SANTA CRUZ BIOTECHNOLOGY, INC.

SHIP-2 (B-9): sc-515211

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 haemopoietic and non-haemopoietic 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 Fc γ RII. SHIP-2 causes cell cycle arrest in G_1 phase in glioblastoma cells and plays a negative role in regulating the PI 3-kinase-PI 3-kinase B pathway. Both SHIP and SHIP-2 mediate Fc γ RIIB signaling, including inhibition of proliferation.

REFERENCES

1. Lioubin, M.N., et al. 1996. $p150^{SHIP}$, a signal transduction molecule with inositol polyphosphate-5-phosphatase activity. Genes Dev. 10: 1084-1095.
2. Liu, L., et al. 1997. The Src homology (SH2) domain of SH2-containing inositol phosphatase (SHIP) is essential for tyrosine phosphorylation of SHIP, its association with Shc, and its induction of apoptosis. J. Biol. Chem. 272: 8983-8988.
3. Pesesse, X., et al. 1997. Identification of a second SH2-domain-containing protein closely related to the phosphatidylinositol polyphosphate 5-phosphatase SHIP. Biochem. Biophys. Res. Commun. 239: 697-700.

CHROMOSOMAL LOCATION

Genetic locus: INPPL1 (human) mapping to 11q13.4; Inppl1 (mouse) mapping to 7 E3.

SOURCE

SHIP-2 (B-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1201-1228 near the C-terminus of SHIP-2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-515211 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

SHIP-2 (B-9) is recommended for detection of SHIP-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

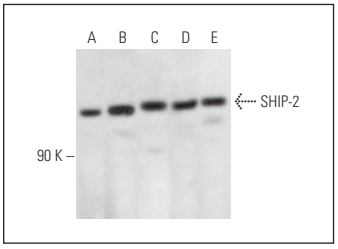
Molecular Weight of SHIP-2: 150-160 kDa.

Positive Controls: NAMALWA cell lysate: sc-2234, K-562 whole cell lysate: sc-2203 or HeLa whole cell lysate: sc-2200.

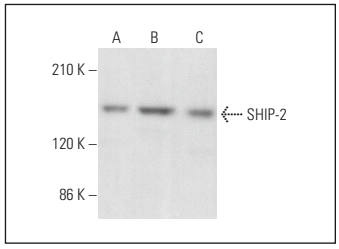
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



SHIP-2 (B-9): sc-515211. Western blot analysis of SHIP-2 expression in 3T3-L1(**A**), NAMALWA (**B**), K-562 (**C**), KNRK (**D**) and HeLa (**E**) whole cell lysates.



SHIP-2 (B-9): sc-515211. Western blot analysis of SHIP-2 expression in WEHI-231 (**A**), NAMALWA (**B**) and Raji (**C**) whole cell lysates.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CONJUGATES

See **SHIP-2 (E-2): sc-166641** for SHIP-2 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.