



SPEETIQUEL



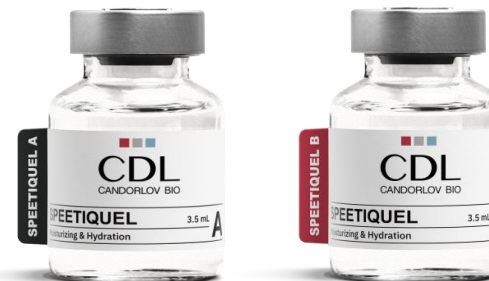
ABOUT SPEETIQUEL

New Generation Skin Booster with LNP Technology



SPEETIQUEL 3.5mL / vial 2ea / 1box

Wrinkle improvement, skin regeneration, skin elasticity



How to store

Room temperature 2-25°C, do not freeze / avoid sunlight

Expiration date

24 months after manufacturing



ABOUT SPEETIQUEL

Contains all the **essential ingredients** needed for healthy skin



SPEETIQUEL A
Ingredients

Water , Taurine, Allantoin,
Adenosine, Cyanocobalamin



SPEETIQUEL B
Ingredients

Water , Sodium Hyaluronate, Sodium Chloride, Sodium DNA,
Acetyl Hexapeptide-8, 1.2-hexanediol, Sodium Phosphate, Hydrogenated,
Phosphatidylcholine, Disodium Phosphate, Cholesterol, Poluglyceryl-10 Laurate,
Palmitic Acid, Palmitoyl Pentapeptide-4, Hexapeptide-9,cooper Tripeptide-1i

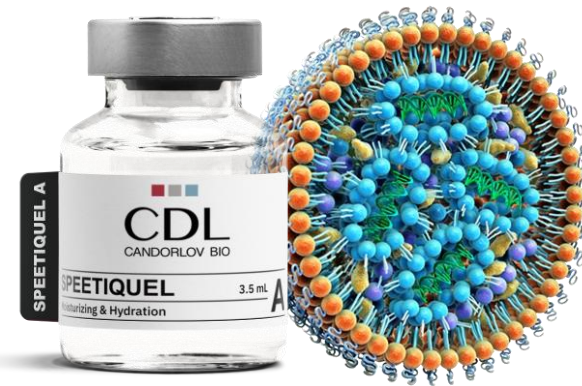


“

Adenosine, hyaluronic acid, peptides...
aren't these also in other skin boosters?

”

Although the ingredients are
the same, the raw materials
are different and the methods
are different.



Speetiquel is a **next-generation skin booster** that
uses **LNP Technology** to deliver effective
ingredients deep into cells.

LNP Technology Attracts Worldwide Attention

LNP technology is currently the most promising technology that major pharmaceutical companies around the world are trying to secure.

Inventage Labs Stock Price Soars...LNP Manufacturing Equipment to Be Released Soon

Reporter Lee Kyung-sun | Posted 2024.02.14 13:26



[Pinpoint News Reporter Kyung-sun Lee] The stock price of Inventage Lab, a drug delivery system (DDS) platform research and development company, is rising.

According to the Korea Exchange on the 14th, it is being traded at 13,150 won, up 3.71% in the afternoon.

The stock price is reversing from a long-term downtrend following a sharp rise.

News that the manufacturing equipment for lipid nanoparticles (LNPs), which are delivery vehicles for messenger ribonucleic acid (mRNA) vaccines, will be unveiled soon appears to be giving a boost to the stock price.

GC Green Cross Introduces 'Lipid Nanoparticle Technology' to Develop mRNA Influenza Vaccine

Reporter Choi Young-chan · 2023. 3. 9. 09:33



GC Green Cross plans to develop an mRNA vaccine from Canadian biocompany Aquitas.,Photo

GC Green Cross is developing a flu vaccine using mRNA technology.

GC Green Cross Announced on the 1st that it has developed a Lipid Nanoparticle (LNP) Technology from a system that safely transports nanoparticles and is a key technology for the development of mRNA-based vaccines.

Last April, GC Green Cross signed an agreement with Aquitas, a Canadian biotechnology company, to develop an mRNA-based influenza vaccine. Aquitas is a leader in mRNA technology for COVID-19 vaccines.

GC Green Cross plans to enter phase 1 clinical trials in 2024 by combining its associated technology with Aquitas' mRNA technology.

Moderna and Pfizer's Tangled Lawsuit... What's with the LNP Technology?

Reporter Kim Ji-won | Posted 2022.12.07 17:36

Pfizer requests dismissal of lawsuit filed by Moderna in August
Key technology to enhance delivery of COVID-19 mRNA vaccine 'LNP'
Several companies involved in LNP-related patents...In-house technology development draws attention

What is the 'next-generation LNP' technology that will go beyond vaccines to tackle cancer and rare diseases?

2024.02.16(日) 08:09

mRNA delivery to specific organs...Expected expansion of therapeutic areas



Lipid nanoparticles (LNPs) are gaining attention as the next-generation technology for messenger ribonucleic acid (mRNA) therapeutics, which have become famous as COVID-19 vaccines. This is because if the 4th generation LNP technology that selectively delivers drugs to specific organs is developed, the therapeutic scope of mRNA can be significantly expanded beyond vaccines to cancer, rare genetic diseases, etc.

Sungkyunkwan University, Development of Liver Cancer Targeting Immune Cell Therapy Using Functional Lipid Nanoparticles

A Reporter Im Woong | Posted 2024.03.20 10:24

Professor Wooram Park's research team from the Department of Convergence Biotechnology at Sungkyunkwan University announced that they have developed an NK cell-based liver cancer-targeting immune cell therapy using functional lipid nanoparticles (LNPs) that activate natural killer cells (NK cells) and enable genetic engineering at the same time.



Professor Wooram Park, Department of Convergence Biotechnology, Sungkyunkwan University

Immunotherapy is an innovative treatment that uses our body's immune cells to attack cancer cells, and among them, NK cells can directly recognize and kill cancer cells without a specific antigen.

In particular, since NK cells from healthy people can be used, there are advantages in that it is easier to obtain cells, costs less, and is more efficient and stable than using the patient's own cells, but there is also a disadvantage in that genetic manipulation of NK cells is difficult.

In particular, engineering of a special receptor called Chimeric Antigen Receptor (CAR) which targets cancer cells in NK cells, is difficult due to the limited delivery of genes for it.

To solve this problem, the research team succeeded in developing functional lipid nanoparticles that can efficiently deliver genes to NK cells and simultaneously enhance the cancer treatment ability of NK cells.

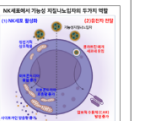
Using these functional lipid nanoparticles, the research team created an NK cell-based immune cell therapy for liver cancer that can highly express genes within NK cells and kill cancer cells more effectively.

The research team confirmed that using the functional lipid nanoparticles they developed, more receptors that attack cancer were produced in mouse and human NK cells, making them better able to kill cancer cells.

Then, through joint research with Professor Cho Deok's team at the Department of Medicine at Samsung Seoul Hospital, the research team confirmed that this technology was also effective in human-derived NK cells, demonstrating the possibility of clinical application.

This new NK cell treatment was confirmed to be effective in eliminating not only liver cancer but also peritoneal cancer in mouse experiments, and liver function was also confirmed to return to normal.

This means that the cancer-targeting NK cell treatment developed by the research team has a high possibility of effectively treating cancer.



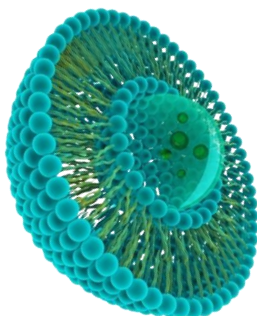
NK cell activation and gene-delivery of functional lipid nanoparticles / Sungkyunkwan University



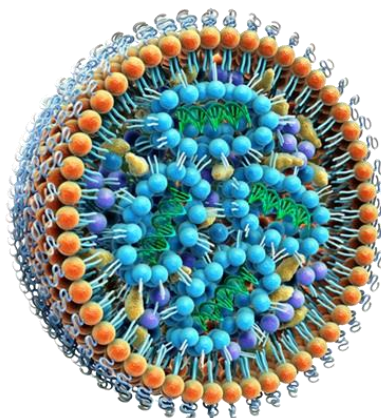
LNP Technology Attracts Worldwide Attention

The LNP nanolipid particle delivery system, a key technology for the COVID-19 vaccine, is attracting attention as a third-generation delivery system following liposomes and exosomes.

1st generation liposome

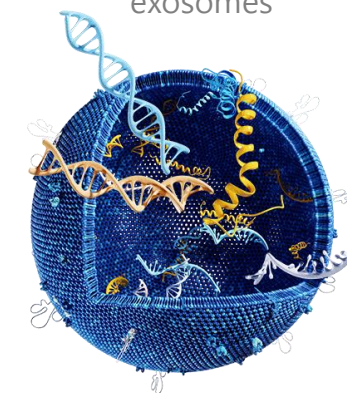


Small microparticles surrounded by artificially generated lipid bilayers: drug delivery systems

3rd generation LNP
Lipid Nano-Particle Formulation

Nanometer-sized lipid-based particles:
Effective in solving solubility problems of
specific ingredients as drug delivery systems

2nd generation exosomes



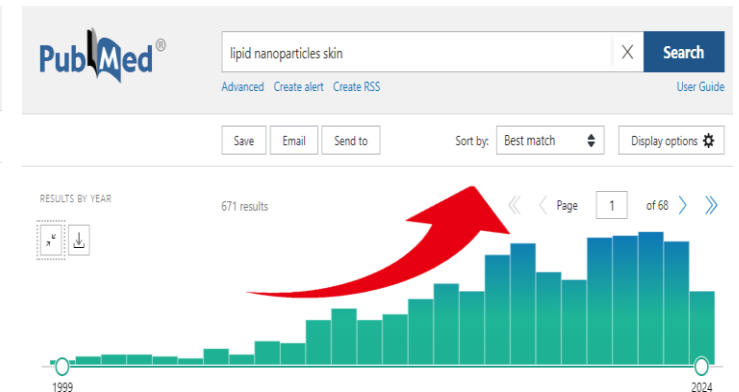
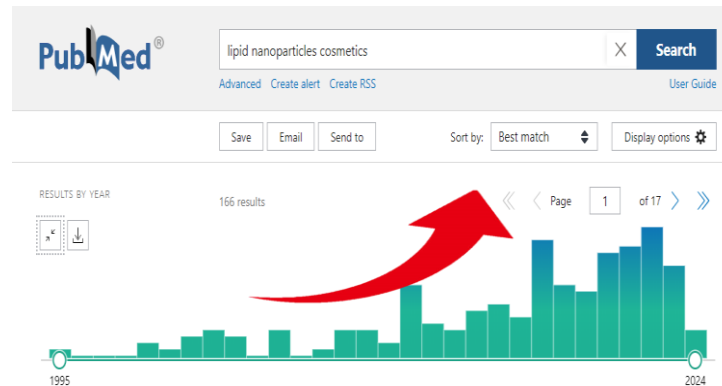
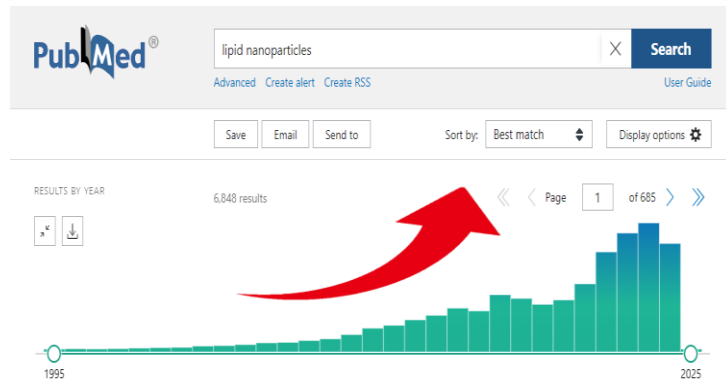
Small vesicles produced within cells: Cell-to-cell communication and signaling



LNP Technology Attracts Worldwide Attention

Global LNP Technology Timeline

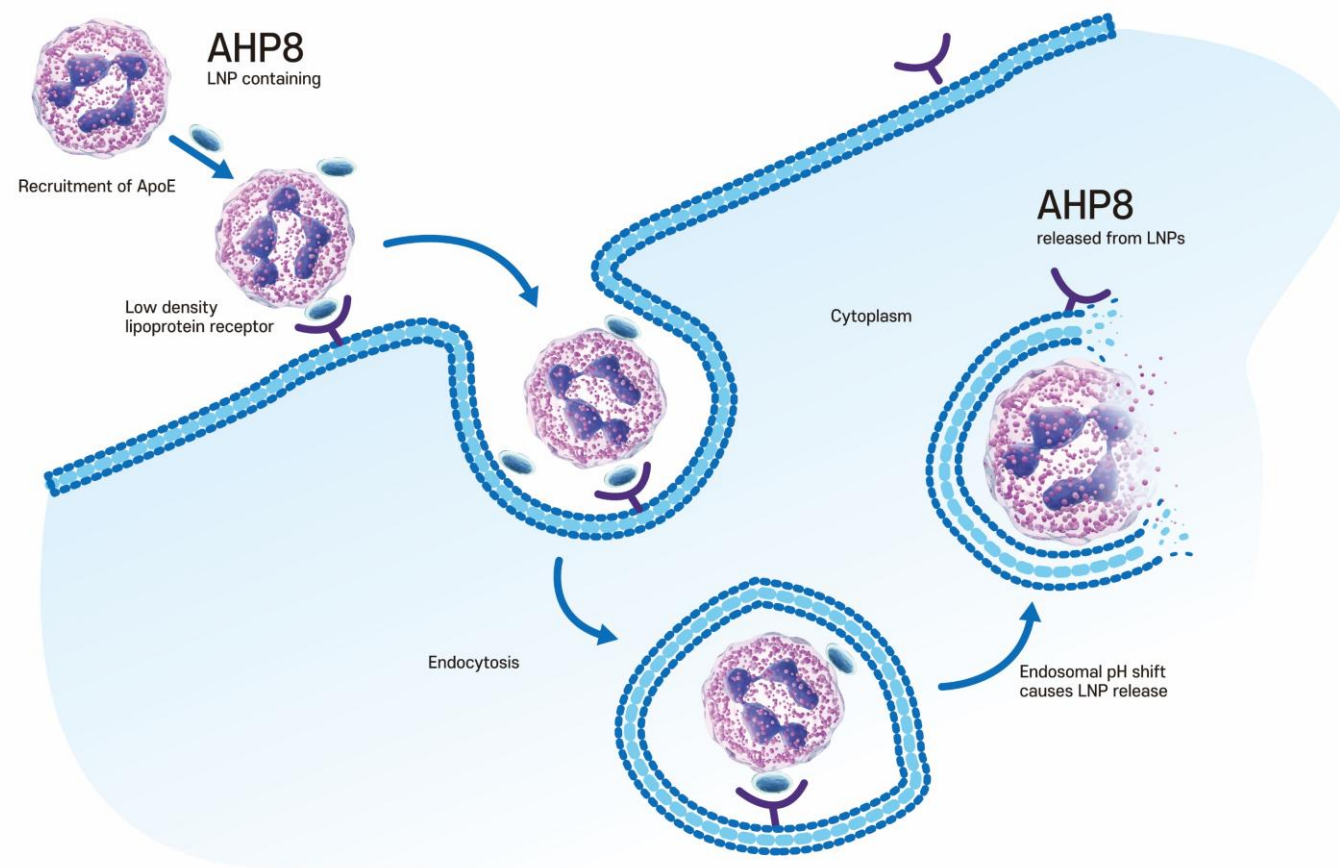
Vaccines, gene therapy, targeted cancer therapy, etc. are technologies that major pharmaceutical companies around the world are paying attention to, and related academic journals are continuously being published. 6848 Results. Among them, the trend of academic journals related to LNP and Cosmetic/Skin is a steady upward curve. 837 Results (approximately 12%)
(<https://pubmed.ncbi.nlm.nih.gov>)



LNP Technology Attracts Worldwide Attention

LNP Technology Mechanism of Action

The LNP nanolipid particle delivery system overcomes the limitations of the exosome delivery system and directly penetrates the cell by loading the drug into the nanoparticle carrier. This effectively spreads the drug inside the cell to maximize the desired effect.



LNP Technology Attracts Worldwide Attention

LNP Technology

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Journal of Pharmaceutical Sciences
Volume 102, Issue 2, February 2013, Pages 684-693



Pharmaceutics, Drug Delivery and Pharmaceutical Technology

Tableting Lipid-Based Formulations for Oral Drug Delivery: A Case Study with Silica Nanoparticle-Lipid-Mannitol Hybrid Microparticles

Kristen E. Bremmell¹, Angel Tan², Amanda Martin², Clive A. Prestidge² ✉

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ABSTRACT

Silica-lipid-mannitol hybrid (SLMH) microparticles have been developed that were compressible into high quality tablets suitable for oral dosing and delivery of poorly soluble drugs. SLMH tablets enable high lipid-loading levels (>40%) and retain the immediate release, enhanced lipase digestion and drug solubilisation performance. Specifically, we report formulation optimisation of SLMH microparticles and tablets using coumarin 102 (log $P = 4.09$) as a model Biopharmaceutics Classification System class II drug. SLMH tablets were acceptable according to standard British Pharmacopoeia friability, hardness and disintegration tests; this is not the case for conventional dry emulsions. Furthermore, *in vitro* dissolution and pancreatic-lipase-induced lipolysis

Development of silica-lipid-mannitol hybrid (SLMH) microparticles that can be compressed into high-quality tablets suitable for oral administration and delivery of poorly soluble drugs. SLMH microparticles and tablets are LNP technology applied to liquid lipid containing solid dosage forms to enhance and control oral absorption of poorly soluble drugs.

(Tableting Lipid-Based Formulations for Oral Drug Delivery: A Case Study with Silica Nanoparticle-Lipid-Mannitol Hybrid Microparticles, Kristen E. Bremmell et. Al, Journal of Pharmaceutical Sciences, 2013)



LNP Technology Attracts Worldwide Attention

LNP Technology

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The role of lipid components in lipid nanoparticles for vaccines and gene therapy

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 pKa
 Drug delivery
 Targeting

ABSTRACT

Lipid nanoparticles (LNPs) play an important role in mRNA vaccines against COVID-19. In addition, many preclinical and clinical studies, including the mRNA-LNP product, Copaxone[®], highlight that LNPs unlock the potential of nucleic acid-based therapies and vaccines. To understand what is key to the success of LNPs, we need to understand the role of the building blocks that constitute them. In this Review, we discuss what each lipid component adds to the LNP delivery platform in terms of size, structure, stability, apparent pKa, nucleic acid encapsulation efficiency, cellular uptake, and endosomal escape. To explore this, we present findings from the liposome field as well as from landmark and recent articles in the LNP literature. We also discuss challenges and strategies related to in vitro/in vivo studies of LNPs based on fluorescence readouts, immunogenicity/reactogenicity, and LNP delivery beyond the liver. How these fundamental challenges are pursued, including what lipid components are added and combined, will likely determine the scope of LNP-based gene therapies and vaccines for treating various diseases.

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Many preclinical and clinical studies highlight the potential of LNPs to unlock nucleic acid-based therapeutics and vaccines. To understand the core of LNPs' appeal, it is necessary to understand the roles of the components that make up LNPs. In this review, we discuss what each lipid component adds to the LNP delivery platform in terms of size, structure, stability, apparent pKa, nucleic acid encapsulation efficiency, cellular uptake, and endosomal escape.

(The role of lipid components in lipid nanoparticles for vaccines and gene therapy, Camilla Hald Albertsen a. et al, Advanced Drug Delivery Reviews, 2022)

LNP Technology Attracts Worldwide Attention

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European Journal of Pharmaceutics and
Biopharmaceutics


Volume 108, November 2016, Pages 304-309



Research paper

Heptapeptide-loaded solid lipid nanoparticles for cosmetic anti-aging applications

Franz Suter , Daniel Schmid, Franziska Wandrey, Fred Züllig

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<https://doi.org/10.1016/j.ejpb.2016.06.014>

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Abstract

The cosmetic industry requires more and more expensive actives and ingredients such as retinol, coenzyme Q10, proteins, peptides and biotechnologically produced molecules. In this study, we demonstrate the development of a cost effective formulation of a nanostructured lipid carrier (NLC) or solid lipid nanoparticles (SLN) improving peptide delivery into skin. NLC or SLN are very suitable vehicles for the delivery of active ingredients into skin. The SLN, produced by using hot high pressure homogenization method combine advantages such as physical stability, protection of incorporated labile actives and controlled release. By the used method we dispersed the amorphous

The cosmetics industry requires increasingly expensive actives and ingredients such as retinol, coenzyme Q10, proteins, peptides, and biotechnologically produced molecules. In this study, we demonstrate the development of cost-effective formulations of nanostructured lipid carriers (NLCs) or solid lipid nanoparticles (SLNs) that improve the delivery of peptides into the skin using LNP synthesis technology.

(Heptapeptide-loaded solid lipid nanoparticles for cosmetic anti-aging applications, Franz Suter et al, European Journal of Pharmaceutics and Biopharmaceutics, 2016)

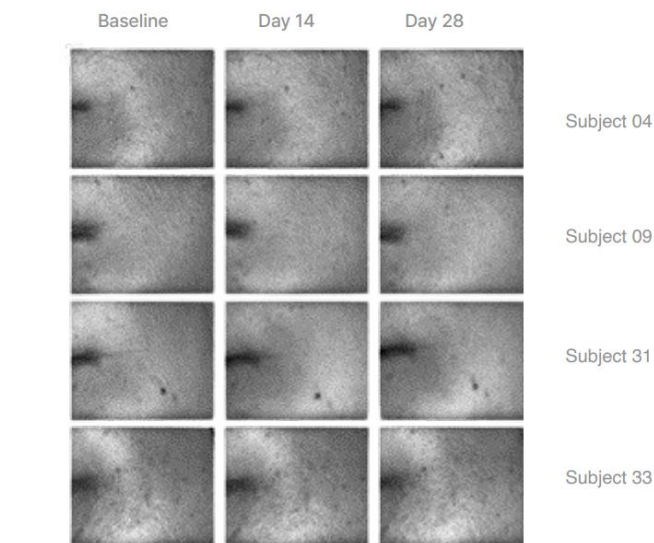
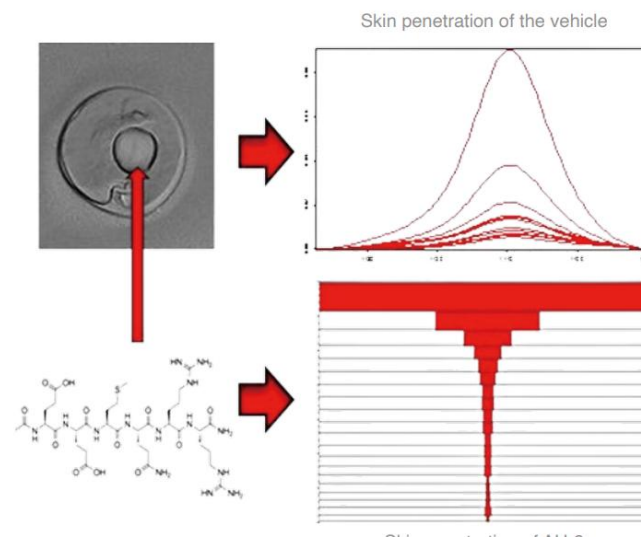


Ingredients

Active Ingredient
Key Ingredient for Improving Wrinkles

ACETYLE HEXAPEPTIDE - 8 with LNP Technology

Acetyl hexapeptide-8 is a wrinkle-improving ingredient that relaxes facial muscles, smoothes wrinkles, and increases skin elasticity. It is encapsulated in LNP and delivered deep into skin cells to induce a powerful effect.



Acetyl hexapeptide-8 (AH-8) is a topically applied hexapeptide with a mechanism of action similar to botulinum neurotoxin (BoNT).

It has been used effectively in anti-aging cosmetic applications and has recently been studied as a promising treatment for blepharospasm.

(Lungu et al., 2013; Gorouhi & Maibach, 2009)

The study included 32 subjects with an average age of 28.5 years.

At day 28, there was a significant reduction in the number, depth, and volume of wrinkles. Skin hydration, elasticity, and firmness continued to increase throughout the study period, consistent with common anti-aging claims. The majority of participants (75.00%) expressed overall satisfaction with the appearance of their skin after using the product.

Active Ingredient
Key Ingredient for Improving Wrinkles

ACETYLE HEXAPEPTIDE - 8 with LNP Technology



Home > Archive > v.31(3); Jun 2019 > 10.5021/ad.2019.31.3.263

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Original Article

Anti-Wrinkle Efficacy of Cross-Linked Hyaluronic Acid-Based Microneedle Patch with Acetyl Hexapeptide-8 and Epidermal Growth Factor on Korean Skin

Ji Hae An , Hee Jung Lee , Moon Soo Yoon , and Dong Hyun Kim  

Author information

Author notes

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Abstract

Background

Hyaluronic acid (HA)-based microneedle patch has recently been studied for wrinkle improvement. Cross-linked HA (CLHA) is widely used in dermal fillers. Acetyl hexapeptide-8 (AHP-8) and epidermal growth factor (EGF) are used for cosmetic ingredients.

Objective

This study aimed to verify the efficacy of the CLHA/HA-based patch with microstructure (microneedle patch) containing AHP-8 or EGF.

Methods

A total of 52 Korean females were enrolled in a double-blind, randomized, controlled, split-face trial. The subjects were divided into 3 groups: (1) microneedle patch alone, (2) microneedle patch/AHP-8, and (3) microneedle patch/EGF. The treatment was applied on the periorbital and perioral fold area for 4 hours to compare the efficacy

Anti-wrinkle efficacy of cross-linked hyaluronic acid microneedle patches using acetyl hexapeptide-8 and epidermal growth factor.

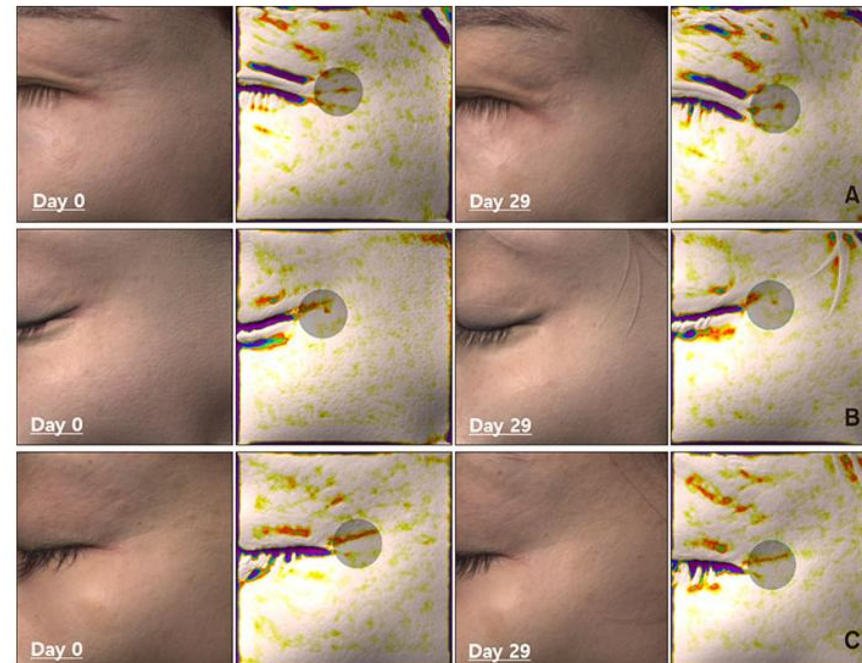
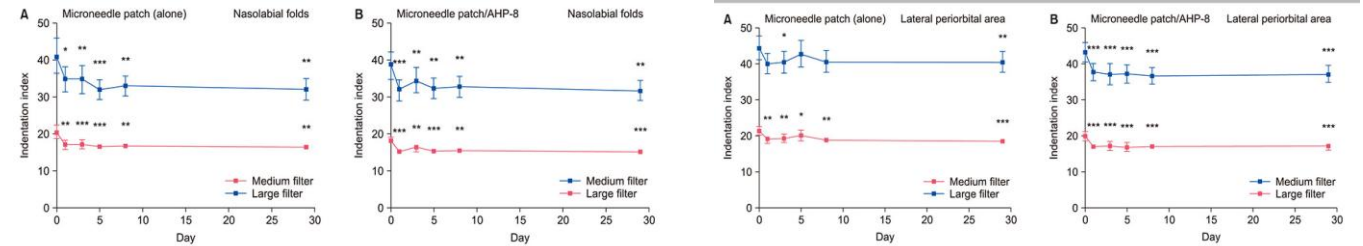
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(Anti-Wrinkle Efficacy of Cross-Linked Hyaluronic Acid-Based Microneedle Patch with Acetyl Hexapeptide-8 and Epidermal Growth Factor on Korean Skin, Ji Hae An et al, Ann Dermatol, 2019)



Active Ingredient
Key Ingredient for Improving Wrinkles

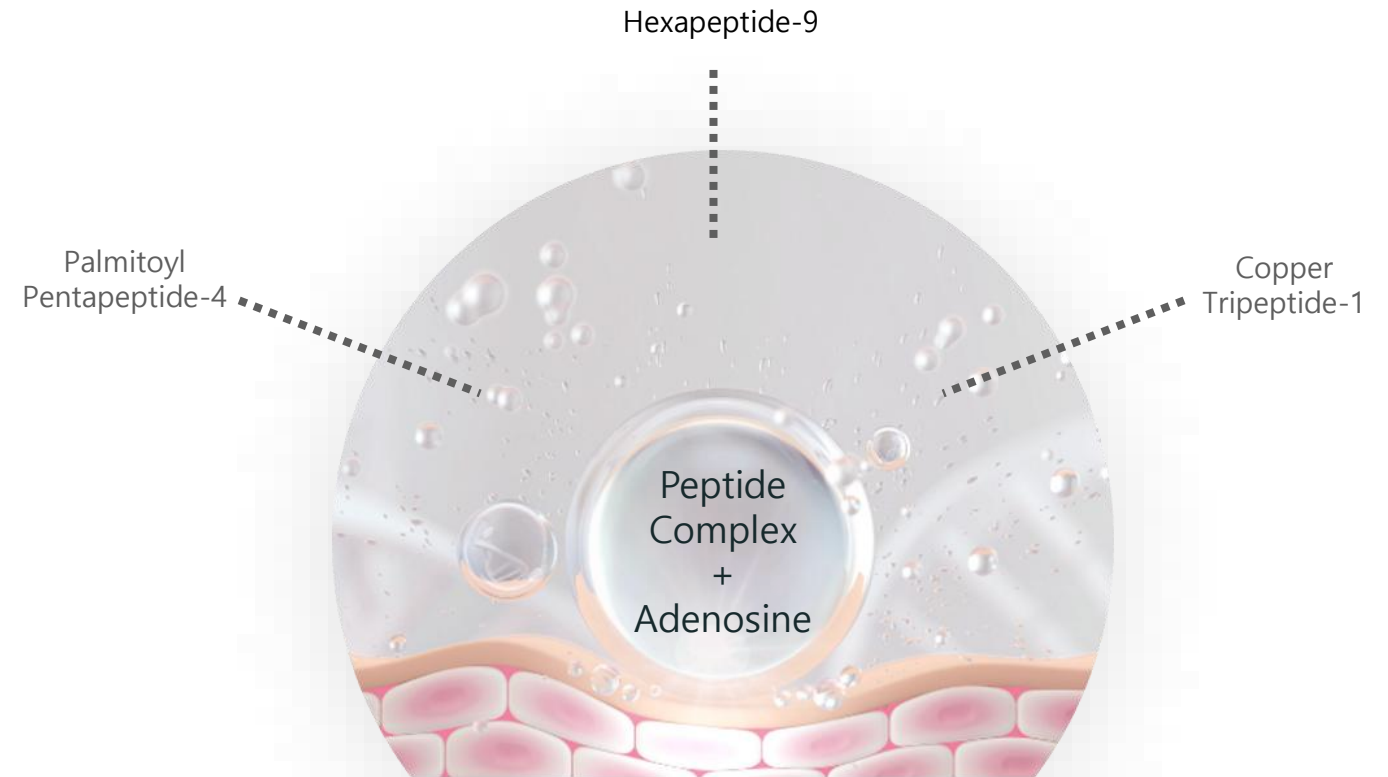
ACETYLE HEXAPEATIDE - 8 with LNP Technology



(Anti-Wrinkle Efficacy of Cross-Linked Hyaluronic Acid-Based Microneedle Patch with Acetyl Hexapeptide-8 and Epidermal Growth Factor on Korean Skin, Ji Hae An et al, Ann Dermatol, 2019)

Main Ingredient
Key Ingredient for Improving Wrinkles

PEPTIDE COMPLEX · ADENOSINE



Active ingredient certified by the Ministry of Food and Drug Safety for wrinkle improvement.

Three types of peptides that contribute to collagen formation are combined in an optimal ratio to provide elasticity from within the skin and prevent wrinkles.

In addition, adenosine, a functional active ingredient recognized by the Ministry of Food and Drug Safety of Korea, was added to enhance the wrinkle improvement effect.

Main Ingredient
Key Ingredient for Improving Wrinkles

PEPTIDE COMPLEX • ADENOSINE

International Journal of
Cosmetic Science



Original Article

Adenosine-loaded dissolving microneedle patches to improve skin wrinkles, dermal density, elasticity and hydration

G. Kang, T. N. T. Tu, S. Kim, H. Yang, M. Jang, D. Jo, J. Ryu, J. Baek, H. Jung ✉

First published: 25 March 2018 | <https://doi.org/10.1111/ics.12453> | Citations: 39

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Abstract

EN FR

Objective

Although dissolving microneedle patches have been widely studied in the cosmetics field, no comparisons have been drawn with the topical applications available for routine use. In this study, two wrinkle-improving products, adenosine-loaded dissolving microneedle patches and an adenosine cream, were evaluated for efficacy, with respect to skin wrinkling, dermal density, elasticity, and hydration, and safety in a clinical test on the crow's feet area.

Methods

Clinical efficacy and safety tests were performed for 10 weeks on 22 female subjects with wrinkles around their eyes. The adenosine-loaded dissolving microneedle patch was applied once every 3 days, in the evening, for 8 weeks to the designated crow's feet area. The adenosine cream was applied two times per day, in the morning and evening, for 8 weeks to the other crow's feet area. Skin wrinkling, dermal density, elasticity, and hydration were measured by using PRIMOS® premium, Dermascan® C, Cutometer®

Adenosine-loaded soluble microneedle patch for improving skin wrinkles, dermal density, elasticity, and moisture.

In this study, the efficacy and safety of adenosine-loaded soluble microneedle patch and adenosine cream, which are wrinkle-improving products, were evaluated in a clinical trial on the crow's feet area for skin wrinkles, dermal density, elasticity, and moisture.

(Adenosine-loaded dissolving microneedle patches to improve skin wrinkles, dermal density, elasticity and hydration, G Kang et al, Int J Cosmet Sci, 2018)

Main Ingredient
Key Ingredients for Improving Skin Texture

MATRIXYL ·
TAURINE ·
ALLANTOIN

Matrixyl works on collagen and elastin inside the skin. It promotes the production of collagen and elastin, and helps maintain skin elasticity and smooth skin texture.

It works directly on the skin to reduce inflammation and promote skin regeneration.

글리콜릭산 필링 후 rhEGF and Palmitoyl pentapeptide-4의 피부 재생 효과

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⁴영광대학교 자연과학대학 뷰티디자인학부, 교수

Effects of rhEGF and Palmitoyl pentapeptide-4 for Skin Regeneration after Glycolic Acid Peeling

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¹Student, Dept. of Beauty Design, Graduate School of Wonkwang University
²M.D. Dept. of Dermatology, Wonkwang University School of Medicine
³Professor, Dept. of Dermatology, Wonkwang University School of Medicine
⁴Professor, Dept. of Beauty Design, Wonkwang University

Glycolic acid peel is a popular superficial peeling technique associated with low morbidity and prompt recovery. These processes, as well as the final step of comedoesmlysis, which mediates exfoliation, are often disturbed by environmental conditions, resulting in dry, flaky skin conditions. Therefore, aftercare is required to avoid these side effects and achieve the maximum possible improvement in skin condition. To evaluate the skin regeneration effect of rhEGF and palmitoyl pentapeptide-4 after glycolic acid peeling, a base gel, a gel containing rhEGF, and a gel containing palmitoyl pentapeptide-4 were prepared, and their safety was evaluated by patch test. The 30 healthy female volunteers (age 25-39 years) underwent a glycolic acid (20%) face peel once per week and then the prepared gels were applied to the face for 4 weeks. Stratum corneum hydration, transepidermal water loss (TEWL), and erythema index were then evaluated. No specific skin reaction in prepared gels was detected by a patch test. In the application group of rhEGF and palmitoyl pentapeptide-4, stratum corneum hydration is increased, TEWL and erythema index are reduced. Therefore, the skin regeneration effect was confirmed. The skin regeneration effect of the palmitoyl pentapeptide-4 application group was shown to be the best result in particular. The gels containing rhEGF and palmitoyl pentapeptide-4 were safe and effective for skin recovery after glycolic acid peeling. The palmitoyl pentapeptide-4-containing gel was superior to the rhEGF-containing gel in terms of skin regeneration after peeling.

Keywords: Efficacy evaluation, Glycolic acid, Palmitoyl pentapeptide-4, rhEGF, Skin Regeneration

I. Introduction

Glycolic acid is a superficial to medium-depth peel(Sarabhi et al., 2016). This process is often disturbed upon environmental challenges, resulting in dry, flaky skin conditions. Impairment of skin barrier after glycolic acid peeling may lead to skin irritation and inconvenience from the patients. Current research seeks to

The EGF and topical peptides to rejuvenate skin cell are widely discussed in clinical efficacy. Recombinant EGF (rEGF) increases epithelial growth and amounts of collagen in the regenerating wounds (Rheuaissen et al., 2016). Also, EGF plays a critical role in fibroblasts by stimulating the production of collagen and supports cell renewal through the interaction

Skin regeneration effects of rhEGF and Palmitoyl pentapeptide-4 after Glycolic Acid Peeling.

In the application group of rhEGF and palmitoyl pentapeptide-4, the stratum corneum hydration increased and TEWL and erythema index decreased, confirming the skin regeneration effect.

In particular, the skin regeneration effect of palmitoyl pentapeptide-4 application group showed the best results. It was excellent in terms of skin regeneration after peeling.

(Effects of rhEGF and Palmitoyl pentapeptide-4 for Skin Regeneration after Glycolic Acid Peeling, Ji Hyun Ju et al, Journal of the Korean Society of Aesthetic Medicine, 2020)

Main Ingredient
Key Ingredients for Improving Skin Texture

MATRIXYL ·
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Matrixyl works on collagen and elastin inside the skin. It promotes the production of collagen and elastin, and helps maintain skin elasticity and smooth skin texture.

It works directly on the skin to reduce inflammation and promote skin regeneration.

Dermal Stability and *In Vitro* Skin Permeation of Collagen Pentapeptides (KTTKS and palmitoyl-KTTKS)

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Abstract

Collagen pentapeptide (Lys-Thr-Thr-Lys-Ser, KTTKS) and its palmitoylated derivative (pal-KTTKS) have received a great deal of attention as cosmeceutical ingredients for their anti-wrinkle effects. The objective of this study was to evaluate stability and permeability of KTTKS and pal-KTTKS in hairless mouse skin. In this study, a liquid chromatography-tandem mass spectrometric method was developed for the quantification of pal-KTTKS, and used for stability and permeability studies. Stability studies were performed using skin extracts and homogenates. Both KTTKS and pal-KTTKS were rapidly degraded, but pal-KTTKS was more stable than KTTKS. When protease inhibitors were added, the stability of both compounds (KTTKS and pal-KTTKS) improved significantly. In the skin permeation study, neither KTTKS nor pal-KTTKS was detected in the receptor solution, which indicates that neither compound could permeate through the full-thickness hairless mouse skin in the experimental conditions of this study. While KTTKS was not detected in any of the skin layers (the stratum corneum, epidermis, and dermis), pal-KTTKS was observed in all skin layers: $4.2 \pm 0.7 \mu\text{g}/\text{cm}^2$ in the stratum corneum, $2.8 \pm 0.5 \mu\text{g}/\text{cm}^2$ in the epidermis, and $0.3 \pm 0.1 \mu\text{g}/\text{cm}^2$ in the dermis. In conclusion, this study indicated that pal-KTTKS had greater stability and permeability than that of unmodified KTTKS, and may be a useful anti-wrinkle and anti-aging cosmeceutical agent.

Key Words: Collagen pentapeptide, KTTKS, Palmitoyl-KTTKS, Stability, Permeability

INTRODUCTION

Collagen pentapeptide (Lys-Thr-Thr-Lys-Ser, KTTKS) is a subfragment of the carboxyl-terminal propeptide of type I collagen (Katayama *et al.*, 1991). It has been shown to promote extracellular matrix (ECM) production in subconfluent fibroblasts (Katayama *et al.*, 1993; Abu Samah and Heard, 2011). KTTKS has also been shown to promote the expression of type I collagen and stabilize mRNA associated with the up-regulation of transforming growth factor- β in rat Achilles tendon cells (Tsai *et al.*, 2007). These properties made KTTKS to be widely studied and applied in the field of cosmeceuticals for its expected anti-wrinkle and anti-aging effects (Draeos, 2007; Lupo and Cole, 2007; Reszko *et al.*, 2009). KTTKS belongs to a 'signal peptide', which can enhance dermal remodeling by triggering cellular processes such as inhibition of collagenase activities and promotion of ECM production (Gorouhi and Maibach, 2009).

When peptides are topically applied, their instability on or in the skin and poor permeability across the skin are challenges for successful dermal delivery. The conjugation of a fatty acid to a peptide is often an effective method to improve the stability and permeability of peptides in the skin (Benson and Namjoohi, 2008). Foldvari *et al.* reported that palmitoyl derivatives of interferon α increased penetration across human skin approximately five-fold over that of the native protein (Foldvari *et al.*, 1998). In a similar manner, a palmitoyl derivative of KTTKS (pal-KTTKS) would be expected to improve stability and enhance permeability in the skin owing to increased lipophilicity derived from the palmitate residue (Lau *et al.*, 2008; Pouillot *et al.*, 2008). Several studies have shown the clinical benefits of pal-KTTKS. Topical formulations containing pal-KTTKS were shown to significantly reduce fine lines and wrinkles and improve skin texture. These effects may help to delay the aging process in the skin (Robinson *et al.*, 2005; Abu Samah and Heard, 2011).

Open Access <http://dx.doi.org/10.4062/biomolther.2014.053>

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Published online Jul 21, 2014

Skin stability and in vitro skin permeability of collagen pentapeptide (KTTKS, palmitoyl-KTTKS)

pal-KTTKS has greater stability and permeability than unmodified KTTKS, indicating that it may be a useful anti-wrinkle and anti-aging cosmeceutical agent.

(Dermal Stability and In Vitro Skin Permeation of Collagen

Pentapeptides (KTTKS and palmitoyl-KTTKS), Yun Lim Choi et al, The Korean Society of Applied Pharmacology, 2014)

Main Ingredient
Key Ingredients for Improving Skin Texture

MATRIXYL ·
TAURINE ·
ALLANTOIN

Taurine is a raw material mainly used in fatigue recovery agents, but it is known to be effective for skin health. It prevents aging and strengthens the skin barrier, protecting the skin from external stimuli.

SCI

Biomedicine & Pharmacotherapy
Volume 141, September 2021, 111898

Protective effect of taurine on UVB-induced skin aging in hairless mice

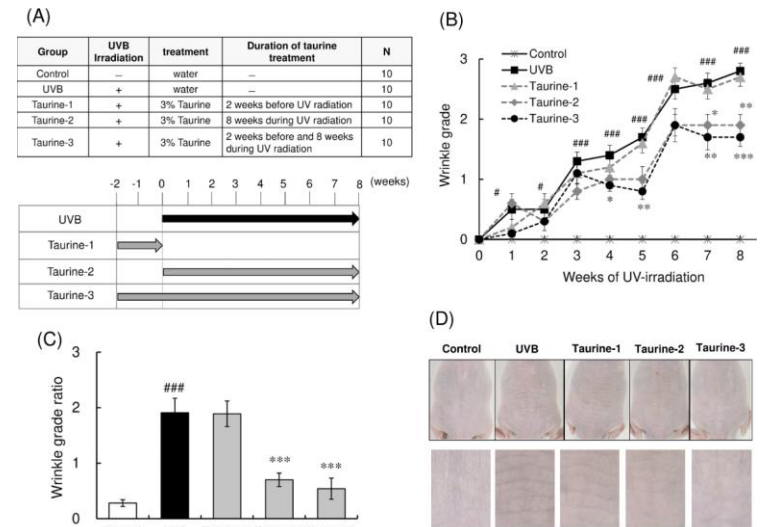
Tomohisa Yoshimura^a, Chika Manabe^a, Yuki Inokuchi^a, Chikako Mutou^a, Tohru Nagahama^a, Shigeru Murakami^b

https://doi.org/10.1016/j.biopha.2021.111898

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Abstract

Taurine, a sulfur-containing amino acid derivative, exists at a high concentration in the skin and is considered to play an important role in maintaining moisture homeostasis. This study investigated the effects of oral taurine supplementation on epidermal moisture content and wrinkle formation, as well as skin taurine content, using ultraviolet B (UVB)-irradiated hairless mice. Wrinkles were induced by exposing hairless mice to UVB radiation (70–100mJ/cm²). Taurine was dissolved in drinking water at a concentration of 0.3 or 3% (w/v) and given to the mice ad libitum for 2–10 weeks. Taurine was then extracted from the dorsal skin, and the skin taurine content was determined



Study on the effect of taurine on skin aging caused by UVB

Exposure of mice to UVB radiation for 4 weeks decreased water content and increased transepidermal water loss (TEWL) of the skin, whereas taurine supplementation inhibited these changes.

This study showed that oral taurine supplementation could suppress UVB-induced wrinkle formation, which may be related to the regulation of epidermal water content. The beneficial effects of taurine on skin aging may be due to its role in osmoregulatory regulation.

(Protective effect of taurine on UVB-induced skin aging in hairless mice, Tomohisa Yoshimura et al, Biomedicine & Pharmacotherapy, 2021)

Main Ingredient
Key Ingredients for Improving Skin Texture

MATRIXYL ·
TAURINE ·
ALLANTOIN

Allantoin has a soothing effect on skin tired from MTS treatment and removes dead skin cells, making the skin smooth.

SCI

The screenshot shows the top of a scientific article page. At the top, there is a blue header with the journal title "DERMATOLOGIC SURGERY" in white. Below the header is a navigation bar with links for "Articles & Issues", "Collections", "Videos", "Podcast", "For Authors", and "Journal Info". The main content area is titled "ORIGINAL ARTICLES" and features the article title "Effect of Allium Cepa-Allantoin-Pentaglycan Gel on Skin Hypertrophic Scars: Clinical and Video-Capillaroscopic Results of an Open-Label, Controlled, Nonrandomized Clinical Trial". The authors listed are CAMPANATI, ANNA MD; SAVELLI, ANDREA MD; SANDRONI, LUCIA PHD; MARCONI, BARBARA MD; GIULIANO, ANGELA MD; GIULIODORI, KATIA MD; GANZETTI, GIULIA MD; OFFIDANI, ANNAMARIA MD. The article is from *Dermatologic Surgery* 36(9):p 1439-1444, September 2010. There is a "BUY" button and a "Metrics" button. The abstract section is partially visible, starting with "BACKGROUND" and "OBJECTIVE".

Effects of Allium Cepa-Allantoin-Pentaglycan Gel on Hypertrophic Scars: Clinical and Video Capillary Results from an Open, Controlled, Nonrandomized Clinical Trial

Topical application of a gel containing allium cepa, pentaglycan, and allantoin twice daily for 24 weeks appears to be useful in reducing neovascularization in hypertrophic scars and keloids, resulting in clinical improvement of skin lesions.

(Effect of Allium Cepa-Allantoin-Pentaglycan Gel on Skin Hypertrophic Scars: Clinical and Video-Capillaroscopic Results of an Open-Label, Controlled, Nonrandomized Clinical Trial, CAMPANATI et al, *Dermatologic Surgery*, 2010)



Main Ingredient
Key Ingredient for Improving Turnover Cycles

COPPER TRIPETIDE - 1

The skin turnover cycle is 4 weeks. As aging progresses, the skin turnover cycle increases to 6 to 8 weeks. Therefore, the skin cell regeneration ability decreases significantly, and as the stratum corneum thickens, the skin aging phenomenon progresses.

If you supply copper tripeptide-1 to your skin, you can see the effects of promoting the growth of new skin cells, regenerating the skin, and improving the skin turnover cycle.



Research Article

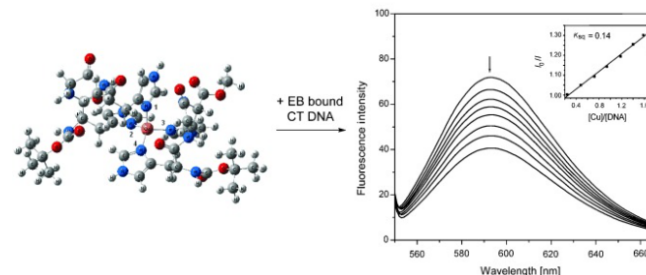
A 1 : 2 Copper(II)-Tripeptide Complex for DNA Binding and Cleavage Agent under Physiological Conditions

Pulimamidi R. Reddy ✉ Pallerla Manjula, Tushar K. Chakraborty, Rajarshi Samanta

First published: 28 May 2009 | <https://doi.org/10.1002/cbdv.200800079> | Citations: 2

PDF TOOLS SHARE

Abstract



A 1 : 2 copper-tripeptide complex, $[\text{Cu}^{\text{II}}(\text{Boc-His-Gly-His-OMe})_2]^{2+}$, was synthesized and structurally characterized. The absorption band at 577 nm suggests a square-planar geometry around Cu^{II} . The DNA-binding and DNA-cleavage properties of the Cu^{II} complex were investigated. The complex binds to calf thymus DNA (CT DNA) in an intercalative fashion and cleaves chemically 10 DNA hydrolytically at micromolar concentrations.

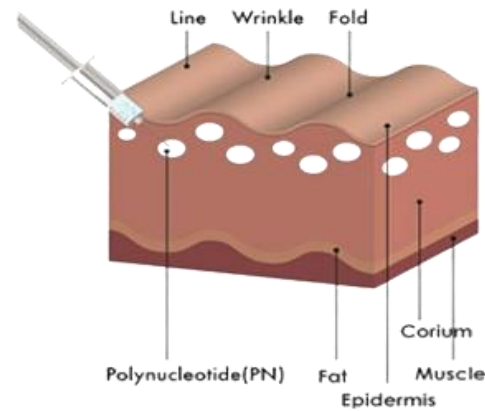
Complexes for DNA Binding and Cleavage under Physiological Conditions

The DNA-binding and DNA-cleavage properties of $\text{Cu}(\text{II})$ complexes were investigated. The intrinsic binding constants for the binding of Cu -tripeptide complexes to DNA suggest that these complexes are suitable for rapid diffusion on the pharmacological time scale.

(A 1 : 2 Copper(II)-Tripeptide Complex for DNA Binding and Cleavage Agent under Physiological Conditions, Pulimamidi R. Reddy et al, Chem Biodivers, 2009)

Main Ingredient
Key Ingredients for Improving Moisture and Glow

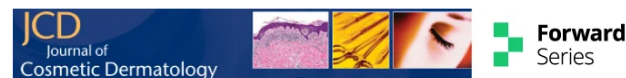
POLYNUCLEOTIDE SODIUM · HYALURONIC ACID



Sodium polynucleotide inhibits melanin production to improve hyperpigmentation and uneven skin tone, and hyaluronic acid, which improves skin barrier function, works together to reduce epidermal moisture loss, thereby enhancing the skin's moisture radiance effect.

Main Ingredient
Key Ingredients for Improving Moisture and Glow

POLYNUCLEOTIDE SODIUM · HYALURONIC ACID



ORIGINAL ARTICLE | [Open Access](#) | [©](#) [i](#) [e](#) [s](#)

Clinical efficacy and safety of polynucleotides highly purified technology (PN-HPT®) and cross-linked hyaluronic acid for moderate to severe nasolabial folds: A prospective, randomized, exploratory study

Antonino Araco MD [✉](#) Francesco Araco MD, PhD, Mauro Raichi MD

First published: 09 May 2022 | <https://doi.org/10.1111/jocd.15064> | Citations: 1

Funding information

The authors declare their study was spontaneous and born of scientific curiosity and published literature. Support with the article processing charges required by the *Journal of Cosmetic Dermatology* will be the only funding provided by the corporate sponsor

SECTIONS

PDF TOOLS SHARE

Abstract

Introduction

The mandibular profile undergoes progressive wasting with aging, and the deepening of nasolabial folds (NLFs) has a leading role. Hyaluronic acid (HA) efficiently controls tissue hydration and permeability to small and large molecules. NLFs are an acknowledged HA target; at the same time, another class of agents, PN-HPT® (Polynucleotides Highly Purified Technology), enjoy growing acknowledgement in aesthetic medicine. This exploratory, prospective study probed the rationale of sequentially associating PN-HPT® as a first priming agent acting in the skin followed by HA dermal filler injections for correcting moderate to severe NLFs.

Clinical efficacy and safety of polynucleotide high-purification technology (PN-HPT®) and cross-linked hyaluronic acid for moderate to severe nasolabial folds: a prospective randomized exploratory study.

Emphasizes the role of intradermal PN-HPT® in rapidly improving skin quality in the treatment of moderate to severe NLF with subjectively expressed consistent aesthetic benefits. PN-HPT® administered in the pre-priming phase prolongs the clinical effects of HA administered as an integrating agent for aesthetic benefits.

(Clinical efficacy and safety of polynucleotides highly purified technology (PN-HPT®) and cross-linked hyaluronic acid for moderate to severe nasolabial folds: A prospective, randomized, exploratory study, Antonino Araco MD et al, *J Cosmet Dermatol.*, 2023)

Main Ingredient
Key Ingredients for Improving Moisture and Glow

POLYNUCLEOTIDE
SODIUM ·
HYALURONIC ACID



(Clinical efficacy and safety of polynucleotides highly purified technology (PN-HPT®) and cross-linked hyaluronic acid for moderate to severe nasolabial folds: A prospective, randomized, exploratory study, Antonino Araco MD et al, J Cosmet Dermatol., 2023)

Main Ingredient
Key Ingredients for Improving Moisture and Glow

POLYNUCLEOTIDE SODIUM • HYALURONIC ACID





Therapeutic Hotline

Long-chain polynucleotide filler for skin rejuvenation: efficacy and complications in five patients

Kui Young Park, Joon Seok, Nark Kyoung Rho, Beom Joon Kim ✉, Myeung Nam Kim

First published: 02 November 2015 | <https://doi.org/10.1111/dth.12299> | Citations: 20

[Read the full text >](#)

 PDF  TOOLS  SHARE

ABSTRACT

Aging well has become the new target of preventative medicine, and aesthetic dermatology can contribute to this request. The polynucleotide (PN) containing products not only fill the space, but improve tissue regeneration, resulting in more natural tissue regeneration. Five Korean women received four times injections of long-chain PN filler in two-week intervals for skin rejuvenation. About 0.05 mL of material was injected in 40 points of one-side cheek. The pore and skin thickness were markedly improved in the patients in their 30s, whereas skin tone, melanin, wrinkles, and sagging were noticeably improved for patients in their 40s. There are no serious side effects. In conclusion, intradermal long-chain PN filler injection seems to be an effective and safe treatment for skin rejuvenation.

Polynucleotide Filler for Skin Improvement

The polynucleotide (PN) contained in the product not only fills the space, but also improves tissue regeneration, resulting in more natural tissue regeneration. Patients in their 30s showed significant improvements in pores and skin thickness, while patients in their 40s showed noticeable improvements in skin tone, melanin, wrinkles, and sagging. There were no serious side effects. In conclusion, intradermal long-chain PN filler injections appear to be an effective and safe treatment for skin rejuvenation.

(Long-chain polynucleotide filler for skin rejuvenation: efficacy and complications in five patients, Kui Young Park et al, Dermatol Ther, 2016)

SPEETIQUEL PROTOCOL

SPEETIQUEL PROTOCOL



SPEETIQUEL Vial A



SPEETIQUEL Vial B

How to Use

- Open both vials A and B.
- Pour the content of vial A into vial B.
- Close the lid of vial B, and gently swirl it with both hands as if turning it softly. Mix carefully & thoroughly without creating air bubbles.



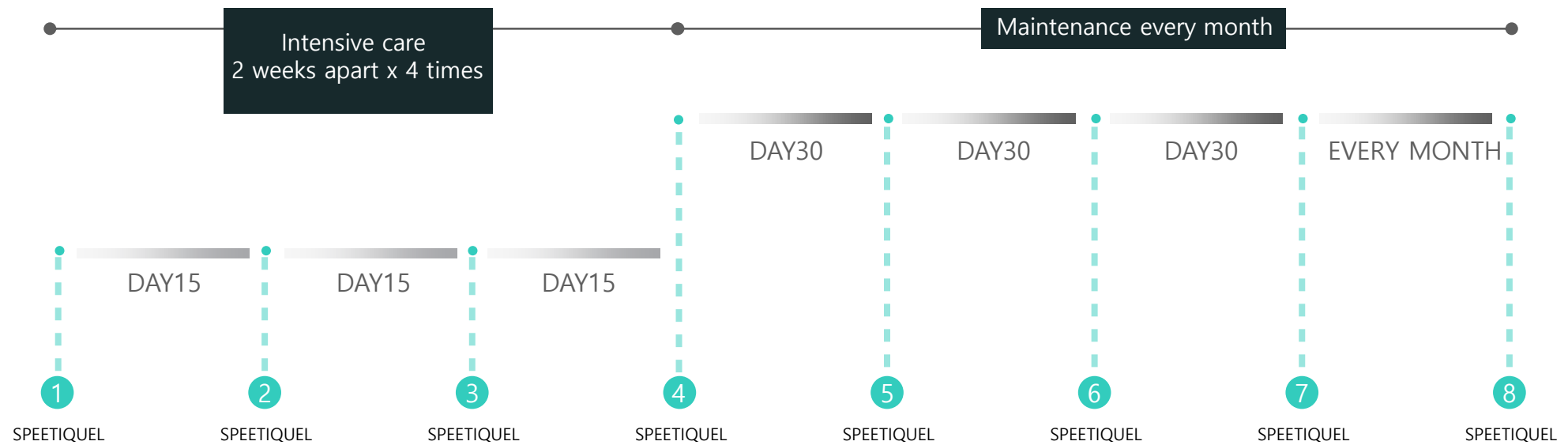
SPEETIQUEL PROTOCOL

Intensive care
2 weeks apart x 4 times

Maintenance
every month

Recommended usage cycle based on
individual skin type

During the maintenance period, we recommend
mixing skin botox or hydrating injection.



BEFORE & AFTER

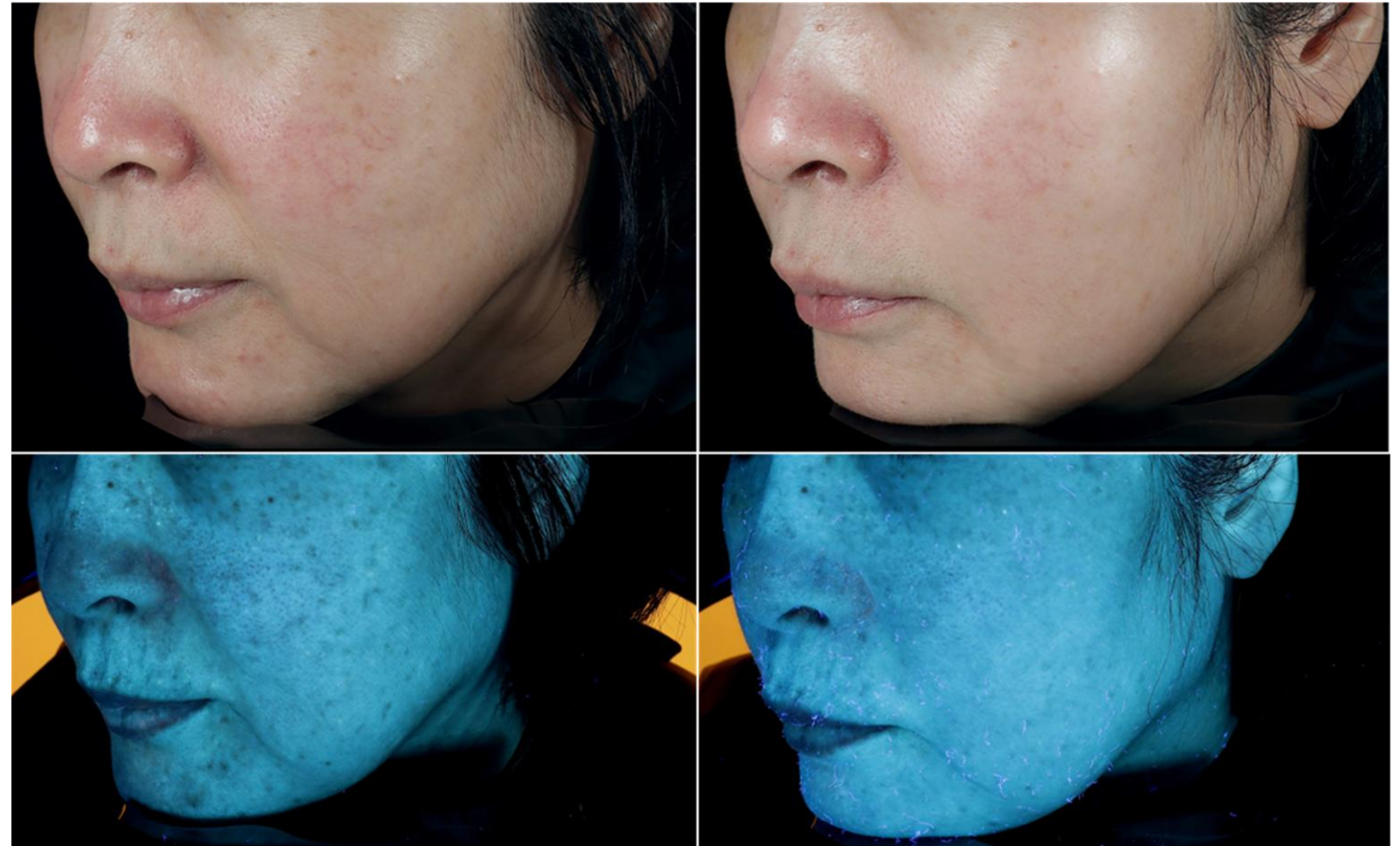
8 Weeks using Speetiquel

Case 1 - 40's female

Area: Skin Tone

BEFORE

AFTER 8 WEEKS



Data provided by:



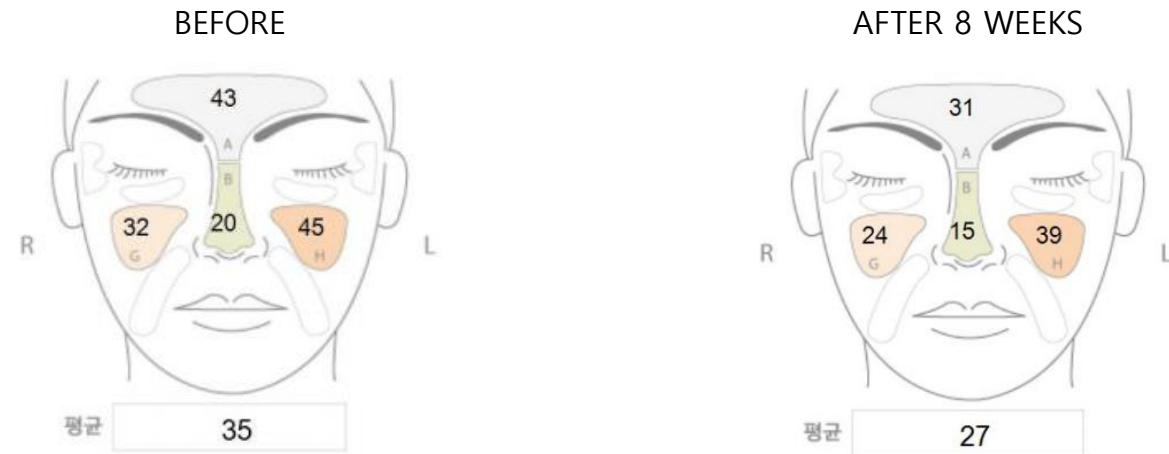
BIOBIJOU | CANDORLOV BIO

BEFORE & AFTER

8 Weeks using Speetiquel

Case 2 - 20s female

Area: Forehead Pores



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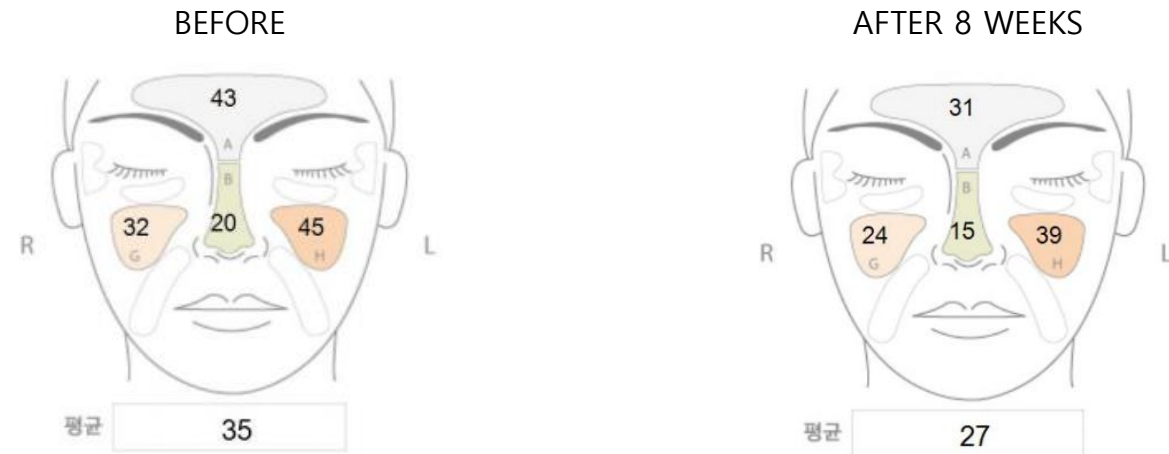
BIOBIJOU | CANDORLOV BIO

BEFORE & AFTER

8 Weeks using Speetiquel

Case 2 – 20s female

Area: Right cheek pores



Data provided by:



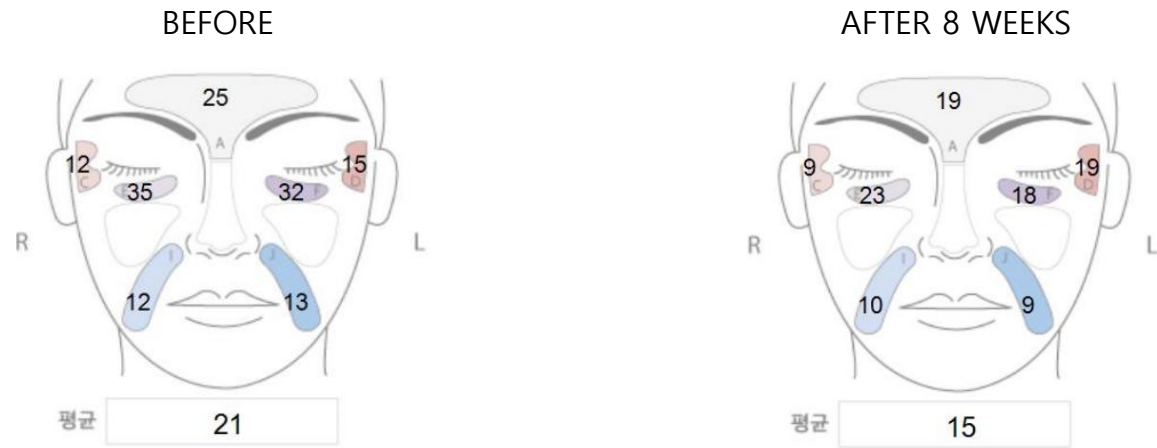
BIOBIJOU | CANDORLOV BIO

BEFORE & AFTER

8 Weeks using Speetiquel

Case 2 - 20s female

Area: Left lower eye wrinkle



Data provided by:



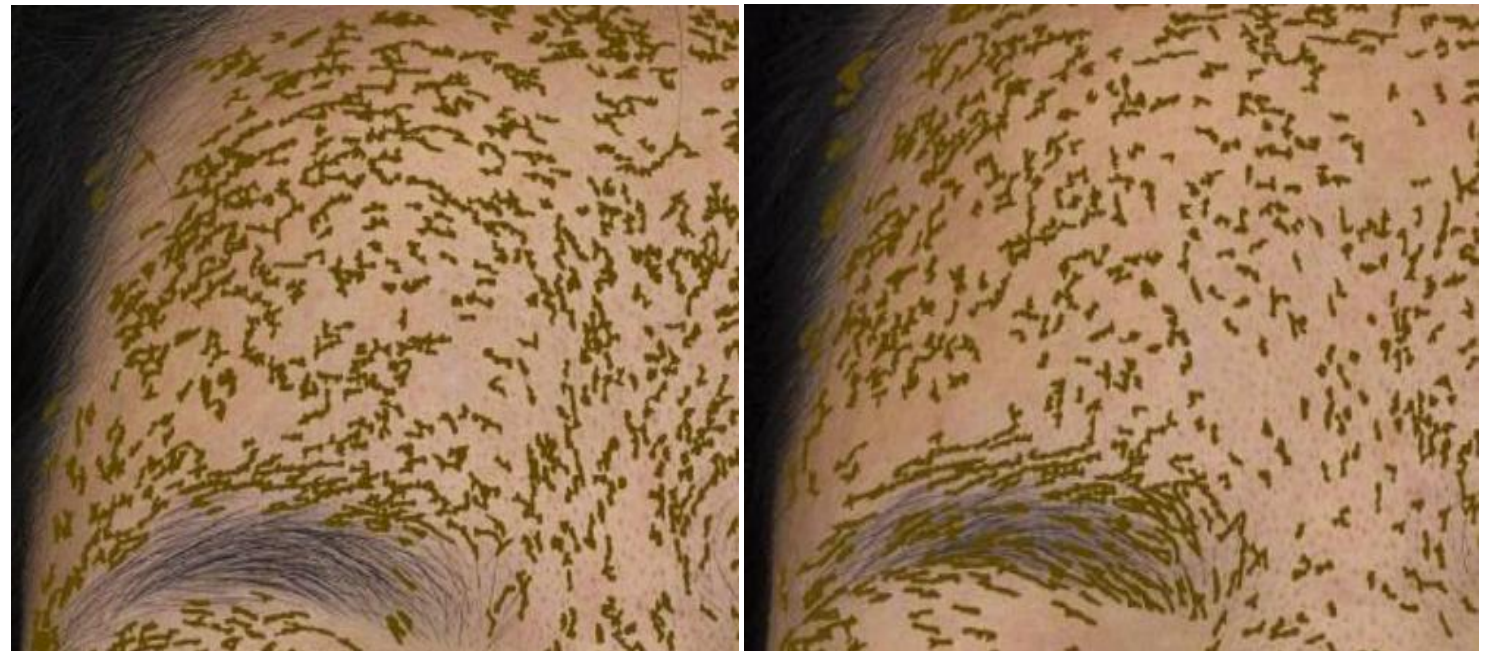
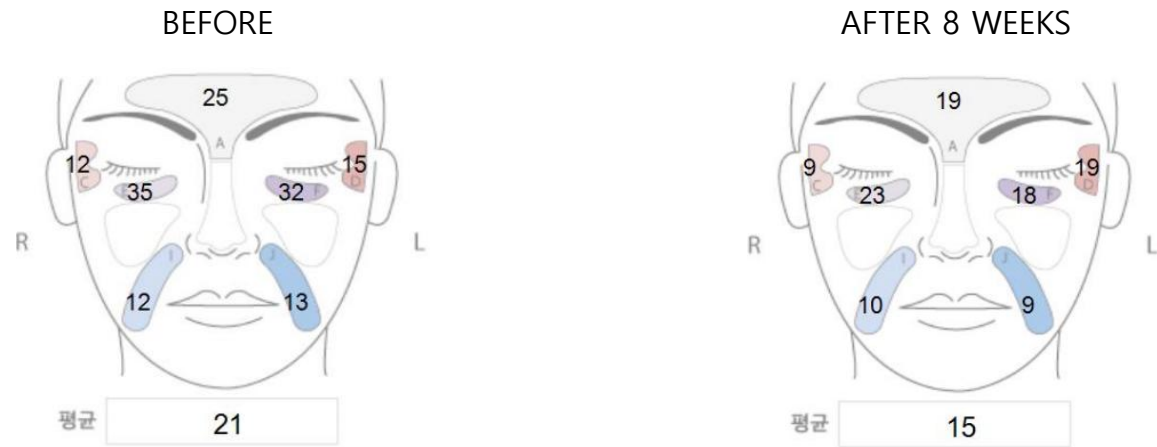
BIOBIJOU | CANDORLOV BIO

BEFORE & AFTER

8 Weeks using Speetiquel

Case 2 - 20s female

Area: Forehead wrinkles



Data provided by:



BIOBIJOU | CANDORLOV BIO

BEFORE & AFTER

8 Weeks using Speetiquel

Case 3 – 40s female

Area: Skin tone, wrinkles

BEFORE

AFTER 8 WEEKS



Data provided by:



BIOBIJOU | CANDORLOV BIO

BEFORE & AFTER

8 Weeks using Speetiquel

Case 4 – 20s female

BEFORE

AFTER 8 WEEKS



Data provided by:



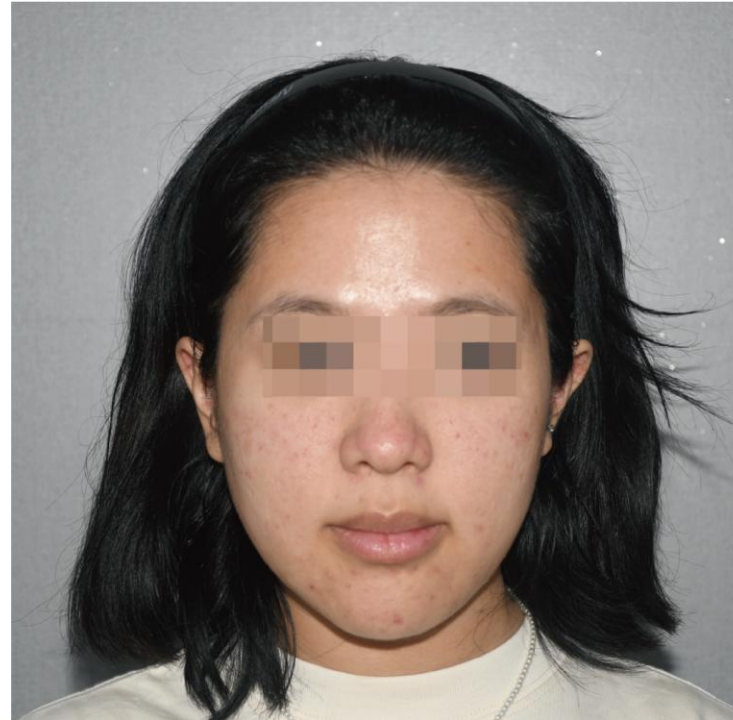
BIOBIJOU | CANDORLOV BIO

BEFORE & AFTER

8 Weeks using
Speetiquel

Case 4 – 20s female

BEFORE



AFTER 8 WEEKS



Data provided by:



BIOBIJOU | CANDORLOV BIO

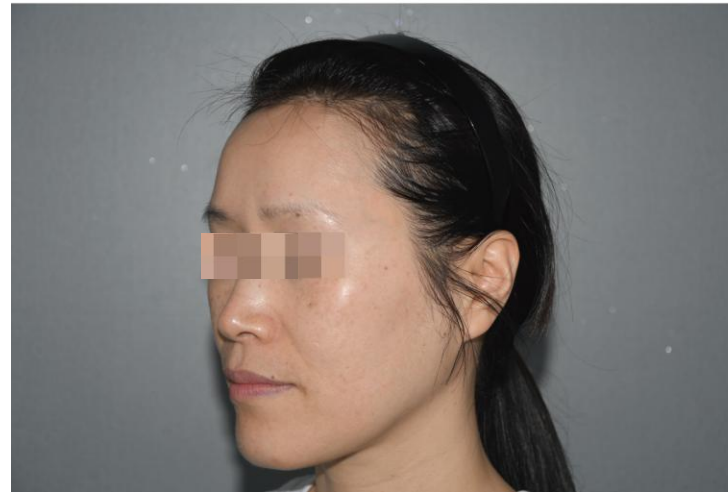
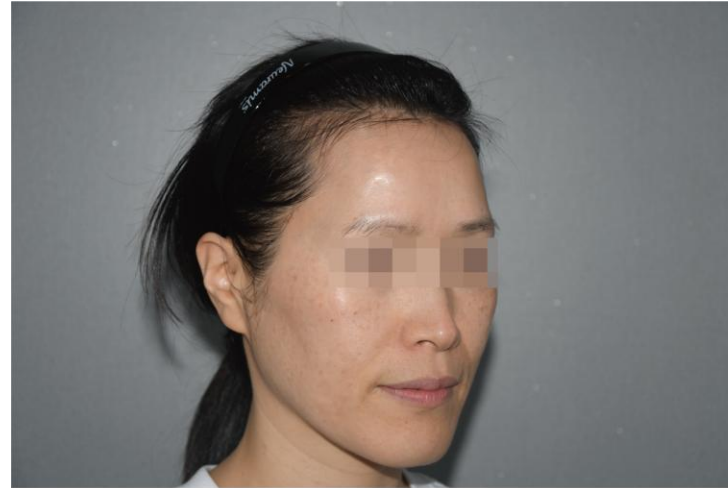
BEFORE & AFTER

8 Weeks using Speetiquel

Case 5 – 40s female

BEFORE

AFTER 8 WEEKS



Data provided by:



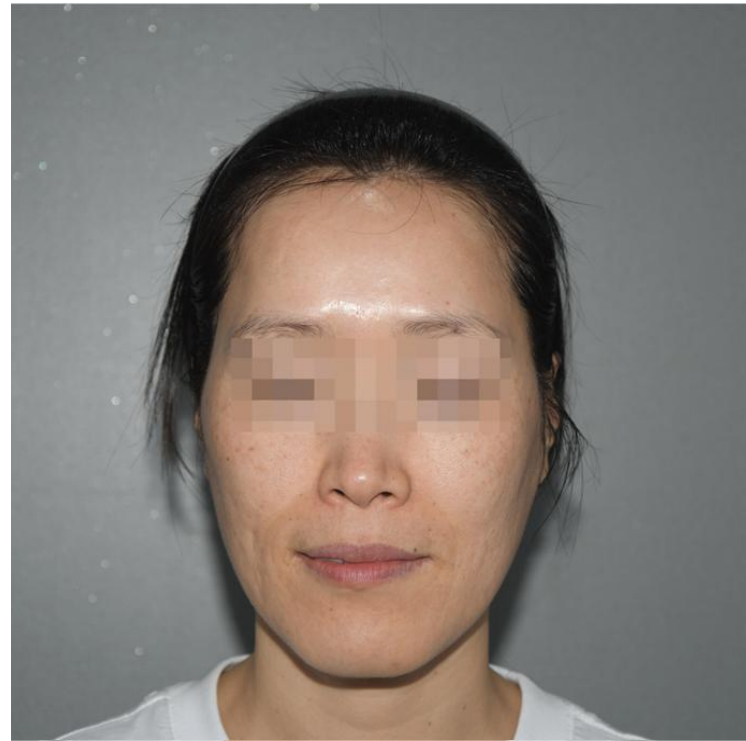
BIOBIJOU | CANDORLOV BIO

BEFORE & AFTER

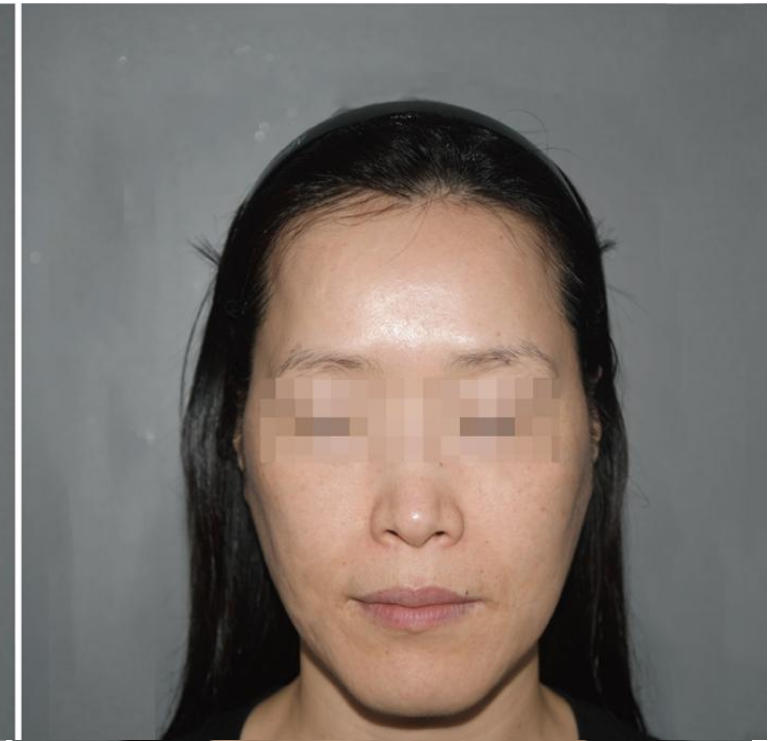
8 Weeks using
Speetiquel

Case 5 – 40s female

BEFORE



AFTER 8 WEEKS



Data provided by:



BIOBIJOU | CANDORLOV BIO

COMPANY

Hyaluronic Acid Filler · Botulinum Toxin · Fat Dissolving Injection · Skin Boosters · Hair Loss Therapy · Cosmetics

BIOBIJOU

Biobijou has a factory and production facility that has received GMP certification, which means the excellent pharmaceutical manufacturing and quality management standards of the Ministry of Food and Drug Safety, and holds numerous filler manufacturing technology trademarks and patents.

We will not stop there, but will continue to lead the bio beauty market by continuously researching and investing for differentiated products and innovative development.

Biobijou and ExocoBio China Expansion Agreement

Beauty company **Biobijou** has decided to exclusively supply ASCEplus™, a 'skin booster' product that is rapidly growing in the aesthetic market, to China starting in June. **Biobijou** released a press release on the 28th and announced a contract with ExocoBio, the manufacturer of ASCEplus™.



Biobijou-Moogene Medi, 'join hands' for next-generation medical device development

Cheongdam Global (362320) announced on the 7th that its subsidiary **Biobijou** (CEO Yang Jun-ho) and Moogene Medi (CEO Yoon Tae-jong) signed a strategic partnership (MOU) for the joint development of next-generation medical devices and promised joint cooperation.



Geronbio and Cheongdam Global·Biobijou Signed MOU for PN Filler Development and Distribution

PDRN technology development specialist Geronbio (CEO Kim Deok-gyu) signed a strategic partnership (MOU) with Cheongdam Global (CEO Choi Seok-ju) and **Biobijou** (CEO Yang Jun-ho) on the 11th for product development and distribution through comprehensive technology cooperation including PN fillers.



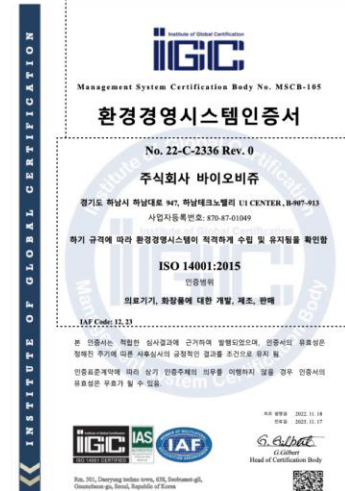
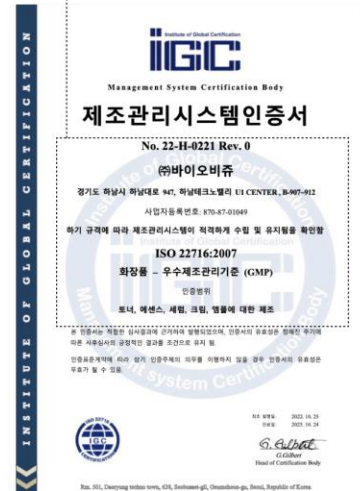
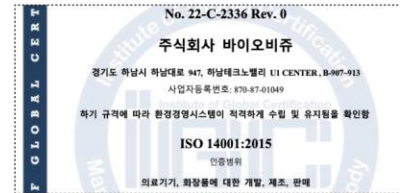
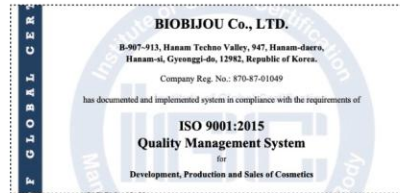
Cheongdam Global Subsidiary Biobijou to Develop LNP Filler

Biobijou, a subsidiary of Cheongdam Global, is joining hands with Moogene Medi, a KONEX-listed company, to develop the next-generation medical device, LNP filler. On the 7th, **Biobijou**, a subsidiary of Cheongdam Global, and Moogene Medi signed a strategic partnership (MOU) for the joint development of the next-generation medical device, LNP-based filler (tentative name).



Biobijou, a filler specialist company

Filler Specialized Manufacturing Technology Certifications



BIOBIJOU, a Filler Specialist Company

Increased brand awareness through participation in overseas medical professional exhibitions



Colena Launching Ceremony: Vietnam



2024 Arab Health



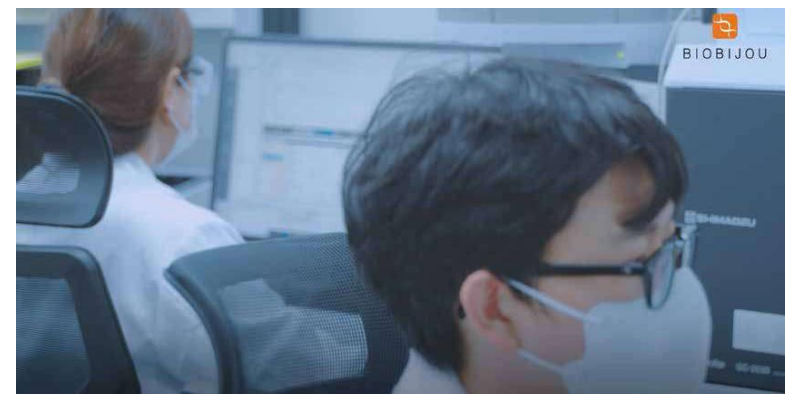
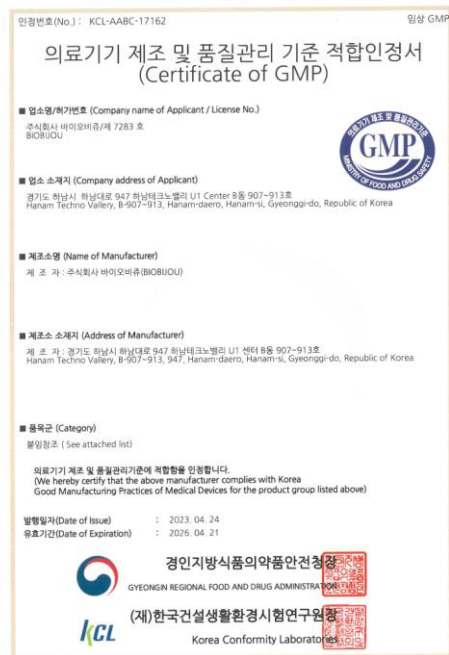
2023 Imcas



2023 Dubai Derma

BIOBIJOU, a Filler Specialist Company

BIOBIJOU Formulation Composition Laboratory





BIOBIJOU Will Make Humanity Healthy Through New Innovations and Challenges.

New innovations and challenges

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