

论文

1-(2,6-二甲基苯氧基)-2-(3,4-二甲氧基苯乙胺基)丙烷盐酸盐对心脏成纤维细胞胶原I,III型mRNA表达的影响

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摘要:

目的: 研究去甲肾上腺素 (NE) 引起心肌肥厚与胶原I, III型mRNA表达水平之间的关系, 及兼具α₁受体阻断作用及钙离子拮抗作用的1-(2,6-二甲基苯氧基)-2-(3,4-二甲氧基苯乙胺基)丙烷盐酸盐 (DDPH) 的影响。方法: 培养的新生鼠心肌成纤维细胞, 加NE孵育, 胶原I,III型mRNA表达水平用RT-PCR方法测定。结果: 心肌成纤维细胞,加1 μmol. L⁻¹ NE孵育24 h, 导致胶原I,III型表达水平分别增加10, 3.1倍, 但DDPH可使其表达水平显著降低。结论: DDPH可抑制心肌成纤维细胞胶原I,III型mRNA的表达。

关键词: I型胶原 III型胶原 成纤维细胞 去甲肾上腺素 1-(2,6-二甲基苯氧基)-2-(3,4-二甲氧基苯乙胺基)丙烷盐酸盐

EFFECT OF 1-(2,6-DIMETHYLPHENOXY)-2-(3,4-DIMETHOXYPHENYL-ETHYLAMINO)PROPANE HYDROCHLORIDE ON EXPRESSION OF COLLAGEN TYPE I AND TYPE III mRNA IN CULTURED CARDIAC FIBROBLASTS

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Abstract:

AIM: The collagen subtypes I(Co I) and III(Co III) are essential components of the cardiac extracellular matrix (ECM) in maintaining the functional integrity of the heart. The aim of the present study was to investigate whether norepinephrine stimulation known to induce cardiac hypertrophy might be involved in the regulation of the Co I and Co III mRNA expression, and effects of 1-(2,6-dimethylphenoxy)-2-(3,4-dimethoxyphenylethylamino) propane hydrochloride (DDPH) on expression of Co I and Co III mRNA. METHODS: Neonatal rat cardiac fibroblasts were prepared from Sprague-Dawley rats(1~3 d after birth). Norepinephrine was used as hyperplastic agent, Co I, Co III and mRNA expression were measured by RT-PCR. RESULTS: Stimulation of neonatal rat cardiac fibroblasts with 1 μmol.L⁻¹ norepinephrine for 24 h resulted in a significant increase of the Co I mRNA(10 fold) and Co III mRNA (3.1 fold). The changes on the expression level were blocked by the DDPH. CONCLUSION: The data demonstrate that the Co I and Co III mRNA levels were up-regulated by the activation of the adrenergic signal transduction pathway and DDPH was shown to decrease the expression levels of Co I and Co III mRNA.

Keywords: collagen III cardiac fibroblasts norepinephrine 1-(2,6-dimethylphenoxy)-2-(3,4-dimethoxyphenylethylamino) propane hydrochloride collagen I

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