

Deciphering the antimycobacterial, cytotoxicity and phytochemical profile of *Entada abyssinica* stem bark

Abstract

Organic (acetonic, chloroform, methanolic and hexanic) extracts of *Entada abyssinica* stem bark were screened for their antimycobacterial, cytotoxicity and phytochemical profiles. Microplate Alamar Blue and MTT assays were used to establish the minimum inhibitory concentration (MIC) of the extracts against *Mycobacterium smegmatis* and *Mycobacterium tuberculosis*, and median cytotoxic concentrations (CC₅₀) against Vero E6 cells, respectively. The most bioactive extracts were subjected to phytochemical screening, FTIR and GC/MS analyses. Results obtained showed that acetonic and methanolic extracts were the most bioactive (MIC range: 125 to 468 µg/mL) while the CC₅₀ of all the extracts were greater than 500 µg/mL. GC/MS analysis revealed 14 compounds in the acetonic and methanolic extracts and these were mainly esters. Of these, a known antimycobacterial compound (oleic acid) was identified. We conclude that acetonic and methanolic extracts of *Entada abyssinica* stem bark possess promising antimycobacterial activity, indicating the need to isolate pure compounds and test them in an effort to unveil novel and more effective antitubercular drugs.

Authors

Samuel Baker Obakiro, Timothy Omara, Ambrose Kiprof, Lydia Bunalema, Isaac Kowino & Elizabeth Kigundu

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