

# TREK-1 (N-20): sc-11554

## BACKGROUND

TREK-1 (also designated TWIK-related K<sup>+</sup> channel) and TREK-2 are members of the tandem-pore K<sup>+</sup> channel family and belong to the class of mechanosensitive and fatty acid-stimulated K<sup>+</sup> channels. TREK-1 has an outwardly rectifying current-voltage relationship, while TREK-2 shows inward rectification. Both TREK-1 and TREK-2 are activated by arachidonic acid and other naturally occurring unsaturated free fatty acids. These family members possess two pore-forming domains and four transmembrane segments. TREK-2 is a 538-amino acid protein and shares 65% amino acid sequence identity with TREK-1. TREK-1 is expressed in many different tissues, particularly lung and brain, while TREK-2 is expressed mainly in the cerebellum, spleen, and testis.

## REFERENCES

1. Pongs, O. 1992. Molecular biology of voltage-dependent potassium channels. *Physiol. Rev.* 72: 569-588.
2. Jan, L.Y., et al. 1994. Potassium channels and their evolving gates. *Nature* 371: 119-122.
3. Wei, A., et al. 1996. Eight potassium channel families revealed by the *C. elegans* genome project. *Neuropharmacology* 35: 805-829.
4. 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.
5. Patel, A.J., et al. 1998. A mammalian two pore domain mechano-gated S-like K<sup>+</sup> channel. *EMBO J.* 17: 4283-4290.
6. Maingret, F., et al. 1999. TRAAK is a mammalian neuronal mechano-gated K<sup>+</sup> channel. *J. Biol. Chem.* 274: 1381-1387.

## CHROMOSOMAL LOCATION

Genetic locus: KCNK2 (human) mapping to 1q41; Kcnk2 (mouse) mapping to 1 H6.

## SOURCE

TREK-1 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of TREK-1 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-11554 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.

## RESEARCH USE

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

## APPLICATIONS

TREK-1 (N-20) is recommended for detection of TREK-1 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).

TREK-1 (N-20) is also recommended for detection of TREK-1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for TREK-1 siRNA (h): sc-37180, TREK-1 siRNA (m): sc-37181, TREK-1 shRNA Plasmid (h): sc-37180-SH, TREK-1 shRNA Plasmid (m): sc-37181-SH, TREK-1 shRNA (h) Lentiviral Particles: sc-37180-V and TREK-1 shRNA (m) Lentiviral Particles: sc-37181-V.

Molecular Weight of TREK-1 monomer: 45-56 kDa.

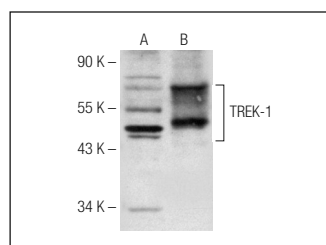
Molecular Weight of TREK-1 glycosylated homodimer: 99-112 kDa.

Positive Controls: mouse brain extract: sc-2253, human TREK-1 transfected whole cell lysate or rat hypothalamus tissue extract.

## 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.

## DATA



TREK-1 (N-20): sc-11554. Western blot analysis of TREK-1 expression in non-transfected (A) and human TREK-1 transfected (B) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. 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.
2. Xiao, Z., et al. 2009. Noradrenergic depression of neuronal excitability in the entorhinal cortex via activation of TREK-2 K<sup>+</sup> channels. *J. Biol. Chem.* 284: 10980-10991.