SANTA CRUZ BIOTECHNOLOGY, INC.

DC-STAMP siRNA (m): sc-142887

BACKGROUND

Bone homeostasis is accomplished by the balance of osteoblast and osteoclast activity. DC-STAMP (DC-specific transmembrane protein), also known as Transmembrane 7 superfamily member 4, is a 470 amino acid multi-pass membrane protein that regulates osteoclast and macrophage cell fusion. With localization at the cell surface, DC-STAMP is highly expressed in dendritic cells of the lung, kidney, liver and lymph nodes and is expressed at lower levels in spleen, bone marrow, leukocytes and pancreas. Mice that lack the gene encoding DC-STAMP exhibit upregulation of bone formation by osteoblasts and decreased bone reabsorption, ulitmately leading to an increase in bone mass. Alternatively, mice that overexpress the DC-STAMP gene show decreased osteoblast activity and bone mass, due to accelerated cell-cell fusion of osteoclasts. This evidence suggests that DC-STAMP plays an essential role in osteoclastogenesis.

REFERENCES

1. Hartgers, F.C., et al. 2000. DC-STAMP, a novel multimembrane-spanning molecule preferentially expressed by dendritic cells. Eur. J. Immunol. 30: 3585-3590.
2. Staege, H., et al. 2001. Two novel genes FIND and LIND differentially expressed in deactivated and *Listeria*-infected human macrophages. Immunogenetics 53: 105-113.
3. Hartgers, F.C., et al. 2001. Genomic organization, chromosomal localization, and 5' upstream region of the human DC-STAMP gene. Immunogenetics 53: 145-149.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605933. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Yagi, M., et al. 2005. DC-STAMP is essential for cell-cell fusion in osteoclasts and foreign body giant cells. J. Exp. Med. 202: 345-351.

CHROMOSOMAL LOCATION

Genetic locus: Tm7sf4 (mouse) mapping to 15 B3.1.

PRODUCT

DC-STAMP 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 DC-STAMP shRNA Plasmid (m): sc-142887-SH and DC-STAMP shRNA (m) Lentiviral Particles: sc-142887-V as alternate gene silencing products.

For independent verification of DC-STAMP (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-142887A, sc-142887B and sc-142887C.

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

DC-STAMP siRNA (m) is recommended for the inhibition of DC-STAMP 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DC-STAMP gene expression knockdown using RT-PCR Primer: DC-STAMP (m)-PR: sc-142887-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.