Full wwPDB X-ray Structure Validation Report ⓘ

Jun 24, 2025 – 01:52 pm BST

PDB ID	:	9F2R / pdb_00009f2r
Title	:	Influenza A/H17N10 polymerase with bound promoter and 3' end of template in active site
Authors	:	Cusack, S.; Drncova, P.
Deposited on	:	2024-04-23
Resolution	:	1.96 Å(reported)

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

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

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

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

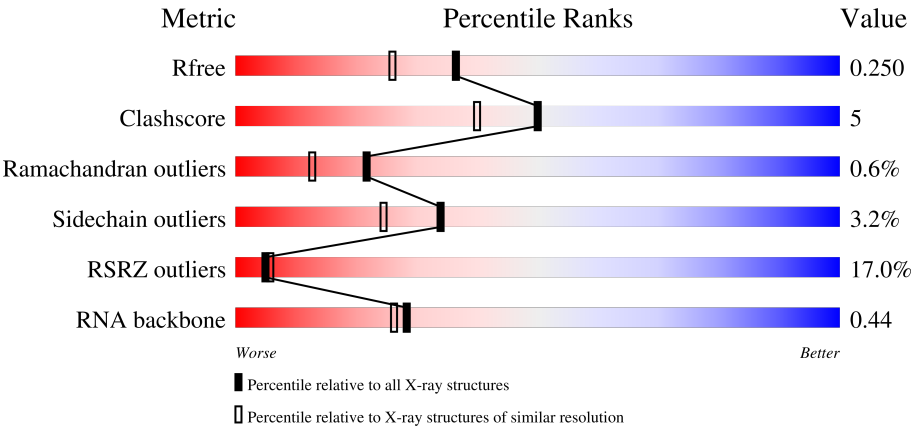
MolProbity	:	4-5-2 with Phenix2.0rc1
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	2.0rc1
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.003 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.44

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 1.96 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	164625	3187 (1.96-1.96)
Clashscore	180529	3412 (1.96-1.96)
Ramachandran outliers	177936	3390 (1.96-1.96)
Sidechain outliers	177891	3390 (1.96-1.96)
RSRZ outliers	164620	3186 (1.96-1.96)
RNA backbone	3690	1028 (2.36-1.56)

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

Mol	Chain	Length	Quality of chain
1	A	738	19% 83% 11% • •
2	B	776	5% 82% 12% • 5%
3	C	809	24% 74% 15% • 10%
4	R	21	5% 43% 19% 5% 5% 29%

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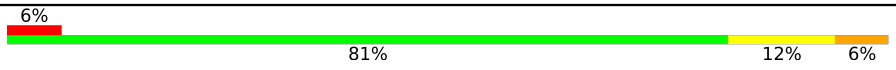
Mol	Chain	Length	Quality of chain
5	V	16	

2 Entry composition

There are 9 unique types of molecules in this entry. The entry contains 19393 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 Polymerase acidic protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	708	5825	3696	985	1106	38	0	7	0

There are 25 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-13	GLY	-	expression tag	UNP H6QM92
A	-12	SER	-	expression tag	UNP H6QM92
A	-11	HIS	-	expression tag	UNP H6QM92
A	-10	HIS	-	expression tag	UNP H6QM92
A	-9	HIS	-	expression tag	UNP H6QM92
A	-8	HIS	-	expression tag	UNP H6QM92
A	-7	HIS	-	expression tag	UNP H6QM92
A	-6	HIS	-	expression tag	UNP H6QM92
A	-5	HIS	-	expression tag	UNP H6QM92
A	-4	HIS	-	expression tag	UNP H6QM92
A	-3	GLY	-	expression tag	UNP H6QM92
A	-2	SER	-	expression tag	UNP H6QM92
A	-1	GLY	-	expression tag	UNP H6QM92
A	0	SER	-	expression tag	UNP H6QM92
A	714	GLY	-	expression tag	UNP H6QM92
A	715	SER	-	expression tag	UNP H6QM92
A	716	GLY	-	expression tag	UNP H6QM92
A	717	SER	-	expression tag	UNP H6QM92
A	718	GLY	-	expression tag	UNP H6QM92
A	719	GLU	-	expression tag	UNP H6QM92
A	720	ASN	-	expression tag	UNP H6QM92
A	721	LEU	-	expression tag	UNP H6QM92
A	722	TYR	-	expression tag	UNP H6QM92
A	723	PHE	-	expression tag	UNP H6QM92
A	724	GLN	-	expression tag	UNP H6QM92

- Molecule 2 is a protein called RNA-directed RNA polymerase catalytic subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	737	Total	C	N	O	S	0	14	0
			5979	3759	1059	1121	40			

There are 20 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-8	GLY	-	expression tag	UNP H6QM91
B	-7	SER	-	expression tag	UNP H6QM91
B	-6	GLY	-	expression tag	UNP H6QM91
B	-5	SER	-	expression tag	UNP H6QM91
B	-4	GLY	-	expression tag	UNP H6QM91
B	-3	SER	-	expression tag	UNP H6QM91
B	-2	GLY	-	expression tag	UNP H6QM91
B	-1	SER	-	expression tag	UNP H6QM91
B	0	GLY	-	expression tag	UNP H6QM91
B	757	GLY	-	expression tag	UNP H6QM91
B	758	SER	-	expression tag	UNP H6QM91
B	759	GLY	-	expression tag	UNP H6QM91
B	760	SER	-	expression tag	UNP H6QM91
B	761	GLY	-	expression tag	UNP H6QM91
B	762	GLU	-	expression tag	UNP H6QM91
B	763	ASN	-	expression tag	UNP H6QM91
B	764	LEU	-	expression tag	UNP H6QM91
B	765	TYR	-	expression tag	UNP H6QM91
B	766	PHE	-	expression tag	UNP H6QM91
B	767	GLN	-	expression tag	UNP H6QM91

- Molecule 3 is a protein called Polymerase basic protein 2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	C	731	Total	C	N	O	S	0	2	0
			5813	3665	1032	1084	32			

There are 49 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	-8	GLY	-	expression tag	UNP H6QM90
C	-7	SER	-	expression tag	UNP H6QM90
C	-6	GLY	-	expression tag	UNP H6QM90
C	-5	SER	-	expression tag	UNP H6QM90
C	-4	GLY	-	expression tag	UNP H6QM90
C	-3	SER	-	expression tag	UNP H6QM90
C	-2	GLY	-	expression tag	UNP H6QM90

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Chain	Residue	Modelled	Actual	Comment	Reference
C	-1	SER	-	expression tag	UNP H6QM90
C	0	GLY	-	expression tag	UNP H6QM90
C	761	GLY	-	expression tag	UNP H6QM90
C	762	TRP	-	expression tag	UNP H6QM90
C	763	SER	-	expression tag	UNP H6QM90
C	764	HIS	-	expression tag	UNP H6QM90
C	765	PRO	-	expression tag	UNP H6QM90
C	766	GLN	-	expression tag	UNP H6QM90
C	767	PHE	-	expression tag	UNP H6QM90
C	768	GLU	-	expression tag	UNP H6QM90
C	769	LYS	-	expression tag	UNP H6QM90
C	770	GLY	-	expression tag	UNP H6QM90
C	771	GLY	-	expression tag	UNP H6QM90
C	772	GLY	-	expression tag	UNP H6QM90
C	773	SER	-	expression tag	UNP H6QM90
C	774	GLY	-	expression tag	UNP H6QM90
C	775	GLY	-	expression tag	UNP H6QM90
C	776	GLY	-	expression tag	UNP H6QM90
C	777	SER	-	expression tag	UNP H6QM90
C	778	GLY	-	expression tag	UNP H6QM90
C	779	GLY	-	expression tag	UNP H6QM90
C	780	SER	-	expression tag	UNP H6QM90
C	781	ALA	-	expression tag	UNP H6QM90
C	782	TRP	-	expression tag	UNP H6QM90
C	783	SER	-	expression tag	UNP H6QM90
C	784	HIS	-	expression tag	UNP H6QM90
C	785	PRO	-	expression tag	UNP H6QM90
C	786	GLN	-	expression tag	UNP H6QM90
C	787	PHE	-	expression tag	UNP H6QM90
C	788	GLU	-	expression tag	UNP H6QM90
C	789	LYS	-	expression tag	UNP H6QM90
C	790	GLY	-	expression tag	UNP H6QM90
C	791	ARG	-	expression tag	UNP H6QM90
C	792	SER	-	expression tag	UNP H6QM90
C	793	GLY	-	expression tag	UNP H6QM90
C	794	GLY	-	expression tag	UNP H6QM90
C	795	GLU	-	expression tag	UNP H6QM90
C	796	ASN	-	expression tag	UNP H6QM90
C	797	LEU	-	expression tag	UNP H6QM90
C	798	TYR	-	expression tag	UNP H6QM90
C	799	PHE	-	expression tag	UNP H6QM90
C	800	GLN	-	expression tag	UNP H6QM90

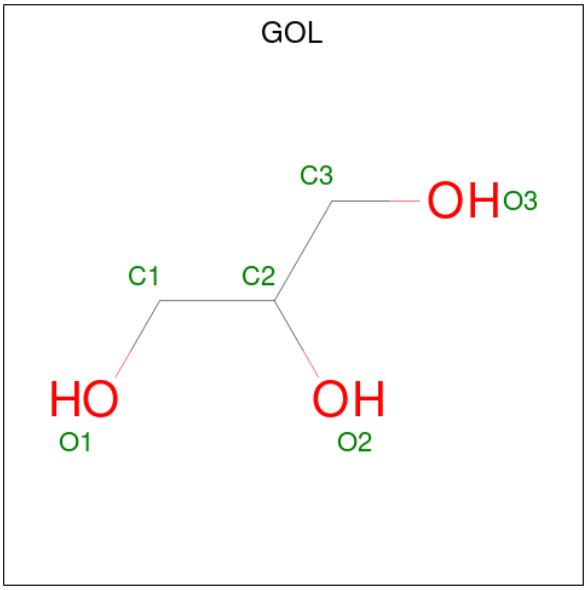
- Molecule 4 is a RNA chain called 3' end of the promoter vRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	R	15	Total	C	N	O	P	0	0	0
			289	129	43	103	14			

- Molecule 5 is a RNA chain called 5' end of the promoter vRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	V	16	Total	C	N	O	P	0	0	0
			342	152	67	107	16			

- Molecule 6 is GLYCEROL (CCD ID: GOL) (formula: $C_3H_8O_3$).

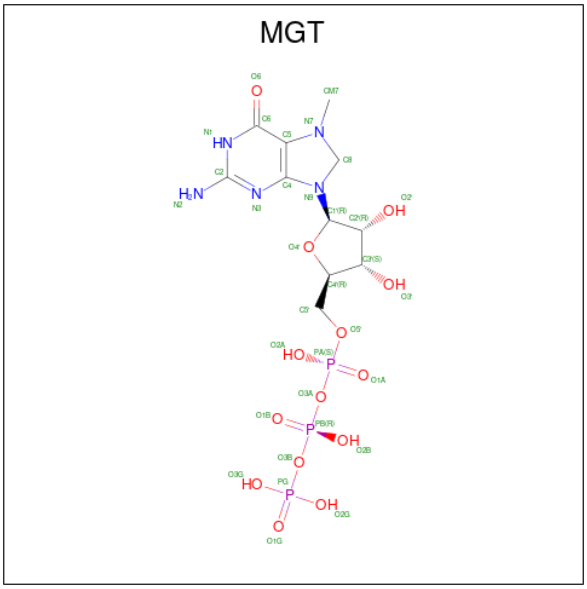


Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	A	1	Total	C	O	0	0
			6	3	3		
6	B	1	Total	C	O	0	0
			6	3	3		
6	C	1	Total	C	O	0	0
			6	3	3		

- Molecule 7 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	B	1	Total	Mg	0	0
			1	1		

- Molecule 8 is 7N-METHYL-8-HYDROGUANOSINE-5'-TRIPHOSPHATE (CCD ID: MGT) (formula: $C_{11}H_{20}N_5O_{14}P_3$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
8	C	1	Total	C	N	O	P	0	0
			33	11	5	14	3		

- Molecule 9 is water.

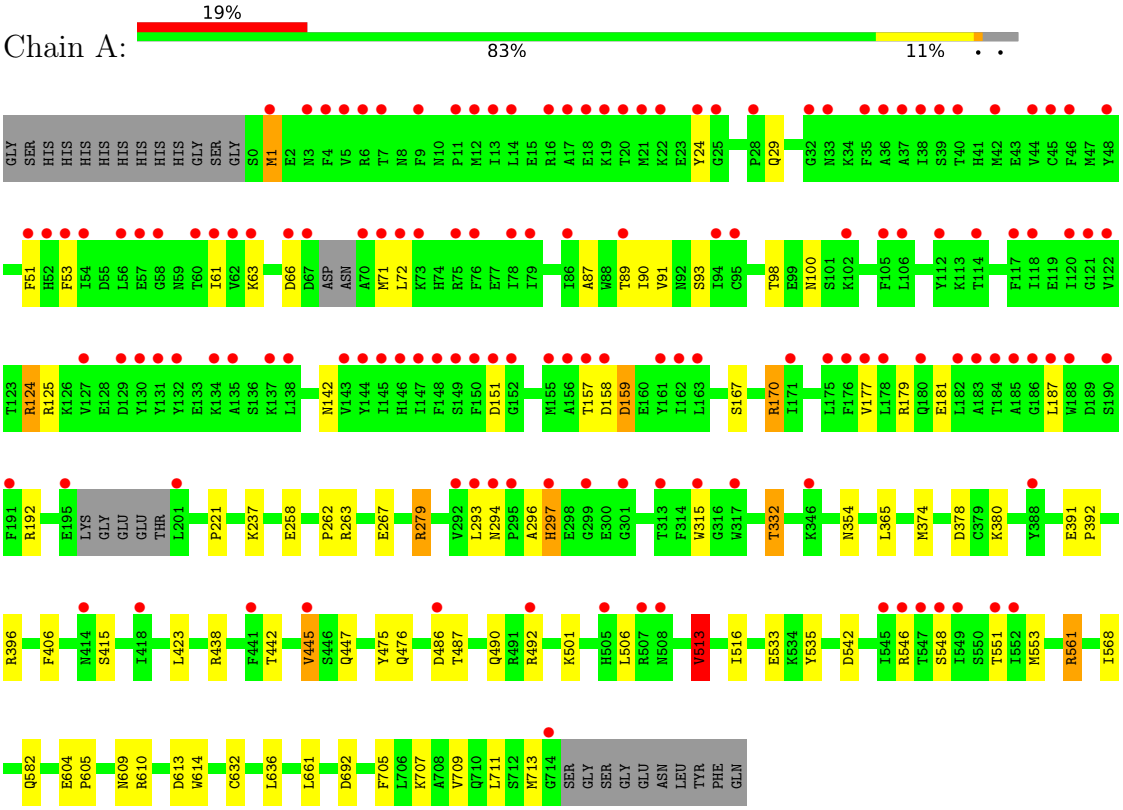
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
9	A	371	Total	O	0	0
			371	371		
9	B	409	Total	O	0	0
			409	409		
9	C	237	Total	O	0	0
			237	237		
9	R	22	Total	O	0	0
			22	22		
9	V	54	Total	O	0	0
			54	54		

3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

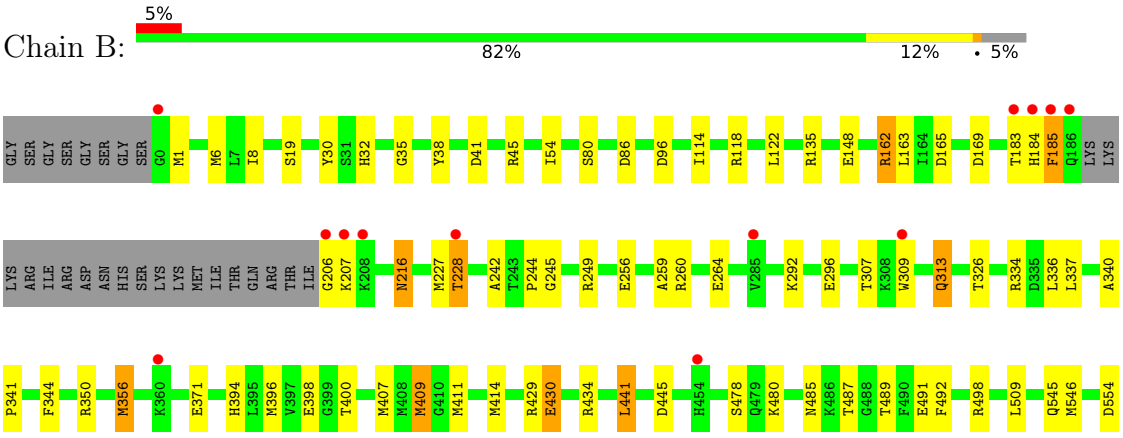
• Molecule 1: Polymerase acidic protein

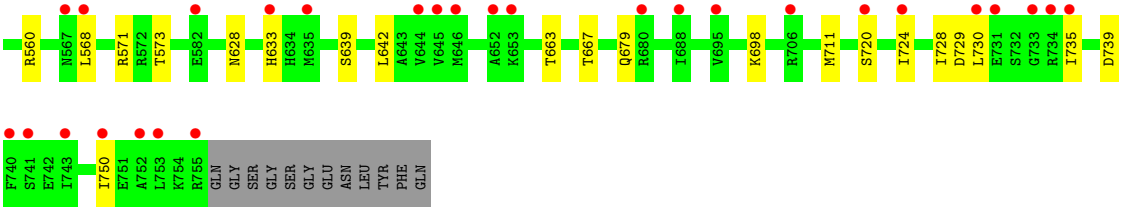
Chain A:



• Molecule 2: RNA-directed RNA polymerase catalytic subunit

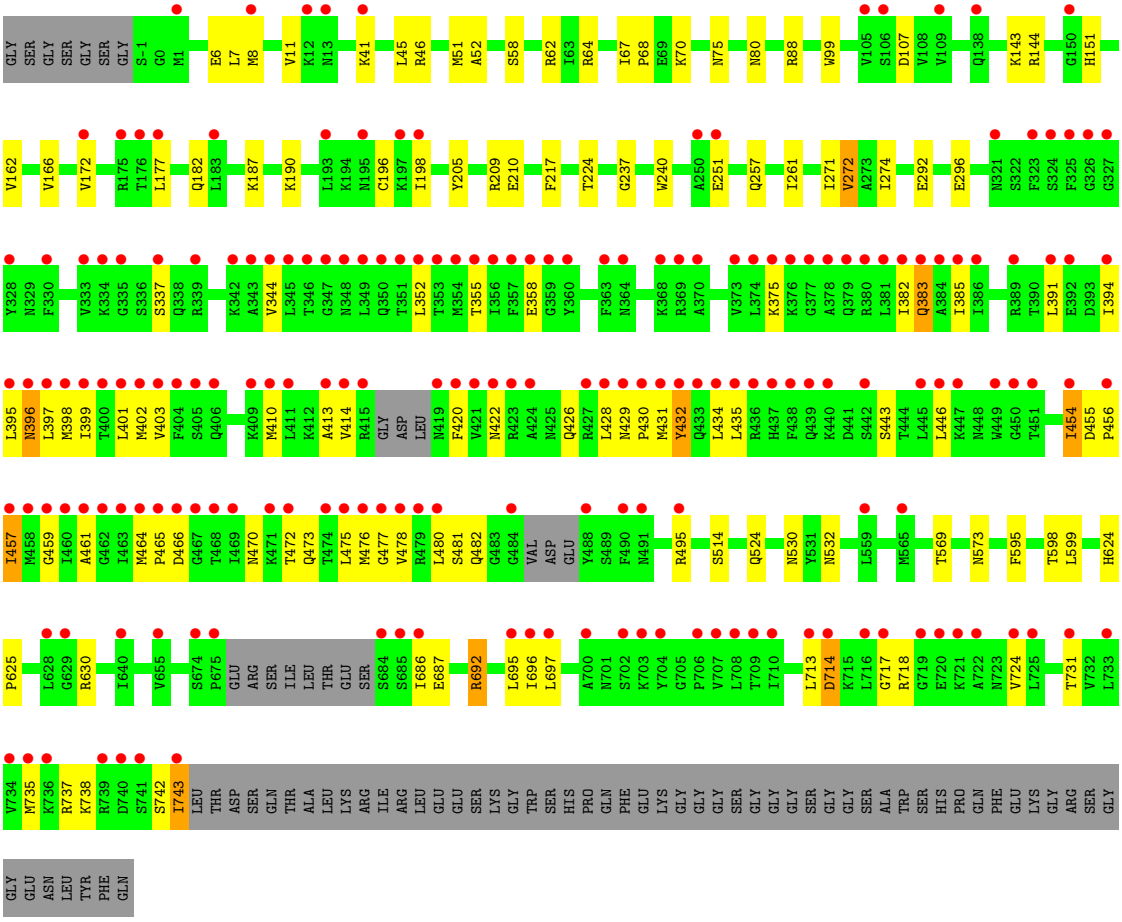
Chain B:





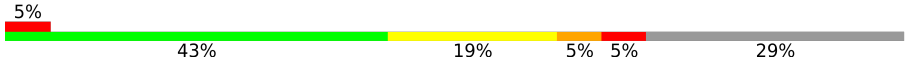
• Molecule 3: Polymerase basic protein 2

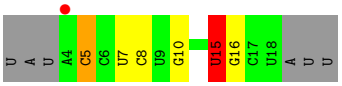
Chain C:



• Molecule 4: 3’ end of the promoter vRNA

Chain R:





• Molecule 5: 5’ end of the promoter vRNA

Chain V:


A1
G5
A8
A11
G16

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	91.08Å 119.27Å 251.56Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	125.80 – 1.96 125.78 – 1.96	Depositor EDS
% Data completeness (in resolution range)	69.1 (125.80-1.96) 69.0 (125.78-1.96)	Depositor EDS
R_{merge}	0.16	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.63 (at 1.95Å)	Xtriage
Refinement program	REFMAC 5.8.0425	Depositor
R, R_{free}	0.189 , 0.245 0.197 , 0.250	Depositor DCC
R_{free} test set	6694 reflections (4.93%)	wwPDB-VP
Wilson B-factor (Å^2)	33.3	Xtriage
Anisotropy	0.025	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.37 , 59.1	EDS
L-test for twinning[2]	$< \|L\| > = 0.51$, $< L^2 > = 0.35$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	19393	wwPDB-VP
Average B, all atoms (Å^2)	47.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.45% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

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

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	0.50	0/5947	0.99	4/8007 (0.0%)
2	B	0.53	0/6097	1.00	10/8236 (0.1%)
3	C	0.51	0/5911	0.97	5/7976 (0.1%)
4	R	0.53	0/319	1.12	2/494 (0.4%)
5	V	0.57	0/384	1.13	1/596 (0.2%)
All	All	0.52	0/18658	1.00	22/25309 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	2
3	C	0	1
All	All	0	3

There are no bond length outliers.

All (22) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	R	15	U	O3'-P-O5'	-7.14	93.29	104.00
2	B	185	PHE	CA-CB-CG	6.96	120.76	113.80
3	C	272	VAL	N-CA-CB	-6.93	100.44	112.08
1	A	332	THR	CA-CB-OG1	-6.54	99.79	109.60
2	B	554	ASP	CA-CB-CG	6.19	118.79	112.60
1	A	406	PHE	CA-CB-CG	-6.16	107.64	113.80
1	A	513	VAL	N-CA-CB	6.04	118.28	111.21
4	R	5	C	O3'-P-O5'	-6.00	95.00	104.00
2	B	216	ASN	CA-CB-CG	5.91	118.51	112.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	513	VAL	CB-CA-C	-5.86	102.96	110.98
2	B	135	ARG	CB-CA-C	-5.43	100.51	110.62
3	C	224	THR	CA-CB-OG1	-5.43	101.45	109.60
2	B	313	GLN	CB-CA-C	5.43	119.53	109.54
2	B	487	THR	CA-CB-OG1	-5.39	101.51	109.60
3	C	187	LYS	CB-CA-C	-5.34	102.74	110.96
3	C	187	LYS	N-CA-CB	5.31	117.67	109.91
3	C	598	THR	CA-CB-OG1	-5.28	101.69	109.60
2	B	96	ASP	CA-CB-CG	5.27	117.87	112.60
2	B	480	LYS	CB-CA-C	-5.26	100.56	110.67
5	V	8	A	O3'-P-O5'	-5.23	96.16	104.00
2	B	86	ASP	CA-CB-CG	5.15	117.75	112.60
2	B	169	ASP	CA-CB-CG	5.05	117.65	112.60

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	279	ARG	Sidechain
1	A	548	SER	Peptide
3	C	46	ARG	Sidechain

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	5825	0	5718	52	0
2	B	5979	0	5952	72	0
3	C	5813	0	5924	77	0
4	R	289	0	150	7	0
5	V	342	0	170	0	0
6	A	6	0	8	0	0
6	B	6	0	8	0	0
6	C	6	0	8	0	0
7	B	1	0	0	0	0
8	C	33	0	16	0	0
9	A	371	0	0	6	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
9	B	409	0	0	7	0
9	C	237	0	0	5	0
9	R	22	0	0	0	0
9	V	54	0	0	0	0
All	All	19393	0	17954	190	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 5.

All (190) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:609[B]:ASN:O	1:A:609[B]:ASN:OD1	1.84	0.94
1:A:506:LEU:HD11	1:A:513:VAL:HG22	1.52	0.91
2:B:568:LEU:O	2:B:573:THR:HG21	1.71	0.89
2:B:491[A]:GLU:OE2	9:B:901:HOH:O	1.95	0.84
3:C:196:CYS:SG	3:C:198:ILE:HG22	2.23	0.78
2:B:41[B]:ASP:OD2	2:B:45:ARG:NH1	2.21	0.73
1:A:354:ASN:OD1	1:A:476[A]:GLN:HG2	1.92	0.70
2:B:216:ASN:HB3	9:B:1192:HOH:O	1.91	0.69
2:B:434:ARG:HH21	2:B:434:ARG:HG2	1.56	0.68
2:B:260:ARG:NH1	2:B:264:GLU:OE2	2.28	0.66
3:C:403:VAL:HA	3:C:410:MET:HE3	1.76	0.66
1:A:296:ALA:O	1:A:297:HIS:O	2.13	0.66
3:C:296:GLU:OE2	9:C:1001:HOH:O	2.13	0.66
1:A:506:LEU:HD11	1:A:513:VAL:CG2	2.26	0.65
2:B:216:ASN:ND2	2:B:398:GLU:OE1	2.29	0.65
3:C:530:ASN:ND2	3:C:532[A]:ASN:HD21	1.96	0.64
2:B:340:ALA:HB3	2:B:341:PRO:HD3	1.80	0.63
1:A:177:VAL:O	1:A:181:GLU:HG2	1.99	0.62
2:B:313:GLN:HG3	2:B:407:MET:HG3	1.83	0.61
2:B:148:GLU:HG3	9:B:1124:HOH:O	2.02	0.60
1:A:293:LEU:O	1:A:294:ASN:C	2.45	0.59
1:A:445:VAL:HG23	1:A:632[A]:CYS:SG	2.41	0.59
3:C:530:ASN:ND2	3:C:532[A]:ASN:ND2	2.50	0.59
3:C:64:ARG:NH1	3:C:80:ASN:OD1	2.33	0.59
3:C:456:PRO:O	3:C:457:ILE:C	2.45	0.59
1:A:262:PRO:HG2	1:A:713:MET:HE1	1.85	0.58
3:C:237:GLY:HA3	3:C:240:TRP:CE2	2.38	0.58
3:C:692:ARG:O	3:C:692:ARG:HG3	2.02	0.58
3:C:530:ASN:HD21	3:C:532[A]:ASN:HD21	1.52	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:633:HIS:HB3	2:B:667[A]:THR:HG21	1.88	0.56
2:B:244:PRO:HG3	2:B:411:MET:SD	2.45	0.56
3:C:697:LEU:HD11	3:C:735:MET:HB2	1.88	0.56
2:B:698:LYS:NZ	3:C:6:GLU:OE1	2.37	0.56
2:B:292:LYS:O	2:B:429:ARG:NH1	2.39	0.56
3:C:569:THR:O	3:C:573:ASN:ND2	2.38	0.56
2:B:326:THR:OG1	2:B:334:ARG:HD2	2.06	0.56
2:B:441:LEU:HD23	2:B:492:PHE:CZ	2.41	0.56
2:B:326:THR:O	2:B:334:ARG:HD3	2.05	0.56
2:B:750:ILE:HG13	3:C:8:MET:HE2	1.89	0.55
3:C:45:LEU:C	3:C:45:LEU:HD23	2.32	0.54
3:C:422:ASN:HD22	3:C:428:LEU:HD21	1.71	0.54
3:C:394:ILE:HD13	3:C:480:LEU:CD1	2.38	0.54
3:C:391:LEU:O	3:C:395:LEU:HG	2.08	0.54
1:A:158:ASP:O	1:A:159:ASP:C	2.50	0.54
2:B:735:ILE:HG12	2:B:739:ASP:HB2	1.90	0.54
3:C:41:LYS:HE3	4:R:15:U:C5	2.43	0.54
1:A:486:ASP:OD2	1:A:490:GLN:HB2	2.08	0.54
2:B:307:THR:HB	2:B:478:SER:HB2	1.90	0.54
2:B:336[B]:LEU:C	2:B:336[B]:LEU:HD23	2.33	0.54
2:B:350:ARG:NH1	2:B:371:GLU:OE2	2.40	0.53
3:C:530:ASN:HD21	3:C:532[A]:ASN:ND2	2.06	0.53
1:A:661:LEU:HD11	2:B:6:MET:HE1	1.90	0.53
3:C:352:LEU:HD13	3:C:420:PHE:CB	2.39	0.52
2:B:54[A]:ILE:HD11	9:B:1308:HOH:O	2.10	0.52
2:B:242:ALA:O	4:R:16:G:H1'	2.10	0.52
3:C:686:ILE:HA	3:C:696:ILE:O	2.10	0.52
1:A:90:ILE:HG12	2:B:724:ILE:HG12	1.91	0.52
2:B:434:ARG:HH21	2:B:434:ARG:CG	2.23	0.51
1:A:396[A]:ARG:NH1	1:A:533:GLU:OE1	2.44	0.51
2:B:720:SER:O	2:B:724:ILE:HD13	2.10	0.50
1:A:535:TYR:CD2	1:A:561:ARG:HG3	2.46	0.50
3:C:414:VAL:HG21	3:C:434:LEU:CD2	2.40	0.50
1:A:365:LEU:HG	1:A:516:ILE:HD11	1.93	0.50
3:C:383:GLN:NE2	3:C:385:ILE:HD11	2.26	0.50
3:C:495:ARG:HH11	3:C:495:ARG:HG3	1.76	0.50
3:C:151:HIS:HA	3:C:210:GLU:O	2.11	0.50
3:C:205:TYR:O	3:C:209:ARG:HG2	2.12	0.49
1:A:98:THR:OG1	1:A:100:ASN:HB2	2.13	0.49
3:C:687:GLU:HB2	3:C:696:ILE:HB	1.94	0.49
2:B:313:GLN:HB3	9:B:1033:HOH:O	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:221:PRO:HB3	2:B:54[B]:ILE:HD11	1.93	0.49
2:B:628:ASN:O	3:C:62:ARG:NH1	2.38	0.49
2:B:309:TRP:CG	2:B:445:ASP:HB3	2.47	0.49
1:A:475:TYR:HA	1:A:501:LYS:O	2.13	0.49
2:B:206:GLY:N	9:B:912:HOH:O	2.45	0.49
2:B:313:GLN:HG3	2:B:407:MET:CG	2.43	0.49
2:B:114:ILE:HD13	2:B:336[A]:LEU:HD23	1.94	0.49
4:R:10:G:N3	4:R:10:G:H2'	2.28	0.48
1:A:546:ARG:CB	1:A:551:THR:HG22	2.43	0.48
3:C:432:TYR:CD1	3:C:432:TYR:C	2.91	0.48
3:C:470:ASN:OD1	3:C:473:GLN:HB2	2.13	0.48
1:A:279:ARG:NH2	1:A:692:ASP:OD2	2.45	0.48
1:A:396[A]:ARG:HH12	1:A:533:GLU:CD	2.22	0.48
3:C:399:ILE:HD13	3:C:402:MET:CE	2.44	0.48
2:B:260:ARG:HA	2:B:414:MET:HG2	1.95	0.48
2:B:35:GLY:HA3	2:B:228:THR:HG22	1.96	0.48
2:B:396:MET:HA	2:B:400:THR:O	2.14	0.48
2:B:260:ARG:CA	2:B:414:MET:HG2	2.44	0.47
1:A:315:TRP:HA	9:A:1137:HOH:O	2.14	0.47
9:A:1141:HOH:O	2:B:711:MET:HG2	2.13	0.47
3:C:382:ILE:O	3:C:383:GLN:CB	2.63	0.47
3:C:454:ILE:O	3:C:472:THR:HB	2.15	0.47
3:C:385:ILE:CG2	3:C:481:SER:HB3	2.45	0.47
3:C:718:ARG:CZ	9:C:1009:HOH:O	2.61	0.47
2:B:571:ARG:NH1	3:C:52:ALA:O	2.47	0.47
1:A:711:LEU:HG	9:A:1145:HOH:O	2.14	0.46
3:C:257:GLN:NE2	3:C:261:ILE:HD11	2.30	0.46
3:C:7:LEU:O	3:C:11:VAL:HG23	2.15	0.46
3:C:375:LYS:HB2	3:C:382:ILE:HB	1.98	0.46
2:B:730:LEU:N	2:B:735:ILE:HG22	2.31	0.46
2:B:336[B]:LEU:HD23	2:B:336[B]:LEU:O	2.15	0.46
2:B:245:GLY:O	2:B:249:ARG:HG3	2.16	0.46
1:A:267:GLU:CD	1:A:707:LYS:HD3	2.41	0.46
3:C:271:ILE:HG12	9:C:1217:HOH:O	2.16	0.46
4:R:7:U:H2'	4:R:8:C:C6	2.51	0.46
3:C:624:HIS:O	3:C:625:PRO:C	2.58	0.45
1:A:293:LEU:HD13	1:A:492:ARG:NH2	2.31	0.45
3:C:429:ASN:CG	3:C:432:TYR:HB3	2.41	0.45
3:C:481:SER:OG	3:C:482:GLN:N	2.49	0.45
1:A:568:ILE:HG12	2:B:30:TYR:CE1	2.51	0.45
2:B:344:PHE:CE1	2:B:409:MET:HE3	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:445:VAL:HG22	1:A:636:LEU:HD22	1.99	0.45
2:B:489:THR:HG22	2:B:498:ARG:HA	1.98	0.45
3:C:403:VAL:HG21	3:C:435:LEU:HA	1.99	0.45
3:C:352:LEU:HD13	3:C:420:PHE:HB2	1.98	0.45
3:C:713:LEU:O	3:C:714:ASP:C	2.59	0.45
3:C:70:LYS:HA	3:C:75:ASN:O	2.17	0.45
3:C:352:LEU:HD13	3:C:420:PHE:HB3	1.99	0.45
2:B:259:ALA:HB3	2:B:414:MET:HB3	1.99	0.45
1:A:51:PHE:HB3	1:A:63:LYS:O	2.17	0.44
1:A:374:MET:HE2	1:A:378:ASP:HB2	1.99	0.44
3:C:397:LEU:O	3:C:401:LEU:HG	2.16	0.44
3:C:395:LEU:O	3:C:398:MET:HB3	2.18	0.44
1:A:263:ARG:HG3	1:A:713:MET:HE2	2.00	0.44
2:B:227:MET:HG3	4:R:15:U:H5'	1.99	0.44
2:B:663:THR:HG21	3:C:99:TRP:CD1	2.53	0.44
3:C:383:GLN:HA	3:C:477:GLY:O	2.18	0.44
1:A:258[B]:GLU:CD	9:A:1094:HOH:O	2.61	0.44
1:A:167:SER:HA	1:A:170:ARG:CZ	2.47	0.44
1:A:609[B]:ASN:O	1:A:609[B]:ASN:CG	2.59	0.44
1:A:711:LEU:HD12	9:A:1221:HOH:O	2.17	0.44
3:C:595:PHE:CE2	3:C:599:LEU:HD11	2.52	0.44
2:B:730:LEU:HA	2:B:735:ILE:HG22	2.00	0.43
3:C:695:LEU:HD13	3:C:737:ARG:CG	2.48	0.43
1:A:90:ILE:HG23	2:B:724:ILE:HG12	2.01	0.43
2:B:356:MET:HE2	2:B:356:MET:HB2	1.93	0.43
3:C:478:VAL:HG21	9:C:1237:HOH:O	2.17	0.43
2:B:560[A]:ARG:HH21	3:C:51:MET:CB	2.32	0.43
1:A:604:GLU:HB2	1:A:605:PRO:HD3	2.01	0.43
2:B:633:HIS:CB	2:B:667[A]:THR:HG21	2.49	0.43
1:A:415:SER:O	1:A:447:GLN:HA	2.18	0.42
1:A:707:LYS:HA	1:A:707:LYS:HE2	2.01	0.42
1:A:124:ARG:HB3	1:A:192:ARG:HG3	2.01	0.42
3:C:257:GLN:NE2	3:C:261:ILE:CD1	2.82	0.42
3:C:395:LEU:HA	3:C:398:MET:HE2	2.01	0.42
1:A:391:GLU:HB3	1:A:392:PRO:HD2	2.01	0.42
3:C:713:LEU:HD21	3:C:724:VAL:HG22	2.02	0.42
1:A:53:PHE:CZ	1:A:66:ASP:HA	2.54	0.42
3:C:718:ARG:HB3	3:C:738:LYS:HA	2.02	0.42
1:A:582:GLN:HB2	2:B:509:LEU:HD11	2.02	0.42
3:C:717:GLY:O	3:C:718:ARG:C	2.61	0.42
1:A:87:ALA:O	1:A:91:VAL:HG23	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:162:ARG:HG3	2:B:165:ASP:OD2	2.19	0.42
3:C:58:SER:O	3:C:88:ARG:NH1	2.52	0.42
3:C:177:LEU:HD13	3:C:182:GLN:HB3	2.01	0.42
1:A:442:THR:HG22	9:A:924:HOH:O	2.20	0.42
2:B:394[A]:HIS:CE1	9:B:1155:HOH:O	2.71	0.42
1:A:614:TRP:CD1	2:B:8[A]:ILE:HD11	2.55	0.42
2:B:8[A]:ILE:HD12	2:B:8[A]:ILE:HA	1.89	0.42
3:C:383:GLN:HE21	3:C:385:ILE:HD11	1.84	0.42
1:A:89:THR:O	1:A:93:SER:OG	2.36	0.41
3:C:402:MET:HE1	3:C:446:LEU:HD21	2.00	0.41
2:B:256:GLU:OE1	2:B:414:MET:HB2	2.20	0.41
2:B:430:GLU:CD	2:B:430:GLU:H	2.28	0.41
3:C:67:ILE:HB	3:C:68:PRO:HD2	2.02	0.41
3:C:464:MET:O	3:C:466:ASP:N	2.50	0.41
1:A:705:PHE:CZ	1:A:709:VAL:HG21	2.55	0.41
3:C:426:GLN:HG2	9:C:1197:HOH:O	2.20	0.41
3:C:724:VAL:O	3:C:731:THR:HA	2.21	0.41
4:R:15:U:O5'	4:R:15:U:H2'	2.19	0.41
2:B:38:TYR:O	2:B:41[A]:ASP:HB2	2.20	0.41
2:B:730:LEU:CA	2:B:735:ILE:HG22	2.50	0.41
3:C:143:LYS:HE3	3:C:524:GLN:OE1	2.21	0.41
3:C:395:LEU:O	3:C:396:ASN:C	2.63	0.41
3:C:630:ARG:O	3:C:692:ARG:NH1	2.54	0.41
3:C:475:LEU:HB2	3:C:478:VAL:HB	2.03	0.41
1:A:438:ARG:HD3	2:B:546[B]:MET:HG3	2.03	0.41
2:B:434:ARG:CG	2:B:434:ARG:NH2	2.83	0.41
2:B:35:GLY:CA	2:B:228:THR:HG22	2.51	0.41
3:C:162:VAL:O	3:C:166:VAL:HG23	2.21	0.41
3:C:742:SER:O	3:C:743:ILE:HD12	2.21	0.40
1:A:1:MET:HG2	1:A:187:LEU:HD22	2.03	0.40
2:B:729:ASP:C	2:B:735:ILE:HG22	2.47	0.40
1:A:423:LEU:HD11	2:B:545:GLN:HB3	2.03	0.40
2:B:183:THR:HG22	2:B:184:HIS:N	2.36	0.40
1:A:263:ARG:HG3	1:A:713:MET:CE	2.51	0.40
2:B:344:PHE:CD1	2:B:409:MET:HE3	2.57	0.40
2:B:639:SER:HA	2:B:642:LEU:HD12	2.04	0.40
3:C:337:SER:HB2	3:C:358:GLU:C	2.47	0.40
4:R:15:U:O5'	4:R:15:U:C2'	2.70	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	709/738 (96%)	663 (94%)	42 (6%)	4 (1%)	22 13
2	B	747/776 (96%)	724 (97%)	23 (3%)	0	100 100
3	C	725/809 (90%)	683 (94%)	32 (4%)	10 (1%)	9 3
All	All	2181/2323 (94%)	2070 (95%)	97 (4%)	14 (1%)	22 13

All (14) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	125	ARG
1	A	297	HIS
3	C	443	SER
3	C	457	ILE
1	A	159	ASP
3	C	383	GLN
3	C	714	ASP
3	C	413	ALA
3	C	476	MET
3	C	461	ALA
1	A	610	ARG
3	C	459	GLY
3	C	465	PRO
3	C	430	PRO

5.3.2 Protein sidechains (i)

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	639/657 (97%)	616 (96%)	23 (4%)	30 20
2	B	657/676 (97%)	637 (97%)	20 (3%)	36 27
3	C	647/706 (92%)	628 (97%)	19 (3%)	37 28
All	All	1943/2039 (95%)	1881 (97%)	62 (3%)	34 24

All (62) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1	MET
1	A	24	TYR
1	A	29	GLN
1	A	61	ILE
1	A	71	MET
1	A	72	LEU
1	A	124	ARG
1	A	142	ASN
1	A	151	ASP
1	A	157	THR
1	A	170	ARG
1	A	179	ARG
1	A	237	LYS
1	A	332	THR
1	A	380	LYS
1	A	445	VAL
1	A	487	THR
1	A	513	VAL
1	A	542	ASP
1	A	553	MET
1	A	561	ARG
1	A	613[A]	ASP
1	A	613[B]	ASP
2	B	1	MET
2	B	19	SER
2	B	32	HIS
2	B	80	SER
2	B	118	ARG
2	B	122	LEU
2	B	162	ARG
2	B	163	LEU
2	B	185	PHE
2	B	207	LYS
2	B	228	THR

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Mol	Chain	Res	Type
2	B	296	GLU
2	B	337	LEU
2	B	356	MET
2	B	409	MET
2	B	430	GLU
2	B	441	LEU
2	B	485	ASN
2	B	679	GLN
2	B	728	ILE
3	C	107	ASP
3	C	144	ARG
3	C	172	VAL
3	C	190	LYS
3	C	217	PHE
3	C	251	GLU
3	C	272	VAL
3	C	274	ILE
3	C	292	GLU
3	C	344	VAL
3	C	355	THR
3	C	396	ASN
3	C	431	MET
3	C	432	TYR
3	C	454	ILE
3	C	455	ASP
3	C	514	SER
3	C	692	ARG
3	C	743	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (21) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	10	ASN
1	A	30	ASN
1	A	82	GLN
1	A	294	ASN
1	A	466	ASN
1	A	582	GLN
2	B	99	HIS
2	B	127	GLN
2	B	329	GLN
2	B	461	GLN

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Mol	Chain	Res	Type
3	C	13	ASN
3	C	243	GLN
3	C	285	HIS
3	C	379	GLN
3	C	383	GLN
3	C	396	ASN
3	C	422	ASN
3	C	548	ASN
3	C	556	ASN
3	C	573	ASN
3	C	601	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
4	R	13/21 (61%)	2 (15%)	0
5	V	15/16 (93%)	2 (13%)	1 (6%)
All	All	28/37 (75%)	4 (14%)	1 (3%)

All (4) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
4	R	5	C
4	R	15	U
5	V	8	A
5	V	11	A

All (1) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
5	V	5	G

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 5 ligands modelled in this entry, 1 is monoatomic - leaving 4 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
6	GOL	C	902	-	5,5,5	0.21	0	5,5,5	0.39	0
6	GOL	B	801	-	5,5,5	0.14	0	5,5,5	0.42	0
6	GOL	A	801	-	5,5,5	0.12	0	5,5,5	0.37	0
8	MGT	C	901	-	30,35,35	0.98	1 (3%)	42,56,56	0.82	0

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
6	GOL	C	902	-	-	4/4/4/4	-
6	GOL	B	801	-	-	0/4/4/4	-
6	GOL	A	801	-	-	1/4/4/4	-
8	MGT	C	901	-	-	5/22/50/50	0/3/3/3

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
8	C	901	MGT	C5-N7	4.50	1.40	1.35

There are no bond angle outliers.

There are no chirality outliers.

All (10) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	C	902	GOL	O1-C1-C2-C3
6	C	902	GOL	C1-C2-C3-O3
8	C	901	MGT	PB-O3B-PG-O3G

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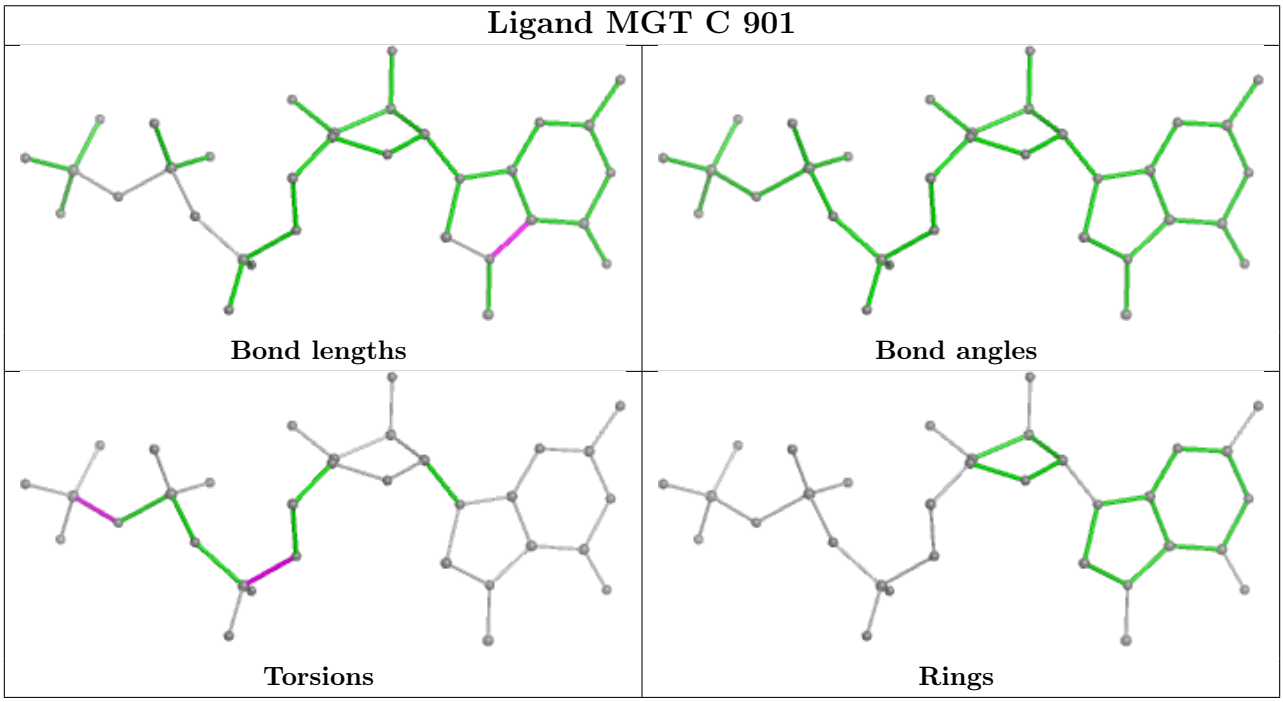
Mol	Chain	Res	Type	Atoms
8	C	901	MGT	C5'-O5'-PA-O3A
8	C	901	MGT	C5'-O5'-PA-O2A
6	C	902	GOL	O2-C2-C3-O3
6	C	902	GOL	O1-C1-C2-O2
8	C	901	MGT	PB-O3B-PG-O1G
6	A	801	GOL	O1-C1-C2-O2
8	C	901	MGT	C5'-O5'-PA-O1A

There are no ring outliers.

No monomer is involved in short contacts.

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



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^{th} 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	708/738 (95%)	0.80	141 (19%) 3 4	13, 39, 117, 154	7 (0%)
2	B	737/776 (94%)	0.13	41 (5%) 31 38	11, 31, 68, 118	14 (1%)
3	C	731/809 (90%)	1.23	192 (26%) 2 2	13, 47, 113, 154	2 (0%)
4	R	15/21 (71%)	0.02	1 (6%) 25 30	29, 49, 78, 97	0
5	V	16/16 (100%)	-0.54	1 (6%) 27 33	21, 26, 65, 94	0
All	All	2207/2360 (93%)	0.71	376 (17%) 5 6	11, 38, 109, 154	23 (1%)

All (376) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	C	420	PHE	7.8
3	C	457	ILE	6.9
3	C	480	LEU	6.9
3	C	349	LEU	6.7
3	C	352	LEU	6.4
3	C	446	LEU	6.4
3	C	463	ILE	6.1
3	C	628	LEU	6.1
3	C	460	ILE	6.1
3	C	347	GLY	5.9
3	C	421	VAL	5.7
3	C	325	PHE	5.5
1	A	293	LEU	5.5
3	C	478	VAL	5.4
3	C	348	ASN	5.4
3	C	432	TYR	5.3
1	A	315	TRP	5.3
1	A	72	LEU	5.3
1	A	187	LEU	5.3
3	C	411	LEU	5.2

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Mol	Chain	Res	Type	RSRZ
3	C	449	TRP	5.2
3	C	399	ILE	5.1
3	C	434	LEU	5.1
1	A	24	TYR	5.0
3	C	454	ILE	5.0
3	C	404	PHE	5.0
1	A	549	ILE	5.0
3	C	414	VAL	5.0
1	A	149	SER	4.9
3	C	469	ILE	4.9
3	C	428	LEU	4.8
3	C	431	MET	4.8
3	C	459	GLY	4.8
1	A	150	PHE	4.8
3	C	384	ALA	4.8
3	C	722	ALA	4.7
3	C	374	LEU	4.7
1	A	144	TYR	4.7
3	C	484	GLY	4.6
3	C	177	LEU	4.6
3	C	465	PRO	4.6
3	C	356	ILE	4.6
3	C	413	ALA	4.5
3	C	456	PRO	4.5
3	C	461	ALA	4.5
2	B	735	ILE	4.5
3	C	354	MET	4.5
3	C	403	VAL	4.5
3	C	381	LEU	4.4
3	C	391	LEU	4.4
3	C	445	LEU	4.4
3	C	708	LEU	4.4
1	A	152	GLY	4.4
3	C	475	LEU	4.4
3	C	430	PRO	4.4
1	A	70	ALA	4.4
1	A	201	LEU	4.4
3	C	435	LEU	4.4
3	C	429	ASN	4.3
3	C	438	PHE	4.3
3	C	716	LEU	4.3
2	B	185	PHE	4.3

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Mol	Chain	Res	Type	RSRZ
1	A	73	LYS	4.3
1	A	35	PHE	4.3
1	A	56	LEU	4.3
1	A	62	VAL	4.3
3	C	467	GLY	4.2
1	A	14	LEU	4.2
1	A	156	ALA	4.2
3	C	376	LYS	4.2
2	B	724	ILE	4.1
1	A	190	SER	4.1
1	A	28	PRO	4.1
3	C	458	MET	4.1
3	C	357	PHE	4.1
1	A	4	PHE	4.1
1	A	148	PHE	4.1
3	C	345	LEU	4.0
3	C	395	LEU	4.0
3	C	410	MET	4.0
3	C	326	GLY	4.0
1	A	60	THR	4.0
3	C	333	VAL	4.0
3	C	377	GLY	4.0
3	C	725	LEU	4.0
1	A	127	VAL	4.0
1	A	441	PHE	4.0
1	A	176	PHE	3.9
3	C	397	LEU	3.9
3	C	373	VAL	3.9
1	A	117	PHE	3.9
3	C	360	TYR	3.9
3	C	451	THR	3.9
1	A	162	ILE	3.9
3	C	344	VAL	3.8
1	A	54	ILE	3.8
3	C	401	LEU	3.8
1	A	507	ARG	3.8
1	A	13	ILE	3.8
1	A	714	GLY	3.8
3	C	675	PRO	3.8
3	C	450	GLY	3.8
1	A	20	THR	3.8
3	C	713	LEU	3.7

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Mol	Chain	Res	Type	RSRZ
3	C	12	LYS	3.7
1	A	102	LYS	3.7
2	B	734	ARG	3.7
1	A	178	LEU	3.7
1	A	51	PHE	3.6
1	A	112	TYR	3.6
1	A	147	ILE	3.6
3	C	419	ASN	3.6
3	C	686	ILE	3.6
3	C	488	TYR	3.6
1	A	25	GLY	3.5
3	C	464	MET	3.5
2	B	183	THR	3.5
1	A	163	LEU	3.5
1	A	5	VAL	3.5
3	C	559	LEU	3.5
1	A	161	TYR	3.5
3	C	704	TYR	3.5
1	A	143	VAL	3.4
1	A	145	ILE	3.4
3	C	382	ILE	3.4
3	C	422	ASN	3.4
3	C	433	GLN	3.4
1	A	182	LEU	3.4
1	A	155	MET	3.3
3	C	476	MET	3.3
3	C	195	ASN	3.3
1	A	48	TYR	3.3
3	C	743	ILE	3.3
1	A	22	LYS	3.3
3	C	351	THR	3.3
2	B	186	GLN	3.3
1	A	151	ASP	3.3
1	A	46	PHE	3.3
3	C	330	PHE	3.3
3	C	477	GLY	3.3
1	A	545	ILE	3.3
1	A	191	PHE	3.3
1	A	548	SER	3.2
3	C	466	ASP	3.2
1	A	295	PRO	3.2
1	A	157	THR	3.2

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Mol	Chain	Res	Type	RSRZ
3	C	479	ARG	3.2
1	A	45	CYS	3.2
1	A	61	ILE	3.2
1	A	71	MET	3.2
1	A	11	PRO	3.2
3	C	707	VAL	3.1
1	A	137	LYS	3.1
3	C	409	LYS	3.1
1	A	130	TYR	3.1
3	C	343	ALA	3.1
1	A	299	GLY	3.1
3	C	468	THR	3.1
2	B	206	GLY	3.1
3	C	327	GLY	3.1
1	A	547	THR	3.1
1	A	131	TYR	3.1
1	A	132	TYR	3.1
1	A	105	PHE	3.1
1	A	171	ILE	3.0
3	C	402	MET	3.0
3	C	721	LYS	3.0
3	C	655	VAL	3.0
1	A	63	LYS	3.0
3	C	406	GLN	3.0
3	C	385	ILE	3.0
3	C	324	SER	3.0
1	A	175	LEU	3.0
3	C	490	PHE	3.0
2	B	635	MET	3.0
3	C	439	GLN	3.0
3	C	394	ILE	2.9
3	C	700	ALA	2.9
3	C	355	THR	2.9
3	C	398	MET	2.9
3	C	474	THR	2.9
3	C	447	LYS	2.9
3	C	437	HIS	2.9
1	A	135	ALA	2.9
3	C	346	THR	2.9
1	A	53	PHE	2.9
3	C	358	GLU	2.9
1	A	508	ASN	2.9

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Mol	Chain	Res	Type	RSRZ
3	C	342	LYS	2.9
3	C	375	LYS	2.9
3	C	363	PHE	2.9
2	B	645	VAL	2.9
1	A	121	GLY	2.9
3	C	440	LYS	2.9
2	B	652	ALA	2.9
3	C	710	ILE	2.8
1	A	76	PHE	2.8
3	C	353	THR	2.8
3	C	350	GLN	2.8
3	C	328	TYR	2.8
1	A	37	ALA	2.8
3	C	378	ALA	2.8
3	C	389	ARG	2.8
3	C	198	ILE	2.8
3	C	462	GLY	2.8
5	V	16	G	2.8
3	C	105	VAL	2.8
3	C	734	VAL	2.8
1	A	40	THR	2.8
1	A	146	HIS	2.8
2	B	730	LEU	2.7
3	C	193	LEU	2.7
3	C	724	VAL	2.7
3	C	379	GLN	2.7
1	A	7	THR	2.7
1	A	12	MET	2.7
3	C	565	MET	2.7
1	A	414	ASN	2.7
2	B	743	ILE	2.7
3	C	321	ASN	2.7
3	C	427	ARG	2.7
1	A	38	ILE	2.7
3	C	696	ILE	2.7
1	A	66	ASP	2.7
3	C	733	LEU	2.7
3	C	472	THR	2.7
3	C	719	GLY	2.7
1	A	94	ILE	2.7
1	A	120	ILE	2.7
1	A	134	LYS	2.7

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Mol	Chain	Res	Type	RSRZ
3	C	368	LYS	2.7
3	C	720	GLU	2.7
3	C	176	THR	2.6
1	A	39	SER	2.6
3	C	731	THR	2.6
2	B	740	PHE	2.6
1	A	58	GLY	2.6
3	C	736	LYS	2.6
3	C	386	ILE	2.6
1	A	6	ARG	2.6
3	C	423	ARG	2.6
1	A	106	LEU	2.6
3	C	396	ASN	2.6
1	A	301	GLY	2.6
3	C	150	GLY	2.6
1	A	177	VAL	2.6
1	A	18	GLU	2.6
1	A	52	HIS	2.6
3	C	735	MET	2.6
3	C	380	ARG	2.6
3	C	334	LYS	2.5
1	A	188	TRP	2.5
3	C	415	ARG	2.5
3	C	495	ARG	2.5
1	A	79	ILE	2.5
2	B	753	LEU	2.5
2	B	184	HIS	2.5
3	C	703	LYS	2.5
3	C	109	VAL	2.5
1	A	294	ASN	2.5
1	A	138	LEU	2.5
2	B	568	LEU	2.5
3	C	629	GLY	2.5
2	B	207	LYS	2.5
1	A	183	ALA	2.5
1	A	297	HIS	2.5
3	C	1	MET	2.5
1	A	122	VAL	2.5
1	A	21	MET	2.4
2	B	646	MET	2.4
3	C	8	MET	2.4
1	A	486	ASP	2.4

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Mol	Chain	Res	Type	RSRZ
1	A	418	ILE	2.4
2	B	688	ILE	2.4
1	A	445	VAL	2.4
3	C	175	ARG	2.4
2	B	633	HIS	2.4
1	A	67	ASP	2.4
1	A	184	THR	2.4
2	B	309	TRP	2.4
1	A	33	ASN	2.4
1	A	17	ALA	2.4
1	A	75	ARG	2.4
3	C	706	PRO	2.4
2	B	285	VAL	2.4
3	C	323	PHE	2.4
2	B	0	GLY	2.4
1	A	551	THR	2.4
2	B	454[A]	HIS	2.4
3	C	442	SER	2.4
3	C	685	SER	2.4
1	A	158	ASP	2.4
1	A	292	VAL	2.4
3	C	400	THR	2.4
2	B	567	ASN	2.3
2	B	755	ARG	2.3
3	C	106	SER	2.3
3	C	337	SER	2.3
3	C	717	GLY	2.3
1	A	3	ASN	2.3
1	A	118	ILE	2.3
2	B	582	GLU	2.3
3	C	251	GLU	2.3
3	C	335	GLY	2.3
2	B	680	ARG	2.3
1	A	114	THR	2.3
1	A	346	LYS	2.3
3	C	714	ASP	2.3
2	B	741	SER	2.3
2	B	752	ALA	2.3
4	R	4	A	2.3
1	A	19	LYS	2.3
1	A	9	PHE	2.3
3	C	695	LEU	2.3

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Mol	Chain	Res	Type	RSRZ
1	A	546	ARG	2.2
3	C	138	GLN	2.2
3	C	741	SER	2.2
1	A	388	TYR	2.2
1	A	552	ILE	2.2
2	B	360	LYS	2.2
3	C	383	GLN	2.2
1	A	57	GLU	2.2
2	B	731	GLU	2.2
2	B	228	THR	2.2
3	C	740	ASP	2.2
1	A	44	VAL	2.2
1	A	317	TRP	2.2
2	B	750	ILE	2.2
1	A	16	ARG	2.2
3	C	339	ARG	2.2
3	C	197	LYS	2.2
1	A	32	GLY	2.2
1	A	180	GLN	2.2
1	A	78	ILE	2.2
3	C	674	SER	2.1
2	B	733	GLY	2.1
3	C	392	GLU	2.1
1	A	36	ALA	2.1
3	C	183	LEU	2.1
3	C	250	ALA	2.1
3	C	370	ALA	2.1
3	C	424	ALA	2.1
1	A	89	THR	2.1
3	C	684	SER	2.1
3	C	709	THR	2.1
2	B	208	LYS	2.1
1	A	42	MET	2.1
1	A	492	ARG	2.1
3	C	369	ARG	2.1
1	A	86	ILE	2.1
3	C	640	ILE	2.1
3	C	702	SER	2.1
3	C	471	LYS	2.1
1	A	505	HIS	2.1
2	B	706	ARG	2.1
3	C	436	ARG	2.1

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Mol	Chain	Res	Type	RSRZ
2	B	644	VAL	2.1
3	C	172	VAL	2.1
2	B	653	LYS	2.1
2	B	720	SER	2.1
3	C	13	ASN	2.1
2	B	695	VAL	2.0
3	C	697	LEU	2.0
1	A	1	MET	2.0
1	A	313	THR	2.0
3	C	364	ASN	2.0
3	C	491	ASN	2.0
3	C	739	ARG	2.0
1	A	186	GLY	2.0
3	C	359	GLY	2.0
1	A	129	ASP	2.0
1	A	95	CYS	2.0
1	A	185	ALA	2.0
1	A	195	GLU	2.0
3	C	41	LYS	2.0
3	C	405	SER	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, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
8	MGT	C	901	33/33	0.81	0.13	69,77,93,99	0
7	MG	B	802	1/1	0.84	0.11	50,50,50,50	0
6	GOL	C	902	6/6	0.84	0.15	43,51,52,54	0

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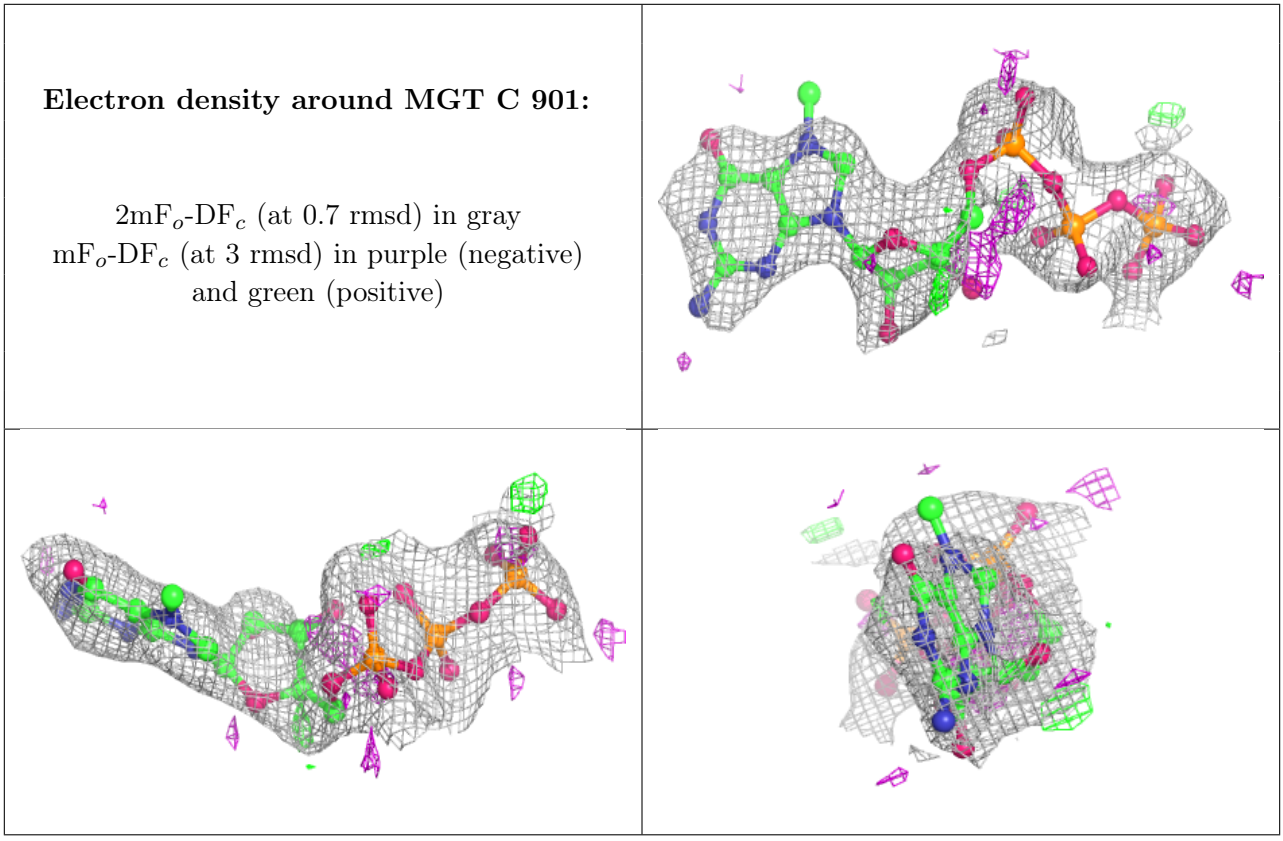
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
6	GOL	A	801	6/6	0.92	0.10	28,35,37,42	0
6	GOL	B	801	6/6	0.95	0.10	38,46,48,49	0

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 MGT C 901:

$2mF_o$-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.