SANTA CRUZ BIOTECHNOLOGY, INC.

KCNC3 (T-12): sc-138363

BACKGROUND

KCNC3 (potassium voltage-gated channel subfamily C member 3) is a multi-pass membrane-bound protein that acts as an ion channel and is generally expressed as a heterotetramer of potassium channeling proteins. The corneal epithelium is an important cell layer that functions to separate the corneal stroma from the anterior chamber of the eye. Increased expression of KCNC3 in confluent corneal endothelial cells suggests that the ionic current maintained by KCNC3 acts to regulate the hydration and transparency of the corneal stroma. Potassium channel regulation is also important for the high-frequency firing of cerebellar neurons. Defects, primarily missense mutations, in the gene encoding the KCNC3 protein have been attributed to neurological developmental disorders and adult onset neurological diseases.

REFERENCES

1. D'Adamo, M.C., et al. 1999. Mutations in the KCNA1 gene associated with episodic ataxia type-1 syndrome impair heteromeric voltage-gated K^+ channel function. FASEB J. 13: 1335-1345.
2. Zuberi, S.M., et al. 1999. A novel mutation in the human voltage-gated potassium channel gene (Kv1.1) associates with episodic ataxia type 1 and sometimes with partial epilepsy. Brain 122: 817-825.
3. Rae, J.L., et al. 2000. Kv3.3 potassium channels in lens epithelium and corneal endothelium. Exp. Eye Res. 70: 339-348.
4. Imbrici, P., et al. 2003. Functional characterization of an episodic ataxia type-1 mutation occurring in the S1 segment of hKv1.1 channels. Pflugers Arch. 446: 373-379.
5. Imbrici, P., et al. 2004. Dysfunction of the brain calcium channel CaV2.1 in absence epilepsy and episodic ataxia. Brain 127: 2682-2692.
6. Cusimano, A., et al. 2004. An episodic ataxia type-1 mutation in the S1 segment sensitises the hKv1.1 potassium channel to extracellular Zn^{2+}. FEBS Lett. 576: 237-244.
7. Imbrici, P., et al. 2006. Episodic ataxia type 1 mutations in the KCNA1 gene impair the fast inactivation properties of the human potassium channels Kv1.4-1.1/Kvβ1.1 and Kv1.4-1.1/Kvβ1.2. Eur. J. Neurosci. 24: 3073-3083.
8. Waters, M.F., et al. 2006. Mutations in voltage-gated potassium channel KCNC3 cause degenerative and developmental central nervous system phenotypes. Nat. Genet. 38: 447-451.

CHROMOSOMAL LOCATION

Genetic locus: KCNC3 (human) mapping to 19q13.33; Kcnc3 (mouse) mapping to 7 B4.

SOURCE

KCNC3 (T-12) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of KCNC3 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.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-138363 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

KCNC3 (T-12) is recommended for detection of KCNC3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:50-1:500), immunofluorescence (starting dilution 1:25, dilution range 1:25-1:250) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with KCNC4.

KCNC3 (T-12) is also recommended for detection of KCNC3 in additional species, including porcine.

Suitable for use as control antibody for KCNC3 siRNA (h): sc-97185, KCNC3 siRNA (m): sc-146356, KCNC3 shRNA Plasmid (h): sc-97185-SH, KCNC3 shRNA Plasmid (m): sc-146356-SH, KCNC3 shRNA (h) Lentiviral Particles: sc-97185-V and KCNC3 shRNA (m) Lentiviral Particles: sc-146356-V.

Molecular Weight of KCNC3: 81 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.