

Abstract

### **ETHNOPHARMACOLOGICAL RELEVANCE:**

*Acacia mellifera* (Vahl) Benth (Leguminosae) is a subtropical medicinal plant that is widely used in traditional African medicines against various diseases such as pneumonia and malaria.

### **AIM OF THE STUDY:**

The present study was performed to evaluate the antimicrobial effects of extracts from the stem bark of *Acacia mellifera*.

### **MATERIALS AND METHODS:**

The extracts were examined for antibacterial and antifungal activity using the disc-diffusion method against bacterial strains: *Streptococcus pneumoniae* (ATCC 25923), *Pseudomonas aeruginosa* (ATCC 27853), *Escherichia coli* (ATCC 35218), *Escherichia coli* (ATCC 25922) and *Staphylococcus aureus* (ATCC 25923) and fungal strains *Candida albicans* (ATCC 90028), *Candida krusei* (ATCC 6255), *Cryptococcus neoformans* (ATCC 6603) and clinical isolates of *Microsporium gypseum* and *Trichophyton mentagrophytes*.

### **RESULTS:**

Some of these extracts were found to be active against some bacterial and fungal strains and were further fractionated to give 12 pure compounds. The methanolic and methanol:dichloromethane (1:1) extracts exhibited antibacterial and antifungal activity. The two were active against *Staphylococcus aureus* (ATCC 25923), *Microsporium gypseum*, and *Trichophyton mentagrophytes*. Activity guided fractionation led to isolation of two active compounds: 3-(Z)-cis coumaroylbetulin and 30-hydroxylup-20 (29)-en-3beta-ol which were active against *Staphylococcus aureus* (ATCC 25923), *Microsporium gypseum*, *Trichophyton mentagrophytes* and *Pseudomonas aeruginosa* (ATCC 27853).

### **CONCLUSIONS:**

These results may partly explain and support the use of *Acacia mellifera* stem barks for the treatment of infectious diseases in traditional Kenya medicine.