

Rabbit PRKG1 Polyclonal Antibody | anti-PRKG1 antibody

PRKG1 Antibody

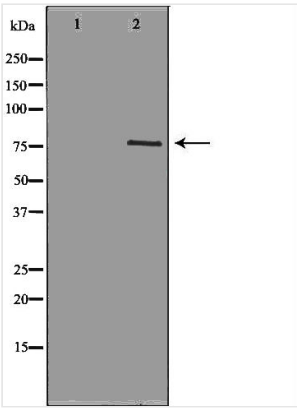
CATALOG # AAA326767	HOST Rabbit	REACTIVITY Human, Mouse, Rat	APPLICATIONS ELISA, Immunohistochemistry, Western Blot
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PRODUCT SYNONYMS

PRKG1; Polyclonal Antibody; PRKG1 Antibody; cGK 1; cGK1; cGKI alpha; cGKI; cGKI beta; cGMP-dependent protein kinase 1; cGMP-dependent protein kinase I; DKFZp686K042; FLJ36117; KGP1_HUMAN; KGPB; MGC71944; pkg; PRKG1B; PRKGR1A; PRKGR1B; anti-PRKG1 antibody

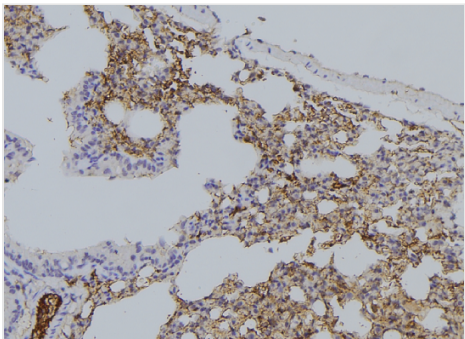
PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Isotype	IgG
Specificity	PRKG1 antibody detects endogenous levels of total PRKG1
Purity/Purification	The antiserum was purified by peptide affinity chromatography using SulfoLink Coupling Resin.
Form/Format	Liquid Phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Sequence Length	671
Applicable Applications for anti-PRKG1 antibody	ELISA, IHC (Immunohistochemistry), WB (Western Blot)
Immunogen	A synthesized peptide derived from human PRKG1
Subcellular Location	Cytoplasm. Colocalized with TRPC7 in the plasma membrane.
Tissue Specificity	Primarily expressed in lung and placenta.
Conjugation	Unconjugated
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.



WB (Western Blot)

Western blot analysis of Hepg2 whole cell lysates, using PRKG1 Antibody. The lane on the left is treated with the antigen-specific peptide.



IHC (Immunohistochemistry)

AAA326767 at 1/100 staining Human lung tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary.

ADDITIONAL INFORMATION

Related Product Information for anti-PRKG1 antibody	Description: Mammals have three different isoforms of cyclic GMP-dependent protein kinase (Ialpha, Ibeta, and II). These PRKG isoforms act as key mediators of the nitric oxide/cGMP signaling pathway and are important components of many signal transduction processes in diverse cell types. This PRKG1 gene on human chromosome 10 encodes the soluble Ialpha and Ibeta isoforms of PRKG by alternative transcript splicing. A separate gene on human chromosome 4, PRKG2, encodes the membrane-bound PRKG isoform II. The PRKG1 proteins play a central role in regulating cardiovascular and neuronal functions in addition to relaxing smooth muscle tone, preventing platelet aggregation, and modulating cell growth. This gene is most strongly expressed in all types of smooth muscle, platelets, cerebellar Purkinje cells, hippocampal neurons, and the lateral amygdala. Isoforms Ialpha and Ibeta have identical cGMP-binding and catalytic domains but differ in their leucine/isoleucine zipper and autoinhibitory sequences and therefore differ in their dimerization substrates and kinase enzyme activity. Function: 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 MRV11/IRAG and inhibits IP3-induced Ca2+ release from intracellular stores, phosphorylation of KCNMA1 (BKCa) channels decreases intracellular Ca2+ 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/PKG1 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. Subunit Structure: Isoform alpha: parallel homodimer or heterodimer and also heterotetramer. Interacts directly with PPP1R12A. Non-covalent dimer of dimer of PRKG1-PRKG1 and PPP1R12A-PPP1R12A. This interaction targets PRKG1 to stress fibers to mediate smooth muscle cell relaxation and vasodilation in responses to rises in cGMP. Isoform beta: antiparallel homodimer. Part of cGMP kinase signaling complex at least composed of ACTA2/alpha-actin, CNN1/calponin H1, PLN/phospholamban, PRKG1 and ITPR1 (By similarity). Interacts with MRV11. Forms a stable complex with ITPR1, MRV11, and isoform beta of PRKG1. Interacts with TRPC7 (via ankyrin repeat domain). Isoform alpha interacts with RGS2. Interacts with GTF2I. Post-translational Modifications: Autophosphorylation increases kinase activity.65 kDa monomer is produced by proteolytic cleavage. Similarity: Composed of an N-terminal leucine-zipper domain followed by an autoinhibitory domain, which mediate homodimer formation and inhibit kinase activity, respectively. Next, two cGMP-binding domains are followed by the catalytic domain at the C-terminus. Binding of cGMP to cGMP-binding domains results in a conformational change that activates kinase activity by removing the autoinhibitory domain from the catalytic cleft leaving the catalytic domain free to phosphorylate downstream substrates. Isoforms alpha and beta have identical cGMP-binding and catalytic domains but differ in their leucine zipper and autoinhibitory sequences and therefore differ in their dimerization substrates and kinase enzyme activity.Heterotetramerization is mediated by the interaction between a coiled-coil of PRKG1 and the leucine/isoleucine zipper of PPP1R12A/MBS, the myosin-binding subunit of the myosin phosphatase. Belongs to the protein kinase superfamily. AGC Ser/Thr protein kinase family. cGMP subfamily.
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NCBI AND UNIPROT INFORMATION

NCBI GI #	148612818
NCBI GeneID	5592
NCBI Accession #	NP_001091982.1
NCBI GenBank Nucleotide #	NM_001098512.3
UniProt Accession #	Q13976; P14619; Q5JP05; Q5JSJ6; Q6P5T7; A5YM56; B3KSF3; E2PU10

Molecular Weight	Observed: 76 kDa Predicted: 77 kDa
NCBI Official Full Name	cGMP-dependent protein kinase 1 isoform 1
NCBI Official Synonym Full Names	protein kinase cGMP-dependent 1
NCBI Official Symbol	PRKG1
NCBI Official Synonym Symbols	PKG; cGK; AAT8; PKG1; cGK1; cGKI; cGK 1; PRKG1B; PRKGR1B; cGKI-BETA; cGKI-alpha
NCBI Protein Information	cGMP-dependent protein kinase 1
UniProt Protein Name	cGMP-dependent protein kinase 1
UniProt Gene Name	PRKG1
UniProt Synonym Gene Names	PRKG1B; PRKGR1A; PRKGR1B; cGK 1; cGK1; cGKI

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://stage.aaabiotech.com/polyclonal/prkg1-antibody-immunohistochemistry-western-blot-elisa/326767>