

Medicinal Properties of *Cinnamomum cassia* and its General Uses

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The plant *Cinnamomum cassia* is commonly known as Chinese cinnamon. Its leaves and bark are primarily used in medicine. When used in tiny doses, such as in meals and medications, *C. cassia* is safe. The entire plant has medicinal use in the traditional Indian medical system, especially in Ayurveda. Recent investigations have demonstrated the scientific justification for this particular herb's use in medicine. Among other things, cinnamon can be used to flavour creams, syrups, and flavoured wines. The applications, phytochemistry, and therapeutic effects of cinnamon as a spice and common uses are briefly discussed in this paper so that it may easily be understandable to know about this utile plant.

**Key Words:** *Cinnamomum cassia*, cinnamaldehyde, general uses, botanical description.

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INTRODUCTION

*Cinnamomum cassia* (also known as *Cinnamomum aromaticum*, Chinese cinnamon or Chinese cassia) belongs to Laurel (*Lauraceae*) family of plant kingdom. It is derived from the tree's bark and used as a flavour in a variety of Asian dishes. India, China, Uganda, Vietnam, Bangladesh, and Pakistan are common cultivating nations. The herb has a potent perfume and a flavour that is sweet with a hint of bitterness. Its leaves and bark are primarily used in medicine. When used in tiny doses, such as in meals and medications, *C. cassia* is safe. The entire plant has medicinal use in the traditional Indian medical system, especially in Ayurveda [1]. Recently, numerous studies have reported the therapeutic use of this plant in a variety of fatigued states, including malignancies, peptic ulcer illnesses, and diabetes mellitus [2]. The most popular types of cinnamon look pale and parchment-like. Cakes, pancakes, and other baked dishes, as well as milk and rice puddings, frequently contain cinnamon. Especially in pears and apple sweets, cinnamon is frequently used in chocolate dishes and fruit desserts. Among other things, cinnamon can be used to flavour creams, syrups, and flavoured wines. The applications, phytochemistry, and therapeutic effects of cinnamon as a spice and medication are briefly discussed in this paper. In light of this, we suggest more research be done on the clinical, medicinal, purification, and identifying.

Scientific classification	
Kingdom:	Plantae
Clade:	Tracheophytes
Clade:	Angiosperms
Clade:	Magnoliids
Order:	Lurales
Family:	Lauraceae
Genus:	<i>Cinnamomum</i>
Species:	<b><i>C. cassia</i></b>

Source: Koehler's Medicinal-Plants

**Botanical Description:** Small, evergreen trees and shrubs in this species can grow to a height of 10-15 m. China, Australia, South-East Asia, and Africa are all places where plants can be found. The ovate-oblong, 7–18 cm long leaves are present [3]. Flowers are grouped in panicles and have a greenish colour. One seeded, 1-cm-long purple berries make up the fruit [4-5]. It grows in tropical rain forests at a range of altitudes, including lowland forests with swampy areas, highland slopes, and well-drained soils. However, in latitudes with seasonal climatic conditions, they become incredibly rare [5].



Figure 1. Dried bark (left) and leaves (right) of *cinnamomum cassia*

**Phytoconstituents:** Cinnamaldehyde (60–90%), coumarin (7%) and essential oil (4%), which together make up the majority of *C. cassia*'s active ingredients. Eugenol, benzoic acid, cinnamic acid, salicylic acid, cinnamyl alcohol, and the corresponding esters and aldehydes are among the other ingredients present in trace amounts [6]. It also contains some amount of tannins, starch and mucilage [7].

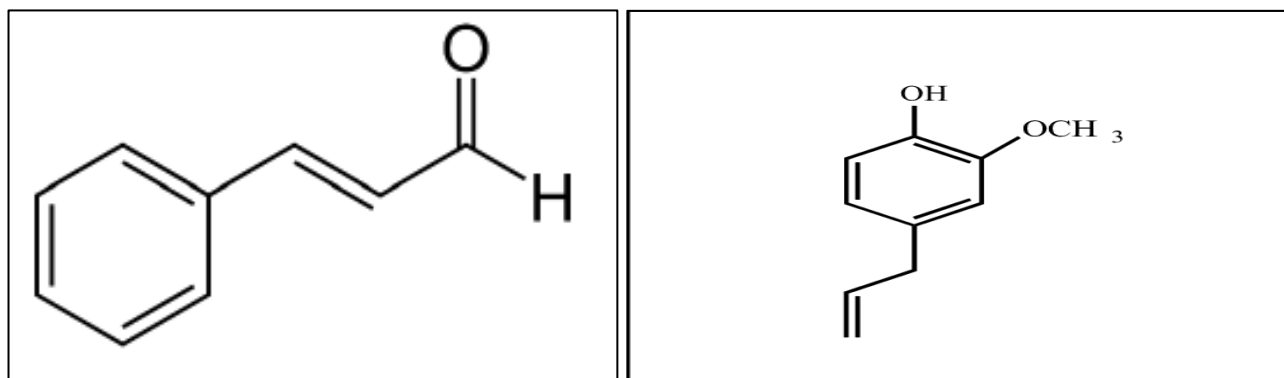


Figure 2. Chemical structure of cinnamaldehyde (right) and eugenol (left)

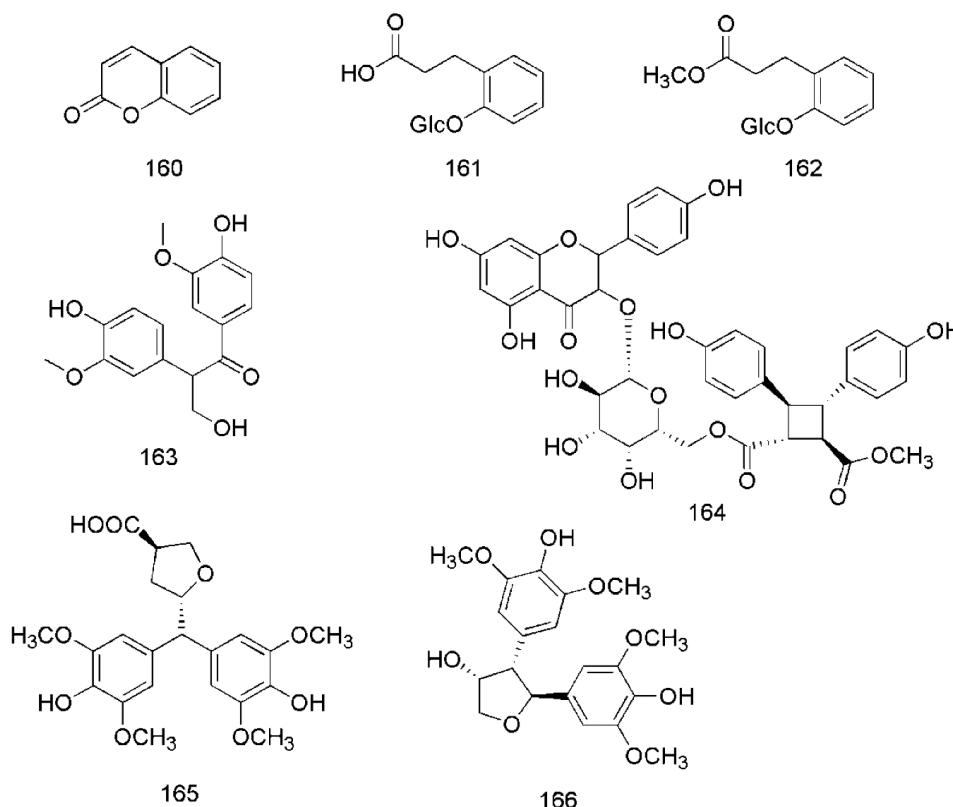


Figure 3. Phytoconstituents of Cinnamon

**Medicinal Properties:** According to reports, the active ingredients in *C. cassia* contain anti-inflammatory, antioxidant, anti-cancer, anti-fungal, anti-pyretic, antimicrobial, anti-angiogenic, and larvicidal properties [8]. *Cinnamomum* is used as an aromatic spice. Bark is used for its carminative, stomachic, diarrhea and antibacterial properties. It has been demonstrated that a traditional Chinese therapy including *C. cassia* is protective against brain ischemia damage [8]. *C. cassia* has been shown to have anti-microbial properties against various pathogens [9]. Four species of *Candida*, *Candida albicans*, *Candida tropicalis*, *Candida glabrata*, and *Candida krusei*, have been shown to be susceptible to the anti-fungal effects of *cinnamomum cassia* [10]. A clinical trial studied examined *C. cassia* to see if it improved postmenopausal type II diabetics' lipid profiles, insulin sensitivity, and fasting serum glucose levels [11]. The ethanol extract of *C. cassia* possesses strong antioxidant effects [12]. The anti-cancer properties of cinnamon have been well investigated. It inhibits cell growth and induces apoptosis in a number of malignancies, including colorectal cancer, human promyelocytic leukaemia, hepatoma, cervical cancer, lymphoma, and melanoma [8,13]. The plant has been used in Pakistan's traditional Unani medical system to treat gastrointestinal symptoms like diarrhoea, flatulence, and vomiting [14].

Cinnamic acid reduces skin melanin by 29% when given topically, with no negative side effects. Cinnamic acid does not exhibit a significant amount of activity against dopachrome tautomerase, but it does block the tyrosinase enzyme to mediate its function. *Cinnamomum* may therefore be used in cosmetics and beauty products to increase skin whitening due to its impact on the skin cells' melanin bio-synthetic process [15-17]. It also has anti allergic effect that functions by a particular pathway [18]. Some researchers told that *C. cassia* shows anti-inflammatory properties.

#### General Uses:

- For flavouring confections, desserts, pastries, meat.
- As an ingredient in many curry dishes, cassia bark is used in both powdered and whole or "stick" form [19].
- Used to make liquors, beverages, spicy candies, and chocolate [20].
- Some people use it to remove mouth odor
- Village people commonly use it as traditional remedy for headache
- Used to make condiment and pickles
- *C. cassia* possess antifebrile property
- It accelerates digestion
- It is commonly used as a notes to make perfume
- Used as flavouring agent in icecream

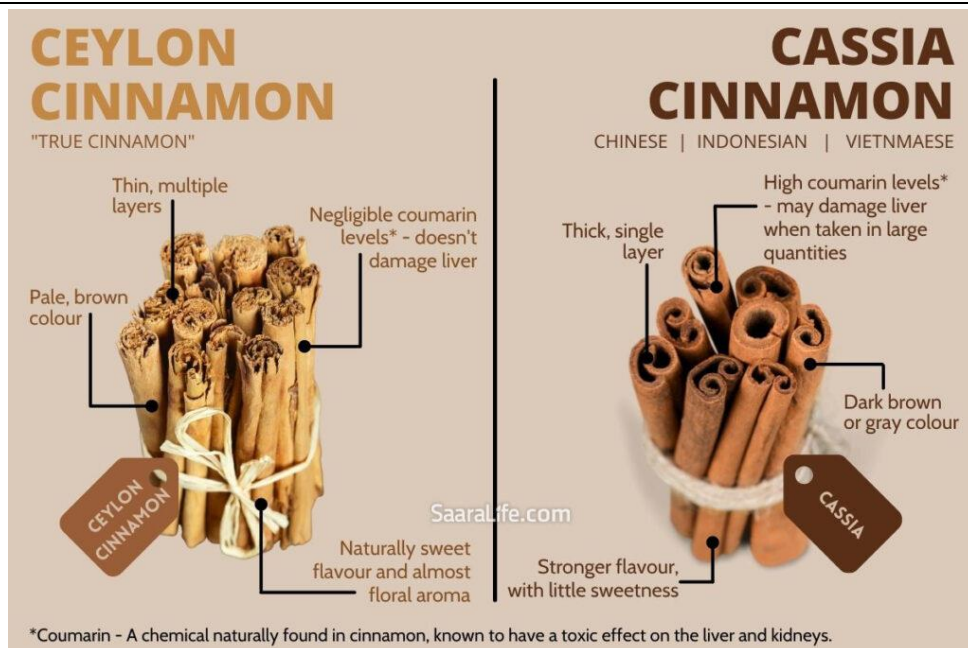


Figure 4. Types of cinnamon most commonly used

**Side effects:** People frequently eat items that contain *Cinnamon cassia*. As a short-term medication, it is probably safe. It has been successfully used for up to three months at doses of 1-2 grams per day. When consumed over 6 grams of cassia cinnamon every-day for an extended length of time, there may be potential risks. There is a substance called coumarin in cassia cinnamon. In some cases, especially in those with liver disease, consuming high doses of coumarin might damage the liver. Yet, it shouldn't have any significant adverse impacts on the majority of people. Short-term use of cassia cinnamon may be harmless. It may result in allergic skin responses and skin inflammation in long term use. A small amount of cinnamon may help lower blood sugar, but too much of it could cause it to drop too far. We refer to this as hypoglycemia. Fatigue, lightheadedness, and even fainting may result from it.

**Potential of herbal drugs:** The environment has a big impact on a plant's phytochemical profile. The amount of bioactive components in a species can change depending on a number of factors, including soil composition, climate, and geographic location. The chemical makeup of plants changes from year to year even in the same spot because of variations in the local climate (temperature, drought, flood, etc.). In general, wild plants have more varied ingredient levels. It is possible to mitigate these detrimental impacts in commercial plants by standardizing production practices. Indeed, higher stable amounts of bioactive chemicals are found in plants that are produced under controlled settings and have a genetic source that is well-characterized and homogeneous [21, 22]. Finding and separating any potentially dangerous chemicals is also crucial. Reduced bioactivity might result from low concentrations of the active chemical caused by improper separation methods. Moreover, the bioavailability is greatly influenced by the use of nootropics. A variety of forms, including pills, capsules, raw and dried herbs, tinctures (alcoholic extracts), tisanes (hot water extracts), and others, are used to apply natural goods. This affects the drug's biological function as well.

Furthermore, the prevalent consensus is that natural goods are safe by nature, without any potential for side effects or overdose. Despite the possibility of negative consequences and interactions such as herb-drug or herb-herb, natural goods can nevertheless be harmful. Thus, further research is required to have a better understanding of how nootropics interact [23].

## CONCLUSION

The majority of the drugs needed by the chemical and pharmaceutical industries, along with modern and traditional medicine, come from medicinal plants. Most commonly, aromatic herbs are used to make fragrances, cosmetics, and health drinks. Scientists and researchers study medicinal plants to enhance drug development. Approximately 70 percent of the world's population currently relies on these medicinal plants for health issues. Several studies on cinnamon's antibacterial, anti-inflammatory, anti-cancer, anti-diabetic, anti-melanin, and antioxidant properties have been conducted. But more research and studies needed to discover more about this utile plant.

**Conflict of Interest:** The author declare no competing interest regarding this paper.

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