SANTA CRUZ BIOTECHNOLOGY, INC.

HSV-1 UL42 (2H4): sc-53333

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The herpes simplex virus (HSV) (also known as cold sore, night fever or fever blister) is a virus that causes a contagious disease. The HSV-1 strain generally appears in the orafacial organs. All herpes viruses are morphologically identical: they have a large double stranded DNA genome and the virion consists of an icosahedral nucleocapsid which is surrounded by a lipid bilayer envelope. Following primary infection, the virus establishes a latent infection in the host and may reactivate at any stage. Reactivation is frequently, but not always, associated with further disease. UL42, the processivity subunit of the HSV-1 DNA polymerase, binds DNA as a monomer and is essential for the replication of the virus. UL42 reduces the rate of dissociation from primer-template DNA, but it does not reduce the rate of elongation. UL42 increases the ability of UL9 to load onto DNA, thus increasing its assembly into a functional complex that is capable of unwinding duplex DNA.

REFERENCES

1. Reddig, P.J., et al. 1994. The essential *in vivo* function of the herpes simplex virus UL42 protein correlates with its ability to stimulate the viral DNA polymerase *in vitro*. Virology 200: 447-456.
2. Sheaffer, A.K., et al. 1996. Characterization of monoclonal antibodies recognizing amino- and carboxy-terminal epitopes of the herpes simplex virus UL42 protein. Virus Res. 38: 305-314.
3. Weisshart, K., et al. 1999. Herpes simplex virus processivity factor UL42 imparts increased DNA-binding specificity to the viral DNA polymerase and decreased dissociation from primer-template without reducing the elongation rate. J. Virol. 73: 55-66.
4. Thornton, K.E., et al. 2000. Analysis of *in vitro* activities of HSV-1 UL42 mutant proteins: correlation with *in vivo* function. Virology 275: 373-390.
5. Zuccola, H.J., et al. 2000. The crystal structure of an unusual processivity factor, herpes simplex virus UL42, bound to the C-terminus of its cognate polymerase. Mol. Cell 5: 267-278.
6. Chaudhuri, M. and Parris, D.S. 2002. Evidence against a simple tethering model for enhancement of herpes simplex virus DNA polymerase processivity by accessory protein UL42. J. Virol. 76: 10270-10281.
7. Randell, J.C. and Coen, D.M. 2003. The herpes simplex virus processivity factor, UL42, binds DNA as a monomer. J. Mol. Biol. 335: 409-413.

SOURCE

HSV-1 UL42 (2H4) is a mouse monoclonal antibody raised against Baculovirus-expressed HSV DNA polymerase (POL) and POL/UL42 complex.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

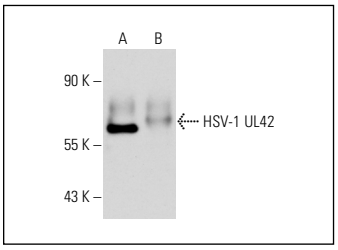
HSV-1 UL42 (2H4) is recommended for detection of UL42 of HSV-1 by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of HSV-1 UL42: 61 kDa.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



HSV-1 UL42 (2H4): sc-53333. Western blot analysis of HSV-1 UL42 expression in HSV-1 (strain 17 syn +) infected baby hamster kidney (**A**) and mock infected baby hamster kidney (**B**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Musarra-Pizzo, M., et al. 2020. *In vitro* anti-HSV-1 activity of polyphenol-rich extracts and pure polyphenol compounds derived from Pistachios Kernels *(Pistacia vera L.)*. Plants 9: 267.
2. Musarra-Pizzo, M., et al. 2022. Direct cleavage of caspase-8 by herpes simplex virus 1 tegument protein US11. Sci. Rep. 12: 12317.
3. El-Aguel, A., et al. 2022. *Punica granatum* peel and leaf extracts as promising strategies for HSV-1 treatment. Viruses 14: 2639.
4. Pennisi, R., et al. 2023. Analysis of antioxidant and antiviral effects of olive *(Olea europaea L.)* leaf extracts and pure compound using cancer cell model. Biomolecules 13: 238.
5. Pennisi, R., et al. 2023. Mechanistic understanding of the antiviral properties of pistachios and zeaxanthin against HSV-1. Viruses 15: 1651.

RESEARCH USE

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