SANTA CRUZ BIOTECHNOLOGY, INC.

Influenza A m1 (FluAc): sc-69824

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Influenza viruses are divided into three types, designated A, B and C. Influenza types A and B are responsible for epidemics of respiratory illness that occur almost every winter and are often associated with increased rates for hospitalization and death. Influenza type A viruses are divided into subtypes based on differences in two viral proteins called hemagglutinin (HA) and neuraminidase (NA). The influenza virus matrix 1, otherwise known as m1, is a critical protein required for assembly and budding. Hemagglutinin (HA) and neuraminidase (NA) interact with influenza virus m1; HA associates with m1 via its cytoplasmic tail and transmembrane domain. The m2 and NB proteins are critical in the replication cycle of influenza viruses. The m2 channel protein is an essential component of the viral envelope because of its ability to form a highly selective, pH-regulated, proton-conducting channel. The m2 channel allows protons to enter the interior of the virus and acidification weakens the interaction of the m1 protein with the ribonuclear core.

REFERENCES

1. Pinto, L.H., et al. 1997. A functionally defined model for the m2 proton channel of Influenza A virus suggests a mechanism for its ion selectivity. Proc. Natl. Acad. Sci. USA 94: 11301-11306.
2. Kukol, A., et al. 1999. Experimentally based orientational refinement of membrane protein models: a structure for the Influenza A m2 H^+ channel. J. Mol. Biol. 286: 951-962.
3. Mould, J.A., et al. 2000. Mechanism for proton conduction of the m2 ion channel of Influenza A virus. J. Biol. Chem. 275: 8592-8599.
4. Ali, A., et al. 2000. Influenza virus assembly: effect of influenza virus glycoproteins on the membrane association of m1 protein. J. Virol. 18: 8709-8719.
5. Fleming, D.M., et al. 2001. Update on influenza and other viral pneumonias. Curr. Opin. Infect. Dis. 2: 199-204.

SOURCE

Influenza A m1 (FluAc) is a mouse monoclonal antibody raised against recombinant Influenza A m1.

PRODUCT

Each vial contains 100 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

Influenza A m1 (FluAc) is recommended for detection of Influenza A m1 of Influenza A virus by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of Influenza A m1: 38 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 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. Halder, U.C., et al. 2011. Cell death regulation during Influenza A virus infection by matrix (M1) protein: a model of viral control over the cellular survival pathway. Cell Death Dis. 2: e197.
2. Tripathi, S., et al. 2013. Influenza A virus nucleoprotein induces apoptosis in human airway epithelial cells: implications of a novel interaction between nucleoprotein and host protein Clusterin. Cell Death Dis. 4: e562.
3. Halder, U.C., et al. 2013. Phosphorylation drives an apoptotic protein to activate antiapoptotic genes: paradigm of Influenza A matrix 1 protein function. J. Biol. Chem. 288: 14554-14568.
4. Hamamoto, I., et al. 2013. Cyclosporin A inhibits the propagation of influenza virus by interfering with a late event in the virus life cycle. Jpn. J. Infect. Dis. 66: 276-283.
5. Yang, C., et al. 2013. Deliberate reduction of hemagglutinin and neuraminidase expression of i nfluenza virus leads to an ultraprotective live vaccine in mice. Proc. Natl. Acad. Sci. USA 110: 9481-9486.
6. Kumar, D., et al. 2016. Interaction of host nucleolin with Influenza A virus nucleoprotein in the early phase of infection limits the late viral gene expression. PLoS ONE 11: e0164146.
7. Zheng, W., et al. 2019. Naproxen exhibits broad anti-influenza virus activity in mice by impeding viral nucleoprotein nuclear export. Cell Rep. 27: 1875-1885.e5.
8. Sha, T.W., et al. 2020. Influenza A virus NS1 optimises virus infectivity by enhancing genome packaging in a dsRNA-binding dependent manner. Virol. J. 17: 107.
9. Sharma, A., et al. 2020. Influenza A virus nucleoprotein activates the JNK stress-signaling pathway for viral replication by sequestering host Filamin-A protein. Front. Microbiol. 11: 581867.
10. Liu, S., et al. 2021. Mammalian cells use the autophagy process to restrict avian influenza virus replication. Cell Rep. 35: 109213.

RESEARCH USE

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

PROTOCOLS

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