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ABSTRACT BOOK

A study of the antitumour potential of three Portuguese Wild Mushrooms

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Natural matrixes such as mushrooms represent a rich source of biologically active compounds with recognized potential in drug discovery and development [1, 2]. Indeed, many pre-clinical studies have been conducted in human tumour cell lines and in some cases, a number of compounds extracted from mushrooms have entered clinical trials [3]. Our previous results showed that extracts from *Agaricus arvensis*, *Suillus collinitus* and *Clytocibe alexandri* are promising sources of low molecular weight bioactive compounds [4]. The aim of the present work was to study the antitumour potential of the extracts and isolated compounds from three Portuguese wild mushrooms by verifying their effect on various human tumour cell lines in what concerns effect on cell growth, cell cycle profile and programmed cell death. Wild mushrooms were collected from the Northeast of Portugal and classified as *Agaricus arvensis*, *Suillus collinitus* and *Clitocybe alexandri*. Phenolic (methanolic and ethanolic) and polissacharidic extracts were prepared. The effect of the extracts on tumour cell growth inhibition was verified with the SRB assay and the GI_{50} of each extract was determined for each of the cell lines studied (NCI-H460, MCF-7, AGS and HCT-15). Our preliminary results revealed that all the extracts from *Clitocybe alexandri* are capable of causing cell growth inhibition and provided GI_{50} concentrations bellow 60μg/ml in all the cell lines tested [4]. Regarding the effect of the *Agaricus arvensis* extracts, they all caused an inhibition of cell growth in all cell lines, particularly the methanolic extract which revealed to be a very potent inhibitor of cell growth, especially in the MCF-7 cell line. The evaluation of the effect of the *Suillus collinitus* extracts will be carried out as well as cell cycle and apoptosis analyses, by flow cytometry. Finally, the isolation and characterization of compounds from these extracts will also be carried out, using HPLC-DAD or HPLC-RI. The structures of the compounds will be established by NMR spectral analysis (^1H, ^{13}C, DEPT, COSY, HSQC and HMBC).

References:
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