

Cytotoxic Effects of *Syzygium aromaticum* Leaf Extract against *Aedes albopictus* Cells

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Syzygium aromaticum consists of anti-microbial and anti-parasitic activity. *S. aromaticum* is rich in many phytochemicals such as eugenol, terpenes, and phenolic compounds. In this research, we tested the cytotoxicity of *S. aromaticum* in *Aedes albopictus* (C6/36) cells using the CytoTox 96® Non-radioactive cytotoxicity assay. This is a colorimetric assay that quantitatively measures lactate dehydrogenase, a stable cytosolic enzyme released upon cell lysis. *S. aromaticum* leaf extract was prepared in a two-fold dilution series. Two 96-well plates were prepared with C6/36 cells, and the assay was set up with analytical system based negative control - without C6/36 cells, vehicle control - untreated cells, positive control - lysis solution with four replicates. *S. aromaticum* extract was added to the test wells at different concentrations, one plate was incubated for 5 hours, and the next plate was incubated for 24 hours at 28° C. The absorbance data were measured using a standard 96-well plate reader (Labtech LT-4500, Singapore) and the percentage of cytotoxicity was calculated for each of the concentrations tested. The colour intensity and absorbance values decreased with the decreasing concentrations of *S. aromaticum* leaf extract. High concentrations of *S. aromaticum* extract caused high number of cell lysis. High concentrations of *S. aromaticum* leaf extracts were cytotoxic to C6/36 cells at dilutions >1/128. Cytotoxicity data of *S. aromaticum* leaf extracts help to select the minimum toxic concentrations for testing the anti-*Aedes* inhibitory activity of the product. The data corroborated with the larvicidal activity of *S. aromaticum* leaf extract against *Aedes* larvae.

Keywords: cytotoxicity, *Syzygium aromaticum* leaf extract, cell lysis, colour intensity