

# KChIP2 siRNA (h): sc-42402

## 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 Kv4 $\alpha$ -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 colocalizes with Kv4.3 in granule cells and KChIP2 colocalizes with Kv4.2 in both neocortical 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

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3. Hoffman, D.A., Magee, J.C., Colbert, C.M. and Johnston, D.K. 1997. K<sup>+</sup> channel regulation of signal propagation in dendrites of hippocampal pyramidal neurons. *Nature* 387: 869-875.
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5. An, W.F., Bowlby, M.R., Betty, M., Cao, J., Ling, H-P., Mendoza, G., Hinson, J.W., Mattsson, K.I., Strassle, B.W., Trimmer, J.S. and Rhodes, K.J. 2000. Modulation of A-type potassium channels by a family of calcium sensors. *Nature* 403: 553-556.

## CHROMOSOMAL LOCATION

Genetic locus: KCNP2 (human) mapping to 10q24.32.

## PRODUCT

KChIP2 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see KChIP2 shRNA Plasmid (h): sc-42402-SH and KChIP2 shRNA (h) Lentiviral Particles: sc-42402-V as alternate gene silencing products.

For independent verification of KChIP2 (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-42402A, sc-42402B and sc-42402C.

## PROTOCOLS

See our web site at [www.scbt.com](http://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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

KChIP2 siRNA (h) is recommended for the inhibition of KChIP2 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  $\mu$ M in 66  $\mu$ l. 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

KChIP2 (9K9): sc-134371 is recommended as a control antibody for monitoring of KChIP2 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor KChIP2 gene expression knockdown using RT-PCR Primer: KChIP2 (h)-PR: sc-42402-PR (20  $\mu$ l, 566 bp). 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.