

## *Cassia alata* - an Useful Antimicrobial Agent

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Traditional medicine comprises medical knowledge system that develops over generations within various societies before the era of modern medicine. The traditional medicine includes herbal, ayurveda, and acupuncture. In some Asian and African countries upto 80% of the population relies on traditional medicines or practices can have negative or dangerous effect, therefore further research is needed to ascertain the efficacy and safety.

Here we have selected an important medicinal plant, *Cassia alata* for a comprehensive review on ethnophytopathology of this plant. It is a native of South America and can found widely in tropical regions. In Indonesia, philippinnes and Thailand, this plant can be found all over the countries, sometimes cultivated for medicinal purposes. Fresh or dried leaflet of *C. alata* has been used as folk medicines and its different parts are used in ayurvedic medicine as well as home remedies for common ailments in many countries in the treatment of constipation, stomach pain, ringworm and skin disease.

Sequential extraction using solvents *viz.* petroleum ether, chloroform, ethanol, methanol and water of leaves of the plant have been proved to possess antibacterial property [1]. The antimicrobial screening of the ethanolic extracts of the plants has been studied against some clinical isolates of Gram-positive and Gram-negative bacteria *viz.*, *Vibrio cholerae*, *Bacillus subtilis*, *Staphylococcus aureus*, *Streptococcus sp.*, *Escherichia coli* as well as against a few fungi which are mostly dermatophytes causing skin infection in human beings like, *Aspergillus niger*, *Aspergillus flavus*, *Aspergillus candidus*, *Penicillium patulum*, *Candida albicans* and *Rhizopus stolonifer* [2] and *Trichophyton mentagrophytes var interdigitale*, *T. Mentagrophytes var. mentagrophytes*, *T. rubrum* and *Microsporium gypseum* and *Microsporium canis* [3]. Phytochemical screening of these plant has been performed for constituents like, alkaloids, flavonoids, tannins, anthraquinones, saponins and volatile oils which are responsible for exerting antimicrobial activity [4,5]. Results were compared to commercial antibiotics, chloramphenicol, penicillin and aerofloxaxine. Histological examination on the liver cells suggests that both extract groups contribute to mild hepatocyte degeneration [6].

An attempt has been made to study the antimicrobial property of the leaf extract of three species of *Cassia* (*Cassia alata*, *Cassia occidentalis* and *Cassia tora*) against a few Gram positive and Gram negative bacteria as well as against a few fungi which are mostly dermatophytes causing skin infection in human beings. It seems that *C. alata* is the most potent species for having significant antimicrobial activity [2].

A one-step purification of *Senna alata* (L.) Roxb. (Leguminosae) extract using silica gel vacuum chromatographic technique provided an anthraquinone high-yielding *S. alata* leaf extract. This method was capable of improving its anthraquinone content as well as antifungal activity against dermatophytes. The result of the present work confirmed that the *Cassia alata* possesses antibacterial or antifungal properties. It further underlines the importance for the selection of *Cassia alata* in the discovery of new bioactive compounds. Further phytochemical research is still ongoing to identify the active principle compounds responsible for antibacterial or antifungal effect of *Cassia alata* [4].

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