

Insecticidal activity of Compounds Derived from *Piper nigrum* Methanol Extract Against *Culex pipiens* and *Aedes togoi*

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The insecticidal activity of *Piper nigrum* derived compounds was investigated against *Culex pipiens* and *Aedes togoi*. The fruits of *Piper nigrum* purchased as a commercially available product were extracted twice with methanol and sequentially partitioned into hexane, chloroform, ethyl acetate, butanol and water-soluble portions for subsequent bioassay with the test insects.

In a primary screening, hexane and chloroform solvent portions showed potent insecticidal activity against *Culex pipiens* and *Aedes togoi*. The active compounds were isolated by using a silica gel column and high performance liquid chromatography (HPLC). Structural determination of the active isolates was made by spectroscopic analysis such as EI-, CI-Mass, ¹H-, ¹³C-, ¹H-¹H-Cosy, HMQC, HMBC and DEPT NMR and UV spectra data. Five compounds were identified as follows.

A: 1- [5-(1,3-benzodioxol-5-yl)-1-oxo-2,4-pentadienyl] -(E,E)-piperidine

B: N-isobutyl-2E,4E-decadienoic amide

C: N-isobutyl-13-(3,4-methylenedioxyphenyl)-2E,4E,12E-tridecatrenoic amide

D: N-isobutyl-11-(3,4-methylenedioxyphenyl)-2E,4E,10E-undecatrenoic amide

E: N-isobutyl-9-(3,4-methylenedioxyphenyl)-2E,4E,8E-nonatrenoic amide