ANTIOXIDANTS & REDOX SIGNALING
Volume 2, Number 2, 2000
Mary Ann Liebert, Inc.

Book Review

Antioxidant and Redox Regulation of Genes

C.K. Sen, H. Sies, and P.A. Baeuerle, Eds. Academic Press, San Diego, 2000

Reviewed by BARRY HALLIWELL

"FREE RADICALS are bad, antioxidants are good"—So ran a recent advertisement for antioxidant nutritional supplements, with a picture of a multihorned demon to prove the former point. We now know, of course, that free radicals and other reactive oxygen/nitrogen/chlorine species play useful roles *in vivo*, and the field of redox regulation of gene expression and protein function is growing fast. Therefore, this book is particularly timely, and the publishers have selected three of the leading experts in the field to act as editors. The emphasis of *Antioxidant and Redox Regulation of Genes* is on pathology rather than the physiology of redox signaling, and I found it difficult to obtain from it a picture of the overall "state of the art." How important are reactive species as regulators of gene expression/ protein function in the healthy organism rather than at sites of inflammation, ischaemia-reperfusion, exposure to UV light, etc.? Does this process happen in all cells or only some cell types in a few tissues? The book would, I feel, have benefited from a concluding chapter addressing these issues.

Nevertheless, the chapters are uniformly good and many are excellent. Ones I particularly enjoyed included "Signalling by singlet O_2," "Redox regulation of ion channels," "Induction of protein tyrosine phosphorylation by oxidative stress . . . ," "Reactive oxygen species as stimulatory signals of cytokine-induced NF-κB activation pathways," Redox regulation of cell adhesion processes," "Peroxiredoxins in cell signalling and HIV infection," and "Oxidative stress as a governing factor in physiological aging."

The book has a pithy foreword by Luc Montagnier, and is appropriately dedicated to Lester Packer. I recommend it strongly.

Barry Halliwell
Department of Biochemistry
National University of Singapore
10 Kent Ridge Road
Singapore 119 260 Singapore