

Umaporn Maikaew 2007: Study of Nucleotide Arrangement and Genetic Diversity of Mitochondrial DNA in Thai Elephants (*Elephas maximus indicus*). Master of Science (Agricultural Biotechnology), Major Field: Agricultural Biotechnology, Interdisciplinary Graduate Program. Thesis Advisor: Associate Professor Anuchai Pinyopummin, D.Vet.Med.Sc. 61 pages.

Thai elephant (*Elephas maximus indicus*) continues to decline in numbers and genetic diversity. Therefore, genetic diversity in elephant has been studied for breeding plan. The study of nucleotides arrangement of mitochondrial DNA, maternal inheritance, is the one way for elephant conservation. We sampled 11 elephant from Thai Elephant conservation center, Lampang by extracting DNA from blood. One elephant was used to PCR amplifying by 20 primer pairs and sequencing. The first complete mitochondrial DNA 16847 bp sequence of Thai elephant has been reported here, deposited in GenBank and given accession number EF588275. Our phylogenetic analyses show that the Thai elephant is more closely related to the mammoth than african elephant. 5'end cytochrome 250 bp and 3'end cytochrome to left domain of the control region 927 bp were used to identify the animal and can genetically be divided into 6 haplotypes. They are identified by 9 and 30 positions of nucleotide that are different of 5'end cytochrome and 3'end cytochrome to left domain of the control region, respectively.

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Thesis Advisor's signature

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