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ProductInformation

Anti-phospho-Insulin Receptor Substrate-1 (IRS-1) (pTyr^{1179})
Developed in Rabbit, Affinity Isolated Antibody

Product Number **I1658**

Product Description

Anti-phospho-Insulin Receptor Substrate-1 (IRS-1) (pTyr^{1179}) is developed in rabbit using a synthetic phosphorylated peptide derived from the region of mouse Insulin Receptor Substrate-1 (IRS-1) that is phosphorylated on tyrosine 1173 (corresponding to tyrosine 1179 of the human sequence) as immunogen. The antibody is preadsorbed to remove any reactivity towards a non-phosphorylated IRS-1. The final product is generated by affinity chromatography using an IRS-1-derived peptide that is phosphorylated at tyrosine 1179. Anti-phospho-IRS-1 (pTyr^{1179}) specifically recognizes human IRS-1 (pTyr^{1179}). Mouse (100% homologous) and rat (93%) have not been tested. It has been used in immunoblotting applications.

Insulin Receptor Substrate-1 (IRS-1) is a major endogenous substrate of the insulin receptor kinase. It is a 165 kDa cytoplasmic docking protein with multiple phosphorylation sites, involved in the regulation of metabolism and proliferation by insulin, IL-4 and other cytokines. Insulin binding to the insulin receptor activates the catalytic domain and causes phosphorylation on tyrosine residues of IRS proteins, which in turn serve to recruit a variety of Src homology-2 (SH2) domain-containing proteins such as PI3 kinase, Grb-2, SHP-2, Nck and Crk. These proteins further propagate intracellular signaling, culminating in both metabolic and growth-promoting functions of IRS-1. Tyrosine 1179 of IRS-1 is a SHP-2 binding site, which negatively regulates insulin. Upon insulin stimulation, RAF-1 undergoes tyrosine phosphorylation and subsequently binds to p85 and activates phosphatidylinositol kinase-3 (PI3 kinase). [1-4]

Reagents

Anti-phospho-IRS-1 (pTyr^{1179}) is supplied as a solution in phosphate buffered saline, pH 7.3, containing 1 mg/ml BSA (IgG and protease free) and 0.05% sodium azide.

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the Attention of the safety officer of your institution. Consult the MSDS for information regarding hazards and safe handling practices.

Storage/Stability

Store at –70 °C. Upon initial thawing freeze the solution in working aliquots for extended storage. Avoid repeated freezing and thawing to prevent denaturing the antibody. Do not store in frost-free freezers. Working dilution samples should be discarded if not used within 12 hours. The antibody is stable for at least 6 months when stored appropriately.

Product Profile

A recommended working concentration of 0.1 to 1.0 µg/ml is determined by immunoblotting using a Chinese Hamster Ovary cell line transfected with a vector encoding the human insulin receptor (CHO-T) and transiently transfected with a vector encoding IRS-1 and stimulated with insulin.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

1. Ogawa, W., et. al., Role of binding proteins to IRS-1 in insulin signalling. Mol. Cell. Biochem., **182**, 13-22 (1998).
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3. Lima, M. H., et. al., The insulin receptor substrate 1 associates with phosphotyrosine phosphatase SHPTP2 in liver and muscle of rats. Braz. J. Med. Biol. Res., **31**, 1409-1413 (1998).
4. Xiao, H., et. al., Specificity of IL-2 receptor gamma chain superfamily cytokines is mediated by insulin receptor substrate-dependent pathway. J. Biol. Chem., **277**, 8091-8098 (2002).

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