

**Biological Response Modifiers – Interferons, Double-Stranded RNA and 2',5'-Oligoadenylates. Progress in Molecular and Subcellular Biology (Vol. 14);** Edited by W.E.G. Müller and H.C. Schröder, Springer-Verlag; Berlin Heidelberg, 1994; xvi + 276 pages. DM 198.00. ISBN 3-540-57285-6.

This volume of Progress in Molecular and Subcellular Biology deals with three biological effectors: interferons, dsRNA, and 2'5' oligoadenylates, gathered under a generic term: Biological Response Modifiers (BRM), that has been used to describe cytokines and cytokine inducers. This term is not commonly used at the present time. So it is presumably with particular intent that the editors wish to specify both the spirit and the contents of this volume.

Out of fifteen chapters, seven are dedicated to 2–5 A synthetase, three to the dsRNA-dependent protein kinases, three to the effects of dsRNA, and finally two to interferons. The original approach of this volume is precisely to introduce some aspects of these BRM that are not often evoked in most reviews on the interferon system.

For dsRNA-dependent protein kinases, in addition to two excellent chapters on the activation of the enzyme and its regulation by cellular inhibitors, there is one chapter on a plant 68 PK and its activation by viral RNA.

Out of the three chapters on dsRNA, one deals with 'dsRNA as gene activators', one with the antiviral effect of dsRNA, with particular emphasis on a mismatched ds-polynucleotide, poly(I)·poly(C<sub>12</sub>U), and one with the antiviral activity of RNA–dye combinations. These dsRNA antiviral activities are interesting though controversial.

Most of the articles on 2–5 A are quite specific. It is a good initiative

to include a chapter on the chemical synthesis of 2–5 A analogues and conjugates, which is indeed very useful for 'non-chemist' researchers in this field. The same for the chapter on the photo labeling of enzymes. Two unusual subjects have been included in two chapters: one on the interrelation between 2–5 A and cAMP, with an intriguing hypothesis of a coordinated regulation of one to the other; one on the implication of the 2–5 A system in diabetes, with an emphasis on the effects of dsRNA. Two more classical articles deal with the role of the 2–5 A system in antiviral action: one overview ultimately referring to interferons antiviral actions; another more specifically related to HIV infections. The interferon antiviral action is complemented by one article specifically on the regulation of HIV regulation in monocytes by interferons. Finally, one chapter deals with a fast-moving subject: the article goes through the transmembrane signaling by IFN  $\alpha$ . It would be important however for readers interested in signal transduction by interferons to get informed on the recent finding of the family of signal transducers and activators of transcription (STAT).

The book is dense and rich in information and rather homogenous in its subject. The papers are accessible to researchers, physicians and students, and deserve to be read widely, with the idea in mind that it does not cover all aspects of the interferon system.

M.N. Thang

**Methods in Molecular Biology, Vol. 32: Basic Protein and Peptide Protocols;** Edited by John M. Walker, Humana Press; Totowa, New Jersey, 1994; x + 490 pages. \$59.50. ISBN 0-89603-269-8.

'Basic Protein and Peptide Protocols' is a useful compendium for a starting student in protein chemistry as well as for the experienced specialist who rapidly needs to consult the details of a protocol. The methods combined in this work can be considered as reliable standards. They are presented and described in a clear manner.

Many of the techniques taken up in this volume were developed several years ago and since then have not changed fundamentally. Other techniques however, have been modified and adapted considerably or are now used exceptionally. The latter category, includes for instance TLE-TLC peptide mapping, the Dansyl-method and the chemiluminescent protein detection method. In contrast, some

more recently developed techniques are not sufficiently covered: e.g. phosphopeptide and phosphoamino acid analysis, reverse-phase HPLC peptide separation techniques *in gel* or *on-membrane* digestion, capillary electrophoresis, etc.

In summary, 'Basic Protein and Peptide Protocols' is the type of indispensable work that should find a place on the shelf of every molecular biology laboratory. With frequent updates and expansion including more recent methods, this work could become a classic protein-chemistry laboratory handbook.

J. Vandekerckhove

**The Human Brain Circulation: Functional Changes in Disease;** Edited by R.D. Bevan and J.A. Bevan, Humana Press; Totowa, NJ, USA, 1994; xiv + 456 pages. \$89.50. ISBN 0-89603-271-X.

This monograph is the second in a series published under the auspices of the University of Vermont Center for Vascular Research, and like the first publication is concerned with a specific aspect of vascular science, here the cerebral vasculature. The volume consists of 35 relatively short chapters, written by the contributors to a meeting held on this topic in October 1992. Most of the chapters deal with a specific aspect of cerebral vessel research, although some are more general, like the chapters describing aspects of endothelial derived relaxing factor and nitric oxide, tissue preservation techniques, *in vitro* methodology, and the molecular aspects of endothelial function.

An initial chapter is concerned with the positron emission tomography (PET) technique, as the best technique currently available to study human cerebral blood flow; here, some illustrations would have been helpful to show the power of this technique. This is followed by a chapter on the anatomy of individual cerebral blood vessels with a summary of current knowledge concerning human vessels as related to those found in various species of animals. The next five chapters are concerned with neural activation mechanisms, with the chapters on neural pathways and neuropeptides in human cerebral arteries being particularly useful. Of the three chapters on receptors in human cerebral arteries, the chapter on cholinergic receptors is specially interesting, with a peep at changes seen in patients with Alzheimer's Disease. Four chapters follow concerning the basic physiology of

cerebral arteries, as concerns mechanisms for regulation of vascular tone, including the important question of how hypoxia and hypercapnia cause vasodilatation. The next four chapters are concerned with the anatomy of the brain circulation, including the pituitary circulation, the choroid plexus, the Circle of Willis, the intracranial circulation and the cerebral circulation in the foetus. The monograph concludes with the consideration of various diseases involving cerebral vessels, including cerebral ischaemia, subarachnoid haemorrhage, cerebrovasospasm, hypertension and headache.

A general concern about this monograph will be the reader's disappointment in finding that although the title indicates that it refers to the human brain circulation, most of the chapters are in fact concerned with the brain circulation in animals, with only perfunctory reference to humans. Although there are a number of notable and welcome exceptions (such as those dealing with neuropeptides, and with cholinergic receptors), this clearly reflects the current lack of information about human cerebral vessels. In this respect, I would like to have seen a more clear-cut division in each chapter between human and animal data. Another concern is that some of the data which is presented concerning human cerebral vessels appears not to have been published previously, so that with the inevitable lack of methodological detail in a monograph such as this, the implication of the data is not entirely clear. A third concern is the lack of information about the