

PHYLOGENETIC ANALYSIS OF *MACACA FASCICULARIS* IN THAILAND, USING DATA OF MITOCHONDRIAL DNA VARIATION

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INTRODUCTION

Mitochondrial DNA (mtDNA) is a useful genetic marker in investigating intraspecific variation or phylogeny of different species. As for *Macaca fascicularis*, mtDNA RFLPs of individuals from four different regions were already analyzed, and phylogeny of mtDNA types and that of regional populations were discussed¹. In the present study, individuals of *M. fascicularis* from nine different localities in Thailand were surveyed and phylogeny of mtDNA types were constructed by combining the previous data¹.

MATERIALS AND METHODS

Blood samples of 98 individuals of *M. fascicularis*, living in nine localities of Thailand were collected in 1988^{2,3}. Total DNA were extracted from blood cells and it was digested with these restriction enzymes: BamHI, EcoRI, HindIII, HpaI and SstI. The patterns of digested mtDNA were detected by the Southern hybridization method, using human mtDNA as a probe^{1,4}. A pattern generated by digestion of one enzyme is called mtDNA enzyme morph and mtDNAs were classified into types by combining five enzyme morphs¹. Combining the present results and data of ref.1, diversity between each mtDNA type of *M. fascicularis* were calculated⁵ and a phylogenetic tree was constructed using UPGMA.

RESULTS AND DISCUSSION

A total of 10 enzyme morphs were detected and six of them have been reported previously^{1,4}. Four morphs, were found in the present study. Combining five enzyme morphs for each individual, mtDNAs of *M. fascicularis* in Thailand were reclassified into only three types. These mtDNA types have not been found in other regional populations¹ and were named mtDNA types 22, 23 and 24. Individuals of one locality had only one type of mtDNA. MtDNA types 22 and 23, which had very close relationship to each other, were found

in troops in Northern main part of Thailand. Type 24, which had three new enzyme morphs, was found in two populations of Southern Thailand or northern Malay Peninsula.

In a phylogenetic UPGMA tree for 24 mtDNA types of the species, types 22 and 23 had close relationships with other mtDNA types found mainly in other continental regions, Malaysia and Indochina. MtDNA type 24 is located very far from other types found both in continental and insular regions.

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