

A Review on Ixora Coccinea Plant

P.Roja*, M.Nandini, B.Deepthi, Kranthiguptha, Masaramraju

St.paul's school of pharmacy, Turkyamjal, Rangareddy district, Telangana, 501510

Date Of Submission: 01-06-2021

Date Of Acceptance: 14-06-2021

ABSTRACT: Ixora Coccinea is additionally referred to as Jungle herb, flame of the woods or Jungle flame. It belongs to the family rubiaceae; it's a typical shrub native to southern Asian nation, Asian nation and srilanka. Relying upon the medical condition the flowers, leaves, roots and also the stem area unit wants to treat varied ailments within the Indian ancient system of drugs, the written material, and additionally in varied people medicines. The fruits once totally ripe area unit wants to treat varied ailments within the Indian ancient system of drugs. The fruits once totally ripe area unit used as dietary sources. Pharmacological studies of those plant shows that it posses inhibitor, medicament, gastro protecting, hepatoprotective, antidiarrhoeal, anti-nociceptive, antimutagenic and chemo preventive effects. This review studies concerning the cultivation, ancient and pharmacologic effects of Ixora Coccinea.

KEYWORDS: Ixora Coccinea, flame of woods, Jungle herb, Ayurveda, ancient system of drugs, pharmacologic studies.

as Jungle herb, flame of the woods or Jungle flame. It belongs to the family rubiaceae; it's a typical shrub native to southern Asian nation, Asian nation and srilanka. The genus name Ixora is meant to be derived from the Indo-Aryan word "ikvana" when a Malaysian spiritual being, or probably from the name "iswara" the opposite name of lord Shiva to whom the flowers area unit offered throughout worship, whereas the species name "cocaine" suggests that scarlet(reference:Manjeshwar shrinath Baliga and Poruthukaran john kurian)

Ixora coccinea is a dense, multi-branched evergreen shrub, usually 4–6 ft (1.2–1.8 m) tall, however capable of reaching up to 12 ft (3.7 m) high. It's a rounded kind, with a selection which will exceed its height. The glossy, leathery, rectangular leaves are concerning 4 in (10 cm) long, with entire margins, and area unit carried in opposite pairs or whorled on the stems. Tiny cannular, scarlet flowers in dense rounded clusters 2–5 in (5.1–12.7 cm) across area unit created most years long.

I. INTRODUCTION

Ixora Coccinea is additionally referred to



Fig: 1-IXORA COCCINEA PLANT

SCIENTIFIC CLASSIFACIATION

Kingdom : Plantae

Clade	:	Tracheophytes
Clade	:	Angiosperms
Clade	:	Eudicots
Clade	:	Asterids
Order	:	Flower ales
Family	:	Rubiacea
Genus	:	Ixora
Species	:	I. Coccinea
BOTANICAL NAME		
Ixora Coccinea		



Fig: 2-Fruits of Ixora Coccinea



Fig:3-Ixora Coccinea in Kerala, India

CULTIVATION:

There are a unit five hundred species within the genus *Ixora*, solely a few area unit usually cultivated, and also the common name, *Ixora* is typically used for *I. Coccinea*. *I. Coccinea* is employed in heat climates for hedges and screens, foundation plantings, collected in flowering beds, or grownup as a specimen woody plant or tiny tree. In cooler climates it's grownup during a greenhouse or as a potted hose plant requiring bright lightweight. It's additionally grownup in containers, trying terribly distinguished as a area or poolside plant.

USES:

The flowers, leaves, roots and also the stem area unit wants to treat varied ailments within the Indian ancient system of drugs, the written

material, and additionally in varied people medications (reference: Manjeswar shrinath Baliga and poruthukaran John Kurian) in ancient Indian medicine the fusion of juice leaves and also the fruit of *ixora coccinea* is employed to worry for infectious disease, ulcers and sexually transmitted disease.

Phytochemical constituents:

The phytochemical studies of this plant hinted that the plant retains ursolic acid, lupeol, sitosterol, fatty acids, and organic compound of kaempferol, flavonaols, rutin, ferulic acid, quercetin, cyanidin, flavanoids, tannins, phenolic resin acid, oleanolic acid, rutin, lecocyanadian, anthocyanins and proanthocyanins. (Reference: Anisha Devendran, G.Gnanavel*)

Different parts of phytochemical constituents	
Parts	Constituents
Roots	Fatty acids, Oils
Leaves	Triterpenoids, Alkaloids, Proanthocyanins,
Flowers	Triterpenoids, Sterols, Alkaloids

Pharmacological properties:

Ixora coccinea is AN autochthonic plant that has marginal scientific studies, particularly on the pharmacologic properties. Many pharmacologic properties of this declared as follows.

Antioxidant effect:

Antioxidants area unit the compounds that inhibit chemical reaction. Chemical reaction is that the method which might turn out free radicals through chemical reactions. The excessive production of free radicals of chemical element species includes hydroxyl radical radicals, superoxide radicals, peroxide etc. a number of the

chemical element species includes gas radicals and peroxy nitrite radicals had been related to pathologic process of diseases. As way as Ixora studies shows that flower has scavenging activity beneath vitro conditions (Saha, 2008).

With respect to Ixora, studies have shown that the hydromethanolic extract (70%) of the flower possesses considerable radical scavenging activity in vitro (16) within the universally accepted DPPH assay, the extract showed a degree dependent inhibition up to a hundred $\mu\text{g/mL}$. With an extra increase within the concentration a proportionate increase in result wasn't seen and a upland was observed. The IC_{50} of the extract was $100153 \mu\text{g/mL}$, quite that of the water-soluble vitamin ($\text{IC}_{50} 58192 \mu\text{g/mL}$) used as positive control. The extract additionally possessed reducing power and total inhibitor results and a concentration-dependent effect was observed (16) to boot, Torey, et al, (22) additionally showed that at equivalent concentrations, the methyl alcohol extracts of flowers were more practical than the leaf and stem in scavenging DPPH and this could result to the upper concentration of polyphenols within the flower extracts but, within the organic compound enzyme inhibition activity the methanolic extract of the leaf was found to be higher than each flower and stem (leaf > flower > stem).

Recently, Idowu, et al, (5) additionally rumored that a number of the phytochemicals isolated from the leaves area unit effective in DPPH and gas scavenging effects in vitro with acid as management within the DPPH assay the IC_{50} was as follows: cinnamtannin B-1 (6114 ± 0109) > proanthocyanidin polymer (6137 ± 0112) > procyanidin A2 (10127 ± 0122) > the control acid (12182 ± 0115), quercetin-3-O-a-L-rhamnopyranoside (13166 ± 0123) > epicatechin (19107 ± 0141). In the meantime, within the gas inhibition assay, the IC_{50} was as follows: cinnamtannin B-1 (10128 ± 0145) > proanthocyanidin polymer (11150 ± 0129) > quercetin-3-O-a-L-rhamnopyranoside (13187 ± 0165) > procyanidin A2 (17113 ± 0127) > epicatechin (28155 ± 0131) > management acid (45115 ± 0194).

Anti-inflammatory effect:

Medicine is that the property of a substance or treatment that is employed to scale back inflammation or swelling. Surplus production of gas and element species activates inflammatory leukocytes beneath conditions of chronic

inflammation. Concentration dependent decrease in inflammation was caused thanks to the oral administration of binary compound and methanolic extract of the leaves. Antimicrobial effect: Antimicrobial is that the property that eradicate being or inhibit their growth. The methanolic and ether extract from leaves of Ixora coccinea has possess bactericide properties against *Arthrobacter citreus*, *Bacillus* genus *Cereus*, *B. licheniformis*, *B. polymixa*, *B. subtilis*, *eubacterium sp.*, *cocci aureus*, *eubacterium sp.*, *escherichia*, *enterobacteria aerogenes*, genus *Pseudomonas aeruginosa*, *P. putida*, *salmonella*, *Sarcina lutea*, *Nocardia sp* etc. (Annapurna, 2003).

Chemo preventive effect:

Chemo preventive is an impression that emphasizes that prevents cancer at earlier stage by interference, reversing or delaying the onset with the utilization of medicine or biological process agent at nontoxic concentrations and an alternate observe to reduce cancer connected death rate. The hematopoietic system and therefore the halted the decrease within the cyclophosphamide and cisplatin that decline in leukocytes level and haemoprotein levels (Latha, 2001).

Anti-nociceptive effect:

Anti-nociceptive is that the result could be a method that belittles a painful or injurious input within the sensory system. The leaves of Ixora coccinea were studied and show the anti-nociceptive action was mediate centrally via dopaminergic mechanism (Sunitha Dontha, 2015).

Anti-mutagenic effect:

The continuous exposure of numerous classes of xenobiotics-physical and biological agents results in mutation in body. Carcinogenesis could be a method that was originated by the broken DNA and its bar is incredibly vital. The element that is gift within the Ixora flower particularly ursolic acid scale back the metallic element dichromate- induced genotoxicity (Latha, 2001).

Antidiarrhoeal Effects:

In developing countries, diarrhea caused by enteral pathogens could be a major health concern and is a crucial reason behind baby mortality (32) Recent studies recommend that the binary compound extract of the leaves possess antidiarrhoeal effects in rats. The oral administration of the extract (100, two hundred and

four hundred mg/ kilo, intraperitoneal injection) one h before administration of physic reduced the diarrhoea in a very concentration dependent manner throughout the study amount (30 min to 240 min)1 when put next to the physic alone cohorts, the consistency of the feces was a lot of consistent within the cohorts that additionally received the extract1 (33) The extract additionally reversed the castor oil induced enter pooling, and therefore the results of the extract were higher than that of the clinically used loperamide1 Administering the extract reduced the channel motility within the charcoal meal check following physic administration1 the most effective antidiarrhoeal effect was ascertained for the four hundred mg/kg extract administered cohorts and therefore the effects were cherish that of loperamide (5 mg/kg)1 (33) along, of these observations clearly recommend the quality of root extracts in preventing diarrheal.

Hepatoprotective Effects:

Liver pathology and diseases area unit a serious unhealthiness and therefore the lack of effective medications within the trendy system medication of medication} complicates the treatment of significant liver disorders1 flavored drugs are employed in the management of varied liver disorders and a few medications are ascertained to be effective1 Studies have shown that oral administration of the ethanol extract of the roots (100, two hundred and three hundred mg/kg for 2 consecutive days) before intraperitoneal administration of biological weapon B1 area unit effective in preventing liver damage1 when put next to the biological weapon B1 cluster alone, pretreatment with the extract caused a level dependent decrease within the levels of blood serum internal organ enzymes salt transferase, salt pyruvate transferase, and alkalescent phosphatase1 (24) The best result was seen within the cohorts administered with a three hundred mg/kg concentration, and therefore the protecting effects were cherish that of silymarin (100 mg/kg), used as a positive control1 microscopic anatomy studies showed that the extract cut infiltration of lymphocytes, repaired the disturbed lobe design and reduced the fatty chronic changes and therefore the focal necrosis1 The extracts repaired the amount of GSH within the liver of the biological weapon treated animals and reduced the FeCl₂-ascorbic acid-induced macromolecule per chemical reaction in rat liver material in vitro, suggesting that the hepatoprotective effects is also Chin J

Integr MEd 2011 Oct;17(10): • five • mediate through the inhibitor and by inhibition of macromolecule per oxidation(24)

Anti-neoplastic Effect:

Cancer, characterized by unregulated proliferation of cells, is nowadays the second leading reason behind death1 Predictions area unit that by the year 2010 cancer are the leading reason behind death worldwide1 (40) The chemotherapeutical medicine that area unit the foremost ordinarily used treatment modality particularly within the advanced stages possess undesirable facet effects1 (41) so, efforts area unit on to find agents that area unit effective in dominant the cancer and area unit void of any facet effects1 presymptomatic studies have shown that intraperitoneal administration of the active fraction of the solvent extract of the flowers (100 and two hundred mg/kg) throughout the study amount caused a concentration-dependent malignant neoplasm effect1 (42) The extract reduced the murine pathology tumors growth and enlarged survival time of the mice bearing Dalton's malignant neoplastic disease and Paul Ehrlich pathology cancer by 113% and sixty eight, respectively1 when put next to the untreated controls, the extract was additionally effective in retarding the expansion of Dalton's malignant neoplastic disease solid tumors growing on the flanks of Swiss unusual person mice and was effective in increasing the period of the tumor-bearing mice1 (42) In v itro s tudies with refined Dalton' s l malignant neoplastic disease, Ehrl i ch as c ites automobile c inoma, and Sarcoma-180 cells showed that the extract possesses cytotoxic effects which the IC₅₀ was eighteen, sixty and twenty five g/mL, respectively1 Similar observations were ascertained with the lymphocytes of leukemia patients, acute lymphoblastic cancer of the blood, chronic myelogenous cancer of the blood, and K-562 cell cultures however not with the conventional lymphocytes, suggesting the cytotoxic result to be specific solely to growth and remodeled cells1 Mechanistic studies additionally showed that the extract was effective in inhibiting the incorporation of tritiated deoxythymidine cellular DNA, suggesting that the extract contains compounds that possess restrictive effects on DNA synthesis and replication1 (42)

II. CONCLUSION:

Studies carried out in the recent past shows that the *Ixora Coccinea* contains wide range

of chemical constituents which are used to treat various ailments. The *Ixora Coccinea* possesses numerous benefits to pharmacological and traditional folks. When the fruit is ripe it is used as a dietary source. The *Ixora Coccinea* leaves, flowers, and fruit show anti-oxidant, anti-microbial, anti-nociceptive, hepatoprotective, anti-diarrhoeal, anti-mutagenic, anti-neoplastic, gastroprotective and chemo preventive effects.

REFERENCES

- [1]. National Institute of Science Communication and Information Resources. Glossary of Indian medicinal plants with active principles. New Delhi 1992:3741
- [2]. National Institute of Science Communication and Information Resources. The wealth of India, dictionary of Indian raw materials and industrial products – raw materials. New Delhi 2002: 3511
- [3]. Griffiths M. Index of garden plants. Portland: Timber Press; Portland, OR, USA 1994:12341
- [4]. Liogier H. Descriptive flora of Puerto Rico and adjacent islands. Vol 1. Editorial de la Universidad de Puerto Rico, San Juan, Puerto Rico; 1997:4361
- [5]. Idowu TO, Ogundaini AO, Salau AO, Obuotor EM, Bezabih M, Abegaz BM. Doubly linked, A-type proanthocyanidin trimer and other constituents of *Ixora coccinea* leaves and their antioxidant and antibacterial properties. *Phytochemistry* 2010;71:2092-2098
- [6]. Nazarudeen. Nutritional composition of some lesser-known fruits used by the ethnic communities and local folks of Kerala. *Indian J Trade Knowle* 2010; 9:398-4021
- [7]. Whistler, WA, ed. Tropical ornamentals, a guide. Portland: Timber Press; 2000:5421
- [8]. Ayyanar M, Ignacimuthu S. Herbal medicines for wound healing among tribal people in Southern India: Ethnobotanical and Scientific evidences. *Int J Appl Res Nat Prod* 2009; 2(3): 29-421
- [9]. Latha PG, Nayar MNS, Singh OV, George V, Panikkar KR, Pushpangadan P. Isolation of antigenotoxic ursolic acid from *Ixora coccinea* flowers. *Actual Biol* 2001;23(74):21-241
- [10]. Deshpande A, Jadge D, Dawdle S, Patrakar R, Gadgul A. Flower extract of *Ixora coccinea* as a natural indicator in acid base titration. *J Pharm Res* 2010;3:2512-25131