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ProductInformation

Anti-Potassium Channel K_{2P}4.1 (TRAAK)
produced in rabbit, affinity isolated antibody

Catalog Number **K0265**

Product Description

Anti-Potassium Channel K_{2P}4.1 (TWIK-related arachidonic acid-stimulated K^+ channel; KCNK4) is developed in rabbit using as immunogen peptide NLAFIDESSDTQSERGC, corresponding to amino acid residues 343-359 of human K_{2P}4.1. The K_{2P}4.1 antibody is directed against a highly conserved epitope in the intracellular C-terminal region of the human K_{2P}4.1 channel. The antibody is affinity purified on immobilized antigen.

Anti-K_{2P}4.1 recognizes human (Gene KCNK4 ID 50801). It is identical in rat (Kcnk4 gene ID 116489), mouse and dog. Anti- K_{2P}4.1 cross-reacts with rat. The antibody has been used in immunoblotting and immunohistochemistry.

K_{2P}4.1 (also named TWIK-related arachidonic acid stimulated K^+ channel, TRAAK or KCNK4) is a member of the 2-pore (2P) domain K^+ channels family that at the moment includes 15 members. These channels show little time or voltage dependence and are considered to be “leaky” or “background” K^+ channels, thereby generating background currents which help set the membrane resting potential and cell excitation. The K_{2P} channels have a signature topology that includes four transmembrane domains and two pore domains with intracellular N- and C termini.

K_{2P} channels are regulated by diverse physical and chemical stimuli including temperature, pH, mechanical stretch, and inhalation anesthetics. The channels can then be sub-classified based in their specific activators. K_{2P}4.1 can be integrated to a K_{2P} subfamily that includes K_{2P}2.1 (TREK1) and K_{2P}10.1 (TREK2) that are activated by intracellular unsaturated fatty acids, such as arachidonic acid and lysophosphatidic acid, high intracellular pH and mechanical stretch. K_{2P}4.1 is expressed largely in the brain in mouse samples, while in humans it is also expressed in placenta and to a lesser degree in kidney, small intestine and prostate.

Reagent

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

Reconstitution:

Reconstitute the lyophilized vial with 50µL or 200 µL deionized water, depending on package size. Further dilutions should be made using a carrier protein such as BSA (1-3%).

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.

Storage/Stability

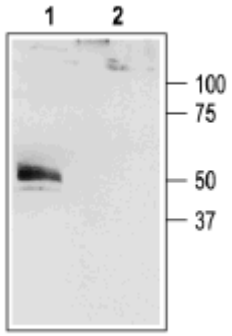
Lyophilized powder can be stored intact at room temperature for several weeks. For extended storage, it should be stored at -20 °C or below. The reconstituted solution can be stored at 2-8 °C for up to 2 weeks. For longer storage, freeze in working aliquots. Avoid repeated freezing and thawing. Storage in “frost-free” freezers is not recommended. Centrifuge before use. Working dilution samples should be discarded if not used within 12 hours. The antibody is stable for at least 12 months when stored appropriately.

Product Profile

Immunoblotting: a recommended working dilution of 1:200 was determined using HEK-K_{2P}4.1 transfected cells or rat cerebellum lysate.

Immunohistochemistry: rat cerebellum lysate.

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



Immunoblot of HEK-K_{2P}4.1 transfected cells:

Lane 1. Anti-K_{2P}4.1 antibody (1:200).
Lane 2. Anti-K_{2P}4.1 antibody, preincubated with the control peptide antigen.

References

1. Lesage, F. *et al FEBS Lett.* **471,** 137-140 (2000).
2. Lesage, F. and Lazdunski, M. *Am. J. Physiol. Renal Physiol.* , **279,** F793-F801 (2000).
3. Kim, D. *Trends Pharmacol. Sci.* **24,** 648-654 (2003).

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