



Rich source of bioactive molecules including xanthenes, flavonoids, benzophenones, lactones, and phenolic acids.

Garcinia

Antioxidant activity | Anti-obesity activity |
Anti-diabetic activity | Anti-tumoral activity
Gastro-protective | Cardio-protective
Anti-bacterial, Anti-fungal, Anti-viral



Garcinia
Cambogia



Bioactive molecules like Hydroxy Citric Acid (HCA), polysaccharides, terpenes, flavonoids, procyanidines and polyisoprenylated benzophenone derivatives like xanthochymol, guttiferone isoforms and garcinol which have immense remedial qualities

Garcinia is the source of a natural diet ingredient Hydroxy Citric Acid (HCA) which is an anti-obesity compound

The polyisoprenylated benzophenone, xanthone derivatives, and bioactive compounds present in the genus are known for their antioxidant, anti-ulcer, anticancer, chemopreventive, free radical scavenging, antioxidant properties, anti-inflammatory, antibacterial, anti-viral, anti-fungal properties.

Garcinia gum resin is used as cathartic or purgative.

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The pericarp of *Garcinia mangostana* fruit has been used in the treatment of arthritis, fever, ulcers, skin infections, wounds, and amoebic dysentery in South Asia

The decoction of *Garcinia gummi-gutta* fruit rind works against rheumatism and bowel complaints and is also employed in veterinary medicine as a rinse for diseases of the mouth in cattle

The crushed fruits of *Garcinia pedunculata* are taken during dysentery and young fruits are taken for management of jaundice

The plant parts of *Garcinia cambogia* have been used in Asian countries as a traditional medicine for treating intestinal parasites, constipation, cancer, piles, bowel complaints, rheumatism, delayed menstruation etc.

Traditionally the crushed extract of *Garcinia dulcis* fruits is used as an expectorant, cough relief, and scurvy, while the crushed extract of roots is used to relieve fever and as a detoxicant



Garcinia species are known to be rich in phenolic compounds such as flavonoids, phenolic acids, xanthenes, biflavonoids and benzophenones that possess free radical scavenging activities which act against different diseases and having a major role in the mechanism of bioactivities

Griffipavixanthone, a prenylated xanthone isolated from *Garcinia virgata* was reported as a promising antioxidant activity

The pericarp extract of this family is rich in the both phenolic and flavonoids contents and plays a significant role in the scavenging of free radicals in the different in vitro antioxidant models

Extracts prepared from the rinds of *Garcinia indica* are reported to possess antioxidant properties

Garcinia parvifolia fruit has the potential as a natural source of antioxidants and as an anti-Alzheimer agent.

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**Antioxidant
properties**



Xanthonenes have been isolated from pericarp, whole fruit, bark, and leaves of mangosteen, and several studies have shown that xanthonenes obtained from mangosteen fruit have remarkable biological activities like anti-cancer activities.

Mangosteen fruit contains xanthonenes including alpha-mangostin which possess anti-cancer properties including initiation of apoptosis through the regulation of cell death pathways

Xanthonenes have been shown to modulate cell signalling pathways that are deregulated in cancer cells

Several recent studies have examined the potential of garcinol, a non-nutritive dietary component, against different cancer types.

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Anti-tumoral
properties



Garcinia is a good source of natural diet ingredient (-)-hydroxycitric acid, [(-)-HCA], (1,2-dihydroxypropane- 1,2,3-tricarboxylic acid) which is an anti-obesity compound and a principle acid found in the leaves and fruit rinds of Garcinia species known to inhibit fatty acid and lipid synthesis in living systems.

Hydroxycitric acid inhibits the cleavage of citrate to oxaloacetate and acetyl-CoA, a key molecule that plays a vital role in energy storage as fat. The energy in turn diverted to the production of liver and muscle glycogen that slows down the production of cholesterol, fatty acids, and triglycerides reducing fat production and storage.

HCA combined with niacin-bound chromium reduced body weight and BMI by 7.8% and 7.9% respectively.

HCA (hydroxycitric acid) has been known for its hypo-lipidemic property and a hypocholesterolamic agent has reviewed the anti-obesity effects of HCA in suppressing fatty acid synthesis, lipogenesis, food intake, and induced weight loss.



**Anti-obesity
properties**



Extract from *Garcinia gummi-gutta* has been determined as a potential anti-obesity agent to inhibit lipogenesis and stimulation of lipolysis

Consumption of hydroxycitric acid reduces appetite, inhibits fat synthesis, lipogenesis, decreases food intake, and reduces body weight. At the same time, it also increases the synthesis of hepatic glycogen thereby activating the glucoreceptors and causing a sensation of reduced appetite and fullness

Concomitantly, hydroxycitric acid also inhibits pancreatic alpha-amylase and intestinal alpha-glucosidase, leading to a reduction in carbohydrate metabolism

Isogarcinol is also reported to possess lipase inhibitory effect and anti-obesity properties

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**Anti-obesity
properties**



Aqueous extract of the *Garcinia* decreases streptozotocin-induced hyperglycemia validating its anti-diabetic effects.

Garcinia restored the erythrocyte GSH level, an intracellular antioxidant proved to be effective in preventing the risk of developing secondary complications of diabetes.

Saponin extract from the root of *Garcinia kola* proved to be a remarkable antidiabetic activity even more than a standard anti-diabetic drug in alloxan-induced diabetic rats.

Dose-dependent reduction in blood glucose level, improvement in lipid profile together with a dose-dependent attenuation of the atherogenic index by *Garcinia kola* seed powder signifies that it could be used as an anti-diabetic agent with a potent cardioprotective effect.

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Anti-diabetic
properties

Garcinia cambogia fruit extract (aqueous and ethanol extract) protected the gastric mucosa against the damage induced by indomethacin.

Garcinia cambogia decreased the acidity and increased the mucosal defense in the gastric areas, thereby justifying its use as an anti-ulcerogenic agent.

The methanolic extract of seed, leaf, and branch has gastroprotective properties.

The seed extract of *Garcinia achacharu* showed a dose-dependent effect on the inhibition of gastric lesions and the maximum inhibition percentage was about 85% and the dose of the extract was 500 mg/kg.

Garcinol alone and in combination with clarithromycin inhibits the growth of *Helicobacter pylori*, a causative agent of gastric ulceration and cancer

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**Anti-ulcer
properties**

Antibacterial, antifungal, and antiviral properties

The bioactive molecules like hydroxycitric acid (HCA), terpenes, flavonoids, procyanidines, polysaccharides and polyisoprenylated benzophenone derivatives like garcinol, xanthochymol and guttiferone isoforms isolated from the genus *Garcinia* are known for their antibacterial and antifungal properties

Alpha and beta-mangostins and garcinone B from *Garcinia mangostana* L. exhibited intense inhibitory effect against *Mycobacterium tuberculosis*

The antifungal and antibacterial properties from *Garcinia indica* extract and its potential for use as a biopreservative in food applications

The Mangosteen fruit pericarp contains polyoxygenated xanthenes, including mangostin 4, b-mangostin, nor-mangostin and gartanin; these compounds are used as antibacterial agents

The extract of the fruit hull of *Garcinia pedunculata* was significantly effective on the fungi *C. paradoxa* and *P. citrinum*.

The chloroform extract from rinds of *Garcinia indica* inhibits the growth and production of Aflatoxin by *Aspergillus flavus*





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