

# NDV HN (9F7): sc-52116

## 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- $\alpha$ . 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.
2. Toyoda, T., Sakaguchi, T., Imai, K., Inocencio, N.M., Gotoh, B., Hamaguchi, M. and Nagai, Y. 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., 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.
8. Chen, L., Gorman, J.J., McKimm-Breschkin, J., Lawrence, L.J., Tulloch, P.A., Smith, B.J., Colman, P.M. and Lawrence, M.C. 2001. The structure of the fusion glycoprotein of Newcastle disease virus suggests a novel paradigm for the molecular mechanism of membrane fusion. *Structure* 9: 255-266.
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 (9F7) is a mouse monoclonal antibody raised against HN of La-sota strain of Newcastle disease virus origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

NDV HN (9F7) is recommended for detection of hemagglutinin neuraminidase of Newcastle disease virus origin by solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of NDV HN: 74 kDa.

## 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](http://www.scbt.com) for detailed protocols and support products.