

Short Communication

## Prevalence of Phasi Charoen virus in female mosquitoes

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**The authors previously characterized a partial nucleic acid sequence for a novel virus, Phasi Charoen virus (PhaV), which was isolated from *Aedes aegypti* larvae in Thailand, and PhaV appears to belong to the family *Bunyaviridae* based on phylogenetic analysis of amino acid sequences. In this study, we examined whether adult female mosquitoes in Thailand are infected by PhaV, and they found that over 20% of adult female mosquitoes were infected by PhaV. These viruses were genetically similar to strains. This result suggested a high prevalence of PhaV in adult female mosquitoes.**

**Key words:** PhaV, bunyavirus, female mosquito, high prevalence.

### INTRODUCTION

Arboviruses are biologically transmitted to vertebrate hosts by blood-feeding arthropod vectors, such as mosquitoes, biting flies and ticks. The surveillance of viral infection in mosquitoes depended on amplification by reverse transcription-polymerase chain reaction (RT-PCR). However, unknown virus is difficult to detect by PCR. The authors recently developed a rapid system for determination of viral nucleic acid sequences (RDV) for detecting unknown viruses (Mizutani et al., 2007; Kihara et al., 2007; Maeda et al., 2008; Yamao et al., 2009), and by this method they identified the novel virus Phasi Charoen virus (PhaV), which was isolated from *Aedes aegypti* larvae collected from the Phasi Charoen district of Thailand using C6/36 cells in previous study (Yamao et al., 2009). PhaV infects and replicates slowly in mosquito C6/36 cells. The previously characterized partial nucleic

acid sequence for this virus and PhaV appears to belong to the family *Bunyaviridae* based on phylogenetic analysis of amino acid sequences. Members of the *Bunyaviridae* family are icosahedral enveloped viruses with a tripartite negative-sense RNA genome comprising small, medium and large segments, named according to their molecular sizes (Gonzalez-Scarano et al., 1991). Among the members of *Bunyaviridae* family, the mosquito-transmitted Rift Valley Fever Virus (RVFV) is important as a human pathogen. PhaV was not found to be infectious to mammalian Vero cells, even after 8 days of incubation (Yamao et al., 2009). However, we cannot discount the possibility that PhaV has non-pathogenic properties in mammalian. In addition, we did not investigate data regarding the infectivity of adult female, in which blood was taken from mammal. In this study, we examined whether adult female mosquitoes in Thailand are infected or not by PhaV.

*Aedes aegypti* specimens (77 adult females) were collected from houses of patients clinically diagnosed with dengue fever from the Bang Khun Thian, Bang Bon,

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(Vazeille et al., 2007). These chikungunya outbreaks spread rapidly and caused several million clinical cases in the Indian Ocean Islands and India (Pialoux et al., 2007). PhaV transmission from female mosquitoes to humans and animals will be examined in a future study.

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