



A Pharmacological review on Cassia Auriculata

Hithesh Gowda H S*, Karthik S, Jai Shankar, Umakanth B S, Syed sagheer ahmed, Rupesh Kumar M

Department of Pharmacology, Sri Adichunchanagiri College of Pharmacy, Adichunchanagiri University, B.G.Nagara, Mandya Dist, Karnataka

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Abstract

Cassia auriculata has been used medically for many years to treat chronic disorders. The purpose of this review is to look through the literature to find any information on the *cassia auriculata* plant's pharmacological properties and phytochemical composition were taken from the published publications concentrating on the plant's Pharmacological properties. It has the wild pharmacological properties such as Anti-cancer, Anti-fungal, antibacterial, antimicrobial, anti-viral, Anti-obese and anti-diabetic. The gathered information can assist the researchers concentrate on the most important fields that still need to be explored.

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*Corresponding Author
Hithesh Gowda H S

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Introduction

Medicinal plants are a significant component of a nation's natural resources. They contribute significantly to the delivery of basic healthcare services to the rural population. They operate as both medicinal agents and crucial raw materials in the production of conventional pharmaceuticals [1]. The majority of people in underdeveloped nations, including India, still use traditional medicine as their primary method of disease treatment; nevertheless, even among those who have access to western medicine, the use of complementary and alternative medicine is fast rising globally.

According to estimates from the World Health Organization (WHO), around 80% of the communities in underdeveloped nations rely almost entirely on traditional medicine to meet

their basic medical needs. The medicinal plants are the foundation of practically all traditional healthcare systems and play a significant part in their care [2].

Cassia auriculata is One such herb, has a reputation for being effective against a number of diseases. It has stunning yellow flowers and is an evergreen plant. Different regions of Asia, particularly India support the growth of this plant [3].

C. auriculata A member of the Fabaceae family, it is a legume shrub. Alternative synonyms for it include Tarwar, Avaram, Ranwara, Tanner's Cassia, and Avaramsenna. Growing between 30 and 60 cm tall, it is a perennial plant. The stem has several branches, is strong and solid, and has a brown colour. The complex, stipulated leaves have a yellowish-green colour. The plant gives out a huge golden flower. Seven to ten seeds make up the fruit, which is a legume. The bark of *Tanner's Cassia*, one of the most expensive Indian tans, is where the plant gets its name [4].

It is a yearly or annual shrub that can be found in open woods in India's hotter regions. Due to the existence of phytochemical components as tannins, saponin, alkaloids, glycosides, and volatile oils, plants have significant medicinal effects.

The plant's leaves are astringent, acrid, cooling, diuretic, bitter, ophthalmic, and vulnerary. The entire plant has medicinal significance from the tip to the root, demonstrating therapeutic properties like anti-microbial, anti-diabetics, hepatoprotective, antiperoxidative, antiviral, and antipyretic. A plant's bark is used to cure gout, gonorrhoea, and rheumatic pain, while the roots are significant in urinary disorders, fever, and other bacterial infections. Leaf properties include constipation and are helpful in digestion. Flower buds are used to treat diabetes [5].



Fig .1 *Cassia Auriculata*

Geographical distribution

The medicinal plant *Cassia auriculata* L , sometimes referred to as "Tanner's cassia" (Caesalpinaceae), is widely distributed throughout India. It is a spreading shrub, brown branchlets and pubescent branchlets. The nature of its leaves is alternating, stipulate, and thin. It blooms all year long with bright yellow, irregular, bisexual flowers. Fruits are small, oblong, thin, and pale brown in appearance. They are also legumes.

Taxonomical classification [7]

- Kingdom: Plantae
- Division: Magnoliophyta
- Class: Magnoliopsida
- Sub Class: Rosidae
- Order: Fabales
- Family: Fabaceae
- Sub Family: Caesalpinaceae
- Genus: Senna
- Species: S. auriculata

Synonym [8]

- Varamsenna
- avarampoo
- Tanner's cassia

Table:Phytoconstituents [9,10,11,12]

Parts	Chemical constituents
Flowers	<ul style="list-style-type: none"> • Terpenoids • Flavonoids • Alkaloids • Reducing Sugars <ul style="list-style-type: none"> • Steroid • Glycoside • Phenol • Anthraquinones <ul style="list-style-type: none"> • Saponin • Tannin

Leaves	<ul style="list-style-type: none"> • Alkaloids • Carbohydrates • Flavonoids • Cardiac Glycosides • Phenols • Proteins • Saponins • Tannins • Terpenoids
Bark	<ul style="list-style-type: none"> • Phthalate ester • Alkaloid • Elemene sesquiterpenoids • Quinoline • Monoterpenoid • Sesquiterpene • Phthalate ester • Carbamate • Ester
Root	<p>Flavonoid, glycosides</p> <ul style="list-style-type: none"> • 7, 4-dihydroxy flavone-5-o-beta-d-galactopyranoside • Anthraquinone glycosides • 1,3-dihydroxy-2 methyl-antraquinone, • 1,3,8- trihydroxy- 6methoxy -2 methyl- anthraquinone, • Rutinoside Flavone glycoside
Seed	<ul style="list-style-type: none"> • 4.8% of lightyellow fatty acid. • Major components of fatty acids are linoleic acids, palmitic and oleic . • Benzoic acid • Resorcinol (0.21%) • 2- hydroxyl methyl ester (0.07%) • Glycine, 1-methybutul ester (0.10%)

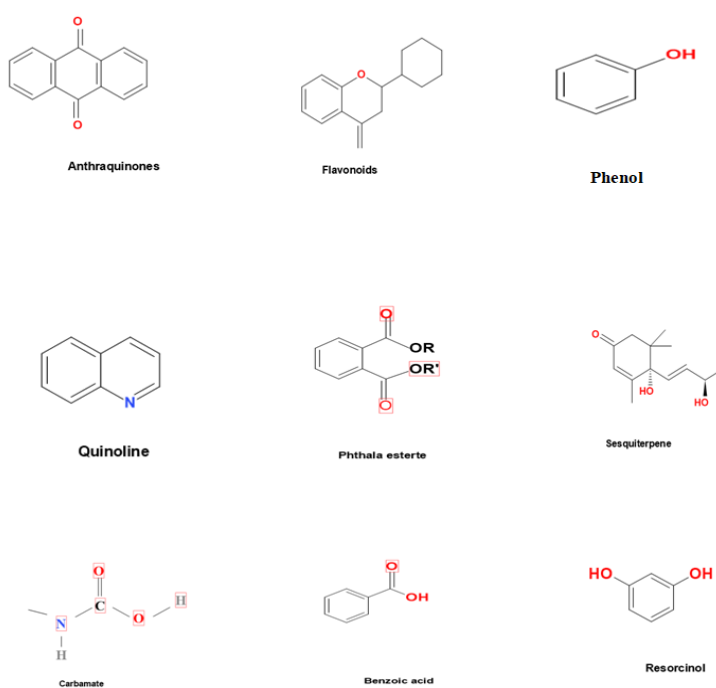


Fig 2 Structure

Pharmacological activities

1. Anti-microbial activity [13]

P.K. Nithiyandham *et.al.*, has evaluated antimicrobial effect of *Cassia auriculata* coated modal & cotton fabric . It has effective antibacterial action and it is non-toxic and allergy-free and when comparing modal fabric to cotton fabric that has an antibacterial treatment, modal fabric wins.

2. Anti-diabetic activity [14]

GayathriNambirajan *et.a.l.*, has Evaluation of antidiabetic activity of bud and flower of *Cassia auriculata* L. The *C. auriculata* L. treatment had an anti-diabetic effect on diabetic rats that had been fed a high-fat diet and induced diabetic by streptozotocin. Compared to flower ethanol extract, bud ethanol extract (CABE500) might more effectively stop and stop the disease's development. The gene expression investigations showed that there was no differential expression of the GRIA2 gene across all experimental groups and that the IRS2 gene was regulated in buds but not in animal livers treated with floral extract. L. *C. auriculata* Compared to flower extract, bud extract may be able to better manage diabetes.

3. Anti-cancer activity [15]

AnithaRajagopal *et.al.*, has evaluated *Cassia auriculata* Linn. Extracts cause the A549 lung cancer cell lines to undergo apoptosis and cell cycle arrest, the outstanding anticancer and other properties of the plant may be attributed to the flavonoid chemicals discovered in the current study. Based on these discoveries, the plant *C. auriculata* can be further utilised to create potential candidate compounds, especially for the treatment of lung cancer.

4. Anti-bacterial activity [16]

Nabil Al-Zaqri *et.al.*, has assessed the green manufacture of nickel oxide nanoparticles, their photocatalytic breakdown, and their antibacterial activity. Here, nickel oxide (NiO) nanoparticles were biosynthesised utilising aqueous floral extract from *Senna auriculata*. These research demonstrate that *Senna auriculata* is an effective sell being planted and has the best likelihood of being utilised in the design when assessed to the photocatalyst and antibacterial activities and creation of nanoparticles to combat environmental and human health hazards.

5. Laxative Activity [17]

Muhammad Akram *et.al.*, has looked at *Cassia auriculata* for the management of laxative activity; this plant possesses laxative properties, The current

review shown that several in vivo and in vitro models of laxative action of herbs.

6. Anti-fungal activity [18]

T. S. Bhuvanewari *et.al.*, has examined L-based phytomediated silver nanoparticle production and assessed antifungal efficacy. The nanoparticles showed signs of having antibacterial properties. Regular chloramphenicol and nystatin are tested against diverse antifungal potentials in this experiment.

7. Anti-viral activity [19]

P. Sugapriya Menaga *et.al.*, has looked at the in-silico docking of bioactive compounds from the *Cassia auriculata* flower extract against the dengue virus's Ns2b-Ns3 protease. The primary antiviral strategy of plant chemicals is the suppression of the dengue viral enzyme activity; hence, the ability of these antiviral substances to regulate virus replication was investigated using computational techniques. According to these findings, the combination of carefully chosen chemicals may be used as antiviral medications for dengue infections.

8. Anti-obese activity [20]

Rajendran Vijayakumar *et.al.*, has been discovered that a floral extract from *Cassia auriculata* reduces hyperlipidemia in male Wistar rats by controlling how the liver processes cholesterol. These findings demonstrated the effectiveness of Et-CAF extract as an anti-hyperlipidemic medication.

9. Anti-inflammatory activity [21]

AnithaRajagopal *et.al.*, has evaluated *Cassia auriculata* and its role in infection / inflammation Different *in vitro* evaluations of The plant demonstrated that both ethyl acetate (DPPH-IC50: 340.9 g/ml) and ethanol fractions (DPPH-IC50: 205.5 g/ml) displayed a robust activity and indicated great potential of anti-inflammatory and antioxidant properties. The results of this investigation supported the traditional uses of this herb for treating infections and inflammation.

Conclusion

Based on the current review, the herb was investigated to have a number of therapeutic qualities. The plant pharmacological properties or any of its components for Anti-cancer, Anti-fungal, antibacterial, antimicrobial, anti-viral, Anti-obese and anti-diabetic effects have all been successfully demonstrated by research. In order to find new and successful applications, it is necessary to fully study its potential in the field of medical and pharmaceutical sciences.

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