

Screening of Antibacterial Activity of *Goniothalamus calvicarpa* Extracts against *Xanthomonas axonopodis* pv. *citri* in vitro

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<https://doi.org/10.12982/CMUJNS.2020.0017>

Received: April 19, 2019

Revised: July 9, 2019

Accepted: July 15, 2019

ABSTRACT

Citrus canker caused by *Xanthomonas axonopodis* pv. *citri* (*Xac*) is a serious disease in many parts of the world and is difficult to control. The use of copper-based pesticides is becoming a concern due to the accumulation of heavy metals in orchard soils and more benign treatment methods are needed. Eighteen Thai native plant extracts were screened for antibacterial activity against a Thai isolate of *Xac* and it was found that ethanolic extracts of *Goniothalamus calvicarpa* leaves showed the strongest antibacterial activity against *Xac* in vitro. The *G. calvicarpa* extracts were then sequentially dissolved with hexane, ethyl acetate and methanol and retested. A 70% aqueous ethanol extract and a methanol soluble extract produced strong inhibition zones against *Xac*. Although thin layer chromatographic profiles revealed the likely presence of flavonoids in the biologically active extracts of *G. calvicarpa*, the active compounds have yet to be identified. Work is proceeding to determine whether specific extracts of *G. calvicarpa* have biological activity against citrus canker in the field.

Keywords: Antibacterial activity, Plant extract, Citrus canker