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The Effects of Multiple Injections of Beta-Amyloid (25-35) into the Medial Septal Area on Spatial Learning in the Male Rat

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Poster Presentation 20

**THE EFFECTS OF MULTIPLE INJECTIONS OF
BETA-AMYLOID (25-35) INTO THE MEDIAL SEPTAL AREA ON
SPATIAL LEARNING IN THE MALE RAT**

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Alzheimer's disease is a progressive, irreversible neurological disorder that has a profound effect on memory and personality. Alzheimer's disease currently afflicts over four million people in the United States, with roughly 100,000 new cases reported every year. The pathological hallmarks of Alzheimer's disease are the presence of neuritic plaques and the neurofibrillary tangles which are accompanied by the progressive deterioration of the cortex and septo-hippocampal pathway (brain areas involved in learning and memory function). Currently there is no effective treatment for the disease. While significant progress has been made toward an understanding of the etiology of Alzheimer's disease, development of effective drug therapies is hindered by the lack of a reliable animal model that mimics both the pathological and behavioral changes that characterize the disease. Accumulating evidence suggests that the major constituent of neuritic plaques, a Beta-Amyloid protein comprised of 39-42 amino acids, possesses neurotoxic properties. Conflicting evidence exists in the literature on the behavioral effects of different Beta-Amyloid fragments on learning and memory following injections into the brain areas afflicted in Alzheimer's disease. It was the goal of this study to expand on previous findings on the role of Beta-Amyloid on spatial learning in order to aid in the development of a viable animal model of this debilitating disease. In this study male rats received three injections of Beta-Amyloid (25-35) fragment into different depths of the Medial Septal Area. Spatial learning was then assessed using the Morris Water Maze and the Radial-Arm Maze. The results of this study will be presented at the conference.