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Commentary

# Free Radicals in Biology and Medicine

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## COMMENTARY

The Free Radicals in Biology and Medicine are certainly correct when they state in the Preface that the interest in this field shown by biologists and clinicians has been raised recently. There is a dire need for a book for those that want to understand "what free radicals are, how they're generated, and the way they react." This book is aimed mainly at biologists and clinicians with occasional comments to "charlatans" who would "make money out of proposing that consuming radical scavengers will make you live forever or that taking tablets containing SOD will enhance your health and sex life." The authors present, within the introductory chapter, some chemical terms which the reader must understand before proceeding, and they include an Appendix, entitled "A consideration of Atomic Structure and Bonding," that clearly explains atomic structure and bonding between atoms. Subsequent chapters discuss the chemistry of oxygen radicals and other oxygen-derived species, protection against oxygen radicals and the superoxide theory of oxygen toxicity, and lipid peroxidation.

Then there is a chapter on the chloroplasts of higher plants and the mammalian eye because these "very different systems have a lot in common." Finally, the authors include chapters on free radicals and toxicology, free radicals as useful species, and free radicals, aging and disease. As a researcher during this field at an outsized university, i'm frequently called upon by students, clinicians and other colleagues to assist them understand the topic of free radicals because they are interested in the field, or suspect that their field of research may involve free radicals. And until now there was no good introductory text on this subject.

This book can serve this role. It is an easy hook to read with many anecdotes, editorial comments (perhaps the Vikings may have introduced the SOD-2 gene on one of their rampages!) and "examples of interesting biology which tend to stay the reader's interest. The book is not for those actively involved in research on the role of free radicals in biology and medicine.

For one reason, which is especially annoying, statements within the text are rarely referenced, although some data in tables and figures do contain references and there are references for further reading at the end of the chapter. The absence of references is troublesome for somebody working during this field for there are many conflicting results or controversies during this field, most of which are probably the result of the use of slightly different experimental conditions. Thus, it is important that the researchers have access to the original papers in order to assess the methodology. Also, it appears to this reviewer that it is quite easy to invoke free radicals in almost any toxicity, disease, cancer, and aging or otherwise unexplained malady, perhaps because it is a passing bandwagon or because it is particularly difficult to prove or disprove.

This text may contribute to this perception. Probably because of the attention this field is getting it is quite easy to get the impression that most cells of most tissues are packed with oxygen radical generating systems also as antioxidants and enzymes which protect against oxygen mediated damage. It is therefore important for readers to read certain sections of this book very carefully in order to put everything in perspective. At times it would appear that the authors are indeed trying to address this misconception.

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