Special Issue

Advances in Targeting Mitochondrial Sirtuins for Treatment of Metabolic Diseases Such as Type 2 Diabetes and Obesity

Message from the Guest Editors

Mitochondrial defects and mitochondrial decline have been implicated in a wide spectrum of metabolic disorders, age-related metabolic and degenerative diseases, aging, and cancer. Sirtuins are NAD+-dependent protein deacetylases that are involved in the regulation of metabolic diseases, stress responses, and aging. Three sirtuins are located in mitochondria, including SIRT3, 4, and 5. SIRT3 deacetylates and regulates the enzymatic activity of many metabolic enzymes in mitochondria, whereas SIRT5 removes lysine malonylation and succinylation. Among the three mitochondrial sirtuins, Sirt3 is of particular interest with regard to mitochondrial function and drug targeting because it is primarily localized in the mitochondria and is a major mitochondrial deacetylase. Sirt3 also regulates mitochondrial biogenesis via the deacetylation of PGC-1 and several mitochondrial substrates to control metabolic homeostasis. It is therefore crucial to enhance our understanding of how mitochondrial sirtuins affect systemic metabolism in order to identify targets that may facilitate the prevention and treatment of type 2 diabetes and metabolic disorders.

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We hope to handle your contribution to *Pharmaceuticals* soon.

Editor-in-Chief

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