

Natural SW

Natural Snow White

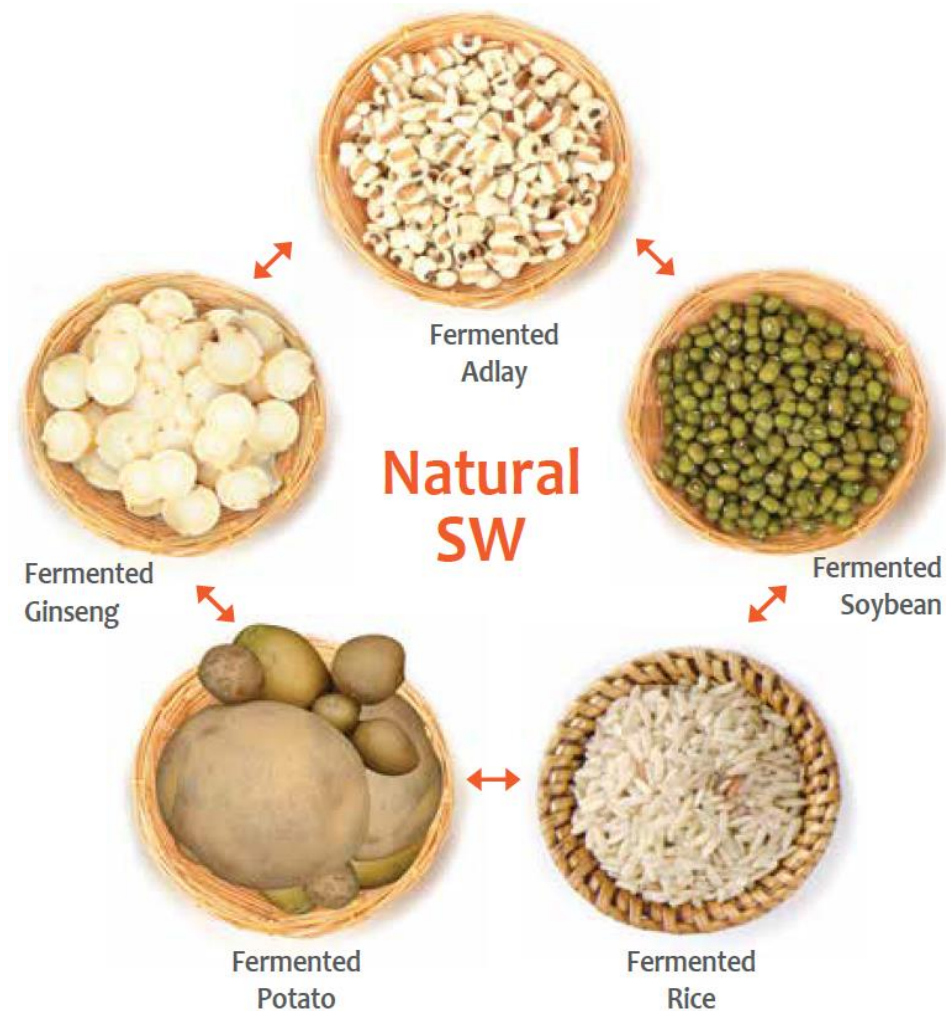
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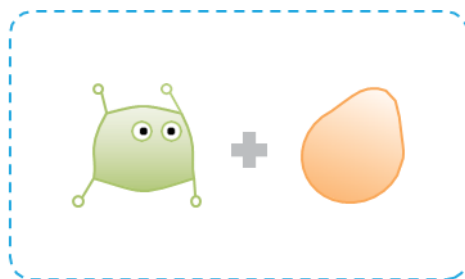


Natural SW

- A complex of 5 fermented ingredients (adlay, soybean, rice, potato and ginseng)
- 2-step fermentation (TSL Fermentation)
- Excellent skin moisturizing, anti-inflammatory and skin brightening effects
- Patented (Korea)

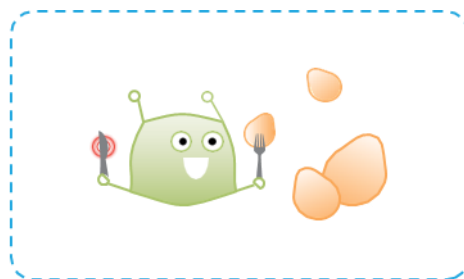


TSL Fermentation



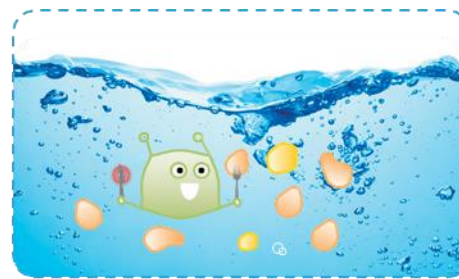
Before Fermentation

raw material + microorganism



1st Fermentation: Solid Fermentation

toxicity reduction, active compound production



2nd Fermentation: Liquid Fermentation

efficacy maximization, low molecularization



After Fermentation

various active compounds, efficacy maximization

Two stage Solid and Liquid Fermentation method, or **TSL Fermentation** method in short, is an upgraded method of traditional fermentation technique. It is a two-step fermentation process, first step with solid fermentation followed with liquid fermentation as a second step. The first step is a pretreatment process, which removes or neutralizes the toxic substances in the raw materials and maximize the extraction efficiency of active compounds. During the second step, the pretreated raw materials are fermented once again, and it is possible to develop a product with excellent efficacy with maximized active ingredients.

Plant Story



Soybean contains plenty of isoflavones such as genistein and daidzein which are type of phytoestrogen that helps woman to keep youth and health. It also contains a high level of phytic acid which provides an anti-oxidant effect.



Seeds of **adlay** (also known as coix) are used as a source of food and folk medicine in Asia. In Korea, it is made into tea or liquors. Recently, a number of studies showed anti-oxidant, anti-inflammatory, anti-tumor of adlay. The major components are fatty acid and oligosaccharides.



Potato is used as a folk remedy for burns in India and for pain of softening furuncles topically in Europe. Potato contains abundant vitamin C and minerals. It shows soothing and anti-allergic effects on skin.

Plant Story



Rice has a long history of cultivation and consumption. Rice brans and hulls contain a large number of bioactive compounds. Distribution of phenolic acid varies in botanical parts of the rice kernel. Ferulic acid is predominant in the bran whereas vanillic and p-coumaric acids are concentrated in the husk. Many studies demonstrated that rice bran had anti-oxidant, anti-allergic, anti-carcinogenic, and anti-diabetic properties.

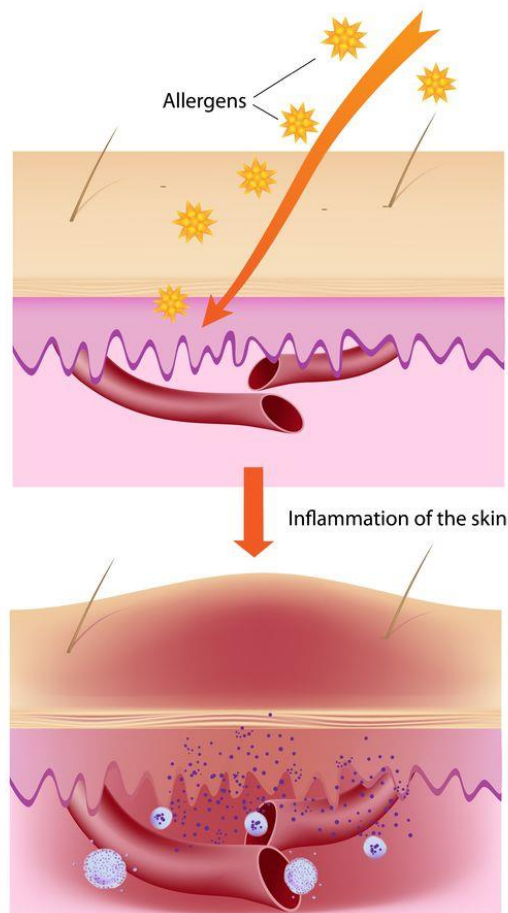


Ginseng is a well-known medicinal herb native to Northeastern Asia. In deference to its medicinal attributes, the genus name is derived from the Latin word Pancea. For thousands of years, ginseng has been used as an adaptogen and restorative tonic. Through its adaptogenic properties, *P. ginseng* is able to provide non-specific support following biochemical or physical stresses.

Efficacy Evaluation

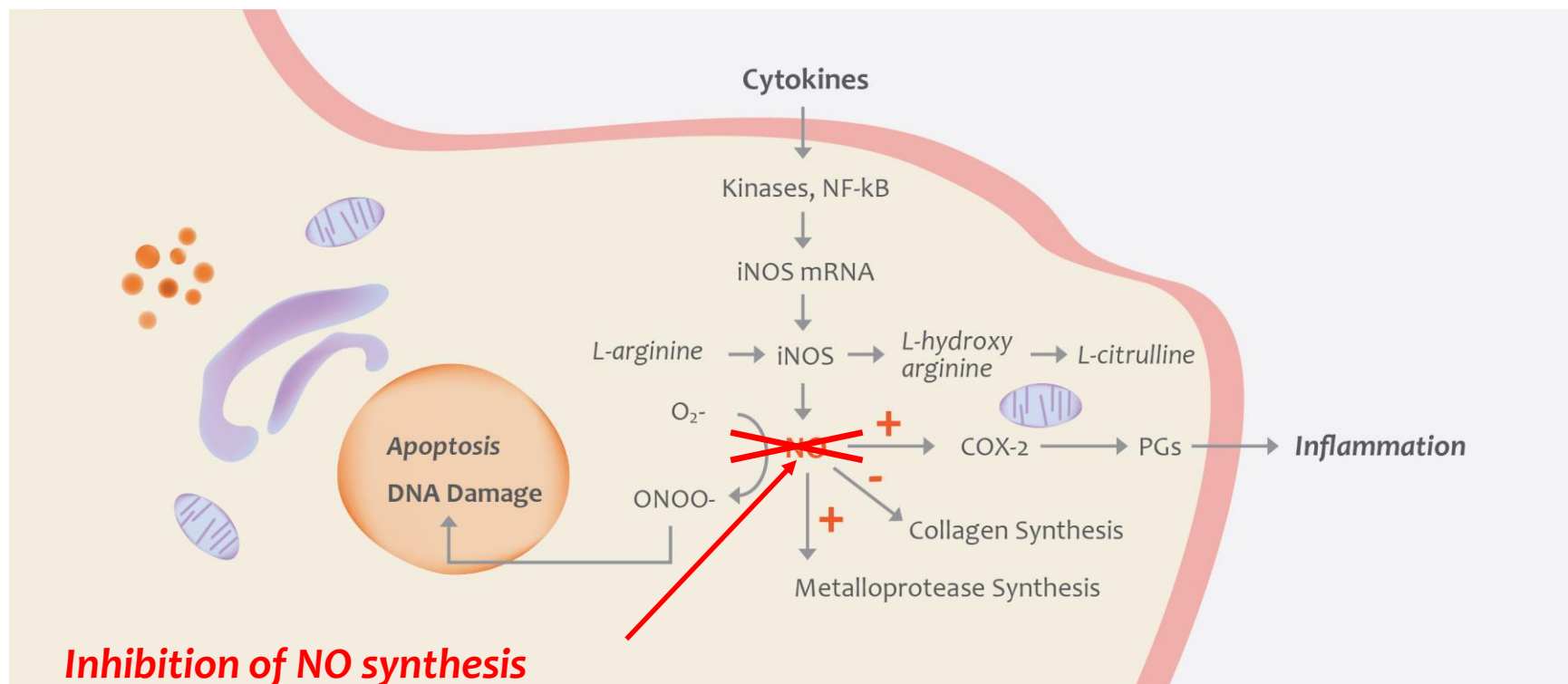
- ❖ **Anti-inflammatory Effect**
NO Synthesis Inhibition Activity (*in vitro*)
- ❖ **Skin Brightening Effect**
Melanin Synthesis Inhibition Activity (*in vitro*)
- ❖ **Skin Moisturizing Effect**
Skin Hydration Activity (*in vivo*)

What is Skin Inflammation?



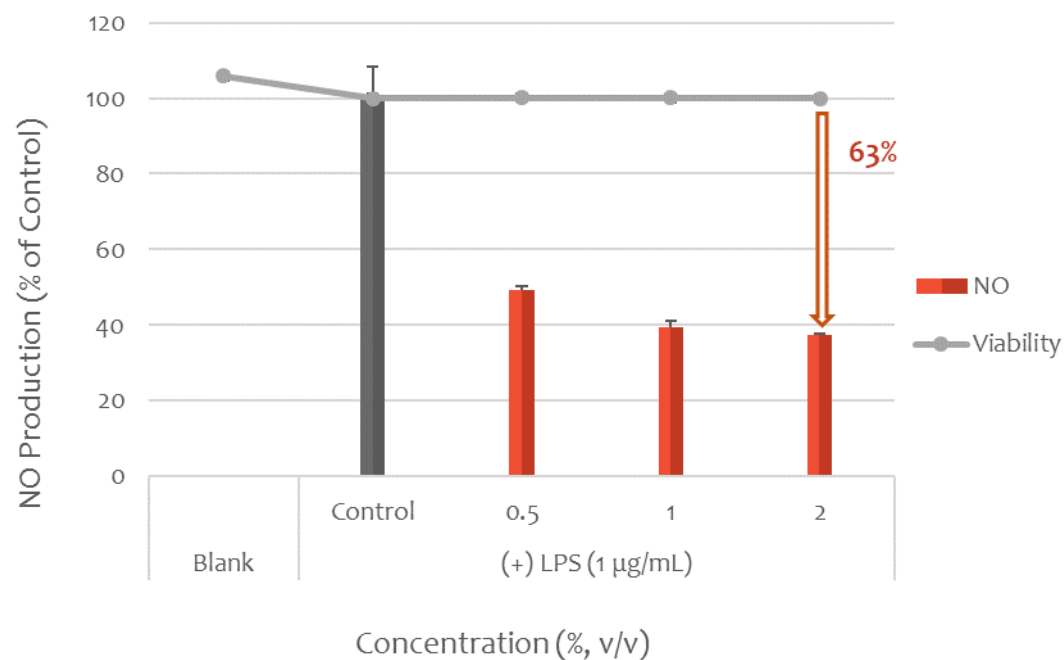
Inflammation is part of the complex immunological responses to a wide range of harmful stimuli including skin injury, tissue necrosis, infection, and irritants. The immune system is responsible for protecting our body from the harmful stimuli and of maintaining homeostasis. Like any other part of the body, the skin can be involved in immune responses. Inflammation in the skin often causes a rash to form. It's a response from the immune system to conditions such as bacterial/viral/fungal infections, allergic reactions, heat, and sunlight. The symptoms of skin inflammation are rash, skin redness, blisters or pimples, warmth, and thickening of the skin in the affected area.

Anti-Inflammation Mechanism of Natural SW



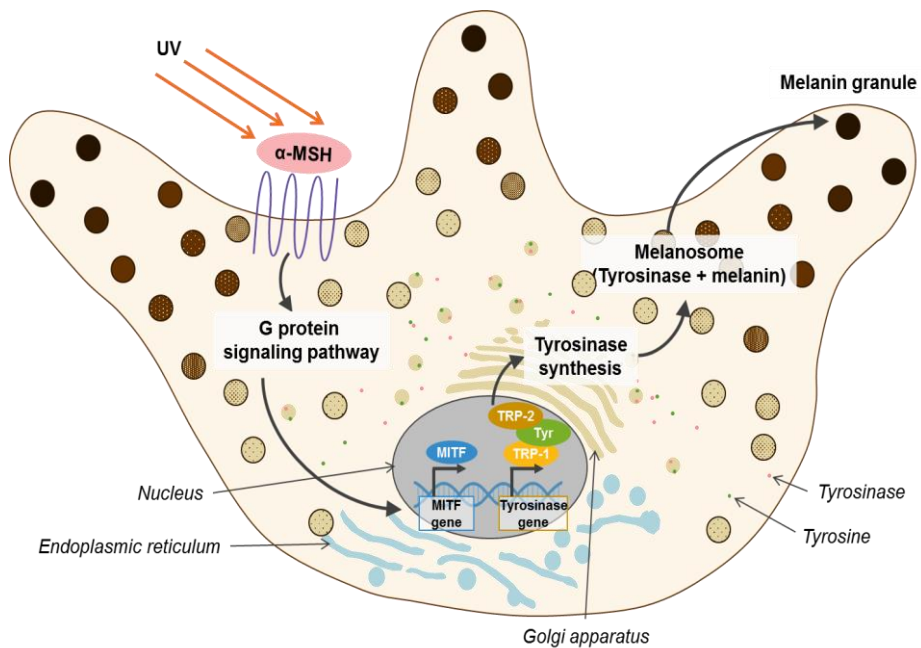
Anti-inflammatory Effect

•• NO Synthesis Inhibition Activity in RAW 264.7 cells (*in vitro*)



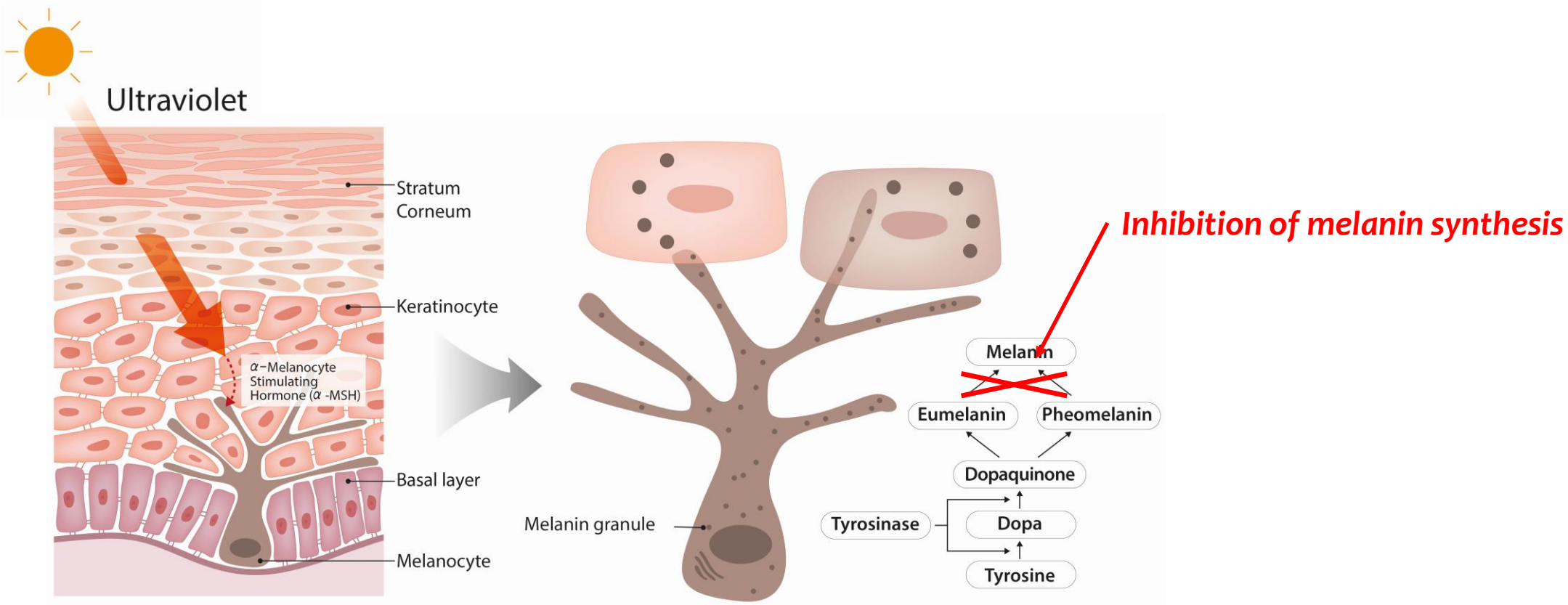
The anti-inflammatory property of **Natural SW** has been identified by measuring the decrease of nitrite (NO) production in macrophage cells. As a result, it showed **63% decrease of NO production at 2% of Natural SW**.

Melanin Synthesis



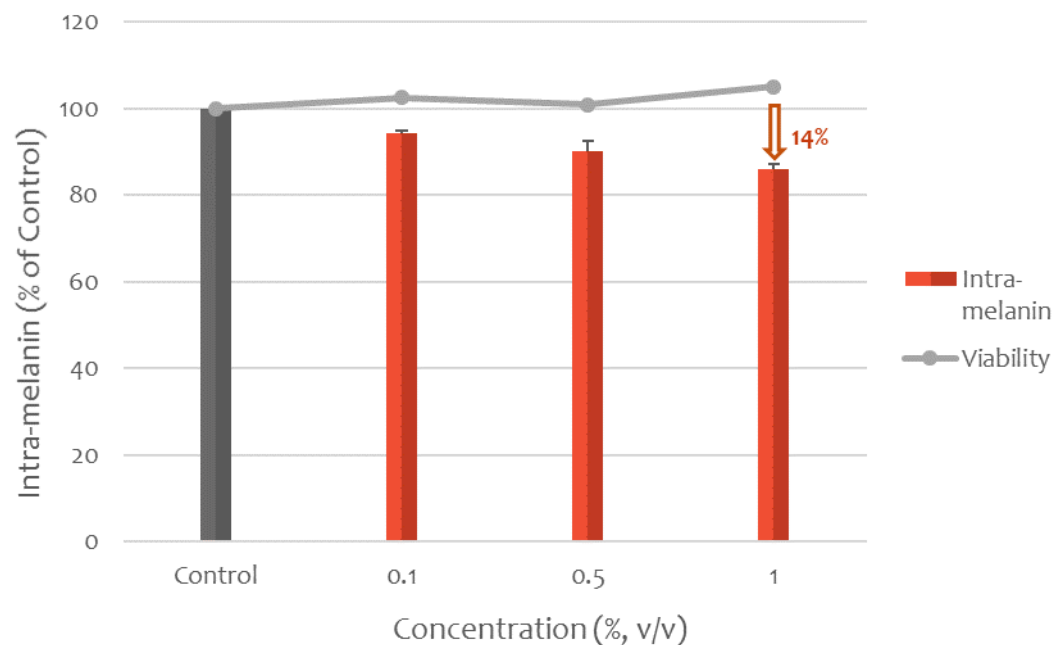
Upon exposure to UV radiation, DNA damage triggers cytokines, growth factors and other inflammatory factors to stimulate melanin production. Melanin is synthesized in melanocytes through a series of oxidative reactions involving amino acid tyrosine in the presence of the enzyme tyrosinase. This leads to the production of melanin, and melanin granules synthesized in the melanocytes are transferred to keratinocytes.

Skin Brightening Action of Natural SW



Skin Brightening Effect

🔴 Melanin Synthesis Inhibition Activity in Melanocytes (*in vitro*)



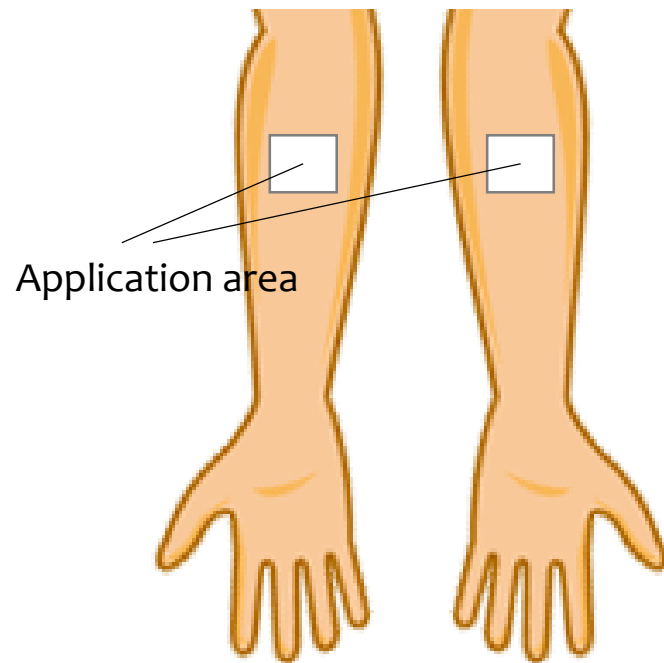
Skin brightening property of **Natural SW** has been identified by measuring the decrease in melanin production in B16-F1 melanoma cells. As a result, it showed **14% decrease in the melanin production** by applying 1% of Natural SW.

Water and Skin

Water is absolutely essential for the normal functioning of the skin and especially its outer layer, the stratum corneum. Adequate skin hydration is critical for maintaining healthy skin, and moisturizers are an important component of basic skin care. The ability of the skin to hold water is primarily related to the stratum corneum which plays the role of a barrier to water loss.



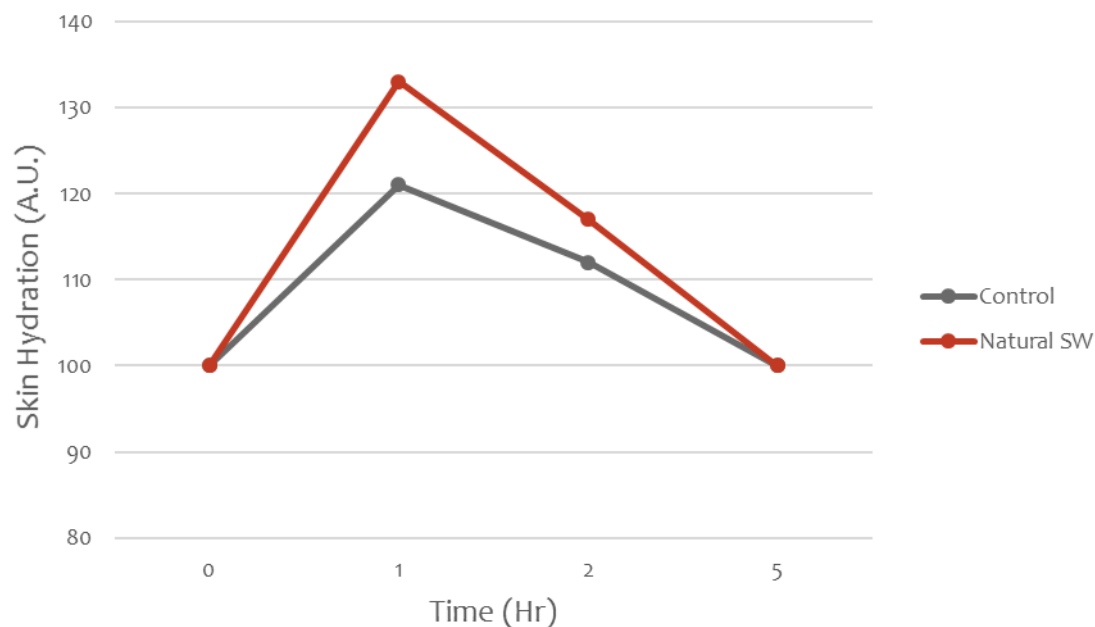
Skin Moisturizing Effect



- **Target Site:** Forearm
- **Subjects:** 6 females, aged between 18 to 65
- **Test Item:** Cream with 10% Natural SW
- **Application:** 4 cm²/site (2 cm * 2 cm)
- **Measurements:** 0, 1, 2, 5 hours after application
- **Test Instrument:**
 - Skin-o-mat (Cosmomed, Germany)

Skin Moisturizing Effect

🔴 Skin Hydration Activity (*in vivo*)



Volunteers applied a cream with **Natural SW** on the forearms and measured the hydration level, and as the result the hydration level was increased by 33% after 1 hour of application and maintained for 5 hours, and no adverse effects were found on all volunteers.

Summary



❖ Soybean

- Rich nutrients, such as proteins, vitamins
- Isoflavones, a type of phytoestrogen
- Anti-oxidant, anti-aging, anti-tumor effects



❖ Rice

- Rich nutrients
- Anti-inflammatory, skin brightening effects



❖ Ginseng

- Contains various types of ginsenosides
- Adaptogenic, anti-aging, anti-oxidant effects



❖ Adlay

- Rich in proteins, high water content
- Anti-oxidant, anti-inflammatory, anti-allergic effects



❖ Potato

- Rich in starch, vitamin B, vitamin C
- Used on sunburn skin
- Skin soothing, skin brightening, anti-oxidant effects



TSL Fermentation

Natural SW



Anti-inflammatory



Skin Brightening



Moisturizing

Patent



- ❖ Title: A moisturizing and anti-wrinkle cosmetic composition comprising fermented soybean, fermented rice, fermented potato, fermented ginseng and fermented adlay extract and preparation method of thereof
- ❖ Patent Number: 10-1914345
- ❖ Registration Date: 26 Oct, 20118

Product Information

- ❖ Product Name: Natural SW(PD)-RSPO
- ❖ INCI Name Lactobacillus/ Soybean Ferment Extract,
/ IECIC Name: Lactobacillus/Rice Ferment,
 Lactobacillus/Panax Ginseng Root Ferment Filtrate,
 Saccharomyces/Coix Lacryma-Jobi Ma-yuen Seed Ferment Filtrate
 Saccharomyces/Potato Extract Ferment Filtrate
- ❖ Dosage: 1 – 5%
- ❖ Formulation: Add to the formulation when the temperature is lower than 55°C.
 Recommended to add after the cooling process.
- ❖ Storage: Avoid direct light or UV.
 Keep it in a dry area at room temperature.

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