

Abstract

Acacia mellifera has been used widely in traditional African medicines against various diseases. Among the Kipsigis community of Kenya, water extracts from the plant is used for the treatment of skin diseases, coughs and gastrointestinal ailments. The aim of the study was to provide scientific rationale for the use of the plant in traditional medicine through bioassay-guided fractionation of *A. mellifera* stem bark. Bioactivity testing was done against selected microbes using disc diffusion technique as outlined in Clinical Laboratory Standard Institute (CLSI). Structure elucidation of the isolated compounds was based primarily on 1D and 2D NMR analyses, including HMQC, HMBC, and NOESY correlations. Fractionation yielded three triterpenoids; (20S)-oxolupane-30-al, (20R)-oxolupane-30-al, and betulinic acid. The three compounds were active against *Staphylococcus aureus* ATCC 25923 and only (20S)-oxolupane-30-al against clinical isolate of *Microsporum gypseum*. The three compounds had no activity against *Escherichia coli* ATCC 25922, *Enterococcus faecalis*, *Candida albicans* ATCC 90028, *Cryptococcus neoformans*, *Trichophyton mentagrophyte*, *Candida krusei*, *Microsporum gypseum*, and *Sacharomyces cerevisiae*. These results explain and support the use of *A. mellifera* stem barks for the treatment of infectious diseases in traditional Kenya medicine. It also shows that the antimicrobial activity is concentrated in the triterpenoid fractions.