SANTA CRUZ BIOTECHNOLOGY, INC.

IRS-2 (B-5): sc-390761

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

IRS-2, originally described as 4PS, acts as a signaling intermediate downstream of the Insulin, IGF-1, IL-4, IL-9 and IL-13 receptors. In IRS-2-deficient mice, reduction in total PI 3-kinase activity by 30% and abolition of downstream activation of protein kinase C (PKC) ζ leads to the development of type 2 diabetes. Additionally, reconstitution with retroviral IRS-2 restores IRS-2/PI 3-kinase/PKC ζ signalling as well as glucose uptake. IRS-2 translocates to the nuclei of mouse embryo fibroblasts expressing the Insulin-like growth factor 1 receptor. Various mutations in the IGF-IR can result in an abrogation of or decrease in the translocation of IRS proteins to the nucleoli. IRS-2 is responsible for mitogen-activated protein kinase (MAPK) and protein kinase B (PKB) activation by Insulin and is the major adapter molecule linking the Insulin receptor to this step.

REFERENCES

1. Sun, X.J., et al. 1995. Role of IRS-2 in Insulin and cytokine signalling. Nature 377: 173-177.
2. Wang, L.M., et al. 1995. The Insulin receptor substrate-1-related 4PS substrate but not the interleukin-2R γ chain is involved in interleukin-13-mediated signal transduction. Blood 86: 4218-4227.

CHROMOSOMAL LOCATION

Genetic locus: IRS2 (human) mapping to 13q34; Irs2 (mouse) mapping to 8 A1.1.

SOURCE

IRS-2 (B-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1293-1321 of IRS-2 of mouse 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.

IRS-2 (B-5) is available conjugated to agarose (sc-390761 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-390761 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390761 PE), fluorescein (sc-390761 FITC), Alexa Fluor® 488 (sc-390761 AF488), Alexa Fluor® 546 (sc-390761 AF546), Alexa Fluor® 594 (sc-390761 AF594) or Alexa Fluor® 647 (sc-390761 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390761 AF680) or Alexa Fluor® 790 (sc-390761 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-390761 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

IRS-2 (B-5) is recommended for detection of IRS-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

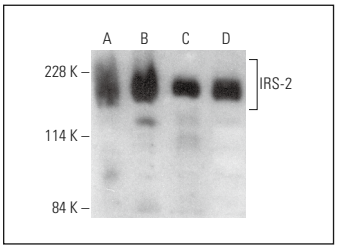
IRS-2 (B-5) is also recommended for detection of IRS-2 in additional species, including equine.

Suitable for use as control antibody for IRS-2 siRNA (h): sc-29378, IRS-2 siRNA (m): sc-35714, IRS-2 siRNA (r): sc-155988, IRS-2 shRNA Plasmid (h): sc-29378-SH, IRS-2 shRNA Plasmid (m): sc-35714-SH, IRS-2 shRNA Plasmid (r): sc-155988-SH, IRS-2 shRNA (h) Lentiviral Particles: sc-29378-V, IRS-2 shRNA (m) Lentiviral Particles: sc-35714-V and IRS-2 shRNA (r) Lentiviral Particles: sc-155988-V.

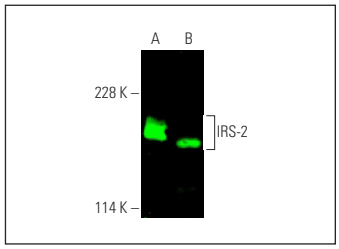
Molecular Weight of IRS-2: 165-185 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, 3T3-L1 cell lysate: sc-2243 or SH-SY5Y cell lysate: sc-3812.

DATA



IRS-2 (B-5) HRP: sc-390761 HRP. Direct western blot analysis of IRS-2 expression in 3T3-L1 (**A**), SH-SY5Y (**B**), HeLa (**C**) and HEK293 (**D**) whole cell lysates.



IRS-2 (B-5): sc-390761. Near-infrared western blot analysis of IRS-2 expression in HeLa (**A**) and SH-SY5Y (**B**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

SELECT PRODUCT CITATIONS

1. Xu, H., et al. 2018. A long-term maternal diet intervention is necessary to avoid the obesogenic effect of maternal high-fat diet in the offspring. J. Nutr. Biochem. 62: 210-220.
2. Augenlicht, A., et al. 2021. MiR-7-5p inhibits thyroid cell proliferation by targeting the EGFR/MAPK and IRS2/PI3K signaling pathways. Oncotarget 12: 1587-1599.
3. Guan, J., et al. 2023. IGF1R contributes to cell proliferation in ALK-mutated neuroblastoma with preference for activating the PI3K-AKT signaling pathway. Cancers 15: 4252.
4. Takahashi, A., et al. 2025. Insulin receptor substrate-2 regulates the secretion of growth factors in response to amino acid deprivation. Int. J. Mol. Sci. 26: 841.

RESEARCH USE

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