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SANTA CRUZ BIOTECHNOLOGY, INC.

TMPRSS2 siRNA (m): sc-154527

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 TMPRSS2 gene encodes a 492 amino acid multimeric serine protease, which is mainly expressed in the mouse prostate and kidney, and is also expressed in the human small intestine, prostate, colon, stomach and salivary gland. TMPRSS2 contains several domains, including a serine protease domain of the S1 family, a scavenger receptor cysteine-rich domain of group A, an LDL receptor class A domain and a transmembrane domain. TMPRSS2 is expressed as a full length form and a cleaved protease domain and its expression is increased by androgenic hormones. TMPRSS2 is also expressed in prostate carcinoma, suggesting that it may play a role in prostate carcinogenesis.

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. Paoloni-Giacobino, A., et al. 1997. Cloning of the TMPRSS2 gene, which encodes a novel serine protease with transmembrane, LDLRA, and SRCR domains and maps to 21q22.3. Genomics 44: 309-320.
3. Lin, B., et al. 1999. Prostate-localized and androgen-regulated expression of the membrane-bound serine protease TMPRSS2. Cancer Res. 59: 4180-4184.
4. Afar, D.E., et al. 2001. Catalytic cleavage of the androgen-regulated TMPRSS2 protease results in its secretion by prostate and prostate cancer epithelia. Cancer Res. 61: 1686-1692.
5. Magee, J.A., et al. 2001. Expression profiling reveals hepsin overexpression in prostate cancer. Cancer Res. 61: 5692-2696.
6. Vaarala, M.H., et al. 2001. Expression of transmembrane serine protease TMPRSS2 in mouse and human tissues. J. Pathol. 193: 134-140.

CHROMOSOMAL LOCATION

Genetic locus: Tmprss2 (mouse) mapping to 16 C2.

PRODUCT

TMPRSS2 siRNA (m) 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 TMPRSS2 shRNA Plasmid (m): sc-154527-SH and TMPRSS2 shRNA (m) Lentiviral Particles: sc-154527-V as alternate gene silencing products.

For independent verification of TMPRSS2 (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-154527A, sc-154527B and sc-154527C.

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

TMPRSS2 siRNA (m) is recommended for the inhibition of TMPRSS2 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 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

TMPRSS2 (H-4): sc-515727 is recommended as a control antibody for monitoring of TMPRSS2 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 TMPRSS2 gene expression knockdown using RT-PCR Primer: TMPRSS2 (m)-PR: sc-154527-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.

PROTOCOLS

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