

AnteAGE<sup>®</sup>  
Regenerative Science

W E L C O M E

# AnteAGE<sup>®</sup>

Regenerative Science

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Our mission is to provide powerful regenerative anti-aging products through sound evidence-based technologies.



# REVCEUTICALS

DR. CHRIS GOJDZ MD PHD

ANTEAGE MD

*Revceuticals by Chris Gojdz*



[shop@revceuticals.com](mailto:shop@revceuticals.com)



Revceuticals

OUR STORY

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# *Origins, Stem Cells and AnteAGE*

## OUR STORY

# AnteAGE Timeline



AnteAGE Early Product Development  
with Renowned Product Developer  
John Garruto

2011

Founded + Begin Cell  
Culture Work

2012-2015

Early Product  
Development

2016

Begin Exosome R&D

2018-2022

Building the brand

2023

Launched Exosome  
products

2024

Launched Biosome  
products

2024

Partnered with ArchiMed  
Private Equity Group

OUR STORY

# *Exosome Lab*

GMP ISO 22715

ISO Certified



OUR STORY

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## *Our Scientific Leadership Team*



ROB KNIGHT, PhD

Lead Scientist, AnteAGE

Dr. Knight has a PhD in small extracellular vesicles (exosomes) and is considered a Regenerative medicine pioneer with over a decade of experience.



CHI ZANG, PhD

Senior Scientist, AnteAGE

Dr. Chi comes to AnteAGE with significant experience in small molecule therapeutic development. Trained as a structural biologist his expertise is in promoting cell proliferation and wound healing to enhance both skincare and make a positive impact in aesthetics.

O U R   S T O R Y

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## *Leader in Regenerative Safety*

- Third-Party Testing For Genotoxicity (OECD 471)
- Dermatologist - Tested For Skin Sensitivity (RIPT)
- FDA MoCRA #53-603116-583651
- Fully Registered Under FDA Regulations



OUR STORY

Evidence Based

CELLISE REGENERATIVE THERAPEUTICS

AnteAGE MDX Exosome Characterization and Functional Testing

Rob Knight 1  
Orcid ID: 0000-0001-9927-6354

1: Cellese Inc., 1842 Barranca Pkwy, Irvine, CA 92606, USA

Introduction:

In recent years, the skincare industry has witnessed a remarkable surge in the integration of cutting-edge scientific advancements with beauty and wellness. Among the various breakthroughs, the utilization of exosomes in cosmetics has emerged as a promising trend, revolutionizing the way we approach skincare. Exosomes, once relegated to the realm of cellular communication and biomedical research, have now captured the attention of the beauty industry due to their potential in enhancing skin health and rejuvenation.

Exosomes are small extracellular vesicles that are naturally produced by various cells within the body, acting as essential mediators of intercellular communication. These vesicles play a crucial role in transferring bioactive molecules such as proteins, lipids, and nucleic acids between cells, influencing cellular functions and maintaining tissue homeostasis [1]. Recognizing the inherent regenerative properties of exosomes, researchers and cosmetic manufacturers have sought to harness their potential to transform the cosmetic landscape.

The recent rise of exosomes in cosmetics can be attributed to their unique ability to address fundamental challenges associated with traditional skincare approaches. Unlike conventional skincare products that merely work on the skin's surface, exosomes can penetrate deeply into the skin layers, delivering bioactive compounds directly to target cells [2]. By encapsulating and delivering active ingredients, exosomes offer a sophisticated delivery system that enhances the efficacy and bioavailability of key skincare components. Exosomes have the potential to stimulate various regenerative processes within the skin, promoting cellular repair, collagen production, and overall skin rejuvenation [3, 4]. Their ability to modulate inflammatory responses [5], promote tissue regeneration [6], and regulate cellular processes has garnered immense interest from both scientific researchers and cosmetic formulators alike.

Amidst the excitement surrounding exosomes in cosmetics, it is imperative to emphasize the importance of robust scientific investigation and thorough characterization of these vesicles [7, 8]. Before exosomes are incorporated into cosmetic formulations, it is crucial to conduct comprehensive research to understand their origin, composition, and functional properties. This involves the isolation and purification of exosomes from reliable and verified sources, ensuring their integrity and purity.

Characterization of exosomes involves determining their size, shape, surface markers, and cargo contents. There are scientific guidelines given by the International Society of Extracellular Vesicles (ISEV) on the minimal experimental requirements for characterizing and claiming extracellular vesicles or exosomes [7, 8]. Advanced techniques such as cryo-transmission electron microscopy (Cryo-TEM), nanoparticle tracking analysis (NTA), and flow cytometry are employed to accurately assess these parameters. Additionally, functional testing of exosomes is vital to validate their efficacy and safety in skincare applications. This includes evaluating their ability to deliver active ingredients to target cells and stimulate desired cellular responses.

By adhering to rigorous scientific standards in exosome research, cosmetic manufacturers can confidently develop formulations that are backed by robust scientific evidence. Such an approach ensures consumer safety and promotes transparency within the industry. Furthermore, it enables the development of reliable and effective skincare products that deliver the desired outcomes.

As the field of exosome research progresses, it is essential to establish standardized protocols and guidelines for the characterization and functional testing of exosomes used in cosmetics. This will contribute to the development of best practices and facilitate the evaluation and comparison of different exosome-based formulations. Collaboration between researchers, regulatory bodies, and cosmetic manufacturers is vital in establishing a framework that ensures the quality and consistency of exosome-based cosmetic products.

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Clinical Trial Results of Mesenchymal Stem Cell Conditioned Media Anti-Aging Skin Care Regimen

Cellease conducted a clinical study of AnteAGE<sup>®</sup>, an advanced anti-aging cosmeceutical whose key active ingredient is derived from laboratory culture of adult human mesenchymal stem cells. The results of the clinical trial proved the efficacy of AnteAGE<sup>®</sup> in the rejuvenation of facial skin.

Abstract:

Based upon the favorable results of the pilot study (n=13) that demonstrated clinical efficacy of cytokines derived from adult mesenchymal stem cells of bone marrow origin, incorporated into a facial skin care serum, a larger study (n=48) was conducted to assess clinical results and user satisfaction of a final product formulation prior to commercialization. Forty-four women and four men ages 30 to 75 participated for a period of four to five weeks. Following instructions provided to them, subjects applied AnteAGE<sup>®</sup> to clean facial skin twice a day - in the morning and at bedtime. Subjects completed self-assessment questionnaires at the start and end of the trial and professional "before" and "after" high resolution photos were taken.

Twelve parameters of skin appearance were self-assessed including: tone, softness, redness, blotchiness, dryness, pore size, age spots, unevenness of color, brightness, texture, fine lines and coarse lines. Using the same visual criteria, a panel of two physicians and a licensed esthetician compared findings in before and after photographs. All subjects (100%) who returned questionnaires saw improvement in two or more criteria; 85% saw improvement in 6 or more criteria; 61% saw improvement in 8 or more criteria; 32% saw improvement in all 12 criteria. Professional evaluation of skin improvement using photographs generally tracked the self-assessment impressions. Subjects who were the most concerned with the condition of their skin before the trial were the ones who observed the most marked improvements. User satisfaction of the product was extremely high with less than 15% considering it "average" compared to other products.

Introduction:

Mesenchymal stem cells (MSC) within the bone marrow are known to act as "emergency responders" to injury throughout the body. Responding to chemokines (cellular "S.O.S." signals) released by injured tissues, MSC migrate to the site of injury where they participate in controlling inflammation and healing. Not only do MSC have the ability to differentiate into different types of cells (muscle, fat, skin, cartilage, nerve, etc.), they more importantly function as "command and control" of the healing response by releasing cellular chemical messengers called cytokines. Resident stem and other cells within the tissue respond to cytokines, thereby promoting, regeneration, healing, and reversal of injury.

Employing sterile bioreactors and proprietary methods, Cellease culture MSC in the laboratory to harness the power and benefits of their cytokines. Blended into the appropriate type of topical formulation, MSC cytokines demonstrate remarkable restorative effects on skin. AnteAGE<sup>®</sup> augments the body's own repair mechanisms, augmenting the important cellular signals that become progressively more deficient in each person as they age.

Method:

Subjects were healthy female and male volunteers ages 30 to 75. A variety of skin types were represented and approximately half were individuals involved in outdoor sports (e.g. tennis, jogging, bicycling) with histories of significant sun exposure. Each subject was provided a before questionnaire that asked them to describe their skin, particular concerns they had about its condition, and their current skincare regimen. A simple check box format was provided as well as an opportunity to expand on particular concerns.

All subjects viewed an explanatory lecture with graphics, had skin cleansed by a licensed esthetician (if wearing makeup), were photographed with high resolution professional equipment, and provided with a one month supply of AnteAGE<sup>®</sup>. Cellease personnel contacted each participant twice during the month to inquire how the trial was progressing and to be certain there were no issues that needed to be addressed.

The post trial questionnaire asked each subject to rate the changes they had noticed during the trial in the twelve skin parameters described in the abstract above. The following 5 anchored 5 point Likert scale was used for grading:

|   |                                                    |
|---|----------------------------------------------------|
| 0 | AnteAGE <sup>®</sup> made the problem worse        |
| 1 | no improvement with AnteAGE <sup>®</sup>           |
| 2 | minor improvement with AnteAGE <sup>®</sup>        |
| 3 | moderate improvement with AnteAGE <sup>®</sup>     |
| 4 | considerable improvement with AnteAGE <sup>®</sup> |
| 5 | remarkable improvement with AnteAGE <sup>®</sup>   |

Comparison of subjects' before and after photos was performed by two physicians and a licensed esthetician using the same scale used for subject self-assessment. The observers made independent evaluations of each dimension for each subject, then collaborated to arrive at a consensus score for each observation.

CELLISE REGENERATIVE THERAPEUTICS

AnteAGE MDX Biosome Characterization and Functional Testing

Rob Knight 1  
Orcid ID: 0000-0001-9927-6354

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Introduction:

In recent years, there has been a surge in exosome research, focusing on their role in tissue repair and regeneration. This interest extends to the cosmetic industry, which has been exploring the potential of exosomes for skincare and anti-aging solutions. Researchers are leveraging the regenerative properties of exosomes to create innovative cosmetic formulations aimed at enhancing skin health and vitality.

Exosomes are nanoparticles composed of a lipid bilayer. They are produced as a result of the endosomal pathway within all cells and contain a wide array of bioactive components such as proteins, growth factors and RNAs. They are typically 30-150nm in diameter with the lipid bilayer composing a mixture of different lipids (fats), that make up the membrane of the cells which are secreting them [1].

We can take this understanding of exosome biology and synthetically manufacture exosome-like nanoparticles. The synthetic exosomes we create have a controlled size distribution, a lipid bilayer composed of the same lipids that are found within the exosome membrane, and allow for accurate control of what proteins and growth factors can be encapsulated within the synthetic nanoparticle [2]. Depending on what we are encapsulating, and its polarity, proteins and growth factors can be either loaded into the lipophobic luminal space at the center of the vesicle or within the lipophilic space between the phospholipid tails [3]. The exosome-like lipid nanoparticles we have created to mimic the function of naturally secreted stem cell exosomes are termed Biosomes<sup>™</sup> (Fig. 1).

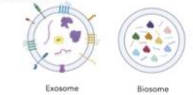
(1) Repas, G. and W. Storzogel. Extracellular vesicles: exosomes, microvesicles, and friends. J Cell Biol, 2013, 200(4): p. 373-83.

(2) Meek, M., et al., Understanding the formation mechanism of lipid nanoparticles in microfluidic devices with chaotic micromixers. PLoS One, 2017, 12(11): p. e0187962.

(3) Liu, P., G. Chen, and J. Zhang. A Review of Liposomes as a Drug Delivery System: Current Status of Approved Products, Regulatory Environments, and Future Perspectives. Molecules, 2022, 27(6).

Figure 1:

Structural similarities between exosomes and Biosomes<sup>™</sup>



Manufacturing Process

The process of manufacturing Biosomes<sup>™</sup> can be tailored to produce Biosomes<sup>™</sup> comprising different lipids and growth factors that preferentially target specific cell types, resulting in a predictable and measured response. AnteAGE MDX Biosomes<sup>™</sup> are manufactured using complex microfluidic mixing of lipid mixtures and a mixture of proteins (TGF-β1, HGF, KGF1, KGF2, NGF, SIRT-1, SIRT-2, TRX, TIMP-1, hBD3H) . Using defined flow rates to precisely control nanoparticle size, Biosomes<sup>™</sup> are engineered with precision and accuracy.

Benefits of Biosomes

Biosomes<sup>™</sup> are characterized in a similar way to the exosomes. Particle size distribution and concentration are determined by Nanoparticle Tracking Analysis (NTA), visually imaged using Cryo-Transmission Electron Microscopy and functionally tested using cells commonly found in the skin [4]. Next generation RNA sequencing techniques allow for precise comparison of gene expression when cells are grown with either MDX exosomes or Biosomes<sup>™</sup>.

More Controlled Process and Output -

Stem cells, inherently diverse in their biological composition, exhibit variability influenced by factors such as their culture environment, microenvironment, and cellular age. Even Exosomes derived from the same cell bank may demonstrate divergent potency due to differences in culture conditions, seeding density, or CO<sub>2</sub> concentration. Synthetic Biosomes<sup>™</sup> can be meticulously engineered to contain specific proteins and microRNA components, ensuring reproducibility and consistency in their therapeutic cargo.

cellese

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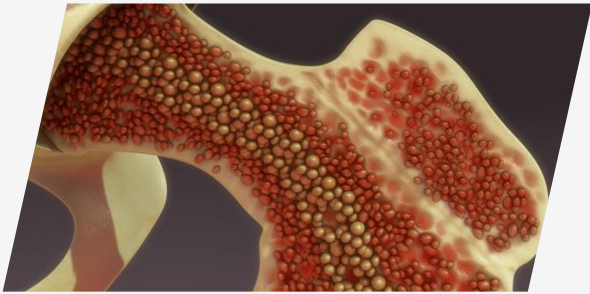
AnteAGE<sup>®</sup>  
Regenerative Science

OUR TECHNOLOGY

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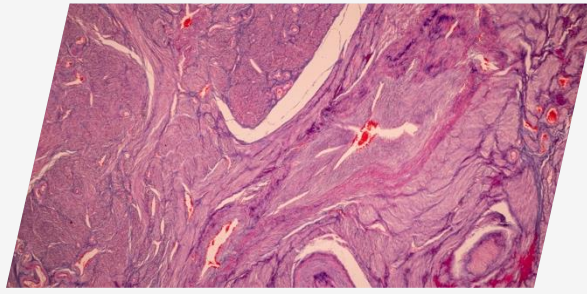
## *Stem Cell Sources*

# Stem Cell Comparison



## BONE MARROW MESENCHYMAL DERIVED STEM CELL-EXOSOMES

- Exosomes concentrate the natural function of a stem cell
- Most regenerative for skin
- AnteAGE PolyGF technology replicates the exact protein bio-signals used by BM-MSC



## UMBILICAL CORD MESENCHYMAL STEM CELL-EXOSOMES

- Skin rejuvenation
- Human dermal fibroblast (HDF) migration and upregulation of collagen
- Sourced from Wharton's Jelly



## PLANT EXOSOMES

- Contain plant proteins
- Non-human
- Likely to contain unique antioxidants & phytochemicals



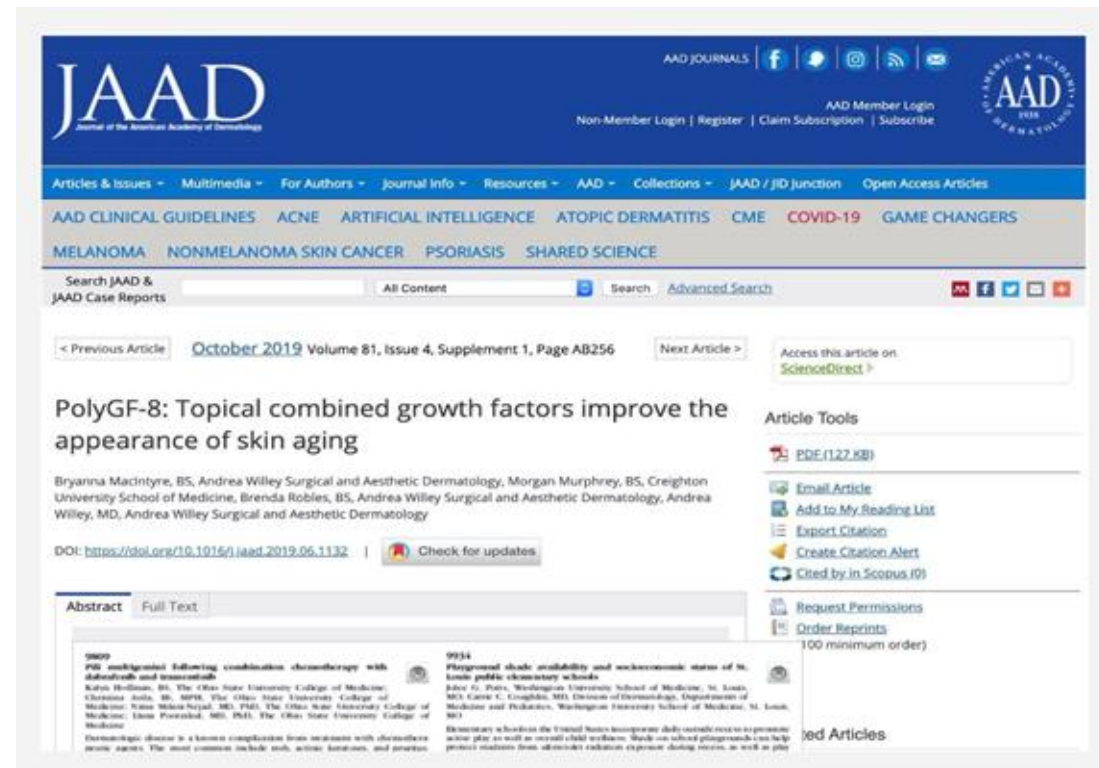
## ADIPOSE DERIVED STEM CELLS-EXOSOMES

- Cell proliferation and migration
- Decrease ROS production and DNA damage

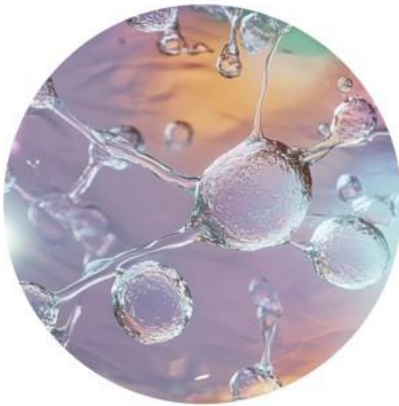
# PolyGF-8

AnteAGE MD® PolyGF technology mimics our body's growth factors and restores youthful skin.

The scientists behind AnteAGE® have harnessed the power of these recombinant growth factors to encourage your skin to behave youthfully and heal beautifully.

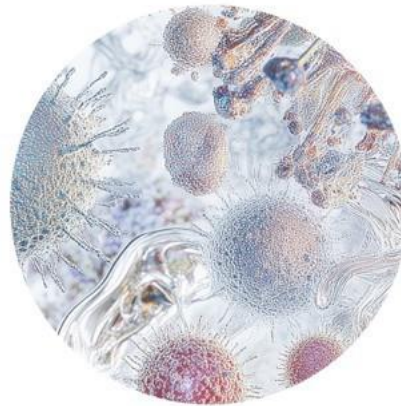


# *Treatment Solution Technologies*



## GROWTH FACTORS

- 1st Generation Solutions
- Available in GF, Brightening, and Hair
- BM-MSC Growth Factors +Cytokines
- PolyGF Technology for many Global territories utilizes recombinant GF Technology



## EXOSOMES

- Advanced Delivery System
- BM-MSC and UC-MSC Derived
- Carry "Regenerative Information"
- Available in Original MDX, Brightening, and Hair



## BIOSOMES™

- Contain Recombinant Human Proteins
- Non-Human Derived
- Specific, Targeted and Customizable
- Replicate the Function and Beneficial Effects Of Exosomes
- Based on 12 years of AnteAGE Recombinant GF Technology

TECHNOLOGY

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## *Practical Applications*



ANTI-AGING/HEALING



BRIGHTENING



HAIR RESTORATION

PRODUCT PROFILES

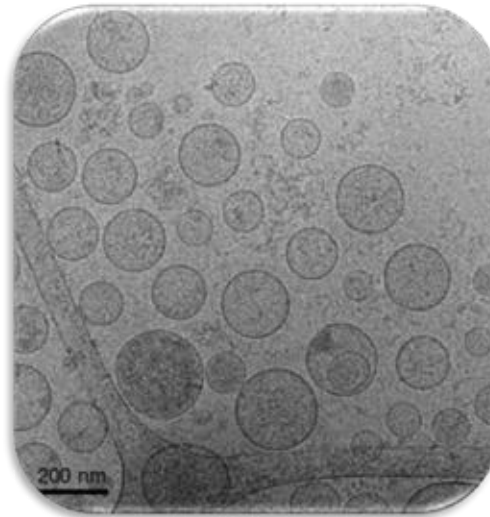
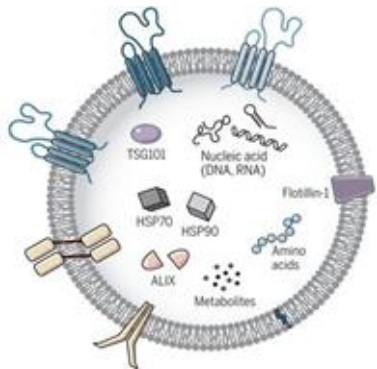
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# *Biosome™ Technology*

# *EXOSOME vs BIOSOME*

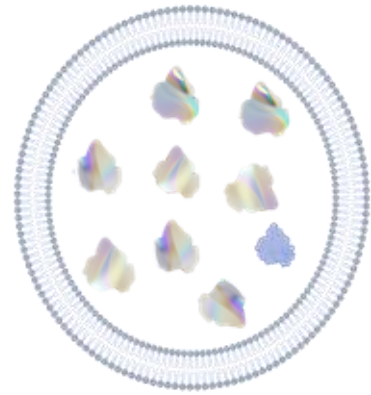
## Exosomes

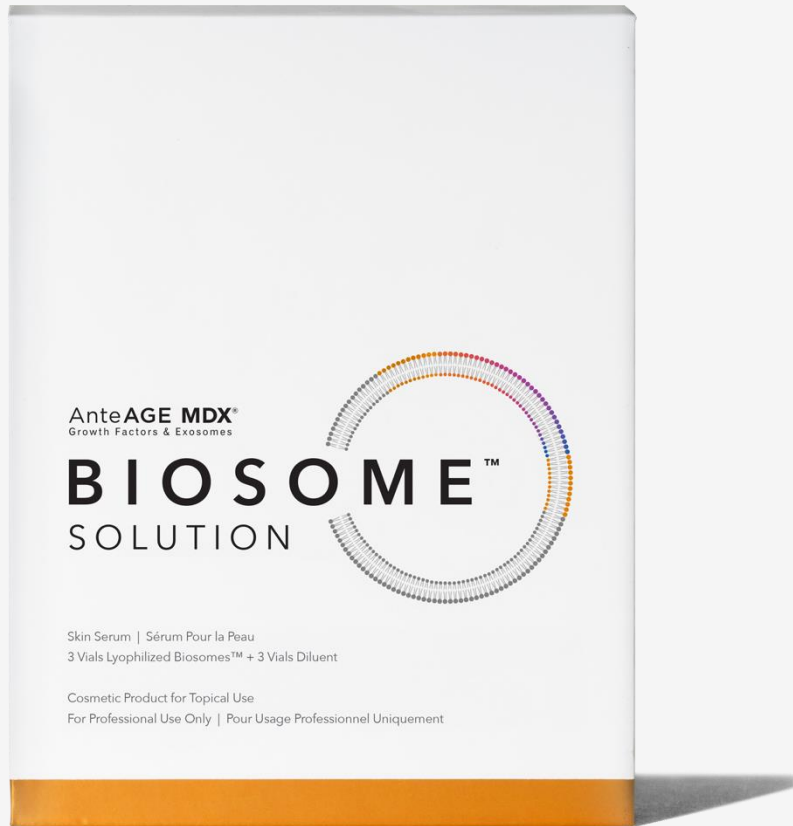
- Lipid Nanoparticle
- 30-150 nm Diameter
- Product of The Endosomal Pathway
- Secreted By Cells
- Protein/ Lipid
- Derived from Plant, Animal, Human Source



## Biosomes

- Lipid Nanoparticle
- 70 - 120 nm Diameter
- Product of Nanomanufacturing
- Recombinant Signals
- Protein/ Lipid
- Contain ONLY pre selected recombinant components





## PRODUCT PROFILE

# *AnteAGE MDX<sup>®</sup> Biosome Solution*

25 BILLION BIOSOMES • NET WT 5ML DILUENT • 3 TREATMENTS PER BOX

### DESCRIPTION

Biosomes<sup>™</sup> are biomimetic exosomes invented by Cellese to capture the potential of human exosomes in a more controlled process with recombinant technology. Designed to enhance advanced aesthetic treatments.

### KEY INGREDIENTS

- Biosomes<sup>™</sup>
- Hyaluronic acid

### BENEFITS

- Non-human derived
- Reduces redness post-treatment
- Enhances ablative and non-ablative procedures
- Can be used as a glide for microneedling procedures

### PROTOCOL

Extract desired amount of diluent. Fill Biosome Solution vial with diluent and close lid. Gently shake back and forth for about ten seconds. Topically apply the reconstituted Biosomes to the treatment area.

## BIOSOME RESULTS

# *Results with MDX<sup>®</sup> Biosome Solution*

AnteAGE MDX<sup>®</sup> Biosome Solution: One Microneedling Treatment



BEFORE

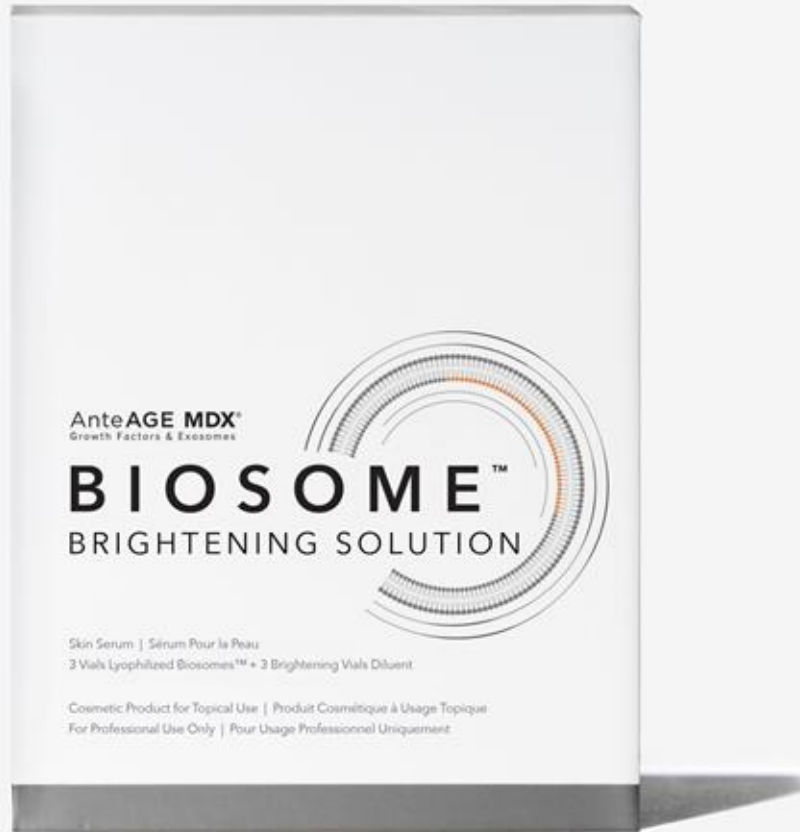
2 WEEKS



BIOSOME RESULTS

## *Results with MDX<sup>®</sup> Biosome Solution*





## PRODUCT PROFILE

# *AnteAGE MDX® Biosome Brightening Solution*

25 BILLION BIOSOMES • NET WT 5ML DILUENT • 3 TREATMENTS PER BOX

### DESCRIPTION

Biosomes™ (biomimetic exosomes) designed to enhance advanced aesthetic treatments. The diluent is amplified by Tranexamic Acid and NAG to improve the appearance of unwanted discoloration.

### KEY INGREDIENTS

- Biosomes™
- Tranexamic Acid 8.5%
- N-Acetyl Glucosamine (NAG)
- HMW hyaluronic acid

### BENEFITS

- Designed to help brighten skin and unwanted skin discoloration
- Reduces redness post treatment
- Enhances ablative and non-ablative procedures

### PROTOCOL

Extract desired amount of Brightening Diluent. Fill Biosome Solution vial with Brightening Diluent and close lid. Gently shake back and forth for about ten seconds. Topically apply the reconstituted Biosomes Solution to the treatment area. Apply any remaining Brightening Diluent at the end of treatment.

## BIOSOME RESULTS

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# *AnteAGE MDX® Biosome Brightening Solution*

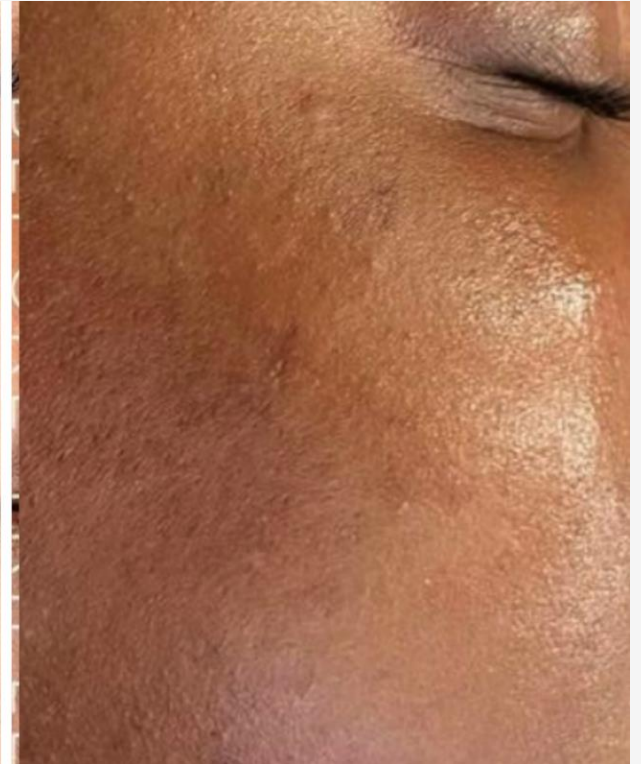
*Mechanical Microneedling*



BEFORE



AFTER – 1 Treatment





## PRODUCT PROFILE

# *AnteAGE MDX® Biosome Hair Solution*

25 BILLION BIOSOMES • NET WT 5ML DILUENT • 3 TREATMENTS PER BOX

### DESCRIPTION

Biosomes™ (biomimetic exosomes) designed to influence the WNT signaling pathway for enhanced hair restoration procedures.

### KEY INGREDIENTS

- Biosomes
- Caffeine
- Azelaic Acid
- Shikimic Acid

### BENEFITS

- Can be Used as a standalone, with PRP, and Post Hair Transplants
- 10 billion hair exosomes per vial for hair follicle signaling
- Can be used on scalp or facial hair

### PROTOCOL

Extract desired amount of Diluent. Fill Biosome Solution vial with Diluent and close lid. Gently shake back and forth for about ten seconds. Topically apply the reconstituted Exosomes to the treatment area. Follow Hair Microneedling Protocol. Apply any remaining solution to the treatment area at the end of treatment.

## BIOSOME RESULTS

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# *AnteAGE MDX® Hair Biosome Solution*

### *Mechanical Microneedling*



1 TREATMENT



2 WEEK RESULT



ANTEAGE MD

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*Thank You*

*Q+A*

