SANTA CRUZ BIOTECHNOLOGY, INC.

VSV-G (P5D4): sc-66180

BACKGROUND

Vesicular stomatitis virus (VSV) is an arbovirus in the family *Rhabdoviridae*, order *Mononegavirales*. VSV infects insects and mammals. The genome of VSV is a negative-sense RNA strand that encodes five major proteins: glycoprotein (G), matrix protein (M), nucleoprotein (NC), large protein (L) and phosphoprotein. The L protein and the phosphoprotein combine to catalyze the replication of VSV mRNA. After endocytosis, the G protein facilitates the entry of VSV into the cell by controlling virus attachment to the host cell as well as fusion of the viral envelope with the endosomal membrane. Transport of the G protein from the endoplasmic reticulum (ER) to the plasma membrane (PM) is temperature sensitive. Because of this property, VSV is commonly used in research labs to study the properties of viruses in the *Rhabdoviridae* family, and to study viral evolution.

REFERENCES

1. Hanover, J.A. 1988. Intracellular transport of VSV G protein occurs in cells lacking a nuclear envelope. Biochem. Biophys. Res. Commun. 152: 469-476.
2. Müsch, A., et al. 1996. Transport of vesicular stomatitis virus G protein to the cell surface is signal mediated in polarized and nonpolarized cells. J. Cell Biol. 133: 543-558.
3. Galipeau, J., et al. 1999. Vesicular stomatitis virus G pseudotyped retrovector mediates effective *in vivo* suicide gene delivery in experimental brain cancer. Cancer Res. 59: 2384-2394.
4. Eslahi, N.K., et al. 2001. Fusogenic activity of vesicular stomatitis virus glycoprotein plasmid in tumors as an enhancer of IL-12 gene therapy. Cancer Gene Ther. 8: 55-62.
5. Mezzacasa, A., et al. 2002. The transitional ER defines a boundary for quality control in the secretion of tsO45 VSV glycoprotein. Traffic 3: 833-849.
6. Jin, Y., et al. 2003. The transmembrane domain of vesicular stomatitis virus glycoprotein suffices to anchor HIV-1 envelope gp120 expressed by a recombinant vaccinia virus. Int. J. Mol. Med. 12: 11-16.
7. Pinschewer, D.D., et al. 2003. Recombinant lymphocytic choriomeningitis virus expressing vesicular stomatitis virus glycoprotein. Proc. Natl. Acad. Sci. USA 100: 7895-7900.
8. Yun, C.O., et al. 2003. dl-VSVG-LacZ, a vesicular stomatitis virus glycoprotein epitope-incorporated adenovirus, exhibits marked enhancement in gene transduction efficiency. Hum. Gene Ther. 14: 1643-1652.
9. Perez, M., et al. 2007. Generation and characterization of a recombinant vesicular stomatitis virus expressing the glycoprotein of borna disease virus. J. Virol. 81: 5527-5536.

SOURCE

VSV-G (P5D4) is a mouse monoclonal antibody raised against amino acids 497-511 of VSV-G of Vesicular Stomatitis virus origin.

PRODUCT

Each vial contains 100 µl ascites containing IgG_1 with < 0.1% sodium azide.

APPLICATIONS

VSV-G (P5D4) is recommended for detection of VSV-G of VSV origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:5000-1:10000), immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution to be determined by researcher, dilution range 1:50-1:500).

SELECT PRODUCT CITATIONS

1. Zhu, H., et al. 2010. Evolutionarily conserved role of calcineurin in phosphodegron-dependent degradation of phosphodiesterase 4D. Mol. Cell. Biol. 30: 4379-4390.
2. Liffers, S.T., et al. 2011. Keratin 23, a novel DPC4/Smad4 target gene which binds 14-3-3ε. BMC Cancer 11: 137.
3. Ren, Y., et al. 2016. Deubiquitinase USP2a sustains interferons antiviral activity by restricting ubiquitination of activated STAT1 in the nucleus. PLoS Pathog. 12: e1005764.
4. Li, L., et al. 2016. Ubiquitin-dependent turnover of ADAR1 is required for efficient antiviral activity of type I-interferon. J. Biol. Chem. E-published.
5. Katzenell, S. and Leib, D.A. 2016. Herpes simplex virus and interferon signaling induce novel autophagic clusters in sensory neurons. J. Virol. 90: 4706-4719.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

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.