abcam

ab249873

Anti-ITPK1 antibody [EPR10631] - 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	EPR10631
Purification technique	Affinity purification Protein A

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Human
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information ITPK1

Function Kinase that can phosphorylate various inositol polyphosphate such as Ins(3,4,5,6)P4 or Ins(1,3,4)P3 (PubMed:11042108, PubMed:8662638). Phosphorylates Ins(3,4,5,6)P4 at position 1 to form Ins(1,3,4,5,6)P5 (PubMed:11042108). This reaction is thought to have regulatory importance, since Ins(3,4,5,6)P4 is an inhibitor of plasma membrane Ca(2+)-activated Cl(-) channels,

while Ins(1,3,4,5,6)P5 is not. Also phosphorylates Ins(1,3,4)P3 on O-5 and O-6 to form Ins(1,3,4,6)P4, an essential molecule in the hexakisphosphate (InsP6) pathway (PubMed:11042108, PubMed:8662638). Also acts as an inositol polyphosphate phosphatase that dephosphorylates Ins(1,3,4,5)P4 and Ins(1,3,4,6)P4 to Ins(1,3,4)P3, and Ins(1,3,4,5,6)P5 to Ins(3,4,5,6)P4 (PubMed:11909533, PubMed:17616525). May also act as an isomerase that interconverts the inositol tetrakisphosphate isomers Ins(1,3,4,5)P4 and Ins(1,3,4,6)P4 in the presence of ADP and magnesium (PubMed:11909533). Probably acts as the rate-limiting enzyme of the InsP6 pathway. Modifies TNF-induced apoptosis by interfering with the activation of TNFRSF1A-associated death domain (PubMed:11909533, PubMed:12925536, PubMed:17616525). Plays an important role in MLKL-mediated necroptosis. Produces highly phosphorylated inositol phosphates such as inositolhexakisphosphate (InsP6) which bind to MLKL mediating the release of an N-terminal auto-inhibitory region leading to its activation. Essential for activated phospho-MLKL to oligomerize and localize to the cell membrane during necroptosis (PubMed:17616525).

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

ab249873 is the carrier-free version of ab175222.

Species reactivity

Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

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	The enzyme inositol 134-trisphosphate 5/6-kinase commonly known as ITPK1 catalyzes the phosphorylation of inositol trisphosphate (IP3) to produce higher phosphorylated forms of inositol phosphates. ITPK1 has a molecular mass of approximately 47 kDa and expresses in various human tissues though it is highly expressed in the brain and skeletal muscles. Researchers often measure ITPK1 activity using inositol trisphosphate (IP3) assays including IP3 ELISA and IP3 measurement methods.
Biological function summary	ITPK1 is involved in regulating cellular levels of inositol phosphates acting as a significant node in the inositol signaling pathways. As a part of a kinase complex it modulates cellular processes like signal transduction osmoregulation and cell growth. ITPK1's role in controlling IP3 levels positions it as a contributor to maintaining cellular homeostasis and enabling proper cellular responses to external stimuli.
Pathways	ITPK1 plays an essential role in the IP3 pathway by converting inositol trisphosphate (IP3) into inositol tetrakisphosphate (IP4). This pathway influences calcium release within cells impacting various physiological processes. ITPK1 is associated with pivotal signaling proteins like IP3 receptors which bind with IP3 to trigger intracellular calcium release playing an important role in cellular signaling and communication networks.
Associated diseases and disorders	Mutations or dysfunctions in ITPK1 have links to conditions like schizophrenia and Down syndrome. Schizophrenia may relate to altered inositol phosphate metabolism wherein interactions with proteins like IP3 receptors are disrupted. ITPK1 also shows a connection to Alzheimer's disease due to its role in calcium signaling pathways which influences neuronal function and survival. These associations highlight ITPK1's potential significance in neuropsychiatric and neurodegenerative diseases.

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.

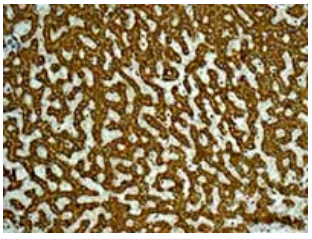
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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

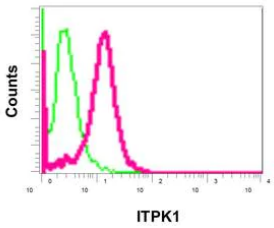


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ITPK1 antibody [EPR10631] - BSA and Azide free (ab249873)

ITPK1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ITPK1 antibody

This data was developed using ab175222, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Human liver tissue labeling ITPK1 with ab175222 at 1/50 dilution.

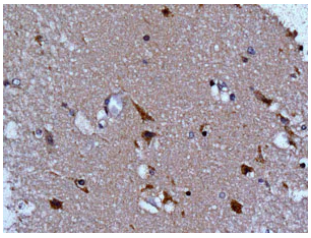
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-ITPK1 antibody [EPR10631] - BSA and Azide free (ab249873)

ITPK1 Flow Cytometry (Intracellular) staining using rabbit Anti-ITPK1 antibody

This data was developed using ab175222, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of permeabilized HeLa cells labeling ITPK1 with ab175222 at 1/10 dilution (red) compared to a rabbit IgG negative control (green).

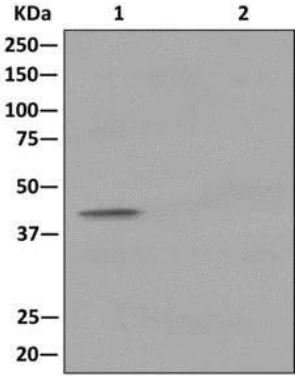


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ITPK1 antibody [EPR10631] - BSA and Azide free (ab249873)

ITPK1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ITPK1 antibody

This data was developed using ab175222, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Human brain tissue labeling ITPK1 with ab175222 at 1/50 dilution.

Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

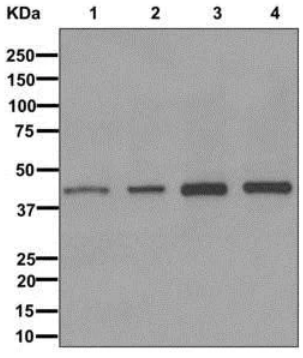


Immunoprecipitation - Anti-ITPK1 antibody [EPR10631] - BSA and Azide free (ab249873)

This data was developed using ab175222, the same antibody clone in a different buffer formulation.
Western blot analysis on immunoprecipitation pellet from (1) HeLa cells lysate or (2) 1X PBS (negative control) using ab175222 and HRP-conjugated anti-rabbit IgG preferentially detecting the non-reduced form of rabbit IgG.

All lanes:
Immunoprecipitation - Anti-ITPK1 antibody [EPR10631] (ab175222)

Predicted band size: 46 kDa



Western blot - Anti-ITPK1 antibody [EPR10631] - BSA and Azide free (ab249873)

This data was developed using ab175222, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-ITPK1 antibody [EPR10631] (ab175222) at 1/10000 dilution

Lane 1:
Fetal brain lysate at 10 µg

Lane 2:

Fetal liver lysate at 10 µg

Lane 3:
HepG2 cell lysate at 10 µg

Lane 4:
Hela cell lysate at 10 µg

Predicted band size: 46 kDa

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