

Larvicidal carbazole alkaloids from *Murraya koenigii* against dengue fever mosquito *Aedes aegypti* Linnaeus

ABSTRACT

Phytochemical studies on different parts of *Murraya koenigii* (L.) have resulted in the isolation of six carbazole alkaloids which have been identified as mahanimbine (1), girinimbine (2), murrayacine (3), murrayanine (4), murrayafoline-A (5) and 3-methylcarbazole (6) together with b-sitosterol. The structures of these compounds were established using spectroscopic techniques. The crude extracts and chemical constituents obtained from the isolation work were tested on its larvicidal activity against dengue fever mosquito, *Aedes aegypti*. Hexane extract from stem bark, roots and leaves of *Murraya koenigii* showed strong activity against *Aedes aegypti* followed by chloroform extract of the roots and leaves. Methanol extract of the leaves also showed strong activity while methanol extract of the roots showed moderate activity. Besides, chloroform and methanol extracts from stem bark showed strong activity. Similarly, pure compounds isolated from the plant, mahanimbine (1), girinimbine (2), murrayacine (3), murrayanine (4) and murrayafoline A (5) exhibited strong activity against *Aedes aegypti* with LC₅₀ values of less than 3 µg/mL.

Keyword: *Aedes aegypti*; Carbazole alkaloid; Larvicidal activity; *Murraya koenigii*.