PRODUCT INFORMATION

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URL＝https://chemical.kao.com/global/

Chlorogenic Acid Materials

LUNA PHENON C-200

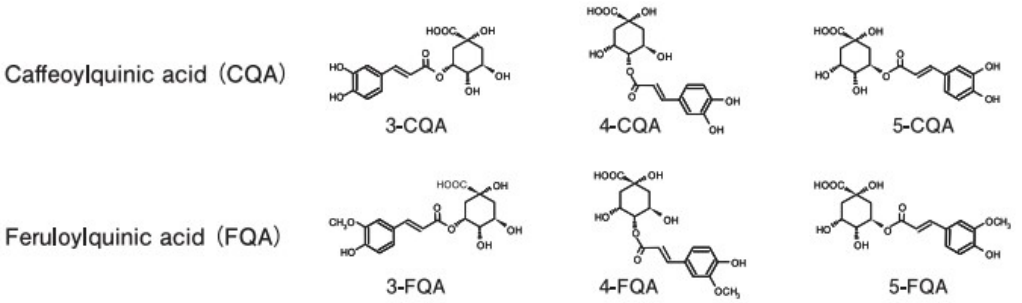
INTRODUCTION

Chlorogenic acids are the main components of coffee polyphenols (generic name for ester compounds of cinnamic acid derivatives and quinic acid), which are abundant in coffee beans, and green coffee beans mainly contain six types of chlorogenic acids.

Chlorogenic acids have long been reported to have antioxidant and bactericidal effects.

In addition, as a functional food, it has the function of reducing body fat and visceral fat in people with a high BMI, and reducing blood pressure in people with high blood pressure. Function to reduce body fat and visceral fat in people with high BMI, to lower blood pressure in people with high blood pressure, to improve the quality of sleep, and to improve some of the cognitive functions that decline with age,

It is also known to support some of the cognitive functions that decline with age, improve blood flow and assist in the recovery of lowered skin temperature, and increase the moisture content of the skin and alleviate dryness.



Chemical structure of chlorogenic acids

【Features of LUNA PHENON C-200】

・ It is a powdered extract obtained by Kao's proprietary "ecological drip process" based on the traditional water extraction method from carefully selected coffee beans

rich in chlorogenic acids from coffee beans producing regions around the world.

・ It is a unique material enriched with chlorogenic acids that has no turbidity or coloration due to roasting in solution, has a low taste with no peculiarities, and has reduced caffeine level to a minimum, making it possible to add "health functions" to a wide range of products.

・ This product (C-200) has a proven track record of use as a material containing ingredients involved in the functionality of foods/beverages with functional claims.

○ Health function of chlorogenic acids: Lowering blood pressure

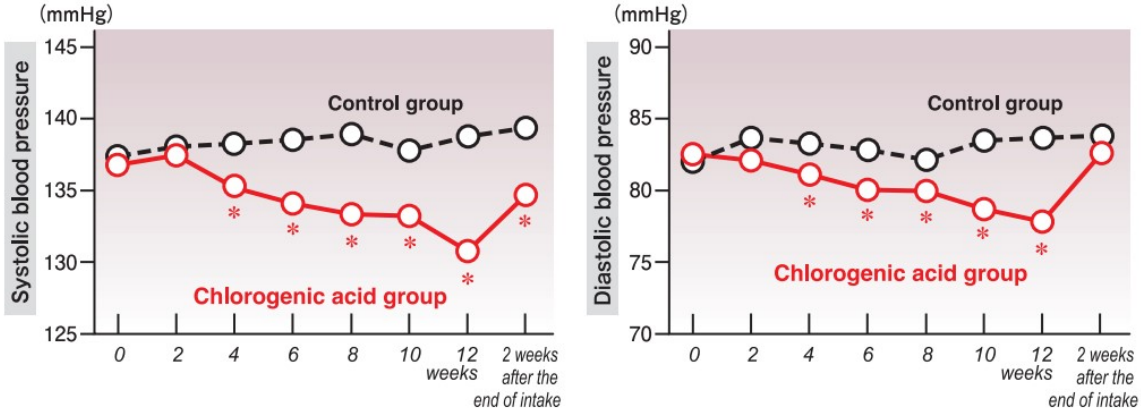
In Kao's research on the vascular function of chlorogenic acids, it has been found that continuous intake of chlorogenic acids lowers elevated blood pressure in humans. Eighty-eight men and women with elevated blood pressure (systolic blood pressure 130-139 mmHg or diastolic blood pressure 85-89 mmHg) were instructed to consume a chlorogenic acid beverage per day for 12 weeks, while maintaining their diet and physical activity as in their daily lives (271 mg/day), resulting in the beneficial effect for significantly lowering systolic and diastolic blood pressures.

Effects of continuous intake of chlorogenic acids on blood pressure in human study

A 12-week parallel-group study. Subjects: 88 men and women with high blood pressure (systolic blood pressure 130-139mmHg or diastolic blood pressure 85-89 mmHg)

・Control group: chlorogenic acids 0 mg/day

・Chlorogenic acid group: chlorogenic acids 271 mg/day

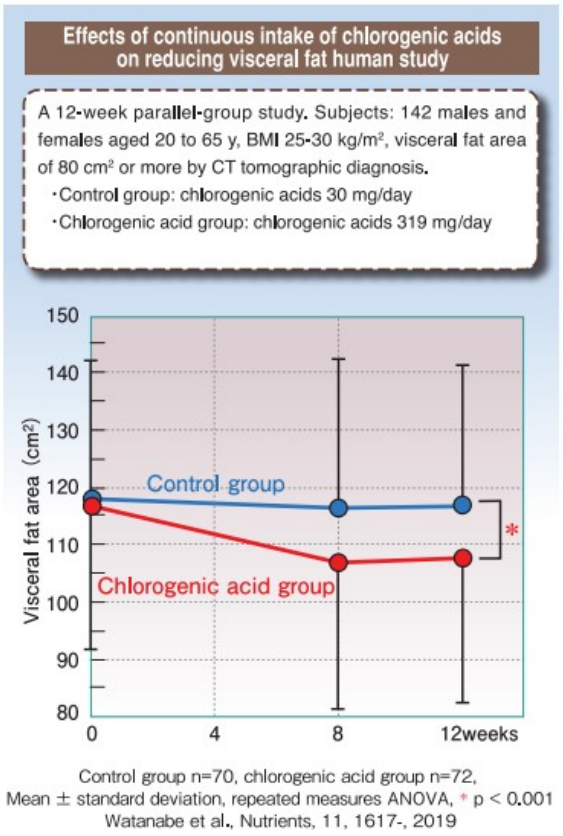


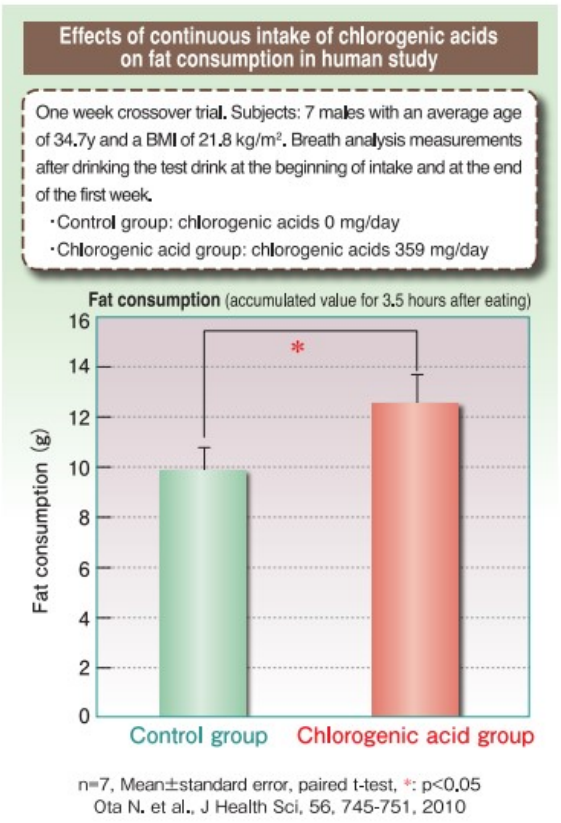
Control group n=43, chlorogenic acid group n=45, Mean ± standard error
*p<0.05 (compared with control group)
Yamaguchi et al., Prog.Med, 27, 683-694, 2007

○Health Functions of Chlorogenic Acids: Reduction of Visceral Fat

Kao has found that continuous intake of chlorogenic acids reduces visceral fat in humans. One hundred forty-two men and women with an elevated BMI (age 20-65, BMI 25-30, visceral fat area of 80 cm2 or more) were instructed to consume a chlorogenic acid beverage per day for 12 weeks, while maintaining their diet and physical activity as in

their daily lives. As a result, a reduction in visceral fat area was statistically observed in the group consuming the chlorogenic acid-containing beverage (319 mg/day of chlorogenic acids).





Kao has been conducting research on the physiological functions and safety of chlorogenic acids, the results of which have been published in 61 academic papers (as of April 2022).

○Ingredient Composition

"Luna phenon C-200" is made from selected green coffee beans rich in chlorogenic acids from coffee bean producing regions around the world, using Kao's proprietary "ecological drip process" based on traditional water extraction methods. This is a chlorogenic acid material that concentrates "Chlorogenic acid derived from coffee beans" with a low taste that can be easily blended into a wide range of products, while using green coffee beans that have not been roasted.

Compositional Analysis Example

Composition	C-200	Instant Coffee
Coffee bean-derived Chlorogenic acids	44%	1.4%
Caffeine	0.02%	2.8%

Caffeine has been reduced to the maximum extent possible, making it easier to include in caffeine-free foods and to consume at night.

○**Safety**

Chlorogenic acids contained in "Luna phenon C-200" are present in coffee, vegetables, and fruits, and have been consumed by humans since ancient times. In addition, safety evaluation studies have been conducted and reported that there are no safety issues (Pharmacology and Therapeutics. 2010:38(9);825-832 and 2009:37(4);333-344).

In addition, no toxicity was observed in any of the mutagenicity, single-dose toxicity, repeated-dose toxicity, and teratogenicity studies conducted.

*Transcribed from the safety information posted on the website. https://www.kao.com/jp/nutrition/about-cga/cga04/

Transcribed from Tokuho "Healthya Coffee Unsweetened Black".

○**Product Specifications**

Appearance ： Yellowish brown powder

Chlorogenic acid derived from coffee beans ：44.0±4.0

Caffeine ：0.047% or less

Dry weight ：5.0% or less

○**Physical and chemical properties**

Solubility ： Easily soluble in water (stir well to avoid lumps)

Hygroscopicity ：Hygroscopic (seal the package after opening)

pH stability ：Turns green under high pH conditions

○**Product Form**

Packing ： 10 kg in a cardboard box (2 x 5 kg bags inside)

Shelf life ：3 years after manufacture in unopened package (Store at room temperature away from high temperature and humidity)

○**Labeling**

Labeling on food products e.g. green coffee bean extract, etc.

○**Example of formulation in food products**

Appearance

○**Stability**

Heat resistance

The information contained herein is based on the results of experiments conducted with the utmost care and attention, but is not a guarantee of actual results.

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