SANTA CRUZ BIOTECHNOLOGY, INC.

KCNQ2 (H-140): sc-20817

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Epilepsy affects about 0.5% of the world's population and has a large genetic component. Epilepsy results from an electrical hyperexcitability in the central nervous system. Potassium channels are important regulators of electrical signaling, determining the firing properties and responsiveness of a variety of neurons. Benign familial neonatal convulsions (BFNC), an autosomal dominant epilepsy of infancy, has been shown to be caused by mutations in the KCNQ2 or the KCNQ3 potassium channel genes. KCNQ2 and KCNQ3 are voltage-gated potassium channel proteins with six putative transmembrane domains. Both proteins display a broad distribution within the brain, with expression patterns that largely overlap.

REFERENCES

1. Singh, N.A., et al. 1998. A novel potassium channel gene, KCNQ2, is mutated in an inherited epilepsy of newborns. Nat. Genet. 18: 25-29.
2. Schroeder, B.C., et al. 1998. Moderate loss of function of cyclic-AMP-modulated KCNQ2/KCNQ3 K^+ channels causes epilepsy. Nature 396: 687-690.

CHROMOSOMAL LOCATION

Genetic locus: KCNQ2 (human) mapping to 20q13.33; Kcnq2 (mouse) mapping to 2 H4.

SOURCE

KCNQ2 (H-140) is a rabbit polyclonal antibody raised against amino acids 641-780 mapping near the C-terminus of KCNQ2 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.

RESEARCH USE

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

APPLICATIONS

KCNQ2 (H-140) is recommended for detection of KCNQ2 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

KCNQ2 (H-140) is also recommended for detection of KCNQ2 in additional species, including equine.

Suitable for use as control antibody for KCNQ2 siRNA (h): sc-35747, KCNQ2 siRNA (m): sc-35748, KCNQ2 shRNA Plasmid (h): sc-35747-SH, KCNQ2 shRNA Plasmid (m): sc-35748-SH, KCNQ2 shRNA (h) Lentiviral Particles: sc-35747-V and KCNQ2 shRNA (m) Lentiviral Particles: sc-35748-V.

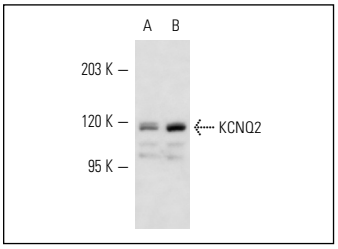
Molecular Weight of KCNQ2: 120 kDa.

Positive Controls: rat cerebellum extract: sc-2398, rat brain extract: sc-2392, EOC 20 whole cell lysate: sc-364187.

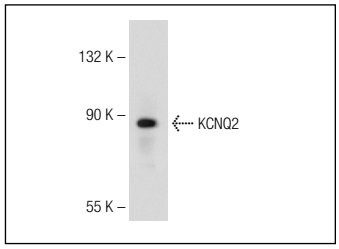
RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



KCNQ2 (H-140): sc-20817. Western blot analysis of KCNQ2 expression in EOC 13.31 (**A**) and EOC 20 (**B**) whole cell lysates.



KCNQ2 (H-140): sc-20817. Western blot analysis of KCNQ2 expression in rat brain tissue extract.

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 or our catalog for detailed protocols and support products.