



Full wwPDB X-ray Structure Validation Report ⓘ

Dec 2, 2021 – 01:14 pm GMT

PDB ID : 6ZBN
Title : HIF Prolyl Hydroxylase 2 (PHD2/EGLN1) in complex with tert-butyl 6-(5-hydroxy-4-(1H-1,2,3-triazol-1-yl)-1H-pyrazol-1-yl)nicotinate (IOX4)
Authors : Figg Jr, W.D.; McDonough, M.A.; Nakashima, Y.; Schofield, C.J.
Deposited on : 2020-06-08
Resolution : 2.01 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

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

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

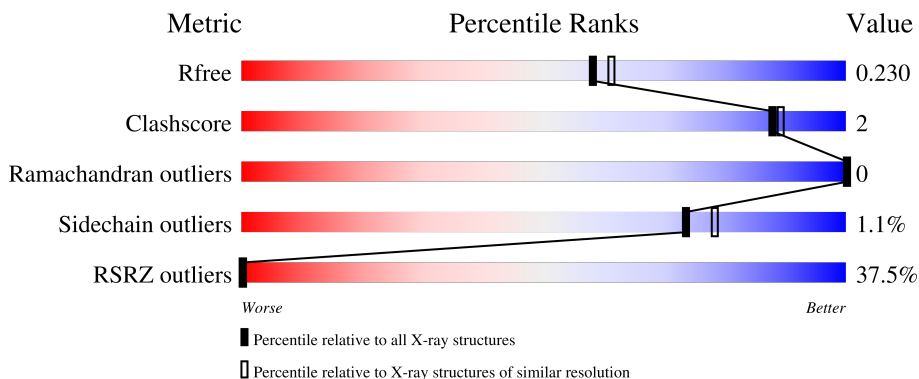
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.01 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	8085 (2.00-2.00)
Clashscore	141614	9178 (2.00-2.00)
Ramachandran outliers	138981	9054 (2.00-2.00)
Sidechain outliers	138945	9053 (2.00-2.00)
RSRZ outliers	127900	7900 (2.00-2.00)

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 $\leq 5\%$. 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	227	
1	B	227	
1	C	227	
1	D	227	
1	E	227	

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Mol	Chain	Length	Quality of chain
1	F	227	 <p>A horizontal bar chart showing the quality of chain. The bar is divided into four segments: a red segment (37%), a green segment (82%), a yellow segment (5%), and a grey segment (13%). The percentages are labeled above or below the segments.</p>

2 Entry composition [i](#)

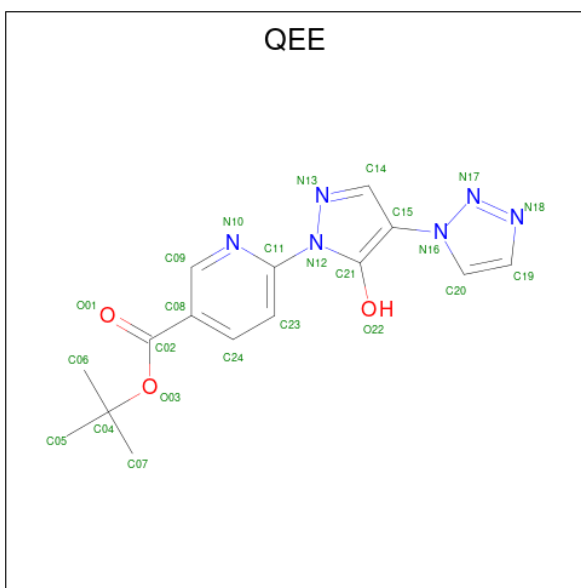
There are 5 unique types of molecules in this entry. The entry contains 19068 atoms, of which 9203 are hydrogens and 0 are deuteriums.

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 Egl nine homolog 1.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	H	N	O	S			
1	A	197	Total 3084	C 999	H 1517	N 269	O 286	S 13	0	4	0
1	B	202	Total 3090	C 1000	H 1514	N 273	O 290	S 13	0	2	0
1	C	202	Total 3128	C 1014	H 1539	N 271	O 291	S 13	0	2	0
1	D	200	Total 3115	C 1007	H 1533	N 274	O 288	S 13	0	3	0
1	E	198	Total 3026	C 983	H 1484	N 265	O 281	S 13	0	2	0
1	F	197	Total 3078	C 996	H 1513	N 269	O 287	S 13	0	3	0

- Molecule 2 is {tert}-butyl 6-[5-oxidanyl-4-(1,2,3-triazol-1-yl)pyrazol-1-yl]pyridine-3-carboxylate (three-letter code: QEE) (formula: C₁₅H₁₆N₆O₃) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	H	N	O	0	0
			40	15	16	6	3		
2	B	1	Total	C	H	N	O	0	0
			40	15	16	6	3		
2	C	1	Total	C	H	N	O	0	0
			40	15	16	6	3		
2	D	1	Total	C	H	N	O	0	0
			40	15	16	6	3		
2	E	1	Total	C	H	N	O	0	0
			40	15	16	6	3		
2	F	1	Total	C	H	N	O	0	0
			40	15	16	6	3		

- Molecule 3 is MANGANESE (II) ION (three-letter code: MN) (formula: Mn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	1	Total	Mn	0	0
			1	1		
3	B	1	Total	Mn	0	0
			1	1		
3	C	1	Total	Mn	0	0
			1	1		
3	D	1	Total	Mn	0	0
			1	1		
3	E	1	Total	Mn	0	0
			1	1		
3	F	1	Total	Mn	0	0
			1	1		

- Molecule 4 is GLYCEROL (three-letter code: GOL) (formula: C₃H₈O₃).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	H	O		
4	C	1	13	3	7	3	0	0

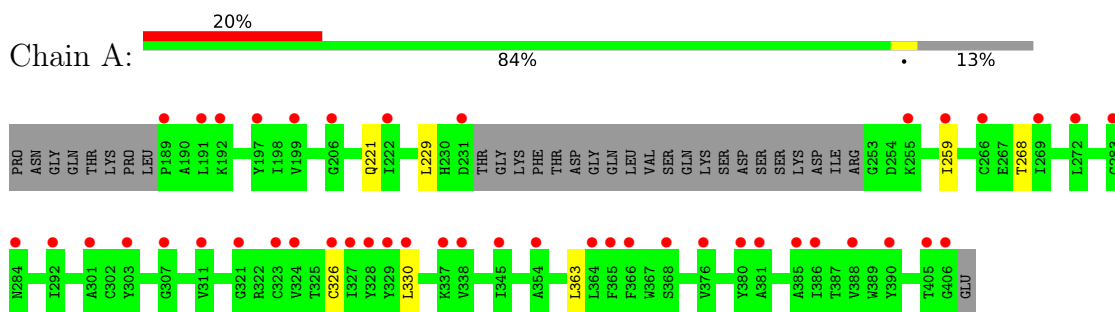
- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	73	Total	O	0	0
			73	73		
5	B	40	Total	O	0	0
			40	40		
5	C	79	Total	O	0	0
			79	79		
5	D	38	Total	O	0	0
			38	38		
5	E	24	Total	O	0	0
			24	24		
5	F	34	Total	O	0	0
			34	34		

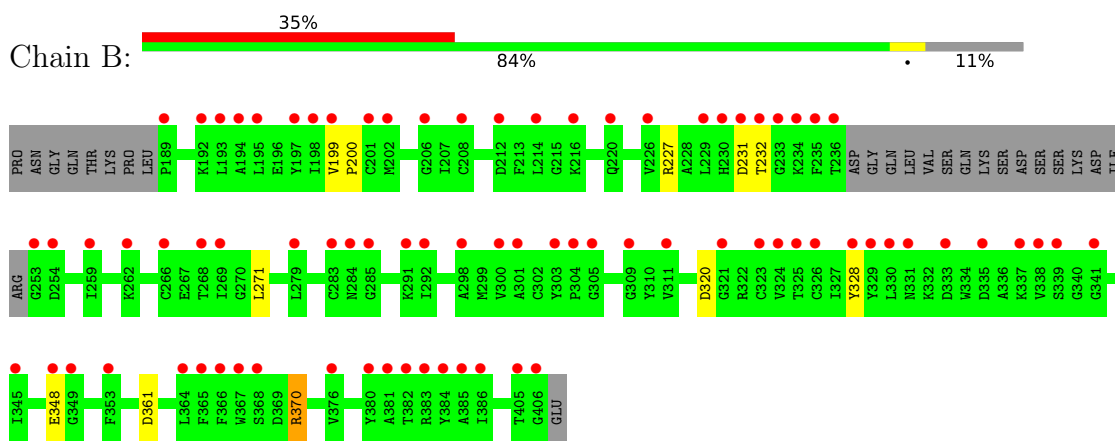
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

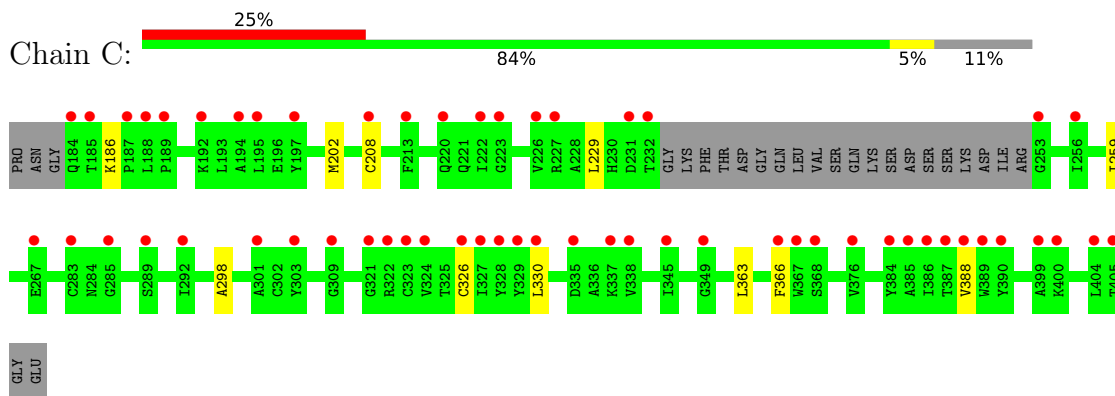
- Molecule 1: Egl nine homolog 1



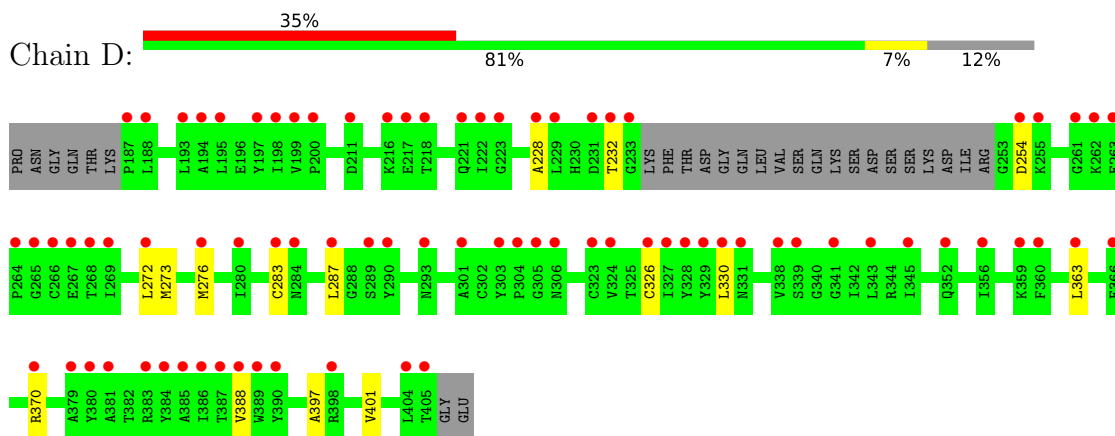
- Molecule 1: Egl nine homolog 1



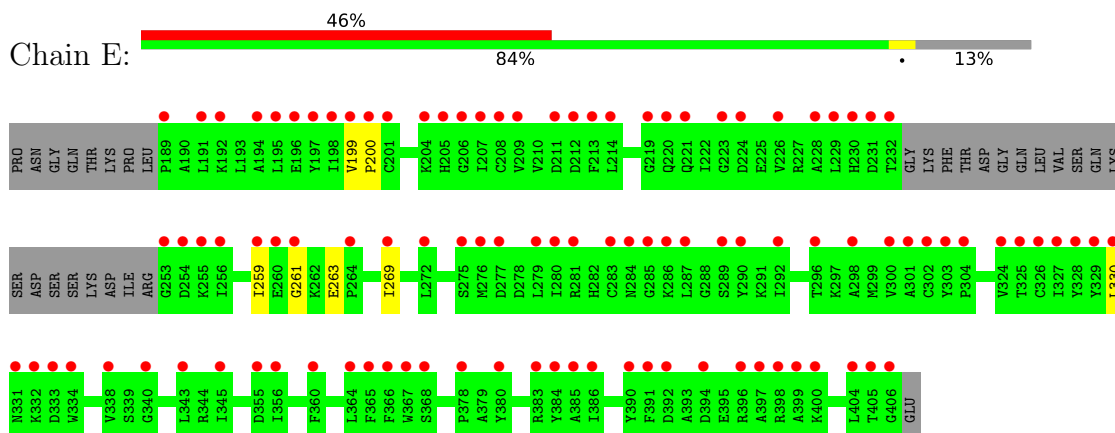
- Molecule 1: Egl nine homolog 1



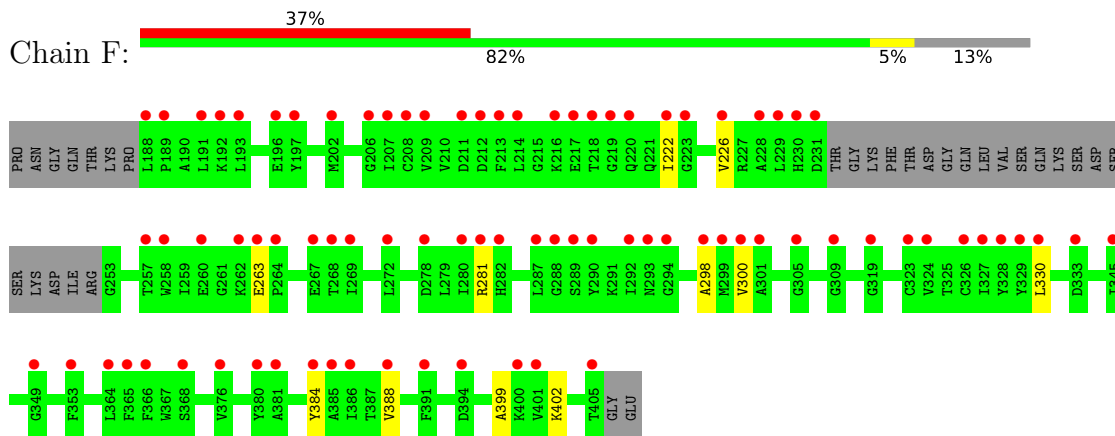
- Molecule 1: Egl nine homolog 1



- Molecule 1: Egl nine homolog 1



- Molecule 1: Egl nine homolog 1



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	77.06Å 75.47Å 127.56Å 90.00° 95.04° 90.00°	Depositor
Resolution (Å)	19.97 – 2.01 19.97 – 2.01	Depositor EDS
% Data completeness (in resolution range)	99.7 (19.97-2.01) 99.7 (19.97-2.01)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.45 (at 2.01Å)	Xtriage
Refinement program	PHENIX 1.19.1-4122-000	Depositor
R, R_{free}	0.205 , 0.230 0.206 , 0.230	Depositor DCC
R_{free} test set	4820 reflections (4.98%)	wwPDB-VP
Wilson B-factor (Å ²)	46.6	Xtriage
Anisotropy	0.451	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	(Not available) , (Not available)	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.34$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	19068	wwPDB-VP
Average B, all atoms (Å ²)	74.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.09% 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: QEE, MN, GOL

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	0.25	0/1613	0.42	0/2181
1	B	0.24	0/1619	0.42	0/2192
1	C	0.25	0/1633	0.44	0/2211
1	D	0.24	0/1623	0.44	0/2196
1	E	0.24	0/1585	0.42	0/2146
1	F	0.24	0/1608	0.42	0/2176
All	All	0.24	0/9681	0.43	0/13102

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 [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	1567	1517	1512	5	0
1	B	1576	1514	1510	8	0
1	C	1589	1539	1535	5	0
1	D	1582	1533	1529	8	0
1	E	1542	1484	1482	4	0
1	F	1565	1513	1514	7	0
2	A	24	16	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	B	24	16	0	0	0
2	C	24	16	0	0	0
2	D	24	16	0	0	0
2	E	24	16	0	0	0
2	F	24	16	0	0	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
3	C	1	0	0	0	0
3	D	1	0	0	0	0
3	E	1	0	0	0	0
3	F	1	0	0	0	0
4	C	6	7	8	0	0
5	A	73	0	0	0	0
5	B	40	0	0	0	0
5	C	79	0	0	0	0
5	D	38	0	0	0	0
5	E	24	0	0	0	0
5	F	34	0	0	0	0
All	All	9865	9203	9090	37	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 (37) 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:E:199:VAL:HG23	1:E:200:PRO:HD3	1.76	0.67
1:A:221:GLN:CG	1:A:268:THR:HG21	2.25	0.66
1:A:221:GLN:HG2	1:A:268:THR:HG21	1.81	0.63
1:E:261:GLY:N	1:E:263:GLU:OE2	2.34	0.60
1:C:326[B]:CYS:SG	1:C:363:LEU:HD11	2.42	0.59
1:C:229:LEU:HD21	1:C:259:ILE:HD11	1.86	0.57
1:F:222:ILE:O	1:F:226:VAL:HG12	2.05	0.57
1:A:221:GLN:HG3	1:A:268:THR:HG21	1.89	0.54
1:A:229:LEU:HD21	1:A:259:ILE:HD11	1.90	0.53
1:E:259:ILE:HD11	1:E:269:ILE:HG21	1.90	0.53
1:D:272:LEU:HD21	1:D:276:MET:CE	2.39	0.52
1:F:226:VAL:HG23	1:F:300:VAL:CG1	2.41	0.51
1:C:298:ALA:HA	1:C:388:VAL:HG12	1.94	0.50
1:A:326[B]:CYS:SG	1:A:363:LEU:HD11	2.52	0.49
1:B:199:VAL:HG23	1:B:200:PRO:HD3	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:326[B]:CYS:SG	1:D:363:LEU:HD11	2.53	0.48
1:E:199:VAL:HG23	1:E:200:PRO:CD	2.45	0.47
1:D:228:ALA:O	1:D:232:THR:OG1	2.33	0.46
1:D:272:LEU:HD21	1:D:276:MET:HE1	1.98	0.46
1:B:348:GLU:OE2	1:B:370:ARG:NH1	2.48	0.46
1:B:271:LEU:O	1:B:271:LEU:HD23	2.16	0.45
1:D:254:ASP:N	1:D:254:ASP:OD1	2.47	0.45
1:F:263:GLU:OE1	1:F:263:GLU:N	2.46	0.45
1:B:328:TYR:OH	1:B:361:ASP:OD1	2.17	0.45
1:F:298:ALA:HA	1:F:388:VAL:HG12	1.99	0.45
1:C:202:MET:HE1	1:C:366:PHE:HA	2.00	0.44
1:C:202:MET:HE2	1:C:208[A]:CYS:SG	2.58	0.44
1:F:330:LEU:HD11	1:F:384:TYR:HB2	1.99	0.44
1:F:399:ALA:O	1:F:402:LYS:NZ	2.43	0.44
1:D:397:ALA:O	1:D:401:VAL:HG23	2.18	0.43
1:B:231:ASP:OD1	1:B:232:THR:N	2.52	0.43
1:B:199:VAL:CG2	1:B:200:PRO:HD3	2.50	0.42
1:B:199:VAL:N	1:B:200:PRO:HD2	2.33	0.42
1:D:272:LEU:HD23	1:D:273:MET:N	2.35	0.42
1:F:330:LEU:HD12	1:F:330:LEU:O	2.19	0.41
1:B:227:ARG:O	1:B:231:ASP:N	2.53	0.40
1:D:283:CYS:HB3	1:D:287:LEU:HD13	2.03	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	197/227 (87%)	194 (98%)	3 (2%)	0	100	100
1	B	200/227 (88%)	195 (98%)	5 (2%)	0	100	100
1	C	200/227 (88%)	197 (98%)	3 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	D	199/227 (88%)	190 (96%)	9 (4%)	0	100	100
1	E	196/227 (86%)	184 (94%)	12 (6%)	0	100	100
1	F	196/227 (86%)	192 (98%)	4 (2%)	0	100	100
All	All	1188/1362 (87%)	1152 (97%)	36 (3%)	0	100	100

There are no Ramachandran outliers to report.

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	160/190 (84%)	159 (99%)	1 (1%)	86	90
1	B	161/190 (85%)	159 (99%)	2 (1%)	71	76
1	C	163/190 (86%)	161 (99%)	2 (1%)	71	76
1	D	162/190 (85%)	159 (98%)	3 (2%)	57	61
1	E	157/190 (83%)	156 (99%)	1 (1%)	86	90
1	F	163/190 (86%)	162 (99%)	1 (1%)	86	90
All	All	966/1140 (85%)	956 (99%)	10 (1%)	73	81

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

Mol	Chain	Res	Type
1	A	330	LEU
1	B	320	ASP
1	B	370	ARG
1	C	186	LYS
1	C	330	LEU
1	D	330	LEU
1	D	370	ARG
1	D	388	VAL
1	E	330	LEU
1	F	281	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 13 ligands modelled in this entry, 6 are monoatomic - leaving 7 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

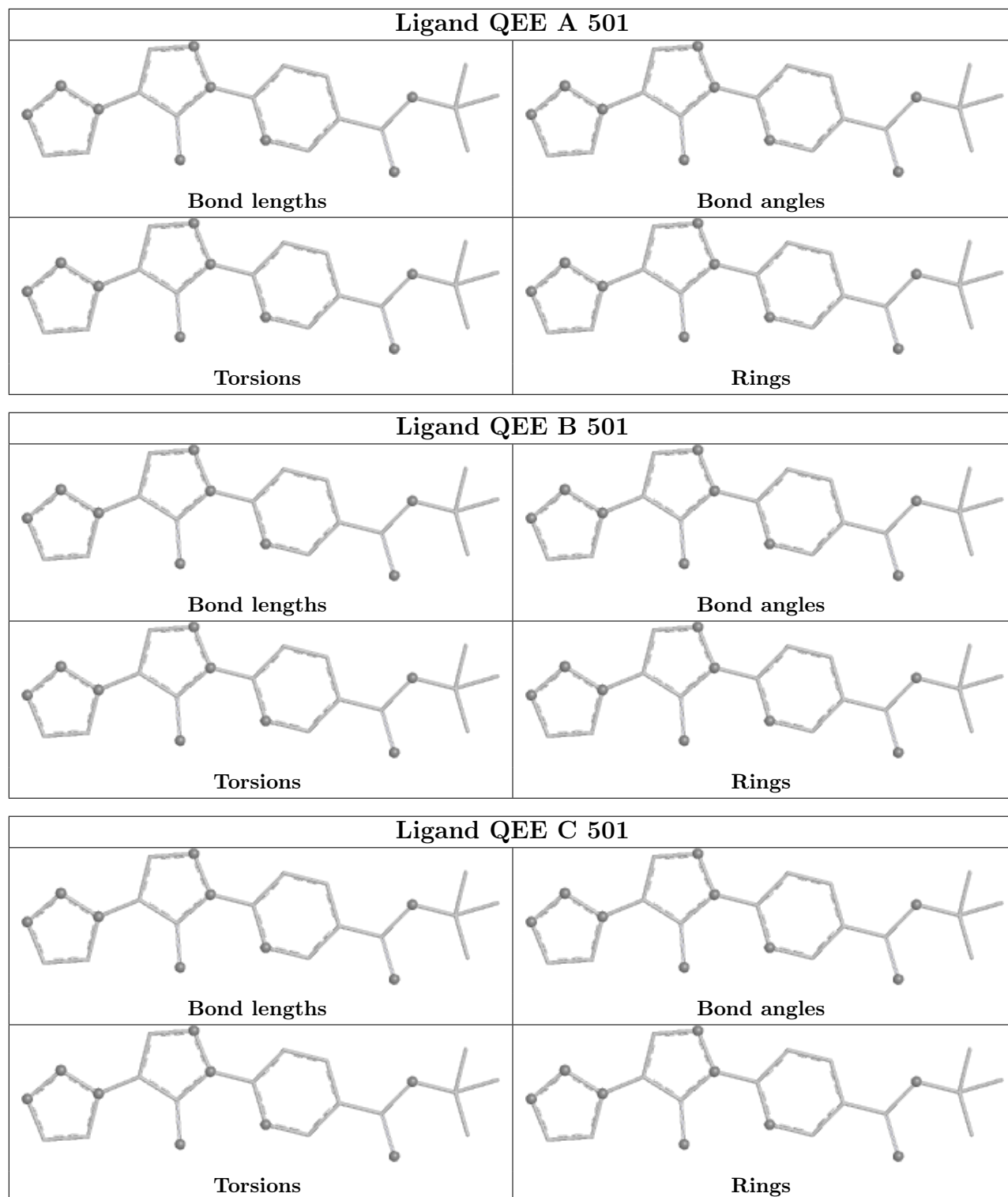
There are no chirality outliers.

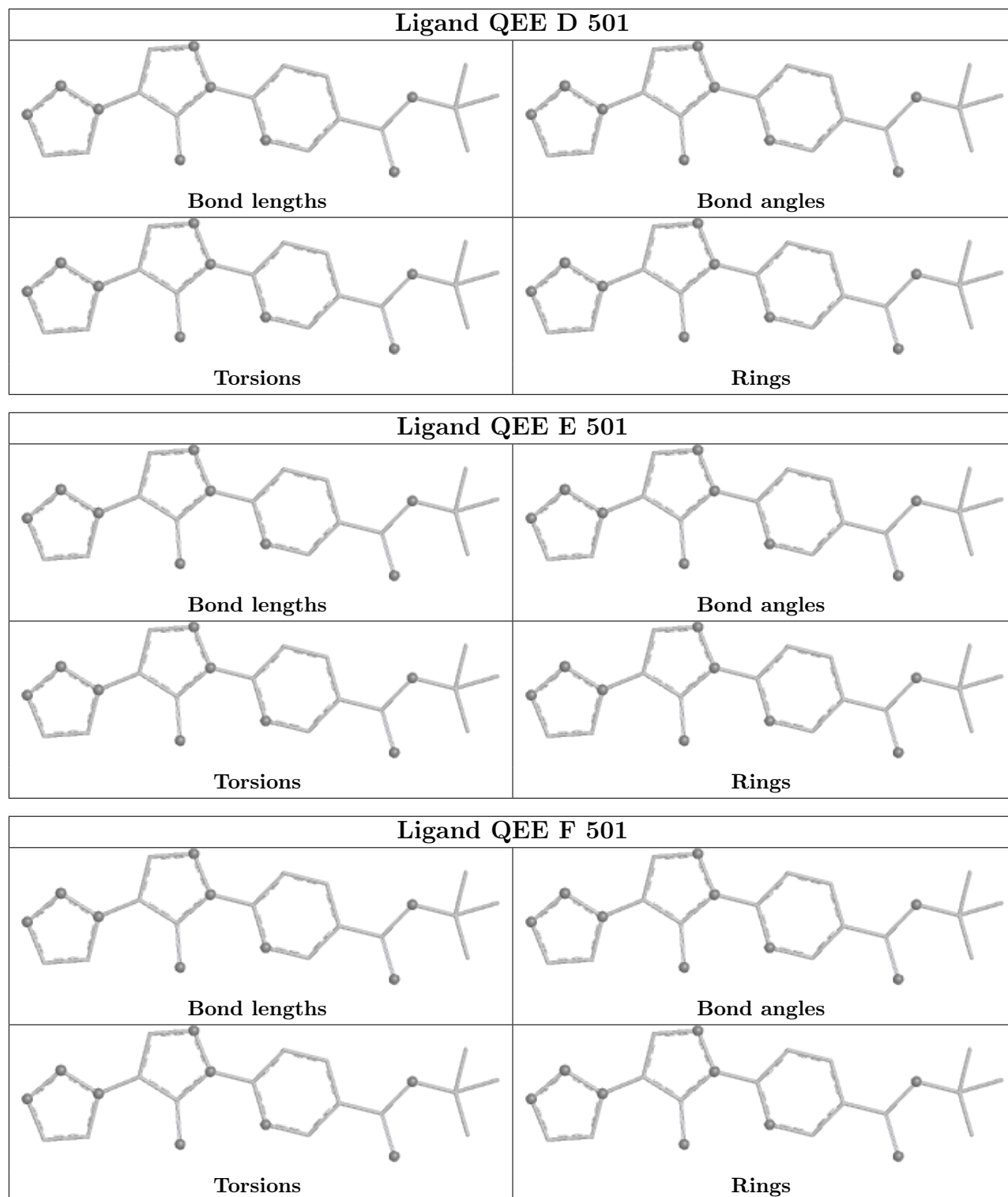
There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less 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

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, 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	197/227 (86%)	1.42	45 (22%) 0 0	38, 54, 71, 110	0
1	B	202/227 (88%)	1.84	80 (39%) 0 0	47, 67, 93, 119	0
1	C	202/227 (88%)	1.60	57 (28%) 0 0	38, 54, 79, 112	0
1	D	200/227 (88%)	1.91	80 (40%) 0 0	47, 69, 103, 136	0
1	E	198/227 (87%)	2.53	104 (52%) 0 0	54, 81, 109, 137	0
1	F	197/227 (86%)	2.02	83 (42%) 0 0	45, 69, 102, 134	0
All	All	1196/1362 (87%)	1.89	449 (37%) 0 0	38, 65, 102, 137	0

All (449) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	232	THR	14.5
1	F	188	LEU	10.8
1	E	209	VAL	10.7
1	B	406	GLY	10.4
1	E	380	TYR	8.9
1	F	405	THR	8.6
1	E	200	PRO	8.1
1	C	187	PRO	7.8
1	E	406	GLY	7.7
1	E	333	ASP	7.6
1	E	197	TYR	7.5
1	B	405	THR	7.5
1	F	292	ILE	7.5
1	E	232	THR	7.4
1	E	214	LEU	7.2
1	B	235	PHE	7.0
1	C	338	VAL	6.7
1	E	230	HIS	6.6
1	C	188	LEU	6.6

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Mol	Chain	Res	Type	RSRZ
1	F	330	LEU	6.4
1	D	188	LEU	6.4
1	E	231	ASP	6.2
1	E	189	PRO	6.1
1	D	330	LEU	6.0
1	C	330	LEU	5.9
1	F	220	GLN	5.9
1	D	187	PRO	5.9
1	D	338	VAL	5.9
1	D	233	GLY	5.8
1	C	232	THR	5.8
1	C	405	THR	5.7
1	E	301	ALA	5.6
1	B	349	GLY	5.6
1	E	264	PRO	5.6
1	B	338	VAL	5.4
1	E	405	THR	5.4
1	D	305	GLY	5.3
1	E	191	LEU	5.3
1	F	257	THR	5.3
1	F	264	PRO	5.3
1	B	232	THR	5.3
1	E	196	GLU	5.3
1	C	185	THR	5.3
1	C	253	GLY	5.2
1	E	205	HIS	5.2
1	F	222	ILE	5.2
1	F	386	ILE	5.1
1	E	226	VAL	5.0
1	F	226	VAL	5.0
1	E	396	ARG	5.0
1	A	231	ASP	4.9
1	F	197	TYR	4.9
1	E	287	LEU	4.9
1	E	285	GLY	4.8
1	D	262	LYS	4.8
1	E	201	CYS	4.8
1	F	294	GLY	4.8
1	B	189	PRO	4.8
1	F	385	ALA	4.8
1	E	286	LYS	4.8
1	A	330	LEU	4.7

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Mol	Chain	Res	Type	RSRZ
1	E	195	LEU	4.7
1	E	378	PRO	4.7
1	F	230	HIS	4.7
1	F	217	GLU	4.7
1	D	326[A]	CYS	4.7
1	D	269	ILE	4.7
1	D	405	THR	4.7
1	D	360	PHE	4.7
1	E	334	TRP	4.7
1	A	326[A]	CYS	4.7
1	B	337	LYS	4.6
1	F	219	GLY	4.6
1	B	330	LEU	4.6
1	F	192	LYS	4.6
1	D	199	VAL	4.6
1	E	324	VAL	4.6
1	D	218	THR	4.6
1	D	217	GLU	4.5
1	F	196	GLU	4.5
1	E	330	LEU	4.5
1	C	386	ILE	4.5
1	C	324	VAL	4.4
1	E	360	PHE	4.4
1	A	328	TYR	4.4
1	E	206	GLY	4.4
1	F	328	TYR	4.4
1	F	289	SER	4.4
1	D	385	ALA	4.3
1	E	326[A]	CYS	4.3
1	F	366	PHE	4.3
1	E	300	VAL	4.3
1	F	228	ALA	4.3
1	F	263	GLU	4.3
1	F	269	ILE	4.2
1	D	380	TYR	4.2
1	B	193	LEU	4.2
1	E	290	TYR	4.2
1	C	326[A]	CYS	4.1
1	E	277	ASP	4.1
1	D	289	SER	4.1
1	D	266	CYS	4.1
1	D	388	VAL	4.1

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Mol	Chain	Res	Type	RSRZ
1	E	228	ALA	4.1
1	D	221	GLN	4.1
1	B	197	TYR	4.0
1	D	324	VAL	4.0
1	E	385	ALA	4.0
1	C	404	LEU	4.0
1	B	192	LYS	4.0
1	B	220	GLN	4.0
1	E	198	ILE	4.0
1	A	329	TYR	4.0
1	B	384	TYR	4.0
1	D	283	CYS	3.9
1	C	189	PRO	3.9
1	E	338	VAL	3.9
1	D	386	ILE	3.9
1	A	381	ALA	3.9
1	B	311	VAL	3.9
1	B	305	GLY	3.9
1	E	224	ASP	3.9
1	E	220	GLN	3.9
1	D	193	LEU	3.9
1	D	267	GLU	3.9
1	D	398	ARG	3.8
1	E	255	LYS	3.8
1	E	390	TYR	3.8
1	E	259	ILE	3.8
1	D	381	ALA	3.8
1	D	229	LEU	3.8
1	F	191	LEU	3.8
1	E	284	ASN	3.8
1	C	385	ALA	3.8
1	F	326[A]	CYS	3.8
1	E	329	TYR	3.8
1	B	386	ILE	3.8
1	C	366	PHE	3.8
1	C	197	TYR	3.7
1	A	385	ALA	3.7
1	C	337	LYS	3.7
1	B	283	CYS	3.7
1	D	293	ASN	3.7
1	E	260	GLU	3.7
1	C	226	VAL	3.7

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Mol	Chain	Res	Type	RSRZ
1	B	284	ASN	3.7
1	B	381	ALA	3.7
1	D	216	LYS	3.7
1	E	276	MET	3.6
1	F	229	LEU	3.6
1	D	200	PRO	3.6
1	D	339	SER	3.6
1	B	376	VAL	3.6
1	E	283	CYS	3.6
1	E	366	PHE	3.6
1	D	390	TYR	3.6
1	C	384	TYR	3.5
1	F	298	ALA	3.5
1	B	216	LYS	3.5
1	B	335	ASP	3.5
1	E	269	ILE	3.5
1	C	328	TYR	3.5
1	C	329	TYR	3.5
1	E	213	PHE	3.5
1	D	222	ILE	3.5
1	D	304	PRO	3.4
1	A	301	ALA	3.4
1	B	385	ALA	3.4
1	B	333	ASP	3.4
1	A	386	ILE	3.4
1	B	253	GLY	3.4
1	F	216	LYS	3.4
1	E	229	LEU	3.4
1	D	329	TYR	3.4
1	B	380	TYR	3.4
1	E	207	ILE	3.4
1	B	301	ALA	3.3
1	E	397	ALA	3.3
1	B	229	LEU	3.3
1	E	289	SER	3.3
1	A	311	VAL	3.3
1	E	275	SER	3.3
1	F	329	TYR	3.3
1	E	398	ARG	3.2
1	E	208[A]	CYS	3.2
1	A	345	ILE	3.2
1	D	284	ASN	3.2

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Mol	Chain	Res	Type	RSRZ
1	D	328	TYR	3.2
1	E	384	TYR	3.2
1	B	329	TYR	3.2
1	C	194	ALA	3.2
1	F	262	LYS	3.2
1	B	214	LEU	3.2
1	C	389	TRP	3.2
1	E	199	VAL	3.2
1	F	394	ASP	3.1
1	A	366	PHE	3.1
1	A	380	TYR	3.1
1	E	253	GLY	3.1
1	B	365	PHE	3.1
1	D	366	PHE	3.1
1	E	365	PHE	3.1
1	A	266	CYS	3.1
1	B	208[A]	CYS	3.1
1	F	212	ASP	3.1
1	E	281	ARG	3.1
1	F	290	TYR	3.1
1	B	367	TRP	3.1
1	D	359	LYS	3.1
1	F	384	TYR	3.1
1	E	399	ALA	3.1
1	C	368	SER	3.1
1	D	195	LEU	3.1
1	A	406	GLY	3.0
1	D	231	ASP	3.0
1	B	266	CYS	3.0
1	E	279	LEU	3.0
1	B	366	PHE	3.0
1	F	309	GLY	3.0
1	D	379	ALA	3.0
1	A	192	LYS	3.0
1	C	283	CYS	3.0
1	B	292	ILE	3.0
1	C	309	GLY	3.0
1	C	184	GLN	3.0
1	E	343	LEU	3.0
1	F	365	PHE	3.0
1	B	206	GLY	3.0
1	D	389	TRP	3.0

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Mol	Chain	Res	Type	RSRZ
1	B	198	ILE	2.9
1	B	323	CYS	2.9
1	D	306	ASN	2.9
1	C	376	VAL	2.9
1	B	259	ILE	2.9
1	B	325	THR	2.9
1	E	192	LYS	2.9
1	B	339	SER	2.9
1	C	222	ILE	2.9
1	D	198	ILE	2.9
1	B	328	TYR	2.9
1	D	263[A]	GLU	2.9
1	B	199	VAL	2.9
1	F	267	GLU	2.9
1	D	303	TYR	2.9
1	E	221	GLN	2.8
1	E	391	PHE	2.8
1	F	213	PHE	2.8
1	B	194	ALA	2.8
1	A	390	TYR	2.8
1	E	367	TRP	2.8
1	B	233	GLY	2.8
1	B	321	GLY	2.8
1	C	323	CYS	2.8
1	C	231	ASP	2.8
1	C	327	ILE	2.8
1	D	280	ILE	2.8
1	B	234	LYS	2.8
1	F	189	PRO	2.8
1	E	254	ASP	2.8
1	E	392	ASP	2.8
1	C	303	TYR	2.8
1	F	381	ALA	2.7
1	E	211	ASP	2.7
1	C	345	ILE	2.7
1	E	386	ILE	2.7
1	F	288	GLY	2.7
1	F	301	ALA	2.7
1	A	206	GLY	2.7
1	C	256	ILE	2.7
1	F	327	ILE	2.7
1	A	368	SER	2.7

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Mol	Chain	Res	Type	RSRZ
1	E	368	SER	2.7
1	D	370	ARG	2.7
1	E	364	LEU	2.7
1	F	345	ILE	2.7
1	E	394	ASP	2.7
1	A	272	LEU	2.7
1	D	268	THR	2.7
1	A	324	VAL	2.7
1	E	261	GLY	2.7
1	A	376	VAL	2.7
1	F	206	GLY	2.7
1	C	220	GLN	2.7
1	A	338	VAL	2.6
1	F	324	VAL	2.6
1	F	401	VAL	2.6
1	C	267	GLU	2.6
1	F	268	THR	2.6
1	B	364	LEU	2.6
1	D	343	LEU	2.6
1	F	272	LEU	2.6
1	E	303	TYR	2.6
1	F	209	VAL	2.6
1	F	323	CYS	2.6
1	B	285	GLY	2.6
1	C	390	TYR	2.6
1	A	327	ILE	2.6
1	B	368	SER	2.6
1	E	219	GLY	2.6
1	E	223	GLY	2.6
1	D	387	THR	2.6
1	C	223	GLY	2.6
1	F	333	ASP	2.6
1	C	192	LYS	2.6
1	A	321	GLY	2.6
1	D	223	GLY	2.6
1	B	195	LEU	2.6
1	A	354	ALA	2.5
1	E	256	ILE	2.5
1	F	391	PHE	2.5
1	C	195	LEU	2.5
1	D	255	LYS	2.5
1	E	298	ALA	2.5

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Mol	Chain	Res	Type	RSRZ
1	C	388	VAL	2.5
1	A	292	ILE	2.5
1	C	321	GLY	2.5
1	D	272	LEU	2.5
1	F	281	ARG	2.5
1	F	278	ASP	2.5
1	C	400	LYS	2.5
1	C	292	ILE	2.5
1	D	265	GLY	2.5
1	B	230	HIS	2.5
1	D	341	GLY	2.5
1	B	298	ALA	2.5
1	B	226	VAL	2.4
1	F	300	VAL	2.4
1	E	332	LYS	2.4
1	B	345	ILE	2.4
1	E	296	THR	2.4
1	B	279	LEU	2.4
1	B	300	VAL	2.4
1	C	289	SER	2.4
1	C	208[A]	CYS	2.4
1	C	399	ALA	2.4
1	A	255	LYS	2.4
1	A	337	LYS	2.4
1	C	387	THR	2.4
1	F	364	LEU	2.4
1	F	349	GLY	2.4
1	B	331	ASN	2.4
1	A	364	LEU	2.4
1	F	231	ASP	2.4
1	B	304	PRO	2.4
1	A	303	TYR	2.4
1	E	302	CYS	2.4
1	D	287	LEU	2.4
1	B	262	LYS	2.4
1	E	325	THR	2.4
1	F	305	GLY	2.4
1	A	222	ILE	2.4
1	D	327	ILE	2.4
1	D	345	ILE	2.4
1	E	327	ILE	2.4
1	E	345	ILE	2.4

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Mol	Chain	Res	Type	RSRZ
1	A	197	TYR	2.4
1	B	254	ASP	2.4
1	E	404	LEU	2.3
1	F	282	HIS	2.3
1	D	301	ALA	2.3
1	F	368	SER	2.3
1	B	212	ASP	2.3
1	D	211	ASP	2.3
1	D	363	LEU	2.3
1	A	199	VAL	2.3
1	B	201	CYS	2.3
1	C	349	GLY	2.3
1	B	236	THR	2.3
1	E	331	ASN	2.3
1	C	213	PHE	2.3
1	D	404	LEU	2.3
1	F	258	TRP	2.3
1	A	307	GLY	2.3
1	B	341	GLY	2.3
1	B	326[B]	CYS	2.3
1	B	383	ARG	2.3
1	E	383	ARG	2.3
1	F	260	GLU	2.3
1	E	304	PRO	2.3
1	E	356	ILE	2.3
1	D	197	TYR	2.3
1	B	348	GLU	2.3
1	B	324	VAL	2.3
1	F	376	VAL	2.3
1	E	204	LYS	2.3
1	A	191	LEU	2.2
1	E	328	TYR	2.2
1	F	299	MET	2.2
1	C	367	TRP	2.2
1	E	292	ILE	2.2
1	C	227	ARG	2.2
1	D	383	ARG	2.2
1	D	352	GLN	2.2
1	A	284	ASN	2.2
1	B	231	ASP	2.2
1	E	355	ASP	2.2
1	B	291	LYS	2.2

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Mol	Chain	Res	Type	RSRZ
1	A	405	THR	2.2
1	F	287	LEU	2.2
1	F	388	VAL	2.2
1	C	301	ALA	2.2
1	F	353	PHE	2.2
1	F	380	TYR	2.2
1	B	382	THR	2.2
1	D	228	ALA	2.2
1	A	259	ILE	2.1
1	A	283	CYS	2.1
1	D	323	CYS	2.1
1	B	202	MET	2.1
1	F	218	THR	2.1
1	B	269	ILE	2.1
1	A	365	PHE	2.1
1	B	303	TYR	2.1
1	F	293	ASN	2.1
1	A	269	ILE	2.1
1	F	214	LEU	2.1
1	D	261	GLY	2.1
1	D	194	ALA	2.1
1	D	290	TYR	2.1
1	A	189	PRO	2.1
1	F	208[A]	CYS	2.1
1	C	335	ASP	2.1
1	D	264	PRO	2.1
1	D	331	ASN	2.1
1	D	254	ASP	2.1
1	D	384	TYR	2.1
1	A	323	CYS	2.1
1	F	400	LYS	2.1
1	E	280	ILE	2.1
1	B	353	PHE	2.1
1	E	340	GLY	2.1
1	F	319	GLY	2.1
1	D	356	ILE	2.0
1	E	212	ASP	2.0
1	E	272	LEU	2.0
1	C	322	ARG	2.0
1	E	400	LYS	2.0
1	D	276	MET	2.0
1	F	207	ILE	2.0

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Mol	Chain	Res	Type	RSRZ
1	F	280	ILE	2.0
1	B	309	GLY	2.0
1	F	223	GLY	2.0
1	F	202	MET	2.0
1	B	268	THR	2.0
1	E	194	ALA	2.0
1	F	193	LEU	2.0
1	A	388	VAL	2.0
1	C	285	GLY	2.0
1	F	211	ASP	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](#)

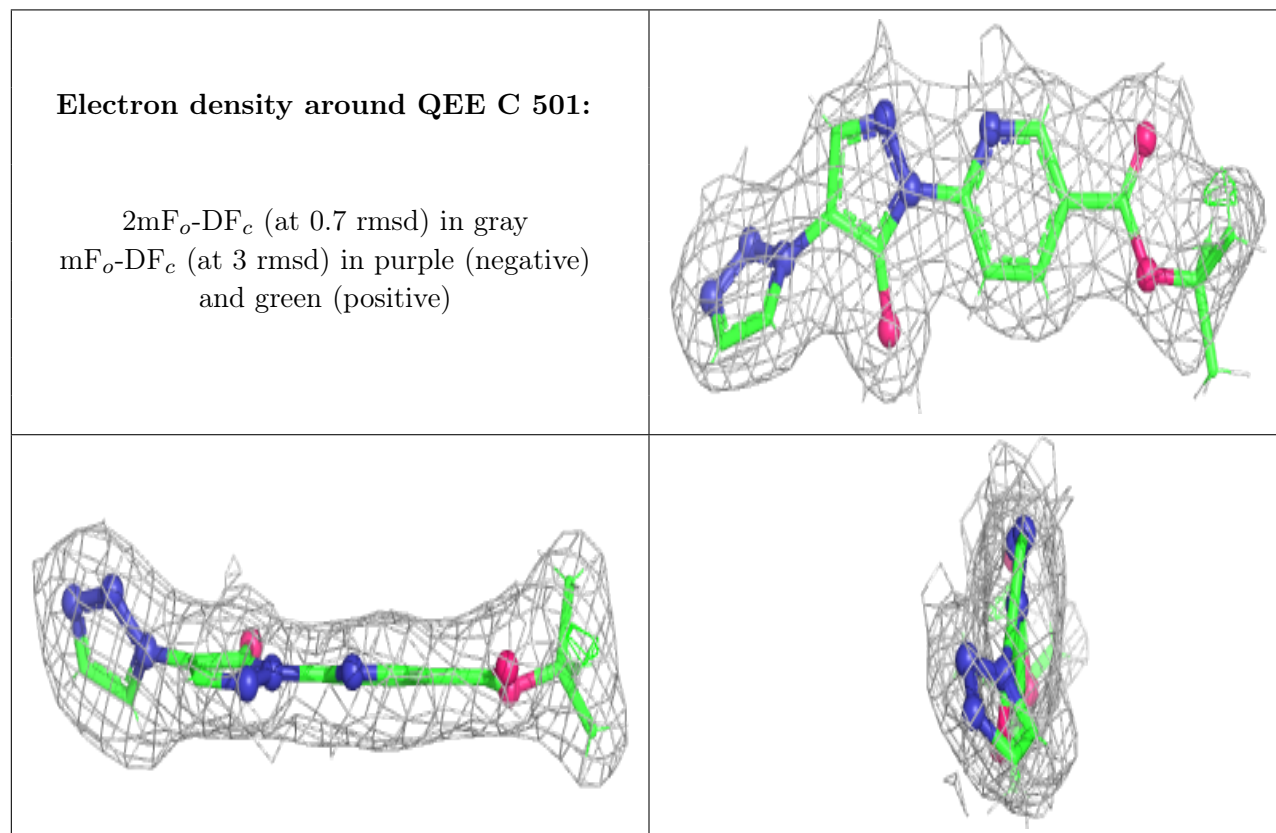
There are no monosaccharides in this entry.

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, 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.

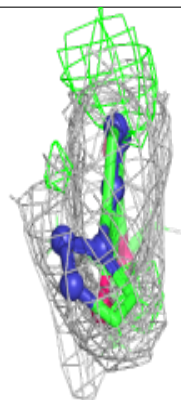
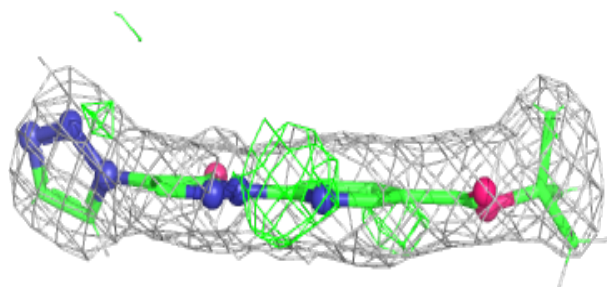
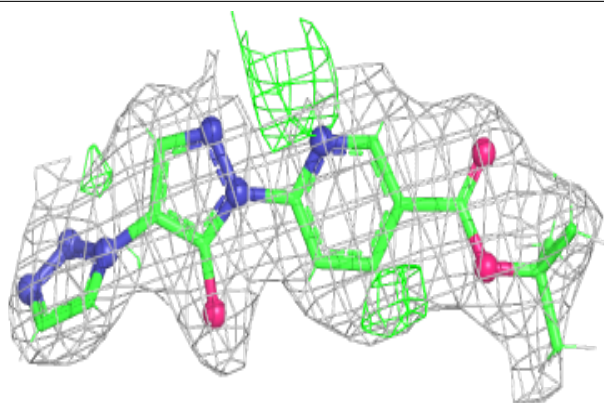
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
4	GOL	C	502	6/6	0.73	0.26	55,67,80,80	0
2	QEE	C	501	24/24	0.84	0.22	36,49,65,65	0
2	QEE	B	501	24/24	0.84	0.18	43,55,74,74	0
2	QEE	D	501	24/24	0.85	0.15	37,56,78,78	0
2	QEE	E	501	24/24	0.87	0.18	47,62,81,81	0
2	QEE	A	501	24/24	0.87	0.19	40,51,83,83	0
2	QEE	F	501	24/24	0.89	0.14	42,58,83,83	0
3	MN	E	502	1/1	0.95	0.11	51,51,51,51	0
3	MN	A	502	1/1	0.97	0.14	40,40,40,40	0
3	MN	B	502	1/1	0.97	0.18	50,50,50,50	0
3	MN	F	502	1/1	0.98	0.26	65,65,65,65	0
3	MN	D	502	1/1	0.98	0.10	48,48,48,48	0
3	MN	C	503	1/1	0.99	0.13	36,36,36,36	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.

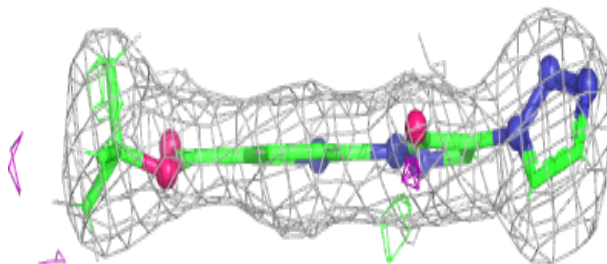
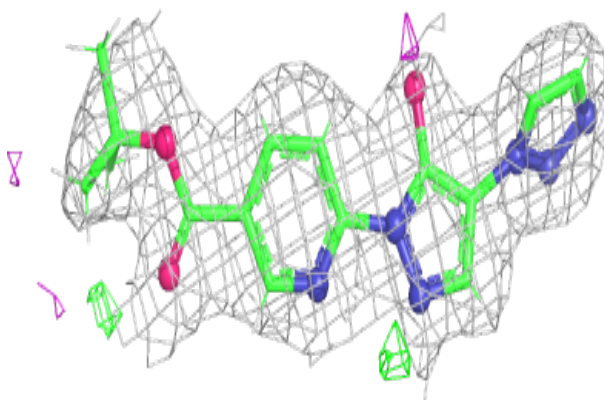


Electron density around QEE B 501:

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

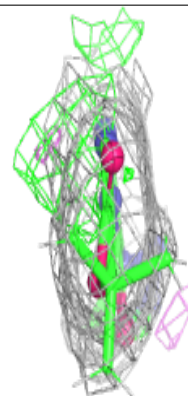
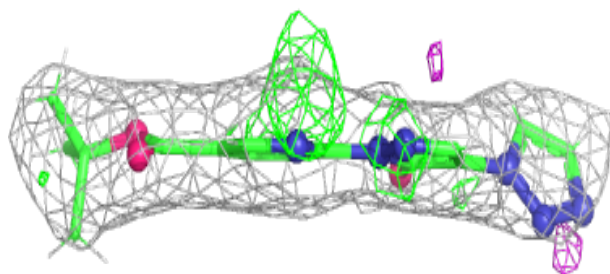
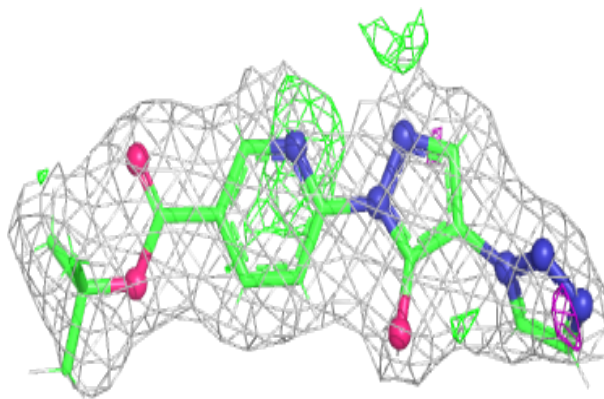
**Electron density around QEE D 501:**

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

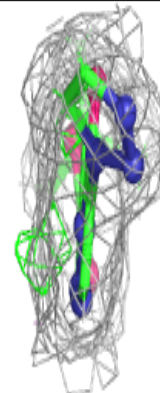
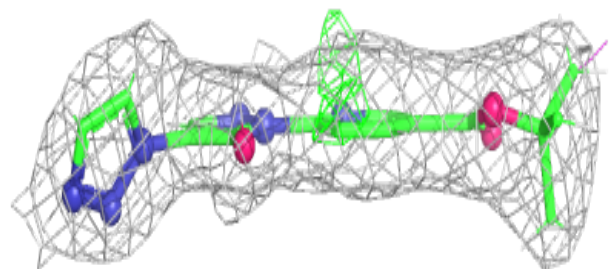
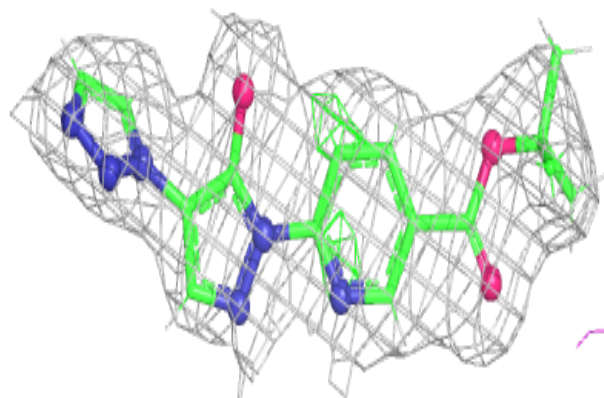


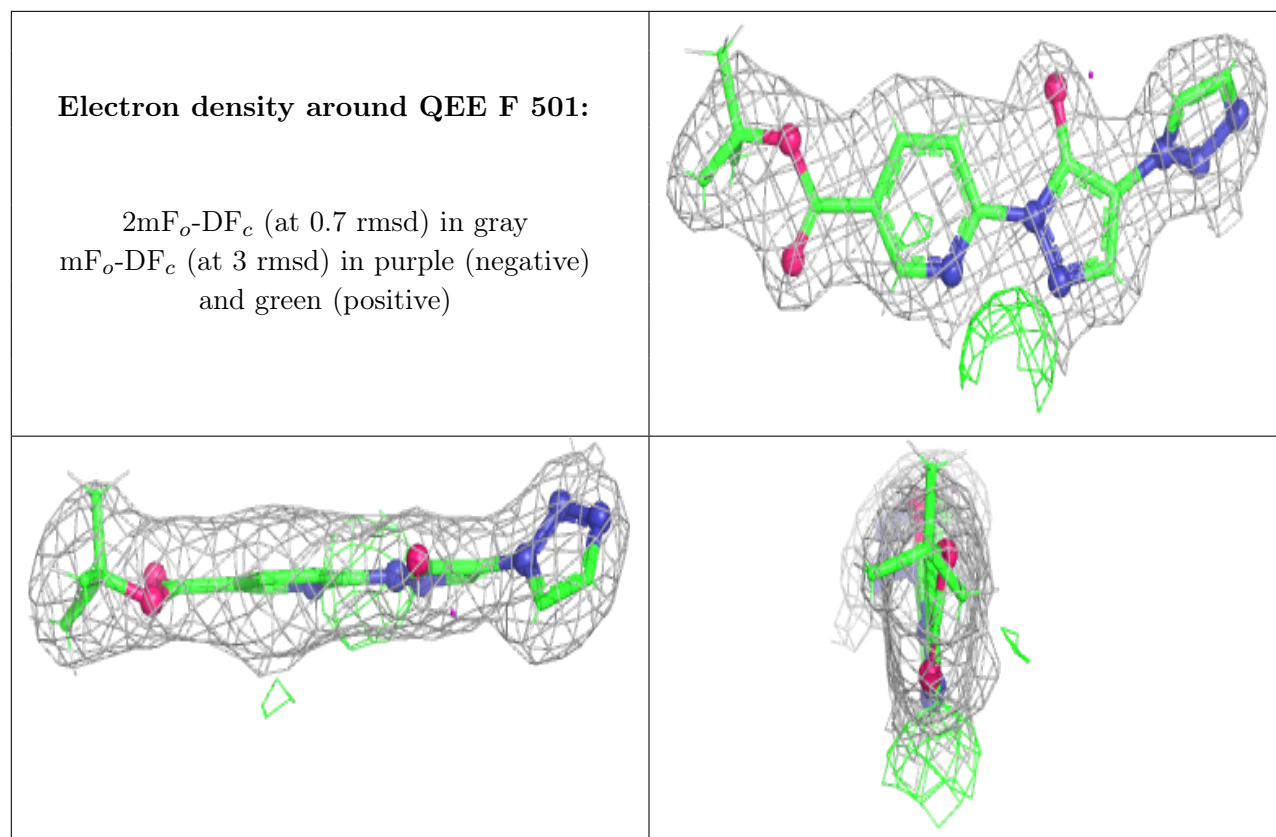
Electron density around QEE E 501:

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

**Electron density around QEE A 501:**

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





6.5 Other polymers [i](#)

There are no such residues in this entry.