## Anti-PKC Alpha Antibody

Catalog \# ABO10549

## Specification

## Anti-PKC Alpha Antibody - Product Information

```
Application
Primary Accession
Host
Reactivity
Clonality
Format
Description
Rabbit IgG polyclonal antibody for Protein kinase C alpha type(PRKCA) detection. Tested with WB, IHC-P in Human;Mouse;Rat.
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## Reconstitution

Add 0.2 ml of distilled water will yield a concentration of $500 \mathrm{ug} / \mathrm{ml}$.

## Anti-PKC Alpha Antibody - Additional Information

Gene ID 5578
Other Names
Protein kinase C alpha type, PKC-A, PKC-alpha, 2.7.11.13, PRKCA, PKCA, PRKACA
Calculated MW
76750 MW KDa

## Application Details

Immunohistochemistry(Paraffin-embedded Section), 0.5-1 $\mu \mathrm{g} / \mathrm{ml}$, Human, Mouse, Rat, By Heat<br>Western blot, 0.1-0.5 $\mu \mathrm{g} / \mathrm{ml}$, Human, Mouse, Rat<br>

Subcellular Localization
Cytoplasm. Cell membrane; Peripheral membrane protein. Mitochondrion membrane ; Peripheral membrane protein. Nucleus.

Protein Name
Protein kinase C alpha type

## Contents

Each vial contains 5 mg BSA, $0.9 \mathrm{mg} \mathrm{NaCl}, 0.2 \mathrm{mg}$ Na2HPO4, 0.05 mg Thimerosal, 0.05 mg NaN3.

## Immunogen

A synthetic peptide corresponding to a sequence at the N-terminus of human PRKCA (153-182aa MDHTEKRGRIYLKAEVADEKLHVTVRDAKN), different from the related rat and mouse sequences by one amino acid.

Purification
Immunogen affinity purified.

Cross Reactivity
No cross reactivity with other proteins

## Storage

Sequence Similarities
Belongs to the protein kinase superfamily. AGC Ser/Thr protein kinase family. PKC subfamily.

## Anti-PKC Alpha Antibody - Protein Information

## Name PRKCA

Synonyms PKCA, PRKACA

## Function

Calcium-activated, phospholipid- and diacylglycerol (DAG)- dependent serine/threonine-protein kinase that is involved in positive and negative regulation of cell proliferation, apoptosis, differentiation, migration and adhesion, tumorigenesis, cardiac hypertrophy, angiogenesis, platelet function and inflammation, by directly phosphorylating targets such as RAF1, BCL2, CSPG4, TNNT2/CTNT, or activating signaling cascade involving MAPK1/3 (ERK1/2) and RAP1GAP. Involved in cell proliferation and cell growth arrest by positive and negative regulation of the cell cycle. Can promote cell growth by phosphorylating and activating RAF1, which mediates the activation of the MAPK/ERK signaling cascade, and/or by up-regulating CDKN1A, which facilitates active cyclin-dependent kinase (CDK) complex formation in glioma cells. In intestinal cells stimulated by the phorbol ester PMA, can trigger a cell cycle arrest program which is associated with the accumulation of the hyper-phosphorylated growth-suppressive form of RB1 and induction of the CDK inhibitors CDKN1A and CDKN1B. Exhibits anti- apoptotic function in glioma cells and protects them from apoptosis by suppressing the p53/TP53-mediated activation of IGFBP3, and in leukemia cells mediates anti-apoptotic action by phosphorylating BCL2. During macrophage differentiation induced by macrophage colony-stimulating factor (CSF1), is translocated to the nucleus and is associated with macrophage development. After wounding, translocates from focal contacts to lamellipodia and participates in the modulation of desmosomal adhesion. Plays a role in cell motility by phosphorylating CSPG4, which induces association of CSPG4 with extensive lamellipodia at the cell periphery and polarization of the cell accompanied by increases in cell motility. During chemokine-induced CD4(+) T cell migration, phosphorylates CDC42-guanine exchange factor DOCK8 resulting in its dissociation from LRCH1 and the activation of GTPase CDC42 (PubMed:<a href="http://www.uniprot.org/citations/28028151" target="_blank">28028151</a>). Is highly expressed in a number of cancer cells where it can act as a tumor promoter and is implicated in malignant phenotypes of several tumors such as gliomas and breast cancers. Negatively regulates myocardial contractility and positively regulates angiogenesis, platelet aggregation and thrombus formation in arteries. Mediates hypertrophic growth of neonatal cardiomyocytes, in part through a MAPK1/3 (ERK1/2)-dependent signaling pathway, and upon PMA treatment, is required to induce cardiomyocyte hypertrophy up to heart failure and death, by increasing protein synthesis, protein-DNA ratio and cell surface area. Regulates cardiomyocyte function by phosphorylating cardiac troponin T (TNNT2/CTNT), which induces significant reduction in actomyosin ATPase activity, myofilament calcium sensitivity and myocardial contractility. In angiogenesis, is required for full endothelial cell migration, adhesion to vitronectin (VTN), and vascular endothelial growth factor A (VEGFA)-dependent regulation of kinase activation and vascular tube formation. Involved in the stabilization of VEGFA mRNA at post-transcriptional level and mediates VEGFA-induced cell proliferation. In the regulation of calcium-induced platelet aggregation, mediates signals from the CD36/GP4 receptor for granule release, and activates the integrin heterodimer ITGA2B-ITGB3 through the RAP1GAP pathway for
adhesion. During response to lipopolysaccharides (LPS), may regulate selective LPS-induced macrophage functions involved in host defense and inflammation. But in some inflammatory responses, may negatively regulate NF-kappa-B-induced genes, through ILIA-dependent induction of NF-kappa-B inhibitor alpha (NFKBIA/IKBA). Upon stimulation with 12-O-
tetradecanoylphorbol-13-acetate (TPA), phosphorylates EIF4G1, which modulates EIF4G1 binding to MKNK1 and may be involved in the regulation of EIF4E phosphorylation. Phosphorylates KIT, leading to inhibition of KIT activity. Phosphorylates ATF2 which promotes cooperation between ATF2 and JUN, activating transcription. Phosphorylates SOCS2 at 'Ser- 52' facilitating its ubiquitination and proteasomal degradation (By similarity). Phosphorylates KLHL3 in response to angiotensin II signaling, decreasing the interaction between KLHL3 and WNK4 (PubMed:<a href="http://www.uniprot.org/citations/25313067" target="_blank">25313067</a>).

## Cellular Location

Cytoplasm. Cell membrane; Peripheral membrane protein. Mitochondrion membrane; Peripheral membrane protein. Nucleus \{ECO:0000250|UniProtKB:P20444\}

## Anti-PKC Alpha Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Anti-PKC Alpha Antibody - Images
250KD-


Anti-PKC alpha antibody, ABO10549, IHC(P)IHC(P): Human Mammary Cancer Tissue

## Anti-PKC Alpha Antibody - Background

Protein kinase $C(P K C)$ is the major phorbol ester receptor. Activation of $P K C$ by calcium ions and the second messenger diacylglycerol is though to play a central role in the induction of cellular responses to a variety of ligand-receptor systems and in the regulation of cellular responsiveness to external stimuli. Three of these, termed alpha, beta and gamma, are highly homologous. PRKCA1 is mapped to 17q22-q23.2. PKC-alpha regulates cardiac contractility and propensity toward heart failure.

