

<b>Thesis Title</b>	Genotype and Nucleotide Sequence Polymorphism of the 56-Kilodalton Major Protein Gene of <i>Orientia tsutsugamushi</i> in Thailand	
<b>Author</b>	Mrs. Salakchit Chutipongvivate	
<b>Degree</b>	Doctor of Philosophy (Biotechnology)	
<b>Thesis Advisory Committee</b>		

Assoc. Prof. Dr. Jiradej Manosroi	Chairperson
Dr. Wattana Auwanit	Member
Assoc. Dr. Aranya Manosroi	Member

### ABSTRACT

Clotted blood samples from scrub typhus patients were collected from hospitals in eight Regional Medical Sciences Centers in Thailand to determine the genotype of *Orientia tsutsugamushi* and nucleotide sequence polymorphism of 56-kilodalton major protein gene. The patients were diagnosed as scrub typhus based on immunofluorescence assay (IFA). The nested polymerase chain reaction (PCR) was used to identify the genotypes of *O. tsutsugamushi* from 84 patients. The result were confirmed by the nucleotide sequencing technique. Two distinct genotypes, Karp genotype (97.5%) and Kato genotype (2.5%) were detected. No Gilliam genotype was detected from any of the study locations. The high prevalence of Karp genotype in this study might represent a unique pattern of *O. tsutsugamushi* circulation in this area. The nucleotide sequence polymorphism of the 56-kilodalton major protein gene from these samples showed a high sequence homology with the reference sequence of *O. tsutsugamushi* Karp and Kato serotypes by using the nucleotide sequence technique. *O. tsutsugamushi* Karp genotype was predominant throughout Thailand. The Kato genotype was detected only in the south whereas Gilliam genotype was not detected. The present study provides data on molecular epidemiology of *O. tsutsugamushi* as well as the sequence of the major gene coding the antigen. This sequence would be beneficial for vaccine and diagnostic test kit development.

