

Special Issue on

Diabetes Mellitus and Glucose-Induced Oxidative Stress: What to Expect from Marine Drugs?

CALL FOR PAPERS

Diabetes mellitus is a heterogeneous chronic disease, predicted by the World Health Organization as the 7th leading cause of death in 2030. Diabetes derives from inappropriate insulin secretion and/or action, resulting in hyperglycaemia that, over time, may trigger life-threatening consequences. The disturbance of any of the mechanisms involved in glucose homeostasis can lead to prolonged hyperglycaemia and, consequently, to glucose-induced toxicity, resulting in serious damage in vital tissues. The increased availability of glucose originates a rise in reactive oxygen species (ROS), leading to increased formation of advanced glycation end products (AGEs), which are hallmarks that contribute to the acceleration of vascular and neurological diabetes-related chronic complications. Thus, the search for new antidiabetic drugs able to avoid glucose-induced toxicity constitutes a challenge for contemporary medicine.

Marine organisms are rich sources of bioactive compounds with diverse molecular structures and biological activities. Besides their role in pharmaceutical, cosmetic, and nutraceutical bioprospecting, they are privileged targets of chemical and molecular studies. The huge diversity of bioactive compounds from marine organisms places these organisms at the forefront as the most appealing sources of drug leads in the XXI century.

In this special issue, we are seeking original and high-quality research articles, as well as reviews, focused on marine drugs with antidiabetic activity, with emphasis on the inhibition of AGEs generation and on endothelial dysfunction induced by oxidative stress. We intend to highlight papers concerning novel compounds, with relevant prospects on disease-related processes.

Potential topics include but are not limited to the following:

- ▶ Oxidative stress and AGEs involvement in diabetes physiopathology
- ▶ Pancreatic β -cells protection against glucose-induced toxicity
- ▶ Genetic modulation of proteins implicated in the pathogenesis of oxidative diabetes-related complications
- ▶ Mechanisms involved in the modulation of endogenous antioxidant defences
- ▶ Mechanisms involving carbohydrate digestion, glucose uptake, and insulin signalling
- ▶ Endogenous glucose production and modulation of enzymes involved in glucose-induced toxicity processes
- ▶ Mechanism of action of marine drugs and biological processes involved in glucose homeostasis

Authors can submit their manuscripts through the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/omcl/mdns/>.

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