

KVβ.2 (N-15): sc-11190

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 the assembly and formation of functional neuronal channels. KVβ.2 can also be designated KCNAB2, KKvβ.2.1 or AKR6A5.

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. β subunits promote K⁺ channel surface expression through effects early in biosynthesis. *Neuron* 16: 843-852.
- Rhodes, K.J., et al. 1997. Association and colocalization of the Kvβ1 and Kvβ2 β-subunits with KV1 α-subunits in mammalian brain K⁺ 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 LOCATIONS

Genetic locus: KCNAB2 (human) mapping to 1p36.31; Kcnab2 (mouse) mapping to 4 E2.

SOURCE

KVβ.2 (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of KVβ.2 of human 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-11190 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

KVβ.2 (N-15) is recommended for detection of KVβ.2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

KVβ.2 (N-15) is also recommended for detection of KVβ.2 in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for KVβ.2 siRNA (h): sc-42727, KVβ.2 siRNA (m): sc-42728, KVβ.2 shRNA Plasmid (h): sc-42727-SH, KVβ.2 shRNA Plasmid (m): sc-42728-SH, KVβ.2 shRNA (h) Lentiviral Particles: sc-42727-V and KVβ.2 shRNA (m) Lentiviral Particles: sc-42728-V.

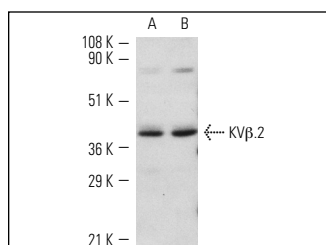
Molecular Weight of KVβ.2: 38 kDa.

Positive Controls: mouse brain extract: sc-2253 or rat brain extract: sc-2392 or KVβ.2 (h): 293T Lysate: sc-111792.

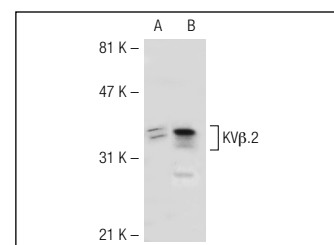
RECOMMENDED SECONDARY REAGENTS

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



KVβ.2 (N-15): sc-11190. Western blot analysis of KVβ.2 expression in rat (A) and mouse (B) brain tissue extracts.



KVβ.2 (N-15): sc-11190. Western blot analysis of KVβ.2 expression in non-transfected: sc-117752 (A) and human KVβ.2 transfected: sc-111792 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

- Cidad, P., et al. 2014. K⁺ channels expression in hypertension after arterial injury, and effect of selective Kv1.3 blockade with PAP-1 on intimal hyperplasia formation. *Cardiovasc. Drugs Ther.* 28: 501-511.

STORAGE

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