

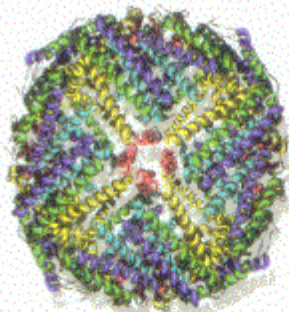
Third Edition

Iron Metabolism

From Molecular Mechanisms to Clinical Consequences

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Iron is of fundamental importance to the growth, development and well-being of almost all living organisms. Multiple biological systems have evolved for the uptake, utilisation, storage, and homeostasis of iron in microbes, plants and mammals. Both iron deficiency and iron overload are found extensively in humans; the intimate links between iron and oxidative stress are associated with a wide range of pathologies. Iron has a well established role in infections by a range of microorganisms and parasites. Other metals such as copper and zinc are also closely linked with iron metabolism. Iron overloads and deficiencies are important factors in the health of humans and are therefore a key target in drug development.

Iron Metabolism: From Molecular Mechanisms to Clinical Consequences, Third Edition presents a comprehensive overview of this important field. Topics covered include:

- Solution chemistry of iron in biological media
- The importance of iron for biological systems
- Microbial iron transport and metabolism
- Iron uptake by plants and fungi
- Cellular iron uptake and export in mammals
- Intracellular iron storage and biomineralization
- Intracellular iron metabolism and cellular iron homeostasis
- Iron absorption in mammals, with particular reference to man, and regulation of systemic iron balance
- Pathophysiology of iron deficiency and iron overload in man
- Iron and oxidative stress
- Brain iron homeostasis and its perturbation in various neurodegenerative diseases
- Interactions between iron and other metals

Written in a lively style by one of the leaders in the field and presented in full colour, this third, expanded edition of *Iron Metabolism* has been fully updated with the latest discoveries. Major additions include recent information on mitochondrial iron metabolism and the role of frataxin; transcriptional control of iron homeostasis; orally active iron chelators; the roles of hepcidin and erythropoietin; the increasing number of types of iron overload; and the importance of iron in Alzheimer's disease.

Iron Metabolism is essential reading for researchers and students in biochemistry, molecular biology, microbiology, cell biology, nutrition and the medical sciences. It will also find space on the bookshelves of bioinorganic chemists with an interest in iron metabolism, health professionals with an interest in diseases of iron metabolism, and pharmacologists in the pharmaceutical industry interested in developing novel iron-binding drugs.



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