

**DETECTION OF TRANSOVARIAL DENGUE VIRUSES IN *Aedes albopictus* FROM
SELECTED LOCALITIES IN KUCHING AND SAMARAHAN DIVISIONS,
SARAWAK, MALAYSIA BY REVERSE TRANSCRIPTION
POLYMERASE CHAIN REACTION (RT-PCR)**

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ABSTRACT

The current study reports the first detection of transovarial dengue virus in the adult of *Aedes albopictus* raised from immatures including eggs and larvae, collected from December 2014 to February 2016 by using black ovitrap from selected localities in Kuching and Samarahan Divisions, Sarawak. The mosquitoes were screened in the laboratory by using a conventional method of reverse transcription polymerase chain reaction (RT-PCR). Dengue virus serotype 1 (DENV-1) and 2 (DENV-2) were detected in two of the mosquito pools comprising of adult females *Ae. albopictus* which emerged from the immatures. None of the *Ae. albopictus* male mosquitoes were detected with dengue virus. Our findings revealed the first natural evidence of the transovarial transmission in the natural population of *Ae. albopictus* at the selected localities. This discovery may aid in establishing more strategic and effective control of Aedes mosquitoes and may also open more discussion and research on the persistency of dengue viruses in the environment via the vertical or transovarial transmission mainly in Sarawak.

Keywords: Dengue virus, *Aedes albopictus*, transovarial transmission, RT-PCR

ABSTRAK

Kajian semasa melaporkan kajian pertama dalam mengesan virus denggi transovari pada nyamuk *Aedes albopictus* dewasa yang dibesarkan daripada peringkat jentik-jentik, yang dikumpul dari Disember 2014 hingga Februari 2016 dengan menggunakan perangkap jentik-jentik dari kawasan terpilih di Bahagian Kuching dan Samarahan, Sarawak. Nyamuk telah disaringkan di makmal dengan menggunakan kaedah tindak balas rantaian polimerase transkripsi terbalik (*RT-PCR*) konvensional. Virus denggi serotip 1 (DENV-1) dan 2 (DENV-2) telah dikesan dalam dua kumpulan nyamuk yang terdiri daripada nyamuk *Ae. albopictus* betina yang dibesarkan daripada peringkat jentik-jentik. Walau bagaimanapun, tiada nyamuk *Ae. albopictus* jantan dikesan mengandungi virus denggi. Penemuan ini telah mendedahkan bukti transmisi virus denggi secara transovari yang pertama dalam populasi semulajadi *Ae. albopictus* di kawasan kajian. Hasil kajian ini boleh membantu dalam mewujudkan kawalan