

SHIP-2 (I-20): sc-14502

BACKGROUND

The production, survival and function of monocytes and macrophages are regulated by the macrophage colony-stimulating factor M-CSF through its tyrosine kinase receptor Fms. Binding of M-CSF to Fms induces the tyrosine phosphorylation and association of SH2-containing inositol phosphatase SHIP with the phosphotyrosine-binding domain of Shc. The SHIP protein hydrolyzes PtdIns P3 to PtdIns Ps and results in strong inhibition of cell growth. SHIP is also a target for CD28, suggesting that SHIP may be involved in the regulation of T cell activation. SHIP has several splice variants and is expressed during hematopoiesis and spermatogenesis. SHIP-2, a homolog of SHIP, is expressed in both hemopoietic and non-hemopoietic cells. In addition to T cells and B cells, spleen, thymus and lung are shown to coexpress SHIP and SHIP-2. SHIP is also expressed in fibroblasts, heart, skeletal muscle and different brain areas and its expression is enhanced in TSH and EGF-stimulated cells. Like SHIP, SHIP-2 is tyrosine-phosphorylated and associates with Shc after ligation of the B cell receptor to FcγRII. SHIP-2 causes cell cycle arrest in G₁ phase in glioblastoma cells and plays a negative role in regulating the PI 3-K-PI 3-K-protein kinase B pathway. Both SHIP and SHIP-2 mediate FcγRIIB signaling, including inhibition of proliferation.

CHROMSOMAL LOCATION

Genetic locus: INPPL1 (human) mapping to 11q13.4; Inpp1 (mouse) mapping to 7 E3.

SOURCE

SHIP-2 (I-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SHIP-2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-14502 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SHIP-2 (I-20) is recommended for detection of SHIP-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

SHIP-2 (I-20) is also recommended for detection of SHIP-2 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for SHIP-2 siRNA (h): sc-39077, SHIP-2 siRNA (m): sc-39078, SHIP-2 shRNA Plasmid (h): sc-39077-SH, SHIP-2 shRNA Plasmid (m): sc-39078-SH, SHIP-2 shRNA (h) Lentiviral Particles: sc-39077-V and SHIP-2 shRNA (m) Lentiviral Particles: sc-39078-V.

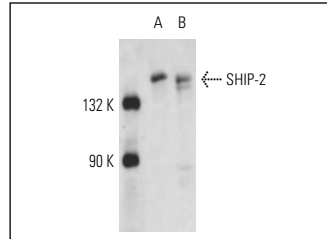
Molecular Weight of SHIP-2: 150-160 kDa.

Positive Controls: NAMALWA cell lysate: sc-2234.

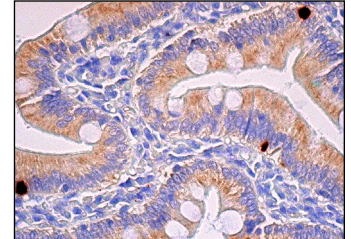
STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



SHIP-2 (I-20): sc-14502. Western blot analysis of SHIP-2 expression in NAMALWA (A) and 3T3-L1 (B) whole cell lysates.



SHIP-2 (I-20): sc-14502. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

- Déléris, P., et al. 2003. SHIP-2 and PTEN are expressed and active in vascular smooth muscle cell nuclei, but only SHIP-2 is associated with nuclear speckles. *J. Biol. Chem.* 278: 38884-38891.
- Koch, A., et al. 2005. The SH2-domain-containing inositol 5-phosphatase (SHIP)-2 binds to c-Met directly via tyrosine residue 1356 and involves hepatocyte growth factor (HGF)-induced lamellipodium formation, cell scattering and cell spreading. *Oncogene* 24: 3436-3447.
- McCurdy, C.E., et al. 2005. Calorie restriction increases the ratio of phosphatidylinositol 3-kinase catalytic to regulatory subunits in rat skeletal muscle. *Am. J. Physiol. Endocrinol. Metab.* 288: E996-E1001.
- Frey, R.S., et al. 2006. Phosphatidylinositol 3-kinase γ signaling through protein kinase C ζ induces NADPH oxidase-mediated oxidant generation and NF κ B activation in endothelial cells. *J. Biol. Chem.* 281: 16128-16138.
- Ishmael, S., et al. 2009. Early signal protein expression profiles in basophils: a population study. *J. Leukoc. Biol.* 86: 313-325.
- Lincová, E., et al. 2009. Multiple defects in negative regulation of the PKB/Akt pathway sensitise human cancer cells to the antiproliferative effect of non-steroidal anti-inflammatory drugs. *Biochem. Pharmacol.* 78: 561-572.
- Hyvönen, M.E., et al. 2010. Lipid phosphatase SHIP2 downregulates Insulin signalling in podocytes. *Mol. Cell. Endocrinol.* 328: 70-79.

RESEARCH USE

For research use only, not for use in diagnostic procedures.



Try **SHIP-2 (E-2): sc-166641** or **SHIP-2 (B-9): sc-515211**, our highly recommended monoclonal alternatives to SHIP-2 (I-20). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **SHIP-2 (E-2): sc-166641**.