SANTA CRUZ BIOTECHNOLOGY, INC.

Shc4 (K-13): sc-165482

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The Power to Question

BACKGROUND

Src homology (SH2) domains are noncatalytic sequences that are conserved among a number of cytoplasmic signaling proteins. These signaling proteins are directly regulated by receptor tyrosine kinases and control the activation of mitogenic signal transduction pathways by such receptors. Shc4 (SHC (Src homology 2 domain containing) family, member 4), also known as RaLP (Rai-like protein) or SHCD (SHC-transforming protein D), is a 630 amino acid protein that contains one SH2 domain and a PID domain. Localizing to the postsynaptic cell membrane, Shc4 activates Ras-dependent and Ras-independent migratory pathways in melanomas, where it is exclusively expressed. Shc4 assists in the phosphorylation of AChRβ1 and has been found to interact with phosphorylated MuSK via its NPXY domain. Shc4 exists as two alternatively spliced isoforms and is encoded by a gene that maps to human chromosome 15q21.1.

REFERENCES

1. Ullrich, A. and Schlessinger, J. 1990. Signal transduction by receptors with tyrosine kinase activity. Cell 61: 203-212.
2. Koch, C.A., Anderson, D., Moran, M.F., Ellis, C. and Pawson, T. 1991. SH2 and SH3 domains: elements that control interactions of cytoplasmic signaling proteins. Science 252: 668-674.
3. Pelicci, G., Lanfrancone, L., Grignani, F., McGlade, J., Cavallo, F., Forni, G., Nicoletti, I., Grignani, F., Pawson, T. and Pelicci, P.G. 1992. A novel transforming protein (SHC) with an SH2 domain is implicated in mitogenic signal transduction. Cell 70: 93-104.
4. Mitra, S.K. and Schlaepfer, D.D. 2006. Integrin-regulated FAK-Src signaling in normal and cancer cells. Curr. Opin. Cell Biol. 18: 516-523.
5. Fagiani, E., Giardina, G., Luzi, L., Cesaroni, M., Quarto, M., Capra, M., Germano, G., Bono, M., Capillo, M., Pelicci, P. and Lanfrancone, L. 2007. RaLP, a new member of the Src homology and collagen family, regulates cell migration and tumor growth of metastatic melanomas. Cancer Res. 67: 3064-3073.

CHROMOSOMAL LOCATION

Genetic locus: SHC4 (human) mapping to 15q21.1; Shc4 (mouse) mapping to 2 F1.

SOURCE

Shc4 (K-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Shc4 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-165482 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

Shc4 (K-13) is recommended for detection of Shc4 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); non cross-reactive with Shc or Shc1.

Shc4 (K-13) is also recommended for detection of Shc4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Shc4 siRNA (h): sc-90080, Shc4 siRNA (m): sc-153445, Shc4 shRNA Plasmid (h): sc-90080-SH, Shc4 shRNA Plasmid (m): sc-153445-SH, Shc4 shRNA (h) Lentiviral Particles: sc-90080-V and Shc4 shRNA (m) Lentiviral Particles: sc-153445-V.

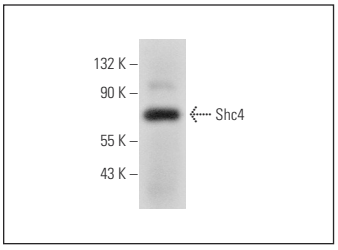
Molecular Weight of Shc4 isoforms: 69/53 kDa.

Positive Controls: human skeletal muscle extract: sc-363776, Jurkat whole cell lysate: sc-2204 or HeLa whole cell lysate: sc-2200.

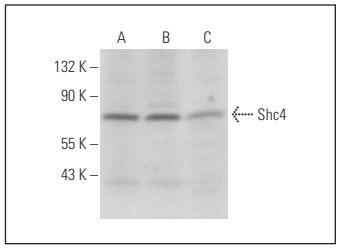
RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



Shc4 (K-13): sc-165482. Western blot analysis of Shc4 expression in human skeletal muscle tissue extract.



Shc4 (K-13): sc-165482. Western blot analysis of Shc4 expression in MOLT-4 (**A**), HeLa (**B**) and Jurkat (**C**) whole cell lysates.

STORAGE

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

PROTOCOLS

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