



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 05:18 AM UTC

PDB ID : 6SNL / pdb_00006snl
Title : (R)-selective amine transaminase from *Exophiala sideris*
Authors : Telzerow, A.; Hakansson, M.; Steiner, K.
Deposited on : 2019-08-26
Resolution : 3.13 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)
Xtriage (Phenix) : 2.0
EDS : 3.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
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) : 2.49

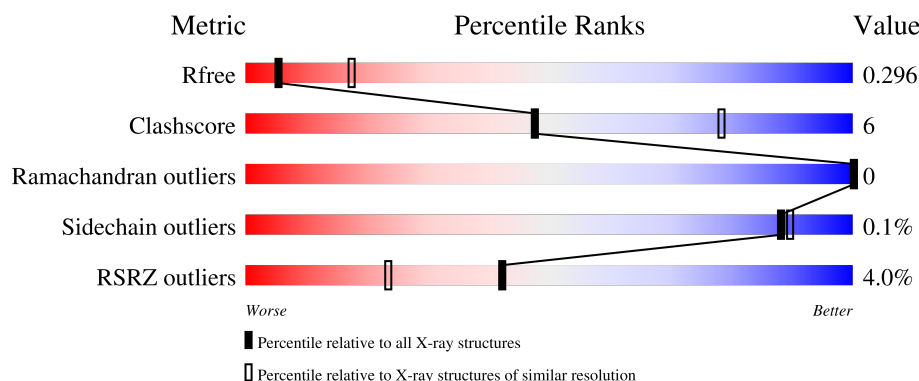
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.13 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}	180053	1816 (3.14-3.10)
Clashscore	190562	1906 (3.14-3.10)
Ramachandran outliers	187476	1802 (3.14-3.10)
Sidechain outliers	187428	1802 (3.14-3.10)
RSRZ outliers	180081	1816 (3.14-3.10)

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	347	4% 79% 13% 8%
1	B	347	4% 84% 7% 8%
1	C	347	2% 75% 17% 8%
1	D	347	3% 78% 14% 8%
1	E	347	3% 79% 13% 8%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	F	347	5% 81% 10% 8%

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 15064 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 amine transaminase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	318	Total	C	N	O	S	0	0	0
			2496	1603	417	464	12			
1	B	318	Total	C	N	O	S	0	0	0
			2489	1601	415	461	12			
1	C	318	Total	C	N	O	S	0	0	0
			2483	1595	415	461	12			
1	D	320	Total	C	N	O	S	0	0	0
			2502	1609	419	462	12			
1	E	319	Total	C	N	O	S	0	0	0
			2496	1603	416	465	12			
1	F	318	Total	C	N	O	S	0	1	0
			2464	1585	411	456	12			

There are 48 discrepancies between the modelled and reference sequences:

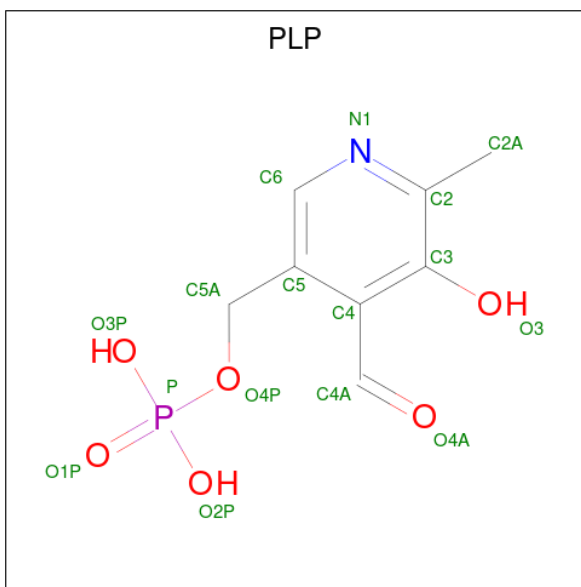
Chain	Residue	Modelled	Actual	Comment	Reference
A	340	LEU	-	expression tag	UNP A0A0D1XFW6
A	341	GLU	-	expression tag	UNP A0A0D1XFW6
A	342	HIS	-	expression tag	UNP A0A0D1XFW6
A	343	HIS	-	expression tag	UNP A0A0D1XFW6
A	344	HIS	-	expression tag	UNP A0A0D1XFW6
A	345	HIS	-	expression tag	UNP A0A0D1XFW6
A	346	HIS	-	expression tag	UNP A0A0D1XFW6
A	347	HIS	-	expression tag	UNP A0A0D1XFW6
B	340	LEU	-	expression tag	UNP A0A0D1XFW6
B	341	GLU	-	expression tag	UNP A0A0D1XFW6
B	342	HIS	-	expression tag	UNP A0A0D1XFW6
B	343	HIS	-	expression tag	UNP A0A0D1XFW6
B	344	HIS	-	expression tag	UNP A0A0D1XFW6
B	345	HIS	-	expression tag	UNP A0A0D1XFW6
B	346	HIS	-	expression tag	UNP A0A0D1XFW6
B	347	HIS	-	expression tag	UNP A0A0D1XFW6
C	340	LEU	-	expression tag	UNP A0A0D1XFW6

Continued on next page...

Continued from previous page...

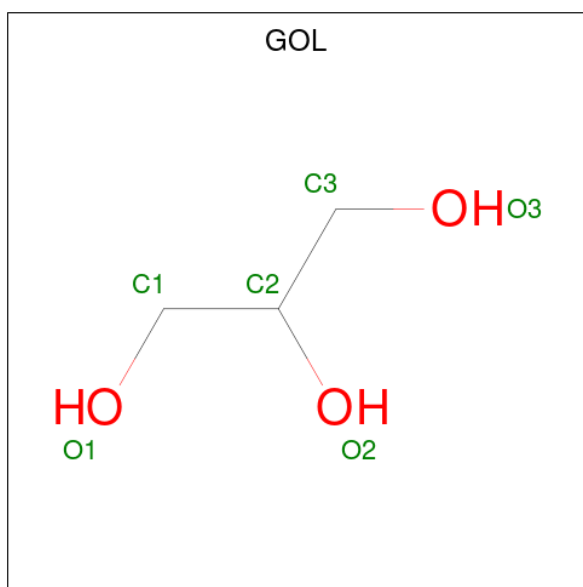
Chain	Residue	Modelled	Actual	Comment	Reference
C	341	GLU	-	expression tag	UNP A0A0D1XFW6
C	342	HIS	-	expression tag	UNP A0A0D1XFW6
C	343	HIS	-	expression tag	UNP A0A0D1XFW6
C	344	HIS	-	expression tag	UNP A0A0D1XFW6
C	345	HIS	-	expression tag	UNP A0A0D1XFW6
C	346	HIS	-	expression tag	UNP A0A0D1XFW6
C	347	HIS	-	expression tag	UNP A0A0D1XFW6
D	340	LEU	-	expression tag	UNP A0A0D1XFW6
D	341	GLU	-	expression tag	UNP A0A0D1XFW6
D	342	HIS	-	expression tag	UNP A0A0D1XFW6
D	343	HIS	-	expression tag	UNP A0A0D1XFW6
D	344	HIS	-	expression tag	UNP A0A0D1XFW6
D	345	HIS	-	expression tag	UNP A0A0D1XFW6
D	346	HIS	-	expression tag	UNP A0A0D1XFW6
D	347	HIS	-	expression tag	UNP A0A0D1XFW6
E	340	LEU	-	expression tag	UNP A0A0D1XFW6
E	341	GLU	-	expression tag	UNP A0A0D1XFW6
E	342	HIS	-	expression tag	UNP A0A0D1XFW6
E	343	HIS	-	expression tag	UNP A0A0D1XFW6
E	344	HIS	-	expression tag	UNP A0A0D1XFW6
E	345	HIS	-	expression tag	UNP A0A0D1XFW6
E	346	HIS	-	expression tag	UNP A0A0D1XFW6
E	347	HIS	-	expression tag	UNP A0A0D1XFW6
F	340	LEU	-	expression tag	UNP A0A0D1XFW6
F	341	GLU	-	expression tag	UNP A0A0D1XFW6
F	342	HIS	-	expression tag	UNP A0A0D1XFW6
F	343	HIS	-	expression tag	UNP A0A0D1XFW6
F	344	HIS	-	expression tag	UNP A0A0D1XFW6
F	345	HIS	-	expression tag	UNP A0A0D1XFW6
F	346	HIS	-	expression tag	UNP A0A0D1XFW6
F	347	HIS	-	expression tag	UNP A0A0D1XFW6

- Molecule 2 is PYRIDOXAL-5'-PHOSPHATE (CCD ID: PLP) (formula: $C_8H_{10}NO_6P$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	1
			15	8	1	5	1		
2	B	1	Total	C	N	O	P	0	1
			15	8	1	5	1		
2	C	1	Total	C	N	O	P	0	1
			15	8	1	5	1		
2	D	1	Total	C	N	O	P	0	1
			15	8	1	5	1		
2	E	1	Total	C	N	O	P	0	1
			15	8	1	5	1		
2	F	1	Total	C	N	O	P	0	1
			15	8	1	5	1		

- Molecule 3 is GLYCEROL (CCD ID: GOL) (formula: $C_3H_8O_3$).

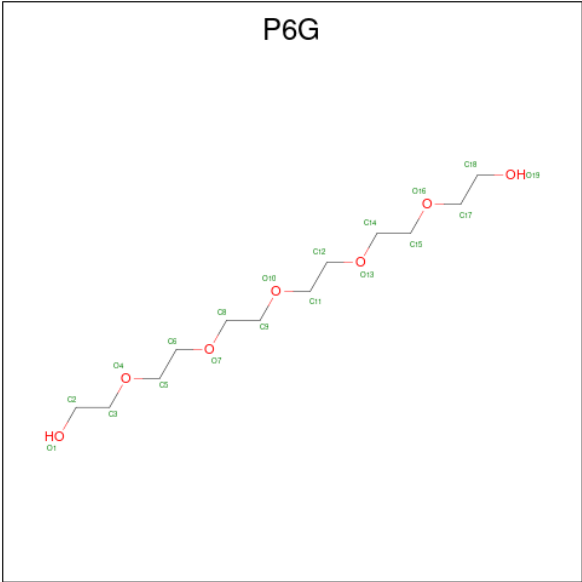


Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	0
			6	3	3		
3	B	1	Total	C	O	0	0
			6	3	3		

- Molecule 4 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	C	1	Total	Cl	0	0
			1	1		
4	F	1	Total	Cl	0	0
			1	1		

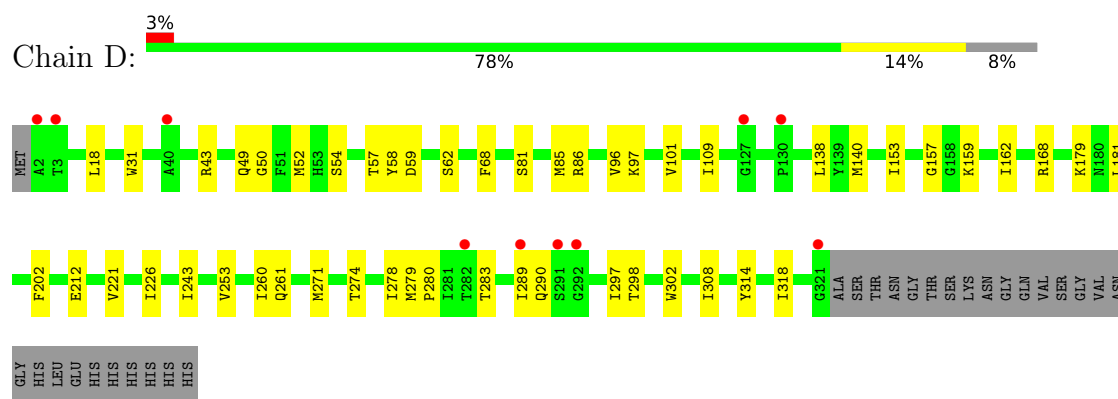
- Molecule 5 is HEXAETHYLENE GLYCOL (CCD ID: P6G) (formula: C₁₂H₂₆O₇).



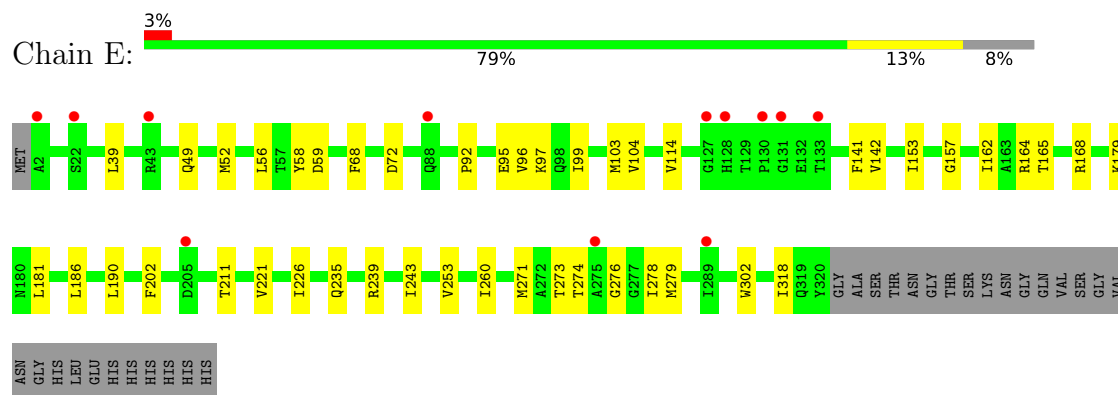
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	C	1	Total	C	O	0	0
			19	12	7		

- Molecule 6 is water.

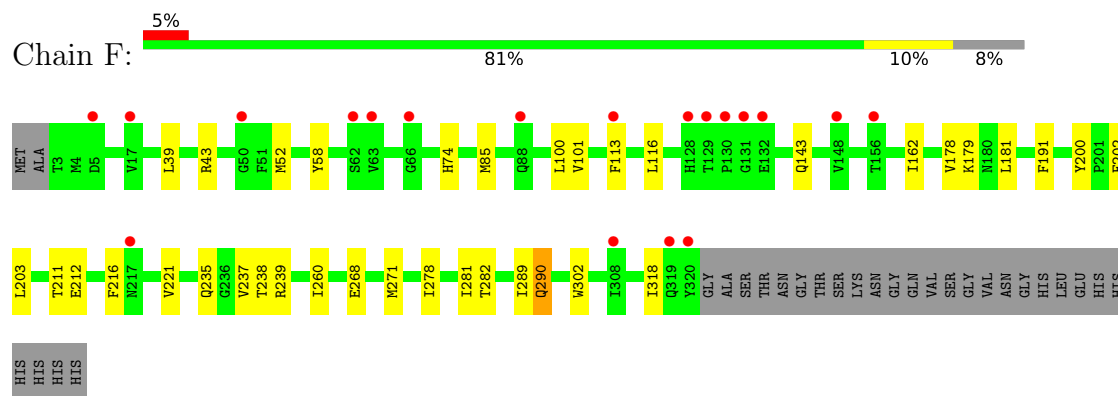
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	3	Total	O	0	0
			3	3		
6	B	1	Total	O	0	0
			1	1		
6	C	2	Total	O	0	0
			2	2		
6	E	4	Total	O	0	0
			4	4		
6	F	1	Total	O	0	0
			1	1		



- Molecule 1: amine transaminase



- Molecule 1: amine transaminase



4 Data and refinement statistics

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, α , β , γ	115.11Å 301.52Å 140.66Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	66.44 – 3.13 66.44 – 3.13	Depositor EDS
% Data completeness (in resolution range)	99.0 (66.44-3.13) 99.2 (66.44-3.13)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.66 (at 3.13Å)	Xtriage
Refinement program	PHENIX 1.14-3260	Depositor
R, R_{free}	0.262 , 0.289 0.267 , 0.296	Depositor DCC
R_{free} test set	2086 reflections (4.79%)	wwPDB-VP
Wilson B-factor (Å ²)	50.8	Xtriage
Anisotropy	0.616	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 19.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.51$, $\langle L^2 \rangle = 0.34$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.87	EDS
Total number of atoms	15064	wwPDB-VP
Average B, all atoms (Å ²)	50.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.65% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: GOL, PLP, P6G, CL

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	0.12	0/2555	0.31	0/3471
1	B	0.10	0/2548	0.32	0/3462
1	C	0.11	0/2542	0.32	0/3455
1	D	0.17	0/2561	0.33	0/3477
1	E	0.11	0/2555	0.30	0/3472
1	F	0.15	0/2526	0.35	2/3439 (0.1%)
All	All	0.13	0/15287	0.32	2/20776 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	F	290	GLN	N-CA-C	5.60	122.72	110.80
1	F	290	GLN	N-CA-CB	-5.23	101.65	110.49

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	2496	0	2472	33	0
1	B	2489	0	2461	17	0
1	C	2483	0	2446	41	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	D	2502	0	2492	33	0
1	E	2496	0	2459	27	0
1	F	2464	0	2407	26	0
2	A	15	0	7	2	0
2	B	15	0	7	2	0
2	C	15	0	7	1	0
2	D	15	0	7	1	0
2	E	15	0	7	1	0
2	F	15	0	7	1	0
3	A	6	0	8	0	0
3	B	6	0	8	0	0
4	C	1	0	0	0	0
4	F	1	0	0	0	0
5	C	19	0	26	3	0
6	A	3	0	0	0	0
6	B	1	0	0	0	0
6	C	2	0	0	0	0
6	E	4	0	0	0	0
6	F	1	0	0	0	0
All	All	15064	0	14821	166	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 6.

All (166) 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:F:235:GLN:HA	1:F:239:ARG:HH21	1.54	0.72
1:D:96:VAL:HG13	1:D:140:MET:HE1	1.70	0.72
1:D:68:PHE:CD2	1:D:318:ILE:HD11	2.25	0.71
1:C:157:GLY:HA3	1:C:282:THR:HG23	1.74	0.69
1:E:168:ARG:HG2	1:E:211:THR:HG21	1.74	0.69
1:F:101:VAL:HG13	1:F:318:ILE:HG23	1.78	0.66
1:A:212:GLU:HB3	1:A:233:VAL:HG13	1.79	0.65
1:E:72:ASP:OD1	1:E:97:LYS:NZ	2.29	0.64
1:C:90:PRO:HG2	1:C:138:LEU:HB2	1.81	0.62
1:E:114:VAL:HG22	1:E:142:VAL:HG13	1.80	0.62
1:A:229:PRO:HB2	1:A:233:VAL:HG21	1.82	0.61
1:E:162:ILE:HD12	1:E:260:ILE:HD11	1.81	0.61
1:C:95:GLU:O	1:C:99:ILE:HG12	2.01	0.61
1:A:58:TYR:CE1	1:A:179:LYS:HG2	2.35	0.61

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:243:ILE:HG12	1:D:253:VAL:HG11	1.83	0.60
1:E:58:TYR:CE1	1:E:179:LYS:HG2	2.36	0.60
1:A:294:VAL:HG13	1:A:299:LYS:HE3	1.82	0.59
1:A:179:LYS:NZ	2:A:401[B]:PLP:O3	2.33	0.59
1:C:58:TYR:CE1	1:C:179:LYS:HG2	2.37	0.59
1:D:162:ILE:HD12	1:D:260:ILE:HD11	1.83	0.59
1:B:238:THR:OG1	2:B:401[B]:PLP:O2P	2.21	0.58
1:C:47:MET:HE3	1:F:39:LEU:HD11	1.85	0.58
1:A:162:ILE:HD12	1:A:260:ILE:HD11	1.84	0.58
1:B:58:TYR:CE1	1:B:179:LYS:HG2	2.38	0.58
1:C:43:ARG:HB3	1:F:43:ARG:HB3	1.86	0.58
1:C:103:MET:HE2	1:C:142:VAL:HG23	1.86	0.57
1:D:31:TRP:HB3	1:D:140:MET:HG3	1.86	0.57
1:E:186:LEU:O	1:E:190:LEU:HD12	2.03	0.57
1:A:97:LYS:O	1:A:101:VAL:HG23	2.05	0.57
1:B:100:LEU:HD11	1:B:116:LEU:HD21	1.85	0.57
1:D:274:THR:OG1	2:D:401[B]:PLP:O3P	2.23	0.56
1:F:100:LEU:HD11	1:F:116:LEU:HD21	1.86	0.56
1:E:92:PRO:O	1:E:96:VAL:HG23	2.06	0.56
1:F:58:TYR:CE1	1:F:179:LYS:HG2	2.40	0.56
1:D:58:TYR:CE1	1:D:179:LYS:HG2	2.41	0.55
1:C:100:LEU:HD11	1:C:116:LEU:HD21	1.87	0.55
1:E:273:THR:HG23	1:E:276:GLY:H	1.72	0.54
1:F:202:PHE:HE1	1:F:271:MET:HE2	1.72	0.54
1:A:162:ILE:HD13	1:A:202:PHE:HB2	1.90	0.54
1:F:221:VAL:HB	1:F:268:GLU:HB2	1.90	0.54
1:C:92:PRO:O	1:C:96:VAL:HG23	2.08	0.54
1:A:59:ASP:HA	1:A:179:LYS:HD3	1.89	0.53
1:C:114:VAL:HG22	1:C:142:VAL:HG13	1.90	0.53
1:D:159:LYS:HG2	1:D:283:THR:HB	1.91	0.53
1:A:90:PRO:HG2	1:A:138:LEU:HB2	1.90	0.53
1:A:49:GLN:HA	1:A:52:MET:HB2	1.91	0.53
1:A:68:PHE:CD2	1:A:318:ILE:HD11	2.44	0.53
1:D:162:ILE:HD13	1:D:202:PHE:HB2	1.90	0.53
1:E:235:GLN:HA	1:E:239:ARG:HH21	1.73	0.52
1:F:289:ILE:HD12	1:F:290:GLN:HB2	1.92	0.52
1:E:59:ASP:HA	1:E:179:LYS:HD3	1.91	0.52
1:C:181:LEU:HD22	1:F:52:MET:O	2.10	0.51
1:C:18:LEU:HD11	1:C:109:ILE:HA	1.91	0.51
1:D:97:LYS:O	1:D:101:VAL:HG23	2.11	0.51
1:A:195:ASP:OD2	1:D:86:ARG:NH2	2.43	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:103:MET:HE2	1:E:142:VAL:HG23	1.93	0.51
1:E:162:ILE:HD13	1:E:202:PHE:HB2	1.93	0.51
1:F:203:LEU:O	1:F:211:THR:OG1	2.29	0.51
1:C:271:MET:HB2	1:C:279:MET:HE3	1.92	0.51
1:D:168:ARG:NH2	1:D:212:GLU:OE2	2.41	0.50
1:C:296:PRO:HB2	5:C:403:P6G:H121	1.93	0.50
1:C:153:ILE:O	1:C:157:GLY:N	2.44	0.50
1:C:300:LYS:HE3	5:C:403:P6G:H141	1.93	0.50
1:D:57:THR:HG23	1:D:85:MET:SD	2.51	0.50
1:A:79:GLU:OE1	1:A:93:ARG:NH2	2.45	0.50
1:A:93:ARG:O	1:A:97:LYS:HG3	2.11	0.50
1:A:274:THR:HG23	2:A:401[B]:PLP:O2P	2.11	0.50
1:E:95:GLU:O	1:E:99:ILE:HG12	2.12	0.50
1:C:300:LYS:NZ	5:C:403:P6G:H81	2.27	0.50
1:A:168:ARG:NH2	1:A:212:GLU:OE2	2.43	0.49
1:A:271:MET:HB2	1:A:279:MET:HE3	1.95	0.49
1:D:18:LEU:HD11	1:D:109:ILE:HG12	1.94	0.49
1:C:59:ASP:HA	1:C:179:LYS:HD3	1.95	0.49
1:C:162:ILE:HG13	1:C:284:LEU:HD11	1.94	0.49
1:B:95:GLU:O	1:B:99:ILE:HG13	2.13	0.49
1:C:274:THR:N	2:C:401[B]:PLP:O2P	2.42	0.48
1:A:203:LEU:O	1:A:211:THR:OG1	2.30	0.48
1:C:119:THR:HG23	1:C:137:HIS:HB2	1.96	0.48
1:C:221:VAL:HG22	1:C:226:ILE:HG12	1.94	0.48
1:C:125:VAL:HG21	1:F:191:PHE:CE1	2.49	0.48
1:E:243:ILE:HG12	1:E:253:VAL:HG11	1.95	0.48
1:A:181:LEU:HD22	1:D:52:MET:O	2.13	0.48
1:F:85:MET:HE3	1:F:178:VAL:HG11	1.95	0.47
1:C:85:MET:HE3	1:C:178:VAL:HG11	1.95	0.47
1:C:146:VAL:O	1:C:275:ALA:O	2.32	0.47
1:B:271:MET:HE3	1:B:279:MET:HE3	1.96	0.47
1:C:165:THR:HG22	1:C:192:GLU:OE1	2.14	0.47
1:C:162:ILE:HD12	1:C:264:TYR:CZ	2.50	0.47
1:F:162:ILE:HD13	1:F:202:PHE:HB2	1.96	0.47
1:B:162:ILE:HD13	1:B:260:ILE:HD11	1.97	0.46
1:D:138:LEU:HD21	1:D:140:MET:HE3	1.98	0.46
1:A:63:VAL:HG21	1:A:318:ILE:HD12	1.97	0.46
1:E:278:ILE:HB	1:E:302:TRP:CD1	2.51	0.46
1:F:200:TYR:CB	1:F:271:MET:HE1	2.46	0.46
1:A:56:LEU:HD11	1:A:181:LEU:HD12	1.98	0.46
1:A:273:THR:HG23	1:A:276:GLY:H	1.81	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:63:VAL:HB	1:C:112:ALA:HB3	1.98	0.46
1:E:104:VAL:HG22	1:E:142:VAL:HG11	1.97	0.46
1:A:157:GLY:HA3	1:A:282:THR:HG23	1.98	0.46
1:D:221:VAL:HG21	1:D:297:ILE:HG21	1.97	0.46
1:A:282:THR:C	1:A:289:ILE:HG12	2.41	0.45
1:C:4:MET:HA	1:C:302:TRP:CH2	2.51	0.45
1:F:162:ILE:HD12	1:F:260:ILE:HD11	1.98	0.45
1:C:278:ILE:HB	1:C:302:TRP:CD1	2.51	0.45
1:E:274:THR:OG1	2:E:401[B]:PLP:O3P	2.29	0.45
1:D:62:SER:HB3	1:D:274:THR:HG22	1.98	0.45
1:F:278:ILE:HD12	1:F:302:TRP:HA	1.97	0.45
1:C:162:ILE:HD13	1:C:260:ILE:HD11	1.98	0.45
1:B:162:ILE:HD12	1:B:264:TYR:CZ	2.52	0.45
1:A:86:ARG:HH21	1:C:92:PRO:HG3	1.82	0.44
1:C:104:VAL:HG22	1:C:142:VAL:HG11	1.99	0.44
1:D:308:ILE:HB	1:D:314:TYR:CD2	2.51	0.44
1:E:39:LEU:HD13	1:E:141:PHE:HB2	1.98	0.44
1:A:149:MET:SD	1:A:279:MET:HB3	2.57	0.44
1:E:221:VAL:HG22	1:E:226:ILE:HG12	2.00	0.44
1:F:74:HIS:NE2	1:F:237:VAL:HG21	2.33	0.44
1:A:43:ARG:HB3	1:D:43:ARG:HB3	1.99	0.44
1:E:153:ILE:O	1:E:157:GLY:N	2.49	0.44
1:D:271:MET:HE3	1:D:279:MET:HE3	2.00	0.44
1:E:49:GLN:HA	1:E:52:MET:HB2	2.00	0.44
1:C:149:MET:SD	1:C:279:MET:HB3	2.58	0.44
1:B:59:ASP:HA	1:B:179:LYS:HD3	1.99	0.44
1:B:75:ILE:HD12	1:B:97:LYS:HG2	2.00	0.43
1:A:59:ASP:OD1	1:A:77:ARG:NH2	2.37	0.43
1:A:92:PRO:O	1:A:96:VAL:HG23	2.18	0.43
1:C:211:THR:OG1	1:C:212:GLU:N	2.51	0.43
1:B:161:ILE:HD13	1:B:196:ARG:HD3	2.01	0.43
1:C:161:ILE:HD13	1:C:196:ARG:HD3	2.00	0.43
1:B:149:MET:HE1	1:B:280:PRO:O	2.19	0.43
1:C:282:THR:C	1:C:289:ILE:HG12	2.43	0.43
1:F:235:GLN:HA	1:F:239:ARG:NH2	2.27	0.43
1:D:261:GLN:OE1	1:E:164:ARG:HD2	2.19	0.43
1:E:68:PHE:CD2	1:E:318:ILE:HD11	2.53	0.43
1:C:52:MET:O	1:F:181:LEU:HD22	2.19	0.43
1:C:58:TYR:O	1:C:179:LYS:HB3	2.18	0.43
1:B:87:LEU:HD21	1:B:120:ARG:HA	2.00	0.43
1:B:179:LYS:NZ	2:B:401[B]:PLP:O3	2.47	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:59:ASP:HA	1:D:179:LYS:HD3	2.01	0.42
1:F:100:LEU:HD21	1:F:116:LEU:HD21	2.01	0.42
1:E:271:MET:HB2	1:E:279:MET:HE3	2.00	0.42
1:B:93:ARG:O	1:B:96:VAL:HG22	2.19	0.42
1:F:238:THR:OG1	2:F:401[B]:PLP:O2P	2.31	0.42
1:D:68:PHE:HD2	1:D:318:ILE:HD11	1.82	0.42
1:A:63:VAL:CG1	1:A:112:ALA:HB3	2.50	0.42
1:B:243:ILE:HG12	1:B:253:VAL:HG11	2.01	0.42
1:B:271:MET:HB2	1:B:279:MET:HE3	2.01	0.42
1:C:243:ILE:HG12	1:C:253:VAL:HG11	2.02	0.42
1:F:271:MET:HE3	1:F:281:ILE:HG13	2.01	0.42
1:D:289:ILE:HG23	1:D:290:GLN:N	2.35	0.42
1:A:52:MET:O	1:D:181:LEU:HD22	2.20	0.42
1:C:149:MET:HE1	1:C:280:PRO:O	2.19	0.41
1:E:164:ARG:HG3	1:E:165:THR:HG23	2.02	0.41
1:F:282:THR:HA	1:F:289:ILE:HG12	2.02	0.41
1:A:3:THR:N	1:A:6:GLU:OE1	2.54	0.41
1:D:49:GLN:HA	1:D:52:MET:HB2	2.02	0.41
1:E:58:TYR:O	1:E:179:LYS:HB3	2.20	0.41
1:E:56:LEU:HD11	1:E:181:LEU:HD12	2.02	0.41
1:F:113:PHE:N	1:F:143:GLN:O	2.32	0.41
1:D:153:ILE:O	1:D:157:GLY:N	2.52	0.41
1:D:57:THR:HG21	1:D:81:SER:HB3	2.04	0.41
1:D:226:ILE:HB	1:D:253:VAL:HG22	2.02	0.40
1:D:50:GLY:O	1:D:54:SER:HA	2.22	0.40
1:D:278:ILE:HB	1:D:302:TRP:CD1	2.55	0.40
1:B:149:MET:SD	1:B:279:MET:HB3	2.62	0.40
1:D:280:PRO:HB3	1:D:298:THR:HG21	2.04	0.40
1:F:212:GLU:HB2	1:F:216:PHE:O	2.21	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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	316/347 (91%)	306 (97%)	10 (3%)	0	100	100
1	B	316/347 (91%)	305 (96%)	11 (4%)	0	100	100
1	C	316/347 (91%)	302 (96%)	14 (4%)	0	100	100
1	D	318/347 (92%)	309 (97%)	9 (3%)	0	100	100
1	E	317/347 (91%)	308 (97%)	9 (3%)	0	100	100
1	F	317/347 (91%)	304 (96%)	13 (4%)	0	100	100
All	All	1900/2082 (91%)	1834 (96%)	66 (4%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains ⓘ

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	265/290 (91%)	264 (100%)	1 (0%)	84	85
1	B	262/290 (90%)	262 (100%)	0	100	100
1	C	261/290 (90%)	261 (100%)	0	100	100
1	D	265/290 (91%)	265 (100%)	0	100	100
1	E	263/290 (91%)	263 (100%)	0	100	100
1	F	256/290 (88%)	256 (100%)	0	100	100
All	All	1572/1740 (90%)	1571 (100%)	1 (0%)	88	90

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

Mol	Chain	Res	Type
1	A	274	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (10) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	49	GLN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	261	GLN
1	B	49	GLN
1	B	261	GLN
1	C	53	HIS
1	D	49	GLN
1	E	256	GLN
1	E	309	HIS
1	E	319	GLN
1	F	136	ASN

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](#)

Of 11 ligands modelled in this entry, 2 are monoatomic - leaving 9 for Mogul analysis.

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	PLP	D	401[B]	1	15,15,16	2.46	4 (26%)	21,22,23	1.51	3 (14%)
3	GOL	A	402	-	5,5,5	0.94	0	5,5,5	1.06	0
2	PLP	F	401[B]	1	15,15,16	2.50	4 (26%)	21,22,23	1.54	3 (14%)
2	PLP	B	401[B]	1	15,15,16	2.43	5 (33%)	21,22,23	1.54	3 (14%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	GOL	B	402	-	5,5,5	0.93	0	5,5,5	1.07	0
2	PLP	E	401[B]	1	15,15,16	2.49	6 (40%)	21,22,23	1.49	3 (14%)
2	PLP	C	401[B]	1	15,15,16	2.47	4 (26%)	21,22,23	1.61	4 (19%)
5	P6G	C	403	-	18,18,18	0.60	0	17,17,17	0.56	0
2	PLP	A	401[B]	1	15,15,16	2.46	4 (26%)	21,22,23	1.53	4 (19%)

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	PLP	D	401[B]	1	-	0/6/6/8	0/1/1/1
3	GOL	A	402	-	-	0/4/4/4	-
2	PLP	F	401[B]	1	-	3/6/6/8	0/1/1/1
2	PLP	B	401[B]	1	-	0/6/6/8	0/1/1/1
3	GOL	B	402	-	-	4/4/4/4	-
2	PLP	E	401[B]	1	-	0/6/6/8	0/1/1/1
2	PLP	C	401[B]	1	-	2/6/6/8	0/1/1/1
5	P6G	C	403	-	-	9/16/16/16	-
2	PLP	A	401[B]	1	-	0/6/6/8	0/1/1/1

All (27) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	F	401[B]	PLP	P-O4P	8.04	1.85	1.60
2	C	401[B]	PLP	P-O4P	7.87	1.85	1.60
2	E	401[B]	PLP	P-O4P	7.80	1.84	1.60
2	A	401[B]	PLP	P-O4P	7.73	1.84	1.60
2	D	401[B]	PLP	P-O4P	7.69	1.84	1.60
2	B	401[B]	PLP	P-O4P	7.61	1.84	1.60
2	C	401[B]	PLP	C6-C5	3.06	1.43	1.37
2	D	401[B]	PLP	C6-C5	2.81	1.43	1.37
2	E	401[B]	PLP	C6-C5	2.79	1.43	1.37
2	F	401[B]	PLP	C6-C5	2.77	1.43	1.37
2	A	401[B]	PLP	C6-C5	2.67	1.43	1.37
2	B	401[B]	PLP	C6-C5	2.63	1.42	1.37
2	D	401[B]	PLP	O4P-C5A	-2.57	1.35	1.44
2	A	401[B]	PLP	O4P-C5A	-2.53	1.35	1.44
2	E	401[B]	PLP	O4P-C5A	-2.49	1.35	1.44
2	C	401[B]	PLP	O4P-C5A	-2.43	1.35	1.44

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	F	401[B]	PLP	O4P-C5A	-2.38	1.36	1.44
2	B	401[B]	PLP	O4P-C5A	-2.25	1.36	1.44
2	A	401[B]	PLP	C4A-C4	-2.21	1.47	1.51
2	B	401[B]	PLP	C4A-C4	-2.20	1.47	1.51
2	E	401[B]	PLP	C2-N1	2.19	1.37	1.33
2	B	401[B]	PLP	C2-N1	2.15	1.37	1.33
2	E	401[B]	PLP	C4A-C4	-2.13	1.47	1.51
2	F	401[B]	PLP	C4A-C4	-2.12	1.47	1.51
2	C	401[B]	PLP	C3-C2	-2.08	1.38	1.41
2	D	401[B]	PLP	C4A-C4	-2.04	1.47	1.51
2	E	401[B]	PLP	C3-C2	-2.01	1.38	1.41

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	401[B]	PLP	O2P-P-O4P	-4.21	95.68	106.67
2	E	401[B]	PLP	O3P-P-O4P	-4.07	96.05	106.67
2	B	401[B]	PLP	O4P-P-O1P	-3.85	96.04	106.44
2	F	401[B]	PLP	O4P-P-O1P	-3.73	96.35	106.44
2	D	401[B]	PLP	O4P-P-O1P	-3.73	96.35	106.44
2	C	401[B]	PLP	O4P-P-O1P	-3.48	97.04	106.44
2	C	401[B]	PLP	O3P-P-O4P	-3.37	97.87	106.67
2	F	401[B]	PLP	O3P-P-O4P	-2.99	98.87	106.67
2	B	401[B]	PLP	O3P-P-O4P	-2.93	99.03	106.67
2	D	401[B]	PLP	O3P-P-O4P	-2.90	99.11	106.67
2	B	401[B]	PLP	O3P-P-O2P	2.89	118.64	107.80
2	F	401[B]	PLP	O3P-P-O2P	2.84	118.45	107.80
2	A	401[B]	PLP	O3P-P-O4P	-2.84	99.27	106.67
2	D	401[B]	PLP	O3P-P-O2P	2.83	118.41	107.80
2	E	401[B]	PLP	O4P-P-O1P	-2.70	99.15	106.44
2	C	401[B]	PLP	O3P-P-O2P	2.68	117.86	107.80
2	E	401[B]	PLP	O3P-P-O2P	2.58	117.49	107.80
2	A	401[B]	PLP	O3P-P-O2P	2.28	116.34	107.80
2	C	401[B]	PLP	C4A-C4-C5	2.21	123.22	120.94
2	A	401[B]	PLP	O3P-P-O1P	2.05	118.83	110.83

There are no chirality outliers.

All (18) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	C	401[B]	PLP	C4-C5-C5A-O4P
2	C	401[B]	PLP	C6-C5-C5A-O4P

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
2	F	401[B]	PLP	C5A-O4P-P-O1P
2	F	401[B]	PLP	C5A-O4P-P-O2P
2	F	401[B]	PLP	C5A-O4P-P-O3P
3	B	402	GOL	O1-C1-C2-C3
5	C	403	P6G	O1-C2-C3-O4
3	B	402	GOL	C1-C2-C3-O3
3	B	402	GOL	O1-C1-C2-O2
3	B	402	GOL	O2-C2-C3-O3
5	C	403	P6G	C14-C15-O16-C17
5	C	403	P6G	O16-C17-C18-O19
5	C	403	P6G	O10-C11-C12-O13
5	C	403	P6G	C9-C8-O7-C6
5	C	403	P6G	C11-C12-O13-C14
5	C	403	P6G	C2-C3-O4-C5
5	C	403	P6G	C6-C5-O4-C3
5	C	403	P6G	C15-C14-O13-C12

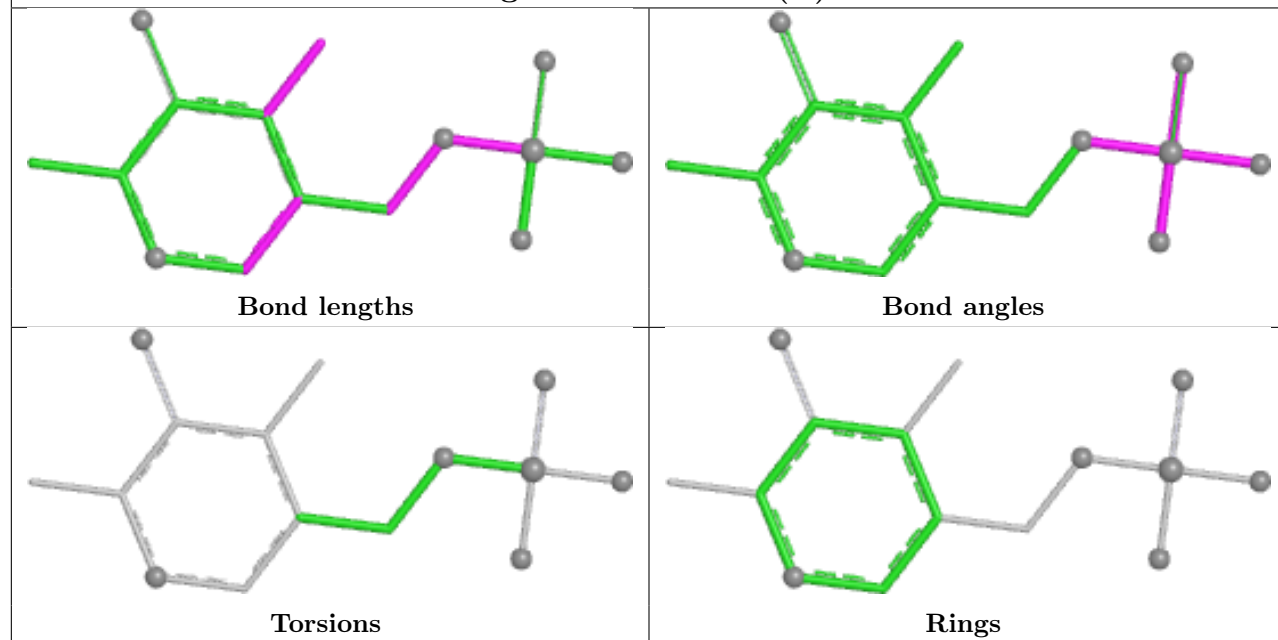
There are no ring outliers.

7 monomers are involved in 11 short contacts:

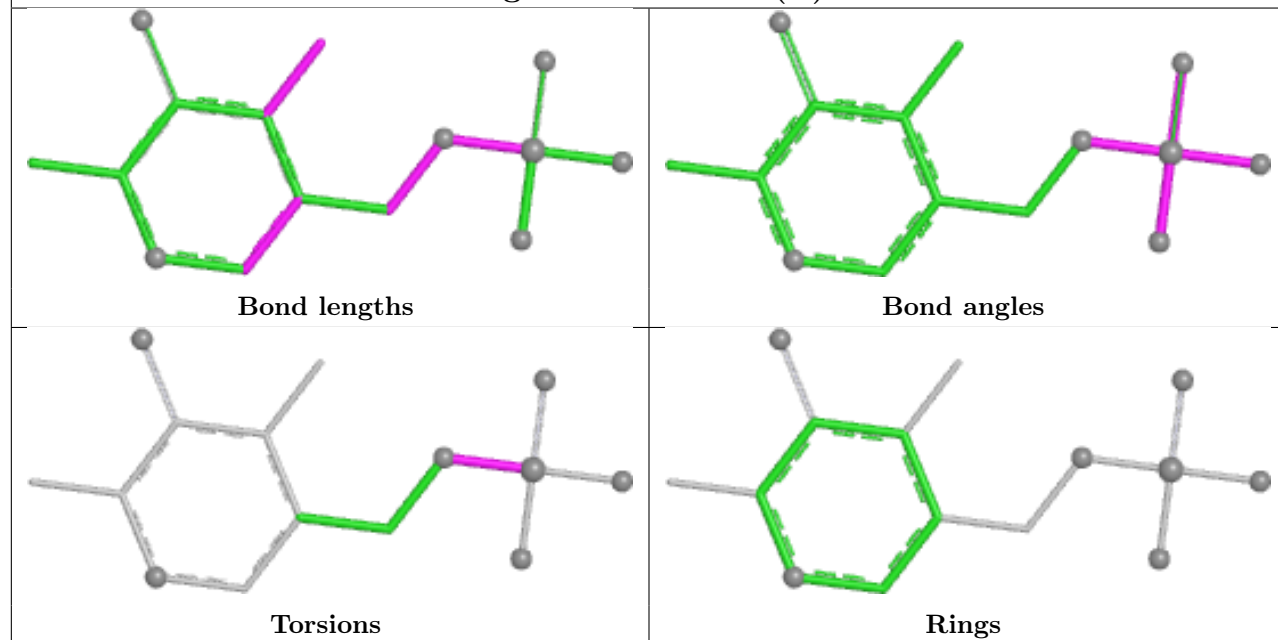
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	D	401[B]	PLP	1	0
2	F	401[B]	PLP	1	0
2	B	401[B]	PLP	2	0
2	E	401[B]	PLP	1	0
2	C	401[B]	PLP	1	0
5	C	403	P6G	3	0
2	A	401[B]	PLP	2	0

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.

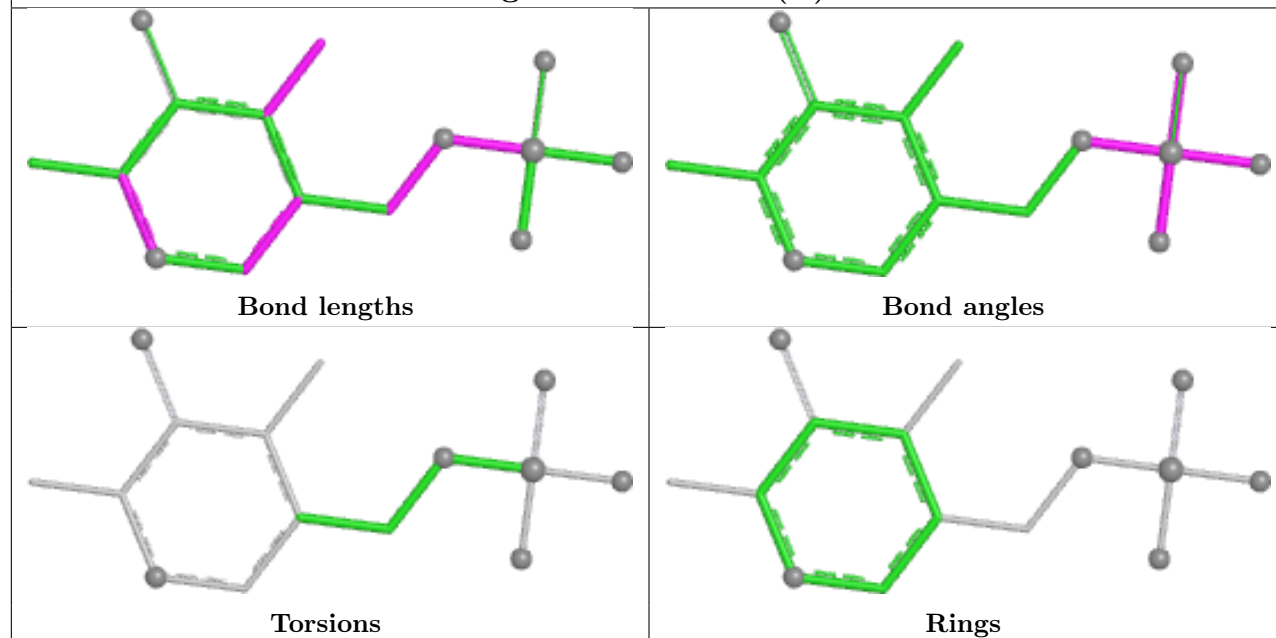
Ligand PLP D 401 (B)



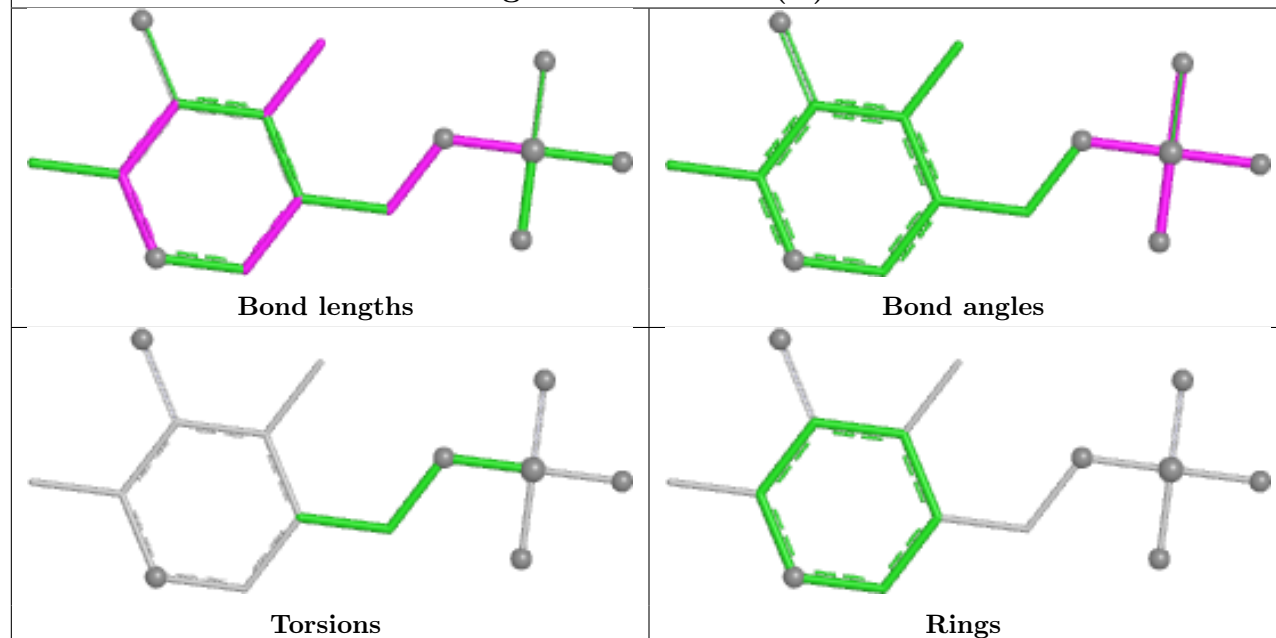
Ligand PLP F 401 (B)

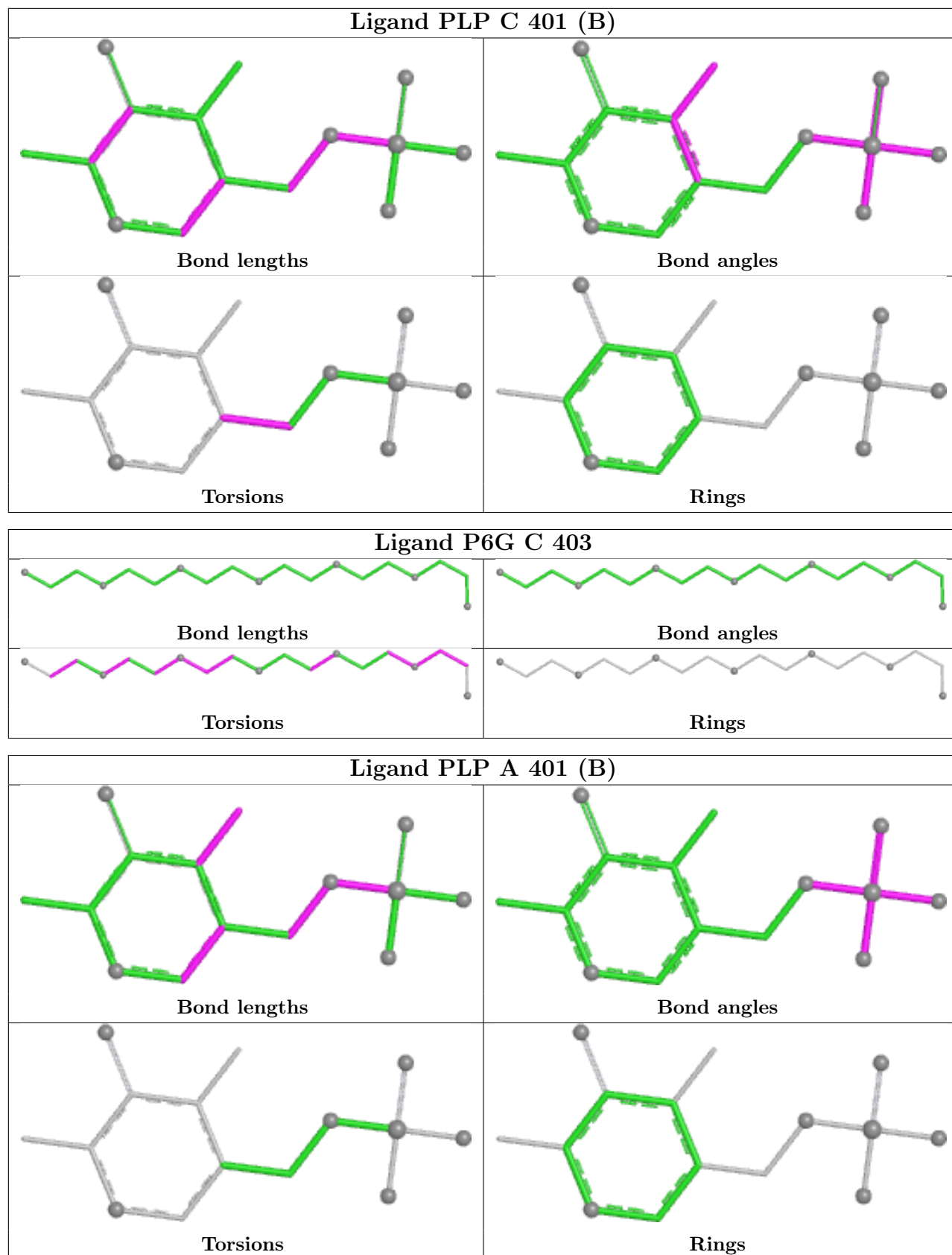


Ligand PLP B 401 (B)



Ligand PLP E 401 (B)





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	318/347 (91%)	0.87	15 (4%)	36 19	39, 50, 60, 75	0
1	B	318/347 (91%)	0.77	13 (4%)	41 23	42, 48, 59, 90	0
1	C	318/347 (91%)	0.83	8 (2%)	58 37	40, 47, 56, 65	0
1	D	320/347 (92%)	0.84	10 (3%)	51 31	40, 50, 64, 78	0
1	E	319/347 (91%)	0.66	12 (3%)	44 25	38, 45, 57, 77	0
1	F	318/347 (91%)	0.94	19 (5%)	27 15	29, 55, 73, 90	1 (0%)
All	All	1911/2082 (91%)	0.82	77 (4%)	42 23	29, 49, 65, 90	1 (0%)

All (77) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	E	133	THR	4.0
1	E	130	PRO	3.6
1	E	289	ILE	3.5
1	B	130	PRO	3.3
1	B	3	THR	3.2
1	F	131	GLY	3.2
1	F	130	PRO	3.2
1	F	132	GLU	3.2
1	A	274	THR	3.2
1	B	129	THR	3.1
1	F	319	GLN	3.1
1	A	276	GLY	3.1
1	F	50	GLY	3.1
1	C	199	THR	3.0
1	E	127	GLY	2.9
1	D	291	SER	2.9
1	E	128	HIS	2.9
1	A	127	GLY	2.9
1	E	131	GLY	2.8

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	A	3	THR	2.8
1	D	127	GLY	2.8
1	D	3	THR	2.8
1	F	156	THR	2.8
1	A	275	ALA	2.7
1	D	2	ALA	2.7
1	B	277	GLY	2.7
1	C	122	LEU	2.6
1	F	217[A]	ASN	2.6
1	C	289	ILE	2.4
1	F	129	THR	2.4
1	A	121	GLY	2.4
1	A	152	ASP	2.4
1	E	205	ASP	2.4
1	F	17	VAL	2.4
1	F	148	VAL	2.3
1	B	131	GLY	2.3
1	F	320	TYR	2.3
1	D	130	PRO	2.3
1	A	131	GLY	2.3
1	A	206	GLY	2.3
1	A	205	ASP	2.3
1	C	88	GLN	2.3
1	D	40	ALA	2.3
1	F	128	HIS	2.3
1	F	62	SER	2.3
1	D	292	GLY	2.2
1	C	274	THR	2.2
1	E	88	GLN	2.2
1	B	303	ASP	2.2
1	C	286	ASP	2.2
1	D	289	ILE	2.2
1	F	63	VAL	2.2
1	E	2	ALA	2.2
1	D	282	THR	2.2
1	F	308	ILE	2.2
1	D	321	GLY	2.2
1	B	125	VAL	2.1
1	E	275	ALA	2.1
1	B	24	PRO	2.1
1	E	43	ARG	2.1
1	F	5	ASP	2.1

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	C	27	LYS	2.1
1	C	90	PRO	2.1
1	F	66	GLY	2.1
1	A	207	ASP	2.1
1	B	128	HIS	2.1
1	F	88	GLN	2.1
1	A	62	SER	2.1
1	B	72	ASP	2.1
1	B	127	GLY	2.1
1	A	41	GLU	2.1
1	A	316	PHE	2.1
1	E	22	SER	2.0
1	B	272	ALA	2.0
1	B	195	ASP	2.0
1	A	34	GLY	2.0
1	F	113	PHE	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 [i](#)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
3	GOL	A	402	6/6	0.79	0.19	41,42,42,43	0
5	P6G	C	403	19/19	0.80	0.19	53,57,59,61	0
3	GOL	B	402	6/6	0.82	0.17	47,49,51,54	0
4	CL	C	402	1/1	0.84	0.11	46,46,46,46	0
2	PLP	F	401[B]	15/16	0.87	0.14	45,49,52,53	0
2	PLP	A	401[B]	15/16	0.90	0.13	45,46,49,50	0
2	PLP	E	401[B]	15/16	0.91	0.12	40,41,42,43	0

Continued on next page...

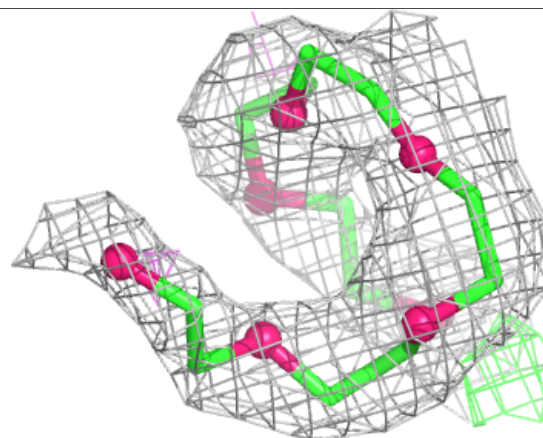
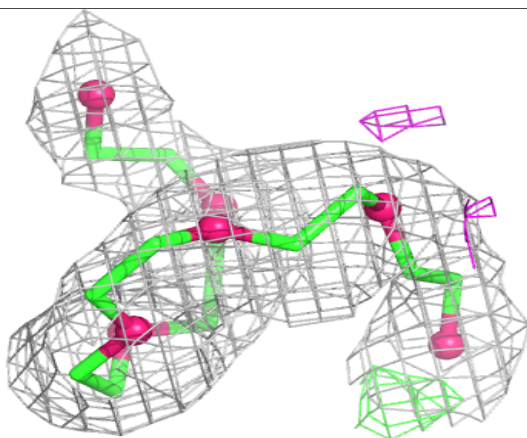
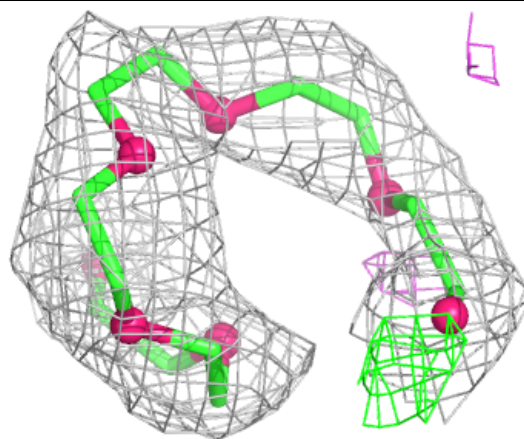
Continued from previous page...

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	PLP	D	401[B]	15/16	0.91	0.11	43,46,48,48	0
2	PLP	C	401[B]	15/16	0.93	0.11	43,44,45,46	0
2	PLP	B	401[B]	15/16	0.93	0.10	44,45,46,47	0
4	CL	F	402	1/1	0.97	0.14	50,50,50,50	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.

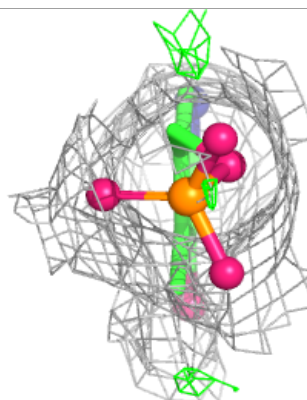
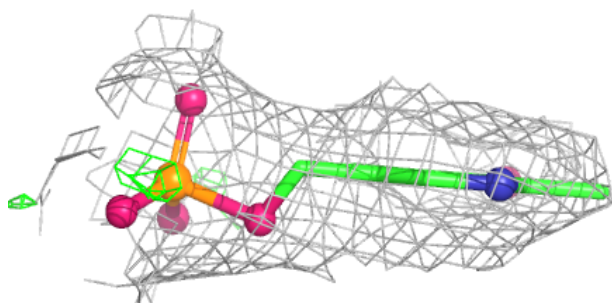
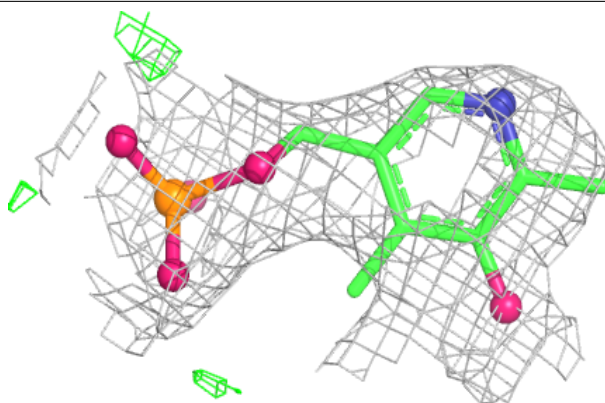
Electron density around P6G C 403:

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

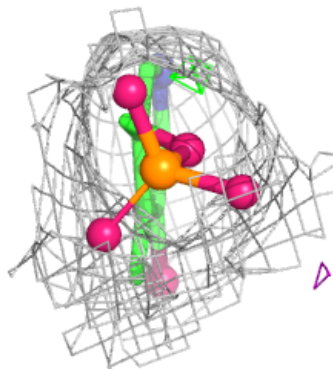
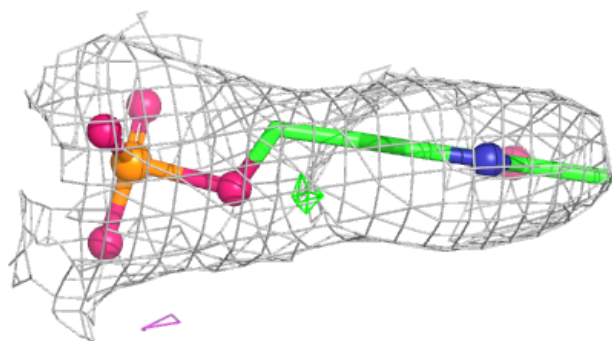


Electron density around PLP F 401 (B):

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

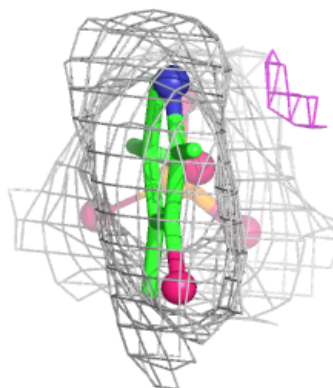
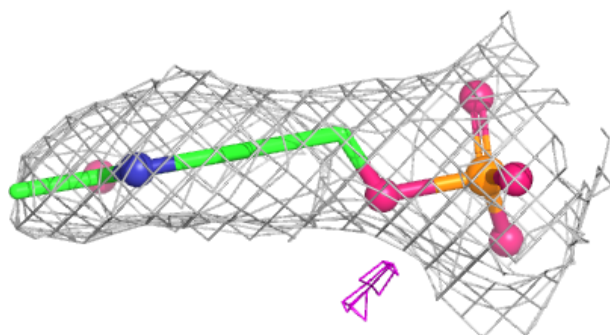
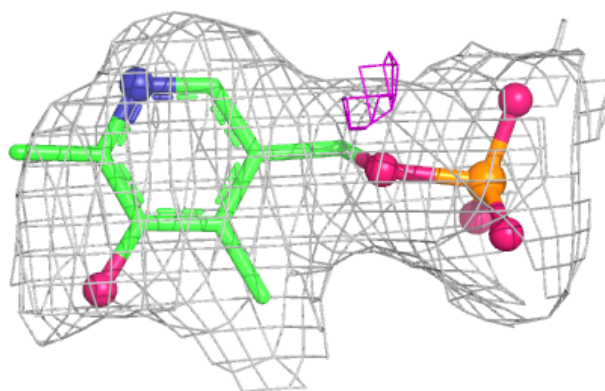
**Electron density around PLP A 401 (B):**

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

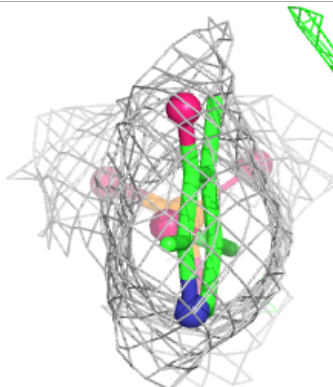
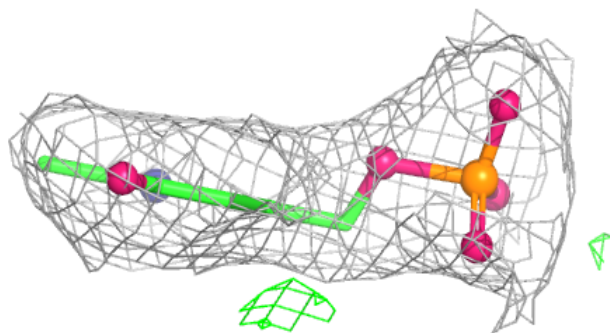


Electron density around PLP E 401 (B):

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

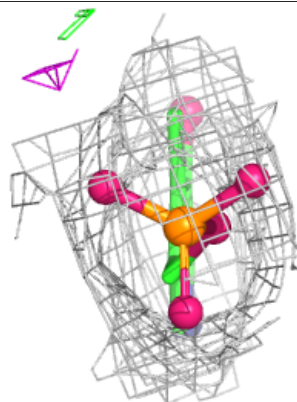
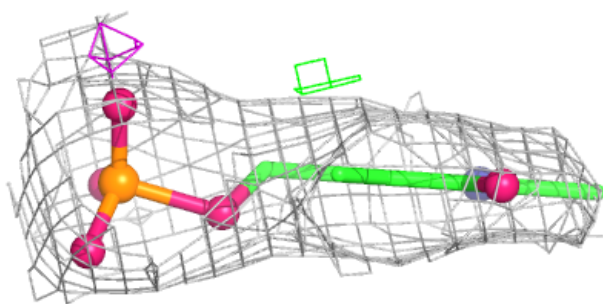
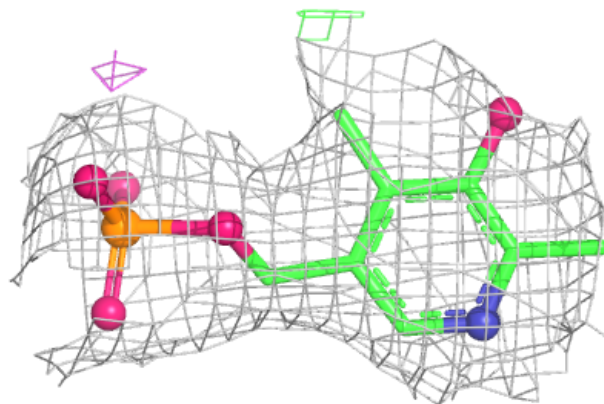
**Electron density around PLP D 401 (B):**

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



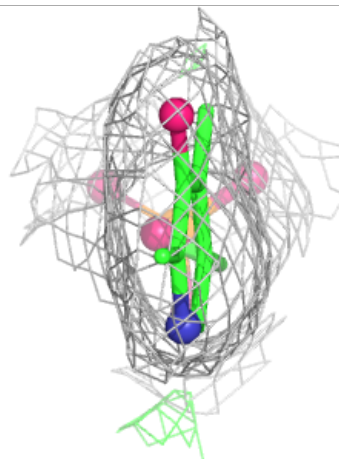
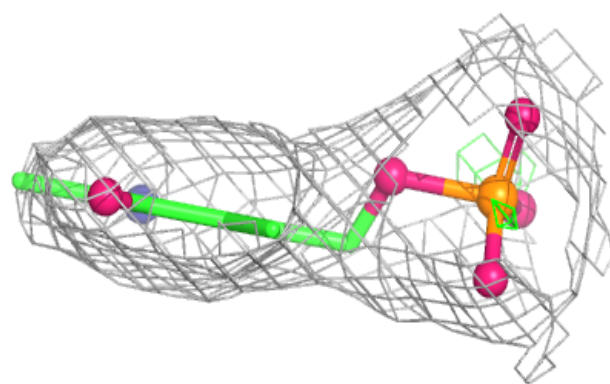
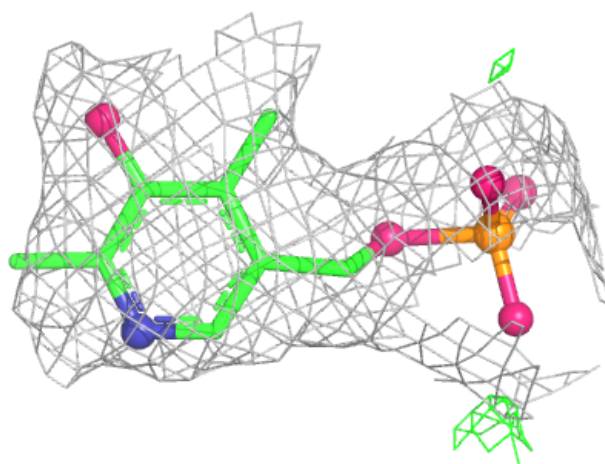
Electron density around PLP C 401 (B):

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



Electron density around PLP B 401 (B):

$2mF_o-DF_c$ (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.