SANTA CRUZ BIOTECHNOLOGY, INC.

TWIK-3 (E-13): sc-241107

BACKGROUND

Potassium (K^+) channels are divided into three subclasses, reflecting the number of transmembrane segments (TMS), which are designated 6TMS, 4TMS and 2TMS. Members of the 4TMS class contain two distinct pore regions, and include TASK, TREK, TRAAK, and TWIK. TWIK-1 mRNA is expressed abundantly in brain and at lower levels in lung, kidney and skeletal muscle. Human TWIK-2 is expressed in pancreas, placenta and heart, while mouse TWIK-2 is expressed in liver. TWIK-2 is inhibited by intracellular, but not extracellular, acidification. TWIK-3, also known as KCNK7, exists as a homodimer and three alternatively spliced isoforms. Localized to the endoplasmic reticulum, TWIK-3 is a 307 amino acid multi-pass membrane protein and is a member of the 2 pore domain potassium channel family. The function of TWIK-3 has not been characterized.

REFERENCES

1. Lesage, F., et al. 1996. TWIK-1, a ubiquitous human weakly inward rectifying K^+ channel with a novel structure. EMBO J. 15: 1004-1011.
2. Fink, M., et al. 1996. Cloning, functional expression and brain localization of a novel unconventional outward rectifier K^+ channel. EMBO J. 15: 6854-6862.
3. Lesage, F., et al. 1997. The structure, function and distribution of the mouse TWIK-1 K^+ channel. FEBS Lett. 402: 28-32.
4. Duprat, F., et al. 1997. TASK, a human background K^+ channel to sense external pH variations near physiological pH. EMBO J. 16: 5464-5471.
5. Maingret, F., et al. 1999. TRAAK is a mammalian neuronal mechano-gated K^+ channel. J. Biol. Chem. 274: 1381-1387.
6. Pountney, D.J., et al. 1999. Identification and cloning of TWIK-originated similarity sequence (TOSS): a novel human 2-pore K^+ channel principal subunit. FEBS Lett. 450: 191-196.
7. Chavez, R.A., et al. 1999. TWIK-2, a new weak inward rectifying member of the tandem pore domain potassium channel family. J. Biol. Chem. 274: 7887-7892.

CHROMOSOMAL LOCATION

Genetic locus: KCNK7 (human) mapping to 11q13.1; Kcnk7 (mouse) mapping to 19 A.

SOURCE

TWIK-3 (E-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of TWIK-3 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.

PROTOCOLS

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

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-241107 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

TWIK-3 (E-13) is recommended for detection of TWIK-3 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 TWIK-1 or TWIK-2.

Suitable for use as control antibody for TWIK-3 siRNA (h): sc-96794, TWIK-3 siRNA (m): sc-154812, TWIK-3 shRNA Plasmid (h): sc-96794-SH, TWIK-3 shRNA Plasmid (m): sc-154812-SH, TWIK-3 shRNA (h) Lentiviral Particles: sc-96794-V and TWIK-3 shRNA (m) Lentiviral Particles: sc-154812-V.

Molecular Weight of TWIK-3 isoforms: 32/26/27 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.

RESEARCH USE

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