SANTA CRUZ BIOTECHNOLOGY, INC.

HPV16 E1/E4 (TVG 402): sc-53324



BACKGROUND

The human papilloma virus (HPV) family of DNA tumor viruses includes HPV16, a "high-risk" sexually-transmitted HPV that can lead to cervical, anal, vulvar, head, neck, and penile cancer. The HPV16E1/E4 protein is expressed abundantly in cells supporting viral DNA amplification, but is lost during malignant progression. HPV16E1/E4 causes G₂ cell cycle arrest by associating with and preventing the nuclear entry of Cdk1/cyclin B1 complexes. HPV16E1/E4 also interacts with cyclin A and Cdk2 during the G₂ phase of the cell cycle, and this association may increase the efficiency with which HPV16E1/E4 is able to prevent mitotic entry. HPV16E1/E4 also associates with keratin intermediate filaments and causes the network to collapse.

REFERENCES

- 1. Doorbar, J., et al. 1992. Epitope-mapped monoclonal antibodies against the HPV16E1—E4 protein. Virology 187: 353-359.
- 2. Bryan, J.T., et al. 2000. The human papillomavirus type 11 E1E4 protein is phosphorylated in genital epithelium. Virology 268: 430-439.
- Doorbar, J., et al. 2000. The E1E4 protein of human papillomavirus type 16 associates with a putative RNA helicase through sequences in its C terminus. J. Virol. 74: 10081-10095.
- 4. Davy, C.E., et al. 2002. Identificatio papillomavirus type 16. J. Virol. 76: 9806-9818.
- 5. Wang, Q., et al. 2003. Functional analysis of the human papillomavirus type 16 E1=E4 protein provides a mechanism for *in vivo* and *in vitro* keratin filament reorganization. J. Virol. 78: 821-833.
- Davy, C.E., et al. 2005. Human papillomavirus type 16 E1 E4-induced G₂ arrest is associated with cytoplasmic retention of active Cdk1/cyclin B1 complexes. J. Virol. 79: 3998-4011.
- Davy, C.E., et al. 2006. HPV16 E1—E4 protein is phosphorylated by Cdk2/cyclin A and relocalizes this complex to the cytoplasm. Virology 349: 230-244.

SOURCE

HPV16 E1/E4 (TVG 402) is a mouse monoclonal antibody raised against amino acids 36-41 of HPV16 E1/E4.

PRODUCT

Each vial contains 200 μg lgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HPV16 E1/E4 (TVG 402) is available conjugated to agarose (sc-53324 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53324 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53324 PE), fluorescein (sc-53324 AF1C), Alexa Fluor[®] 488 (sc-53324 AF488), Alexa Fluor[®] 546 (sc-53324 AF546), Alexa Fluor[®] 594 (sc-53324 AF594) or Alexa Fluor[®] 647 (sc-53324 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-53324 AF680) or Alexa Fluor[®] 790 (sc-53324 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

HPV16 E1/E4 (TVG 402) is recommended for detection of HPV16 E1 and HPV16 E4 of HPV 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850. 3) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

SELECT PRODUCT CITATIONS

- 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.
- 2. Straub, E., et al. 2014. The viral E8^E2C repressor limits productive replication of human papillomavirus 16. J. Virol. 88: 937-947.
- Ludwig, S., et al. 2018. Molecular and functional profiles of exosomes from HPV⁺ and HPV⁻ head and neck cancer cell lines. Front. Oncol. 8: 445.

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 for detailed protocols and support products.