

TMEM119 siRNA (m): sc-154354

BACKGROUND

Bone volume and calcium homeostasis in vertebrates is maintained by continuous bone destruction, reformation and remodeling. Specialized mesenchymal osteoblasts and osteoclasts are responsible for bone formation and resorption, respectively. TMEM119 (transmembrane protein 119), also known as OBIF (osteoblast induction factor), is a 283 amino acid single-pass type I membrane protein expressed in differentiating osteoblasts. It is suggested that TMEM119 may promote the differentiation of myoblasts into osteoblasts and may be required for bone mineralization and spermatogenesis. Induced by PTH (parathyroid hormone), TMEM119 is thought to play an essential role in the development of multiple tissues. TMEM119 is encoded by a gene located on human chromosome 12, which consists of over 1,100 genes within 132 million bases and makes up about 4.5% of the human genome.

REFERENCES

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CHROMOSOMAL LOCATION

Genetic locus: Tmem119 (mouse) mapping to 5 F.

PRODUCT

TMEM119 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TMEM119 shRNA Plasmid (m): sc-154354-SH and TMEM119 shRNA (m) Lentiviral Particles: sc-154354-V as alternate gene silencing products.

For independent verification of TMEM119 (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-154354A, sc-154354B and sc-154354C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

TMEM119 siRNA (m) is recommended for the inhibition of TMEM119 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 μ M in 66 μ l. 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 TMEM119 gene expression knockdown using RT-PCR Primer: TMEM119 (m)-PR: sc-154354-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Hisa, I., et al. 2011. Parathyroid hormone-responsive Smad3-related factor, TMEM119, promotes osteoblast differentiation and interacts with the bone morphogenetic protein-RUNX2 pathway. *J. Biol. Chem.* 286: 9787-9796.
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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.