

KV β .2 (A-3): sc-393014

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 proteins 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. KV β .1 is an accessory K⁺ channel protein which regulates the activity of the pore-forming α subunit. It is expressed in the brain, with highest levels detected in the caudate nucleus, hippocampus and thalamus. KV β .1 is also expressed in the amygdala, subthalamic nucleus and in both healthy and cardiomyopathic heart, where it is up to four times more abundant in the left ventricle than in the left atrium.

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.
- 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 KV β 1 and KV β 2 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 LOCATION

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

SOURCE

KV β .2 (A-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 28-52 near the N-terminus of KV β .2 of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-393014 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

KV β .2 (A-3) is recommended for detection of KV β .2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ 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).

KV β .2 (A-3) is also recommended for detection of KV β .2 in additional species, including canine, bovine and porcine.

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

Molecular Weight of KV β .2: 38 kDa.

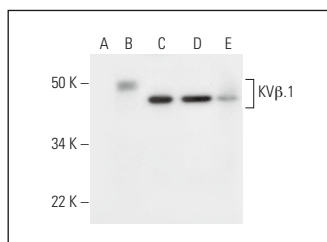
Positive Controls: KV β .1 (m): 293T Lysate: sc-121258, mouse brain extract: sc-2253 or rat brain extract: sc-2392.

RECOMMENDED SUPPORT REAGENTS

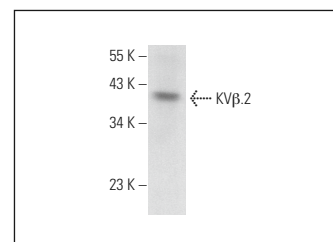
To ensure optimal results, the following support reagents are recommended:

- Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.
- Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).
- Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



KV β .2 (A-3): sc-393014. Western blot analysis of KV β .1 expression in non-transfected: sc-117752 (A) and mouse KV β .1 transfected: sc-121258 (B) 293T whole cell lysates and mouse brain (C), rat brain (D) and human hippocampus (E) tissue extracts.



KV β .2 (A-3): sc-393014. Western blot analysis of KV β .2 expression in rat hippocampus tissue extract.

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.