

insulin R β (11B6): sc-81465

BACKGROUND

The Insulin receptor (IR) is a heterodimeric protein complex that has an intracellular β subunit and an extracellular α subunit, which is disulfide-linked to a transmembrane segment. The Insulin ligand binds to the IR and initiates molecular signaling pathways that promote glucose uptake in cells and glycogen synthesis. Insulin binding to IR induces phosphorylation of intracellular tyrosine kinase domains and recruitment of multiple SH2 and SH3 domain-containing intracellular proteins that serve as signaling intermediates for pleiotropic effects of Insulin. The human Insulin receptor gene maps to chromosome 19p13.2 and encodes a 1,382 amino acid protein that cleaves apart to form α and β subunits. Type 1 diabetes is an autoimmune condition of the endocrine pancreas that results in destruction of Insulin-secreting cells and a progressive loss in Insulin-sensitive glucose uptake by cells. Type 2 diabetes is a condition where cells become resistant to Insulin action.

REFERENCES

- Marino-Buslje, C., et al. 1999. The Insulin receptor: from protein sequence to structure. *Biochem. Soc. Trans.* 27: 715-726.
- Whitehead, J.P., et al. 2000. Signalling through the Insulin receptor. *Curr. Opin. Cell Biol.* 12: 222-228.

CHROMOSOMAL LOCATION

Genetic locus: INSR (human) mapping to 19p13.2; Insr (mouse) mapping to 8 A1.1.

SOURCE

insulin R β (11B6) is a mouse monoclonal antibody raised against the C-terminus of Insulin R of human origin.

PRODUCT

Each vial contains 50 μ g IgG₁ in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, PEG and sucrose.

APPLICATIONS

insulin R β (11B6) is recommended for detection of insulin R β of mouse, rat, human and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for insulin R siRNA (h): sc-29370, insulin R siRNA (m): sc-35673, insulin R siRNA (r): sc-63341, insulin R shRNA Plasmid (h): sc-29370-SH, insulin R shRNA Plasmid (m): sc-35673-SH, insulin R shRNA Plasmid (r): sc-63341-SH, insulin R shRNA (h) Lentiviral Particles: sc-29370-V, insulin R shRNA (m) Lentiviral Particles: sc-35673-V and insulin R shRNA (r) Lentiviral Particles: sc-63341-V.

Molecular Weight of insulin R precursor: 200 kDa.

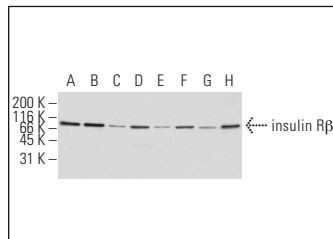
Molecular Weight of mature insulin R β chain: 95 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, HEK293 whole cell lysate: sc-45136 or HeLa whole cell lysate: sc-2200.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



insulin R β (11B6): sc-81465. Western blot analysis of insulin R β expression in serum-starved HeLa (A), Hep G2 (B), HEK293 (C), SH-SY5Y (D), MDCK (E), PC-12 (F), CMT 93 (G) and Neuro 2A (H) whole cell lysates.

SELECT PRODUCT CITATIONS

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- Yang, H.J., et al. 2011. A novel role for neural cell adhesion molecule in modulating Insulin signaling and adipocyte differentiation of mouse mesenchymal stem cells. *J. Cell Sci.* 124: 2552-2560.
- Wang, H.Y., et al. 2012. Reducing amyloid-related Alzheimer's disease pathogenesis by a small molecule targeting filamin A. *J. Neurosci.* 32: 9773-9784.
- Vigelso, A., et al. 2016. Higher muscle content of perilipin 5 and endothelial lipase protein in trained than untrained middle-aged men. *Physiol. Res.* 65: 293-302.
- Wang, H.Y., et al. 2017. PTI-125 binds and reverses an altered conformation of filamin A to reduce Alzheimer's disease pathogenesis. *Neurobiol. Aging* 55: 99-114.
- Bradbery, A.N., et al. 2021. Effect of maternal overnutrition on predisposition to Insulin resistance in the foal: foal skeletal muscle development and Insulin signaling. *Domest. Anim. Endocrinol.* 77: 106648.
- Flores-García, L.C., et al. 2022. Sera from women with different metabolic and menopause states differentially regulate cell viability and Akt activation in a breast cancer *in-vitro* model. *PLoS ONE* 17: e0266073.
- Kulesza, T., et al. 2023. Pit 1 transporter (SLC20A1) as a key factor in the NPP1-mediated inhibition of insulin signaling in human podocytes. *J. Cell. Physiol.* 238: 1921-1936.
- Sekine, Y., et al. 2024. STAP-2 facilitates insulin signaling through binding to CAP/c-Cbl and regulates adipocyte differentiation. *Sci. Rep.* 14: 5799.

RESEARCH USE

For research use only, not for use in diagnostic procedures.