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论文

转录因子NFATc在钙神经素介导的脑缺血再灌注损伤中的作用

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摘要：

目的研究转录因子NFATc及NF-κB在钙神经素介导的脑缺血再灌注损伤中的作用。方法Western blotting和EMSA分子生物学技术。结果与对照组相比较，CsA明显减低I/R组Fas配体和NFATc的蛋白表达;对照组、I/R组和CsA处理组I-κB-α蛋白表达无显著区别;未观察到对照组、I/R组和CsA处理组有phospho-I-κB-α蛋白表达;与对照组相比较，CsA明显减低I/R组Fas配体启动子远端和Fas配体启动子近端NFAT结合位点的NFAT-DNA结合活性($P<0.01$)。结论转录因子NFATc参与钙神经素介导的脑缺血再灌注损伤，促进CD95配体分子的转录表达;NF-κB可能未参与钙神经素介导的脑缺血再灌注损伤的作用机制。

关键词： 钙神经素 转录因子NFATc Fas配体 环孢素A 脑缺血再灌注损伤

Involvement of nuclear factor of activated T-cells (NFATc) in calcineurin-mediated ischemic brain damage*in vivo*

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Abstract:

AimTo study the involvements of nuclear factor of activated T-cells (NFATc) and NF-κB in calcineurin-mediated ischemic brain damage*in vivo*. MethodsThe rat transient forebrain ischemia conducted through 15 min ischemia followed by 8, 24, and 72 h reperfusion was induced using the four-vessel method. The rats were divided randomly into five groups; sham control group, ischemia/reperfusion (I/R) group, CsA treated groups (for 8, 24, and 72 h reperfusion). Western blotting was performed to detect changes of FasL, NFATc, I-κB-α, and phospho-I-κB-α protein expression, and gel shift assays for NFAT FasL-DNA binding activities. ResultsWestern blotting showed that the expressions of both FasL and NFATc protein were significantly increased in the hippocampus of rat subjected to transient forebrain ischemia in comparison with those of the sham control group, which were markedly reduced by CsA. The I-κB-α protein showed no changes in all groups, and phospho-I-κB-α protein was not observed in this study. Proximal and distal FasL promoter NFAT sites bind NFAT proteins from the hippocampal neurons subjected to transient forebrain ischemia, and DNA-binding activities increased significantly compared with those of the sham control group. CsA markedly inhibited these changes. ConclusionNFATc may be involved in calcineurin-mediated ischemic brain damage and transcription factor NF-κB may not be involved.

Keywords: nuclear factor of activated T-cells (NFATc) FasL cyclosporin A ischemic brain damage calcineurin

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