



Full wwPDB X-ray Structure Validation Report ⓘ

Jun 20, 2021 – 05:25 AM BST

PDB ID : 6TGV
Title : Crystal structure of Mycobacterium smegmatis CoaBC in complex with CTP and FMN
Authors : Mendes, V.; Blaszczyk, M.; Bryant, O.; Cory-Wright, J.; Blundell, T.L.
Deposited on : 2019-11-18
Resolution : 2.50 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 following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.20
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.20

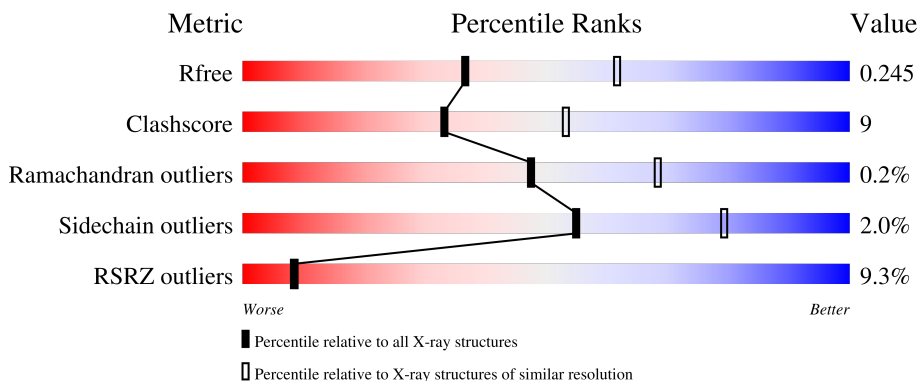
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.50 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	4661 (2.50-2.50)
Clashscore	141614	5346 (2.50-2.50)
Ramachandran outliers	138981	5231 (2.50-2.50)
Sidechain outliers	138945	5233 (2.50-2.50)
RSRZ outliers	127900	4559 (2.50-2.50)

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	415	
1	B	415	
1	C	415	
1	D	415	

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
2	CTP	A	501	-	-	X	-

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 10828 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.

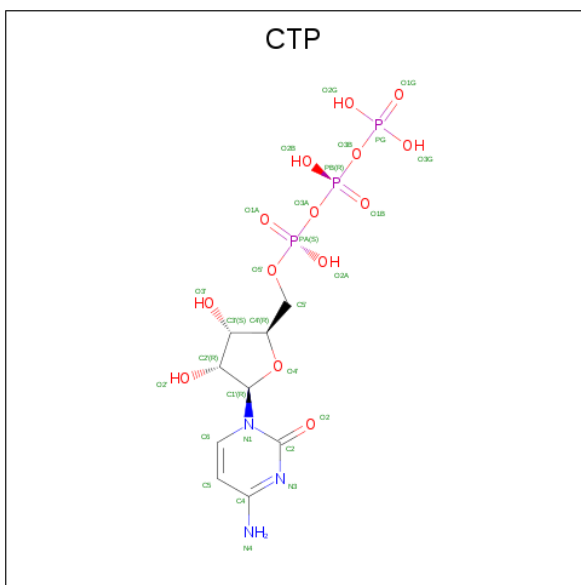
- Molecule 1 is a protein called Coenzyme A biosynthesis bifunctional protein CoaBC.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	381	2680	1673	492	506	9	0	0	0
1	B	372	2559	1600	474	476	9	0	0	0
1	C	389	2715	1696	498	512	9	0	0	0
1	D	374	2576	1609	473	484	10	0	0	0

There are 4 discrepancies between the modelled and reference sequences:

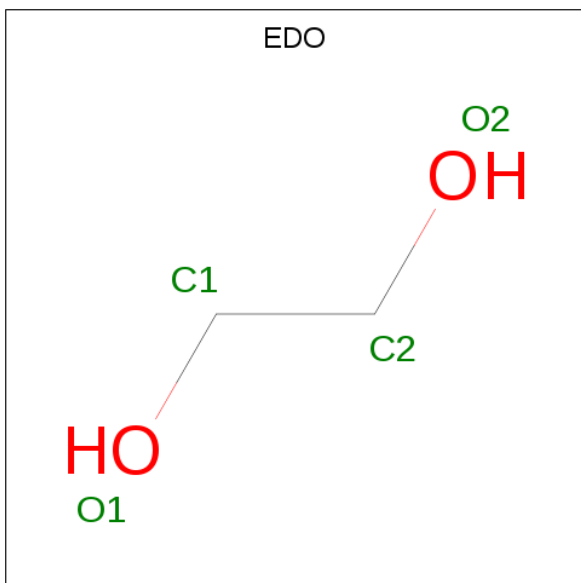
Chain	Residue	Modelled	Actual	Comment	Reference
A	0	SER	-	expression tag	UNP A0QWT2
B	0	SER	-	expression tag	UNP A0QWT2
C	0	SER	-	expression tag	UNP A0QWT2
D	0	SER	-	expression tag	UNP A0QWT2

- Molecule 2 is CYTIDINE-5'-TRIPHOSPHATE (three-letter code: CTP) (formula: $C_9H_{16}N_3O_{14}P_3$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	P		
2	A	1	29	9	3	14	3	0	0
2	B	1	29	9	3	14	3	0	0
2	C	1	29	9	3	14	3	0	0
2	D	1	29	9	3	14	3	0	0

- Molecule 3 is 1,2-ETHANEDIOL (three-letter code: EDO) (formula: C₂H₆O₂).

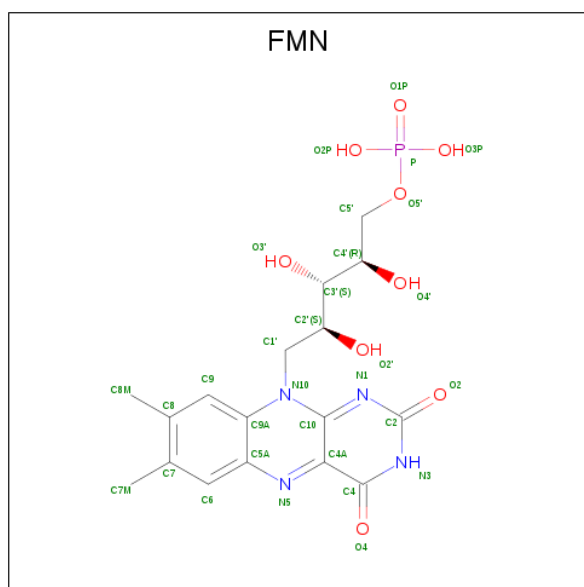


Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total C O 4 2 2	0	0
3	A	1	Total C O 4 2 2	0	0
3	A	1	Total C O 4 2 2	0	0
3	B	1	Total C O 4 2 2	0	0
3	B	1	Total C O 4 2 2	0	0
3	C	1	Total C O 4 2 2	0	0
3	D	1	Total C O 4 2 2	0	0

- Molecule 4 is MAGNESIUM ION (three-letter code: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total Mg 1 1	0	0

- Molecule 5 is FLAVIN MONONUCLEOTIDE (three-letter code: FMN) (formula: C₁₇H₂₁N₄O₉P) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	1	Total C N O P 31 17 4 9 1	0	0

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
5	B	1	Total	C	N	O	P	0	0
			31	17	4	9	1		
5	C	1	Total	C	N	O	P	0	0
			31	17	4	9	1		
5	D	1	Total	C	N	O	P	0	0
			31	17	4	9	1		

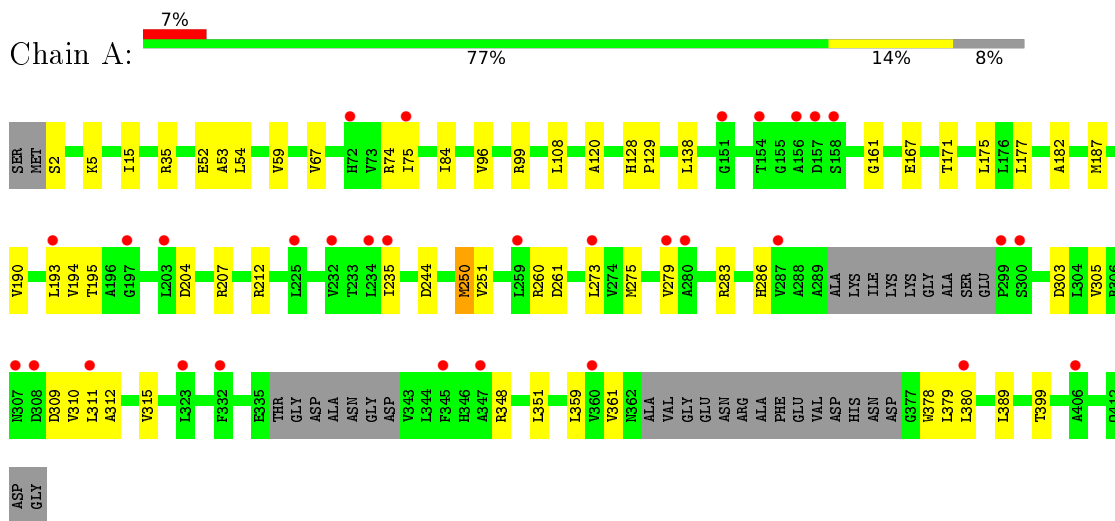
- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	8	Total	O	0	0
			8	8		
6	B	6	Total	O	0	0
			6	6		
6	C	5	Total	O	0	0
			5	5		
6	D	10	Total	O	0	0
			10	10		

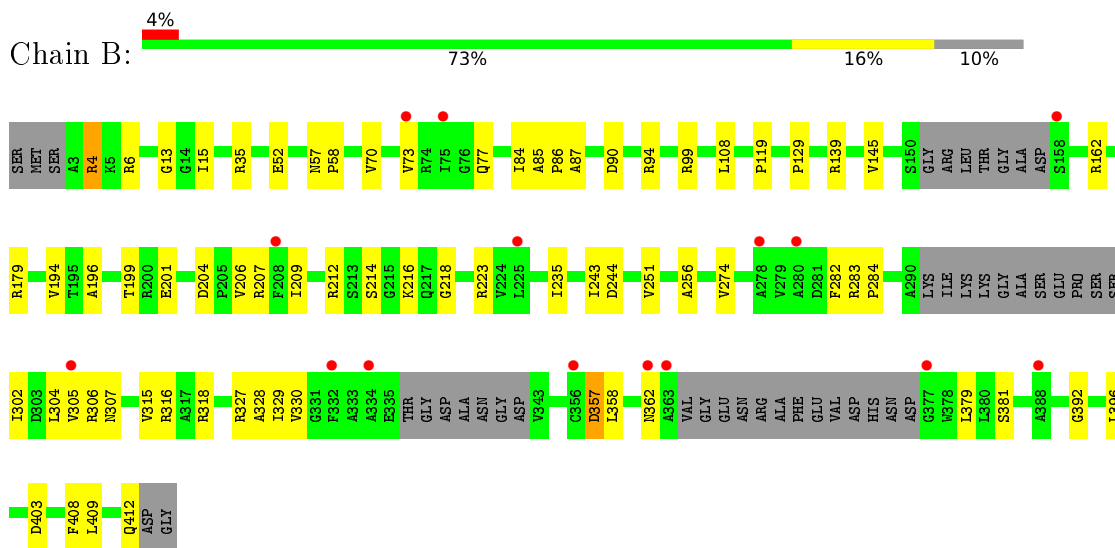
3 Residue-property plots [i](#)

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.

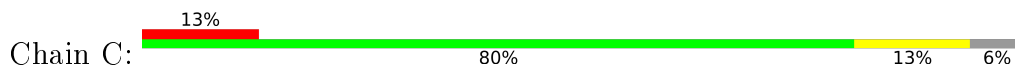
- Molecule 1: Coenzyme A biosynthesis bifunctional protein CoaBC

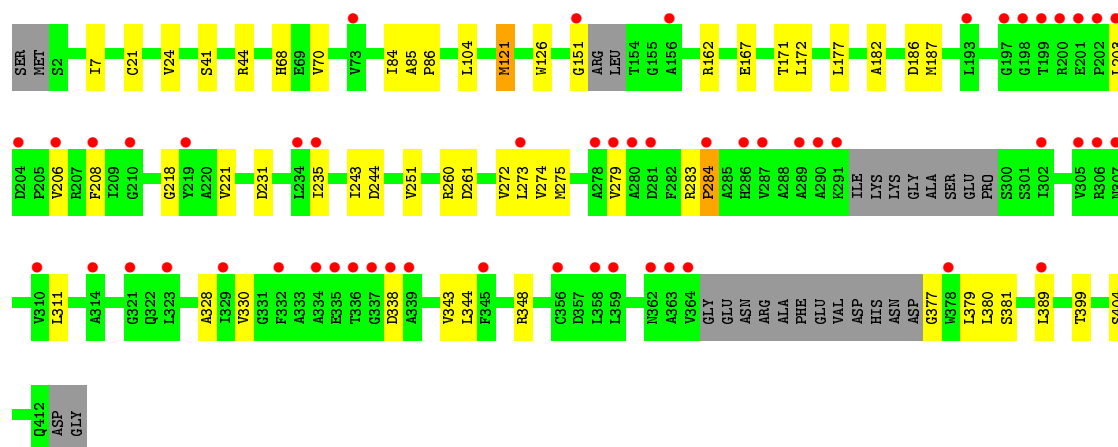


- Molecule 1: Coenzyme A biosynthesis bifunctional protein CoaBC

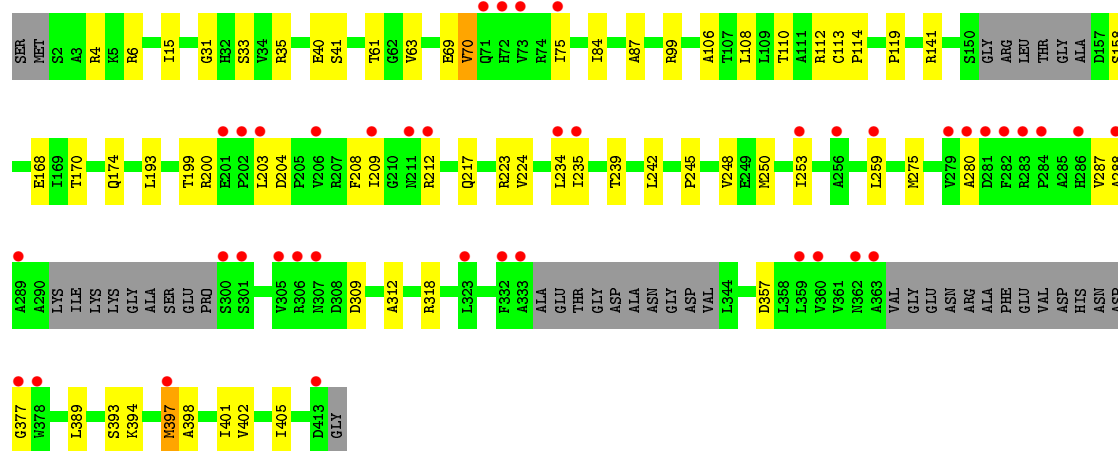
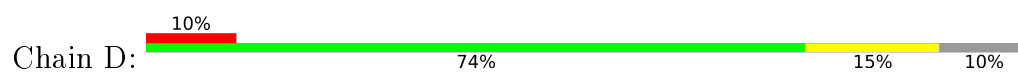


- Molecule 1: Coenzyme A biosynthesis bifunctional protein CoaBC





- Molecule 1: Coenzyme A biosynthesis bifunctional protein CoaBC



4 Data and refinement statistics

Property	Value	Source
Space group	H 3 2	Depositor
Cell constants a, b, c, α , β , γ	195.13Å 195.13Å 373.73Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	62.67 – 2.50 81.77 – 2.50	Depositor EDS
% Data completeness (in resolution range)	99.8 (62.67-2.50) 99.8 (81.77-2.50)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.55 (at 2.51Å)	Xtrriage
Refinement program	PHENIX	Depositor
R, R_{free}	0.204 , 0.245 0.204 , 0.245	Depositor DCC
R_{free} test set	4758 reflections (5.04%)	wwPDB-VP
Wilson B-factor (Å ²)	76.0	Xtrriage
Anisotropy	0.256	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.31 , 82.2	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	10828	wwPDB-VP
Average B, all atoms (Å ²)	109.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.42% 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: CTP, MG, EDO, FMN

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	0.45	0/2717	0.65	0/3708
1	B	0.47	0/2590	0.63	0/3541
1	C	0.45	0/2752	0.65	0/3760
1	D	0.42	0/2610	0.63	0/3568
All	All	0.45	0/10669	0.64	0/14577

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	2680	0	2629	54	0
1	B	2559	0	2481	51	0
1	C	2715	0	2647	44	0
1	D	2576	0	2479	43	0
2	A	29	0	12	10	0
2	B	29	0	12	0	0
2	C	29	0	12	1	0
2	D	29	0	12	2	0
3	A	12	0	18	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	8	0	12	3	0
3	C	4	0	6	0	0
3	D	4	0	6	0	0
4	A	1	0	0	0	0
5	A	31	0	19	1	0
5	B	31	0	19	3	0
5	C	31	0	19	1	0
5	D	31	0	19	3	0
6	A	8	0	0	1	0
6	B	6	0	0	3	0
6	C	5	0	0	0	0
6	D	10	0	0	0	0
All	All	10828	0	10402	183	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 9.

All (183) 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:C:283:ARG:HG2	1:C:284:PRO:HD2	1.21	1.17
1:C:283:ARG:HG2	1:C:284:PRO:CD	1.75	1.15
1:A:279:VAL:HG21	2:A:501:CTP:C4	1.85	1.11
1:D:113:CYS:HB2	1:D:114:PRO:HD2	1.41	0.98
1:B:315:VAL:O	1:B:318:ARG:HB3	1.66	0.95
1:A:279:VAL:CG2	2:A:501:CTP:C4	2.59	0.85
1:A:279:VAL:HG21	2:A:501:CTP:N3	1.91	0.85
1:A:351:LEU:HD22	1:A:380:LEU:HD13	1.58	0.84
1:B:235:ILE:HG22	1:B:251:VAL:HB	1.59	0.83
1:B:328:ALA:HB2	1:B:409:LEU:HD21	1.64	0.80
1:A:15:ILE:HB	5:A:506:FMN:H6	1.65	0.79
1:A:379:LEU:HD23	1:A:389:LEU:HD21	1.67	0.76
1:A:279:VAL:CG2	2:A:501:CTP:C5	2.69	0.75
1:C:203:LEU:HD11	1:D:209:ILE:HD12	1.69	0.75
1:B:15:ILE:HB	5:B:504:FMN:H6	1.69	0.74
1:B:379:LEU:HD12	1:B:379:LEU:O	1.88	0.74
1:A:303:ASP:HA	1:B:302:ILE:HG13	1.70	0.72
1:C:283:ARG:CG	1:C:284:PRO:CD	2.62	0.72
1:B:204:ASP:HB3	1:B:207:ARG:H	1.55	0.70
1:B:13:GLY:N	5:B:504:FMN:O1P	2.23	0.70
1:A:244:ASP:OD1	1:A:250:MET:HE1	1.91	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:279:VAL:CG2	2:A:501:CTP:C6	2.74	0.70
1:C:283:ARG:HG2	1:C:284:PRO:HD3	1.68	0.70
1:A:74:ARG:HH11	1:A:74:ARG:HG2	1.57	0.70
1:A:167:GLU:O	1:A:171:THR:HG23	1.92	0.69
1:C:338:ASP:HB3	1:C:343:VAL:HG13	1.73	0.68
1:A:279:VAL:HG21	2:A:501:CTP:C5	2.29	0.67
1:B:379:LEU:HD12	1:B:379:LEU:C	2.14	0.67
1:C:41:SER:O	1:C:44:ARG:HG2	1.94	0.67
1:D:203:LEU:O	1:D:287:VAL:HA	1.95	0.66
1:A:359:LEU:HB3	1:A:380:LEU:HD11	1.77	0.66
1:D:113:CYS:HB2	1:D:114:PRO:CD	2.21	0.64
1:A:74:ARG:HH11	1:A:74:ARG:CG	2.11	0.64
1:D:309:ASP:HB3	1:D:312:ALA:HB3	1.81	0.63
1:C:7:ILE:HD11	1:C:177:LEU:HD11	1.81	0.62
1:D:203:LEU:HD13	1:D:208:PHE:HA	1.81	0.62
1:A:275:MET:HG3	1:A:311:LEU:HB2	1.82	0.62
1:D:377:GLY:N	1:D:389:LEU:O	2.33	0.62
1:D:275:MET:HG3	2:D:501:CTP:O2'	2.01	0.60
1:D:204:ASP:HB3	1:D:288:ALA:HB3	1.83	0.60
1:A:244:ASP:OD1	1:A:250:MET:CE	2.48	0.60
1:B:283:ARG:O	1:B:305:VAL:N	2.32	0.60
1:D:35:ARG:HD2	1:D:75:ILE:CD1	2.33	0.59
1:C:283:ARG:CG	1:C:284:PRO:HD2	2.14	0.58
1:B:99:ARG:NH1	6:B:601:HOH:O	2.37	0.58
1:B:214:SER:HB2	1:B:216:LYS:HG3	1.85	0.57
1:D:35:ARG:HD2	1:D:75:ILE:HD13	1.84	0.57
1:A:204:ASP:OD1	1:A:207:ARG:N	2.32	0.57
1:D:199:THR:HG21	1:D:280:ALA:H	1.70	0.57
5:B:504:FMN:HM81	1:D:63:VAL:HG23	1.86	0.56
1:C:344:LEU:HD22	1:C:380:LEU:HD21	1.87	0.56
1:D:40:GLU:OE1	1:D:61:THR:HG21	2.06	0.56
1:B:235:ILE:HA	1:B:251:VAL:O	2.07	0.55
1:C:235:ILE:HA	1:C:251:VAL:HG13	1.89	0.55
1:D:84:ILE:HD11	1:D:108:LEU:HD21	1.89	0.54
1:D:318:ARG:NH2	1:D:357:ASP:OD2	2.35	0.54
1:B:327:ARG:O	1:B:412:GLN:NE2	2.41	0.54
1:B:392:GLY:HA3	1:B:396:LEU:HD23	1.88	0.54
1:C:273:LEU:CD2	1:C:275:MET:HG2	2.38	0.54
1:A:212:ARG:HG3	1:B:206:VAL:O	2.08	0.53
1:B:90:ASP:OD1	1:D:99:ARG:HD2	2.07	0.53
1:D:41:SER:OG	5:D:503:FMN:O2P	2.25	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:84:ILE:HD11	1:B:108:LEU:HD21	1.91	0.53
1:A:283:ARG:N	1:A:305:VAL:O	2.41	0.52
1:C:41:SER:OG	5:C:503:FMN:O1P	2.28	0.52
1:B:223:ARG:HH11	1:B:223:ARG:HG3	1.74	0.52
1:C:273:LEU:HD21	1:C:275:MET:HG2	1.90	0.52
1:D:203:LEU:CD1	1:D:203:LEU:N	2.72	0.52
1:B:139:ARG:NH1	1:B:145:VAL:O	2.41	0.52
1:A:99:ARG:NH2	6:A:601:HOH:O	2.38	0.52
1:C:274:VAL:HA	1:C:330:VAL:HG13	1.93	0.51
1:D:253:ILE:HD13	1:D:259:LEU:HB2	1.92	0.51
1:A:187:MET:HE3	1:A:190:VAL:HG21	1.93	0.50
1:A:279:VAL:HG21	2:A:501:CTP:C2	2.45	0.50
1:B:162:ARG:HA	3:B:503:EDO:H12	1.93	0.50
1:D:234:LEU:HD23	1:D:250:MET:SD	2.51	0.50
1:C:279:VAL:HB	2:C:501:CTP:C5	2.47	0.50
1:A:96:VAL:HG12	1:A:138:LEU:HG	1.94	0.50
1:A:279:VAL:HG22	2:A:501:CTP:C6	2.46	0.50
1:B:94:ARG:NH2	6:B:602:HOH:O	2.41	0.50
1:B:196:ALA:HB2	1:B:218:GLY:HA3	1.94	0.50
1:A:5:LYS:HG3	1:A:177:LEU:HD22	1.94	0.49
1:A:359:LEU:HB3	1:A:380:LEU:CD1	2.42	0.49
1:A:279:VAL:HG21	2:A:501:CTP:C6	2.46	0.49
1:D:106:ALA:O	1:D:110:THR:HG23	2.11	0.49
1:D:401:ILE:O	1:D:405:ILE:HG13	2.13	0.49
1:B:6:ARG:HB3	3:B:502:EDO:H11	1.94	0.49
1:B:315:VAL:O	1:B:318:ARG:CB	2.51	0.49
1:D:15:ILE:HB	5:D:503:FMN:H6	1.94	0.49
1:D:245:PRO:HB2	1:D:248:VAL:HG21	1.95	0.49
1:A:74:ARG:CG	1:A:74:ARG:NH1	2.73	0.48
1:C:21:CYS:O	1:C:24:VAL:HG22	2.13	0.48
1:D:200:ARG:HD2	1:D:208:PHE:CE1	2.48	0.48
1:B:282:PHE:HA	1:B:306:ARG:HA	1.96	0.48
1:D:193:LEU:HD21	1:D:235:ILE:HD12	1.95	0.48
1:C:379:LEU:HD23	1:C:404:SER:OG	2.14	0.48
1:B:358:LEU:HB3	1:B:381:SER:HA	1.96	0.48
1:C:348:ARG:NH2	1:C:381:SER:O	2.47	0.48
1:A:244:ASP:CG	1:A:250:MET:CE	2.83	0.47
1:C:272:VAL:HG22	1:C:328:ALA:HB3	1.95	0.47
1:A:128:HIS:CG	1:A:129:PRO:HD2	2.50	0.47
1:A:279:VAL:HG23	2:A:501:CTP:C5	2.48	0.47
1:C:206:VAL:O	1:D:212:ARG:HG3	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:35:ARG:HD3	1:A:75:ILE:HD11	1.96	0.47
1:A:361:VAL:CG1	1:A:378:TRP:HB2	2.45	0.47
1:C:283:ARG:CG	1:C:284:PRO:HD3	2.40	0.47
1:D:4:ARG:NH2	1:D:31:GLY:O	2.48	0.47
1:A:260:ARG:HB3	1:A:310:VAL:HG22	1.96	0.47
1:D:217:GLN:H	1:D:217:GLN:CD	2.18	0.47
1:C:84:ILE:CD1	1:C:104:LEU:HD11	2.45	0.47
1:C:151:GLY:HA3	1:C:162:ARG:HH21	1.80	0.47
1:B:194:VAL:HG13	1:B:274:VAL:HG13	1.96	0.46
1:B:214:SER:CB	1:B:216:LYS:HG3	2.45	0.46
1:B:129:PRO:HB2	1:D:141:ARG:HD3	1.97	0.46
1:B:256:ALA:HB3	1:B:307:ASN:ND2	2.30	0.46
1:D:398:ALA:O	1:D:402:VAL:HG23	2.15	0.46
1:B:330:VAL:HA	1:B:358:LEU:O	2.15	0.46
1:A:52:GLU:HG2	1:A:59:VAL:HG23	1.98	0.45
1:B:73:VAL:HG12	1:B:77:GLN:CD	2.36	0.45
1:B:243:ILE:HD12	1:B:244:ASP:H	1.81	0.45
1:A:175:LEU:HD11	1:A:399:THR:HG21	1.98	0.45
1:D:394:LYS:O	1:D:397:MET:HG3	2.16	0.45
1:B:57:ASN:HB3	1:B:58:PRO:HD2	1.98	0.45
1:D:170:THR:O	1:D:174:GLN:HG3	2.17	0.45
1:C:260:ARG:HG3	1:C:261:ASP:N	2.32	0.45
1:C:377:GLY:HA3	1:C:389:LEU:HB2	1.99	0.45
1:A:244:ASP:CG	1:A:250:MET:HE2	2.37	0.45
1:B:199:THR:HG21	1:B:256:ALA:HB2	1.99	0.44
1:B:284:PRO:HA	1:B:304:LEU:HA	2.00	0.44
1:A:235:ILE:HG22	1:A:251:VAL:HB	1.98	0.44
1:C:203:LEU:CD1	1:D:209:ILE:HD12	2.42	0.44
1:A:53:ALA:HB1	1:B:15:ILE:HD12	2.00	0.44
1:A:84:ILE:HD11	1:A:108:LEU:HD21	1.98	0.44
1:A:193:LEU:HD23	1:A:194:VAL:N	2.33	0.44
1:B:357:ASP:HB3	1:B:408:PHE:CZ	2.52	0.44
1:A:261:ASP:OD2	1:A:261:ASP:N	2.51	0.44
1:C:379:LEU:CD2	1:C:404:SER:OG	2.66	0.44
1:C:85:ALA:HA	1:C:86:PRO:HA	1.80	0.43
1:B:4:ARG:O	1:B:4:ARG:HG2	2.18	0.43
1:B:194:VAL:HG22	1:B:274:VAL:CG1	2.49	0.43
1:B:379:LEU:C	1:B:379:LEU:CD1	2.85	0.43
5:D:503:FMN:H9	5:D:503:FMN:H1'1	1.81	0.43
1:A:35:ARG:HD3	1:A:75:ILE:CD1	2.49	0.43
1:B:94:ARG:NE	6:B:602:HOH:O	2.37	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:179:ARG:NH2	1:B:403:ASP:OD2	2.45	0.43
1:C:208:PHE:HE2	1:D:212:ARG:HG2	1.83	0.43
1:A:309:ASP:HB3	1:A:312:ALA:HB3	2.00	0.42
1:C:275:MET:HG3	1:C:311:LEU:HB2	2.01	0.42
1:B:85:ALA:HA	1:B:86:PRO:HA	1.90	0.42
1:B:362:ASN:OD1	1:B:362:ASN:N	2.52	0.42
1:C:172:LEU:HD23	1:C:172:LEU:HA	1.87	0.42
1:A:312:ALA:HA	1:A:315:VAL:HG12	2.01	0.42
1:B:201:GLU:HB2	1:B:209:ILE:HG23	2.01	0.42
1:D:6:ARG:HE	1:D:6:ARG:HB2	1.69	0.42
1:A:195:THR:HG21	1:A:275:MET:SD	2.60	0.42
1:C:70:VAL:HG13	1:C:70:VAL:O	2.20	0.42
1:A:250:MET:HE3	1:A:250:MET:HB3	1.88	0.42
1:C:221:VAL:HG21	1:C:274:VAL:HG11	2.01	0.42
1:A:120:ALA:HA	1:A:161:GLY:O	2.21	0.41
1:A:273:LEU:CD1	1:A:275:MET:HG2	2.50	0.41
1:B:35:ARG:HD2	3:B:502:EDO:C2	2.50	0.41
1:C:121:MET:HG3	1:C:126:TRP:HB2	2.02	0.41
1:D:168:GLU:HG3	1:D:223:ARG:HE	1.86	0.41
2:D:501:CTP:H6	2:D:501:CTP:O2A	2.04	0.41
1:A:182:ALA:HB1	1:A:399:THR:HG21	2.02	0.41
1:C:243:ILE:HD12	1:C:244:ASP:O	2.20	0.41
1:B:87:ALA:O	1:B:119:PRO:HA	2.21	0.41
1:A:15:ILE:O	1:A:15:ILE:HG12	2.21	0.41
1:C:182:ALA:HB1	1:C:399:THR:HG21	2.02	0.41
1:C:186:ASP:OD1	1:C:187:MET:HG2	2.21	0.41
1:D:224:VAL:HG12	1:D:402:VAL:HG21	2.03	0.41
1:C:218:GLY:O	1:C:221:VAL:HG22	2.21	0.41
1:C:203:LEU:HD11	1:D:209:ILE:CD1	2.47	0.40
1:C:284:PRO:CD	1:C:284:PRO:O	2.69	0.40
1:D:239:THR:HB	1:D:242:LEU:HG	2.03	0.40
1:A:348:ARG:HA	1:A:348:ARG:HD3	1.89	0.40
1:C:167:GLU:O	1:C:171:THR:HG23	2.21	0.40
1:D:87:ALA:O	1:D:119:PRO:HA	2.21	0.40
1:A:54:LEU:HD23	1:A:54:LEU:HA	1.83	0.40
1:B:318:ARG:NH1	1:B:329:ILE:HD12	2.36	0.40
1:C:84:ILE:HD12	1:C:104:LEU:HD11	2.04	0.40
1:C:203:LEU:CD1	1:D:209:ILE:CD1	2.99	0.40
1:B:73:VAL:CG1	1:B:77:GLN:CD	2.90	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	373/415 (90%)	356 (95%)	16 (4%)	1 (0%)	41	61
1	B	362/415 (87%)	352 (97%)	10 (3%)	0	100	100
1	C	381/415 (92%)	368 (97%)	12 (3%)	1 (0%)	41	61
1	D	364/415 (88%)	348 (96%)	15 (4%)	1 (0%)	41	61
All	All	1480/1660 (89%)	1424 (96%)	53 (4%)	3 (0%)	47	68

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	70	VAL
1	A	286	HIS
1	C	284	PRO

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	252/307 (82%)	249 (99%)	3 (1%)	71	88
1	B	227/307 (74%)	221 (97%)	6 (3%)	46	72
1	C	251/307 (82%)	248 (99%)	3 (1%)	71	88
1	D	232/307 (76%)	225 (97%)	7 (3%)	41	68
All	All	962/1228 (78%)	943 (98%)	19 (2%)	55	79

All (19) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	2	SER
1	A	67	VAL
1	A	250	MET
1	B	4	ARG
1	B	52	GLU
1	B	70	VAL
1	B	212	ARG
1	B	316	ARG
1	B	357	ASP
1	C	68	HIS
1	C	121	MET
1	C	231	ASP
1	D	33	SER
1	D	69	GLU
1	D	70	VAL
1	D	112	ARG
1	D	158	SER
1	D	393	SER
1	D	397	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	252	HIS
1	A	362	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 monosaccharides in this entry.

5.6 Ligand geometry

Of 16 ligands modelled in this entry, 1 is monoatomic - leaving 15 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
3	EDO	D	502	-	3,3,3	0.59	0	2,2,2	0.14	0
3	EDO	A	504	-	3,3,3	0.47	0	2,2,2	0.35	0
2	CTP	A	501	4	23,30,30	0.75	0	30,47,47	1.30	5 (16%)
3	EDO	A	503	-	3,3,3	0.70	0	2,2,2	0.08	0
5	FMN	B	504	-	31,33,33	1.48	4 (12%)	40,50,50	1.75	6 (15%)
3	EDO	B	502	-	3,3,3	0.60	0	2,2,2	0.10	0
5	FMN	D	503	-	31,33,33	1.60	5 (16%)	40,50,50	1.80	8 (20%)
2	CTP	B	501	-	23,30,30	0.80	0	30,47,47	1.22	3 (10%)
5	FMN	C	503	-	31,33,33	2.35	12 (38%)	40,50,50	2.44	11 (27%)
3	EDO	B	503	-	3,3,3	0.60	0	2,2,2	0.04	0
3	EDO	C	502	-	3,3,3	0.46	0	2,2,2	0.23	0
3	EDO	A	502	-	3,3,3	0.54	0	2,2,2	0.33	0
2	CTP	D	501	-	23,30,30	0.78	1 (4%)	30,47,47	1.32	3 (10%)
5	FMN	A	506	-	31,33,33	1.44	4 (12%)	40,50,50	1.77	6 (15%)
2	CTP	C	501	-	23,30,30	0.74	0	30,47,47	1.33	5 (16%)

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	EDO	D	502	-	-	1/1/1/1	-
3	EDO	A	504	-	-	1/1/1/1	-
2	CTP	A	501	4	-	8/20/38/38	0/2/2/2
3	EDO	A	503	-	-	0/1/1/1	-
5	FMN	B	504	-	-	4/18/18/18	0/3/3/3
3	EDO	B	502	-	-	1/1/1/1	-
5	FMN	D	503	-	-	9/18/18/18	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	CTP	B	501	-	-	11/20/38/38	0/2/2/2
5	FMN	C	503	-	-	5/18/18/18	0/3/3/3
3	EDO	B	503	-	-	0/1/1/1	-
3	EDO	C	502	-	-	0/1/1/1	-
3	EDO	A	502	-	-	0/1/1/1	-
2	CTP	D	501	-	-	4/20/38/38	0/2/2/2
5	FMN	A	506	-	-	7/18/18/18	0/3/3/3
2	CTP	C	501	-	-	8/20/38/38	0/2/2/2

All (26) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	C	503	FMN	C4A-C10	5.91	1.44	1.38
5	C	503	FMN	P-O2P	-4.70	1.36	1.54
5	A	506	FMN	C10-N1	4.40	1.38	1.33
5	D	503	FMN	C1'-N10	4.25	1.52	1.48
5	D	503	FMN	C10-N1	4.18	1.38	1.33
5	B	504	FMN	C10-N1	4.15	1.38	1.33
5	C	503	FMN	C6-C5A	-4.01	1.35	1.41
5	C	503	FMN	C1'-N10	-3.99	1.44	1.48
5	C	503	FMN	C2-N3	-3.65	1.30	1.38
5	B	504	FMN	C4-N3	3.54	1.39	1.33
5	B	504	FMN	C4A-N5	3.43	1.38	1.33
5	D	503	FMN	C4A-N5	3.31	1.38	1.33
5	D	503	FMN	C4-N3	3.29	1.38	1.33
5	A	506	FMN	C4-N3	3.23	1.38	1.33
5	C	503	FMN	P-O3P	-2.90	1.43	1.54
5	A	506	FMN	C6-C5A	-2.78	1.37	1.41
5	C	503	FMN	C2-N1	-2.74	1.32	1.38
5	A	506	FMN	C4A-N5	2.72	1.37	1.33
5	B	504	FMN	C1'-N10	2.63	1.50	1.48
5	C	503	FMN	C9-C9A	-2.49	1.35	1.40
5	C	503	FMN	P-O1P	-2.31	1.43	1.50
5	C	503	FMN	C5A-N5	-2.30	1.31	1.35
5	C	503	FMN	P-O5'	-2.28	1.52	1.60
5	C	503	FMN	C9A-C5A	2.24	1.47	1.42
2	D	501	CTP	C4-N3	2.07	1.38	1.35
5	D	503	FMN	C4A-C10	2.05	1.40	1.38

All (47) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	C	503	FMN	C4-N3-C2	8.14	122.01	115.14
5	B	504	FMN	C4-N3-C2	6.84	120.92	115.14
5	A	506	FMN	C4-N3-C2	6.66	120.77	115.14
5	C	503	FMN	C4-C4A-C10	-6.55	115.62	119.95
5	C	503	FMN	C1'-N10-C9A	5.70	122.78	118.29
5	D	503	FMN	C4-N3-C2	5.64	119.91	115.14
5	D	503	FMN	C5A-C9A-N10	3.99	120.61	117.72
2	D	501	CTP	PB-O3A-PA	-3.91	119.41	132.83
2	A	501	CTP	PB-O3A-PA	-3.68	120.20	132.83
5	A	506	FMN	C4A-C4-N3	-3.65	118.44	123.43
5	C	503	FMN	C9A-N10-C10	-3.44	117.40	121.91
2	C	501	CTP	C2-N3-C4	3.40	119.78	116.34
5	D	503	FMN	C1'-N10-C9A	3.39	120.96	118.29
5	C	503	FMN	P-O5'-C5'	3.37	127.58	118.30
2	C	501	CTP	PB-O3B-PG	-3.31	121.47	132.83
5	B	504	FMN	C1'-N10-C9A	3.29	120.89	118.29
5	B	504	FMN	C4A-C4-N3	-3.21	119.04	123.43
5	D	503	FMN	O4'-C4'-C3'	3.14	116.72	109.10
5	D	503	FMN	C9A-N10-C10	-3.11	117.84	121.91
2	B	501	CTP	PB-O3B-PG	-3.09	122.23	132.83
2	B	501	CTP	PB-O3A-PA	-3.07	122.31	132.83
5	C	503	FMN	C10-C4A-N5	3.02	123.35	121.26
5	B	504	FMN	C5A-C9A-N10	2.97	119.87	117.72
5	D	503	FMN	C1'-N10-C10	2.95	121.05	118.41
5	C	503	FMN	O2P-P-O5'	-2.95	98.88	106.73
5	A	506	FMN	C4A-N5-C5A	2.92	119.69	116.77
5	D	503	FMN	C4A-C4-N3	-2.84	119.55	123.43
5	A	506	FMN	C1'-N10-C9A	2.83	120.52	118.29
5	A	506	FMN	C7M-C7-C6	-2.76	113.73	120.34
2	B	501	CTP	C6-N1-C2	-2.72	116.87	121.20
5	B	504	FMN	C4A-N5-C5A	2.71	119.48	116.77
5	C	503	FMN	O5'-P-O1P	-2.68	98.97	106.47
5	C	503	FMN	C5A-C9A-N10	2.65	119.64	117.72
2	A	501	CTP	N4-C4-N3	2.59	120.58	116.49
2	A	501	CTP	PB-O3B-PG	-2.53	124.14	132.83
5	B	504	FMN	O3'-C3'-C4'	2.47	114.79	108.81
2	D	501	CTP	C2-N3-C4	2.47	118.84	116.34
5	A	506	FMN	C10-C4A-N5	-2.46	119.56	121.26
5	C	503	FMN	C4A-C4-N3	-2.45	120.08	123.43
2	C	501	CTP	C3'-C2'-C1'	2.43	104.64	100.98
2	A	501	CTP	C5-C4-N3	-2.18	119.20	121.72
5	D	503	FMN	C4A-N5-C5A	2.15	118.92	116.77
5	C	503	FMN	C4-C4A-N5	2.14	121.04	118.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	501	CTP	PB-O3A-PA	-2.11	125.57	132.83
2	D	501	CTP	N4-C4-N3	2.03	119.70	116.49
2	C	501	CTP	N4-C4-N3	2.02	119.68	116.49
2	A	501	CTP	C2-N3-C4	2.01	118.38	116.34

There are no chirality outliers.

All (59) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	501	CTP	C2'-C1'-N1-C6
2	A	501	CTP	O4'-C1'-N1-C6
2	A	501	CTP	O4'-C4'-C5'-O5'
2	A	501	CTP	C5'-O5'-PA-O1A
2	A	501	CTP	C5'-O5'-PA-O2A
2	A	501	CTP	C5'-O5'-PA-O3A
2	B	501	CTP	C3'-C4'-C5'-O5'
2	B	501	CTP	C5'-O5'-PA-O1A
2	B	501	CTP	PB-O3B-PG-O3G
2	C	501	CTP	C3'-C4'-C5'-O5'
2	C	501	CTP	O4'-C4'-C5'-O5'
2	C	501	CTP	C5'-O5'-PA-O1A
2	C	501	CTP	C5'-O5'-PA-O2A
2	C	501	CTP	C5'-O5'-PA-O3A
2	C	501	CTP	PB-O3B-PG-O3G
5	A	506	FMN	O3'-C3'-C4'-C5'
5	A	506	FMN	C5'-O5'-P-O1P
5	A	506	FMN	C5'-O5'-P-O3P
5	B	504	FMN	C3'-C4'-C5'-O5'
5	B	504	FMN	O4'-C4'-C5'-O5'
5	B	504	FMN	C5'-O5'-P-O2P
5	B	504	FMN	C5'-O5'-P-O3P
5	C	503	FMN	O4'-C4'-C5'-O5'
5	C	503	FMN	C5'-O5'-P-O2P
5	C	503	FMN	C5'-O5'-P-O3P
5	D	503	FMN	N10-C1'-C2'-O2'
5	D	503	FMN	N10-C1'-C2'-C3'
5	D	503	FMN	C5'-O5'-P-O2P
5	D	503	FMN	C5'-O5'-P-O3P
5	D	503	FMN	O3'-C3'-C4'-O4'
2	A	501	CTP	C3'-C4'-C5'-O5'
2	B	501	CTP	O4'-C4'-C5'-O5'
5	D	503	FMN	C2'-C3'-C4'-O4'

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Mol	Chain	Res	Type	Atoms
5	D	503	FMN	O3'-C3'-C4'-C5'
5	A	506	FMN	C2'-C3'-C4'-C5'
5	D	503	FMN	C2'-C3'-C4'-C5'
5	A	506	FMN	C2'-C3'-C4'-O4'
5	A	506	FMN	O3'-C3'-C4'-O4'
5	C	503	FMN	C5'-O5'-P-O1P
5	D	503	FMN	C5'-O5'-P-O1P
2	D	501	CTP	PG-O3B-PB-O1B
2	B	501	CTP	PB-O3A-PA-O5'
5	A	506	FMN	C5'-O5'-P-O2P
2	B	501	CTP	PB-O3B-PG-O2G
2	D	501	CTP	PB-O3B-PG-O2G
2	B	501	CTP	C5'-O5'-PA-O3A
2	A	501	CTP	PB-O3A-PA-O1A
2	D	501	CTP	PA-O3A-PB-O1B
2	B	501	CTP	PA-O3A-PB-O3B
2	B	501	CTP	C4'-C5'-O5'-PA
3	B	502	EDO	O1-C1-C2-O2
2	B	501	CTP	PB-O3B-PG-O1G
2	C	501	CTP	PB-O3B-PG-O1G
3	A	504	EDO	O1-C1-C2-O2
2	C	501	CTP	PB-O3B-PG-O2G
2	B	501	CTP	PA-O3A-PB-O1B
2	D	501	CTP	PG-O3B-PB-O2B
5	C	503	FMN	C3'-C4'-C5'-O5'
3	D	502	EDO	O1-C1-C2-O2

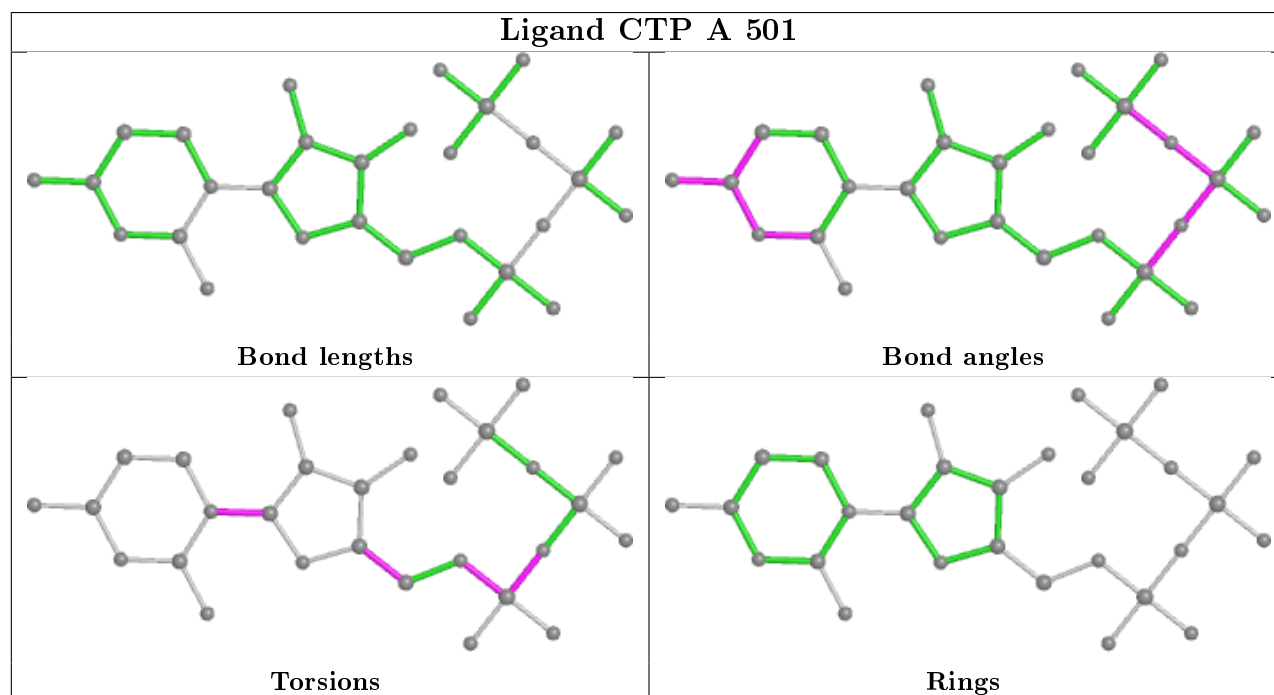
There are no ring outliers.

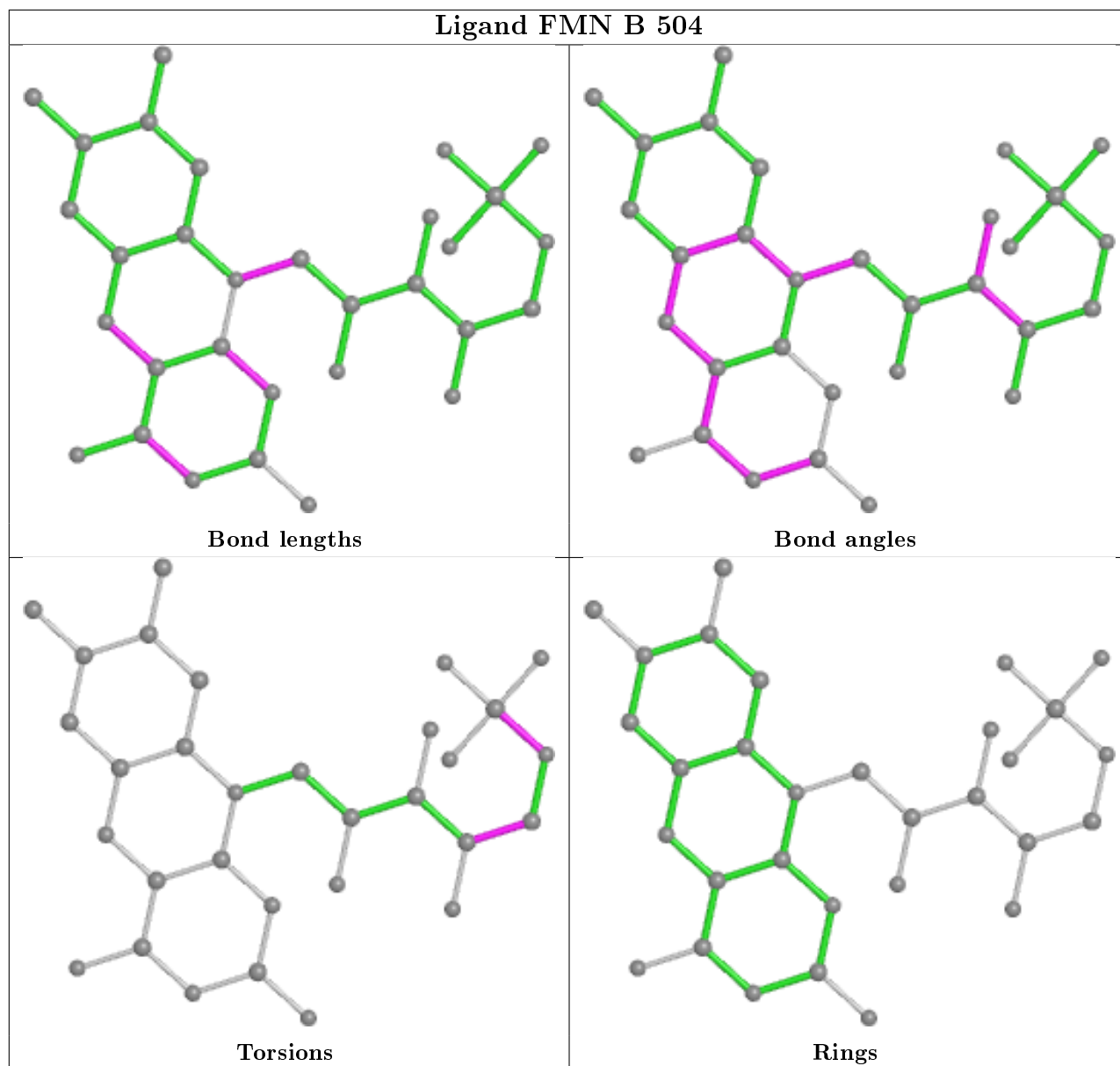
9 monomers are involved in 24 short contacts:

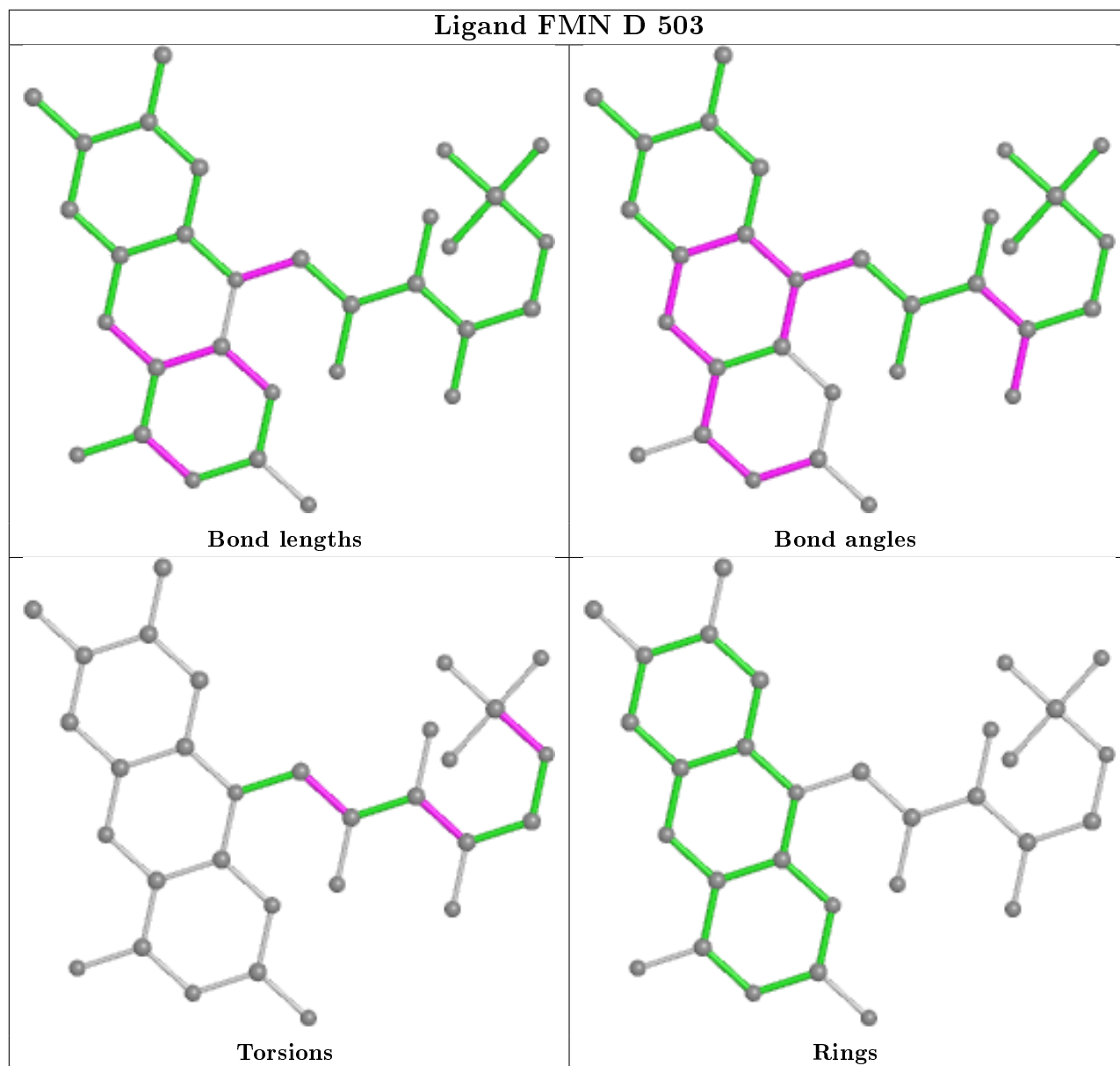
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	501	CTP	10	0
5	B	504	FMN	3	0
3	B	502	EDO	2	0
5	D	503	FMN	3	0
5	C	503	FMN	1	0
3	B	503	EDO	1	0
2	D	501	CTP	2	0
5	A	506	FMN	1	0
2	C	501	CTP	1	0

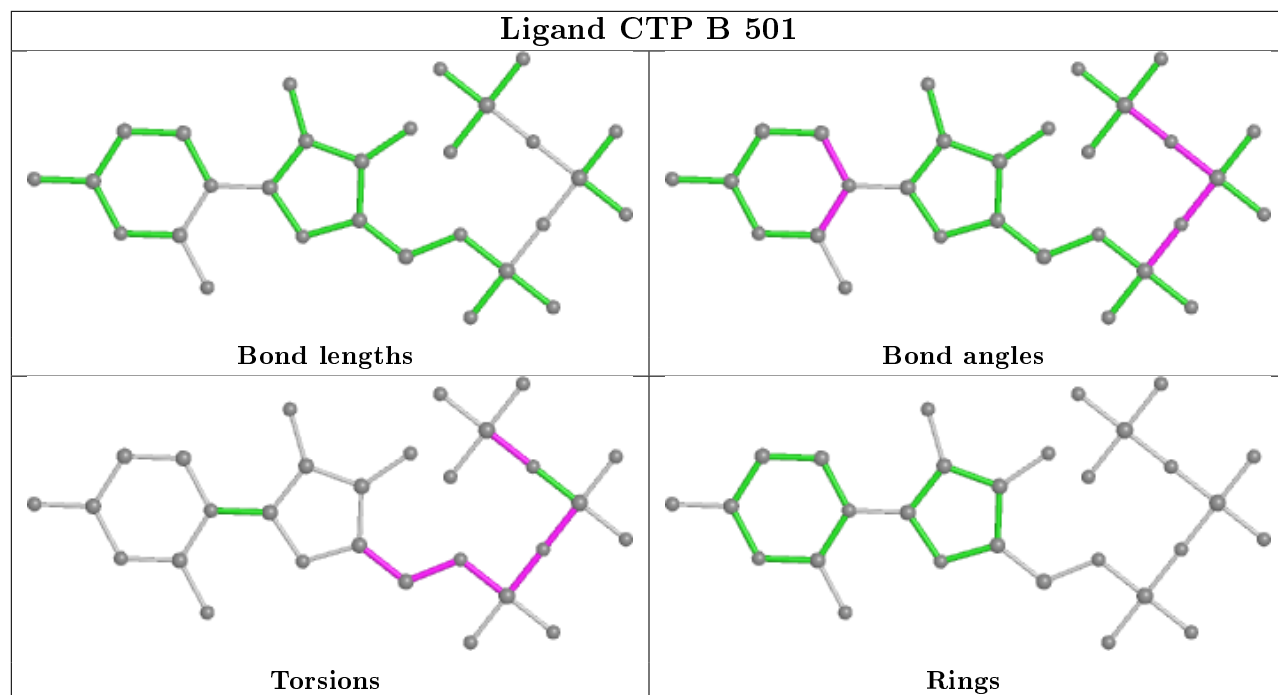
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths,

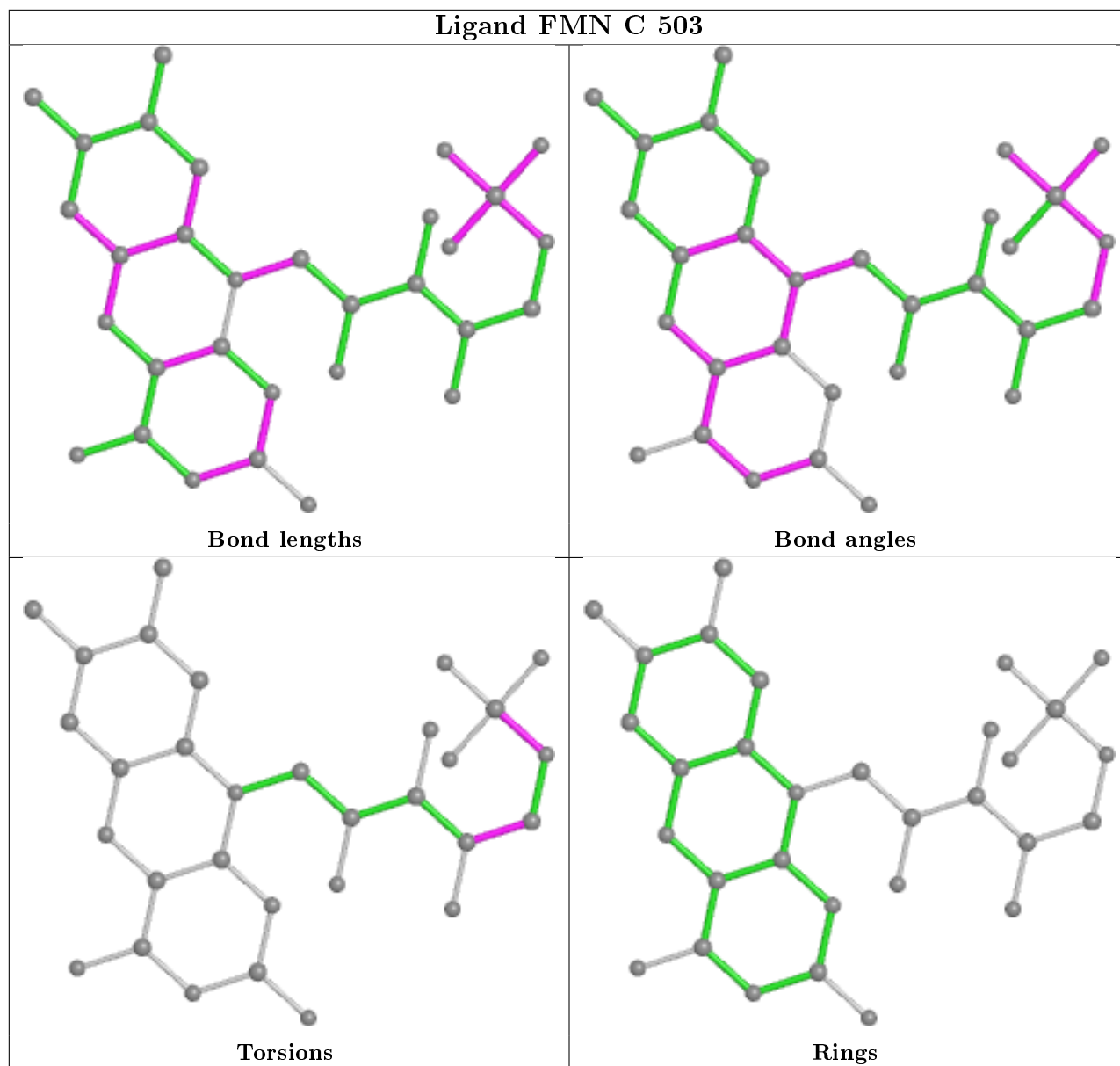
bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 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.

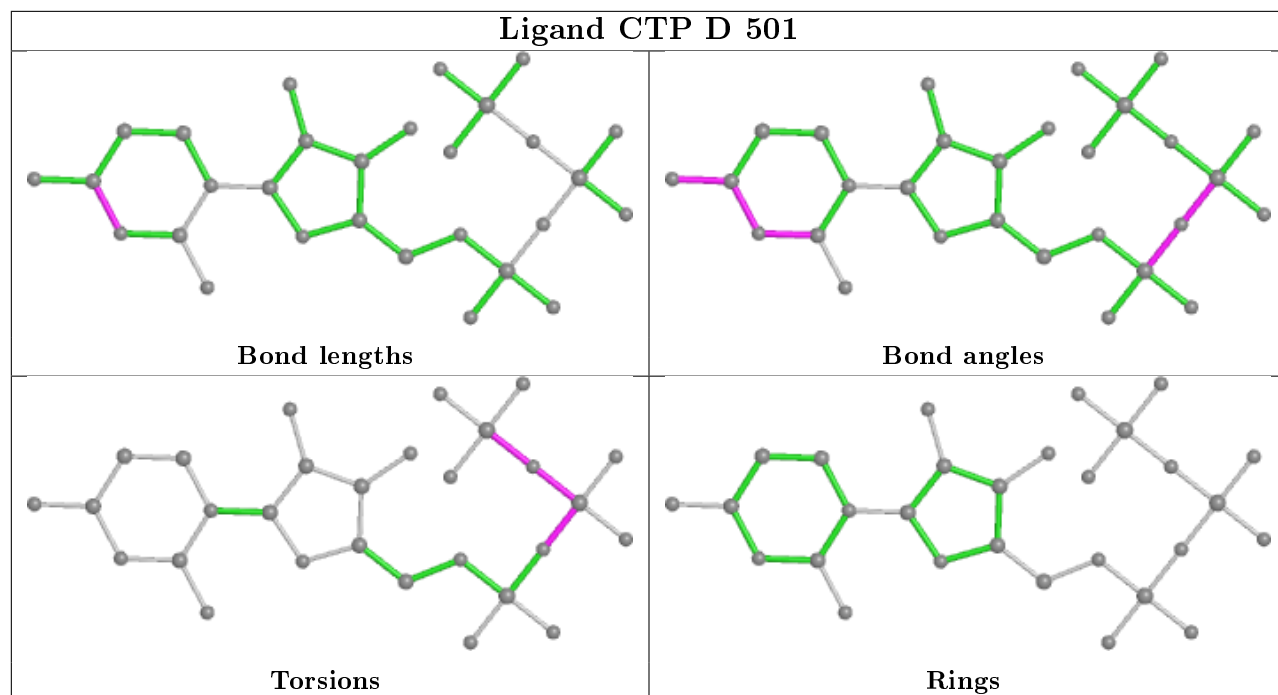


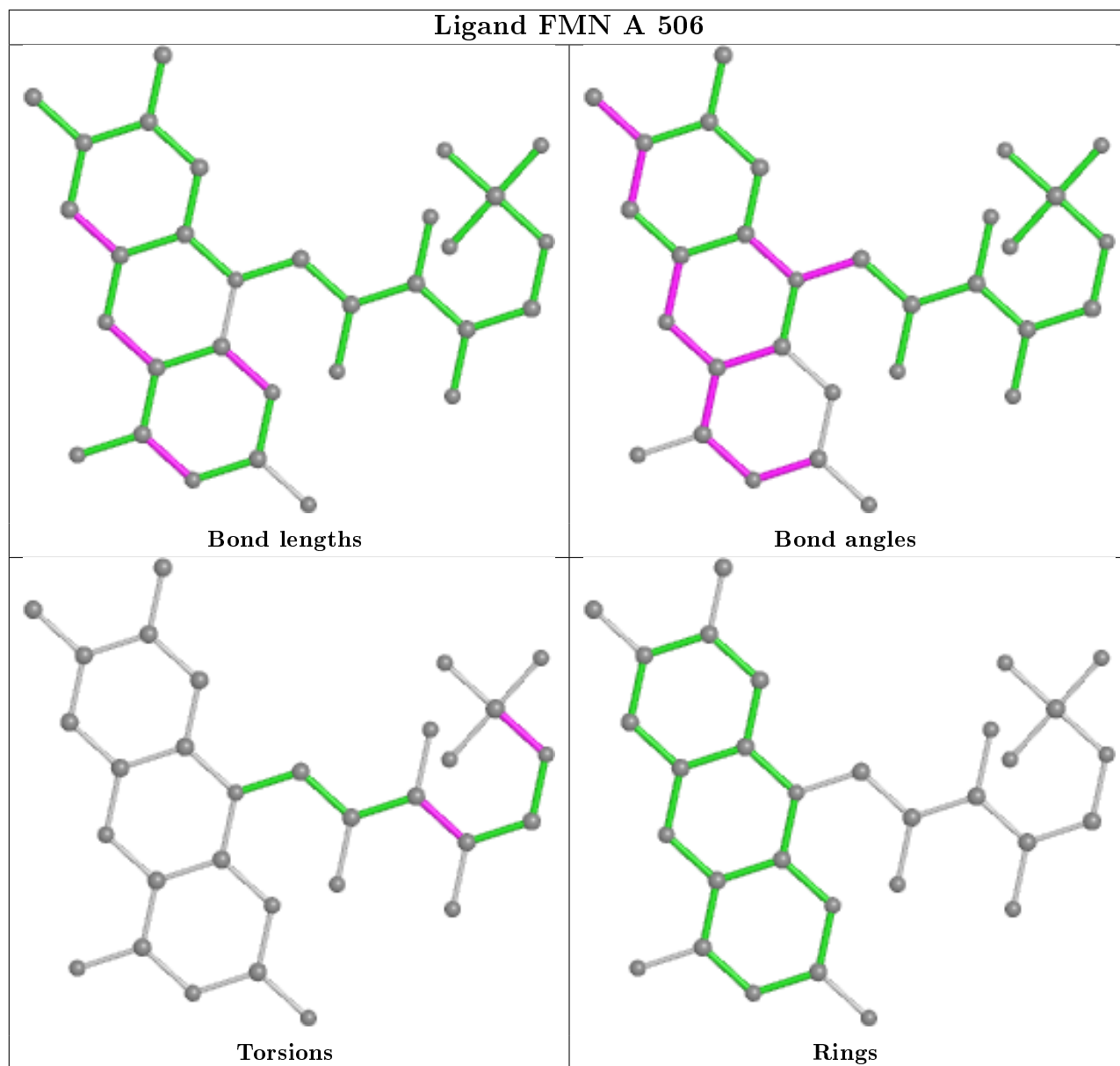


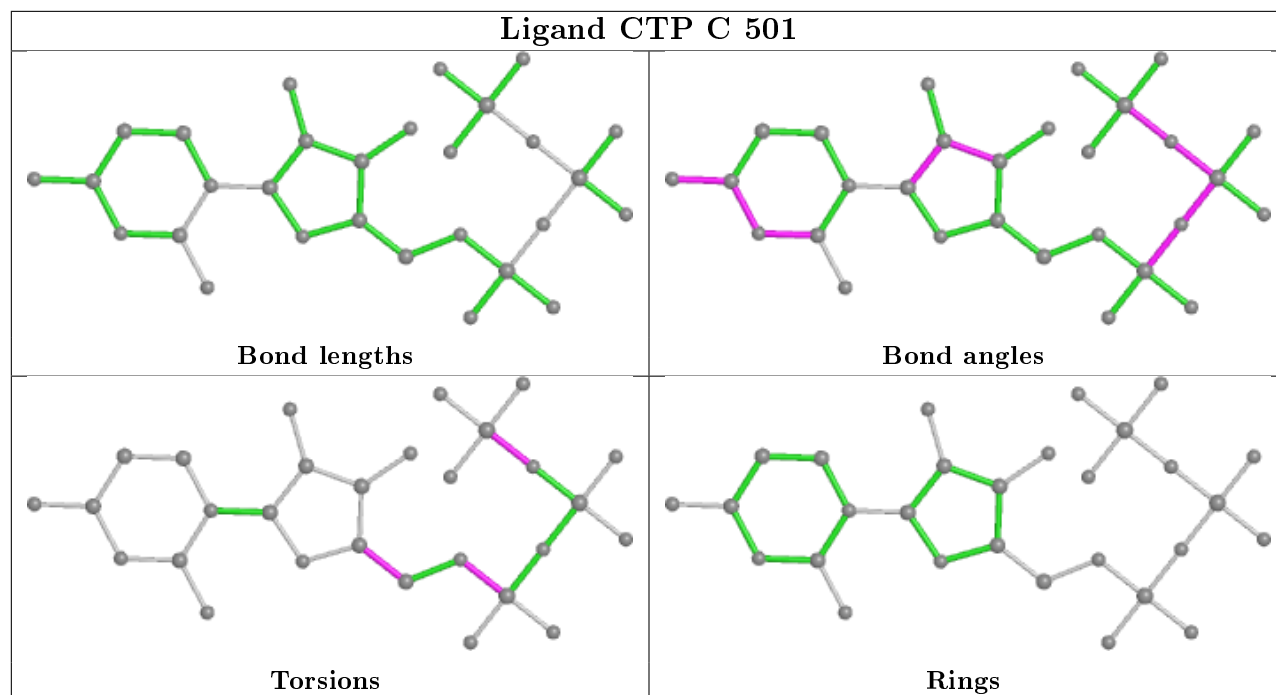












5.7 Other polymers [i](#)

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	381/415 (91%)	0.70	31 (8%) 12 12	59, 112, 167, 200	0
1	B	372/415 (89%)	0.46	15 (4%) 38 41	58, 106, 168, 191	0
1	C	389/415 (93%)	0.82	54 (13%) 2 2	58, 104, 163, 199	0
1	D	374/415 (90%)	0.74	41 (10%) 5 5	57, 110, 167, 191	0
All	All	1516/1660 (91%)	0.68	141 (9%) 8 8	57, 108, 167, 200	0

All (141) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	279	VAL	9.2
1	D	363	ALA	8.4
1	D	282	PHE	7.4
1	C	280	ALA	7.0
1	B	356	CYS	6.2
1	C	336	THR	6.1
1	D	377	GLY	6.0
1	C	156	ALA	6.0
1	D	73	VAL	5.7
1	C	364	VAL	5.7
1	D	253	ILE	5.7
1	A	300	SER	5.5
1	C	198	GLY	5.2
1	D	288	ALA	5.2
1	C	363	ALA	5.0
1	C	289	ALA	4.7
1	C	203	LEU	4.6
1	C	356	CYS	4.5
1	C	337	GLY	4.5
1	D	259	LEU	4.4
1	B	334	ALA	4.3

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Mol	Chain	Res	Type	RSRZ
1	A	299	PRO	4.3
1	D	284	PRO	4.3
1	A	323	LEU	4.3
1	C	310	VAL	4.2
1	D	300	SER	4.1
1	C	314	ALA	4.0
1	C	219	TYR	4.0
1	D	280	ALA	3.9
1	D	289	ALA	3.9
1	C	389	LEU	3.9
1	A	75	ILE	3.8
1	D	72	HIS	3.8
1	C	287	VAL	3.7
1	A	332	PHE	3.7
1	A	203	LEU	3.6
1	A	234	LEU	3.6
1	C	281	ASP	3.6
1	C	278	ALA	3.6
1	A	279	VAL	3.6
1	D	359	LEU	3.5
1	D	332	PHE	3.5
1	A	280	ALA	3.5
1	C	339	ALA	3.4
1	C	206	VAL	3.3
1	B	280	ALA	3.3
1	C	345	PHE	3.3
1	C	332	PHE	3.3
1	A	308	ASP	3.3
1	D	323	LEU	3.3
1	A	232	VAL	3.3
1	A	156	ALA	3.3
1	D	279	VAL	3.2
1	D	212	ARG	3.2
1	A	345	PHE	3.2
1	C	307	ASN	3.2
1	B	377	GLY	3.2
1	D	286	HIS	3.2
1	B	362	ASN	3.2
1	C	73	VAL	3.2
1	A	347	ALA	3.1
1	D	71	GLN	3.1
1	D	209	ILE	3.1

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Mol	Chain	Res	Type	RSRZ
1	C	291	LYS	3.1
1	C	197	GLY	3.1
1	C	199	THR	3.1
1	D	333	ALA	3.1
1	A	307	ASN	3.0
1	A	151	GLY	3.0
1	D	362	ASN	3.0
1	C	204	ASP	3.0
1	B	75	ILE	3.0
1	C	290	ALA	3.0
1	C	329	ILE	3.0
1	D	235	ILE	3.0
1	C	273	LEU	3.0
1	C	358	LEU	2.9
1	D	211	ASN	2.9
1	C	210	GLY	2.9
1	C	151	GLY	2.9
1	B	363	ALA	2.9
1	A	287	VAL	2.9
1	D	307	ASN	2.9
1	A	154	THR	2.9
1	C	335	GLU	2.9
1	D	306	ARG	2.8
1	D	305	VAL	2.8
1	C	234	LEU	2.8
1	D	75	ILE	2.8
1	B	278	ALA	2.7
1	B	225	LEU	2.7
1	C	200	ARG	2.7
1	A	157	ASP	2.7
1	D	283	ARG	2.7
1	A	158	SER	2.7
1	C	302	ILE	2.7
1	B	73	VAL	2.7
1	C	362	ASN	2.6
1	C	201	GLU	2.6
1	C	338	ASP	2.6
1	B	158	SER	2.6
1	D	378	TRP	2.6
1	C	306	ARG	2.5
1	D	203	LEU	2.5
1	A	360	VAL	2.5

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Mol	Chain	Res	Type	RSRZ
1	C	359	LEU	2.5
1	D	360	VAL	2.4
1	A	72	HIS	2.4
1	C	286	HIS	2.4
1	A	406	ALA	2.4
1	B	305	VAL	2.4
1	A	193	LEU	2.4
1	C	202	PRO	2.4
1	D	256	ALA	2.4
1	C	323	LEU	2.4
1	D	234	LEU	2.4
1	C	334	ALA	2.4
1	D	201	GLU	2.3
1	C	321	GLY	2.3
1	C	193	LEU	2.3
1	B	208	PHE	2.3
1	C	208	PHE	2.2
1	A	273	LEU	2.2
1	C	235	ILE	2.2
1	D	202	PRO	2.2
1	D	397	MET	2.2
1	D	206	VAL	2.2
1	A	235	ILE	2.2
1	A	259	LEU	2.1
1	D	281	ASP	2.1
1	B	388	ALA	2.1
1	B	332	PHE	2.1
1	D	301	SER	2.1
1	A	225	LEU	2.1
1	A	380	LEU	2.1
1	C	378	TRP	2.1
1	A	197	GLY	2.1
1	D	413	ASP	2.1
1	A	311	LEU	2.1
1	C	284	PRO	2.0
1	C	305	VAL	2.0

6.2 Non-standard residues in protein, DNA, RNA chains

There are no non-standard protein/DNA/RNA residues in this entry.

6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.4 Ligands [i](#)

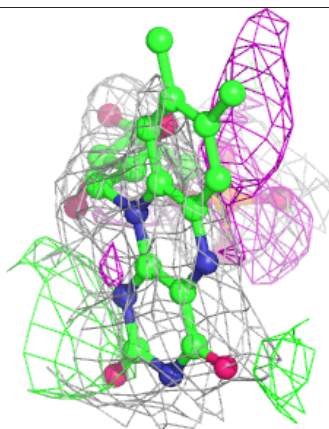
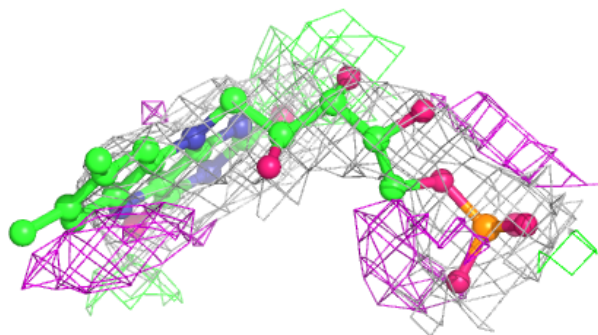
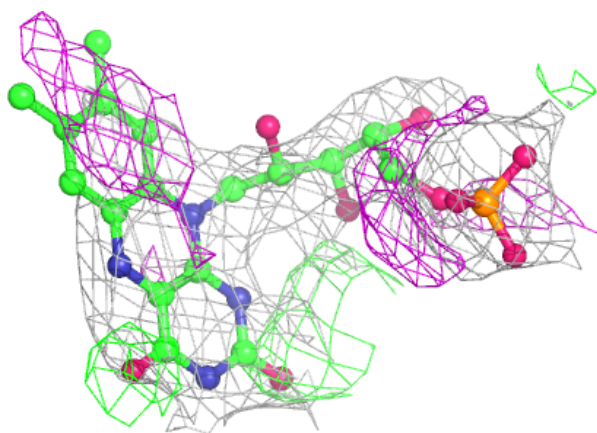
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
3	EDO	D	502	4/4	0.31	0.36	114,121,123,123	0
3	EDO	B	503	4/4	0.81	0.29	76,91,92,93	0
3	EDO	A	502	4/4	0.82	0.25	80,89,100,101	0
3	EDO	B	502	4/4	0.82	0.24	105,106,106,107	0
5	FMN	B	504	31/31	0.83	0.31	121,151,174,175	0
3	EDO	A	503	4/4	0.84	0.23	68,82,94,99	0
2	CTP	D	501	29/29	0.85	0.15	109,141,214,217	0
2	CTP	C	501	29/29	0.86	0.20	106,141,197,202	0
4	MG	A	505	1/1	0.88	0.04	125,125,125,125	0
5	FMN	A	506	31/31	0.88	0.29	116,150,164,166	0
2	CTP	A	501	29/29	0.88	0.16	132,150,204,207	0
2	CTP	B	501	29/29	0.89	0.11	165,172,206,207	0
3	EDO	A	504	4/4	0.89	0.19	95,100,107,110	0
5	FMN	D	503	31/31	0.90	0.22	88,110,117,121	0
3	EDO	C	502	4/4	0.92	0.20	95,105,110,113	0
5	FMN	C	503	31/31	0.93	0.18	84,104,119,120	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.

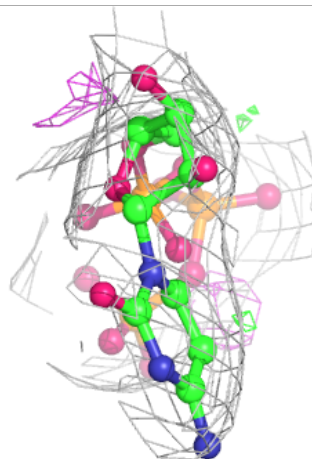
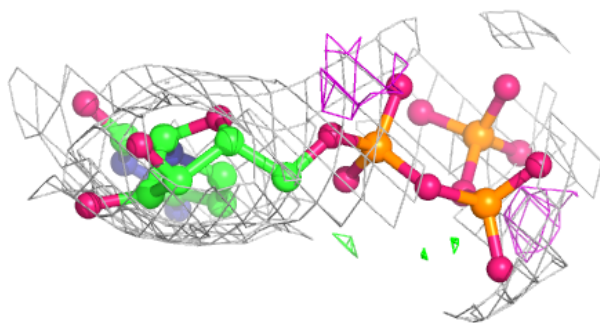
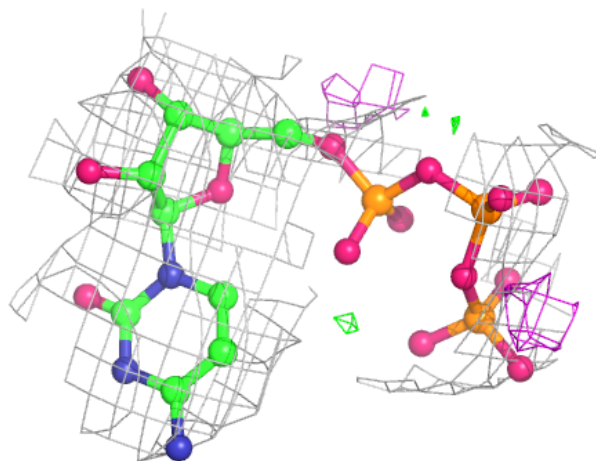
Electron density around FMN B 504:

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



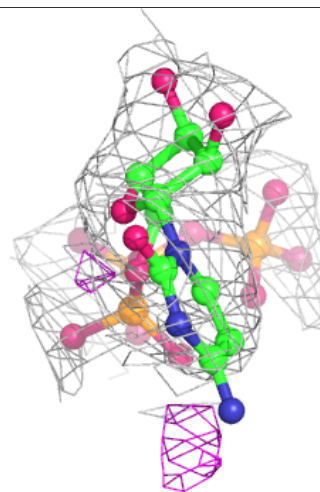
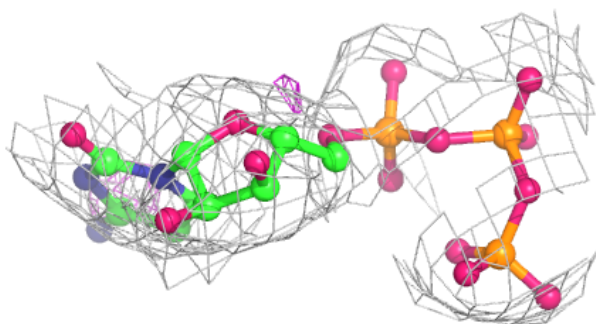
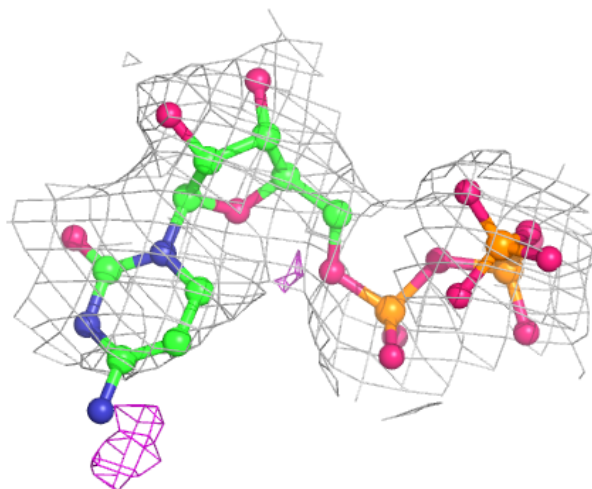
Electron density around CTP D 501:

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



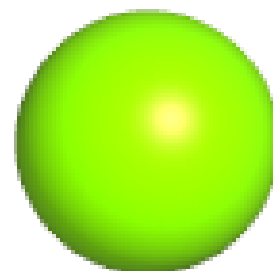
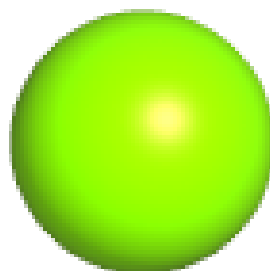
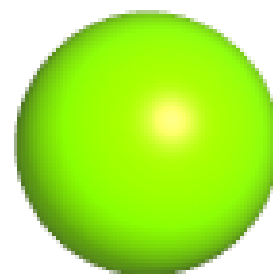
Electron density around CTP C 501:

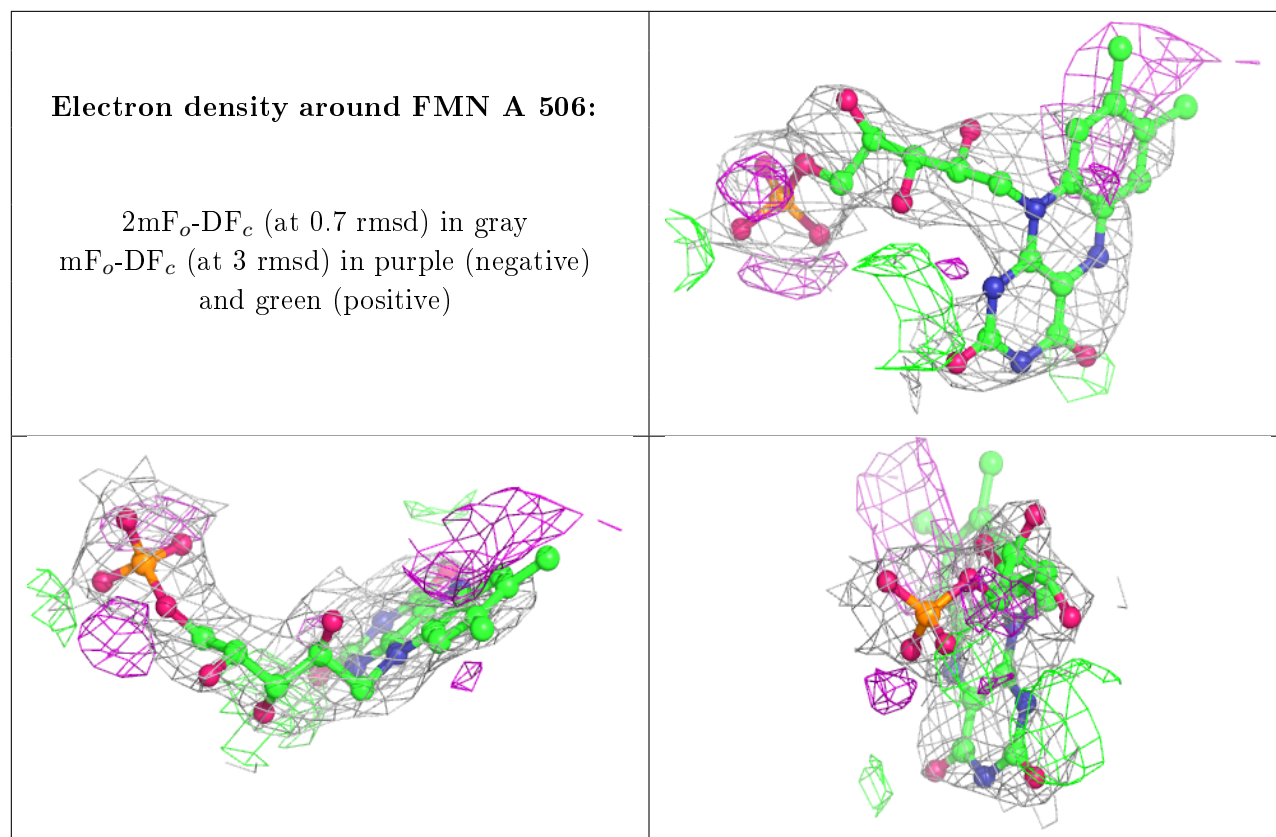
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around MG A 505:

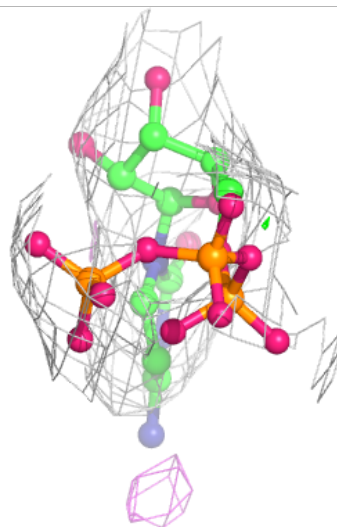
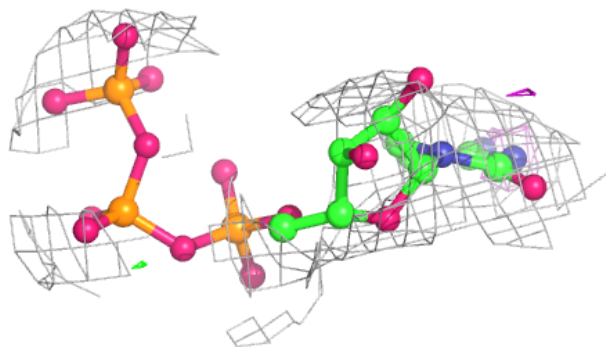
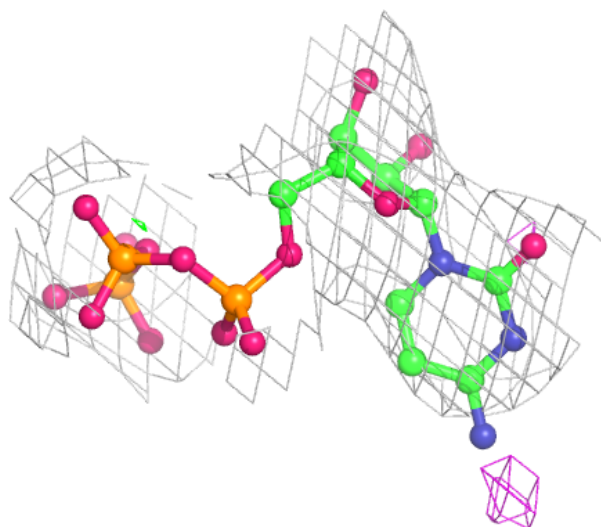
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)





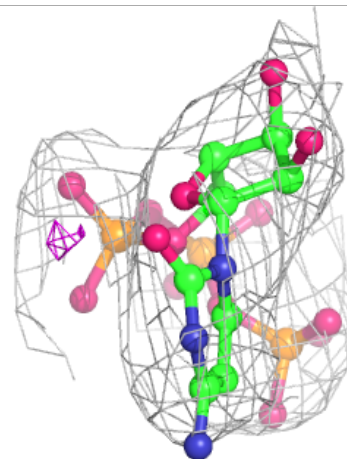
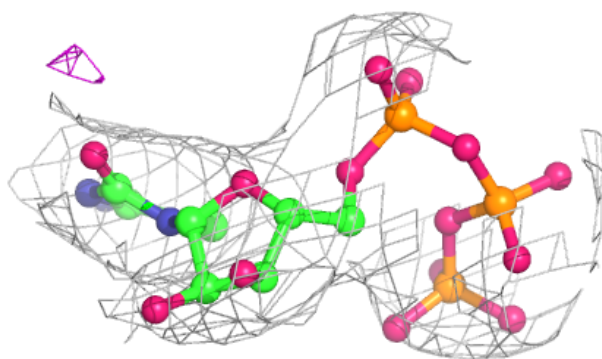
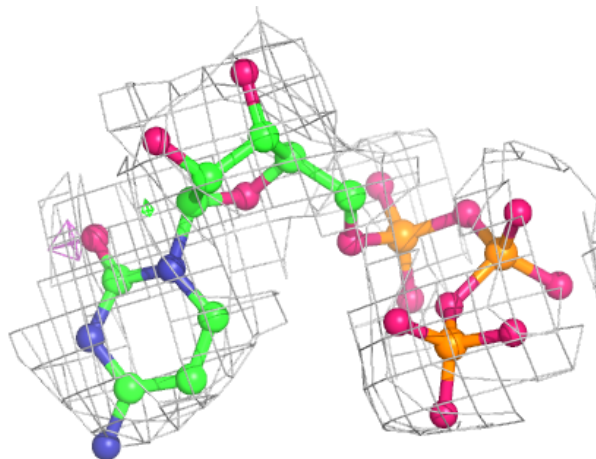
Electron density around CTP A 501:

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



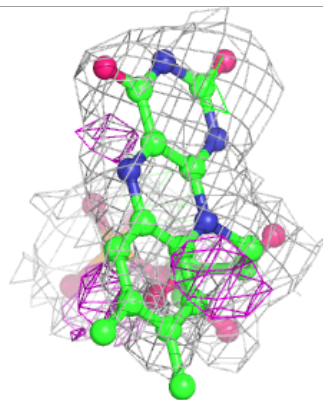
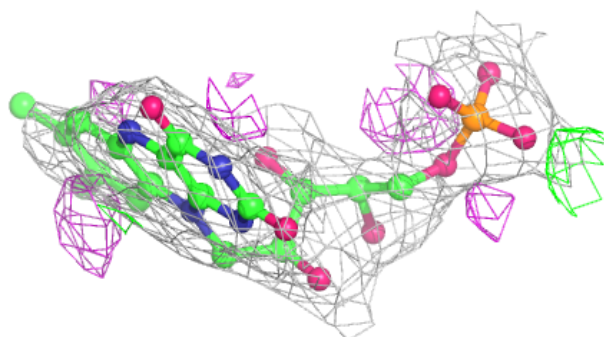
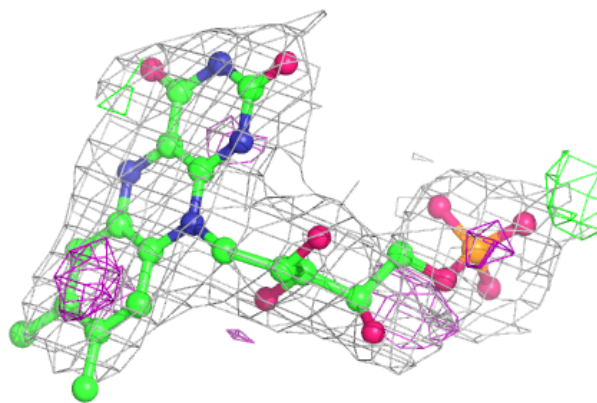
Electron density around CTP B 501:

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

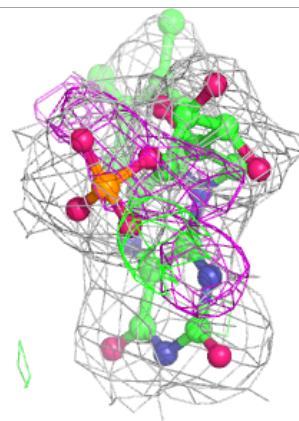
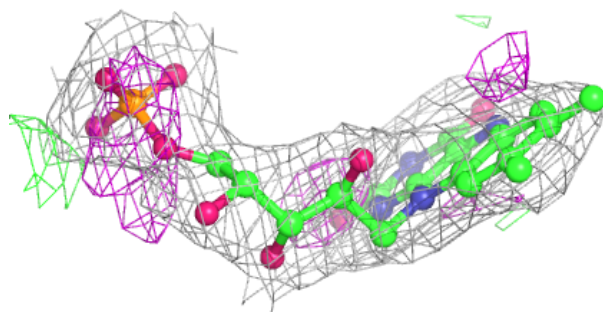
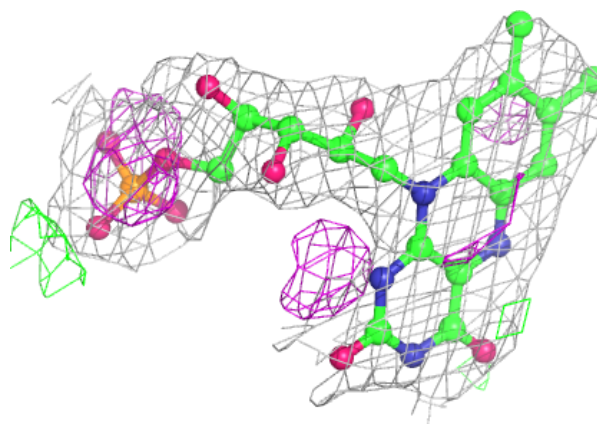


Electron density around FMN D 503:

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

**Electron density around FMN C 503:**

$2mF_o-DF_c$ (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.