

METHODS IN MOLECULAR BIOLOGY

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Plant Isoprenoids

Methods and Protocols

Edited by

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Preface

Plant isoprenoids form one of the most diverse families of metabolites in nature, with tens of thousands of structures known to date. Among them, some are essential for plant photosynthesis (carotenoids and the side chain of chlorophylls, plastoquinone, and phylloquinones), respiration (ubiquinone), and development (brassinosteroids, cytokinins, gibberellins, abscisic acid, strigolactones), whereas others have a great economic interest as drugs (artemisinin, paclitaxel), polymers (rubber), phytonutrients (phytosterols, carotenoids), or even biofuels (limonene, farnesene, or bisabolene).

Because isoprenoids are such a diverse family and they participate in a large variety of processes, the collection of detailed techniques and protocols included in the volume should be a useful tool for a wide range of plant biologists as well as for scientists of other fields with an interest in plant isoprenoids. Rather than being exhaustive, my intention has been that the protocols in this volume would cover strategic areas in plant isoprenoid research. Thus, this volume focuses on four major areas: (1) measurement of core enzyme activities involved in the production of isoprenoid precursors, (2) targeted analysis of major groups of isoprenoid metabolites, (3) isoprenoid profiling in specialized organs such as trichomes and oil glands, and (4) genetic, pharmacological, and bioinformatic tools that are particularly useful for plant molecular biologists.

Thanks to the excellent work of the contributing authors, the protocols provide step-by-step guidance and are easy to follow even for users with little or no experience in the field. At the same time, they can also serve as reference materials that could be adapted to develop customized methods for different needs. I would like to thank all the authors for agreeing to participate and for their generous effort to produce this issue on Plant Isoprenoids, a badly needed resource that will contribute to make the world of plant isoprenoids more accessible for all researchers. I would also like to thank Rosa Rodríguez for her help in editing and adjusting the format of the chapters and acknowledge John M. Walker for his invitation to write this volume for *Methods in Molecular Biology* and for his useful advices for the preparation of the issue.

Barcelona, Spain

Manuel Rodríguez-Concepción

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