PHYTOCHEMICAL SCREEENING OF *CASSIA DIDYMOBOTRYA* (FABACEAE) LEAVES AND INVESTIGATION OF THERE ANTIMICROBIAL ACTIVITY

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULLFILMENT OF THE REQUIREMENT FOR THE DEGREE IN BACHELOR OF PHARMACY OF MOUNT KENYA UNIVERSITY

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ABSTRACT

Human beings benefit from plants secondary metabolites in several ways, including treatment and prevention of diseases. This study was carried out with an objective to investigate the antibacterial and antifungal potentials of the leaves of *Cassia didymobotrya* (Caesalpiniaceae). The aim of the study was to assess the antimicrobial activity determining the zone of inhibition of extracts on some bacterial and fungal strains. In this study, the antimicrobial activity of methanolic extracts of *Cassia didymobotrya* leaves was evaluated using medically important bacterial and fungal strains.

The antimicrobial activity of the extract was tested using agar disk diffusion method. The antibacterial and antifungal activities of extracts (1000mg/ml 500mg/ml 250mg/ml 125mg/ml) were tested against *Escherichia coli* (ATCC 25922), *Staphylococcus aureus* (ATCC 33862) and *Candida albicans* (ATCC 10231). Zones of inhibition were compared with those of different standards like ampicillin, oxacillin for antibacterial activity and fluconazole (200mg) for antifungal activity.

Results indicated that, *Staphylococcus aureus* (ATCC 33862) had activity with the various extract concentrations and the MIC being 0.125g/ml. The extract also showed good antifungal activity against *Candida albicans* (ATCC 10231) with all the five concentrations of extract. Activity against *Escherichia coli* (ATCC 25922) was also observed but only to a particular concentration of the extract that was 0.0625mg/ml upon from which no zone of inhibition was observed. In all this cases, zones of inhibition, improved with increasing concentration of the extract and vice versa.

Keywords: *Cassia didymobotrya*, *Staphylococcus aureus*, *Candida albicans*, *Escherichia coli*, Methanolic extract, Antifungal activity, antibacterial activity, resistant strain, ATCC.