

基于去甲肾上腺素诱发原代培养心肌细胞损伤保护作用的太子参药效部位研究

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中文摘要:目的: 研究太子参对去甲肾上腺素(NE)诱发原代培养心肌细胞损伤保护作用的活性部位。方法: 采用系统溶剂分离制备提取太子参石油醚, 乙酸乙酯, 正丁醇及水层部位。取1~3 d的SD大鼠乳鼠制备原代培养心肌细胞, 以 1×10^5 /mL的细胞密度接种于96孔培养板, 以相当于生药 $0.1 \sim 0.25 \text{ g} \cdot \text{mL}^{-1}$ 的太子参不同提取部位作用于原代培养心肌细胞30 min后, 以 $1 \mu\text{mol} \cdot \text{L}^{-1}$ NE作用于心肌细胞24 h复制细胞损伤模型, MTT法分析不同提取部位太子参的保护作用。结果: 正丁醇和水层提取部位对NE诱导原代培养心肌细胞损伤吸光度(A_{570})降低具有显著的提高作用;进一步分析提示 $0.1 \text{ g} \cdot \text{mL}^{-1}$ 和 $0.25 \text{ g} \cdot \text{mL}^{-1}$ 太子参25%乙醇洗脱正丁醇部位和多糖物质群对NE诱导心肌细胞 A_{570} 的降低保护作用显著(与模型组比较, 差异显著, $P < 0.01$, $P < 0.05$)。结论: 初步的活性筛选发现太子参的正丁醇部位和水层部位对NE诱导的心肌细胞损伤具有保护作用, 进一步的活性追踪确定正丁醇部位经25%乙醇洗脱物质群及水层中的粗多糖为太子参防治NE诱导的心肌细胞损伤的主要活性物质群。

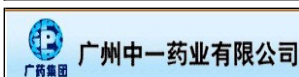
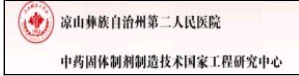
中文关键词: [太子参](#) [原代培养心肌细胞](#) [去甲肾上腺素](#)

Protection of Effective Fractions from Pseudostellariae Radix on Primary Cultured Cardiac Myocytes Injury Induced by Norepinephrine *in vitro*

Abstract: Objective: To explore the protection of active fractions from Pseudostellariae Radix on primary cultured cardiac myocytes injury induced by norepinephrine(NE). Method: four fractions from Pseudostellariae Radix: petroleum ether extract, acetic ether extract, N-butanol extract, and water extract, were obtained by systematic solvent extraction. The primary cultured cardiac myocytes were prepared from the 1-3 d SD neonatal rat, and then 200 μL cell suspension was cultured in 96 well plates by 1×10^5 /mL. Preincubated with different fractions extracted from 0.1, 0.25 g crude Pseudostellariae Radix /mL 30min, and then the cardiac myocytes injury was reproduced by $1 \mu\text{mol} \cdot \text{L}^{-1}$ NE for 24 h. The degree of cardiac myocytes injury was detected by MTT assay. Result: The N-butanol and water fractions extracted from Pseudostellariae Radix could significantly protect primary cultured cardiac myocytes against NE-induced injury by increasing the A_{570} ($P < 0.05$ compared with NE group). Further studies suggested that N-butanol fraction eluted by 25% ethanol and polysaccharides fraction extracted from water fraction at 0.1, 0.25 g crude Pseudostellariae Radix /mL could significantly inhibit the decrease of A_{570} induced by NE ($P < 0.05$ or $P < 0.01$). Conclusion: Primary screening of bioactive fractions indicated that the N-butanol and water fractions extracted from Pseudostellariae Radix protect primary cultured cardiac myocytes against NE-induced injury. Further studies showed that N-butanol extract eluted by 25% ethanol and polysaccharides from Pseudostellariae Radix are the major bioactive fractions which inhibit NE-induced primary cultured cardiac myocyte injury.

keywords: [Pseudostellariae Radix](#) [primary cultured cardiac myocytes](#) [norepinephrine](#)

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