

TREK-1 (F-6): sc-398449

BACKGROUND

TREK-1 (also designated TWIK-related K⁺ channel) and TREK-2 are members of the tandem-pore K⁺ channel family and belong to the class of mechano-sensitive and fatty acid-stimulated K⁺ 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.

CHROMOSOMAL LOCATION

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

SOURCE

TREK-1 (F-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 354-380 near the C-terminus of TREK-1 of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-398449 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

TREK-1 (F-6) is recommended for detection of TREK-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 TREK-1 siRNA (h): sc-37180, TREK-1 siRNA (m): sc-37181, TREK-1 siRNA (r): sc-270403, TREK-1 shRNA Plasmid (h): sc-37180-SH, TREK-1 shRNA Plasmid (m): sc-37181-SH, TREK-1 shRNA Plasmid (r): sc-270403-SH, TREK-1 shRNA (h) Lentiviral Particles: sc-37180-V, TREK-1 shRNA (m) Lentiviral Particles: sc-37181-V and TREK-1 shRNA (r) Lentiviral Particles: sc-270403-V.

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

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

Positive Controls: human hippocampus tissue extract, human hypothalamus extract: sc-516709 or human cerebellum extract: sc-516706.

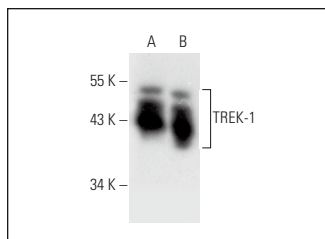
STORAGE

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

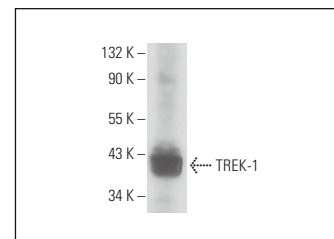
RESEARCH USE

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

DATA



TREK-1 (F-6): sc-398449. Western blot analysis of TREK-1 expression in human hippocampus (A) and human hypothalamus (B) tissue extracts.



TREK-1 (F-6): sc-398449. Western blot analysis of TREK-1 expression in human cerebellum tissue extract. Detection reagent used: m-IgGκ BP-HRP: sc-516102.

SELECT PRODUCT CITATIONS

- Sauter, D.R., et al. 2016. pH-sensitive K⁺ channel TREK-1 is a novel target in pancreatic cancer. *Biochim. Biophys. Acta* 1862: 1994-2003.
- Carreon, T.A., et al. 2017. Interaction of Cochlin and mechanosensitive channel TREK-1 in trabecular meshwork cells influences the regulation of intraocular pressure. *Sci. Rep.* 7: 452.
- Canella, R., et al. 2019. Involvement of the TREK-1 channel in human alveolar cell membrane potential and its regulation by inhibitors of the chloride current. *J. Cell. Physiol.* 234: 17704-17713.
- Pineda, R.H., et al. 2019. Altered detrusor contractility and voiding patterns in mice lacking the mechanosensitive TREK-1 channel. *BMC Urol.* 19: 40.
- Bae, Y., et al. 2020. Spadin modulates astrocytic passive conductance via inhibition of TWIK-1/TREK-1 heterodimeric channels. *Int. J. Mol. Sci.* 21: 9639.
- Chen, T., et al. 2021. Controlled decompression attenuates compressive injury following traumatic brain injury via TREK-1-mediated inhibition of necroptosis and neuroinflammation. *Oxid. Med. Cell. Longev.* 2021: 4280951.
- Ulkumen, B., et al. 2022. The role of TREK-1 and AQP5 in gonadocorticoid-related voice disorders. *J. Voice* 36: 150-155.
- Cong, T., et al. 2023. Blocking two-pore domain potassium channel TREK-1 inhibits the activation of A1-like reactive astrocyte through the NFκB signaling pathway in a rat model of major depressive disorder. *Neurochem. Res.* 48: 1737-1754.
- Wang, C., et al. 2024. Pt nanoshells with a high NIR-II photothermal conversion efficiency mediates multimodal neuromodulation against ventricular arrhythmias. *Nat. Commun.* 15: 6362.

PROTOCOLS

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