SANTA CRUZ BIOTECHNOLOGY, INC.

SPINK2 siRNA (h): sc-88884

BACKGROUND

SPINK2 (serine protease inhibitor Kazal-type 2), also known as acrosin-trypsin inhibitor or HUSI-II, is an 84 amino acid secreted protein that functions as a strong inhibitor of acrosin in the male and/or female genital tract and is highly expressed in the testis, epididymis and seminal vesicle. It has been shown that SPINK2 is expressed in hematopoietic stem progenitor cells (HSPC). SPINK2 also inhibits trypsin and contains one Kazal-like domain. The gene that encodes SPINK2 is a single-copy gene containing 11,883 bases, a GC-rich promoter region, 3 introns, 4 exons and maps to the human chromosome 4q12. The human chromosome 4 represents approximately 6% of the human genome, contains nearly 900 genes and is associated with Huntington's disease, Ellis-van Creveld syndrome, methylmalonic acidemia and polycystic kidney disease.

REFERENCES

1. Dietl, T., Kruck, J., Schill, W.B. and Fritz, H. 1976. Localization of seminal plasma proteinase inhibitors in human spermatozoa as revealed by the indirect immunofluorescence technique. Hoppe-Seyler's Z. Physiol. Chem. 357: 1333-1337.
2. Fink, E., Hehlein-Fink, C. and Eulitz, M. 1990. Amino acid sequence elucidation of human acrosin-trypsin inhibitor (HUSI-II) reveals that Kazal-type proteinase inhibitors are structurally related to β-subunits of glycoprotein hormones. FEBS Lett. 270: 222-224.
3. Collins, J., Taube, W., Fink, E., Möritz, A. and Fritz, H. 1991. Variants of human seminal acrosin inhibitor (HUSI-II) which inhibit human leukocyte elastase. Biomed. Biochim. Acta 50: 683-685.
4. Möritz, A., Lilja, H. and Fink, E. 1991. Molecular cloning and sequence analysis of the cDNA encoding the human acrosin-trypsin inhibitor (HUSI-II). FEBS Lett. 278: 127-130.
5. Möritz, A., Grzeschik, K.H., Wingender, E. and Fink, E. 1993. Organization and sequence of the gene encoding the human acrosin-trypsin inhibitor (HUSI-II). Gene 123: 277-281.
6. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 605753. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. Wapenaar, M.C., Monsuur, A.J., Poell, J., van 't Slot, R., Meijer, J.W., Meijer, G.A., Mulder, C.J., Mearin, M.L. and Wijmenga, C. 2007. The SPINK gene family and celiac disease susceptibility. Immunogenetics 59: 349-357.
8. Chen, T., Lee, T.R., Liang, W.G., Chang, W.S. and Lyu, P.C. 2009. Identification of trypsin-inhibitory site and structure determination of human SPINK2 serine proteinase inhibitor. Proteins 77: 209-219.

CHROMOSOMAL LOCATION

Genetic locus: SPINK2 (human) mapping to 4q12.

PROTOCOLS

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

PRODUCT

SPINK2 siRNA (h) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SPINK2 shRNA Plasmid (h): sc-88884-SH and SPINK2 shRNA (h) Lentiviral Particles: sc-88884-V as alternate gene silencing products.

For independent verification of SPINK2 (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-88884A and sc-88884B.

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

SPINK2 siRNA (h) is recommended for the inhibition of SPINK2 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 SPINK2 gene expression knockdown using RT-PCR Primer: SPINK2 (h)-PR: sc-88884-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.