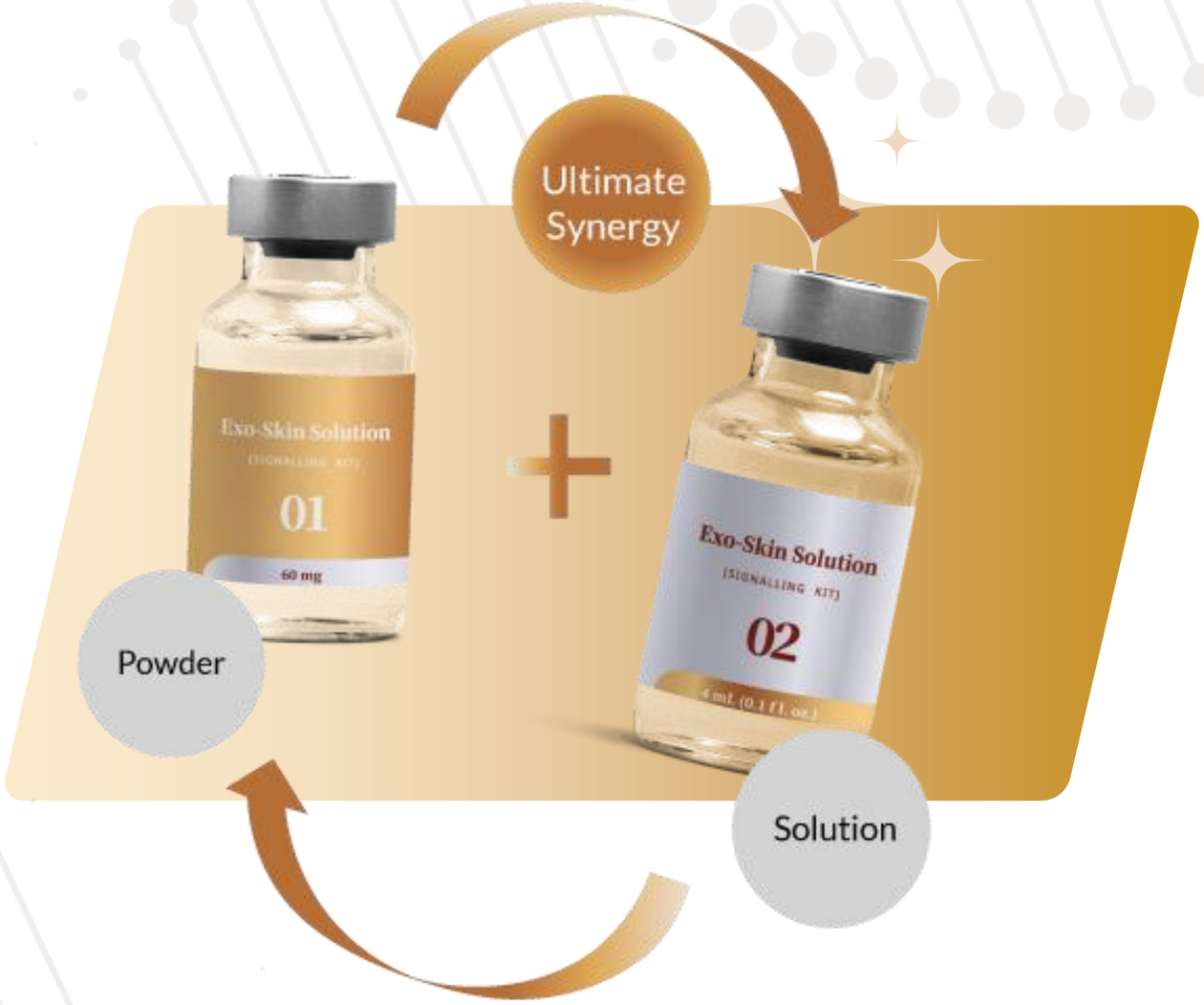
Regenex

Ultimate Exo-Skin Solution



Powder: 60 mg x 5 ea
Solution: 3 mL (0.1 fl. 0z.) 5 ea

BIO ADVANCED FORMULA + FREEZE DRYING TECHNOLOGY

Regenex

Ultimate Exo Skin Solution

[SIGNALLING KIT]
Powder: 60 mg | Solution: 3 mL

Regenex Ultimate Exo Skin Solution is a premium bio-stimulating complex made uniquely to improve skin condition and texture. Our advanced formula contains bio-stimulating complex-enriched UC-MSC, Growth Factor Complex, and other essential ingredients that recover the skin's strength, keep it well-hydrated, and promote a radiant and youthful look.

- BRC-Stable GF Complex
- Young Stem Cell Derived Exosomes
- Power &Solution Synergy

BIO ADVANCED FORMULA + FREEZE DRYING TECHNOLOGY

Regenex

Ultimate Exo Skin Solution

EFFICACY OF ACTIVE INGREDIENTS

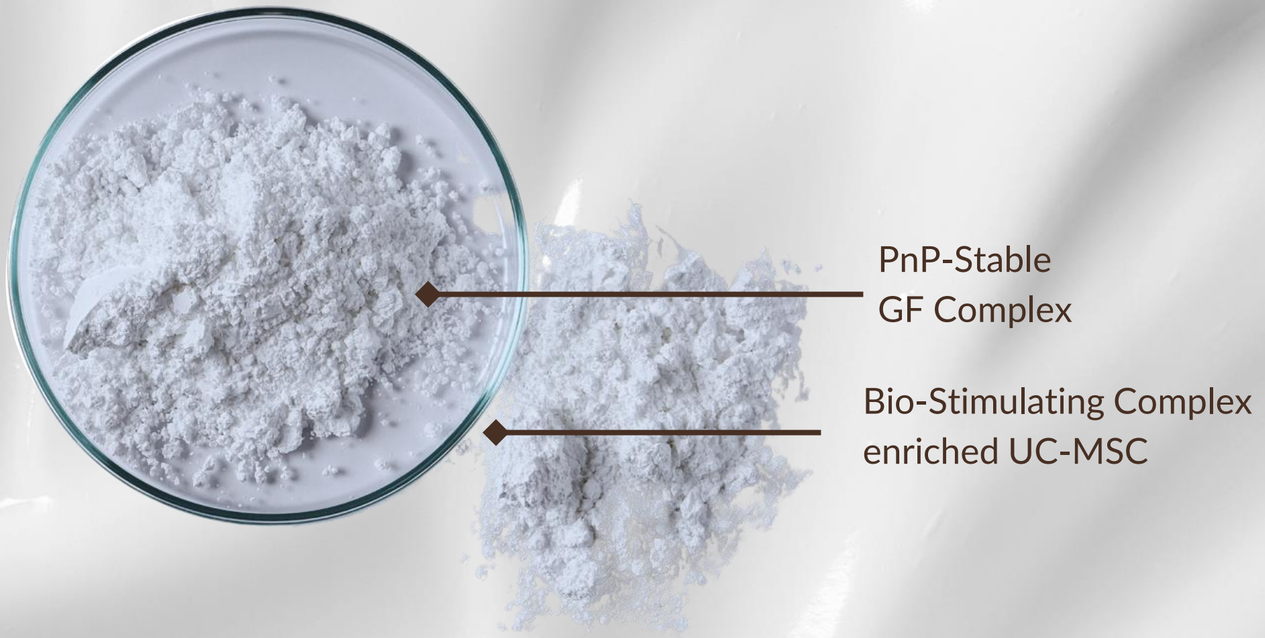
- Improve Skin Condition and Texture
- Help Diminish Signs of Aging
- Recover Skin’s Strength and Firmness
- Keep Skin Well-Hydrated
- Promotea Radiant and Youthful look

Leader in Protein and Peptide Technology

BIO ADVANCED FORMULA + FREEZE DRYING TECHNOLOGY

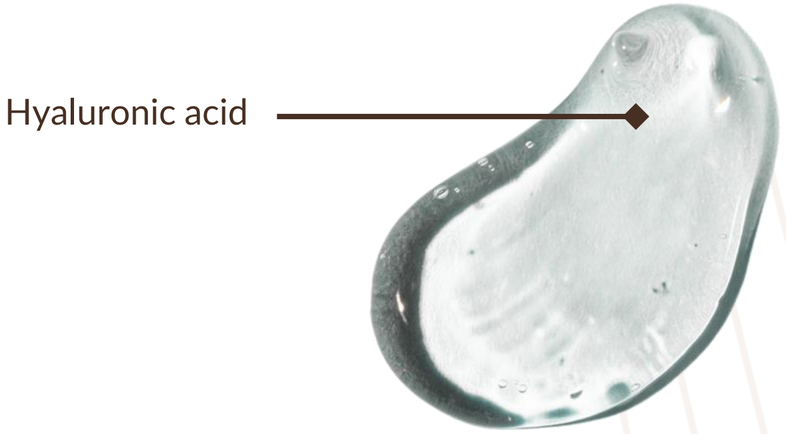
Regenex

Ultimate Exo Skin Solution



KEY INGREDIENTS:

• Hyaluronic Acid • Minerals • Growth Factor Complex
• Amino Acids • Vitamin • Peptides • Coenzymes



PnP-Stable Growth Factors

- Highly Stable and Long-Acting
- Internationally Patented

01

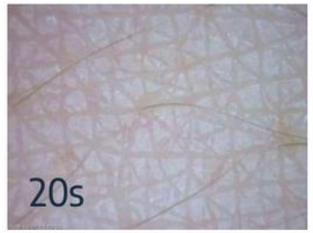
KEY INGREDIENTS

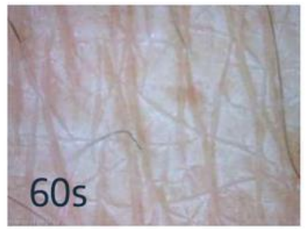
What is Aging?

- Aging occurs when cells lose their ability to divide, resulting in:
  - Decrease in the ability to manage stress
  - Decline in the ability to maintain homeostasis
  - Increase in the possibility of contracting diseases

Skin Regeneration

- The human body contains many different growth factors (GFs) that promote skin regeneration
  - Examples: EGF, FGF, IGF, KGF, VEGF, SCF, etc
- Once people pass their 20s, the amount of growth factors in their skin decreases, which slows down the speed of skin regeneration and eventually leads to wrinkle formations
- The cell regeneration cycle for people in their 20s is about 4 weeks, but the cycle increases to at least 6 weeks once people reach their 40s
  - Growth factors should be supplemented to prevent aging and to maintain the level of growth factors at age 20s





Skin Regeneration & Bio-Stimulating Complex

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Cosmetics Functions of Bio-Stimulating Complex

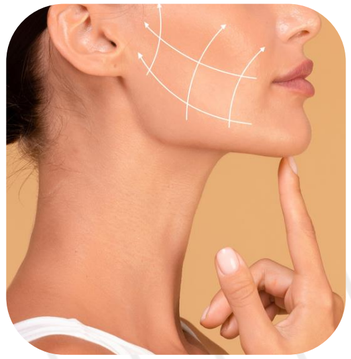
Leader in Protein and Peptide Technology

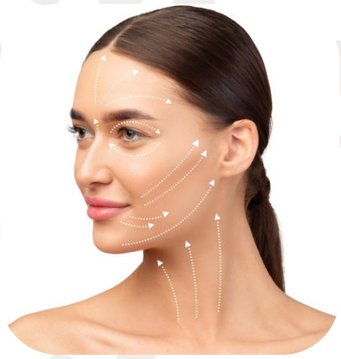
What is a Growth Factor?

A naturally occurring substance capable of stimulating cellular growth, proliferation, and cellular function. Usually, it is a protein or a steroid hormone and is important for regulating various cellular processes.

Cosmetic Functions of Growth Factors:

- Actively generates new skin cells for anti-wrinkle & and anti-aging effects
- Replenish and nourish the skin texture for a revitalized and whitened skin appearance
- Reduces free radicals and inhibits skin aging through potent antioxidant activities
- Stimulates hair follicles to induce hair growth, potentially
- Accelerates wound healing and eliminates scars by forming new cells



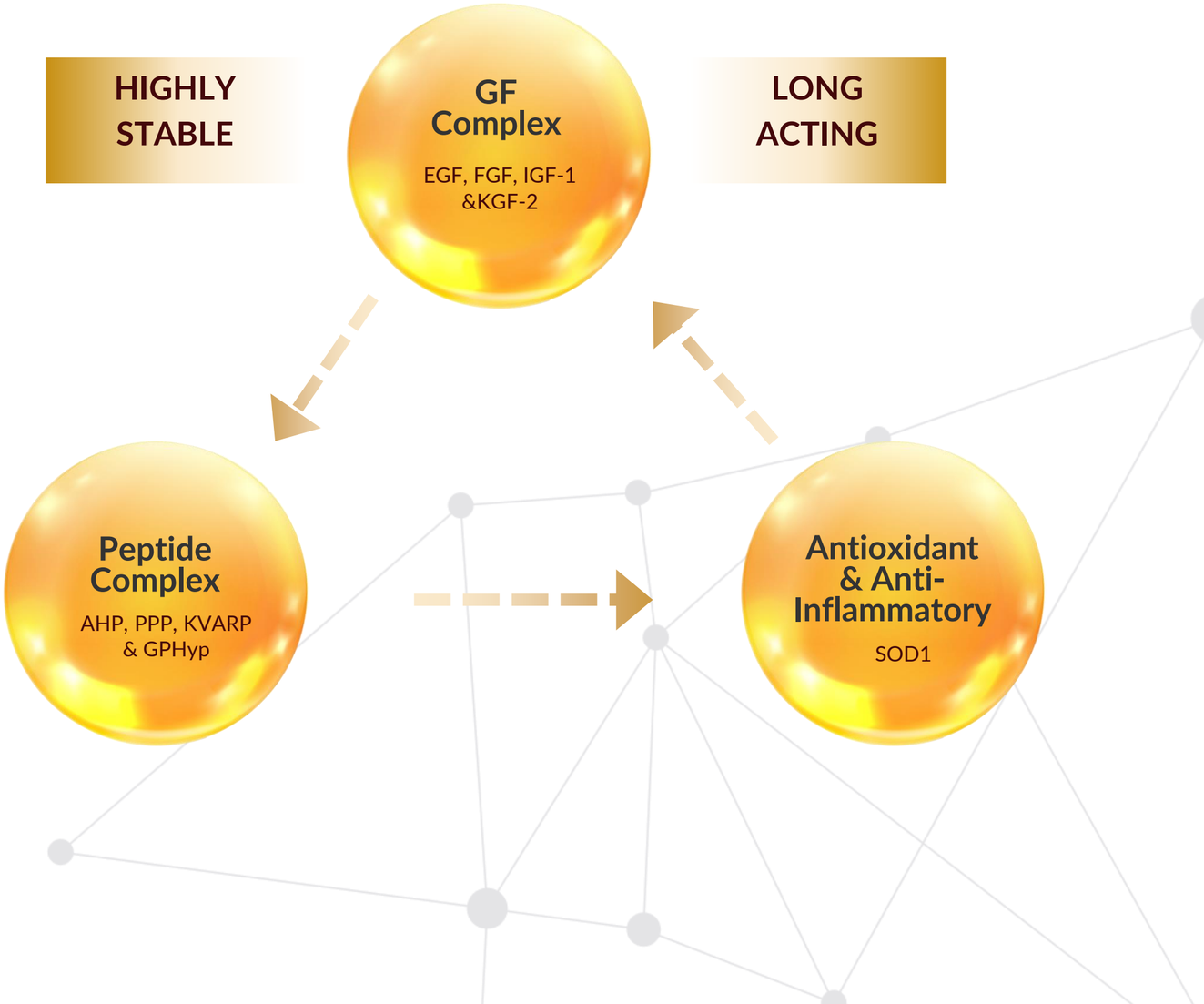


PnP-Stable GF Complex

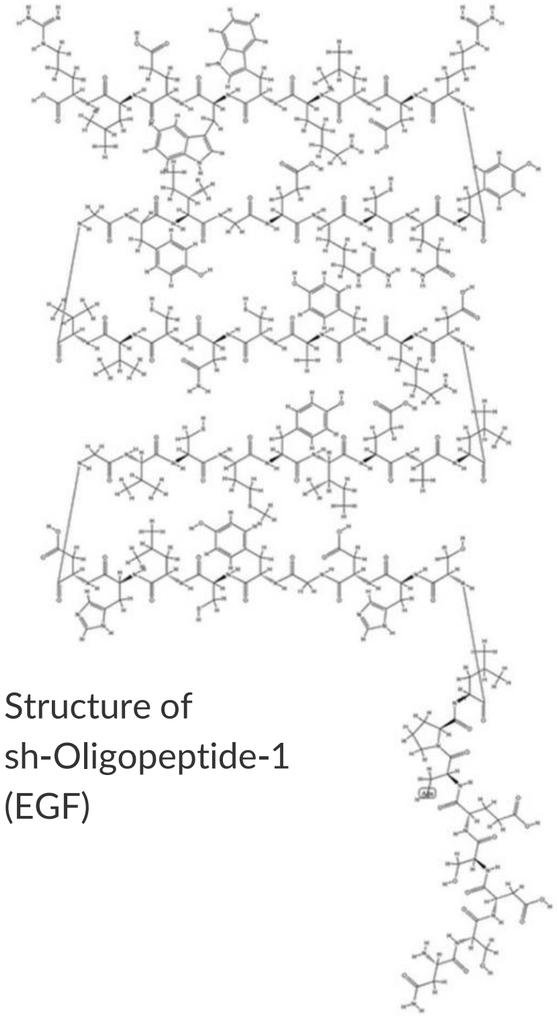
For Skin Care

Leader in Protein and Peptide Technology

Skin Care



Prevalent Issues of Growth Factors



Structure of sh-Oligopeptide-1 (EGF)

01
Expensive to Produce

02
Weak Thermostability

03
Unstable in Aqueous Solutions

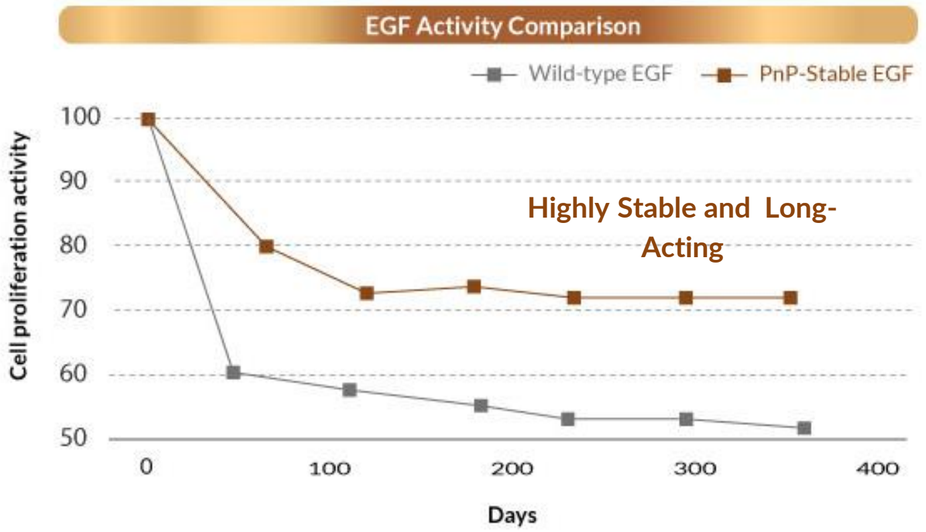
04
Easily Loose Activity

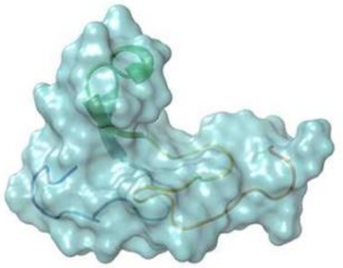
05
Available only in Powder Form

06
Stored at Low Temperature

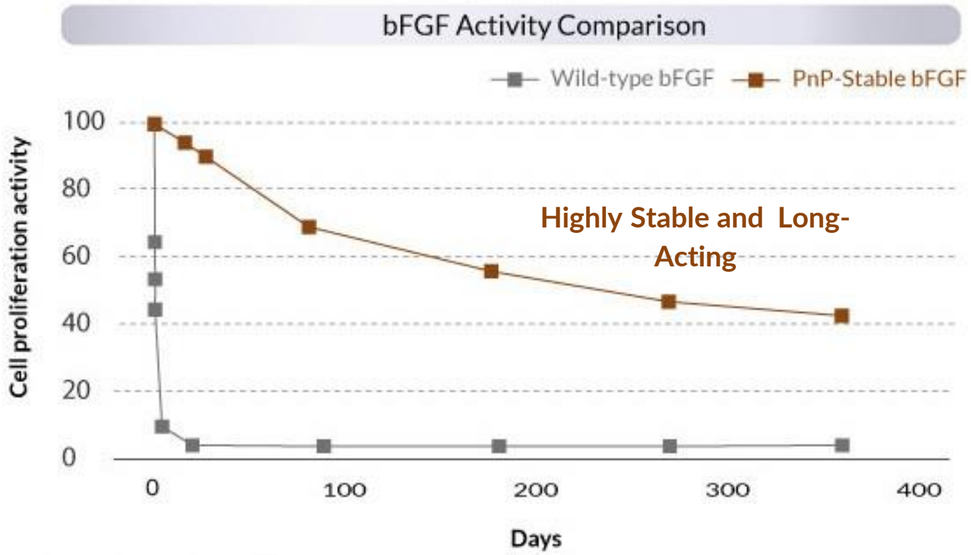
COSTLY AND INCONVENIENT

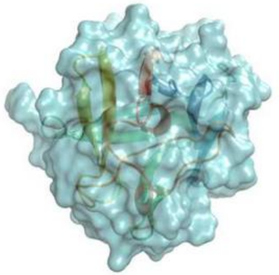
PnP-Stable Growth Factors





PnP-Stable EGF

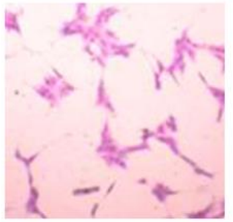
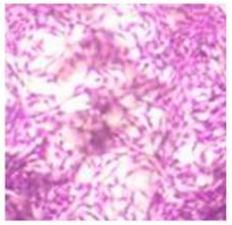
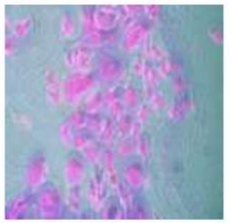
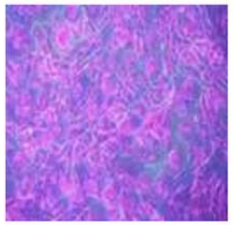




PnP-Stable bFGF

PnP-Stable Growth Factors

Cell Proliferation Test

	Control	GF Complex (3ng/ mL)
Fibroblast		
Keratinocyte		

BRC-Stable EGF and bFGF Patents

Leader in Protein and Peptide Technology

Publications and Patents

“HIGHLY-STABLE” Growth Factor Mutants

1. “Development of Stabilized Growth Factor-Loaded Hyaluronate– Collagen Dressing (HCD) matrix for impaired wound healing” Biomaterials Research (2016) 20:1-7
2. “Effects of structurally stabilized EGF and bFGF on wound healing in type I and type II diabetic mice” Acta Biomaterialia (2018) 40:325-334
3. “Development of stabilized dual growth factor-loaded hyaluronate collagen dressing matrix” Journal of Tissue Engineering (2021) 12:1- 13
4. “Highly stabilized epidermal growth factor mutants” KP 10-1519118
5. “Highly stabilized epidermal growth factor mutants” USP 9102755
6. “Human basic fibroblast factor-2 mutants with high stability and use of the same” KP 10-1754272
7. “Human basic fibroblast factor-2 mutants with high stability and use of the same” KP 10-1778202
8. “Human fibroblast growth factor-2 mutants with increased stability, and use thereof” USP 11207257
9. “Human fibroblast growth factor-2 mutants with increased stability, and use thereof” JP 6665281
10. “Highly-stable mutant of basic fibroblast growth factors with modified N-terminal amino acid region, and uses thereof” KP 10-1891678

Bio-stimulating complex

Enriched UC-MSC1

- Young Stem Cell Conditioned Media
- Young and Outperforming

1) Umbilical Cord derived Mesenchymal Stem Cells

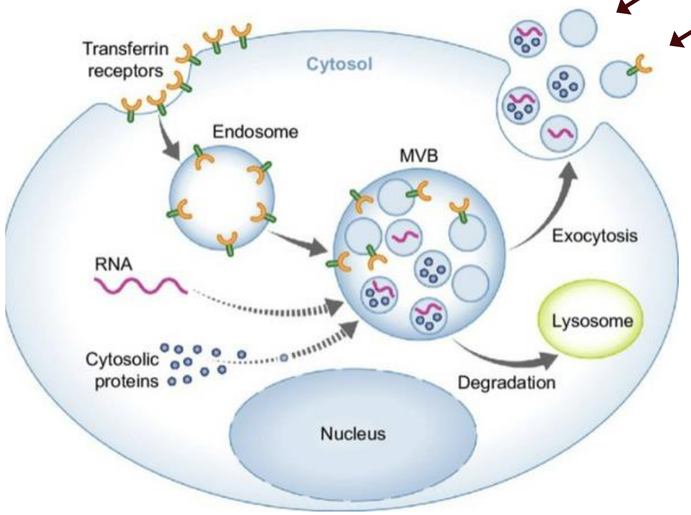
02

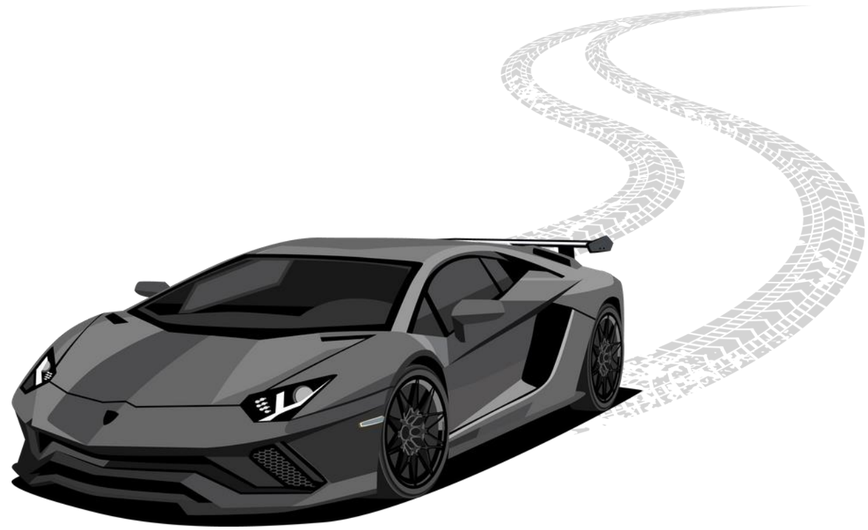
KEY INGREDIENTS

What's inside **the UC-MSC?**

Which substance inside the US-MSC works for skin rejuvenation?

Bio-stimulating complex (~40 to 160 nm) are produced from various cells and contains various biomolecules





What's inside the UC-MSC?

Composition of Bio-Stimulating Complex

EGF

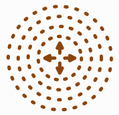
Epidermal Growth Factor

It promotes the skin growth and regeneration, acts anti-infection, prevents skin aging, and improves wrinkle and troubles

HGF

Hepatocyte Growth Factor

It is a growth factor that acts on the epidermal cells and hypodermal cells which need division and growth while circulating through blood stream after being excreted by mesenchymal cells in diverse tissues.
it regenerates damaged skin and iniured skin



PDGF

Platelet-derived Growth Factor

It is a blood platelet-derived proliferation factor. It is an important factor for the anti aging and skirtregeneration, which helps the cell division and involves in the formation of platelets with VEGF.

GDF11

Growth and Differentiation Factor 11

it helps the skin regeneration and elasticity by the proliferation of fibroblast, collagen and elastin.

KGF

Keratinocyte Growth Factor

It is an important growth factor that stimulates the conversion, growth and bioactive of keratinocytes that composes the keratins of skin.

FGF-2

Fibroblast Growth Factor 2

It is a promoting factor of skin regeneration that helps cell growth. It promotes the skin growth and regeneration, acts anti-infection, prevents skin aging, and improves wrinkle and troubles

VEGF

Vascular Endothelium Growth Factor

It is a function to increase the skin composition by inducing the growth and division and promoting the movement of blood cells

TGF-b

Transforming Growth Factor-beta

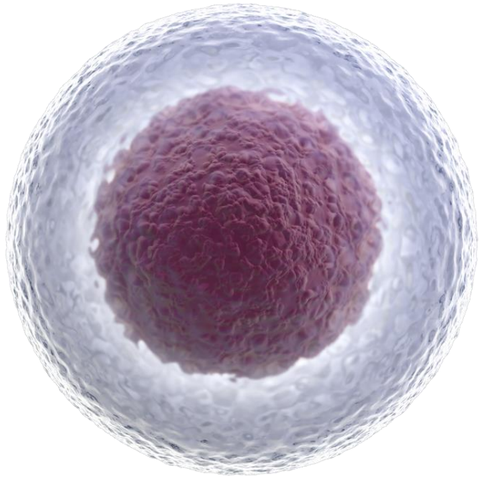
It is a transgenic growth factor. It promotes the synthesis of collagen I &III, the TGF-b regeneration of skin tissue and the recovery of injured skin

AD-MSC vs. UC-MSC

Stem Cells Types Comparison

Others	Regenex
Adipose-derived Mesenchymal Stem Cells **(AD-MSC)**	Adipose-derived Mesenchymal Stem Cells **(AD-MSC)**
POOR Proliferation (Regeneration) Capability	**OUTSTANDING** Proliferation (Regeneration) Capability
POOR Healing Capability	**OUTSTANDING** Healing Capability
Produce exosomes with **LOW** anti-aging, skin regeneration, and anti-inflammatory effects	Produce exosomes with **EXCELLENT** anti-aging, skin regeneration, and anti-inflammatory effects

Young Stem Cells from the Umbilical Cord Wharton's Jelly



UC-MSC

(Umbilical Cord derived Mesenchymal Stem Cells)

OUTSTANDING CHARACTERISTICS OF UC-MSC

01

Young Stem Cells that haven't gone through many cell divisions

02

Produce Superior Bio-stimulating complex Proven Effective in Anti-aging, Skin regeneration, and Anti-inflammatory.

03

Excellent Cell Proliferation (Regeneration) Activity

04

Low Immune Rejection

Regenex

(Derived from BRC-Stable bFGF Treated UC-MSC)

Bio-Stimulating Complex is a type of nano-sized (40-160 nm) extracellular vesicle (EV) produced and secreted from various cells in our body and found in multiple body fluids, such as blood and urine. It Includes proteins, nucleic acids, metabolites, etc., derived from mother cells.

Applications:

- New intercellular signaling substance
- Drug delivery substance
- Ingredient for cosmetics

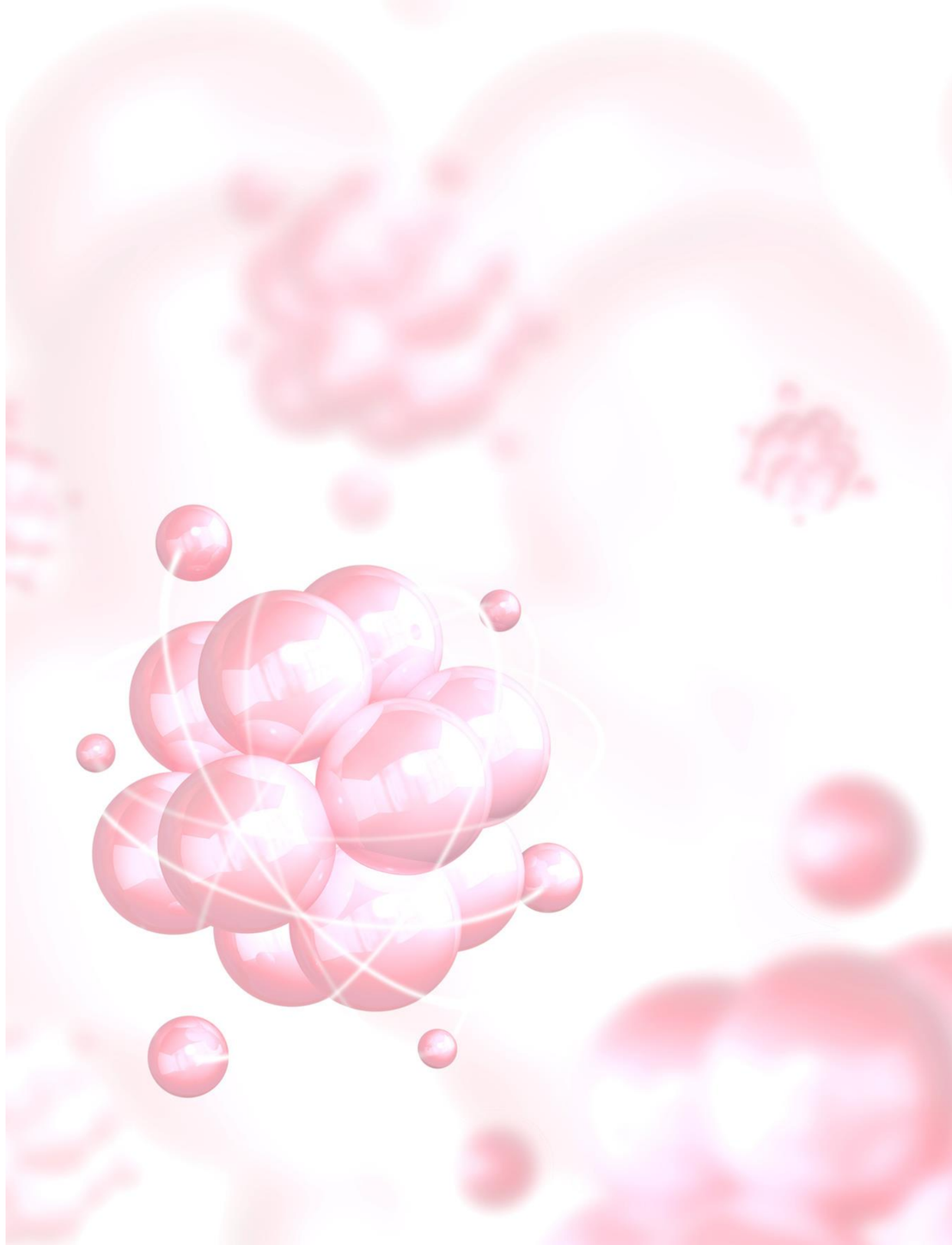
OUTSTANDING CHARACTERISTICS OF STEM-in™ Ex

0 MORE
Particle Number
(15 x 10^9/mL)

0 SMALLER
Particle Size
(109.8nm)

0 HIGHER
Stability

0 31% HIGHER
Anti-inflammatory Activity



Publications and Patents

BRC-stable bFGF treated US-MSC

1. Thermostable Human Basic Fibroblast Growth Factor(TS-bFGF) Engineered with a Disulfide Bond Demonstrates Superior Culture Outcomes in Human Pluripotent Stem Cell" *Biology 2023, 12, 888.*

2. "Thermostable Basic Fibroblast Growth Factor Enhances the Production and Activity of Human Wharton's Jelly Mesenchymal Stem Cell-Derived Extracellular Vesicles"
Int. J. Mol. Sci. 2023, 24, 16460.

3. "Method for producing stem cell-derived exosomes using high-stable and sustained-active basic fibroblast growth factor variants" *PCT/KR2023/009242*

4. "Culturing method of stem cells using highly stable, active-sustaining basic fibroblast growth factor variants" *PCT/KR2023/009244*

03

WHY REGENEX IS BETTER

TS-bFGF enhance better outcome of Bio-Stimulating Complex

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★ SCI IF: 6.2 (2023)

International Journal of *Molecular Sciences*

MDPI

Article

Thermostable Basic Fibroblast Growth Factor Enhances the Production and Activity of Human Wharton's Jelly Mesenchymal Stem Cell-Derived Extracellular Vesicles

SangRok Park [1,†], SeJong Kim [1,2,†], KyungMin Lim [1,2], YeoKyung Shin [1,2], Kwonwoo Song [1,2], Geun-Ho Kang [1,2], Dae Young Kim [3], Hang-Cheol Shin [3] and Ssang-Goo Cho [1,2,*]

Abstract: Wharton's jelly-derived mesenchymal stem cell (WJ-MSC)-derived exosomes contain a diverse cargo and exhibit remarkable biological activity, rendering them suitable for regenerative and immune-modulating functions. However, the quantity of secretion is insufficient. A large body of prior work has investigated the use of various growth factors to enhance MSC-derived exosome production. In this study, we evaluated the utilization of thermostable basic fibroblast growth factor (TS-bFGF) with MSC culture and exosome production. MSCs cultured with TS-bFGF displayed

	2D WJ-MSCs	3D WJ-MSCs	WT-3D WJ-MSCs	TS-3D WJ-MSCs
Total number of cells	1.09×10^9	1.23×10^9	3.0×10^9	9.71×10^9
Total number of EVs in conditioned cell culture media	2.19×10^{13}	5.88×10^{13}	2.83×10^{14}	1.26×10^{15}
Total number of purified EVs (concentration)	1.02×10^{12} (1.02×10^{10}/mL)	3.02×10^{12} (3.02×10^{10}/mL)	1.40×10^{13} (1.40×10^{11}/mL)	5.82×10^{13} (5.82×10^{11}/mL)

PnP-Stable bFGF treated UC-MSC

bFGF is Essential for Cultivating Stem Cells

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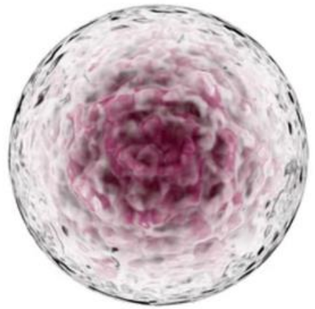
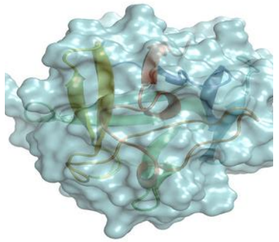
ULTIMATE SYNERGY



Young Stem Cells
(Umbilical Cord derived Mesenchymal Stem Cells)



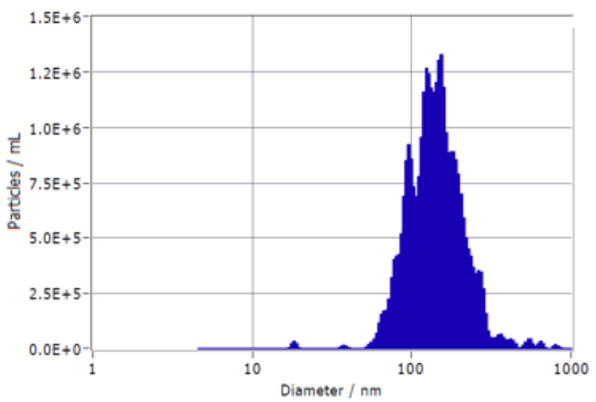
PnP-Stable bFGF
Highly Stable & Long-Acting

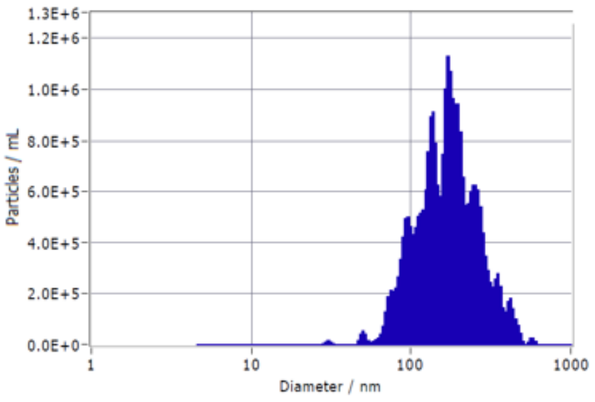
Increased Bio-stimulating complex production yield
Increased-Activity Bio-stimulating complex

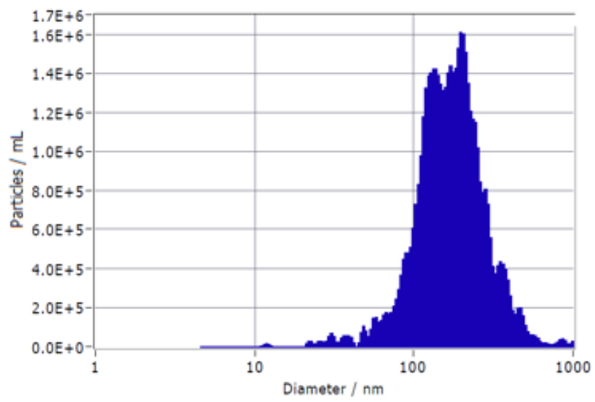
PnP 3D+ is a technology that cultivates Bio-Stimulating complex by processing three-dimensional cell culture technology developed by BRC and patented stabilized bFGF growth factor (BRC-stable bFGF). It can produce very high-quality stem cells that produce highly active Bio-stimulating complex.

√ 1 Superior Number of Particles

√ 2 Smaller Size Particles

Regenex						
Graph						
No. of Particles	3.1E+9 Particles / mL (15.5 Bil/5ml)					
Size	Median	137.6				
	149.6	96.5	127.3			
	61.3%	20.9%	17.8%			

A Brand						
Graph						
No. of Particles	5.4E+8 Particles / mL (2.7 Bil/5ml)					
Size	Median	167.1				
	173.4	136.1	249.7	96.1	345.8	
	38.9%	27.1%	15.9%	10.5%	4.2%	

P Brand						
Graph						
No. of Particles	4.9E+8 Particles / mL (2.45 Bil/5ml)					
Size	Median	167.8				
	200	133.8	353.7			
	51.5%	40.2%	8.3%			

NTA Result by 3-party laboratory (20th Nov, 2023)

Comparison Chart

	Regenex (BRC)	A Brand	P Brand
Volume	60mg powder 3ml ampoule	2ml powder (20mg) 5ml ampoule	2ml powder (20mg) 5ml ampoule
Method	MTS	MTS	MTS
Exosome Origin	Umblilical Cord **(Wharton's Jelly)** Mesenchymal Stem Cell Origin	Adipocyte Stem Cell Origin (Adults)	Umblilical Cord Blood Cell Origin
Conditionned Media	Umbilical cord (Wharton's Jelly) stem cell **treated with stable-bFGF** EXCELLENT anti-aging, skin regeneration and anti-inflammatory effects Reduced Biomarker (P16 P21 PS3	Adipose-derived stem cells **treated with wild-type bFGF**	Umbilical cord blood stem cells treaed with wild-type bFGF
No. of Particles	15 billion -20% pure exosome	5 billion	245 billion
NTA Result	**15.5 billion**	2.7 billion	2.45 billion
Growth Factors	**PnP Stable Growth Factors** Highly Active & Long-Acting Superior Skin Regeneration, Superior Anti-Inflammatory effect, Reduce ROS significantly	Wild Type Growth Factors Weak Themostability Easily Loose Activity	
Storage	Room Tempetature	2˚C ~ 8˚C	

Bio-stimulating complex from BRC-Stable bFGF treated UC-MSC

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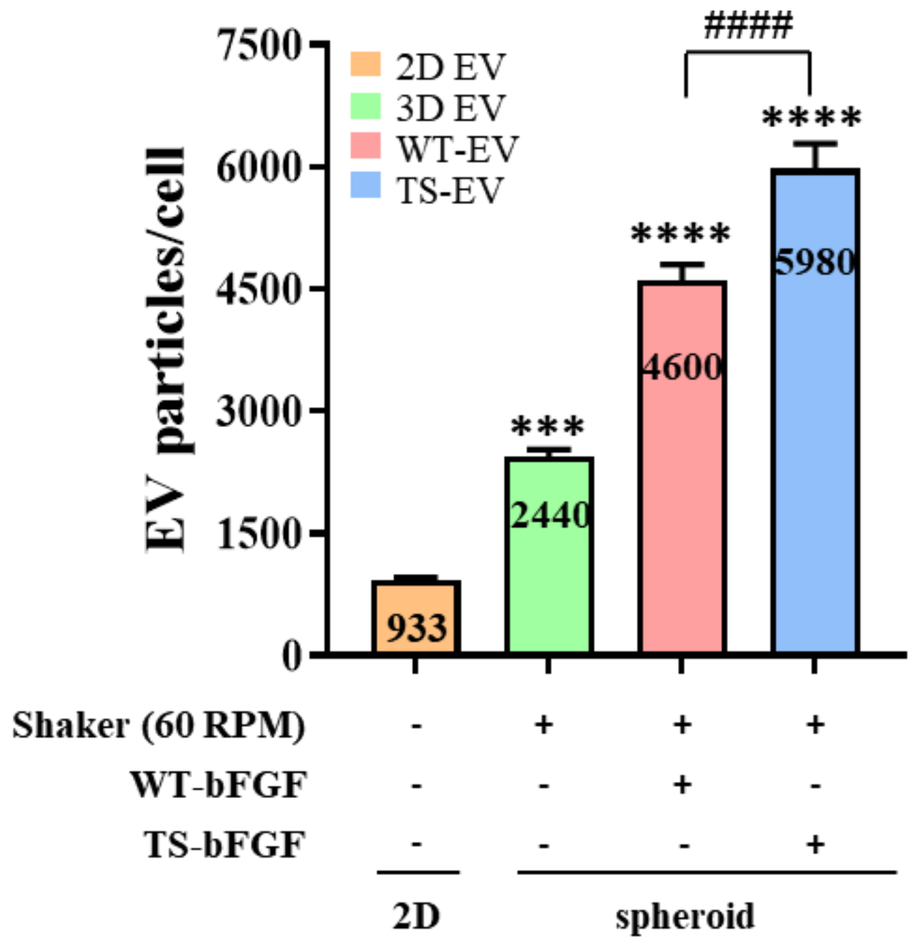
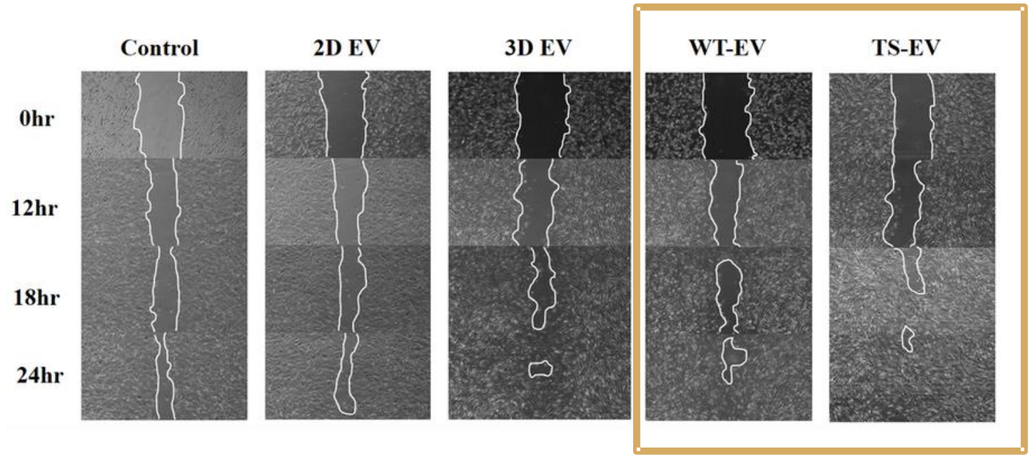
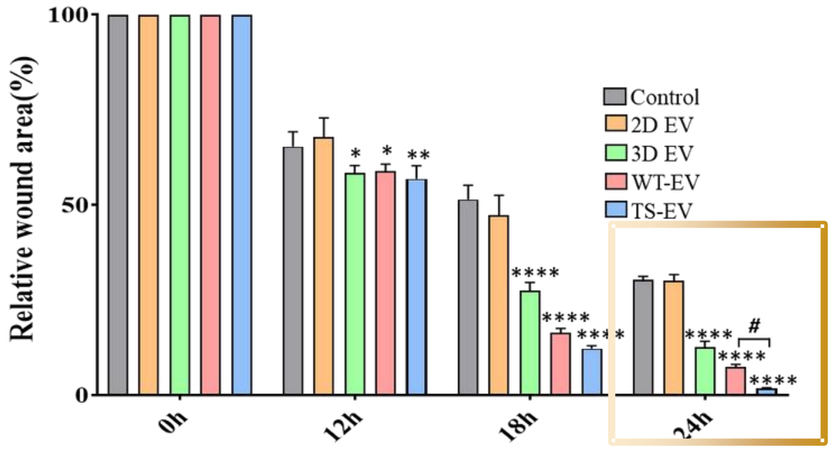
Regenex-Stable bFGF shows much higher number of particles per cell.



WOUND HEALING (REGENERATION)

Bio-stimulating complex from BRC-Stable bFGF treated US-MSC
shows much better wound healing result which explains its great cell regeneration.





Bio-stimulating complex from BRC-Stable bFGF treated UC-MSC

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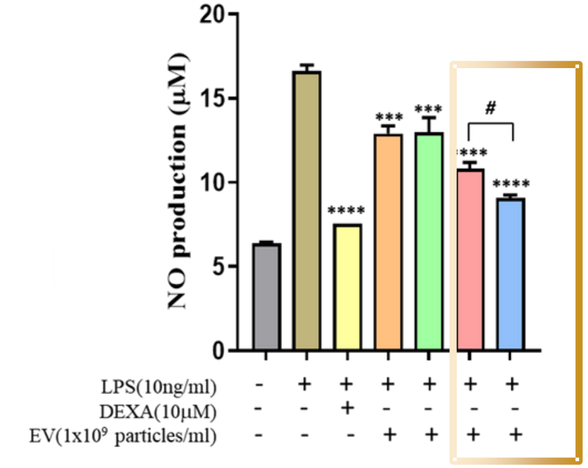
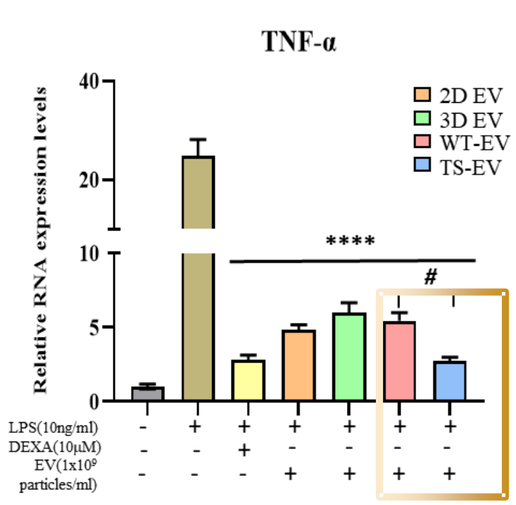
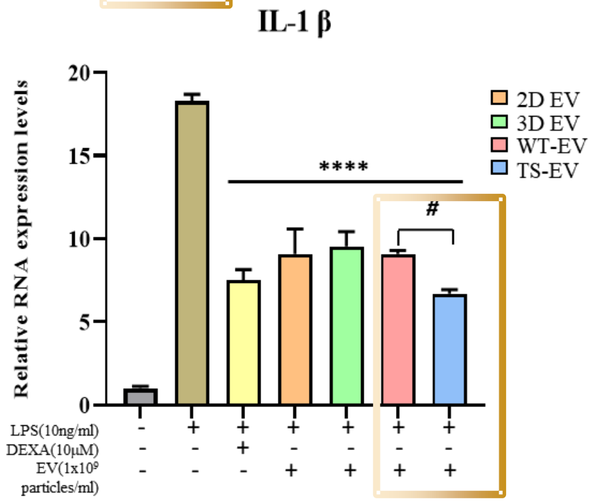
Bio-stimulating complex from BRC-Stable bFGF treated US-MSC
shows much better anti-inflammatory effect when test with inflammatory agents.







Bio-stimulating complex from BRC-Stable bFGF treated UC-MSC

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