

SIRP- α/β (A-1): sc-17803

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-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. Kharitonov, 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.

CHROMOSOMAL LOCATION

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

SOURCE

SIRP- α/β (A-1) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of SIRP- α/β of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SIRP- α/β (A-1) is available conjugated to agarose (sc-17803 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-17803 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-17803 PE), fluorescein (sc-17803 FITC), Alexa Fluor® 488 (sc-17803 AF488), Alexa Fluor® 546 (sc-17803 AF546), Alexa Fluor® 594 (sc-17803 AF594) or Alexa Fluor® 647 (sc-17803 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-17803 AF680) or Alexa Fluor® 790 (sc-17803 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

SIRP- α/β (A-1) is recommended for detection of SIRP- α and SIRP- β of human origin by Western Blotting (starting dilution 1:5,000, dilution range 1:5,000-1:50,000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

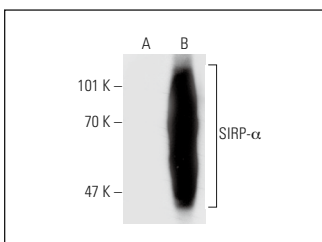
Molecular Weight of unglycosylated SIRP- α : 65 kDa.

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

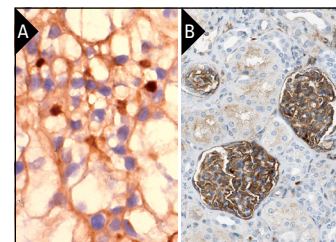
Molecular Weight of SIRP- β : 55 kDa.

Positive Controls: SIRP- α (h): 293T Lysate: sc-195295, THP-1 cell lysate: sc-2238 or HL-60 whole cell lysate: sc-2209.

DATA



SIRP- α/β (A-1): sc-17803. 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/β (A-1): sc-17803. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tumor showing membrane localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing membrane staining of cells in glomeruli and tubules. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).

SELECT PRODUCT CITATIONS

1. Liu, S., et al. 2005. Negative regulation of monocyte adhesion to arterial elastic laminae by signal regulatory protein α and Src homology 2 domain-containing protein-tyrosine phosphatase-1. *J. Biol. Chem.* 280: 39294-39301.
2. Quintanar-Audelo, M., et al. 2011. Sprouty-related Ena/vasodilator-stimulated phosphoprotein homology 1-domain-containing protein (SPRED1), a tyrosine-protein phosphatase non-receptor type 11 (SHP2) substrate in the Ras/extracellular signal-regulated kinase (ERK) pathway. *J. Biol. Chem.* 286: 23102-23112.
3. Gholiha, A.R., et al. 2022. Checkpoint CD47 expression in classical Hodgkin lymphoma. *Br. J. Haematol.* 197: 580-589.

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.

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