

论著

植物雌激素白藜芦醇和根皮素对家兔离体主动脉收缩反应的影响

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摘要

目的 探讨植物雌激素白藜芦醇和根皮素对离体主动脉血管收缩的舒张作用特点是否同雌激素以及有关的作用机制。方法 将家兔离体主动脉平滑肌条置于灌流肌槽中, 记录其等长张力变化。结果 白藜芦醇和根皮素可明显抑制离体血管对去甲肾上腺素 (NE)、KCl 和 CaCl₂ 的浓度依赖性收缩反应, 使其量效曲线明显右移, pD₂' 值分别为 2.89, 3.34, 3.37 和 3.23, 3.52, 3.77; 对 KCl 预收缩血管条具有浓度依赖性的舒张效应。去除血管内皮、N^ω-L-硝基精氨酸 (L-NNA) 或亚甲蓝对白藜芦醇舒张血管作用具有明显的抑制作用, 但对根皮素诱发的血管舒张无明显影响。 咪唑美辛和普萘洛尔温育后, 对二者的舒血管作用均无明显影响。在无钙 Krebs 液 (含 0.01 mmol·L⁻¹ EGTA) 中, 白藜芦醇和根皮素可抑制 NE 诱发的由肌细胞内钙释放引起的 I 相收缩, 但不影响 CaCl₂ 诱发的由肌细胞外钙内流引起的 II 相收缩。结论 白藜芦醇和根皮素对离体主动脉血管的舒张作用可能与其抑制钙离子内流及细胞内钙释放有关; 另外白藜芦醇的舒张作用部分与内皮细胞有关, 但根皮素的舒血管作用与内皮细胞无关。

关键词 [植物雌激素类](#); [白藜芦醇](#); [根皮素](#); [肌,平滑,血管](#); [主动脉,胸](#); [血管舒张](#); [内皮,血管](#)

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Effects of phytoestrogens resveratrol and phloretin on contractile response of aortic strips in rabbits

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Abstract

AIM To investigate whether the relaxation characteristics of phytoestrogens resveratrol and phloretin on contractile response of aortic strips are similar to that of estrogen and the mechanisms underground. **METHODS** Aortic strips from rabbits were suspended in organ baths containing Krebs solution, and then isometric tension was measured. **RESULTS** Resveratrol and phloretin inhibited the contractile responses to norepinephrine (NE), KCl and CaCl₂, shifted their concentration-response curves rightward with pD₂' values of 2.89, 3.34, 3.37 for resveratrol and 3.23, 3.52, 3.77 for phloretin respectively. Also both of them concentration-dependently relaxed KCl-precontracted aortic strip. The relaxing response of resveratrol but not of phloretin in aortic strip was significantly reduced by removal of endothelium or incubation with N^ω-L-nitro-arginine and methylthioninium chloride, however both their relaxant effects were not affected by indometacin and propranolol. In Ca²⁺ free Krebs solution containing 0.01 mmol·L⁻¹ EGTA, resveratrol and phloretin inhibited NE-induced contraction which was caused by Ca²⁺ release from intracellular store, but did not affect the contraction which was induced by Ca²⁺ influx. **CONCLUSION** Resveratrol and phloretin can induce vasorelaxations which may relate to inhibition of Ca²⁺ influx through potential-dependent calcium channels and Ca²⁺ release from intracellular stores, and the relaxing response of resveratrol is endothelium-dependent in part, but of phloretin is not endothelium-dependent.

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