

#2384 Store at -20C

Phospho-IRS-1 (Ser302) Antibody**Cell Signaling**
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For Research Use Only. Not for Use in Diagnostic Procedures.

| Applications: | Reactivity: | Sensitivity: | MW (kDa): | Source: | UniProt ID: | Entrez-Gene Id: |
|---------------|-------------|--------------|-----------|---------|-------------|-----------------|
| WB | H M R | Endogenous | 180 | Rabbit | #P35568 | 3667 |

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| 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 (Ser 302) Antibody detects endogenous levels of IRS-1 only when phosphorylated at Ser302 of mouse IRS-1 or Ser307 of human IRS-1. This antibody does not detect IRS-1 phosphorylated at other sites. | |
| Species predicted to react based on 100% sequence homology: | Pig | |
| Source / Purification | Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser 302 of mouse IRS-1. Antibodies are purified by protein A and peptide affinity chromatography. | |
| Background | <p>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).</p> <p>Ser302 in rat/mouse IRS-1 (corresponding to Ser307 of human IRS-1) is phosphorylated rapidly during insulin stimulation and has a positive role in IRS-1 tyrosine phosphorylation. Inhibition of Ser302 phosphorylation by short-term amino acid/glucose starvation correlates with a decrease in IRS-1 tyrosine phosphorylation without inhibition of insulin receptor autophosphorylation or Akt phosphorylation. A defect in this positive regulatory pathway may be a mechanism contributing to insulin resistance (11).</p> | |
| Background References | <ol style="list-style-type: none"> 1. Sun, X.J. et al. (1991) <i>Nature</i> 352, 73-77. 2. Sun, X.J. et al. (1992) <i>J. Biol. Chem.</i> 267, 22662-22672. 3. Myers Jr., M.G. et al. (1993) <i>Endocrinology</i> 132, 1421-1430. 4. Wang, L.M. et al. (1993) <i>Science</i> 261, 1591-1594. 5. Rui, L. et al. (1997) <i>J. Clin. Invest.</i> 107, 181-189. 6. Gao, Z. et al. (2002) <i>J. Biol. Chem.</i> 277, 48115-48121. 7. Horike, N. et al. (2003) <i>J. Biol. Chem.</i> 278, 18440-18447. 8. Ozes, O.N. et al. (2001) <i>Proc. Natl. Acad. Sci. USA</i> 98, 4640-4645. 9. De Fea, K. and Ruth, R.A. (1997) <i>Biochemistry</i> 36, 12939-12947. 10. Li, Y. et al. (2004) <i>J. Biol. Chem.</i> 279, 45304-45307. 11. Giraud, J. et al. (2004) <i>J Biol Chem</i> 279, 3447-54. | |

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| 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**WB:** Western Blotting**Cross-Reactivity Key**

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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