Special Issue

Iron Metabolism in Health and Disease

Message from the Guest Editors

Iron is biologically essential, but also potentially toxic; as such, it is tightly controlled at cell and systemic levels to prevent both deficiency and overload. The master regulator of systemic iron homeostasis is the liver peptide hepcidin, which controls serum iron through the degradation of ferroportin in iron-absorptive enterocytes and iron-recycling macrophages. Research in this field has made great strides in recent years and clarified the role of iron in physiology and diseases. The disorders associated with alterations in iron metabolism span from iron overload to iron deficiency. The studies of genetic and acquired iron disorders have identified novel iron genes, proteins, and pathways and revealed the essential role of the hepcidin–ferroportin axis in systemic iron homeostasis. The aim of this issue is to obtain an overview of the regulation of iron metabolism at physiological levels and in the diseases associated with iron metabolism alterations.

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