

Special Issue

Iron Dyshomeostasis

Message from the Guest Editors

Iron plays a crucial role in many physiological processes of the human body. A plethora of highly conserved regulatory and signaling pathways comprising metal uptake, transport, release, cellular storage, and metal recycling tightly control the dynamics of iron distribution inside the cells. Iron dyshomeostasis is usually associated with altered distribution and accumulation of iron in different compartments of cells. It is connected to multifactorial cellular dysfunction, causing oxidative stress, iron-induced lipid peroxidation, inflammatory responses, and ferroptosis, a programmed cell death process associated with iron dysregulation. It is supposed to be linked to many pathological processes, especially blood disorders, cancer, metabolic disorders, neurodegenerative diseases, as well as viral infections. In this collection, we will present an updated view of iron dyshomeostasis, discussing the associations with pathological processes. It will be also discussed how accumulated knowledge on this process is helping the creation of novel therapeutic strategies.

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