

## BOOK REVIEWS

### METHODS IN PLANT ELECTRON MICROSCOPY AND CYTOCHEMISTRY

Edited by William V. Dashek

Humana Press Totowa, New Jersey. 300 pp

ISBN:0-89603-809-2

This manual is dedicated to plant studies and should be quite useful to professors, under graduate, graduate students and post-doctorals. In this manual, experimentalists describe the cutting-edge microscopical methods needed for the effective study of plant cell biology today.

There is an interesting manual including chapters regarding light microscope cytochemistry, radioautography and immunocytochemistry. Light microscopy is employed in conjunction with electron microscopy.

In various chapters are presented several techniques all described in great details to ensure successful experimental results. It begins by presenting Methods in light and electron microscopy in Plant cells and Tissues: Structure-Function Relationships. Methods for the Cyto/Histochemical Localization of Plant Cell/Tissue Chemicals offers some recent development regarding fixation, dehydration and embedding. In addition it provides more recently developed fluorochromes for DNA and RNA detection and the processing of cells and tissues for the location of low molecular-weight compounds. Methods in Light Microscope Radioautography is a clear description of methods used in plant cell biology. Some Fluorescence Microscopical Methods for Use visualizes properties of the cell wall, the cytoplasm endomembranes and other organelles of fungal, algal and plant cells. Fluorescence Microscopy of Aniline Blue Stained Pistils is a relatively simple description and a quick method and can be applied in checking pollination and fertilization at the time of plant flowering. A Short Introduction to Immunocytochemistry gives valuable information on the distribution of molecules of interest in tissues or at the cellular and subcellular levels that could be difficult or in most cases impossible to obtain in another way. The elegant simplicity of the technique: The Fixation of Chemical Forms on Nitrocellulose Membranes has resulted in many new applications. The binding properties of nitrocellulose membranes have made it possible the cellular localization of proteins, nucleic acids, enzymatic activities, ions

and certain carbohydrate. This method offers to the molecular biology, to the biochemists rapid means of imaging macromolecules within cells and in specific tissues. Dark-Field Microscopy and Its Applications to Pollen Tube Culture is useful especially when pollen tubes are observed at low magnification to evaluate their growth. Computer-assisted Microphotometry provides an overview of the computer-assisted light microscope and gives you the prerequisites for getting started in light microscopy and in programming a PC, an analytical tool working down to cellular and subcellular levels with relatively low-cost. Isolation and Characterization of Endoplasmic Reticulum from Mulberry Cortical Parenchyma Cells is an important technique for the investigation of the physiological functions of the organelles themselves. Methods for the Identification of Isolated Plant Cells Organelles and Methods for the Detergent Release of Particle-Bound Plant Proteins explain how the negative staining has been very useful to biochemists interested in tentatively identifying subcellular organelles isolated from cellular and tissue homogenates. Scanning Electron Microscopy describes an indispensable tool for taxonomists to study and classify diatoms. Methods for the Ultrastructural Analysis of Plant Cell and Tissues focuses on recent improvements in fixation, dehydration, embedding, sectioning, positive staining, photography and darkroom procedures.

Methods for Anatomic Force and Scanning Tunneling Microscopies is a relatively new tool for examining surface topography on a subatomic scale. Visualization of Golgi Apparatus by Zinc Iodide-Osmium Tetroxide Staining. Methods in Electron Microscope Autoradiography involves protocol for administration of radioisotopes, tissue preparation and emulsion. Electron Microscopic Immunogold Localization: immunogold assays are used to localize proteins within cells and to achieve the detail and resolution that cannot be obtained with alternative assays. It is a technique with great potential to obtain dynamic information of cellular process. Microanalysis with X-ray should become,

as other developed techniques such as immunoelectron microscope and electron system imaging, a routine practice in most Electron Microscope laboratories. Some of the well-established ancillary EM techniques have found new life in their applications to molecular biology. The use of Electron Microscopy in Molecular Biology and certain techniques, e.g., in situ hybridization in visualizing

macromolecular complexes, are widely known and easy to use.

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## DIAGNOSTIC AND THERAPEUTIC ANTIBODIES

Edited by Andrew J. T. George

Catherine E. Urch

Humana Press, Totowa, New Jersey, pp 477

ISBN 0-89603-798-3

This excellent book covers theoretical and practical aspects of the clinical use of antibodies. The results of recent clinical trials have demonstrated unequivocally the benefit of antibody therapy and more careful consideration has been taken of the types of disease best treated using this approach in which antibody therapies are seen to have a role to play in the clinical management of patients, but are not seen as the panacea for all disease. The book is therefore, especially timely, aimed at a new generation of clinicians and scientists who are entering the field and need to know the background of the subject and to gain real competence in the basic techniques that they will be using. The book is well designed and it is divided into four sections. The first is a short introduction to the way to generate antibodies and to the basic science of antibody molecule, its structure, genetics of the antibody, antibody antigen interactions, including the most recent information derived from research in antibodies. 'Polyclonal and Monoclonal Antibodies' covers exhaustively the scientific background that allows successful laboratory practice, and through items offers the most recent information derived from research in selection and preparation of immunogen, route of immunization, generation of an immune response, type of reagents and their advantages and disadvantages for use in laboratory and clinic. Recent advances in understanding and analysis of antibody structure are related in Engineering Antibody Molecules, while the chapter 'Phage Display Technology' concerns itself with phage display in the context of antibody engineering and the application of antibody fragment selected from diverse libraries.

The second section, Prospects for the Application of Antibodies in Medicine, is a series of excellent reviews looking at different applications of antibodies in the clinical (like neoplastic, inflammatory and infectious disease), including clinical laboratories (immunoassay). The third clearly written section, Ethics and Industry, covers the interaction between industry and the basic scientist. This section consists of two chapters, Intellectual Property, that outlines the essential of intellectual property and From Laboratory to Clinic, which gives the case history of the antibody CAMPATH-1 and the disasters and triumphs that accompanied its progress to the marketplace. The interesting final section, Production and Purification, contains a series of protocols that will be useful to people new to the field with specially emphasize in control. The first set gives methods for producing and purifying antibodies as well as the quality control procedures that are needed in preparing material for the clinical.

The second describes how to modify antibody for clinical application and how to measure the affinity and immunoreactivity of the molecules. It specifies also the use of antibodies in a variety of in vitro assays and then it gives the staining procedures. Finally, a pair of chapters outlines basic protocols for the early stages in antibody engineering. I suggest this essential excellent book that I found very useful in various field and especially for research and clinicians.

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**INTERPRETATION OF SEMEN ANALYSIS RESULTS A PRACTICAL GUIDE.**

Rajasingam S. Jeyendram

Cambridge University Press. 100 pp.

ISBN 0-521-79957-0

This book is a practical and concise guide and a valuable resource for clinicians, investigators et all persons working with every aspect of the interpretation of semen analysis procedure .With focus on basic semen analysis techniques it provides a clear guidance on the significance of different results. It also provides clinically essential reference values and the relationships between many sperm characteristics, usually performed as part of the comprehensive investigation of an infertile couples. It is a useful guidance on the significance of different results for infertility assessment.

The guide analyses the interpretation of the results of the most common tests performed on semen sample in clinic and research laboratories, including the macroscopic and microscopic examination of the ejaculate and interpretation of procedure cause, clinical factors, significance and recommendations. The protocols are clearly written and the interpretation of these analyses plays a vital role in the overall treatment of infertile couples.

A logical sequence of routine and specialized semen analysis was performed to facilitate the understanding of the concepts and interpretation to the semen analysis. In every sections, a procedure, discussions and recommendations have been made regarding particularly sperm parameters and their likely diagnosis. Especially in cases with a semen variable abnormality, the semen are deviate from the average range. In the case of infertility, when the standard semen analysis yield equivocal values or the semen are abnormal, specialized test are also recommended. The guide offers recommendations for appropriate referral and additional options. It is a practical and excellent invaluable resource for clinicians, scientists and laboratory professionals working with infertile patients.

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**POLYCYSTIC OVARY SYNDROME**

Edited by Gabor T. Kovacs.

Cambridge University Press 225pp

ISBN 0-521-66073-4

This excellent book is an essential guide to the diagnosis of polycystic ovary syndrome (PCOS), its etiology, pathology and effective medical management to all the doctors with an interest in reproduction and endocrinology, including gynecologists, obstetricians and in-vitro fertilization specialists. This syndrome is one of the major cause of infertility and the use of the new assisted reproductive technologies overcome this problem. The Editor has tailored this book around different topics and several authors have summarized the syndrome's inheritance, its genetic basis and long-term health effects, along with the most recent advances in the molecular basis of the syndrome.

Two other well developed topics are about the syndrome's pathology and the differential diagnosis, and on the Ultrasonographic imaging that in clinical practice has replaced laparoscopy. The excellent chapter 'The Long-Term Health Implication' concerns the impact of the metabolic disturbances, like reproductive health, obesity and cancer and cardiovascular risks. 'Skin Manifestations in women with the PCOS' regards the development of beneficial hormonal and other adjunct treatments. Norman R. and Clark A., the authors of 'Lifestyle factors in the etiology and management', summarize fluently the factors that are critically important for long-term health.

'Ovulation induction in women with POCS' is a good written chapter about the management of this anovulatory infertility and on the medical therapy to induce regular unifollicular ovulation by minimizing the risks of ovarian hyperstimulation syndrome and multiple pregnancy. Jean Cohen writes about 'Laparoscopic Surgical treatment of infertility', specifically in cases of no response to medical treatment, taking full advantage of the laparoscopic techniques (biopsy, catheterization, multi-electrocoagulation, laser etc). 'In-vitro fertilization in women with PCO' is a chapter covering exhaustively the scientific background which requires careful management in order to enhance fertilization and pregnancy outcome. With the presentation of the very last technique for the collection of immature oocyte and for their subsequent maturation enhanced by freezing the oocyte the

authors offer an attractive alternative treatment of infertility for women with PCOS. 'Pregnancy outcome for women with PCO' is the result of an excellent review of the current evidence for an association between PCOS, early pregnancy and later complications during pregnancy.

The fluent last chapter reviews the evidence for long-term adverse outcomes for women with PCOS, laying emphasis on coronary heart disease, diabetics, cancer of the breast and reproductive systems, and discusses the research required to provide firmer recommendations in this area.

This book is an excellent and clear guide to effective clinical practice.

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## MORPHOLOGY METHODS: CELL AND MOLECULAR BIOLOGY TECHNIQUES

Edited by Ricardo Lloyd,  
Humana Press, 2001, 422 pp  
ISBN 0-89603-955-2

This book is a multi-authored volume that includes 20 chapters on a variety of procedures commonly used in today's research and diagnostic laboratories, as well as some less widely used methods that are becoming of growing importance in cell biology research. Each chapter is a concise but thorough explanation on a particular cell or molecular biology method, including abundant bibliographic references, although not equally up-to-date, diagrammatic explanations that help the reader to follow the essentials on the procedure and, most importantly those technical tips that are often the difference between failure and success. Thirteen of the chapters are accompanied by actual protocols described by experienced professionals that have designed or perfected some of them. There are seven chapters devoted to in situ hybridization procedures, not an excess considering the importance of its application in cell biolo-

gy research and the diagnostic pathology. The reader can find protocols for ISH on tissue, interphase nuclei, metaphase chromosome, in situ PCR, for light or electron microscopy, and using fluorescent and non-fluorescent reporters. Other covered subjects are laser capture microdissection, confocal scanning microscopy and immunohistochemistry procedures, dealing with diagnosis of infectious agents, tumors and endocrine lesions.

I find the book specially useful for pathology professionals interested in starting up new diagnostic procedures, and those researchers confronting problems on cell biology that require modern tissue analysis procedures, coupled with molecular methods.

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