

论著

## 河豚毒素对大鼠和小鼠纳洛酮催促吗啡戒断症状的影响

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**摘要** 通过建立吗啡(Mor)依赖大鼠及小鼠模型, 观察河豚毒素(TTX, 大鼠 $0.003\sim 0.1\ \mu\text{g}\cdot\text{kg}^{-1}\cdot\text{d}^{-1}$ , im, 5 d; 小鼠 $0.02\sim 0.2\ \mu\text{g}\cdot\text{kg}^{-1}\cdot\text{d}^{-1}$ , ip, 2 d)对纳洛酮(Nal)催促戒断症状的预防及治疗作用. 结果表明TTX抑制戒断后大鼠体重丢失; 明显抑制Mor依赖小鼠Nal催促后的跳台反应, 并促进催促后小鼠体重的恢复. 证实TTX可显著抑制Mor依赖大鼠和小鼠Nal激发的戒断反应, 其效果与可乐定相近. 在防治戒断症状的有效剂量范围内, TTX不影响麻醉大鼠的血压, 呼吸和心率, 也不影响尼古丁诱发的神经反射活动, 对痛觉反应和中枢神经系统无明显抑制作用.

**关键词** [河豚毒素](#); [吗啡依赖](#); [戒断症状](#); [纳洛酮](#); [大鼠](#); [小鼠](#)

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## Effects of tetrodotoxin on naloxone-precipitated withdrawal syndrome in morphine-dependent rats and mice

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### Abstract

The protective and therapeutic effects of tetrodotoxin (TTX, rats,  $0.003\sim 0.1\ \mu\text{g}\cdot\text{kg}^{-1}$ , im, for 5 d; mice,  $0.02\sim 0.2\ \mu\text{g}\cdot\text{kg}^{-1}\cdot\text{d}^{-1}$ , ip, for 2 d) on withdrawal syndrome induced by naloxone (Nal) were investigated in morphine-dependent rats and mice. The results showed that the loss of body weight of rats was significantly inhibited ( $P<0.01$ ) by TTX. The jumping responses precipitated by Nal in mice were inhibited significantly by TTX administered 2 d before the challenge with Nal. TTX significantly inhibited the withdrawal syndrome evoked by Nal in morphine dependent rats and mice, and its effects were similar to that of clonidine. In the range of dose used in this study, TTX did not affect the blood pressure, respiration and heart rate, and did not affect the nicotine-induced neural reflex responses in anesthetized rats. TTX had no effects on ethanoic acid-writhing response and spontaneous movements of the mice.

**Key words** [tetrodotoxin](#) [morphine dependence](#) [withdrawal syndromes](#) [naloxone](#) [rats](#) [mice](#)

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