

Abstract

Senegalia modesta belongs to family Fabaceae and is a medium-sized deciduous tree. Traditionally, it has been used to treat wounds, cough, body weakness, and bacterial infections. The aim of this study was to evaluate the anti-microbial and cytotoxic activities of *S. modesta*. The extraction of *S. modesta* was done through cold maceration method using ethanol as solvent. Then, the anti-microbial activity was assessed by using the standard well diffusion method against four strains of bacteria viz., *B. subtilis*, *E. coli*, *S. luciferase* and *P. aeruginosa*. Cytotoxicity was measured by MTT assay against Vero cells. The cell viability was determined by comparing the optical density of the treated cells against the optical density of the untreated cells. Our study showed significant anti-microbial potential of the *S. modesta* extract against gram positive and gram negative bacteria. It was more potent against *B. subtilis* bacterial strain while less effective against *E. coli*, *S. luciferase*, and *P. aeruginosa*. Cisplatin was used as positive control drug. Results showed that *S. modesta* extract has more cytotoxic potential (500ug/ml) against Vero cells as compared to Thymol. Thus, our findings here suggest that *S. modesta* may provide cheap and effective therapeutic strategy for treating different diseases like cancer and microbial infections.

Key words: *Senegalia modesta*, Vero cell lines, antimicrobial, Cytotoxicity