

**KCNQ1 Antibody (N-term)**  
**Affinity Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP12143a****Specification**

---

**KCNQ1 Antibody (N-term) - Product Information**

Application	WB,E
Primary Accession	<a href="#">P51787</a>
Other Accession	<a href="#">NP_000209.2</a> , <a href="#">NP_861463.1</a>
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	74699
Antigen Region	4-33

**KCNQ1 Antibody (N-term) - 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 Kv71, KCNQ1, KCNA8, KCNA9, KVLQT1

**Target/Specificity**

This KCNQ1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 4-33 amino acids from the N-terminal region of human KCNQ1.

**Dilution**

WB~~1:1000

E~~Use at an assay dependent concentration.

**Format**

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

**Storage**

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

**Precautions**

KCNQ1 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

**KCNQ1 Antibody (N-term) - Protein Information****Name** KCNQ1 ([HGNC:6294](#))

**Function** Pore-forming subunit of the voltage-gated potassium (Kv) channel involved in the regulation of cardiomyocyte excitability and important in normal development and functions of myocardium, inner ear, stomach and colon (PubMed:[10646604](#), PubMed:[25441029](#)). Associates with KCNE beta subunits that modulates current kinetics (PubMed:[10646604](#), PubMed:[11101505](#), PubMed:[19687231](#), PubMed:[8900283](#), PubMed:[9108097](#), PubMed:[9312006](#)). Induces a voltage-dependent current by rapidly activating and slowly deactivating potassium-selective outward current (PubMed:[10646604](#), PubMed:[11101505](#), PubMed:[25441029](#), PubMed:[8900283](#), PubMed:[9108097](#), PubMed:[9312006](#)). Also promotes a delayed voltage activated potassium current showing outward rectification characteristic (By similarity). During beta-adrenergic receptor stimulation, 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:[10646604](#), PubMed:[11101505](#), PubMed:[8900283](#), PubMed:[9108097](#), PubMed:[9312006](#)). Muscarinic agonist oxotremorine-M strongly suppresses KCNQ1/KCNE1 current (PubMed:[10713961](#)). When associated with KCNE3, forms the potassium channel that is important for cyclic AMP-stimulated intestinal secretion of chloride ions (PubMed:[10646604](#)). 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:[11101505](#)). When associated with KCNE4, inhibits voltage-gated potassium channel activity (PubMed:[19687231](#)). When associated with KCNE5, this complex only conducts current upon strong and continued depolarization (PubMed:[12324418](#)). Also forms a heterotetramer with KCNQ5; has a voltage-gated potassium channel activity (PubMed:[24855057](#)). Binds with phosphatidylinositol 4,5-bisphosphate (PubMed:[25037568](#)). KCNQ1-KCNE2 channel associates with Na(+)-coupled myo-inositol symporter in the apical membrane of choroid plexus epithelium and regulates the myo- inositol gradient between blood and cerebrospinal fluid with an impact on neuron excitability (By similarity).

#### Cellular Location

Cell membrane; Multi-pass membrane protein. Cytoplasmic vesicle membrane Early endosome. Membrane raft. Endoplasmic reticulum Basolateral cell membrane. Apical cell membrane {ECO:0000250|UniProtKB:P97414}; Multi-pass membrane protein. 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 is removed from the plasma membrane to the endoplasmic reticulum, where it is retained, and redistributed to the basolateral cell surface in a PI3K-dependent manner at a later stage (PubMed:21228319). Colocalizes with SLC5A3 at the apical membrane of choroid plexus epithelium {ECO:0000250|UniProtKB:P97414, ECO:0000269|PubMed:10646604, ECO:0000269|PubMed:21228319, ECO:0000269|PubMed:23529131, ECO:0000269|PubMed:24855057}

#### 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

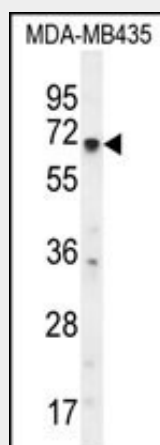
#### KCNQ1 Antibody (N-term) - Protocols

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](#)

#### KCNQ1 Antibody (N-term) - Images



KCNQ1 Antibody (N-term) (Cat. #AP12143a) western blot analysis in MDA-MB435 cell line lysates (35ug/lane). This demonstrates the KCNQ1 antibody detected the KCNQ1 protein (arrow).

#### KCNQ1 Antibody (N-term) - Background

This gene encodes 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 (also known as 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 number of contiguous genes, which are abnormally imprinted in cancer and the Beckwith-Wiedemann syndrome. This gene is also imprinted, with preferential expression from the maternal allele in some tissues, excluding cardiac muscle. Alternatively spliced transcripts encoding distinct isoforms have been described.

#### KCNQ1 Antibody (N-term) - References

Nakajo, K., et al. Proc. Natl. Acad. Sci. U.S.A. 107(44):18862-18867(2010)  
Ren, X.Q., et al. Am. J. Physiol. Heart Circ. Physiol. 299 (5), H1525-H1534 (2010) :  
Tester, D.J., et al. Am. J. Cardiol. 106(8):1124-1128(2010)  
Stuebe, A.M., et al. Am. J. Obstet. Gynecol. 203 (3), 283 (2010) :  
Mohammad, F., et al. Epigenetics 4(5):277-286(2009)