SANTA CRUZ BIOTECHNOLOGY, INC.

BTN2A1 siRNA (h): sc-95278

BACKGROUND

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. BTN2A1 (butyrophilin subfamily 2 member A1), also known as BTF1, is a 527 amino acid single-pass type I membrane B box protein that plays a role in fatty-acid, sterol and lipid metabolism. A member of the immunoglobulin superfamily and BTN/MOG family, BTN2A1 exists as three alternatively spliced isoforms found at high levels in brain, muscle, spleen, pancreas, bone marrow and small intestine. BTN2A1 is expressed at moderate levels in kidney, liver and lung, and is encoded by a gene that maps to human chromosome 6p22.2.

REFERENCES

1. Mather, I.H., et al. 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.
2. Ogg, S.L., et al. 1996. Structural organization and mammary-specific expression of the butyrophilin gene. Mamm. Genome 7: 900-905.
3. Davey, H.W., et al. 1997. Structure and sequence of the bovine butyrophilin gene. Gene 199: 57-62.
4. Tazi-Ahnini, R., et al. 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.
5. Rhodes, D.A., et al. 2001. The cluster of BTN genes in the extended major histocompatibility complex. Genomics 71: 351-362.
6. Robenek, H., et al. 2006. Butyrophilin controls milk fat globule secretion. Proc. Natl. Acad. Sci. USA 103: 10385-10390.
7. Malcherek, G., et al. 2007. The B7 homolog butyrophilin BTN2A1 is a novel ligand for DC-SIGN. J. Immunol. 179: 3804-3811.

CHROMOSOMAL LOCATION

Genetic locus: BTN2A1 (human) mapping to 6p22.2.

PRODUCT

BTN2A1 siRNA (h) 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 BTN2A1 shRNA Plasmid (h): sc-95278-SH and BTN2A1 shRNA (h) Lentiviral Particles: sc-95278-V as alternate gene silencing products.

For independent verification of BTN2A1 (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-95278A, sc-95278B and sc-95278C.

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

BTN2A1 siRNA (h) is recommended for the inhibition of BTN2A1 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 BTN2A1 gene expression knockdown using RT-PCR Primer: BTN2A1 (h)-PR: sc-95278-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.