

论著

## 长苞凹舌兰提取物对亚急性衰老小鼠学习记忆和凋亡相关蛋白表达的影响

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**摘要** 目的 研究长苞凹舌兰提取物(CE)能否改善衰老小鼠的学习记忆能力,及其与神经元凋亡的关系。方法 ip *D*-半乳糖120 mg·kg<sup>-1</sup>·d<sup>-1</sup>和亚硝酸钠90 mg·kg<sup>-1</sup>·d<sup>-1</sup>连续60 d建立衰老模型,从d 47开始ig CE 2.5, 5, 10 mg·kg<sup>-1</sup>·d<sup>-1</sup>,连续14 d。跳台实验检测小鼠的学习记忆能力;免疫组化染色测定海马内Bcl-2, 半胱氨酸天冬氨酸蛋白酶-3(caspase-3)和Bax凋亡相关蛋白的阳性细胞数,并用图像分析系统进行灰度扫描。结果 CE明显改善衰老小鼠的学习记忆能力,跳台实验的潜伏期明显延长,错误次数显著减少。衰老小鼠脑中Bcl-2阳性神经元减少,caspase-3和Bax阳性神经元增多。CE可抑制这些凋亡相关蛋白的阳性细胞数改变,从而可能阻断凋亡级联反应的发生。结论 CE可增强衰老小鼠的学习记忆能力,其机制可能与抑制神经元凋亡有关。

**关键词** [长苞凹舌兰](#) [衰老](#) [原癌基因蛋白质c-bcl-2](#) [半胱氨酸天冬氨酸蛋白酶3](#) [学习](#) [记忆](#)

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## Effects of *Coeloglossum viride* (L.) Hartm. var. *bracteatum* (Willd.) Richter extract on memory and apoptosis-related protein expression of subacute aging mice

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### Abstract

**AIM** To study the effect of *Coeloglossum viride* (L.) Hartm. var. *bracteatum* (Willd.) Richter extract(CE) on memory of senescent mice and the relationship to neuron apoptosis. **METHODS** The aging mice were induced by consecutive ip injection of *D*-galactose (120 mg·kg<sup>-1</sup>·d<sup>-1</sup>) and NaNO<sub>2</sub> (90 mg·kg<sup>-1</sup>·d<sup>-1</sup>) for 60 d. From d 47—60, CE 2.5, 5, 10 mg·kg<sup>-1</sup>·d<sup>-1</sup> were given ig for 14 d. Step-down tests were performed to evaluate the learning and memory function in mice. The expressions of Bcl-2, caspase-3 and Bax protein in hippocampus tissue were studied by immunohistochemical staining. **RESULTS** CE significantly improved the memory ability of aging mice. The latencies prolonged and the number of errors reduced in step-down test. The number of Bcl-2 positive cells in hippocampus of CE treated mice increased when compared with aging group, and the number of caspase-3 and Bax positive cells decreased. **CONCLUSION** CE can improve the memory ability of senescent mice. The mechanism may be that CE rectifies abnormal expression of apoptosis related proteins and prevents neurons from apoptosis.

**Key words** [Coeloglossum viride var. bracteatum](#) [aging](#) [proto-oncogene proteins c-bcl-2](#) [caspase-3](#) [learning](#) [memory](#)

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