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Fluorescent Analysis of Protoporphyrin IX Induced from 5-aminolevulinic acid in Lung tumorigenesis of the A/J mouse

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To clarify the usefulness of fluorescent diagnosis for lung tumor, we investigated the optimal method of administrating 5-aminolevulinic acid(5-ALA) by analyzing fluorescence signal of Protoporphyrin IX(PpIX) in the lung tumor tissues. For lung tumorigenesis, newborn mice less than 24 hours old were injected once subcutaneously in the scapular region with 20 μl of benzo(a)pyrene (500 $\mu\text{g}/\text{mL}$) suspension in olive oil. A fluorescence endoscope system was used to perform the macroscopic fluorescence imaging of the tumor. This system consists of a xenon short arc lamp filtered by a band pass filter (370-440 nm) and a color CCD video camera connected to a modified endoscope, which is integrated with a long pass filter ($\lambda > 430$ nm). Analysis of the fluorescence spectra revealed emission bands at 635 nm and 705 nm which could be related to PpIX generation induced by the exogenously applied 5-ALA. Confocal laser scanning microscope was also employed to measure a fluorescence of PpIX produced in the tumor.

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Hypoglycemic Effects of *Artemisia capillaries*

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Anti-diabetic effects of *Artemisia capillaries* fractions were determined by investigating insulin-like action in 3T3-L1 adipocytes and anti-diabetic effect assay, respectively. Insulin-like activity of 3T3-L1 fibroblast was shown with the treatment of butanol fraction. However, chloroform fraction of *Artemisia capillaries* and differentiation inducers significantly decreased the differentiation of 3T3-L1 fibroblasts to adipocytes. The concentration of leptin released from 3T3-L1 adipocytes in the presence of ethyl acetate fraction of *Artemisia capillaries* was significantly decreased by 80.48% compared to that of the control($p < 0.05$). And free fatty acid(FFA) concentration significantly increased by 456.32% compared to that of the control($p < 0.05$). These data indicate that ethyl acetate fraction seems to enhance the lipolytic activity and inhibit lipids accumulation in the adipocytes. Ethyl acetate and chloroform fractions of *Artemisia capillaries* suppressed saliva α -amylase and α -glucosidase activity, respectively. These data suggested that *Artemisia capillaries* fractions contain effective insulin-like compounds, lipid synthesis suppressing compounds and α -amylase suppressing compounds. Therefore, *Artemisia capillaries* fractions are beneficial for anti-diabetic treatment in obese diabetic patients.