SANTA CRUZ BIOTECHNOLOGY, INC.

HPV16 L2 (2JGmab#5): sc-65709

BACKGROUND

Human papillomaviruses, particularly type 16 (designated HPV16), infect the genital tract and may lead to cervical cancer. Protection against 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

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2. 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.
3. 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. Lett. 189: 121-127.
4. 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.
5. Kawana, Y., et al. 2001. Human papillomavirus type 16 minor capsid protein L2 N-terminal region containing a common neutralization epitope binds to the cell surface and enters the cytoplasm. J. Virol. 75: 2331-2336.
6. Okun, M.M., et al. 2001. L1 interaction domains of papillomavirus 12 necessary for viral genome encapsidation. J. Virol. 75: 4332-4342.
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. 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.

SOURCE

HPV16 L2 (2JGmab#5) is a mouse monoclonal antibody raised against amino acids 40-150 of HPV16 L2.

PRODUCT

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

APPLICATIONS

HPV16 L2 (2JGmab#5) is recommended for detection of HPV16 L2 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 HPV16 L2: 55 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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 goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.