Datasheet for ABIN3093480

PKC mu Protein (AA 1-912) (Strep Tag)

Go to Product page

Overview

Quantity:	250 µg
Target:	PKC mu (PRKD1)
Protein Characteristics:	AA 1-912
Origin:	Human
Source:	Cell-free protein synthesis (CFPS)
Protein Type:	Recombinant
Purification tag / Conjugate:	This PKC mu protein is labelled with Strep Tag.
Application:	SDS-PAGE (SDS), Western Blotting (WB), ELISA

Product Details

Brand:	AliCE®
Sequence:	MSAPPVLRPP SPLLPVAAAA AAAAAALVPG SGPGPAPFLA PVAAPVGGIS FHLQIGLSRE PVLLLQDSSG DYSLAHVREM ACSIVDQKFP ECGFYGMYDK ILLFRHDPTS ENILQLVKAA SDIQEGDLIE VVLSASATFE DFQIRPHALF VHSYRAPAFC DHCGEMLWGL VRQGLKCEGC GLNYHKRCAF KIPNNCSGVR RRRLSNVSLT GVSTIRTSSA ELSTSAPDEP LLQKSPSESF IGREKRSNSQ SYIGRPIHLD KILMSKVKVP HTFVIHSYTR PTVCQYCKKL LKGLFRQGLQ CKDCRFNCHK RCAPKVPNNC LGEVTINGDL LSPGAESDVV MEEGSDDNDS ERNSGLMDDM EEAMVQDAEM AMAECQNDSG EMQDPDPDHE DANRTISPST SNNIPLMRVV QSVKHTKRKS STVMKEGWMV HYTSKDTLRK RHYWRLDSKC ITLFQNDTGS RYYKEIPLSE ILSLEPVKTS ALIPNGANPH CFEITTANVV YYVGENVVNP SSPSPNNSVL TSGVGADVAR MWEIAIQHAL MPVIPKGSSV GTGTNLHRDI SVSISVSNCQ IQENVDISTV YQIFPDEVLG SGQFGIVYGG KHRKTGRDVA IKIIDKLRFP TKQESQLRNE VAILQNLHHP GVVNLECMFE TPERVFVVME

KLHGDMLEMI LSSEKGRLPE HITKFLITQI LVALRHLHFK NIVHCDLKPE NVLLASADPF PQVKLCDFGF ARIIGEKSFR RSVVGTPAYL APEVLRNKGY NRSLDMWSVG VIIYVSLSGT FPFNEDEDIH DQIQNAAFMY PPNPWKEISH EAIDLINNLL QVKMRKRYSV DKTLSHPWLQ DYQTWLDLRE LECKIGERYI THESDDLRWE KYAGEQGLQY PTHLINPSAS HSDTPETEET EMKALGERVS IL

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 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).

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.

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 against its specific reference buffer.
- We use the Expasy's ProtParam tool to determine the absorption coefficient of each protein.

Product Details

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

Target:	PKC mu (PRKD1)
Alternative Name:	PRKD1 (PRKD1 Products)
Background:	Serine/threonine-protein kinase D1 (EC 2.7.11.13) (Protein kinase C mu type) (Protein kinase D) (nPKC-D1) (nPKC-mu),FUNCTION: Serine/threonine-protein kinase that converts transient diacylglycerol (DAG) signals into prolonged physiological effects downstream of PKC, and is involved in the regulation of MAPK8/JNK1 and Ras signaling, Golgi membrane integrity and trafficking, cell survival through NF-kappa-B activation, cell migration, cell differentiation by mediating HDAC7 nuclear export, cell proliferation via MAPK1/3 (ERK1/2) signaling, and plays a role in cardiac hypertrophy, VEGFA-induced angiogenesis, genotoxic-induced apoptosis and flagellin-stimulated inflammatory response (PubMed:10764790, PubMed:12505989, PubMed:12637538, PubMed:17442957, PubMed:18509061, PubMed:19135240, PubMed:19211839). Phosphorylates the epidermal growth factor receptor (EGFR) on dual threonine residues, which leads to the suppression of epidermal growth factor (EGF)-induced MAPK8/JNK1 activation and subsequent JUN phosphorylation (PubMed:10523301). Phosphorylates RIN1, inducing RIN1 binding to 14-3-3 proteins YWHAB, YWHAE and YWHAZ and increased competition with RAF1 for binding to GTP-bound form of Ras proteins (NRAS, HRAS and KRAS). Acts downstream of the heterotrimeric G-protein beta/gamma-subunit complex to maintain the structural integrity of the Golgi membranes, and is required for protein transport along the secretory pathway. In the trans-Golgi network (TGN), regulates the fission of transport vesicles that are on their way to the plasma membrane. May act by activating the lipid kinase phosphatidylinositol 4-kinase beta (PI4KB) at the TGN for the local synthesis of phosphorylated inositol lipids, which induces a sequential production of DAG, phosphatidic acid (PA) and lyso-PA (LPA) that are necessary for membrane fission and generation of specific transport carriers to the cell surface. Under oxidative stress, is phosphorylated at Tyr-463 via SRC-ABL1 and contributes to cell survival by activating IKK complex and subsequent nuclear translocation and activation of NFKB1 (PubMed:12505989). Involved in cell migration by

regulating integrin alpha-5/beta-3 recycling and promoting its recruitment in newly forming focal adhesion. In osteoblast differentiation, mediates the bone morphogenetic protein 2 (BMP2)-induced nuclear export of HDAC7, which results in the inhibition of HDAC7 transcriptional repression of RUNX2 (PubMed:18509061). In neurons, plays an important role in neuronal polarity by regulating the biogenesis of TGN-derived dendritic vesicles, and is involved in the maintenance of dendritic arborization and Golgi structure in hippocampal cells. May potentiate mitogenesis induced by the neuropeptide bombesin or vasopressin by mediating an increase in the duration of MAPK1/3 (ERK1/2) signaling, which leads to accumulation of immediate-early gene products including FOS that stimulate cell cycle progression. Plays an important role in the proliferative response induced by low calcium in keratinocytes, through sustained activation of MAPK1/3 (ERK1/2) pathway. Downstream of novel PKC signaling, plays a role in cardiac hypertrophy by phosphorylating HDAC5, which in turn triggers XPO1/CRM1-dependent nuclear export of HDAC5, MEF2A transcriptional activation and induction of downstream target genes that promote myocyte hypertrophy and pathological cardiac remodeling (PubMed:18332134). Mediates cardiac troponin I (TNNI3) phosphorylation at the PKA sites, which results in reduced myofilament calcium sensitivity, and accelerated crossbridge cycling kinetics. The PRKD1-HDAC5 pathway is also involved in angiogenesis by mediating VEGFA-induced specific subset of gene expression, cell migration, and tube formation (PubMed:19211839). In response to VEGFA, is necessary and required for HDAC7 phosphorylation which induces HDAC7 nuclear export and endothelial cell proliferation and migration. During apoptosis induced by cytarabine and other genotoxic agents, PRKD1 is cleaved by caspase-3 at Asp-378, resulting in activation of its kinase function and increased sensitivity of cells to the cytotoxic effects of genotoxic agents (PubMed:10764790). In epithelial cells, is required for transducing flagellin-stimulated inflammatory responses by binding and phosphorylating TLR5, which contributes to MAPK14/p38 activation and production of inflammatory cytokines (PubMed:17442957). Acts as an activator of NLRP3 inflammasome assembly by mediating phosphorylation of NLRP3 (By similarity). May play a role in inflammatory response by mediating activation of NF-kappa-B. May be involved in pain transmission by directly modulating TRPV1 receptor (PubMed:15471852). Plays a role in activated KRAS-mediated stabilization of ZNF304 in colorectal cancer (CRC) cells (PubMed:24623306). Regulates nuclear translocation of transcription factor TFEB in macrophages upon live S.enterica infection (By similarity). {ECO:0000250|UniProtKB:Q62101, ECO:0000269|PubMed:10523301, ECO:0000269|PubMed:10764790, ECO:0000269|PubMed:12505989, ECO:0000269|PubMed:12637538, ECO:0000269|PubMed:15471852, ECO:0000269|PubMed:17442957, ECO:0000269|PubMed:18332134, ECO:0000269|PubMed:18509061,

Target Details

	ECO:0000269|PubMed:19135240, ECO:0000269|PubMed:19211839, ECO:0000269|PubMed:24623306}.
Molecular Weight:	101.7 kDa
UniProt:	Q15139
Pathways:	Myometrial Relaxation and Contraction

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

Handling

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