

CELLMULA™, NEW PRODUCTS

Growth Factor Therapy
with innovative active ingredients



CELLMULA™, NEW PRODUCTS

new device
with innovative technology



Nov. 2015 Launching

automated-micro needling therapy system
with **electroporation** technology applied
for accelerating the absorption of
medical or cosmetic solutions

CELLMULA™, NEW PRODUCT

Growth Factor Therapy
with innovative active ingredients

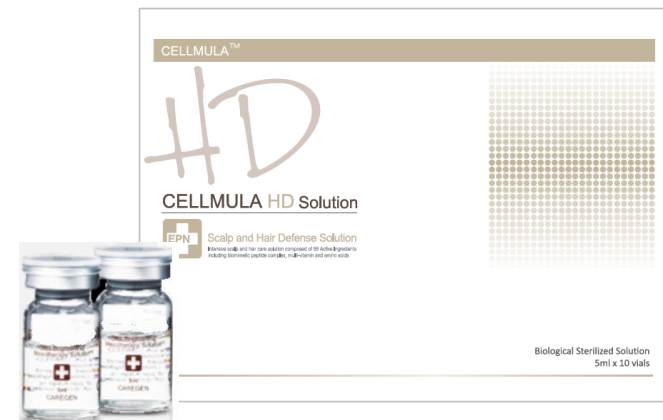
1. Skin Rejuvenation



CELLMULA HSR solution

- Revitalizes dry and dull skin by increasing **Cell proliferation**
- Biomimetic peptide complex **rejuvenate aged skin**
- Pure Hyaluronic Acid **moisturizes skin** and tightens the pore.

2. Hair Regrowth



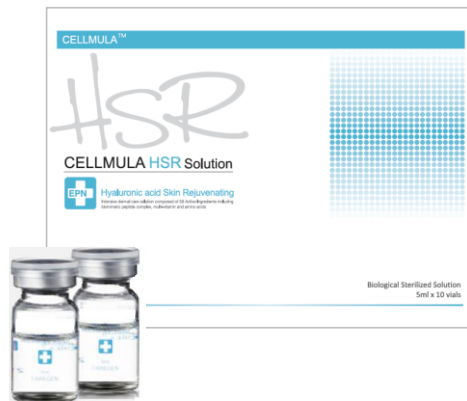
CELLMULA HD solution

- Prevents hair loss and alopecia for both men and women.
- Induces **hair regrowth** by revitalizing the hair follicles and stimulating blood circulation.
- Improves scalp problem and increases **thickness and fullness of hair**.

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1. Skin Rejuvenation



◎ 4 GROWTH FACTORS

- sh-Polypeptide-1 (bFGF)
- sh-Oligopeptide-2 (IGF1)
- sh-Oligopeptide-1 (EGF)
- sh-Polypeptide-2 (TRX)

◎ COPPER TRIPEPTIDE-1

◎ HYALURONIC ACID - Medical Grade HA

◎ 12 VITAMINS

Ascorbic Acid (Vit.C), Retinol (Vit.A), Biotin (Vit.H), Tocopherol (Vit.E), Pyridoxine (Vit.B6), Thiamine Nitrate (Vit.B1), Cyanocobalamin (Vit.B12), Riboflavin (Vit.B2), Niacinamide (Vit.B3), Calcium Pantothenate (Vit.B5), Folic Acid (Vit.M), Inositol (Vit.I)

◎ 24 AMINO ACIDS

Alanine, Aminobutyric Acid, Arginine, Asparagine, Aspartic Acid, Cystine, Glutamine, Glutamic Acid, Glycine, Histidine, Hydroxyproline, Isoleucine, Leucine, Lysine, Methionine, Ornithine, Phenylalanine, Proline, Serine, Taurine, Threonine, Tryptophan, Tyrosine, Valine

◎ 5 MINERALS

Calcium Chloride, Magnesium Sulfate, Potassium Chloride, Sodium Chloride, Sodium Phosphate

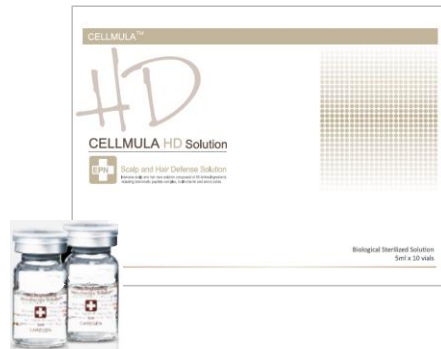
◎ 4 COENZIMES

Thiamine Diphosphate (Cocarcboxylase), CoA (Coenzyme A), FAD (Disodium Flavin Adenine Dinucleotide), NAD (Nicotinamide Adenine Dinucleotide)

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2. Hair Regrowth



◎ 3 GROWTH FACTORS

- sh-Oligopeptide-2 (IGF1)
- sh-Polypeptide-1 (bFGF)
- sh-Polypeptide-9 (VEGF)

◎ COPPER TRIPEPTIDE-1

◎ 12 VITAMINS

Ascorbic Acid (Vit.C), Retinol (Vit.A), Biotin (Vit.H), Tocopherol (Vit.E), Pyridoxine (Vit.B6), Thiamine Nitrate (Vit.B1), Cyanocobalamin (Vit.B12), Riboflavin (Vit.B2), Niacinamide (Vit.B3), Calcium Pantothenate (Vit.B5), Folic Acid (Vit.M), Inositol (Vit.I)

◎ 24 AMINO ACIDS

Alanine, Aminobutyric Acid, Arginine, Asparagine, Aspartic Acid, Cystine, Glutamine, Glutamic Acid, Glycine, Histidine, Hydroxyproline, Isoleucine, Leucine, Lysine, Methionine, Ornithine, Phenylalanine, Proline, Serine, Taurine, Threonine, Tryptophan, Tyrosine, Valine

◎ 5 MINERALS

Calcium Chloride, Magnesium Sulfate, Potassium Chloride, Sodium Chloride, Sodium Phosphate

◎ 4 COENZIMES

Thiamine Diphosphate (Coccarboxylase), CoA (Coenzyme A), FAD (Disodium Flavin Adenine Dinucleotide), NAD (Nicotinamide Adenine Dinucleotide)

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Active ingredients

01 / Growth Factors

sh-Polypeptide-1 (bFGF) basic Fibroblast Growth Factor

sh-Oligopeptide-2 (IGF1) Insulin-like Growth Factor-1

sh-Oligopeptide-1 (EGF) Epidermal Growth Factor (in HSR only)

sh-Polypeptide-9 (VEGF) Vascular endothelial [cell] growth factor (in HD only)

Peptide : sh-Polypeptide-2 (TRX) Thioredoxin (in HSR only) Copper Tripeptide-1

02 / 12 kinds Vitamin

Retinol (Vit.A) Action on skin's density and suppleness by regulating keratinizing and healing processes

Biotin (Vit.H) Action on the metabolism of essential fatty acids

Tocopherol (Vit.E) Anti-radical action by hydrogen peroxide inhibition

Ascorbic Acid (Vit.C), Pyridoxine (Vit.B6), Thiamine Nitrate (Vit.B1), Cyanocobalamin (Vit.B12),

Riboflavin (Vit.B2), Niacinamide (Vit.B3), Calcium Pantothenate (Vit.B5), Folic Acid (Vit.M), Inositol (Vit.I)

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03 /

24 kinds
Amino Acid

Actions on proteinic synthesis by fibroblasts

Alanine, Aminobutyric Acid, Arginine, Asparagine, Aspartic Acid, Cystine, Glutamine, Glutamic Acid, Glycine, Histidine, Hydroxyproline, Isoleucine, Leucine, Lysine, Methionine, Ornithine, Phenylalanine, Proline, Serine, Taurine, Threonine, Tryptophan, Tyrosine, Valine

04 /

5 kinds Mineral

Protects skin from environmental stimulation and balances skin condition

Calcium Chloride, Magnesium Sulfate, Potassium Chloride, Sodium Chloride, Sodium Phosphate

05 /

4 Kinds COENZYMES

Proliferates and vitalizes skin cells

Thiamine Diphosphate (Cocarcboxylase), CoA (Coenzyme A), FAD (Disodium Flavin Adenine Dinucleotide), NAD (Nicotinamide Adenine Dinucleotide)

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How CELLMULA HSR makes skin
rejuvenating and Moisturizing ?

How Growth Factors works?

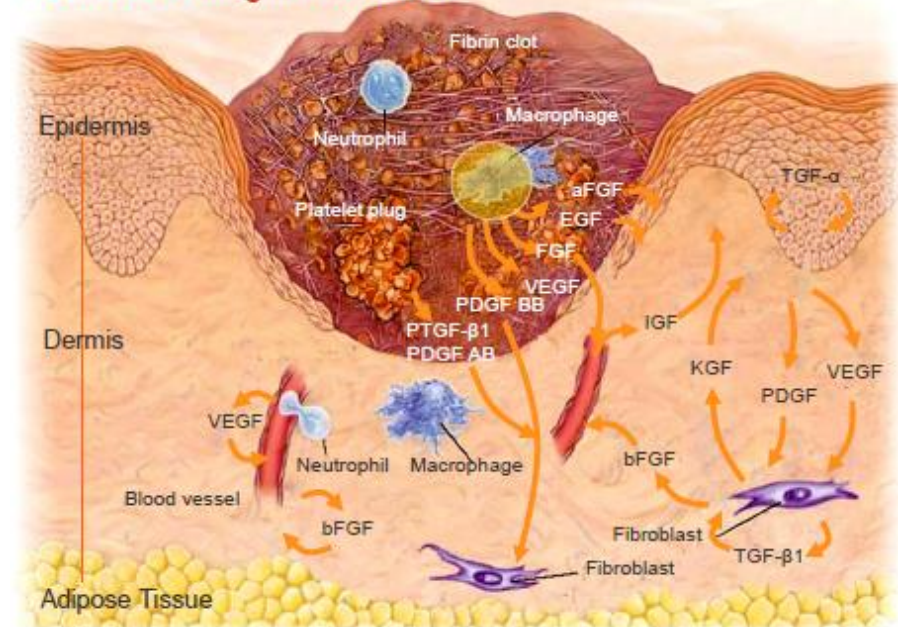
Growth factors can provide clinical benefits acting as
signaling molecules between cells

- sh-Polypeptide-1 >>>> bFGF
- sh-Oligopeptide-2 >>>> IGF-1
- sh-Oligopeptide-1 >>>> EGF

Skin Rejuvenation Process

Various growth factors play important roles in wound healing as well as in skin rejuvenation process.
CELLMULA HSR solution contain the combination of growth factors which reduce fine lines, wrinkles, acne scar and give pore tightening effect.

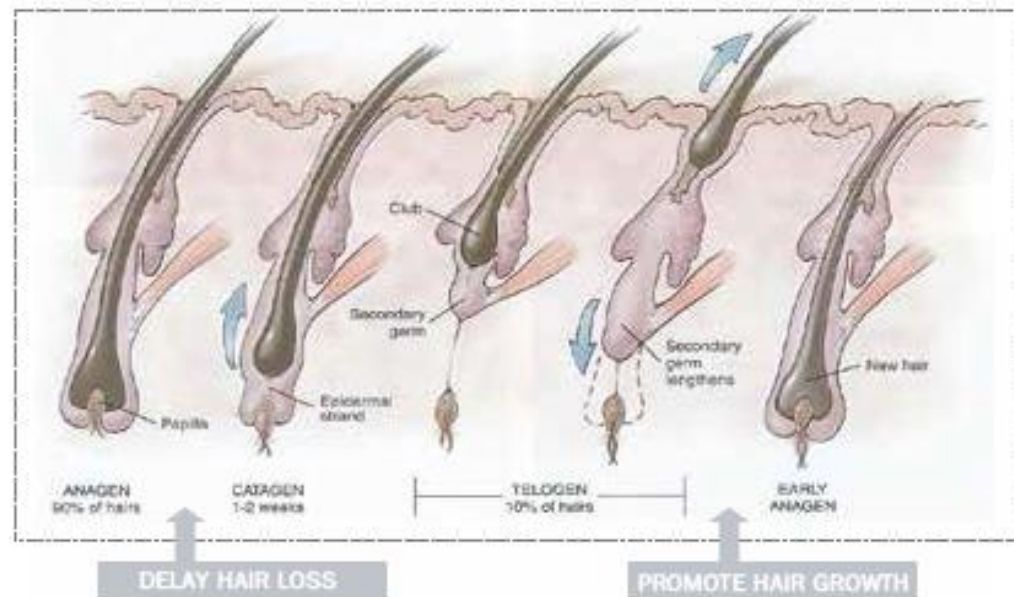
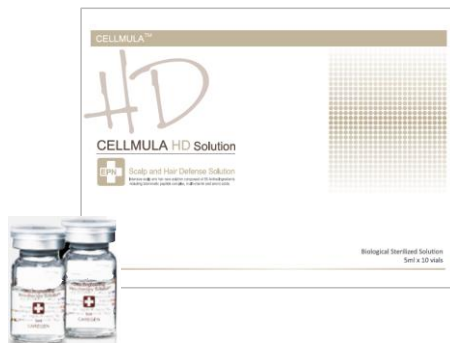
Wound Healing Mechanism



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How CELLMULA HD makes hair regrow?



sh-Oligopeptide-2 (IGF1)

Strengthens hair while stimulating hair follicles to produce strong hair shaft.

Copper Tripeptide-1

Helps strengthen hair while stimulating hair follicles to produce strong hair shaft.
Helps blood circulation in the scalp and revitalizing hair follicles

sh-Polypeptide-1 (bFGF)

Promotes a process from Telogen to Anagen phase, New hair forming

sh-Polypeptide-9 (VEGF)

The base of the follicles strengthens hair while stimulating hair follicles to produce strong hair shaft

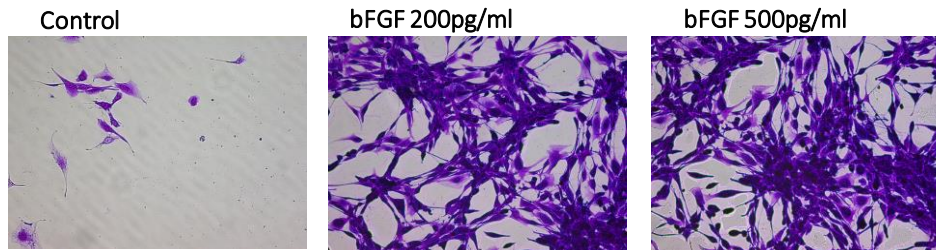
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sh-Polypeptide-1 (bFGF basic Fibroblast Growth Factor)

bFEG promotes cellular proliferation and differentiation. Increases the synthesis of collagen and elastin. Helps recover healthy skin and prevents wrinkles. **Skin Rejuvenation and Wound repair**, Improves blood circulation of scalp and strengthens hair follicles

Cell morphology test with NIH3T3.



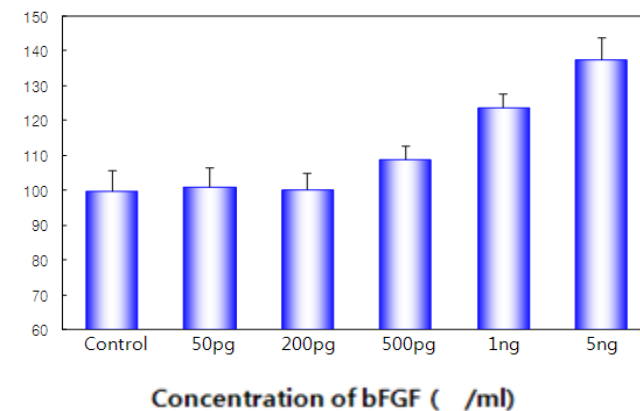
Cell morphology changed after 72hr incubation with bFGF in the condition of serum free medium

bFGF & hair cell proliferation

Cell growth assay with primary hair cell after bFGF treatment for 72hrs.

Proliferation rate was increased by 150% compared with the Control.
It is regarded to be a positive factor that has effected hair growth.

Cell proliferation on primary hair cell by bFGF



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sh-Oligopeptide-2 (IGF1 Insulin-like Growth Factor-1)

IGF1 stimulates the proliferation and survival of various cell types, increases collagen and elastin levels and improves skin elasticity and reduces wrinkles, Strengthens hair with stimulating hair while stimulating hair follicles to produce strong hair shaft

Skin histology with IGF-1.



Control



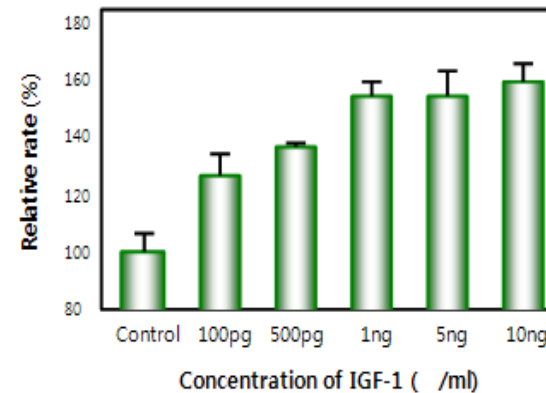
IGF-1 containing cream

Epidermis thickness increased after applying IGF-1 containing cream

The microscopic image (X400) of skin section of histochemical staining for histology after 5days treatment with IGF-1 nanosome containing cream

Cell growth assay with primary hair cell after IGF-1 treatment for 72hrs.

Cell proliferation on hair cell by IGF-1



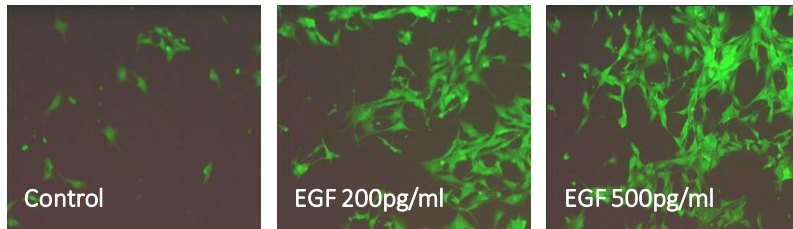
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sh-Oligopeptide-1 (EGF Epidermal Growth Factor)

EGF is a potent growth factor that stimulates the proliferation of various epidermal and epithelial cells. Additionally, EGF has been shown to inhibit gastric secretion, and to be involved in wound healing, **Anti-aging, Anti-Wrinkle.**

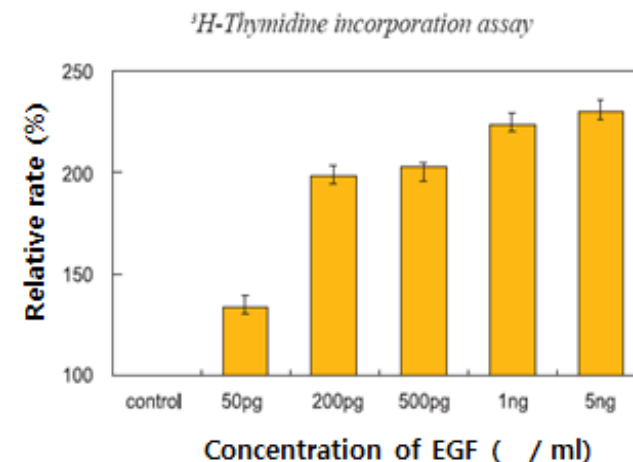
Cell morphology



Cell morphology changed after 72hr incubation with EGF in the condition of serum free medium.

EGF modulates the skin rejuvenating by stimulation of cell proliferation.

Cell growth assay with NIH3T3 fibroblast cell line after EGF treatment for 72hrs. (ED₅₀ is around 100pg/ml)



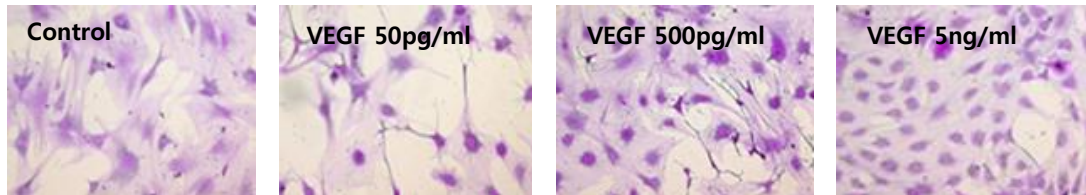
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sh-Polypeptide-9 (VEGF Vascular endothelial [cell] growth factor)

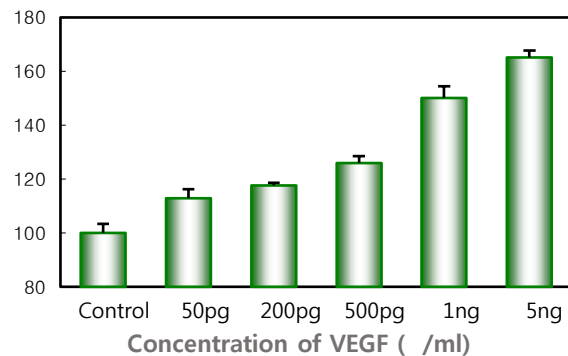
VEGF is a signaling protein that promotes the growth of new blood vessels. VEGF forms part of the mechanism that restores the blood supply to cells and tissues when they are deprived of oxygenated blood due to compromised blood circulation. Essential for angiogenesis and vascular permeability, which is important for maintaining proper vasculature around the hair follicle during the anagen growth phase

Cell morphology on primary hair cell.



Cell morphology changed after 72hr incubation with VEGF (50pg ~ 5ng/ml) on primary hair cells

Cell proliferation on primary hair cell by VEGF



VEGF & Angiogenesis & Hair growth

Cell growth assay with primary hair cell after VEGF treatment for 72hrs.

Proliferation rate was increased by 160% compared with the Control. It is regarded to be a positive factor that has effected hair growth.

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Clinical Data _ HSR

Acne scar improvement

before



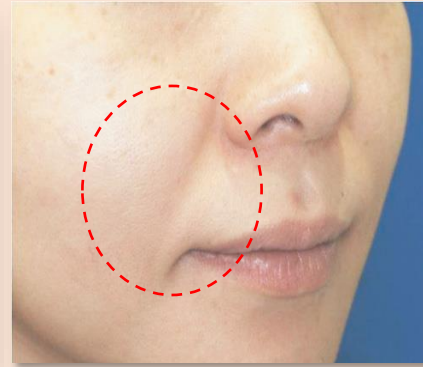
after



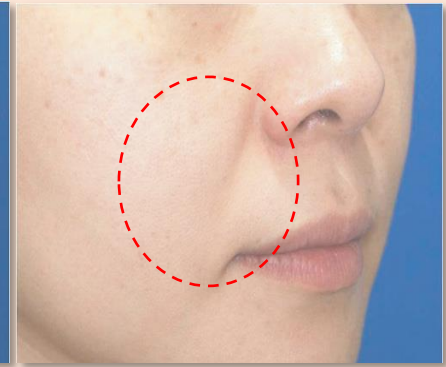
Female / Early 20's
Protocol: 1 session per week with auto-MTS
Period: 4 Weeks

Nasolabial line improvement

before



after



Female / Late 40's
Protocol: 1 session per week with auto-MTS
Period: 4 Weeks

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Clinical Data _ HD

Male

before



after



Male / Mid 40's
Protocol: 1 session per week with auto-MTS
Period: 2 Months

Female

before



after



Female / Mid 40's
Protocol: 1 session per week with auto-MTS
Period: 3 Months

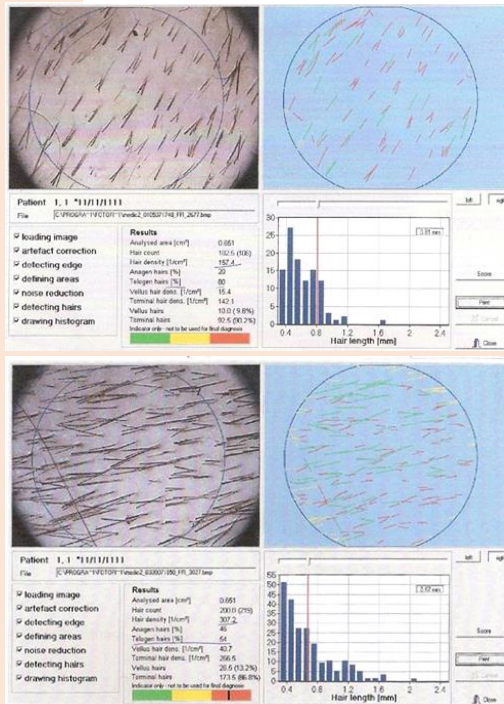
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Clinical Data_ Detected by Trico Scan Professional 2.0

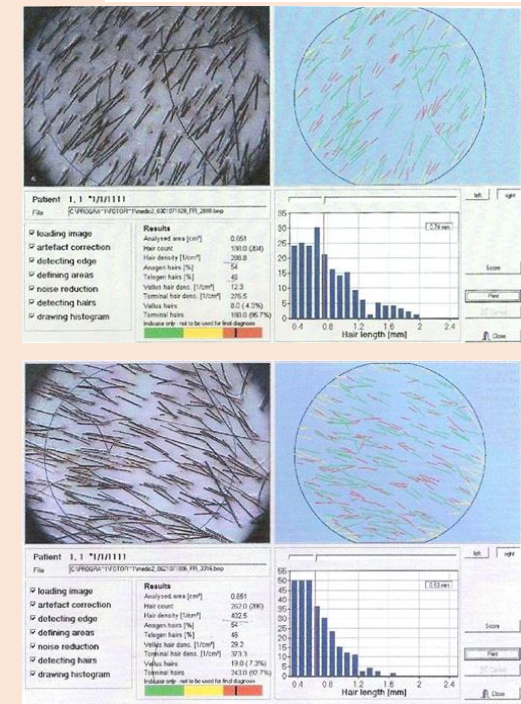
Male / Mid 50's
1 session per week & auto MTS
Period: 40 Days

| | Before | Treatment |
|-----------------------------------|------------|------------|
| Hair Count | 102.5(106) | 200.0(219) |
| Hair Density (1/cm ²) | 157.4 | 307.2 |
| Anagen hairs(%) | 20 | 46 |
| Telogen hairs(%) | 80 | 54 |



Male / Mid 30's
1 session per week & auto MTS
Period: 40 Days

| | Before | Treatment |
|-----------------------------------|------------|------------|
| Hair Count | 188.0(204) | 262.0(286) |
| Hair Density (1/cm ²) | 288.8 | 402.5 |
| Anagen hairs(%) | 54 | 54 |
| Telogen hairs(%) | 46 | 46 |



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Usage

Methods ----- EPN (Electroporation Needle) or Vital Injector
Depth ----- Dermal-epidermal junction or superficial dermis
Area ----- **[HSR] Face, neck, scoop neck, back of hands**
[HD] Scalp



Application & Method

Electroporation / Auto-MTS

Application

- [HSR] aged skin with fine lines and wrinkles, enlarged pore skin, acne skin, excessive dry skin**
[HD] alopecia for man and woman, general thinning of hair on top of scalp, excessive dry scalp
- Consecutive treatment is necessary to reach efficacy expected

Regular Treatment

1st Phase 1 session every week for the first 1 month
2nd Phase 1 session per every 2 weeks for the second 1 month
3rd Phase 1 session a month for the third 1 month
4th Phase 1 session 2~3 months for up to 6 months

Special Treatment

1st Phase 2 sessions every week for the first 1 month
2nd Phase 1 session every week for the second 1 month
3rd Phase 1 session every 2 weeks for the third 1 month
4th Phase 1 session 1~2 months for up to 6 months

* Determine the ideal maintenance treatment depending on skin condition.



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thank you

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