

## Product datasheet

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# ARG65818 anti-Insulin Receptor phospho (Tyr1361) antibody

Package: 100 μg Store at: -20°C

#### **Summary**

Product Description Rabbit Polyclonal antibody recognizes Insulin Receptor phospho (Tyr1361)

Tested Reactivity Hu, Ms, Rat
Tested Application IHC-P, WB

Specificity This antibody detects endogenous levels of Insulin receptor protein only when phosphorylated at

Tyr1361.

Host Rabbit

Clonality Polyclonal

Isotype IgG

Target Name Insulin Receptor

Species Human

Immunogen Synthetic phosphorylated peptide around Tyr1361 of Human Insulin receptor.

Conjugation Un-conjugated

Alternate Names Insulin receptor; IR; CD220; HHF5; CD antigen CD220; EC 2.7.10.1

### **Application Instructions**

Application table	Application	Dilution
	IHC-P	1:50 - 1:300
	WB	1:200 - 1:2000
Application Note	* The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.	

#### **Properties**

Form Liquid

Purification Affinity purification with immunogen.

Buffer PBS, 0.02% Sodium azide, 50% Glycerol and 0.5% BSA.

Preservative 0.02% Sodium azide

Stabilizer 50% Glycerol and 0.5% BSA

Concentration 1 mg/ml

Storage instruction For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot

and store at -20°C. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.

Note For laboratory research only, not for drug, diagnostic or other use.

#### Bioinformation

Database links GeneID: 16337 Mouse

GeneID: 3643 Human

Swiss-port # P06213 Human

Swiss-port # P15208 Mouse

Gene Symbol INSR

Gene Full Name insulin receptor

Background

After removal of the precursor signal peptide, the insulin receptor precursor is post-translationally cleaved into two chains (alpha and beta) that are covalently linked. Binding of insulin to the insulin

receptor (INSR) stimulates glucose uptake. Two transcript variants encoding different isoforms have

been found for this gene. [provided by RefSeq, Jul 2008]

Function Receptor tyrosine kinase which mediates the pleiotropic actions of insulin. Binding of insulin leads to

phosphorylation of several intracellular substrates, including, insulin receptor substrates (IRS1, 2, 3, 4), SHC, GAB1, CBL and other signaling intermediates. Each of these phosphorylated proteins serve as docking proteins for other signaling proteins that contain Src-homology-2 domains (SH2 domain) that specifically recognize different phosphotyrosines residues, including the p85 regulatory subunit of PI3K and SHP2. Phosphorylation of IRSs proteins lead to the activation of two main signaling pathways: the PI3K-AKT/PKB pathway, which is responsible for most of the metabolic actions of insulin, and the Ras-MAPK pathway, which regulates expression of some genes and cooperates with the PI3K pathway to control cell growth and differentiation. Binding of the SH2 domains of PI3K to phosphotyrosines on IRS1 leads to the activation of PI3K and the generation of phosphatidylinositol-(3, 4, 5)-triphosphate (PIP3), a lipid second messenger, which activates several PIP3-dependent serine/threonine kinases, such as PDPK1 and subsequently AKT/PKB. The net effect of this pathway is to produce a translocation of the glucose transporter SLC2A4/GLUT4 from cytoplasmic vesicles to the cell membrane to facilitate glucose transport. Moreover, upon insulin stimulation, activated AKT/PKB is responsible for: anti-apoptotic effect of insulin by inducing phosphorylation of BAD; regulates the expression of gluconeogenic and lipogenic enzymes by controlling the activity of the winged helix or forkhead (FOX) class of transcription factors. Another pathway regulated by PI3K-AKT/PKB activation is mTORC1 signaling pathway which regulates cell growth and metabolism and integrates signals from insulin. AKT mediates insulinstimulated protein synthesis by phosphorylating TSC2 thereby activating mTORC1 pathway. The Ras/RAF/MAP2K/MAPK pathway is mainly involved in mediating cell growth, survival and cellular differentiation of insulin. Phosphorylated IRS1 recruits GRB2/SOS complex, which triggers the activation of the Ras/RAF/MAP2K/MAPK pathway. In addition to binding insulin, the insulin receptor can bind insulin-like growth factors (IGFI and IGFII). Isoform Short has a higher affinity for IGFII binding. When present in a hybrid receptor with IGF1R, binds IGF1. Hybrid receptors composed of IGF1R and INSR isoform Long are activated with a high affinity by IGF1, with low affinity by IGF2 and not significantly activated by insulin, and that hybrid receptors composed of IGF1R and INSR isoform Short are activated by IGF1, IGF2 and insulin. In contrast, one research shows that hybrid receptors composed of IGF1R and INSR isoform Long and hybrid receptors composed of IGF1R and INSR isoform Short have similar

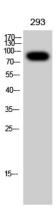
binding characteristics, both bind IGF1 and have a low affinity for insulin. [UniProt]

Calculated Mw 156 kDa

PTM After being transported from the endoplasmic reticulum to the Golgi apparatus, the single glycosylated precursor is further glycosylated and then cleaved, followed by its transport to the plasma membrane.

Autophosphorylated on tyrosine residues in response to insulin. Phosphorylation of Tyr-999 is required for binding to IRS1, SHC1 and STAT5B. Dephosphorylated by PTPRE at Tyr-999, Tyr-1185, Tyr-1189 and Tyr-1190. Dephosphorylated by PTPRF and PTPN1. Dephosphorylated by PTPN2; down-regulates insulin-

induced signaling.



 $\label{eq:continuous} \mbox{ARG65818 anti-Insulin Receptor phospho (Tyr1361) antibody WB image}$ 

Wesstern blot: 293 cell lysates stained with ARG65818 anti-Insulin Receptor phospho (Tyr1361) antibody.