

Muttana Wannajuk 2013: Ancient DNA Evidence of Origin and Domestication of Pig in Thailand in Late Prehistoric Time. Master of Science (Genetics), Major Field: Genetics, Department of Genetics. Thesis Advisor: Ms. Wunrada Surat, Ph.D. 101 pages.

13 ancient pig bones (approximately 3,000 B.P.) from the Pong Takhop archaeological site in Wang Muang district, Saraburi province, Thailand were used to gain the information on origins of Thai pigs. The genetic variation, phylogenetic relationships and network analysis were examined based on partial sequences of mtDNA D-loop region and *cytochrome b* (*cytb*) gene of Thai ancient pig remains (in late prehistoric time) in comparison with those of Chinese ancient pigs, Asian and European modern pig breeds from GenBank. Eight partial D-loop sequences and seven partial *cytb* sequences from 13 ancient pig samples (PTK) was successfully amplified and sequenced. The results of partial mtDNA *cytb* and D-loop sequences indicated that all ancient pig samples were categorized into the Asian pig breeds. Our data showed that Thai ancient pigs have a close relationship with Asian wild boars and domestic pigs. From the results of partial D-loop sequences, 5 polymorphic sites from a total of 23 nucleotide variations were detected in PTK samples and the PTKs were assigned into 5 haplotypes. From phylogenetic relationship, PTKs were clustered into 2 clades; European-Asian clade and Asian clade. In the Asian clade, the majority of PTKs had a close relationship with other Asian pigs, especially Chinese domestic pigs, while the other had affinity to Asian wild boars. The results indicated that Thai ancient pigs were likely to originate from multiple lineages. One was descended from local population while the other originated from other Asian pigs, especially Chinese domestic pigs. In addition, the results also imply that pig domestication in central Thailand might occur at least 3,000 B.P. Moreover, the occurrence of both domestic pigs and wild boars in the Pong Takhop area suggested that the Pong Takhop community might be an agricultural society that both raised and hunted animals for their living.

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Student's signature

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Thesis Advisor's signature