



# Full wwPDB X-ray Structure Validation Report ⓘ

Nov 5, 2017 – 09:23 AM EST

PDB ID : 4EL0  
Title : Crystal structure of GPb in complex with DK16  
Authors : Kantsadi, A.L.; Skamnaki, V.T.; Leonidas, D.D.  
Deposited on : unknown  
Resolution : 2.40 Å(reported)

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

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

A user guide is available at

<http://wwpdb.org/validation/2016/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467  
Mogul : 1.7.2 (RC1), CSD as538be (2017)  
Xtriage (Phenix) : 1.9-1692  
EDS : rb-20030345  
Percentile statistics : 20161228.v01 (using entries in the PDB archive December 28th 2016)  
Refmac : 5.8.0135  
CCP4 : 6.5.0  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : rb-20030345

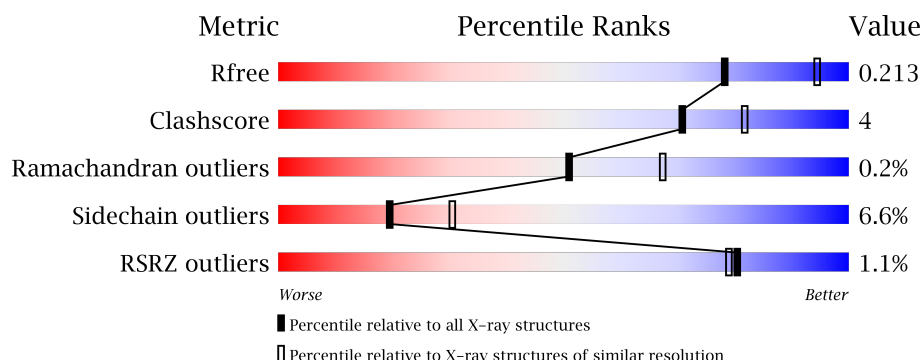
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

## *X-RAY DIFFRACTION*

The reported resolution of this entry is 2.40 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))
$R_{free}$	100719	3166 (2.40-2.40)
Clashscore	112137	3674 (2.40-2.40)
Ramachandran outliers	110173	3616 (2.40-2.40)
Sidechain outliers	110143	3617 (2.40-2.40)
RSRZ outliers	101464	3195 (2.40-2.40)

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 on the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria. 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	825	<div> <div style="width: 100%; height: 10px; position: relative;"> <div style="position: absolute; top: -10px; left: 0; width: 100%;"></div> <div style="position: absolute; bottom: -10px; left: 0; width: 100%;"></div> <div style="position: absolute; top: 0; left: 0; width: 100%; height: 100%; background: linear-gradient(to right, red 0%, red 1%, orange 1%, orange 85%, yellow 85%, yellow 97%, green 97%, green 100%);"></div> <div style="position: absolute; top: 0; left: 0; width: 100%; height: 100%; background: linear-gradient(to right, red 0%, red 1%, orange 1%, orange 85%, yellow 85%, yellow 97%, green 97%, green 100%);"></div> <div style="position: absolute; top: 0; left: 0; width: 100%; height: 100%; background: linear-gradient(to right, red 0%, red 1%, orange 1%, orange 85%, yellow 85%, yellow 97%, green 97%, green 100%);"></div> <div style="position: absolute; top: 0; left: 0; width: 100%; height: 100%; background: linear-gradient(to right, red 0%, red 1%, orange 1%, orange 85%, yellow 85%, yellow 97%, green 97%, green 100%);"></div> </div> <div style="display: flex; justify-content: space-between; width: 100%;"> <span>0.0%</span> <span>85%</span> <span>12%</span> <span>..</span> </div> </div>

## 2 Entry composition [i](#)

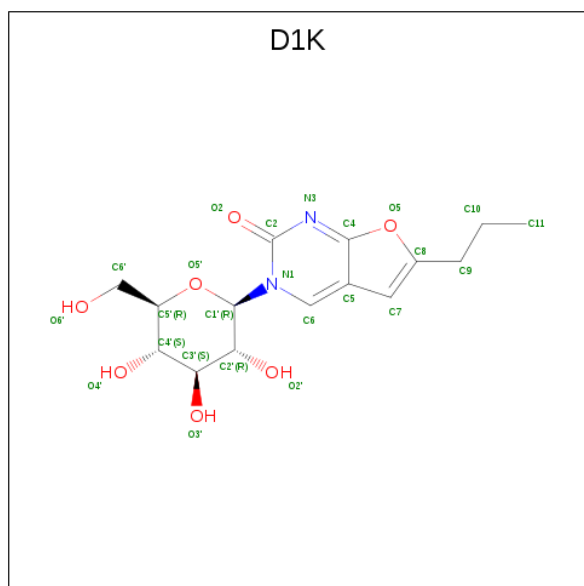
There are 3 unique types of molecules in this entry. The entry contains 6831 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Glycogen phosphorylase, muscle form.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	810	Total	C	N	O	P	S	0	0	0
			6605	4209	1161	1205	1	29			

- Molecule 2 is 3-(beta-D-glucopyranosyl)-6-propylfuro[2,3-d]pyrimidin-2(3H)-one (three-letter code: D1K) (formula: C<sub>15</sub>H<sub>20</sub>N<sub>2</sub>O<sub>7</sub>).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	N	O	0	0
			24	15	2	7		

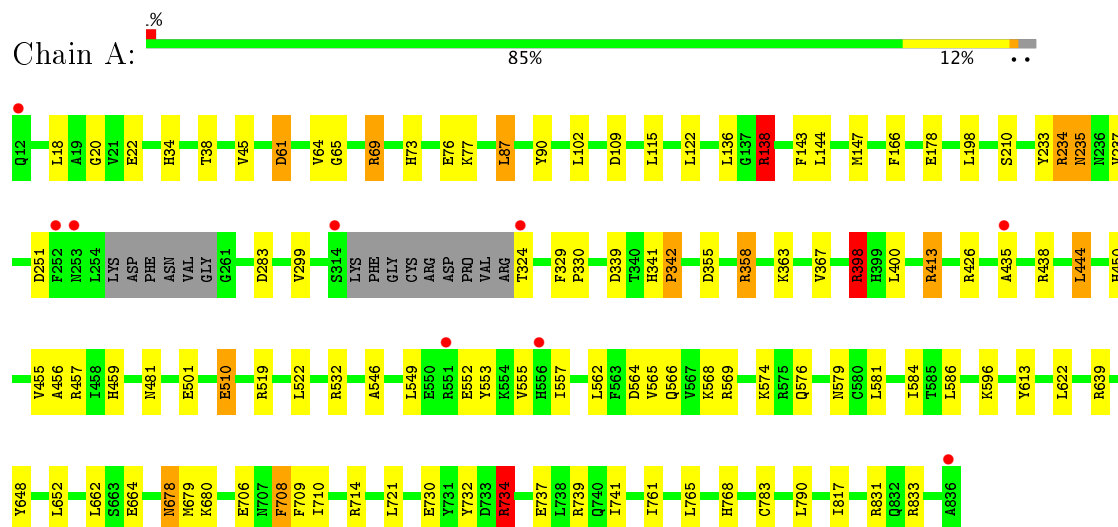
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	202	Total	O	0	0
			202	202		

### 3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA 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: Glycogen phosphorylase, muscle form



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 43 21 2	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	128.59Å 128.59Å 116.43Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	13.70 – 2.40 13.70 – 2.40	Depositor EDS
% Data completeness (in resolution range)	99.9 (13.70-2.40) 99.9 (13.70-2.40)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	0.10	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	3.01 (at 2.39Å)	Xtriage
Refinement program	REFMAC	Depositor
R, $R_{free}$	0.160 , 0.218 0.158 , 0.213	Depositor DCC
$R_{free}$ test set	1930 reflections (5.28%)	DCC
Wilson B-factor (Å <sup>2</sup> )	25.7	Xtriage
Anisotropy	0.023	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.33 , 44.5	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.51$ , $\langle L^2 \rangle = 0.35$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.96	EDS
Total number of atoms	6831	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	24.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.75% of the height of the origin peak. No significant pseudotranslation is detected.*

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

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

## 5 Model quality ⓘ

### 5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: LLP, D1K

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	1.07	4/6727 (0.1%)	0.98	20/9102 (0.2%)

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	510	GLU	CD-OE1	5.79	1.32	1.25
1	A	166	PHE	CE2-CZ	5.35	1.47	1.37
1	A	501	GLU	CG-CD	5.30	1.59	1.51
1	A	233	TYR	CD2-CE2	5.04	1.47	1.39

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	398	ARG	NE-CZ-NH2	12.52	126.56	120.30
1	A	398	ARG	NE-CZ-NH1	-8.43	116.09	120.30
1	A	138	ARG	NE-CZ-NH2	7.68	124.14	120.30
1	A	234	ARG	NE-CZ-NH2	7.28	123.94	120.30
1	A	339	ASP	CB-CG-OD1	7.27	124.84	118.30
1	A	339	ASP	CB-CG-OD2	-6.81	112.17	118.30
1	A	138	ARG	NE-CZ-NH1	-6.63	116.98	120.30
1	A	234	ARG	NE-CZ-NH1	-6.46	117.07	120.30
1	A	734	ARG	NE-CZ-NH1	-6.28	117.16	120.30
1	A	734	ARG	NE-CZ-NH2	5.99	123.30	120.30
1	A	444	LEU	CA-CB-CG	5.93	128.95	115.30
1	A	18	LEU	CA-CB-CG	5.92	128.91	115.30
1	A	61	ASP	CB-CG-OD1	-5.88	113.01	118.30
1	A	61	ASP	CB-CG-OD2	5.84	123.56	118.30
1	A	457	ARG	NE-CZ-NH1	-5.74	117.43	120.30
1	A	87	LEU	CA-CB-CG	-5.67	102.26	115.30
1	A	438	ARG	NE-CZ-NH1	-5.45	117.57	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	299	VAL	CG1-CB-CG2	-5.32	102.39	110.90
1	A	438	ARG	NE-CZ-NH2	5.26	122.93	120.30
1	A	109	ASP	CB-CG-OD1	5.23	123.00	118.30

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	6605	0	6539	54	0
2	A	24	0	20	0	0
3	A	202	0	0	6	0
All	All	6831	0	6559	54	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 (54) 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:455:VAL:H	1:A:459:HIS:HD2	1.26	0.83
1:A:678:ASN:HD22	1:A:679:MET:H	1.28	0.79
1:A:549:LEU:HB3	1:A:555:VAL:HG23	1.64	0.79
1:A:138:ARG:O	1:A:138:ARG:HD3	1.83	0.77
1:A:355:ASP:OD1	1:A:398:ARG:HD3	1.86	0.75
1:A:65:GLY:O	1:A:69:ARG:HG2	1.97	0.65
1:A:549:LEU:HD12	1:A:557:ILE:HD13	1.77	0.64
1:A:678:ASN:ND2	1:A:679:MET:H	1.99	0.60
1:A:329:PHE:HB3	1:A:330:PRO:HD3	1.83	0.59
1:A:34:HIS:HE1	1:A:61:ASP:OD1	1.86	0.58
1:A:730:GLU:O	1:A:734:ARG:HG3	2.05	0.56
1:A:549:LEU:HB3	1:A:555:VAL:CG2	2.34	0.56
1:A:144:LEU:HD23	1:A:147:MET:CE	2.36	0.56
1:A:413:ARG:HG2	1:A:413:ARG:HH21	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:678:ASN:HD22	1:A:679:MET:N	2.02	0.55
1:A:20:GLY:HA3	3:A:1191:HOH:O	2.07	0.55
1:A:34:HIS:HD2	1:A:38:THR:OG1	1.90	0.54
1:A:450:HIS:HD2	3:A:1179:HOH:O	1.92	0.52
1:A:358:ARG:HH11	1:A:358:ARG:HG3	1.75	0.52
1:A:235:ASN:H	1:A:235:ASN:HD22	1.59	0.51
1:A:737:GLU:HG3	3:A:1141:HOH:O	2.11	0.50
1:A:136:LEU:C	1:A:136:LEU:HD23	2.33	0.49
1:A:532:ARG:HG2	3:A:1096:HOH:O	2.14	0.47
1:A:730:GLU:O	1:A:734:ARG:CG	2.62	0.47
1:A:73:HIS:CE1	1:A:77:LYS:HD2	2.50	0.46
1:A:87:LEU:HD13	1:A:341:HIS:HB3	1.97	0.46
1:A:710:ILE:H	1:A:710:ILE:HD12	1.80	0.46
1:A:732:TYR:CZ	1:A:739:ARG:HG3	2.51	0.46
1:A:569:ARG:O	1:A:574:LYS:HD3	2.17	0.45
1:A:678:ASN:HD22	1:A:678:ASN:N	2.14	0.45
1:A:581:LEU:HD22	1:A:741:ILE:HG21	1.98	0.45
1:A:708:PHE:HB3	1:A:710:ILE:HD11	1.99	0.45
1:A:455:VAL:N	1:A:459:HIS:HD2	2.05	0.44
1:A:450:HIS:HE1	3:A:1125:HOH:O	2.00	0.44
1:A:143:PHE:CG	1:A:817:ILE:HD11	2.52	0.44
1:A:566:GLN:HE22	1:A:576:GLN:HA	1.83	0.44
1:A:553:TYR:O	1:A:555:VAL:HG13	2.17	0.44
1:A:235:ASN:ND2	1:A:237:VAL:H	2.16	0.43
1:A:562:LEU:HD23	1:A:562:LEU:C	2.38	0.43
1:A:680:LLP:NZ	1:A:680:LLP:O3	2.51	0.43
1:A:546:ALA:HA	1:A:557:ILE:HD11	2.01	0.42
1:A:564:ASP:OD2	1:A:664:GLU:OE1	2.38	0.42
1:A:584:ILE:HG22	1:A:741:ILE:HG12	2.02	0.42
1:A:251:ASP:OD1	1:A:251:ASP:N	2.53	0.42
1:A:648:TYR:HA	1:A:652:LEU:HD23	2.01	0.42
1:A:456:ALA:C	1:A:481:ASN:HD21	2.24	0.41
1:A:549:LEU:HA	1:A:549:LEU:HD23	1.92	0.41
1:A:678:ASN:ND2	1:A:679:MET:HG3	2.35	0.41
1:A:283:ASP:N	1:A:283:ASP:OD1	2.51	0.41
1:A:341:HIS:HB2	1:A:342:PRO:HD3	2.02	0.41
1:A:709:PHE:HB3	1:A:783:CYS:SG	2.61	0.41
1:A:363:LYS:HE3	1:A:367:VAL:HG23	2.02	0.41
1:A:235:ASN:N	1:A:235:ASN:HD22	2.16	0.41
1:A:639:ARG:CD	3:A:1148:HOH:O	2.69	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	803/825 (97%)	772 (96%)	29 (4%)	2 (0%)	51	67

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	435	ALA
1	A	342	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	700/713 (98%)	654 (93%)	46 (7%)	19	30

All (46) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	22	GLU
1	A	45	VAL
1	A	64	VAL
1	A	69	ARG
1	A	76	GLU
1	A	90	TYR
1	A	102	LEU
1	A	115	LEU
1	A	122	LEU

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Mol	Chain	Res	Type
1	A	138	ARG
1	A	178	GLU
1	A	198	LEU
1	A	210	SER
1	A	234	ARG
1	A	235	ASN
1	A	324	THR
1	A	358	ARG
1	A	398	ARG
1	A	400	LEU
1	A	413	ARG
1	A	426	ARG
1	A	444	LEU
1	A	510	GLU
1	A	519	ARG
1	A	522	LEU
1	A	552	GLU
1	A	565	VAL
1	A	568	LYS
1	A	579	ASN
1	A	586	LEU
1	A	596	LYS
1	A	613	TYR
1	A	622	LEU
1	A	662	LEU
1	A	678	ASN
1	A	706	GLU
1	A	708	PHE
1	A	714	ARG
1	A	721	LEU
1	A	734	ARG
1	A	761	ILE
1	A	765	LEU
1	A	768	HIS
1	A	790	LEU
1	A	831	ARG
1	A	833	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (13) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	34	HIS

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Mol	Chain	Res	Type
1	A	73	HIS
1	A	235	ASN
1	A	325	ASN
1	A	390	HIS
1	A	450	HIS
1	A	459	HIS
1	A	481	ASN
1	A	484	ASN
1	A	566	GLN
1	A	579	ASN
1	A	678	ASN
1	A	767	HIS

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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	$\# Z  > 2$
1	LLP	A	680	1	24,24,25	1.61	4 (16%)	28,32,34	2.15	10 (35%)

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
1	LLP	A	680	1	-	0/15/17/19	0/1/1/1

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	680	LLP	O3-C3	-3.50	1.29	1.37
1	A	680	LLP	C3-C2	-2.88	1.38	1.40
1	A	680	LLP	C4-C4'	3.18	1.52	1.46
1	A	680	LLP	CA-C	3.79	1.55	1.50

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	680	LLP	C4-C3-C2	-4.76	117.23	120.15
1	A	680	LLP	C5-C6-N1	-4.15	116.84	123.87
1	A	680	LLP	CE-NZ-C4'	-3.83	107.92	119.03
1	A	680	LLP	OP2-P-OP4	-2.82	99.23	106.73
1	A	680	LLP	C5-C4-C4'	-2.36	117.84	121.36
1	A	680	LLP	C4-C4'-NZ	-2.23	113.81	124.66
1	A	680	LLP	C5'-C5-C6	-2.18	115.58	119.33
1	A	680	LLP	C3-C4-C5	2.82	120.39	118.24
1	A	680	LLP	C2'-C2-C3	3.00	124.54	120.96
1	A	680	LLP	C6-N1-C2	3.02	125.08	119.26

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	A	680	LLP	1	0

## 5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

## 5.6 Ligand geometry [i](#)

1 ligand 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	D1K	A	901	-	20,26,26	2.24	7 (35%)	20,38,38	1.20	2 (10%)

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	D1K	A	901	-	-	0/4/29/29	0/2/3/3

All (7) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	901	D1K	C6-C5	-3.09	1.33	1.41
2	A	901	D1K	C7-C8	-2.53	1.34	1.39
2	A	901	D1K	O3'-C3'	-2.02	1.38	1.43
2	A	901	D1K	C4'-C5'	3.49	1.60	1.53
2	A	901	D1K	C4-N3	3.84	1.42	1.34
2	A	901	D1K	O5'-C1'	4.01	1.48	1.42
2	A	901	D1K	C6-N1	5.26	1.43	1.34

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	901	D1K	C9-C8-C7	-2.44	122.07	129.10
2	A	901	D1K	O5'-C5'-C6'	-2.25	101.02	106.41

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers ⓘ

There are no such residues in this entry.

## 5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

## 6 Fit of model and data [i](#)

### 6.1 Protein, DNA and RNA chains [i](#)

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
1	A	809/825 (98%)	-0.88	9 (1%) 80 79	9, 22, 48, 74	0

All (9) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	253	ASN	5.4
1	A	324	THR	4.8
1	A	556	HIS	4.3
1	A	314	SER	3.6
1	A	252	PHE	2.9
1	A	435	ALA	2.8
1	A	551	ARG	2.6
1	A	12	GLN	2.4
1	A	836	ALA	2.3

### 6.2 Non-standard residues in protein, DNA, RNA chains [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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled ‘Q< 0.9’ lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors(Å <sup>2</sup> )	Q<0.9
1	LLP	A	680	24/25	0.99	0.07	-	7,12,15,16	0

### 6.3 Carbohydrates [i](#)

There are no carbohydrates 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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors( $\text{\AA}^2$ )	Q<0.9
2	D1K	A	901	24/24	0.97	0.08	0.14	11,18,33,37	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.