

### 论文 远志皂苷对β-淀粉样肽和鹅膏蕈氨酸引起胆碱能系统功能降低的影响

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摘要:

目的观察远志皂苷对拟痴呆模型大鼠胆碱能系统功能的作用。方法在大鼠脑内右侧基底核内联合注射β-淀粉样肽1~40片段(β-AP<sub>1~40</sub>)和鹅膏蕈氨酸建立大鼠拟痴呆模型,用避暗法测定模型动物的学习记忆能力,用放射配体结合分析法测定胆碱乙酰转移酶活性和M受体密度,用改良Ellman法测定脑组织乙酰胆碱酯酶活性。结果给模型大鼠连续ig远志皂苷60 d后,远志皂苷能明显提高拟痴呆大鼠的学习记忆能力,显著升高脑内M受体密度和增强胆碱乙酰转移酶活性,能有效地抑制脑胆碱酯酶活性。结论远志皂苷对老年性痴呆的胆碱能系统功能减退有一定的改善和治疗作用。

关键词: 远志皂苷 β-淀粉样肽 拟痴呆模型 学习记忆 胆碱乙酰转移酶 乙酰胆碱酯酶 M受体密度

### EFFECT OF TENUIGENIN ON CHOLINERGIC DECLINE INDUCED BY β-AMYLOID PEPTIDE AND IBOTENIC ACID IN RATS

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Abstract:

AIMTo observe the effect of tenuigenin (TEN), an active component isolated from Yuanzhi, on cholinergic function in rats with β-amyloid peptide and ibotenic acid injection into right nucleus basalis magnocellularis (NBM). METHODSA combined injection of β-AP<sub>1~40</sub> and ibotenic acid into the right NBM was used as a dementia-like rat model. The ability of learning and memory was detected by the step-through test. The activity of choline acetyltransferase (ChAT) and the muscarinic receptor density were determined by <sup>3</sup>H-acetylcoenzyme and [<sup>3</sup>H]-quinuclidinyl benzilate (<sup>3</sup>H-QNB) binding tests, respectively. The activity of acetylcholinesterase (AChE) was determined by improved Ellman's method. RESULTSThe model animals were treated with daily oral administration of TEN for 60 d. The learning and memory ability were obviously improved. i.e., in the step-through test, the number of error was obviously decreased and the latency was obviously prolonged. The muscarinic receptor density and the activity of ChAT within rats brain were markedly enhanced, whereas the activity of AChE in rat brain was significantly inhibited. CONCLUSIONThese results suggest that TEN probably have certain improving and treating action for the reductions in cholinergic function in Alzheimer's disease.

Keywords: β-amyloid peptide dementia-like model learning and memory ChAT AChE muscarinic receptor density tenuigenin

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