

Product Information

Anti-Potassium Channel K_{Ca1} *slo* β 4 auxilliary subunit

(Anti- KCNMB4; Anti-BK $_{Ca}$ β subunit 4; Anti-*slo* β 4)
produced in rabbit, affinity isolated antibody

Catalog Number **P 1249**

Product Description

Anti-Potassium Channel K_{Ca1} *slo* β 4 auxilliary subunit was developed in rabbit using a peptide, AKLRVSYEYTEAEDKS(C), corresponding to amino acid residues 2-17 of rat *slo* β 4 as the immunogen. This sequence is identical in human and mouse. The antibody was affinity isolated on immobilized immunogen.

Anti-Potassium Channel K_{Ca1} *slo* β 4 auxilliary subunit recognizes *slo* β 4 by Western blotting of rat brain membranes.

The vast family of K^+ channels has been subdivided into the three main subfamilies: the 2 TM, 4 TM and 6 TM K^+ channels.¹ The 6 TM family of K^+ channels includes the voltage-gated K^+ (K_v) channels, the KCNQ, the EAG, the calcium-activated K^+ (Slo) subfamily (which is actually a 7 TM not a 6 TM type of channel) and the calcium-activated SK subfamily.

slo β 4 is a member of a family of regulatory β subunits that control the activity of the large conductance Ca^{2+} -activated K^+ channel $K_{Ca1.1}$. The family includes four members with a shared topology: two trans-membrane domains, short intracellular N- and C-termini and a large extracellular region. The four members of the family have a distinct tissue distribution with *slo* β 4 expressed almost exclusively in the central nervous system (CNS).²

Functionally, *slo* β 4 increases the sensitivity of the pore-forming $K_{Ca1.1}$ subunit to Ca^{2+} and voltage and it also changes its pharmacology. It has been shown that co-expression of *slo* β 4 with $K_{Ca1.1}$ makes the latter resistant to nM concentrations of the well-known inhibitors charybdotoxin and ilberitoxin.³

Reagent

The antibody is supplied as lyophilized powder from phosphate buffered saline, pH 7.4, containing 1% bovine serum albumin and 0.025% sodium azide as preservative.

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazards and safe handling.

Preparation Instructions

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

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 $2-8^\circ\text{C}$ 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.

Product Profile

The recommended working dilution is 1:200 for immunoblotting.

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

References

1. Gutman, G.A., et al., International Union of Pharmacology. XLI. Compendium of voltage-gated ion channels: potassium channels. *Pharmacol. Rev.*, **55**, 583-586 (2003).

2. Orio, P., et al., New Disguises for an Old Channel: MaxiK Channel β -Subunits. *News Physiol. Sci.* **17**, 156-161 (2002).
3. Meera, P., et al., A neuronal β subunit (KCNMB4) makes the large conductance, voltage- and Ca^{2+} -activated K^+ channel resistant to charybdotoxin and iberiotoxin. *Proc. Natl. Acad. Sci. U S A.*, **97**, 5562-5567 (2000).

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