SANTA CRUZ BIOTECHNOLOGY, INC.

SHIP-2 (Z-16): sc-100387

SANTA CRUZ BIOTECHNOLOGY

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-K–PI 3-K-protein kinase B pathway. Both SHIP and SHIP-2 mediate Fc γ RIIB signaling, including inhibition of proliferation.

REFERENCES

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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.
4. Muraille, E., et al. 1999. Distribution of the Src-homology-2-domain-containing inositol 5-phosphatase SHIP-2 in both non-haemopoietic and haemopoietic cells and possible involvement of SHIP-2 in negative signalling of B cells. Biochem. J. 342: 697-705.
5. Edmunds, C., et al. 1999. CD28 stimulates tyrosine phosphorylation, cellular redistribution and catalytic activity of the inositol lipid 5-phosphatase SHIP. Eur. J. Immunol. 29: 3507-3515.
6. Wolf, I., et al. 2000. Cloning of the genomic locus of mouse SH2 containing inositol 5-phosphatase (SHIP) and a novel 110 kDa splice isoform, SHIPδ. Genomics 69: 104-112.
7. Taylor, V., et al. 2000. 5' phospholipid phosphatase SHIP-2 causes protein kinase B inactivation and cell cycle arrest in glioblastoma cells. Mol. Cell. Biol. 20: 6860-6871.
8. Brauweiler, A., et al. 2001. Partially distinct molecular mechanisms mediate inhibitory FcγRIIB signaling in resting and activated B cells. J. Immunol. 167: 204-211.

RESEARCH USE

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

CHROMOSOMAL LOCATION

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

SOURCE

SHIP-2 (Z-16) is a mouse monoclonal antibody raised against recombinant SHIP-2 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

SHIP-2 (Z-16) 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)] 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.

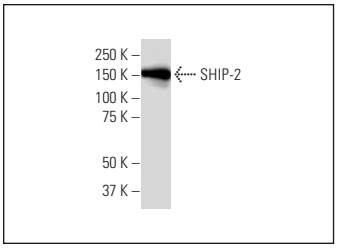
Molecular Weight of SHIP-2: 150-160 kDa.

Positive Controls: NAMALWA cell lysate: sc-2234 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).

DATA



SHIP-2 (Z-16): sc-100387. Western blot analysis of SHIP-2 expression in HeLa whole cell lysate.

STORAGE

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