The Investigation of the Antineoplastic Effects of Lentinus Edodes on Lung Cancer(PC9) Cell Line and Trachial-Bronchial Epithelial (AALE) Cells, Phase II

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The purpose of this researcher's project is to determine the antineoplastic effects of Lentinus Edodes(an all natural Shiitake mushroom extract) toward cultured lung cancer (PC9) cell line as well as to determine if the Lentinus Edodes will exhibit any cytotoxic activity towards tracheal - bronchial (AALE) cell line. This researcher hypothesized that the Shiitake mushroom would not bind to any toxic antigens during the Enzyme Linked Immunosorbent Assay and that the Lentinus Edodes would not only cause apoptosis of the lung cancer cells but also exhibit no significant cytotoxic effects toward human tracheal - bronchial cells. To begin experimentation, the ELISA test was performed to determine any toxic agents. In test 2, 11 different concentrations ranging from 1ul to 512ul of the Lentinus Edodes was injected into each of the lung cancer PC9 cell wells. The same injection methods were conducted for the tracheal-bronchial (AALE) cell line. They were given 24 hours of incubation and then a Trypan Blue Dye Exclusion assay was performed to assess cell viability on both cell lines to determine a percentage of cell death. A strong correlation among the increasing concentration of Lentinus Edodes, and a decrease in viable cell count was determined, and an applicable therapeutic window ranging from 2ul to 32ul was obtained. This researcher was able to support his hypothesis, the Lentinus Edodes showed significant cytotoxic effects toward the lung cancer PC9 cell line starting at 2ul, and showed no significant cytotoxic effects toward the tracheal-bronchial (AALE) cell line until 32ul, thereby providing an applicable therapeutic window ranging from 2ul to 32ul.

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