Extracts of *Hypsizygus tessellatus* (white var.) caps inhibited MCF-7 and MDA-MB-231 cell lines proliferation

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ABSTRACT

Cancer management is associated with serious side-effects due to the harmful nature of radiation and chemotherapy on the body cells. These side-effects have necessitated the need for diversifying the alternative or complementary sources of cancer therapy. Natural products have been on the front line as alternative sources of anticancer agents and have attracted much attention in recent times. In this study, the anticancer activity of *Hypsizygus tessellatus* (white var.) caps (also known as Bunapi shimeji) extracted with acetone and ethyl acetate was evaluated in vitro against MDA-MB-231 and MCF-7 (breast cancer cell lines) and MCF-10a (Vero or normal breast cells). Likewise, the free radical scavenging and metal reducing activities of the extract were evaluated through in vitro chemical-based methods. Furthermore, the phytochemical compositions of the extracts were determined through LC–MS-QTOF-assisted mass spectroscopy. The results of this study indicated that acetone fraction had better radical scavenging activity against DPPH (IC50 = 0.76 mg/mL) and H2O2(IC50 = 0.84 mg/mL) than ethyl acetate fraction against DPPH (IC50 = 1.10 mg/mL) and H2O2 (IC50 = 1.26 mg/mL) ($p < 0.05$). Additionally, the acetone fraction was observed to have more antiproliferative effects against MCF-7 (IC50 = 0.051–0.055 mg/mL) and MDAMB-231 (IC50 = 0.122–0.131 mg/mL) compared to the ethyl acetate fraction against MCF-7 (IC50 = 0.075–0.096 mg/mL) and MDA-MB-231 (IC50 = 0.161–0.164 mg/mL) ($p < 0.05$). Both extracts generally had less effect on MCF-10a cells. Thus, these results suggested that Bunapi shimeji caps is a potential good natural source of anticancer agents.

KEYWORDS: MCF-7; MDA-MB-231; Antioxidant; Antiproliferation; Bunapi shimeji; *H. tessellatus;* Mushroom phytochemicals

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