

# Neuraminidase (NA) Protein with N-Terminal Histidine Tag from Influenza Virus, B/Hong Kong/330/2001 (Victoria Lineage), Recombinant from Baculovirus

## Catalog No. NR-43781

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## Contributor and Manufacturer:

BEI Resources

## Product Description:

A recombinant form of the neuraminidase (NA) protein from influenza B virus, B/Hong Kong/330/2001 (Victoria Lineage) containing an N-terminal histidine tag was produced in Sf9 insect cells using a baculovirus expression vector system and purified by nickel affinity chromatography. The predicted ectodomain coding region of the NA gene was fused to a synthetic gene segment encoding an N-terminal eight-histidine tag followed by a 43 amino acid tetramerization domain from vasodilator-stimulated phosphoprotein (VASP)<sup>1</sup> and a thrombin cleavage site, as described for the 1918 pandemic virus.<sup>2</sup> The predicted protein sequence is shown in Table 1. The full-length NA precursor protein is 466 residues (GenPept: [AAO38878](#)). NR-43781 has a theoretical molecular weight of 51,323 daltons.

## Material Provided:

Each vial contains 20 µg to 80 µg of NR-43781 in 50 mM Tris-HCl (pH 8) with 500 mM NaCl. The concentration, expressed as mg/mL, is shown on the Certificate of Analysis.

## Packaging/Storage:

NR-43781 was packaged aseptically, in screw-capped plastic cryovials. This product is provided on dry ice and should be stored at -80°C immediately upon arrival. Freeze-thaw cycles should be avoided.

## Functional Activity:

NR-43781 was demonstrated to be functionally active based on its ability to cleave the fluorogenic substrate 2'-(4-methylumbelliferyl)-α-D-N-acetylneuraminic acid (4-MUNANA).<sup>3</sup>

## Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: Neuraminidase (NA) Protein with N-Terminal Histidine Tag from Influenza Virus, B/Hong Kong/330/2001 (Victoria Lineage), Recombinant from Baculovirus, NR-43781."

## 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. Kühnel, K., et al. "The VASP Tetramerization Domain is a Right-Handed Coiled Coil Based on a 15-Residue Repeat." *Proc. Natl. Acad. Sci. USA* 101 (2004): 17027-17032. PubMed: 15569942.
2. Xu, X., et al. "Structural Characterization of the 1918 Influenza Virus H1N1 Neuraminidase." *J. Virol.* 82 (2008): 10493-10501. PubMed: 18715929.
3. Wetherall, N. T., et al. "Evaluation of Neuraminidase Enzyme Assays Using Different Substrates to Measure Susceptibility of Influenza Virus Clinical Isolates to Neuraminidase Inhibitors: Report of the Neuraminidase Inhibitor Susceptibility Network." *J. Clin. Microbiol.* 41 (2003): 742-750. PubMed: 12574276.

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Figure 1: Predicted Protein Sequence

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1  ADPHHHHHHH HSSSDYSDLQ RVKQELLEEV KKELQKVKEE IIEAFVQELR
51  KRGLVPRGS PSRSEFEMTF LLPEPEWTYP RLSCQGSTFQ KALLISPHRF
101 GEAKGNSAPL IIREPFIACG PKECKHFALT HYAAQPGGY NGTREDRNKL
151 RHLISVNLGK IPTVENSIFH MAAWGSACH DGREWTYIGV DGPDSNALIK
201 IKYGEAYTDT YHSYANNILR TQESACNCIG GDCYLMITDG SASGISKCRF
251 LKIREGRIVK EIFPTGRVEH TECTCGFAS NKTIECACRD NSYTAKRPFV
301 KLNVEDTAE IRLMCTETYL DTPRPDDGSI TGPCESNGDK GSGGIKGGFV
351 HQRMASKIGR WYSRTMSKTK RMGMELYVKY DGDPTWSDA LAPSGVMVSI
401 EEPGWYSFGF EIKDKKCDVP CIGIEMVHDG GKTTWWSAAT AIYCLMGSGQ
451 LLWDTITGVD MAL

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Plasmid-derived amino acids – Residues 1 to 3, 61 to 66

Octa-histidine Tag – Residues 4 to 11

Tetramerization domain – Residues 12 to 54

Thrombin cleavage sequence – Residues 55 to 60

NA protein – Residues 67 to 463 [represents amino acid residues 70 to 466 of the native NA protein (GenPept: [AAO38878](#))]