SANTA CRUZ BIOTECHNOLOGY, INC.

HPV18 E2 (vN-20): sc-26938

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The Power to Question

BACKGROUND

Human papilloma virus (HPV) classification, as either high risk or low risk, depends upon their association with cancer. Representatives of the high risk groups include HPV16 and HPV18, while the low risk types include HPV6 and HPV11. Approximately 90% of cervical cancers contain HPV DNA of the high risk types. Mutational analysis show that the E6 and E7 genes of high risk HPVs are necessary and sufficient for HPV transforming function. The HPV18 E2 protein regulates both viral transcription and DNA replication. HPV18 E2 represses expression of the HPV18 E6 and E7 oncogenes by binding to three E2-binding motifs within the P105 promoter, which, subsequently, suppresses carcinogenic progression and induces apoptosis. In HPV18-associated carcinoma cells, the E2 protein is specifically inactivated. Ectopic expression of HPV18 E2 in cervical carcinoma cells strongly inhibits cell proliferation. The apoptotic pathway induced by HPV18 E2 relies on the activation of caspase-8, which cleaves the E2 protein.

REFERENCES

1. Reich, N.C., Oren, M., and Levine, A.J. 1983. Two distinct mechanisms regulate the levels of a cellular tumor antigen, p53. Mol. Cell Biol. 3: 2143-2150.
2. Hawley-Nelson, P., Vousden, K.H., Hubbert, N.L., Lowy, D.R., and Schiller, J.T. 1989. HPV16 E6 and E7 proteins cooperate to immortalize human foreskin keratinocytes. EMBO J. 13: 3905-3910.
3. Munger, K., Phelps, W.C., Bubb, V., Howley, P.M., and Schlegel, R. 1989. The E6 and E7 genes of the human papillomavirus type 16 together are necessary and sufficientfor transformation of primary human keratinocytes. J. Virol. 63: 4417-4421.
4. Riou, G., Faure, M., Jeannel, D.J., Bourhis, J., LeDoussal, V., and Orth, G. 1990. Association between poor prognosis in early-stage invasive cervical carcinomas and non-detection of HPV DNA. Lancet 335: 1171-1174.
5. Thierry, F. and Howley, P.M. 1991. Functional analysis of E2-mediated repression of the HPV18 P105 promoter. New Biol. 3: 90-100.
6. Bellanger, S., Demeret, C., Goyat, S. and Thierry, F. 2001. Stability of the human papillomavirus type 18 E2 protein is regulated by a proteasome degradation pathway through its amino-terminal transactivation domain. J. Virol. 75: 7244-7251.
7. Demeret, C., Garcia-Carranca, A. and Thierry, F. 2003. Transcription-independent triggering of the extrinsic pathway of apoptosis by human papillomavirus 18 E2 protein. Oncogene 22: 168-175.

SOURCE

HPV18 E2 (vN-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of HPV18 E2 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-26938 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

HPV18 E2 (vN-20) is recommended for detection of HPV18 E2 of HPV 18 origin 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. Blachon, S., et al. 2005. Nucleo-cytoplasmic shuttling of high risk human papillomavirus E2 proteins induces apoptosis. J. Biol. Chem. 280: 36088-36098.

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.