

WFDC1 siRNA (m): sc-155334

BACKGROUND

The WAP domain (also referred to as the WAP-type four-disulfide core domain), is a signature protein motif that contains eight cysteine residues which form disulfide bonds and may exhibit protease inhibitor activity. WFDC1 (WAP four-disulfide core domain 1), also known as PS20, is a 220 amino acid secreted protein that contains one WAP domain and is thought to possess growth inhibitory activity. The gene encoding WFDC1 maps to a region on human chromosome 16 that is often lost or mutated in several cancers, including breast, prostate and hepatocellular carcinomas, suggesting a role for native WFDC1 in tumor suppression. Human chromosome 16, on which the WFDC1 gene is located, encodes over 900 genes and comprises nearly 3% of the human genome. The GAN gene is located on chromosome 16 and, with mutation, may lead to giant axonal neuropathy, a nervous system disorder characterized by increasing malfunction with growth. The rare disorder Rubinstein-Taybi syndrome is also associated with chromosome 16, as is Crohn's disease, which is a gastrointestinal inflammatory condition.

REFERENCES

1. Rowley, D.R. 1992. Characterization of a fetal urogenital sinus mesenchymal cell line U4F: secretion of a negative growth regulatory activity. *In Vitro Cell. Dev. Biol.* 28A: 29-38.
2. Rowley, D.R., et al. 1995. Purification of a novel protein (ps20) from urogenital sinus mesenchymal cells with growth inhibitory properties *in vitro*. *J. Biol. Chem.* 270: 22058-22065.
3. Larsen, M., et al. 1998. Molecular cloning and expression of ps20 growth inhibitor. A novel WAP-type "four-disulfide core" domain protein expressed in smooth muscle. *J. Biol. Chem.* 273: 4574-4584.
4. Larsen, M., et al. 2000. The WFDC1 gene encoding ps20 localizes to 16q24, a region of LOH in multiple cancers. *Mamm. Genome* 11: 767-773.
5. Saffroy, R., et al. 2002. Analysis of alterations of WFDC1, a new putative tumour suppressor gene, in hepatocellular carcinoma. *Eur. J. Hum. Genet.* 10: 239-244.
6. Watson, J.E., et al. 2004. Molecular analysis of WFDC1/ps20 gene in prostate cancer. *Prostate* 61: 192-199.
7. Online Mendelian Inheritance in Man, OMIM[™]. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 605322. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
8. Alvarez, R., et al. 2008. WFDC1/ps20 is a novel innate immunomodulatory signature protein of human immunodeficiency virus (HIV)-permissive CD4⁺ CD45RO⁺ memory T cells that promotes infection by upregulating CD54 integrin expression and is elevated in HIV type 1 infection. *J. Virol.* 82: 471-486.
9. Madar, S., et al. 2009. Modulated expression of WFDC1 during carcinogenesis and cellular senescence. *Carcinogenesis* 30: 20-27.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CHROMOSOMAL LOCATION

Genetic locus: Wfdc1 (mouse) mapping to 8 E1.

PRODUCT

WFDC1 siRNA (m) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see WFDC1 shRNA Plasmid (m): sc-155334-SH and WFDC1 shRNA (m) Lentiviral Particles: sc-155334-V as alternate gene silencing products.

For independent verification of WFDC1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-155334A and sc-155334B.

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

WFDC1 siRNA (m) is recommended for the inhibition of WFDC1 expression in mouse 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor WFDC1 gene expression knockdown using RT-PCR Primer: WFDC1 (m)-PR: sc-155334-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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