

PHYLOGENETIC RELATIONSHIPS AMONG THE SPECIES OF
BOMBYCIDAE AND SATURNIIDAE BASED ON MITOCHONDRIA DNA
ANALYSIS

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The phylogenetic relationships were investigated among *Bombyx mori* and *Bombyx mandarina* of Bombycidae and *Antheraea yamamai* and *Antheraea pernyi* of Saturniidae based on mt DNA RFLP and genes including 16S rRNA, 12S rRNA and Cytochrome oxidase I. The sizes of mt DNA of all the species were estimated approximately $16\text{kb} \pm 500\text{bp}$ by total length of all the restricted fragments and size variation was not recognized. Of the fourteen different restriction endonucleases used, *Bam*HI, *Hind*III, *Pst*I, *Eco*RI and *Xba*I showed RFLP. Only *Hind*III among them showed RFLP between *Bombyx mori* and *Bombyx mandarina*. A comparative analysis of sequences was also investigated in the mitochondrial 16S rRNA, 12S rRNA and cytochrome oxidase I genes of the species. At the 16S rRNA, *Bombyx mori* showed high sequence identity sharing 98 %, 87 % and 86 % with *Bombyx mandarina*, *Antheraea yamamai* and *Antheraea pernyi*, respectively. High sequence similarity was also shown among the species at the 12S rRNA and cytochrome oxidase I genes. While, it is possibly assumed that there may exist closer genetic relationship between *Bombyx mori* and *Bombyx mandarina* than between *Antheraea yamamai* and *Antheraea pernyi*.