

# insulin R $\beta$ (H-70): sc-20739

## BACKGROUND

The Insulin receptor (IR) is a heterodimeric protein complex that has an intracellular  $\beta$  subunit and an extracellular  $\alpha$  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  $\alpha$  and  $\beta$  subunits. Type 1 diabetes is an auto-immune 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

insulin R $\beta$  (H-70) is a rabbit polyclonal antibody raised against amino acids 941-1010 of Insulin R $\beta$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Available as agarose conjugate for immunoprecipitation, sc-20739 AC, 500  $\mu$ g/0.25 ml agarose in 1 ml.

## APPLICATIONS

insulin R $\beta$  (H-70) is recommended for detection of Insulin R $\beta$  of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Insulin R $\beta$  (H-70) is also recommended for detection of Insulin R $\beta$  in additional species, including equine, canine, bovine and porcine.

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.

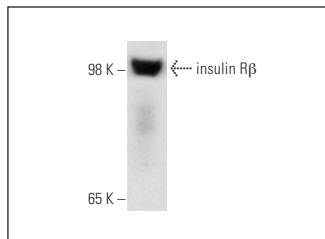
Molecular Weight of Insulin R precursor: 200 kDa.

Molecular Weight of mature Insulin R $\beta$  chain: 95 kDa.

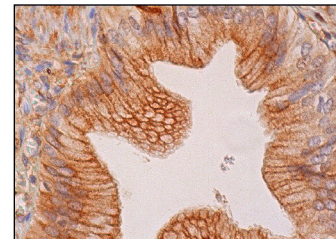
## STORAGE

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

## DATA



insulin R $\beta$  (H-70): sc-20739. Western blot analysis of insulin R $\beta$  expression in rat skeletal muscle tissue extract.



insulin R $\beta$  (H-70): sc-20739. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing membrane and cytoplasmic staining of glandular cells.

## SELECT PRODUCT CITATIONS

1. Pagel-Langenickel, I., et al. 2008. PGC-1 $\alpha$  integrates Insulin signaling, mitochondrial regulation, and bioenergetic function in skeletal muscle. *J. Biol. Chem.* 283: 22464-22472.
2. 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.
3. Ju Ha, H., et al. 2013. Association of Insulin receptor and syndecan-1 by Insulin with activation of ERK 1/II in osteoblast-like UMR-106 cells. *J. Recept. Signal Transduct. Res.* 33: 37-40.
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. da Rocha, A.L., et al. 2015. Downhill running-based overtraining protocol improves hepatic Insulin signaling pathway without concomitant decrease of inflammatory proteins. *PLoS ONE* 10: e0140020.

## RESEARCH USE

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



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Try **insulin R $\beta$  (CT-3): sc-57342** or **insulin R $\beta$  (C-4): sc-373975**, our highly recommended monoclonal alternatives to insulin R $\beta$  (H-70). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **insulin R $\beta$  (CT-3): sc-57342**.