

HSV-2 gD (0191): sc-58154

BACKGROUND

Two serotypes of the herpes simplex virus, HSV-1 (also known as type 1 or oral) and HSV-2 (type 2 or genital), can establish lifelong latent infections within sensory ganglia. Periodically, the virus reactivates and can cause recurrent cold sores, eye and genital infections and encephalitis. Nectin1, also known as human herpesvirus entry mediator C (HveC) and poliovirus receptor-related protein 1 (PRR1), allows the entry of HSV-1 and HSV-2 into mammalian cells. Nectin 1 contains three Ig-like domains in its extracellular portion. The glycoprotein D (gD) binding site is located within the first Ig-like domain (the V domain) of Nectin 1. The interaction of virus envelope gD with Nectin 1 is an essential step in the process leading to membrane penetration, fusion and cell-cell spread. The fusion event is dependent on the expression of a gD receptor on target cell membranes and does not require the presence of cell-surface glycosaminoglycans. Utilizing more than one cell receptor for entry, gD is also essential for receptor-mediated entry of α herpesviruses and bovine herpesvirus type 1 (BHV-1).

REFERENCES

- Eisenberg, R.J., et al. 1980. Comparative structural analysis of glycoprotein gD of herpes simplex virus types 1 and 2. *J. Virol.* 35: 428-435.
- Weis, J.H., et al. 1983. An immunologically active chimaeric protein containing herpes simplex virus type 1 glycoprotein D. *Nature* 302: 72-74.
- Cohen, G.H., et al. 1984. Localization and synthesis of an antigenic determinant of herpes simplex virus glycoprotein D that stimulates the production of neutralizing antibody. *J. Virol.* 49: 102-108.
- Minson, A.C., et al. 1986. An analysis of the biological properties of monoclonal antibodies against glycoprotein D of herpes simplex virus and identification of amino acid substitutions that confer resistance to neutralization. *J. Gen. Virol.* 67: 1001-1013.
- 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.* 3: R41-R45.
- Krummenacher, C., et al. 2000. Localization of a binding site for herpes simplex virus glycoprotein D on herpesvirus entry mediator C by using antireceptor monoclonal antibodies. *J. Virol.* 23: 10863-10872.
- Rauch, D.A., et al. 2000. Mutations in herpes simplex virus glycoprotein D distinguish entry of free virus from cell-cell spread. *J. Virol.* 24: 11437-11446.
- 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.
- Connolly, S.A., et al. 2001. Glycoprotein D homologs in herpes simplex virus type 1, pseudorabies virus, and bovine herpes virus type 1 bind directly to human HveC (Nectin-1) with different affinities. *Virology* 280: 7-18.

SOURCE

HSV-2 gD (0191) is a mouse monoclonal antibody raised against herpes simplex virus.

PRODUCT

Each vial contains 100 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

HSV-2 gD (0191) is recommended for detection of herpes simplex virus 2 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 HSV-2 gD: 57 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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

- Liu, Y., et al. 2015. Tetherin restricts HSV-2 release and is counteracted by multiple viral glycoproteins. *Virology* 475: 96-109.
- Petro, C., et al. 2015. Herpes simplex type 2 virus deleted in glycoprotein D protects against vaginal, skin and neural disease. *Elife* 4: e06054.
- Liu, Y., et al. 2018. HSV-2 glycoprotein J promotes viral protein expression and virus spread. *Virology* 525: 83-95.
- Yan, Y., et al. 2021. CCL19 and CCL28 assist herpes simplex virus 2 glycoprotein D to induce protective systemic immunity against genital viral challenge. *mSphere* 6: e00058-21.

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.