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SANTA CRUZ BIOTECHNOLOGY, INC.

TRPM2 siRNA (m): sc-42675

BACKGROUND

Transient receptor potential ion channels (TRPC) are a superfamily of six transmembrane segment-spanning, gated cation channels. TRP subtypes mediate store-operated Ca^{2+} entry, a process involving Ca^{2+} influx and replenishment of Ca^{2+} stores formerly emptied through the action of inositol 1,4,5-trisphosphate production and other Ca^{2+} mobilizing agents. TRP ion channels influence calcium-depletion-induced calcium influx processes in response to chemo-, mechano- and osmo-regulatory events. TRPM2 (known also as LTRPC2) is highly expressed in brain as well as in bone marrow, spleen, heart, liver and lung. Activation of TRPM2 by oxidative stress or TNFa extends susceptibility to cell death. Three physiological splice variants of human TRPM2 have been identified. The short variant of TRPM2, with a deletion in the carboxy-terminus, has been shown to function as an inhibitor of activity of the full-length TRPM2.

REFERENCES

1. Zhu, X., et al. 1995. Molecular cloning of a widely expressed human homologue for the *Drosophila* TRP gene. FEBS Lett. 373: 193-198.
2. Wes, P.D., et al. 1995. TRPC1, a human homolog of a *Drosophila* store-operated channel. Proc. Natl. Acad. Sci. USA 92: 9652-9666.
3. Zitt, C., et al. 1996. Cloning and functional expression of a human Ca^{2+}-permeable cation channel activated by calcium store depletion. Neuron 16: 1189-1196.
4. D'Esposito, M., et al. 1998. Identification and assignment of the human transient receptor potential channel 6 gene TRPC6 to chromosome 11q2 → q22. Cytogenet. Cell Genet. 83: 46-47.
5. Nagamine, K., et al. 1998. Molecular cloning of a novel putative Ca^{2+} channel protein (TRPC7) highly expressed in brain. Genomics 54: 124-131.
6. Okada, T., et al. 1999. Molecular and functional characterization of a novel mouse transient receptor potential protein homologue TRP7. Ca^{2+}-permeable cation channel that is constitutively activated and enhanced by stimulation of G protein-coupled receptor. J. Biol. Chem. 274: 27359-27370.
7. Hofmann, T., et al. 2000. Transient receptor potential channels as molecular substrates of receptor-mediated cation entry. J. Mol. Med. 78: 14-25.

CHROMOSOMAL LOCATION

Genetic locus: Trpm2 (mouse) mapping to 10 C1.

PRODUCT

TRPM2 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 TRPM2 shRNA Plasmid (m): sc-42675-SH and TRPM2 shRNA (m) Lentiviral Particles: sc-42675-V as alternate gene silencing products.

For independent verification of TRPM2 (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-42675A, sc-42675B and sc-42675C.

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

TRPM2 siRNA (m) is recommended for the inhibition of TRPM2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TRPM2 gene expression knockdown using RT-PCR Primer: TRPM2 (m)-PR: sc-42675-PR (20 µl, 598 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Rah, S.Y., et al. 2010. Generation of cyclic ADP-ribose and nicotinic acid adenine dinucleotide phosphate by CD38 for Ca^{2+} signaling in interleukin-8-treated lymphokine-activated killer cells. J. Biol. Chem. 285: 21877-21887.

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.