SANTA CRUZ BIOTECHNOLOGY, INC.

HSV-1 ICP0 (5H7): sc-56985

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The infected cell protein 0 (ICP0) is a general transactivator of all three classes of herpes simplex virus (HSV) genes. ICP0 functions synergistically with ICP4 and may control the balance between the latent and lytic states by reactivating latent HSV. A short sequence of ICP0 is similar to a sequence in the N-terminus of CoREST, a corepressor that exists in complexes with histone deacetylases (HDACs) 1 or 2 and the repressor REST. ICP0 is required to replicate HSV as well as to enable gene expression, and precludes the silencing of viral DNA by disrupting the human BHC corepressor complex though its interaction with human RCOR1/CoREST protein. ICP0 also interacts with and leads to the degradation of the human centromere protein CENP-A.

REFERENCES

1. Perry, L.J., et al. 1986. Characterization of the IE110 gene of herpes simplex virus type 1. J. Gen. Virol. 67: 2365-2380.
2. Lomonte, P., et al. 2001. Degradation of nucleosome-associated centromeric Histone H3-like protein CENP-A induced by herpes simplex virus type 1 protein ICP0. J. Biol. Chem. 276: 5829-5835.
3. Gu, H., et al. 2005. Components of the REST/CoREST/histone deacetylase repressor complex are disrupted, modified, and translocated in HSV-1-infected cells. Proc. Natl. Acad. Sci. USA 102: 7571-7576.
4. Poon, A.P., et al. 2006. ICP0 and the US3 protein kinase of herpes simplex virus 1 independently block histone deacetylation to enable gene expression. Proc. Natl. Acad. Sci. USA 103: 9993-9998.
5. Maillet, S., et al. 2006. Herpes simplex virus type 1 latently infected neurons differentially express latency-associated and ICP0 transcripts. J. Virol. 80: 9310-9321.
6. Orlando, J.S., et al. 2006. ICP22 is required for wild-type composition and infectivity of herpes simplex virus type 1 virions. J. Virol. 80: 9381-9390.
7. Morishige, N., et al. 2006. Herpes simplex virus type 1 ICP0 localizes in the stromal layer of infected rabbit corneas and resides predominantly in the cytoplasm and/or perinuclear region of rabbit keratocytes. J. Gen. Virol. 87: 2817-2825.

SOURCE

HSV-1 ICP0 (5H7) is a mouse monoclonal antibody raised against herpes simplex 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

HSV-1 ICP0 (5H7) is recommended for detection of ICP0 of HSV-1 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).

Molecular Weight of HSV-1 ICP0: 97 kDa.

STORAGE

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

SELECT PRODUCT CITATIONS

1. Lussignol, M., et al. 2013. The herpes simplex virus 1 Us11 protein inhibits autophagy through its interaction with the protein kinase PKR. J. Virol. 87: 859-871.
2. Qiu, M., et al. 2013. Pyrrolidine dithiocarbamate inhibits herpes simplex virus 1 and 2 replication, and its activity may be mediated through dysregulation of the ubiquitin-proteasome system. J. Virol. 87: 8675-8686.
3. Kato, A., et al. 2016. Roles of Us8A and its phosphorylation mediated by Us3 in herpes simplex virus 1 pathogenesis. J. Virol. 90: 5622-5635.
4. Maeda, F., et al. 2017. Herpes simplex virus 1 UL34 protein regulates the global architecture of the endoplasmic reticulum in infected cells. J. Virol. 91: e00271-17.
5. Bisignano, C., et al. 2017. Almond skin extracts abrogate HSV-1 replication by blocking virus binding to the cell. Viruses 9: 178.
6. Kobayashi, K., et al. 2017. MiR-199a inhibits secondary envelopment of herpes simplex virus-1 through the downregulation of Cdc42-specific GTPase activating protein localized in Golgi apparatus. Sci. Rep. 7: 6650.
7. Colao, I., et al. 2017. The ERK-1 function is required for HSV-1-mediated G_1/S progression in HEP-2 cells and contributes to virus growth. Sci. Rep. 7: 9176.
8. Luo, Y., et al. 2020. Tumor-targeting oncolytic virus elicits potent immunotherapeutic vaccine responses to tumor antigens. Oncoimmunology 9: 1726168.
9. Whisnant, A.W., et al. 2020. Integrative functional genomics decodes herpes simplex virus 1. Nat. Commun. 11: 2038.
10. Tsai, M.S., et al. 2022. Integrin-linked kinase reduces H3K9 trimethylation to enhance herpes simplex virus 1 replication. Front. Cell. Infect. Microbiol. 12: 814307.
11. El-Aguel, A., et al. 2022. *Punica granatum* peel and leaf extracts as promising strategies for HSV-1 treatment. Viruses 14: 2639.

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.

CONJUGATES

See **HSV-1 ICP0 (11060): sc-53070** for HSV-1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.