

KCNMB3 siRNA (m): sc-146369

BACKGROUND

MaxiK channels are large conductance voltage and Ca^{2+} -activated potassium channels which are formed by tetramers of MaxiK α subunits, which create pores that are used for smooth muscle tone and neuronal excitability. These MaxiK α subunits have the ability to coassemble with MaxiK β subunits that are structurally related and are able to regulate the function of MaxiK α subunits. KCNMB3 (potassium large conductance calcium-activated channel, subfamily M β member 3) is also known as Slo- β -3, K(VCA) β -3, H β 3 or BK β 3 (BK channel subunit β -3) and is a 279 amino acid MaxiK β subunit that is localized to the membrane with two transmembrane spanning domains, typical of MaxiK β subunits. KCNMB3 exists as four 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 (mouse) mapping to 3 A3.

PRODUCT

KCNMB3 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 KCNMB3 shRNA Plasmid (m): sc-146369-SH and KCNMB3 shRNA (m) Lentiviral Particles: sc-146369-V as alternate gene silencing 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

KCNMB3 siRNA (m) is recommended for the inhibition of KCNMB3 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 KCNMB3 gene expression knockdown using RT-PCR Primer: KCNMB3 (m)-PR: sc-146369-PR (20 μl). Annealing temperature for the primers should be $55-60^{\circ}\text{C}$ and the extension temperature should be $68-72^{\circ}\text{C}$.

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.