SANTA CRUZ BIOTECHNOLOGY, INC.

HPV16 E7 (TVG710Y): sc-264

BACKGROUND

The HPV E7 proteins are small zinc-binding phosphoproteins that are localized in the nucleus. They are structurally and functionally similar to the E1A protein of subgenus C adenoviruses. The CR2 homology region contains the LXCXE motif (residues 22-26) involved in binding to the tumor suppressor protein pRb. This sequence is also present in SV40 and polyoma large T antigens. The high risk HPV E7 proteins (e.g. HPV16 E7 and HPV18 E7) have an approximately ten-fold higher affinity for pRb protein than the low risk HPV E7 proteins (e.g. HPV6 E7). Association of the E7 protein with pRb promotes cell proliferation by the same mechanism as the E1A proteins of adenoviruses and SV40 large T antigen. Research has shown that E7 promotes degradation of Rb family proteins rather than simply inhibiting their function by complex formation. The CR2 region also contains the casein kinase II phosphorylation site (residues 31 and 32). HPV16 and 18 are strongly associated with cervical, vaginal and vulvar malignancies.

REFERENCES

1. Reich, N.C., et al. 1983. Two distinct mechanisms regulate the levels of a cellular tumor antigen, p53. Mol. Cell. Biol. 3: 2143-2150.
2. zur Hausen, H. and Schneider, A. 1987. The role of papilloma-viruses in human angogenital cancer. In Howley, P.M. and Salzman, N.P., eds., The Papovaviradae,2 Papillomaviruses. New York: Plenum, 245-263.

SOURCE

HPV16 E7 (TVG710Y) is a mouse monoclonal antibody raised against E7 of HPV16 origin.

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 E7 (TVG710Y) is available conjugated to agarose (sc-264 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-264 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-264 PE), fluorescein (sc-264 FITC), Alexa Fluor® 488 (sc-264 AF488), Alexa Fluor® 546 (sc-264 AF546), Alexa Fluor® 594 (sc-264 AF594) or Alexa Fluor® 647 (sc-264 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-264 AF680) or Alexa Fluor® 790 (sc-264 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

HPV16 E7 (TVG710Y) is recommended for detection of E7 of HPV16 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of HPV16 E7: 21 kDa.

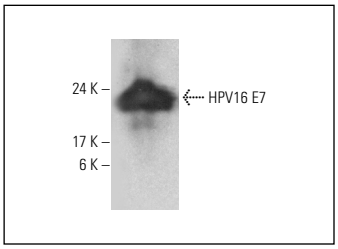
RESEARCH USE

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

STORAGE

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

DATA



HPV16 E7 (TVG710Y): sc-264. Western blot analysis of full length human recombinant HPV16 E7.

SELECT PRODUCT CITATIONS

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2. Kobayashi, A., et al. 2002. Lymphoid follicles are generated in high-grade cervical dysplasia and have differing characteristics depending on HIV status. Am. J. Pathol. 160: 151-164.
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4. Hauser, H., et al. 2004. Secretory heat-shock protein as a dendritic cell-targeting molecule: a new strategy to enhance the potency of genetic vaccines. Gene Ther. 11: 924-932.
5. Bischof, O., et al. 2005. Human papillomavirus oncoprotein E7 targets the promyelocytic leukemia protein and circumvents cellular senescence via the Rb and p53 tumor suppressor pathways. Mol. Cell. Biol. 25: 1013-1024.
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8. Luevano, M., et al. 2010. High-throughput profiling of the humoral immune responses against thirteen human papillomavirus types by proteome microarrays. Virology 405: 31-40.
9. Tyagi, A., et al. 2016. Cervical cancer stem cells selectively overexpress HPV oncoprotein E6 that controls stemness and self-renewal through upregulation of HES1. Clin. Cancer Res. 22: 4170-4184.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.