

CTRP7 siRNA (h): sc-77056

BACKGROUND

Members of the C1q/TNF- α protein family have diverse functions that are related to cell adhesion and basement membrane components that may exert their effects in a paracrine or autocrine fashion. CTRP7 (complement C1q tumor necrosis factor-related protein 7) is a 289 amino acid secreted glycoprotein that contains one collagen-like domain and one C1q domain. In young obese mice, transcripts of CTRP1, CTRP2, CTRP3, CTRP6 and CTRP7 are found to be upregulated. CTRP7 is predominantly expressed in adipose tissue and may be a paralog of Acrp30 (adiponectin). Caloric restriction in young animals leads to an increase in serum Acrp30, however this is not the case with older animals. During caloric restriction in older animals, transcription of CTRP2 and CTRP7 is significantly induced in senescent skeletal muscle and myocardium. This however is not sufficient to activate AMPK to the same extent as in younger animals, therefore suggesting that CTRP2 and CTRP7 are not suitable substitutions for Acrp30 function.

REFERENCES

1. Lasser, G., et al. 2006. C1q/TNF-related protein-1 (CTRP-1): a vascular wall protein that inhibits collagen-induced platelet aggregation by blocking VWF binding to collagen. *Blood* 107: 423-430.
2. Whitehead, J.P., et al. 2006. Adiponectin—a key adipokine in the metabolic syndrome. *Diabetes Obes. Metab.* 8: 264-280.
3. Kim, K.Y., et al. 2006. Tumor necrosis factor- α and interleukin-1 β increases CTRP1 expression in adipose tissue. *FEBS Lett.* 580: 3953-3960.
4. Rohrbach, S., et al. 2007. Age-associated loss in adiponectin-activation by caloric restriction: lack of compensation by enhanced inducibility of adiponectin paralogs CTRP2 and CTRP7. *Mol. Cell. Endocrinol.* 277: 26-34.
5. Wong, G.W., et al. 2008. Molecular, biochemical and functional characterizations of C1q/TNF family members: adipose-tissue-selective expression patterns, regulation by PPAR- γ agonist, cysteine-mediated oligomerizations, combinatorial associations and metabolic functions. *Biochem. J.* 416: 161-177.

CHROMOSOMAL LOCATION

Genetic locus: C1QTNF7 (human) mapping to 4p15.32.

PRODUCT

CTRP7 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 CTRP7 shRNA Plasmid (h): sc-77056-SH and CTRP7 shRNA (h) Lentiviral Particles: sc-77056-V as alternate gene silencing products.

For independent verification of CTRP7 (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-77056A, sc-77056B and sc-77056C.

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 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

CTRP7 siRNA (h) is recommended for the inhibition of CTRP7 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 CTRP7 gene expression knockdown using RT-PCR Primer: CTRP7 (h)-PR: sc-77056-PR (20 μ l). 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.