

**PC-10**

## **Enzyme Inhibitory and Anti-proliferation Effects of Peanut Skin Extracts Depending on Cultivar**

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### **[Introduction]**

Even though the peanut skin was just a tiny part of the total seed, the phenolic compounds, such as flavonoids, phenolic acids, procyanidins, anthocyanins are mostly located in the skins part. Therefore, this study was performed to investigate enzyme inhibitory activities and anti-proliferation of human cancer cell lines (HCT 116, NCI-H460 and MCF-7) of peanut skin depending on cultivars (*Arachis hypogaea* L. cv. K-OI, cv. Sinpalkwang, cv. Daan, cv. Heuksaeng) and extraction solvent.

**[Materials and Methods]:** Peanut skin was extracted with 80% ethanol, 80% methanol, 80% acetone and distilled water, followed by analysis of enzyme inhibitory activity (tyrosinase, ACE,  $\alpha$ -glucosidase) and anticancer activity on human cancer cell lines (HCT 116, NCI-H460 and MCF-7).

### **[Results and Discussion]**

Methanol extract of Daan cultivar most effectively inhibited Tyrosinase(82.49%, 2 mg/mL), ACE(73.61%, 10 mg/mL) and  $\alpha$ -glucosidase(65.08%, 0.025 mg/mL). The inhibitory effect of peanut skin extracts on human colon cancer cell (HCT-116), Human lung cancer cell (NCI-H460) and human breast cancer cell (MCF-7) growth were investigate using MTT assay. Cell treatments done with extracts less than 200  $\mu$ g/mL concentration had no significant effect on non-cancer cell (3T3-L1 adipocyte) viability. The highest anti-proliferation of human cancer cell line of peanut skin extracts was observed in methanol extract of Daan cultivar. The cell viability on HCT 116, NCI-H460 and MCF-7 cell lines of methanol extracts from peanut skin of Daan cultivar was 48.13%, 41.03% and 36.02% at 200  $\mu$ g/mL. These results suggest that peanut skin extracts may mediate physiological activity, and provide useful information for the use of Korean peanut byproduct as a functional food materials.

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