Enterprise creating beauty with healthy nature

Ingredients supply to the next level of energy, vital, and beauty. Enriching lives in harmony with nature.
When, where beauty begins
CoSeedBioPharm

ISO 14001, ISO 9001
About Us

Ingredients supply to the next level of energy, vital, regeneration, and beauty. Enriching lives in harmony with nature.

Innovative, custom-tailored extracts for your needs!

We offer a wide variety of plant extracts using in cosmetic formulations. Virtually unlimited selections of innovative plant extracts create our product philosophy. No matter how exotic they are, we are able to meet any requirements of your needs in custom-tailored formats and quantities.

We have creative and professional mind toward our products and committed to finding customized and innovative solutions for all ideas of our customers. The needs of our customers are our first priority.

Various extract forms.

Natural carrier materials play an increasingly important role in new cosmetic development. You can specify what to receive extracted with water, glycerine, alcohol, or different carrier materials.
Field of Business

Cosmetic Material
- Functional Natural Substance
- Marin Bio Substance
- Undeclared Functional Material
- Bio Surfactant
- Bio-Friendly Preservative

Food Material
- Food Cosmetic
- Diet Food
- Liver Improvement Food
- Recognition Ability Improvement
- Food Additives

Research Supporting
- Patent Application
- Connected Business With Local Government
- Cooperation Research Development Business
- Functional Cosmetics Efficacy Evaluation

Development Supporting
- Cosmetic Stability Evaluation
- Cosmetic Efficacy Evaluation
- DDS (Drug Delivery System) Evaluation
- Specific Formulation Supporting with 2,000 applications

10 Core Techniques of CoSeedBioPharm
1. The development technique of natural substance by promoting ceramide biosynthesis.
2. The development technique of natural substance by controlling dermal sensation channel.
3. The development technique of natural substance by promoting and disassembling adipocyte.
4. The development of functional cosmetic material from natural substance (MFDS).
5. The development technique of plant stem cell and callus culturing.
6. Protein expression, production, and purification.
7. Extracting and refining technique of animal and plant origin mucus.
8. Plant vinegar culturing technology.
9. Microorganism culture and bioconversion technology.
10. Compound technique of polymer and surfactant agent.
# Products List

<table>
<thead>
<tr>
<th>Snail Mucin</th>
<th>Product Name</th>
<th>INCI Name</th>
<th>Efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS-Mucin</td>
<td>Snail Secretion Filtrate</td>
<td>Moisturizing, Regeneration</td>
<td></td>
</tr>
<tr>
<td>Sapo-Mucin 250+</td>
<td>Snail Secretion Filtrate</td>
<td>Moisturizing, Regeneration + Skin Barrier Enhancer</td>
<td></td>
</tr>
<tr>
<td>Golden Shell Mucin</td>
<td>Snail Secretion Filtrate</td>
<td>Moisturizing, Regeneration + UV Protector</td>
<td></td>
</tr>
<tr>
<td>Alo-Mucin</td>
<td>Snail Secretion Filtrate</td>
<td>Moisturizing, Regeneration + Soothing</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Anti-Irritation</th>
<th>Product Name</th>
<th>INCI Name</th>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td>Sophoricoside</td>
<td>Sophora Japonica Fruit Extract</td>
<td>🌿</td>
<td></td>
</tr>
<tr>
<td>Germination Flavone</td>
<td>Phaseolus Radiatus Seed Extract</td>
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<table>
<thead>
<tr>
<th>Anti-Pollution</th>
<th>Product Name</th>
<th>INCI Name</th>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td>Dust Smart Solution</td>
<td>Saururus Chinensis Leaf/Root Extract</td>
<td>🌿</td>
<td></td>
</tr>
<tr>
<td>Skin 3-Pure(C)</td>
<td>Tillandsia Usneoides Extract, Zostera Marina Extract, Nelumbo Nucifera Flower Extract</td>
<td>🌿</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Jeju Complex</th>
<th>Product Name</th>
<th>INCI Name</th>
<th>Efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jeju Natural Regeneration Cell</td>
<td>Calendula Officinalis Extract, Camellia Sinensis Leaf Extract, Cinnamomum Camphora (Camphor) Leaf Extract, Panax Ginseng Root Extract</td>
<td>Regeneration</td>
<td></td>
</tr>
<tr>
<td>Jeju Natural Whitening Cell</td>
<td>Magnolia Kobus Branch/Flower/Leaf Extract, Nelumbium Speciosum Flower Extract, Camellia Japonica Flower Extract</td>
<td>Whitening</td>
<td></td>
</tr>
<tr>
<td>Jeju Natural Moisture Cell</td>
<td>Centaurea Cyanus Flower Extract, Camellia Japonica Flower Extract, Aloe Barbadensis Leaf Extract, Opuntia Coccinellifera Fruit Extract</td>
<td>Moisturizing</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Moisturizing</th>
<th>Product Name</th>
<th>INCI Name</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetable Collagen</td>
<td>Tremella Fuciformis (Mushroom) Extract</td>
<td>🌿</td>
<td></td>
</tr>
<tr>
<td>CS-Jeju Horse Fat</td>
<td>Horse Fat</td>
<td>🌿</td>
<td></td>
</tr>
<tr>
<td>Tuna Tears Extract</td>
<td>Tuna Extract</td>
<td>🌿</td>
<td></td>
</tr>
<tr>
<td>Okra Extract</td>
<td>Hibiscus Esculentus Fruit Extract</td>
<td>🌿</td>
<td></td>
</tr>
</tbody>
</table>

Email us for more products and details
### Anti-Wrinkle

<table>
<thead>
<tr>
<th>Product Name</th>
<th>INCI Name</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black Ginseng Extract</td>
<td>Panax Ginseng Root Extract</td>
<td></td>
</tr>
<tr>
<td>Jellyfish Extract</td>
<td>Jellyfish Extract</td>
<td></td>
</tr>
<tr>
<td>Green Tomato Extract</td>
<td>Lycopersicon Esculentum Fruit Extract</td>
<td></td>
</tr>
<tr>
<td>Jeju Greentea Extract</td>
<td>Camellia Sinensis Leaf Extract</td>
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</tr>
</tbody>
</table>

### Whitening

<table>
<thead>
<tr>
<th>Product Name</th>
<th>INCI Name</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Garcinia</td>
<td>Garcinia Cambogia Fruit Extract</td>
<td>Hydroxycitric acid</td>
</tr>
<tr>
<td>Schizandra Extract</td>
<td>Schizandra Chinensis Fruit Extract</td>
<td>Schizandrin, Gomisin N</td>
</tr>
<tr>
<td>Forsythia Fruit Extract</td>
<td>Forsythia Suspensa Fruit Extract</td>
<td>Arctigenin</td>
</tr>
<tr>
<td>Jeju Lotus Extract</td>
<td>Nelumbium Speciosum Flower Extract</td>
<td></td>
</tr>
</tbody>
</table>

### Fermentation

<table>
<thead>
<tr>
<th>Product Name</th>
<th>INCI Name</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jeju Shindari Centella</td>
<td>Centella Asiatica Extract, Aspergillus Ferment</td>
<td></td>
</tr>
<tr>
<td>Jeju Shindari Rhubarb</td>
<td>Rheum Palmatum Root/Stalk Extract, Aspergillus Ferment</td>
<td></td>
</tr>
<tr>
<td>Rice Bran Ferment W</td>
<td>Saccharomyces/Rice Bran Ferment</td>
<td></td>
</tr>
<tr>
<td>Lacto-FT Ginseng W</td>
<td>Lactobacillus/Ginseng Root Ferment Filtrate</td>
<td></td>
</tr>
</tbody>
</table>

### Preservative

<table>
<thead>
<tr>
<th>Product Name</th>
<th>INCI Name</th>
<th>Dosage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS-Bion I</td>
<td>Caprylyl Glycol, Ethylhexylglycerin</td>
<td>0.30 ~ 0.60</td>
</tr>
<tr>
<td>CS-Diol II</td>
<td>Ethyl Hexanediol, 1,2-Hexanediol</td>
<td>1.50 ~ 2.00</td>
</tr>
</tbody>
</table>

### Surfactant

<table>
<thead>
<tr>
<th>Product Name</th>
<th>INCI Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS-Soften 20S</td>
<td>PEG-7 Dimethicone</td>
<td>Emulsifying Agents, Skin-Conditioning Agents</td>
</tr>
<tr>
<td>CS-Soften VX</td>
<td>PEG-10 Dimethicone</td>
<td>Emulsifying Agents, Skin-Conditioning Agents</td>
</tr>
<tr>
<td>CS-2000</td>
<td>PEG-20 Glyceryl Triisostearate</td>
<td>Surfactants, Emulsifying Agents</td>
</tr>
</tbody>
</table>
LS-Mucin

**Introduction**
- LS-Mucin is a unique species and extracting from pure snail secretion to protect itself from external environment.
- No cytotoxicity to the skin.
- Allantoin: Anti-irritation, pore constriction.

Select the 6-month-old Land snail

**Main Ingredients**
- Chondroitin Sulfate.
- Premium snail mucin made by CoSeedBioPharm.

**Efficacy Assessment**

**Cell cytotoxicity**

![Cell cytotoxicity graph](p<0.01)

**Cell proliferation**

![Cell proliferation graph](p<0.01)

**Analysis of Chondroitin Sulfate**

Chondroitin sulfate analysis by Dionex Bio HPLC

**Regeneration of LS-Mucin**

<table>
<thead>
<tr>
<th>LS-Mucin (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
</tr>
</tbody>
</table>

**Marketing Point**
- Moisturizing, Regeneration.
- Dosage: 2 ~ 20%.
Snail Series

Sapo-Mucin 250+

Efficacy: Moisturizing, Regeneration + Skin Barrier Enhancer.

Main Ingredients: Chondroitin Sulfate, Saponin.
Sapo-Mucin 250+ shows outstanding moisturizing and skin barrier enhancing efficacy.

Introduction
- Snail secretion filtrate from snails fed red ginseng was the first developed invention in the world.
- This product contains saponin from red ginseng.
- It shows outstanding efficacy for personal skin care.
- Saponin: Skin Barrier Enhancer

Efficacy Assessment
Skin Barrier Enhancer

Efficacy of Moisturizing
- SCORAD index is consist of Extent criteria, Intensity criteria and Subjective symptoms.

<table>
<thead>
<tr>
<th>SCORAD index</th>
<th>Baseline</th>
<th>After 4 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyaluronic acid</td>
<td>40</td>
<td>33 Decrease</td>
</tr>
<tr>
<td>Sapo-Mucin 250+</td>
<td>35</td>
<td>16 Decrease</td>
</tr>
</tbody>
</table>

Moisturizing

<table>
<thead>
<tr>
<th>Sapo-mucin 250+ (%)</th>
<th>0.03</th>
<th>0.1</th>
<th>0.3</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serine palmitoyltransferase</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>β-actin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sapo-mucin 250+ (%)</th>
<th>200</th>
<th>0.1</th>
<th>0.3</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquaporin-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>β-actin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Marketing Point
- Moisturizing, Regeneration, Skin Barrier Enhancer.
- Dosage: 2 ~ 20%.

Sapo-Mucin 250+ shows an excellent moisturizing efficacy and an efficacy to relieve atopic dermatitis.

Golden Shell Mucin

Efficacy: Moisturizing, Regeneration + UV Protector.

Main Ingredients: Chondroitin Sulfate, Golden Shell Colloid. Having protective color (gold) itself from external environment.

Introduction
- Golden Shell Mucin contains all of LS-Mucin features.
- Golden Shell Mucin is a unique species and the product includes pure snail secretion.
- Golden Shell Mucin naturally contains moisturizing efficacy and absorbs ultraviolet wave, having sun block and anti-inflammatory efficacy.

Golden Shell
Golden shell
- Protecting itself from external environment by color change.

Golden color (natural coloring matter)
- Anti-biotic and anti-oxidant efficacy.

Efficacy Assessment
UV Blocking of Golden Shell Mucin

After adding 1% Golden Shell Mucin, SPF (Sun Protection Factor) index increased from 11.81 to 19.61 (1.66 times) protecting UV longer than control.

Cell cytotoxicity

Cell proliferation

Moisturizing

Marketing Point
- Moisturizing, Regeneration, UV-Protector.
- Dosage: 2 ~ 20%.
Snail Series

Alo-Mucin

Efficacy : Moisturizing, Regeneration + Soothing.

Main Ingredients : Chondroitin Sulfate, Aloe-polysaccharide.
Maximizing moisturizing efficacy by feeding aloe.

Introduction

- Alo-Mucin contains all of LS-Mucin features.
- Alo-Mucin is a unique species fed Aloe and the product includes pure snail secretion.
- Snail secretion naturally contains aloe ingredients and those can maximize moisturizing and soothing efficacy.

Main Ingredient of Aloe

1. Salicylic Acid
   Anti-bacterial, anti-inflammatory, and anti-allergic effect like aspirin.
2. Lupeol
   Relieve pain.
3. Mannose
   Inhibition of bacterial in human body.
4. Aloin
   It is known as strong purgative with bitter taste and yellow colored liquid.
5. Alo-polysaccharide
   Moisturizing, soothing.

Marketing Point

- Strong Moisturizing, Regeneration, Soothing.
- Dosage : 2 ~ 20%.

Efficacy Assessment

Cell proliferation

[Graph showing cell proliferation percentage with Alo-Mucin (%)]

Moisturizing

[Table showing moisturizing index with Alo-mucin (%), Dexamethasone (nM), Aquaporin 3, β-actin]

Clinical Test ; Skin Patch Test

- Client : CoSeedBioPharm Co., Ltd.
- Test Center : Ecoderm, inc.
- Test Material : Alo-Mucin, SLS.

Table 1. Material

<table>
<thead>
<tr>
<th>No.</th>
<th>Test materials</th>
<th>Conc.</th>
<th>Squalane</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Alo-Mucin</td>
<td>5</td>
<td>95</td>
</tr>
</tbody>
</table>

Table 2. Result

<table>
<thead>
<tr>
<th>Test Materials</th>
<th>Responders</th>
<th>Sum of skin irritation strength</th>
<th>Skin irritation index**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alo-Mucin</td>
<td>0</td>
<td>5.0</td>
<td>7.0</td>
</tr>
<tr>
<td>2% Sodium Lauryl Sulfate</td>
<td>14.0</td>
<td>5.0</td>
<td>7.5</td>
</tr>
</tbody>
</table>

** (Each Score;1,2,3,4 at each of three readings) X 100
4 (Maximum score) X 30 (No. of total subjects) X 3 (Total score) = 360

- Single epicutaneous applications of Alo-Mucin under 48 hours occlusive patch onto healthy adult skin of 30 volunteers revealed no significant irritation index. Thus these samples can be used safely in real life usage condition.
Sophoricoside

Efficacy : Anti-Allergy, Anti-Irritation.

ICID Name : Sophora Japonica Fruit Extract

Sophora Japonica?
- Sophora japonica is well known as medical tree normally raised in palace. There is a superstition that sophora japonica tree drives out an evil spirit.
- Sophora japonica has bitter and sour flavor with no toxicity.
- It also shows wound healing efficacy such as broken bone, burn, and festering wounds.
- Its fruit, sophorae fructus, shows hemostatic efficacy and it is good for climacteric women due to isoflavonoid component.

About Sophoricoside?
- Sophoricoside is a main ingredient of sophora japonica fruit.
- There are a lot of advanced researches on anti-irritant and anti-sensitizer efficacy of sophoricoside.

Isoflavonoid of Sophoricoside

Immune System Balance : Skin Stimulation Mechanism

Regulation of 'Immune Balance' is critical for our health

<table>
<thead>
<tr>
<th>Type</th>
<th>Related cytokine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Th1</td>
<td>Irritant</td>
</tr>
<tr>
<td>Th2</td>
<td>Allergy</td>
</tr>
</tbody>
</table>

Cytokine, such as IL-5, IL-3 and GM-CSF, inhibitory effects of sophoricoside and isoflavonoid.

< Life Sciences 67 (2000) 2855–2863 >

< Molecules 2013, 18, 6113-6127; doi:10.3390/molecules18056113 >

Anti-Irritant Efficacy of Sophoricoside

- Cytokine, such as TNF-α, IL-8 and IL-6, inhibitory effects of sophoricoside and isoflavonoid.
- Down regulated express of inflammatory related cytokines.

< Molecules 2013, 18, 6113-6127; doi:10.3390/molecules18056113 >

Marketing Point
- Protect skin and improve immune system of allergy and irritant materials.
- Dosage : Above 2%. 
Germination Flavone

ICID Name: Phaseolus Radiatus Seed Extract

Germinated Mung Bean
- Mung bean contains abundant vitamin C.
- Mung bean promotes collagen to prevent aging.
- Mung bean shows soothing efficacy from damage of ultra violet, skin trouble, and sebum control.

Composition of Mung Bean

Anti-irritant Mechanism & Efficacy
- Germinated mung bean decreases TRPV1 revelation.

Anti-Inflammatory Efficacy of Mung Bean

Reduction of NO (Nitric Oxide) production

Reduction of Inflammation-Mediating Cytokines

Cell Proliferation Efficacy

Strong cell proliferation efficacy after germination.

Marketing Point
- Natural material with cooling property to decrease skin fever to control sebum.
- Anti-inflammation efficacy by inhibition of TNF-α expression.
- TRPV1 revelation to anti-irritant efficacy.
Dust Smart Solution

Efficacy : Anti-Pollution.

ICID Name : Saururus Chinensis Leaf/Root Extract

Fine Dust? “A silent murder”
- Fine dust (Particulate Matter, PM) contains a lot of heavy metals that occur allergic reaction, atopy, and other diseases.
- When fine dust meets the oil on the skin, it occurs skin trouble and inflammation. Also, this reaction decreases the level of immunity.

The Efficacy of Saururus Chinensis
- Increasing water metabolism, skin reproduction, and skin elasticity.
- Detoxification, skin suppression, and recovery of cell damage.
- Whitening, anti-inflammatory, and anti-oxidant efficacy by active ingredient of Saucerneol D (SD).

Influence on Skin by Fine Dust Size

| Source of origin: Ministry of Food and Drug Safety |

SD (Saucerneol D) of Saururus Chinensis activates the expression factor (Nrf-2, nuclear related factor 2) of skin purification

Expression of enzyme to resolve toxin. ↑

Immunity Cell Proliferation and Inhibition of Inflammatory Cytokine by Saururus Chinensis Extract

Over 40% cell proliferation efficacy in 200 μg/mL concentration

Inhibition of NO by saurus chinensis extract

Inhibition of inflammatory cytokine revelation in mRNA standard

Inhibition of inflammation factor in fine dust by saurus chinensis extract
**Skin 3-Pure(C)**

**Efficacy:** Clean-Pollution.

**ICID Name:** Tillandsia Usneoides Extract, Nelumbo Nucifera Flower Extract, Zostera Marina Extract

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**Finance Dust**

- Fine dust is a small particle which is 1/100 of hair thickness.
- High adsorption causes promoting body wastes such as heavy metals on skin pore.

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**Skin Air Purification (Air Purifying Plant)**

- Tillandsia

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**Skin Surface Purification (Water Purifying Plant)**

- Lotus
  - Roemerine, Nuciferine, Flavonoid

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**Deep Skin Purification (Mud Flat Purifying Plant)**

- Sea grass
  - Anti-acne, Anti-inflammation, Anti-bacteria, Anti-wrinkle, Anti-virus

---

**Marketing Point**

- Purification efficacy of fine dust and virus.
- Producing skin protective film from external toxic substances.
- Deep skin purification efficacy by mud flat purification.
Vegetable Collagen

ICID Name: Tremella Fuciformis (Mushroom) Extract

Characteristics
- **Texture**: Flexible and cushion feel
- **Adhesion**: Strong stickiness
- **Vegetable Collagen**: Moisturizing

**Moisturizing**

**Efficacy**
- **Skin elasticity enhancer**: Forming a flexible moisture film on the skin and providing moisture and elasticity for a long time.
- **Anti-aging**: The abundant collagen ingredients provide nourishment and skin moisture.

**Beauty and other usage**

The Empress Yang Kwei Fei: Tremella fuciformis is well known as a beauty product by women in China and Japan as it reportedly increases moisture retention on the skin and prevents senile degradation of micro-blood vessels on the skin, reducing wrinkles, and smoothing fine lines.

**Promote Creation of the Eleidin**

- Low molecular weight of vegetable collagen for skin.
- Promoting creation of eleidin inside skin.
- Excellent water-holding capacity and abundant vitamin D.
- Natural ingredient with high absorption and flexibility.

**Collagen Peptide**

**Usability of Vegetable Collagen**

(Questionnaire survey target: Twenty people, Perfect 10)

**Water Holding Capacity**

<table>
<thead>
<tr>
<th>Peak Name</th>
<th>RT</th>
<th>Area</th>
<th>% Area Height</th>
<th>Squalane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetable Collagen-TF</td>
<td>19.620</td>
<td>815815</td>
<td>100.00</td>
<td>30481</td>
</tr>
<tr>
<td>STD 1 (molecular weight:5,000)</td>
<td>17,258</td>
<td>17100626</td>
<td>100.00</td>
<td>573426</td>
</tr>
<tr>
<td>STD 2 (molecular weight:11,000)</td>
<td>16,548</td>
<td>22453486</td>
<td>100.00</td>
<td>61913</td>
</tr>
</tbody>
</table>
Moisturizing

CS-Jeju Horse Fat

ICID Name: Horse Fat

Introduction

[Folk Remedy]
- Horses have unique habit maintaining body temperature by sweating like human → Skin and fatty acid structures are similar to human → Outstanding affinity and absorption.
- Producing oil film that can not be generated inside the body → Skin protection and anti-bacterial efficacy.
- Excellent anti-bacterial, anti-inflammatory, and wound healing effectiveness as folk remedy.
- Valuable ingredient from clean area of Jeju island.

CS-Horse Fat

<table>
<thead>
<tr>
<th>Fatty Acid</th>
<th>Com (%)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Myristic</td>
<td>3.66</td>
<td>saturated fatty acid</td>
</tr>
<tr>
<td>Palmitic</td>
<td>26.86</td>
<td>saturated fatty acid</td>
</tr>
<tr>
<td>Stearic</td>
<td>9.46</td>
<td>saturated fatty acid</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>39.98</strong></td>
<td></td>
</tr>
</tbody>
</table>

Refining Process of Horse Fat

Natural monounsaturated fat extraction method of Horse adipose tissue.

Moisturizing / Anti-bacterial efficacy

<table>
<thead>
<tr>
<th>Fatty acid</th>
<th>Com (%)</th>
<th>Effect</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palmitoleic</td>
<td>7.28</td>
<td>Burn &amp; wound treatment</td>
<td>Unsaturated fatty acid (C16:1)</td>
</tr>
<tr>
<td>Oleic</td>
<td>34.75</td>
<td>Moisturizing &amp; atopy</td>
<td>Unsaturated fatty acid (C18:1)</td>
</tr>
<tr>
<td>Linoleic</td>
<td>14.15</td>
<td>Atopy</td>
<td>Omega6 unsaturated fatty acid precursor (C18:2)</td>
</tr>
<tr>
<td>Linoenic acid</td>
<td>0.87</td>
<td>Atopy</td>
<td>Omega3 unsaturated fatty acid (C18:0)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>57.05</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Easily accessible moisturizer, anti-bacterial, anti-inflammatory material.
- Outstanding wound healing efficacy.
- Abundant unsaturated fatty acid and Vitamin E.

Clean and natural material for improving all types of skin.

The Balance of saturated and unsaturated fatty acid.

Unsaturated fatty acid (flexibility, antibacterial)

Saturated fatty acid (adhesion)

Unique fat composition
Black Ginseng Extract

ICID Name: Panax Ginseng Root Extract

Premium Black Ginseng with Triple Ginsenoside

According to Seoul Broadcasting System, Black Ginseng was selected one of the best black foods in the world. Also, Black Ginseng contains 2-3 times of more Saponin content compared to Ginseng.

Black Ginseng, Triple Ginsenoside (Rg3)

When ingredients of ginseng are heated, it produces Glucose and Amino by browning reaction.

Anti-oxidant and Wrinkle efficacy of Ginsenoside Rg3

Black Ginseng Evolution

Traditional method of over heating to generate more benzopyrene.

Improvement

When extracting ginseng first and heating later for several times, it removes generating benzopyrene.

Black Ginseng Extract for Supplying Nutrition

Black Ginseng transforms its active ingredient "Ginsenoside" structure by nine times heating. It shows outstanding dermatological efficacy and high absorption rate with Rg5, Rg3, and Rk1.

Marketing Point

"Ginsenoside, Premium Black Ginseng"

- Black Ginseng Extract shows anti-wrinkle efficacy by Rg3, Rk1, and Rg5.
- Unique method maximizes skin efficacy by using “Korean Ginseng”.
- The nine times heating removes benzopyrene of Black Ginseng.
‘Collagen’, the substance revitalizing and enhancing skin elasticity.

Collagen is produced less and aging starts as the secretion of female hormones is reduced beginning at 20 to 25 years of age. While there are lots of collagen products for eating or applying to the skin, Are they all absorbed well? Better absorption, Less stimulation, Cleaner, More naturally as it is.

“Jellyfish” The Origin of Collagen

- Jellyfish, the ‘pirate of the sea’, is detested as an uninvited guest in the sea during summer, but is the origin of collagen. In the West, it has been named ‘jellyfish’ because of the gelatin of which its body is configured.

- The tentacles of the jellyfish are characterized by strong, quick resilience and enough strength to entangle a human being or a fish bigger than itself.

- Jellyfish contains relatively high protein, 57.8%. The contents of collagen are 34.7%. This indicates that the proteins that make up jellyfish are mostly collagen protein. Electrolysis analysis of the amino acid contained in the collagen of jellyfish has found proline, glycine, arginine and valine were contained in higher amounts in that sequence.

- Proline has a cold tolerance function in plants and hydroxyl proline is known as the substance that stimulates the biosynthesis of collagen. Thus, it has been recently used widely because it is very useful as a cosmetic ingredient.

Collagen Synthesis Efficacy of Jellyfish Collagen in Skin

The more the concentration of jellyfish collagen increases, the more the collagen synthesis efficacy is improved. Application of jellyfish collagen by 2% increased the collagen synthesis efficacy in skin by 37%.

Efficacy of JellyFish Collagen to Activate Skin Cells

Cells dyed in blue were significantly reduced in the jellyfish collagen extract group as compared to the control group. This indicates that the jellyfish collagen extract group has fewer aged cells than the control group.

Identification of Collagen Type II by using SDS-PAGE

Figure 1. SDS-PAGE pattern of jellyfish PSC. M: high molecular weight protein marker; 1: type I collagen from calf skin; 2: type I collagen from salmon; 3: type II collagen from chicken sternum; 4 & 5: jellyfish PSC (non-reduced); 6: jellyfish PSC (reduced).

Marketing Point

- Jellyfish collagen, the natural marine product having no skin toxicity.
- Protecting skin moisture by helping jellyfish collagen to be immediately absorbed through hydrolysis.
- Wrinkle decline by the powerful efficacy of jellyfish collagen to active cells.
- Jellyfish collagen has similar structure of collagen Type II.
White Garcinia

ICID Name: Garcinia Cambogia Fruit Extract
CAS No. 90045-23-1

Garcinia Cambogia

- Active ingredient: Hydroxycitric acid (HCA).
- White Garcinia uses garcinia cambogia’s bark part which includes high content of HCA, 10~30%.
- White Garcinia shows outstanding whitening efficacy by regulation melanin synthesis mechanism with unique extracting method from CoSeedBioPharm Co., Ltd.
- 10 times whitening efficacy compared to Arbutin.

White Garcinia inhibits melanin production in low concentration compared to Arbutin by regulating PKA disassociation. It is also effectively decreasing melanogenesis related protein such as Tyrosinase, TRP-1, and TRP-2.

Marketing Point

- Super Diet Food with Safety.
- High Content of Hydroxycitric acid, HCA calcium.
- Outstanding Whitening Efficacy.
- Cytotoxicity Safety.

Patent

- 10-1449577 "Cosmetic composition for skin whitening comprising the extract of Garcinia cambogia as active ingredient".
Whitening

Schizandra Extract

ICID Name: Schizandra Chinensis Fruit Extract

Ingredients

Active Ingredients: Schizandrin, Gomisin N.

Analysis of schizandrin and gomisin N

Efficacy Assessment

Schizandra Extract on melanin production

<table>
<thead>
<tr>
<th>Tyrosinase</th>
<th>10</th>
<th>30</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>α-MSH (250 nM)</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Schizandra Extract (ppm)</td>
<td>-</td>
<td>500</td>
<td>-</td>
</tr>
</tbody>
</table>

Schizandra Extract on tyrosinase and TRP-1 expression

<table>
<thead>
<tr>
<th>Tyrosinase</th>
<th>10</th>
<th>30</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>α-MSH (250 nM)</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Arbutin (ppm)</td>
<td>-</td>
<td>500</td>
<td>-</td>
</tr>
<tr>
<td>Schizandra Extract (ppm)</td>
<td>-</td>
<td>10</td>
<td>30</td>
</tr>
</tbody>
</table>

Schizandra Extract on the AKT phosphorylation

<table>
<thead>
<tr>
<th>Tyrosinase</th>
<th>10</th>
<th>30</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>α-MSH (250 nM)</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Schizandra Extract (ppm)</td>
<td>-</td>
<td>10</td>
<td>30</td>
</tr>
</tbody>
</table>

Clinical Test

Pigmentation reduction by Visual evaluation

Melanin reduction by Mexameter (M-value)

Whitening mechanism of Schizandra Extract

Anti-melanogenic effect of gomisin N from Schisandra chinensis (Turcz.) Baillon (Schisandraceae) in melanoma cells, Archives of Pharmacal Research.
Jeju Shindari Centella

ICID Name: Centella Asiatica Extract, Aspergillus Ferment

Centella

Centella is called Healing Plant (plant healing diseases) or Tiger Plant in Korea because legend says that a tiger rolled over this plant when it was wounded and its wound was cured.

Skin physiological activity based on the traditional Indian medicine (Aura Veda).

1. Relief of inflammation including acne or pimples.
2. Improving resilience and tightening pores by accelerating the synthesis of collagen.
3. Wrinkle decline by superior activity helping cell proliferation.
4. Preventing the penetration of harmful substances, wound healing and acceleration of blood circulation.

Main substance helping to heal wounds

Method for making Shindari

Shindari (a regional Jeju term) is a summer drink made with rice and malt. Low degree alcoholic drink of fermented malt with rice that is slightly spoiled.

• Centella of Jeju is fermented with malt using the method for making Shindari.
• Fermentation enhances efficiency for skin.
• Improve the stability of raw materials by improving long-term storage through fermentation.

Fermented Centella accelerates the growth of skin cells

Fermented Centella was added to skin cells forming the dermal layer and cell proliferation was measured. The test group showed superior effect for proliferating skin cells at 46.3% (0.2% applied), 59.5% (0.4%), and 66.2% (0.8% applied) as compared to the control group (Buffer).

Marketing Point

Various kinds of activities of Centella using traditional fermentation techniques, facilitate the development of diverse kinds of external applications for the skin.

Dosage

Above 2%.
Jeju Shindari Rhubarb

ICID Name: Rheum Palmatum Root/Stalk Extract, Aspergillus Ferment

Feature
- Safety verified by the Traditional Medicine Industry Center designated for the management of oriental medicine materials by the MFDS.
- Rhubarb has long been used for soothing and as anti-inflammatory laxative in oriental medicine.
- It is known to be effective against burn and eczema.

Effect
- Emodin, the main substance, improves skin resilience, prevents aging and reduces wrinkles by inhibiting the activation of collagenase.
- Relieving inflammation by anti-bacterial effect.
- Inhibiting the generation of melanin and improving dull and dark skin.

Method for making Shindari

DPPH Scavenging Activity

Cell Viability

Anti-Wrinkle (MMP-1 Inhibition Activity)

Journal

Marketing Point
- Traditional fermentation technology of Korea (Shindari Method).
- Anti-inflammation and anti-oxidant effects, low cytotoxicity, effective against MMP-1.
- Program Name: Bio-industry Technology Development.
- Acknowledgment: This research was financially supported by the Ministry of Trade, Industry, and Energy (MOTIE), Korea, under the “Regional Specialized Industry Development Program” (reference number R0002894) supervised by the Korea Institute for Advancement of Technology (KIAT).
**Preservative**

**CS-BION I**

Preservation and Skin flexibilizer

Check *S.Aureus, P.Aeruginosa, E.Coli, C.Albicans.*

Applicable to a variety of formulation prescriptions.

---

**Introduction**

- CS-BION I is a complete system for preservative-free cosmetics and personal care products. It can be used to improve the efficacy of traditional cosmetic preservatives such as Paraben or Phenoxyethanol.
- Applicable to a variety of formulation prescriptions.
- CS-BION I has proven safety with long-term use of domestic market.

**Composition**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Caprylyl Glycol</td>
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<tr>
<td>CAS No. 1117-86-8</td>
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<td>Ethylhexylglycerin</td>
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<tr>
<td>CAS No.70445-33-9</td>
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</table>

**Solubility**

- Applicable to a variety of formulation prescriptions of O/W, W/O, W/S.
- Excellent solubility at the concentration of 1%.

**MIC Value**

<table>
<thead>
<tr>
<th>Species</th>
<th>CS-BION I (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>S.Aureus</em></td>
<td>0.05</td>
</tr>
<tr>
<td><em>P.Aeruginosa</em></td>
<td>0.3</td>
</tr>
<tr>
<td><em>E.Coli</em></td>
<td>0.2</td>
</tr>
<tr>
<td><em>C.Albicans</em></td>
<td>0.2</td>
</tr>
</tbody>
</table>

* Initial microorganism count:
  [S, P, E – 10^7~10^8 cfu/ml ; C – 10^5~10^6 cfu/ml]

---

**Challenge Test**

0.3% CS-BION I (O/W Emulsion)

**Application**

- Lotion
- Cream

**Dosage**

0.3% ~ 0.6%.
Preservative

**CS-DIOL II**

Water-soluble preservation, Skin flexibilizer, Clear formulations

Check *S.Aureus, P.Aeruginosa, E.Coli, C.Albicans*

Applicable to clear formulation prescriptions.

---

### Introduction

- CS-DIOL II is a complete system for preservative-free cosmetics and personal care products. It can be used to improve the efficacy of traditional cosmetic preservatives, such as paraben or phenoxyethanol.
- Applicable to a variety of formulations prescription.
- This product has proven safety with long-term use of domestic market.
- Applicable to a clear formulations prescription.

---

### Composition

<table>
<thead>
<tr>
<th>Ethyl Hexanediol</th>
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<table>
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</thead>
<tbody>
<tr>
<td>CAS No. 6920-22-5</td>
<td>ICID2004</td>
</tr>
</tbody>
</table>

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### Solubility

- Applicable to a variety of formulations.
- Prescription for O/W, W/O, W/S.
- Excellent solubility at the concentration 3% in water.

---

### MIC Values

<table>
<thead>
<tr>
<th>Species</th>
<th>CS-DIOL II (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>S.Aureus</em></td>
<td>1.5</td>
</tr>
<tr>
<td><em>P.Aeruginosa</em></td>
<td>0.5</td>
</tr>
<tr>
<td><em>E.Coli</em></td>
<td>0.5</td>
</tr>
<tr>
<td><em>C.Albicans</em></td>
<td>1.5</td>
</tr>
</tbody>
</table>

*Initial microorganism count:*

[S, P, E – $10^2$–$10^7$ cfu/ml; C – $10^5$–$10^6$ cfu/ml]

---

### Challenge Test

**1.5% CS-DIOL II (S/W Emulsion)**

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### Application

- Facial Mask
- Toner

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### Dosage

1.5% ~ 2.0%