Annals of Pharmacology and Pharmaceutics

Research Article
Published: 20 Sep, 2017

Evaluation of the Wound Healing Properties of *Jasminum Mesnyi* H in Diabetic Rats

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Abstract

Jasminum mesnyi H is a well known plant in the traditional medicine. Based upon the traditional use the root of the plant was selected for evaluation of its dermal wound healing potential in diabetic rats. In the present study the antidiabetic and wound healing activities of the ethyl acetate and ethanol extract of *Jasminum mesnyi* H roots were investigated. The wound healing effect was studied on the streptozotocin-induced diabetic rat model for 21 days. The glucose levels in the blood of rats were measured by using glucose oxidase method by blood glucose measuring strips. According to the obtained statistics, the ethanol and ethyl acetate extract of *Jasminum mesnyi* root at 400 mg/Kg was found to hold a high antidiabetic and wound healing potential.

Keywords: *Jasminum mesnyi*; Diabetes; Dermal wounds

Introduction

Jasminum mesnyi H (primrose jasmine**,** sansonae, peeli malati and peeli chameli) Oleaceae family is a native herb of the Himalayan region and is an evergreen shrub with long and slender arching stems that climb like a sprawling vine [1]. The crude drug is used in various antidiabetic formulations like "Pahari Butti" to lower down the blood glucose level especially in Himalayan ranges like in Solan, India. Low concentration of antioxidants may lead to Diabetes and variety of plants species show antidiabetic property due to their antioxidant potential [2-4]. *Jasminum mesnyi* Hance (*Jasminum primulinum Hemsley*) also known as "Primrose Jasmine" or "Japanese Jasmine" is found in tropical, sub-tropical and warm temperate regions of Asia continent. It is trailing evergreen shrub with long and lean arching stems that scale up like a rambling creeper. Leaves are trifoliolate, opposite and attached at the base of branchlets. Flowers are having 6-10 petals arranged in a semidouble whorl, usually axillary or rarely terminal, solitary and yellow coloured [5-7]. Leaves have been proved to have a phenolic glucoside (syringin), secoiridoids (9"- hydroxyjasmesosidic acid, 2"-hydroxyjasminin, jasmoside, , isojasminin, jasminin, jasminin 10"-O-β-D-glucoside, jasmesoside, jasmosidic acid, 9"-hydroxyjasmesoside and 4"-hydroxyisojasminin) and rutin [8-12].

Material and Methods

Plant collection

Jasminum mesnyi herb's roots were collected from the local market of Sonepat, Haryana. Taxonomic identity of the herb was confirmed at the National Institute of Science Communication and Information Resources, New Delhi. A voucher specimen (NISCAIR/RHMD/ Consult/2015/2564-143-2) has been deposited in the NISCAIR Department, New Delhi for future reference.

Plant extracts preparation

Ethyl acetate and ethanol extract were extracted from 500g of shade dried roots of *Jasminum mesnyi* by continuous hot percolation method by using soxhlet extractor. In which, ethyl acetate and ethanol were used as solvents to collect the extracts. Both ethyl acetate and ethanol extracts were evaporated to dryness under reduced pressure below 40° C to obtain a semi-solid consistency mass and were separately kept in desiccators for further use.

Animals

Wistar albino rats weighing 150 g-200 g were used for experimentation. Rats were kept under specific pathogenic-free conditions, housed, fed and treated in accordance with the international guidelines principles of laboratory animal use and care. The animals were maintained with pelleted

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Received Date: *01 Aug 2017*
Accepted Date: *25 Aug 2017*
Published Date: *10 Sep 2017*

Citation:
Saini P, Verma PK. Evaluation of the Wound Healing Properties of Jasminum Mesnyi H in Diabetic Rats. Ann Pharmacol Pharm. 2017; 2(9): 1096.