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In vitro evaluation of anti-tumor activity of extracts of two wild collected mushrooms

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The extracts of two wild-collected mushrooms, *Cantharellus cibarius* and *Boletus edulis*, known to contain phytochemicals that exhibit anti-tumor activities were used to evaluate their effects on cell viability of four cancer cell lines, U87 Glioma, A172 Glioma, CH157-MN meningioma, Pan-C1 pancreatic cancer and NIH3T3. The WST-8 assay, crystal violet assay and CyQuant assay were used to assay the viability of the respective cells line plated into 96 well plates followed by the mushroom extract treatments. The combined methanol, saline and hot water extract of *C. cibarius*, neutral saline and hot water extracts of *B. ediulis*, respectively were used in the assays. The assay was conducted using five concentrations of the mushroom extracts, namely 0, 10, 100, 1,000 and 2,000 µg/mL over three days. Treatments with high concentrations of *C. cibarius* extracts resulted in reduced number of viable cancer cells for all cell lines tested. Treatments with high concentrations of *B. edulis* extracts of neutral saline and hot water resulted in reduced number of viable cells. Caspase activation is known as a signature of Apoptosis. The FAM-FLICA caspase activation assay was used to determine the effectiveness of the *C. cibarius* mushroom extract in inciting apoptosis. The caspase activation assay results indicated that mushroom extracts did likely account for reduced viability of cancer cells.

Biography

Kit L Chin has received his PhD degree in Horticulture from Louisiana State University and has extensive research experience and expertise in sustainable agriculture research. He was a Member of the Agribusiness in Sustainable Natural African Plant Products (ASNAPP), a value chain development organization that promotes African indigenous natural products. He currently serves as a Project Team Leader in evaluating specialty crops with medical properties for small farm adoption. He has extensive collaborative research experience with West Virginia State University and Rutgers University on phytochemistry, antioxidant capacity and anti-tumor properties of Roselle plant and edible mushroom. He has published several papers on phytochemistry and bioactivities of Roselle plants.

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