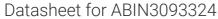
# antibodies .- online.com





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



#### Overview

Quantity:	1 mg
Target:	PRKG1
Protein Characteristics:	AA 2-671
Origin:	Human
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 FQSLPEEILS KLADVLEETH
YENGEYIIRQ GARGDTFFII SKGTVNVTRE 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 FPEDNDEPPP

DDNSGWDIDF

Grade:

# 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 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. >95 % as determined by SDS PAGE, Size Exclusion Chromatography and Western Blot. Purity: Sterility: 0.22 µm filtered Endotoxin Level: Protein is endotoxin free.

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:10567269, ECO:0000269 PubMed:11162591,
	ECO:0000269 PubMed:11723116, ECO:0000269 PubMed:12082086,
	ECO:0000269 PubMed:14608379, ECO:0000269 PubMed:15194681,
	ECO:0000269 PubMed:16990611, ECO:0000269 PubMed:8182057}.
Molecular Weight:	77.2 kDa Including tag.

UniProt:

Q13976

### **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)