Datasheet for ABIN7554232

KCNA1 Protein (AA 1-495) (His tag)

Go to Product page

Overview

Quantity:	1 mg
Target:	KCNA1
Protein Characteristics:	AA 1-495
Origin:	Human
Source:	HEK-293 Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This KCNA1 protein is labelled with His tag.

Product Details

Purpose:	Custom-made recombinant KCNA1 Protein expressed in mammalian cells.
Sequence:	MTVMSGENVD EASAAPGHPQ DGSYPRQADH DDHECCERVV INISGLRFET QLKTLAQFPN TLLGNPKKRM RYFDPLRNEY FFDRNRPSFD AILYYYQSGG RLRRPVNVPL DMFSEEIKFY ELGEEAMEKF REDEGFIKEE ERPLPEKEYQ RQVWLLFEYP ESSGPARVIA IVSVMVILIS IVIFCLETLP ELKDDKDFTG TVHRIDNTTV IYNSNIFTDP FFIVETLCII WFSFELVVRF FACPSKTDFF KNIMNFIDIV AIIPYFITLG TEIAEQEGNQ KGEQATSLAI LRVIRLVRVF RIFKLSRHSK GLQILGQTLK ASMRELGLLI FFLFIGVILF SSAVYFAEAE EAESHFSSIP DAFWWAVVSM TTVGYGDMYP VTIGGKIVGS LCAIAGVLTI ALPVPVIVSN FNYFYHRETE GEEQAQLLHV SSPNLASDSD LSRRSSSTMS KSEYMEIEED MNNSIAHYRQ VNIRTANCTT ANQNCVNKSK LLTDV **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:	KCNA1
Alternative Name:	KCNA1 (KCNA1 Products)
Background:	Potassium voltage-gated channel subfamily A member 1 (Voltage-gated K(+) channel HuKI) (Voltage-gated potassium channel HBK1) (Voltage-gated potassium channel subunit Kv1.1),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 kidney (PubMed:8845167, PubMed:19903818). Contributes to the regulation of the membrane potential and nerve signaling, and prevents neuronal hyperexcitability (PubMed:17156368). 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:19912772). 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:12077175, PubMed:17156368). 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 (PubMed:12077175, PubMed:17156368). 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 KCNA1 forms a delayed-rectifier potassium channel that opens in response to membrane depolarization, followed by slow spontaneous channel closure (PubMed:19912772, PubMed:19968958, PubMed:19307729, PubMed:19903818). In contrast, a heterotetrameric channel formed by KCNA1 and KCNA4 shows rapid inactivation (PubMed:17156368). Regulates neuronal excitability in hippocampus, especially in mossy fibers and medial perforant path axons, preventing neuronal hyperexcitability. 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). 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) release (By similarity). Plays a role in regulating the generation of action potentials and preventing hyperexcitability in myelinated axons of the vagus nerve, and thereby contributes to the regulation of heart contraction (By similarity). Required for normal neuromuscular responses (PubMed:11026449, PubMed:17136396). Regulates the frequency of neuronal action potential firing in response to mechanical stimuli, and plays a role in the perception of pain caused by mechanical stimuli, but does not play a role in the perception of pain due to heat stimuli (By similarity). Required for normal responses to auditory stimuli and precise location of sound sources, but not for sound perception (By similarity). The use of toxins that block specific channels suggest that it contributes to the regulation of the axonal release of the neurotransmitter dopamine (By similarity). Required for normal postnatal brain development and normal proliferation of neuronal precursor cells in the brain (By similarity). Plays a role in the reabsorption of Mg(2+) in the distal convoluted tubules in the kidney and in magnesium ion homeostasis, probably via its effect on the membrane potential (PubMed:23903368, PubMed:19307729). {ECO:0000250|UniProtKB:P10499, ECO:0000269|PubMed:11026449, ECO:0000269|PubMed:12077175, ECO:0000269|PubMed:15837928, ECO:0000269|PubMed:17136396, ECO:0000269|PubMed:17156368, ECO:0000269|PubMed:19307729, ECO:0000269|PubMed:19903818, ECO:0000269|PubMed:19912772, ECO:0000269|PubMed:19968958, ECO:0000269|PubMed:21106501, ECO:0000269|PubMed:23903368,

Target Details

	ECO:0000269|PubMed:8845167}.
Molecular Weight:	56.5 kDa
UniProt:	Q09470

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

