abcam

ab32026

Anti-PKC beta 2 antibody [Y125]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 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	Y125
Purification technique	Affinity purification Protein A
Specificity	This antibody recognises PKC beta 2, it does not cross react with human PKC beta 1. Immunogen's homology with PKC alpha is 77.8%. Cross-reactivity with PKC alpha has not been tested.
Epitope	ab32026 reacts with an epitope located in the region near the C terminus of PKC beta 2.
Concentration	0.11 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Synthetic peptide - Human
Dilution info	1/1000 - 1/10000
Notes	-

Species	Rat
Dilution info	1/1000 - 1/10000
Notes	-

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

Species	Mouse
Dilution info	1/1000 - 1/10000
Notes	-

Predicted

Species	Cow, Pig
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/250 - 1/500
Notes	-

Expected

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

Predicted

Species	Cow, Pig
Dilution info	-
Notes	-

Not recommended

Species	Synthetic peptide - Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/50
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

Predicted

Species	Cow, Pig
Dilution info	-
Notes	-

Not recommended

Species	Synthetic peptide - Human

Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Mouse
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Rat
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Predicted

Species	Cow, Pig
Dilution info	-
Notes	-

Not recommended

Species	Synthetic peptide - 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 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 beta 2 also known as PKC beta 2 or PRKCB is an important isoform of the PKC family with a molecular weight of 79 kDa. PKC proteins are a group of serine/threonine kinases involved in various cellular processes. PKC beta 2 expresses in tissues like the spleen lymph nodes and other immune-related tissues. The protein plays a significant role in immune responses and its expression is regulated by various signaling molecules.
Biological function summary	PKC beta 2 acts as an important regulator in the immune system by modulating immune cell activation and proliferation. It functions as part of the PKC protein complex which interacts with lipids and calcium as cofactors. This protein has critical influence on processes such as B-cell activation and phagocyte response. It also regulates several transcription factors impacting gene expression critical for the immune system.
Pathways	PKC beta 2 integrates into multiple signaling pathways including the NF-kB and MAPK pathways. These pathways are essential for transmitting signals from the cell surface to the nucleus affecting gene expression and cell function. PKC beta 2 directly influences protein interactions within these pathways such as with other PKC family members and other proteins like IKK which is critical in the NF-kB signaling pathway.
Associated diseases and disorders	PKC beta 2 is significantly connected to certain cancers and autoimmune conditions. Aberrant PKC beta 2 activity is linked to chronic lymphocytic leukemia where it affects the survival and proliferation of B cells. It is also involved in diabetic nephropathy contributing to kidney damage through excessive signaling.

In these conditions PKC beta 2 interacts with proteins like Bcl-2 in cancer and TGF-beta in diabetic nephropathy influencing the disease courses and potentially serving as targets for therapeutic interventions.

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

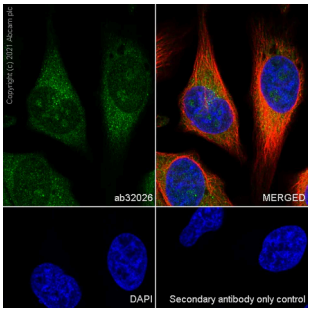
We do not recommend this combination. It is not covered by our product promise.

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.

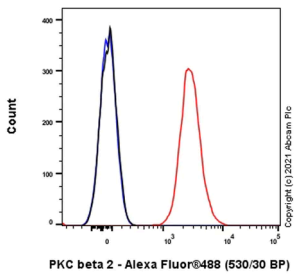
7 product images



Immunocytochemistry/ Immunofluorescence - Anti-PKC beta 2 antibody [Y125] (ab32026)

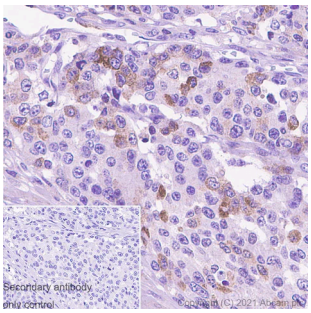
PKC beta 2 Immunocytochemistry/ Immunofluorescence staining of HeLa (Human cervix adenocarcinoma epithelial cell) using rabbit Anti-PKC beta 2 antibody

Immunocytochemistry/ Immunofluorescence analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling PKC beta 2 using ab32026. The cells were fixed with 4% paraformaldehyde then permeabilized with 0.1% Triton X-100. The cells were then incubated with ab32026 at 1:50 dilution followed by a further incubation with a Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 2 µg/ml (shown in green). Nuclear DNA was labelled in blue with DAPI. Cells were counterstained using ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) at 1:200 dilution (shown in red). Secondary antibody only control: PBS instead of the primary antibody.



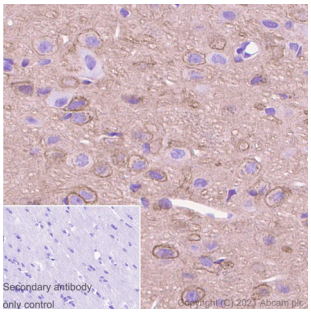
Flow Cytometry (Intracellular) - Anti-PKC beta 2 antibody [Y125] (ab32026)

Intracellular Flow Cytometry analysis of K-562 (Human chronic myelogenous leukemia lymphoblast) cells labeling PKC beta 2 with purified ab32026 at 1/20 dilution (5 ug/ml) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150081) (1/2000 dilution) was used as the secondary antibody. Rabbit monoclonal IgG (Black) was used as a isotype control. Cell without incubation with primary antibody and secondary antibody (Blue) were used as unlabeled control.



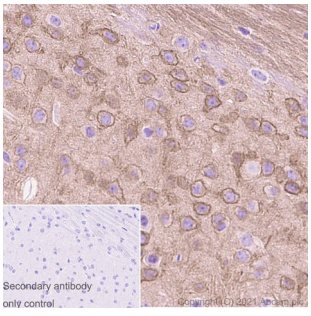
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PKC beta 2 antibody [Y125] (ab32026)

Immunohistochemical analysis of Paraffin-embedded sections human gastric carcinoma tissue labelling PKC beta 2 with ab32026 at 1/300 dilution, followed by a ready to use secondary Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Staining on human gastric carcinoma tissue is observed. Counter stained with Haematoxylin. Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0). The immunostaining was performed on a Leica Biosystems BOND® RX instrument.



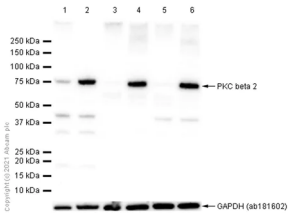
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PKC beta 2 antibody [Y125] (ab32026)

Immunohistochemical analysis of Paraffin-embedded sections rat cerebrum tissue labelling PKC beta 2 with ab32026 at 1/1000 dilution, followed by a ready to use secondary Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Staining on rat cerebrum tissue is observed. Counter stained with Haematoxylin. Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0). The immunostaining was performed on a Leica Biosystems BOND® RX instrument.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PKC beta 2 antibody [Y125] (ab32026)

Immunohistochemical analysis of Paraffin-embedded sections mouse cerebrum tissue labelling PKC beta 2 with ab32026 at 1/1000 dilution, followed by a ready to use secondary Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Staining on mouse cerebrum tissue is observed. Counter stained with Haematoxylin. Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0). The immunostaining was performed on a Leica Biosystems BOND® RX instrument.



Western blot - Anti-PKC beta 2 antibody [Y125] (ab32026)

Blocking and diluting buffer and concentration: 5% NFDM/TBST. ab181602 was used as GAPDH loading control. We recommend not to boil samples when loading lysate.
All lanes:
Western blot - Anti-PKC beta 2 antibody [Y125] (ab32026) at 1/1000 dilution

Lane 1:
K-562 (Human chronic myelogenous leukemia lymphoblast) whole cell lysate boiled at 20 µg

Lane 2:
K-562 (Human chronic myelogenous leukemia lymphoblast) whole cell lysate unboiled at 20 µg

Lane 3:
Mouse brain lysate boiled at 20 µg

Lane 4:
Mouse brain lysate unboiled at 20 µg

Lane 5:
Rat brain lysate boiled at 20 µg

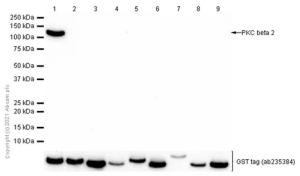
Lane 6:
Rat brain lysate unboiled at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 77 kDa

Observed band size: 77 kDa



Western blot - Anti-PKC beta 2 antibody [Y125] (ab32026)

PKC beta 2 Western blot staining using rabbit Anti-PKC beta 2 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST. ab235384 was used to detect GST tag.
All lanes:
Western blot - Anti-PKC beta 2 antibody [Y125] (ab32026) at 1/1000 dilution

Lane 1:
Western blot - Recombinant human PKC beta 2 protein (GST tag N-Terminus) (ab60841) at 10 ng

Lane 2:
Western blot - Recombinant human PKC beta 1 protein (GST tag N-Terminus) (ab60840) at 10 ng

Lane 3:
Western blot - Recombinant human PKC delta protein (GST tag N-Terminus) (ab60844) at 10 ng

Lane 4:
Western blot - Recombinant human PKC eta protein (GST tag N-Terminus) (ab60849) at 10 ng

Lane 5:
Western blot - Recombinant human PKC epsilon protein (GST tag N-Terminus) (ab60847) at 10 ng

Lane 6:
Western blot - Recombinant human PKC theta/PRKCQ protein (GST tag N-Terminus) (ab56641) at 10 ng

Lane 7:
Western blot - Recombinant human PKC mu/PKD protein (GST tag N-Terminus) (ab60873) at 10 ng

Lane 8:
Western blot - Recombinant human PKC alpha protein (Active) (GST tag N-Terminus) (ab55672) at 10 ng

Lane 9:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 10 ng

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 77 kDa

Observed band size: 100 kDa

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