Winter wonders of the Common hamster. Part I: Tooth records and thermologging.

Natalia Feoktistova, G.A. Klevezal, E.A. Zaytseva, D.V. Shchepotkin, M.M. Chunkov, A.V. Surov

A.N. Severtsov Institute of Ecology and Evolution Russian Academy of Sciences

One of the critical adaptation that helps to survive the cold periods of the year is hypothermia. Subfamily Cricetinae demonstrates the wide spectrum of transitions from torpor to obligate hibernation. Thermologging is the most popular method to study body temperature dynamics but not the only one. Another tool to study hibernation is an analysis of the enamel of incisor teeth of animals that have recently emerged. The "hibernation zone" on the surface of the incisors was first detected in marmots *Marmota flaviventris*. It looks like a series of increments that are narrower and express better compare to typical daily increments. We examined teeth of various species of the subfamily Cricetinae, with thermologger recordings. For four species that have demonstrated hibernation (even short-term 1-2 days) - *Mesocricetus raddei*, *M. brandti*, *Allocricetulus eversmanni*, *A. curtatus*, periods of hypo- and normothermia were easily distinguished on the surface of incisors. Surprisingly, we did not find any records of hibernation on the enamel of the common hamster although the thermologgers indicated a series of hibernation episodes lasting for several days. We have no explanation of this phenomenon so far. Perhaps the answer should be sought in the features of the winter metabolism of the common hamster.

E-mail: feoktistovanyu@gmail.com