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 Microsporum 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), Microsporum 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 against Staphylococcus aureus (ATCC 25923), Microsporum 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.