INTRODUCTION

Dimebon, a compound recently proposed for a treatment of Alzheimer’s disorder1,2, was suggested to have memory enhancing properties in pre-clinical studies1,4. Dimebon increased memory scores1,5 and enhanced neurogenesis6 in rats. We aimed to investigate the pro-cognitive effects of dimebon, and to study whether repeated or acute intraperitoneal injection of this compound, at doses known to increase memory (respectively 0.1 and 0.5 mg/kg), affect learning scores in appetitive (Y-Maze) and inhibitory (step-down avoidance) tasks in 3-month-old C57BL/6N mice. Additional O-maze, novel cage, open field and water consumption tests were carried out to address possible non-specific effects of dimebon on parameters of drinking, anxiety and exploration/locomotion2.

RESULTS

1) Subchronic treatment with dimebon accelerates learning and increases duration of drinking behaviour in an appetitive memory task in C57BL/6N mice while thirst and behaviours in other tests were not affected

2) Bolus treatment with dimebon at the dose of 0.5 mg/kg increases the performance in an inhibitory memory task in C57BL/6N

CONCLUSIONS

• Administration of dimebon via repeated (0.1 mg/kg) and acute (0.5 mg/kg) i.p. injections respectively increases learning scores in Y-Maze and step-down avoidance tasks in C57BL/6N mice.
• Acute treatment with dimebon at the dose 0.1 mg/kg did not affect learning scores
• No effects of 3-day administration with dimebon were observed on the parameters of thirst, anxiety, and exploration/locomotion in 3-month-old C57BL/6N mice
• Dimebon enhances hippocampus learning in both appetitive and inhibitory tasks in C57BL/6N mice

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