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## Review Article

# A Brief Review on Anti-Microbial Activity of *Pergularia Daemia* Linn

Muhammed Farhan P., Nadha Naurin K. C., Pranav P., Shirin Fathima K., Thooba M. T., Rahmabi Kuttipuravan\*, Dr. Celestin Baboo R. V., Dr. Sirajudheen M. K.

Jamia Salafiya Pharmacy College, Pulikkal, Malappuram, Kerala, India.

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## ABSTRACT

Veliparuthi (*Pergularia daemia*) (Family: Apocynaceae) is also known as uthamani in Tamil, utaran in Hindi, and trellis-Ovine in English. It is medicinal plant with various traditional uses, particularly in siddha and ayurvedic medicine. It is having of a wide variety of anti-microbial activity, managing digestive issues and respiratory problems. It is known for its anti-bacterial and anti-fungal properties, making it potentially useful for treating minor wounds and skin infections. The leaves of Veliparuthi have a significant anti-microbialprotective activity. the leaves and roots are showing more pronounced effect against various pathogenic organism. several constituents In *Pergularia daemia* Linn exhibits anti-microbial activity. Thus, it focuses on the therapeutic benefits of *pergularia daemia* Linn according to their anti-microbial action. Layers of skin cover and protect the body. Plant-based herbal body formulations soothe and moisturises. The aim of present research was to formulate and evaluate the herbal topical formulation. Herbal formulation was prepared with various solvents. Extract was obtained by various solvents.


## INTRODUCTION

The whole plant of *Pergularia daemia* known as “Veliparuthi” in Tamil,” Uttaravaruni” in Sanskrit and” utranajutuka” in Hindi has traditionally been used foranthelminticlaxative, antipyretic, expectorant and anti-microbial activities <sup>(1)</sup>. One such traditionally used ethnomedical plant is *Pergularia daemia* (Fig:01). which is used to treat a various number of ailments <sup>(2)</sup>. It is having of

latex, pungent smell, twinning at perennial <sup>(2)</sup>. Herbal medicinal plants are an essential segment of research advancements <sup>(3)</sup>. *Pergularia daemia* is having of more varieties of application that possess diverse and varieties of healing potential for a wide range of illness <sup>(4)</sup>. The continued evolution of infectious disease and the development of resistance by pathogens to existing pharmaceutical have led to intensification of the search for novel drugs <sup>(5)</sup>. These are against fungal,

\*Corresponding Author: Rahmabi Kuttipuravan

Address: Jamia Salafiya Pharmacy College, Pulikkal, Malappuram, Kerala, India.

Email : rahmauvais@gmail.com

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bacterial, parasitical, and viral infections. Plant derived anti-microbials have a long-range providing much needed novel therapeutics. *Pergularia daemia* is a known Indian herbal drug used in ancient medicines, it is distributed all over the India and has been used in many ways in medicine. So, it is widely used in treat infections because of anti-microbial activity.



(Fig:01 *Pergularia daemia* Linn)

It acts against microbes such as *Enterococcus faecalis*, *Bacillus anthracis* etc <sup>(6)</sup>. It shows anti-microbial effect also against *Bacillus subtilis*, *Staphylococcus aureus*, *Escherichia coli*, *Proteus vulgaris* <sup>(7)</sup>. Herbal formulation is composed of bioactive compounds derived from natural plant sources, many of which are utilized in traditional medicine system for their therapeutic and cosmetic benefits <sup>(8)</sup>. So, *Pergularia daemia* Linn is a known Indian herbal drug which can be formulated in different formulations. Recently demand for the natural and skin friendly cosmetic product has mainly focusing on herbal formulation. Unlike the synthetic skin care products, which may cause irritation and also long-term side effects. The latex of this plant is used for venereal diseases, arthritis, muscular pains, asthma, rheumatism, snake bites, relief from toothache and aerial parts are reported to have various pharmacological activities like antifertility, wound healing, antidiabetic, antibacterial, the plant leaf juice 2-3 times a day is

a best remedy for asthma, anaemia, leprosy and piles <sup>(9)</sup>. The preliminary phytochemical screening was performed from these extracts for the presence of Alkaloids, Saponins, Terpenoids and Steroids, Tannins, Phenolic compounds, Flavonoids, Coumarins, Quinones, Resins, and Glycosides. Here, the herbal creams and gels are generally well-tolerated and having variety of therapeutic benefits because of derived from plant varieties. Evaluation of anti-microbial activity of the formulation was determined for assessing the anti-microbial activity against microbes. Mainly focuses on the evaluation of efficacy of the *Pergularia daemia* herbal formulation.

### Anti-microbial activity;

Anti-bacterial and Anti-fungal activity of *Pergularia daemia* Linn can be examined by using hexane, acetone, ethyl acetate and methanol extracts.

### Anti-inflammatory, analgesic and anti-pyretic activity;

Ethanol extract and with its butanol fraction of *Pergularia daemia* Linn was exhibiting anti-inflammatory activity.

### Hepatoprotective effect;

The aqueous and ethanolic extracts which obtained from aerial parts of *Pergularia daemia* Linn were evaluated for hepatoprotective effect. The protective effect was occurred by lowering the serum levels of glutamic oxaloacetic transaminase, glutamic pyruvic transaminase, alkaline phosphatase <sup>(10)</sup>.

### Anti-epileptogenic and Neuroprotective effects;

*Pergularia daemia* Linn protected cell against death induces by L-glutamate. This effect is mainly mediated by antiapoptotic pathways. From

these findings it indicates that *Pergularia daemia* Linn has anti-epileptogenic and neuroprotective effects.

## MATERIALS AND METHODS:

### MATERIALS:

**Collection of plant material:** Dried leaves of *Pergularia daemia* Linn was collected.

**Preparation of *Pergularia daemia* Linn Extract:** Freshly collected leaves of *Pergularia daemia* Linn were cleaned and dried under shade for 48hours. It was the grounded into powder. Then it was treated with suitable solvent and the macerate mixture was filters and then evaporated under suitable temperature to obtain the extract.

**Preliminary evaluation test:** The tests such as test for Alkaloids, Tannins, Flavonoids, Carbohydrate, Steroids etc.

**Determining the anti-microbial activity:** The anti-microbial activity of *Pergularia daemia* Linn was determined by using various bacteria such as *Enterococcus faecalis*, *Bacillus anthracis* etc. It shows anti-microbial effect also against *Bacillus subtilis*, *Staphylococcus aureus*, *Escherichia coli*, *Proteus vulgaris*.

### CONCLUSION:

Veliparuthi *Pergularia daemia* Linn is a medicinal plant commonly used in traditional system of medicine. From various studies, it is clear that Veliparuthi has strong anti-microbial properties such as anti-bacterial and anti-fungal activity. Presence of various compounds such as flavonoids, Tannins, Alkaloids shows their ability towards their activity. These compounds will disrupt the microbial cell wall, inhibit enzymes, or interfere with nucleic acid synthesis. Veliparuthi stands as promising candidate for development of

novel plant based anti-microbial formulation. Overall, the findings from these research studies highlights its value towards microbial agents. However, for ensuring its safety and efficient application in modern therapeutics, further studies are recommended.

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