

of mutagens in yeast which is of great interest in relation to the account of DNA repair and mutagenesis in yeast and other microorganisms is discussed in detail in the final chapter.

Polymers have had an important utilization and application in academic and industrial studies for many years. This book describes the mechanism of gene induction and repression, the DNA repair and mutagenesis, the activation of mutagens and carcinogens and the detection of mutagens of the important biopolymers DNA, RNA polymerase II and cytochrome P-448 enzymes into the genetic systems in yeast and some of their applications such as in drug resistance. A reference section with over 800 entries covering literature up to 1986 with a comprehensive subject index gives an excellent overview of the earlier and current researches on genetic engineering. Carbohydrate technologists will want to consider the implications of such engineering on polysaccharide structures and development of their industrial utility.

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Introduction to Microscale High-Performance Liquid Chromatography. Edited by Daido Ishii, VCH Verlagsgesellschaft, Weinheim, Basel, Cambridge, New York, 1988, pp. xiii + 208. ISBN 0-89573-309-9 VCH Publishers, ISBN 3-527-26636-4 VCH Verlagsgesellschaft. Price: £41.45.

HPLC has long been recognized as a valuable piece of instrumentation in the laboratory either in research, analytical or preparative works. Continuous innovations in equipment and column design have brought about improvements in sensitivity, selectivity, resolution and speed, which are the primary goals of an HPLC analysis.

The microscale HPLC technique which was introduced in the past decade, and which utilizes columns of 0.2–0.5 mm i.d., boasted of economy in both mobile and stationary phases, increased mass sensitivity and the possibility of coupling with mass spectrometer, in addition to improved selectivity, sensitivity and speed.

'Introduction to Microscale High-Performance Liquid Chromatography' aims to present the basic information on microscale HPLC. It is edited by one of the pioneers of this technique and ten authors have made their contributions to this book which is divided into seven chapters. The book starts with a brief introduction on microscale HPLC, its

characteristics and classification. Two chapters discuss the intricate requirements of microscale HPLC in terms of instrument components and detection with particular emphasis on factors that might contribute to band broadening such as the Poiseuille flow dispersion and the diffusion and mixing chamber effects. Another chapter focusses on peak broadening caused by the reactors in post-column derivatization used in microscale HPLC. A separate chapter presents the types of micro-columns, i.e. open-tubular and packed microcapillary columns including the different supports used such as chemically bonded columns, cross-linked and dynamically modified columns. In addition, a brief discussion on the semi-micro columns is given. However, whilst a substantial portion has already been allotted on instrumentation requirements, an unnecessary inclusion of it was still made in this chapter on columns. Another chapter presents an interesting discussion on systems that may be coupled with microscale HPLC such as infrared and mass spectrometers. The final chapter presents an extensive list of applications of microscale HPLC which include, among others, the separation of saccharides using direct UV detection. In addition, applications of semi-micro and high-speed HPLC are also given.

To provide the reader with a clearer picture of the text, the text is aptly supplemented with figures and tables. A directory of appendices follows the last chapter and it provides very useful information on the available packing materials for semi-micro and micro-columns for the different modes of chromatography. Likewise, the index is comprehensive and proves to be a very useful quick reference guide.

The book proves to be a useful guide and source of information on the basics of microscale HPLC. Although it is primarily intended as an introductory guide on this HPLC technique, it can be used by both beginners in the field and the professional chromatographers who would like to extend their knowledge into micro HPLC techniques and to utilize its capabilities.

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Modern Carbohydrate Chemistry. R. W. Brinkley, Marcel Dekker, New York, 1988, 343 pp. ISBN 0-8247-7789-1. Price: £64/\$108.

Carbohydrate chemistry has grown rapidly in recent years in line with most other scientific fields and significant advances have been made.