

Product Information

Anti-TREK-1

produced in rabbit, affinity isolated antibody

Catalog Number **T6448**

Synonym: Anti-Potassium Channel K_{2P}2.1

Product Description

Anti-TREK-1 is produced in rabbit using as immunogen a synthetic peptide (DPKSA AQNSK PRLSF STKC) corresponding to the intracellular amino terminus of human TREK-1, amino acid residues 8-28,. The antibody was affinity isolated on immobilized immunogen.

Anti-TREK-1 reacts with rat TREK-1 by immunoblotting using rat membranes. It is expected that the antibody will also react with mouse due to sequence homology (17/18).

The action of potassium (K⁺) channels is regulated by voltage, calcium and a variety of neurotransmitters. Each subfamily generally consists of a primary pore forming α subunit that is associated with several regulatory subunits.¹ To date, some 70 different genes that encode the α subunits of K⁺ channels have been identified.

The vast family of K⁺ channels has been subdivided into the three main subfamilies: the 2 TM, 4 TM and 6 TM K⁺ channels.² TREK-1 (K_{2P}2.1) is a member of the 4 TM potassium channel family, proteins that contain two-pore domain and four transmembrane domains. These channels are considered to be "leak" or "background" K⁺ channels, thereby generating background currents which help set the membrane resting potential and cell excitation.³ K_{2P} channels can be activated by a wide variety of stimuli including polyunsaturated fatty acids, low intracellular pH, and mechanical stretch.^{4,5} TREK-1 is highly expressed in the central nervous system, and may have a possible role in ischemic neuroprotection.⁶

Reagent

Supplied as a lyophilized powder from phosphate buffered saline, pH 7.4, containing 1% bovine serum albumin and 0.025% sodium azide.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Reconstitute the lyophilized vial with either 0.05 ml or 0.2 ml deionized water, depending on the package size. Further dilutions should be made using a carrier protein such as BSA (1%).

Storage/Stability

Store at -20 °C. For extended storage, freeze in working aliquots. Avoid repeated freezing and thawing. Storage in "frost-free" freezers is not recommended. Centrifuge before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: the recommended working dilution is 1:200.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

1. Alexander, S.P., et al., Guide to receptors and channels, 1st edition, *Br. J. Pharmacol.*, **141**, Suppl 1:S1-S126 (2004).
2. Gutman, G.A., et al., Compendium of voltage-gated ion channels: potassium channels, *Pharmacol. Rev.*, **55**, 583-586 (2003).
3. Lesage, F., Pharmacology of neuronal background potassium channels, *Neuropharmacology*, **44**, 1-7 (2003).

4. Kim, D., Fatty acid-sensitive two-pore domain K⁺ channels, *Trends Pharmacol. Sci.*, **24**, 648-654 (2003).
5. Franks, N.P. and Honore, E., The TREK K^{2P} channels and their role in general anaesthesia and neuroprotection, *Trends Pharmacol. Sci.*, **25**, 601-608 (2004).
6. Buckler, K.J. and Honore, E., The lipid-activated two-pore domain K⁺ channel TREK-1 is resistant to hypoxia: implication for ischaemic neuroprotection, *J Physiol.*, **562**, 213-222 (2005).

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