

ARG59935 anti-KCND2 / Kv4.2 antibody

Package: 100 µl
Store at: -20°C

Summary

Product Description	Rabbit Polyclonal antibody recognizes KCND2 / Kv4.2
Tested Reactivity	Ms
Tested Application	WB
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Target Name	KCND2 / Kv4.2
Species	Human
Immunogen	Recombinant fusion protein corresponding to aa. 501-630 of Human KCND2 (NP_036413.1).
Conjugation	Un-conjugated
Alternate Names	KV4.2; RK5; Voltage-gated potassium channel subunit Kv4.2; Potassium voltage-gated channel subfamily D member 2

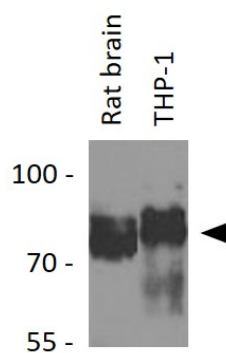
Application Instructions

Application table	<table> <tr> <th>Application</th><th>Dilution</th></tr> <tr> <td>WB</td><td>1:500 - 1:2000</td></tr> </table>	Application	Dilution	WB	1:500 - 1:2000
Application	Dilution				
WB	1:500 - 1:2000				
Application Note	* The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.				
Positive Control	Rat brain and THP-1				
Observed Size	82 kDa				

Properties

Form	Liquid
Purification	Affinity purified.
Buffer	PBS (pH 7.3), 0.02% Sodium azide and 50% Glycerol.
Preservative	0.02% Sodium azide
Stabilizer	50% Glycerol
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.
Note	For laboratory research only, not for drug, diagnostic or other use.

Gene Symbol	KCND2
Gene Full Name	potassium channel, voltage gated Shal related subfamily D, member 2
Background	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. [provided by RefSeq, Jul 2008]
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. The channel alternates between opened and closed conformations in response to the voltage difference across the membrane. 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. Likewise, interaction with DPP6 or DPP10 promotes expression at the cell membrane and regulates both channel characteristics and activity (By similarity). [UniProt]
Calculated Mw	71 kDa
PTM	Phosphorylation at Ser-438 in response to MAPK activation is increased in stimulated dendrites. Interaction with KCNIP2 and DPP6 promotes phosphorylation by PKA at Ser-552. Phosphorylation at Ser-552 has no effect on interaction with KCNIP3, but is required for the regulation of channel activity by KCNIP3. Phosphorylation at Ser-552 leads to KCND2 internalization (By similarity). Phosphorylated by MAPK in response to signaling via the metabotropic glutamate receptor GRM5 (By similarity). Phosphorylation at Ser-616 is required for the down-regulation of neuronal A-type currents in response to signaling via GRM5 (By similarity). [UniProt]
Cellular Localization	Cell membrane; Multi-pass membrane protein. Cell projection, dendrite. Cell junction, synapse. Perikaryon. Cell junction, synapse, postsynaptic cell membrane. Cell projection, dendritic spine. Cell junction. Note=In neurons, primarily detected on dendrites, dendritic spines and on the neuron cell body, but not on axons. [UniProt]



ARG59935 anti-KCND2 / Kv4.2 antibody WB image

Western blot: 25 µg of Rat brain and THP-1 cell lysates stained with ARG59935 anti-KCND2 / Kv4.2 antibody at 1:1000 dilution.