

Manakorn Sukmak 2010: Genetic Diversity of Y Chromosome in Siamese Eld's deer (*Cervus eldii siamensis*) and Burmese Eld's deer (*Cervus eldii thamin*). Master of Science (Agricultural Biotechnology), Major Field: Agricultural Biotechnology, Interdisciplinary Graduate Program. Thesis Advisor: Associate Professor Worawidh Wajjwalku, D.M.S. 73 pages.

Y chromosomal marker has been used as a molecular tool in population genetic such as genetic diversity study, phylogenetic, hybrid identification and sex identification. The application has been successful in many species for instance human, bovine, non-human primate and so forth. According to Wildlife Preservation and Protection Act, B.E.2535 (1992) of Thailand, Eld's deer has been declared as one of the preserved wildlife animal, still lack of Y chromosomal information especially for Y specific polymorphic markers. Our objectives were to develop new male-specific polymorphic marker in the Eld's deer by screening Y chromosome conserved anchored tagged sequences primers in Burmese and Siamese Eld's deer in Thailand. We screened two introns of DBY gene (508 bp in length), three introns of ZFY gene (1,945 bp) and also SRY gene (2,697 bp). We also developed the new two sets of primer for sex identification in fecal sample by using sequence from this study. There was no variation within both Burmese Eld's deer population and Siamese Eld's deer population. However, we found six single nucleotides polymorphism (SNPs) on Y chromosome between Burmese and Siamese Eld's deer. For sex identification, our primers are able to identify the sex of these deer from fecal sample by the polymerase chain reaction (PCR) technique. Conclusion, although these markers were not appropriated for paternal lineage haplotyping within the population, however, they can be used as a phylogenetic marker for detecting hybrid-subspecies between Burmese and Siamese Eld's deer population. The new primer set from this study will also be applied for a non-invasive sexing in Eld's deer and hog deer and be used to follow these deer which were reintroduced into the forest of wildlife sanctuary in Thailand.

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Student's signature

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Thesis Advisor's signature