

# KV1.1 (A-15): sc-11184

## 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 genes 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 poreforming  $\alpha$ -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. 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

- 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.
- 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.
- Shi, G., et al. 1996.  $\beta$  subunits promote K<sup>+</sup> channel surface expression through effects early in biosynthesis. *Neuron* 16: 843-852.
- Rhodes, K.J., et al. 1997. Association and colocalization 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.
- Manganas, L.N., et al. 2000. Subunit composition determines KV1 potassium channel surface expression. *J. Biol. Chem.* 275: 29685-29693.

## CHROMOSOMAL LOCATION

Genetic locus: KCNA1 (human) mapping to 12p13.32; Kcna5 (mouse) mapping to 6 F3.

## SOURCE

KV1.1 (A-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of KV1.1 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-11184 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

KV1.1 (A-15) is recommended for detection of KV1.1 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).

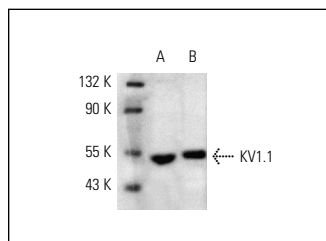
KV1.1 (A-15) is also recommended for detection of KV1.1 in additional species, including equine, canine and avian.

Suitable for use as control antibody for KV1.1 siRNA (h): sc-35766, KV1.1 siRNA (m): sc-35767, KV1.1 shRNA Plasmid (h): sc-35766-SH, KV1.1 shRNA Plasmid (m): sc-35767-SH, KV1.1 shRNA (h) Lentiviral Particles: sc-35766-V and KV1.1 shRNA (m) Lentiviral Particles: sc-35767-V.

Molecular Weight of KV1.1: 57-59 kDa.

Positive Controls: U-87 MG cell lysate: sc-2411 or H4 cell lysate: sc-2408.

## DATA



KV1.1 (A-15): sc-11184. Western blot analysis of KV1.1 expression in U-87 MG (A) and H4 (B) whole cell lysates

## SELECT PRODUCT CITATIONS

- Hernandez-Gonzalez, E.O., et al. 2005. Absence of Dp71 in mdx3cv mouse spermatozoa alters flagellar morphology and the distribution of ion channels and nNOS. *J. Cell Sci.* 118: 137-145.
- Rampino, T., et al. 2007. KCNA1 and TRPC6 ion channels and NHE1 exchanger operate the biological outcome of HGF/scatter factor in renal tubular cells. *Growth Factors* 25: 382-391.

## 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.



Try **KV1.1 (2D8): sc-293345**, our highly recommended monoclonal alternative to KV1.1 (A-15).