Datasheet for ABIN3132732

PRKG1 Protein (AA 2-671) (His tag)

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Overview

Quantity:	1 mg
Target:	PRKG1
Protein Characteristics:	AA 2-671
Origin:	Mouse
Source:	Insect Cells
Protein Type:	Recombinant
Purification tag / Conjugate:	This PRKG1 protein is labelled with His tag.
Application:	Western Blotting (WB), SDS-PAGE (SDS), ELISA, Crystallization (Crys)

Product Details

Sequence:	SELEEDFAKI LMLKEERIKE LEKRLSEKEE EIQELKRKLH KCQSVLPVPS THIGPRTTRA QGISAEPQTY RSFHDLRQAF RKFTKSERSK DLIKEAILDN DFMKNLELSQ IQEIVDCMYP VEYGKDSCII KEGDVGSLVY VMEDGKVEVT KEGVKLCTMG PGKVFGELAI LYNCTRTATV KTLVNVKLWA IDRQCFQTIM MRTGLIKHTE YMEFLKSVPT FQSLPDEILS KLADVLEETH YENGEYIIRQ GARGDTFFII SKGQVNVTRE DSPSEDPVFL RTLGKGDWFG EKALQGEDVR TANVIAAEAV TCLVIDRDSF KHLIGGLDDV SNKAYEDAEA KAKYEAEAAF FANLKLSDFN IIDTLGVGGF GRVELVQLKS EESKTFAMKI LKKRHIVDTR QQEHIRSEKQ IMQGAHSDFI VRLYRTFKDS KYLYMLMEAC LGGELWTILR DRGSFEDSTT RFYTACVVEA FAYLHSKGII YRDLKPENLI LDHRGYAKLV DFGFAKKIGF GKKTWTFCGT PEYVAPEIIL NKGHDISADY WSLGILMYEL LTGSPPFSGP DPMKTYNIIL RGIDMIEFPK KIAKNAANLI KKLCRDNPSE RLGNLKNGVK DIQKHKWFEG FNWEGLRKGT LTPPIIPSVA SPTDTSNFDS FPEDSDEPPP DDNSGWDIDF

Product Details

	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 Prkg1 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:	Two step purification of proteins expressed in baculovirus infected SF9 insect cells: 1. In a first purification step, the protein is purified from the cleared cell lysate using three different His-tag capture materials: high yield, EDTA resistant, or DTT resistant. 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 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.
Grade:	Crystallography grade

Target Details

Target:	PRKG1
Alternative Name:	Prkg1 (PRKG1 Products)
Background:	Serine/threonine protein kinase that acts as key mediator of the nitric oxide (NO)/cGMP signaling pathway. GMP binding activates PRKG1, which phosphorylates serines and threonines on many cellular proteins. Numerous protein targets for PRKG1 phosphorylation are implicated in modulating cellular calcium, but the contribution of each of these targets may vary substantially among cell types. Proteins that are phosphorylated by PRKG1 regulate platelet activation and adhesion, smooth muscle contraction, cardiac function, gene expression, feedback of the NO-signaling pathway, and other processes involved in several aspects of the CNS like axon guidance, hippocampal and cerebellar learning, circadian rhythm and nociception. Smooth muscle relaxation is mediated through lowering of intracellular free calcium, by desensitization of contractile proteins to calcium, and by decrease in the contractile state of smooth muscle or in platelet activation. Regulates intracellular calcium levels via several pathways: phosphorylates MRVI1/IRAG and inhibits IP3-induced Ca(2+) release from intracellular stores, phosphorylation of KCNMA1 (BKCa) channels decreases intracellular Ca(2+) levels, which leads to increased opening of this channel. PRKG1 phosphorylates the canonical transient receptor potential channel (TRPC) family which inactivates the associated inward calcium current. Another mode of action of NO/cGMP/PKGI signaling involves PKGI-mediated inactivation of the Ras homolog gene family member A (RhoA). Phosphorylation of RHOA by PRKG1 blocks the action of this protein in myriad processes: regulation of RHOA translocation, decreasing contraction, controlling vesicle trafficking, reduction of myosin light chain phosphorylation resulting in vasorelaxation. Activation of PRKG1 by NO signaling alters also gene expression in a number of tissues. In smooth muscle cells, increased cGMP and PRKG1 activity influence expression of smooth muscle-specific contractile proteins, levels of proteins in the NO/cGMP signaling pathway, down-regulation of the matrix proteins osteopontin and thrombospondin-1 to limit smooth muscle cell migration and phenotype. Regulates vasodilator-stimulated phosphoprotein (VASP) functions in platelets and smooth muscle. {ECO:0000269|PubMed:10209042, ECO:0000269|PubMed:11055988, ECO:0000269|PubMed:19156199, ECO:0000269|PubMed:9606187, ECO:0000269|PubMed:9920894}.
Molecular Weight:	77.2 kDa Including tag.
UniProt:	P0C605

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:	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)