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KChIP4 siRNA (h): sc-45837

BACKGROUND

The downstream regulatory element, DRE, acts as a location-dependent gene silencer. DREAM (for DRE-antagonist modulator) is a Ca^{2+} -regulated transcriptional repressor that specifically binds to the DRE. DREAM regulates transcription of prodynorphin and c-Fos genes and shows 99% nucleotide homology to the Kv channel-interacting proteins (KChIPs). KChIP family members include KChIP1, which is expressed in brain, KChIP2, which is expressed in heart, brain and lung, KChIP3 (also designated calsenilin), which is expressed in brain and testis, and KChIP4.

REFERENCES

1. Xiong, H., et al. 2004. Differential distribution of KChIPs mRNAs in adult mouse brain. *Brain. Res. Mol. Brain. Res.* 128: 103-111.
2. Link, W.A., et al. 2004. Day-night changes in downstream regulatory element antagonist modulator/potassium channel interacting protein activity contribute to circadian gene expression in pineal gland. *J. Neurosci.* 24: 5346-5355.
3. Rhodes, K.J., et al. 2004. KChIPs and Kv4 α subunits as integral components of A-type potassium channels in mammalian brain. *J. Neurosci.* 24: 7903-7915.
4. Baranauskas, G., et al. 2004. Cell-type-specific splicing of KChIP4 mRNA correlates with slower kinetics of A-type current. *Eur. J. Neurosci.* 20: 385-391.
5. Lin, Y.L., et al. 2004. Evidence showing an intermolecular interaction between KChIP proteins and Taiwan cobra cardiotoxins. *Biochem. Biophys. Res. Commun.* 319: 720-724.
6. Zhou, W., et al. 2004. Structural insights into the functional interaction of KChIP1 with Shal-type K⁺ channels. *Neuron* 41: 573-586.

CHROMOSOMAL LOCATION

Genetic locus: KCNIP4 (human) mapping to 4p15.31.

PRODUCT

KChIP4 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see KChIP4 shRNA Plasmid (h): sc-45837-SH and KChIP4 shRNA (h) Lentiviral Particles: sc-45837-V as alternate gene silencing products.

For independent verification of KChIP4 (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-45837A, sc-45837B and sc-45837C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog 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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

KChIP4 siRNA (h) is recommended for the inhibition of KChIP4 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 μ M in 66 μ 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

KChIP4 (H-1): sc-373732 is recommended as a control antibody for monitoring of KChIP4 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor KChIP4 gene expression knockdown using RT-PCR Primer: KChIP4 (h)-PR: sc-45837-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.