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Review Article

A Review on Phytochemical Constituent and Pharmacological Activity of*Hibiscus Rosa-Sinensis Linn*

Author: Bhupinder Singh*[1], Davinder Singh[1], Taranjit Kaur[1], Rajinderpal Kaur[2], Amandeep singh[3]

Department of Pharmaceutics[1], Rayat-Bahra Institute of Pharmacy, Hoshiarpur, Punjab
Department of Pharmacology[2], CT Institute of Pharmaceutical Sciences, Shahpur, Jalandhar, Punjab
Department of Pharmaceutics[3],Bahra group Of Pharmacy, Patiala, Punjab

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Abstract

Nature has been a source of medicinal agents for a large number of year and countless have been isolated from natural sources. Higher plants, as source of medicinal compounds have proceeded to play a vital role in the preservation of human well-being since ancient times. *Hibiscus rosa-sinensis* with these medications, fruitfulness can be stifled voluntarily, for whatever length of time that wanted, with very nearly 100% certainty and finish profit of fruitfulness for stopping. The main constituents of China rose are flavonoids (cyanidin-3-sophoroside-5-glycosides, Quercetin-3-diglucoside, 3, 7-diglucoside and cyanidin-3, 5-diglucoside). Entire plant of *Hibiscus rosasinensis* are utilized as pain relieving, antiviral, antiovultory, hostile to tumor, juvenoid action, antifertility, hypotensive, antiimplantation, depressant, mitigating and anti-estrogenic movement.

Key words: Hibiscus rosa-sinensis Linn, Pharmacological activity, Marketed Formulation, Patent.

Introduction

The herb *Hibiscus rosa-sinensis* Linn (Malvaceae) is a glabrous shrub generally developed in the tropics as a fancy plant and has a few structures with shifting shades of blossoms. In medication, be that as it may the red flowered assortment is preferred.[1]The leaves and blossoms are seen to be promoters of hair development and help in recuperating of ulcers[2-4]. Flowers have been found to be compelling in the treatment of blood vessel hypertension5 and to have important antifertility effect[6-7]"World Health Organization" has prescribed that traditional well-being and people medication system are turned out to be more productive in medical issues around the world. India is one of the countries blessed with a rich legacy of customary therapeutic systems and rich biodiversity to complement the herbal needs of the treatment administered by these routine medicinal systems. The approved Indian systems of medicine are Ayurveda, Unani and Siddha, which utilizes herbs and common assets in the formulations[8]. *Hibiscus rosasinensis* L (Malvaceae) is a fancy plant frequently a support or fence plant. It is local to china and is additionally found in India and Philippines. This plant has a few structures and different colors of flowers. This is a national blossom of Malaysia [9].

It is a conspicuous, perennial ornamental shrub, grows as an evergreen herbaceous plant and garden plant all over the universe. China rose are available various regions of Pakistan, native of Southeast Asia (south of China) and tropical Asia[10].

Common Names

The common names of Hibiscus rosasinensis are China rose, Chinese hibiscus, Jaswand, Shoe flower plant, Tropical hibiscus, Gurhal, Japaphool, Jaba, Joba, Japa, Sadaphool and Kante[11].Vernacular names are mentioned in table 2.

Distribution

It is a native of China. It is grown-up as an ornamental plant in gardens throughout India besides often planted as a hedge or fence plant.[15]

Propagation and Cultivation

Hibiscus rosasinensis develops best under direct temperature and generally high sticky conditions. It flourishes best on all around depleted permeable loamy soil. The Plant is normally spread by cuttings, ideally from develop wood of current year development. Layering, sprouting, uniting and air layering can likewise be effectively connected. Plants spread via air or ground layering show better development and blossoming. Shoe bloom is truly contaminated by bugs like vermin and red creepy crawly creating twisting of leaves, which stops encourage development and flowering[15].

Parts Used

Flowers, Roots, Leaves[15]

Description of plant parts

Figure No 1: Photograph of *Hibiscus rosa-sinensis*Linn

Table No: 1 ScientificClassification ofHibiscus rosasinensis linn

Botanical Name	***Hibiscus rosa-sinensis Linn***
Kingdom	*Plantae*
Subkingdom	*Tracheobionta (Vascular plants)*
Super division	*Spermatophyta (Seed plants)*
Division	*Magnoliophyta (Flowering plants)*
Class	*Magnoliopsida*
Subclass	*Dilleniidae*
Order	*Malvales*
Family	*Malvaceae*
Genus	*Hibiscus*
Species	*Hibiscus rosasinensis*

Table No 2: Vernacular names of Hibiscus rosasinensis linn

English	*Chinese hibiscus, Shoe flower and China rose*
Sanskrit	*japa, Rudrapuspa, Aundrapuspa, Trisandhya*
Hindi	*jasum, Java, Arahul, Odhul and Gulhar*
Bengali	*jaba, joba, Jiwa, Oru*
Arab	*Anghara-hindi*
Tribal name	*HinduMa-pangi (Marma) and Raktajaba (Chakma)*

Table No 3: Phytochemical Review of Hibiscus rosa-sinensis Linn

Sr.no.	*Plant part*	*Constituent reported*
	Flowers[14]	*Thiamine, Riboflavin, Niacin and Ascorbic acid, Apigenidin citric acid, fructose, glucose, oxalic acid, pelargonidin, quercetin*
	Leaves[12]	*Alkaloids, glycosides, reducing sugars, fatty materials, resin and sterols, Fatty acids, fatty alcohol, and hydrocarbon, sterculicandmalvalic acid.*
	Stems[15]	*Teraxeryl acetate, ß-sitosterol and the cyclicacidssterculicandmalvalic acids*
	Roots[16]	*Glycosides, tannins, phytosterols, fixed oils, fats, proteins, aminoacids, flavonoids, Saponins, gums and mucilage.*

Table No: 4 Traditional medicinal uses of Hibiscus rosa-sinensis Linn

Sr.No.	Place	Parts	Activity
1	Bangladesh	Decoction of flowers	Regulation of menstrual cycle[20]
2	China	Hot water extract of flowers & bark	Emmenagogue[21]
3	Cook Islands	Hot water extract of flowers & leaves	Ailing infants, Gonorrhea[22]
4	Fiji	Leaf Juice	Digestion Diarrhea[22]
5	French Guiana	Hot extract of flowers	Grippe[23]
6	Ghana	Peeled Twig	Chewstick[24]
7	Guadeloupe	Hot extract of flowers	Sodorific , Antitussive[26]
8	Guam	Leaves	To Promote draining of abscesses[27]
9	India	Hot water extract of stems & flowers Abortion20	Antifertility, Contraceptive, Diuretic23, Menorrhagia, bronchitis Emmenagogue25, Demulcent ,Cough , Abortifacient[28-30]
10	Japan	Decoction of leaves	Antidiarrheal[31]
11	Mexico	Infusion of Barks & leaves	Dysentery[32]
12	Nepal	Hot water extract of roots	Cough[33]
13	New Britain	Hot extract of flowers	Menstruation[34]
14	New Caledonia	Decoction of flowers	Abortifacient[34]
15	Vanuata	Decoction of stems & barks	Menorrhagia[35]

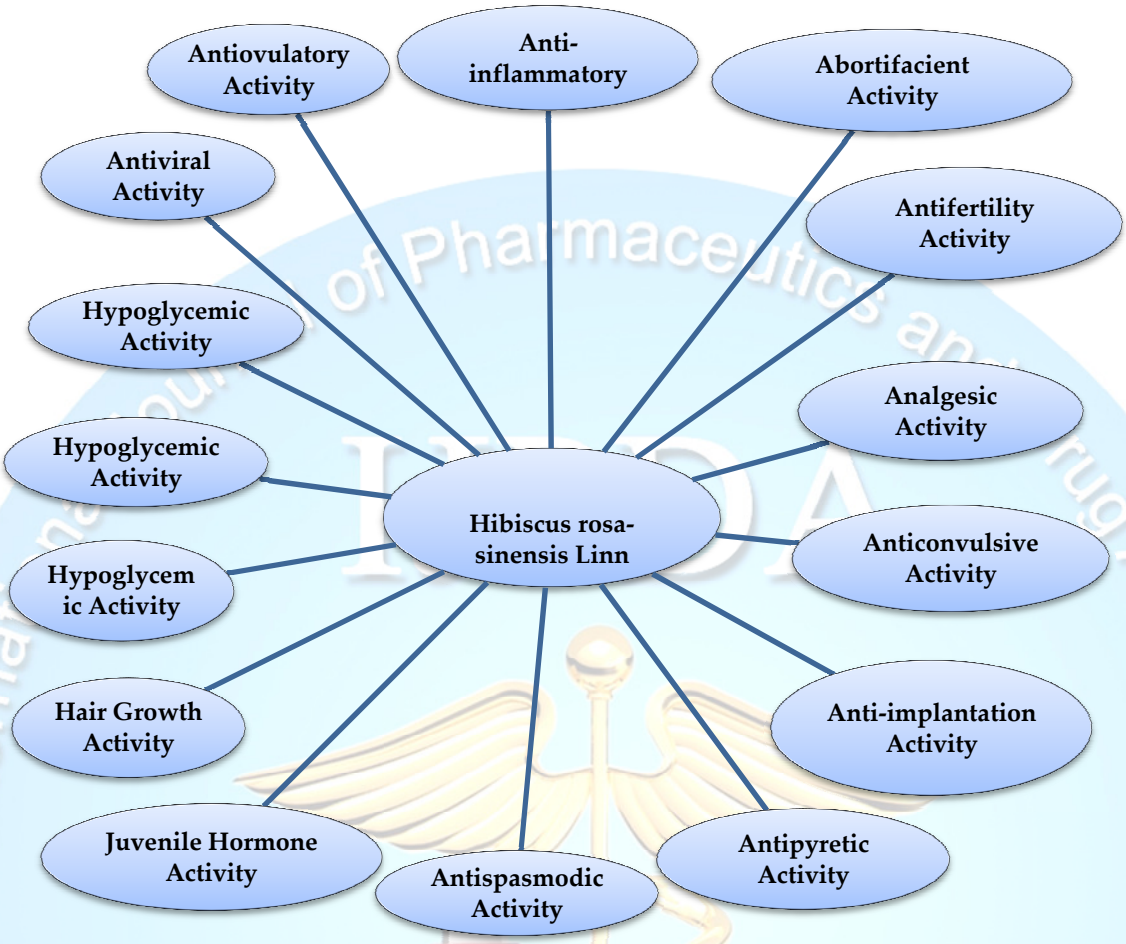

Figure No 2: Pharmacological Activities of Hibiscus rosa-sinensis Linn

Table No: 5 Hibiscus species with anti-inflammatory, analgesic and anti-diabetic properties.[36]

***Hibiscus* species**	**Plant part**	**Extract/compound**	**Activity**
H. tiliaceus	Leaf	Successive	Anti-inflammatory, analgesic
	Wood	Methanol	Anti-inflammatory, analgesic
	Flower	Methanol	Anti-diabetic, hypolipidemic
H. mutabilis	Leaf	Ethanol	Anti-inflammatory
	Bark	Successive	Analgesic
	Leaf	Methanol	Anti-diabetic
H. sabdariffa	Leaf	Methanol	Anti-inflammatory
	Seed	Petroleum ether	Anti-inflammatory, analgesic
	Calyx	Ethanol	Hypoglycemic, hypolipidemic
H. schizopetalus	Leaf, flower	Methanol	Analgesic
	Leaf, flower	Methanol	Hypoglycemic, hypolipidemic
H. taiwanensis	Stem	Aqueous	Anti-inflammatory, analgesic
	Stem	Aqueous	Hypoglycemic

Table No 6: Patent of Hibiscus rosa-sinensis Linn

Sr. No	PatentNo.	Inventor	Title	Reference no
1	US PP15257 P2	Barry Schlueter	Hibiscus rosa-sinensis plant named 'Moon Pie'	37
2	US PP15926 P3	Barry Schlueter	Hibiscus rosa-sinensis plant named 'Smiley Face'	38
3	US PP6473 P	Jesus Zamora	Hibiscus rosa-sinensis cv. Monora	39
4	WO 2014081715 A1	Balaraman B	Compositions and methods for their dermatological use	40

Table No 7: Hibiscus rosa-sinensis Linn based Marketed Formulation

Formulation	Brand Name	Type	Function	Business Type
Extracts	Juba Kusum Hibiscus	Herbal Supplements	A laxative, diuretic, anti-bacterial and because of its high vitamin C content, antiscorbutic protects against scurvy	Panacea Phytoextracts Aslali, Ahmedabad
Liquid	Hibiscus Extracts	Herbal Supplement	Neutraceuticals, Veterinary, Food	Vivaan Herbals & Healthcare Science City, Ahmedabad
Extracts	Gudhal	Herbal Supplement	Nourishes the cardiac muscles	Neeraj Enterprises Begam Bazar, Hyderabad
Shampoo	Jaswanti-Phool	Herbal Supplement	Anti-dandruff	Haridass Aggarwal & Sons Vashi, Navi Mumbai
Powder	Chemparuthi Poo	Dietary Supplement	White discharge, Bleeding piles, Hair Falling, Long Healthy Bleach Hair.	Yashwanth Exports & Imports Valasaravakkam, Chennai

Macroscopic

Flower ebracteate, pedicellate, finish, customary, actinomorphic, cross-sexual, protandroushypogynous, cyclic. Epicalyx 5, free, green, straight. Calyx 5, gamosepalous, campanulate, sub-par, green. Corolla 5, polypetalous, obovate, sinous upper edge, adhesive, contorted, sub-par, red. Androecium numerous, monoadelphous, epipetalous, antisepalous. Gynoecium pentacarpellary, syncarpous, predominant, style joined underneath and free at its tips, disgrace 5, capitate, smooth red. Scent fragrant; taste adhesive.monadelphous stamen in a staminal tube furthermore, style with trifid shame going through the staminal tube.[26]

Microscopic

- **Root**-The roots indicate plug, phelloderm and the auxiliary phloem which is stratified because of 8-10 unrelated groups of phloem filaments rotating with parenchyma. The xylem is an expansive zone and a portion of the vessels demonstrate tyloses. Groups of calcium oxalate are available in the phelloderm.
- **Stem-** It indicates peripheral thin cork, the center locale of which is firmly thickened because of the overwhelming testimony of lignin. Phelloderm is thin zone took after by a wide zone of optional phloem. Adhesive cells are available in the substance. Powder mounted in nitrocellulose give green fluorescence under UV light.
- **Leaf -** Leaf exhibit a dorsiventral structure. Both the glandular and stellate sorts of trichomes are available. Stomata are of ranunculaceous on the other hand rubiaceoustypa, exhibit on the lower surface. A couple adhesive cells are available in the midrib zone. Starch grains and bunches of calcium oxalate precious stones are available. Powdered leaf when treated with 1 N NaoH in methanol transmits dull green fluorescence under UV light. Palisade proportion is 4.44: Stomatal file 20.38; Vein islet number 23-97 for each sq. mm.
- **Flower -** Flower powder demonstrates spheroidal, pantoporate, pore-round dust grains ; stellate trichomes single, stretched, cone shaped or curved and convoluted; glandular trichomesuni or bi-seriate, multicellular- barrel shaped and bi-or multiseriate, multicellular-globose or clubshaped; ranunculaceous sort of stomata; sphaeraphide calcium oxalate precious stones.
- **Powder-** Purplish red. Demonstrates bunch gems of calcium oxalate ; vast, spinuous and yellow dust grains; glandular, multicellular trichomes, and also covering stellate sort trichmoes; parts of calyx tissue bearing anomocytic stomata and stellate and glandular trichomes; winding vessel and group precious stones and sections of overy with stellate trichomes, sections of style with stomata, trichomes also, cells with red substance, piece of another with dust grains, sections of bristly shame with rosy colors, spinuous dividers and trichomes; sections of corolla tissues[26].

Phytochemical Constituent

Different extract of *Hibiscus rosa-sinensis*plant exposed the occurrence of alkaloids, glycosides, greasy materials, diminishing sugars, resin, sterols and the absence of tannins and Saponins. Isolation of β-sitosterol, taraxeryl acetic acid derivation and four uncharacterized compounds which included an alkaloid and three sterols has been accounted for in the leaves. The leaves of *Hibiscus rosa-sinensis* were likewise researched for their greasy liquor, unsaturated fats and hydrocarbon content. Two cyclic acids viz., malvalic and sterculic are likewise identified.12 Flowers contain vitamins, flavonoids, ascorbic corrosive, niacin, riboflavin, thiamine and cyaniding diglucoside. Quercetin-3-diglucoside, cyanidin-3-sophoroside-5-glycosides, 3, 7- diglucoside, cyanidin-3, 5-diglucoside have been disengaged from profound yellow flowers [13].

Pharmacological Claims

Hibiscus rosa sentences (Malvaceae) is a perennial attractive shrub available throughout India. Many parts of this plant similar flowers, leaves and roots have been known to possess medicinal properties like oral contraceptive, laxative, aphrodisiac, menorrhagia etc.[12]In traditional medication, the leaves of the plant are used in fatigue and skin disease. Powdered root of the plant is given for menorrhagia and the fresh root juice for gonorrhea.[17] Flowers of the plant are used in diabetes, epilepsy, bronchial catarrh and leprosy.[18-19]

Conclusion

Hibiscus rosasinensis have numerous properties and this plant may acquired everywhere scale for giving natural contrasting option to numerous ailments. The phytochemical screening on subjective examination demonstrates that the plant is rich in alkaloids, terpenoids, flavonoids, glycosides, Fatty materials, saponins, gums and adhesive. Herbology are better and more secure approaches to decreases agony, irritation and fever. Many cures are utilized for aggravation, torment and fever. Hibiscus rosasinensislinn indicated important analgesic, anti-pyretic and anti-inflammatory properties.

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