



A Comprehensive Review on Aromatic Medicinal Plant - *Commiphora caudata*

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ABSTRACT

Commiphora caudata most abundant species of *Commiphora* in the family Burseraceae found mostly in southern India, Sri Lanka. The tree is typically grown in hilly dry zone areas that's the name hill Mango or green *Commiphora*. The endosperm obtained from four or five fresh or dried seeds is taken two each day for 2 to 3 days to reduce stomach ache. The *Commiphora caudata* posses different pharmacological activities such as anti-inflammatory, antidiabetic, antioxidant, aphrodisiac and diuretic The Research work is to highlight the comprehensive review on *Commiphora caudata* an aromatic medicinal plant.

Keywords: Hill Mango, *Commiphora caudata*, Burseraceae, Pharmacological activities.

INTRODUCTION

Commiphora caudata (Wight & Arn) is also known as hill-mango or green *Commiphora*. Fruiting & Flowering occurs since March to October, red bloom born in axillary cymes. *Commiphora caudata* (Wight & Arn) belongs to the family Burseraceae is circulating throughout the Srilanka, Western peninsula, and India. In Tamil, it is known as "Pachai kiluvai" and in Telugu its far properly known as "Konda mamidi". It is known for anti-inflammatory activity¹. Various parts of the plant were described to possess various biological activities such as antiviral, antispasmodic, cytotoxic, hypothermic activity, anticomdogenesis effect, antioxidant and anti-acne properties². *Commiphora cauadata* roots shows the presence of alkaloids, amino acids, flavonoids, glycosides, proteins, reducing sugars, starch, steroids, tannins,

terpenoids³. Though there is a traditional and experimental evidence to support various claims and benefits of these plants still it needs proper evaluation and exploitation⁴.

INTRODUCTORY PROFILE^{5,6}

Synonym

Amyris acuminata Roxb. *Protium caudatum*, hill mango

Family

Burseraceae. The genus of *Commiphora* consists of about 185 species. Such as *C. africana* - *C. boranensis* - *C. caudata* - *C. corrugata* - *C. gileadensis* - *C. guidottii* - *C. habessinica* - *C. kataf* - *C. madagascariensis* - *C. mossambicensis* - *C. myrrha* - *C. schimperii* - *C. Wightii*



Figure 1: Representing all parts of *Commiphora caudata*

Morphological characteristics

C. caudata is a thornless, midsized and deciduous tree growing up to 12-15m high with a characteristic papery greenish bark. Leaves were compound, alternative 3, to 7 foliate, upper surface dark green, lower surface light green in colour there's no characteristic odour and it's mucilaginous taste. Shape is ovate - oblong; length - 4.5 to 6.5 cm; width - 2.2 to 3.5 cm; apex - acuminate, base - slightly asymmetric; margin - entire, venation - reticulate pinnate; pedicle length - 3.5 to 6.2 cm and texture - glabrous, glossy above, sub glaucous below. The flowers of *C. caudata* are unit classified in few-flowered and axillary cymes.

The flowers are unit 4-merous. The calyx-tube is cupular with four lobes. The tube is a pair of millimeter long and three millimeter in diameter and also the lobes area unit triangular and one.5 millimeter long and wide. The whorl is yellow-pinkish-coloured and hairless.

The gyre consists of four yellow-pinkish-coloured and hairless petals. The petals area unit rectangular and curving at the tip, five millimeter long and a couple of millimeter wide. The androecium is composed of 8 stamens. The filaments are 5-2 millimetre long and connate and therefore the anthers are rectangular. The lobe consists of a one millimetre long style and a 2-lobed stigma. The flowers are fragrant. The fruit of *Commiphora caudata* is a globose and fleshy drupe. The fruit is 1.5 cm across. The bark of *Commiphora caudata* is papery. It peels off, exposing the bright green of the new bark. Root are astringent, sweet, cooling, diuretic, aphrodisiacs, diabetes, strangury, fever.

TRADITIONAL AND MEDICINAL USES⁷

Commiphora caudata is utilized in Ayurveda and Siddha traditional medicines. *Commiphora caudata* has hepatoprotective, febrifuge, antibacterial and antioxidant. The gum blended in with water is utilized as mouth wash to cure mouth ulcer and is utilized for wound healing and rheumatoid arthritis.

The leaves blended in with goat milk are taken as sexual stimulant. The roots are astringent, sweet, cooling, aphrodisiac and diuretic. They are used to deal with diabetes, strangury and fever.

PHARMACOLOGICAL ACTIVITIES OF COMMIPHORA CAUDATA

Anti arthritic activity⁸

Girijapashikanti et.al, (2014) reported that the antiarthritic activity of ethanolic extract from the leaves of *commiphora caudata* in complete Freund's adjuvant induced arthritis in experimental rats. The ethanolic concentrate of *commiphora caudata* leaves 200 and 400mg/kg were tested for its anti arthritic activity. Their examination concluded that the ethanolic extract of *commiphora caudata* leaves have probable anti arthritic activity.

Antispasmodic activity, cytotoxic activity and hypothermic activity⁹

C. caudata may be a therapeutically plant utilized for its antispasmodic, cytotoxic & hypothermic activity.

Antioxidant and anti microbial activity¹⁰

Prasanna Anjaney reddy et al., reported that thirty three constituents were identified in leaf & fruit oil of *Commiphora caudata*. Fruits yielded more oil with higher number of constituents than flowers. Cyclofenchene & β -pinene are the main constituents of leaf oil. Cyclofenchene & Dihydrocarveol were the main constituents of fruit oil. Out of 2 fungi and 4 bacteria, *C. rugosa* and *S. aureus* were progressively delicate to both the oils. Both the oils showed anti oxidant property, which is used in storage and preparation of food materials Fruit oil shows more anti microbial & anti oxidant activity, in this manner holds guarantee for additional examinations.

Anti inflammatory activity¹¹

Siva kumar T et al., reported that ester and methanolic extracts of *Commiphora caudata* syn: *Protium caudatum* were tested for anti-inflammatory activity in rats by carrageenan induced hind paw oedema method. Both ester and methanolic extract of *Commiphora caudata* (200 mg/kg of body weight) exhibit significant anti-inflammatory activities, as compared with control. Indomethacin was used as a reference anti-inflammatory drug.

Learning and Memory Enhancing Activity¹²

Sumanth M et al., reported that, amnesia was induced by scopolamine in rats *Commiphora caudata* 200 & 400 mg/kg body wt, p.o improves learning and memory. This might flow from to antioxidant property present in it, which can be attributed to Flavonoids, tannins and polyphenols.

Diabetic activity in HFD+STZ induced Diabetic model¹³

Anitha et al., reported that the EECC showed significant because the antidiabetic potential at 400 mg/kg instead of 200 mg/kg. So by this HFD + STZ induced model the ethanolic extract of roots of *C. caudata* has shown the many changes in lipoprotein that depicts the extract possess the antidiabetic activity.

Anti inflammatory activity¹⁴

S.Bala sundar et al., reported that *Commiphora caudata* is a drug of folkore importance which is widely employed by traditional practitioners due to its medicinal values. so it's having importance in biodiversity. Experimental evaluation on artificially induced inflammation proved that *commiphora caudata* has significant action in inflammation were oral administration is far better than external application. The final result suggests that study drug is effective in reducing inflammation. So it's choice for inflammatory condition.



Anti ulcer activity¹⁵

Chandrasekar K et al., reported that the present study showed that pretreated rats with ethanolic extract of *C.caudata* bark extracts or cimetidine significantly reduced the formation of peptic ulcer induced by absolute ethanol compared to animals pretreated with PBS and administered absolute ethanol, It might be assumed that ethanolic extract of *C.caudata* bark exert their anti-ulcer activity.

Anti diabetic activity in alloxan induced diabetic rats¹⁶

Siva kumar T et al., reported that this investigation examine the blood glucose lowering potential of *C. caudata* (Wight & Arn) Engl extracts in alloxan induced diabetic rats. Both the extracts caused highly significant

reduction of (**P < 0.001) blood sugar level, in comparison with diabetic control also like glibenclamide at the top of 7th and 14th consecutive days by oral intubations. They also significantly reduced the TGL, HDL, VLDL, LDL and total cholesterol levels.

Anti-inflammatory, Analgesic & Anti-oxidant activity¹⁷

Annu W et al., reported that this study has demonstrated that the leaves of *C.caudata* has anti-inflammatory and analgesic properties and justify its use in traditional medicine to treat anti-inflammatory and painful conditions. These results also giving evidence that the beneficial effects of *C.caudata* might also be free essential scavenging activity.

Table 1: Earlier works done on *Commiphora caudata*⁸⁻¹⁷

S.no	Authors name	Activity	Journal Name	Year	Part Used
1	Girija. P et al.,	Anti arthritic activity	Nigerian Journal of Experimental & clinical Biosciences, January	2014	Leaves
2	Prasanna Anjaney R et al.,	Anti oxidant and Anti microbial activity	International Journal of Pharmacognosy& phytochemical Research	2015	Leaves & fruits
3	Siva kumar T et al.,	Anti Diabetic	int. J. Chem. Sci	2010	Whole plant including
4	Sumanth M , et al.,	Learning and memory enhancing activity	World journal of pharmaceutical research	2016	leaves
5	Anitha et al.,	Anti Diabetic activity	Asian journal of pharamaceutical and clinical research.	2019	Roots
6	S.Bala sundar et al.,	Anti Inflammatory	int. J. Res. Ayurveda	2016	leaves
7	Chandrasekar K et al.,	Anti Ulcer	Journal of Pharmacy Research.	2009	Bark
8	Annu W et al.,	Anti inflammatory, analgesic	Indian journal of natural products and Resources,	2010	Leaves

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