

Phospho-IRS-1 (Ser332/336) Antibody

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For Research Use Only. Not for Use in Diagnostic Procedures.

| Applications: | Reactivity: | Sensitivity: | MW (kDa): | Source/Isotype: | UniProt ID: | Entrez-Gene Id: |
|---------------|-------------|------------------|-----------|-----------------|-------------|-----------------|
| W | R | Transfected Only | 180 | Rabbit | #P35568 | 3667 |

Product Usage Information**Application**

Western Blotting

Dilution

1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Phospho-IRS-1 (Ser332/336) Antibody detects transfected levels of IRS-1 when phosphorylated at Ser332/336. It also detects IRS-1 protein when singly phosphorylated at Ser332 or Ser336 of human IRS-1. This antibody does not cross-react with other related phosphoproteins.

Species predicted to react based on 100% sequence homology

Human, Mouse

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser332/336 of mouse IRS-1 (equivalent to Ser337/341 of human IRS-1). Antibodies are purified by peptide affinity chromatography.

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 PKCθ and results in an inhibition of insulin signaling in the cell, suggesting a potential mechanism for insulin resistance in some models of obesity (10).

GSK-3-mediated IRS-1 serine phosphorylation leads to inhibition of insulin-stimulated IRS-1 signaling. Ser332 and Ser336 of IRS-1 are situated in a glycogen synthase kinase-3 (GSK-3) consensus motif (SXXXS), and it has been shown that Ser332 is the actual GSK-3 phosphorylation site while Ser336 provides a "priming" site necessary for GSK-3 action (11).

Background References

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4. Wang, L.M. et al. (1993) *Science* 261, 1591-1594.
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10. Li, Y. et al. (2004) *J. Biol. Chem.* 279, 45304-45307.
11. Liberman, Z. and Eldar-Finkelman, H. (2005) *J. Biol. Chem.* 280, 4422-4428.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

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

Applications Key

W: Western Blotting

Cross-Reactivity Key

R: Rat

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