Full wwPDB X-ray Structure Validation Report ⓘ

Oct 4, 2023 – 03:11 AM EDT

PDB ID	:	6O0J
Title	:	M.tb MenD with ThDP and Inhibitor bound
Authors	:	Johnston, J.M.; Bashiri, G.; Bulloch, E.M.M.; Jirgis, E.M.N.; Nigon, L.V.; Chuang, H.; Ho, N.A.T.; Baker, E.N.
Deposited on	:	2019-02-16
Resolution	:	2.35 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:

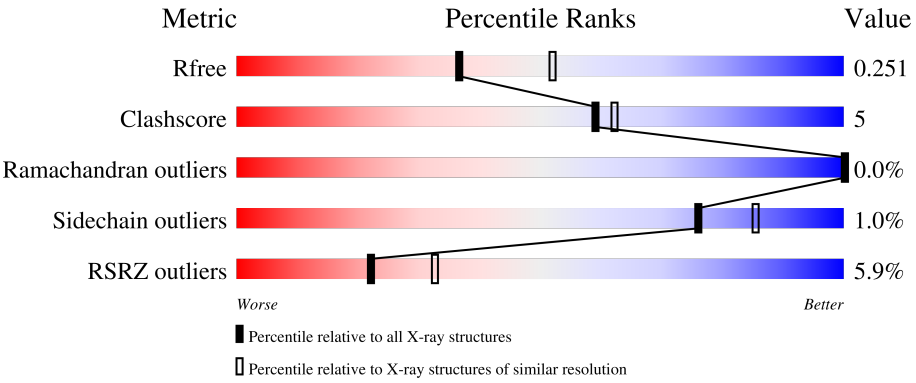
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35.1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35.1

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 2.35 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	1164 (2.36-2.36)
Clashscore	141614	1232 (2.36-2.36)
Ramachandran outliers	138981	1211 (2.36-2.36)
Sidechain outliers	138945	1212 (2.36-2.36)
RSRZ outliers	127900	1150 (2.36-2.36)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	574	5% 80% 12% 8%
1	B	574	3% 81% 10% 9%
1	C	574	9% 82% 11% 7%
1	D	574	3% 83% 10% 7%

2 Entry composition (i)

There are 8 unique types of molecules in this entry. The entry contains 15922 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 2-succinyl-5-enolpyruvyl-6-hydroxy-3-cyclohexene-1-carboxylate synthase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	527	Total	C	N	O	S	0	1	0
			3814	2390	699	715	10			
1	D	532	Total	C	N	O	S	0	2	0
			3855	2415	703	727	10			
1	B	524	Total	C	N	O	S	0	0	0
			3773	2361	688	713	11			
1	C	536	Total	C	N	O	S	0	3	0
			3862	2421	704	727	10			

There are 80 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-19	MET	-	initiating methionine	UNP P9WK11
A	-18	GLY	-	expression tag	UNP P9WK11
A	-17	SER	-	expression tag	UNP P9WK11
A	-16	SER	-	expression tag	UNP P9WK11
A	-15	HIS	-	expression tag	UNP P9WK11
A	-14	HIS	-	expression tag	UNP P9WK11
A	-13	HIS	-	expression tag	UNP P9WK11
A	-12	HIS	-	expression tag	UNP P9WK11
A	-11	HIS	-	expression tag	UNP P9WK11
A	-10	HIS	-	expression tag	UNP P9WK11
A	-9	SER	-	expression tag	UNP P9WK11
A	-8	SER	-	expression tag	UNP P9WK11
A	-7	GLY	-	expression tag	UNP P9WK11
A	-6	LEU	-	expression tag	UNP P9WK11
A	-5	VAL	-	expression tag	UNP P9WK11
A	-4	PRO	-	expression tag	UNP P9WK11
A	-3	ARG	-	expression tag	UNP P9WK11
A	-2	GLY	-	expression tag	UNP P9WK11
A	-1	SER	-	expression tag	UNP P9WK11
A	0	HIS	-	expression tag	UNP P9WK11

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Chain	Residue	Modelled	Actual	Comment	Reference
D	-19	MET	-	initiating methionine	UNP P9WK11
D	-18	GLY	-	expression tag	UNP P9WK11
D	-17	SER	-	expression tag	UNP P9WK11
D	-16	SER	-	expression tag	UNP P9WK11
D	-15	HIS	-	expression tag	UNP P9WK11
D	-14	HIS	-	expression tag	UNP P9WK11
D	-13	HIS	-	expression tag	UNP P9WK11
D	-12	HIS	-	expression tag	UNP P9WK11
D	-11	HIS	-	expression tag	UNP P9WK11
D	-10	HIS	-	expression tag	UNP P9WK11
D	-9	SER	-	expression tag	UNP P9WK11
D	-8	SER	-	expression tag	UNP P9WK11
D	-7	GLY	-	expression tag	UNP P9WK11
D	-6	LEU	-	expression tag	UNP P9WK11
D	-5	VAL	-	expression tag	UNP P9WK11
D	-4	PRO	-	expression tag	UNP P9WK11
D	-3	ARG	-	expression tag	UNP P9WK11
D	-2	GLY	-	expression tag	UNP P9WK11
D	-1	SER	-	expression tag	UNP P9WK11
D	0	HIS	-	expression tag	UNP P9WK11
B	-19	MET	-	initiating methionine	UNP P9WK11
B	-18	GLY	-	expression tag	UNP P9WK11
B	-17	SER	-	expression tag	UNP P9WK11
B	-16	SER	-	expression tag	UNP P9WK11
B	-15	HIS	-	expression tag	UNP P9WK11
B	-14	HIS	-	expression tag	UNP P9WK11
B	-13	HIS	-	expression tag	UNP P9WK11
B	-12	HIS	-	expression tag	UNP P9WK11
B	-11	HIS	-	expression tag	UNP P9WK11
B	-10	HIS	-	expression tag	UNP P9WK11
B	-9	SER	-	expression tag	UNP P9WK11
B	-8	SER	-	expression tag	UNP P9WK11
B	-7	GLY	-	expression tag	UNP P9WK11
B	-6	LEU	-	expression tag	UNP P9WK11
B	-5	VAL	-	expression tag	UNP P9WK11
B	-4	PRO	-	expression tag	UNP P9WK11
B	-3	ARG	-	expression tag	UNP P9WK11
B	-2	GLY	-	expression tag	UNP P9WK11
B	-1	SER	-	expression tag	UNP P9WK11
B	0	HIS	-	expression tag	UNP P9WK11
C	-19	MET	-	initiating methionine	UNP P9WK11
C	-18	GLY	-	expression tag	UNP P9WK11

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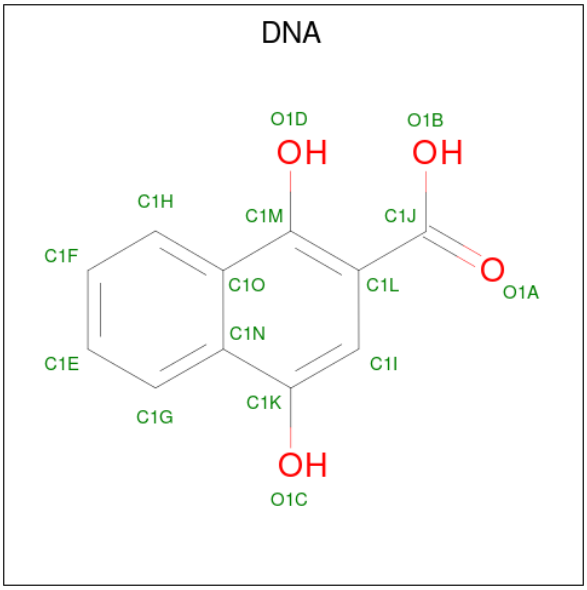
Chain	Residue	Modelled	Actual	Comment	Reference
C	-17	SER	-	expression tag	UNP P9WK11
C	-16	SER	-	expression tag	UNP P9WK11
C	-15	HIS	-	expression tag	UNP P9WK11
C	-14	HIS	-	expression tag	UNP P9WK11
C	-13	HIS	-	expression tag	UNP P9WK11
C	-12	HIS	-	expression tag	UNP P9WK11
C	-11	HIS	-	expression tag	UNP P9WK11
C	-10	HIS	-	expression tag	UNP P9WK11
C	-9	SER	-	expression tag	UNP P9WK11
C	-8	SER	-	expression tag	UNP P9WK11
C	-7	GLY	-	expression tag	UNP P9WK11
C	-6	LEU	-	expression tag	UNP P9WK11
C	-5	VAL	-	expression tag	UNP P9WK11
C	-4	PRO	-	expression tag	UNP P9WK11
C	-3	ARG	-	expression tag	UNP P9WK11
C	-2	GLY	-	expression tag	UNP P9WK11
C	-1	SER	-	expression tag	UNP P9WK11
C	0	HIS	-	expression tag	UNP P9WK11

- Molecule 2 is 1,4-dihydroxy-2-naphthoic acid (three-letter code: DNA) (formula: $C_{11}H_8O_4$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	C	O	0	0
			15	11	4		
2	D	1	Total	C	O	0	0
			15	11	4		

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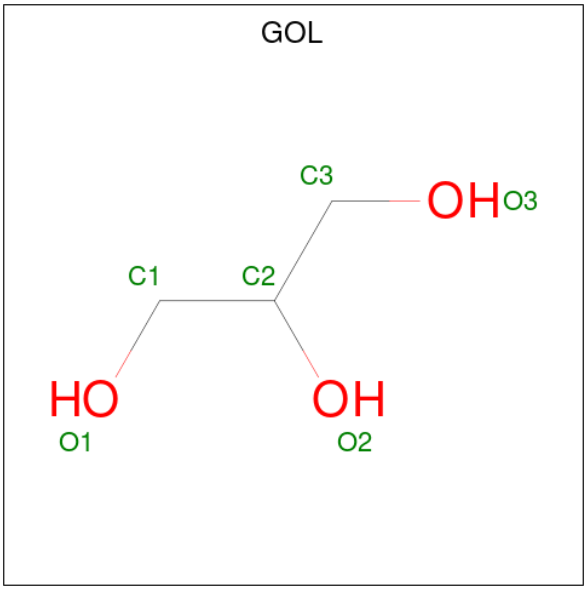
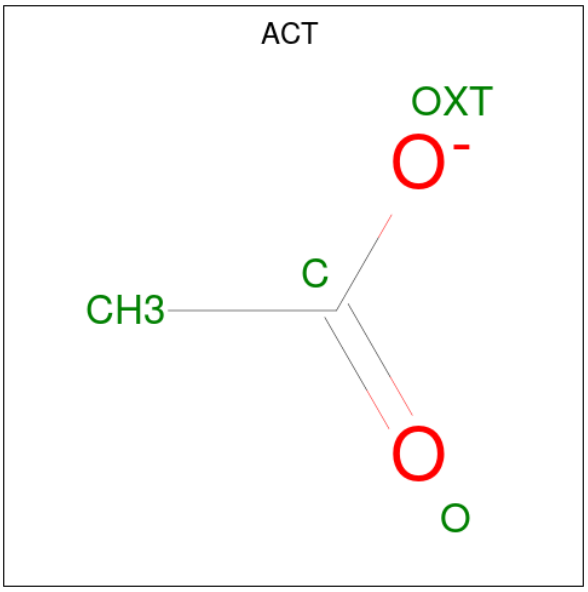
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	B	1	Total C O 15 11 4	0	0
2	C	1	Total C O 15 11 4	0	0

- Molecule 3 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).



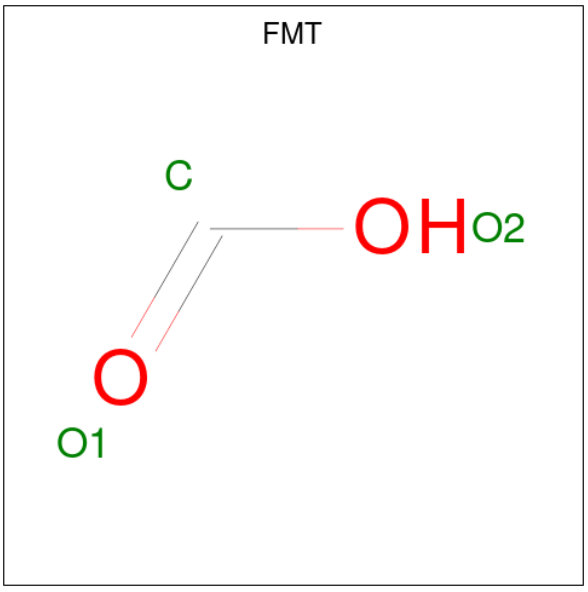
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total C O 6 3 3	0	0
3	A	1	Total C O 6 3 3	0	0

- Molecule 4 is ACETATE ION (three-letter code: ACT) (formula: $C_2H_3O_2$).



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

- Molecule 5 is FORMIC ACID (three-letter code: FMT) (formula: CH_2O_2).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	A	1	Total	C	O	0	0
			3	1	2		

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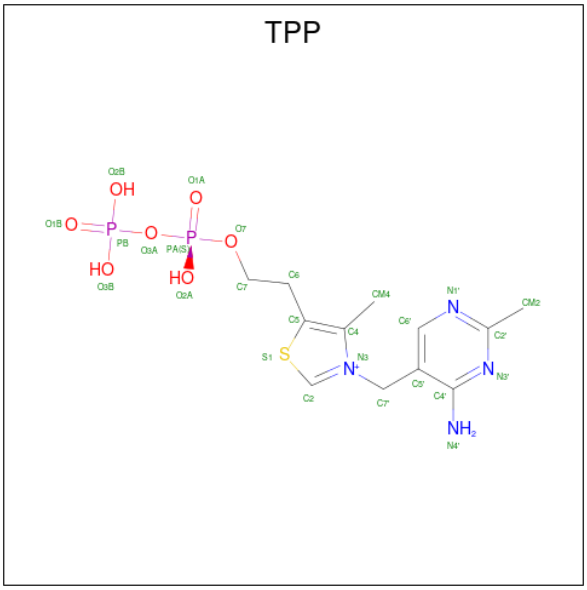
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	D	1	Total C O 3 1 2	0	0
5	B	1	Total C O 3 1 2	0	0

- Molecule 6 is MAGNESIUM ION (three-letter code: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	D	1	Total Mg 1 1	0	0
6	C	1	Total Mg 1 1	0	0

- Molecule 7 is THIAMINE DIPHOSPHATE (three-letter code: TPP) (formula: $C_{12}H_{19}N_4O_7P_2S$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	D	1	Total C N O P S 26 12 4 7 2 1	0	0
7	C	1	Total C N O P S 26 12 4 7 2 1	0	0

- Molecule 8 is water.

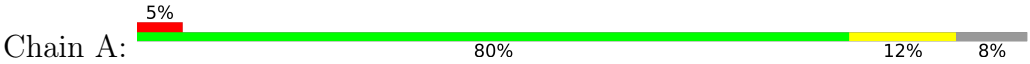
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	A	141	Total O 141 141	0	0
8	D	105	Total O 105 105	0	0
8	B	117	Total O 117 117	0	0
8	C	108	Total O 108 108	0	0

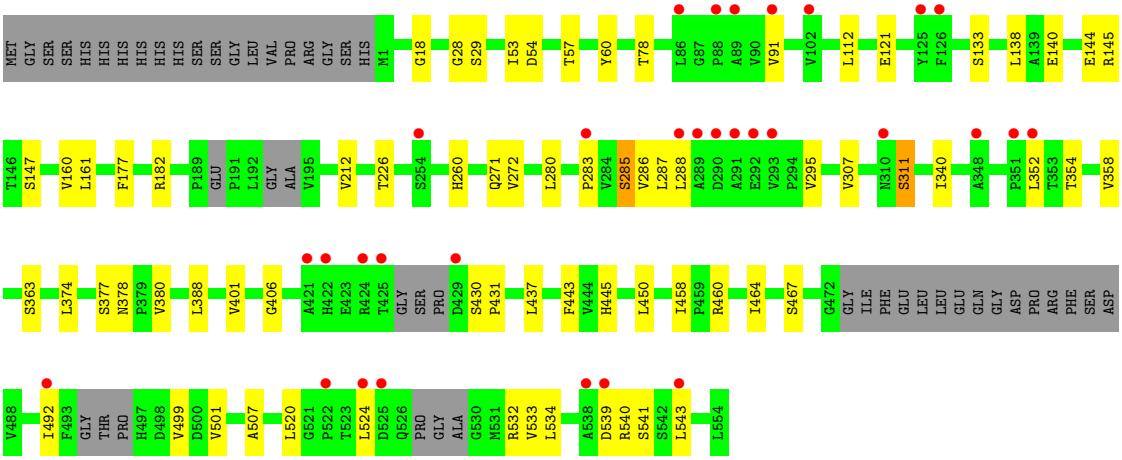
3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: 2-succinyl-5-enolpyruvyl-6-hydroxy-3-cyclohexene-1-carboxylate synthase

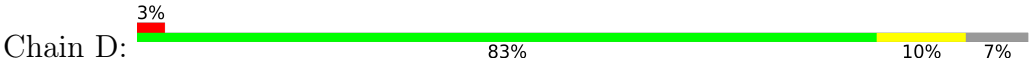
Chain A:

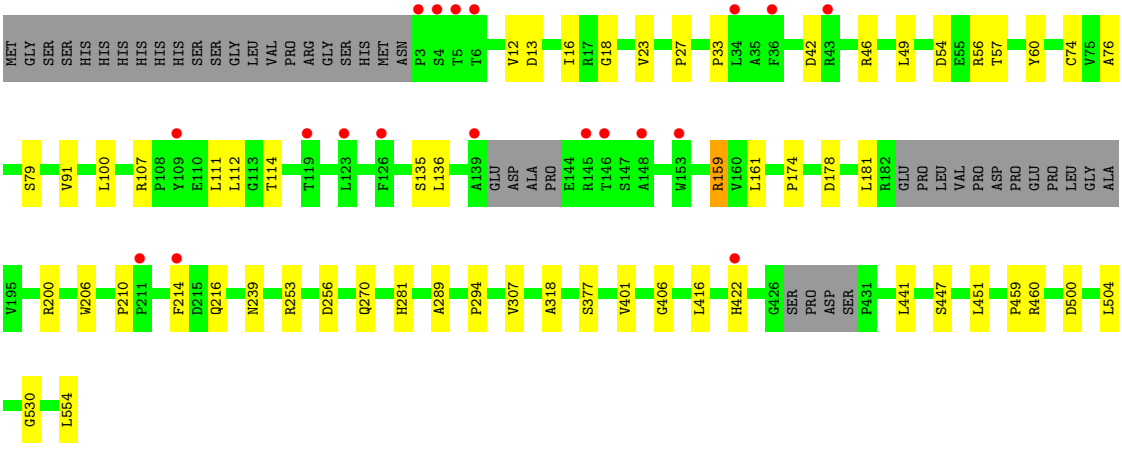




• Molecule 1: 2-succinyl-5-enolpyruvyl-6-hydroxy-3-cyclohexene-1-carboxylate synthase

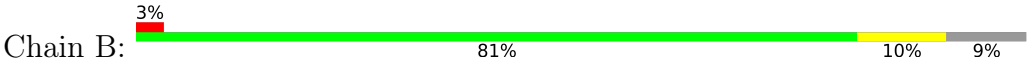
Chain D:

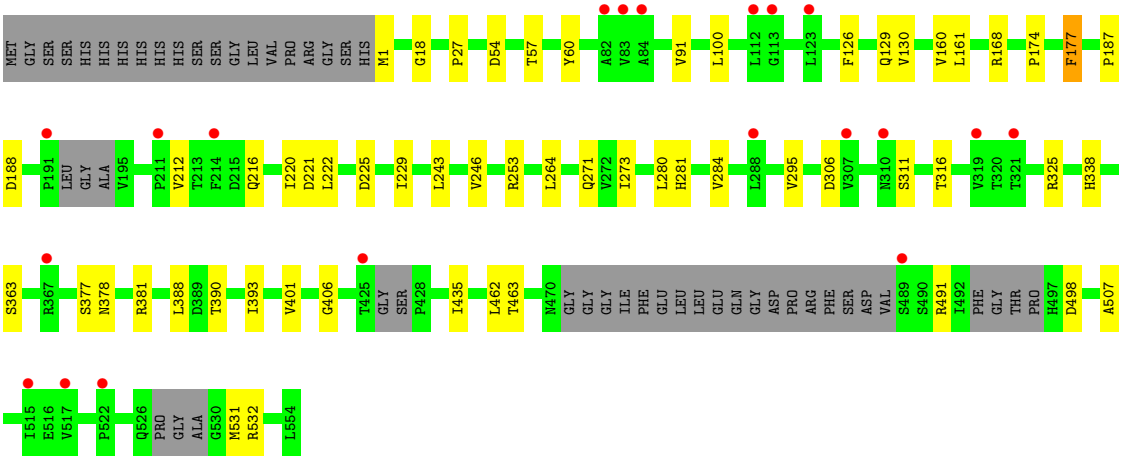




• Molecule 1: 2-succinyl-5-enolpyruvyl-6-hydroxy-3-cyclohexene-1-carboxylate synthase

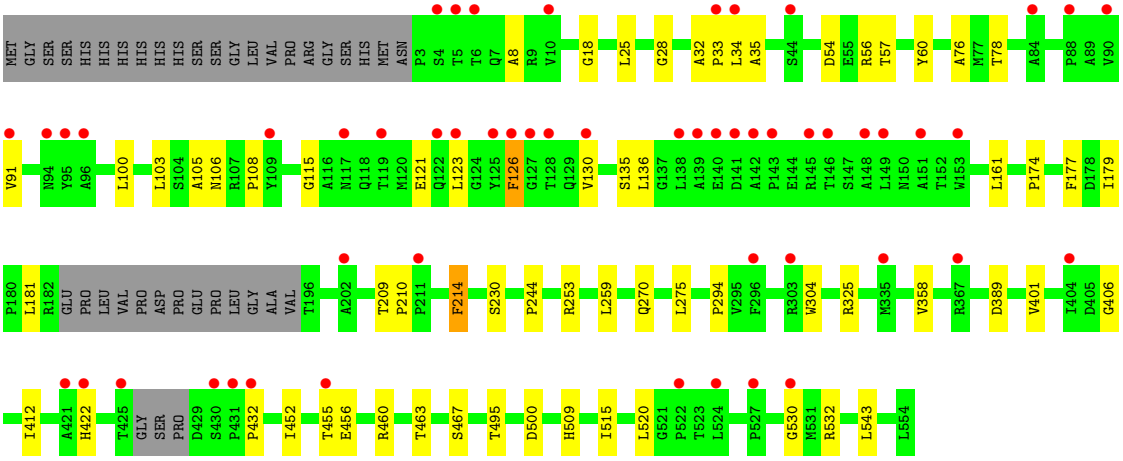
Chain B:





• Molecule 1: 2-succinyl-5-enolpyruvyl-6-hydroxy-3-cyclohexene-1-carboxylate synthase

Chain C:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	101.55Å 143.67Å 176.11Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	48.79 – 2.35 48.81 – 2.35	Depositor EDS
% Data completeness (in resolution range)	99.9 (48.79-2.35) 100.0 (48.81-2.35)	Depositor EDS
R_{merge}	0.28	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.32 (at 2.34Å)	Xtriage
Refinement program	PHENIX 1.14_3260, REFMAC	Depositor
R, R_{free}	0.205 , 0.251 0.206 , 0.251	Depositor DCC
R_{free} test set	5373 reflections (4.99%)	wwPDB-VP
Wilson B-factor (Å^2)	44.2	Xtriage
Anisotropy	0.401	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 39.1	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	15922	wwPDB-VP
Average B, all atoms (Å^2)	57.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.98% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ 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: ACT, FMT, DNA, MG, TPP, 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	0.32	0/3892	0.50	0/5337
1	B	0.31	0/3848	0.47	0/5283
1	C	0.30	0/3948	0.49	0/5418
1	D	0.30	0/3940	0.49	0/5400
All	All	0.31	0/15628	0.49	0/21438

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

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	3814	0	3809	42	0
1	B	3773	0	3746	40	0
1	C	3862	0	3831	44	0
1	D	3855	0	3841	37	0
2	A	15	0	5	0	0
2	B	15	0	5	1	0
2	C	15	0	7	1	0
2	D	15	0	5	0	0
3	A	12	0	16	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	A	4	0	3	0	0
4	C	4	0	3	0	0
4	D	4	0	3	0	0
5	A	3	0	1	0	0
5	B	3	0	1	0	0
5	D	3	0	1	0	0
6	C	1	0	0	0	0
6	D	1	0	0	0	0
7	C	26	0	16	2	0
7	D	26	0	16	0	0
8	A	141	0	0	1	0
8	B	117	0	0	0	0
8	C	108	0	0	1	0
8	D	105	0	0	1	0
All	All	15922	0	15309	144	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 5.

All (144) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:307:VAL:HG11	1:A:311:SER:HB2	1.54	0.90
1:C:32:ALA:HB3	1:C:35:ALA:HB2	1.68	0.75
1:B:435:ILE:HD12	1:B:463:THR:HB	1.72	0.72
1:B:229:ILE:HD13	1:B:284:VAL:HG13	1.72	0.71
1:B:253:ARG:NH2	1:B:390:THR:H	1.90	0.70
1:B:253:ARG:HH21	1:B:390:THR:H	1.40	0.69
1:A:285:SER:HA	1:A:288:LEU:HD12	1.75	0.68
1:C:54:ASP:HB3	1:C:57:THR:HG22	1.76	0.67
1:C:33:PRO:HB3	1:C:105:ALA:HB2	1.78	0.65
1:B:498:ASP:O	1:C:509:HIS:NE2	2.32	0.61
1:A:18:GLY:HA3	1:A:161:LEU:HD13	1.81	0.61
1:D:23:VAL:HG22	1:D:74:CYS:HB2	1.81	0.60
1:C:105:ALA:HB1	1:C:181:LEU:HD12	1.85	0.59
1:A:140:GLU:OE2	1:A:145:ARG:NH1	2.37	0.58
1:D:54:ASP:HB3	1:D:57:THR:HG22	1.85	0.58
1:B:295:VAL:HG13	1:B:311:SER:HA	1.86	0.57
1:A:60:TYR:CG	1:A:406:GLY:HA3	2.40	0.57
1:C:8:ALA:HA	1:C:34:LEU:CD1	2.34	0.57
1:C:91:VAL:HG12	1:C:401:VAL:HG21	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:216:GLN:HE22	1:B:168:ARG:HG2	1.69	0.56
1:B:221:ASP:O	1:B:271:GLN:NE2	2.39	0.56
1:C:18:GLY:HA3	1:C:161:LEU:HD13	1.86	0.56
1:D:239:ASN:ND2	1:D:318:ALA:O	2.37	0.56
7:C:604:TPP:HN42	7:C:604:TPP:H2	1.71	0.55
1:B:507:ALA:HA	1:C:500:ASP:HB3	1.89	0.55
1:C:515:ILE:HD11	1:C:520:LEU:HD13	1.88	0.55
1:D:214[B]:PHE:HD2	1:B:212:VAL:HG21	1.72	0.55
1:D:18:GLY:HA3	1:D:161:LEU:HD13	1.89	0.54
1:B:246:VAL:HG21	1:B:264:LEU:HD22	1.89	0.54
1:D:107:ARG:HH12	1:D:181:LEU:HD11	1.72	0.54
1:A:53:ILE:HD12	1:D:441:LEU:HG	1.90	0.53
1:C:103:LEU:HD23	1:C:177:PHE:HB3	1.91	0.53
1:A:431:PRO:HD3	1:A:460:ARG:HH21	1.74	0.53
1:A:354:THR:HB	1:A:543:LEU:HD21	1.90	0.53
1:C:8:ALA:HA	1:C:34:LEU:HD12	1.89	0.53
1:B:280:LEU:O	1:B:381:ARG:NH1	2.42	0.52
1:B:1:MET:HE1	1:B:188:ASP:H	1.75	0.52
1:C:34:LEU:HD21	1:C:179:ILE:HD13	1.92	0.51
1:A:260:HIS:CD2	1:A:340:ILE:HD13	2.46	0.51
1:B:220:ILE:HG21	1:B:273:ILE:HD11	1.92	0.51
1:B:225:ASP:OD2	1:B:325:ARG:NH2	2.44	0.51
1:C:25:LEU:HD23	1:C:76:ALA:HB3	1.91	0.51
1:B:216:GLN:HB3	1:B:316:THR:HG23	1.93	0.51
1:B:377:SER:OG	1:B:378:ASN:N	2.31	0.51
1:A:112:LEU:HD21	1:A:121:GLU:HG3	1.92	0.50
1:B:126:PHE:HA	1:C:123:LEU:HD23	1.93	0.50
1:C:455:THR:OG1	1:C:456:GLU:OE2	2.29	0.50
1:D:33:PRO:HD2	1:D:76:ALA:HB1	1.92	0.50
1:A:54:ASP:HB3	1:A:57:THR:HG22	1.93	0.50
1:A:507:ALA:HA	1:D:500:ASP:HB3	1.94	0.50
1:A:212:VAL:HG21	1:C:214[B]:PHE:CD2	2.47	0.49
7:C:604:TPP:HN42	7:C:604:TPP:C2	2.24	0.49
1:B:100:LEU:O	1:B:174:PRO:HA	2.11	0.49
1:B:1:MET:CE	1:B:188:ASP:H	2.25	0.49
1:D:289:ALA:HB2	1:D:307:VAL:HG12	1.95	0.48
1:B:363:SER:HB3	1:B:388:LEU:HD13	1.94	0.48
1:C:463:THR:HG23	1:C:532:ARG:HG3	1.94	0.48
1:B:60:TYR:CG	1:B:406:GLY:HA3	2.48	0.48
1:A:260:HIS:HD2	1:A:340:ILE:HD13	1.79	0.47
1:D:60:TYR:CD2	1:D:406:GLY:HA3	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:352:LEU:HD13	1:A:539:ASP:HB3	1.95	0.47
1:D:253:ARG:NH2	8:D:706:HOH:O	2.46	0.47
1:B:129:GLN:NE2	1:C:121:GLU:HG3	2.29	0.47
1:D:91:VAL:HG12	1:D:401:VAL:HG21	1.95	0.47
1:D:100:LEU:O	1:D:174:PRO:HA	2.14	0.47
1:D:159:ARG:HH11	1:B:306:ASP:HB3	1.78	0.47
2:B:601:DNA:H1F	1:C:115:GLY:HA2	1.96	0.47
1:A:272:VAL:HG22	1:A:295:VAL:HG22	1.96	0.47
1:C:126:PHE:O	1:C:130:VAL:HG22	2.15	0.47
1:A:283:PRO:HA	1:A:286:VAL:HG22	1.97	0.46
1:C:100:LEU:O	1:C:174:PRO:HA	2.15	0.46
1:B:18:GLY:HA3	1:B:161:LEU:HD13	1.97	0.46
1:B:54:ASP:OD1	1:C:56:ARG:NH2	2.48	0.46
1:D:214[B]:PHE:CD2	1:B:212:VAL:HG21	2.51	0.46
1:A:499:VAL:HG21	1:D:451:LEU:HD12	1.98	0.46
1:C:304:TRP:C	2:C:601:DNA:H1H	2.36	0.46
1:A:91:VAL:HG12	1:A:401:VAL:HG11	1.98	0.45
1:A:520:LEU:O	1:A:524:LEU:HG	2.15	0.45
1:B:160:VAL:HG21	1:B:177:PHE:CD2	2.52	0.45
1:A:54:ASP:OD1	1:D:56:ARG:NH2	2.48	0.45
1:C:412:ILE:HD13	1:C:452:ILE:HD11	1.99	0.45
1:A:363:SER:HB3	1:A:388:LEU:HD13	1.99	0.45
1:A:374:LEU:HD23	1:A:437:LEU:HB3	1.97	0.45
1:D:12:VAL:O	1:D:16:ILE:HG12	2.17	0.45
1:D:135:SER:HB2	1:D:178:ASP:HB3	1.99	0.45
1:C:358:VAL:HG11	1:C:467:SER:HB2	1.98	0.45
1:A:377:SER:OG	1:A:378:ASN:N	2.48	0.45
1:A:443:PHE:CE2	1:A:501:VAL:HG13	2.52	0.45
1:B:91:VAL:HG12	1:B:401:VAL:HG11	1.98	0.45
1:A:272:VAL:HG11	1:A:287:LEU:HD21	1.98	0.45
1:A:144:GLU:H	1:A:144:GLU:CD	2.20	0.45
1:C:460:ARG:O	1:C:530:GLY:HA2	2.18	0.44
1:C:28:GLY:HA3	1:C:78:THR:HB	1.99	0.44
1:D:210:PRO:HG2	1:B:216:GLN:HG2	1.98	0.44
1:D:111:LEU:HD13	1:D:114:THR:HG21	1.99	0.44
1:A:160:VAL:HG21	1:A:177:PHE:CG	2.53	0.44
1:C:325:ARG:HG2	8:C:712:HOH:O	2.16	0.44
1:D:112:LEU:HB3	1:C:135:SER:HB3	1.99	0.44
1:B:54:ASP:HB3	1:B:57:THR:HG22	2.00	0.44
1:C:60:TYR:CG	1:C:406:GLY:HA3	2.53	0.44
1:D:136:LEU:HD23	1:D:136:LEU:HA	1.87	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:492:ILE:HD11	1:D:27:PRO:HG3	1.99	0.43
1:C:60:TYR:CD2	1:C:406:GLY:HA3	2.53	0.43
1:C:136:LEU:HD12	1:C:136:LEU:HA	1.76	0.43
1:A:445:HIS:HE1	1:D:54:ASP:HA	1.84	0.43
1:A:532:ARG:NH2	1:A:534:LEU:HD11	2.34	0.43
1:D:200:ARG:HG3	1:D:206:TRP:HA	1.99	0.43
1:A:464:ILE:HB	1:A:533:VAL:HG22	2.00	0.43
1:D:554:LEU:HD23	1:D:554:LEU:HA	1.91	0.43
1:B:1:MET:HE1	1:B:187:PRO:HA	2.01	0.43
1:A:28:GLY:HA3	1:A:78:THR:HB	2.01	0.43
1:D:42:ASP:HB2	1:D:49:LEU:HG	2.01	0.43
1:D:60:TYR:CG	1:D:406:GLY:HA3	2.54	0.43
1:C:106:ASN:O	1:C:108:PRO:HD3	2.19	0.43
1:D:416:LEU:HG	1:D:459:PRO:HG3	2.01	0.43
1:A:283:PRO:O	1:A:286:VAL:HG22	2.19	0.42
1:A:358:VAL:HG11	1:A:467:SER:HB2	2.00	0.42
1:C:230:SER:HB3	1:C:275:LEU:HD12	2.01	0.42
1:A:226:THR:HA	1:A:271:GLN:O	2.19	0.42
1:A:458:ILE:HD11	8:A:705:HOH:O	2.20	0.42
1:D:256:ASP:OD1	1:D:256:ASP:N	2.53	0.42
1:C:543:LEU:HD23	1:C:543:LEU:HA	1.72	0.42
1:A:539:ASP:OD1	1:A:541:SER:OG	2.31	0.42
1:A:443:PHE:CZ	1:A:450:LEU:HD11	2.55	0.42
1:B:130:VAL:HA	1:B:174:PRO:HG2	2.02	0.42
1:C:270[A]:GLN:O	1:C:294:PRO:HD2	2.20	0.42
1:D:460:ARG:O	1:D:530:GLY:HA2	2.19	0.41
1:B:222:LEU:HD22	1:B:243:LEU:HD11	2.02	0.41
1:B:27:PRO:HB3	1:C:495:THR:HG21	2.02	0.41
1:C:244:PRO:HB2	1:C:259:LEU:HD22	2.02	0.41
1:B:281:HIS:HB2	1:B:284:VAL:HG23	2.03	0.41
1:B:491:ARG:NH1	1:C:456:GLU:OE1	2.43	0.41
1:C:209:THR:HA	1:C:210:PRO:HD3	1.92	0.41
1:C:422:HIS:CG	1:C:432:PRO:HD3	2.56	0.41
1:D:270:GLN:O	1:D:294:PRO:HD2	2.21	0.41
1:D:447:SER:HB2	1:D:504:LEU:HD21	2.03	0.40
1:A:280:LEU:HD11	1:A:380:VAL:HG13	2.04	0.40
1:B:462:LEU:O	1:B:531:MET:HA	2.21	0.40
1:A:540:ARG:HA	1:A:543:LEU:CD1	2.51	0.40
1:D:13:ASP:OD1	1:D:46:ARG:NH1	2.40	0.40
1:B:129:GLN:HE22	1:C:121:GLU:HG3	1.85	0.40
1:B:390:THR:HA	1:B:393:ILE:HD11	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:138:LEU:HD11	1:A:182:ARG:HB2	2.03	0.40
1:C:253:ARG:HH12	1:C:389:ASP:HA	1.86	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	514/574 (90%)	503 (98%)	11 (2%)	0	100 100
1	B	512/574 (89%)	499 (98%)	13 (2%)	0	100 100
1	C	533/574 (93%)	520 (98%)	13 (2%)	0	100 100
1	D	526/574 (92%)	509 (97%)	16 (3%)	1 (0%)	47 56
All	All	2085/2296 (91%)	2031 (97%)	53 (2%)	1 (0%)	100 100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	281	HIS

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	393/445 (88%)	387 (98%)	6 (2%)	65 76

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	B	387/445 (87%)	384 (99%)	3 (1%)	81 89
1	C	393/445 (88%)	390 (99%)	3 (1%)	81 89
1	D	397/445 (89%)	393 (99%)	4 (1%)	76 85
All	All	1570/1780 (88%)	1554 (99%)	16 (1%)	76 85

All (16) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	29	SER
1	A	133	SER
1	A	147	SER
1	A	285	SER
1	A	311	SER
1	A	430	SER
1	D	79	SER
1	D	159	ARG
1	D	377	SER
1	D	422	HIS
1	B	177	PHE
1	B	338	HIS
1	B	532	ARG
1	C	126	PHE
1	C	214[A]	PHE
1	C	214[B]	PHE

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	118	GLN
1	B	118	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 16 ligands modelled in this entry, 2 are monoatomic - leaving 14 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	GOL	A	603	-	5,5,5	0.24	0	5,5,5	0.42	0
2	DNA	C	601	-	16,16,16	2.30	4 (25%)	22,23,23	1.10	1 (4%)
2	DNA	D	601	-	16,16,16	2.30	4 (25%)	22,23,23	1.00	0
4	ACT	D	603	-	3,3,3	0.76	0	3,3,3	0.70	0
5	FMT	A	605	-	2,2,2	0.61	0	1,1,1	0.70	0
4	ACT	A	604	-	3,3,3	0.76	0	3,3,3	0.76	0
5	FMT	D	605	-	2,2,2	0.73	0	1,1,1	0.60	0
3	GOL	A	602	-	5,5,5	0.38	0	5,5,5	0.45	0
7	TPP	C	604	6	22,27,27	1.35	3 (13%)	29,40,40	2.08	10 (34%)
5	FMT	B	602	-	2,2,2	0.79	0	1,1,1	0.49	0
7	TPP	D	604	6	22,27,27	1.39	3 (13%)	29,40,40	1.90	9 (31%)
2	DNA	B	601	-	16,16,16	2.21	4 (25%)	22,23,23	1.15	2 (9%)
2	DNA	A	601	-	16,16,16	2.23	5 (31%)	22,23,23	1.36	3 (13%)
4	ACT	C	603	-	3,3,3	0.82	0	3,3,3	0.73	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	GOL	A	603	-	-	4/4/4/4	-
2	DNA	C	601	-	-	0/4/4/4	0/2/2/2
2	DNA	D	601	-	-	0/4/4/4	0/2/2/2
3	GOL	A	602	-	-	2/4/4/4	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
7	TPP	C	604	6	-	1/16/17/17	0/2/2/2
7	TPP	D	604	6	-	2/16/17/17	0/2/2/2
2	DNA	B	601	-	-	2/4/4/4	0/2/2/2
2	DNA	A	601	-	-	0/4/4/4	0/2/2/2

All (23) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	601	DNA	C1L-C1M	7.00	1.49	1.39
2	C	601	DNA	C1L-C1M	6.88	1.48	1.39
2	B	601	DNA	C1L-C1M	6.59	1.48	1.39
2	A	601	DNA	C1L-C1M	6.49	1.48	1.39
7	C	604	TPP	C4-N3	-4.02	1.36	1.39
7	D	604	TPP	C4-N3	-3.96	1.36	1.39
7	C	604	TPP	C5'-C4'	3.17	1.48	1.42
2	C	601	DNA	C1K-C1N	3.15	1.48	1.42
7	D	604	TPP	C5'-C4'	3.14	1.48	1.42
7	D	604	TPP	C6-C5	3.03	1.52	1.50
2	A	601	DNA	C1K-C1N	3.00	1.48	1.42
2	D	601	DNA	C1K-C1N	2.95	1.48	1.42
2	B	601	DNA	C1O-C1N	2.79	1.48	1.43
2	D	601	DNA	C1O-C1N	2.79	1.48	1.43
2	A	601	DNA	C1O-C1N	2.76	1.48	1.43
2	C	601	DNA	C1O-C1N	2.74	1.48	1.43
2	B	601	DNA	C1K-C1N	2.59	1.47	1.42
7	C	604	TPP	C6-C5	2.39	1.52	1.50
2	A	601	DNA	C1M-C1O	2.37	1.48	1.43
2	C	601	DNA	C1M-C1O	2.33	1.48	1.43
2	B	601	DNA	C1M-C1O	2.32	1.48	1.43
2	D	601	DNA	C1M-C1O	2.23	1.48	1.43
2	A	601	DNA	C1H-C1O	-2.16	1.37	1.42

All (25) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	C	604	TPP	C6-C5-C4	6.51	132.66	127.43
7	D	604	TPP	C6-C5-C4	5.65	131.97	127.43
7	C	604	TPP	C6'-N1'-C2'	3.67	122.21	115.96
7	D	604	TPP	C6'-N1'-C2'	3.56	122.02	115.96
7	D	604	TPP	CM2-C2'-N1'	3.44	120.93	117.14
7	C	604	TPP	C5'-C6'-N1'	-3.21	118.47	123.82
7	C	604	TPP	CM4-C4-N3	3.07	126.45	122.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	D	604	TPP	CM4-C4-N3	2.79	126.09	122.53
7	C	604	TPP	CM2-C2'-N1'	2.49	119.88	117.14
7	D	604	TPP	CM4-C4-C5	-2.49	122.15	127.60
7	D	604	TPP	C5'-C6'-N1'	-2.46	119.72	123.82
2	A	601	DNA	C1I-C1L-C1M	2.45	120.95	118.97
7	D	604	TPP	N1'-C2'-N3'	-2.42	121.38	125.54
2	C	601	DNA	C1I-C1L-C1M	2.35	120.87	118.97
2	B	601	DNA	C1I-C1L-C1M	2.34	120.86	118.97
2	A	601	DNA	C1F-C1H-C1O	-2.33	117.66	120.89
2	A	601	DNA	C1E-C1G-C1N	-2.33	117.66	120.89
7	C	604	TPP	PA-O3A-PB	-2.33	124.85	132.83
7	C	604	TPP	CM4-C4-C5	-2.28	122.61	127.60
7	C	604	TPP	C7'-N3-C2	-2.18	121.42	125.35
7	C	604	TPP	N4'-C4'-N3'	2.17	120.10	117.03
7	C	604	TPP	C6'-C5'-C4'	2.14	118.63	115.72
7	D	604	TPP	C5-C4-N3	2.09	111.76	107.57
7	D	604	TPP	C7'-N3-C2	-2.07	121.62	125.35
2	B	601	DNA	C1F-C1H-C1O	-2.00	118.12	120.89

There are no chirality outliers.

All (11) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	602	GOL	C1-C2-C3-O3
3	A	603	GOL	O1-C1-C2-C3
3	A	603	GOL	C1-C2-C3-O3
3	A	603	GOL	O2-C2-C3-O3
7	D	604	TPP	PA-O3A-PB-O2B
7	C	604	TPP	PA-O3A-PB-O2B
3	A	602	GOL	O2-C2-C3-O3
3	A	603	GOL	O1-C1-C2-O2
7	D	604	TPP	PA-O3A-PB-O1B
2	B	601	DNA	O1B-C1J-C1L-C1M
2	B	601	DNA	O1A-C1J-C1L-C1M

There are no ring outliers.

3 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	C	601	DNA	1	0
7	C	604	TPP	2	0

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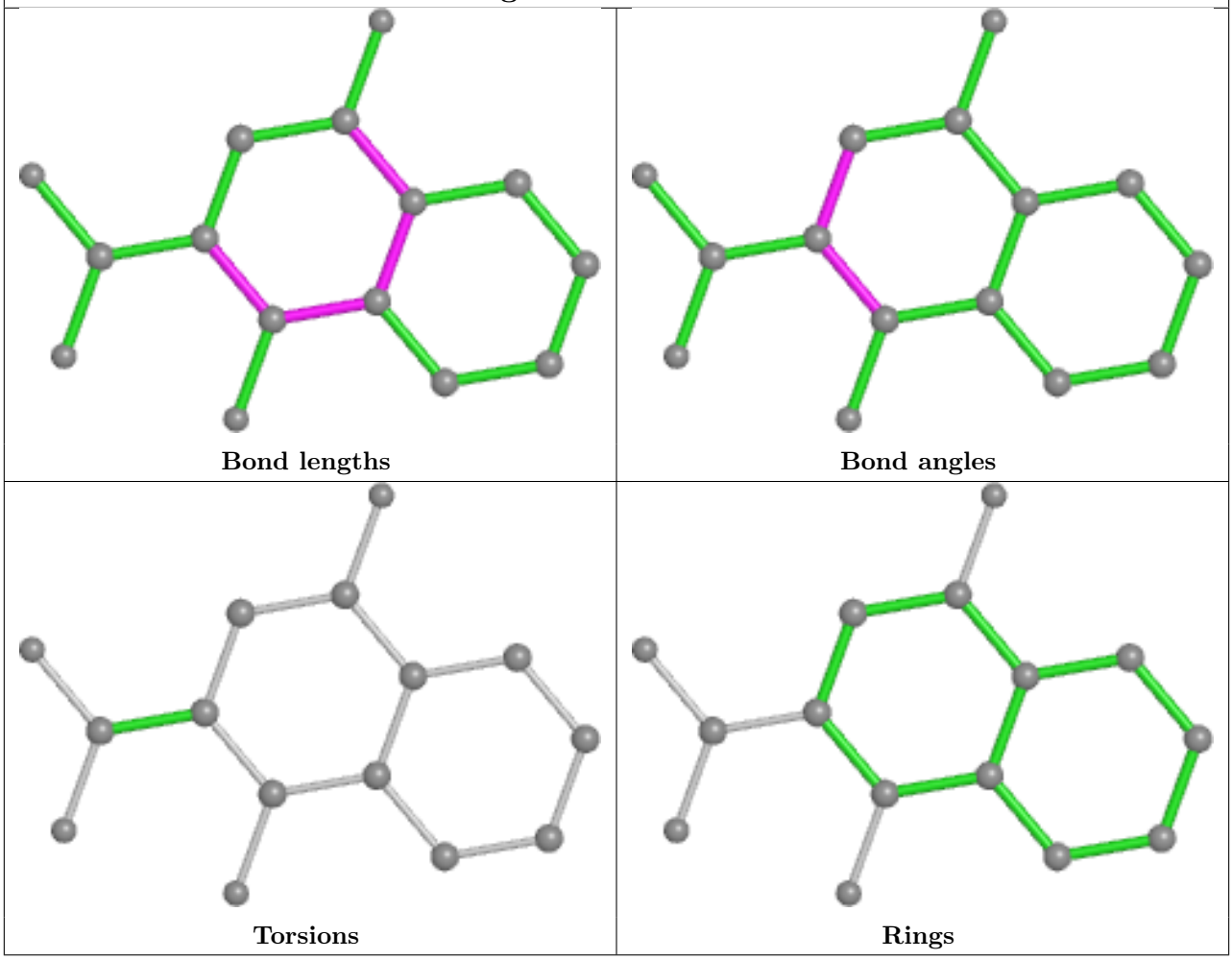
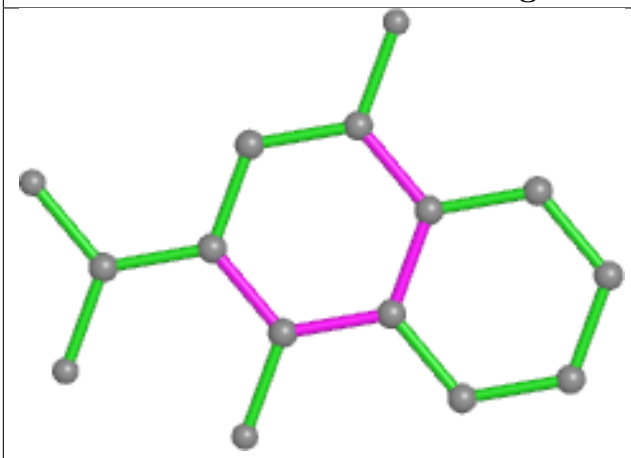
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	601	DNA	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

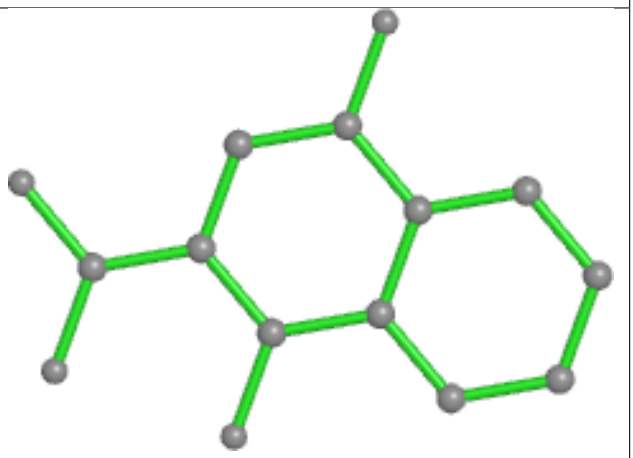
Ligand DNA C 601



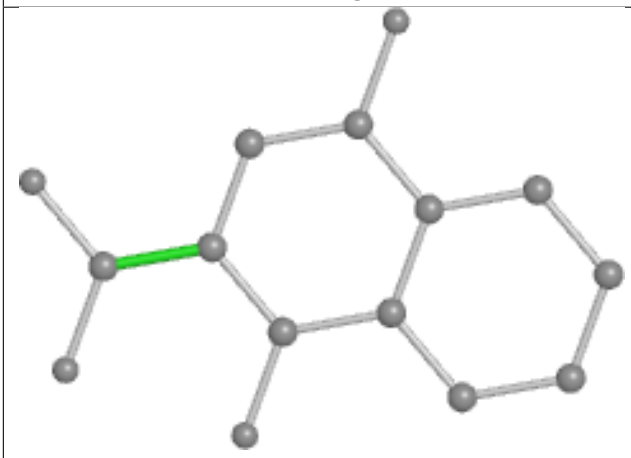
Ligand DNA D 601



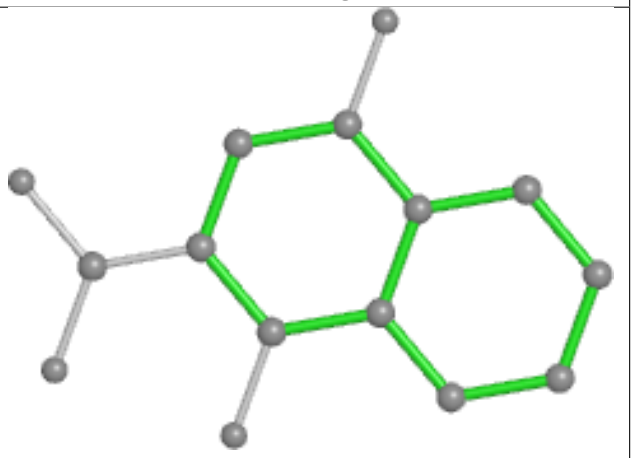
Bond lengths



Bond angles

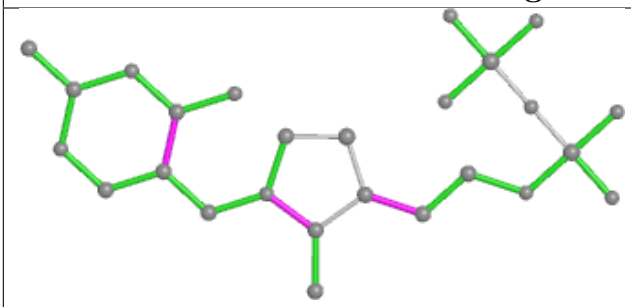


Torsions

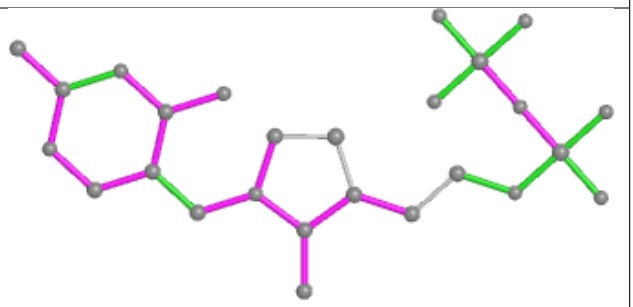


Rings

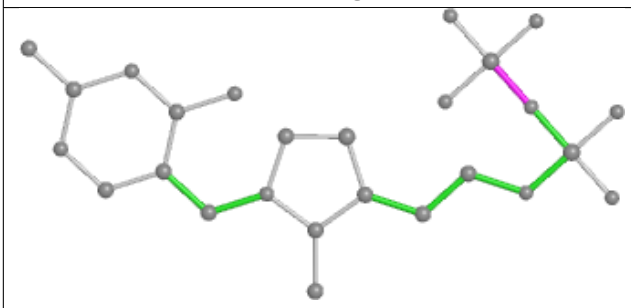
Ligand TPP C 604



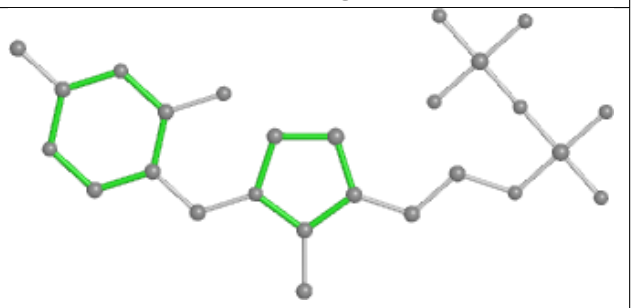
Bond lengths



Bond angles

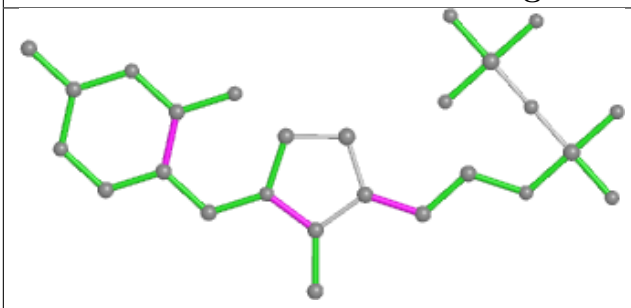


Torsions

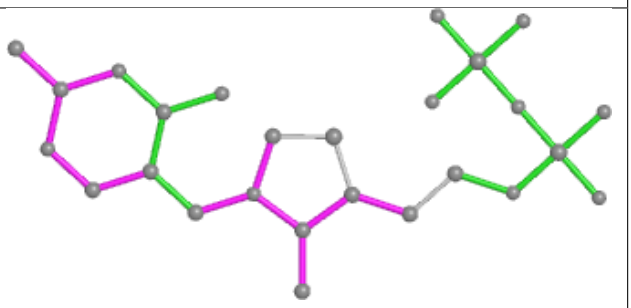


Rings

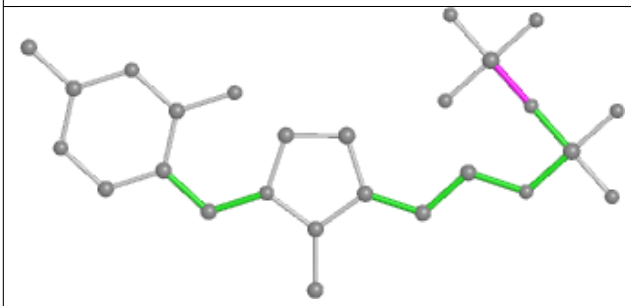
Ligand TPP D 604



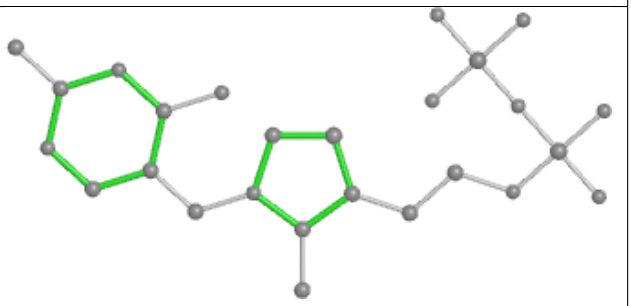
Bond lengths



Bond angles

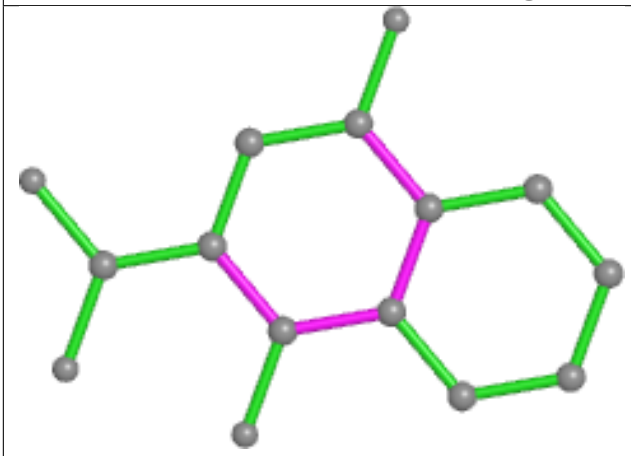


Torsions

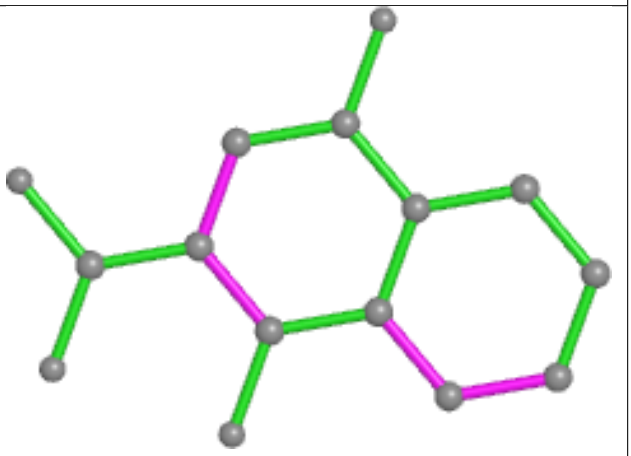


Rings

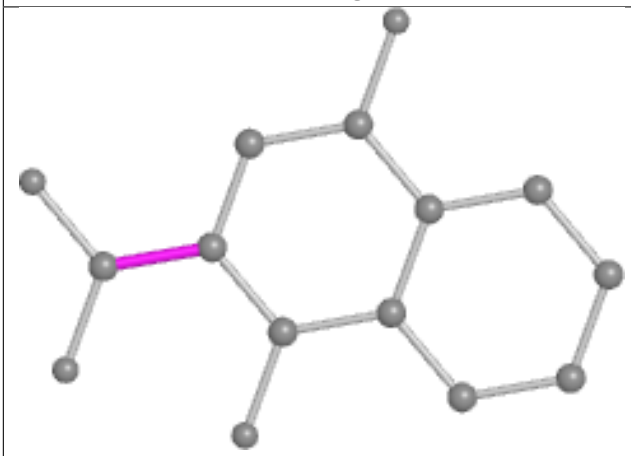
Ligand DNA B 601



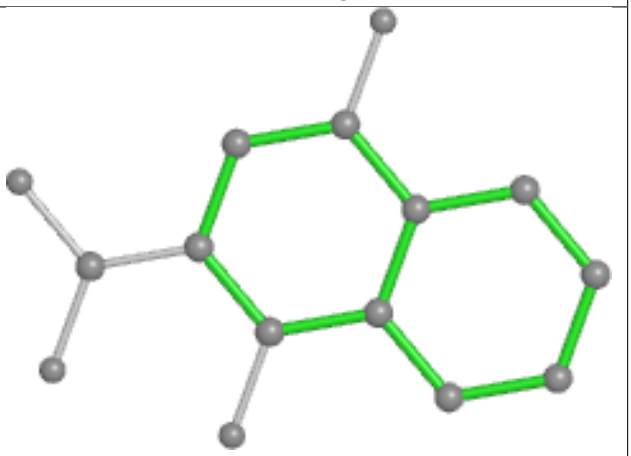
Bond lengths



Bond angles

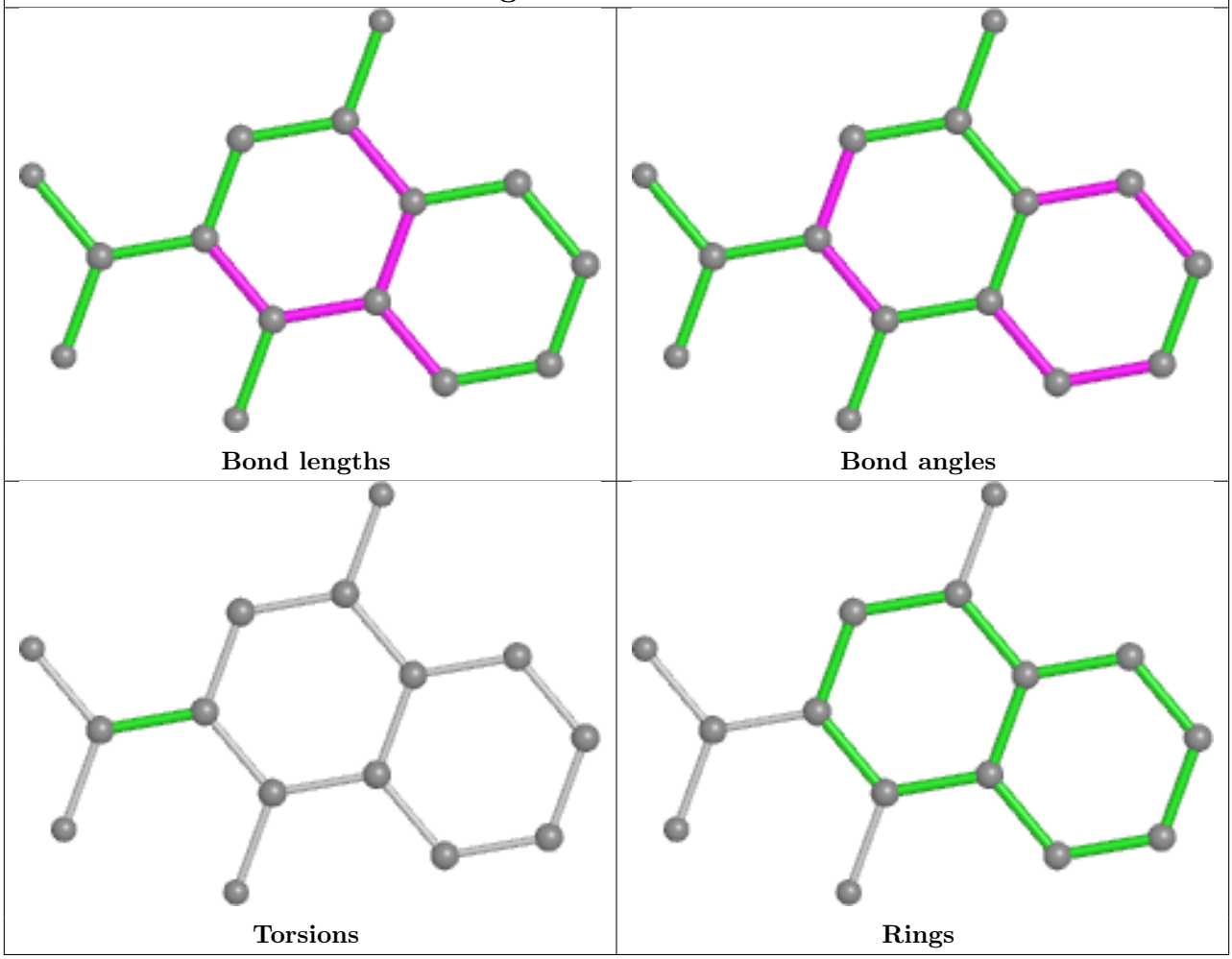


Torsions



Rings

Ligand DNA A 601



5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

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, 95^{th} percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
1	A	527/574 (91%)	0.47	31 (5%)	22	33	32, 55, 89, 109	0
1	B	524/574 (91%)	0.28	20 (3%)	40	53	32, 53, 84, 105	0
1	C	536/574 (93%)	0.60	54 (10%)	7	11	33, 56, 88, 115	0
1	D	532/574 (92%)	0.24	19 (3%)	42	55	33, 57, 83, 106	0
All	All	2119/2296 (92%)	0.40	124 (5%)	22	33	32, 55, 86, 115	0

All (124) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	142	ALA	5.6
1	C	146	THR	5.3
1	C	143	PRO	5.1
1	A	289	ALA	4.8
1	D	139	ALA	4.5
1	C	139	ALA	4.5
1	D	211	PRO	4.2
1	C	211	PRO	4.2
1	C	422	HIS	4.1
1	C	33	PRO	4.0
1	A	293	VAL	4.0
1	C	530	GLY	3.9
1	D	4	SER	3.8
1	D	146	THR	3.8
1	A	422	HIS	3.7
1	C	431	PRO	3.6
1	B	211	PRO	3.6
1	C	151	ALA	3.6
1	A	254	SER	3.6
1	C	430	SER	3.6
1	C	148	ALA	3.5

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Mol	Chain	Res	Type	RSRZ
1	B	307	VAL	3.5
1	D	148	ALA	3.4
1	C	141	ASP	3.4
1	C	527	PRO	3.3
1	D	3	PRO	3.2
1	A	522	PRO	3.2
1	D	109	TYR	3.2
1	D	119	THR	3.2
1	C	4	SER	3.2
1	A	425	THR	3.1
1	C	88	PRO	3.1
1	A	292	GLU	3.1
1	B	82	ALA	3.0
1	D	6	THR	3.0
1	D	126	PHE	3.0
1	C	522	PRO	2.9
1	D	34	LEU	2.9
1	C	128	THR	2.9
1	B	517	VAL	2.8
1	C	34	LEU	2.8
1	D	422	HIS	2.8
1	C	130	VAL	2.8
1	C	123	LEU	2.8
1	A	283	PRO	2.8
1	A	429	ASP	2.7
1	C	109	TYR	2.7
1	A	524	LEU	2.7
1	C	126	PHE	2.7
1	A	352	LEU	2.7
1	C	44	SER	2.7
1	A	291	ALA	2.7
1	C	149	LEU	2.7
1	C	94	ASN	2.6
1	B	83	VAL	2.6
1	C	153	TRP	2.6
1	C	140	GLU	2.6
1	B	425	THR	2.6
1	D	214[A]	PHE	2.6
1	B	112	LEU	2.6
1	B	191	PRO	2.6
1	A	125	TYR	2.6
1	C	5	THR	2.6

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Mol	Chain	Res	Type	RSRZ
1	C	6	THR	2.6
1	A	421	ALA	2.6
1	A	351	PRO	2.5
1	B	310	ASN	2.5
1	C	117	ASN	2.5
1	C	119	THR	2.5
1	A	290	ASP	2.5
1	C	127	GLY	2.5
1	A	126	PHE	2.5
1	C	432	PRO	2.5
1	B	319	VAL	2.4
1	C	125	TYR	2.4
1	D	153	TRP	2.4
1	C	303	ARG	2.4
1	C	425	THR	2.4
1	C	455	THR	2.4
1	C	145	ARG	2.4
1	C	10	VAL	2.4
1	C	95	TYR	2.3
1	D	5	THR	2.3
1	B	489	SER	2.3
1	A	525	ASP	2.3
1	C	122	GLN	2.3
1	B	522	PRO	2.3
1	C	90	VAL	2.3
1	B	367	ARG	2.3
1	B	515	ILE	2.3
1	C	335	MET	2.3
1	A	424	ARG	2.2
1	A	86	LEU	2.2
1	B	288	LEU	2.2
1	C	296	PHE	2.2
1	B	84	ALA	2.2
1	D	36	PHE	2.2
1	B	214	PHE	2.2
1	A	492	ILE	2.2
1	A	91	VAL	2.1
1	A	102	VAL	2.1
1	D	43	ARG	2.1
1	B	321	THR	2.1
1	C	96	ALA	2.1
1	A	543	LEU	2.1

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Mol	Chain	Res	Type	RSRZ
1	C	91	VAL	2.1
1	C	421	ALA	2.1
1	A	88	PRO	2.1
1	B	123	LEU	2.1
1	C	367	ARG	2.1
1	A	89	ALA	2.1
1	D	123	LEU	2.1
1	C	138	LEU	2.1
1	C	404	ILE	2.1
1	A	539	ASP	2.1
1	D	145	ARG	2.1
1	C	84	ALA	2.1
1	C	202	ALA	2.0
1	A	288	LEU	2.0
1	B	113	GLY	2.0
1	A	538	ALA	2.0
1	A	310	ASN	2.0
1	C	524	LEU	2.0
1	A	348	ALA	2.0

6.2 Non-standard residues in protein, DNA, RNA chains (i)

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

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	GOL	A	602	6/6	0.80	0.38	53,55,61,63	0
4	ACT	C	603	4/4	0.86	0.30	49,50,52,54	0
3	GOL	A	603	6/6	0.90	0.24	53,55,57,60	0
4	ACT	A	604	4/4	0.91	0.16	61,61,61,62	0

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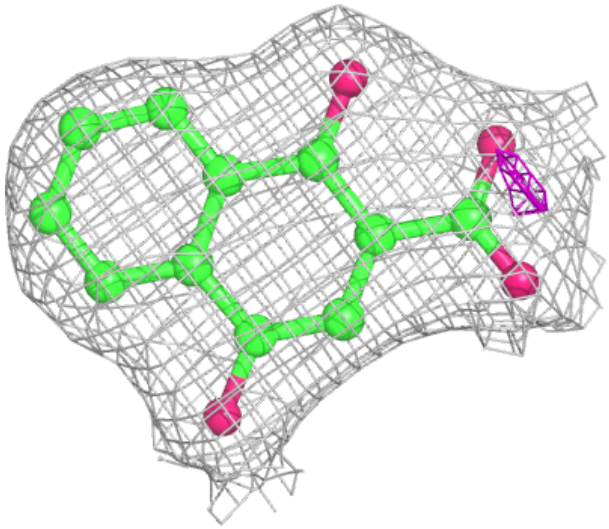
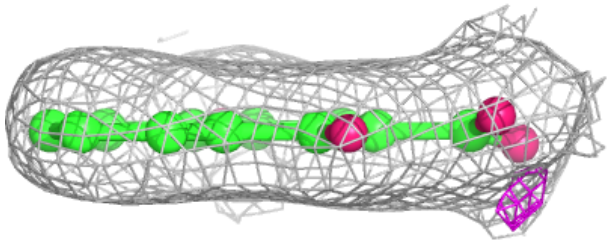
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
4	ACT	D	603	4/4	0.92	0.28	47,50,50,52	0
5	FMT	A	605	3/3	0.92	0.18	60,60,62,64	0
5	FMT	B	602	3/3	0.93	0.12	58,58,58,58	0
5	FMT	D	605	3/3	0.95	0.11	68,68,71,73	0
2	DNA	A	601	15/15	0.96	0.15	39,43,45,46	0
2	DNA	B	601	15/15	0.96	0.15	38,45,47,49	0
6	MG	C	602	1/1	0.96	0.08	41,41,41,41	0
7	TPP	C	604	26/26	0.96	0.17	43,47,50,50	0
6	MG	D	602	1/1	0.97	0.10	37,37,37,37	0
2	DNA	D	601	15/15	0.97	0.14	34,38,41,42	0
7	TPP	D	604	26/26	0.97	0.14	28,40,47,47	0
2	DNA	C	601	15/15	0.97	0.23	32,38,43,43	0

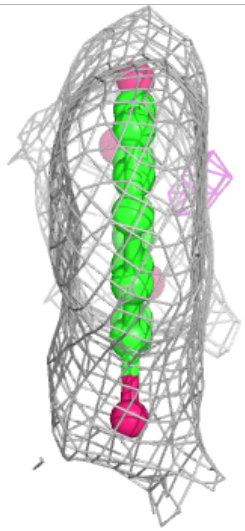
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around DNA A 601:

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

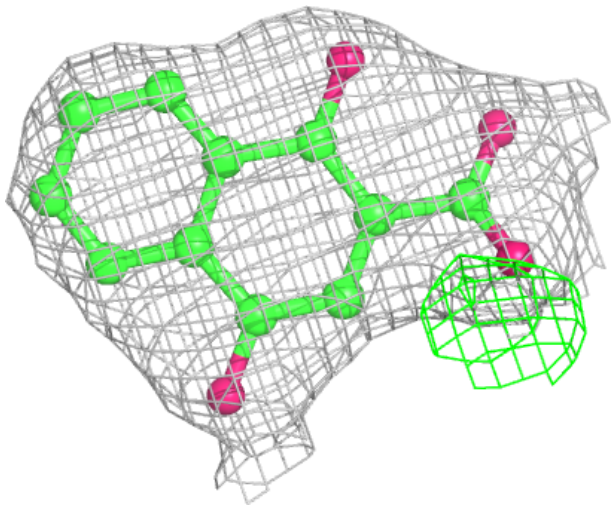


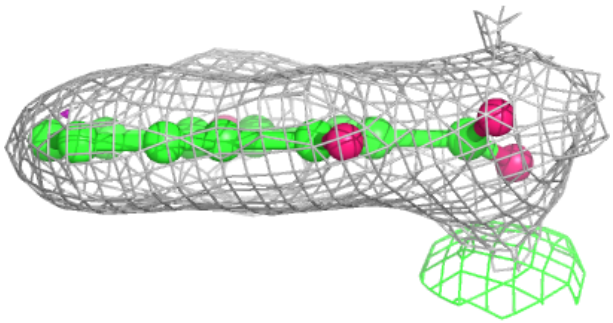


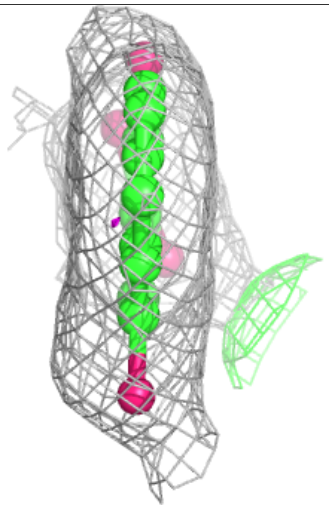


Electron density around DNA B 601:

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

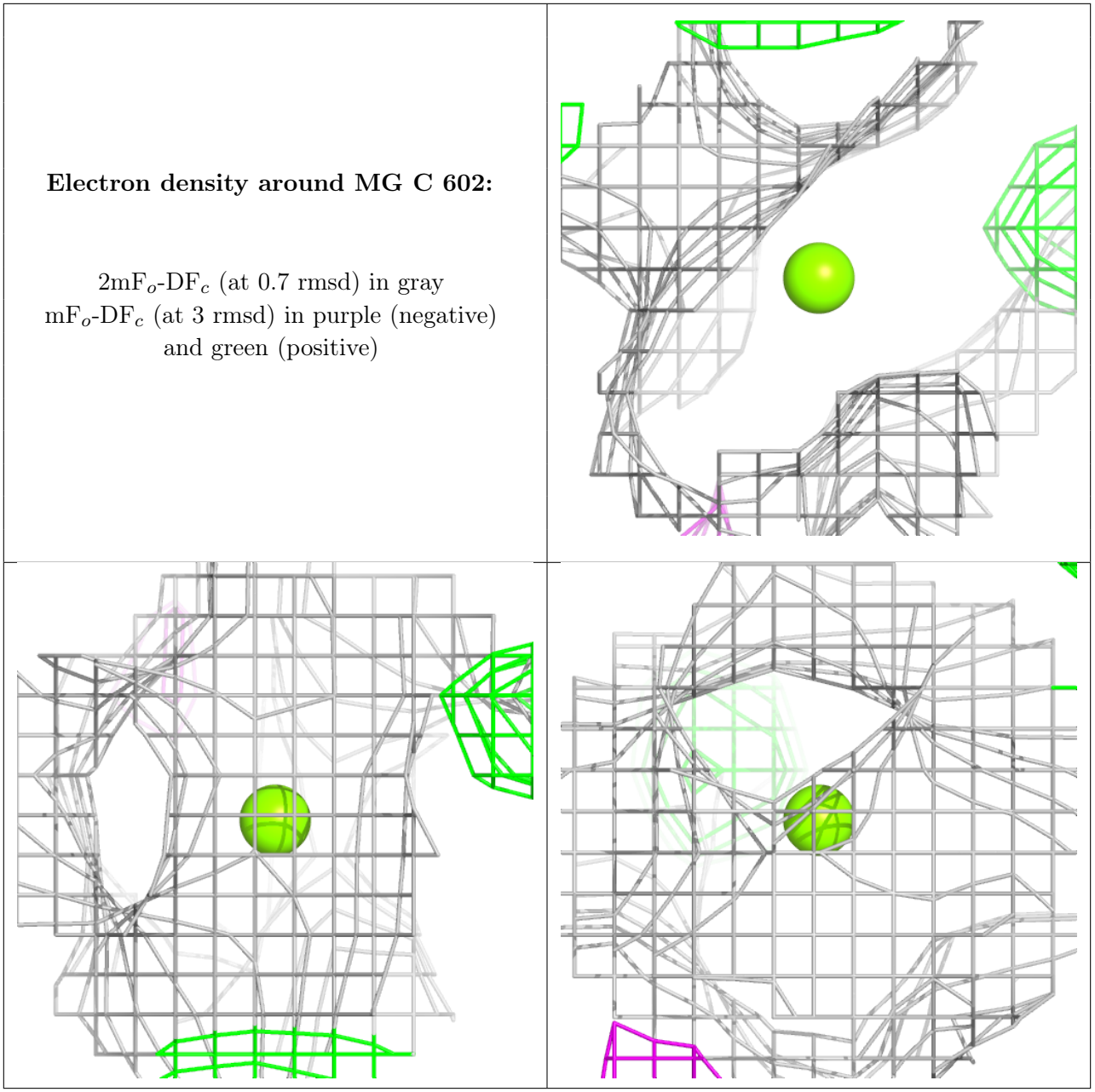






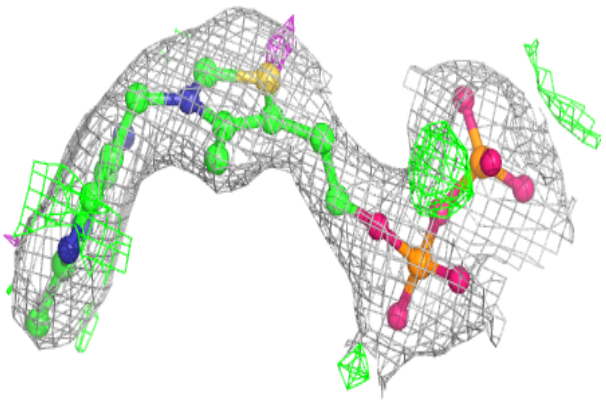
Electron density around MG C 602:

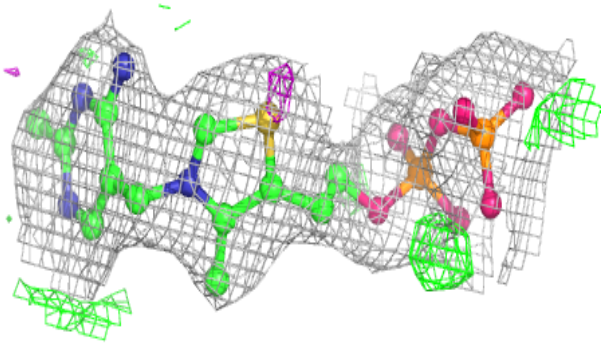
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

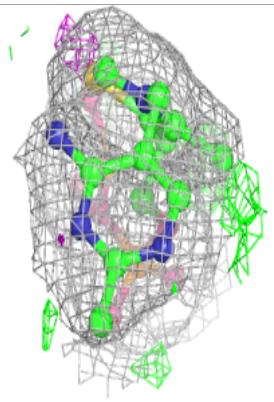


Electron density around TPP C 604:

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

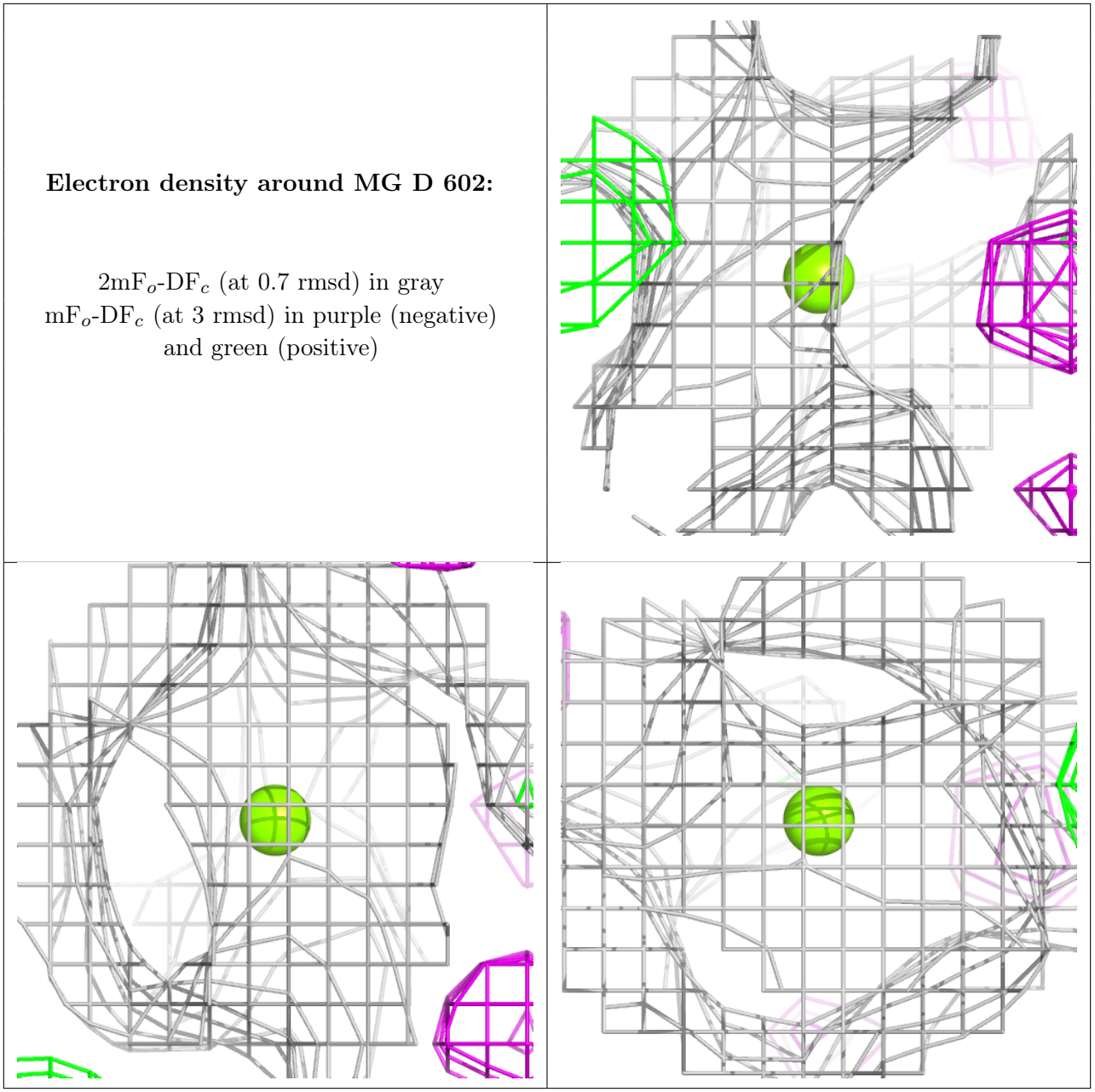






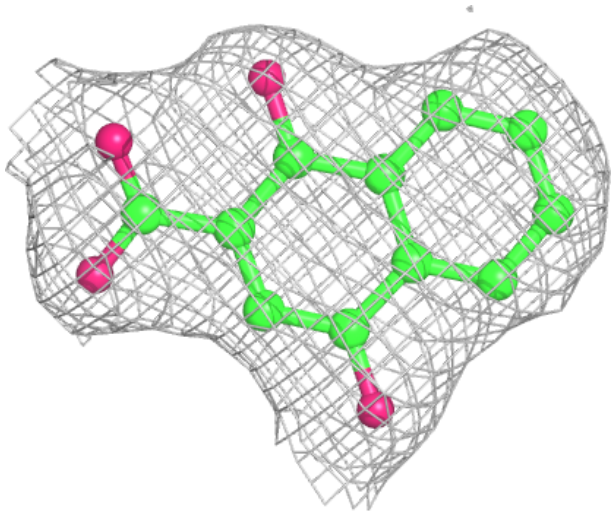
Electron density around MG D 602:

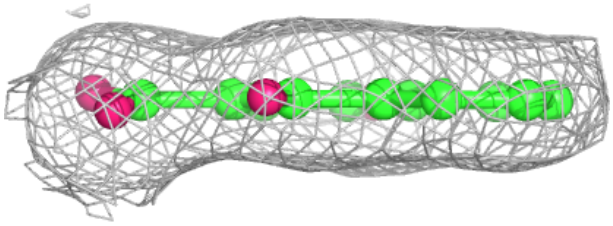
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

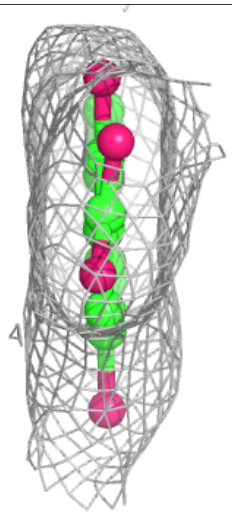


Electron density around DNA D 601:

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

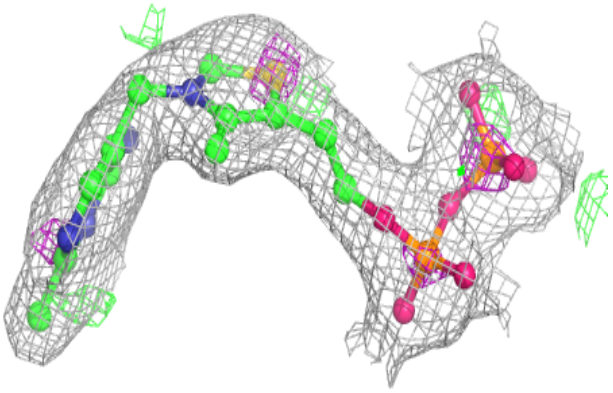


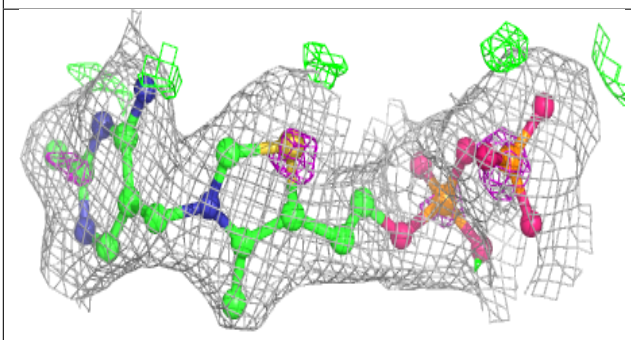


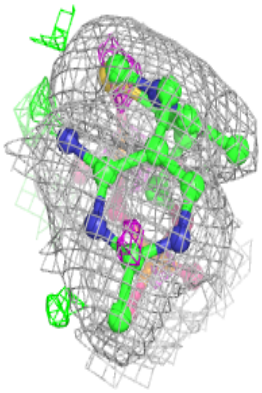


Electron density around TPP D 604:

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

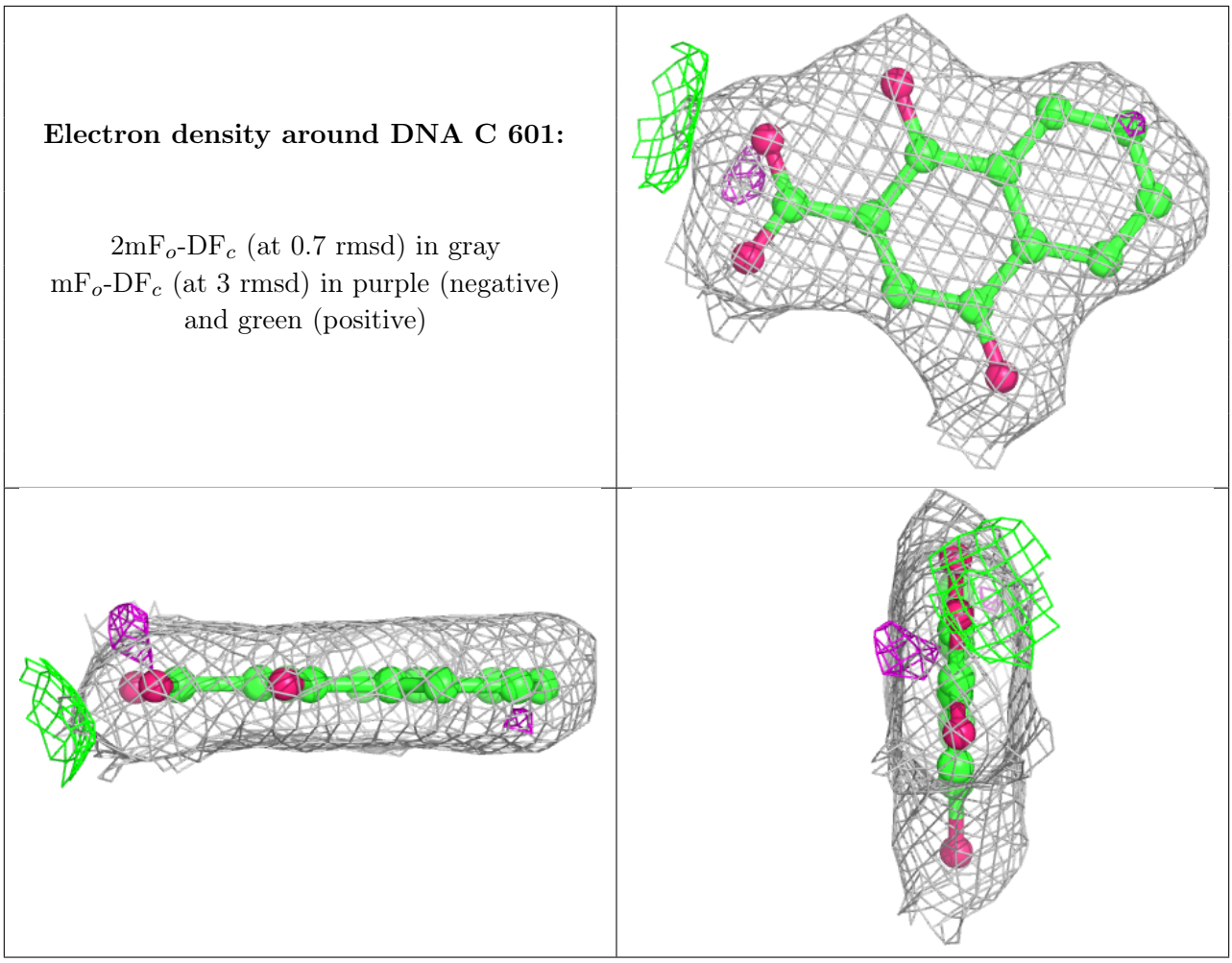






Electron density around DNA C 601:

$2mF_o$-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

There are no such residues in this entry.