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BOOK OF ABSTRACTS

drive system for *An. gambiae* using the endonuclease I-PpoI. The problem related to the expression from the Y chromosome is to address to the MSUC, a phenomenon of early transcriptional repression and heterochromatization of the sex chromosomes that happen during the pachytene stage of meiosis, while the rest of the genome is actively transcribed. The expression of the endonuclease from the Y chromosome, using the spermatogenesis-specific β2 tubulin promoter, is silenced. In order to achieve the Y-linked meiotic expression, we have selected some cis-regulatory sequences of genes, which are active during the spermatogenesis, in order to test them on the possibility to evade the MSUC. We are testing the different promoters for the expression of the endonuclease I-PpoI fused with a fluorescent marker eGFP. We will present some preliminary results about the building of a Y-drive system in *Anopheles gambiae*.

Keywords: *An. gambiae*, Gene Drive, Y Chromosome, cis-regulatory sequences

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CONSIDERATIONS FOR BIOSECURITY OF GENETICALLY MODIFED INSECTS WITH RESPECT TO THE NIGERIAN BIOSAFETY LAW

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Genetically Modified Organisms (GMOs) holds a huge promise for Nigeria, the most populous country in Africa. Genetically Modified Insects (GMIs) as GMOs hold great promise for Nigeria in Agricultural and public health concerns with implications for pest control and enhancement of productivity for agriculture. The Cartagena Protocol on Convention on Biodiversity has generated interest leading to legislation in different countries including Nigeria to regulate the practice and effect of products of modern biotechnology on biodiversity. The Nigerian Law is known as the National Biosafety law. With this law, it is expected that the floodgate for various GMOs (including GMIs) finding their way into Nigeria with their huge potentials for agriculture, environment, commerce, public health, animal health and scientific research. There are however considerations to the introduction of the GMIs requiring elaborate Environmental Risk Assessment (ERA). Also, public ignorance and opposition to GMIs, inadequate institutional capabilities and paucity of qualified technical manpower for monitoring and enforcement of the law also need to be considered. The Nigeria Biosafety Association has been involved in training and membership drive but there's no emphasis on GMIs and their containment for biosecurity considerations. Also, in Southwest Nigeria only one institution has capacity for biosafety testing but without focus for biosecurity. If these bottlenecks are addressed, GMIs holds promise for Nigeria to reap the dividends of sustainable development.

Keywords: Biosafety, Biosecurity, Genetically Modified Organisms, Genetically Modified Insects, Environmental Risk Assessment, Nigeria Biosafety Law, Nigeria Biosafety Association

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CLONING, MOLECULAR CHARACTERIZATION AND TISSUE EXPRESSION OF AN OCTOPAMINE/TYRAMINE RECEPTOR FROM SPOTTED WING DROSOPHILA (*DROSOPHILA SUZUKII*)

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Spotted wing Drosophila (*Drosophila suzukii*) is a polyphagous pest arrived in Europe in 2009 able to infest a growing number of fruit and vine species, causing considerable economic damage. *D. suzukii* grows very rapidly (seven to fifteen generations per year) and shows a remarkable ability to adapt to climatic conditions and to new host plants. These characteristics make its populations particularly difficult to control. Octopamine (OA) and tyramine (TA) biogenic amines are present in traces in vertebrates, while in invertebrates they act as substitutes for adrenaline and noradrenaline. Indeed, these amines regulate numerous physiological processes in insects. They exert their effects by binding to specific receptor proteins that belong to the superfamily of G-protein coupled receptors (GPCRs). In this work, we have isolated complementary DNA (cDNA) coding for an amine receptor from *Drosophila suzukii* (DsTyr). The cloned cDNA is about 1.8kb long and encodes for a 601 amino acids protein. This polypeptide presents the classical seven transmembrane domains as revealed by hydropathic profile analysis. BLAST analysis of the sequence shows a high identity (>98%) to the octopamine/tyramine receptor from *Drosophila melanogaster*. DsTyr1 deduced sequence will be compared to the amino acid sequence of octopamine/tyramine receptors from other insects. Furthermore, the various receptor sequences will be characterized by phylogenetic analysis. The expression level of the receptor will be studied by qRT-PCR analysis in different parts of *D. suzukii* male and female body (head, thorax and abdomen). With this work, we present a first structural and functional description of an octopamine/tyramine receptor from *Drosophila suzukii*.

Keywords: *Drosophila suzukii*, octopamine, tyramine, biogenic amines, G-protein coupled receptor, qRT-PCR