



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 9, 2026 – 05:46 AM UTC

PDB ID : 3AEM / pdb_00003aem
Title : Reaction intermediate structure of Entamoeba histolytica methionine gamma-lyase 1 containing Michaelis complex and methionine imine-pyridoxamine-5'-phosphate
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Deposited on : 2010-02-10
Resolution : 2.20 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

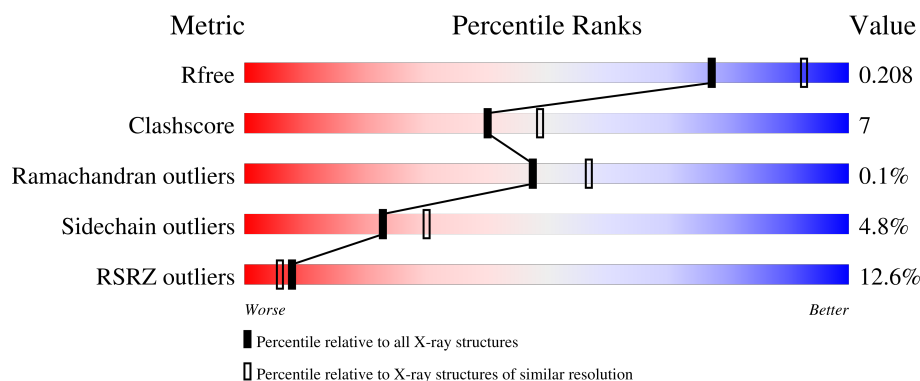
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.20 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	6164 (2.20-2.20)
Clashscore	190562	6851 (2.20-2.20)
Ramachandran outliers	187476	6768 (2.20-2.20)
Sidechain outliers	187428	6769 (2.20-2.20)
RSRZ outliers	180081	6166 (2.20-2.20)

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	389	5% 85% 13% ..
1	B	389	17% 85% 13% ..
1	D	389	25% 83% 13% ..
2	C	389	4% 86% 12% ..

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
6	MET	C	2003	-	-	X	-

2 Entry composition

There are 7 unique types of molecules in this entry. The entry contains 12782 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 Methionine gamma-lyase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	387	Total	C	N	O	S	0	1	0
			2952	1878	497	553	24			
1	B	386	Total	C	N	O	S	0	1	0
			2937	1867	495	551	24			
1	D	384	Total	C	N	O	S	0	1	0
			2923	1859	492	548	24			

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	308	LEU	SER	SEE REMARK 999	UNP Q86D28
B	808	LEU	SER	SEE REMARK 999	UNP Q86D28
D	1808	LEU	SER	SEE REMARK 999	UNP Q86D28

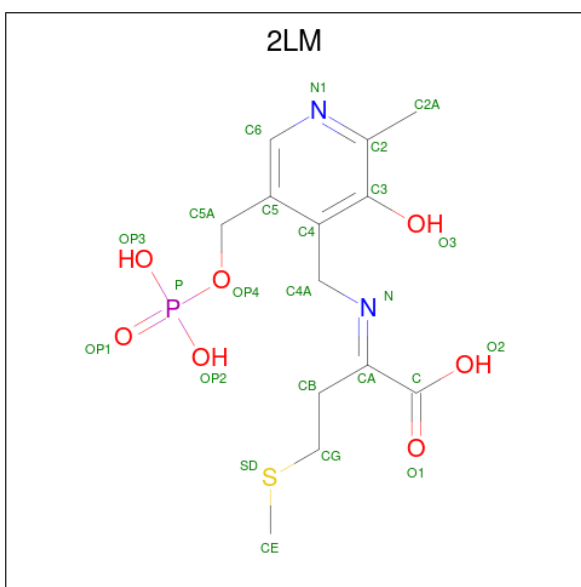
- Molecule 2 is a protein called Methionine gamma-lyase.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
2	C	387	Total	C	N	O	P	S	0	1	0
			2967	1886	498	558	1	24			

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	1308	LEU	SER	SEE REMARK 999	UNP Q86D28

- Molecule 3 is (2E)-2-[(3-hydroxy-2-methyl-5-[(phosphonoxy)methyl]pyridin-4-yl)methyl]imino-4-(methylsulfanyl)butanoic acid (CCD ID: 2LM) (formula: C₁₃H₁₉N₂O₇PS).



Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
3	A	1	Total	C	N	O	P	S	0	0
			24	13	2	7	1	1		
3	B	1	Total	C	N	O	P	S	0	0
			24	13	2	7	1	1		
3	D	1	Total	C	N	O	P	S	0	0
			24	13	2	7	1	1		

- Molecule 4 is SULFATE ION (CCD ID: SO4) (formula: O₄S).



Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	1	Total	O S	0	0
			5	4 1		

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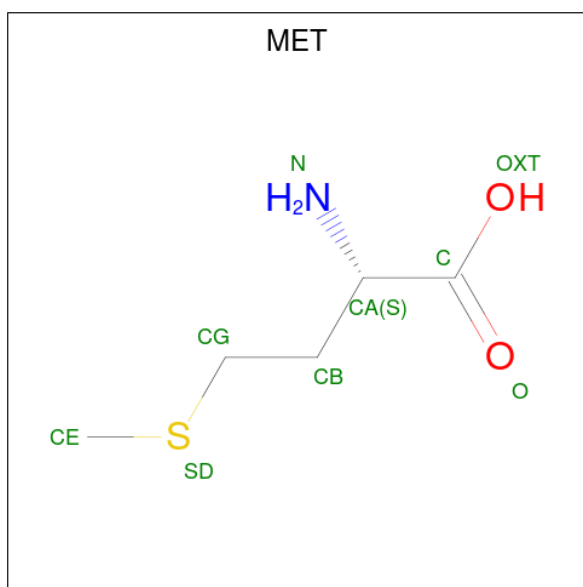
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	B	1	Total	O	S	0	0
			5	4	1		
4	C	1	Total	O	S	0	0
			5	4	1		
4	D	1	Total	O	S	0	0
			5	4	1		

- Molecule 5 is GLYCEROL (CCD ID: GOL) (formula: $C_3H_8O_3$).



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

- Molecule 6 is METHIONINE (CCD ID: MET) (formula: $C_5H_{11}NO_2S$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
6	C	1	Total	C	N	O	S	0	0
			9	5	1	2	1		

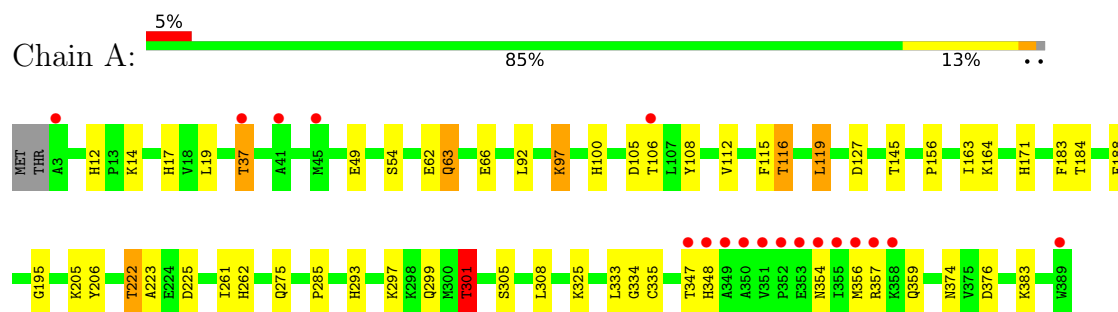
- Molecule 7 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	A	289	Total	O	0	0
			289	289		
7	B	172	Total	O	0	0
			172	172		
7	C	270	Total	O	0	0
			270	270		
7	D	159	Total	O	0	0
			159	159		

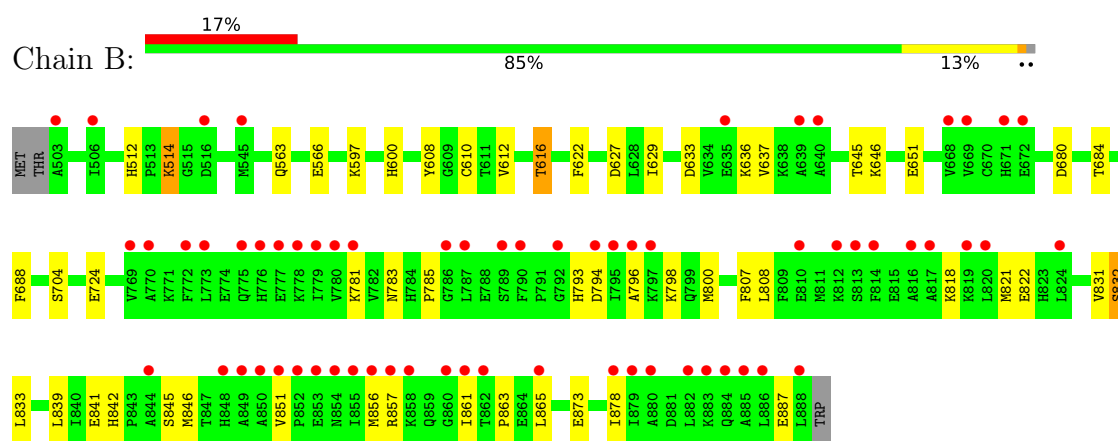
3 Residue-property plots [i](#)

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.

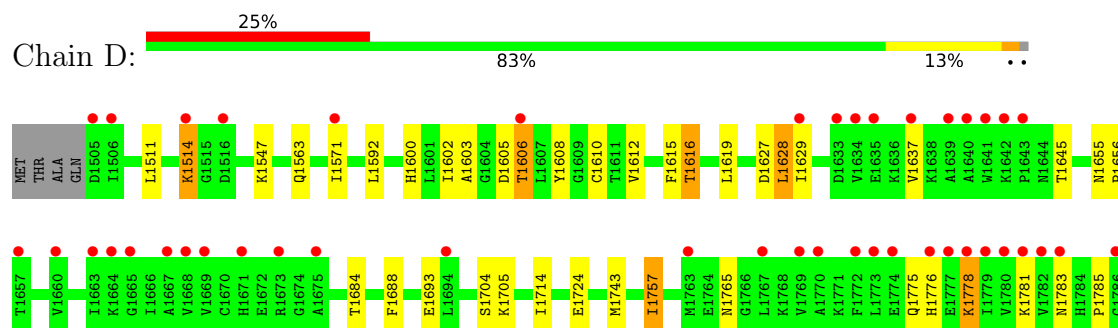
• Molecule 1: Methionine gamma-lyase

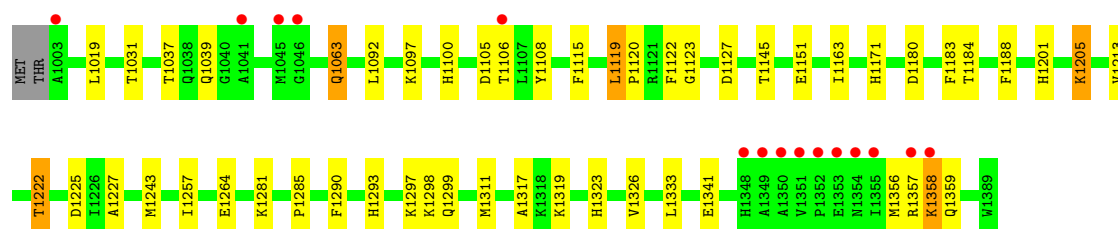


• Molecule 1: Methionine gamma-lyase



• Molecule 1: Methionine gamma-lyase





4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	99.09Å 85.33Å 114.33Å 90.00° 101.90° 90.00°	Depositor
Resolution (Å)	48.48 – 2.20 48.48 – 2.20	Depositor EDS
% Data completeness (in resolution range)	99.7 (48.48-2.20) 99.9 (48.48-2.20)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.80 (at 2.20Å)	Xtriage
Refinement program	REFMAC	Depositor
R, R_{free}	0.151 , 0.196 0.172 , 0.208	Depositor DCC
R_{free} test set	4752 reflections (5.01%)	wwPDB-VP
Wilson B-factor (Å ²)	22.2	Xtriage
Anisotropy	0.138	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.36 , 47.8	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.34$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	12782	wwPDB-VP
Average B, all atoms (Å ²)	43.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.53% 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

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 2LM, SO4, LLP, GOL

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.97	1/3018 (0.0%)	0.96	3/4080 (0.1%)
1	B	0.80	0/3001	0.89	0/4057
1	D	0.76	0/2987	0.89	3/4038 (0.1%)
2	C	0.98	1/3008 (0.0%)	0.96	1/4066 (0.0%)
All	All	0.88	2/12014 (0.0%)	0.93	7/16241 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
2	C	0	1

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	1227	ALA	CA-CB	5.11	1.61	1.53
1	A	223	ALA	CA-CB	5.01	1.61	1.53

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	1875	VAL	CB-CA-C	-8.41	101.02	112.04
1	A	301	THR	N-CA-C	-6.40	103.91	112.94
1	A	301	THR	N-CA-CB	-5.82	101.37	110.98
2	C	1341	GLU	N-CA-CB	-5.14	103.59	111.56
1	A	301	THR	CB-CA-C	5.11	119.42	110.64
1	D	1842	HIS	CA-C-N	5.06	125.09	119.32
1	D	1842	HIS	C-N-CA	5.06	125.09	119.32

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	C	1201	HIS	Peptide

5.2 Too-close contacts ⓘ

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	2952	0	2957	49	0
1	B	2937	0	2947	35	0
1	D	2923	0	2934	42	0
2	C	2967	0	2960	45	0
3	A	24	0	15	4	0
3	B	24	0	15	0	0
3	D	24	0	15	1	0
4	A	5	0	0	0	0
4	B	5	0	0	0	0
4	C	5	0	0	0	0
4	D	5	0	0	0	0
5	A	6	0	8	0	0
5	C	6	0	8	0	0
6	C	9	0	8	6	0
7	A	289	0	0	16	0
7	B	172	0	0	3	0
7	C	270	0	0	8	0
7	D	159	0	0	5	0
All	All	12782	0	11867	156	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 7.

All (156) 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)
2:C:1205:LLP:H4'1	6:C:2003:MET:N	1.66	1.11
1:B:822:GLU:OE2	2:C:1037:THR:HG22	1.52	1.07

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:1205:LLP:C4'	6:C:2003:MET:N	2.20	1.04
1:A:222:THR:HG22	1:A:225:ASP:H	1.31	0.94
1:A:63:GLN:HG2	7:A:3525:HOH:O	1.67	0.93
2:C:1092:LEU:HD21	2:C:1119:LEU:HD22	1.48	0.92
2:C:1357:ARG:HA	7:C:3306:HOH:O	1.73	0.87
2:C:1108:TYR:CE1	6:C:2003:MET:N	2.44	0.85
2:C:1222:THR:HG22	2:C:1225:ASP:H	1.45	0.80
2:C:1222:THR:HG21	7:C:3559:HOH:O	1.80	0.79
1:B:612:VAL:O	1:B:616:THR:HB	1.85	0.76
1:B:856:MET:HE3	1:B:861:ILE:HG22	1.67	0.76
1:A:188:PHE:HA	1:A:301:THR:HG22	1.69	0.75
1:D:1592:LEU:HD21	1:D:1619:LEU:HD22	1.67	0.75
1:D:1781:LYS:HD3	1:D:1783:ASN:ND2	2.02	0.74
1:A:222:THR:HG21	7:A:3061:HOH:O	1.87	0.74
1:A:92:LEU:HD21	1:A:119:LEU:HD22	1.69	0.73
1:D:1612:VAL:O	1:D:1616:THR:HB	1.88	0.73
2:C:1106:THR:HG22	2:C:1359:GLN:HG2	1.71	0.73
2:C:1108:TYR:OH	6:C:2003:MET:HG3	1.88	0.72
1:B:600:HIS:HD2	1:B:645:THR:OG1	1.73	0.71
1:A:106:THR:HG22	1:A:359:GLN:HG2	1.72	0.71
1:D:1757:ILE:HD12	7:D:3224:HOH:O	1.91	0.70
1:A:66:GLU:HB3	7:A:3130:HOH:O	1.90	0.69
2:C:1319:LYS:O	2:C:1323:HIS:HD2	1.76	0.69
1:A:112:VAL:O	1:A:116:THR:HB	1.93	0.68
1:D:1781:LYS:HD3	1:D:1783:ASN:HD21	1.57	0.68
1:B:600:HIS:HE1	1:B:627:ASP:OD2	1.78	0.67
2:C:1100:HIS:HE1	2:C:1127:ASP:OD2	1.78	0.67
1:A:297:LYS:HD3	7:A:3315:HOH:O	1.94	0.66
2:C:1100:HIS:HD2	2:C:1145:THR:OG1	1.79	0.65
2:C:1063:GLN:HG2	7:C:3382:HOH:O	1.96	0.65
1:A:37:THR:HG23	1:D:1822:GLU:OE1	1.97	0.64
1:A:54:SER:HB2	1:D:1714:ILE:HD12	1.80	0.63
1:A:100:HIS:HE1	1:A:127:ASP:OD2	1.83	0.62
1:A:335[A]:CYS:SG	7:A:3799:HOH:O	2.27	0.62
1:D:1600:HIS:HD2	1:D:1645:THR:OG1	1.83	0.61
1:B:512:HIS:HE1	1:D:1873:GLU:OE1	1.82	0.61
2:C:1163:ILE:H	2:C:1299:GLN:HE22	1.49	0.61
1:A:301:THR:HG23	7:A:3168:HOH:O	2.01	0.60
1:A:285:PRO:O	1:A:293:HIS:HD2	1.85	0.59
1:A:383:LYS:NZ	7:A:3837:HOH:O	2.31	0.59
1:A:163:ILE:H	1:A:299:GLN:HE22	1.50	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:222:THR:CG2	1:A:225:ASP:H	2.11	0.59
1:B:597:LYS:HD2	2:C:1097:LYS:HD2	1.84	0.58
1:D:1874:ASN:HD21	1:D:1876:ASP:HB2	1.66	0.58
1:D:1605:ASP:OD2	1:D:1606:THR:HG22	2.03	0.58
1:D:1606:THR:HG21	7:D:3611:HOH:O	2.02	0.58
2:C:1264:GLU:HG3	7:C:3561:HOH:O	2.03	0.58
2:C:1205:LLP:HE3	6:C:2003:MET:HA	1.85	0.58
1:A:357:ARG:HA	7:A:3145:HOH:O	2.04	0.57
1:A:184:THR:HG22	1:A:188:PHE:HB2	1.86	0.57
2:C:1243:MET:CE	1:D:1743:MET:HE1	2.35	0.57
1:D:1684:THR:HG22	1:D:1688:PHE:HB2	1.87	0.56
2:C:1243:MET:CE	1:D:1743:MET:CE	2.84	0.56
1:B:842:HIS:HD2	1:B:845:SER:OG	1.88	0.56
1:A:100:HIS:HD2	1:A:145:THR:OG1	1.89	0.55
1:A:66:GLU:HG3	7:A:3548:HOH:O	2.06	0.55
1:D:1765:ASN:ND2	1:D:1875:VAL:HG22	2.22	0.55
1:A:106:THR:HG21	7:A:3207:HOH:O	2.07	0.55
1:A:301:THR:CG2	7:A:3168:HOH:O	2.53	0.55
1:D:1808:LEU:HD21	1:D:1865:LEU:HD22	1.90	0.54
1:A:156:PRO:HD3	1:A:348:HIS:NE2	2.23	0.54
1:A:14:LYS:HE3	7:A:3337:HOH:O	2.06	0.53
1:D:1615:PHE:HA	1:D:1619:LEU:HG	1.89	0.53
1:D:1606:THR:HB	1:D:1859:GLN:HG2	1.89	0.53
1:A:156:PRO:HD3	1:A:348:HIS:CE1	2.44	0.53
2:C:1171:HIS:HD2	7:C:3026:HOH:O	1.91	0.52
1:D:1785:PRO:O	1:D:1793:HIS:HD2	1.92	0.52
2:C:1285:PRO:O	2:C:1293:HIS:HD2	1.92	0.52
1:A:105:ASP:OD1	1:A:106:THR:HG23	2.10	0.51
1:A:374:ASN:HD21	1:A:376:ASP:HB2	1.75	0.51
1:B:856:MET:HE3	1:B:861:ILE:CG2	2.39	0.51
1:A:17:HIS:HD2	7:A:3672:HOH:O	1.93	0.50
1:D:1603:ALA:HB3	1:D:1628:LEU:HD22	1.93	0.50
1:D:1608:TYR:CE2	1:D:1610:CYS:HB2	2.46	0.50
1:D:1514:LYS:HD3	7:D:3558:HOH:O	2.11	0.49
1:D:1819:LYS:HD3	7:D:3249:HOH:O	2.11	0.49
1:A:205:LYS:HE2	3:A:2001:2LM:H4A	1.95	0.49
1:B:842:HIS:HE1	1:B:863:PRO:O	1.96	0.49
1:D:1819:LYS:CD	7:D:3249:HOH:O	2.60	0.49
2:C:1243:MET:HE1	1:D:1743:MET:CE	2.43	0.48
1:A:115:PHE:HA	1:A:119:LEU:HG	1.96	0.48
1:A:261:ILE:HD11	2:C:1257:ILE:HG12	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:794:ASP:O	1:B:798:LYS:HE2	2.12	0.48
1:B:808:LEU:HB3	7:B:3482:HOH:O	2.12	0.48
1:D:1874:ASN:ND2	1:D:1876:ASP:HB2	2.28	0.48
1:B:646:LYS:HE3	7:B:3764:HOH:O	2.14	0.48
1:B:873:GLU:HB2	1:B:878:ILE:HD11	1.95	0.48
1:A:205:LYS:CE	3:A:2001:2LM:H4A	2.44	0.48
1:B:822:GLU:OE2	2:C:1037:THR:CG2	2.43	0.48
2:C:1108:TYR:CZ	6:C:2003:MET:N	2.81	0.48
1:B:622:PHE:HB3	2:C:1122:PHE:HB3	1.94	0.47
2:C:1319:LYS:O	2:C:1323:HIS:CD2	2.63	0.47
1:D:1600:HIS:HE1	1:D:1627:ASP:OD2	1.97	0.47
1:A:108:TYR:CE1	3:A:2001:2LM:N	2.83	0.47
1:A:347:THR:HA	3:A:2001:2LM:HEA	1.96	0.47
1:B:651:GLU:HG2	1:B:680:ASP:HB3	1.95	0.47
1:B:785:PRO:O	1:B:793:HIS:HD2	1.98	0.47
1:A:54:SER:HB2	1:D:1714:ILE:CD1	2.45	0.46
2:C:1106:THR:HG21	7:C:3461:HOH:O	2.14	0.46
1:A:100:HIS:CE1	1:A:127:ASP:OD2	2.65	0.46
1:D:1776:HIS:CE1	1:D:1778:LYS:HB2	2.50	0.46
2:C:1100:HIS:CE1	2:C:1127:ASP:OD2	2.63	0.46
1:D:1705:LYS:NZ	3:D:2004:2LM:HBA	2.30	0.46
2:C:1184:THR:HG22	2:C:1188:PHE:HB2	1.98	0.46
1:B:796:ALA:HB1	1:B:800:MET:HE2	1.98	0.46
2:C:1097:LYS:HG3	2:C:1123:GLY:HA3	1.97	0.45
2:C:1106:THR:HG22	2:C:1359:GLN:HA	1.97	0.45
1:B:808:LEU:CB	7:B:3482:HOH:O	2.65	0.45
1:B:808:LEU:HD21	1:B:865:LEU:HD13	1.98	0.45
1:D:1514:LYS:HB2	1:D:1514:LYS:HE2	1.84	0.45
1:D:1783:ASN:O	1:D:1807:PHE:HB2	2.17	0.45
1:B:608:TYR:CE2	1:B:610:CYS:HB2	2.52	0.45
1:A:262:HIS:O	1:A:305:SER:HB3	2.18	0.44
1:B:629:ILE:HD11	1:B:637:VAL:HA	2.00	0.44
1:B:684:THR:HG22	1:B:688:PHE:HB2	1.99	0.44
1:D:1808:LEU:HD11	1:D:1865:LEU:HD13	1.98	0.44
1:D:1853:GLU:O	1:D:1856:MET:HB3	2.17	0.44
1:A:308:LEU:HB3	7:A:3444:HOH:O	2.17	0.43
1:A:374:ASN:ND2	1:A:376:ASP:HB2	2.32	0.43
2:C:1222:THR:CG2	2:C:1225:ASP:H	2.23	0.43
1:B:514:LYS:H	1:B:514:LYS:HG2	1.59	0.43
2:C:1092:LEU:HD21	2:C:1119:LEU:CD2	2.35	0.43
1:D:1831:VAL:O	1:D:1832:SER:HB3	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:12:HIS:CE1	2:C:1326:VAL:O	2.71	0.43
2:C:1119:LEU:HB2	2:C:1120:PRO:HD3	2.00	0.43
1:B:831:VAL:O	1:B:832:SER:CB	2.67	0.43
1:D:1831:VAL:O	1:D:1832:SER:CB	2.66	0.43
2:C:1115:PHE:HA	2:C:1119:LEU:HG	2.00	0.43
1:B:841:GLU:OE2	1:B:846:MET:HB2	2.19	0.43
1:B:633:ASP:HB3	1:B:636:LYS:HD2	2.01	0.43
2:C:1151:GLU:HG3	2:C:1180:ASP:HB3	2.00	0.43
1:B:600:HIS:CD2	1:B:645:THR:OG1	2.63	0.43
1:B:783:ASN:O	1:B:807:PHE:HB2	2.19	0.42
2:C:1105:ASP:OD2	2:C:1106:THR:HG23	2.19	0.42
2:C:1281:LYS:HE2	7:C:3052:HOH:O	2.19	0.42
1:A:171:HIS:HE1	1:A:195:GLY:O	2.03	0.42
1:B:831:VAL:O	1:B:832:SER:HB3	2.18	0.42
1:B:831:VAL:HG22	7:C:3049:HOH:O	2.20	0.42
2:C:1311:MET:HG3	2:C:1317:ALA:HA	2.01	0.42
1:A:206:TYR:CE2	1:A:334:GLY:HA2	2.55	0.42
1:D:1602:ILE:HG23	1:D:1629:ILE:HG12	2.03	0.41
1:D:1781:LYS:CD	1:D:1783:ASN:ND2	2.78	0.41
2:C:1105:ASP:HB2	2:C:1358:LYS:HD2	2.02	0.41
1:A:66:GLU:CG	7:A:3548:HOH:O	2.64	0.41
2:C:1285:PRO:HA	2:C:1290:PHE:CD2	2.56	0.41
1:D:1655:ASN:HA	1:D:1656:PRO:HA	1.88	0.41
1:A:347:THR:HB	7:A:3345:HOH:O	2.21	0.41
1:B:873:GLU:HG3	1:D:1511:LEU:HD12	2.03	0.41
1:A:62:GLU:O	1:A:66:GLU:HG3	2.21	0.41
1:A:97:LYS:HE3	1:A:97:LYS:HB3	1.94	0.41
1:D:1629:ILE:HD11	1:D:1637:VAL:HA	2.03	0.41
1:B:821:MET:SD	1:B:842:HIS:HB2	2.62	0.41
1:A:222:THR:HG22	1:A:225:ASP:N	2.15	0.40
1:B:818:LYS:HG3	2:C:1037:THR:HG21	2.02	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	386/389 (99%)	375 (97%)	11 (3%)	0	100	100
1	B	385/389 (99%)	374 (97%)	10 (3%)	1 (0%)	36	42
1	D	383/389 (98%)	375 (98%)	7 (2%)	1 (0%)	36	42
2	C	385/389 (99%)	375 (97%)	10 (3%)	0	100	100
All	All	1539/1556 (99%)	1499 (97%)	38 (2%)	2 (0%)	48	57

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	1832	SER
1	B	832	SER

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	321/322 (100%)	305 (95%)	16 (5%)	22	28
1	B	320/322 (99%)	308 (96%)	12 (4%)	29	40
1	D	319/322 (99%)	300 (94%)	19 (6%)	17	21
2	C	320/321 (100%)	307 (96%)	13 (4%)	27	37
All	All	1280/1287 (100%)	1220 (95%)	60 (5%)	23	31

All (60) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	19	LEU
1	A	37	THR
1	A	49	GLU
1	A	63	GLN
1	A	97	LYS
1	A	116	THR

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Mol	Chain	Res	Type
1	A	119	LEU
1	A	164	LYS
1	A	183	PHE
1	A	222	THR
1	A	275	GLN
1	A	301	THR
1	A	325	LYS
1	A	333	LEU
1	A	354	ASN
1	A	356	MET
1	B	514	LYS
1	B	563	GLN
1	B	566	GLU
1	B	616	THR
1	B	704	SER
1	B	724	GLU
1	B	781	LYS
1	B	833	LEU
1	B	839	LEU
1	B	851	VAL
1	B	857	ARG
1	B	887	GLU
2	C	1019	LEU
2	C	1031	THR
2	C	1039	GLN
2	C	1063	GLN
2	C	1119	LEU
2	C	1183	PHE
2	C	1213	VAL
2	C	1222	THR
2	C	1297	LYS
2	C	1298	LYS
2	C	1333	LEU
2	C	1356	MET
2	C	1358	LYS
1	D	1514	LYS
1	D	1547	LYS
1	D	1563	GLN
1	D	1571	ILE
1	D	1606	THR
1	D	1616	THR
1	D	1628	LEU

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Mol	Chain	Res	Type
1	D	1693	GLU
1	D	1704	SER
1	D	1724	GLU
1	D	1757	ILE
1	D	1775	GLN
1	D	1778	LYS
1	D	1833	LEU
1	D	1839	LEU
1	D	1856	MET
1	D	1858	LYS
1	D	1875	VAL
1	D	1878	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (33) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	17	HIS
1	A	100	HIS
1	A	265	ASN
1	A	293	HIS
1	A	299	GLN
1	A	348	HIS
1	A	374	ASN
1	B	512	HIS
1	B	563	GLN
1	B	600	HIS
1	B	765	ASN
1	B	783	ASN
1	B	793	HIS
1	B	842	HIS
1	B	854	ASN
2	C	1039	GLN
2	C	1100	HIS
2	C	1117	HIS
2	C	1265	ASN
2	C	1283	ASN
2	C	1293	HIS
2	C	1299	GLN
2	C	1323	HIS
2	C	1348	HIS
2	C	1354	ASN
2	C	1374	ASN

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Mol	Chain	Res	Type
1	D	1528	GLN
1	D	1600	HIS
1	D	1617	HIS
1	D	1765	ASN
1	D	1783	ASN
1	D	1793	HIS
1	D	1874	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

1 non-standard protein/DNA/RNA residue is 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	LLP	C	1205	2	23,24,25	2.22	7 (30%)	25,32,34	1.57	3 (12%)

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	LLP	C	1205	2	-	5/16/17/19	0/1/1/1

All (7) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	1205	LLP	O3-C3	-5.81	1.23	1.36
2	C	1205	LLP	CE-NZ	4.70	1.57	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	1205	LLP	C4'-NZ	3.76	1.39	1.27
2	C	1205	LLP	C4-C4'	2.79	1.52	1.46
2	C	1205	LLP	C2-N1	2.68	1.38	1.33
2	C	1205	LLP	P-OP2	-2.22	1.46	1.54
2	C	1205	LLP	CD-CE	2.06	1.58	1.51

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	1205	LLP	OP4-C5'-C5	5.17	119.05	109.36
2	C	1205	LLP	C4-C4'-NZ	-3.27	108.96	124.04
2	C	1205	LLP	OP4-P-OP1	-2.00	101.03	106.44

There are no chirality outliers.

All (5) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	C	1205	LLP	O-C-CA-CB
2	C	1205	LLP	CG-CD-CE-NZ
2	C	1205	LLP	C4-C4'-NZ-CE
2	C	1205	LLP	CD-CE-NZ-C4'
2	C	1205	LLP	C3-C4-C4'-NZ

There are no ring outliers.

1 monomer is involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	C	1205	LLP	3	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

10 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
4	SO4	D	2008	-	4,4,4	0.24	0	6,6,6	0.10	0
4	SO4	A	2005	-	4,4,4	0.20	0	6,6,6	0.34	0
3	2LM	A	2001	-	23,24,24	3.06	3 (13%)	24,33,33	1.78	6 (25%)
5	GOL	A	2009	-	5,5,5	0.40	0	5,5,5	0.44	0
6	MET	C	2003	-	7,8,8	1.84	1 (14%)	5,9,9	1.98	1 (20%)
4	SO4	B	2006	-	4,4,4	0.29	0	6,6,6	0.20	0
3	2LM	B	2002	-	23,24,24	3.04	2 (8%)	24,33,33	1.36	2 (8%)
4	SO4	C	2007	-	4,4,4	0.19	0	6,6,6	0.18	0
3	2LM	D	2004	-	23,24,24	3.06	3 (13%)	24,33,33	1.29	2 (8%)
5	GOL	C	2010	-	5,5,5	0.34	0	5,5,5	0.35	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	2LM	A	2001	-	-	10/18/19/19	0/1/1/1
5	GOL	A	2009	-	-	4/4/4/4	-
6	MET	C	2003	-	-	2/8/8/8	-
3	2LM	B	2002	-	-	12/18/19/19	0/1/1/1
3	2LM	D	2004	-	-	8/18/19/19	0/1/1/1
5	GOL	C	2010	-	-	0/4/4/4	-

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	2004	2LM	C4A-N	-12.42	1.29	1.46
3	B	2002	2LM	C4A-N	-12.32	1.29	1.46
3	A	2001	2LM	CA-N	9.87	1.41	1.28
3	A	2001	2LM	C4A-N	-9.83	1.32	1.46
3	B	2002	2LM	CA-N	6.45	1.37	1.28
3	D	2004	2LM	CA-N	6.05	1.36	1.28
6	C	2003	MET	OXT-C	-4.29	1.17	1.30
3	A	2001	2LM	O2-C	-2.37	1.24	1.30
3	D	2004	2LM	C3-C2	-2.05	1.38	1.41

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	2001	2LM	C3-C4-C5	-4.38	114.76	118.73
6	C	2003	MET	OXT-C-O	-3.81	115.44	124.08
3	A	2001	2LM	O2-C-O1	-3.50	115.57	123.90
3	A	2001	2LM	C6-C5-C4	3.45	120.67	118.06
3	A	2001	2LM	CE-SD-CG	3.12	116.45	100.32
3	B	2002	2LM	CE-SD-CG	2.98	115.72	100.32
3	D	2004	2LM	OP2-P-OP4	-2.26	100.78	106.67
3	A	2001	2LM	OP2-P-OP4	-2.24	100.83	106.67
3	B	2002	2LM	O2-C-O1	-2.19	118.69	123.90
3	A	2001	2LM	OP3-P-OP2	2.06	115.53	107.80
3	D	2004	2LM	OP2-P-OP1	2.06	118.85	110.83

There are no chirality outliers.

All (36) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	2001	2LM	O1-C-CA-N
3	A	2001	2LM	O2-C-CA-N
3	A	2001	2LM	O2-C-CA-CB
3	A	2001	2LM	C3-C4-C4A-N
3	A	2001	2LM	C5-C4-C4A-N
3	A	2001	2LM	C-CA-CB-CG
3	A	2001	2LM	N-CA-CB-CG
3	A	2001	2LM	CA-CB-CG-SD
3	B	2002	2LM	O1-C-CA-N
3	B	2002	2LM	O2-C-CA-N
3	B	2002	2LM	O2-C-CA-CB
3	B	2002	2LM	C3-C4-C4A-N
3	B	2002	2LM	C5-C4-C4A-N
3	B	2002	2LM	C-CA-CB-CG
3	B	2002	2LM	CA-CB-CG-SD
3	D	2004	2LM	O2-C-CA-N
3	D	2004	2LM	O2-C-CA-CB
3	D	2004	2LM	C3-C4-C4A-N
3	D	2004	2LM	C5-C4-C4A-N
3	D	2004	2LM	C-CA-CB-CG
6	C	2003	MET	C-CA-CB-CG
6	C	2003	MET	CA-CB-CG-SD
5	A	2009	GOL	O1-C1-C2-C3
5	A	2009	GOL	C1-C2-C3-O3
5	A	2009	GOL	O2-C2-C3-O3

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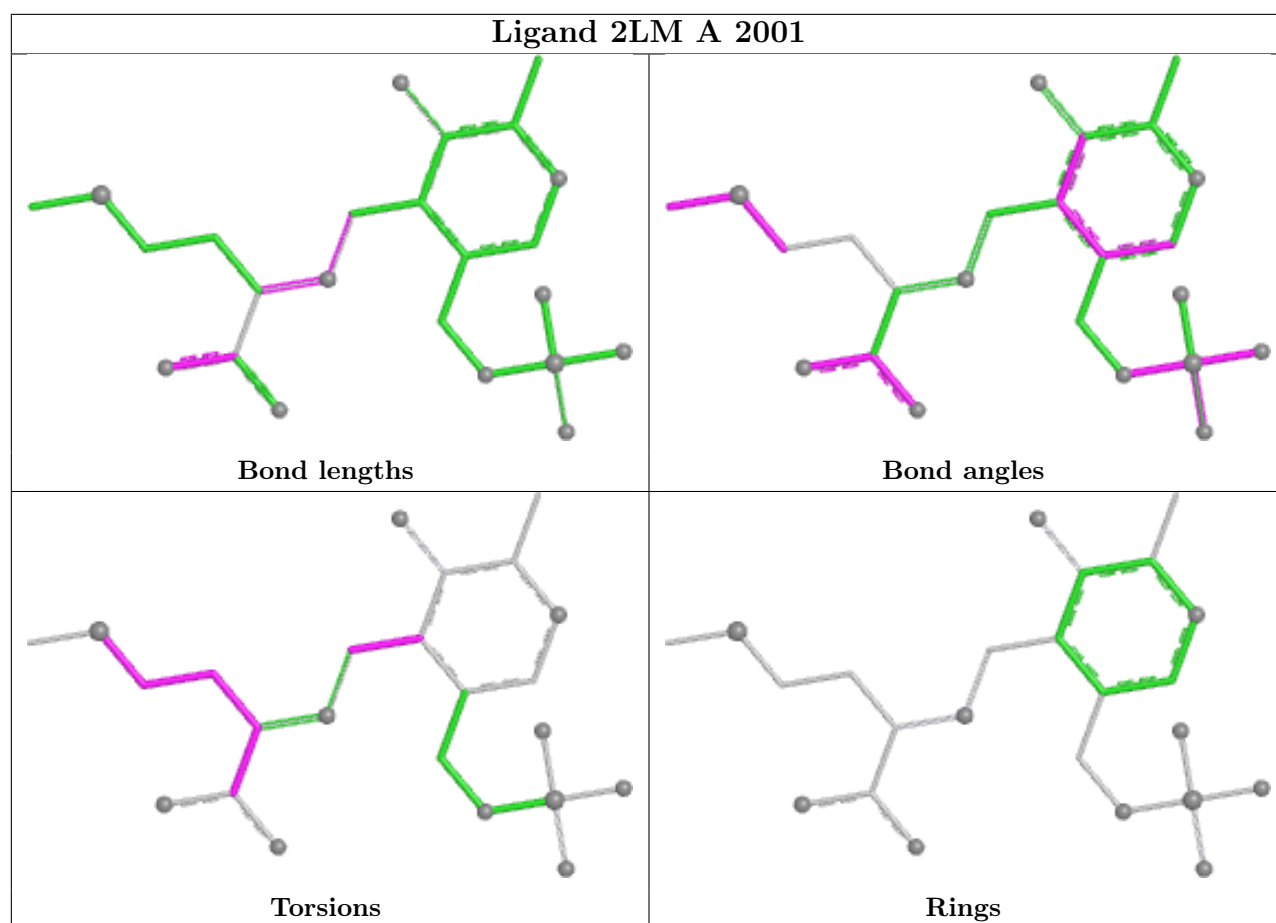
Mol	Chain	Res	Type	Atoms
3	B	2002	2LM	CB-CG-SD-CE
3	D	2004	2LM	CB-CG-SD-CE
5	A	2009	GOL	O1-C1-C2-O2
3	A	2001	2LM	O1-C-CA-CB
3	B	2002	2LM	O1-C-CA-CB
3	A	2001	2LM	CB-CG-SD-CE
3	D	2004	2LM	O1-C-CA-N
3	B	2002	2LM	N-CA-CB-CG
3	D	2004	2LM	N-CA-CB-CG
3	B	2002	2LM	C6-C5-C5A-OP4
3	B	2002	2LM	C4-C5-C5A-OP4

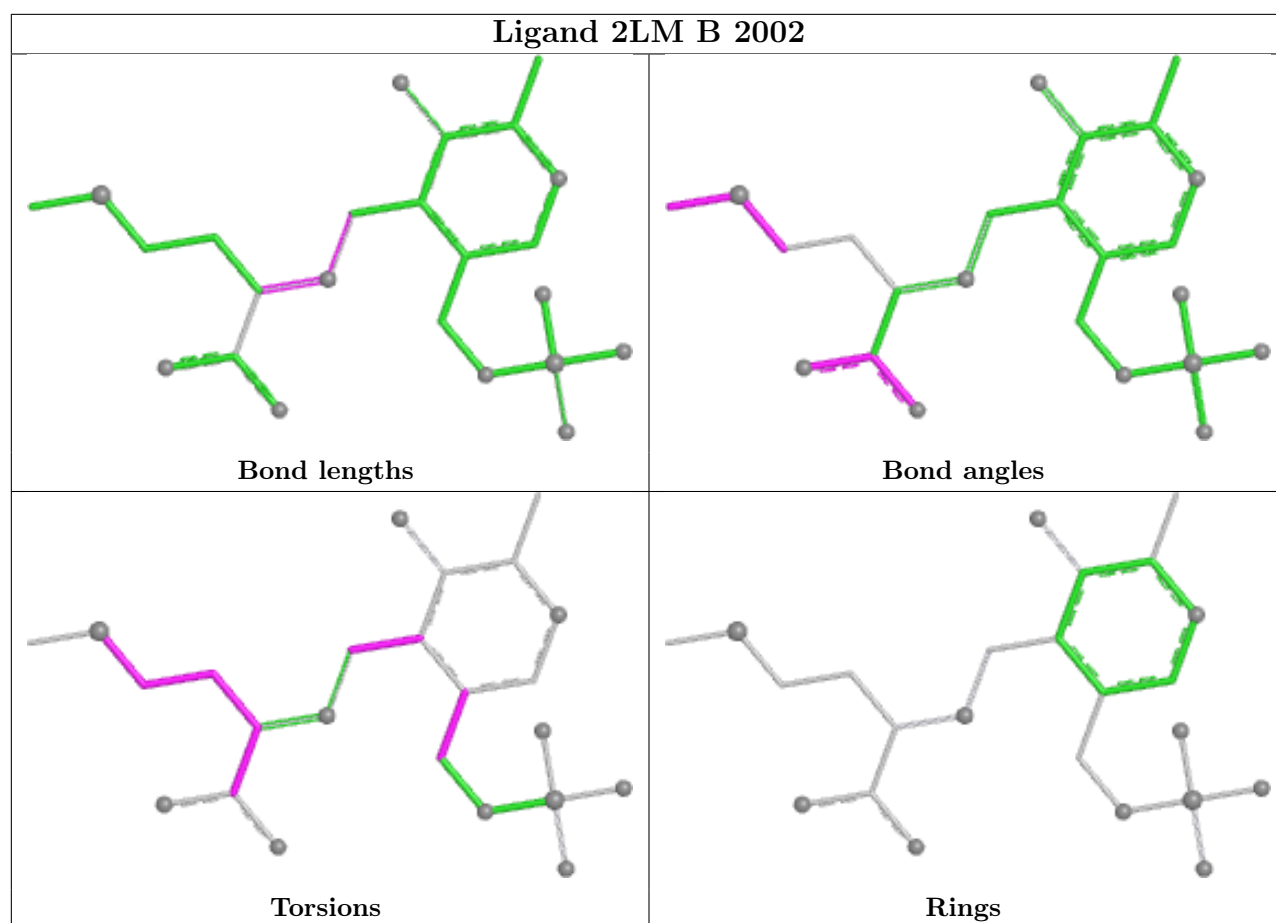
There are no ring outliers.

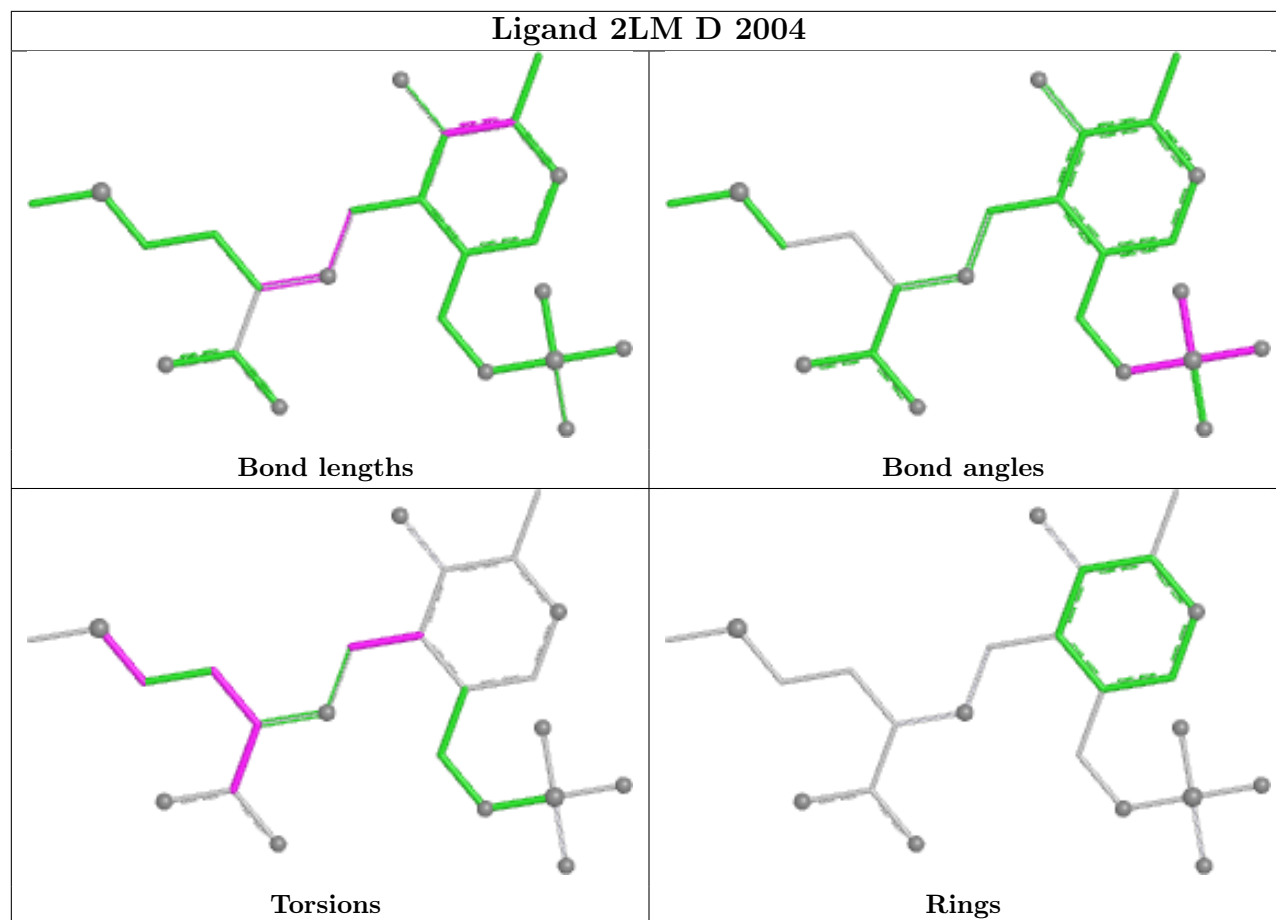
3 monomers are involved in 11 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	2001	2LM	4	0
6	C	2003	MET	6	0
3	D	2004	2LM	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	387/389 (99%)	-0.25	18 (4%) 36 33	14, 28, 62, 88	2 (0%)
1	B	386/389 (99%)	0.74	65 (16%) 4 3	20, 48, 92, 121	2 (0%)
1	D	384/389 (98%)	0.98	97 (25%) 1 1	21, 54, 97, 118	1 (0%)
2	C	386/389 (99%)	-0.23	15 (3%) 43 40	15, 29, 63, 93	2 (0%)
All	All	1543/1556 (99%)	0.31	195 (12%) 8 6	14, 36, 88, 121	7 (0%)

All (195) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	1888	LEU	6.0
1	B	888	LEU	5.1
1	B	851	VAL	4.4
2	C	1355	ILE	4.3
1	D	1795	ILE	4.3
1	D	1855	ILE	4.3
1	A	355	ILE	4.2
1	D	1634	VAL	4.2
1	D	1780	VAL	4.2
1	B	855	ILE	4.2
1	D	1791	PRO	4.1
1	D	1668	VAL	4.1
1	D	1816	ALA	4.0
1	D	1779	ILE	4.0
2	C	1350	ALA	4.0
2	C	1351	VAL	3.9
1	B	503	ALA	3.9
1	B	852	PRO	3.9
1	D	1886	LEU	3.9
2	C	1354	ASN	3.9
1	D	1790	PHE	3.8

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Mol	Chain	Res	Type	RSRZ
1	D	1812	LYS	3.8
1	D	1639	ALA	3.8
2	C	1349	ALA	3.7
1	D	1669	VAL	3.6
1	B	777	GLU	3.6
1	D	1813	SER	3.6
1	B	861	ILE	3.5
1	B	812	LYS	3.5
1	D	1514	LYS	3.5
1	D	1506	ILE	3.5
2	C	1352	PRO	3.5
1	B	886	LEU	3.4
1	B	780	VAL	3.4
1	D	1770	ALA	3.4
1	D	1796	ALA	3.4
1	D	1777	GLU	3.4
1	D	1792	GLY	3.4
2	C	1358	LYS	3.4
1	D	1851	VAL	3.3
1	B	779	ILE	3.3
1	D	1505	ASP	3.3
1	A	352	PRO	3.3
1	B	854	ASN	3.3
1	B	772	PHE	3.3
1	B	849	ALA	3.2
1	B	850	ALA	3.2
1	B	814	PHE	3.2
1	B	813	SER	3.2
1	D	1797	LYS	3.2
1	A	354	ASN	3.2
2	C	1357	ARG	3.1
1	A	349	ALA	3.1
1	B	545	MET	3.1
1	B	858	LYS	3.1
2	C	1003	ALA	3.1
1	D	1798	LYS	3.1
1	D	1787	LEU	3.1
1	D	1878	ILE	3.0
1	D	1794	ASP	3.0
1	D	1863	PRO	3.0
1	B	856	MET	3.0
1	B	787	LEU	3.0

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Mol	Chain	Res	Type	RSRZ
1	D	1860	GLY	3.0
1	B	885	ALA	3.0
1	D	1885	ALA	3.0
2	C	1045	MET	3.0
1	B	817	ALA	2.9
1	D	1789	SER	2.9
1	D	1635	GLU	2.9
1	D	1773	LEU	2.9
1	D	1844	ALA	2.9
1	B	884	GLN	2.9
1	D	1861	ILE	2.9
1	D	1633	ASP	2.9
1	D	1849	ALA	2.9
1	A	351	VAL	2.9
1	D	1778	LYS	2.9
2	C	1348	HIS	2.9
1	B	816	ALA	2.9
1	B	860	GLY	2.8
1	B	773	LEU	2.8
1	D	1782	VAL	2.8
1	A	37	THR	2.8
1	D	1862	THR	2.8
1	B	857	ARG	2.8
1	D	1776	HIS	2.8
1	D	1772	PHE	2.8
1	D	1801	THR	2.8
1	B	862	THR	2.8
1	B	797	LYS	2.8
1	D	1781	LYS	2.8
1	B	844	ALA	2.8
1	D	1850	ALA	2.8
1	B	775	GLN	2.7
1	D	1857	ARG	2.7
1	B	794	ASP	2.7
1	D	1783	ASN	2.7
1	B	639	ALA	2.7
1	D	1817	ALA	2.7
1	D	1793	HIS	2.7
1	D	1641	TRP	2.7
1	B	848	HIS	2.7
1	D	1665	GLY	2.7
1	D	1852	PRO	2.7

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Mol	Chain	Res	Type	RSRZ
1	A	389	TRP	2.7
1	B	668	VAL	2.6
1	D	1629	ILE	2.6
1	D	1887	GLU	2.6
1	D	1879	ILE	2.6
1	D	1643	PRO	2.6
1	D	1799	GLN	2.6
1	A	45	MET	2.6
1	D	1664	LYS	2.6
1	D	1880	ALA	2.5
1	A	348	HIS	2.5
1	A	358	LYS	2.5
1	B	819	LYS	2.5
1	B	778	LYS	2.5
1	B	853	GLU	2.5
1	B	820	LEU	2.5
1	D	1671	HIS	2.5
1	B	635	GLU	2.5
1	D	1814	PHE	2.5
1	D	1637	VAL	2.5
1	D	1660	VAL	2.5
1	B	865	LEU	2.5
1	B	878	ILE	2.4
1	D	1875	VAL	2.4
1	B	776	HIS	2.4
1	A	350	ALA	2.4
1	B	781	LYS	2.4
1	D	1516	ASP	2.3
1	D	1786	GLY	2.3
1	B	506	ILE	2.3
1	A	353	GLU	2.3
1	B	883	LYS	2.3
1	D	1858	LYS	2.3
1	B	789	SER	2.3
1	B	879	ILE	2.3
1	D	1853	GLU	2.3
1	A	3	ALA	2.3
1	A	356	MET	2.3
1	B	671	HIS	2.3
1	D	1864	GLU	2.3
1	D	1767	LEU	2.3
1	D	1876	ASP	2.3

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Mol	Chain	Res	Type	RSRZ
1	B	770	ALA	2.3
1	B	880	ALA	2.3
2	C	1041	ALA	2.3
1	D	1788	GLU	2.3
1	D	1854	ASN	2.2
1	D	1640	ALA	2.2
1	A	347	THR	2.2
1	B	824	LEU	2.2
1	D	1865	LEU	2.2
1	B	786	GLY	2.2
1	D	1571	ILE	2.2
2	C	1353	GLU	2.2
1	D	1673	ARG	2.2
1	D	1826	VAL	2.2
1	D	1815	GLU	2.2
1	B	640	ALA	2.2
1	B	796	ALA	2.2
1	D	1667	ALA	2.2
1	D	1803	TYR	2.1
1	D	1811	MET	2.1
1	B	792	GLY	2.1
1	D	1675	ALA	2.1
1	B	882	LEU	2.1
1	B	810	GLU	2.1
1	D	1774	GLU	2.1
1	D	1859	GLN	2.1
1	D	1883	LYS	2.1
1	B	669	VAL	2.1
1	B	769	VAL	2.1
1	B	790	PHE	2.1
1	A	41	ALA	2.1
1	D	1823	HIS	2.1
1	B	795	ILE	2.1
1	D	1763	MET	2.0
1	B	672	GLU	2.0
1	D	1769	VAL	2.0
2	C	1046	GLY	2.0
1	D	1800	MET	2.0
1	A	106	THR	2.0
1	D	1606	THR	2.0
1	D	1657	THR	2.0
2	C	1106	THR	2.0

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Mol	Chain	Res	Type	RSRZ
1	B	516	ASP	2.0
1	D	1694	LEU	2.0
1	A	357	ARG	2.0
1	D	1663	ILE	2.0
1	D	1642	LYS	2.0
1	D	1819	LYS	2.0

6.2 Non-standard residues in protein, DNA, RNA chains [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
2	LLP	C	1205	24/25	0.98	0.07	19,22,24,31	6

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

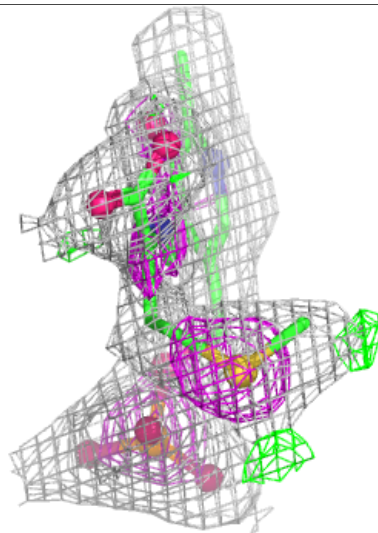
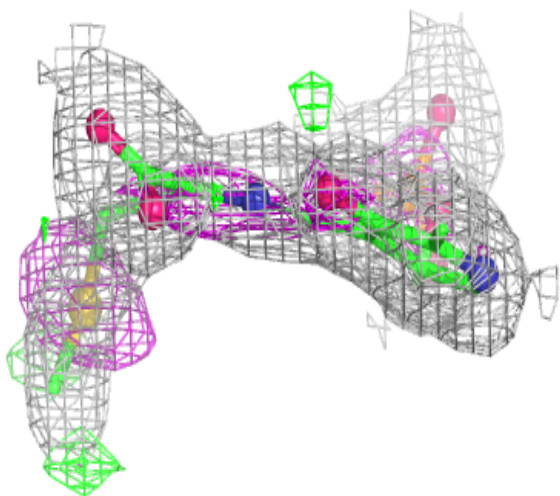
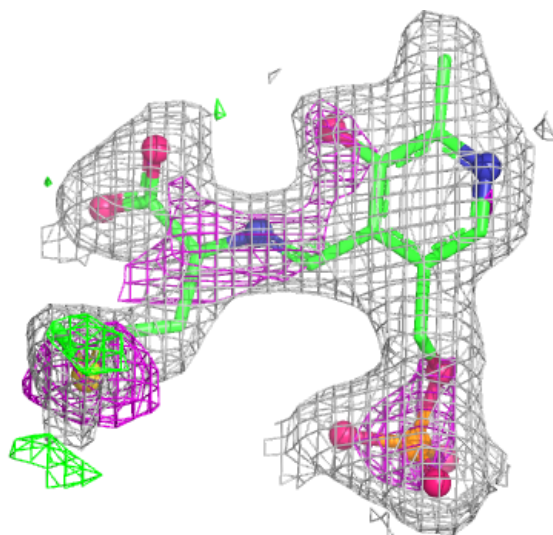
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q<0.9' lists 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
4	SO4	D	2008	5/5	0.83	0.10	72,72,72,73	0
6	MET	C	2003	9/9	0.83	0.18	25,30,42,45	0
4	SO4	B	2006	5/5	0.84	0.10	71,71,72,72	0
5	GOL	A	2009	6/6	0.86	0.14	42,45,46,47	0
4	SO4	A	2005	5/5	0.88	0.18	58,59,60,60	0
5	GOL	C	2010	6/6	0.90	0.12	38,42,43,43	0
4	SO4	C	2007	5/5	0.90	0.19	58,59,60,60	0
3	2LM	B	2002	24/24	0.93	0.11	17,30,40,52	0
3	2LM	D	2004	24/24	0.94	0.11	19,31,40,52	0
3	2LM	A	2001	24/24	0.94	0.11	7,17,33,43	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.

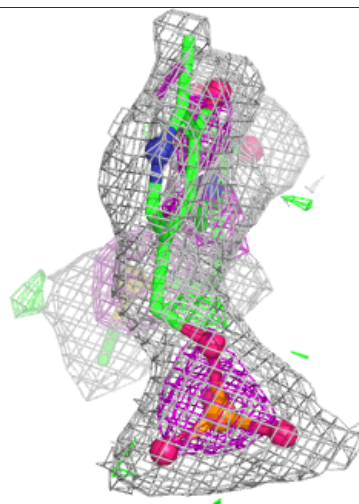
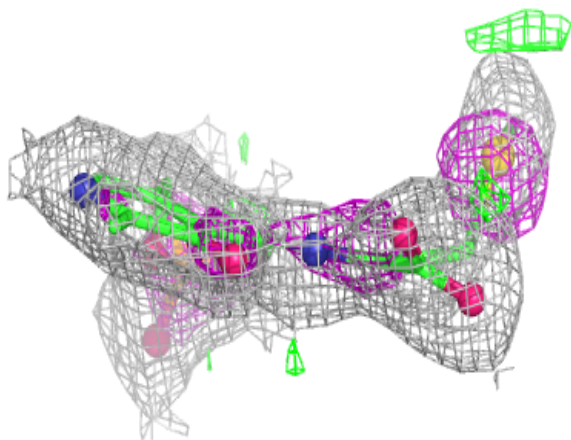
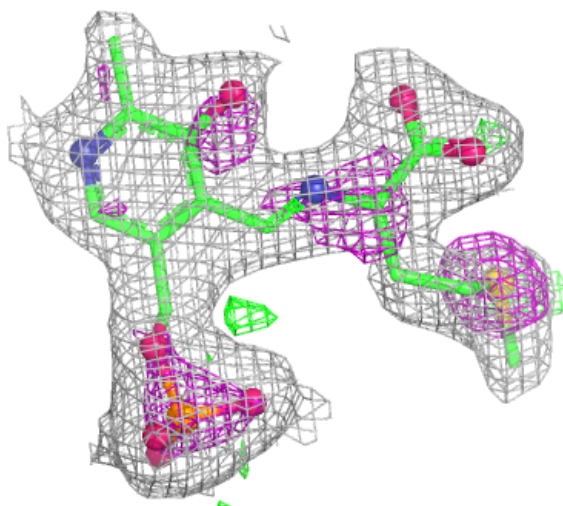
Electron density around 2LM B 2002:

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



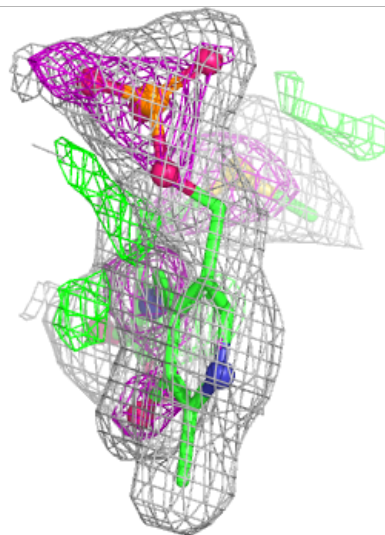
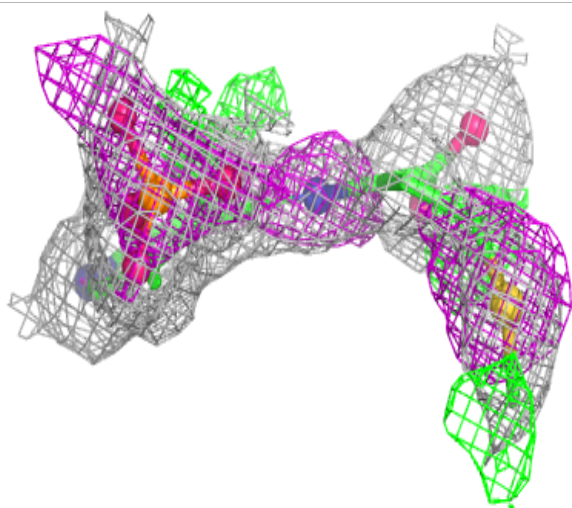
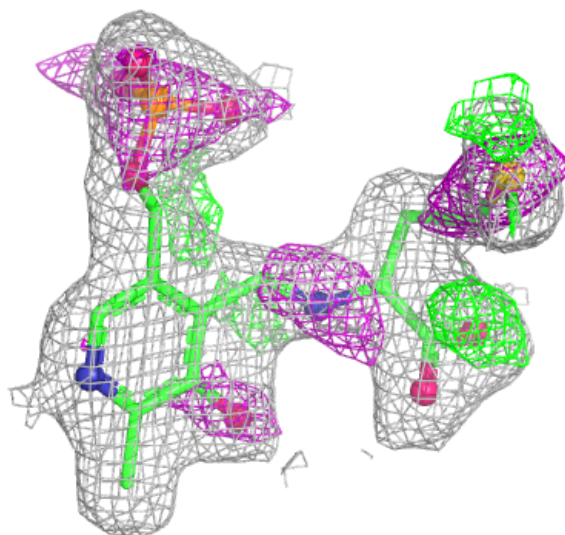
Electron density around 2LM D 2004:

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



Electron density around 2LM A 2001:

$2mF_o-DF_c$ (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.