SANTA CRUZ BIOTECHNOLOGY, INC.

HPV16 L1 (vC-13): sc-18052

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. 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.
2. Dupuy, C., et al. 1999. Nasal immunization of mice with human papillomavirus type 16 (HPV-16) virus-like particles or with the HPV-16 L1 gene elicits specific cytotoxic T lymphocytes in vaginal draining lymph nodes. J. Virol. 73: 9063-9071.
3. Chen, X.S., et al. 2000. Structure of small virus-like particles assembled from the L1 protein of human papillomavirus 16. Mol. Cell 5: 557-567.
4. Touze, A., et al. 2000. The nine C-terminal amino acids of the major caspid protein of the human papillomavirus type 16 are essential for DNA binding and gene transfer capacity. FEMS Microbiol. Letts. 189: 121-127.
5. Koffa, M.D., et al. 2000. The human papillomavirus type 16 negative regulatory RNA element interacts with three proteins that act at different posttranscriptional levels. Proc. Natl. Acad. Sci. USA 97: 4677-4682.
6. Revaz, V., et al. 2001. Mucosal vaccinations with a recombinant Salmonella typhimurium expressing human papillomavirus type 16 (HPV16) L1 virus-like particles (VLPs) or HPV16 VLPs purified from insect cells inhibits the growth of HPV16-expressing tumor cells in mice. Virology 279: 354-360.
7. Kowalczyk, D.W., et al. 2001. Vaccine regimen for prevention of sexually transmitted infections with human papillomavirus type 16. Vaccine 19: 3583-3590.
8. Kawana, Y., et al. 2001. Human papillomavirus type 16 minor capsid protein 12 N-terminal region containing a common neutralization epitope binds to the cell surface and enters the cytoplasm. J. Virol. 75: 2331-2336.

SOURCE

HPV16 L1 (vC-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of HPV16 L1 of viral origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-18052 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

HPV16 L1 (vC-13) is recommended for detection of HPV late major caspid protein L1 by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Paratcha, G., et al. 2003. The neural cell adhesion molecule NCAM is an alternative signaling receptor for GDNF family ligands. Cell. 113: 867-879.

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 or our catalog for detailed protocols and support products.