

论著

## 大补阴丸对真性性早熟模型大鼠的治疗作用

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**摘要** **目的** 探讨大补阴丸对真性性早熟大鼠的治疗作用, 评价大补阴丸对真性性早熟的疗效并探讨可能的作用机制。**方法** 5日龄SD雌性大鼠一次性sc给予达那唑30  $\mu\text{g} \cdot \text{g}^{-1}$ 建立性早熟模型。15日龄时开始ig给予大补阴丸0.81, 1.62和3.24  $\text{g} \cdot \text{kg}^{-1}$ , 每天1次, 至模型组大鼠阴门开启数超过50%。21日龄起, 密切观察各组大鼠阴门开启情况, 并记录开启时的日龄。对阴门已开启的大鼠, 于每日早晨进行阴道脱落细胞涂片, 显微镜下观察性周期的变化。当模型组阴门开启大鼠数超过该组的50%时(33日龄), 所有大鼠股动脉放血处死, 取子宫和卵巢计算子宫和卵巢系数, 并常规制作子宫和卵巢组织切片测定子宫壁厚度和卵巢黄体生成数; 半定量逆转录(RT)-PCR法测定下丘脑促性腺激素释放激素(GnRH)、G蛋白偶联受体54(GPR54)和Kiss-1 mRNA的表达水平。**结果** 大补阴丸3.24  $\text{g} \cdot \text{kg}^{-1}$ 组子宫系数为 $115 \pm 12$ , 较模型组 $154 \pm 14$ 显著降低( $P < 0.05$ ); 大补阴丸3.24  $\text{g} \cdot \text{kg}^{-1}$ 组子宫壁厚度为 $(166 \pm 27) \mu\text{m}$ , 较模型组 $(477 \pm 71) \mu\text{m}$ 显著降低( $P < 0.05$ ), 并使卵巢黄体生成个数显著减少; 大补阴丸能明显降低下丘脑GnRH, GPR54和Kiss-1 mRNA的表达水平, 卵巢系数则无明显变化。**结论** 大补阴丸可能通过抑制下丘脑Kiss-1和GPR54基因表达, 抑制下丘脑GnRH的合成和释放, 从而抑制下丘脑-垂体-性腺轴的启动, 发挥治疗真性性早熟的作用。

**关键词** [大补阴丸](#) [达那唑](#) [青春期早熟](#) [促性腺激素释放激素](#) [Kiss-1](#) [G蛋白偶联受体54](#)

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## Therapeutic effect of Dabuyin Wan on precocious puberty model rats

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### Abstract

**OBJECTIVE** To investigate the potential effect of Dabuyin Wan on the rat precocious puberty model induced by danazol and its possible mechanism. **METHODS** Female Sprague-Dawley rats aged five days were once sc injected with danazol 30  $\mu\text{g} \cdot \text{g}^{-1}$ . From the postnatal fifteenth day, the rats in Dabuyin Wan groups were ig given Dabuyin Wan 0.81, 1.62 and 3.24  $\text{g} \cdot \text{kg}^{-1}$ , once daily, till the day more than 50% of rats in model group had their vaginas open. Vaginal opening and the first proestrus of the rats were observed every day. All the rats were executed when rats with an open vagina in the model group exceeded 50% (33 d of age). The wet weight of the uterus and ovary were measured, and corpora luteum in the ovary and the uterine wall thickness were detected. RT-PCR technology was used to observe the expression of gonadotropin releasing hormone(GnRH), G protein-coupled receptor 54 (GPR54) and Kiss-1 mRNA in hypothalamic. **RESULTS** The organ coefficients of the uterus, the uterine wall thickness and the number of corpora luteum of the rat ovary in model group were  $154 \pm 14$ ,  $(477 \pm 71) \mu\text{m}$  and  $3.1 \pm 0.3$ , respectively. Dabuyin Wan 3.24  $\text{g} \cdot \text{kg}^{-1}$  significantly decreased the organ coefficients of the uterus to  $115 \pm 12$ , the uterine wall thickness to  $(166 \pm 27) \mu\text{m}$  and the number of corpora luteum in the ovary to  $0.0 \pm 0.0$ . In addition, Dabuyin Wan could down-regulate the mRNA expression of GnRH, GPR54 and Kiss-1 in hypothalamus. However, the organ coefficients of the ovary in each group had no difference. **CONCLUSION** Dabuyin Wan may inhibit both the abnormal hyperfunction of hypothalamus-pituitary-ovary axis in precocious puberty rats induced by danazol via reducing the expression of Kiss-1 and GPR54 mRNA, and the synthesis and release of GnRH in hypothalamus, which may be the primary mechanism by which Dabuyin Wan can effectively treat the true precocious puberty.

**Key words** [Dabuyin Wan](#) [danazol](#) [puberty](#) [precocious](#) [gonadotropin releasing hormone](#) [Kiss-1](#) [G protein-coupled receptor 54](#)

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