wwPDB X-ray Structure Validation Summary Report (i)

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PDB ID	:	2JGO
Title	:	Structure of the arsenated de novo designed peptide Coil Ser L9C
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Deposited on	:	2007-02-13
Resolution	:	1.81 Å(reported)

This is a wwPDB X-ray Structure Validation Summary 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 (i) 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 (i)) were used in the production of this report:

MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	NOT EXECUTED
EDS	:	NOT EXECUTED
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

PERCENTILES INFOmissingINFO

1 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 805 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 COIL SER L9C.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	31	Total	C	N	O	S	5	4	1
			261	173	41	46	1			
1	B	31	Total	C	N	O	S	2	2	1
			246	158	41	46	1			
1	C	31	Total	C	N	O	S	0	1	1
			240	153	40	46	1			

- Molecule 2 is ARSENIC (three-letter code: ARS) (formula: As).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	1	Total	As	0	0
			1	1		

- Molecule 3 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	2	Total	Zn	0	0
			2	2		
3	B	2	Total	Zn	0	0
			2	2		

- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	19	Total	O	0	0
			19	19		
4	B	16	Total	O	0	0
			16	16		
4	C	18	Total	O	0	0
			18	18		

SEQUENCE-PLOTS INFOmissingINFO

2 Data and refinement statistics (i)

Xtriage (Phenix) and EDS were not executed - this section is therefore incomplete.

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	77.28Å 29.42Å 44.20Å 90.00° 119.49° 90.00°	Depositor
Resolution (Å)	13.74 – 1.81	Depositor
% Data completeness (in resolution range)	99.2 (13.74-1.81)	Depositor
R_{merge}	0.05	Depositor
R_{sym}	(Not available)	Depositor
Refinement program	REFMAC 6.0	Depositor
R, R_{free}	0.198 , 0.257	Depositor
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	805	wwPDB-VP
Average B, all atoms (Å^2)	18.0	wwPDB-VP

3 Model quality

3.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: ACE, NH2, ARS, ZN

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	1.28	2/274 (0.7%)	1.22	2/366 (0.5%)
1	B	0.43	0/251	1.08	1/332 (0.3%)
1	C	0.42	0/242	1.22	2/321 (0.6%)
All	All	0.84	2/767 (0.3%)	1.18	5/1019 (0.5%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	0	ACE	C-N	-17.13	0.94	1.34
1	A	1	GLU	C-N	-8.16	1.15	1.34

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	0	ACE	O-C-N	9.23	137.47	122.70
1	A	1	GLU	O-C-N	-6.43	112.41	122.70
1	C	20	GLU	CG-CD-OE2	-6.18	105.94	118.30
1	B	1	GLU	CA-CB-CG	-5.80	100.65	113.40
1	C	23	LEU	CB-CG-CD1	5.34	120.08	111.00

There are no chirality outliers.

There are no planarity outliers.

3.2 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	261	0	280	43	1
1	B	246	0	264	38	1
1	C	240	0	251	40	0
2	A	1	0	0	0	0
3	A	2	0	0	0	0
3	B	2	0	0	0	0
4	A	19	0	0	3	0
4	B	16	0	0	2	0
4	C	18	0	0	8	0
All	All	805	0	795	73	1

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 48.

The worst 5 of 73 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:2[A]:TRP:CZ3	1:B:5:LEU:HD12	1.67	1.28
1:C:22[B]:LYS:NZ	4:C:2015:HOH:O	1.73	1.19
1:B:2:TRP:CZ3	1:C:2:TRP:CZ3	2.32	1.17
1:B:2:TRP:HZ3	1:C:2:TRP:CZ3	1.65	1.12
1:B:2:TRP:CZ3	1:C:2:TRP:HZ3	1.65	1.11

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:22[B]:LYS:NZ	1:B:30:NH2:N[4_454]	1.75	0.45

3.3 Torsion angles (i)

3.3.1 Protein backbone (i)

There are no protein backbone outliers to report in this entry.

3.3.2 Protein sidechains (i)

There are no protein residues with a non-rotameric sidechain to report in this entry.

3.3.3 RNA

There are no RNA molecules in this entry.

3.4 Non-standard residues in protein, DNA, RNA chains

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

3.5 Carbohydrates

There are no monosaccharides in this entry.

3.6 Ligand geometry

Of 5 ligands modelled in this entry, 5 are monoatomic - leaving 0 for Mogul analysis.

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.

3.7 Other polymers

There are no such residues in this entry.

3.8 Polymer linkage issues

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	A	2

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	1:GLU	C	2:TRP	N	1.15
1	A	0:ACE	C	1:GLU	N	0.94

4 Fit of model and data

4.1 Protein, DNA and RNA chains

EDS was not executed - this section is therefore empty.

4.2 Non-standard residues in protein, DNA, RNA chains

EDS was not executed - this section is therefore empty.

4.3 Carbohydrates

EDS was not executed - this section is therefore empty.

4.4 Ligands

EDS was not executed - this section is therefore empty.

4.5 Other polymers

EDS was not executed - this section is therefore empty.