

IRS-4 (H-300): sc-28830

BACKGROUND

The Insulin receptor substrate (IRS) proteins are key components in signaling from the Insulin receptor. IRS-4 is the most recently characterized member of the IRS family and has an undefined *in vivo* function. Phosphorylated IRS-4 associates with phosphatidylinositol 3-kinase (PI3-kinase), involved in Insulin-stimulated DNA synthesis, GH-induced tyrosine phosphorylation of IRS-4 and nuclear translocation of Stat5. IRS-4 also associates with IRAS which, when overexpressed, enhances IRS-4-dependent Insulin stimulation of PI3-kinase. The IRS-4 protein exhibits a limited fiber type specific expression in heart and skeletal muscle tissue and has not yet been detected in any mouse or primary human tissue. The absence of IRS-4 in mice causes mild defects in growth, reproduction and glucose homeostasis, while overexpression of IRS-4 increases basal PI3-kinase activity and Akt phosphorylation. Defects in IRS-4-null mice may result from a lower overall blood glucose concentration.

REFERENCES

- Fantin, V.R., et al. 2000. Mice lacking Insulin receptor substrate 4 exhibit mild defects in growth, reproduction and glucose homeostasis. *Am. J. Physiol. Endocrinol. Metab.* 278: E127-E33.
- Tsuruzoe, K., et al. 2001. Insulin receptor substrate 3 (IRS-3) and IRS-4 impair IRS-1- and IRS-2-mediated signaling. *Mol. Cell. Biol.* 21: 26-38.
- Sano, H., et al. 2002. Insulin receptor substrate 4 associates with the protein IRAS. *J. Biol. Chem.* 277: 19439-19447.
- Schreyer, S., et al. 2003. Insulin receptor substrate-4 is expressed in muscle tissue without acting as a substrate for the Insulin receptor. *Endocrinology* 144: 1211-1218.
- Urso, B., et al. 2003. IRS-4 mediated mitogenic signalling by Insulin and growth hormone in LB cells, a murine T-cell lymphoma devoid of IGF-1 receptors. *Cell Signal.* 15: 385-394.

CHROMOSOMAL LOCATION

Genetic locus: IRS4 (human) mapping to Xq22.3; Irs4 (mouse) mapping to X F2.

SOURCE

IRS-4 (H-300) is a rabbit polyclonal antibody raised against amino acids 958-1257 mapping at the C-terminus of IRS-4 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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.

APPLICATIONS

IRS-4 (H-300) is recommended for detection of IRS-4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 IRS-4 siRNA (h): sc-35715, IRS-4 siRNA (m): sc-35716, IRS-4 shRNA Plasmid (h): sc-35715-SH, IRS-4 shRNA Plasmid (m): sc-35716-SH, IRS-4 shRNA (h) Lentiviral Particles: sc-35715-V and IRS-4 shRNA (m) Lentiviral Particles: sc-35716-V.

Molecular Weight of IRS-4: 160 kDa.

Positive Controls: HEK 293 whole cell lysate.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

- Wauaman, J., et al. 2008. Insulin receptor substrate 4 couples the leptin receptor to multiple signaling pathways. *Mol. Endocrinol.* 22: 965-977.

PROTOCOLS

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


 MONOS
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Try **IRS-4 (C-1): sc-373778** or **IRS-4 (C-4): sc-393207**, our highly recommended monoclonal alternatives to IRS-4 (H-300).