

## **Abstract**

The naked mole rat (*Heterocephalus glaber*) is a rodent that has gained importance as a biomedical research model for various conditions including hypoxic brain injury, cancer and nociception. It is captured from the wild and housed under laboratory conditions during research. Much is unknown about how to optimize housing conditions for the animals in captivity. This study was designed to establish whether the animals will replicate in the laboratory their natural behaviour of having separate resting, waste disposal and eating areas. A total of 52 naked mole rats were kept in four colonies of different sizes and housed in two types of cage design. It was found that, in all four colonies, their behavior was similar to that in the wild with regards to separating their resting, eating, defecation and urination areas. Urination and defecation commonly occurred in the outer corners of the cages while resting and eating mostly occurred in the inner parts of the cages. Average daily feed consumption was 7.6 grams per naked mole rat. Weekly weight gain averaged 0.44 grams per naked mole rat. In this study, the four colonies of naked mole rats behaved similarly in their selection of resting, waste disposal and eating area. However, additional studies are needed to investigate further whether these behaviours can be affected by colony origin, colony size or cage size. The results of our study indicate that resting, eating and waste disposal behaviours need to be taken into consideration when housing naked mole rats, to optimize the comfort of these animals in captivity.