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## Poster Session 2 – Taxonomy Genetics

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### **88 Genetic structure of a peripheral population of the Northern mole vole: re-evaluation after eliminating nuclear pseudogene contaminants**

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Mole voles (the genus *Ellobius*) are highly specialized subterranean rodents. Areal fragmentation, coupled with some features of reproductive system described for mole voles, is expected to result in low intra-population genetic diversity and strong inter-population differentiation. In the course of our previous study of the Northern mole vole, *Ellobius talpinus*, in the Novosibirsk region of Russia (Kuprina et al., 2016), an unexpected high haplotype diversity of the mitochondrial control region fragment had been revealed. In addition, there was a high sequence divergence (5.6%) between two predominating haplotypes. However, our subsequent molecular investigation (Kuprina et al., 2018, this volume) discovered that one of these haplotypes was actually a cryptic nuclear pseudogene. Using the new primers designed to amplify a target portion of the mitochondrion control region only, a 417-base pair fragment was sequenced. In total, 5 haplotypes defined by 6 polymorphic sites were identified among 56 individuals from 3 subpopulations. Thus, overall, a relatively high haplotype ( $H=31\%$ ) and low nucleotide ( $\pi=0.15\%$ ) diversities have been detected. The genetic variation within each of two most peripheral subpopulations was extremely low ( $H=0\%$ ,  $\pi=0.00\%$ ,  $n=11$  and  $H=10\%$ ,  $\pi=0.03\%$ ,  $n=37$ ). An analysis of molecular variance showed a very strong genetic differentiation among subpopulations on high geographic scale ( $\sim 100$  km;  $F_{st}=0.91$ ) and the absence of differentiation on low scale ( $\sim 10$  km;  $F_{st}=-0.04$ ). These reevaluated data consist with both theoretical predictions and information on population genetic structure of other studied social subterranean rodents. The research was funded by the RFBR (projects 16-04-00479 and 16-04-00888). Technical and financial support: Chromas and MCT RRCs of SPbSU.

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Jens Jacob, Jana Eccard (Editors)

6<sup>th</sup> International Conference of Rodent  
Biology and Management  
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Book of Abstracts



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