SANTA CRUZ BIOTECHNOLOGY, INC.

ITM2B siRNA (m): sc-60870

BACKGROUND

The type II integral membrane (ITM2) protein family consists of three members: ITM2A (also designated E25), ITM2B and ITM2C. ITM2A expression is high in osteogenic and lymphoid tissues, while both ITM2B and ITM2C are expressed in brain. ITM2B is a 266 amino acid protein that contains a potential N-glycosylation site, a potential single transmembrane-spanning domain between amino acids 52 and 74 and an extracellular C-terminal domain. Mutations in the ITM2B gene can lead to familial British dementia (FBD), an autosomal dominant disease with an onset around the fifth decade of life that is characterized by progressive dementia, spasticity and cerebellar ataxia. Familial Danish dementia (FDD), also designated heredopathia ophthalmo-oto-encephalica, is also associated with mutations in the ITM2B gene. FDD is an autosomal dominant disorder characterized by cataracts, deafness, progressive ataxia and dementia.

REFERENCES

1. Ernst, B., et al. 1970. Luria testing in demented patients. Acta Neurol. Scand. 46: 97-98.
2. Vidal, R., et al. 1999. A stop-codon mutation in the BRI gene associated with familial British dementia. Nature 399: 776-781.
3. Ghiso, J.A., et al. 2001. Systemic amyloid deposits in familial British dementia. J. Biol. Chem. 276: 43909-43914.
4. El-Agnaf, O., et al. 2004. Properties of neurotoxic peptides related to the Bri gene. Protein Pept. Lett. 11: 207-212.
5. Matsuda, S., et al. 2005. The familial dementia BRI2 gene binds the Alzheimer gene Amyloid-β precursor protein and inhibits Amyloid-β production. J. Biol. Chem. 280: 28912-28916.
6. Zirn, B., et al. 2005. All-*trans* retinoic acid treatment of Wilms tumor cells reverses expression of genes associated with high risk and relapse *in vivo*. Oncogene 24: 5246-5251.
7. Morelli, L., et al. 2005. Insulin-degrading enzyme degrades Amyloid peptides associated with British and Danish familial dementia. Biochem. Biophys. Res. Commun. 332: 808-816.

CHROMOSOMAL LOCATION

Genetic locus: Itm2b (mouse) mapping to 14 D3.

PRODUCT

ITM2B 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 ITM2B shRNA Plasmid (m): sc-60870-SH and ITM2B shRNA (m) Lentiviral Particles: sc-60870-V as alternate gene silencing products.

For independent verification of ITM2B (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-60870A, sc-60870B and sc-60870C.

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

ITM2B siRNA (m) is recommended for the inhibition of ITM2B 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.

GENE EXPRESSION MONITORING

ITM2B (C-8): sc-374362 is recommended as a control antibody for monitoring of ITM2B gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ITM2B gene expression knockdown using RT-PCR Primer: ITM2B (m)-PR: sc-60870-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.