SANTA CRUZ BIOTECHNOLOGY, INC.

p-IRS-1 (Tyr 1229)-R: sc-17202-R

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Insulin receptor substrate-1 (IRS-1) is a substrate of the Insulin receptor that undergoes phosphorylation in response to Insulin, IGF-1 and IL-4. Tyrosine (Tyr) phosphorylation of IRS-1 mediates Insulin-stimulated responses, while Serine (Ser)/Threonine (Thr) phosphorylation of IRS-1 can either enhance or negate Insulin effects. Tyrosines 465, 612, 632, 662, 941 and 989 of IRS-1 resemble YXXM motifs that upon phosphorylation are predicted to bind SH2 domains in the p85 regulatory subunit of PI3K, resulting in activation of p110 catalytic subunit. SHP-2 binding to IRS-1 can occur upon phosphorylation at Tyr 1179 and Tyr 1229. GRB2 binding can occur upon phsophoryl-ation at Tyr 896. Rodent Ser 99 and Thr 502 of IRS-1 are casein kinase II-dependent phosphorylation sites. There is an increase in Ser 636 phosphoryl-ation of IRS-1 in primary skeletal muscle cells from patients with type 2 diabetes. IGF-I and anisomycin treatment converge downstream onto FRAP and PKCd to induce IRS-1 Ser 312 phosphorylation. Insulin resistance in the aorta of hypertensive rats is associated with elevated IRS-1 phosphorylation at Ser 307 and increased SAPK/JNK activation. IRS-1 contains three putative binding sites for 14-3-3 protein at Ser 270, Ser 374 and Ser 641 that are capable of phosphorylation.

CHROMOSOMAL LOCATION

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

SOURCE

p-IRS-1 (Tyr 1229)-R is a rabbit polyclonal antibody raised against a short amino acid sequence containing Tyr 1229 phosphorylated 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.

Blocking peptide available for competition studies, sc-17202 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-IRS-1 (Tyr 1229)-R is recommended for detection of Tyr 1229 phosphorylated IRS-1 of 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 shRNA Plasmid (h): sc-29376-SH and IRS-1 shRNA (h) Lentiviral Particles: sc-29376-V.

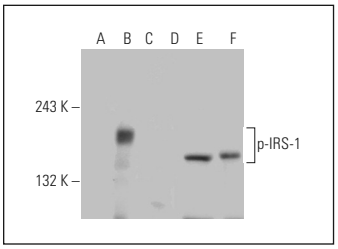
Molecular Weight of p-IRS-1: 170-185 kDa.

Positive Controls: MCF7 + Insulin cell lysate: sc-24733 or MCF7 whole cell lysate: sc-2206.

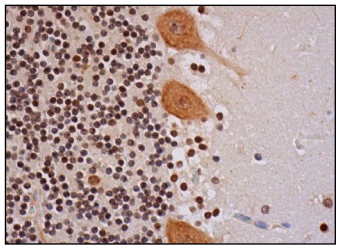
RECOMMENDED SECONDARY REAGENTS

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 B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



Western blot analysis of IRS-1/2 phosphorylation in untreated (**A**,**C**), insulin treated (**B**,**E**) and insulin and lambda protein phosphatase treated (**C**,**F**) 293T whole cell lysates. Antibodies tested include p-IRS-1 (Tyr 1229)-R: sc-17202-R (**A**,**B**,**C**) and IRS-1 (A-19): sc-560 (**D**,**E**,**F**).



p-IRS-1 (Tyr 1229)-R: sc-17202-R. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic and nuclear staining of Purkinje cells and nuclear staining of cells in granular layer and cells in molecular layer.

SELECT PRODUCT CITATIONS

1. Lappas, M. 2014. NOD1 is increased in adipose tissue from women with gestational diabetes. J. Endocrinol. 222: 99-112.
2. Lappas, M. 2015. Double stranded viral RNA induces inflammation and Insulin resistance in skeletal muscle from pregnant women *in vitro.* Metabolism 64: 642-653.
3. Liong, S. and Lappas, M. 2015. Activation of AMPK improves inflammation and Insulin resistance in adipose tissue and skeletal muscle from pregnant women. J. Physiol. Biochem. E-published.

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 or our catalog for detailed protocols and support products.