

Preface

IMAGING TECHNIQUES

Scientific progress often takes place when new technologies are developed, or when old procedures are improved. Today, more than ever, we are in need of complementary technology platforms to tackle complex biological problems, as we are rapidly moving from the analysis of single molecules to the study of multifaceted biological problems. The third edition of *Cell Biology: A Laboratory Handbook* brings together 236 articles covering novel techniques and procedures in cell and molecular biology, proteomics, genomics, and functional genomics. It contains 165 new articles, many of which were commissioned in response to the extraordinary feedback we received from the scientific community at large.

As in the case of the second edition, the *Handbook* has been divided in four volumes. The first volume covers tissue culture and associated techniques, viruses, antibodies, and immunohistochemistry. Volume 2 covers organelles and cellular structures as well as assays in cell biology. Volume 3 includes imaging techniques, electron microscopy, scanning probe and scanning electron microscopy, microdissection, tissue arrays, cytogenetics and in situ hybridization, genomics, transgenic, knockouts, and knockdown methods. The last volume includes transfer of macromolecules, expression systems, and gene expression profiling in addition to various proteomic

technologies. Appendices include representative cultured cell lines and their characteristics, Internet resources in cell biology, and bioinformatic resources for in silico proteome analysis. The *Handbook* provides in a single source most of the classical and emerging technologies that are essential for research in the life sciences. Short of having an expert at your side, the protocols enable researchers at all stages of their career to embark on the study of biological problems using a variety of technologies and model systems. Techniques are presented in a friendly, step-by-step fashion, and gives useful tips as to potential pitfalls of the methodology.

I would like to extend my gratitude to the Associate Editors for their hard work, support, and vision in selecting new techniques. I would also like to thank the staff at Elsevier for their constant support and dedication to the project. Many people participated in the realization of the *Handbook* and I would like to thank in particular Lisa Tickner, Karen Dempsey, Angela Dooley, Carl Soares, and Tari Paschall for coordinating and organizing the preparation of the volumes. My gratitude is also extended to all the authors for the time and energy they dedicated to the project.

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Editor