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## Antibacterial activity of ethanolic leaf extract of aquilaria m against multidrug-resistant gram-negative pathogen (Article) (O

Jihadi, N.I.M.<sup>a</sup>, Hashim, Y.Z.H.-Y.<sup>a</sup>, Rahim, N.A.<sup>b</sup>, Kamal, K.M.<sup>a</sup>, Noor, N.M.<sup>a</sup>, Sani, M. Maifiah, M.H.M.<sup>a</sup> ✉️ 👤

<sup>a</sup>International Institute for Halal Research and Training (INHART), International Islamic University, Level 3, KICT Building, Jalan Gombak, Selangor 53100, Malaysia

<sup>b</sup>Faculty of Pharmacy, University of Malaya, Kuala Lumpur, 50603, Malaysia


### Abstract

The rapid emergence of resistant Gram-negative bacteria and the limited discovery of novel antibiotics pose a significant healthcare challenge. Many medicinal plants with potent bioactivities have been developed for the treatment of bacterial infections. *Aquilaria malaccensis* exhibits wide applications from perfumes and aromatics and great potential in medicines. In this study, crude leaf extract of *A. malaccensis* was evaluated for its antibacterial activity against several pathogenic Gram-negative bacteria. The leaves were processed and extracted using ethanol as the solvent. The antibacterial activity of the crude extract was tested by the disc diffusion method, minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) against *Acinetobacter baumannii* (ATCC 19606), *Klebsiella pneumoniae* (ATCC 10031 and ATCC 700603) and *Escherichia coli* (ATCC 1129). Using the optimized method, the Soxhlet extract produced a yield of 178.41 mg/g

extract at 200 mg/mL displayed the largest inhibition zones of 14.0 mm and 9.7 mm against *A. pneumoniae* ATCC 10031, respectively. In contrast, against *E. coli* and *K. pneumoniae* ATCC 700603, inhibitions of 3.3 mm were demonstrated. The MIC values of the extract were 32 mg/mL against *A. pneumoniae* ATCC 10031 and 64 mg/mL against *E. coli* and *K. pneumoniae* ATCC 700603. The extract were consistent with the MIC values for all the bacteria investigated. Overall, this study antibacterial activity of *A. malaccensis* leaves extract particularly against *A. baumannii* and *K. pneumoniae* potentially develop for the treatment of resistant bacteria. © 2020 The Authors. Published by RSC

## SciVal Topic Prominence

Topic: 2-(2-Phenylethyl)Chromone | *Aquilaria Sinensis* | Thymelaeaceae

Prominence percentile: 87.406 

## Author keywords

*Aquilaria malaccensis*

*Escherichia coli* *Acinetobacter baumannii*

Gram-negative pathogen

*Klebsiella pneumoniae*

Leaf extract

## Indexed keywords

EMTREE drug terms:

alcohol

antibiotic agent

*Aquilaria malaccensis* extract

aromatic compound

plant extract

unclassified drug

EMTREE medical terms:

*Acinetobacter baumannii*

antibacterial activity

antibiotic sensitivity

*Aquilaria malaccensis*

Article

bacterial infection

*Escherichia coli*

Gram negative bacterium

*Klebsiella pneumoniae*

medicine

minimum bactericidal concentration

minimum inhibitory concentration

plant leaf

Soxhlet extraction

zone of inhibition

Chemicals and CAS Registry Numbers: