SANTA CRUZ BIOTECHNOLOGY, INC.

IRS-3 siRNA (m): sc-40974

BACKGROUND

Insulin receptor substrate (IRS) proteins play important roles in Insulin action and pancreatic β-cell function. IRS-3, identified only in rodents, shows robust and prolonged tyrosine phosphorylation upon Insulin treatment of cells and may play a role in delayed and prolonged Insulin actions. IRS-3 interacts with phosphatidylinositol-3-kinase in adipocytes and hepatoma cells and contains pleckstrin and phosphotyrosine binding domains which are highly homologous to domains in IRS-1 and IRS-2. IRS-3 exhibits an expression pattern which differs from other IRS proteins. During both the embryonic development and adult life of the mouse, p53 inhibits the IRS-3 promoter, while tumor-derived p53 mutants de-repress the same promoter. GFP-IRS-3 fusion protein and endogenous rat IRS-3 localize in both the plasma membrane and the nucleus, indicating that intracellular localization of IRS-3 is determined by a different mechanism from other IRS proteins.

REFERENCES

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2. Choi, W.S. and Sung, C.K. 2000. Characterization of Insulin receptor substrate 3 in rat liver derived cells. Biochem. Biophys. Res. Commun. 272: 953-958.
3. Sciacchitano, S., Orecchio, A., Lavra, L., Misiti, S., Giacchini, A., Zani, M., Danese, D., Gurtner, A., Soddu, S., Di Mario, U. and Andreoli, M. 2002. Cloning of the mouse receptor substrate-3 (mIRS-3) promoter, and its regulation by p53. Mol. Endocrinol. 16: 1577-1589.
4. Kabuta, T., Hakuno, F., Asano, T. and Takahashi, S. 2002. Insulin receptor substrate-3 functions as transcriptional activator in the nucleus. J. Biol. Chem. 277: 6846-6851.
5. Bjornholm, M., He, A.R., Attersand, A., Lake, S., Liu, S.C., Lienhard, G.E., Taylor, S., Arner, P. and Zierath, J.R. 2002. Absence of functional Insulin receptor substrate-3 (IRS-3) gene in humans. Diabetologia 45: 1697-1702.

CHROMOSOMAL LOCATION

Genetic locus: Irs3 (mouse) mapping to 5 G2.

PRODUCT

IRS-3 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see IRS-3 shRNA Plasmid (m): sc-40974-SH and IRS-3 shRNA (m) Lentiviral Particles: sc-40974-V as alternate gene silencing products.

For independent verification of IRS-3 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-40974A, sc-40974B and sc-40974C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

IRS-3 siRNA (m) is recommended for the inhibition of IRS-3 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor IRS-3 gene expression knockdown using RT-PCR Primer: IRS-3 (m)-PR: sc-40974-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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