SANTA CRUZ BIOTECHNOLOGY, INC.

Myonectin siRNA (m): sc-141631

BACKGROUND

Peptides called myokines are produced and secreted by the skeletal muscle and mediate communication between muscle and liver, adipose tissue, brain, and other organs. During physical exercise, mytokines are overexpressed and are suggested to contribute to the benefits of exercise to metabolic homeostasis. Myonectin, also known as Erythroferrone, FAM132B, CTRP15 or C1QTNF15, is a 354 amino acid skeletal muscle-derived myokine belonging to the CTRP superfamily. Containing one C1q domain, Myonectin may exists as a homodimer and form heteromeric complexes with CTRP2, C1QDC2, CTRP5 and C1qL2. A precusor to Irisin, Myonectin is thought to play a role in fatty acid uptake and oxidation in adipose tissue and liver, and may serve as a novel regulator of cellular autophagy. Myonectin is encoded by a gene located on human chromosome 2q37.3.

REFERENCES

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2. Seldin, M.M., et al. 2012. Myonectin (CTRP15), a novel myokine that links skeletal muscle to systemic lipid homeostasis. J. Biol. Chem. 287: 11968-11980.
3. Seldin, M.M., et al. 2013. Skeletal muscle-derived Myonectin activates the mammalian target of rapamycin (mTOR) pathway to suppress autophagy in liver. J. Biol. Chem. 288: 36073-36082.
4. Yang, M., et al. 2013. Saturated fatty acid palmitate-induced Insulin resistance is accompanied with myotube loss and the impaired expression of health benefit myokine genes in C2C12 myotubes. Lipids Health Dis. 12: 104.
5. Peterson, J.M., et al. 2014. Effect of obesity and exercise on the expression of the novel myokines, Myonectin and Fibronectin type III domain containing 5. PeerJ 2: e605.
6. Ahima, R.S. and Park, H.K. 2015. Connecting myokines and metabolism. Endocrinol. Metab. 30: 235-245.
7. Lawen, A. 2015. Is erythroferrone finally the long sought-after systemic erythroid regulator of iron? World J. Biol. Chem. 6: 78-82.

CHROMOSOMAL LOCATION

Genetic locus: Fam132b (mouse) mapping to 1 D.

PRODUCT

Myonectin 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 Myonectin shRNA Plasmid (m): sc-141631-SH and Myonectin shRNA (m) Lentiviral Particles: sc-141631-V as alternate gene silencing products.

For independent verification of Myonectin (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-141631A, sc-141631B and sc-141631C.

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

Myonectin siRNA (m) is recommended for the inhibition of Myonectin 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Myonectin gene expression knockdown using RT-PCR Primer: Myonectin (m)-PR: sc-141631-PR (20 µl, 545 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.