

IRS-4 (C-4): sc-393207

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

1. 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-E133.
2. 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.
3. Sano, H., et al. 2002. Insulin receptor substrate 4 associates with the protein IRAS. *J. Biol. Chem.* 277: 19439-19447.
4. 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.

CHROMOSOMAL LOCATION

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

SOURCE

IRS-4 (C-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1208-1239 near the C-terminus of IRS-4 of human origin.

PRODUCT

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

IRS-4 (C-4) is available conjugated to agarose (sc-393207 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393207 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393207 PE), fluorescein (sc-393207 FITC), Alexa Fluor[®] 488 (sc-393207 AF488), Alexa Fluor[®] 546 (sc-393207 AF546), Alexa Fluor[®] 594 (sc-393207 AF594) or Alexa Fluor[®] 647 (sc-393207 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-393207 AF680) or Alexa Fluor[®] 790 (sc-393207 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393207 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

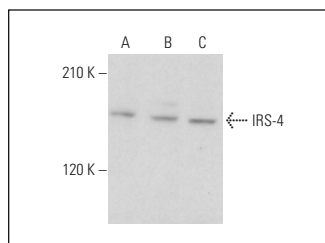
IRS-4 (C-4) is recommended for detection of IRS-4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) 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.

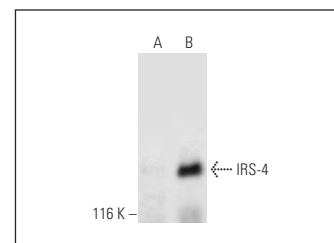
Molecular Weight of IRS-4: 160 kDa.

Positive Controls: c4 whole cell lysate: sc-364186, NIH/3T3 whole cell lysate: sc-2210 or IRS-4 (h): 293T Lysate: sc-176236.

DATA



IRS-4 (C-4): sc-393207. Western blot analysis of IRS-4 expression in NIH/3T3 (A), c4 (B) and C2C12 (C) whole cell lysates.



IRS-4 (C-4): sc-393207. Western blot analysis of IRS-4 expression in non-transfected: sc-117752 (A) and human IRS-4 transfected: sc-176236 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Nishimura, T., et al. 2021. Filopodium-derived vesicles produced by MIM enhance the migration of recipient cells. *Dev. Cell* 56: 842-859.e8.
2. Hu, H.T., et al. 2021. Ultracentrifugal separation, characterization, and functional study of extracellular vesicles derived from serum-free cell culture. *STAR Protoc.* 2: 100625.

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.

PROTOCOLS

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

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