**KALINAT® ANTI-WRINKLE**

* A NEW FUNCTIONAL ANTI-AGE INGREDIENT WITH PROVEN ANTI-WRINKLE EFFICACY

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**PRODUCT DESCRIPTION**

KALINAT® ANTI-WRINKLE is a new, biologically active, functional ingredient. It is constituted by native deoxyribonucleic acid, that has been purified, depolymerized and neutralized with sodium ions. Several clinical tests, aimed to study its effects in the treatment of distinct types of lesions and cutaneous pathology, are evidence of the efficacy of nucleotide DNA fragments in delaying the formation and appearance of wrinkles and in the reduction of all skin phenomena bound to aging.

The extent of wrinkles on the skin before (initial control) and after (treated area) application of emulsion with KALINAT® ANTI-WRINKLE

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**SKIN AGING AND WRINKLES**

Skin aging is a serial process characterized by a sequence of changes in skin metabolism and by the accumulation of non repaired damages of both biological or environmental origin. Structural changes and involution of connective tissue, progressive decay of elastic fibres and collagen take place. They are induced both by the decrease in cell turn-over, in the activity of fibroblasts and in the supply of nutrients that are triggered by the impaired cutaneous microcirculation and by the biological mistakes accumulated during aging. They are additive factors that heavily impair the skin properties, so determining the irreversible aging phenomena. Besides the progressive reduction of functionality of structural components, daily environmental stress (UV and IR rays, osmotic stress, low moisture) to skin cells must be taken into account, that targets them to thousands of free radicals. Moreover, psychological stress adds to the above picture, which reduces body defences and increases susceptibility to free radicals attack. The consequent formation of wrinkles, initially narrow and progressively coarser, the thinning of the epidermal layer and the reduction of skin firmness and elasticity, gradually modify the properties and appearance of skin surface.
ACTION PROCESS OF KALINAT® ANTI-WRINKLE

DNA-Na molecules penetrate into cells by pinocytosis. This type of transport suggests that cells might use DNA-Na in order to perform their own DNA metabolism and as the structural basis for the synthesis of nucleic acids and their co-factors. These processes very easily occur in metabolic stressed cells, as is the case of aged skin cells. KALINAT® ANTI-WRINKLE is a strong stimulator of cell repair and of aged tissues regeneration. As a result of its cell integration process, clinical tests demonstrated that DNA-Na contributes to reduce inflammatory symptoms, to stimulate epithelial and granulation tissues growth and to help the resolution of cutaneous micro-lesions.

Comparison of transport process of macromolecules from the outside to the inside of living cells

- phagocytosis
- pinocytosis
- mediated endocytosis

EFFICACY EVALUATIONS IN VITRO

In order to quantify the anti-age activity of KALINAT® ANTI-WRINKLE, in-vitro experiments on fibroblasts and keratinocytes and a series of in-vivo evaluations have been carried out. In-vitro tests show that KALINAT® ANTI-WRINKLE stimulates cell growth and is active toward cell protection. Indeed, it functions by increasing the activity of the fibroblasts, which results in improved cell proliferation after 24h incubation.

Moreover, KALINAT® ANTI-WRINKLE is able to protect fibroblasts from UV-A radiation, while it works as a growth promoter on keratinocytes. Indeed, increased cell proliferation is registered 72 h after incubation with the active principle.
A series of instrumental *in-vivo* evaluations have been carried out on 20 healthy volunteers (average age: 49 years). A base emulsion containing 0.25 % of KALINAT® ANTI-WRINKLE® has been compared to a placebo.

The results give a statistically significant increase of cutaneous moisturization and a highly significant increase of the elasticity parameters (+25% initial/placebo) that is a marker of skin biologic elasticity, *showing an improvement of skin vitality and regeneration*. The increase of cutaneous thickness parameter, with an improvement of cutaneous fine lines (+9% initial/placebo), and a statistically significant reduction of maximum wrinkledness value, *make the skin appear smoother and younger*. 

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**ELASTICITY INCREASE**

+25.62% (initial/placebo)

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Formula + KALINAT® anti-wrinkle                  Formula placebo

**IMPROVEMENT OF CUTANEOUS FINE LINES**

(Cutaneous thickness)

+8.7% (initial/placebo)

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Formula + KALINAT® anti-wrinkle                  Formula placebo
KALINAT® ANTI-WRINKLE

COMPOSITION
Deoxyribonucleic acid, sodium salt with MW = 250-500 kD

INCI
Sodium DNA CAS: 9007-49-2 Einecs: 3095666

ORIGIN
Purified and De-polymerized Extraction from serum of gonads “Acipenser transmontanus”

PHYSICAL-CHEMICAL PARAMETERS
Appearance: Amorphous, non-hygroscopic powder
Color: White
Odour: Odourless
Na DNA content: 86 - 105%
Na RNA content: 0,5 - 10% max
Proteins: 0,1% max
Nitrogen: 13,6 - 16,0%
Phosphorus: 8,0 - 9,8%
Heavy Metals: 0,001% max
Solubility in water: Soluble
Colour of 1,5% water solution: Colourless
Solubility in ethanol: Insoluble
Solubility in chloroform: Insoluble
pH (sol. 1,5% water solution): 6,2 - 7,2 (Potentiometric)

MICROBIOLOGICAL CHARACTERISTICS
Total microbial count: Lower than 100 CFU/g (Agar count)
Enterobacteria: 0
Pseudomonas Aeruginosa: 0
Staphylococcus Aureus: 0

STORAGE
In a dry and dark container.