SANTA CRUZ BIOTECHNOLOGY, INC.

IFITM5 siRNA (h): sc-96804

BACKGROUND

Interferons (IFNs) are potential antitumor agents, as they exhibit antiproliferative and differentiating properties, in addition to functioning in the defense against microbial infections. IFN exposure induces the regulation of expression levels of cellular proteins that mediate the pleiotropic effects of interferons. These effects may be mediated by soluble factors or by cell-cell interactions involving specific membrane proteins. The IFITM family of proteins are transmembrane proteins which are named as such because their expression is IFN-inducible. IFITM proteins have been found to be upregulated in human colorectal carcinomas. IFITM5 (Interferon-induced transmembrane protein 5), also known as BRIL (bone-restricted interferon-induced transmembrane protein-like protein), is a 132 amino acid multi-pass membrane protein belonging to the CD225 family. The peak of IFITM5 expression occurs during the early mineralization stage during the osteoblast maturation process. IFITM5 plays a role in bone mineralization.

REFERENCES

1. Lewin, A.R., et al. 1991. Molecular analysis of a human interferon-inducible gene family. Eur. J. Biochem. 199: 417-423.
2. Lange, U.C., et al. 2003. The fragilis interferon-inducible gene family of transmembrane proteins is associated with germ cell specification in mice. BMC Dev. Biol. 3: 1.
3. Tanaka, S.S., et al. 2005. IFITM/Mil/fragilis family proteins IFITM1 and IFITM3 play distinct roles in mouse primordial germ cell homing and repulsion. Dev. Cell 9: 745-756.
4. Moffatt, P., et al. 2008. Bril: a novel bone-specific modulator of mineralization. J. Bone Miner. Res. 23: 1497-1508.
5. Hanagata, N., et al. 2010. Characterization of the osteoblast-specific transmembrane protein IFITM5 and analysis of IFITM5-deficient mice. J. Bone Miner. Metab. 29: 279-290.
6. Siegrist, F., et al. 2011. The small interferon-induced transmembrane genes and proteins. J. Interferon Cytokine Res. 31: 183-197.
7. Huang, I.C., et al. 2011. Distinct patterns of IFITM-mediated restriction of filoviruses, SARS coronavirus, and influenza A virus. PLoS Pathog. 7: e1001258.

CHROMOSOMAL LOCATION

Genetic locus: IFITM5 (human) mapping to 11p15.5.

PRODUCT

IFITM5 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 IFITM5 shRNA Plasmid (h): sc-96804-SH and IFITM5 shRNA (h) Lentiviral Particles: sc-96804-V as alternate gene silencing products.

For independent verification of IFITM5 (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-96804A and sc-96804B.

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

IFITM5 siRNA (h) is recommended for the inhibition of IFITM5 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 IFITM5 gene expression knockdown using RT-PCR Primer: IFITM5 (h)-PR: sc-96804-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.