
Response to Human Induced Changes

Genetic structure, reproduction and physiology features of the common hamster (*Cricetus cricetus*) in urban populations

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Traditionally, urbanization is seen as a negative phenomenon for biota. However, changes in the environmental parameters induced by urbanization might be favorable for some species. Therefore, we can consider this process not only as formation of new adaptations, but also as the disclosure of the deposited capabilities of sinurbic species. Over the past half-century the common hamster actively populates the cities. Its settlements exist in some European, Russian and Kazakh cities. During 2014-2017 genetic and physiological methods were used to reveal adaptations of the common hamster (*Cricetus cricetus*) to settle in the urban environment of several cities. Based on the allelic composition of 10 microsatellite loci and mtDNA sequences we shown that in urban territories the hamster population is divided into separate groups. The level of genetical distance between the groups is high and not dependent on spatial distance between locations inhabited by the groups. In outskirts of cities, on the territories adjacent to green areas and further to countryside, the level of distinction between neighbouring hamster groups decreased and intergroup genetic differentiation began to correlate with the spatial distances. Based on physiological methods we have shown that in urban territories the common hamster demonstrates extremely short hibernation (presumably because of additional food sources). This allows the species to start breeding very early (or even to breed all over the year) and to produce up to three litters. However, the life span of the common hamster in urban conditions is very short (less than 1 year) generally. We propose that the last phenomenon is due to high mortality as a result of dog predation, environmental pollution, and interspecies aggressions at the peak of breeding activity. This study was supported by RFBR No.17-04-01061.

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6th International Conference of Rodent
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and
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