

生命科学

## 镁对老年小鼠学习和记忆的改善作用

司文, 白静, 邓世宁, 曾庆文, 曹晓华

华东师范大学 上海市脑功能基因组学重点实验室, 上海 200062

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**摘要** 为了探讨镁离子对老年性小鼠年龄相关的学习记忆衰退的影响, 将14月龄实验小鼠随机分为镁处理组 and 对照组, 实验小鼠以10 mg/kg的剂量饮用浓度为4 mmol/L的MgCl<sub>2</sub>溶液60 d之后, 进行学习记忆能力行为学测试. 结果显示, 补充镁离子后, 实验小鼠的活动量和探索能力没有发生明显改变. 但是在新异物体识别实验中, 与对照组相比, 镁处理组鼠在新物体上探究的时间比例增高, 显示了较强的识别记忆能力. 此外在明暗箱被动回避实验中, 镁处理组鼠逃避潜伏期长于对照组, 亦表现出较强的恐惧记忆能力. 由此认为, 补充镁离子具有改善老年小鼠学习记忆能力的作用.

**关键词** [镁离子](#); [衰老](#); [识别记忆](#); [恐惧记忆](#)

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## Enhanced effect of magnesium on learning and memory ability in aged mice(Chinese)

SI Wen, BAI Jing, DENG Shi-ning, ZENG Qing-wen, CAO Xiao-hua

Key Laboratories of MOE and STCSM Shanghai Institute of Brain Functional Genomics, East China Normal University, Shanghai 200062, China

### Abstract

The experiment was designed to investigate the effect of magnesium on learning and memory ability in aged mice. Forty aged mice (14 months old) were divided into two groups randomly, magnesium-treated group and control group. In magnesium-treated group, mice were fed with the MgCl<sub>2</sub> solution (concentration of solution: 4 mmol/L, dose: 10 mg/kg) for 60 days and then subjected to the novel object recognition test and passive avoidance task. No significant difference was found in locomotor activity and exploration between two groups. However, in the novel object recognition test, magnesium-treated mice showed significantly higher exploratory preference to the novel object than controls. In addition, compared to the controls, magnesium-treated mice exhibited longer escape latency in the passive avoidance test, suggesting that magnesium-treated mice have better fear memory. These results indicate that magnesium can improve the ability of learning and memory in aged mice.

**Key words** [magnesium](#) [ageing](#) [recognition memory](#) [fear memory](#)

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通讯作者 曹晓华 [xhcao@brain.ecnu.edu.cn](mailto:xhcao@brain.ecnu.edu.cn)

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