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A Review On Medicinal Uses Of Ruta Graveolens

Khushi S. Bora*[1] , Manasi R. Bhalerao[2], Rushikesh D. parkale[3]
Department of pharmacology, HSBPVT, GOI, College of Pharmacy, Kashti, Shrigonda, 413702, Maharastra, India
Department of pharmacology, HSBPVT, GOI, College of Pharmacy, Kashti, Shrigonda, 413702,
Department Maharastra, India
Department of pharmacology, HSBPVT, GOI, College of Pharmacy, Kashti, Shrigonda, 413702, Maharastra,India

ABSRACT:

The Rutaceae family contains a diverse range of aromatic plants, mostly found in tropical regions. The genus Ruta is the most abundant. It is now grown in many parts of the world. This plant is native to South Europe and North Africa, where it grows on waste. Rue (Ruta graveolens) has been used as a medical preparation for centuries and serves a variety of functions, owing to its diverse chemical composition. This plant is widely cultivated in India and is known as sudab or sadab. It is used as a stimulant, emmenagogue, diuretic, abortefacient, and resolvent in traditional medicine. In many countries, R. graveolens extracts and essential oil are important areas in drug development with numerous pharmacological activities. R. graveolens has long been used in traditional medicine to treat pain, eye problems, rheumatism, and dermatitis. R. graveolens has recently been demonstrated to have antibacterial, analgesic, anti-inflammatory, antidiabetic, and insecticidal properties.This article provides in-depth analysis of the botanical, chemical, and pharmacological aspects of R. graveolens.

KEYWORDS: Parmacology, Unani system of medicine, flavonoid, phytochemistry

INTRODUCTION:

Ruta graveolens L. commonly known as Rue. *Ruta graveolens* L. (Rutaceae) is a medicinal plant widely used in the Mediterranean region to treat pain, dermatitis, rheumatism, and other inflammatory diseases, but it is used limited because of its toxicity. It grows on waste stony ground. It is distributed largely in tropical and subtropical parts of the world. *Ruta graveolens* is cultivated as a medicinal and ornamental herb in many countries including India It is a well known remedy for the treatment of various types of disorders as reported in various classical texts of Ayurveda, Homoeopathy and Unani. More than 120 natural compounds mainly including acridone alkaloids, coumarins, essential oils, flavonoides, and fluoroquinolones have been found in the roots and aerial parts. It belongs to the one of the largest families Rutaceae.

Two species of genus Ruta are found to grow in India. Due to its medicinal and cultural value, rue has been introduced in many countries of South, Central and North America, China, Middle East and South Africa.

Picture:

Fig 1 . *Ruta Graveolens*

Fig 2 . *Ruta Graveolens* leaves

Fig 3. *R. graveolens* flowers.

Synonyms:

English - Bitter herb

Hindi - Satap, Sadab

French - Rue de

Greek - Fejan

Scientific Information :

Scientific Name - Ruta Graveolens

Kingdom - Plantae

Class - Rue

Order - Sapindales

Family - Rutaceae

Genus - Ruta

Species - R. Graveolens

CHEMICAL CONSTITUENTS :

Common Phytochemical Compounds :

Acridone, alkaloids, coumarins, volatile substance, terpenoids, flavonoids and furoquinolines.

Seeds Constituents :

Nitrogenous substances - 21.6%

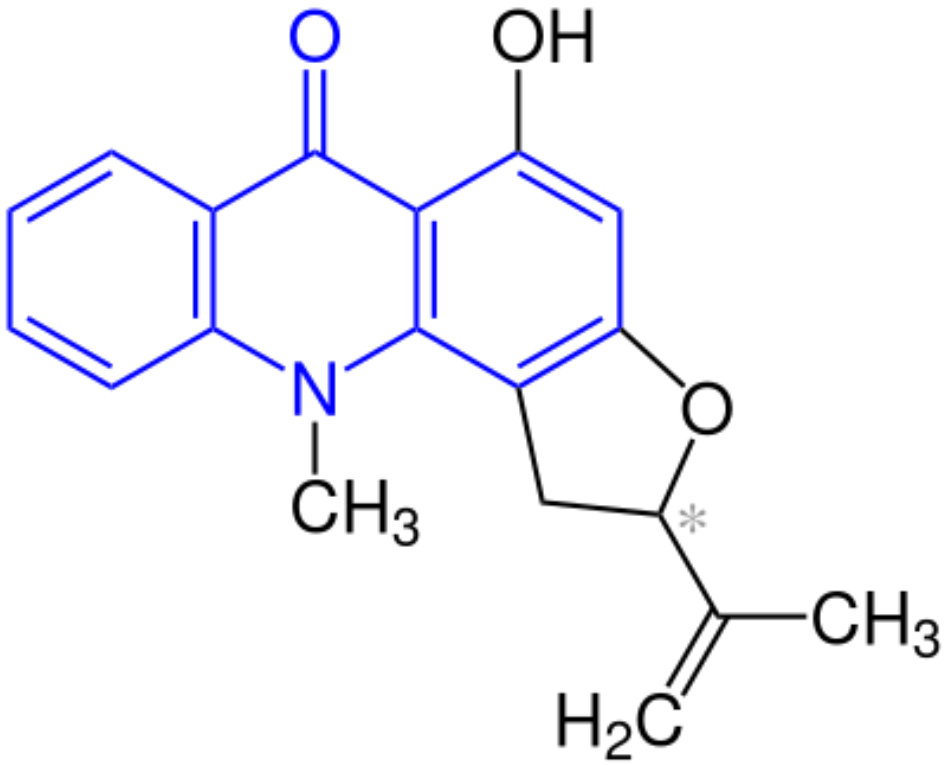
Fixed oils - 36.8%

Ash - 13.8%

Rutacridone, rutacridone epoxide, and gravacridondiol are acridone alkaloids isolated from R. graveolens roote and an alkaloid named graveoline has been isolated from leaves.

STRUCTURE:

Rutacridone Structural Formula



USES:

Inflammatory disorders, eczema, ulcers, arthritis, fibromyalgia, antidotes for venoms, insect repellant, and as an abortifacient are just a few of the reported medicinal uses for it . In addition, the plant has long been used to season a variety of foods, including soup, cheese, butter, coffee, and tea, as well as to make emmenagogues and antispasmodics in the form of rue oil and infusions

This therapeutic plant has been given new characteristics, such as its defence against DNA strand breaks and mutagenesis. Rue has also been demonstrated to increase the sensitivity of cancer cells to death while having no effect on normal cells by inducing the removal of an amide group from the antiapoptotic protein Bcl-xL in human brain cancer cells but not in healthy B and T lymphocytes.

PROPERTIES:

1. Anti-oxidant Activity:

The aldehyde oxidase enzyme in the liver of Guinea pigs is 89-96% inhibited by a 70% methanolic extract of Ruta graveolens leaves. Quercetin and Rutin, the two main flavonoids of Ruta graveolens, have the ability to inhibit the

hepatic aldehyde oxidase activity, which varied depending on the dose. Quercetin was found to have a stronger inhibitory impact on the enzyme than menadione, which is a recognised aldehyde oxidase-specific inhibitor.

2. Anti- inflammatory Activity:

Maximum (90.9%) inhibition on carrageenan-induced paw edoema was seen in wistar male rats treated with methanolic extract of Ruta graveolens at a dose of 20 mg/kg and ethanolic extract at a concentration of 50 mg/kg. Compared to the usual medication Diclofenac sodium, the impact was much higher .

3. Anti-androgenic Activity:

Anti-androgenic activity of Ruta graveolens in male albino rats with emphasis on sexual and aggressive behaviour was done which reveals decrease in sperm motility and density in cauda epididymis and testicular ducts. Decreased spermatogenic activity was observed in somniferous tubules, testosterone and FSH levels were found decreased and aggressive behaviour was also diminished

4. Anti-tumor Activity:

The Ruta graveolens extract was discovered to have anti-tumor activity and to be cytotoxic to Ehrlich ascites carcinoma (EAC), Dalton's lymphoma ascites (DLA), and L929 cells in culture (IC100=16 mg/ml). It was also proven to prolong the life of tumor-bearing mice. When provided concurrently with extending the longevity of tumor-bearing rats, the 246 extract reduced solid tumours arising from DLA and EAC cells.

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