

Full wwPDB X-ray Structure Validation Report (i)

Oct 5, 2023 – 05:37 AM EDT

:	6VY6
:	Crystal structure of Hendra receptor binding protein head domain in complex
	with human neutralizing antibody HENV-26
:	Dong, J.; Crowe, J.E.
:	2020-02-25
:	2.60 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 (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 (1)) 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: $X\hbox{-}RAY\,DIFFRACTION$

The reported resolution of this entry is 2.60 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 (i)

There are 9 unique types of molecules in this entry. The entry contains 6803 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 receptor binding protein.

Mol	Chain	Residues		Atoms			ZeroOcc	AltConf	Trace	
1	А	415	Total 3260	C 2079	N 548	O 614	S 19	0	0	0

There are 13 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
А	605	GLU	-	expression tag	UNP F4YH71
А	606	ASN	-	expression tag	UNP F4YH71
A	607	LEU	-	expression tag	UNP F4YH71
А	608	TYR	-	expression tag	UNP F4YH71
A	609	PHE	-	expression tag	UNP F4YH71
А	610	GLN	-	expression tag	UNP F4YH71
A	611	GLY	-	expression tag	UNP F4YH71
А	612	HIS	-	expression tag	UNP F4YH71
A	613	HIS	-	expression tag	UNP F4YH71
A	614	HIS	-	expression tag	UNP F4YH71
A	615	HIS	-	expression tag	UNP F4YH71
А	616	HIS	-	expression tag	UNP F4YH71
А	617	HIS	-	expression tag	UNP F4YH71

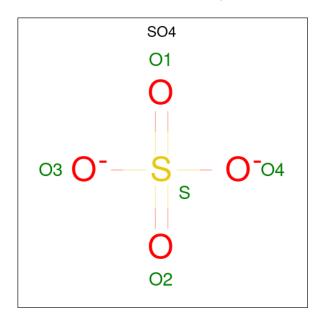
• Molecule 2 is a protein called Anti-Hendra receptor binding protein antibody HENV-26 Fab heavy chain.

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf	Trace		
2	Н	226	Total 1688	C 1071	N 287	O 323	S 7	0	0	0

• Molecule 3 is a protein called Anti-Hendra receptor binding protein antibody HENV-26 Fab light chain.



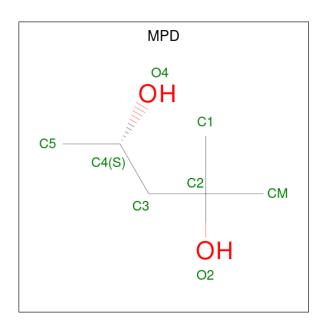
Mo	l Chain	Residues	Atoms			ZeroOcc	AltConf	Trace		
3	L	212	Total 1573	C 983	N 264	0 322	S 4	0	0	0



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	Δ	1	Total O S	0	0
4	Л	1	$5 \ 4 \ 1$	0	0
1	Δ	1	Total O S	0	0
Т	11	I	$5 \ 4 \ 1$	0	0
1	Δ	1	Total O S	0	0
Т	11	I	$5 \ 4 \ 1$	0	0
1	Н	1	Total O S	0	0
-	11	1	$5 \ 4 \ 1$	0	0
4	T	1	Total O S		0
-	Ц	1	$5 \ 4 \ 1$	0	0

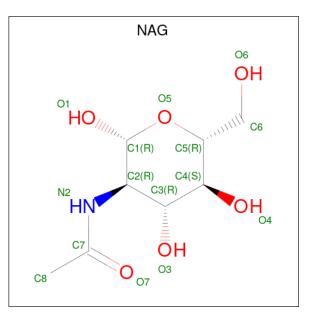
• Molecule 5 is (4S)-2-METHYL-2,4-PENTANEDIOL (three-letter code: MPD) (formula: $C_6H_{14}O_2$).





Mo	Chain	Residues	Atoms			ZeroOcc	AltConf
5	А	1	Total 8	С 6	O 2	0	0

• Molecule 6 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	А	1	Total C N O 14 8 1 5	0	0
6	А	1	Total C N O 14 8 1 5	0	0

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
6	А	1	Total 14			O 5	0	0
6	А	1	Total 14	C 8	N 1	O 5	0	0

• Molecule 7 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	Н	1	Total Cl 1 1	0	0

• Molecule 8 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	L	1	Total 1	Zn 1	0	0

• Molecule 9 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
9	А	110	Total O 110 110	0	0
9	Н	56	$\begin{array}{cc} {\rm Total} & {\rm O} \\ 56 & 56 \end{array}$	0	0
9	L	25	TotalO2525	0	0

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



3 Data and refinement statistics (i)

Property	Value	Source	
Space group	P 2 21 21	Depositor	
Cell constants	70.81Å 79.77Å 177.13Å	Depositor	
a, b, c, α , β , γ	90.00° 90.00° 90.00°	Depositor	
Resolution (Å)	45.35 - 2.60	Depositor	
% Data completeness	99.9 (45.35-2.60)	Depositor	
(in resolution range)			
R _{merge}	0.12	Depositor	
R _{sym}	(Not available)	Depositor	
$< I/\sigma(I) > 1$	$3.41 (at 2.61 \text{\AA})$	Xtriage	
Refinement program	PHENIX 1.14_3260	Depositor	
R, R_{free}	0.197 , 0.247	Depositor	
Wilson B-factor ($Å^2$)	47.7	Xtriage	
Anisotropy	0.326	Xtriage	
L-test for twinning ²	$ < L >=0.49, < L^2>=0.32$	Xtriage	
Estimated twinning fraction	No twinning to report.	Xtriage	
Total number of atoms	6803	wwPDB-VP	
Average B, all atoms $(Å^2)$	52.0	wwPDB-VP	

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

Xtriage's analysis on translational NCS is as follows: The largest off-origin peak in the Patterson function is 3.83% of the height of the origin peak. No significant pseudotranslation is detected.

²Theoretical 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.



¹Intensities estimated from amplitudes.

4 Model quality (i)

4.1 Standard geometry (i)

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

4.2 Too-close contacts (i)

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

4.3 Torsion angles (i)

4.3.1 Protein backbone (i)

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

4.3.2 Protein sidechains (i)

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

4.3.3 RNA (i)

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

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

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

4.5 Carbohydrates (i)

There are no monosaccharides in this entry.

4.6 Ligand geometry (i)

Of 12 ligands modelled in this entry, 2 are monoatomic - leaving 10 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



Mal	Mol Type		Res	Link	Bond lengths			Bond angles		
	Type	Chain	nes	LIIIK	Counts	RMSZ	# Z >2	Counts	RMSZ	# Z > 2
4	SO4	А	701	-	4,4,4	0.14	0	$6,\!6,\!6$	0.06	0
4	SO4	А	703	-	4,4,4	0.14	0	$6,\!6,\!6$	0.07	0
6	NAG	А	705	1	14,14,15	0.30	0	17,19,21	0.45	0
6	NAG	А	707	1	14,14,15	0.23	0	17,19,21	0.45	0
5	MPD	А	704	-	7,7,7	0.26	0	$9,\!10,\!10$	0.22	0
4	SO4	L	301	-	4,4,4	0.14	0	$6,\!6,\!6$	0.04	0
6	NAG	А	706	1	14,14,15	0.47	0	17,19,21	0.43	0
6	NAG	А	708	1	14,14,15	0.25	0	17,19,21	0.41	0
4	SO4	А	702	-	4,4,4	0.14	0	$6,\!6,\!6$	0.08	0
4	SO4	Н	301	-	4,4,4	0.14	0	$6,\!6,\!6$	0.12	0

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).

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	NAG	А	705	1	-	0/6/23/26	0/1/1/1
6	NAG	А	708	1	-	0/6/23/26	0/1/1/1
5	MPD	А	704	-	-	1/5/5/5	-
6	NAG	А	706	1	-	2/6/23/26	0/1/1/1
6	NAG	А	707	1	-	1/6/23/26	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	А	704	MPD	CM-C2-C3-C4
6	А	706	NAG	O5-C5-C6-O6
6	А	706	NAG	C4-C5-C6-O6
6	А	707	NAG	C4-C5-C6-O6

There are no ring outliers.

No monomer is involved in short contacts.



4.7 Other polymers (i)

There are no such residues in this entry.

4.8 Polymer linkage issues (i)

There are no chain breaks in this entry.



5 Fit of model and data (i)

5.1 Protein, DNA and RNA chains (i)

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

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

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

5.3 Carbohydrates (i)

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

5.4 Ligands (i)

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

5.5 Other polymers (i)

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

