

论著

## 急性脑缺血损伤大鼠海马神经元谷氨酸转运体的表达

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**摘要** 目的: 研究急性脑缺血损伤大鼠海马神经元谷氨酸转运体 (EAAC1) 的表达变化。方法: 采用EAAC1反义寡核苷酸脑内注射, 用插线法建立大鼠局灶性脑缺血模型(MCAO)。运用Western blot法和TTC染色观察缺血区EAAC1表达和梗塞体积; 采用RT-PCR 和Western blot法, 测定海马EAAC1 mRNA和蛋白在缺血1 h、6 h、24 h的变化。结果: 注射EAAC1反义寡核苷酸组大鼠梗塞体积 [(105.67±8.70) mm<sup>3</sup>] 显著小于正义组。缺血1 h大鼠海马EAAC1 mRNA表达 (0.963±0.117) 与假手术组 (0.907±0.113) 无明显差异, 缺血6h、24h持续高于缺血1 h (分别为1.116±0.104和1.428±0.078)。而海马EAAC1蛋白表达 (0.640±0.027) 在缺血24 h高于假手术组, 缺血1 h和6h EAAC1表达与假手术组比较无显著差异 (分别为0.330±0.018、0.330±0.015)。结论: EAAC1可促进缺血脑损伤, 在急性脑缺血病理过程中表达增加。

**关键词** [神经元谷氨酸转运体](#); [脑缺血](#); [海马](#); [寡核苷酸类,反义](#)

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## Changes of neuronal glutamate transporter in the rat hippocampus during acute cerebral ischemia

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### Abstract

<FONT face=Verdana>AIM: To investigate the changes of neuronal glutamate transporter (EAAC1) at different ischemic times in the rat hippocampus in early stage. METHODS: Brain microinjection of EAAC1 antisense oligodeoxynucleotide (EAAC1 antisense) was adopted and focal transient ischemia was produced by the filament method of middle cerebral artery occlusion (MCAO). Western blotting and TTC staining analysis were adopted for observing EAAC1 expression and infarction volume in ischemic region. The expression of EAAC1 mRNA and protein at different ischemic times in the rat ischemic hippocampus was assessed by RT-PCR and Western blotting analysis. RESULTS: Compared with EAAC1 sense group, the volume of brain ischemic infarction [(105.67±8.70) mm<sup>3</sup>] was reduced after brain microinjection of EAAC1 antisense. Compared with the sham-operated control, EAAC1 mRNA was significantly higher at 6 h and at 24 h in the hippocampal regions during ischemia, while protein expression was higher at 24 h only. EAAC1 mRNA and protein expression were unchanged at other ischemic times. CONCLUSION: EAAC1 is associated with ischemic injury and its expression is increased in the hippocampal regions after focal cerebral ischemia.</FONT>

**Key words** [Neuronal glutamate transporter](#) [Brain ischemia](#) [Hippocampus](#) [Oligonucleotides](#) [antisense](#)

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