SANTA CRUZ BIOTECHNOLOGY, INC.

p-Shc (Tyr 317): sc-101797

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.

REFERENCES

1. Pelicci, G., et al. 1992. A novel transforming protein (SHC) with an SH2 domain is implicated in mitogenic signal transduction. Cell 70: 93-104.
2. McGlade, J., et al. 1992. Shc proteins are phosphorylated and regulated by the v-Src and v-Fps protein-tyrosine kinases. Proc. Natl. Acad. Sci. USA 89: 8869-8873.

CHROMOSOMAL LOCATION

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

SOURCE

p-Shc (Tyr 317) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Tyr 317 Shc of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

p-Shc (Tyr 317) is recommended for detection of Tyr 317 phosphorylated Shc of human origin and correspondingly phosphorylated Tyr 312 of mouse and rat 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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

Molecular Weight of p66Shc isoform: 63 kDa.

Molecular Weight of p52Shc isoform: 52 kDa.

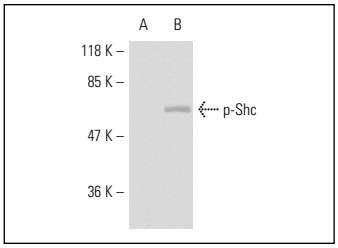
Molecular Weight of p46Shc isoform: 47 kDa.

Positive Controls: EGF-treated HEK293 whole cell lysate.

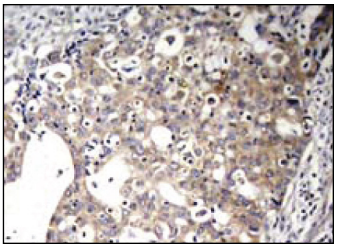
RECOMMENDED SECONDARY REAGENTS

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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



p-Shc (Tyr 317): sc-101797. Western blot analysis of phosphorylated Shc expression in untreated (**A**) and EGF-treated (**B**) 293 whole cell lysates.



p-Shc (Tyr 317): sc-101797. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing cytoplasmic staining.

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.