

Chapter 6

Anti-Ulcer Activities of Medicinal Plants and Natural Products

Madhu Rani

 <https://orcid.org/0000-0001-8759-6852>

Deshbandhu College, University of Delhi, India

Rubina Chongtham

Deshbandhu College, University of Delhi, India

Ajeet Singh

 <https://orcid.org/0000-0002-4393-8889>

National Dairy Research Institute, India

ABSTRACT

The peptic ulcer is a widespread and common health problem around the world. The major causes include generation of free radicles, decrease in mucosal defense factor, or increase in mucosal injurious factors. Various plants and their products have been known to prevent or reduce peptic ulcers. Natural products from plants are a rich resource used for centuries to cure different ailments. The use of phyto-constituents as drugs has proved to be clinically effective and less toxic than existing drugs. An attempt has been made to review some plant species and their products as phytomedicines showing promising results in prevention and treatment of peptic ulcers.

DOI: 10.4018/978-1-7998-2094-9.ch006

INTRODUCTION

Peptic ulcer is very frequent gastrointestinal disorder stemming from an insufficient gastric mucosal guard. Many medications are accessible in the market as remedy for this disease; though, these medications are linked with troubling side effects. Peptic ulcer disease is represented by the disruption of the mucosal layer of the digestive tract. This term is encompassing a diverse group of conditions with ulcerations. It is amongst the most common gastrointestinal ailment affecting about 10-15% of the population. Ulcers primarily results from an imbalance among several endogenous antagonistic and defensive factors in the stomach, acid-pepsin secretion, like blood flow, mucus secretion, integrity of the mucosal barrier, cellular regeneration, growth factors and prostaglandins (Paguigan *et. al.*, 2014). Other factors associated with occurrence of peptic ulcer include intake of alcohol, traumatic lifestyle, consumption of steroidal and non-steroidal anti-inflammatory medicines, bacterial infections (such as *Helicobacter pylori*), smoking, inferior socio-economic status and, occasionally, family history. Though, ulcer is not a fatal disease, it can be attributed to more severe complications as gastrointestinal perforations, internal bleeding, infiltration of ulcer into adjoining organs and gastric outlet impediment. Treatments available for peptic ulcer disease heal ulcerations, ease the pain and delay relapse of ulcerations. Generally, the medicines include antacids, antibiotics and proton pump inhibitors. Though different categories of medicines are used in the therapy of peptic ulcer, most of the drugs show significant side effects like arrhythmias, hypergastrinemia, haemopoetic changes, impotence, gynaecomastia and arthralgia. Medicaments from Ayurvedic or traditional medicinal system are an alternative approach.

This chapter aims to explore the anti-ulcer properties of some medicinal plants. A number of investigations have verified the efficacy of medicinal plants for the cure of peptic ulcer disease. The detected activity in such plants is accredited with the presence of various secondary metabolites including phenolic acids, terpenoids, flavonoids, tannins, alkaloids, and saponins. Studies revealed anti-ulcer activity of extract from numerous plants belonging to different families. Some of these plants are *Bauhinia* spp., *Eruca sativa* (Linn.) Cav. (Brassicaceae), *Gynura procumbens*, *Ocimum tnuiflorum*, *Toona ciliat*, *Diospyros* spp., *Symplocos* spp., *Chionanthus* spp., *Voacanga africana* Stapf (Apocyanaceae), *Palaquium ellipticum* Blanco (Sapotaceae), *Musa paradisiaca* Linn. (Musaceae), *Swietenia mahagoni* (Linn.) Jacq. (Meliaceae), *Wilbrandia ebracteata* Cong. (Curcubitaceae), *Xantolis tomentosa* Roxb. Raf. (Sapotaceae), *Calligonum somosum* Linn. (Polygonaceae) and *Pedaliium murex* Linn. (Pedaliaceae). In this study, some of these plants are assessed for their anti-ulcer properties described in table 1 (Kokate *et al.*, 2007).

12 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/anti-ulcer-activities-of-medicinal-plants-and-natural-products/252938

Related Content

QSAR-Based Studies of Nanomaterials in the Environment

Valeria V. Kleandrova, Feng Luan, Alejandro Speck-Plancheand M. Natália D. S. Cordeiro (2017). *Pharmaceutical Sciences: Breakthroughs in Research and Practice* (pp. 1339-1366).

www.irma-international.org/chapter/qsar-based-studies-of-nanomaterials-in-the-environment/174172

Online Molecular Docking Resources

Adriana Isvoran (2016). *Methods and Algorithms for Molecular Docking-Based Drug Design and Discovery* (pp. 360-379).

www.irma-international.org/chapter/online-molecular-docking-resources/151895

Current Update on Natural Agents Against Triple Negative Breast Cancer

Prathibha Sivaprakasam, Sureshkumar Anandasadagopan, Tamilselvi Alagumuthuand Ashok Kumar Pandurangan (2020). *Advanced Pharmacological Uses of Medicinal Plants and Natural Products* (pp. 91-113).

www.irma-international.org/chapter/current-update-on-natural-agents-against-triple-negative-breast-cancer/252937

Protein Ligand Interaction Fingerprints

Ali HajiEbrahimi, Hamidreza Ghafouri, Mohsen Ranjbarand Amirhossein Sakhteman (2016). *Methods and Algorithms for Molecular Docking-Based Drug Design and Discovery* (pp. 128-147).

www.irma-international.org/chapter/protein-ligand-interaction-fingerprints/151885

Effect of Ocimum sanctum on Cancer Progression and Its Effective Therapeutic Activity

Chittipolu Ajaykumar, K. Swathiand Pavithra Dasari (2023). *Natural Products as Cancer Therapeutics* (pp. 1-23).

www.irma-international.org/chapter/effect-of-ocimum-sanctum-on-cancer-progression-and-its-effective-therapeutic-activity/329152