

5th Generation Exosome Scalp & Hair Booster

LxH

LEUCO EXO HAIR

EXOSOME (LEUCONOSTOC, GINSENG, CAMELLIA, CICA)



LEUCO EXO HAIR
EXOSOME (LEUCONOSTOC, GINSENG, CAMELLIA, CICA)

4 Exosome

Leuconostoc Extracellular Vesicles
Panax Ginseng Callus Vesicles
Camellia Japonica Callus Vesicles
Centella Asiatica Callus Vesicles



PDRN

Made by a French
From Wild Alaskan salmon
High-purity PDRN 15,000 ppm



Collagen & Peptides

EGF, FGF, IGF
Atelocollagen, Hydrolyzed Collagen
8 Peptides & 5 Natural Extract



LEUCO EXO HAIR
EXOSOME (LEUCONOSTOC, GINSENG, CAMELLIA, CICA)



No. 1 EXOSOME, Freeze-Dried Ampoule : 100mg
No. 2 PDRN + Collagen + Peptides, Solvent Ampoule : 6ml

PRODUCT NAME | LEUCO EXO HAIR

EXOSOME (Leuconostoc, Ginseng, Camellia, Cica)

- Leuconostoc Extracellular Vesicles
- Panax Ginseng Callus Extracellular Vesicles
- Camellia Japonica Callus Extracellular Vesicles
- Centella Asiatica Callus Extracellular Vesicles

PDRN

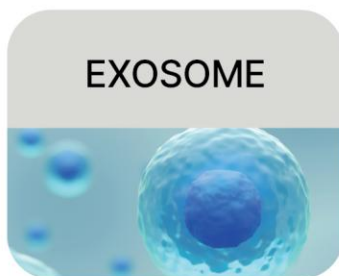
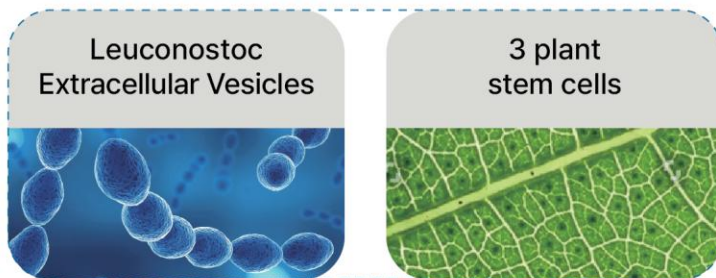
- High-purity PDRN 15,000 ppm
- Made by a French manufacturer derived from wild Alaskan salmon.
- Authorized by European Health Authorities (USA and Canada).

Collagen & Peptides

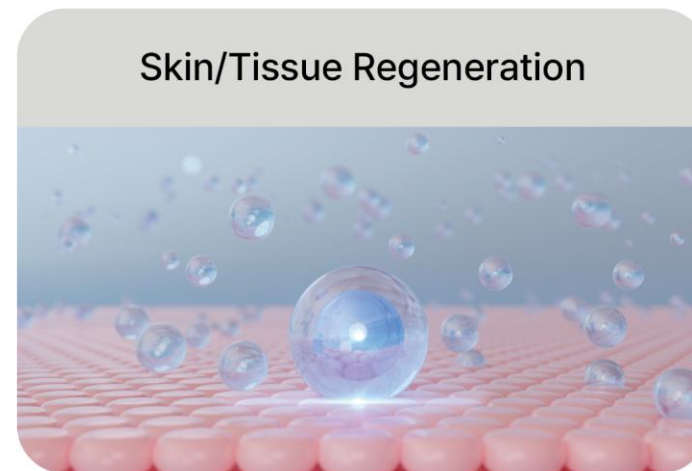
- EGF, FGF, IGF
- Atelocollagen, Hydrolyzed Collagen
- 8 Peptides and 5 Natural Extract

EXOSOME

LEUCO EXO HAIR is a product that extracts exosomes, the core active ingredient, from Scalp improvement and hair growth beneficial plant derived leuconostoc bacteria and three plant stem cell cultures and uses technology to increase the absorption of active ingredients into the scalp and pores through exosome nanoparticles. Also contains highly purified PDRN and 8 peptides to improve scalp and hair environment



Extraction of 0.5% core component of stem cell culture extract 184 to 462 times smaller than skin pore size, High absorption rate

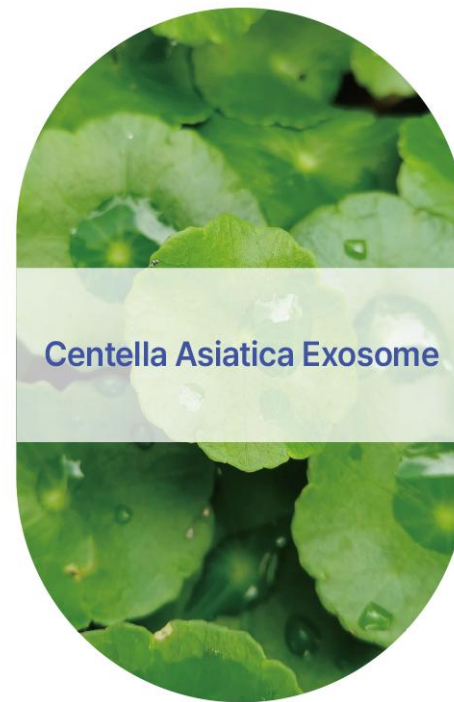
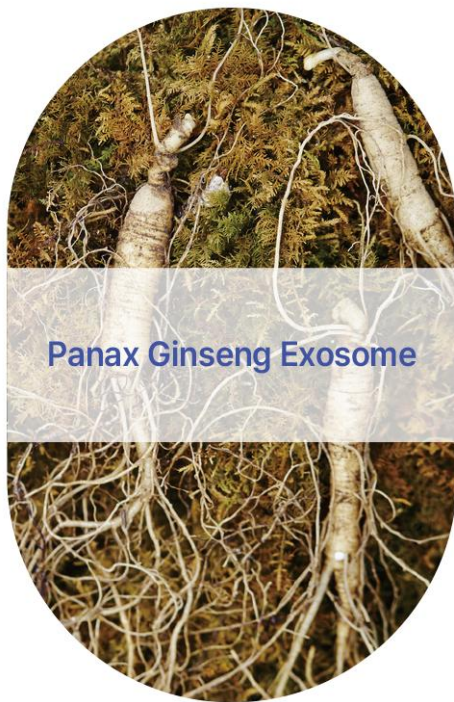


Contains various active ingredients such as protein DNA, mRNA, and lipids that help with skin cell regeneration and activation.

4 Exosomes + PDRN + Collagen & Peptides

4 Exosomes

Technology extracts exosomes, a key active ingredient, from plant stem cell (callus) culture medium, from Scalp improvement and hair growth and exosome nanoparticles increase the absorption rate of the active ingredient. The ultra-nano particles contain of about 4.5 billion/ml of purified high-purity exosomes alone. High-purity exosomes are directly isolated and purified from 4 plant stem cell (callus) culture.



4 Exosomes + PDRN + Collagen & Peptides

4 Exosomes

Purified high-purity exosomes isolated from only the core active ingredients plant stem cell (callus) culture medium



Leuconostoc Exosome

Leuconostoc lactic acid bacteria, isolated and purified by fermenting and culturing radish roots, are involved in cell proliferation of hair follicle and dermal papilla cells and promote hair growth. also has high probiotics and antibacterial properties, so it is effective in suppressing scalp inflammation, alleviating alopecia, and is excellent for hair elasticity and scalp moisturizing.

Panax Ginseng Exosome

Ginsenoside(Saponin), vitamins, mineral salts, and various amino acids helps regenerate aged scalp cells, promotes the synthesis of hyaluronic acid, a natural moisturizing factor in the dermal layer of the scalp, provides scalp elasticity (improves wrinkles) and prevents scalp aging.

Camellia Japonica Exosome

Rich in **flavonoid, polyphenol, catechin, methionine**, etc. and have excellent antioxidant properties, which help protect the skin from irritation inside and outside the skin. They also have moisturizing effects, inhibiting inflammation, shrinking pores, and inhibiting excessive sebum secretion.

Centella Asiatica Exosome

Phytosterol, Glycoside Tannin ingredients promote scalp cell regeneration, have antimicrobial properties, reduce scalp inflammation, and promote wound healing. **Madecassic Acid, Asiaticoside** ingredients help the scalp to synthesize collagen, giving it elasticity. Contains various amino acids essential for scalp cell regeneration.

4 Exosomes + PDRN + Collagen & Peptides



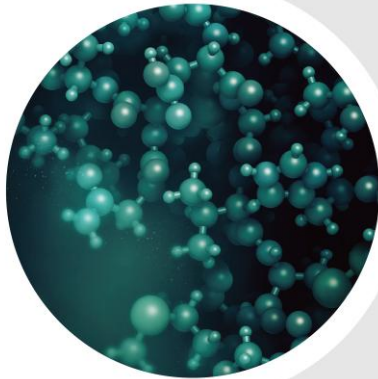
PDRN

High-purity PDRN is rich in vitamins, amino acids, and minerals, which are essential for preventing hair loss and hair growth, and PDRN also has excellent effects on cell regeneration.

- High-purity PDRN 15,000 ppm
- Made by a French manufacturer derived from wild Alaskan salmon.
- Authorized by European Health Authorities (USA and Canada).
- Promotes and increases Scalp hydration
- OH ° free radical scavenger
- Reconstruction of damaged skin
- Anti UV light
- Reinforces the antioxidant barrier of the Scalp

4 Exosomes + PDRN + Collagen & Peptides

Growth Factors & Atelocollagen



EGF, FGF, IGF

EGF (Epidermal Growth Factor) is responsible for the regeneration of the scalp epidermis
FGF (Fibroblast Growth Factor) helps regenerate the scalp dermis
IGF (Insulin-like Growth Factor) is a substance produced in the dermal papilla and is a representative growth factor that helps hair growth by promoting the differentiation of keratinocytes in hair follicles. It promotes the growth of dermal papilla cells, promotes hair growth, and prevents hair cell death



Atelocollagen

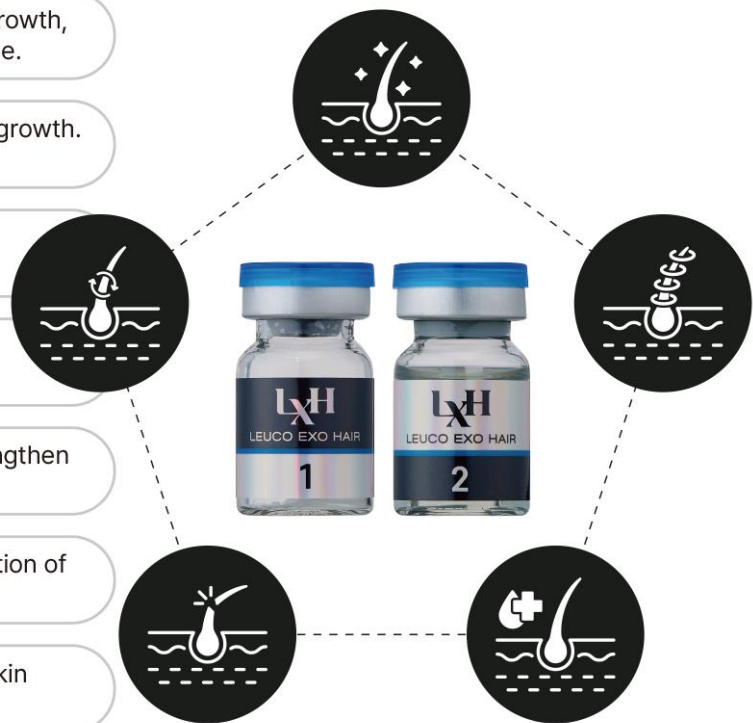
Extracted from blue shark fin, rich in basic amino acids that are easily absorbed into hair and scalp.
Promote the synthesis of scalp collagen and elastin,
Twice the moisturizing effect compared to hyaluronic acid
Gives shine to the hair, increases elasticity, and helps improve soft, voluminous hair.
Improves damaged hair due to dyeing, etc.
Reduces the appearance of dead skin cells due to dry scalp and provides moisture to dry or damaged scalp.

4 Exosomes + PDRN + Collagen & Peptides

8 (Amino Acid) Peptides

8 (Amino Acid) Peptides : Made from 99% high purity powder raw materials

01. **Copper Tripeptide-1** : powerful antioxidant used in hair, helping hair and scalp health, relieving the hair growth cycle and especially strengthening scalp immunity.
02. **Myristoyl Pentapeptide-17** : Helps promote hair growth by significantly activating keratin growth, increasing nutrient absorption by hair follicles and promoting the development of hair papillae.
03. **Biotinoyl Tripeptide-1** : A peptide extracted from Biotin, a vitamin essential for healthy hair growth. Helps strengthen hair strands, reduce hair breakage and promote hair growth
04. **Galloyl Pentapeptide-74(SEATIDE)** : Contains antioxidant spirulina and polyphenolic acid, which are effective in antioxidant, anti-inflammatory, and skin soothing.
05. **Nicotinoyl Tripeptide-1** : Effective for powerful antioxidant, soothing and anti-inflammatory, Anti-Hair Loss, Hair Growth
06. **Glycine Soja Peptide** : Contains a large amount of isoflavone and saponin, which helps strengthen hair roots and prevent hair loss.
07. **Palmitoyl Pentapeptide-4** : Helps improve damaged scalp tissue by stimulating the production of collagen and elastin in the scalp
08. **Palmitoyl Tetrapeptide-7** : Contains many amino acids that reduce skin inflammation and skin damage Helps improve scalp



4 Exosomes + PDRN + Collagen & Peptides

5 Natural plant enzymes



Ecklonia Cava Extract

Rich in polyphenols, it has the function of suppressing scalp toxicity and sebum secretion, helping to improve chronic seborrheic dermatitis and provide anti-inflammatory moisturizing.



Rhus Semialata Extract

PPD (p-phenylenediamine), one of the main ingredients in hair dye, is known to cause various allergies. It protects the scalp from PPD and helps keep the scalp safer and healthier from dyes and various chemicals.



Hydrolyzed Pea Protein

Contains abundant dietary fiber, vitamins, and various minerals to help promote hair growth and prevent hair loss.



Papain

Helps cleanse and soothe the scalp by breaking down old scalp dead skin cells and removing impurities in pores.



Prunella Vulgaris Extract

The stress hormone cortisol inhibits hair follicle growth. Helps suppress hair loss by suppressing cortisol, increasing the size of hair follicles and promoting the growth of hair follicle cells.



Clinical Trial Report Alopecia prevention efficacy

KDRI-2020-880

Assessment of Alopecia Improvement Effect

Summary of Test Result			
TITLE	Double-blind, placebo-controlled, single-site, randomized, human application test to evaluate safety and effectiveness of alopecia prevention of "Leuco-Exo (sample 1) & Hair solvent (sample 2)"		
CLIENT	Hucosmedic Co.,Ltd. (Person in Charge : Yoon Yeo Cho) 2-1002, Ace High-tech City Cheongna, 495, Parang-ro, Seo-gu, Incheon, Republic of Korea (Tel. +82-32-1833-3667)		
INSTITUTE	Korea Dermatology Research Institute 5~8F, 98, Yatap-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea (Tel. +82-31-704-0099 / Fax. +82-31-701-0189)		
PERIOD	Mar. 24. 2021 ~ Jul. 30. 2020	Test Period	Mar. 29. 2019 ~ Jul. 06. 2020
TEST METHOD	Number of Sample	2 EA (Test Sample, Placebo Sample)	Number of Subjects 31 (Final subject)
	Treatment	Self-application by subjects	
	Details on Test Method	1. Subject Selection : 31 subjects who met the selection criteria and were not included in exemption criteria were selected 2. Test Area : Scalp 3. Application Method : Self-application by subjects on the scalp two a week 4. Evaluation Method a. Hair density and diameter change assessment by phototrichogram b. Visual evaluation by researchers c. Self-assessment by subjects d. Cutaneous irritation evaluation by dermatologist	

KDRI-2020-880

Assessment of Alopecia Improvement Effect

TEST RESULT	<p>As a result of testing 31 research subjects suffering from hair loss during the 12-week test period, the areas where "Leuco-Exo (sample 1) & Hair solvent (sample 2)" were applied showed a statistically significant increase ($p < 0.05$) in the number of hairs (N/cm^2), the main efficacy index, from Week 4 compared to before the test. On the other hand, the areas where the placebo sample had been applied showed no statistically significant changes ($p < 0.05$) in the number of hairs. In addition, the comparison and interaction analysis of the weekly changes in the number of hairs between the groups revealed statistically significant differences ($p < 0.05$). There were also statistically significant differences in changes in the number of hairs after Weeks 4, 8 and 12. Therefore, "Leuco-Exo (sample 1) & Hair solvent (sample 2)" is judged to have alopecia prevention efficacy. In addition, no specific adverse reactions were observed in any of the study subjects during the test. (There may be temporary changes and individual differences.)</p>
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"Leuco-Exo & Hair solvent" is judged to have alopecia prevention efficacy. In addition, no specific adverse reactions were observed in any of the study subjects during the test.

Clinical Trial Report 5 Improvement effect

Assessment of Pilatory & Alopecia Alleviation & Number of Hair Dropouts & Scalp Water Barrier & Scalp Moisturizing

TITLE	Pilatory & Alopecia Alleviation & Number of Hair Dropouts & Scalp Water Barrier & Scalp Moisturizing Improvement Clinical Evaluation of "A (LEUCO EXO HAIR) & B (Control 1) & C (Control 2)"		
CLIENT	Hucosmedic Co., Ltd 2-1002, Ace High-tech City Cheongna, 495, Parang-ro, Seo-gu, Incheon, Republic of Korea (Tel. +82-32-1833-3667)		
INSTITUTE	Korea Dermatology Research Institute 5~8F, 98, Yatap-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea (Tel. +82-31-704-0099 / Fax. +82-31-701-0189)		
PERIOD	Sep. 21. 2022 ~ Feb. 28. 2023	Test Period	Sep. 28. 2022 ~ Dec. 29. 2022
Number of Sample	4 EA (Test Sample, Control Sample 1, Control Sample 2, MTS)	Number of Subjects	Test Group: 7, Control 1 Group: 7, Control 2 Group: 6
Treatment	Self-application by subjects (Test Group: Sample A+MTS, Control 1 Group: Sample B+MTS, Control 2 Group: Sample C+MTS)		
TEST METHOD	<p>1. Subject Selection : 20 subjects who met the selective criteria and did not meet the exclusion criteria were selected</p> <p>2. Test Area</p> <ol style="list-style-type: none"> Pilatory(Hair Thickness): Hair Alopecia Alleviation & Number of Hair Dropouts: Scalp and Hair Scalp Water Barrier: The point at which the horizontal extension of the end of the eyebrow meets the vertical extension of the targus Scalp Moisturizing: About 15cm from the center of the between the eyebrows on the imaginary line connecting the parietal and the center of the between the eyebrows <p>2. Application Method : Once a week, mix the powder and solution and when the contents are completely dissolved, use the MTS device for self-use on the scalp.</p> <p>Application Method : Evaluation of hair count and hair thickness using Folliscope : Evaluation of the number of hair dropouts</p>		

	<p>c. Evaluation of scalp water barrier using Tewameter Nano</p> <p>d. Evaluation of scalp water content using the Hydration Pin</p> <p>e. Visual evaluation by researchers</p> <p>f. Cutaneous irritation evaluation by dermatologist</p>
TEST RESULT	<p>As a result of testing on 20 subjects during the 12 weeks the period, Hucosmedic Co., Ltd. "A (LEUCO EXO HAIR Test Group)" and the "MTS" device, the control 1 group(B+MTS), and the control 2 group (C+MTS) were evaluated the effectiveness of pilatory, alopecia alleviation, number of hair dropout, scalp water barrier and scalp moisturizing improvement.</p> <p>1)"A (LEUCO EXO HAIR Test Group)" and the "MTS" device, the control 1 group(B+MTS), and the control 2 group (C+MTS) showed a statistically significant increase in hair thickness (p<0.05) compared to before the test. In addition, the hair thickness of the test group and the control 2 group (sample C+MTS) showed a statistically significant difference (p<0.05). In the hair thickness variation at each time point, a statistically significant difference was found after week 12 at an adjusted significance level (p<0.025).</p> <p>2)"A (LEUCO EXO HAIR Test Group)" and the "MTS" device, the control 1 group(B+MTS), and the control 2 group (C+MTS) did not show a statistically significant difference (p<0.05) compared to before the test, while there was a numerical increase. The comparison between the groups did not show a statistically significant difference (p<0.05). However, the test group recorded a greater increase in hair count compared to the control 1 group (sample B+MTS) and the control 2 group (sample C+MTS). In addition, the results of the secondary criteria of expert visual assessment confirmed that all the groups did not show statistically significant improvement compared to "no change" (0). The Test Group, however, showed greater improvement than the control 1 group from week 4, and the control 2 group from week 12.</p> <p>3)"A (LEUCO EXO HAIR Test Group)" and the "MTS" device, the control 1 group(B+MTS), and the control 2 group (C+MTS) showed a statistically significant (p<0.05) decrease in the number of hair lost compared to before sample application. In the comparison results between groups, there was no statistically significant difference (p<0.05) in the number of hair lost between the test group and the control 1 group and between the test group and the control 2 group. However, the test group showed a greater numerical decrease compared to the control 1 group and the control 2 group.</p> <p>4)"A (LEUCO EXO HAIR Test Group)" and the "MTS" device, the control 1 group(B+MTS), and the control 2 group (C+MTS) showed a statistically significant decrease in scalp transepidermal water loss (p<0.05) compared to before the test. In the comparison results between groups, there was no statistically significant</p>

TEST RESULT	<p>difference(p<0.05) in scalp trans epidermal water loss between the test group and the control 1 group. However, the test group showed a greater numerical decrease compared to the control 1 group. While the test group and the control 2 group showed a statistically significant difference (p<0.05)</p> <p>5) "LEUCO EXO HAIR KIT Test Group" and the "MTS" device, the control 1 group (B+MTS), and the control 2 group (C+MTS) showed a statistically significant increase in the scalp water contents (p<0.05) compared to before the test, in the comparison results between groups, there was no statistically significant difference (p<0.05)</p> <p>In the scalp water contents between the test group and the control group 1 and between the test group and the control group 2. However, the test group showed a greater numerical increase compared to the control group 1 and the control group 2</p> <p>Therefore, the test group using both the test sample and the device will help improve pilatory, alopecia alleviation, number of Hair dropout, scalp water barrier and scalp moisturizing, and pilatory is considered to be more effective in improving the hair thickness than control 2 group and alopecia alleviation, number of hair dropout, scalp water barrier and scalp moisturizing are numerically superior to control group 1 and control group2.</p> <p>In addition, no special adverse reactions were observed in all study subjects during the test. (There may be temporary changes and individual differences.)</p>
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Therefore, the test group using both the test sample and the device will help improve pilatory, alopecia alleviation, number of Hair dropout, scalp water barrier and scalp moisturizing, and pilatory is considered to be more effective in improving the hair thickness than control 2 group and alopecia alleviation, number of hair dropout, scalp water barrier and scalp moisturizing are numerically superior to control group 1 and control group2.

Leuconostoc Research Reports

Leuconostoc Thesis

Herein, we investigated the effects of hs-LhEVs (Leuconostoc holzapfelii) on hair growth in HFDPCs. We show that hs-LhEVs increase cell proliferation, migration, and regulate the cell cycle. Furthermore, hs-LhEVs were found to modulate the mRNA expression of hair-growth-related genes in vitro.

These data demonstrate that hs-LhEVs can reduce apoptosis by modulating the cell cycle and promote hair growth by regulation via the Wnt/ β -catenin signal transduction pathway.

Article

Stimulatory Effects of Extracellular Vesicles Derived from *Leuconostoc holzapfelii* That Exists in Human Scalp on Hair Growth in Human Follicle Dermal Papilla Cells

Yeo Cho Yoon¹, Beom Hee Ahn¹, Jin Woo Min², Kyung Real Lee³, Sang Hoon Park⁴ and Hee Cheol Kang^{1,2,*}¹ Human & Microbiome Communicating Laboratory, GFC Co., Ltd., Hwaseong 18471, Korea; yc.yoon@gfcoos.co.kr (Y.C.Y.); bh.ahn@gfcoos.co.kr (B.H.A.)² Green & Biome Customizing Laboratory, GFC Co., Ltd., Hwaseong 18471, Korea; jw.min@gfcoos.co.kr³ SKINDA Dermatology Clinic, Sungnam 13595, Korea; teamdoctor79@naver.com⁴ Department of Plastic Surgery, ID Hospital, Seoul 06039, Korea; spark@idhospital.com

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Abstract: Human hair follicle dermal papilla cells (HFDPCs) located in hair follicles (HFs) play a pivotal role in hair follicle morphogenesis, hair cycling, and hair growth. Over the past few decades, probiotic bacteria (PB) have been reported to have beneficial effects such as improved skin health, anti-obesity, and immuno-modulation for conditions including atopic dermatitis and inflammatory bowel disease (IBD). PB can secrete 50–150 nm sized extracellular vesicles (EVs) containing microbial DNA, mRNA, proteins, lipids, and cell wall components. These EVs can regulate communication between bacteria or between bacteria and their host. Although numerous biological effects of PB-EVs have been reported, the physiological roles of *Leuconostoc holzapfelii* (hs-Lh), which is isolated from human scalp tissue, and the extracellular vesicles derived from them (hs-LhEVs) are largely unknown.

Herein, we investigated the effects of hs-LhEVs on hair growth in HFDPCs. We show that hs-LhEVs increase cell proliferation, migration, and regulate the cell cycle. Furthermore, hs-LhEVs were found to modulate the mRNA expression of hair-growth-related genes in vitro. These data demonstrate that hs-LhEVs can reduce apoptosis by modulating the cell cycle and promote hair growth by regulation via the Wnt/ β -catenin signal transduction pathway.

Keywords: extracellular vesicles (EVs); probiotic bacteria; human scalp-derived *Leuconostoc holzapfelii* (hs-Lh); apoptosis; hair growth



Citation: Yoon, Y.C.; Ahn, B.H.; Min, J.W.; Lee, K.R.; Park, S.H.; Kang, H.C. Stimulatory Effects of Extracellular Vesicles Derived from *Leuconostoc holzapfelii* That Exists in Human Scalp on Hair Growth in Human Follicle Dermal Papilla Cells. *Curr. Issues Mol. Biol.* **2022**, *44*, 845–866. <https://doi.org/10.3390/cimb44020058>

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1. Introduction

Human hair not only affects external appearance and protects the head but also maintains head temperature [1]. Hair loss, known as alopecia, is a common medical disorder that affects all genders. Hair loss can occur as a result of several changes such as seasons, fatigue, stress, hormone imbalances, drugs, pollution, and aging [2]. In a modern society that values outward appearance, hair loss can cause mental stress and lower quality of life, and it can become an obstacle to human relationships or social life [3,4]. Hair follicles (HFs), one of the adnexal components of mammalian skin, are derived from interactions between epithelial and mesenchymal compartments during embryonic development [5,6], and they are the sites of hair growth, which is regulated by growth factors [7]. Hair growth occurs in four phases: anagen (a rapid hair proliferation period), catagen (apoptosis-driven regression period), telogen (a relatively inactive period), and exogen [8–11]. Current, hair loss treatments include cosmetic products, surgical operation (such as hair follicle transplantation), and oral or topical medications such as finasteride (a 5 α -reductase inhibitor) and minoxidil (which was developed as a hypertension treatment) [12]. Additionally, blue light treatments have been proposed as additional methods for hair loss treatment [13]. However, these two representative drugs have short-term effects that degrade when treatment is

Leuconostoc Research Reports

Leuconostoc Thesis

Leuconostoc holzapfelii is one of the dominant species in the early fermentation of kimchi. According to a recent study, this strain is involved in cell proliferation and cell cycle regulation of human hair follicle dermal papilla cells and has the potential to promote hair growth

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김치에서 분리한 유산균 발효 서목태 분말과 신균주 복합물을 이용한 발모 촉진 소재 개발[§]

김미정¹ · 염규진^{2*}
¹워코엘바이오 기술연구소, ²워코엘바이오

Development of hair growth-promoting materials using a mixture of lactobacillus-fermented Seomoktae powder and new strains isolated from kimchi[§]

Mi Jung Kim¹ and Kyu-Jin Yum^{2*}
¹Coenbio Co., Ltd. R&D center, Seongnam 13207, Republic of Korea
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(Received January 19, 2024; Revised March 6, 2024; Accepted March 13, 2024)



Rhynchosia milubilis, also called rat-eye beans, has been widely used since ancient times as it has been known to promote hair growth, hair shine, and elasticity. In this study, we tried to develop a natural material good for human hair by fermenting rat-eye beans with specific kimchi lactobacilli. *Leuconostoc holzapfelii* is one of the dominant species in the early fermentation of kimchi. According to a recent study, this strain is involved in cell proliferation and cell cycle regulation of human hair follicle dermal papilla cells and has the potential to promote hair growth. Using a mixture of the small black bean powder fermented by *L. brevis* Ceb-ke-006 and the powder of *L. holzapfelii* Ceb-ke-003 purely separated from Korean kimchi, the proliferation of human hair dermal papilla cells and hair growth effects of the mixture were evaluated. When the content of *L. holzapfelii* Ceb-ke-003 in the mixture increased, human dermal papilla cell proliferation also increased by 61 ± 2.96% compared to the control. When the genes VEGF and FGF7, which are promoters of hair growth, were compared with controls, the expression level increased 68.83 ± 23.10% and 28.96 ± 6.02%, respectively. Furthermore, the Wnt3 gene

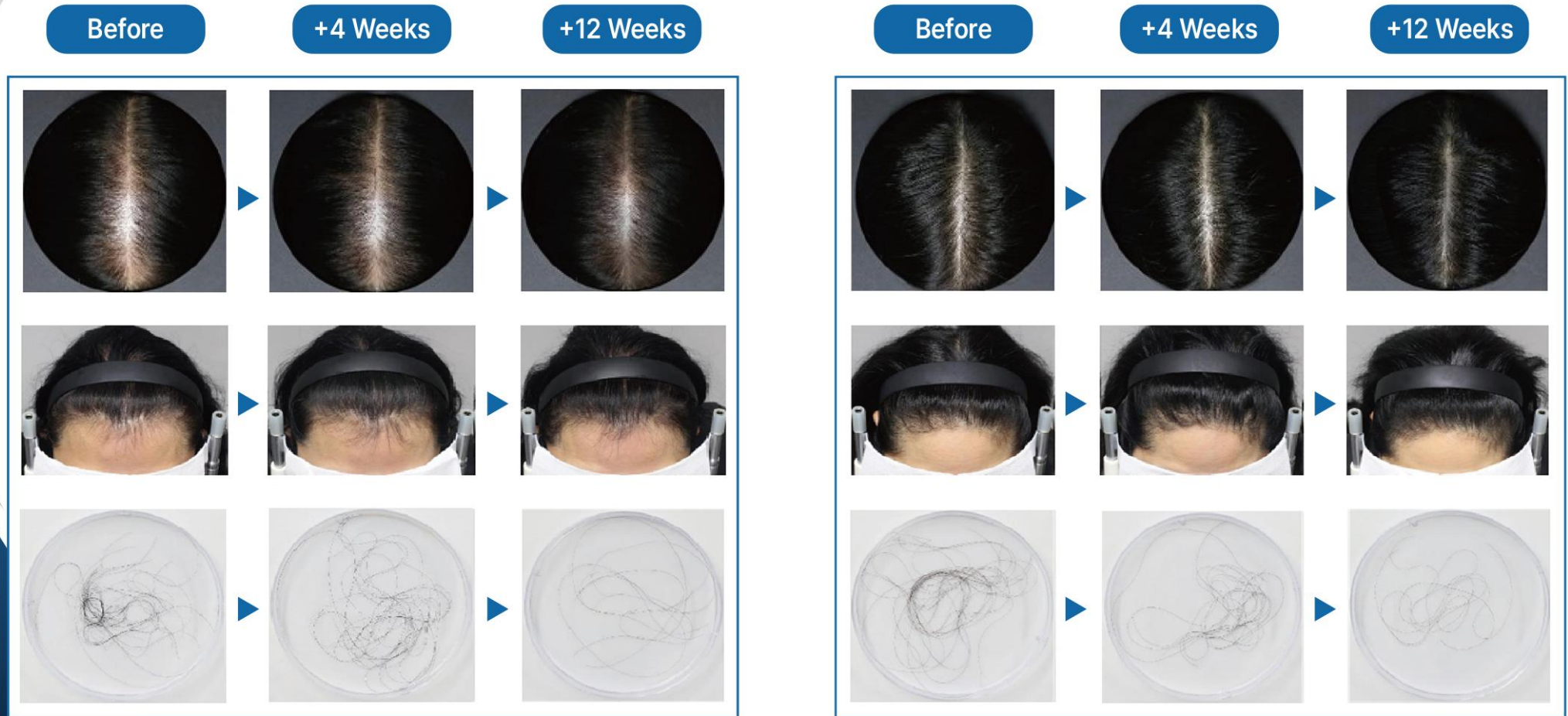
increased by 61.81 ± 14.79% compared to the control. The hair growth inhibitors IL-1b and IL-6 genes decreased by 40.76 ± 15.65% and 61.17 ± 14.25% compared to the control, and TGF-β decreased by 7.88 ± 25.38%. Based on the gene expression results for hair growth and inhibition-related factors, it was found that the mixed extract had a positive effect on hair growth and hair loss inhibition.

Keywords: *Lactobacillus brevis*, *Leuconostoc holzapfelii*, *Rhynchosia milubilis*, hair growth, human dermal papilla cell (HDPC)

인간의 모발은 두개골 보호와 같은 본래의 기능 이외에도 미용적인 면에서 큰 기능을 하고 있어 발모, 양모 및 탈모 예방은 예로부터 많은 관심의 대상이 되고 있다(Stenna, 1991; Hwang *et al.*, 2017). 탈모는 크게 두 종류로 구분하며 후자의 모발이 자연스럽게 모낭에서 탈락되는 자연탈모와 임신, 유전적 요인, 호르몬 분비 이상, 노화, 극심한 다이어트, 정신적 스트레스, 불규칙한 식사 및 생활, 발열성 질병, 과도한 화학제품의 사용 등이 원인이 되는 비정상적인 탈모로 분류한다(Song and Mo, 2010; Lee *et al.*, 2014). 과거에 탈모는 중장년층만의 문제로 생각되었지만 현재에는 20, 30대 젊은 층에서 크게 증가하는 추세이며 질병으로써 치부되고 있다(Ali and Martin, 2010;

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[§]Supplemental material for this article may be found at <http://www.kjom.org/main.html>

Before & After



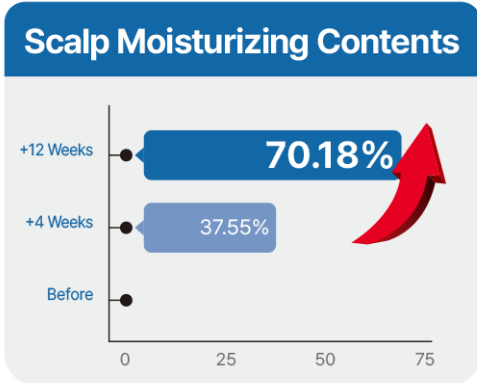
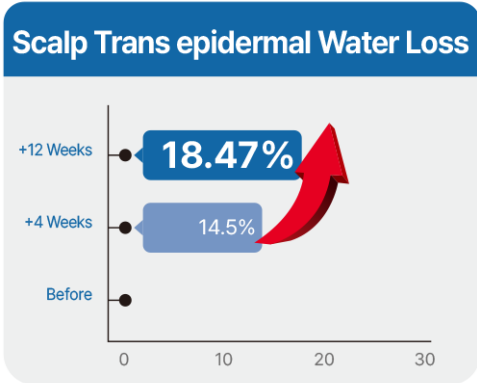
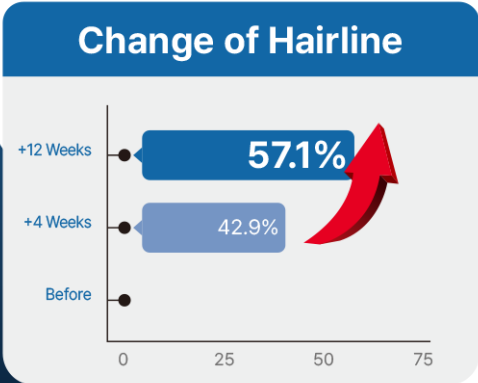
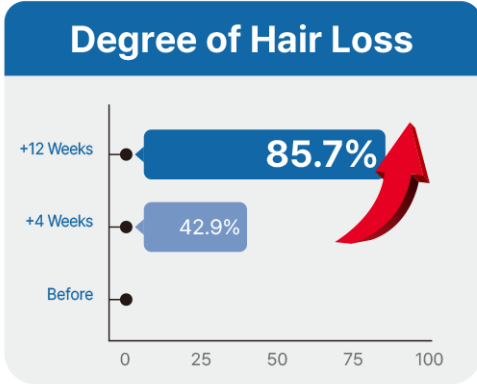
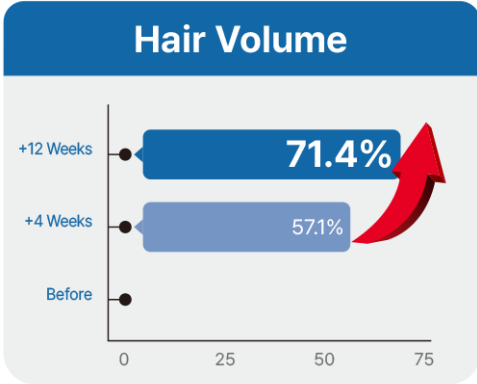
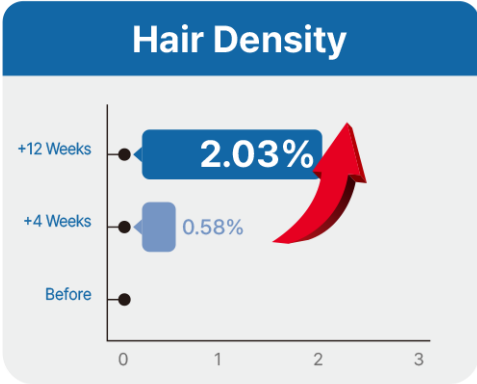
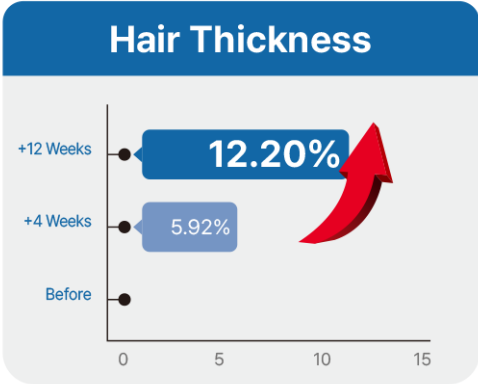
Before & After



Improvement Rate of Clinical Test



Statistics Result of Improvement Rate(%) - As a result of testing on 20 subjects during the 12 weeks the period



HOW TO USE

How to use LEUCO EXO HAIR serum

Only for topical application. Daily use at home.

01. After shampooing, dry your scalp and hair lightly.
02. Pour Ampoule 2 into Ampoule 1 and mix before use.
03. Insert the rubber cones inside the box into the Ampoule 1.

* Rubber cones are enclosed in the box.

04. Apply the serum to the scalp to allow it to be absorbed.

05. For using MTS

Drop one drop evenly all over the vulnerable scalp.
After 1 to 2 minutes, when the scalp becomes moist, apply the drops again, one by one, and perform MTS. The ingredients will then permeate the scalp.



5th Generation Exosome Scalp & Hair Booster
4 Exosome + PDRN + Collagen & Peptides



LxH

LEUCO EXO HAIR

EXOSOME (LEUCONOSTOC, GINSENG, CAMELLIA, CICA)