SANTA CRUZ BIOTECHNOLOGY, INC.

insulin Rβ (29B4): sc-09

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 intra-cellular 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 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 Rβ (29B4) is a mouse monoclonal antibody mapping to an intracellular region of the 95 kDa β chain of the human Insulin receptor.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

insulin Rβ (29B4) is recommended for detection of Insulin Rβ chain of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and kinase assay.

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 Rβ 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.

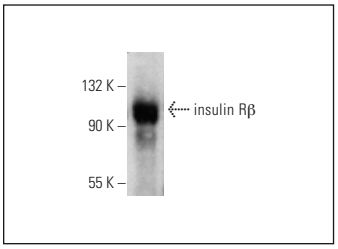
PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

RESEARCH USE

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

DATA



Western blot analysis of insulin Rβ expression in Hep G2 whole cell lysate immunoprecipitated with insulin Rβ (29B4): sc-09 and detected with insulin Rβ (C-19): sc-711.

SELECT PRODUCT CITATIONS

1. Wang, H., et al. 1994. Distinct protein tyrosine phosphorylation during mitogenesis induced in quiescent SV40-transformed 3T3 T cells by Insulin or vanadate. J. Cell. Physiol. 158: 408-416.
2. Dinchuk, J.E., et al. 2010. Insulin receptor (IR) pathway hyperactivity in IGF-IR null cells and suppression of downstream growth signaling using the dual IGF-IR/IR inhibitor, BMS-754807. Endocrinology 151: 4123-4132.
3. Lecosnier, S., et al. 2011. A steric blocker of translation elongation inhibits IGF-1R expression and cell transformation. FASEB J. 25: 2201-2210.
4. Drapeau, N., et al. 2013. Expression of SHP-1 induced by hyperglycemia prevents Insulin actions in podocytes. Am. J. Physiol. Endocrinol. Metab. 304: E1188-E1198.
5. Stouffer, M.A., et al. 2015. Insulin enhances striatal dopamine release by activating cholinergic interneurons and thereby signals reward. Nat. Commun. 6: 8543.
6. Pérez-Pérez, A., et al. 2016. Insulin and leptin signaling in placenta from gestational diabetic subjects. Horm. Metab. Res. 48: 62-69.
7. Martinez-Rachadell, L., et al. 2019. Cell-specific expression of Insulin/Insulin-like growth factor-I receptor hybrids in the mouse brain. Growth Horm. IGF Res. 45: 25-30.
8. Filippello, A., et al. 2020. Direct effects of D-chiro-inositol on Insulin signaling and glucagon secretion of pancreatic α cells. Biomolecules 10: 1404.
9. Mendoza, C., et al. 2023. Insulin receptor-inspired soluble Insulin binder. Eur. J. Cell Biol. 102: 151293.

CONJUGATES

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