



## Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 03:38 PM UTC

PDB ID : 3JQM / pdb\_00003jqm  
Title : Binding of 5'-GTP to molybdenum cofactor biosynthesis protein MoaC from *Thermus thermophilus* HB8  
Authors : Kanaujia, S.P.; Jeyakanthan, J.; Nakagawa, N.; Sekar, K.; Shinkai, A.; Kuramitsu, S.; Yokoyama, S.; RIKEN Structural Genomics/Proteomics Initiative (RSGI)  
Deposited on : 2009-09-07  
Resolution : 2.50 Å(reported)

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

We welcome your comments at [validation@mail.wwpdb.org](mailto: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>.

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The following versions of software and data (see [references](#) ①) were used in the production of this report:

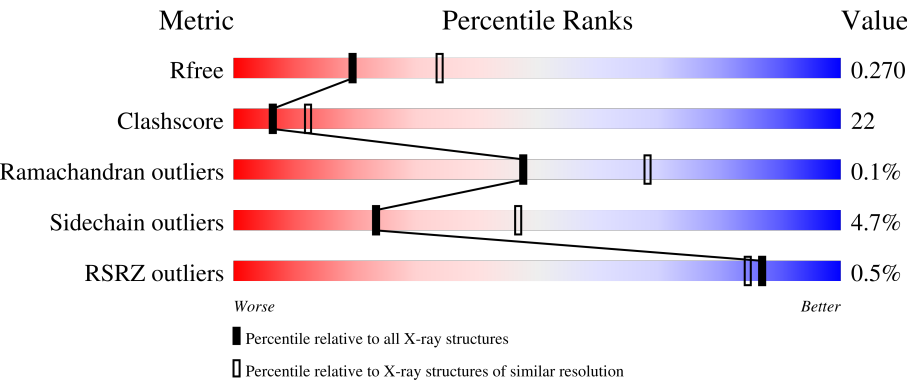
MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

# 1 Overall quality at a glance i

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

The reported resolution of this entry is 2.50 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	180053	5829 (2.50-2.50)
Clashscore	190562	6492 (2.50-2.50)
Ramachandran outliers	187476	6378 (2.50-2.50)
Sidechain outliers	187428	6380 (2.50-2.50)
RSRZ outliers	180081	5833 (2.50-2.50)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 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	157	<div><div></div><div>52%38%6%</div></div>
1	B	157	<div><div></div><div>55%35%7%</div></div>
1	C	157	<div><div>%</div><div>52%37%6%</div></div>
1	D	157	<div><div>%</div><div>50%39%6%</div></div>
1	E	157	<div><div></div><div>62%31%5%</div></div>

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Mol	Chain	Length	Quality of chain
1	F	157	
1	G	157	
1	H	157	
1	I	157	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	FLC	F	159	-	-	X	-

## 2 Entry composition

There are 7 unique types of molecules in this entry. The entry contains 10857 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 Molybdenum cofactor biosynthesis protein C.

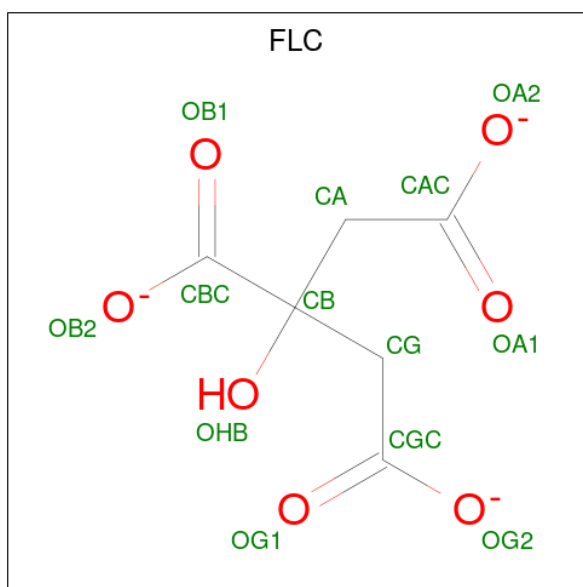
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	147	Total	C	N	O	S	0	0	0
			1096	692	194	204	6			
1	B	146	Total	C	N	O	S	0	0	0
			1092	690	193	203	6			
1	C	147	Total	C	N	O	S	0	0	0
			1096	692	194	204	6			
1	D	147	Total	C	N	O	S	0	0	0
			1096	692	194	204	6			
1	E	149	Total	C	N	O	S	0	0	0
			1113	701	197	209	6			
1	F	146	Total	C	N	O	S	0	0	0
			1092	690	193	203	6			
1	G	146	Total	C	N	O	S	0	0	0
			1092	690	193	203	6			
1	H	146	Total	C	N	O	S	0	0	0
			1092	690	193	203	6			
1	I	148	Total	C	N	O	S	0	0	0
			1105	697	195	207	6			

- Molecule 2 is GUANOSINE-5'-TRIPHOSPHATE (CCD ID: GTP) (formula: C<sub>10</sub>H<sub>16</sub>N<sub>5</sub>O<sub>14</sub>P<sub>3</sub>).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			32	10	5	14	3		
2	B	1	Total	C	N	O	P	0	0
			32	10	5	14	3		
2	C	1	Total	C	N	O	P	0	0
			32	10	5	14	3		
2	D	1	Total	C	N	O	P	0	0
			32	10	5	14	3		
2	E	1	Total	C	N	O	P	0	0
			32	10	5	14	3		
2	F	1	Total	C	N	O	P	0	0
			32	10	5	14	3		
2	G	1	Total	C	N	O	P	0	0
			32	10	5	14	3		
2	H	1	Total	C	N	O	P	0	0
			32	10	5	14	3		
2	I	1	Total	C	N	O	P	0	0
			32	10	5	14	3		

- Molecule 3 is CITRATE ANION (CCD ID: FLC) (formula: C<sub>6</sub>H<sub>5</sub>O<sub>7</sub>).



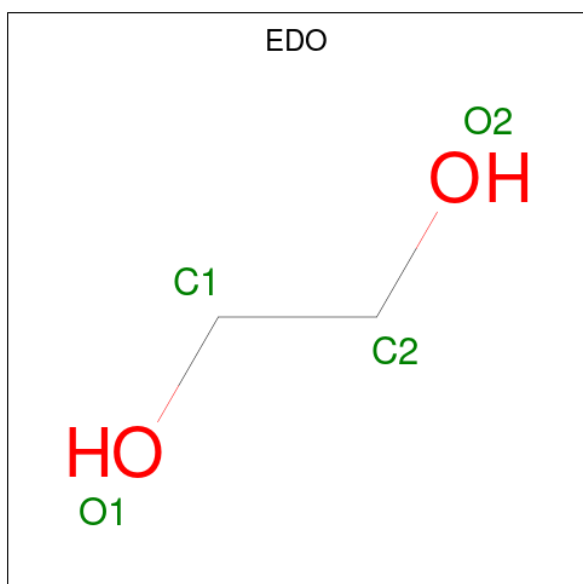
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	0
			13	6	7		
3	B	1	Total	C	O	0	0
			13	6	7		
3	C	1	Total	C	O	0	0
			13	6	7		
3	D	1	Total	C	O	0	0
			13	6	7		
3	E	1	Total	C	O	0	0
			13	6	7		
3	F	1	Total	C	O	0	0
			13	6	7		
3	G	1	Total	C	O	0	0
			13	6	7		
3	H	1	Total	C	O	0	0
			13	6	7		
3	I	1	Total	C	O	0	0
			13	6	7		

- Molecule 4 is GLYCEROL (CCD ID: GOL) (formula: C<sub>3</sub>H<sub>8</sub>O<sub>3</sub>).



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

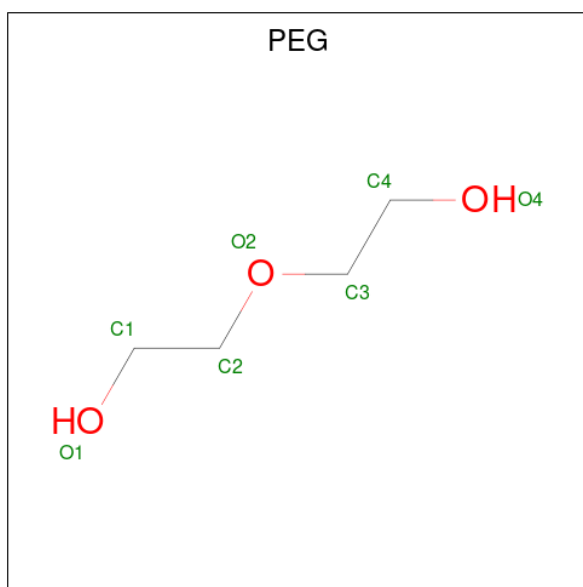
- Molecule 5 is 1,2-ETHANEDIOL (CCD ID: EDO) (formula: C<sub>2</sub>H<sub>6</sub>O<sub>2</sub>).





Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	1	Total C O 4 2 2	0	0
5	A	1	Total C O 4 2 2	0	0
5	B	1	Total C O 4 2 2	0	0
5	B	1	Total C O 4 2 2	0	0
5	B	1	Total C O 4 2 2	0	0
5	C	1	Total C O 4 2 2	0	0
5	D	1	Total C O 4 2 2	0	0
5	D	1	Total C O 4 2 2	0	0
5	F	1	Total C O 4 2 2	0	0
5	F	1	Total C O 4 2 2	0	0
5	G	1	Total C O 4 2 2	0	0
5	G	1	Total C O 4 2 2	0	0
5	G	1	Total C O 4 2 2	0	0
5	G	1	Total C O 4 2 2	0	0
5	H	1	Total C O 4 2 2	0	0
5	H	1	Total C O 4 2 2	0	0
5	I	1	Total C O 4 2 2	0	0
5	I	1	Total C O 4 2 2	0	0

- Molecule 6 is DI(HYDROXYETHYL)ETHER (CCD ID: PEG) (formula: C<sub>4</sub>H<sub>10</sub>O<sub>3</sub>).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	A	1	Total	C	O	0	0
			7	4	3		
6	A	1	Total	C	O	0	0
			7	4	3		
6	B	1	Total	C	O	0	0
			7	4	3		
6	C	1	Total	C	O	0	0
			7	4	3		
6	E	1	Total	C	O	0	0
			7	4	3		
6	F	1	Total	C	O	0	0
			7	4	3		
6	H	1	Total	C	O	0	0
			7	4	3		

- Molecule 7 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	A	60	Total	O	0	0
			60	60		
7	B	44	Total	O	0	0
			44	44		
7	C	45	Total	O	0	0
			45	45		
7	D	62	Total	O	0	0
			62	62		
7	E	59	Total	O	0	0
			59	59		

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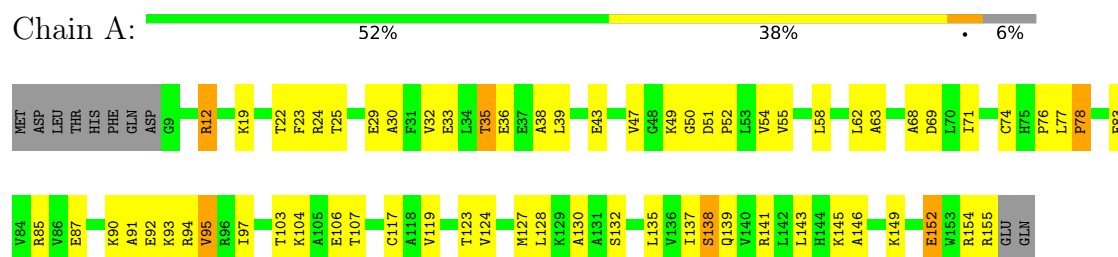
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	F	42	Total 42	O 42	0	0
7	G	49	Total 49	O 49	0	0
7	H	32	Total 32	O 32	0	0
7	I	34	Total 34	O 34	0	0

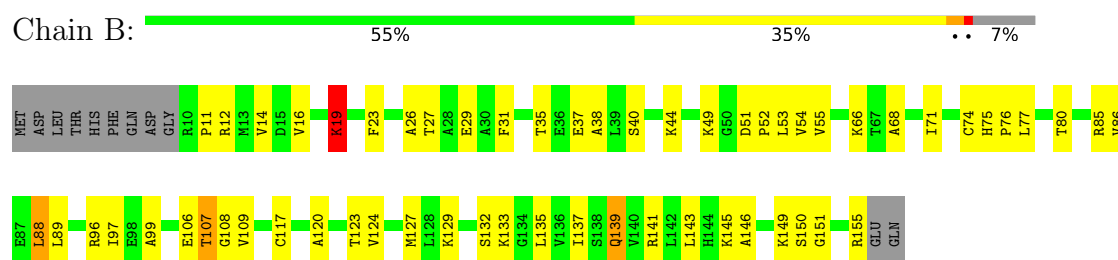
### 3 Residue-property plots

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.

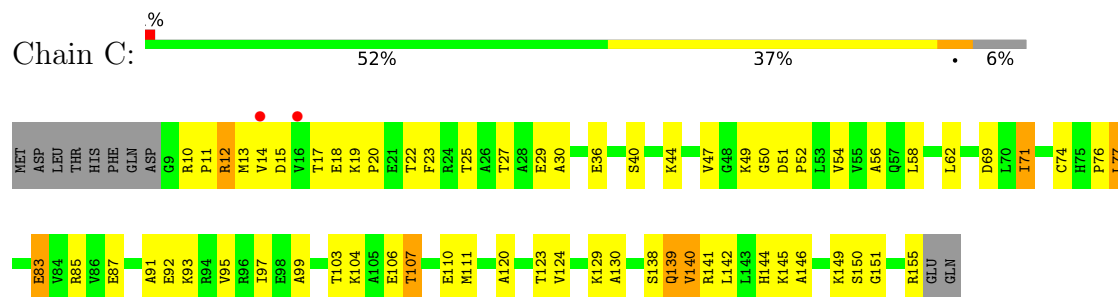
#### • Molecule 1: Molybdenum cofactor biosynthesis protein C



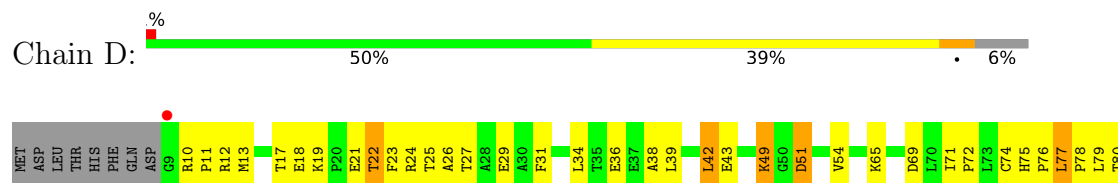
#### • Molecule 1: Molybdenum cofactor biosynthesis protein C



#### • Molecule 1: Molybdenum cofactor biosynthesis protein C

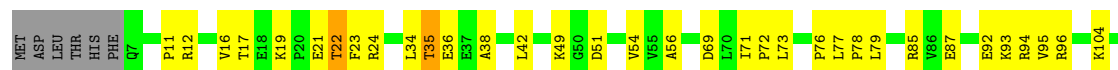


#### • Molecule 1: Molybdenum cofactor biosynthesis protein C





• Molecule 1: Molybdenum cofactor biosynthesis protein C



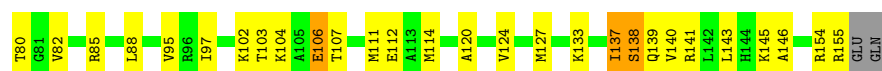
• Molecule 1: Molybdenum cofactor biosynthesis protein C



• Molecule 1: Molybdenum cofactor biosynthesis protein C

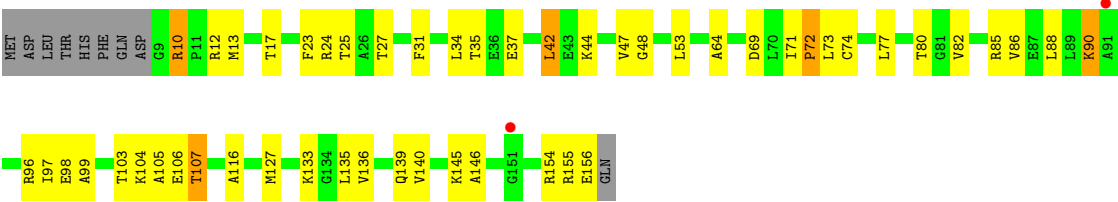


• Molecule 1: Molybdenum cofactor biosynthesis protein C



• Molecule 1: Molybdenum cofactor biosynthesis protein C





## 4 Data and refinement statistics

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	69.93Å 111.57Å 311.42Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	29.63 – 2.50 29.63 – 2.50	Depositor EDS
% Data completeness (in resolution range)	88.3 (29.63-2.50) 88.3 (29.63-2.50)	Depositor EDS
$R_{merge}$	0.09	Depositor
$R_{sym}$	0.08	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	3.63 (at 2.51Å)	Xtriage
Refinement program	CNS 1.2	Depositor
R, $R_{free}$	0.202 , 0.270 0.204 , 0.270	Depositor DCC
$R_{free}$ test set	3776 reflections (10.00%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	44.9	Xtriage
Anisotropy	0.654	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.35 , 50.8	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.49$ , $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.95	EDS
Total number of atoms	10857	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	54.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.46% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical 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

### 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: FLC, GTP, EDO, GOL, PEG

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	0.47	0/1108	1.05	7/1495 (0.5%)
1	B	0.47	0/1104	1.03	7/1490 (0.5%)
1	C	0.45	0/1108	1.00	5/1495 (0.3%)
1	D	0.44	0/1108	1.04	5/1495 (0.3%)
1	E	0.48	0/1125	0.99	5/1518 (0.3%)
1	F	0.43	0/1104	1.00	3/1490 (0.2%)
1	G	0.45	0/1104	1.05	7/1490 (0.5%)
1	H	0.45	0/1104	1.07	6/1490 (0.4%)
1	I	0.43	0/1117	1.01	6/1507 (0.4%)
All	All	0.45	0/9982	1.03	51/13470 (0.4%)

There are no bond length outliers.

All (51) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	149	LYS	N-CA-C	9.25	122.30	111.02
1	D	139	GLN	N-CA-C	8.49	123.70	111.56
1	F	138	SER	N-CA-C	8.21	120.01	111.14
1	A	138	SER	N-CA-C	8.03	123.42	112.90
1	G	139	GLN	N-CA-C	7.83	122.04	111.24
1	A	124	VAL	N-CA-C	-6.75	103.94	110.42
1	G	46	GLY	N-CA-C	6.69	118.31	111.56
1	E	71	ILE	CA-C-N	6.63	128.13	119.84
1	E	71	ILE	C-N-CA	6.63	128.13	119.84
1	B	139	GLN	N-CA-C	6.45	120.31	111.54
1	F	77	LEU	N-CA-C	6.41	116.37	108.11
1	G	35	THR	N-CA-C	-6.40	100.51	110.17
1	E	78	PRO	N-CA-C	-6.39	100.40	111.32
1	H	124	VAL	N-CA-C	-6.12	104.55	110.42
1	B	19	LYS	CA-C-N	6.07	127.28	120.66

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	19	LYS	C-N-CA	6.07	127.28	120.66
1	A	35	THR	N-CA-C	-6.01	102.44	110.55
1	H	137	ILE	N-CA-C	-6.00	97.97	107.15
1	E	95	VAL	N-CA-C	-5.98	99.74	108.11
1	H	140	VAL	N-CA-C	-5.96	99.83	108.17
1	B	35	THR	N-CA-C	-5.88	100.70	110.17
1	I	139	GLN	N-CA-C	5.88	119.50	111.39
1	H	138	SER	N-CA-C	5.86	117.47	111.14
1	A	95	VAL	N-CA-C	-5.71	100.25	108.53
1	I	48	GLY	N-CA-C	-5.66	107.38	115.64
1	G	137	ILE	N-CA-C	-5.63	99.62	108.23
1	C	140	VAL	N-CA-C	-5.62	101.42	108.84
1	B	120	ALA	N-CA-C	-5.61	105.06	111.07
1	I	90	LYS	N-CA-C	5.55	117.79	111.02
1	C	71	ILE	CA-C-N	5.52	126.74	119.84
1	C	71	ILE	C-N-CA	5.52	126.74	119.84
1	I	72	PRO	N-CA-C	5.49	123.77	112.47
1	C	77	LEU	N-CA-C	5.45	117.05	108.55
1	D	13	MET	N-CA-C	-5.45	98.40	107.99
1	D	49	LYS	N-CA-C	-5.45	107.88	114.75
1	C	139	GLN	N-CA-C	5.39	119.14	112.24
1	A	78	PRO	N-CA-C	-5.39	101.77	110.55
1	I	105	ALA	N-CA-C	5.37	115.62	108.38
1	G	140	VAL	N-CA-C	-5.34	101.78	108.84
1	F	133	LYS	N-CA-C	-5.33	106.78	113.28
1	A	137	ILE	N-CA-C	-5.32	98.80	106.88
1	I	35	THR	N-CA-C	-5.29	102.63	110.46
1	B	75	HIS	N-CA-C	5.23	116.24	109.65
1	G	71	ILE	CA-C-N	5.23	126.37	119.84
1	G	71	ILE	C-N-CA	5.23	126.37	119.84
1	D	51	ASP	CA-C-N	5.22	124.84	119.05
1	D	51	ASP	C-N-CA	5.22	124.84	119.05
1	B	124	VAL	N-CA-C	-5.14	105.37	110.62
1	E	35	THR	N-CA-C	-5.07	102.69	110.14
1	H	22	THR	N-CA-C	5.06	116.36	109.18
1	H	49	LYS	N-CA-C	-5.03	107.53	113.97

There are no chirality outliers.

There are no planarity outliers.

## 5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1096	0	1166	53	0
1	B	1092	0	1163	56	0
1	C	1096	0	1166	71	0
1	D	1096	0	1166	68	0
1	E	1113	0	1178	49	0
1	F	1092	0	1163	49	0
1	G	1092	0	1163	58	0
1	H	1092	0	1163	76	0
1	I	1105	0	1172	58	0
2	A	32	0	12	0	0
2	B	32	0	12	0	0
2	C	32	0	12	1	0
2	D	32	0	12	2	0
2	E	32	0	12	4	0
2	F	32	0	12	2	0
2	G	32	0	12	2	0
2	H	32	0	12	1	0
2	I	32	0	12	3	0
3	A	13	0	5	3	0
3	B	13	0	5	3	0
3	C	13	0	5	2	0
3	D	13	0	5	3	0
3	E	13	0	5	1	0
3	F	13	0	5	5	0
3	G	13	0	5	2	0
3	H	13	0	5	0	0
3	I	13	0	5	2	0
4	A	12	0	16	2	0
4	C	6	0	8	1	0
4	F	6	0	8	2	0
4	H	6	0	8	1	0
5	A	8	0	12	0	0
5	B	12	0	18	1	0
5	C	4	0	6	0	0
5	D	8	0	12	1	0
5	F	8	0	12	0	0
5	G	16	0	24	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	H	8	0	12	0	0
5	I	8	0	12	1	0
6	A	14	0	18	3	0
6	B	7	0	9	3	0
6	C	7	0	9	0	0
6	E	7	0	9	2	0
6	F	7	0	9	0	0
6	H	7	0	9	1	0
7	A	60	0	0	5	0
7	B	44	0	0	1	0
7	C	45	0	0	4	0
7	D	62	0	0	6	0
7	E	59	0	0	4	0
7	F	42	0	0	2	0
7	G	49	0	0	4	0
7	H	32	0	0	0	0
7	I	34	0	0	2	0
All	All	10857	0	10864	466	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 22.

All (466) 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:150:SER:HB3	3:B:159:FLC:HA1	1.43	0.97
1:B:145:LYS:HZ3	1:B:150:SER:HB2	1.31	0.95
1:G:154:ARG:HD2	1:G:155:ARG:H	1.32	0.93
1:A:141:ARG:HH22	4:A:160:GOL:H32	1.33	0.92
1:C:77:LEU:HD11	1:C:107:THR:HG22	1.52	0.90
1:G:25:THR:HG22	1:G:146:ALA:HB3	1.53	0.90
1:F:30:ALA:HA	1:F:139:GLN:O	1.74	0.86
1:H:19:LYS:HB3	1:H:106:GLU:HB3	1.56	0.86
1:D:22:THR:HG23	1:D:24:ARG:HE	1.38	0.85
1:E:12:ARG:HD2	7:E:241:HOH:O	1.77	0.82
1:I:154:ARG:NH1	1:I:154:ARG:HB3	1.94	0.82
1:C:14:VAL:HG21	2:G:158:GTP:H4'	1.61	0.81
1:C:10:ARG:NH1	1:H:85:ARG:HB2	1.96	0.80
1:C:47:VAL:HG11	1:C:130:ALA:HB3	1.61	0.80
1:A:152:GLU:HG2	1:A:154:ARG:HH22	1.46	0.80
1:G:85:ARG:HH21	1:I:10:ARG:NH2	1.81	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:65:LYS:HD3	1:I:13:MET:HE1	1.65	0.76
1:I:154:ARG:HB3	1:I:154:ARG:HH11	1.50	0.76
1:D:24:ARG:HH12	3:D:159:FLC:HA1	1.49	0.76
1:G:58:LEU:HD13	1:H:58:LEU:HD12	1.66	0.75
1:C:19:LYS:O	1:C:106:GLU:HG2	1.87	0.74
1:F:90:LYS:N	4:F:160:GOL:H32	2.02	0.74
1:B:145:LYS:NZ	1:B:150:SER:HB2	2.04	0.73
1:C:19:LYS:HB2	1:C:106:GLU:HB3	1.72	0.72
1:E:21:GLU:HG2	1:E:104:LYS:HZ2	1.54	0.72
1:B:141:ARG:HB2	1:B:155:ARG:NH2	2.04	0.71
1:D:29:GLU:OE2	1:D:143:LEU:HD21	1.91	0.70
1:D:75:HIS:HB2	1:D:77:LEU:HD21	1.72	0.70
1:B:23:PHE:HB2	1:I:44:LYS:HE3	1.73	0.70
1:C:15:ASP:HA	1:H:80:THR:O	1.91	0.70
1:C:10:ARG:NH1	1:H:85:ARG:NE	2.39	0.70
1:C:11:PRO:HA	1:G:49:LYS:O	1.93	0.69
1:E:123:THR:O	1:E:127:MET:HG2	1.93	0.68
1:F:31:PHE:CE2	1:F:96:ARG:HG3	2.29	0.68
1:D:149:LYS:HA	7:D:418:HOH:O	1.94	0.68
1:E:24:ARG:NH1	3:E:159:FLC:HG2	2.09	0.68
1:H:19:LYS:HD2	1:H:106:GLU:O	1.94	0.68
1:E:77:LEU:HD21	1:E:107:THR:HG23	1.76	0.67
1:D:11:PRO:HA	1:F:49:LYS:O	1.94	0.67
1:C:12:ARG:O	1:C:12:ARG:HG2	1.94	0.67
1:G:87:GLU:HG3	1:G:96:ARG:HB3	1.76	0.67
1:C:19:LYS:HE2	1:C:149:LYS:NZ	2.09	0.66
1:H:133:LYS:HE2	1:I:145:LYS:HE3	1.75	0.66
1:G:65:LYS:HD3	1:I:13:MET:CE	2.25	0.66
1:B:145:LYS:HZ2	1:E:133:LYS:HE2	1.59	0.66
1:H:71:ILE:HG12	1:H:111:MET:HE2	1.75	0.66
1:A:92:GLU:HG2	7:A:279:HOH:O	1.96	0.66
1:F:10:ARG:HG2	7:F:320:HOH:O	1.95	0.66
1:E:22:THR:HG23	1:E:24:ARG:HE	1.61	0.66
1:F:142:LEU:O	1:F:155:ARG:NH1	2.30	0.65
1:G:18:GLU:HB2	7:G:425:HOH:O	1.97	0.65
1:A:30:ALA:HA	1:A:139:GLN:O	1.96	0.65
1:H:30:ALA:HA	1:H:139:GLN:O	1.97	0.65
1:A:51:ASP:OD1	1:A:54:VAL:HG23	1.96	0.65
1:B:151:GLY:HA2	7:B:354:HOH:O	1.95	0.65
1:E:141:ARG:HD2	1:E:155:ARG:NE	2.11	0.65
1:I:37:GLU:CD	1:I:37:GLU:H	2.04	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:54:VAL:HA	4:H:160:GOL:H12	1.79	0.64
1:D:49:LYS:HD3	1:D:127:MET:HG2	1.80	0.64
1:C:145:LYS:HD2	3:C:159:FLC:OG2	1.99	0.63
1:B:11:PRO:HA	1:E:49:LYS:O	1.97	0.63
1:D:78:PRO:HB3	5:D:161:EDO:O2	1.97	0.63
1:A:54:VAL:HG22	6:A:165:PEG:H31	1.81	0.63
1:C:27:THR:O	1:C:142:LEU:HD12	1.98	0.63
1:G:154:ARG:HD2	1:G:155:ARG:N	2.10	0.63
1:B:14:VAL:HG21	2:E:158:GTP:H5'	1.79	0.62
1:B:76:PRO:O	1:B:77:LEU:HD23	2.00	0.62
1:D:38:ALA:CB	1:D:135:LEU:HD21	2.29	0.62
1:H:133:LYS:HE2	1:I:145:LYS:CE	2.29	0.62
1:E:87:GLU:OE1	1:E:96:ARG:HD3	2.00	0.62
1:F:23:PHE:CD1	1:F:23:PHE:C	2.76	0.62
1:G:58:LEU:HD13	1:H:58:LEU:CD1	2.30	0.62
1:D:24:ARG:NH1	3:D:159:FLC:HA1	2.14	0.62
1:D:34:LEU:HD11	1:D:95:VAL:HG23	1.82	0.62
1:H:71:ILE:HD12	1:H:71:ILE:N	2.15	0.62
1:H:39:LEU:O	1:H:43:GLU:HG3	2.00	0.61
1:H:70:LEU:O	1:H:72:PRO:HD3	2.00	0.61
1:C:120:ALA:O	1:C:124:VAL:HG23	2.00	0.61
1:D:39:LEU:HG	1:D:43:GLU:OE2	2.00	0.61
1:A:83:GLU:OE2	1:E:12:ARG:HB2	1.99	0.61
1:A:141:ARG:NH2	4:A:160:GOL:H32	2.12	0.61
1:D:77:LEU:HD11	1:D:107:THR:HG22	1.82	0.61
1:G:23:PHE:CD1	1:I:17:THR:HG21	2.36	0.61
1:C:85:ARG:HG2	1:D:10:ARG:CZ	2.31	0.61
1:G:29:GLU:HA	1:G:97:ILE:O	2.01	0.61
1:F:71:ILE:HB	1:F:74:CYS:HB2	1.82	0.60
1:G:23:PHE:CE1	1:I:17:THR:HG21	2.35	0.60
1:C:10:ARG:HH12	1:H:85:ARG:HB2	1.66	0.60
1:C:20:PRO:O	1:C:22:THR:HG23	2.00	0.60
1:I:31:PHE:CE2	1:I:96:ARG:HG3	2.36	0.60
1:G:25:THR:CG2	1:G:146:ALA:HB3	2.31	0.60
1:D:140:VAL:HB	1:F:137:ILE:HB	1.83	0.60
1:D:26:ALA:HB3	1:D:109:VAL:HG23	1.84	0.60
1:A:22:THR:O	1:A:104:LYS:HA	2.02	0.59
1:G:87:GLU:OE1	1:G:96:ARG:HG2	2.03	0.59
1:H:32:VAL:HB	1:H:95:VAL:HB	1.83	0.59
1:C:10:ARG:NH1	1:H:85:ARG:HE	2.01	0.59
1:H:25:THR:HG22	1:H:146:ALA:HB3	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:138:SER:HA	7:G:229:HOH:O	2.03	0.59
1:A:39:LEU:HD22	1:A:93:LYS:HG2	1.84	0.58
1:C:19:LYS:HE2	1:C:149:LYS:HE3	1.85	0.58
1:H:33:GLU:HG2	1:H:138:SER:HB3	1.85	0.58
1:C:17:THR:HG21	1:H:23:PHE:CE1	2.38	0.58
1:D:18:GLU:CD	1:D:18:GLU:H	2.11	0.58
1:G:12:ARG:O	1:G:73:LEU:HD13	2.04	0.58
1:G:85:ARG:HH21	1:I:10:ARG:CZ	2.15	0.58
1:C:13:MET:HB3	1:H:82:VAL:HB	1.86	0.58
1:A:47:VAL:HG11	1:A:130:ALA:HB3	1.84	0.58
1:D:137:ILE:HB	1:F:140:VAL:HB	1.85	0.58
1:H:31:PHE:HB2	1:H:138:SER:OG	2.03	0.58
1:H:77:LEU:O	6:H:163:PEG:H22	2.04	0.57
1:C:19:LYS:HE2	1:C:149:LYS:CE	2.34	0.57
1:G:71:ILE:HB	1:G:74:CYS:HB2	1.85	0.57
1:A:154:ARG:NH1	1:A:154:ARG:HB2	2.20	0.57
1:D:65:LYS:HD3	1:H:13:MET:HE2	1.87	0.57
1:G:144:HIS:CG	1:G:145:LYS:N	2.72	0.57
1:B:150:SER:CB	3:B:159:FLC:HA1	2.26	0.57
1:E:23:PHE:CD1	1:E:104:LYS:HG3	2.40	0.57
1:I:10:ARG:HE	1:I:12:ARG:NH1	2.03	0.57
1:I:53:LEU:HD22	1:I:86:VAL:HG12	1.86	0.57
1:D:27:THR:O	1:D:142:LEU:HD12	2.05	0.57
1:E:77:LEU:H	6:E:160:PEG:H11	1.69	0.57
1:A:145:LYS:HD2	3:A:159:FLC:OG2	2.04	0.57
1:D:85:ARG:CD	1:H:10:ARG:HH12	2.18	0.56
1:D:149:LYS:HB2	3:D:159:FLC:OG2	2.05	0.56
1:I:77:LEU:HD21	1:I:107:THR:HG22	1.88	0.56
1:B:133:LYS:HE3	1:E:145:LYS:HZ1	1.70	0.56
1:C:17:THR:OG1	1:H:102:LYS:HE3	2.06	0.56
1:D:145:LYS:HG2	1:D:153:TRP:HB3	1.87	0.56
1:A:30:ALA:HB2	1:A:117:CYS:HB3	1.86	0.56
1:A:141:ARG:HH11	1:A:155:ARG:HE	1.54	0.56
1:H:42:LEU:HD21	1:H:88:LEU:HD22	1.87	0.56
1:F:23:PHE:C	1:F:23:PHE:HD1	2.14	0.56
1:D:133:LYS:NZ	3:F:159:FLC:HG2	2.21	0.56
1:F:13:MET:HE2	1:F:75:HIS:HA	1.88	0.56
1:H:42:LEU:HD23	1:H:42:LEU:C	2.31	0.56
1:H:67:THR:OG1	1:H:112:GLU:HA	2.05	0.56
1:D:21:GLU:HG3	1:D:106:GLU:OE2	2.06	0.55
1:A:55:VAL:HG21	1:A:127:MET:HE2	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:68:ALA:CB	6:B:163:PEG:H11	2.36	0.55
1:E:144:HIS:HE1	1:E:152:GLU:HG3	1.71	0.55
1:H:154:ARG:HG3	1:H:154:ARG:HH11	1.71	0.55
1:B:137:ILE:HB	1:E:140:VAL:HB	1.87	0.55
1:I:24:ARG:HH12	3:I:159:FLC:HA2	1.72	0.55
1:E:56:ALA:HA	1:E:123:THR:HG21	1.88	0.55
1:G:83:GLU:O	1:G:99:ALA:HA	2.07	0.55
1:B:37:GLU:CD	1:B:37:GLU:H	2.15	0.55
1:B:145:LYS:NZ	1:B:150:SER:CB	2.69	0.55
1:D:31:PHE:HD1	1:D:139:GLN:HB2	1.72	0.55
1:B:40:SER:O	1:B:44:LYS:HD3	2.07	0.55
1:D:49:LYS:HB3	7:D:416:HOH:O	2.07	0.54
1:A:24:ARG:NH1	3:A:159:FLC:HG1	2.22	0.54
1:B:127:MET:SD	1:E:73:LEU:HD12	2.47	0.54
1:F:149:LYS:HB3	3:F:159:FLC:OHB	2.06	0.54
1:I:27:THR:HA	1:I:99:ALA:O	2.07	0.54
1:C:29:GLU:HA	1:C:97:ILE:O	2.07	0.54
1:E:22:THR:HG21	1:E:148:GLY:HA2	1.89	0.54
1:B:145:LYS:NZ	1:E:133:LYS:HE2	2.22	0.54
1:I:24:ARG:HB2	1:I:103:THR:HG22	1.89	0.54
1:I:155:ARG:HG2	1:I:156:GLU:H	1.73	0.54
1:D:25:THR:HG22	1:D:146:ALA:HB3	1.89	0.54
1:F:34:LEU:HA	1:F:135:LEU:HD22	1.90	0.54
1:H:14:VAL:HG11	2:I:158:GTP:O3'	2.08	0.54
1:B:38:ALA:HB2	1:B:135:LEU:HD21	1.90	0.53
1:B:19:LYS:HD3	1:B:106:GLU:HB3	1.90	0.53
1:B:55:VAL:HG21	1:B:127:MET:HE2	1.89	0.53
1:F:90:LYS:H	4:F:160:GOL:H32	1.73	0.53
1:A:50:GLY:O	1:A:52:PRO:HD3	2.07	0.53
1:B:49:LYS:O	1:E:11:PRO:HA	2.08	0.53
1:C:13:MET:SD	1:H:82:VAL:HG23	2.48	0.53
1:C:49:LYS:HB3	1:G:73:LEU:CD1	2.38	0.53
1:E:38:ALA:HB2	1:E:135:LEU:HD21	1.91	0.53
1:E:51:ASP:OD2	1:E:54:VAL:HG23	2.09	0.53
1:I:42:LEU:HD13	1:I:88:LEU:HD22	1.91	0.53
1:C:40:SER:O	1:C:44:LYS:HG3	2.09	0.53
1:C:91:ALA:HB3	7:C:334:HOH:O	2.09	0.53
1:D:133:LYS:NZ	1:F:145:LYS:HE3	2.24	0.53
1:E:92:GLU:HG3	7:E:304:HOH:O	2.08	0.53
1:A:141:ARG:HH11	1:A:155:ARG:NE	2.05	0.52
1:F:85:ARG:NH2	1:F:96:ARG:HH11	2.05	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:158:GTP:H5'	7:I:367:HOH:O	2.09	0.52
1:I:155:ARG:HG2	1:I:156:GLU:N	2.23	0.52
1:B:71:ILE:HB	1:B:74:CYS:HB2	1.91	0.52
1:H:137:ILE:CG1	1:I:140:VAL:HB	2.38	0.52
1:C:129:LYS:HE3	2:C:158:GTP:O2A	2.09	0.52
1:D:65:LYS:HD3	1:H:13:MET:CE	2.40	0.52
1:G:144:HIS:HA	1:G:153:TRP:O	2.09	0.52
1:H:77:LEU:HD21	1:H:107:THR:HG22	1.91	0.52
1:C:92:GLU:HG3	7:C:334:HOH:O	2.10	0.52
1:A:25:THR:HG22	1:A:146:ALA:HB3	1.90	0.52
1:B:16:VAL:O	1:B:19:LYS:HG3	2.09	0.52
1:F:25:THR:CG2	1:F:146:ALA:HB3	2.39	0.52
1:G:145:LYS:HE3	3:G:159:FLC:OG2	2.10	0.52
1:B:123:THR:O	1:B:127:MET:HG2	2.10	0.52
1:G:87:GLU:CG	1:G:96:ARG:HB3	2.39	0.51
1:H:97:ILE:HD13	1:H:120:ALA:CB	2.40	0.51
1:I:42:LEU:HD22	5:I:161:EDO:H11	1.93	0.51
1:D:39:LEU:O	1:D:43:GLU:HG3	2.10	0.51
1:E:141:ARG:HD2	1:E:155:ARG:CZ	2.41	0.51
1:H:114:MET:HE1	1:H:141:ARG:HA	1.91	0.51
1:D:80:THR:O	1:H:15:ASP:HA	2.11	0.51
1:B:53:LEU:HD22	1:B:86:VAL:HG12	1.92	0.51
1:B:141:ARG:HB3	1:E:136:VAL:HG22	1.92	0.51
1:I:23:PHE:CE2	1:I:104:LYS:HE2	2.46	0.51
1:E:126:ASP:OD1	2:E:158:GTP:O1G	2.29	0.51
1:G:65:LYS:CD	1:I:13:MET:HE1	2.39	0.51
1:C:138:SER:CA	7:G:229:HOH:O	2.59	0.51
1:A:43:GLU:OE2	1:A:90:LYS:HE3	2.11	0.51
1:F:76:PRO:O	1:F:77:LEU:HD23	2.10	0.51
1:G:138:SER:HA	7:G:229:HOH:O	2.11	0.51
1:H:55:VAL:HG21	1:H:127:MET:HE2	1.93	0.51
1:C:51:ASP:OD2	1:C:54:VAL:HG23	2.11	0.50
1:G:53:LEU:HD22	1:G:86:VAL:HG12	1.92	0.50
1:D:51:ASP:CG	1:D:54:VAL:HG23	2.36	0.50
1:A:36:GLU:OE1	1:A:93:LYS:HE2	2.11	0.50
1:C:56:ALA:HA	1:C:123:THR:HG21	1.92	0.50
1:I:23:PHE:N	1:I:23:PHE:CD2	2.77	0.50
1:A:23:PHE:HD1	1:E:17:THR:HG22	1.77	0.50
1:D:133:LYS:HZ3	3:F:159:FLC:HG2	1.75	0.50
1:A:29:GLU:HB3	1:A:143:LEU:HD11	1.94	0.50
1:A:62:LEU:HD21	1:E:72:PRO:HA	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:42:LEU:CD2	1:H:88:LEU:HD22	2.41	0.50
1:F:13:MET:SD	1:I:82:VAL:HG23	2.51	0.50
1:E:77:LEU:HD21	1:E:107:THR:CG2	2.41	0.50
1:A:29:GLU:HA	1:A:97:ILE:O	2.12	0.49
1:B:106:GLU:N	1:B:106:GLU:CD	2.69	0.49
1:C:83:GLU:O	1:C:99:ALA:HA	2.12	0.49
1:H:145:LYS:HE3	1:I:133:LYS:HE3	1.94	0.49
1:F:47:VAL:O	2:F:158:GTP:H1'	2.12	0.49
1:A:85:ARG:HD3	1:A:87:GLU:OE2	2.12	0.49
1:D:71:ILE:HB	1:D:74:CYS:HB2	1.94	0.49
1:H:71:ILE:HG12	1:H:111:MET:CE	2.39	0.49
1:G:47:VAL:HG13	2:G:158:GTP:N3	2.27	0.49
1:C:30:ALA:CB	1:C:140:VAL:HG22	2.42	0.49
1:D:25:THR:CG2	1:D:146:ALA:HB3	2.42	0.49
1:E:144:HIS:HA	1:E:153:TRP:O	2.13	0.49
1:B:37:GLU:CD	1:B:37:GLU:N	2.71	0.49
1:C:29:GLU:O	1:C:140:VAL:HA	2.12	0.49
1:G:36:GLU:OE2	1:G:93:LYS:HD3	2.13	0.49
1:G:85:ARG:NH2	1:I:10:ARG:NH2	2.56	0.49
1:G:144:HIS:CG	1:G:145:LYS:H	2.31	0.49
1:G:79:LEU:HD22	1:G:101:VAL:CG1	2.43	0.49
1:H:133:LYS:CE	1:I:145:LYS:HE3	2.42	0.48
1:H:138:SER:O	1:H:139:GLN:HG2	2.13	0.48
1:G:26:ALA:O	1:G:100:THR:HA	2.12	0.48
1:A:76:PRO:HB3	6:A:164:PEG:H41	1.95	0.48
1:C:50:GLY:O	1:C:52:PRO:HD3	2.13	0.48
1:D:42:LEU:HD13	1:D:88:LEU:HD22	1.94	0.48
1:D:133:LYS:HZ3	1:F:145:LYS:HE3	1.78	0.48
1:F:34:LEU:HA	1:F:135:LEU:CD2	2.42	0.48
1:G:62:LEU:HD21	1:I:72:PRO:HA	1.95	0.48
2:E:158:GTP:N7	7:E:442:HOH:O	2.35	0.48
1:C:19:LYS:CB	1:C:106:GLU:HB3	2.41	0.48
1:C:110:GLU:OE2	1:G:133:LYS:HE2	2.13	0.48
1:H:73:LEU:HD12	1:I:127:MET:SD	2.54	0.48
1:I:10:ARG:NE	1:I:12:ARG:NH1	2.62	0.48
1:D:75:HIS:CB	1:D:77:LEU:HD21	2.41	0.48
1:F:23:PHE:HD1	1:F:24:ARG:N	2.12	0.48
1:I:106:GLU:N	1:I:106:GLU:CD	2.71	0.48
1:C:141:ARG:HD2	1:C:155:ARG:CZ	2.44	0.48
1:E:79:LEU:HD21	1:E:112:GLU:HG2	1.96	0.48
1:G:47:VAL:HG21	1:G:128:LEU:HA	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:20:PRO:O	1:G:22:THR:HG22	2.13	0.48
1:B:149:LYS:HE3	3:B:159:FLC:OB2	2.14	0.47
1:C:76:PRO:HG2	1:H:79:LEU:H	1.79	0.47
1:D:106:GLU:N	1:D:106:GLU:CD	2.72	0.47
1:C:139:GLN:O	1:C:141:ARG:HG2	2.14	0.47
1:A:24:ARG:HB2	1:A:103:THR:HG22	1.96	0.47
1:A:83:GLU:OE2	1:E:12:ARG:NE	2.47	0.47
1:C:62:LEU:HD21	1:D:72:PRO:HA	1.94	0.47
1:D:107:THR:CG2	7:D:298:HOH:O	2.63	0.47
1:G:86:VAL:HG22	1:G:97:ILE:HG12	1.96	0.47
1:D:36:GLU:HB2	7:D:625:HOH:O	2.12	0.47
1:A:25:THR:CG2	1:A:146:ALA:HB3	2.45	0.47
1:A:33:GLU:OE1	1:A:94:ARG:HD2	2.14	0.47
1:B:88:LEU:HD22	1:B:89:LEU:N	2.30	0.47
1:B:106:GLU:CD	1:B:106:GLU:H	2.23	0.47
1:C:49:LYS:O	1:G:11:PRO:HA	2.15	0.47
1:C:71:ILE:HG12	1:C:111:MET:HE2	1.97	0.47
1:D:18:GLU:OE2	1:D:19:LYS:HG3	2.15	0.47
1:H:77:LEU:HD11	1:H:107:THR:CG2	2.44	0.47
1:D:144:HIS:ND1	1:D:145:LYS:N	2.62	0.47
1:G:77:LEU:C	1:G:77:LEU:HD12	2.39	0.47
1:D:22:THR:CG2	1:D:24:ARG:HE	2.19	0.47
1:D:31:PHE:CD1	1:D:139:GLN:HB2	2.50	0.47
1:H:19:LYS:HG2	1:H:20:PRO:HD2	1.96	0.47
1:C:11:PRO:HD2	1:H:57:GLN:OE1	2.15	0.47
1:C:47:VAL:CG1	1:C:130:ALA:HB3	2.39	0.47
1:F:148:GLY:HA3	3:F:159:FLC:OB1	2.15	0.47
1:H:85:ARG:HG2	1:H:85:ARG:HH21	1.79	0.46
1:F:29:GLU:OE2	1:F:141:ARG:NE	2.41	0.46
1:E:76:PRO:HB3	6:E:160:PEG:H41	1.96	0.46
1:H:14:VAL:HG21	2:I:158:GTP:H4'	1.97	0.46
4:C:160:GOL:H11	7:C:329:HOH:O	2.16	0.46
1:F:37:GLU:CD	1:F:37:GLU:H	2.23	0.46
1:G:47:VAL:HG11	1:G:130:ALA:HB3	1.96	0.46
1:H:79:LEU:HD21	1:H:112:GLU:HG2	1.97	0.46
1:C:13:MET:HE1	1:H:65:LYS:HD3	1.97	0.46
1:D:138:SER:HA	1:F:138:SER:O	2.15	0.46
1:A:38:ALA:CB	1:A:135:LEU:HD21	2.45	0.46
1:F:70:LEU:O	1:F:72:PRO:HD3	2.16	0.46
1:A:91:ALA:HB3	1:A:92:GLU:OE2	2.16	0.46
1:D:85:ARG:HD3	1:H:10:ARG:HH12	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:63:ALA:HB2	1:A:119:VAL:HG11	1.98	0.46
1:H:29:GLU:HB3	1:H:143:LEU:HD11	1.97	0.46
1:H:36:GLU:HA	1:H:36:GLU:OE2	2.15	0.45
7:D:297:HOH:O	1:F:11:PRO:HD3	2.15	0.45
1:I:155:ARG:NH1	1:I:155:ARG:HG3	2.31	0.45
1:B:68:ALA:H	6:B:163:PEG:H11	1.81	0.45
1:D:97:ILE:HG21	1:D:120:ALA:HB3	1.97	0.45
1:H:127:MET:SD	1:I:73:LEU:HD12	2.57	0.45
1:A:35:THR:HG22	7:A:616:HOH:O	2.16	0.45
1:A:71:ILE:HB	1:A:74:CYS:HB2	1.97	0.45
1:I:85:ARG:O	1:I:97:ILE:HA	2.17	0.45
1:C:141:ARG:HD2	1:C:155:ARG:NE	2.31	0.45
1:D:27:THR:HA	1:D:99:ALA:O	2.17	0.45
1:E:144:HIS:ND1	1:E:153:TRP:O	2.34	0.45
1:F:80:THR:HG23	1:F:103:THR:HA	1.99	0.45
1:G:54:VAL:HG11	1:H:54:VAL:HG11	1.98	0.45
1:A:55:VAL:CG2	1:A:127:MET:HE2	2.47	0.44
1:A:145:LYS:HG2	1:A:146:ALA:N	2.32	0.44
1:B:16:VAL:HB	1:B:19:LYS:CD	2.47	0.44
1:D:49:LYS:HG2	1:F:73:LEU:CD1	2.46	0.44
1:F:12:ARG:HG3	1:F:12:ARG:HH11	1.82	0.44
1:G:31:PHE:CE2	1:G:96:ARG:HD2	2.52	0.44
1:H:155:ARG:HH22	1:I:136:VAL:CG2	2.30	0.44
1:B:66:LYS:HD3	5:B:162:EDO:H22	1.99	0.44
1:G:44:LYS:HB3	1:G:44:LYS:HE2	1.78	0.44
1:G:142:LEU:O	1:G:155:ARG:HD3	2.17	0.44
1:C:23:PHE:CD1	1:D:17:THR:HG21	2.53	0.44
1:I:10:ARG:NH2	1:I:12:ARG:HH12	2.16	0.44
1:E:21:GLU:HG2	1:E:104:LYS:NZ	2.26	0.44
1:F:10:ARG:N	7:F:320:HOH:O	2.50	0.44
1:H:25:THR:CG2	1:H:146:ALA:HB3	2.48	0.44
1:C:25:THR:CG2	1:C:146:ALA:HB3	2.48	0.44
1:C:58:LEU:HD12	1:F:58:LEU:HD12	1.99	0.44
1:E:23:PHE:HD1	1:E:104:LYS:HG3	1.81	0.44
1:C:103:THR:OG1	1:C:104:LYS:N	2.51	0.44
1:G:108:GLY:HA3	1:G:110:GLU:OE1	2.17	0.44
1:I:24:ARG:HB2	1:I:103:THR:CG2	2.46	0.44
1:A:123:THR:O	1:A:127:MET:HG2	2.17	0.44
1:B:85:ARG:O	1:B:97:ILE:HA	2.18	0.44
1:F:13:MET:HE1	1:F:76:PRO:HD3	2.00	0.44
1:B:68:ALA:HB3	6:B:163:PEG:H11	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:97:ILE:HD13	1:H:120:ALA:HB3	1.98	0.44
1:C:149:LYS:HB2	3:C:159:FLC:OB1	2.17	0.44
1:F:126:ASP:OD1	2:F:158:GTP:O1G	2.35	0.44
1:G:132:SER:O	1:G:135:LEU:HG	2.18	0.44
1:H:85:ARG:HG2	1:H:85:ARG:NH2	2.33	0.44
1:I:42:LEU:HD12	1:I:88:LEU:HD13	1.99	0.44
1:F:51:ASP:CG	1:F:54:VAL:HG23	2.43	0.43
1:H:154:ARG:HG3	1:H:154:ARG:NH1	2.33	0.43
1:A:32:VAL:HB	1:A:95:VAL:HB	2.00	0.43
1:F:17:THR:HG23	1:I:104:LYS:HG3	2.00	0.43
1:G:27:THR:HA	1:G:99:ALA:O	2.18	0.43
1:B:107:THR:CG2	1:B:108:GLY:N	2.79	0.43
1:C:144:HIS:CG	1:C:145:LYS:N	2.86	0.43
1:H:77:LEU:HD11	1:H:107:THR:HG23	2.00	0.43
1:I:154:ARG:HH11	1:I:154:ARG:CB	2.23	0.43
1:A:154:ARG:HB2	1:A:154:ARG:CZ	2.49	0.43
1:E:36:GLU:OE2	1:E:93:LYS:NZ	2.44	0.43
1:H:80:THR:HG23	1:H:103:THR:HA	2.00	0.43
1:H:133:LYS:HD3	1:I:145:LYS:HD3	2.00	0.43
1:I:71:ILE:HB	1:I:74:CYS:HB2	2.00	0.43
1:B:38:ALA:CB	1:B:135:LEU:HD21	2.48	0.43
1:B:145:LYS:HG2	1:B:146:ALA:N	2.33	0.43
1:D:38:ALA:HB2	1:D:135:LEU:HD21	2.00	0.43
1:E:38:ALA:CB	1:E:135:LEU:HD21	2.48	0.43
1:F:24:ARG:NH1	3:F:159:FLC:OB1	2.52	0.43
1:F:129:LYS:HA	1:F:132:SER:O	2.19	0.43
1:F:129:LYS:O	1:F:133:LYS:HE3	2.19	0.43
1:G:39:LEU:HD22	1:G:93:LYS:HG2	2.01	0.43
1:C:92:GLU:N	7:C:334:HOH:O	2.50	0.43
1:E:56:ALA:HA	1:E:123:THR:CG2	2.49	0.43
1:B:129:LYS:HA	1:B:132:SER:O	2.18	0.43
1:E:145:LYS:NZ	1:E:150:SER:OG	2.40	0.43
1:D:79:LEU:HD22	1:D:101:VAL:CG1	2.49	0.43
1:F:144:HIS:CG	1:F:145:LYS:N	2.87	0.43
1:B:133:LYS:HE3	1:E:145:LYS:HE2	2.01	0.42
1:D:149:LYS:HG3	7:D:418:HOH:O	2.19	0.42
1:E:35:THR:H	1:E:38:ALA:HB3	1.84	0.42
1:E:134:GLY:O	1:E:135:LEU:C	2.61	0.42
1:I:77:LEU:HD11	1:I:107:THR:CG2	2.49	0.42
1:G:106:GLU:OE1	1:G:106:GLU:N	2.52	0.42
1:A:132:SER:O	1:A:135:LEU:HG	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:154:ARG:NH1	7:I:552:HOH:O	2.53	0.42
1:A:52:PRO:HG2	1:A:128:LEU:HD21	2.01	0.42
1:A:138:SER:O	1:A:139:GLN:HG2	2.20	0.42
3:A:159:FLC:HA2	7:A:455:HOH:O	2.19	0.42
2:D:158:GTP:O1B	1:F:14:VAL:CG1	2.67	0.42
1:G:85:ARG:HH21	1:I:10:ARG:HH22	1.63	0.42
1:H:22:THR:O	1:H:104:LYS:HA	2.19	0.42
1:A:19:LYS:O	1:A:106:GLU:HG2	2.19	0.42
1:B:26:ALA:HB3	1:B:109:VAL:HG23	2.00	0.42
1:D:129:LYS:HE3	2:D:158:GTP:O2A	2.20	0.42
1:E:94:ARG:NH2	7:E:503:HOH:O	2.52	0.42
1:B:52:PRO:HB3	1:B:127:MET:HB2	2.01	0.42
1:C:58:LEU:HD12	1:F:58:LEU:CD1	2.49	0.42
1:E:92:GLU:O	1:E:93:LYS:HB2	2.20	0.42
1:A:55:VAL:HG21	1:A:127:MET:CE	2.49	0.42
1:A:77:LEU:CD2	1:A:78:PRO:HD2	2.50	0.42
1:E:144:HIS:CG	1:E:145:LYS:N	2.88	0.42
1:H:77:LEU:HD21	1:H:107:THR:CG2	2.50	0.42
1:I:96:ARG:NH1	1:I:98:GLU:OE1	2.49	0.42
1:I:155:ARG:HG3	1:I:155:ARG:HH11	1.84	0.42
1:B:29:GLU:HA	1:B:97:ILE:O	2.20	0.42
1:B:88:LEU:CD2	1:B:89:LEU:N	2.83	0.42
1:C:87:GLU:O	1:C:95:VAL:HG13	2.19	0.42
1:D:26:ALA:O	1:D:100:THR:HA	2.20	0.42
1:I:34:LEU:HA	1:I:135:LEU:CD2	2.50	0.42
1:C:74:CYS:SG	1:C:111:MET:HG3	2.60	0.41
1:G:31:PHE:HA	1:G:95:VAL:O	2.19	0.41
1:I:25:THR:HG22	1:I:146:ALA:HB3	2.02	0.41
1:B:14:VAL:HG21	2:E:158:GTP:C5'	2.47	0.41
1:B:31:PHE:HD1	1:B:139:GLN:HB2	1.85	0.41
1:G:50:GLY:O	1:G:52:PRO:HD3	2.20	0.41
1:A:12:ARG:NH1	7:A:373:HOH:O	2.53	0.41
1:E:16:VAL:HB	1:E:19:LYS:HD2	2.02	0.41
1:G:145:LYS:HG2	1:G:146:ALA:N	2.35	0.41
1:I:106:GLU:CD	1:I:106:GLU:H	2.28	0.41
1:A:49:LYS:HB2	7:A:211:HOH:O	2.21	0.41
1:B:51:ASP:CG	1:B:54:VAL:HG23	2.45	0.41
1:C:30:ALA:HB2	1:C:140:VAL:HG22	2.03	0.41
1:D:77:LEU:CD1	1:D:107:THR:HG22	2.50	0.41
1:D:132:SER:C	1:D:134:GLY:H	2.27	0.41
1:F:85:ARG:HD3	1:F:87:GLU:OE2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:25:THR:HA	1:G:101:VAL:O	2.20	0.41
1:D:49:LYS:HD3	1:D:127:MET:HA	2.02	0.41
1:H:141:ARG:HD2	1:H:155:ARG:CZ	2.51	0.41
1:B:29:GLU:HA	1:B:117:CYS:SG	2.61	0.41
1:H:71:ILE:N	1:H:71:ILE:CD1	2.83	0.41
1:C:18:GLU:N	1:C:18:GLU:CD	2.79	0.41
1:G:149:LYS:H	3:G:159:FLC:CBC	2.33	0.41
1:I:80:THR:HG23	1:I:103:THR:HA	2.02	0.41
1:A:77:LEU:HA	1:A:77:LEU:HD23	1.85	0.41
1:B:29:GLU:HG2	1:B:143:LEU:HG	2.01	0.41
1:C:56:ALA:HA	1:C:123:THR:CG2	2.51	0.41
1:C:69:ASP:OD1	1:H:66:LYS:HE3	2.21	0.41
1:C:149:LYS:C	1:C:151:GLY:N	2.79	0.41
1:D:65:LYS:HD2	1:H:76:PRO:HG3	2.03	0.41
1:D:155:ARG:NH2	1:F:136:VAL:CG2	2.84	0.41
1:C:27:THR:HA	1:C:99:ALA:O	2.21	0.41
1:F:29:GLU:OE2	1:F:143:LEU:HD21	2.21	0.41
1:G:10:ARG:HA	1:G:11:PRO:HD3	1.93	0.41
1:A:85:ARG:CD	1:A:87:GLU:OE2	2.69	0.40
1:B:53:LEU:HD22	1:B:86:VAL:CG1	2.50	0.40
1:C:36:GLU:OE2	1:C:93:LYS:NZ	2.55	0.40
1:D:31:PHE:CE2	1:D:96:ARG:HG3	2.56	0.40
1:D:76:PRO:C	1:D:77:LEU:HD23	2.46	0.40
1:H:19:LYS:O	1:H:106:GLU:HG2	2.22	0.40
1:B:51:ASP:O	1:B:55:VAL:HG23	2.22	0.40
1:C:10:ARG:HH11	1:H:85:ARG:NE	2.18	0.40
1:D:103:THR:OG1	1:D:104:LYS:N	2.54	0.40
1:F:14:VAL:O	1:F:14:VAL:HG13	2.21	0.40
1:I:145:LYS:HE2	3:I:159:FLC:OG2	2.20	0.40
1:B:16:VAL:HB	1:B:19:LYS:HD2	2.03	0.40
1:C:30:ALA:HB1	1:C:140:VAL:HG22	2.02	0.40
1:C:56:ALA:HB1	1:C:120:ALA:O	2.21	0.40
1:A:68:ALA:H	6:A:164:PEG:C1	2.34	0.40
1:D:23:PHE:CD1	1:H:17:THR:HG21	2.57	0.40
1:D:144:HIS:CG	1:D:145:LYS:N	2.90	0.40
1:E:34:LEU:HA	1:E:135:LEU:HD22	2.03	0.40
1:I:47:VAL:O	2:I:158:GTP:H1'	2.22	0.40
1:I:64:ALA:HB2	1:I:116:ALA:HB2	2.04	0.40
1:B:27:THR:HA	1:B:99:ALA:O	2.22	0.40
1:C:19:LYS:HE2	1:C:149:LYS:HZ1	1.85	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	145/157 (92%)	141 (97%)	4 (3%)	0	100	100
1	B	144/157 (92%)	135 (94%)	9 (6%)	0	100	100
1	C	145/157 (92%)	133 (92%)	11 (8%)	1 (1%)	18	34
1	D	145/157 (92%)	136 (94%)	9 (6%)	0	100	100
1	E	147/157 (94%)	136 (92%)	11 (8%)	0	100	100
1	F	144/157 (92%)	135 (94%)	9 (6%)	0	100	100
1	G	144/157 (92%)	135 (94%)	9 (6%)	0	100	100
1	H	144/157 (92%)	136 (94%)	8 (6%)	0	100	100
1	I	146/157 (93%)	141 (97%)	5 (3%)	0	100	100
All	All	1304/1413 (92%)	1228 (94%)	75 (6%)	1 (0%)	48	68

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	150	SER

### 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	114/124 (92%)	109 (96%)	5 (4%)	25	50
1	B	114/124 (92%)	108 (95%)	6 (5%)	20	42
1	C	114/124 (92%)	111 (97%)	3 (3%)	40	68

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	D	114/124 (92%)	108 (95%)	6 (5%)	20	42
1	E	116/124 (94%)	110 (95%)	6 (5%)	21	42
1	F	114/124 (92%)	107 (94%)	7 (6%)	17	35
1	G	114/124 (92%)	107 (94%)	7 (6%)	17	35
1	H	114/124 (92%)	111 (97%)	3 (3%)	40	68
1	I	115/124 (93%)	110 (96%)	5 (4%)	26	51
All	All	1029/1116 (92%)	981 (95%)	48 (5%)	23	47

All (48) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	12	ARG
1	A	58	LEU
1	A	69	ASP
1	A	107	THR
1	A	152	GLU
1	B	12	ARG
1	B	19	LYS
1	B	80	THR
1	B	88	LEU
1	B	96	ARG
1	B	107	THR
1	C	12	ARG
1	C	83	GLU
1	C	107	THR
1	D	12	ARG
1	D	22	THR
1	D	42	LEU
1	D	69	ASP
1	D	77	LEU
1	D	107	THR
1	E	22	THR
1	E	42	LEU
1	E	69	ASP
1	E	85	ARG
1	E	107	THR
1	E	152	GLU
1	F	17	THR
1	F	23	PHE
1	F	39	LEU

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Mol	Chain	Res	Type
1	F	42	LEU
1	F	58	LEU
1	F	74	CYS
1	F	107	THR
1	G	12	ARG
1	G	21	GLU
1	G	22	THR
1	G	58	LEU
1	G	96	ARG
1	G	107	THR
1	G	154	ARG
1	H	58	LEU
1	H	69	ASP
1	H	106	GLU
1	I	10	ARG
1	I	42	LEU
1	I	69	ASP
1	I	90	LYS
1	I	107	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (3) such sidechains are listed below:

Mol	Chain	Res	Type
1	D	139	GLN
1	E	7	GLN
1	F	144	HIS

### 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

48 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$
3	FLC	D	159	-	12,12,12	2.03	4 (33%)	17,17,17	1.33	3 (17%)
5	EDO	B	160	-	3,3,3	0.40	0	2,2,2	0.40	0
3	FLC	F	159	-	12,12,12	1.73	1 (8%)	17,17,17	1.44	3 (17%)
2	GTP	A	158	-	33,34,34	1.56	7 (21%)	50,54,54	1.70	11 (22%)
6	PEG	C	162	-	6,6,6	1.50	1 (16%)	5,5,5	0.42	0
2	GTP	D	158	-	33,34,34	1.46	7 (21%)	50,54,54	1.71	13 (26%)
3	FLC	I	159	-	12,12,12	1.69	2 (16%)	17,17,17	1.46	3 (17%)
5	EDO	D	161	-	3,3,3	0.43	0	2,2,2	0.38	0
5	EDO	H	162	-	3,3,3	0.50	0	2,2,2	0.29	0
5	EDO	G	163	-	3,3,3	0.51	0	2,2,2	0.31	0
5	EDO	C	161	-	3,3,3	0.47	0	2,2,2	0.37	0
6	PEG	H	163	-	6,6,6	1.50	1 (16%)	5,5,5	0.46	0
3	FLC	G	159	-	12,12,12	1.79	2 (16%)	17,17,17	1.37	3 (17%)
5	EDO	I	160	-	3,3,3	0.47	0	2,2,2	0.35	0
3	FLC	A	159	-	12,12,12	1.65	3 (25%)	17,17,17	1.42	3 (17%)
4	GOL	F	160	-	5,5,5	0.64	0	5,5,5	0.49	0
5	EDO	G	161	-	3,3,3	0.51	0	2,2,2	0.29	0
5	EDO	F	161	-	3,3,3	0.44	0	2,2,2	0.39	0
5	EDO	H	161	-	3,3,3	0.49	0	2,2,2	0.33	0
6	PEG	B	163	-	6,6,6	1.57	1 (16%)	5,5,5	0.48	0
5	EDO	G	162	-	3,3,3	0.52	0	2,2,2	0.30	0
6	PEG	F	163	-	6,6,6	1.42	1 (16%)	5,5,5	0.44	0
2	GTP	H	158	-	33,34,34	1.77	9 (27%)	50,54,54	1.69	10 (20%)
5	EDO	A	163	-	3,3,3	0.53	0	2,2,2	0.30	0
6	PEG	E	160	-	6,6,6	1.46	1 (16%)	5,5,5	0.42	0
3	FLC	E	159	-	12,12,12	2.02	3 (25%)	17,17,17	1.38	3 (17%)
2	GTP	B	158	-	33,34,34	1.53	8 (24%)	50,54,54	1.70	12 (24%)
2	GTP	G	158	-	33,34,34	1.99	7 (21%)	50,54,54	1.74	11 (22%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
2	GTP	C	158	-	33,34,34	1.75	9 (27%)	50,54,54	1.72	13 (26%)
6	PEG	A	164	-	6,6,6	1.54	1 (16%)	5,5,5	0.51	0
3	FLC	C	159	-	12,12,12	1.78	3 (25%)	17,17,17	1.56	3 (17%)
4	GOL	A	161	-	5,5,5	0.74	0	5,5,5	0.58	0
4	GOL	C	160	-	5,5,5	0.50	0	5,5,5	0.43	0
5	EDO	B	162	-	3,3,3	0.56	0	2,2,2	0.28	0
4	GOL	H	160	-	5,5,5	0.55	0	5,5,5	0.34	0
4	GOL	A	160	-	5,5,5	0.71	0	5,5,5	0.38	0
6	PEG	A	165	-	6,6,6	1.45	1 (16%)	5,5,5	0.44	0
5	EDO	D	160	-	3,3,3	0.44	0	2,2,2	0.38	0
5	EDO	I	161	-	3,3,3	0.47	0	2,2,2	0.36	0
3	FLC	H	159	-	12,12,12	1.76	1 (8%)	17,17,17	1.30	3 (17%)
2	GTP	F	158	-	33,34,34	1.47	6 (18%)	50,54,54	1.68	12 (24%)
3	FLC	B	159	-	12,12,12	2.21	3 (25%)	17,17,17	1.56	4 (23%)
5	EDO	A	162	-	3,3,3	0.53	0	2,2,2	0.31	0
2	GTP	I	158	-	33,34,34	1.65	9 (27%)	50,54,54	1.69	10 (20%)
5	EDO	G	160	-	3,3,3	0.46	0	2,2,2	0.38	0
5	EDO	B	161	-	3,3,3	0.50	0	2,2,2	0.32	0
5	EDO	F	162	-	3,3,3	0.53	0	2,2,2	0.30	0
2	GTP	E	158	-	33,34,34	1.50	7 (21%)	50,54,54	1.70	11 (22%)

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	FLC	D	159	-	-	5/16/16/16	-
5	EDO	B	160	-	-	0/1/1/1	-
3	FLC	F	159	-	-	5/16/16/16	-
2	GTP	A	158	-	-	2/22/38/38	0/3/3/3
6	PEG	C	162	-	-	3/4/4/4	-
2	GTP	D	158	-	-	2/22/38/38	0/3/3/3
3	FLC	I	159	-	-	8/16/16/16	-
5	EDO	D	161	-	-	1/1/1/1	-
5	EDO	H	162	-	-	1/1/1/1	-
5	EDO	G	163	-	-	0/1/1/1	-
5	EDO	C	161	-	-	0/1/1/1	-
6	PEG	H	163	-	-	2/4/4/4	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	FLC	G	159	-	-	9/16/16/16	-
5	EDO	I	160	-	-	1/1/1/1	-
3	FLC	A	159	-	-	6/16/16/16	-
4	GOL	F	160	-	-	2/4/4/4	-
5	EDO	G	161	-	-	0/1/1/1	-
5	EDO	F	161	-	-	0/1/1/1	-
5	EDO	H	161	-	-	1/1/1/1	-
6	PEG	B	163	-	-	3/4/4/4	-
5	EDO	G	162	-	-	1/1/1/1	-
6	PEG	F	163	-	-	2/4/4/4	-
2	GTP	H	158	-	-	2/22/38/38	0/3/3/3
5	EDO	A	163	-	-	1/1/1/1	-
6	PEG	E	160	-	-	2/4/4/4	-
3	FLC	E	159	-	-	7/16/16/16	-
2	GTP	B	158	-	-	1/22/38/38	0/3/3/3
2	GTP	G	158	-	-	2/22/38/38	0/3/3/3
2	GTP	C	158	-	-	0/22/38/38	0/3/3/3
6	PEG	A	164	-	-	2/4/4/4	-
3	FLC	C	159	-	-	1/16/16/16	-
4	GOL	A	161	-	-	2/4/4/4	-
4	GOL	C	160	-	-	2/4/4/4	-
5	EDO	B	162	-	-	0/1/1/1	-
4	GOL	H	160	-	-	2/4/4/4	-
4	GOL	A	160	-	-	2/4/4/4	-
6	PEG	A	165	-	-	1/4/4/4	-
5	EDO	D	160	-	-	0/1/1/1	-
5	EDO	I	161	-	-	1/1/1/1	-
3	FLC	H	159	-	-	3/16/16/16	-
2	GTP	F	158	-	-	1/22/38/38	0/3/3/3
3	FLC	B	159	-	-	7/16/16/16	-
5	EDO	A	162	-	-	1/1/1/1	-
2	GTP	I	158	-	-	2/22/38/38	0/3/3/3
5	EDO	G	160	-	-	0/1/1/1	-
5	EDO	B	161	-	-	0/1/1/1	-
5	EDO	F	162	-	-	1/1/1/1	-
2	GTP	E	158	-	-	3/22/38/38	0/3/3/3

All (98) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	G	158	GTP	PA-O3A	4.97	1.64	1.59
2	G	158	GTP	PB-O3A	4.74	1.64	1.59
2	G	158	GTP	PB-O3B	4.47	1.64	1.59
3	B	159	FLC	CA-CB	4.11	1.59	1.54
3	E	159	FLC	OG2-CGC	3.99	1.44	1.30
2	H	158	GTP	PA-O3A	3.97	1.63	1.59
3	B	159	FLC	OG2-CGC	3.84	1.43	1.30
3	D	159	FLC	OG2-CGC	3.83	1.43	1.30
3	F	159	FLC	OG2-CGC	3.79	1.43	1.30
3	H	159	FLC	OG2-CGC	3.79	1.43	1.30
3	I	159	FLC	OG2-CGC	3.79	1.43	1.30
2	C	158	GTP	PA-O3A	3.79	1.63	1.59
3	G	159	FLC	OG2-CGC	3.68	1.43	1.30
2	C	158	GTP	PB-O3B	3.64	1.63	1.59
2	I	158	GTP	PA-O3A	3.63	1.63	1.59
3	C	159	FLC	OG2-CGC	3.60	1.42	1.30
6	A	164	PEG	O1-C1	-3.52	1.24	1.42
3	A	159	FLC	OG2-CGC	3.52	1.42	1.30
6	B	163	PEG	O1-C1	-3.48	1.24	1.42
6	H	163	PEG	O1-C1	-3.42	1.24	1.42
2	H	158	GTP	PB-O3A	3.38	1.63	1.59
6	C	162	PEG	O1-C1	-3.35	1.25	1.42
3	B	159	FLC	CG-CB	3.33	1.58	1.54
2	E	158	GTP	C5-N7	-3.30	1.32	1.39
3	E	159	FLC	CB-CBC	3.28	1.56	1.53
6	E	160	PEG	O1-C1	-3.28	1.25	1.42
2	H	158	GTP	PG-O1G	3.25	1.60	1.50
2	C	158	GTP	PG-O1G	3.22	1.60	1.50
6	A	165	PEG	O1-C1	-3.20	1.25	1.42
2	D	158	GTP	PG-O1G	3.20	1.60	1.50
6	F	163	PEG	O1-C1	-3.18	1.25	1.42
2	G	158	GTP	PG-O1G	3.14	1.60	1.50
2	B	158	GTP	PG-O1G	3.14	1.60	1.50
2	A	158	GTP	C5-N7	-3.00	1.33	1.39
3	D	159	FLC	CG-CB	2.89	1.57	1.54
2	F	158	GTP	C5-N7	-2.88	1.33	1.39
3	G	159	FLC	CA-CB	2.88	1.57	1.54
2	C	158	GTP	C1'-N9	2.88	1.55	1.47
2	I	158	GTP	PB-O3A	2.86	1.62	1.59
2	I	158	GTP	PG-O1G	2.85	1.59	1.50
2	F	158	GTP	PG-O1G	2.81	1.59	1.50
2	C	158	GTP	C5-N7	-2.80	1.33	1.39
2	A	158	GTP	PB-O3B	2.80	1.62	1.59

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	158	GTP	C5-N7	-2.79	1.33	1.39
2	C	158	GTP	PB-O3A	2.79	1.62	1.59
2	B	158	GTP	PA-O3A	2.78	1.62	1.59
2	H	158	GTP	O4'-C1'	2.78	1.48	1.42
2	A	158	GTP	PG-O1G	2.77	1.59	1.50
2	H	158	GTP	C5-N7	-2.74	1.33	1.39
2	I	158	GTP	C5-N7	-2.74	1.33	1.39
2	A	158	GTP	C6-N1	2.74	1.44	1.38
3	D	159	FLC	CA-CB	2.72	1.57	1.54
3	E	159	FLC	CA-CB	2.70	1.57	1.54
3	C	159	FLC	CA-CB	2.68	1.57	1.54
2	H	158	GTP	PB-O3B	2.67	1.62	1.59
2	C	158	GTP	O4'-C1'	2.66	1.48	1.42
2	E	158	GTP	PG-O1G	2.65	1.58	1.50
2	I	158	GTP	PB-O3B	2.60	1.62	1.59
2	B	158	GTP	C6-N1	2.59	1.43	1.38
2	G	158	GTP	C6-N1	2.55	1.43	1.38
2	H	158	GTP	C6-N1	2.55	1.43	1.38
3	D	159	FLC	CB-CBC	2.50	1.56	1.53
2	D	158	GTP	C5-N7	-2.48	1.34	1.39
2	G	158	GTP	O4'-C1'	2.44	1.47	1.42
2	F	158	GTP	C6-N1	2.42	1.43	1.38
2	D	158	GTP	C6-N1	2.39	1.43	1.38
2	G	158	GTP	C5-N7	-2.39	1.34	1.39
2	A	158	GTP	C2-N1	2.37	1.43	1.37
2	I	158	GTP	C1'-N9	2.35	1.54	1.47
2	I	158	GTP	C6-N1	2.35	1.43	1.38
2	D	158	GTP	O4'-C1'	2.33	1.47	1.42
2	H	158	GTP	C1'-N9	2.31	1.54	1.47
2	F	158	GTP	O4'-C1'	2.30	1.47	1.42
2	B	158	GTP	C1'-N9	2.27	1.54	1.47
2	I	158	GTP	O4'-C1'	2.25	1.47	1.42
2	E	158	GTP	C2-N1	2.24	1.43	1.37
2	F	158	GTP	C1'-N9	2.23	1.53	1.47
2	D	158	GTP	C2-N1	2.23	1.43	1.37
2	B	158	GTP	C2-N1	2.22	1.43	1.37
2	B	158	GTP	PB-O3B	2.22	1.61	1.59
2	A	158	GTP	O4'-C1'	2.21	1.47	1.42
3	A	159	FLC	CA-CB	2.21	1.56	1.54
2	B	158	GTP	O4'-C1'	2.20	1.47	1.42
2	C	158	GTP	C6-N1	2.20	1.43	1.38
2	F	158	GTP	C2-N1	2.20	1.43	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	H	158	GTP	C2-N1	2.20	1.43	1.37
2	E	158	GTP	C6-N1	2.16	1.42	1.38
2	D	158	GTP	C1'-N9	2.12	1.53	1.47
2	A	158	GTP	C1'-N9	2.12	1.53	1.47
2	C	158	GTP	C2-N1	2.11	1.42	1.37
2	E	158	GTP	O4'-C1'	2.10	1.46	1.42
2	E	158	GTP	C1'-N9	2.08	1.53	1.47
3	I	159	FLC	CA-CB	2.06	1.56	1.54
2	D	158	GTP	PB-O3B	2.06	1.61	1.59
3	C	159	FLC	CB-CBC	2.05	1.55	1.53
2	I	158	GTP	C2-N1	2.04	1.42	1.37
2	E	158	GTP	PA-O3A	2.04	1.61	1.59
3	A	159	FLC	CB-CBC	2.01	1.55	1.53

All (131) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	158	GTP	C2-N3-C4	5.55	121.85	112.30
2	D	158	GTP	C2-N3-C4	5.51	121.79	112.30
2	G	158	GTP	C2-N3-C4	5.45	121.69	112.30
2	I	158	GTP	C2-N3-C4	5.41	121.62	112.30
2	F	158	GTP	C2-N3-C4	5.39	121.58	112.30
2	B	158	GTP	C2-N3-C4	5.38	121.56	112.30
2	A	158	GTP	C2-N3-C4	5.36	121.54	112.30
2	H	158	GTP	C2-N3-C4	5.35	121.51	112.30
2	E	158	GTP	C2-N3-C4	5.23	121.30	112.30
2	I	158	GTP	C5-C4-N3	-4.57	121.11	128.39
2	C	158	GTP	C5-C4-N3	-4.54	121.17	128.39
2	H	158	GTP	C5-C4-N3	-4.44	121.32	128.39
2	G	158	GTP	C5-C4-N3	-4.41	121.37	128.39
2	F	158	GTP	C5-C4-N3	-4.37	121.43	128.39
2	E	158	GTP	C5-C4-N3	-4.35	121.47	128.39
2	B	158	GTP	C5-C4-N3	-4.34	121.48	128.39
2	A	158	GTP	C5-C4-N3	-4.32	121.51	128.39
2	D	158	GTP	C5-C4-N3	-4.25	121.62	128.39
3	F	159	FLC	OB1-CBC-CB	-3.38	115.55	122.09
3	C	159	FLC	OB1-CBC-CB	-3.38	115.55	122.09
3	C	159	FLC	OB2-CBC-CB	3.28	119.43	113.14
2	A	158	GTP	C2-N1-C6	-3.15	119.39	125.11
2	C	158	GTP	C2-N1-C6	-3.10	119.49	125.11
2	I	158	GTP	C2-N1-C6	-3.09	119.50	125.11
2	E	158	GTP	C2-N1-C6	-3.09	119.50	125.11

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	159	FLC	CG-CB-CA	3.08	117.22	109.31
2	G	158	GTP	C2-N1-C6	-3.07	119.54	125.11
3	I	159	FLC	OB1-CBC-CB	-3.06	116.17	122.09
2	F	158	GTP	C2-N1-C6	-3.05	119.57	125.11
3	A	159	FLC	OB1-CBC-CB	-3.05	116.19	122.09
2	D	158	GTP	C2-N1-C6	-3.02	119.64	125.11
2	B	158	GTP	C2-N1-C6	-3.01	119.65	125.11
2	H	158	GTP	C2-N1-C6	-2.99	119.70	125.11
2	G	158	GTP	N9-C4-N3	2.98	131.92	125.95
2	I	158	GTP	N9-C4-N3	2.93	131.81	125.95
3	F	159	FLC	OB2-CBC-CB	2.90	118.70	113.14
2	H	158	GTP	N9-C4-N3	2.89	131.74	125.95
3	A	159	FLC	OB2-CBC-CB	2.89	118.68	113.14
2	A	158	GTP	N9-C4-N3	2.83	131.60	125.95
2	B	158	GTP	N9-C4-N3	2.79	131.54	125.95
2	F	158	GTP	N9-C4-N3	2.79	131.53	125.95
2	E	158	GTP	N9-C4-N3	2.78	131.52	125.95
2	A	158	GTP	O6-C6-C5	-2.76	119.25	126.53
2	I	158	GTP	O2G-PG-O3B	2.75	113.85	104.64
3	E	159	FLC	OB1-CBC-CB	-2.74	116.78	122.09
2	G	158	GTP	O4'-C1'-N9	-2.72	102.19	108.36
2	C	158	GTP	N9-C4-N3	2.72	131.39	125.95
3	E	159	FLC	OB2-CBC-CB	2.72	118.35	113.14
3	I	159	FLC	OB2-CBC-CB	2.70	118.32	113.14
2	F	158	GTP	O6-C6-C5	-2.69	119.42	126.53
2	B	158	GTP	O2G-PG-O3B	2.69	113.67	104.64
2	H	158	GTP	O2G-PG-O3B	2.69	113.65	104.64
2	G	158	GTP	O6-C6-C5	-2.67	119.47	126.53
2	H	158	GTP	O6-C6-C5	-2.64	119.56	126.53
2	C	158	GTP	O4'-C1'-C2'	-2.62	101.00	106.62
2	E	158	GTP	O6-C6-C5	-2.62	119.62	126.53
2	B	158	GTP	O6-C6-C5	-2.61	119.65	126.53
3	D	159	FLC	OB1-CBC-CB	-2.59	117.07	122.09
2	D	158	GTP	O2G-PG-O3B	2.59	113.32	104.64
2	I	158	GTP	O6-C6-C5	-2.58	119.72	126.53
3	B	159	FLC	OA1-CAC-CA	-2.58	115.65	122.95
2	D	158	GTP	N9-C4-N3	2.57	131.08	125.95
3	G	159	FLC	OA1-CAC-CA	-2.56	115.69	122.95
2	D	158	GTP	O2'-C2'-C3'	-2.55	103.63	111.82
2	C	158	GTP	O6-C6-C5	-2.53	119.86	126.53
3	I	159	FLC	OA1-CAC-CA	-2.53	115.80	122.95
3	H	159	FLC	OB1-CBC-CB	-2.51	117.22	122.09

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	G	159	FLC	OB1-CBC-CB	-2.50	117.25	122.09
2	G	158	GTP	O2G-PG-O3B	2.49	113.00	104.64
3	D	159	FLC	OB2-CBC-CB	2.49	117.92	113.14
2	G	158	GTP	C5-C6-N1	2.46	119.52	113.25
2	D	158	GTP	O6-C6-C5	-2.46	120.05	126.53
2	E	158	GTP	O2'-C2'-C3'	-2.46	103.94	111.82
2	F	158	GTP	O2G-PG-O3B	2.45	112.85	104.64
2	A	158	GTP	C2'-C1'-N9	2.45	120.06	113.25
3	H	159	FLC	OB2-CBC-CB	2.44	117.82	113.14
2	C	158	GTP	O2G-PG-O3B	2.43	112.80	104.64
2	E	158	GTP	O2G-PG-O3B	2.43	112.79	104.64
3	H	159	FLC	OA1-CAC-CA	-2.39	116.17	122.95
3	D	159	FLC	OA1-CAC-CA	-2.38	116.21	122.95
2	F	158	GTP	C5-C6-N1	2.38	119.31	113.25
3	C	159	FLC	OA1-CAC-CA	-2.37	116.24	122.95
2	I	158	GTP	C5-C6-N1	2.35	119.24	113.25
2	A	158	GTP	O4'-C1'-N9	-2.31	103.12	108.36
2	C	158	GTP	C5-C6-N1	2.31	119.12	113.25
2	A	158	GTP	O2'-C2'-C3'	-2.29	104.48	111.82
3	A	159	FLC	OA1-CAC-CA	-2.28	116.49	122.95
2	A	158	GTP	C5-C6-N1	2.28	119.05	113.25
2	A	158	GTP	O2G-PG-O3B	2.27	112.24	104.64
2	H	158	GTP	C5-C6-N1	2.26	119.02	113.25
2	B	158	GTP	C5-C6-N1	2.25	118.98	113.25
2	G	158	GTP	C2'-C1'-N9	2.24	119.50	113.25
3	B	159	FLC	OB1-CBC-CB	-2.24	117.76	122.09
3	G	159	FLC	OB2-CBC-CB	2.23	117.42	113.14
2	H	158	GTP	O2'-C2'-C3'	-2.22	104.69	111.82
2	D	158	GTP	C5-C6-N1	2.22	118.90	113.25
2	E	158	GTP	C5-C6-N1	2.19	118.83	113.25
3	F	159	FLC	OG1-CGC-CG	-2.18	116.78	122.95
2	I	158	GTP	O4'-C1'-C2'	-2.17	101.97	106.62
2	D	158	GTP	C2'-C1'-N9	2.16	119.26	113.25
2	F	158	GTP	O2'-C2'-C3'	-2.15	104.92	111.82
3	E	159	FLC	OA1-CAC-CA	-2.15	116.86	122.95
2	F	158	GTP	O4'-C1'-C2'	-2.15	102.03	106.62
3	B	159	FLC	OB2-CBC-CB	2.14	117.25	113.14
2	B	158	GTP	O2'-C2'-C3'	-2.14	104.96	111.82
2	B	158	GTP	C2'-C1'-N9	2.14	119.21	113.25
2	I	158	GTP	O2'-C2'-C3'	-2.13	105.00	111.82
2	F	158	GTP	N1-C2-N3	-2.12	119.43	123.32
2	C	158	GTP	O3G-PG-O3B	2.12	111.73	104.64

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	G	158	GTP	N1-C2-N3	-2.11	119.45	123.32
2	B	158	GTP	O4'-C1'-C2'	-2.09	102.14	106.62
2	D	158	GTP	N2-C2-N1	2.08	121.16	116.76
2	H	158	GTP	O4'-C1'-C2'	-2.08	102.16	106.62
2	E	158	GTP	O4'-C1'-N9	-2.08	103.66	108.36
2	E	158	GTP	C2'-C1'-N9	2.07	119.01	113.25
2	C	158	GTP	O2'-C2'-C3'	-2.06	105.22	111.82
2	B	158	GTP	N1-C2-N3	-2.05	119.57	123.32
2	C	158	GTP	N2-C2-N1	2.03	121.05	116.76
2	D	158	GTP	C6-C5-N7	2.03	133.98	130.29
2	D	158	GTP	N1-C2-N3	-2.03	119.61	123.32
2	I	158	GTP	C8-N7-C5	2.02	107.86	104.26
2	F	158	GTP	N2-C2-N1	2.02	121.01	116.76
2	G	158	GTP	C8-N7-C5	2.01	107.85	104.26
2	A	158	GTP	N1-C2-N3	-2.01	119.64	123.32
2	D	158	GTP	C1'-N9-C4	-2.01	120.55	126.49
2	E	158	GTP	N2-C2-N1	2.01	121.00	116.76
2	B	158	GTP	N2-C2-N1	2.01	121.00	116.76
2	C	158	GTP	C2'-C1'-N9	2.01	118.83	113.25
2	H	158	GTP	C8-N7-C5	2.01	107.83	104.26
2	C	158	GTP	C8-N7-C5	2.00	107.83	104.26
2	F	158	GTP	C8-N7-C5	2.00	107.83	104.26

There are no chirality outliers.

All (100) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	B	159	FLC	CAC-CA-CB-CBC
3	B	159	FLC	CAC-CA-CB-CG
3	B	159	FLC	CAC-CA-CB-OHB
3	B	159	FLC	CA-CB-CBC-OB1
3	B	159	FLC	CA-CB-CBC-OB2
3	B	159	FLC	OHB-CB-CBC-OB1
3	B	159	FLC	OHB-CB-CBC-OB2
3	D	159	FLC	CG-CB-CBC-OB1
3	D	159	FLC	CG-CB-CBC-OB2
3	D	159	FLC	OHB-CB-CBC-OB1
3	D	159	FLC	OHB-CB-CBC-OB2
3	E	159	FLC	CAC-CA-CB-CG
3	E	159	FLC	CAC-CA-CB-OHB
3	E	159	FLC	CG-CB-CBC-OB1
3	E	159	FLC	CG-CB-CBC-OB2

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Mol	Chain	Res	Type	Atoms
3	E	159	FLC	OHB-CB-CBC-OB1
3	E	159	FLC	OHB-CB-CBC-OB2
3	F	159	FLC	CG-CB-CBC-OB1
3	F	159	FLC	CG-CB-CBC-OB2
3	F	159	FLC	OHB-CB-CBC-OB1
3	F	159	FLC	OHB-CB-CBC-OB2
3	G	159	FLC	CAC-CA-CB-CBC
3	G	159	FLC	CAC-CA-CB-OHB
3	G	159	FLC	CG-CB-CBC-OB1
3	G	159	FLC	CG-CB-CBC-OB2
3	G	159	FLC	OHB-CB-CBC-OB1
3	G	159	FLC	OHB-CB-CBC-OB2
3	H	159	FLC	CAC-CA-CB-CBC
3	H	159	FLC	CAC-CA-CB-OHB
3	I	159	FLC	CAC-CA-CB-CBC
3	I	159	FLC	CAC-CA-CB-OHB
4	A	160	GOL	O1-C1-C2-C3
4	A	161	GOL	O1-C1-C2-C3
4	C	160	GOL	O1-C1-C2-C3
4	F	160	GOL	O1-C1-C2-C3
4	H	160	GOL	O1-C1-C2-C3
3	G	159	FLC	CAC-CA-CB-CG
3	H	159	FLC	CAC-CA-CB-CG
3	I	159	FLC	CAC-CA-CB-CG
4	A	161	GOL	O1-C1-C2-O2
4	C	160	GOL	O1-C1-C2-O2
4	F	160	GOL	O1-C1-C2-O2
4	H	160	GOL	O1-C1-C2-O2
5	H	162	EDO	O1-C1-C2-O2
6	C	162	PEG	O2-C3-C4-O4
6	E	160	PEG	O2-C3-C4-O4
4	A	160	GOL	O1-C1-C2-O2
3	E	159	FLC	CAC-CA-CB-CBC
6	F	163	PEG	O2-C3-C4-O4
5	G	162	EDO	O1-C1-C2-O2
5	I	160	EDO	O1-C1-C2-O2
2	E	158	GTP	PG-O3B-PB-O1B
2	G	158	GTP	PG-O3B-PB-O1B
2	I	158	GTP	PG-O3B-PB-O1B
3	D	159	FLC	CAC-CA-CB-OHB
3	F	159	FLC	CAC-CA-CB-OHB
5	F	162	EDO	O1-C1-C2-O2

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Mol	Chain	Res	Type	Atoms
6	A	164	PEG	O2-C3-C4-O4
2	E	158	GTP	PB-O3A-PA-O5'
6	C	162	PEG	C4-C3-O2-C2
6	A	164	PEG	C1-C2-O2-C3
6	H	163	PEG	C4-C3-O2-C2
6	B	163	PEG	C1-C2-O2-C3
2	A	158	GTP	PG-O3B-PB-O1B
2	H	158	GTP	PG-O3B-PB-O1B
6	B	163	PEG	O2-C3-C4-O4
3	A	159	FLC	CA-CB-CBC-OB1
3	A	159	FLC	CG-CB-CBC-OB1
5	A	163	EDO	O1-C1-C2-O2
6	H	163	PEG	C1-C2-O2-C3
6	E	160	PEG	C1-C2-O2-C3
6	F	163	PEG	C1-C2-O2-C3
2	D	158	GTP	PG-O3B-PB-O2B
3	A	159	FLC	OHB-CB-CBC-OB1
3	A	159	FLC	CA-CB-CBC-OB2
3	A	159	FLC	CG-CB-CBC-OB2
3	I	159	FLC	CA-CB-CBC-OB1
3	I	159	FLC	CA-CB-CBC-OB2
3	I	159	FLC	CG-CB-CBC-OB1
3	I	159	FLC	CG-CB-CBC-OB2
5	I	161	EDO	O1-C1-C2-O2
6	B	163	PEG	C4-C3-O2-C2
2	B	158	GTP	PG-O3B-PB-O1B
2	F	158	GTP	PG-O3B-PB-O1B
2	H	158	GTP	PG-O3B-PB-O2B
2	I	158	GTP	PG-O3B-PB-O2B
6	C	162	PEG	C1-C2-O2-C3
5	A	162	EDO	O1-C1-C2-O2
5	H	161	EDO	O1-C1-C2-O2
6	A	165	PEG	C1-C2-O2-C3
3	G	159	FLC	CB-CA-CAC-OA2
3	C	159	FLC	CAC-CA-CB-OHB
2	A	158	GTP	PG-O3B-PB-O2B
2	D	158	GTP	PG-O3B-PB-O1B
2	E	158	GTP	PG-O3B-PB-O2B
2	G	158	GTP	PG-O3B-PB-O2B
3	A	159	FLC	OHB-CB-CBC-OB2
3	I	159	FLC	OHB-CB-CBC-OB1
3	G	159	FLC	CB-CA-CAC-OA1

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Mol	Chain	Res	Type	Atoms
5	D	161	EDO	O1-C1-C2-O2

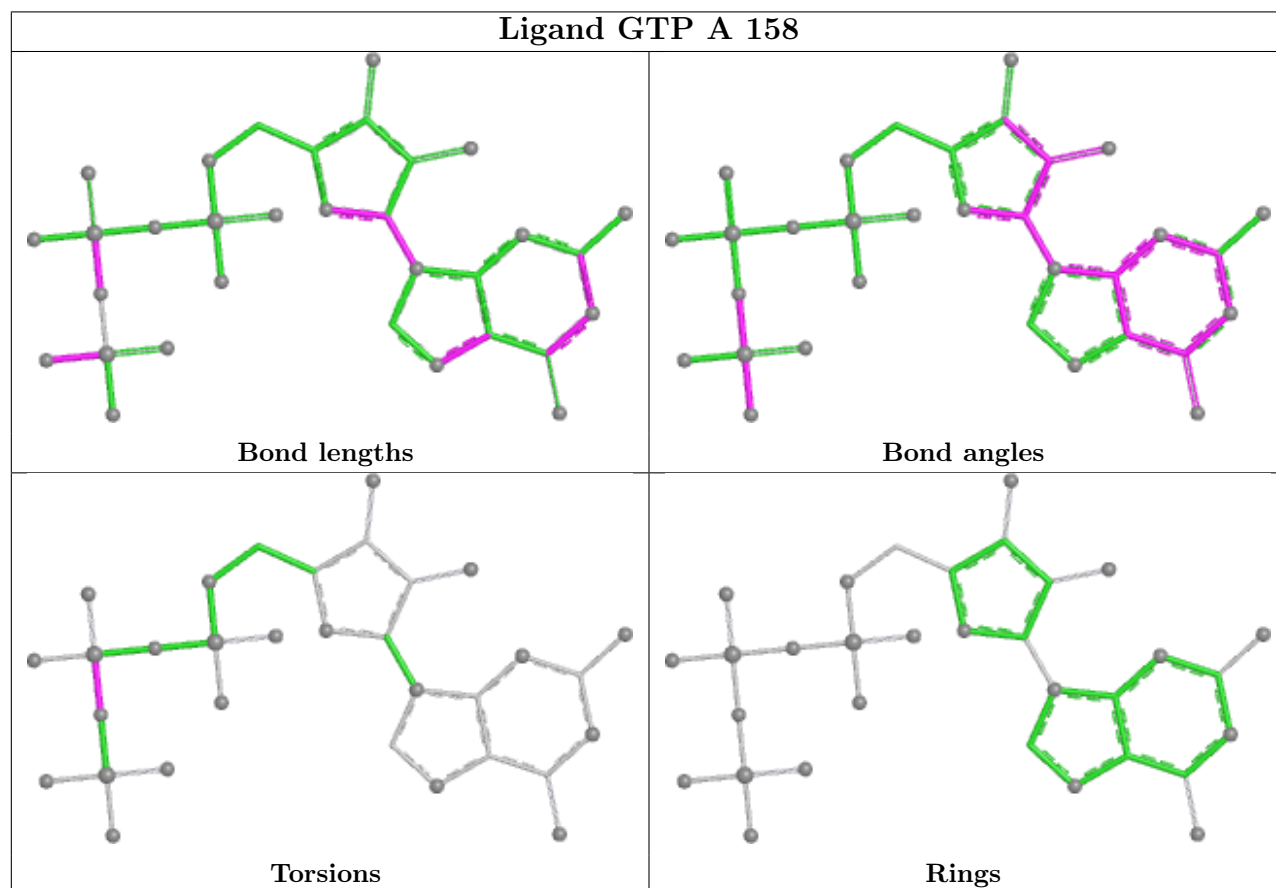
There are no ring outliers.

27 monomers are involved in 54 short contacts:

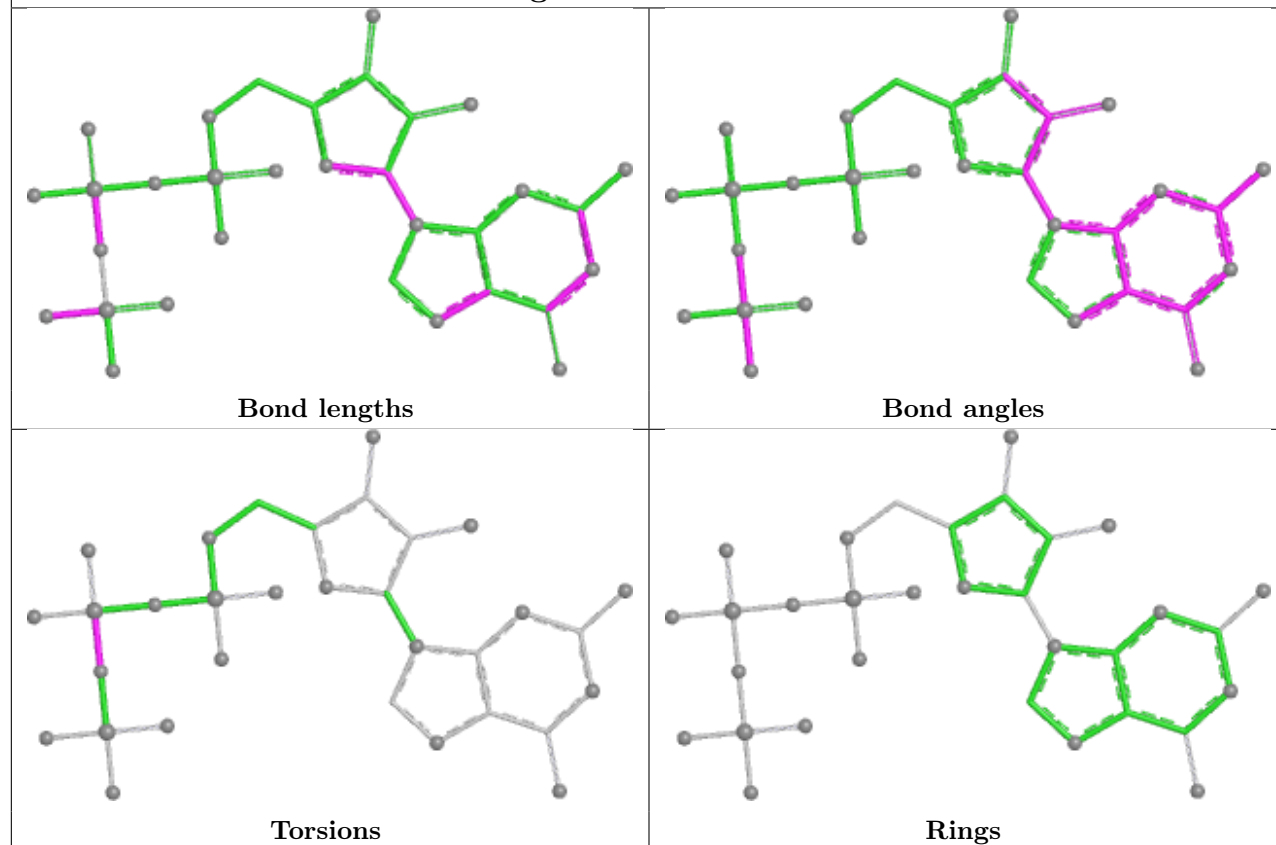
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	D	159	FLC	3	0
3	F	159	FLC	5	0
2	D	158	GTP	2	0
3	I	159	FLC	2	0
5	D	161	EDO	1	0
6	H	163	PEG	1	0
3	G	159	FLC	2	0
3	A	159	FLC	3	0
4	F	160	GOL	2	0
6	B	163	PEG	3	0
2	H	158	GTP	1	0
6	E	160	PEG	2	0
3	E	159	FLC	1	0
2	G	158	GTP	2	0
2	C	158	GTP	1	0
6	A	164	PEG	2	0
3	C	159	FLC	2	0
4	C	160	GOL	1	0
5	B	162	EDO	1	0
4	H	160	GOL	1	0
4	A	160	GOL	2	0
6	A	165	PEG	1	0
5	I	161	EDO	1	0
2	F	158	GTP	2	0
3	B	159	FLC	3	0
2	I	158	GTP	3	0
2	E	158	GTP	4	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

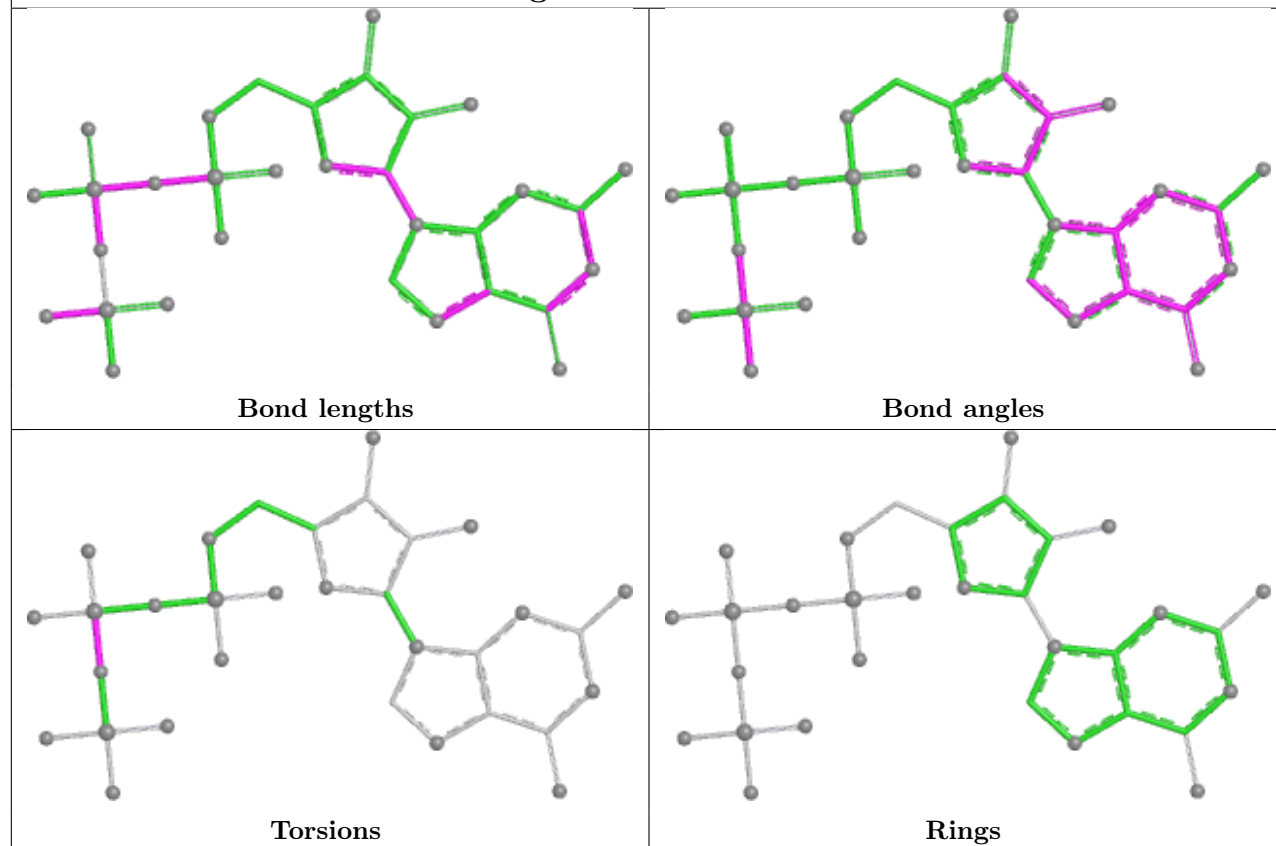
average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



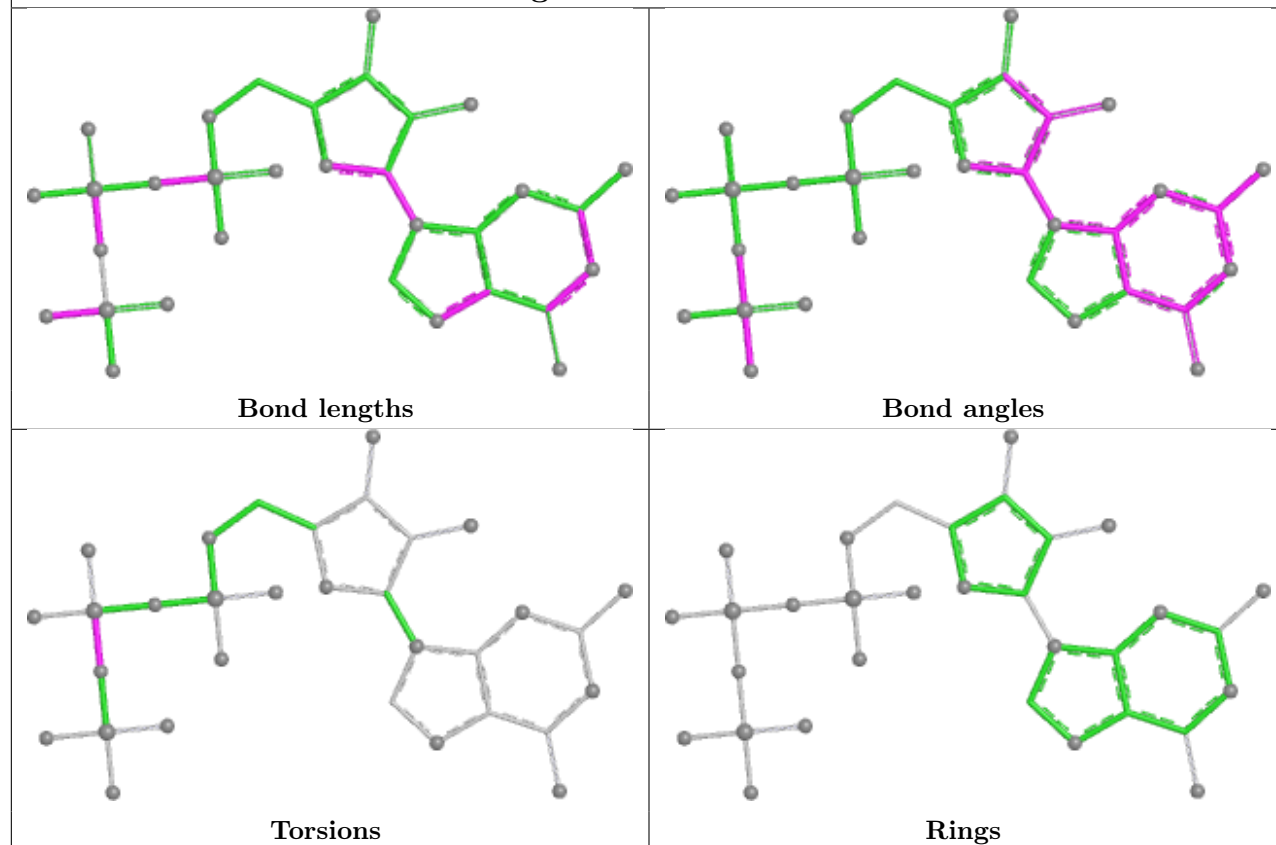
## Ligand GTP D 158



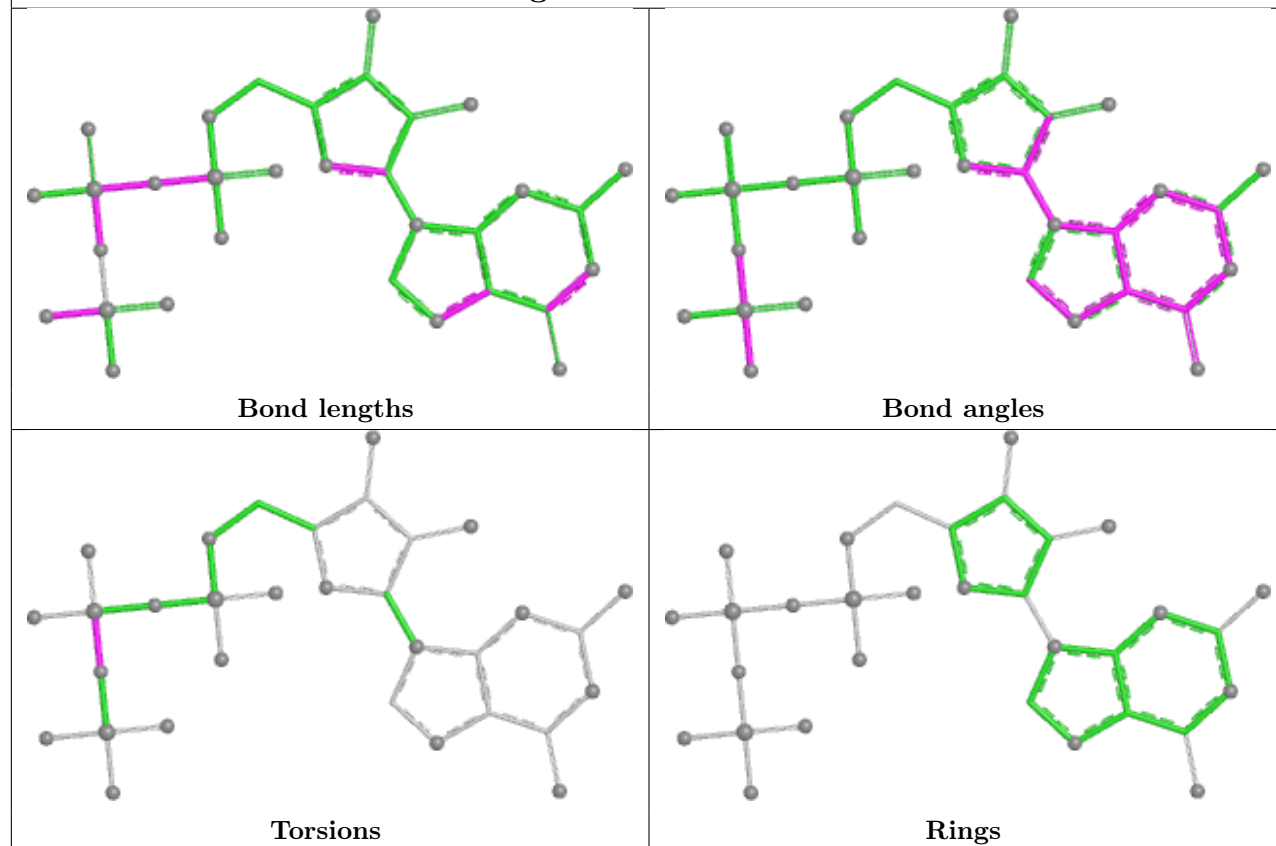
## Ligand GTP H 158



## Ligand GTP B 158

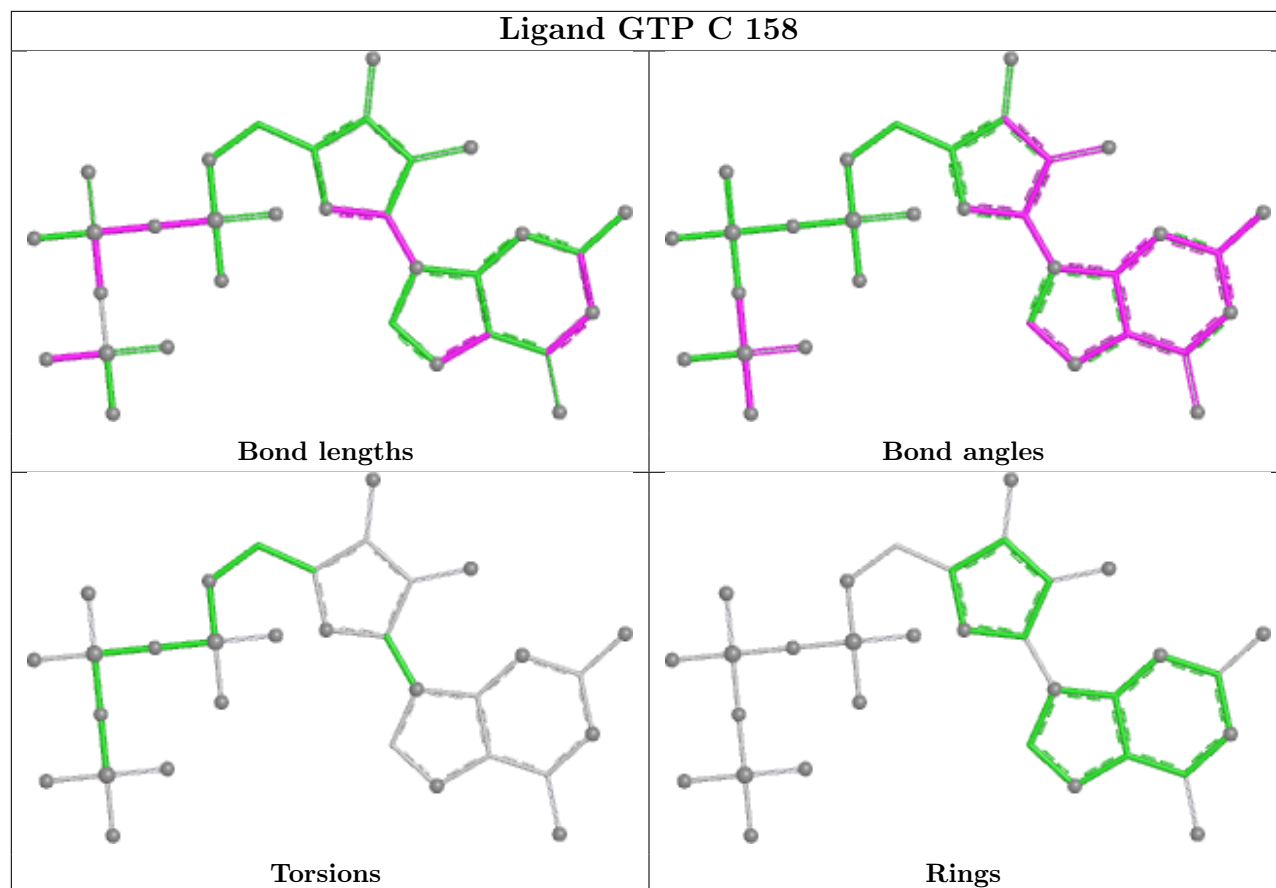


## Ligand GTP G 158

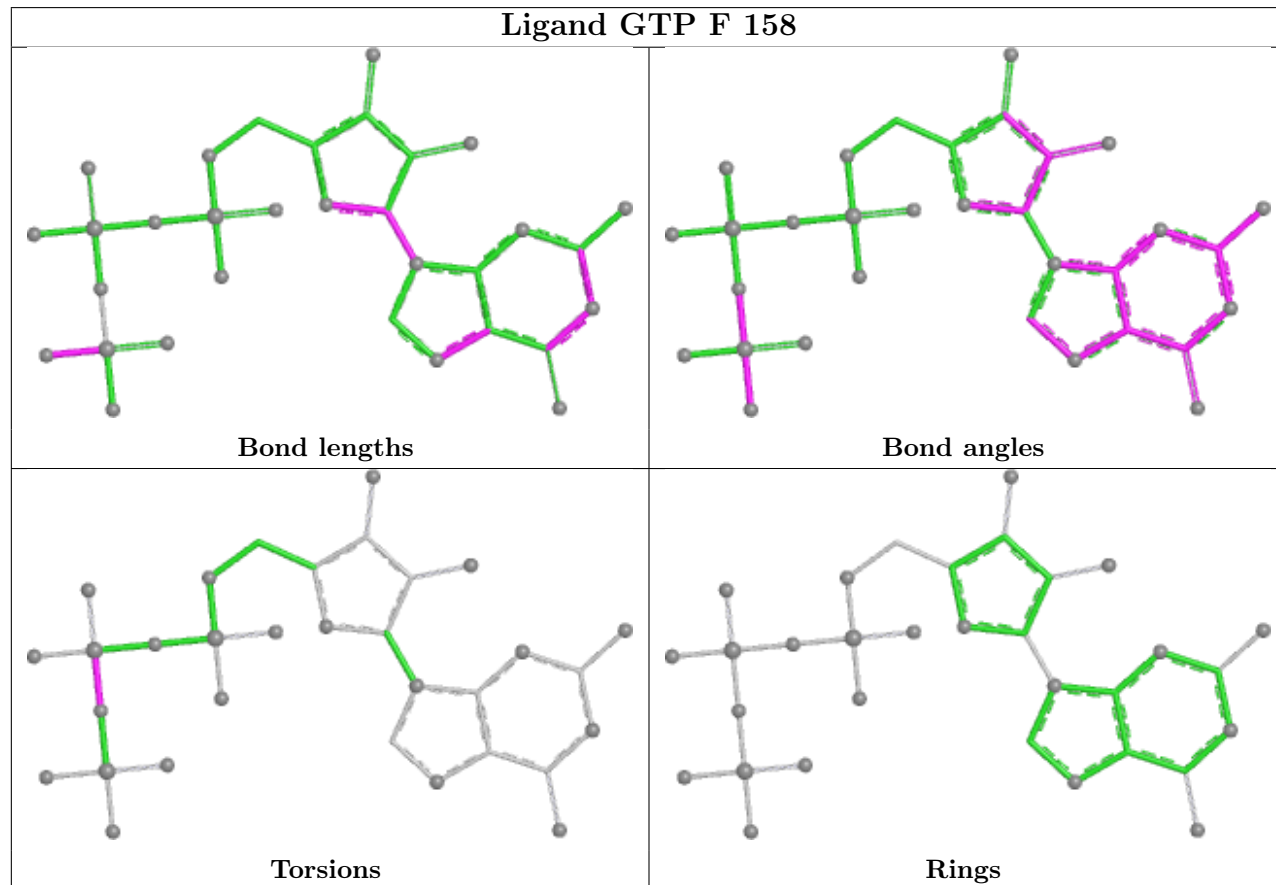




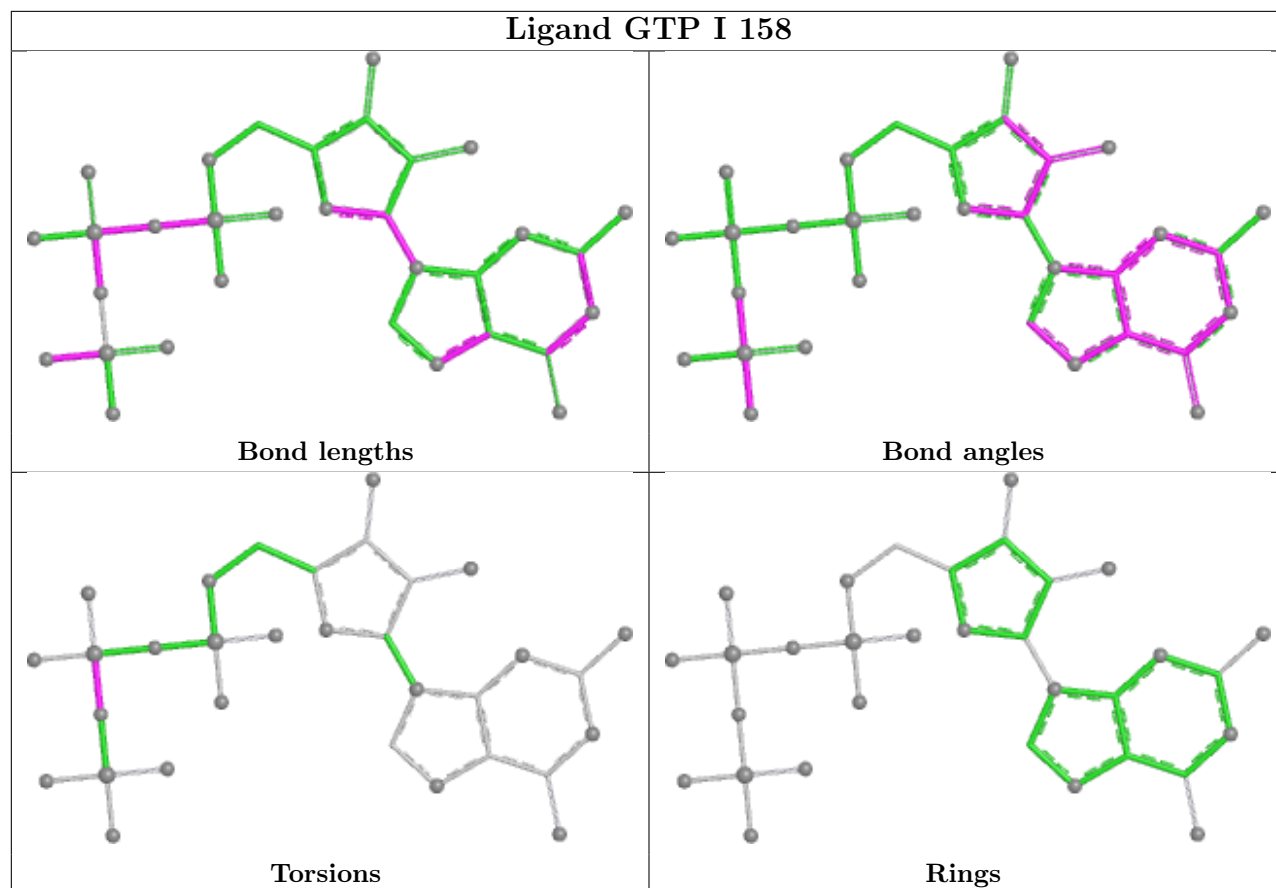
## Ligand GTP C 158



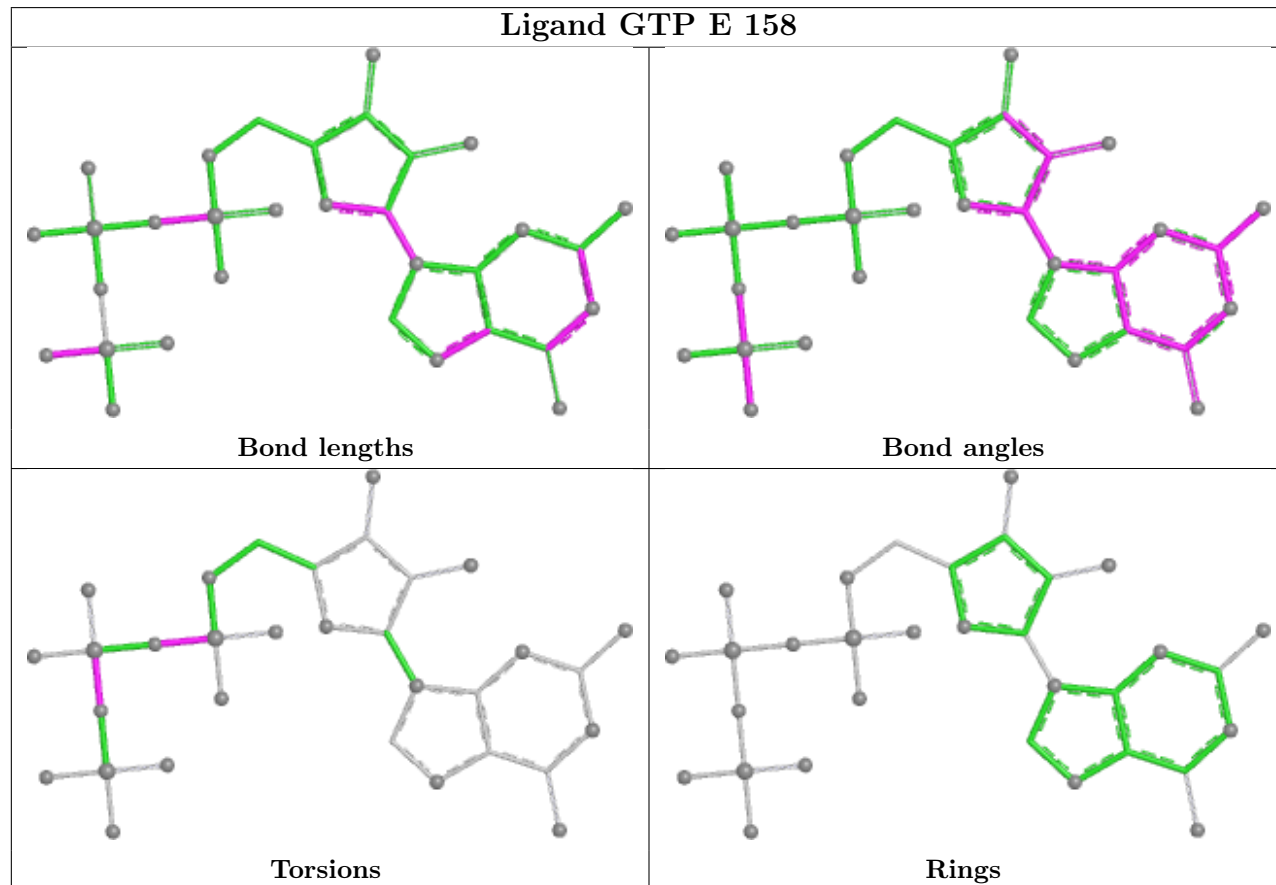
## Ligand GTP F 158



## Ligand GTP I 158



## Ligand GTP E 158



## 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, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	147/157 (93%)	-0.32	0 100 100	28, 45, 75, 88	0
1	B	146/157 (92%)	-0.25	0 100 100	30, 48, 75, 85	0
1	C	147/157 (93%)	-0.10	2 (1%) 73 70	32, 52, 88, 100	0
1	D	147/157 (93%)	-0.15	1 (0%) 84 81	32, 50, 77, 88	0
1	E	149/157 (94%)	-0.23	0 100 100	29, 48, 81, 93	0
1	F	146/157 (92%)	-0.15	1 (0%) 84 81	31, 49, 89, 98	0
1	G	146/157 (92%)	-0.14	1 (0%) 84 81	32, 50, 78, 85	0
1	H	146/157 (92%)	-0.22	0 100 100	34, 53, 78, 89	0
1	I	148/157 (94%)	-0.06	2 (1%) 73 70	33, 53, 84, 99	0
All	All	1322/1413 (93%)	-0.18	7 (0%) 87 85	28, 50, 81, 100	0

All (7) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	F	151	GLY	3.8
1	I	91	ALA	2.6
1	G	14	VAL	2.6
1	C	16	VAL	2.4
1	D	9	GLY	2.2
1	I	151	GLY	2.0
1	C	14	VAL	2.0

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

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

## 6.3 Carbohydrates ⓘ

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, 95<sup>th</sup> 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.

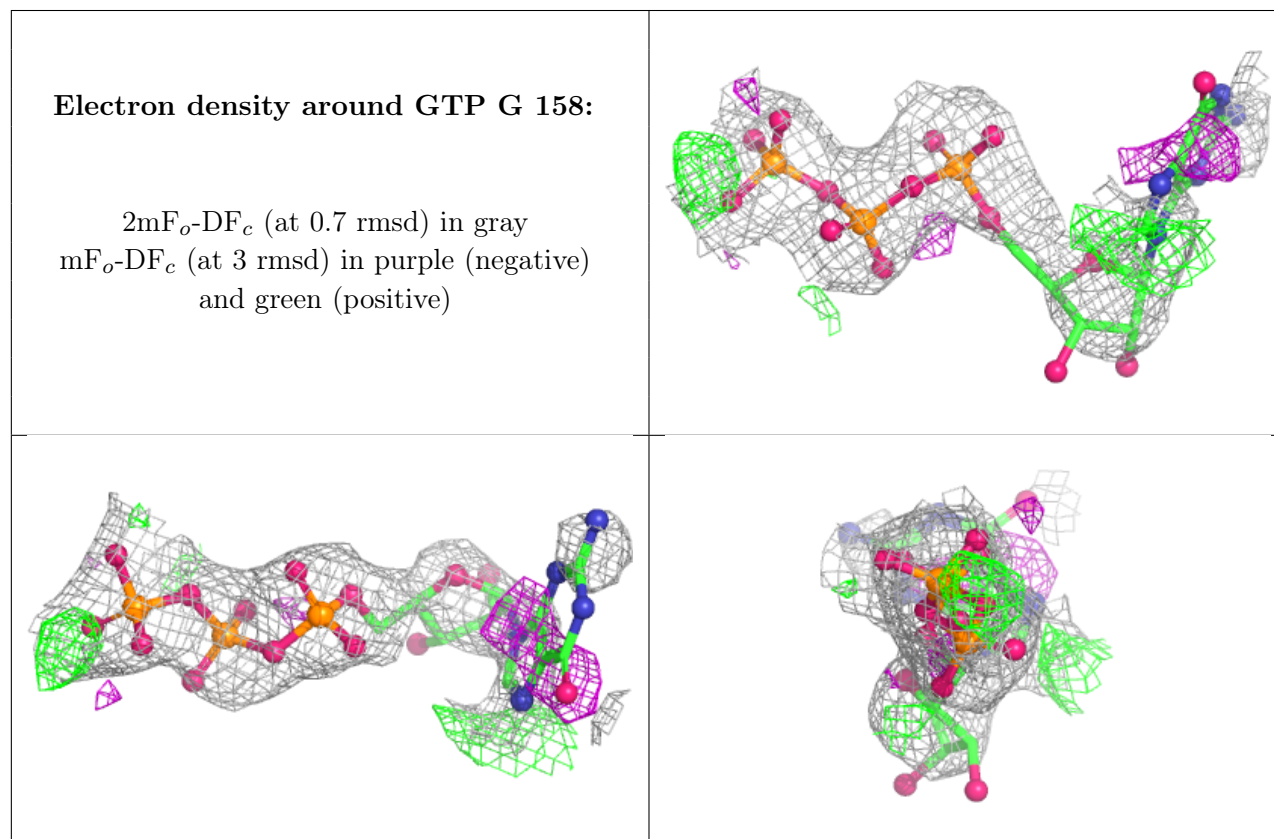
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
3	FLC	B	159	13/13	0.62	0.15	92,96,98,98	0
3	FLC	F	159	13/13	0.64	0.18	97,100,100,100	0
5	EDO	F	162	4/4	0.64	0.15	92,94,95,95	0
4	GOL	F	160	6/6	0.69	0.13	70,73,73,74	0
3	FLC	I	159	13/13	0.72	0.13	99,100,100,100	0
4	GOL	A	161	6/6	0.74	0.13	78,80,80,81	0
4	GOL	C	160	6/6	0.75	0.11	93,94,94,95	0
3	FLC	D	159	13/13	0.76	0.13	95,98,100,100	0
5	EDO	I	161	4/4	0.77	0.10	70,72,72,73	0
3	FLC	C	159	13/13	0.79	0.14	98,100,100,100	0
6	PEG	B	163	7/7	0.79	0.14	68,73,77,79	0
4	GOL	A	160	6/6	0.80	0.13	79,80,81,81	0
5	EDO	G	162	4/4	0.80	0.13	62,64,64,65	0
3	FLC	A	159	13/13	0.80	0.11	86,87,88,89	0
5	EDO	A	163	4/4	0.80	0.11	71,73,74,74	0
3	FLC	E	159	13/13	0.81	0.11	81,82,84,84	0
5	EDO	I	160	4/4	0.81	0.11	65,65,66,66	0
3	FLC	G	159	13/13	0.82	0.13	89,94,95,95	0
2	GTP	G	158	32/32	0.82	0.13	66,96,100,100	0
5	EDO	G	163	4/4	0.83	0.08	86,87,88,88	0
5	EDO	H	162	4/4	0.83	0.11	99,100,100,100	0
5	EDO	F	161	4/4	0.83	0.16	90,90,90,90	0
5	EDO	A	162	4/4	0.83	0.16	63,66,68,71	0
5	EDO	C	161	4/4	0.83	0.13	57,60,60,62	0
2	GTP	D	158	32/32	0.84	0.12	78,99,100,100	0
6	PEG	C	162	7/7	0.84	0.12	97,98,98,98	0
2	GTP	H	158	32/32	0.85	0.12	79,98,100,100	0
3	FLC	H	159	13/13	0.86	0.12	92,96,97,98	0
5	EDO	B	162	4/4	0.86	0.10	50,55,57,60	0
6	PEG	H	163	7/7	0.86	0.15	76,77,79,80	0
6	PEG	A	165	7/7	0.87	0.13	80,82,84,85	0
2	GTP	B	158	32/32	0.87	0.11	64,96,100,100	0

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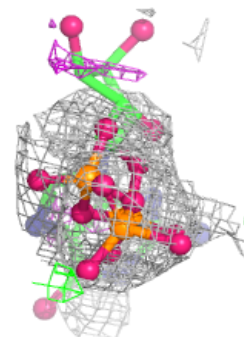
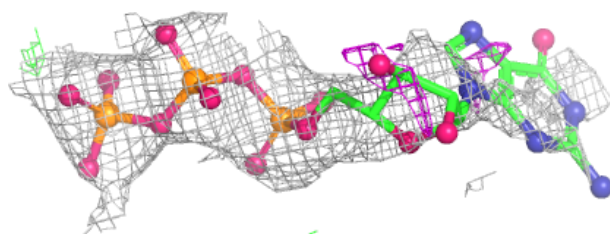
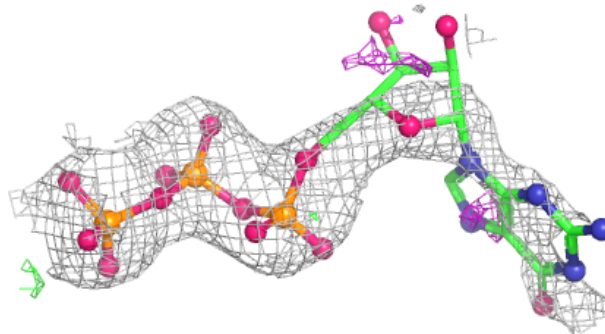
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
5	EDO	B	161	4/4	0.88	0.11	83,84,85,85	0
5	EDO	D	161	4/4	0.88	0.12	73,73,73,74	0
6	PEG	E	160	7/7	0.88	0.11	80,82,83,83	0
5	EDO	G	160	4/4	0.88	0.10	62,62,63,65	0
6	PEG	A	164	7/7	0.89	0.13	66,69,72,74	0
5	EDO	H	161	4/4	0.90	0.09	62,63,64,64	0
6	PEG	F	163	7/7	0.90	0.10	79,82,87,87	0
5	EDO	D	160	4/4	0.90	0.13	65,67,68,69	0
5	EDO	B	160	4/4	0.91	0.10	70,70,70,72	0
4	GOL	H	160	6/6	0.91	0.08	61,66,67,68	0
2	GTP	E	158	32/32	0.92	0.12	42,95,100,100	0
2	GTP	F	158	32/32	0.92	0.10	47,82,91,92	0
2	GTP	C	158	32/32	0.92	0.09	51,86,92,93	0
2	GTP	A	158	32/32	0.93	0.10	40,79,89,90	0
5	EDO	G	161	4/4	0.93	0.07	50,53,56,56	0
2	GTP	I	158	32/32	0.93	0.10	50,74,83,85	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.

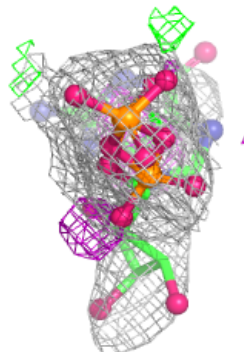
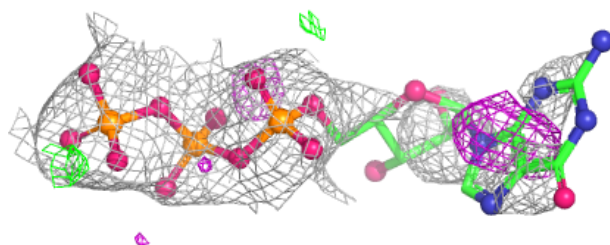
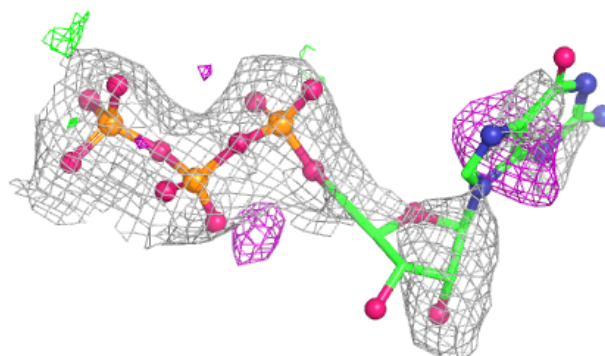


**Electron density around GTP D 158:**

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

**Electron density around GTP H 158:**

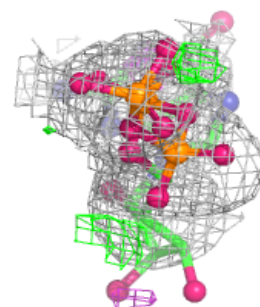
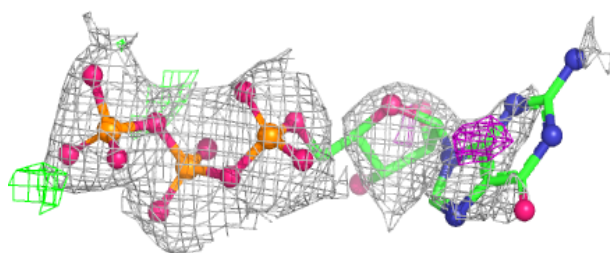
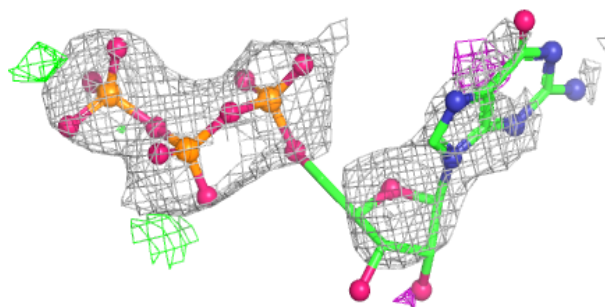
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



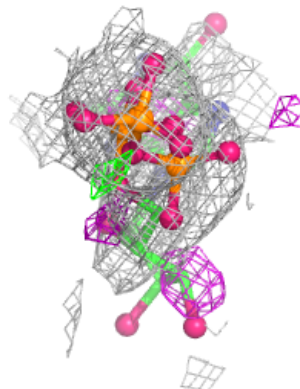
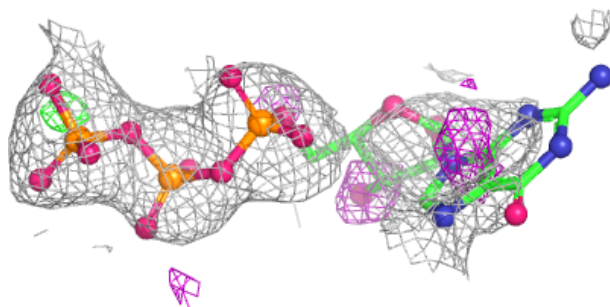
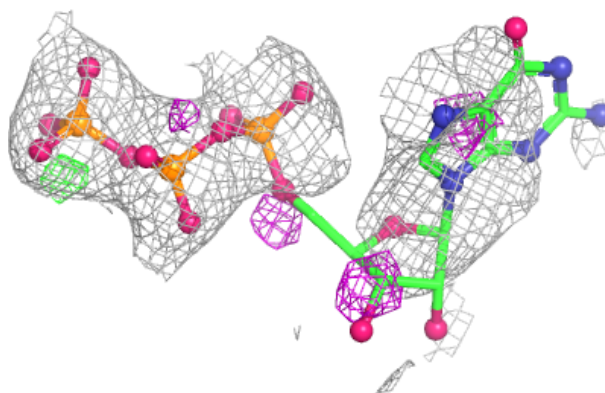


**Electron density around GTP B 158:**

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

**Electron density around GTP E 158:**

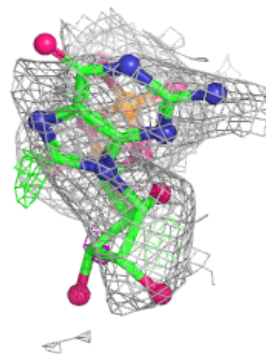
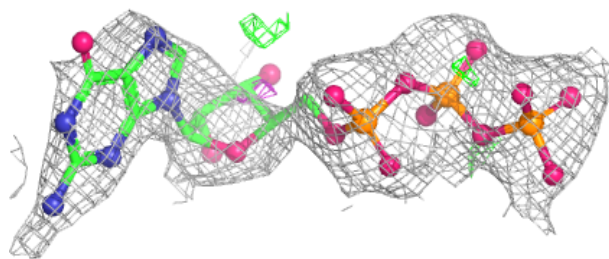
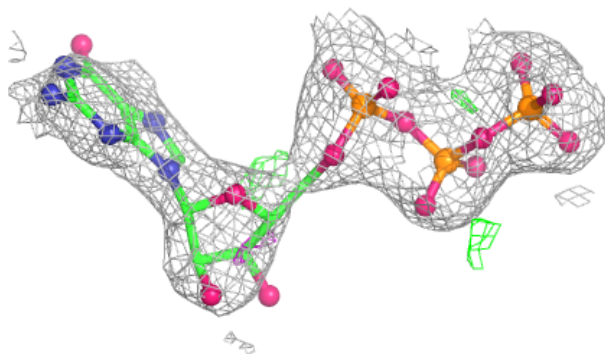
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



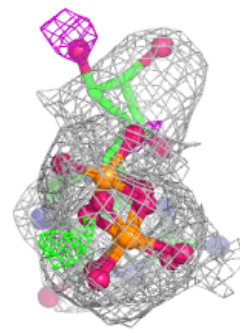
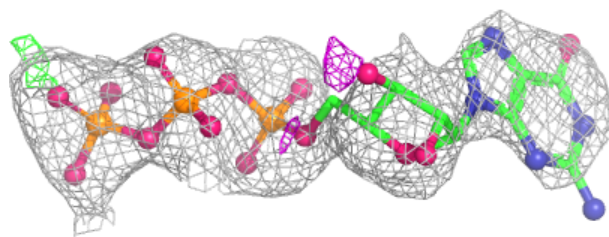
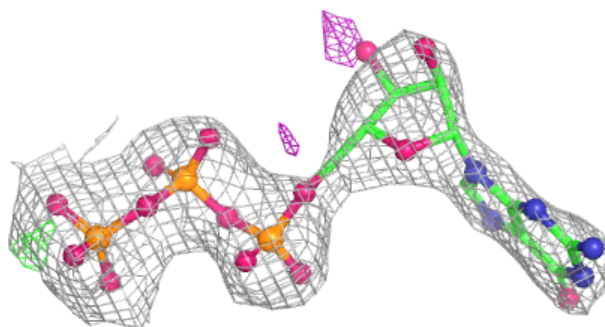


**Electron density around GTP F 158:**

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

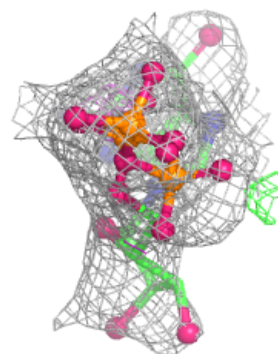
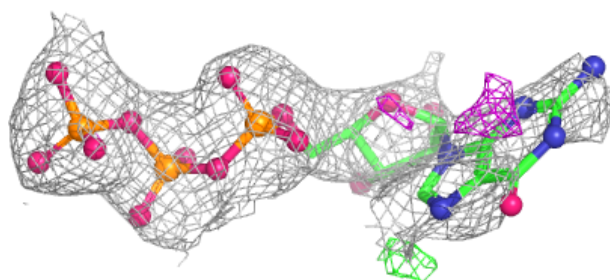
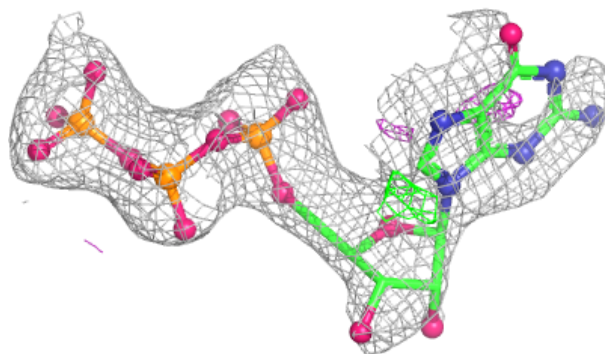
**Electron density around GTP C 158:**

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

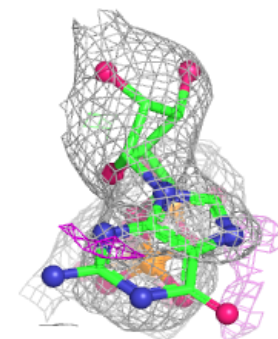
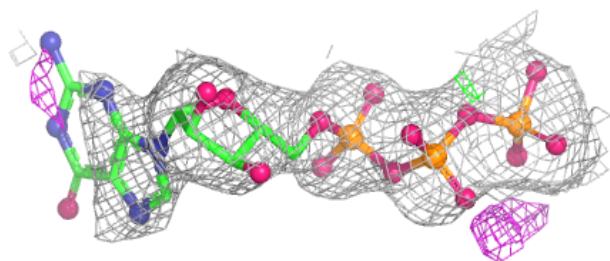
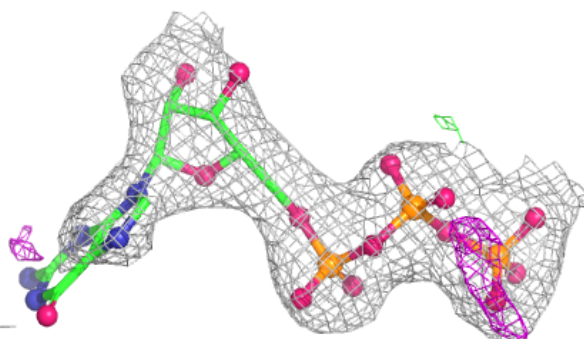


**Electron density around GTP A 158:**

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

**Electron density around GTP I 158:**

$2mF_o-DF_c$  (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.