

**Mouse (monoclonal)  
Anti-Human Insulin Receptor  
( $\alpha$ -Subunit)  
PRODUCT ANALYSIS SHEET**

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<b>Catalog Number:</b>	AHR0231
<b>Lot Number:</b>	See product label
<b>Expiration Date:</b>	See product label
<b>Quantity/Volume:</b>	100 $\mu$ g/0.5 mL
<b>Clone Number:</b>	83-7
<b>Isotype:</b>	Mouse IgG1
<b>Form of Antibody:</b>	Purified immunoglobulin in 10mM phosphate buffered saline, pH 7.4, with 0.2% bovine serum albumin.
<b>Preservation:</b>	0.09% sodium azide (Caution: sodium azide is a poisonous and hazardous substance. Handle with care and dispose of properly.)
<b>Purification:</b>	Purified from ascites by Protein G affinity chromatography.
<b>Immunogen:</b>	IM-9 lymphocytes followed by purified insulin receptor.
<b>Myeloma/Fusion Partners:</b>	Produced by fusion between BALB/c mouse splenocytes and mouse myeloma NS1 cells.
<b>Specificity:</b>	<p>This monoclonal antibody recognizes a protein with <math>M_r=135</math> kDa, identified as the <math>\alpha</math>-subunit of insulin receptor (IR). IR is a receptor tyrosine kinase which mediates the biological activities of insulin by regulating multiple signaling pathways through activation of a series of phosphorylation cascades. The receptor is a disulfide-linked heterotetrameric glycoprotein consisting of two <math>\alpha</math>-subunits and two <math>\beta</math>-subunits arranged in the following configuration: <math>\beta</math>-<math>\alpha</math>-<math>\alpha</math>-<math>\beta</math>. The <math>\alpha</math>-subunits each contain insulin binding sites and are entirely extracellular in localization. The <math>\beta</math>-subunits each possess an extracellular domain, a single transmembrane domain, and a cytoplasmic tyrosine kinase domain. Binding of insulin to the <math>\alpha</math>-subunits induces a conformation change in the receptor which activates the kinase domain, stimulating tyrosine autophosphorylation of the receptor and tyrosine phosphorylation of at least five different insulin receptor substrates designated IRS-1-4, and Shc.</p> <p>This antibody is specific for IR and shows no cross-reactivity with insulin-like growth factor (IGF)-receptors.</p> <p>The epitope for this monoclonal antibody is conformational and is located in exon 3.</p>
<b>Species Reactivity:</b>	Human, cow, pig, sheep, and rabbit. Does not react with mouse and rat. Other species were not tested.

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**Applications:**

This antibody is suitable for use in ELISA, flow cytometry, tyrosine kinase assays, and in immunohistology with acetone-fixed frozen and formalin-fixed/paraffin-embedded tissue sections. Staining of formalin/paraffin tissues requires digestion of tissue sections with pepsin at 1.0 mg/mL in Tris-HCl, pH 2.0, for 15 minutes at room temperature or 10 minutes at 37°C.

This antibody has insulin-like agonist properties. Please note that the sodium azide should be removed by dialysis before exposing cells to this antibody. This antibody does not significantly inhibit insulin binding.

**Suggested Working Dilutions:**

For immunohistology, the recommended concentration is 2.0-4.0 µg/mL with a 30 minute incubation at room temperature. The optimal antibody concentration should be determined for each specific application.

**Recommended Positive Control:**

IM-9 lymphocytes, placenta, or breast carcinoma.

**Storage:**

Store at 2-8°C.

**References:**

Macaulay, S.L., et al. (1995) Mutagenic structure/function analysis of the cytoplasmic cysteines of the insulin receptor. *Biochem. J.* 306:811-820.

Prigent, S.A., et al. (1990) Identification of epitopes on the human insulin receptor reacting with rabbit polyclonal antisera and mouse monoclonal antibodies. *J. Biol. Chem.* 265(17):9970-9977.

Soos, M.A., et al. (1986) Monoclonal antibodies reacting with multiple epitopes on the human insulin receptor. *Biochem. J.* 235(1):199-208.

Soos, M.A., et al. (1989) Monoclonal antibodies to the insulin receptor mimic metabolic effects of insulin but do not stimulate receptor autophosphorylation in transfected NIH3T3 fibroblasts. *Proc. Nat'l. Acad. Sci. USA* 86(14):5217-5221.

Soos, M.A. and K. Siddle (1989) Immunological relationships between receptors for insulin and insulin-like growth factor I. Evidence for structural heterogeneity of insulin-like growth factor I receptors involving hybrids with insulin receptors. *Biochem. J.* 263(2):553-563.

Taylor, R., et al. (1987) Insulin-like and insulin-inhibitory effects of monoclonal antibodies for different epitopes on the human insulin receptor. *Biochem. J.* 242(1):123-129.

Zhang, B. and R.A. Roth (1991) A region of the insulin receptor important for ligand binding (residues 450-601) is recognized by patients' autoimmune antibodies and inhibitory monoclonal antibodies. *Proc. Nat'l. Acad. Sci. USA* 88:9858-9862.

Explanation of symbols

Symbol	Description	Symbol	Description
	Catalogue Number		Batch code
	Research Use Only		In vitro diagnostic medical device
	Use by		Temperature limitation
	Manufacturer		European Community authorised representative
	Without, does not contain		With, contains
	Protect from light		Consult accompanying documents
	Directs the user to consult instructions for use (IFU), accompanying the product.		

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