

Book Reviews

Treatment of Dementias. A New Generation of Progress. Edited by Edwin M. Meyer, James W. Simpkins, Jyunji Yamamoto, and Fulton T. Crews. Plenum Press, New York and London, 1992, xiii + 533 pp., ISBN 0-306-44228-0.

Our understanding of the pathophysiology of the diseases of aging, particularly dementia and dementia of the Alzheimer type (AD), is advancing and the number of therapeutic modalities currently being investigated is increasing. Significant progress in molecular biology technology and improved animal models have, in part, been responsible for this increase in knowledge and potential therapies. Success in related areas such as drug delivery of proteins into the brain has also contributed to the investigation of new therapeutic modalities to treat dementias. Research results in these areas were presented at the Second Suncoast Workshop on the Neurobiology of Aging, held March 1-4, 1991 at Amelia Island Plantation, Florida. This book is a compilation of the presentations.

The book is divided into seven sections: cholinergic drugs in AD, growth factors in AD, phospholipids in AD, ion channel modulators in AD, CNS targeted delivery, normal aging, and animal models for AD. The evidence supporting the use of muscarinic agents as front-line treatment in AD as well as the use of centrally active anticholinesterases to enhance cholinergic transmission is reviewed first. The role of neurotrophins, particularly brain-derived nerve factor (BDNF), in the central nervous system and their potential use in neurodegenerative diseases such as AD, is evaluated next. In addition, factors that modulate the expression of trophic factors are discussed and hypotheses on the relationship among nerve growth factor (NGF), "killer" proteins, and ischemia are proposed. In subsequent sections, investigators present the membrane hypothesis of AD and data on phosphatidylserine stimulation of growth factors in both animal and humans. The efficacy of phosphatidylserine is assessed in patients with age-associated memory impairment (AAMI) and AD. Approaches to reverse age-associated memory impairment through modulators of neuronal ion channels, e.g., Nimodipine (a calcium channel blocker), beta-carboline (GABA_A receptor modulator), and modulators of *N*-methyl-D-aspartate (NMDA) receptors are discussed. Novel methods of targeting drugs to the CNS such as prodrug formulations, liposomes, and chemical delivery systems are addressed, as well as the use of virosome envelopes as vectors for the delivery of macromolecules including genes into the CNS. Evidence for age-related alterations in physiological processes and brains of animals is presented. The final section explores the use of *in vitro* systems and *in vivo* models to enhance our understanding of the pathogenesis of dementias and AD.

This is a comprehensive compilation of pioneering research in the area of dementia and AD. Topics proceed from the molecular level to clinical trials in humans. Most of the research presented is preclinical; only one study in patients is presented. Even so, this is a well-balanced compendium of

major therapeutic approaches to the treatment of AD and goes beyond cholinergic agents and growth factors. The book is well organized, with a summary of major points beginning each section. This is also an excellent source for references on dementias and AD.

In addition to the lack of clinical trial results, the book has other flaws. Typographical errors are not corrected. The title font, formatting of subtopics, and reference format are inconsistent. In several sections, the chapters are from individuals in the same laboratory, with only the order of authors changed. In these cases, the information presented could have been condensed into one chapter. Despite these shortcomings, the book is an excellent resource and should be added to individual libraries.

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Recent Advances in Pharmaceutical and Industrial Biotechnology. Edited by A. Atilla Hincal and H. Suheyla Kas. Editions de Sante, Paris, 1993, 277 pp., ISBN 2-86411-063-6. 460 FF (paperback).

This book is a collection of the minutes of the 6th International Pharmaceutical Technology Symposium held on September 7-10, 1992, in Ankara, Turkey. It covers the basic principles of biotechnology, biotechnology-derived pharmaceuticals, and quality control of these products. It also includes some ethical and economic issues concerning pharmaceutical biotechnology. The various topics discussed in this symposium include proteins and peptides, biological response modifiers, vaccines, hormones, recombinant DNA technology, immunological drug delivery systems, quality control, safety, ethical, educational, and economical issues concerning these products. This book is comprised of a total of 20 lectures, which are divided into four parts.

Part 1 describes the basic principles of biotechnology. The first section, by W. Sadee, deals with the current direction of pharmaceutical biotechnology and the major challenges to its successful application to health care systems. The next section, by E. T. Papoutsakis, deals with the importance of animal cell culture in pharmaceutical biotechnology. A novel approach is discussed by Cohen *et al.* for immobilization of proteins, liposomes, and cells in ionotropic synthetic hydrogels. The last section in this part, by A. Fiechter, deals with the current progress in bioprocess development and noninvasive bioresearch concepts.

The second part deals with the different biotechnologically derived pharmaceuticals. All of these sections are descriptive with good illustrations. This part consists of seven lectures. The first lecture by J. Buchanan, deals with recombinant DNA-derived pharmaceuticals. The author nicely describes the chronological developments of pharmaceuticals derived by recombinant DNA technology. The next two lec-