

insulin R β (E-19): sc-31369

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.

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.
5. Perz, M., et al. 2001. Insulin receptor: structural and functional characteristics. *Med. Sci. Monit.* 7: 169-177.
6. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 147670. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. LocusLink Report (LocusID: 3643). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

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

SOURCE

insulin R β (E-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal extracellular domain of Insulin R β of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-31369 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

insulin R β (E-19) is recommended for detection of Insulin receptor β of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 R β (E-19) is also recommended for detection of Insulin receptor β chain in additional species, including equine 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 β chain: 95 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, Hep G2 cell lysate: sc-2227 or HEK293 whole cell lysate: sc-45136.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Caricilli, A.M., et al. 2011. Gut microbiota is a key modulator of Insulin resistance in TLR 2 knockout mice. *PLoS Biol.* 9: e1001212.

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 or our catalog for detailed protocols and support products.



Try **insulin R β (CT-3): sc-57342** or **insulin R β (C-4): sc-373975**, our highly recommended monoclonal alternatives to insulin R β (E-19). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **insulin R β (CT-3): sc-57342**.