



Litchi chinensis: medicinal uses, phytochemistry, and pharmacology

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Abstract:

Ethnopharmacological relevance: *Litchi chinensis* Sonn. (Sapindaceae) has been widely used in many cultures for the treatment of cough, flatulence, stomach ulcers, diabetes, obesity, testicular swelling, hernia-like conditions, and epigastric and neuralgic pains. The ethnopharmacological history of *L. chinensis* indicated that it possesses hypoglycemic, anticancer, antibacterial, anti-hyperlipidemic, anti-platelet, anti-tussive, analgesic, antipyretic, hemostatic, diuretic, and antiviral activities. **Aim of the review:** The aim of this review is to provide up-to-date information on the botanical characterization, distribution, traditional uses, and chemical constituents, as well as the pharmacological activities and toxicity of *L. chinensis*. Moreover, the focus of this review is the possible exploitation of this plant to treat different diseases and to suggest future investigations. **Materials and methods:** To provide an overview of the ethnopharmacology, chemical constituents, and pharmacological activities of litchi, and to reveal their therapeutic potentials and being an evidence base for further research works, information on litchi was gathered from scientific journals, books, and worldwide accepted scientific databases via a library and electronic search (PubMed, Elsevier, Google Scholar, Springer, Scopus, Web of Science, Wiley online library, and pubs.acs.org/journal/jacsat). All abstracts and full-text articles were examined. The most relevant articles were selected for screening and inclusion in this review. **Results:** A comprehensive analysis of the literature obtained through the above-mentioned sources confirmed that ethno-medical uses of *L. chinensis* have been recorded in China, India, Vietnam, Indonesia, and Philippines. Phytochemical investigation revealed that the major chemical constituents of litchi are flavonoids, sterols, triterpenes, phenolics, and other bioactive compounds. Crude extracts and pure compounds isolated from *L. chinensis* exhibited significant antioxidant, anti-cancer, anti-inflammatory, anti-microbial, anti-viral, anti-diabetic, anti-obesity, hepatoprotective, and immunomodulatory activities. From the toxicological perspective, litchi fruit juice and extracts have been proven to be safe at a dose 1 g/kg. **Conclusions:** Phytochemical investigations indicated that phenolics were the major bioactive components of *L. chinensis* with potential pharmacological activities. The ethnopharmacological relevance of *L. chinensis* is fully justified by the most recent findings indicating it is a useful medicinal and nutritional agent for treating a wide range of human disorders and ailments. Further investigations are needed to fully understand the mode of action of the active constituents and to fully exploit its preventive and therapeutic potentials. © 2015 Elsevier Ireland Ltd. All rights reserved

Keywords:

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