

**BEHAVIORAL CHARACTERIZATION OF ACETALDEHYDE IN
C57BL/6J MICE: LOCOMOTOR, HYPNOTIC AND ATAXIC EFFECTS**

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Acetaldehyde, the first ethanol metabolite, was recently suggested to play a major role in many behavioral effects of ethanol. However, no studies have directly investigated the behavioral effects of acetaldehyde after acute administration. Therefore, the aim of the present study was to characterize the locomotor, hypnotic and ataxic effects of acetaldehyde in C57BL/6J mice. Various acetaldehyde doses (0-300 mg/kg) were injected intraperitoneally and their effects were investigated with several classical behavioral tests. The locomotor effects of acetaldehyde were measured in standard activity boxes. In addition, the loss of righting reflex was used to assess the hypnotic effects of acetaldehyde. Finally, the ataxic effects of acetaldehyde were studied with the horizontal wire test. The results show that acetaldehyde induced a significant hypolocomotor effect at 170 mg/kg and higher doses. In addition, the hypnotic effects of acetaldehyde were evidenced by a loss of righting reflex in doses between 170 and 300 mg/kg. However, the locomotor and hypnotic effects of acetaldehyde were very brief relative to what is observed after ethanol administration. After 170 mg/kg acetaldehyde, normal activity was recovered in less than 30 minutes and the loss of righting reflex lasted only an average of 6.14 ± 1.29 minutes after the administration of 300 mg/kg acetaldehyde, the highest testable dose before lethality. Ataxic effects were observed with lower doses that did not significantly affect locomotor activity. These results show that acetaldehyde, like ethanol, possesses sedative, hypnotic and ataxic properties and therefore indicate that the first product of ethanol metabolism might be involved in these ethanol effects.