

KV4.2/4.3 (H-225): sc-28634

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 β 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. β subunits promote K⁺ channel surface expression through effects early in biosynthesis. *Neuron* 16: 843-852.

SOURCE

KV4.2/4.3 (H-225) is a rabbit polyclonal antibody raised against amino acids 406-630 mapping within a C-terminal cytoplasmic domain of KV4.2 of human origin.

PRODUCT

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

APPLICATIONS

KV4.2/4.3 (H-225) is recommended for detection of KV4.2, KV4.3 and to a lesser extent, KV4.1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

KV4.2/4.3 (H-225) is also recommended for detection of KV4.2, KV4.3, and to a lesser extent, KV4.1 in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of KV4.2: 71 kDa.

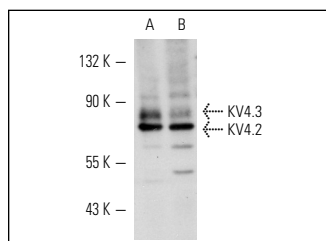
Molecular Weight of KV4.3: 73 kDa.

Positive Controls: mouse brain extract: sc-2253 or rat brain extract: sc-2392.

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.

DATA



KV4.2/4.3 (H-225): sc-28634. Western blot analysis of KV4.2/4.3 expression in mouse (A) and rat (B) brain tissue extracts.

SELECT PRODUCT CITATIONS

1. Johenning, F.W., et al. 2009. Dendritic compartment and neuronal output mode determine pathway-specific long-term potentiation in the piriform cortex. *J. Neurosci.* 29: 13649-13661.
2. Chavira-Suarez, E., et al. 2011. Expression and high glucose-mediated regulation of K⁺ channel interacting protein 3 (KCHIP3) and KV4 channels in retinal Müller glial cells. *Biochem. Biophys. Res. Commun.* 404: 678-683.
3. Iqbal, J., et al. 2012. Potassium and ANO1/ TMEM16A chloride channel profiles distinguish atypical and typical smooth muscle cells from interstitial cells in the mouse renal pelvis. *Br. J. Pharmacol.* 165: 2389-2408.
4. Li, S., et al. 2012. Olfaxin as a novel Prune2 isoform predominantly expressed in olfactory system. *Brain Res.* 1488: 1-13.

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.

MONOS
Satisfaction
Guaranteed

Try **KV4.2/4.3 (H-5): sc-390571**, our highly recommended monoclonal alternative to KV4.2/4.3 (H-225).