Datasheet for ABIN7563592

Kv2.1/KCNB1 Protein (AA 1-857) (His tag)

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Overview

Quantity:	1 mg
Target:	Kv2.1/KCNB1 (KCNB1)
Protein Characteristics:	AA 1-857
Origin:	Mouse
Source:	HEK-293 Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This Kv2.1/KCNB1 protein is labelled with His tag.

Product Details

Purpose:	Custom-made recombinant Kcnb1 Protein expressed in mammalian cells.
Sequence:	MPAGMTKHGS RSTSSLPPEP MEIVRSKACS RRVRLNVGGL AHEVLWRTLD RLPRTRLGKL RDCNTHDSLL QVCDDYSLED NEYFFDRHPG AFTSILNFYR TGRLHMMEEM CALSFSQELD YWGIDEIYLE SCCQARYHQK KEQMNEELKR EAETLREREG EEFDNTCCAE KRKKLWDLLE KPNSSVAAKI LAIISIMFIV LSTIALSLNT LPELQSLDEF GQSTDNPQLA HVEAVCIAWF TMEYLLRFLS SPKKWKFFKG PLNAIDLLAI LPYYVTIFLT ESNKSVLQFQ NVRRVVQIFR IMRILRILKL ARHSTGLQSL GFTLRRSYNE LGLLILFLAM GIMIFSSLVF FAEKDEDDTK FKSIPASFWW ATITMTTVGY GDIYPKTLLG KIVGGLCCIA GVLVIALPIP IIVNNFSEFY KEQKRQEKAI KRREALERAK RNGSIVSMNM KDAFARSIEM MDIVVEKNGE GVAKKDKVQD NHLSPNKWKW TKRALSETSS SKSFETKEQG SPEKARSSSS PQHLNVQQLQ DMYSKMAKTQ SQPILNTKEM APQSQPQEEL EMGSMPSPVA PLPTRTEGVI DMRSMSSIDS FISCATDFPE ATRFSHSPLA SLSGKSGGST APEVGWRGAL GASGGRLMET NPIPEASRSG FFVESPRSSM KTHNPMKLRA LKVNFLEGDP TPLLPALGLY HDPLRNRGGA AAAVAGLECA SLLDKPVLSP

Product Details

	ESSIYTTASA RTPPRSPEKH TAIAFNFEAG VHQYIDTDTD DEGQLLYSVD SSPPKSLHGS TSPKFSLGAR TEKNHFESSP LPTSPKFLRP NCVYASEGLP GKGPGAQEKC KLENHTSPDV HMLPGGGAHG STRDQSI **Sequence without tag. The proposed Purification-Tag is based on experiences with the expression system, a different complexity of the protein could make another tag necessary. In case you have a special request, please contact us.**
Specificity:	If you are looking for a specific domain and are interested in a partial protein or a different isoform, please contact us regarding an individual offer.
Characteristics:	Key Benefits: • Made to order protein - from design to production - by highly experienced protein experts. • Protein expressed in mammalian cells and purified in one-step affinity chromatography • The optimized expression system ensures reliability for intracellular, secreted and transmembrane proteins. • State-of-the-art algorithm used for plasmid design (Gene synthesis). This protein is a made-to-order protein and will be made for the first time for your order. Our experts in the lab try to ensure that you receive soluble protein. If you are not interested in a full length protein, please contact us for individual protein fragments. The big advantage of ordering our made-to-order proteins in comparison to ordering custom made proteins from other companies is that there is no financial obligation in case the protein cannot be expressed or purified.
Purity:	> 90 % as determined by Bis-Tris PAGE, anti-tag ELISA, Western Blot and analytical SEC (HPLC)
Grade:	custom-made

Target Details

Target:	Kv2.1/KCNB1 (KCNB1)
Alternative Name:	Kcnb1 (KCNB1 Products)
Background:	Potassium voltage-gated channel subfamily B member 1 (Voltage-gated potassium channel subunit Kv2.1) (mShab),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:14684365, PubMed:19383458, PubMed:24494598). Also plays 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:22056818). 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 (By similarity). 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 (PubMed:22056818). 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 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 (PubMed:10506487, PubMed:12270920, PubMed:17767909, PubMed:23161216, PubMed:24494598). 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 (By similarity). Plays a role in the induction of long-term potentiation (LTP) of neuron excitability in the CA3 layer of the hippocampus (PubMed:24494598). Contributes to the regulation of the glucose-induced amplitude and duration of action potentials in pancreatic beta-cells, hence limiting calcium influx and insulin secretion (PubMed:12270920, PubMed:17767909, PubMed:19383458, PubMed:23161216). Plays a role in the regulation of resting membrane potential and contraction in hypoxia-treated pulmonary artery smooth muscle cells (By similarity). May contribute to the regulation of the duration of both the action potential of cardiomyocytes and the heart ventricular repolarization QT interval (PubMed:10506487, PubMed:14684365). Contributes to the pronounced pro-apoptotic potassium current surge during neuronal

Target Details

	apoptotic cell death in response to oxidative injury (By similarity). 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 (By similarity). 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). {ECO:0000250|UniProtKB:P15387, ECO:0000250|UniProtKB:Q14721, ECO:0000269|PubMed:10506487, ECO:0000269|PubMed:12270920, ECO:0000269|PubMed:14684365, ECO:0000269|PubMed:17767909, ECO:0000269|PubMed:19383458, ECO:0000269|PubMed:22056818, ECO:0000269|PubMed:23161216, ECO:0000269|PubMed:24494598}.
Molecular Weight:	95.6 kDa
UniProt:	Q03717
Pathways:	Synaptic Membrane

Application Details

Application Notes:	We expect the protein to work for functional studies. As the protein has not been tested for functional studies yet we cannot offer a guarantee though.
Restrictions:	For Research Use only

Handling

Format:	Liquid
Buffer:	The buffer composition is at the discretion of the manufacturer.
Handling Advice:	Avoid repeated freeze-thaw cycles.
Storage:	-80 °C
Storage Comment:	Store at -80°C.
Expiry Date:	12 months

