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Datasheet for ABIN3133581
CAMK2B Protein (AA 1-542) (Strep Tag)

Overview

Quantity:	1 mg
Target:	CAMK2B
Protein Characteristics:	AA 1-542
Origin:	Mouse
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This CAMK2B protein is labelled with Strep Tag.
Application:	Western Blotting (WB), ELISA, SDS-PAGE (SDS)

Product Details

Sequence: MATTVTCTRF TDEYQLYEDI GKGAFSVVRR CVKLCTGHEY AAKIINTKKL SARDHQKLER
EARICRLLKH SNIVRLHDSI SEEGFHLYLVF DLVTGGELFE DIVAREYYSE ADASHCIQOI
LEAVLHCHQM GVHRDLKPE NLLLASKCKG AAVKLADFGI AIEVQGDQQA WFGFAGTPGY
LSPEVLRKEA YGKPVDIWAC GVILYILLVG YPPFWDEDQH KLYQQIKAGA YDFPSPEWDT
VTPEAKNLIN QMLTINPAKR ITAHEALKHP WVCQRSTVAS MMHRQETVEC LKKFNARRKL
KGAILTTMLA TRNFSVGRQT TAPATMSTAA SGTTMGLVEQ AKSLLNKKAD GVKPQTNSTK
NSSAITSPKG SLPPAALEPQ TTVIHNPVDG IKESSDSTNT TIEDEKAR KQEIITTEQ
LIEAVNNGDF EAYAKICDPG LTSFEPEALG NLVEGMDFHR FYFENLLAKN SKPIHTTILN
PHVHVIGEDA ACIAYIRLTQ YIDGQGRPRT SQSEETRVWH RRDGKWQNVH FHCSGAPVAP LQ

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.

Characteristics:

Key Benefits:

- Made in Germany - from design to production - by highly experienced protein experts.
- Protein expressed with ALiCE® and purified by multi-step, protein-specific process to ensure correct folding and modification.
- 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).

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.

Expression System:

- 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!

Concentration:

- 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.
- We use the Expasy's protparam tool to determine the absorption coefficient of each protein.

Purification:

Two step purification of proteins expressed in Almost Living Cell-Free Expression System (ALiCE®):

1. In a first purification step, the protein is purified from the cleared cell lysate using StrepTag capture material. Eluate fractions are analyzed by SDS-PAGE.
2. 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

Product Details

Western blot.

Purity: $\geq 80\%$ as determined by SDS PAGE, Size Exclusion Chromatography and Western Blot.

Endotoxin Level: Low Endotoxin less than 1 EU/mg (< 0.1 ng/mg)

Target Details

Target: CAMK2B

Alternative Name: Camk2b ([CAMK2B Products](#))

Background: Calcium/calmodulin-dependent protein kinase type II subunit beta (CaM kinase II subunit beta) (CaMK-II subunit beta) (EC 2.7.11.17),FUNCTION: Calcium/calmodulin-dependent protein kinase that functions autonomously after Ca(2+)/calmodulin-binding and autophosphorylation, and is involved in dendritic spine and synapse formation, neuronal plasticity and regulation of sarcoplasmic reticulum Ca(2+) transport in skeletal muscle. In neurons, plays an essential structural role in the reorganization of the actin cytoskeleton during plasticity by binding and bundling actin filaments in a kinase-independent manner. This structural function is required for correct targeting of CaMK2A, which acts downstream of NMDAR to promote dendritic spine and synapse formation and maintain synaptic plasticity which enables long-term potentiation (LTP) and hippocampus-dependent learning. In developing hippocampal neurons, promotes arborization of the dendritic tree and in mature neurons, promotes dendritic remodeling. Also regulates the migration of developing neurons (PubMed:29100089). Participates in the modulation of skeletal muscle function in response to exercise. In slow-twitch muscles, is involved in regulation of sarcoplasmic reticulum (SR) Ca(2+) transport and in fast-twitch muscle participates in the control of Ca(2+) release from the SR through phosphorylation of triadin, a ryanodine receptor-coupling factor, and phospholamban (PLN/PLB), an endogenous inhibitor of SERCA2A/ATP2A2 (PubMed:21752990). In response to interferon-gamma (IFN-gamma) stimulation, catalyzes phosphorylation of STAT1, stimulating the JAK-STAT signaling pathway (By similarity). Phosphorylates reticulophagy regulator RETREG1 at 'Thr-134' under endoplasmic reticulum stress conditions which enhances RETREG1 oligomerization and its membrane scission and reticulophagy activity (By similarity). {ECO:0000250|UniProtKB:P08413, ECO:0000250|UniProtKB:Q13554, ECO:0000269|PubMed:21752990, ECO:0000269|PubMed:29100089}.

Molecular Weight: 60.5 kDa

UniProt: [P28652](#)

Target Details

Pathways: [WNT Signaling](#), [Interferon-gamma Pathway](#), [Myometrial Relaxation and Contraction](#), [Regulation of G-Protein Coupled Receptor Protein Signaling](#), [Smooth Muscle Cell Migration](#), [Regulation of long-term Neuronal Synaptic Plasticity](#)

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.

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Restrictions: For Research Use only

Handling

Format: Liquid

Buffer: The buffer composition is at the discretion of the manufacturer. If you have a special request, please contact us.

Handling Advice: Avoid repeated freeze-thaw cycles.

Storage: -80 °C

Storage Comment: Store at -80°C.

Expiry Date: Unlimited (if stored properly)