

particular study has been beneficial in developing an economically viable process for producing valuable biomaterials from starch. *Enzymes for Carbohydrate Engineering* also contains information on several other types of carbohydrate enzymes, including cellulases, pectinases and xylanases. It is interesting to note that the subject matter of storage compounds in plants, particularly lipids, was also discussed in the agricultural symposia.

Enzymes for Carbohydrate Engineering manages to provide a link to bridge the gap between the so-called fundamental understanding and applied research on carbohydrate enzymes. The scientists and researchers involved in the agricultural symposia were all from established universities and research institutes with backgrounds of basic chemistry, biochemistry, molecular biology, microbiology and enzymology. This book is particularly useful to anyone working with or interested in carbohydrate enzymes. It is a good reference book for basic and applied researchers in the field of carbohydrate enzymology, applied biochemistry and microbiology, biotechnology, agricultural engineering and other interrelated disciplines.

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Phytochemicals as Bioactive Agents

Wayne R. Bidlack, Stanley T. Omaye, Mark S. Meskin, Debra K.W. Topham (Eds.); Technomic Publishing Co., Inc., Lancaster, 2000, 296 pages, ISBN 1-56676-788-1, (US\$99.95)

The whole field of phytochemicals is one that is expanding and some large chemical companies are placing more and more emphasis on the natural plant materials in view of their being renewable. This includes carbohydrates, both monomeric and polymeric. Phytochemicals with bioactivity have been used as pharmaceuticals and pest management aids. The positive correlation between certain diets, specific foods and disease expression has consistently been shown

by epidemiological evidence. The health benefits of certain foods are not solely due to their nutrient contents, but due to the presence of phytochemicals, which have displayed bioactivity in the prevention of cancer, heart disease and many other diseases.

Phytochemicals as Bioactive Agents contains the latest in phytochemical research, especially on the antimutagenic and anticarcinogenic effects of tea constituents, chemoprevention from cruciferae and allium, and the effects of garlic on lowering serum cholesterol. The book contains 14 chapters and starts with strategies for the discovery of bioactive phytochemicals and QSAR, and molecular modelling of bioactive phyto-phenolics. Subsequent chapters cover chemoprevention by phytochemical modifiers of carcinogen metabolism, clinical trial design for evaluating phytochemical bioactivity, the use of fermentable fibres to manage the gastrointestinal ecosystem, and phytomicrobial (PAM) agents as multifunctional food additives.

The protective effect of tea on cancer: human evidence, the effect of genistein on growth of human breast cancer cells *in vitro* and *in vivo*, and cancer prevention by carotenoids and curcumin are all covered in later chapters. The book describes the chemistry and applications of alfalfa saponins and saw palmetto, and discusses the effect of garlic on serum cholesterol levels. Finally, the bioactives in rice bran and rice bran oil are covered, and the book concludes with a chapter designing functional foods to enhance health.

Phytochemicals as Bioactive Agents presents the latest research findings and contains contributions from over 53 internationally recognized experts in the field. The book evaluates mechanisms of action and describes compound characteristics and their metabolism in the body. The integrated role of phytochemicals in health and disease prevention is also presented. The book is an ideal reference tool for food researchers, scientists and technologists and educators, food process engineers, biochemists, nutritionists, public health professionals and entrepreneurs involved in the design, processing and marketing of new functional food products.

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