

PRO XN

PROFESSIONAL THERAPY

PRO XN product line based on **Xanthohumol** –
the most powerful flavonoid with antioxidant activity known so far.

Innovative Xanthohumol Complex developed with the participation of Polish scientists.
Used in cosmetics for the first time in the world.

ANTIOXIDANT ACTIVITY OF XANTHOTHUMOL AND XANTHOTHUMOL COMPLEX

Xanthohumol is a highly active flavonoid naturally found in the hops plant during florescence. So far, due to the Complex and time-consuming methods of obtaining Xanthohumol, it has not been possible to use its properties in cosmetic formulations.

The DermoTech Beauty team, in cooperation with Polish scientists, has developed an innovative, and at the same time environmentally friendly, method of Xanthohumol synthesis. To increase the stability of Xanthohumol, it has been enclosed in a complex with high bioavailability and increased permeability through the stratum corneum. The complex enables the release of the Xanthohumol molecule at the level of living epidermal cells to maximize the effectiveness of action.

Xanthohumol is one of the most powerful extrinsic antioxidants, it has 30 times stronger antioxidant properties than vitamin C, and that is why it protects the skin much more effectively against oxidative stress and its effects.

The antioxidant properties of the Xanthohumol Complex have been demonstrated by an indirect method, which is analogous to the natural cycle of catalytic removal of hydrogen peroxide by glutathione peroxidase (GPx) – an enzyme involved in the protection of cells against oxidation by peroxides formed during biochemical processes. The results indicate that the properties of the complex are thirty times better than those of vitamin C.

ANTIOXIDANT ACTIVITY OF THE XANTHOTHUMOL COMPLEX

		Residual dithiothreitol (%)				
	Catalyst (0.1 equiv.)	3 min	5 min	15 min	30 min	60 min
1	Vitamin C	99	98	98	98	98
2	Xanthohumol Complex	99	98	98	98	98
		92	86	74	61	41
		89	83	71	54	26
		89	88	83	58	36

To a solution of compound 1-2 (0.0075 mmol) and dithiothreitol (0.075 mmol) in 0.5 mL of CD3OD a 30% solution of H2O2 (0.075 mmol) was added. 1H spectra were recorded after adding 30% H2O2 at specified time intervals.

The Xanthohumol Complex prevents changes in proteins (which are the most important building component of the skin), such as oxidation and amino acid modifications. It eliminates the peroxidation of lipids responsible for the construction of the hydrolipid coat, thus reducing their permeability, instability, as well as disruption of function and transmembrane transport.

1. ANTI-AGING ACTION

Metalloproteinases are involved in skin aging processes such as increased breakdown of extracellular matrix components, in particular collagen, elastin and fibronectin. Xanthohumol shows high inhibitory activity against metalloproteinases MMP-1 and MMP-8, slowing down the aging process. At the same time, it protects the skin against photoaging by reducing the negative effects of UV radiation.

2. BRIGHTENING ACTION

Keratinocytes, in response to oxidative stress induced by UVA and UVB radiation, produce GM-CSF cytokines that bind to a specific GMCSFR receptor and then activate STAT-1, STAT-3 and STAT-5 transduction signals.

Melanocytes and active tyrosinase proteins TRP1 and TRP2 are stimulated, leading to formation of skin hyperpigmentation. Xanthohumol, by inhibiting the secretion of GM-CSF, contributes to the brightening of existing hyperpigmentation, inhibiting new hyperpigmentation from forming and reducing skin redness.

3. ANTIMICROBIAL ACTIVITY

Xanthohumol inhibits the growth of Gram-positive bacteria: *Staphylococcus aureus*, *Staphylococcus pyogenes* and *Staphylococcus epidermidis*, which cause purulent skin infections. It also exhibits potent bactericidal activity against two other Gram-positive skin pathogens: *Propionibacterium acnes* and *Kocura rhizophila*. High activity inhibiting the growth of bacteria contributes to the effective care of problematic skin with acne and rosacea.

4. IMPROVEMENT OF SKIN MICROCIRCULATION

Xanthohumol stimulates the microcirculation of the skin, which promotes the removal of toxins and better nutrition and regeneration of tissues. The skin becomes better supplied with blood, its appearance is visibly improved.

XANTHOTHUMOL IN PROFESSIONAL THERAPY

XANTHOTHUMOL AS A HIGHLY ACTIVE COMPOUND HAS A WIDE APPLICATION IN ANTI-AGING PREVENTION AND PROBLEMATIC SKIN CARE

The first clinical signs of skin aging, such as loss of firmness and density, mimic wrinkles, hyperpigmentation, dryness and atonicity of the skin, are the result of chronic inflammation caused by oxidative stress.

The PRO XN products line is aimed at supporting the prevention of skin problems and eliminating the signs of premature skin aging. The main goal of the therapy is, first of all, to rebuild the skin barrier and strengthen the skin's antioxidant system, and only then, as part of the next stages of therapy, to act in an anti-aging manner in other aspects.

The groundbreaking application of of highly active **Xanthothumol Complex** in professional therapies is of particular importance in terms of skin regeneration after invasive procedures.

Therapies that trigger inflammation are aimed at stimulating collagen production and the restoration of cellular structures. Then, the local requirement for antioxidants increases in order to overcome the chain lipid peroxidation, which can lead to dysfunction of the entire epidermal barrier.

PRO XN – Professional product line
provides visible therapeutic results supported by effectiveness studies

PRO **XN**

XANTHOTHUMOL RECOVERY TREATMENT
ZABIEG REGENERUJĄCY Z KSANTOTHUMOLEM

INNOVA
PROFESSIONAL THERAPY





CLEANSING THAT IS COMPATIBLE WITH THE PHYSIOLOGY OF THE SKIN

Cleansing is the most important element of skin care because it affects the overall health of the skin. In order for the stratum corneum, which protects our skin, to perform its physiological functions, it should be cleansed with agents that will not damage its integrity.

The solution is brought by PRO XN cleansing products, whose formula does not damage the delicate hydro-lipid barrier and the stratum corneum, and at the same time protects against excessive leaching of lipids important for the skin.

PRODUCTS

CLEANSING – PHASE I

RECOVERY CLEANSING OIL

It minimizes lipid damage during cleansing and supports regenerative and protective processes.

Formula based on light shea butter rich in stearic acid, whose role is to minimize lipid damage and supplement the top layer of the epidermis with fatty acids. In addition, the squalane contained in the product provides softening and occlusive properties, ensuring the reduction of water loss, and thus protects the epidermal barrier and prevents its damage.

The product includes Xanthohumol Complex, which supports the antioxidant protection of epidermal cells and soothes the symptoms of inflammation.

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- **ACTIVE INGREDIENTS:** Xanthohumol Complex, shea butter ester, palmitic, stearic and oleic acids, squalane
 - **APPLICATION:** professional care/home care
 - **INDICATIONS:** dry, sensitive, overactive skin
skin with rosacea-like lesions
oily skin with signs of dehydration



PRODUCTS

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CLEANSING – PHASE II

PRIME MIST, pH 4,5

he second, indispensable element of skin cleansing, which regulates the functioning of the skin barrier.

Mist formulation **PRIME MIST** is based on two polyhydroxy acids: lactobionic acid and gluconolactone, which have a very high ability to absorb moisture from the environment, thus strongly moisturizing the skin. Topically applied PHA acids strengthen the function of the epidermal barrier and support the process of cell renewal. In addition, the mist has been enriched with niacinamide, which has soothing and seborregulating properties.

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- **ACTIVE INGREDIENTS:** lactobionic acid, gluconolactone, niacinamide
 - **APPLICATION:** professional care/home care
 - **INDICATIONS:** dry, sensitive, overactive skin, skin with rosacea-like lesions, oily skin with signs of dehydration

PRODUCTS

CLEANSING – PHASE II

BALANCING CLEANSING GEL, pH 4,5

The second phase of cleansing regulates the keratinization process and contributes to the maintenance of the proper skin microbiome

BALANCING CLEANSING GEL based on azelaic acid, lactobionic acid and Relipidium™.

Azelaic and lactobionic acid gradually remove dead skin cells, and the Relipidium complex™ maintains the proper microbiome of the skin and increases lipid synthesis to improve and maintain the integrity of the epidermal barrier.

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- **ACTIVE INGREDIENTS:** azelaic acid, lactobionic acid, relipidium™, oak bark extract
 - **APPLICATION:** professional care/home care
 - **INDICATIONS:** oily skin, combination skin, oily skin with acne vulgaris and rosacea lesions, smoker's skin, uneven skin tone skin with post-inflammatory hyperpigmentation, sun spots and hormonal hyperpigmentation

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PRODUCTS



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EXFOLIATION

PHA SOLUTION, pH 4

Delicate resurfacing aimed primarily at the treatment of sensitive skin.

The formula of the preparation is based on gluconolactone and azelaic acid. Gluconolactone activates the synthesis of essential lipids (ceramides and phospholipids), ensuring skin protection and transports water molecules deep into the skin, helping to maintain its proper moisture. Azelaic acid has antibacterial and brightening properties, which contributes to alleviating the symptoms of acne vulgaris and rosacea, as well as helps to even out the skin tone.

PHA SOLUTION increases the absorption capacity of the skin in the subsequent stages of the treatment.

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- **ACTIVE INGREDIENTS:** gluconolactone 10%, azelaic acid 10%
 - **APPLICATION:** professional care
 - **INDICATIONS:** dry, sensitive, overactive skin
skin with rosacea-like lesions
oily, combination skin

PRODUCTS

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EXFOLIATION

NOVEL PEEL, pH 3,5

Deep biorevitalization without signs of irritation, redness and exfoliation.

The peeling formula is based on a new generation retinoid: retinoic acid ester. New generation of retinoid – the anti-ageing ingredient, that provides the effect of retinol with much lower irritation potential. It combines the anti-aging and stimulating effects of retinol with tranexamic and azelaic acids with strong brightening properties. The mechanism of action of the new retinoid is more advanced compared to those of retinol derivatives. Retinoic acid ester alters inherent retinoic activity by binding directly to retinoid receptors without the need for metabolic breakdown into more biological forms.

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- **ACTIVE INGREDIENTS:** ester of retinoic acid 2.5%, azelaic acid 10%, tranexamic acid 0.5%, tripeptide
 - **APPLICATION:** professional care
 - **INDICATIONS:** dry, sensitive skin
couperose skin
signs of aging and photoaging



PRODUCTS

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ANTIOXIDATION

XANTHOHUMOL RECOVERY TREATMENT TWO-STEP TREATMENT

1. — **Xanthohumol Complex AMPOULE**

Composition based on **Xanthohumol Complex**, which:

- strengthens the skin's antioxidant system
- soothes irritation
- reduces hyperpigmentation
- inhibits metalloproteinases (MMPs)
- stimulates the biosynthesis of collagen and elastin fibers

Additionally enriched with substances necessary for proper skin reconstruction processes: superoxide dismutase, 3-O ethyl ascorbic acid, niacinamide, coenzyme Q10.

2. — **STERILE BIOCELL FACIAL MASK**

The mask has a nano-fibrous structure, the fibers of which do not exceed the width of 100 nm and are much smaller than the pores of the skin. Due to its high hygroscopicity, it has a very high water retention capacity, which makes it perform a function similar to the epidermis, ensuring strong and lasting hydration.

The mask perfectly adheres to the skin, creating an ideal occlusive layer and at the same time increases the absorption of active ingredients from **Xanthohumol Complex AMPOULE**.

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- **ACTIVE INGREDIENTS:** Xanthohumol Complex, superoxide dismutase, 3-O ethyl ascorbic acid, niacinamide, coenzyme Q10
 - **APPLICATION:** professional care



Increasing the effectiveness of invasive procedures by providing the skin with substances necessary for proper reconstruction processes.

The use of XANTHOTHUMOL RECOVERY TREATMENT immediately after invasive procedures contributes to:
 accelerated regeneration • soothing irritations • increased hydration • evening out the skin tone

*Effectiveness confirmed by 100% of test subjects in application studies

PRODUCTS



ANTIOXIDATION

ANTIOXIDANT THERAPY

Obtaining satisfactory results in the case of anti-aging aesthetic medicine and cosmetology treatments requires proper care both before and after the treatment.

ANTIOXIDANT THERAPY is an innovative, highly concentrated formula that uses high bioactivity **Xanthohumol Complex** in combination with complementary ingredients that restore the proper physiology of the skin and have an anti-aging effect on four main levels:

- intensive antioxidant protection
- skin protection and rebuilding of the hydrolipid barrier
- skin regeneration and cell renewal
- restoring the balance of the skin microbiome

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- **ACTIVE INGREDIENTS:** Xanthohumol Complex, Artemisia Ferment Oil, squalane, stoechiol, relegendium
 - **APPLICATION:** professional care/home care
 - **INDICATIONS:** sensitive, dry, rough skin
lack of elasticity and flexibility of the skin
telangiectasia, uneven skin tone with skin prone to erythema
skin exposed to stress and adverse external factors

PRODUCTS

SPECIALIST CARE

LF MASTER

Specialist Serum using the potential of lactoferrin as a protein with known and documented effects.

Lactoferrin has multidirectional anti-aging, protective and regulating effects. It affects the stabilization and restoration of the balance of the proper skin microbiome and stimulates repair processes. Enriching the formula with a conditioning complex of amino acids and colloidal gold strengthens the regenerative properties and increases the ability to retain water in the skin, creating optimal conditions for its proper functioning and maintaining a healthy appearance.

LF MASTER is a perfect complement to cosmetology treatments. The combination of lactoferrin and **Xanohumul complex** in professional **PRO XN** treatments is a mutual complement to their effect by supporting various dermal repair mechanisms.

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- **ACTIVE INGREDIENTS:** lactoferrin, amino acid complex, colloidal gold
 - **APPLICATION:** professional care/home care
 - **INDICATIONS:** alleviation of acne vulgaris lesions
normalization of the regeneration processes
of damaged epidermis

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PRODUCTS



BRIGHTENING

BRIGHT UP THERAPY

Concentrated emulsion combining antioxidant, brightening and smoothing properties.

The multifaceted effect of the emulsion has been achieved through the use of ingredients that both protect our skin cells against oxidative stress, but also stimulate repair processes. **BRIGHT UP THERAPY** contains ingredients with a proven brightening effect that control the main pathways of melanin formation, including melanin reduction, inhibition of melanin transport and melanin-producing enzymes: a formula of three synergistically acting plant extracts from marshmallow root, rice bran and liquorice root as well as butylresorcinol and **Xanthohumol Complex**. The smoothing and firming effect was achieved through the use of a new generation retinoid – retinoic acid ester.

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- **ACTIVE INGREDIENTS:** **Xanthohumol Complex**, butylresorcinol (0.5%), retinoic acid ester (1.5%), a formula of three plant extracts: marshmallow root, rice bran and licorice root (2%)
 - **APPLICATION:** home care
 - **INDICATIONS:** post-inflammatory hyperpigmentation
sun spots and hormonal hyperpigmentation,
skin with uneven tone and structure
dull complexion, smoker's skin
skin with elasticity and density deficits
skin with low tolerance to pure retinol

BRIGHT UP THERAPY - CONTROL OF THE MAIN PATHWAYS OF MELANIN FORMATION

1. Regulation of tyrosinase transcription and activity

Butylresorcinol is a potent inhibitor of human tyrosinase with remarkable in-vivo efficacy (Fig. 1).

After only 8 weeks of use, the first signs of lightening of age spots, melasma-type hyperpigmentation and post-inflammatory hyperpigmentation are visible (Fig. 2).

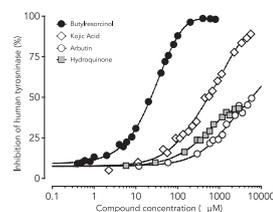


Fig.1

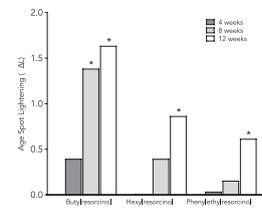


Fig.2

2. Inhibition of melanosome transport

An important mechanism of the melanogenesis process is the transport of melanosomes to keratinocytes. This process takes place thanks to the dendrites and the activity of melanophilin anchoring proteins.

Xanohumul significantly suppresses the number of dendrites and their total length, which correlates with reduced transport of melanosomes (Fig. 3). Xanthohumul also plays an important role in preventing hyperpigmentation by inhibiting communication between activated keratinocytes and melanocytes (inhibits the GMCSF factor).

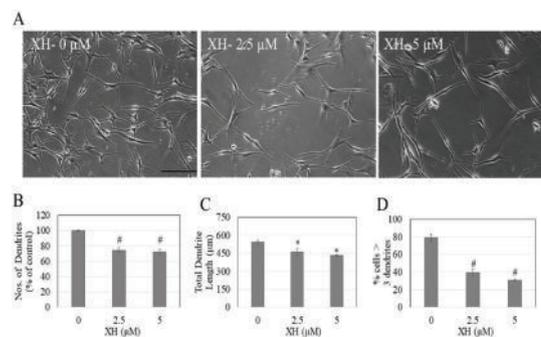


Fig.3

3. Reduction of accumulated melanin

After 56 days of treatment with the formula of three plant extracts: marshmallow root, rice bran and licorice root at a concentration of 1%, the amount of accumulated melanin in surface keratinocytes decreased to -52% (Fig. 4).

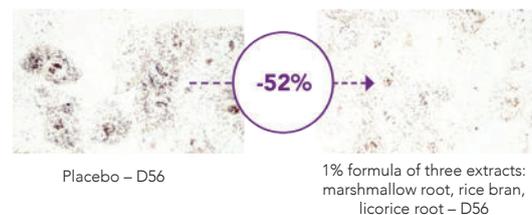


Fig.4

Fig. 1, 2: "4-n-butylresorcinol, a highly effective tyrosinase inhibitor for the topical treatment of hyperpigmentation", L. Kolbe, T. Mann, W. Gerwat, J. Batzer, S. Ahlheit, C. Scherner, H. Wenck, F. Stüb.

Fig. 3: "Depigmenting effect of Xanthohumul from hop extract in MNT-1 human melanoma cells and normal human melanocytes" Shilpi Goenka*, Sanford R. Simon.

Fig. 4: Manufacturer's own research.

PRODUCTS

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PROTECTION

SUN BARRIER

Strengthening cream for daily photoprotection with SPF 50.

SUN BARRIER formula is based on a mixture of physical filters (titanium dioxide) with organic filters. The blend used causes the product to be photostable and provides a high degree of photoprotection against UVA and UVB radiation.

In addition to sun protection, the product accelerates the regeneration of the epidermal barrier due to the content of biocompatible squalane and, thanks to allantoin, soothes redness and irritation. The rich formula makes the skin smooth and soft, and the semi-matte finish is an ideal base for make-up.

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- **ACTIVE INGREDIENTS:** squalane, allantoin, vitamin E
 - **APPLICATION:** professional care/home care
 - **INDICATIONS:** dry, sensitive and mature skin
skin prone to hyperpigmentation,
oily skin with symptoms of dehydration after aesthetic
medicine treatments: lasers, chemical peels, microneedle
mesotherapy

PRO **XX**