

论文

紫草素抗炎及对白三烯B₄生物合成的抑制作用

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摘要:

皮下注射紫草素(shikonin)10mg.kg⁻¹对小鼠巴豆油耳炎症和大鼠酵母性足肿有明显抑制作用;在白细胞体外温孵系统中,紫草素在10⁻⁴~10⁻⁷mol.L⁻¹浓度范围内可浓度依赖性地抑制LTB₄和5-HETE生物合成,其50%抑制浓度(IC₅₀)分别为6.2×10⁻⁷mol.L⁻¹和2.6×10⁻⁷mol.L⁻¹。此外,还报道紫草素几个天然衍生物对LTB₄生物合成的影响。

关键词: 紫草素 萘醌 抗炎药 白三烯B₄

THE ANTI INFLAMMATORY ACTIVITY OF SHIKONIN AND ITS INHIBITORY EFFECT ON LEUKOTRIENE B₄ BIOSYNTHESIS

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Abstract:

Shikonin is one of the active components isolated from the dry root of *Arnebiaeuchrona*(Royle) Johnston (AERJ).It has been shown to have anti inflammatory activity on formalde-hyde induced paw swellin1g in rats.Preparations of AERJ has been used clinically in curing phlebitisand vascular purpura,In the present study ,sc administered shikonin was shown to have significantinhibitory effects on ear edema induced by croton oil in mice and paw swelling induced by yeast inrats.In order to investigate the influence of shikonin on biosynthesis of LTB₄ and 5-HETE, an *in vitro* leukocyte incubation svstem was adopted.The results showed that shikonin has fairly strong inhibitoryeffects on LTB₄ and 5-HETE biosynthesis.Its effects and concentrations fit a positive relationshipwithin the range of 10⁻⁷~10⁻⁴mol.L⁻¹.The equations of inhibition(Y) versus concentration(X,LogC)obtained by linear regression were Y= 166+18. 7X(r=0.9319) for LTB₄ and Y= 173+18.7X(r=0.9856)for 5-HETE. The IC₅₀ were 6.2× 10⁻⁷ and 2.6×10⁻⁷mol.L⁻¹,respec-tively.The results also indicate that natural shikonin derivatives have similar inhibitory effects on LTB₄ biosynthesis. These results suggest that inhibition of LTB₄ and 5-HETE may play a major role inthe mechanism of anti inflammatory effects of shikonin.

Keywords: Naphthoquinone Anti inflammatory drug Leukotriene B₄ Shikonin

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