

MTCH1 siRNA (m): sc-149669

BACKGROUND

MTCH1 (mitochondrial carrier homolog 1), also known as PSAP or PIG60, is a 389 amino acid multi-pass membrane protein that localizes to the inner mitochondrial membrane and contains two solcar repeats. Expressed in a variety of tissues with highest expression in brain, MTCH1 interacts with presenilin 1 and is thought to function as a mitochondrial transporter that may play a role in apoptosis. Multiple isoforms of MTCH1 exist due to alternative splicing events. The gene encoding MTCH1 maps to human chromosome 6, which contains 170 million base pairs and comprises nearly 6% of the human genome. Deletion of a portion of the q arm of chromosome 6 is associated with early onset intestinal cancer, suggesting the presence of a cancer susceptibility locus. Additionally, porphyria cutanea tarda, Parkinson's disease, Stickler syndrome and a susceptibility to bipolar disorder are all associated with genes that map to chromosome 6.

REFERENCES

1. Xu, X., Shi, Y., Wu, X., Gambetti, P., Sui, D. and Cui, M.Z. 1999. Identification of a novel PSD-95/Dlg/ZO-1 (PDZ)-like protein interacting with the C terminus of presenilin 1. *J. Biol. Chem.* 274: 32543-32546.
2. Xu, X., Shi, Y.C., Gao, W., Mao, G., Zhao, G., Agrawal, S., Chisolm, G.M., Sui, D. and Cui, M.Z. 2002. The novel presenilin 1-associated protein is a proapoptotic mitochondrial protein. *J. Biol. Chem.* 277: 48913-48922.
3. Trinchese, F., Liu, S., Battaglia, F., Walter, S., Mathews, P.M. and Arancio, O. 2004. Progressive age-related development of Alzheimer-like pathology in APP/PS1 mice. *Ann. Neurol.* 55: 801-814.
4. Online Mendelian Inheritance in Man, OMIM[™]. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 610449. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Lamarca, V., Sanz-Clemente, A., Perez-Pe, R., Martínez-Lorenzo, M.J., Halaihel, N., Muniesa, P. and Carrodegua, J.A. 2007. Two isoforms of PSAP/MTCH1 share two proapoptotic domains and multiple internal signals for import into the mitochondrial outer membrane. *Am. J. Physiol., Cell Physiol.* 293: C1347-C1361.
6. Mao, G., Tan, J., Gao, W., Shi, Y., Cui, M.Z. and Xu, X. 2008. Both the N-terminal fragment and the protein-protein interaction domain (PDZ domain) are required for the pro-apoptotic activity of presenilin-associated protein PSAP. *Biochim. Biophys. Acta* 1780: 696-708.
7. Lamarca, V., Marzo, I., Sanz-Clemente, A. and Carrodegua, J.A. 2008. Exposure of any of two proapoptotic domains of presenilin 1-associated protein/mitochondrial carrier homolog 1 on the surface of mitochondria is sufficient for induction of apoptosis in a Bax/Bak-independent manner. *Eur. J. Cell Biol.* 87: 325-334.

CHROMOSOMAL LOCATION

Genetic locus: Mtch1 (mouse) mapping to 17 A3.3.

PROTOCOLS

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

PRODUCT

MTCH1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MTCH1 shRNA Plasmid (m): sc-149669-SH and MTCH1 shRNA (m) Lentiviral Particles: sc-149669-V as alternate gene silencing products.

For independent verification of MTCH1 (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-149669A, sc-149669B and sc-149669C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

MTCH1 siRNA (m) is recommended for the inhibition of MTCH1 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 μ M in 66 μ l. 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 MTCH1 gene expression knockdown using RT-PCR Primer: MTCH1 (m)-PR: sc-149669-PR (20 μ l). 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.