abcam

ab223792

Anti-PI 3 Kinase p85 alpha antibody [EPR18702] - BSA and Azide free

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR18702
Purification technique	Affinity purification Protein A
Concentration	1.028 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human, Mouse, Rat
Dilution info	-

Notes	-

Expected

Species	African green monkey
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Tested

Species	Human, Mouse
Dilution info	-
Notes	-

Expected

Species	Rat, African green monkey
Dilution info	Use at an assay dependent concentration.
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	African green monkey
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Species	Mouse
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

Target data

See full target information PIK3R1

Function	Binds to activated (phosphorylated) protein-Tyr kinases, through its SH2 domain, and acts as an adapter, mediating the association of the p110 catalytic unit to the plasma membrane. Necessary for the insulin-stimulated increase in glucose uptake and glycogen synthesis in insulin-sensitive tissues. Plays an important role in signaling in response to FGFR1, FGFR2, FGFR3, FGFR4, KITLG/SCF, KIT, PDGFRA and PDGFRB. Likewise, plays a role in ITGB2 signaling (PubMed:17626883, PubMed:19805105, PubMed:7518429). Modulates the cellular response to ER stress by promoting nuclear translocation of XBP1 isoform 2 in a ER stress- and/or insulin-dependent manner during metabolic overloading in the liver and hence plays a role in glucose tolerance improvement (PubMed:20348923).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C

Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab223792 is the carrier-free version of ab191606.

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.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	PI 3 Kinase p85 alpha also known as PI3KR1 or phospho PI3K is a regulatory subunit of phosphoinositide 3-kinase (PI3K) that plays a fundamental role in various signaling pathways. The p85 protein has a molecular weight of approximately 85 kDa. This protein is widely expressed in many cell types facilitating essential cellular functions by forming a heterodimer with the class I PI3K catalytic subunit often implicated in regulating lipid signaling pathways.
Biological function summary	P85 alpha modulates intracellular signaling by interacting with other proteins in a complex formation with catalytic subunit p110. This interaction enables the initiation of downstream signaling cascades controlling cell growth proliferation and survival. PI 3 kinase activity mediated by p85 alpha is integral to cellular

	homeostasis and metabolism helping to execute cellular responses to a variety of growth factors and hormones.
Pathways	PI 3 Kinase p85 alpha integrates into two principal signaling networks: the PI3K-Akt and mTOR pathways. These pathways are instrumental for regulating anabolic processes and cell survival. The p85 form of PI3K interacts with additional proteins such as Akt and mTOR coordinating cellular energy balance promoting protein synthesis and inhibiting apoptosis. Through these interactions the protein ensures that cells respond accurately to nutritional and stress signals.
Associated diseases and disorders	Alterations in PI 3 Kinase p85 alpha function have been linked to cancer and type 2 diabetes. Aberrant signaling involving PI3K-Akt-mTOR pathways due to mutations in PI3KR1 can contribute to tumor progression and chemoresistance. Moreover dysfunction of this pathway affects insulin signaling connecting p85 alpha to diabetic pathologies. Proteins such as IRS-1 (insulin receptor substrate 1) act alongside p85 alpha in mediating these disease-associated processes emphasizing its importance in maintaining physiological balance.

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

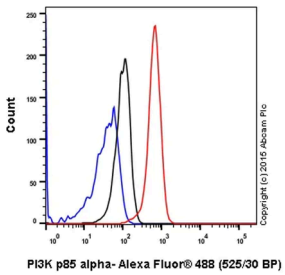
We do not recommend this combination. It is not covered by our product promise.

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.

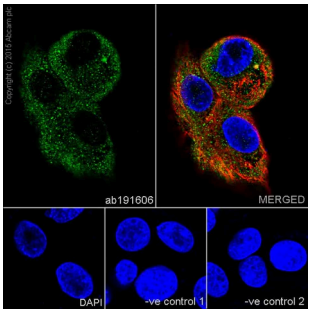
7 product images



Flow Cytometry (Intracellular) - Anti-PI 3 Kinase p85 alpha antibody [EPR18702] - BSA and Azide free (ab223792)

PI 3 Kinase p85 alpha Flow Cytometry (Intracellular) staining using rabbit Anti-PI 3 Kinase p85 alpha antibody

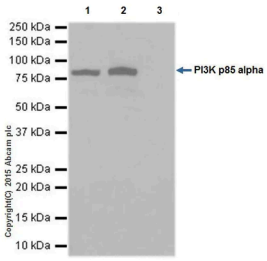
Overlay histogram showing HepG2 cells fixed in 4% PFA and stained with ab191606 at a dilution of 1/80 (red line). The secondary antibody used was Alexa Fluor® 488 goat anti-rabbit at a dilution of 1/500. Rabbit monoclonal IgG (ab172730) was used as an isotype control (black line) and cells incubated in the absence of both primary and secondary antibody were used as a negative control (blue line).
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab191606).



Immunocytochemistry/ Immunofluorescence - Anti-PI 3 Kinase p85 alpha antibody [EPR18702] - BSA and Azide free (ab223792)

PI 3 Kinase p85 alpha Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-PI 3 Kinase p85 alpha antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HepG2 (Human liver hepatocellular carcinoma cell line) cells labeling PI3K p85 with ab191606 at 1/250 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic staining on HepG2 cell line. The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody - Loading Control (ab7291) at 1/1000 dilution and Goat Anti-Mouse IgG (AlexaFluor®594) preadsorbed (ab150120) at 1/1000 dilution (red).
The negative controls are as follows:
-ve control 1: ab191606 at 1/500 dilution followed by ab150120 at 1/1000 dilution.
-ve control 2: ab7291 at 1/1000 dilution followed by ab150077 at 1/1000 dilution.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab191606).



Immunoprecipitation - Anti-PI 3 Kinase p85 alpha antibody [EPR18702] - BSA and Azide free (ab223792)

PI3K p85 was immunoprecipitated from 1mg of MCF7 (Human breast adenocarcinoma cell line) whole cell lysate with ab191606 at 1/50 dilution. Western blot was performed from the immunoprecipitate using ab191606 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10000 dilution.
Lane 1: MCF7 whole cell lysate, 10µg (Input).

Lane 2: ab191606 IP in MCF7 whole cell lysate.

Lane 3: Rabbit IgG, monoclonal - Isotype Control (ab172730) instead of ab191606 in MCF7 whole cell lysate.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

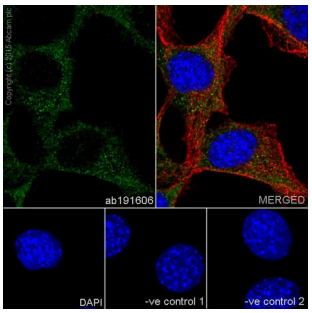
Exposure time: 5 seconds.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab191606).

All lanes:

Immunoprecipitation - Anti-PI 3 Kinase p85 alpha antibody [EPR18702] (ab191606)

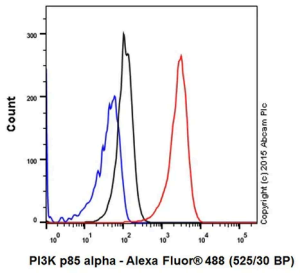
Predicted band size: 83 kDa



Immunocytochemistry/ Immunofluorescence - Anti-PI 3 Kinase p85 alpha antibody [EPR18702] - BSA and Azide free (ab223792)

PI 3 Kinase p85 alpha Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-PI 3 Kinase p85 alpha antibody

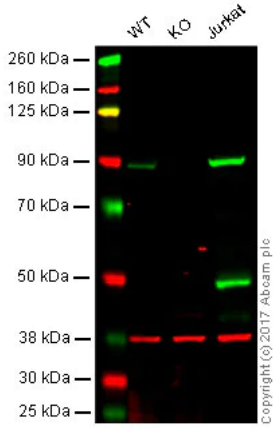
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 100% Methanol permeabilized NIH/3T3 (Mouse embryonic fibroblast cell line) cells labeling PI3K p85 with ab191606 at 1/250 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic staining on NIH/3T3 cell line. The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody - Loading Control (ab7291) at 1/1000 dilution and Goat Anti-Mouse IgG (AlexaFluor®594) preadsorbed (ab150120) at 1/1000 dilution (red).
The negative controls are as follows:
-ve control 1: ab191606 at 1/500 dilution followed by ab150120 at 1/1000 dilution.
-ve control 2: ab7291 at 1/1000 dilution followed by ab150077 at 1/1000 dilution.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab191606).



Flow Cytometry (Intracellular) - Anti-PI 3 Kinase p85 alpha antibody [EPR18702] - BSA and Azide free (ab223792)

PI 3 Kinase p85 alpha Flow Cytometry (Intracellular) staining using rabbit Anti-PI 3 Kinase p85 alpha antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed NIH/3T3 (Mouse embryonic fibroblast cell line) cells labeling PI3K p85 with ab191606 at 1/150 dilution (red) compared with a Rabbit IgG,monoclonal - Isotype control (ab172730) (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat anti Rabbit IgG (Alexa Fluor® 488) at 1/500 dilution was used as the secondary antibody.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab191606).



Western blot - Anti-PI 3 Kinase p85 alpha antibody [EPR18702] - BSA and Azide free (ab223792)

PI 3 Kinase p85 alpha Western blot staining using rabbit Anti-PI 3 Kinase p85 alpha antibody

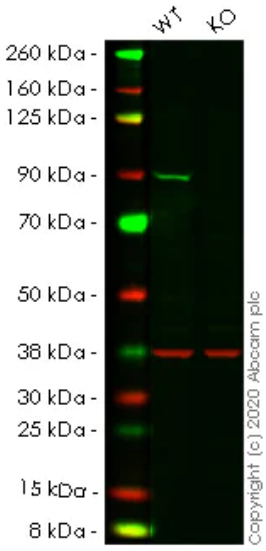
This WB data was generated using the same anti-PI 3 Kinase p85 alpha antibody clone [EPR18702] in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (cat# ab191606).
Lane 1: Wild type HAP1 whole cell lysate (20 µg)
Lane 2: PIK3R1 knockout HAP1 whole cell lysate (20 µg)
Lane 3: Jurkat whole cell lysate (20 µg)

Lanes 1 - 4: Merged signal (red and green). Green - ab191606 observed at 90 kDa. Red - loading control, ab9484, observed at 37 kDa.

ab191606 was shown to specifically react with PIK3R1 when PIK3R1 knockout samples were used. Wild-type and PIK3R1 knockout samples were subjected to SDS-PAGE. ab191606 and ab9484

(Mouse anti GAPDH loading control) were incubated overnight at 4°C at 1000 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ab216773 and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ab216776 secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.
All lanes:
Western blot - Anti-PI 3 Kinase p85 alpha antibody [EPR18702] (ab191606)

Predicted band size: 83 kDa



Western blot - Anti-PI 3 Kinase p85 alpha antibody [EPR18702] - BSA and Azide free (ab223792)

PI 3 Kinase p85 alpha Western blot staining using rabbit Anti-PI 3 Kinase p85 alpha antibody

This data was developed using the same antibody clone in a different buffer formulation (ab191606).
Lanes 1- 2: Merged signal (red and green). Green - ab191606 observed at 90 kDa. Red - Anti-GAPDH antibody [6C5] - Loading Control (ab8245) observed at 37 kDa.

ab191606 was shown to react with PI 3 Kinase p85 alpha in wild-type HeLa cells in western blot. Loss of signal was observed when knockout cell line ab265116 (knockout cell lysate ab257029) was used. Wild-type HeLa and PIK3R1 knockout HeLa cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab191606 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye®800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye®680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-PI 3 Kinase p85 alpha antibody [EPR18702] (ab191606) at 1/1000 dilution

Lane 1:
Wild-type HeLa cell lysate at 20 µg

Lane 2:
PIK3R1 knockout HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human PIK3R1 (PI 3 Kinase p85 alpha) knockout HeLa cell line (ab265116)

Performed under reducing conditions.

Predicted band size: 83 kDa

Observed band size: 90 kDa

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