

Product Information

Anti-Potassium Channel K_v3.3 (KNC3)

Developed in Rabbit, Affinity Isolated Antibody

Product Number **P 4622**

Product Description

Anti-Potassium Channel K_v3.3 (KNC3) was developed in rabbit using a synthetic peptide KSPITPGSRGRY-SRDRAC corresponding to amino acid residues 701-718 of rat Kv3.3 as the immunogen. This sequence is identical in human and mouse. The antibody was affinity isolated on immobilized immunogen.

Anti-Potassium Channel K_v3.3 (KNC3) recognizes only splice variant K_v3.3-1 in Western blot with rat brain membranes.

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. Recently, the crystal structure of the K⁺ channels has been identified.²

The vast family of K⁺ channels has been subdivided into the three main subfamilies: the 2 TM, 4 TM and 6 TM K⁺ channels.³ The voltage-gated K⁺ (K_v) channels belong to the 6 TM family of K⁺ channels. K_v3.3 is a member of the Shaw type family of voltage-gated K channels. K_v3.3 subfamily members inactivate very rapidly and therefore are thought to play a role in the repolarization of action potentials and to facilitate repetitive high frequency firing.⁴ K_v3.3 is mostly localized in the brain, although it has been observed in vascular smooth muscle cells and eye epithelium. In the brain its expression pattern largely overlaps that of the K_v3.1 channel suggesting that they may form functional heteromers. Indeed, mouse knockouts of both K_v3.1 and K_v3.3, but not either channel alone, display severe motor defects.⁵

Reagent

The antibody is supplied as lyophilized powder from phosphate buffered saline containing 1% bovine serum albumin and 0.05% 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 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

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

- Alexander, S.P., et al., Br. J. Pharmacol., **141**, Suppl 1:S1-S126 (2004).
- MacKinnon, R., FEBS Letters, **555**, 62-65 (2003).

3. Gutman, G.A., et al., Pharmacol. Rev., **55**, 583-586 (2003).
4. Rudy, B. and McBain, C.J., Trends Neurosci., **24**, 517-26 (2001).

5. Matsukawa, H., et al., J Neurosci., **23**, 7677-7684 (2003).

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