# Product Information Sheet for NR-19236

## Neuraminidase (NA) Protein with N-Terminal Histidine Tag from Influenza Virus, B/Florida/4/2006, Recombinant from Baculovirus

## Catalog No. NR-19236

This reagent is the tangible property of the U.S. Government.

## For research use only. Not for human use.

### Contributor and Manufacturer:

BEI Resources

### Product Description:

The neuraminidase (NA) protein from influenza B virus, B/Florida/4/2006 containing an N-terminal histidine tag was produced in Sf9 (Invitrogen™ 11496-015) 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 466 residues (GenPept: ABU50667).

### Material Provided:

Each vial contains approximately 50 µg of purified recombinant NA protein in 10 mM sodium phosphate pH 7.4 with 500 mM sodium chloride. 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 on ice and should be stored at 2°C to 8°C immediately upon arrival.

### Functional Activity:

NR-19236 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: Neuraminidase (NA) Protein with N-Terminal Histidine Tag from Influenza Virus, B/Florida/4/2006, Recombinant from Baculovirus, NR-19236."

### 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, 2007; see www.cdc.gov/od/ohs/biosfty/bmbl5/bmbl5toc.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

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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.



Support Provided by NIAID

## Table 1 – Predicted Protein Sequence

| | | | | | |
|---|---|---|---|---|---|
| 1 | ADPHHHHHHH | HSSSDYSDLQ | RVKQELLEEV | KKELQKVKEE | IIEAFVQELR |
| 51 | KRGSLVPRGS | PSRSEFGVTL | LLPEPEWTYP | RLSCPGSTFQ | KALLISPHRF |
| 101 | GETKGNSAPL | IIREPFIACG | PTECKHFALT | HYAAQPGGYY | NGTREDRNKL |
| 151 | RHLISVKLGK | IPTVENSIFH | MAAWSGSACH | DGKEWTYIGV | DGPDSNALLK |
| 201 | IKYGEAYTDT | YHSYAKNILR | TQESACNCIG | GDCYLMITDG | PASGISECRF |
| 251 | LKIREGRIIK | EIFPTGRVKH | TEECTCGFAS | NKTIECACRD | NSYTAKRPFV |
| 301 | KLNVETDTAE | IRLMCTETYL | DTPRPNDGSI | TGPCESDGDK | GSGGIKGGFV |
| 351 | HQRMASKIGR | WYSRTMSKTK | RMGMGLYVKY | DGDPWTDSEA | LALSGVMVSM |
| 401 | EEPGWYSFGF | EIKDKKCDVP | CIGIEMVHDG | GKTTWHSAAT | AIYCLMGSGQ |
| 451 | LLWDTVTGVD | MAL | | | |

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 463***

*This represents amino acid residues 70 to 466 of the B/Florida/4/2006 NA protein.

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