

Kalichem
a lamberti company

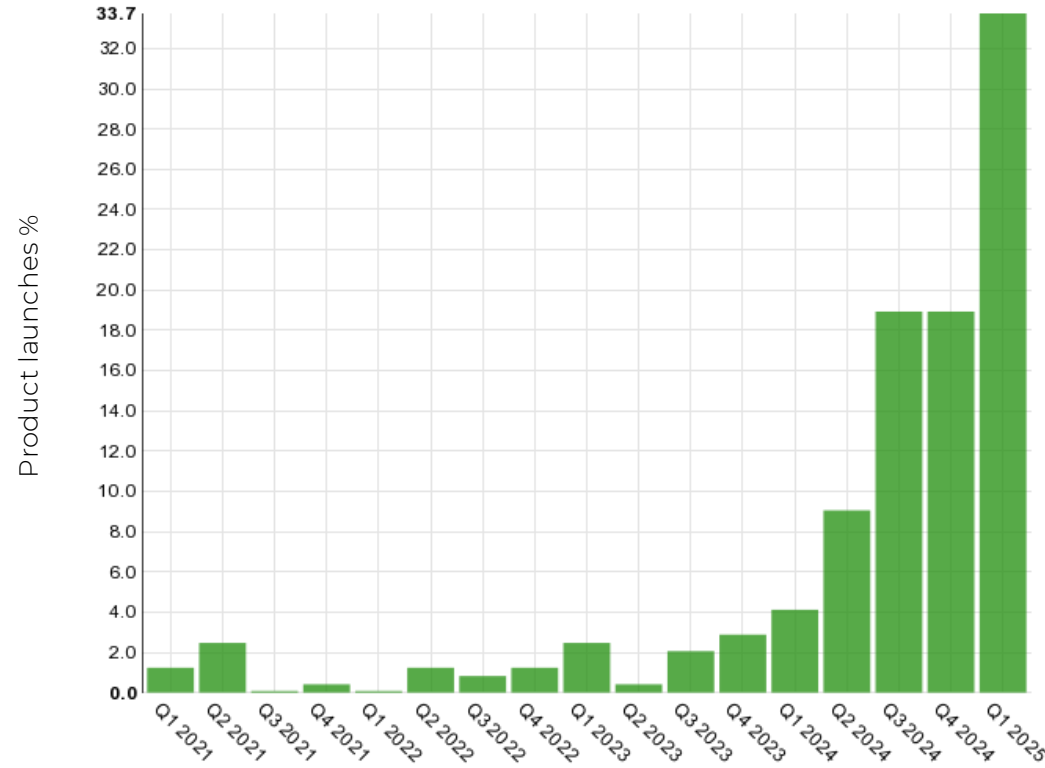
KaliGen

**Bio and plant-based NUCLEOBIOTICS for
ultimate skin renewal, rejuvenation and
replumping action.**



TRENDS IN COSMETIC LAUNCHES

with Nucleic Acid-Based Regeneration Technology



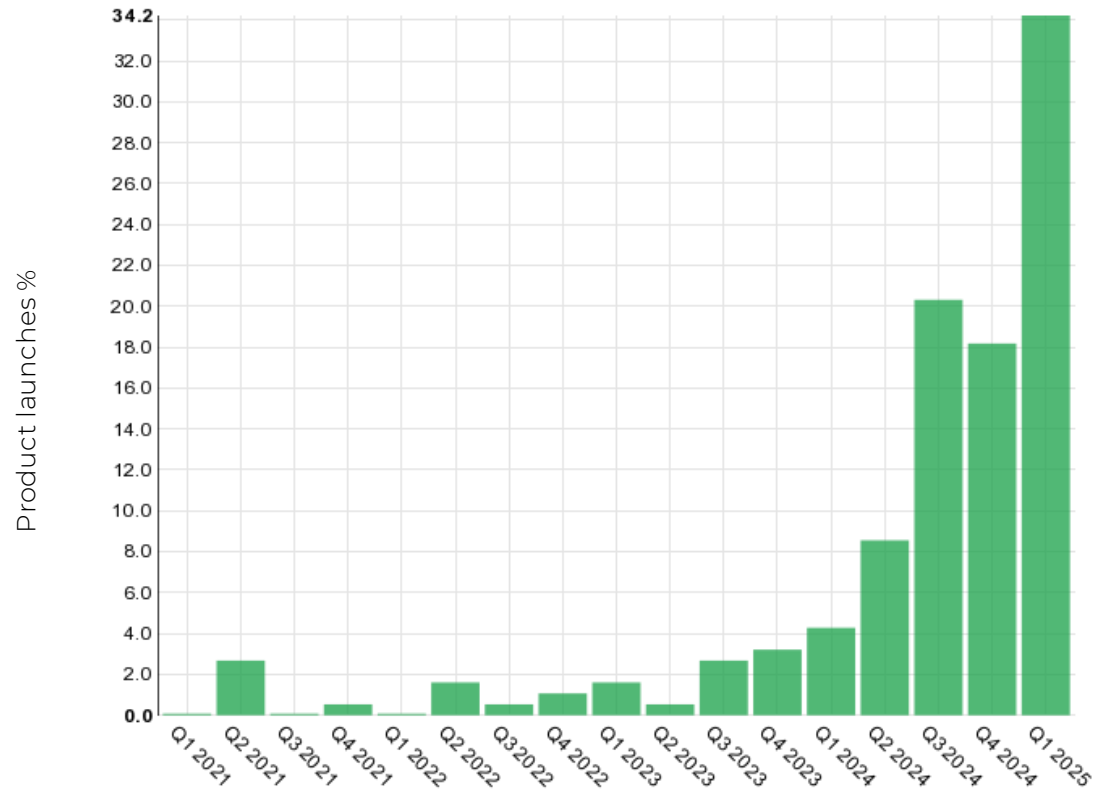
Source: Mintel

Nucleic acid-based ingredients are rising in products inspired by dermatological and aesthetic treatments, as informed consumers seek more 'advanced' and 'professional' skincare



TRENDS IN COSMETIC LAUNCHES

with Nucleic Acid-Based Regeneration Technology



SOUTH KOREA

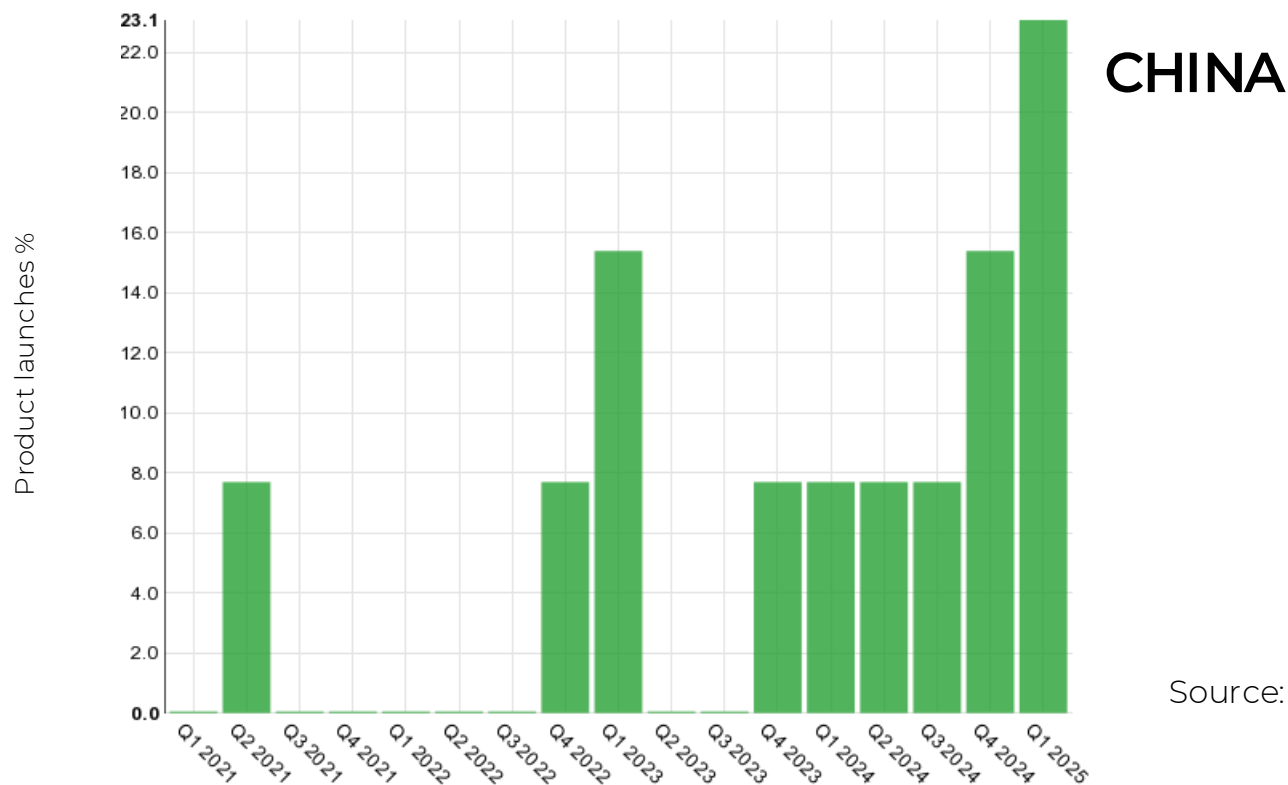
Source: Mintel

Nucleic acid-based ingredients have significantly increased in South Korea, now present in 4% of skincare launches since mid-2024. The trend is expanding into sun and eye treatments, with growing interest in vegan and biotech alternative



TRENDS IN COSMETIC LAUNCHES

with Nucleic Acid-Based Regeneration Technology



Source: Mintel

In China, nucleic acid-based ingredients are primarily used in at-home devices inspired by aesthetic medicine and post-procedure recovery applications.



NUCLEOBIOTICS

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DESCRIPTION

- Bioactive ingredients derived from plants and biotechnological processes, promoting cellular **regeneration for healthier skin**
- Derived from the cellular nucleus through an **exclusive biotechnological process**, ensuring high purity and effectiveness
- **Advanced biomacromolecular complexes, composed of nucleic acids and nucleotides with high-bioavailability**, oligosaccharides, vitamins, and peptides, designed to enhance cellular regeneration and support skin health



BIONUCLEMAX TECHNOLOGY

KALIGEN

- An innovative fermentation process that maximizes nucleotides and nucleic acids production.
- Optimized pH, temperature, selected oligoelements and oxygenation conditions enhance the synthesis and yield of nucleobiotic components.
- Chicory oligosaccharides, with their prebiotic properties, are the ideal substrate for maximizing yeast growth and productivity.
- **BioNucleMax** technology produces an ingredient with over **90%** nucleic acids content.



EFFICACY STUDY

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In vitro multi-level action evaluation

- Cell proliferation
- Protein synthesis stimulation
- Skin repair
- Collagen I expression

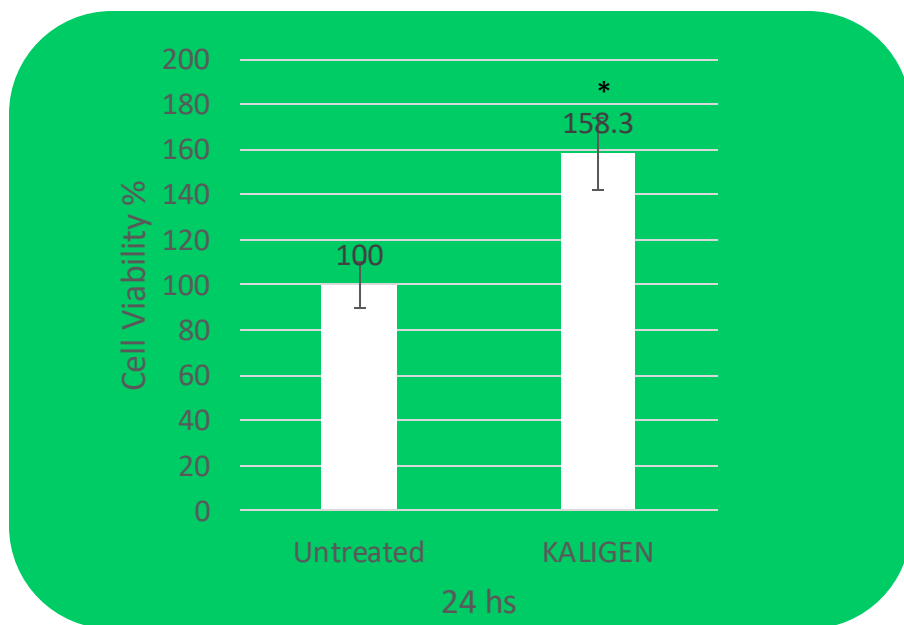
In Vivo Assessment of Skin Response After Cosmetic Treatment

Analysis of wrinkle area after a 4-week treatment (single-blind test procedure)



IN VITRO MULTI-LEVEL ACTION EVALUATION

CELL PROLIFERATION



* Statistically significant

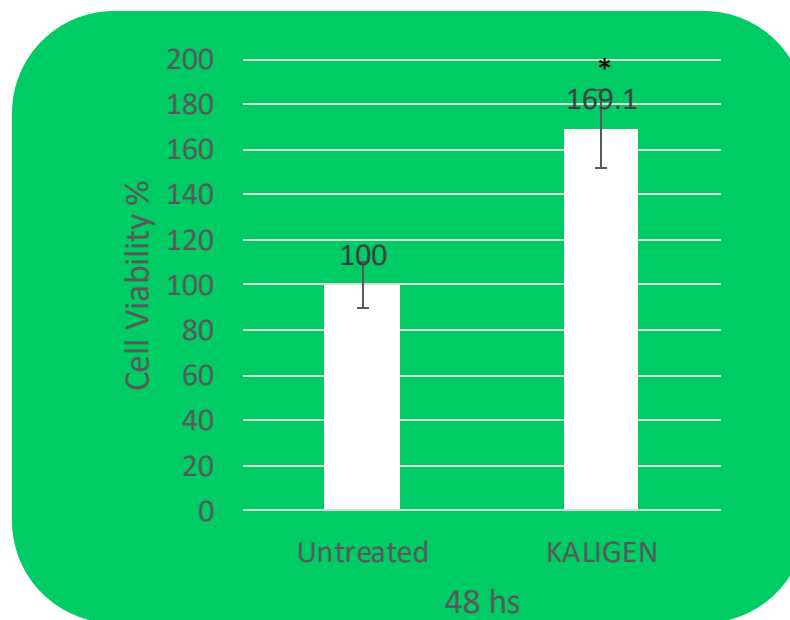
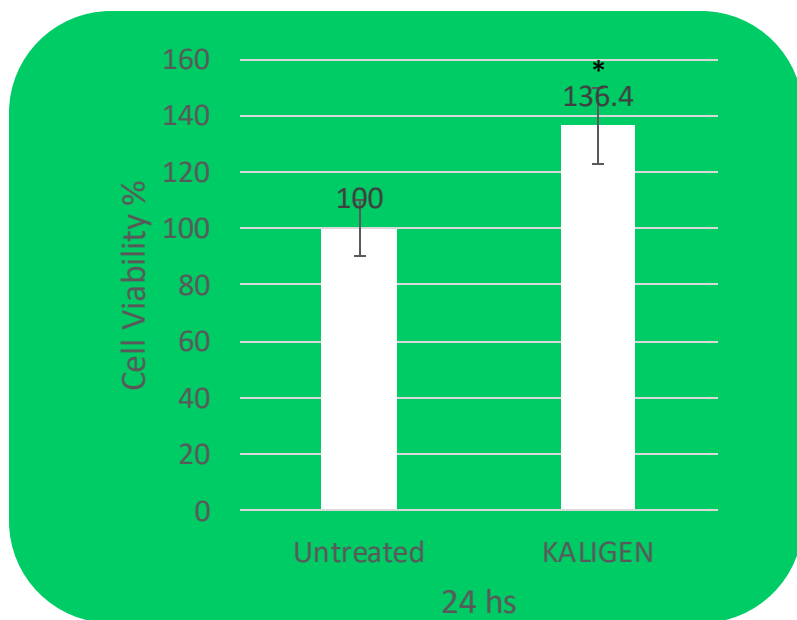
Cells (human fibroblasts) were seeded, starved for 6 hours in serum-free medium, then treated with the sample for 24 hours. Cell viability was measured by MTT assay in triplicate (insulin was used as positive control)



IN VITRO MULTI-LEVEL ACTION EVALUATION

PROTEIN SYNTHESIS STIMULATION

* Statistically significant

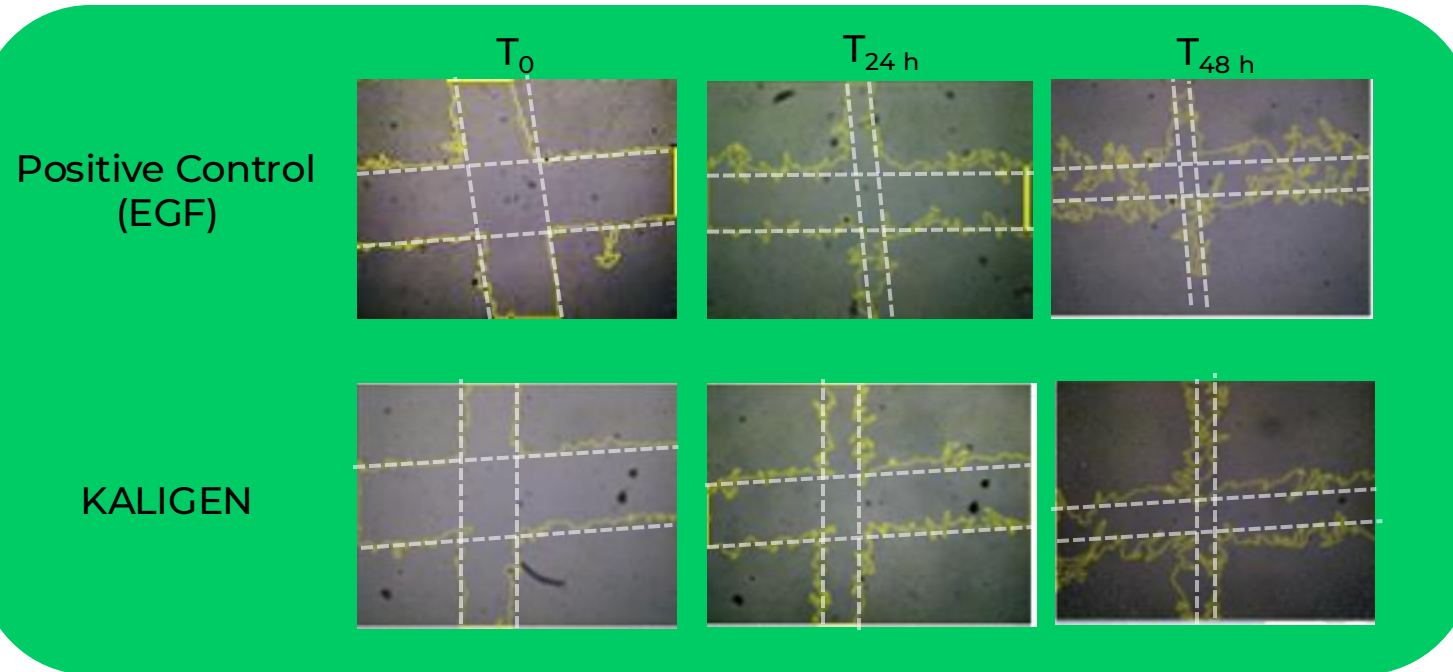


Cells (human fibroblasts) were seeded, starved for 6 hours in serum-free medium, then treated with the sample for 24 & 48 hours. Protein content was measured by Bradford assays in triplicate (insulin was used as positive control)



IN VITRO MULTI-LEVEL ACTION EVALUATION

SKIN REPAIR

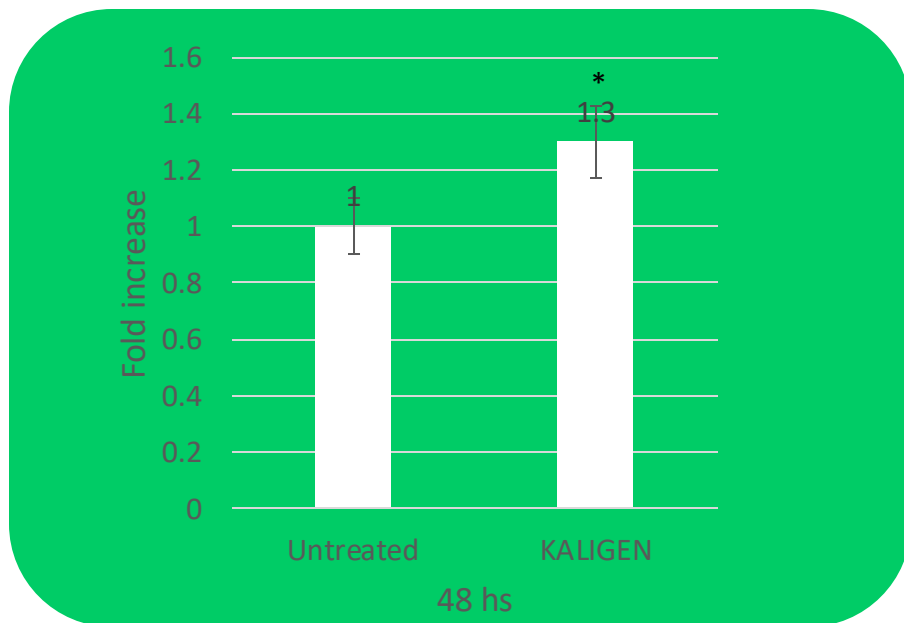


The in vitro scratch assay measures a substance's effectiveness in promoting skin repair over time by observing fibroblasts migration to close a gap



IN VITRO MULTI-LEVEL ACTION EVALUATION

COLLAGEN I EXPRESSION



* Statistically significant

Gene expression changes were analyzed by Real-Time PCR using TaqMan assay with a fluorescent probe, where the fluorescence signal correlates with the amplified product amount



IN VIVO ASSESSMENT OF SKIN RESPONSE AFTER COSMETIC TREATMENT

STUDY DESIGN

- A single-blind study protocol was used to evaluate product efficacy, measuring the area, of wrinkles in volunteers with signs of skin aging
- Volunteers applied either the cream with Kaligen or a placebo twice daily for 4 weeks
- Wrinkles were analyzed using 3D imaging



IN VIVO ASSESSMENT OF SKIN RESPONSE AFTER COSMETIC TREATMENT

RESULTS

T_0

T_{4w}

Forehead



2,81 Fold increase*

Crow's Feet



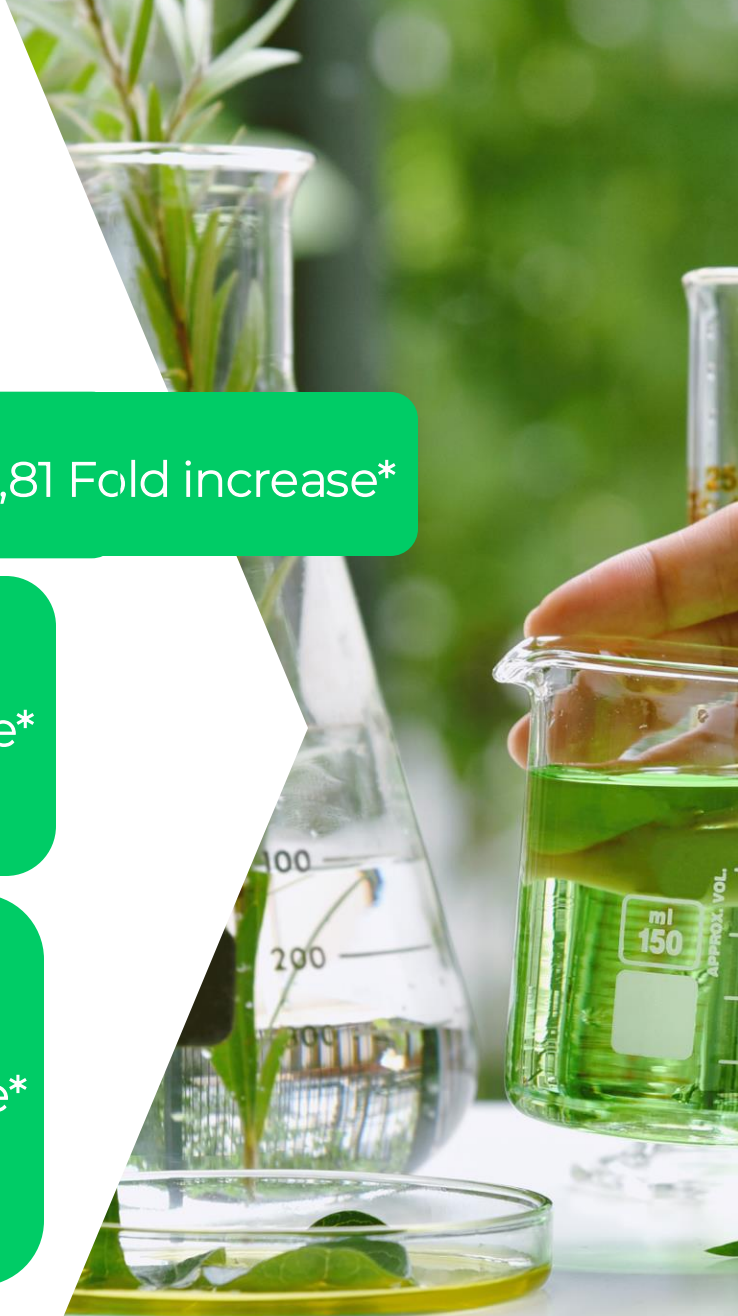
1,1 Fold increase*

Frown



4,87 Fold increase*

*Wrinkle area reduction compared to placebo (fold increase)



ADVANCED COSMETIC ACTION FOR **SKIN REJUVENATION**

CELLULAR RENEWAL & TISSUE REPAIR:

- In vitro proven efficacy in boosting cellular turnover, supporting tissue repair, and stimulating collagen synthesis for visibly rejuvenated skin

ACCELERATED SKIN REGENERATION:

- Actively stimulates protein synthesis improving skin regeneration and revealing smoother, fresher skin

BIOMIMETIC COLLAGEN BOOST & SKIN FIRMING:

- Enhances native collagen production through biomimetic activation, improving skin firmness, elasticity, and overall structure for a more youthful appearance.



CORE ADVANTAGES

CLEAN FORMULATION:

- Ensures a simple, natural INCI, free from additives (e.g. preservatives), for clean and effective skincare.

HIGH-PERFORMANCE ANTI-AGING EFFECTIVENESS:

- Highly effective in reducing visible signs of aging, offering a solution for smoother, firmer, and more youthful-looking skin.

VERSATILE & EASY FORMULATING:

- Water-soluble powder that delivers active ingredients to the skin instantly and consistently. Easily incorporated into various treatments to deliver lasting results and improve skin texture.

POWERFUL & MULTIFUNCTIONAL:

- Its high concentration of active ingredients at multiple levels makes it effective yet at low concentrations. A powerful addition to modern skincare routines for optimal skin health and appearance.



STRATEGIC MARKETING CLAIMS

CROSS-LAYER EFFICACY:

- Cross efficacy on multiple skin layers for three-dimensional anti-aging support and comprehensive action

LIFTING/ BIORESTRUCTURING/ REPLUMPING ACTION:

- Provides a lifting, biorestructuring, and replumping effect to improve skin firmness and structure.

CELLULAR RENEWAL & VITALITY:

- Stimulates cellular renewal to enhance skin resilience and vitality for healthier, rejuvenated skin.



STRATEGIC MARKETING CLAIMS

YOUTHFUL, REFRESHED APPEARANCE:

- Promotes a youthful and refreshed appearance with tangible skin revitalization.

CLEAN & CONSCIOUS SKINCARE:

- Clean and conscious skincare, free from additives, for a purer, more natural approach

POWERFUL SKINCARE TOOL:

- A powerful tool for advanced modern skincare, delivering optimal, youth-enhancing results for timeless skin



APPLICATIONS **KALIGEN**

| APPLICATION | HOW KALIGEN FITS | PRODUCT SUGGESTIONS |
|--------------------------------|--|---|
| Adaptive Skincare | Cross-layer efficacy adapts to daily skin changes and environmental factors, optimizing hydration, lifting, and protection. | <ul style="list-style-type: none">• Rejuvenating creams boosting skin vitality and texture, adapting to its needs• Dynamic serums counteracting daily environmental stress |
| Anti-Stress & Energizing | Stimulates cellular renewal, counteracting stress and fatigue for a glowing, energized complexion. | <ul style="list-style-type: none">• Revitalizing face masks for radiance and energy.• Energizing serums with soothing properties for stressed skin. |
| Recovery & Skin Revitalization | Biorestructuring, lifting, and replumping effects aid healing and revitalization after treatments, improving elasticity and reducing inflammation. | <ul style="list-style-type: none">• Biorestructuring creams for skin regeneration and firmness.• Repairing masks to improve texture and elasticity. |



APPLICATIONS **KALIGEN**

| APPLICATION | HOW KALIGEN FITS | PRODUCT SUGGESTIONS |
|---|--|--|
| Clean & Skin Rejuvenation | Skin renewal triggers rejuvenation in clean, high-tech beauty products, free from additives, for a purer, more advanced approach. | <ul style="list-style-type: none">• Clean serums activating skin renewal.• Detoxifying functional cleansers to purify and rejuvenate skin. |
| Resilient Skin Against External Factors | Enhances skin vitality and supports its integrity, helping it recover from external factors like pollution, digital fatigue, and environmental stress. | <ul style="list-style-type: none">• Protective serums to shield against environmental stress.• Rebuilding creams to restore skin's strength after environmental exposure. |
| Strengthening & Age-Defying | Regenerative and structural support boosts skin strength, improving tone and reducing fine lines and sagging. | <ul style="list-style-type: none">• Sculpting treatments to redefine contours and tone.• Resilience serums to restore firmness and reduce sagging. |





Thank You.



www.kalichem.it

