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# WWOX shRNA (h) Lentiviral Particles: sc-44193-V

## BACKGROUND

WWOX (WW domain containing oxidoreductase) protein is a candidate tumor suppressor consisting of two WW domains that influence protein-protein interactions, and a short chain dehydrogenase (SDR) domain, that influences sex-steroid metabolism. Modulation of the WWOX gene influences esophageal squamous cell carcinogenesis and tumorigenicity of breast cancer cell lines MDA-MB-435 and T47D. The murine homolog WOX1 localizes in the mitochondria, and contains a mitochondrial targeting sequence mapping within the SDR domain. JNK1 can physically associate with WOX1 and sequester WOX1-dependent apoptosis.

## REFERENCES

1. Bednarek, A.K., Keck-Waggoner, C.L., Daniel, R.L., Laflin, K.J., Bergsagel, P.L., Kiguchi, K., Brenner, A.J. and Aldaz, C.M. 2001. WWOX, the FRA16D gene, behaves as a suppressor of tumor growth. *Cancer Res.* 61: 8068-8073.
2. Chang, N.S., Pratt, N., Heath, J., Schultz, L., Sleva, D., Carey, G.B. and Zevotek, N. 2001. Hyaluronidase induction of a WW domain-containing oxidoreductase that enhances tumor necrosis factor cytotoxicity. *J. Biol. Chem.* 276: 3361-3370.
3. Kuroki, T., Trapasso, F., Shiraishi, T., Alder, H., Mimori, K., Mori, M. and Croce, C.M. 2002. Genetic alterations of the tumor suppressor gene WWOX in esophageal squamous cell carcinoma. *Cancer Res.* 62: 2258-2260.
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5. Chang, N.S., Doherty, J. and Ensign, A. 2003. JNK1 physically interacts with WW domain-containing oxidoreductase (WOX1) and inhibits WOX1-mediated apoptosis. *J. Biol. Chem.* 278: 9195-9202.

## CHROMOSOMAL LOCATION

Genetic locus: WWOX (human) mapping to 16q23.1.

## PRODUCT

WWOX shRNA (h) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 4 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200  $\mu$ l frozen stock containing  $1.0 \times 10^6$  infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see WWOX siRNA (h): sc-44193 and WWOX shRNA Plasmid (h): sc-44193-SH as alternate gene silencing products.

## STORAGE

Store lentiviral particles at  $-80^\circ$  C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at  $4^\circ$  C for up to one week. Avoid repeated freeze thaw cycles.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

## APPLICATIONS

WWOX shRNA (h) Lentiviral Particles is recommended for the inhibition of WWOX expression in human cells.

## SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200  $\mu$ l frozen viral stock containing  $1.0 \times 10^6$  infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

## GENE EXPRESSION MONITORING

WWOX (C-7): sc-374449 is recommended as a control antibody for monitoring of WWOX 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).

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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 goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor WWOX gene expression knockdown using RT-PCR Primer: WWOX (h)-PR: sc-44193-PR (20  $\mu$ l, 600 bp). Annealing temperature for the primers should be  $55-60^\circ$  C and the extension temperature should be  $68-72^\circ$  C.

## BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

## RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.