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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

Acrp30 siRNA (m): sc-45891

BACKGROUND

Acrp30 (adipocyte complement-related protein or AdipoQ) is a secretory protein made exclusively in adipocytes with mRNA induced over 100-fold during adipocyte differentiation. Post-transcriptional modification of Acrp30 yields several oligomeric forms of varying molecular weight, including a monomer, a dimer, a trimer, a hexamer and a polymer. Acrp30 is an abundant serum protein, secreted exclusively from fat cells, and is implicated in energy homeostasis and obesity. Due to the dysregulation of Acrp30 in cases of obesity in humans and mice and the strong structural similarity to TNF α , Acrp30 is a suspected regulator of whole body energy homeostasis. In addition, regulated exocytosis of Acrp30 appears to require phosphatidylinositol-3-kinase activity, since Insulin-stimulated Acrp30 secretion is blocked by pharmacologic inhibitors of this enzyme.

REFERENCES

1. Scherer, P.E., et al. 1995. A novel serum protein similar to C1q, produced exclusively in adipocytes. *J. Biol. Chem.* 270: 26746-26749.
2. Shapiro, L., et al. 1998. The crystal structure of a complement-1q family protein suggests an evolutionary link to tumor necrosis factor. *Curr. Biol.* 8: 335-338.
3. Bogan, J.S., et al. 1999. Two compartments for Insulin-stimulated exocytosis in 3T3-L1 adipocytes defined by endogenous ACRP30 and GLUT4. *J. Cell Biol.* 146: 609-620.
4. Kappes, A., et al. 2000. Influences of ionomycin, dibutyryl-cycloAMP and tumour necrosis factor- α on intracellular amount and secretion of apM1 in differentiating primary human preadipocytes. *Horm. Metab. Res.* 32: 548-554.
5. Das, K., et al. 2001. Chromosomal localization, expression pattern, and promoter analysis of the mouse gene encoding adipocyte-specific secretory protein Acrp30. *Biochem. Biophys. Res. Commun.* 280: 1120-1129.
6. Fruebis, J., et al. 2001. Proteolytic cleavage product of 30 kDa adipocyte complement-related protein increases fatty acid oxidation in muscle and causes weight loss in mice. *Proc. Natl. Acad. Sci. USA* 98: 2005-2010.

CHROMOSOMAL LOCATION

Genetic locus: Adipoq (mouse) mapping to 16 B1.

PRODUCT

Acrp30 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Acrp30 shRNA Plasmid (m): sc-45891-SH and Acrp30 shRNA (m) Lentiviral Particles: sc-45891-V as alternate gene silencing products.

For independent verification of Acrp30 (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-45891A, sc-45891B and sc-45891C.

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

Acrp30 shRNA Plasmid (m) is recommended for the inhibition of Acrp30 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 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 Acrp30 gene expression knockdown using RT-PCR Primer: Acrp30 (m)-PR: sc-45891-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Gamberi, T., et al. 2016. Activation of autophagy by globular adiponectin is required for muscle differentiation. *Biochim. Biophys. Acta* 1863: 694-702.

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.