SANTA CRUZ BIOTECHNOLOGY, INC.

KV1.2 (S-14): sc-11188

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 (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

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 KV1α-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: KCNA2 (human) mapping to 1p13.3; Kcna2 (mouse) mapping to 3 F2.3.

SOURCE

KV1.2 (S-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of KV1.2 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-11188 P, (100 µg 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

KV1.2 (S-14) is recommended for detection of KV1.2 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

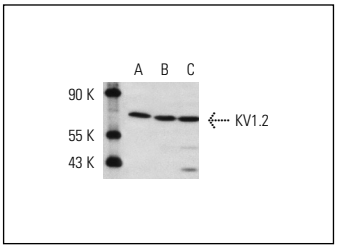
KV1.2 (S-14) is also recommended for detection of KV1.2 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for KV1.2 siRNA (h): sc-42710, KV1.2 siRNA (m): sc-42711, KV1.2 siRNA (r): sc-270344, KV1.2 shRNA Plasmid (h): sc-42710-SH, KV1.2 shRNA Plasmid (m): sc-42711-SH, KV1.2 shRNA Plasmid (r): sc-270344-SH, KV1.2 shRNA (h) Lentiviral Particles: sc-42710-V, KV1.2 shRNA (m) Lentiviral Particles: sc-42711-V and KV1.2 shRNA (r) Lentiviral Particles: sc-270344-V.

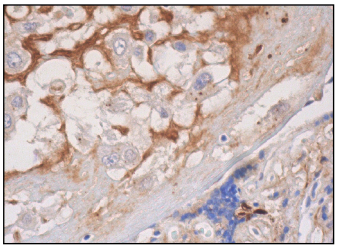
Molecular Weight of KV1.2: 70 kDa.

Positive Controls: U-87 MG cell lysate: sc-2411, SK-N-SH cell lysate: sc-2410 or CCRF-CEM cell lysate: sc-2225.

DATA



KV1.2 (S-14): sc-11188. Western blot analysis of KV1.2 expression in U 87 MG (**A**), SK-N-SH (**B**) and CCRF-CEM (**C**) whole cell lysates.



KV1.2 (S-14): sc-11188. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing membrane and cytoplasmic staining of trophoblastic cells and decidual cells.

SELECT PRODUCT CITATIONS

1. Fukui, I., et al. 2004. Tonotopic gradients of membrane and synaptic properties for neurons of the chicken nucleus magnocellularis. J. Neurosci. 24: 7514-7523.
2. Kuba, H., et al. 2005. Tonotopic specialization of auditory coincidence detection in nucleus laminaris of the chick. J. Neurosci. 25: 1924-1934.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.