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脑缺血再灌注后bFGF和FGFR表达及藻蓝蛋白的干预作用 [点此下载全文](#)

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摘要:

目的: 观察脑缺血再灌注后神经细胞凋亡和碱性成纤维细胞生长因子(bFGF)及其受体(FGFR)的表达, 探讨藻蓝蛋白对脑缺血损伤的干预作用。方法: 成年健康雄性Wistar大鼠52只, 应用线栓法建立大脑中动脉阻塞再灌注(MCAO/R)模型, 藻蓝蛋白进行治疗, TUNEL方法观察脑缺血再灌注后神经细胞凋亡, 免疫组化检测bFGF和bFGFR的表达。结果: 脑缺血再灌注后6h, 皮质区和纹状体区神经细胞凋亡逐渐增加, 至第1d达高峰, 第3d开始下降, 第14d时仍高于假手术组; 藻蓝蛋白治疗组凋亡细胞的变化与对照组相似, 同一时间点相比较, 均显著低于对照组。脑缺血再灌注后皮质区和纹状体区神经元bFGF和FGFR表达增强, 再灌注6h神经细胞即出现bFGF表达, 第1d达高峰, 后逐渐减弱, 至第14d仍高于假手术组; 藻蓝蛋白组神经细胞bFGF和FGFR表达的变化趋势与对照组相似, 同一时间点比较, 均明显高于对照组。结论: 藻蓝蛋白可能通过促进bFGF和FGFR的表达, 激活内源性神经保护机制而发挥抗凋亡作用。

关键词: [藻蓝蛋白](#) [脑缺血](#) [凋亡](#) [碱性成纤维细胞生长因子](#) [受体](#)

The expressions of basic fibroblast growth factor and fibroblast growth factor receptor after cerebral ischemic reperfusion and the protective effects of phycocyanin in rats [Download Fulltext](#)

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Abstract:

Objective: To investigate the expression of bFGF and FGFR after focal cerebral ischemia reperfusion and the protective effects of phycocyanin in rats. Method: The animal model of middle cerebral artery occlusion reperfusion (MCAO/R) was established using the intraluminal filament occlusion with 52 healthy adult male Wistar rats, and treated by phycocyanin. The apoptosis and the expression of bFGF and FGFR were determined by TUNEL assay and immunohistochemical staining to evaluate the effects of phycocyanin on above indexes. Result: In control group, apoptosis-positive cells were preferentially located in cortex and striatum and progressively increased from reperfusion 6h and peaked at the 1st d after reperfusion, then decreased on the 3rd d and still in high level on the 14th d. In treatment group, the time-phase pattern of apoptosis-positive cells were similar to that in control group, but the number of cells was significantly lower than that in control group at the same time points. In the control group, the overexpressions of bFGF and FGFR were mainly in cortex and striatum and began from ischemic reperfusion 6h, reached maximum on the 1st d, then subsided gradually and still in high level on the 14th d. In treatment group, the time-phase pattern of bFGF and FGFR were similar to those in control group, while the bFGF and FGFR-positive cells were significantly more than those in control group at the same time points. Conclusion: Phycocyanin might play anti-apoptotic effects by means of over-expressing bFGF and FGFR and activating endogenous neuroprotective mechanism following cerebral ischemic reperfusion in rats.

Keywords: [phycocyanin](#) [cerebral ischemia](#) [apoptosis](#) [basic fibroblast growth factor](#) [receptor](#)

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