# IGF-IRα (2C8): sc-463

SANTA CRUZ®
BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Receptor tyrosine kinases (RTKs) are transmembrane molecular scaffolds that influence cellular processes including the cell cycle, cell migration, cell metabolism, cell survival, proliferation and differentiation. Insulin-like growth factor-I receptor (IGF-IR) is an RTK that stimulates growth in many different cell types, blocks apoptosis, acts as an intermediate of many growth hormone responses and may stimulate the growth of some types of cancer. The IGF-IR cognate ligand Insulin-like growth factor-I (IGF-I) promotes association of IGF-IR with Shc, GRB2 and Sos 1, which initiates Ras and ERK kinase cascades, thereby modifying transcription factor activity, such as activation of the Elk transcription factors. The modular phosphotyrosine binding (PTB) domains of Insulin receptor substrate (IRS)-1 and -2 can associate with active IGF-IR and initiate phosphatidylinositol 3-kinase-dependent downstream signals. The human IGF-IR gene maps to chromosome 15q26.3 and encodes a 1,376 amino acid precursor protein that cleaves into α and β subunits. The human IGF-IIR gene maps to chromosome 6q26 and encodes a 2,491 amino acid transmembrane protein.

## REFERENCE

1. Frattali, A.L., et al. 1993. Molecular defects of Insulin/IGF-1 receptor transmembrane signaling. Ann. N.Y. Acad. Sci. 687: 77-89.

2. Keller, S.R., et al. 1993. Insulin and IGF-I signaling through the Insulin receptor substrate 1. Mol. Reprod. Dev. 35: 346-352.

3. De Meyts, P., et al. 1995. Mechanism of Insulin and IGF-I receptor activation and signal transduction specificity. Receptor dimer cross-linking, bell-shaped curves, and sustained versus transient signaling. Ann. N.Y. Acad. Sci. 766: 388-401.

## CHROMOSOMAL LOCATION

Genetic locus: IGF1R (human) mapping to 15q26.3; Igf1r (mouse) mapping to 7 D1.

## SOURCE

IGF-IRα (2C8) is a mouse monoclonal antibody raised against IGF-I receptor purified from placenta of human origin.

## PRODUCT

Each vial contains 200 µg IgG$_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

IGF-IRα (2C8) is available conjugated to agarose (sc-463 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-463 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-463 PE), fluorescein (sc-463 FITC), Alexa Fluor® 488 (sc-463 AF488), Alexa Fluor® 546 (sc-463 AF546), Alexa Fluor® 594 (sc-463 AF594) or Alexa Fluor® 647 (sc-463 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-463 AF680) or Alexa Fluor® 790 (sc-463 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

## RESEARCH USE

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

## APPLICATIONS

IGF-IRα (2C8) is recommended for detection of IGF-IRα and complex 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for IGF-IRα/β siRNA (h): sc-29358, IGF-IRα/β siRNA (m): sc-35638, IGF-IRα/β shRNA Plasmid (h): sc-29358-SH, IGF-IRα/β shRNA Plasmid (m): sc-35638-SH, IGF-IRα/β shRNA (h) Lentiviral Particles: sc-29358-V and IGF-IRα/β shRNA (m) Lentiviral Particles: sc-35638-V.
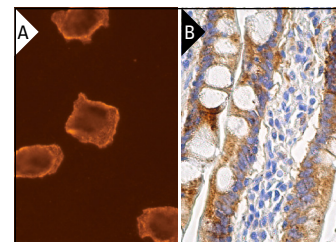
Molecular Weight of pro-IGF-IR: 200 kDa.

Molecular Weight of IGF-IRα: 130 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A-431 whole cell lysate: sc-2201 or MCF7 whole cell lysate: sc-2206.

## DATA
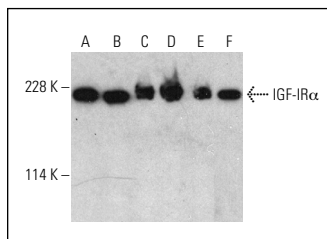


IGF-IRα (2C8) HRP: sc-463 HRP. Direct western blot analysis of IGF-IRα expression in HeLa (**A**), A-431 (**B**), MCF7 (**C**), SK-BR-3 (**D**), NCI-H929 (**E**) and COLO 320 (**F**) whole cell lysates.

IGF-IRα (2C8): sc-463. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane staining (**A**). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of glandular cells (**B**).

## SELECT PRODUCT CITATIONS

1. Naranda, T., et al. 1997. A peptide derived from an extracellular domain selectively inhibits receptor internalization: target sequences on Insulin and Insulin-like growth factor 1 receptors. Proc. Natl. Acad. Sci. USA 94: 11692-11697.

2. Sirohi, V.K., et al. 2018. Selective estrogen receptor modulator ormeloxifene suppresses embryo implantation via inducing miR-140 and targeting Insulin-like growth factor 1 receptor in rat uterus. J. Steroid Biochem. Mol. Biol. 178: 272-282.

3. Valadez-Bustos, N., et al. 2019. Oral administration of microencapsulated *B. longum* BAA-999 and lycopene modulates IGF-1/IGF-1R/IGFBP3 protein expressions in a colorectal murine model. Int. J. Mol. Sci. 20: 4275.

4. Song, W., et al. 2020. Long non-coding RNA BANCR mediates esophageal squamous cell carcinoma progression by regulating the IGF1R/Raf/MEK/ERK pathway via miR-338-3p. Int. J. Mol. Med. 46: 1377-1388.

## STORAGE

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