I. 抗氧化中藥材之開發 II.中藥材之品質管制

I. Antioxidant of Chinese Medicines II.Quality Control on Chinese Medicines (V) Pai-Chi

中文摘要

英文摘要

Arsenics have been considered the most potential human carcinogen. Recently the issue of arsenic in drinking water raised an unprecedented social concern on human health, and yet the molecular mechanisms through which arsenic induces cancer remain unknown. In the process of arsenic metabolism, inorganic arsenic is methylated to monomethylarsonic acid (MMA) and finally to dimethylarsinic acid (DMA), followed by excretion through urine. Heat shock proteins, which protect cells from stress will be induced when cells suffer from different kind of stimulates. Evidence support that HO-1 protein is highly correlated to the exposure of arsenic. We and others hypothesis which arsenic-induced formation of reactive oxygen species and the subsequent activation other protein in the skin, leading to increase in cell proliferation. The specific aim of this study is to investigate the role of HO-1 on the proliferative mechanism of arsenics and their metabolites, including As+3, As+5, MMA+3, DMA+3, MMA+5 and DMA+5 treated HaCaT cells. Among the arsenics and its metabolites, low doses (1 M and 0.5 M) As+3 and MMA+3 show the potent proliferative effect in HaCaT cells, and HO-1 protein induction was correlated to arsenic exposure. Besides, the signal transduction pathway, including ERKs、JNKs and p38 involved in arsenic and its metabolites are totally different. The HO-1 inhibitor (SnPP) attenuated arsenic induced HaCaT cells proliferation. Results of our study provide evidence to suggest HO-1 may in arsenics induced proliferation involve in arsenics.