

## Abstract

The geographical distribution and phylogeny of the spiny mice of the genus *Acomys* Geoffroy I., 1838 remains a controversial and open topic. This doctoral thesis deals with the intraspecific structure and geographical distribution of the genus *Acomys* from the northern, eastern, central and southern parts of Africa, the Mediterranean islands of Cyprus and Crete, the Turkish coast, the Arabian and Sinai Peninsula and Iran, using molecular analyzes. Molecular analyzes were based on both the mitochondrial gene sequences of the D-loop genes (publication I.) and cytochrome b, as well as the nuclear sequences of the Intraretinal Binding Protein gene (IRBP) (publication IV) and recombinant activation gene 1 (RAG1) (publication II.). Furthermore, the data were subjected to phylogenetic analyzes using the Maximum Probability, Bayesian, Maximum Parsimony, and Minimum Evolution analysis.

The results of mentioned analyses confirmed that the Afro-Mediterranean *Acomys cahirinus* and Asian *Acomys dimidiatus* are clearly separated. The large similarity between the haplotypes of continental Africa and the northern Mediterranean (*A. cahirinus* sensu stricto) supports the hypothesis that the ancestors of *A. nesiotes*, *A. cilicicus* and *A. minous* are very likely to spread as commensal populations, thereby challenging their status as valid species. Considerable genetic variability was found in Asia (publication I), but the greatest genetic variability was found in East Africa (publications II, III, IV). Multi-locus phylogeny based on four genetic markers shows the presence of five major groups of spiny mice of the genus *Acomys*: *A. subspinosus*, *A. spinosissimus*, *A. russatus*, *A. wilsoni* and *A. cahirinus*. The groups *A. spinosissimus*, *A. wilsoni* and *A. cahirinus* are further structured into phylogenetic sub-populations with predominantly parapatric distributions.

This doctoral thesis provides information on the existence of at least 27 lineages of spiny mice of the genus *Acomys*, some of which were first described in this thesis.