



Book reviews

Nutraceuticals in Health and Disease Prevention

K. Kramer, P.-P. Hoppe, L. Packer (Eds.); Marcel Dekker, 2001, Price \$150.00, ISBN 0-8247-0492-4

As a long time researcher into the health benefits of phytochemicals, I always take an interest, when travelling internationally from country to country and continent to continent, in the contents of the different pharmacists' shelves, prepared for inducing customers to purchase plant-derived products. The contents of 'Nutraceuticals in Health and Disease Prevention' is such a list of the best-stocked modern apothecary's produce.

Each chapter, covering a range of supplements including vitamin E, carotenoids, flavonoids, lipoic acid, polyunsaturated fatty acids, creatine, *S*-adenosyl methionine, attempts to examine the roles of these dietary components, their potency, the current state of knowledge of their mechanisms of action, and potential roles in protection against a variety of diseases. In addition, important issues such as multiple uses, safety and approaches to optimal delivery are examined.

The book, which focuses mainly on cardiovascular diseases, ageing and neuropathies, is edited refreshingly by two industrially-associated scientists, with interests in nutraceuticals, in collaboration with Lester Packer, a leading long-time researcher in this field. The volume opens with an introduction to the concept of nutraceuticals and the importance of demonstrating efficacy and safety. There is not the space here to address each topic but highlights include an excellent and detailed overview of the role of α lipoic acid in disease prevention and the novel features of this supplementary 'thiol group', with redox regulatory and coenzymic properties. The chapter on plant phenols is intuitive and thought-provoking for the state of the field at that time (up to 1998), particularly the idea that phenolics have the capability to alter the outcome of oxidative stress-induced activation processes, either by interacting with specific molecules generated as a consequence of oxidative stimuli or by intercepting activation pathways. Current advances in the field indeed promulgate a role

for in vivo flavonoid conjugates and metabolites in signaling events and modulation of enzymic pathways induced by oxidative stress. Unfortunately, most of the studies undertaken up to the end of the 90s decade have ignored the concept of in vivo metabolism and have focused on dietary flavonoids in forms which would not necessarily target the tissues, and applying levels far in excess of those indicated from human studies. An excellent critique is included on the carotenoids lycopene and lutein and their roles in the prevention of prostate cancer and age-related macular degeneration, respectively, with particular reference to the need to understand the metabolism of the compounds and the requirements for additional observational and prospective data.

In summary, this book describes research-directed findings from leading experts linking phytochemicals with disease prevention and demonstrates the advances and continuing evolution of the field over the last decade. It also prepares the way for the future developments in providing clear answers concerning the wider picture of the relevance of plant-derived nutrients and currently considered 'non-nutrients' to disease prevention and potentially places phytochemical researchers at the helm of the 'designer food' concept.

The book is based on the proceedings of a conference on nutraceuticals, held in 1998. As such the text is a good summary of the field at that time but inevitably fails to report new and recent developments. Indeed, of the 1000 or so scientific articles cited in the references of the 15 chapters, only approximately 50 were published in the years 1999 and onwards. It is a pity that the publication process took so long. Nevertheless it is still a valuable text reviewing developments in these important fields up to that time.

Catherine Rice-Evans
Antioxidant Research Group
Wolfson Centre for Age-Related Diseases
King's College, London, UK
E-mail address: catherine.rice-evans@kcl.ac.uk