SANTA CRUZ BIOTECHNOLOGY, INC.

KV1.5 (K-16): sc-11677

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Voltage-gated K^+ channels in the plasma membrane control the repolarization and the frequency of action potentials in neurons, muscles, and other excitable cells. The KV gene family encodes more than 30 genes that comprise the subunits of the K^+ channels, and they vary in their gating and permeation properties, subcellular distribution, and expression patterns. Functional KV channels assemble as tetramers consisting of pore-forming α-subunits (KV), which include the KV1, KV2, KV3, and KV4 proteins, and accessory or KV-subunits that modify the gating properties of the coexpressed KV subunits. Differences exist in the patterns of trafficking, biosynthetic processing, and surface expression of the major KV1 subunits (KV1.1, KV1.2, and KV1.4) expressed in rat and human brain, suggesting that the individual protein subunits are highly regulated to control for the assembly and formation of functional neuronal channels.

REFERENCES

1. Deal, K.K., et al. 1994. The brain Kv1.1 potassium channel: *in vitro* and *in vivo* studies on subunit assembly and posttranslational processing. J. Neurosci. 14: 1666-1676.
2. Veh, R.W., et al. 1995. Immunohistochemical localization of five members of the Kv1 channel subunits: contrasting subcellular locations and neuron-specific co-localizations in rat brain. Eur. J. Neurosci. 7: 2189-2205.
3. Shi, G., et al. 1996. Beta subunits promote K^+ channel surface expression through effects early in biosynthesis. Neuron 16: 843-852.
4. Rhodes, K.J., et al. 1997. Association and colocalization of the Kvbeta1 and Kvbeta2 beta-subunits with KV1 alpha-subunits in mammalian brain K^+ channel complexes. J. Neurosci. 17: 8246-8258.
5. Coleman, S.K., et al. 1999. Subunit composition of Kv1 channels in human CNS. J. Neurochem. 73: 849-858.
6. Manganas, L.N., et al. 2000. Subunit composition determines Kv1 potassium channel surface expression. J. Biol. Chem. 275: 29685-29693.

SOURCE

KV1.5 (K-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of KV1.5 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-11677 P, (100 µg 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.

RESEARCH USE

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

APPLICATIONS

KV1.5 (K-16) is recommended for detection of KV1.5 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Suitable for use as control antibody for KV1.5 siRNA (m): sc-42717.

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) 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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.