

Mucin 20 siRNA (m): sc-149702

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. Mucin 20 is a 709 amino acid secreted protein. Mucin 20 interacts with MET and may regulate the MET signaling cascade. Mucin 20 also decreases HGF-induced transient MAPK activation and inhibits HGF-induced proliferation MMP-1 and MMP-9. Expressed as two isoforms produced by alternative splicing, Mucin 20 is present at highest levels in kidney and at moderate levels in prostate, lung, liver, digestive system and placenta.

REFERENCES

1. Clark, H.F., Gurney, A.L., Abaya, E., Baker, K., Baldwin, D., Brush, J., Chen, J., Chow, B., Chui, C., Crowley, C., Currell, B., Deuel, B., Dowd, P., Eaton, D., Foster, J., Grimaldi, C., Gu, Q., Hass, P.E., Heldens, S., Huang, A., et al. 2003. The secreted protein discovery initiative (SPDI), a large-scale effort to identify novel human secreted and transmembrane proteins: a bioinformatics assessment. *Genome Res.* 13: 2265-2270.
2. Higuchi, T., Orita, T., Nakanishi, S., Katsuya, K., Watanabe, H., Yamasaki, Y., Waga, I., Nanayama, T., Yamamoto, Y., Munger, W., Sun, H.W., Falk, R.J., Jennette, J.C., Alcorta, D.A., Li, H., Yamamoto, T., Saito, Y., et al. 2004. Molecular cloning, genomic structure, and expression analysis of MUC20, a novel mucin protein, up-regulated in injured kidney. *J. Biol. Chem.* 279: 1968-1979.
3. Higuchi, T., Orita, T., Katsuya, K., Yamasaki, Y., Akiyama, K., Li, H., Yamamoto, T., Saito, Y. and Nakamura, M. 2004. MUC20 suppresses the hepatocyte growth factor-induced Grb2-Ras pathway by binding to a multifunctional docking site of met. *Mol. Cell. Biol.* 24: 7456-7468.
4. Li, G., Zhang, H., Lv, J., Hou, P. and Wang, H. 2006. Tandem repeats polymorphism of MUC20 is an independent factor for the progression of immunoglobulin A nephropathy. *Am. J. Nephrol.* 26: 43-49.
5. Russo, C.L., Spurr-Michaud, S., Tisdale, A., Pudney, J., Anderson, D. and Gipson, I.K. 2006. Mucin gene expression in human male urogenital tract epithelia. *Hum. Reprod.* 21: 2783-2793.
6. Online Mendelian Inheritance in Man, OMIM™. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 610360. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: Muc20 (mouse) mapping to 16 B3.

PROTOCOLS

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

PRODUCT

Mucin 20 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 Mucin 20 shRNA Plasmid (m): sc-149702-SH and Mucin 20 shRNA (m) Lentiviral Particles: sc-149702-V as alternate gene silencing products.

For independent verification of Mucin 20 (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-149702A and sc-149702B.

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 20 siRNA (m) is recommended for the inhibition of Mucin 20 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 Mucin 20 gene expression knockdown using RT-PCR Primer: Mucin 20 (m)-PR: sc-149702-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.