

## **Abstract**

**Objective:** The naked mole rat (NMR) (*Heterocephalus glaber*) is increasingly considered an important biomedical research model for various conditions like hypoxic brain injury, cancer and nociception. This study was designed to investigate the effects of clonidine and yohimbine, an alpha-2 ( $\alpha_2$ ) adrenoceptor agonist and antagonist respectively in the tail flick and hot plate tests.

**Results:** A significant difference in tail flick latency was noted between saline control and 30  $\mu\text{g}/\text{kg}$  clonidine, which was reduced after administration of 30  $\mu\text{g}/\text{kg}$  yohimbine. A significant difference in hot plate latency was also noted between saline control and 30  $\mu\text{g}/\text{kg}$  clonidine during the periods 30, 45, 60, 75 and 90 min after administration, and between saline control and 10  $\mu\text{g}/\text{kg}$  clonidine during 30 min after administration. The hot plate latency by 30  $\mu\text{g}/\text{kg}$  clonidine was also reduced by 30  $\mu\text{g}/\text{kg}$  yohimbine during 30 min after administration. Since the tail-flick and hot plate tests mediate the effects at spinal and supraspinal levels respectively, the present study indicates the presence and involvement of noradrenergic receptors in thermal antinociception at spinal and supraspinal levels of the NMR, similar to what has been found in other mammals.