

N9 Neuraminidase (NA) Protein from Influenza Virus, A/Shanghai/1/2013 (H7N9), Recombinant from Baculovirus

Catalog No. NR-44080

For research use only. Not for use in humans.

Contributor:

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Manufacturer:

BEI Resources

Product Description:

A recombinant form of the N9 neuraminidase (NA) protein from influenza A virus, A/Shanghai/1/2013 (H7N9) was produced in Sf9 insect cells using a baculovirus expression vector system.¹ The predicted ectodomain coding region of the NA gene was fused to a synthetic gene segment encoding an N-terminal six histidine tag followed by a tetramerization domain from vasodilator-stimulated phosphoprotein (VASP) and a thrombin cleavage site.^{2,3} The protein was purified by nickel and benzamidine affinity chromatography and then treated with thrombin to remove the tetramerization domain and the histidine tag. The thrombin-treated protein was further purified prior to final formulation. The full-length NA precursor protein is 465 residues (GISAID EpiFlu: EPI439487).⁴ NR-44080 has a theoretical molecular weight of approximately 48 kilodaltons.

Material Provided:

Each vial contains approximately 5 µg to 50 µg of purified recombinant NA protein in 16 mM Tris (pH 8.0), 400 mM NaCl, 20% glycerol and 32 mM imidazole. The concentration, expressed as µg/mL, is shown on the Certificate of Analysis.

Packaging/Storage:

NR-44080 was packaged aseptically in cryovials. This product is provided frozen and should be stored at -20°C or colder immediately upon arrival. Multiple freeze-thaw cycles should be avoided.

Functional Activity:

NR-44080 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).⁵

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: N9 Neuraminidase (NA) Protein from Influenza Virus, A/Shanghai/1/2013 (H7N9), Recombinant from Baculovirus, NR-44080."

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 \(BMBL\)](#), 6th ed. Washington, DC: U.S. Government Printing Office, 2020.

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References:

1. Gao, R. et al. "Human Infection with a Novel Avian-Origin Influenza A (H7N9) Virus." *N. Engl. J. Med.* 368 (2013): 1888-1897. PubMed: 23577628.
2. 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.
3. Margine, I., P. Palese, and F. Krammer. "Expression of Functional Recombinant Hemagglutinin and Neuraminidase Proteins from the Novel H7N9 Influenza Virus Using the Baculovirus Expression System." *J. Vis. Exp.* 6 (2013): e51112. PubMed: 24300384.
4. [GISAID](#)

5. 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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