SANTA CRUZ BIOTECHNOLOGY, INC.

Mucin 5B siRNA (h): sc-106263

BACKGROUND

Mucins are a group of high molecular weight glycoproteins consisting of a mucin core protein and O-linked carbohydrates. The Mucin 5B gene, which contains a 3' *cis*-element, is one of the four mucin genes mapped to human chromosome 11p15.5. Although Mucin 5B is the prominent human gallbladder mucin, it is also expressed and secreted in the colon. In addition, Mucin 5B is expressed in non-inflammed middle ears and normal esophagus, and is upregulated by chronic inflammation and highly secreted in the diseased middle ear. Mucin 5B is abnormally expressed in gastric carcinomatous tissues. Its expression in gastric cancer cells is controlled by a highly active distal promoter, which is upregulated by protein kinase C and repressed under the influence of methylation. Mucous differentiation and expression of Mucin 5B is retinoic acid- (RA) or retinol-dependent. RA control of mucin gene is mediated by the retinoid acid receptor RARα and, to a lesser extent, by RARγ. The correlation of mucin protein levels in human cervical mucous with the peak at midcycle suggests that mucin may be important in sperm transit to the uterus.

REFERENCES

1. Pigny, P., et al. 1996. Identification of a 42-kDa nuclear factor (NF1-MUC5B) from HT-29 MTX cells that binds to the 3' region of human mucin gene MUC5B. Biochem. Biophys. Res. Commun. 220: 186-191.
2. van Klinken, B.J., et al. 1998. MUC5B is the prominent mucin in human gallbladder and is also expressed in a subset of colonic goblet cells. Am. J. Physiol. 274: 871-878.
3. Kashiwagi, H., et al. 2001. MUC1 and MUC2 expression in human gallbladder carcinoma: a clinicopathological study and relationship with prognosis. Oncol. Rep. 8: 485-489.
4. Smirnova, M.G., et al. 2001. Up-regulation of mucin secretion in HT29-MTX cells by the pro-inflammatory cytokines tumor necrosis factor-α and interleukin-6. Eur. Cytokine Netw. 12: 119-125.

CHROMOSOMAL LOCATION

Genetic locus: MUC5B (human) mapping to 11p15.5.

PRODUCT

Mucin 5B siRNA (h) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Mucin 5B shRNA Plasmid (h): sc-106263-SH and Mucin 5B shRNA (h) Lentiviral Particles: sc-106263-V as alternate gene silencing products.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Mucin 5B siRNA (h) is recommended for the inhibition of Mucin 5B 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 µM in 66 µl. 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 5B (5B#19-2E): sc-21768 is recommended as a control antibody for monitoring of Mucin 5B 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 5B gene expression knockdown using RT-PCR Primer: Mucin 5B (h)-PR: sc-106263-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Jia, Y., et al. 2015. Expression of ligands for Siglec-8 and Siglec-9 in human airways and airway cells. J. Allergy Clin. Immunol. 135: 799-810.e7.
2. Lee, J., et al. 2016. DUSP28 links regulation of Mucin 5B and Mucin 16 to migration and survival of AsPC-1 human pancreatic cancer cells. Tumour Biol. 37: 12193-12202.

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.