

## Antioxidant and Anticancer Activities from Leaf Extracts of Four *Combretum* Species from Northern Thailand

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### ABSTRACT

*Four Combretum species (Combretaceae) from northern Thailand (Combretum deciduum, Combretum griffithii, Combretum latifolium and Combretum quadrangulare) were tested for antioxidant and anticancer activities. Antioxidant activities were assessed by ABTS and DPPH radical scavenging capacity methods. Anticancer activity was tested against three cancerous human cell lines (KB, MCF7 and NCI-H187). All methanolic leaf extracts showed antioxidant activities with the ABTS and DPPH methods. The methanolic leaf extracts of C. deciduum inhibited KB-oral cavity and MCF7-breast cancer cell lines, C. latifolium inhibited MCF7-breast cancer cell line and C. quadrangulare inhibited KB-oral cavity and NCI-H187-small cell lung cancer cell lines. However, the methanolic leaf extracts of C. griffithii were inactive against all three cell lines. All methanolic leaf extracts exhibited non-cytotoxicity to Vero cell lines.*

**Keywords:** *Combretum deciduum, Combretum griffithii, Combretum latifolium, Combretum quadrangulare*, Antioxidant activity, Anticancer activity

### INTRODUCTION

The genus *Combretum* belongs to the family Combretaceae. This genus of trees, woody climbers and shrubs is distributed in the tropics, including southern Africa, Asia and America. The genus is well known in folk medicine for its medicinal value. In southern Africa, *Combretum* is used to treat abdominal disorders, backaches, bacterial infections, bilharzia, cancer, coughing, the urinary system, colds, conjunctivitis, constipation, diarrhea, dysentery, dysmenorrhea, earaches, fever, gastric ulcers, general weakness, gonorrhea, headaches, heart disease, hookworm, hypertension, jaundice, leprosy, nose bleeds, pneumonia, skin diseases, sore throats, swelling caused by mumps, syphilis, toothaches, malaria and diabetes (Clarke, 1878; Banskota et al., 2003; Eloff et al., 2008 and Lima et al., 2012).

Previous research on the genus includes the antioxidant activities of *C. decandrum* Roxb. (DC) and *C. duarteanum* Cambess. and the anticancer activities and cytotoxicity of *C. duarteanum*, *C. collinum* Fresen., *C. apiculatum* Sond. subsp