SANTA CRUZ BIOTECHNOLOGY, INC.

IRRα/β siRNA (m): sc-40082

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The insulin receptor-related receptor (IRR) is a member of the Insulin receptor tyrosine kinase family, whose ligand, gene regulation and biological function have not been elucidated. IRR shares significant homology with the Insulin and Insulin-like growth factor-1 (IGF-I) receptors, but does not bind to any of their known ligands. IRR is synthesized as a single polypeptide precursor that undergoes proteolytic cleavage and glycosylation to produce α and β subunits. IRRα and IRRβ form a heterotetramer(2,3). The two IRRα subunits form the ligand-binding domain, while the two IRRβ subunits contain the kinase domain. IRR is expressed in brain, stomach, pancreas and heart with the highest level of expression in kidney. However, the expression of IRR is selectively distributed within each tissue. The gene encoding IRR maps to human chromosome 1q23.1, a region linked with type-2 diabetes mellitus, which suggests a role for IRR in Insulin regulation.

REFERENCES

1. Jui, H.Y., et al. 1994. Expression of a cDNA encoding the human Insulin receptor-related receptor. J. Biol. Chem. 269: 22446-22452.
2. Mathi, S.K., et al. 1995. Insulin receptor-related receptor messenger ribonucleic acid: quantitative distribution and localization to subpopulations of epithelial cells in stomach and kidney. Endocrinology 136: 4125-4132.
3. Ozaki, K., et al. 1997. Localization of Insulin receptor-related receptor in the rat kidney. Kidney Int. 52: 694-698.
4. Ozaki, K. 1998. Insulin receptor-related receptor in rat islets of Langerhans. Eur. J. Endocrinol. 139: 244-247.
5. Chrysis, D., et al. 1998. Effect of fasting on Insulin receptor-related receptor messenger ribonucleic acid in rat kidney. J. Endocrinol. 159: 9-12.
6. Kitamura, T., et al. 2001. Preserved pancreatic β-cell development and function in mice lacking the Insulin receptor-related receptor. Mol. Cell. Biol. 21: 5624-5630.
7. Wolford, J.K., et al. 2001. Polymorphism screening of the insulin receptor-related receptor gene (INSRR) on 1q in Pima Indians. Mol. Cell. Probes 15: 223-227.

CHROMOSOMAL LOCATION

Genetic locus: Insrr (mouse) mapping to 3 F1.

PRODUCT

IRRα/β 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 IRRα/β shRNA Plasmid (m): sc-40082-SH and IRRα/β shRNA (m) Lentiviral Particles: sc-40082-V as alternate gene silencing products.

For independent verification of IRRα/β (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-40082A, sc-40082B and sc-40082C.

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

IRRα/β siRNA (m) is recommended for the inhibition of IRRα/β 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.

GENE EXPRESSION MONITORING

IRRα (D-3): sc-515888 is recommended as a control antibody for monitoring of IRRα/β gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor IRRα/β gene expression knockdown using RT-PCR Primer: IRRα/β (m)-PR: sc-40082-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.

PROTOCOLS

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