

Rabbit Kv2.1 Polyclonal Antibody | anti-KCNB1 antibody

Phospho-Kv2.1 (Ser805) Antibody

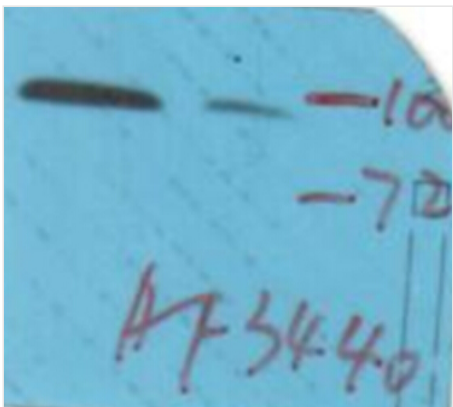
CATALOG # AAA321730	HOST Rabbit	REACTIVITY Human, Mouse, Rat	APPLICATIONS ELISA, Western Blot
-------------------------------	-----------------------	--	--

PRODUCT SYNONYMS

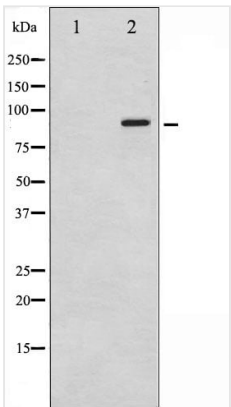
Kv2.1; Polyclonal Antibody; Phospho-Kv2.1 (Ser805) Antibody; Delayed rectifier potassium channel 1; Delayed rectifier potassium channel Kv2.1; DRK 1; DRK1; h DRK1 K(+) channel; h-DRK1; hDRK 1; hDRK1; KCB 1; KCB1; KCNB1; KCNB1_HUMAN; KV2.1; Potassium channel protein DRK1; Potassium voltage gated channel shab related subfamily member 1; Potassium voltage-gated channel subfamily B member 1; Voltage-gated potassium channel subunit Kv2.1; anti-KCNB1 antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Isotype	IgG
Specificity	Phospho-Kv2.1 (Ser805) antibody detects endogenous levels of Kv2.1 only when phosphorylated at Serine 805
Purity/Purification	From purified rabbit serum by affinity purification via sequential chromatography on phospho- and non-phospho-peptide affinity columns.
Form/Format	Liquid Phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Sequence Length	858
Applicable Applications for anti-KCNB1 antibody	ELISA, WB (Western Blot)
Immunogen	A synthesized peptide derived from human Kv2.1 around the phosphorylation site of Serine 805
Subcellular Location	Membrane.
Tissue Specificity	Expressed in neocortical pyramidal cells (PubMed:24477962). Expressed in pancreatic beta cells (at protein level) (PubMed:12403834, PubMed:14988243). Expressed in brain, heart, lung, liver, colon, kidney and adrenal gland (PubMed:19074135). Expressed in the cortex, amygdala, cerebellum, pons, thalamus, hypothalamus, hippocampus and substantia nigra (PubMed:19074135).
Predicted Cross Reactivity	Pig, Bovine, Horse, Sheep, Rabbit, Dog
Similarity	Pig (100%), Bovine (100%), Horse (100%), Sheep (100%), Rabbit (89%), Dog (100%)
Conjugation	Unconjugated
Epitope	Phospho Ser805
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.



WB (Western Blot)
Western blot analysis of Phospho-Kv2.1 (Ser805) Antibody expression in TNF treated K562 cells lysates. The lane on the right is treated with the antigen-specific peptide.



WB (Western Blot)
Western blot analysis of Kv2.1 phosphorylation expression in TNF treated K562 whole cell lysates. The lane on the left is treated with the antigen-specific peptide.

Related Product Information for anti-KCNB1 antibody

Description: Kv2.1 a potassium voltage-gated channel protein of subfamily B. Mediates the voltage-dependent potassium ion permeability of excitable membranes. Channels open or close in response to the voltage difference across the membrane, letting K ions pass in accordance with their electrochemical gradient.

Function: Voltage-gated potassium channel that mediates transmembrane potassium transport in excitable membranes, primarily in the brain, but also in the pancreas and cardiovascular system. Contributes to the regulation of the action potential (AP) repolarization, duration and frequency of repetitive AP firing in neurons, muscle cells and endocrine cells and plays a role in homeostatic attenuation of electrical excitability throughout the brain (PubMed:23161216). Plays also a role in the regulation of exocytosis independently of its electrical function (By similarity). 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. Homotetrameric channels mediate a delayed-rectifier voltage-dependent outward potassium current that display rapid activation and slow inactivation in response to membrane depolarization (PubMed:8081723, PubMed:1283219, PubMed:10484328, PubMed:12560340, PubMed:19074135, PubMed:19717558, PubMed:24901643). Can form functional homotetrameric and heterotetrameric channels that contain variable proportions of KCNB2; channel properties depend on the type of alpha subunits that are part of the channel (By similarity). Can also form functional heterotetrameric channels with other alpha subunits that are non-conducting when expressed alone, such as KCNF1, KCNG1, KCNG3, KCNG4, KCNH1, KCNH2, KCNS1, KCNS2, KCNS3 and KCNV1, creating a functionally diverse range of channel complexes (PubMed:10484328, PubMed:11852086, PubMed:12060745, PubMed:19074135, PubMed:19717558, PubMed:24901643). Heterotetrameric channel activity formed with KCNS3 show increased current amplitude with the threshold for action potential activation shifted towards more negative values in hypoxic-treated pulmonary artery smooth muscle cells (By similarity). Channel properties are also modulated by cytoplasmic ancillary beta subunits such as AMIGO1, KCNE1, KCNE2 and KCNE3, slowing activation and inactivation rate of the delayed rectifier potassium channels (By similarity). 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. Major contributor to the slowly inactivating delayed-rectifier voltage-gated potassium current in neurons of the central nervous system, sympathetic ganglion neurons, neuroendocrine cells, pancreatic beta cells, cardiomyocytes and smooth muscle cells. Mediates the major part of the somatodendritic delayed-rectifier potassium current in hippocampal and cortical pyramidal neurons and sympathetic superior cervical ganglion (CGC) neurons that acts to slow down periods of firing, especially during high frequency stimulation. Plays a role in the induction of long-term potentiation (LTP) of neuron excitability in the CA3 layer of the hippocampus (By similarity). Contributes to the regulation of glucose-induced action potential amplitude and duration in pancreatic beta cells, hence limiting calcium influx and insulin secretion (PubMed:23161216). Plays a role in the regulation of resting membrane potential and contraction in hypoxia-treated pulmonary artery smooth muscle cells. May contribute to the regulation of the duration of both the action potential of cardiomyocytes and the heart ventricular repolarization QT interval. Contributes to the pronounced pro-apoptotic potassium current surge during neuronal apoptotic cell death in response to oxidative injury. May confer neuroprotection in response to hypoxia/ischemic insults by suppressing pyramidal neurons hyperexcitability in hippocampal and cortical regions (By similarity). Promotes trafficking of KCNG3, KCNH1 and KCNH2 to the cell surface membrane, presumably by forming heterotetrameric channels with these subunits (PubMed:12060745). Plays a role in the calcium-dependent recruitment and release of fusion-competent vesicles from the soma of neurons, neuroendocrine and glucose-induced pancreatic beta cells by binding key components of the fusion machinery in a pore-independent manner (By similarity).

Subunit Structure: Homotetramer or heterotetramer with KCNB2 (PubMed:8081723, PubMed:1283219). Heterotetramer with non-conducting channel-forming alpha subunits such as KCNF1, KCNG1, KCNG3, KCNG4, KCNH1, KCNH2, KCNS1, KCNS2, KCNS3 and KCNV1 (PubMed:10484328, PubMed:11852086, PubMed:12060745, PubMed:19357235, PubMed:19074135, PubMed:19717558, PubMed:24901643). Channel activity is regulated by association with ancillary beta subunits such as AMIGO1, KCNE1, KCNE2 and KCNE3 (By similarity). Self-associates (via N-terminus and C-terminus) (PubMed:12560340, PubMed:24901643); self-association is required to regulate trafficking, gating and C-terminal phosphorylation-dependent modulation of the channel (By similarity). Interacts (via C-terminus) with STX1A (via C-terminus); this decreases the rate of channel activation and increases the rate of channel inactivation in pancreatic beta cells, induces also neuronal apoptosis in response to oxidative injury as well as pore-independent enhancement of exocytosis in neuroendocrine cells, chromaffin cells, pancreatic beta cells and from the soma of dorsal root ganglia (DRG) neurons. Interacts (via N-terminus) with SNAP25; this decreases the rate of channel inactivation in pancreatic beta cells and also increases interaction during neuronal apoptosis in a N-methyl-D-aspartate receptor (NMDAR)-dependent manner. Interacts (via N-terminus and C-terminus) with VAMP2 (via N-terminus); stimulates channel inactivation rate. Interacts with CREB1; this promotes channel acetylation in response to stimulation of incretin hormones. Interacts (via N-terminus and C-terminus) with MYL12B. Interacts (via N-terminus) with PIAS3; this increases the number of functional channels at the cell surface (By similarity). Interacts with SUMO1 (PubMed:19223394). Interacts (via phosphorylated form) with PTPRE; this reduces phosphorylation and channel activity in heterologous cells (By similarity).

Post-translational Modifications: Phosphorylated. Differential C-terminal phosphorylation on a subset of serines allows graded activity-dependent regulation of channel gating in hippocampal neurons. Ser-607 and Tyr-128 are significant sites of voltage-gated regulation through phosphorylation/dephosphorylation activities. Tyr-128 can be phosphorylated by Src and dephosphorylated by cytoplasmic form of the phosphatase PTPRE. CDK5-induced Ser-607 phosphorylation increases in response to acute blockade of neuronal activity. Phosphorylated on Tyr-128 by Src and on Ser-605 by MAPK14/P38MAPK; phosphorylations are necessary and sufficient for an increase in plasma membrane insertion, apoptotic potassium current surge and completion of the neuronal cell death program. Phosphorylated on Ser-520, Ser-607, Ser-656 and Ser-805 by CDK5; phosphorylation is necessary for KCNB1

NCBI AND UNIPROT INFORMATION

NCBI GI #	4826784
NCBI GeneID	3745
NCBI Accession #	NP_004966.1
NCBI GenBank Nucleotide #	NM_004975.3
UniProt Accession #	Q14721; Q14193
Molecular Weight	Observed: 96 kDa Predicted: 96 kDa
NCBI Official Full Name	potassium voltage-gated channel subfamily B member 1
NCBI Official Synonym Full Names	potassium voltage-gated channel subfamily B member 1
NCBI Official Symbol	KCNB1
NCBI Official Synonym Symbols	DRK1; Kv2.1
NCBI Protein Information	potassium voltage-gated channel subfamily B member 1
UniProt Protein Name	Potassium voltage-gated channel subfamily B member 1
UniProt Gene Name	KCNB1
UniProt Synonym Gene Names	DRK11 PublicationManual assertion based on opinion iniRef.1; h-DRK11 PublicationManual assertion based on opinion iniRef.1

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://stage.aaabiotech.com/polyclonal/kv21-antibody-western-blot-elisa/321730>