

IGF-IIR siRNA (h): sc-37118

BACKGROUND

The mannose 6-phosphate/insulin-like growth factor II receptor, IGF-IIR (also designated M6P/IGF2R), is a ubiquitously expressed integral glycoprotein. By binding glycoproteins through two of its extracytoplasmic domains, IGF-IIR mediates the activation of TGF β 1 (a growth inhibitor), the degradation of IGF-II and the transport of lysosomal enzymes. Subsequently, IGF-IIR can form oligomeric complexes, which increase the affinity of IGF-IIR for lysosomal enzymes. Unlike IGF-IR, IGF-IIR does not potentiate the signaling of IGF-I or IGF-II, which have mitogenic, cell survival and Insulin-like effects. Therefore, IGF-IIR is characterized as a tumor suppressor. Furthermore, the IGF-IIR gene is located on chromosome 6q25.3, which is commonly mutated or deleted in several human cancers.

REFERENCES

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2. Braulke, T. 1999. Type-2 IGF receptor: a multi-ligand binding protein. *Horm. Metab. Res.* 31: 242-246.
3. Lorenzo, K., et al. 2000. Invasive properties of murine squamous carcinoma cells: secretion of matrix-degrading cathepsins is attributable to a deficiency in the mannose 6-phosphate/Insulin-like growth factor II receptor. *Cancer Res.* 60: 4070-4076.
4. Gemma, A., et al. 2000. Mutation analysis of the gene encoding the human mannose 6-phosphate/Insulin-like growth factor 2 receptor (M6P/IGF2R) in human cell lines resistant to growth inhibition by transforming growth factor β 1 (TGF- β 1). *Lung Cancer* 30: 91-98.
5. Byrd, J.C., et al. 2000. Mechanisms for high affinity mannose 6-phosphate ligand binding to the Insulin-like growth factor II/ mannose 6-phosphate receptor. *J. Biol. Chem.* 275: 18638-18646.
6. Byrd, J.C., et al. 2000. Dimerization of the Insulin-like growth factor II/ mannose 6-phosphate receptor. *J. Biol. Chem.* 275: 18647-18656.
7. Kong, F.M., et al. 2000. M6P/IGF2R is mutated in squamous cell carcinoma of the lung. *Oncogene* 19: 1572-1578.

CHROMOSOMAL LOCATION

Genetic locus: IGF2R (human) mapping to 6q25.3.

PRODUCT

IGF-IIR siRNA (h) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see IGF-IIR shRNA Plasmid (h): sc-37118-SH and IGF-IIR shRNA (h) Lentiviral Particles: sc-37118-V as alternate gene silencing products.

For independent verification of IGF-IIR (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-37118A, sc-37118B and sc-37118C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

IGF-IIR siRNA (h) is recommended for the inhibition of IGF-IIR expression in human 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 μ M in 66 μ l. 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

IGF-IIR (2G11): sc-53146 is recommended as a control antibody for monitoring of IGF-IIR 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor IGF-IIR gene expression knockdown using RT-PCR Primer: IGF-IIR (h)-PR: sc-37118-PR (20 μ l, 464 bp). 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.