SANTA CRUZ BIOTECHNOLOGY, INC.

NDV HN (HN4a): sc-53561

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., Yoshida, T., Nishikawa, K., Naruse, H. and Nagai, Y. 1983. Transcriptive complex of Newcastle disease virus. I. Both L and P proteins are required to constitute an active complex. Virology 128: 105-117.
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3. Glickman, R.L., Syddall, R.J., Iorio, R.M., Sheehan, J.P. and Bratt, M.A. 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., Shieh, H.K., Lin, Y.L. and Chang, P.C. 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.
6. Sinkovics, J.G. and Horvath, J.C. 2000. Newcastle disease virus: brief history of its oncolytic strains. J. Clin. Virol. 16: 1-15.
7. Alexander, D.J. 2000. Newcastle disease and other avian paramyxoviruses. Rev. Sci. Tech. 19: 443-462.
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9. Yu, M., Wang, E., Liu, Y., Cao, D., Jin, N., Zhang, C.W., Bartlam, M., Rao, Z., Tien, P. and Gao, G.F. 2002. Six-helix bundle assembly and characterization of heptad repeat regions from the F protein of Newcastle disease virus. J. Gen. Virol. 83: 623-629.

RESEARCH USE

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

SOURCE

NDV HN (HN4a) 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.

APPLICATIONS

NDV HN (HN4a) 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). 3) 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.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.