Datasheet for ABIN5709785

KCNA1 Protein (AA 1-154, partial) (His tag)

1 Image

Go to Product page

Overview

Quantity:	100 µg
Target:	KCNA1
Protein Characteristics:	AA 1-154, partial
Origin:	Human
Source:	Escherichia coli (E. coli)
Protein Type:	Recombinant
Purification tag / Conjugate:	This KCNA1 protein is labelled with His tag.
Application:	SDS-PAGE (SDS)

Product Details

Sequence:	MTVMSGENVD EASAAPGHPQ DGSYPRQADH DDHECCERVV INISGLRFET QLKTLAQFPN TLLGNPKKRM RYFDPLRNEY FFDRNRPSFD AILYYYQSGG RLRRPVNVPL DMFSEEIKFY ELGEEAMEKF REDEGFIKEE ERPLPEKEYQ RQVW
Purification:	SDS-PAGE
Purity:	> 90 %

Target Details

Target:	KCNA1
Alternative Name:	KCNA1 (KCNA1 Products)
Background:	Voltage-gated potassium channel that mediates transmbrane potassium transport in excitable mbranes, primarily in the brain and the central nervous syst, but also in the kidney . Contributes

	to the regulation of the mbrane potential and nerve signaling, and prevents neuronal hyperexcitability . Forms tetrameric potassium-selective channels through which potassium ions pass in accordance with their electrochical gradient. The channel alternates between opened and closed conformations in response to the voltage difference across the mbrane . Can form functional homotetrameric channels and heterotetrameric channels that contain variable proportions of KCNA1, KCNA2, KCNA4, KCNA5, KCNA6, KCNA7, and possibly other family mbers as well, channel properties depend on the type of alpha subunits that are part of the channel . 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 . In vivo, mbranes 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 mber. Homotetrameric KCNA1 forms a delayed-rectifier potassium channel that opens in response to mbrane depolarization, followed by slow spontaneous channel closure . In contrast, a heterotetrameric channel formed by KCNA1 and KCNA4 shows rapid inactivation . 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 pacaking and regulate the output of deep cerebellar nuclear neurons . May function as down-stream effector for G protein-coupled receptors and inhibit GABAergic inputs to basolateral amygdala neurons . May contribute to the regulation of neurotransmitter release, such as gamma-aminobutyric acid (GABA) release . 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 . Required for normal neuromuscular responses . 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 . Required for normal responses to auditory stimuli and precise location of sound sources, but not for sound perception . The use of toxins that block specific channels suggest that it contributes to the regulation of the axonal release of the neurotransmitter dopamine . Required for normal postnatal brain development and normal proliferation of neuronal precursor cells in the brain . Plays a role in the reabsorption of Mg2+ in the distal convoluted tubules in the kidney and in magnesium ion homeostasis, probably via its effect on the mbrane potential .
Molecular Weight:	22.3 kDa
UniProt:	Q09470

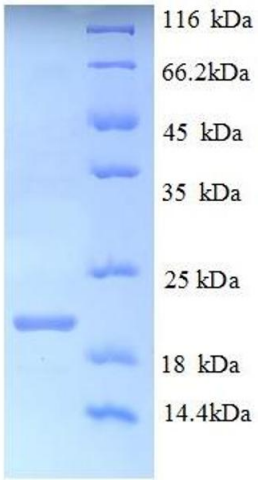
Application Details

Application Notes:	Optimal working dilution should be determined by the investigator.
Restrictions:	For Research Use only

Handling

Format:	Liquid
Concentration:	0.1-2 mg/mL
Buffer:	20 mM Tris-HCl based buffer, pH 8.0
Storage:	-80 °C,4 °C,-20 °C
Storage Comment:	Store at -20°C, for extended storage, conserve at -20°C or -80°C. Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.

Images



SDS-PAGE

Image 1.