PRODUCT INFORMATION

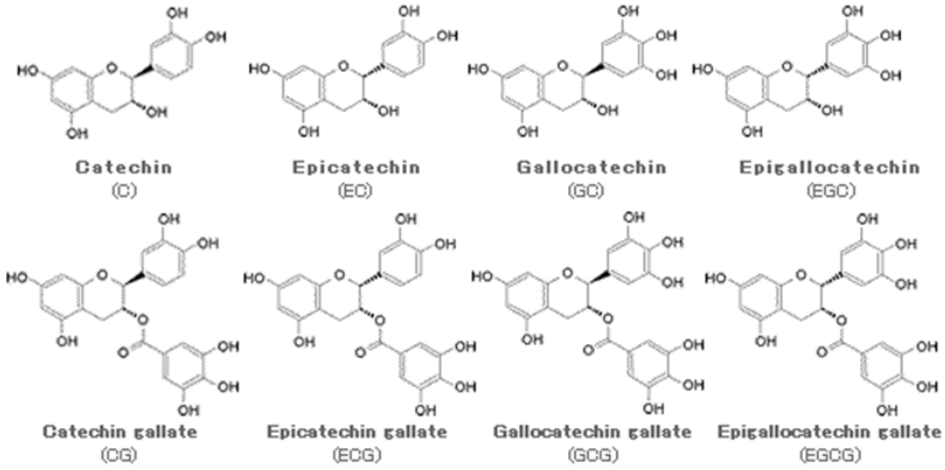
Kao Corporation
1-3,Bunka 2-chome,Sumida-ku,Tokyo 131-8501,JAPAN
URL＝https://chemical.kao.com/jp/

Tea Catechin Material

LUNA PHENON T-100

INTRODUCTION

Catechin is the major components (flavan-3-ol) classified as “green tea polyphenol” that are abundant in tea leaves, and green tea contains mainly eight types of catechins. It has been reported that tea catechins have antioxidant and antibacterial effects. In addition, as a food with functional claims, it is known to have the function of reducing body fat and visceral fat of those with a high BMI.



Chemical structures of tea catechins

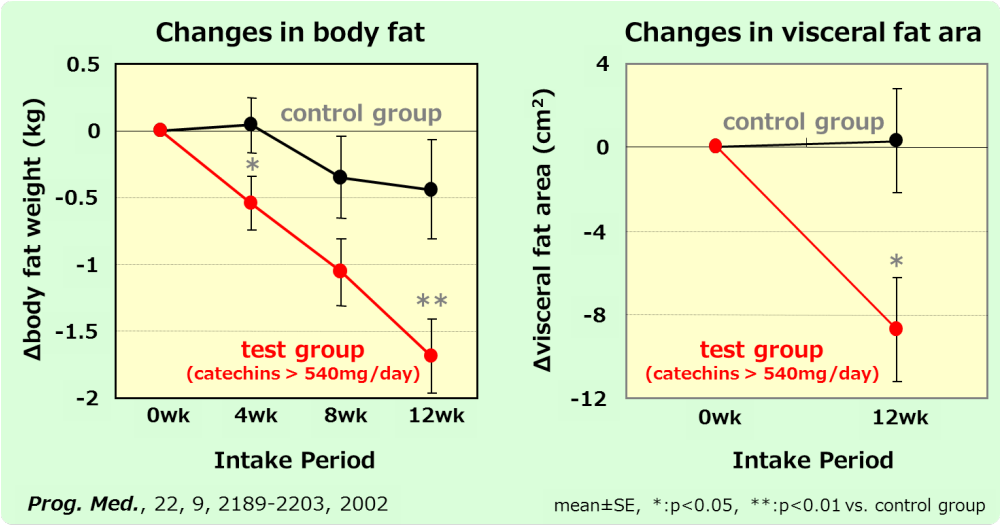
[Features of **LUNA PHENON T-100**]

- This is a powder extract obtained by carefully selecting raw tea leaves with abundant tea catechin content around the world and using Kao's original "natural refining manufacturing method" based on the traditional water extraction method.
- Also, this is a tea catechin material that reduces the annoying bitterness and miscellaneous taste and combines the original "deliciousness" and "health function" of green tea brewed in a traditional teapot.
- This product has a track record of use as a raw material containing ingredients related to the functionality of foods with functional claims (FFC).

HEALTH BENEFITS: VISCERAL FAT REDUCTION

Kao has conducted a study of obesity for about 30 years, and found that the continued intake of tea catechins from a number of foods reduces body fat, especially visceral fat, by increasing the decomposition and consumption of human fat and boosting fat metabolism.

For 80 healthy men and women (43 men: average 42.1 years, average BMI 26.5 kg/m^2, 37 women: average 54.8 years, average BMI 25.9 kg/m^2), the diet and amount of exercise are the same as in daily life. As a result of continuous ingestion of tea catechin in the form of a beverage once a day for 12 weeks, in the group ingesting a beverage containing tea catechin (tea catechin 588 mg day), body weight, BMI, total abdominal fat and visceral fat were significantly reduced.



Subjects: 80 healthy men and women (43 men: average age 42.1 years, average BMI 26.5 kg/m^2, 37 women: average age 54.8 years, Average BMI 25.9 kg/m^2) / tea catechin 588 mg/day was continuously ingested for 12 weeks (126 mg/day in the control group).

Kao has been conducting research on the physiological functions and safety of tea catechins, resulting in more than 80 publications (as of July 2021).

CHARACTERISTICS OF INGREDIENT

LUNA PHENON T-100 is made by carefully selecting raw tea leaves rich in tea catechins from tea leaves around the world and using Kao's original "natural refining method" based on the traditional water extraction method. This is a tea catechin material that concentrates the original "deliciousness" and "tea catechin" of green tea.

Analysis example of **LUNA PHENON T-100**, general catechin product, and green tea

Composition	**LUNA PHENON T-100**	Tea catechin product A*	Tea leaves
Total catechins	37%	33%	13%
Catechin gallate ratio	47%	50%	45-65%
Gallocatechin ratio	76%	76%	76%
Caffeine to total catechins	3.2% (0.09)	6.1% (0.18)	2.6% (0.20)
Organic acids to total catechins	8.2% (0.22)	10% (0.30)	8.1% (0.62)

*general product extracted by water

- The amount of caffeine and organic acids per tea catechin is lowered to moderate bitterness and miscellaneous taste
- Tea catechin composition is almost the same as green tea brewed in a traditional teapot.

SAFETY

The catechin composition of the **LUNA PHENON T-100** is almost identical to green tea brewed in a traditional teapot. Green tea is also a food material with more than 1,000 years of long eating experience in Asian countries, and it has been reported that there is no adverse effect on health in large-scale epidemiological studies (Tomata, AJCN 2012).

In Shizuoka prefecture and Saitama Prefecture, where green tea is produced, there are people who consume more than 10 cups of green tea a day, which is equivalent to 1,000 to 1,500 mg/day in terms of tea catechins.

Acute toxicity: LD_{50} > 2000 mg/kg-bw (Oral administration)
Mutagenicity: negative (Reverse mutation test)

PRODUCT SPECIFICATIONS

Appearance:	pale greenish yellow powder
Total catechins	36 ± 4%
Caffeine	4.0% or less
Moisture	8.0% or less

PHYSICAL AND CHEMICAL PROPERTIES

Solubility:	soluble in water
Hygroscopicity:	yes (please keep tightly sealed after opening)
pH stability:	discoloration to dark brown under high pH conditions

PRODUCT DETAILS

Packaging:	Kraft bag (10.5kg)
Shelf life:	two years after production (stored at ambient temperature to avoid direct sunlight, high temperature and humidity)

FOOD LABELING EXAMPLE

Japan:	Green tea extract (green tea catechins)

FOOD FORMULATION EXAMPLES

- APPEARANCE

LUNA PHENON T-100 is relatively rarely colored by formulations and is less likely to affect the appearance of food.

EXAMPLES

Cookie (total catechins 680mg/50g)

Ingredients

Shortening	16.7%
Sugar	15.6%
Salt	0.5%
Whole egg	3.1%
Water	8.1%
Cake flour	52.0%
LUNA PHENON T-100	3.9%

Chocolate (total catechins 650mg/55g)

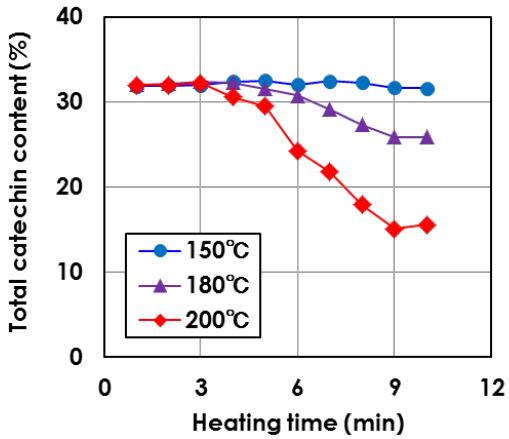
Ingredients

White chocolate	96.0%
Seed agent	0.5%
LUNA PHENON T-100	3.5%

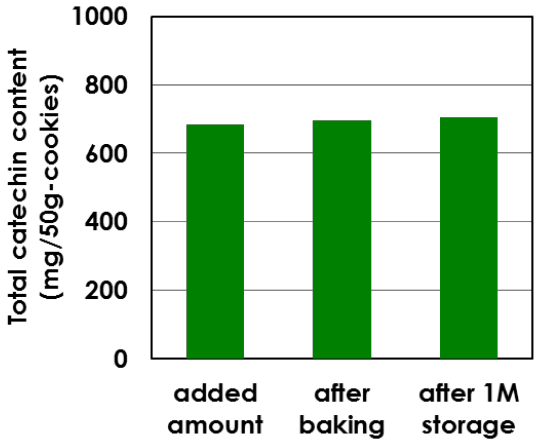
- STABILITY DURING FOOD PROCESSING AND IN FOOD PRODUCTS

LUNA PHENON T-100 is heat resistant up to 150°C and remains stable to some extent in food products after processing.

- Schaal oven test of **LUNA PHENON T-100**



- Stability of catechins during cooking and storage



The matters described here are based on the results of experiments conducted with the utmost care, but do not guarantee the actual results.

Kao Corporation Chemical Business Division
2-1-3 Bunka, Sumida-ku, Tokyo 131-8501, JAPAN
TEL: +81-3-5630-7852
URL: https://chemical.kao.com/jp/

Issue date: August 18, 2021