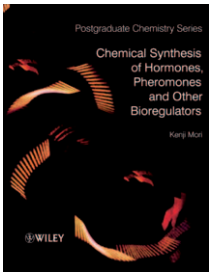

Chemical Synthesis of Hormones, Pheromones and Other Bioregulators
By Kenji Mori. John Wiley & Sons, Hoboken 2010. 314 pp., softcover, € 48.90.—ISBN 978-0470697238

Chemical Synthesis of Hormones, Pheromones and Other Bioregulators

Small natural products adopt diverse strategies to regulate the interaction of organisms and to help structure the environment. Kenji Mori has dedicated his scientific career to the synthesis of these compounds and to their biological function. In collaboration with biologists, he was able to determine the structure and function of many pheromones, signaling agents, and other bioregulators through total synthesis and to establish synthetic pathways to these compounds. Research groups around the world work with him and use his substances to conduct experiments. Especially difficult target compounds inspired him to find new paths in synthetic chemistry. He is one of the pioneers in the now established area of small bioregulators, as he calls it. He was instrumental in putting stereochemical aspects at the forefront of natural-product synthesis and in elucidating their importance for biological activity.

This book is the chemical autobiography of Kenji Mori. In it, he describes almost exclusively his own work in over 170 (!) syntheses that he and his research group have conducted in 50 years. As such, his book is also an historic document: the syntheses are arranged in loose chronological order, so that the development of organic natural-product synthesis can be recognized if the book is read from beginning to end. Mori always incorporated the newest protocols into his syntheses of stereochemically pure compounds—he is a pioneer especially of the synthesis of enantiomerically pure compounds.

After an introductory chapter on biofunctional molecules and organic synthesis come chapters on the synthesis of phytohormones, insect hormones and antifeedants, pheromones, microbial natural products, marine natural products, and glycosphingolipids. A chapter on incorrect structural assignment of natural products concludes the book.

Those familiar with Mori's work know that he has a clear, concise style and concentrates on the essentials. This book is the exact opposite of *The Way of Synthesis* by Hudlicky and Reed, which nearly overflows with words. Instead, each of the many syntheses is illustrated graphically, and the text describes only their most important aspects. The reader should thus have a solid knowledge of organic synthesis to be able to understand the schemes. Nevertheless, the author incorporates many personal experiences, insight, and anecdotes into the text, which makes the book entertaining to read. Mori's writing reflects his personality: direct, honest, interested in the person he is talking to, and with a special love of organic synthesis.

One of the central themes of Kenji Mori's work is surely the synthesis of pheromones. He dedicated himself early on to the synthesis of pure stereoisomers and perfected it over the years. Here, he describes the improvement and adaptation of syntheses, as small amounts of the wrong isomer suppress function or even reverse it. An especially interesting chapter reports on incorrect structural assignment, be it either purposeful or inadvertent. The moral of the story is familiar to every synthetic chemist: diligence. He does not shy away from naming names, and he describes his own errors as well; one chapter bears the heading "Human errors are inevitable in chemistry, too." It is this human view of science that permeates many parts of the book.

The book is wonderfully suited as in introduction to the synthesis of small natural products. Synthetic organic chemists will find many useful suggestions, and advanced students can further their knowledge of organic chemistry. A solid knowledge of organic synthesis is, however, a prerequisite to get the most out of the book.

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