
Preface

Photosynthesis is one of the most important biological phenomena on Earth. The capture of sunlight by photosynthetic organisms supplies most of the energy required to develop and sustain life on the planet. Not only is photosynthesis at the heart of plant bioenergetics, it is also fundamental to plant productivity and biomass. Photosynthetic carbon fixation and oxygen evolution directly intervene into many environmental aspects, such as the global atmospheric CO₂ level and global climate. Therefore, it is not surprising that a large effort is devoted to photosynthesis research.

Photosynthesis, in itself, is of great interest to a multidisciplinary field of research involving agriculture, biochemistry, biotechnology, botany, cell biology, environmental sciences, forestry, plant genetics, plant molecular biology, photobiology, photophysics, photoprotection, plant physiology, plant stress, etc. This book is thus intended as a source of information for scientists working on any of the numerous aspects of photosynthesis. Several biochemical methods of isolation, treatment, and analysis have been developed to fulfil the needs of photosynthesis research. This 2nd edition of *Photosynthesis Research Protocols* aims at presenting a detailed description of a broad range of general and fundamental methods that are commonly used by plant biochemists, physiologists, and molecular biologists. It retains most of the methods presented in chapters of the first edition, but several new interesting methods are added. This includes coverage of methods related to the most abundant protein on earth, ribulose-1,5-bisphosphate carboxylase/oxygenase.

Each technique is described by an expert, and the methods presented can serve as basic protocols for new photosynthesis researchers as well as for experienced scientists seeking to use a new type of preparation or method. The book is especially valuable to the beginner in the field of photosynthesis since each technique is described in simple terms, requiring no previous knowledge of the method. In the Note section of each chapter, appears some further hints and tips which are not provided in regular research papers.

I would like to acknowledge and congratulate our series editor, John Walker, for his idea of writing the 1st edition of *Photosynthesis Research Protocols*. Such a book was badly missing from our shelves. This first version had great success, and we hope this 2nd edition does the same. I also want to thank Johanne Harnois for her great help in preparing the final layout and arrangement of the chapters. Finally, I wish to express my deep gratitude to all the contributors for agreeing to participate. Thanks to their considerable effort, this 2nd edition of *Photosynthesis Research Protocols* constitutes a major reference book in many laboratories.

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