

# Maximilian Zenho & Co

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**By Doctor Andriana Anastasiou**

## **General Information.**

**Derma GeL® is a herbal healing product.**

**Derma GeL® is a normal saline-based hydrogel with anti-microbial agent, intended for topical use in skin conditions such as wounds, burns, bites and stings etc.**

**Derma GeL® is free of cytogenotoxic and mutating effects and does not irritate the skin cells (non-irritant).**

**Derma GeL® provides a moist environment to the injured skin site (wound, burn, etc), through a water-based gel polymer that doesn't dry out.**

**Derma GeL® is a gel that forms a homogenous protective barrier on the surface of the damaged skin site.**

## **TABLE OF SKIN CONDITIONS TREATED WITH Derma GeL®**

- **Scratches, skin laceration and abrasions.**
- **Skin irritations.**
- **First and second degree burns (including sunburns).**
- **Insect bites and plant stings.**
- **Bedsore.**
- **Pressure sores.**
- **Cutaneous ulcers.**
- **Diabetic foot ulcers.**
- **Friction sores.**
- **Venous stasis ulcers.**
- **Post-operative wounds (on suture points).**
- **Radiation dermatitis**  
(pre- and post- radiation treatment).

**Contra-indications: None Known.**

**Side effects: None known.**

**Use during pregnancy: Safe to use.**

**Use during breast-feeding: Safe to use.**

**Cross-reactions with other drugs: None known.**

**Overdose: None known.**

**CAUTION:** Not to be used in cases of abnormal cell proliferation, e.g. on warts, or when there is suspicion of fungal invasion.

## Ingredients:

- Titrated polysaccharides (Pyrus sorbus extr.).
- Centella asiatica (titr.extr.).
- Calendula officinalis (titr.extr.).
- Salvia officinalis (titr.extr.).
- Thymus vulgaris (titr.extr.).
- Lavandula angustifolia (titr.extr.).
- Propylene glycol.
- Hydrogenated castor oil.
- Sodium bicarbonate.
- Glycerine.
- Ethyl alcohol (5%).
- Purified water.
- Carbomer.

**When the extracts of Derma GeL® were studied on different types of cells *in vitro*, it was proven that they:**

- Are absorbed rapidly and completely from intact skin, as well as injured skin.
- Promote the synthesis of Collagen Type III and Collagen Type I.
- Promote the maturation of collagen.
- Enhance the wound contraction rate.
- Stimulate all phases of epithelization.
- Stimulate the multiplication and migration of epithelial cells.
- Present strong anti - inflammatory action.
- Have bactericidal action.
- Promote healthy and rapid epithelization.

## Protective Film effect:

Derma GeL® ensures a protective film effect,

which provides the damaged skin the ideal amount

of moisture needed for a rapid and effective healing,

reducing concomitantly the risk

of excessive epithelial cell proliferation (for example, the epithelization process can stop or be altered if the **damaged skin is too dry**).

If the damaged skin is **more than necessary moist**, there could be irritation, excessive epithelial cell proliferation, and scar, keloid or hypertrophic tissue formation, as a result of excessive infection.

## **Bactericidal effect:**

### **Gram+**

- Staphylococcus aureus
- Staphylococcus epidermis
- Micrococcus flavus
- Sarcina lutea
- Streptococcus faecalis
- Streptococcus pyogens
- Streptococcus agalactiae
- Diplococcus pneumoniae
- Corynebacterium Hoffman
- Propionebacterium acnes
- Bacillus subtilis
- Beta-haemolytic streptococcus

### **Gram-**

- Escherichia coli
- Proteus vulgaris
- Moraxella glucidolytica
- Klebsiella pneumoniae
- Neisseria flava
- Citrobacter spp.
- Shigella sonnei
- Proteus mirabilis
- Legionella spp.
- Pseudomonas aeruginosa

### **FUNGI**

- Trichophyton mentagophytes
- Trichophyton rubrum
- Aspergillus flavus
- Aspergillus flavus
- Candida albicans
- Candida tropicalis
- Microsporum canis
- Microsporum gypseum
- Thermoactinomyces vulgaris

## PROOF OF ANTIMICROBIAL ACTIVITY

The following results prove the unique advantage of Derma GeL® to sustain its anti-microbial activity for 28 days after only a SINGLE APPLICATION of the product.

- Sample: Derma GeL® Batch No. 68-07/2004, Maximilian Zenho & Co.
- Method: European Pharmacopoeia.
- Initiation of analysis: 07.08.2000.

### Results:

#### 1. Total number of initial inoculations:

Staphylococcus aureus	1,1.10 <sup>9</sup> cfu/ml
Pseudomonas aeruginosa	9,6.10 <sup>8</sup> cfu/ml
Candida albicans	8,9.10 <sup>8</sup> cfu/ml
Aspergillus niger	7,2.19 <sup>8</sup> cfu/ml

(cfu=colony forming unit)

#### 2. Total amount of initial inoculations at time 0:

Staphylococcus aureus	1,1.10 <sup>7</sup> cfu/ml
Pseudomonas aeruginosa	9,6.10 <sup>6</sup> cfu/ml
Candida albicans	8,9.10 <sup>6</sup> cfu/ml
Aspergillus niger	7,2.19 <sup>6</sup> cfu/ml

#### 3. Confirmation of recovery values:

	<u>Control value</u> (cfu/ml)	<u>Product dilution</u> 10 <sup>-1</sup> (cfu/ml)	<u>Value</u> 10 <sup>-2</sup> (cfu/ml)
Staphylococcus aureus	842±30	804±54	940±94
Pseudomonas aeruginosa	910±37	874±59	900±94
Candida albicans	660±50	684±90	670±148
Aspergillus niger	590±86	656±52	570±98

Micro-org. (cfu/ml)	0 hours	6 hours	24 hours	7 days	14 days	28 days
S. aureus	6,6.10 <sup>3</sup>	6,2.10 <sup>3</sup>	7,2.10 <sup>2</sup>	-	-	0
Pseudomonas aeruginosa	1,2.10 <sup>3</sup>	9,4.10 <sup>3</sup>	6,2.10 <sup>2</sup>	-	-	0
Candida albicans	7,2.10 <sup>6</sup>	-	-	7,2.10 <sup>2</sup>	-	0
Aspergillus niger	6,4.10 <sup>6</sup>	-	-	2,2.10 <sup>2</sup>	-	0



## EUROPEAN PHARMACOPOEIA CRITERIA:

		TIME		DURAT.		
		6 hours	24 hours	7 days	14 days	28 days
BACTERIA	A	2	3	-	-	NR
	B	-	1	3	-	NI
FUNGI	A	-	-	2	-	NI
	B	-	-	-	1	NI

NR=No Recovery

NI =No Increase

A: Suggested Effectiveness Criteria.

B: In some justified Criteria that cannot meet Criteria A, samples must respond to Criteria B.

### **CONCLUSION:**

The sample of Derma GeL® analysed, meets the Criteria A. **Therefore, Derma GeL® can be listed as an anti-microbial agent.**

### **BIBLIOGRAPHY:**

Cordonnier J. Chemiphar Labo\* (Belgium) for Maximilian Zenho & Co. (Belgium)-  
**Evaluation of the Efficacy of Anti-microbial Preservation of the Product Derma GeL®** according to the European Pharmacopoeia-P.E.T (Preservative Effective Test) No. 5.1.3 - Analytical Report No.00/08/066-August 2000.

\*Accredited organization for controls and investigations operating according to EN 45001 (European Norm), S.O.P. (Standard Operating Procedures) and G.L.P. (Good Laboratory Practice).

**MANY HERBAL PRODUCTS DON'T WORK.**  
**WHY?**

- **BECAUSE THEY DON'T USE TITRATED EXTRACTS.**
- **BECAUSE THE METHOD USED FOR THE ISOLATION OF THE ESSENTIAL OILS IS DEFICIENT.**
- **BECAUSE THEY DON'T USE THE RIGHT COMBINATION OF HERBS.**

**DERMA GeL® WORKS.**

## Effects of Derma GeL® on healthy tissues.

The study was performed at Bio-Pharma and Simon Laboratories (Internationally Approved Organization For Controls and Trials) - functioning according to Standard Operating Procedures (S.O.P.), Good Laboratory Practice (G.L.P.), accredited to EN 45001 and other International Research Programmes, after application of the Company Maximilian Zenho & Co, Brussels, Belgium).

This model was composed of human 3-dimensional keratinocyte cultures that formed a complete differentiated epidermis and a stratum corneum.

These *in vitro* cultures show barrier function, as well as metabolic activity, allowing therefore the application of product batches and resemble topical exposure *in vivo*.

Based on these studies and their results, it was proved that all active ingredients PENETRATE HEALTHY SKIN TISSUES.

DUE TO THE FACT THAT Derma GeL® IS COMPLETELY FREE OF ANY TOXIC SUBSTANCE, OR TOXIC ACTION, AS PROVEN IN THIS STUDY, HAS THE UNIQUE ADVANTAGE TO MAINTAIN CELL VIABILITY TO >97% WHEN APPLIED TO THE SKIN.

## **RECOMMENDED APPLICATION.**

**Apply as soon as possible** so as to avoid infection, and above all, the damage or the alteration of the available healthy skin cells. In the case of insect bites or plant stings, early application of Derma GeL® will help to the immediate neutralization of several substances related to the bite or sting (e.g. formic acid), and the prevention of uncontrolled inflammation (oedema, redness, pain, etc).

**The quality of the available healthy cells** is very important, as Derma GeL® enhances the proliferation of the cells (the fresher the wound, burn, etc., the faster the healing).

In several cases, it is **recommended to scrape and remove any existing scabs, keloids, etc.** from the damaged skin area before the application of Derma GeL®, so as to obtain a basis of healthy epithelial cells for fast proliferation and excellent results.

## **GENERAL DIRECTIONS** **FOR THE CORRECT USE OF Derma GeL®.**

**Cleaning:** **Only** with **hot water** or **normal saline (0.9%)**.

**Application:** Apply a thick layer of Derma GeL® 2-3 times daily, or as frequently as required. It is advisable to extend the application to the healthy perimeter of the affected area.

**Caution:** When the skin has been extensively damaged (massive loss of skin tissues, severe burns, etc)-where and when possible-apply Derma GeL® 2-3 times daily, covering it with a non-adhesive dressing and a bandage. Best results are obtained by using the hydrocolloid Hydrofilm® (Hartmann AG). The dressing should remain on the damaged skin area for about 24 hours, to assist the healing process.

**Thereafter, the area should remain uncovered**, as Derma GeL® forms a porous protective film on the surface of the damaged skin area. It is not advisable to leave the dressing for a longer period of time, as it can increase the local temperature and lead to infection, 'runny' wounds, etc, due to the lack of air. Additionally, in some cases, prolonged use of dressings stimulates **excessive skin proliferation and formation of keloids, hypertrophic tissues, etc.**

**GENERALLY, AVOID THE USE OF ...**

**ANTISEPTICS.**

**POVIDONE-IODINE SOLUTIONS.**

**TRADITIONAL SPRAYS.**

**CREAMS AND OINTMENTS.**

**TRADITIONAL DRESSINGS.**

**TOPICAL ANTIBIOTICS.**

**PARAFFIN DRESSINGS CONTAINING ANTIBIOTICS.**

**ALCOHOL SOLUTIONS.**

**SILICONE-BASED DRESSINGS.**

## POVIDONE-IODINE SOLUTIONS:

- ▼ Are toxic to human fibroblasts.
- ▼ They reduce the viability of leucocytes.
- ▼ They reduce the activity of macrophages.
- ▼ The dried tissue tends to turn necrotic and acts as an excellent means of microbial growth, favouring therefore infection.

## TOPICAL ANTIBIOTICS:

- ▼ They leave unabsorbed residues on skin surface.  
These residues oxidise with body temperature and the consequent result is cell irritation.
- ▼ They favour infection and surer-infection, because they disrupt or destroy the normal bacterial flora of the skin.
- ▼ Usually they stop the very necessary inflammation phase.

**IF ANTIBIOTIC ADMINISTRATION IS NECESSARY, THESE SHOULD BE ADMINISTERED:**

**ORALLY  
INTRAVENOUSLY  
INTRAMUSCULARLY  
SUBCUTANEOUSLY**

**ALTHOUGH, NEVER TOPICALLY!**

# Mechanism of action

## Derma GeL® combines:

The moist wound healing theory because it contains 70% water

**AND**

the necessary active ingredients for a healthy, rapid and complication-free healing with

**NONE, OR THE MINIMUM POSSIBLE SCAR, HYPERTROPHIC TISSUE, KELOID FORMATION, ETC.**



**ALL KINDS OF DERMAL TISSUE DAMAGE [i.e. IRRESPECTIVE OF THE REASON THAT CAUSED THE BREAK OF THE CONTINUITY OF THE SKIN, LIKE ACCIDENTS, BURNS, STINGS, BITES ETC, OR INCISIONS IN THE OPERATING THEATRE UNDER ABSOLUTE STERILIZATION] MUST PASS THROUGH SEVERAL PHASES UNTIL COMPLETE AND CORRECT HEALING(WITHOUT SCAR, KELOID, HYPERTROPHIC TISSUE FORMATION, ETC).**

**The major healing phases of a damaged dermal tissue are:**

**HEMOSTASIS**

**INFLAMMATION**

**PROLIFERATION**

**MATURATION**

**NOTE:** Derma GeL® intervenes in all four healing phases, orientating healing towards its rapid completion, without complications

# **Phase 1: Haemostasis**

## ROLE OF Derma GeL® IN THE HEMOSTASIS PHASE.

**Derma GeL® FORMS A FRAMEWORK THAT ACTS AS A MESH. THIS MESH ENHANCES FIBRIN AND STABILIZES FURTHER THE PLATELET PLAQUE.**

## ADVANTAGES OF Derma GeL® APPLICATION DURING THE HEMOSTASIS PHASE.

In normal conditions, as the platelet aggregate and the stable fibrous tissue are formed, a scab also is formed.

**NOTE: The scab formation delays the healing process,** because the cells of the epidermis have to migrate into deeper layers of the skin, where the environment is moist, something which forces the damaged skin to heal from bottom to top.

**If Derma GeL® is applied early on damaged skin, the environment will maintain its moisture, and epithelial cells are not forced to migrate into deeper layers of the skin for survival. These advantages will help the damaged skin healing to be effected from the opposite sites, as well as from bottom to top.**

## PHASE 2: INFLAMMATION

- PRODUCTION OF INFLAMMATORY EXUDATES.
- PRODUCTION OF PROSTAGLANDINS.
- ATTRACTION OF NEUTROPHILS MONOCYTES AT THE DAMAGED SKIN SITE. CHANGE PHAENOTYPE WHEN ENTERING TISSUES, RESULTING TO MACROPHAGES.

**CONTROLLED INFLAMMATION IS REQUIRED FOR A HEALTHY HEALING. EXCESSIVE AND UNCONTROLLED INFLAMMATION HAS NEGATIVE RESULTS IN THE HEALING PROCESS.**

### SYMPTOMS OF INFLAMMATION DUE TO PROSTAGLANDIN PRODUCTION.

- Redness of the area.
- Increase of the local temperature.
- Oedema.
- **Pain**, due to destruction of blood cells and increase in the production of prostaglandins which alter the pain threshold, due to their action nerve endings.

**AFTER 72 HOURS, THE MACROPHAGE IS THE MAIN CELL TISSUE TYPE FOUND AT THE DAMAGED TISSUE SITE. THE FORMATION OF NEW BLOOD VESSELS IS SUCCEEDED THROUGH THE RELEASE OF GROWTH ANGIOGENIC FACTORS (HGF) WHICH STIMULATE THE PROLIFERATION OF EPITHELIAL CELLS.**

## **ADVANTAGES OF THE USE OF Derma GeL® DURING THE INFLAMMATION PHASE.**

■ enhances the control of the inflammatory phase (**CONTROL, and NOT TOTAL INHIBITION, because 'controlled inflammation' plays a significant role in the acceleration of the healing process**).

■ the production of thromboxanes, prostacyclins and prostaglandins **STOPS**.

As far as inflammation is concerned, this is beneficial.

**Generally, the term 'beneficial' applies to prostaglandin inhibition.**

### **Prostaglandins:**

- ▼ reduce the immune response and the proliferation and activity of leucocytes.  
Immune system is important to inflammation and healing.
- ▼ contribute to pain, altering the pain threshold by their action to nerve endings.
- ▼ When the synthesis of prostaglandins is inhibited, healing of trauma, burn, etc, is succeeded in a better way and with less pain.

■ **Derma GeL® has strong anti-inflammatory action.**

■ **Derma GeL® is bactericidal.**

■ **Derma GeL® does not destroy any beneficial cell or protein.**

## **CONCLUSION**

Derma GeL®-if used as recommended- keeps the inflammation phase under control, resulting to the following benefits:

- **Dramatic reduction of pain and itchiness**, therefore less amount and frequency of anti-inflammatory drug administration is required. Patients experience an immediate cooling effect after the application of the product.
- **Reduction of oedema formation.**
- **Reduction of redness.**
- **Bactericidal**, although without destruction or disruption of the normal bacterial flora of the skin. Therefore, complications and infection of the damaged skin site are minimised.

The damaged skin site cannot pass to any other healing phase, unless the inflammatory phase has been completed.

**WHEN THE INFLAMMATION PHASE IS COMPLETED,  
THE DAMAGED SKIN SITE PASSES TO THE  
PROLIFERATION PHASE.**

## **PHASE 3: PROLIFERATION.**

**The proliferation phase involves the formation of new connective tissue (granulation tissue).**

**In this phase, the macrophages recruit a new cell-type, the FIBROBLAST.**

### **THE FIBROBLAST:**

☐ Produces Proteoglycans that shelter the collagen fibres and provide them with greater flexibility.

☐ Produces and deposits collagen fibres, which surround the newly formed angiogenesis.

☐ Produces FIBRONECTIN that holds the collagen and the cells together.

**THE FORMATION OF THE GRANULATION TISSUE BEGINS ± 80 HOURS AFTER SKIN DAMAGING.**

**The presence of [OXYGEN AND VITAMIN C](#) is absolutely necessary for the initiation of the proliferation phase.**

### **Why are oxygen and Vitamin C necessary?**

Oxygen and Vitamin C are necessary for the formation of collagen and granulation tissue, because they are substrates of the enzyme that catalyses the reaction of Hydroxyproline formation. Hydroxyproline is an unusual amino acid that is abundant in collagen structure.

The small polypeptide chains, containing Hydroxyproline, are gradually converted to an immature form of triple-helix collagen that is secreted outside the cell, and it's called Procollagen.

Procollagen is converted to [Tropocollagen \(Immature Collagen Type III\)](#).

In this phase there is also **CONTRACTION OF THE DAMAGED SKIN SITE.**

The contraction of the damaged skin reduces its size, mainly by the activity of the **MYOFIBROBLAST** (mature fibroblast).

**NOTE:** If the extent of tissue damage is great, and there is extensive loss of tissues, the re-epithelization process is succeeded from the margins of the damaged skin.

**WHEN AN OPEN WOUND OR BURN IS FILLED UP WITH NEW GRANULATION TISSUE AND EPITHELIZATION IS SUCCEEDED, THE PROLIFERATION PHASE STOPS AND THE SKIN ENTERS THE MATURATION PHASE.**

## **PHASE 4: MATURATION**

In this phase, **MATURE COLLAGEN TYPE I** is formed. Collagen Type I is consisted of three triple  $\alpha$ -helixes bound together with stable bonds.

☐ **Maturation phase is characterized by the organization of collagen and the possible formation of a scar, keloid, etc.**

**Generally, most scars are never as strong in structure as normal tissue originating from, and remain 15-20% weaker compared to the surrounding healthy tissue.**

☐ **Maturation phase can last for several days,** depending on the individual. During this phase there is re-organization of the collagen fibres laid at the damaged skin, during the proliferation time.

☐ During this phase Collagen Type III, a kind of soft, gelatinous collagen laid down during the proliferation phase is matured to a **highly organized collagen, Collagen Type I.**

**The differentiation of Collagen is a dynamic process** that takes place mainly during the maturation phase. However, collagen may continue to remodel indefinitely.



## HOW Derma GeL® INTERVENES IN THE PROLIFERATION AND MATURATION PHASES?

■ Derma GeL® stimulates the fibroblasts to produce and secrete the immature collagen Type III.

■ By the action of Asiatic acid, Madegassic acid and Asiatic acid glycoside, the immature collagen Type III is matured to the stable collagen Type I.

### IMPORTANT REMARK:

Palling or darkening of the skin after healing has been completed.

☞ During the maturation phase, there is **rationalization of the blood vessels** under the healed skin, resulting to its palling or darkening. This colour disappears with time.

☞ On the other hand, the physical status of the patient and the period of time passed for healing, are factors that can affect this particular process.

**HEALTHY HEALING WITH NONE OR MINIMAL SCAR  
FORMATION.**

# **BURNS**

**Due to its strong anti-inflammatory action, Derma GeL® will reduce instantly the inflammation and will soothe dramatically the pain.**

**IMMEDIATE APPLICATION OF Derma GeL® will prevent the formation of blisters and lead to a rapid regeneration of the epithelial tissues.**

Unlike the common practice, i.e. to keep the burned areas dry and demarcated, it is more advisable to treat the damages caused by the burn with Derma GeL®.

Derma GeL® provides an **ideal amount of moisture** to the burned skin, necessary for the minimization of the damages caused by the burn, as well as for acceleration of the healing process.

**It is believed that between the dead and the healthy tissue surrounding it, there is an area of damaged tissue, the fate of which will depend on the therapeutic treatment applied.** This area is analogous to the stasis zone that has been identified in previous studies on burns.

## **SPECIAL REMARK**

**If a skin injury due to an extensive severe burn remains exposed to traditional products and the tissue is desiccated,** this necrotic area can be expanded either on the sides or into the deeper layers of the skin (Dermis).

### **The application of Derma GeL®:**

- ♥prevents from any loss of gases,
- ♥provides the necessary environment for the recovering of this vulnerable area,
- ♥and helps in the reduction of this secondary damage.

## **Application of Derma GeL® on simple clean superficial burns:**

- 1. Clean the burn with plentiful of hot water, or normal saline applied under pressure. In addition, mechanically clean the burn with a sterile non-woven tampon.**

**NOTE:** It has been found, irrespective of the lavage solution used, that the lavage solutions are more effective if applied by pressure.

### **The optimum pressure is 7pSi and this can be easily produced by:**

- a] A 60ml syringe with 18G needle.
- b] A plastic spray container, placed on the stream setting.

- 2. Apply a thick layer of Derma GeL® on the burned surface, extending the application to its healthy margins (preferably, keep the area uncovered).**
- 3. Follow Steps 1 and 2, two to three times daily, until complete healing.**

## **Application of Derma GeL® on extensive burns:**

**If the extent of the burn is great, Derma GeL® can be used in combination with a secondary non-adhesive dressing, preferably Hydrofilm® (HARTMANN AG).**

- 1. Clean the burn with plentiful of hot water, or normal saline applied under pressure. In addition, mechanically clean the burn with a sterile non-woven tampon.**
- 2. Apply a thick layer of Derma GeL® on the surface of the burn, extending the application to its healthy margins (if existing).**
- 3. Fix Hydrofilm® on top of the layer of Derma GeL®. The combination of Derma GeL® with Hydrofilm® can remain unchanged for 24 hours.**
- 4. Thereafter, apply Derma GeL® 2-3 times daily (preferably uncovered) until complete healing.**
- 5. If antibiotic administration is required, according to the severity of the case, or the medical history, these should be administered orally or systemically only.**

## **Application of Derma GeL® on extensive burns on hands.**

We recommend Derma GeL® to be placed in a transparent polyethylene glove because,

- **The high amount of moisture prevents tissue desiccation and helps to its autolytic debridement.**
  
- **The transparent nature of the GeL® and of the gloves, allow the frequent inspection of the burn.**
  
- **The advanced structure of the GeL® protects the nerve endings from the environment aiding to remarkable reduction of pain.**
  
- **The strong anti-inflammatory action of Derma GeL® adds further to the reduction of pain.**
  
- **The whole system allows, in an adequate degree, the movement of the fingers.**

# **RADIATION DERMATITIS.**

## **Pre-radiation treatment:**

Clean the area of the skin to be radiated with normal saline (0.9%) and apply a thick layer of Derma GeL® (preferably, the area should remain uncovered). Derma GeL® should be applied 2-3 times daily, for about 14 days prior to radiation (or as recommended by the physician).

## **Post-radiation treatment:**

Clean the affected area with normal saline (0.9%). Apply a thick layer of Derma GeL® to the affected area (preferably the area should remain uncovered) twice daily, or as recommended by the physician, until complete healing of the damaged skin.

## **Important Remark on pre-radiation treatment:**

Asiatic acid, Madegassic acid and Asiatic acid glycoside (titrated extracts of Centella asiatica) PENETRATE HEALTHY SKIN, STIMULATE THE COLLAGEN TYPE III SYNTHESIS AND ITS MATURATION TO THE STABLE COLLAGEN TYPE I, AND HAVE BEEN SHOWN EXTREMELY EFFECTIVE IN THE ENHANCEMENT OF SUBCUTANEOUS TISSUE AND OF SUPERFICIAL LAYERS OF THE SKIN.

**This kind of prior-treatment application will minimize considerably the possible unwanted effects resulting from radiation (redness, burned skin, tearing of the skin etc).**

# **TREATMENT OF ALREADY DEVELOPED SCARS WITH Derma GeL®.**

## **Recommended application:**

### **Day 1 (Start of the treatment):**

Clean the area (scar) with normal saline. Apply a (very) thick layer of Derma GeL® on the scar, extending the application to its healthy tissue margins. Keep the area uncovered, or if this is not feasible, cover it with a non-adhesive dressing, preferably Hydrofilm® (Hartmann AG).

Apply Derma GeL® in this way twice daily.

### **Day 2:**

Clean the area (scar) with normal saline. Apply a (very) thick layer of Derma GeL® on the scar, extending the application to its healthy tissue margins. Cover the layer of Derma GeL® with a common adhesive plaster.

Apply Derma GeL® in this way twice daily.

### **Day 3:**

Follow the same way of application as Day 1.

### **Day 4:**

Follow the same way of application as Day 2.

...

**Repeat this kind of alternate application of Derma GeL® for about 8 weeks.**

■ The application of Derma GeL® enhances the synthesis of Collagen Type III and Type I at the connective tissue level (deep layer of the skin), through the transdermal absorption of its ingredients.

■ This permanent remodelling of the connective tissue induced by the GeL®, will gradually force the regeneration of the Dermis and the Epidermis layers, erasing the cells of the superficial hypertrophic skin.

■ In addition, the combination of ‘uncovered’ and ‘covered’ application, plays a critical role to the deep regeneration of the skin due to the repetitive changes in temperature, induced by this kind of alternative applications.

■ Derma GeL® is used to erase, to reduce, or to minimize already formed keloids, scars or hypertrophic tissues. This treatment is only successful for low depth keloids, scars or hypertrophic tissues and requires at least 8 weeks of correct application.

■ Derma GeL® also reduces the rash and redness, frequently present at the site of the scar, aiding to patients comfort.



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