## **RESEARCH NOTE**

## FIELD-COLLECTED PERMETHRIN-RESISTANT AEDES AEGYPTI FROM CENTRAL THAILAND CONTAIN POINT MUTATIONS IN THE DOMAIN IIS6 OF THE SODIUM CHANNEL GENE (KDR)

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**Abstract**. One of the mechanisms responsible for pyrethroid resistance in mosquitoes is mutations in domain IIS6 of voltage-gated sodium channel gene (*kdr*). *Aedes aegypti* larvae were collected from the central provinces of Thailand (Bangkok, Prachin Buri and Ratchaburi) and colonized until they became adults. Partial fragment of *kdr* of permethrin-resistant mosquitoes were amplified by RT-PCR and sequenced. Among the four nucleotide mutations detected, two mutations resulted in two amino acid substitutions, S(TCC) 989 P(CCC) and V(GTA)1016 G(GGA). Among 94 permethrin-resistant mosquitoes, the SS genotype (SS/VV) was found to predominate (*n* = 74), followed by SR (SP/VG) (*n* = 15) and RR (PP/GG) genotypes (*n* = 5), with the resistant allele frequency ranging from 0.03 to 0.17. As pyrethroid insecticides are currently being advocated for use in Thailand, investigations of pyrethroid resistance among different types of insecticides.

**Keywords**: *Aedes aegypti*, permethrin resistant, voltage-gated sodium channel, *kdr* resistance

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