

**H9 Hemagglutinin (HA) Protein with C-Terminal Histidine Tag from Influenza Virus, A/turkey/Wisconsin/1/1966 (H9N2), Recombinant from Baculovirus**

**Catalog No. NR-43782**

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**For research use only. Not for use in humans.**

**Contributor and Manufacturer:**

BEI Resources

**Product Description:**

A recombinant form of the H9 hemagglutinin (HA) protein from influenza A virus, A/turkey/Wisconsin/1/1966 (H9N2), was produced in Sf9 insect cells using a baculovirus expression vector system and was purified by nickel affinity chromatography. The predicted protein sequence is shown in Figure 1. The recombinant protein lacks the signal sequence and includes additional plasmid encoded residues at both the N-terminal and C-terminal, T4 foldon trimerization domain, thrombin cleavage site and C-terminal octa-histidine tag.<sup>1,2</sup> The full-length HA precursor protein is 560 residues (GenPept: [AGB50938](#)). NR-43782 has a theoretical molecular weight of 62,056 daltons. The crystal structure for the precursor HA protein has been solved at 3.00 Å resolution (PDB: [1RD8](#)).<sup>2</sup>

**Material Provided:**

Each vial contains approximately 240 µl of purified recombinant HA protein in PBS (pH 7.4) with 1mM 4-(2-aminoethyl)-benzenesulfonyl fluoride hydrochloride (AEBSF), 0.5M NaCl and 20% glycerol. The concentration, expressed as mg/mL, is shown on the Certificate of Analysis.

**Packaging/Storage:**

Purified recombinant HA protein was packaged aseptically, in screw-capped plastic cryovials. This product is provided on ice bricks and should be stored at -20°C immediately upon arrival.

**Citation:**

Acknowledgment for publications should read “The following reagent was obtained through BEI Resources, NIAID, NIH: H9 Hemagglutinin (HA) Protein with C-Terminal Histidine Tag from Influenza Virus, A/turkey/Wisconsin/1/1966 (H9N2), Recombinant from Baculovirus, NR-43782.”

**Biosafety Level: 1**

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the following publication: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health. [Biosafety in Microbiological and Biomedical Laboratories](#). 6th ed. Washington, DC: U.S. Government Printing Office, 2020.

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**References:**

1. Stevens, J., et al. “Structure of the Uncleaved Human H1 Hemagglutinin from the Extinct 1918 Influenza Virus.” *Science* 303 (2004): 1866-1870. PubMed: [14764887](#).
2. Stevens, J., et al. “Structure and Receptor Specificity of the Hemagglutinin from an H5N1 Influenza Virus.” *Science* 312 (2006): 404-410. PubMed: [16543414](#).

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Figure 1: Predicted Protein Sequence

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1  ADPDKICIGY QSTNSTETVD TLTESNVPVT HTKELLHTEH NGMLCATDLG
51  HPLILDTCIT EGLIYGNPSC DILLGGKEWS YIVERSSAVN GMCYPGNVEN
101 LEELRSLFSS AKSYKRIQIF PDKTWNVTYS GTSRACSNSF YRSMRWLTHK
151 SNSYPFQNAH YTNNERENIL FMWGIHHPPT DTEQTDLYKK ADTTTSVTTE
201 DINRTFKPVI GPRPLVNGQQ GRIDYYWSVL KPGQTLRIGS NGNLIAPWYG
251 HVLTGESHGR ILKTDLNNGN CVVQCQTEKG GLNTTLPFHN ISKYAFGNCP
301 KYVGVKSLKL AVGLRNVPAV SSRGLFGAIA GFIEGGWPGL VAGWYGFQHS
351 NDQGVGMAAD KGSTQKAIDK ITSKVNNIID KMNKQYEVID HEFNELEARL
401 NMINKIDDQ IQDIWAYNAE LLVLENQKT LDEHDANVNN LYNKVKRALG
451 SNAVEDGNGC FELYHKCDDQ CMETIRNGTY DRQKYQEESR LERQKIEGVK
501 LESEIGIRLV PRGSPGSGYI PEAPRDGQAY VRKDGEWVLL STFLGHHHHH
551 HHH
  
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Plasmid-derived amino acids – Residues 1 to 3, 506 to 508, 515, 545

HA protein – **Residues 10 to 522** [represents amino acid residues 4 to 505 of the native HA protein (GenPept: [AGB50938](#))]

Thrombin cleavage sequence – Residues 509 to 514

T4 foldon trimerizing domain – Residues 516 to 544

Octa-histidine tag – Residues 546 to 553