abcam

ab202666

Alexa Fluor® 488 Anti-PI3 Kinase p110 beta antibody [EPR5515(2)]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 488
Excitation/Emission	Ex: 495nm, Em: 519nm
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% 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	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	This product gave a positive signal in HeLa cells fixed with 100% methanol (5 min).

Expected

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

Flow Cyt (Intra)

Expected

Species	Human, Mouse, Rat
Dilution info	Use at an assay dependent concentration.
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	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	Stable for 12 months at -20°C, Store in the dark

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.

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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

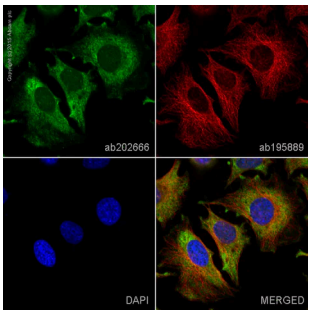
We do not recommend this combination. It is not covered by our product promise.

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

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1 product image



Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 488 Anti-PI3 Kinase p110 beta antibody [EPR5515(2)] (ab202666)

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

ab202666 staining PI3 Kinase p110 beta in HeLa cells. The cells were fixed with 100% methanol (5min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab202666 at 1/100 dilution (shown in green) and ab195889, Mouse monoclonal to alpha Tubulin (Alexa Fluor® 594), at 1/250 dilution (shown in red). Nuclear DNA was labelled with DAPI (shown in blue).
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

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