

Review Article

MEDICINAL USES OF *FICUS RACEMOSA* LINN

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ABSTRACT

India has an ancient heritage of traditional medicine. The Materia Medica of India provides a great deal of information on the folklore practices and traditional aspects of therapeutically important natural products. Indian traditional medicine is based on various systems including Ayurveda, Siddha, Unani and Homoeopathy. Plants are one of the most important sources of medicines. Today the large numbers of drugs in use are derived from plants. The medicinal plants are rich in secondary metabolites (which are potential sources of drugs) and essential oils of therapeutic importance. The important advantages claimed for therapeutic uses of medicinal plants in various ailments are their safety besides being economical, effective and their easy availability. The plant *Ficus Racemosa* Linn. have the various pharmacological activities like antioxidant, cardio-protective, mosquito larvicidal, gastroprotective.

Keywords: *Ficus Racemosa*, Medicinal plants, Traditional, Effective.

INTRODUCTION

Medicinal plants continue to be an important therapeutic aid for alleviating the ailments of human kind. [1] With a view to increasing the wide range of medicinal usages, the present day entails new drugs with more potent and desired activity with less or no side effects against particular disease [2, 3]. Udumbara consists of dried bark of *Ficus Racemosa* Linn. Syn. *Ficus glomerata* Roxb. (Fam. Moraceae), a large deciduous tree distributed all over india, found throughout the year, grows in evergreen forests, moist localities and bank of streams to the elevation of 1800 m, often cultivated in villages for shade and its edible fruits.

COMMON NAMES

Bengali: Dumur, Hpak-Lu, Jagyadumbar, Mayen, Taung Tha Phan, Thapan, Ye Thapan.

Burmese: Hpak-Lu, Jagyadumbar, Mayen, Taung Tha Phan, Thapan, Ye Thapan.

Chinese: Ju Guo Rong.

English: Cluster Fig, Cluster Tree, Clustertree, Country Fig, Gular Fig, Redwood Fig.

Gujarati: Gular, Umardo.

Hindi: Ambar (Bombay), Domoor, Doomar, Gular, Jagya Dumur, Udumbara, Umar, Umbar.

Indonesian: Cratcock.

Kannada: Alhi, Atthimara, Atti.

Laotian: Kok Dua Kieng (As F Glomerata Var).

Malay: Ara, Elo (Indonesia)

Malayalam: Athi (Kerala), Athiathial, Atthi.

Marathi: Audumbar, Umbar.

Nepalese: Dumrii.

Oriya: Dimri.

Sanskrit: Gular, Hemadugdhaka, Jantuphala, Sadaphalah, Udumbar, Udumbara, Udumbarah, Yajnan.

Sinhalese: Attikka.

Tamil: Anai (As F Glomerata), Athi, Attee Marum, Atthi, Atti, Malaiyin Munivan (As F Glomerata), Utumparam.

Telugu: Arri, Athi, Bodda, Maydi, Paidi, Udumbaramu.

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Thai: Dueda Kliang, Dueda Nam, Ma Dueda, Ma Dueda Chumphon, Ma Dueda Utum Phon (Central Thailand).

Urdu: Dimiri

Vietnamese: Cây Sung, Sung

SCIENTIFIC CLASSIFICATION

Domain : Eukaryota
Kingdom : Plantae
Division : Magnoliophyta
Class : Magnoliopsida
Subclass : Rosidae
Superorder : Urticanae
Order : Rosales
Family : Moraceae
Genus : *Ficus*
Species : *F. racemosa*
Synonyms : *Ficus glomerata* Roxb

DIFFERENT SPECIES OF *FICUS RACEMOSA* LINN

Ficus Benghalensis
Ficus Microcarpa
Ficus Congesta
Ficus Carica
Ficus Pumila
Ficus Lyrata
Ficus Macrophylla
Ficus Elastica
Ficus Benjamina

DISCRIPTION

Leaves are ovate, ovate-lanceolate or elliptic, sub acute, entire and petiolate and are shed by December and replenished by January and April, when the tree becomes bare for a short period. It is seen dwelling in areas up to 1200 m altitude on hilltop. This requires well-drained, medium to heavy soils for its successful cultivation and comes up in all kinds of soils except in water logged and clay soil. The plant is propagated by using cuttings of stem and root suckers. Seeds can also be used for propagation. The flowers are pollinated by very small wasps. It has evergreen leaves, if it is close to a water source. Otherwise it sheds its leaves in January. Figs have been traditionally used by children to play. Thin sticks can be joined by inserting them in goolar figs to make interesting shapes, it can grow over 40 feet tall and 20 to 40 feet wide [4].



(A) (B) (C)
Figure 1: Fruits (A), Bark (B) and Leaves (C) of *Ficus Racemosa* Linn

PHARMACOGNOSTICAL CHARACTERISTICS

Macroscopical

The tree is medium to moderate sized deciduous. The rich green foliage provides a good shade.

Leaves

The leaves are dark green, 7.5-10 cm long, glabrous; receptacles small subglobose or piriform, in large clusters from old nodes of main trunk.

Fruits

The fruits receptacles are 2-5 cm in diameter, pyriform, in large clusters, arising from main trunk or large branches. The fruits resemble the figs and are green when raw, turning orange, dull reddish or dark crimson on ripening. The fruit of *Ficus Racemosa* Linn is 3/4inch to 2 inches long, circular and grows directly on the trunk.

Seeds

The seeds are tiny, innumerable and grain-like. Outer surface of the bark consists of easily removable translucent flakes grayish to rusty brown, uniformly hard and non-brittle [5, 6].

Bark

Bark is reddish grey or grayish green, soft surface, uneven and often cracked, 0.5-1.8 cm thick, on rubbing white papery flakes come out from the outer surface, inner surface light brown, fracture fibrous, taste mucilaginous without any characteristic odour. Unlike the banyan, it has no aerial roots. Those looking for the flower of gular should know that the fig is actually a compartment carrying hundreds of flowers [4, 7]. Texture is homogeneously leathery [8].

Roots

The roots of *F.racemosa* are long, brownish in colour. It's having characteristic odour and slightly bitter in taste. Roots are irregular in shape [5, 9].

Microscopical

Cork

The cork is made up of polygonal or rectangular cells. The phellogen is made up of 1-2 layers of thin walled cells.

Phelloderm

Phelloderm is well marked compact tissue consisting mainly of parenchymatous cells with isolated or small groups of sclereids, particularly in inner region. Sclereids are lignified with simple pits. Several parenchymatous cells contain single prism of calcium oxalate or some brownish content.

Cortex

The cortex is wide with numerous sclereids and some cortical cells contain resinous mass. Prismatic crystals of calcium oxalate are present in some of the cells. Sclereids are rectangular or isodiametric and pitted thick walled.

Phloem

Phloem consists of sieve tubes, companion cells, phloem parenchyma, sclereids, phloem fibres and medullary rays. Starch grains are ovoid to spherical. Laticiferous vessels with a light brown granular material are present in the phloem region. Cambium is present in 2-3 layered of tangentially elongated thin walled cells. Figs are smooth or rarely covered with minute soft Hair [4, 10, 11].

AYURVEDIC PROPERTIES

Rasa → Kashaya, Madhur

Guna → Guru, Ruksha

Virya → Sheet

Vipak → Katu

Doshaghnata → Kapha, Pitta Shama [12]

Table 1: Identity, Purity and Strength *Ficua Racemosa* Linn. [12]

Foreign matter	Not more than 2 %
Total Ash	Not more than 14 %
Acid-insoluble ash	Not more than 1 %
Alcohol-soluble extractive	Not less than 7 %
Water-soluble extractive	Not less than 9 %

CHEMICAL CONSTITUENTS

Several chemical constituents have been isolated from the *Ficua racemosa* plant. The stem bark showed the presence of two leucoanthocyanins: leucocyanidin-3-O-β-glucopyranoside, leucopelarogonidin-3-O-α-L-rhamnopyranoside, β-sitosterol, unidentified long chain ketone, ceryl behenate, lupeol, its acetate, α-amyirin acetate. From trunk bark, lupeol, β-sitosterol and stigmasterol were isolated. Fruit of *Ficua racemosa* Linn. contains glauanol, hentriacontane, β-sitosterol, glauanol acetate, glucose, tiglic acid, and esters of taraxasterol, lupeol acetate, friedelin, higher hydrocarbons and other phytosterol. A new tetracyclic triterpene glauanol acetate which is characterized as 13α, 14β, 17 βH, 20 αH-

lanosta-8, 22-diene-3 β -acetate and racemosic acid were isolated from the leaves. A thermo stable aspartic protease was isolated from the latex of the plant. The stem bark and fruit also showed presence of glauanol acetate (1). The leaf of this plant also contains sterols, triterpenoids in Petroleum ether extract and alkaloids, tannins and flavonoids in ethanolic extract.

ELEMENTAL COMPOSITION

The mineral composition of the bark is shown in Table. It is observed that potassium was the most abundant mineral present in the bark followed by chloride and calcium. The bark was a good source of iron, magnesium, phosphorous as well as trace elements such as manganese, nickel, chromium, zinc and copper. However, the bark contained significantly less ($p \leq 0.01$) sodium in proportion to potassium. The trace elements such as cadmium, aluminum, cobalt, mercury and arsenic were not detected.

Table 2: Concentration of mineral elements (\pm SD) in the bark of *Ficus Racmosa* Linn.

Sr. No	Mineral elements	Concentration (ppm)
1	Calcium	1729.3 \pm 13.02
2	Iron	159.2 \pm 2.03
3	Magnesium	196.2 \pm 4.63
4	Phosphorous	443 \pm 8.98
5	Zinc	0.49
6	Manganese	1.9 \pm 0.14
7	Nickel	1.9 \pm 0.14
8	Cadmium	ND
9	Chromium	0.38
10	Copper	5.2 \pm 0.15
11	Lead	0.017 \pm 0.003
12	Sodium	255 \pm 42.03
13	Potassium	11975 \pm 537.74
14	Chloride	7475 \pm 263
15	Aluminum	ND
16	Cobalt	ND
17	Arsenic	ND
18	Mercury	ND

PHARMACOLOGICAL STUDIES OF *FICUS RACMOSA* LINN

1. Hypoglycemic

Several mechanisms have been proposed for the antidiabetic effect of medicinal plants such as inhibition of carbohydrate-metabolizing enzymes, manipulation of glucose transporters, betacell regeneration and enhancing insulinreleasing activity. The findings indicate *Ficus Racmosa* Linn bark to possess strong hypoglycemic effect and hence can be utilized as an adjunct in the management of diabetes mellitus [13, 14].

2. Antioxidant

Ethanol extract (FRE) and water extract (FRW) of *Ficus Racmosa* Linn. were subjected to free radical scavenging both by steady state and time resolved methods such as nanosecond pulse radiolysis and stopped-flow spectrophotometric analyses. FRE exhibited significantly higher steady state antioxidant activity than FRW. FRE exhibited concentration dependent DPPH, ABTS, hydroxyl radical and superoxide radical scavenging and inhibition of lipid peroxidation with IC₅₀ comparable with tested standard compounds. *In vitro* radio protective potential of FRE was studied using micronucleus assay in irradiated Chinese hamster lung fibroblast cells (V79). Pretreatment with different doses of FRE 1h prior to 2 Gy γ -radiations resulted in a significant ($P < 0.001$) decrease in the percentage of micro nucleated binuclear V79 cells. Maximum radioprotection was observed at 20 μ g/ml of FRE. The radioprotection was found to be significant ($P < 0.01$) when cells were treated with optimum dose of FRE (20 μ g/ml) 1 h prior to 0.5, 1,

2, 3 and 4 Gy γ -irradiation compared to the respective radiation controls. The cytokinesis-block proliferative index indicated that FRE does not alter radiation induced cell cycle delay. Based on various results it may be said that the ethanol extract of *Ficus Racemosa* Linn. acts as a potent antioxidant & probable radio protector [15].

3. Antidiarrhoeal

People living in the area of Jalgaon District traditionally use various parts of the plant *Ficus racemosa*, for their antidiarrhoeal activity. Wistar albino rats weighing 180 to 200g of both sexes were used for the study. The antidiarrhoeal activity of ethanolic extract of leaves of the plant *Ficus Racemosa* Linn were evaluated by different experimental models viz. castor oil induced diarrhea, gastrointestinal motility test. Result shows that ethanolic extracts of *Ficus Racemosa* Linn of concentration 400 and 600 mg/kg significantly inhibited diarrhea. The experiment showed dose dependent antidiarrhoeal activity [16].

4. Memory Enhancing

Alzheimer's disease (AD) is a progressive neurodegenerative disorder resulting in dementia and enhancement of acetylcholine (Ach) levels in brain using acetyl cholinesterase inhibitors is one of the most important approaches for the treatment of AD. Aqueous extract of *Ficus Racemosa* Linn. (Moraceae) bark having antiinflammatory, antioxidant, and Anticholinesterase activity was evaluated for its ability to enhance Ach levels, and to ascertain its antidementia activity in rats. This work was carried out under the assumption that the *Ficus Racemosa* Linn. extract may show combination of actions which could be beneficial in the treatment of AD, such as neuro protection, attributed to antioxidant and anti-inflammatory property and may elevate levels of Ach like *Ficus hispida* extract reported earlier. The plant extract selected for investigation elevated Ach levels and improved memory in rats. The collective pharmacological actions attributed by *Ficus Racemosa* Linn extract may serve as beneficial and supporting agent in the treatment of AD [17].

5. Anticholinesterase

The various study evaluated the Anticholinesterase activity of cold and hot aqueous extracts of *Ficus Racemosa* Linn stem bark against rat brain acetyl cholinesterase *in vitro*. Both the cold aqueous extract (FRC) and the hot aqueous extract (FRH) exhibited a dose dependent inhibition of rat brain acetyl cholinesterase. FRH showed significantly higher ($P \leq 0.001$)

cholinesterase inhibitory activity compared to FRC; however, both the extracts did not show 50% inhibition of AChE at the doses tested (200-1000 $\mu\text{g ml}^{-1}$). The IC₅₀ values of 1813 and 1331 $\mu\text{g ml}^{-1}$ were deduced for FRC and FRH, respectively (calculated by extrapolation using Boltzmann's dose response analysis). Among FRC and FRH, FRH showed significantly higher ($P \leq 0.001$) cholinesterase inhibitory activity compared to FRC; however, both the extracts did not show 50% inhibition of AChE at the doses tested (200-1000 $\mu\text{g ml}^{-1}$) and hence IC₅₀ values were calculated by extrapolation using Boltzmann's dose response analysis [18].

6. Anti-inflammatory

Ethanol extract of leaves at a dose of 400 mg/kg exhibited maximum anti-inflammatory effects with 30.4, 32.2, 33.9 and 32% with carrageenin, serotonin, histamine and dextran induced rat paw edema models, respectively. In chronic model of cotton granuloma weight method, it showed 41.5% reduction in the granuloma weight. The results were comparable with that of Phenylbutazone [19, 20]. Racemosic acid isolated from ethanol extract of leaves by bioassay guided fractionation showed potent inhibitory activity against COX-1 and 5-LOX *in vitro* with IC₅₀ and 18mM, respectively [21]. Ethanol extract of stem bark also inhibited COX-1 with IC₅₀ value of 100ng/ml proving the drug use in the treatment of inflammatory condition [22].

7. Antibacterial

A coarse powder of the leaves of *Ficus Racemosa* Linn. was prepared and dried at 50°C. The coarse powder extracted using hydroalcoholic (methanol:water) in Soxhlet apparatus. The extracts were then subjected to photochemical screening using standard procedure. The extract was screened against bacteria i.e. *Actinomyces viscosus* (MTCC 7345). Agar Broth Dilution technique and Cup Plate Diffusion Method were used to assay. Agar broth dilution technique shows that the lowest concentration that inhibited the growth of microorganism *Actinomyces viscosus* was 0.08 mg/ml. From this data Minimum Inhibitory Concentration of the extracts of *Ficus Racemosa* Linn leaves for microorganism *Actinomyces viscosus* was found to be 0.08mg/ml. Cup Plate Diffusion Method the concentration of extract of *Ficus Racemosa* Linn. leaves 0.08 mg/ml, 0.09 mg/ml; 0.1 mg/ml shown the zone of inhibition. The extract of *Ficus Racemosa* Linn leaves of 0.08mg/ml to 0.1mg/ml has better antibacterial activity [23].

8. Antidiuretic

The decoction of stem bark was investigated for antidiuretic potential in rats at a dose of 250, 500 and 1000mg/kg, p.o. It had a rapid onset (within 1h), peaked at 3h and lasted throughout the study period of 5h and it also caused reduction in urinary Na⁺ level, Na⁺/K⁺ ratio and an increase in urinary osmolarity indicating multiple mechanism of action for its antidiuretic activity [24].

9. Antipyretic

Methanol extract of stem bark was evaluated on normal body temperature and yeast-induced Pyrexia in albino rats, at doses of 100, 200 and 300 mg/kg body wt. p.o. It showed significant dose dependent reduction in normal body

temperature and yeast-provoked elevated temperature which extended up to 5 h after drug administration. The anti-pyretic effect was comparable to that of paracetamol.

10. Hypolipidemic

Hypercholesterolemia and hyper-triglyceridemia have been reported to occur in alloxan-induced diabetic rats. Accumulation of cholesterol and phospholipids in liver due to elevated plasma free fatty acids has been reported in diabetic rats. The higher concentration of plasma total cholesterol observed in diabetic rats is probably due to mobilization of free fatty acids from the peripheral fat depots. Alterations in the erythrocyte membranes lipid composition may be a reflection of alterations in the plasma lipid profile. HDL removes cholesterol from nonhepatic tissues to liver through the process known as reverse cholesterol transport. Several studies have documented reduction in plasma HDL cholesterol in diabetic rats and diabetic patients due to defect in reverse cholesterol. Triglycerides accumulation in the liver of diabetic rats is due to enhanced synthesis or decreased output from liver as VLDL or combination of both. Oral administration of FrEBet restored the levels of lipids and lipoproteins in diabetic rats. The hypolipidemic effect of the *Ficua racemosa* bark extract is due to inhibition of endogenous synthesis of lipids probably by potentiating the secretion of insulin. The hypolipidemic effect of FrEBet may also be due to the presence of several bioactive hypolipidemic principles and their synergistic properties [25].

11. Antifilarial

Alcoholic as well as aqueous extracts caused inhibition of spontaneous motility of whole worm and nerve muscle preparation of *Setaria cervi* characterized by increase in amplitude and tone of contractions. Initial stimulatory effect was not observed with aqueous extract on whole worm preparation, while effect of alcoholic extract on whole worm and nerve muscle preparation was characterized by an increase in amplitude and tone of contractions followed by paralysis. The concentrations required to inhibit the movement of the whole worm and nerve muscle preparation for alcoholic extract of fruits of *Ficus Racemosa* Linn. were 250 and 50 microg/ml, respectively, whereas aqueous extract caused inhibition of the whole worm and nerve muscle preparation at 350 and 150 microg/ml, respectively, suggesting a cuticular barrier. Both alcoholic and aqueous extracts caused death of microfilariae in vitro. LC50 and LC90 were 21 and 35 ng/ml, respectively for alcoholic, which were 27 and 42ng/ml for aqueous [26].

12. Hepatoprotective

An ethanolic extract of the leaves was evaluated for hepatoprotective activity in rats by inducing chronic liver damage by subcutaneous injection of 50% v/v carbon tetrachloride in liquid paraffin at a dose of 3 mL/kg on alternate days for a period of 4 weeks. The biochemical parameters SGOT, SGPT, serum bilirubin and alkaline phosphates were estimated to assess the liver function [27]. In other study, the methanol extract of stem bark at the doses of 250 and 500 mg/kg was evaluated for its hepatoprotective activity in rats against carbon tetrachloride induced liver damage with silymarin as standard. It showed significant reversal of all biochemical parameter towards normal when compared to carbon tetrachloride treated control rats in serum, liver and kidney [28].

13. Cardio-protective

Ficus Racemosa Linn. (Moraceae) bark is a rich source of phenolic compounds having diverse biological properties including antioxidant activity. Cardiotoxicity was induced by administration of doxorubicin (10 mg kg⁻¹) i.v.) to the extract pretreated rats (250 and 500 mg kg⁻¹) and compared with that of Arjuna, a standard cardiotoxic. Biochemical parameters included CK-MB, LDH, AST, ALT, troponin I, thiobarbituric acid reactive substances (TBARS), and glutathione. The HPLC fingerprinting of the extract indicated the presence of bergenin (0.89%) and bergapten (0.07%). In an acute toxicity study, the extract at a dose of 2 g kg⁻¹ did not cause any adverse changes and no mortality was observed. Administration of doxorubicin significantly increased ($p < 0.05$) serum levels of creatine kinase, lactate dehydrogenase, aspartate aminotransferase, and alanine aminotransferase, which were decreased to an extent of 68, 63, 41, and 65%, respectively, in extract pretreated group (500 mg kg⁻¹). Troponin I was undetected in control group, while it was found in serum of all the experimental groups. The extract pretreatment significantly decreased ($p \leq 0.05$) TBARS and increased glutathione levels in serum and cardiac tissue. These observations were further substantiated by the histopathological studies. The acetone extract of *Ficus Racemosa* Linn. bark possesses potential cardio protective activity against doxorubicin-induced Cardiotoxicity in rats by scavenging free radicals generated by the administration of the drug [29].

14. Mosquito larvicidal

The larvicidal activity of crude hexane, ethyl acetate, petroleum ether, acetone, and methanol extracts of the leaf and bark of *Ficus racemosa* (Moraceae) was assayed for their toxicity against the early fourth-instar larvae of *Culex quinquefasciatus* (Diptera: Culicidae). The larval mortality was observed after 24-h exposure. All extracts showed moderate larvicidal effects; however, the highest larval mortality was found in bark acetone extract of *F. racemosa*. In the present study, bioassay guided fractionation of acetone extract led to the separation and identification of a tetracyclic triterpenes derivative; gluanol acetate was isolated and identified as new mosquito larvicidal compound. Gluanol acetate was quite potent against fourth instar larvae of *Aedes aegypti* L. (LC (50) 14.55 and LC (90) 64.99 ppm), *Anopheles stephensi* Liston (LC (50) 28.50 and LC (90) 106.50 ppm) and *C. quinquefasciatus* Say (LC (50) 41.42 and LC (90) 192.77 ppm). The structure was elucidated from infrared, ultraviolet, (1) H-nuclear magnetic

resonance (NMR), (13) C-NMR, and mass spectral data. This is the first report on the mosquito larvicidal activity of the reported compound from *Ficus Racemosa* Linn. [30, 31].

15. Gastroprotective

Gastroprotective effect of 50% ethanolic extract of *Ficus Racemosa* Linn. fruit (FRE) was studied in different gastric ulcer models in rats. *ods*: FRE (50, 100 and 200 mg/kg body weight) was administered orally, twice daily for 5 days for prevention from pylorus ligation (PL), ethanol (EtOH) and cold restraint stress (CRS) – induced ulcers. Estimation of H+K+ATPase activity and gastric wall mucous were performed in EtOH-induced ulcer and antioxidant enzyme activities in supernatant mitochondrial fraction of CRS-induced ulcers. FRE showed dose dependent inhibition of ulcer index in pylorus ligation, ethanol and cold restraint stress – induced ulcers. FRE prevents the oxidative damage of gastric mucosa by blocking lipid peroxidation and by significant decrease in superoxide dismutase, H+K+ATPase and increase in catalase activity. High performance thin layer chromatography (HPTLC) analysis showed the presence of 0.57% and 0.36% w/w of gallic acid and ellagic acid in FGE [32].

16. Renal anti carcinogenic

Ficus Racemosa Linn extract at a dose of 200 and 400 mg/kg when given orally a significant decrease in lipid peroxidation, xanthine oxidase, γ -glutamyl transpeptidase and hydrogen peroxide (H₂O₂) generation with reduction in renal glutathione content and antioxidant enzymes generated by KBrO₃, a potent nephrotoxic agent that induces renal carcinogenesis in rats. There was significant recovery of renal glutathione content and antioxidant enzymes. There was also reversal in the enhancement of renal ornithine decarboxylase activity, DNA synthesis, and blood urea nitrogen and serum creatinine [31, 33]. This result suggests that *Ficus Racemosa* Linn extract is a potent chemo-preventive agent and suppresses KBrO₃-mediated nephrotoxicity in rats.

17. Anti-tussive

The methanol extract of stem bark was tested for its Anti-tussive potential against a cough induced model by sulphur dioxide gas in mice. The extract exhibited maximum inhibition of 56.9% at a dose of 200 mg/kg (*p.o.*) 90 min after administration [34].

18. Wound healing

Ethanol extracts of stem bark show a potent wound healing in excised and incised wound model in rat [35].

19. Treatment of cancer

Medicinal plant products exhibiting anticancer activity continue to be the subject of extensive research aimed at the development of new or alternative drugs for the treatment of different human tumors. It is suggested that *F. glomerata* and *Ficus Racemosa* Linn used for the treatment of skin cancer [36]. Both the natural and compounds synthesised from *F. carica* showed in vitro inhibitory effects on proliferation of various cancer cell lines [37]. Fruit extracts of *F. benjamina* Linn, *F. bengalensis*, *F. religiosa* Linn and *Ficus sycomorus* Linn., an African species, exhibited anti tumor activity in the potato disc bioassay [38].

20. Anti ulcer

The 50 % ethanol extract of fruits was studied in different gastric ulcer models, viz pylorus ligation, ethanol and cold restraint stress induced ulcers in rats at a dose of 50, 100 and 200 mg/kg body weight *p.o.* for 5 days twice daily. The extract showed dose dependent inhibition of ulcer index in all three models of ulcer [32, 39].

Table 3: HPTLC finger print profile of 50% ethanolic fruit extract of *Ficus Racemosa* Linn at 366 nm

Sr. No.	Rf Values
1	0.3
2	0.5
3	0.78
4	0.82
5	0.86



Figure 2 HPTLC of Ficus Racemosa Linn.

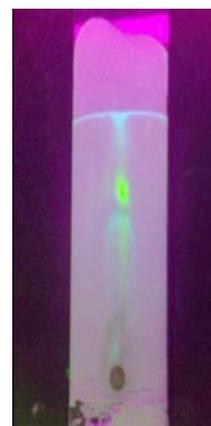


Figure 3: TLC of Isolated Compound Flavonoid in UV Light

Table 4: TLC Profile of Flavonid Compound

2qSr. No.	Extracts	No. of Spots	Colour of Spots	R _f Values
1	Methanol	3	Greenish Yellow Green Brown	0.85 0.79 0.62

Table 5: TLC Profile of Compound (Flavonid)

Compound	No. of Spots	Colour of Spots	R _f Value
Compound Flavonid	1	Yellowish Green	0.79



Figure 4: TLC of Isolated Compound Flavonoid in Day Light

TRADITIONAL USES

Ficus Racemosa Linn has been extensively used in traditional medicine for a wide range of ailments. Its bark, fruits, leaves, roots, latex and seeds are medicinally used in different forms, sometimes in combination other herbs [40].

Bark

Bark is reddish grey or grayish green, soft surface, uneven and often cracked, 0.5-1.8 cm thick, on rubbing white papery flakes come out from the outer surface, inner surface light brown, fracture fibrous, taste mucilaginous without any characteristic odour^{15, 16}. It is highly efficacious in threatened abortion and also recommended in urological disorders, diabetes, hiccup, leprosy, dysentery and piles.

Leaves

Leaves are dark green, 7.5-10 cm long, glabrous; receptacles small subglobose or piriform, in large clusters from old nodes of main trunks. The leaves are good wash for wounds and ulcers. They are useful in dysentery and diarrhea. The infusion of bark and leaves is also employed as mouth wash to spongy gums and internally in dysentery, menorrhagia, effective remedy in glandular swelling, abscess, chronic wounds, cervical adenitis and haemoptysis [41-44].

Fruits

The fruits receptacles are 2-5 cm in diameter, pyriform, in large clusters, arising from main trunk or large branches. The fruits resemble the figs and are green when raw, turning orange, dull reddish or dark crimson on ripening. The fruit of *Ficus Racemosa* Linn is ¾ inch to 2 inches long, circular and grows directly on the trunk. Tender fruits are astringent, stomachic, refrigerant, dry cough, loss of voice, disease of kidney and spleen, astringent to bowel, styptic, tonic, useful in the treatment of leucorrhoea, blood disorder, burning sensation, fatigue, urinary discharges, leprosy, intestinal worms and carminative. They are useful in miscarriage, menorrhagia, spermatorrhoea, cancer, scabies, haemoptysis, and visceral obstructions [44-46].

Roots

The roots of *Ficus Racemosa* Linn are long and brownish in colour. It's having characteristic odour and slightly bitter in taste. Roots are used in dysentery, pectoral complaints, and diabetes, applied in mumps, other inflammatory glandular enlargements and hydrophobia [42-44].

Latex

Latex is aphrodisiac and administered in hemorrhoids, diarrhea, diabetes, boils, traumatic swelling, toothache and vaginal disorders [47].

MARKETED FORMULATIONS

Currently available marketed formulations are Asamgrahaniya kasaya churna, Udumbarasara, Udumbaravaleha, Udumbramtra, and Diabet Guard.

CONCLUSION

The use of plant *Ficus Racemosa* Linn (Family-Moraceae) is very important in various diseases. *Ficus Racemosa* Linn have the many pharmacological activities such as anti-diuretic, anti-tussive, gastroprotective, anti-ulcer etc. The use of *Ficus Racemosa* Linn is very ancient. It is strongly believed that detailed information as presented in this review on various therapeutic actions of the constituents might provide detailed evidence for the use of this plant in different medicines.

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