SANTA CRUZ BIOTECHNOLOGY, INC.

p-Shc (Tyr 239/240)-R: sc-18074-R

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The Shc gene encodes three widely expressed proteins which act as substrates for receptors and tyrosine kinases in signal transduction pathways. Growth factor receptors with tyrosine kinase activity phosphorylate and thus modulate the function of Shc. Specifically, the tyrosine phosphorylation of Shc residues 239/240 and 317 stimulates activation of Ras/MAPK via recruitment of the GRB2-Sos complex, with Shc binding GRB2. These residues are present in all Shc isoforms. *In vitro,* tyrosine residues 239/240 are phosphorylated by the tyrosine kinase Src, while stimulation of hematopoietic cells with interleukin 3 (IL-3) results in Shc phosphorylation, primarily on residues Tyr 239 and Tyr 317. Similarly, Insulin and EGF stimulate the phosphorylation of Shc and the subsequent binding of Shc and GRB2. Shc has a role in Insulin-induced mitogenesis by competing with IRS to bind to the Insulin receptor. The human Shc gene maps to chromosome 1q21.3.

CHROMOSOMAL LOCATION

Genetic locus: SHC1 (human) mapping to 1q21.3; Shc1 (mouse) mapping to 3 F1.

SOURCE

p-Shc (Tyr 239/240)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated of Shc 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-18074 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-Shc (Tyr 239/240)-R is recommended for detection of Tyr 239 and 240 dually phosphorylated Shc 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p-Shc (Tyr 239/240)-R is also recommended for detection of correspondingly phosphorylated Shc in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Shc siRNA (h): sc-29480, Shc siRNA (m): sc-29481, Shc shRNA Plasmid (h): sc-29480-SH, Shc shRNA Plasmid (m): sc-29481-SH, Shc shRNA (h) Lentiviral Particles: sc-29480-V and Shc shRNA (m) Lentiviral Particles: sc-29481-V.

Molecular Weight of p-Shc p66Shc isoform: 63 kDa.

Molecular Weight of p-Shc p52Shc isoform: 52 kDa.

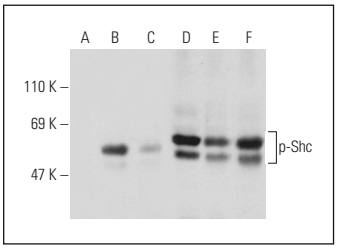
Molecular Weight of p-Shc p46Shc isoform: 47 kDa.

Positive Controls: EGF-treated HEK293 whole cell lysate or EGF-treated and serum starved HEK293 whole cell lysate.

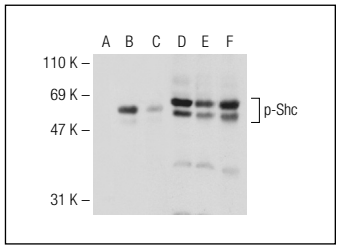
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Western blot analysis of Shc phosphorylation in untreated (**A**,**D**), serum starved and EGF treated (**B**,**E**) and serum starved, EGF and lambda protein phosphatase treated (**C**,**F**) HEK293 whole cell lysates. Antibodies tested include p-Shc (Tyr 239/240)-R: sc-18074-R (**A**,**B**,**C**) and Shc (H-108): sc-1695 (**D**,**E**,**F**).



Western blot analysis of Shc phosphorylation in untreated (**A**,**D**), serum starved and EGF treated (**B**,**E**) and serum starved, EGF and lambda protein phosphatase (sc-200312A) treated (**C**,**F**) HEK293 whole cell lysates. Antibodies tested include p-Shc (Tyr 239/240)-R: sc-18074-R (**A**,**B**,**C**) and Shc (H-108): sc-1695 (**D**,**E**,**F**).

SELECT PRODUCT CITATIONS

1. Ursini-Siegel, J., et al. 2008. ShcA signalling is essential for tumour progression in mouse models of human breast cancer. EMBO J. 27: 910-920.

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.

PROTOCOLS

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