

Apple of Sedom A Ayurveda's Gift

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Abstract

The beginning of civilization, human beings have worshiped plants and such plants are conserved as a genetic resource. *Calotropis gigantea* Linn is a well known medicinal herb commonly known as milk weed. It has been used in Unani, Ayurveda and Siddha system of medicine for years. The current study was intended to evaluate and compare the in vivo efficacy of *Calotropis gigantea* mouth rinse as anticariogenic agents with 0.2% chlorhexidine and Listerine mouth rinse^{c a}. All parts of the plant have been used as medicine as well as an important ingredient in a number of Unani formulations used for the treatment of various ailments. In classical Unani literature it is mentioned to have anthelmintic, appetizer, anti flatulence, astringent, tonic, expectorant, emetic, diaphoretic, anti inflammatory, sedative, wound healer, antidote and digestive properties and used in asthma, stomach ache, cholera, amenorrhea and toothache. Phytochemical constituents include giganteol, α and β calotropeol, β -amyrin, giganteol and isogiganteol etc. *Calotropis gigantea* has been reported for its anti asthmatic, antioxidant, antibacterial, antiviral, wound healing, antiinflammatory, antidiarrhoeal, hepatoprotective and hypoglycemic activities. In this review the main extract of *Calotropis gigantea* discussed.

Keywords: Extraction, *Calotropis gigantea*, Antibacterial assay, Vegetative Character, Antipyretic activity, Antimicrobial, Apocynaceae.

INTRODUCTION

Calotropis gigantea belongs to the family Asclepiadaceae which includes more than 280 genera and approximately 2,000 species. From pre-historic times to the modern era in many parts of the world and India, plants, animals and other natural objects have profound influence on culture and civilization of man. Since the beginning of civilization, human beings have worshiped plants and such plants are conserved as genetic resource and used as food, fodder, fibre, fertilizer, fuel, febrifuge and in every other way, *Calotropis gigantea* is one such plant.

Kingdom	Plantae
Subkingdom	Tracheobionta
Superdivision	Spermatophyta
Division	Magnoliophyta
Class	Dicotyledones

Sub class	AsteridaeSeries:
Order	Gentianales
Family	Apocynaceae
Subfamily	Asclepiadiaceae
Genus	Calotropis
Species	Calotropis gigantea.

Vegetative Characters:

Habit: Shrub or a small tree up to 2.5 m (max.6m) height. Root :- Simple, branched, woody at base and covered with a fissured; corky bark; branches somewhat succulent and densely white tomentose; early glabrescent. All parts of the plant exude white latex when cut or broken.

Leaves: Opposite-decussate, simple, sub sessile, extipulate; blade-oblong obovate to broadly obovate, 5-30X2.5-15.5 cm, apex abruptly and shortly acuminate to apiculate, base cordate, margins entire, succulent, white tomentose when young, later glabrescent and glaucous.

Flowers: Bracteate, complete, bisexual, actinomorphic, pentamerous, hypogynous, pedicellate, pedicel 1-3 cm long.

Floral Characteristics: Inflorescence: A dense, multiflowered, umbellate, peduncled cymes, arising from the nodes and appearing axillary or terminal

Calyx: Sepal 5, Polysepalous, 5 lobed, shortly united at the base, glabrescent, quincuncial aestivation.

Corolla :- Petals five, gamopetalous, five lobed, twisted aestivation. Androecium :- Stamens five, gynandrous, anther ditheous, coherent.

Gynoecium :- Bicarpellary, apocarpus, styles are united at their apex, peltate stigma with five lateral stigmatic surfaces. Anthers adnate to the stigma forming a gynostegium.

Fruit :- A simple, fleshy, inflated, subglobose to obliquely ovoid follicle up to 10 cm or more in diameter.

Seeds :- Many, small, flat, obovate, 6x5 mm, compressed with silky white pappus, 3 cm or more long.

In developing countries, the majority of people living in rural areas almost exclusively use traditional medicines in treating all sorts of disease. Calotropis gigantea is well known medicinal herb, but till now we didn't use main extract of Calotropis gigantea plant. This study reports on the use of main extract of Calotropis gigantea plant.



Calotropis gigantea Flower



Aak, Madar

It is a large shrub growing to 4 m (13 ft) tall. It has clusters of waxy flowers that are either white or lavender in colour. Each flower consists of five pointed petals and a small "crown" rising from the center which holds the stamens.

The leaves of *Calotropis procera* are said to be valuable as an antidote for snake bite, sinus fistula, rheumatism, mumps, burn injuries, and body pain.

method of extraction of

C. Gigantea plants leaves

1st collect the leaves of *Calotropis gigantea* and washed that leaves properly with distilled water. after completing this step we can go to next step that is at room temperature leaves of *C. gigantea* have been shade dried after this using motor pestle dried leaves were uniformly grinded. After completing grinding of dried leaves they converted into powder 10g. Of plant powder was soaked in 100 ml of distilled water in conical flask, and for 24 hours at speed 120 rpm that loaded on an orbit shaker after this that mixture was filtered using filter Paper number 1. The filtrate was concentrated using rotary evaporator and dried using lyophilizer. Dried extract was collected in an air tight container and stored at 4°C. The extracted powder was dissolved in sterilized distilled water to make 1000 µg/ml solution. This mixture was used to perform antibacterial assay

Test microorganism:

For studying test microorganism some clinical isotopes of bacteria was used

1. *S.aureus*
2. *K. Pneumonia*

3. B. Cereus
4. p. aeruginosa
5. M. gluteus
6. E. coli

At 4 C all 6 cultures were maintained on nutrient agar plates Positive and negative control Amoxicillin is a penicillin antibiotic, it was used as positive control for B.cereus and K. Pneumonia, Penicillin G disc , S. aureus and M.luteus Polymyxin-B is a polypeptide bactericidal antibiotic, it was used for E.coli and P.aeruginosa Sterilized distilled water was used as negative control.

Antibacterial Assay On C. Gigantea Plants

On diffusion method antimicrobial activity of the crude extracts was determined by the agar All test organisms were inoculated in Mueller Hinton broth (pH 7.4.) for 8 hours. The concentration of the suspensions was adjusted to 0.5 (optical density) by using a spectrophotometer. Isolates were seeded on Mueller Hinton agar plates by using sterilized cotton swabs. Agar surface was bored by using sterilized gel borer to make wells (7 mm diameter). 100 µl of the test extract and 100 µl of sterilized distilled water (negative control) were poured in to separate wells. The standard antibiotic disc was placed on the agar surface as positive control. Plates were incubated at 37°C for 48 hours. Triplicate plates were maintained for each organism.

Determination of relative inhibition

Relative percentage inhibition of the test extract

$$= 100 \times (x - y) \div (z - y)$$

Where,

X= total area of inhibition of the test extract Y= total area of inhibition of the solvent

Z= total area of inhibition of the standard drug Total area of inhibition was calculated by using $\text{area} = \pi r^2$

Where, r = radius of zone of inhibition

By using this formula The relative percentage inhibition of the test extract with respect to positive control was calculated.

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