

Anti-KCNA1/Kv1.1 Rabbit Monoclonal Antibody
Catalog # ABO13668**Specification****Anti-KCNA1/Kv1.1 Rabbit Monoclonal Antibody - Product Information**

Application	WB, IP
Primary Accession	Q09470
Host	Rabbit
Isotype	Rabbit IgG
Reactivity	Human
Clonality	Monoclonal
Format	Liquid

Description

Anti-KCNA1/Kv1.1 Rabbit Monoclonal Antibody . Tested in WB, IP applications. This antibody reacts with Human.

Anti-KCNA1/Kv1.1 Rabbit Monoclonal Antibody - Additional Information

Gene ID 3736

Other Names

Potassium voltage-gated channel subfamily A member 1, Voltage-gated K(+) channel HuK1, Voltage-gated potassium channel HBK1, Voltage-gated potassium channel subunit Kv1.1, KCNA1 (http://www.genenames.org/cgi-bin/gene_symbol_report?hgnc_id=6218)
HGNC:6218

Calculated MW

56466 MW KDa

Application Details

WB 1:5000-1:10000
IP 1:10

Subcellular Localization

Cell membrane ; Multi- pass membrane protein. Membrane. Cell projection, axon. Cytoplasmic vesicle. Perikaryon. Endoplasmic reticulum. Cell projection, dendrite. Cell junction. Cell junction, synapse. Cell junction, synapse, presynaptic cell membrane. Homotetrameric KCNA1 is primarily located in the endoplasmic reticulum. Interaction with KCNA2 and KCNAB2 or with KCNA4 and KCNAB2 promotes expression at the cell membrane (By similarity). Detected at axon terminals (By similarity)..

Tissue Specificity

Detected adjacent to nodes of Ranvier in juxtaparanodal zones in spinal cord nerve fibers, but also in paranodal regions in some myelinated spinal cord axons (at protein level) (PubMed:11086297). Detected in the islet of Langerhans (PubMed:21483673)..

Contents

Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.

Immunogen

A synthesized peptide derived from human KCNA1

Purification

Affinity-chromatography

Storage

Store at -20°C for one year. For short term storage and frequent use, store at 4°C for up to one month. Avoid repeated freeze-thaw cycles.

Anti-KCNA1/Kv1.1 Rabbit Monoclonal Antibody - Protein Information

Name KCNA1 ([HGNC:6218](#))

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 kidney (PubMed: [19903818](http://www.uniprot.org/citations/19903818)), PubMed: [8845167](http://www.uniprot.org/citations/8845167)). Contributes to the regulation of the membrane potential and nerve signaling, and prevents neuronal hyperexcitability (PubMed: [17156368](http://www.uniprot.org/citations/17156368)). 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: [19912772](http://www.uniprot.org/citations/19912772)). 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: [12077175](http://www.uniprot.org/citations/12077175), PubMed: [17156368](http://www.uniprot.org/citations/17156368)). 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 (PubMed: [12077175](http://www.uniprot.org/citations/12077175), PubMed: [17156368](http://www.uniprot.org/citations/17156368)). 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 KCNA1 forms a delayed-rectifier potassium channel that opens in response to membrane depolarization, followed by slow spontaneous channel closure (PubMed: [19307729](http://www.uniprot.org/citations/19307729), PubMed: [19903818](http://www.uniprot.org/citations/19903818), PubMed: [19912772](http://www.uniprot.org/citations/19912772), PubMed: [19968958](http://www.uniprot.org/citations/19968958)). In contrast, a heterotetrameric channel formed by KCNA1 and KCNA4 shows rapid inactivation (PubMed: [17156368](http://www.uniprot.org/citations/17156368)). Regulates neuronal excitability in hippocampus, especially in mossy fibers and medial perforant path axons, preventing neuronal hyperexcitability. Response to toxins that are selective for KCNA1, respectively for KCNA2, suggests that heteromeric potassium channels composed of both KCNA1 and KCNA2 play a role in pacemaking and regulate the output of deep cerebellar nuclear neurons (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) release (By similarity). Plays a role in regulating the generation of action potentials and preventing hyperexcitability in myelinated axons of the vagus nerve, and thereby contributes to the regulation of heart contraction (By similarity). Required for normal neuromuscular responses (PubMed: [17156368](#))

[11026449](http://www.uniprot.org/citations/11026449), PubMed: [17136396](http://www.uniprot.org/citations/17136396)). Regulates the frequency of neuronal action potential firing in response to mechanical stimuli, and plays a role in the perception of pain caused by mechanical stimuli, but does not play a role in the perception of pain due to heat stimuli (By similarity). Required for normal responses to auditory stimuli and precise location of sound sources, but not for sound perception (By similarity). The use of toxins that block specific channels suggest that it contributes to the regulation of the axonal release of the neurotransmitter dopamine (By similarity). Required for normal postnatal brain development and normal proliferation of neuronal precursor cells in the brain (By similarity). Plays a role in the reabsorption of Mg(2+) in the distal convoluted tubules in the kidney and in magnesium ion homeostasis, probably via its effect on the membrane potential (PubMed: [19307729](http://www.uniprot.org/citations/19307729), PubMed: [23903368](http://www.uniprot.org/citations/23903368)).

Cellular Location

Cell membrane; Multi-pass membrane protein. Membrane Cell projection, axon. Cytoplasmic vesicle. Perikaryon {ECO:0000250|UniProtKB:P10499}. Endoplasmic reticulum {ECO:0000250|UniProtKB:P10499}. Cell projection, dendrite {ECO:0000250|UniProtKB:P16388}. Cell junction {ECO:0000250|UniProtKB:P16388}. Synapse {ECO:0000250|UniProtKB:P16388}. Presynaptic cell membrane {ECO:0000250|UniProtKB:P10499}. Presynapse {ECO:0000250|UniProtKB:P16388}. Note=Homotetrameric KCNA1 is primarily located in the endoplasmic reticulum. Interaction with KCNA2 and KCNAB2 or with KCNA4 and KCNAB2 promotes expression at the cell membrane (By similarity). {ECO:0000250|UniProtKB:P10499, ECO:0000250|UniProtKB:P16388}

Tissue Location

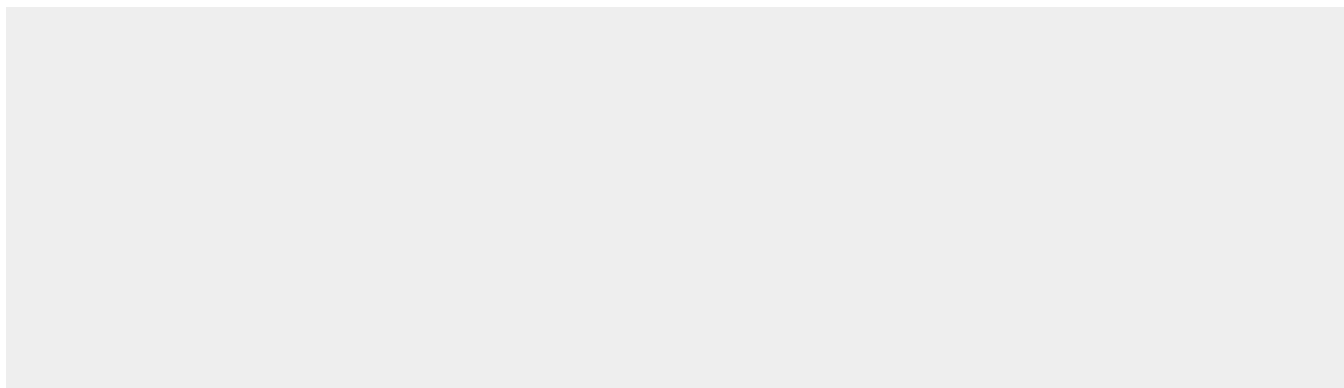
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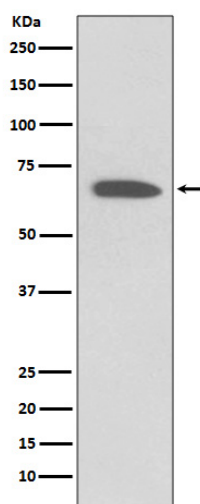
Anti-KCNA1/Kv1.1 Rabbit Monoclonal Antibody - Protocols

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

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

Anti-KCNA1/Kv1.1 Rabbit Monoclonal Antibody - Images





Western blot analysis of KCNA1 expression in Human fetal brain lysate.