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**Role of exercise-induced myokine and autophagy in metabolic diseases through the regulation of microRNAs**

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As is well known, Exercise is Medicine. Indeed, exercise is an effective, green and environmentally-friendly intervention strategy for metabolic diseases such as obesity and diabetes. Irisin, as a newly discovered myokine with 112 amino acid residues after exercise training, is firstly up-regulated by exercise or corresponding drug-induced PGC-1 $\alpha$  and plays an important regulatory role in a series of metabolic diseases through targeting different tissues or organs, especially for its functions of switching white fat cells to brown fat cells, thus resulting in the prevention and recovery of obesity and diabetes through regulating microRNA-mediated autophagy upon exercise intervention. In addition, exercise or drug-induced irisin also can regulate the UCP1 generation, improve insulin sensitivity and enhancing  $\beta$ -cell regeneration, which can function as the modulator for the prevention and treatments of a series of metabolic diseases including diabetes and obesity. Moreover, exercise-induced irisin can improve cognition capacity during neuro degradative diseases. All of these investigations will provide a clear target for the prevention and treatment of metabolic diseases through microRNA-mediated autophagy and myokines. Furthermore, this exploration will provide a new strategy for developing a novel and effective candidate drug or supplementary dietary as well as mimic exercise pills for the prevention and treatment of metabolic diseases.

**Biography**

Ning Chen has completed his PhD from Georgia State University in the USA. He is a Chutian Scholar Distinguished Professor in Biochemistry and Molecular Exercise Physiology in College of Health at Wuhan Sports University in China. He is also the director of Tianju Research and Development Centre for Exercise Nutrition and Foods and the director of Hubei Key Laboratory of Sports Training and Monitoring at Wuhan Sports University. He has published more than 50 papers in reputed journals and has been serving as the editorial board member of several international journals.

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