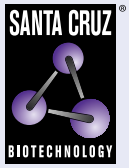
SANTA CRUZ BIOTECHNOLOGY, INC.

SHIP-2 (E-2): sc-166641



The Power to Question

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.

CHROMOSOMAL LOCATION

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

SOURCE

SHIP-2 (E-2) is a mouse monoclonal antibody raised against amino acids 959-1258 of SHIP-2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SHIP-2 (E-2) is available conjugated to agarose (sc-166641 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166641 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166641 PE), fluorescein (sc-166641 FITC), Alexa Fluor® 488 (sc-166641 AF488), Alexa Fluor® 546 (sc-166641 AF546), Alexa Fluor® 594 (sc-166641 AF594) or Alexa Fluor® 647 (sc-166641 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166641 AF680) or Alexa Fluor® 790 (sc-166641 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

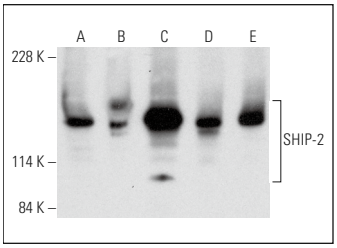
SHIP-2 (E-2) is recommended for detection of SHIP-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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.

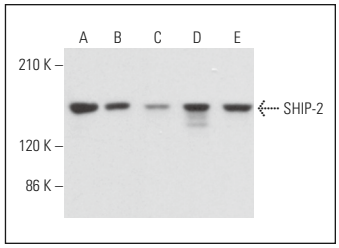
Molecular Weight of SHIP-2: 150-160 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, HeLa whole cell lysate: sc-2200 or NAMALWA cell lysate: sc-2234.

DATA



SHIP-2 (E-2) HRP: 166641 HRP. Direct western blot analysis of SHIP-2 expression in NAMALWA (**A**), 3T3-L1 (**B**), K-562 (**C**), NIH/3T3 (**D**) and HeLa (**E**) whole cell lysates.



SHIP-2 (E-2): sc-166641. Western blot analysis of SHIP-2 expression in NAMALWA (**A**), BJAB (**B**), RAW 264.7 (**C**), P19 (**D**) and WEHI-231 (**E**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Umasankar, P.K., et al. 2012. Distinct and separable activities of the endocytic clathrin-coat components Fcho1/2 and AP-2 in developmental patterning. Nat. Cell Biol. 14: 488-501.
2. Umasankar, P.K., et al. 2014. A clathrin coat assembly role for the muniscin protein central linker revealed by TALEN-mediated gene editing. Elife 3: e04137.
3. Liu, Q., et al. 2015. SHIP2 on pI3K/Akt pathway in palmitic acid stimulated islet β cell. Int. J. Clin. Exp. Med. 8: 3210-3218.
4. Wu, C., et al. 2019. IRTKS promotes Insulin signaling transduction through inhibiting SHIP2 phosphatase activity. Int. J. Mol. Sci. 20: 2834.
5. Pedicone, C., et al. 2020. Pan-SHIP1/2 inhibitors promote microglia effector functions essential for CNS homeostasis. J. Cell Sci. 133: jcs238030.
6. Antoine, M., et al. 2020. IRSp53 is a novel interactor of SHIP2: a role of the actin binding protein Mena in their cellular localization in breast cancer cells. Cell. Signal. 73: 109692.

RESEARCH USE

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

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