SANTA CRUZ BIOTECHNOLOGY, INC.

TRESK (S-13): sc-51239

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Potassium channels play an important role in cell excitability and plasticity. The pore loop domain, a highly conserved region common to all potassium channels, is involved in determining potassium ion selectivity. The family of potassium channels possessing two-pore loop domains consists of both inward and outwardly rectifying channels and includes THIK-1, THIK-2, TRESK, TALK-1 and TALK-2. Members of this family are all characterized by four transmembrane domains and may function to help influence the resting membrane potential of cells. TWIK-related spinal cord K^+ (TRESK) is the most sensitive volatile anesthetic-activated channel in the family and may function to mediate the effects of inhaled anesthetics in the central nervous system in a manner that is sensitive to immunosuppressive drugs. TRESK is activated by the calcium signal from calcineurin, a calcium/calmodulin-dependent phosphatase, and is highly sensitive to zinc.

REFERENCES

1. Czirják, G., et al. 2004. The two-pore domain K^+ channel, TRESK, is activated by the cytoplasmic calcium signal through calcineurin. J. Biol. Chem. 279: 18550-18558.
2. Kang, D., et al. 2004. Functional expression of TRESK-2, a new member of the tandem-pore K^+ channel family. J. Biol. Chem. 279: 28063-28070.
3. Liu, C., et al. 2004. Potent activation of concentrations of volatile anesthetics. Anesth. Analg. 99: 1715-1722.
4. Kang, D., et al. 2005. Thermosensitivity of the two-pore domain K^+ channels TREK-2 and TRAAK. J. Physiol. 564: 103-116.
5. Keshavaprasad, B., et al. 2005. Species-specific differences in response to anesthetics and other modulators by the K2P channel TRESK. Anesth. Analg. 101: 1042-1049.
6. Brosnan, R., et al. 2006. Chirality in anesthesia II: stereoselective modulation of ion channel function by secondary alcohol enantiomers. Anesth. Analg. 103: 86-91.
7. Czirják, G. and Enyedi, P. 2006. Targeting of calcineurin to an NFAT-like docking site is required for the calcium-dependent activation of the background K^+ channel, TRESK. J. Biol. Chem. 281: 14677-14682.
8. Czirják, G. and Enyedi, P. 2006. Zinc and mercuric ions distinguish TRESK from the other two-pore-domain K^+ channels. Mol. Pharmacol. 69: 1024-1032.
9. Kang, D. and Kim, D. 2006. TREK-2 (K2P10.1) and TRESK (K2P18.1) are major background K^+ channels in dorsal root ganglion neurons. Am. J. Physiol. Cell Physiol. 291: 138-146.

CHROMOSOMAL LOCATION

Genetic locus: KCNK18 (human) mapping to 10q25.3.

SOURCE

TRESK (S-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of TRESK 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-51239 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

TRESK (S-13) is recommended for detection of TRESK of 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).

Suitable for use as control antibody for TRESK siRNA (h): sc-61709, TRESK shRNA Plasmid (h): sc-61709-SH and TRESK shRNA (h) Lentiviral Particles: sc-61709-V.

Molecular Weight of TRESK: 43 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.

SELECT PRODUCT CITATIONS

1. Sánchez-Miguel, D.S., et al. 2013. TRESK potassium channel in human T lymphoblasts. Biochem. Biophys. Res. Commun. 434: 273-279.

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.