



Full wwPDB X-ray Structure Validation Report ⓘ

Sep 28, 2026 – 06:22 PM JST

PDB ID : 9X0H / pdb_00009x0h
Title : Diguanylate cyclase Q15Z91 complex with c-di-GMP and GTP
Authors : Zhao, X.; Liu, X.; Jing, Y.; Silvaggi, N.R.; Han, L.
Deposited on : 2025-09-30
Resolution : 1.94 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4-5-2 with Phenix2.2
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 2.2
EDS : 3.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4 : 9.0.015 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.51

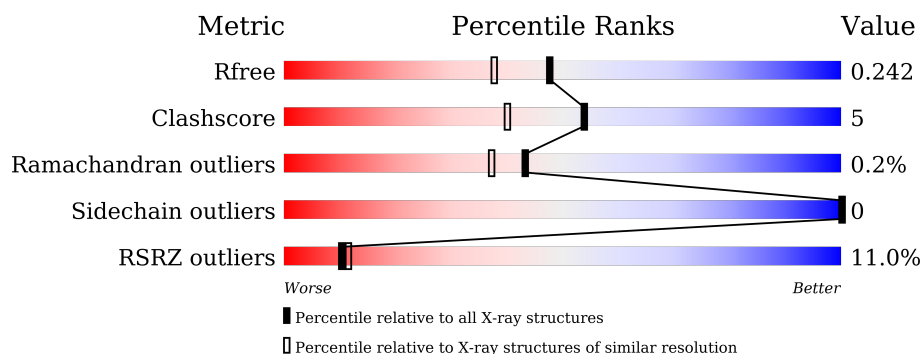
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.94 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	1452 (1.94-1.94)
Clashscore	190562	1494 (1.94-1.94)
Ramachandran outliers	187476	1479 (1.94-1.94)
Sidechain outliers	187428	1479 (1.94-1.94)
RSRZ outliers	180081	1453 (1.94-1.94)

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	310	4% 89% 8% .
1	B	310	9% 83% 12% 5%
1	C	310	22% 82% 13% 5%
1	D	310	6% 89% 7% .

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 crite-

ria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
5	GOL	A	405	-	X	-	-

2 Entry composition [i](#)

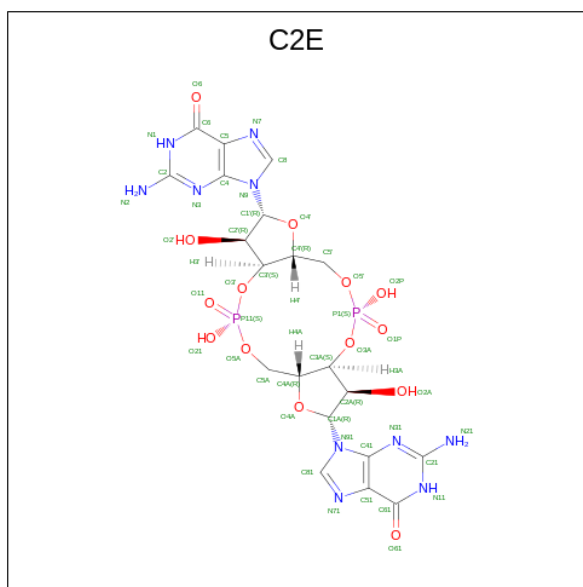
There are 6 unique types of molecules in this entry. The entry contains 20138 atoms, of which 9789 are hydrogens and 0 are deuteriums.

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 diguanylate cyclase.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	299	Total	C	H	N	O	S	0	0	0
			4750	1490	2405	407	436	12			
1	B	295	Total	C	H	N	O	S	0	0	0
			4686	1472	2373	400	429	12			
1	C	294	Total	C	H	N	O	S	0	0	0
			4663	1459	2361	399	432	12			
1	D	298	Total	C	H	N	O	S	0	0	0
			4734	1485	2397	406	435	11			

- Molecule 2 is 9,9'-[(2R,3R,3aS,5S,7aR,9R,10R,10aS,12S,14aR)-3,5,10,12-tetrahydroxy-5,12-dioxidoctahydro-2H,7H-difuro[3,2-d:3',2'-j][1,3,7,9,2,8]tetraoxadiphosphacyclododecine-2,9-diyl]bis(2-amino-1,9-dihydro-6H-purin-6-one) (CCD ID: C2E) (formula: C₂₀H₂₄N₁₀O₁₄P₂) (labeled as "Ligand of Interest" by depositor).



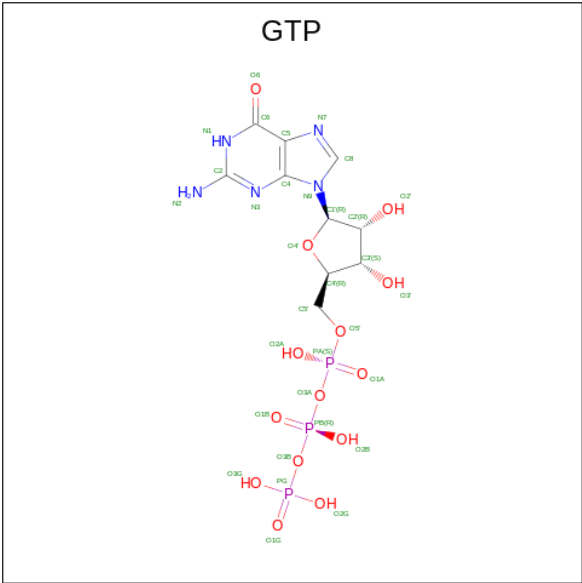
Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
2	A	1	Total	C	H	N	O	P	0	0
			68	20	22	10	14	2		

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Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
2	A	1	Total	C	H	N	O	P	0	0
			68	20	22	10	14	2		
2	B	1	Total	C	H	N	O	P	0	0
			68	20	22	10	14	2		
2	B	1	Total	C	H	N	O	P	0	0
			68	20	22	10	14	2		
2	C	1	Total	C	H	N	O	P	0	0
			68	20	22	10	14	2		
2	C	1	Total	C	H	N	O	P	0	0
			68	20	22	10	14	2		
2	D	1	Total	C	H	N	O	P	0	0
			68	20	22	10	14	2		
2	D	1	Total	C	H	N	O	P	0	0
			68	20	22	10	14	2		

- Molecule 3 is GUANOSINE-5'-TRIPHOSPHATE (CCD ID: GTP) (formula: C₁₀H₁₆N₅O₁₄P₃) (labeled as "Ligand of Interest" by depositor).

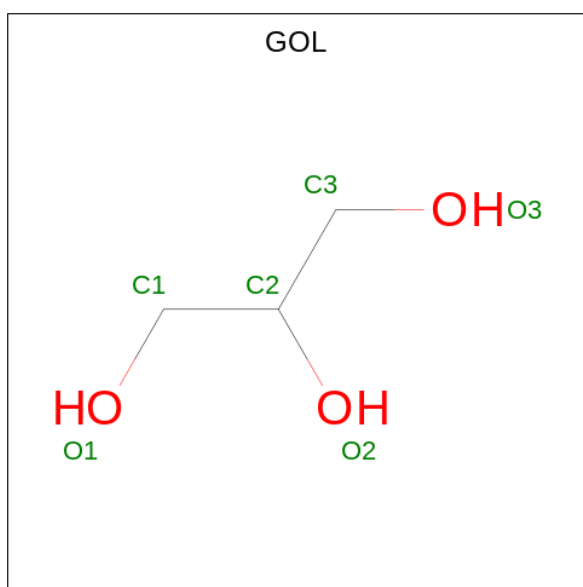


Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
3	A	1	Total	C	H	N	O	P	0	0
			42	10	10	5	14	3		
3	B	1	Total	C	H	N	O	P	0	0
			41	10	9	5	14	3		
3	C	1	Total	C	H	N	O	P	0	0
			41	10	9	5	14	3		
3	D	1	Total	C	H	N	O	P	0	0
			41	10	9	5	14	3		

- Molecule 4 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

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

- Molecule 5 is GLYCEROL (CCD ID: GOL) (formula: C₃H₈O₃).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	A	1	Total 14	C 3	H 8	O 3	0	0
5	B	1	Total 14	C 3	H 8	O 3	0	0
5	B	1	Total 14	C 3	H 8	O 3	0	0
5	C	1	Total 14	C 3	H 8	O 3	0	0
5	D	1	Total 14	C 3	H 8	O 3	0	0

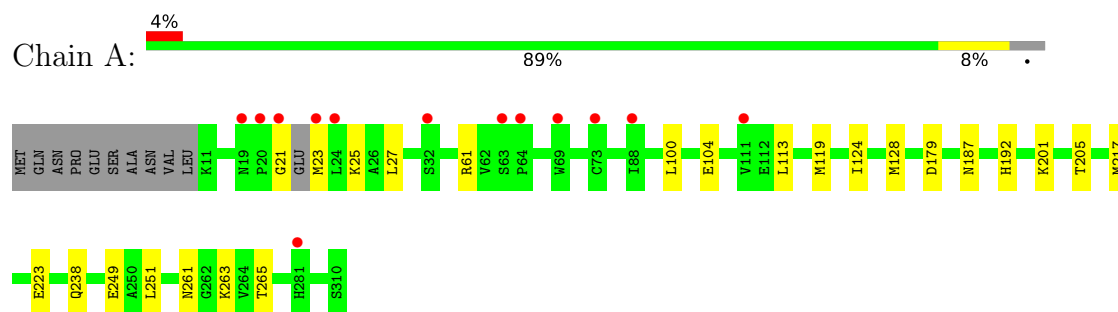
- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	164	Total 164	O 164	0	0
6	B	172	Total 172	O 172	0	0
6	C	85	Total 85	O 85	0	0
6	D	100	Total 100	O 100	0	0

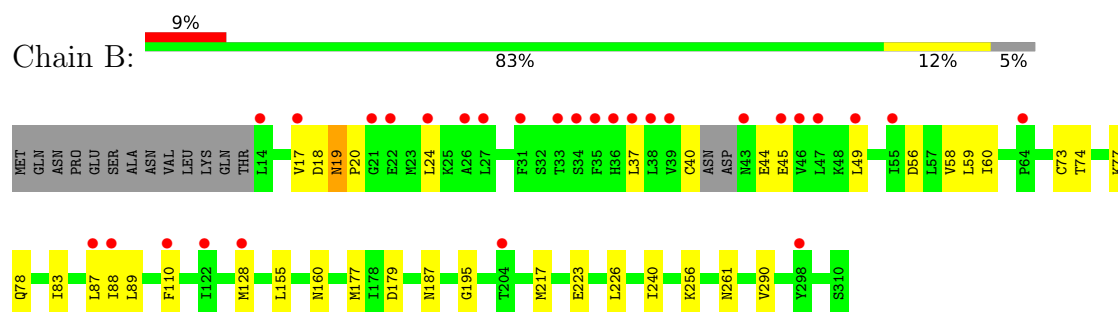
3 Residue-property plots [i](#)

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.

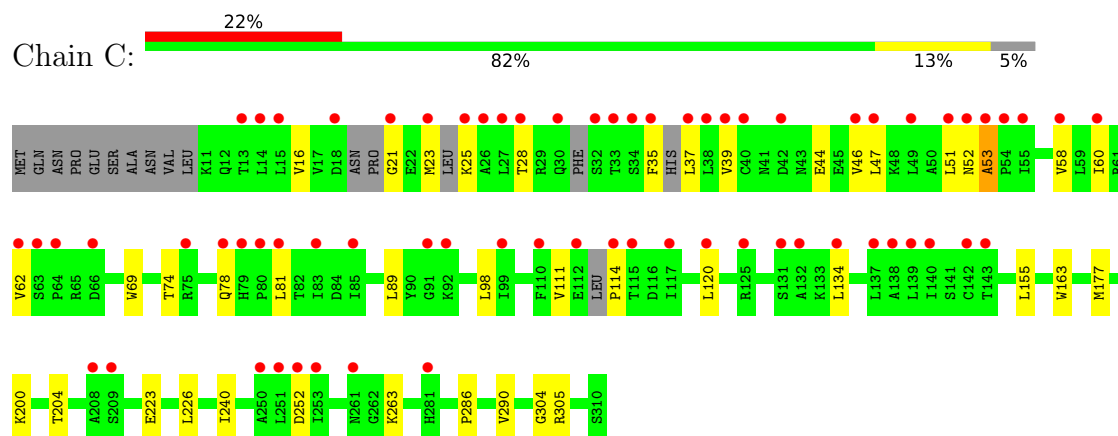
- Molecule 1: diguanylate cyclase



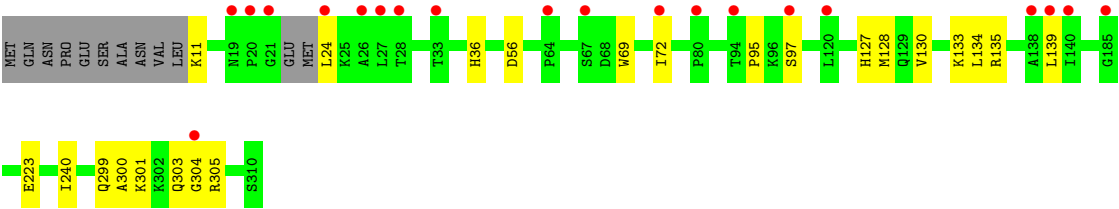
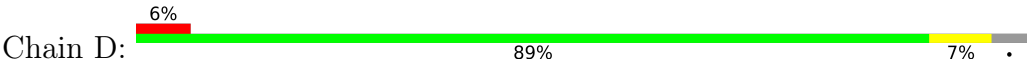
- Molecule 1: diguanylate cyclase



- Molecule 1: diguanylate cyclase



- Molecule 1: diguanylate cyclase



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	82.86Å 116.49Å 167.29Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	47.80 – 1.94 47.80 – 1.94	Depositor EDS
% Data completeness (in resolution range)	97.9 (47.80-1.94) 97.9 (47.80-1.94)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.97 (at 1.94Å)	Xtriage
Refinement program	PHENIX 1.15.2_3472	Depositor
R, R_{free}	0.201 , 0.239 0.203 , 0.242	Depositor DCC
R_{free} test set	1996 reflections (1.67%)	wwPDB-VP
Wilson B-factor (Å ²)	30.0	Xtriage
Anisotropy	0.956	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.41 , 43.0	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	20138	wwPDB-VP
Average B, all atoms (Å ²)	53.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 25.54 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 3.1088e-03. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

¹Intensities estimated from amplitudes.

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

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: GOL, MG, GTP, C2E

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	0.57	1/2382 (0.0%)	0.65	1/3222 (0.0%)
1	B	0.63	3/2350 (0.1%)	0.67	0/3179
1	C	0.46	0/2332	0.61	0/3145
1	D	0.49	0/2374	0.60	0/3212
All	All	0.54	4/9438 (0.0%)	0.63	1/12758 (0.0%)

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	261	ASN	C-O	9.62	1.31	1.23
1	B	261	ASN	CA-C	-6.99	1.46	1.52
1	A	217	MET	SD-CE	-6.17	1.64	1.79
1	B	217	MET	SD-CE	-5.17	1.66	1.79

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	217	MET	CG-SD-CE	6.99	116.27	100.90

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	2345	2405	2405	14	0
1	B	2313	2373	2373	31	0
1	C	2302	2361	2357	35	0
1	D	2337	2397	2396	19	0
2	A	92	44	44	0	0
2	B	92	44	44	1	0
2	C	92	44	44	1	0
2	D	92	44	44	1	0
3	A	32	10	12	0	0
3	B	32	9	12	0	0
3	C	32	9	12	1	0
3	D	32	9	12	2	0
4	A	1	0	0	0	0
4	B	1	0	0	0	0
4	C	2	0	0	0	0
4	D	1	0	0	0	0
5	A	6	8	8	0	0
5	B	12	16	16	0	0
5	C	6	8	8	0	0
5	D	6	8	8	0	0
6	A	164	0	0	2	1
6	B	172	0	0	2	0
6	C	85	0	0	0	0
6	D	100	0	0	0	1
All	All	10349	9789	9795	96	1

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 (96) 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:B:40:CYS:SG	1:B:45:GLU:HG3	2.10	0.90
1:C:25:LYS:HA	1:C:28:THR:HG22	1.54	0.88
1:C:25:LYS:HA	1:C:28:THR:CG2	2.14	0.77
1:C:134:LEU:HD23	1:D:134:LEU:HD12	1.66	0.77
1:A:201:LYS:O	1:A:205:THR:HG23	1.85	0.77
1:C:25:LYS:O	1:C:28:THR:HG22	1.87	0.75
1:C:25:LYS:CA	1:C:28:THR:HG22	2.18	0.73
1:B:40:CYS:SG	1:B:45:GLU:CG	2.77	0.73
1:C:35:PHE:O	1:C:37:LEU:N	2.24	0.70
1:A:238:GLN:OE1	6:A:501:HOH:O	2.11	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:17:VAL:HG13	1:B:60:ILE:HA	1.80	0.63
1:B:59:LEU:HD23	1:B:88:ILE:HB	1.80	0.62
1:A:179:ASP:OD2	1:A:223:GLU:OE2	2.17	0.62
1:C:25:LYS:C	1:C:28:THR:HG22	2.25	0.62
1:B:17:VAL:CG1	1:B:60:ILE:HA	2.30	0.61
1:C:134:LEU:HD23	1:D:134:LEU:CD1	2.31	0.61
1:D:24:LEU:HD23	1:D:24:LEU:O	1.99	0.61
1:C:134:LEU:HD21	1:D:133:LYS:HG2	1.81	0.61
1:C:44:GLU:N	1:C:44:GLU:OE1	2.34	0.60
1:C:37:LEU:C	1:C:37:LEU:HD23	2.26	0.60
1:D:305:ARG:NH1	3:D:403:GTP:O3G	2.35	0.60
1:D:135:ARG:O	1:D:139:LEU:HD23	2.03	0.59
1:A:119:MET:HE2	6:A:562:HOH:O	2.02	0.59
1:B:74:THR:O	1:B:78:GLN:HG2	2.03	0.58
1:B:44:GLU:HG2	1:B:45:GLU:N	2.18	0.58
1:C:240:ILE:HD11	2:C:402:C2E:C51	2.34	0.57
1:B:155:LEU:HD21	1:B:226:LEU:HB3	1.87	0.57
1:A:261:ASN:HB3	1:A:263:LYS:HD2	1.87	0.56
1:A:23:MET:HE1	1:A:61:ARG:NH1	2.21	0.56
1:C:16:VAL:HB	1:C:39:VAL:HG22	1.88	0.55
1:C:44:GLU:HA	1:C:46:VAL:HG22	1.89	0.55
1:B:40:CYS:SG	1:B:45:GLU:OE2	2.65	0.55
1:C:155:LEU:HD21	1:C:226:LEU:HB3	1.88	0.54
1:D:223:GLU:HG2	1:D:223:GLU:O	2.07	0.54
1:D:223:GLU:OE2	3:D:403:GTP:O3A	2.26	0.54
1:B:160:ASN:OD1	6:B:501:HOH:O	2.19	0.53
1:C:51:LEU:HD22	1:C:81:LEU:HD12	1.90	0.53
1:C:52:ASN:O	1:C:53:ALA:CB	2.57	0.53
1:B:179:ASP:OD1	1:B:223:GLU:OE2	2.28	0.52
1:A:249:GLU:HG3	1:A:265:THR:HG22	1.90	0.51
1:B:20:PRO:HA	1:B:24:LEU:HD23	1.91	0.51
1:A:23:MET:HE1	1:A:61:ARG:CZ	2.42	0.50
1:D:299:GLN:O	1:D:303:GLN:HB3	2.11	0.50
1:C:58:VAL:HG12	1:C:60:ILE:HG13	1.94	0.50
1:B:177:MET:HE2	1:B:290:VAL:HG13	1.94	0.50
1:D:127:HIS:O	1:D:130:VAL:HG12	2.12	0.50
1:B:89:LEU:O	1:B:110:PHE:HA	2.12	0.49
1:A:187:ASN:OD1	1:A:192:HIS:HA	2.12	0.49
1:C:47:LEU:O	1:C:51:LEU:HG	2.13	0.49
1:D:24:LEU:HD23	1:D:24:LEU:C	2.37	0.49
1:A:124:ILE:O	1:A:128:MET:HG3	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:23:MET:HE3	1:C:114:PRO:HD2	1.95	0.48
1:C:223:GLU:OE2	3:C:403:GTP:O1A	2.31	0.48
1:C:74:THR:O	1:C:78:GLN:HG3	2.13	0.48
1:B:58:VAL:HB	1:B:87:LEU:HD12	1.95	0.48
1:D:56:ASP:HB3	1:D:128:MET:SD	2.54	0.48
1:B:56:ASP:HB3	1:B:128:MET:HE2	1.95	0.47
1:B:73:CYS:SG	1:B:87:LEU:HD21	2.54	0.47
1:D:69:TRP:O	1:D:72:ILE:HG22	2.14	0.47
1:A:27:LEU:HD21	1:A:113:LEU:HD11	1.95	0.47
1:A:100:LEU:O	1:A:104:GLU:HG3	2.15	0.47
1:C:47:LEU:H	1:C:47:LEU:HD23	1.80	0.47
1:D:95:PRO:HB2	1:D:97:SER:OG	2.15	0.46
1:C:111:VAL:HG11	1:C:120:LEU:HB2	1.97	0.46
1:C:177:MET:CE	1:C:290:VAL:HG13	2.46	0.45
1:C:252:ASP:OD1	1:C:263:LYS:NZ	2.31	0.45
1:C:69:TRP:HZ2	1:C:98:LEU:HD13	1.82	0.44
1:B:17:VAL:CG1	1:B:60:ILE:HG12	2.47	0.44
1:A:205:THR:HG21	1:A:251:LEU:HD21	1.99	0.44
1:C:46:VAL:HG23	1:C:47:LEU:H	1.83	0.44
1:C:62:VAL:HG13	1:C:69:TRP:CE2	2.53	0.44
1:B:45:GLU:O	1:B:49:LEU:HG	2.18	0.43
1:C:60:ILE:HB	1:C:89:LEU:HD23	1.99	0.43
1:D:300:ALA:O	1:D:304:GLY:O	2.36	0.43
1:C:23:MET:HE3	1:C:114:PRO:CD	2.48	0.43
1:B:256:LYS:HE3	6:B:511:HOH:O	2.18	0.43
1:B:40:CYS:HG	1:B:45:GLU:CD	2.24	0.43
1:B:177:MET:CE	1:B:290:VAL:HG13	2.48	0.43
1:C:21:GLY:O	1:C:25:LYS:N	2.52	0.42
1:B:60:ILE:HB	1:B:89:LEU:HD23	2.02	0.42
1:D:240:ILE:HD11	2:D:402:C2E:C5	2.49	0.42
1:B:17:VAL:HG13	1:B:17:VAL:O	2.19	0.42
1:B:37:LEU:HD23	1:B:37:LEU:HA	1.93	0.42
1:C:304:GLY:O	1:C:305:ARG:HB2	2.19	0.42
1:B:18:ASP:O	1:B:19:ASN:CB	2.68	0.41
1:B:44:GLU:HG2	1:B:45:GLU:H	1.84	0.41
1:D:303:GLN:O	1:D:303:GLN:CG	2.68	0.41
1:D:11:LYS:HE2	1:D:36:HIS:NE2	2.35	0.41
1:B:187:ASN:OD1	1:B:195:GLY:HA3	2.20	0.41
1:B:77:LYS:O	1:B:83:ILE:HD12	2.21	0.41
1:C:163:TRP:CG	1:C:286:PRO:HB3	2.56	0.41
1:B:240:ILE:HD11	2:B:401:C2E:C5	2.51	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:200:LYS:O	1:C:204:THR:HG23	2.21	0.40
1:D:301:LYS:O	1:D:304:GLY:O	2.40	0.40
1:B:17:VAL:HG12	1:B:59:LEU:O	2.20	0.40
1:A:21:GLY:O	1:A:25:LYS:HD2	2.22	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:606:HOH:O	6:D:567:HOH:O[4_455]	2.04	0.16

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	295/310 (95%)	288 (98%)	7 (2%)	0	100	100
1	B	291/310 (94%)	283 (97%)	7 (2%)	1 (0%)	36	30
1	C	282/310 (91%)	268 (95%)	13 (5%)	1 (0%)	30	22
1	D	294/310 (95%)	289 (98%)	5 (2%)	0	100	100
All	All	1162/1240 (94%)	1128 (97%)	32 (3%)	2 (0%)	43	37

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	19	ASN
1	C	53	ALA

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	260/270 (96%)	260 (100%)	0	100	100
1	B	256/270 (95%)	256 (100%)	0	100	100
1	C	255/270 (94%)	255 (100%)	0	100	100
1	D	259/270 (96%)	259 (100%)	0	100	100
All	All	1030/1080 (95%)	1030 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	160	ASN
1	A	292	GLN
1	B	30	GLN
1	B	129	GLN
1	B	154	GLN
1	B	299	GLN
1	C	12	GLN
1	C	121	ASN
1	C	127	HIS
1	C	129	GLN
1	C	192	HIS
1	D	19	ASN
1	D	78	GLN
1	D	154	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 22 ligands modelled in this entry, 5 are monoatomic - leaving 17 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	GTP	B	404	4	30,34,34	0.87	1 (3%)	46,54,54	1.76	14 (30%)
2	C2E	C	401	-	52,52,52	3.61	27 (51%)	80,82,82	2.89	21 (26%)
3	GTP	C	403	4	30,34,34	0.88	0	46,54,54	1.63	10 (21%)
5	GOL	C	406	-	5,5,5	0.77	0	5,5,5	1.15	0
2	C2E	A	401	-	52,52,52	3.66	25 (48%)	80,82,82	2.88	21 (26%)
2	C2E	D	402	-	52,52,52	3.73	25 (48%)	80,82,82	2.92	19 (23%)
2	C2E	B	402	-	52,52,52	3.65	25 (48%)	80,82,82	2.92	15 (18%)
3	GTP	D	403	4	30,34,34	0.91	1 (3%)	46,54,54	1.97	13 (28%)
2	C2E	C	402	-	52,52,52	3.65	26 (50%)	80,82,82	2.90	21 (26%)
2	C2E	A	402	-	52,52,52	3.73	24 (46%)	80,82,82	2.77	20 (25%)
3	GTP	A	403	4	30,34,34	0.87	0	46,54,54	1.52	11 (23%)
2	C2E	B	401	-	52,52,52	3.64	23 (44%)	80,82,82	3.01	19 (23%)
5	GOL	A	405	-	5,5,5	1.58	2 (40%)	5,5,5	1.04	0
5	GOL	B	403	-	5,5,5	1.30	0	5,5,5	0.80	0
2	C2E	D	401	-	52,52,52	3.68	25 (48%)	80,82,82	2.89	22 (27%)
5	GOL	B	406	-	5,5,5	0.95	0	5,5,5	1.06	0
5	GOL	D	405	-	5,5,5	0.97	0	5,5,5	1.11	1 (20%)

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	GTP	B	404	4	-	7/22/38/38	0/3/3/3
2	C2E	C	401	-	-	0/30/62/62	0/6/7/7
3	GTP	C	403	4	-	7/22/38/38	0/3/3/3
5	GOL	C	406	-	-	2/4/4/4	-
2	C2E	A	401	-	-	2/30/62/62	0/6/7/7
2	C2E	D	402	-	-	1/30/62/62	0/6/7/7
2	C2E	B	402	-	-	0/30/62/62	0/6/7/7
3	GTP	D	403	4	-	4/22/38/38	0/3/3/3
2	C2E	C	402	-	-	0/30/62/62	0/6/7/7
2	C2E	A	402	-	-	0/30/62/62	0/6/7/7
3	GTP	A	403	4	-	0/22/38/38	0/3/3/3
2	C2E	B	401	-	-	0/30/62/62	0/6/7/7
5	GOL	A	405	-	-	4/4/4/4	-
5	GOL	B	403	-	-	0/4/4/4	-
2	C2E	D	401	-	-	0/30/62/62	0/6/7/7
5	GOL	B	406	-	-	0/4/4/4	-
5	GOL	D	405	-	-	0/4/4/4	-

All (204) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	401	C2E	C5-C4	12.41	1.74	1.38
2	B	402	C2E	C5-C4	11.89	1.72	1.38
2	D	402	C2E	C5-C4	11.81	1.72	1.38
2	C	402	C2E	C5-C4	11.77	1.72	1.38
2	A	402	C2E	C5-C4	11.77	1.72	1.38
2	D	401	C2E	C5-C4	11.75	1.72	1.38
2	C	401	C2E	C5-C4	11.64	1.71	1.38
2	B	401	C2E	C5-C4	11.34	1.71	1.38
2	D	402	C2E	C5-N7	-8.75	1.22	1.39
2	A	402	C2E	C5-N7	-8.54	1.22	1.39
2	A	402	C2E	O61-C61	8.35	1.39	1.23
2	C	401	C2E	C5-N7	-8.30	1.23	1.39
2	C	402	C2E	C5-N7	-8.25	1.23	1.39
2	D	402	C2E	O61-C61	8.11	1.39	1.23
2	A	402	C2E	C8-N7	-8.07	1.09	1.32
2	C	401	C2E	O61-C61	8.06	1.38	1.23
2	A	402	C2E	O6-C6	8.05	1.38	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	401	C2E	O61-C61	7.99	1.38	1.23
2	A	401	C2E	C5-N7	-7.94	1.23	1.39
2	D	402	C2E	O6-C6	7.93	1.38	1.23
2	D	401	C2E	C5-N7	-7.91	1.23	1.39
2	D	402	C2E	C8-N7	-7.84	1.10	1.32
2	B	401	C2E	O61-C61	7.77	1.38	1.23
2	B	401	C2E	C5-N7	-7.72	1.24	1.39
2	C	401	C2E	C8-N7	-7.59	1.11	1.32
2	D	401	C2E	C8-N7	-7.58	1.11	1.32
2	B	401	C2E	C8-N7	-7.54	1.11	1.32
2	B	402	C2E	C8-N7	-7.31	1.12	1.32
2	B	402	C2E	O61-C61	7.31	1.37	1.23
2	C	402	C2E	O61-C61	7.29	1.37	1.23
2	C	402	C2E	C8-N7	-7.25	1.12	1.32
2	D	401	C2E	O6-C6	7.19	1.37	1.23
2	A	401	C2E	C8-N7	-7.18	1.12	1.32
2	B	402	C2E	O6-C6	7.05	1.37	1.23
2	B	402	C2E	C5-N7	-6.97	1.25	1.39
2	D	401	C2E	O61-C61	6.97	1.36	1.23
2	B	401	C2E	O6-C6	6.91	1.36	1.23
2	A	402	C2E	C2-N3	-6.90	1.16	1.33
2	B	402	C2E	C4-N9	6.66	1.55	1.38
2	D	401	C2E	C4-N9	6.51	1.55	1.38
2	B	402	C2E	C2-N3	-6.49	1.17	1.33
2	C	402	C2E	O6-C6	6.47	1.35	1.23
2	C	401	C2E	C2-N3	-6.47	1.17	1.33
2	B	401	C2E	C2-N3	-6.41	1.17	1.33
2	D	401	C2E	C2-N3	-6.38	1.17	1.33
2	C	402	C2E	C2-N3	-6.31	1.17	1.33
2	D	402	C2E	C2-N3	-6.31	1.17	1.33
2	A	401	C2E	C2-N3	-6.31	1.17	1.33
2	C	402	C2E	C4-N9	6.20	1.54	1.38
2	C	401	C2E	O6-C6	6.16	1.35	1.23
2	A	401	C2E	O6-C6	6.12	1.35	1.23
2	B	401	C2E	C4-N9	5.99	1.53	1.38
2	A	401	C2E	C4-N9	5.95	1.53	1.38
2	C	401	C2E	C4-N9	5.87	1.53	1.38
2	D	402	C2E	C4-N9	5.70	1.52	1.38
2	A	402	C2E	C4-N9	5.50	1.52	1.38
2	B	402	C2E	O4'-C1'	5.47	1.55	1.42
2	A	401	C2E	C5-C6	5.33	1.64	1.44
2	C	401	C2E	C5-C6	5.22	1.63	1.44

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	401	C2E	C5-C6	5.00	1.62	1.44
2	C	402	C2E	C2-N2	4.98	1.46	1.34
2	B	402	C2E	C5-C6	4.96	1.62	1.44
2	D	401	C2E	C5-C6	4.93	1.62	1.44
2	C	402	C2E	C5-C6	4.84	1.62	1.44
2	B	401	C2E	C2-N2	4.74	1.45	1.34
2	A	402	C2E	C21-N21	4.74	1.45	1.34
2	B	401	C2E	C21-N11	4.73	1.49	1.37
2	D	401	C2E	C21-N21	4.67	1.45	1.34
2	D	401	C2E	C51-N71	4.66	1.48	1.39
2	B	402	C2E	C21-N31	4.62	1.44	1.33
2	D	401	C2E	O4'-C1'	4.57	1.52	1.42
2	D	402	C2E	C2-N2	4.56	1.45	1.34
2	D	402	C2E	C5-C6	4.54	1.61	1.44
2	B	401	C2E	C51-N71	4.50	1.47	1.39
2	A	401	C2E	C21-N11	4.49	1.48	1.37
2	A	402	C2E	C5-C6	4.48	1.60	1.44
2	C	402	C2E	C51-N71	4.47	1.47	1.39
2	A	401	C2E	C2-N2	4.47	1.44	1.34
2	C	402	C2E	C21-N11	4.42	1.48	1.37
2	D	402	C2E	C21-N31	4.39	1.43	1.33
2	C	401	C2E	C2-N2	4.39	1.44	1.34
2	A	402	C2E	C21-N31	4.38	1.43	1.33
2	B	401	C2E	C21-N21	4.31	1.44	1.34
2	C	401	C2E	C21-N11	4.26	1.48	1.37
2	A	401	C2E	C51-N71	4.24	1.47	1.39
2	D	402	C2E	C21-N21	4.23	1.44	1.34
2	D	402	C2E	C21-N11	4.22	1.48	1.37
2	D	402	C2E	C2'-C3'	-4.21	1.43	1.52
2	B	402	C2E	C2-N2	4.20	1.44	1.34
2	A	401	C2E	C2'-C3'	-4.18	1.43	1.52
2	A	402	C2E	C2-N2	4.16	1.44	1.34
2	A	402	C2E	C51-N71	4.12	1.47	1.39
2	B	402	C2E	C21-N11	4.08	1.47	1.37
2	D	401	C2E	C2-N2	4.05	1.43	1.34
2	C	402	C2E	C2'-C3'	-3.92	1.44	1.52
2	B	402	C2E	C51-N71	3.90	1.46	1.39
2	C	402	C2E	C21-N21	3.86	1.43	1.34
2	C	401	C2E	C8-N9	-3.86	1.28	1.37
2	D	402	C2E	C51-N71	3.84	1.46	1.39
2	A	401	C2E	C21-N21	3.79	1.43	1.34
2	C	401	C2E	C21-N21	3.79	1.43	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	401	C2E	C8-N9	-3.77	1.29	1.37
2	B	402	C2E	C21-N21	3.77	1.43	1.34
2	A	402	C2E	C21-N11	3.74	1.46	1.37
2	C	402	C2E	O4'-C1'	3.74	1.50	1.42
2	B	401	C2E	C21-N31	3.73	1.42	1.33
2	D	401	C2E	C21-N31	3.70	1.42	1.33
2	D	402	C2E	C8-N9	-3.66	1.29	1.37
2	B	401	C2E	C2'-C3'	-3.64	1.44	1.52
2	B	402	C2E	C2'-C1'	-3.64	1.41	1.53
2	C	401	C2E	C21-N31	3.54	1.41	1.33
2	C	402	C2E	O4A-C1A	3.53	1.50	1.42
2	D	401	C2E	C2'-C3'	-3.50	1.45	1.52
2	B	402	C2E	C2'-C3'	-3.47	1.45	1.52
2	C	402	C2E	C8-N9	-3.43	1.29	1.37
2	D	401	C2E	C8-N9	-3.39	1.30	1.37
2	A	401	C2E	C8-N9	-3.39	1.30	1.37
2	C	401	C2E	C2'-C3'	-3.36	1.45	1.52
2	D	401	C2E	C21-N11	3.32	1.45	1.37
2	A	402	C2E	C8-N9	-3.31	1.30	1.37
2	A	401	C2E	C21-N31	3.29	1.41	1.33
2	B	402	C2E	C8-N9	-3.28	1.30	1.37
2	A	402	C2E	C2'-C3'	-3.21	1.45	1.52
2	C	401	C2E	O4A-C1A	3.20	1.49	1.42
2	C	402	C2E	C21-N31	3.19	1.40	1.33
2	D	402	C2E	O4'-C1'	3.18	1.49	1.42
2	B	401	C2E	C1'-N9	-3.16	1.38	1.47
2	B	402	C2E	C2-N1	-3.13	1.30	1.37
2	C	401	C2E	O4'-C4'	3.11	1.51	1.45
2	A	401	C2E	C2A-C3A	-3.10	1.46	1.52
2	B	401	C2E	C4-N3	-3.07	1.27	1.34
2	A	402	C2E	O4'-C4'	3.05	1.51	1.45
2	D	401	C2E	O4A-C1A	3.02	1.49	1.42
2	D	401	C2E	C1'-N9	-3.01	1.38	1.47
2	D	402	C2E	C1'-N9	-3.00	1.38	1.47
2	A	401	C2E	C81-N91	-3.00	1.30	1.37
2	A	401	C2E	O4'-C1'	2.93	1.48	1.42
2	B	401	C2E	O4A-C1A	2.90	1.48	1.42
2	B	402	C2E	O4'-C4'	2.89	1.51	1.45
2	C	402	C2E	C2A-C3A	-2.87	1.46	1.52
2	A	402	C2E	O4A-C1A	2.87	1.48	1.42
2	C	401	C2E	C2A-C3A	-2.84	1.46	1.52
2	D	401	C2E	C2'-C1'	-2.82	1.44	1.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	402	C2E	C2A-C3A	-2.81	1.46	1.52
2	C	401	C2E	C41-N91	-2.76	1.30	1.38
2	A	401	C2E	C2'-C1'	-2.74	1.44	1.53
2	D	401	C2E	C2-N1	-2.72	1.31	1.37
2	A	402	C2E	C2-N1	-2.71	1.31	1.37
2	B	402	C2E	O4A-C1A	2.70	1.48	1.42
2	B	401	C2E	C2A-C3A	-2.69	1.47	1.52
2	C	402	C2E	C2-N1	-2.68	1.31	1.37
2	A	401	C2E	C4-N3	-2.65	1.27	1.34
2	C	401	C2E	C2-N1	-2.63	1.31	1.37
2	C	401	C2E	O4'-C1'	2.61	1.48	1.42
2	C	402	C2E	C4-N3	-2.60	1.28	1.34
2	D	402	C2E	C2-N1	-2.54	1.31	1.37
2	D	402	C2E	O4'-C4'	2.53	1.50	1.45
2	A	402	C2E	C41-N91	-2.52	1.31	1.38
2	C	402	C2E	C81-N91	-2.51	1.31	1.37
2	A	402	C2E	C81-N91	-2.50	1.32	1.37
2	B	401	C2E	C2-N1	-2.46	1.31	1.37
2	A	401	C2E	O4A-C1A	2.45	1.47	1.42
2	D	401	C2E	C81-N91	-2.44	1.32	1.37
2	A	402	C2E	C2A-C3A	-2.43	1.47	1.52
2	C	402	C2E	C2'-C1'	-2.42	1.45	1.53
3	B	404	GTP	C5-N7	-2.38	1.34	1.39
2	D	402	C2E	O4A-C1A	2.38	1.47	1.42
2	A	401	C2E	C41-N91	-2.35	1.32	1.38
2	D	402	C2E	C6-N1	2.35	1.43	1.38
2	C	401	C2E	C1'-N9	-2.35	1.40	1.47
2	C	402	C2E	P1-O2P	-2.34	1.44	1.55
3	D	403	GTP	C2-N3	2.34	1.38	1.33
2	D	402	C2E	C4-N3	-2.32	1.28	1.34
2	D	401	C2E	C41-N91	-2.30	1.32	1.38
2	B	401	C2E	C81-N71	2.29	1.38	1.32
5	A	405	GOL	C1-C2	2.29	1.61	1.51
2	C	401	C2E	C61-N11	-2.28	1.34	1.38
2	A	402	C2E	C1'-N9	-2.27	1.41	1.47
2	D	401	C2E	C2A-C3A	-2.26	1.47	1.52
2	C	401	C2E	P1-O2P	-2.24	1.44	1.55
2	D	401	C2E	C4-N3	-2.24	1.28	1.34
2	D	402	C2E	C81-N91	-2.23	1.32	1.37
2	B	401	C2E	O4'-C1'	2.23	1.47	1.42
2	B	402	C2E	C81-N91	-2.22	1.32	1.37
2	C	401	C2E	C4-N3	-2.22	1.29	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	402	C2E	P11-O21	-2.22	1.44	1.55
2	C	402	C2E	C1'-N9	-2.21	1.41	1.47
2	D	402	C2E	C41-N91	-2.20	1.32	1.38
2	C	402	C2E	C1A-N91	-2.18	1.41	1.47
2	D	401	C2E	C3'-C4'	-2.17	1.47	1.52
2	A	401	C2E	P11-O21	-2.17	1.45	1.55
2	C	401	C2E	C51-N71	2.16	1.43	1.39
5	A	405	GOL	O1-C1	2.16	1.51	1.42
2	A	401	C2E	O4'-C4'	2.15	1.49	1.45
2	A	401	C2E	C3'-C4'	-2.14	1.47	1.52
2	A	402	C2E	C4-N3	-2.13	1.29	1.34
2	B	402	C2E	P1-O2P	-2.10	1.45	1.55
2	B	402	C2E	C4-N3	-2.08	1.29	1.34
2	C	401	C2E	P11-O3'	2.06	1.65	1.60
2	B	401	C2E	O4'-C4'	2.06	1.49	1.45
2	B	402	C2E	C2A-C3A	-2.05	1.48	1.52
2	A	402	C2E	C41-N31	2.04	1.39	1.34
2	C	401	C2E	C41-N31	2.04	1.39	1.34
2	B	402	C2E	C61-N11	-2.02	1.35	1.38

All (207) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	401	C2E	C6-C5-N7	13.06	154.54	130.25
2	B	402	C2E	C6-C5-N7	12.68	153.82	130.25
2	D	402	C2E	C6-C5-N7	12.23	153.00	130.25
2	B	401	C2E	C6-C5-C4	-12.08	100.19	118.77
2	C	402	C2E	C6-C5-N7	12.06	152.67	130.25
2	C	401	C2E	C6-C5-N7	12.02	152.60	130.25
2	A	401	C2E	C6-C5-N7	11.83	152.25	130.25
2	D	401	C2E	C6-C5-N7	11.81	152.21	130.25
2	A	402	C2E	C6-C5-N7	11.29	151.25	130.25
2	B	402	C2E	C6-C5-C4	-11.29	101.41	118.77
2	D	402	C2E	C6-C5-C4	-10.84	102.09	118.77
2	C	402	C2E	C6-C5-C4	-10.51	102.61	118.77
2	C	401	C2E	C6-C5-C4	-10.48	102.65	118.77
2	D	401	C2E	C6-C5-C4	-9.88	103.57	118.77
2	A	402	C2E	C6-C5-C4	-9.50	104.16	118.77
2	A	401	C2E	C6-C5-C4	-9.47	104.21	118.77
2	C	401	C2E	N9-C4-N3	9.35	144.72	125.94
2	A	402	C2E	N9-C4-N3	9.29	144.59	125.94
2	D	401	C2E	N9-C4-N3	9.23	144.47	125.94

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	401	C2E	N9-C4-N3	9.12	144.26	125.94
2	B	402	C2E	N9-C4-N3	8.78	143.57	125.94
2	D	402	C2E	N9-C4-N3	8.63	143.27	125.94
2	B	401	C2E	N9-C4-N3	8.50	143.02	125.94
2	B	401	C2E	C5-C4-N9	-8.48	90.24	105.63
2	D	402	C2E	C5-C4-N9	-8.44	90.32	105.63
2	C	401	C2E	C5-C4-N9	-8.41	90.36	105.63
2	C	402	C2E	N9-C4-N3	8.07	142.15	125.94
2	B	402	C2E	C5-C4-N9	-7.91	91.27	105.63
2	A	402	C2E	C5-C4-N9	-7.91	91.28	105.63
2	D	401	C2E	C5-C4-N9	-7.86	91.38	105.63
2	C	402	C2E	C5-C4-N9	-7.82	91.44	105.63
2	D	401	C2E	C8-N7-C5	7.54	117.89	104.24
2	A	401	C2E	C5-C4-N9	-7.47	92.08	105.63
2	C	401	C2E	C8-N7-C5	7.47	117.75	104.24
2	D	402	C2E	C8-N7-C5	7.37	117.57	104.24
2	A	401	C2E	C8-N7-C5	7.26	117.38	104.24
2	B	401	C2E	C8-N7-C5	7.17	117.21	104.24
2	C	402	C2E	C8-N7-C5	7.03	116.97	104.24
2	A	402	C2E	C8-N7-C5	6.98	116.87	104.24
2	B	402	C2E	C8-N7-C5	6.85	116.64	104.24
2	B	401	C2E	C2-N3-C4	6.57	124.00	112.30
2	B	402	C2E	C2-N3-C4	5.98	122.95	112.30
2	D	401	C2E	C2-N3-C4	5.82	122.68	112.30
2	C	401	C2E	C2-N3-C4	5.69	122.43	112.30
2	A	402	C2E	C2-N3-C4	5.54	122.18	112.30
2	A	401	C2E	C2-N3-C4	5.54	122.17	112.30
2	D	402	C2E	C2-N3-C4	5.42	121.96	112.30
3	D	403	GTP	C5-C4-N3	-5.13	120.14	128.46
2	B	402	C2E	C4'-O4'-C1'	-4.81	98.86	109.47
2	C	402	C2E	C2-N3-C4	4.78	120.81	112.30
3	D	403	GTP	O4'-C1'-N9	4.76	119.25	108.36
2	C	402	C2E	O6-C6-N1	4.76	129.24	120.12
2	D	402	C2E	O6-C6-N1	4.62	128.97	120.12
2	A	401	C2E	C4-C5-N7	-4.61	103.42	110.72
3	D	403	GTP	C2-N3-C4	4.53	120.36	112.30
2	D	402	C2E	O6-C6-C5	-4.52	114.62	126.60
3	B	404	GTP	C2-N3-C4	4.31	119.97	112.30
2	C	402	C2E	O6-C6-C5	-4.23	115.38	126.60
2	C	402	C2E	C81-N91-C41	4.21	114.06	106.05
2	A	402	C2E	N9-C8-N7	4.17	121.25	113.39
2	B	401	C2E	O6-C6-C5	-4.15	115.58	126.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	401	C2E	C4-C5-N7	-4.13	104.19	110.72
2	A	401	C2E	N9-C8-N7	4.12	121.15	113.39
2	A	401	C2E	C81-N91-C41	4.05	113.75	106.05
2	B	401	C2E	N2-C2-N3	-4.01	111.92	119.73
2	B	402	C2E	N9-C8-N7	3.94	120.81	113.39
2	C	402	C2E	C21-N11-C61	-3.93	117.93	125.10
2	A	402	C2E	C4-C5-N7	-3.90	104.55	110.72
2	C	402	C2E	N9-C8-N7	3.88	120.70	113.39
2	A	402	C2E	C81-N91-C41	3.87	113.42	106.05
3	B	404	GTP	C5-C4-N3	-3.85	122.22	128.46
3	C	403	GTP	C5-C4-N3	-3.84	122.23	128.46
2	B	402	C2E	C4-C5-N7	-3.82	104.67	110.72
2	C	402	C2E	C4-C5-N7	-3.81	104.69	110.72
3	D	403	GTP	O3G-PG-O3B	3.79	117.34	104.64
2	D	401	C2E	C4'-O4'-C1'	-3.78	101.14	109.47
2	C	401	C2E	C4-C5-N7	-3.77	104.75	110.72
2	D	401	C2E	C81-N91-C41	3.77	113.22	106.05
2	D	402	C2E	N2-C2-N3	-3.72	112.49	119.73
2	C	401	C2E	O6-C6-C5	-3.72	116.74	126.60
2	D	402	C2E	C4-C5-N7	-3.71	104.86	110.72
2	C	401	C2E	O6-C6-N1	3.67	127.15	120.12
2	D	401	C2E	N9-C8-N7	3.66	120.28	113.39
3	A	403	GTP	O4'-C1'-N9	3.65	116.71	108.36
3	C	403	GTP	C2-N3-C4	3.64	118.79	112.30
2	B	402	C2E	C81-N91-C41	3.59	112.87	106.05
2	A	401	C2E	N2-C2-N3	-3.59	112.75	119.73
2	C	401	C2E	C81-N91-C41	3.56	112.83	106.05
3	C	403	GTP	O4'-C1'-N9	3.54	116.46	108.36
2	B	402	C2E	C21-N11-C61	-3.54	118.65	125.10
3	A	403	GTP	C5-C4-N3	-3.52	122.75	128.46
2	C	402	C2E	C4'-O4'-C1'	-3.52	101.70	109.47
2	A	401	C2E	N1-C2-N3	3.51	129.88	123.32
2	C	402	C2E	N2-C2-N3	-3.49	112.94	119.73
2	B	401	C2E	C4-C5-N7	-3.45	105.26	110.72
2	B	402	C2E	O6-C6-C5	-3.42	117.54	126.60
2	A	401	C2E	C21-N11-C61	-3.39	118.92	125.10
2	D	402	C2E	N9-C8-N7	3.38	119.75	113.39
2	B	401	C2E	C21-N11-C61	-3.38	118.94	125.10
2	D	402	C2E	C81-N91-C41	3.36	112.45	106.05
2	A	401	C2E	O6-C6-N1	3.29	126.43	120.12
2	A	401	C2E	O6-C6-C5	-3.28	117.90	126.60
3	D	403	GTP	PB-O3B-PG	-3.28	121.57	132.83

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	402	C2E	N2-C2-N3	-3.27	113.36	119.73
2	C	401	C2E	C21-N11-C61	-3.26	119.15	125.10
3	D	403	GTP	C8-N7-C5	3.19	110.01	104.24
2	D	402	C2E	C21-N11-C61	-3.17	119.33	125.10
3	B	404	GTP	N9-C8-N7	-3.16	107.45	113.39
2	B	401	C2E	C81-N91-C41	3.14	112.02	106.05
3	B	404	GTP	O4'-C1'-N9	3.12	115.50	108.36
2	C	401	C2E	N9-C8-N7	3.06	119.15	113.39
3	C	403	GTP	N9-C8-N7	-3.05	107.65	113.39
3	D	403	GTP	N9-C4-N3	3.03	132.03	125.94
2	A	401	C2E	C5-C4-N3	-3.03	123.55	128.46
2	B	401	C2E	C1'-N9-C4	-3.00	117.61	126.50
2	D	401	C2E	O6-C6-C5	-2.98	118.68	126.60
2	C	402	C2E	C51-C61-N11	2.98	120.76	113.19
3	B	404	GTP	C8-N7-C5	2.98	109.63	104.24
2	C	402	C2E	O61-C61-C51	-2.97	118.71	126.60
2	B	401	C2E	N9-C8-N7	2.95	118.95	113.39
2	B	401	C2E	O6-C6-N1	2.94	125.75	120.12
3	A	403	GTP	C2-N3-C4	2.92	117.49	112.30
3	B	404	GTP	O6-C6-C5	-2.91	118.87	126.60
3	D	403	GTP	C2-N1-C6	-2.86	119.88	125.10
2	A	402	C2E	C21-N11-C61	-2.85	119.91	125.10
3	D	403	GTP	N9-C8-N7	-2.83	108.06	113.39
2	D	401	C2E	O6-C6-N1	2.80	125.49	120.12
2	C	401	C2E	N2-C2-N3	-2.80	114.29	119.73
3	C	403	GTP	C8-N7-C5	2.79	109.29	104.24
3	B	404	GTP	PA-O3A-PB	-2.76	123.37	132.83
2	A	402	C2E	C3'-C2'-C1'	2.75	105.98	99.89
2	D	402	C2E	O2'-C2'-C1'	-2.74	100.88	110.02
2	D	401	C2E	C51-C61-N11	2.69	120.01	113.19
2	A	402	C2E	C5-C4-N3	-2.68	124.12	128.46
2	A	401	C2E	C4'-O4'-C1'	-2.67	103.59	109.47
2	D	401	C2E	C3A-C2A-C1A	2.66	105.78	99.89
2	D	401	C2E	C5-C4-N3	-2.66	124.15	128.46
2	B	401	C2E	N2-C2-N1	2.65	122.36	116.71
2	C	402	C2E	C1'-N9-C8	2.64	134.21	126.70
3	A	403	GTP	N9-C4-N3	2.62	131.19	125.94
2	B	402	C2E	O6-C6-N1	2.60	125.10	120.12
3	B	404	GTP	N9-C4-N3	2.60	131.15	125.94
2	B	401	C2E	C1'-N9-C8	2.58	134.04	126.70
2	A	402	C2E	C51-C61-N11	2.58	119.73	113.19
2	A	402	C2E	C3A-C2A-C1A	2.57	105.58	99.89

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	402	C2E	N1-C2-N3	2.56	128.11	123.32
2	D	401	C2E	N1-C2-N3	2.56	128.10	123.32
3	D	403	GTP	C4-C5-N7	-2.56	106.67	110.72
2	D	401	C2E	N2-C2-N3	-2.53	114.81	119.73
2	A	402	C2E	O61-C61-C51	-2.51	119.95	126.60
2	C	401	C2E	O2'-C2'-C1'	-2.50	101.65	110.02
3	C	403	GTP	C2-N1-C6	-2.48	120.58	125.10
2	B	402	C2E	C51-C61-N11	2.48	119.49	113.19
2	C	402	C2E	N1-C2-N3	2.45	127.89	123.32
2	C	401	C2E	C4'-O4'-C1'	-2.45	104.08	109.47
3	A	403	GTP	N9-C8-N7	-2.43	108.82	113.39
3	B	404	GTP	N2-C2-N1	2.42	121.87	116.71
2	D	401	C2E	C21-N11-C61	-2.39	120.73	125.10
3	C	403	GTP	N9-C4-N3	2.39	130.73	125.94
2	A	401	C2E	C3A-C2A-C1A	2.38	105.15	99.89
2	C	401	C2E	C3A-C2A-C1A	2.36	105.12	99.89
2	D	402	C2E	C3'-C2'-C1'	2.34	105.07	99.89
2	A	401	C2E	C51-C61-N11	2.33	119.12	113.19
2	C	402	C2E	C1'-N9-C4	-2.32	119.61	126.50
2	C	401	C2E	N1-C2-N3	2.30	127.62	123.32
2	B	401	C2E	C51-C61-N11	2.30	119.03	113.19
2	D	402	C2E	C1'-N9-C4	-2.29	119.70	126.50
2	A	402	C2E	C81-N71-C51	-2.28	100.11	104.24
2	C	401	C2E	C3'-C2'-C1'	2.28	104.94	99.89
3	B	404	GTP	N1-C2-N3	-2.27	119.08	123.32
2	A	401	C2E	O61-C61-C51	-2.27	120.59	126.60
3	C	403	GTP	C5-C6-N1	2.21	118.81	113.19
2	C	401	C2E	C5-C4-N3	-2.21	124.88	128.46
2	D	401	C2E	O61-C61-C51	-2.20	120.76	126.60
3	D	403	GTP	PA-O3A-PB	-2.18	125.34	132.83
2	D	401	C2E	C61-C51-N71	2.18	134.30	130.25
2	C	401	C2E	C51-C61-N11	2.15	118.66	113.19
2	D	402	C2E	C1'-N9-C8	2.15	132.82	126.70
3	C	403	GTP	PB-O3B-PG	-2.15	125.45	132.83
2	D	402	C2E	C51-C61-N11	2.15	118.64	113.19
2	D	401	C2E	C2A-C3A-C4A	-2.14	99.43	103.22
2	B	401	C2E	C5-C6-N1	2.13	118.61	113.19
2	D	401	C2E	C2A-C1A-N91	2.12	119.23	113.22
3	B	404	GTP	C5-C6-N1	2.11	118.56	113.19
5	D	405	GOL	C3-C2-C1	-2.10	103.53	111.70
2	C	401	C2E	C1'-N9-C4	-2.10	120.27	126.50
3	D	403	GTP	C2'-C1'-N9	-2.10	107.28	113.22

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	404	GTP	PB-O3B-PG	-2.08	125.69	132.83
3	C	403	GTP	O6-C6-C5	-2.08	121.08	126.60
2	B	401	C2E	O2'-C2'-C1'	-2.08	103.07	110.02
3	A	403	GTP	C5-C6-N1	2.07	118.45	113.19
3	A	403	GTP	C2'-C1'-N9	-2.06	107.37	113.22
3	B	404	GTP	O3G-PG-O2G	2.06	115.50	107.64
2	C	402	C2E	C1A-N91-C41	-2.04	120.44	126.50
2	B	402	C2E	C5-C4-N3	-2.04	125.15	128.46
2	A	402	C2E	C4'-O4'-C1'	-2.03	104.99	109.47
2	A	402	C2E	O6-C6-C5	-2.03	121.22	126.60
2	C	402	C2E	O4'-C1'-C2'	2.03	111.06	106.64
3	D	403	GTP	C5-C6-N1	2.03	118.34	113.19
2	A	401	C2E	C1'-N9-C8	2.03	132.46	126.70
3	A	403	GTP	O4'-C4'-C5'	2.02	116.03	109.37
2	A	401	C2E	N21-C21-N31	-2.02	115.80	119.73
2	D	402	C2E	C4'-O4'-C1'	-2.02	105.02	109.47
3	A	403	GTP	PB-O3B-PG	-2.02	125.91	132.83
3	A	403	GTP	O3B-PG-O1G	-2.01	100.02	111.19
3	A	403	GTP	O6-C6-C5	-2.01	121.28	126.60
3	B	404	GTP	C2-N1-C6	-2.00	121.45	125.10

There are no chirality outliers.

All (27) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	B	404	GTP	PB-O3B-PG-O2G
3	B	404	GTP	PB-O3A-PA-O5'
3	B	404	GTP	C5'-O5'-PA-O3A
3	C	403	GTP	C5'-O5'-PA-O3A
3	C	403	GTP	O4'-C4'-C5'-O5'
3	D	403	GTP	C5'-O5'-PA-O1A
3	D	403	GTP	C5'-O5'-PA-O2A
3	B	404	GTP	O4'-C4'-C5'-O5'
3	C	403	GTP	C3'-C4'-C5'-O5'
5	A	405	GOL	O1-C1-C2-C3
5	A	405	GOL	C1-C2-C3-O3
5	C	406	GOL	C1-C2-C3-O3
5	A	405	GOL	O1-C1-C2-O2
3	B	404	GTP	C3'-C4'-C5'-O5'
5	A	405	GOL	O2-C2-C3-O3
3	C	403	GTP	PG-O3B-PB-O1B
3	B	404	GTP	C5'-O5'-PA-O2A

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Mol	Chain	Res	Type	Atoms
3	C	403	GTP	C5'-O5'-PA-O2A
5	C	406	GOL	O2-C2-C3-O3
3	C	403	GTP	PA-O3A-PB-O2B
3	D	403	GTP	PB-O3A-PA-O2A
2	A	401	C2E	O4A-C4A-C5A-O5A
3	D	403	GTP	C5'-O5'-PA-O3A
3	C	403	GTP	PA-O3A-PB-O1B
2	A	401	C2E	C5A-O5A-P11-O11
2	D	402	C2E	C5'-O5'-P1-O1P
3	B	404	GTP	PB-O3B-PG-O1G

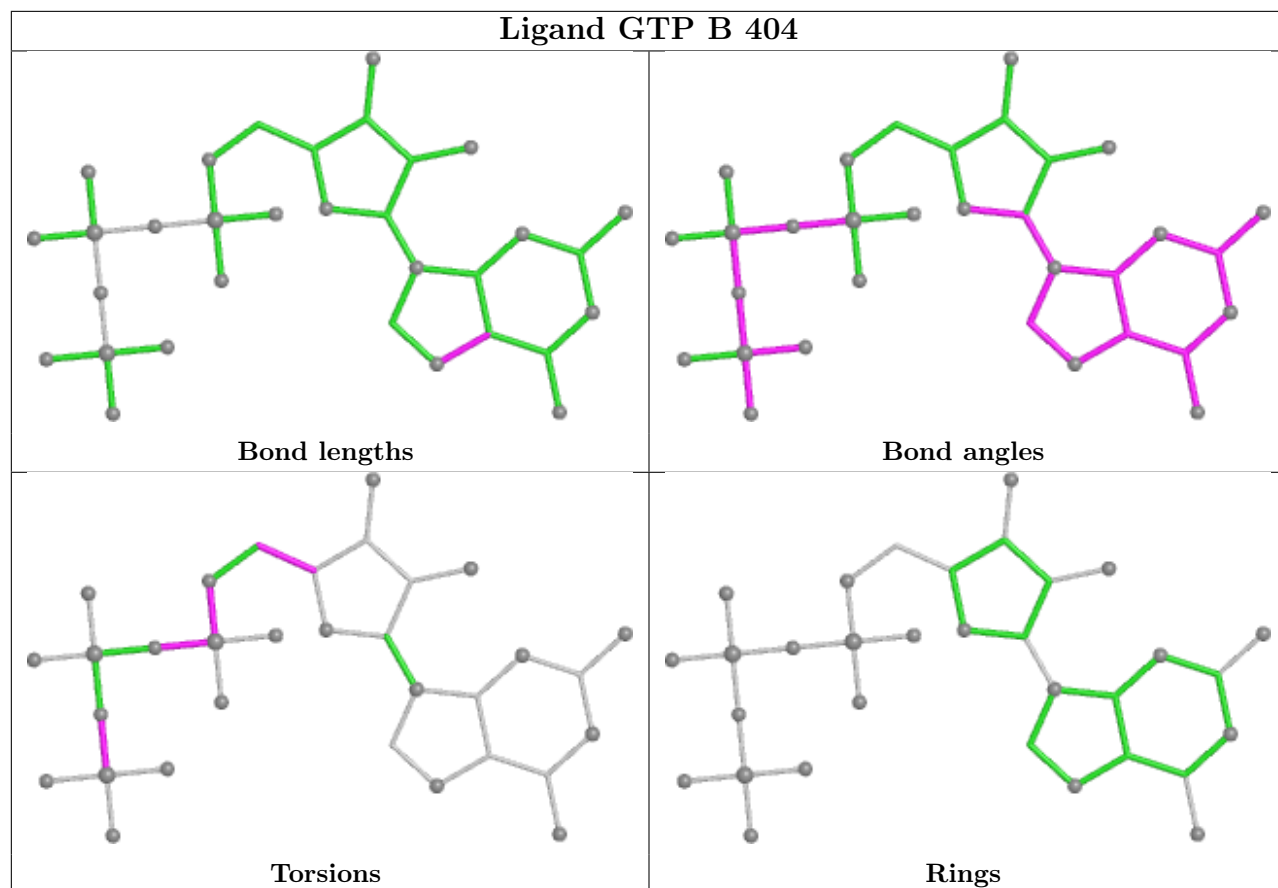
There are no ring outliers.

5 monomers are involved in 6 short contacts:

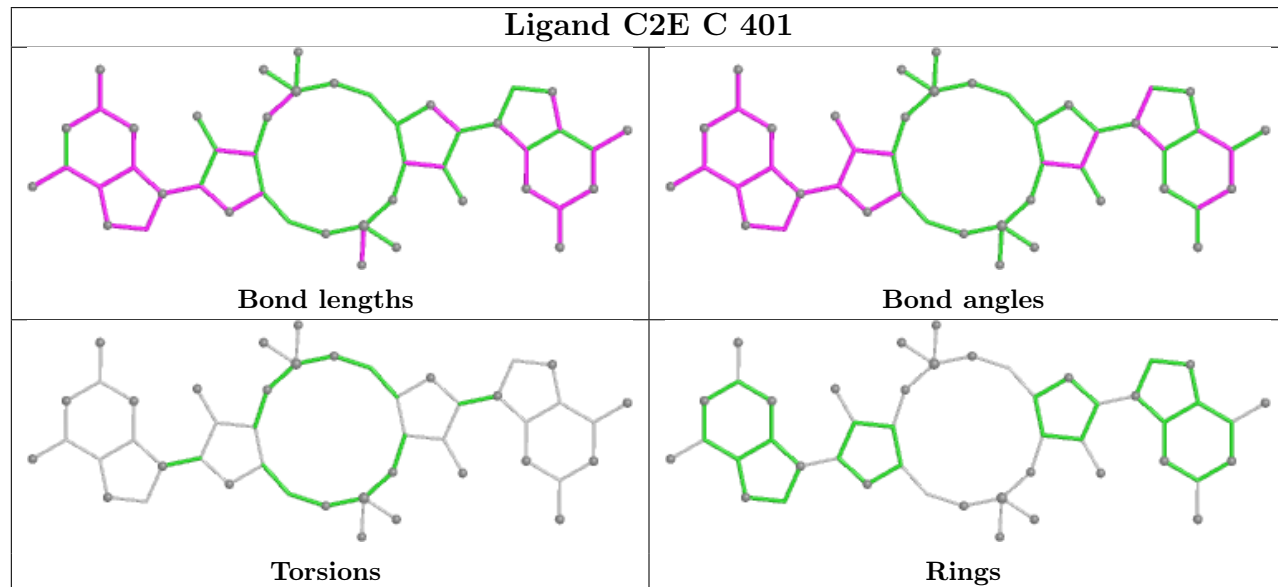
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	C	403	GTP	1	0
2	D	402	C2E	1	0
3	D	403	GTP	2	0
2	C	402	C2E	1	0
2	B	401	C2E	1	0

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.

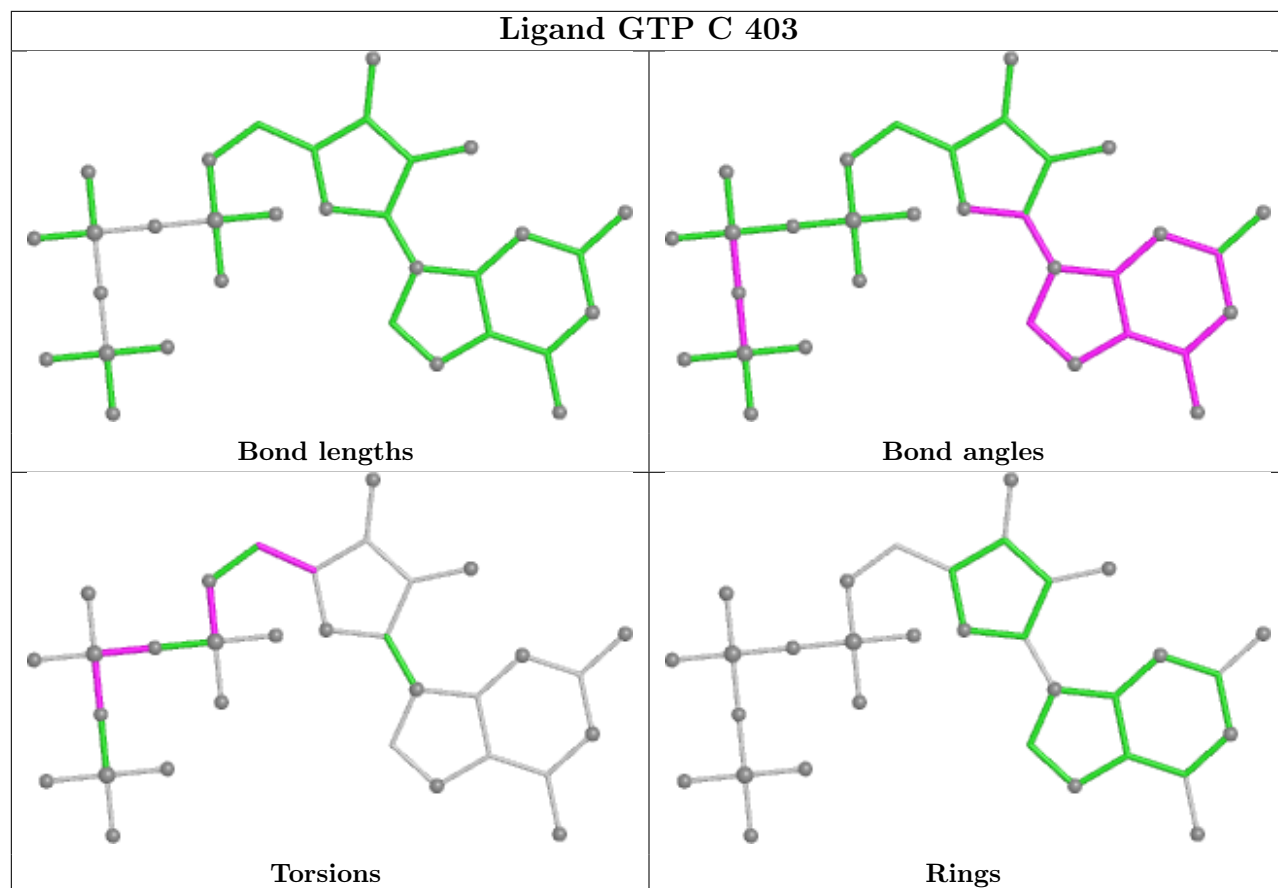
Ligand GTP B 404



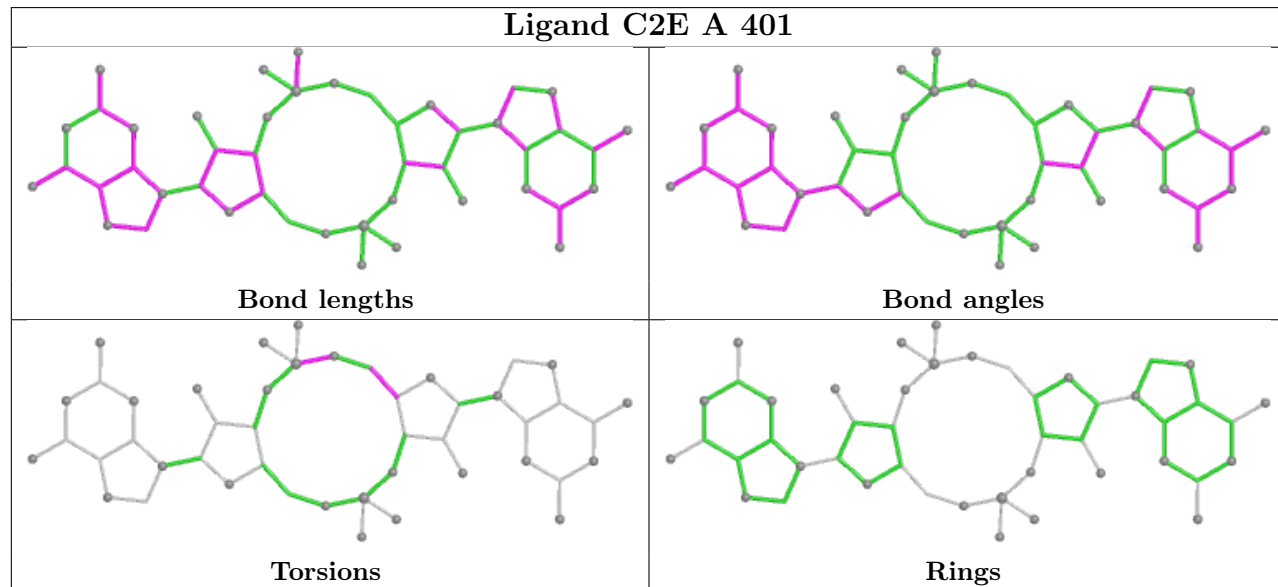
Ligand C2E C 401



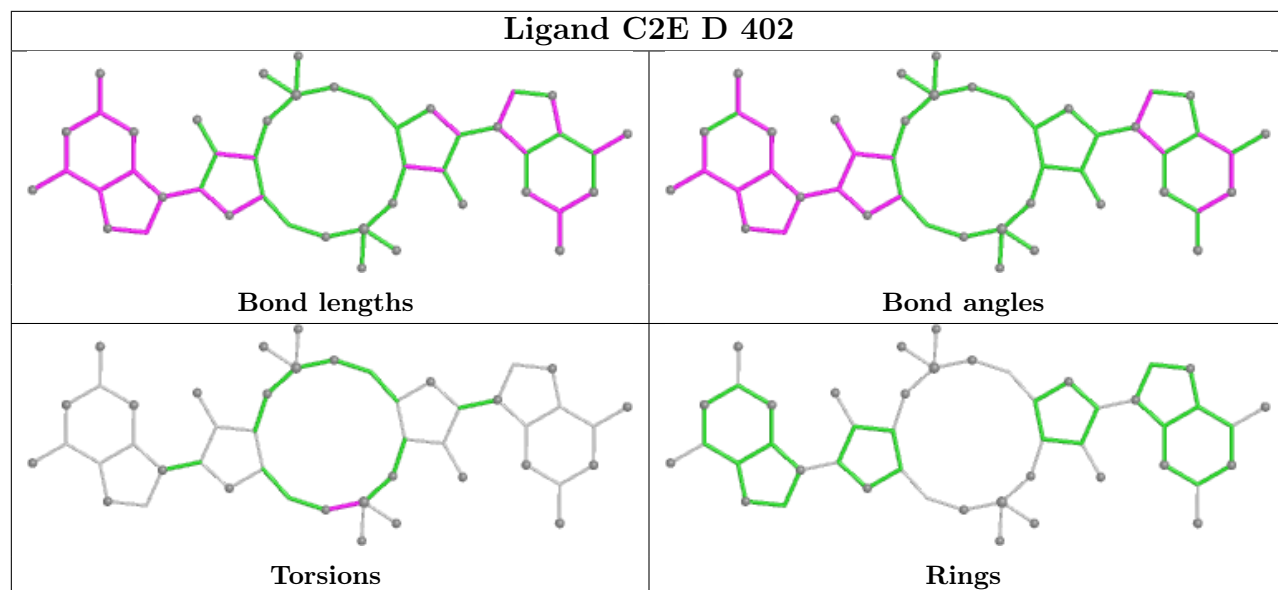
Ligand GTP C 403



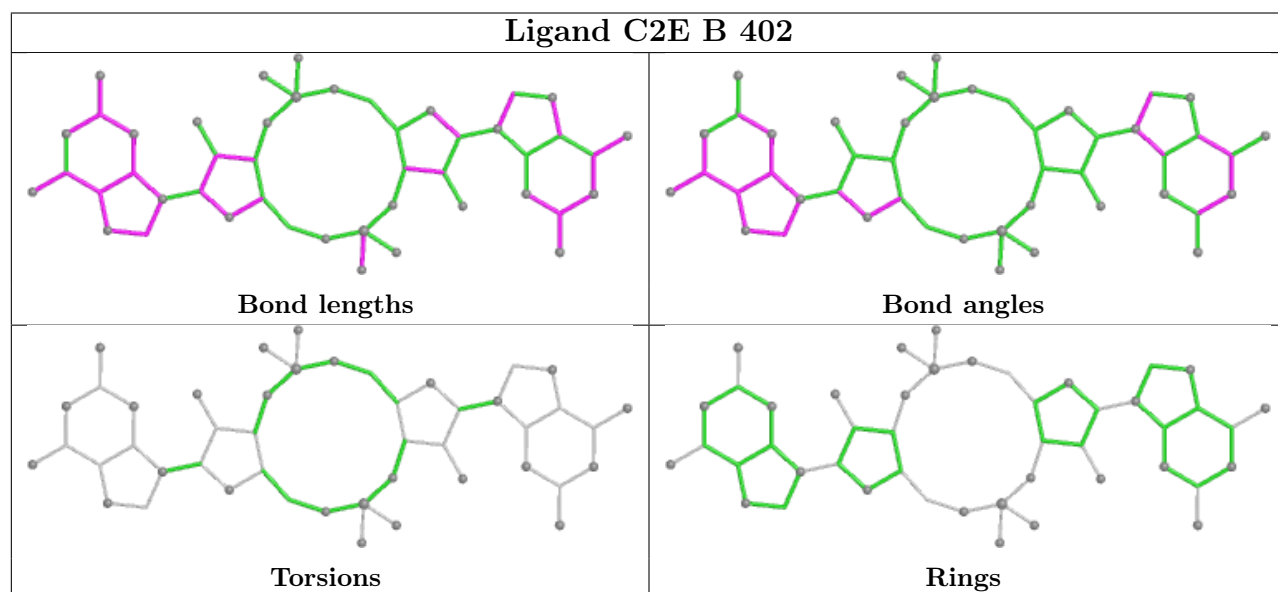
Ligand C2E A 401

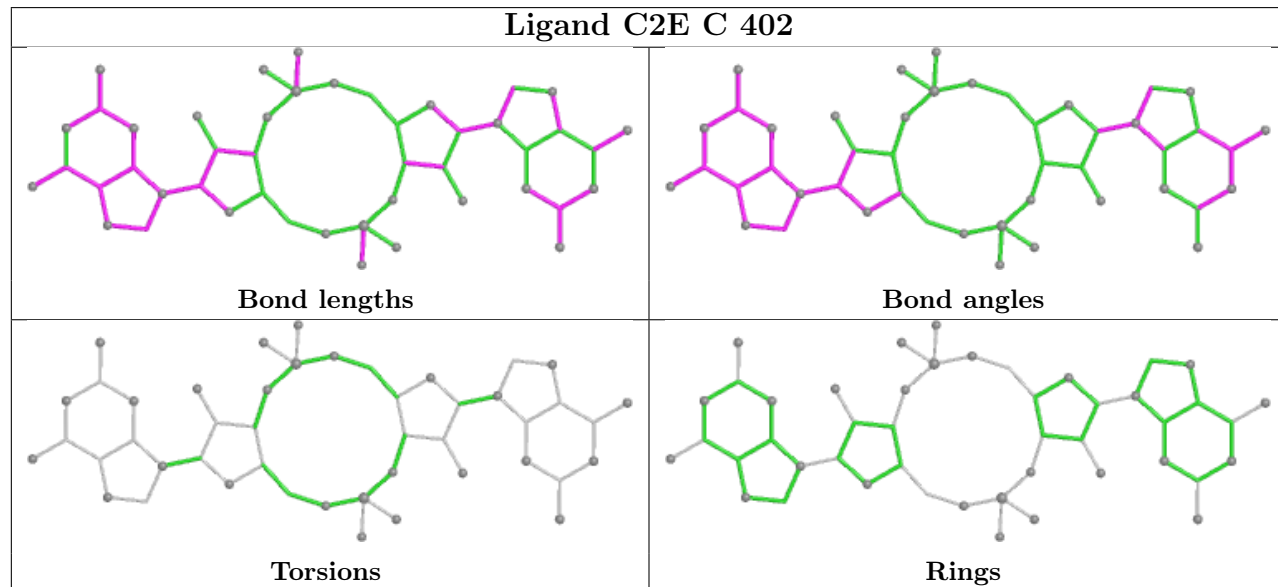
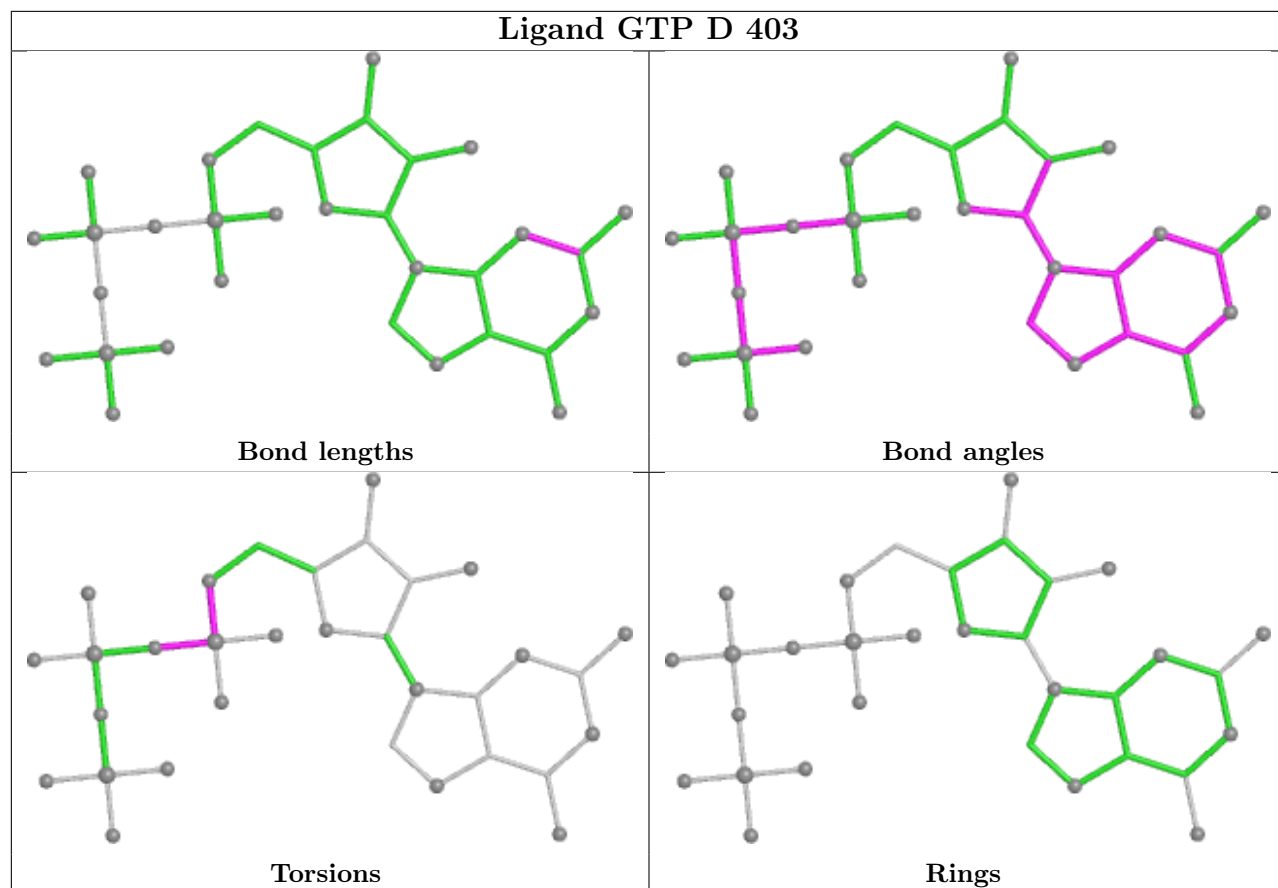


Ligand C2E D 402

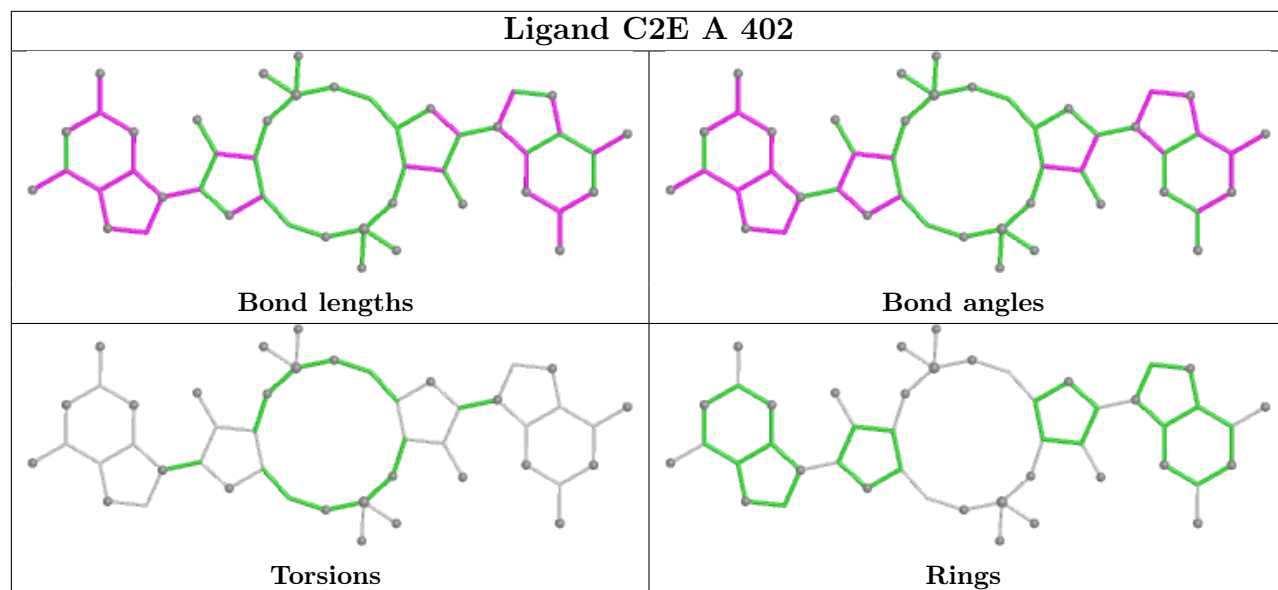


Ligand C2E B 402

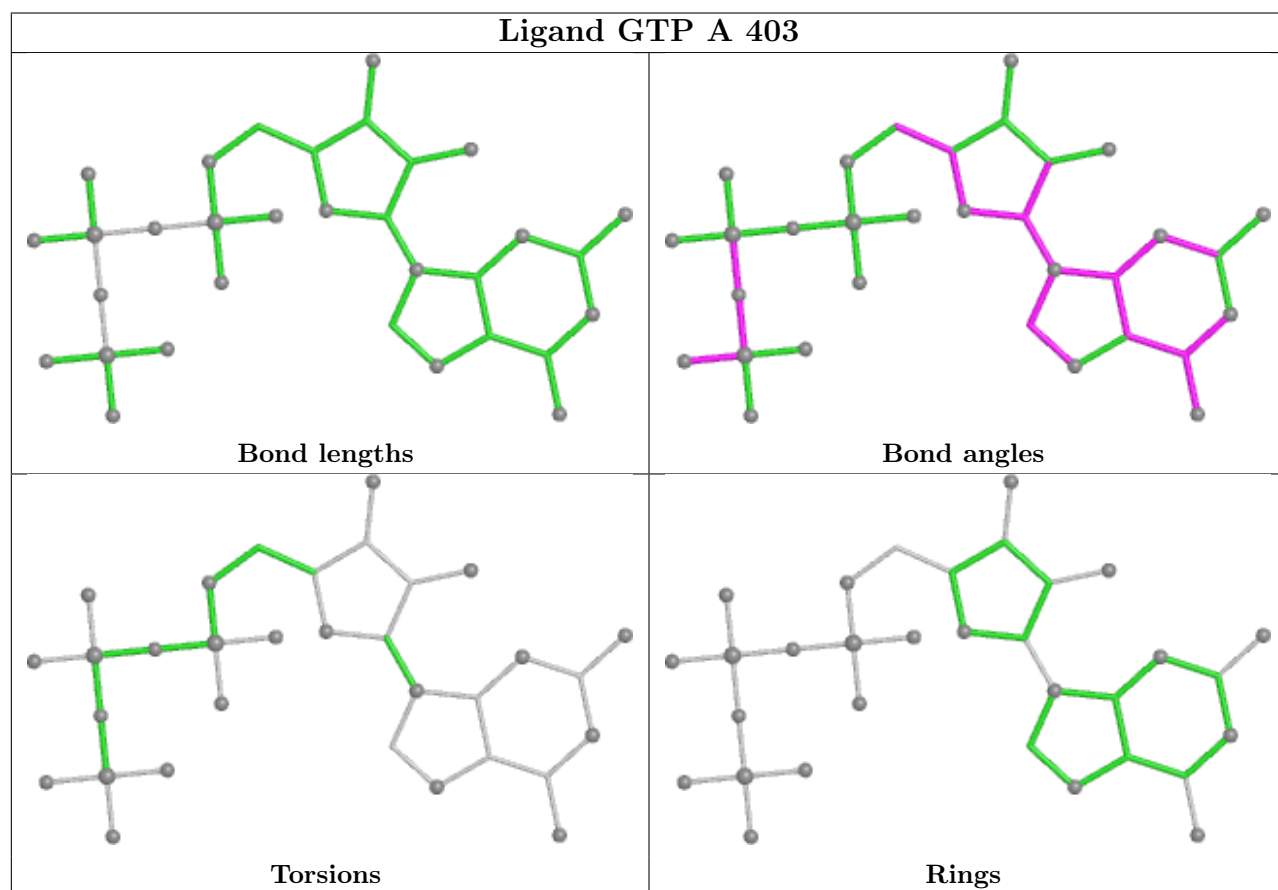


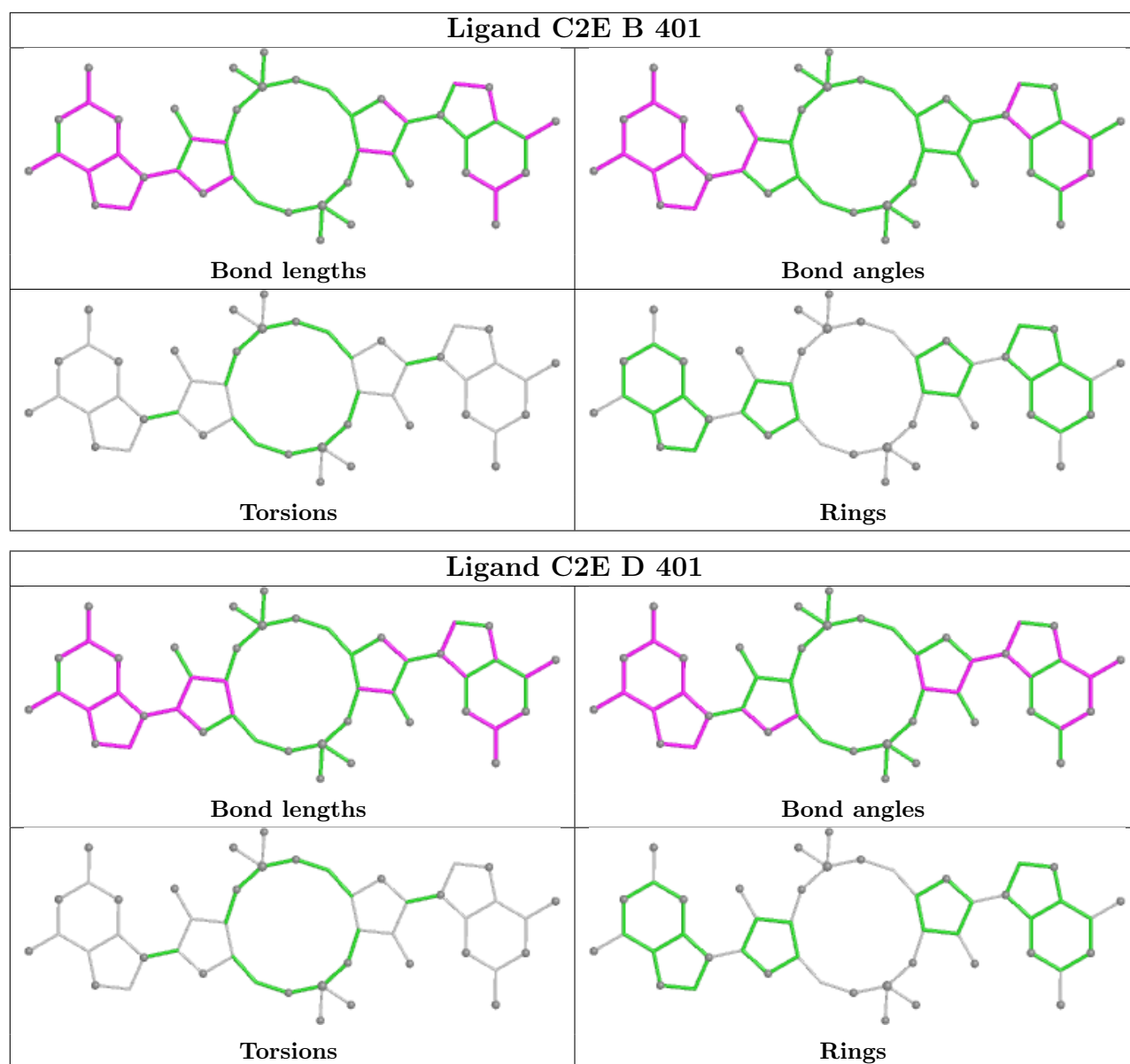


Ligand C2E A 402



Ligand GTP A 403





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	299/310 (96%)	0.38	13 (4%)	40 44	28, 43, 74, 104	0
1	B	295/310 (95%)	0.65	29 (9%)	13 14	26, 44, 87, 115	0
1	C	294/310 (94%)	1.13	68 (23%)	2 1	28, 54, 119, 174	0
1	D	298/310 (96%)	0.70	20 (6%)	24 27	27, 51, 81, 117	0
All	All	1186/1240 (95%)	0.71	130 (10%)	10 11	26, 48, 94, 174	0

All (130) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	114	PRO	9.0
1	C	21	GLY	6.3
1	C	115	THR	5.5
1	C	27	LEU	5.0
1	A	21	GLY	5.0
1	C	35	PHE	4.9
1	B	46	VAL	4.7
1	B	26	ALA	4.5
1	B	17	VAL	4.3
1	C	23	MET	4.2
1	B	36	HIS	4.2
1	C	28	THR	4.1
1	B	49	LEU	4.1
1	D	140	ILE	4.1
1	C	26	ALA	4.1
1	C	15	LEU	4.0
1	D	21	GLY	3.9
1	C	37	LEU	3.8
1	C	39	VAL	3.8
1	B	45	GLU	3.8
1	B	64	PRO	3.7

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Mol	Chain	Res	Type	RSRZ
1	B	39	VAL	3.5
1	C	83	ILE	3.5
1	B	47	LEU	3.4
1	C	64	PRO	3.4
1	C	131	SER	3.4
1	D	138	ALA	3.3
1	B	24	LEU	3.3
1	C	38	LEU	3.3
1	C	14	LEU	3.3
1	A	20	PRO	3.2
1	D	24	LEU	3.2
1	C	112	GLU	3.2
1	A	64	PRO	3.2
1	D	67	SER	3.1
1	C	34	SER	3.1
1	C	140	ILE	3.1
1	D	28	THR	3.1
1	C	42	ASP	3.0
1	C	60	ILE	3.0
1	D	20	PRO	3.0
1	C	137	LEU	2.9
1	D	139	LEU	2.9
1	A	32	SER	2.9
1	B	87	LEU	2.9
1	B	14	LEU	2.8
1	C	99	ILE	2.8
1	A	19	ASN	2.8
1	D	80	PRO	2.8
1	C	13	THR	2.8
1	C	54	PRO	2.8
1	C	40	CYS	2.7
1	C	46	VAL	2.7
1	A	281	HIS	2.7
1	B	34	SER	2.7
1	C	81	LEU	2.7
1	C	91	GLY	2.6
1	B	298	TYR	2.6
1	C	92	LYS	2.6
1	A	24	LEU	2.6
1	C	47	LEU	2.6
1	B	21	GLY	2.6
1	B	33	THR	2.6

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Mol	Chain	Res	Type	RSRZ
1	D	72	ILE	2.6
1	C	32	SER	2.6
1	C	63	SER	2.6
1	D	19	ASN	2.6
1	C	25	LYS	2.5
1	C	250	ALA	2.5
1	C	51	LEU	2.5
1	C	120	LEU	2.5
1	D	27	LEU	2.5
1	B	55	ILE	2.5
1	C	79	HIS	2.4
1	C	33	THR	2.4
1	D	26	ALA	2.4
1	C	66	ASP	2.4
1	C	132	ALA	2.4
1	C	138	ALA	2.4
1	C	261	ASN	2.4
1	A	73	CYS	2.4
1	B	122	ILE	2.4
1	C	117	ILE	2.4
1	C	53	ALA	2.4
1	B	128	MET	2.4
1	B	27	LEU	2.3
1	B	37	LEU	2.3
1	C	75	ARG	2.3
1	B	35	PHE	2.3
1	C	55	ILE	2.3
1	C	208	ALA	2.3
1	B	43	ASN	2.3
1	C	209	SER	2.3
1	C	142	CYS	2.3
1	C	30	GLN	2.3
1	D	33	THR	2.3
1	C	49	LEU	2.3
1	C	251	LEU	2.3
1	C	80	PRO	2.3
1	B	31	PHE	2.2
1	C	110	PHE	2.2
1	D	64	PRO	2.2
1	A	63	SER	2.2
1	B	110	PHE	2.2
1	C	52	ASN	2.2

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Mol	Chain	Res	Type	RSRZ
1	B	22	GLU	2.2
1	C	139	LEU	2.2
1	B	204	THR	2.2
1	D	94	THR	2.2
1	D	97	SER	2.2
1	A	23	MET	2.1
1	B	38	LEU	2.1
1	D	120	LEU	2.1
1	A	88	ILE	2.1
1	C	85	ILE	2.1
1	C	252	ASP	2.1
1	A	69	TRP	2.1
1	C	62	VAL	2.1
1	D	304	GLY	2.1
1	C	253	ILE	2.1
1	C	143	THR	2.1
1	C	281	HIS	2.1
1	C	18	ASP	2.1
1	D	185	GLY	2.0
1	A	111	VAL	2.0
1	C	58	VAL	2.0
1	C	134	LEU	2.0
1	B	88	ILE	2.0
1	C	78	GLN	2.0
1	C	125	ARG	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 ⓘ

There are no oligosaccharides in this entry.

6.4 Ligands ⓘ

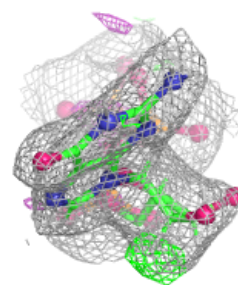
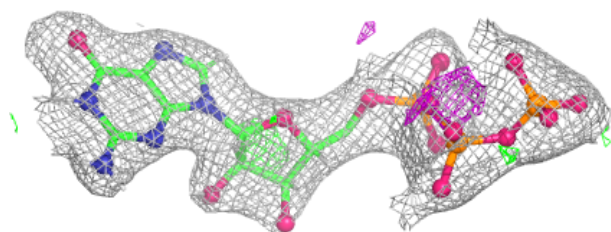
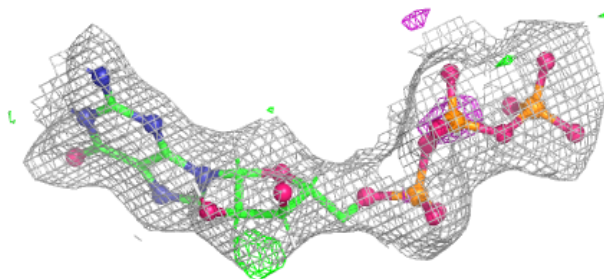
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
5	GOL	A	405	6/6	0.70	0.20	36,62,70,81	0
5	GOL	B	403	6/6	0.82	0.17	39,51,71,71	0
3	GTP	D	403	32/32	0.90	0.10	44,56,76,88	0
5	GOL	B	406	6/6	0.92	0.10	36,51,63,65	0
5	GOL	D	405	6/6	0.92	0.10	42,50,59,71	0
5	GOL	C	406	6/6	0.93	0.09	42,50,58,58	0
4	MG	D	404	1/1	0.93	0.07	41,41,41,41	0
3	GTP	B	404	32/32	0.94	0.09	32,40,49,55	0
3	GTP	C	403	32/32	0.94	0.09	39,47,62,72	0
3	GTP	A	403	32/32	0.94	0.09	33,46,61,62	0
4	MG	B	405	1/1	0.95	0.08	34,34,34,34	0
4	MG	A	404	1/1	0.96	0.06	36,36,36,36	0
2	C2E	C	402	46/46	0.96	0.07	26,34,43,45	0
4	MG	C	404	1/1	0.96	0.06	46,46,46,46	0
2	C2E	D	401	46/46	0.96	0.07	29,35,46,50	0
2	C2E	D	402	46/46	0.96	0.07	27,35,44,51	0
2	C2E	A	401	46/46	0.96	0.07	26,33,43,51	0
2	C2E	A	402	46/46	0.96	0.07	25,34,43,49	0
2	C2E	B	402	46/46	0.96	0.07	24,33,41,45	0
2	C2E	C	401	46/46	0.96	0.08	26,34,44,46	0
2	C2E	B	401	46/46	0.97	0.07	26,32,42,47	0
4	MG	C	405	1/1	0.97	0.09	41,41,41,41	0

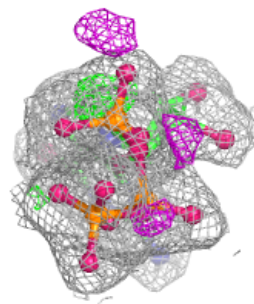
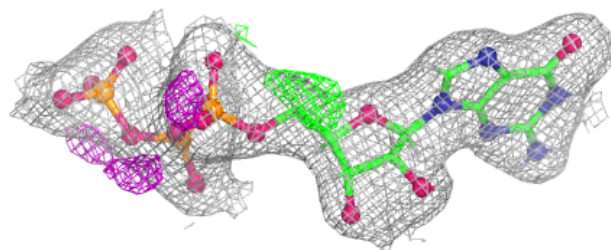
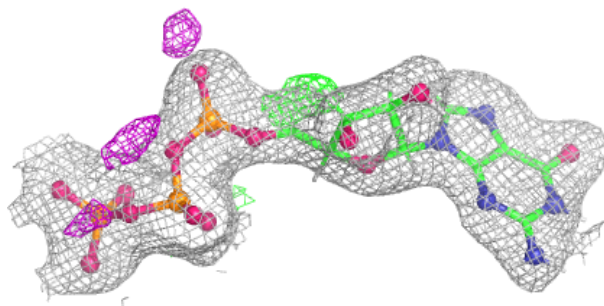
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around GTP D 403:

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

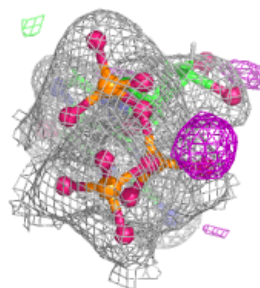
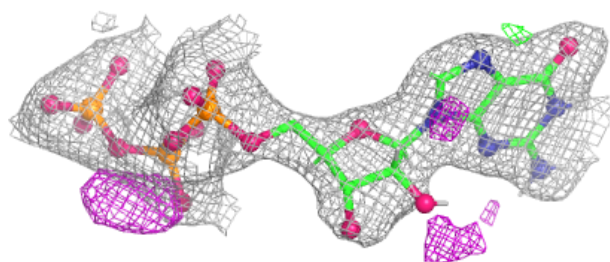
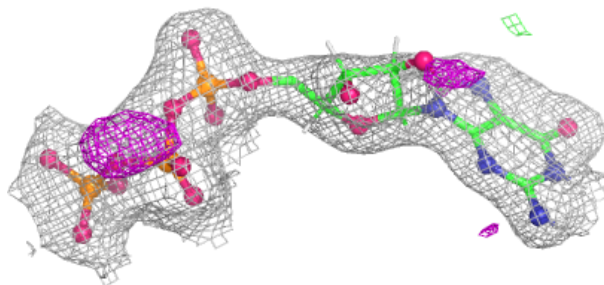
**Electron density around GTP B 404:**

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 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

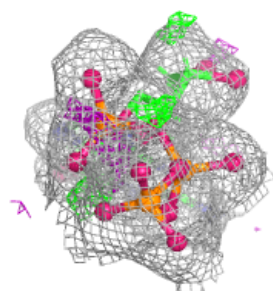
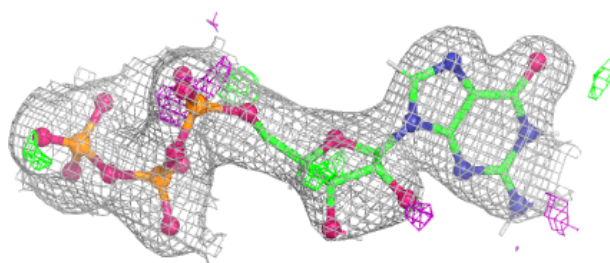
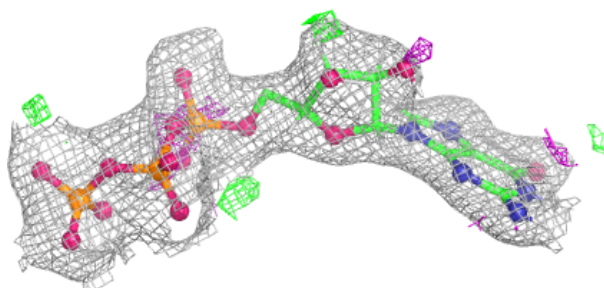


Electron density around GTP C 403:

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and green (positive)

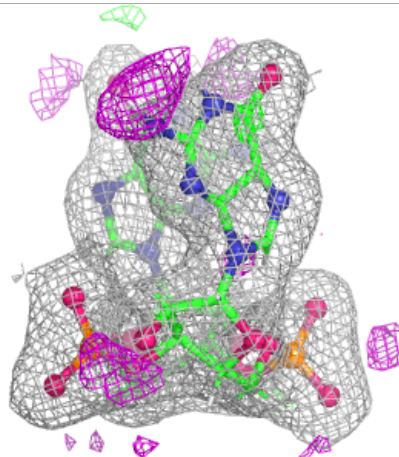
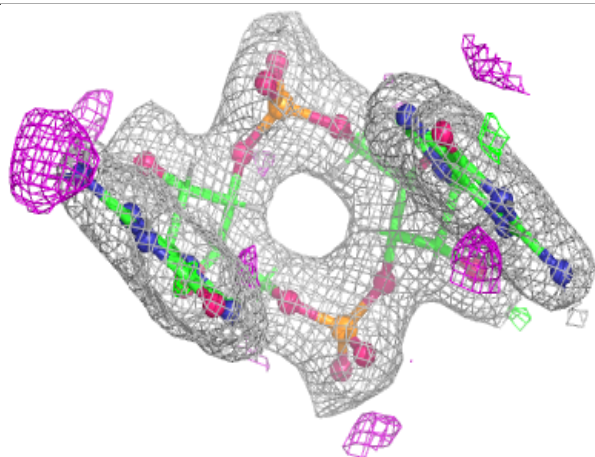
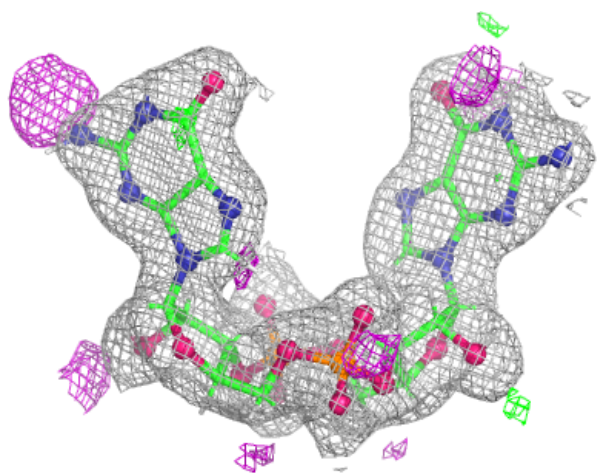
**Electron density around GTP A 403:**

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



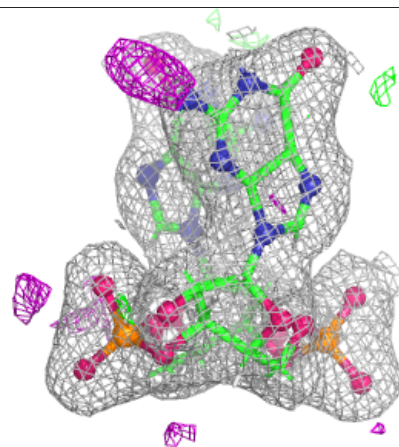
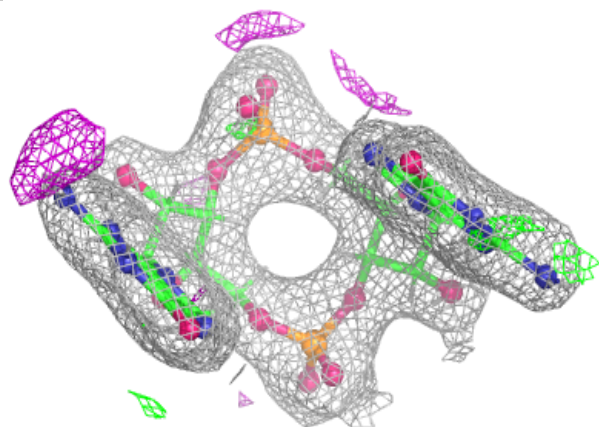
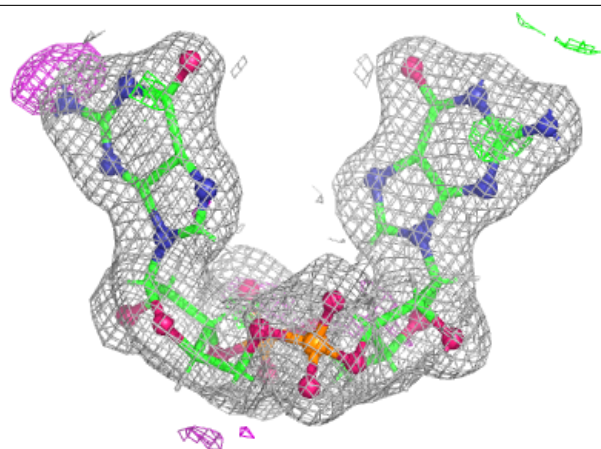
Electron density around C2E C 402:

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and green (positive)



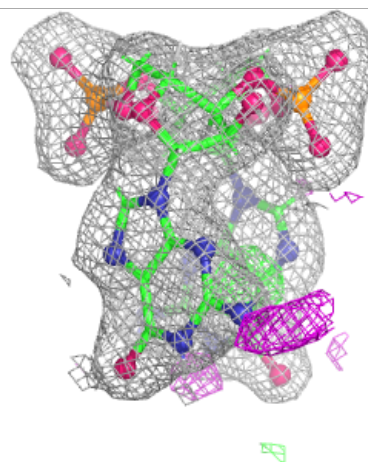
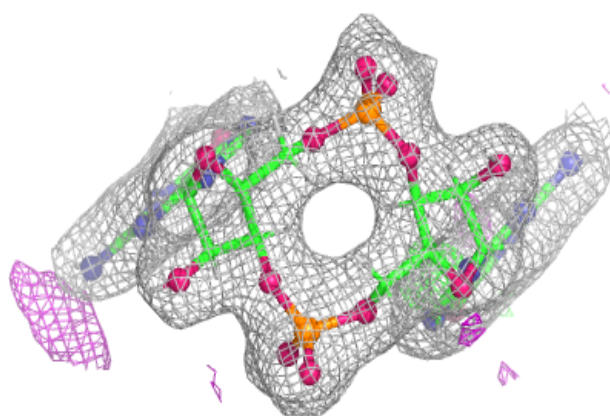
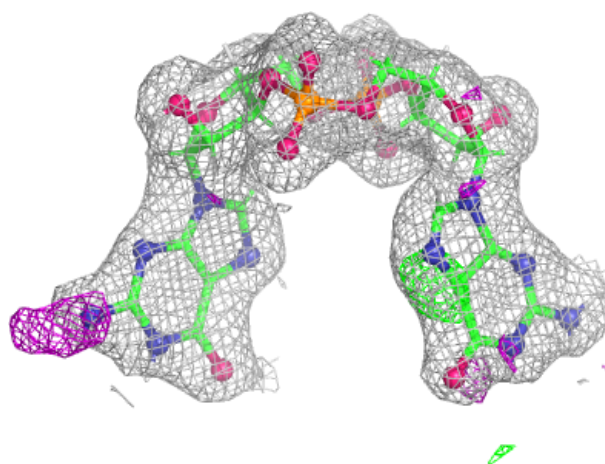
Electron density around C2E D 401:

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and green (positive)



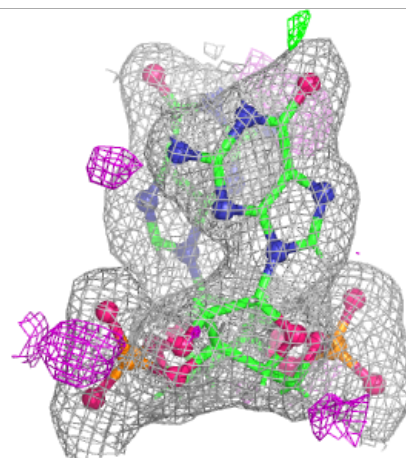
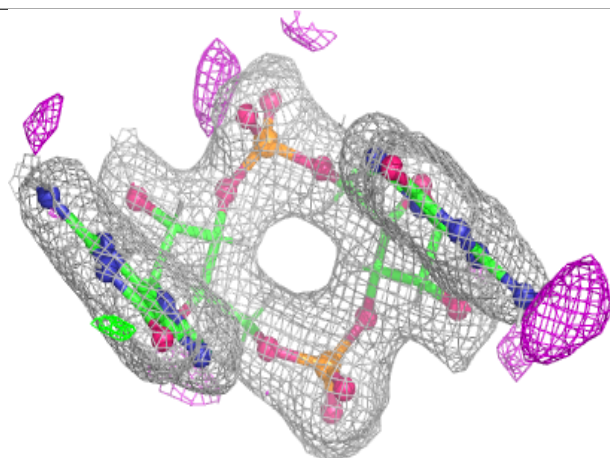
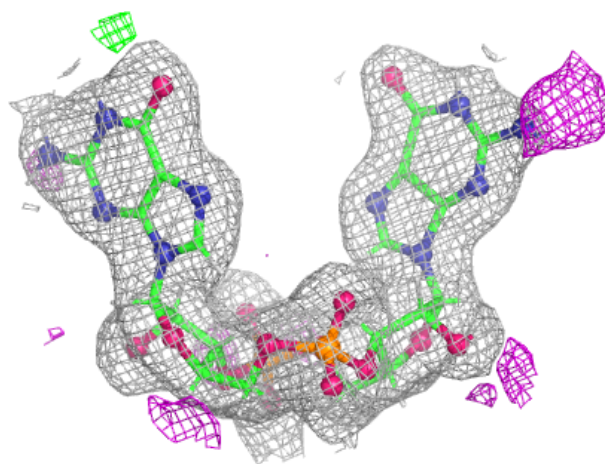
Electron density around C2E D 402:

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



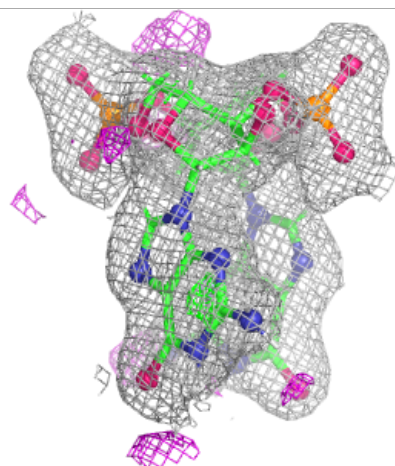
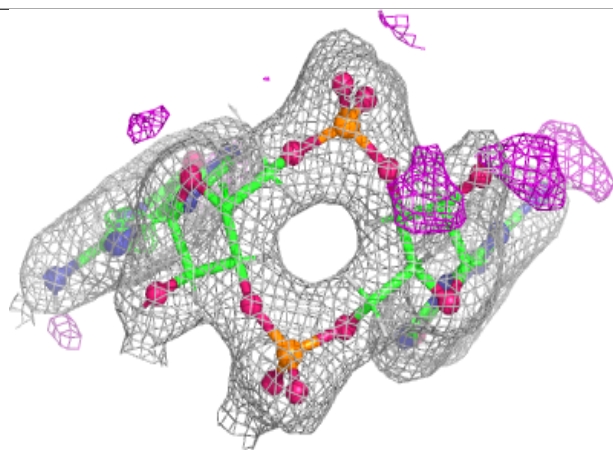
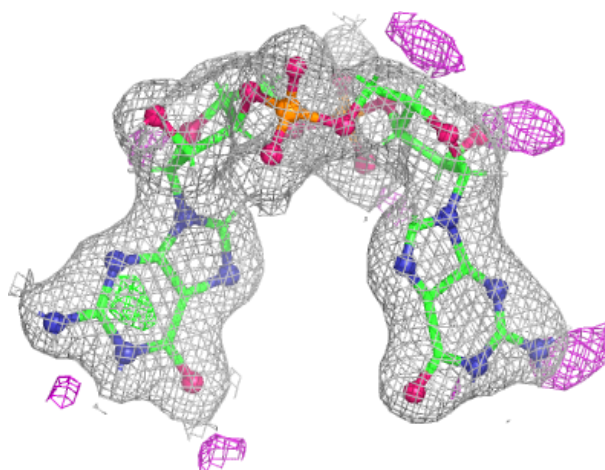
Electron density around C2E A 401:

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and green (positive)



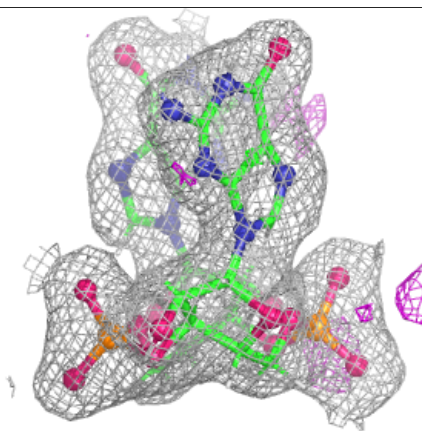
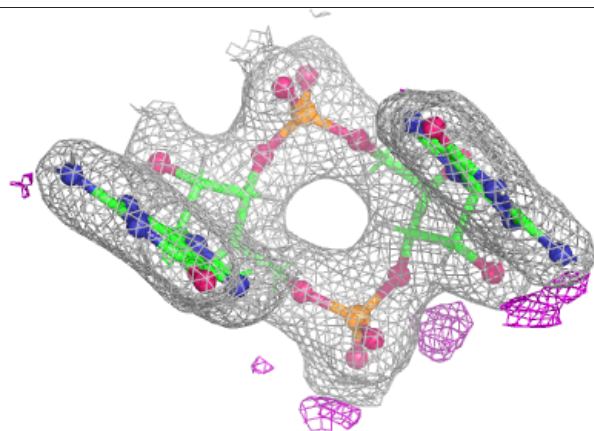
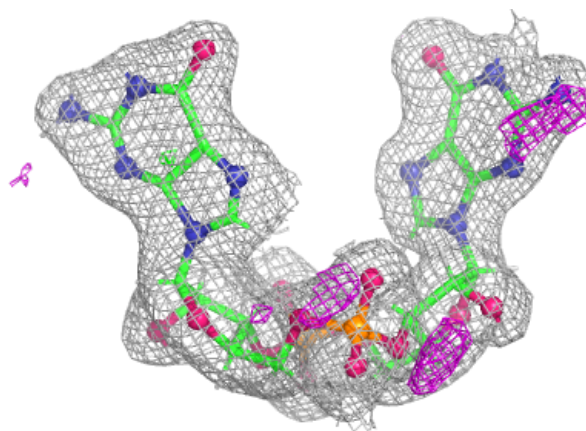
Electron density around C2E A 402:

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and green (positive)



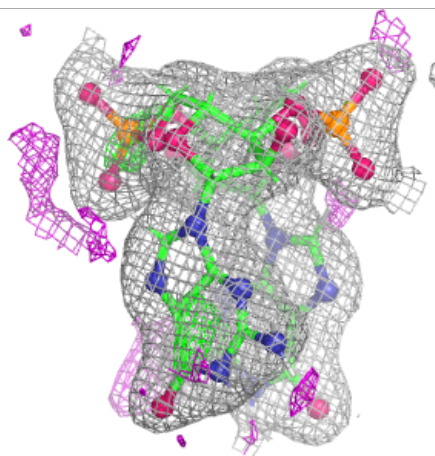
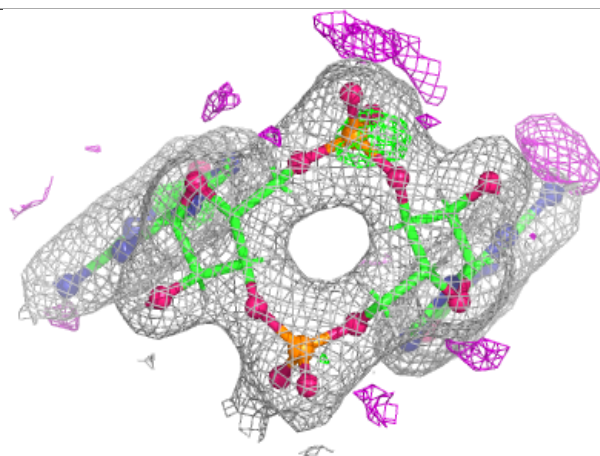
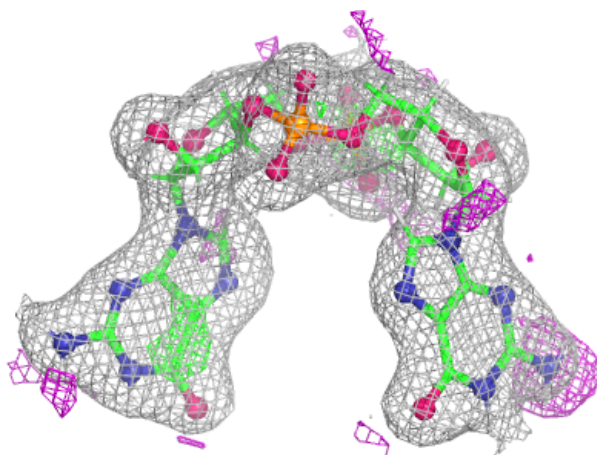
Electron density around C2E B 402:

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



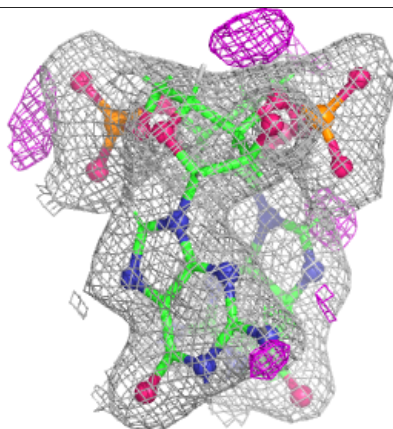
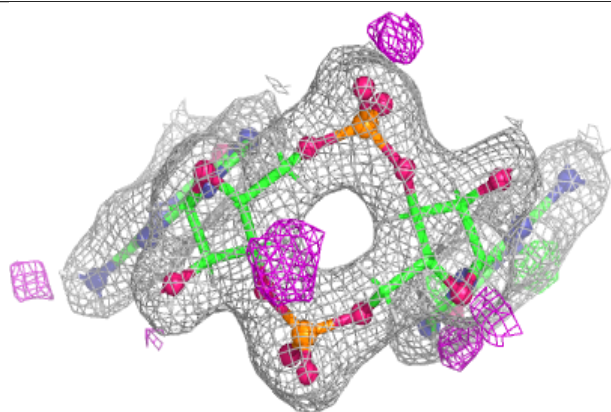
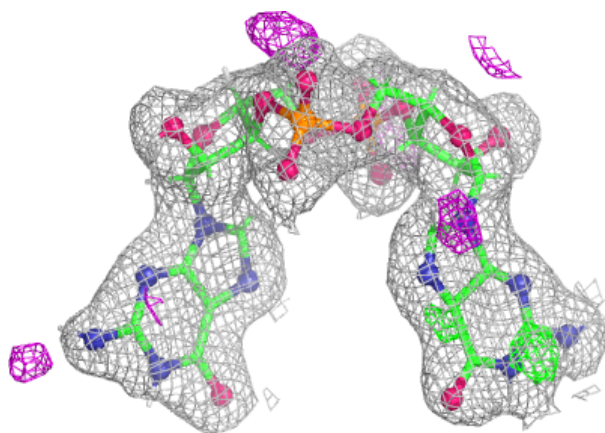
Electron density around C2E C 401:

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



Electron density around C2E B 401:

$2mF_o-DF_c$ (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.