SANTA CRUZ BIOTECHNOLOGY, INC.

p-IGF-IR (50.Y1165/1166): sc-135767

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.

REFERENCES

1. Frattali, A.L., et al. 1993. Molecular defects of Insulin/IGF-I 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.
4. Song, R.X., et al. 2004. The role of Shc and Insulin-like growth factor 1 receptor in mediating the translocation of estrogen receptor α 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-1 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.
7. Broussard, S.R., et al. 2004. IL-1β impairs Insulin-like growth factor I-induced differentiation and downstream activation signals of the Insulin-like growth factor I receptor in myoblasts. J. Immunol. 172: 7713-7720.

CHROMOSOMAL LOCATION

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

SOURCE

p-IGF-IR (50.Y1165/1166) is a mouse monoclonal antibody raised against a short amino acid sequence containing Tyr 1165 and Tyr 1166 dually phosphorylated IGF-IR 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.

APPLICATIONS

p-IGF-IR (50.Y1165/1166) is recommended for detection of Tyr 1165 and Tyr 1166 dually phosphorylated IGF-IR of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for IGF-IRα/β siRNA (h): sc-29358, IGF-IRα/β shRNA Plasmid (h): sc-29358-SH and IGF-IRα/β shRNA (h) Lentiviral Particles: sc-29358-V.

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

Molecular Weight of IGF-IR α subunit: 130 kDa.

Molecular Weight of IGF-IR β subunit: 97 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Lambda Phosphatase: sc-200312A and Western Blotting Luminol Reagent: sc-2048.

SELECT PRODUCT CITATIONS

1. Jamwal, G., et al. 2018. Identification of a unique loss-of-function mutation in IGF-1R and a crosstalk between IGF-1R and Wnt/β-catenin signaling pathways. Biochim. Biophys. Acta Mol. Cell Res. 1865: 920-931.
2. Bano, N., et al. 2020. Analyzing structural differences between Insulin receptor (IR) and IGF-1R for designing small molecule allosteric inhibitors of IGF-1R as novel anti-cancer agents. Growth Horm. IGF Res. 55: 101343.
3. Singh, G., et al. 2021. Identification of a cross-talk between EGFR and Wnt/β-catenin signaling pathways in Hep G2 liver cancer cells. Cell. Signal. 79: 109885.
4. Giatagana, E.M., et al. 2022. Biglycan interacts with type I Insulin-like receptor (IGF-IR) signaling pathway to regulate osteosarcoma cell growth and response to chemotherapy. Cancers 14: 1196.
5. Qadir Bhat, A., et al. 2022. Identification of a stretch of four discontinuous amino acids involved in regulating kinase activity of IGF1R. J. Cell Sci. 135: jcs260014.

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. Not for resale.