Datasheet for ABIN7563503

KCNA2 Protein (AA 1-499) (His tag)

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Overview

Quantity:	1 mg
Target:	KCNA2
Protein Characteristics:	AA 1-499
Origin:	Mouse
Source:	HEK-293 Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This KCNA2 protein is labelled with His tag.

Product Details

Purpose:	Custom-made recombinant Kcna2 Protein expressed in mammalian cells.
Sequence:	MTVATGDPVD EAAALPGHPQ DTYDPEADHE CCERVVINIS GLRFETQLKT LAQFPETLLG DPKKRMRYFD PLRNEYFFDR NRPSFDAILY YYQSGGRLRR PVNVPLDIFS EEIRFYELGE EAMEMFREDE GYIKEEERPL PENEFQRQVW LLFEYPESSG PARIIAIVSV MVILISIVSF CLETLPIFRD ENEDMHGGGV TFHTYSNSTI GYQQSTSFTD PFFIVETLCI IWFSFEFLVR FFACPSKAGF FTNIMNIIDI VAIIPYFITL GTELAEKPED AQQGQQAMSL AILRVIRLVR VFRIFKLSRH SKGLQILGQT LKASMRELGL LIFFLFIGVI LFSSAVYFAE ADERDSQFPS IPDAFWWAVV SMTTVGYGDM VPTTIGGKIV GSLCAIAGVL TIALPVPVIV SNFNYFYHRE TEGEEQAQYL QVTSCPKIPS SPDLKKSRSA STISKSDYME IQEGVNNSNE DFREENLKTA NCTLANTNYV NITKMLTDV **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

Product Details

	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:	KCNA2
Alternative Name:	Kcna2 (KCNA2 Products)
Background:	Potassium voltage-gated channel subfamily A member 2 (MK2) (Voltage-gated potassium channel subunit Kv1.2),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 cardiovascular system. Prevents aberrant action potential firing and regulates neuronal output. 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:12527813, PubMed:21233214). 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:20696761). 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 (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. Homotetrameric KCNA2 forms a delayed-rectifier potassium channel that opens in response to membrane depolarization, followed by slow spontaneous channel closure (PubMed:23864368). In contrast, a heteromultimer formed by KCNA2 and KCNA4 shows rapid inactivation (PubMed:23864368). Contributes to the regulation of action potentials in neurons (PubMed:12527813, PubMed:17925011). KCNA2-containing channels play a presynaptic role and prevent hyperexcitability and aberrant action potential firing (PubMed:17634333, PubMed:17925011). 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). Response to toxins that are selective for KCNA2-containing potassium channels suggests that in Purkinje cells, dendritic subthreshold KCNA2-containing potassium channels prevent random spontaneous calcium spikes, suppressing dendritic hyperexcitability without hindering the generation of somatic action potentials, and thereby play an important role in motor coordination (By similarity). KCNA2-containing channels play a role in GABAergic transmission from basket cells to Purkinje cells in the cerebellum, and thereby play an import role in motor coordination (PubMed:20696761). Plays a role in the induction of long-term potentiation of neuron excitability in the CA3 layer of the hippocampus (PubMed:23981714). 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) (By similarity). Contributes to the regulation of the axonal release of the neurotransmitter dopamine (PubMed:21233214). Reduced KCNA2 expression plays a role in the perception of neuropathic pain after peripheral nerve injury, but not acute pain (By similarity). Plays a role in the regulation of the time spent in non-rapid eye movement (NREM) sleep (PubMed:17925011). {ECO:0000250, ECO:0000269|PubMed:12527813, ECO:0000269|PubMed:17634333, ECO:0000269|PubMed:17925011, ECO:0000269|PubMed:20696761, ECO:0000269|PubMed:21233214, ECO:0000269|PubMed:23864368, ECO:0000269|PubMed:23981714, ECO:0000305}.
Molecular Weight:	56.7 kDa
UniProt:	P63141

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