

All Natural: The Renaissance of Natural Products Chemistry

Progress in natural products chemistry has followed in lockstep with advances in modern organic chemistry and has been credited as a driver in its development. The milestone discoveries—life-saving antibiotics (penicillins, cephalosporins), anti-inflammatory cortisols, potent analgesics (morphine, ω -conotoxin-MVIIa), steroidal sex hormones (androgens, estrogens), prostaglandins, and many others—all attest to the importance and power of natural products to transform our society for the betterment of all.

Natural products chemistry leaves a formidable legacy, indeed, yet it is tempting to think that in the new millennium, it is a “mature” science—far from the truth. In the past 10 years, natural products chemistry has been undergoing a quiet renaissance, propelled by rapid innovations in isolation—purification, spectroscopy (particularly nuclear magnetic resonance), molecular genetics and rapid, cost-effective gene sequencing, high-throughput pharmacological screening of drug leads, target-centered bioassay, computational methods, and of course, synthesis.

In this ACS Virtual Issue, I have highlighted 22 excellent papers that appeared in *Organic Letters*, *The Journal of Organic Chemistry*, and *Journal of the American Chemical Society* between March 2012 and April 2014, which illustrate the breadth and power of new technologies brought to bear upon discovery and identification of natural products, their stereochemical properties, and biosynthetic origins. The papers are introduced largely under four themes—discovery and biological properties, molecular genetics, computational methods for structural analysis, and structural classes of natural products (polyketides, peptides, terpenoids). In more than a few papers, the roles of synthesis and chemical biology in enhancing our understanding of the links between structure and bioactivity are highlighted.

I encourage you to read through the full summary in *Organic Letters* and the 22 selected articles, browse the structures, and embrace the astonishing breadth of chemical diversity and ornate molecular architecture of newly discovered natural product structures and their exquisitely potent biological activities. All natural and *au courant*.

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Notes

Views expressed in this editorial are those of the author and not necessarily the views of the ACS.