SANTA CRUZ BIOTECHNOLOGY, INC.

KCNMB3 siRNA (h): sc-78541

BACKGROUND

MaxiK channels are large conductance voltage and Ca^{2+}-activated potassium channels which are formed by tetramers of MaxiKα subunits, which create pores that are used for smooth muscle tone and neuronal excitability. These MaxiKα subunits have the ability to coassemble with MaxiKβ subunits that are structurally related and are able to regulate the function of MaxiKα subunits. KCNMB3 (potassium large conductance calcium-activated channel, subfamily M β member 3) is also known as Slo-β3, K(VCA)β-3, Hβ3 or BKβ3 (BK channel subunit β-3) and is a 279 amino acid MaxiKβ subunit that is localized to the membrane with 2 transmembrane spanning domains, typical of MaxiKβ subunits. KCNMB3 exists as 4 isoforms and is expressed in a variety of tissues in an isoform-dependent manner. Isoforms 1, 3 and 4 have a wide range of expression, with isoforms 1 and 3 being highly expressed in pancreas and testis, in contrast to isoform 2 which is expressed in placenta, pancreas, kidney and heart. KCNMB3 affects MaxiK channels by allowing slightly faster activation rates of currents, leading to faster cellular excitability. However, KCNMB3 is also able to inactivate MaxiK channels which is an ability that is coded for in the 33 amino acid N-terminal region of the KCNMB3 protein. The human KCNMB3 gene is located on a region of chromosome 3 (specifically 3q26.2-3q27) that is thought to be implicated in the pathogenesis of neurological abnormalities.

REFERENCES

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CHROMOSOMAL LOCATION

Genetic locus: KCNMB3 (human) mapping to 3q26.32.

PRODUCT

KCNMB3 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 KCNMB3 shRNA Plasmid (h): sc-78541-SH and KCNMB3 shRNA (h) Lentiviral Particles: sc-78541-V as alternate gene silencing products.

For independent verification of KCNMB3 (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-78541A, sc-78541B and sc-78541C.

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

KCNMB3 siRNA (h) is recommended for the inhibition of KCNMB3 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 KCNMB3 gene expression knockdown using RT-PCR Primer: KCNMB3 (h)-PR: sc-78541-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.