abcam

ab45142

Anti-SHIP-1 antibody [EP378Y]

Recombinant | RabMAb | KO Validated | 20ul selling size

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	EP378Y
Purification technique	Affinity purification Protein A
Concentration	0.24 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/100 - 1/500
Notes	-

Species	Human

Dilution info	1/100 - 1/500
Notes	-

IP

Tested

Species	Human
Dilution info	1/20 - 1/50
Notes	-

Expected

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

WB

Tested

Species	Human
Dilution info	1/1000
Notes	**For unpurified use at 1/50000.**

Expected

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

ICC/IF

Tested

Species	Human
Dilution info	1/150

Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/20 - 1/50
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

Target data

See full target information INPP5D

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:10764818, PubMed:8723348, PubMed:8769125). Able also to hydrolyzes the 5-phosphate of phosphatidylinositol-4,5-bisphosphate (PtdIns(4,5)P3) and inositol 1,3,4,5-tetrakisphosphate (PubMed:10764818, PubMed:8769125, PubMed:9108392). Acts as a negative regulator of B-cell antigen receptor signaling. Mediates signaling from the FC-gamma-RIIB receptor (FCGR2B), playing a central role in terminating signal transduction from activating immune/hematopoietic cell receptor systems. Acts as a negative regulator of myeloid cell proliferation/survival and chemotaxis, mast cell degranulation, immune cells homeostasis, integrin alpha-IIb/beta-3 signaling in platelets and JNK signaling in B-cells. Regulates proliferation of osteoclast precursors, macrophage programming, phagocytosis and activation and is required for endotoxin tolerance. Involved in the control of cell-cell junctions, CD32a signaling in

neutrophils and modulation of EGF-induced phospholipase C activity (PubMed:16682172). Key regulator of neutrophil migration, by governing the formation of the leading edge and polarization required for chemotaxis. Modulates FCGR3/CD16-mediated cytotoxicity in NK cells. Mediates the activin/TGF-beta-induced apoptosis through its Smad-dependent expression.

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

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.

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

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	SHIP-1 also known as SHIP or INPP5D is a protein with a molecular mass of approximately 145 kDa. It functions as an inositol polyphosphate-5-phosphatase. This enzyme specifically hydrolyzes the 5’ phosphate from phosphatidylinositol-345-trisphosphate (PIP3) converting it to phosphatidylinositol-34-bisphosphate (PI(34)P2). SHIP-1 is mainly expressed in hematopoietic cells including those of the immune system like B cells T cells and myeloid cells.
Biological function summary	SHIP-1 plays significant roles in regulating immune cell signaling. It partakes in control over cell growth apoptosis and cellular responses to external signals. SHIP-1 influences the balance between cell survival and programmed cell death by modulating the PI3K signaling pathway which is pivotal for lymphocyte activation and immune functions. SHIP-1 can operate independently or as part of larger signaling complexes with other molecules to ensure immune cells respond appropriately to stimuli.
Pathways	SHIP-1 plays an integral role in the phosphoinositide signaling pathway and is linked to the PI3K-Akt pathway. It acts as an important regulatory node by limiting the accumulation of PIP3 a necessary component for Akt activation. This regulation allows for controlled signal propagation that influences immune cell activity and development. SHIP-1 also interfaces with proteins like PTEN and SHP-1 which similarly modulate downstream signaling events within these pathways ensuring the maintenance of immune equilibrium.
Associated diseases and disorders	SHIP-1 is associated with conditions like leukemia and autoimmune diseases. Alterations or deficiencies in SHIP-1 function can lead to abnormal immune responses or uncontrolled cell proliferation. For instance its reduced activity has connections to leukemia where there is excessive cell growth due to unchecked PI3K signaling. Moreover SHIP-1 is associated with autoimmune disorders through interactions with other signaling proteins that might affect the intensity and duration of immune responses highlighting its role in maintaining immune tolerance and preventing self-reactivity.

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

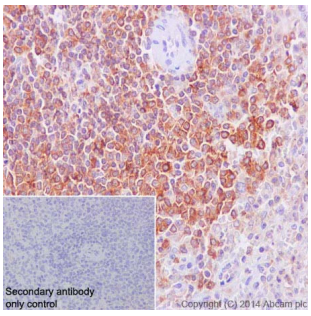
We do not recommend this combination. It is not covered by our product promise.

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.

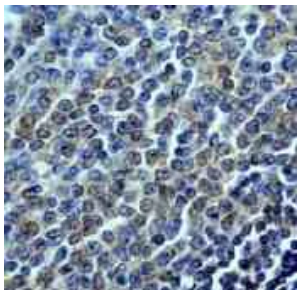
12 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SHIP-1 antibody [EP378Y] (ab45142)

SHIP-1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SHIP-1 antibody

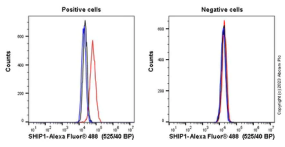
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human spleen tissue labelling SHIP-1 with purified ab45142 at 1/500. Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9. ab97051 a HRP-conjugated goat anti-rabbit IgG (H+L) was used as the secondary antibody (1/500). Negative control using PBS instead of primary antibody. Counterstained with hematoxylin.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SHIP-1 antibody [EP378Y] (ab45142)

SHIP-1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SHIP-1 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human spleen tissue labelling SHIP-1 with unpurified ab45142 at a dilution of 1/100.
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-SHIP-1 antibody [EP378Y] (ab45142)

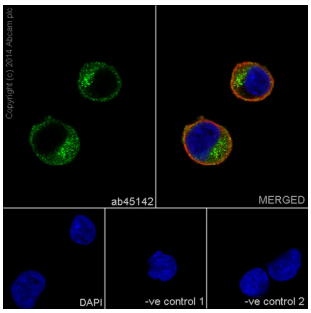
SHIP-1 Flow Cytometry (Intracellular) staining using rabbit Anti-SHIP-1 antibody

Flow cytometry overlay histogram showing left Raji positive cells and right negative MCF7 stained with ab45142 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilised with 0.1% PBS-Triton X-100 for 15 min. The cells were then incubated in 1x PBS containing 10µg/ml human IgG and 10% normal goat serum to block FC receptors and non-specific protein-protein interaction followed by the antibody (ab45142) (1x 106 in 100µl at 0.008µg/ml (1/275000)) for 30min at 22°C.

The secondary antibody Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed was incubated at 1/4000 for 30min at 22°C

Isotype control antibody (black line) was Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.

Acquisition of >5000 events were collected using a 50 mW Blue laser (488nm) and 525/40 bandpass filter.

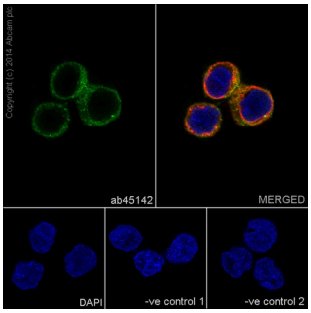


Immunocytochemistry/ Immunofluorescence - Anti-SHIP-1 antibody [EP378Y] (ab45142)

SHIP-1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-SHIP-1 antibody

Immunocytochemistry/Immunofluorescence analysis of Jurkat cells labelling SHIP-1 with purified ab45142 at 1/150. Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. ab150077 an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/500) was used as the secondary antibody. DAPI (blue) was used as the nuclear counterstain. ab7291 a mouse anti-tubulin (1/1000) and ab150120 an Alexa Fluor® 594-conjugated goat anti-mouse IgG (1/500) were also used.
Control 1: primary antibody (1/150) and secondary antibody ab150120 an Alexa Fluor® 594-conjugated goat anti-mouse IgG (1/500).

Control 2: ab7291 (1/1000) and secondary antibody ab150077 an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/500).

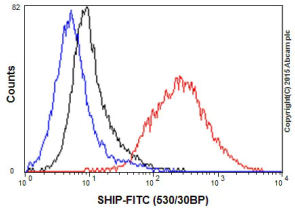


Immunocytochemistry/ Immunofluorescence - Anti-SHIP-1 antibody [EP378Y] (ab45142)

SHIP-1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-SHIP-1 antibody

Immunocytochemistry/Immunofluorescence analysis of Raji cells labelling SHIP-1 with purified ab45142 at 1/150. Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. ab150077 an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/500) was used as the secondary antibody. DAPI (blue) was used as the nuclear counterstain. ab7291 a mouse anti-tubulin (1/1000) and ab150120 an Alexa Fluor® 594-conjugated goat anti-mouse IgG (1/500) were also used.
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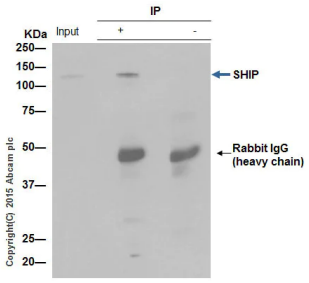
Control 2: ab7291 (1/1000) and secondary antibody ab150077 an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/500).



Flow Cytometry (Intracellular) - Anti-SHIP-1 antibody [EP378Y] (ab45142)

SHIP-1 Flow Cytometry (Intracellular) staining using rabbit Anti-SHIP-1 antibody

Intracellular Flow Cytometry analysis of Raji cells labelling SHIP-1 with purified ab45142 at 1/50 (red). Cells were fixed with 2% paraformaldehyde. A FITC-conjugated goat anti-rabbit IgG (1/150) was used as the secondary antibody. Black - Isotype control, rabbit monoclonal IgG. Blue - Unlabelled control, cells without incubation with primary and secondary antibodies.



Immunoprecipitation - Anti-SHIP-1 antibody [EP378Y] (ab45142)

ab45142 (purified) at 1/20 immunoprecipitating SHIP-1 in Daudi whole cell lysate.
Lane 1 (input): Daudi whole cell lysate (10µg)

Lane 2 (+): ab45142 + Daudi whole cell lysate (10µg).

Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab45142 in Daudi whole cell lysate.

For western blotting, a HRP-conjugated anti-rabbit IgG, specific to the non-reduced form of IgG was used as the secondary antibody (1/1500).

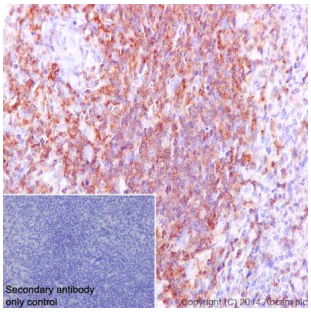
Blocking buffer and concentration: 5% NFDM/TBST.

Diluting buffer and concentration: 5% NFDM /TBST.

All lanes:
Immunoprecipitation - Anti-SHIP-1 antibody [EP378Y] (ab45142)

Predicted band size: 133 kDa

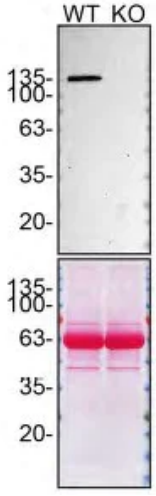
Observed band size: 140 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SHIP-1 antibody [EP378Y] (ab45142)

SHIP-1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SHIP-1 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of mouse spleen tissue labelling SHIP-1 with purified ab45142 at 1/500. Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9. ab97051 a HRP-conjugated goat anti-rabbit IgG (H+L) was used as the secondary antibody (1/500). Negative control using PBS instead of primary antibody. Counterstained with hematoxylin.



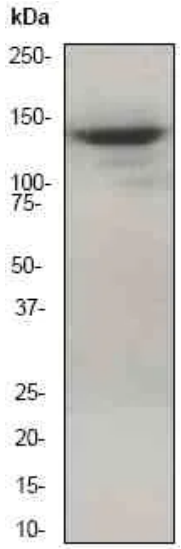
Western blot - Anti-SHIP-1 antibody [EP378Y] (ab45142)

ab45142 was shown to react with INPP5D in wild-type iPSC-derived microglia cells in Western blot with loss of signal observed in a INPP5D knockout cell line. Wild-type iPSC-derived microglia and INPP5D knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 5% milk in TBST for 1 hr before incubation with ab45142 overnight at 4 °C at a 1/500 dilution. Blots were incubated with secondary antibodies at 0.2 µg/mL before imaging.

These data were provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.
All lanes:
Western blot - Anti-SHIP-1 antibody [EP378Y] (ab45142) at 1/500 dilution

Lane 1:
Wild-type iPSC-derived microglia lysate at 10 µg

Lane 2:
INPP5D knock-out iPSC-derived microglia lysate at 10 µg



Western blot - Anti-SHIP-1 antibody [EP378Y] (ab45142)

SHIP-1 Western blot staining of Daudi cell lysate using rabbit Anti-SHIP-1 antibody

All lanes:
Western blot - Anti-SHIP-1 antibody [EP378Y] (ab45142) at 1/50000 dilution

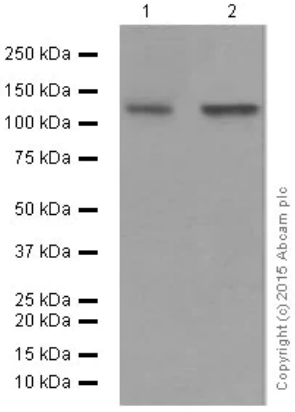
All lanes:
Daudi cell lysate at 10 µg

Secondary

All lanes:
HRP-conjugated goat anti-rabbit IgG at 1/2000 dilution

Predicted band size: 133 kDa

Observed band size: 140 kDa



Western blot - Anti-SHIP-1 antibody [EP378Y] (ab45142)

SHIP-1 Western blot staining using rabbit Anti-SHIP-1 antibody

Blocking and dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-SHIP-1 antibody [EP378Y] (ab45142) at 1/5000 dilution

Lane 1:
Daudi cell lysate at 20 µg

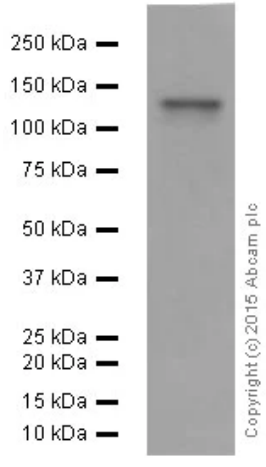
Lane 2:
Ramos cell lysate at 20 µg

Secondary

All lanes:
Peroxidase-conjugated goat anti-rabbit IgG, (H+L) at 1/1000 dilution

Predicted band size: 133 kDa

Observed band size: 140 kDa



Western blot - Anti-SHIP-1 antibody [EP378Y] (ab45142)

SHIP-1 Western blot staining of KM3 cell lysate using rabbit Anti-SHIP-1 antibody

Blocking and dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-SHIP-1 antibody [EP378Y] (ab45142) at 1/1000 dilution

All lanes:
KM3 cell lysate at 20 µg

Secondary

All lanes:
Peroxidase-conjugated goat anti-rabbit IgG, (H+L) at 1/1000 dilution

Predicted band size: 133 kDa

Observed band size: 140 kDa

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