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Mucin 16 siRNA (h): sc-44971

BACKGROUND

The mucins are a family of highly glycosylated, secreted proteins with a basic structure consisting of a variable number of tandem repeats (VNTRs). Membrane-associated and secretory Mucins are high molecular weight glycoproteins of the glycocalyx (polysaccharide biofilm) that protects mucosal epithelium from particulate matter and microorganisms. Epithelial mucins are large, secreted and cell surface glycoproteins crucial for adhesion modulation, signaling and epithelial cell protection. The number of repeats is highly polymorphic and varies among different alleles. The mucin family consists of Mucins 1-4, Mucin 5 (AC and B), Mucins 6-8, Mucins 11-13 and Mucins 15-17. The Mucin 16 protein (also commonly referred to as CA125), encoded by the gene MUC16, is a very high molecular weight tumor antigen consisting of three domains: a carboxy-terminal domain, an extracellular domain and an amino-terminal domain. Mucin 16, an ovarian cancer-associated antigen, is used as a marker to monitor the progress of epithelial ovarian cancer. It is a hydrophilic membrane-associated protein that may be involved in vitamin A functions.

REFERENCES

1. Yin, B.W., et al. 2001. Molecular cloning of the CA125 ovarian cancer antigen: identification as a new mucin, MUC16. *J. Biol. Chem.* 276: 27371-27375.
2. Maeda, T., et al. 2004. Solution structure of the SEA domain from the murine homologue of ovarian cancer antigen CA125 (MUC16). *J. Biol. Chem.* 279: 13174-13182.
3. Hori, Y., et al. 2005. Effect of retinoic acid on gene expression in human conjunctival epithelium: secretory phospholipase A₂ mediates retinoic acid induction of Mucin 16. *Invest. Ophthalmol. Vis. Sci.* 46: 4050-4061.
4. Palmi-Pallag, T., et al. 2005. The role of the SEA (sea urchin sperm protein, enterokinase and agrin) module in cleavage of membrane-tethered mucins. *FEBS J.* 272: 2901-2911.
5. Modrak, D.E., et al. 2005. Identification of a Mu-9 (anti-colon-specific antigen-p)-reactive peptide having homology to CA125 (Mucin 16). *Int. J. Oncol.* 26: 1591-1596.

CHROMOSOMAL LOCATION

Genetic locus: MUC16 (human) mapping to 19p13.2.

PRODUCT

Mucin 16 siRNA (h) is a pool of 3 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 Mucin 16 shRNA Plasmid (h): sc-44971-SH and Mucin 16 shRNA (h) Lentiviral Particles: sc-44971-V as alternate gene silencing products.

For independent verification of Mucin 16 (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-44971A, sc-44971B and sc-44971C.

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

Mucin 16 siRNA (h) is recommended for the inhibition of Mucin 16 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

Mucin 16 (C-6): sc-365002 is recommended as a control antibody for monitoring of Mucin 16 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 Mucin 16 gene expression knockdown using RT-PCR Primer: Mucin 16 (h)-PR: sc-44971-PR (20 μ l, 586 bp). 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.

PROTOCOLS

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