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Goat Anti-KCNQ1 Antibody

Peptide-affinity purified goat antibody
Catalog # AF1587a

Specification

Goat Anti-KCNQ1 Antibody - Product Information

Application	**WB, E**
Primary Accession	P51787
Other Accession	NP_861463, 3784, 16535 (mouse), 84020 (rat)
Reactivity	**Human**
Predicted	**Mouse, Rat, Dog**
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

Dilution
WB~~1:1000
E~~N/A

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.

Goat Anti-KCNQ1 Antibody - 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

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 Cytomety
- Cell Culture

Goat Anti-KCNQ1 Antibody - Images

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

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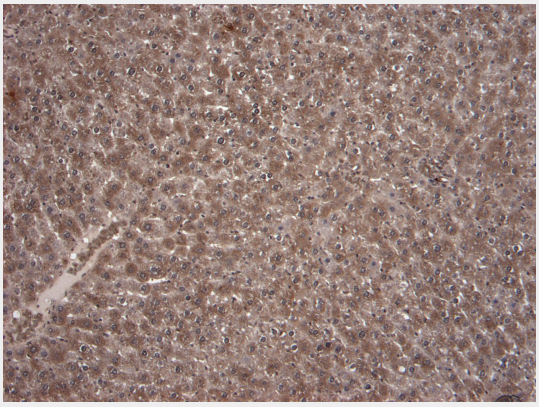
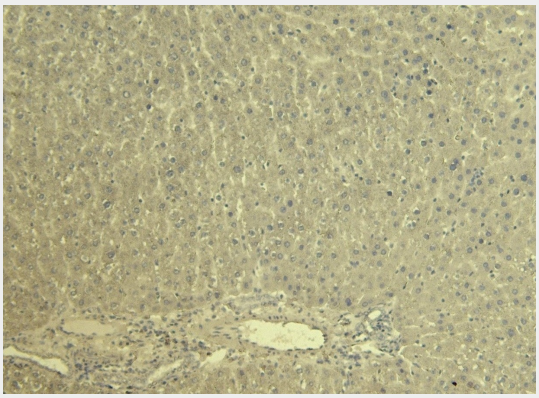
EB09214 (1µg/ml) staining of Human Heart lysate (35µg protein in RIPA buffer). Detected by chemiluminescence.



EB09214 (8µg/ml) staining of paraffin embedded Rat Liver. Heat induced antigen retrieval with citrate buffer Ph 6, HRP-staining.



EB09214 Negative Control showing staining of paraffin embedded Rat Liver, with no primary antibody.

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.

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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 20802253.
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.