



Full wwPDB X-ray Structure Validation Report ⓘ

Apr 2, 2026 – 10:39 AM EDT

PDB ID : 9Y6B / pdb_00009y6b
Title : CRYSTAL STRUCTURE OF A149T VARIANT OF SERINE HYDROXY METHYLTRANSFERASE 8 FROM SOYBEAN CULTIVAR ESSEX IN COMPLEX WITH PLP-GLYCINE
Authors : Beamer, L.J.; Samarakoon, V.; Owuocha, L.F.
Deposited on : 2025-09-08
Resolution : 1.90 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 types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity : 4-5-2 with Phenix2.0
Mogul : 2022.3.0, CSD as543be (2022)
Xtrriage (Phenix) : 2.0
EDS : 3.0
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4 : 9.0.010 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.48.1

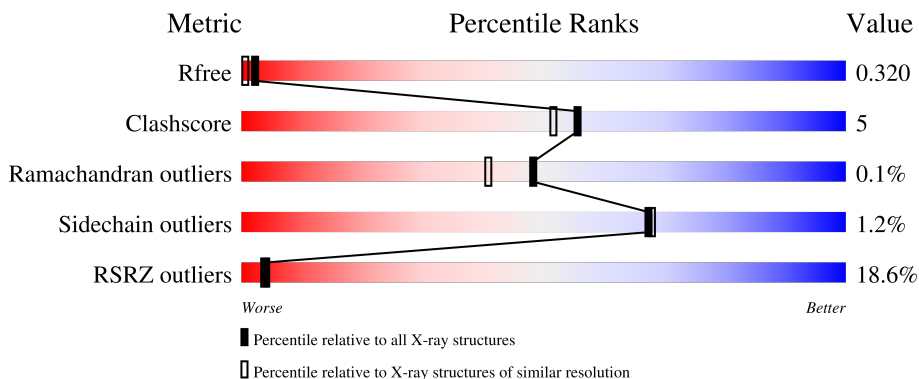
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.90 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}	164625	7293 (1.90-1.90)
Clashscore	180529	8090 (1.90-1.90)
Ramachandran outliers	177936	8022 (1.90-1.90)
Sidechain outliers	177891	8022 (1.90-1.90)
RSRZ outliers	164620	7292 (1.90-1.90)

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	492	
1	B	492	
1	C	492	
1	D	492	

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Mol	Chain	Length	Quality of chain
1	E	492	 <p>A horizontal bar chart showing the quality distribution of the chain. The bar is divided into four segments: a red segment on the left labeled '25%', a large green segment labeled '83%', a yellow segment labeled '11%', and a small grey segment on the far right labeled '7%'.</p>

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 17910 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 Serine hydroxymethyltransferase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	457	3426	2177	587	645	17	0	0	0
1	B	458	3448	2189	594	648	17	0	0	0
1	C	460	3429	2176	588	648	17	0	0	0
1	D	464	3481	2213	597	654	17	0	0	0
1	E	460	3398	2155	582	644	17	0	0	0

There are 110 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-20	MET	-	initiating methionine	UNP K4FZF8
A	-19	GLY	-	expression tag	UNP K4FZF8
A	-18	SER	-	expression tag	UNP K4FZF8
A	-17	SER	-	expression tag	UNP K4FZF8
A	-16	HIS	-	expression tag	UNP K4FZF8
A	-15	HIS	-	expression tag	UNP K4FZF8
A	-14	HIS	-	expression tag	UNP K4FZF8
A	-13	HIS	-	expression tag	UNP K4FZF8
A	-12	HIS	-	expression tag	UNP K4FZF8
A	-11	HIS	-	expression tag	UNP K4FZF8
A	-10	HIS	-	expression tag	UNP K4FZF8
A	-9	SER	-	expression tag	UNP K4FZF8
A	-8	SER	-	expression tag	UNP K4FZF8
A	-7	GLY	-	expression tag	UNP K4FZF8
A	-6	LEU	-	expression tag	UNP K4FZF8
A	-5	VAL	-	expression tag	UNP K4FZF8
A	-4	PRO	-	expression tag	UNP K4FZF8
A	-3	ARG	-	expression tag	UNP K4FZF8
A	-2	GLY	-	expression tag	UNP K4FZF8

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Chain	Residue	Modelled	Actual	Comment	Reference
A	-1	SER	-	expression tag	UNP K4FZF8
A	0	ASN	-	expression tag	UNP K4FZF8
A	149	THR	ALA	engineered mutation	UNP K4FZF8
B	-20	MET	-	initiating methionine	UNP K4FZF8
B	-19	GLY	-	expression tag	UNP K4FZF8
B	-18	SER	-	expression tag	UNP K4FZF8
B	-17	SER	-	expression tag	UNP K4FZF8
B	-16	HIS	-	expression tag	UNP K4FZF8
B	-15	HIS	-	expression tag	UNP K4FZF8
B	-14	HIS	-	expression tag	UNP K4FZF8
B	-13	HIS	-	expression tag	UNP K4FZF8
B	-12	HIS	-	expression tag	UNP K4FZF8
B	-11	HIS	-	expression tag	UNP K4FZF8
B	-10	HIS	-	expression tag	UNP K4FZF8
B	-9	SER	-	expression tag	UNP K4FZF8
B	-8	SER	-	expression tag	UNP K4FZF8
B	-7	GLY	-	expression tag	UNP K4FZF8
B	-6	LEU	-	expression tag	UNP K4FZF8
B	-5	VAL	-	expression tag	UNP K4FZF8
B	-4	PRO	-	expression tag	UNP K4FZF8
B	-3	ARG	-	expression tag	UNP K4FZF8
B	-2	GLY	-	expression tag	UNP K4FZF8
B	-1	SER	-	expression tag	UNP K4FZF8
B	0	ASN	-	expression tag	UNP K4FZF8
B	149	THR	ALA	engineered mutation	UNP K4FZF8
C	-20	MET	-	initiating methionine	UNP K4FZF8
C	-19	GLY	-	expression tag	UNP K4FZF8
C	-18	SER	-	expression tag	UNP K4FZF8
C	-17	SER	-	expression tag	UNP K4FZF8
C	-16	HIS	-	expression tag	UNP K4FZF8
C	-15	HIS	-	expression tag	UNP K4FZF8
C	-14	HIS	-	expression tag	UNP K4FZF8
C	-13	HIS	-	expression tag	UNP K4FZF8
C	-12	HIS	-	expression tag	UNP K4FZF8
C	-11	HIS	-	expression tag	UNP K4FZF8
C	-10	HIS	-	expression tag	UNP K4FZF8
C	-9	SER	-	expression tag	UNP K4FZF8
C	-8	SER	-	expression tag	UNP K4FZF8
C	-7	GLY	-	expression tag	UNP K4FZF8
C	-6	LEU	-	expression tag	UNP K4FZF8
C	-5	VAL	-	expression tag	UNP K4FZF8
C	-4	PRO	-	expression tag	UNP K4FZF8

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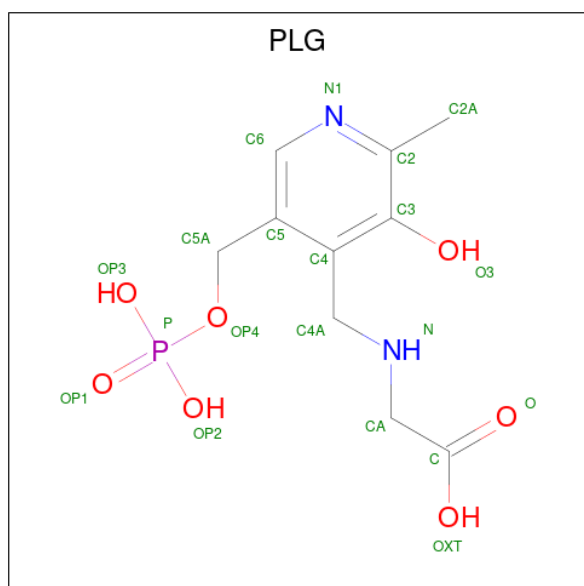
Chain	Residue	Modelled	Actual	Comment	Reference
C	-3	ARG	-	expression tag	UNP K4FZF8
C	-2	GLY	-	expression tag	UNP K4FZF8
C	-1	SER	-	expression tag	UNP K4FZF8
C	0	ASN	-	expression tag	UNP K4FZF8
C	149	THR	ALA	engineered mutation	UNP K4FZF8
D	-20	MET	-	initiating methionine	UNP K4FZF8
D	-19	GLY	-	expression tag	UNP K4FZF8
D	-18	SER	-	expression tag	UNP K4FZF8
D	-17	SER	-	expression tag	UNP K4FZF8
D	-16	HIS	-	expression tag	UNP K4FZF8
D	-15	HIS	-	expression tag	UNP K4FZF8
D	-14	HIS	-	expression tag	UNP K4FZF8
D	-13	HIS	-	expression tag	UNP K4FZF8
D	-12	HIS	-	expression tag	UNP K4FZF8
D	-11	HIS	-	expression tag	UNP K4FZF8
D	-10	HIS	-	expression tag	UNP K4FZF8
D	-9	SER	-	expression tag	UNP K4FZF8
D	-8	SER	-	expression tag	UNP K4FZF8
D	-7	GLY	-	expression tag	UNP K4FZF8
D	-6	LEU	-	expression tag	UNP K4FZF8
D	-5	VAL	-	expression tag	UNP K4FZF8
D	-4	PRO	-	expression tag	UNP K4FZF8
D	-3	ARG	-	expression tag	UNP K4FZF8
D	-2	GLY	-	expression tag	UNP K4FZF8
D	-1	SER	-	expression tag	UNP K4FZF8
D	0	ASN	-	expression tag	UNP K4FZF8
D	149	THR	ALA	engineered mutation	UNP K4FZF8
E	-20	MET	-	initiating methionine	UNP K4FZF8
E	-19	GLY	-	expression tag	UNP K4FZF8
E	-18	SER	-	expression tag	UNP K4FZF8
E	-17	SER	-	expression tag	UNP K4FZF8
E	-16	HIS	-	expression tag	UNP K4FZF8
E	-15	HIS	-	expression tag	UNP K4FZF8
E	-14	HIS	-	expression tag	UNP K4FZF8
E	-13	HIS	-	expression tag	UNP K4FZF8
E	-12	HIS	-	expression tag	UNP K4FZF8
E	-11	HIS	-	expression tag	UNP K4FZF8
E	-10	HIS	-	expression tag	UNP K4FZF8
E	-9	SER	-	expression tag	UNP K4FZF8
E	-8	SER	-	expression tag	UNP K4FZF8
E	-7	GLY	-	expression tag	UNP K4FZF8
E	-6	LEU	-	expression tag	UNP K4FZF8

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Chain	Residue	Modelled	Actual	Comment	Reference
E	-5	VAL	-	expression tag	UNP K4FZF8
E	-4	PRO	-	expression tag	UNP K4FZF8
E	-3	ARG	-	expression tag	UNP K4FZF8
E	-2	GLY	-	expression tag	UNP K4FZF8
E	-1	SER	-	expression tag	UNP K4FZF8
E	0	ASN	-	expression tag	UNP K4FZF8
E	149	THR	ALA	engineered mutation	UNP K4FZF8

- Molecule 2 is N-GLYCINE-[3-HYDROXY-2-METHYL-5-PHOSPHONOXYMETHYL-PYRIDIN-4-YL-METHANE] (CCD ID: PLG) (formula: C₁₀H₁₅N₂O₇P) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	P		
2	A	1	Total	C	N	O	P	0	0
			20	10	2	7	1		
2	B	1	Total	C	N	O	P	0	0
			20	10	2	7	1		
2	C	1	Total	C	N	O	P	0	0
			20	10	2	7	1		
2	D	1	Total	C	N	O	P	0	0
			20	10	2	7	1		
2	E	1	Total	C	N	O	P	0	0
			20	10	2	7	1		

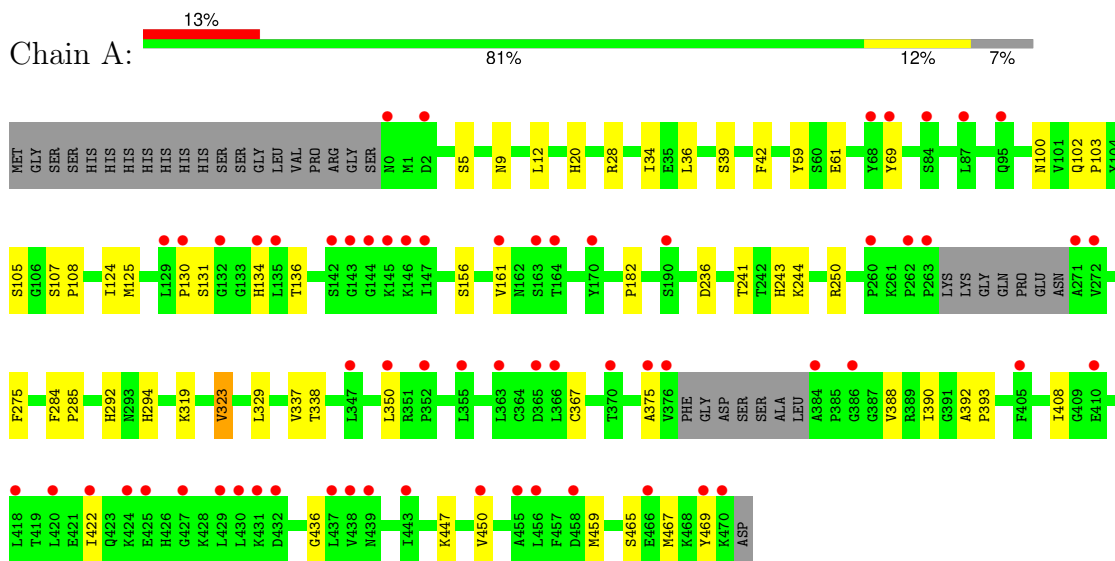
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	134	Total 134	O 134	0	0
3	B	135	Total 135	O 135	0	0
3	C	107	Total 107	O 107	0	0
3	D	164	Total 164	O 164	0	0
3	E	88	Total 88	O 88	0	0

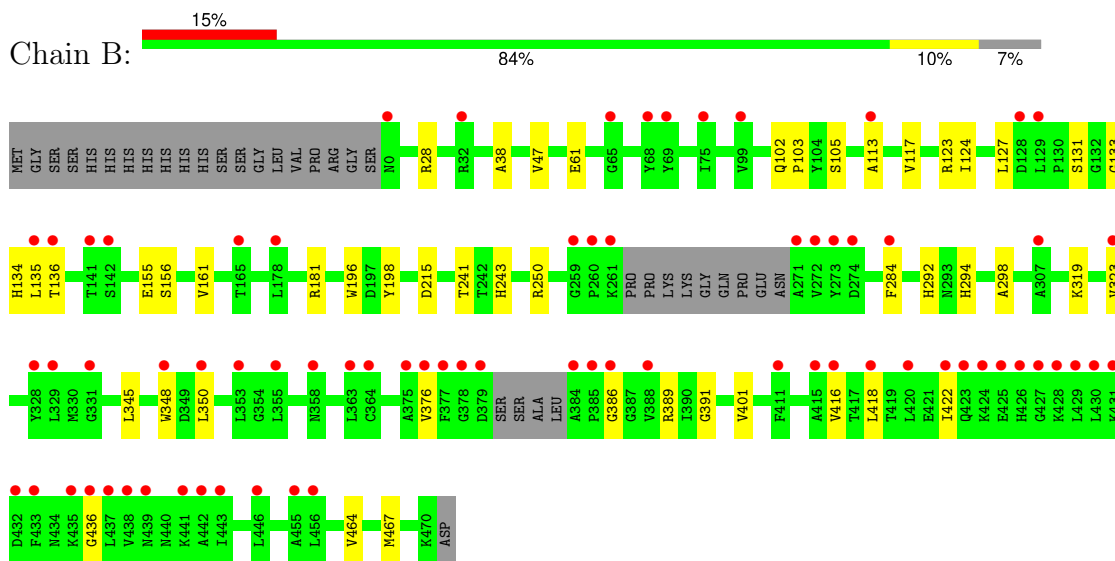
3 Residue-property plots [i](#)

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.

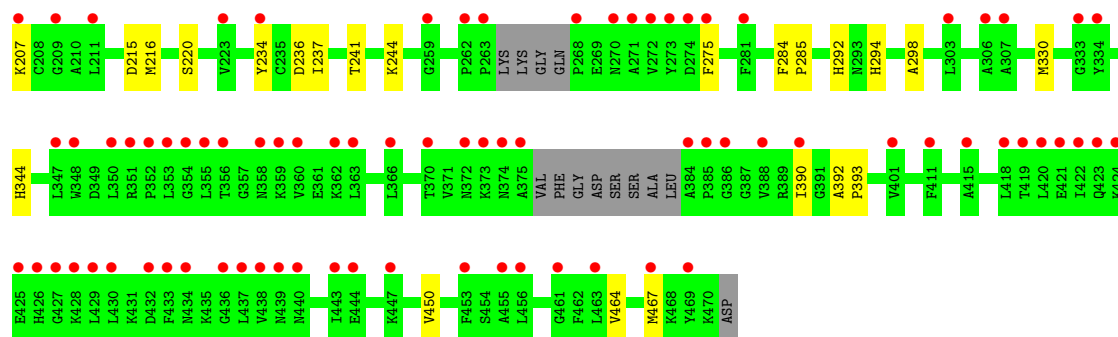
- Molecule 1: Serine hydroxymethyltransferase



- Molecule 1: Serine hydroxymethyltransferase



- Molecule 1: Serine hydroxymethyltransferase



4 Data and refinement statistics i

Property	Value	Source
Space group	P 31 2 1	Depositor
Cell constants a, b, c, α , β , γ	174.35Å 174.35Å 183.63Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	48.54 – 1.90 48.54 – 1.90	Depositor EDS
% Data completeness (in resolution range)	99.4 (48.54-1.90) 99.4 (48.54-1.90)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.20 (at 1.90Å)	Xtrriage
Refinement program	PHENIX 1.21.2_5419	Depositor
R, R_{free}	0.282 , 0.319 0.284 , 0.320	Depositor DCC
R_{free} test set	12724 reflections (5.05%)	wwPDB-VP
Wilson B-factor (Å ²)	29.2	Xtrriage
Anisotropy	0.474	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 39.1	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtrriage
Estimated twinning fraction	0.024 for -h,-k,l	Xtrriage
F_o, F_c correlation	0.92	EDS
Total number of atoms	17910	wwPDB-VP
Average B, all atoms (Å ²)	40.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 29.74 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 1.4728e-03. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

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: PLG

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	0.30	0/3505	0.48	0/4763
1	B	0.28	0/3526	0.47	0/4785
1	C	0.30	0/3506	0.49	0/4762
1	D	0.31	0/3563	0.51	0/4842
1	E	0.31	0/3477	0.50	0/4730
All	All	0.30	0/17577	0.49	0/23882

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	3426	0	3249	33	0
1	B	3448	0	3278	28	0
1	C	3429	0	3242	28	0
1	D	3481	0	3303	41	0
1	E	3398	0	3171	33	0
2	A	20	0	12	1	0
2	B	20	0	12	1	0
2	C	20	0	12	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	D	20	0	12	4	0
2	E	20	0	12	3	0
3	A	134	0	0	1	0
3	B	135	0	0	0	0
3	C	107	0	0	0	0
3	D	164	0	0	3	0
3	E	88	0	0	0	0
All	All	17910	0	16303	154	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 (154) 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:A:5:SER:HA	1:A:9:ASN:HD22	1.56	0.69
1:D:61:GLU:HB3	1:D:284:PHE:CZ	2.33	0.63
1:E:131:SER:HB3	1:E:161:VAL:HG13	1.81	0.61
1:B:131:SER:HB3	1:B:161:VAL:HG13	1.81	0.61
1:D:170:TYR:CD1	1:D:200:ARG:HG2	2.36	0.60
1:C:63:MET:HE1	1:C:100:ASN:HD21	1.66	0.59
1:C:135:LEU:CD1	1:D:285:PRO:HB2	2.33	0.58
1:A:319:LYS:O	1:A:323:VAL:HG12	2.03	0.58
1:A:131:SER:HB3	1:A:161:VAL:HG13	1.85	0.58
1:A:5:SER:HB2	1:E:330:MET:HE3	1.87	0.57
1:E:132:GLY:HA2	1:E:191:ALA:HB3	1.86	0.57
1:C:34:ILE:HG13	1:C:450:VAL:HG13	1.86	0.57
1:E:244:LYS:NZ	2:E:501:PLG:H4A2	2.21	0.56
1:B:319:LYS:O	1:B:323:VAL:HG12	2.06	0.55
1:E:244:LYS:HZ1	2:E:501:PLG:H4A2	1.71	0.55
1:C:337:VAL:HG12	1:C:338:THR:HG23	1.89	0.54
1:A:422:ILE:HG23	1:A:436:GLY:HA3	1.90	0.54
1:C:131:SER:HB3	1:C:161:VAL:HG13	1.90	0.54
1:C:137:HIS:HE1	1:C:215:ASP:OD2	1.90	0.54
1:D:42:PHE:CD1	1:D:459:MET:HE1	2.43	0.53
1:A:34:ILE:HG13	1:A:450:VAL:HG13	1.91	0.53
1:C:113:ALA:O	1:C:117:VAL:HG22	2.08	0.53
1:B:464:VAL:O	1:B:467:MET:HG2	2.09	0.53
1:C:58:LYS:HD2	1:D:40:GLU:OE2	2.09	0.53
1:A:42:PHE:CD1	1:A:459:MET:HE1	2.45	0.52
1:B:61:GLU:HB3	1:B:284:PHE:CZ	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:125:MET:HG3	1:E:182:PRO:HB3	1.92	0.52
1:C:135:LEU:HD11	1:D:285:PRO:HB2	1.92	0.52
1:D:131:SER:HB3	1:D:161:VAL:HG13	1.90	0.51
1:A:241:THR:HB	1:A:243:HIS:CE1	2.45	0.51
1:B:241:THR:HB	1:B:243:HIS:CE1	2.45	0.51
1:A:243:HIS:ND1	1:A:250:ARG:HA	2.26	0.51
1:A:61:GLU:HB3	1:A:284:PHE:CZ	2.47	0.50
1:B:401:VAL:HG22	1:E:164:THR:HG21	1.94	0.50
1:C:61:GLU:HB3	1:C:284:PHE:CZ	2.47	0.50
1:B:134:HIS:CE1	1:B:136:THR:HG23	2.47	0.50
1:D:464:VAL:HA	1:D:467:MET:HG3	1.94	0.50
1:E:34:ILE:HG13	1:E:450:VAL:HG13	1.93	0.50
1:E:47:VAL:HG13	1:E:298:ALA:HB1	1.94	0.49
1:E:86:ALA:HB3	1:E:99:VAL:HG11	1.94	0.49
1:A:36:LEU:HB3	1:A:390:ILE:HG23	1.95	0.48
1:A:28:ARG:HD2	1:A:469:TYR:HB3	1.95	0.48
1:E:292:HIS:HB3	1:E:294:HIS:CE1	2.48	0.48
1:A:292:HIS:HB3	1:A:294:HIS:CE1	2.50	0.47
1:E:202:ARG:HB2	1:E:234:TYR:HB3	1.97	0.47
1:D:458:ASP:HB3	3:D:729:HOH:O	2.14	0.47
1:C:306:ALA:HA	1:C:311:PHE:CG	2.50	0.47
1:D:292:HIS:HB3	1:D:294:HIS:CE1	2.50	0.47
1:E:36:LEU:HB3	1:E:390:ILE:HG23	1.96	0.47
1:A:236:ASP:HB3	1:A:275:PHE:CE2	2.50	0.46
1:D:312:LYS:HE3	1:D:316:LYS:HE2	1.97	0.46
1:A:124:ILE:O	1:A:156:SER:HA	2.16	0.46
1:D:58:LYS:HG2	1:D:75:ILE:HG13	1.96	0.46
1:C:147:ILE:HD12	1:D:281:PHE:HZ	1.79	0.46
1:A:350:LEU:HD11	1:A:388:VAL:HG13	1.98	0.46
1:E:61:GLU:HB3	1:E:284:PHE:CZ	2.51	0.45
1:B:47:VAL:HG13	1:B:298:ALA:HB1	1.97	0.45
1:D:227:GLU:CD	1:D:316:LYS:HG2	2.42	0.45
1:E:34:ILE:HG22	1:E:36:LEU:HG	1.98	0.45
1:A:125:MET:HG3	1:A:182:PRO:HB3	1.98	0.45
1:B:127:LEU:O	1:B:133:GLY:HA3	2.17	0.45
1:C:395:MET:HB3	1:C:400:LEU:HD22	1.98	0.45
1:D:392:ALA:N	1:D:393:PRO:HD3	2.31	0.45
1:D:63:MET:HE3	1:D:64:PRO:HD2	1.99	0.45
1:B:422:ILE:HG23	1:B:436:GLY:HA3	1.98	0.45
1:C:149:THR:HG23	1:D:286:SER:O	2.17	0.45
1:A:42:PHE:CE1	1:A:459:MET:HE1	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:337:VAL:HG12	1:A:338:THR:HG23	1.99	0.44
1:A:130:PRO:HA	1:A:375:ALA:HB3	1.99	0.44
1:C:392:ALA:N	1:C:393:PRO:CD	2.80	0.44
1:D:67:ARG:HB3	3:D:655:HOH:O	2.18	0.44
1:D:284:PHE:CD1	1:D:285:PRO:HA	2.53	0.44
1:D:132:GLY:HA2	1:D:191:ALA:HB3	2.00	0.44
1:C:129:LEU:HD21	1:C:135:LEU:HD23	1.98	0.44
1:D:34:ILE:HG22	1:D:36:LEU:HG	2.00	0.43
1:A:34:ILE:HD13	1:A:408:ILE:HG12	2.00	0.43
1:A:102:GLN:N	1:A:103:PRO:CD	2.82	0.43
1:E:464:VAL:HA	1:E:467:MET:HG3	2.00	0.43
1:A:392:ALA:N	1:A:393:PRO:CD	2.82	0.43
1:B:28:ARG:HA	1:B:467:MET:HE1	2.00	0.43
1:B:113:ALA:O	1:B:117:VAL:HG22	2.18	0.43
1:B:292:HIS:HB3	1:B:294:HIS:CE1	2.53	0.43
1:B:38:ALA:HA	1:B:391:GLY:HA3	2.01	0.43
1:C:19:ILE:O	1:C:23:ILE:HG13	2.19	0.43
1:B:350:LEU:HB2	1:B:386:GLY:O	2.19	0.43
1:B:418:LEU:HD23	1:B:418:LEU:HA	1.77	0.43
1:E:236:ASP:HB3	1:E:275:PHE:CE2	2.54	0.43
1:E:172:ARG:HD2	1:E:175:GLU:OE1	2.19	0.43
1:C:63:MET:HE1	1:C:100:ASN:ND2	2.33	0.42
1:E:107:SER:HB2	1:E:108:PRO:HD3	2.00	0.42
1:A:12:LEU:HG	1:A:20:HIS:HB2	2.02	0.42
1:B:102:GLN:N	1:B:103:PRO:CD	2.83	0.42
1:A:100:ASN:OD1	1:A:103:PRO:HD3	2.20	0.42
1:C:47:VAL:HG13	1:C:298:ALA:HB1	2.01	0.42
1:C:350:LEU:HD11	1:C:388:VAL:HG22	2.00	0.42
1:A:329:LEU:HD23	1:A:329:LEU:HA	1.89	0.42
1:B:345:LEU:HD22	1:B:389:ARG:HD2	2.00	0.42
1:D:134:HIS:HE2	2:D:501:PLG:H4A1	1.84	0.42
1:B:215:ASP:OD2	2:B:501:PLG:N1	2.52	0.42
1:D:107:SER:HB2	1:D:108:PRO:HD3	2.01	0.42
1:A:323:VAL:HG13	3:A:632:HOH:O	2.19	0.42
1:C:24:GLU:HA	1:C:27:LYS:HD3	2.01	0.42
1:D:113:ALA:O	1:D:117:VAL:HG22	2.20	0.42
1:A:107:SER:HB2	1:A:108:PRO:HD3	2.02	0.42
1:D:243:HIS:ND1	1:D:250:ARG:HA	2.35	0.42
2:D:501:PLG:N	2:D:501:PLG:O3	2.53	0.42
2:A:501:PLG:H5A1	2:A:501:PLG:H4A1	1.88	0.42
1:E:5:SER:HA	1:E:9:ASN:HB2	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:392:ALA:N	1:E:393:PRO:CD	2.83	0.42
1:B:348:TRP:CH2	1:B:416:VAL:HG21	2.55	0.42
1:C:135:LEU:HD12	1:D:285:PRO:HB2	1.98	0.42
1:E:216:MET:HG3	1:E:220:SER:HB3	2.02	0.42
1:D:127:LEU:O	1:D:133:GLY:HA3	2.20	0.41
1:D:244:LYS:HZ1	2:D:501:PLG:C4A	2.32	0.41
1:A:467:MET:HB3	1:A:467:MET:HE2	1.78	0.41
1:D:58:LYS:HA	1:D:58:LYS:HD2	1.91	0.41
1:D:190:SER:HA	1:D:218:HIS:CD2	2.55	0.41
1:B:345:LEU:HD12	1:B:345:LEU:C	2.45	0.41
1:E:102:GLN:N	1:E:103:PRO:CD	2.84	0.41
1:B:123:ARG:HA	1:B:155:GLU:O	2.21	0.41
1:B:196:TRP:HB2	1:B:198:TYR:CZ	2.55	0.41
1:B:418:LEU:O	1:B:422:ILE:HG13	2.21	0.41
1:D:35:GLU:CD	1:D:40:GLU:OE1	2.63	0.41
1:D:215:ASP:OD2	2:D:501:PLG:N1	2.54	0.41
1:A:39:SER:HB2	1:A:244:LYS:HE3	2.03	0.41
1:C:216:MET:O	1:C:217:ALA:C	2.64	0.41
1:B:243:HIS:ND1	1:B:250:ARG:HA	2.35	0.41
1:C:207:LYS:HB2	1:C:207:LYS:HE2	1.71	0.41
1:E:58:LYS:HD2	1:E:58:LYS:HA	1.85	0.41
1:E:207:LYS:HA	1:E:207:LYS:HD3	1.78	0.41
1:A:134:HIS:CE1	1:A:136:THR:HG23	2.56	0.41
1:D:36:LEU:HB3	1:D:390:ILE:HG23	2.02	0.41
1:D:338:THR:HA	3:D:634:HOH:O	2.21	0.41
1:E:19:ILE:HD13	1:E:19:ILE:HA	1.87	0.41
1:E:344:HIS:HD1	1:E:344:HIS:H	1.67	0.41
1:A:367:CYS:HA	1:A:447:LYS:HB2	2.01	0.41
1:B:181:ARG:HA	1:B:181:ARG:HD3	1.91	0.40
1:C:131:SER:OG	1:C:161:VAL:HG22	2.20	0.40
1:D:109:ALA:O	1:D:254:ILE:HD11	2.21	0.40
1:E:117:VAL:HG11	1:E:237:ILE:HD11	2.02	0.40
1:E:79:GLU:O	1:E:83:ARG:HG3	2.20	0.40
1:E:284:PHE:CD1	1:E:285:PRO:HA	2.55	0.40
1:C:29:ARG:NH2	1:D:58:LYS:HD3	2.36	0.40
1:C:292:HIS:HE1	1:D:104:TYR:O	2.04	0.40
1:D:102:GLN:N	1:D:103:PRO:CD	2.84	0.40
1:D:392:ALA:N	1:D:393:PRO:CD	2.84	0.40
1:D:422:ILE:HG23	1:D:436:GLY:HA3	2.03	0.40
1:A:285:PRO:HB2	1:B:135:LEU:HD13	2.02	0.40
1:B:124:ILE:O	1:B:156:SER:HA	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:130:PRO:HA	1:C:375:ALA:HB3	2.03	0.40
1:E:106:GLY:HA3	1:E:241:THR:HG22	2.04	0.40
1:E:125:MET:HE2	1:E:125:MET:HB3	1.99	0.40
1:D:216:MET:O	1:D:217:ALA:C	2.65	0.40
1:E:215:ASP:OD2	2:E:501:PLG:N1	2.55	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	451/492 (92%)	438 (97%)	13 (3%)	0	100	100
1	B	452/492 (92%)	437 (97%)	15 (3%)	0	100	100
1	C	454/492 (92%)	437 (96%)	16 (4%)	1 (0%)	44	36
1	D	458/492 (93%)	445 (97%)	12 (3%)	1 (0%)	44	36
1	E	454/492 (92%)	437 (96%)	17 (4%)	0	100	100
All	All	2269/2460 (92%)	2194 (97%)	73 (3%)	2 (0%)	48	41

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	377	PHE
1	D	269	GLU

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	342/404 (85%)	337 (98%)	5 (2%)	60	59
1	B	344/404 (85%)	342 (99%)	2 (1%)	84	86
1	C	340/404 (84%)	333 (98%)	7 (2%)	48	45
1	D	348/404 (86%)	344 (99%)	4 (1%)	70	71
1	E	331/404 (82%)	328 (99%)	3 (1%)	75	77
All	All	1705/2020 (84%)	1684 (99%)	21 (1%)	67	68

All (21) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	59	TYR
1	A	69	TYR
1	A	105	SER
1	A	323	VAL
1	A	465	SER
1	B	105	SER
1	B	376	VAL
1	C	12	LEU
1	C	35	GLU
1	C	105	SER
1	C	129	LEU
1	C	135	LEU
1	C	374	ASN
1	C	416	VAL
1	D	59	TYR
1	D	105	SER
1	D	218	HIS
1	D	374	ASN
1	E	4	VAL
1	E	59	TYR
1	E	105	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	9	ASN
1	A	293	ASN

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Mol	Chain	Res	Type
1	A	295	GLN
1	B	407	GLN
1	C	137	HIS
1	D	20	HIS
1	D	293	ASN
1	D	305	GLN
1	D	407	GLN
1	E	0	ASN
1	E	20	HIS
1	E	293	ASN
1	E	295	GLN
1	E	407	GLN

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](#)

5 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	PLG	D	501	-	20,20,20	1.37	2 (10%)	26,28,28	1.25	4 (15%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	PLG	E	501	-	20,20,20	1.32	4 (20%)	26,28,28	1.27	3 (11%)
2	PLG	A	501	-	20,20,20	1.33	3 (15%)	26,28,28	1.84	7 (26%)
2	PLG	B	501	-	20,20,20	1.33	3 (15%)	26,28,28	1.73	5 (19%)
2	PLG	C	501	-	20,20,20	1.26	2 (10%)	26,28,28	1.16	2 (7%)

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	PLG	D	501	-	-	8/12/12/12	0/1/1/1
2	PLG	E	501	-	-	4/12/12/12	0/1/1/1
2	PLG	A	501	-	-	5/12/12/12	0/1/1/1
2	PLG	B	501	-	-	6/12/12/12	0/1/1/1
2	PLG	C	501	-	-	7/12/12/12	0/1/1/1

All (14) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	501	PLG	C5-C4	-3.03	1.36	1.40
2	A	501	PLG	C5-C4	-2.81	1.36	1.40
2	B	501	PLG	C5-C4	-2.73	1.36	1.40
2	E	501	PLG	C5-C4	-2.61	1.36	1.40
2	D	501	PLG	C2A-C2	2.41	1.54	1.50
2	A	501	PLG	C3-C2	-2.30	1.38	1.41
2	B	501	PLG	C3-C4	-2.24	1.36	1.40
2	A	501	PLG	C3-C4	-2.20	1.36	1.40
2	E	501	PLG	C3-C4	-2.11	1.36	1.40
2	C	501	PLG	C3-C2	-2.09	1.38	1.41
2	C	501	PLG	C5-C4	-2.09	1.37	1.40
2	E	501	PLG	C2A-C2	2.09	1.53	1.50
2	E	501	PLG	C3-C2	-2.06	1.38	1.41
2	B	501	PLG	C2A-C2	2.01	1.53	1.50

All (21) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	501	PLG	C4A-N-CA	-4.90	107.02	112.72
2	B	501	PLG	C4A-N-CA	-4.53	107.44	112.72

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	501	PLG	C6-C5-C4	3.60	120.78	118.06
2	A	501	PLG	C6-C5-C4	3.41	120.64	118.06
2	E	501	PLG	C6-C5-C4	3.41	120.64	118.06
2	B	501	PLG	C5-C6-N1	-3.10	118.78	123.83
2	A	501	PLG	C5-C6-N1	-2.76	119.34	123.83
2	E	501	PLG	C5-C6-N1	-2.68	119.47	123.83
2	A	501	PLG	C4A-C4-C3	2.66	123.51	119.98
2	A	501	PLG	C4A-C4-C5	-2.60	116.91	119.75
2	D	501	PLG	C6-C5-C4	2.42	119.89	118.06
2	D	501	PLG	C4A-C4-C3	2.36	123.12	119.98
2	B	501	PLG	C4A-C4-C3	2.34	123.09	119.98
2	A	501	PLG	OP4-P-OP1	2.32	112.71	106.44
2	C	501	PLG	C6-C5-C4	2.29	119.79	118.06
2	D	501	PLG	OXT-C-CA	2.25	121.37	112.81
2	A	501	PLG	OP4-C5A-C5	2.23	113.54	109.36
2	E	501	PLG	OXT-C-CA	2.18	121.09	112.81
2	C	501	PLG	C5-C6-N1	-2.16	120.31	123.83
2	D	501	PLG	C5-C6-N1	-2.11	120.40	123.83
2	B	501	PLG	C4A-C4-C5	-2.08	117.48	119.75

There are no chirality outliers.

All (30) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	501	PLG	C5A-OP4-P-OP3
2	B	501	PLG	C5A-OP4-P-OP1
2	B	501	PLG	C5A-OP4-P-OP3
2	D	501	PLG	C5-C4-C4A-N
2	D	501	PLG	C5A-OP4-P-OP1
2	D	501	PLG	C5A-OP4-P-OP3
2	E	501	PLG	C5A-OP4-P-OP3
2	A	501	PLG	C5-C4-C4A-N
2	B	501	PLG	C5-C4-C4A-N
2	C	501	PLG	C5-C4-C4A-N
2	E	501	PLG	C5-C4-C4A-N
2	A	501	PLG	C3-C4-C4A-N
2	C	501	PLG	C4-C4A-N-CA
2	D	501	PLG	C4-C4A-N-CA
2	A	501	PLG	C5A-OP4-P-OP1
2	C	501	PLG	C5A-OP4-P-OP1
2	E	501	PLG	C5A-OP4-P-OP1
2	B	501	PLG	C3-C4-C4A-N

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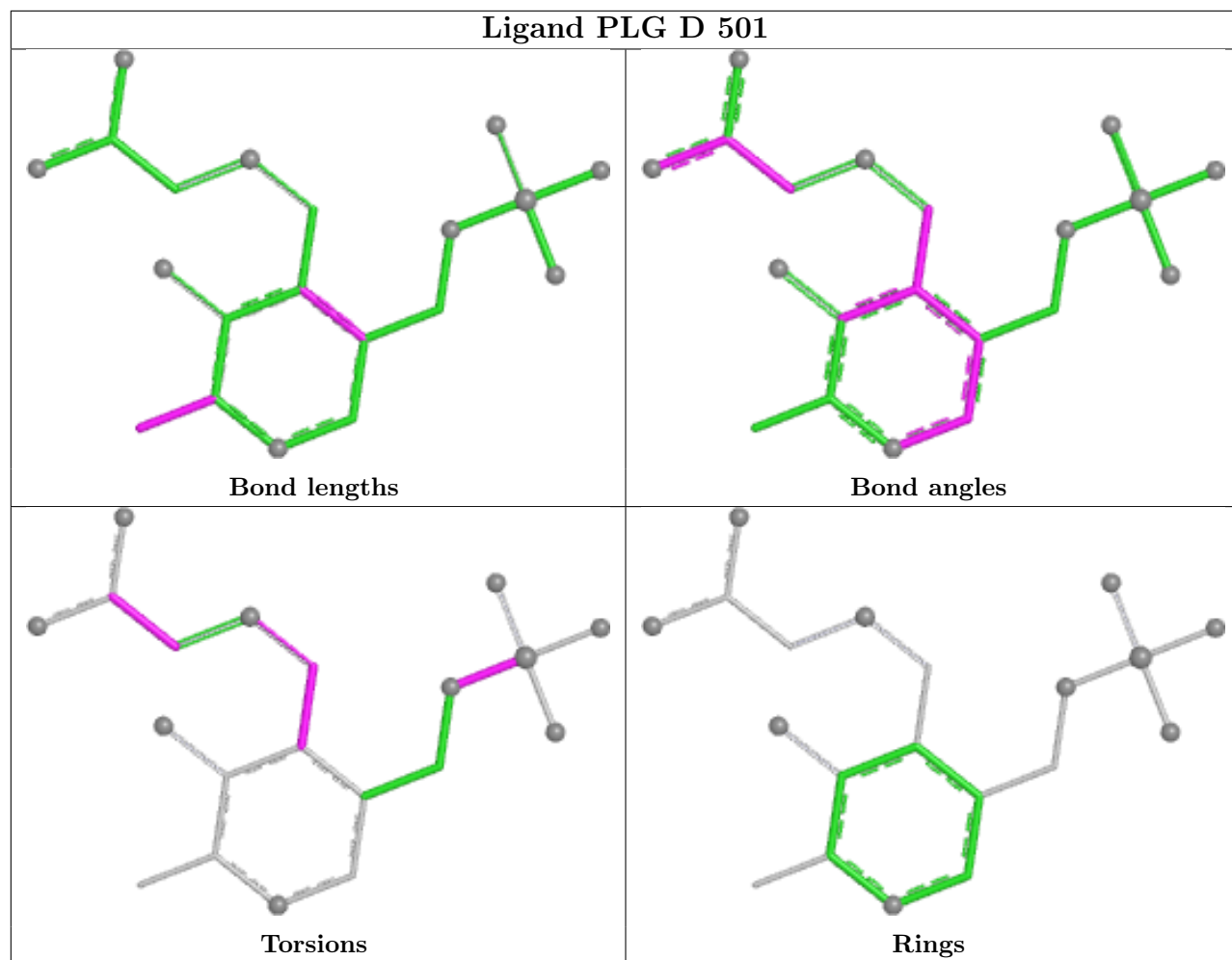
Mol	Chain	Res	Type	Atoms
2	C	501	PLG	C3-C4-C4A-N
2	E	501	PLG	C3-C4-C4A-N
2	C	501	PLG	OXT-C-CA-N
2	D	501	PLG	C3-C4-C4A-N
2	D	501	PLG	OXT-C-CA-N
2	A	501	PLG	C-CA-N-C4A
2	C	501	PLG	O-C-CA-N
2	D	501	PLG	O-C-CA-N
2	B	501	PLG	C5A-OP4-P-OP2
2	C	501	PLG	C5A-OP4-P-OP3
2	D	501	PLG	C5A-OP4-P-OP2
2	B	501	PLG	C4-C4A-N-CA

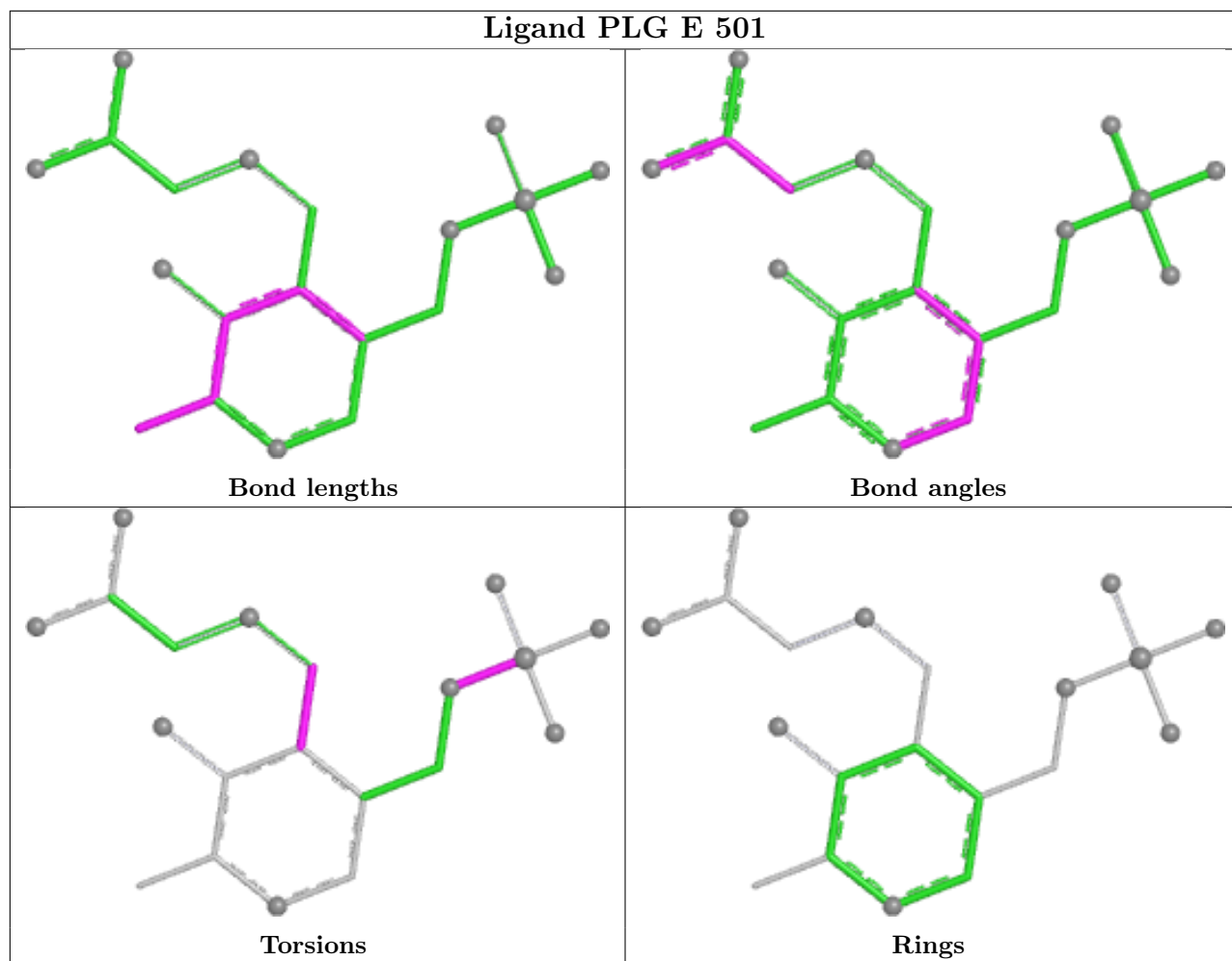
There are no ring outliers.

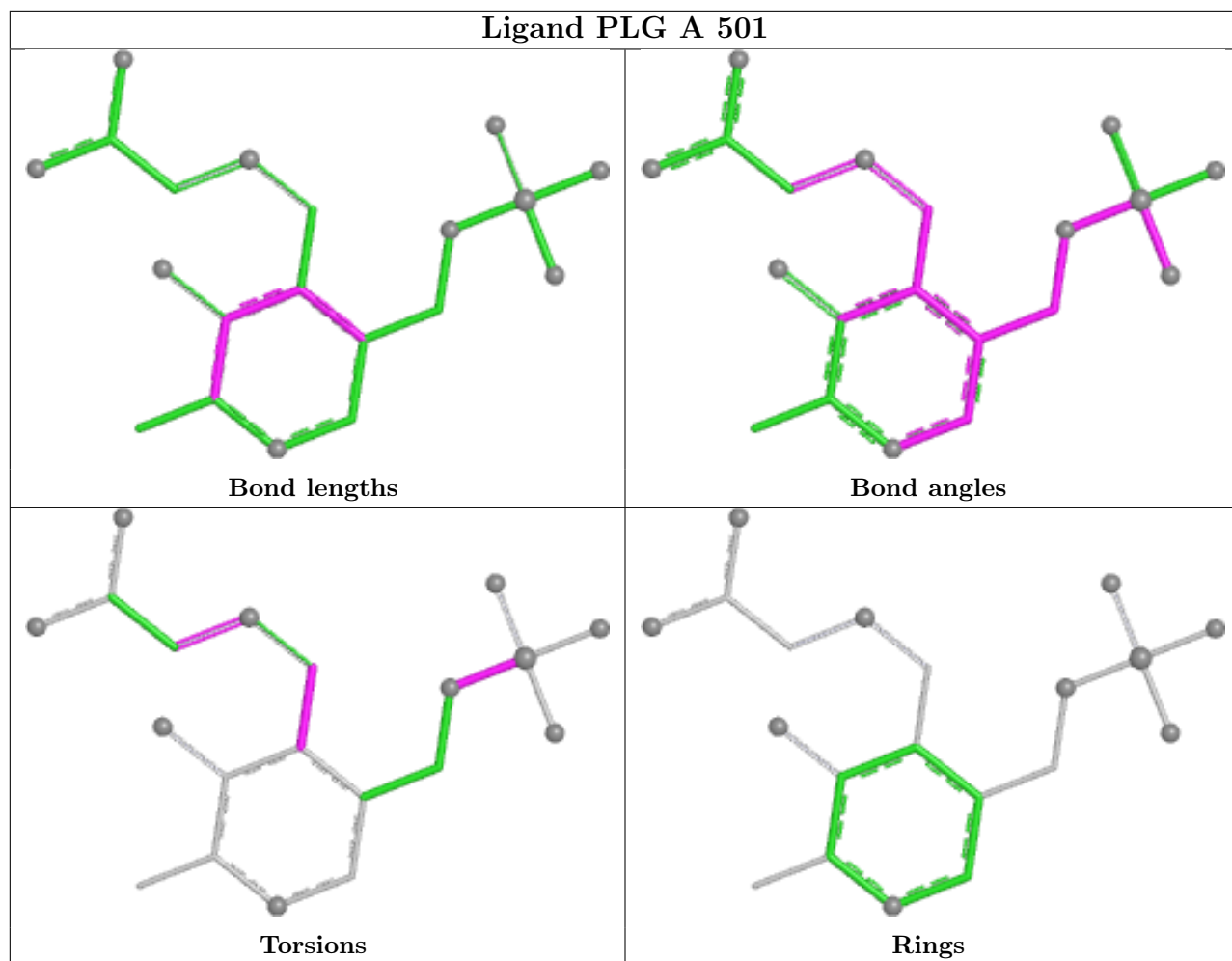
4 monomers are involved in 9 short contacts:

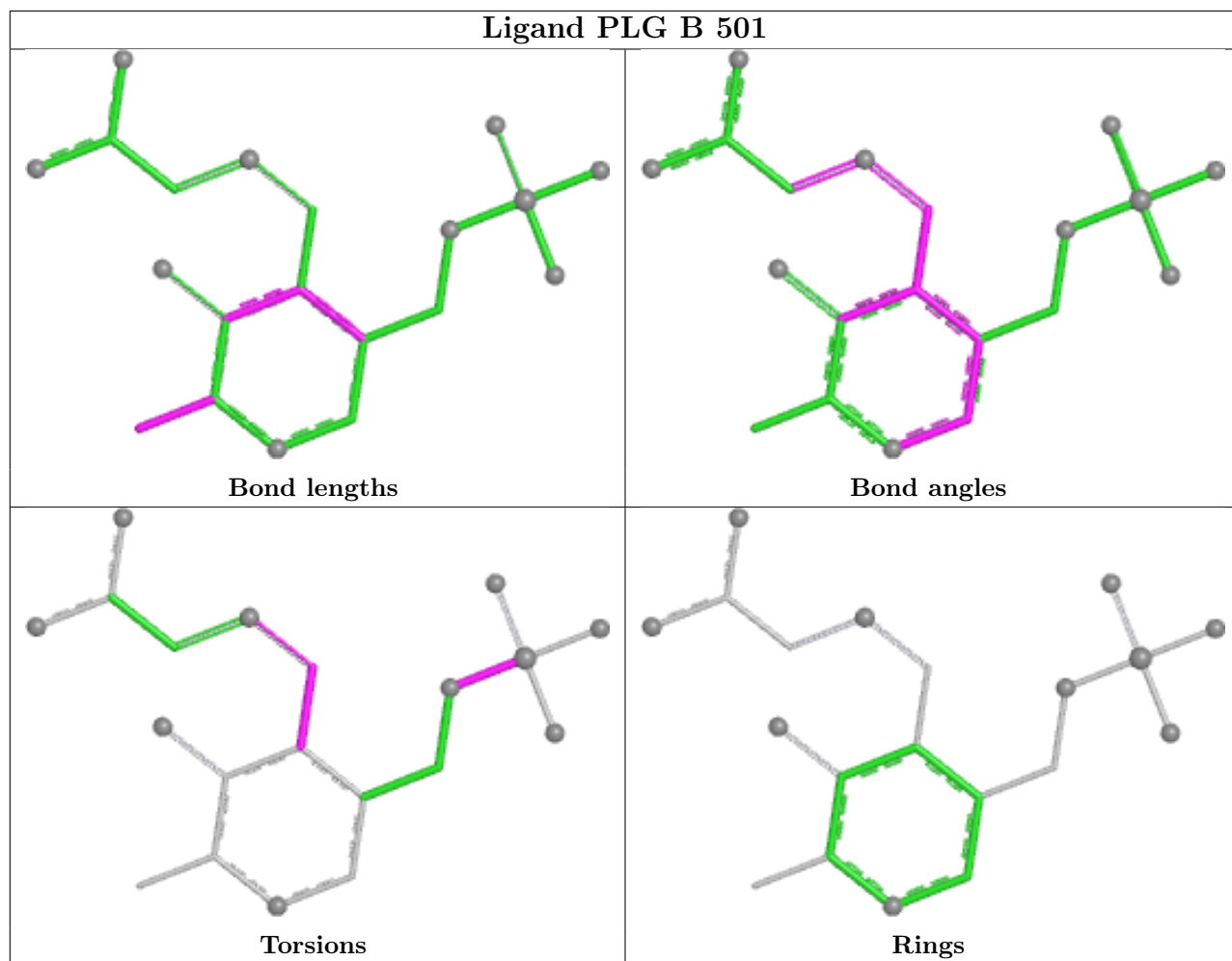
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	D	501	PLG	4	0
2	E	501	PLG	3	0
2	A	501	PLG	1	0
2	B	501	PLG	1	0

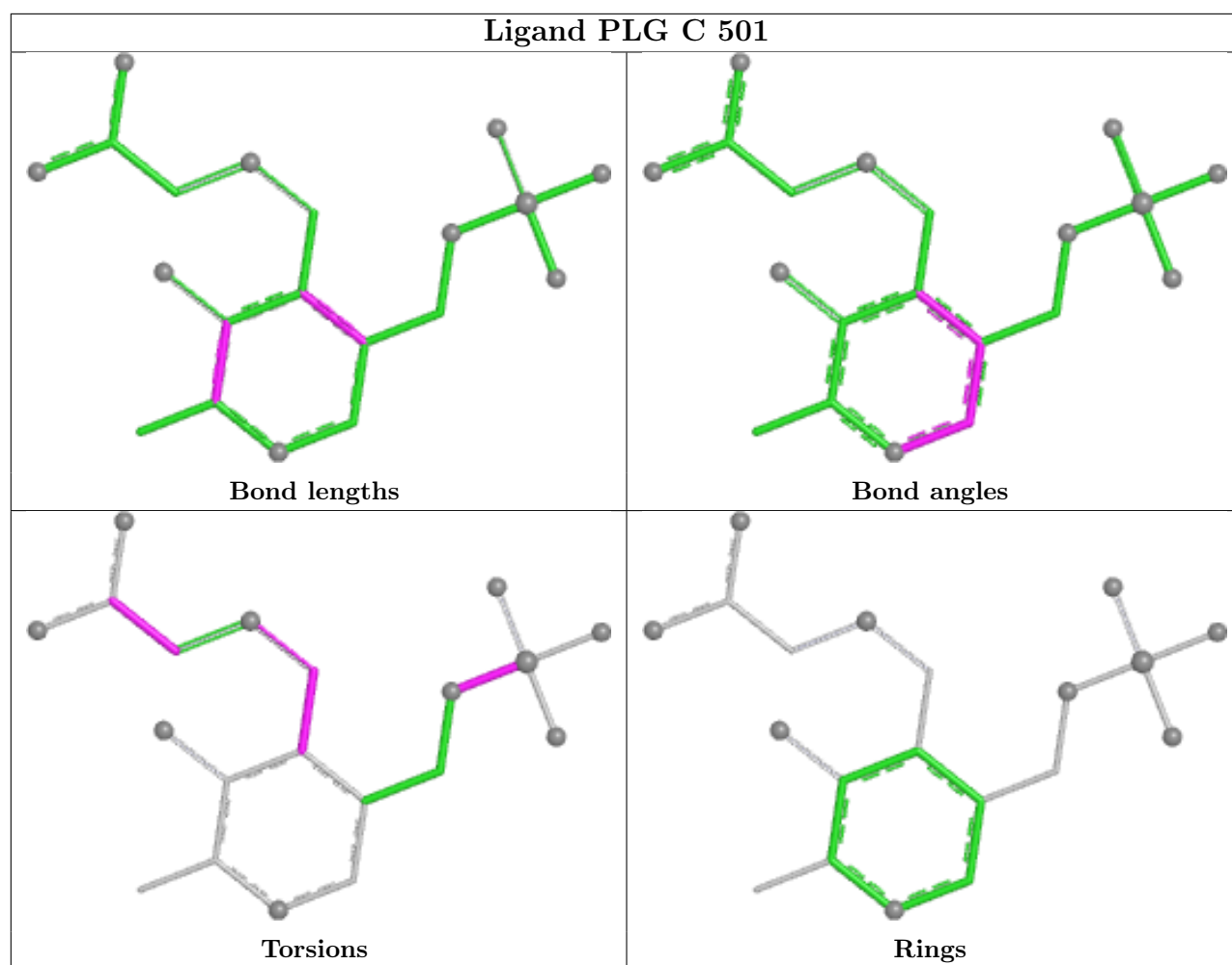
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less 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, 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	457/492 (92%)	1.11	63 (13%) 8 8	23, 37, 64, 95	0
1	B	458/492 (93%)	1.11	73 (15%) 6 5	24, 35, 67, 90	0
1	C	460/492 (93%)	1.40	110 (23%) 2 2	26, 40, 75, 100	0
1	D	464/492 (94%)	1.10	58 (12%) 9 9	22, 33, 61, 82	0
1	E	460/492 (93%)	1.48	123 (26%) 2 1	30, 42, 78, 99	0
All	All	2299/2460 (93%)	1.24	427 (18%) 4 4	22, 38, 69, 100	0

All (427) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	E	375	ALA	7.0
1	A	142	SER	6.8
1	D	437	LEU	6.2
1	B	377	PHE	6.0
1	E	142	SER	5.9
1	C	378	GLY	5.9
1	C	418	LEU	5.5
1	C	437	LEU	5.5
1	D	129	LEU	5.5
1	E	437	LEU	5.4
1	A	376	VAL	5.2
1	C	384	ALA	5.2
1	A	0	ASN	5.2
1	E	263	PRO	5.2
1	E	384	ALA	5.1
1	E	427	GLY	5.1
1	E	422	ILE	5.1
1	E	433	PHE	5.0
1	E	425	GLU	5.0
1	C	439	ASN	4.9

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Mol	Chain	Res	Type	RSRZ
1	A	430	LEU	4.9
1	E	353	LEU	4.9
1	E	355	LEU	4.9
1	A	375	ALA	4.9
1	D	268	PRO	4.9
1	E	68	TYR	4.8
1	D	69	TYR	4.8
1	C	419	THR	4.7
1	C	455	ALA	4.7
1	C	137	HIS	4.6
1	C	138	GLY	4.5
1	A	263	PRO	4.5
1	E	94	ALA	4.5
1	C	262	PRO	4.5
1	B	430	LEU	4.5
1	B	437	LEU	4.4
1	C	433	PHE	4.4
1	A	384	ALA	4.4
1	B	355	LEU	4.4
1	E	137	HIS	4.3
1	E	69	TYR	4.3
1	D	456	LEU	4.3
1	E	420	LEU	4.3
1	C	430	LEU	4.3
1	E	418	LEU	4.3
1	E	95	GLN	4.3
1	E	455	ALA	4.2
1	C	387	GLY	4.2
1	A	271	ALA	4.2
1	C	135	LEU	4.2
1	E	66	ASN	4.2
1	B	378	GLY	4.2
1	B	384	ALA	4.2
1	E	363	LEU	4.2
1	C	438	VAL	4.2
1	D	438	VAL	4.2
1	C	164	THR	4.1
1	A	143	GLY	4.1
1	D	455	ALA	4.1
1	E	423	GLN	4.1
1	C	432	ASP	4.1
1	E	358	ASN	4.1

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Mol	Chain	Res	Type	RSRZ
1	C	422	ILE	4.0
1	E	443	ILE	4.0
1	C	333	GLY	4.0
1	D	436	GLY	4.0
1	B	363	LEU	4.0
1	C	429	LEU	4.0
1	E	426	HIS	4.0
1	E	268	PRO	3.9
1	C	132	GLY	3.9
1	C	281	PHE	3.9
1	D	435	LYS	3.9
1	C	335	SER	3.9
1	E	428	LYS	3.9
1	C	358	ASN	3.8
1	A	130	PRO	3.8
1	C	331	GLY	3.8
1	D	0	ASN	3.8
1	E	143	GLY	3.8
1	D	68	TYR	3.8
1	B	429	LEU	3.8
1	A	455	ALA	3.8
1	B	425	GLU	3.8
1	B	379	ASP	3.8
1	C	376	VAL	3.8
1	D	352	PRO	3.7
1	A	135	LEU	3.7
1	D	429	LEU	3.7
1	C	348	TRP	3.7
1	A	68	TYR	3.7
1	E	270	ASN	3.7
1	C	420	LEU	3.7
1	A	405	PHE	3.7
1	A	163	SER	3.7
1	A	262	PRO	3.7
1	B	426	HIS	3.7
1	B	433	PHE	3.6
1	B	142	SER	3.6
1	C	142	SER	3.6
1	D	-1	SER	3.6
1	D	439	ASN	3.6
1	C	129	LEU	3.6
1	C	412	LEU	3.6

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Mol	Chain	Res	Type	RSRZ
1	E	356	THR	3.6
1	C	191	ALA	3.6
1	E	439	ASN	3.6
1	E	348	TRP	3.6
1	A	129	LEU	3.5
1	D	270	ASN	3.5
1	E	362	LYS	3.5
1	B	68	TYR	3.5
1	C	385	PRO	3.5
1	B	261	LYS	3.5
1	D	135	LEU	3.5
1	D	147	ILE	3.5
1	D	426	HIS	3.5
1	C	139	TYR	3.5
1	D	269	GLU	3.4
1	E	436	GLY	3.4
1	B	431	LYS	3.4
1	C	377	PHE	3.4
1	B	438	VAL	3.4
1	A	132	GLY	3.4
1	C	456	LEU	3.4
1	C	425	GLU	3.4
1	C	-1	SER	3.4
1	C	147	ILE	3.4
1	C	443	ILE	3.4
1	C	360	VAL	3.4
1	C	436	GLY	3.4
1	D	134	HIS	3.4
1	E	385	PRO	3.4
1	C	167	TYR	3.4
1	E	274	ASP	3.4
1	D	265	LYS	3.3
1	E	87	LEU	3.3
1	D	142	SER	3.3
1	C	428	LYS	3.3
1	C	426	HIS	3.3
1	A	429	LEU	3.3
1	E	347	LEU	3.3
1	B	364	CYS	3.3
1	B	432	ASP	3.3
1	B	442	ALA	3.3
1	C	329	LEU	3.3

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Mol	Chain	Res	Type	RSRZ
1	C	165	THR	3.3
1	C	354	GLY	3.3
1	C	415	ALA	3.2
1	B	135	LEU	3.2
1	B	350	LEU	3.2
1	C	353	LEU	3.2
1	A	69	TYR	3.2
1	E	62	GLY	3.2
1	E	138	GLY	3.2
1	A	352	PRO	3.2
1	E	359	LYS	3.2
1	A	418	LEU	3.2
1	B	0	ASN	3.2
1	B	388	VAL	3.1
1	E	366	LEU	3.1
1	E	259	GLY	3.1
1	E	419	THR	3.1
1	C	424	LYS	3.1
1	E	-1	SER	3.1
1	C	423	GLN	3.1
1	E	140	TYR	3.1
1	C	421	GLU	3.1
1	B	65	GLY	3.1
1	B	420	LEU	3.1
1	C	347	LEU	3.1
1	D	188	GLY	3.1
1	E	135	LEU	3.1
1	E	333	GLY	3.1
1	E	438	VAL	3.1
1	E	272	VAL	3.1
1	B	439	ASN	3.0
1	E	352	PRO	3.0
1	C	145	LYS	3.0
1	E	207	LYS	3.0
1	B	271	ALA	3.0
1	A	427	GLY	3.0
1	C	427	GLY	3.0
1	D	358	ASN	3.0
1	E	306	ALA	3.0
1	D	377	PHE	3.0
1	B	129	LEU	3.0
1	E	303	LEU	3.0

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Mol	Chain	Res	Type	RSRZ
1	E	360	VAL	3.0
1	A	424	LYS	3.0
1	C	37	ILE	3.0
1	E	354	GLY	3.0
1	B	113	ALA	3.0
1	E	415	ALA	3.0
1	D	348	TRP	3.0
1	B	423	GLN	3.0
1	E	144	GLY	2.9
1	C	134	HIS	2.9
1	C	417	THR	2.9
1	D	430	LEU	2.9
1	D	65	GLY	2.9
1	B	443	ILE	2.9
1	C	68	TYR	2.9
1	E	401	VAL	2.9
1	E	262	PRO	2.9
1	A	190	SER	2.9
1	E	164	THR	2.9
1	C	287	LEU	2.9
1	C	334	TYR	2.9
1	C	355	LEU	2.9
1	C	363	LEU	2.9
1	C	272	VAL	2.9
1	E	65	GLY	2.9
1	D	282	ALA	2.9
1	E	350	LEU	2.8
1	C	416	VAL	2.8
1	C	464	VAL	2.8
1	E	424	LYS	2.8
1	C	168	ILE	2.8
1	B	427	GLY	2.8
1	C	161	VAL	2.8
1	B	165	THR	2.8
1	B	422	ILE	2.8
1	B	428	LYS	2.8
1	E	421	GLU	2.8
1	E	74	TYR	2.8
1	A	438	VAL	2.8
1	E	133	GLY	2.8
1	E	281	PHE	2.7
1	D	442	ALA	2.7

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Mol	Chain	Res	Type	RSRZ
1	E	271	ALA	2.7
1	E	209	GLY	2.7
1	B	329	LEU	2.7
1	C	365	ASP	2.7
1	E	434	ASN	2.7
1	C	326	GLY	2.7
1	A	410	GLU	2.7
1	A	84	SER	2.7
1	A	147	ILE	2.7
1	A	470	LYS	2.7
1	B	435	LYS	2.7
1	E	273	TYR	2.6
1	A	386	GLY	2.6
1	C	408	ILE	2.6
1	C	130	PRO	2.6
1	E	61	GLU	2.6
1	E	63	MET	2.6
1	B	456	LEU	2.6
1	A	439	ASN	2.6
1	B	436	GLY	2.6
1	C	69	TYR	2.6
1	D	421	GLU	2.6
1	C	350	LEU	2.6
1	D	463	LEU	2.6
1	E	411	PHE	2.6
1	D	139	TYR	2.6
1	A	366	LEU	2.6
1	A	437	LEU	2.6
1	E	386	GLY	2.6
1	D	425	GLU	2.6
1	C	271	ALA	2.6
1	A	450	VAL	2.5
1	B	376	VAL	2.5
1	C	337	VAL	2.5
1	E	32	ARG	2.5
1	B	260	PRO	2.5
1	A	456	LEU	2.5
1	B	418	LEU	2.5
1	D	431	LYS	2.5
1	C	225	ALA	2.5
1	E	307	ALA	2.5
1	B	272	VAL	2.5

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Mol	Chain	Res	Type	RSRZ
1	E	47	VAL	2.5
1	C	469	TYR	2.5
1	E	469	TYR	2.5
1	A	347	LEU	2.5
1	A	355	LEU	2.5
1	A	363	LEU	2.5
1	E	373	LYS	2.5
1	C	411	PHE	2.5
1	C	0	ASN	2.5
1	D	66	ASN	2.5
1	E	334	TYR	2.5
1	E	81	LEU	2.5
1	E	4	VAL	2.5
1	B	328	TYR	2.4
1	D	28	ARG	2.4
1	E	146	LYS	2.4
1	A	350	LEU	2.4
1	B	353	LEU	2.4
1	C	446	LEU	2.4
1	B	307	ALA	2.4
1	C	163	SER	2.4
1	E	275	PHE	2.4
1	D	432	ASP	2.4
1	B	259	GLY	2.4
1	D	418	LEU	2.4
1	E	456	LEU	2.4
1	A	134	HIS	2.4
1	E	131	SER	2.4
1	B	284	PHE	2.4
1	C	166	GLY	2.4
1	C	297	GLY	2.4
1	E	132	GLY	2.4
1	E	175	GLU	2.4
1	A	443	ILE	2.4
1	D	422	ILE	2.4
1	E	7	TRP	2.4
1	B	415	ALA	2.4
1	B	455	ALA	2.4
1	B	99	VAL	2.4
1	A	87	LEU	2.3
1	D	470	LYS	2.3
1	A	466	GLU	2.3

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Mol	Chain	Res	Type	RSRZ
1	C	357	GLY	2.3
1	C	450	VAL	2.3
1	D	360	VAL	2.3
1	C	434	ASN	2.3
1	C	136	THR	2.3
1	E	447	LYS	2.3
1	A	422	ILE	2.3
1	E	19	ILE	2.3
1	C	133	GLY	2.3
1	D	62	GLY	2.3
1	D	368	ASN	2.3
1	A	272	VAL	2.3
1	B	416	VAL	2.3
1	D	388	VAL	2.3
1	E	161	VAL	2.3
1	B	385	PRO	2.3
1	A	146	LYS	2.3
1	A	161	VAL	2.3
1	E	223	VAL	2.3
1	E	388	VAL	2.3
1	B	446	LEU	2.3
1	E	429	LEU	2.3
1	E	191	ALA	2.2
1	E	351	ARG	2.2
1	E	374	ASN	2.2
1	A	431	LYS	2.2
1	A	370	THR	2.2
1	E	136	THR	2.2
1	B	348	TRP	2.2
1	E	211	LEU	2.2
1	A	170	TYR	2.2
1	B	375	ALA	2.2
1	C	340	GLY	2.2
1	D	137	HIS	2.2
1	B	136	THR	2.2
1	B	141	THR	2.2
1	E	10	THR	2.2
1	E	141	THR	2.2
1	E	453	PHE	2.2
1	A	144	GLY	2.2
1	D	350	LEU	2.2
1	E	430	LEU	2.2

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Mol	Chain	Res	Type	RSRZ
1	E	205	ALA	2.2
1	B	273	TYR	2.2
1	C	296	ILE	2.2
1	A	432	ASP	2.2
1	C	371	VAL	2.2
1	D	371	VAL	2.2
1	E	31	CYS	2.2
1	B	331	GLY	2.2
1	B	386	GLY	2.2
1	B	411	PHE	2.2
1	B	441	LYS	2.2
1	D	9	ASN	2.2
1	E	440	ASN	2.2
1	E	467	MET	2.2
1	A	420	LEU	2.2
1	D	89	ALA	2.2
1	B	69	TYR	2.2
1	C	285	PRO	2.2
1	A	365	ASP	2.1
1	A	145	LYS	2.1
1	B	424	LYS	2.1
1	C	435	LYS	2.1
1	E	372	ASN	2.1
1	C	463	LEU	2.1
1	D	412	LEU	2.1
1	E	234	TYR	2.1
1	A	164	THR	2.1
1	E	84	SER	2.1
1	C	327	LYS	2.1
1	D	61	GLU	2.1
1	E	444	GLU	2.1
1	D	464	VAL	2.1
1	B	32	ARG	2.1
1	D	365	ASP	2.1
1	B	75	ILE	2.1
1	C	34	ILE	2.1
1	E	370	THR	2.1
1	A	95	GLN	2.1
1	E	70	GLY	2.1
1	A	458	ASP	2.1
1	C	362	LYS	2.1
1	E	147	ILE	2.1

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Mol	Chain	Res	Type	RSRZ
1	C	234	TYR	2.1
1	E	196	TRP	2.1
1	B	358	ASN	2.1
1	C	66	ASN	2.1
1	C	270	ASN	2.1
1	E	461	GLY	2.1
1	B	128	ASP	2.0
1	E	93	ASP	2.0
1	E	432	ASP	2.0
1	C	346	VAL	2.0
1	D	366	LEU	2.0
1	E	463	LEU	2.0
1	C	40	GLU	2.0
1	D	433	PHE	2.0
1	E	390	ILE	2.0
1	A	469	TYR	2.0
1	C	97	TRP	2.0
1	A	2	ASP	2.0
1	B	274	ASP	2.0
1	A	425	GLU	2.0
1	C	25	LYS	2.0
1	A	260	PRO	2.0
1	B	323	VAL	2.0
1	C	470	LYS	2.0
1	C	94	ALA	2.0
1	D	64	PRO	2.0
1	C	330	MET	2.0
1	B	178	LEU	2.0
1	C	366	LEU	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 oligosaccharides in this entry.

6.4 Ligands

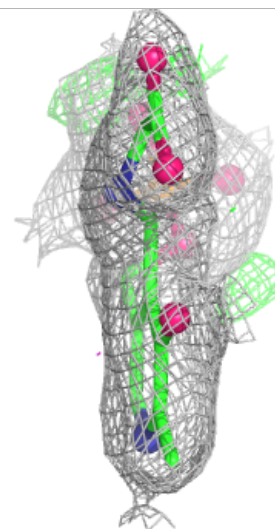
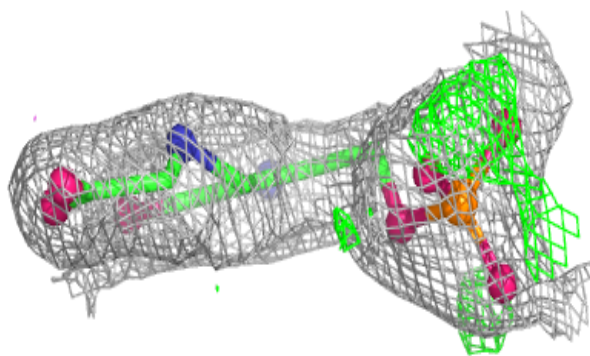
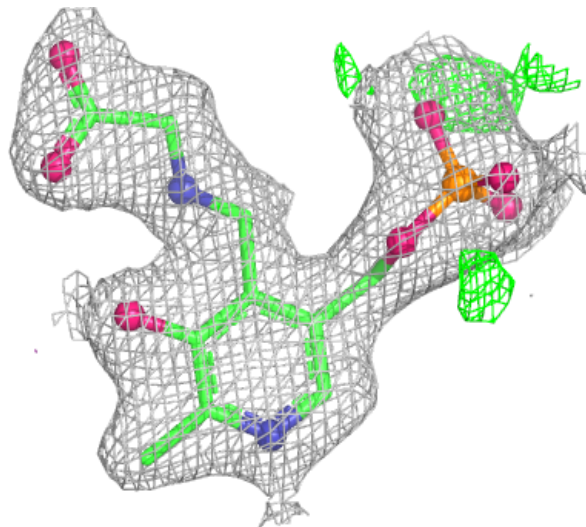
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
2	PLG	A	501	20/20	0.92	0.12	28,34,38,40	0
2	PLG	C	501	20/20	0.92	0.13	28,37,41,41	0
2	PLG	E	501	20/20	0.92	0.12	31,40,42,44	0
2	PLG	D	501	20/20	0.93	0.13	23,31,34,35	20
2	PLG	B	501	20/20	0.95	0.09	27,31,34,35	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.

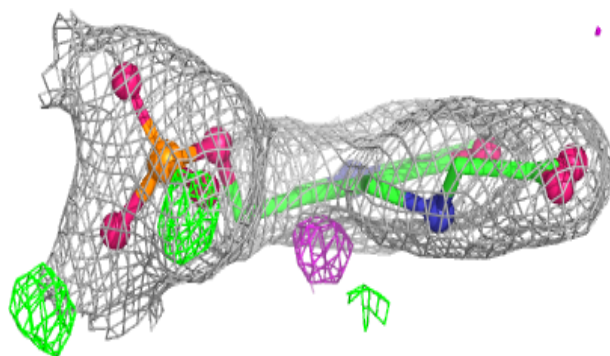
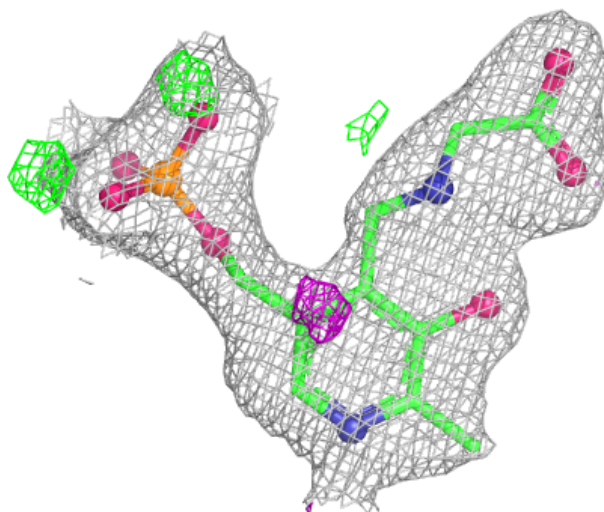
Electron density around PLG A 501:

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



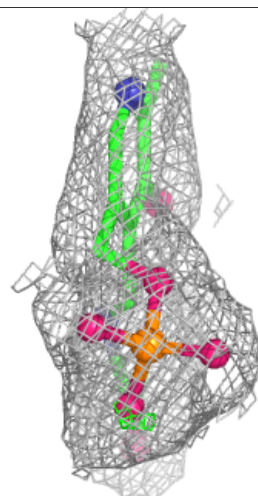
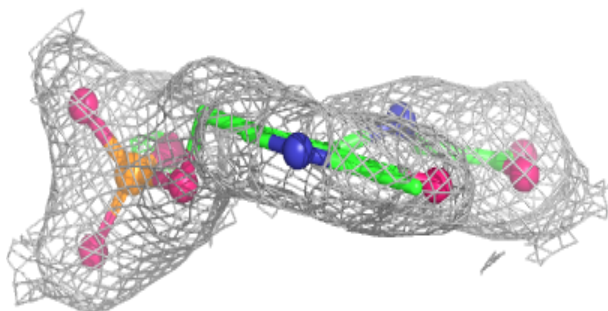
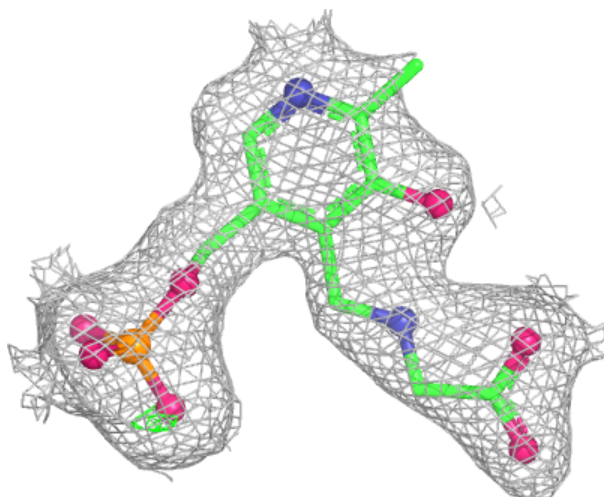
Electron density around PLG C 501:

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



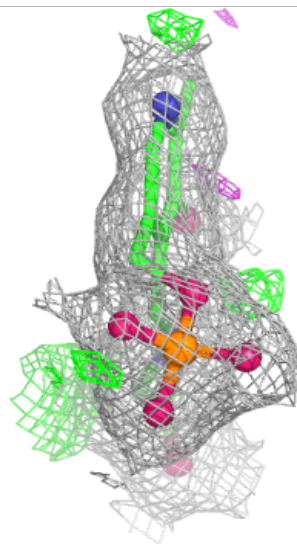
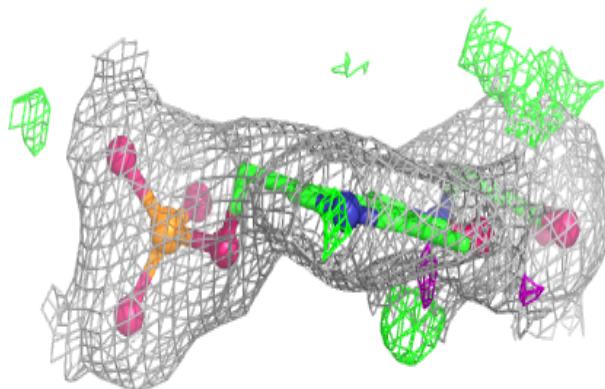
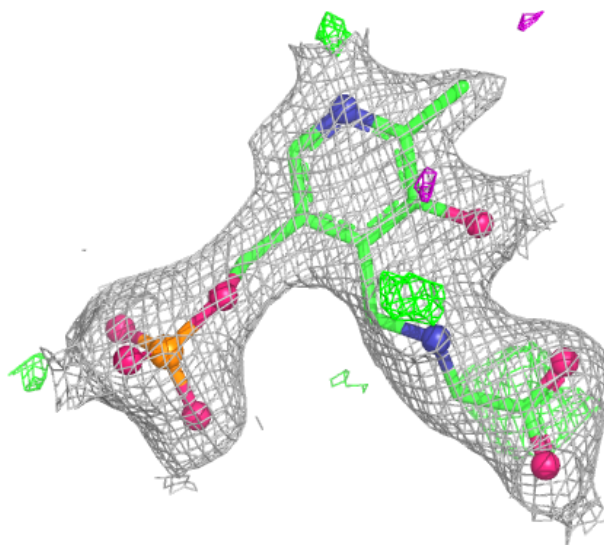
Electron density around PLG E 501:

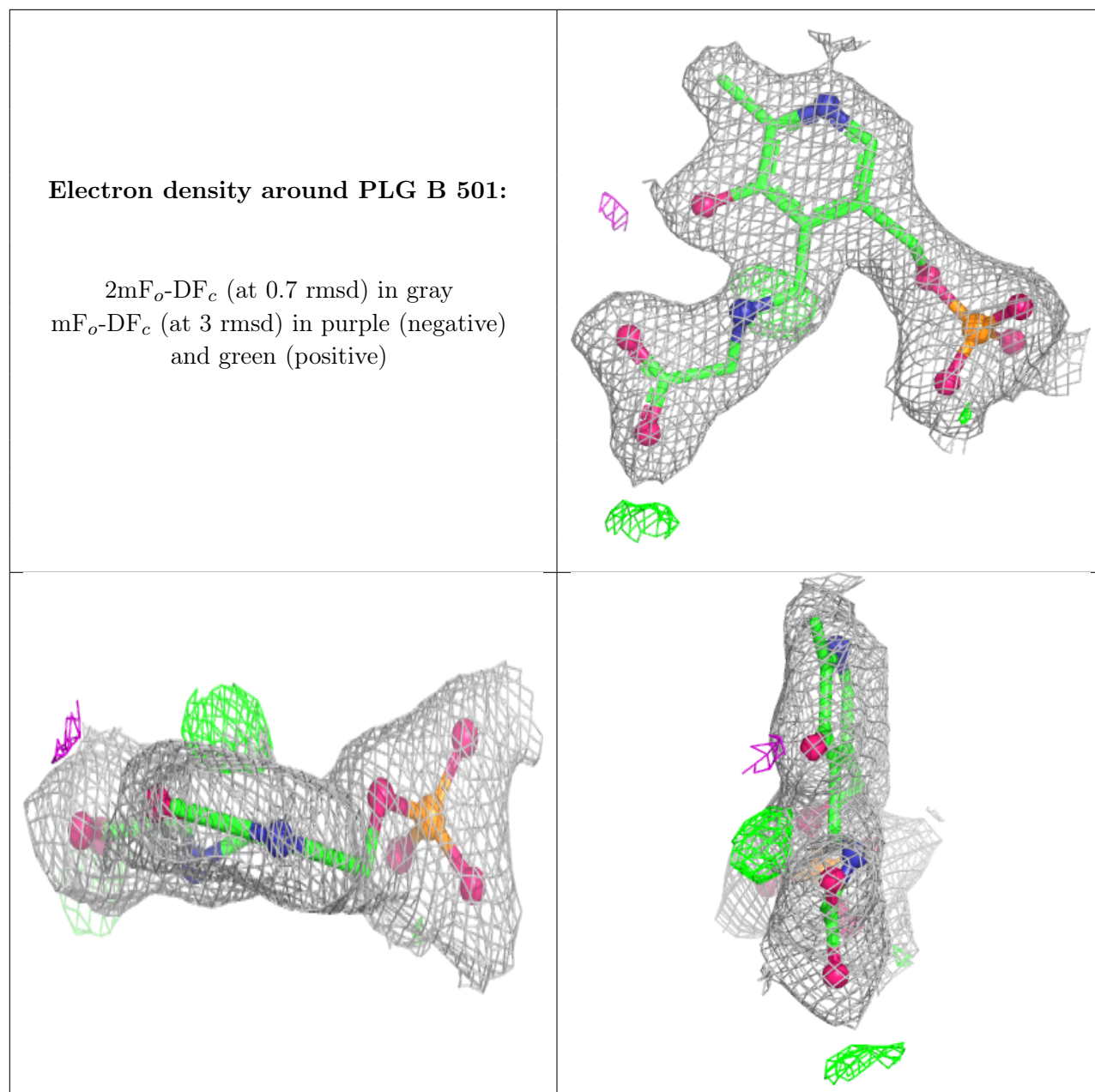
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around PLG 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)





6.5 Other polymers [i](#)

There are no such residues in this entry.