

# KV1.7 (E-15): sc-132318

## BACKGROUND

Voltage-gated K<sup>+</sup> 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<sup>+</sup> channels which vary in their gating and permeation properties, subcellular distribution and expression patterns. Functional KV channels assemble as tetramers consisting of pore-forming  $\alpha$ -subunits (KV $\alpha$ ), which include the KV1, KV2, KV3 and KV4 proteins, and accessory or KV $\beta$  subunits that modify the gating properties of the coexpressed KV $\alpha$  subunits. KV1.7 is a 456 amino acid voltage-gated K<sup>+</sup> channel protein highly expressed in heart, skeletal muscle and kidney. The tail of KV1.7 is thought to modulate channel activity while the N-terminus may be important for the activation rate of the channel.

## REFERENCES

1. Kalman, K., et al. 1998. Genomic organization, chromosomal localization, tissue distribution, and biophysical characterization of a novel mammalian shaker-related voltage-gated potassium channel, Kv1.7. *J. Biol. Chem.* 273: 5851-5857.
2. Kashuba, V.I., et al. 2001. Initial isolation and analysis of the human Kv1.7 (KCNA7) gene, a member of the voltage-gated potassium channel gene family. *Gene* 268: 115-122.
3. Bardien-Kruger, S., et al. 2002. Characterisation of the human voltage-gated potassium channel gene, KCNA7, a candidate gene for inherited cardiac disorders, and its exclusion as cause of progressive familial heart block I (PFHBI). *Eur. J. Hum. Genet.* 10: 36-43.
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6. Gutman, G.A., et al. 2005. International union of pharmacology. LIII. Nomenclature and molecular relationships of voltage-gated potassium channels. *Pharmacol. Rev.* 57: 473-508.
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## CHROMOSOMAL LOCATION

Genetic locus: KCNA7 (human) mapping to 19q13.33; Kcna7 (mouse) mapping to 7 B4.

## SOURCE

KV1.7 (E-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of KV1.7 of human origin.

## RESEARCH USE

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

## PRODUCT

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

Blocking peptide available for competition studies, sc-132318 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

KV1.7 (E-15) is recommended for detection of KV1.7 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

KV1.7 (E-15) is also recommended for detection of KV1.7 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for KV1.7 siRNA (h): sc-97461, KV1.7 siRNA (m): sc-146611, KV1.7 shRNA Plasmid (h): sc-97461-SH, KV1.7 shRNA Plasmid (m): sc-146611-SH, KV1.7 shRNA (h) Lentiviral Particles: sc-97461-V and KV1.7 shRNA (m) Lentiviral Particles: sc-146611-V.

Molecular Weight of KV1.7: 50 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.