SANTA CRUZ BIOTECHNOLOGY, INC.

IGF-IRβ (3G5C1): sc-81167

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.

CHROMOSOMAL LOCATION

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

SOURCE

IGF-IRβ (3G5C1) is a mouse monoclonal antibody raised against a recombinant protein corresponding to amino acids 1101-1367 of IGF-IR of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

IGF-IRβ (3G5C1) is recommended for detection of IGF-IRβ of 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 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.

Positive Controls: MCF7 whole cell lysate: sc-2206, A549 cell lysate: sc-2413 or HEL 92.1.7 cell lysate: sc-2270.

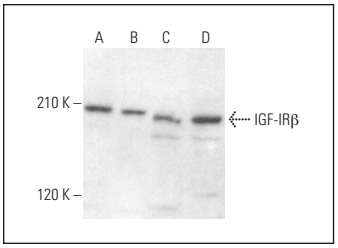
STORAGE

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

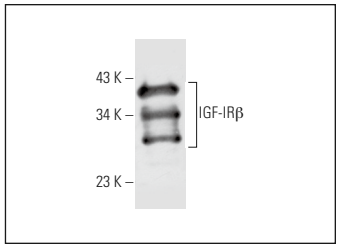
RESEARCH USE

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

DATA



IGF-IRβ (3G5C1): sc-81167. Western blot analysis of IGF-IRβ expression in MCF7 (**A**), SK-MEL-24 (**B**), A549 (**C**) and HEL 92.1.7 (**D**) whole cell lysates.



IGF-IRβ (3G5C1): sc-81167. Western blot analysis of human recombinant IGF-IRβ.

SELECT PRODUCT CITATIONS

1. Yeves, A.M., et al. 2014. Physiological cardiac hypertrophy: critical role of Akt in the prevention of NHE-1 hyperactivity. J. Mol. Cell. Cardiol. 76: 186-195.
2. Mason, J.A., et al. 2016. Oncogenic Ras differentially regulates metabolism and anoikis in extracellular matrix-detached cells. Cell Death Differ. 23: 1271-1282.
3. Pan, H., et al. 2017. VPA and MEL induce apoptosis by inhibiting the Nrf2-ARE signaling pathway in TMZ-resistant U251 cells. Mol. Med. Rep. 16: 908-914.
4. Shu, S., et al. 2019. MicroRNA-320a acts as a tumor suppressor in endometrial carcinoma by targeting IGF-1R. Int. J. Mol. Med. 43: 1505-1512.
5. Kazi, A., et al. 2019. Dual farnesyl and geranylgeranyl transferase inhibitor thwarts mutant KRAS-driven patient-derived pancreatic tumors. Clin. Cancer Res. 25: 5984-5996.
6. Somri-Gannam, L., et al. 2020. IGF1R axis inhibition restores dendritic cell antitumor response in ovarian cancer. Transl. Oncol. 13: 100790.
7. Ugradar, S., et al. 2021. Teprotumumab for non-inflammatory thyroid eye disease (TED): evidence for increased IGF-1R expression. Eye 35: 2607-2612.
8. Achlaug, L., et al. 2021. ZYG11A is expressed in epithelial ovarian cancer and correlates with low grade disease. Front. Endocrinol. 12: 688104.
9. Shin, J.W., et al. 2022. Grabody B, an IGF1 receptor-based shuttle, mediates efficient delivery of biologics across the blood-brain barrier. Cell Rep. Methods 2: 100338.

CONJUGATES

See **IGF-IRβ (F-1): sc-390130** for IGF-IRβ antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.