10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Mouse Insr Antibody (Center) Blocking Peptide

Synthetic peptide
Catalog # BP14623c

Specification

Mouse Insr Antibody (Center) Blocking Peptide - Product Information

Primary Accession P15208

Mouse Insr Antibody (Center) Blocking Peptide - Additional Information

Gene ID 16337

Other Names
Insulin receptor, IR, CD220, Insulin receptor subunit alpha, Insulin receptor subunit beta, Insr

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

Mouse Insr Antibody (Center) Blocking Peptide - Protein Information

Name Insr

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 phosphotyrosine 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 insulin- stimulated 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). When present in a hybrid receptor with IGF1R, binds IGF1 (By similarity). In adipocytes, inhibits lipolysis (PubMed:27322061).

Cellular Location
Cell membrane; Single-pass type I membrane protein. Recycling endosome membrane. Late endosome. Lysosome Note=Binding of insulin to INSR induces internalization and lysosomal degradation of the receptor, a means for down-regulating this signaling pathway after stimulation. In the presence of SORL1, internalized INSR molecules are redirected back to the cell surface, thereby preventing their lysosomal catabolism and strengthening insulin signal reception

Mouse Insr Antibody (Center) Blocking Peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Blocking Peptides

Mouse Insr Antibody (Center) Blocking Peptide - Images

Mouse Insr Antibody (Center) Blocking Peptide - Background

This receptor binds insulin and has a tyrosine-protein kinase activity. When present in a hybrid receptor with IGF1R, binds IGF1.

Mouse Insr Antibody (Center) Blocking Peptide - References

Brothers, K.J., et al. Cell Metab. 12(3):295-305(2010)Divall, S.A., et al. J. Clin. Invest. 120(8):2900-2909(2010)Fulzele, K., et al. Cell 142(2):309-319(2010)Ferron, M., et al. Cell 142(2):296-308(2010)Ulanet, D.B., et al. Proc. Natl. Acad. Sci. U.S.A. 107(24):10791-10798(2010)