SANTA CRUZ BIOTECHNOLOGY, INC.

TMPRSS11D siRNA (h): sc-89121

BACKGROUND

TMPRSS11D (transmembrane protease, serine 11D), also known as HAT, is a 418 amino acid single-pass type II membrane protein that contains one SEA domain and one peptidase S1 domain. Expressed in bronchi and trachea, TMPRSS11D functions as a monomer that cleaves the C-terminal side of arginine residues at the P1 position of certain peptides and, via this catalytic activity, plays a role in the host defense system. TMPRSS11D is inhibited by diisopropyl fluorophosphate, leupeptin, antipain and aprotinin and is subject to posttranslational cleavage which results in the formation of an active, secreted peptide. The gene encoding TMPRSS11D maps to human chromosome 4, which encodes nearly 6% of the human genome and has the largest gene deserts (regions of the genome with no protein encoding genes) of all of the human chromosomes.

REFERENCES

1. Yasuoka, S., et al. 1997. Purification, characterization, and localization of a novel Trypsin-like protease found in the human airway. Am. J. Respir. Cell Mol. Biol. 16: 300-308.
2. Yamaoka, K., et al. 1998. Cloning and characterization of the cDNA for human airway Trypsin-like protease. J. Biol. Chem. 273: 11895-11901.
3. Takahashi, M., et al. 2001. Localization of human airway Trypsin-like protease in the airway: an immunohistochemical study. Histochem. Cell Biol. 115: 181-187.
4. Miki, M., et al. 2003. Effect of human airway Trypsin-like protease on intracellular free Ca^{2+} concentration in human bronchial epithelial cells. J. Med. Invest. 50: 95-107.
5. Iwakiri, K., et al. 2004. Human airway Trypsin-like protease induces PAR-2-mediated IL-8 release in psoriasis vulgaris. J. Invest. Dermatol. 122: 937-944.

CHROMOSOMAL LOCATION

Genetic locus: TMPRSS11D (human) mapping to 4q13.2.

PRODUCT

TMPRSS11D 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 TMPRSS11D shRNA Plasmid (h): sc-89121-SH and TMPRSS11D shRNA (h) Lentiviral Particles: sc-89121-V as alternate gene silencing products.

For independent verification of TMPRSS11D (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-89121A, sc-89121B and sc-89121C.

PROTOCOLS

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

TMPRSS11D siRNA (h) is recommended for the inhibition of TMPRSS11D 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

TMPRSS11D (C-9): sc-515673 is recommended as a control antibody for monitoring of TMPRSS11D 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 TMPRSS11D gene expression knockdown using RT-PCR Primer: TMPRSS11D (h)-PR: sc-89121-PR (20 µl). 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.