



# Full wwPDB X-ray Structure Validation Report ⓘ

Oct 13, 2021 – 12:12 pm BST

PDB ID : 6ZGU  
Title : Crystal structure of a MFS transporter with bound 3-(2-methylphenyl)propionic acid at 2.41 Angstrom resolution  
Authors : Kalbermatter, D.; Bosshart, P.; Bonetti, S.; Fotiadis, D.  
Deposited on : 2020-06-19  
Resolution : 2.18 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

<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)  
Xtrriage (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

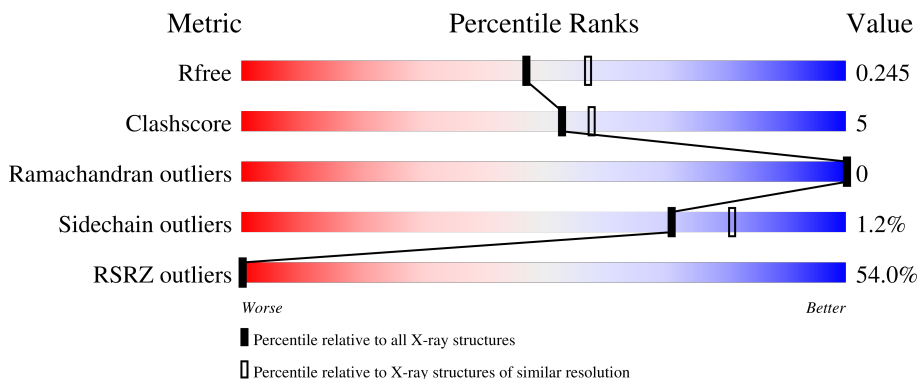
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.18 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	6864 (2.20-2.16)
Clashscore	141614	7689 (2.20-2.16)
Ramachandran outliers	138981	7564 (2.20-2.16)
Sidechain outliers	138945	7564 (2.20-2.16)
RSRZ outliers	127900	6738 (2.20-2.16)

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  $\geq 3$ , 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	420	
1	B	420	

## 2 Entry composition i

There are 3 unique types of molecules in this entry. The entry contains 5822 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.

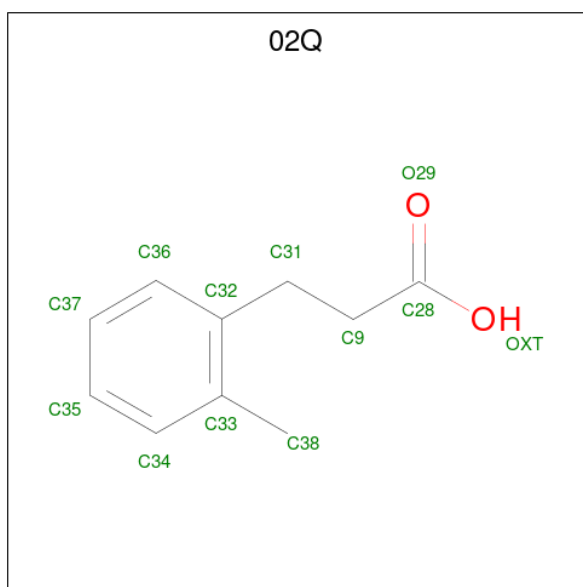
- Molecule 1 is a protein called L-lactate transporter.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	404	3055	2044	481	505	25	0	0	0
1	B	364	2735	1832	428	452	23	0	0	0

There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	413	LEU	-	expression tag	UNP A0LNN5
A	414	GLU	-	expression tag	UNP A0LNN5
A	415	LEU	-	expression tag	UNP A0LNN5
A	416	GLU	-	expression tag	UNP A0LNN5
A	417	VAL	-	expression tag	UNP A0LNN5
A	418	LEU	-	expression tag	UNP A0LNN5
A	419	PHE	-	expression tag	UNP A0LNN5
A	420	GLN	-	expression tag	UNP A0LNN5
B	413	LEU	-	expression tag	UNP A0LNN5
B	414	GLU	-	expression tag	UNP A0LNN5
B	415	LEU	-	expression tag	UNP A0LNN5
B	416	GLU	-	expression tag	UNP A0LNN5
B	417	VAL	-	expression tag	UNP A0LNN5
B	418	LEU	-	expression tag	UNP A0LNN5
B	419	PHE	-	expression tag	UNP A0LNN5
B	420	GLN	-	expression tag	UNP A0LNN5

- Molecule 2 is 3-(2-methylphenyl)propanoic acid (three-letter code: 02Q) (formula: C<sub>10</sub>H<sub>12</sub>O<sub>2</sub>) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	
2	A	1	Total	C	O	0	0
			12	10	2		
2	B	1	Total	C	O	0	0
			12	10	2		

- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	7	Total	O	0	0
			7	7		
3	B	1	Total	O	0	0
			1	1		

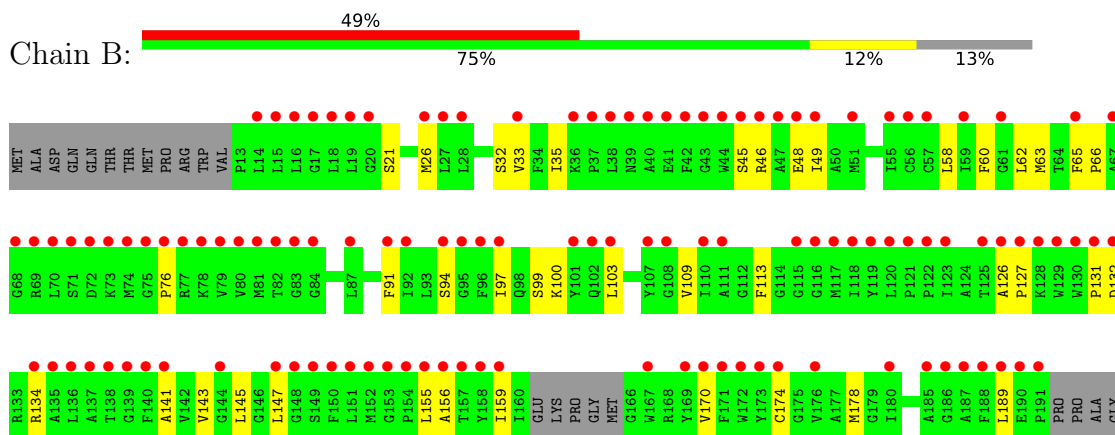
### 3 Residue-property plots

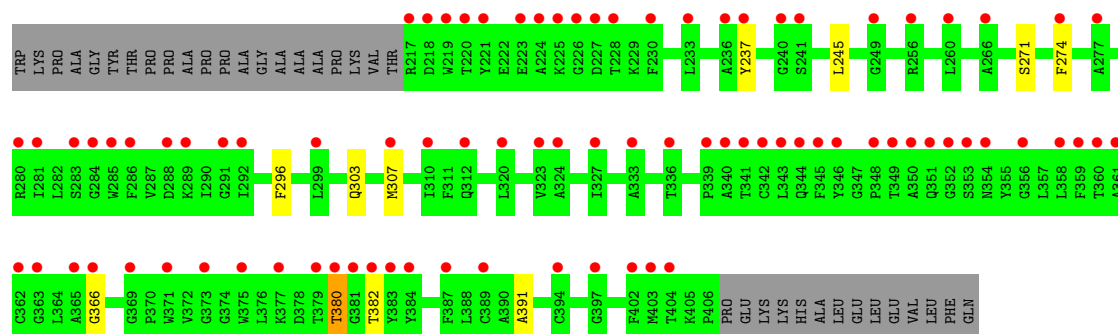
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density.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

- Molecule 1: L-lactate transporter



- Molecule 1: L-lactate transporter





## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	102.05Å 199.70Å 61.62Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	14.97 – 2.18 14.97 – 2.18	Depositor EDS
% Data completeness (in resolution range)	62.1 (14.97-2.18) 62.1 (14.97-2.18)	Depositor EDS
$R_{merge}$	0.16	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.35 (at 2.18Å)	Xtriage
Refinement program	PHENIX 1.14_3228	Depositor
R, $R_{free}$	0.215 , 0.244 0.216 , 0.245	Depositor DCC
$R_{free}$ test set	1988 reflections (4.82%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	68.5	Xtriage
Anisotropy	0.059	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	(Not available) , (Not available)	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.51$ , $\langle L^2 \rangle = 0.34$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.95	EDS
Total number of atoms	5822	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	96.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.99% 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, 0.333 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: 02Q

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	0.51	0/3152	0.65	0/4290
1	B	0.43	0/2817	0.60	0/3830
All	All	0.48	0/5969	0.63	0/8120

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	3055	0	3094	29	0
1	B	2735	0	2766	32	0
2	A	12	0	11	3	0
2	B	12	0	11	3	0
3	A	7	0	0	0	0
3	B	1	0	0	0	0
All	All	5822	0	5882	63	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 (63) 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:159:ILE:HB	1:B:170:VAL:HG22	1.75	0.67
1:B:76:PRO:HB2	1:B:189:LEU:HD23	1.83	0.61
1:A:45:SER:HB3	1:A:48:GLU:HG3	1.86	0.57
1:B:380:THR:HB	1:B:382:THR:HG22	1.86	0.57
1:A:145:LEU:HD22	2:A:501:02Q:C28	2.35	0.57
1:B:33:VAL:HG11	1:B:156:ALA:HB1	1.87	0.56
1:B:26:MET:HB3	1:B:178:MET:HE2	1.87	0.56
1:B:131:PRO:HA	1:B:134:ARG:HE	1.70	0.55
1:B:58:LEU:O	1:B:62:LEU:HG	2.06	0.55
1:A:33:VAL:HG11	1:A:156:ALA:HB1	1.88	0.54
1:B:271:SER:HA	1:B:274:PHE:HD2	1.74	0.53
1:A:94:SER:HA	1:A:97:ILE:HG23	1.89	0.53
1:B:60:PHE:CD1	2:B:501:02Q:H37	2.44	0.53
1:B:35:ILE:HA	1:B:49:ILE:HD13	1.90	0.52
1:A:60:PHE:CD1	2:A:501:02Q:H37	2.44	0.52
1:B:45:SER:OG	1:B:46:ARG:N	2.43	0.52
1:A:94:SER:O	1:A:97:ILE:HG12	2.09	0.51
1:B:99:SER:OG	1:B:100:LYS:N	2.43	0.51
1:A:32:SER:HA	1:A:35:ILE:HG13	1.94	0.50
1:A:221:TYR:O	1:A:225:LYS:HB3	2.11	0.50
1:A:411:HIS:CE1	1:A:416:GLU:OE2	2.65	0.50
1:B:307:MET:HB2	1:B:391:ALA:HB2	1.94	0.49
1:B:63:MET:HG3	1:B:113:PHE:HA	1.94	0.48
1:A:159:ILE:HB	1:A:170:VAL:HG22	1.95	0.48
1:A:303:GLN:O	1:A:307:MET:HG2	2.14	0.47
1:A:216:THR:HA	1:A:410:LYS:O	2.13	0.47
1:A:199:ALA:HB1	1:A:201:TYR:O	2.14	0.47
1:A:377:LYS:HE2	1:A:383:TYR:CZ	2.49	0.47
1:B:65:PHE:HB3	1:B:66:PRO:HD3	1.98	0.46
1:A:245:LEU:HD13	1:A:366:GLY:HA2	1.98	0.46
1:A:30:ALA:O	1:A:33:VAL:HB	2.15	0.46
1:B:145:LEU:HD22	2:B:501:02Q:C28	2.46	0.46
1:B:143:VAL:O	1:B:147:LEU:HG	2.17	0.45
1:A:413:LEU:O	1:A:417:VAL:HG22	2.16	0.45
1:B:97:ILE:HD13	1:B:103:LEU:HB2	1.97	0.45
1:B:109:VAL:O	1:B:113:PHE:HB2	2.17	0.45
1:B:303:GLN:O	1:B:307:MET:HG2	2.17	0.45
1:A:160:ILE:HG13	1:A:170:VAL:HG21	1.99	0.44
1:B:48:GLU:OE1	1:B:100:LYS:HD3	2.16	0.44
1:B:94:SER:HA	1:B:97:ILE:HG23	1.99	0.44
1:B:32:SER:HA	1:B:35:ILE:HG13	1.99	0.44

*Continued on next page...*

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:271:SER:HA	1:B:274:PHE:CD2	2.53	0.44
1:A:107:TYR:O	1:A:111:ALA:HB3	2.17	0.44
1:A:99:SER:OG	1:A:100:LYS:N	2.51	0.43
1:A:77:ARG:HG3	1:A:186:GLY:O	2.18	0.43
1:B:245:LEU:HD13	1:B:366:GLY:HA2	2.01	0.42
2:A:501:02Q:H31	2:A:501:02Q:H38	1.86	0.41
1:A:119:TYR:HE1	1:A:145:LEU:HD13	1.84	0.41
1:B:155:LEU:O	1:B:159:ILE:HG13	2.21	0.41
1:B:132:ASP:OD1	1:B:132:ASP:N	2.40	0.41
1:A:102:GLN:O	1:A:106:THR:HG23	2.21	0.41
1:B:131:PRO:HB3	1:B:134:ARG:HH21	1.86	0.41
1:A:337:LEU:HD23	1:A:337:LEU:HA	1.86	0.41
1:B:174:CYS:HB3	1:B:178:MET:CE	2.51	0.41
1:A:105:ILE:HD13	1:A:105:ILE:HA	1.85	0.41
2:B:501:02Q:H31	2:B:501:02Q:H38	1.80	0.41
1:A:233:LEU:HA	1:A:233:LEU:HD23	1.76	0.40
1:B:21:SER:HB3	1:B:141:ALA:O	2.21	0.40
1:B:94:SER:O	1:B:97:ILE:HG12	2.21	0.40
1:B:126:ALA:N	1:B:127:PRO:HD2	2.36	0.40
1:A:113:PHE:O	1:A:117:MET:HG3	2.21	0.40
1:A:246:MET:HE3	1:A:390:ALA:HB2	2.04	0.40
1:A:385:LEU:HD23	1:A:385:LEU:HA	1.60	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	400/420 (95%)	391 (98%)	9 (2%)	0	100	100
1	B	358/420 (85%)	353 (99%)	5 (1%)	0	100	100
All	All	758/840 (90%)	744 (98%)	14 (2%)	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	298/307 (97%)	295 (99%)	3 (1%)	76	85
1	B	264/307 (86%)	260 (98%)	4 (2%)	65	76
All	All	562/614 (92%)	555 (99%)	7 (1%)	71	81

All (7) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	237	TYR
1	A	296	PHE
1	A	385	LEU
1	B	91	PHE
1	B	237	TYR
1	B	296	PHE
1	B	380	THR

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

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	02Q	A	501	-	9,12,12	0.54	0	12,15,15	0.94	0
2	02Q	B	501	-	9,12,12	0.52	0	12,15,15	1.03	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
2	02Q	A	501	-	-	0/3/5/5	0/1/1/1
2	02Q	B	501	-	-	0/3/5/5	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

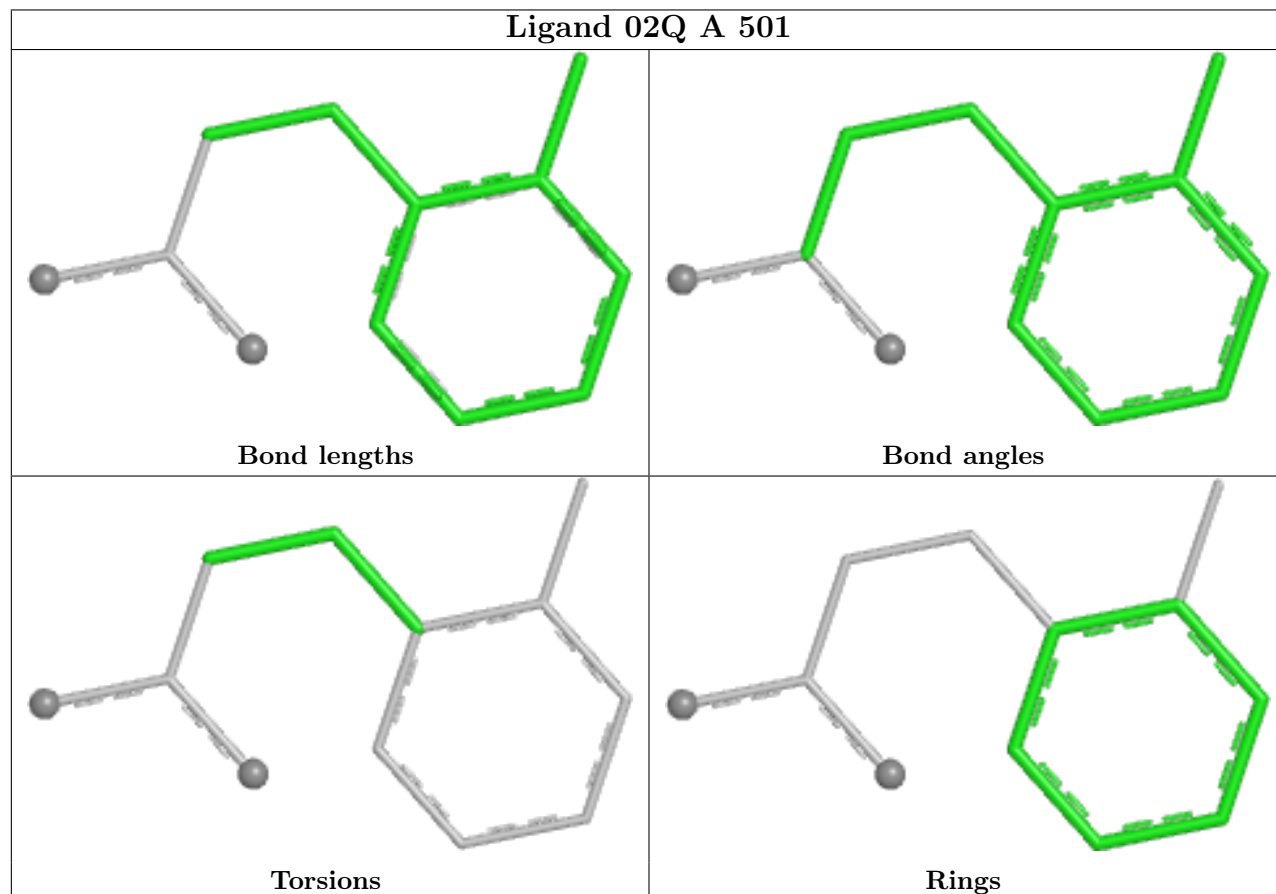
There are no ring outliers.

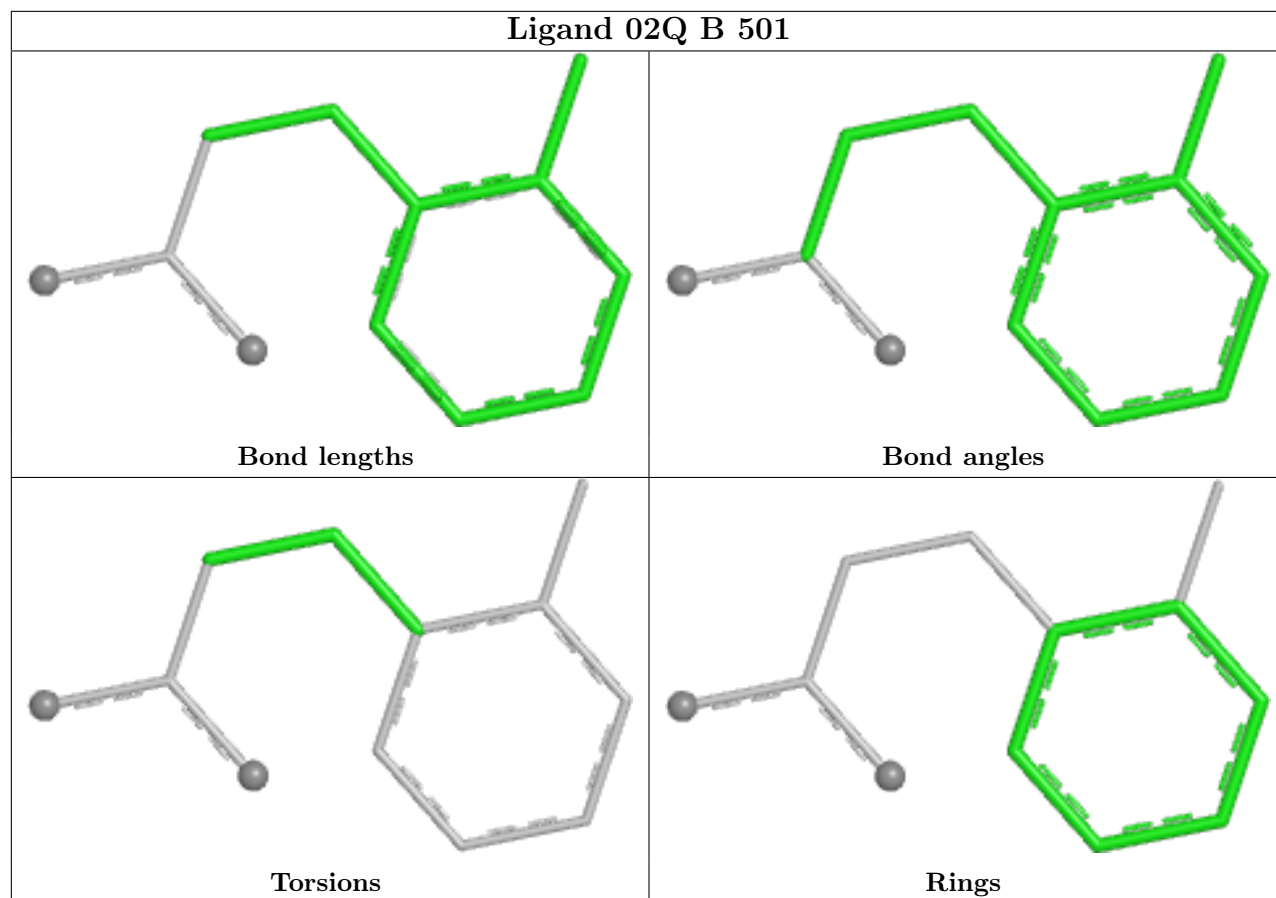
2 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	501	02Q	3	0
2	B	501	02Q	3	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, 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	404/420 (96%)	2.72	211 (52%) <b>0</b> <b>0</b>	41, 82, 146, 184	0
1	B	364/420 (86%)	3.11	204 (56%) <b>0</b> <b>0</b>	51, 103, 154, 196	0
All	All	768/840 (91%)	2.91	415 (54%) <b>0</b> <b>0</b>	41, 91, 152, 196	0

All (415) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	189	LEU	27.2
1	B	70	LEU	21.6
1	B	349	THR	20.9
1	A	196	TRP	15.9
1	A	201	TYR	15.0
1	A	159	ILE	14.9
1	B	43	GLY	13.4
1	B	224	ALA	13.3
1	A	158	TYR	12.6
1	B	19	LEU	12.2
1	A	173	TYR	11.8
1	B	96	PHE	11.5
1	A	163	PRO	11.4
1	B	125	THR	11.3
1	A	97	ILE	11.1
1	A	198	PRO	11.0
1	A	87	LEU	10.7
1	B	351	GLN	10.5
1	B	150	PHE	10.3
1	B	45	SER	10.3
1	A	164	GLY	10.0
1	B	217	ARG	9.9
1	B	226	GLY	9.8
1	B	118	ILE	9.8

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	A	174	CYS	9.7
1	B	44	TRP	9.6
1	A	38	LEU	9.5
1	A	156	ALA	9.1
1	B	188	PHE	9.1
1	B	158	TYR	9.1
1	B	350	ALA	8.9
1	A	98	GLN	8.9
1	A	79	VAL	8.8
1	B	190	GLU	8.6
1	B	102	GLN	8.6
1	B	15	LEU	8.5
1	A	195	GLY	8.3
1	B	27	LEU	8.2
1	A	91	PHE	8.1
1	B	169	TYR	8.1
1	B	40	ALA	8.0
1	A	43	GLY	7.8
1	B	121	PRO	7.7
1	B	154	PRO	7.6
1	A	171	PHE	7.5
1	A	155	LEU	7.4
1	B	173	TYR	7.4
1	A	48	GLU	7.4
1	B	358	LEU	7.4
1	B	402	PHE	7.4
1	B	119	TYR	7.3
1	B	218	ASP	7.3
1	A	160	ILE	7.2
1	B	97	ILE	7.2
1	B	120	LEU	7.1
1	A	200	GLY	7.0
1	B	134	ARG	7.0
1	B	380	THR	6.9
1	A	177	ALA	6.9
1	B	16	LEU	6.8
1	B	37	PRO	6.8
1	A	170	VAL	6.8
1	A	44	TRP	6.7
1	B	122	PRO	6.6
1	B	132	ASP	6.6
1	B	180	ILE	6.6

*Continued on next page...*



*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	A	65	PHE	6.6
1	A	194	ALA	6.6
1	B	345	PHE	6.5
1	A	103	LEU	6.5
1	B	136	LEU	6.4
1	B	346	TYR	6.4
1	B	39	ASN	6.4
1	B	344	GLN	6.4
1	B	101	TYR	6.3
1	A	350	ALA	6.3
1	A	202	THR	6.3
1	A	31	TRP	6.3
1	B	91	PHE	6.3
1	B	362	CYS	6.2
1	B	292	ILE	6.2
1	A	166	GLY	6.1
1	A	176	VAL	6.1
1	A	188	PHE	6.1
1	B	129	TRP	6.0
1	A	80	VAL	5.9
1	B	74	MET	5.8
1	A	167	TRP	5.8
1	A	113	PHE	5.8
1	A	346	TYR	5.8
1	A	17	GLY	5.7
1	B	126	ALA	5.7
1	A	394	CYS	5.7
1	A	214	LYS	5.6
1	B	379	THR	5.6
1	A	35	ILE	5.6
1	B	285	TRP	5.5
1	B	320	LEU	5.4
1	A	40	ALA	5.3
1	A	157	THR	5.3
1	B	153	GLY	5.2
1	A	148	GLY	5.1
1	A	191	PRO	5.1
1	B	172	TRP	5.1
1	A	89	ILE	5.1
1	A	7	THR	5.0
1	B	137	ALA	5.0
1	B	187	ALA	5.0

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	B	221	TYR	5.0
1	A	150	PHE	5.0
1	B	103	LEU	4.9
1	B	65	PHE	4.9
1	B	77	ARG	4.9
1	B	81	MET	4.9
1	B	157	THR	4.9
1	A	219	TRP	4.9
1	A	24	CYS	4.9
1	B	384	TYR	4.8
1	A	120	LEU	4.8
1	A	414	GLU	4.7
1	A	220	THR	4.7
1	A	413	LEU	4.7
1	A	165	MET	4.7
1	A	263	MET	4.7
1	B	155	LEU	4.7
1	B	230	PHE	4.6
1	A	284	GLY	4.6
1	A	129	TRP	4.6
1	B	291	GLY	4.5
1	A	10	ARG	4.5
1	B	260	LEU	4.5
1	B	127	PRO	4.5
1	B	131	PRO	4.5
1	B	83	GLY	4.5
1	A	26	MET	4.5
1	B	152	MET	4.4
1	B	354	ASN	4.4
1	A	52	ALA	4.4
1	B	171	PHE	4.4
1	B	156	ALA	4.4
1	B	371	TRP	4.4
1	A	367	PHE	4.3
1	B	28	LEU	4.3
1	A	94	SER	4.3
1	A	28	LEU	4.3
1	A	337	LEU	4.3
1	A	419	PHE	4.3
1	A	13	PRO	4.3
1	A	387	PHE	4.2
1	B	135	ALA	4.2

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	A	101	TYR	4.2
1	B	228	THR	4.2
1	B	225	LYS	4.2
1	A	23	THR	4.2
1	B	219	TRP	4.2
1	B	108	GLY	4.2
1	B	363	GLY	4.2
1	A	118	ILE	4.2
1	A	290	ILE	4.2
1	A	112	GLY	4.1
1	A	169	TYR	4.1
1	B	95	GLY	4.1
1	B	404	THR	4.1
1	B	36	LYS	4.1
1	B	71	SER	4.0
1	A	375	TRP	4.0
1	A	72	ASP	4.0
1	A	185	ALA	4.0
1	A	45	SER	4.0
1	A	359	PHE	4.0
1	A	25	GLY	4.0
1	B	123	ILE	4.0
1	A	151	LEU	3.9
1	A	189	LEU	3.9
1	B	151	LEU	3.9
1	B	336	THR	3.9
1	B	130	TRP	3.9
1	A	324	ALA	3.9
1	B	185	ALA	3.9
1	B	353	SER	3.8
1	A	354	ASN	3.8
1	A	36	LYS	3.8
1	B	41	GLU	3.8
1	A	143	VAL	3.8
1	B	356	GLY	3.8
1	B	381	GLY	3.8
1	A	312	GLN	3.8
1	B	186	GLY	3.8
1	B	361	ALA	3.7
1	B	359	PHE	3.7
1	A	397	GLY	3.7
1	A	371	TRP	3.7

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	A	102	GLN	3.7
1	A	8	MET	3.7
1	A	117	MET	3.7
1	A	190	GLU	3.7
1	B	312	GLN	3.7
1	A	27	LEU	3.7
1	B	333	ALA	3.7
1	A	175	GLY	3.7
1	B	79	VAL	3.7
1	A	197	LYS	3.6
1	A	342	CYS	3.6
1	B	111	ALA	3.6
1	B	324	ALA	3.5
1	B	78	LYS	3.5
1	A	215	VAL	3.5
1	B	48	GLU	3.5
1	B	94	SER	3.5
1	A	99	SER	3.5
1	A	100	LYS	3.5
1	A	96	PHE	3.5
1	A	320	LEU	3.5
1	A	363	GLY	3.5
1	A	192	PRO	3.4
1	A	193	PRO	3.4
1	B	360	THR	3.4
1	B	375	TRP	3.4
1	A	111	ALA	3.4
1	B	87	LEU	3.4
1	B	84	GLY	3.4
1	A	11	TRP	3.4
1	B	147	LEU	3.4
1	A	93	LEU	3.4
1	A	110	ILE	3.3
1	A	64	THR	3.3
1	A	135	ALA	3.3
1	B	107	TYR	3.3
1	B	284	GLY	3.3
1	B	283	SER	3.3
1	B	117	MET	3.3
1	B	394	CYS	3.3
1	B	307	MET	3.3
1	B	403	MET	3.3

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	RSRZ
1	A	39	ASN	3.3
1	A	42	PHE	3.3
1	B	280	ARG	3.3
1	B	80	VAL	3.3
1	A	187	ALA	3.3
1	A	362	CYS	3.2
1	B	141	ALA	3.2
1	B	17	GLY	3.2
1	B	397	GLY	3.2
1	A	34	PHE	3.2
1	B	49	ILE	3.2
1	B	310	ILE	3.1
1	B	68	GLY	3.1
1	A	152	MET	3.1
1	A	57	CYS	3.1
1	B	149	SER	3.1
1	A	236	ALA	3.1
1	A	172	TRP	3.1
1	A	161	GLU	3.1
1	A	29	TYR	3.1
1	B	377	LYS	3.1
1	A	41	GLU	3.1
1	B	223	GLU	3.1
1	A	107	TYR	3.1
1	A	300	PHE	3.1
1	A	16	LEU	3.0
1	A	299	LEU	3.0
1	A	224	ALA	3.0
1	A	418	LEU	3.0
1	B	323	VAL	3.0
1	B	76	PRO	3.0
1	B	176	VAL	3.0
1	B	383	TYR	3.0
1	B	75	GLY	3.0
1	A	37	PRO	3.0
1	A	386	PRO	3.0
1	A	243	ALA	3.0
1	A	358	LEU	3.0
1	A	153	GLY	2.9
1	A	21	SER	2.9
1	A	408	GLU	2.9
1	A	149	SER	2.9

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	B	128	LYS	2.9
1	A	377	LYS	2.9
1	B	47	ALA	2.9
1	B	170	VAL	2.9
1	B	327	ILE	2.9
1	A	392	ALA	2.9
1	A	73	LYS	2.9
1	B	148	GLY	2.9
1	A	22	THR	2.9
1	B	227	ASP	2.9
1	B	92	ILE	2.9
1	B	373	GLY	2.9
1	A	285	TRP	2.9
1	B	82	THR	2.9
1	B	286	PHE	2.8
1	B	67	ALA	2.8
1	A	74	MET	2.8
1	A	178	MET	2.8
1	A	327	ILE	2.8
1	B	281	ILE	2.8
1	A	241	SER	2.8
1	A	78	LYS	2.8
1	A	84	GLY	2.8
1	A	154	PRO	2.8
1	B	72	ASP	2.8
1	B	288	ASP	2.8
1	B	233	LEU	2.8
1	A	349	THR	2.8
1	B	144	GLY	2.8
1	A	260	LEU	2.8
1	B	236	ALA	2.7
1	B	352	GLY	2.7
1	B	159	ILE	2.7
1	B	116	GLY	2.7
1	B	110	ILE	2.7
1	A	365	ALA	2.7
1	B	14	LEU	2.7
1	B	339	PRO	2.6
1	B	365	ALA	2.6
1	B	220	THR	2.6
1	A	234	TYR	2.6
1	A	105	ILE	2.6

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	A	286	PHE	2.6
1	B	51	MET	2.6
1	B	342	CYS	2.6
1	A	369	GLY	2.6
1	A	30	ALA	2.6
1	B	42	PHE	2.6
1	B	387	PHE	2.6
1	B	26	MET	2.5
1	B	343	LEU	2.5
1	A	251	LEU	2.5
1	A	83	GLY	2.5
1	B	266	ALA	2.5
1	A	383	TYR	2.5
1	A	60	PHE	2.5
1	B	73	LYS	2.5
1	A	416	GLU	2.5
1	B	33	VAL	2.5
1	B	56	CYS	2.5
1	B	174	CYS	2.5
1	A	280	ARG	2.5
1	A	400	ILE	2.5
1	A	137	ALA	2.5
1	A	104	TYR	2.4
1	A	274	PHE	2.4
1	B	140	PHE	2.4
1	A	380	THR	2.4
1	B	341	THR	2.4
1	A	108	GLY	2.4
1	B	274	PHE	2.4
1	B	18	LEU	2.4
1	B	69	ARG	2.4
1	A	92	ILE	2.4
1	A	20	GLY	2.4
1	A	115	GLY	2.4
1	A	239	CYS	2.4
1	A	247	VAL	2.4
1	A	395	ALA	2.4
1	A	296	PHE	2.3
1	A	222	GLU	2.3
1	B	340	ALA	2.3
1	B	138	THR	2.3
1	B	382	THR	2.3

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	B	237	TYR	2.3
1	B	241	SER	2.3
1	B	366	GLY	2.3
1	B	55	ILE	2.3
1	A	68	GLY	2.3
1	A	255	GLY	2.3
1	A	310	ILE	2.3
1	A	353	SER	2.3
1	A	376	LEU	2.3
1	B	299	LEU	2.3
1	B	389	CYS	2.3
1	A	59	ILE	2.3
1	A	123	ILE	2.3
1	A	352	GLY	2.3
1	B	191	PRO	2.3
1	B	369	GLY	2.3
1	A	183	LEU	2.2
1	B	240	GLY	2.2
1	B	57	CYS	2.2
1	B	59	ILE	2.2
1	A	139	GLY	2.2
1	A	180	ILE	2.2
1	A	379	THR	2.2
1	B	256	ARG	2.2
1	A	179	GLY	2.2
1	B	38	LEU	2.2
1	B	115	GLY	2.2
1	A	141	ALA	2.2
1	A	32	SER	2.2
1	A	49	ILE	2.1
1	B	348	PRO	2.1
1	A	19	LEU	2.1
1	A	357	LEU	2.1
1	A	67	ALA	2.1
1	A	61	GLY	2.1
1	A	307	MET	2.1
1	A	382	THR	2.1
1	A	18	LEU	2.1
1	B	46	ARG	2.1
1	B	167	TRP	2.1
1	A	356	GLY	2.1
1	B	20	GLY	2.1

*Continued on next page...*



*Continued from previous page...*

Mol	Chain	Res	Type	RSRZ
1	A	228	THR	2.0
1	A	323	VAL	2.0
1	A	119	TYR	2.0
1	B	61	GLY	2.0
1	B	139	GLY	2.0
1	A	71	SER	2.0
1	A	289	LYS	2.0
1	A	147	LEU	2.0
1	B	249	GLY	2.0
1	B	289	LYS	2.0
1	A	279	THR	2.0
1	A	281	ILE	2.0
1	B	277	ALA	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](#)

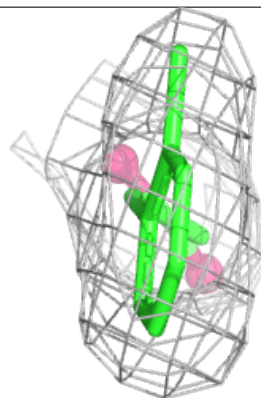
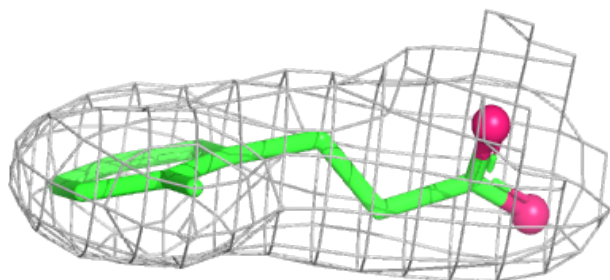
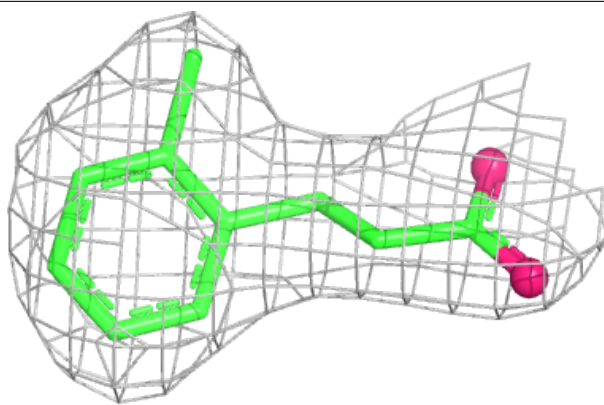
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
2	02Q	B	501	12/12	0.86	0.19	69,78,93,118	0
2	02Q	A	501	12/12	0.91	0.19	54,57,80,88	0

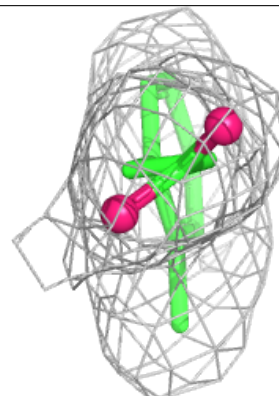
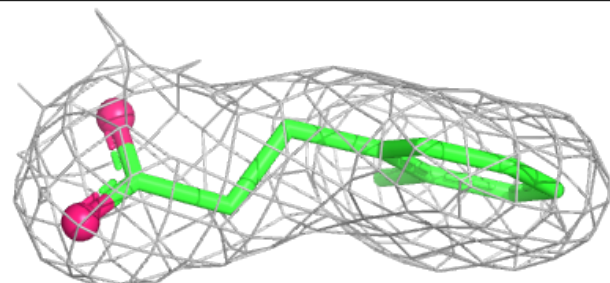
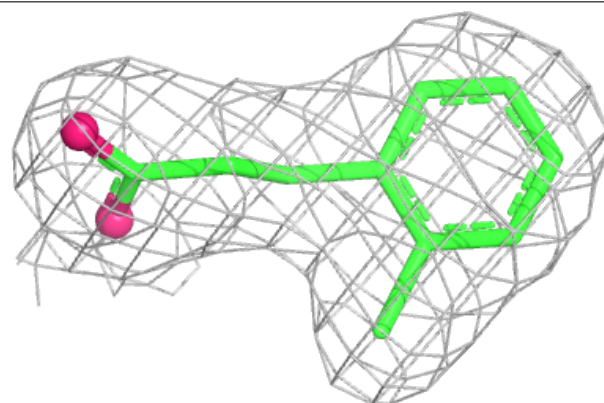
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

**Electron density around 02Q 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 02Q 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.