

## KChIP1 (E-13): sc-26465

### 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

1. Nef, P., 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., Shi, W., Wang, H.S., McDonald, C., Yu, H., Wymore, R.S., Cohen, I.S. and McKinnon, D. 1996. Role of the Kv4.3 K<sup>+</sup> channel in ventricular muscle. A molecular correlate for the transient outward current. *Circ. Res.* 79: 659-668.
3. Hoffman, D.A., Magee, J.C., Colbert, C.M. and Johnston, D. 1997. K<sup>+</sup> channel regulation of signal propagation in dendrites of hippocampal pyramidal neurons. *Nature* 387: 869-875.
4. Buxbaum, J.D., Choi, E.K., Luo, Y., Lilliehook, C., Crowley, A.C., Merriam, D.E. and Wasco, W. 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; Kcnp1 (mouse) mapping to 11 A4.

### SOURCE

KChIP1 (E-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of KChIP1 of human origin.

### PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-26465 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

### APPLICATIONS

KChIP1 (E-13) is recommended for detection of KChIP1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

KChIP1 (E-13) is also recommended for detection of KChIP1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for KChIP1 siRNA (h): sc-42400, KChIP1 siRNA (m): sc-42401, KChIP1 shRNA Plasmid (h): sc-42400-SH, KChIP1 shRNA Plasmid (m): sc-42401-SH, KChIP1 shRNA (h) Lentiviral Particles: sc-42400-V and KChIP1 shRNA (m) Lentiviral Particles: sc-42401-V.

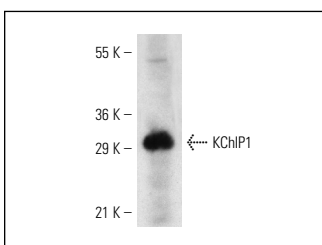
Molecular Weight of KChIP1: 32 kDa.

Positive Controls: rat small intestine extract: sc-364811 or mouse brain extract: sc-2253.

### RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

### DATA



KChIP1 (E-13): sc-26465. Western blot analysis of KChIP1 expression in rat small intestine tissue extract.

### RESEARCH USE

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

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.