

The potential of truffle bioactive compounds for benefitting human health

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Over the last few years, Libyan scientists and researchers have investigated most of the native wild plants from various regions of Libya. Since tens of years, research groups from Libyan universities, especially at Faculty of Pharmacy and Biotechnology Center, have assessed the native wild plants for their detailed biochemical and pharmacological active composition in order to identify their biologically active compounds with health and therapeutic benefits and economical values. Recent scientific reports stated that several wild Libyan plants carry various bioactive compounds which have a substantial role in treating certain human diseases such as diabetes mellitus, inflammations, microbial infections, cancer, etc. [1, 2].

Edible fungi such as truffles and mushrooms have long been an interesting and challenging scientific research area worldwide for over a hundred years, especially in far Eastern countries such as China. Truffles are regarded worldwide by most people as a great delicacy because of their unique flavor and its high nutritional value, whereas others have long believed in its health benefits (such as improving human fertility). Truffles are native to Libya and the Libyan society is familiar with them. Truffles grow in the wild in various different regions of Libya. However, scientific reports on the research concerning health benefits and biological activities of Libyan desert truffle are scarce.

To be part of international research groups working on the health impact of truffle and mushrooms, our researchers have recently started working on several areas that correlate with human health such as anti-

diabetic action [3], anti-angiogenic and anti-inflammatory actions [4, 5]. We, here at Juva Truffle Center, Finland, have put efforts and used our facilities, along with our international colleagues (from Germany, India, Italy and Libya) to explore truffles and chanterelle (golden mushrooms) for their bioactive composition and their beneficial role in human health [4-6].

Our recent research paper entitled “Anti-angiogenic and anti-inflammatory activity of the summer truffle (*Tuber aestivum* Vittad) extracts and a correlation with the chemical constituents identified therein”, was published in the reputed journal ‘Food Research International’ [4]. The paper is based on our research focused on assessing the anti-angiogenic (possible anti-cancer) potential of truffles using chick embryos as a model system. We have also studied the anti-inflammatory property in this work, which has been correlated with the anti-angiogenic effect. The composition of the bioactive compounds has also been studied and reported in this paper. This research work performed by the researchers of Juva Truffle Center is the first-ever report on the anti-angiogenic and anti-inflammatory effect of the summer truffle (*Tuber aestivum* Vittad). Based on this research work, we aim to highlight the potential health effects of Truffles and Chanterelles, thus proposing them as a functional food.

We believe Truffles and Chanterelles could be a potential source of various bioactive which might display several biological activities. In the future, we aim to take our research studies deeper, working further on the anti-cancer and other health applications of truffles.

We are encouraging our friends and colleagues in Libyan Universities to put their scientific skills and knowledge to explore the bioactive compound of Libyan desert truffles and their benefits to human health. We also welcome their collaboration with Juva Truffle Center.

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