

# SIRP- $\alpha$ / $\beta$ 1 (A-1): sc-376220

## 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- $\alpha$  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- $\alpha$  is a substrate for activated receptor tyrosine kinases. In its tyrosine phosphorylated form, SIRP- $\alpha$  binds to SH-PTP2 through SH2 interactions and acts as an SH-PTP2 substrate. SIRP- $\alpha$  has been shown to have negative regulatory effects on cellular responses induced by growth factors, oncogenes and insulin. SIRP- $\beta$ 1 shares extensive sequence homology with SIRP- $\alpha$  in its extracellular portion but lacks the cytoplasmic portion. SIRP- $\gamma$ , originally designated SIRP- $\beta$ 2 (SIRP-B2, CD172g) has unique characteristics from both the  $\alpha$  and  $\beta$  versions. SIRP- $\gamma$  is expressed on the majority of T cells and a proportion of B cells. CD47 associates with SIRP- $\gamma$ , 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.

## CHROMOSOMAL LOCATION

Genetic locus: SIRPA/SIRPB1 (human) mapping to 20p13.

## SOURCE

SIRP- $\alpha$ / $\beta$ 1 (A-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 22-53 near the N-terminus of SIRP- $\alpha$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-376220 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## 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](http://www.scbt.com) for detailed protocols and support products.

## APPLICATIONS

SIRP- $\alpha$ / $\beta$ 1 (A-1) is recommended for detection of SIRP- $\alpha$  and SIRP- $\beta$ 1 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

Suitable for use as control antibody for SIRP- $\alpha$ / $\beta$ 1/ $\gamma$  siRNA (h): sc-36492, SIRP- $\alpha$ / $\beta$ 1/ $\gamma$  shRNA Plasmid (h): sc-36492-SH and SIRP- $\alpha$ / $\beta$ 1/ $\gamma$  shRNA (h) Lentiviral Particles: sc-36492-V.

Molecular Weight of unglycosylated SIRP- $\alpha$ : 65 kDa.

Molecular Weight of glycosylated SIRP- $\alpha$ : 100-150 kDa.

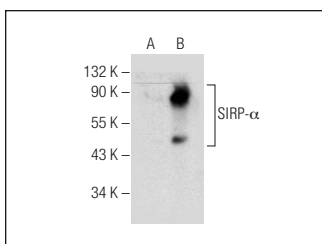
Molecular Weight of SIRP- $\beta$ : 55 kDa.

Positive Controls: THP-1 cell lysate: sc-2238, HL-60 whole cell lysate: sc-2209 or SIRP- $\alpha$  (h): 293T Lysate: sc-159295.

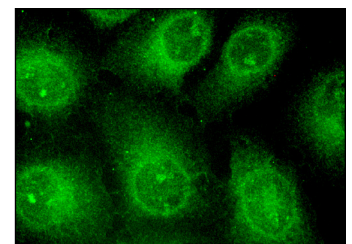
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), 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 m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



SIRP- $\alpha$ / $\beta$ 1 (A-1): sc-376220. Western blot analysis of SIRP- $\alpha$  expression in non-transfected: sc-117752 (A) and human SIRP- $\alpha$  transfected: sc-159295 (B) 293T whole cell lysates.



SIRP- $\alpha$ / $\beta$ 1 (A-1): sc-376220. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and membrane localization.

## RESEARCH USE

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



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