



SIRP- α (1-300): sc-4345 WB

BACKGROUND

The signal regulatory gene family comprises at least fifteen members which encode the signal-regulatory proteins, or SIRPs. 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- 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 1 in its extracellular portion but lacks the cytoplasmic portion.

REFERENCES

1. Milarski, K.L. and Saltiel, A.R. 1994. Expression of catalytically inactive Syp phosphatase in 3T3 cells blocks stimulation of mitogen-activated protein kinase by insulin. *J. Biol. Chem.* 269: 21239-21343.
2. Yamauchi, K., Ribon, V., Saltiel, A.R., and Pessin, J.E. 1995. Identification of the major SHPTP2-binding protein that is tyrosine-phosphorylated in response to insulin. *J. Biol. Chem.* 270: 17716-17722.
3. Tang, T.L., Freeman, R.M. Jr., O'Reilly, A.M., Neel, B.G., and Sokol, S.Y. 1995. The SH2-containing protein-tyrosine phosphatase SH-PTP2 is required upstream of MAP kinase for early *Xenopus* development. *Cell* 80: 473-483.
4. Yamauchi, K., Milarski, K.L., Saltiel, A.R., and Pessin, J.E. 1995. Protein-tyrosine-phosphatase SHPTP2 is a required positive effector for insulin downstream signaling. *Proc. Natl. Acad. Sci. USA* 92: 664-668.
5. Bennett, A.M., Hausdorff, S.F., O'Reilly, A.M., Freeman, R.M. Jr., and Neel, B.G. 1996. Multiple requirements for SHPTP2 in epidermal growth factor-mediated cell cycle progression. *Mol. Cell. Biol.* 16: 1189-1202.
6. Fujioka, Y., Matozaki, T., Noguchi, T., Iwamatsu, A., Yamao, T., Takahashi, N., Tsuda, M., Takada, T., and Kasuga, M. 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.
7. Kharitonov, A., Chen, Z., Sures, I., Wang, H., Schilling, J., and Ullrich, A. 1997. A family of proteins that inhibit signalling through tyrosine kinase receptors. *Nature* 386: 181-186.
8. Stofega, M.R., Wang, H., Ullrich, A., and Carter-Su, C. 1998. Growth hormone regulation of SIRP and SHP-2 tyrosyl phosphorylation and association. *J. Biol. Chem.* 273: 7112-7117.
9. Vernon-Wilson, E.F., Kee, W.J., Willis, A.C., Barclay, A.N., Simmons, D.L., Brown, M.H. 2000. CD47 is a ligand for rat macrophage membrane signal regulatory protein SIRP (OX41) and human SIRP α 1. *Eur. J. Immunol.* 30: 2130-2137.
10. Smith, R.E., Patel, V., Seatter, S.D., Deehan, M.R., Brown, M.H., Brooke, G.P., Goodridge, H.S., Howard, C.J., Rigley, K.P., Harnett, W., and Harnett, M.M. 2003. A novel MyD-1 (SIRP-1 α) signaling pathway that inhibits LPS-induced TNF α production by monocytes. *Blood* 102: 2532-2540.

SOURCE

SIRP- α (1-300) is expressed in *E. coli* as a 60 kDa tagged fusion protein corresponding to amino acids 1-300 of SIRP- α of human origin.

PRODUCT

SIRP- α (1-300) is purified from bacterial lysates (>98%) by column chromatography; supplied as 10 μ g in 0.1 ml SDS-PAGE loading buffer.

APPLICATIONS

SIRP- α (1-300) is suitable as a Western blotting control for sc-6921.

STORAGE

Store at -20 $^{\circ}$ C; stable for one year from the date of shipment.

RESEARCH USE

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