abcam

**ab175222**

# Anti-ITPK1 antibody [EPR10631]

Recombinant | RabMAb

## Key facts

| | |
|---|---|
| **Isotype** | IgG |
| **Host species** | Rabbit |
| **Storage buffer** | pH: 7.2 - 7.4 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** | EPR10631 |
| **Purification technique** | Affinity purification Protein A |
| **Concentration** | 0.104 - 0.11 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

### IHC-P

#### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/50 - 1/100 |
| **Notes** | - |

### ICC/IF

### Not recommended

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | - |
| **Notes** | - |

## IP

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/10 - 1/100 |
| **Notes** | - |

## WB

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/10000 - 1/50000 |
| **Notes** | - |

## Flow Cyt (Intra)

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/10 - 1/100 |
| **Notes** | ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody. |

# 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** | Conditional Ambient |
| **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** | Avoid freeze / thaw cycle |

## Notes

**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.

## 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.

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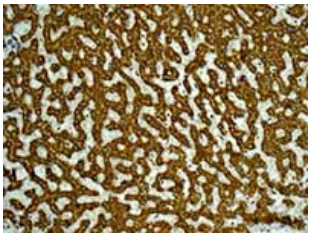
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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

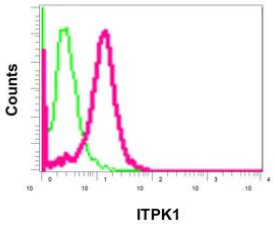


### Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ITPK1 antibody [EPR10631] (ab175222)

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

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.

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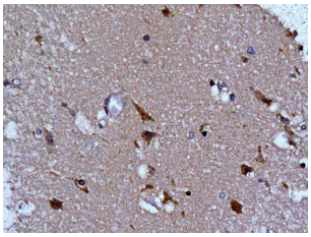



### Flow Cytometry (Intracellular) - Anti-ITPK1 antibody [EPR10631] (ab175222)

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

Intracellular flow cytometric analysis of permeabilized HeLa cellslabeling ITPK1 with ab175222 at 1/10 dilution (red) compared toa rabbit IgG negative control (green).

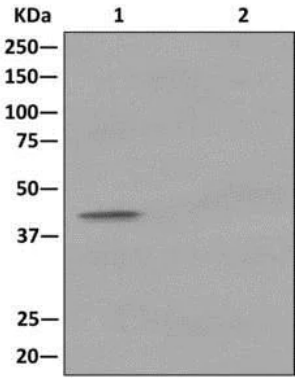
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## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ITPK1 antibody [EPR10631] (ab175222)

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

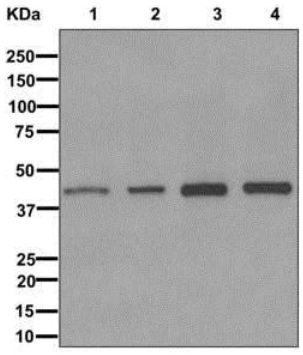
Immunohistochemical analysis of paraffin-embedded Human brain tissue labeling ITPK1 with ab175222 at 1/50 dilution.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.




## Immunoprecipitation - Anti-ITPK1 antibody [EPR10631] (ab175222)

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] (ab175222)

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'.