SANTA CRUZ BIOTECHNOLOGY, INC.

IRS-1 (H-165): sc-7200

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The Insulin receptor substrate-1 (IRS-1), a 1protein 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 overexpressed IRS-1 *in vivo*. Threonine 502 is the major casein kinase II-catalyzed phosphorylation site in rat IRS-1; Serine 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 (Serine 270, 374 and 641) and the motif around Serine 270 is located in the phospho-tyrosine 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.

CHROMOSOMAL LOCATION

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

SOURCE

IRS-1 (H-165) is a rabbit polyclonal antibody raised against amino acids 905-1070 of IRS-1 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.

Available as agarose conjugate for immunoprecipitation, sc-7200 AC, 500 µg/0.25 ml agarose in 1 ml; as HRP conjugate for Western blotting, sc-7200 HRP, 200 µg/ml; as fluorescein (sc-7200 FITC) or rhodamine (sc-7200 TRITC) conjugates for immunofluorescence, 200 µg/ml; and as Alexa Fluor® 405 (sc-7200 AF405), Alexa Fluor® 488 (sc-7200 AF488) or Alexa Fluor® 647 (sc-7200 AF647) conjugates for immunofluorescence; 100 µg/2 ml.

APPLICATIONS

IRS-1 (H-165) 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

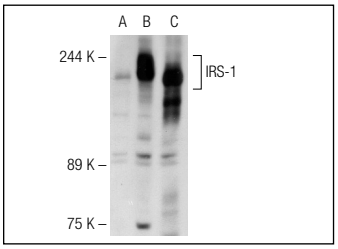
Suitable for use as control antibody for IRS-1 siRNA (h): sc-29376, IRS-1 siRNA (m): sc-29377, IRS-1 shRNA Plasmid (h): sc-29376-SH, IRS-1 shRNA Plasmid (m): sc-29377-SH, IRS-1 shRNA (h) Lentiviral Particles: sc-29376-V and IRS-1 shRNA (m) Lentiviral Particles: sc-29377-V.

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

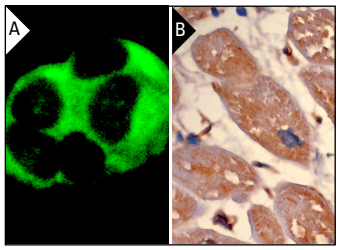
STORAGE

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

DATA



IRS-1 (H-165): sc-7200. Western blot analysis of IRS-1 expression in non-transfected 293T: sc-117752 (**A**), human IRS-1 transfected 293T: sc-177402 (**B**) and A549 (**C**) whole cell lysates.



IRS-1 (H-165): sc-7200. Immunofluorescence staining of methanol-fixed MCF7 cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart tissue showing cytoplasmic localization (**B**).

SELECT PRODUCT CITATIONS

1. Gao, Z., et al. 2002. Serine phosphorylation of Insulin receptor substrate-1 by inhibitor κB kinase complex. J. Biol. Chem. 277: 48115-48121.
2. Veilleux, A., et al. 2010. Chronic inhibition of the mTORC1/S6K1 pathway increases Insulin-induced PI3K activity but inhibits Akt2 and glucose transport stimulation in 3T3-L1 adipocytes. Mol. Endocrinol. 24: 766-778.
3. Vishwamitra, D., et al. 2011. Expression and effects of inhibition of IGF-IR tyrosine kinase in mantle cell lymphoma. Haematologica 96: 871-880.
4. Olianas, M.C., et al. 2011. Signaling pathways mediating phosphorylation and inactivation of glycogen synthase kinase-3β by the recombinant human δ-opioid receptor stably expressed in Chinese hamster ovary cells. Neuropharmacology 60: 1326-1336.
5. He, Q., et al. 2011. Regulation of HIF-1α activity in adipose tissue by obesity-associated factors: adipogenesis, Insulin, and hypoxia. Am. J. Physiol. Endocrinol. Metab. 300: E877-E885.
6. Litzenburger, B.C., et al. 2011. High IGF-IR activity in triple-negative breast cancer cell lines and tumorgrafts correlates with sensitivity to anti-IGF-IR therapy. Clin. Cancer Res. 17: 2314-2327.
7. Machado, M.V., et al. 2012. Liver and muscle in morbid obesity: the interplay of fatty liver and Insulin resistance. PLoS ONE 7: e31738.

RESEARCH USE

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

MONOS Satisfaction Guaranteed

Try **IRS-1 (H-7): sc-515017** or **IRS-1 (E-12): sc-8038**, our highly recommended monoclonal alternatives to IRS-1 (H-165). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **IRS-1 (H-7): sc-515017**.