SANTA CRUZ BIOTECHNOLOGY, INC.

HPV18 E7 (F-7): sc-365035

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Human papilloma viruses (HPVs) can be classified as either high risk or low risk according to their association with cancer. HPV16 and HPV18 are the most common of the high risk group, while HPV6 and HPV11 are among the low risk types. Approximately 90% of cervical cancers contain HPV DNA of the high risk types. Mutational analysis have shown that the E6 and E7 genes of the high risk HPVs are necessary and sufficient for HPV transforming function. The specific interactions of the E6 and E7 proteins with p53 and pRB, respectively, correlate with HPV high and low risk classifications. The high risk HPV E7 proteins bind to pRB with a higher affinity than do the low risk HPV proteins, and only the high risk HPV E6 proteins form detectable complexes with p53 *in vitro*.

SOURCE

HPV18 E7 (F-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 3-27 at the N-terminus of HPV18 E7 of viral origin.

PRODUCT

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

HPV18 E7 (F-7) is available conjugated to agarose (sc-365035 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-365035 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365035 PE), fluorescein (sc-365035 FITC), Alexa Fluor® 488 (sc-365035 AF488), Alexa Fluor® 546 (sc-365035 AF546), Alexa Fluor® 594 (sc-365035 AF594) or Alexa Fluor® 647 (sc-365035 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365035 AF680) or Alexa Fluor® 790 (sc-365035 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365035 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

HPV18 E7 (F-7) is recommended for detection of HPV18 E7 by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

Molecular Weight of HPV18 E7: 15 kDa.

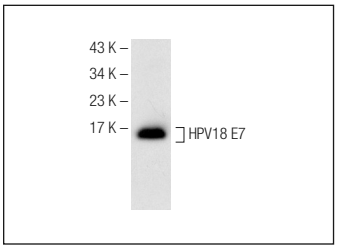
RECOMMENDED SUPPORT REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

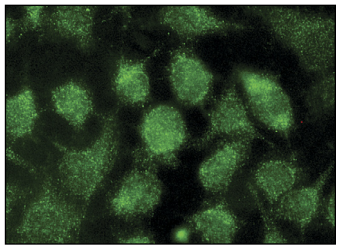
STORAGE

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

DATA



HPV18 E7 (F-7): sc-365035. Western blot analysis of HPV18 E7 expression in HeLa whole cell lysate.



HPV18 E7 (F-7): sc-365035. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. He, H., et al. 2014. SAHA inhibits the transcription initiation of HPV18 E6/E7 genes in HeLa cervical cancer cells. Gene 553: 98-104.
2. Sheaffer, A.K., et al. 2016. A small molecule inhibitor selectively induces apoptosis in cells transformed by high risk human papilloma viruses. PLoS ONE 11: e0155909.
3. Khan, S., et al. 2017. Development of a replication-deficient adenoviral vector-based vaccine candidate for the interception of HPV16- and HPV18-induced infections and disease. Int. J. Cancer 141: 393-404.
4. Westrich, J.A., et al. 2018. Human papillomavirus 16 E7 stabilizes APOBEC3A protein by inhibiting Cullin 2-dependent protein degradation. J. Virol. 92: e01318-17.
5. Jayamohan, S., et al. 2019. Dysregulation of miR-375/AEG-1 axis by human papillomavirus 16/18-E6/E7 promotes cellular proliferation, migration, and invasion in cervical cancer. Front. Oncol. 9: 847.
6. Basukala, O., et al. 2019. The HPV-18 E7 CKII phospho acceptor site is required for maintaining the transformed phenotype of cervical tumour-derived cells. PLoS Pathog. 15: e1007769.
7. Luo, X., et al. 2020. HPV16 drives cancer immune escape via NLRX1-mediated degradation of STING. J. Clin. Invest. 130: 1635-1652.
8. Xu, C., et al. 2020. Bioinspired tumor-homing nanoplatform for co-delivery of paclitaxel and siRNA-E7 to HPV-related cervical malignancies for synergistic therapy. Theranostics 10: 3325-3339.
9. Layman, H., et al. 2020. Development and validation of a multiplex immunoassay for the simultaneous quantification of type-specific IgG antibodies to E6/E7 oncoproteins of HPV16 and HPV18. PLoS ONE 15: e0229672.

RESEARCH USE

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