EFFECTS OF A METABOTROPIC GLUTAMATE RECEPTOR 5 POSITIVE ALLOSTERIC MODULATOR, CDPPB, ON SPATIAL LEARNING IN RODENTS

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ABSTRACT

Metabotropic glutamate receptor 5 (mGlu5) has been implicated in a variety of learning processes and is important for aversive learning tasks. The present studies used an mGlu5 receptor positive allosteric modulator, 2-cyano-N-(1,3 diphenyl-1H-hyrazol-5-yl)benzamide (CDPPB) to characterize the importance of mGlu5 receptors in aversively- and appetitively-motivated spatial learning. CDPPB, administered prior to 5 daily training sessions in the Barnes maze (Experiment 1) did not significantly enhance acquisition of the task. However, in a second experiment CDPPB (30 mg/kg) significantly enhanced performance compared to vehicle-treated controls during 3 days of reversal learning and had a significant effect on proportion search strategy used. Additionally, CDPPB (30 mg/kg), delivered 20 min prior to 5 daily training sessions (of Experiment 3) enhanced the delay rats were able to withstand in the appetitively-motivated delayed alternation version of the T-maze. The present results emphasize the role of mGlu5 receptors in spatial learning tasks, and demonstrate mGlu5 receptors are important for learning in appetitive, as well as aversive, tasks.