

论著

## 17 $\beta$ -雌二醇对卵巢切除小鼠海马内源性神经营养因子及神经营养因子3表达的影响

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**摘要** 目的 为确定雌激素可能具有的神经营养调节作用。方法 采用蛋白质印迹法检测上述指标的变化。结果与卵巢未切除对照组相比, 小鼠卵巢切除10周后海马内源性神经营养因子(BDNF)表达水平明显下降, 给予17 $\beta$ -雌二醇(2.4或4.8  $\mu\text{g} \cdot \text{d}^{-1}$ , sc, 连续12周)替代具有明显的改善作用 ( $P < 0.01$ )。但卵巢切除及17 $\beta$ -雌二醇替代对海马内神经营养因子3表达水平无明显影响。结论 海马内BDNF表达水平的改变与雌激素缺乏具有密切关系。雌激素对调节海马内BDNF水平具有重要作用。

**关键词** [卵巢切除术](#) [雌二醇](#) [脑源性神经营养因子](#) [神经营养因子3](#)

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## Effect of 17 $\beta$ -estradiol on the expression of brain-derived neurotrophic factor and neurotrophin-3 in the hippocampus of ovariectomized mice

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### Abstract

**AIM** To confirm the possible neurotrophomodulatory effect of estrogens. **METHODS** Western blot analysis was employed to determine the levels of brain-derived neurotrophic factor(BDNF) and neurotrophin 3(NT-3). **RESULTS** There was a significant reduction of BDNF expression in the hippocampus of ovariectomized mice compared with that of sham-operated mice ( $P < 0.01$ ). Replacement of 17 $\beta$ -estradiol(2.4 or 4.8  $\mu\text{g} \cdot \text{d}^{-1}$ , sc, for 12 weeks) restored BDNF level in the hippocampus. However, both ovariectomy and estradiol replacement had no effect on NT-3 expression in the hippocampus. **CONCLUSION** The decrease in the expression of BDNF in the hippocampus of ovariectomized mice is closely associated with estrogen deficiency. Estrogen plays an important role in modulating BDNF level in the hippocampus.

**Key words** [ovariectomy](#) [estradiol](#) [brain-derived neurotrophic factor](#) [neurotrophin 3](#)

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