SANTA CRUZ BIOTECHNOLOGY, INC.

insulin Rα (N-20): sc-710

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 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 Rα (N-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the N-terminus of Insulin Rα of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-710 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

insulin Rα (N-20) is recommended for detection of insulin receptor α 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)], 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).

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 Rα precursor: 200 kDa.

Molecular Weight of mature insulin Rα: 125 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Y79 cell lysate: sc-2240 or 3611-RF whole cell lysate: sc-2215.

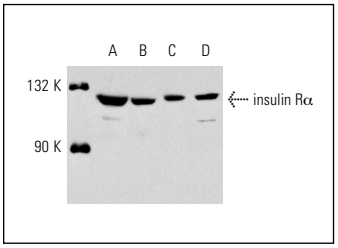
RESEARCH USE

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

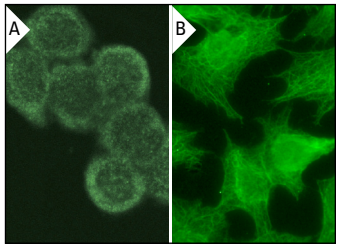
STORAGE

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

DATA



insulin Rα (N-20): sc-710. Western blot analysis of insulin receptor α subunit expression in HeLa (**A**), Y79 (**B**), NIH/3T3 (**C**) and 3611-RF (**D**) whole cell lysates.



insulin Rα (N-20): sc-710. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization (**A**). Immunofluorescence staining of formalin-fixed Hep G2 cells showing membrane localization (**B**).

SELECT PRODUCT CITATIONS

1. Zhao, A.Z., et al. 1997. Attenuation of insulin secretion by insulin-like growth factor I is mediated through activation of phosphodiesterase 3B. Proc. Natl. Acad. Sci. USA 94: 3223-3228.
2. Smith, B.J., et al. 2010. Structural resolution of a tandem hormone-binding element in the insulin receptor and its implications for design of peptide agonists. Proc. Natl. Acad. Sci. USA 107: 6771-6776.
3. Uzelac, P.S., et al. 2010. Dysregulation of leptin and testosterone production and their receptor expression in the human placenta with gestational diabetes mellitus. Placenta 31: 581-588.
4. Vikram, A., et al. 2010. Increased cell proliferation and contractility of prostate in insulin resistant rats: linking hyperinsulinemia with benign prostate hyperplasia. Prostate 70: 79-89.
5. He, Q., et al. 2011. Regulation of HIF-1α activity in adipose tissue by obesity-associated factors: adipogenesis, insulin, and hypoxia. Am. J. Physiol. Endocrinol. Metab. 300: E877-E885.
6. Hamilton, A., et al. 2011. Novel GLP-1 mimetics developed to treat type 2 diabetes promote progenitor cell proliferation in the brain. J. Neurosci. Res. 89: 481-489.
7. McClean, P.L., et al. 2011. The diabetes drug liraglutide prevents degenerative processes in a mouse model of Alzheimer's disease. J. Neurosci. 31: 6587-6594.
8. Sacilotto, N., et al. 2011. Epigenetic transcriptional regulation of the growth arrest-specific gene 1 (Gas1) in hepatic cell proliferation at mononucleosomal resolution. PLoS ONE 6: e23318.