

# TRAAK (A-20): sc-11326



The Power to Question

## BACKGROUND

K<sup>+</sup> 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 TWIK-1, TREK-1, TRAAK, TASK, TASK-2 and TASK-3. TRAAK is selectively expressed in the neuronal tissues of brain, spinal cord, and retina. TRAAK is activated by arachidonic acid, and other unsaturated fatty acids, but not by saturated fatty acids. TRAAK produces baseline K<sup>+</sup> currents, which are strongly stimulated by mechanical stretch and insensitive to K<sup>+</sup> channel blockers.

## REFERENCES

1. Fink, M., et al. 1996. Cloning, functional expression and brain localization of a novel unconventional outward rectifier K<sup>+</sup> channel. *EMBO J.* 15: 6854-6862.
2. Duprat, F., et al. 1997. TASK, a human background K<sup>+</sup> channel to sense external pH variations near physiological pH. *EMBO J.* 16: 5464-5471.
3. Fink, M., et al. 1998. A neuronal two P domain K<sup>+</sup> channel stimulated by arachidonic acid and polyunsaturated fatty acids. *EMBO J.* 17: 3297-3308.
4. Cluzeaud, F., et al. 1998. Expression of TWIK-1, a novel weakly inward rectifying potassium channel in rat kidney. *Am. J. Physiol.* 275: 1602-1609.
5. Maingret, F., et al. 1999. TRAAK is a mammalian neuronal mechano-gated K<sup>+</sup> channel. *J. Biol. Chem.* 274: 1381-1387.
6. Lesage, F., et al. 2000. Cloning and expression of human TRAAK, a polyunsaturated fatty acids-activated and mechano-sensitive K<sup>+</sup> channel. *FEBS Lett.* 471: 137-140.
7. Reyes, R., et al. 2000. Immunolocalization of the arachidonic acid and mechano-insensitive baseline traak potassium channel in the nervous system. *Neuroscience* 95: 893-901.

## CHROMOSOMAL LOCATION

Genetic locus: KCNK4 (human) mapping to 11q13.1; Kcnk4 (mouse) mapping to 19 A.

## SOURCE

TRAAK (A-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of TRAAK 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-11326 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

TRAAK (A-20) is recommended for detection of TRAAK 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).

Suitable for use as control antibody for TRAAK siRNA (h): sc-42345, TRAAK siRNA (m): sc-42346, TRAAK shRNA Plasmid (h): sc-42345-SH, TRAAK shRNA Plasmid (m): sc-42346-SH, TRAAK shRNA (h) Lentiviral Particles: sc-42345-V and TRAAK shRNA (m) Lentiviral Particles: sc-42346-V.

Molecular Weight of TRAAK: 47 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409 or Y79 cell lysate: sc-2240.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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. Yamamoto, Y., et al. 2003. Heterogeneous expression of TASK-3 and TRAAK in rat paraganglionic cells. *Histochem. Cell Biol.* 120: 335-339.
2. Bryan, R.M., Jr., et al. 2006. Evidence for two-pore domain potassium channels in rat cerebral arteries. *Am. J. Physiol. Heart Circ. Physiol.* 291: H770-780.
3. Yamamoto, Y., et al. 2009. Immunohistochemical co-localization of TREK-1, TREK-2 and TRAAK with TRP channels in the trigeminal ganglion cells. *Neurosci. Lett.* 454: 129-133.
4. Cadaveira-Mosquera, A., et al. 2011. Activation of TREK currents by the neuroprotective agent riluzole in mouse sympathetic neurons. *J. Neurosci.* 31: 1375-1385.
5. 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.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.