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KCNAB1/Kv beta 1 Rabbit pAb

Catalog # AP96773

Product Information

Application	WB
Primary Accession	Q14722
Other Accession	Q14722
Reactivity	Rat, Human
Predicted	Pig, Mouse, Rabbit, Chicken, Dog, Sheep
Host	Rabbit
Clonality	Polyclonal
Calculated MW	46563
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human KCNAB1/Kv beta 1
Epitope Specificity	131-230/419
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 shaker potassium channel beta subunit family.
SUBUNIT	Forms heteromultimeric complex with alpha subunits. Interacts with SQSTM1 (By similarity). Part of a complex containing KCNA1, KCNA4 and LGI1 (By similarity).
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Voltage-gated K+ channels in the plasma membrane control the repolarization and the frequency of action potentials in neurons, muscles and other excitable cells. The KV gene family encodes more than 30 proteins that comprise the subunits of the K+ channels, and they vary in their gating and permeation properties, subcellular distribution and expression patterns. Functional KV channels assemble as tetramers consisting of pore-forming □ subunits (KV), which include the KV1, KV2, KV3 and KV4 proteins, and accessory or KV-subunits that modify the gating properties of the coexpressed KV subunits. KV∫, also known as KCNAB1 (potassium voltage-gated channel, shaker-related subfamily, beta member 1), is a 419 amino acid accessory K+ channel protein that exists as three alternatively spliced isoforms and regulates the activity of the pore-forming □subunit. It is expressed in brain, with highest levels detected in caudate nucleus, hippocampus and thalamus.

Additional Information

Gene ID	7881
Other Names	KCNAB3; KVB1.1; Kvbeta1.1; AKR6A3; KCNA1B; KV-BETA-1; Kvb1.3; hKvBeta3; hKvb3; Akr8a8; mKv(beta)1; KvBeta3; KCAB1_CHICK; KCNAB1; K(+) channel subunit beta-1; 1.1.1.-; KCAB1_BOVIN; KCAB1_HUMAN; KCAB1_MOUSE; Kvb1; KCAB1_RAT; potassium voltage-gated channel subfamily A regulatory beta subunit 1; potassium voltage-gated channel, shaker-related subfamily, beta

	member 1; potassium voltage-gated channel subfamily A member regulatory beta subunit 1; K+ channel Beta1a chain
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	KCNAB1 (HGNC:6228)
Synonyms	KCNA1B
Function	Regulatory subunit of the voltage-gated potassium (Kv) Shaker channels composed of pore-forming and potassium-conducting alpha subunits and of regulatory beta subunits (PubMed:17156368, PubMed:17540341, PubMed:19713757, PubMed:7499366, PubMed:7603988). The beta-1/KCNAB1 cytoplasmic subunit mediates closure of delayed rectifier potassium channels by physically obstructing the pore via its N- terminal domain and increases the speed of channel closure for other family members (PubMed:9763623). Promotes the inactivation of Kv1.1/KCNA1, Kv1.2/KCNA2, Kv1.4/KCNA4, Kv1.5/KCNA5 and Kv1.6/KCNA6 alpha subunit-containing channels (PubMed:12077175, PubMed:12130714, PubMed:15361858, PubMed:17156368, PubMed:17540341, PubMed:19713757, PubMed:7499366, PubMed:7603988, PubMed:7649300, PubMed:7890764, PubMed:9763623). Displays nicotinamide adenine dinucleotide phosphate (NADPH)-dependent aldoketoreductase activity by catalyzing the NADPH- dependent reduction of a variety of endogenous aldehydes and ketones (By similarity). The binding of NADPH is required for efficient down- regulation of potassium channel activity (PubMed:17540341). Oxidation of the bound NADPH restrains N-terminal domain from blocking the channel, thereby decreasing N-type inactivation of potassium channel activity (By similarity).
Cellular Location	Cytoplasm. Membrane {ECO:0000250|UniProtKB:P63144}; Peripheral membrane protein; Cytoplasmic side. Cell membrane; Peripheral membrane protein; Cytoplasmic side. Note=Recruited to the cytoplasmic side of the cell membrane via its interaction with pore-forming potassium channel alpha subunits.
Tissue Location	In brain, expression is most prominent in caudate nucleus, hippocampus and thalamus. Significant expression also detected in amygdala and subthalamic nucleus. Also expressed in both healthy and cardiomyopathic heart. Up to four times more abundant in left ventricle than left atrium.

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