

# Full wwPDB X-ray Structure Validation Report (i)

#### Oct 6, 2024 – 02:07 AM EDT

PDB ID : 2IQG

Title: Crystal Structure of Hydroxyethyl Secondary Amine-based Peptidomimetic

Inhibitor of Human Beta-Secretase (BACE)

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Deposited on : 2006-10-13

Resolution : 1.70 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 (i) symbol.

The types of validation reports are described at http://www.wwpdb.org/validation/2017/FAQs#types.

The following versions of software and data (see references (1)) were used in the production of this report:

MolProbity: 4.02b-467

Mogul : 2022.3.0, CSD as543be (2022)

Xtriage (Phenix) : 1.20.1

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)

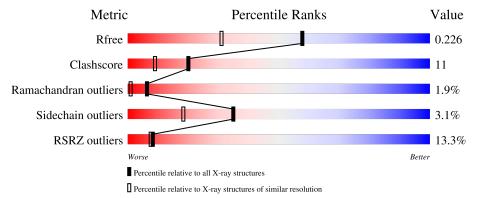
Validation Pipeline (wwPDB-VP) : 2.39

# 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 1.70 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 $(\# \mathrm{Entries})$	$\begin{array}{c} {\rm Similar\ resolution} \\ (\#{\rm Entries},\ {\rm resolution\ range}({\rm \AA})) \end{array}$
$R_{free}$	164625	5161 (1.70-1.70)
Clashscore	180529	5671 (1.70-1.70)
Ramachandran outliers	177936	5594 (1.70-1.70)
Sidechain outliers	177891	5594 (1.70-1.70)
RSRZ outliers	164620	5159 (1.70-1.70)

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				
			12%				
1	A	406		71%	19%	• 8%	



# 2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 3393 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 Beta-secretase 1.

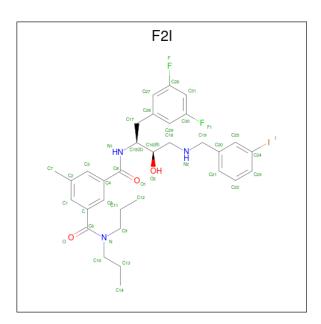
Mol	Chain	Residues		$\mathbf{At}$	oms			ZeroOcc	AltConf	Trace
1	A	375	Total 2982	C 1914	N 494	O 560	S 14	0	4	0

There are 9 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	58P	MET	-	cloning artifact	UNP P56817
A	393	ARG	-	cloning artifact	UNP P56817
A	394	SER	-	cloning artifact	UNP P56817
A	395	HIS	-	expression tag	UNP P56817
A	396	HIS	-	expression tag	UNP P56817
A	397	HIS	-	expression tag	UNP P56817
A	398	HIS	-	expression tag	UNP P56817
A	399	HIS	-	expression tag	UNP P56817
A	400	HIS	-	expression tag	UNP P56817

• Molecule 2 is N'- $\{(1S,2R)-1-(3,5-DIFLUOROBENZYL)-2-HYDROXY-3-[(3-IODOBENZYL)AMINO]PROPYL\}-5-METHYL-N,N-DIPROPYLISOPHTHALAMIDE (three-letter code: F2I) (formula: <math>C_{32}H_{38}F_2IN_3O_3$ ).





Mol	Chain	Residues	Atoms			ZeroOcc	AltConf			
2	A	1	Total 41				N 3	O 3	0	0

### • Molecule 3 is water.

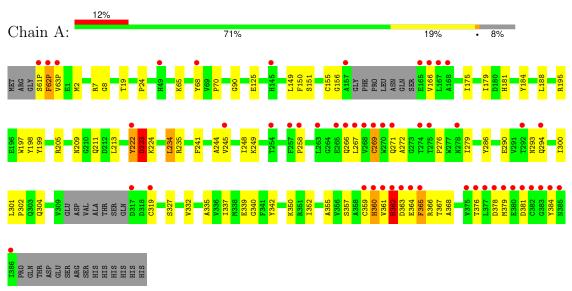
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	370	Total O 370 370	0	0



# 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.







# 4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants	73.09Å 105.08Å 50.50Å	Donositor
a, b, c, $\alpha$ , $\beta$ , $\gamma$	90.00° 94.81° 90.00°	Depositor
Resolution (Å)	20.00 - 1.70	Depositor
Resolution (A)	20.00 - 1.70	EDS
% Data completeness	90.8 (20.00-1.70)	Depositor
(in resolution range)	90.8 (20.00-1.70)	EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$< I/\sigma(I) > 1$	3.22 (at 1.70Å)	Xtriage
Refinement program	CNS, X-PLOR	Depositor
D D.	0.206 , 0.231	Depositor
$R, R_{free}$	0.200 , $0.226$	DCC
$R_{free}$ test set	3937 reflections (10.07%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	18.5	Xtriage
Anisotropy	0.484	Xtriage
Bulk solvent $k_{sol}(e/Å^3)$ , $B_{sol}(Å^2)$	0.39, 46.9	EDS
L-test for twinning <sup>2</sup>	$ < L >=0.50, < 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	3393	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	25.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: The largest off-origin peak in the Patterson function is 7.50% of the height of the origin peak. No significant pseudotranslation is detected.

<sup>&</sup>lt;sup>2</sup>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.



<sup>&</sup>lt;sup>1</sup>Intensities estimated from amplitudes.

# 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: F2I

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).

Mal	Chain	Bond	lengths	Bo	nd angles
IVIOI	Chain	RMSZ	# Z  > 5	RMSZ	# Z  > 5
1	A	0.32	0/3056	0.67	2/4153 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	$\mathbf{Z}$	$\mathbf{Observed}(^o)$	$\operatorname{Ideal}({}^o)$
1	A	362	HIS	N-CA-C	5.79	126.63	111.00
1	A	234	LEU	N-CA-C	-5.42	96.36	111.00

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	2982	0	2907	64	1
2	A	41	0	38	0	0
3	A	370	0	0	7	0
All	All	3393	0	2945	64	1

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 11.

All (64) close contacts within the same asymmetric unit are listed below, sorted by their clash



magnitude.

Atom-1	Atom-2	Interatomic	Clash
Atom-1	Atom-2	${\rm distance}  (\mathring{\rm A})$	$-$ overlap $(\AA)$
1:A:361:VAL:HB	1:A:368:ALA:HB2	1.40	1.00
1:A:301:LEU:HD12	1:A:361:VAL:HG12	1.55	0.87
1:A:362:HIS:H	1:A:362:HIS:CD2	1.91	0.87
1:A:293:ASN:HA	1:A:376:THR:O	1.78	0.82
1:A:222:TYR:O	1:A:223:ASP:HB3	1.81	0.80
1:A:378:ASP:HB3	1:A:381:ASP:OD2	1.82	0.79
1:A:61(P):SER:HA	1:A:175:ILE:CG2	2.16	0.76
1:A:61(P):SER:HA	1:A:175:ILE:HG23	1.67	0.75
1:A:365:PHE:CD2	1:A:365:PHE:N	2.55	0.74
1:A:361:VAL:CB	1:A:368:ALA:HB2	2.17	0.74
1:A:269:CYS:HG	1:A:319:CYS:HG	1.36	0.73
1:A:361:VAL:HB	1:A:368:ALA:CB	2.15	0.73
1:A:294:GLN:H	1:A:379:MET:HE1	1.55	0.71
1:A:357:SER:O	1:A:360:HIS:HB3	1.91	0.71
1:A:62(P):PHE:HD2	1:A:63(P):VAL:H	1.40	0.66
1:A:365:PHE:N	1:A:365:PHE:HD2	1.93	0.65
1:A:304:GLN:OE1	1:A:361:VAL:HG21	1.97	0.65
1:A:350:LYS:HE2	3:A:1295:HOH:O	2.01	0.60
1:A:258:PRO:HG3	1:A:266:GLN:NE2	2.17	0.58
1:A:294:GLN:N	1:A:379:MET:HE1	2.20	0.57
1:A:245[B]:VAL:CG1	1:A:249:LYS:HE3	2.35	0.56
1:A:276:PRO:O	1:A:279:ILE:HG12	2.08	0.54
1:A:149:LEU:HD23	1:A:150:PHE:N	2.23	0.53
1:A:363:ASP:HB3	1:A:366:ARG:O	2.08	0.53
1:A:335:ALA:O	1:A:339:GLU:HG3	2.09	0.52
1:A:304:GLN:CD	1:A:361:VAL:HG21	2.30	0.51
1:A:188:LEU:HD23	1:A:355:ALA:HB2	1.92	0.51
1:A:65:LYS:HE2	3:A:1254:HOH:O	2.12	0.49
1:A:149:LEU:HD23	1:A:149:LEU:C	2.33	0.49
1:A:62(P):PHE:HD1	3:A:1231:HOH:O	1.95	0.48
1:A:2:MET:HG2	1:A:90:GLY:HA2	1.94	0.48
1:A:301:LEU:HB3	1:A:302:PRO:HD2	1.97	0.47
1:A:245[B]:VAL:HG12	1:A:249:LYS:HE3	1.97	0.46
1:A:125:GLU:OE1	1:A:195:ARG:NH1	2.33	0.46
1:A:7:ARG:HD3	3:A:1282:HOH:O	2.15	0.45
1:A:361:VAL:CG2	1:A:368:ALA:HB2	2.46	0.45
1:A:62(P):PHE:CD2	1:A:63(P):VAL:N	2.83	0.45
1:A:234:LEU:HB2	1:A:337:ILE:HD11	1.99	0.45
1:A:301:LEU:HD11	1:A:367:THR:HA	1.98	0.45
1:A:235:ARG:HG3	1:A:332:VAL:HB	1.99	0.44
1:A:364:GLU:HB3	1:A:365:PHE:CE2	2.53	0.44

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A + 1	A 4 0	Interatomic	Clash
Atom-1	Atom-2	${\rm distance} \ (\mathring{\rm A})$	overlap (Å)
1:A:364:GLU:C	1:A:365:PHE:HD2	2.21	0.43
1:A:7:ARG:HG2	1:A:8:GLY:N	2.33	0.43
1:A:340:GLY:HA3	1:A:361:VAL:HG23	2.01	0.43
1:A:179:ILE:HG23	1:A:342:TYR:HE2	1.83	0.43
1:A:205:ARG:HB3	1:A:286:TYR:HB2	2.01	0.43
1:A:199:TYR:HB3	1:A:352:ILE:HD11	2.00	0.43
1:A:364:GLU:HB3	1:A:365:PHE:CD2	2.53	0.42
1:A:290:GLU:HG2	3:A:1176:HOH:O	2.19	0.42
1:A:198:TYR:CE2	1:A:224:LYS:HE3	2.55	0.42
1:A:271:GLN:O	1:A:272:ALA:C	2.58	0.42
1:A:241:PHE:O	1:A:245[A]:VAL:HG22	2.20	0.42
1:A:19:THR:HB	1:A:24:PRO:HB3	2.02	0.41
1:A:244:ALA:O	1:A:248:ILE:HG13	2.20	0.41
1:A:350:LYS:HD3	3:A:1294:HOH:O	2.20	0.41
1:A:151:SER:OG	1:A:175:ILE:HB	2.20	0.41
1:A:155:CYS:CB	1:A:359:CYS:HG	2.27	0.41
1:A:181:HIS:HA	1:A:184:TYR:CE1	2.56	0.41
1:A:267:LEU:C	1:A:267:LEU:HD12	2.40	0.41
1:A:235:ARG:HB3	1:A:327:SER:HB2	2.02	0.41
1:A:290:GLU:OE1	3:A:1144:HOH:O	2.21	0.41
1:A:300:ILE:HG23	1:A:304:GLN:CD	2.41	0.41
1:A:7:ARG:CG	1:A:8:GLY:N	2.83	0.40
1:A:340:GLY:HA3	1:A:361:VAL:CG2	2.51	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	$egin{aligned} &  ext{Interatomic} \ &  ext{distance} \ &  ext{(Å)} \end{aligned}$	$\begin{array}{c} \text{Clash} \\ \text{overlap } (\text{\AA}) \end{array}$
1:A:384:TYR:OH	1:A:384:TYR:OH[2_656]	2.09	0.11

# 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	373/406 (92%)	354 (95%)	12 (3%)	7 (2%)	6 1

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	166	VAL
1	A	223	ASP
1	A	362	HIS
1	A	360	HIS
1	A	222	TYR
1	A	70	PRO
1	A	156	GLY

#### 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	324/348 (93%)	314 (97%)	10 (3%)	35 18	

All (10) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	62(P)	PHE
1	A	68	TYR
1	A	197	TRP
1	A	209	ASN
1	A	211	GLN
1	A	213	LEU
1	A	223	ASP
1	A	269	CYS
1	A	362	HIS
1	A	365	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:



Mol	Chain	Res	Type
1	A	111	ASN
1	A	266	GLN
1	A	271	GLN
1	A	326	GLN
1	A	362	HIS

#### 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 oligosaccharides in this entry.

## 5.6 Ligand geometry (i)

1 ligand is 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	Iol Type Chain Res Lin		Link	$\mathbf{B}$	Bond lengths			Bond angles		
	MIOI	Туре	Chain	rtes	Lilik	Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
Ī	2	F2I	A	801	-	43,43,43	1.89	17 (39%)	57,58,58	1.29	7 (12%)

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	F2I	A	801	-	-	6/36/36/36	0/3/3/3



All (17) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	${f Z}$	$\operatorname{Observed}(\operatorname{\AA})$	$\operatorname{Ideal}(\text{\AA})$
2	A	801	F2I	C6-N	4.76	1.44	1.34
2	A	801	F2I	C25-C20	3.26	1.44	1.39
2	A	801	F2I	C29-C30	2.94	1.42	1.37
2	A	801	F2I	C27-C26	2.81	1.42	1.37
2	A	801	F2I	C27-C28	2.79	1.44	1.39
2	A	801	F2I	C31-C30	2.78	1.42	1.37
2	A	801	F2I	C31-C26	2.72	1.42	1.37
2	A	801	F2I	C8-N1	2.69	1.40	1.34
2	A	801	F2I	C1-C2	2.49	1.42	1.39
2	A	801	F2I	C22-C23	2.35	1.42	1.38
2	A	801	F2I	C3-C2	2.35	1.42	1.39
2	A	801	F2I	C5-C4	2.29	1.42	1.39
2	A	801	F2I	C1-C	2.25	1.42	1.39
2	A	801	F2I	C22-C21	2.20	1.42	1.38
2	A	801	F2I	C25-C24	2.17	1.42	1.38
2	A	801	F2I	F1-C30	-2.13	1.31	1.36
2	A	801	F2I	C3-C4	2.01	1.42	1.39

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	$\mathbf{Z}$	$Observed(^o)$	$\mathbf{Ideal}(^{o})$
2	A	801	F2I	C17-C15-N1	-4.04	104.35	110.08
2	A	801	F2I	C31-C26-C27	-3.02	119.83	123.50
2	A	801	F2I	C-C6-N	2.95	122.34	118.66
2	A	801	F2I	C31-C30-C29	-2.50	120.46	123.50
2	A	801	F2I	C30-C31-C26	2.43	119.63	116.08
2	A	801	F2I	C28-C27-C26	2.36	120.81	118.75
2	A	801	F2I	C28-C29-C30	2.14	120.62	118.75

There are no chirality outliers.

All (6) torsion outliers are listed below:

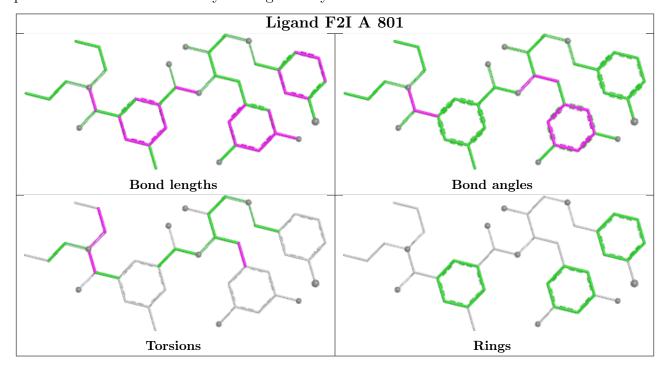
Mol	Chain	Res	Type	Atoms
2	A	801	F2I	C11-C9-N-C6
2	A	801	F2I	C12-C11-C9-N
2	A	801	F2I	O-C6-N-C9
2	A	801	F2I	C15-C17-C28-C27
2	A	801	F2I	C11-C9-N-C10
2	A	801	F2I	C15-C17-C28-C29

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.



# 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 (i)

## 6.1 Protein, DNA and RNA chains (i)

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	$\langle { m RSRZ} \rangle$	$\# \mathrm{RSRZ}{>}2$	$OWAB(Å^2)$	Q<0.9
1	A	375/406 (92%)	0.52	50 (13%) 8 7	8, 22, 45, 52	4 (1%)

All (50) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ	
1	A	361	VAL	7.9	
1	A	62(P)	PHE	6.2	
1	A	384	TYR	6.1	
1	A	362	HIS	6.1	
1	A	61(P)	SER	5.8	
1	A	166	VAL	5.3	
1	A	292	THR	4.3	
1	A	376	THR	4.2	
1	A	63(P)	VAL	4.1	
1	A	270	TRP	4.1	
1	A	386	ILE	4.0	
1	A	271	GLN	3.9	
1	A	222	TYR	3.8	
1	A	378	ASP	3.5	
1	A	360	HIS	3.5	
1	A	319	CYS	3.5	
1	A	363	ASP	3.3	
1	A	269	CYS	3.3	
1	A	365	PHE	3.3	
1	A	377	LEU	3.3	
1	A	268	VAL	3.2	
1	A	265	GLU	3.0	
1	A	385	ASN	3.0	
1	A	157	ALA	2.9	
1	A	382	CYS	2.8	
1	A	145	HIS	2.8	
1	A	263	LEU	2.6	

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Mol Chain		Res	0 1		
1	A	380	GLU	2.6	
1	A	274	THR	2.6	
1	A	267	LEU	2.5	
1	A	379	MET	2.5	
1	A	266	GLN	2.4	
1	A	254	THR	2.4	
1	A	275	THR	2.4	
1	A	258	PRO	2.3	
1	A	317	ASP	2.3	
1	A	383	GLY	2.3	
1	A	167	LEU	2.3	
1	A	165	GLU	2.2	
1	A	375	VAL	2.2	
1	A	381	ASP	2.2	
1	A	294	GLN	2.2	
1	A	168	ALA	2.2	
1	A	245[A]	VAL	2.2	
1	A	364	GLU	2.2	
1	A	257	PHE	2.1	
1	A	278	ASN	2.1	
1	A	359	CYS	2.1	
1	A	68	TYR	2.1	
1	A	49	HIS	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.

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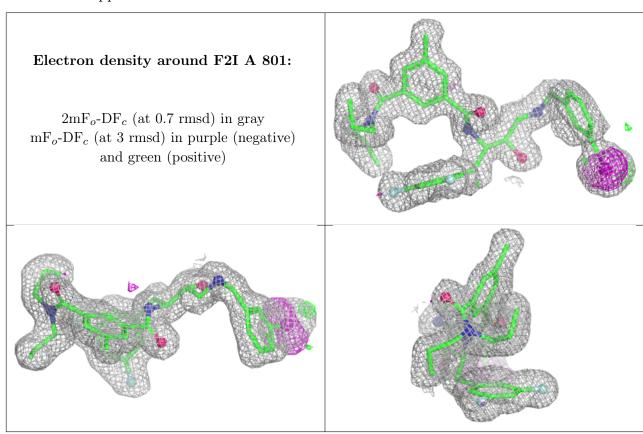


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Mol	Type	Chain	Res	Atoms	RSCC	RSR	$\mathbf{B} ext{-}\mathbf{factors}(\mathbf{\mathring{A}}^2)$	Q < 0.9
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	$\mathbf{B} ext{-}\mathbf{factors}(\mathbf{\mathring{A}}^2)$	Q < 0.9
2	F2I	A	801	41/41	0.98	0.07	15,17,24,24	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.

