

Product Information

Anti-Potassium Channel K_v7.1 (KCNQ1)

(Voltage-gated potassium channel QKT subfamily member 1, KvLQT1)
Developed in Rabbit
Affinity Isolated Antibody

Product Number **P 5372**

Product Description

Anti-Potassium Channel K_v7.1 (KCNQ1) was developed in rabbit using a synthetic peptide (C)TYEQLTVPRRGPEGS, corresponding to amino acid residues 661-676 of human KCNQ1 as the immunogen. This sequence has 14/16 residues identical in rat and mouse. The antibody was affinity isolated on immobilized immunogen.

The antibody recognizes KCNQ1; it does not cross react with other QKT proteins. It has been successfully used in Western blot with rat heart 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.

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 The voltage-gated K⁺ (K_v) channels belong to the 6 TM family of K⁺ channels. The KCNQ family of voltage-gated potassium channels includes 5 known members: K_v7.1 - K_v7.5 (KCNQ1 to KCNQ5).³ Potassium Channel K_v7.1 (KCNQ1) is important in cardiac function. Mutations on KCNQ1 can be responsible for long QT syndrome, a cardiac disorder that causes arrhythmias and sudden death.⁴ KCNQ2/KCNQ3 heteromultimers are believed to be the molecular correlates of the so-called M current.⁵ Mutations in either gene are associated with a form of epilepsy known as benign familial neonatal convulsions.⁴

Reagent

The antibody is supplied as lyophilized powder from phosphate buffered saline 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 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

1. Alexander, S.P., et al., Br. J. Pharmacol., **141**, Suppl 1:S1-S126 (2004).
2. Gutman, G.A., et al., Pharmacol. Rev., **55**, 583-586 (2003).
3. Robbins, J., Pharmacol. Ther., **90**, 1 (2001).
4. Hubner, C.A. and Jentsch, T.J., Hum Mol Genet., **11**, 2435-2345 (2002).
5. Wang, H.S., et al., Science, **282**, 1890 (1998).

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