

p-IRS-1 (Tyr 1179): sc-17201

BACKGROUND

Insulin receptor substrate-1 (IRS-1) is a 170-185 kDa 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 phosphorylation 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 phosphorylation of IRS-1 in primary skeletal muscle cells from patients with type 2 diabetes. IGF-1 and anisomycin treatment converge downstream onto mTOR and PKC δ 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.

REFERENCES

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CHROMOSOMAL LOCATION

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

RESEARCH USE

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

SOURCE

p-IRS-1 (Tyr 1179) is available as either goat (sc-17201) or rabbit (sc-17201-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing phosphorylated Tyr 1179 of IRS-1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-17201 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

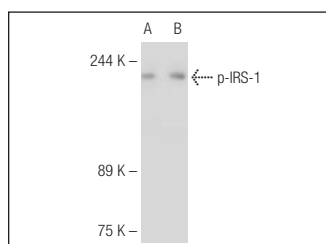
p-IRS-1 (Tyr 1179) is recommended for detection of Tyr 1179 phosphorylated IRS-1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 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 p-IRS-1: 170-185 kDa.

Positive Controls: IRS-1 (h3): 293T Lysate: sc-177402, A549 cell lysate: sc-2413 or MCF7 + Insulin cell lysate: sc-24733 .

DATA



p-IRS-1 (Tyr 1179)-R: sc-17201-R. Western blot analysis of IRS-1 phosphorylation in non-transfected: sc-117752 (A) and human IRS-1 transfected: sc-177402 (B) 293T whole cell lysates.

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 or our catalog for detailed protocols and support products.