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Larvicidal proficiency of volatile compounds present in *Commiphora wightii* gum extract against *Aedes aegypti* (Linnaeus, 1762)

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Aedes mosquitoes are the major cause of several vector-borne diseases in tropical and subtropical regions. Synthetic pesticides against these mosquitoes have certain limitations; hence, natural, eco-friendly, and safe larvicides obtained from plant resources are used to overcome these. In the present study, the larvicidal efficiency of *Commiphora wightii* against the fourth instar stage of the dengue fever mosquito *Aedes aegypti* (Linnaeus, 1762) was studied. The gum resin of *C. wightii* was collected using the borehole tapping method, and hexane extracts in different concentrations were prepared. The fourth-instar larvae were exposed to the extracts, and percent mortality, as well as LC₂₀, LC₅₀, and LC₉₀, was calculated. Volatile compounds of the hexane gum extract were analyzed by Headspace GC/MS, and the sequence of the acetylcholine, Gamma-aminobutyric acid (GABA) receptor, and octopamine receptor subunit of *A. aegypti* was obtained. It was found that the hexane gum extract was toxic and lethal for larvae at different concentrations. Minimum mortality was observed at 164 µg mL⁻¹ (10%/h), while maximum mortality was at 276 µg mL⁻¹ (50%/h). The lethal concentrations LC₂₀, LC₅₀, and LC₉₀ were 197.38 µg mL⁻¹, 294.13 µg mL⁻¹, and 540.15 µg mL⁻¹, respectively. The GC/MS analysis confirmed the presence of diterpenes, monoterpenes, monoterpene alcohol, and sesquiterpenes in the gum samples, which are lethal for larvae due to their inhibitory activity on the