

KV1.3 (h2): 293T Lysate: sc-159570

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 α), which include the KV1, KV2, KV3 and KV4 proteins, and accessory or KV β subunits that modify the gating properties of the coexpressed KV α 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 KV β 1 and KV β 2 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.

PRODUCT

KV1.3 (h2): 293T Lysate represents a lysate of human KV1.3 transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

KV1.3 (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive KV1.3 antibodies. Recommended use: 10-20 μ l per lane.

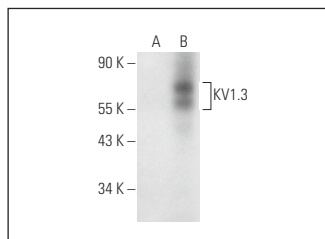
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

KV1.3 (G-9): sc-398855 is recommended as a positive control antibody for Western Blot analysis of enhanced human KV1.3 expression in KV1.3 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

DATA



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

RESEARCH USE

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

PROTOCOLS

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