Book Reviews

Protecting Groups. Philip J. Kocienski. Thieme Foundations of Organic Chemistry Series. Edited by D. Enders, R. Noyori, and B. Trost. Georg Thieme Verlag, Stuttgart and New York. 1994. xv + 260 pp. 17 × 24 cm. ISBN 313-135601-4 (Stuttgart). $60.00.

This book is a critical survey of functional group protection and deprotection of approximately 50 of the most commonly used protecting groups in modern synthetic chemistry. Though it was not written to compete with more comprehensive resources, it is complementary in that it provides discussions of the underlying decision-making processes involved in making the proper choice of protecting groups. Discussion of each of the protecting groups begins with an emphasis on deprotection followed by methods of formation. Subtle differences in functional group reactivity and lability are discussed, allowing the reader to gain a greater appreciation for protecting group chemistry when applied to complex structures. The book focuses primarily on protection of the hydroxy, diol, carboxyl, carbonyl, and amino groups. Each of the seven chapters is referenced and contains related review articles. Chapter 1 discusses how protecting groups can be categorized into orthogonal sets followed by a description of the 12 orthogonal sets presented in the book; chapter 2 focuses on the more popular hydroxyl protecting groups (e.g., silyl, alkyl, benzyl, etc.); chapter 3 discusses protection of the diol (e.g., acetals and silylene derivatives); chapter 4 presents recent methods of carboxyl protection; chapter 5 presents carbonyl protecting groups; chapter 6 provides insight to the most utilized amino protecting groups; chapter 7 exemplifies the importance of protecting group strategy with the presentation of R. W. Hoffman and associates' synthesis of (9*S*)-dihydroerythronolide. The visual aids provided by the over 500 schemes also allow the reader to gain a "feel" for synthetic chemistry in the context of protecting groups strategies. Also exemplified throughout the book are various ways protecting groups enter into a chemical transformation in a direct fashion, such as through anchimeric assistance or a chelation effect.

This is an excellent book to serve in building a solid foundation and appreciation for protecting group chemistry and strategies depicted in the realm of synthetic chemistry.

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Advanced Computer-Assisted Techniques in Drug Discovery. Volume 3 of Methods and Principles in Medicinal Chemistry. Edited by H. Van de Waterbeemd. VCH, Wéinhéim, Germany. 1994. xx + 343 pp. 17.5 × 24.5 cm. ISBN 3-527-29248-9. DM 168.00.

This third volume in the series continues the objective of offering a practice-oriented survey of techniques of interest and potential value in medicinal chemistry. The 13 chapters are grouped into categories of 3-D QSAR, databases, advanced statistical techniques, and neural networks and expert systems. The three chapters on 3-D QSAR cover this area using good illustrations and examples. The chapter on linear PLS estimations (GOLPE) is of particular interest. In the database section, the articles are strong, each being contributed by the leaders in this field. The section on statistical techniques is a good entrée into some of the newer methods available. The chapter on adaptive least squares (fuzzy) is noteworthy. The last two chapters on artificial neutral networks and rule induction round out a well-organized and very well written book.

The book is an important contribution to the background of graduate students in medicinal chemistry seeking careers in the theoretical aspects of drug design. Established medicinal chemists will find this book an important resource to stay current with new paradigms.

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