SANTA CRUZ BIOTECHNOLOGY, INC.

ITM2C siRNA (h): sc-94875

BACKGROUND

The type II integral membrane (ITM2) protein family consists of three members: ITM2A (also designated E25), ITM2B and ITM2C. ITM2C (integral membrane protein 2C), also known as CT-BRI3 or hucep-14, is a 267 amino acid single-pass type II membrane protein that belongs to the ITM2 family. Containing one BRICHOS domain, ITM2C is expressed almost exclusively in brain. ITM2C interacts with APP by restricting its access to α and β secretase, and also interacts directly with BACE1 and SCG10. ITM2C may negatively regulate the production of β amyloid, and may also play a role TNF-induced cell death. Existing as three alternatively spliced isoforms, the gene encoding ITM2C maps to human chromosome 2q37.1 and mouse chromosome 1 C5.

REFERENCES

1. Pittois, K., Deleersnijder, W. and Merregaert, J. 1998. cDNA sequence analysis, chromosomal assignment and expression pattern of the gene coding for integral membrane protein 2B. Gene 217: 141-149.
2. Vidal, R., Calero, M., Revesz, T., Plant, G., Ghiso, J. and Frangione, B. 2001. Sequence, genomic structure and tissue expression of human BRI3, a member of the BRI gene family. Gene 266: 95-102.
3. Choi, S.C., Kim, J., Kim, T.H., Cho, S.Y., Park, S.S., Kim, K.D. and Lee, S.H. 2001. Cloning and characterization of a type II integral transmembrane protein gene, ITM2C, that is highly expressed in the mouse brain. Mol. Cells 12: 391-397.
4. Van den Plas, D. and Merregaert, J. 2004. *In vitro* studies on ITM2A reveal its involvement in early stages of the chondrogenic differentiation pathway. Biol. Cell 96: 463-470.
5. Van den Plas, D. and Merregaert, J. 2004. Constitutive overexpression of the integral membrane protein ITM2A enhances myogenic differentiation of C2C12 cells. Cell Biol. Int. 28: 199-207.
6. Rengaraj, D., Gao, F., Liang, X.H. and Yang, Z.M. 2007. Expression and regulation of type II integral membrane protein family members in mouse male reproductive tissues. Endocrine 31: 193-201.
7. Martin, L., Fluhrer, R. and Haass, C. 2009. Substrate requirements for SPPL2b-dependent regulated intramembrane proteolysis. J. Biol. Chem. 284: 5662-5670.

CHROMOSOMAL LOCATION

Genetic locus: ITM2C (human) mapping to 2q37.1.

PRODUCT

ITM2C 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 ITM2C shRNA Plasmid (h): sc-94875-SH and ITM2C shRNA (h) Lentiviral Particles: sc-94875-V as alternate gene silencing products.

For independent verification of ITM2C (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-94875A, sc-94875B and sc-94875C.

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

ITM2C siRNA (h) is recommended for the inhibition of ITM2C 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 ITM2C gene expression knockdown using RT-PCR Primer: ITM2C (h)-PR: sc-94875-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.