SANTA CRUZ BIOTECHNOLOGY, INC.

KChIP1 siRNA (h): sc-42400

BACKGROUND

In the brain and heart, rapidly inactivating (A-type) voltage-gated potassium (Kv) currents control the excitability of neurons and cardiac myocytes. KChIPs are Kv channel-interacting proteins that bind to the cytoplasmic amino termini of Kv4α-subunits and are integral components of native Kv4 channel complexes. KChIP family members include KChIP1 expressed in brain, KChIP2 expressed in heart, brain, and lung, and KChIP3 (previously identified as calsenilin) expressed in brain and testis. In rat brain, KChIP1 co-localizes with Kv4.3 in granule cells and KChIP2 co-localizes with Kv4.2 in both neocoritcal and subcortical structures. The KChIPs are members of the recoverin/neuronal calcium sensor-1 subfamily of calcium-binding proteins and show 99% nucleotide homology to DREAM, suggesting that KChIPs may have activity beyond modulation of Kv4 channels.

REFERENCES

1. Nef, P., et al. 1996. Neuron specific calcium sensors (the NCS subfamily). In Celio, M.R., ed., Guidebook to the Calcium-Binding Proteins. New York: Oxford Univ. Press, 94-97.
2. Dixon, J.E., et al. 1996. Role of the Kv4.3 K^+ channel in ventricular muscle. A molecular correlate for the transient outward current. Circ. Res. 79: 659-668.
3. Hoffman, D.A., et al. 1997. K^+ channel regulation of signal propagation in dendrites of hippocampal pyramidal neurons. Nature 387: 869-875.
4. Buxbaum, J.D., et al. 1998. Calsenilin: a calcium-binding protein that interacts with the presenilins and regulates the levels of a presenilin fragment. Nat. Med. 4: 1177-1181.
5. An, W.F., et al. 2000. Modulation of A-type potassium channels by a family of calcium sensors. Nature 403: 553-556.

CHROMOSOMAL LOCATION

Genetic locus: KCNIP1 (human) mapping to 5q35.1.

PRODUCT

KChIP1 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 KChIP1 shRNA Plasmid (h): sc-42400-SH and KChIP1 shRNA (h) Lentiviral Particles: sc-42400-V as alternate gene silencing products.

For independent verification of KChIP1 (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-42400A, sc-42400B and sc-42400C.

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

KChIP1 siRNA (h) is recommended for the inhibition of KChIP1 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 KChIP1 gene expression knockdown using RT-PCR Primer: KChIP1 (h)-PR: sc-42400-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.