abcam

ab247515

Anti-INPP4B antibody [EPR3108Y] - BSA and Azide free

Recombinant | RabMAb

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	EPR3108Y
Purification technique	Affinity purification Protein A
Concentration	1.003 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Human
Dilution info	-

Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/50
Notes	-

ICC/IF

Expected

Species	Human
Dilution info	1/50
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information INPP4B

Function	Catalyzes the hydrolysis of the 4-position phosphate of phosphatidylinositol 3,4-bisphosphate, inositol 1,3,4-trisphosphate and inositol 3,4-trisphosphate (PubMed:24070612, PubMed:24591580). Plays a role in the late stages of macropinocytosis by dephosphorylating phosphatidylinositol 3,4-bisphosphate in membrane ruffles (PubMed:24591580). The lipid phosphatase activity is critical for tumor suppressor function. Antagonizes the PI3K-AKT/PKB signaling pathway by dephosphorylating phosphoinositides and thereby modulating cell cycle progression and cell survival (PubMed:19647222, PubMed:24070612).

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

ab247515 is the carrier-free version of ab81269.

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	INPP4B also known as inositol polyphosphate-4-phosphatase type II has a molecular mass of approximately 105 kDa. This enzyme primarily localizes in the cytoplasm but also presents in the nucleus. It catalyzes the hydrolysis of the 4-phosphate group from phosphoinositides converting phosphatidylinositol (34)-bisphosphate (PI(34)P2) to phosphatidylinositol 3-phosphate (PI3P). INPP4B expression is noticeable in various tissues including the prostate thyroid and breast suggesting its diverse roles in different physiological processes.
Biological function summary	INPP4B participates in regulating intracellular signaling pathways and maintaining cellular homeostasis. It is a negative regulator of the PI3K/AKT signaling cascade a critical pathway controlling cell growth proliferation survival and metabolism. INPP4B acts as a tumor suppressor modulating signals that impact cellular transformation and tumorigenesis. While not known to form a complex itself it indirectly influences complexes within the cascade through its regulatory functions.
Pathways	INPP4B contributes to the PI3K/AKT and mTOR pathways. It regulates PI3K/AKT signaling by decreasing levels of PI(34)P2 therefore modulating AKT activity. This action makes it an essential component in controlling mTOR signaling which affects protein synthesis and autophagy. INPP4B closely interacts with other signaling proteins like PTEN also a phosphatase which further lowers PI3K signaling by dephosphorylating PI(345)P3 to PI(45)P2.
Associated diseases and disorders	INPP4B has notable links to cancer and insulin resistance. In some cancers like breast and prostate reduced INPP4B expression correlates with increased aggressive phenotypic markers and poor outcomes indicating its tumor-suppressive role. Its regulation of the PI3K/AKT pathway connects it to insulin signaling where dysregulated pathways can lead to insulin resistance a critical factor in type 2 diabetes. INPP4B interacts with proteins involved in these diseases like AKT and PTEN which further influence and exacerbate the pathology in these conditions.

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.

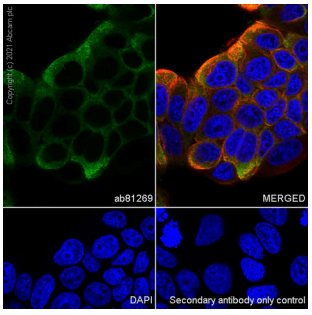
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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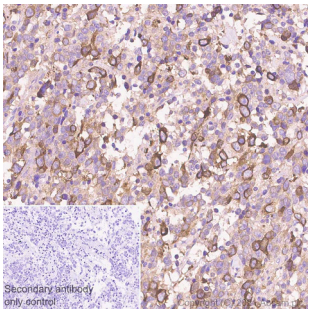
5 product images



Immunocytochemistry/ Immunofluorescence - Anti-INPP4B antibody [EPR3108Y] - BSA and Azide free (ab247515)

INPP4B Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-INPP4B antibody

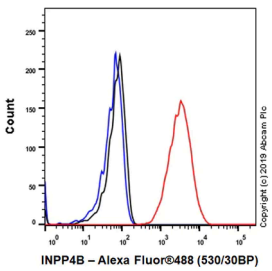
This data was developed using ab81269, the same antibody clone in a different buffer formulation. Immunocytochemistry analysis of MCF7 (Human breast adenocarcinoma epithelial cell) cells labeling INPP4B with Purified ab81269 at 1:50 dilution (2.4 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1:200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1:1000 (2 µg/ml) dilution. DAPI (blue) was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-INPP4B antibody [EPR3108Y] - BSA and Azide free (ab247515)

INPP4B Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-INPP4B antibody

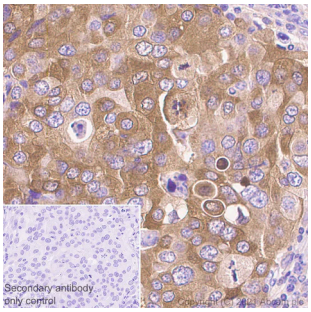
This data was developed using ab81269, the same antibody clone in a different buffer formulation. Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human lung carcinoma tissue sections labeling INPP4B with Purified ab81269 at 1:50 dilution (2.36 µg/ml). Heat mediated antigen retrieval was performed using Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0) . Tissue was counterstained with Hematoxylin. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) secondary antibody was used. PBS instead of the primary antibody was used as the negative control.



Flow Cytometry (Intracellular) - Anti-INPP4B antibody [EPR3108Y] - BSA and Azide free (ab247515)

INPP4B Flow Cytometry (Intracellular) staining using rabbit Anti-INPP4B antibody

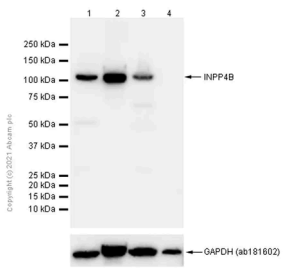
This data was developed using ab81269, the same antibody clone in a different buffer formulation. Intracellular Flow Cytometry analysis of MCF7 (Human breast adenocarcinoma epithelial cell) cells labeling INPP4B with purified ab81269 at 1/100 dilution (10 µg/mL) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cells without incubation with primary antibody and secondary antibody (Blue).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-INPP4B antibody [EPR3108Y] - BSA and Azide free (ab247515)

INPP4B Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-INPP4B antibody

This data was developed using ab81269, the same antibody clone in a different buffer formulation. Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human breast carcinoma tissue sections labeling INPP4B with Purified ab81269 at 1:50 dilution (2.36 µg/ml). Heat mediated antigen retrieval was performed using Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 2 (pH 9.0) . Tissue was counterstained with Hematoxylin. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) secondary antibody was used. PBS instead of the primary antibody was used as the negative control.



Western blot - Anti-INPP4B antibody [EPR3108Y] - BSA and Azide free (ab247515)

INPP4B Western blot staining using rabbit Anti-INPP4B antibody

This data was developed using ab81269, the same antibody clone in a different buffer formulation. INPP4B is lowly expressed in PANC-1 (PMID: 29952716)

All lanes:
Western blot - Anti-INPP4B antibody [EPR3108Y] (ab81269) at 1/1000 dilution

Lane 1:
MCF7 (Human breast adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
Human skeletal muscle lysate at 20 µg

Lane 3:
A-204 (Human muscle rhabdomyosarcoma) whole cell lysate at 20 µg

Lane 4:
PANC-1 (Human pancreatic epithelioid carcinoma epithelial cell) whole cell lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Predicted band size: 105 kDa

Observed band size: 107 kDa

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