

Chemical Constituents and Antibacterial Activity of Volatile Oils of *Combretum latifolium* Bl. and *C. quadrangulare* Kurz Leaves

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ABSTRACT

The volatile constituents from leaves of Combretum latifolium Bl. and Combretum quadrangulare Kurz (Combretaceae) were obtained by hydrodistillation and analyzed by GC-MS. From the leaf oil, we identified six compounds accounting for 81.6% of C. latifolium and nine compounds accounting for 68.0% of C. quadrangulare. The major compounds of the volatile oils in C. latifolium and C. quadrangulare were palmitic acid (37.05%, 17.74%), hexahydrofarnesyl acetone (11.54%, 17.36%), isophytol (13.47%, 3.71%), neophytadiene (7.71%, 3.52%) and n-nonacosane (4.68% and 5.37%), respectively. Antibacterial activity of the volatile oils was evaluated by using agar disc diffusion method. The antibacterial assay showed activity of the oils from the leaves of C. latifolium and C. quadrangulare as diameter of zones of inhibition against the gram-positive bacterium, Staphylococcus aureus (8.50±0.05, 7.50±0.05 mm, respectively), and gram-negative bacterium, Escherichia coli (9.33±0.06, 8.00±0.10 mm, respectively). The extracts showed little antibacterial activity against Pseudomonas aeruginosa. The chemistry and antibacterial activity of the volatile oils of these two plants have been studied here for the first time.

Keywords: Chemical constituents, Volatile oils, Antibacterial activity, Combretaceae, *Combretum latifolium* Bl., *Combretum quadrangulare* Kurz

INTRODUCTION

Many species of *Combretum* (Combretaceae) have been used as traditional medicines for many applications, including abdominal disorders, bacterial infections, diarrhea, bilharzias, malaria, respiratory infections, pneumonia, skin and venereal diseases, fevers and sore throats, especially in rural areas (Banskota et al., 2003; Eloff et al., 2008). Some *Combretum* species have anti-infective acti-