

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

#### Nov 19, 2023 – 04:34 PM JST

:	6LOO
:	Crystal Structure of Class IB terpene synthase bound with geranylcitronellyl
	diphosphate
:	Fujihashi, M.; Inagi, H.; Miki, K.
:	2020-01-07
:	1.99  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:

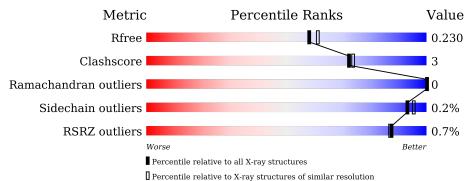
MolProbity Mogul Xtriage (Phenix) EDS	:	4.02b-467 1.8.5 (274361), CSD as541be (2020) 1.13 2.36
buster-report Percentile statistics Refmac	: : :	1.1.7 (2018) 20191225.v01 (using entries in the PDB archive December 25th 2019) 5.8.0158 7.0.044 (Gargrove)
Ideal geometry (DNA, RNA) Validation Pipeline (wwPDB-VP)		Parkinson et al. (1996) 2.36

# 1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:  $X\text{-}RAY \, DIFFRACTION$ 

The reported resolution of this entry is 1.99 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	$egin{array}{c} { m Whole \ archive} \ (\#{ m Entries}) \end{array}$	$\begin{array}{l} {\rm Similar\ resolution} \\ (\# {\rm Entries,\ resolution\ range}({\rm \AA})) \end{array}$		
$R_{free}$	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 <=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	А	354	90%	8%	·
1	В	354	% 90%	8%	·



#### 6LOO

## 2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 6424 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.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	Δ	347	Total	С	Ν	0	$\mathbf{S}$	0	10	0
	A	347	2964	1911	480	558	15	0	10	0
1	р	347	Total	С	Ν	0	S	0	10	0
	D	047	2981	1920	492	553	16	0	10	0

• Molecule 1 is a protein called Tetraprenyl-beta-curcumene synthase.

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
А	-2	GLY	-	expression tag	UNP A0A094YZ24
А	-1	SER	-	expression tag	UNP A0A094YZ24
А	0	HIS	-	1 0	
В	-2	GLY	-	- 0	UNP A0A094YZ24
В	-1	SER	-	expression tag	UNP A0A094YZ24
В	0	HIS	-	expression tag	UNP A0A094YZ24

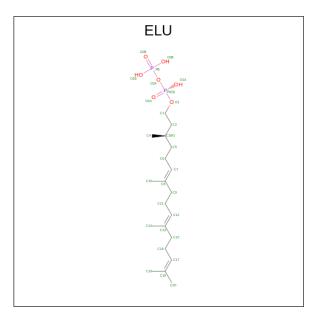
• Molecule 2 is phosphono [(3 {S},6 {E},10 {E})-3,7,11,15-tetramethylhexadeca-6,10,14-trieny l] hydrogen phosphate (three-letter code: ELR) (formula:  $C_{20}H_{38}O_7P_2$ ) (labeled as "Ligand of Interest" by depositor).



Page	
C1 C2	
C4     100-5250 C5	
CT CT	
C11 C9	
C14-C13 C15	
C18 C17	
C20-C10 C10	

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	
2	Λ	1	Total	С	Ο	Р	0	1	
	Л	1	29	20	7	2	0	L	
2	В	1	Total	С	Ο	Р	0	1	
	D	в 1		40	14	4	0	1	

• Molecule 3 is phosphono [(3 {R},6 {E},10 {E})-3,7,11,15-tetramethylhexadeca-6,10,14 -trienyl] hydrogen phosphate (three-letter code: ELU) (formula:  $C_{20}H_{38}O_7P_2$ ) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	Δ	1	Total	С	Ο	Р	Ο	1
0	А	A	29	20	$\overline{7}$	2	0	1



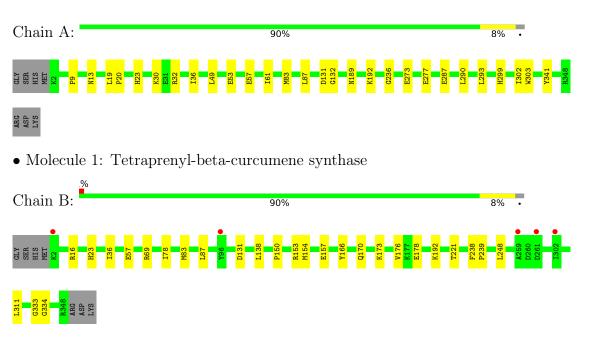
• Molecule 4 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	А	192	Total O 192 192	0	0
4	В	171	Total O 171 171	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.



• Molecule 1: Tetraprenyl-beta-curcumene synthase



## 4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1	Depositor
Cell constants	50.87Å 53.48Å 76.54Å	Depositor
a, b, c, $\alpha$ , $\beta$ , $\gamma$	$94.63^{\circ}$ $104.72^{\circ}$ $113.33^{\circ}$	Depositor
Resolution (Å)	48.12 - 1.99	Depositor
Resolution (A)	48.07 - 1.99	EDS
% Data completeness	97.9 (48.12-1.99)	Depositor
(in resolution range)	97.9(48.07-1.99)	EDS
R <sub>merge</sub>	0.10	Depositor
R <sub>sym</sub>	(Not available)	Depositor
$< I/\sigma(I) > 1$	$1.62 (at 1.98 \text{\AA})$	Xtriage
Refinement program	REFMAC 5.8.0238	Depositor
D D.	0.179 , $0.225$	Depositor
$R, R_{free}$	0.184 , $0.230$	DCC
$R_{free}$ test set	2339 reflections $(4.96%)$	wwPDB-VP
Wilson B-factor $(Å^2)$	25.7	Xtriage
Anisotropy	0.312	Xtriage
Bulk solvent $k_{sol}(e/Å^3)$ , $B_{sol}(Å^2)$	0.34, 38.7	EDS
L-test for twinning <sup>2</sup>	$ \langle L  \rangle = 0.49, \langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.96	EDS
Total number of atoms	6424	wwPDB-VP
Average B, all atoms $(Å^2)$	35.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: The largest off-origin peak in the Patterson function is 6.49% of the height of the origin peak. No significant pseudotranslation is detected.

<sup>&</sup>lt;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.



<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: ELR, ELU

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		lengths	Bond angles		
	Unam	RMSZ	# Z  > 5	RMSZ	# Z  > 5	
1	А	0.63	0/3041	0.70	0/4117	
1	В	0.64	0/3059	0.71	0/4138	
All	All	0.64	0/6100	0.71	0/8255	

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	А	2964	0	2843	17	0
1	В	2981	0	2880	22	0
2	А	29	0	0	0	0
2	В	58	0	0	2	0
3	А	29	0	0	1	0
4	А	192	0	0	1	0
4	В	171	0	0	5	0
All	All	6424	0	5723	40	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 3.



Atom 1	Atom 2	Interatomic	Clash
Atom-1	Atom-2	distance $(\text{\AA})$	overlap (Å)
2:B:401[B]:ELR:C14	2:B:401[B]:ELR:C17	2.47	0.91
3:A:402[B]:ELU:C4	3:A:402[B]:ELU:O2A	2.21	0.88
1:B:23[A]:HIS:HE1	1:B:57:GLU:OE2	1.74	0.69
1:A:32:ARG:NH1	1:A:132:GLY:O	2.26	0.68
2:B:401[B]:ELR:C10	2:B:401[B]:ELR:C5	2.75	0.63
1:A:53:GLU:HB2	4:A:605:HOH:O	2.02	0.59
1:B:36:ILE:HG23	1:B:131:ASP:HA	1.87	0.57
1:B:69[B]:ARG:HH22	1:B:150:PRO:CD	2.19	0.55
1:B:153:ARG:NH1	1:B:154[A]:MET:SD	2.80	0.55
1:B:69[B]:ARG:NH2	1:B:150:PRO:HD3	2.22	0.55
1:A:341:TYR:CZ	1:B:16:ARG:HG3	2.43	0.54
1:A:32:ARG:O	1:A:32:ARG:NH2	2.42	0.52
1:A:36:ILE:HG23	1:A:131:ASP:HA	1.92	0.51
1:B:23[A]:HIS:CE1	1:B:57:GLU:OE2	2.58	0.51
1:B:69[B]:ARG:HH22	1:B:150:PRO:HD3	1.75	0.51
1:B:83:MET:O	1:B:87:LEU:HG	2.10	0.50
1:B:334:GLY:N	4:B:501:HOH:O	2.26	0.50
1:B:69[B]:ARG:NH2	1:B:150:PRO:CD	2.77	0.48
1:A:236:GLY:HA3	1:A:293:LEU:HD21	1.96	0.48
1:B:83:MET:HG3	1:B:138:LEU:HB3	1.96	0.47
1:B:69[A]:ARG:HD2	1:B:221:THR:HB	1.97	0.47
1:A:341:TYR:CE1	1:B:16:ARG:HG3	2.49	0.47
1:B:192:LYS:HE2	4:B:661:HOH:O	2.14	0.47
1:A:30:LYS:HA	1:A:49:LEU:HD13	1.97	0.46
1:B:176:VAL:HG13	1:B:178[B]:GLU:HG2	1.98	0.45
1:A:61:ILE:CG2	1:A:302:ILE:HD11	2.47	0.45
1:A:290:LEU:HD22	1:A:299:HIS:HB3	1.99	0.45
1:B:333:GLY:HA3	4:B:501:HOH:O	2.16	0.45
1:A:9:PRO:O	1:A:13:ASN:ND2	2.46	0.44
1:A:23:HIS:NE2	1:A:57:GLU:OE2	2.40	0.44
1:B:157:GLU:HG3	4:B:663:HOH:O	2.17	0.44
1:A:83:MET:O	1:A:87:LEU:HG	2.18	0.43
1:B:166:TYR:O	1:B:170:GLN:HG2	2.17	0.43
1:A:19:LEU:HB2	1:A:20:PRO:HD3	2.00	0.43
1:A:189:ASN:HA	1:A:192[B]:LYS:HE3	2.01	0.43
1:A:287:GLU:HG3	1:A:303:TRP:CH2	2.55	0.42
1:B:238:PHE:HA	1:B:239:PRO:HA	1.78	0.41
1:B:173:LYS:NZ	4:B:508:HOH:O	2.47	0.41
1:B:248:LEU:HD11	1:B:311:LEU:HD21	2.02	0.41
1:A:273:GLU:O	1:A:277[B]:GLU:HG2	2.20	0.40

All (40) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.



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	Percenti	les
1	А	355/354~(100%)	349~(98%)	6~(2%)	0	100 10	00
1	В	355/354~(100%)	347~(98%)	8 (2%)	0	100 10	00
All	All	710/708~(100%)	696~(98%)	14 (2%)	0	100 10	00

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	А	318/319~(100%)	318 (100%)	0	100	100	
1	В	321/319~(101%)	320 (100%)	1 (0%)	92	95	
All	All	639/638~(100%)	638 (100%)	1 (0%)	93	95	

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	В	78	ILE

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)

4 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).

Mal	Mol Type C	Chain Res	Link	Bond lengths			Bond angles			
10101	туре	Chain	nes	LIIIK	Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
2	ELR	В	401[B]	-	$26,\!28,\!28$	0.47	0	$33,\!37,\!37$	1.50	7 (21%)
2	ELR	В	401[A]	-	26,28,28	0.56	0	33,37,37	1.45	5 (15%)
3	ELU	А	402[B]	-	26,28,28	0.44	0	33,37,37	1.53	6 (18%)
2	ELR	А	401[A]	-	26,28,28	0.55	0	33,37,37	1.34	5 (15%)

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	ELR	В	401[B]	-	-	13/31/31/31	-
2	ELR	В	401[A]	-	-	12/31/31/31	-
3	ELU	А	402[B]	-	-	6/31/31/31	-
2	ELR	А	401[A]	-	-	9/31/31/31	-



There are no bond length outliers.

All (23) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	$Observed(^{o})$	$Ideal(^{o})$
2	В	401[B]	ELR	PA-O3A-PB	-4.38	117.81	132.83
2	В	401[A]	ELR	C14-C13-C15	3.88	121.80	115.27
3	А	402[B]	ELU	C11-C12-C13	-3.53	119.16	127.66
2	В	401[A]	ELR	PA-O3A-PB	-3.23	121.75	132.83
2	В	401[A]	ELR	C14-C13-C12	-3.20	115.47	123.68
2	В	401[B]	ELR	C14-C13-C15	3.12	120.53	115.27
3	А	402[B]	ELU	PA-O3A-PB	-3.05	122.35	132.83
3	А	402[B]	ELU	C10-C8-C9	2.98	120.28	115.27
2	В	401[B]	ELR	C11-C12-C13	-2.90	120.69	127.66
3	А	402[B]	ELU	C6-C7-C8	-2.84	120.82	127.66
3	А	402[B]	ELU	C16-C17-C18	-2.68	118.58	127.75
2	А	401[A]	ELR	C14-C13-C15	2.63	119.70	115.27
2	А	401[A]	ELR	C9-C8-C7	-2.61	115.83	121.12
3	А	402[B]	ELU	C19-C18-C20	2.61	120.36	114.60
2	В	401[B]	ELR	C20-C18-C19	2.60	120.34	114.60
2	А	401[A]	ELR	C10-C8-C9	2.55	119.56	115.27
2	А	401[A]	ELR	C5-C6-C7	-2.54	105.52	112.23
2	В	401[B]	ELR	C6-C7-C8	-2.53	121.56	127.66
2	А	401[A]	ELR	C15-C13-C12	-2.33	116.41	121.12
2	В	401[A]	ELR	C9-C8-C7	-2.22	116.62	121.12
2	В	401[A]	ELR	C10-C8-C9	2.21	118.99	115.27
2	В	401[B]	ELR	C16-C17-C18	-2.14	120.44	127.75
2	В	401[B]	ELR	C10-C8-C9	2.07	118.75	115.27

There are no chirality outliers.

All (40) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	А	401[A]	ELR	C12-C13-C15-C16
2	А	401[A]	ELR	C14-C13-C15-C16
2	А	401[A]	ELR	C1-O1-PA-O2A
2	А	401[A]	ELR	C1-O1-PA-O3A
2	А	401[A]	ELR	O1-C1-C2-C3
2	В	401[A]	ELR	C14-C13-C15-C16
2	В	401[A]	ELR	C1-O1-PA-O2A
2	В	401[A]	ELR	C1-C2-C3-C4
2	В	401[B]	ELR	C14-C13-C15-C16
2	В	401[B]	ELR	C1-O1-PA-O2A
2	В	401[B]	ELR	C1-O1-PA-O3A
2	В	401[B]	ELR	O1-C1-C2-C3

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Mol	Chain	Res	Type	Atoms
2	В	401[B]	ELR	C1-C2-C3-C4
2	В	401[B]	ELR	C5-C6-C7-C8
3	А	402[B]	ELU	O1-C1-C2-C3
3	А	402[B]	ELU	C12-C11-C9-C8
2	В	401[B]	ELR	C12-C13-C15-C16
3	А	402[B]	ELU	C14-C13-C15-C16
2	В	401[A]	ELR	C12-C13-C15-C16
3	А	402[B]	ELU	C12-C13-C15-C16
2	А	401[A]	ELR	C12-C11-C9-C8
2	В	401[B]	ELR	C2-C3-C5-C6
2	В	401[A]	ELR	C12-C11-C9-C8
2	В	401[B]	ELR	C4-C3-C5-C6
2	В	401[A]	ELR	C2-C3-C5-C6
2	А	401[A]	ELR	C3-C5-C6-C7
2	В	401[A]	ELR	C3-C5-C6-C7
2	В	401[A]	ELR	C1-C2-C3-C5
2	В	401[A]	ELR	C1-O1-PA-O3A
2	В	401[A]	ELR	C1-O1-PA-O1A
2	В	401[B]	ELR	C1-C2-C3-C5
2	В	401[A]	ELR	C4-C3-C5-C6
2	В	401[B]	ELR	C12-C11-C9-C8
3	А	402[B]	ELU	C5-C6-C7-C8
2	А	401[A]	ELR	PB-O3A-PA-O2A
2	В	401[B]	ELR	PB-O3A-PA-O1A
2	В	401[A]	ELR	C10-C8-C9-C11
2	В	401[B]	ELR	C10-C8-C9-C11
2	А	401[A]	ELR	PB-O3A-PA-O1A
3	А	402[B]	ELU	PB-O3A-PA-O1A

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There are no ring outliers.

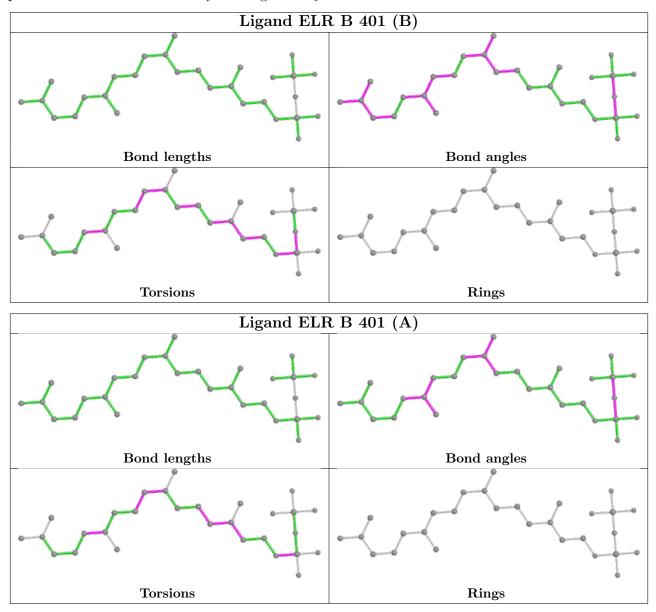
2 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	В	401[B]	ELR	2	0
3	А	402[B]	ELU	1	0

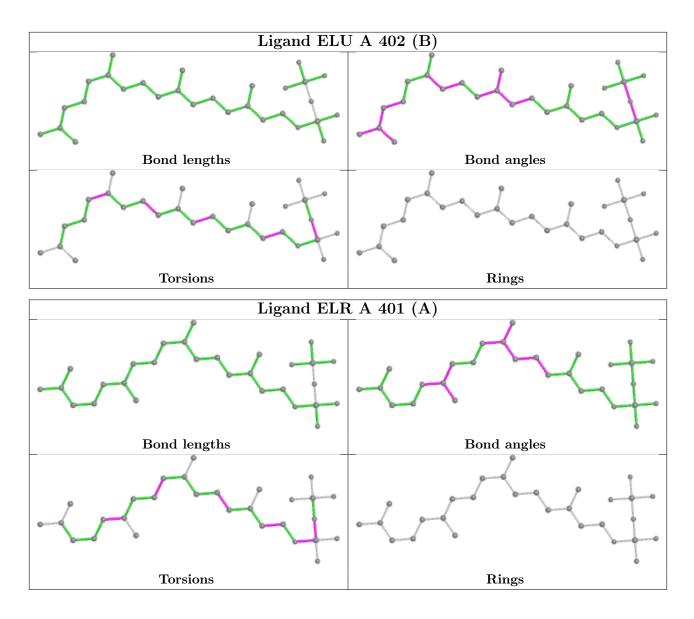
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less 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	$\langle RSRZ \rangle$	#RSRZ>2	$\mathbf{OWAB}(\mathbf{\AA}^2)$	Q<0.9
1	А	347/354~(98%)	-0.23	0 100 100	19,  30,  51,  83	0
1	В	347/354~(98%)	-0.16	5 (1%) 75 74	19,  32,  56,  91	0
All	All	694/708~(98%)	-0.20	5 (0%) 87 87	19,31,54,91	0

All (5) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	В	96	TYR	3.5
1	В	2	LYS	3.2
1	В	259	ALA	3.0
1	В	261	ASP	2.7
1	В	302	ILE	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.

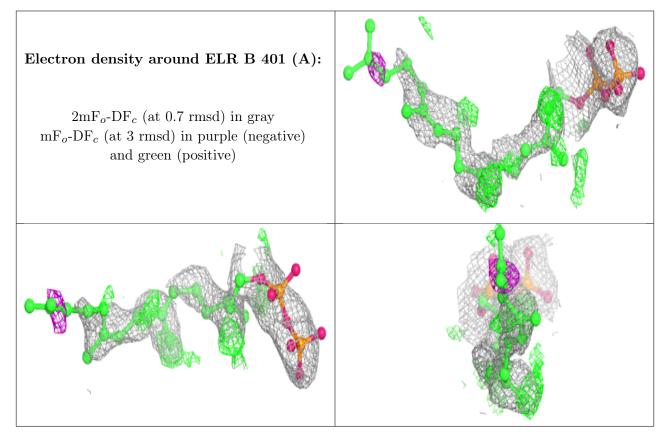
### 6.4 Ligands (i)

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.

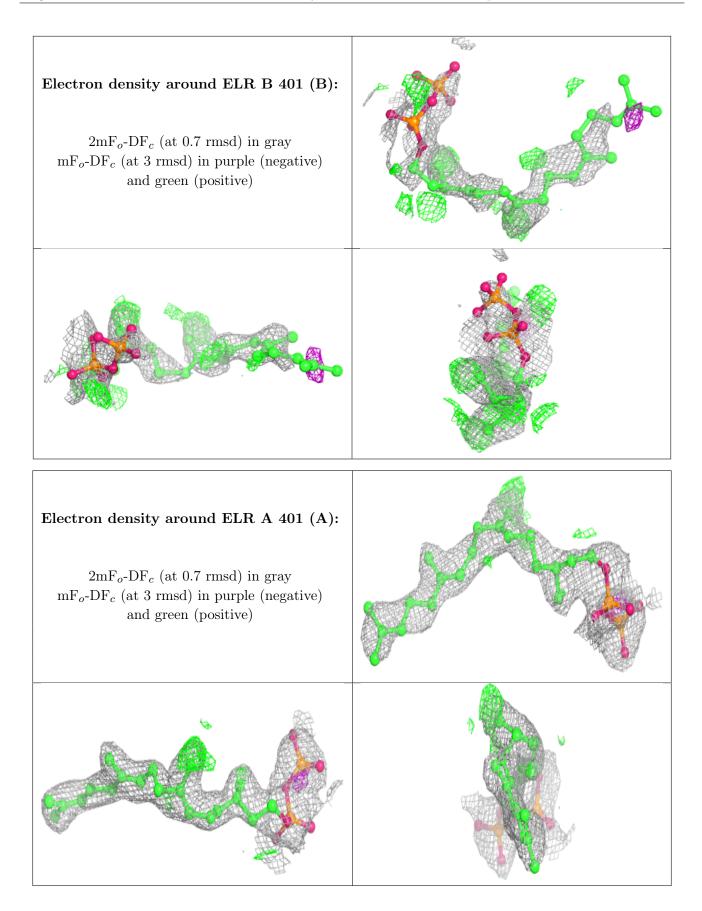


Mol	Type	Chain	Res	Atoms	RSCC	RSR	$\mathbf{B} ext{-factors}(\mathrm{\AA}^2)$	Q < 0.9
2	ELR	В	401[A]	29/29	0.69	0.31	58,87,92,93	29
2	ELR	В	401[B]	29/29	0.69	0.31	64,68,72,73	29
2	ELR	А	401[A]	29/29	0.80	0.18	43,61,108,112	29
3	ELU	А	402[B]	29/29	0.83	0.19	50,63,85,86	29

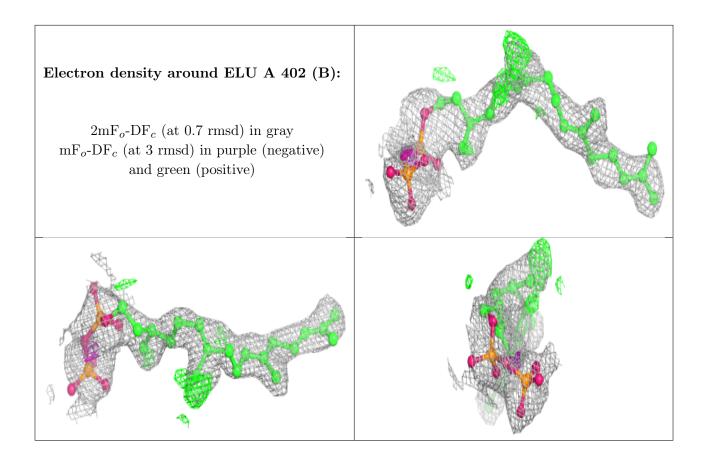
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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











## 6.5 Other polymers (i)

There are no such residues in this entry.

