

Herein, we are treated to a good, short, review of the proteins of central and peripheral myelin by R.M. Epaud, an up-to-date account of central nervous system myelin proteolipid protein by M.B. Lees and W.B. Macklin and a superb essay by R.H. Quarles on myelin-associated glycoprotein, in which the clinical applications are more fully developed than elsewhere.

Three more chapters, on microtubules (M.

Wallin), glial fibrillary acidic protein (L.F. Eng and R.H. Shiurba) and the Thy-1 glycoprotein (R. Morris) complete the work.

This is an enjoyable book to read and the amount of information conveyed is very high indeed. With the qualifications voiced above this is an excellent reference source and as such it can be recommended enthusiastically.

P.B. Nunn

Neuropeptides: A Methodology

IBRO Handbook Series: Methods in the Neurosciences, Vol. 11

Edited by G. Fink and A.J. Harmer

Wiley, Chichester, 1989

xv + 345 pages. £45.00

It is always difficult to edit (or indeed to review) books which are collections of techniques. Perhaps the most important starting point is to define the audience which is being addressed. The publishers suggest on the back of the book that this audience should include undergraduate and postgraduate students as well as established researchers. I doubt whether the authors would agree with this blatant attempt to maximise revenues, since it seems to me that this book is squarely aimed at active workers in the neurosciences who wish to introduce new techniques into their laboratories. To this end several chapters contain detailed protocols for particular methods and seek to act as laboratory manuals for the techniques which they describe.

Given this aim some of the omissions are rather surprising. There is little material on quantitative immunochemical techniques such as RIA and ELISA while the single chapter on chromatographic techniques largely deals with electrochemical detection which although a powerful technique is far from universally applicable. However these omissions are understandable when one considers the wide range of methods which the authors have tried to cover in a single volume, everything from behavioral studies to in situ hybridisation. Herein lies the weakness of the

book; surely each reader will find only one or two chapters to be at all relevant to his or her needs.

Several of the chapters have dealt with this problem by providing a broad brush review of whole areas of work and give protocols largely as illustration. This can be very successful as a method of bringing out the advantages and drawbacks of a technique. In this category there are for example chapters on electron microscopy, second messengers and peptide degrading enzymes.

Other chapters seek to be more prescriptive in describing particular techniques. This works well where the techniques are relatively uncomplicated and require little specialist equipment, for example in the chapter on neuropeptide release in vitro. However, I think few workers would contemplate introducing patch clamping, peptide synthesis or the sampling of hypophysial portal blood into their laboratories on the strength of a single chapter in a book. A far better approach for most groups is to seek a collaboration with a laboratory already using the technique. Therefore I suspect much of the space given up to detailed protocols would have been better used for general discussion of the applications, strengths and weaknesses of particular techniques.

In one sense then this book has failed, I think

very few copies will end up as the battered reagent-stained source books for whole laboratories, as some other volumes have. On the other hand the strength of this book lies in the large number of approaches it brings together. Almost anyone who

works with neuropeptides could browse through this book and find something of interest, perhaps even the inspiration for a new line of investigation.

D.C. Parish

Meiotic Inhibition – Molecular Control of Meiosis

Progress in Clinical and Biological Research, Vol. 267

Edited by Florence P. Heseltine and Neal L. First

Alan R. Liss; New York, 1988

401 pages. \$78.00

Meiosis is an intriguing biological process. Apart from being the only occasion where haploid cells are produced it is also a major event in the generation of genetic diversity. Moreover studies on meiosis are generally linked to a wider interest in fertility and with as many as one in six of the population suffering some level of clinically recognised infertility it warrants the type of research described in this volume.

The meiotic process in males and females is quite different. In males as soon as sexual maturity is reached there is a continuous production of large numbers of haploid sperm for most of the adult life. In contrast the number of mature haploid eggs released by a female is very limited and the meiotic process is separated into two parts with the egg held in meiotic prophase for many years prior to completion and release. This book concentrates mainly on the maturing oocyte with four contributions towards the end dealing with some aspects of spermatogenesis. For those not familiar with the nature of oocyte maturation the first chapter in this book is essential where some general rules are defined and some comparative studies between humans and other mammals are made. The more detailed papers which follow this are largely concerned with how the meiotic process is reactivated in the oocyte.

Two basic mechanisms are considered. Either a substance is produced to act in a positive way in restarting the meiotic process or there is release

from control by a meiotic inhibitor. cAMP appears to have an important role in this process and Dekel gives a clear account of the way in which the follicular cells supply cAMP to the arrested egg to maintain meiotic arrest. When this supply is stopped meiosis may resume. Hormones play a key role in this process and this is summarised in a paper by Behrman and co-workers. The actual consequences of high cAMP levels on the biochemistry are discussed by Schultz with respect to changes in the activity of protein kinase C, and this is extended in a chapter considering the possible role of Mullerian inhibiting substance. In the only paper not dealing with mammals, Mitchell describes the work in yeast on how the entry of cells into meiosis is governed and concludes that at least some of the mechanisms may be conserved.

Spermatogenesis provides the biologist with a beautifully synchronised pathway of cellular differentiation. In this book two papers deal with the possible role of oncogenes in this process. One is a description of where and when a battery of these genes are expressed with particular reference to *abl* and *mos* which seem to have specific roles. The second is discussing the action of G proteins which are found in all mammalian sperm and of which the *ras* gene product is a member. Hecht provides a clear idea of how molecular biology can be used to dissect spermatogenesis and describes what is known of two genes expressed abundantly after meiosis.

Neuropeptides: Methods and Protocols presents a readily reproducible collection of established and emerging techniques for neuropeptide research as contributed by expert researchers in the field. The detailed methods presented cover subjects such as immunocytochemical localization, biochemical characterization, functional analysis, development and production of genetic probes, and the design of neuropeptide derivatives for cellular neurobiology as well as the potential therapeutic applications. Written in the highly successful Methods in Molecular Biology series format, chapters include intro P.B. Nunn. *Neuropeptides: A Methodology*. IBRO Handbook Series: Methods in the Neurosciences, Vol. 11. Edited by G. Fink and A.J. Harmer. Wiley; Chichester, 1989. However these omissions are understandable when one considers the wide range of methods which the authors have tried to cover in a single volume, everything from behavioral studies to in situ hybridisation. Herein lies the weakness of the book; surely each reader will find only one or two chapters to be at all relevant to his or her needs. Several of the chapters have dealt with this problem by providing a broad brush review of whole areas of work and give protocols largely as illustration. This can be very successful as a method of bringing out the advantages and drawbacks of a technique. Neuropeptides are considered key mediators in the communication between neurons (in particular sensory neurons) and effector cells (smooth muscle, glands, and immune cells) and exhibit a variety of functions in the gastrointestinal tract. Neuropeptides are involved in the secretion of salivary, gastric fluids and intestinal fluids and electrolytes, and G protein-coupled receptors (GPCRs) that bind neuropeptides represent potentially useful peptide therapeutics. Besides the action on motor function of the gut, neuropeptides also function as cotransmitters of enteric cholinergic neurons, increases *Frontiers in Psychology*, Vol. 11, Issue. , CrossRef. Google Scholar. However, recent technological innovations in the neurosciences, coupled with theoretical and methodological advances in creativity assessment, have enabled humans to gain unprecedented insights into the contributions of the brain to creative thought. This unique volume brings together contributions by the very best scholars to offer a comprehensive overview of cutting edge research on this important and fascinating topic. This handbook is a convenient, contemporary, authoritative source for instructors, researchers, and students. Entries are engaging and represent myriad areas of interest in this new and growing field of inquiry. The *Journal of Neuroscience Methods* publishes papers that describe new methods that are specifically for neuroscience research conducted in... The most downloaded articles from *Journal of Neuroscience Methods* in the last 90 days. DeepVOG: Open-source pupil segmentation and gaze estimation in neuroscience using deep learning - Open access. Yuk-Hoi Yiu | Moustafa Aboulatta |