

## Review of Chemical Synthesis of Hormones, Pheromones and Other Bioregulators

**Chemical Synthesis of Hormones, Pheromones and Other Bioregulators.** Edited by K. Mori (University of Tokyo). John Wiley & Sons Ltd., Chichester. 2010. xiv + 299. 19 × 24.5 cm. \$65.00. ISBN 978-0-470-69724-5 (softcover).

It was a privilege and pleasure to review this excellent book edited by Kenji Mori, a distinguished professor and pioneer in the realm of hormones, pheromones, and other bioregulators. The title does not fully reflect its contents: it goes far beyond just describing “chemical synthesis” of bioregulators; this book indeed presents a long (50 years!), personal, interesting, and challenging scientific journey along the syntheses of 173 bioactive compounds. It seems a wonderful, touching, and inspiring story of a thoughtful scientist in the field of natural products.

The book starts with a very readable introduction to biofunctional molecules and organic synthesis, which walks readers through the basic concepts and techniques and the vital roles of organic synthesis in the studies of biofunctional molecules. The text then turns to the syntheses of 173 biofunctional molecules, divided into five chapters, including phytohormones, insect bioregulators (juvenile hormones, antifeedants, and repellents), pheromones, microbial bioregulators (hormones and antibiotics), and marine natural products and glycosphingolipids. The author’s invaluable thoughts in choosing each target molecule and strategies in designing each synthetic route are provided without reservation. The syntheses, featuring stereospecific approaches, are described succinctly with the help of the well-organized schemes. The syntheses described in the book indeed reflect the historical advancement of synthetic methodology during the past 50 years, as the author always employed the most up to date methods at each particular point. Throughout these five chapters, the syntheses of enantiomerically pure natural products are well interwoven with their elegant applications in the evaluation of biological functions. The configuration—bioactivity relationships of natural products are extensively discussed in the book with vivid case studies.

A unique feature of the book is the author’s wonderful applications of total synthesis in the determination of a compound’s enantiomeric purity and absolute configuration. Examples of revisions of the incorrectly assigned structures, especially configurations, of bioactive molecules frequently appear in Chapters 2–6, which are examined in depth and summarized systematically in Chapter 7. The encouraging Chapter 8, expressing the editor’s hopes, based on his wonderful career as a famous chemist, concludes this book. With great enthusiasm, the editor shares his personal experiences, insightful thoughts, and anecdotes with readers, which make for highly enjoyable and meaningful reading. A wealth of specific lessons that the editor learned from his syntheses are provided as well in the book.

Overall, reading this book was very enjoyable. This book is a very important and essential acquisition for those libraries supporting the efforts of the research groups in the realms of natural products chemistry, organic synthetic chemistry, and agricultural chemistry. Even though it was designed as one of the *Postgraduate Chemistry Series* of advanced textbooks, this book will also serve as an excellent reminder of a number of key considerations for veterans in the fields of natural products and organic synthetic chemistry. The book should particularly be of great value to any individual interested in stereospecific syntheses and configuration assignments of biologically active natural products.

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