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Phospho-IRS-1 (Ser612) (C15H5) Rabbit mAb

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rev. 01/06/16

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Entrez-Gene ID # 3667
UniProt ID # P35568

Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W Endogenous	H, M, R	180 kDa	Rabbit IgG**

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 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, which suggests a potential mechanism for insulin resistance in some models of obesity (10).

Phosphorylation of IRS-1 at Ser612 by MAPK downregulates insulin signaling and may be part of a response to high glucose/glucosamine levels (11).

Specificity/Sensitivity: Phospho-IRS-1 (Ser612) (C15H5) Rabbit mAb detects endogenous levels of IRS-1 only when phosphorylated at Ser612.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser612 of mouse IRS-1.

Background References:

(1) Sun, X.J. et al. (1991) *Nature* 352, 73–77.

(2) Sun, X.J. et al. (1992) *J. Biol. Chem.* 267, 22662–22672.

(3) Myers Jr., M.G. et al. (1993) *Endocrinology* 132, 1421–1430.

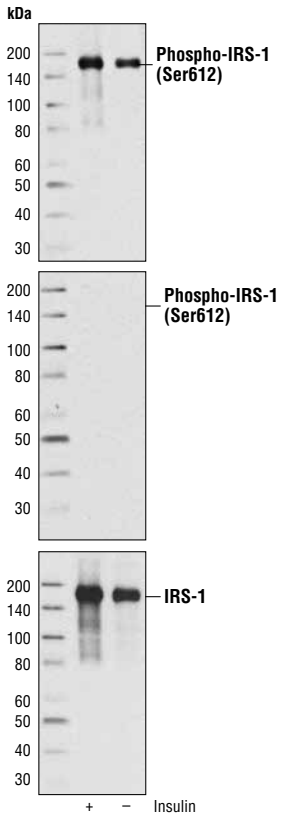
(4) Wang, L.M. et al. (1993) *Science* 261, 1591–1594.

(5) Rui, L. et al. (1997) *J. Clin. Invest.* 107, 181–189.

(6) Gao, Z. et al. (2002) *J. Biol. Chem.* 277, 48115–48121.

(7) Horike, N. et al. (2003) *J. Biol. Chem.* 278, 18440–18447.

(8) Ozes, O.N. et al. (2001) *Proc. Natl. Acad. Sci. USA* 98, 4640–4645.



Western blot analysis of cell extracts from CHO IR/IRS-1 cells, untreated or treated with insulin, using Phospho-IRS-1 (Ser612) (C15H5) Rabbit mAb (upper and middle) or IRS-1 Antibody #2382 (lower). The middle blot was treated with calf intestinal phosphatase (CIP) before antibody probing.

(9) De Fea, K. and Ruth, R.A. (1997) *Biochemistry* 36, 12939–12947.

(10) Li, Y. et al. (2004) *J. Biol. Chem.* 279, 45304–45307.

(11) Andreozzi, F. et al. (2004) *Endocrinology* 145, 2845–57.

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. *Do not aliquot the antibody.*

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western Blotting	1:1000

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

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.

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Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide

Species Cross-Reactivity Key: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **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 **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.