

Pharmacological and Chemical Potential of *Cassia fistula*

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PERSPECTIVE

Cassia fistula has been reported to possess potent pharmacological actions against diabetes, hepatotoxicity, inflammation, cancer etc. Different chemical constituents such as catechin, epicatechin, procyanidin B-2, kaempferol, chrysophanol, rhein, emodin, fistulic acid, sennoside and many others have been isolated from the plant. The present article reviews the pharmacological and phytochemical work done on the plant.

Since the advent of modern drug treatments, traditional medicine has greatly receded in occidental societies. Moreover, only a limited number of medicinal plants have received detailed scientific scrutiny thereby prompting the World Health Organisation to recommend that this area be comprehensively investigated. *Cassia fistula* Linn is used extensively in various parts of the world against a wide range of ailments, the synergistic action of its metabolite production being most probably responsible for the plant's beneficial effects. This paper reviews the primary and secondary metabolite composition of vegetative and reproductive plant parts and cell cultures thereby derived, with emphasis on potent phenolic antioxidants such as anthraquinones, flavonoids and flavan-3-ol derivatives. This paper also appraises the antioxidant and free radical propensities of plant parts and cell culture extracts. The data so far generated clearly sets the basis for a clearer understanding of the phytochemistry of the plant and derived cultures and opens the possibility of the potential utilization of the phenolic rich extracts from medicinal plants in food system or as prophylactics in nutritional/food supplement programs. Thus traditional medicinal plant-derived antioxidants may protect against a number of diseases and reduce oxidation processes in food systems. In order to establish this, it is imperative to measure the markers of baseline oxidative stress particularly in human health and disease and examine how they are affected by supplementation with pure compounds or complex plant extracts from the traditional medicinal plants.

Cassia fistula L. (Fabaceae) is a plant species called "Aragvadha"

which means "disease killer". *C. fistula* consists of a large amount of medicinal properties. The plant has been used in Ayurvedic medicine since ancient periods, because it affects all three "Doshas" i.e. Vata, Pitah, and Kapha. In the last few years, the plant has been widely explored for its array of pharmacological uses which have also been experimentally proven. It contains many chemical components having important pharmacological properties. These constituents are reported to possess various biological activities such as antioxidant, antimicrobial, antidiabetic, antitumor and antmelasmic. This current article will be important to investigate *Cassia fistula* and explore it further for determination of new potential pharmacophores that could be responsible for its activities related to the central nervous system, heart, antitumor, antioxidant and inflammation.

The drug consists of ripe fruits and fruit pulp of *Cassia fistula* Linn. family Caesalpiniaceae. *Cassia fistula*, commonly known as 'golden shower' is a well-known plant in the Ayurvedic system of medicine. The plant is found throughout India in all deciduous forests and hilly tracts. It is cultivated as an ornamental plant for its beautiful yellow flowers. *Cassia fistula* has traditionally been used to treat leprosy, tuberculosis, syphilis, rheumatism, skin disease. The Ayurvedic pharmacopoeia of India indicated the fruit pulp for constipation, colic, chlorosis and urinary disorders. The fruit of *Cassia fistula* is used to treat diabetes. *Cassia fistula* plant is rarely ever wholly leafless, but in some localities it is almost bare between March and May and new leaves appear during April-July. The flowers appear along with the leaves, in dry areas the flowers however appear till October.

The various chemical constituents isolated from the plant are fistucacidin, leucocyanidin, leucopelargonidin, hexacosanol, lupeol, and β -sitosterol. Current research on *Cassia fistula* has focused on its hepatoprotective, antioxidant, anticancer, anti-inflammatory and other reported activities. This review on *Cassia fistula* presents the chemical and pharmacological investigations so far reported.

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