



PERGAMON

Available online at www.sciencedirect.com

SCIENCE @ DIRECT®

PHYTOCHEMISTRY

Phytochemistry 63 (2003) 847–849

www.elsevier.com/locate/phytochem

Book reviews

Flavonoids in Cell Function

Editors: B.S. Buslig and J.A. Manthey, 2002 Kluwer Academic/Plenum Publishers, New York, ISBN 0-306-47254-6, \$115.00/£81.50

A volume entitled *Flavonoids in Cell Function* is inevitably going to have all those interested in the field of flavonoids and phenolic compounds jumping for scientific joy. Flavonoid chemistry, biochemistry, pharmaceutical and biological researchers have been awaiting a review from the cellular side; cell biologists and physiologists anticipated pointers through the complexities of the flavonoid families. Thus this volume is welcome.

However, reviewing in January 2003 the proceedings of a meeting held in March 2000 was initially a little disappointing, although many contributors have updated their presentations prior to publication in 2002 such that, out of a total of approximately 600 references, approximately 40 are dated as recently as 2000 and 2001. Most importantly, the editors preface that *the book is not intended to be a comprehensive treatise on flavonoid research, only a sampling of recent results*: with chapters ranging from plant-microbe communication, to the effects of these components in animal cells and systems, and the medicinal and therapeutic implications.

At the disease end of the spectrum, the potential for flavonoids as useful dietary chemopreventive agents is given strong support by Dashwood et al.'s chapter on the *Inhibition of aberrant crypt formation by the dietary flavonoids (+)-catechin and hesperidin*. In addition Folts' exposition of the potential cardioprotective benefits of purple grape flavonoids in inhibiting atherosclerosis through a variety of potential mechanisms, including improvement of endothelial function, inhibition of platelet aggregation and reducing properties, includes

doi:10.1016/S0031-9422(03)00185-7

an elegant background to the mechanism by which cells in the vessel wall contribute to the disease process, as well as very convincing results involving 15 patients.

The final chapter of the book is perhaps the major feature that is implied by the title, namely, *Flavonoids and gene expression in mammalian cells* by Kuo. Although brief, this is a very nice and very well-referenced survey of the way flavonoids appear to regulate gene expression through interactions with protein transcription factors.

Two impressive methodological chapters, from the laboratories of Barnes et al. and Berhow, focus on isoflavones applying the state-of-the art analytical tools of LC-mass spectrometry. Other chapters add to the breadth of the field presented, but unfortunately a 2 year delay from conference to publication in this fast moving field can lead to a shortfall in the value of some of the submissions. For example, the application of oligomeric substances to cell models provide some valuable insights, but are of limited value without taking into account the reality of the structural modifications and resulting changes in biological properties which these flavonoid molecules would undergo in vivo (post-gastrointestinal tract) prior to encountering the cells under discussion.

Bearing in mind the above-mentioned limitations, this is a useful little monograph especially for those entering the field or those within the field who are interested in translating their research to cellular studies.

Catherine Rice-Evans
Wolfson Centre for Age-Related Disease
Guy's King's and St Thomas's School of
Biomedical Sciences, King's College
University of London, London SE1 9RT, UK
E-mail address: catherine.rice-evans@kcl.ac.uk

Poisonous Plants of South Africa

B. van Wyk, F. van Heerden and B. van Oudtshoorn. Briza, Pretoria, South Africa, 2002. 288 pp. ISBN 1-875093-30-3. US \$ 45.00.

The introduction to this book describes plant poisons in general, both human and animal, gives advice on first

aid, and gives an account of the chemical isolation of toxins, and of the several classes of poisonous plant products and their effect on the living system. This is followed by descriptions of 94 native or naturalised plants, and of 41 exotics, likely to be found in cultivation.

The selection is pretty comprehensive, ranging from *Quercus robur*, which cannot be very dangerous in