

Book Reviews

Molecular and Cellular Iron Transport, Douglas M. Templeton, Marcel Dekker Inc, New York, 2002.

The stated aim of this book is to bring together in one volume our current knowledge of how living organisms deal with iron. On the whole, it succeeds well, although so many books deal nowadays with iron and iron chelators that its market may well be limited.

The book begins with iron chemistry, including spin state, complex formation and Fenton Chemistry. Sadly, the Fenton reaction is misrepresented on p. 29; reduction of Fe^{3+} by $\text{O}_2^{\bullet-}$ is not Fenton chemistry *per se*. The various iron binding proteins are then reviewed in detail, including the different classes of transferrins, transferrin receptors and ferritins. The pictures on pages 49, 81, 82, 97, 98 and 127 have reproduced poorly and would have been better in colour; indeed the book in general has a drab and uninspiring appearance. It was nice, however, to see, chapters on iron acquisition by yeasts and higher plants.

Chapter 6 is a useful update on the Nramp family, followed by a good chapter on intestinal basolateral iron ion transport, although this is separated from and overlaps with chapter 23 ("Regulation of intestinal iron transport"). Again, however, p. 183 shows poor figure presentation. A whole chapter is devoted to HFE and its mutations (with another badly reproduced Figure on p. 200), and a later chapter discusses well how the discovery of the gene has influenced the diagnosis and management of haemochromatosis. IRPs-1 and -2 and IREs are well reviewed. There is a very useful chapter on frataxin.

Siderophore chemistry is well discussed in chapters 12 and 13, aptly followed by a chapter on bacterial iron uptake (again a pity about the dreadful figure on p. 408). The book has several interesting chapters dealing with "low-molecular mass" or "non-transferrin bound" iron, including its uptake by hepatocytes and its measurement by fluorescent probes (pages 548 and 554 more dreadful Figures). Other topics covered include aceruloplasminaemia (the figure on p. 754 again poor), the hereditary hyperferritinaemia cataract syndrome, African dietary iron overload, how the reticuloendothelial system handles iron, iron movements in the liver, brain and nervous system (another bad figure on p. 495), megaloblastic cell iron handling, and various animal models of iron transport and storage disorders, some examples described being the atransferrinaemic mouse, and the zebrafish *weh* gene mutation. Transfusional iron overload is well described in chapter 29, although the controversy about the hepatotoxicity and general safety profile of LI still continues (also see chapter 33).

Overall this is a useful reference book and I am pleased to have it on my shelf. Most chapters are well written by appropriate experts. The index is a bit skimpy but my main complaint is the poor presentation of figures. For the cost, the publishers could have done better.

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