Lys’lastine™

Beauty Care Solutions

The Chemical Company
Elastin and elasticity breakthrough discoveries  
(BASF in association with CNRS institute)

Lys’lastine is one of the most advanced concepts launched recently in the cosmetic industry. It relies on several major discoveries on elastin physiology and mechanics. The key element in cutaneous elasticity during aging is LOXL.

Despite the obvious relationship between elastin and skin elasticity, the structure and aging of this protein are in fact poorly known. In contrast to other skin constituents such as collagen and glycosaminoglycans (GAGs), that decrease with age, elastin accumulates and changes appearance, as can be observed in skin elastosis.

Thanks to a joint project we have conducted with a French research institute (CNRS), we have made major discoveries on ELASTIN: STRUCTURE, FUNCTIONALITY AND AGING.

Elastin is an assembly of microfibrils and tropoelastin (or soluble elastin). The insoluble nature of the assembly is required for its functionality.

Our work, as well as medical research on pathologies involving structural defaults of elastin, has led to the discovery of the key player regulating the assembly of the two elements: LOXL.

While microfibrils and soluble elastin continue to be synthesized throughout life, LOXL dramatically decreases from the age of 18.

Lys’lastine™ v has been developed to help renew skin elasticity, through the reinduction of LOXL synthesis.

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Elastin in the skin
discovery of a major player

Young skin

Elastin is made of 2 major elements
- Microfibrils
- Tropoelastin

Functional elastin
Cross linking process

Elastic properties

Aged skin

2 major elements synthetized at the SAME LEVEL in AGED SKIN
- Microfibrils
- Tropoelastin

Not functional elastin
Bad cross-linking

LOSS of elastic properties

Only LOXL dramatically decreases with age
LOXL is the missing link

mRNA Expression
- Elastin
- LOXL

Fore skin
- Adult

-66%

*** p<0.001 vs. foreskin

Key player
LOXL

Studies carried out with CNRS
New Stories by Simply elastic...

Skin reactivates its own resilience, like a modern textile

Lys’lastine™ v renews skin elasticity

90% women find their skin texture improved

95% women find their skin more elastic

Clinical study
- Conducted on 50 women between 43 and 56 years old. A 3-month treatment, 2 applications per day.
- 25 women treated with 1% Lys’lastine™ v
- 25 women treated with the placebo
- After 56 and 84 days of treatment, biometric, clinical and self-evaluation parameters were determined.

+19% elasticity-resilience

+11% elasticity

Clinical evaluation

100% women are satisfied

Self assessment

* significant difference in favor of the product (p<0.05)
Lys’lastine™ v

The face designer™...

3D stretching effect

Elastin is the only fiber capable to structure the 3D aspect of skin
A natural result respecting natural features

Lys’lastine™ v acts like a skin care artist

Face architecture

81% women find their facial architecture improved

+10% tonicity of the jaw line

Tenses the skin
Smoothes wrinkles

-13% wrinkle length

-20% wrinkled surface

Clinical evaluation

Self assessment

n=20 or 21 subjects per product
* statistically different from placebo (p<0.05)
** statistically different from placebo (p<0.01)

n=20 or 21 subjects per product
* statistically different from placebo (p<0.05)
** statistically significant vs. T0 (p<0.01)
Lys’lastine™ v increases the production of LOXL (on 3 models - 3 rates of activation)

Lys’lastine™ v multiplies LOXL mRNA production by a factor of 2

In vitro study
• On cultures of aged fibroblasts (59-year-old donor)
• Measurement of the production of LOXL and tropoelastin mRNA vs. Lys’lastine™ v concentrations by quantitative reverse transcriptase polymerase chain reaction (QRT PCR).

Results obtained on monolayer fibroblast cultures

Lys’lastine™ v increases LOXL mRNA by 64%

In vitro study
• 36 dermal samples were used for this study.
• They were prepared for 28 days in the absence (control) or presence of 1% Lys’lastine™ v.
• Measurement of the production of LOXL and tropoelastin mRNA in presence of Lys’lastine™ v 1% by quantitative RT PCR.

Results obtained on Mimederm™

+12% LOXL, visible activation on complete skin and co-location of the 2 components showing their interaction

In vitro study
• 36 reconstructed skin samples were used for this study.
• They were prepared for 28 days in the absence (control) or presence of 1% Lys’lastine™ v.
• LOXL and tropoelastin were visualized by immunolabelling and quantification was by image analysis of histological sections.

Results obtained on Mimeskin™
How does induction of LOXL production make elastin functional and positively affect the mechanical properties of the skin?

**Visualization of the effect of LOXL on the synthesis of functional elastin**

The presence of LOXL substantially improves the elasticity of reconstructed dermis, proving the renovation of elastin functionality.

**Results obtained on Mimeskin™ in electron microscopy**

**Preliminary specification**

<table>
<thead>
<tr>
<th>Property</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dry weight (15 hours, 105°C)</strong></td>
<td>0.2 – 3.0</td>
</tr>
<tr>
<td><strong>Total Inorganic Matter Content (15 hours, 600°C)</strong></td>
<td>0.0 – 1.0</td>
</tr>
<tr>
<td><strong>Appearance</strong></td>
<td>Viscous liquid</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>Orangey yellow</td>
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<tr>
<td><strong>Odor</strong></td>
<td>Characteristic</td>
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<tr>
<td><strong>pH (Direct)</strong></td>
<td>4.0 – 8.0</td>
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<tr>
<td><strong>Viscosity (Brookfield RVDV-II +)</strong></td>
<td>(600-6667) cps</td>
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<tr>
<td><strong>Refractive index (20°C)</strong></td>
<td>1.35 – 1.37</td>
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<tr>
<td><strong>Aerobic bacteria (30°C)</strong></td>
<td>&lt; or = 100/g</td>
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<tr>
<td><strong>Pathogens</strong></td>
<td>None</td>
</tr>
<tr>
<td><strong>Preservatives/Additives</strong></td>
<td>Phenoxyethanol (0.1 – 1%)</td>
</tr>
</tbody>
</table>

Mimederm™ is a dermal model of BASF BCS

Mimeskin™ is a skin model of BASF BCS
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