African Journal of Biotechnology Vol. 8 (14), pp. 3336-3340, 20 July, 2009
Available online at http://www.academicjournals.org/AJB
ISSN 1684–5315 © 2009 Academic Journals

Full Length Research Paper

GC/MS determination of bioactive components and antibacterial properties of *Goniothalamus umbrosus* extracts

Siddig Ibrahim Abdelwahab[1], Ahmad Bustamam Abdul[1]*, Manal Mohamed Elhassan[1], Syam Mohan[1], Mohamed Yousif Ibrahim[1], Abdelbasit Adam Mariod[3], Nagi. A. AlHaj[2] and Rasedee Abdullah[2]

[1]UPM-MAKNA Research Laboratory, Institute of Bioscience, University Putra Malaysia, Serdang, 43400, Selangor, Malaysia.
[2]Department of Biomedical Sciences, Faculty of Medicine and Health Sciences, University Putra Malaysia, Serdang 43400, Selangor, Malaysia.
[3]Faculty of Agricultural Studies, Sudan University for Sciences and Technology, Sudan.

Accepted 21 April, 2009

In this study, the antibacterial activity and chemical composition of *Goniothalamus umbrosus* leaves extracts were evaluated. The antibacterial activity was investigated using two gram-positive bacteria, Methicillin resistant *Staphylococcus aureus* (MRSA) and *Bacillus subtilis* B29, and two gram-negative bacteria, *Pseudomonas aeruginosa* 60690 and *Salmonella choleraesuis*. The activity was tested using disc diffusion and minimum inhibitory concentration assays. The chemical compositions of the ethyl acetate extract of *G. umbrosus* were investigated using Shimadzu gas chromatography–mass spectrometry (GC-17A) while the mass spectra of the compounds found in the extract was matched with the library. The results showed that the extracts demonstrated broad spectrum antibacterial effects against all tested bacteria. GC/MS analysis of ethyl acetate extract of *G. umbrosus* revealed the existence of 1-butyl-2-cyclohexen-1-ol (46.84%), benzaldehyde (4.42%) and globulol (4.07%). The results of this study offer a platform of using *G. umbrosus* as herbal alternative for the current synthetic antimicrobial agents.

Key words: *Goniothalamus umbrosus*, GC/MS, antibacterial properties.