



Università degli Studi di Napoli Federico II

PhD in Biotechnology - 35th cycle

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New bioactive metabolites from natural sources for pharmaceutical, nutraceutical and cosmeceutical industry

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Over the past few years, the field of modern biotechnologies has as its objective the research and development of innovative and natural products with potential applications in various industrial sectors, such as cosmetics and nutraceuticals. Numerous living organisms, such as plants and fungi, are an excellent source of bioactive compounds given their structural diversity and variety of biological activities. Moreover, they can be subjected to processes that improve their biological characteristics both in terms of cell penetration and degree of activity. Furthermore, biotechnologies allow us to formulate products with a broad spectrum of action able to act on several levels in a structured and complete way. The natural sources to which our team is particularly interested are parasitic plants (belonging to the Orobanchaceae family) and Amaryllidaceae. These species have considerable potential for nutraceutical and economic application, as they are a rich source of metabolites useful for practical application in different fields.

The general aims of the present PhD project are to use parasitic plants to 1) isolate and chemically characterize new and already known metabolites, 2) explore their biological activities using well tested experimental approaches, 3) set up new in vitro cell-based systems more close to in vivo situations such as tumour spheroids and embryo-bodies for metabolites testing.

References

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