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P1.020

Suppression of airway inflammation by Illicium verum and trans-anethole

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Purpose: To develop antiasthmatic agent, Illicium verum and its major components were evaluated on their suppression effect in the ariway inflammation. Furthermore we have studied the molecular mechanism of trans-anethole compound concerning Treg cell mediated suppression.

Methods: Asthma was induced in BALB/c mice by systemic sensitization to ovalbumin (OVA) followed by intratracheal, intraperitoneal, and aerosol allergen challenges. Illicium verum and its major components were orally administered for 4 weeks. We investigated their effects on airway hyperresponsiveness, pulmonary eosinophilic infiltration, various immune cell phenotypes, cytokine & cytospin measurements in Bronchoalveolar lavage (BAL), Th2 cytokine production, OVA-specific IgE production, Th1/Th2 cytokine production, lung histology in this mouse model of asthma.

Results: Illicium verum and trans-anethole significantly ($p < 0.05$) inhibited OVA-induced increases in total cell counts, eosinophil counts, and IL-4, IL-5, IL-13, and eotaxin levels recovered in bronchoalveolar lavage fluid in OVA-sensitized mice. Trans-anethole further substantially ($p < 0.05$) reduced the total IgE, eotaxin 2 levels, and CCR3 expression of BAL fluid. Trans-anethole also substantially ($p < 0.05$) increased the IL-10, IFN- level, and IL-10 or TGF-1 mRNA expression of BAL fluid. Histological studies showed that TRANS-ANETHOLE dramatically inhibited eosinophilia, and infiltration of lymphocytes in lung tissues

Conclusion: These result suggest that the anti-inflammatory and anti-asthmatic effects of Illicum verum and trans-anethole may be exerted through upregulation of regulatory T cells.

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P1.021

Ethanolic extract of Taiwanofungus camphorates enhanced cisplatin/doxorubicin induced cytotoxicity on human hepatocellular carcinoma cells

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Purpose: Taiwanofungus camphorates (TC, syn antrodia camphorate) is a widely used local remedy in Taiwan and demonstrated several pharmacological features such as anti-inflammatory, liver protection, anti-hypertensive and anti-oxidative activities. The ethanolic extract of TC (TCEE) which contains diterpenoids, triterpenoids, lactone, benzenoids, and polysaccharides also exhibits anti-tumor effects in various human cancer cell lines. The aim of this study is to clarify the combination effects of TCEE with standard chemotherapeutic drugs, cisplatin and doxorubicin on human hepatocellular carcinoma (HCC) cells.

Methods: The TCEE was prepared form the pulverized crude extract of solid-state cultivated TC. HCC cells, HepG2, Hep3B and HepJ5 were treated by 0 to 1 mg/ml TCEE for 48 hr and the cell proliferation was determined by MTT assay. Cell cycle assay and western blotting assay were used for clarify the possible cell cycle arrest and activation of apoptosis markers, caspase-3 and caspase-7 induced by TCEE. HCC cells were further treated by TCEE with 0 to 20 μM cisplatin or 0 to 10 μM doxorubicin to identify the combination effects of TCEE with cisplatin/doxorubicin.

Results: The half-maximal inhibitory concentrations (IC50s) of TCEE on Hep3B and HepJ5 cells were 0.119 and 0.127 mg/ml respectively. TCEE treatment resulted in G0/G1 arrest in Hep5J cells, and G2/M arrest in HepG2 cells. Furthermore, TCEE induced cleavage of caspase-3 in Hep3B cells but not Hep5J and HepG2 cells. The combined treatment of TCEE enhanced the cisplatin and doxorubicin induced cytotoxicity on HepG2, Hep3B and Hep5J cells by significantly reducing the IC50s from 20 to 11 μM on cisplatin average and 12.2 to 3.9 μM on doxorubicin in average.

Conclusion: This study indicated that TCEE treatment induced tumor cell suppression and further enhanced the cisplatin and doxorubicin induced cytotoxicity in HCC cells suggested TCEE a potential ingredient to develop integrated chemotherapy for human hepatocellular cancer.

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