V-TECH SYSTEM

The first advanced cosmeceutical system
Ultra intensive
with PDRN and synthetic exosomes

An innovative concept designed to obtain unparalleled results.

Unique,
effective,
Safe.

Thanks to the formulation rich in active ingredients,
V-Tech System is the perfect treatment to stimulate skin rejuvenation right from the first application.

The power of Polynucleotides associated with the stimulating strength of synthetic exosomes, enriched with biomimetic peptides

V-TECH SYSTEM

V-Tech System is a tissue regeneration technology composed of 2 products:

- **V-Tech Serum**
- **V-Tech Gel Mask**

The specific protocol, studied by the specialists of VM Corporation, allows to obtain an optimal result in terms of firming, lifting and bio-restructuring

V-TECH SERUM

Synthetic exosomes with High molecular weight polynucleotides 2% (20mg/ml)

Synthetic exosomes with biomimetic peptides(20mg)

- Oligopeptide 20
- Acetyl decapeptide3

Plant stem cells

V-TECH

GEL MASK

Low molecular weight polynucleotides 1%

- Acetyl heptapeptide 9 ***Gold carrier***
- Copper Tripeptide 1

Polysaccharides purified from snail slime, low molecular weight linear hyaluronic acid, aloe vera

Scientific rationale

01 Polynucleotides

02 Synthetic exosomes

03 Synthetic peptides

04 Soothing and protective principles

Synthetic exosomes with

Polynucleotides

The power of DNA

Polynucleotides:
NucleoTech Lifting

Polynucleotides are DNA fractions of organic origin that have the ability of stimulating fibroblasts by increasing the vitality and production of collagen and other components of the extracellular matrix (ECM); they have a strong antioxidant effect thus reducing the negative effects of cellular free radicals. (SALMON DNA)

Polynucleotides

- Stimulate cell regeneration.
- Stimulate the process of DNA synthesis.
- Have anti-aging and antioxidant properties.
- Promote the synthesis of new collagen.

Synthetic exosomes

The specific cellular conveyance

Exosomes

EXOSOMES are NANOVESICLES expelled by EXOCYTOSIS from a large number of human cells; they present a double membrane (as the cells themselves) and contain one or more specific information. Human exosomes are potentially dangerous as they can present membrane antigens capable of triggering a violent immune reaction.

Exosomes contain information such as:

- **Proteins**
- **Messenger RNAs, double-stranded fragments of RNA called MICRO RNA**
- **HLA class 1 and 2 molecules that bind antigens like cells responsible for presenting antigens.**

Synthetic exosomes
V-Tech System technology

To avoid the risk of excessive cellular stimulation, with the consequent effect of «rebound to negative feedback» and above all to avoid overstimulation of the immune system, the research of the VM laboratories has developed a double membrane ***synthetic exosomal system***, devoid of antigen receptors capable of carrying biomimetic peptides without causing excessive stimulation or immune reactions.

Synthetic exosomes guarantee

- Perfect conveyance of biomimetic peptides
- No overstimulation
- No stimulation of the immune system
- No risk of disease transmission

Comparison between Human/ vegetable VS Synthetic Exosomes

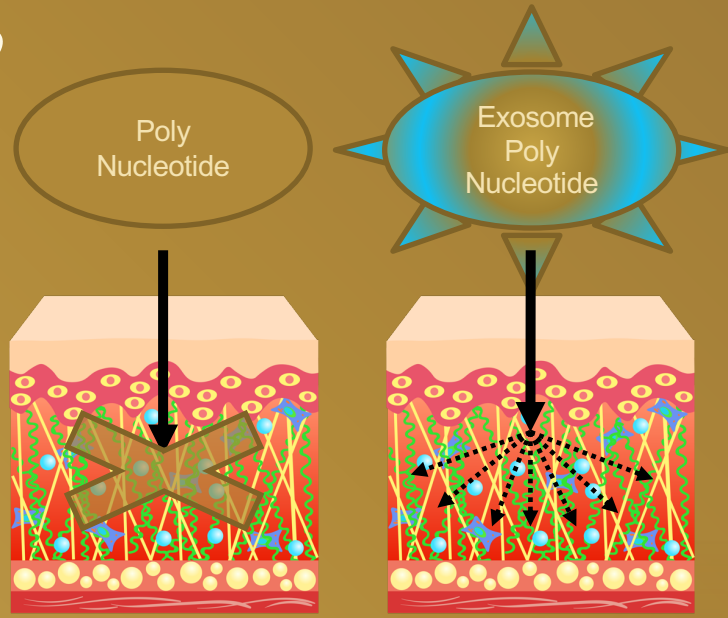
	HUMAN	***Vegetable***	***SYNTHETIC***
NUMBER per ml	Can't be calculated as it is highly variable	Can't be calculated as it is highly variable	**1 Billion / ml Standardized**
Allergic Reaction	High probability since there is a big chance of Antigen transfer	Possible allergic reaction for the presence of trans-membrane protein	**No reaction from antigens as they are synthetic**
Disease transmission	Possible since it comes from human origin	No possibility	**No possibility**
Storage	Need to be stored in special freezing conditions otherwise it will be not viable	Need to be stored in special freezing conditions	**No special storage conditioned are required**
Shipment	Special conditions must be applied otherwise it is not viable	Special conditions must be applied otherwise it is not viable	**No Special conditions are required**

Why PDRN in Syntetic Exosome

The main problem with polynucleotide solutions is that ***part of the moleculas are degraded before they get to activate cell receptors***, reducing the effectiveness of treatment.

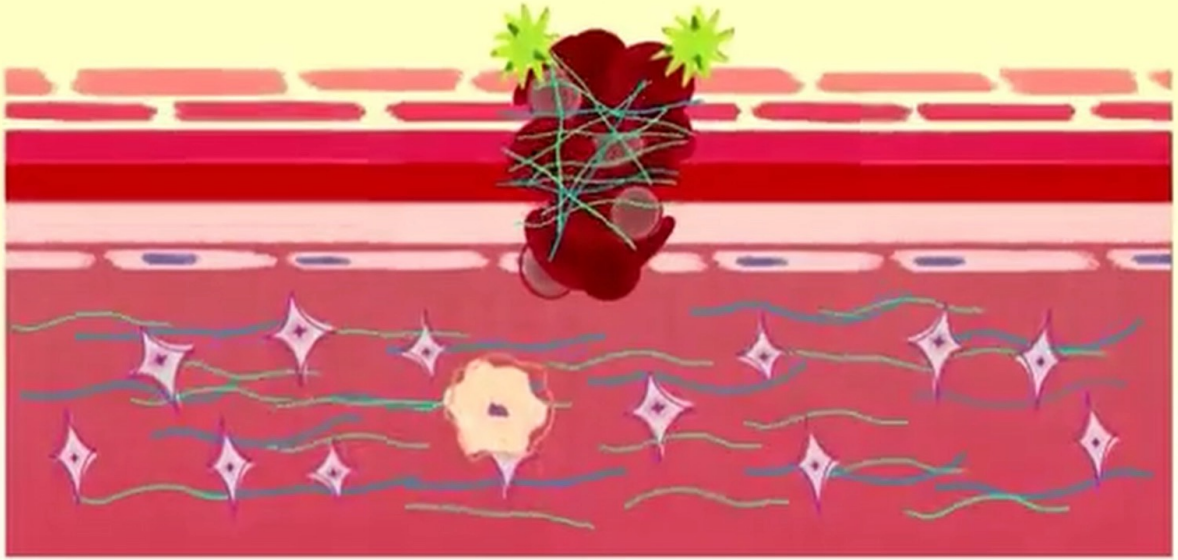
Polynucleotides, in fact, are highly polar molecules and bind strongly to both fibrous structures and molecules present in the dermis capable of binding water.Only a small part of the polynucleotides will then be able to activate the receptors.

For this reason, we decided to include polynucleotides within synthetic exosomal structures in order to allow a greater biological effect between polynucleotides and receptors and avoid tissue dispersion.



Why PDRN in Syntetic Exosome

PolyNucleotides free	**Exosomal structure with Polynucleotide**
Blocked by polar structure (collagen-elastin...)	No interaction with polar structures (collagen-elastin)
Recall of extrcellular water: risk of transitorial edema	Recall of water only near the cellular structure: no edema , better cell enviroment, better absorbation of nutrients
Short emivita of the polynucleotides	High emivita of polynucleotides



Schematic representation:exosomal structure in tissue

Synthetic Biomimetic peptides

Targeted tissue stimulation

Exosomal oligopeptide-20
Exosomal acetyl decapeptide-3

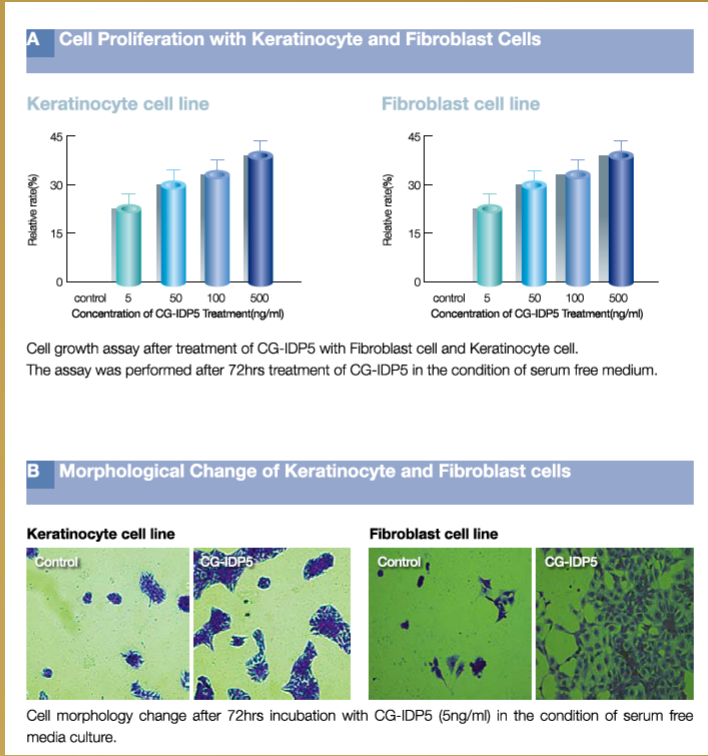
Two specific biomimetic peptides for skin stimulation. The exosomal conveyance improves and enhances their effect by preventing interference with the extracellular matrix.

Two powerful biomimetic peptides of synthetic origin capable of:

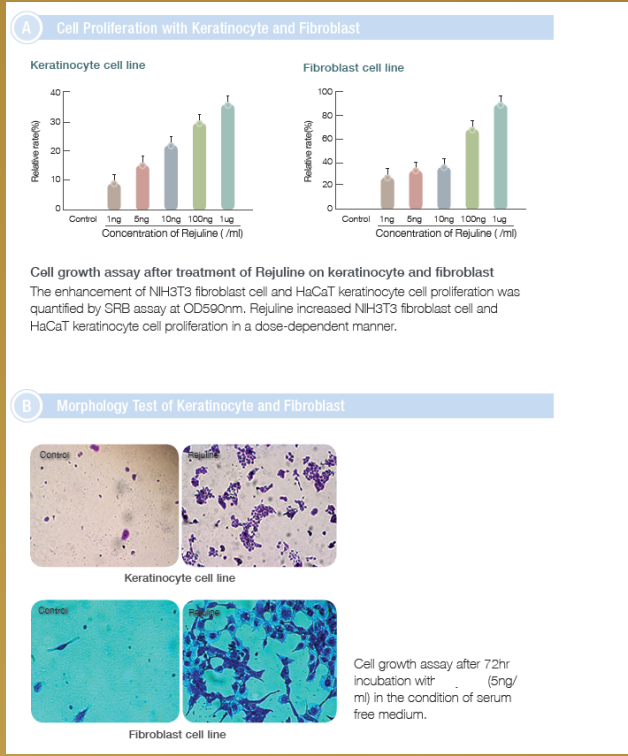
- **Speeding up wound healing and repair.**
- **Stimulating normal skin growth.**
- **Reducing and preventing skin lines and wrinkles by actively generating new skin cells.**
- **Improving skin elasticity by inducing collagen and elastin synthesis.**

Clinically proven results

Exosomal oligopeptide-20



Exosomal acetyl decapeptide-3



Why Biomimetic peptide in Syntetic exosome

As for PN, ***biomimetic peptides also tend to be blocked by the fibrous structures of the skin, this reduces their effectiveness at the receptor level.***

Synthetic exosomal structures improve their delivery by facilitating peptide-receptor binding.

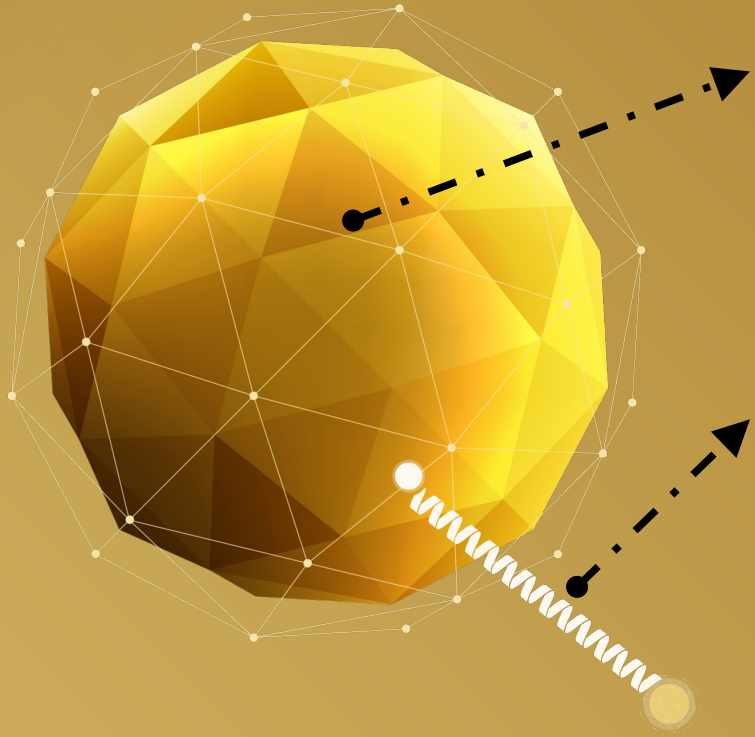
Another very important advantage is also the reduction of allergic reactions and side effects linked to the presence of synthetic peptides

Biomimetic petide	**Exosomal structure with Biomimetic peptide**
Blocked by polar structure (collagen- elastin...)	No interaction with polar structures (collagen-elastin)
Risk of allergic reaction	Less risk of allergic reaction
Need high quantity of product to have a good stimulation	Need miminal quantity of product to have a good result

Acetyl heptapeptide 9 *Gold carrier*
Copper Tripeptide 1

V-Tech Gel Mask is enriched with two innovative polypeptides capable of effectively stimulating the skin.
Two innovative peptides of synthetic origin able to stimulate regenerative processes and improve skin quality.

Acetyl heptapeptide 9 *Gold carrier*



Colloidal gold Core,
the part of the peptide used for a better biodistribution of the peptide

Acetyl Heptapeptide 9
The peptide based on TGFBeta essential for a normal stimulation of fibroblast cell, it increase the production of elastin, collagen type 3 and HA.

Clinically proven effect:

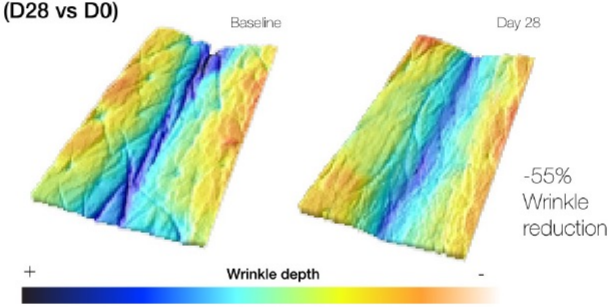
- Increase of the proteins of the extracellular matrix
- Increased cell turnover
- Relaxing effect on skin lines and wrinkles

Clinically proven results

In vivo study:
In-use double blind, randomized, efficacy test
of a cream with MVP Golden Collagenine to improve facial and eye contour wrinkles

Protocol study :
15 Panelist (Healthy females)
Age : 35 -60 years old
28 days
Cream at 0.30% applied twice a day

Anti-wrinkle effect (D28 vs D0)



Technique : Confocal profilometry :
Confocal profilometry is a point scanning optical technique used to image the sample surface.

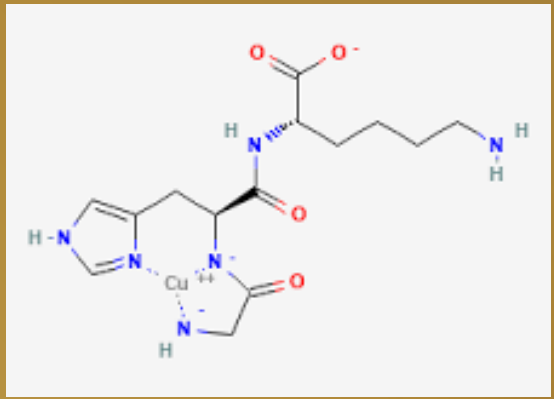
Technique : Stereoscopic microscope

IN VIVO TEST

Acetyl heptapeptide 9
Gold carrier

Copper Tripeptide 1

GHK-Cu is a copper-peptide complex that is naturally found in body fluids (plasma, saliva and urine).
It has various biological properties: improves wound healing by stimulating the breakdown of denatured collagen and subsequently stimulating the production of new EMC.
It has antioxidant properties thanks to conjugated copper, thus reducing extracellular free radicals harmful to cellular health.



Soothing and protective principles

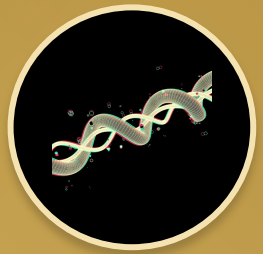
Hydration and protection

Regenerating and protective principles

The uniqueness of V-Tech Gel Mask is given by the multiplicity and richness of functional ingredients. In addition to the bioactive molecules, the texture is enriched with substances that have a high hydrating, stimulating and emollient power.

- Snail slime: purified polysaccharides
- Low molecular weight polynucleotides
- Aloe Vera
- LMW hyaluronic acid

Many active ingredients for a synergistic action

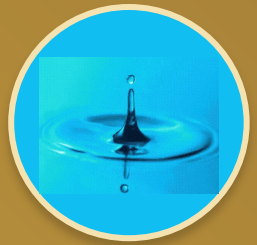


Polynucleotides

- Skin regeneration
- Antioxidant effect
- Deep moisturizing action

Synthetic exosomes

Targeted stimulating effect



Soothing and hydrating substances

Restoration of the skin barrier, hydration, protection

V tech SystemVS Other Human exosomes products

Contains PDRN (Salmon DNA) which is the latest of technologies for biorestructuring and biostimulation Contains Specific Polypeptides that ensures maximum stimulation of cells	Contains basic Vitamins, Minerals and peptides. Leading to minimal stimulation if compared with Poly nucleotides

Indications

- Powerful biostimulation and tightening in skin of Face, Neck, Decollete, Hands and Feet.
- Powerful stimulation to Hair Follicles
- Stretch Marks
- Breast striae
- décolleté
- Cuticles
- Earlobe

Each box contains:

5 V-Tech Serum of 5 ml
5 V-Tech Gel Mask of 5 ml

Application protocol

Phase 1 : Intradermal Administration of V-Tech Serum
Phase 2: Application of V-Tech Gel Mask without rinsing

Normally *2 ml of V-Tech Serum* are sufficient for each area (face-neck-décolleté) and about *2 ml of V-Tech Gel Mask* to be applied on the same area by massaging, leaving on until completely absorbed

Application protocol with microneedling

Phase 1 : Spread 2ml of V-Tech Serum on the area to be treated then pass the microneedling device in antigravitational direction
Phase 2: Application of V-Tech Gel Mask without rinsing

Normally ***2 ml of V-Tech Serum*** are sufficient for each area (face-neck-décolleté) and about ***2 ml of V-Tech Gel Mask*** to be applied on the same area by massaging, leaving on until completely absorbed

Speed and needle depth should be regulated depending on skin structure

Application protocol with microneedling

Protocol:

- 1 session every 2 weeks
- For at least 4-6 sessions
- Repeat 2 cycles per year

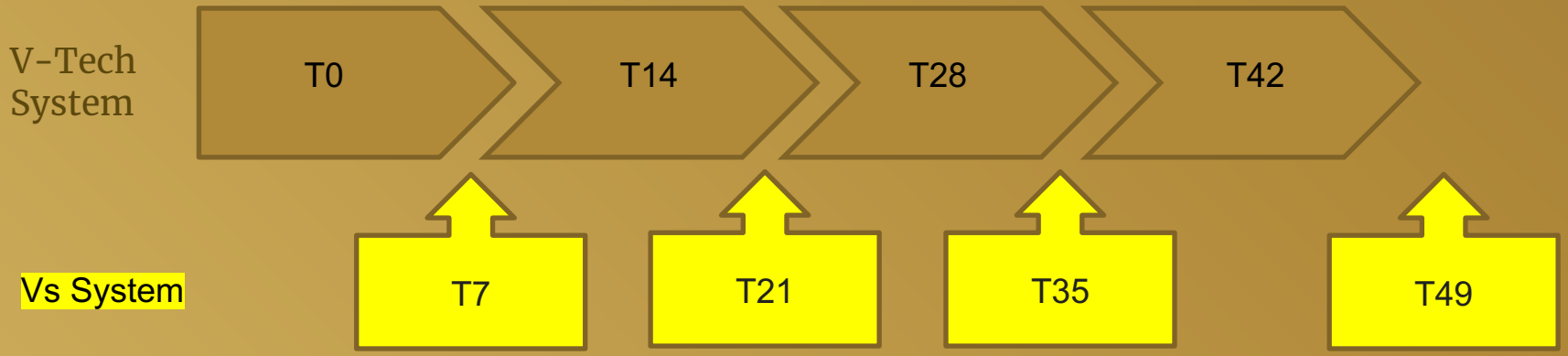
Application protocol

One session every 14 days for 4 consecutive sessions.

We suggest one maintenance session every 2 months to optimize results

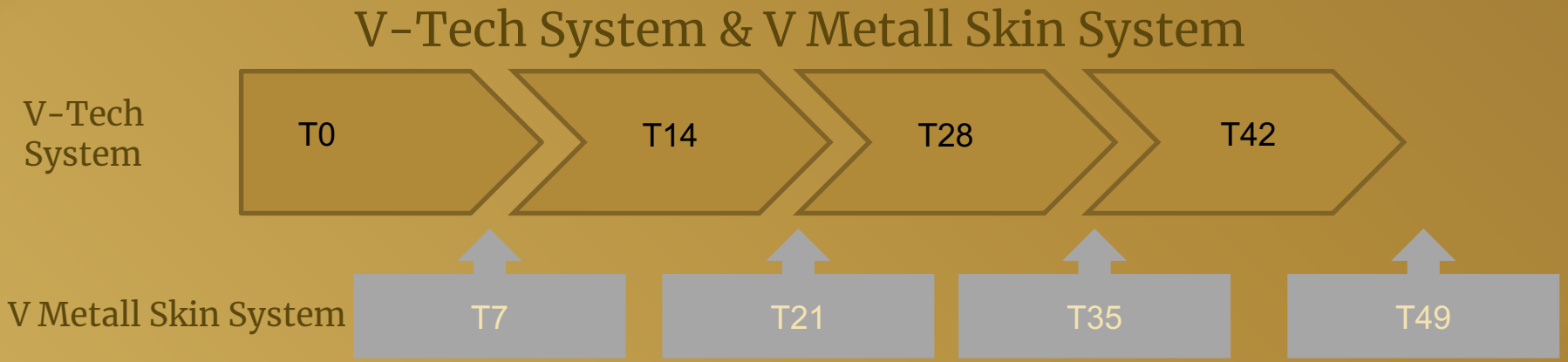
Combined application protocol for dry skin

V-Tech System & Vs System



We suggest one maintenance session every 2 months to optimize results

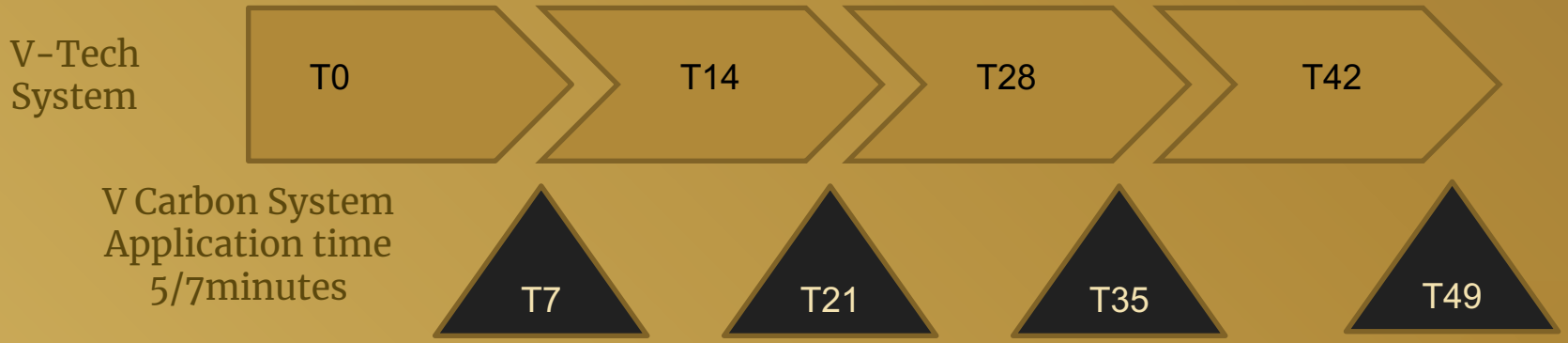
Combined application protocol for asphyxiated and thin skin



We suggest one maintenance session every 2 months to optimize results

Application protocol for oily/acneic/comedonic skin

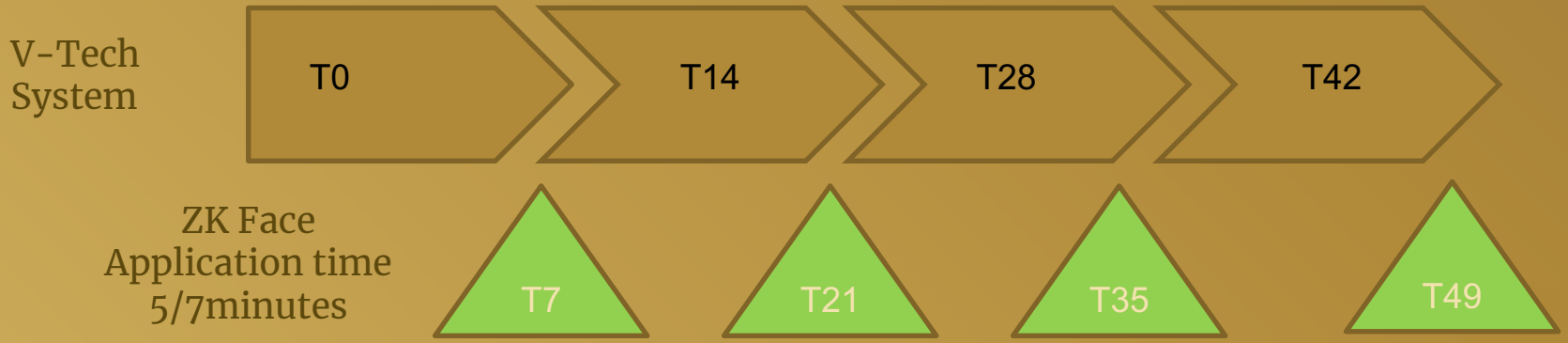
V-Tech System & V Carbon System



We suggest one maintenance session every 2 months to optimize results

Combined application protocol for skin with advanced chrono and photoaging

V-Tech System & ZK Face



We suggest one maintenance session every 2 months to optimize results

Clinical study and personal experience

EFFECTIVENESS AND SAFETY OF A GALENIC PREPARATION BASED ON SYNTETIC EXOSOMES ENRICHED WITH POLYNUCLEOTIDES WITH HIGH MOLECULAR WEIGHT AND A COSMETIC GEL CONTAINED LOW MOLECULAR WEIGHT POLYNUCLEOTIDES, BIOMIMETIC PEPTIDES AND OTHER INGREDIENTS:

CLINICAL STUDY

Dr. Andrea Brunoro - MD - Board Certified Aesthetic Physician

Basso Di Pasquale - CPT

Silvia Basevi – Biologist and Nutritionist

Patients :

62 male and female patients aged between 40 and 68 were treated following an identical protocol, every two weeks for 4 sessions, one hour before treatment an anesthetic cream based on 20% lidocaine.

Women who were pregnant or planning to become pregnant in the next 12 months, or those who were breastfeeding were excluded from the study.

Other exclusion criteria:

- previous aesthetic medical treatments in the area,
- treatment with botulinum toxin,
- patients with proven allergic reactions,
- patients subject to chronic drug therapies

Material and methods

Treatment outcomes were evaluated by biophysical measurements using:

- ***Corneometer*** (CM825, Courage1Khazaka electronic GmbH, Germany),
- ***Visioscan*** (VC98,Courage1Khazaka electronic GmbH, Germany),
- ***Visio face*** (Quick, Courage1Khazaka electronic GmbH, Germany),
- ***VISIA FIGCR*** (2.2 Deluxe, CANFIELD, Germany)
- ***Skin scanner*** (DUB-USB, Taberna pro medicum, Germany),
- ***Moire*** (MBS-100, Stradek, Korea),
- ***PRIMOS*** (GFM, Teltow, Germany),

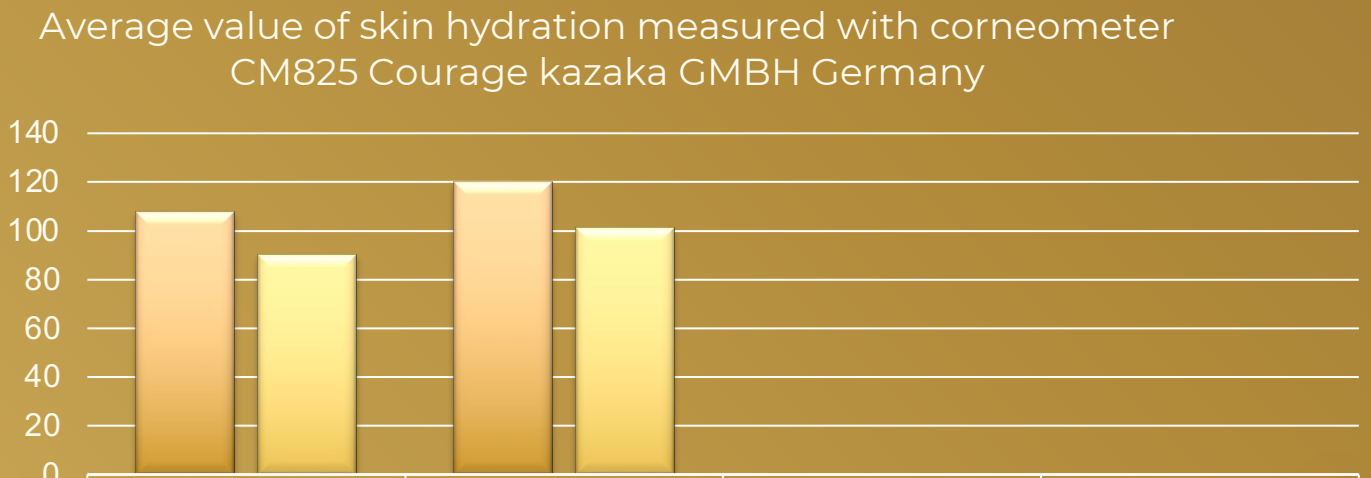
Results

The thickness and quality of the skin showed and maintained results even after 12 weeks after implantation. Skin hydration increased both after the first two weeks, but especially after the following 12, confirming a remarkable beneficial effect especially in the range of younger people (graph 1).

Regarding skin tone and wrinkles, the most noticeable improvement was seen 12 weeks after implantation and was greater in younger patients (range 40-50) than in more mature patients (50-65) (graph 2).

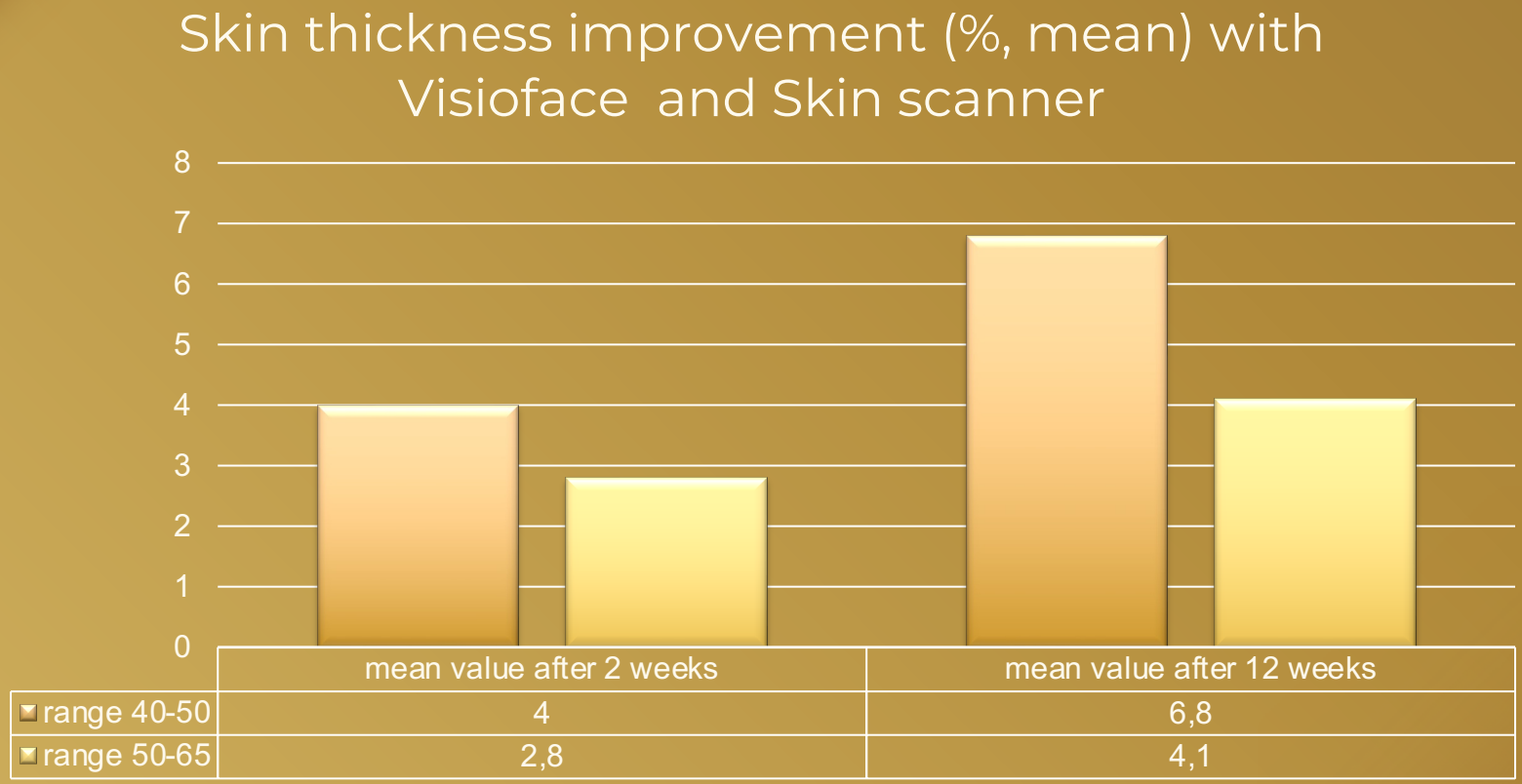
On the contrary, analyzing the results on patients who had tissue failure, especially on the mandibular area, the most important results were detected after 12 weeks and on patients with a more mature age range (range 50-65) (graph 3).

Graph 1



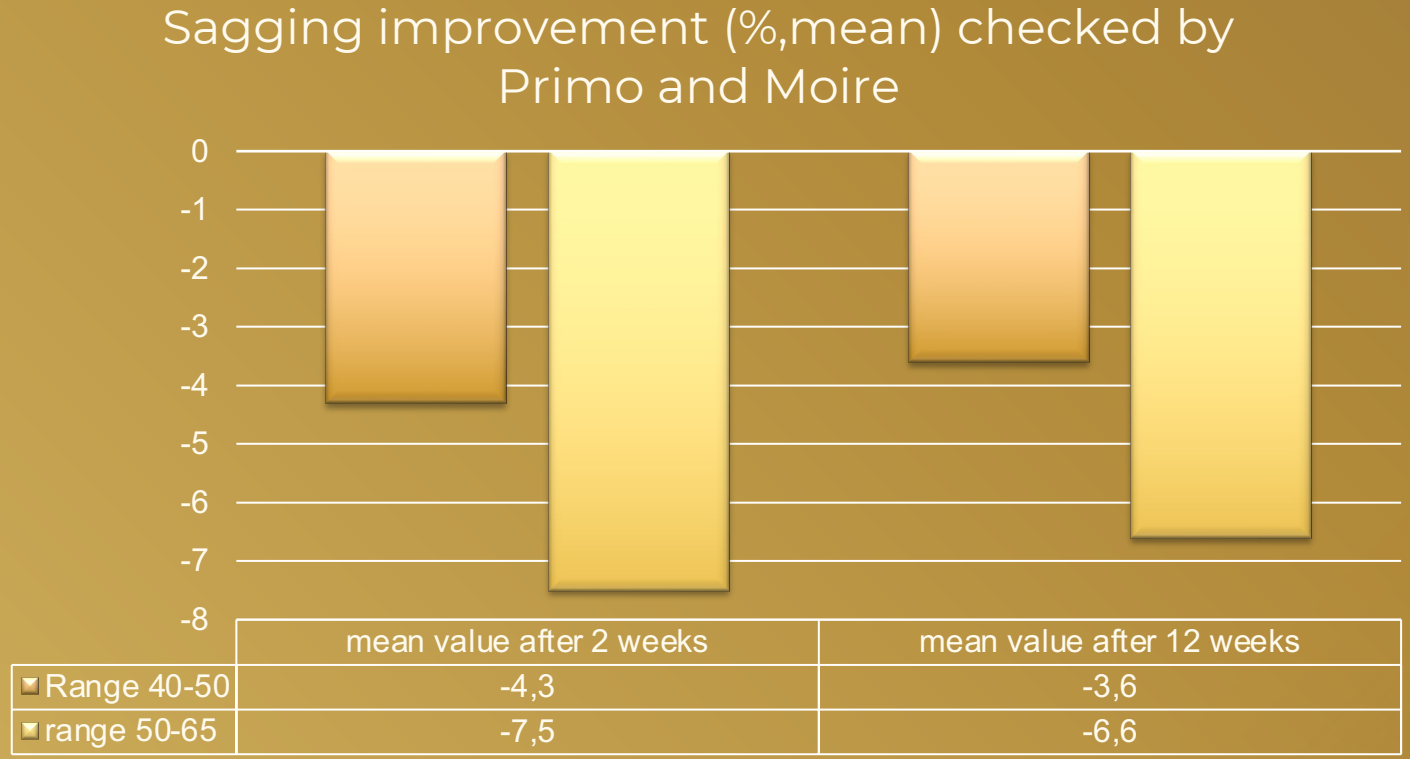
	mean value after two weeks	mean value after 12 weeks		
range 40-50	108	120		
range 50-65	90	101		

Graph 2



	mean value after 2 weeks	mean value after 12 weeks
range 40-50	4	6,8
range 50-65	2,8	4,1

Graph 3



	mean value after 2 weeks	mean value after 12 weeks
Range 40-50	-4,3	-3,6
range 50-65	-7,5	-6,6

Conclusions

The instrumental measurements carried out after the treatment with the galenic solution containing polynucleotides, synthetic exosomes and biomimetic peptides in association with the cosmetic gel mask, ***showed a significant improvement in skin conditions in terms of hydration, improvement of skin thickness and reduction of skin laxity*** both in the class of younger patients analyzed and in the class of more mature patients.

No cases of side effects have been reported. We can assume that this condition derives from the better tolerability guaranteed by the exosomal structures, which makes the active ingredients contained in them less exposed.

Therefore, it is possible to affirm that the use of synthetic exosomes in association with high molecular weight polynucleotides, biomimetic peptides and vegetable stem cells stands as a promising and effective combination to counteract the aging process of the skin.

Before and after

Before and after 3 sessions

Before and after 4 sessions

Before and after 3 sessions

Before and after

Before and after 4 sessions

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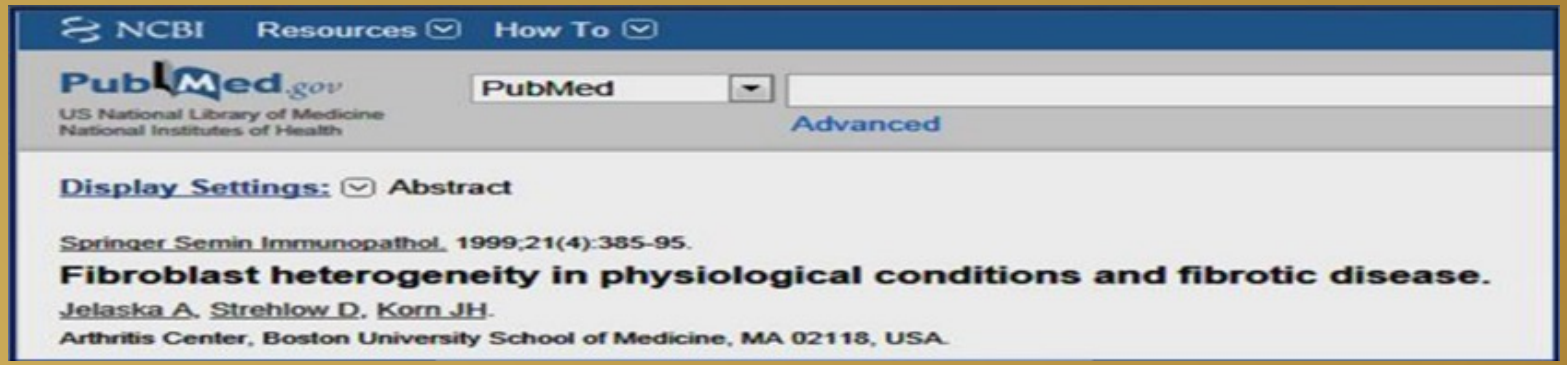
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Cardiovascular & Hematological Agents in Medicinal Chemistry, 2009, *7*, 313-321

Polydeoxyribonucleotide (PDRN): A Safe Approach to Induce Therapeutic Angiogenesis in Peripheral Artery Occlusive Disease and in Diabetic Foot Ulcers

Domenica Altavilla[1], Alessandra Bitto[1], Francesca Polito[1], Herbert Marini[2], Letteria Minutoli[1], Vincenzo Di Stefano, Natasha Irrera, Giulia Cattarini[3] and Francesco Squadrito[1,*]

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14 (1996) 1555–1560

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AND BIOMEDICAL
ANALYSIS

Characterization and quantitation of the active polynucleotide fraction (PDRN) from human placenta, a tissue repair stimulating agent

Giuseppe Tonello[a], Marcello Daglio[a], Nadia Zaccarelli[a], Enzo Sottofattori[b], Mauro Mazzei[b], Alessandro Balbi[b,*]

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Clinical Evaluation of the Trophic Effect of Polydeoxyribonucleotide (PDRN) in Patients Undergoing Skin Explants. A Pilot Study

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Address for correspondence: Prof. M. Fimiani, Clinica Dermatologica, Università degli Studi di Siena, Italy

Key words: PDRN – Polydeoxyribonucleotide – Re-epithelialisation – Wound healing – Skin explants – A_2-purinergic receptors – Salvage pathway

BIOREVITALIZATION AND COSMETIC SURGERY OF THE FACE: SYNERGIES OF ACTION

Maurizio Cavallini, MD

Unit of Plastic Surgery, Galeazzi Institute - Milan - Italy

Received: *March, 2004*

Key words: *Polydeoxyribonucleotide; PDRN; Biorevitalization; Aesthetic surgery;*

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THERAPEUTIC HOTLINE

Long-chain polynucleotide filler for skin rejuvenation: efficacy and complications in five patients

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ORIGINAL ARTICLE

JKMS

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Effects of Polydeoxyribonucleotide in the Treatment of Pressure Ulcers

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This study aimed to examine the positive effects of polydeoxyribonucleotide (PDRN) on the wound-healing process in pressure ulcers. In this randomized controlled trial, the effects of PDRN were compared over time between an experimental group (n = 11) and a control group (n = 12). The former was administered the same dose of PDRN intramuscularly (1 ampule, 3 mL, 5.625 mg, for 5 days) for 2 weeks and perilesionally (1 ampule, 3 mL, 5.625 mg, twice a week) for 4 weeks. The primary endpoint for determining efficacy was wound healing in the pressure ulcers, which was reflected by the wound surface area determined using VISITRAK Digital (Smith & Nephew, Largo, FL). The secondary endpoint was the pressure ulcer scale for healing score, determined using pressure ulcer scale for healing (PUSH Tool 3.0 developed by the National Pressure Ulcer Advisory Panel). After the 4-week treatment period, PDRN therapy was found to significantly reduce the wound size and PUSH score, without adverse effect during the treatment. The findings indicate that PDRN can positively modify the wound healing process in pressure ulcers, and its use could improve the clinical outcomes of patients and lower the need for additional therapies or hospital stay.

Keywords: Pressure Ulcers; Polydeoxyribonucleotides; Re-epithelialization

Cell Proliferation

Cell Prolif. 2008, **41**, 739–754 doi: 10.1111/j.1365-2184.2008.00547.x

In vitro polydeoxyribonucleotide effects on human pre-adipocytes

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The Effect of PDRN, an Adenosine Receptor A_{2A} Agonist, on the Healing of Chronic Diabetic Foot Ulcers: Results of a Clinical Trial

Francesco Squadrito, Alessandra Bitto, Domenica Altavilla, Vincenzo Arcoraci, Giovanni De Caridi, Maria Eugenio De Feo, Salvatore Corrao, Giovanni Pallio, Carmelo Sterrantino, Letteria Minutoli, Antonino Saitta, Mario Vaccaro, and Domenico Cucinotta

Departments of Clinical and Experimental Medicine (F.S., A.B., V.A., G.P., C.S., L.M., A.S., M.V., D.C.), Paediatric, Gynaecological, Microbiological, and Biomedical Sciences (D.A.), and Experimental Surgical Sciences and Dentistry (G.D.C.), University of Messina, 98125 Messina, Italy; Diabetology Unit (E.D.F.), Cardarelli Hospital, 80131 Naples, Italy; and Department of Internal Medicine (S.C.), University of Palermo, 90128 Palermo, Italy

Thank you for your kind attention