abcam

ab151549

Anti-PI3 Kinase p110 beta antibody [EPR5515(2)]

Recombinant | RabMAb | KO Validated | 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	EPR5515(2)
Purification technique	Affinity purification Protein A
Concentration	0.152 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Rat
Dilution info	1/1000
Notes	**For unpurified use at 1/1000 - 1/10000.**

Species	Mouse

Dilution info	1/1000
Notes	**For unpurified use at 1/1000 - 1/10000.**

Species	Human
Dilution info	1/1000
Notes	**For unpurified use at 1/1000 - 1/10000.**

ICC/IF

Tested

Species	Human
Dilution info	1/150
Notes	**For unpurified use at 1/250 - 1/500.**

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/20
Notes	For unpurified use at 1/100 - 1/1000. 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	-

IHC-P

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information PIK3CB

Function	Phosphoinositide-3-kinase (PI3K) phosphorylates phosphatidylinositol derivatives at position 3 of the inositol ring to produce 3-phosphoinositides (PubMed:15135396). Uses ATP and PtdIns(4,5)P2 (phosphatidylinositol 4,5-bisphosphate) to generate phosphatidylinositol 3,4,5-trisphosphate (PIP3) (PubMed:15135396). PIP3 plays a key role by recruiting PH domain-containing proteins to the membrane, including AKT1 and PDPK1, activating signaling cascades involved in cell growth, survival, proliferation, motility and morphology. Involved in the activation of AKT1 upon stimulation by G-protein coupled receptors (GPCRs) ligands such as CXCL12, sphingosine 1-phosphate, and lysophosphatidic acid. May also act downstream receptor tyrosine kinases. Required in different signaling pathways for stable platelet adhesion and aggregation. Plays a role in platelet activation signaling triggered by GPCRs, alpha-IIb/beta-3 integrins (ITGA2B/ ITGB3) and ITAM (immunoreceptor tyrosine-based activation motif)-bearing receptors such as GP6. Regulates the strength of adhesion of ITGA2B/ ITGB3 activated receptors necessary for the cellular transmission of contractile forces. Required for platelet aggregation induced by F2 (thrombin) and thromboxane A2 (TXA2). Has a role in cell survival. May have a role in cell migration. Involved in the early stage of autophagosome formation. Modulates the intracellular level of PtdIns3P (phosphatidylinositol 3-phosphate) and activates PIK3C3 kinase activity. May act as a scaffold, independently of its lipid kinase activity to positively regulate autophagy. May have a role in insulin signaling as scaffolding protein in which the lipid kinase activity is not required. May have a kinase-independent function in regulating cell proliferation and in clathrin-mediated endocytosis. Mediator of oncogenic signal in cell lines lacking PTEN. The lipid kinase activity is necessary for its role in oncogenic transformation. Required for the growth of ERBB2 and RAS driven tumors. Also has a protein kinase activity showing autophosphorylation (PubMed:12502714).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C

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	Phosphatidylinositol 3-kinase p110 beta (PI3 kinase p110β) also known as PI3Kβ is an enzyme that belongs to the class I PI3-kinases. It functions as a catalytic subunit in the PI3K complex. The PI3 kinase p110β has a molecular mass of approximately 122 kDa. This protein is expressed in various tissues with notable presence in heart and skeletal muscles. The enzyme is responsible for phosphorylating PIP2 to generate PIP3 an essential step in signaling pathways that regulate cell growth and survival.
Biological function summary	PI3 kinase p110β plays a role in the regulation of cellular processes such as proliferation migration and metabolism. It is a component of the PI3K complex comprised of regulatory and catalytic subunits which form functional homodimers or heterodimers. This complex is activated by various receptors including G-protein coupled receptors (GPCRs) and tyrosine kinase receptors. By converting PIP2 to PIP3 it aids in the recruitment and activation of downstream signaling proteins like AKT.
Pathways	PI3 kinase p110β is integral in the PI3K/AKT signaling pathway and also contributes to the regulation of the mTOR pathway. These pathways are critical for controlling cellular responses to growth signals and maintaining homeostasis. Association with proteins like PTEN which negatively regulates the PI3K/AKT pathway highlights its importance in maintaining cellular balance. PI3 kinase p110β also interacts with other PI3 proteins like p110α showing the intricate network of signaling it participates in.
Associated diseases and disorders	PI3 kinase p110β has been implicated in cancer and cardiovascular diseases. Its overactivation leads to unchecked cellular proliferation contributing significantly to oncogenesis. Alterations in the PI3K/AKT/mTOR pathway are common in breast cancer highlighting its interaction with proteins such as ERBB2. In cardiovascular disorders PI3 kinase p110β influences heart development and function where it can impact the action of related proteins like PI3 kinase p110α. The study of PI3

kinase p110β in these diseases offers potential for targeted therapies and improved understanding of its pathological roles.

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

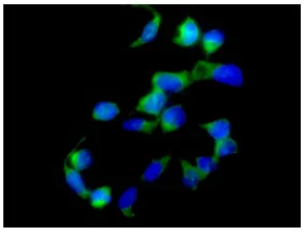
We do not recommend this combination. It is not covered by our product promise.

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.

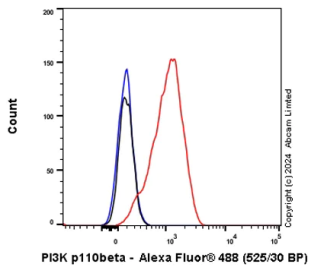
7 product images



Immunocytochemistry/ Immunofluorescence - Anti-PI3 Kinase p110 beta antibody [EPR5515(2)] (ab151549)

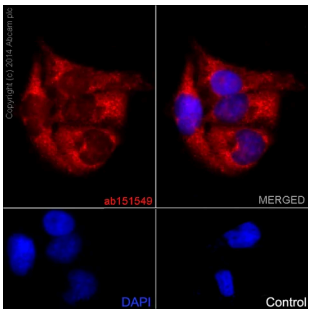
PI3 Kinase p110 beta Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-PI3 Kinase p110 beta antibody

Immunofluorescent analysis of 293 cells labelling PI3 Kinase p110 beta with unpurified ab151549 at 1/10 dilution.



Flow Cytometry (Intracellular) - Anti-PI3 Kinase p110 beta antibody [EPR5515(2)] (ab151549)

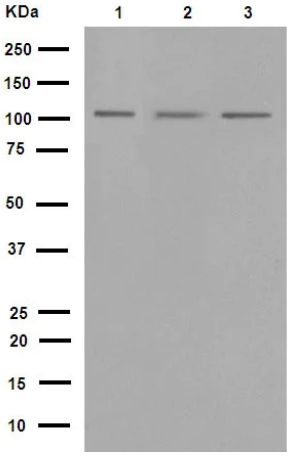
Flow cytometry analysis of 80% methanol-fixed 0.1% Tween-20-permeabilized MCF7 cells stained with ab151549 at 1/50 dilution (red) and secondary Goat anti-Rabbit IgG (Alexa Fluor® 647, ab150083) at 1/5000 dilution. The isotype control was Rabbit monoclonal IgG (ab172730) / Black and the control used was cells without incubation with primary antibody and secondary antibody / Blue. This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab151549).



Immunocytochemistry/ Immunofluorescence - Anti-PI3 Kinase p110 beta antibody [EPR5515(2)] (ab151549)

PI3 Kinase p110 beta Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-PI3 Kinase p110 beta antibody

ab151549 staining PI3 Kinase p110 in the HeLa cell line by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed with 4% Paraformaldehyde permeabilized with 0.1% Triton X-100. Samples were incubated with primary antibody (1/150).ab150082 an Alexa Fluor®555-conjugated Goat anti-rabbit IgG(1/500) was used as the secondary antibody. Nuclei were counterstained with DAPI.



Western blot - Anti-PI3 Kinase p110 beta antibody [EPR5515(2)] (ab151549)

All lanes:
Western blot - Anti-PI3 Kinase p110 beta antibody [EPR5515(2)] (ab151549) at 1/1000 dilution

Lane 1:
293 Cell Lysate at 10 µg

Lane 2:
Jurkat Cell Lysate at 10 µg

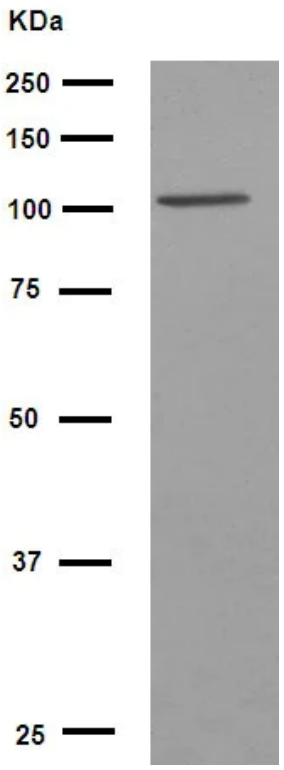
Lane 3:
MCF-7 Cell Lysate at 10 µg

Secondary

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

Predicted band size: 123 kDa

Observed band size: 110 kDa



Western blot - Anti-PI3 Kinase p110 beta antibody [EPR5515(2)] (ab151549)

All lanes:
Western blot - Anti-PI3 Kinase p110 beta antibody [EPR5515(2)] (ab151549) at 1/5000 dilution

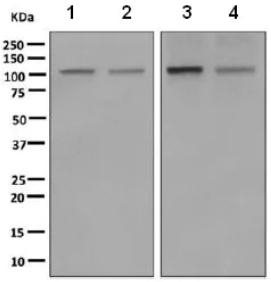
All lanes:
K562 Cell Lysate at 10 µg

Secondary

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

Predicted band size: 123 kDa

Observed band size: 110 kDa



Western blot - Anti-PI3 Kinase p110 beta antibody [EPR5515(2)] (ab151549)

All lanes:
Western blot - Anti-PI3 Kinase p110 beta antibody [EPR5515(2)] (ab151549) at 1/1000 dilution

Lane 1:
MCF7 cell lysate at 10 µg

Lane 2:
Jurkat cell lysate at 10 µg

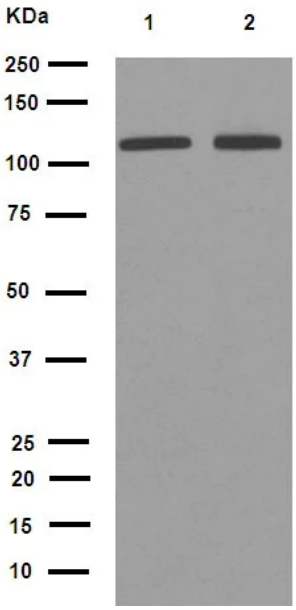
Lane 3:
K562 cell lysate at 10 µg

Lane 4:
293T cell lysate at 10 µg

Secondary

All lanes:
HRP labelled goat anti-rabbit at 1/2000 dilution

Predicted band size: 123 kDa



Western blot - Anti-PI3 Kinase p110 beta antibody [EPR5515(2)] (ab151549)

All lanes:
Western blot - Anti-PI3 Kinase p110 beta antibody [EPR5515(2)] (ab151549) at 1/1000 dilution

Lane 1:
Rat Brain Lysate at 10 µg

Lane 2:
Mouse Brain Lysate at 10 µg

Secondary

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

Predicted band size: 123 kDa

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