WORLDWIDE PDB
PROTEIN DATA BANK

wwPDB X-ray Structure Validation Summary Report ⓘ

Mar 4, 2024 – 01:01 AM EST

PDB ID	:	6OIY
Title	:	Structure of Escherichia coli bound to dGTP
Authors	:	Barnes, C.O.; Wu, Y.; Calero, G.
Deposited on	:	2019-04-09
Resolution	:	3.29 Å(reported)

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	:	2.36
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)	:	2.36

1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 3.29 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.
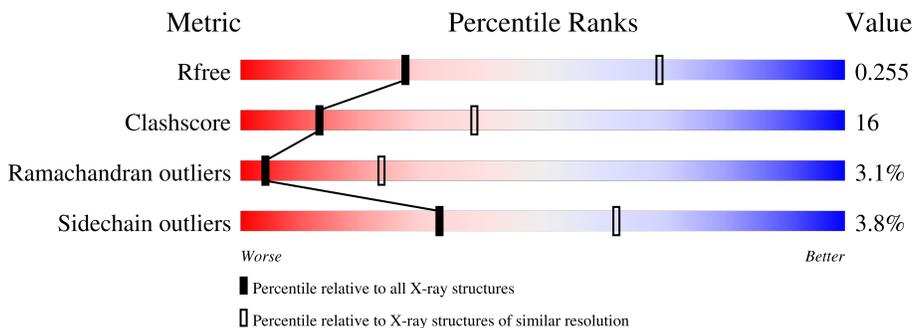
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1149 (3.34-3.26)
Clashscore	141614	1205 (3.34-3.26)
Ramachandran outliers	138981	1183 (3.34-3.26)
Sidechain outliers	138945	1182 (3.34-3.26)

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%

Mol	Chain	Length	Quality of chain
1	A	505	63% 31% • •
1	B	505	50% 43% 5% •
1	C	505	73% 24% •
1	D	505	69% 27% • • • •
1	E	505	69% 25% • •
1	F	505	74% 22% • •

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:

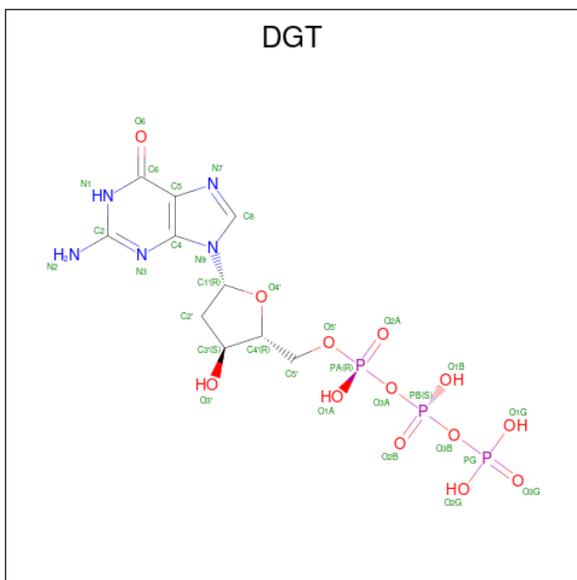| Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	DGT	B	601	-	-	X	-

2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 24717 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 Deoxyguanosinetriphosphate triphosphohydrolase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	503	Total	C	N	O	S	0	0	0
			4115	2627	737	735	16			
1	B	503	Total	C	N	O	S	0	0	0
			4112	2624	737	735	16			
1	C	503	Total	C	N	O	S	0	0	0
			4112	2624	737	735	16			
1	D	492	Total	C	N	O	S	0	0	0
			4058	2592	726	724	16			
1	E	492	Total	C	N	O	S	0	0	0
			4058	2592	726	724	16			
1	F	492	Total	C	N	O	S	0	0	0
			4058	2592	726	724	16			

- Molecule 2 is 2'-DEOXYGUANOSINE-5'-TRIPHOSPHATE (three-letter code: DGT) (formula: $C_{10}H_{16}N_5O_{13}P_3$).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total 31	C 10	N 5	O 13	P 3	0	0
2	B	1	Total 31	C 10	N 5	O 13	P 3	0	0
2	C	1	Total 31	C 10	N 5	O 13	P 3	0	0
2	D	1	Total 31	C 10	N 5	O 13	P 3	0	0
2	E	1	Total 31	C 10	N 5	O 13	P 3	0	0
2	F	1	Total 31	C 10	N 5	O 13	P 3	0	0

- Molecule 3 is MANGANESE (II) ION (three-letter code: MN) (formula: Mn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	1	Total 1	Mn 1	0	0
3	B	1	Total 1	Mn 1	0	0
3	C	1	Total 1	Mn 1	0	0
3	D	1	Total 1	Mn 1	0	0
3	E	1	Total 1	Mn 1	0	0
3	F	1	Total 1	Mn 1	0	0

- Molecule 4 is water.

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

3 Residue-property plots ⓘ

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. 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. 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.
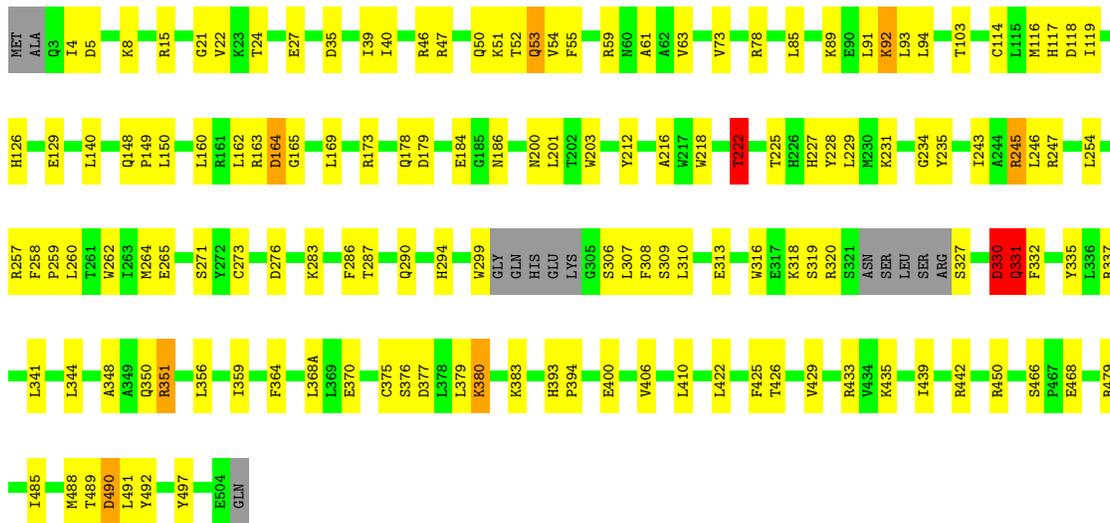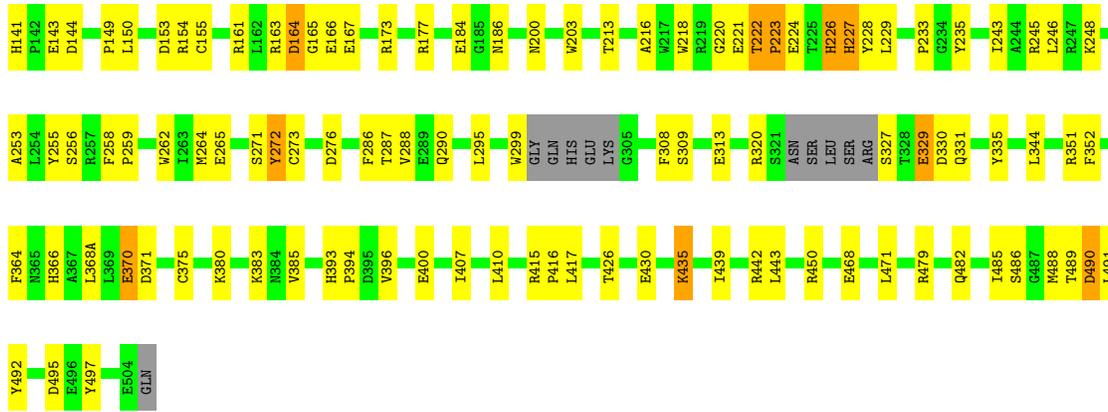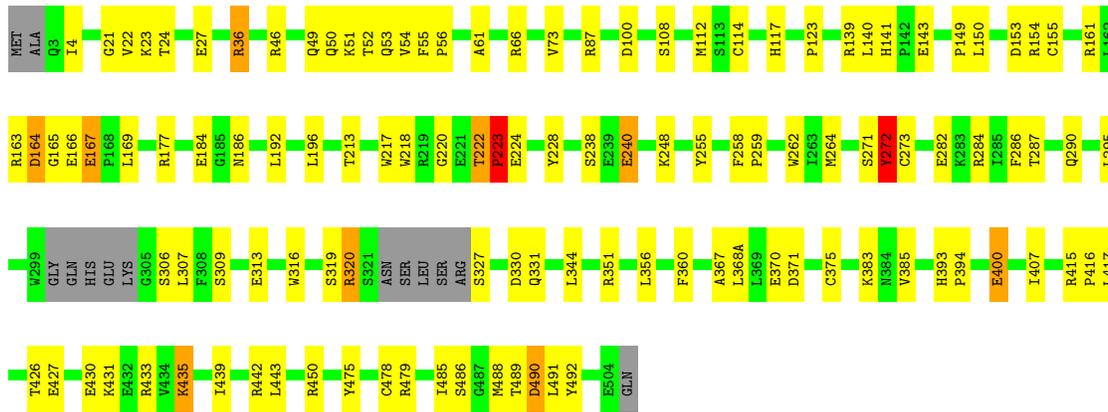
- Molecule 1: Deoxyguanosinetriphosphate triphosphohydrolase

Chain A:

- Molecule 1: Deoxyguanosinetriphosphate triphosphohydrolase

Chain B:

P416 L417 L418 S419 L422 F425 T426 E427 L428 V429 E430 R433 V434 K435 R436 F437 E440 S441 H445 S448 T449 R450 H451 R452 L453 A454 Y455 V456 E457 P463 S464 D465 S466 P467 E468 F469 P470 L471 W472 E473 Y474 Y475 Y476 R477 C478 R479 D483 M488 T489 D490 L491

Y492 R499 E504 GLN

• Molecule 1: Deoxyguanosinetriphosphate triphosphohydrolase

Chain C: 73% 24% •

MET A2 R15 Y16 G21 V22 K23 E27 R46 R47 L48 Q49 Q50 K51 T52 Q53 V54 F55 P56 L57 E58 R59 N60 V63 R66 H69 V73 K92 C114 H117 D118 N121 Q138 R139 L140 H141 P142 E143 Q148 P149 L150 T151 D152 D153 R154 C155

A158 R161 L162 R163 D164 G165 E166 L169 R173 R177 E184 G185 N186 R198 W203 R214 P215 W218 T222 P223 E224 T225 H226 H227 Y228 L229 M230 L246 Y255 P259 W262 I263 M264 E265 S271 Y272 F286 T287 Q290 L295

W299 H302 E303 K304 G305 S306 L307 F308 S309 E313 E317 K318 S319 R320 S321 N322 S323 L324 S325 R326 S327 T328 E329 D330 Q331 M334 Y335 L344 R351 L368A L369 E370 D371 A372 C375 L381 Y382 R383 N384 V385 H393 P394 D395 V396 L399 E400 R415 P416

L417 K435 R442 L443 R450 E468 F469 P470 L471 R479 Q482 I485 S486 G487 M488 T489 D490 L491 Y492 E504 GLN

• Molecule 1: Deoxyguanosinetriphosphate triphosphohydrolase

Chain D: 69% 27% • • •

MET ALA Q3 I4 D5 K8 R15 G21 V22 K23 T24 E27 D35 I39 I40 R46 R47 Q50 K51 T52 Q53 V54 F55 R59 N60 A61 A62 V63 V73 R78 L85 K89 E90 L91 K92 L93 L94 T103 C114 L115 M116 H117 D118 I119

H126 E129 L140 Q148 P149 L150 L160 R161 L162 R163 D164 G165 L169 R173 Q178 D179 E184 G185 N186 N200 L201 T202 W203 Y212 A216 W217 W218 T222 T225 H226 H227 Y228 L229 M230 K231 G234 Y235 I243 A244 R245 L246 R247 L254

R257 F258 P259 L260 T261 W262 I263 M264 E265 S271 Y272 C273 D276 K283 F286 T287 Q290 H294 W299 GLY GLN HIS GLU LYS G305 L307 F308 S309 L310 E313 W316 E317 K318 S319 R320 S321 ASN SER LEU SER ARG S327 D330 Q331 F332 Y335 L336 R337

L341 L344 A348 A349 Q350 R351 L356 I359 F364 L368A L369 E370 C375 S376 D377 L378 L379 K380 K383 H393 P394 E400 V406 L410 L422 F425 T426 V429 R433 V434 K435 I439 R442 R450 S466 P467 E468 R479

I485 M488 T489 D490 L491 Y492 Y497 E504 GLN

• Molecule 1: Deoxyguanosinetriphosphate triphosphohydrolase

Chain E: 69% 25% • •

MET ALA Q3 R14 R15 Y16 R17 S18 P19 Q20 G21 V22 K23 T24 E25 H26 E27 D35 R38 I39 P43 R46 R47 L48 Q49 Q50 V54 R59 R66 E72 V76 K92 L93 Y97 H117 D118 I119 G120 N121 P122 P123 F124 G125 H126 F127 L140

H141 P142 E143 D144 P149 L150 D153 R154 C155 R161 L162 R163 D164 G165 E166 E167 R173 R177 E184 G185 N186 N200 W203 T213 A216 W217 W218 R219 G220 E221 T222 P223 E224 T225 H226 H227 Y228 L229 P233 G234 Y235 I243 A244 R245 L246 R247 K248

A253 L254 Y255 S256 R257 F258 P259 W262 I263 M264 E265 S271 Y272 C273 D276 F286 T287 V288 E289 Q290 L295 W299 GLY GLN HIS GLU LYS G305 F308 S309 E313 R320 S321 ASN SER LEU SER ARG S327 T328 E329 D330 Q331 Y335 L344 R351 F352

F364 N365 H366 A367 L368A L369 E370 D371 C375 K380 K383 N384 V385 H393 P394 D395 V396 E400 I407 L410 R415 P416 L417 T426 E430 K435 I439 R442 L443 R450 E468 L471 R479 Q482 I485 S486 G487 M488 T489 D490 L491

Y492 D495 E496 Y497 E504 GLN

• Molecule 1: Deoxyguanosinetriphosphate triphosphohydrolase

Chain F: 74% 22% • •

MET ALA Q3 I4 G21 V22 K23 T24 E27 R36 R46 Q49 Q50 K51 T52 Q53 V54 F55 P56 A61 R66 V73 R87 D100 S108 M112 S113 C114 H117 P123 R139 L140 H141 P142 E143 P149 L150 D153 R154 C155 R161 L162

R163 D164 G165 E166 E167 P168 L169 R177 E184 G185 N186 L192 L196 T213 W217 W218 R219 G220 E221 T222 P223 E224 Y228 S238 E239 E240 K248 Y255 F258 P259 W262 I263 M264 S271 Y272 C273 E282 K283 R284 I285 F286 T287 Q290 L295

W299 GLY GLN HIS GLU LYS G305 S306 L307 F308 S309 E313 W316 S319 R320 S321 ASN SER LEU SER ARG S327 D330 Q331 L344 R351 L356 F360 A367 L368A L369 E370 D371 C375 K383 N384 V385 H393 P394 E400 I407 R415 P416 L417

T426 E427 E430 K431 E432 R433 V434 K435 I439 R442 L443 R450 R479 Y475 C478 I485 S486 G487 M488 T489 D490 L491 Y492 E504 GLN

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 43 21 2	Depositor
Cell constants a, b, c, α, β, γ	192.18Å 192.18Å 299.60Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	46.87 – 3.29 49.15 – 3.29	Depositor EDS
% Data completeness (in resolution range)	98.3 (46.87-3.29) 99.8 (49.15-3.29)	Depositor EDS
R_{merge}	0.25	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.01 (at 3.33Å)	Xtriage
Refinement program	PHENIX (1.10.1_2155: ???)	Depositor
R, R_{free}	0.205 , 0.241 0.247 , 0.255	Depositor DCC
R_{free} test set	2552 reflections (3.00%)	wwPDB-VP
Wilson B-factor (Å^2)	151.0	Xtriage
Anisotropy	0.223	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 136.2	EDS
L-test for twinning[2]	$< |L| > = 0.45, < L^2 > = 0.28$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	24717	wwPDB-VP
Average B, all atoms (Å^2)	160.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.09% of the height of the origin peak. No significant pseudotranslation is detected.*

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[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: MN, DGT

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	0.75	5/4216 (0.1%)	0.76	8/5705 (0.1%)
1	B	0.59	4/4213 (0.1%)	0.87	14/5699 (0.2%)
1	C	0.64	1/4213 (0.0%)	0.70	1/5699 (0.0%)
1	D	0.52	1/4157 (0.0%)	0.73	11/5618 (0.2%)
1	E	0.59	3/4157 (0.1%)	0.73	8/5618 (0.1%)
1	F	0.61	3/4157 (0.1%)	0.69	2/5618 (0.0%)
All	All	0.62	17/25113 (0.1%)	0.75	44/33957 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	3
1	B	0	2
1	C	0	1
1	D	0	2
1	E	0	4
1	F	0	1
All	All	0	13

The worst 5 of 17 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	334	MET	CG-SD	-13.84	1.45	1.81
1	A	160	LEU	CG-CD1	10.65	1.91	1.51
1	A	479	ARG	CZ-NH2	-6.96	1.24	1.33
1	E	329	GLU	CD-OE1	-6.72	1.18	1.25
1	D	332	PHE	CB-CG	6.64	1.62	1.51

The worst 5 of 44 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	383	LYS	CD-CE-NZ	-15.62	75.78	111.70
1	E	17	ARG	CB-CG-CD	11.09	140.42	111.60
1	B	334	MET	CA-CB-CG	10.59	131.31	113.30
1	E	17	ARG	CG-CD-NE	10.34	133.50	111.80
1	B	140	LEU	CA-CB-CG	9.81	137.87	115.30

There are no chirality outliers.

5 of 13 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	163	ARG	Sidechain
1	A	219	ARG	Sidechain
1	A	222	THR	Peptide
1	B	219	ARG	Sidechain
1	B	382	TYR	Peptide

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	4115	0	4033	161	0
1	B	4112	0	4027	231	0
1	C	4112	0	4031	106	0
1	D	4058	0	4003	123	0
1	E	4058	0	4000	108	0
1	F	4058	0	4002	82	0
2	A	31	0	12	5	0
2	B	31	0	12	11	0
2	C	31	0	12	3	0
2	D	31	0	12	6	0
2	E	31	0	12	2	0
2	F	31	0	12	4	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
3	C	1	0	0	0	0
3	D	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	E	1	0	0	0	0
3	F	1	0	0	0	0
4	A	2	0	0	0	0
4	B	3	0	0	1	0
4	C	3	0	0	1	0
4	D	1	0	0	0	0
4	E	1	0	0	0	0
4	F	2	0	0	0	0
All	All	24717	0	24168	799	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 16.

The worst 5 of 799 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:160:LEU:CD1	1:A:160:LEU:CG	1.91	1.47
1:E:127:PHE:CE2	1:E:400:GLU:OE1	1.70	1.43
1:F:218:TRP:NE1	1:F:220:GLY:O	1.62	1.29
2:F:601:DGT:C4'	2:F:601:DGT:O4'	1.67	1.28
2:C:601:DGT:C4'	2:C:601:DGT:O4'	1.66	1.27

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	501/505 (99%)	448 (89%)	33 (7%)	20 (4%)	3	18
1	B	501/505 (99%)	423 (84%)	55 (11%)	23 (5%)	2	15
1	C	501/505 (99%)	444 (89%)	38 (8%)	19 (4%)	3	19

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	D	486/505 (96%)	442 (91%)	33 (7%)	11 (2%)	6	29
1	E	486/505 (96%)	446 (92%)	31 (6%)	9 (2%)	8	34
1	F	486/505 (96%)	442 (91%)	35 (7%)	9 (2%)	8	34
All	All	2961/3030 (98%)	2645 (89%)	225 (8%)	91 (3%)	4	23

5 of 91 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	22	VAL
1	A	23	LYS
1	A	57	LEU
1	A	61	ALA
1	A	92	LYS

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	431/450 (96%)	408 (95%)	23 (5%)	22	53
1	B	431/450 (96%)	410 (95%)	21 (5%)	25	56
1	C	431/450 (96%)	416 (96%)	15 (4%)	36	64
1	D	431/450 (96%)	420 (97%)	11 (3%)	46	71
1	E	431/450 (96%)	417 (97%)	14 (3%)	39	67
1	F	431/450 (96%)	416 (96%)	15 (4%)	36	64
All	All	2586/2700 (96%)	2487 (96%)	99 (4%)	33	62

5 of 99 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	479	ARG
1	E	54	VAL
1	D	53	GLN
1	D	380	LYS

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Mol	Chain	Res	Type
1	E	248	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 12 such sidechains are listed below:

Mol	Chain	Res	Type
1	B	402	GLN
1	C	53	GLN
1	E	226	HIS
1	C	69	HIS
1	B	20	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 12 ligands modelled in this entry, 6 are monoatomic - leaving 6 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#$|Z| > 2$	Counts	RMSZ	#$|Z| > 2$
2	DGT	A	601	3	26,33,33	1.62	4 (15%)	32,52,52	1.89	8 (25%)
2	DGT	E	601	-	26,33,33	1.65	5 (19%)	32,52,52	1.60	7 (21%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
2	DGT	C	601	-	26,33,33	3.43	12 (46%)	32,52,52	1.44	6 (18%)
2	DGT	D	602	-	26,33,33	1.88	5 (19%)	32,52,52	1.94	10 (31%)
2	DGT	F	601	3	26,33,33	3.42	11 (42%)	32,52,52	1.32	5 (15%)
2	DGT	B	601	-	26,33,33	1.58	5 (19%)	32,52,52	1.84	11 (34%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	DGT	A	601	3	-	9/18/34/34	0/3/3/3
2	DGT	E	601	-	-	1/18/34/34	0/3/3/3
2	DGT	C	601	-	-	1/18/34/34	0/3/3/3
2	DGT	D	602	-	-	5/18/34/34	0/3/3/3
2	DGT	F	601	3	-	2/18/34/34	0/3/3/3
2	DGT	B	601	-	-	5/18/34/34	0/3/3/3

The worst 5 of 42 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	F	601	DGT	O4'-C4'	9.86	1.67	1.45
2	C	601	DGT	O4'-C4'	9.62	1.66	1.45
2	C	601	DGT	C3'-C4'	-6.93	1.33	1.53
2	F	601	DGT	C3'-C4'	-6.93	1.34	1.53
2	D	602	DGT	C6-N1	-6.51	1.28	1.37

The worst 5 of 47 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	601	DGT	C2'-C1'-N9	4.45	124.53	114.27
2	A	601	DGT	C5-C6-N1	4.29	121.53	113.95
2	B	601	DGT	O2G-PG-O1G	4.04	123.06	107.64
2	D	602	DGT	O4'-C4'-C3'	-4.03	96.28	105.67
2	D	602	DGT	O4'-C1'-C2'	-3.61	99.43	106.25

There are no chirality outliers.

5 of 23 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	601	DGT	PB-O3B-PG-O1G
2	A	601	DGT	C5'-O5'-PA-O1A
2	A	601	DGT	C4'-C5'-O5'-PA
2	B	601	DGT	C5'-O5'-PA-O1A
2	B	601	DGT	C5'-O5'-PA-O2A

There are no ring outliers.

6 monomers are involved in 31 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	601	DGT	5	0
2	E	601	DGT	2	0
2	C	601	DGT	3	0
2	D	602	DGT	6	0
2	F	601	DGT	4	0
2	B	601	DGT	11	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 DGT A 601

Bond lengths

Bond angles

Torsions

Rings

Ligand DGT E 601

Bond lengths

Bond angles

Torsions

Rings

Ligand DGT C 601

Bond lengths

Bond angles

Torsions

Rings

Ligand DGT D 602

Bond lengths

Bond angles

Torsions

Rings

Ligand DGT F 601

Bond lengths

Bond angles

Torsions

Rings

Ligand DGT B 601

Bond lengths

Bond angles

Torsions

Rings
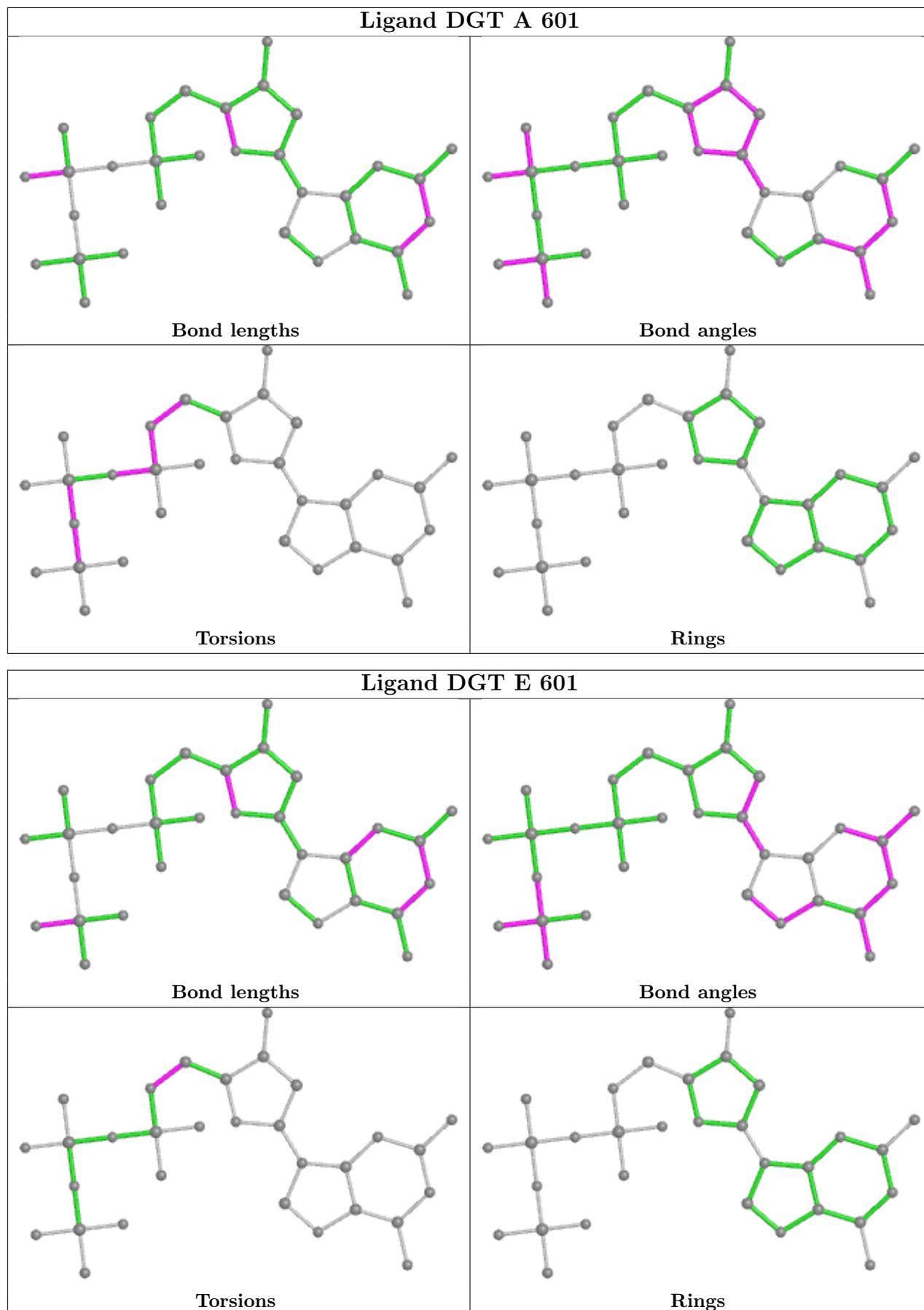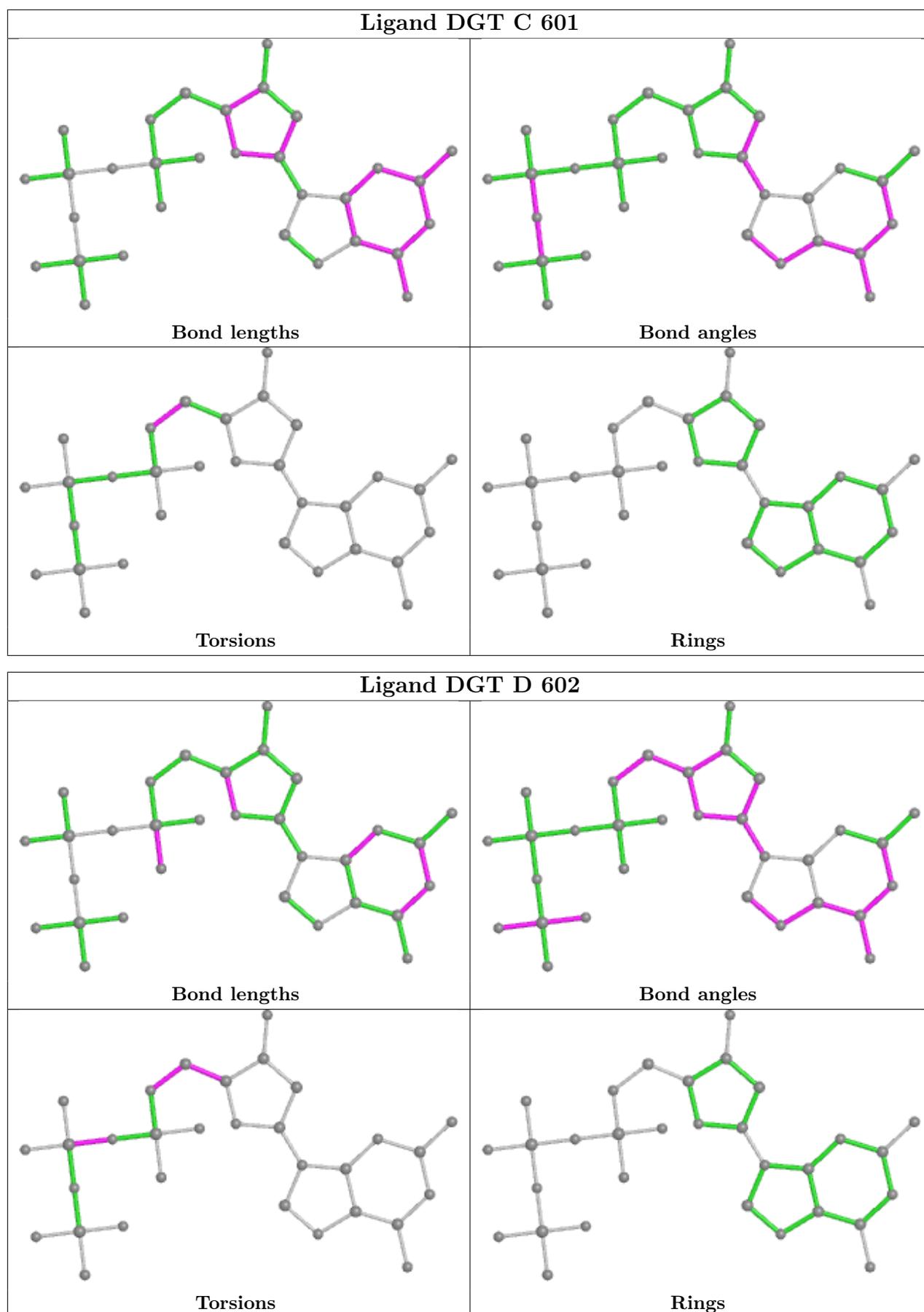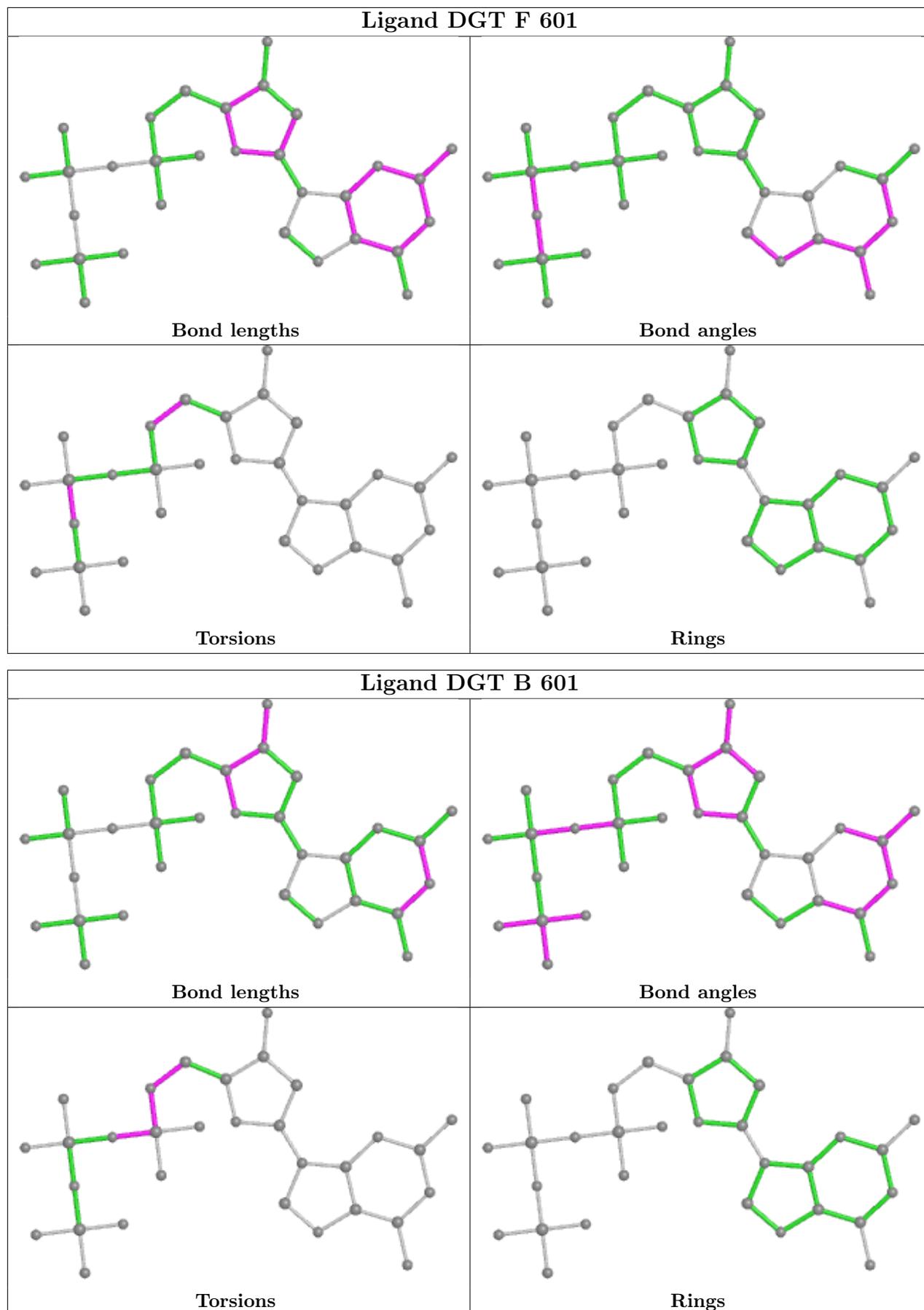
5.7 Other polymers ⓘ

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 ⓘ

Unable to reproduce the depositors R factor - this section is therefore empty.

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

Unable to reproduce the depositors R factor - this section is therefore empty.

6.3   Carbohydrates ⓘ

Unable to reproduce the depositors R factor - this section is therefore empty.

6.4   Ligands ⓘ

Unable to reproduce the depositors R factor - this section is therefore empty.

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.
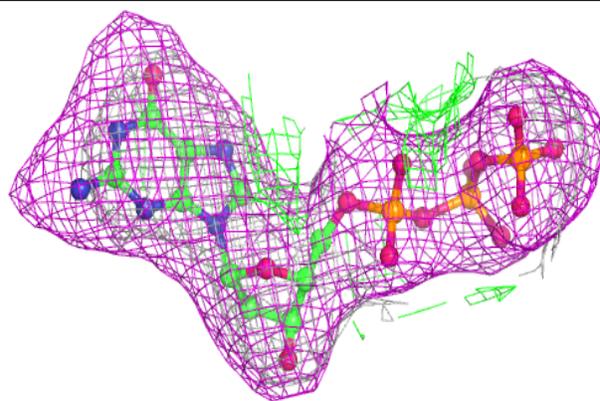

Electron density around DGT A 601:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
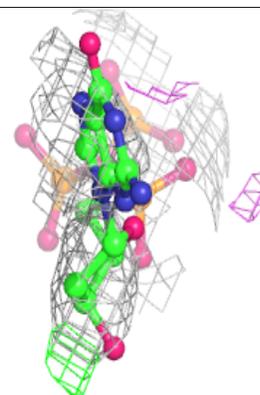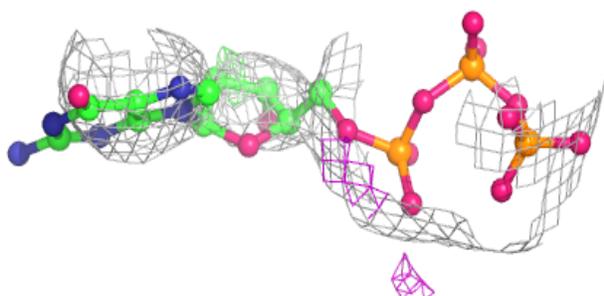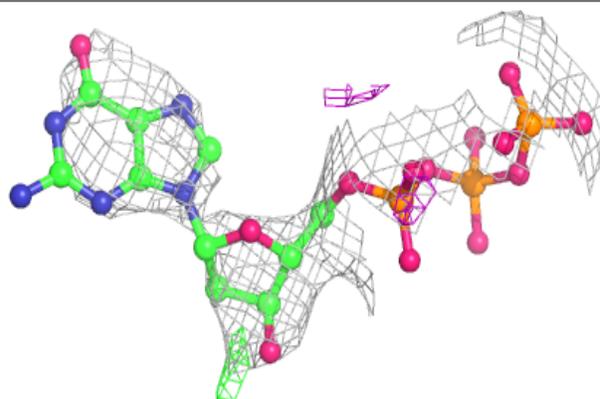mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
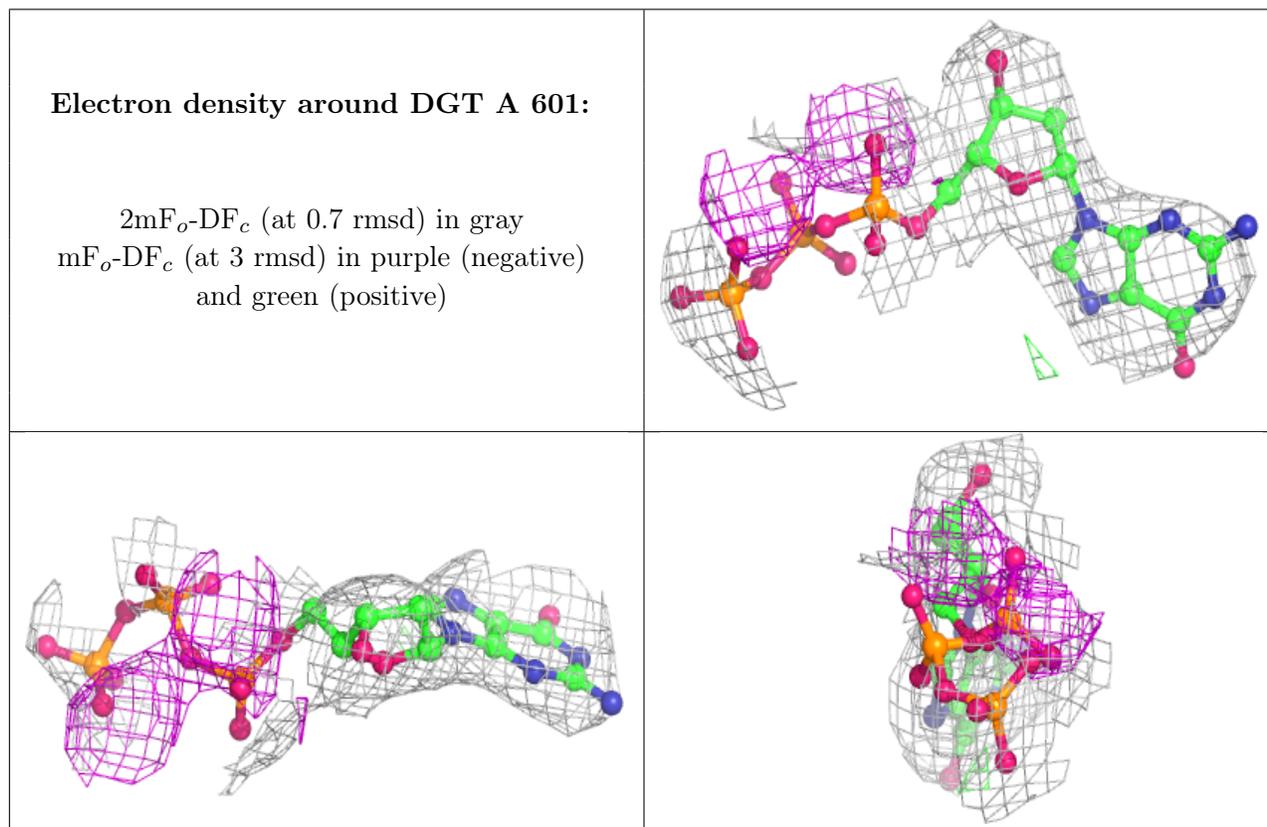
Electron density around DGT B 601:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)
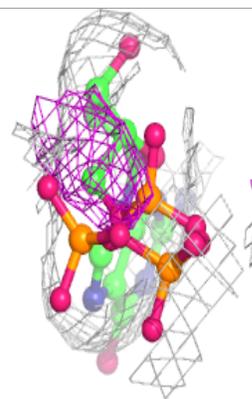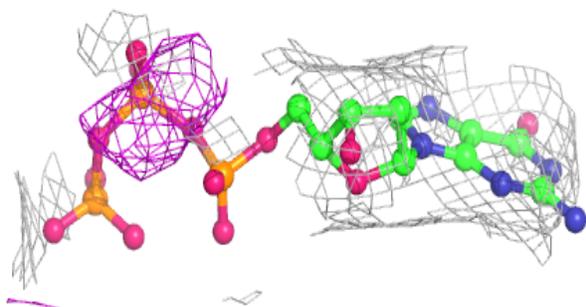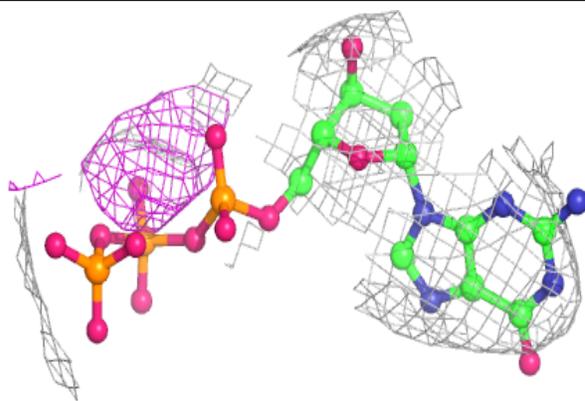
Electron density around DGT C 601:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
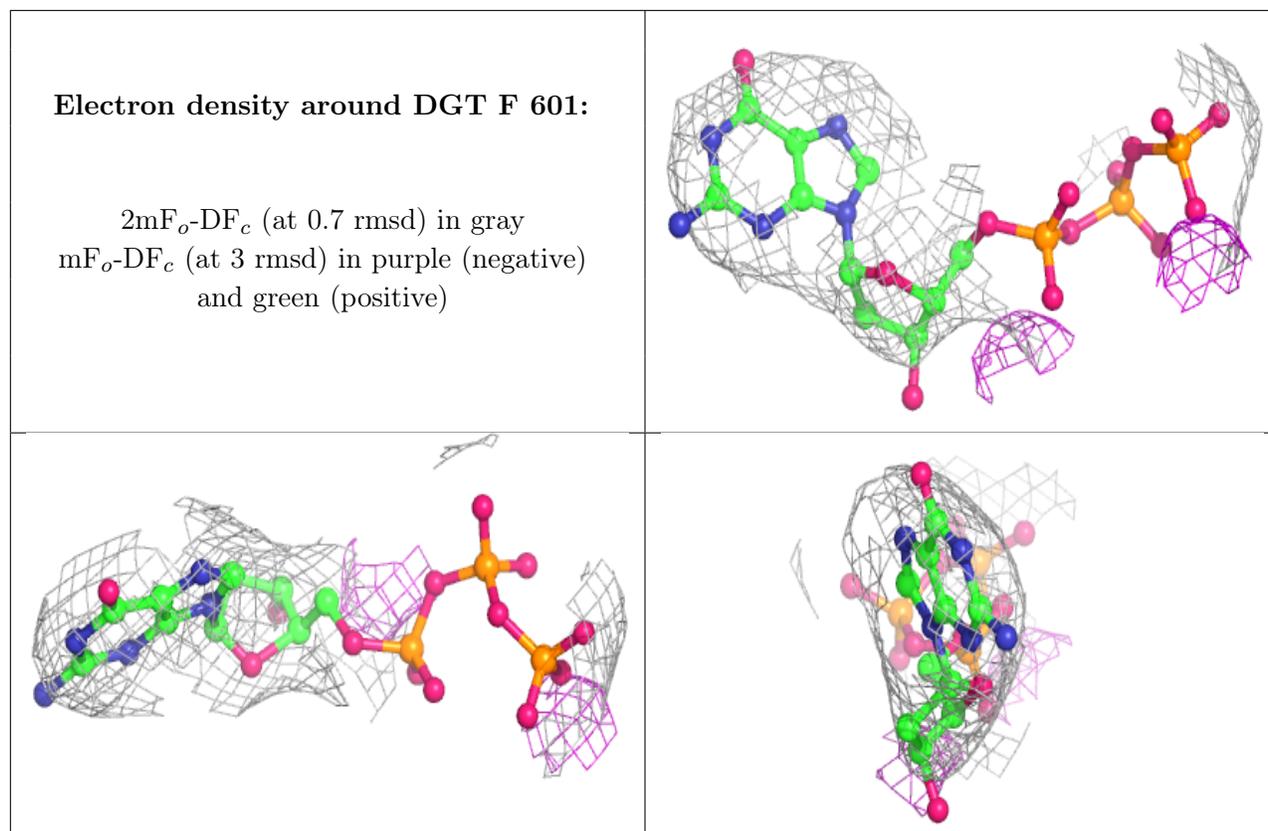and green (positive)
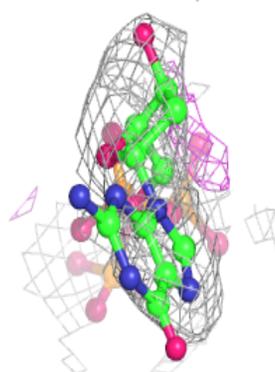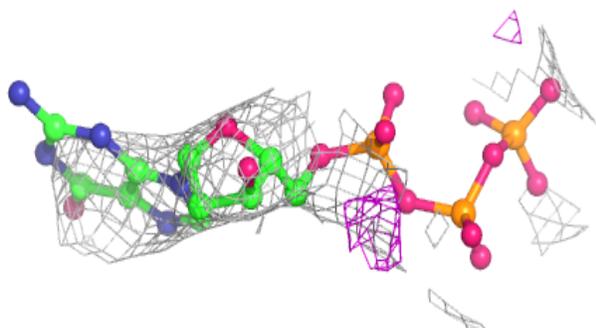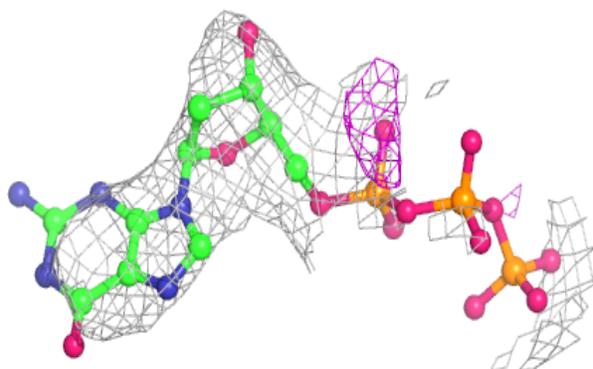
Electron density around DGT D 602:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
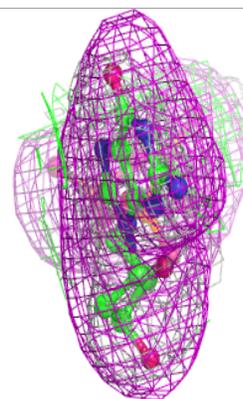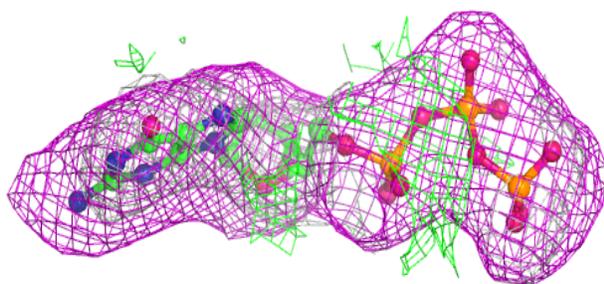
Electron density around DGT E 601:

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

Electron density around DGT F 601:

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

6.5   Other polymers ⓘ

Unable to reproduce the depositors R factor - this section is therefore empty.