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### Concordant divergence in proteins and mitochondrial DNA between two vole species in the genus *Clethrionomys*

Journal Biochemical Genetics  
 Publisher Springer Netherlands  
 ISSN 0006-2928 (Print) 1573-4927 (Online)  
 Issue Volume 26, Numbers 3-4 / April, 1988  
 DOI 10.1007/BF00561462  
 Pages 223-237  
 Subject Collection Biomedical and Life Sciences  
 SpringerLink Date Tuesday, December 07, 2004

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Received: 22 September 1987 Revised: 4 December 1987

**Abstract** The bank vole (*Clethrionomys glareolus*) and the northern red-backed vole (*C. rutilus*) are two closely related species where interspecific crosses result in fertile female but sterile male offspring. Mitochondrial DNA (mtDNA) from *C. rutilus* has passed the species barrier and is found in *C. glareolus* from northern Fennoscandia. The present report shows that the genetic distance between the two species, calculated from enzyme data (Nei's *D*), is 0.64. Isoelectric focusing of muscle proteins resolved around 55 bands, of which each species had 6 or 7 bands not present in the other species. Sequence divergence of mtDNA from the two species is 13.9%. A comparison between protein and mtDNA distances in other species pairs reveals a high correlation between the two measures, indicating that differences in mtDNA between taxa are not random when compared to divergence in protein-coding nuclear genes. The relationship between genetic divergence in proteins and that in mtDNA between *Clethrionomys glareolus* and *C. rutilus* is similar to that found in other species pairs. It is also shown that despite large differences on the protein level it is still, in some cases, possible for species pairs to produce fertile hybrid females.

**Key words** *Clethrionomys* - mitochondrial DNA - genetic divergence

This study was sponsored by the Swedish Natural Science Research Council, the Erik Philip-Sörensen Foundation, and the Nilsson-Ehle Foundation.

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