中国病理生理杂志 2005 21 (3): 484-488 ISSN: 1000-4718 CN: 44-1187/R

论著

NF-κB参与Akt信号途径激活诱导的心肌肥大

李跃华[1],哈团柱[2],陈琪[1],李菁[1],李传富[2]

1南京医科大学病理生理学教研室， 江苏 南京 210029；2美国东田纳西州立大学外科，美国

收稿日期 2004-8-15 修回日期 2004-11-4 网络版发布日期 2009-9-14 接受日期 2004-11-4

摘要 目的：探讨NF-κB信号在Akt信号途径激活诱导的心肌肥大发生机制中所起的作用。 方法： 以缩窄SD大鼠升主动脉诱导的心肌肥大和心脏特异性表达的caAkt转基因小鼠为模型，采用EMSA检测心肌组织中NF-κB结合活性，应用Western blot方法分析心肌组织中phospho-Akt 和 phospho-IκBα的表达水平。 结果：①缩窄大鼠升主动脉3周后，心脏重量/体重比值高于假手术组34.5%(P＜0.01) ，而且肥大心肌组织中p-Akt蛋白表达明显高于假手术组(P＜0.01)。②caAkt转基因小鼠心脏明显肥大，其心肌组织中NF-κB活性比野生型小鼠高567.86%(P＜0.01)，同时心肌组织中IκBα的磷酸化水平也明显高于野生型小鼠(P＜0.01)。 结论：NF-κB介入到Akt信号途径激活所致的心肌肥大发生发展过程中。

关键词 蛋白激酶B NF-κB 心肌肥大

分类号 R363

NF-κB activation participates in the activated Akt signaling induced cardiac hypertrophy in vivo

LI Yue-hua[1], HA Tuan-zhu[2], CHEN Qi[1], LI Jing[1], LI Chuan-fu[2]

1Department of Pathophysiology, Nanjing Medical University, Najing 210029, China;2Department of Surgery, East Tennessee State University, Johnson City, TN 37614, USA

Abstract

<FONT face=Verdana>AIM: To explore whether NF-κB activation participates in the activated Akt signaling-induced cardiac hypertrophy in vivo. METHODS: We used two in vivo models of cardiac hypertrophy, namely, aortic banding in Sprague-Dawley rats for 3 weeks and transgenic mice with cardiac specific expression of constitutively active Akt (caAkt). Electrophoretic mobility shift assay (EMSA) was used to determine NF-κB binding activity with nuclear proteins extracted from heart tissues. Western blots were performed to examine the phosphorylation of Akt and phosphor-IκBα with appropriate specific anti-phospho antibodies. RESULTS: ① The heart weight/body weight (HW/BW) ratio was significantly increased by 34.5% (P<0.01) in aortic banded 3 weeks rats compared to sham operated control. The level of phosphor-Akt in hypertrophic heart was significantly increased compared to sham operated control (P<0.01). ② The ratio of HW/BW in caAkt transgenic mice was significantly increased by 123.4% (P<0.01), compared to wild type control. NF-κB binding activity and the level of phospho-IκBα were also significantly increased in caAkt mice compared to wild type control (P<0.01). CONCLUSION: NF-κB activation participates in the activated Akt signaling-induced cardiac hypertrophy in vivo. </FONT>

Key words Protein kinase B NF-kappa B Cardiac hypertrophy

DOI: 1000-4718

通讯作者 李跃华 yhli@njmu.edu.cn