SANTA CRUZ BIOTECHNOLOGY, INC.

# HPV16 E7 siRNA (hpv): sc-270423

## 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.

## PRODUCT

HPV16 E7 siRNA (hpv) is a pool of 2 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see HPV16 E7 shRNA Plasmid (hpv): sc-270423-SH and HPV16 E7 shRNA (hpv) Lentiviral Particles: sc-270423-V as alternate gene silencing products.

For independent verification of HPV16 E7 (hpv) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270423A and sc-270423B.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

HPV16 E7 siRNA (hpv) is recommended for the inhibition of HPV16 E7 expression in hpv cells.

## SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

## GENE EXPRESSION MONITORING

HPV16 E7 (ED17): sc-6981 is recommended as a control antibody for monitoring of HPV16 E7 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HPV16 E7 gene expression knockdown using RT-PCR Primer: HPV16 E7 (hpv)-PR: sc-270423-PR (20 µl, 571 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS


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3. Shao, J.S., et al. 2017. HPV16 E6/E7 upregulates HIF-2α and VEGF by inhibiting LKB1 in lung cancer cells. Tumour Biol. 39: 1010428317717137.
4. Brand, T.M., et al. 2018. Cross-talk signaling between HER3 and HPV16 E6 and E7 mediates resistance to PI3K inhibitors in head and neck cancer. Cancer Res. 78: 2383-2395.
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7. Aedo-Aguilera, V., et al. 2019. Curcumin decreases epithelial-mesenchymal transition by a Pirin-dependent mechanism in cervical cancer cells. Oncol. Rep. 42: 2139-2148.
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10. Sasivimolrattana, T., et al. 2023. HPV16E1 downregulation altered the cell characteristics involved in cervical cancer development. Sci. Rep. 13: 18217.
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## RESEARCH USE

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