

عنوان مقاله:

Protective effect of  $\gamma$ ,  $\lambda$ -cineole (eucalyptol) against lead-induced liver injury by ameliorating oxidative stress and inflammation and modulating TLR $\epsilon$ /MyD $\delta\delta$ /NF-KB signaling

محل انتشار:

مجله علوم پایه پزشکی ایران، دوره 27، شماره 10 (سال: 1403)

تعداد صفحات اصل مقاله: 7

نویسندگان:

Mojdeh Abdollahi - Department of Genetics, Zanjan Branch, Islamic Azad University, Zanjan, Iran

Masoumeh Asle Rousta - Department of Physiology, Zanjan Branch, Islamic Azad University, Zanjan, Iran

Sanaz Mahmazi - Department of Genetics, Zanjan Branch, Islamic Azad University, Zanjan, Iran

خلاصه مقاله:

Objective(s): This study was conducted to explore the impact of  $\gamma$ ,  $\lambda$ -cineole (eucalyptol) on the biochemical, molecular, and histological changes caused by lead acetate in the liver of adult male Wistar rats. The research also investigated the potential involvement of the TLR $\epsilon$  signaling pathway in this effect. Materials and Methods: Rats were orally administered lead acetate (25 mg/kg-day) for 14 consecutive days and received  $\gamma$ ,  $\lambda$ -cineole (100 mg/kg-day) during the same period. Results:  $\gamma$ ,  $\lambda$ -cineole prevented an increase in the malondialdehyde level, a decrease in the glutathione level, and a decrease in the activity of superoxide dismutase and glutathione peroxidase enzymes in the liver of rats treated with lead acetate. This monoterpene also prevented an increase in the expression of pro-inflammatory cytokines and significantly reduced the infiltration of inflammatory cells in the liver parenchyma. Additionally,  $\gamma$ ,  $\lambda$ -cineole discouraged the increase in toll-like receptor  $\epsilon$  (TLR $\epsilon$ ), myeloid differentiation primary response  $\delta\delta$  (MyD $\delta\delta$ ), and nuclear factor kappa B (NF-KB) expression in the liver and stopped a rise in serum AST and ALT enzymes. Conclusion:  $\gamma$ ,  $\lambda$ -cineole can prevent liver damage caused by lead acetate by reducing oxidative stress and inflammation. This hepatoprotection is probably achieved by inhibiting TLR $\epsilon$ /MyD $\delta\delta$ /NF-KB signaling.

کلمات کلیدی:

Cytokines, Eucalyptol, Lead acetate, Liver, Oxidative stress, Toll-like receptor  $\epsilon$

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/2055630>

