

Special Issue

Cellular Oxygen Homeostasis— 2nd Edition

Message from the Guest Editor

Oxygen facilitates an effective production of the cellular energy currency ATP. Cells sense and respond to the partial pressure of oxygen in their environment using a cell-type specific toolkit of oxygen-sensitive ion channels, receptors, second messengers, transcription factors, and other enzymes. Cellular oxygen homeostasis is a prerequisite for proper cellular function and survival, and both under-supply and excess of oxygen induce oxidative stress. Dysregulation induces increased formation of reactive oxygen species, which override the redox buffering capability and modify lipids and proteins. The changes in enzymatic activity can affect all aspects of cellular function, including metabolism, development, and differentiation, cellular secretions, as well as epigenetic mechanisms and gene expression. We cordially invite interested investigators in this field to contribute Original Articles or Reviews to this Special Issue with a focus on molecular mechanisms of cellular responses to different oxygen conditions, whether it be with the help of in vitro models, animal models or in humans, which might provide insight into clinically relevant questions.

Guest Editor

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