

schemes in a hands-on style and, despite the price and slightly dated introductory chapter, should appeal to researchers wishing to learn more about biotransformations and to those wishing to explore the possibilities of applying this technology to their own research.

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### **Uses of Inorganic Chemistry in Medicine**

N. P. Farrell (ed.)

Royal Society of Chemistry, Cambridge, 1999

xii + 160 pages. £59.50

ISBN 0-85404-444-2

Traditionally, medicinal chemistry researchers have experienced some difficulty in adapting their thinking to embracing the role of metal ions in pharmaceuticals. This is partly because synthetic chemistry of old was based upon organic bonds, and partly because the concept of lability of metal–ligand bonding was difficult to grasp. Over the last two decades there has been much progress in this area: several books have appeared, and pharmaceutical research companies have recruited specialists in the area of metallocomplexes.

This book, edited by N. P. Farrell, is a contribution to this progress, and contains nine chapters addressing such topics as the biomedical uses of lithium, gold complexes for treating cancer and HIV, nitric oxide in physiology and medicine, therapeutic uses of manganese, vanadium in its role of a possible insulin modifier, platinum-based anticancer drugs, and the role of iron and copper in controlling oxidation damage. The authors are all well experienced in the field and give balanced overviews which make useful reading.

Progress in these areas is best made using an interdisciplinary approach, blending the most modern research techniques in chemistry with those of biology and pharmacology. This book contains selected case studies addressing topics such as those listed. The most important chemical factors are researched in order to enlighten our knowledge of the mechanistics, pharmacokinetics and tissue distribution features. Traditional factors which need to be built into any structure–activity relationship include coordination number, the geometry of the complex, the type of ligand involved, and whether the species are kinetically inert or labile.

To someone who has been in the field for several years, this book will bring the readers up-to-date in terms of progress in these various topics. Particularly valuable contributions are those concerning platinum-based anticancer agents, and it is fascinating and intriguing to see that more and more details have emerged over the last 30

years concerning the target sites for cisplatin after it has lost its two chloride ligands. Diagrams are produced which can be useful in instructing new researchers in the field concerning the exact sites of nucleophilic attack upon DNA, RNA and proteins. The more recent replacement of the two chloride leaving groups by cyclobutane dicarboxylic acid (CBDCA) is described in detail, and how it enhances, by two orders of magnitude, resistance to aquation replacing the leaving group. This is one of the rare instances in this book where chemical speciation is implicated although not mentioned by name.

This exciting area of research has continued to involve novel trinuclear platinum compounds, which have now entered the first phase of clinical trials and are designed to have a spectrum of clinical activity that is complementary to the parent cisplatin drugs.

This is an excellent volume for inspiring research students with enthusiasm for relating different aspects of inorganic chemistry to medicine. I cannot see it being prescribed as a first-choice textbook in the area, but it will be cited as useful support reading and copies should be available in libraries and in research laboratories. I imagine that pharmaceutical researchers from industry will use it to become familiar with the new terminology more closely associated with metals in medicine. The authors have put much effort into simplifying their accounts and rendering them reader-friendly, and are to be congratulated.

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### **Colloid–Polymer Interactions (From Fundamentals to Practice)**

Paul L. Dubin and Raymond S. Farinato (eds)

John Wiley and Sons, Chichester, 1999

x + 417 pages. £74.50

ISBN 0-471-24316-7

This book is a comprehensive study of colloid–polymer interactions involving the ways polymer chains may behave at the interface. It takes the form of a series of chapters, well written by invited authors, although it must be emphasized that this is not just a collection of research articles since there is a good integration of cross-referencing throughout the volume. The editors provide an excellent preface and set the goals to be achieved by the book: firstly, to present in a non-specialist manner practical technologies that are based on colloid–polymer interactions; secondly, to put into clearer focus the models used to organize and rationalize observations; thirdly, to provide technologists and