EFFECT OF ANALOG P165 OF APP 5-MER PEPTIDE ON CHANGE OF LEARNING AND MEMORY ABILITY IN TYPE 3 DIABETES RATS

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Objective: To investigate the effect of Analog P165 of APP5-mer peptide on change of learning and memory ability in type 3 diabetes rats.

Method: SD rats were randomly divided into 3 groups: Control group; type 3 diabetes (T3DM) group; T3DM administrated P165 group. T3DM models were induced by intracerebroventricular injection of Streptozotocin (STZ, 3mg/kg) bilaterally. P165 groups were treated with gastric P165 (355µg/kg) was treated with gastric for 4 weeks. Then, learning and memory ability was detected by Morris water maze test. The rat serum Insulin, Glucagon, insulin-like growth factor-1 (IGF-1) was detected by ELISA method.

Results: In the Morris water maze test, compared with control group, the escape latency increased significantly (p< 0.05) in model group at the 3rd day. Compared with model group, the escape latency decreased significantly (p< 0.05) in the models administrated P165 group at the 3rd day. Although there was no significant difference, the escape latency decreased in P165 group at the 4th and 5th day. From the result of rats blood serum detection, the serum IGF-1 level decreased significantly in the model group (p< 0.01) than the control group. The serum IGF-1 level increased significantly in P165 treated group(p< 0.05).The body weight and the serum glucose, insulin, glucagon had no significant difference among the groups in the period of experiment.

Conclusion: There is learning and memory impairment in the T3DM rats.P165 can raise the rats blood serum IGF-1 level, ameliorate learning and memory ability but don't influence the serum glucose.