



- **Latin Name: Cinnamomum cassia**
- **Active Ingredient: Polyphenols**
- **CAS No.:**
- **Test method: HPLC**
- **Specifications: 4:1**

### **Product Description:**

**Name :Cinnamon Bark Extract (no coumarin)**

Source: Cortex Cinnamomi Cassiae

Botanical Name : Cinnamomum cassia

Extract part: Bark

Composition ratio :10 to 1

Appearance: Fine Brownish red powder

Country of origin:P.R. China

### **Source**

Cinnamon as the name of several species of evergreen aromatic tree that belonging to the genus Cinnamomum in the family Lauraceae and the commercial spice products that made by the bark of a few of them. One economically important specie of the genus is Cinnamomum cassia, commonly called Chinese cassia or Chinese cinnamon, is an evergreen tree originating in southern China, and widely cultivated there and elsewhere in southern and eastern Asia (India, Indonesia, Laos, Malaysia, Taiwan, Thailand, and Vietnam). The tree grows to 10–15 m tall, with greyish bark and hard, elongated leaves that are 10–15 cm long and have a decidedly reddish colour when young.

In addition to its wide application in foods, Cinnamon, also called Cortex Cinnamomi Cassiae, is used in China for a long time as a fundamental herb in traditional Chinese medicine.

### **Main bio-actives**

Cinnamomum cassia is a medicinal plant that contains mainly cinnamic aldehyde. The primary constituents of the cinnamon essential oil are 65% to 80% cinnamaldehyde and lesser percentages of other phenols and terpenes, including eugenol, trans-cinnamic acid, hydroxycinnamaldehyde, o-methoxycinnamaldehyde, cinnamyl alcohol and its acetate, limonene, alpha-terpineol, tannins, mucilage, oligomeric procyanidins, and trace amounts of coumarin.

Coumarin is a fragrant organic chemical compound which is naturally found in many plants including Cinnamomum cassia, however, our Cinnamon Bark Extract does not contain Coumarin.

Polyphenols of cinnamon appear to have antidiabetic effect on diabetic rats. More recently, it has

been suggested that the polyphenols in cinnamon, specifically polyphenol A, are responsible for decreases in blood glucose witnessed.

## **Functions**

### **Antidepressant**

Antidepressive activity of Cinnamomum cassia compound Cinnamomum cassia was investigated by oral gavage administration to stressed rats for 21days .Study result published on Journal of Ethnopharmacology showed that chronic unexpected mild stress (CUMS) procedure not only decreased the sucrose preference, but also elevated the COX-2 activity, mRNA and protein levels, and increased PGE2 concentration in rat brain regions. Treatment with high doses of cinnamic aldehyde (45, 90 mg/kg) reversed the behavioral abnormalities, and decreased the COX-2 protein and activity (but not COX-2 mRNA expression) and PGE2 concentration in frontal cortex and hippocampus of stressed rats.The current findings suggest that targeting COX-2 system might be benefit to the depression, especially elderly individuals and cinnamic aldehyde might be a promising medicine to treat the subjects in the depression.

### **Anti-inflammatory**

Investigation conducted in 2012 examined the anti-inflammatory effects of Cinnamomum cassia constituents (cinnamic aldehyde, cinnamic alcohol, cinnamic acid, and coumarin) using lipopolysaccharide (LPS)-stimulated mouse macrophage (RAW264.7) and carrageenan (Carr)-induced mouse paw edema model. Result showed on Evid Based Complement Alternat Med indicated that Cinnamic aldehyde decreased the NO, TNF- $\alpha$ , and PGE2 levels on the serum level after Carr injection. Western blotting revealed that cinnamic aldehyde decreased Carr-induced iNOS, COX-2, and NF- $\kappa$ B expressions in the edema paw. These findings demonstrated that cinnamic aldehyde has excellent anti-inflammatory activities and thus has great potential to be used as a source for natural health products.

### **Antioxidative**

In an early experiment reported on Phytother Res determined the wound healing action of an ethanol extract of cinnamon, researchers suggested the significant increase in wound healing was attributable to the antioxidant activity demonstrated.Further study showed on Biofactors in 2006 that the effects of Cinnamomum cassia the activity of the antioxidant enzymes (catalase, superoxide dismutase and glutathione peroxidase) in the liver of db/db mice were demonstrated .Study showed Cinnamomum cassia extracts significantly decreased on blood glucose, increased levels of reduced glutathione and the activities of glutathione reductase, glutathione S-transferase, glutathione peroxidase, catalase and superoxide dismutase in the liver.

### **Antihyperglycemic and antihyperlipidemic**

Nowadays, increased oxidative stress was shown to play an important role in the etiology and pathogenesis of diabetes mellitus and its complications. A study reported on Biofactors showed that Cinnamomum cassia extracts significantly decreased blood glucose, lipid peroxidation and increased the level of reduced glutathione.Such findings suggest Cinnamomum cassia may be effective for correcting hyperglycemia and preventing diabetic complications.And further study released on Arch Pharm Res in 2010 scientists explored their mechanism of action. The results

suggest that cinnamon extract significantly increases insulin sensitivity, reduces serum, and hepatic lipids, and improves hyperglycemia and hyperlipidemia possibly by regulating the PPAR-mediated glucose and lipid metabolism.

### **Antibacterial**

In vitro inhibition of bacterial endotoxin has been demonstrated by an unidentified component in cinnamon bark. 36 The essential oils of cinnamon halted mycelial growth and aflatoxin synthesis in *Aspergillus parasiticus* at a concentration of only 0.1%.

### **Anticancer**

#### **Lung Cancer**

An investigation published on *J Altern Complement Med* in 2000 that cinnamon bark, as a part of a traditional herbal medicine, showed activities against lung carcinoma. The tumor marker levels (CEA and CA19-9) decreased and the scores of yin-yang and xu-shi inverted from negative and positive during 7 weeks. The patient's cough disappeared and her appetite recovered. NYT has a positive effect on life expectancy for patients with malignancy. The diagnostic scoring system in yin-yang and xu-shi and prescription of Chinese herb may be available to gain control over a patient's health.

### **Applications**

Cinnamon is used as a spice and aromatic. Traditionally, the bark or oil has been used to combat microorganisms, diarrhea, and other GI disorders, and dysmenorrhea, although there is limited data to support these uses. Cinnamon has found multiple activities including anti-inflammatory, antioxidant, and antimicrobial activity, it also has potential applications in the management of diabetes.

In foods, cinnamon is used as a spice and as a flavoring agent in beverages.

In manufacturing, cinnamon oil is used in small amounts in toothpaste, mouthwashes, gargles, lotions, liniments, soaps, detergents, and other pharmaceutical products and cosmetics.

--CINNAMON bark\_ Uses, Side Effects, Interactions and Warnings - WebMD;

<http://www.webmd.com/vitamins-supplements/ingredientmono-330-CINNAMON%20bark.aspx?activeIngredientId=330&activeIngredientName=CINNAMON%20bark>

--Cinnamon, From Wikipedia, the free encyclopedia;

[https://en.wikipedia.org/wiki/Cinnamon#cite\\_note-38](https://en.wikipedia.org/wiki/Cinnamon#cite_note-38)

--Cinnamomum cassia; From Wikipedia, the free encyclopedia;

[https://en.wikipedia.org/wiki/Cinnamomum\\_cassia](https://en.wikipedia.org/wiki/Cinnamomum_cassia)

--Ying Yao, et al; "Cinnamic aldehyde treatment alleviates chronic unexpected stress-induced depressive-like behaviors via targeting cyclooxygenase-2 in mid-aged rats"; *Journal of Ethnopharmacology* 2015

--Jung-Chun Liao, et al; "Anti-Inflammatory Activities of Cinnamomum cassia Constituents In Vitro and In Vivo"; *Evid Based Complement Alternat Med.* 2012

--Kim SH, et al; "Antioxidative effects of Cinnamomi cassiae and *Rhodiola rosea* extracts in liver of diabetic mice"; *Biofactors.* 2006

- 
- Kamath JV, Rana AC, Chowdhury AR. Pro-healing effect of Cinnamomum zeylanicum bark. Phytother Res . 2003;17(8):970-972.
  - Kim SH,et al; “Antihyperglycemic and antihyperlipidemic action of Cinnamomi Cassiae (Cinnamon bark) extract in C57BL/Ks db/db mice”;Arch Pharm Res. 2010
  - Eugen J. Verspohl,et al;“Antidiabetic Effect of Cinnamomum cassia and Cinnamomum zeylanicum In vivo and In vitro”;PHYTOTHERAPY RESEARCH 2005
  - Soliman KM, Badeaa RI. Effect of oil extracted from some medicinal plants on different mycotoxigenic fungi. Food Chem Toxicol . 2002;40(11):1669-1675.
  - “An Evidence-Based Systematic Review of Cinnamon (Cinnamomum spp.) by the Natural Standard Research Collaboration”
  - Kamei T,et al; “The effect of a traditional Chinese prescription for a case of lung carcinoma”;J Altern Complement Med. 2000

