

SIRP- α/β (148): sc-53605

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-kinase pathway, which may diminish EGFR-mediated motility and survival phenotypes that contribute to transformation of certain cell types. SIRP- α 1 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 (also known as SIRP- α 1, SIRP- α 2 or SIRP- α 3) 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- α has been shown to have negative regulatory effects on cellular responses induced by growth factors, oncogenes and Insulin. SIRP- β 1 shares extensive sequence homology with SIRP- α in its extracellular portion but lacks the cytoplasmic portion. SIRP- γ , originally designated SIRP- β 2 (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. Kharitonkov, 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.
6. Latour, S., et al. 2001. Bidirectional negative regulation of human T and dendritic cells by CD47 and its cognate receptor signal-regulator protein- α : downregulation of IL-12 responsiveness and inhibition of dendritic cell activation. *J. Immunol.* 167: 2547-2554.

CHROMOSOMAL LOCATION

Genetic locus: SIRPA/SIRPB1/SIRPB2 (human) mapping to 20p13.

SOURCE

SIRP- α/β (148) is a mouse monoclonal antibody raised against dendritic cells of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 μ g IgG $_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SIRP- α/β (148) is available conjugated to either phycoerythrin (sc-53605 PE) or fluorescein (sc-53605 FITC), 200 μ g/ml, for IF, IHC(P) and FCM.

APPLICATIONS

SIRP- α/β (148) is recommended for detection of SIRP- α and SIRP- β of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and flow cytometry (1 μ g per 1 x 10⁶ cells).

Molecular Weight of unglycosylated SIRP- α : 65 kDa.

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

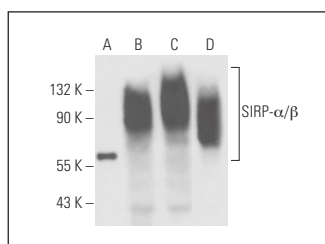
Molecular Weight of SIRP- β : 55 kDa.

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

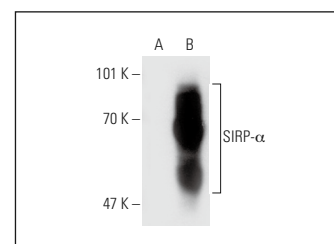
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



SIRP- α/β (148): sc-53605. Western blot analysis of human recombinant SIRP- α/β fusion protein (A) and SIRP- α/β expression in HL-60 (B), THP-1 (C) and human peripheral blood (D) whole cell lysates.



SIRP- α/β (148): sc-53605. 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.

RESEARCH USE

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



See **SIRP- α/β (A-1): sc-17803** for SIRP- α/β antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.