

## BACKGROUND

Insulin receptor is a transmembrane receptor that is activated by insulin. It belongs to the large class of tyrosine kinase receptors. Two alpha subunits and two beta subunits make up the insulin receptor. The beta subunits pass through the cellular membrane and are linked by disulfide bonds.<sup>1</sup> Insulin receptor functions as an enzyme that transfers phosphate groups from ATP to tyrosine residues on intracellular target proteins. Binding of insulin to the alpha subunits causes the beta subunits to phosphorylate themselves (autophosphorylation), thus activating the catalytic activity of the receptor. The activated receptor then phosphorylates a number of intracellular proteins, which in turn alters their activity, thereby generating a biological response.<sup>2</sup>

Several intracellular proteins have been identified as phosphorylation substrates for the insulin receptor, the best studied of which is insulin receptor substrate 1 or IRS-1. When IRS-1 is activated by phosphorylation, it serves as a type of docking center for recruitment and activation of other enzymes that ultimately mediate insulin's effects, which include activation of PI-3-kinase and MAP kinase pathway etc.<sup>3,4</sup>

### References

1. Youngren, J.F.: Cell Mol Life Sci. 64:873, 2007
2. Backer, J.M. et al. J Cell Biol.118:831, 1992
3. Sesti, G. : Best Pract Res Clin Endocrinol Metab. 20:665, 2006
4. Gual, P. et al. : Biochimie 87:99, 2005

## TECHNICAL INFORMATION

### Source:

Insulin receptor-beta antibody is a mouse monoclonal antibody raised against purified cytoplasmic domain of human insulin receptor-beta expressed in *E. coli*.

### Specificity and Sensitivity:

This antibody detects endogenous insulin receptor-beta proteins without cross-reactivity with other family members.

**Storage Buffer:** PBS and 30% glycerol

### Storage:

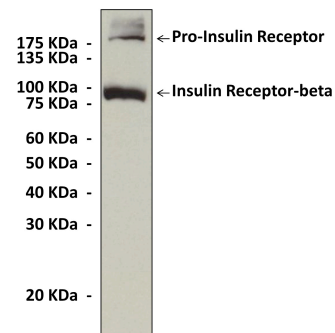
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

## APPLICATIONS

Application:	*Dilution:
WB	1:1000
IP	1:50
IHC	n/d
ICC	n/d
FACS	n/d

\*Optimal dilutions must be determined by end user.

## QUALITY CONTROL DATA



Western Blot detection of insulin receptor proteins in HepG2 cells using Insulin Receptor-beta Antibody.

