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Book Review

Natural Product Chemistry for Drug Discovery (**RSC Biomolecular Sciences No. 18**). Edited by Antony D. Buss and Mark S. Butler. Royal Society of Chemistry, Cambridge, U.K. 2010. xvii + 440 pp. 16 × 24 cm. ISBN 978-0-85404-193-0. £119.95.

This volume serves as a useful reminder that even as the first decade of the 21st century comes to a close, natural products are still a valuable resource for new therapeutic agents and new drug leads with broad structural diversity. Thus, in the period 2003−2008, over 20 such drugs were introduced, originating from an ever-expanding group of source organisms, comprising actinomycetes, bacteria, fungi, higher plants, a marine invertebrate, and a terrestrial vertebrate. Furthermore, currently there are 36 additional natural product-derived compounds in late-stage drug development.

The book is divided into six major sections and is supplied with a subject index. The introductory section contains chapters that provide a historical perspective, discussions of the occupation of chemical space by natural product and synthetic entities, and the importance in the drug discovery process of natural products with new mechanisms of action. The second section is perhaps at the heart of this volume and covers the effects of the Convention on Biological Diversity (also known as the "Rio Convention") on the collection of samples for natural product research, as well as individual treatments on plants, marine macroorganisms (mollusks, soft corals, sponges, and tunicates), and prokaryotic and eukaryotic microorganisms. The third section offers contributions on advances in technology that are germane to natural product drug discovery, including biological screening methods, new instrumentation for compound purification, dereplication, and structure elucidation, and on how natural product combinatorial biosynthesis may lead to interesting "non-natural" or "designer" natural products. The fourth section covers natural products in clinical development, comprising an overview, and chapters on salinosporamide A (an antineoplastic 20*S* proteasome inhibitor from a marine actinomycete) and bevirimat (a plant-derived compound that is an anti-HIV maturation inhibitor). The final section includes case reports on two natural product-derived agents that have been introduced to the market recently, namely the antibacterial agent, daptomycin, and the antifungal, micafungin.

Natural Product Chemistry for Drug Discovery certainly conveys the enthusiasm of the editors and individual chapter authors for not only the recent successes of small molecular weight compounds derived from nature in treating cancer, hypercholesterolemia, infectious diseases, and immunological disorders but also their prospects for future lead discovery. However, the various contributors are frank about some of the limitations inherent in drug discovery from organisms, with the provision of few truly structurally novel chemical templates being among these. This is a timely and highly informative text that belongs in institutional libraries where biomedical research is carried out. Also, many natural product researchers, as well as medicinal chemists, synthetic organic chemists, and pharmacologists will find this volume well worthy of purchase for their personal libraries.

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