abcam

ab278787

# Anti-PKC (phospho T514) antibody [PKCgT514-PF4]

Recombinant | 20ul selling size

## Key facts

| | |
|---|---|
| **Isotype** | IgG |
| **Host species** | Rabbit |
| **Storage buffer** | Preservative: 0.02% Sodium azide Constituents: PBS, 50% Glycerol (glycerin, glycerine), 0.1% BSA |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Immunogen** | Synthetic Peptide within Human PRKCA pT514. The exact immunogen used to generate this antibody is proprietary information. Database link P17252 |
| **Clone number** | PKCgT514-PF4 |
| **Purification technique** | Affinity purification Protein A/G |
| **Specificity** | Pan-specific for PKC. Recognises gamma Thr514. |
| **Light chain type** | kappa |
| **Concentration** | 0.5 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## Flow Cyt

### Tested

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|---|---|
| **Species** | Mouse |

| | |
|---|---|
| **Dilution info** | 0.001-1 µg/mL |
| **Notes** | - |

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 0.001-1 µg/mL |
| **Notes** | - |

### Expected

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

## WB

### Tested

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | 0.05-0.1 µg/mL |
| **Notes** | - |

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | 0.05-0.1 µg/mL |
| **Notes** | - |

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 0.05-0.1 µg/mL |
| **Notes** | - |

## Target data

See full target information PRKCA pT514

| | |
|---|---|
| **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: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. 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:25313067). Phosphorylates and activates LRRK1, which phosphorylates RAB proteins involved in intracellular trafficking (PubMed:36040231).

## Storage

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|---|---|
| **Shipped at conditions** | Blue Ice |
| **Appropriate short-term storage duration** | 1-2 weeks |
| **Appropriate short-term storage conditions** | +4°C |
| **Appropriate long-term storage conditions** | -20°C |
| **Aliquoting information** | Upon delivery aliquot |
| **Storage information** | Avoid freeze / thaw cycle |

## Notes

**What are the advantages of a recombinant monoclonal antibody?**
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

## Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

| | |
|---|---|
| **Activity summary** | Protein kinase C (PKC) comprises a family of serine/threonine kinases with several isoforms such as PKC alpha beta and gamma among others. PKC enzymes play key roles in intracellular signaling particularly in mediating responses to growth factors hormones and other signals. PKC exhibits a molecular weight generally ranging around 77 to 97 kDa depending on the isoform. These enzymes show expression in many tissues but have high concentrations in the brain heart and lung. PKC activation often involves translocation to cellular membranes which is important for their signaling roles. |
| **Biological function summary** | PKC influences various cellular processes such as cell proliferation differentiation apoptosis and immune responses. It acts within larger protein complexes serving as a modulator of cellular functions. The activation of PKC leads to its association with different scaffolding proteins impacting a wide array of cell activities. PKC notably affects the function of other kinases and transcription factors demonstrating its integral role in managing cellular behavior and homeostasis. |

| | |
|---|---|
| **Pathways** | PKC participates in the phosphoinositide signaling pathway and the mitogen-activated protein kinase (MAPK) pathway. In these contexts PKC activation impacts proteins like Ras and Raf kinases which play roles in cellular growth and differentiation. By modulating these pathways PKC becomes an important component in signal transduction cascades influencing cell fate decisions. Understanding the interaction between PKC and these pathways helps in elucidating its role in maintaining normal cellular activities and responses to external stimuli. |
| **Associated diseases and disorders** | PKC is linked to cancer and cardiovascular diseases. In cancer dysregulation of PKC activity often contributes to tumor growth and progression by altering pathways that control cell division and survival. PKC abnormally interacts with proteins like Bcl-2 promoting cell survival. In cardiovascular diseases changes in PKC signaling can impact heart function contributing to conditions like heart failure through interactions with proteins such as troponin. Research on PKC and these diseases can provide insights into developing targeted therapies. |

## Product promise

**Tested**

We have tested this species and application combination and it works. It is covered by our product promise.

**Expected**

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

**Predicted**

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

**Not recommended**

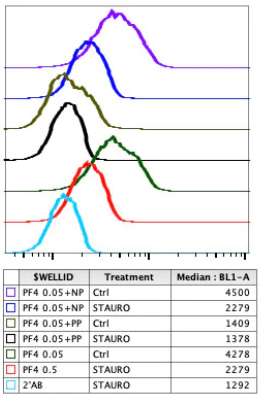
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

## 5 product images

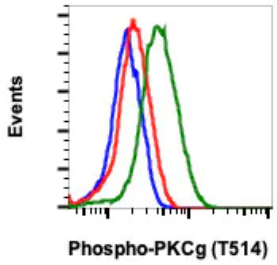


| | $WELLID | Treatment | Median : BL1-A |
|---|---|---|---|
| | PF4 0.05+NP | Ctrl | 4500 |
| | PF4 0.05+NP | STAURO | 2279 |
| | PF4 0.05+PP | Ctrl | 1409 |
| | PF4 0.05+PP | STAURO | 1378 |
| | PF4 0.05 | Ctrl | 4278 |
| | PF4 0.5 | STAURO | 2279 |
| | 2°AB | STAURO | 1292 |

## Flow Cytometry - Anti-PKC (phospho T514) antibody [PKCgT514-PF4] (ab278787)

PKC (phospho T514) Flow Cytometry staining using rabbit Anti-PKC (phospho T514) antibody

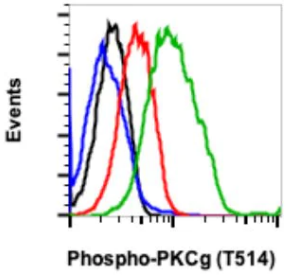
Peptide blocking flow cytometric analysis of HT1080 cells secondary antibody only negative control (light blue) or untreated (red) or treated with staurosporine (green) or untreated and blocked with phospho-peptide (black) or treated with staurosporine and blocked with phospho peptide (gold) or untreated and blocked with non-phospho peptide (dark blue) or treated with staurosporine and blocked with non-phospho peptide (purple) using ab278787 at 0.05 µg/mL.




## Flow Cytometry - Anti-PKC (phospho T514) antibody [PKCgT514-PF4] (ab278787)

PKC (phospho T514) Flow Cytometry staining using rabbit Anti-PKC (phospho T514) antibody

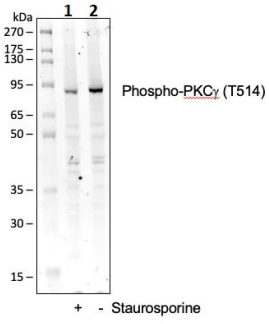
Flow cytometric analysis of Jurkat cells, treated with K252a and stained with the secondary antibody only negative control (blue) or treated with K252a (red) or untreated (green) using ab278787 at 0.1 µg/mL. Cat. #2451.




## Flow Cytometry - Anti-PKC (phospho T514) antibody [PKCgT514-PF4] (ab278787)

PKC (phospho T514) Flow Cytometry staining using rabbit Anti-PKC (phospho T514) antibody

Flow cytometric analysis of HT1080 cells treated with staurosporine (red) or untreated (green) usingab278787 at 0.05 ug/mL, or concentration-matched Rabbit (G9) mAb IgG Isotype Control for cells treated with staurosporine (black) or untreated (blue).



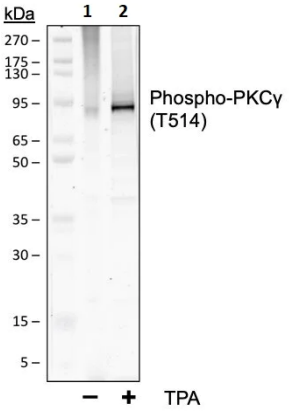

## Western blot - Anti-PKC (phospho T514) antibody [PKCgT514-PF4] (ab278787)

All lanes:
Western blot - Anti-PKC (phospho T514) antibody [PKCgT514-PF4] (ab278787) at 0.1 µg/mL

Lane 1:
C6 cell extract (treated with staurosporine)

Lane 2:
C6 cell extract (untreated)

Predicted band size: 77 kDa




# Western blot - Anti-PKC (phospho T514) antibody [PKCgT514-PF4] (ab278787)

All lanes:
Western blot - Anti-PKC (phospho T514) antibody [PKCgT514-PF4] (ab278787) at 0.05 µg/mL

Lane 1:
Mouse embryo fibroblast cell line (NIH/3T3) cell extract (untreated)

Lane 2:
Mouse embryo fibroblast cell line (NIH/3T3) cell extract (treated with TPA)

Predicted band size: 77 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.