SANTA CRUZ BIOTECHNOLOGY, INC.

NDV HN (HN14f): sc-53562

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Newcastle disease virus (NDV) is a negative-sense single-stranded RNA virus which causes Newcastle disease, a highly contagious zoonotic bird disease affecting many domestic and wild avian species. Transmission occurs by exposure to fecal and other excretions from infected birds and replication takes place in the cytoplasm of the host cell. NDV HN (hemagglutinin neuraminidase) is one of eight proteins encoded by the NDV genome. NDV HN is glycosylated and functions as a component of the external envelope, responsible for the binding of NDV to host cells. More specifically, NDV HN attaches to the sialic acid-containing receptors on target cells and causes an upregulation in the host cell expression of TRAIL, death receptors (DRs) and IFN-α. Once bound, the viral and cell-surface membranes fuse through a process regulated by the NDV F protein. Both NDV HN and NDV F proteins promote the infection of neighboring cells and are therefore involved in the viral infectivity and virulence of NDV.

REFERENCES

1. Hamaguchi, M., et al. 1983. Transcriptive complex of Newcastle disease virus. I. Both L and P proteins are required to constitute an active complex. Virology 128: 105-117.
2. Toyoda, T., et al. 1987. Structural comparison of the cleavage-activation site of the fusion glycoprotein between virulent and avirulent strains of Newcastle disease virus. Virology 158: 242-247.
3. Glickman, R.L., et al. 1988. Quantitative basic residue requirem the fusion glycoprotein as a determinant of virulence for Newcastle disease virus. J. Virol. 62: 354-356.
4. de Leeuw, O. and Peeters, B. 1999. Complete nucleotide sequence of Newcastle disease virus: evidence for the existence of a new genus within the subfamily *Paramyxovirinae*. J. Gen. Virol. 80: 131-136.
5. Yang, C.Y., et al. 1999. Newcastle disease virus isolated from recent outbreaks in Taiwan phylogenetically related to viruses (genotype VII) from recent outbreaks in western Europe. Avian Dis. 43: 125-130.

SOURCE

NDV HN (HN14f) is a mouse monoclonal antibody raised against HN of Austrailia-Victoria (AV-WT) strain of Newcastle disease virus origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NDV HN (HN14f) is available conjugated to agarose (sc-53562 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-53562 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53562 PE), fluorescein (sc-53562 FITC), Alexa Fluor® 488 (sc-53562 AF488), Alexa Fluor® 546 (sc-53562 AF546), Alexa Fluor® 594 (sc-53562 AF594) or Alexa Fluor® 647 (sc-53562 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53562 AF680) or Alexa Fluor® 790 (sc-53562 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

NDV HN (HN14f) is recommended for detection of hemagglutinin neuramidase of Australia-Victoria strain of Newcastle disease virus origin by immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of NDV HN: 74 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

SELECT PRODUCT CITATIONS

1. Porotto, M., et al. 2012. The second receptor binding site of the globular head of the Newcastle disease virus hemagglutinin-neuraminidase activates the stalk of multiple paramyxovirus receptor binding proteins to trigger fusion. J. Virol. 86: 5730-5741.
2. Talekar, A., et al. 2013. Identification of a region in the stalk domain of the nipah virus receptor binding protein that is critical for fusion activation. J. Virol. 87: 10980-10996.
3. Talekar, A., et al. 2013. Measles virus fusion machinery activated by sialic acid binding globular domain. J. Virol. 87: 13619-13627.
4. Ye, T., et al. 2018. Oncolytic Newcastle disease virus induces autophagy-dependent immunogenic cell death in lung cancer cells. Am. J. Cancer Res. 8: 1514-1527.
5. Jiang, K., et al. 2018. Recombinant oncolytic Newcastle disease virus displays antitumor activities in anaplastic thyroid cancer cells. BMC Cancer 18: 746.
6. Seo, J.H., et al. 2020. MTFMT deficiency correlates with reduced mitochondrial integrity and enhanced host susceptibility to intracellular infection. Sci. Rep. 10: 11183.
7. Neog, S., et al. 2023. Isolation and characterization of NDV from biological fluids through column chromatography. Biomed. Chromatogr. 37: e5527.
8. Neog, S., et al. 2024. NDV targets the invasion pathway in malaria parasite through cell surface sialic acid interaction. FASEB J. 38: e23856.
9. Chen, Y., et al. 2024. The HN protein of Newcastle disease virus induces cell apoptosis through the induction of lysosomal membrane permeabilization. PLoS Pathog. 20: e1011981.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.