	2.39	0.51
1:B:1128:PRO:HG2	1:B:1131:THR:HB	1.92	0.51
1:B:906:THR:HG22	1:B:912:LEU:HD11	1.93	0.51
1:A:1136:TYR:O	1:A:1139:MET:HB2	2.11	0.51
1:B:842:ARG:O	1:B:1049:LEU:HD13	2.12	0.50
1:B:1045:CYS:HB2	2:B:502:C19:O26	2.11	0.50
1:B:888:ILE:O	1:B:892:ILE:HG13	2.12	0.49
1:B:1004:HIS:HD2	1:B:1040:ASN:ND2	2.11	0.49
1:B:842:ARG:C	1:B:1049:LEU:HD13	2.32	0.49
1:B:1160:LEU:HD23	1:B:1163:LEU:HD12	1.95	0.49
1:B:906:THR:HG22	1:B:912:LEU:CD1	2.42	0.49
1:B:1078:PHE:HZ	1:B:1116:CYS:HB3	1.76	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:875:THR:HG22	1:B:877:SER:N	2.28	0.49
1:A:871:LYS:HG2	1:A:872:GLU:H	1.76	0.48
1:A:1099:PHE:CE2	1:A:1135:MET:HG2	2.49	0.48
1:A:1079:ASP:O	1:A:1080:ARG:HB2	2.13	0.48
1:A:1106:TYR:CE1	1:A:1125:MET:HG3	2.48	0.48
1:B:892:ILE:HD11	1:B:1024:CYS:SG	2.54	0.48
1:B:831:ARG:HG3	3:B:48:HOH:O	2.12	0.48
1:A:870:LEU:HD11	1:A:879:HIS:CA	2.37	0.47
1:B:1099:PHE:CE2	1:B:1135:MET:HG2	2.49	0.47
1:B:1128:PRO:O	1:B:1131:THR:HG22	2.14	0.47
1:B:884:SER:O	1:B:888:ILE:HG13	2.13	0.47
1:B:830:PRO:HB2	1:B:833:ARG:HD3	1.97	0.46
1:B:1096:TRP:CD1	1:B:1128:PRO:HD3	2.51	0.46
1:A:1114:GLU:OE1	1:A:1117:ARG:NH1	2.49	0.45
1:B:1075:GLU:OE2	1:B:1147:PRO:HG3	2.16	0.45
1:A:820:LEU:HB2	1:A:887:LYS:HB3	1.99	0.45
1:B:875:THR:HB	1:B:878:GLU:HG3	1.99	0.45
1:A:1015:GLY:O	1:A:1018:PHE:HB3	2.16	0.45
1:B:1163:LEU:C	1:B:1165:GLN:H	2.20	0.45
1:B:1015:GLY:O	1:B:1018:PHE:HB3	2.17	0.44
1:A:884:SER:O	1:A:888:ILE:HG13	2.16	0.44
1:B:894:HIS:CE1	1:B:900:ASN:ND2	2.85	0.44
1:B:894:HIS:CG	1:B:895:HIS:N	2.86	0.44
1:A:1022:ARG:NH2	1:A:1022:ARG:HG3	2.33	0.44
1:A:1002:LEU:HD23	1:A:1002:LEU:HA	1.88	0.44
1:A:1027:ARG:HG2	1:A:1082:TYR:CD2	2.53	0.43
1:A:875:THR:HG22	1:A:876:HIS:H	1.83	0.43
1:B:1075:GLU:CD	1:B:1150:ARG:HH22	2.21	0.43
1:B:1039:LYS:O	1:B:1039:LYS:HG2	2.18	0.43
1:A:1067:LEU:HA	1:A:1068:PRO:HD2	1.76	0.43
1:A:936:VAL:O	1:A:1001:THR:HA	2.19	0.43
1:B:894:HIS:ND1	1:B:900:ASN:ND2	2.67	0.42
1:A:849:ILE:HG22	1:A:850:GLU:N	2.34	0.42
1:A:929:ARG:HH11	1:A:929:ARG:HG2	1.83	0.42
1:A:923:ASN:OD1	1:A:925:SER:HB3	2.19	0.42
1:B:937:PRO:O	1:B:1002:LEU:HB2	2.19	0.42
1:A:924:LEU:O	1:A:928:LEU:HG	2.19	0.42
1:B:883:MET:CE	1:B:887:LYS:HE3	2.50	0.42
1:A:895:HIS:H	1:A:900:ASN:HD21	1.68	0.42
1:A:848:VAL:HG13	2:A:501:C19:H22A	2.01	0.42
1:A:872:GLU:CD	1:B:858:LYS:HD3	2.40	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1038:GLU:H	1:A:1038:GLU:CD	2.23	0.42
1:A:838:LYS:HA	1:A:839:PRO:HD3	1.77	0.42
1:B:1151:PRO:HA	1:B:1155:GLU:OE1	2.20	0.41
1:B:1106:TYR:CE1	1:B:1125:MET:HG3	2.55	0.41
1:B:905:CYS:O	1:B:912:LEU:HD12	2.21	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	282/314 (90%)	269 (95%)	12 (4%)	1 (0%)	39	61
1	B	259/314 (82%)	244 (94%)	12 (5%)	3 (1%)	16	29
All	All	541/628 (86%)	513 (95%)	24 (4%)	4 (1%)	26	46

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	874	ALA
1	B	938	TYR
1	B	1048	GLY
1	B	937	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	253/270 (94%)	250 (99%)	3 (1%)	78	93
1	B	236/270 (87%)	235 (100%)	1 (0%)	93	98
All	All	489/540 (91%)	485 (99%)	4 (1%)	86	96

All (4) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	929	ARG
1	A	1037	SER
1	A	1121	GLU
1	B	1002	LEU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (13) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	847	GLN
1	A	900	ASN
1	A	933	ASN
1	A	1040	ASN
1	A	1162	ASN
1	A	1165	GLN
1	A	1169	GLN
1	B	847	GLN
1	B	900	ASN
1	B	1040	ASN
1	B	1085	GLN
1	B	1162	ASN
1	B	1165	GLN

### 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 carbohydrates in this entry.

## 5.6 Ligand geometry

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	C19	A	501	-	34,34,34	2.70	13 (38%)	36,52,52	1.52	7 (19%)
2	C19	B	502	-	34,34,34	2.66	14 (41%)	36,52,52	1.60	7 (19%)

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	C19	A	501	-	-	0/8/20/20	0/5/5/5
2	C19	B	502	-	-	0/8/20/20	0/5/5/5

All (27) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	502	C19	C27-N18	-4.82	1.38	1.44
2	A	501	C19	C27-N18	-3.97	1.39	1.44
2	A	501	C19	C31-N38	-2.69	1.34	1.39
2	B	502	C19	C31-N38	-2.38	1.35	1.39
2	A	501	C19	C8-C9	2.09	1.43	1.38
2	B	502	C19	C8-C9	2.10	1.43	1.38
2	B	502	C19	C10-C9	2.26	1.44	1.39
2	A	501	C19	C3-C4	2.27	1.45	1.42
2	B	502	C19	C3-C4	2.53	1.45	1.42
2	B	502	C19	C29-C28	2.59	1.43	1.38
2	A	501	C19	C11-C10	2.61	1.42	1.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	502	C19	C29-C30	2.74	1.43	1.39
2	B	502	C19	C28-C27	2.82	1.43	1.38
2	A	501	C19	C29-C28	2.87	1.43	1.38
2	A	501	C19	C29-C30	2.93	1.43	1.39
2	B	502	C19	C2-N1	3.05	1.37	1.32
2	B	502	C19	C11-C10	3.06	1.43	1.36
2	A	501	C19	C2-N1	3.08	1.37	1.32
2	B	502	C19	C17-C16	3.25	1.51	1.44
2	A	501	C19	C28-C27	3.42	1.44	1.38
2	A	501	C19	C17-C16	3.63	1.52	1.44
2	A	501	C19	C32-C27	4.04	1.43	1.38
2	B	502	C19	C32-C27	4.04	1.43	1.38
2	A	501	C19	C20-C21	4.15	1.49	1.39
2	B	502	C19	C20-C21	4.47	1.50	1.39
2	B	502	C19	C19-N18	9.90	1.50	1.36
2	A	501	C19	C19-N18	10.48	1.51	1.36

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	501	C19	C22-C21-C20	-3.66	112.86	120.33
2	B	502	C19	C22-C21-C20	-3.62	112.94	120.33
2	B	502	C19	C3-C4-N5	-2.74	117.53	122.25
2	A	501	C19	C3-C2-N1	-2.53	119.41	124.06
2	A	501	C19	C3-C4-N5	-2.52	117.90	122.25
2	B	502	C19	C3-C2-N1	-2.48	119.50	124.06
2	A	501	C19	C28-C27-C32	-2.41	119.32	121.50
2	B	502	C19	C28-C27-C32	-2.09	119.61	121.50
2	A	501	C19	C28-C27-N18	2.09	122.37	119.50
2	B	502	C19	C28-C27-N18	2.43	122.83	119.50
2	A	501	C19	C11-C4-N5	2.59	122.84	118.73
2	B	502	C19	C11-C4-N5	2.93	123.38	118.73
2	A	501	C19	C22-C21-C16	3.74	126.76	121.92
2	B	502	C19	C22-C21-C16	3.88	126.94	121.92

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	501	C19	1	0
2	B	502	C19	1	0

## 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<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	288/314 (91%)	0.05	16 (5%) 28 31	16, 29, 63, 77	0
1	B	269/314 (85%)	0.35	21 (7%) 16 17	23, 45, 72, 84	0
All	All	557/628 (88%)	0.20	37 (6%) 22 24	16, 35, 71, 84	0

All (37) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	859	THR	4.7
1	A	1067	LEU	4.6
1	A	874	ALA	4.5
1	B	842	ARG	4.0
1	A	875	THR	4.0
1	B	819	ARG	3.7
1	A	858	LYS	3.6
1	B	1067	LEU	3.6
1	B	1149	GLN	3.5
1	A	873	GLY	3.5
1	A	819	ARG	3.3
1	B	1027	ARG	3.0
1	A	872	GLU	2.9
1	B	1091	PHE	2.9
1	B	825	SER	2.8
1	B	939	LYS	2.8
1	A	871	LYS	2.8
1	A	880	ARG	2.7
1	A	870	LEU	2.7
1	A	860	ALA	2.6
1	B	1094	LEU	2.6
1	B	990	VAL	2.6
1	B	832	ASP	2.6
1	B	1081	VAL	2.5

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Mol	Chain	Res	Type	RSRZ
1	B	997	LYS	2.5
1	A	876	HIS	2.5
1	B	1080	ARG	2.5
1	B	1079	ASP	2.5
1	A	1094	LEU	2.4
1	B	998	ASP	2.4
1	B	1111	ILE	2.4
1	A	1108	GLY	2.3
1	B	1114	GLU	2.3
1	A	857	ASP	2.2
1	B	824	ALA	2.1
1	B	1110	LYS	2.1
1	B	1068	PRO	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 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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. The B-factors column lists the minimum, median, 95<sup>th</sup> 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	LLDF	B-factors(Å <sup>2</sup> )	Q<0.9
2	C19	A	501	30/30	0.95	0.13	-0.55	21,24,28,30	0
2	C19	B	502	30/30	0.96	0.12	-0.91	20,28,35,36	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.