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## Investigation of the Amnestic Effects of Microinjections of NMDA Receptor Antagonist AP5 Directly to the Goldfish Telencephalon.



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### ABSTRACT

*N-Methyl-D-aspartate (NMDA) receptor antagonists have been shown to block long-term potentiation (LTP), an increased effectiveness in communication among neurons and a physiological correlate of learning and memory, and also impair certain learning in mammals. Previous studies in our lab have shown that NMDA receptor antagonists injected into the cranial space in goldfish impair active avoidance conditioning. In mammals, NMDA receptor antagonists block LTP in the hippocampus, which may result in learning impairment in mammals. Although neuroanatomists are not yet in agreement with which part of the goldfish telencephalon is homologous to the hippocampus in mammals, studies have shown that telencephalon ablation in goldfish impairs active avoidance conditioning. A binding study has also detected NMDA sensitive components most densely in the goldfish telencephalon, compared to other areas of the goldfish brain. Therefore, the amnestic effects of the microinjections of NMDA receptor antagonist AP5 directly to the goldfish telencephalon was investigated in active avoidance conditioning. Results so far showed that the microinjection of AP5 to the goldfish telencephalon impaired learning of active avoidance conditioning.*