

HSV-1/2 gB (H126): sc-69799

BACKGROUND

Membrane fusion is crucial for the entry, spread and formation of enveloped viruses, such as herpes simplex virus, and is mediated by envelope glycoproteins. Two serotypes of the herpes simplex virus, HSV-1 (also known as type 1 or oral) and HSV-2 (type 2 or genital), have been shown to encode at least ten glycoproteins, four of which are necessary and sufficient to facilitate fusion. These four glycoproteins include glycoprotein B (gB), glycoprotein D (gD), glycoprotein H (gH) and glycoprotein L (gL). The fusion event is dependent upon the expression of a gD receptor on target cell membranes and does not require the presence of cell surface glycosaminoglycans. gB is essential for viral growth as gB free virions are able to bind cells but not to synthesize virus-specific proteins upon infection. HSV-1 and HSV-2 gB exist as a homodimer which may be linked by disulfide bonds. HSV-1 gB is a 904 amino acid protein with an extracellular domain consisting of amino acids 31-730 and a cytoplasmic domain consisting of amino acids 796-904. HSV-2 gB is a protein also containing 904 amino acids with amino acids 23 to 727 making up the extracellular domain and amino acids 793 to 904 making up the cytoplasmic domain.

REFERENCES

1. Cai, W.H., et al. 1988. Role of glycoprotein B of herpes simplex virus type 1 in viral entry and cell fusion. *J. Virol.* 62: 2596-2604.
2. Bystricka, M., et al. 1991. Type-common and type-specific monoclonal antibodies to herpes simplex virus types 1 and 2. *Acta Virol.* 35: 152-164.
3. Slomka, M.J. 1996. Seroepidemiology and control of genital herpes: the value of type-specific antibodies to herpes simplex virus. *Commun. Dis. Rep. CDR Rev.* 6: R41-R45.
4. Bystricka, M., et al. 1997. Monoclonal antibodies to the distinct antigenic sites on glycoproteins C and B and their protective abilities in herpes simplex virus infection. *Acta Virol.* 41: 5-12.
5. Turner, A., et al. 1998. Glycoproteins gB, gD, and gH/gL of herpes simplex virus type 1 are necessary and sufficient to mediate membrane fusion in a COS cell transfection system. *J. Virol.* 72: 873-875.
6. Bystricka, M., et al. 1999. Monoclonal antibodies suitable for type-specific identification of herpes simplex viruses by a rapid culture assay. *Acta Virol.* 43: 399-402.
7. Muggeridge, M.I. 2000. Characterization of cell-cell fusion mediated by herpes simplex virus 2 glycoproteins gB, gD, gH and gL in transfected cells. *J. Gen. Virol.* 81: 2017-2027.
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9. Browne, H., et al. 2001. Plasma membrane requirements for cell fusion induced by herpes simplex virus type 1 glycoproteins gB, gD, gH and gL. *J. Gen. Virol.* 82: 1419-1422.

RESEARCH USE

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

SOURCE

HSV-1/2 gB (H126) is a mouse monoclonal antibody raised against glycoprotein B of herpesvirus origin.

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.

APPLICATIONS

HSV-1/2 gB (H126) is recommended for detection of glycoprotein B of HSV-1 and HSV-2 origin 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).

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. Cheshenko, N., et al. 2013. HSV activates Akt to trigger calcium release and promote viral entry: novel candidate target for treatment and suppression. *FASEB J.* 27: 2584-2599.
2. Cheshenko, N., et al. 2014. Herpes simplex virus type 2 glycoprotein H interacts with integrin $\alpha_v\beta_3$ to facilitate viral entry and calcium signaling in human genital tract epithelial cells. *J. Virol.* 88: 10026-10038.
3. Yan, Y., et al. 2015. Immunization with HSV-2 gB-CCL19 fusion constructs protects mice against lethal vaginal challenge. *J. Immunol.* 195: 329-338.
4. Cheshenko, N., et al. 2018. Herpes simplex viruses activate phospholipid scramblase to redistribute phosphatidylserines and Akt to the outer leaflet of the plasma membrane and promote viral entry. *PLoS Pathog.* 14: e1006766.
5. Yan, Y., et al. 2022. CCL28 enhances HSV-2 gB-specific Th1-polarized immune responses against lethal vaginal challenge in mice. *Vaccines* 10: 1291.

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 for detailed protocols and support products.