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EXPLORING THE THERAPEUTIC POTENTIAL OF BOMBAX CEIBA: A COMPREHENSIVE REVIEW OF ITS MEDICINAL PROPERTIES AND APPLICATIONS IN DRUG DEVLOPEMENT

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ABSTRACT

The Red Silk Cotton Tree, Bombax ceiba has received a lot of interest recently for its potential as a treatment. This in depth review study explores the amazing plants many therapeutic uses and qualities in the field of drug development. The tropical tree Bombax ceiba, which is native to Asia, has long history of traditional medicinal use. Alkaloids, flavonoids and phenolic compounds are among its various chemical constituents which have piqued the curiosity of researchers looking for new sources of medicinal agents. This review complies a wide range of studies investigating its pharmacological properties, including diabetes, cancer and cardiovascular diseases as well as its anti-inflammatory and antioxidant benefit. Moreover, the research highlights Bombax ceiba's potential as a source of natural products for drug discovery by illuminating the separation and identification of bioactive chemicals from it. Understanding its molecular mechanisms and signaling

pathways can help us understand how to use it for medicinal purposes. This review paper summarizes the current understanding of therapeutic qualities of Bombax ceiba, highlighting its promise as a source of novel medications and highlighting its promise as a source of novel medications and highlighting the significance of further study to fully realize its therapeutic potential in contemporary medicine. **KEYWORDS:** Bombax ceiba, Medicinal properties, Therapeutic potential, Bioactive compounds, Traditional medicine, Therapeutic applications.

INTRODUCTION

Bombax ceiba, a member of the family Bombacaceae, is also known as the silk cotton tree and semal. It is a significant medicinal plant in tropical and subtropical India and also occurs in Sri Lanka, Pakistan, Bangladesh, Myanmar, Malaysia, Java, Sumatra and Northern Australia. It has a variety of conventional uses and its reputed medical use in the Indian traditional medical practices like Ayurveda, Unani and Siddha.^[1] It goes by variety of names such as Indian kapok tree, Red cotton tree, Shimul (Bengali), Semal (Hindi), Shalmali (Sanskrit), kondaburga (Telgu), mullilavu (Malyalam), in many tongues.^[2] Bombax Ceiba -"Bombox" (Greek) Silkworm; South American slang term "ceiba". The name of the silk cotton tree.^[3] Ayurveda claims that it possesses aphrodisiac, haemostatic, stimulant, astringent, diuretic, demulcent, antidysenteric, alterative, and antipyretic properties.^[4] It can be found in large quantities in temperate and tropical Asia, Africa, and Australia. It can be found in India at elevations of up to 1500 m. The tree is indigenous to peninsular India. Quite prevalent along rivers and in deciduous woodlands, both dry and wet. The tree grow quickly and is a powerful light - demander. It thrives in deep sandy loams or other well -drained soils, especially in valleys, in areas with an average annual rainfall of 50 to 460 cm that is evenly dispersed throughout the year.^[5] It can grow to heights of 30 to 40 meters and girths of up to 3 meters^[6,7], serving as a source of food, shelter, roosting grounds, and breeding</sup> grounds for several wild species. It also a significant ecological function in tropical forest environments, offering food, fuel, and many other advantages.^[8,9] B.ceiba has a long history in ethnobotany and is widely used to in cure a variety of illnesses.^[10] In addition to its grown extensively for its springtime-blooming crimson flowers. White silk cotton or semul, also known as bombax ceiba (Bombaxmalabarica, Bombacaceae), is a medicinal herb that has been suggested to have liver protective properties. And hypotensive function, in addition to anti- inflammatory effect. A naphthol, naphthoguinones, polysaccharides, anthocyanins, shamimin, and lupeol were discovered through photochemical analysis in a plant.^[11] Plants utilized as folk medicine often have leaves, fruit, bark, and flowers.^[12] It has anti- angiogenic properties and is utilized in conventional medicine. Although numerous researchers have looked into a variety of aspects of this plant species, a thorough assessment that includes full information about the therapeutic potential of B.ceiba is lacking. It would give details on the miracle plant's strong healing components that are responsible for its success against many

illnesses. Additionally, this assessment would highlight scientific knowledge gaps and support researchers around the world in their pursuit of innovative substances and medications.

DESCRIPTION

A big deciduous tree with a broad crown and a lofty trunk. Young trees' trunks and branches are especially coated in enormous, woody, conical prickles. Leaves Large, with petiole longer then the leaflets and 3-7 palmately arranged leaflets measuring 15-30 cm in length. The leaves are completely glabrous, lanceolate, acuminate, and more or less Coriaceous. Before the new leaves emerge, there are big, many, fascicled flowers that range in color from brilliant red to yellow. There are several, huge, 10-12.5 cm wide flowers. It has sepals that are thick, meaty and cup- shaped. It typically has five petals in each flower, each of which is 7.5-15 cm long, rectangular, Recovered above, juicy, and vivid crimson in color (occasionally yellow or orange). Fruit is between 15 and 17.5 cm long, oblong-obtuse, and has five valves.^[13] Up to middle age, the bark of semal is smooth, 1.8 to 2.5 cm thick, and appears pale ashy to silver grey. The huge, vivid red blossoms bloom from January to March. The huge, meaty, scarlet blossoms that cover the normally naked branches in winter and spring make for an incredibly spectacular picture. People like to plants it an ornamental plant in botanical gardens, gardens, or as an avenue species because of its lovely and alluring blossoms.



Fig. Bombax Ceiba Tree.



Fig. Bombax Ceiba Flower.



Fig. Bombax ceiba silk cotton fruit.



Fig. Bombax ceiba tree thorns.

Table 1: Taxonomical Classification.

Rank	Scientific Name and Common Name		
Kingdom	Plantae - Plants		
Subkingdom	Tracheobionta - Vascular plants		
Superdivision	Spermatophyta - Seed plants		
Division	Magnoliophyta – Flowering plants		
Class	Magnoliopsida - Dicotyledons		
Subclass	Dilleniidae		
Order	Malvales		
Family	Bombacaceae – Kapok- tree family		
Genus	Bombax L cottontree		
Species	<i>Bombax cebia</i> L – red silk cotton tree		

 Table 2: Floral characters of Bombax ceiba.

Floral Characters	Observation		
Flowering period	January – March		
Flower type	Somewhat ornithophilous		
Flower color	Crimson		
Flower opening time	Absent		
Odour	Present		
Nectar	Post midnight to morning		
Anther dehiscence time	After anthesis		
Anther dehiscence mode	Longitudinal		
Number of anthers	Many (100 approx.)		
Average number of pollens per anther	88,630		
Average number of pollens per flower	88,63,000		
Pollen type	3-colporate		
Pollen shape	Euoblate		
Pollen size	+/- 38.8 ' 71.75 micro meter		
Atmospheric pollen frequency	5.17% in 10.00 h		
Stigma typa	Above anther level, digitate with stout		
Sugina type	Style and wet type		

PHYTOCONSTITUENTS

Research has indicated that the blooms of Bombax cebia posses β -Dglucoside of β -Sitosterol, free β -Sitosterol, hentriacontane, henttriacontanol, and certain amounts of an essential oil, quercetin and kaemferol. A pale yellow powder known as shamimin, a recently identitied flavonol C-glycoside, was extracted from the ethanolic extract of fresh undried B. ceiba leaves. Through spectroscopic approaches (IR, Mass, 1-H and 13C-NMR), as well as 2D - NMR investigations, its structures has been clarified as 2-(2, 4, 5-trihydroxyphenyl)-3, 5, 7-trihydroxy-6-C-glucopyranosyloxy-4H-1-Benzopyran-4-one. Muhammad Ali Versiani studied the phytochemical investigations of B. cebia in his doctoral study. Plant extract from dried leaves were exposed to chemical analysis resulting in the separation of three novel

chemicals as [4-C-β-D] 1,3,6,8- tetrahydroxy- 7-O-(4"- hydroxybenzoyl)-9H-xanthen-9-one (I),2-C-β-D glucopyronosyl Glycerin,6,7-trihydroxy,3-O,(4"-hydroxybenzoyl)-9H-xanthen,9-One (Π),4-C,β-D Glucopyronosyl-1,6-xanthen, 9-one (III)]; 8-trihydroxy-3,7-di-O-(4"hydroxybenzoyl) with well-known substance mangiferin.^[35] A sesquiterpene lactone that was identified as Salmalimalbaricum (syn. B.ceiba) was isolated from the roots of plant species was earlier recognized as lactone-7-methyl ether hemigossylic acid. This was a novel molecule, isohemigossylic acid lactones -2-methyl ether, as demonstrated by 2D NMR investigations. A thorough investigation of the phytochemical characteristic and TLC ratios of different B.ceiba extracts was also carried out, and the result demonstrated that alkaloids, flavanoids, glycosides, coumarins, proteins and amino acids are present in both the water and alcohol extract.^[36] Phytochemical analysis was conducted on the gynaceum portion of the B. ceiba plants bloom. Chromatographic methods were utilized to separate the ethyl acetate fraction of an ethanolic extract of the flowers gynaceum, which contains the chemical querctageti glycoside. UV, 1H, and 13CNMR spectroscopy were used to determine the structures of the isolated substances. Two substances were identified by isolation and characterization from the steam bark extract of B.ceiba. These included 2-hexyl-7, 8dimethyl-1, 4-naphthaquinone, and lup-20 (29) en-3b-ol, which were dubbed BC-1 and ceibanapthaquinone, respectively.^[36] Through spectroscopic investigation and comparison with published data, the structures of these compounds were determined to be: querctin-3-Oβ-D-glucronopyranoside, chlorogenic acid, rutin, sexangularetin-3-O-sophoroside, vitexin, isovitexin, kaempferol-3-O-rutinoside, kaemferol-3-O-β-D-glucuronopyranoside, isomangiferin and 7-O-methyl mangiferin, scopoletin, scopolin, esculetin, fraxetin, benzyl-βglucopyranoside, methyl chlorogenate, phenylethylrutinoside, vanillic acid and D protocatechulic acid of these, were isolated from this plant.





5. Rutin

6. Kaempferol-3-O-rutinoside

PHYTOCHEMICAL EVALUATION

Phytochemical screening of TEBC (Thorn Extract of Bombax Ceiba) was executed for the presence of sugars, alkaloids, glycosides, tannins, flavonoids, steroids, proteins and terpens as per the given standard test procedures.

Alkaloids

Hager's test: When TEBC (10 mg/ml) was mixed with saturated solution of picric acids, formation of yellow precipitate is the indication of presence of alkaloids.

Flavonoids

Shinoda's test: Drop wise addition of concentrated HCL and small amount of magnesium turnings to TEBC (10 mg/ml) resulted in emergence of a scarlet or pink color. After a short while, red color indicates presence of flavonoids.

Carbohydrates

Fehling's test: In two separate tubes, equal amounts of Fehling A and B were combined with two ml of TEBC before being heated for short period of time. Both the contents were mixed as they attain nearly the boiling point, the emergence of brownish-red precipitate indicate the presence of carbohydrates.

Cardiac glycoside

Legal's test: Pyridine and an alkaline sodium nitroprusside solution were added to TEBC (10 mg/ml). Appearance of blood red color indicates the presence of cardiac glycoside, but no blood red color indicates the absence of cardiac glycosides.

Anthraquinone glycoside

Borntrager's test: In a test tube, 10 mg/ml of TEBC was heated for 5 minutes with 1 ml of sulfuric acid before being immediately filtered. Then the filtrate was cooled and shaken with equal volume of di-chloromethane. The bottom layer of di-chloromethane was separated and shaken with half of its volume of dilute volume. Red to rose pink color was produced in ammonia layer which indicate the presence of anthraquinone glycoside.

Tannins

Gelatin test: When 1% gelatin solution containing 10% NaCl was added to TEBC (10 mg/ml), buff-colored precipitate formation indicates the presence of tannins.

Saponin

Froth formation test: 2 ml TEBC was placed in test tube, and the mixcture was agitated for 5 minute (in presence of saponin), but for the next five minutes no foam was developed, which indicate the absence of saponin of TEBC.

Steroid

Libermann-Burchards test: Thorn extract of Bombax Ceiba (10 mg/ml) was treated with 7-8 drops of acetic anhydride solution boiled and cooled. Additionally sulphuric acid was added from the test tube's side, where brown ring was visible at the junction of two layers and the upper layer changed to green, which indicate the presence of steroids.

Protein

Xanthoproteic test: 1 ml of strong nitric acid was added to extract(10 mg/ml) and heated to produce a yellow precipitate, which after cooling 2 ml of 40 % NaOH were added to solution, orange color appears (if protein is present). No orange color was produced with TEBC indicating the absence of protein.

Phenol

Ferric chloride test: TEBC extract was dissolved in water; 8-10 drops of dilute ferric trichloride were added. The presence of phenol was indicated by the black color.

Diterpene

Copper acetate test: TEBC (10 mg/ml) was treated with 3-4 drops of copper acetate solution; emerald green color appears which indicate the presence of diterpens. No emerald green color appeared, verifies that diterpens weren't present.

Triterpens

Salkowski's test: When concentrated sulphuric acid (5-6 drops) was treated with TEBC (10 mg/ml), the lower half of the reaction produces yellow color (if triterpens are present), but no yellow layer development indicate the absence of triterpens.

Phyto- Chemical Analysis of Bombax Ceiba

Bombax ceiba extracts were subjected to a preliminary phytochemical analysis, which found that all of the extract includes a variety of secondary metabolites, including tri-terpenoids, sterols, polysaccharides, flavones and flavanones.

Name of the Chemical Test	Chloroform	Ethyl Acetate	Ethanol	Aqueous
Alkaloids	-	-	-	-
Glycosides	-	-	+	+
Flavonoids	-	-	+	+
Carbohydrate	-	-	+	+
Protein	-	-	+	-
Fat	-	-	-	-
Saponins	-	-	-	+
Tannins	_	_	+	+

Table 3: Phyto-Chemical Analysis of Bombax Ceiba Leaves.^[22]

MEDICINAL USES

Issues with nocturnal ejection and semen

Add vidari (Ipomoea digitata) root, shatawar, and misri to semal root powder. Two times daily using milk.

Blood cleansing

Semal leaves should be ground with water. Drink after filtering.

Leucorrhoea

Two times each day, mix semal root powder with water.

Over bleeding in menstruation

Mix 100 grams of semal root powder, 50 grams of mulethi powder, and 25 grams of swarngeru to treat excessive menstrual bleeding. Take this powder twice day with milk or water.

Blemishes (skin), pigmentation, and acne

Take the thorny portion of the semal tree stem. Make a water and thorn root paste. Use on the affected area. This also reduces the appearance of burns, freckles, boils, and acne Vulgaris scars.

Weakness

Take the green base of the semal flower, clean it, and allow it to dry in the shade. To produce powder, grind. Take one spoon of powder, two tablespoons of honey, and one tablespoons of desi ghee with milk.

Better breast milk

Clean, dry, and crush the bark from the semal root to create a powder. To enhance breast milk, take twice.

Cough and the flu

Combine dry ginger powder, black pepper, and semal root powder in a bowl. To treat a cold or cough, take a tiny dose.^[23]

PHARMACOLOGICAL ACTIVITIES



Fig. 1: Various potential pharmacological activities of *Bombax ceiba*.

In - vitro Anti - Inflammatory Activity

Human Red Blood cells were used to test the extracts of B. ceiba's in vitro anti inflammatory activities. (HRBC) membrane stabilizing technique with minor adjustments. Blood was drawn from a healthy human volunteer who had abstained from using any inflammatory medicines for two weeks prior to the experiment. The blood was then transferred to heparinized centrifuge tubes and spun at 3,000 rpm. After being cleaned with isosaline, the packed cells were converted into a 100% suspension in regular saline. As a benchmark, potassium Diclofenac (50 mcg/ ml) was employed. The reaction mixture (4-5ml) contained 0.5 ml of 10% HRBC in normal saline, 1 ml of test solution (1000mcg/ml) in normal saline, 2 ml of hypotonic saline (0.25% w/v NaCl), and 1 ml of 0.15 M phosphate buffer (pH 7.4). In place of the test solution, 1ml of isotonic saline was utilized as the control. The mixes were incubated for 30 minutes at 56 degree C and with flowing water. The visible spectrophotometer was used to measure the absorbance of the supernatant at 560 nm. The experiment was carried out three times. 100% of the lyses in the control are lyses.^[24]

Anti- obesity

The current investigation established the methonolic extract of Bombax ceiba Linn's antiobesity efficacy. Against obesity in rats caused by high- fat diets. Gemfibrozil was employed as a benchmark in this investigation because it lowers cholesterol and affects how lipids and carbs are metabolized.^[25] According to experimental findings, the active phytoconstituents of B. ceiba have a strong preference for the methanolic or hydro- alcoholic extract. Soxhlet extractor was used to create the methanolic extract. Phytochemical screening was used to characterize the B. ceiba extract, revealing the presence of alkaloids, glycosides (including cardiac- and saponin-glycosides), tannins, terpenoids, steroids, and flavonoids.

Anti -diabetic activity

Juice from a variety of plants can assist to reduce blood sugar levels by 10% to 15%. Currently, Diabetes has one of the more prevalent metabolic diseases. Approximately 1.3% of people worldwide have this illness, and the number of diabetics is rising by 6% year. Every year, diabetics accounts for 300,000 fatalities, ranging from 0.2% in children under the age of 17 to 10% in people 65 and over. Scientists are working to develop medications from natural products like plants to address the major problem of diabetes.^[26]

Hypotensive Activity

Hypertension is a condition that affects all significant bodily organs. It is referred to as a silent killer because, even in the absence of obvious signs, it may lead covertly to cardiac arrest, cerebral hemorrhage and stroke, loss of vision, renal failure and abnormalities. Blood pressure has impacted 10-15 % of people worldwide and killed many. Drugs on the one hand are quiet pricey when utilized for its therapy. Furthermore Bombax's ability to lower blood pressure, describe the Ceiba's evolution of hypotension.^[27]

Antihemolytic Activity

When erythrocytes are destroyed, hemolysis results, releasing hemoglobin and other internal components into fluid around them. Since polyunsaturated fatty acids make up the majority of membranes of erythrocytes, they are extremely vulnerable to oxidative damage whose side effects are hemolysis and lipid peroxidation. Erythrocytes were used in an antihemolytic experiment to determine Bombax cebia extract showed noteworthy behaviors.^[28]

Anti-angiogenic Activity

When looking for antiangiogenic compounds in medicinal plants we discovered that a methanol extract of the steam bark of B. cebia shown a considerable reduction in a non-inhibitory antiangiogenic action at 50g/ml focusing on the expansion of tumor cell line A549 (Human lung carcinoma).^[29]

Analgesic Activity

Mangiferin, a compound derived directly from methanolic extracts of B.cebia leaves and 2beta-D-glucopyranosyl-1, 3, 6, 7-tetrahydroxyl-9H-xanthene-9-one showed EC (50) 5.8(+/-) 0.96; high antioxidant activity utilizing the DPPH test, mg/ml. The cinnamoyl and acetyl derivatives was found to be more active than mangiferin as opposed to methyl and 3,6,7trimethylether tetra acetate compounds had no effect suggesting that for antioxidant that the catechol moiety and free hydroxyl group are essential. Mangiferin also demonstrated the ability to protect the liver from carbon tetrachloride harm to liver that was caused, supporting the free radical in-vivo systems scavenging ability. Additionally refined mangiferin and unprocessed plant extract did not demonstrate immidate anti-inflammatory action, although in acetic acid, extracts had a noticeable analgesic effect acetic acid induced writhing and hot plate tests in mice. It was found that plant extract-induced analgesia was independent of opoid receptor using naloxone. Mangiferin however showed substantial contact with receptor at distant location, using little involvement at neuronal level.^[30]

Antimicrobial and Antibacterial Activity

Methanol and aqueous plant extract were tested for their efficacy against Salmonella typhi that was multi drug resistant. The strong significant antimicrobial action was shown by methanol extracts of Salmaliamalabarica.

Plants or plant parts were gathered, dried, homogenized and extracted in methanol and acetone organic solvents. The ability to combat bacteria using an agar disc, Klebsiellapneumoniae was defeated by diffusion method. The activity was contrasted with Amikacin and Piperacillin are common antimicrobials.^[31]

Cytotoxicity

The brine shrimp lethality test was used to evaluate the cytotoxicity of plants aqueous extract. The current investigation provides evidence that brine shrimp bioassay is an easy, dependable and practical approach for evaluation of biological effects of medicinal plants and herbs defending their usage in conventional medicine.

Hepatoprotective Activity

An investigation into the hepatoprotective properties of methanolic extract of B.cebia flowers (MEBC) against hepatotoxicity caused by delivering an isonizid combined with two anttubercular medications rifampicin (RIF) with INH for 10 and 21 days by intraperitoneal route in rats. MEBC were given out with a graduate dose of 150,300 and 450 mg/kg intravenously 45 min prior during 10 and 21 days anti-tubercular challenge. A considerable decrease in alkaline phospatase (ALP), alanine transaminases (ALT), and separate transaminases indicated that MEBC was present at all doses, but an increase in the level in comparison to total control, of total protein. MEBC dramatically reduced TBARS levels (thiobarbituric acid reactive substance) and increased GSH (reduced gluthaione) concentration at all doses as compared to control. The examination of biochemical variables and histopathological studies findings lead to conclusion that inability of the MEBC to fully reverse the liver damage brought on by INH and RIF; however it could limit the effect of INH and RIF to the extent of necrosis.^[32]

Antipyretic

Rats were tested for the antipyretic effect of the Bombay malabaricum (syn. Bombax cebia) leaves in methanol extract (MEBM).^[33] MEBM significantly reduced the pyrexia brought on

the Baker's yeast. Tests on phytochemicals revealed the presence of steroids, sugars, tannins, flavonoids, coumarin, deoxy-sugars, trierpenoids and glycosides.

APPLICATIONS^[34]

Medicinal: The flower blooms have cooling and astringent properties. They are applied to treat skin conditions. The young roots have tonic and diuretic properties. Young roots are used to treat coughs, cholera, dysentery related abdominal pain, tubercular fistula, urinary problems and impotence etc. The gum has tonic demulcent and astringent properties; it is also used to treat influenza, dysentery, menorrhagia, pulmonary tuberculosis releated hemoptysis. The leaves have hypotensive (low blood pressure) and hypoglycaemic (low blood sugar) properties. The decoction of shoots is used to treat leprosy, palatal ulcer, spider or snake bite, and syphilis. They are used to cure an enlarged spleen when mixed with the roots of Moghania macrophylla, the fruits of terminalia chebula, and borax; to treat edema when combined with Capparis Zeylancia and Carissa carandas. The seedlings are said to have antipyretic properties when combined with semecarpus annacardium and few fisula leaves. They are used with Terminalia alata to cure haematuria and vitis spp. (part not specified) to treat carbuncls. The knots or the stem are used for bleeding gums. The bark is used to treat cholera (often in combination with several other plants), pleurisy, stings and as a diuretic. It is also rumored to have sexual properties.

Agroforestry Uses: Rapidly growing multipurpose and even tiny enough to tolerate full light this plant can serve as a pioneer in the restoration of natural woodlands. Because it can continue to grow as canopy tree as the garden ages, it can also be employed as a pioneer when creating a big woodland garden. In the northwest Himalyas, the plant is traditionally grown in living fences, where it serves a variety of medicinal and other purposes in addition to marking land boundaries and keeping livestock and other animals at bay.

Other Uses: For stuffing pillows, cushions, and other items, seed floss is utilized. It's regarded as rodent proof. It can be utilized as the filter in the life jackets because it is buoyant and waterproof. It can also be utilized as packaging material, also act as an insulator in freezers and has sound proofing qualities. Compared to the floss made from Ceiba pentendra, it is of inferior quality.

The inner bark is used to produce a fiber. Extract of the flower is used as an ingredient in commercial cosmetic preparations as humectants.

The sapling root and bark both emit a clear gum, which is called as 'Gum of Malabar'. Gum can be used as a cement to seal iron saucepans by combining it with ashes and castor oil. The seeds yield oil that is used for illumination, soap-making and other purposes. It can be utilized in place of cottonseed oil. In mosquito control programs, a methanol extraction of leaf powder has proven to be an effective larvicide. Since stagnant water bodies are known to serve as mosquito breeding grounds, the plant extract may be applied there.

Ropes are made from the fibrous bark. The wood is light in weight, has straight grains, a gritty texture is very soft and has dark streaks. Toys, pencils, packaging boxes can be made using it. To create canoes, large trunks are frequently hollowed out. It is advised to use the wood as a cellulose source.

CONCLUSION

In conclusion, this thorough analysis has shown Bombax Ceiba's therapeutic potential and range of medicinal qualities. Its phytochemical makeup, pharmacological properties and historical use have all been thoroughly investigated and the results have shed important light on its possible uses in medication development. Flavanoids, terpenoids, and phenolic compounds- among the many bioactive components included in Bombax ceiba- have shown promise in treatment of number of illnesses, including microbial infections, cancer, diabetes, and inflammations. The review has also emphasized how crucial it is to conduct more studies and clinical trials in order to completely comprehend the mechanism of action and maximize Bombax ceiba's medicinal potential. Overall, this comprehensive review emphasizes the significance of Bombax ceiba as a valuable source for developing novel drug and highlights its potential contributions to the field of medicines.

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