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PRINT: ISSN 0972-3757 ONLINE: ISSN 2456-6330

Int J Hum Genet, 25(3): 100-113 (2025)

DOI: 10.31901/24566330.2025/25.03.917

Shen-su-yin, a Traditional Herbal Medicine, Attenuates Lipopolysaccharide-induced Acute Lung Injury in Rats Through its Anti-inflammatory and Antioxidative Effects

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KEYWORDS Traditional Chinese Medicine, Cytokines, Herb, Inflammation. Oxidative Stress

ABSTRACT The present study was designed to investigate potential effects and mechanisms of Shen-su-yin (SSY) on lipopolysaccharide (LPS) induced acute lung injury (ALI) in rats. Forty-eight rats were randomly divided into 4 groups of control (Ctrl), LPS-induced ALI (ALI), low- (SSY-LD) and high- (SSY-HD) dose SSY-treated ALI group. Twenty-four hours after SSY administration, bronchoalveolar lavage fluid determination, Western blot analysis, and histopathological analysis were performed. The results showed that SSY administration 24 hours post-treatment showed improved lung histopathology, reduced pro-inflammatory and oxidative markers, and increased anti-inflammatory and antioxidative cytokines. SSY also inhibited NF- κ B signalling and activated the Keap1-Nrf2-ARE pathway. The high-dose SSY group exhibited significant improvements. The results indicate that the preventive use of SSY can alleviate ALI through the anti-inflammatory and antioxidant effects mediated by inhibition of NF- κ B signalling pathway and activation of Keap1-Nrf2-ARE signalling pathway, respectively