Mosquito vectors of Zika virus

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With 1 table

\textbf{Abstract:} The recent Zika virus outbreaks have been recognized as “Public Health Emergency of International Concern” by WHO. In this review, we summarized current knowledge about Zika virus vector competence in mosquitoes. \textit{Aedes africanus} was the first species where Zika virus was isolated. Currently, \textit{Aedes aegypti} and \textit{Aedes albopictus} are reported as the main species with Zika virus vector competence by many researches. Recently, laboratory experiments showed the vector competence for Zika virus of two new mosquitoes species: \textit{Aedes hensilli} (23\% of infected mosquitoes transmitted Zika virus), and \textit{Aedes vexans} (5\% of infected mosquitoes transmitted Zika virus). Furthermore, Zika virus has been isolated in several species of the genus \textit{Aedes}, as well as in \textit{Mansonia uniformis}, \textit{Culex perfuscus} and \textit{Anopheles coustani}, but the vector competence of these species was not evaluated in laboratory experiments. \textit{Culex quinquefasciatus} was found both competent and non-competent vector in studies from different research groups. Overall, the findings summarized in this review showed that Zika virus can be transmitted mainly by \textit{Aedes} mosquito species, highlighting the pivotal role of effective and eco-friendly control strategies against mosquito vectors, which should always rely to the criteria of Integrated Vector Management, avoiding conventional single-intervention approaches.

\textbf{Keywords:} dengue, \textit{Flavivirus}, mosquito-borne diseases, Integrated Vector Management

\section{1 Introduction}

Arthropod vector-borne diseases, such as malaria, dengue, lymphatic filariasis, chikungunya, Chagas disease, leishmaniasis, Zika virus, yellow fever and Japanese encephalitis, are a major threat to the health of humans and animals worldwide (WHO