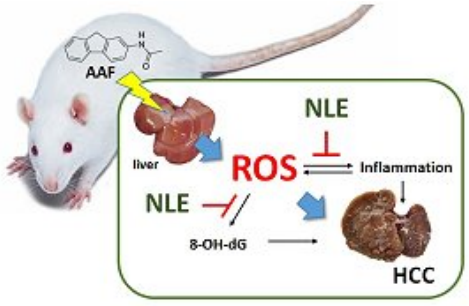
優秀論文 II

醫化系 / 曾翠華 老師



題目：Inhibitory effect of*Nelumbo nucifera*leaf extract on2-acetylaminofluorene-induced hepatocarcinogenesis through enhancing antioxidative potential and alleviating inflammation in rats

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摘要:本篇文章主要探討荷葉萃取物(NLE)預防肝癌發生的作用及其機制。首先我們發現以0.03%2-acetylaminofluorene(AAF)餵飼老鼠經12週後可誘導老鼠產生肝纖維化，而同時餵飼NLE (0.5% - 2%)可抑制肝纖維化的發生。另外經六個月的實驗後觀察到單獨餵飼AAF的老鼠其血液肝損傷指標如ALT, AST, γ -GT, AFP, TG, total cholesterol等及發炎指標IL-6, TNF-α 皆大大提升，而同時餵飼NLE的各組老鼠則明顯降低這些指標，而在肝臟組織生化及切片分析中也觀察到NLE可減少AAF所誘導的肝脂質過氧化、8-OHdG、GST-Pi及肝癌細胞。進一步研究發現NLE乃透過減緩肝發炎及增加抗氧化轉錄因子Nrf2及其下游酵素如catalase, SOD-1, GPx的表現來抑制AAF所誘發的肝癌。

Abstract: Leaf extract of*Nelumbo nucifera*(NLE) has been demonstrated to possess anti-atherosclerosis, improve alcohol-induced steatohepatitis, prevent high-fat diet-induced obesity, and inhibit the proliferation and metastasis of human breast cancer cells. This study determines the chemopreventive role of NLE against2-acetylaminofluorene(AAF)-induced hepatocellular carcinoma (HCC) in rats. AAF was used to induce hepatocarcinogenesis in rats through genetic and nongenetic effects. After administration for 12 weeks, NLE (0.5% - 2%) supplementation orally inhibited AAF (0.03%)-induced hepatic fibrosis which appears during the development of premalignant lesions in rats. After the 6-month experiment, NLE supplementation resulted in decreasingAAF-inducedserum parameters ofhepatic injury,includingthelevel of triglycerides,total cholesterol,alpha-fetoprotein (AFP),and inflammatory mediator IL-6 and TNF-α as well as the activities ofalanine aminotransferase (ALT),aspartate aminotransferase (AST),andgamma-glutamyl transferase (γ GT). NLE supplementation also reduced AAF-induced lipid peroxidation and 8-hydroxy-2'-deoxyguanosine (8-OHdG) formation in the rat liver. Hepatic histopathological investigation revealed that NLE supplementation attenuated the AAF-induced HCC and GST-Pi expression. Furthermore, NLE supplementation increased the expression of transcription factor Nrf2 and its downstream targets, including catalase, glutathion peroxidase (GPx), and superoxide dismutase 1 (SOD-1) in the rat liver. Our findings indicate that NLE supplementation inhibited AAF-induced hepatocarcinogenesis by enhancing antioxidative potential and alleviating inflammation in rats.