



WWOX siRNA (h): sc-44193

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., et al. 2001. WWOX, the FRA16D gene, behaves as a suppressor of tumor growth. *Cancer Res.* 61: 8068-8073.
2. Chang, N.S., et al. 2001. Hyaluronidase induction of a WW domain-containing oxidoreductase that enhances tumor necrosis factor cytotoxicity. *J. Biol. Chem.* 276: 3361-3370.
3. Kuroki, T., et al. 2002. Genetic alterations of the tumor suppressor gene WWOX in esophageal squamous cell carcinoma. *Cancer Res.* 62: 2258-2260.
4. Ludes-Meyers, J.H., et al. 2003. WWOX, the common chromosomal fragile site, FRA16D, cancer gene. *Cytogenet. Genome Res.* 100: 101-110.
5. Chang, N.S., et al. 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 siRNA (h) is a pool of 4 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see WWOX shRNA Plasmid (h): sc-44193-SH and WWOX shRNA (h) Lentiviral Particles: sc-44193-V as alternate gene silencing products.

For independent verification of WWOX (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-44193A, sc-44193B, sc-44193C and sc-44193D.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

WWOX siRNA (h) is recommended for the inhibition of WWOX expression in human 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 μ M in 66 μ l. 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

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 reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

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 μ l, 600 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Hung, P.S., et al. 2020. miR-187* enhances SiHa cervical cancer cell oncogenicity via suppression of WWOX. *Anticancer Res.* 40: 1427-1436.
2. Celebi, A., et al. 2020. Silencing of WWOX increases nuclear import of Dvl proteins in head and neck cancer. *J. Cancer* 11: 4030-4036.

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.