SANTA CRUZ BIOTECHNOLOGY, INC.

TRESK (V-12): sc-51240

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

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2. Kang, D., Mariash, E. and Kim, D. 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., Au, J.D., Zou, H.L., Cotten, J.F. and Yost, C.S. 2004. Potent activation of concentrations of volatile anesthetics. Anesth. Analg. 99: 1715-1722.
4. Kang, D., Choe, C. and Kim, D. 2005. Thermosensitivity of the two-pore domain K^+ channels TREK-2 and TRAAK. J. Physiol. 564: 103-116.
5. Keshavaprasad, B., Liu, C., Au, J.D., Kindler, C.H., Cotten, J.F. and Yost, C.S. 2005. Species-specific differences in response to anesthetics and other modulators by the K2P channel TRESK. Anesth. Analg. 101: 1042-1049.
6. Brosnan, R., Gong, D., Cotten, J., Keshavaprasad, B., Yost, C.S., Eger, E.I. and Sonner, J.M. 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.

CHROMOSOMAL LOCATION

Genetic locus: Kcnk18 (mouse) mapping to 19 D3.

SOURCE

TRESK (V-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of TRESK of mouse 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-51240 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

TRESK (V-12) is recommended for detection of TRESK of mouse and rat 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 (m): sc-61710, TRESK shRNA Plasmid (m): sc-61710-SH and TRESK shRNA (m) Lentiviral Particles: sc-61710-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. Xiao, Z., Deng, P.Y., Rojanathammanee, L., Yang, C., Grisanti, L., Permpoonputtana, K., Weinshenker, D., Doze, V.A., Porter, J.E. and Lei, S. 2009. Noradrenergic depression of neuronal excitability in the entorhinal cortex via activation of TREK-2 K^+ channels. J. Biol. Chem. 284: 10980-10991.
2. Yoo, S., Liu, J., Sabbadini, M., Au, P., Xie, G.X. and Yost, C.S. 2009. Regional expression of the anesthetic-activated potassium channel TRESK in the rat nervous system. Neurosci. Lett. 465: 79-84.
3. Cadaveira-Mosquera, A., et al. 2012. Expression of K2P channels in sensory and motor neurons of the autonomic nervous system. J. Mol. Neurosci. 48: 86-96.

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.