SANTA CRUZ BIOTECHNOLOGY, INC.

KCNH4 siRNA (m): sc-146364

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The Power to Question

BACKGROUND

Voltage-gated potassium channels play an essential role in controlling cellular excitability in the nervous system. They regulate a variety of properties including membrane potential as well as the frequency and structure of action potentials. KCNH4 (potassium voltage-gated channel, subfamily H (eag-related), member 4), also known as BEC2, ELK1 or voltage-gated potassium channel subunit Kv12.3, is a 1,017 amino acid multi-pass membrane protein that belongs to the potassium channel family and H (Eag) (TC 1.A.1.20) subfamily. Containing one cyclic nucleotide-binding domain, a PAC (PAS-associated C-terminal) domain and a PAS (PER-ARNT-SIM) domain, KCNH4 is a pore-forming α subunit to voltage-gated potassium channels. The gene encoding KCNH4 maps to human chromosome 17q21.2 and mouse chromosome 11 D, and is brain specific.

REFERENCES

1. Occhiodoro, T., Bernheim, L., Liu, J.H., Bijlenga, P., Sinnreich, M., Bader, C.R. and Fischer-Lougheed, J. 1998. Cloning of a human ether-a-go-go potassium channel expressed in myoblasts at the onset of fusion. FEBS Lett. 434: 177-182.
2. Miyake, A., Mochizuki, S., Yokoi, H., Kohda, M. and Furuichi, K. 1999. New ether-à-go-go K^+ channel family members localized in human telencephalon. J. Biol. Chem. 274: 25018-25025.
3. Ju, M. and Wray, D. 2002. Molecular identification and characterisation of the human eag2 potassium channel. FEBS Lett. 524: 204-210.
4. Zou, A., Lin, Z., Humble, M., Creech, C.D., Wagoner, P.K., Krafte, D., Jegla, T.J. and Wickenden, A.D. 2003. Distribution and functional properties of human KCNH8 (Elk1) potassium channels. Am. J. Physiol., Cell Physiol. 285: C1356-C1366.
5. Ju, M. and Wray, D. 2006. Molecular regions responsible for differences in activation between heag channels. Biochem. Biophys. Res. Commun. 342: 1088-1097.

CHROMOSOMAL LOCATION

Genetic locus: Kcnh4 (mouse) mapping to 11 D.

PRODUCT

KCNH4 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 KCNH4 shRNA Plasmid (m): sc-146364-SH and KCNH4 shRNA (m) Lentiviral Particles: sc-146364-V as alternate gene silencing products.

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.

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

KCNH4 siRNA (m) is recommended for the inhibition of KCNH4 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 KCNH4 gene expression knockdown using RT-PCR Primer: KCNH4 (m)-PR: sc-146364-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.