

Datasheet for ABIN3133113

KCNA1 Protein (AA 1-495) (Strep Tag)



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Overview

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| Quantity: | 250 µg |
| Target: | KCNA1 |
| Protein Characteristics: | AA 1-495 |
| Origin: | Mouse |
| Source: | Cell-free protein synthesis (CFPS) |
| Protein Type: | Recombinant |
| Purification tag / Conjugate: | This KCNA1 protein is labelled with Strep Tag. |
| Application: | SDS-PAGE (SDS), ELISA, Western Blotting (WB) |

Product Details

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| Brand: | AliCE® |
| Sequence: | <p>MTVMSGENAD EASTAPGHPQ DGSYPRQADH DDHECCERVV INISGLRFET QLKTLAQFPN</p> <p>TLLGNPKKRM RYFDPLRNEY FFDRNRPSFD AILYYYQSGG RLRRPVNVPL DMFSEEIKFY</p> <p>ELGEEAMEKF REDEGFIKEE ERPLPEKEYQ RQVWLLFEYP ESSGPARVIA IVSVMVILIS</p> <p>IVIFCLETLP ELKDDKDFTG TIHRIDNTTV IYTSNIFTDP FFIVETLCII WFSFELVVRF FACPSKTDF</p> <p>KNIMNFIDIV AIIPYFITLG TEIAEQEGNQ KGEQATSLAI LRVIRLVRF RIFKLSRHSK GLQILGQTLK</p> <p>ASMRELGLLI FFLFIGVILF SSAVYFAEAE EAESHFSSIP DAFWWAVVSM TTVGYGDMYP</p> <p>VTIGGKIVGS LCAIAGVLT I ALPVPVIVSN FNYFYHRETE GEEQAQLLHV SSPNLASDSD</p> <p>LSRRSSSTIS KSEYMEIEED MNNSIAHYRQ ANIRTNCTT ADQNCVNKSK LLTDV</p> <p>Sequence without tag. The proposed Strep-Tag is based on experience s 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.</p> |

Product Details

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| Characteristics: | <div>Key Benefits:</div> <ul style="list-style-type: none">• Made in Germany - from design to production - by highly experienced protein experts.• Protein expressed with ALiCE® and purified in one-step affinity chromatography• These proteins are normally active (enzymatically functional) as our customers have reported (not tested by us and not guaranteed).• State-of-the-art algorithm used for plasmid design (Gene synthesis). <div>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.</div> <div>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.</div> <div>Expression System:</div> <ul style="list-style-type: none">• ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from Nicotiana tabacum c.v.. This contains all the protein expression machinery needed to produce even the most difficult-to-express proteins, including those that require post-translational modifications.• During lysate production, the cell wall and other cellular components that are not required for protein production are removed, leaving only the protein production machinery and the mitochondria to drive the reaction. During our lysate completion steps, the additional components needed for protein production (amino acids, cofactors, etc.) are added to produce something that functions like a cell, but without the constraints of a living system - all that's needed is the DNA that codes for the desired protein! <div>Concentration:</div> <ul style="list-style-type: none">• The concentration of our recombinant proteins is measured using the absorbance at 280nm.• The protein's absorbance will be measured against its specific reference buffer.• We use the ExPASy's ProtParam tool to determine the absorption coefficient of each protein. |
| Purification: | One-step Strep-tag purification of proteins expressed in Almost Living Cell-Free Expression System (ALiCE®). |
| Purity: | > 70-80 % as determined by SDS PAGE, Western Blot and analytical SEC (HPLC). |
| Grade: | custom-made |

Target Details

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| Target: | KCNA1 |
| Alternative Name: | Kcna1 (KCNA1 Products) |
| Background: | <p>Potassium voltage-gated channel subfamily A member 1 (MBK1) (MKI) (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. Contributes to the regulation of the membrane potential and nerve signaling, and prevents neuronal hyperexcitability (PubMed:9736643, PubMed:9581771, PubMed:10191303, PubMed:12611922, PubMed:21966978, PubMed:22158511, PubMed:23473320). 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:15361858). 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. 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:15361858). 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:7517498, PubMed:15361858). In contrast, a heterotetrameric channel formed by KCNA1 and KCNA4 shows rapid inactivation (By similarity). Regulates neuronal excitability in hippocampus, especially in mossy fibers and medial perforant path axons, preventing neuronal hyperexcitability (PubMed:23466697). 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 (PubMed:20392939, PubMed:22641786, PubMed:25377007). Required for normal neuromuscular responses (PubMed:9736643). 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 (PubMed:23473320). Required for normal responses to auditory stimuli and precise</p> |

Target Details

location of sound sources, but not for sound perception (PubMed:21966978, PubMed:22396426). The use of toxins that block specific channels suggest that it contributes to the regulation of the axonal release of the neurotransmitter dopamine (PubMed:21233214). Required for normal postnatal brain development and normal proliferation of neuronal precursor cells in the brain (PubMed:8995755, PubMed:17250763, PubMed:17315199, PubMed:22411008). 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 (By similarity). {ECO:0000250|UniProtKB:P10499, ECO:0000250|UniProtKB:Q09470, ECO:0000269|PubMed:10191303, ECO:0000269|PubMed:12611922, ECO:0000269|PubMed:15361858, ECO:0000269|PubMed:17250763, ECO:0000269|PubMed:17315199, ECO:0000269|PubMed:20392939, ECO:0000269|PubMed:21233214, ECO:0000269|PubMed:21966978, ECO:0000269|PubMed:22158511, ECO:0000269|PubMed:22396426, ECO:0000269|PubMed:22411008, ECO:0000269|PubMed:22641786, ECO:0000269|PubMed:23466697, ECO:0000269|PubMed:23473320, ECO:0000269|PubMed:25377007, ECO:0000269|PubMed:7517498, ECO:0000269|PubMed:8995755, ECO:0000269|PubMed:9581771, ECO:0000269|PubMed:9736643}.

Molecular Weight: 56.4 kDa

UniProt: [P16388](#)

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: ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from *Nicotiana tabacum* c.v.. This contains all the protein expression machinery needed to produce even the most difficult-to-express proteins, including those that require post-translational modifications.

During lysate production, the cell wall and other cellular components that are not required for protein production are removed, leaving only the protein production machinery and the mitochondria to drive the reaction. During our lysate completion steps, the additional components needed for protein production (amino acids, cofactors, etc.) are added to produce something that functions like a cell, but without the constraints of a living system - all that's

Application Details

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| | needed is the DNA that codes for the desired protein! |
| Restrictions: | For Research Use only |

Handling

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| Format: | Liquid |
| Buffer: | The buffer composition is at the discretion of the manufacturer. Standard Storage Buffer: PBS pH 7.4, 10 % Glycerol Might differ depending on protein. |
| Handling Advice: | Avoid repeated freeze-thaw cycles. |
| Storage: | -80 °C |
| Storage Comment: | Store at -80°C. |
| Expiry Date: | 12 months |