

***Ganoderma lucidum* methanolic extract: chemical characterization in phenolic compounds and study of growth inhibitory activity in human tumour cell lines**

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Ganoderma lucidum is one of the most extensively studied mushroom species due to its medicinal properties. It has been used as functional food and as chemopreventer in some countries for thousands of years, and became a popular dietary supplement ingredient in Western countries [1]. Some of its pharmacological properties have been related to antitumour properties, attributed to a wide variety of bioactive components such as polysaccharides, triterpenes, sterols, lectins and some proteins [2,3]. Nevertheless, the bioactive properties of its phenolic compounds have not been studied. The aim of this work was to study the potential antitumor activity of the methanolic extract of this mushroom. This extract of *Ganoderma lucidum*, collected in Northeast Portugal, was characterized in phenolic compounds, by high performance liquid chromatography coupled to photodiode array detection and mass spectrometry (HPLC-DAD-MS). The extract was further submitted to evaluation of growth inhibitory activity in four human tumour cell lines (MCF-7, NCI-H460, HCT15 and AGS), by the sulforhodamine B assay.

The extract presented a moderate growth inhibitory activity in all the cell lines tested (values of GI₅₀ between 93.3±18.1 and 112.6±11.7µg/mL). The following compounds were identified in the extract: *p*-hydroxybenzoic acid (0.58 ± 0.04 mg/100 g dw), *p*-coumaric acid (0.38 ± 0.03 mg/100 g dw) and cinnamic acid (0.28 ± 0.03 mg/100 g dw). Future work will elucidate the mechanism of action of the studied extract leading to the observed cell growth inhibition.

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