

# Cosmeceutical

Technology & Product

2021

Pharmaceuticals



Cosmetics

We Create a New World  
With DNA, the Most Fundamental of Human Being

Nexmos 

---

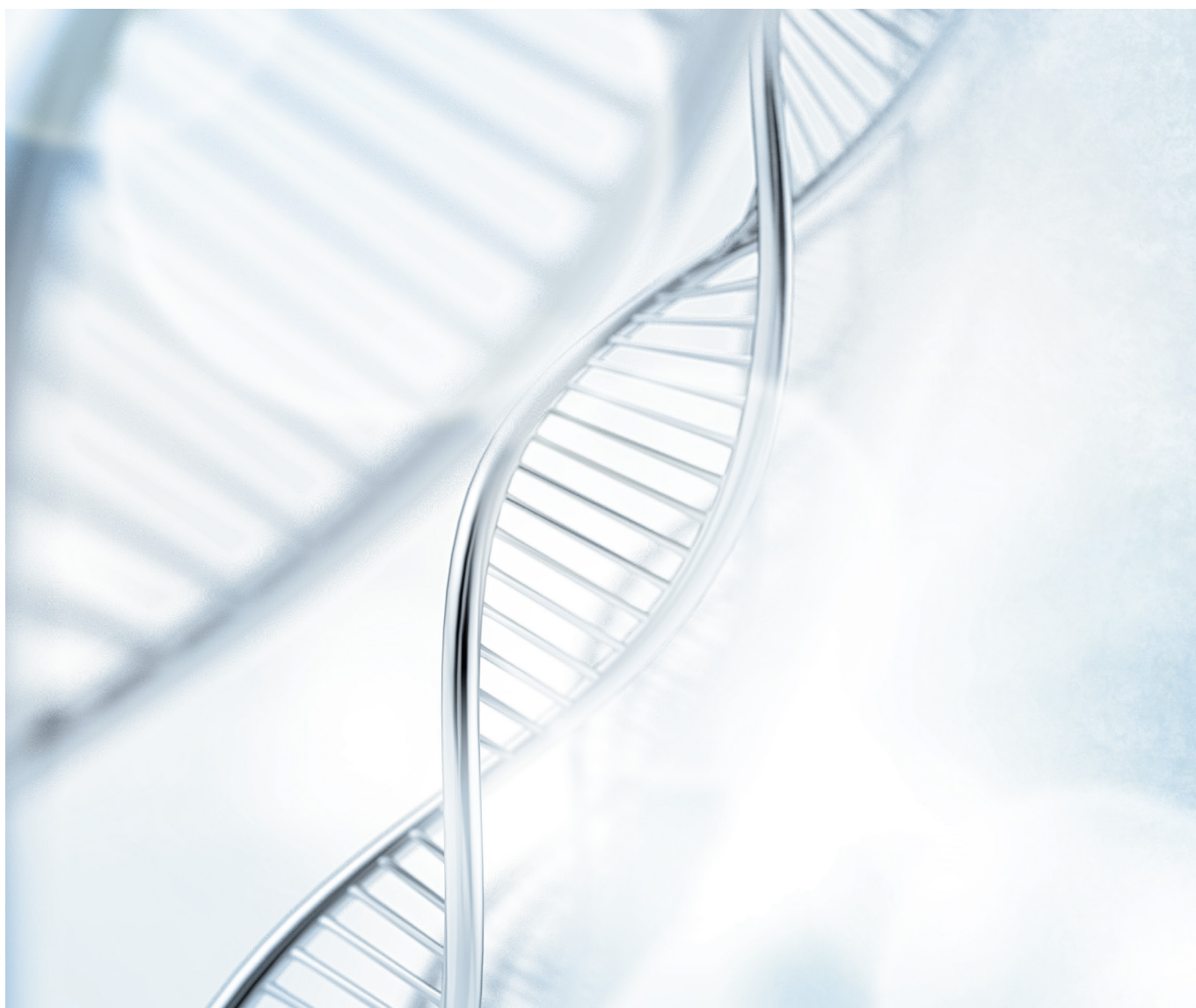
## COVER STORY

#Future Identity

---

### A Pioneer of the Cosmeceutical

Cosmeceutical is a compound word of cosmetic and pharmaceuticals, meaning pharmaceutical & clinical research-based scientific cosmetic technologies and products. Nexmos, a Korean biotechnology company dealing with a relatively unique concept of DNA Aptamer for many years, and has continued research and development to solve incurable diseases that has not been solved yet. As a result, Nexmos succeeded in developing Aptamer as the key of incurable diseases, and expanded it to create a new success story in the field of life science.



---

## WHY DID DNA SCIENTISTS STUDY COSMETICS?

Nexmos believes that science is the most realistic key to making human life better. In order for discovery to lead to progress, the scientists' responsibility and duty is to make sure it works well and improve for real-life applications. Nexmos was able to obtain exceptional clinical results based on the meaningful outcomes derived by applying Aptamin to various fields as the world's only commercially available new DNA substance. After years of studies, optimized formulations are made with the balanced ratio of ingredients, and its safety and stability are secured. Currently many new concepts of cosmetic products are being developed.

Aptamer is not only a substance but a platform that captures and interacts with specific antioxidants to generate synergy and amplify their outstanding efficacy. It also has infinite possibilities, and Nexmos' DNA is still in the development and expansion stage.









---

## CAOA STORY

### **Aptamin® C & Antioxidant**

Refreshing with advanced moisturizing & anti-aging specifications.

CAOA is a product with high moisturizing anti-aging efficacy which incorporates the antioxidant know-how of Aptamin®C, a new substance developed by Nexmos.

Aptamin® is a new DNA-based substance that interacts with various antioxidants and delays their oxidation and maximizes its efficacy. In particular, it stabilizes vitamin C which is the easily oxidized representative antioxidant, and helps improve normal effects such as anti-aging, moisturizing, skin vitality and whitening.

Nexmos has tested Aptamin and its complex with vitamin C for the last few years with internal, academics, and domestic dermatologists and developed a prototype in cooperation with a domestic cosmetic manufacturing partner.

---

## SELEX DNA SHAMPOO STORY

### **DNA Hair Loss Control**

The core technology of SELEX shampoo is developed by Nexmos scientists. It has a differentiated concept that scientifically proven DNA's new mechanism of function. The first commercialized DNA-based hair and scalp solution contains WD-aptamer, which protects the Wnt-signal and improves its role to prevent hair loss ultimately.

## PRODUCT

#CAOA serum / CAO A cream

### Product Story

CAOA serum and cream evenly supply moisture and active ingredients to the deep part of the skin with fast absorption. Besides, it finds the balance of the skin tired from stress caused by various external harmful environments to restore its natural elasticity and improves skin tone even brighter.

It is a premium cosmetic product that can be used not only for anti-aging purposes for middle-aged and elderly people but also for sensitive skin with frequent troubles.





## Key Features



## CAOA Serum

<b>Product Title</b>	CAO Derma Intensive Serum
<b>Volume</b>	30 ml / 1.0 fl oz
<b>Appearance</b>	Pure yellow liquid
<b>Purpose</b>	Anti-aging, Antioxidant, Moisturizing
<b>Directions</b>	After cleansing, place 2~4 drops on the palm or between fingertips and massage evenly into your dry face and neck. Apply daily or more often as required
<b>Cautions for use</b>	Avoid direct contact with the eyes. If contact with eyes occurs, rinse immediately



## Key Features



## CAOA Cream

<b>Product Title</b>	Cream Moisturizer
<b>Volume</b>	50 ml / 1.7 fl oz
<b>Appearance</b>	Cream, off-white
<b>Purposes</b>	Anti-aging, Revitalizing, Moisturizing
<b>Directions</b>	Place one or two scoops of cream on your palm and directly massage evenly to your skins such as face, neck and chest
<b>Cautions for use</b>	Avoid direct contact with the eyes. If contact with eyes occurs, rinse immediately



PRODUCT

#The First DNA Atopy Cream



Product Story

Puricare ATO Solution, which was the first dermatology including Aptamin's technology from various experimental data, and applying it, is an anti-inflammatory moisturizer that can be used casually from infants and toddlers to adults suffering from various skin diseases showing psoriasis, dryness, and itching, including atopy. The patented new materials of Nexmos Aptamin C and MultiEx BSASM were used as key ingredients. MultiEx BSASM is composed of seven plant-derived ingredients (Chamomile, gotu kola, licorice, green tea, Japanese knotweed, rosemary, skullcap), and exhibits excellent atopic soothing and anti-inflammatory effects.

Puricare Ato Solution

Product Title	Puricare ATO Solution
Volume	100 ml / 3.4 fl oz
Appearance	Cream, off-white
Purposes	Relieves skin inflammation, Improvement of psoriasis and acne
Directions	Apply an appropriate amount of the cream to the wounds on the face and body, and then gently rub it
Cautions for use	If you keep it in the refrigerator, it can be kept in an optimal condition for a long time





## Interruption Vs. Protection

The Wnt signal is a signal transmission system between stem cells centered on the protein. From the discovery that the Wnt signal affects the growth and differentiation of cells, and when 'B-catenin', an essential for this signaling system, is abnormally increased, the Wnt signal is also fast and the proliferation of cancer or cancer stem cells is promoted. After this discovery, it has been mainly the subject of cancer mechanisms. Nexmos found that hair loss worsens due to CXXC5 protein, which interferes with the Wnt signaling system. Dishevelled1 makes the scalp hair follicles bigger and binds a protein well that constitutes the Wnt signaling system. We have developed and tested a DNA aptamer that prevents CXXC5 from binding to Dishevelled1—binding the aptamer to the site that needs to be attached to the Dishevelled1 protein,



proven that the interrupting of the CXXC5 was prevented and the Wnt signaling proceeds smoothly. The paper was published in the SCI-level international journal 'CDOAJ' (Clinical Dermatology Open Access Journal) by Nexmos Co in therapeutics team leader Sooho Choi PhD. See the part of the contents below.

In conclusion, the research indicates that Wnt/ $\beta$ -catenin signaling plays a crucial role in bone formation, hair regrowth, and wound healing. CXXC5 is a negative regulator of the Wnt/ $\beta$ -catenin signaling pathway. WD-Aptamer binds to the Dvl1\_PDZ domain and maintains the Wnt/ $\beta$ -catenin signaling pathway.

## PRODUCT

#The First DNA Shampoo



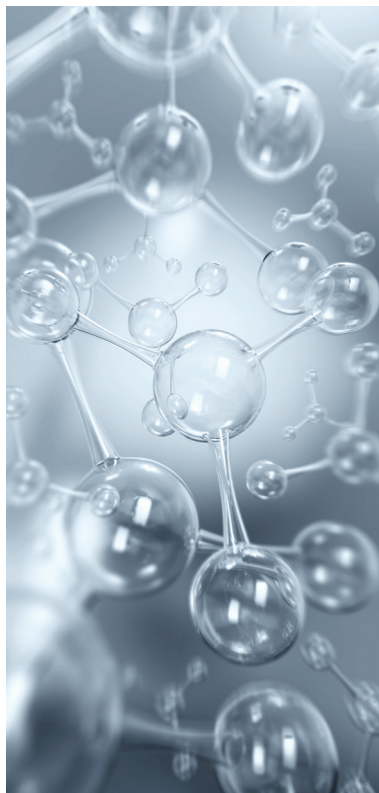
## Product Story

SELEX DNA Shampoo – a DNA-based hair loss solution containing the world's first DNA-based scalp health ingredient, WD-Aptamer, and other active and natural ingredients such as Aloperon, MultiEx BSASM +, and Cordyceps Sinensis and promotes normal cell proliferation of healthy scalp and hair roots. WD-Aptamer prevents Wnt/ $\beta$ -catenin signaling from interfering with CXXC5, which binds to the hair growth protein Dvl1\_PDZ, thus engaging in normal cell division of healthy scalp and hair roots, ultimately improving hair loss symptom. Normal cell division of healthy scalp and hair roots, ultimately improving hair loss symptoms.

## SELEX DNA Shampoo

<b>Product Title</b>	SELEX DNA Shampoo
<b>Volume</b>	500 ml / 16.9 fl oz
<b>Appearance</b>	Liquid, off-white
<b>Effects</b>	Improvement of Hair Loss, Relief of Scalp Inflammation
<b>Directions</b>	Wet the scalp with warm water, pump it once or twice, massage it evenly on the scalp, and rinse it off after 3 minutes
<b>Cautions for use</b>	Keep for 3 minutes for sufficient effect

## ABOUT APTAMIN NEXMOS' APTAMER



DNA Aptamer is a new bio substance that stabilizes the target protein or antioxidant by reacting with a specific target material in the form of DNA and RNA with a stable three-dimensional structure. In particular, Nexmos' proprietary Aptamin<sup>®</sup> platform maximizes the efficacy and stability of target antioxidants such as vitamin C.

### “Antioxidation, solving the secret of aging”

Antioxidants refer to substances that inhibit oxidation, representatively, lutein, beta-carotene, catechins, vitamins, and glutathione, etc. Cellular aging occurs caused by such oxidation, and reactive oxygen species (ROS) produces the process of absorbing oxygen in the body during the aging process of cells is the main cause, and antioxidants properly control these free radicals and consequently improve cellular aging.

In addition to typical antioxidants, each antioxidant has its own effects. Catechin (EGCG) is anti-cancer, anti-inflammatory, and prevents male hormone alopecia, and glutathione is widely known as a natural whitening agent. Vitamins familiar to us have various effects such as strength immunity, anti-inflammatory, skin elasticity and wrinkle improvement, and whitening. Both of these are not synthesized in the body and must be applied or consumed, but the problem is in low absorption and easy oxidation.

### “The world's first DNA-based antioxidant platform”

Paradoxically, antioxidant materials, including vitamins, function by themselves to prevent oxidation, but they are also easily oxidized by exposure to the environment. There are several oxidative inhibitors for keeping the effectiveness of the antioxidant on the bio-market, but they generally disrupt the antioxidant's natural effectiveness. As the first new antioxidant platform founder in the Aptamer industry, Nexmos focused on Aptamer own features that binds, protects, and delays oxidation and maximizes efficacy through interaction. Nexmos still strives to develop and apply to various fields.

## COMPANY HISTORY

**2014** Founded in Nexmos Co., Ltd.  
Developed contact-lens type of early diagnosis system

**2016** Developed Aptamin<sup>®</sup> C

**2015** Developed microneedle patch type of early diagnosis system

## ABOUT NEXMOS

### Nexmos is an innovative biotechnology R&D company

Having a new DNA Aptamer platform technology with a patent. Since its establishment in 2014, Nexmos has been developing treatments for degenerative brain diseases, improvement of intractable Atopy skin diseases, and clinical proven cosmetics and food and beverage industries for expanding the business areas for a better life in humanity.

## COMPANY BUSINESS AREA



### Therapeutics



Parkinson's Disease  
Alzheimer's Disease



Aptamer-Based  
BBB Shuttle



Diagnosis  
Medical Devices

### Healthcare



Cosmeceutical



Food & Beverage

**2017** Aptamin® C ICID register  
Co-developed Aptamin®  
with Hanyang University

**2018** Developed Aptamin® G & K  
Developed Aptamin® Platform  
Aptamin® C Korea Cosmetic Association  
Registration

**2019** Launched Aptamin® C Cosmetic In Cosmetics Global,  
CosmeTech Co-research with Kyunghee University,  
Chungang University, Sookmyung Women's University

**2020** Aptamin® C GRAS Notification (FDA, US)  
Aptamin® C patent registration (US, Korea)  
Aptamin® G ICID, CAS, Korea Cosmetic  
Association Registration  
Launched Selex Hair & Scalp Care shampoo





**Nexmos Co., Ltd.**

#2207 & 2208, U-Tower, 767, Sinsu-ro, Yongin-si, Gyeonggi-do, 16827, Republic of Korea

**Tel** 070.5138.9863 **Fax** 070.8220.6400 **Email** [nexmos@nexmos.com](mailto:nexmos@nexmos.com)