Taxonomy Genetics

The genus *Sciurus* in Turkey: data on their distribution, morphometry, karyology and mtDNA sequence variation

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The genus *Sciurus* is represented by two species: *Sciurus anomalus* and *Sciurus vulgaris*. The latter species is naturally distributed in European part of Turkey. *Sciurus anomalus* has a predominant distribution in Anatolia but allopatrically found with *Sciurus vulgaris* on the Northeast of Turkey. In this study, *Sciurus anomalus* and *Sciurus vulgaris* samples were collected from their natural habitats in Turkey. Morphometric characteristics of both species were studied based on standard and geometric morphometric approaches. Karyotyping was also conducted to find out the chromosomal properties of both species. Partial DNA sequences of two mitochondrial genes (Cytb and dLoop) were sequenced for genetical comparisons and phylogenetical assessment. Morphological measurements showed significant differences between two species ($P<0.05$) based on 26 cranial characters. Mandibules and the skull used in geometric morphometric analysis resulted in significant differences ($P=0.013$) in terms of shape based on mandibules but did not yield any significant differences ($P=0.069$) based on skull. Both species have the same chromosome number 2n=40 but differ in the NF (*Sciurus vulgaris* 76 and *Sciurus anomalus* 80) and NFa (*Sciurus vulgaris* 72 and *Sciurus anomalus* 76) values obtained from karyological analysis. The two species were distinguishable based on both mtDNA gene regions utilized and the sequences were approved by the sequences obtained from the Genbank. Two separated *Sciurus vulgaris* populations were found in Turkey. Based on the mtDNA sequences Edirne samples (from Thrace, European part of Turkey) were clustered with the northeast squirrel population. The genetic distance between two species is found to be 0.182±0.020 based on mtDNA dLoop sequences. The results obtained from both mitochondrial gene regions supported each other.

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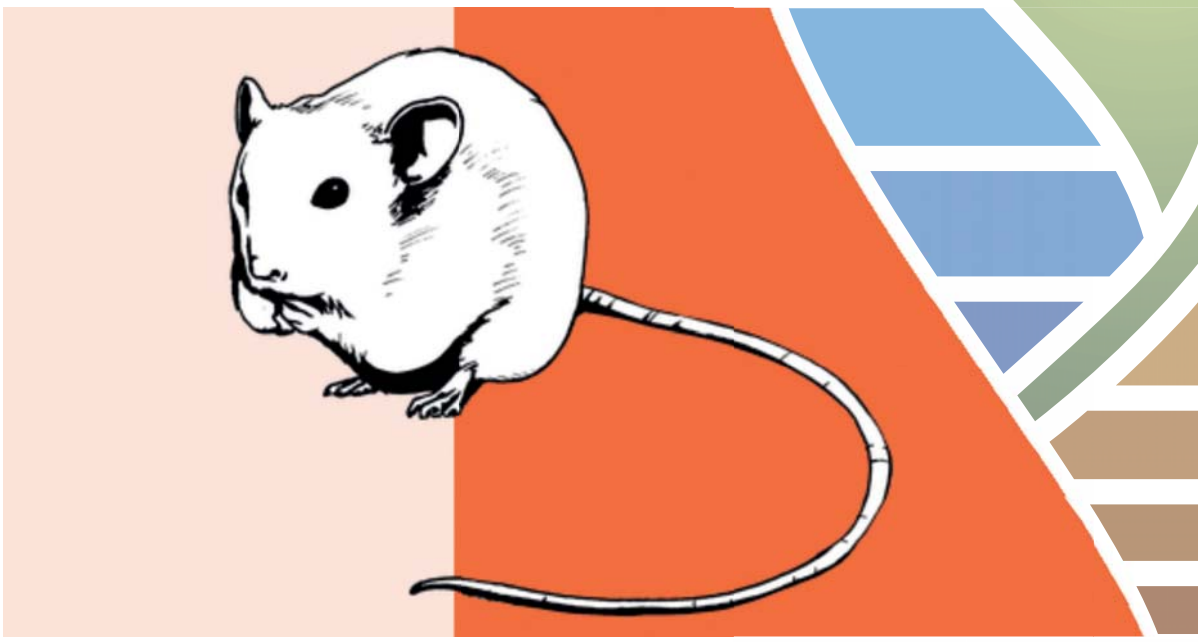

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