Book review

Cyclooxygenases. Methods and Protocols. Springer Protocols. Methods in Molecular Biology 644

Edited by S. S. Ayoub, R. J. Flower and M. P. Seed. Published by Humana Press, New York, 2010. 215 pp, price £85.50, ISBN: 978-1-58829-953-6

This excellent work is part of a long-established series of protocols on 'methods in molecular biology'. It is much broader in scope than this series title might suggest, and includes many pharmacologists (clinical as well as basic) among the distinguished list of authors. The series is edited by Dr John M. Walker and employs consistent templates for each protocol, as follows: an introductory overview, a list of reagents and materials, step-by-step descriptions of the procedures with notes on troubleshooting and practical tips. The strength of the present volume is the outstanding authorship, including John Oates, Brendan Whittle and Paula Patrignani among many others, renowned not only for the depth and consistency of their own published work on eicosanoids – unsurprisingly the introductory overviews are distinctive as well as authoritative – but also for having remained close to the coalface of hands-on experiment. Practical aspects are very well covered in consequence.

The scope is such that the work will be of considerable interest to basic and clinical pharmacologists engaged in experimental work not only on nonsteroidal anti-inflammatory drugs (NSAIDs, the main focus) but also on pretty much any aspect of eicosanoid pharmacology. The protocols are detailed and lucid and will provide a running start for any PhD student, postdoctoral worker or established scientist getting into this field for the first time or expanding their experimental repertoire. The authors include several of the scientists who pioneered this therapeutically important area, notably several collaborators of the late Sir John Vane, whose pioneering work first explained the mechanism of NSAIDs as inhibitors of

cyclooxygenase (COX) enzyme activity and prostaglandin synthesis. The authorship includes an impressive international spread as well as a good mix of industry- with academic-based scientists.

The first part of the book is devoted to *in vitro* protocols for studying expression and activity of COX enzymes and characterization of their inhibition. The second part describes methods for extracting and measuring eicosanoids; clinical pharmacologists will be particularly interested, especially in the chapter on measurement of 8-iso-prostaglandin $F_{2\alpha}$ in view of the use of this biomarker of oxidative stress *in vivo*. They will also be interested in the final section, which addresses *in vivo* models for studying COX products in health and disease. These include a chapter by Brendan Whittle on assessing gastrointestinal adverse effects of NSAIDs, and a chapter by Moore, Ayoub and Seed on COX enzymes and their products in carageenan-induced pleurisy. Inevitably, in a work of this length (215 pages; it fits conveniently on a laboratory shelf) coverage is not comprehensive and some topics that are included, while very interesting (e.g. iloprost nociception), are perhaps somewhat arbitrary. One omission that might be considered in a future edition is *ex vivo* stimulation of prostaglandin E_2 synthesis by lipopolysaccharide in whole blood, a method developed by Patrignani that provides a robust approach to investigating COX2 inhibition in early-phase human drug development.

In summary, this is an invaluable laboratory manual with thoughtful, succinct and authoritative introductory comments that will be of great interest to investigators working on eicosanoid pharmacology.

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