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Data Article

Data on the effect of miR-15b on the expression of INSR in murine C2C12 myocytes

Won-Mo Yang [a], Kyung-Ho Min [a], Se-Whan Park [a], Wan Lee [a,b,*]

[a] Department of Biochemistry, Dongguk University College of Medicine, Gyeongju-si, Gyeongsangbuk-do 38067, Republic of Korea
[b] Endocrine Channelopathy, Channelopathy Research Center, Dongguk University College of Medicine, Goyang-si, Gyeonggi-do 10326, Republic of Korea

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ABSTRACT

The ectopic expression of miR-15b is linked causally to impaired insulin signaling in human HepG2 hepatocytes through the suppression of INSR (Yang et al., 2015) [1]. In this data article, we further examined the effect of miR-15b on insulin signaling in a murine skeletal muscle cells, C2C12 myocytes. Although the 3'UTR of mouse INSR mRNA has an appropriate binding site for miR-15b based on TargetScan analysis, the ectopic expression of miR-15b did not suppress the expression and insulin-stimulated phosphorylation of insulin signaling intermediates in C2C12 myocytes. A more detailed understanding of the effects of miR-15b on hepatic insulin resistance can be found in "Obesity-induced miR-15b is linked causally to the development of insulin resistance through the repression of the insulin receptor in hepatocytes" (Yang et al., 2015) [1].

Specifications Table

Subject area	*Cell Biology, Biochemistry*
More specific subject area	*Obesity, MicroRNA, Metabolism*

* Corresponding author at: Department of Biochemistry, Dongguk University College of Medicine, Gyeongju-si, Gyeongsangbuk-do 38067, Republic of Korea.
E-mail address: wanlee@dongguk.ac.kr (W. Lee).

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Type of data	*Figures and text*
How data was acquired	*TargetScan analysis and immunoblotting*
Data format	*Analyzed*
Experimental factors	*Transfection of miR-15b, Treatment of insulin, Analysis of the expression and phosphorylation of insulin signaling intermediates*
Experimental features	*C2C12 myocytes were transfected with scRNA or miR-15b mimic. For insulin stimulation, 100 nM of insulin was treated during the last 30 min of incubation.*
Data source location	*Dongguk University School of Medicine, Gyeongju-si, Gyeongsangbuk-do 38067, Korea*
Data accessibility	*The data are available with this article*

Value of the data

- The data are useful for understanding the putative binding sites of miR-15b on the 3′UTR of human and mouse INSR mRNA.
- The effect of miR-15b on the insulin signaling pathway in mouse skeletal muscle cells.
- The data can be compared with the target of miR-15b between hepatocytes and myocytes.

1. Data

Intake of high saturated fatty acid (SFA) in diets results in ectopic lipid accumulation in the liver and skeletal muscle, which is a major risk factor for insulin resistance, type 2 diabetes, and metabolic syndrome [2]. The dysregulation of certain miRNAs targeting the insulin signaling molecules is closely

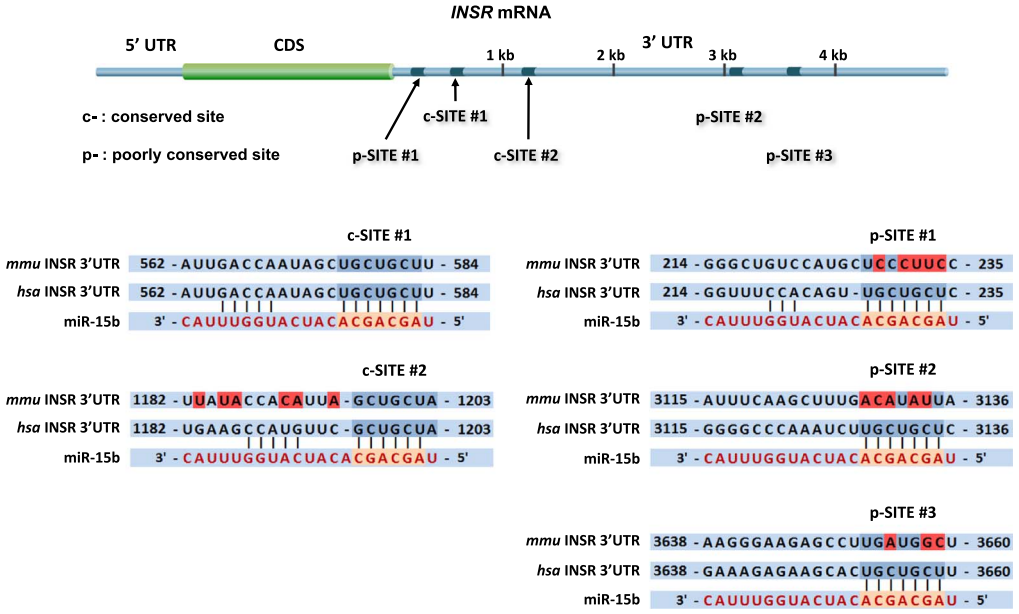

Fig. 1. *Putative targeting sites of miR-15b in the 3′UTRs of murine and human INSR.* The miR-15b targeting INSR 3′UTR was analyzed using TargetScan. The seed sequence of miR-15b predicted to target *INSR* 3′UTRs (orange background) was identified in murine (*mmu*) and human (*has*).