Title: A Functional Workbench for *Anopheles gambiae* Micro Array Analysis

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Abstract: Insecticide resistance, a character inherited that encompasses alteration in one or more of insect's genes is now a major public health challenge combating world efforts on malaria control strategies. *Anopheles* has developed heavy resistance to pyrethroids, the only World Health Organization (WHO) recommended class for Indoor Residual Spray (IRS) and Long-Lasting Insecticide Treated Nets (LLITNs) through P450 pathways. We used the biochemical network of *Anopheles gambiae* (henceforth *Ag)* to deduce its resistance mechanism(s) using two expression data (when *Ag* is treated with pyrethroid and when controlled). The employed computational techniques are accessible by a robust, multi-faceted and friendly automated graphic user interface (GUI) tagged 'workbench' with JavaFX Scenebuilder. In this work, we introduced a computational platform to determine and also elucidate for the first time resistance mechanism to a commonly used class of insecticide, Pyrethroid. Significantly, our work is the first computational work to identify genes associated or involved in the efflux system in *Ag* and as a resistance mechanism in the A*nopheles.*