

Rabbit KCND2 Polyclonal Antibody | anti-KCND2 antibody

KCND2 Antibody (N-term)

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA287621	Rabbit	Human (Predicted Reactivity: Mouse, Rabbit, Rat)	Immunohistochemistry, ELISA, Western Blot

PRODUCT SYNONYMS

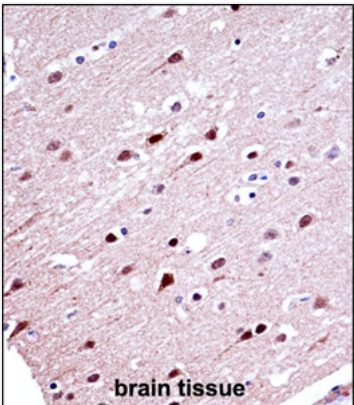
KCND2; Polyclonal Antibody; KCND2 Antibody (N-term); Potassium voltage-gated channel subfamily D member 2; Voltage-gated potassium channel subunit Kv42; KIAA1044; anti-KCND2 antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human (Predicted Reactivity: Mouse, Rabbit, Rat)
Clonality	Polyclonal
Isotype	IgG
Specificity	This KCND2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 123-151 amino acids from the N-terminal region of human KCND2.
Purity/Purification	Peptide Affinity Purified Rabbit Polyclonal Antibody (Pab)
Form/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.
Sequence Positions	123-151
Sequence Length	630
Applicable Applications for anti-KCND2 antibody	IHC (Immunohistochemistry), ELISA, WB (Western Blot)
Function	Voltage-gated potassium channel that mediates transmembrane potassium transport in excitable membranes, primarily in the brain. Mediates the major part of the dendritic A-type current I(SA) in brain neurons (By similarity). This current is activated at membrane potentials that are below the threshold for action potentials. It regulates neuronal excitability, prolongs the latency before the first spike in a series of action potentials, regulates the frequency of repetitive action potential firing, shortens the duration of action potentials and regulates the back-propagation of action potentials from the neuronal cell body to the dendrites. Contributes to the regulation of the circadian rhythm of action potential firing in suprachiasmatic nucleus neurons, which regulates the circadian rhythm of locomotor activity (By similarity). Functions downstream of the metabotropic glutamate receptor GRM5 and plays a role in neuronal excitability and in nociception mediated by activation of GRM5 (By similarity). Mediates the transient outward current I(to) in rodent heart left ventricle apex cells, but not in human heart, where this current is mediated by another family member. Forms tetrameric potassium-selective channels through which potassium ions pass in accordance with their electrochemical gradient (PubMed:10551270, PubMed:15454437, PubMed:14695263, PubMed:14623880, PubMed:14980201, PubMed:16934482, PubMed:24811166, PubMed:24501278). The channel alternates between opened and closed conformations in response to the voltage difference across the membrane (PubMed:11507158). Can form functional homotetrameric channels and heterotetrameric channels that contain variable proportions of KCND2 and KCND3; channel properties depend on the type of pore-forming alpha subunits that are part of the channel. In vivo, membranes probably contain a mixture of heteromeric potassium channel complexes. Interaction with specific isoforms of the regulatory subunits KCNIP1, KCNIP2, KCNIP3 or KCNIP4 strongly increases expression at the cell surface and thereby increases channel activity; it modulates the kinetics of channel activation and inactivation, shifts the threshold for channel activation to more negative voltage values, shifts the threshold for inactivation to less negative voltages and accelerates recovery after inactivation (PubMed:15454437, PubMed:14623880, PubMed:14980201, PubMed:19171772, PubMed:24501278, PubMed:24811166). Likewise, interaction with DPP6 or DPP10 promotes expression at the cell membrane and regulates both channel characteristics and activity (By similarity).

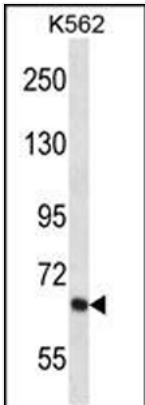
Cellular Location	Cell membrane; Multi-pass membrane protein {ECO:0000269 PubMed:11102480, ECO:0000269 PubMed:14980201, ECO:0000305}. Cell projection, dendrite Synapse {ECO:0000250 UniProtKB:Q63881}. Perikaryon {ECO:0000250 UniProtKB:Q63881}. Postsynaptic cell membrane {ECO:0000250 UniProtKB:Q63881}. Cell projection, dendritic spine {ECO:0000250 UniProtKB:Q63881}. Cell junction {ECO:0000250 UniProtKB:Q63881}. Note=In neurons, primarily detected on dendrites, dendritic spines and on the neuron cell body, but not on axons. Localized preferentially at the dendrites of pyramidal cells in the hippocampus CA1 layer. Detected at GABAergic synapses. Detected at cell junctions that are distinct from synaptic cell contacts. Detected in lipid rafts. Detected primarily at the endoplasmic reticulum or Golgi when expressed by itself (PubMed:15454437). Interaction with KCNIP1, KCNIP2, KCNIP3 or KCNIP4 promotes expression at the cell membrane (PubMed:15454437, PubMed:24811166). Interaction with DPP6 or DPP10 promotes expression at the cell membrane (By similarity) Internalized from the cell membrane by clathrin-dependent endocytosis in response to activation of AMPA-selective glutamate receptors and PKA-mediated phosphorylation at Ser-552. Redistributed from dendritic spines to the main dendritic shaft in response to activation of AMPA- selective glutamate receptors and activation of PKA (By similarity) {ECO:0000250 UniProtKB:Q63881, ECO:0000250 UniProtKB:Q9Z0V2, ECO:0000269 PubMed:15454437, ECO:0000269 PubMed:24811166}
Tissue Location	Detected in ovary, in corpus luteum and in granulosa and theca cells in the follicle (at protein level) (PubMed:15991246). Highly expressed throughout the brain (PubMed:10551270, PubMed:10729221). Detected in amygdala, caudate nucleus, cerebellum, hippocampus, substantia nigra and thalamus (PubMed:10551270, PubMed:10729221). Expression is not detectable or very low in heart, kidney, liver, lung, pancreas and skeletal muscle (PubMed:10551270, PubMed:10729221). Not detectable in human heart atrium (PubMed:12395204).
Preparation and Storage	Store at 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.

IMAGES



IHC (Immunohiostchemistry)

KCND2 Antibody (N-term) (AAA287621) immunohistochemistry analysis in formalin fixed and paraffin embedded human brain tissue followed by peroxidase conjugation of the secondary antibody and DAB staining.This data demonstrates the use of KCND2 Antibody (N-term) for immunohistochemistry. Clinical relevance has not been evaluated.



WB (Western Blot)

KCND2 Antibody (N-term) (AAA287621) western blot analysis in K562 cell line lysates (35ug/lane).This demonstrates the KCND2 antibody detected the KCND2 protein (arrow).

ADDITIONAL INFORMATION

Related Product Information for anti-KCND2 antibody	Voltage-gated potassium (Kv) 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, shal-related subfamily, members of which form voltage-activated A-type potassium ion channels and are prominent in the repolarization phase of the action potential. This member mediates a rapidly inactivating, A-type outward potassium current which is not under the control of the N terminus as it is in Shaker channels.
Product Categories/Family for anti-KCND2 antibody	Cardiovascular; Neuroscience

References	Foeger, N.C., et al. J. Biol. Chem. 285(43):33413-33422(2010) Levy, D.I., et al. J. Physiol. (Lond.) 588 (PT 14), 2657-2668 (2010) : Rose, J.E., et al. Mol. Med. 16 (7-8), 247-253 (2010) : Aronica, E., et al. Neurobiol. Dis. 36(1):81-95(2009) Tayo, B.O., et al. Circ Cardiovasc Genet 2(1):38-45(2009)
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NCBI AND UNIPROT INFORMATION

NCBI GI #	9789987
NCBI GeneID	3751
NCBI Accession #	NP_036413.1
NCBI GenBank Nucleotide #	NM_012281.2
UniProt Accession #	Q9NZV8; O95012; O95021; Q2TBD3; Q9UBY7; Q9UN98; Q9UNH9
Molecular Weight	Calculated MW: 70537
NCBI Official Full Name	potassium voltage-gated channel subfamily D member 2
NCBI Official Synonym Full Names	potassium channel, voltage gated Shal related subfamily D, member 2
NCBI Official Symbol	KCND2
NCBI Official Synonym Symbols	RK5; KV4.2
NCBI Protein Information	potassium voltage-gated channel subfamily D member 2
UniProt Protein Name	Potassium voltage-gated channel subfamily D member 2
UniProt Gene Name	KCND2
UniProt Synonym Gene Names	KIAA1044
UniProt Entry Name	KCND2_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

AAA Biotech | Tel: +1 (619) 604-9440 | Fax: +1 (619) 604-9441 | contact@aaabiotech.com

Online datasheet: <https://www.aaabiotech.com/polyclonal/kcnd2-antibody-immunohistochemistry-western-blot-elisa/287621>