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Anticancer potential of spores of the soil fungus *Pisolithus tinctorius*

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INTRODUCTION : Cancer is one of the major causes of death worldwide being the search for new anticancer drugs essential for the treatment of this disease. The sporocarps of the soil fungus *Pisolithus tinctorius* contain pisosterol, a triterpene that has been shown to have antitumor activity against some cancer cell lines. Nevertheless, no studies have focused on the anticancer potential of other structures such as spores, and so the anticancer potential of *P. tinctorius*, remains largely unknown. The main objective of this study was to evaluate the potential of *P. tinctorius* spores as a source of anticancer compounds

MATERIALS AND METHODS: A crude extract of spores was prepared with dichloromethane/methanol (DCM/MeOH-2:1). From the crude extract, 11 fractions were prepared with increasing polarity. The viability of the colon adenocarcinoma cell line RKO, breast carcinoma cell line T47D, osteocarcinoma cell line MG63 and the normal cell hCMEC/D3 exposed to crude extract and fractions was assessed by the 3-(4,5-dimethyl-2-thiazolyl)-2,5-diphenyl-2H-tetrazolium bromide reduction assay.

RESULTS AND CONCLUSIONS: The results concerning the cytotoxicity of the crude extract showed that this extract was able to inhibit cell viability in all cancer cell lines. The concentration test of 0.1 mg/ml showed a reduction in cell viability of around 95% in all cancer cell lines in the fractions D, F, G and H, without significant reduction in viability of hCMEC/D3 cells. *P. tinctorius* spores exert cytotoxic activity in cancer cell lines, while having little effects on normal cells, which highlights their anticancer potential. Further studies are on-going such as the evaluation of the effects of different concentrations of the fractions in the cancer cell lines and the identifications of the compounds with anticancer activity that are present in the obtained *P. tinctorius* fractions, more specifically, in the fractions D, F, G, and H.

Keywords: *Pisolithus tinctorius* spores; Crude extract, Fractions, Anticancer potential; Cytotoxicity

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