SANTA CRUZ BIOTECHNOLOGY, INC.

IRS-1 (H-7): sc-515017

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 overexpressed 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.

CHROMOSOMAL LOCATION

Genetic locus: IRS1 (human) mapping to 2q36.3.

SOURCE

IRS-1 (H-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-25 at the N-terminus of IRS-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

IRS-1 (H-7) is available conjugated to agarose (sc-515017 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515017 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515017 PE), fluorescein (sc-515017 FITC), Alexa Fluor® 488 (sc-515017 AF488), Alexa Fluor® 546 (sc-515017 AF546), Alexa Fluor® 594 (sc-515017 AF594) or Alexa Fluor® 647 (sc-515017 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515017 AF680) or Alexa Fluor® 790 (sc-515017 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-515017 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

PROTOCOLS

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

APPLICATIONS

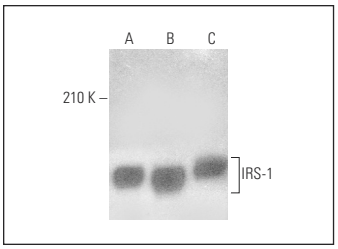
IRS-1 (H-7) is recommended for detection of IRS-1 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

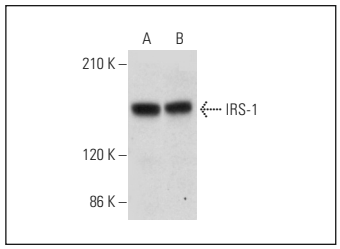
Molecular Weight of IRS-1: 170-185 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, MCF7 whole cell lysate: sc-2206 or BJAB whole cell lysate: sc-2207.

DATA



IRS-1 (H-7): sc-515017. Western blot analysis of IRS-1 expression in Ramos (**A**), HeLa (**B**) and MCF7 (**C**) whole cell lysates.



IRS-1 (H-7): sc-515017. Western blot analysis of IRS-1 expression in BJAB (**A**) and Jurkat (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Chen, Z., et al. 2017. Clinical study on the association between pregnancy-induced hypertension and Insulin resistance. Exp. Ther. Med. 13: 2065-2070.
2. Cannavo, A., et al. 2019. Aldosterone jeopardizes myocardial Insulin and β-adrenergic receptor signaling via G protein-coupled receptor kinase 2. Front. Pharmacol. 10: 888.
3. Mohamad, H.E., et al. 2020. Infliximab ameliorates tumor necrosis factor-α exacerbated renal Insulin resistance induced in rats by regulating Insulin signaling pathway. Eur. J. Pharmacol. 872: 172959.
4. Wei, J., et al. 2020. Epigenetic repression of miR-17 contributed to di(2-ethylhexyl) phthalate-triggered Insulin resistance by targeting Keap1-Nrf2/miR-200a axis in skeletal muscle. Theranostics 10: 9230-9248.
5. Bai, X.P., et al. 2021. Influence of liver cirrhosis on blood glucose, Insulin sensitivity and islet function in mice. Am. J. Med. Sci. 362: 403-417.
6. Qiu, J., et al. 2022. Antenatal dexamethasone retarded fetal long bones growth and development by down-regulating of Insulin-like growth factor 1 signaling in fetal rats. Hum. Exp. Toxicol. 41: 9603271211072870.

RESEARCH USE

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