TRANSGENIC EXPRESSION OF A VARIANT BEE VENOM PHOSPHOLIPASE A_2 IN *Aedes fluviatilis* MOSQUITOES TOWARDS *Plasmodium gallinaceum* DEVELOPMENT

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The genetic manipulation of malaria vectors has been appointed as one alternative for disease control. The PLA_2 protein isolated from the bee venom, when added to an infectious blood meal and offered to mosquitoes inhibited *P. gallinaceum* and *P. falciparum* development, although impaired mosquito fitness when expressed by transgenic mosquitoes. To overcome this problem, we performed two point mutations on the PLA_2 coding sequence in order to inactivate the enzyme ($mPLA_2$). Recently, we generated four *Ae. fluviatilis* transgenic lines expressing this antiparasitic gene, $mPLA_2$, driven by the mosquito midgut specific promoter (AgPer1). This work evaluated the $mPLA_2$ expression by transgenic mosquitoes towards the development of *P. gallinaceum*. The $mPLA_2$ gene was expressed only in transgenic female midguts, as showed by RT-PCR (500bp). There was no modification on gene expression time course, before and after the blood meal, similarly to the endogenous AgPer1 mRNA. By confocal microscopy, it was possible to localize the $mPLA_2$ protein throughout the midgut of all transgenic mosquito lines. In 13 experiments to test the ability of $mPLA_2$-transgenic mosquitoes to block *Plasmodium*, the number of oocysts was significantly reduced (17.5 to 68.5%), when compared to non-transgenic mosquitoes.

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