



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 9, 2026 – 07:02 AM UTC

PDB ID : 3D45 / pdb_00003d45
Title : Crystal structure of mouse PARN in complex with m7GpppG
Authors : Wu, M.; Song, H.
Deposited on : 2008-05-13
Resolution : 3.00 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 : 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

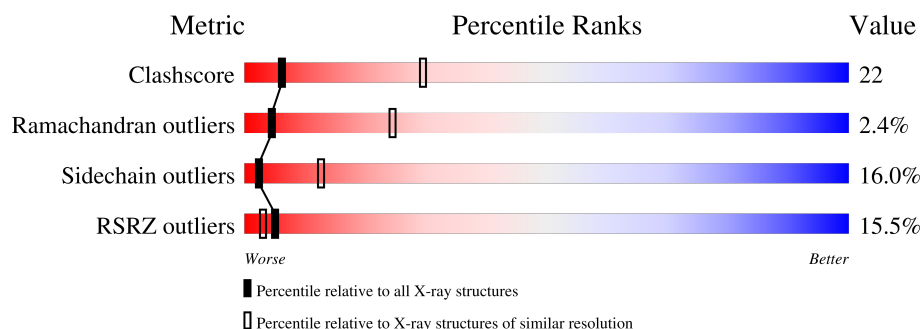
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.00 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))
Clashscore	190562	2977 (3.00-3.00)
Ramachandran outliers	187476	2877 (3.00-3.00)
Sidechain outliers	187428	2880 (3.00-3.00)
RSRZ outliers	180081	2671 (3.00-3.00)

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

Mol	Chain	Length	Quality of chain
1	A	507	
1	B	507	

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 6307 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.

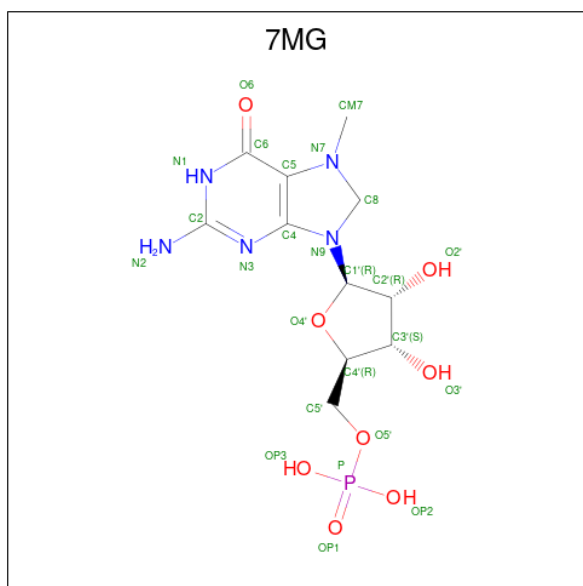
- Molecule 1 is a protein called Poly(A)-specific ribonuclease PARN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	383	Total	C	N	O	S	0	0	0
			3109	2005	503	586	15			
1	B	373	Total	C	N	O	S	0	0	0
			3016	1947	488	567	14			

There are 4 discrepancies between the modelled and reference sequences:

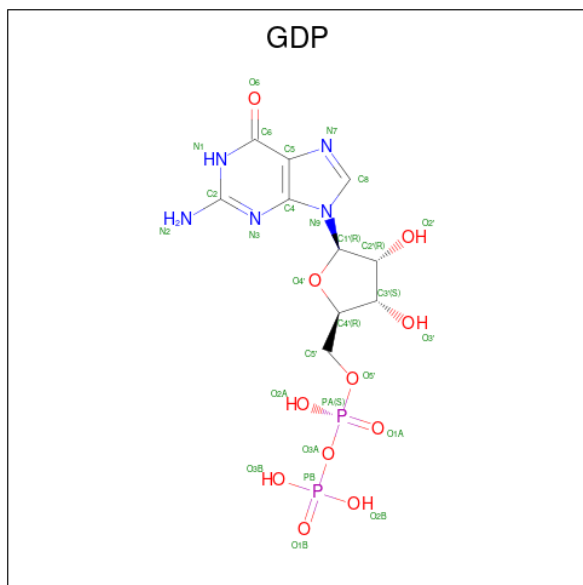
Chain	Residue	Modelled	Actual	Comment	Reference
A	901	GLY	-	expression tag	UNP Q8VDG3
A	900	PRO	-	expression tag	UNP Q8VDG3
B	901	GLY	-	expression tag	UNP Q8VDG3
B	900	PRO	-	expression tag	UNP Q8VDG3

- Molecule 2 is 7N-METHYL-8-HYDROGUANOSINE-5'-MONOPHOSPHATE (CCD ID: 7MG) (formula: $C_{11}H_{18}N_5O_8P$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			24	11	5	7	1		
2	B	1	Total	C	N	O	P	0	0
			24	11	5	7	1		

- Molecule 3 is GUANOSINE-5'-DIPHOSPHATE (CCD ID: GDP) (formula: $C_{10}H_{15}N_5O_{11}P_2$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	N	O	P	0	0
			28	10	5	11	2		
3	B	1	Total	C	N	O	P	0	0
			28	10	5	11	2		

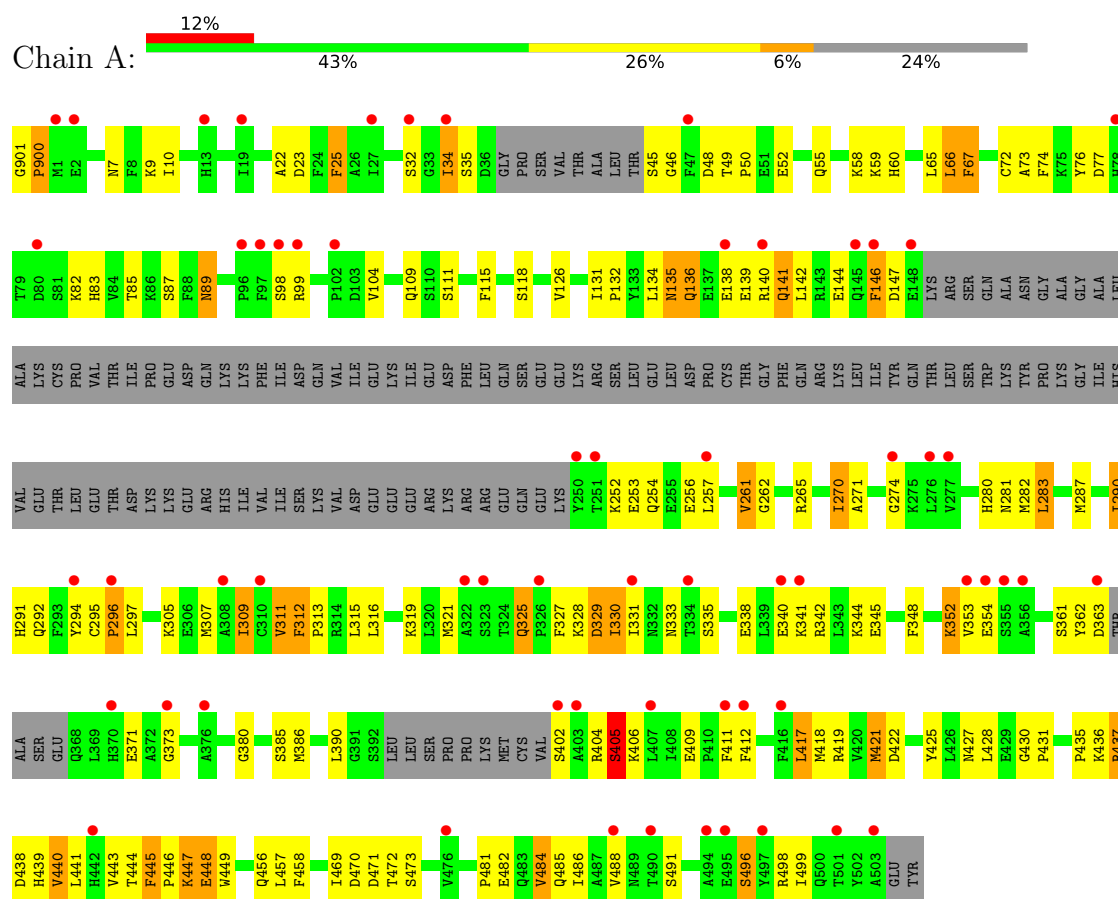
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	34	Total	O	0	0
			34	34		
4	B	44	Total	O	0	0
			44	44		

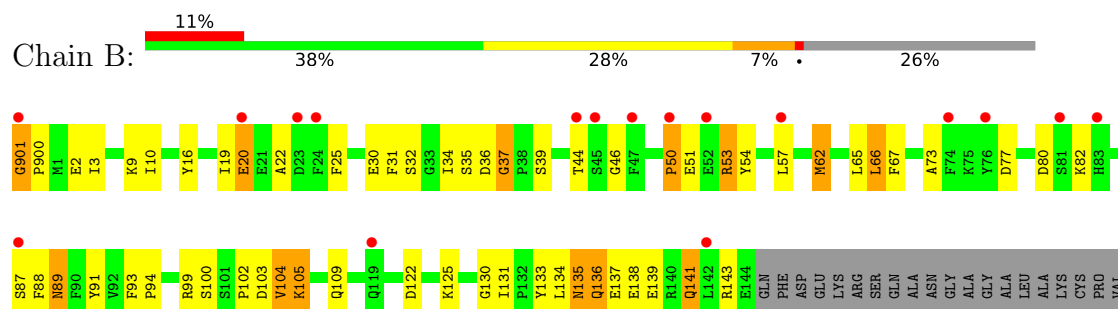
3 Residue-property plots

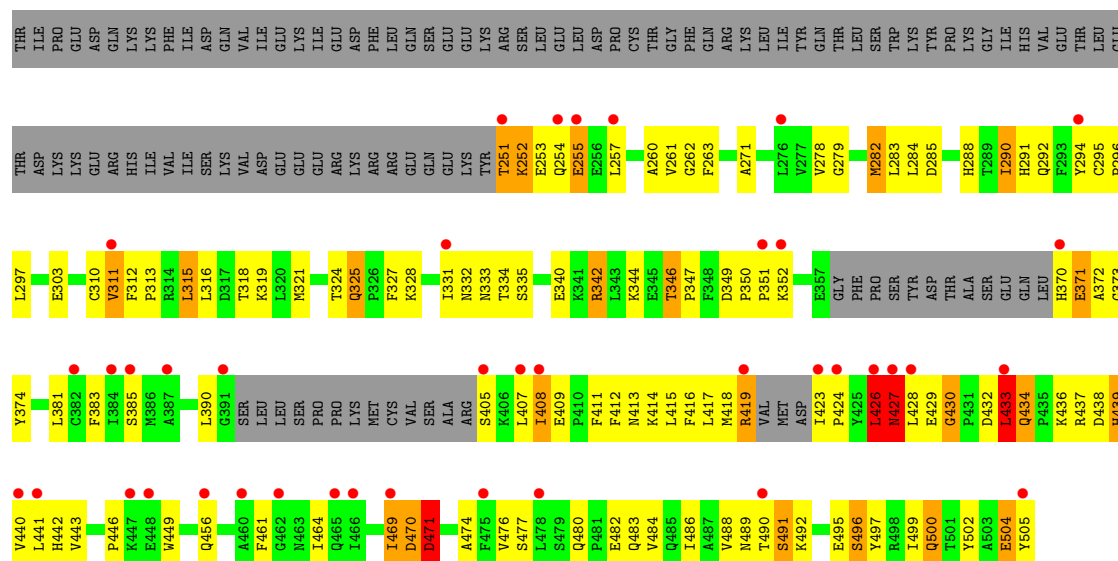
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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: Poly(A)-specific ribonuclease PARN



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4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	58.01Å 128.35Å 176.84Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	103.69 – 3.00 103.69 – 3.00	Depositor EDS
% Data completeness (in resolution range)	94.7 (103.69-3.00) 94.7 (103.69-3.00)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.78 (at 2.91Å)	Xtriage
Refinement program	REFMAC 5.2.0019	Depositor
R, R_{free}	0.299 , 0.334 (Not available) , (Not available)	Depositor DCC
R_{free} test set	No test flags present.	wwPDB-VP
Wilson B-factor (Å ²)	78.7	Xtriage
Anisotropy	0.254	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 80.0	EDS
L-test for twinning ²	$\langle L \rangle = 0.51$, $\langle L^2 \rangle = 0.34$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.83	EDS
Total number of atoms	6307	wwPDB-VP
Average B, all atoms (Å ²)	76.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.61% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 7MG, 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	0.76	0/3189	1.07	5/4306 (0.1%)
1	B	0.77	0/3093	1.04	7/4179 (0.2%)
All	All	0.76	0/6282	1.05	12/8485 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	B	0	1

There are no bond length outliers.

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	471	ASP	N-CA-C	-9.61	101.67	113.97
1	B	901	GLY	CA-C-N	8.21	130.10	119.84
1	B	901	GLY	C-N-CA	8.21	130.10	119.84
1	B	311	VAL	N-CA-C	-8.00	103.06	110.82
1	A	312	PHE	CA-C-N	6.92	126.52	119.19
1	A	312	PHE	C-N-CA	6.92	126.52	119.19
1	B	427	ASN	N-CA-C	6.63	121.59	112.04
1	A	445	PHE	N-CA-C	6.29	113.66	108.07
1	A	311	VAL	N-CA-C	-6.06	104.94	110.82
1	B	282	MET	N-CA-C	5.39	119.55	112.92
1	B	263	PHE	N-CA-C	5.24	117.74	111.71
1	B	37	GLY	N-CA-C	5.05	122.63	112.34

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	430	GLY	Peptide

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	3109	0	2999	124	0
1	B	3016	0	2926	143	0
2	A	24	0	16	4	0
2	B	24	0	16	6	0
3	A	28	0	12	4	0
3	B	28	0	12	4	0
4	A	34	0	0	7	0
4	B	44	0	0	9	0
All	All	6307	0	5981	273	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 (273) 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:325:GLN:HE21	1:B:325:GLN:HA	1.07	1.09
1:B:484:VAL:O	1:B:488:VAL:HG23	1.71	0.90
1:A:470:ASP:HB2	1:A:473:SER:OG	1.70	0.90
1:B:66:LEU:H	1:B:292:GLN:HE22	1.03	0.90
1:B:325:GLN:HE21	1:B:325:GLN:CA	1.86	0.89
1:B:66:LEU:H	1:B:292:GLN:NE2	1.70	0.88
1:B:66:LEU:N	1:B:292:GLN:HE22	1.72	0.87
1:B:342:ARG:HD2	4:B:1158:HOH:O	1.75	0.86
1:B:325:GLN:HA	1:B:325:GLN:NE2	1.91	0.86
1:B:35:SER:H	1:B:109:GLN:HE22	1.23	0.85
1:B:31:PHE:HE2	1:B:66:LEU:HD22	1.42	0.84
1:B:89:ASN:HD21	1:B:373:GLY:H	1.27	0.82
1:A:900:PRO:HB3	1:A:87:SER:OG	1.80	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:319:LYS:HD3	1:B:416:PHE:CE2	2.15	0.81
1:B:901:GLY:N	1:B:900:PRO:HD3	1.96	0.81
1:A:325:GLN:H	1:A:325:GLN:CD	1.87	0.80
1:B:441:LEU:HD12	1:B:499:ILE:HG23	1.64	0.80
1:A:333:ASN:HD22	1:A:338:GLU:HB2	1.46	0.79
1:B:900:PRO:HG2	1:B:373:GLY:HA3	1.64	0.79
2:A:651:7MG:P	3:A:652:GDP:O3B	2.41	0.78
2:B:1152:7MG:P	3:B:1151:GDP:O3B	2.42	0.78
1:A:325:GLN:H	1:A:325:GLN:NE2	1.81	0.78
1:A:35:SER:H	1:A:109:GLN:HE22	1.32	0.78
1:B:480:GLN:H	1:B:483:GLN:HE21	1.31	0.77
1:B:413:ASN:O	1:B:427:ASN:ND2	2.18	0.75
1:B:34:ILE:H	1:B:109:GLN:NE2	1.85	0.74
1:B:102:PRO:O	4:B:1184:HOH:O	2.05	0.74
1:B:427:ASN:HB2	1:B:430:GLY:H	1.53	0.74
1:A:470:ASP:HB3	1:A:472:THR:H	1.53	0.73
1:A:333:ASN:ND2	1:A:338:GLU:HB2	2.03	0.73
1:B:135:ASN:HD21	1:B:137:GLU:HB2	1.54	0.73
1:B:441:LEU:HD12	1:B:499:ILE:CG2	2.18	0.73
1:B:346:THR:HG22	1:B:347:PRO:HA	1.71	0.72
1:A:34:ILE:H	1:A:109:GLN:HE21	1.37	0.72
1:A:333:ASN:HD22	1:A:338:GLU:CB	2.02	0.72
1:B:433:LEU:HG	1:B:434:GLN:H	1.54	0.72
1:A:274:GLY:HA2	1:A:313:PRO:HG3	1.71	0.71
1:A:89:ASN:HD21	1:A:373:GLY:H	1.37	0.71
1:A:305:LYS:HE2	1:A:427:ASN:O	1.91	0.70
1:A:901:GLY:N	4:A:929:HOH:O	2.24	0.70
1:A:348:PHE:HB2	4:A:907:HOH:O	1.92	0.70
1:A:253:GLU:CD	1:A:256:GLU:HG3	2.17	0.69
1:A:271:ALA:HA	1:A:311:VAL:O	1.93	0.69
1:B:333:ASN:HA	4:B:1195:HOH:O	1.92	0.69
1:B:432:ASP:O	1:B:433:LEU:HB2	1.92	0.68
1:B:469:ILE:HG23	1:B:474:ALA:HA	1.75	0.68
1:A:321:MET:HE3	1:A:411:PHE:CD1	2.30	0.66
1:B:480:GLN:HB2	1:B:483:GLN:HG3	1.78	0.66
1:A:49:THR:OG1	1:A:52:GLU:HG3	1.96	0.65
1:B:2:GLU:OE1	1:B:125:LYS:HE2	1.97	0.65
1:A:253:GLU:OE1	1:A:256:GLU:HG3	1.96	0.64
1:B:16:TYR:O	1:B:20:GLU:HB2	1.99	0.63
1:B:490:THR:O	1:B:491:SER:HB3	1.99	0.63
1:A:419:ARG:HG2	1:A:469:ILE:HA	1.81	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:80:ASP:HB2	1:B:82:LYS:HG2	1.81	0.63
1:B:32:SER:HB2	1:B:65:LEU:H	1.64	0.63
1:B:139:GLU:HG3	1:B:261:VAL:CG1	2.29	0.63
1:A:254:GLN:HB3	4:A:924:HOH:O	1.98	0.62
1:B:470:ASP:C	2:B:1152:7MG:H1'	2.24	0.62
1:A:437:ARG:C	1:A:439:HIS:H	2.07	0.62
2:A:651:7MG:P	3:A:652:GDP:PB	2.97	0.62
1:B:31:PHE:CD2	1:B:288:HIS:HD2	2.17	0.62
1:A:34:ILE:H	1:A:109:GLN:NE2	1.97	0.62
1:A:900:PRO:HD3	1:A:371:GLU:OE1	2.00	0.61
1:B:371:GLU:OE1	1:B:374:TYR:HB2	2.00	0.61
1:B:419:ARG:NH1	4:B:1181:HOH:O	2.34	0.61
1:B:490:THR:O	1:B:491:SER:CB	2.49	0.60
1:A:901:GLY:HA2	1:A:362:TYR:CE1	2.37	0.59
1:A:281:ASN:HB2	1:A:319:LYS:HD2	1.84	0.59
1:A:283:LEU:O	1:A:287:MET:HG3	2.02	0.59
1:B:34:ILE:H	1:B:109:GLN:HE21	1.50	0.59
1:A:321:MET:HG2	1:A:386:MET:SD	2.42	0.59
1:A:352:LYS:H	1:A:352:LYS:HD2	1.68	0.58
1:B:19:ILE:HA	1:B:25:PHE:CE2	2.38	0.58
1:B:427:ASN:HD22	1:B:427:ASN:H	1.50	0.58
1:A:98:SER:HA	4:A:919:HOH:O	2.04	0.58
1:B:316:LEU:HD12	1:B:411:PHE:HB2	1.84	0.57
1:A:484:VAL:O	1:A:488:VAL:HG23	2.04	0.57
1:B:446:PRO:HD3	1:B:496:SER:O	2.05	0.57
1:B:282:MET:HG3	1:B:415:LEU:HD22	1.86	0.57
1:B:89:ASN:ND2	1:B:373:GLY:H	1.98	0.57
1:B:31:PHE:CE2	1:B:288:HIS:HD2	2.23	0.57
1:B:449:TRP:CH2	1:B:497:TYR:HB3	2.40	0.56
1:B:315:LEU:H	1:B:413:ASN:ND2	2.03	0.56
1:A:49:THR:O	1:A:50:PRO:C	2.49	0.56
1:A:146:PHE:HE2	1:A:254:GLN:HA	1.71	0.56
1:B:103:ASP:O	1:B:105:LYS:NZ	2.25	0.56
1:A:457:LEU:HD23	1:A:458:PHE:CE2	2.41	0.55
2:A:651:7MG:P	3:A:652:GDP:O2B	2.65	0.55
1:B:271:ALA:HA	1:B:311:VAL:O	2.06	0.55
1:B:423:ILE:HG13	1:B:424:PRO:HD3	1.88	0.55
1:A:253:GLU:HA	1:A:256:GLU:HG3	1.88	0.55
1:B:133:TYR:O	1:B:134:LEU:HD23	2.06	0.55
1:A:294:TYR:O	1:A:295:CYS:HB3	2.07	0.55
1:A:437:ARG:O	1:A:439:HIS:N	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:446:PRO:HD3	1:A:496:SER:O	2.06	0.55
1:B:408:ILE:HG23	1:B:412:PHE:CE2	2.42	0.55
1:B:423:ILE:HD12	4:B:1181:HOH:O	2.07	0.55
1:B:319:LYS:HD3	1:B:416:PHE:CD2	2.41	0.55
1:B:442:HIS:CD2	1:B:500:GLN:OE1	2.60	0.55
1:B:901:GLY:N	1:B:900:PRO:CD	2.67	0.54
1:B:34:ILE:N	1:B:109:GLN:NE2	2.53	0.54
1:B:443:VAL:HG12	1:B:499:ILE:HG12	1.88	0.54
1:B:295:CYS:HB2	1:B:296:PRO:HD2	1.88	0.54
1:B:91:TYR:O	1:B:131:ILE:HD12	2.07	0.54
1:B:44:THR:HA	1:B:53:ARG:NH2	2.23	0.54
1:B:344:LYS:HA	1:B:350:PRO:HG3	1.90	0.54
1:B:91:TYR:CZ	1:B:125:LYS:HD2	2.43	0.53
1:A:46:GLY:O	1:A:421:MET:HG2	2.08	0.53
1:A:257:LEU:O	1:A:261:VAL:HG13	2.09	0.53
1:B:32:SER:CB	1:B:65:LEU:H	2.22	0.53
1:A:32:SER:HB2	1:A:65:LEU:H	1.74	0.52
1:A:74:PHE:CD2	1:A:85:THR:HG22	2.43	0.52
1:B:321:MET:HE1	1:B:383:PHE:HD1	1.73	0.52
1:B:82:LYS:HB3	1:B:352:LYS:HD2	1.91	0.52
1:B:900:PRO:HB3	1:B:88:PHE:CA	2.40	0.52
1:A:309:ILE:HA	1:A:312:PHE:O	2.09	0.52
1:A:59:LYS:HE3	1:A:60:HIS:CE1	2.45	0.52
1:A:281:ASN:HB2	1:A:319:LYS:CD	2.39	0.51
1:B:135:ASN:HD22	1:B:137:GLU:H	1.57	0.51
1:B:489:ASN:HA	1:B:492:LYS:HE3	1.92	0.51
1:A:144:GLU:O	1:A:147:ASP:CB	2.58	0.51
1:B:135:ASN:HD22	1:B:137:GLU:N	2.09	0.51
1:B:35:SER:N	1:B:109:GLN:HE22	2.01	0.51
1:B:346:THR:CG2	1:B:347:PRO:HA	2.40	0.51
1:B:135:ASN:ND2	1:B:137:GLU:N	2.58	0.51
1:A:344:LYS:C	4:A:907:HOH:O	2.54	0.51
1:A:333:ASN:ND2	1:A:338:GLU:CB	2.70	0.51
1:B:31:PHE:CE2	1:B:66:LEU:HD22	2.33	0.51
1:A:115:PHE:O	1:A:118:SER:OG	2.26	0.51
1:A:333:ASN:OD1	2:A:651:7MG:HM72	2.11	0.51
1:B:53:ARG:O	1:B:54:TYR:C	2.54	0.51
1:B:311:VAL:HG12	1:B:312:PHE:CZ	2.46	0.50
1:B:284:LEU:O	1:B:285:ASP:C	2.53	0.50
1:B:440:VAL:HG12	1:B:477:SER:HA	1.92	0.50
1:A:55:GLN:HE21	1:A:58:LYS:NZ	2.10	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:35:SER:H	1:A:109:GLN:NE2	2.04	0.50
1:B:433:LEU:HG	1:B:434:GLN:N	2.23	0.50
1:A:491:SER:HB3	1:A:499:ILE:HD12	1.94	0.50
1:A:82:LYS:HD2	1:A:354:GLU:HB2	1.94	0.49
1:B:9:LYS:NZ	1:B:9:LYS:HB3	2.27	0.49
1:B:135:ASN:ND2	1:B:137:GLU:H	2.10	0.49
1:A:136:GLN:HE21	1:A:136:GLN:HA	1.77	0.49
1:B:279:GLY:HA3	1:B:282:MET:SD	2.52	0.49
1:B:443:VAL:HG12	1:B:499:ILE:CG1	2.42	0.49
1:A:25:PHE:CE1	1:A:270:ILE:CG2	2.95	0.49
1:A:291:HIS:CD2	1:A:297:LEU:HD13	2.48	0.49
1:B:22:ALA:HB2	1:B:73:ALA:HB1	1.94	0.49
1:A:327:PHE:CZ	1:A:390:LEU:HD13	2.47	0.48
1:A:280:HIS:CE1	1:A:319:LYS:HB2	2.48	0.48
1:A:446:PRO:HD2	1:A:449:TRP:NE1	2.28	0.48
1:B:471:ASP:HA	2:B:1152:7MG:H82	1.94	0.48
1:A:23:ASP:OD2	1:A:76:TYR:N	2.47	0.48
1:A:45:SER:HA	1:A:48:ASP:OD1	2.14	0.48
1:B:900:PRO:HG3	1:B:87:SER:HB2	1.96	0.48
1:B:34:ILE:N	1:B:109:GLN:HE21	2.12	0.48
1:A:327:PHE:HB3	1:A:331:ILE:HD12	1.96	0.48
1:A:443:VAL:HG23	1:A:445:PHE:HE1	1.79	0.48
1:B:291:HIS:HB2	1:B:297:LEU:HD13	1.95	0.48
2:B:1152:7MG:P	3:B:1151:GDP:PB	3.12	0.47
1:B:471:ASP:HA	2:B:1152:7MG:C8	2.50	0.47
1:A:25:PHE:HB3	1:A:73:ALA:HA	1.96	0.47
1:A:443:VAL:HG23	1:A:445:PHE:CE1	2.48	0.47
1:B:469:ILE:HG23	1:B:474:ALA:CA	2.45	0.47
1:A:447:LYS:HD2	1:A:448:GLU:OE2	2.15	0.47
1:A:7:ASN:OD1	1:A:7:ASN:C	2.58	0.47
1:A:305:LYS:HZ1	1:A:431:PRO:HA	1.80	0.47
1:A:89:ASN:ND2	1:A:373:GLY:H	2.09	0.47
1:B:44:THR:HG23	1:B:53:ARG:HH12	1.80	0.47
1:A:441:LEU:HD23	1:A:484:VAL:HG13	1.97	0.47
1:B:62:MET:HG3	1:B:291:HIS:CG	2.50	0.47
1:B:93:PHE:HB3	1:B:130:GLY:HA3	1.96	0.47
1:B:504:GLU:C	1:B:504:GLU:OE1	2.58	0.47
1:B:331:ILE:HG23	1:B:342:ARG:HG2	1.96	0.46
1:A:144:GLU:O	1:A:147:ASP:HB2	2.15	0.46
1:A:290:ILE:CD1	1:A:307:MET:SD	3.03	0.46
1:A:319:LYS:NZ	3:A:652:GDP:O2A	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:76:TYR:HD1	1:A:83:HIS:CE1	2.34	0.46
1:A:135:ASN:HD21	1:A:138:GLU:H	1.62	0.46
1:B:370:HIS:N	4:B:1168:HOH:O	2.48	0.46
1:B:253:GLU:C	1:B:255:GLU:H	2.23	0.46
1:A:405:SER:OG	1:A:406:LYS:N	2.48	0.46
1:B:134:LEU:HG	1:B:260:ALA:O	2.14	0.46
1:A:49:THR:O	1:A:52:GLU:N	2.49	0.46
1:B:409:GLU:HG2	4:B:1173:HOH:O	2.14	0.46
1:A:140:ARG:O	1:A:141:GLN:C	2.58	0.45
1:A:135:ASN:ND2	1:A:138:GLU:H	2.14	0.45
1:B:319:LYS:HE3	1:B:334:THR:OG1	2.16	0.45
1:A:295:CYS:HB2	1:A:296:PRO:HD2	1.97	0.45
1:B:94:PRO:HB2	1:B:104:VAL:HG21	1.99	0.45
1:B:442:HIS:HD2	1:B:500:GLN:OE1	1.99	0.45
1:A:25:PHE:CE1	1:A:270:ILE:HG23	2.50	0.45
1:B:50:PRO:O	1:B:51:GLU:C	2.59	0.45
1:A:72:CYS:SG	1:A:87:SER:HB3	2.57	0.45
1:B:251:THR:HB	1:B:252:LYS:H	1.44	0.45
1:B:327:PHE:CZ	1:B:390:LEU:HD13	2.52	0.45
1:B:426:LEU:HD23	1:B:426:LEU:HA	1.84	0.45
1:A:316:LEU:C	1:A:316:LEU:HD23	2.42	0.45
1:A:321:MET:HA	1:A:411:PHE:CE1	2.52	0.45
1:A:418:MET:O	1:A:419:ARG:C	2.60	0.45
1:B:441:LEU:HD12	1:B:499:ILE:HG21	1.98	0.45
1:A:330:ILE:HG22	1:A:342:ARG:NH1	2.32	0.44
1:B:46:GLY:O	1:B:419:ARG:HB2	2.17	0.44
1:B:290:ILE:HG13	1:B:291:HIS:N	2.32	0.44
1:A:305:LYS:HB3	1:A:428:LEU:O	2.17	0.44
1:A:32:SER:CB	1:A:65:LEU:H	2.30	0.44
1:A:253:GLU:HA	1:A:256:GLU:CG	2.47	0.44
1:A:439:HIS:CE1	1:A:481:PRO:HD3	2.53	0.44
1:B:315:LEU:HB2	1:B:413:ASN:HD22	1.82	0.44
1:A:22:ALA:HB2	1:A:73:ALA:HB1	2.00	0.44
1:B:414:LYS:HE3	1:B:428:LEU:HG	1.99	0.44
1:A:331:ILE:HG12	1:A:342:ARG:HG2	2.00	0.44
1:B:324:THR:O	1:B:327:PHE:N	2.51	0.44
1:A:325:GLN:CD	1:A:325:GLN:N	2.65	0.44
1:B:278:VAL:HA	1:B:316:LEU:O	2.17	0.44
1:B:294:TYR:CE1	1:B:311:VAL:HG13	2.52	0.43
1:B:436:LYS:HG2	1:B:438:ASP:HB2	1.99	0.43
1:A:305:LYS:NZ	1:A:431:PRO:HA	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:405:SER:N	4:B:1192:HOH:O	2.50	0.43
1:A:66:LEU:C	1:A:66:LEU:HD12	2.44	0.43
1:B:122:ASP:HB3	1:B:125:LYS:HG3	1.99	0.43
1:B:136:GLN:HE21	1:B:136:GLN:CA	2.31	0.43
1:B:350:PRO:HA	1:B:351:PRO:HD2	1.67	0.43
2:B:1152:7MG:H3'	3:B:1151:GDP:O4'	2.19	0.43
1:B:93:PHE:CD1	1:B:94:PRO:HD2	2.53	0.43
1:B:143:ARG:HH21	1:B:257:LEU:HD21	1.84	0.43
1:A:146:PHE:CE2	1:A:254:GLN:HA	2.51	0.43
1:A:435:PRO:O	1:A:436:LYS:HB2	2.19	0.43
3:B:1151:GDP:O3B	3:B:1151:GDP:H5''	2.19	0.43
1:B:412:PHE:N	1:B:412:PHE:CD2	2.87	0.42
1:B:427:ASN:HD22	1:B:427:ASN:N	2.10	0.42
1:A:55:GLN:HE21	1:A:58:LYS:HZ2	1.68	0.42
1:B:139:GLU:HG3	1:B:261:VAL:HG11	2.00	0.42
1:A:111:SER:OG	1:B:103:ASP:OD1	2.37	0.42
1:A:134:LEU:HD22	1:A:138:GLU:HB3	2.02	0.42
1:A:409:GLU:HA	1:A:412:PHE:CE1	2.54	0.42
1:A:417:LEU:HD12	1:A:417:LEU:HA	1.68	0.42
1:A:425:TYR:CD1	1:A:425:TYR:C	2.98	0.42
1:B:57:LEU:O	1:B:62:MET:HE2	2.20	0.42
1:B:294:TYR:CZ	1:B:311:VAL:HG13	2.55	0.42
1:B:279:GLY:CA	1:B:282:MET:SD	3.08	0.41
1:A:139:GLU:HG3	1:A:261:VAL:CG1	2.50	0.41
1:A:333:ASN:HD21	1:A:335:SER:HB2	1.84	0.41
1:A:74:PHE:CE2	1:A:85:THR:CG2	3.03	0.41
1:A:283:LEU:HD22	1:A:287:MET:HG3	2.02	0.41
1:A:329:ASP:N	1:A:329:ASP:OD1	2.53	0.41
1:A:342:ARG:HH21	1:A:345:GLU:HB2	1.85	0.41
1:B:30:GLU:HG2	1:B:372:ALA:HB2	2.02	0.41
1:B:440:VAL:HG23	1:B:502:TYR:HB2	2.02	0.41
1:B:135:ASN:HD22	1:B:136:GLN:N	2.17	0.41
1:A:67:PHE:HB2	1:A:126:VAL:HG11	2.03	0.41
1:A:74:PHE:CE1	1:A:380:GLY:HA3	2.55	0.41
1:A:348:PHE:C	4:A:907:HOH:O	2.63	0.41
1:B:141:GLN:C	1:B:143:ARG:N	2.77	0.41
1:B:415:LEU:HD23	1:B:415:LEU:HA	1.88	0.41
1:B:480:GLN:H	1:B:483:GLN:NE2	2.09	0.41
1:A:325:GLN:HE21	1:A:328:LYS:HD2	1.85	0.41
1:B:137:GLU:O	1:B:138:GLU:C	2.64	0.41
1:B:414:LYS:NZ	4:B:1171:HOH:O	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:59:LYS:HG2	1:A:59:LYS:O	2.21	0.41
1:A:421:MET:HE3	1:A:440:VAL:HG21	2.03	0.41
1:B:312:PHE:HA	1:B:313:PRO:HD2	1.84	0.41
1:A:131:ILE:HA	1:A:132:PRO:HD3	1.98	0.41
1:B:381:LEU:HA	1:B:381:LEU:HD23	1.87	0.40
1:A:74:PHE:CD2	1:A:85:THR:CG2	3.05	0.40
1:B:470:ASP:CG	1:B:471:ASP:N	2.79	0.40
1:A:66:LEU:H	1:A:292:GLN:HE22	1.70	0.40
1:B:412:PHE:N	1:B:412:PHE:HD2	2.19	0.40
1:A:262:GLY:O	1:A:265:ARG:HG3	2.22	0.40
1:A:291:HIS:HD2	1:A:297:LEU:HD13	1.87	0.40
1:A:321:MET:HE3	1:A:411:PHE:CE1	2.57	0.40
1:A:436:LYS:HE3	4:A:904:HOH:O	2.22	0.40
1:B:3:ILE:O	1:B:131:ILE:HD11	2.22	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	373/507 (74%)	322 (86%)	43 (12%)	8 (2%)	5	27
1	B	363/507 (72%)	316 (87%)	37 (10%)	10 (3%)	4	21
All	All	736/1014 (73%)	638 (87%)	80 (11%)	18 (2%)	4	24

All (18) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	405	SER
1	A	438	ASP
1	B	433	LEU
1	B	491	SER

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Mol	Chain	Res	Type
1	A	252	LYS
1	B	36	ASP
1	B	37	GLY
1	A	421	MET
1	B	471	ASP
1	B	439	HIS
1	A	900	PRO
1	A	146	PHE
1	B	254	GLN
1	B	426	LEU
1	B	50	PRO
1	A	296	PRO
1	B	262	GLY
1	A	430	GLY

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	345/458 (75%)	297 (86%)	48 (14%)	3	17
1	B	335/458 (73%)	274 (82%)	61 (18%)	2	9
All	All	680/916 (74%)	571 (84%)	109 (16%)	2	12

All (109) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	9	LYS
1	A	10	ILE
1	A	25	PHE
1	A	34	ILE
1	A	66	LEU
1	A	67	PHE
1	A	77	ASP
1	A	89	ASN
1	A	99	ARG

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Mol	Chain	Res	Type
1	A	104	VAL
1	A	135	ASN
1	A	136	GLN
1	A	141	GLN
1	A	142	LEU
1	A	261	VAL
1	A	270	ILE
1	A	282	MET
1	A	283	LEU
1	A	290	ILE
1	A	309	ILE
1	A	315	LEU
1	A	325	GLN
1	A	329	ASP
1	A	330	ILE
1	A	340	GLU
1	A	341	LYS
1	A	352	LYS
1	A	353	VAL
1	A	361	SER
1	A	363	ASP
1	A	385	SER
1	A	402	SER
1	A	404	ARG
1	A	405	SER
1	A	417	LEU
1	A	422	ASP
1	A	437	ARG
1	A	440	VAL
1	A	444	THR
1	A	447	LYS
1	A	448	GLU
1	A	456	GLN
1	A	482	GLU
1	A	484	VAL
1	A	485	GLN
1	A	486	ILE
1	A	496	SER
1	A	498	ARG
1	B	10	ILE
1	B	20	GLU
1	B	39	SER

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Mol	Chain	Res	Type
1	B	53	ARG
1	B	62	MET
1	B	66	LEU
1	B	67	PHE
1	B	77	ASP
1	B	89	ASN
1	B	99	ARG
1	B	100	SER
1	B	104	VAL
1	B	105	LYS
1	B	135	ASN
1	B	136	GLN
1	B	141	GLN
1	B	251	THR
1	B	252	LYS
1	B	255	GLU
1	B	283	LEU
1	B	290	ILE
1	B	303	GLU
1	B	310	CYS
1	B	315	LEU
1	B	318	THR
1	B	325	GLN
1	B	328	LYS
1	B	332	ASN
1	B	335	SER
1	B	340	GLU
1	B	342	ARG
1	B	346	THR
1	B	349	ASP
1	B	371	GLU
1	B	385	SER
1	B	407	LEU
1	B	408	ILE
1	B	417	LEU
1	B	418	MET
1	B	419	ARG
1	B	426	LEU
1	B	427	ASN
1	B	429	GLU
1	B	433	LEU
1	B	434	GLN

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Mol	Chain	Res	Type
1	B	437	ARG
1	B	439	HIS
1	B	456	GLN
1	B	461	PHE
1	B	464	ILE
1	B	469	ILE
1	B	470	ASP
1	B	471	ASP
1	B	476	VAL
1	B	482	GLU
1	B	486	ILE
1	B	495	GLU
1	B	496	SER
1	B	500	GLN
1	B	504	GLU
1	B	505	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (30) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	55	GLN
1	A	60	HIS
1	A	89	ASN
1	A	109	GLN
1	A	124	ASN
1	A	135	ASN
1	A	136	GLN
1	A	145	GLN
1	A	268	HIS
1	A	280	HIS
1	A	291	HIS
1	A	325	GLN
1	A	439	HIS
1	A	463	ASN
1	B	89	ASN
1	B	109	GLN
1	B	135	ASN
1	B	136	GLN
1	B	254	GLN
1	B	280	HIS
1	B	288	HIS
1	B	292	GLN

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Mol	Chain	Res	Type
1	B	302	ASN
1	B	325	GLN
1	B	370	HIS
1	B	413	ASN
1	B	427	ASN
1	B	439	HIS
1	B	442	HIS
1	B	483	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

4 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	7MG	A	651	-	23,26,27	2.79	4 (17%)	27,39,42	1.93	5 (18%)
3	GDP	A	652	-	29,30,30	1.20	3 (10%)	45,47,47	1.88	10 (22%)
2	7MG	B	1152	-	23,26,27	2.27	3 (13%)	27,39,42	2.30	5 (18%)
3	GDP	B	1151	-	29,30,30	1.21	3 (10%)	45,47,47	1.85	7 (15%)

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	7MG	A	651	-	-	2/7/37/38	0/3/3/3
3	GDP	A	652	-	-	2/16/32/32	0/3/3/3
2	7MG	B	1152	-	-	2/7/37/38	0/3/3/3
3	GDP	B	1151	-	-	2/16/32/32	0/3/3/3

All (13) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	651	7MG	C8-N9	-12.36	1.37	1.45
2	B	1152	7MG	C8-N9	-9.52	1.39	1.45
2	B	1152	7MG	C5-N7	3.87	1.40	1.35
3	B	1151	GDP	C5-C4	3.27	1.47	1.38
3	A	652	GDP	C5-C4	3.05	1.47	1.38
3	A	652	GDP	C6-N1	-2.90	1.33	1.38
3	B	1151	GDP	PA-O3A	2.40	1.62	1.59
2	A	651	7MG	C8-N7	-2.36	1.30	1.42
2	A	651	7MG	C5-N7	2.31	1.38	1.35
3	A	652	GDP	C5-N7	-2.27	1.34	1.39
2	A	651	7MG	O5'-C5'	-2.19	1.37	1.44
3	B	1151	GDP	C6-N1	-2.15	1.34	1.38
2	B	1152	7MG	C8-N7	-2.13	1.32	1.42

All (27) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	1152	7MG	N9-C8-N7	7.74	114.33	103.37
3	A	652	GDP	C5-C4-N3	-6.37	118.26	128.39
3	B	1151	GDP	C5-C4-N3	-6.02	118.81	128.39
2	B	1152	7MG	C4-C5-N7	5.66	112.06	105.38
2	A	651	7MG	C4-C5-N7	5.53	111.91	105.38
3	A	652	GDP	C2-N3-C4	5.19	121.24	112.30
2	A	651	7MG	N9-C8-N7	5.16	110.67	103.37
3	B	1151	GDP	C2-N3-C4	5.07	121.02	112.30
3	B	1151	GDP	N9-C4-N3	4.55	135.06	125.95
3	A	652	GDP	N9-C4-N3	4.49	134.94	125.95
2	B	1152	7MG	O4'-C1'-N9	4.25	115.09	109.30
3	B	1151	GDP	C6-C5-N7	3.65	136.94	130.29
3	A	652	GDP	C6-C5-N7	3.26	136.21	130.29

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	1152	7MG	C6-C5-C4	-3.12	116.91	122.40
3	B	1151	GDP	C4-C5-N7	-2.82	106.20	110.67
3	A	652	GDP	O2A-PA-O3A	2.71	114.59	107.27
2	A	651	7MG	O4'-C1'-N9	2.49	112.69	109.30
3	A	652	GDP	C5-C6-N1	2.40	119.37	113.25
3	B	1151	GDP	C5'-C4'-C3'	-2.38	106.66	115.21
2	B	1152	7MG	O4'-C4'-C3'	-2.25	100.69	105.15
3	A	652	GDP	C2-N1-C6	-2.24	121.05	125.11
3	A	652	GDP	C4-C5-N7	-2.22	107.15	110.67
3	B	1151	GDP	C8-N7-C5	2.19	108.15	104.26
2	A	651	7MG	C6-C5-C4	-2.18	118.56	122.40
3	A	652	GDP	C2'-C3'-C4'	2.12	106.70	102.61
3	A	652	GDP	O6-C6-C5	-2.12	120.94	126.53
2	A	651	7MG	O3'-C3'-C4'	-2.10	105.05	111.08

There are no chirality outliers.

All (8) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	652	GDP	PA-O3A-PB-O3B
2	A	651	7MG	O4'-C4'-C5'-O5'
2	B	1152	7MG	O4'-C1'-N9-C4
2	A	651	7MG	C3'-C4'-C5'-O5'
3	B	1151	GDP	O4'-C4'-C5'-O5'
2	B	1152	7MG	O4'-C1'-N9-C8
3	B	1151	GDP	PB-O3A-PA-O5'
3	A	652	GDP	PA-O3A-PB-O2B

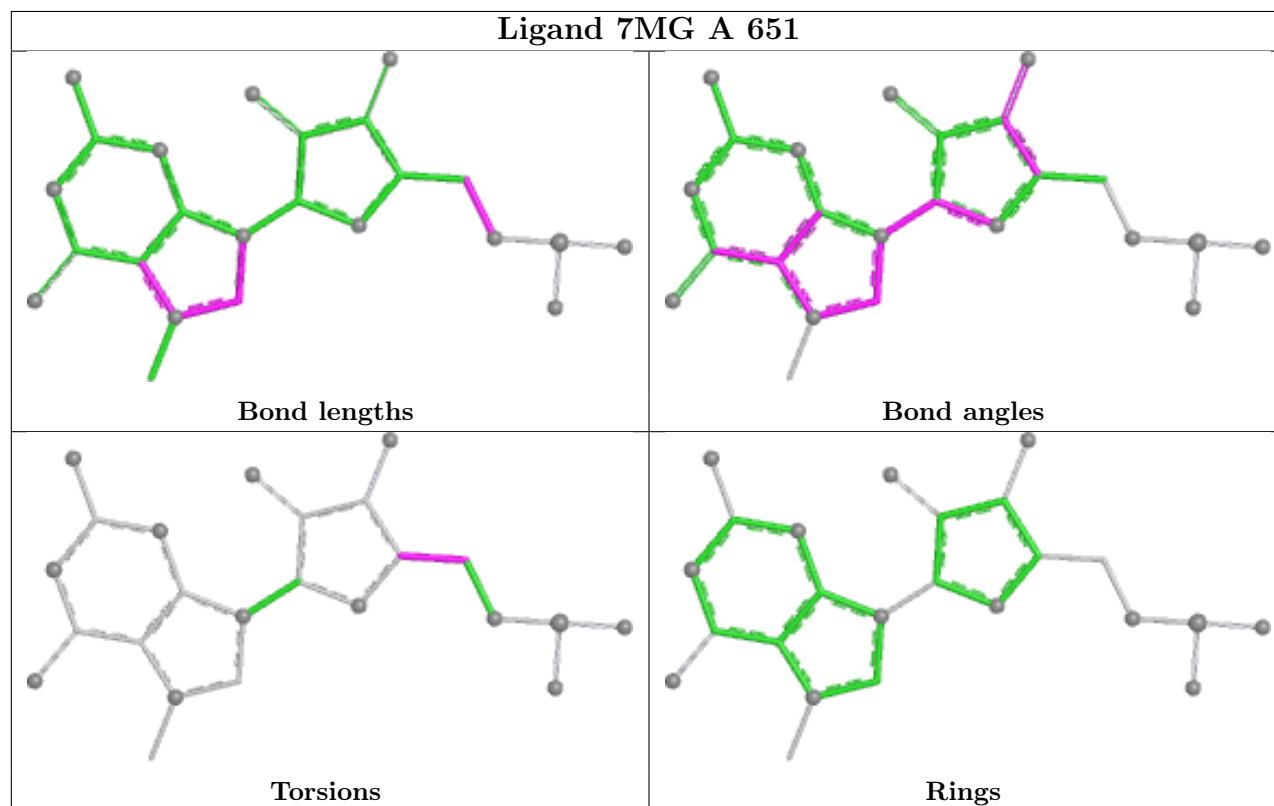
There are no ring outliers.

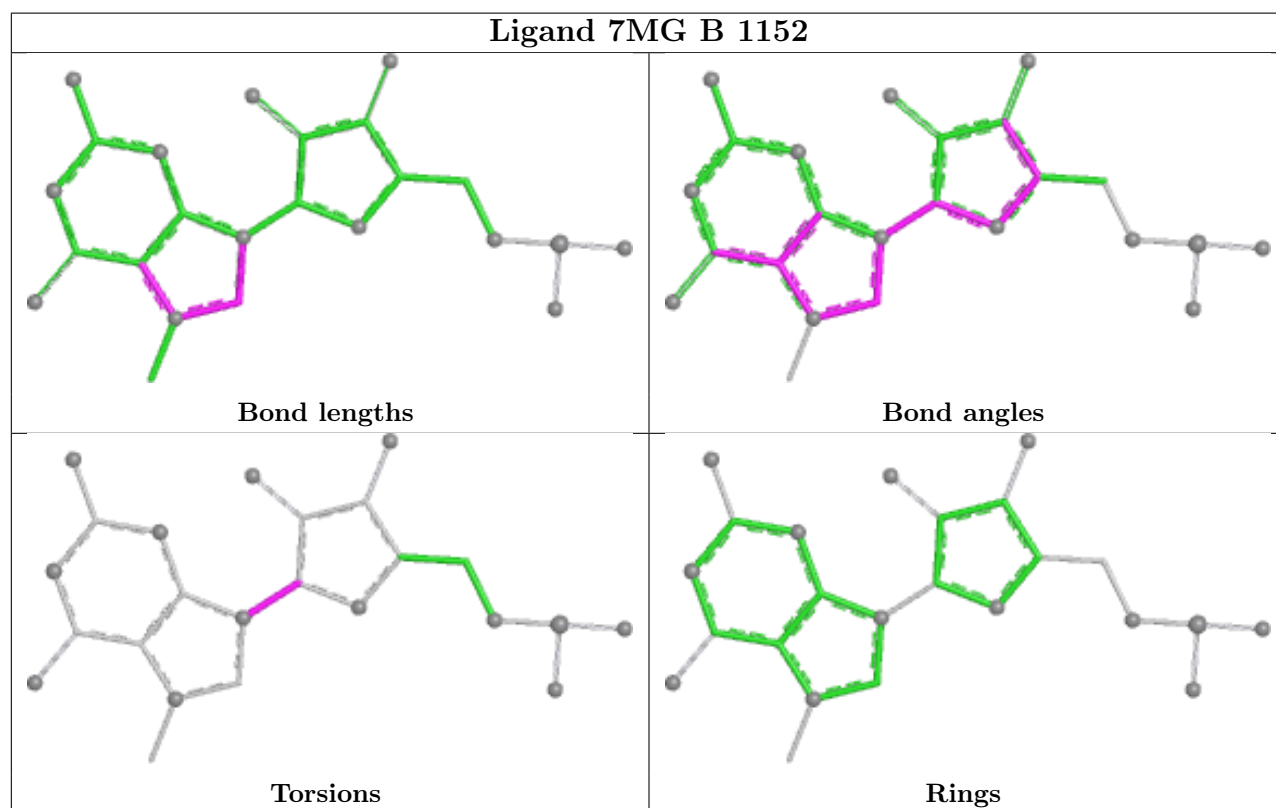
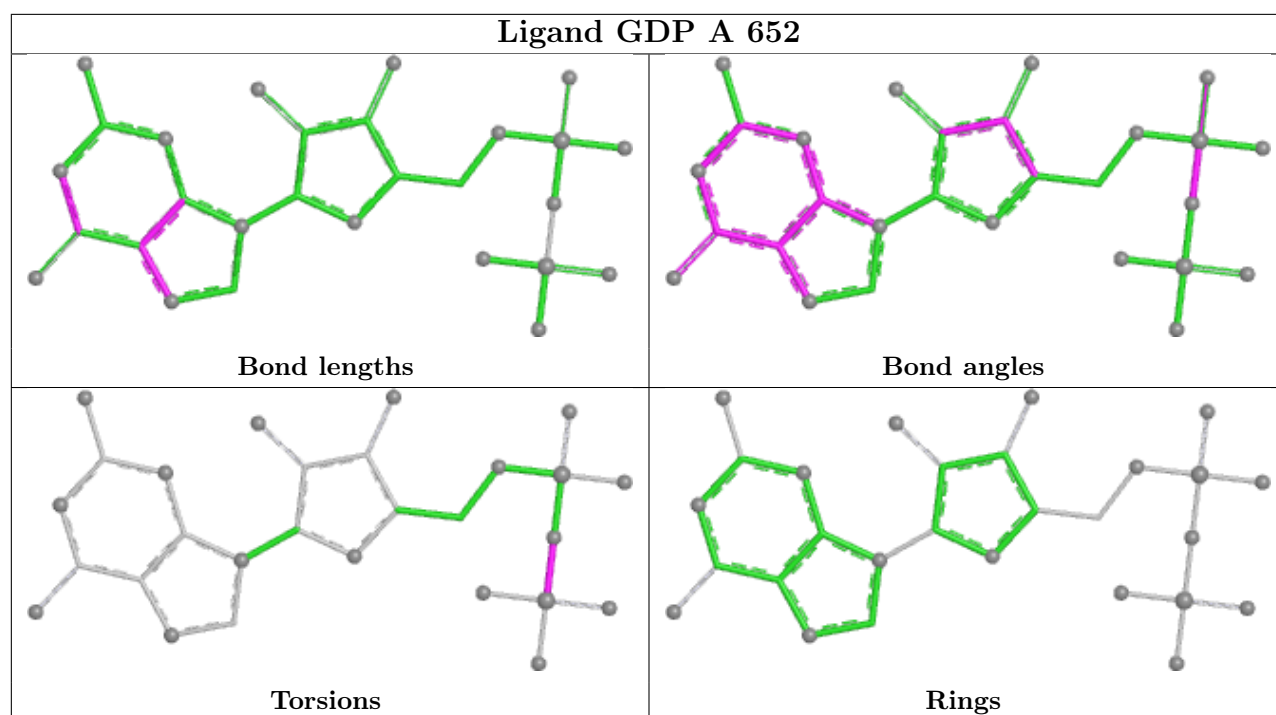
4 monomers are involved in 12 short contacts:

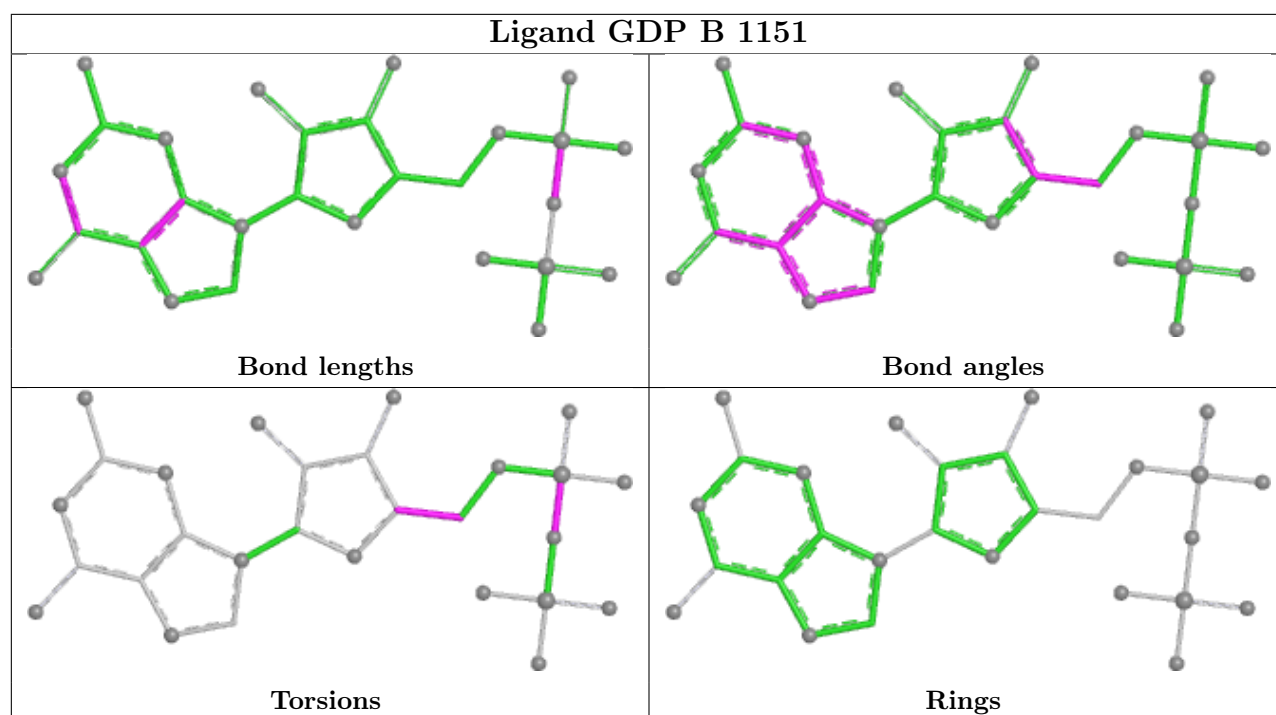
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	651	7MG	4	0
3	A	652	GDP	4	0
2	B	1152	7MG	6	0
3	B	1151	GDP	4	0

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.







5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	383/507 (75%)	1.30	60 (15%) 5 3	58, 75, 95, 110	0
1	B	373/507 (73%)	1.28	57 (15%) 5 3	57, 76, 95, 107	0
All	All	756/1014 (74%)	1.29	117 (15%) 5 3	57, 75, 95, 110	0

All (117) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	50	PRO	4.4
1	A	403	ALA	4.1
1	B	47	PHE	4.0
1	A	402	SER	3.7
1	B	428	LEU	3.7
1	B	385	SER	3.7
1	B	405	SER	3.5
1	A	501	THR	3.4
1	A	250	TYR	3.2
1	A	376	ALA	3.2
1	B	465	GLN	3.2
1	B	426	LEU	3.1
1	A	490	THR	3.1
1	A	98	SER	3.0
1	B	23	ASP	2.9
1	A	503	ALA	2.9
1	B	387	ALA	2.9
1	A	296	PRO	2.9
1	B	475	PHE	2.9
1	A	494	ALA	2.8
1	B	251	THR	2.8
1	A	294	TYR	2.8
1	B	370	HIS	2.8
1	A	323	SER	2.8

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Mol	Chain	Res	Type	RSRZ
1	B	424	PRO	2.7
1	B	423	ILE	2.7
1	A	363	ASP	2.7
1	B	52	GLU	2.6
1	B	490	THR	2.6
1	A	13	HIS	2.6
1	A	373	GLY	2.6
1	B	901	GLY	2.6
1	B	276	LEU	2.6
1	B	466	ILE	2.6
1	B	433	LEU	2.6
1	A	19	ILE	2.5
1	B	76	TYR	2.5
1	B	57	LEU	2.5
1	A	326	PRO	2.5
1	A	257	LEU	2.5
1	B	440	VAL	2.5
1	A	353	VAL	2.5
1	A	354	GLU	2.5
1	A	47	PHE	2.5
1	B	254	GLN	2.5
1	A	32	SER	2.5
1	B	460	ALA	2.5
1	B	351	PRO	2.5
1	B	45	SER	2.4
1	B	83	HIS	2.4
1	B	505	TYR	2.4
1	A	274	GLY	2.4
1	A	138	GLU	2.4
1	A	416	PHE	2.4
1	B	257	LEU	2.4
1	B	407	LEU	2.4
1	B	462	GLY	2.4
1	A	97	PHE	2.4
1	A	334	THR	2.4
1	B	24	PHE	2.4
1	B	142	LEU	2.4
1	A	340	GLU	2.4
1	A	34	ILE	2.3
1	B	408	ILE	2.3
1	A	488	VAL	2.3
1	B	391	GLY	2.3

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Mol	Chain	Res	Type	RSRZ
1	B	469	ILE	2.3
1	A	322	ALA	2.3
1	B	447	LYS	2.3
1	A	251	THR	2.3
1	A	140	ARG	2.3
1	B	311	VAL	2.3
1	B	87	SER	2.2
1	A	148	GLU	2.2
1	A	411	PHE	2.2
1	A	78	HIS	2.2
1	A	497	TYR	2.2
1	A	355	SER	2.2
1	A	277	VAL	2.2
1	B	382	CYS	2.2
1	B	384	ILE	2.2
1	A	276	LEU	2.2
1	A	412	PHE	2.2
1	B	44	THR	2.2
1	A	145	GLN	2.2
1	B	119	GLN	2.2
1	A	331	ILE	2.2
1	A	1	MET	2.2
1	B	81	SER	2.2
1	B	331	ILE	2.2
1	B	456	GLN	2.2
1	A	310	CYS	2.2
1	A	146	PHE	2.2
1	B	352	LYS	2.1
1	A	308	ALA	2.1
1	A	341	LYS	2.1
1	B	441	LEU	2.1
1	B	478	LEU	2.1
1	B	74	PHE	2.1
1	A	2	GLU	2.1
1	A	102	PRO	2.1
1	A	370	HIS	2.1
1	A	495	GLU	2.1
1	B	255	GLU	2.1
1	A	476	VAL	2.1
1	B	427	ASN	2.1
1	B	419	ARG	2.1
1	A	356	ALA	2.1

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Mol	Chain	Res	Type	RSRZ
1	A	96	PRO	2.1
1	B	20	GLU	2.1
1	A	99	ARG	2.0
1	A	407	LEU	2.0
1	A	442	HIS	2.0
1	B	294	TYR	2.0
1	B	448	GLU	2.0
1	A	27	ILE	2.0
1	A	80	ASP	2.0

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

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

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

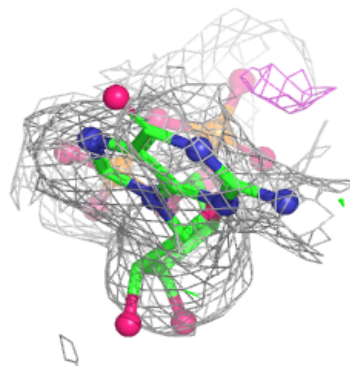
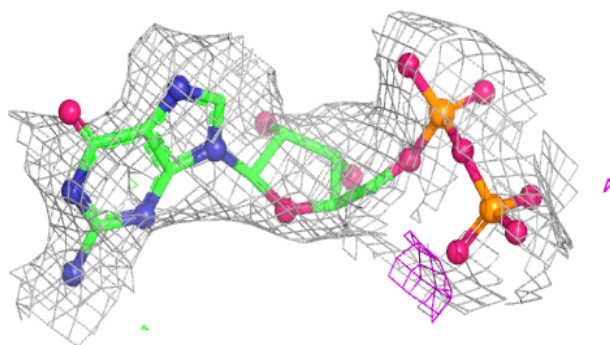
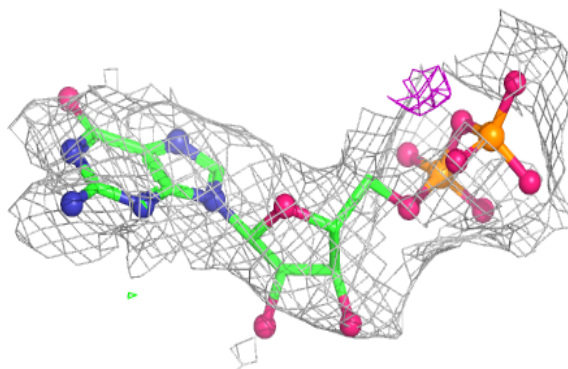
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
3	GDP	B	1151	28/28	0.72	0.14	114,118,121,122	0
2	7MG	B	1152	24/25	0.81	0.12	61,68,75,76	0
2	7MG	A	651	24/25	0.86	0.12	54,64,65,68	0
3	GDP	A	652	28/28	0.89	0.12	57,60,64,65	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.

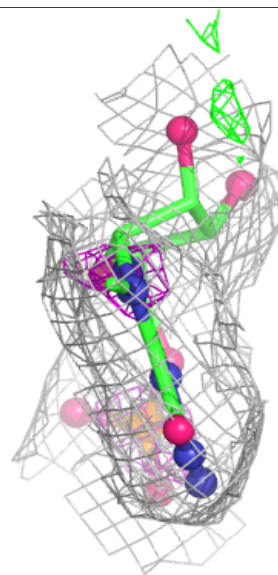
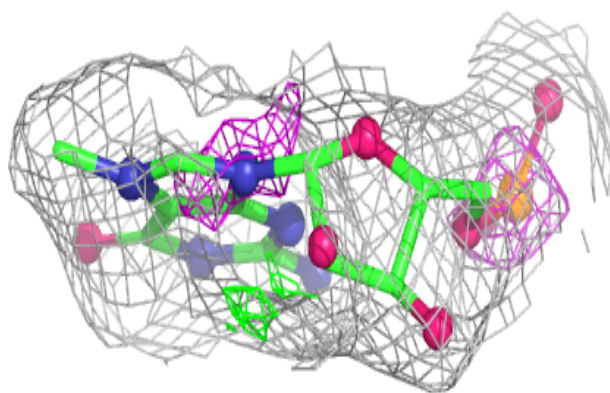
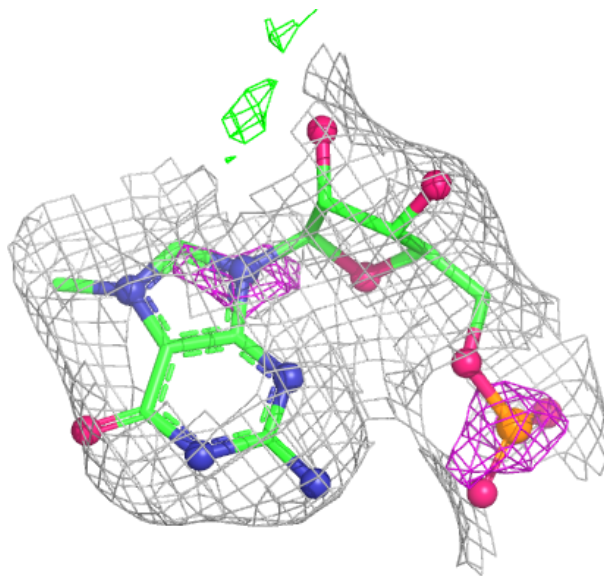
Electron density around GDP B 1151:

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



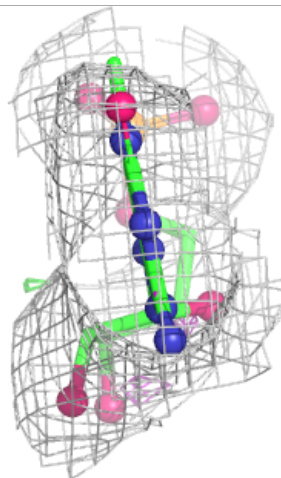
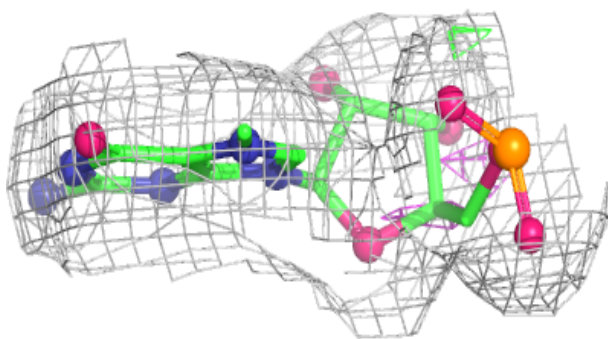
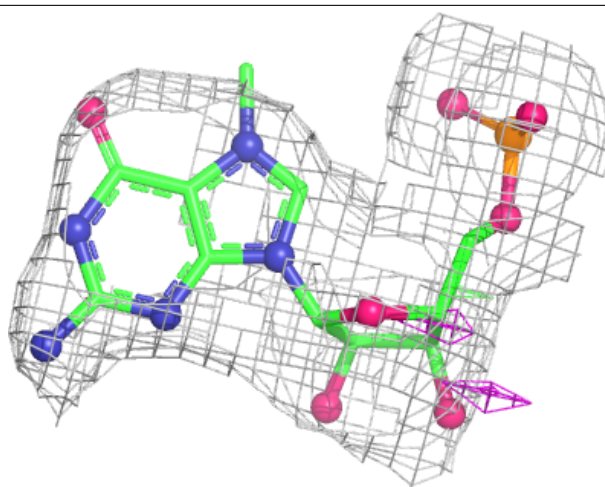
Electron density around 7MG B 1152:

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



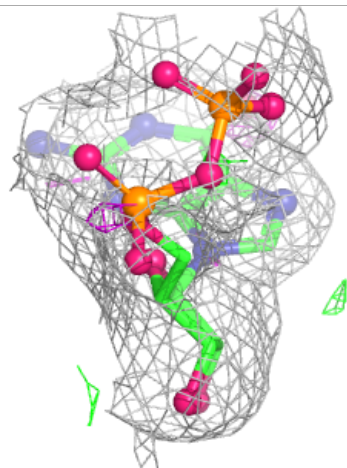
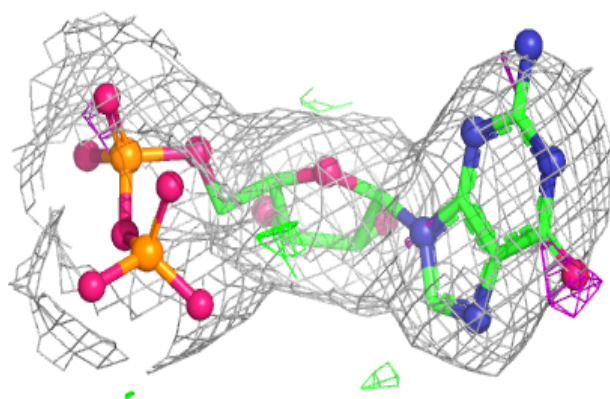
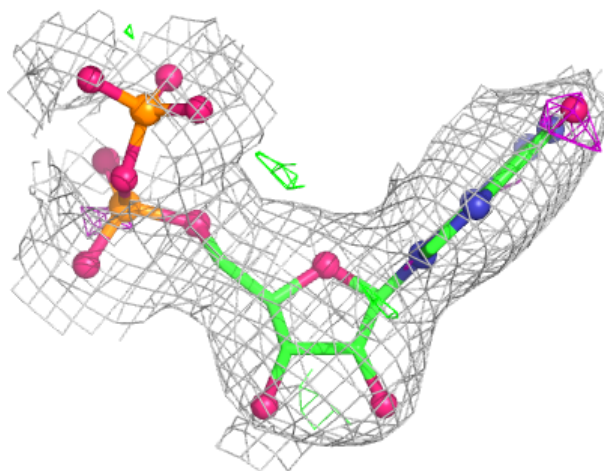
Electron density around 7MG A 651:

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



Electron density around GDP A 652:

$2mF_o-DF_c$ (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.