SANTA CRUZ BIOTECHNOLOGY, INC.

SIRP-α (27): sc-136067

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

SIRPs (signal-regulatory proteins) are a family of transmembrane glycoproteins that were identified by their association with the Src homology 2 domain-containing protein-tyrosine phosphatase SHP-2 in response to Insulin. The SIRP family negatively regulates the PI 3-K pathway, which may diminish EGFR-mediated motility and survival phenotypes that contribute to transformation of certain cell types. SIRP-α is a transmembrane protein which contains an extracellular portion with three immunoglobulin-like structures and a cytoplasmic region with four potential tyrosine phosphorylation sites. SIRP-α is a substrate for activated receptor tyrosine kinases. In its tyrosine phosphorylated form, SIRP-α binds to SH-PTP2 through SH2 interactions and acts as an SH-PTP2 substrate. SIRP-α1 has been shown to have negative regulatory effects on cellular responses induced by growth factors, oncogenes and insulin. SIRP-β1 shares extensive sequence homology with SIRP-α in its extracellular portion but lacks the cytoplasmic portion. SIRP-γ, originally designated SIRP-β2 (SIRP-B2, CD172g) has unique characteristics from both the α and β versions. SIRP-γ is expressed on the majority of T cells and a proportion of B cells. CD47 associates with SIRP-γ, and this interaction signals unidirectionally only.

REFERENCES

1. Yamauchi, K., et al. 1995. Identification of the major SHPTP2-binding protein that is tyrosine-phosphorylated in response to Insulin. J. Biol. Chem. 270: 17716-17722.
2. Fujioka, Y., et al. 1996. A novel membrane glycoprotein, SHPS-1, that binds the SH2-domain-containing tyrosine phosphatase SHP-2 in response to mitogens and cell adhesion. Mol. Cell. Biol. 16: 6887-6899.
3. Kharitonenkov, A., et al. 1997. A family of proteins that inhibit signalling through tyrosine kinase receptors. Nature 386: 181-186.
4. Stofega, M.R., et al. 1998. Growth hormone regulation of SIRP and SHP-2 tyrosyl phosphorylation and association. J. Biol. Chem. 273: 7112-7117.
5. Wu, C.J., et al. 2000. Inhibition of EGFR-mediated phosphoinositide-3-OH kinase (PI-3 K) signaling and glioblastoma phenotype by signal-regulatory proteins (SIRPs). Oncogene 19: 3999-4010.

CHROMOSOMAL LOCATION

Genetic locus: SIRPA (human) mapping to 20p13; Sirpa (mouse) mapping to 2 F1.

SOURCE

SIRP-α (27) is a mouse monoclonal antibody raised against amino acids 395-503 of SIRP-α of human origin.

PRODUCT

Each vial contains 50 µg IgG_1 in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

SIRP-α (27) is recommended for detection of SIRP-α 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 immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for SIRP-α siRNA (h): sc-44106, SIRP-α siRNA (m): sc-36493, SIRP-α siRNA (r): sc-270499, SIRP-α shRNA Plasmid (h): sc-44106-SH, SIRP-α shRNA Plasmid (m): sc-36493-SH, SIRP-α shRNA Plasmid (r): sc-270499-SH, SIRP-α shRNA (h) Lentiviral Particles: sc-44106-V, SIRP-α shRNA (m) Lentiviral Particles: sc-36493-V and SIRP-α shRNA (r) Lentiviral Particles: sc-270499-V.

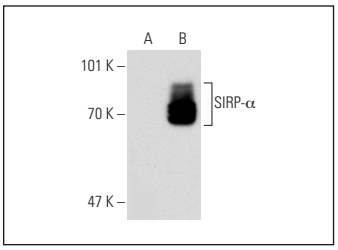
Molecular Weight of SIRP-α: 90 kDa.

Molecular Weight of nonglycosylated SIRP-α: 65 kDa.

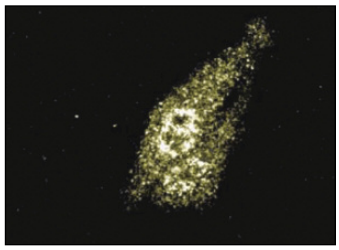
Molecular Weight of glycosylated SIRP-α: 100-150 kDa.

Positive Controls: SIRP-α (h): 293T Lysate: sc-159295, HeLa whole cell lysate: sc-2200 or rat brain extract: sc-2392.

DATA



SIRP-α (27): sc-136067. Western blot analysis of SIRP-α expression in non-transfected: sc-117752 (**A**) and human SIRP-α transfected: sc-159295 (**B**) 293T whole cell lysates.



SIRP-α (27): sc-136067. Immunofluorescence staining of HeLa cells showing nuclear and cytoplasmic localization.

RESEARCH USE

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

PROTOCOLS

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

CONJUGATES

See **SIRP-α/β (A-1): sc-17803** for SIRP-α/β antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.