

论文

东莨菪碱致记忆障碍大鼠中枢电压依赖性钾通道亚型的表达

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摘要:

目的研究东莨菪碱致记忆障碍大鼠模型中枢电压依赖性钾通道亚型mRNA表达的差异。方法Morris水迷宫实验检验大鼠空间学习记忆能力,用RT-PCR方法检测大脑皮层和海马中5种电压依赖性钾通道Kv1.4,Kv1.5,Kv2.1,Kv4.2及Kv4.3 mRNA的表达。结果注射东莨菪碱大鼠的学习记忆能力明显下降,大脑皮层中Kv4.2的表达比对照组降低28.8%;海马中Kv1.4的表达升高111.7%,Kv2.1的表达升高64.3%,而Kv4.2的表达降低33.9%。其它电压依赖性钾通道表达的变化不大。结论东莨菪碱致大鼠学习记忆障碍的同时可诱发中枢电压依赖性钾通道亚型的表达改变。

关键词: 东莨菪碱 电压依赖性钾通道 逆转录聚合酶链式反应 记忆障碍

mRNA EXPRESSIONS OF VOLTAGE-DEPENDENT POTASSIUM CHANNELS IN THE BRAIN OF SCOPOLAMINE-INDUCED MEMORY IMPAIRED RATS

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Abstract:

AIMTo study mRNA expression difference of voltage-dependent potassium channels in the brain of scopolamine-induced memory impaired rats. METHODSMemory impairments induced in rats by scopolamine (1 mg·kg⁻¹) were assessed in the Morris water maze test. After rats were injected intraperitoneally with scopolamine for 6 days, the mRNA expression level of five voltage-dependent potassium channels, Kv1.4, Kv1.5, Kv2.1, Kv4.2 and Kv4.3 were detected in the rat cortex and hippocampus by RT-PCR. RESULTSScopolamine (1 mg·kg⁻¹) was shown to significantly induce memory impairment in rats. The mRNA levels of Kv4.2 were decreased by 28.8% and 33.9% in the cortex and hippocampus, respectively. The mRNA levels of Kv1.4 and Kv2.1 were increased in the hippocampus by 111.7% and 64.3%, respectively. There were no differences in the brain mRNA levels of other voltage-dependent potassium channels in scopolamine-induced memory impaired rat. CONCLUSIONThe mRNA expression levels of voltage-dependent potassium channels changed significantly in the brain of scopolamine-induced memory impaired rats.

Keywords: RT-PCR voltage-dependent potassium channels Alzheimer's disease scopolamine

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