SANTA CRUZ BIOTECHNOLOGY, INC.

TRPM3 siRNA (h): sc-76759

BACKGROUND

The transient receptor potential (TRP) protein family consists of a diverse group of cation channels functioning in a variety of homeostatic and regulatory pathways. Four subfamilies exist, based on channel domain homology, not activating stimuli: C type (canonical or classical), V type (vanilloid receptor related), M type (melastatin related) and P type (PKD). TRPM3 (transient receptor potential cation channel subfamily M member 3), also known as long transient receptor potential channel 3v and melastatin 2, is a 1,732 amino acid multi-pass membrane protein that is a member of the M-type subfamily and is closely related to MLSN1 (melastatin 1), also known as TRPM1. TRPM3 functions as a calcium channel that mediates entry of calcium ion into the cell. A decrease in extracellular osmolarity, depletion of stored calcium and muscarinic receptor activation result in an increase of TRPM3 channel activity. Nine isoforms of TRPM3 are produced as a result of alternative splicing events.

REFERENCES

1. Nagase, T., et al. 2000. Prediction of the coding sequences of unidentified human genes. XVIII. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 7: 273-281.
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3. Lee, N., et al. 2003. Expression and characterization of human transient receptor potential melastatin 3 (hTRPM3). J. Biol. Chem. 278: 20890-20897.
4. Grimm, C., et al. 2003. Molecular and functional characterization of the melastatin-related cation channel TRPM3. J. Biol. Chem. 278: 21493-21501.
5. Kraft, R., et al. 2005. The mammalian melastatin-related transient receptor potential cation channels: an overview. Pflugers Arch. 451: 204-211.
6. Oberwinkler, J. 2007. TRPM3, a biophysical enigma? Biochem. Soc. Trans. 35: 89-90.
7. Harteneck, C., et al. 2007. TRP channels activated by extracellular hypoosmoticity in epithelia. Biochem. Soc. Trans. 35: 91-95.
8. Topala, C.N., et al. 2007. Molecular determinants of permeation through the cation channel TRPM6. Cell Calcium 41: 513-523.

CHROMOSOMAL LOCATION

Genetic locus: TRPM3 (human) mapping to 9q21.12.

PRODUCT

TRPM3 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 TRPM3 shRNA Plasmid (h): sc-76759-SH and TRPM3 shRNA (h) Lentiviral Particles: sc-76759-V as alternate gene silencing products.

For independent verification of TRPM3 (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-76759A, sc-76759B and sc-76759C.

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

TRPM3 siRNA (h) is recommended for the inhibition of TRPM3 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 TRPM3 gene expression knockdown using RT-PCR Primer: TRPM3 (h)-PR: sc-76759-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.