

The Role of Natural Products in Promoting Well-being: From Foods to Drugs

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Nature is an invaluable source of medicines and traditional remedies since ancient times, which are mostly represented by herbs, animal products, and inorganic materials. The high biodiversity of medicinal plants has notably contributed to the development of natural homemade treatments for multiple diseases. Indeed, plants represent a rich source of structurally diverse secondary metabolites, which can be exploited in the development of new clinically important compounds. As claimed by several scientists, we are at the beginning of a New Golden Age of natural products drug discovery. Natural products feature enormous structural and chemical diversity that cannot be matched by any synthetic screening libraries and continue to remain the single most productive source of leads in modern drug discovery. The advent of new techniques in separation, purification and characterization of novel compounds significantly improved the efficiency of these processes and, today, an important challenge is the generation of high-quality libraries of natural products that might allow the fast identification of lead compounds for drug discovery progression. In addition, the advent of powerful and user-friendly informatics tools for chemistry and biology further promoted the revolution of natural products screening in drug discovery. This presentation will outline the exploitation of the *in house* library in the identification of unexpected new scaffolds, and in the development of therapeutically-relevant molecules.