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Author Shau-Shin Chang
Author's Email Address No Public.
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Abstract
Recent studies demonstrated that many natural foods have ability to restrain tumor cells, because the compounds of these foods contained can inhibit the growth of human cancer cells or induce the death of cancer cells. The fruiting body of Antrodia camphorata are said to be effective in liver therapy in folklore. The aim of this study is to cultivate Antrodia camphorata mycelium with various natural foods by the solid-state and submerged fermentation, and then the extract of fermented mycelia, fermented broth and the foods are tested by MTT assay to investigate the effectiveness on cancer cells inhibition. The results showed that the alcohol extract of fermented food is more effective in suppressing the growth of cancer cells than the extract of foods. The extract of different fermented foods posses different degree of inhibition to human cancer cells proliferation. Low concentration（0.4%）extracts of A. camphorata by solid-state culturing can effectively inhibit the proliferation of different human cancer cells. In contrast, much higher extract concentrations of A.camphorata by submerged fermentation are needed to reach the same inhibition effect. From the microscopic observation, the extracts of A. camphorata by solid-state culture can induce tumor cell death by the mechanism seeming to similar to apoptosis. The results indicated that some natural foods metabolized by A. camphorata can produce cytotoxic compounds that are detrimental to tumor cells.
Advisory Committee Shun-Lai Li - advisor

Meng-Bor Hsu - advisor

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