WORLDWIDE PDB

PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report (i)

Jan 6, 2024 – 09:03 pm GMT

PDB ID	:	5NKL
Title	:	Crystal structure of the large fragment of DNA polymerase I from Thermus Aquaticus in a closed ternary complex with the artificial base pair dDs-dPxTP
Authors	:	Betz, K.; Marx, A.; Diederichs, K.; Hirao, I.; Kimoto, M.
Deposited on	:	2017-03-31
Resolution	:	1.70 Å(reported)

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

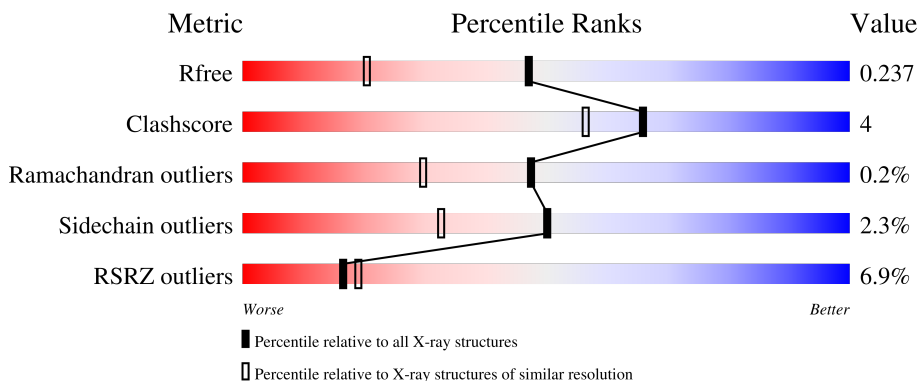|		
MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

1   Overall quality at a glance ⓘ

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

The reported resolution of this entry is 1.70 Å.

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

Metric	Percentile Ranks	Value
Rfree		0.237
Clashscore		4
Ramachandran outliers		0.2%
Sidechain outliers		2.3%
RSRZ outliers		6.9%

Worse   *Better*

▌ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	4298 (1.70-1.70)
Clashscore	141614	4695 (1.70-1.70)
Ramachandran outliers	138981	4610 (1.70-1.70)
Sidechain outliers	138945	4610 (1.70-1.70)
RSRZ outliers	127900	4222 (1.70-1.70)

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	540	7% / 90% / 9% / •
2	B	12	42% / 50% / 8%
3	C	16	12% / 62% / 31% / 6%

2 Entry composition ⓘ

There are 9 unique types of molecules in this entry. The entry contains 10035 atoms, of which 4752 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 DNA polymerase I, thermostable.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	540	Total 8694	C 2741	H 4375	N 781	O 784	S 13	0	6	0

- Molecule 2 is a DNA chain called DNA (5'-D(*GP*AP*CP*CP*AP*CP*GP*GP*CP*GP* CP*(DOC))-3').

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
2	B	12	Total 374	C 114	H 134	N 48	O 67	P 11	0	0	0

- Molecule 3 is a DNA chain called DNA (5'-D(*AP*AP*AP*(DNU)P*GP*GP*CP*GP*CP *CP*GP*TP*GP*GP*TP*C)-3').

Mol	Chain	Residues	Atoms							ZeroOcc	AltConf	Trace
3	C	16	Total 515	C 161	H 182	N 64	O 92	P 15	S 1	0	0	0

- Molecule 4 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	2	Total 2	Mg 2	0	0

- Molecule 5 is ACETATE ION (three-letter code: ACT) (formula: $C_2H_3O_2$).

ACT

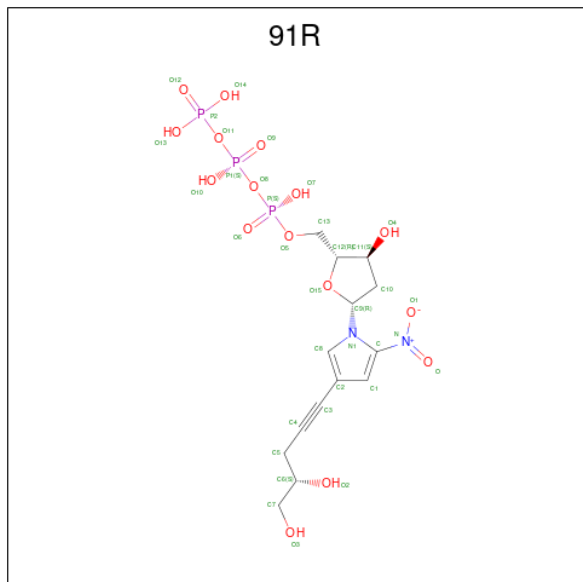| Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	H	O		
5	A	1	7	2	3	2	0	0

- Molecule 6 is [[(2 {R},3 {S},5 {R})-5-[4-[(4 {R})-4,5-bis(oxidanyl)pent-1-ynyl]-2-nitro-pyrrol l-1-yl]-3-oxidanyl-oxolan-2-yl]methoxy-oxidanyl-phosphoryl] phosphono hydrogen phosphate (three-letter code: 91T) (formula: $C_{14}H_{21}N_2O_{16}P_3$).

91T
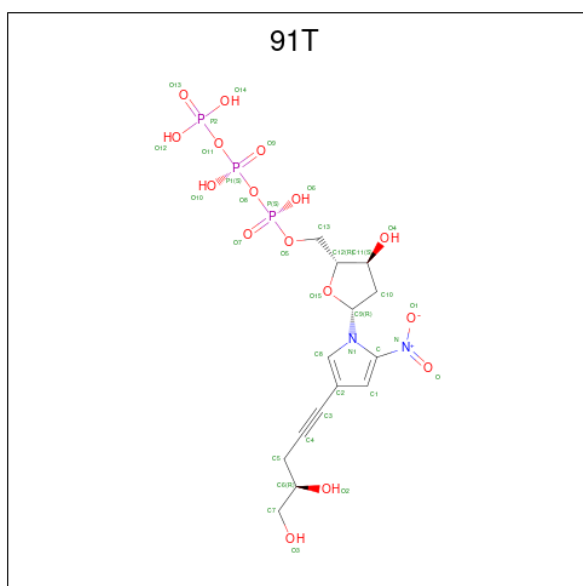
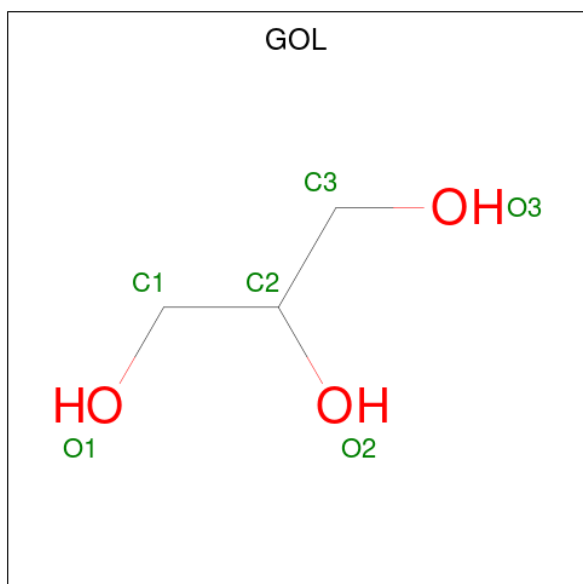| Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
			Total	C	H	N	O	P		
6	A	1	56	14	21	2	16	3	0	1

- Molecule 7 is [[(2 {R},3 {S},5 {R})-5-[4-[(4 {S})-4,5-bis(oxidanyl)pent-1-ynyl]-2-nitro-pyrrol

-1-yl]-3-oxidanyl-oxolan-2-yl]methoxy-oxidanyl-phosphoryl] phosphono hydrogen phosphate (three-letter code: 91R) (formula: $C_{14}H_{21}N_2O_{16}P_3$).

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
7	A	1	Total 56	C 14	H 21	N 2	O 16	P 3	0	1

- Molecule 8 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
8	C	1	Total 14	C 3	H 8	O 3	0	0

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
8	C	1	Total 14	C 3	H 8	O 3	0	0

- Molecule 9 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
9	A	244	Total 244	O 244	0	0
9	B	26	Total 26	O 26	0	0
9	C	33	Total 33	O 33	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.
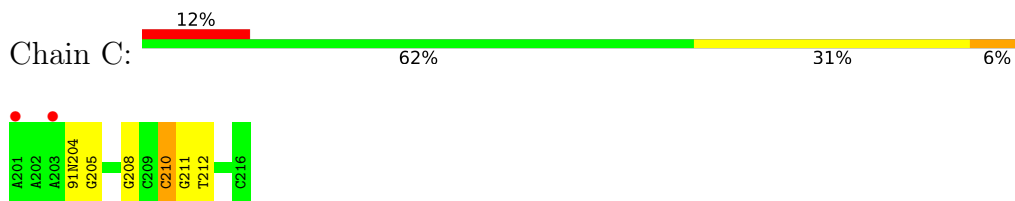
• Molecule 1: DNA polymerase I, thermostable

Chain A:
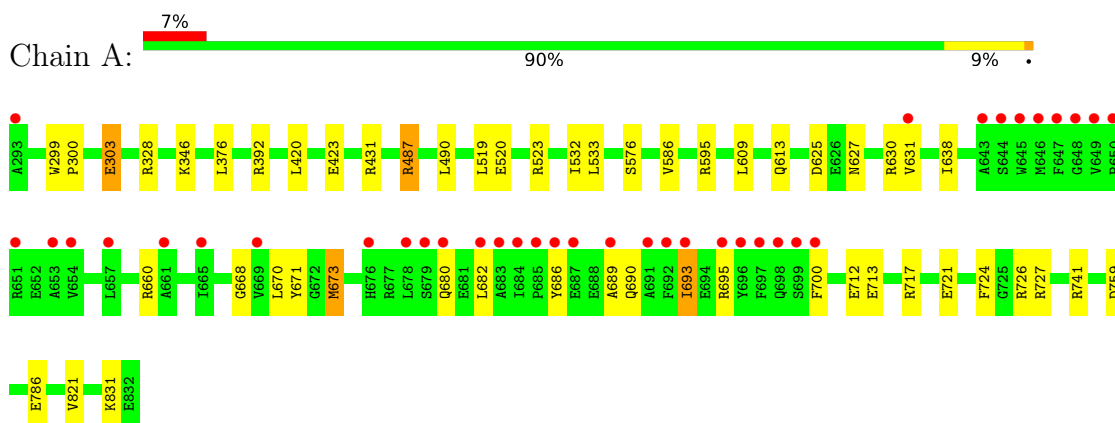
• Molecule 2: DNA (5'-D(*GP*AP*CP*CP*AP*CP*GP*GP*CP*GP*CP*(DOC))-3')

Chain B:
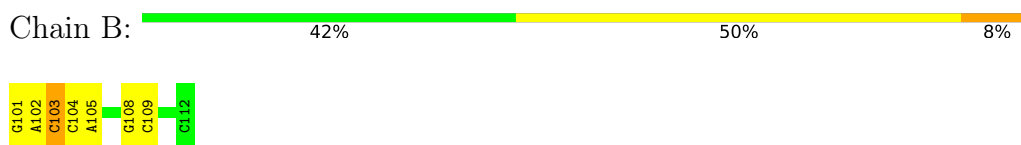
• Molecule 3: DNA (5'-D(*AP*AP*AP*(DNU)P*GP*GP*CP*GP*CP*CP*GP*TP*GP*GP*TP*C)-3')

Chain C:

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 31 2 1	Depositor
Cell constants a, b, c, α, β, γ	108.78Å 108.78Å 90.57Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	47.10 – 1.70 47.10 – 1.70	Depositor EDS
% Data completeness (in resolution range)	98.5 (47.10-1.70) 98.4 (47.10-1.70)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.00 (at 1.70Å)	Xtriage
Refinement program	PHENIX (dev_2650: ???)	Depositor
R, R_{free}	0.181 , 0.237 0.181 , 0.237	Depositor DCC
R_{free} test set	3388 reflections (5.05%)	wwPDB-VP
Wilson B-factor (Å^2)	31.8	Xtriage
Anisotropy	0.271	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.37 , 44.7	EDS
L-test for twinning[2]	$< |L| > = 0.47, < L^2 > = 0.30$	Xtriage
Estimated twinning fraction	0.036 for -h,-k,l	Xtriage
F_o, F_c correlation	0.97	EDS
Total number of atoms	10035	wwPDB-VP
Average B, all atoms (Å^2)	58.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.74% of the height of the origin peak. No significant pseudotranslation is detected.*

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

5　Model quality ⓘ

5.1　Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: ACT, GOL, 91N, 91T, MG, 91R, DOC

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	0.51	0/4430	0.68	3/5999 (0.1%)
2	B	1.50	1/249 (0.4%)	1.24	4/382 (1.0%)
3	C	1.39	1/345 (0.3%)	1.34	4/529 (0.8%)
All	All	0.69	2/5024 (0.0%)	0.79	11/6910 (0.2%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	109	DC	N3-C4	-7.07	1.29	1.33
3	C	205	DG	P-O5'	6.08	1.65	1.59

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	C	212	DT	O5'-P-OP2	-8.01	98.49	105.70
3	C	210	DC	O5'-P-OP1	-7.97	98.52	105.70
3	C	210	DC	OP1-P-OP2	7.45	130.77	119.60
2	B	109	DC	O4'-C1'-N1	6.14	112.30	108.00
3	C	210	DC	O5'-P-OP2	-5.83	100.45	105.70
2	B	108	DG	O4'-C1'-N9	5.66	111.96	108.00
1	A	741	ARG	NE-CZ-NH1	5.27	122.94	120.30
1	A	487	ARG	NE-CZ-NH2	-5.22	117.69	120.30
2	B	108	DG	C1'-O4'-C4'	-5.07	105.03	110.10
1	A	741	ARG	NE-CZ-NH2	-5.07	117.77	120.30
2	B	103	DC	O5'-P-OP2	-5.03	101.17	105.70

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	4319	4375	4352	34	0
2	B	240	134	134	4	0
3	C	333	182	169	3	0
4	A	2	0	0	0	0
5	A	4	3	3	0	0
6	A	35	21	0	2	0
7	A	35	21	0	1	0
8	C	12	16	16	0	0
9	A	244	0	0	6	0
9	B	26	0	0	0	0
9	C	33	0	0	0	0
All	All	5283	4752	4674	39	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 4.

All (39) 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:625:ASP:OD2	9:A:1001:HOH:O	1.94	0.84
1:A:700:PHE:HA	9:A:1001:HOH:O	2.01	0.61
1:A:520:GLU:OE1	1:A:523:ARG:NH2	2.38	0.56
3:C:210:DC:H2'	3:C:211:DG:C8	2.42	0.55
1:A:631:VAL:HG11	1:A:638:ILE:HD11	1.89	0.55
1:A:303:GLU:O	1:A:328:ARG:NH1	2.40	0.54
1:A:668:GLY:HA2	3:C:204:91N:C3A	2.41	0.51
1:A:595:ARG:HD3	9:A:1165:HOH:O	2.12	0.50
1:A:638:ILE:N	1:A:638:ILE:HD12	2.27	0.50
2:B:101:DG:H2'	2:B:102:DA:C8	2.48	0.49
1:A:713:GLU:O	1:A:717:ARG:HG2	2.13	0.48
1:A:576:SER:O	3:C:208:DG:H4'	2.13	0.48
1:A:721:GLU:HA	1:A:726:ARG:O	2.14	0.47
1:A:423:GLU:OE1	1:A:727:ARG:NH2	2.46	0.47
1:A:668:GLY:O	1:A:673:MET:HB2	2.16	0.46
1:A:627:ASN:OD1	1:A:630:ARG:NH1	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:693:ILE:HG13	1:A:693:ILE:O	2.15	0.46
1:A:686:TYR:HE1	1:A:690:GLN:OE1	1.99	0.45
1:A:627:ASN:HB2	9:A:1001:HOH:O	2.17	0.45
1:A:724:PHE:CD2	1:A:759:ASP:HB3	2.52	0.45
1:A:613:GLN:HA	7:A:905[B]:91R:O10	2.17	0.45
1:A:519:LEU:HB2	1:A:533:LEU:HD21	1.98	0.44
1:A:700:PHE:HD1	9:A:1001:HOH:O	2.00	0.44
1:A:660:ARG:HB3	6:A:904[A]:91T:O3	2.18	0.44
2:B:103:DC:H2"	2:B:104:DC:H5'	2.00	0.43
1:A:490:LEU:HD11	1:A:532:ILE:HD13	2.01	0.43
1:A:670:LEU:HD12	1:A:671:TYR:CE1	2.53	0.43
1:A:670:LEU:C	1:A:670:LEU:HD13	2.40	0.42
1:A:689:ALA:O	1:A:693:ILE:HG23	2.19	0.42
2:B:102:DA:H2'	2:B:103:DC:C6	2.55	0.42
1:A:613:GLN:HA	6:A:904[A]:91T:O10	2.18	0.42
1:A:299:TRP:CG	1:A:300:PRO:HA	2.55	0.41
1:A:713:GLU:O	1:A:717:ARG:CG	2.68	0.41
1:A:376:LEU:HD22	1:A:420:LEU:HD12	2.02	0.41
1:A:609:LEU:O	1:A:786:GLU:HA	2.20	0.41
1:A:831:LYS:HG3	9:A:1165:HOH:O	2.21	0.41
2:B:104:DC:H2"	2:B:105:DA:C8	2.55	0.41
1:A:609:LEU:HG	1:A:821:VAL:HG23	2.03	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	544/540 (101%)	526 (97%)	17 (3%)	1 (0%)	47	30

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	586	VAL

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	446/441 (101%)	436 (98%)	10 (2%)	52	34

All (10) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	303	GLU
1	A	346	LYS
1	A	392	ARG
1	A	487	ARG
1	A	673	MET
1	A	680	GLN
1	A	682	LEU
1	A	693	ILE
1	A	695	ARG
1	A	712	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

1 non-standard protein/DNA/RNA residue is 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	DOC	B	112	3,2	16,19,20	0.56	0	20,26,29	0.48	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
2	DOC	B	112	3,2	-	0/7/18/19	0/2/2/2

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 7 ligands modelled in this entry, 2 are monoatomic - leaving 5 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	91T	A	904[A]	4	29,36,36	0.57	0	35,54,54	0.77	2 (5%)
5	ACT	A	903	-	3,3,3	1.52	1 (33%)	3,3,3	0.59	0
8	GOL	C	301	-	5,5,5	0.16	0	5,5,5	0.40	0
7	91R	A	905[B]	4	29,36,36	0.60	0	35,54,54	0.74	2 (5%)
8	GOL	C	302	-	5,5,5	0.16	0	5,5,5	0.32	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
8	GOL	C	301	-	-	0/4/4/4	-
6	91T	A	904[A]	4	-	7/23/46/46	0/2/2/2
8	GOL	C	302	-	-	4/4/4/4	-
7	91R	A	905[B]	4	-	5/23/46/46	0/2/2/2

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	903	ACT	CH3-C	2.29	1.58	1.49

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	A	905[B]	91R	C2-C8-N1	2.39	110.37	107.58
7	A	905[B]	91R	C5-C4-C3	-2.31	171.51	176.43
6	A	904[A]	91T	C2-C8-N1	2.30	110.26	107.58
6	A	904[A]	91T	C5-C4-C3	-2.19	171.76	176.43

There are no chirality outliers.

All (16) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	A	904[A]	91T	C4-C5-C6-C7
7	A	905[B]	91R	P1-O11-P2-O14
8	C	302	GOL	C1-C2-C3-O3
6	A	904[A]	91T	C4-C5-C6-O2
8	C	302	GOL	O1-C1-C2-C3
8	C	302	GOL	O1-C1-C2-O2

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Mol	Chain	Res	Type	Atoms
6	A	904[A]	91T	P1-O8-P-O7
6	A	904[A]	91T	P1-O11-P2-O13
8	C	302	GOL	O2-C2-C3-O3
7	A	905[B]	91R	C4-C5-C6-C7
7	A	905[B]	91R	C2-C3-C4-C5
6	A	904[A]	91T	P1-O8-P-O6
7	A	905[B]	91R	P1-O11-P2-O12
6	A	904[A]	91T	P1-O11-P2-O12
6	A	904[A]	91T	P1-O11-P2-O14
7	A	905[B]	91R	P1-O11-P2-O13

There are no ring outliers.

2 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	A	904[A]	91T	2	0
7	A	905[B]	91R	1	0

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

Ligand 91T A 904 (A)

Bond lengths

Bond angles

Torsions

Rings

Ligand 91R A 905 (B)

Bond lengths

Bond angles

Torsions

Rings
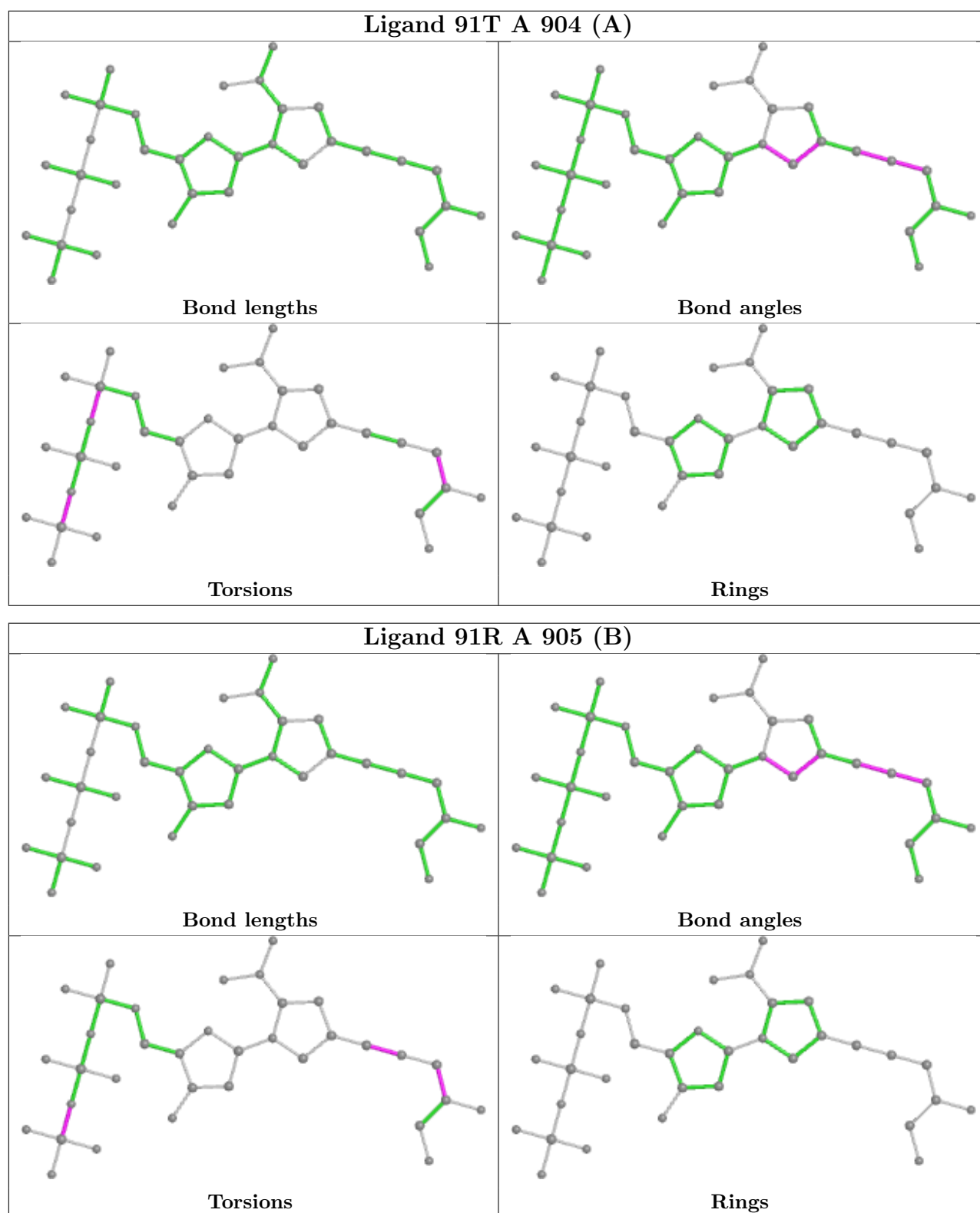
5.7 Other polymers ⓘ

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(Å²)	Q<0.9
1	A	540/540 (100%)	0.04	37 (6%)	16	19	27, 45, 101, 148	0
2	B	11/12 (91%)	-0.50	0	100	100	29, 32, 62, 64	0
3	C	15/16 (93%)	0.02	2 (13%)	3	3	31, 36, 110, 136	0
All	All	566/568 (99%)	0.03	39 (6%)	16	19	27, 45, 101, 148	0

All (39) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	645	TRP	7.3
1	A	692	PHE	6.8
1	A	682	LEU	6.5
1	A	693	ILE	5.8
1	A	697	PHE	5.5
1	A	689	ALA	5.5
1	A	683	ALA	5.1
1	A	684	ILE	4.9
1	A	695	ARG	4.8
1	A	653	ALA	4.6
1	A	647	PHE	4.3
1	A	687	GLU	4.2
1	A	657	LEU	4.2
1	A	700	PHE	4.0
1	A	293	ALA	3.9
1	A	696	TYR	3.8
1	A	648	GLY	3.8
1	A	649	VAL	3.7
1	A	651	ARG	3.7
1	A	650	PRO	3.6
1	A	685	PRO	3.5
1	A	676	HIS	3.4
1	A	691	ALA	3.3

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Mol	Chain	Res	Type	RSRZ
1	A	646	MET	3.1
1	A	699	SER	3.0
1	A	680	GLN	2.7
1	A	678	LEU	2.7
1	A	686	TYR	2.6
3	C	203	DA	2.6
3	C	201	DA	2.5
1	A	643	ALA	2.5
1	A	661	ALA	2.5
1	A	665	ILE	2.4
1	A	679	SER	2.1
1	A	654	VAL	2.1
1	A	698	GLN	2.1
1	A	669	VAL	2.1
1	A	644	SER	2.0
1	A	631	VAL	2.0

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

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	DOC	B	112	18/19	0.98	0.09	28,36,43,44	0

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.
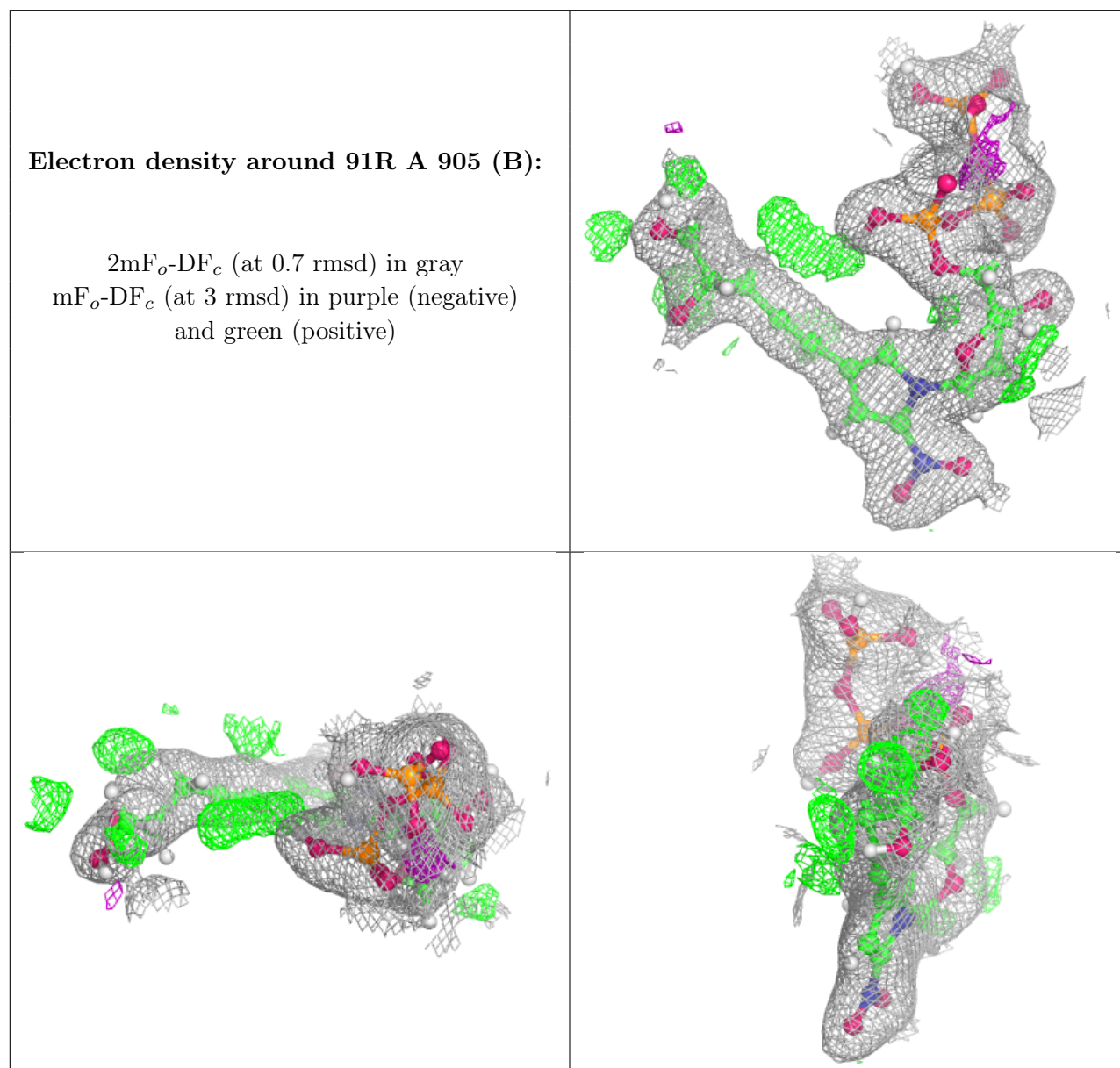
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
8	GOL	C	302	6/6	0.84	0.11	36,53,61,70	14

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($Å^2$)	Q<0.9
5	ACT	A	903	4/4	0.92	0.16	51,61,67,71	0
7	91R	A	905[B]	35/35	0.96	0.08	30,42,51,63	56
4	MG	A	902	1/1	0.96	0.09	45,45,45,45	0
4	MG	A	901	1/1	0.97	0.04	46,46,46,46	0
8	GOL	C	301	6/6	0.97	0.06	44,61,73,81	0
6	91T	A	904[A]	35/35	0.97	0.08	31,42,51,61	56

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 91R A 905 (B):

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

Electron density around 91T A 904 (A):

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

6.5 Other polymers ⓘ

There are no such residues in this entry.