SANTA CRUZ BIOTECHNOLOGY, INC.

KV1.3 (G-9): sc-398855

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 (KVα), which include the KV1, KV2, KV3, and KV4 proteins, and accessory or KVβ subunits that modify the gating properties of the coexpressed KVα subunits. Differences exist in the patterns of trafficking, biosynthetic processing and surface expression of the major KV1 subunits (KV1.1, KV1.2, KV1.4, KV1.5 and KV1.6) 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.
4. 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.
5. Coleman, S.K., et al. 1999. Subunit composition of KV1 channels in human CNS. J. Neurochem. 73: 849-858.
6. Manganas, L.N., et al. 2000. Subunit composition determines KV1 potassium channel surface expression. J. Biol. Chem. 275: 29685-29693.

CHROMOSOMAL LOCATION

Genetic locus: KCNA3 (human) mapping to 1p13.3; Kcna3 (mouse) mapping to 3 F2.3.

SOURCE

KV1.3 (G-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 535-556 within a C-terminal cytoplasmic domain of KV1.3 of human origin.

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 for detailed protocols and support products.

PRODUCT

Each vial contains 200 µg IgG_3 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-398855 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

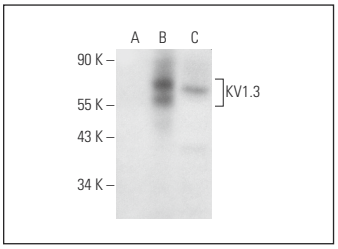
KV1.3 (G-9) is recommended for detection of KV1.3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for KV1.3 siRNA (h): sc-42712, KV1.3 siRNA (m): sc-42713, KV1.3 siRNA (r): sc-270019, KV1.3 shRNA Plasmid (h): sc-42712-SH, KV1.3 shRNA Plasmid (m): sc-42713-SH, KV1.3 shRNA Plasmid (r): sc-270019-SH, KV1.3 shRNA (h) Lentiviral Particles: sc-42712-V, KV1.3 shRNA (m) Lentiviral Particles: sc-42713-V and KV1.3 shRNA (r) Lentiviral Particles: sc-270019-V.

Molecular Weight of KV1.3: 67 kDa.

Positive Controls: KV1.3 (h2): 293T Lysate: sc-159570 or Jurkat whole cell lysate: sc-2204.

DATA



KV1.3 (G-9): sc-398855. Western blot analysis of KV1.3 expression in non-transfected 293T: sc-117752 (**A**), human KV1.3 transfected 293T: sc-159570 (**B**) and Jurkat (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Jayanthi, S., et al. 2020. A single prior injection of methamphetamine enhances methamphetamine self-administration (SA) and blocks SA-induced changes in DNA methylation and mRNA expression of potassium channels in the rat nucleus accumbens. Mol. Neurobiol. 57: 1459-1472.
2. Triantafilou, K., et al. 2021. Differential recognition of HIV-stimulated IL-1β and IL-18 secretion through NLR and NAIP signalling in monocyte-derived macrophages. PLoS Pathog. 17: e1009417.

RESEARCH USE

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