

Mucin 7 siRNA (h): sc-43167

BACKGROUND

Mucin glycoproteins are major constituents of the glycocalyx that covers mucosal epithelium. There are two broad classes of mucins: membrane-associated and secretory mucins. The Mucin 7 gene encodes a low-molecular-mass salivary mucin, Mucin 7 (also designated MG2, mucin glycoprotein 2), that lacks cysteine-rich domains and is secreted as a soluble monomer. The Mucin 7 glycoprotein can bind to a variety of microbes and this binding requires a cysteine-containing domain in the N-terminal region of Mucin 7. Mucin 7 is expressed in human submandibular/sublingual secretions and in mucous acinar cells. Among all normal malignant tissue samples and tumor cell lines, Mucin 7 is only expressed in bladder cancer cell lines and samples of invasive transitional cell carcinomas, suggesting differential Mucin 7 gene expression with the onset of malignant transformation of the bladder urothelium. Mucin 7 is also expressed in a variety of epithelial cancers. Expression of Mucin 7 is retinoic acid (RA)- or retinol-dependent and is mediated by the retinoid acid receptors RAR α and, to a lesser extent, by RAR γ . Thyroid hormone T3 binds to thyroid receptors and interacts with RA to inhibit mucin gene expression.

REFERENCES

1. Bobek, L.A., et al. 1993. Molecular cloning, sequence and specificity of expression of the gene encoding the low molecular weight human salivary mucin (Muc 7). *J. Biol. Chem.* 268: 20563-20569.
2. Khan, S.H., et al. 1998. *In situ* hybridization localized Mucin 7 mucin gene expression to the mucous acinar cells of human and Mucin 7-transgenic mouse salivary glands. *Glycoconj. J.* 15: 1125-1132.
3. Bobek, L.A., et al. 1998. Tissue-specific expression of human salivary mucin gene, Mucin 7, in transgenic mice. *Transgenic Res.* 7: 195-204.
4. Retz, M., et al. 1998. Differential mucin Muc 7 gene expression in invasive bladder carcinoma in contrast to uniform Muc 1 and Muc 2 gene expression in both normal urothelium and bladder carcinoma. *Cancer Res.* 58: 5662-5666.
5. Zhang, S., et al. 1998. Selection of tumor antigens as targets for immune attack using immunohistochemistry: protein antigens. *Clin. Cancer Res.* 4: 2669-2676.

CHROMOSOMAL LOCATION

Genetic locus: MUC7 (human) mapping to 4q13.3.

PRODUCT

Mucin 7 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 7 shRNA Plasmid (h): sc-43167-SH and Mucin 7 shRNA (h) Lentiviral Particles: sc-43167-V as alternate gene silencing products.

For independent verification of Mucin 7 (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-43167A, sc-43167B and sc-43167C.

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 7 siRNA (h) is recommended for the inhibition of Mucin 7 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 7 (1C10): sc-517138 is recommended as a control antibody for monitoring of Mucin 7 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 MarkerTM 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 7 gene expression knockdown using RT-PCR Primer: Mucin 7 (h)-PR: sc-43167-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.

PROTOCOLS

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