SANTA CRUZ BIOTECHNOLOGY, INC.

KCNH7 (C-15): sc-161090

BACKGROUND

Voltage-gated potassium channels play an essential role in controlling cellular excitability in the nervous system. They regulate a variety of properties, including membrane potential and the frequency and structure of action potentials. KCNH7 (potassium voltage-gated channel subfamily H member 7), also known as ERG-3 (ether-a-go-go-related gene potassium channel 3), or Kv11.3 (voltage-gated potassium channel subunit Kv11.3), is a 1,196 amino acid multi-pass membrane protein that is expressed in prolactin-secreting adenomas and belongs to the potassium channel family. Containing one cyclic nucleotide-binding domain, a PAC (PAS-associated C-terminal) domain, and a PAS (PER-ARNT-SIM) domain, KCNH7 is a member of the pore-forming α subunit of the voltage-gated potassium channel. Existing as two alternatively spliced isoforms, the gene encoding KCNH7 maps to human chromosome 2q24.2 and mouse chromosome 2 C1.3.

REFERENCES

1. Occhiodoro, T., et al. 1998. Cloning of a human ether-a-go-go potassium channel expressed in myoblasts at the onset of fusion. FEBS Lett. 434: 177-182.
2. Miyake, A., et al. 1999. New ether-à-go-go K^+ channel family members localized in human telencephalon. J. Biol. Chem. 274: 25018-25025.
3. Ju, M., et al. 2002. Molecular identification and characterisation of the human eag2 potassium channel. FEBS Lett. 524: 204-210.
4. Zou, A., et al. 2003. Distribution and functional properties of human KCNH8 (Elk1) potassium channels. Am. J. Physiol., Cell Physiol. 285: C1356-C1366.
5. Bauer, C.K., et al. 2003. HERG K^+ currents in human prolactin-secreting adenoma cells. Pflugers Arch. 445: 589-600.
6. Ju, M., et al. 2006. Molecular regions responsible for differences in activation between heag channels. Biochem. Biophys. Res. Commun. 342: 1088-1097.
7. Couturier, N., et al. 2009. IFIH1-GCA-KCNH7 locus is not associated with genetic susceptibility to multiple sclerosis in French patients. Eur. J. Hum. Genet. 17: 844-847.

CHROMOSOMAL LOCATION

Genetic locus: KCNH7 (human) mapping to 2q24.2; Kcnh7 (mouse) mapping to 2 C1.3.

SOURCE

KCNH7 (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of KCNH7 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-161090 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

KCNH7 (C-15) is recommended for detection of KCNH7 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); non cross-reactive with other KCNH family members.

KCNH7 (C-15) is also recommended for detection of KCNH7 in additional species, including canine.

Suitable for use as control antibody for KCNH7 siRNA (h): sc-94618, KCNH7 siRNA (m): sc-146366, KCNH7 shRNA Plasmid (h): sc-94618-SH, KCNH7 shRNA Plasmid (m): sc-146366-SH, KCNH7 shRNA (h) Lentiviral Particles: sc-94618-V and KCNH7 shRNA (m) Lentiviral Particles: sc-146366-V.

Molecular Weight of KCNH7: 135 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.

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.