abcam

ab249329

# Anti-INPPL1/SHIP-2 antibody [EPR10954] - BSA and Azide free

Recombinant | RabMAb | KO Validated

## 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** | EPR10954 |
| **Purification technique** | Affinity purification |
| **Concentration** | 1.022 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## ICC/IF

**Not recommended**

| | |
|---|---|
| **Species** | Human, Mouse, Rat |
| **Dilution info** | - |

| | |
|---|---|
| **Notes** | - |

## IP

### Tested

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

### Predicted

| | |
|---|---|
| **Species** | Mouse, Rat |
| **Dilution info** | - |
| **Notes** | - |

## WB

### Tested

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

### Predicted

| | |
|---|---|
| **Species** | Mouse, Rat |
| **Dilution info** | - |
| **Notes** | - |

## IHC-P

### Not recommended

| | |
|---|---|
| **Species** | Human, Mouse, Rat |
| **Dilution info** | - |
| **Notes** | - |

## Flow Cyt (Intra)

### Tested

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

### Predicted

| | |
|---|---|
| **Species** | Mouse, Rat |
| **Dilution info** | - |
| **Notes** | - |

## Target data

See full target information INPPL1

**Function**

Phosphatidylinositol (PtdIns) phosphatase that specifically hydrolyzes the 5-phosphate of phosphatidylinositol-3,4,5-trisphosphate (PtdIns(3,4,5)P3) to produce PtdIns(3,4)P2, thereby negatively regulating the PI3K (phosphoinositide 3-kinase) pathways (PubMed:16824732). Required for correct mitotic spindle orientation and therefore progression of mitosis (By similarity). Plays a central role in regulation of PI3K-dependent insulin signaling, although the precise molecular mechanisms and signaling pathways remain unclear (PubMed:9660833). While overexpression reduces both insulin-stimulated MAP kinase and Akt activation, its absence does not affect insulin signaling or GLUT4 trafficking (By similarity). Confers resistance to dietary obesity (By similarity). May act by regulating AKT2, but not AKT1, phosphorylation at the plasma membrane (By similarity). Part of a signaling pathway that regulates actin cytoskeleton remodeling (PubMed:11739414, PubMed:12676785). Required for the maintenance and dynamic remodeling of actin structures as well as in endocytosis, having a major impact on ligand-induced EGFR internalization and degradation (PubMed:15668240). Participates in regulation of cortical and submembraneous actin by hydrolyzing PtdIns(3,4,5)P3 thereby regulating membrane ruffling (PubMed:21624956). Regulates cell adhesion and cell spreading (PubMed:12235291). Required for HGF-mediated lamellipodium formation, cell scattering and spreading (PubMed:15735664). Acts as a negative regulator of EPHA2 receptor endocytosis by inhibiting via PI3K-dependent Rac1 activation (PubMed:17135240). Acts as a regulator of neuritogenesis by regulating PtdIns(3,4,5)P3 level and is required to form an initial protrusive pattern, and later, maintain proper neurite outgrowth (By similarity). Acts as a negative regulator of the FC-gamma-RIIA receptor (FCGR2A) (PubMed:12690104). Mediates signaling from the FC-gamma-RIIB receptor (FCGR2B), playing a central role in terminating signal transduction from activating immune/hematopoietic cell receptor systems (PubMed:11016922). Involved in EGF signaling pathway (PubMed:11349134). Upon stimulation by EGF, it is recruited by

EGFR and dephosphorylates PtdIns(3,4,5)P3 (PubMed:11349134). Plays a negative role in regulating the PI3K-PKB pathway, possibly by inhibiting PKB activity (PubMed:11349134). Down-regulates Fc-gamma-R-mediated phagocytosis in macrophages independently of INPP5D/SHIP1 (By similarity). In macrophages, down-regulates NF-kappa-B-dependent gene transcription by regulating macrophage colony-stimulating factor (M-CSF)-induced signaling (By similarity). Plays a role in the localization of AURKA and NEDD9/HEF1 to the basolateral membrane at interphase in polarized cysts, thereby mediates cell cycle homeostasis, cell polarization and cilia assembly (By similarity). Additionally promotion of cilia growth is also facilitated by hydrolysis of (PtdIns(3,4,5)P3) to PtdIns(3,4)P2 (By similarity). Promotes formation of apical membrane-initiation sites during the initial stages of lumen formation via Rho family-induced actin filament organization and CTNNB1 localization to cell-cell contacts (By similarity). May also hydrolyze PtdIns(1,3,4,5)P4, and could thus affect the levels of the higher inositol polyphosphates like InsP6. Involved in endochondral ossification (PubMed:23273569).

## 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

ab249329 is the carrier-free version of ab157460.

**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** | INPPL1 also known as SHIP-2 (Src homology 2 domain containing inositol 5-phosphatase 2) participates in the regulation of intracellular signaling pathways by dephosphorylating phosphatidylinositol 345-trisphosphate (PIP3). It acts as a phosphatase with a molecular mass of approximately 145 kDa. SHIP-2 is expressed in various tissues including heart brain skeletal muscle and lung. SHIP-2 influences cell growth survival and motility through its enzymatic activity that constrains the levels of PIP3. |
| **Biological function summary** | SHIP-2 plays a role in modulating cellular processes like insulin signaling and endocytosis. It acts as a negative regulator counteracting PIP3 accumulation which affects downstream signaling pathways such as Akt. SHIP-2 also integrates into larger protein complexes that contribute to its regulatory functions. These complexes facilitate interactions with multiple cell surface receptors and adaptors emphasizing its role in fine-tuning cell responses. |
| **Pathways** | SHIP-2 is an essential component in the insulin signaling and phosphoinositide pathways. It interacts closely with other proteins such as PI3K (phosphoinositide 3-kinase) and PTEN (phosphatase and tensin homolog). In the insulin signaling pathway SHIP-2 modulates the availability of PIP3 impacting the activity of Akt and by extension influence metabolic processes. In the phosphoinositide pathway it harmonizes with PTEN to maintain cellular homeostasis and signaling balance. |
| **Associated diseases and disorders** | SHIP-2 is linked to metabolic diseases like Type 2 Diabetes and obesity. Its regulatory function in insulin signaling positions it as an important player in insulin resistance. Aberrations in SHIP-2 activity can lead to disrupted glucose homeostasis and contribute to the development of these conditions. In the case of insulin signaling disorders SHIP-2's interaction with proteins like IRS-1 (insulin receptor substrate 1) highlights its importance in managing cellular sensitivity to insulin emphasizing its therapeutic potential in metabolic 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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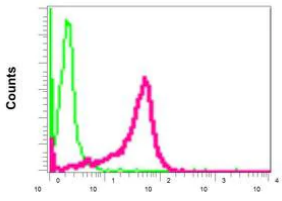
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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

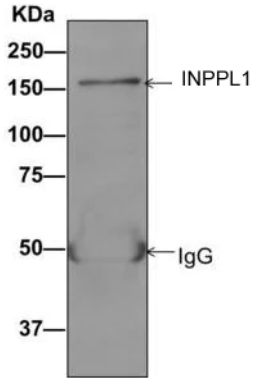



### Flow Cytometry (Intracellular) - Anti-INPPL1/SHIP-2 antibody [EPR10954] - BSA and Azide free (ab249329)

INPPL1/SHIP-2 Flow Cytometry (Intracellular) staining using rabbit Anti-INPPL1/SHIP-2 antibody

This data was developed using ab157460, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of permeabilized K562 cells labeling INPPL1/SHIP-2 with ab157460 at 1/10 dilution (red) or a rabbit IgG (negative) (green).

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### Immunoprecipitation - Anti-INPPL1/SHIP-2 antibody [EPR10954] - BSA and Azide free (ab249329)

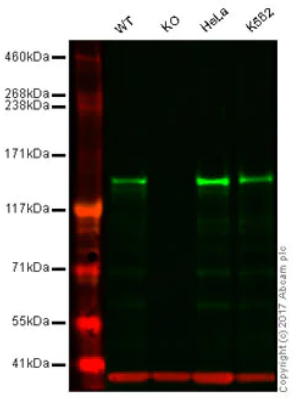
This data was developed using ab157460, the same antibody clone in a different buffer formulation.
Detection of INPPL1/SHIP-2 by Western Blot of Immunprecipitate. HeLa cell lysate immunoprecipitated using ab157460 at 1/10 dilution.

All lanes:
Immunoprecipitation - Anti-INPPL1/SHIP-2 antibody [EPR10954] (ab157460) at 1/1000 dilution

All lanes:
immunoprecipitation pellet from HeLa cell lysate

Predicted band size: 139 kDa

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## Western blot - Anti-INPPL1/SHIP-2 antibody [EPR10954] - BSA and Azide free (ab249329)

INPPL1/SHIP-2 Western blot staining using rabbit Anti-INPPL1/SHIP-2 antibody

This data was developed using ab157460, the same antibody clone in a different buffer formulation.
**Lane 1:** Wild-type HAP1 whole cell lysate (20 µg)

**Lane 2:** INPPL1/SHIP-2 knockout HAP1 whole cell lysate (20 µg)

**Lane 3:** HeLa whole cell lysate (20 µg)

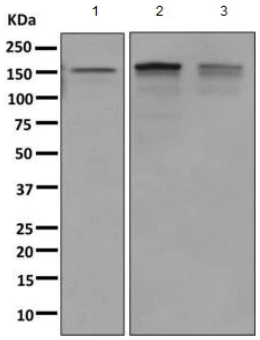
**Lane 4:** K562 whole cell lysate (20 µg)

**Lanes 1 - 4:** Merged signal (red and green). Green - ab157460 observed at 139 kDa. Red - loading control, ab9484, observed at 37 kDa.

ab157460 was shown to specifically react with INPPL1/SHIP-2 in wild-type HAP1 cells. No bands were observed when INPPL1/SHIP-2 knockout samples were examined. Wild-type and INPPL1/SHIP-2 knockout samples were subjected to SDS-PAGE. ab157460 and ab9484 (Mouse anti-GAPDH loading control) were incubated overnight at 4°C at 1/1000 dilution and 1/10000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ab216773 and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ab216776 secondary antibodies at 1/10000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-INPPL1/SHIP-2 antibody [EPR10954] (ab157460)

Predicted band size: 139 kDa




## Western blot - Anti-INPPL1/SHIP-2 antibody [EPR10954] - BSA and Azide free (ab249329)

This data was developed using ab157460, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-INPPL1/SHIP-2 antibody [EPR10954] (ab157460) at 1/1000 dilution

Lane 1:
Daudi cell lysate at 10 µg

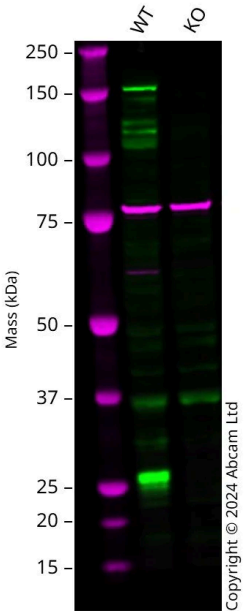
Lane 2:
HeLa cell lysate at 10 µg

Lane 3:
K562 cell lysate at 10 µg

Secondary

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

Predicted band size: 11 kDa, 117 kDa, 139 kDa




# Western blot - Anti-INPPL1/SHIP-2 antibody [EPR10954] - BSA and Azide free (ab249329)

This data was developed using the same antibody clone in a different buffer formulation (ab157460 ).

Western blot: Anti-INPPL1 antibody [EPR10954] (ab157460) staining at 1/1000 dilution, shown in green; Mouse anti-CANX [CANX/1543] (ab238078) loading control staining at 1/20000 dilution, shown in magenta. In Western blot, ab157460 was shown to bind specifically to INPPL1. A band was observed at 110-150 kDa in wild-type A549 cell lysates with no signal observed at this size in INPPL1 knockout cell line. To generate this image, wild-type and INPPL1 knockout A549 cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3 % milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution.
All lanes:
Western blot - Anti-INPPL1/SHIP-2 antibody [EPR10954] (ab157460) at 1/1000 dilution

Lane 1:
Wild-type A549 cell lysate at 20 µg

Lane 2:
INPPL1 knockout A549 cell lysate at 20 µg

Lane 2:
Western blot - Human INPPL1 knockout A549 cell line (ab301003)

Secondary

All lanes:
Goat anti-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution

Performed under reducing conditions.

Observed band size: 110-150 kDa

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