

# The Comparative Molecular Study between Bombycidae and Saturniidae Based on mtDNA RFLP and Cytochrome Oxidase I Gene Sequences: Implication for Molecular Evolution

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The phylogenetic relationships between *Bombyx mori* and *Bombyx mandarina* species of Bombycidae, and *Antheraea yamamai* and *Antheraea pernyi* species of Saturniidae were investigated based on mtDNA RFLP and cytochrome oxidase I gene. The sizes of the mtDNA of all the species were estimated at approximately 16 kbp  $\pm$  500 bp by total length of all the restricted fragments and no variation in size was recognized. Of the fourteen different restriction endonucleases used, *Bam*HI, *Hind*III, *Pst*I, *Eco*RI and *Xba*I showed RFLP. Among these, only *Hind*III showed RFLP between *B. mori* and *B. mandarina*. A comparative analysis of sequences was also conducted with the mitochondrial cytochrome oxidase I genes of each species. The results indicated that *B. mori* shared a 97%, 85% and 87% sequence identity with *B. mandarina*, *A. yamamai* and *A. pernyi*, respectively. *B. mandarina* shared a 87% and 88% sequence identity with *A. yamamai* and *A. pernyi*, respectively. *A. yamamai* shared 92% sequence identity with *A. pernyi*. The results of the phylogenetic analysis exhibited monophyly and confidence limits of more than 99% in all trees for both Bombycidae and Saturniidae.