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BOOK REVIEW

C BENEDETTO, R G MCDONALD-GIBSON, S. NIGAM & T.F. SLATER
Prostaglandins and related substances — a practical approach
IRL Press Oxford £18 ($34 (US))

This book, published in 1987, is one of the "Practical Approach Series"; it is very suitable for the novice and experienced research worker who require practical details of analyses of the eicosanoids. The title is somewhat misleading and would have been better as "Eicosanoids and related substances". One reason for this, which is pointed out in the book, is that the prostaglandins are but one of the groups of substances that are produced by arachidonic acid metabolism. Another, is that publications on the eicosanoids especially, when studying physiological systems, still reflect a preoccupation with the prostaglandins whereas the leukotrienes and other eicosanoids, with their potent and diverse activities, are often ignored.

The problems of investigating and measuring the wide range of known eicosanoids is dealt with very thoroughly in this multi-author book (27 contributors and 17 chapters). All the known methods are dealt with from the use of profiling analysis to give a total picture, to specific radio- and enzyme immunoassay for individual eicosanoids. In section I the eicosanoid structures and their complex metabolism are dealt with. It may reflect the aging eyesight of this reviewer, but the quality and consistency of the chemical formulae could have been better in these and some of the other chapters. Important information is given in section II on the precautions and methods required for the sampling and extraction of the eicosanoids from biological fluids and tissues. Methods for TLC, HPLC, GC and mass spectrometry of the eicosanoids are dealt with in section III. In section IV on pharmacological assays, Professor Piper quotes Sir John Vane, "with extraordinary simplicity and convenience, by its very nature, bioassay distinguishes between the important biologically active compounds and their closely related but biologically unimportant metabolites". These assays are dealt with in this section and also extensively in the chapter entitled "Methods in Prostanoid Receptors Classification". In the latter the classical pharmacological approach i.e. comparison of rank orders of agonist and antagonist potency, is discussed with lots of examples. This is of obvious importance, and is very well done, but the reader looking for data on radioactively-labelled eicosanoid binding to receptors will be disappointed because this is not dealt with here or anywhere else in the book. The available radioimmunoassays and the materials and validation procedures required are extensively described. There is a chapter on recently developed enzyme immunoassays (EIA) which deals mainly with the EIAs for 6-keto-$PGF_1\alpha$ and thromboxane B_2. These have potential advantages over RIAs (besides the "problems" of environmental pollution") of high capacity and sensitivity. Assays for cyclooxygenase and lipoxygenase activity are competently described in two separate chapters. This is followed by methodology for the determination of lipid peroxidation; this will certainly be of interest to readers of this Journal. Methodology for measuring free arachidonic acid based on GLC only is covered. The final short chapter deals with the general properties of platelet activator factor PAF. There is an

excellent Appendix which lists all the eicosanoids, their structures, the suppliers, and conditions of storage and stability. This book is highly recommended.

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