Methods in ENZYMOLOGY

Volume 359

Nitric Oxide, Part D: Nitric Oxide Detection, Mitochondria and Cell Functions, and Peroxynitrite Reactions

Edited by

Enrique Cadenas

Lester Packer

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NITRIC OXIDE

Part D

Nitric Oxide Detection, Mitochondria and Cell Functions, and Peroxynitrite Reactions

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Preface

The discovery that nitrogen monoxide or nitric oxide (NO) is a free radical formed in a variety of cell types by nitric oxide synthase and is involved in a wide array of physiological and pathophysiological phenomena has ignited enormous interest in the scientific community. One of the unique features of nitric oxide is its function as an intercellular messenger and, in this capacity, its involvement in the modulation of cell signaling and mitochondrial respiration. Nitric oxide metabolism and the interactions of this molecule with multiple cellular targets are currently areas of intensive research and have important pharmacological implications for health and disease.

Accurately assessing the generation, action, and regulation of nitric oxide in biological systems has required the development of new analytical methods at the molecular, cellular, tissue, and organismal levels. This was the impetus for *Methods in Enzymology* Volumes 268, 269, and 301, Nitric Oxide Parts A, B, and C, respectively. Only a few years later, this new Volume 359 reflects the amazing development of new and important tools for the assessment of nitric oxide action. Nitric Oxide, Part D contains five major sections: Detection of Nitric Oxide, Nitrosothiols and Nitric Oxide in Cell Signaling, Nitric Oxide and Mitochondrial Functions, Peroxynitrite, and Nitric Oxide Synthases.

In bringing this volume to fruition, credit must be given to the experts in various specialized fields of nitric oxide research who have contributed outstanding chapters to these sections on nitric oxide methodology. To these colleagues, we extend our sincere thanks and most grateful appreciation.

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