Phospho-IRS-1 (Ser307) Antibody

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Background: Insulin receptor substrate 1 (IRS-1) is one of the major substrates of the insulin receptor kinase (1). IRS-1 contains multiple tyrosine phosphorylation motifs that serve as docking sites for SH2 domain containing proteins that mediate the metabolic and growth promoting functions of insulin (2-4). IRS-1 also contains over 30 potential serine/threonine phosphorylation sites. Ser307 of IRS-1 is phosphorylated by JNK (5) and IKK (6) while Ser789 is phosphorylated by SIK-2, a member of the AMPK family (7). The PKC and mTOR pathways mediate phosphorylation of IRS-1 at Ser612 and Ser636/639, respectively (8,9). Phosphorylation of IRS-1 at Ser1101 is mediated by PKC\(\theta\) and results in an inhibition of insulin signaling in the cell, suggesting a potential mechanism for insulin resistance in some models of obesity (10).

Specificity/Sensitivity: Phospho-IRS-1 (Ser307) Antibody detects endogenous IRS-1 only when phosphorylated at serine 307. This antibody does not cross-react with other related phospho-proteins.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser307 of mouse IRS-1 (equivalent to Ser312 of human IRS-1). Antibodies are purified by protein A and peptide affinity chromatography.

Western blot analysis of CHO IR/IRS-1 cells, untreated or insulin-treated (100 nM for 5 min), showing an increase in phospho-IRS-1 (Ser307) with insulin stimulation, using Phospho-IRS-1 (Ser307) Antibody.

Western blot analysis of MCF-7 cell extracts, unstimulated and insulin-stimulated (100 nM for 5 min), using IRS-1 Antibody #2382 (left) and Phospho-IRS-1 (Ser307) Antibody (right).

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.