

Product for anti-inflammatory, anti-allergic and skin moisturizing effects

# Narcisture

*A bulb extract of Narcissus tazetta  
for skin soothing and skin barrier  
improvement*

the garden of  
**naturalsolution**  
[www.naturalsolution.co.kr](http://www.naturalsolution.co.kr)

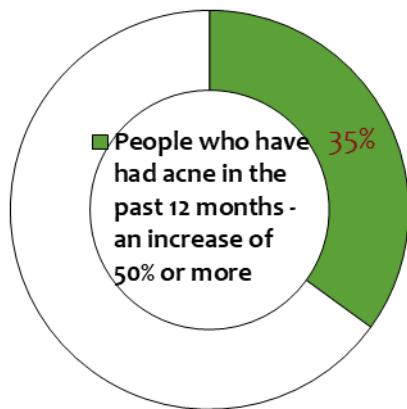


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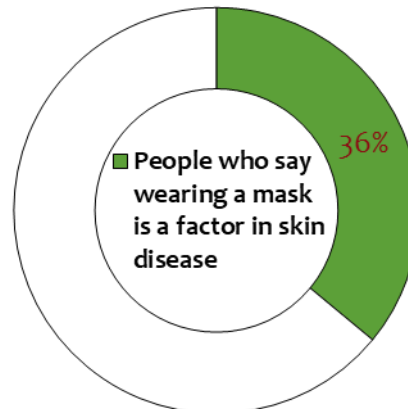
# Covid-19 and Maskne

According to the Mintel survey, wearing a mask due to COVID-19 significantly increased the incidence of acne and skin trouble. In Brazil, the increase rate of acne was close to 50%. And in the UK, skin trouble caused by masks, “maskne,” was cited as one of the major factors in the occurrence of skin diseases. As such, wearing a mask in the COVID-19 era is recognized as a cause of various skin troubles in people.

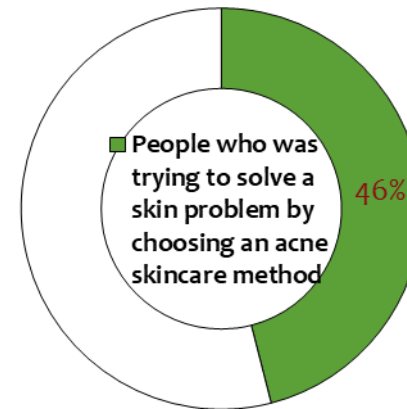
Brazil - Internet users aged 16 or older



UK - Internet users aged 16 or older who have experienced acne over the past 12 months



Thailand - Internet users aged 18 or older who have experienced skin problems over the past 6 months



Reference: Facial Skincare: Incl Impact of COVID-19 – Brazil / Mintel; UK Skincare Ingredients and Format Trends Market Report 2021 / Mintel; Dermacosmetics – Thai Consumer – 2021 / Mintel 2021.08

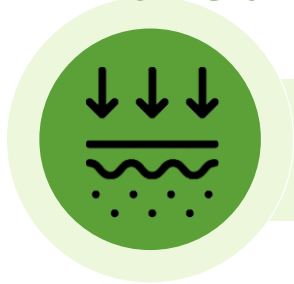
# Symptoms of Maskne



# Causes of Maskne

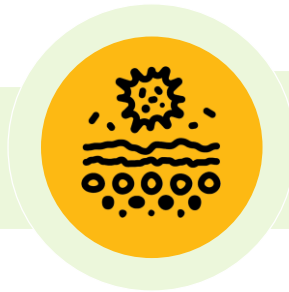
Maskne refers to acne and other skin troubles that arise from regular use of facial masks. Maskne is caused by many factors such as warm and humid environment, allergens, clogged pores or chafing and facial irritation.

## Warm and Humid Environment



When you breathe or speak while wearing a mask, hot air is trapped in the mask. It creates an environment where bacteria and skin flora can proliferate actively.

## Allergens



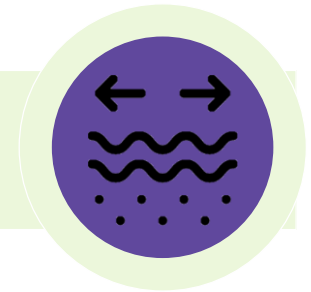
Facial skin can become sensitive or allergic to the material of the mask that has been pretreated with chemicals.

## Clogged pores



Sweat, oil, and dead skin cells are the main causes of clogging pores. Wearing a mask causes more of these substances to build up on your skin, clogging your pores more and causing skin problems.

## Chafing and Irritation



If the mask continues to rub on the face and causes skin friction, it can irritate the skin and cause rosacea flare-ups and irritant contact dermatitis.

# How to Prevent and Treat Maskne



## Alleviate Skin with Mild Skincare

- Use skincare that has anti-itching effect and can soothe irritated skin



## Choose a treatment that is Mild to The Skin

- Avoid using artificial fragrance products
- Use products with excellent anti-inflammation effect



## Apply a Skin Moisturizer

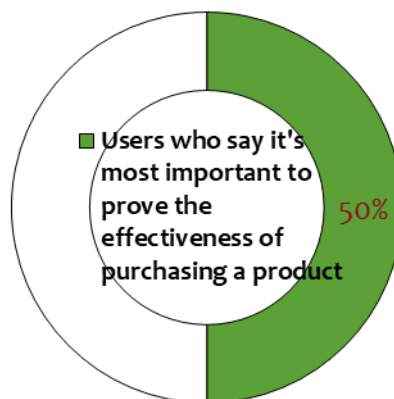
- Keep facial skin hydrated to protect from dirt and grime



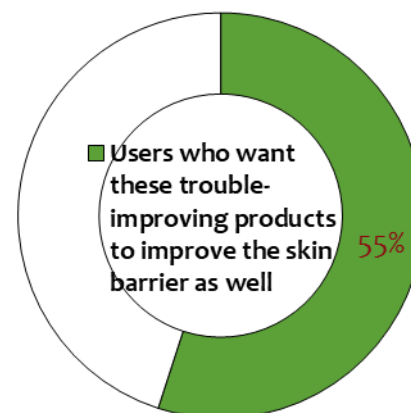
## Growing Demand for Relieving Maskne

Half of the US consumers who are stressed by skin problems from masks considered it important to choose products that clearly demonstrated the effectiveness of relieving skin trouble. More than half of Chinese consumers who use skin care products for sensitive skin demanded products that relieves skin problems, soothes damage to the skin, and replenishes moisture to create barriers to keep skin healthy.

US – Consumers aged over 18 who use certain skincare products at home



China - Consumers who use skincare products for sensitive skin



Reference: US Facial Skincare Market Report 2021 / Mintel ; Women's Facial Skincare – China – 2021 / Mintel 2021.08

# Cosmetics to Alleviate Maskne

## Averr Aglow



### Maskne Face Spray

- Containing chamomile and cucumber together, it refreshes the skin, soothes the skin and removes inflammation
- **Getting rid of skin troubles related to masks by removing factors that cause acne, without harming the skin's natural microbiome**

## Primera



### Organique Emulsion

- Featuring outstanding anti-oxidation efficacy, germinated black beans protect the skin from oxidation stress and help the skin appear clear and fair
- **Containing houttuynia sprouts, shields the skin from external stimulants, such as chafing by the mask**

## The Potions



### Cica Smooth Peeling Pads

- A daily peeling pad drenched with PHAs moisturizers that helps revitalize uneven skin tones and renew the skin for a healthy-looking complexion
- **Helping to reduce acne caused by face masks and control excess oil production without drying out the skin**

## Narcisture: Skin Soothing Solution

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**Narcisture** is a blub extract of *Narcissus tazetta*, which has anti-inflammatory effect and anti-microbial effect against skin resident flora such as *Bacillus cereus* and *Staphylococcus aureus*. Narcisture is effective in soothing skin inflammation that occurs under the mask in the COVID-19 epidemic era and strengthening skin barriers by filling with moisture.

With Narcisture, which contains the moisture of narcissus, consumers can make their skin healthy and lively while preparing for the post-corona new normal era.



## Plant Story: *Narcissus tazetta*

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*Narcissus tazetta* is a perennial flowering plant native to southern Europe from Portugal to Turkey, and is widely distributed from the Western Mediterranean to Afghanistan.

The name of the flower is derived from the name of the protagonist of a Greek myth, Narcissus. He fell in love with himself too deeply, which eventually led to his death. The flower language "self-esteem" in narcissus is originated from this myth.

It is known that narcissus has active ingredients such as tazettone, pretazettine, O-methylmaritidine and more. These compounds are known to relieve skin problems, such as acne, atopy, itchy skin, eczema, and prevent hair loss.



# *in vitro* Efficacy Evaluation

## ❖ Anti-inflammatory Effect

NO Production Inhibition Activity

IL-1 $\beta$  and COX-2 Gene Expression Inhibition Activity

TNF- $\alpha$  and PGE<sub>2</sub> Release Inhibition Activity

## ❖ Anti-allergic Effect

$\beta$ -hexosaminidase Release Inhibition Activity

## ❖ Skin Moisturizing Effect

AQP-3 Synthesis Increase Activity

## ❖ Anti-oxidant Effect

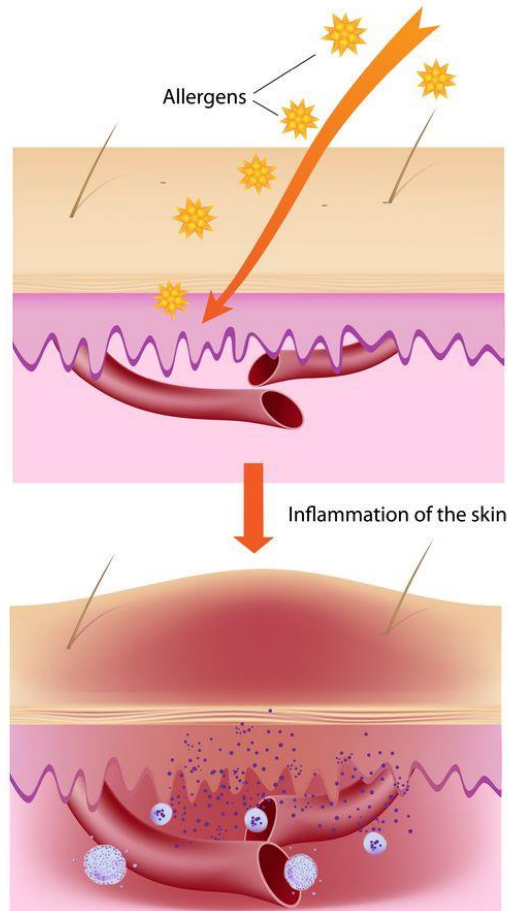
ROS Generation Inhibition Activity

## ❖ Anti-wrinkle Activity

MMP-1 Synthesis Decrease Activity

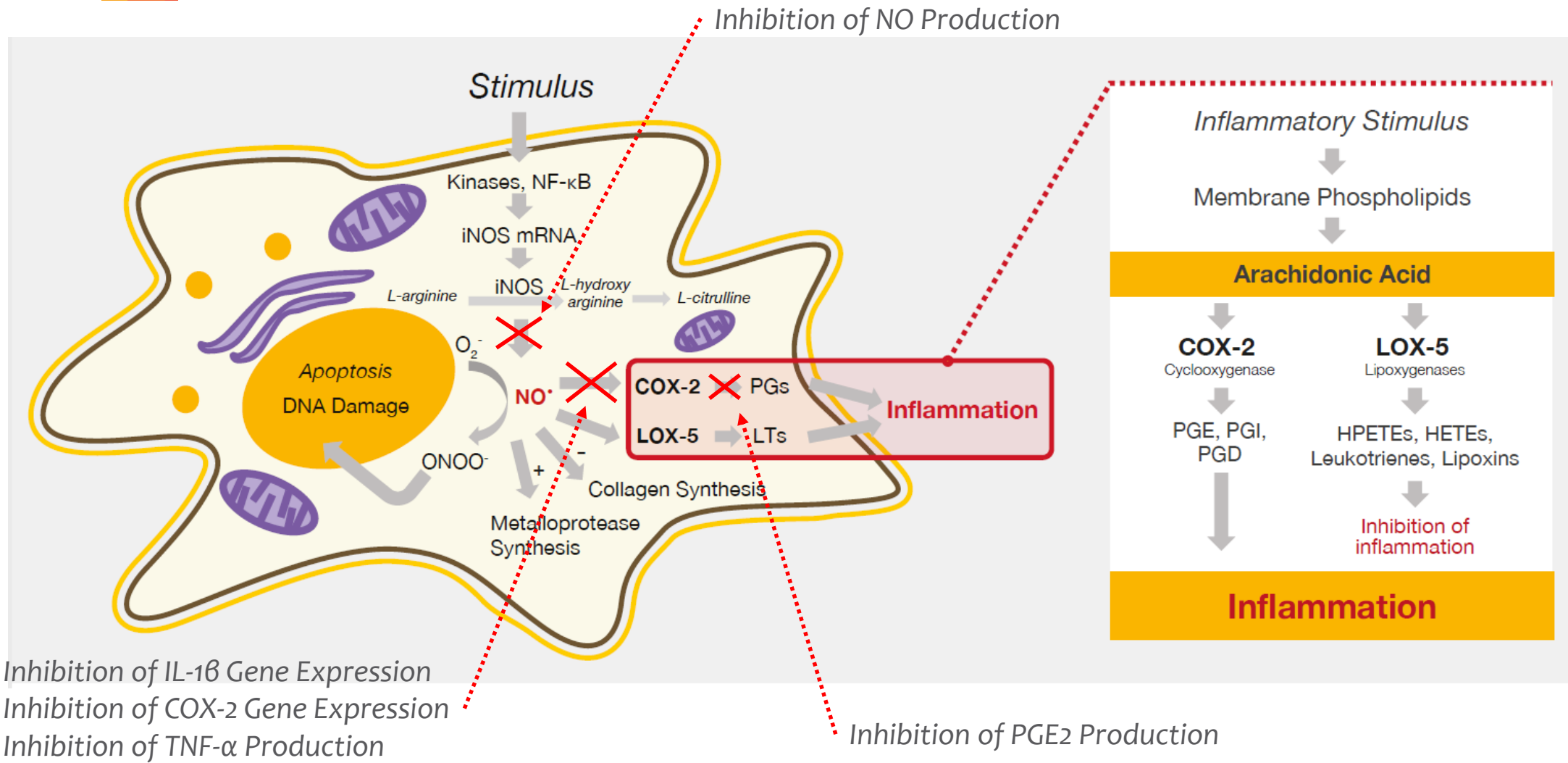


# What is Skin Inflammation?



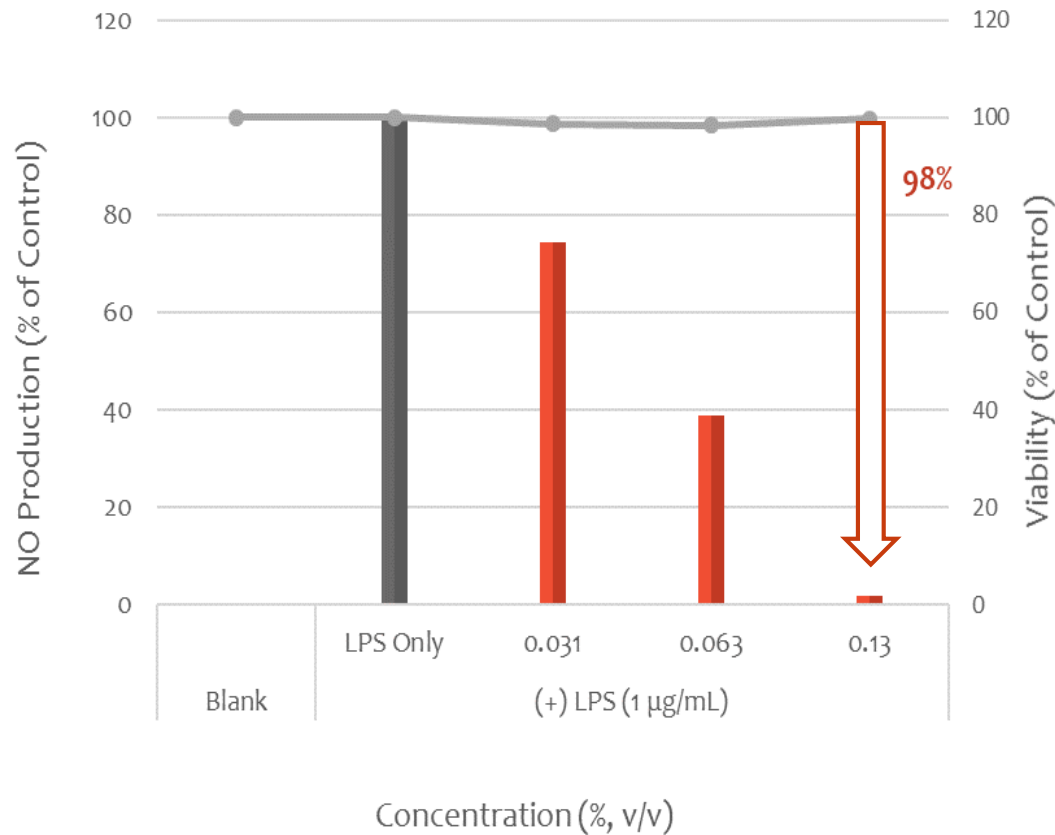
Inflammation is part of the complex immunological responses to a wide range of harmful stimuli, including skin injury, tissue necrosis, infection, and irritants. The immune system is responsible for protecting our bodies from harmful stimuli and for maintaining homeostasis. Like any other part of the body, the skin can be involved in immune responses. Inflammation in the skin often causes a rash to form. It's a response of 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 Narcisture



# in vitro Efficacy Evaluation: Anti-inflammatory Effect

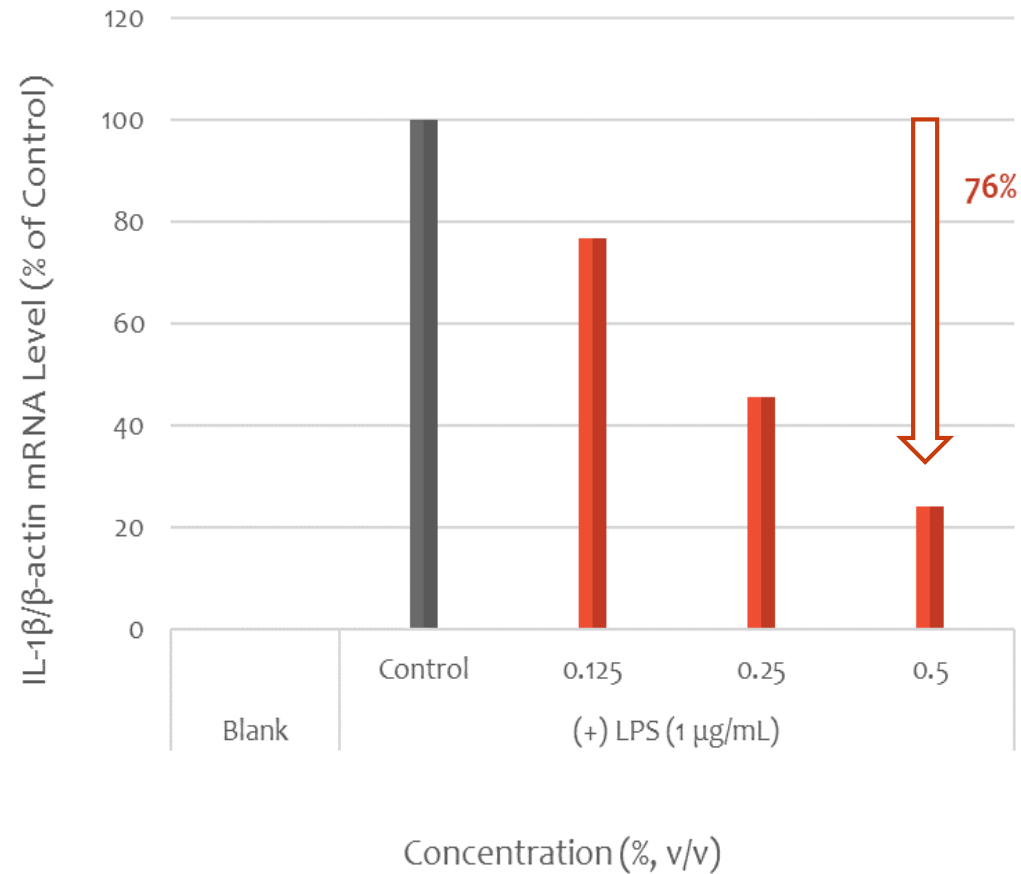
## •• NO Production Inhibition Activity



The anti-inflammatory property of Narcisture has been identified by measuring the decrease of nitrite (NO) production in macrophage cells. As a result, **0.13% of Narcisture decreased the NO production by 98.3%.**

# in vitro Efficacy Evaluation: Anti-inflammatory Effect

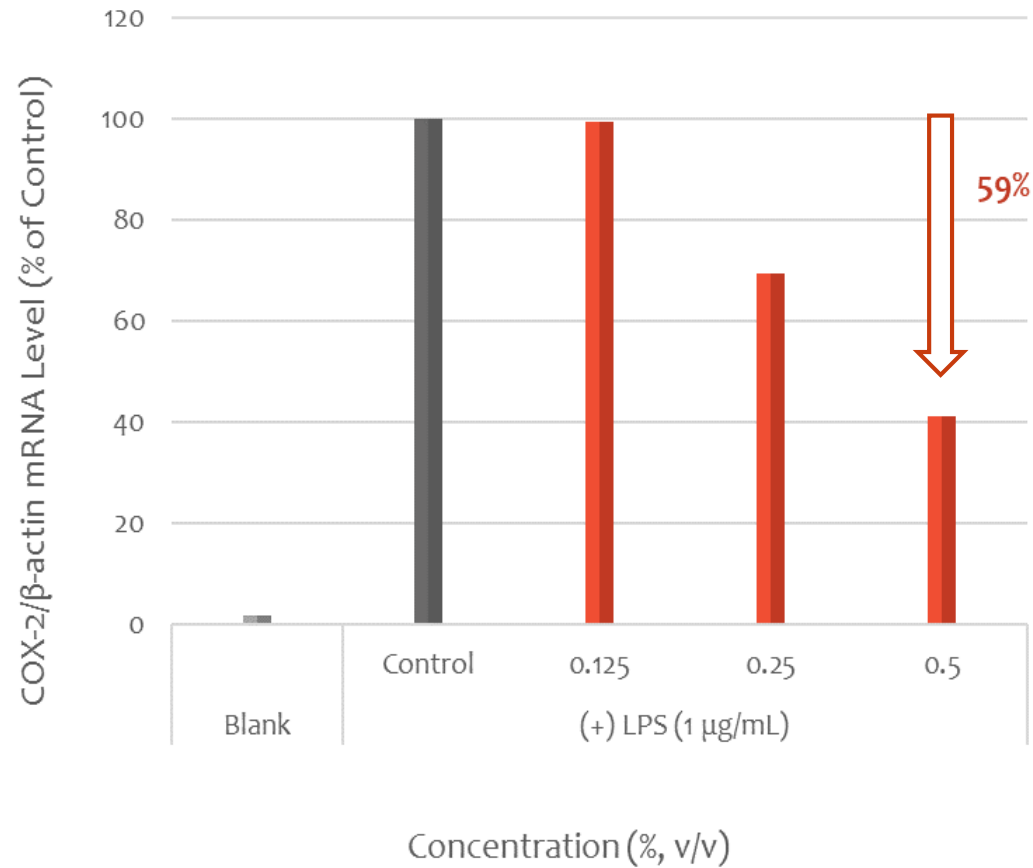
## IL-1 $\beta$ Gene Expression Inhibition Activity



In the test, **0.5%** of Narcisture inhibited the IL-1 $\beta$  expression activity by **76%**.

# in vitro Efficacy Evaluation: Anti-inflammatory Effect

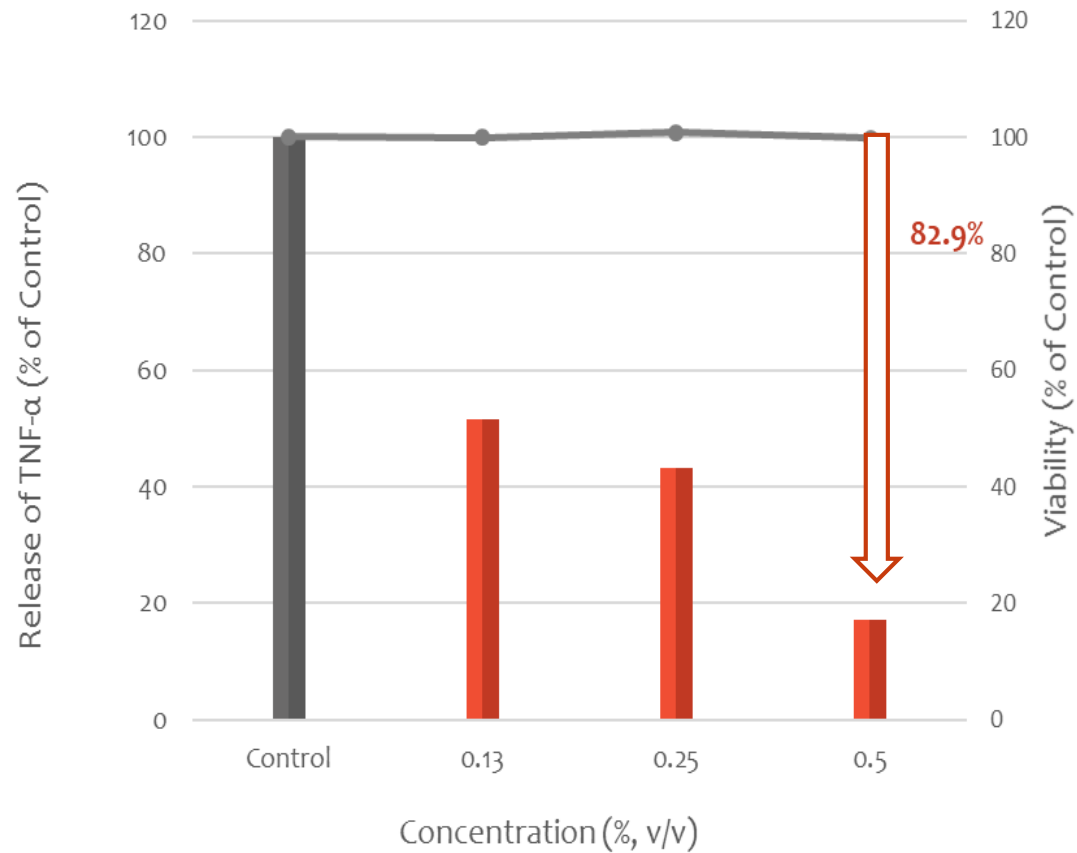
## COX-2 Gene Expression Inhibition Activity



In the test, 0.5% of Narcisture inhibited the COX-2 expression activity by 58.8%.

# in vitro Efficacy Evaluation: Anti-inflammatory Effect

## 🔴 TNF- $\alpha$ Release Inhibition Activity

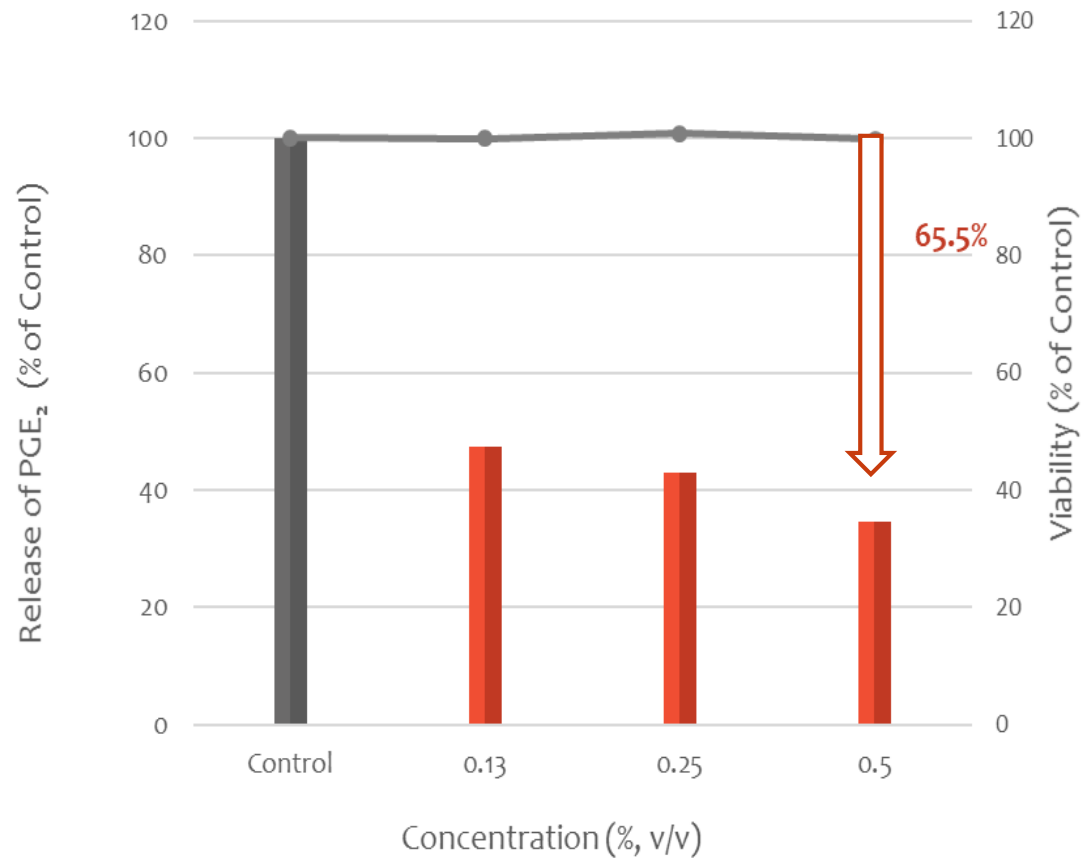


In the test, 0.5% of Narcisture inhibited the TNF- $\alpha$  release by 82.9%.



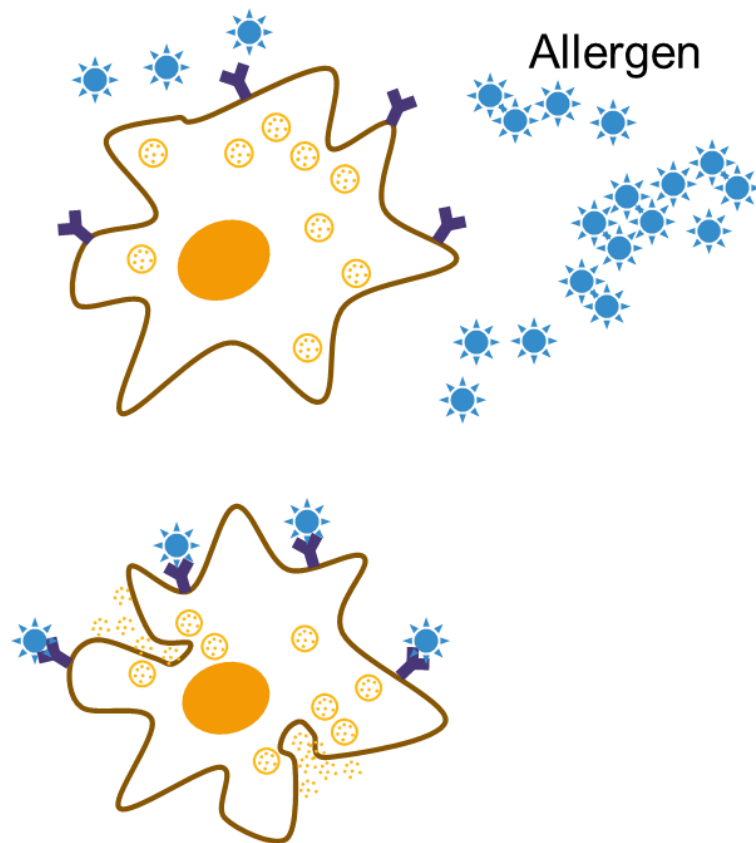
# in vitro Efficacy Evaluation: Anti-inflammatory Effect

## 🔴 PGE<sub>2</sub> Release Inhibition Activity



In the test, 0.5% of Narcisture inhibited the PGE<sub>2</sub> release by 65.5%.

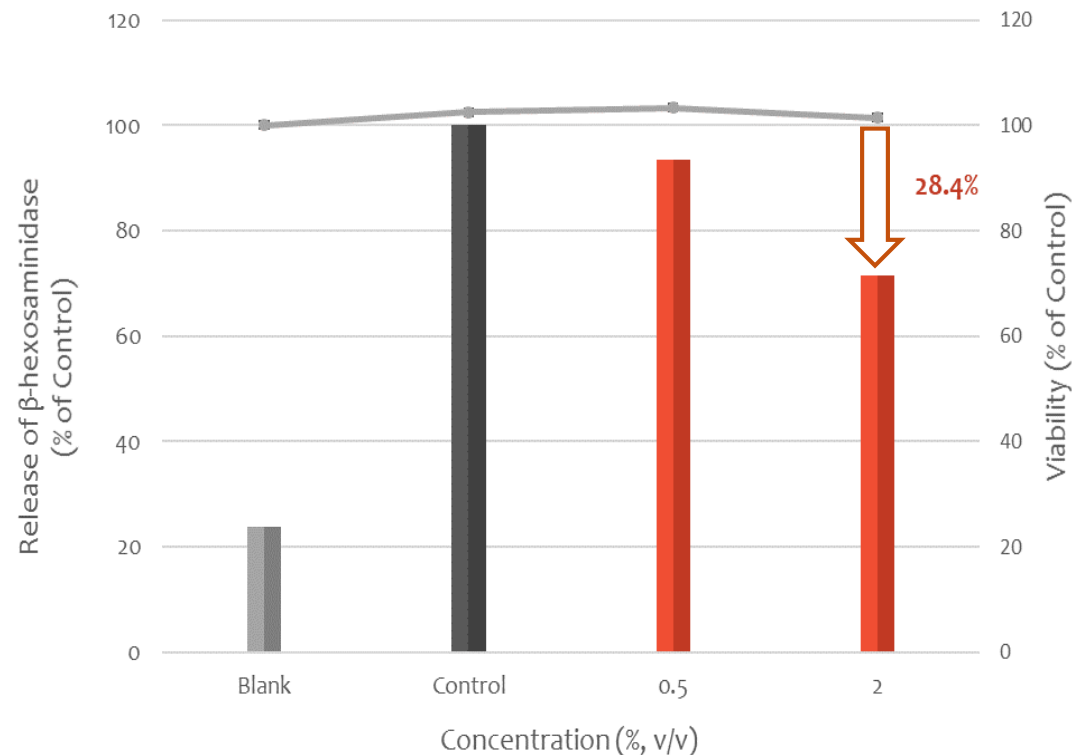
# Allergic Reaction: $\beta$ -hexosaminidase Release



Immediate allergy is caused by a chemical mediator released from basophile and mast cells via cell degranulation due to the reaction between an immunoglobulin E (IgE) antibody, bound with the IgE receptor on the cell membrane, and an antigen. Because mast cells play essential roles in provoking the pathogenesis of allergic reactions via the degranulation process, measuring the degree of degranulation reflects the level of mast cell activation.  $\beta$ -hexosaminidase released by these cells during this process has been reported to be a suitable marker for determining the degree of degranulation.

# in vitro Efficacy Evaluation: Anti-allergic Effect

## •• $\beta$ -hexosaminidase Release Inhibition Activity



The anti-allergic property of Narcisture has been identified by measuring the decrease of  $\beta$ -hexosaminidase release in basophils (RBL-2H<sub>3</sub>). As the result, **2% of Narcisture inhibited the  $\beta$ -hexosaminidase release by 28.4%.**

# Water and Skin

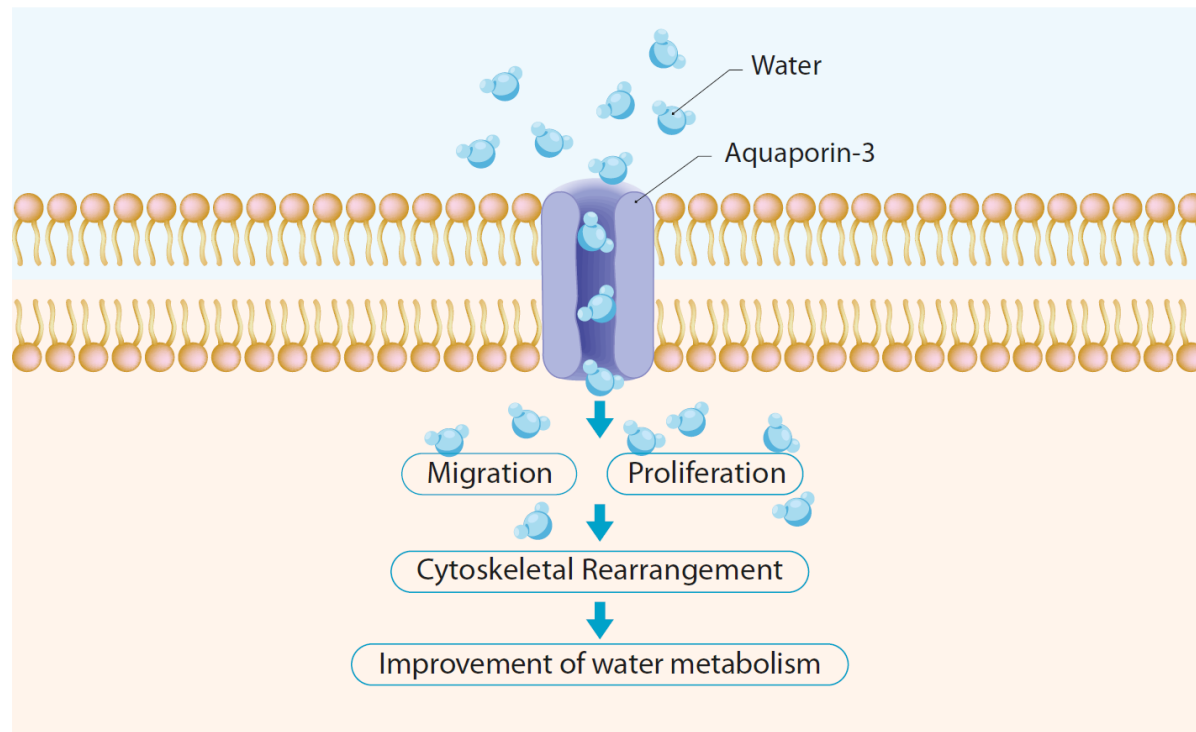
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Water is absolutely essential for the normal functioning of the skin and especially its outer layer, the stratum corneum. Adequate skin hydration is critical for maintaining healthy skin, and moisturizers are an important component of basic skin care. 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.



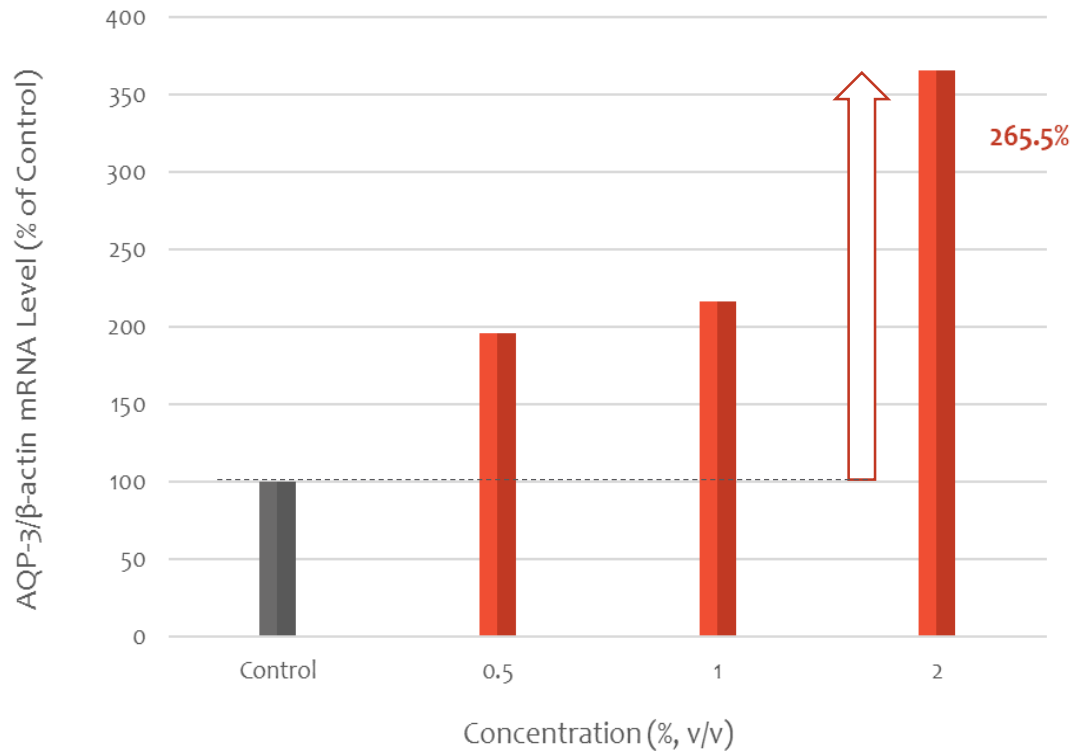
# Skin Moisturizing Mechanism

Aquaporin is an intrinsic membrane protein that forms a channel in the cell membrane to induce manual transport of water. Aquaporin plays an important role in moisture metabolism in the skin by selectively passing only water molecules while restricting the movement of other substances.



# in vitro Efficacy Evaluation : Skin Moisturizing Effect

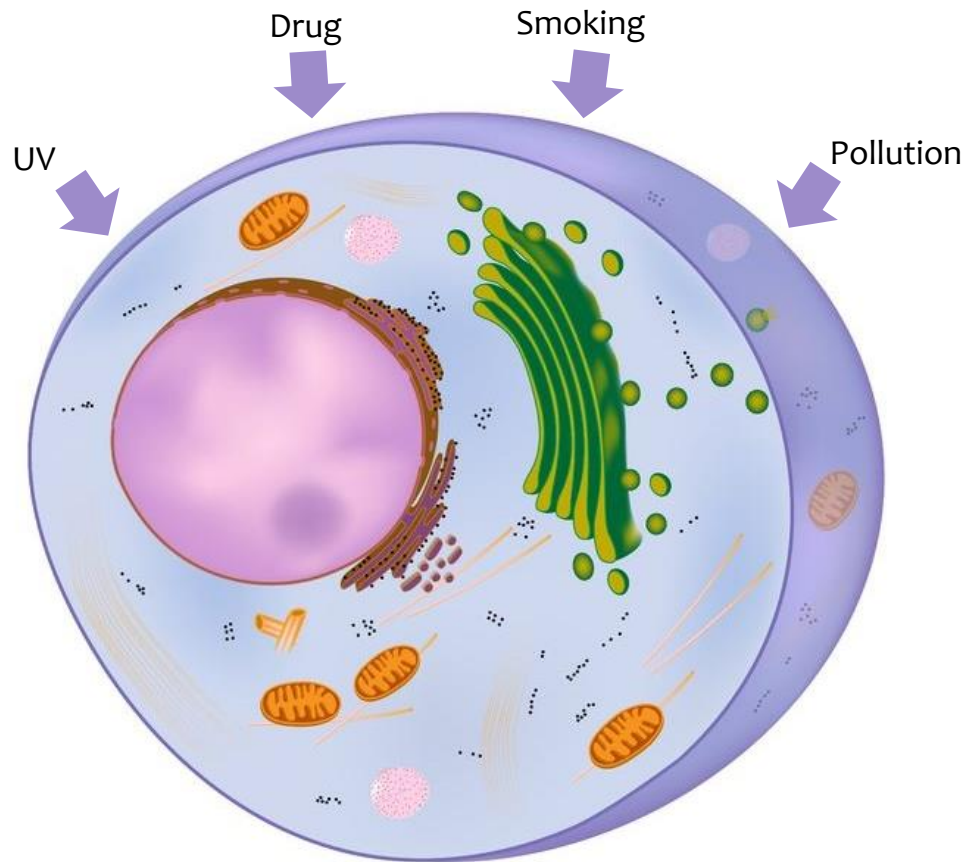
## 🔴 AQP-3 Synthesis Increase Activity



The skin moisturizing property of Narcisture has been identified by measuring the increase of AQP-3 synthesis. As a result, **2% of Narcisture increased the AQP-3 synthesis by 265.5%.**

# Oxidative Stress

*Reactive Oxygen Species (ROS) can be increased by*



*Intracellular ROS may induce*

- DNA damage
- Lipid peroxidation
- Amino acid oxidation: protein damage
- Oxidation of co-factors: enzyme inactivation
- Chronic inflammation

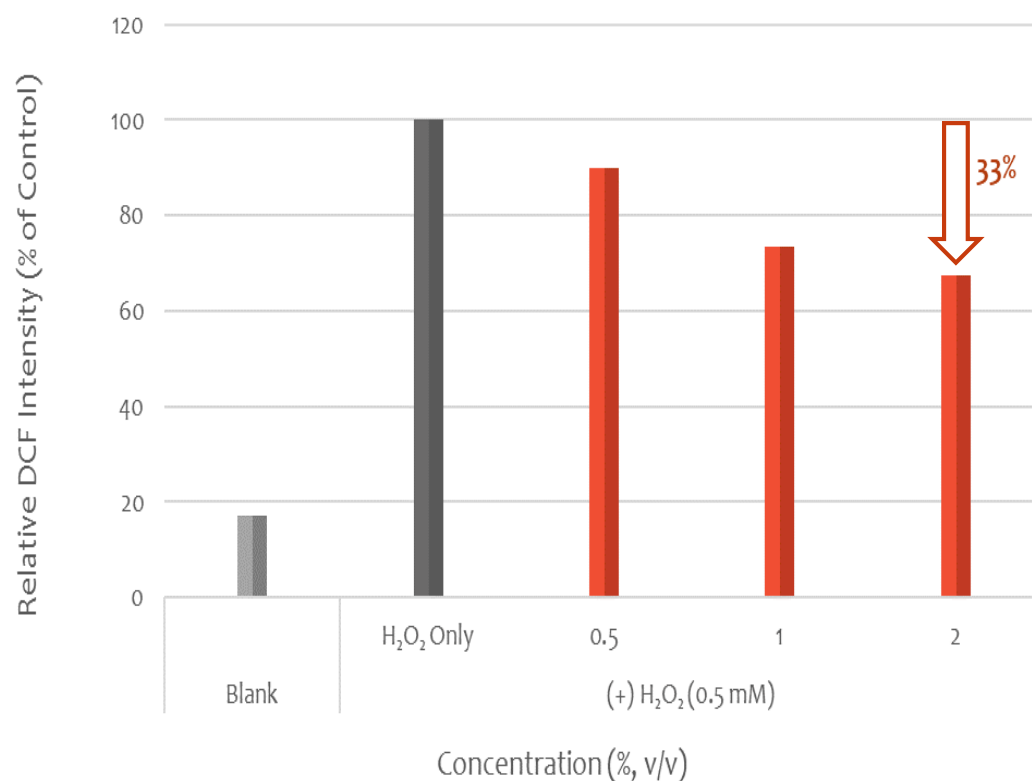
ROS



Skin Aging  
Inflammation

# in vitro Efficacy Evaluation: Anti-oxidant Effect

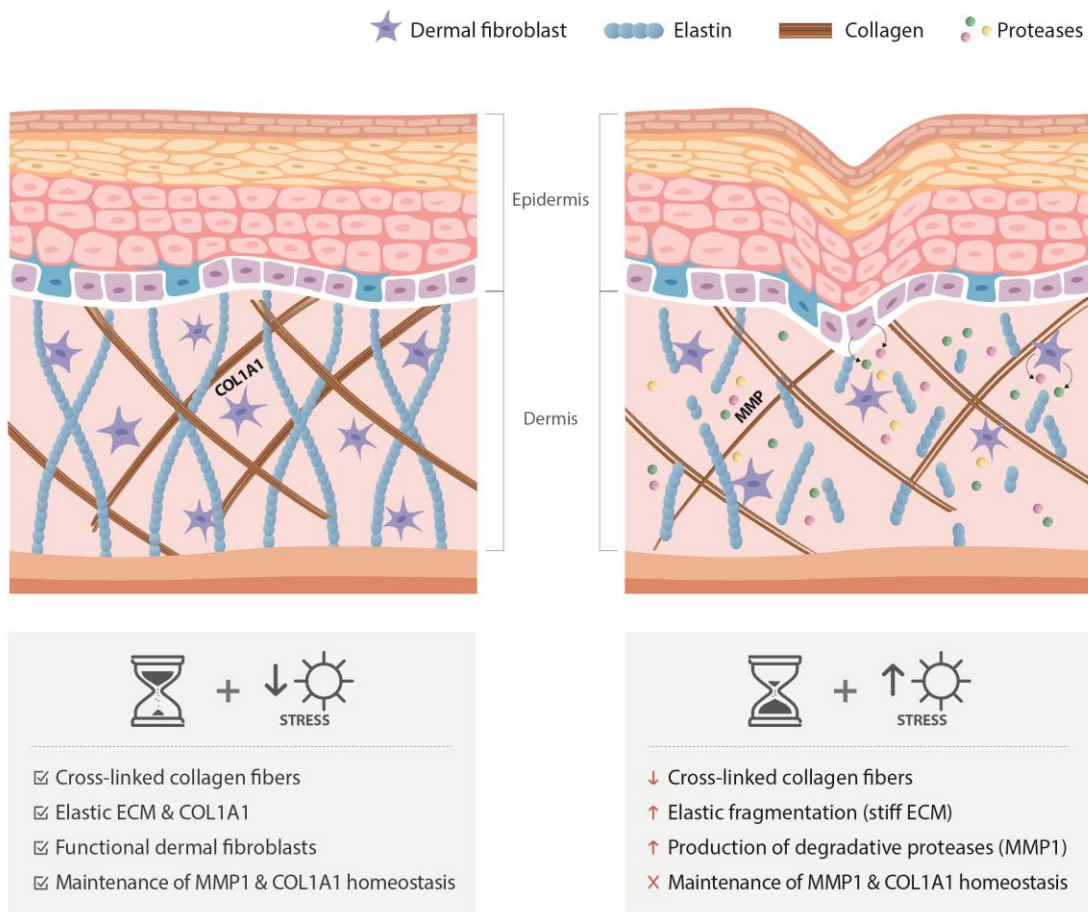
## ROS Generation Inhibition Activity



Anti-oxidant property of Narcisture has been evaluated by measuring the decrease in the ROS content produced in cells. As a result, **2% of Narcisture inhibited the ROS production by 32.5%.**



# Decomposition of Collagen by MMPs

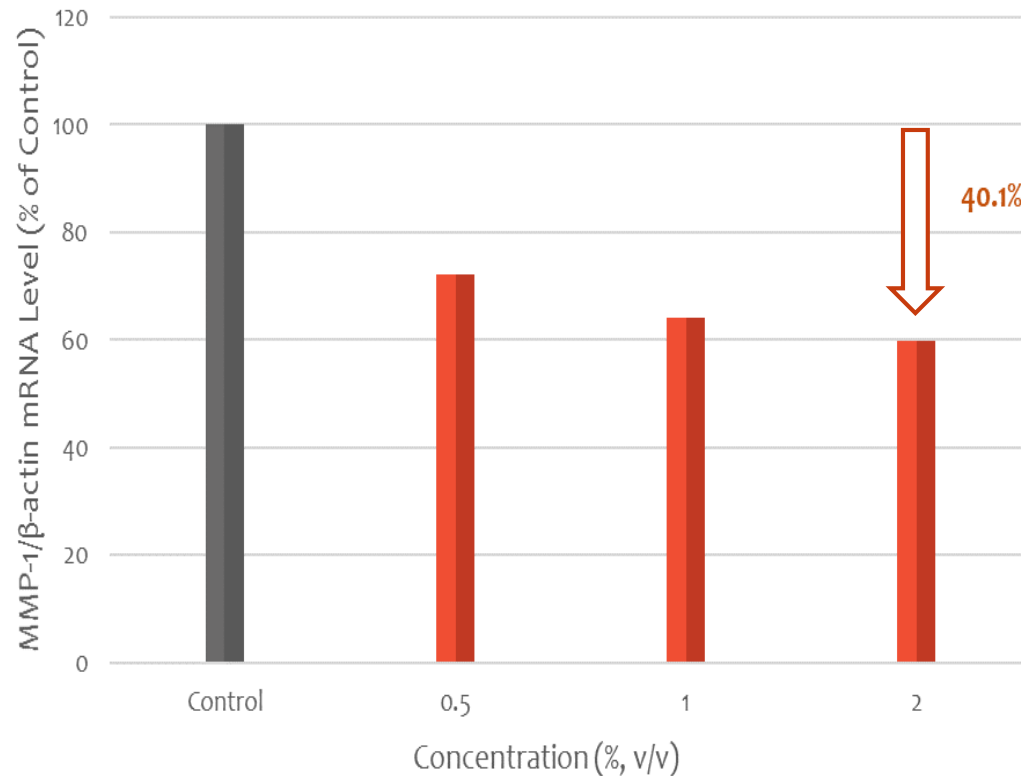


Collagen maintains skin firmness, elastin provides elasticity to the skin, and hyaluronic acid keeps hydration.

MMPs (matrix metalloproteinases) are the main group of enzymes responsible for the collagen and other protein degradation in the extracellular matrix (ECM), which are released into the skin by ultraviolet irradiation and active oxygen species. MMP-1 is a major enzyme that breaks down collagen fibers and is mainly involved in the decomposition of collagen types I and III present in the human skin, causing wrinkles on the skin.

# in vitro Efficacy Evaluation: Anti-wrinkle Effect

## ◉◉ MMP-1 Synthesis Decrease Activity



The anti-wrinkle property of Narcisture is identified by measuring the decrease of MMP-1 synthesis. As a result, **2% of Narcisture inhibited the MMP-1 release by 40.1%.**

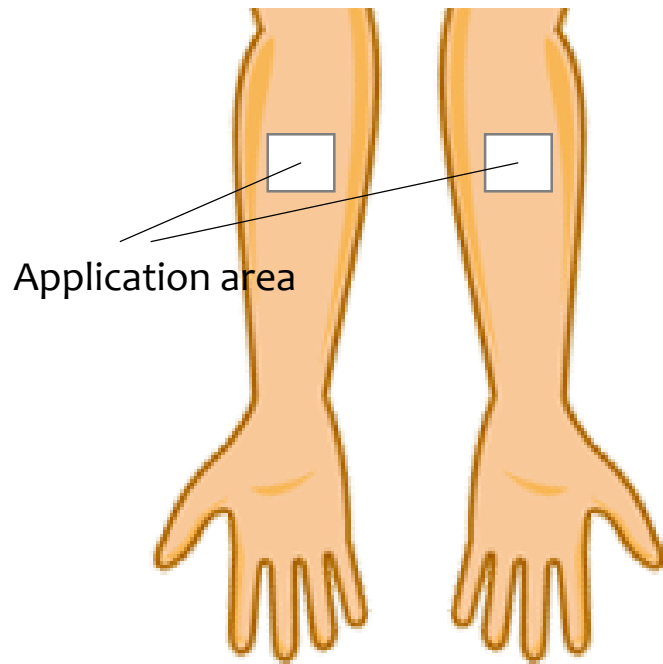
# in vivo Efficacy Evaluation

## ❁ Skin Moisturizing Effect

Skin TEWL Analysis



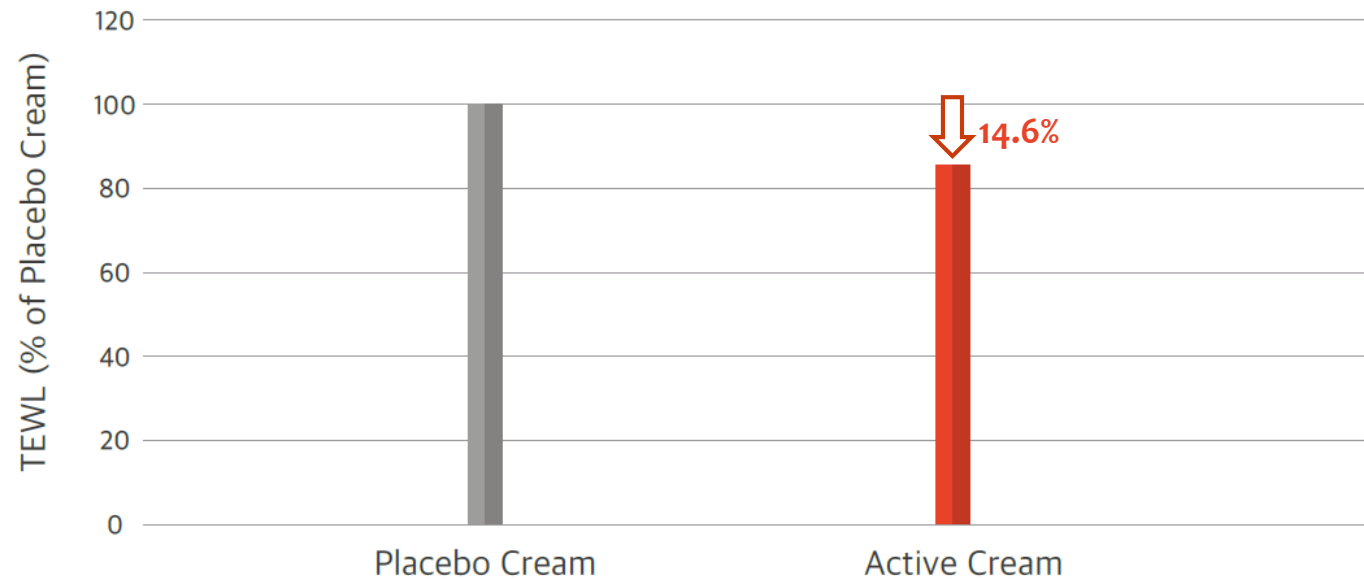
## in vivo Evaluation: Skin Moisturizing Effect



- **Target Site:** Forearms
- **Subjects:** 10 males and females, aged between 20 to 45
- **Test Item:** Cream with 5% Narcisture
- **Application:** 2 hours absorption with a patch attached to the forearms
- **Application Area:** 20 cm<sup>2</sup>/site (4 cm \* 5 cm)
- **Measurements:** 0 and 2 hours after application
- **Test Instrument:**
  - AquaFlux AF200 (Biox, England)

# in vivo Evaluation: Skin Moisturizing Effect

## 🔗 Skin TEWL Analysis



\*TEWL: Transepidermal Water Loss

- Cream with 5% Narcisture reduced TEWL by 14.6% compared to placebo cream.

# Marketing Points

- A bulb extract of *Narcissus tazetta* soothes skin and relieves the skin with strong anti-inflammatory, anti-oxidation, and anti-allergic effects
- Anti-wrinkle effect that suppresses MMP-1 synthesis helps to reduce the wrinkles and to increase skin elasticity
- Moisturizes skin and improves skin barrier by retaining water in the skin



## Product Information

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- Product Name: Narcisture(GPD)
- INCI Name: Narcissus Tazetta Bulb Extract
- Dosage: 0.5 – 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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