

论文

十二种化学药品破坏小鼠被动回避性行为——跳台试验和避暗试验的作用的比较观察

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摘要:

采用小鼠一次性学习行为——跳台和避暗反应法, 观察了十二种化学药品对学习和记忆获得, 巩固和再现的影响, 结果表明, M-胆碱能拮抗剂、儿茶酚胺耗竭剂和多巴胺拮抗剂可破坏记忆的获得; 中枢抑制剂可破坏记忆的获得和/或记忆的再现; 除三尖杉酯碱的其它两种蛋白质生物合成抑制剂和RNA生物合成抑制剂可破坏记忆的巩固。上述大多数化学药品虽可在两种试验方法中得到相似的结果, 但对记忆获得和记忆巩固的损害, 跳台法较避暗法更敏感。以上两法均系值得采用的简易快速的学习记忆试验。

关键词: 化学药品 记忆缺损 一次性学习回避性反应 跳台法 避暗法

STUDIES ON SUSCEPTIBILITIES TO THE AMNESTIC EFFECTS OF 12 CHEMICALS ON PASSIVE AVOIDANCE RESPONSES IN MICE: COMPARISON BETWEEN STEP DOWN AND STEP THROUGH TESTS

Zhang Jun-tian and Saito H

Abstract:

Eleven chemicals were investigated for their amnesic effects in one trial passive avoidance learning-step down and step through tests in mice. Anticholinergic agents such as scopolamine and anisodine, and catecholamine depletion agent such as reserpine were shown to impair acquisition of memory in both tests. The CNS depressants, including alcohol, pentobarbital, chlorpromazine and chlorodiazepoxide, disrupted acquisition and/of retrieval processes, of which, 15~20% alcohol impaired acquisition and retrieval of mice in both tests, but it did not elicit obvious nonspecific effects. Haloperidol, a dopamine antagonist, was shown to induce impairment of acquisition of memory in step down test, but not in step through test. Protein biosynthesis inhibitors, Cycloheximide and chloramphenicol, and a RNA biosynthesis inhibitor, cafriptohecin, were found to impair consolidation of memory in step down test. Chloramphenicol and camptothecin, however, elicited an amnesia of consolidation in step through test. Since nearly all of the chemicals mentioned above can induce amnesia in step down test rather than step through test, the former is recommended as a simple, rapid and Sensitive method in the study of learning and memory.

Keywords: Amnesia One trial passive avoidance response Step-down test Step-through test Chemicals

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