SANTA CRUZ BIOTECHNOLOGY, INC.

KCNT2 siRNA (m): sc-146374

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The Power to Question

BACKGROUND

Voltage-gated K^+ channels in the plasma membrane are important regulators of electrical signaling, controlling the repolarization and the frequency of action potentials in neurons, muscles and other excitable cells. KCNT2 (Potassium channel subfamily T member 2), also known as Sequence like an intermediate conductance potassium channel subunit (SLICK) and Sodium and chloride-activated ATP-sensitive potassium channel Slo2.1, is a 1,135 amino acid multi-pass transmembrane protein belonging to the potassium channel family (calcium-activated subfamily) of proteins. KCNT2 produces rapidly activating outward rectifier potassium currents in reponse to high intracellular sodium and chloride levels. Its channel activity is inhibited by ATP, inhalation anesthetics, such as isoflourane, and upon stimulation of G protein-coupled receptors, such as mAChR M1 and GluR-1. There are four isoforms of KCNT2 that are produced as a result of alternative splicing events.

REFERENCES

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2. Lin, Y.W., MacMullen, C., Ganguly, A., Stanley, C.A. and Shyng, S.L. 2006. A novel KCNJ11 mutation associated with congenital hyperinsulinism reduces the intrinsic open probability of β-cell ATP-sensitive potassium channels. J. Biol. Chem. 281: 3006-3012.
3. Santi, C.M., Ferreira, G., Yang, B., Gazula, V.R., Butler, A., Wei, A., Kaczmarek, L.K. and Salkoff, L. 2006. Opposite regulation of Slick and Slack K^+ channels by neuromodulators. J. Neurosci. 26: 5059-5068.
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5. Fleming, M.R. and Kaczmarek, L.K. 2009. Use of optical biosensors to detect modulation of Slack potassium channels by G protein-coupled receptors. J. Recept. Signal Transduct. Res. 29: 173-181.
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CHROMOSOMAL LOCATION

Genetic locus: Kcnt2 (mouse) mapping to 1 F.

PRODUCT

KCNT2 siRNA (m) is a target-specific 19-25 nt siRNA 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 KCNT2 shRNA Plasmid (m): sc-146374-SH and KCNT2 shRNA (m) Lentiviral Particles: sc-146374-V as alternate gene silencing products.

PROTOCOLS

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

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

KCNT2 siRNA (m) is recommended for the inhibition of KCNT2 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 KCNT2 gene expression knockdown using RT-PCR Primer: KCNT2 (m)-PR: sc-146374-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.