



# Fructus polygoni orientalis extract inhibited liver regeneration and proliferation of bone marrow cells of rat after partial hepatectomy

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**ABSTRACT.** To study the effect of fructus polygoni orientalis extract (EFPO) on liver regeneration and proliferation of bone marrow cells on rat model of partial hepatectomy, EFPO was extracted, and 60 adult male Wistar rats were divided randomly into 6 experimental groups. Rats were treated with intergastric administration (*ig*) with EFPO daily. All rats were euthanized 7 days after administration, and the livers and bone marrow cells were collected. The levels of taxifolin and quercetin in EFPO were 1.238 and 0.381 mg/g, respectively. EFPO decreased the proliferating cell nuclear antigen expression of the regenerating liver. Obvious tissue damage was observed in the EFPO groups, such as a widened hepatic sinusoid cavity, several enlarged nuclei, slightly ballooning degeneration, and spotty and focal necrosis as compared to the control group. Additionally, 1.8 and 3.6 g/kg EFPO significantly inhibited proliferating cell nuclear antigen expression in bone marrows cells ( $P < 0.05$ ), and induced gathering of these cells during the  $G_0/G_1$  phases ( $P < 0.05$ ). The karyocyte and myelosis of bone marrows cells clearly

decreased, and mature erythrocytes increased ( $P < 0.05$ ) in the EFPO groups. Additionally, 3.6 g/kg EFPO induced active proliferation, while the sham operation and control groups showed apparent active myeloproliferation. The maximum dosage of mice *ig* EFPO was 148.8 g/kg. Our results indicate that EFPO inhibits rat liver regeneration and bone marrow cell proliferation in regenerating rat liver.

**Key words:** Bone marrow cells proliferation; Fructus polygoni orientalis; Hepatocyte proliferation; Liver regeneration; Rat