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Carbohydrate Polymers 55 (2004) 115
Carbohydrate Polymers
www.elsevier.com/locate/carbpol

Book Review

Medicinal Chemistry: Principles and Practice, 2nd edition

F.D. King (Ed.); The Royal Society of Chemistry, Cambridge, 2002, xxvii + 450 pages, ISBN 0-85404-631-3 (£ 39.50)

Medicines as chemical substances play a role in the management of health care problems and will become more important in the future. They relieve the sick by having effects on specific targets with mechanisms of inhibition or activate specific receptors within human organs. Proteins/enzyme systems are one of the well-known receptors in metabolic pathways which change and produce intermediates and chemicals that concern or control pain. Therefore basic knowledge of drug–receptor interaction is required to lead to the discovery of many new drugs and therapies. Scientists must utilise carefully controlled research, development, validation and monitoring in order to discover the best medicines, and strictly controlled production processes are required so that confidence with respect to safe human consumption is achieved. Study about the patterns, mechanisms, structures, activities and relationships between drugs and targets is necessary to lead to the best cures for specific human symptoms. Consequently, a lot of knowledge needs to be learnt and is thus collected in this informative volume.

This book describes targets, biology, metabolisms, pharmacokinetics, genetics, patents and development chemistry, new case histories, and strategies and tactics for drug recovery. Drug information based on many fields of sciences from principle to new technology, from initial discovery through to final development and from laboratory to industrial processes, is presented. The physicochemical properties of drugs are also presented since they are very important for evaluating and improving efficiencies, such as identification of drugs, receptors, and symptoms, dissolution testing, determination of suitable sizes and doses, electro-properties and binding, absorption and disposition, penetration and release rate, etc. Effective biological tests, such as from test tubes to animal models, pre-clinical proof and drug metabolism assays, should be considered to ensure usage does not result in any negative side effects. This book covers the practise of drugs, some techniques and technologies for synthesis, production, research and developing processes, quantitative structure–activity relationship determination by automatic and systematic computer analysis. It also explains data collecting and results and mathematical modelling for researchers to perform their work quickly and effectively. Information on new genetic diseases, originating from abnormal genes and their mechanisms are also discussed in this edition, along with basic information about molecular biology, genome (DNA–RNA) technologies, gene libraries and bioinformatics. Drug patents should be recognised as protecting copying that can damage the health, life, wealth and safety of producers and consumers. Thus the drug patent, inventive step, sufficiency, utility, applying, prosecution and litigation and patent medicine are all important issues that are also covered.

This 'Medicinal Chemistry: Principles and Practice, 2nd edition' introduces new topics on combinatorial chemistry, biology, genomics and cheminformatics, with many chapters written by practitioners. It is valuable not only for medicinal or chemistry workers, but is also suitable for graduate students and scientists working in the pharmaceutical and medical area, providing up to date information on newer technologies.

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0144-8617/$ - see front matter © 2004 Published by Elsevier Ltd.
doi:10.1016/j.carbpol.2003.08.009