

Datasheet for ABIN3134919
KCNC2 Protein (AA 1-642) (rho-1D4 tag)



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1 Image

Overview

Quantity:	1 mg
Target:	KCNC2
Protein Characteristics:	AA 1-642
Origin:	Mouse
Source:	Insect Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This KCNC2 protein is labelled with rho-1D4 tag.
Application:	Crystallization (Crys), ELISA, SDS-PAGE (SDS), Western Blotting (WB)

Product Details

Sequence: MGKIESNERV ILNVGGTRHE TYRSTLKTLP GTRLALLASS EPQGDCLTAA GDKLQPLPPP
LSPPPRPPPL SPVPSGCFEG GAGNCSSHGG NGGNGGSDHP GGGREFFFD R HPGVFAYVLN
YYRTGKLHCP ADVCGPLFEE ELAFWGIDET DVEPCCWMTY RQHRDAEEAL DIFETPDLIG
GDPGDDLEDA AKRLGIEDAA GLGGPDGKSG RWRKLQPRMW ALFEDPYSSR AARFIAFASL
FFILVSITTF CLETHEAFNI VKNKTEPVIN GTSPVLQYEI ETDPALTYVE GVCVWVWTFE
FLVRIVFSPN KLEFIKLLN IIDFVAILPF YLEVGLSGLS SKAAKDV LGF LRVVRFVRIL RIFKLTRHFV
GLRVLGHTLR ASTNEFLLLI IFLALGV LIF ATMIYYAERV GAQPN DPSAS EHTQFKNIPI
GFWWAVVTMT TLGYGDMYPQ TWSGMLVGAL CALAGVLTIA MPVPVIVNNF GMYSLAMAK
QKLPRKRKKH IPPAPLASSP TFCKTELNMA CNSTQSDTCL GKENRLLLEHN RSVLSGD DST
GSEPPLSPPE RLPIRRSTR DKNRRGETCF LLTTGDYTCA SDGGIRKGYE KSRSLNNIAG
LAGNALRLSP VTSPYN SPCP LRRSRPIPS IL

Sequence without tag. Tag location is at the discretion of the manufacturer. If you have a

special request, please contact us.

Characteristics:

- Made in Germany - from design to production - by highly experienced protein experts.
- Mouse Kcnc2 Protein (raised in Insect Cells) purified by multi-step, protein-specific process to ensure crystallization grade.
- 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 will ensure that you receive a correctly folded protein.

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.

In the unlikely event that the protein cannot be expressed or purified we do not charge anything (other companies might charge you for any performed steps in the expression process for custom-made proteins, e.g. fees might apply for the expression plasmid, the first expression experiments or purification optimization).

When you order this made-to-order protein you will only pay upon receipt of the correctly folded protein. With no financial risk on your end you can rest assured that our experienced protein experts will do everything to make sure that you receive the protein you ordered.

The concentration of our recombinant proteins is measured using the absorbance at 280nm. The protein's absorbance will be measured in several dilutions and is measured against its specific reference buffer.

The concentration of the protein is calculated using its specific absorption coefficient. We use the ExPASy's protParam tool to determine the absorption coefficient of each protein.

Purification:

Three step purification of membrane proteins expressed in baculovirus infected SF9 insect cells:

1. Membrane proteins are fractionated by ultracentrifugation and subsequently solubilized with different detergents (detergent screen). Samples are analyzed by Western blot.
2. The best performing detergent is used for solubilization and the proteins are purified via their rho1D4 tag via two rho1D4 antibody columns: one DTT resistant, the other one not. Eluate fractions are analyzed by Western blot.
3. Protein containing fractions of the best purification are subjected to second purification step through size exclusion chromatography. Eluate fractions are analyzed by SDS-PAGE and Western blot.

Purity:

>95 % as determined by SDS PAGE, Size Exclusion Chromatography and Western Blot.

Sterility:

0.22 µm filtered

Endotoxin Level:

Protein is endotoxin-free.

Product Details

Grade: Crystallography grade

Target Details

Target: KCNC2

Alternative Name: Kcnc2 ([KCNC2 Products](#))

Background: Voltage-gated potassium channel that mediates transmembrane potassium transport in excitable membranes, primarily in the brain. Contributes to the regulation of the fast action potential repolarization and in sustained high-frequency firing in neurons of the central nervous system (PubMed:10561420, PubMed:10414303, PubMed:11124984, PubMed:10903572, PubMed:11506885, PubMed:15317859, PubMed:15917463, PubMed:17761775, PubMed:21414897). Homotetramer channels mediate delayed-rectifier voltage-dependent potassium currents that activate rapidly at high-threshold voltages and inactivate slowly (PubMed:10414303). Forms tetrameric 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 (By similarity). Can form functional homotetrameric and heterotetrameric channels that contain variable proportions of KCNC1, and possibly other family members as well, channel properties depend on the type of alpha subunits that are part of the channel (PubMed:10531438, PubMed:12000114). Channel properties may be modulated by either the association with ancillary subunits, such as KCNE1, KCNE2 and KCNE3 or indirectly by nitric oxide (NO) through a cGMP- and PKG-mediated signaling cascade, slowing channel activation and deactivation of delayed rectifier potassium channels (By similarity). Contributes to fire sustained trains of very brief action potentials at high frequency in thalamocortical and suprachiasmatic nucleus (SCN) neurons, in hippocampal and neocortical interneurons and in retinal ganglion cells (PubMed:10561420, PubMed:10903572, PubMed:11506885, PubMed:17761775). Sustained maximal action potential firing frequency in inhibitory hippocampal interneurons is negatively modulated by histamine H2 receptor activation in a cAMP- and protein kinase (PKA) phosphorylation-dependent manner (PubMed:10903572). Plays a role in maintaining the fidelity of synaptic transmission in neocortical GABAergic interneurons by generating action potential (AP) repolarization at nerve terminals, thus reducing spike-evoked calcium influx and GABA neurotransmitter release (PubMed:15917463). Required for long-range synchronization of gamma oscillations over distance in the neocortex (PubMed:22539821). Contributes to the modulation of the circadian rhythm of spontaneous action potential firing in suprachiasmatic nucleus (SCN) neurons in a light-dependent manner (PubMed:21414897).
{ECO:0000250|UniProtKB:P22462, ECO:0000269|PubMed:10531438,

Target Details

ECO:0000269|PubMed:10561420, ECO:0000269|PubMed:10903572,
ECO:0000269|PubMed:11124984, ECO:0000269|PubMed:12000114,
ECO:0000269|PubMed:15317859, ECO:0000269|PubMed:15917463,
ECO:0000269|PubMed:17761775, ECO:0000269|PubMed:21414897,
ECO:0000269|PubMed:22539821, ECO:0000305|PubMed:10414303,
ECO:0000305|PubMed:11506885}.

Molecular Weight: 71.7 kDa Including tag.

UniProt: [Q14B80](#)

Application Details

Application Notes: In addition to the applications listed above we expect the protein to work for functional studies as well. As the protein has not been tested for functional studies yet we cannot offer a guarantee though.

Comment: Protein has not been tested for activity yet. In cases in which it is highly likely that the recombinant protein with the default tag will be insoluble our protein lab may suggest a higher molecular weight tag (e.g. GST-tag) instead to increase solubility. We will discuss all possible options with you in detail to assure that you receive your protein of interest.

Restrictions: For Research Use only

Handling

Format: Liquid

Buffer: 100 mM NaCl, 20 mM Hepes, 10% glycerol. pH value 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: Unlimited (if stored properly)



Image 1. „Crystallography Grade“ protein due to multi-step, protein-specific purification process