Product Information Sheet for NR-19234

N1 Neuraminidase (NA) Protein with N-Terminal Histidine Tag from Influenza Virus, A/California/04/2009 (H1N1)pdm09, Recombinant from Baculovirus

Catalog No. NR-19234

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Contributor and Manufacturer:

BEI Resources

Product Description:

A recombinant form of the N1 neuraminidase (NA) protein from influenza A virus, A/California/04/2009 (H1N1)pdm09 containing an N-terminal histidine tag was produced in Sf9 insect cells using a baculovirus expression vector system and was 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)[1] and a thrombin cleavage site, as described for the 1918 pandemic virus.[2] The predicted protein sequence is shown in Table 1. The full-length NA precursor protein is 453 residues (GenPept: ACP44158).

Material Provided:

Each vial contains approximately 50 µg of purified recombinant NA protein in PBS (pH 7.4). The protein content in µg and the concentration, expressed as µg/mL, are shown on the Certificate of Analysis.

Packaging/Storage:

Purified recombinant NA protein was packaged aseptically in screw-capped plastic cryovials. This product is provided frozen and should be stored at -20°C or colder immediately upon arrival. For long-term storage, freezing at -80°C or colder is recommended. Multiple freeze-thaw cycles should be avoided.

Functional Activity:

NR-19234 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).[3]

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: N1 Neuraminidase (NA) Protein with N-Terminal Histidine Tag from Influenza Virus, A/California/04/2009 (H1N1)pdm09, Recombinant from Baculovirus, NR-19234."

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. 5th ed. Washington, DC: U.S. Government Printing Office, 2009; see www.cdc.gov/biosafety/publications/bmbl5/index.htm.

Disclaimers:

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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

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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.

Support Provided by NIAID

Table 1 – Predicted Protein Sequence

1	ADPHHHHHHH	HSSSDYSDLQ	RVKQELLEEV	KKELQKVKEE	IIEAFVQELR
51	KRGSLVPRGS	PSRSEFVKLA	GNSSLCPVSG	WAIYSKDNSV	RIGSKGDVFV
101	IREPFISCSP	LECRTFFLTQ	GALLNDKHSN	GTIKDRSPYR	TLMSCPIGEV
151	PSPYNSRFES	VAWSASACHD	GINWLTIGIS	GPDNGAVAVL	KYNGIITDTI
201	KSWRNNILRT	QESECACVNG	SCFTVMTDGP	SNGQASYKIF	RIEKGKIVKS
251	VEMNAPNYHY	EECSCYPDSS	EITCVCRDNW	HGSNRPWVSF	NQNLEYQIGY
301	ICSGIFGDNP	RPNDKTGSCG	PVSSNGANGV	KGFSFKYGNG	VWIGRTKSIS
351	SRNGFEMIWD	PNGWTGTDNN	FSIKQDIVGI	NEWSGYSGSF	VQHPELTGLD
401	CIRPCFWVEL	IRGRPKENTI	WTSGSSISFC	GVNSDTVGWS	WPDGAELPFT
451	IDK				

Plasmid-derived amino acids – Residues 1 to 3 and 61 to 66
His Tag – Residues 4 to 11
Tetramerization domain – Residues 12 to 54
Thrombin cleavage sequence – Residues 55 to 60
NA protein – **Residues 67 to 453***

*This represents amino acid residues 83 to 469 of the A/California/04/2009 (H1N1)pdm NA protein.

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