

KCNK3 Rabbit pAb

Catalog # AP97073

Product Information

Application	WB
Primary Accession	Q14649
Other Accession	Q14649
Reactivity	Rat
Predicted	Human, Mouse, Dog
Host	Rabbit
Clonality	Polyclonal
Calculated MW	43518
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human KCNK3
Epitope Specificity	181-280/394
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	KCNK9 or TASK-3 (TWIK-related Acid sensitive K ⁺ channel) is a member of the potassium channel family of proteins that contain two-pore domain and four transmembrane domains. These channels are characterized as leak K ⁺ channels that are sensitive to changes in the extracellular pH. The physiological functions of TASK channels are largely unknown; it has been proposed that they may be involved in the regulation of breathing, aldosterone secretion and anesthetic-mediated neuronal activity. They were found to act in neurons' membrane potential and in resting K ⁺ currents. KCNK9 gene has been localized to the chromosomal region 8q24. The protein is expressed at high levels mainly in the brain and at low levels in other tissues. In contrast to normal tissues, it was found that KCNK9 is amplified in some human carcinomas such as breast, lung, colon and metastatic prostate. In 10% of breast cancer patients this gene is amplified, and in 44% the protein is over expressed. Monoclonal antibodies to KNCK9 are an important tool for studying the potassium channel family of proteins in different tissues.

Additional Information

Gene ID	3777
Other Names	K2p3.1; OAT1; PPH4; TASK; TASK-1; TASK1; TBAK1; cTBAK-1; rTASK; KCNK3_HUMAN; KCNK3; Acid-sensitive potassium channel protein TASK-1; TWIK-related acid-sensitive K(+) channel 1; Two pore potassium channel KT3.1 (Two pore K(+) channel KT3.1); Q53SU2_HUMAN; KCNK3_MOUSE; Cardiac two pore background K(+) channel; Ctbak; KCNK3_RAT; potassium two pore domain channel subfamily K member 3; potassium channel, subfamily K,

member 3; potassium channel, two pore domain subfamily K, member 3;
TWIK-related acid-sensitive K⁺ 1

Dilution

WB=1:500-2000

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

KCNK3 {ECO:0000303 | PubMed:10748056, ECO:0000312 | HGNC:HGNC:6278}

Function

K(+) channel that conducts voltage-dependent outward rectifying currents upon membrane depolarization. Voltage sensing is coupled to K(+) electrochemical gradient in an 'ion flux gating' mode where outward but not inward ion flow opens the gate (PubMed:[23169818](#), PubMed:[26919430](#), PubMed:[32499642](#), PubMed:[36195757](#), PubMed:[9312005](#)). Changes ion selectivity and becomes permeable to Na(+) ions in response to extracellular acidification. Protonation of the pH sensor His-98 stabilizes C-type inactivation conformation likely converting the channel from outward K(+)-conducting, to inward Na(+)-conducting to nonconductive state (PubMed:[22948150](#)). Homo- and heterodimerizes to form functional channels with distinct regulatory and gating properties (PubMed:[23169818](#), PubMed:[32499642](#)). Allows K(+) currents with fast- gating kinetics important for the repolarization and hyperpolarization phases of action potentials (By similarity). In cerebellar granule cells, heteromeric KCNK3:KCNK9 channel may hyperpolarize the resting membrane potential to limit intrinsic neuronal excitability, but once the action potential threshold is reached, it may support high- frequency action potential firing and increased neuronal excitability (By similarity). Dispensable for central chemosensory respiration i.e. breathing controlled by brainstem CO₂/pH, it rather conducts pH- sensitive currents and controls the firing rate of serotonergic raphe neurons involved in potentiation of the respiratory chemoreflex. Additionally, imparts chemosensitivity to type 1 cells in carotid bodies which respond to a decrease in arterial oxygen pressure or an increase in carbon dioxide pressure or pH to initiate adaptive changes in pulmonary ventilation (By similarity). In adrenal gland, contributes to the maintenance of a hyperpolarized resting membrane potential of aldosterone-producing cells at zona glomerulosa and limits aldosterone release as part of a regulatory mechanism that controls arterial blood pressure and electrolyte homeostasis (By similarity). In brown adipocytes, mediates K(+) efflux that counteracts norepinephrine- induced membrane depolarization, limits Ca(2+) efflux and downstream cAMP and PKA signaling, ultimately attenuating lipid oxidation and adaptive thermogenesis (By similarity).

Cellular Location

Cell membrane; Multi-pass membrane protein

Tissue Location

Widespread expression in adult. Strongest expression in pancreas and placenta. Lower expression in brain, lung, prostate, heart, kidney, uterus, small intestine and colon

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