Full wwPDB X-ray Structure Validation Report ⓘ

Feb 9, 2026 – 06:14 PM EST

PDB ID	:	1OSW / pdb_000010sw
Title	:	Crystal structure of Guanylate Kinase from Burkholderia thailandensis in complex with GDP
Authors	:	Seattle Structural Genomics Center for Infectious Disease; Seattle Structural Genomics Center for Infectious Disease (SSGCID)
Deposited on	:	2026-02-06
Resolution	:	2.96 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

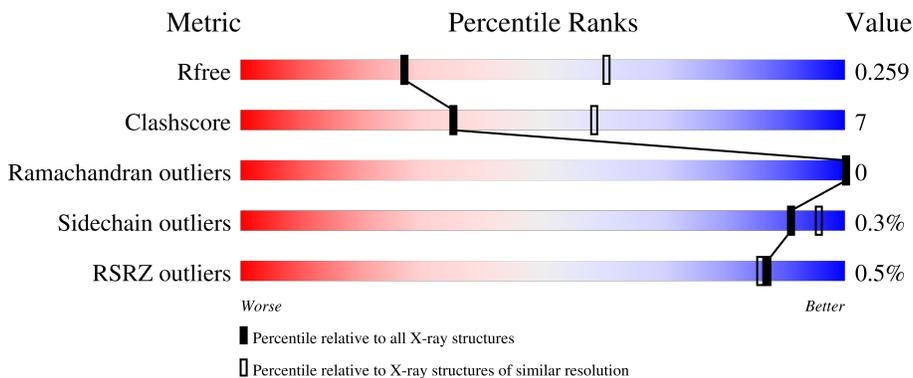|		
MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.48

1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 2.96 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.
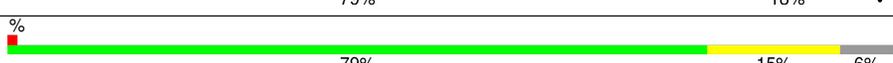
Metric	Percentile Ranks	Value
Rfree		0.259
Clashscore		7
Ramachandran outliers		0
Sidechain outliers		0.3%
RSRZ outliers		0.5%

Worse *Better*

▮ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R$_{free}$	164625	1044 (2.98-2.94)
Clashscore	180529	1097 (2.98-2.94)
Ramachandran outliers	177936	1049 (2.98-2.94)
Sidechain outliers	177891	1049 (2.98-2.94)
RSRZ outliers	164620	1044 (2.98-2.94)

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 <=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	214	85% 10% 5%
1	B	214	% 86% 11% •
1	C	214	80% 14% 5%
1	D	214	84% 11% 5%

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Mol	Chain	Length	Quality of chain
1	E	214	% 82% 14% •
1	F	214	81% 14% •
1	G	214	79% 18% •
1	H	214	% 79% 15% 6%

2   Entry composition ⓘ

There are 3 unique types of molecules in this entry. The entry contains 13077 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 Guanylate kinase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	204	Total	C	N	O	S	0	0	0
			1600	1014	282	300	4			
1	B	209	Total	C	N	O	S	0	0	0
			1622	1029	289	299	5			
1	C	203	Total	C	N	O	S	0	0	0
			1603	1018	282	299	4			
1	D	203	Total	C	N	O	S	0	0	0
			1608	1020	283	301	4			
1	E	205	Total	C	N	O	S	0	0	0
			1595	1014	282	295	4			
1	F	205	Total	C	N	O	S	0	0	0
			1605	1016	282	303	4			
1	G	208	Total	C	N	O	S	0	0	0
			1610	1021	283	302	4			
1	H	202	Total	C	N	O	S	0	0	0
			1545	980	269	292	4			

There are 56 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	11	MET	-	expression tag	UNP Q2SY72
A	12	HIS	-	expression tag	UNP Q2SY72
A	13	HIS	-	expression tag	UNP Q2SY72
A	14	HIS	-	expression tag	UNP Q2SY72
A	15	HIS	-	expression tag	UNP Q2SY72
A	16	HIS	-	expression tag	UNP Q2SY72
A	17	HIS	-	expression tag	UNP Q2SY72
B	11	MET	-	expression tag	UNP Q2SY72
B	12	HIS	-	expression tag	UNP Q2SY72
B	13	HIS	-	expression tag	UNP Q2SY72
B	14	HIS	-	expression tag	UNP Q2SY72
B	15	HIS	-	expression tag	UNP Q2SY72
B	16	HIS	-	expression tag	UNP Q2SY72

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Chain	Residue	Modelled	Actual	Comment	Reference
B	17	HIS	-	expression tag	UNP Q2SY72
C	11	MET	-	expression tag	UNP Q2SY72
C	12	HIS	-	expression tag	UNP Q2SY72
C	13	HIS	-	expression tag	UNP Q2SY72
C	14	HIS	-	expression tag	UNP Q2SY72
C	15	HIS	-	expression tag	UNP Q2SY72
C	16	HIS	-	expression tag	UNP Q2SY72
C	17	HIS	-	expression tag	UNP Q2SY72
D	11	MET	-	expression tag	UNP Q2SY72
D	12	HIS	-	expression tag	UNP Q2SY72
D	13	HIS	-	expression tag	UNP Q2SY72
D	14	HIS	-	expression tag	UNP Q2SY72
D	15	HIS	-	expression tag	UNP Q2SY72
D	16	HIS	-	expression tag	UNP Q2SY72
D	17	HIS	-	expression tag	UNP Q2SY72
E	11	MET	-	expression tag	UNP Q2SY72
E	12	HIS	-	expression tag	UNP Q2SY72
E	13	HIS	-	expression tag	UNP Q2SY72
E	14	HIS	-	expression tag	UNP Q2SY72
E	15	HIS	-	expression tag	UNP Q2SY72
E	16	HIS	-	expression tag	UNP Q2SY72
E	17	HIS	-	expression tag	UNP Q2SY72
F	11	MET	-	expression tag	UNP Q2SY72
F	12	HIS	-	expression tag	UNP Q2SY72
F	13	HIS	-	expression tag	UNP Q2SY72
F	14	HIS	-	expression tag	UNP Q2SY72
F	15	HIS	-	expression tag	UNP Q2SY72
F	16	HIS	-	expression tag	UNP Q2SY72
F	17	HIS	-	expression tag	UNP Q2SY72
G	11	MET	-	expression tag	UNP Q2SY72
G	12	HIS	-	expression tag	UNP Q2SY72
G	13	HIS	-	expression tag	UNP Q2SY72
G	14	HIS	-	expression tag	UNP Q2SY72
G	15	HIS	-	expression tag	UNP Q2SY72
G	16	HIS	-	expression tag	UNP Q2SY72
G	17	HIS	-	expression tag	UNP Q2SY72
H	11	MET	-	expression tag	UNP Q2SY72
H	12	HIS	-	expression tag	UNP Q2SY72
H	13	HIS	-	expression tag	UNP Q2SY72
H	14	HIS	-	expression tag	UNP Q2SY72
H	15	HIS	-	expression tag	UNP Q2SY72
H	16	HIS	-	expression tag	UNP Q2SY72

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Chain	Residue	Modelled	Actual	Comment	Reference
H	17	HIS	-	expression tag	UNP Q2SY72

- Molecule 2 is GUANOSINE-5'-DIPHOSPHATE (CCD ID: GDP) (formula: $C_{10}H_{15}N_5O_{11}P_2$) (labeled as "Ligand of Interest" by depositor).
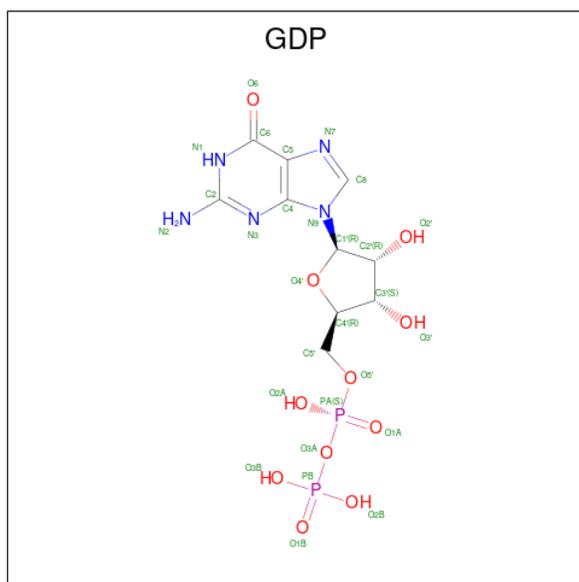
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			28	10	5	11	2		
2	A	1	Total	C	N	O	P	0	0
			28	10	5	11	2		
2	B	1	Total	C	N	O	P	0	0
			28	10	5	11	2		
2	C	1	Total	C	N	O	P	0	0
			28	10	5	11	2		
2	D	1	Total	C	N	O	P	0	0
			28	10	5	11	2		
2	E	1	Total	C	N	O	P	0	0
			28	10	5	11	2		
2	F	1	Total	C	N	O	P	0	0
			28	10	5	11	2		
2	F	1	Total	C	N	O	P	0	0
			28	10	5	11	2		
2	G	1	Total	C	N	O	P	0	0
			28	10	5	11	2		
2	H	1	Total	C	N	O	P	0	0
			28	10	5	11	2		

- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	1	Total 1	O 1	0	0
3	B	1	Total 1	O 1	0	0
3	C	1	Total 1	O 1	0	0
3	D	2	Total 2	O 2	0	0
3	E	1	Total 1	O 1	0	0
3	F	1	Total 1	O 1	0	0
3	G	1	Total 1	O 1	0	0
3	H	1	Total 1	O 1	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 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: Guanylate kinase

Chain A:

• Molecule 1: Guanylate kinase

Chain B:

• Molecule 1: Guanylate kinase

Chain C:
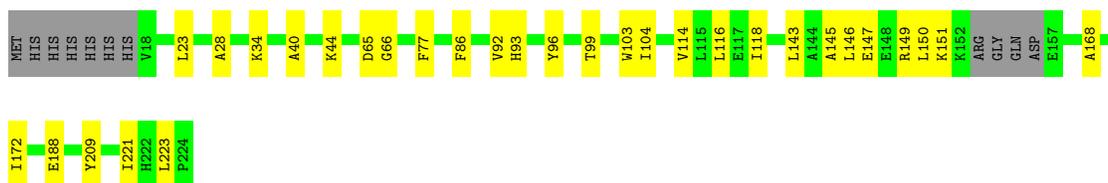
• Molecule 1: Guanylate kinase

Chain D:

• Molecule 1: Guanylate kinase

Chain E:

MET HIS HIS HIS HIS HIS H17 L23 S30 K44 D45 I48 T73 D76 V92 H93 T99 W103 I104 M108 L116 E117 I118 E147 L150 G154 GLN ASP GLU P158 T162 L166 A167 A168 I172 L194 E195 V198 A199 L203

A213 V217 E218 P224

• Molecule 1: Guanylate kinase

Chain F:

81%   14%   •

MET HIS HIS HIS HIS HIS V18 M25 K34 V38 D45 I48 S51 R57 R60 V74 R78 L87 V92 T99 L115 L116 E117 I118 D119 W120 Q121 G122 A123 P140 L143 L146 R153 GLY GLN D156 E157 P158 N159 V160 I161

E193 R202 E214 L215 L219 P224

• Molecule 1: Guanylate kinase

Chain G:

79%   18%   •

MET HIS HIS H14 V18 Y19 S30 K34 L37 V38 D45 I48 C49 L50 S51 T55 T73 D76 L87 Y96 Y97 I104 M108 L116 E117 I118 Q124 K127 A133 P140 L143 L146 L150 K151 K152 ARG GLY GLN D156

E157 P158 I161 T162 R163 R164 L165 E177 T186 F187 E188 H189 E193 I197 Y209 L223 P224

• Molecule 1: Guanylate kinase

Chain H:

%
79%   15%   6%

MET HIS HIS HIS HIS HIS VAL Y19 L23 F24 M25 D45 I48 C49 L50 S51 Y54 P59 R60 Q64 Q67 H68 Y69 H70 F71 T72 D76 F86 L87 V92 H93 Y96 M108 L115 L116 E117 I118 A123 F137 L146 L150 K151

LYS ARG GLY GLN D156 E157 P158 Y209 A213 E214 V217 E218 L223 P224

4 Data and refinement statistics   ⓘ

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	95.16Å 63.26Å 191.80Å 90.00° 94.94° 90.00°	Depositor
Resolution (Å)	47.05 – 2.96 47.05 – 2.96	Depositor EDS
% Data completeness (in resolution range)	99.8 (47.05-2.96) 99.7 (47.05-2.96)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.74 (at 2.96Å)	Xtriage
Refinement program	PHENIX (2.0_5936: ???)	Depositor
R, R_{free}	0.202 , 0.259 0.204 , 0.259	Depositor DCC
R_{free} test set	2378 reflections (4.96%)	wwPDB-VP
Wilson B-factor (Å^2)	83.9	Xtriage
Anisotropy	0.226	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.33 , 60.9	EDS
L-test for twinning[2]	$< |L| > = 0.50, < L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	13077	wwPDB-VP
Average B, all atoms (Å^2)	93.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.97% 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 (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: GDP

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	0.13	0/1637	0.25	0/2224
1	B	0.12	0/1659	0.26	0/2253
1	C	0.13	0/1639	0.26	0/2222
1	D	0.11	0/1643	0.25	0/2225
1	E	0.12	0/1632	0.25	0/2215
1	F	0.12	0/1641	0.25	0/2228
1	G	0.11	0/1647	0.26	0/2240
1	H	0.12	0/1579	0.27	0/2149
All	All	0.12	0/13077	0.26	0/17756

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1600	0	1540	21	0
1	B	1622	0	1546	13	0
1	C	1603	0	1568	26	0
1	D	1608	0	1576	19	0
1	E	1595	0	1543	20	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	F	1605	0	1542	30	0
1	G	1610	0	1533	32	0
1	H	1545	0	1466	32	0
2	A	56	0	24	0	0
2	B	28	0	12	0	0
2	C	28	0	12	1	0
2	D	28	0	12	0	0
2	E	28	0	12	1	0
2	F	56	0	24	1	0
2	G	28	0	12	2	0
2	H	28	0	12	2	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
3	C	1	0	0	0	0
3	D	2	0	0	0	0
3	E	1	0	0	0	0
3	F	1	0	0	0	0
3	G	1	0	0	0	0
3	H	1	0	0	0	0
All	All	13077	0	12434	185	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 7.

All (185) 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:D:92:VAL:HG12	1:D:93:HIS:CD2	2.11	0.84
1:H:209:TYR:HD2	1:H:223:LEU:HD21	1.52	0.74
1:E:92:VAL:HG12	1:E:93:HIS:ND1	2.02	0.74
1:H:209:TYR:CD2	1:H:223:LEU:HD21	2.25	0.72
1:F:45:ASP:OD2	1:F:48:ILE:HD11	1.90	0.72
1:G:163:ARG:HH11	1:G:163:ARG:HG2	1.55	0.72
1:G:30:SER:O	1:G:150:LEU:HD21	1.90	0.71
1:D:161:ILE:HD12	1:D:161:ILE:H	1.58	0.68
1:G:18:VAL:HG23	1:G:19:TYR:CD1	2.28	0.68
1:A:45:ASP:HB3	1:A:48:ILE:CD1	2.24	0.67
1:E:194:LEU:O	1:E:198:VAL:HG23	1.94	0.67
1:C:23:LEU:HD11	1:C:116:LEU:HD11	1.75	0.66
1:E:147:GLU:OE1	1:E:147:GLU:C	2.41	0.64
1:D:215:LEU:HD12	1:D:215:LEU:O	1.97	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:160:VAL:HG13	1:B:163:ARG:NH2	2.14	0.62
1:G:209:TYR:CZ	1:G:223:LEU:HD11	2.35	0.61
1:E:30:SER:O	1:E:150:LEU:HD21	2.01	0.61
1:G:104:ILE:HD11	1:G:116:LEU:HD21	1.83	0.60
1:C:168:ALA:O	1:C:172:ILE:HG13	2.02	0.59
1:G:108:MET:HA	1:G:108:MET:HE2	1.84	0.59
1:A:45:ASP:HB3	1:A:48:ILE:HD12	1.85	0.58
1:D:158:PRO:HA	1:D:161:ILE:HD13	1.85	0.58
1:H:23:LEU:HD11	1:H:116:LEU:HD13	1.86	0.57
1:D:157:GLU:OE1	1:D:160:VAL:HG23	2.05	0.57
1:C:92:VAL:HG12	1:C:93:HIS:ND1	2.20	0.57
1:A:47:GLU:H	1:A:47:GLU:CD	2.11	0.57
1:C:147:GLU:OE2	1:C:151:LYS:NZ	2.37	0.56
1:G:73:THR:HG23	1:G:76:ASP:H	1.70	0.56
1:B:34:LYS:O	1:B:38:VAL:HG23	2.06	0.56
1:F:157:GLU:O	1:F:160:VAL:HG12	2.04	0.56
1:E:199:ALA:O	1:E:203:LEU:HD13	2.06	0.56
1:C:99:THR:HG21	1:C:116:LEU:HD23	1.87	0.55
1:F:119:ASP:C	1:F:119:ASP:OD1	2.49	0.55
1:H:92:VAL:HG12	1:H:93:HIS:ND1	2.22	0.55
1:H:157:GLU:CB	1:H:158:PRO:HD2	2.37	0.54
1:G:45:ASP:HB3	1:G:48:ILE:HD12	1.89	0.54
1:A:18:VAL:HG12	1:A:19:TYR:CE2	2.43	0.54
1:A:23:LEU:HD11	1:A:116:LEU:HD11	1.90	0.54
1:G:143:LEU:HD12	1:G:143:LEU:H	1.73	0.53
1:B:136:ILE:HD11	1:B:197:ILE:HG21	1.91	0.53
1:H:50:LEU:HD23	1:H:51:SER:N	2.23	0.53
1:H:64:GLN:HB2	1:H:67:GLN:HG3	1.92	0.52
1:F:45:ASP:OD2	1:F:48:ILE:CD1	2.57	0.52
1:F:161:ILE:H	1:F:161:ILE:HD12	1.75	0.52
1:A:161:ILE:HD12	1:A:161:ILE:H	1.75	0.52
1:D:104:ILE:HD11	1:D:116:LEU:HD21	1.90	0.52
1:D:158:PRO:HA	1:D:161:ILE:CD1	2.40	0.52
1:F:214:GLU:H	1:F:214:GLU:CD	2.16	0.52
1:F:25:MET:HE3	1:F:123:ALA:HA	1.90	0.52
1:A:17:HIS:C	1:A:18:VAL:HG23	2.34	0.51
1:F:119:ASP:OD1	1:F:121:GLN:N	2.43	0.51
1:C:23:LEU:HD11	1:C:116:LEU:CD1	2.41	0.51
1:D:101:ARG:HH22	1:D:129:GLN:NE2	2.09	0.50
1:E:48:ILE:HD11	1:E:198:VAL:HG11	1.94	0.50
1:H:146:LEU:O	1:H:150:LEU:HG	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:168:ALA:O	1:E:172:ILE:HD12	2.12	0.50
1:H:54:TYR:CD1	1:H:70:HIS:HB2	2.47	0.50
1:F:140:PRO:HG3	1:F:146:LEU:HD22	1.94	0.49
1:A:45:ASP:OD1	1:A:47:GLU:OE2	2.29	0.49
1:D:104:ILE:HD13	1:D:114:VAL:HG11	1.94	0.49
1:F:34:LYS:O	1:F:38:VAL:HG23	2.12	0.49
1:A:168:ALA:O	1:A:172:ILE:HG13	2.11	0.49
1:H:118:ILE:HG22	2:H:301:GDP:C6	2.47	0.49
1:A:103:TRP:HE3	1:A:104:ILE:HD13	1.78	0.49
1:F:48:ILE:HD11	1:F:202:ARG:NH2	2.26	0.49
1:F:92:VAL:HG22	1:F:119:ASP:OD2	2.12	0.49
1:C:209:TYR:CE1	1:C:223:LEU:HG	2.47	0.49
1:G:186:THR:HG22	1:G:189:HIS:H	1.77	0.48
1:A:191:LEU:O	1:A:191:LEU:HD23	2.14	0.48
1:C:77:PHE:CE2	1:C:96:TYR:HB3	2.48	0.48
1:H:45:ASP:HB3	1:H:48:ILE:HD12	1.94	0.48
1:D:52:ILE:HG23	1:D:68:HIS:C	2.38	0.48
1:G:209:TYR:CE1	1:G:223:LEU:HD11	2.48	0.48
1:E:218:GLU:HB3	1:F:143:LEU:HD11	1.95	0.48
1:H:23:LEU:HB2	1:H:108:MET:HE1	1.96	0.48
1:G:50:LEU:HD12	1:G:51:SER:N	2.29	0.48
1:B:11:MET:HE3	1:B:132:ASN:C	2.39	0.48
1:C:146:LEU:CD1	1:C:150:LEU:HD21	2.44	0.48
1:H:54:TYR:CD2	1:H:86:PHE:HE1	2.32	0.48
1:B:209:TYR:HD1	1:B:216:PHE:CD2	2.32	0.48
1:C:28:ALA:HB3	1:C:34:LYS:HD3	1.95	0.47
1:C:118:ILE:HG22	2:C:301:GDP:C6	2.49	0.47
1:F:118:ILE:HG22	2:F:302:GDP:C6	2.49	0.47
1:H:209:TYR:CD1	1:H:213:ALA:HA	2.49	0.47
1:D:48:ILE:HD11	1:D:198:VAL:HG11	1.97	0.47
1:B:55:THR:HG22	1:B:69:TYR:HB3	1.97	0.46
1:C:221:ILE:HD13	1:D:175:ALA:HB3	1.97	0.46
1:E:44:LYS:HD2	1:E:195:GLU:OE2	2.16	0.46
1:H:87:LEU:HD12	1:H:87:LEU:O	2.15	0.46
1:H:209:TYR:CD2	1:H:223:LEU:CD2	2.97	0.46
1:G:143:LEU:HD11	1:H:218:GLU:OE1	2.15	0.46
1:D:87:LEU:HD12	1:D:129:GLN:OE1	2.15	0.45
1:A:18:VAL:HG12	1:A:19:TYR:CD2	2.51	0.45
1:D:215:LEU:HD12	1:D:219:LEU:HG	1.98	0.45
1:G:163:ARG:HG2	1:G:163:ARG:NH1	2.23	0.45
1:F:115:LEU:HD23	1:F:116:LEU:N	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:73:THR:HG23	1:E:76:ASP:H	1.81	0.45
1:G:209:TYR:CE2	1:G:223:LEU:CD1	3.00	0.45
1:G:34:LYS:O	1:G:38:VAL:HG23	2.17	0.45
1:H:209:TYR:HE1	1:H:213:ALA:HB1	1.82	0.45
1:H:25:MET:HE3	1:H:123:ALA:HB1	1.97	0.45
1:A:23:LEU:HD11	1:A:116:LEU:CD1	2.48	0.44
1:C:65:ASP:OD1	1:C:65:ASP:C	2.59	0.44
1:F:161:ILE:HD12	1:F:161:ILE:N	2.31	0.44
1:C:104:ILE:HD12	1:C:114:VAL:HG11	1.98	0.44
1:D:215:LEU:HD12	1:D:215:LEU:C	2.41	0.44
1:E:218:GLU:CB	1:F:143:LEU:HD11	2.47	0.44
1:C:209:TYR:CD1	1:C:223:LEU:HG	2.53	0.44
1:G:87:LEU:O	1:G:87:LEU:HD12	2.18	0.44
1:C:146:LEU:HD12	1:C:150:LEU:HD21	1.99	0.44
1:H:157:GLU:CB	1:H:158:PRO:CD	2.95	0.44
1:A:103:TRP:CE3	1:A:104:ILE:HD13	2.53	0.44
1:E:104:ILE:O	1:E:108:MET:HG2	2.17	0.44
1:G:118:ILE:HG22	2:G:301:GDP:C6	2.53	0.44
1:E:45:ASP:HB3	1:E:48:ILE:HD12	2.00	0.43
1:H:54:TYR:HD2	1:H:86:PHE:HE1	1.67	0.43
1:H:23:LEU:HB2	1:H:108:MET:CE	2.49	0.43
1:G:37:LEU:HD23	1:G:187:PHE:CE1	2.52	0.43
1:B:157:GLU:HB3	1:B:158:PRO:HD2	2.00	0.43
1:C:145:ALA:O	1:C:149:ARG:HG3	2.19	0.43
1:G:209:TYR:CE2	1:G:223:LEU:HD11	2.54	0.43
1:G:150:LEU:HD12	1:G:165:LEU:HD23	2.01	0.43
1:C:103:TRP:HE3	1:C:104:ILE:HD13	1.83	0.43
1:C:209:TYR:O	1:C:209:TYR:HD2	2.02	0.43
1:F:74:VAL:HG12	1:F:78:ARG:HE	1.83	0.43
1:H:72:THR:HG23	1:H:76:ASP:OD1	2.18	0.43
1:C:40:ALA:O	1:C:44:LYS:HG2	2.18	0.43
1:D:101:ARG:NH2	1:D:129:GLN:NE2	2.67	0.43
1:F:45:ASP:OD2	1:F:48:ILE:CG1	2.66	0.43
1:G:209:TYR:CZ	1:G:223:LEU:CD1	3.02	0.43
1:A:105:GLU:O	1:A:109:LYS:HG3	2.19	0.43
1:C:77:PHE:CE1	1:C:86:PHE:CE2	3.07	0.43
1:A:139:LEU:CD2	1:A:172:ILE:HG23	2.49	0.42
1:E:213:ALA:O	1:E:217:VAL:HG23	2.19	0.42
1:G:127:LYS:HE2	1:G:133:ALA:O	2.19	0.42
1:A:203:LEU:CD1	1:B:193:GLU:HB3	2.49	0.42
1:E:103:TRP:HE3	1:E:104:ILE:HD13	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:162:THR:O	1:E:166:LEU:HD13	2.20	0.42
1:E:23:LEU:HD11	1:E:116:LEU:HD13	2.01	0.42
1:F:87:LEU:O	1:F:87:LEU:HD23	2.19	0.42
1:B:146:LEU:HD12	1:B:146:LEU:O	2.19	0.42
1:G:150:LEU:CD1	1:G:165:LEU:HD23	2.49	0.42
1:H:118:ILE:HG22	2:H:301:GDP:N1	2.34	0.42
1:H:115:LEU:C	1:H:116:LEU:HD12	2.44	0.42
1:E:118:ILE:HG22	2:E:301:GDP:C6	2.54	0.42
1:E:203:LEU:HD21	1:F:193:GLU:HB3	2.02	0.42
1:F:45:ASP:OD1	1:F:45:ASP:C	2.62	0.42
1:G:104:ILE:O	1:G:108:MET:HG2	2.18	0.42
1:C:143:LEU:HD11	1:D:218:GLU:HB3	2.02	0.42
1:F:158:PRO:HA	1:F:161:ILE:HD13	2.01	0.42
1:H:23:LEU:CD1	1:H:116:LEU:HD13	2.48	0.42
1:F:215:LEU:HD12	1:F:215:LEU:O	2.19	0.42
1:G:193:GLU:O	1:G:197:ILE:HG13	2.19	0.42
1:A:104:ILE:O	1:A:108:MET:HG2	2.18	0.41
1:G:140:PRO:HG3	1:G:146:LEU:HD13	2.01	0.41
1:B:87:LEU:HD12	1:B:87:LEU:O	2.20	0.41
1:B:104:ILE:CD1	1:B:114:VAL:HG11	2.50	0.41
1:G:124:GLN:HE21	1:G:177:GLU:CD	2.27	0.41
1:A:156:ASP:OD1	1:A:156:ASP:N	2.53	0.41
1:E:172:ILE:HG21	1:F:219:LEU:HB3	2.03	0.41
1:G:55:THR:HA	1:G:96:TYR:O	2.21	0.41
1:B:42:LEU:HD23	1:B:48:ILE:HB	2.02	0.41
1:C:209:TYR:HD2	1:C:209:TYR:C	2.29	0.41
1:C:209:TYR:C	1:C:209:TYR:CD2	2.99	0.41
1:F:57:ARG:CZ	1:F:60:ARG:HH11	2.34	0.41
1:A:96:TYR:N	1:A:96:TYR:CD2	2.89	0.41
1:H:72:THR:CG2	1:H:76:ASP:OD1	2.68	0.41
1:C:65:ASP:OD1	1:C:66:GLY:N	2.54	0.41
1:C:188:GLU:H	1:C:188:GLU:CD	2.28	0.41
1:F:157:GLU:HB2	1:F:158:PRO:HD2	2.03	0.41
1:G:158:PRO:O	1:G:161:ILE:HG22	2.20	0.41
1:H:214:GLU:O	1:H:217:VAL:HG22	2.21	0.41
1:G:158:PRO:HA	1:G:161:ILE:HG22	2.03	0.41
1:H:25:MET:HG2	1:H:118:ILE:HD11	2.03	0.41
1:H:96:TYR:CD1	1:H:96:TYR:N	2.89	0.41
1:D:19:TYR:HE1	1:D:109:LYS:HG2	1.86	0.40
1:D:119:ASP:OD2	1:D:121:GLN:HG3	2.22	0.40
1:H:59:PRO:O	1:H:60:ARG:HB2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:99:THR:HG21	1:F:116:LEU:HD21	2.02	0.40
1:H:209:TYR:CD1	1:H:209:TYR:C	3.00	0.40
1:A:199:ALA:O	1:A:203:LEU:HG	2.21	0.40
1:B:99:THR:HG21	1:B:116:LEU:HD22	2.03	0.40
1:F:48:ILE:HD13	1:F:48:ILE:N	2.37	0.40
1:F:157:GLU:O	1:F:161:ILE:HD12	2.21	0.40
1:G:97:TYR:HB3	2:G:301:GDP:C6	2.57	0.40

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	200/214 (94%)	199 (100%)	1 (0%)	0	100	100
1	B	203/214 (95%)	201 (99%)	2 (1%)	0	100	100
1	C	199/214 (93%)	197 (99%)	2 (1%)	0	100	100
1	D	199/214 (93%)	199 (100%)	0	0	100	100
1	E	201/214 (94%)	199 (99%)	2 (1%)	0	100	100
1	F	201/214 (94%)	199 (99%)	2 (1%)	0	100	100
1	G	204/214 (95%)	204 (100%)	0	0	100	100
1	H	198/214 (92%)	195 (98%)	3 (2%)	0	100	100
All	All	1605/1712 (94%)	1593 (99%)	12 (1%)	0	100	100

There are no Ramachandran outliers to report.

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	166/179 (93%)	166 (100%)	0	100	100
1	B	165/179 (92%)	164 (99%)	1 (1%)	84	91
1	C	168/179 (94%)	168 (100%)	0	100	100
1	D	169/179 (94%)	169 (100%)	0	100	100
1	E	164/179 (92%)	163 (99%)	1 (1%)	84	91
1	F	166/179 (93%)	165 (99%)	1 (1%)	84	91
1	G	164/179 (92%)	164 (100%)	0	100	100
1	H	156/179 (87%)	155 (99%)	1 (1%)	84	91
All	All	1318/1432 (92%)	1314 (100%)	4 (0%)	91	96

All (4) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	51	SER
1	E	99	THR
1	F	51	SER
1	H	72	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (23) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	39	ASN
1	A	84	HIS
1	B	107	GLN
1	B	174	HIS
1	B	189	HIS
1	B	212	HIS
1	C	84	HIS
1	C	129	GLN
1	C	159	ASN
1	D	93	HIS
1	D	121	GLN
1	E	81	HIS
1	E	107	GLN
1	E	112	HIS

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Mol	Chain	Res	Type
1	E	189	HIS
1	F	81	HIS
1	F	212	HIS
1	G	70	HIS
1	G	84	HIS
1	G	124	GLN
1	G	208	GLN
1	H	121	GLN
1	H	124	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 oligosaccharides in this entry.

5.6   Ligand geometry ⓘ

10 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#$|Z| > 2$	Counts	RMSZ	#$|Z| > 2$
2	GDP	G	301	-	25,30,30	0.96	1 (4%)	30,47,47	1.24	4 (13%)
2	GDP	C	301	-	25,30,30	0.99	2 (8%)	30,47,47	1.06	2 (6%)
2	GDP	A	302	-	25,30,30	1.02	3 (12%)	30,47,47	1.14	2 (6%)
2	GDP	D	301	-	25,30,30	0.98	1 (4%)	30,47,47	1.08	2 (6%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
2	GDP	F	301	-	25,30,30	1.03	3 (12%)	30,47,47	1.09	2 (6%)
2	GDP	A	301	-	25,30,30	0.97	1 (4%)	30,47,47	1.25	4 (13%)
2	GDP	F	302	-	25,30,30	1.01	2 (8%)	30,47,47	1.05	2 (6%)
2	GDP	E	301	-	25,30,30	0.95	2 (8%)	30,47,47	1.07	2 (6%)
2	GDP	B	301	-	25,30,30	1.00	2 (8%)	30,47,47	1.06	2 (6%)
2	GDP	H	301	-	25,30,30	1.00	2 (8%)	30,47,47	1.03	2 (6%)

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	GDP	G	301	-	-	2/12/32/32	0/3/3/3
2	GDP	C	301	-	-	5/12/32/32	0/3/3/3
2	GDP	A	302	-	-	6/12/32/32	0/3/3/3
2	GDP	D	301	-	-	2/12/32/32	0/3/3/3
2	GDP	F	301	-	-	8/12/32/32	0/3/3/3
2	GDP	A	301	-	-	5/12/32/32	0/3/3/3
2	GDP	F	302	-	-	6/12/32/32	0/3/3/3
2	GDP	E	301	-	-	3/12/32/32	0/3/3/3
2	GDP	B	301	-	-	3/12/32/32	0/3/3/3
2	GDP	H	301	-	-	7/12/32/32	0/3/3/3

All (19) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	F	302	GDP	O4'-C1'	2.47	1.44	1.40
2	H	301	GDP	O4'-C1'	2.46	1.44	1.40
2	G	301	GDP	O4'-C1'	2.44	1.44	1.40
2	F	301	GDP	O4'-C1'	2.43	1.44	1.40
2	A	302	GDP	O4'-C1'	2.38	1.44	1.40
2	D	301	GDP	C6-N1	-2.35	1.34	1.37
2	A	301	GDP	O4'-C1'	2.32	1.43	1.40
2	B	301	GDP	O4'-C1'	2.29	1.43	1.40
2	B	301	GDP	C6-N1	-2.27	1.34	1.37
2	C	301	GDP	O4'-C1'	2.26	1.43	1.40
2	C	301	GDP	C6-N1	-2.25	1.34	1.37
2	E	301	GDP	C6-N1	-2.25	1.34	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	F	301	GDP	PA-O3A	2.25	1.61	1.59
2	F	302	GDP	C6-N1	-2.21	1.34	1.37
2	H	301	GDP	C6-N1	-2.21	1.34	1.37
2	A	302	GDP	C6-N1	-2.12	1.34	1.37
2	E	301	GDP	O4'-C1'	2.05	1.43	1.40
2	A	302	GDP	PA-O3A	2.03	1.61	1.59
2	F	301	GDP	C6-N1	-2.02	1.34	1.37

All (24) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	302	GDP	C8-N7-C5	3.12	107.86	102.55
2	H	301	GDP	C8-N7-C5	3.12	107.85	102.55
2	F	302	GDP	C8-N7-C5	3.06	107.75	102.55
2	A	301	GDP	C8-N7-C5	3.03	107.70	102.55
2	C	301	GDP	C8-N7-C5	3.01	107.68	102.55
2	G	301	GDP	C8-N7-C5	2.95	107.58	102.55
2	D	301	GDP	C8-N7-C5	2.95	107.57	102.55
2	E	301	GDP	C8-N7-C5	2.94	107.55	102.55
2	B	301	GDP	C8-N7-C5	2.93	107.53	102.55
2	F	301	GDP	C8-N7-C5	2.90	107.49	102.55
2	A	301	GDP	N2-C2-N1	2.80	122.67	116.76
2	G	301	GDP	N2-C2-N3	-2.79	114.23	119.67
2	G	301	GDP	N2-C2-N1	2.79	122.64	116.76
2	A	301	GDP	N2-C2-N3	-2.70	114.40	119.67
2	B	301	GDP	C5-C6-N1	2.27	118.39	114.07
2	A	301	GDP	C5-C6-N1	2.24	118.34	114.07
2	C	301	GDP	C5-C6-N1	2.19	118.24	114.07
2	D	301	GDP	C5-C6-N1	2.17	118.21	114.07
2	F	302	GDP	C5-C6-N1	2.12	118.12	114.07
2	A	302	GDP	C5-C6-N1	2.11	118.10	114.07
2	G	301	GDP	C5-C6-N1	2.09	118.05	114.07
2	E	301	GDP	C5-C6-N1	2.08	118.04	114.07
2	H	301	GDP	C5-C6-N1	2.08	118.04	114.07
2	F	301	GDP	C5-C6-N1	2.08	118.04	114.07

There are no chirality outliers.

All (47) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	301	GDP	C5'-O5'-PA-O1A
2	A	302	GDP	C5'-O5'-PA-O3A

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Mol	Chain	Res	Type	Atoms
2	A	302	GDP	C5'-O5'-PA-O1A
2	A	302	GDP	C5'-O5'-PA-O2A
2	C	301	GDP	C5'-O5'-PA-O1A
2	E	301	GDP	C5'-O5'-PA-O3A
2	E	301	GDP	C5'-O5'-PA-O2A
2	F	301	GDP	C5'-O5'-PA-O3A
2	F	301	GDP	C5'-O5'-PA-O1A
2	F	302	GDP	C5'-O5'-PA-O3A
2	F	302	GDP	O4'-C4'-C5'-O5'
2	F	302	GDP	C3'-C4'-C5'-O5'
2	H	301	GDP	PA-O3A-PB-O3B
2	H	301	GDP	PB-O3A-PA-O5'
2	H	301	GDP	C5'-O5'-PA-O3A
2	H	301	GDP	C5'-O5'-PA-O1A
2	C	301	GDP	O4'-C4'-C5'-O5'
2	A	301	GDP	O4'-C4'-C5'-O5'
2	C	301	GDP	C3'-C4'-C5'-O5'
2	F	301	GDP	O4'-C4'-C5'-O5'
2	A	301	GDP	C3'-C4'-C5'-O5'
2	F	301	GDP	C3'-C4'-C5'-O5'
2	B	301	GDP	O4'-C4'-C5'-O5'
2	B	301	GDP	C3'-C4'-C5'-O5'
2	F	301	GDP	C4'-C5'-O5'-PA
2	A	301	GDP	PB-O3A-PA-O5'
2	B	301	GDP	PB-O3A-PA-O5'
2	C	301	GDP	PB-O3A-PA-O5'
2	D	301	GDP	PB-O3A-PA-O5'
2	E	301	GDP	PB-O3A-PA-O5'
2	F	301	GDP	PB-O3A-PA-O5'
2	F	302	GDP	PB-O3A-PA-O5'
2	H	301	GDP	PA-O3A-PB-O2B
2	F	301	GDP	C5'-O5'-PA-O2A
2	F	302	GDP	C5'-O5'-PA-O1A
2	H	301	GDP	C5'-O5'-PA-O2A
2	A	302	GDP	PB-O3A-PA-O1A
2	G	301	GDP	PB-O3A-PA-O5'
2	F	301	GDP	PA-O3A-PB-O1B
2	H	301	GDP	PA-O3A-PB-O1B
2	A	301	GDP	PB-O3A-PA-O2A
2	C	301	GDP	PB-O3A-PA-O2A
2	F	302	GDP	PB-O3A-PA-O2A
2	A	302	GDP	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
2	A	302	GDP	PB-O3A-PA-O2A
2	G	301	GDP	PB-O3A-PA-O2A
2	D	301	GDP	O4'-C4'-C5'-O5'

There are no ring outliers.

5 monomers are involved in 7 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	G	301	GDP	2	0
2	C	301	GDP	1	0
2	F	302	GDP	1	0
2	E	301	GDP	1	0
2	H	301	GDP	2	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 GDP G 301

Bond lengths

Bond angles

Torsions

Rings

Ligand GDP C 301

Bond lengths

Bond angles

Torsions

Rings

Ligand GDP A 302

Bond lengths

Bond angles

Torsions

Rings

Ligand GDP D 301

Bond lengths

Bond angles

Torsions

Rings

Ligand GDP F 301

Bond lengths

Bond angles

Torsions

Rings

Ligand GDP A 301

Bond lengths

Bond angles

Torsions

Rings

Ligand GDP F 302

Bond lengths

Bond angles

Torsions

Rings

Ligand GDP E 301

Bond lengths

Bond angles

Torsions

Rings

Ligand GDP B 301

Bond lengths

Bond angles

Torsions

Rings

Ligand GDP H 301

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 ⓘ

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(Å²)	Q<0.9
1	A	204/214 (95%)	-0.29	0	100	100	64, 87, 127, 158	0
1	B	209/214 (97%)	-0.22	3 (1%)	73	71	64, 85, 131, 168	0
1	C	203/214 (94%)	-0.35	0	100	100	63, 85, 115, 140	0
1	D	203/214 (94%)	-0.26	1 (0%)	87	86	65, 85, 121, 178	0
1	E	205/214 (95%)	-0.30	2 (0%)	79	77	61, 81, 115, 159	0
1	F	205/214 (95%)	-0.26	0	100	100	64, 90, 134, 163	0
1	G	208/214 (97%)	-0.17	0	100	100	67, 92, 129, 159	0
1	H	202/214 (94%)	-0.13	2 (0%)	79	77	71, 105, 147, 175	0
All	All	1639/1712 (95%)	-0.25	8 (0%)	87	86	61, 88, 132, 178	0

All (8) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	19	TYR	3.1
1	E	154	GLY	2.4
1	B	15	HIS	2.4
1	H	68	HIS	2.3
1	E	158	PRO	2.2
1	D	102	VAL	2.1
1	H	137	PHE	2.0
1	B	17	HIS	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(Å^2)	Q<0.9
2	GDP	A	302	28/28	0.50	0.16	92,118,152,164	0
2	GDP	F	301	28/28	0.69	0.13	80,111,133,140	0
2	GDP	F	302	28/28	0.85	0.09	89,100,139,147	0
2	GDP	A	301	28/28	0.89	0.09	77,92,131,139	0
2	GDP	G	301	28/28	0.89	0.09	67,86,116,126	0
2	GDP	H	301	28/28	0.89	0.08	81,93,133,148	0
2	GDP	E	301	28/28	0.90	0.09	57,78,131,148	0
2	GDP	C	301	28/28	0.91	0.08	71,81,124,133	0
2	GDP	B	301	28/28	0.91	0.07	68,81,120,135	0
2	GDP	D	301	28/28	0.92	0.08	58,71,118,131	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.
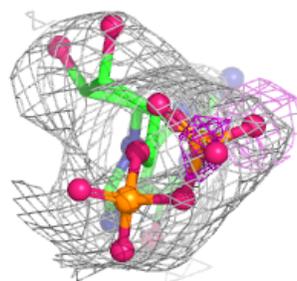
Electron density around GDP A 302:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
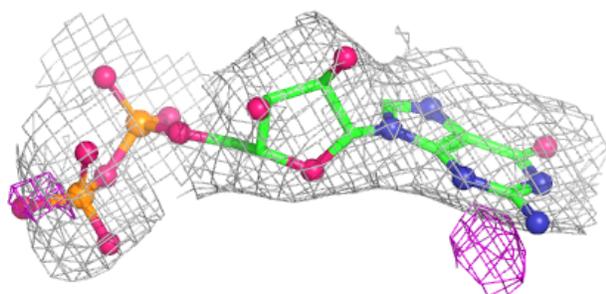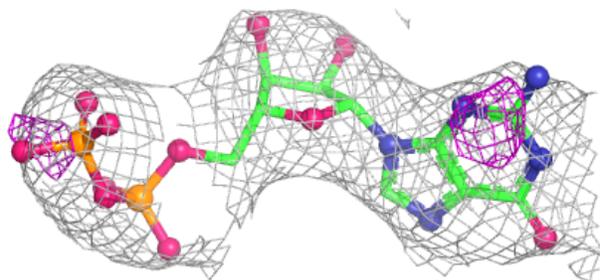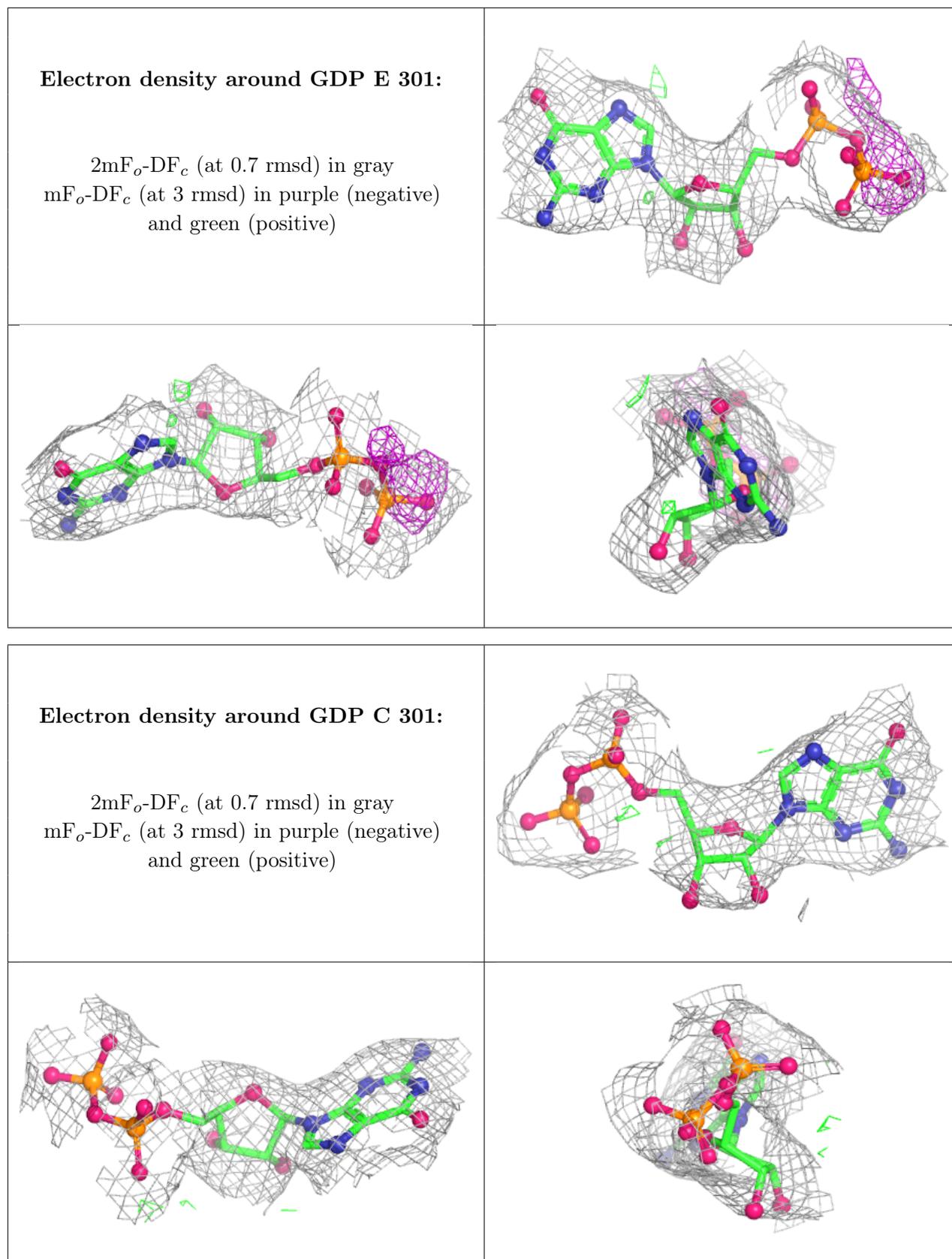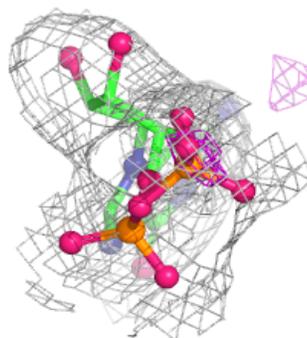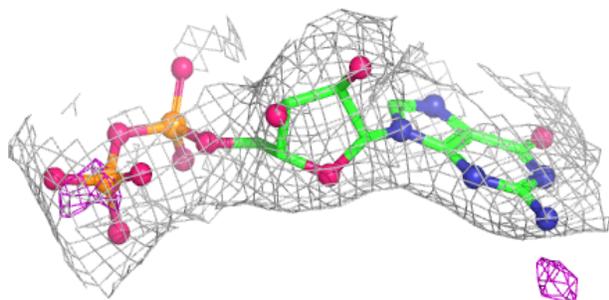mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
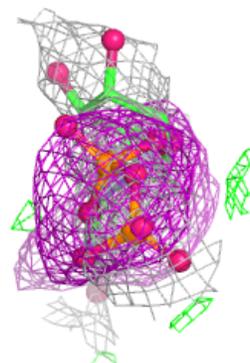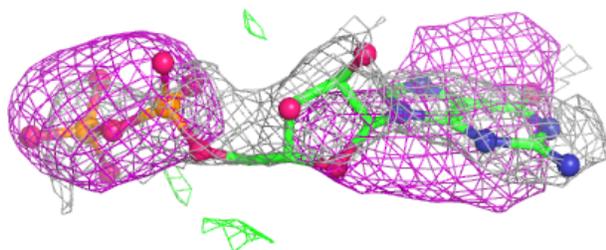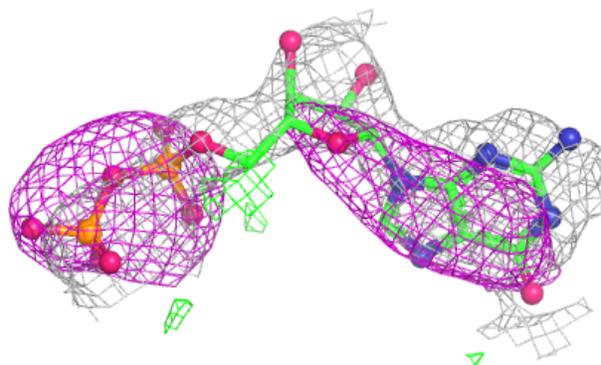
Electron density around GDP F 301:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
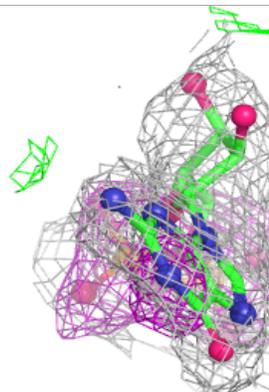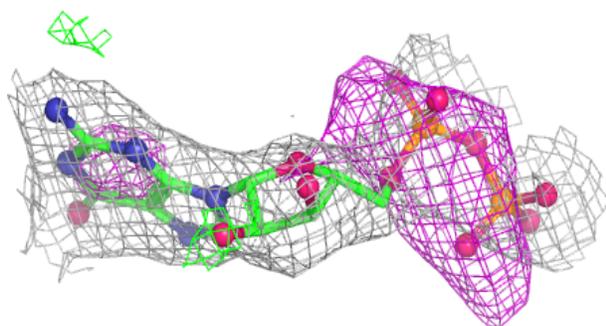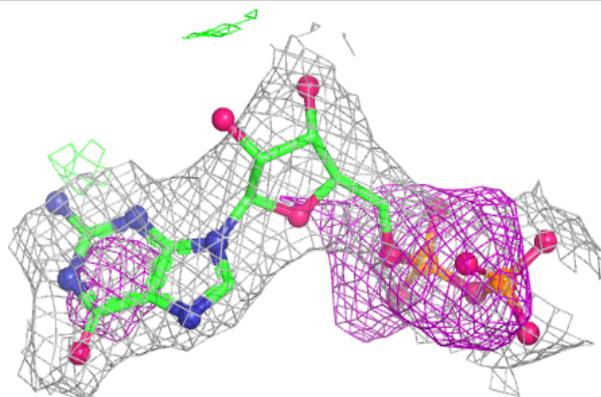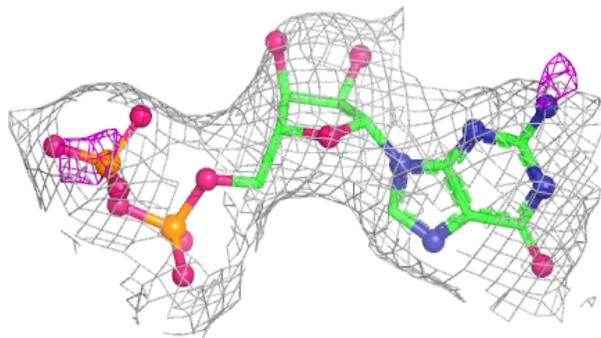
Electron density around GDP F 302:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
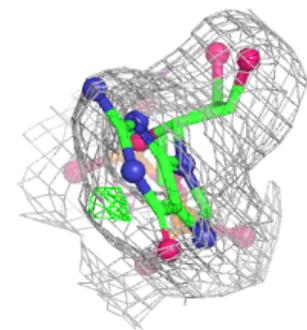and green (positive)
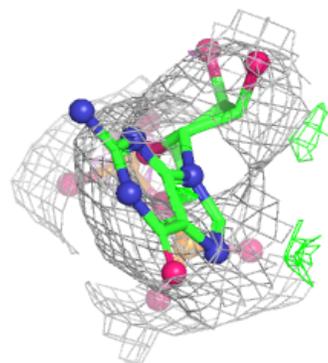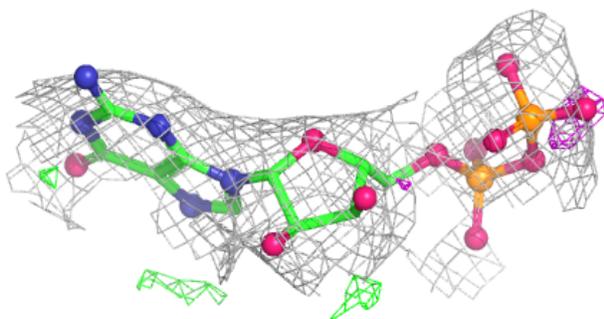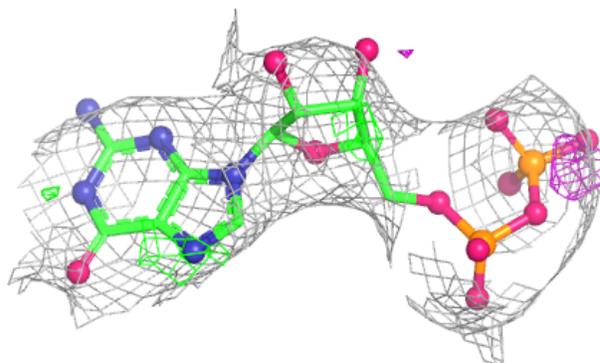
Electron density around GDP A 301:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
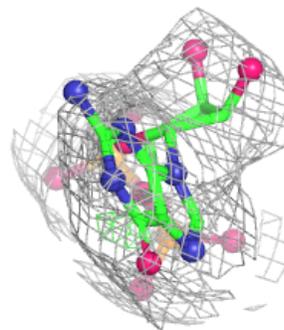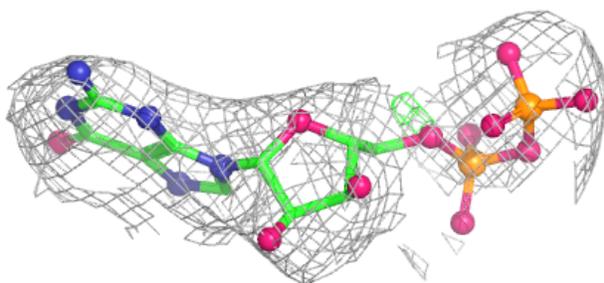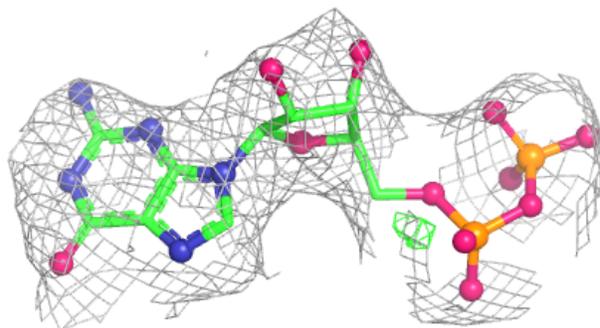
Electron density around GDP G 301:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
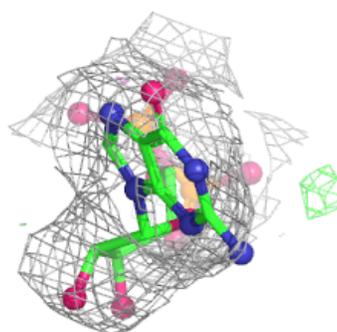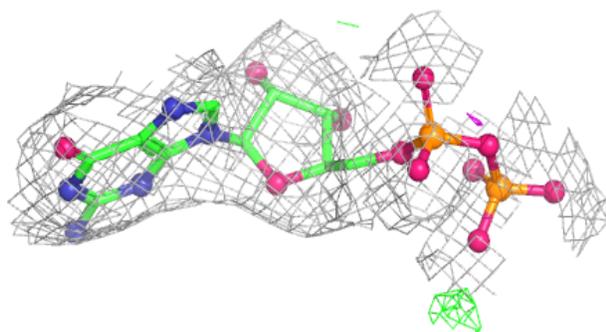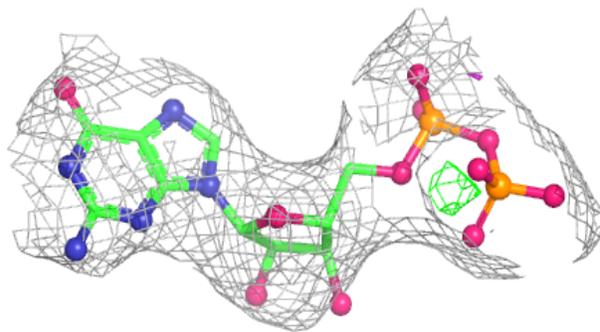
Electron density around GDP H 301:

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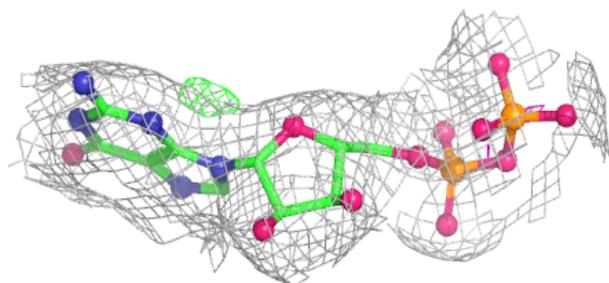$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
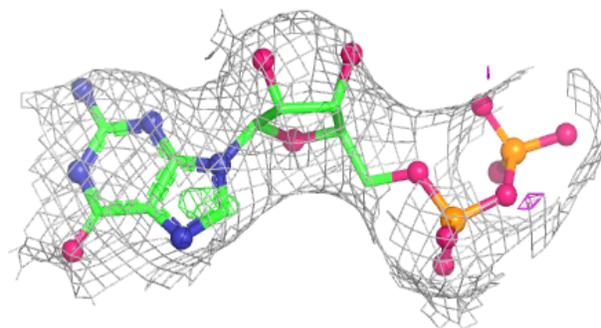and green (positive)

Electron density around GDP E 301:

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

Electron density around GDP C 301:

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

Electron density around GDP B 301:

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

Electron density around GDP D 301:

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

6.5 Other polymers ⓘ

There are no such residues in this entry.