

Phytochemistry and Pharmacological Uses of *Hibiscus rosa sinensis*: A Review

Gimhana M.A.N.^{1#}, Jayashan T.W.K.S.S.², Wijesekera K.¹

¹Department of Pharmacy, Faculty of Allied Health Sciences, University of Ruhuna, Sri Lanka

²Department of Bio Systems Technology, Faculty of Technology, Sabaragamuwa University of Sri Lanka

[#]Corresponding author: nadeera.gimhana@yahoo.com

Background: One of the most useful plants in nature, *Hibiscus rosa sinensis* is comprised of several different parts, each of which has its own distinct medical benefits. Pre-existing studies in pharmacology have shown that *H. rosa-sinensis* has a wide range of biological activities. Herbal health supplements and medicines, such as *H. rosa sinensis* Linn., are expected to become increasingly popular in the near future, both in everyday self-care and in professionally managed health care.

Objective: To provide updated information on the phytochemistry, pharmacological properties, and therapeutic value of *H. rosa sinensis*

Methods: Articles published in three online databases ScienceDirect, PubMed, and Google Scholar between year 2011-2021 with respect to phytochemistry, pharmacology and toxicology of *H. rosa sinensis* were considered for the review. A total number of 27 articles published in English language were considered after excluding conference papers.

Results: Our comprehensive analysis of *H. rosa-sinensis* revealed a rich array of secondary metabolites within the whole plant. These include tannin, anthraquinones, flavonoids, alkaloids, terpenes, saponins, and cardiac glycosides. Notably, the extraction process predominantly involved the use of water or water-organic solvent mixtures. The traditional uses of *H. rosa-sinensis* are diverse and encompass a wide range of medicinal applications. The flowers and roots of this plant have been historically employed for addressing various health issues, including the regulation of the menstrual cycle, treatment of liver diseases, management of high blood pressure and alleviation of cough symptoms. Fruits have also been used topically to mitigate pain associated with sprains, wounds, and ulcers. Furthermore, flower extracts have exhibited *in-vivo* hypoglycemic, cardiovascular and CNS depressant activity. Ethanol (70%) extract of dried leaves have exhibited *in-vivo* analgesic, anti-inflammatory and antipyretic activities in mice. These findings underscore the diverse pharmacological potential of *H. rosa-sinensis* and its historical significance in traditional medicine.

Conclusions: *H. rosa-sinensis* is a rich source of secondary metabolites that leads to a wide range of biological activities. Chemical constituents and the therapeutic uses associated with the plant parts and extraction methods involved. Many medicinal properties indicate that the plant could be used to develop new drugs that are highly effective in treating a wide range of disorders in future.

Keywords: Herbal, *Hibiscus rosa sinensis*, Pharmacology, Phytochemistry, Traditional medicine