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Kv1.2 Rabbit pAb

Catalog # AP96901

Product Information

Application	WB, IHC-P, IHC-F, IF
Primary Accession	P16389
Other Accession	P16389
Reactivity	Mouse
Predicted	Rat, Pig, Human, Rabbit, Zebrafish, Chicken, Dog, Horse, Sheep
Host	Rabbit
Clonality	Polyclonal
Calculated MW	56717
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human Kv1.2
Epitope Specificity	401-499/499
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 potassium channel family.
SUBUNIT	Heterotetramer of potassium channel proteins.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Kv1.2 mediates the voltage-dependent potassium ion permeability of excitable membranes. Assuming opened or closed conformations in response to the voltage difference across the membrane, the protein forms a potassium-selective channel through which K(+) ions may pass in accordance with their electrochemical gradient. Kv1.2 binds PDZ domains of DLG1, DLG2 and DLG4. The N-terminus may be important in determining the rate of inactivation of the channel while the tail may play a role in modulation of channel activity and/or targeting of the channel to specific subcellular compartments.

Additional Information

Gene ID	3737
Other Names	DEE32; EIEE32; HBK5; HK4; HUKIV; KV1.2; MK2; NGK1; RBK2; Akr6a4; Gm10672; Kca1-2; Mk-2; BK2; KCNA2_HUMAN; KCNA2; Voltage-gated K(+) channel HuKIV; Voltage-gated potassium channel HBK5; Voltage-gated potassium channel subunit Kv1.2; KCNA2_MOUSE; KCNA2_RAT; RAK; RCK5; potassium voltage-gated channel subfamily A member 2; potassium voltage-gated channel, shaker-related subfamily, member 2
Dilution	WB=1:500-2000,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	KCNA2
Function	Voltage-gated potassium channel that mediates transmembrane potassium transport in excitable membranes, primarily in the brain and the central nervous system, but also in the cardiovascular system. Prevents aberrant action potential firing and regulates neuronal output. Forms tetrameric potassium-selective channels through which potassium ions pass in accordance with their electrochemical gradient. The channel alternates between opened and closed conformations in response to the voltage difference across the membrane (PubMed:11211111, PubMed:19912772, PubMed:23769686, PubMed:8495559). Can form functional homotetrameric channels and heterotetrameric channels that contain variable proportions of KCNA1, KCNA2, KCNA4, KCNA5, KCNA6, KCNA7, and possibly other family members as well; channel properties depend on the type of alpha subunits that are part of the channel (PubMed:20220134, PubMed:8495559). Channel properties are modulated by cytoplasmic beta subunits that regulate the subcellular location of the alpha subunits and promote rapid inactivation of delayed rectifier potassium channels. In vivo, membranes probably contain a mixture of heteromeric potassium channel complexes, making it difficult to assign currents observed in intact tissues to any particular potassium channel family member. Homotetrameric KCNA2 forms a delayed-rectifier potassium channel that opens in response to membrane depolarization, followed by slow spontaneous channel closure (PubMed:19912772, PubMed:23769686). In contrast, a heteromultimer formed by KCNA2 and KCNA4 shows rapid inactivation (PubMed:8495559). Regulates neuronal excitability and plays a role as pacemaker in the regulation of neuronal action potentials (By similarity). KCNA2- containing channels play a presynaptic role and prevent hyperexcitability and aberrant action potential firing (By similarity). Response to toxins that are selective for KCNA2-containing potassium channels suggests that in Purkinje cells, dendritic subthreshold KCNA2- containing potassium channels prevent random spontaneous calcium spikes, suppressing dendritic hyperexcitability without hindering the generation of somatic action potentials, and thereby play an important role in motor coordination (By similarity). Plays a role in the induction of long-term potentiation of neuron excitability in the CA3 layer of the hippocampus (By similarity). May function as down-stream effector for G protein-coupled receptors and inhibit GABAergic inputs to basolateral amygdala neurons (By similarity). May contribute to the regulation of neurotransmitter release, such as gamma-aminobutyric acid (GABA) (By similarity). Contributes to the regulation of the axonal release of the neurotransmitter dopamine (By similarity). Reduced KCNA2 expression plays a role in the perception of neuropathic pain after peripheral nerve injury, but not acute pain (By similarity). Plays a role in the regulation of the time spent in non-rapid eye movement (NREM) sleep (By similarity).
Cellular Location	Cell membrane; Multi-pass membrane protein {ECO:0000250|UniProtKB:P63142, ECO:0000305}. Membrane {ECO:0000250|UniProtKB:P63142}. Cell projection, axon. Synapse {ECO:0000250|UniProtKB:P63142} Endoplasmic reticulum membrane {ECO:0000250|UniProtKB:P63142}. Cell projection, lamellipodium membrane {ECO:0000250|UniProtKB:P63142} Synapse, synaptosome {ECO:0000250|UniProtKB:P63141}. Presynaptic cell membrane {ECO:0000250|UniProtKB:P63141}. Cell projection, dendrite {ECO:0000250|UniProtKB:P63141}. Cell junction, paranodal septate junction

	{ECO:0000250|UniProtKB:P63141}. Note=KCNA2 by itself is detected both at the endoplasmic reticulum and at the cell membrane Coexpression with KCNA4 or with beta subunits promotes expression at the cell membrane. Coexpression with KCNA1 inhibits cell surface expression. In myelinated peripheral axons, clustered in the juxtaparadonal region and at an internodal line located along the mesaxon and below the Schmidt-Lanterman incisures (By similarity) {ECO:0000250|UniProtKB:P63141, ECO:0000250|UniProtKB:P63142}
Tissue Location	Detected in brain cortex (PubMed:16473933). Detected in peroneal nerve in the juxtaparanodal regions of the node of Ranvier; expression is decreased in patients with diabetes mellitus that suffer from axonal neuropathy (PubMed:22649228). Detected in paranodal and juxtanodal zones in myelinated spinal cord (at protein level) (PubMed:11086297).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.