Anti-KCNQ1 antibody

Description	Unconjugated Rabbit polyclonal to KCNQ1

Model	STJ191190
Host	Rabbit
Reactivity	Human
Applications	ELISA, WB
Immunogen	Synthesized peptide derived from human KCNQ1 protein.
Immunogen Region	350-430aa
Gene ID	3784
Gene Symbol	KCNQ1
Dilution range	WB 1:500-2000 ELISA 1:5000-20000
Specificity	KCNQ1 Polyclonal Antibody detects endogenous levels of protein.
Tissue Specificity	Abundantly expressed in heart, pancreas, prostate, kidney, small intestine and peripheral blood leukocytes. Less abundant in placenta, lung, spleen, colon, thymus, testis and ovaries.
Purification	KCNQ1 antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Note	For Research Use Only (RUO).
Protein Name	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

Molecular Weight	74 kDa
Clonality	Polyclonal
Conjugation	Unconjugated
Isotype	IgG
Formulation	Liquid form in PBS containing 50% glycerol,and 0.02% sodium azide.
Concentration	1 mg/ml
Storage Instruction	Store at -20°C, and avoid repeat freeze-thaw cycles.
Database Links	HGNC:6294OMIM:125853
Alternative 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
Function	Potassium channel that plays an important role in a number of tissues, including heart, inner ear, stomach and colon . Associates with KCNE beta subunits that modulates current kinetics . Induces a voltage-dependent by rapidly activating and slowly deactivating potassium-selective outward current . Promotes also a delayed voltage activated potassium current showing outward rectification characteristic . 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) . Muscarinic agonist oxotremorine-M strongly suppresses KCNQ1/KCNE1 current . When associated with KCNE3, forms the potassium channel that is important for cyclic AMP-stimulated intestinal secretion of chloride ions . This interaction with KCNE3 is reduced by 17beta-estradiol, resulting in the reduction of currents . 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 . 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 . 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 . When associated with KCNE4, inhibits voltage-gated potassium channel activity . When associated with KCNE5, this complex only conducts current upon strong and continued depolarization . Also forms a heterotetramer with KCNQ5; has a voltage-gated potassium channel activity . Binds with phosphatidylinositol 4,5-bisphosphate . Isoform 2: Non-functional alone but modulatory when coexpressed with the full-length isoform 1.
Sequence and Domain Family	The segment S4 is probably the voltage-sensor and is characterized by a series of positively charged amino acids at every third position.; The coiled-coil domain mediates tetramerization. The segment S6 is involved in the inhibition of voltage-gated potassium channel activity by KCNE4. The C-terminal assembly domain promotes self-interactiona; allows functional channel.
Cellular Localization	Cell membrane Cytoplasmic vesicle membrane Early endosome Membrane raft Endoplasmic reticulum Basolateral cell membrane. Colocalized with KCNE3 at the plasma membrane . Upon 17beta-oestradiol treatment,

	colocalizes with RAB5A at early endosome . Heterotetramer with KCNQ5 is highly retained at the endoplasmic reticulum and is localized outside of lipid raft microdomains . 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 .
Post-translational Modifications	Phosphorylation at Ser-27 by PKA; increases delayed rectifier potassium channel activity of the KCNQ1-KCNE1 complex through a macromolecular complex that includes PKA, PP1, and the targeting protein AKAP9. Ubiquitinated by NEDD4L; promotes internalization . The ubiquitinylated form is internalized through a clathrin-mediated endocytosis by interacting with AP2M1 and is recycled back to the cell membrane via RAB4A and RAB11A . Deubiquitinated by USP2; counteracts the NEDD4L-specific down-regulation of I(Ks) and restores the membrane localization.