

Special Issue on
**The Role of Oxidative Stress in the Development of
Diabetes Mellitus and its Complications**

CALL FOR PAPERS

Oxidative stress is an imbalance in cellular redox reactions that play a key role in metabolic disorders including obesity, metabolic syndrome, and diabetes mellitus. Oxidative stress is the result of reactive oxygen species (ROS) overproduction or a decline in antioxidant defense mechanisms. Although ROS production can be beneficial in some cases as they are used by the immune system and cell communications, overall excessive generation of ROS results in deleterious effects causing damage to DNA, proteins, and lipids, ultimately leading to cell death. Therefore, agents counteracting excess ROS and/or increasing the antioxidant defenses represent an appealing strategy for the treatment of diabetes and its complications.

The current understanding of the complex role of ROS is necessary for developing multifunctional antioxidants, which can maintain oxidative homeostasis in diabetes. In this context, numerous research groups have focused on the characterization of the ROS source and the pathway triggered by ROS diabetes. In addition, a great deal of effort is being conducted to design and synthesize free radical scavenging and antioxidant substances that can diminish excessive ROS production and improve the endogenous antioxidant defenses in diabetes.

We invite investigators to contribute original research as well as review articles that illustrate the role of ROS in the development of diabetes and its complications. In addition, the purpose of the special issue will be to focus on articles describing the mechanism underlying the modulatory effect antioxidants have on oxidative stress.

Potential topics include but are not limited to the following:

- ▶ Role of ROS in insulin resistance and diabetes complications
- ▶ Nutrition, exercise, and the environment link on ROS generation and its implications in diabetes
- ▶ *In vitro* and *in vivo* studies on the role of antioxidants in controlling redox imbalance and its implications in diabetes development and its complications
- ▶ Modulators of the redox-sensitive transcription factors in diabetes
- ▶ Natural and synthetic antioxidants as modulators of cellular signaling and metabolism in diabetes
- ▶ Therapeutic application of antioxidants in oxidative stress related to diabetes

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/jdr/rosdm/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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