SANTA CRUZ BIOTECHNOLOGY, INC.

Vaccinia Virus (8118): sc-69950

BACKGROUND

Vaccinia Virus belongs to the poxvirus family of viruses. It contains double-stranded DNA and was used as a vaccine to eradicate the smallpox disease. Fusion protein plays an important role in the entry of intracellular enveloped virus (IEV) into cells. In Vaccinia Virus, the fusion process is attributed to the action of a protein, which is encoded by the Vaccinia Virus A27L gene. This protein plays an important role in the biology of the virus, acting in virus-to-cell and cell-to-cell fusions. The protein is required for the microtubule-dependent transport of intracellular mature virus particles and for the process of envelopment that leads to IEV formation. The N-terminus of this protein recognizes heparan sulfate on the cell surface and interacts with the negative charges of sulfates of glycosaminoglycans (GAGs). Therefore, antibodies that recognize this protein are able to neutralize Vaccinia Virus infection and to identify other viral and cellular proteins, which participate in the Vaccinia Virus entry process.

REFERENCES

1. Rodriguez, D., Risco, C., Rodriguez, J.R., Carrascosa, J.L. and Esteban, M. 1996. Inducible expression of the Vaccinia Virus A17L gene provides a synchronized system to monitor sorting of viral proteins during morphogenesis. J. Virol. 70: 7641-7653.
2. Vazquez, M.I., Rivas, G., Cregut, D., Serrano, L. and Esteban, M. 1998. The Vaccinia Virus 14-kilodalton (A27L) fusion protein forms a triple coiled-coil structure and interacts with the 21-kilodalton (A17L) virus membrane protein through a C-terminal α-helix. J. Virol. 72: 10126-10137.
3. Vazquez, M.I. and Esteban, M. 1999. Identification of functional domains in the 14-kilodalton envelope protein (A27L) of Vaccinia Virus. J. Virol. 73: 9098-9109.
4. Sanderson C.M., Hollinshead, M. and Smith, G.L. 2000. The Vaccinia Virus A27L protein is needed for the microtubule-dependent transport of intracellular mature virus particles. J. Gen. Virol. 81: 47-58.
5. Matsui, M., Moriya, O., Yoshimoto, T. and Akatsuka, T. 2005. T-bet is required for protection against Vaccinia Virus infection. J. Virol. 79: 12798-12806.
6. Pillay, N.S., Kellaway, L.A. and Kotwal, G.J. 2005. Administration of Vaccinia Virus complement control protein shows significant cognitive improvement in a mild injury model. Ann. N.Y. Acad. Sci. 1056: 450-461.
7. Roper, R.L. 2006. Characterization of the Vaccinia Virus A35R protein and its role in virulence. J. Virol. 80: 306-313.
8. Okeke, M.I., Nilssen, O. and Traavik, T. 2006. Modified Vaccinia Virus Ankara multiplies in rat IEC-6 cells and limited production of mature virions occurs in other mammalian cell lines. J. Gen. Virol. 87: 21-27.
9. Moerdyk, M.J., Byrd, C.M. and Hruby, D.E. 2006. Analysis of Vaccinia Virus temperature-sensitive I7L mutants reveals two potential functional domains. Virol. J. 3: 64.

SOURCE

Vaccinia Virus (8118) is a mouse monoclonal antibody raised against Vaccinia Virus.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Vaccinia Virus (8118) is recommended for detection of free Vaccinia Virus and infected cells of Vaccinia Virus origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of Vaccinia Virus: 14 kDa.

SELECT PRODUCT CITATIONS

1. Li, Z., Ling, L., Liu, X., Laus, R. and Delcayre, A. 2010. A flow cytometry-based immuno-titration assay for rapid and accurate titer determination of modified vaccinia Ankara virus vectors. J. Virol. Methods 169: 87-94.
2. Forsyth, K.S., DeHaven, B., Mendonca, M., Paul, S., Sette, A. and Eisenlohr, L.C. 2019. Poor antigen processing of poxvirus particles limits $CD4^+$ T cell recognition and impacts immunogenicity of the inactivated vaccine. J. Immunol. 202: 1340-1349.

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.

PROTOCOLS

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