

## Effects of Extract from *Lactuca sativa* on Sleep in Pentobarbital-Induced Sleep and Caffeine-Induced Sleep Disturbance in Mice

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**Abstract :** *Lactuca sativa* (lettuce) has been known for its medical property to relieve anxiety and nervous. This study was implemented to investigate sleep-promoting effects of the lettuce alcohol extract (LAE). Caffeine is widely used psychoactive substance known to induced wakefulness and insomnia to its consumers. In the present study, the sedative-hypnotic activity of the LAE was studied using the method of pentobarbital-induced sleep in the mouse model. The LAE was administrated to mice 30 min before the pentobarbital injection. The LAE prolonged the pentobarbital-induced sleep duration and decreased sleep latency. The effects of LAE were comparable to those of induced by diazepam. Another study was performed to examine whether LAE ameliorates caffeine-induced sleep disturbance in mice. Additionally, caffeine (10 mg/kg, p.o) delayed sleep onset and reduced sleep duration of mice. Conversely, LAE treatment (80 or 160 mg/kg, p.o), especially at 160 mg/kg, normalized the sleep disturbance induced by caffeine. LAE supplementation can counter the sleep disturbance induced by caffeine. These results suggest that LAE possess significant sedative-hypnotic activity, which supports the popular use of lettuce for treatment of insomnia and provide the basis for new drug discovery. Furthermore, these results demonstrate that the lettuce extract may be preferable for the treatment of insomnia.

**Keywords :** caffeine, *Lactuca sativa*, sleep duration, sleep latency

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