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Abstract
Armillariella mellea is one of the Tricholomataceae mushrooms that spread worldwide and can be used as food and medicine. This study uses the fermentation products of Armillariella mellea with the addition of Gastrodia elata Blume or Ziziphus spinosa to explore the phenomenon of hypnosis in mice with the pentobarbital sodium(60mg/kg)-induced .Mice were fed with fermentation products twice daily in a 7 days period prior to hypnosis test. The tests are going to see whether the sleeping onset time and duration time would be changed or not in the pentobarbital-induced mice. The onset time is the duration of time from the injection of pentobarbital sodium till the loss of righting reflex ability; the sleeping duration time is the period of time from loss the ability of righting reflex to its recovery.

The study showed that the sleeping duration time induced by pentobarbital sodium(60mg/kg)was 70% longer than that of control by treating with the fermentation product of Gastrodia elata Blume and substance1 fermented by Armillariella mellea. Mice Treated with product of Ziziphus spinosa and substance1 fermented by Armillariella mellea prolonged 48% of the sleeping duration time than that of control. The onset time by treating with the fermentation products of Armillariella mellea with Gastrodia elata Blume or Ziziphus spinosa was 78% to 88% shorter than that untreated. But those treated with product of chinese herbs and substance2 fermented by Armillariella mellea did not affect hypnosis in mice.

The onset time and sleeping duration time that were treated with the fermentation products of Armillariella mellea with Gastrodia elata Blume and substance1 in 10 mg/20g、 20 mg/20g, Ziziphus spinosa and substance1 in 2mg/20g and substance2 in 20mg/20g as test groups are different from control($p<0.05$).The aforementioned four test groups were again to evaluate the hyponosis phenomena of mice under subhypnotic dosage and their anti-tolerance effect. The sleeping onset time of mice treated with fermentation products by subhypnotic dosage (45mg/kg) and 60mg/kg of pentobarbital are shorter than control, but sleeping duration time have not been affected. The onset time is shorter than control for mice treated with fermentations products with continuous injection of pentobarbital sodium (60mg/kg) in 7 primary days in anti-tolerance evaluation, and the prolonged sleeping duration time did not appeared until the 7th day of fermentation product treatment.

The Na+-K+ ATPase activities in cerebral cortex of mice were inhibited after treated with fermentation products of Armillariella mellea with Gastrodia elata Blume and substance1 in 10 mg/20g、 20 mg/20g for 1 week. However the activities were increased for mice treated with fermentation products of Armillariella mellea with Ziziphus spinosa and substance1 in 2mg/20g and with substance2 in 20mg/20g. The ATPase activities in mice treated with fermentation products for 4 weeks, however, were significantly higher than control. In conclusion, the mechanism of hyponotic

effects between Na+-K+ ATPase activities and the fermentation products of Armillariella melle should be further investigated.
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