

SIRP- β 1 (B4B6): sc-21800

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 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 1 is a substrate for activated receptor tyrosine kinases. In its tyrosine phosphorylated form, SIRP- α 1 binds to SH-PTP2 through SH2 interactions and acts as an SH-PTP2 substrate. SIRP- α 1 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 1 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

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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.
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.
7. Brooke, G., et al. 2004. Human lymphocytes interact directly with CD47 through a novel member of the signal regulatory protein (SIRP) family. *J. Immunol.* 173: 2562-2570.
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STORAGE

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

CHROMOSOMAL LOCATION

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

SOURCE

SIRP- β 1 (B4B6) is a mouse monoclonal antibody raised against a recombinant extracellular domain of human SIRP- β 1.

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- β 1 (B4B6) is available conjugated to either phycoerythrin (sc-21800 PE) or fluorescein (sc-21800 FITC), 200 μ g/ml, for IF, IHC(P) and FCM.

APPLICATIONS

SIRP- β 1 (B4B6) is recommended for detection of SIRP- β 1 of human origin by 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).

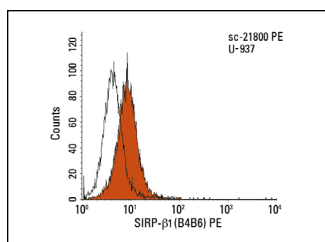
Suitable for use as control antibody for SIRP- β 1 siRNA (h): sc-40985, SIRP- β 1 shRNA Plasmid (h): sc-40985-SH and SIRP- β 1 shRNA (h) Lentiviral Particles: sc-40985-V.

Molecular Weight of SIRP- β 1: 55 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



SIRP- β 1 (B4B6) PE: sc-21800 PE. FCM analysis of U-937 cells. Black line histogram represents the isotype control, normal mouse IgG₁-PE: sc-2866.

RESEARCH USE

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

PROTOCOLS

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