

# IGF-IR $\alpha$ (16-13): sc-80985

## 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  $\alpha$  and  $\beta$  subunits. The human IGF-IR gene maps to chromosome 6q25.3 and encodes a 2,491 amino acid transmembrane protein.

## REFERENCES

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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.
4. Song, R.X., et al. 2004. The role of Shc and Insulin-like growth factor-I receptor in mediating the translocation of estrogen receptor  $\alpha$  to the plasma membrane. *Proc. Natl. Acad. Sci. USA* 101: 2076-2081.
5. Mitsiades, C.S., et al. 2004. Inhibition of the Insulin-like growth factor receptor-I tyrosine kinase activity as a therapeutic strategy for multiple myeloma, other hematologic malignancies, and solid tumors. *Cancer Cell* 5: 221-230.
6. Salatino, M., et al. 2004. Inhibition of *in vivo* breast cancer growth by antisense oligodeoxynucleotides to type I Insulin-like growth factor receptor mRNA involves inactivation of ErbBs, PI-3K/Akt and p42/p44 MAPK signaling pathways but not modulation of progesterone receptor activity. *Oncogene* 23: 5161-5174.
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8. Hayashi, K., et al. 2004. Insulin receptor substrate-1/SHP-2 interaction, a phenotype-dependent switching machinery of Insulin-like growth factor-I signaling in vascular smooth muscle cells. *J. Biol. Chem.* 279: 40807-40818.
9. Shimizu, C., et al. 2004. Expression of Insulin-like growth factor-I receptor in primary breast cancer: immunohistochemical analysis. *Hum. Pathol.* 35: 1537-1542.

## CHROMOSOMAL LOCATION

Genetic locus: IGF1R (human) mapping to 15q26.3.

## SOURCE

IGF-IR $\alpha$  (16-13) is a mouse monoclonal antibody raised against transfected 3T3 cells overexpressing IGF-IR $\alpha$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

IGF-IR $\alpha$  (16-13) is recommended for detection of IGF-IR $\alpha$  of human origin by immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)]; non cross-reactive with IGF-IR $\alpha$  of rat origin and Insulin R $\alpha$  of human origin.

Suitable for use as control antibody for IGF-IR $\alpha$ / $\beta$  siRNA (h): sc-29358, IGF-IR $\alpha$ / $\beta$  shRNA Plasmid (h): sc-29358-SH and IGF-IR $\alpha$ / $\beta$  shRNA (h) Lentiviral Particles: sc-29358-V.

Molecular Weight of pro-IGF-IR: 200 kDa.

Molecular Weight of IGF-IR $\alpha$ : 130 kDa.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:  
 1) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## SELECT PRODUCT CITATIONS

1. Zhu, Y., et al. 2017. Isoflurane anesthesia induces liver injury by regulating the expression of Insulin-like growth factor 1. *Exp. Ther. Med.* 13: 1608-1613.

## STORAGE

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

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## CONJUGATES

See **IGF-IR $\alpha$  (G-5): sc-271606** for IGF-IR $\alpha$  antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor<sup>®</sup> 488, 546, 594, 647, 680 and 790.