

Editorial

An introductory to the special issue of The Fifth Euro-Mediterranean Conference of Life Sciences, Pharma and Biomedicine (BioNat)

A natural product is a substance or chemical compound produced by a living organism that is, found in nature. In the broadest sense, natural products include any substance produced by life. Natural products can also be replicated by chemical synthesis (both semisynthesis and total synthesis), and such undertakings have played a central role in the development of the field of organic chemistry by taking on challenging synthetic targets. The term natural product has also been embraced for commercial purposes to refer to cosmetics, dietary supplements, and foods produced from natural sources without added artificial ingredients. Within the field of organic chemistry, the definition of natural products is usually restricted to purified organic compounds isolated from natural sources that are produced via the pathways of primary or secondary metabolism.

Within the field of medicinal chemistry, the definition is often further restricted to secondary metabolites. Secondary metabolites are not essential for survival, but nevertheless provide the organisms that produce them with an evolutionary advantage. Many secondary metabolites are cytotoxic and have been selected and optimized through evolution for use as "chemical warfare" agents against prey, predators, and competing organisms. Natural products may possess pharmacological or biological activity that can be of therapeutic benefit in treating diseases. As such, natural products are the active components not only of most traditional medicines but also many modern medicines. Furthermore, because the structural diversity of natural products exceeds that readily achievable by chemical synthesis, and synthetic analogs of natural products can be prepared with improved potency and safety, natural products are often used as starting points for drug discovery.

Specifically for life, health-driven research is an ideal objective to aim for. With this in mind, in 2011 five Egyptian scientists, who possessed administrative skills, professional experience, research capabilities and scientific relations/collaborations at local, regional (Arab) and international levels, decided to form The Euro-Mediterranean Association of Life Sciences (EMALS). The primary aims of EMALS were to contribute effectively to the international and national programs of scientific research development along with providing strategic services that affect the lives of scientists, researchers and their assistants; develop their professional and research competence; and raise the awareness of various segments of the society for natural products research and the use of these products for health care. Another main goal of this Association was to biannually organize a conference series in Euro-Mediterranean area and invite the leaders from all over the world to discuss latest developments in life sciences, drug discovery and cancer research and other major diseases. Special emphasis and encouragement are provided to students and trainees in Egypt and Euro-Mediterranean are to attend these meetings and to network with the leaders in their fields.

The purposes of the series of Euro-Mediterranean Conferences of Life Sciences, Pharma and Biomedicine (BioNat) are to promote discussion and interaction among

academic researchers, practitioners, and other professionals in the field of natural products (metabolic networks, vitamins, carotenoids, flavonoids, anti-nutrients, toxins, products of plant-associated microorganisms and bioactive proteins). Attention is also devoted to herbal medicine, plant-derived drugs, phytopharmaceuticals, synthetic drugs, ethnopharmacology, biodiversity, as well as research

strategies and legislations concerning natural products research. Ultimately, this series of conferences will overcome the challenges of drug discovery and drug delivery in a completely new way. BioNat hopes to help delegates convert these expensive, challenging and inefficient processes into more accessible and affordable ones.

Planned open panel discussions and breakout sessions on key thematic areas are effective in energizing the participants in defining the drug discovery and development landscape. Several eminent scientists are expected to continue to attend these conferences, and this will definitely contribute to advancing the scientific knowledge regarding natural products. Beside our normal scientific events, attendees have access to a variety of activities covering a large range of interests.

The 5th Euro-Mediterranean Conference of Life Sciences, Pharma and Natural Products (BioNat-V) was recently convened. Overall, the meeting provided a platform for scientists from different nations to discuss emerging ideas that focused on cell signaling in cancer; the pathogenesis of autoimmune diseases; the identification and use of natural

products as well as novel drug delivery approaches for the treatment of cancer, arthritis, diabetes, tuberculosis, fungal infection, etc.; and untapped or unconventional sources for natural products. This fourth in a row conference tried to bridge the gap not only between basic research and clinical applications, but also between developed nations and developing countries.

With the continuing success of these past meetings, the sixth Euro-Mediterranean Conference of Life Sciences, Pharma and Biomedicine (BioNat-VI) is slated to be in April 2019. Please contact us (www.bionats.org) if you are interested in participating, presenting, or supporting the next conference.

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