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Procognitive Properties of Cysteine Protease Inhibitor – Ovocystatin in Alzheimer’s Disease Mice Model.

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Background

The results obtained in the last decade suggest that cystatin C plays an important role in the development of Alzheimer’s disease (AD) by inhibiting the aggregation of β -amyloid and its deposition. Cystatin C also demonstrate protective role via inhibition of cysteine proteases or by induction of autophagy and induction of proliferation (1-3).

Aims/Objectives

The aim of the study concerns the influence of the ovocystatin derived from the new generation of eggs on cognitive decline in AD mice model.

Methods

Animals: Mice B6C3-Tg(APP^{swe},PSEN1^{dE9})85Dbo/Mmjax–Genotype HEMI and NCAR (The Jackson Laboratories). Specimen and administration: Ovocystatin [40 μ g/mouse] were administered with drinking water by 22 weeks. The placebo group received drinking water. The locomotor activity were tested by IR Actimeter. The evaluation of learning and memory was determined by Morris Water Maze test (MWM) (4). The study „Innovative technologies of bio-preparations’ production on the base of new generation of eggs” was co-financed by the European Union from the European Regional Development Fund under the Operational Program Innovative Economy, 2007-2013.

Results

Mice from group with ovocystatin administration with drinking water have traveled statistically longer distance [D%] at Target quadrant than Placebo mice in MWM ($p < 0,05$).

Conclusion

Ovocystatin given with drinking water has influence on learning and memory in HEMI group.

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