

Preface

Free radicals and reactive oxidizing agents were once ignored as biochemical entities not worth close scrutiny, but are now recognized as causes or contributing factors in dozens, if not hundreds, of disease states. In addition, free radical metabolisms of xenobiotics have become increasingly important to pharmacologists. Accordingly, the need has arisen to accurately quantify reactive oxygen species and their byproducts.

Methods in Biological Oxidative Stress is practical in scope, providing the details of up-to-date techniques for measuring oxidative stress and detecting oxidizing agents both in vitro and in vivo. The contributors are recognized experts in the field of oxidative stress who have developed novel strategies for studying biological oxidations.

The chapters of *Methods in Biological Oxidative Stress* cover widely used standard laboratory techniques, often developed by the authors, as well as HPLC–electrochemical measurement of protein oxidation products, particularly nitrotyrosine and dityrosine, and HPLC–electrochemical detection of DNA oxidation products. Additionally, recently developed techniques are presented to measure lipid oxidation and nitration products such as 5-NO₂- γ -tocopherol and isoprostanes, using HPLC-electrochemical/photodiode array methods and mass spectrometry as well as electron paramagnetic resonance (EPR) techniques.

In scope, presentation, and authority therefore, *Methods in Biological Oxidative Stress* was designed to be an invaluable manual for clinical laboratories and teaching institutions now conducting routine measurements of biological oxidants and biological oxidative stress or implementing new programs in this vital area of research. As a reference work, this collection of techniques and methods will prove useful for many years to come.

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