Full wwPDB X-ray Structure Validation Report (i)

Oct 2, 2023 – 01:47 PM EDT

PDB ID	:	6NSV
Title	:	Crystal structure of the human CHIP TPR domain in complex with a 5mer acetylated optimized peptide
Authors	:	Basu, K.; Ravalin, M.; Bohn, M.-F.; Craik, C.S.; Gestwicki, J.E.
Deposited on	:	2019-01-25
Resolution	:	1.30 Å(reported)

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

MolProbity	:	FAILED
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	FAILED
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)	:	2.35.1

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 1.30 Å.

There are no overall percentile quality scores available for this entry.

MolProbity and EDS failed to run properly - the sequence quality summary graphics cannot be shown.

2 Entry composition ⓘ

There are 6 unique types of molecules in this entry. The entry contains 4562 atoms, of which 2115 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 E3 ubiquitin-protein ligase CHIP.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	128	Total	C	H	N	O	S	0	1	0
			2012	642	989	187	188	6			
1	B	130	Total	C	H	N	O	S	0	1	0
			2061	654	1016	189	196	6			

- Molecule 2 is a protein called ACE-LEU-TRP-TRP-PRO-ASP.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	C	6	Total	C	H	N	O	0	0	0
			88	39	33	7	9			
2	D	6	Total	C	H	N	O	0	0	0
			88	39	33	7	9			

- Molecule 3 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	1	Total	Cl	0	0
			1	1		

- Molecule 4 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	1	Total	Na	0	0
			1	1		
4	B	1	Total	Na	0	0
			1	1		

- Molecule 5 is PENTAETHYLENE GLYCOL (three-letter code: 1PE) (formula: $C_{10}H_{22}O_6$).

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	A	1	Total 38	C 10	H 22	O 6	0	0
5	B	1	Total 38	C 10	H 22	O 6	0	0

- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	117	Total 117	O 117	0	0
6	B	108	Total 108	O 108	0	0
6	C	4	Total 4	O 4	0	0
6	D	5	Total 5	O 5	0	0

MolProbity and EDS failed to run properly - this section is therefore empty.

3 Data and refinement statistics ⓘ

EDS failed to run properly - this section is therefore incomplete.

Property	Value	Source
Space group	P 2 21 21	Depositor
Cell constants a, b, c, α, β, γ	46.22Å 71.92Å 77.79Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	39.73 – 1.30	Depositor
% Data completeness (in resolution range)	94.7 (39.73-1.30)	Depositor
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.84 (at 1.31Å)	Xtriage
Refinement program	PHENIX (1.14_3260: ???)	Depositor
R, R_{free}	0.214 , 0.243	Depositor
Wilson B-factor (Å^2)	12.3	Xtriage
Anisotropy	0.637	Xtriage
L-test for twinning[2]	$< |L| > = 0.47, < L^2 > = 0.30$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	4562	wwPDB-VP
Average B, all atoms (Å^2)	27.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 39.60 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 3.0987e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

---

[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.

4 Model quality ⓘ

4.1 Standard geometry ⓘ

MolProbity failed to run properly - this section is therefore empty.

4.2 Too-close contacts ⓘ

MolProbity failed to run properly - this section is therefore empty.

4.3 Torsion angles ⓘ

4.3.1 Protein backbone ⓘ

MolProbity failed to run properly - this section is therefore empty.

4.3.2 Protein sidechains ⓘ

MolProbity failed to run properly - this section is therefore empty.

4.3.3 RNA ⓘ

MolProbity failed to run properly - this section is therefore empty.

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

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

4.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

4.6 Ligand geometry ⓘ

Of 5 ligands modelled in this entry, 3 are monoatomic - leaving 2 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	#$|Z| > 2$
5	1PE	A	203	-	15,15,15	0.39	0	14,14,14	1.06	1 (7%)
5	1PE	B	202	-	15,15,15	0.54	0	14,14,14	0.94	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
5	1PE	A	203	-	-	8/13/13/13	-
5	1PE	B	202	-	-	9/13/13/13	-

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	A	203	1PE	OH3-C23-C13	2.49	121.62	110.39

There are no chirality outliers.

All (17) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	B	202	1PE	OH6-C15-C25-OH5
5	B	202	1PE	OH5-C14-C24-OH4
5	A	203	1PE	OH4-C13-C23-OH3
5	A	203	1PE	C23-C13-OH4-C24
5	A	203	1PE	OH7-C16-C26-OH6
5	A	203	1PE	C12-C22-OH3-C23
5	B	202	1PE	C16-C26-OH6-C15
5	A	203	1PE	C16-C26-OH6-C15
5	B	202	1PE	OH7-C16-C26-OH6
5	A	203	1PE	OH5-C14-C24-OH4
5	B	202	1PE	OH4-C13-C23-OH3
5	B	202	1PE	OH2-C12-C22-OH3
5	B	202	1PE	C14-C24-OH4-C13
5	B	202	1PE	C15-C25-OH5-C14
5	A	203	1PE	OH6-C15-C25-OH5

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
5	A	203	1PE	C25-C15-OH6-C26
5	B	202	1PE	C23-C13-OH4-C24

There are no ring outliers.

No monomer is involved in short contacts.

4.7   Other polymers ⓘ

There are no such residues in this entry.

4.8   Polymer linkage issues ⓘ

There are no chain breaks in this entry.

5 Fit of model and data ⓘ

5.1 Protein, DNA and RNA chains ⓘ

EDS failed to run properly - this section is therefore empty.

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

EDS failed to run properly - this section is therefore empty.

5.3 Carbohydrates ⓘ

EDS failed to run properly - this section is therefore empty.

5.4 Ligands ⓘ

EDS failed to run properly - this section is therefore empty.

5.5 Other polymers ⓘ

EDS failed to run properly - this section is therefore empty.