

AAP Focus on Medicinal Plants Series



Biomolecules and Pharmacology of Medicinal Plants

VOLUME 1



T. Pullaiah
Editor



CRC Press
Taylor & Francis Group

APPLE ACADEMIC PRESS

CHAPTER 35

PHYTOCHEMICAL AND PHARMACOLOGICAL PROFILE OF *PHYSALIS ALKEKENGII* L. (WINTER CHERRY)

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ABSTRACT

P. alkekengi belongs to the family Solanaceae and is native of tropical North and South America. It has numerous pharmacological actions as described in Unani and other traditional systems of medicine. The drug is used as a diuretic and in the treatment of kidney and bladder disorders; relieves burning micturition and urinary tract infection. It is useful in the treatment of asthma, and cough. The drug is effective in jaundice and beneficial for hepatitis. Phytochemical studies demonstrated the presence of physalin, citric acid and vitamin C as the major compounds; alkaloids and flavonoids have been isolated from this herb; auroxanthin, mutatoxanthin, phydalein, zeaxanthin, β -Cryptoxanthin from the calyx of the fruit; glycoalkaloids detected in the

seeds. Malic acid, citric acid, a volatile matter, sugar, mucilage, pectin, woody fiber, and water are also reported. It is rich in alkaline and mineral salts. Numerous pharmacological studies have been reported for its diuretic, antioxidant, anti-inflammatory, anti-fertility and abortifacient, anti-microbial, anti-diabetic, analgesic and anti-spasmodic, cytotoxic, hypolipidemic, anti-fungal, and nephroprotective activities.

35.1 INTRODUCTION

Physalis alkekengi L. is a common plant in Tropical North and South America that relates to the Solanaceae family. It is considered a native of the region extending from Japan to Southeast Europe (Sastri, 1959). It is also known as Bladder cherry, Papota, and Kaknaj. *Habb Kaknaj* is the dried mature fruit used for treatment of urogenital disorders in Unani system of medicine. The plant is a diffuse annual or perennial herb, about 80 cm in height with glabrous or slightly pubescent stems; white flowers, and red fruits—spherical, smooth, and marked with greenish yellow-colored strips (Sastri, 1959; Anonymous, 2008a).

P. alkekengi has numerous pharmacological actions as described in Unani and other traditional systems of medicine; it is a diuretic (Nadkarni, 2009; Qumri, 2008; Sastri, 1959), lithotriptic, alterative, anthelmintic, laxative (Anonymous, 2008b), narcotic (Khare, 2007; Ghani, 2011) antifebrile, hydragog (Sastri, 1959) and blood purifier (Nadkarni, 2009); contraceptive (Dymock and Hooper, 2005; Nadkarni, 2009; Qumri, 2008) and hepatic stimulant (Qumri, 2008) properties. Its temperament is reported to be cold and dry in nature. The drug is used as a diuretic, lithotriptic (Khare, 2007; Ghani, 2011), relieves burning micturition, and urinary tract infection (Ghani, 2011). It is useful in the treatment of asthma, dyspnea (Ibn Sina, 2007), cough (Ghani, 2011), jaundice, and hepatitis (Ibn Sina, 2007; Anonymous, 2008a; Ghani, 2011). Its paste is applied locally to resolve inflammation and hardening of tumors (Khare, 2007).