

## Anti-phospho-IRS1 (Ser312)

Rabbit Polyclonal Antibody

**Catalog # I40-365R**

Lot # J1178-10

### Cited Applications

WB

*Suggested Dilutions:*

WB: 1:500-1:1000

*Ideal working dilutions for each application should be empirically determined by the investigator.*

### Specificity

Recognizes the IRS1 protein phosphorylated at serine 312

### Cross Reactivity

Human, Mouse and Rat

### Host/Isotype/Clone#

Rabbit, IgG

### Immunogen

Synthetic phospho-peptide corresponding to amino acid residues surrounding Ser312

### Formulation

PBS (pH 7.4) 150mM NaCl, 0.02% sodium azide and 50% glycerol.

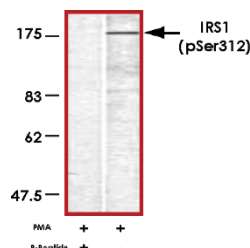
### Scientific Background

IRS1 is the substrate for the insulin tyrosine kinase receptor and it is expressed in a variety of insulin-responsive tissues. IRS1 is a docking protein with no intrinsic enzymatic activity. Via its SH2 domains, IRS1 facilitates interactions between key players in insulin signaling such as the insulin receptor. 14-3-3 competitively binds with IRS1 against the insulin receptor (1). This competition has implications towards the regulation of insulin sensitivity. IRS1 has been linked to colorectal cancer and diet via the regulation of plasma insulin levels. Thus, variation of IRS1 function may have implications in colorectal cancer (2). IRS1 has several Ser/Thr phosphorylation sites including Ser312, which is sensitive to TNF- $\alpha$  or calyculin A treatment (3) and Ser636/639, which is associated with S6K and mTOR activation (4).

### References

- Ogihara, T. et al: 14-3-3 protein binds to insulin receptor substrate-1, one of the binding sites of which is in the phosphotyrosine binding domain. J. Biol. Chem. 272: 25267-25274, 1997.
- Slattery, M L. et al: Genetic variation in IGF1, IGFBP3, IRS1, IRS2 and risk of breast cancer in women living in southwestern United States. Breast Cancer Res Treat. 2007.
- Gao, Z. et al: Serine phosphorylation of insulin receptor substrate 1 by inhibitor kappa B kinase complex. J Biol Chem. 2002 Dec 13;277(50):48115-21.
- Khamzina, L. et al: Increased activation of the mammalian target of rapamycin pathway in liver and skeletal muscle of obese rats: possible involvement in obesity-linked insulin resistance. Endocrinology. 2005 Mar;146(3):1473-81.

### Sample Data



Western blot analysis of extracts from HEK293 anti-phospho-IRS1 (Ser312) antibody.

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Purification

Affinity chromatography

Stability

1yr at -20°C from date of shipment

Storage & Shipping

Store product at -20°C. For optimal storage, aliquot antibody into smaller quantities after centrifugation and store at recommended temperature. For optimal performance, avoid repeated handling and multiple freeze/thaw cycles. Product shipped on ice packs.

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