abcam

ab179522

Anti-PKC antibody [EPR16898]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR16898
Purification technique	Affinity purification Protein A
Concentration	1.92 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Rat
Dilution info	1/100
Notes	-

Expected

Species	Mouse, Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

Species	Recombinant full length protein - Human
Dilution info	1/1000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/200

Notes	-

Expected

Species	Rat, Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/360
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

Species	Rat, Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

Target data

See full target information PRKCB

Function	Calcium-activated, phospholipid- and diacylglycerol (DAG)-dependent serine/threonine-protein kinase involved in various cellular processes such as regulation of the B-cell receptor (BCR) signalosome, oxidative stress-induced apoptosis, androgen receptor-dependent transcription regulation, insulin signaling and endothelial cells proliferation. Plays a key role in B-cell activation by regulating BCR-induced NF-kappa-B activation. Mediates the activation of the canonical NF-kappa-B pathway (NFKB1) by direct phosphorylation of CARD11/CARMA1 at 'Ser-559', 'Ser-644' and 'Ser-652'. Phosphorylation induces CARD11/CARMA1 association with lipid rafts and recruitment of the BCL10-MALT1 complex as well as MAP3K7/TAK1, which then activates IKK complex, resulting in nuclear translocation and activation of NFKB1. Plays a direct role in the negative feedback regulation of the BCR signaling, by down-modulating BTK function via direct phosphorylation of BTK at 'Ser-180', which results in the alteration of BTK plasma membrane localization and in turn inhibition of BTK activity (PubMed:11598012). Involved in apoptosis following oxidative damage: in case of oxidative conditions, specifically phosphorylates 'Ser-36' of isoform p66Shc of SHC1, leading to mitochondrial accumulation of p66Shc, where p66Shc acts as a reactive oxygen species producer. Acts as a coactivator of androgen receptor (AR)-dependent transcription, by being recruited to AR target genes and specifically mediating phosphorylation of 'Thr-6' of histone H3 (H3T6ph), a specific tag for epigenetic transcriptional activation that prevents demethylation of histone H3 'Lys-4' (H3K4me) by LSD1/KDM1A (PubMed:20228790). In insulin signaling, may function downstream of IRS1 in muscle cells and mediate insulin-dependent DNA synthesis through the RAF1-MAPK/ERK signaling cascade. Participates in the regulation of glucose transport in adipocytes by negatively modulating the insulin-stimulated translocation of the glucose transporter SLC2A4/GLUT4. Phosphorylates SLC2A1/GLUT1, promoting glucose uptake by SLC2A1/GLUT1 (PubMed:25982116). Under high glucose in pancreatic beta-cells, is probably involved in the inhibition of the insulin gene transcription, via regulation of MYC expression. In endothelial cells, activation of PRKCB induces increased phosphorylation of RB1, increased VEGFA-induced cell proliferation, and inhibits PI3K/AKT-dependent nitric oxide synthase (NOS3/eNOS) regulation by insulin, which causes endothelial dysfunction. Also involved in triglyceride homeostasis (By similarity). Phosphorylates ATF2 which promotes cooperation between ATF2 and JUN, activating transcription (PubMed:19176525). 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). Isoform Beta-II. Acts as an activator of ferroptosis by mediating phosphorylation and activation of ACSL4 (PubMed:35027735). Also stimulates ferroptosis propagation by catalyzing phosphorylation of FOXK1, thereby promoting LGALS13 secretion (PubMed:40246981).

Storage

Shipped at conditions	Conditional Ambient
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

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

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

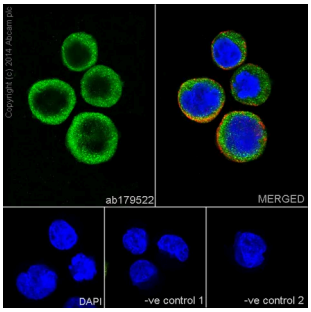
We do not recommend this combination. It is not covered by our product promise.

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.

11 product images

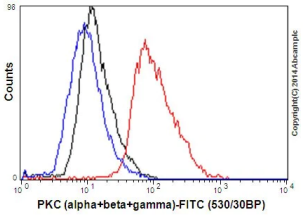


Immunocytochemistry/ Immunofluorescence - Anti-PKC antibody [EPR16898] (ab179522)

PKC Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-PKC antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized K562 (Human chronic myelogenous leukemia cells from bone marrow) cells labeling PKC alpha + beta + gamma with ab179522 at 1/200 dilution, followed by Goat anti-rabbit IAlexa Fluor® 488 (IgG) (ab150077) secondary antibody at 1/400 dilution (green). Confocal image shows cytoplasmic staining on K562 cell line. The nuclear counterstain is DAPI (blue). Tubulin is detected with ab7291 (anti-Tubulin mouse mAb) at 1/500 dilution and ab150120 (goat anti-mouse AlexaFluor®594 secondary antibody) at 1/500 dilution (red).

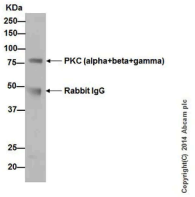
The negative controls are as follows: -ve control 1: ab179522 at 1/200 dilution followed by ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/500 dilution.-ve control 2: ab7291 (anti-Tubulin mouse mAb) at 1/500 dilution followed by ab150077 (Alexa Fluor®488 Goat Anti-Rabbit IgG H&L) at 1/400 dilution.



Flow Cytometry (Intracellular) - Anti-PKC antibody [EPR16898] (ab179522)

PKC Flow Cytometry (Intracellular) staining using rabbit Anti-PKC antibody

Intracellular flow cytometric analysis of2% paraformaldehyde-fixed NIH/3T3 (Mouse embyro fibroblast cells) cells labeling PKC alpha + beta + gamma with ab179522 at 1/360 dilution (red) compared with a rabbit monoclonal IgG isotype control (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody; blue). Goat anti rabbit IgG (FITC) at 1/150 dilution was used as the secondary antibody.

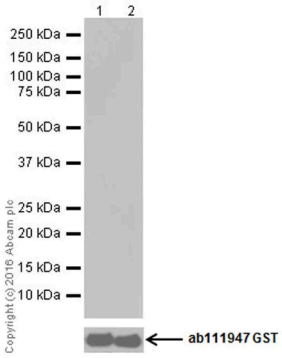


Immunoprecipitation - Anti-PKC antibody [EPR16898] (ab179522)

PKC alpha + beta + gamma was immunoprecipitated from 1mg of Rat brain extract with ab179522 at 1/100 dilution. Western blot was performed from the immunoprecipitate using ab179522 at 1/1000 dilution. Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated antibody was used as secondary antibody at 1/1000 dilution.
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

All lanes:
Immunoprecipitation - Anti-PKC antibody [EPR16898] (ab179522)

Predicted band size: 77 kDa



Western blot - Anti-PKC antibody [EPR16898] (ab179522)

PKC Western blot staining using rabbit Anti-PKC antibody

Active human PKC zeta full length protein (Catalog# ab60848) contains aa1-592 with GST-tag; Active human PKC iota full length protein (Catalog#ab60850) contains aa1-596 with GST-tag.
Blocking/Diluting buffer 5% NFDM/TBST

All lanes:
Western blot - Anti-PKC antibody [EPR16898] (ab179522) at 1/2000 dilution

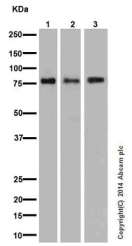
Lane 1:
Active human PKC zeta full length protein at 0.02 µg

Lane 2:
Active human PKC iota full length protein at 0.02 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/50000 dilution

Exposure time: 3min



Western blot - Anti-PKC antibody [EPR16898] (ab179522)

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-PKC antibody [EPR16898] (ab179522) at 1/1000 dilution

Lane 1:
Human fetal brain tissue lysate at 10 µg

Lane 2:
Human fetal heart tissue lysate at 10 µg

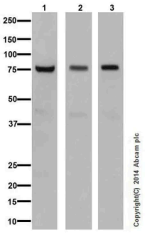
Lane 3:
Human fetal kidney tissue lysate at 10 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1000 dilution

Predicted band size: 77 kDa

Observed band size: 77 kDa



Western blot - Anti-PKC antibody [EPR16898] (ab179522)

PKC Western blot staining using rabbit Anti-PKC antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-PKC antibody [EPR16898] (ab179522) at 1/10000 dilution

Lane 1:
HeLa (Human epithelial cells from cervix adenocarcinoma) whole cell lysate at 20 µg

Lane 2:
293T (Human epithelial cells from embryonic kidney) whole cell lysate at 10 µg

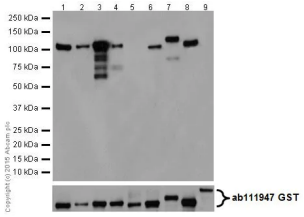
Lane 3:
SH-SY5Y (Human neuroblastoma from bone marrow cells) whole cell lysate at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L),Peroxidase conjugated at 1/1000 dilution

Predicted band size: 77 kDa

Observed band size: 77 kDa



Western blot - Anti-PKC antibody [EPR16898] (ab179522)

PKC Western blot staining using rabbit Anti-PKC antibody

Active human PKC alpha full length protein (Catalog#ab55672) contains aa1-672 with GST-tag; Active human PKC beta 1 full length protein(Catalog#ab60840) contains aa1-671 with GST-tag; Active human PKC beta 2 full length protein(Catalog#ab60841) contains aa1-673 with GST-tag; Active human PKC gamma full length protein(Catalog#ab60842) contains aa1-677 with GST-tag; Active human PKC delta full length protein(Catalog#ab60844) contains aa1-676 with GST-tag; Active human PKC eta full length protein(Catalog#ab60849) contains aa1-683 with GST-tag; Active human PKC epsilon full length protein(Catalog#ab60847) contains aa1-737 with GST-tag; Active human PKC theta full length protein(Catalog#ab56641) contains aa1-706 with GST-tag; Active human PKC mu full length protein(Catalog#ab60873) contains aa1-912 with GST-tag.
Blocking/Diluting buffer 5% NFDM/TBST

All lanes:
Western blot - Anti-PKC antibody [EPR16898] (ab179522) at 1/2000 dilution

Lane 1:
Active human PKC alpha full length protein at 0.02 µg

Lane 2:
Active human PKC beta 1 full length protein at 0.02 µg

Lane 3:
Active human PKC beta 2 full length protein at 0.02 µg

Lane 4:
Active human PKC gamma full length protein at 0.02 µg

Lane 5:
Active human PKC delta full length protein at 0.02 µg

Lane 6:
Active human PKC eta full length protein at 0.02 µg

Lane 7:
Active human PKC epsilon full length protein at 0.02 µg

Lane 8:
Active human PKC theta full length protein at 0.02 µg

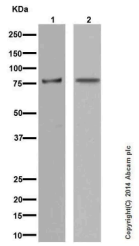
Lane 9:
Active human PKC mu full length protein at 0.02 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/50000 dilution

Predicted band size: 77 kDa

Exposure time: 2s



Western blot - Anti-PKC antibody [EPR16898] (ab179522)

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-PKC antibody [EPR16898] (ab179522) at 1/1000 dilution

Lane 1:
K562 (Human chronic myelogenous leukemia cells from bone marrow) whole cell lysate at 20 µg

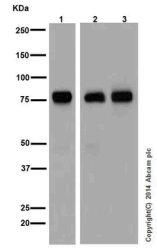
Lane 2:
A431 (Human epidermoid carcinoma) whole cell lysate at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L),Peroxidase conjugated at 1/1000 dilution

Predicted band size: 77 kDa

Observed band size: 77 kDa



Western blot - Anti-PKC antibody [EPR16898] (ab179522)

PKC Western blot staining using rabbit Anti-PKC antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-PKC antibody [EPR16898] (ab179522) at 1/5000 dilution

Lane 1:
L6 (Rat skeletal muscle cell line) whole cell lysate at 10 µg

Lane 2:
Neuro-2a (Mouse neuroblastoma cells) whole cell lysate at 10 µg

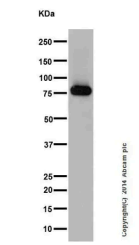
Lane 3:
L-929 (Mouse connective tissue fibroblast cells) whole cell lysate at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

Predicted band size: 77 kDa

Observed band size: 77 kDa



Western blot - Anti-PKC antibody [EPR16898] (ab179522)

PKC Western blot staining of Rat brain whole tissue lysate using rabbit Anti-PKC antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-PKC antibody [EPR16898] (ab179522) at 1/1000 dilution

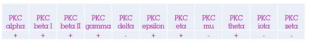
All lanes:
Rat brain whole tissue lysate at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L),Peroxidase conjugated at 1/1000 dilution

Predicted band size: 77 kDa

Observed band size: 77 kDa



Western blot - Anti-PKC antibody [EPR16898] (ab179522)

PKC Western blot staining using rabbit Anti-PKC antibody

Recombinant PKC isoforms were tested for reactivity by western blot, and are marked as positive (+) or negative (-).
All lanes:
Western blot - Anti-PKC antibody [EPR16898] (ab179522)

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