

insulin R β (46): sc-135949

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 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.
- Ottensmeyer, F.P., et al. 2000. Mechanism of transmembrane signaling: insulin binding and the Insulin receptor. *Biochemistry* 39: 12103-12112.
- Sesti, G. 2000. Insulin receptor variant forms and type 2 diabetes mellitus. *Pharmacogenomics* 1: 49-61.
- Perz, M. and Torlinska, T. 2001. Insulin receptor — structural and functional characteristics. *Med. Sci. Monit.* 7: 169-177.
- Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 147670. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Blucher, M., et al. 2003. Extended longevity in mice lacking the Insulin receptor in adipose tissue. *Science* 299: 572-574.
- Corl, A.B., et al. 2005. Insulin signaling in the nervous system regulates ethanol intoxication in *Drosophila melanogaster*. *Nat. Neurosci.* 8: 18-19.

CHROMOSOMAL LOCATION

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

SOURCE

insulin R β (46) is a mouse monoclonal antibody raised against amino acids 1006-1144 of insulin R β of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

insulin R β (46) is recommended for detection of insulin R β of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

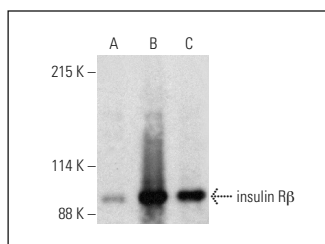
Suitable for use as control antibody for Insulin R siRNA (h): sc-29370, Insulin R siRNA (m): sc-35673, Insulin R siRNA (r): sc-63341, Insulin R shRNA Plasmid (h): sc-29370-SH, Insulin R shRNA Plasmid (m): sc-35673-SH, Insulin R shRNA Plasmid (r): sc-63341-SH, Insulin R shRNA (h) Lentiviral Particles: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

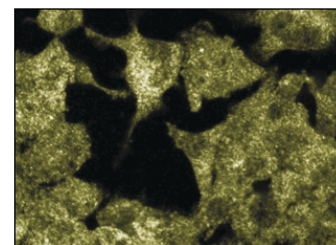
Molecular Weight of mature insulin R β chain: 95 kDa.

Positive Controls: mouse liver extract: sc-2256, rat liver extract: sc-2395 or Sol8 cell lysate: sc-2249.

DATA



insulin R β (46): sc-135949. Western blot analysis of insulin R β expression in Sol8 whole cell lysate (A) and mouse liver (B) and rat liver (C) tissue extracts.



insulin R β (46): sc-135949. Immunofluorescence staining of PFSK-1 cells showing membrane staining.

SELECT PRODUCT CITATIONS

- Yoo, J.Y., et al. 2016. Role of Mig-6 in hepatic glucose metabolism. *J. Diabetes* 8: 86-97.
- Shao, X., et al. 2016. Induction of autophagy and apoptosis via PI3K/Akt/TOR pathways by azadirachtin A in *Spodoptera litura* cells. *Sci. Rep.* 6: 35482.
- Zhang, J., et al. 2018. Regulation of antimicrobial peptide genes via Insulin-like signaling pathway in the silkworm *Bombyx mori*. *Insect Biochem. Mol. Biol.* 103: 12-21.

STORAGE

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



See **insulin R β (CT-3): sc-57342** for insulin R β antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.