SANTA CRUZ BIOTECHNOLOGY, INC.

SHIP (D-20): sc-14503

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 FcγRII. SHIP-2 causes cell cycle arrest in G_1 phase in glioblastoma cells and plays a negative role in regulating the PI3K-PI3K-protein kinase B pathway. Both SHIP and SHIP-2 mediate FcγRIIB signaling, including inhibition of proliferation.

REFERENCES

1. Lioubin, M.N., et al. 1996. p150Ship, 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: INPP5D (human) mapping to 2q37.1, INPPL1 (human) mapping to 11q13.4; Inpp5d (mouse) mapping to 1 D, Inppl1 (mouse) mapping to 7 E3.

SOURCE

SHIP (D-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SHIP-1 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-14503 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

RESEARCH USE

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

APPLICATIONS

SHIP (D-20) is recommended for detection of SHIP-1 and SHIP-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

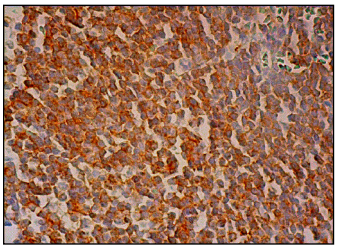
SHIP (D-20) is also recommended for detection of SHIP-1 and SHIP-2 in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of SHIP: 145 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



SHIP (D-20): sc-14503. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing cytoplasmic and membrane staining of cells in germinal center.

SELECT PRODUCT CITATIONS

1. Zhang, J., et al. 2010. A key role for the phosphorylation of Ser440 by the cyclic AMP-dependent protein kinase in regulating the activity of the Src homology 2 domain-containing Inositol 5'-phosphatase (SHIP1). J. Biol. Chem. 285: 34839-34849.