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KCNK1 Rabbit pAb

Catalog # AP99023

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	O00180
Other Accession	O00180
Reactivity	Mouse
Predicted	Rat, Pig, Human, Rabbit, Dog, Horse, Sheep
Host	Rabbit
Clonality	Polyclonal
Calculated MW	38143
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human KCNK1
Epitope Specificity	241-336/336
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the two pore domain potassium channel (TC 1.A.1.8) family.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	This gene encodes one of the members of the superfamily of potassium channel proteins containing two pore-forming P domains. The product of this gene has not been shown to be a functional channel, however, it may require other non-pore-forming proteins for activity. [provided by RefSeq, Jul 2008]

Additional Information

Gene ID	3775
Other Names	DPK; HOHO; K2P1; K2p1.1; KCNO1; TWIK-1; TWIK1; Twik; KCNK1_HUMAN; KCNK1; Inward rectifying potassium channel protein TWIK-1; Potassium channel K2P1; Potassium channel KCNO1; HOHO1; KCNK1_MOUSE; KCNK1_RAT; Inward rectifying potassium channel protein TWIK-1 (rTWIK); potassium two pore domain channel subfamily K member 1; potassium channel, subfamily K, member 1; potassium channel, two pore domain subfamily K, member 1; tandem of P domains in a weak inward rectifying K+ channel 1
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name KCNK1

Synonyms HOHO1 {ECO:0000303|PubMed:9462864}, KCNO

Function Ion channel that contributes to passive transmembrane potassium transport and to the regulation of the resting membrane potential in brain astrocytes, but also in kidney and in other tissues (PubMed:15820677, PubMed:21653227). Forms dimeric channels through which potassium ions pass in accordance with their electrochemical gradient (PubMed:22282804). The channel is selective for K(+) ions at physiological potassium concentrations and at neutral pH, but becomes permeable to Na(+) at subphysiological K(+) levels and upon acidification of the extracellular medium (PubMed:21653227, PubMed:22431633). The homodimer has very low potassium channel activity, when expressed in heterologous systems, and can function as weakly inward rectifying potassium channel (PubMed:15820677, PubMed:21653227, PubMed:22431633, PubMed:23169818, PubMed:25001086, PubMed:8605869, PubMed:8978667). Channel activity is modulated by activation of serotonin receptors (By similarity). Heterodimeric channels containing KCNK1 and KCNK2 have much higher activity, and may represent the predominant form in astrocytes (By similarity). Heterodimeric channels containing KCNK1 and KCNK3 or KCNK9 have much higher activity (PubMed:23169818). Heterodimeric channels formed by KCNK1 and KCNK9 may contribute to halothane-sensitive currents (PubMed:23169818). Mediates outward rectifying potassium currents in dentate gyrus granule cells and contributes to the regulation of their resting membrane potential (By similarity). Contributes to the regulation of action potential firing in dentate gyrus granule cells and down-regulates their intrinsic excitability (By similarity). In astrocytes, the heterodimer formed by KCNK1 and KCNK2 is required for rapid glutamate release in response to activation of G protein-coupled receptors, such as F2R and CNR1 (By similarity). Required for normal ion and water transport in the kidney (By similarity). Contributes to the regulation of the resting membrane potential of pancreatic beta cells (By similarity). The low channel activity of homodimeric KCNK1 may be due to sumoylation (PubMed:15820677, PubMed:20498050, PubMed:23169818). The low channel activity may be due to rapid internalization from the cell membrane and retention in recycling endosomes (PubMed:19959478). Permeable to monovalent cations with ion selectivity for K(+) > Rb(+) >> NH4(+) >> Cs(+) = Na(+) = Li(+).

Cellular Location Cell membrane; Multi-pass membrane protein {ECO:0000269|PubMed:22282804, ECO:0000269|PubMed:8978667, ECO:0000305} Recycling endosome. Synaptic cell membrane {ECO:0000250|UniProtKB:Q9Z2T2}. Cytoplasmic vesicle {ECO:0000250|UniProtKB:O08581}. Perikaryon {ECO:0000250|UniProtKB:O08581}. Cell projection, dendrite {ECO:0000250|UniProtKB:O08581}. Cell projection {ECO:0000250|UniProtKB:O08581}. Apical cell membrane; Multi-pass membrane protein. Note=The heterodimer with KCNK2 is detected at the astrocyte cell membrane. Not detected at the astrocyte cell membrane when KCNK2 is absent. Detected on neuronal cell bodies, and to a lesser degree on neuronal cell projections. Detected on hippocampus dentate gyrus granule cell bodies and to a lesser degree on proximal dendrites Detected at the apical cell membrane in stria vascularis in the cochlea. Detected at the apical cell membrane of vestibular dark cells situated between the crista and the utricle in the inner ear. Detected at the apical cell membrane in kidney proximal tubule segment S1 and in subapical compartments in segments S1, S2 and S3. Predominantly in cytoplasmic structures in kidney distal convoluted tubules and collecting ducts (By similarity). Detected at the apical

	cell membrane of bronchial epithelial cells (PubMed:21964404) {ECO:0000250|UniProtKB:O08581, ECO:0000250|UniProtKB:Q9Z2T2, ECO:0000269|PubMed:21964404}
Tissue Location	Detected in bronchial epithelial cells (PubMed:21964404). Detected in heart left atrium and left ventricle (PubMed:17478540). Detected in cardiac myocytes (at protein level) (PubMed:21653227). Widely expressed with high levels in heart, brain and kidney, and lower levels in colon, ovary, placenta, lung and liver (PubMed:8605869, PubMed:9362344). Highly expressed in cerebellum, and detected at lower levels in amygdala, caudate nucleus, brain cortex, hippocampus, putamen, substantia nigra, thalamus, dorsal root ganglion, spinal cord, pituitary, heart, kidney, lung, placenta, pancreas, stomach, small intestine, uterus and prostate (PubMed:11165377) Detected in right and left heart ventricle and atrium, and in heart Purkinje fibers (PubMed:17478540).

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