SANTA CRUZ BIOTECHNOLOGY, INC.

Btnl1 siRNA (m): sc-141784

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The Power to Question

BACKGROUND

A major protein associated with fat droplets in the milk of many species, Butyrophilin is a member of the immunoglobulin superfamily, a large family of proteins that comprises of components of the immune system, plasma membrane receptors and adhesive molecules. Butyrophilin is a glycoprotein that is specifically expressed on the apical surface of mammary epithelial cells during lactation and becomes incorporated as an integral protein into the membrane of the milk fat globule during the budding and secretion of fat droplets into milk. Btnl1 (butyrophilin-like 1), also known as Gm316 or Ng10, is a 509 amino acid single-pass type I membrane protein. Belonging to the immunoglobulin superfamily and BTN/MOG family, Btnl1 contains one Ig-like V-type (immunoglobulin-like) domain and a B30.2/SPRY domain. Btnl1 exists as two alternatively spliced isoforms, and is encoded by a gene that maps to mouse chromosome 17 B1.

REFERENCES

1. Franke, W.W., Heid, H.W., Grund, C., Winter, S., Freudenstein, C., Schmid, E., Jarasch, E.D. and Keenan, T.W. 1981. Antibodies to the major insoluble milk fat globule membrane-associated protein: specific location in apical regions of lactating epithelial cells. J. Cell Biol. 89: 485-494.
2. Mather, I.H. and Jack, L.J. 1993. A review of the molecular and cellular biology of butyrophilin, the major protein of bovine milk fat globule membrane. J. Dairy Sci. 76: 3832-3850.
3. Ogg, S.L., Komaragiri, M.V. and Mather, I.H. 1996. Structural organization and mammary-specific expression of the butyrophilin gene. Mamm. Genome 7: 900-905.
4. Vernet, C., Boretto, J., Mattei, M.G., Takahashi, M., Jack, L.J., Mather, I.H., Rouquier, S. and Pontarotti, P. 1993. Evolutionary study of multigenic families mapping close to the human MHC class I region. J. Mol. Evol. 37: 600-612.
5. Tazi-Ahnini, R., Henry, J., Offer, C., Bouissou-Bouchouata, C., Mather, I.H. and Pontarotti, P. 1997. Cloning, localization, and structure of new members of the butyrophilin gene family in the juxta-telomeric region of the major histocompatibility complex. Immunogenetics 47: 55-63.
6. Rhodes, D.A., Stammers, M., Malcherek, G., Beck, S. and Trowsdale, J. 2001. The cluster of BTN genes in the extended major histocompatibility complex. Genomics 71: 351-362.
7. Robenek, H., Hofnagel, O., Buers, I., Lorkowski, S., Schnoor, M., Robenek, M.J., Heid, H., Troyer, D. and Severs, N.J. 2006. Butyrophilin controls milk fat globule secretion. Proc. Natl. Acad. Sci. USA 103: 10385-10390.

CHROMOSOMAL LOCATION

Genetic locus: Btnl1 (mouse) mapping to 17 B1.

PROTOCOLS

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

PRODUCT

Btnl1 siRNA (m) is a target-specific 19-25 nt siRNA 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 Btnl1 shRNA Plasmid (m): sc-141784-SH and Btnl1 shRNA (m) Lentiviral Particles: sc-141784-V as alternate gene silencing 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

Btnl1 siRNA (m) is recommended for the inhibition of Btnl1 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 Btnl1 gene expression knockdown using RT-PCR Primer: Btnl1 (m)-PR: sc-141784-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.