There are major teachings in theses natural products that we would do well to consider. They may be reflecting eons of wisdom and refinement. … In fact, one of the most promising approaches in diversity chemistry is to produce diversity-chemistry-derived collections that benefit from partake of the "wisdom" of natural products. - Samuel J. Danishefsky

Closely following therapeutics discovery trends, TimTec NDL-3,000, Natural Products Derivatives Library of 3,040 compounds, is a cross-over between pure natural molecules and synthetic organic chemistry drawing its design from publications and in-house material. NDL-3,000 elaborates on structural diversity of pure natural compounds including natural derivatives, analogs, semi-natural compounds, and mimics. Natural chemistry favorably broadens diverse chemical space outside of reasonably good limits of drug-likeness. The edge of natural and synthetic chemistry fusion is susceptible to producing novel leads suited for more challenging, under-studied, and newly emerging targets.

Natural chemistry does occupy chemical space distinct from bioactive molecules and common organic molecules. What is more, natural product structures differ depending on the organism or natural source they have come from. Based on the presented cheminformatics analysis, TimTec NDL includes the same scaffolds that are produced by plants, animals, and bacteria:

Peter Ertl, Ansgar Schuffenhauer. Cheminformatics analysis of natural products: Lessons from nature inspiring the design of new drugs. Natural Compounds as Drugs. Progress in Drug Research, 2008 Volume 66, pp 217-235

NDL-3000 is a “natural” extension of the well-known NPL-800, Pure Natural Product Library , in design and structural diversity. Compounds comply with screening purity standards. NDL-3000 is available as an entire collection or in custom subsets. Custom formatting is available in vials or 96/384 plates. NPL and NDL are independent screening collections and make a good screening pair for nature inspired chemistry exploration.

For structural data and pricing please contact us

Natural Products in Journal of Medicinal Chemistry

One of the topical Miniperspectives from the Journal of Medicinal Chemistry examines the benefit of coupling natural products chemistry and synthetic organic chemistry: "A combination of natural products chemistry and focused library synthesis furnishes a powerful tool for drug discovery."

Ojuma, I. Modern Natural Products Chemistry and Drug Discovery. J.Med.Chem. 2008, 51, 9, 2587-2588.

The paramount importance of nature-sourced and nature-inspired products in drug discovery is proverbial. Statistics keeps natural products and their derivatives research relevant: combinatorial chemistry produced only one FDA-approved drug for the last 20 years compared to 57.7% of approvals for natural-products-based drugs.

At the same time evolution in combinatorial chemistry, parallel synthesis, computational chemistry, and molecular target-based drug discovery accumulated valuable methods and tools that can be applied to natural material.

Another study investigates natural products and synthetic organic chemistry results in more detail, following successful drug discovery examples in pharmaceutical industry:

Newman, D. J. Natural products as leads to potential drugs: an old process or the new hope for drug discovery? J.Med.Chem. 2008, 51, 9, 2587-2588.

TimTec Nature-Informed Libraries in Publications

Related products

Natural Products Library, NPL-720 , pure natural molecules

Flavonoid derivatives collection, **FL-500**

Gossypol and its derivatives

Plant Extracts , crude mixtures of compounds

Chem-TCM Database of molecular records, constituents of plants used in traditional Chinese medicine