Nitric oxide in plant growth, development and stress physiology /

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Aufsatzsammlung

Monografía

Recent advances in the study of nitric oxide (NO) biology, biochemistry, molecular biology and physiology in plants are presented in this book, providing an overview of current understanding of the NO actions involved in adaptive responses of plant fitness to environmental constraints. The special emphasis is on NO-dependent signalling, molecular adjustments and targets as key elements in plant growth, development and stress physiology. The first part of the book is devoted to the description of key features related to NO biochemistry, synthesis and metabolism and the modes of action involved. The second part covers the functionality of NO in three central nodes of the plant life cycle: growth, development and stress physiology. Finally, a detailed analysis of the advantages and disadvantages of the use of fluorometric detection of NO in plant research brings to light information necessary for understanding the limitations of the method

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Contenido: Cover -- Contents -- Higher Plant Mitochondria as a Source for NO -- Nitric Oxide -- A Product of Plant Nitrogen Assimilation -- NO-Based Signaling in Plants -- S-Nitrosylation in Plants -- Spectrum and Selectivity -- Enzymatic Sources of Nitric Oxide during Seed Germination -- Seeking the Role of NO in Breaking Seed Dormancy -- Nitric Oxide Functions as Intermediate in Auxin, Abscisic Acid, and Lipid Signaling Pathways -- Nitric Oxide in Cytokinin and Polyamine Signaling: Similarities and Potential Crosstalk -- Nitric Oxide and Plant Ion Channel Control -- Nitric Oxide in Nitrogen-Fixing Symbiosis -- Nitrosative Stress in Plants: A New Approach to Understand the Role of NO in Abiotic Stress -- Nitric Oxide-Mediated Signaling Functions During the Plant Hypersensitive Response -- Nitric Oxide in Cell-to-Cell Communication Coordinating the Plant Hypersensitive Response -- Mitochondrial Nitric Oxide Synthesis During Plant-Pathogen Interactions: Role of Nitrate Reductase in Providing Substrates -- Nitric Oxide as an Alternative Electron Carrier During Oxygen Deprivation -- Fluorometric Detection of Nitric Oxide with Diaminofluoresceins (DAFs): Applications and Limitations for Plant NO Research -- Subject Index -- Last Page

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