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A field survey for *Wolbachia* and phage WO infections of *Aedes albopictus* in Guangzhou City, China**Xiaoying Zheng**

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W*olbachia* are maternal endosymbiotic bacterium, which infect a diverse range of arthropods, ranging from 20 to 76% in nature. They are capable of inducing a wide range of reproductive abnormalities to their hosts, such as cytoplasmic incompatibility (CI), which has been proposed to be used as a tool to modify mosquitoes that are resistant to the development of pathogen as an alternative vector control strategy. Here, we evaluated the prevalence of *Wolbachia* and phage WO infections in the field population of *Aedes albopictus* in Guangzhou City via polymerase chain reaction (PCR) assay using the *Wolbachia* specific *Wolbachia* surface protein (wsp) and phage WO *orf7* gene primers. Based on the results of PCR and phylogeny analysis, we found that *A. albopictus* in Guangzhou City were infected with two *Wolbachia* strains, wAlbA and wAlbB. Phage WO, the virus-infected *Wolbachia*, was also detected in *A. albopictus*. One hundred and ten (110) female individuals were screened via PCR, with 109 super-infected with *Wolbachia* and one sample single infected with wAlbB strain. And 104 of 113 male individuals were both infected with wAlbA and wAlbB, and nine male samples were found to be infected with wAlbA strain only. The infection rates of phage WO in female and male individuals were 82.73 and 46.02%, respectively. These results showed that the natural *Wolbachia* and phage WO infections in *A. albopictus* population in Guangzhou were at a higher frequency at present, indicating that *Wolbachia* appear to be a better candidate nature resource for biological control insect vectors to reduce vector-borne diseases.

Biography

Xiaoying Zheng is a associate Professor at Department of Parasitology, Zhongshan School of Medicine, Sun Yat-sen University has her expertise in mosquitos and *Wolbachia* bacteria. She is the In-charge of Community Engagement and Coordinating for the laboratory research and field test.

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