

论著

正常与慢性脑缺血大鼠海马比较蛋白质组学研究

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摘要:

目的: 通过研究正常大鼠和慢性脑缺血大鼠海马蛋白质表达的差异,探讨慢性脑缺血后脑损伤的发病机制。方法: 采用双侧颈总动脉结扎的方法建立慢性脑缺血模型,20只大鼠随机分为模型组($n=10$)和假手术组($n=10$),4周后对各组大鼠海马进行双向凝胶电泳分析,并通过质谱技术鉴定差异蛋白质。结果: 模型组与假手术组相比共有4种蛋白质上调,2种蛋白质下调,经质谱鉴定得到6种蛋白质的具体信息,包括泛素羧基末端水解酶L1;动力蛋白1;雄激素受体辅助活化因子;ATP合酶;rCG50513, isoform CRA_a和expressed sequence AU016693, isoform CRA_b。结论: 建立了分辨率较高且重复性较好的慢性脑缺血双向电泳图谱,并发现了6种可能与脑缺血后神经损伤相关的蛋白质。

关键词: 脑缺血 海马 蛋白质组学 大鼠

Comparative proteomic analysis of hippocampus between chronic cerebral ischemia rats and normal controls

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Abstract:

Objective To explore the pathogenesis of brain damage after chronic cerebral ischemia through analysis of the differences in proteins expression in hippocampus between chronic cerebral ischemia rats and normal rats. Methods The chronic cerebral ischemia model was established by ligating the bilateral common carotid arteries. Twenty rats were randomly divided into a model group ($n=10$) and a sham operation group ($n=10$). Four weeks later, the differences of proteins expression in hippocampus between model group and sham operation group were analyzed by two dimensional polyacrylamide gel electrophoresis and ultraflex TOF/TOF mass spectrograph. Results Compared to the sham operation group, the expressions of 4 proteins were up-regulated and that of 2 proteins were down-regulated in the model group. Six proteins were identified by ultraflex TOF/TOF, which were ubiquitin carboxy-terminal hydrolase L1; Dynamin-1; TMF regulated nuclear protein-like, partial; ATP synthase; rCG50513, isoform CRA_a; and expressed sequence AU016693, isoform CRA_b. Conclusion Well-resolved and reproducible 2-DE patterns of chronic cerebral ischemia rats were established. Six proteins that correlate with nerve damage after chronic cerebral ischemia are identified.

Keywords: chronic cerebral ischemia hippocampus proteomics rats

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