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- Trockeneiszuschlag
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SANTA CRUZ BIOTECHNOLOGY, INC.

TMPRSS3 siRNA (h): sc-41659

BACKGROUND

Extracellular proteases mediate the digestion of neighboring extracellular matrix components in initial tumor growth, allow desquamation of tumor cells into the surrounding environment, provide the basis for invasion of basement membranes in targeted metastatic organs and are required for release and activation of many growth and angiogenic factors. The TMPRSS3 (also known as ECHOS1) gene, which encodes a transmembrane serine protease, has been found to be responsible for two non-syndromic recessive deafness loci located on human chromosome 21q22.3, DFNB8 and DFNB10. TMPRSS3, a 437 amno acid membrane bound serine protease and a member of the S1 peptidase family. TMPRSS3 contains an amino-terminal signal-anchor sequence and a glycosylated extracellular region containing the serine protease domain. Two novel missense mutations of TMPRSS3, W251C and P404L, alter the highly conserved amino acids of the serine protease domain. TMPRSS3 is expressed in many tissues, including fetal cochlea, a subset of pancreatic cancer and various other cancer tissues. TMPRSS3 is also over-expressed in cancer, suggesting that it may be important for processes in metastasis formation and tumor invasion.

REFERENCES

1. Tanimoto, H., et al. 1997. Hepsin, a cell surface serine protease identified in hepatoma cells, is overexpressed in ovarian cancer. Cancer Res. 57: 2884-2887.
2. Wallrapp, C., et al. 2000. A novel transmembrane serine protease (TMPRSS3) overexpressed in pancreatic cancer. Cancer Res. 60: 2602-2606.
3. Magee, J.A., et al. 2001. Expression profiling reveals hepsin overexpression in prostate cancer. Cancer Res. 61: 5692-5696.
4. Masmoudi, S., et al. 2001. Novel missense mutations of TMPRSS3 in two consanguineous Tunisian families with non-syndromic autosomal recessive deafness. Hum. Mutat. 18: 101-108.
5. Scott, H.S., et al. 2001. Insertion of β-satellite repeats a transmembrane protease causing both congenital and childhood onset autosomal recessive deafness. Nat. Genet. 27: 59-63.

CHROMOSOMAL LOCATION

Genetic locus: TMPRSS3 (human) mapping to 21q22.3.

PRODUCT

TMPRSS3 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TMPRSS3 shRNA Plasmid (h): sc-41659-SH and TMPRSS3 shRNA (h) Lentiviral Particles: sc-41659-V as alternate gene silencing products.

For independent verification of TMPRSS3 (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-41659A, sc-41659B and sc-41659C.

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

TMPRSS3 siRNA (h) is recommended for the inhibition of TMPRSS3 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TMPRSS3 gene expression knockdown using RT-PCR Primer: TMPRSS3 (h)-PR: sc-41659-PR (20 µl, 563 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.