SANTA CRUZ BIOTECHNOLOGY, INC.

insulin Rβ (C-4): sc-373975

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 to form α and β 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.

REFERENCES

1. Marino-Buslje, C., et al. 1999. The insulin receptor: from protein sequence to structure. Biochem. Soc. Trans. 27: 715-726.
2. Ottensmeyer, F.P., et al. 2000. Mechanism of transmembrane signaling: insulin binding and the insulin receptor. Biochemistry 39: 12103-12112.
3. Sesti, G. 2000. Insulin receptor variant forms and type 2 diabetes mellitus. Pharmacogenomics 1: 49-61.
4. 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 Rβ (C-4) is a mouse monoclonal antibody raised against amino acids 941-1010 of insulin Rβ of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

insulin Rβ (C-4) is available conjugated to agarose (sc-373975 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-373975 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373975 PE), fluorescein (sc-373975 FITC), Alexa Fluor® 488 (sc-373975 AF488), Alexa Fluor® 546 (sc-373975 AF546), Alexa Fluor® 594 (sc-373975 AF594) or Alexa Fluor® 647 (sc-373975 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373975 AF680) or Alexa Fluor® 790 (sc-373975 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

insulin Rβ (C-4) is recommended for detection of insulin Rβ of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (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 Rβ (C-4) is also recommended for detection of insulin Rβ in additional species, including equine, canine and porcine.

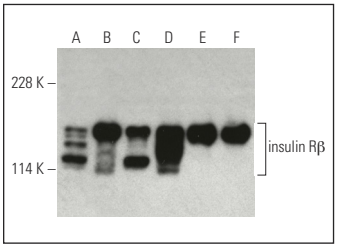
Suitable for use as control antibody for insulin R siRNA (h): sc-29370, insulin R siRNA (m): sc-35673, insulin R siRNA (r): sc-63341, insulin R shRNA Plasmid (h): sc-29370-SH, insulin R shRNA Plasmid (m): sc-35673-SH, insulin R shRNA Plasmid (r): sc-63341-SH, insulin R shRNA (h) Lentiviral Particles: 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 Rβ precursor: 200 kDa.

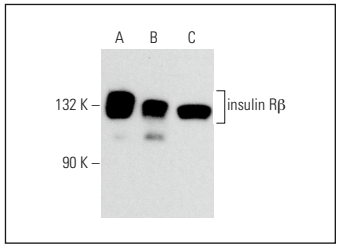
Molecular Weight of mature insulin Rβ chain: 95 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or MCF7 whole cell lysate: sc-2206.

DATA



insulin Rβ (C-4) HRP: sc-373975 HRP. Direct western blot analysis of insulin Rβ expression in Hep G2 (**A**), Jurkat (**B**), MDA-MB-435S (**C**), T-47D (**D**), MDA-MB-231 (**E**) and HeLa (**F**) whole cell lysates.



insulin Rβ (C-4): sc-373975. Western blot analysis of insulin Rβ expression in MCF7 (**A**), Jurkat (**B**) and MDA-MB-435S (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Qi, L., et al. 2013. Heterogeneity of neuroblastoma cell lines in insulin-like growth factor 1 receptor/Akt pathway-mediated cell proliferative responses. Cancer Sci. 104: 1162-1171.
2. Meakin, P.J., et al. 2018. The β secretase BACE1 regulates the expression of insulin receptor in the liver. Nat. Commun. 9: 1306.
3. Tomita, S., et al. 2022. Tyrphostin AG1024 downregulates aryl hydrocarbon receptor (AhR) expression in an IGF1R and IR-independent manner. Toxicol. Lett. 360: 62-70.
4. Fehsel, K. and Bouvier, M.L. 2024. Sex-specific effects of long-term antipsychotic drug treatment on adipocyte tissue and the crosstalk to liver and brain in rats. Int. J. Mol. Sci. 25: 2188.

RESEARCH USE

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