

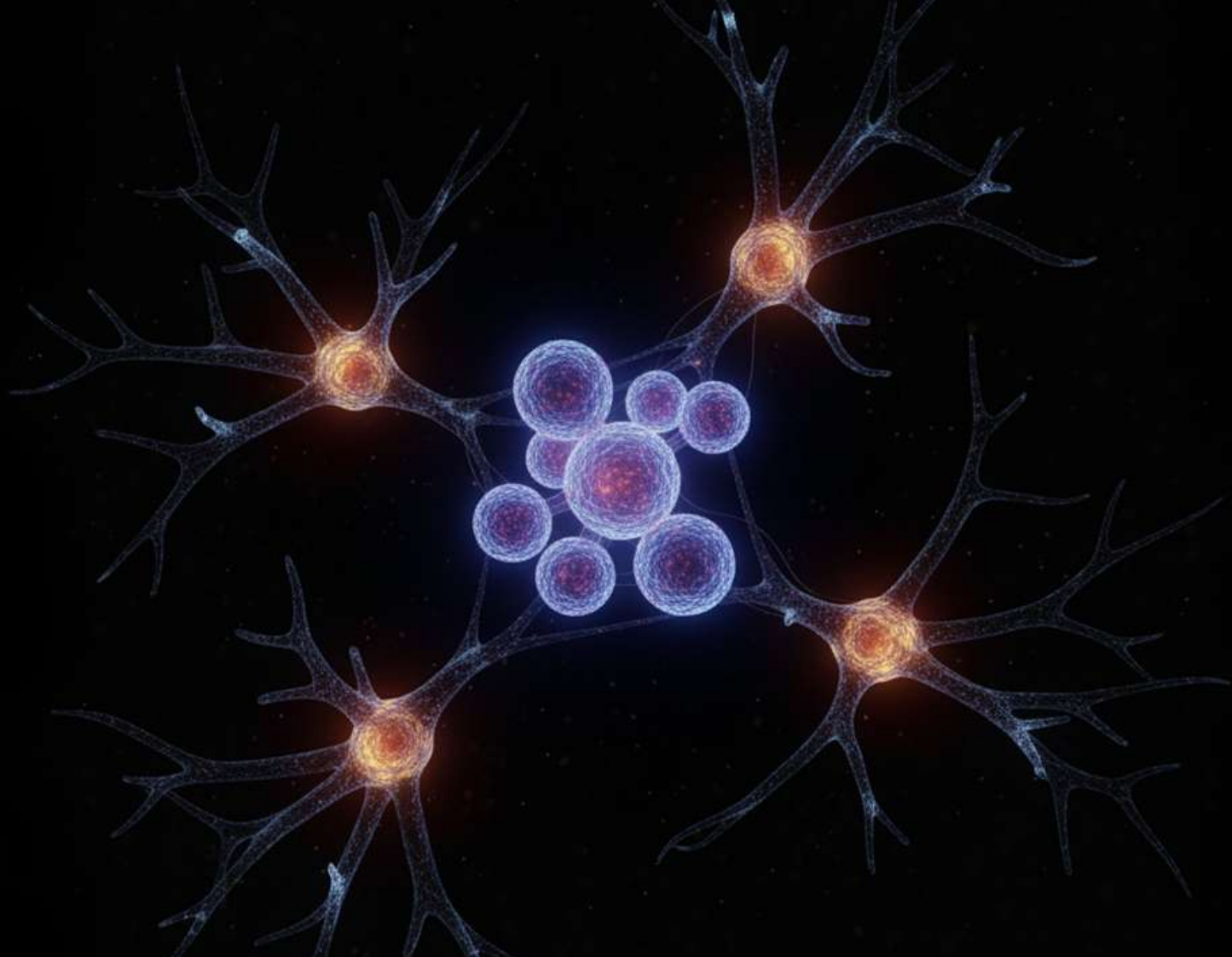
GENKORD

THERAPEUTICS



Stem Cells and Exosomes





GENKORD

www.genkord.com

As Turkey's first cord blood bank, GENKORD is an R&D platform that has been developing evidence-based solutions in regenerative medicine, stem cell research, and advanced biotechnology since 2003. As one of the five companies in Turkey awarded the Seal of Excellence in Horizon 2020, GENKORD ranked 5th in R&D in 2015 following ASELSAN and Arçelik, and became the face of the Borsa İstanbul Private Market. Distinguished by its achievements in TÜBİTAK and EU projects, GENKORD is committed to transforming scientific innovations into clinical value.



www.veragen.com.tr

Transforming Science Into Life

VERAGEN was established with the purpose of transforming science into tangible benefits for human life and shaping the future of health, today. We are the official representative of cutting-edge stem cell therapies and registered cellular products developed by GENKORD, the pioneer of regenerative medicine in Turkey. Our core philosophy is to open new doors in healthcare by combining the latest scientific innovations with ethical and quality standards.

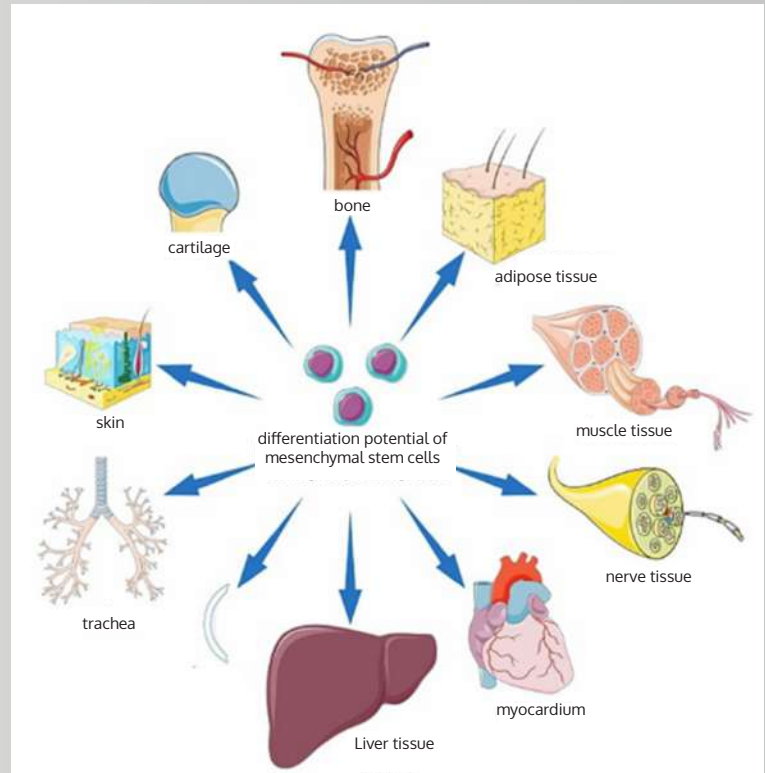
STEM CELL

A stem cell is a type of cell that has the potential to develop into many different cell types within the body.

Upon division, these cells can generate more stem cells or give rise to other cells that perform specialized functions.

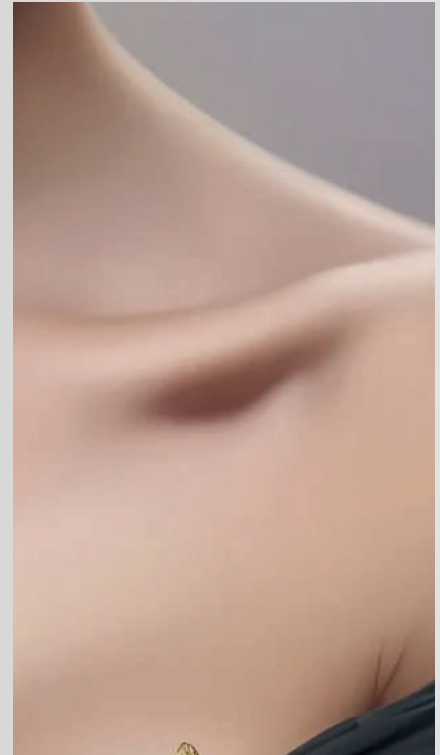
Furthermore, they have the capacity for indefinite self-renewal. These two characteristics make stem cells invaluable to both developmental biology and medicine.

Mesenchymal Stem Cells (MSCs) can differentiate into and regenerate various tissues and cell types, such as muscle, bone, ligament, nerve, adipose, skin, fibroblasts, and cartilage.



BENEFICIAL EFFECTS OF STEM CELLS

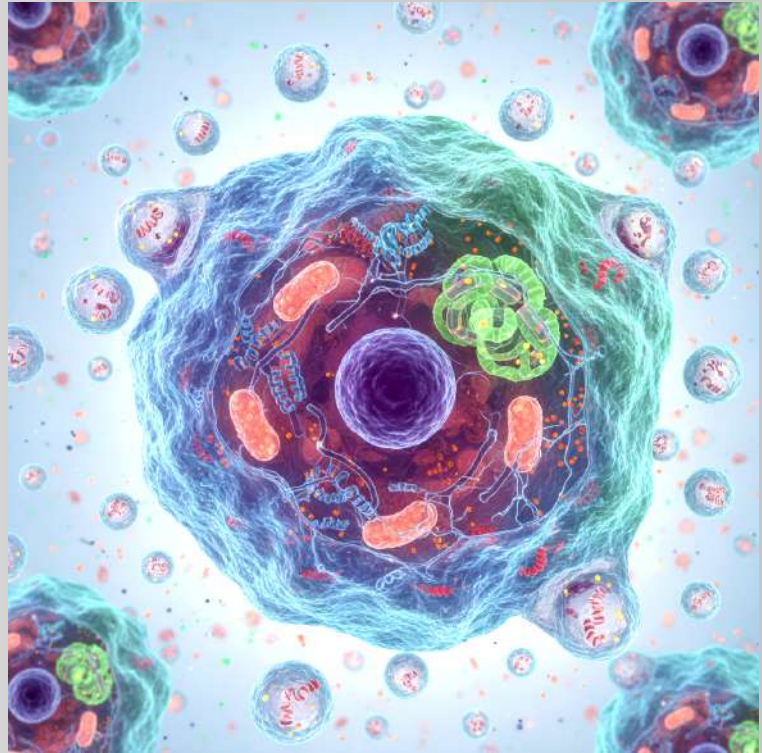
- **Anti-inflammatory Effect:** MSCs secrete anti-inflammatory cytokines such as IL-10 and TGF- β , and regulate immune balance in autoimmune and chronic inflammatory diseases.
- **Immunomodulatory Effect:** MSCs can suppress excessive immune system responses without inducing total immunosuppression. Therefore, they are utilized in the treatment of Graft-versus-host disease (GVHD) and various autoimmune diseases, including Rheumatoid Arthritis, Multiple Sclerosis, Systemic Lupus Erythematosus (SLE), and Inflammatory Bowel Disease (IBD).
- **Regeneration and Tissue Repair:** Mesenchymal stem cells promote tissue repair mechanisms through growth factors and exosomes.
- **Angiogenic Effect:** They secrete factors such as VEGF and PDGF, promoting neovascularization and increasing tissue perfusion.
- **Anti-apoptotic Effect:** They reduce cell loss in damaged tissues and supports tissue regeneration.



EXOSOMES

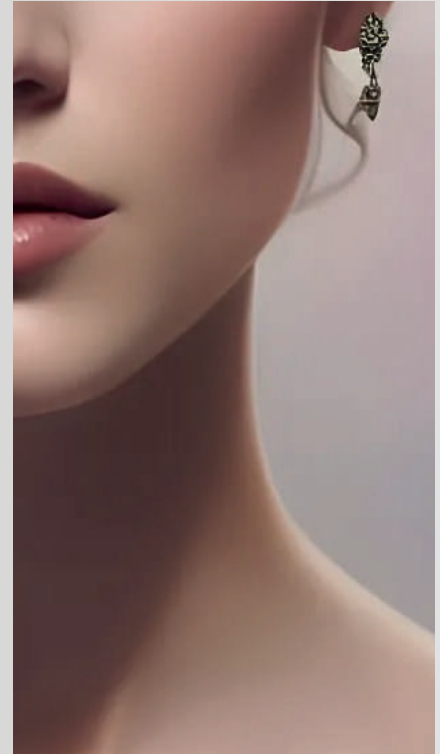
Cellular Signal of Youth

Exosomes are nano-scale extracellular vesicles secreted by cells, serving as carriers for nucleic acids, proteins, lipids, and other bioactive substances that play a role in the body's physiological and pathological processes.



BENEFICIAL EFFECTS OF EXOSOMES

- They repair damaged tissues by promoting **cellular regeneration**.
- They regulate biological processes by facilitating **communication between cells**.
- They reduce systemic inflammation through their **anti-inflammatory effects**.
- They regulate immunological processes through their **immunomodulatory activity**.
- They regenerate vascular structures and regulate blood circulation by promoting **angiogenesis**.
- **They renew and rejuvenate the skin**, providing a more vibrant and youthful appearance.
- **They increase collagen and elastin synthesis**, restoring elasticity to the skin. They provide a lifting effect.



Miron RJ, Estrin NE, Sculean A, Zhang Y. Understanding exosomes: Part 2-Emerging leaders in regenerative medicine. Periodontol 2000. 2024;94(1):257-414. doi:10.1111/prd.12561

CONTENTS OF EXOSOMES

Growth factors are potent signaling molecules that trigger the body's natural repair and regeneration mechanisms.

Cytokines help modulate the immune response by influencing the activation and differentiation of immune cells.

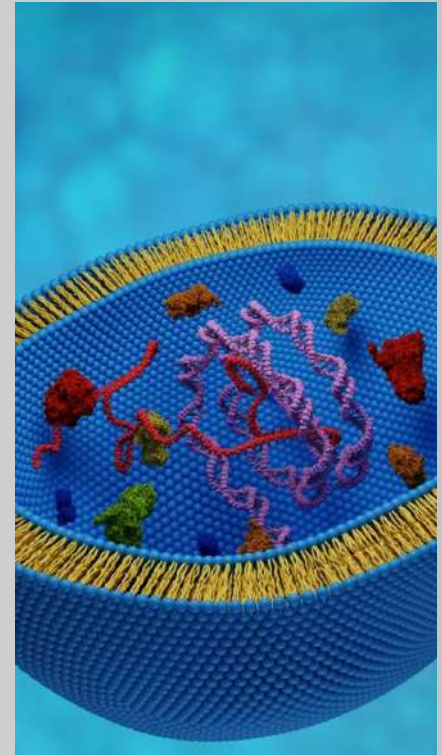
Proteins are the basis of exosomes' biological functions and their role in intercellular communication.

Enzymes are potent molecules that regulate the biological effects of exosomes.

miRNAs initiate tissue regeneration by transmitting the molecular state information of the source cell to both distant and nearby target cells.

ATPs provide energy support to target cells, enabling the regeneration of particularly ischemic tissues.

Miron RJ, Zhang Y. Understanding exosomes:
Part 1-Characterization, quantification and isolation techniques.
Periodontol 2000.2024;94(1):231-256. doi:10.1111/prd.12520



cGMP-CERTIFIED MANUFACTURING

- High Protein Content
- Maximum Biological Activity
- Negative for Endotoxins
- Sterile Filtration and Manufacturing
- Comprehensive Quality Control Testing



AREAS OF USE

- Dermatology
- Aesthetic Medicine
- Plastic Surgery
- Orthopedics & Physical Medicine and Rehabilitation
- Urology
- Gynecology
- Neurology
- Ophthalmology
- Dental Medicine
- Longevity





CORD-Stem™

Mesenchymal Stem Cells Derived From Umbilical Cord (WJ)

It is a cellular suspension derived from Wharton's Jelly-derived mesenchymal stem cells (WJ-MSCs), containing 5 million MSCs in serum.

Their high regenerative capacity enables these cells to repair, restore, and regenerate damaged tissues.

These cells:

- **Have high immunomodulation activity.**
- **Have the potential to differentiate into cartilage, muscle, bone, tendon, connective tissue, and nerve cells.**
- **Exhibit anti-inflammatory and anti-fibrotic effects.**
- **Have the potential to enhance angiogenesis and circulation.**
- **Provide neuro-regenerative effects and promote the release of trophic factors.**



1-Han Y et al. Mesenchymal Stem Cells for Regenerative Medicine. Cells. 2019;8(8):886.

2-Rodríguez-Fuentes DE et al. Mesenchymal Stem Cells Current Clinical Applications: A Systematic Review. Arch Med Res. 2021;52(1):93-101.

3-Caplan AI. Adult mesenchymal stem cells for tissue engineering versus regenerative medicine. J Cell Physiol 2007;213:341e347.



R-EXOSOME™

Mesenchymal Stem Cell (MSC) Exosome Derived
From Umbilical Cord (WJ)

It facilitates intercellular communication.

By transmitting the properties of source cells to target cells, it regulates biological processes such as inflammation, apoptosis, and regeneration.

It promotes regeneration and tissue repair.

It provides support in a wide range of applications, including musculoskeletal disorders, cardiac damage, nerve regeneration, and wound healing.

It has anti-inflammatory effects.

It has therapeutic effects on various inflammatory diseases by suppressing pro-inflammatory cytokines and enhancing the synthesis of anti-inflammatory cytokines.

It promotes immunomodulation.

It has potential for treating autoimmune diseases by regulating the immune system.

It stimulates angiogenesis.

It contributes to the recovery of ischemic tissues by stimulating the process of new vessel formation.





OXYSOME™

CD34(+) Hematopoietic Stem Cell Exosome

Neovascular activity

It contributes to the formation of a healthier vascular structure by strengthening the vascular endothelium.

Angiogenic effect

It promotes the formation of new blood vessels.

Wound repair

It facilitates rapid wound repair by promoting new vessel formation and the restoration of damaged vessels.

It offers therapeutic potential for the treatment of ischemic diseases.

It restores oxygenation by increasing blood flow in vessels with insufficient oxygen supply.

- Ischemic Stroke
- Myocardial Infarction
- Peripheral Artery Disease
- Retinal Ischemia
- Diabetic Foot Disease
- Ischemic-Based Diseases





IMMUNOSOMETM

Mesenchymal Stem Cell (MSC) Exosome Derived
From Umbilical Cord Blood

Potent immunomodulatory effect

It Suppresses T-cell Proliferation

It helps regulate the excessive proliferation and activation of T-lymphocytes, which play a critical role in immune system overreactions.

It Increases Regulatory T-cell Levels.

It helps to suppress autoimmunity by increasing the differentiation and number of regulatory T-cells (Treg), which maintain immune tolerance and control autoimmune responses.

Anti-inflammatory effect

Reduces Pro-inflammatory Cytokines.

It suppresses the secretion and effects of pro-inflammatory cytokines, such as TNF- α , IL-6, and IL-1, which cause inflammation.

Increases Anti-inflammatory Cytokines.

It increases the production of IL-10 and TGF- β molecules that promote healing and reduce inflammation.

- Vitiligo
- Lupus
- Eczema
- Atopic Dermatitis
- Rheumatoid Arthritis
- Autoimmune Diseases





CORD-Blast™

Fibroblast Cells Derived From Cord Tissue (WJ)

Fibroblasts are the primary cells of the human dermis and synthesize the extracellular matrix that provides the structural integrity of the skin. Dermal fibroblasts are specifically responsible for producing Type I and Type III collagen fibers, as well as elastic fibrils.

Due to increased oxidative stress and the accumulation of senescent cells, fibroblasts in aging skin produce less collagen. These changes result in skin thinning, loss of elasticity, and an increase in wrinkles and sagging.

Fibroblasts derived from cord tissue:

- **Increase collagen and elastin synthesis.**
- **Help tissue repair.**
- **Promote scar healing.**
- **Regulate inflammation.**



1-Boraldi F, Lofaro FD, Bonacorsi S, Mazzilli A, Garcia-Fernandez M, Quaglino D. The Role of Fibroblasts in Skin Homeostasis and Repair. *Biomedicines*. 2024; 12(7):1586.

2-Zhang J, at all Aging in the dermis: Fibroblast senescence and its significance. *Aging Cell*. 2024;23(2):e14054.



FIBROSOME™

Fibroblast Exosomes Derived From Umbilical Cord Tissue

Due to increased oxidative stress and the accumulation of senescent cells, fibroblasts in aging skin produce less collagen. These changes result in skin thinning, loss of elasticity, and an increase in wrinkles and sagging.

Fibroblast-derived exosomes stimulate collagen synthesis and support tissue elasticity and integrity by promoting collagen production and activity through intercellular communication, growth factors, proteins, and miRNAs.

Increase **extracellular matrix** production.

Increase **collagen and elastin** synthesis.

Provide a **lifting effect**.

Regulate **inflammation**.

Support **scar** healing.

Promote **tissue repair**.





FIBRO-Plus™

Fibroblasts +
Fibroblast-derived Exosomes

Fibroblasts are the primary cells of the human dermis and synthesize the extracellular matrix that provides the structural integrity of the skin. Dermal fibroblasts are specifically responsible for producing Type I and Type III collagen fibers, as well as elastic fibrils.

Fibroblast-derived exosomes stimulate collagen synthesis and support tissue elasticity and integrity by promoting fibroblast proliferation and collagen activity through intercellular communication, growth factors, proteins, and microRNAs.

The main benefits are as follows:

- **Enhances collagen and elastin synthesis.**
- **Improves the quality of wound healing by providing collagen and elastin replacement.**
- **Increases angiogenesis.**
- **Has anti-inflammatory effects.**





FIBROSOME-Plus™

Umbilical Cord-Derived Mesenchymal Stem Cell (MSC)
Exosomes + Fibroblast Exosomes

Umbilical cord mesenchymal stem cell-derived exosomes rejuvenate and revitalize the skin through their powerful anti-inflammatory effects.

Fibroblast-derived exosomes stimulate collagen synthesis and support tissue elasticity and integrity by promoting collagen production and activity through intercellular communication, growth factors, proteins, and miRNAs.

Increase **extracellular matrix** production.

Increase **collagen and elastin** synthesis.

Provide a **lifting effect**.

Regulate **inflammation**.

Promote **scar** healing.

Promote **tissue repair**.



FIBROGEL™

Fibroblasts +
Human Blood Plasma Gel

Human Plasma Gel-Enhanced CORD-Blast™ (Fibroblast) is a combined suspension of umbilical cord-derived fibroblasts and plasma gel obtained from the patient's blood, containing 5-7 million cells per 1 ml of plasma gel.

FibroGel™ supports 3D repair and reconstruction in the treatment of scars, wrinkles, tendon repair, and the regeneration of post-inflammatory damaged areas. The plasma gel, the bioskeleton of the filler, is prepared from the patient's plasma and provides a dense medium for the three-dimensional configuration of dermal fibroblasts. The plasma gel provides an immediate volumizing effect, while the fibroblasts synthesize extracellular matrix proteins to support skin rejuvenation.

The filler effect is visible immediately after the first injection and continues progressively from the 3rd month onwards.

Collagen Synthesis - Ensures the structural integrity and strength of skin, tendons, and connective tissue.

Elastin Synthesis - Provides tissue elasticity.

Wound Healing - Activates fibroblasts following injury to initiate the repair of new tissue.

Regulation of Inflammation - Activates immune cells by secreting cytokines and growth factors.

Extracellular Matrix Remodeling - Restores old and damaged tissue and supports its 3D reconstruction.



1-Yasemin Oram, At all A novel autologous dermal filler based on cultured fibroblasts and plasma gel for facial wrinkles: Long term results, Journal of Cosmetic and Laser Therapy, 23:5-6, 122-129,

2-Oram Y, Turgut G. Autologous Dermal Filler Derived from Cultured Dermal Fibroblasts and Plasma Gel (FibroGel): One-year Follow-up of a Case. J Cutan Aesthet Surg. 2019;12(4):237-239.



HAIRSOME™

Hair Follicle Derived Stem Cell Exosomes

HAIRSOME™ promotes the formation of new blood vessels through intercellular communication, growth factors, proteins, and miRNAs. It exerts this effect via angiogenic factors that regulate the hair growth cycle.

It can initiate the **anagen** (growth) phase of the hair and delay the **catagen** and **telogen** phases, which represent the regression and resting stages.

- HAIRSOME activates hair follicle stem cells.
- An increase in hair growth rate and thickening of the hair begins.
- Cellular apoptosis is inhibited, resulting in stronger hair follicles.
- Hair loss is reduced, while hair density and vitality are enhanced.





HAIRSOME-Plus™

Umbilical Cord Tissue-Derived Mesenchymal Stem Cell (MSC)
Exosome + Hair Follicle Derived Exosomes

Umbilical cord tissue mesenchymal stem cell-derived exosomes regenerate and strengthen hair follicles through their potent anti-inflammatory effects. It also enables the regeneration of the blood vessels that nourish the hair follicles through its angiogenic effect

It can initiate the **anagen** (growth) phase of the hair and delay the **catagen** and **telogen** phases, which represent the regression and resting stages.

- HAIRSOME-Plus™ activates hair follicle stem cells.
- An increase in hair growth rate and thickening of the hair begins.
- Cellular apoptosis is inhibited, resulting in stronger hair follicles.
- Hair loss is reduced, while hair density and vitality are enhanced.



CHONDROSOME™

Cartilage Tissue-Derived Chondrocyte Exosomes



Chondrocytes maintain the extracellular matrix (ECM) and synthesize the cartilage matrix.

Chondrocytes are primarily responsible for synthesizing collagen and the extracellular matrix (ECM), which ensures the maintenance of articular cartilage.

It offers a therapeutic approach for cartilage regeneration by inducing chondrogenesis.

It plays a crucial role in maintaining homeostasis by providing cushioning for joint movements.

- **Cartilage Degeneration**
- **Ligament Injuries**
- **Tendon Injuries**
- **Tendinopathy**
- **Tendinitis**





EXO-Joint™

Umbilical Cord Tissue-Derived Mesenchymal Stem Cell (MSC)
Exosome + Cartilage Tissue Exosome

Umbilical Cord Tissue-Derived Mesenchymal Stem Cell Exosomes

exhibit a regenerative effect. Through its potent immunomodulatory and regenerative effects, along with its anti-inflammatory activity, it plays a key role in the resolution of inflammation in the joints.

Chondrocyte-Derived Exosomes

offer a therapeutic approach for cartilage regeneration by inducing chondrogenesis.

- Osteoarthritis
- Bone Fractures
- Avascular Necrosis
- Tissue Damage
- Loss of Function
- Inflammation
- Cartilage Degeneration
- Ligament Injuries
- Tendon Injuries
- Tendinopathy
- Tendinitis
- Fibromyalgia



P-Stem Shot™

MSC Exosome + CD34(+) Hematopoietic
Stem Cell Exosome



It enables the penis to regain its normal functions through the regenerative and angiogenic effects.

The main mechanisms are as follows:

- Induction of angiogenesis,
- Increased expression and activity of endothelial mediators,
- Activation of endothelial nitric oxide synthase (eNOS),
- An increase in neuronal nitric oxide synthase (nNOS) and neurofilaments,
- The preservation and growth of smooth muscle,
- Prevention of cavernosal fibrosis.



FERTISOME™

Mesenchymal Stem Cell (MSC) Exosome Derived
From Umbilical Cord Blood



FERTISOME™ helps to promote ovarian regeneration and reduce inflammation in cases of ovarian insufficiency or inflammation.

When injected into the ovaries, it stimulates the regeneration of granulosa cells and protects follicles from environmental changes and inflammation.

It has regenerative efficacy in the treatment of infertility associated with ovarian insufficiency.

It is also used for genital aesthetic purposes.





NEUROSOMETM

Dental Pulp-Derived Exosomes

NEUROSOMETM exhibits neuroprotective and neurogenerative activity. It also induces an immunomodulatory response.

It exhibits a variety of activities, such as enhancing angiogenesis, modulating inflammation and immune responses, promoting cell proliferation and migration, reducing apoptosis and senescence, and supporting neuroprotection.

In addition, it facilitates the secretion of growth factors by stimulating endogenous neurons and the vascular system, and contributes to neuroregenerative recovery by exhibiting anti-inflammatory activity.





NEUROSOME-Plus™

Umbilical Cord Tissue-Derived Mesenchymal Stem Cell (MSC)
Exosome + Dental Pulp Derived MSC Exosomes

NEUROSOME-Plus™ exhibits neuroprotective and neurogenerative activity. It also induces an immunomodulatory response.

It exhibits a variety of activities, such as enhancing angiogenesis, modulating inflammation and immune responses, promoting cell proliferation and migration, reducing apoptosis and senescence, and supporting neuroprotection.

In addition, it facilitates the secretion of growth factors by stimulating endogenous neurons and the vascular system, and contributes to neuroregenerative recovery by exhibiting anti-inflammatory activity.

- Traumatic Brain Injury
- Peripheral Nerve Injury
- Spinal Cord
- Alzheimer
- Parkinson's
- MS
- Dementia
- ALS
- Cerebral Palsy





R-EXOSOMETM

Mesenchymal Stem Cell (MSC) Exosome Derived
From Umbilical Cord Tissue

Intra-Nasal Exosome

By enabling direct delivery to brain and central nervous system tissues, it ensures more effective targeting of the central nervous system

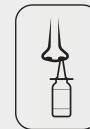
It exhibits **anti-inflammatory** activity.

It promotes the resolution of inflammation.

It prevents cell death with its **anti-apoptotic effect**.

Through its **angiogenic** effects, it promotes the regeneration of damaged vessels and facilitates the formation of new blood vessels.

It protects and regenerates nerve cells through its **neuroprotective and neuroregenerative effects**.

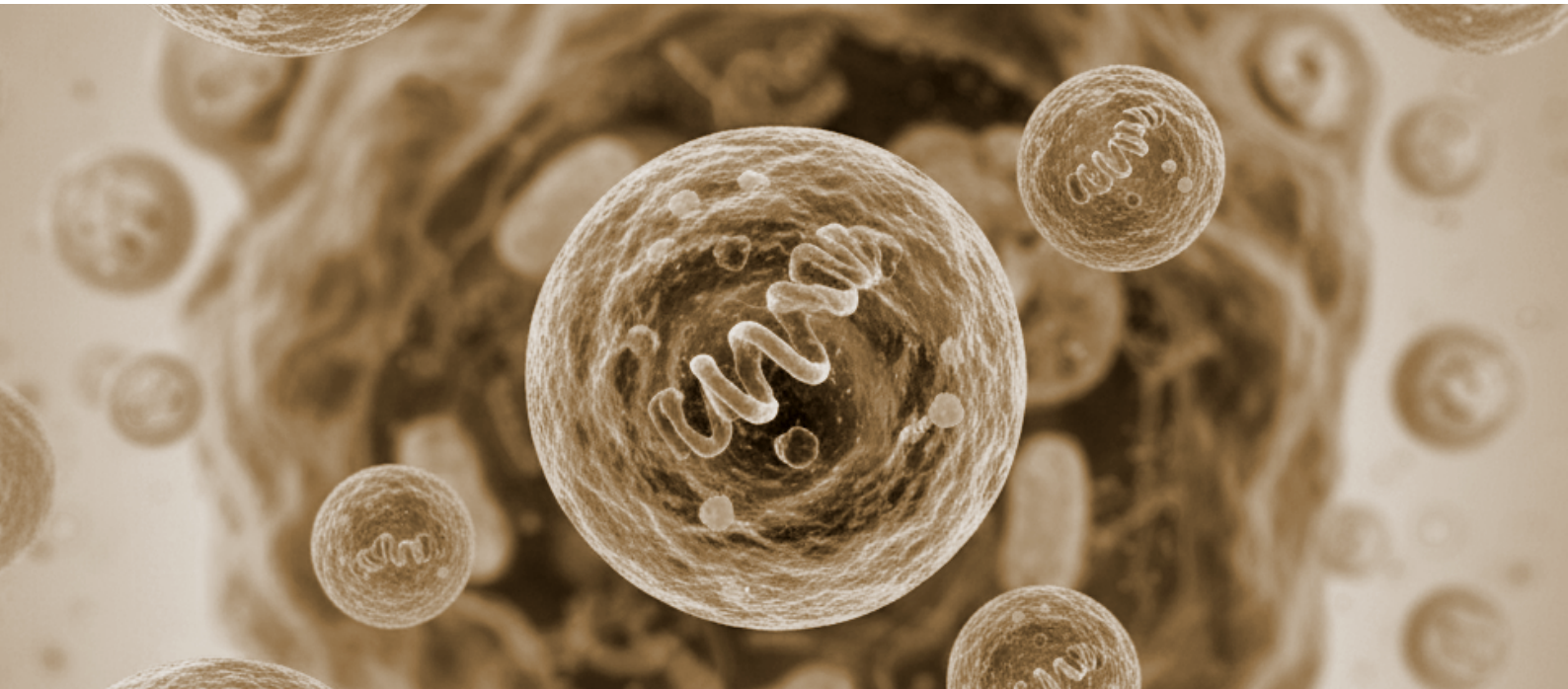


Our products are transported via 'Cold Chain' in accordance with medical standards.

- The storage temperature for cell-containing products is 4-8°C for 24 hours.
- The storage temperature for exosome-containing products is -20°C for 6 months.
- The storage temperature for exosome-containing products is 4-8°C for 48 hours.

GENKORD

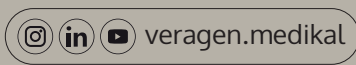




Biotechnology and Healthcare Products



VERAGEN



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