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**Inhibitory effects of turmeric and black pepper ethanolic extracts on A549 and NCI-H292 cell lines**

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**Introduction & Aim:** Turmeric (*Curcuma longa*) is an herbaceous perennial plant belonging to the ginger family, Zingiberaceae and is commonly used as a culinary spice, as well as in food coloring. Black pepper (*Piper nigrum*) is a flowering vine of the family Piperaceae, which is usually dried and used as a culinary spice. Co-administration of piperine and curcumin, which are the main constituents of black pepper and turmeric, respectively, has been shown to enhance the bioavailability of curcumin by 2000% in humans and 154% in rats. We evaluated the growth inhibitory effect of turmeric and black pepper ethanolic extracts on A549 and NCI-H292 cell lines.

**Methodology & Theoretical Orientation:** The turmeric and black pepper powder was extracted with 70% ethanol with yields of 26.3% and 14.3%, respectively. In order to confirm the specific toxicity toward lung cancer cells, the turmeric and black pepper ethanolic extracts were exposed to two lung cancer cell lines (A549 and NCI-H292), as well as to normal human lung fibroblast cell line for 24 hours.

**Results:** At a concentration of 100 µg/mL viability of normal lung fibroblasts was  $87.1 \pm 5.7\%$ , while those of A549 and NCI-H292 cells were  $57.0 \pm 3.3$  and  $62.7 \pm 9.4\%$ , respectively.

**Conclusion & Significance:** Co-treatment of turmeric and black pepper ethanolic extracts showed a synergistic effect on lung cancer cell cytotoxicity. Our study confirmed the effects of turmeric and black pepper ethanolic extracts on lung cancer cell death through synergistic effects and provides a basis for further study.

**Biography**

Cho Hyun-Ki is studying master's course in Chungbuk National University, Republic of Korea. He is one of staff in the Tobacco Smoke Analysis Center, an internationally recognized testing laboratory (KOLAS, KS Q ISQ / IEQ 17025), which analyzes the smoke components of all tobacco produced in Republic of Korea.

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