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Mosquito repellent and attractant coumarin derivatives, synthesis and bioassay against Aedes albopictus (Diptera: Culicidae).

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PURPOSE OF THE ABSTRACT

Mosquito?s vector-borne diseases have recently a high recrudescence and now represent 14% of infectious diseases and 28% of emerging diseases that weigh heavily on public health. In the search for effective alternatives to pesticides in managing mosquitoes, a major challenge of many researches has been focused to develop mosquito attractants for mass trapping and repellents for personal protection. Many synthetic and natural volatile organic compounds possess the ability to either attract or repel adult mosquitoes. Coumarin derivatives were found to be an effective repellent against Drosophila melanogaster (Diptera: Drosophilidae) in a laboratory setting (WO 2013003168 A1, 2013) and were recommended to be tested on others insects. In this study, we aim to assess the effectiveness of coumarin derivatives against Aedes albopictus (Dipetra: Culicidae). Synthesis, bioassays and field study were done to evaluate the products? effects. The results showed that 4 and 6-hydroxycoumarin present an attractant property with selectivity about of 60 and 50% respectively; 4-secbutoxycoumarin was repellent with repulsion rate around of 55%. These results are confirmed during the field study conducted in eastern cost of Madagascar using BG sentinel traps method.

FIGURES

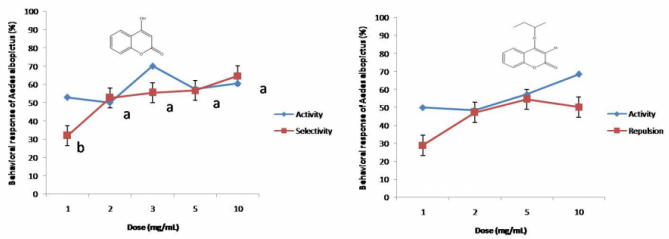

Figure: Effect of products against *Aedes albopictus: (a)* 4-hydroxycoumarin; (b) 4(sec butoxy)coumarin

FIGURE 1

Effects of products against Aedes albopictus: (a) 4-hydroxycoumarin; (b) 4-sec-butoxycoumarin

No

FIGURE 2

KEYWORDS

Aedes albopictus | repellent | Attractant | coumarin derivatives

BIBLIOGRAPHY