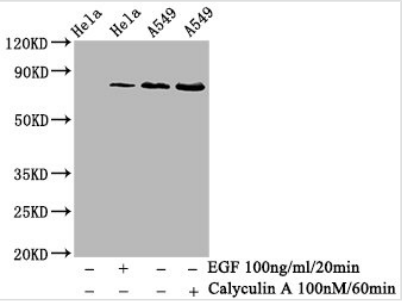
Phospho-PRKCA (T638) Antibody

Product Code	CSB-RA018699A638phHU
Abbreviation	Protein kinase C alpha type
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	P17252
Immunogen	A synthesized peptide derived from Human Phospho-PRKCA (T638)
Species Reactivity	Human
Tested Applications	ELISA, WB, IF; Recommended dilution: WB:1:500-1:5000, IF:1:20-1:200
Relevance	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:28028151). 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),

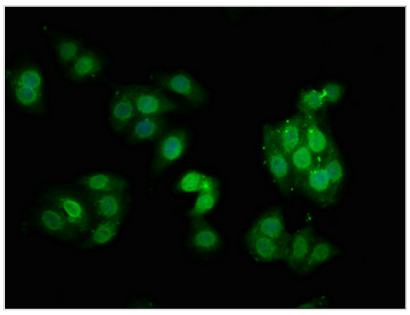
which induces significant reduction in actomyosin ATPase activity, myofilament calcium sensitivity and myocardial contractility. In angiogenesis, is required for full endothelial cell migration, adhesion to vitronectin (VTN), and vascular endothelial growth factor A (VEGFA)-dependent regulation of kinase 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 IL1A-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.

Form	Liquid
Conjugate	Non-conjugated
Storage Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purification Method	Affinity-chromatography
Isotype	Rabbit IgG
Clonality	Monoclonal
Alias	Protein kinase C alpha type, PKC-A, PKC-alpha, PRKCA, PKCA, PRKACA
Immunogen Species	Homo sapiens (Human)
Research Area	Signal Transduction
Gene Names	PRKCA
Accession NO.	3A5

Image



Western Blot
Positive WB detected in Hela whole cell lysate?A549 whole cell lysate(treated with Calyculin A or EGF)
All lanes Phospho-PRKCA antibody at 0.68µg/ml
Secondary
Goat polyclonal to rabbit IgG at 1/50000 dilution
Predicted band size: 80 KDa
Observed band size: 80 KDa



Immunofluorescence staining of HepG2 cells with CSB-RA018699A638phHU at 1:100,counter-stained with DAPI. The cells were fixed in 4% formaldehyde, permeabilized using 0.2% Triton X-100 and blocked in 10% normal Goat Serum. The cells were then incubated with the antibody overnight at 4°C. The secondary antibody was Alexa Fluor 488-congugated AffiniPure Goat Anti-Rabbit IgG (H+L).

Description

The vectors expressing anti-PRKCA antibody were constructed as follows: immunizing an animal with a synthesized peptide derived from human Phospho-PRKCA (T638), isolating the positive splenocyte and extracting RNA, obtaining DNA by reverse transcription, sequencing and screening PRKCA antibody gene, and amplifying heavy and light chain sequence by PCR and cloning them into plasma vectors. After that, the vector clones were transfected into the mammalian cells for production. The product is the recombinant PRKCA antibody. Recombinant PRKCA antibody in the culture medium was purified using affinity-chromatography. It can react with PRKCA protein from Human and is used in the ELISA, WB, IF.

The PRKCA gene is large, containing 17 exons spanning 0.5Mb of genomic DNA. It encodes the PKC alpha protein and is a cytoplasmic serine/threonine kinase member of the AGC (PKA, PKG, PKC) family. According to some studies, PRKCA may have the following characteristics.
PRKCA acts as a repeatedly mutated tumor gene in human cancers and uncovers potential therapeutic holes in this uncommon brain tumor. Multipoint SNP analysis indicated an association with PRKCA and its telomeric flanking regions in both populations, and combined SNP haplotype and genotype analysis revealed an allelic variant of PRKCA. PRKCA fusions are highly diagnostic for PGNT, and rare fusion partners can be identified by RNA-sequencing detection. Genomic analysis of pigment epithelial melanoma reveals recurrent alterations in PRKAR1A and PRKCA genes.