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Terrein from *Aspergillus terreus* induced cytotoxic and nuclear changes on human colon cancer COLO205 cells

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Colon cancer is the most common cancer worldwide. Recently, natural products have been used for the treatment of cancer and becoming an important research area for drug discovery. Terrein, a fungal metabolite derived from *Aspergillus terreus*, has been shown to have a variety of biological activities to exhibit selective anticancer activity in human including colon cancer. However, cytotoxic effects of terrrein against human colon cancer cell lines have never been studied. Therefore, the present study was observed the cytotoxic effects of terrein by using the MTT assay. The sensitivity was evaluated by comparing the effect to COLO205 cells with vero cells for 24h. The results of MTT assay showed that terrein was cytotoxic to COLO205 with IC_{50} at 0.05 mM, but not to normal Vero epithelial cell line. The induction of cell death was further investigated by observing the cellular morphology of nuclei using Hoechst 33342 staining, a DNA specific dye. The result showed that the treated cancer cells had increased of nuclear condensation and fragmentation with 0.05, 0.15, 0.2, 0.25, 0.3 mM at 6 h by observing under the phase contrast inverted microscopy. These data supported that the mode of cell death induction of terrein possibly activated via apotosis mechanism. Thus, terrein is an interesting compound that might be a development for colon cancer treatment. However, investigation through the mechanism of action is needed.

Biography

Faongchat Jarintanan has completed her PhD from Srinakharinwirot University at Thailand in 2010. During the academic year 1998-2018, she is the Lecturer in Molecular Genetic and Hematology at Faculty of Medical Technology, Rangsit University. She got grant for research at Hiroshima University to study development of production system for foreign protein by exploiting transgenic green algae in 2003. She has research focuses on natural product, cell culture, bioprinting with cells and SNPs gene of Alzheimer's disease.

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