

### THE FUTURE

"The medical world is moving towards the molecular"



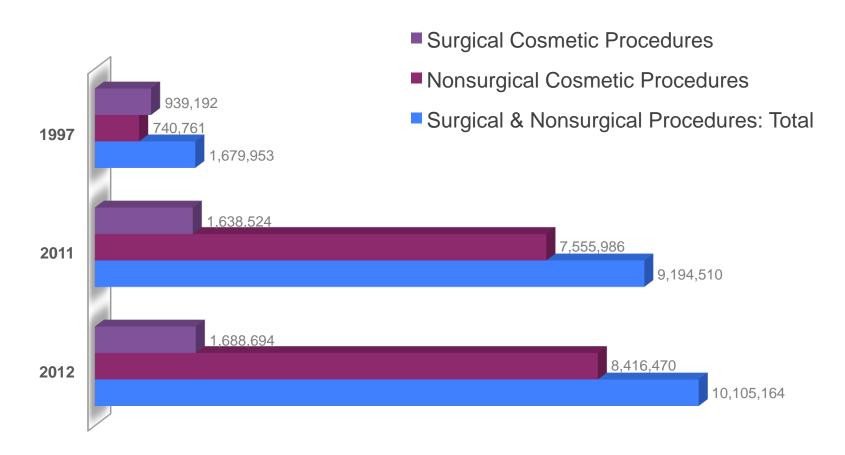
### KEY ROLES OF GROWTH FACTORS

#### THE MOLECULAR

Growth Factors, Cytokines, Interleukins, Fibroblasts, and Interferon's have shown to play a key role in:

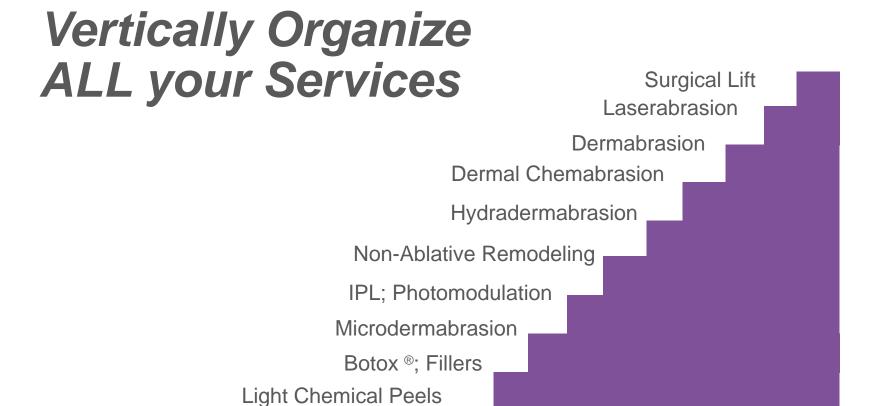
- Tissue regeneration and rejuvenation
- Increasing collagen production, which can increase skin thickness and overall skin health
- Recruiting other cells to the site of injury
- Minimizing scarring
- Reduction in inflammation
- Activating immune cells

# Patient Demand & Technology Change



### Aesthetic IPU (AIPU)

**Skin Treatment & Care Products** 



Dr. Bruce Freedman's Rejuvenation Stairway

### **ABOUT OMNI**



- Omni is committed to delivering innovative skin treatment and care solutions to meet the dermatological needs of people throughout their lifetime while serving professionals in the global medical aesthetic market, through:
  - Specialty products and innovation
  - Collaborative partnerships in research and development

### OMNI FUTURE VISION



Cosmeceutical Facial & Hair Multi-source GF Hybrid Products

Distribution
Manufacturing
Collaboration

Innovation Research IP

Digital Training Education Envision U

### WHAT IS TAC?



Inspired by cutting-edge bioscience technology, Omni Bioceutical Innovations introduces, *TAC: Treatment And Care*, a powerful post procedural and anti-aging system.





TAC Core
Recovery Complex
(99% Growth Factors)

Core Recovery
Complex
Vision Recovery

This highly concentrated formula of medical grade human growth factors has been developed for professional use to help improve the appearance of aging, damaged, and post-procedure skin.

- Calms inflammation
- Promotes homeostasis
- Speeds recovery and reduces downtime

A treatment and care (TAC) system that promotes youthful skin function with selected human growth factors and cytokines that provide for optimal skin conditions.

- Activates the skins natural regeneration capabilities
- Skin looks smoother and more radiant
- Stimulates collagen and elastin

TAC Restorative
Daily Eye Serum
(50% Growth Factors)





A treatment and care (TAC) system that provides specific human growth factors for the delicate eye area and addresses the issues associated with age.

- Effectively diminishes wrinkles, crepiness, and fine lines
- Gently lightens dark circles
- Firms and lifts sagging fragile eye area



#### **Hair Loss & Thinning Hair**

Hair loss occurs when the hair follicle shrinks and weakens at the root of the hair shaft. This can be caused by genetics, environmental factors, hormonal changes, stress, illness, autoimmune disease, certain drugs and malnutrition.

When roots are still present, it is possible to prevent and reverse hair loss.



TAC Hair Recovery Complex acts on the scalp to nourish and repair hair follicles, allowing for normal, healthy hair growth. Scalp-specific growth factor combination stimulates hair follicle generation and new hair growth.

 Restore the health and vitality of hair follicles, which encourages hair re-growth using a specifically formulated

targeted human growth factor formula.

Natural, cutting-edge solution that targets the source of hair

loss by restoring a healthy scalp.
• Provide a solution to a non-greasy, paraben-free, free of synthetic color and fragrance product for hair restoration.



#### **V-TAC Vaginal Restoration**

**V-TAC** is a breakthrough Treatment and Care solution for vaginal rejuvenation. Through targeted growth factor key technology, the V-TAC serum supports the vaginal wall lining by helping restore health and vitality for natural vaginal function.

V-TAC Vaginal Restorative GF Complex is formulated and designed to hydrate the interior vaginal walls and create a tightening effect, thus allowing more comfort, sensation and youthful resilience to an important part of the body.

- Relieve vaginal dryness and soothe irritation
- Improve elasticity, tighten and firm the vaginal walls
- Rejuvenate vascularity, collagen and elastin





## TAC Lash & Brow Vital Growth Complex

**TAC Lash & Brow Vital Growth Complex** TAC Eyelash & Brow Vital Growth Serum has been formulated to help improve the appearance of aging, damaged and post. This proprietary serum of highly concentrated clinical human growth factors and cytokines encourages the transformation of skin to a youthful state and supports the skin's ability to repair sun and environmental damage that causes the signs of aging.



**TAC Lash & Brow Vital Growth** a complex of conditioning growth factors that helps to achieve darker, longer and naturally fuller eyelashes & eyebrows.

- Effectively support longer, fuller, and darker eyelashes
- Moisturize and conditions to leave delicate eye area soft and silky
- Use daily disposable applicators uniquely designed for Omni TAC.

(70% Binterin)



#### **TAC Boost Mask**

TAC Boost Mask contains Binterin, a CD-99 peptide that has very powerful anti-inflammatory properties. It has been clinically proven to reduce inflammation by 120%.



The TAC Boost Recovery Mask is a technological breakthrough of combining Binterin (CD99) peptides in an anti-inflammatory cooling fluid that promotes fast effective recovery from micro invasive procedures and can be an accelerator to a regular skin care regime.

- Refresh and rejuvenate facial.
- Strong anti-inflammatory attributes reduce redness and relaxes facial skin.
- Always paraben-free, free of synthetic color and fragrance.



#### **TAC Natural Sun Screen**

**TAC Natural Sun Screen** provides your skin with extra protection against free-radical damage generated by UV exposure. Mitochondria, and the DNA within, are the power plants for directing all cellular energy and cell cycles.

**TAC Natural Sun Screen** is formulated with Zinc Oxide for broad spectrum UVA/UVB as well as to help calm irritated skin. It also contains Red Algae and Ergothioneine with special free-radical scavengers that support the Mitochondria DNA.

- Zinc Oxide Broad spectrum protection from UVA and UVB exposure which also promotes healing, soothes and calms the skin
- **Thiotaine**® Natural antioxidant and amino acid, prevents damage caused by UV radiation, recycles Vitamin C, assures efficient energy production, inhibits Tyrosinase
- Red Algae Extract Organism that lives in shallow water where it is exposed to extreme UV radiation, produces the most powerful UV-absorbing substances in nature, and the extract itself absorbs both UVA and UVB light

TAC Natural Sun Screen (Zinc Oxide)

# WHAT IS TAC FORMULATED TO DO?



Our innovative medical grade growth factor serums deliver rapid results post procedure and in daily use. These uniquely formulated **TAC** products generate more radiant and youthful looking skin, eyes and hair. They help address issues such as, fine lines, wrinkles, sun exposure, environmental damage and thinning hair.

Our one of a kind **TAC Core Recovery Complex** can be used in post procedure laser treatments, included in micro-needling treatments, and in conjunction with peels and microdermabrasion. Along with our daily maintenance eye, facial and hair products, this is our answer to an integrated anti-aging system.

## PEPTIDES AND ACTIVE INGREDIENTS



In addition to the unique medical grade Growth Factors Omni contain highly effective peptides and active ingredients. We can also make modifications to customize to specific needs. Here are some examples of active ingredients:

ACTIVES	Attributes/Benefits
Argierline	A powerful anti-wrinkle hexapeptide with a Botulinum toxin-inspired activity
Matrixyl Synth6	Wrinkle filler derived from tripeptide found in collagen VI and laminins, smoothes wrinkles from the inside by stimulating the synthesis of the macromolecules in the dermal/epidermal junction that are needed for structure
Snap-8	Peptide, reduces depth of expression wrinkles up to 63%
Haloxyl	Lessened appearance of under eye dark circles in more than 60% of volunteers, reinforces firmness and tones up eye area, facilitates in the elimination of blood pigments responsible for dark circle coloration and local inflammation
Retinol (encapsulated)	Stable retinol for reduction of wrinkles and helps restore UV damaged tissue
ChroNOlineTM	Biomimetic peptide derived from a growth factor, boosts collagen production, activates skin repair, reduces appearance of fine lines and wrinkles
Hesperidin	Improves skin tone, reduces dark circles by stimulating skin's surface circulation
Binterin	CD99-agonist peptide with high anti-inflammatory properties
Many more available	Contact us for more information

### SEEING IS BELIEVING







Omni's Core Complex applied promptly after Smartskin CO2 micro ablative laser procedure





Immediately post-laser

48 hours later

Photo courtesy of Cherie Morgan



Omni's Core Complex used in conjunction with Micro-Needling procedure – six week results





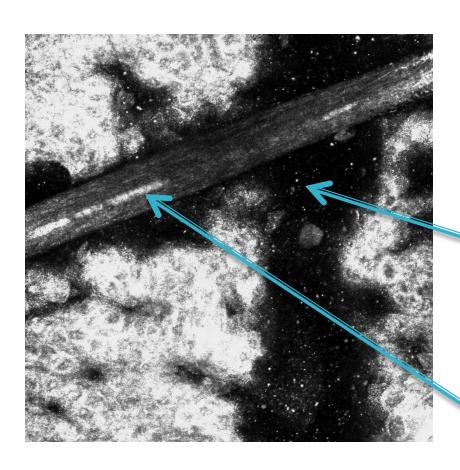
# TAC RESTORATIVE FACIAL SERUM & MICRO NEEDLING



Omni's *TAC Restorative Facial Serum* usage along with two Micro Needling procedures using *CORE Complex - 12 weeks* 







- Omni's TAC CORE products, along with non-invasive procedures and custom delivery systems penetrate the epidermis to give "best" results.
- The small white specs (to the left) are GF's in the "dermis" area of the skin, applied in combination with a molecular delivery system.

Hair shaft

# WHY TARGETED GROWTH FACTORS



Omni's targeted growth factors provide specific support to your skin at a cellular level. These key signaling proteins communicate with cells to activate the skins rejuvenation process.

#### **Omni Product's**

GF	CORE	FACE	EYE
TGF β	X	X	X
PDGF	X	X	X
GM-CSF	x	x	X
INTERLEUKINS	X	X	X

Omni's TAC product line contains human derived stem cell growth factors which are manufactured in an FDA approved facility. All of our products are tripletested for quality purposes and abide by all GMP standards.

# OMNI Competitive Profile

### THE OMNI DIFFERENCE

#### **Product Benefits**

In comparison to other growth factor serum products, Omni's TAC products are more cost effective, contain a higher grade and percentage of growth factors, thus resulting in higher rates of client satisfaction.

#### One of a Kind Product

Our one of a kind TAC Core Recovery Complex can be used in post procedure laser treatments, included in micro-needling treatments, and in conjunction with peels and microdermabrasion.

#### **Omni Advantage**

Omni follows the highest standards of ingredient selection with innovative processes that retain the ingredients purity and strength. Along with our partners proprietary delivery systems we ensure maximum stability and absorption of actives into the skin for better results.

#### **Competitor Products**

Several competitors use plant and fruit growth factors or other sources of diluted growth factors to develop their skin care products. These ingredients often produce ineffective or poor results.





Products	Size	SRP\$	Per oz \$
Face Serum	1.0 oz	\$175.00	\$175.00

OMNI TAC Treatment Care based on Human Growth Factors, Cytokines and chemokines (TGF-B) molecules. FACE SERUM HGF LEVEL 60%



Products	Size	SRP\$	Per oz \$
Bio Serum	1.0 oz	\$210.00	\$210.00

**Neocutis** - formulated with patented PSP®, a nourishing protein blend including Human Growth Factors and Cytokines. **HGF LEVEL 0.1% PSP** 



Products	Size	SRP\$	Per oz \$
AnteAGE	1.0 oz	\$150.00	\$150.00

AnteAGE® was developed by Cellese Regenerative Therapeutics **HGF LEVEL 50%** 



Products	Size	SRP\$	Per oz \$
TNS	0.63 oz	\$172.00	\$273.02
Essential Serum	1.0 oz	\$270.00	\$270.00

SkinMedica® chooses scientifically proven ingredients such as growth factors and other compounds to formulate advanced skin care products.

HGF LEVEL 60%.





Products	Size	SRP\$	Per oz \$
Core Complex*	0.14 oz	\$220.00	N/A

OMNI TAC Treatment Care based on Human Growth Factors, Cytokines and chemokines (TGF-B) molecules. CORE COMPLEX HGF LEVEL 99.7% professional use only.

**NO DIRECT** COMPETITIVE **PRODUCTS** 

# Product Specifications



#### TAC Core Recovery Complex Serum has been formulated to help:



Enhance the results of clinical procedures such as micro-needling, ablative & non-ablative laser and peel treatments.

Calm inflammation and redness caused by skin irritation and dryness

Return facial appearance to a youthful toned and glowing complexion

Activate and promote homeostasis for optimal skin health

**TAC Core Recovery Complex Serum** has been formulated to help improve the appearance of aging, damaged and post-procedure skin. This proprietary serum of highly concentrated clinical human growth factors and cytokines encourages the transformation of skin to a youthful state and supports the skin's ability to repair sun and environmental damage that causes the signs of aging.

- High quality concentration of clinical growth factors combined with antioxidants;
- Size: 5 Vials per box, each Vial is 0.14 fl oz, 4.0 ml
- Available in Individual Vials: YES
- Intended Users: Trained Professionals
- Can Be Used with: Micro-Needling, Chemical Peels, Non-Ablative and Ablative Laser

**Directions:** Gently smooth a thin layer of the serum over the affected area. For optimum results, apply **TAC Core Recovery Complex Serum** every twelve hours until the vial is finished (once vile is open use within 48 hours). This highly effective serum can be used in conjunction with Micro-Needling, Lasers and other devises. Protocols for devise usage can be found in the **Omni Physician Educational Manual.** 

Ingredients: Human Fibroblast Conditioned Media, Water (Aqua), SD Alcohol 40, Propylene Glycol, Cellulose Gum, Polysorbate 20, Tetrahexyldecyl Ascorbate, Tocopheyrl Acetate, Menthl Lactate, Sodium Hyaluronate, Phenoxyethanol, 1,2-Hexanediol, Caprylyl Glycol

#### This serum is paraben free, free of synthetic color

# TAC CORE RECOVERY COMPLEX SERUM PROTOCOL



#### Post- ablative or Micro-ablative Laser

- Immediately after the laser procedure, apply chilled **TAC Recovery Complex Serum**. Apply one half vial for full face or one full vial for face, neck and chest. Draw serum out of the vial with a needless 1cc syringe, apply dots to facial skin and create a smooth film with a gloved hand. Allow to absorb into the skin for 5 minutes. Patient should feel less heat, stinging and a slight reduction in redness. If a barrier cream is applied like Aquafor, apply after serum has absorbed. We like using Oxygenetix "Oxygenating Moisturizer" but if there is a physician preference apply after serum is absorbed into skin.
- Depending on the types of facial procedures that are completed, send the patient home with either the remainder of the vial of serum for the face or send home a full vial for face, neck and chest. Have the patient apply the remaining serum 12 to 24 hours after the first rinse, then follow with a barrier cream or physician post laser procedure protocol.
- Patient can start to use **Omni TAC Restorative Daily Facial Serum** and **Omni TAC Restorative Daily Eye Serum** post procedure starting day 4 and beyond. Apply twice a day and let absorb before applying any other products.

\*Note: Core Complex can be used during a micro needling procedure to infuse the targeted growth factors and as a recovery serum post peel. Our daily maintenance eye and facial serums can be used twice a day on clean skin for ideal anti-aging results.

<sup>\*</sup>This is an example of a protocol we have used for the core serum.

# TAC RESTORATIVE DAILY FACIAL SERUM (60% GROWTH FACTORS)





#### TAC Restorative Daily Facial Serum has been formulated to help:

Skin look smoother and more luminous
Diminish wrinkles and fine lines
Reduce inflammation and skin irritations
Gradually fade sun/age spots
Return skin to the proper "homeostasis"

Return skin to the proper "homeostasis" balance, providing the optimal cell environment for supporting proper skin health

#### **About TAC Restorative Daily Facial Serum**

With twice daily regular use this highly active and effective human growth factor serum can help renew the skin to achieve a more radiant appearance. Youthful skin has a process that repairs damage and keeps it looking firm and supple. This process becomes less efficient over time, but with the topical application of **TAC Restorative Daily Facial Serum** the support of the skin's function begins to mimic those younger years. This concentrated blend of clinical human growth factor proteins, cytokines and interleukins, found in healthy young skin, has been formulated to help encourage the stimulation of collagen production (essential for smooth firm skin) and activates the skin's natural regeneration capabilities. This serum has shown to help diminish years of accumulated skin damage from environmental and sun exposure.

Unit Size: 1.0 fl oz, 30 ml

Intended Users: Consumers, Professional Use

**Directions:** Gently press the pump to dispense one drop onto clean fingers. Lightly spread over clean skin on the entire face. Use two pumps to include the neck area. Moderate skin renewal may occur within two weeks, but optimal improvement to skin is usually seen after six weeks of consistent twice daily use.

Twice daily use of **TAC Restorative Daily Facial Serum** has shown to help produce a firmer, smoother complexion, more even skin tone, diminished fine lines and wrinkles while reducing or eliminating sun/age spots and hyper-pigmentation. Additionally, the surface of the skin has shown to appear moisturized for an instant plumping and smoothing effect. The pure, non-greasy formula has a clean fresh scent and will not clog pores or irritate sensitive skin.

Ingredients: TAC Human Fibroblast Conditioned Media, Water (Aqua), Glycerin, Polysorbate 20, Cellulose Gum, Tetrahexyldecyl Ascorbate, Tocopheryl Acetate, Lactic Acid, Citrus Aurantium Bergamia (Bergamot) Fruit Oil, Phenoxyethanol, 1,2-Hexanediol, Caprylyl Glycol.

This serum is paraben-free, fragrance-free, and free of synthetic color.

# TAC RESTORATIVE DAILY EYE SERUM (50% GROWTH FACTORS)





#### TAC Restorative Daily Eye Serum has been formulated to help:

Effectively diminishes "crow's feet" wrinkles, crepiness, and fine lines

Gently lightening dark circles under the eyes and reduces puffiness

Firm and lift fragile eye area

Moisturize and condition to leave delicate eye area soft and nourished

**About TAC Restorative Daily Eye Serum** 

With twice daily regular use, this highly effective eye serum has been formulated to encourage lightening and tightening around the eye area for a fresh radiant appearance. This highly concentrated formula is potent yet gentle enough for the eye area to help promote firmer, younger looking skin.

TAC Restorative Daily Eye Serum has been shown to stimulate the skin's natural process of repair and rejuvenation by providing the biological elements present in young, healthy skin. The concentrated formula found in our TAC Eye Restorative Daily Serum has specifically targeted growth factors to help minimize the signs of aging, stress, and fatigue while helping the eye's skin to appear smooth and refreshed. Topically applying these hybrid growth factors twice daily helps activate of the skin's own damage repair process to smooth out fine lines and wrinkles, as well as reduce puffiness.

Unit Size: 0.5 fl oz, 15 ml

Intended Users: Consumers, Professional Use

**Directions:** Gently press the pump no more than halfway down to dispense onto clean finger. Apply to completely clean skin around the eye area in a gentle tapping motion using gentle pressure, and then let serum absorb. For optimal results, apply morning and night.

TAC Restorative Daily Eye Serum has also been formulated to encourage an increase in lightening under the eye area reducing dark circles. The moisturizing formula should not irritate even the most sensitive eyes. This unique, non-greasy formula serum has a clean scent and will not clog pores.

Ingredients: TAC Human Fibroblast Conditioned Media, Water (Aqua), Acetyl Hexapeptide-8, Glycerin, Hesperidin Methyl Chalone, Steareth- 20, Dipeptide-2, Palmitoyl Tetrapeptide-7, Butylene Glycol, Oenothera Biennis (Evening Primrose), Polysorbate 20, Chrysin, N-Hydroxysuccinmide, Palmotoyl Oligopeptide, Aminoethylphosphinic Acid, Xantham Gum, Camella Sinesis (Green Tea) Leaf Extract, Phenoxyethanol, Caprylyl Glycol.

#### This serum is paraben-free, fragrance-free, and free of synthetic color

# TAC RESTORATIVE GF HAIR COMPLEX (60% GROWTH FACTORS)



#### TAC Restorative GF Hair Complex has been formulated to help



- Restore the health and vitality of hair follicles, which encourages hair re-growth using a specifically formulated targeted growth factor formula
- A natural, cutting-edge serum solution that targets the hair follicle and helps restore a healthy scalp that supports hair vitality.
- Provide a solution to a non-greasy, paraben-free, free of synthetic color and fragrance product for hair restoration.

**TAC Restorative GF Hair Complex** has been formulated to encourage the scalp to nourish and replenish hair follicles, allowing for normal and healthy hair growth. The hair/scalp specific growth factor combination can help stimulate hair follicle generation and new hair growth helping to revitalize damaged hair follicles and stimulate regeneration of active new hair follicles.

This serum of proprietary growth factor technology utilized is the same remarkable technology behind the **Omni TAC** skin serums, but the selection of growth factors in **Omni Restorative GF Hair Complex** are carefully refined to promote the special needs of the hair and scalp. This unique serum has been formulated to help encourage and nourish hair follicles back to a state of ideal health with the select growth factor proteins that are naturally present in healthy, young hair follicles. Our hair complex has been shown to help improve the overall condition of the scalp, rejuvenating damaged hair follicles and increasing circulation of nutrients for healthy hair.

This serum's action is enhanced by protective flower extracts, which may help maintain the health of lustrous fuller hair.

- Size: 5 Vials per box, each Vial is 0.21 fl oz, 6.0 ml
- Intended Users: Consumers, Professional Use

#### Directions:

- 1. Wash hair and scalp with shampoo, mornings are best
- 2. After drying hair and scalp, apply small amounts of serum to the areas of the scalp you wish to treat.
- 3. Gently massage the areas of application for a minimum of five minutes (section hair if necessary). Do not wash hair for a minimum of eight hours, allowing the serum to remain on the scalp overnight.

Repeat steps 1-3 every other day until all five vials have used.

This serum may be used with various cosmetic topical delivery systems designed to increase penetration such as a microneedling stamp or pen. Protocol is included in the Physician's education manual.

*Ingredients:* Water (Aqua), Proprietary blend of Human Fibroblast Conditioned Media, Propylene Glycol, Lonicera Caprifolium (honeysuckle) Flower Extract, Lonicera Japonica (Honeysuckle) flower extract, 1,2-Hexanediol, Caprylyl Glycol

#### This serum is paraben-free, fragrance-free, and free of synthetic color.

## TAC VAGINAL RESTORATIVE GF COMPLEX

(60% GROWTH FACTORS)





#### This revolutionary serum is thought to help:

Relieve vaginal dryness and soothe irritation Improve elasticity, tighten and firm the vaginal walls

Rejuvenate vascularity, collagen and elastin

**V-TAC** is a breakthrough Treatment and Care solution for vaginal rejuvenation. Through targeted growth factor key technology, the V-TAC serum supports the vaginal wall lining by helping restore health and vitality for natural vaginal function.

**V-TAC Vaginal Restorative GF Complex** supports rejuvenation of the vaginal wall by helping to restore the body's natural vascularity function and health.

V-TAC is formulated and designed to hydrate the interior vaginal walls and create a tightening effect, thus allowing more comfort, sensation and youthful resilience to an important part of the body.

**Size:** each Vial is 0.14 fl oz, 4.0 ml **Available in:** A convenient case of 6

**Intended Users:** Professionals and consumers

**Directions** Hold firmly at the thick end of the applicator, and gently insert the open end of the applicator to the affected area. Squeeze the thick end of the tube firmly to deposit the V-TAC serum. Use one full tube two times a week.

Ingredients Human Fibroblast Conditioned Media, Water (Aqua), Glycerin, Simmondsia Chinensis (Jojoba) Seed Oil, Xantham Gum, Hydroxyethyl Acrylate/Sodium Acryloyldimethyl Taurate Copolymer, Squalane, Polysorbate 60, Rosemarinus Officinalis (Rosemary) Leaf Oil, Lactic Acid, Chlorphenesin

This serum is paraben-free, fragrance-free, and free of synthetic color.

# OMNI Training & Education Programs

# OMNI TRAINING AND CONTINUING EDUCATION (CE) PROGRAMS



- OMNI, in affiliation with *Integrated Laser Solutions* (www.integratedlasersolutions.com) offers certified training programs for various medical devices including micro needling.
- For more information please contact:
  - <sup>∞</sup> Cherie Morgan <a href="mailto:com">cmorgannp@gmail.com</a> 877-285-0087
  - □ Jane Christensen jane@omnibioinnovations.com 888-578-3335

# Market Trends

## THE MEDICAL & AESTHETIC MEDICAL MOVEMENT

### **Traditional**

90's Surgery was the core

### Smart Technologies

Early 2000's saw a shift from surgery to medical devices

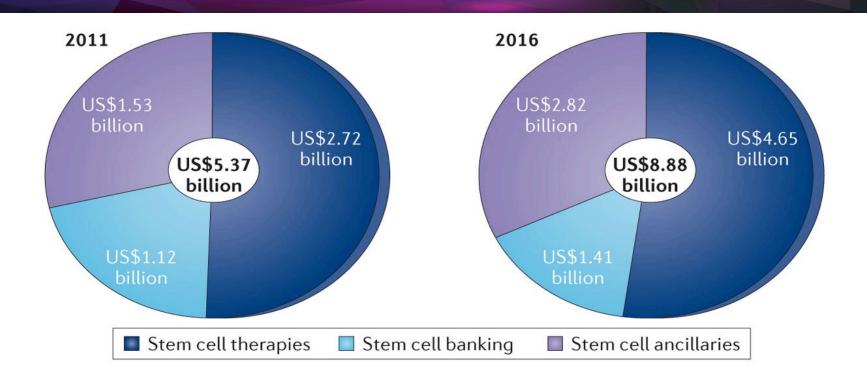
### **Emerging Trends**

2008 saw a significant shift into smart technologies

### The bleeding Edge

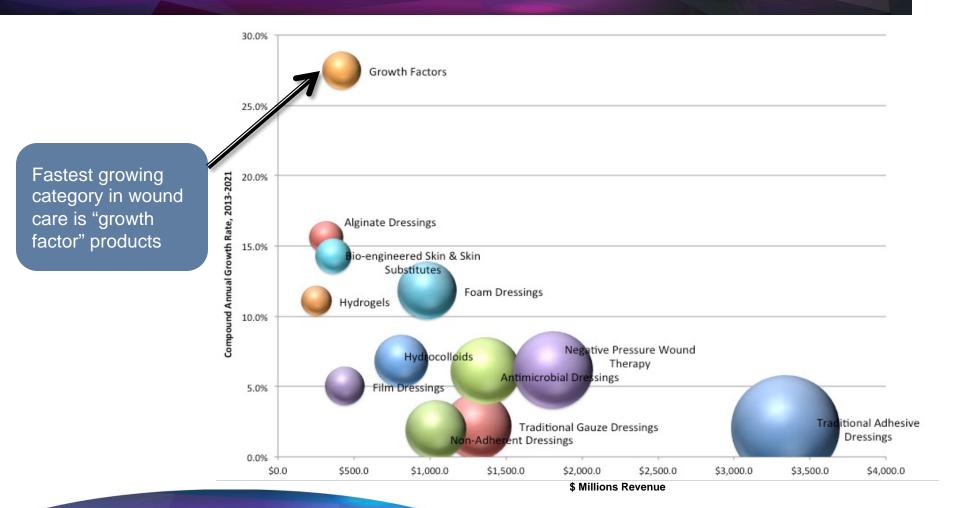
NOW - Growth Factors and molecular science related products

### MARKET TRENDS - GROWTH



Stem Cell Therapies will increase by 71% or \$1.93 billion by 2016!

## MARKET TRENDS - CATEGORY GROWTH

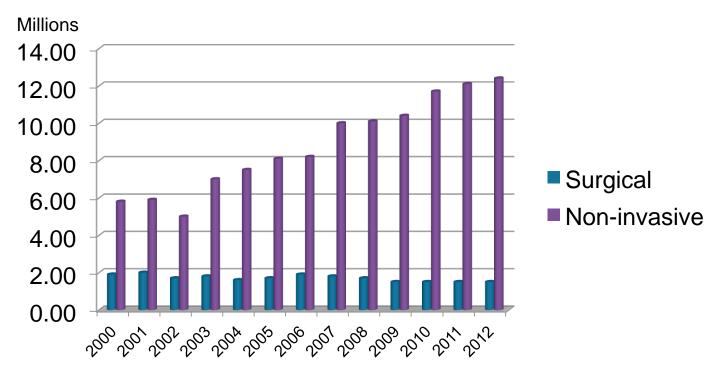


## U.S. PROCEDURE DATA — COSMETIC AND AESTHETIC MARKET

(IN MILLIONS)

"One's self-image tends to be very psychological. Physical attractiveness is an endlessly pursued notion that has existed for centuries that only becomes exacerbated with aging and the eternal fear of growing obsolete."

Non-invasive procedures have grown significantly since 2000



Source: ASPS, Griffin Securities, Inc.

# The Science Behind the Omni Product Offering

## CLINICAL FINDINGS ON THE USE OF GROWTH FACTORS

- "The results from this study demonstrate that this (use of growth factors, specifically TGFβ3) was well tolerated and provided both immediate and long-term improvements in the appearance of fine and coarse wrinkles." The Journal of Clinical and Aesthetic Dermatology, March 2009.
- "The improvement of structural organization in the healing wound is self-propagating and leads to a reduction of subsequent scarring. TGF $\beta$ 3 has completed safety studies and entered human clinical trials. Data from these studies have demonstrated that TGF $\beta$ 3 in humans is safe and well tolerated." *Journal of Biomaterials Science, Volume 19, Issue 8*

## SPECIALIZED GROWTH FACTORS AND INFLAMMATION

- Growth factors are a type of cytokine or signaling molecule that leads to tissue growth, whether for purposes of development (e.g. embryogenesis) or healing (regeneration).
- A damaged tissue needs to be rebuilt.
   But rebuilding cannot occur in the presence of inflammation newly minted cells just get gobbled up along with the old & dying cells.
- Thus, in a wise conservation strategy, inflammatory cytokines tend to depress levels of growth factors while antiinflammatory cytokines tend to increase their activity.

INFLAMMATORY	ANTI-INFLAMMATORY
TGF- <i>β</i> 1, TGF- <i>β</i> 2	TGF β3
	PDGF
IL-3, IL-6	IL-8
	GM-CSF (neutral)

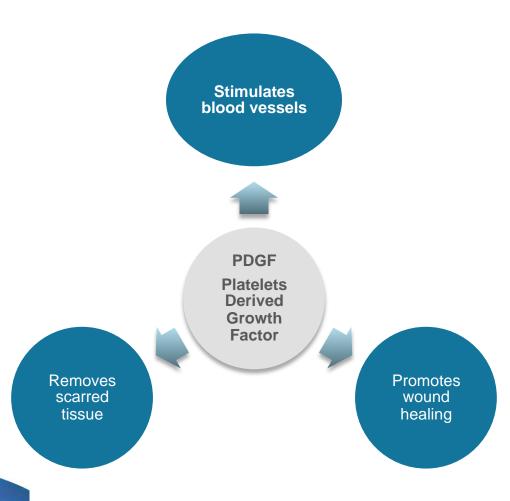
## SPECIALIZED GROWTH FACTOR FAMILIES TGF - BETA

Transforming Growth
Factor (TGF) – beta superfamily of cytokines play integral parts in cell differentiation and proliferation, and their signaling depends on an intricate spatiotemporal orchestration of protein interactions from membrane to nucleus.



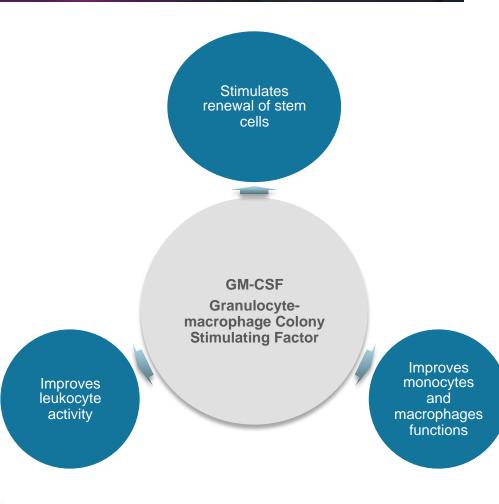
## SPECIALIZED GROWTH FACTOR FAMILIES PDGF

In molecular biology, Platelet **Derived Growth Factors** (PDGF) is one of the numerous growth factors, or proteins that regulate cell growth and division. In particular, it plays a significant role in blood vessel formation (angiogenesis), the growth of blood vessels from alreadyexisting blood vessel tissue.



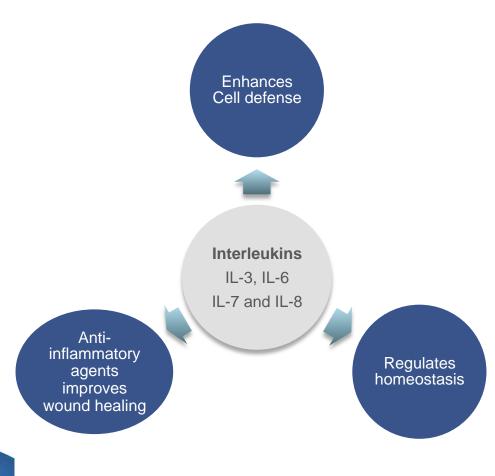
## SPECIALIZED GROWTH FACTOR FAMILIES GM-CSF

Granulocyte-macrophage
Colony Stimulating Factor
(GM-CSF) is a protein
secreted by macrophages, T
cells, mast cells, NK cells,
endothelial and fibroblasts.
GM-CSF promotes a th 1
biased immune response,
angiogenesis, allergic
inflammation and the
development of autoimmunity.



## SPECIALIZED GROWTH FACTOR FAMILIES INTERLEUKINS

Interleukins are a group of cytokines that were first seen to be expressed by white blood cells. Interleukins are produced by a wide variety of body cells. The function of the immune system depends on Interleukins. They promote the development and differentiation of T, B and hematopoietic cells.





- Aesthetic Products
- ◆ Device Integration ◆
  - ◆ Collaboration ◆

#### CONTACT US

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