

Exoline

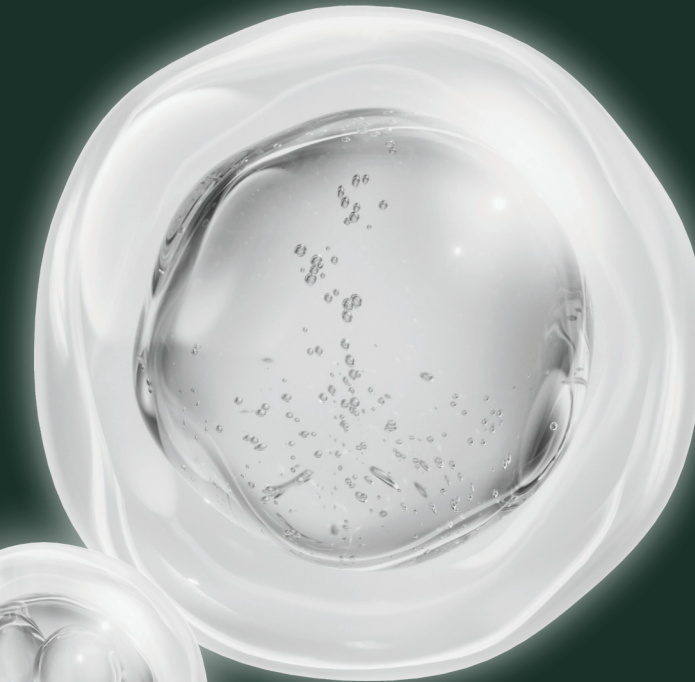
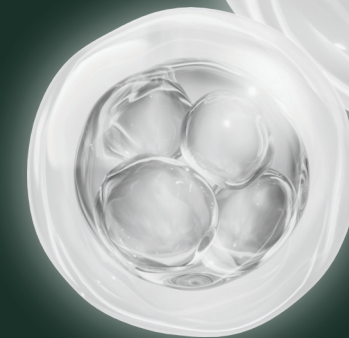
All new, the Line has begun



ABio materials Co., Ltd

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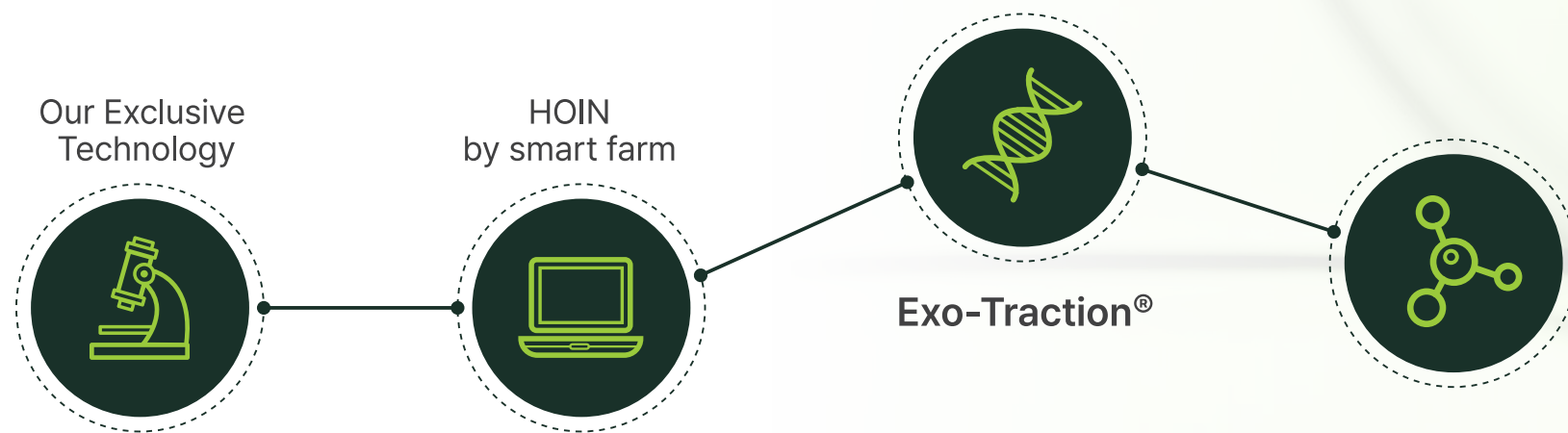
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Future of Exosome **Exoline**

Inspired by the robust vitality of Centella Asiatica leaves, **a symbol of wound healing and skin regeneration**, exosome experts have developed a new patented strain of Centella asiatica called 'HOIN' cultivated in a specialized smart farm environment. This innovation has led to the creation of Exo-CICA®

**Matchless
Technical
Process**



Exo-CICA®
Plant CICA Exosome
Skin Booster

Exoline

New Bio-materials
By Exosome Professionals

The Origin of Exoline

POINT 01 Maximized Effectiveness of Centelloside by Smart farm

▪ A new kind of Centella Asiatica leaf 'HOIN'

Development of a new kind of Centella Asiatica cultivated in our own smart farm to maximize the effectiveness of 'Centelloside,' the key ingredient of the 'Centella Asiatica leaf,' a symbol of Wound healing and Skin calming.

▪ Centelloside Benefits

- ✓ Wound Healing
- ✓ Wrinkle Improvement
- ✓ Anti-Aging
- ✓ Skin Improvement

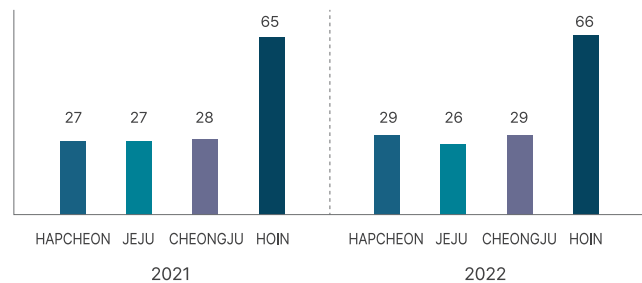
By Exosome Professionals



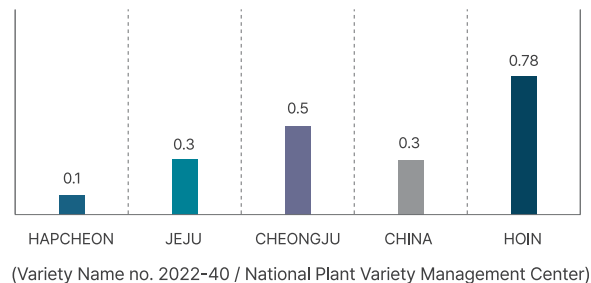
Special Cultivation Condition by Smart Farms

- ✓ Maximization of Active Ingredient Efficacy
- ✓ Uniformity of Active Ingredient Content
- ✓ Stability of Mass Production

Growth Comparison of Domestic Centella Asiatica by Region
(Leaf parts with highest Centelloside content)



Analysis of Centelloside Content in Centella Asiatica by Country and Region



POINT 02 Patented Technology Exo-Traction®

Patented Technology for High-Efficiency, High-Purity Exosomes :
Enables mass production of high-purity exosomes using a patented process that adds APTs Solution to the freeze-dried concentrated supernatant, stirs it, and then separates and purifies it.

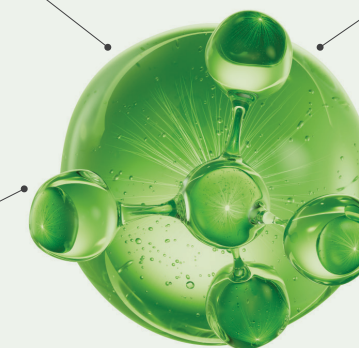
POINT 03 New Bio materials Exo-CICA®

- **Non-Cholesterol**
→ Cause of various immune responses
→ Reduces the possibility of side effects

Exo-CICA®

- **Composed of a Bilayer of Phospholipids**
→ Facilitates easy movement and absorption within cells

- **Unaffected by Temperature Changes**
Maintained stability in NTA distribution without changes under conditions of 4°C, 25°C, and 45°C over 12 weeks



- **Contains Various Proteins (Peptides)**
→ Plays a role in communication between cells

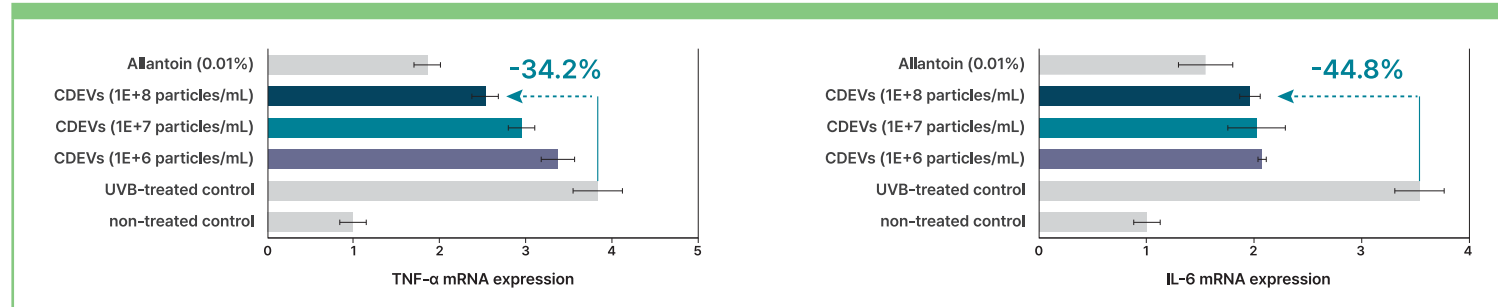
- 01 Proteins
- 02 miRNA
- 03 Bioactive Constituents
- 04 Lipids
- 05 mRNA

* Components of Exo-CICA Cultivated from the HOIN Variety

- **Centelloside:** An important bioactive compound extracted from Centella Asiatica leaf, known for its various therapeutic properties, including anti-diabetic, anti-inflammatory, antioxidant, anticancer, wound healing, and neuroprotective characteristics.

The Origin of Exoline

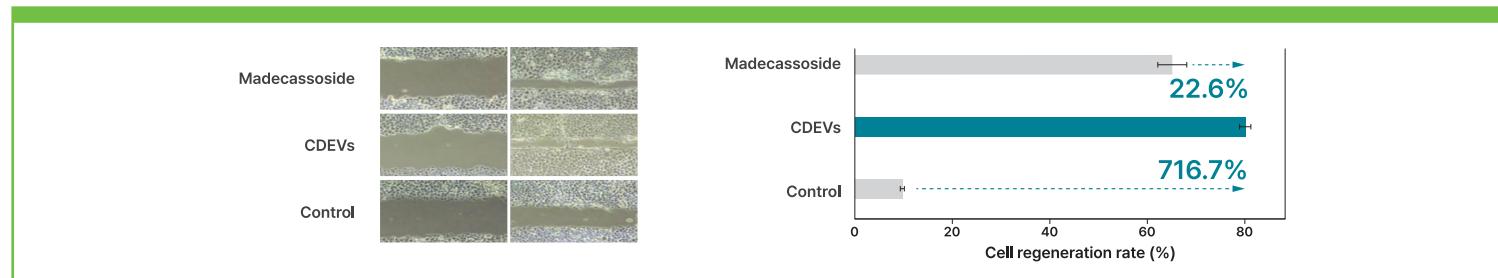
POINT 04 Anti-inflammatory Efficacy (Reduction in TNF- α , IL-6 Expression)



Anti-inflammatory Effect of Exo-CICA[®]

Treatment of inflammatory cells in human epidermal keratinocyte cells with varying concentrations of Exo-CICA[®] confirmed a significant reduction in the expression of inflammatory factors TNF- α and IL-6.

POINT 05 Cell Regeneration Efficacy (Wound Healing)

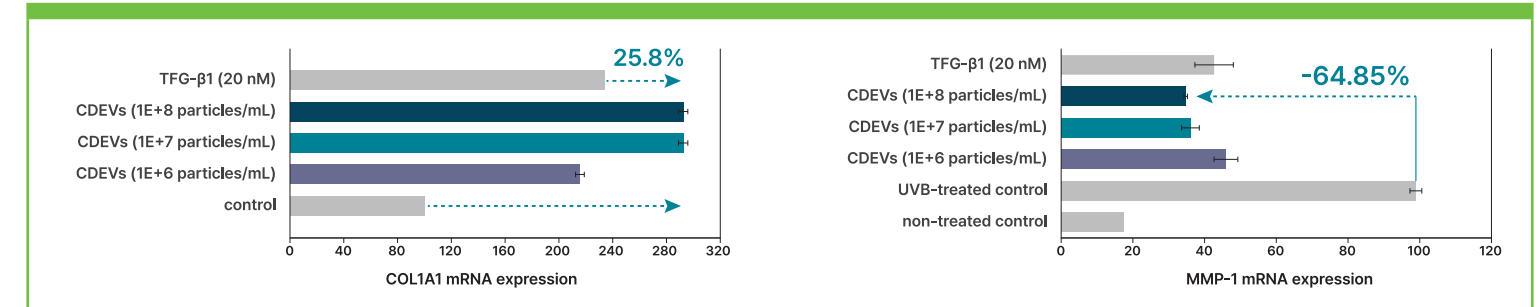


Wound Healing Effect of Exo-CICA[®]

→ After inducing physical damage to human dermal fibroblast cells and treating them with Exo-CICA[®], the following were observed:

1. Increased cell growth and migration, leading to skin regeneration
2. Overwhelming effect compared to the control group

POINT 06 Wrinkle Improvement Efficacy (Increase in COL1A1 Expression, Decrease in MMP-1 Expression)



Wrinkle Improvement Effect of Exo-CICA[®]

Applied Exo-CICA[®] to human epidermal keratinocyte cells

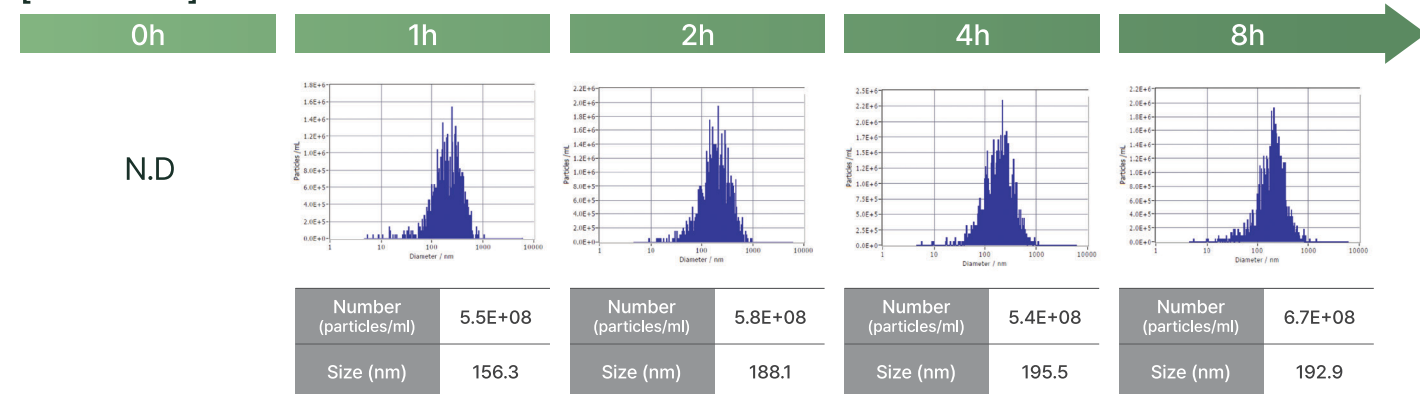
1. An increase in the expression of the collagen biosynthesis gene (Collagen type I alpha 1) was confirmed
2. A decrease in the expression of the collagen-degrading enzyme (Matrix metalloproteinase-1), which had been increased by UV radiation, was confirmed
3. Superior wrinkle improvement effect compared to that of the positive control group



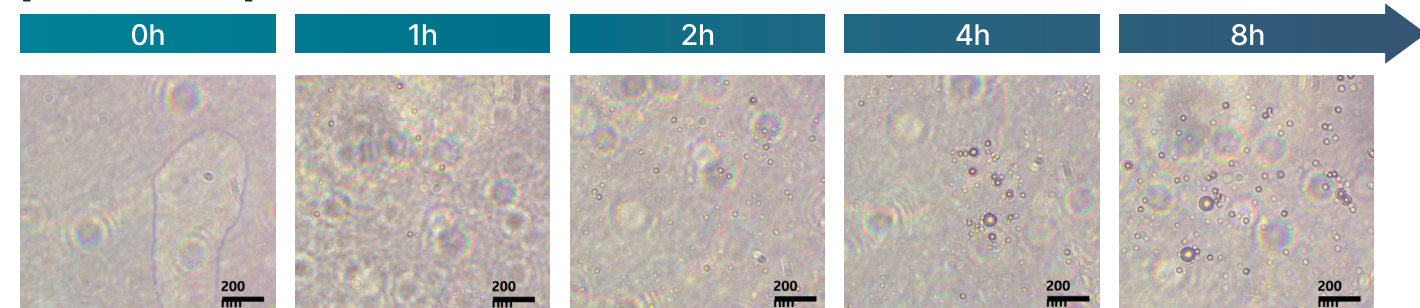
Clear Commitment for your Change

POINT 01 Skin Permeability Test for Optimal Absorption of Active Ingredients

[NTA results]



[Oil red O results]

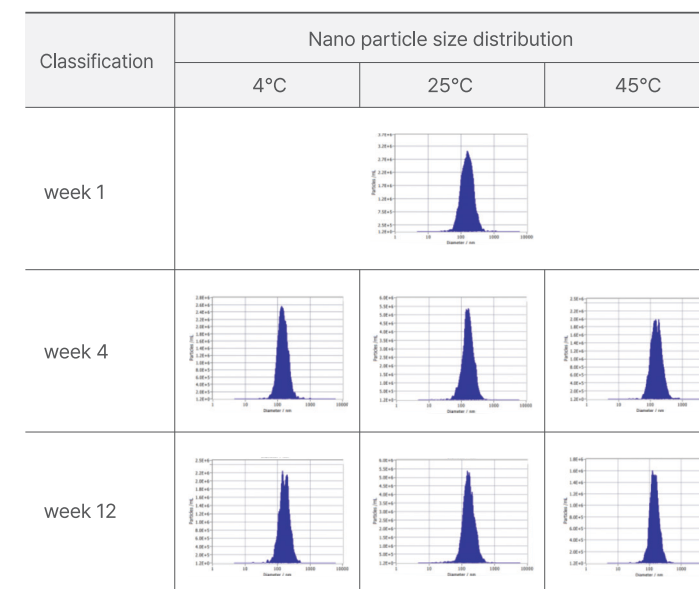


▪ Proven absorption of effective ingredients with a confirmed increase in skin permeability over time.

POINT 02

NTA Analysis of Exo-CICA® Before and After High-Pressure Sterilization and Particle size change Over 12 weeks at Different temperatures

Analysis results of temperature changes and nano particle size changes



NTA analysis after high-pressure sterilization

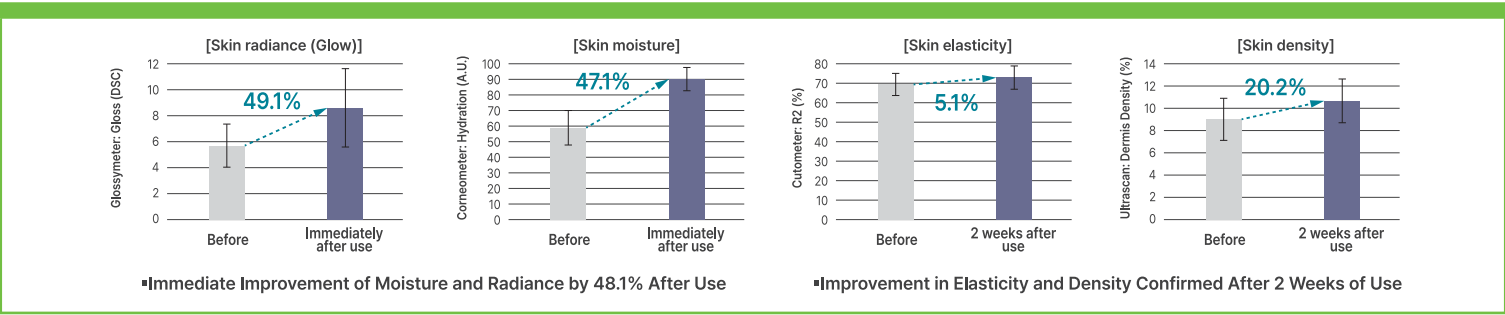
Classification	Beginning	25°C, 15mins	Autoclave 121°C, 15mins
Particle Q'ty (particles/mL)	3.6E+10	2.8E+10	2.7E+10
Particle Size (nm)	161.9	153.5	162.5
Particle Q'ty (particles/mL)	3.1E+09	2.9E+09	4.3E+09
Particle Size (nm)	158.9	149.8	122.6
Particle Q'ty (particles/mL)	3.1E+08	3.5E+08	1.4E+09
Particle Size (nm)	160.2	137.6	130.2
Particle Q'ty (particles/mL)	3.2E+07	3.2E+07	8.4E+07
Particle Size (nm)	159.4	119.6	112.2

Confirmed ability to maintain consistent particle size despite changes in temperature and time.

▪ Maintained consistent size and quantity of exosome particles even after high-temperature sterilization
 → Ability to maintain uniform quality over a long period.

Clear Commitment for your Change

POINT 03 Time-based Effects of Exo-CICA® Exosome



POINT 04 Comparison of Phospholipid and Exosome Content Rates between Competitor Products and Exo-CICA®

Microscopy Images:
 (V) BioExo-Water(Cica) (Lot. 230823)
 CICA-EXO(SH)
 CICA-EXO(EH)
 Phyto-EV Jeju Cica

▪ **1.87 Times Higher Level** Compared to Callus Exosomes

Sample	Conc.(ng/μl)	A260/ A280
DW	0	2.3
BioExo-Water(Cica)	635.2	2.11
CICA-EXO(SH)	3.5	2.35
CICA-EXO(EH)	339.4	2.15
Phyto-EV Jeju Cica	80.4	2.38

▪ Reference Image of our Exo-CICA®
 Cryo-TEM analysis image
 Oil red O test image

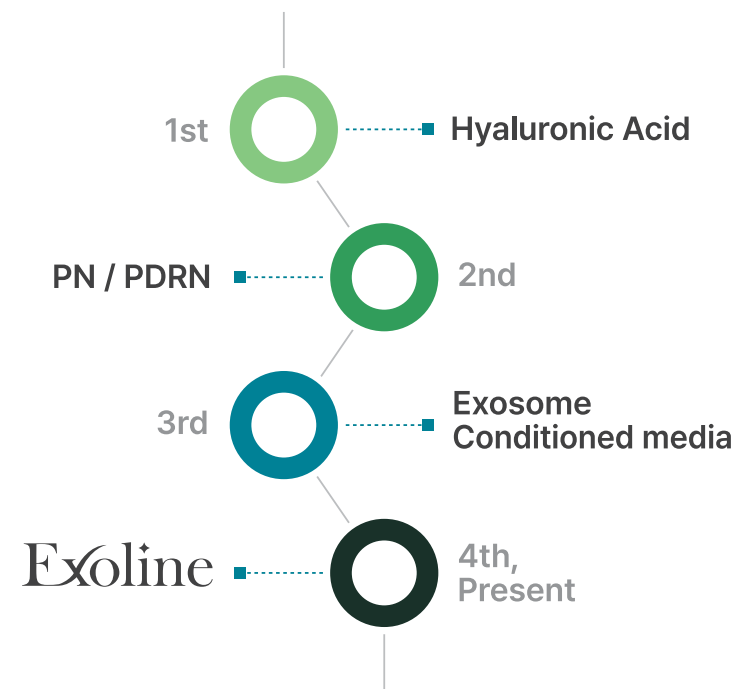
▪ miRNA Protein Quantification Result Compared to Competitor Control Group

ABio materials

Advanced Bio materials



The Evolution of Skin Boosters



Exoline

A High-Purity Premium Plant CICA Exosome Skin Booster
Not Culture media or Extracts, Just pure exosomes derived our own exclusive new biomaterial Exo-CICA®
from the new kind of Centella Asiatica leaves

01 Exclusive Technology & Quality

Maximization of Centelloside Efficacy

A newly designed Centella Asiatica leaf variety that has been specially engineered to allow the leaves, which contain the highest amount of Centelloside, the most powerful component for regeneration and wound healing, to grow large, thus maximizing the Centelloside content.

02 Matchless Safety

Safety of Plant Exosomes

High biocompatibility
Minimized risk of side effects due to 'Non-Cholesterol'

03 Absolute Effect

Peptide, HA, Glutathione

A Premium Skin Booster with High Functionality and High Purity, Combining 11 Different Peptides, Glutathione, and HA with Plant Exosomes from Patented Bio-Materials

ETM Process

(Exoline Technology Mechanism)



The key active ingredient in Centella, known for its soothing and healing properties.



Our own-specialized cultivation environment
*Capable of mass-producing high-quality products with a smart farm system



Development of a new high-quality product combining Centelloside with various medical ingredients
[Designated as a high-tech product by the Ministry of Health and Welfare]



A patented technology that efficiently extracts high-purity exosomes from plant sources.



A new bio-material derived from plant-based exosomes, extracted and separated through a patented process to maximize the efficacy of the exosomes.

Anti-Melanin

Internal training materials Confidential

POINT 01 Proven Anti-Melanin Effect Through Experiments

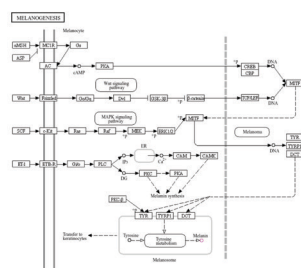


Gene Prediction List



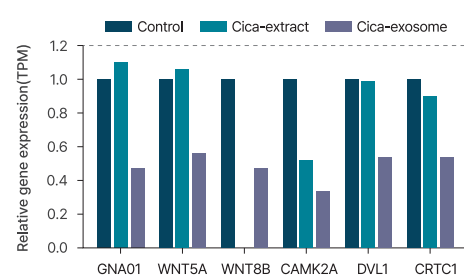
Analysis of human target genes for plant exosome miRNA (in silico) Confirmed a total of 5,872 target genes

Target Gene KEGG Pathway Analysis Results



Analysis of 5,872 target genes' KEGG pathways Confirmed the involvement of target genes in melanin and skin inflammation pathways

Melanin Inhibitory Ability of Plant Exosomes

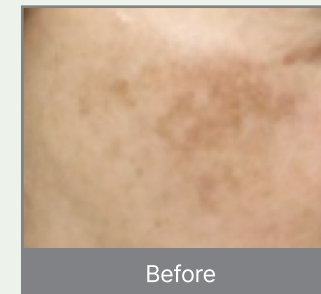


Confirmed superior performance in regulating and suppressing genes related to melanin in plant-derived exosomes compared to extracts

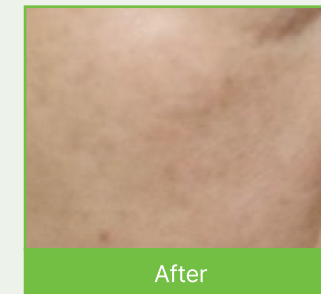
Exoline Beginning of Change

The plant-derived exosomes of Exoline directly regulate (inhibit) the enzyme (protein) genes that produce melanin through the melanin biosynthesis process, effectively helping to inhibit melanin production and alleviate pigmentation.

Pigmentation Improvement

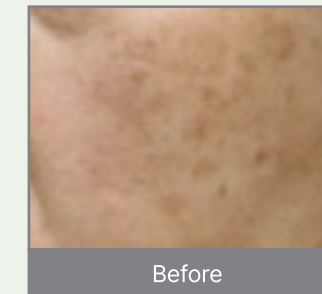


Before

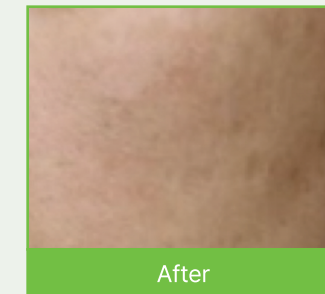


After

Before & After 5 times treatments

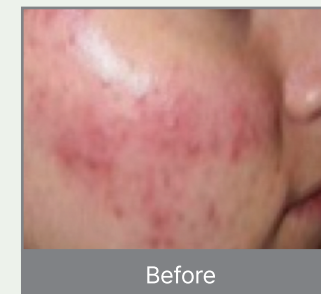


Before

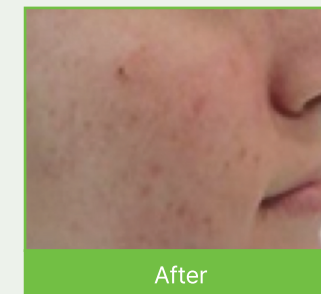


After

Before & After 6 months

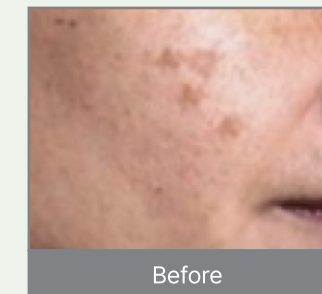


Before

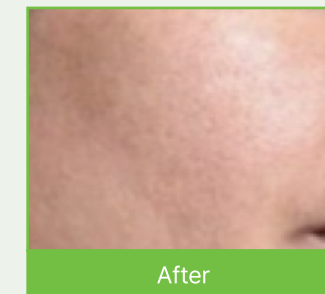


After

Before & After 2 weeks



Before

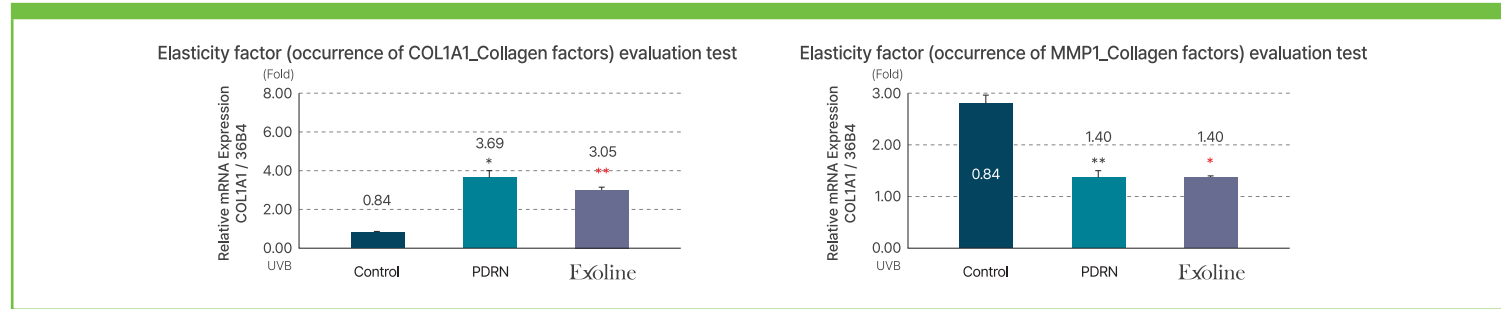


After

Before & After 3 weeks

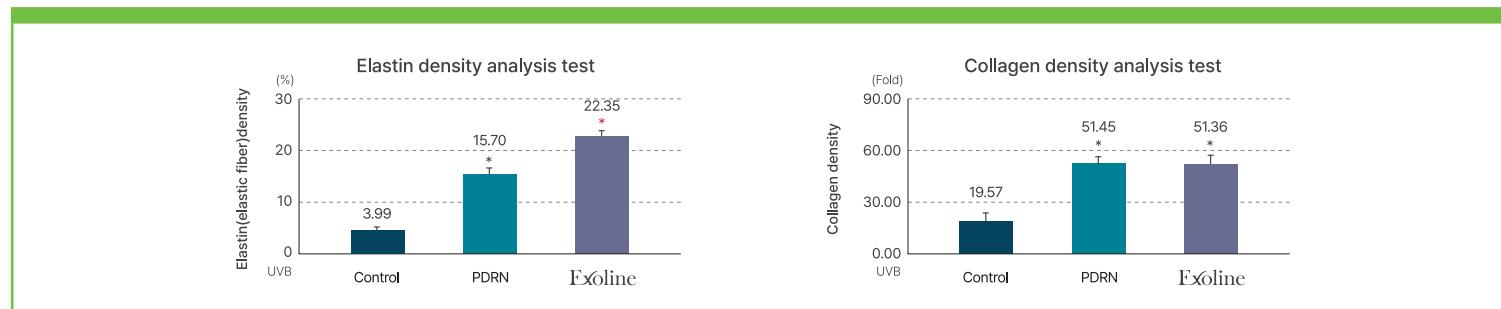
Elasticity

POINT 01 Collagen Synthesis and Degradation Evaluation Test



- Collagen synthesis factors **increased by 261.26%**, and degradation factors **decreased by 50.30%**
- Definite improvement effect

POINT 02 Collagen Density Test

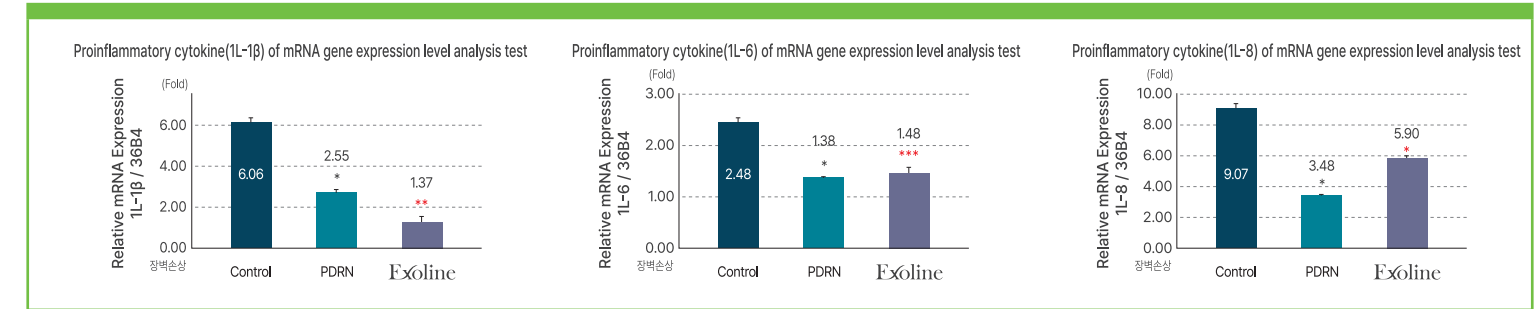


- Collagen Density increased by **162.48%**
- Elastin(elastic fiber) density **increased by 560.65%**, which is **142.38% higher** compared to the control group (PDRN)

2024 Ex vivo trial result from by Korea Biomedical research Institute/limited to raw ingredient characteristics

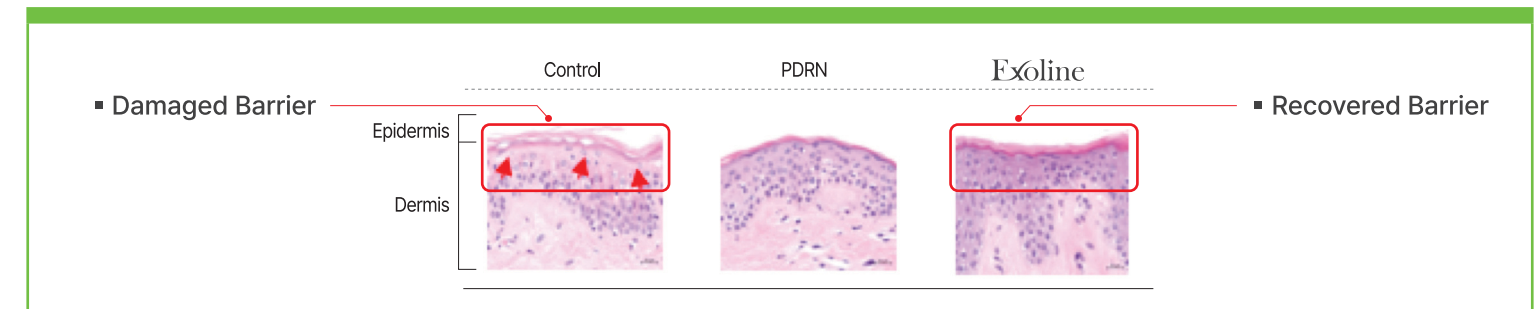
Skin Barrier

POINT 03 Inflammatory Cytokine mRNA Gene Expression Experiment Results



- IL-1β mRNA gene expression **decreased by 77.38%** compared to the negative control group, and by 46.34% compared to the control group.
- IL-6 mRNA gene expression **decreased by 40.19%**. IL-8 mRNA gene expression **decreased by 35.03%**.

POINT 04 Analysis test result for Elastin(elastic fiber) density



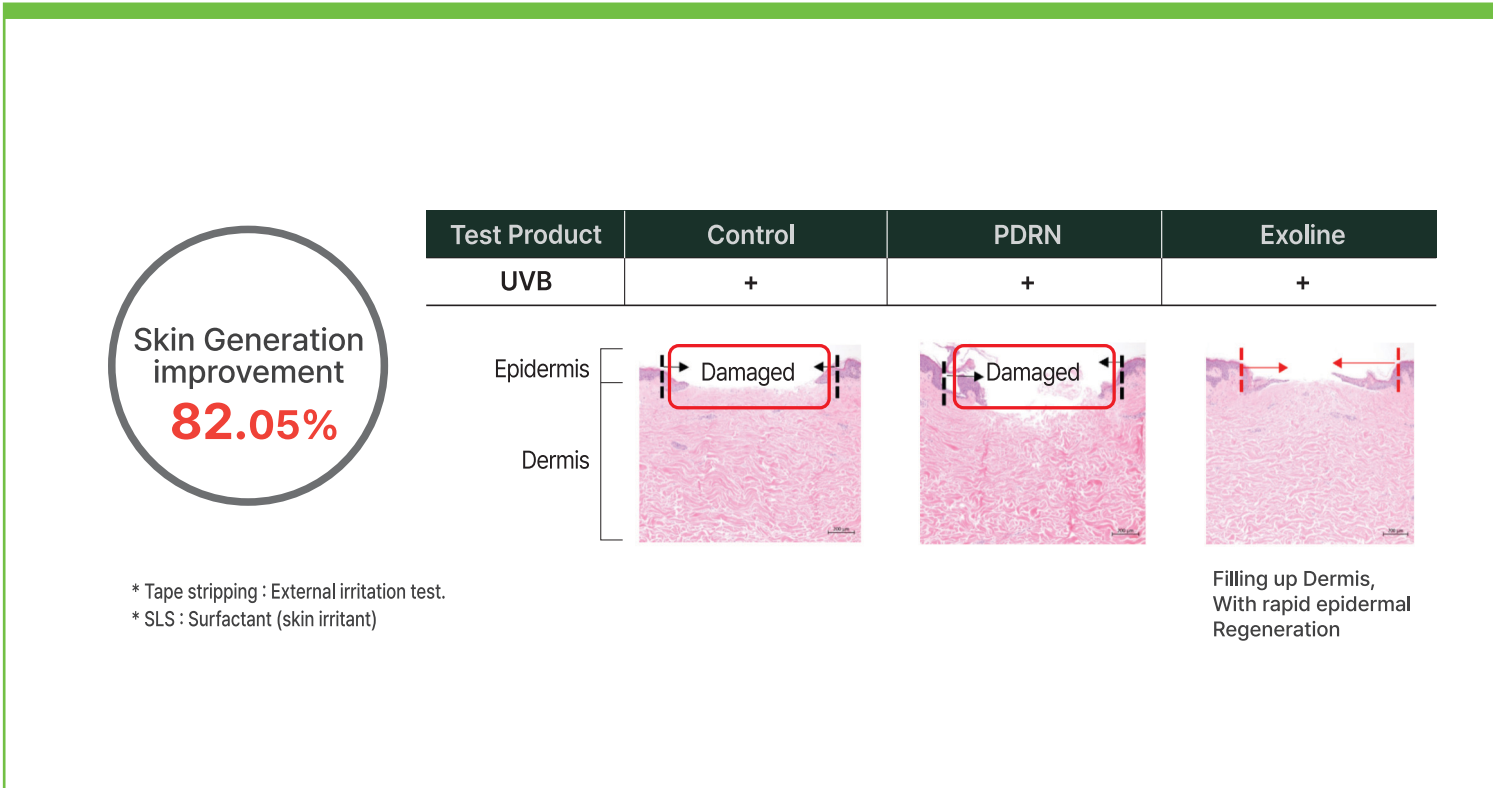
- Representative Image of H&E Staining (X400, scale bar=20μm)

2024 Ex vivo trial result from by Korea Biomedical research Institute/limited to raw ingredient characteristics

Skin Regeneration

POINT 01

Efficacy Evaluation Test of Skin Barrier Recovery in an Ex Vivo Human-Derived Skin Tissue Culture Model Damaged by Tape Stripping and SLS



Representative H&E staining image (X50, scale bar = 200µm)

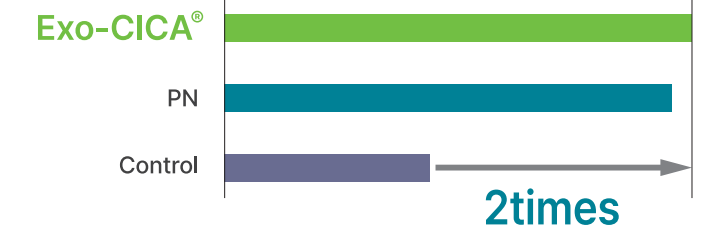
2024 Ex vivo trial result from by Korea Biomedical research Institute/limited to raw ingredient characteristics

vs PN

POINT 01

Comparison with PN : Collagen Synthesis and Wound Healing Efficacy

Collagen synthesis (COL1 on HDF)



Collagen synthesis effect is more than twice as effective as the control group and at least equal to PN.

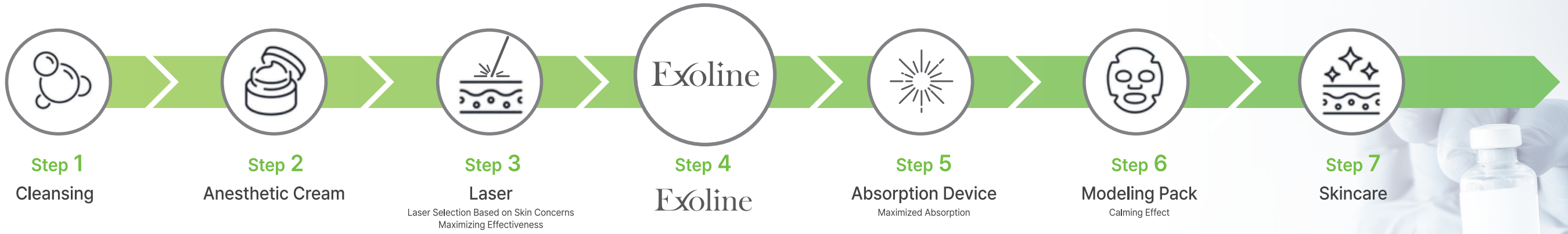
Wound healing on HDF



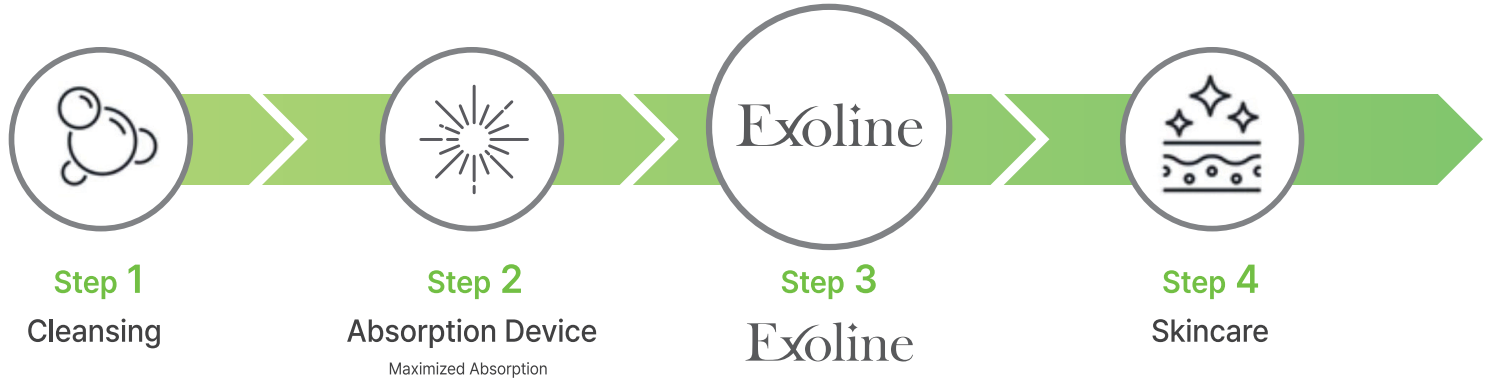
Wound healing effect is 20% higher than the control group and at least equal to PN.

Best Protocol

POINT 01 Protocol with Laser treatment



POINT 02 Laser & Needle RF Combination treatment Protocol



Advantages of Using Laser / Needle RF Combination

- ✓ Ability to select and combine lasers according to specific skin concerns
- ✓ Rapid noticeable effects through intensive care
- ✓ Increased skin recovery speed
- ✓ Reduced risk of post-inflammatory hyperpigmentation (PIH)
- ✓ Shortened treatment intervals



Product portfolio

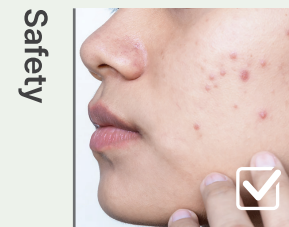
Need Exoline



- Acne scars
- Enlarged pores
- Skin inflammation
- Scar pigmentation
- Uneven skin tone



- Moisture replenishment
- Wrinkle improvement
- Elasticity enhancement



- Ingredient stability
- Pain reduction
- Rapid effect

Ideal Product Usage Cycle



Exoline Rejuv Skin Booster



Composition ----- 1ml / 1Syringe



Exoline Refine Skin Booster



Composition ----- 3 ml x 10 Vials



Exoline HA Filler 2 Types



Composition ----- 1ml / 1Syringe



Exoline HA-filler

with high density HA molecule

**FEEL The Smoother, and
FILL your skin with The Elastin**

Cross-linked Hyaluronic Acid Dermal filler by Exoline



Internal training materials Confidential



Smooth

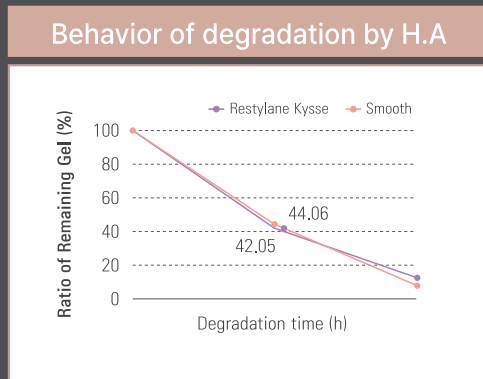
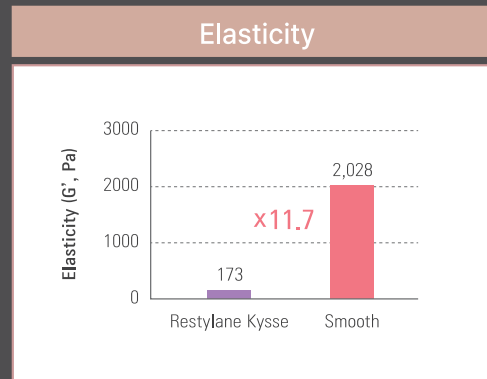


Elastin

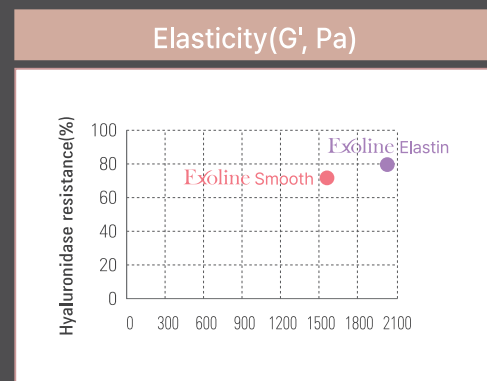
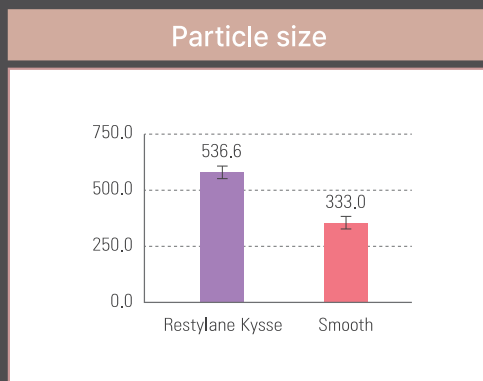
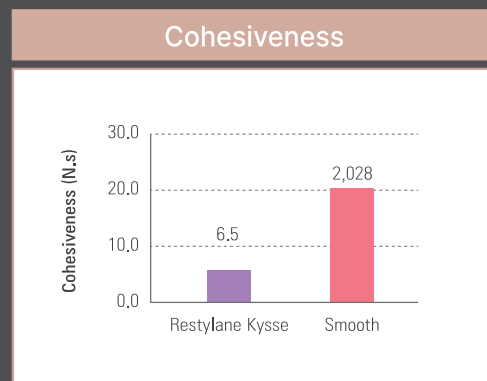
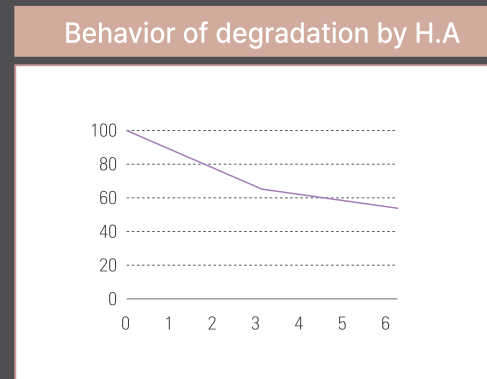
Description	Colorless transparent gel type with any impurities	
Materials	Hyaluronic acid (C/L), 0.3% Lidocaine	
HA	24mg / ml	
Composition	1ml / 1Syringe	
Application	•Superficial dermis •Middle layer of subcutis	Deep to very deep layer of subcutis
Needle	27 G	25 G
Storage	2~25°C (room temperature standard)	
Expiry date	Refer to bottom of the package	

Performance Report

Smooth

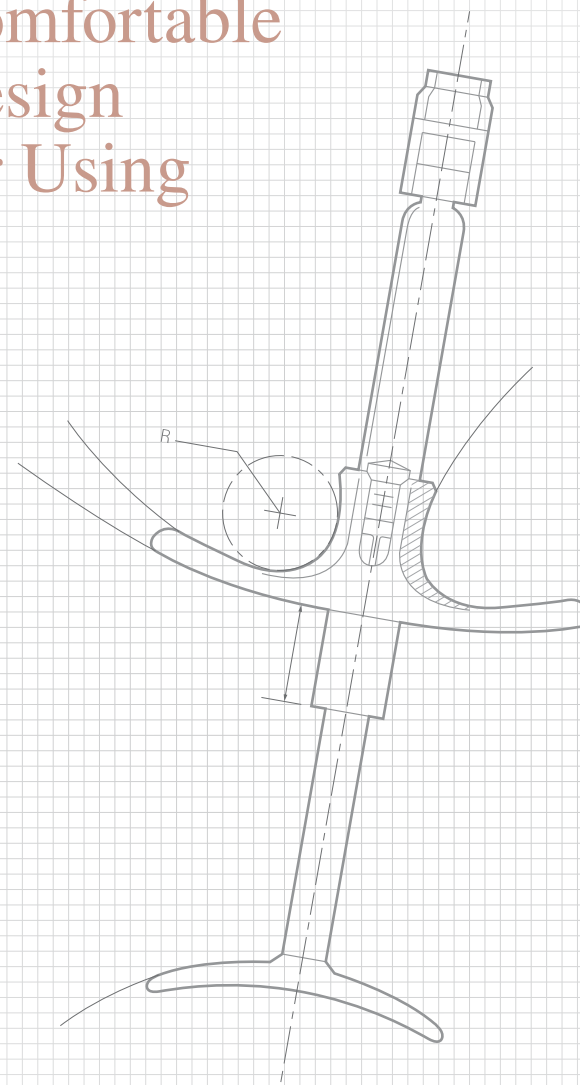


Elastin

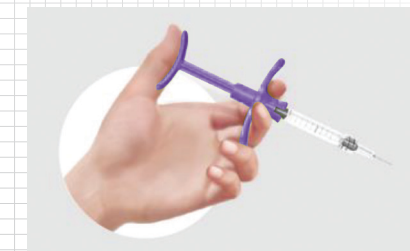


Smaller Particle ❖ Less Pain ❖ Natural Skin effect

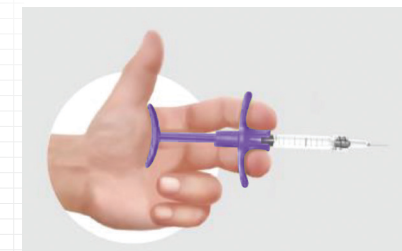
Comfortable Design for Using



Anti-slip features and ergonomic finger-grip design ensure stable the skin-booster application



Exoline



Exoline



Competitor



Competitor