

# Sangmodan

*Hair care ingredients from  
natural herbs*

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



## Plant Story

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Hair loss, hair thinning, and itchiness of the scalp can be caused by a number of environmental factors such as smoking and air pollution. Sangmodan has been developed as a natural hair care ingredient and is composed of 11 oriental medicinal herbs based on traditional remedies. It provides anti-inflammatory effects and improves blood circulation to the scalp to prevent hair loss or hair thinning.

# Composition



## ❖ INCI Name

- Sophora Flavescens Root Extract (Sophora root extract)
- Capsicum Annuum Fruit Extract (Red pepper extract)
- Lycium Chinense Fruit Extract (Goji berry extract)
- Camellia Sinensis Leaf Extract (Green tea extract)
- Angelica Gigas Root Extract (Korean angelica extract)
- Angelica Dahurica Root Extract (Angelica root extract)
- Rubus Coreanus Fruit Extract (Korean black raspberry extract)
- Morus Alba Root Extract (Mulberry root extract)
- Pinus Palustris Leaf Extract (Pine needle extract)
- Lithospermum Erythrorhizon Root Extract (Gromwell extract)
- Polygonum Multiflorum Root Extract (Chinese knotweed extract)

# Plant Story



## ❖❖ Dahurian angelica

*Angelica dahurica* has been used as an anti-inflammatory, laxative, and anti-fungal cream for skin. It has anti-bacterial, wound healing, skin brightening, anti-oxidant, and anti-inflammatory effects.



## ❖❖ Korean angelica

*Angelica gigas*, also known as Korean angelica, is used as a major medicinal herb in Korea and China. In traditional medicine, it has been used to treat anaemia, menstrual pains, and postmenopausal syndromes. Research has demonstrated its anti-allergic and anti-inflammatory effects.



## ❖❖ Green tea

**Green tea** is the most popular tea in East Asia, which has undergone minimal oxidation during processing. Green tea has become a raw material used in beverages, health foods, dietary supplements, and cosmetic products. The primary active components of green tea polyphenols are catechins and flavonoids.



## Plant Story



### ❖ Red pepper

Capsicum has a long history as a source of healthy and biologically active compounds, such as flavonoids, phenols, carotenoids, capsaicinoids, and vitamins. Capsaicin, a major ingredient in *Capsicum annuum*, shows numerous bioactive properties such as anti-inflammatory and anti-oxidant and anti-obesity activities.



### ❖ Gromwell

*Lithospermum erythrorhizon* was used as a natural dye to obtain purple color in Korea. The root has also been used for promoting blood circulation and treating skin eczema. The pigments were reported to have anti-inflammatory, anti-bacterial, and anti-tumor activities. Its extracts also have anti-oxidant, anti-allergic, and wound healing properties.



### ❖ Goji berry

*Lycium chinense* is mainly distributed in East Asia. The berries are one of the most popular tonic herbs and have been frequently used in oriental herbal medicine for a long time. The fruits are usually infused in water or spirit liquor. The fruits are rich in vitamins, minerals, flavonoids, carotenes, and many other bio-active compounds.

## Plant Story



### ❖❖ Mulberry

White mulberry is cultivated to feed the silkworms. Each part of *Morus alba* has been used to treat various ailments, including colds, nose bleeds, spasms, dizziness. In traditional oriental medicine, the root extract of *M. alba* is prescribed as traditional treatment for accelerating wound healing.



### ❖❖ Pine needle

*Pinus palustris*, commonly called longleaf pine or pitch pine, is an evergreen tree. It is distinguished by long drooped leaves from the other species. It was used to treat kidney and bladder complaints internally and skin complaints, wounds, burns externally.



### ❖❖ Korean black raspberry

*Rubus coreanus* fruit is commonly used for making fruit wine. It has also been used as a traditional herbal medicine to treat impotence, enuresis, asthma, allergy, and inflammatory diseases. It is reported to have anti-oxidant, anti-inflammatory, and anti-tumor activities. *R. coreanus* extracts showed anti-aging and anti-obesity effects.

# Plant Story



## ❖ Chinese knotweed

There is a story about the origin of the plant's common Chinese name He Shou Wu which means 'Mr. He's hair became black.' An old man named 'He' ate *Polygonum multiflorum* root to keep from starving in ancient China. After eating the root, he regained health and strength. Furthermore, his black hair started to grow. It is also reported that *P. multiflorum* root promotes the activity of hair growth in mice and anti-oxidant activity.



## ❖ Sophora root

The dried root of *Sophora flavescens* is a well-known medicinal herb in East Asia. It has been used to treat various diseases, including diarrhea, eczema, psoriasis, and cancer. Experimental results also suggest that *S. flavescens* promotes hair growth and may affect atopic dermatitis and other inflammatory skin problems.

# *in vitro* Efficacy Evaluation

## ❖ Anti-oxidant Effect

DPPH Scavenging Activity

Superoxide Scavenging Activity

## ❖ Hair Growth Effect

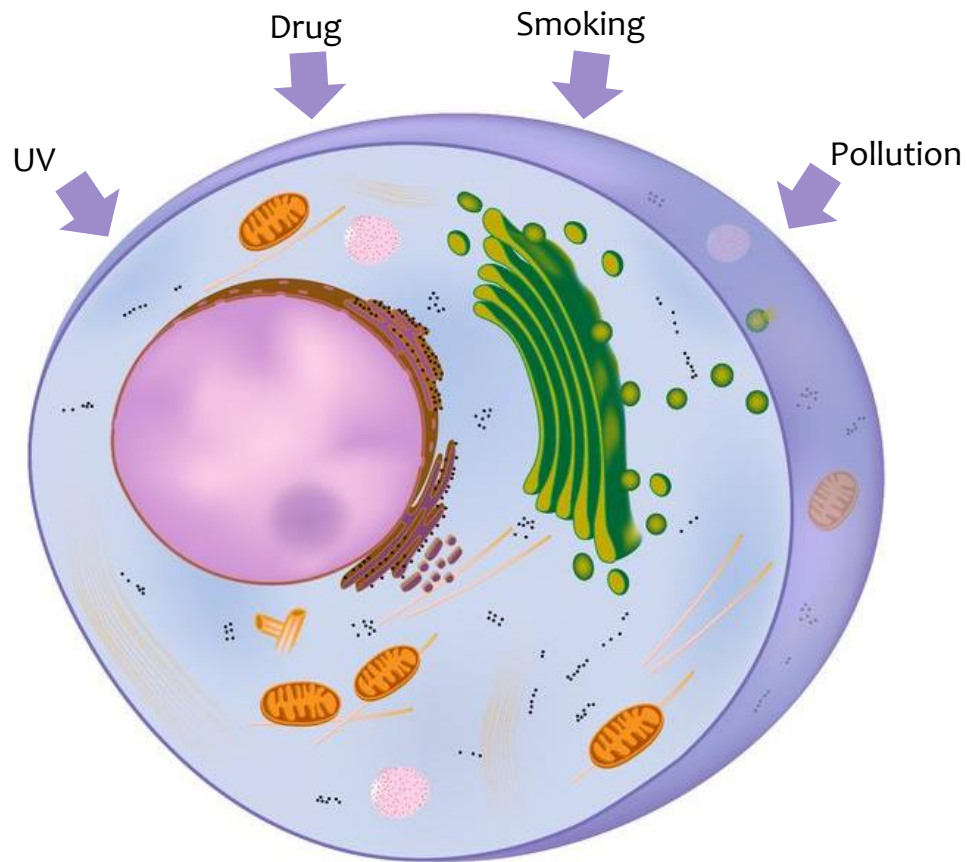
Hair Cell Proliferation in Human Dermal Papilla Cells (HDPCs)





# 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

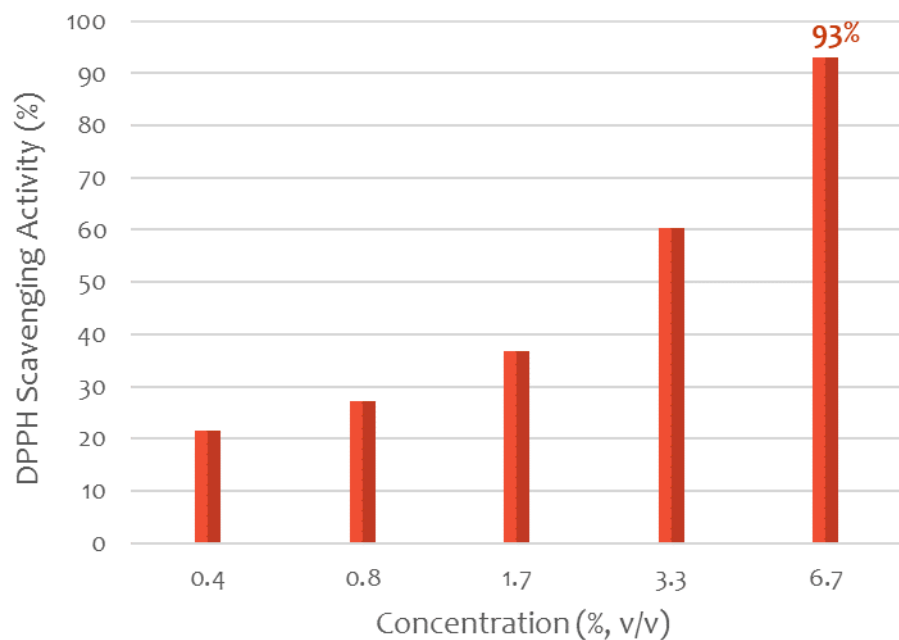
ROS



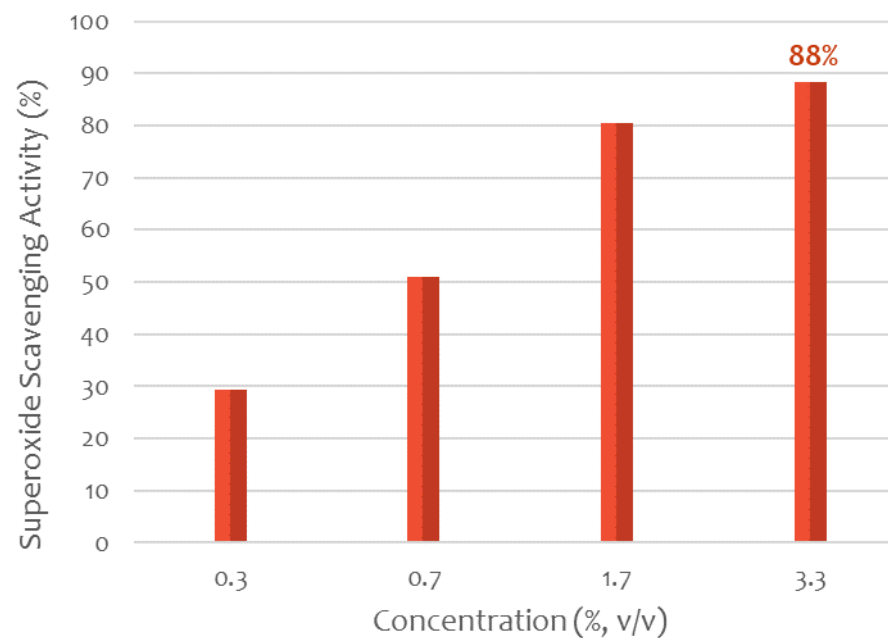
Skin Aging  
Inflammation

# in vitro Efficacy Evaluation: Anti-oxidant Effect

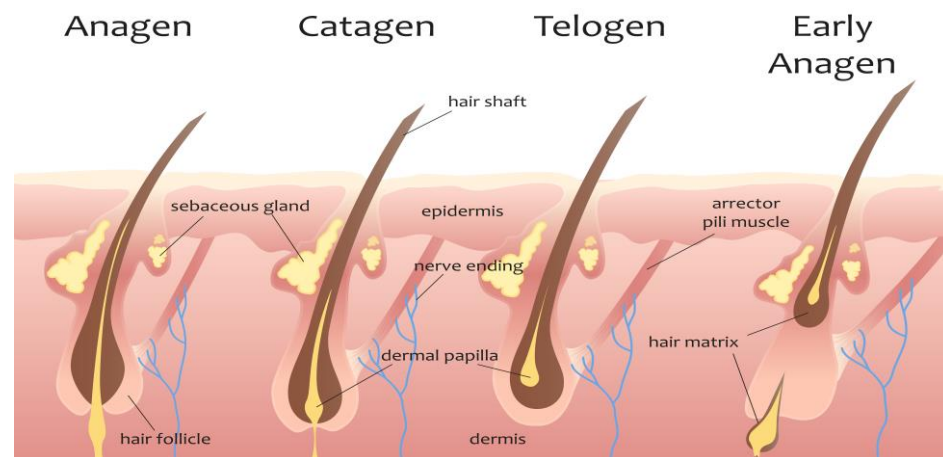
## •• DPPH Scavenging Activity



## •• Superoxide Scavenging Activity

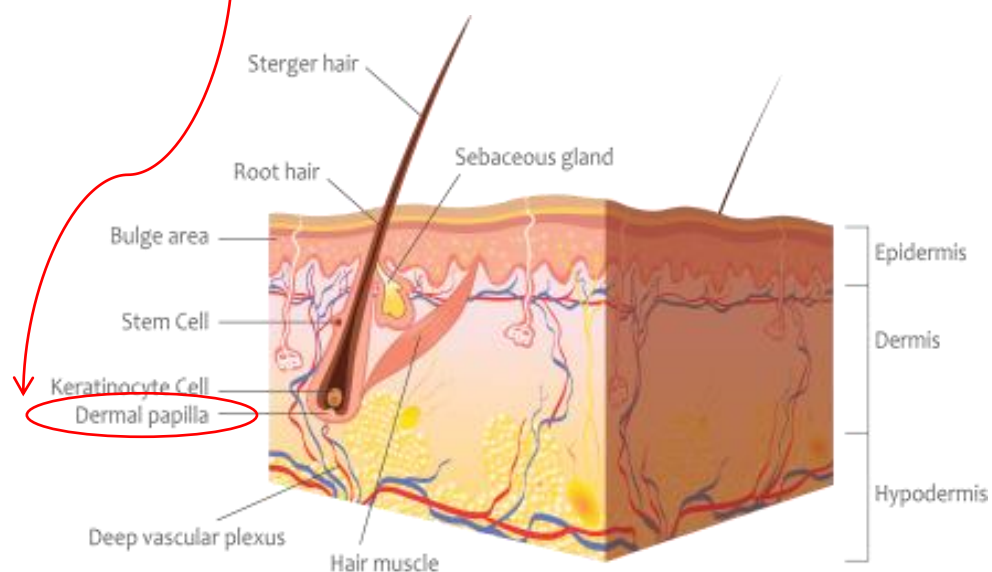


# Hair Growth Cycle



## Hair Growth Cycle

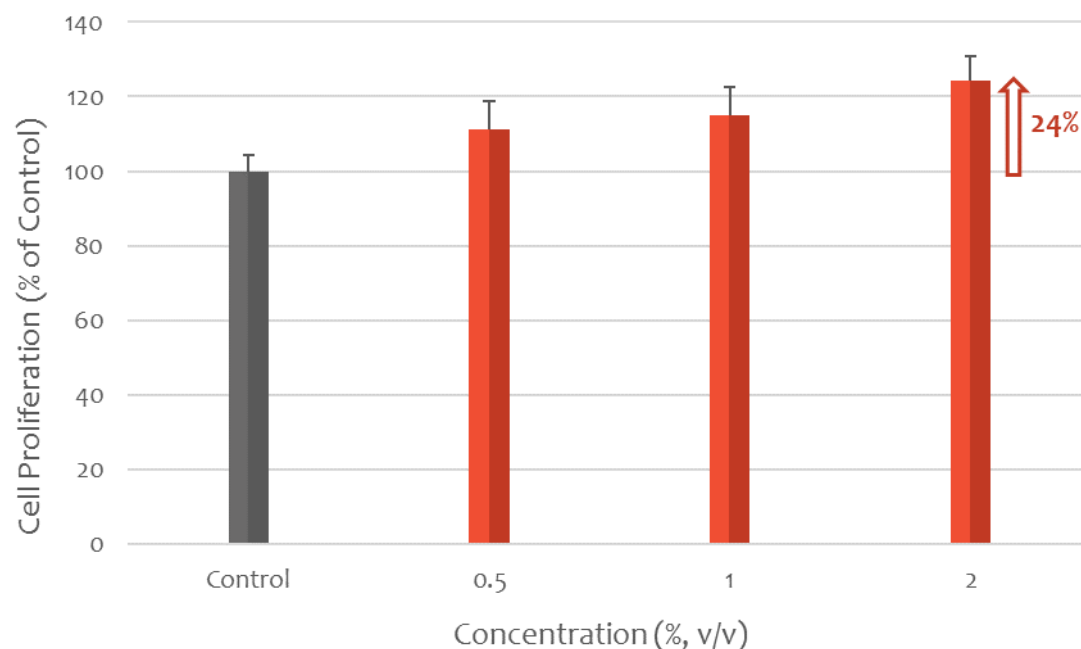
- Anagen: Hair grows thick
- Catagen: Hair roots start degenerating
- Telogen: Growth stops completely
- Early anagen: Old hair falls out and new hair grows



Human Dermal papilla cells (HDPCs) comprise a group of specialized fibroblasts. HDPCs play a critical role in regulating hair follicle development and periodic regeneration. Human hair growth has a unique repetitive cycle composed of the anagen, catagen, and telogen phases.

## in vitro Efficacy Evaluation: Hair Growth Effect

### •• Hair Cell Proliferation in Human Dermal Papilla Cells (HDPCs)



The proliferation of human dermal papilla cells was evaluated by measuring the metabolic activity using a 3-[4,5-dimethylthiazol-2-yl]-2,5-diphenyltetrazolium bromide (MTT) assay. HDPCs were stimulated in the presence of various concentration of Sangmodan.

## in vivo Evaluation: Hair and Scalp Care



- **Target Site:** Scalp
- **Subjects:** 30 male and female alopecia patients
- **Test Item:** Hair tonic containing 10% Sangmodan
- **Application:** 2 – 4 times a day on application area for 6-12 months

• Case 1

• Case 2

• Case 3

Before



After





# Market Reference

## Sidmool / Sidmool



### Eye Lash Serum

- Serum designed to make eyelashes longer and stronger
- Help to grow lashes fastly
- Contain oriental plant extracts that are known for boosting proliferation effects

## Costory / Papa Recipe



### Natural Aroma Hair Essence

- Contains 11 extracts which show excellent hair care effect
- Provides nutrition to hair
- Moisturizes dry hair

## Tohtonku (Singapore) / Silkpro



### Hair Fall Control

- Contains a blend of 11 herbs
- Base shampoo for normal hair types and scalp condition
- Provides a revitalizing experience when cleansing hair

## Product Information

- ❖ **Product Name:** Sangmodan, Sangmodan(PD)-RSPO Sangmodan(GOL)-RSPO
- ❖ **INCI Name:** Sophora Flavescens Root Extract, Capsicum Annuum Fruit Extract, Lycium Chinense Fruit Extract, Camellia Sinensis Leaf Extract, Angelica Gigas Root Extract, Angelica Dahurica Root Extract, Rubus Coreanus Fruit Extract, Morus Alba Root Extract, Pinus Palustris Leaf Extract, Lithospermum Erythrorhizon Root Extract, Polygonum Multiflorum Root Extract
- ❖ **Dosage:** 2 – 4%
- ❖ **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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*"We are always upgrading to serve you better"*

