Datasheet for ABIN3118698

KCND2 Protein (AA 1-630) (rho-1D4 tag)

1 Image

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Overview

Quantity:	1 mg
Target:	KCND2
Protein Characteristics:	AA 1-630
Origin:	Human
Source:	Insect Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This KCND2 protein is labelled with rho-1D4 tag.
Application:	SDS-PAGE (SDS), Crystallization (Crys), ELISA, Western Blotting (WB)

Product Details

Sequence:	MAAGVAAWLP FARAAAIGWM PVASGPMPAP PRQERKRTQD ALIVLNVSGT RFQTWQDTLE RYPDTLLGSS ERDFFYHPET QQYFFDRDPD IFRHILNFYR TGKLHYPRHE CISAYDEELA FFGLIPEIIG DCCYEEYKDR RRENAERLQD DADTDTAGES ALPTMTARQR VWRAFENPHT STMALVFYYV TGFFIAVSVI ANVVETVPCG SSPGHIKELP CGERYAVAFF CLDTACVMIF TVEYLLRLAA APSRYRFVRS VMSIIDVVAI LPYYIGLVMT DNEDVSGAFV TLRVFRVFRI FKFSRHSQGL RILGYTLKSC ASELGFLLFS LTMAIIIFAT VMFYAEKGSS ASKFTSIPAA FWYTIVTMTT LGYGDMVPKT IAGKIFGSIC SLSGVLVIAL PVPVIVSNFS RIYHQNQRAD KRRAQKKARL ARIRAAKSGS ANAYMQSKRN GLLSNQLQSS EDEQAFVSKS GSSFETQHHH LLHCLEKTTN HEFVDEQVFE ESCMEVATVN RPSSHSPSLS SQQGVTSTCC SRRHKKTFRI PNANVSGSHQ GSIQELSTIQ IRCVERTPLS NSRSSLNAKM EECVKLNCEQ PYVTTAIISI PTPPVTTPEG DDRPESPEYS GGNIVRVSAL
	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. • Human KCND2 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 receival 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 fractioned 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 chromatograph. 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:	KCND2
Alternative Name:	KCND2 (KCND2 Products)
Background:	Voltage-gated potassium channel that mediates transmembrane potassium transport in excitable membranes, primarily in the brain. Mediates the major part of the dendritic A-type current I(SA) in brain neurons (By similarity). This current is activated at membrane potentials that are below the threshold for action potentials. It regulates neuronal excitability, prolongs the latency before the first spike in a series of action potentials, regulates the frequency of repetitive action potential firing, shortens the duration of action potentials and regulates the back-propagation of action potentials from the neuronal cell body to the dendrites. Contributes to the regulation of the circadian rhytm of action potential firing in suprachiasmatic nucleus neurons, which regulates the circadian rhythm of locomotor activity (By similarity). Functions downstream of the metabotropic glutamate receptor GRM5 and plays a role in neuronal excitability and in nociception mediated by activation of GRM5 (By similarity). Mediates the transient outward current I(to) in rodent heart left ventricle apex cells, but not in human heart, where this current is mediated by another family member. Forms tetrameric potassium-selective channels through which potassium ions pass in accordance with their electrochemical gradient (PubMed:10551270, PubMed:15454437, PubMed:14695263, PubMed:14623880, PubMed:14980201, PubMed:16934482, PubMed:24811166, PubMed:24501278). The channel alternates between opened and closed conformations in response to the voltage difference across the membrane (PubMed:11507158). Can form functional homotetrameric channels and heterotetrameric channels that contain variable proportions of KCND2 and KCND3, channel properties depend on the type of pore-forming alpha subunits that are part of the channel. In vivo, membranes probably contain a mixture of heteromeric potassium channel complexes. Interaction with specific isoforms of the regulatory subunits KCNIP1, KCNIP2, KCNIP3 or KCNIP4 strongly increases expression at the cell surface and thereby increases channel activity, it modulates the kinetics of channel activation and inactivation, shifts the threshold for channel activation to more negative voltage values, shifts the threshold for inactivation to less negative voltages and accelerates recovery after inactivation (PubMed:15454437, PubMed:14623880, PubMed:14980201, PubMed:19171772, PubMed:24501278, PubMed:24811166). Likewise, interaction with DPP6 or DPP10 promotes expression at the cell membrane and regulates both channel characteristics and activity (By similarity). {ECO:0000250|UniProtKB:Q63881, ECO:0000250|UniProtKB:Q9Z0V2,

Target Details

	ECO:0000269|PubMed:10551270, ECO:0000269|PubMed:10729221, ECO:0000269|PubMed:11507158, ECO:0000269|PubMed:14623880, ECO:0000269|PubMed:14695263, ECO:0000269|PubMed:14980201, ECO:0000269|PubMed:15454437, ECO:0000269|PubMed:16934482, ECO:0000269|PubMed:19171772, ECO:0000269|PubMed:24501278, ECO:0000269|PubMed:24811166}.
Molecular Weight:	71.7 kDa Including tag.
UniProt:	Q9NZV8

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 gurantee though.
Comment:	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