



SNED1 siRNA (h): sc-94914

BACKGROUND

SNED1 (Sushi, nidogen and EGF-like domain-containing protein 1), also known as IRE-BP1 (Insulin-responsive element DNA-binding protein 1), is a 1,413 amino acid secreted protein that contains 15 EGF-like domains, 3 fibronectin type-III domains, 2 follistatin-like domains, one NIDO domain and one Sushi domain. SNED1 binds and transactivates Insulin-like growth factor-binding protein-3 and other Insulin responsive genes downstream of the phosphatidylinositol 3'-kinase/protein kinase B (Akt) pathway. SNED1 is localized to the cytoplasm in α , β , and δ -cells of the islets of Langerhans. Expression of SNED1 is decreased in diabetes and Insulin-deficiency, suggesting that it plays a role in the mediation of Insulin action. There are four isoforms of SNED1 that are produced as a result of alternative splicing events.

REFERENCES

1. Villafuerte, B.C., Phillips, L.S., Rane, M.J. and Zhao, W. 2004. Insulin-response element-binding protein 1: a novel Akt substrate involved in transcriptional action of Insulin. *J. Biol. Chem.* 279: 36650-36659.
2. Villafuerte, B.C. and Kaytor, E.N. 2005. An Insulin-response element-binding protein that ameliorates hyperglycemia in diabetes. *J. Biol. Chem.* 280: 20010-20020.
3. Takeoshi, K. and Nakai, T. 2005. Insulin-like growth factor binding protein-3 (IGFBP-3). *Nippon Rinsho* 63: 180-182.
4. Renehan, A.G., Harvie, M. and Howell, A. 2006. Insulin-like growth factor (IGF)-I, IGF binding protein-3, and breast cancer risk: eight years on. *Endocr. Relat. Cancer* 13: 273-278.
5. Yadav, S. and Krishnamurthy, S. 2007. Insulin like growth factors and growth hormone deficiency. *Indian Pediatr.* 44: 349-353.
6. Chahal, J., Chen, C.C., Rane, M.J., Moore, J.P., Barati, M.T., Song, Y. and Villafuerte, B.C. 2008. Regulation of Insulin-response element binding protein-1 in obesity and diabetes: potential role in impaired Insulin-induced gene transcription. *Endocrinology* 149: 4829-4836.
7. Villafuerte, B.C., Barati, M.T., Song, Y., Moore, J.P., Epstein, P.N. and Portillo, J. 2009. Transgenic expression of Insulin-response element binding protein-1 in β -cells reproduces type 2 diabetes. *Endocrinology* 150: 2611-2617.
8. Canale-Zambrano, J.C. and Haston, C.K. 2010. Insulin-like growth factor binding protein-3 treatment alters intestinal cell proliferation but not body weight of adult Cfr deficient mice. *Pediatr. Res.* 69: 129-134.

CHROMOSOMAL LOCATION

Genetic locus: SNED1 (human) mapping to 2q37.3.

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.

PRODUCT

SNED1 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 SNED1 shRNA Plasmid (h): sc-94914-SH and SNED1 shRNA (h) Lentiviral Particles: sc-94914-V as alternate gene silencing products.

For independent verification of SNED1 (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-94914A, sc-94914B and sc-94914C.

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

SNED1 siRNA (h) is recommended for the inhibition of SNED1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SNED1 gene expression knockdown using RT-PCR Primer: SNED1 (h)-PR: sc-94914-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.