

论著

## 小鼠胚胎干细胞诱导的神经前体细胞大脑皮层移植对AD大鼠的治疗作用

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**摘要** 目的与方法: 将小鼠胚胎干细胞无血清诱导为神经前体细胞后移植到叠氮钠所致的阿尔茨海默氏病(AD)大鼠额叶皮层, 采用免疫组化观察移植细胞的存活、分化以及细胞移植对AD大鼠Morris水迷宫记忆功能的作用。结果: 胚胎干细胞形成的胚胎样体经N2选择性培养基选择生长5 d后, 85%以上的小鼠胚胎干细胞分化为nestin阳性的神经前体细胞。移植到AD大鼠额叶皮层后4-6周, 神经前体细胞存活良好, 大部分移植细胞保持为未分化的nestin阳性的神经前体细胞并呈克隆生长, 部分细胞发出类似于神经元的长突起。移植后4周, AD大鼠的空间记忆能力明显提高。结论: 胚胎干细胞来源的神经前体细胞移植到AD大鼠额叶皮层后能存活并分化为神经元, 能改善AD大鼠的记忆功能障碍。

**关键词** [阿尔茨海默病](#); [胚胎干细胞](#); [分化](#); [大鼠](#)

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## Cell replacement of neural precursor cells differentiated from mouse embryonic stem cells in the frontal cortex of AD rats and its therapeutic effect

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### Abstract

<FONT face=Verdana>AIM: To observe the survive, differentiation and therapeutic effect of neural precursor cells (NPCs) differentiated from mouse embryonic stem cells (ESc) when transplanted in the frontal cortex of Alzheimer's disease (AD) rats. METHODS: NPCs were induced from mouse ESc with serum-free methods. The differentiation of transplanted NPCs was observed with immunohistochemistry methods and memory of rats was evaluated with Morris water maze test. RESULTS: About 85% of mouse ESc were differentiated into NPCs 5 days after the embryoid bodies cultured in the N2 medium. 4 and 6 weeks after transplantation, the memory impairment of AD rats was relieved, most of the grafted NPCs were kept undifferentiated and proliferated in clone shape, neuron-like long processes was observed. CONCLUSIONS: The NPCs derived from ESc survive and differentiate into neurons after grafted into the frontal cortex of AD rats, which produces therapeutic effects on AD.</FONT>

**Key words** [Alzheimer disease](#) [Embryonic stem cells](#) [Differentiation](#) [Rats](#)

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