

ABSTRACT

Spatial behavior is widely studied to understand cognition and its neurophysiological substrate. Hippocampus plays a crucial role in many spatial tasks. It is unclear whether hippocampus is necessary for recognizing position of distant objects located in inaccessible space. To address this question we developed a novel operant-conditioning task in which rats recognize position of an object located in an inaccessible space. We assessed the role of the dorsal hippocampus in the task by blocking its activity with muscimol. Our results showed that intact rats use the dorsal hippocampus for recognizing position of the distant object located in the inaccessible part of the environment. In addition, we showed that the cognitive performance in the task is not affected by the changes in motor activity induced by prazosin.

Key words: spatial cognition, operant conditioning, hippocampus, muscimol, prazosin