

p-insulin R β (10C3): sc-81500

BACKGROUND

The insulin receptor (insulin R) 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 insulin R and initiates molecular signaling pathways that promote glucose uptake in cells and, ultimately, glycogen synthesis. Insulin binding to insulin R induces phosphorylation of intracellular tyrosine kinase domains and recruitment of multiple SH2 and SH3 domain-containing intracellular proteins that serve as signaling intermediates for the pleiotropic effects of insulin. The human Insulin R gene encodes a 1,382 amino acid protein that cleaves apart to form α and β subunits. Human insulin R may be phosphorylated on specific amino acid residues, such as Tyr 1322.

REFERENCES

1. Marino-Buslje, C., et al. 1999. The insulin receptor: from protein sequence to structure. *Biochem. Soc. Trans.* 27: 715-726.
2. Whitehead, J.P., et al. 2000. Signalling through the insulin receptor. *Curr. Opin. Cell Biol.* 12: 222-228.
3. Ottensmeyer, F.P., et al. 2000. Mechanism of transmembrane signaling: insulin binding and the insulin receptor. *Biochemistry* 39: 12103-12112.
4. Sesti, G. 2000. Insulin receptor variant forms and type 2 diabetes mellitus. *Pharmacogenomics* 1: 49-61.
5. Perz, M. and Torlinska, T. 2001. Insulin receptor—structural and functional characteristics. *Med. Sci. Monit.* 7: 169-177.

CHROMOSOMAL LOCATION

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

SOURCE

p-insulin R β (10C3) is a mouse monoclonal antibody raised against a phosphopeptide corresponding to amino acid residues surrounding Tyr 1150/1151 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

p-insulin R β (10C3) is recommended for detection of Tyr 1150 and Tyr 1151 dually phosphorylated insulin R β and IGF1 receptor of mouse, rat and human 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)].

Molecular Weight of insulin R precursor: 200 kDa.

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

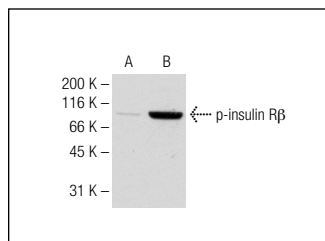
RESEARCH USE

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

STORAGE

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

DATA



p-insulin R β (10C3) (phospho-Tyr 1150/1151): sc-81500.
Western blot analysis of insulin R phosphorylation in non-stimulated (A) and insulin stimulated (B) MDA-MB-231 whole cell lysates.

SELECT PRODUCT CITATIONS

1. Viscarra, J.A., et al. 2011. Glut4 is upregulated despite decreased insulin signaling during prolonged fasting in northern elephant seal pups. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* 300: R150-R154.
2. 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.
3. Midde, K.K., et al. 2015. Multimodular biosensors reveal a novel platform for activation of G proteins by growth factor receptors. *Proc. Natl. Acad. Sci. USA* 112: E937-E946.
4. Petrov, D., et al. 2015. High-fat diet-induced deregulation of hippocampal insulin signaling and mitochondrial homeostasis deficiencies contribute to Alzheimer disease pathology in rodents. *Biochim. Biophys. Acta* 1852: 1687-1699.
5. Yunn, N.O., et al. 2015. Agonistic aptamer to the insulin receptor leads to biased signaling and functional selectivity through allosteric modulation. *Nucleic Acids Res.* 43: 7688-7701.
6. Yoo, J.Y., et al. 2016. Role of Mig-6 in hepatic glucose metabolism. *J. Diabetes* 8: 86-97.
7. 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.
8. Mukherjee, S., et al. 2017. A small insulinomimetic molecule also improves insulin sensitivity in diabetic mice. *PLoS ONE* 12: e0169809.
9. Jia, Y., et al. 2018. Dapagliflozin aggravates renal injury via promoting gluconeogenesis in db/db mice. *Cell. Physiol. Biochem.* 45: 1747-1758.

PROTOCOLS

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