

# KV $\beta$ .3 (L-21): sc-133716

## BACKGROUND

Voltage-gated K<sup>+</sup> 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 proteins that comprise the subunits of the K<sup>+</sup> 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  $\alpha$  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. KV $\beta$ .3 is an accessory K<sup>+</sup> channel protein which regulates the activity of the pore-forming  $\alpha$  subunit and alters the functional properties of Kv1.5. KV $\beta$ .3 localizes to the cytoplasm and is expressed in the brain, with highest expression detected in the cerebellum, and weakest expression seen in the frontal and temporal lobes. No KV $\beta$ .3 expression is detected in the heart, spinal cord, lung, liver, kidney, pancreas, placenta or skeletal muscle.

## REFERENCES

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- 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.
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- Rhodes, K.J., et al. 1997. Association and co-localization of the KV $\beta$ 1 and KV $\beta$ 2  $\beta$  subunits with KV1  $\alpha$  subunits in mammalian brain K<sup>+</sup> channel complexes. *J. Neurosci.* 17: 8246-8258.
- Coleman, S.K., et al. 1999. Subunit composition of KV1 channels in human CNS. *J. Neurochem.* 73: 849-858.
- Leicher, T., et al. 1999. Coexpression of the KCNA3B gene product with KV1.5 leads to a novel A-type potassium channel. *J. Biol. Chem.* 273: 35095-35101.
- Manganas, L.N., et al. 2000. Subunit composition determines KV1 potassium channel surface expression. *J. Biol. Chem.* 275: 29685-29693.

## CHROMOSOMAL LOCATION

Genetic locus: KCNAB3 (human) mapping to 17p13.1.

## SOURCE

KV $\beta$ .3 (L-21) is a Protein A purified rabbit polyclonal antibody raised against synthetic KV $\beta$ .3 peptide of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 ml PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

## RESEARCH USE

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

## APPLICATIONS

KV $\beta$ .3 (L-21) is recommended for detection of KV $\beta$ .3 of human and canine 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), immunohistochemistry (including paraffin-embedded sections) (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 KV $\beta$ .3 siRNA (h): sc-60905, KV $\beta$ .3 shRNA Plasmid (h): sc-60905-SH and KV $\beta$ .3 shRNA (h) Lentiviral Particles: sc-60905-V.

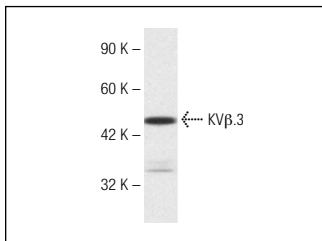
Molecular Weight of KV $\beta$ .3: 44 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

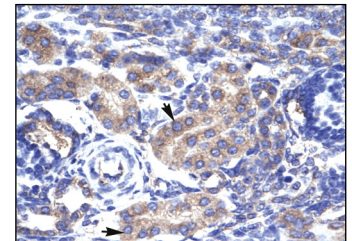
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

## DATA



KV $\beta$ .3 (L-21): sc-133716. Western blot analysis of KV $\beta$ .3 expression in Jurkat whole cell lysate.



KV $\beta$ .3 (L-21): sc-133716. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human kidney tissue showing cytoplasmic localization.

## STORAGE

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

## PROTOCOLS

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