# P02-287

## MODELING OF SELECTION OF RELEVANT CUES IN RATS: EFFECTS OF TASK COMPLEXITY AND LESIONS OF MEDIAL PREFRONTAL CORTEX

**J. Svoboda**[1], K. Blahna[1,2], P. Telensky[1,2], J. Bures[1], A. Stuchlik[1]

*[1]Department of Neurophysiology of Memory, Institute of Physiology, Academy of Sciences of the Czech Republic, [2]Department of Zoology, Faculty of Science, Charles University, Prague, Czech Republic*

One of key features of cognitive processing in both humans and animals is to select relevant stimuli. Several rodent spatial paradigms proved to be useful in biological psychiatric research. A place avoidance task has been previously used in animal model of cognitive deficits in psychosis.

Here we present modifications of the place avoidance paradigm, assessing the ability of selecting appropriate cues at various levels of task complexity. Moreover, we present a pilot experiment showing an effect of lesion to medial prefrontal cortex (mPFC) on those tasks. Generally, the place avoidance apparatus consists of a circular arena elevated 1m above the floor. Rats are trained to avoid an unmarked forbidden sector, entering which is punished by mild footshocks. The sector can be defined with respect to the room or arena frame, which can be dissociated by arena rotation. Moreover, we studied an ability of rats to avoid the place defined by salient rotating object.

The results showed that animals with mPFC lesion were capable of avoiding a place defined either by distal of by proximal cues, similarly as controls. However, both control and mPFC-lesioned rats had difficulties to avoid a place surrounding moving salient object. The performance increased whenever the rat was passively rotated with the arena, suggesting that vestibular stimulation enhanced the directed attention to an object. The poster will discuss the present findings and outline the future directions with emphasis on their utilization in animal models of neuropsychiatric disorders.

Supported by GACR grants 309/07/0341 and 309/06/1231.

https://doi.org/10.1016/S0924-9338(09)71210-6 Published online by Cambridge University Press