

## Goat Anti-KCNQ1 Antibody

Peptide-affinity purified goat antibody  
Catalog # AF1587a

### Specification

#### Goat Anti-KCNQ1 Antibody - Product Information

Application	WB
Primary Accession	<a href="#">P51787</a>
Other Accession	<a href="#">NP_861463</a> , <a href="#">3784</a> , <a href="#">16535 (mouse)</a> , <a href="#">84020 (rat)</a>
Reactivity Predicted	Human Mouse, Rat, Dog, Cow
Host	Goat
Clonality	Polyclonal
Concentration	0.5 mg/ml
Isotype	IgG
Calculated MW	74699

#### Goat Anti-KCNQ1 Antibody - Additional Information

**Gene ID** 3784

#### Other Names

Potassium voltage-gated channel subfamily KQT member 1, IKs producing slow voltage-gated potassium channel subunit alpha KvLQT1, KQT-like 1, Voltage-gated potassium channel subunit Kv7.1, KCNQ1, KCNA8, KCNA9, KVLQT1

#### Format

0.5 mg IgG/ml in Tris saline (20mM Tris pH7.3, 150mM NaCl), 0.02% sodium azide, with 0.5% bovine serum albumin

#### Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

#### Precautions

Goat Anti-KCNQ1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.



AF1587a (1 µg/ml) staining of Human Heart lysate (35 µg protein in RIPA buffer). Primary incubation was 1 hour. Detected by chemiluminescence.

#### Goat Anti-KCNQ1 Antibody - Background

This gene encodes a protein for a voltage-gated potassium channel required for the repolarization phase of the cardiac action potential. The gene product can form heteromultimers with two other potassium channel proteins, KCNE1 and KCNE3. Mutations in this gene are associated with hereditary long QT syndrome, Romano-Ward syndrome, Jervell and Lange-Nielsen syndrome and familial atrial fibrillation. The gene is located in a region of chromosome 11 that contains a large number of contiguous genes that are abnormally imprinted in cancer and the Beckwith-Wiedemann syndrome. Two alternative transcripts encoding distinct isoforms have been described.

#### Goat Anti-KCNQ1 Antibody - References

Obesity and diabetes genetic variants associated with gestational weight gain. Stuebe AM, et al. Am J Obstet Gynecol, 2010 Sep. PMID 20816152.  
Glycemia determines the effect of type 2 diabetes risk genes on insulin secretion. Heni M, et al. Diabetes, 2010 Aug 29. PMID

**Goat Anti-KCNQ1 Antibody - Protein Information****Name** KCNQ1 ([HGNC:6294](#))**Function**

Potassium channel that plays an important role in a number of tissues, including heart, inner ear, stomach and colon (PubMed:<a href="http://www.uniprot.org/citations/10646604" target="\_blank">10646604</a>, PubMed:<a href="http://www.uniprot.org/citations/25441029" target="\_blank">25441029</a>). Associates with KCNE beta subunits that modulates current kinetics (PubMed:<a href="http://www.uniprot.org/citations/9312006" target="\_blank">9312006</a>, PubMed:<a href="http://www.uniprot.org/citations/9108097" target="\_blank">9108097</a>, PubMed:<a href="http://www.uniprot.org/citations/8900283" target="\_blank">8900283</a>, PubMed:<a href="http://www.uniprot.org/citations/10646604" target="\_blank">10646604</a>, PubMed:<a href="http://www.uniprot.org/citations/11101505" target="\_blank">11101505</a>, PubMed:<a href="http://www.uniprot.org/citations/19687231" target="\_blank">19687231</a>). Induces a voltage-dependent current by rapidly activating and slowly deactivating potassium-selective outward current (PubMed:<a href="http://www.uniprot.org/citations/9312006" target="\_blank">9312006</a>, PubMed:<a href="http://www.uniprot.org/citations/9108097" target="\_blank">9108097</a>, PubMed:<a href="http://www.uniprot.org/citations/8900283" target="\_blank">8900283</a>, PubMed:<a href="http://www.uniprot.org/citations/10646604" target="\_blank">10646604</a>, PubMed:<a href="http://www.uniprot.org/citations/11101505" target="\_blank">11101505</a>, PubMed:<a href="http://www.uniprot.org/citations/25441029" target="\_blank">25441029</a>). Promotes also a delayed voltage activated potassium current showing outward rectification characteristic (By similarity). During beta-adrenergic receptor stimulation

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KCNQ1 gene polymorphisms are associated with lipid parameters in a Chinese Han population. Chen Z, et al. Cardiovasc Diabetol, 2010 Aug 11. PMID 20701788.

COMMON VARIANTS IN 40 GENES ASSESSED FOR DIABETES INCIDENCE AND RESPONSE TO METFORMIN AND LIFESTYLE INTERVENTIONS IN THE DIABETES PREVENTION PROGRAM.

Jablonski KA, et al. Diabetes, 2010 Aug 3. PMID 20682687.

Variation at the NFATC2 Locus Increases the Risk of Thiazolinedinedione-Induced Edema in the Diabetes REduction Assessment with ramipril and rosiglitazone Medication (DREAM) Study. Bailey SD, et al. Diabetes Care, 2010 Jul 13. PMID 20628086.

participates in cardiac repolarization by associating with KCNE1 to form the I(Ks) cardiac potassium current that increases the amplitude and slows down the activation kinetics of outward potassium current I(Ks) (By similarity) (PubMed:<a href="http://www.uniprot.org/citations/9312006" target="\_blank">9312006</a>, PubMed:<a href="http://www.uniprot.org/citations/9108097" target="\_blank">9108097</a>, PubMed:<a href="http://www.uniprot.org/citations/8900283" target="\_blank">8900283</a>, PubMed:<a href="http://www.uniprot.org/citations/10646604" target="\_blank">10646604</a>, PubMed:<a href="http://www.uniprot.org/citations/11101505" target="\_blank">11101505</a>). Muscarinic agonist oxotremorine-M strongly suppresses KCNQ1/KCNE1 current (PubMed:<a href="http://www.uniprot.org/citations/10713961" target="\_blank">10713961</a>). When associated with KCNE3, forms the potassium channel that is important for cyclic AMP-stimulated intestinal secretion of chloride ions (PubMed:<a href="http://www.uniprot.org/citations/10646604" target="\_blank">10646604</a>). This interaction with KCNE3 is reduced by 17beta-estradiol, resulting in the reduction of currents (By similarity). During conditions of increased substrate load, maintains the driving force for proximal tubular and intestinal sodium ions absorption, gastric acid secretion, and cAMP- induced jejunal chloride ions secretion (By similarity). Allows the provision of potassium ions to the luminal membrane of the secretory canaliculus in the resting state as well as during stimulated acid secretion (By similarity). When associated with KCNE2, forms a heterooligomer complex leading to currents with an apparently instantaneous activation, a rapid deactivation process and a linear current-voltage relationship and decreases the amplitude of the outward current (PubMed:<a href="http://www.uniprot.org/citations/11101505" target="\_blank">11101505</a>). When associated with KCNE4, inhibits voltage-gated potassium channel activity (PubMed:<a href="http://www.uniprot.org/citations/19687231" target="\_blank">19687231</a>). When

associated with KCNE5, this complex only conducts current upon strong and continued depolarization (PubMed:<a href="http://www.uniprot.org/citations/12324418" target="\_blank">12324418</a>). Also forms a heterotetramer with KCNQ5; has a voltage-gated potassium channel activity (PubMed:<a href="http://www.uniprot.org/citations/24855057" target="\_blank">24855057</a>). Binds with phosphatidylinositol 4,5- biphosphate (PubMed:<a href="http://www.uniprot.org/citations/25037568" target="\_blank">25037568</a>).

### **Cellular Location**

Cell membrane; Multi-pass membrane protein. Cytoplasmic vesicle membrane Early endosome. Membrane raft. Endoplasmic reticulum Basolateral cell membrane Note=Colocalized with KCNE3 at the plasma membrane (PubMed:10646604) Upon 17beta-oestradiol treatment, colocalizes with RAB5A at early endosome (PubMed:23529131). Heterotetramer with KCNQ5 is highly retained at the endoplasmic reticulum and is localized outside of lipid raft microdomains (PubMed:24855057). During the early stages of epithelial cell polarization induced by the calcium switch it removed from plasma membrane to the endoplasmic reticulum where it retained and it is redistributed to the basolateral cell surface in a PI3K-dependent manner at a later stage (PubMed:21228319)

### **Tissue Location**

Abundantly expressed in heart, pancreas, prostate, kidney, small intestine and peripheral blood leukocytes. Less abundant in placenta, lung, spleen, colon, thymus, testis and ovaries

## **Goat Anti-KCNQ1 Antibody - Protocols**

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)

- [Flow Cytometry](#)
- [Cell Culture](#)