SANTA CRUZ BIOTECHNOLOGY, INC.

HPV16 L1 (CAMVIR-1): sc-47699

BACKGROUND

Human papillomaviruses, mainly type 16 (designated HPV16), infect the genital tract and may lead to cervical cancer. Protection to HPV16 is thought to be provided by neutralizing antibodies directed to the major caspid protein L1 of HPV16. HPV16 L1 forms the pentameric assembly unit of the viral shell, and the binding of HPV16 L1 to the cell surface without the involvement of minor capsid protein L2 is believed to be the first step of HPV16 infection. The L1-binding domain located near the C-terminus of L2 binds L1 prior to completion of capsid assembly and is required for efficient encapsidation of the viral genome. In addition, the C-terminus of L1 is necessary for both DNA binding and DNA packaging. Expression of the late gene L1 is restricted to the upper layers of the infected epithelium. HPV16 L1 is able to package unrelated plasmid DNA *in vitro* and deliver the foreign DNA to eukaryotic cells with the subsequent expression of the encoded gene. L1 shows a diffuse nuclear distribution, whereas L2 is localized to punctate nuclear regions identified as promonocytic leukemia protein oncogenic domains (PODs). Coexpression of L1 and L2 induces a relocalization of L1 into the PODs.

REFERENCES

1. Day, P.M., et al. 1998. The papillomavirus minor capsid protein, L2, induces localization of the major capsid protein, L1, and the viral transcription/replication protein, E2, to PML oncogenic domains. J. Virol. 72: 142-150.
2. White, W.I., et al. 1998. *In vitro* infection and type-restricted antibody-mediated neutralization of authentic human papillomavirus type 16. J. Virol. 72: 959-964.

SOURCE

HPV16 L1 (CAMVIR-1) is a mouse monoclonal antibody raised against amino acids 198-531 of recombinant HPV16 L1 protein.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HPV16 L1 (CAMVIR-1) is available conjugated to agarose (sc-47699 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-47699 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-47699 PE), fluorescein (sc-47699 FITC), Alexa Fluor® 488 (sc-47699 AF488), Alexa Fluor® 546 (sc-47699 AF546), Alexa Fluor® 594 (sc-47699 AF594) or Alexa Fluor® 647 (sc-47699 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-47699 AF680) or Alexa Fluor® 790 (sc-47699 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

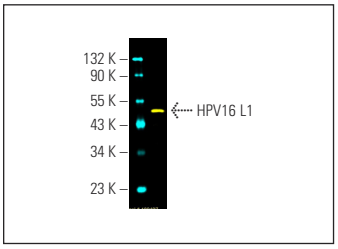
HPV16 L1 (CAMVIR-1) is recommended for detection of HPV16 L1; may cross react with HPV33 of HPV-16 origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with HPV6 or HPV11.

Molecular Weight of HPV16 L1: 55 kDa.

STORAGE

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

DATA



HPV16 L1 (CAMVIR-1) Alexa Fluor® 488: sc-47699 AF488. Direct fluorescent western blot analysis of HPV16 L1 expression in ME-180 whole cell lysate. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker MW Tag-Alexa Fluor® 647: sc-516791.

SELECT PRODUCT CITATIONS

1. Lee, H.J., et al. 2010. Development of a novel viral DNA vaccine against human papillomavirus: AcHERV-HP16L1. Vaccine 28: 1613-1619.
2. Foresta, C., et al. 2011. Mechanism of human papillomavirus binding to human spermatozoa and fertilizing ability of infected spermatozoa. PLoS ONE 6: e15036.
3. Garolla, A., et al. 2012. Human papillomavirus sperm infection and assisted reproduction: a dangerous hazard with a possible safe solution. Hum. Reprod. 27: 967-973.
4. Cerqueira, C., et al. 2013. Heparin increases the infectivity of human papillomavirus type 16 independent of cell surface proteoglycans and induces L1 epitope exposure. Cell. Microbiol. 15: 1818-1836.
5. Cho, H., et al. 2014. Immunogenicity of a trivalent human papillomavirus L1 DNA-encapsidated, non-replicable baculovirus nanovaccine. PLoS ONE 9: e95961.
6. Lee, H.J., et al. 2015. Therapeutic potential of an AcHERV-HPV L1 DNA vaccine. J. Microbiol. 53: 415-420.
7. Broniarczyk, J., et al. 2017. The VPS4 component of the ESCRT machinery plays an essential role in HPV infectious entry and capsid disassembly. Sci. Rep. 7: 45159.
8. Egawa, N., et al. 2017. HPV16 and 18 genome amplification show different E4-dependence, with 16E4 enhancing E1 nuclear accumulation and replicative efficiency via its cell cycle arrest and kinase activation functions. PLoS Pathog. 13: e1006282.

RESEARCH USE

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