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Different organization patterns of a satellite DNA sequence in closely related species, *Phodopus sungorus* and *Peromyscus eremicus* (Rodentia, Cricetidae)

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An important feature emerging from the work on several experimental organisms is that satellite DNAs and other repetitive sequences can act as “active agents” for chromosomal evolution in mammals, implicated in reorganizational processes. Moreover, different authors suggest that satellite DNA sequences can even promote chromosomal rearrangements, due to their rapid evolution by means of intragenomic movements among different chromosomal fields. Here, we report the isolation of a *Phodopus sungorus* satellite DNA sequence, obtained from a repetitive DNA library constructed after a series of experimental steps: restriction of *P. sungorus* total genomic DNA, cloning of the restriction products and colony-lift hybridization using the restriction products as probes. Physical mapping by fluorescent in situ hybridization located this sequence exclusively on centromeric positions of P. sungorus chromosomes. Interestingly, when the physical location of this sequence was investigated on chromosomes of other Cricetidae species, Peromyscus eremicus, a scattered pattern of distribution was observed throughout the karyotype. The presence of this repetitive sequence in *Phodopus sungorus* and *Peromyscus eremicus* implies its existence in a common ancestor. The existence of orthologous repetitive DNA sequences displaying different chromosomal locations in the two Cricetidae genomes suggests the occurrence of intragenomic movements of this repetitive sequence, resulting in an extensive process of karyotype restructuring during Cricetidae genome evolution.