

KCNAB1 Antibody(N-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab) Catalog # AP19413a

Specification

KCNAB1 Antibody(N-term) - Product Information

Application	WB,E
Primary Accession	<u>Q14722</u>
Other Accession	<u>NP_003462.2</u>
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	46563
Antigen Region	15-44

KCNAB1 Antibody(N-term) - Additional Information

Gene ID 7881

Other Names

Voltage-gated potassium channel subunit beta-1, K(+) channel subunit beta-1, Kv-beta-1, KCNAB1, KCNA1B

Target/Specificity

This KCNAB1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 15-44 amino acids from the N-terminal region of human KCNAB1.

Dilution WB~~1:1000 E~~Use at an assay dependent concentration.

Format

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

Storage

Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions

KCNAB1 Antibody(N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

KCNAB1 Antibody(N-term) - Protein Information

Name KCNAB1 (<u>HGNC:6228</u>)



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:<u>17156368</u>, PubMed:<u>17540341</u>, PubMed:<u>19713757</u>, PubMed:<u>7499366</u>, PubMed:<u>7603988</u>). 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:<u>9763623</u>). 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:<u>12077175</u>, PubMed:<u>12130714</u>, PubMed:<u>15361858</u>, PubMed:<u>17156368</u>, PubMed:<u>7603988</u>, PubMed:<u>7649300</u>, PubMed:<u>7890764</u>, PubMed:<u>9763623</u>). 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:<u>17540341</u>). 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.

KCNAB1 Antibody(N-term) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- <u>Western Blot</u>
- <u>Blocking Peptides</u>
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- <u>Cell Culture</u>

KCNAB1 Antibody(N-term) - Images





Western blot analysis of lysate from human heart tissue lysate, using KCNAB1 Antibody (N-term)(Cat. #AP19413a). AP19413a was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody. Lysate at 35ug per lane.

KCNAB1 Antibody(N-term) - Background

Potassium channels represent the most complex class of voltage-gated ion channels from both functional and structural standpoints. Their diverse functions include regulating neurotransmitter release, heart rate, insulin secretion, neuronal excitability, epithelial electrolyte transport, smooth muscle contraction, and cell volume. Four sequence-related potassium channel genes - shaker, shaw, shab, and shal - have been identified in Drosophila, and each has been shown to have human homolog(s). This gene encodes a member of the potassium channel, voltage-gated, shaker-related subfamily. This member includes three distinct isoforms which are encoded by three alternatively spliced transcript variants of this gene. These three isoforms are beta subunits, which form heteromultimeric complex with alpha subunits and modulate the activity of the pore-forming alpha subunits.

KCNAB1 Antibody(N-term) - References

Rose, J.E., et al. Mol. Med. 16 (7-8), 247-253 (2010) : Decher, N., et al. EMBO J. 27(23):3164-3174(2008) Cavalleri, G.L., et al. Lancet Neurol 6(11):970-980(2007) Lamesch, P., et al. Genomics 89(3):307-315(2007) Lunetta, K.L., et al. BMC Med. Genet. 8 SUPPL 1, S13 (2007) :