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ANTIOXIDANT PROPERTIES OF *AMANITA PONDEROSA* CULTURES AND ANTIPROLIFERATIVE EFFECT AGAINST MDA-MB-231 HUMAN BREAST CANCER CELLSCátia Salvador¹; M.R. Martins²; M.F. Duarte³; A.T. Caldeira⁴¹Chemistry Department, Évora Chemistry Centre (CQE), Évora University, Évora, Portugal;²Chemistry Department, Institute of Mediterranean Agricultural and Environmental Sciences (ICAAM), HERCULES Laboratory, Évora University, Évora, Portugal;³Centre of Agricultural and Agri-Food Biotechnology of the Baixo Alentejo e Litoral (CEBAL), Beja Polytechnic Institute, Beja, Portugal; Centre for Research in Ceramics & Composite Materials (CICECO), Aveiro University, Aveiro, Portugal;⁴Chemistry Department, Évora Chemistry Centre (CQE), HERCULES Laboratory, Évora University, Évora, Portugal

Edible mushrooms are much appreciated, due to their texture and flavour as well for their chemical composition and nutritional properties. Some mushrooms have been reported as functional foods as a source of bioactive compounds with antioxidant properties, such as phenolic compounds, carotenoids and polysaccharides, important to prevent some diseases, such as hypertension, hypercholesterolemia and cancer [1, 2]. The medicinal properties of several species of edible mushrooms have been extensively investigated and reported their antitumoral activity.

Amanita ponderosa are wild edible mushrooms, which grow in Mediterranean forests in mountained areas with holm oaks and cork trees, namely in Alentejo region (Southern Portugal) and Andalusia (Southern Spain). There are few studies about biological properties of this species, however with this work it was possible to obtain *A. ponderosa* pure cultures from strains collected from different areas of Alentejo [3].

The aim of this study was to evaluate the antioxidant properties of *A. ponderosa* cultures and characterize their anti-tumoral activity of cultures against human breast cancer cell (MDA-MB231) *in vitro* model.

The antioxidant properties were screening by the evaluation of DPPH radical scavenging activity and lipidic peroxidation by the α -carotene linoleate system. Cultures and mushrooms showed antioxidant activities as well capacity to mimetize catalase and superoxide dismutase enzymatic activities. Cultures (mycelia and supernatants) present a strong anti-proliferative ability, decreasing the percentage of viability of MDA-MB-231 human breast cancer cells.

Further studies are required to investigate pharmacological and toxicological properties of bioactive compounds produced by *A. ponderosa* cultures, with further medicinal potential and functional foods.

[1] Arteiro JM, Martins MR, Salvador C, Candeias MF, Karmali A, Caldeira AT, Med Chem Res, 21 (2012) 937-943.

[2] Salvador C, Martins MR, Candeias MF, Karmali A, Arteiro JM, Caldeira AT, J Agr Sci Technol A, 2 (2012) 1296-1306.

[3] Salvador C, Martins MR, Vicente H, Neves J, Arteiro JM, Caldeira AT, Agroforest Sys, (2012) DOI 10.1007/s10457-012-9548-y.

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