SANTA CRUZ BIOTECHNOLOGY, INC.

KCNH5 siRNA (m): sc-75371

SANTA CRUZ BIOTECHNOLOGY

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. KCNH5, also called potassium voltage-gated channel subfamily H member 5 or human ether-a-go-go potassium channel 2 (hEAG2), is the α subunit of a multi-pass transmembrane potassium channel family. KCNH5 functions in forming the pore of the voltage-gated channel. The channel itself is a homo- or heterotetrameric structure of α subunits that associates with modulating β subunits. KCNH5 is expressed in a wide variety of tissues including brain, skeletal muscle, heart, placenta, lung, liver, and to a lesser extent, kidney.

REFERENCES

1. Occhiodoro, T., et al. 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. Schönherr, R., et al. 2002. Functional distinction of human EAG1 and EAG2 potassium channels. FEBS Lett. 514: 204-208.
3. Ju, M. and Wray, D. 2002. Molecular identification and characterisation of the human EAG2 potassium channel. FEBS Lett. 524: 204-210.
4. Ju, M. and Wray, D. 2006. Molecular regions responsible for differences in activation between heag channels. Biochem. Biophys. Res. Commun. 342: 1088-1097.
5. Mareschi, K., et al. 2006. Neural differentiation of human mesenchymal stem cells: evidence for expression of neural markers and eag K^+ channel types. Exp. Hematol. 34: 1563-1572.

CHROMOSOMAL LOCATION

Genetic locus: Kcnh5 (mouse) mapping to 12 C3.

PRODUCT

KCNH5 siRNA (m) 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 KCNH5 shRNA Plasmid (m): sc-75371-SH and KCNH5 shRNA (m) Lentiviral Particles: sc-75371-V as alternate gene silencing products.

For independent verification of KCNH5 (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-75371A, sc-75371B and sc-75371C.

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

KCNH5 siRNA (m) is recommended for the inhibition of KCNH5 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.

GENE EXPRESSION MONITORING

KCNH5 (A-6): sc-393777 is recommended as a control antibody for monitoring of KCNH5 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor KCNH5 gene expression knockdown using RT-PCR Primer: KCNH5 (m)-PR: sc-75371-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.