

June 00, 2025

## Filed Patent Application for Newly Discovered Hair Growth Ingredients and Mechanisms in (FemBerry™/Strawberry Guava Extract)!

We are **excited to announce the successful discovery of three hair growth ingredients and their scientific mechanisms** within our proprietary ingredient, FemBerry™ (Strawberry Guava Extract).

### ■ Background of This Discovery

FemBerry™ was launched in 2023 as an ingredient for improving cold sensitivity and swelling, and promoting barrier function. Subsequent animal studies confirmed its hair growth effects, and the presence of adenosine, a known hair growth component, was also verified.

Now, **through the latest research utilizing the FY2024 New Aichi Creation Research and Development Subsidy, we've successfully identified new hair growth ingredients beyond adenosine.**

### 【Research Highlights】

- Three Newly Discovered Hair Growth components \*1
  - ✓ Fructose
  - ✓ Phosphatidylethanolamine
  - ✓ Pedunculagin
- Elucidation of Scientific Mechanisms
  - ✓ **Proliferation effect on dermal papilla cells \*2:** Confirmed in all three newly discovered ingredients.
  - ✓ **Increased VEGF production \*3:** Particularly significant effect observed with pedunculagin.
- Intellectual Property Secured
  - ✓ **Patent application completed** for the discovered components and their mechanisms.

### ■ Future Developments

These discoveries elevate FemBerry™'s **potential as a next-generation hair growth ingredient**. By containing multiple scientifically backed hair growth components, it offers efficient hair growth support. A large-scale human clinical trial on the hair growth function of this ingredient has been completed, and data analysis is currently underway.

We position FemBerry™ as an innovative breakthrough ingredient in the hair growth and regeneration field and will actively promote it both domestically and internationally.

## ■ Terminology Explained

### \*1 Discovered Hair Growth Ingredients

- ✓ Fructose: A type of sugar also known as fruit sugar.
- ✓ Phosphatidylethanolamine: A type of phospholipid.
- ✓ Pedunculagin: A type of polyphenol known as tannin.

### \*2 Dermal Papilla Cells:

These cells play a crucial role in controlling hair growth, and evaluating their proliferative capacity which is a widely used method for assessing hair growth effects.

### \*3 VEGF:

Stands for Vascular Endothelial Growth Factor. Increased VEGF production promotes hair growth.

## ■ About FemBerry™ (Strawberry Guava Extract)

The raw material of FemBerry™ is the fruit of *Psidium littorale*, commonly known as yellow strawberry guava or Kibanjro. Although it's a tropical plant, seedlings are available for gardening in Japan. Previously, we discovered FemBerry™'s effectiveness in human trials for **improving cold sensitivity and swelling**. We also identified its active core components as **adenosine (platelet aggregation inhibitory effect)**, **glucosylceramide (GlcCer)**, and **digalactosyldiacylglycerol (DGDG) (vascular barrier function improving effect)**. Furthermore, we confirmed its **hair growth effect** in animal studies and filed a patent application.

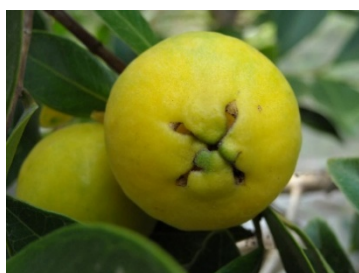


Photo 1. Fruit of Strawberry Guava (Yellow)

Sincerely,  
Oryza Oil & Fat Chemical Co., Ltd.