Anti-TWIK-1 antibody

Description	Rabbit polyclonal to TWIK-1.

Model	STJ96151
Host	Rabbit
Reactivity	Human, Rat
Applications	ELISA, WB
Immunogen	Synthesized peptide derived from human TWIK-1
Immunogen Region	260-340 aa, C-terminal
Gene ID	3775
Gene Symbol	KCNK1
Dilution range	WB 1:500-1:2000ELISA 1:40000
Specificity	TWIK-1 Polyclonal Antibody detects endogenous levels of TWIK-1 protein.
Tissue Specificity	Detected in bronchial epithelial cells . Detected in heart left atrium and left ventricle . Detected in cardiac myocytes (at protein level) . Widely expressed with high levels in heart, brain and kidney, and lower levels in colon, ovary, placenta, lung and liver . 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, stom
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Note	For Research Use Only (RUO).

Protein Name	Potassium channel subfamily K member 1 Inward rectifying potassium channel protein TWIK-1 Potassium channel K2P1 Potassium channel KCNO1
Molecular Weight	38 kDa
Clonality	Polyclonal
Conjugation	Unconjugated
Isotype	IgG
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Concentration	1 mg/ml
Storage Instruction	Store at -20°C, and avoid repeat freeze-thaw cycles.
Database Links	HGNC:6272OMIM:601745
Alternative Names	Potassium channel subfamily K member 1 Inward rectifying potassium channel protein TWIK-1 Potassium channel K2P1 Potassium channel KCNO1
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 . Forms dimeric channels through which potassium ions pass in accordance with their electrochemical gradient. 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 . The homodimer has very low potassium channel activity, when expressed in heterologous systems, and can function as weakly inward rectifying potassium channel . Channel activity is modulated by activation of serotonin receptors . Heterodimeric channels containing KCNK1 and KCNK2 have much higher activity, and may represent the predominant form in astrocytes . Heterodimeric channels containing KCNK1 and KCNK3 or KCNK9 have much higher activity . Heterodimeric channels formed by KCNK1 and KCNK9 may contribute to halothane-sensitive currents . Mediates outward rectifying potassium currents in dentate gyrus granule cells and contributes to the regulation of their resting membrane potential . Contributes to the regulation of action potential firing in dentate gyrus granule cells and down-regulates their intrinsic excitability . 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 . Required for normal ion and water transport in the kidney . Contributes to the regulation of the resting membrane potential of pancreatic beta cells . The low channel activity of homodimeric KCNK1 may be due to sumoylation . The low channel activity may be due to rapid internalization from the cell membrane and retention in recycling endosomes .
Cellular Localization	Cell membrane Recycling endosome Cell junction, synapse Cytoplasmic vesicle Perikaryon Cell projection, dendrite Cell projection Apical cell membrane. 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 in synaptic membranes. 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 . Detected at the apical cell membrane of bronchial epithelial cells .
Post-translational Modifications	Sumoylation is controversial. Sumoylated by UBE2I . Not sumoylated when expressed in xenopus oocytes or mammalian cells . Sumoylation inactivates the channel, but does not interfere with expression at the cell membrane . Sumoylation of a single subunit is sufficient to silence the dimeric channel . Sumoylation of KCNK1 is sufficient to silence heterodimeric channels formed by KCNK1 and KCNK3 or KCNK9 . Desumoylated by SENP1; this activates the channel . Desumoylated by SENP1; this strongly increases halothane-mediated activation of heterodimeric channels formed with KCNK9 . SENP1 treatment has no effect .