



GREEN SYNTHESIS OF ANTI-ACNE SILVER NANOPARTICLES GEL USING HYDROALCOHOLIC SEEDS EXTRACT FROM EMBELIA RIBES

Richa Pathak ^{(1)*} Rahul Sharma ⁽²⁾ Jagdish Chandra Rath ⁽³⁾

⁽¹⁾ NRI Institute of Pharmaceutical Sciences, Bhopal, Madhya Pradesh, India.

⁽²⁾ NRI Institute of Pharmaceutical Sciences, Bhopal, Madhya Pradesh, India.

⁽³⁾ NRI Institute of Pharmaceutical Sciences, Bhopal, Madhya Pradesh, India.

Abstract

Acne vulgaris is one of the most common skin disorders in the world, affecting about 80 percent of teenagers during their lives. Antibiotic resistance is created by the creation of a particular relationship between antibiotics and bacteria through prolonged therapy. Medicinal and aromatic plants were commonly used in ancient times as medicine. Acne therapy has been considered a significant field of science in the field of medicinal and personal cosmetic care. The aim of the present work was to evaluate the phytochemical composition of Embelia Ribes, green synthesis of silver nanoparticle and to develop herbal topical gel formulation to treat acne. Phytochemical analysis revealed phytoconstituents such as flavonoids, phenol, proteins, carbohydrates, tannins and saponins are present in the hydroalcoholic extract. Silver nanoparticle was synthesized using 1 mM aqueous silver nitrate solution. The resultant AgNPs were characterized using UV-visible spectroscopy, microscope and dynamic light scattering analysis. Synthesized silver nanoparticles was incorporated into gel base and evaluated for its physical properties such as pH, viscosity, spreadability and antiacne activity against Propionibacterium acne. The antiacne study of the developed formulation showed inhibitory activity against Propionibacterium acne. Synthesized silver nanoparticle of Embelia Ribes showed higher activity than the extract. Hence, silver nanoparticle of Embelia Ribes in aqueous gel-base can be used as an appropriate formulation for treatment of acne vulgaris.

Author Keywords

Nanobiotechnology, Embelia Ribes extract, Silver NPs, Green synthesis, Antiacne activity

Acknowledgement

The authors would like to thank the all supporting staff of NRI Institute of pharmaceutical science and Scan Research Laboratories, Bhopal (M.P.) who helped in the experiments during research work.

ISSN Print:

Source Type: Journals

Publication Language: English

Abbreviated Journal Title: WJPR

Publisher Name: Dr T Pal

Major Subject: Life Sciences

Subject area: Pharmacology

ISSN Online: 2277-7105

Document Type: Journal Article

DOI: <https://doi.org/10.20959/wjpr20211-19463>

Access Type: Open Access

Resource Licence: CC BY-NC

Subject Area classification: Pharmacology, Toxicology and Pharmaceutics

Source: SCOPEDATABASE

Reference