SANTA CRUZ BIOTECHNOLOGY, INC.

# KCNT1 siRNA (m): sc-146373

## 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. KCNT1 (potassium channel, subfamily T, member 1), also known as KCa4.1, is a multi-pass membrane protein belonging to the potassium channel family (calcium-activated subfamily) of proteins. KCNT1 is predominantly expressed in brain, spinal cord and liver localizing to the cell membrane. It contains one RCK domain at the N-terminus and can be phosphorylated at the C-terminus by PKC. The phosphorylation acts to increase channel activity. In addition, KCNT1 activity can be regulated by intracellular calcium levels. KCNT1 produces an outwardly rectifying current and may assemble with other Slo-type channel subunits. Two KCNT1 isoforms exist due to alternative splicing events.

## REFERENCES


1. Coleman, S.K., et al. 1999. Subunit composition of KV1 channels in human CNS. J. Neurochem. 73: 849-858.
2. Nagase, T., et al. 2000. Prediction of the coding sequences of unidentified human genes. XVI. The complete sequences of 150 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 7: 65-73.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608167: World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Morton, M.J., et al. 2004. Human podocytes possess a stretch-sensitive, $Ca^{2+}$-activated $K^+$ channel: potential implications for the control of glomerular filtration. J. Am. Soc. Nephrol. 15: 2981-2987.
5. Wei, A.D., et al. 2005. International Union of Pharmacology. LII. Nomenclature and molecular relationships of calcium-activated potassium channels. Pharmacol. Rev. 57: 463-472.


## CHROMOSOMAL LOCATION

Genetic locus: Kcnt1 (mouse) mapping to 2 A3.

## PRODUCT

KCNT1 siRNA (m) is a pool of 2 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 KCNT1 shRNA Plasmid (m): sc-146373-SH and KCNT1 shRNA (m) Lentiviral Particles: sc-146373-V as alternate gene silencing products.

For independent verification of KCNT1 (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-146373A and sc-146373B.

## PROTOCOLS

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

## APPLICATIONS

KCNT1 siRNA (m) is recommended for the inhibition of KCNT1 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 KCNT1 gene expression knockdown using RT-PCR Primer: KCNT1 (m)-PR: sc-146373-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## 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.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.