

Antifungal, antibacterial and antimycobacterial activity of *Entada abyssinnica* Steudel ex A. Rich (Fabaceae) methanol extract

Richard M. Mariita, John A. Orodho, Paul O. Okemo, Paul K. Mbugua

^aDepartment of Plant and Microbial Sciences

ABSTRACT

The purpose of the study was to investigate the antifungal, antibacterial and antimycobacterial properties of methanol extract of *Entada abyssinnica* Steudel ex A. Rich (Fabaceae) leaves used by herbalists from the Lake Victoria region, Kenya. The extract was tested against four strains of mycobacteria (*Mycobacterium tuberculosis*, *Mycobacterium kansasii*, *Mycobacterium fortuitum*, and *Mycobacterium smegmatis*) using BACTEC Mycobacteria Growth Indicator Tube (MGIT) 960 system and the proportional method. Standard procedures were used to determine the zones of inhibition, minimum inhibitory concentrations (MICs) and minimum bactericidal/fungicidal concentrations (MBCs/MFCs) for *Candida albicans*, *Salmonella typhi*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Escherichia coli*, and *Klebsiella pneumoniae*. The extract showed activity against some mycobacteria strains, especially *M. tuberculosis*. It also showed strong antimicrobial activity (zones of inhibition were between 9.00 and 14.10 mm) against *C. albicans*, *Sa. typhi*, and *St. aureus*. The extract gave a better zone of inhibition against *C. albicans* than fluconazole whose zone of inhibition was 13.00 mm. The MICs and MBCs for *C. albicans* and *Sa. typhi* were good. The crude extracts were also analyzed for the presence of phytochemicals. Phytochemical screening indicated that the extract most abundantly contained tannins, saponins, and flavonoids. The data suggest that the methanolic leaves extract of *E. abyssinnica* could be a rich source of antimicrobial agents, especially antifungals. The results further show that there is some merit in the use of the plant in alternative medical practices. However, bioassays of isolated compounds are underway and will be reported during subsequent communications.

KEYWORDS

Antifungal . antibacterial . antimycobacterial . *Entada abyssinnica* . methanol extract

REFERENCES