

عنوان مقاله:

Lentinan and β -glucan extract from shiitake mushroom, *Lentinula edodes*, alleviate acute LPS-induced hematological changes in mice

محل انتشار:

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خلاصه مقاله:

Objective(s): Immunomodulatory activity of β -glucans of shiitake mushroom (*Lentinula edodes*) has been known. We investigated whether β -glucans from *L. edodes* would attenuate the acute effects of lipopolysaccharides (LPS) on peripheral hematological parameters in mice. Materials and Methods: An in-house β -glucans extract (BG) prepared from fruiting bodies of shiitake mushroom *L. edodes* was chemically measured and characterized using spectrophotometry and HPLC. Male BALB/c mice directly inhaled aerosolized LPS of 3 mg/ml and were treated with BG or commercial β -glucan (known as lentinan; LNT) (10 mg/kg bw) at 1 hr before or 6 hr after LPS inhalation. The blood samples were collected by cardiac puncture from euthanized mice at 16 hr post-treatment. Results: The results showed a significant reduction in levels of blood parameters, including red blood cells (RBC), hemoglobin (HGB), hematocrit (HCT), and platelets (PLT); and a significant increase in blood lymphocyte counts in LPS-treated mice as

compared with the control mice ($P \leq 0.05$). Total white blood cells, neutrophils, and monocyte counts did not show any significant difference among the groups. Treatment of LPS-challenged mice with LNT or BG significantly increased the levels of RBC, HGB, HCT, and PLT; and reduced blood lymphocyte counts as compared with LPS-treated mice ($P \leq 0.05$). Conclusion: These findings suggest that β -glucans from *L. edodes* might be effective in attenuating the effects of inhaled LPS on peripheral blood parameters. Thus, these findings might be useful in acute inflammatory diseases particularly pulmonary infectious diseases in which the hematological parameters would be affected

کلمات کلیدی:

β -glucans, hematological parameters, Inflammation, Inhalation, Lentinan Lipopolysaccharide, Shiitake

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