

# ABSOLUTE RICH MOISTURE AGE DEFENSE

ABSOLUTE RICH HYDRATION
WITH PEPTIDE EXFOLIATION TECHNOLOGY
AND CERAMIDE HYDROLIPID REGENERATION

- Multi-level restoration of hydration and water potential
- Protective barrier regeneration for the regulation of TEWL
- Supplementation of lipids,
   NMF humectants and emollients
- Intensive renewal of elasticity and reduction of wrinkles







An advanced year-round moisturising and rejuvenating therapy featuring peptide-based skin exfoliation. Regenerates the hydrolipid barrier, increases the skin's water reserves and activates repair mechanisms for effective wrinkle reduction, restored elasticity and a healthy glow.

#### SKIN BARRIER AND HYDRATION

The skin is the largest organ of the human body with an important task to maintain homeostasis of the whole system – it is the first protective barrier against variable external factors. Dry skin manifests itself by a feeling of tightness, flaking, roughness and dullness. It is easily irritated and is often covered with fine, superficial wrinkles that can later deepen into larger furrows. Dry skin is also characterised by reduced elasticity, sebum deficiency and a tendency to deep wrinkles. This dermatosis is accompanied by impaired water and lipid metabolism, weakened function of the sweat and sebaceous glands and a low acidic pH response (the skin's antimicrobial barrier).

#### MECHANISMS FOR PROPER SKIN HYDRATION

The essence of proper skin moisturising is not only the providing of highly hygroscopic substances that bind water, but first of all the increasing of water resources in the skin. The essence of this process is to reduce transepidermal water loss TEWL and strengthen the skin's protective barrier - the stratum corneum and the hydrolipid barrier. These mechanisms depend on a number of metabolic and biochemical changes occurring in the epidermis, as well as in the deep skin layers.

The endogenous mechanism of skin hydration focuses on maintaining the barrier function. When it is disturbed, transepidermal water loss increases, resulting in dry, flaky and tight skin, with accelerated signs of skin ageing - wrinkles, fine lines, loss of elasticity, often with enlarged pores, without a healthy glow, and with a dull tone.

#### ABSOLUTE MOISTURE

The ABSOLUTE RICH MOISTURE AGE DEFENSE treatment addresses the causes of dry skin and its repair mechanisms The treatment uses active ingredients that focus on

- 1. REGENERATION OF THE PROTECTIVE BARRIER
- especially the regeneration of the stratum corneum and the hydrolipid barrier through: REGULATION OF THE EXFOLIATION PROCESS
- SUPPLEMENTATION OF MISSING BARRIER COMPONENTS
- **ACTIVATION OF REPAIR MECHANISMS**

which affect the condition of the deeper layers of the skin and, as a result. improve the condition and rejuvenation of the skin

2. REDUCTION OF ADVERSE CHANGES DUE TO LACK OF MOISTURE: wrinkles, lack of elasticity and stimulation of regenerative mechanisms





#### **INDICATIONS**

- √ very dry skin
- √ sensitive skin
- √ mature skin
- √ protection against environmental factors
- √ after exfoliating treatments
- and other dermo-aesthetic treatments

#### **EFFECTS**

- √ improves skin barrier functions
- √ protects the skin against external factors and UV radiation
- √ prevents the formation of wrinkles
- √ soothes irritations
- √ intensively moisturises the skin
- $\checkmark$  accelerates the healing process of the skin

Desmocollin and Desmoglein Form Cell-Cell Adhesion in Corneodesmosomes

#### PEPTIDE-BASED SKIN EXFOLIATION

The exfoliation process declines with age starting from the age of 30:

- The skin barrier is weakened, less tight and the skin loses water more quickly.
- Epidermis starts to need more time to renew itself and this process becomes slow and irregular.
- Excess dead cells can accumulate in the opening of the hair follicle and clog it, leading to the formation of blackheads and inflammatory lesions.
- This leads to lower quality of the skin barrier and makes the skin dry, rough and dull.

Innovative biomimetic peptide encapsulated in liposomes - PERFECTION PEEL PEPTIDE accelerates and regulates the exfoliation process in a non-invasive manner and is well-tolerated by the skin. It prevents corneodesmosomal adhesion in the outermost stratum corneum by attaching itself to desmoglein. As a consequence, corneccytes lose contact with neighbouring cells and start to exfoliate. The action of the peptide does not affect the protective barrier of the skin and does not cause irritation. It is safer than chemical peels or enzymes and can be used all year round.

Desmoalein Keratin intermediate filan Cytoplasmic plaque Corneocyte Intercellular space

# ABSOLUTE RICH MOISTURE

#### CERAMIDES TO SEAL THE HYDROLIPID BARRIER

Ceramides are the main component of the intercellular cement. Their role is to fill the gaps in the structure of the cement and thus limit the evaporation of water from the lower layers of the skin (TEWL). Advanced CERAMOSIDES™ HP ceramides used in the treatment are a unique complex of glycosphingolipids and glycolipids with moisturising, firming and rejuvenating effects confirmed by tests. It contains plant ceramides Omega 3, 6, 9 similar to those naturally found in the skin and Digalactosyl Diglyceride (DGDG), which works in synergy with ceramides increasing their effectiveness. Ceramides protect the dermis against loss of firmness and elasticity and restore the balance between proteinases (enzymes that degrade the skin's extracellular matrix as we age) and their inhibitors (TIMP) by:

- increased synthesis of collagenase inhibitors: TIMP-1,
- blocking the activity of elastase involved in the degradation of elasticity of the dermis.







(2) Young skin degraded by elastase

→ -91.7% elastin fibers



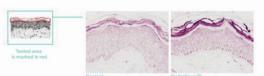
(3) Young skin degraded by elastase & protected by CERAMOSIDES™ HP 0.005%

47% protection of elastin fibers

-82.3% elastase activity

## STIMULATION OF CERAMIDE SYNTHESIS + IMMEDIATE AND LONG-LASTING MOISTURISING EFFECT

The treatment uses a natural moisturising complex HYDRAFENCE™ which strengthens the skin barrier. The complex is based on a hydrocolloidal matrix of rice amylopectin (Oryza sativa var.glutinosa), containing a calcium-rich fraction extracted from the alga Lithothamnion Calcareum. It works from the inside by activating the skin's natural moisture and protective mechanisms. At the same time, it strengthens the barrier function from the outside by stimulating the synthesis of lipids, especially ceramides, which are key in maintaining the skin barrier function. The complex increases the tightness of the epidermal barrier and thus has a moisturising effect (ensures immediate and long-lasting hydration), as well as improving the skin's resistance to irritation and accelerating the regeneration of an irritated skin. Restores the skin's ability to produce its own ceramides, strengthening the barrier function, moisturises, refreshes and soothes the skin for up to 120 hours.







HYDRAFENCE™ restores the skin's capacity to produce its own ceramides, increasing its barrier function

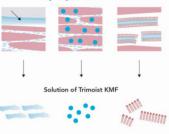
#### SOURCE OF LIPIDS, NMF AND POLYSACCHARIDES

The intensively moisturising biomimetic **TRIMOIST™ KMF** complex combines the action of three active ingredients essential for an efficient skin hydration system. Ensures a 24h **effect of both immediate and long-lasting hydration**:

- Polysaccharides CM-Glucan strengthen the skin's defence system and build an excellent protective film.
- 2. Lamellar lipids, similar to skin strengthen the barrier function of the lipid layer.
- 3. Humectants glycerine and sodium lactate mimic the skin's Natural Moisturising Factor (NMF).

Additionally, a **peptide – carnosine** – affects sugars, inhibits the glycation of skin proteins and the formation of advanced glycation end-products (AGEs), which contribute significantly to the loss of skin elasticity.

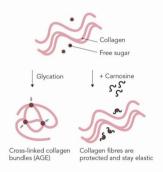
#### Mechanism of Trimoist KMF



Protecting film
 CM-Glucan

2. NMF: Glycerin Lactate 3. Lamellar lipids: Stearoyl lactylate Cetyl alcohol Oleic acid triglyceride

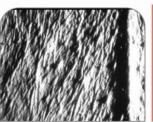
#### Anti-glycation Effect of Carnosine



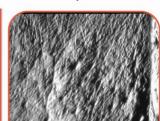
## SKIN REJUVENATION EFFECT - ELIMINATION OF THE EFFECTS OF LACK OF SKIN HYDRATION

The anti-ageing and rejuvenating effect is further enhanced by an amino acid – **ULTRA-LIFT HYDROXYPROLINE**. It is a famous youth molecule with **anti-wrinkle**, moisturising, anti-free radical and toning properties. It is essential for building new collagen fibres. It plays a key role **in collagen synthesis and stability**, reduces deep wrinkles and those resulting from skin dehydration. It increases the skin's ability to bind water, inhibits the action of MMPs – enzymes responsible for skin ageing processes. Smooths and increases skin elasticity with a lifting effect.

#### Increase in hydration after 28 days



Before application



After 28 days of application Formula with Ultra-Lift Hydroksyproline



#### Make-up removal / cleansing

Absolute Moisturising Hydrolipidic Cleansing Gel (CP0127) – remove make-up, wash off with water

Absolute Moisturising Hydrolipidic Toning Foam (CP0227) – apply one pump; massage into skin in circular motions, leave to absorb.

Before the first treatment in the series, use the lactic acid 25% pH 3.5 mask (CP0851) or cavitation in case of very rough skin.

#### Concentrates

#### PDT Absolute Moisturising Peptide Non-Acid Peel Booster (CP184230)

Application: photodynamic PDT light R 650nm / UV 420nm or LED light R 650nm or by sonophoresis or manually. Apply on the skin for 5 min; do not wash off.

#### PDT THERMO Absolute Moisturising Ceramide Serum (CP184330)

Application: photodynamic light R  $\overline{6}$ 50nm / UV 420nm or LED light R 650nm or THERMO (temp. up to 41°) or by sonophoresis or manually. Apply onto the skin for 5 mins (PDT LASER /LED) or 10 mins (THERMO, sonophoresis, manually); do not wash off.

#### Mask

#### PDT THERMO Absolute Moisturising Lift Effect Mask (CP0861)

Application: photodynamic light R 650nm / UV 420nm or LED light R 650nm or THERMO (temp. up to 41°) or by sonophoresis or manually. Apply onto the skin for 10 mins. Do not wash off, remove any excess with a tissue. Avoid the eye area. You can additionally apply the plastic mask from the SPECIAL AESTHETICS line. Remove any excess with a tissue; do not wash off.

#### **Treatment finish**

Absolute Moisturising Day Cream SPF30 UVA/UVB (CD1478) - Apply to skin, tap in lightly.

Number of treatments in a series - 4-6 treatments every 7-10 days.

Treatment time - up to 50 minutes.



#### ABSOLUTE MOISTURISING HYDROLIPIDIC CLEANSING GEL FACE & NECK

An absolute hydrating hydrolipid cleansing gel that gently removes skin impurities, intensely moisturises and regenerates the hydrolipid barrier. Contains a moisturising complex rich in lipids, polysaccharides and humectants that mimic NMF. Increases the level of hydration, strengthens the skin's defence system and builds an excellent protective film. Protects the skin against transepidermal water loss TEWL, increases skin elasticity, firmness and smoothness. CP0127 500ml, CD0127 200ml

Trimoist™ KMF, hyaluronic acid, complex of 7 moisturising extracts of mountain arnica, cucumber, ivy, mallow, lime, elderberry and parietaria, betaine



#### ABSOLUTE MOISTURISING HYDROLIPIDIC TONING FOAM CERAMIDE BOOSTER FACE & NECK

An absolute moisturising hydrolipidic toning foam. Regenerates the hydrolipid barrier, smooths wrinkles, creates a comfortable feeling of a fully hydrated and supple skin and restores a fresh healthy glow. Contains a moisturising complex rich in lipids, polysaccharides and humectants that mimic NMF. Rice amylopectin and coralline algae complex produces immediate and long-lasting hydration and further stimulates ceramide production. Peeling peptide stimulates correct exfoliation of the epidermis. CD0227 200ml

Perfection Peel Peptide,
Hydrafence™,
Trimoist™ KMF,
hyaluronic acid,
complex of 7 moisturising extracts
of mountain arnica, cucumber, ivy,
mallow, lime, elderberry and parietaria,
betaine



#### PDT ABSOLUTE MOISTURISING PEPTIDE NON-ACID PEEL BOOSTER FACE & NECK & EYES

Active peptide peeling serum that stimulates and regulates skin exfoliation without irritating the skin. Simultaneously moisturises, regenerates the hydrolipid barrier and ensures the skin's water potential. Enhances elasticity and resilience, smooths wrinkles and gives a fresh glow. Biomimetic tripeptide encapsulated in liposomes accelerates and reactivates the natural process of exfoliation and cell renewal. Effectively removes dead epidermis by breaking the bonds between corneocytes – dead cells of the epidermis – preventing them from adhering. As a result, they lose contact with neighbouring cells and are exfoliated. The unique moisturising active formula provides immediate and long-lasting hydration. For year-round use.

Application by PDT LASER LLLT with R 650nm / UV 420nm light or LED with R 650nm light or by sonophoresis or manually CP184230 30ml

Perfection Peel Peptide,
Hydrafence™,
Trimoist™ KMF,
hyaluronic acid,
complex of 7 moisturising extracts
of mountain arnica, cucumber, ivy,
mallow, lime, elderberry and parietaria,
bio-chromophores



### PDT THERMO ABSOLUTE MOISTURISING CERAMIDE SERUM HYDROLIPIDIC FIRMNESS BOOSTER FACE & NECK & EYES

Intensely moisturising ceramide serum for face and under eye skin. Restores the skin's protective barrier, protects it against water loss (TEWL), has an antioxidant and protective effect against external factors. Contains an advanced complex of ceramides – glycosphingolipids and glycolipids, rich in natural antioxidants and essential fatty acids. Another valuable ingredient is a moisturising complex rich in lipids, polysaccharides and humectants that mimic NMF. Regenerates the hydrolipid barrier, ensures water potential in the skin, smooths wrinkles, strengthens elasticity and resilience. Creates a comfortable feeling of a fresh and healthy looking, more hydrated, supple and firm skin, with an even texture and skin tone.

Application by PDT LASER LLLT with R 650nm / UV 420nm light or LED with R 650nm light or THERMO DO 42 degrees C or by sonophoresis or manually CP184330 30ml

Ceramonides™ HP, Trimoist™ KMF, hyaluronic acid, complex of 7 moisturising extracts of mountain arnica, cucumber, ivy, mallow, lime, elderberry and parietaria, bio-chromophores

#### **ABSOLUTE** RICH MOISTURE AGE DEFENSE





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PDT THERMO ABSOLUTE MOISTURISING LIFT EFFECT MASK CERAMIDE & COLLAGEN BOOSTER

An absolute intensively moisturising mask that regenerates the hydrolipid barrier. Gives the comfort of a fully hydrated and supple skin with smoothed wrinkles and a healthy fresh glow. Immediately and long-lastingly moisturises while stimulating the skin to produce ceramides and collagen. The rice amylopectin and coralline algae complex protects the skin against TEWL water loss, stimulates lipid synthesis, provides immediate relief to dry skin. Has a pronounced effect on various genes that produce proteins involved in the formation of skin barrier structures. Hydroxyproline – the famous youth molecule increases the skin's ability to bind water, smooths the skin with a lifting effect called plumping effect and stimulates collagen synthesis. Reduces deep wrinkles and micro-wrinkles resulting from skin dehydration.

Application by PDT LASER LLLT with R 650nm / UV 420nm light or LED with R 650nm light or THERMO up to 42 degrees by sonophoresis or manually

CP0861 200ml

Hydrafence™, Ultra-Lift Hydroxyproline, hyaluronic acid, allantoin, complex of 7 moisturising extracts of mountain arnica, cucumber, ivy, mallow, linden, elderberry and parietaria, Shea butter. vitamin E. bio-chromophores



#### ABSOLUTE MOISTURISING LIFT EFFECT DAY CREAM SPF30 UVA/UVB CERAMIDE & COLLAGEN BOOSTER

An intensively moisturising, regenerating and rejuvenating cream that restores the comfort of full hydration and improves skin elasticity. Thanks to advanced active ingredients it regenerates the hydrolipid barrier, immediately and long-lastingly moisturises and protects the skin against transepidermal water loss TEWL. It also strongly stimulates the skin to produce ceramides and collagen. The cream effectively smooths wrinkles and gives a healthy, fresh glow. The cream contains a unique complex rich in lipids, polysaccharides and humectants that mimic NMF. Another ingredient – rice amylopectin and coralline algae complex stimulates the production of ceramides, while a peeling peptide enhances proper exfoliation of the epidermis. Hydroxyproline – smooths the skin with a lifting effect and fills it with moisture giving the so-called plumping effect. CD1478 50ml

Hydrafence™ Trimoist™ KMF. Ultra-Lift Hydroxyproline, Perfection Peel Peptide, hvaluronic acid. complex of 7 moisturising extracts of mountain arnica, cucumber, ivy, mallow, linden, elderberry and parietaria, Shea butter. vitamin E. UVA/UVB filters



#### ABSOLUTE MOISTURISING CERAMIDE NIGHT CREAM HYDROLIPIDIC FIRMNESS BOOSTER

A cream with intensively moisturising, firming and rejuvenating properties. Rebuilds the skin's protective barrier and horny layer of the epidermis, protects the skin against water loss (TEWL), has antioxidant and protective properties. Creates a comfortable feeling of a fresh and healthy looking skin. The cream contains a unique advanced complex of ceramides - glycosphingolipids and glycolipids, rich in natural antioxidants and essential unsaturated fatty acids, which protect the dermis against the loss of elasticity and resilience and restore the balance between proteinases and their inhibitors (TIMP). The active formula includes a moisturising complex with lipids, polysaccharides and humectants that mimic NMF. The cream's ingredients also include a rice amylopectin and coralline algae complex to stimulate ceramide production and a peeling peptide to enhance correct enidermal exfoliation CD1479 50ml

Ceramonides™ HP, Hydrafence™ Trimoist™ KMF. Perfection Peel Peptide. hvaluronic acid. complex of 7 moisturising extracts of mountain arnica, cucumber, ivy, mallow, linden, elderberry and parietaria, Shea butter. vitamin E



#### ABSOLUTE MOISTURISING PEPTIDE NON-ACID PEEL BOOSTER FACE & NECK & EYES

Active peptide peeling serum for face and under eye skin. Accelerates and regulates the natural process of exfoliation and cell renewal. Intensely hydrates, improves skin texture and reduces the depth of wrinkles. Biomimetic tripeptide encapsulated in liposomes removes dead epidermis by breaking the bonds between corneccytes - dead cells of the epidermis - preventing them from adhering. As a result, they lose contact with neighbouring cells and are exfoliated. The exfoliating effect helps prevent excessive keratinisation, the appearance of imperfections and signs of ageing. Valuable moisturising complexes strengthen the skin's protective barrier, protect it against water loss (TEWL) and provide immediate and long-lasting hydration. CD120230 30ml

Perfection Peel Peptide. Hydrafence™ Trimoist™ KMF hyaluronic acid. complex of 7 moisturising extracts of mountain arnica, cucumber, ivv. mallow, linden, elderberry and parietaria, allantoin, vitamin E



#### ABSOLUTE MOISTURISING CERAMIDE SERUM HYDROLIPIDIC FIRMNESS BOOSTER FACE & NECK & EYES

Intensely moisturising ceramide serum for face and under eye skin. Ceramides identical to the natural ones improve nutrition, hydration and rebuild the lipid barrier of mature and dry skin. They protect the skin against water loss and the effects of external factors. They act as a highly effective anti-ageing shield for mature and tired skin. The serum contains lamellar lipids strengthening the skin's protective barrier, film-forming polysaccharides protecting the skin against water loss (TEWL), humectants that mimic Natural Moisturising Factor (NMF). The product rebuilds the protective layer of the skin and improves its hydration. Creates a comfortable feeling of a fresh and healthy looking, more hydrated, supple and firm skin, with an even texture and skin tone... CD120330 30ml

Ceramonides™ HP. Trimoist™ KMF hyaluronic acid. complex of 7 moisturising extracts of mountain arnica, cucumber, ivv. mallow, linden, elderberry and parietaria, vitamin E



#### ABSOLUTE MOISTURISING LIFT EFFECT MASK CERAMIDE & COLLAGEN BOOSTER FACE & NECK

An absolute intensively moisturising mask that regenerates the hydrolipid barrier. Creates a comfortable feeling of a fully hydrated and supple skin with smoothed wrinkles and a fresh healthy glow. Immediately and long-lastingly moisturises while stimulating the skin to produce ceramides and collagen. The rice amylopectin and coralline algae complex protects the skin against TEWL water loss, stimulates lipid synthesis, provides immediate relief to dry skin. Has a pronounced effect on various genes that produce proteins involved in the formation of skin barrier structures. Hydroxyproline – the famous youth molecule increases the skin's ability to bind water, smooths the skin with a lifting effect called plumping effect and stimulates collagen synthesis. Reduces deep wrinkles and micro-wrinkles resulting from skin dehydration. CD0862 5ml

Hydrafence™. Ultra-Lift Hydroxyproline, hvaluronic acid. allantoin. complex of 7 moisturising extracts of mountain arnica, cucumber, ivy, mallow, linden, elderberry and parietaria, Shea butter. vitamin E



#### **PERFECTION PEEL PEPTIDE**

biomimetic tripeptide, encapsulated in liposomes, accelerates and reactivates the natural process of exfoliation and cell renewal. Intensely moisturises, improves skin structure and reduces the depth of wrinkles. Effectively, yet without irritating the skin, removes dead skin by breaking the bonds between corneocytes – dead skin cells, preventing them from adhering. For year-round use.

#### CERAMOSIDES™ HP

is a biomimetic complex of ceramides – glycosphingolipids and glycolipids with moisturising, firming and rejuvenating effect. It is rich in natural antioxidants and essential fatty acids – it contains 77% of Omega 3, 6, 9 acids. Plant ceramides identical to the natural ones strengthen the protective layer of the skin and rebuild the lipid barrier. They protect the skin against water loss (TEWL) and harmful external factors. Thanks to the unique structure of the complex, it strengthens skin cohesion, elasticity and firmness – by increasing the synthesis of TIMP-1 collagenase inhibitors and blocking elastase activity.

#### HYDRAFENCE™

an intensively moisturising complex of rice amylopectin (Oryza sativa var.glutinosa) and coralline algae (Lithothamnion calcareum). Increases the tightness of the epidermal barrier and produces an immediate and long-lasting moisturising effect. Stimulates the production of the skin's own ceramides to strengthen the protective barrier. Strengthens the skin's resistance, protects it from harmful external factors and accelerates regeneration of an irritated skin. Refreshes and soothes the skin for up to 120 hours.

#### TRIMOIST™ KMF

is a biomimetic intensively moisturising complex of three active ingredients essential for the efficient functioning of the skin's hydration system. Gives a 24h effect – both immediate and long-lasting, confirmed by tests. Contains lamellar lipids strengthening the skin's protective barrier, film-forming polysaccharides protecting the skin against water loss (TEWL) and humectants that mimic Natural Moisturising Factor (NMF). The complex has also been enriched with a peptide – carnosine with anti-ageing properties counteracting the effects of protein glycation.

#### **ULTRA-LIFT HYDROXYPROLINE**

is a vector of hydroxyproline, a key element with a collagen structure, which has a triple anti-wrinkle, firming and moisturising effect. Hydroxyproline is a famous youth molecule with anti-ageing, anti-free radical and toning properties, necessary for the construction of new collagen fibres. It plays a key role in collagen synthesis and stability, reduces wrinkles resulting from skin dehydration. Increases the skin's ability to bind water and fills it with moisture giving it a so-called plumping effect.

#### HIGH MOLECULAR WEIGHT HYALURONIC ACID (1MDa)

forms a protective film, increases moisture reserves, reduces transepidermal water loss (TEWL). Protects the skin against drying and adverse effects of external factors. Gives an immediate sense of proper skin firmness and elasticity.

#### ALANTOIN

protects the skin against free radicals, has soothing and calming properties.

#### VITAMIN E

known as the "vitamin of youth", counteracts the release of free radicals, helps maintain skin elasticity. Prevents strong oxidation of lipids in the skin.

#### SHEA BUTTER

smooths and soothes irritations, has antioxidant properties. Protects the intercellular cement, moisturises and regenerates the skin.

The active formula is also rich in valuable plant extracts with moisturising, refreshing and soothing effects. These are extracts of MOUNTAIN ARNICA, CUCUMBER, IVY, MALLOW, LIME, ELDERBERRY AND PARIETARIA.

#### **UVA/UVB filters**

stable high filters against harmful UV radiation.

Synergy of action PDT laser LLLT / LED, active ingredients and bio-chromophores

#### BIO-CHROMOPHORES (R 650nm i UV 420nm)

proprietary innovative bio-chromophores, developed in CHANTARELLE laboratories, for PDT LASER or LED photodynamic treatments:

- R red 650nm improvement of tissue metabolism, stimulation of healing processes, stimulation of fibroblasts, reduction of wrinkles, increased cellular absorption of active substances contained in cosmetics or
- UV 420nm regeneration of irritated skin with symptoms of inflammatory changes.

