

# Influenza A ns1 (NS1-23-1): sc-130568

## 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 (H) and neuraminidase (N). The Influenza A virus ns1 protein is a type I IFN antagonist that plays an important role in viral pathogenesis. The interaction of the ns1 protein with host-cell factors plays a significant role in viral pathogenesis. NS1 is a nonstructural protein that is located in the nucleus and affects cellular RNA transport, splicing and translation. NS2 is a nonstructural protein that localizes to the nucleus and the cytoplasm. NS2 is essential for nuclear export of influenza virus ribonucleoprotein (RNP) complexes.

## REFERENCES

1. O'Neill, R.E., et al. 1998. The influenza virus NEP (ns2 protein) mediates the nuclear export of viral ribonucleoproteins. *EMBO J.* 17: 288-296.
2. Wang, X., et al. 2000. Influenza A virus ns1 protein prevents activation of NF $\kappa$ B and induction of  $\alpha/\beta$  interferon. *J. Virol.* 24: 11566-11573.

## SOURCE

Influenza A ns1 (NS1-23-1) is a mouse monoclonal antibody raised against recombinant protein corresponding to the N-terminal domain of ns1 of Influenza A/Puerto Rico/8/34 (H1N1) virus origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Influenza A ns1 (NS1-23-1) is available conjugated to agarose (sc-130568 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-130568 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-130568 PE), fluorescein (sc-130568 FITC), Alexa Fluor<sup>®</sup> 488 (sc-130568 AF488), Alexa Fluor<sup>®</sup> 546 (sc-130568 AF546), Alexa Fluor<sup>®</sup> 594 (sc-130568 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-130568 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-130568 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-130568 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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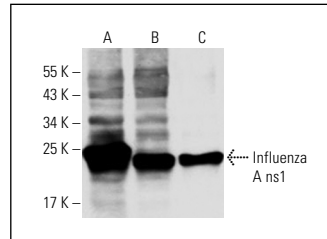
## APPLICATIONS

Influenza A ns1 (NS1-23-1) is recommended for detection of ns1 of Influenza Virus strains A/Puerto Rico/8/34 (H1N1), A/FPV/Bratislava/79 (H7N7), A/goose/Guangdong/1/96 (H5N1), A/FPV/Rostock/34 (H7N1), A/WSN-HK reassortant (H1N2), A/Victoria/3/75 (H3N2), A/Thailand/KAN-1/04 (H5N1) and Influenza Virus strains A/Puerto Rico/8/34 (H1N1), A/FPV/Bratislava/79 (H7N7), A/goose/Guangdong/1/96 (H5N1), A/FPV/Rostock/34 (H7N1), A/WSN-HK reassortant (H1N2), A/Victoria/3/75 (H3N2), A/Thailand/KAN-1/04 (H5N1) origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with Influenza B virus.

## STORAGE

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

## DATA



Influenza A ns1 (NS1-23-1): sc-130568. Western blot analysis of Influenza A ns1 expression in human A549 lung epithelial cells infected with Victoria (H3N2) (A), Asia subtype (H5N1) (B), and PR8/34 (C) influenza virus strains. Kindly provided by Dr. Viktor Wixler, University of Münster.

## SELECT PRODUCT CITATIONS

1. van Wielink, R., et al. 2011. MDCK cell line with inducible allele B NS1 expression propagates delNS1 influenza virus to high titres. *Vaccine* 29: 6976-6985.
2. Gao, S., et al. 2012. Influenza A virus-encoded NS1 virulence factor protein inhibits innate immune response by targeting IKK. *Cell. Microbiol.* 14: 1849-1866.
3. Seo, Y.J., et al. 2013. Sphingosine kinase 1 serves as a pro-viral factor by regulating viral RNA synthesis and nuclear export of viral ribonucleoprotein complex upon influenza virus infection. *PLoS ONE* 8: e75005.
4. Nayak, M.K., et al. 2014. Antiviral activity of baicalin against influenza virus H1N1-pdm09 is due to modulation of NS1-mediated cellular innate immune responses. *J. Antimicrob. Chemother.* 69: 1298-1310.
5. De Baets, S., et al. 2015. A GFP expressing Influenza A virus to report *in vivo* tropism and protection by a matrix protein 2 ectodomain-specific monoclonal antibody. *PLoS ONE* 10: e0121491.
6. Moriyama, M., et al. 2016. The RNA- and TRIM25-binding domains of Influenza Virus NS1 protein are essential for suppression of NLRP3 inflammasome-mediated Interleukin-1 $\beta$  secretion. *J. Virol.* 90: 4105-4114.
7. Kesavardhana, S., et al. 2017. ZBP1/DAI ubiquitination and sensing of Influenza vRNPs activate programmed cell death. *J. Exp. Med.* 214: 2217-2229.
8. Courtney, D.G., et al. 2017. Epitranscriptomic enhancement of Influenza A Virus gene expression and replication. *Cell Host Microbe* 22: 377-386.e5.
9. Tang, Q., et al. 2017. The short form of the zinc finger antiviral protein inhibits Influenza A Virus protein expression and is antagonized by the virus-encoded ns1. *J. Virol.* 91: e01909-16.

## RESEARCH USE

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