



## Studying some memory deficits in a valproic acid-induced rat model of autism

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### BACKGROUND:

Autism is a complex disorder characterized by repetitive behavior and impaired social communication. Still, apart from these main manifestations, a significant number of cases display impaired emotional learning and memory functions..

### METHODS:

We tried to better understand the memory functions in an environmentally induced rat animal model of autism, based on the administration of valproic acid (VPA) during gestation (500 mg/kg or saline on day 12.5 of gestation) and examined the resultant progeny on specific memory tests, such as the Y maze task and the 8-arms radial maze.

### RESULTS :

Our data indicated that animals perinatally exposed to VPA are showing, besides specific social interaction deficiencies, significant behavioral alterations in Y maze task (Figure 1), as expressed in decreased spontaneous alternations percentage, suggesting affected immediate working memory and in the radial arm maze, as expressed to an increased number of both reference (Figure 2) and working memory errors (Figure 3). Also, the time necessary to finish the maze was altered, as it can be observed in Figure 4.

In addition, we are also presenting here, some of our preliminary data regarding the possible usage of various other dosage of VPA, in order to induce this rat model of autism, and how this is influencing the memory processes, as studied in radial 8 arms maze (Figures 2,3 and 4).

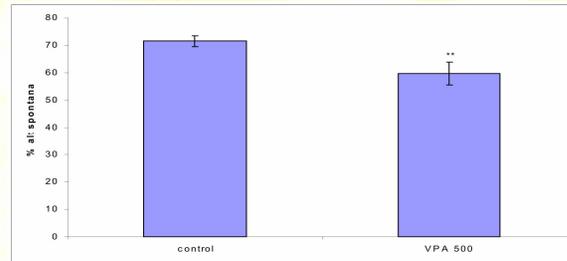


Figure 1

(\*\*p<0.001 vs control group)

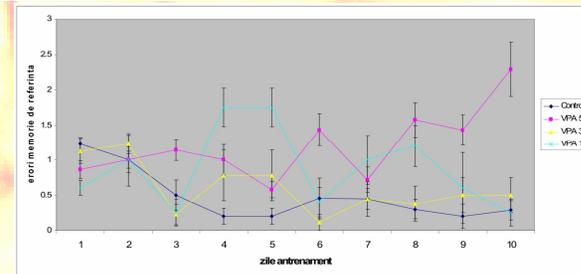


Figure 2

(\*p<0.05 vs control group)

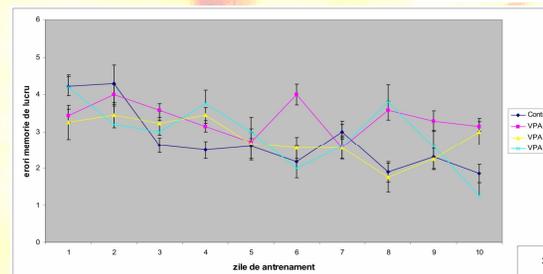


Figure 3

(\*p<0.05 vs control group)

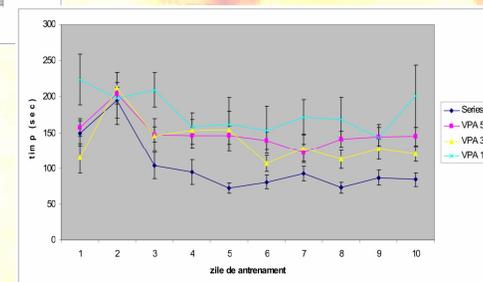


Figure 4

(\*p<0.05 vs control group)

### CONCLUSIONS :

In conclusion, we showed significant memory deficits in a VPA-induced rat model of autism, demonstrating also the relevance of the memory processes in autism, apart from the social deficiencies.