



**INTERNATIONAL JOURNAL OF
PHARMACEUTICAL SCIENCES**
[ISSN: 0975-4725; CODEN(USA): IJPS00]
Journal Homepage: <https://www.ijpsjournal.com>



Review Article

Exploring The Medicinal Potential of Luffa Acutangula: Phytochemistry, Pharmacology and Traditional Uses

S. Kamali*, M. K. Mohammed Nazeer*, G. Asma Begum, Rampravesh Kumar, C. Rejitha

Faculty Of Pharmacy, Bharath Institute of Higher Education and Research, Chennai.

ARTICLE INFO

Published: 14 Mar. 2025

Keywords:

Luffa acutangula, traditional medicine, anthraquinones, saponin triterpene, antidiabetic activity, antioxidant activity.

DOI:

10.5281/zenodo.15027034

ABSTRACT

The perennial plant *Luffa Acutangula* [Cucurbitaceae], which appears primarily in India, South east Asia, China, Japan, Egypt, and other parts of Africa, is widely used in traditional Indian medicine to heal a variety of diseases. It is also common in waste. The hypoglycemia, anti-glycemia, anti-hypertrophic and blood pressure-lowering properties of these herbicide ingredients make it an advantage. Pharmacy characteristics such as scientific classification, colloquial names, and plant potential for biological effects are the main focus of this overview. This plant was treated for treatment of leprosy, caterpillar infection, diabetes, hemo, headache, ruhr. Flavonoids, anthraquinones, proteins, fatty acids, saponin triterpenes, fleeting components, and other plant kingdom dyes are one of over 50 chemicals extracted from plants. Available in plant type abstractions and their separations, including anti-diabetics, liver protection, anti-hair, anti-cancer, immunoregulatory, antioxidant, antioxidant, antioxidant, antioxidant, ZNS depression, analgesic, analgesic and anti-inflammatory properties.

INTRODUCTION

Since ancient times, plant medical substances have been widely used to prevent and treat diseases. Some of these substances are harmful to plant predators, but can help heal human diseases [1]. *Luffa Acutangula* is often referred to as Ridge-Gourd and is a medicinal plant. It is common in subtropical regions of Asia. India is said to be one of the main areas of origin centres. This work has

been widely added in Egypt, China, Japan, India, Southeast Asia and other African countries. This plant is propagated through seeds owned in February, March, June and July [1][2]. The purpose of this paper is to analyze traditional uses, phytochemistry, pharmacological effects, and toxicological studies. Furthermore, the information came from several experimental studies. Further more, information from several

***Corresponding Author:** S. Kamali

Address: Faculty Of Pharmacy, Bharath Institute of Higher Education and Research, Chennai.

Email ✉: kamalianu15@gmail.com

Relevant conflicts of interest/financial disclosures: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.



experimental studies was critically evaluated to support the traditional and therapeutic use of *Luffa Acutangula* [2].



Description

- a) **Macroscopic:** *Luffa Acutangula* [L] Roxb is one of the large climbers [2].
- b) **Roots:** The roots are round, cylindrical, rough, and often swollen from removal of the abdominal roots. They vary on long ranges, striped, pale yellowish brown, porous, fractured, broken surfaces. It has a slightly stringy and bitter taste, but does not have a distinctive smell.
- c) **STEM:** It elongated, 5 7 angles, internodes length 8°C, width 0.5 1 cm. It is a longitudinal, fracture, fracture laser with cuts and grooves, with a prominent knot packed with thin spiral twinning ten drills, most of which are triad dishes. It has a slightly bitter and stringy taste and does not have a distinctive smell. 8-10 cm wide, sinful, dental, with prominent veins at the bottom and dark top[2]. The petioles are cylindrical, length 4-10 cm, diameter 1-2 mm, lengthwise direction, tattered, light green brown. It has a slightly bitter and stringy taste and does not have a distinctive smell[3].
- d) **Flower:** Female flowers, individually, yellow, same armpits, subovarian and ribs, proliferative stigma, male inflorescence, armpits, 10-20 flowers, length 20-22 cm, yellow, kalyx , Colora 5. , 5 stamens and 5 stamens of cullchi leaves and petals[3][2].

- e) **Fruit:** Pepo, cylindrical or clever, 15 cm long, 3-5 cm diameter, tapered with blunt lace to the lower distal end. The surface shows ten notable ribs running at small angles in the vertical direction. It has a mild smell and a boring taste [3].
- f) **Seed:** Chocolate brown to black, oval to elongate, dorsal, 0.7-1.2 cm, width 0.4-0.6 cm, with small waves at the edges.

Plant Description

Botanical Aliases: *Cucumis acutangulus*, *Cucumis lineatus*, *Cucumis longus* var. *indicus*, *Cucumis megacarpus*, *Cucumis operculatus*, *Cucurbita acutangula*, *Luffa acutangula* var. *amara*, *Luffa acutangula* var. *forskali*, *Luffa amara*, *Luffa drastic*, *Luffa fluminensis*, *Luffa foetida*, *Luffa forskalii*, *Luffa gosa*, *Momordica tubiflora*[3].

Taxonomic Classification for *Luffa Acutangula*

1. Kingdom: Plantae
2. Subkingdom: Viridiplantae
3. Infrakingdom: Streptophyta
4. Superdivision: Embryophyta
5. Division: Tracheophyta
6. Subdivision: Spermatophytina
7. Class: Magnoliopsida
8. Superorder: Rosanae
9. Order: Cucurbitales
10. Family: Cucurbitaceae
11. Genus: *Luffa*
12. Species: *Luffa acutangula*

Geographic Range

Sales in India and Pakistan. This was the order: China, Hong Kong, Bangladesh. Africa: [Benin, Chad, Ghana, Madagascar, Mortius, Mozambic, Nigeria, Sierra Leone, Uganda]; North America: [USA, Mexico]; Salvador, El Salvador, Martitik, Rico, Trinity, Tobago]; South America: [Brazil, Ecuador, Peru, Venezuela]; India, Japan, Kazakhstan, Malaysia, Myanmar, Pakistan, Philipines, Sri Lanka, Taiwan, Thailand, Vietnam, Yemen[4].

Parts Used Medicinally

Leaves, fruits, roots, seed and seeds oil.

General Aspects

A. Ethnobotanical Uses

Ethnovegetative studies in hilly areas of Maharashtra showed that powdered fruits of *Luffa acutangula* are used as sniff cigarettes to avoid yellowing[4]. Western Maharashtra strains are traditionally used for insect bites. Swelling hemo is treated with fruit powder. Soft and smooth seed cores are a good treatment for diarrhea, and roasted young fruit juices are used to relieve headaches[5].

B. Therapeutic Applications

Luffa acutangula fruit is used to treat tumors, Vata, Kapha, anemia, leukemia, and anemia. They are also advantageous as diuretics, according to Ayurvedic literature. It illustrates many related biological processes[6]. In addition to its therapeutic use, the fruits of *luffa acutangula* are used as food in almost every region of India. In Ayurveda, Ridge Gourd is associated with many health benefits, and current clinical research supports these claims. Ayurveda says that ridge gourds regulate the pitta dosha in the body, while also increasing the number of vatas and kapas. Despite its tasteless taste, Ridge offers many health benefits[6][5].

C. Bioactive Compounds

Many phytochemicals have been found in *Luffa acutangula*, serin, tryptophan, pipecholic acid, flavonoids and saponins (Mahbubar, 2013). Ruffangulin, a novel inactivated N-terminal ribosome, L. Found in acutangula seeds. Additionally, oleanic acid, sapogenin, and bitter substances known as cucurbitacin B were discovered in L. acutangula[7]. The oil attributes of *L. acutangula* have melting points from -3°C to -10°C, iodine values of 99.5, saponization values of 190.8, or acid values of 10.5.

D. Physical Characteristics

They investigated the mechanical properties of polypropylene packed with *Luffa Acutangula* in

2017. In this study, both treated and untreated *luffa acutangula* fibers were loaded at 1%, 3%, and 5% as polypropylene fillers[8]. This study shows that untreated polypropylene trains and impact strengths increased with increased fiber loading of composites, but increased tensile and impact resistance of alkali-covered polypropylene filled polypropylene[8].

E. Phyto Constituents

About 50 substances, including flavonoids, anthraquinones, proteins, fatty acids, saponin triterpene, volatile additives, and other phytoconstituents, have been isolated and identified as a consequence of the phytochemical investigations[10]. Proteins Several ribosome inactivating proteins [RIPs] were identified and extracted from various *Luffa acutangula* sections. Due to its diverse pharmacological properties, which include abortifacient, antifungal, anti-tumor, antiviral, and HIV-1 integrase inhibitory actions, RIP has drawn a lot of attention for use in medicine. Two RIPs, luffaculin1 [11]and 2 [12], were extracted from seeds by Junkaiaetal. (2002) using sodium dodecyl sulfate-polyacrylamide gel electrophoresis [SDSPAGE]. It was discovered that the molecular masses of luffaculins 1 and 2 exceeded 28 kD. Another RIP, Luffangulin [13], was extracted from seeds and had no effect on HIV-1 reverse transcription, but reduced cell-free translation [IC₅₀ = 3.5 nm]. Flavonoids insulated labonoids totaling 10f from various Ruffa types of Shilling and Heisters [1981]. Of these, two flavonoids were found in the leaves. Apigenin-7-glucoside [14]and luteolin-7-glucoside [15] [Schilling and Heiser, 1981]. The anthraquinon derivatives 1.8-dihydroxy-4-methylantracene 9, 10dione [16] were isolated using a method led by the Anthraquinon bioassay. Of the 14 factions, only five were tested for anticancer efficacy against NCIH460 or non-small cell lung cancer cells. Cell growth was heavily inhibited by groups produced at two IC₅₀ values at 10 mg/mL



concentrations. Fatty acids show nutritional analysis of seeds and were shown to contain minerals, proteins and lipids. 39% of the total body weight was made up of protein, while 44% of the fat was made up of kernels. Total saturated [32.1%] and unsaturated [67.9%] fatty acids were found in seed oils. This was discovered as mystical [0.45%] [17], palmitin [20.9%] [18], and stearic [10, 8%] [19]. Identified), oil [24.1%] and linol [43.7%] acid (11). Iodine, saponification and acid levels in seed oil were determined to be 99.5, 190.8, and 10.5. Seed cores were also used to identify minerals such as Fe, Ca, Zn, Cu, P, and Mg [Camel and Blackman, 1982]. The air portion of the triterpene saponin *Luffa Acutangra* showed seven saponins, which are members of the olean-type triterpene.

Botanical Traits

Folkloric Uses and Indigenous Pharmacology

The various components of *Luffa Acutangula* are widely used in many ethnic communities in India for their medical characteristics. In the Maharashtra region and in the trunk area of Madhya Pradesh, both leaf and powdered fruit are used to treat yellowund. Residents of Mahadevpur Spare Forest, formerly part of Andhra Pradesh and now in Telangana, often use fruit to treat diabetes. Additionally, trunks in western Maharashtra apply the system to mitigate the effects of insect bites. Powder fruit is also used topically to fix swelling hemo. Seeds act as an effective treatment for Rule, but fruit juice is applied to relieve headaches[21]. In Rajasthan, oral intake of seed powder is usually used to treat bladder stones in the urine. Local application of fragmented leaves in diseases such as splenicitis, hemo, tinea infection, and leprosy has been reported to be useful in treating granulocytic conjunctivitis in children during juices from the leaves of the eye. Furthermore, fruits exhibit urinary and diuretic properties, and seeds have integrative, emetic and anihilmine effects. Dried fruit powder is advantageous to

prevent early graying of hair. Plant roots act as laxatives and are used in the case of drops. The immature fruits of the less bitter variety of *Luffa Acutangula* are consumed as vegetables and are often cooked or fried, or placed in soups and sauces[21]. Sometimes delicate regulars are used as lush vegetables along with young leaves and flower buds. In Southeast Asia, Ridge Gourd is a favorite vegetable due to its slightly bitter taste, which prefers a slightly sponge-like texture and sweet juicy. Young fruits of sweet varieties are also used raw, sometimes small fruits are inserted. Seeds sometimes produce bitter and toxic edible oils. The best sponge comes from Tire Fruit, but dried fruits can also be used. The fruit is soaked for several days before it peels off. After cleaning, bleach the sponge and then dry in the sun.

Pharmacological Activity of *Luffa Acutangula*

1. Anitulcer Effect

The ability of *Luffa acutangula* extract to prevent gastric ulcers in rats with non-insulin-dependent diabetic pregnancy. We also investigated the functions of antioxidants and gastric mucosal proteins. This study investigated the gastroprotective effects of methanol and aqueous extracts from *Luffa acutangula* on rats with diabetics -II. Based on the results of this study, it was found that methanol extract from *Luffa Acutangula* is an excellent treatment option for diabetic ulcers[22].

2. Antiparasitic Effect

The antiparasitic properties of *Luffa acutangula* extracts were evaluated for the efficacy of the larval agent against the late third larval stage of *Culex Quinquefasciatus*. After a 24-h exposure period, larval mortality was observed. The extract showed an LC 50 value of 839.81 ppm [Moid and Prabha, 2014][23]. Additionally, a -in -vitro -assay was conducted using the *Legetimethauma* Rainworm to assess the potential for angelminism in the *Luffa Acutangula* Air Parts. Methanolux from the air components showed moderate



anthermin activity, resulting in paralysis and subsequent death after more than 90 minutes at a concentration of 10 mg/ml [Jadhav and Chavan, 2013].

3. Hepatoprotective Activity

Many studies have highlighted the therapeutic potential of *Luffa acutangula* in the treatment of liver disease. Ethanol extracts of fruits showed significant hepatoprotective effects compared to pet ether extracts in the case of carbon tetrachloride-induced liver necrosis[24]. This extract reduced SGPT, SGOT, serum alcarphosphatase [ALP], cerunvirbin, serum cholesterol, triglycerides [TG], serum high density lipo7conpine (HDLS), total serum protein, and serum albumin, among others. Histopathological examinations showed early necrosis of gasoline ether extracts, but no necrosis was observed in ethanol extracts, and the hepatoprotective properties of the latter were observed. Liver secretory activity of liver-alcohol [70%] carectrats against hepatotoxicity by carbon tetrachlor and rifampicin in Wistar rats[24]. Dosages of 100, 200 and 400 mg/kg. Model . The liver secretory activity of various sects of alcoholic fruit extracts was assessed by Mishra and Mukherjee [2017] in relation to liver toxicity induced by paracetamol. Oral administration and biochemical parameters of the toluol, chloroform and ethyl acetate fractions of ethanol extract [100 mg/kg]were evaluated. The ethyl acetate fraction led to a direct increase in bilirubin levels, whereas older branching, ALP mirror, and ALP mirror were normalized compared to other groups. Histopathological analysis of liver cells showed a lack of necrosis and reduced vacuum formation [Mishra and Mukerjee, 2017]. To evaluated the hepatoprotective activity of leaf ethanol extracts against carbon tetrachloride. Increases in serum marker levels [SGPT, SGOT, and ALP] induced by carbon tetrachloride were normalized after oral administration of the blade extract, and tissue-

specific antioxidant activity of the extract was observed[25].

4. Anti-Inflammatory and Anti Analgesic Activity

In 2011, Gill NS and colleagues looked into the possibility of *Luffa Acutangula* seeds with anti-inflammatory, analgesic and antioxidant properties. In this study, carrageenan-induced rat pod edema was used to assess tail strips and soaking to measure anti-inflammatory effects, hydrogen peroxide, and analgesic effects. This result provided important evidence that rufa acutangula seeds have significant anti-inflammatory, analgesic and antioxidant activities [25].

5. Anti-Cancer Effect

Ruffa-Akitangara's potential for ethanol and aqueous extracts induced cytotoxicity of human glioblast cells [U343] and lung cancer cells [A549]. The results showed a significant concentration-dependent reduction in cell vital capacity. Both MTT and SRB assays showed that ethanol and aqueous extracts from *Luffa acutangula* exhibited significant cytotoxic effects. Surprisingly, the aqueous extract showed superior cytotoxicity in lethal tests of salt removal compared to ethanol extracts [Dashora and Chauhan, 2015][26]. In vitro studies were conducted using *Luffa acutangula*-blatt extracts on human lung cancer cell lines [NCI-H460]. The MTT assay showed that the Blatt extract had a strong antiproliferative effect on cell lines tested at an IC50 value of 20 g/ml[26]. Compared to the control group, the group treated with the extract showed an increase in DCF fluorescence. This indicates an increase in mirrors and a significant increase in mitochondrial depolarization of reactive oxygen species [ROS]. Furthermore, microscopy using the double-color method of acridine randiethidium bromide showed changes in the core morphology and induction of apoptosis in cells treated with blade extracts. Aqueous

extracts from *Luffa Acutangula* were administered to assess their efficacy in inhibiting the growth of the Ehrlich abdominal cancer cell line [EAC]. For 13 days, mice received daily oral administration of 200 and 400 mg/kg BW. Treatment with both extracts resulted in a significant increase in lifespan [$p < 0.0001$] in mice carrying EAC tumors and a significant reduction in tumor volume, number of viable cells, and tumor weight. Furthermore, erythrocytes, hemoglobin, and leukocyte mirrors returned to normal in treated mice. The anticancer effects of methanol and aqueous extracts [200 and 400 mg/kg, oral] from the acute gula fruit of rufa have also been examined in mice with solid tumors used in Daltonian lymphoma ascites. [DLA] cells were induced. Both extracts were significantly inhibited in solid tumor growth in these mice[26].

6. Antibacterial Effect

The antibacterial efficacy of *Luffa acutangula* against several harmful microorganisms in 2012 was evaluated. After soaking the fruit powder from *Luffa Acutangula* in methanol, a comparative analysis was performed and extracted one after another using hexane, chloroform, ethyl acetate and butanol[27]. Antibacterial activity was assessed using the fountain injection method. Several chemical classes were identified using Dine-Layer Chromatography and phytochemical screening. Methanol extracts include *Pseudomonas aeruginosa*, *E. coli*, and *B. It* was clearly effective against *subtilis* and *S. aureus*, but it was insufficient to stop the growth of *E. Aerogenes*, *S. post-study. Dysentriae*, and *S. Thypi*. In this study, ethyl acetate extracts containing phenols, condensed tannins, flavonoids, saponins, terpenoids are ethyl acetate extracts, bone ano, *E. coli*, *B. It* has been shown to have the strongest antibacterial effect on lateral inflammation and uveal aureus[27][28].

7. Antimicrobial Effect

Several extracts of the fruits of *Luffa Acutangula* have been investigated for their antibacterial properties. Chloroform extracts showed more antibacterial activity against gram-negative bacteria than extensive drug bites. Furthermore, this study found that chloroform extracts surpass aqueous extracts in terms of antibacterial activity[28]. The antifungal properties of both extracts were only weak .

8. CNS Effect

The effect of determined ethanol extracts of *Luffa Acutangula* var Amara Fruits on behavioral changes, exploratory activity, and barbiturate duration in mice. The extract showed a Zns declining effect. This was dosage dependent. Exploration activity was significantly reduced in a dose-dependent manner by ethanol extracts[29]. Furthermore, we improved the hypnosis caused by pentobarbit sodium in both single doses and in long-term mice. We investigated the antitactile effects of rufa-akitangara-ethanol extracts in haloperidol-induced catalepsy in rats using block technology, pathogen motor activity, and exploratory behavior in perforated plate devices. Rats administered with ethanol extracts at 90, 120, 150, and 180 min of the haloperidol challenge had a significant increase in head soaking and line transitions [$P < 0.01$ and $P < 0.05$] compared to the negative control group was shown[29]. In addition to the antioxidant properties of the extract, the authors regulate neurotransmitters of importance to prevent catalodin by modulating neurotransmitters such as dopamine, serotonin, and glutamate. , set the hypothesis that it has a protective effect against Parkinson's disease symptoms[29].

9. Cardio And Nephroprotective Effect

Renal protection and cardiovascular use of a series of metrics such as blood biomarks and antioxidants of the target group to protect the protective effect of the aqueous alcohol extract of Rufa-actangra against doxorubicin-induced



cardiotoxicity and nephrotoxicity. It used it in Protection with hydroalcoholic extracts reduced the increase in blood concentrations of renal creatinine phosphosinase, lactate dehydrogenase, and alaninaminotransferase, and reduced hearts in mice treated with doxorubicin. In addition to restoring glutathione, catalase, and superoxide discatases lost in heart and kidney tissues, treatment with oily extracts reduced the amount of increased malondiadehyde[30]. Doxorubicin-induced changes in the tissue structure of kidney and heart tissue were also reduced by the hydroalcoholic extract. The protective effect of hydroalcoholic extracts against doxorubicin-induced cardiotoxicity and nephrotoxicity in mice was associated with the antioxidant ability of plant extracts.

10. Anti Tumour Activity

Dashora N and Chauhan LS [2015] tested *Luffa acutangula* and in vivo anti-oxidant properties in mice with Daltonian lymphoma [DLA] cells. According to an in vitro model, this study showed that ethanol and aqueous extracts have antioxidant potential. Furthermore, this study showed that ethanol extracts from *Luffa acutangula* at doses of 400 mg/kg and aqueous extracts exhibited potent anticancer activity at both 200 µm/kg and 400 m/kg. [31]

11. Immunoregulatory Activity

Effects on Immune Modulation In vivo fungi experiments used experiments involving neutrophil adhesion and carbon clearance to assess the immunomodulatory properties of ethanol extracts from *Luffa Acutangula* var. Amara. The proportion of in vitro antioxidant activity and neutrophil adhesion was significantly increased by ethanol extracts [32].

12. Teratogenic Effect

Abortions from antimin animals consumed by Ruffa Achutangras have been documented by many farms in northeastern Brazil. The woman used tea derived from this plant to induce abortion.

Consumption of *Rufa-Acutangula* during pregnancy prevented rat puppies from developing normally [32].

13. Antioxidant Activity

The antioxidant activity, overall phenol and flavonoid content of *Luffa- acutangula* Fruits. The results of this study fully demonstrate that the fruits of the *Luffa acutangula* plant are abundant natural antioxidant sources for application in food, cosmetics and medical products. The possibilities of *Luffa Acutangula* Pulp and Peel Powder were evaluated in this study using a variety of anti-oxygen techniques and solvent fractions[33]. The antioxygen activity of comb pulp powder and extracts was found to be greater than that of Kammkurbisschelle powder and extracts documented how methanol extracts from *Luffa Acutangula* Fruits protected human erythrocytes from oxidative damage by T-BHP. The antioxidant properties of hexane, methanol and aqueous extracts were investigated using free radical DPPH technology.

Toxicity

Luffa Acutangula Ethanol extracts in Wistar-albino rats was published in 2012. This study examined the acute and long-term toxicity of the entire *Luffa acutangula* plant. The results of this study showed that ethanol extract from *Luffa Acutangula* was non-toxic when administered orally up to 2000 mg/kg of rats. It was found that there were no signs of toxicity or beginning.[36]

CONCLUSION

After reviewing the literature, it was found that *Luffa acutangula* [L]ROXB has been used to treat a series of diseases and has been proven to be antitumor, antibacterial, antibacterial, ameliorative, anti-proliferative, anti-angiogenic, and antidiabetic. Ta. Last year, traditional remedies have been increasingly considered and evaluated for people's effectiveness and general security. Several pharmacological and phytochemical tests were conducted in different



sections. It is possible to promote more research to investigate the therapeutic effects of all phytochemicals and their mode of action.

REFERENCES

1. Vanajothi, Ramar and Srinivasan, Pappu. Bioassay guided isolation and identification of bioactive compound from aerial parts of *Luffa acutangula* against lung cancer cell line NCI-H460. *Journal of Receptors and Signal Transduction* 2015;35(4):295-302.
2. Lin et al. Purification and Characterization of two Luffaculins, Ribosome-inactivating proteins from seeds of *Luffa acutangula*. *Chinese Journal of Biochemistry and Molecular biology* 2002; 18(5):609-613.
3. Nagao T, Tanaka R and Okabe H. Studies on the constituents of *Luffa acutangula* Roxb. 2. structures of acutoside-H and acutoside-I, Oleanolic acid saponins isolated from the seed. *Chemical and Pharmaceutical Bulletin* 1991; 39(4):889-893.
4. Salma SH, Sabir AW and Khan SA. Cultivation conditions and physic-chemical properties of *Luffa acutangula* –var-*acutangula* seed oil. *Pakistan Journal of Scientific and Industrial Research* 1985; 28(2):119-122.
5. Dandge S, Rothe P, Pethe A. 2010. Antimicrobial activity and pharmacognostic study of *Luffa acutangula* Roxb var *amara* on some deuteromycetes fungi. *International Journal of Innovation Science*, 2:191–196.
6. Das S, Basu P. 1997. Effect of cephalixin on flowering fruit setting and development of *Luffa acutangula* Roxb. *Indian Journal of Plant Physiology*, 2:18–20.
7. Parshuram Nivrutti Shendge, Sateesh Belemkar. Therapeutical potential of *Luffa* A Review on its Traditional uses, phytochemistry, pharmacology and Toxicological Aspects, *Frontiers in pharmacology* 2018;9(1177):1-14.
8. Manikandaselvi S, Vadivel V, Brindha P. Review on *Luffa acutangula* L: Ethanobotany, phytochemistry, Nutritional value and pharmacological properties, *International journal of current Review and Research* 2016;7(3):151-155.
9. Vijayasanthi P, Mydhili G, Aswini M, Seshadri S, Ramasubramaniya R, Raja et al. *Luffa acutangula* –Phyto Pharmacological Review; *International journal of pharmaceutical sciences and medicine* 2017;2(1):1-9.
10. Pingale Shirish, Punde Vikas, Deokar Dinesh. Pharmacological review of *Luffa acutangula* (L) Roxb. *International research journal of science and engineering* 2018;A3:1-8.
11. Sathianarayanan S, Asha Jose, Rajasekaran A, Rijo mary George. Evaluation of protective effect of *Luffa acutangula* extract against bilateral carotid artery occlusion induced stroke in rats, *Indian journal of pharmaceutical science and Research* 2012;2(1):1-6
12. Manikandaselvi S, Brindha P. Quality control studies on *Luffa acutangula*, *International journal of pharmacy and pharmaceutical sciences* ISSN -0975-1491 2014, 6
13. Katewa SS, Chaudhary BL, Jain A. Folk herbal medicine from tribal area of Rajasthan, India, *Journal of Ethanopharmacology* 2004, 41.
14. Siti Nurai'syah et al. Mechanical properties of High loading *Luffa acutangula* fiber with Cloisite 15A and polypropylene. *Advanced materials research* 2016; 1134:178-184.
15. Hon Wei et al. *Luffa acutangula* peel as an effective natural biosorbent for malachite green removal in aqueous media: equilibrium, kinetic and thermodynamic investigations. *Desalination and Water Treatment* 2016; 57(16):7302-7311.
16. Suryanti V, Marliyana SD, Astuti IY and Iop. Chemical constituents of *Luffa acutangula* (L.)



- Roxb fruit. International conference on Food Science and Engineering 2016; 193.
17. Ananthan, Padmashree, Sharma GK, Semwal AD and Bawa AS. In vitro antioxygenic activity of ridge gourd (*Luffa acutangula*) pulp, peel and their extracts on peroxidation models. American Journal of Plant Sciences 2012; 3(10):1413-1421.
 18. Reddy BP, Mohan SV and Sarma PN. The protective role of *Luffa acutangula* fruit methanolic fraction against t-BHP induced oxidative damage in human erythrocytes. Current trends in Biotechnology and Pharmacy 2011; 5(1):1073-1082.
 19. Gill NS, Rashmi, Arora and Kumar SR. Evaluation of antioxidant, anti-inflammatory and analgesic potential of the *Luffa acutangula* Roxb var amara. Research Journal of Phytochemistry 2011; 5(4):201-208.
 20. Fernandes LCB, Cordeiro LAV and Soto-Blanco B. Evaluation of the abortifacient effect of *Luffa acutangula* Roxb in rats. P. 270-273.
 21. Dashora N and Chauhan LS. In vitro antioxidant and in vivo anti-tumour activity of *Luffa acutangula* against Dalton's Lymphoma ascites (DLA) cells bearing mice. Journal of Chemical and Pharmaceutical Research 2015; 7(6):940-945.
 22. Pimple BP, Kadam PV and Patil MJ. Protective effect of *Luffa acutangula* extracts on gastric ulceration in NIDDM rats: Role of gastric mucosal glycoproteins and antioxidants. Asian Pacific Journal of Tropical Medicine 2012; 5(8):610-615.
 23. Mustarichie R, Udin LZ, Muchtaridi and Supriyatna. Identification and antibacterial activity of methanol extract of *Luffa acutangula* Roxb. Medical and Health Sciences Journal 2012; 12:70-77.
 24. Jadhav, Vishal B, Thakare, Vishnu N, Suralkar, Anupama A and Naik, Suresh R. Ameliorative effect of *Luffa acutangula* Roxb on Doxorubicin induced cardiac and nephrotoxicity in mice. Indian Journal of Experimental Biology 2013; 51(2):149-156.
 25. Reddy BP, Goud RK, Mohan SV and Sarma PN. Antiproliferative and antiangiogenic effects of partially purified *Luffa acutangula* fruit extracts on human lung adenocarcinoma epithelial cell line (A-549). Current trends in Biotechnology and Pharmacy 2009; 3(4):396-404.
 26. Pimple BP, Kadam PV and Patil J. Antidiabetic and antihyperlipidemic activity of *Luffa acutangula* fruit extracts in streptozotocin induced NIDDM rats. Asian Journal of Pharmaceutical and Clinical Research 2011; 4(2):156-163.
 27. Nipun, Dashora, Chauhan LS and Neeraj, Kumar. In vitro cytotoxic activity of *Luffa acutangula* on human neuronal glioblastoma and human lung adenocarcinoma cell lines. Scholars Academic Journal of Pharmacy 2014; 3(5):401-405.
 28. Mishra, Shanthi Bhushan and Mukerjee, Alok. In vivo and ex vivo evaluation of *Luffa acutangula* fruit extract and its fractions for hepatoprotective activity in wistar rats. International Journal of Pharmaceutical Sciences and Research 2017; 8(12):5227-5233.
 29. Gupta KA, Rizvi W, Kumar A and Khan AA. Hepatoprotective effect of seeds of *Luffa acutangula* in carbon tetrachloride induced hepatotoxicity in rats. Indian Journal of Pharmacology 2013; 45:S175-S176.
 30. Ulaganathan I, Divya D, Radha K, Vijayakumar TM and Dhanaraju MD. Protective effect of *Luffa acutangula* (var) amara against carbon tetrachloride induced hepatotoxicity in experimental rats. Research Journal of Biological Sciences 2010; 5(9):615-624.



31. Jadhav et al. Hepatoprotective activity of *Luffa acutangula* against carbon tetrachloride and rifampicin induced liver toxicity in rats: A biochemical and histopathological evaluation. *Indian Journal of Experimental Biology* 2010; 48(8):822-829.
32. Mohan, Kalaskar G and Sanjay, Surana J. Free radical scavenging, immunomodulatory and chemical composition of *Luffa acutangula* var *amara* pericarp. *Journal of the Chilean Chemical Society* 2014; 5(1):2299-2302.
33. Mullai K, Jebanesan Anad Pushpanathan T. Bioactivity of the leaf extract of *Luffa acutangula* Roxb against the mosquito *Aedes aegypti* (L). *Journal of Experimental Zoology India* 2007; 10(1):165-167.
34. Arunachalam A, Selvakumar S and Jeganath S. Toxicological studies on ethanol extract of *Luffa acutangula* in albino wistar rats. *International Journal of Current Pharmaceutical and Clinical Research* 2012; 2(1):29-33.

HOW TO CITE: S. Kamali*, M. K. Mohammed Nazeer*, G. Asma Begum, Rampravesh Kumar, C. Rejitha, Exploring the Medicinal Potential of *Luffa Acutangula*: Phytochemistry, Pharmacology and Traditional Uses, *Int. J. of Pharm. Sci.*, 2025, Vol 3, Issue 3, 1341-1350. <https://doi.org/10.5281/zenodo.15027034>

