

IRS-1 (E-12): sc-8038

BACKGROUND

The Insulin receptor substrate-1 (IRS-1), a protein major substrate of the Insulin receptor, is phosphorylated in response to stimulation of cells by Insulin, Insulin-like growth factor 1 (IGF-1) and interleukin 4 (IL-4). IRS-1 is phosphorylated on serine, threonine and tyrosine residues in a variety of tissues. An Insulin-sensitive serine/threonine kinase casein kinase II mediates a portion of the Insulin-stimulated serine/threonine phosphorylation of over-expressed IRS-1 *in vivo*. Thr 502 is identified as the major casein kinase II-catalyzed phosphorylation site in rat IRS-1, and Ser 99 is an additional phosphorylation site catalyzed by casein kinase II. Thus, casein kinase II-catalyzed phosphorylation of IRS-1 may be a component of the intracellular Insulin signaling cascade. IRS-1 contains three putative binding sites for 14-3-3 (Ser 270, Ser 374 and Ser 641) and the motif around Ser 270 is located in the phosphotyrosine binding domain of IRS-1, which is responsible for the interaction with the Insulin receptor. The association of 14-3-3 with IRS-1 increases significantly upon treatment with okadaic acid, a potent serine/threonine phosphatase inhibitor. Therefore, the association of 14-3-3 protein may play a role in the regulation of Insulin sensitivity by interrupting the association between the Insulin receptor and IRS-1.

REFERENCES

1. Myers, M.G., Jr., et al. 1992. IRS-1 activates the phosphatidylinositol 3'-kinase by associating with the Src homology 2 domains of p85. *Proc. Natl. Acad. Sci. USA* 89: 10350-10354.
2. Myers, M.G., Jr., et al. 1993. IRS-1 is a common element in Insulin and IGF signaling to the phosphatidylinositol 3'-kinase. *Endocrinology* 132: 1421-1430.

CHROMOSOMAL LOCATION

Genetic locus: IRS1 (human) mapping to 2q36.3; Irs1 (mouse) mapping to 1 C5.

SOURCE

IRS-1 (E-12) is a mouse monoclonal antibody raised against amino acids 905-1070 mapping to a central domain of IRS-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

IRS-1 (E-12) is available conjugated to agarose (sc-8038 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-8038 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-8038 PE), fluorescein (sc-8038 FITC), Alexa Fluor® 488 (sc-8038 AF488), Alexa Fluor® 546 (sc-8038 AF546), Alexa Fluor® 594 (sc-8038 AF594) or Alexa Fluor® 647 (sc-8038 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-8038 AF680) or Alexa Fluor® 790 (sc-8038 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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RESEARCH USE

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

APPLICATIONS

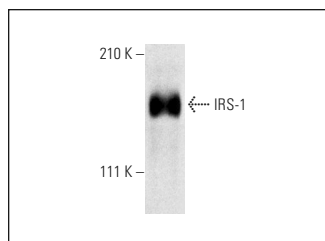
IRS-1 (E-12) is recommended for detection of IRS-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1 µg per 1 x 10⁶ cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for IRS-1 siRNA (h): sc-29376, IRS-1 siRNA (m): sc-29377, IRS-1 siRNA (r): sc-155987, shRNA Plasmid (h): sc-29376-SH, IRS-1 shRNA Plasmid (m): sc-29377-SH, IRS-1 shRNA Plasmid (r): sc-155987-SH, IRS-1 shRNA (h) Lentiviral Particles: sc-29376-V, IRS-1 shRNA (m) Lentiviral Particles: sc-29377-V and IRS-1 shRNA (r) Lentiviral Particles: sc-155987-V.

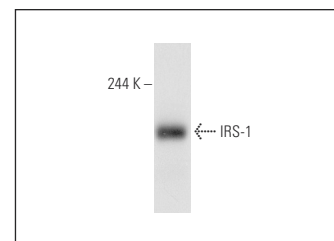
Molecular Weight of IRS-1: 170-185 kDa.

Positive Controls: Ramos cell lysate: sc-2216, HeLa whole cell lysate: sc-2200 or A549 cell lysate: sc-2413.

DATA



IRS-1 (E-10): sc-8038. Western blot analysis of IRS-1 expression in Ramos whole cell lysate.



IRS-1 (E-12): sc-8038. Western blot analysis of IRS-1 expression in A549 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Luo, H., et al. 2001. Cross-linking of EphB6 resulting in signal transduction and apoptosis in Jurkat cells. *J. Immunol.* 167: 1362-1370.
2. Wang, H.Y., et al. 2012. Reducing amyloid-related Alzheimer's disease pathogenesis by a small molecule targeting filamin A. *J. Neurosci.* 32: 9773-9784.
3. Yang, W.H., et al. 2013. Leptin induces IL-6 expression through OBRI receptor signaling pathway in human synovial fibroblasts. *PLoS ONE* 8: e75551.
4. Romic, S., et al. 2014. Gender differences in the expression and cellular localization of lipin 1 in the hearts of fructose-fed rats. *Lipids* 49: 655-663.
5. Stanisic, J., et al. 2016. Low intensity exercise prevents disturbances in rat cardiac Insulin signaling and endothelial nitric oxide synthase induced by high fructose diet. *Mol. Cell. Endocrinol.* 420: 97-104.
6. Fang, S., et al. 2017. MicroRNA-126 inhibits cell viability and invasion in a diabetic retinopathy model via targeting IRS-1. *Oncol. Lett.* 14: 4311-4318.

STORAGE

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