

Iso-SlimComplex

Pro slimming – anti cellulite



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Activated Soy Isoflavone for a Perfect Body

Iso-SlimComplex is both a slimming and anti-cellulite ingredient based on genistein, the biologically active form of the most abundant soy isoflavone.

Genistein is a powerful anti-cellulite ingredient: It inhibits the formation of new adipocytes (cells specialized for fat storage), promotes the fat breakdown and also strongly improves skin strength, firmness and smoothness.

Iso-SlimComplex combines genistein with 3 other active substances: caffeine and carnitine which stimulate the fat breakdown and spirulina platensis extract which has firming and restructuring properties.

The efficacy of Iso-SlimComplex was demonstrated thanks to different techniques:

- Genistein was shown to inhibit the differentiation of pre-adipocytes into adipocytes by immunofluorescence and gene array analysis.
- In a reconstructed full skin model, genistein was also shown to stimulate the production of collagen IV, a key component of the basement membrane.
- In vivo, the slimming and anti-cellulite effects of Iso-SlimComplex as well as its capacity to improve skin quality were proven after only 6 weeks of application.

Iso-SlimComplex

- Visibly reduces cellulite (degree of cellulite: –37%)
- Multi-targeted slimming activity (thigh girth: –3.8 cm)
- Boosts collagen production for a firmer look

Applications for Body Care

- Anti-cellulite
- Slimming
- Anti-aging
- Firming

Formulating with Iso-SlimComplex

- Recommended use level: 1–5%
- Incorporation: For cold processes, dissolve IsoSlimComplex into the aqueous phase. In cold/hot processes, add during the cooling phase below 40°C.
- Thermostability: Temperatures of up to 60°C over a short time do not affect the stability of Iso-SlimComplex.

INCI (EU/PCPC) Declaration

Spirulina Platensis Extract (and) Soy Isoflavones (and) Caffeine (and) Carnitine (and) Polysorbate 80 (and) Phenoxyethanol (and) Alcohol (and) Aqua/Water

Iso-SlimComplex

Genistein for slimming and fighting cellulitis

Cellulite: Mostly Women are Affected

Following puberty, 90% of women suffer from stubborn cellulite regardless of their weight. Conversely, men are less affected.

This fact is explained by the specific nature of the adipose tissue in the thighs and buttocks of women which contains more fat and is structured in a different manner to that of men.

Cellulite is characterized by an "orange peel" skin and results from the hypertrophy of adipocytes. Due to their enlargement, these fat cells compress the wrap (connective tissue) that contains them. The bigger the adipocytes, the more the wrap deforms and hardens, which leads to a deficient blood and lymph microcirculation.

Skin Aging and Cellulite

With age, cellulite becomes more visible for two reasons:

- The number of adipocytes increases.
- From the age of 40, the skin becomes thinner by 1% every year, this is predominantly due to the fact that the proteins responsible for the skin's elasticity (collagen and elastin) are reduced.

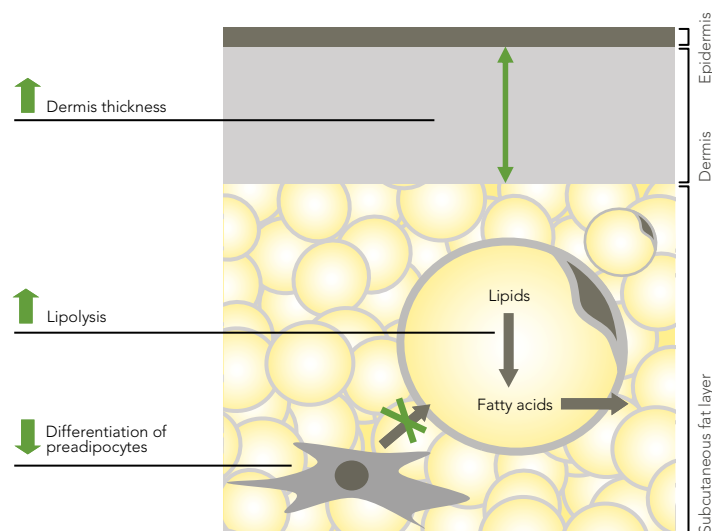
A Patented Combination for a Multi-Targeted AntiCellulite and Slimming Activity

Iso-SlimComplex combines genistein with 3 other active substances:

- Genistein is the most abundant isoflavone in soy. It is found in nature in the glycoside form but must be transformed into the aglycone form to become physiologically active when topically applied. Genistein fights against cellulite in various different ways: It inhibits adipogenesis by limiting the differentiation of pre-adipocytes into adipocytes. Furthermore, it promotes fat breakdown by inhibiting phosphodiesterase enzyme activity. Finally, it reduces the appearance of cellulite and limits the expansion of adipose tissue by thickening and reinforcing the dermis.
- Caffeine promotes fat breakdown by activating the cell metabolism and inhibiting phosphodiesterase enzyme activity.
- Carnitine, which is naturally present in our body, accelerates fat breakdown by supporting the transport of fatty acids.
- Spirulina platensis extract, which is rich in proteins, minerals and vitamins, has firming and restructuring properties.

The topical use of Iso-SlimComplex to treat cellulitis is patented in Europe (EP1234572B1).

Anti-Cellulite and Slimming Activity of Genistein



Iso-SlimComplex

Study results



Inhibition of the Adipogenesis Process

Normal human pre-adipocytes were cultivated and then incubated in a differentiation medium for 7 days. Formation of mature adipocytes was followed by two different methods: staining of deposited lipids and gene microarray analysis.

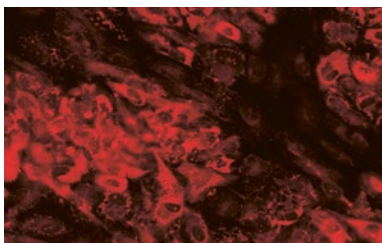
The intracellular lipids were stained using a red marker. They were then quantified by measuring fluorescence intensity. In parallel, the total number of cells was controlled with Hoechst staining of the cell nuclei.

Results showed that genistein significantly inhibited the accumulation of intracellular lipids (-42%). Because only mature adipocytes can store lipids, this clearly shows that genistein inhibits the differentiation of pre-adipocytes.

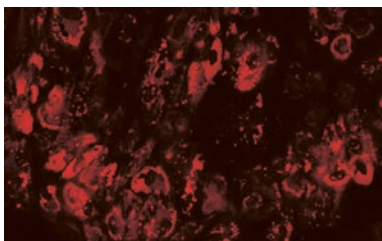
DNA microarray technology was used to analyze 96 genes related to adipogenesis. Only genes which were highly up-regulated or highly down-regulated were taken into account for the activity evaluation.

Results showed that genistein strongly down-regulated markers of the differentiation of pre-adipocytes into adipocytes and also up-regulated genes which are predominantly expressed in pre-adipocytes. Thus this analysis confirms that genistein inhibits the adipogenesis process.

Lower Fat Storage Capacities



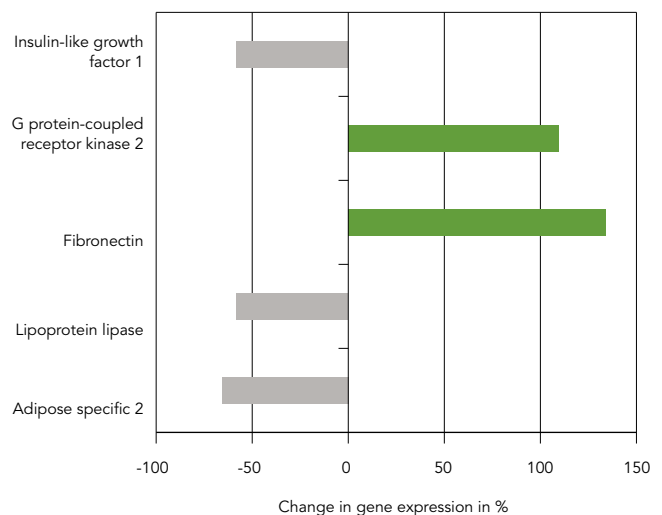
Control



Genistein

Gene Expression of Adipogenesis Markers

■ Markers of adipogenesis process ■ Markers of pre-adipocytes



Iso-SlimComplex

Study results



Genistein Stimulates Collagen Production

In a 3D full skin model, genistein was shown to increase the biosynthesis of collagen IV using immunolabelling techniques. Collagen IV is essential for the structural integrity and function of the basement membrane (stratum basale).

The reconstructed full skin model was prepared from normal human fibroblasts and keratinocytes isolated from skin biopsy. The cultured keratinocytes were seeded on the dermis equivalent in order to obtain a vertical differentiation leading to the formation of the stratum basale and the different layers of the epidermis.

The immunofluorescent staining of collagen IV and cell nuclei (Hoechst) showed a 53% increase of the collagen IV content in the 3D full skin model treated with genistein. The number of cell nuclei was not increased indicating that genistein specifically stimulated collagen IV production.



Visible Anti-Cellulite Effect

A gel containing 4% Iso-SlimComplex was applied once daily for six weeks on one thigh of twenty women aged from 39 to 58 presenting severe cellulite.

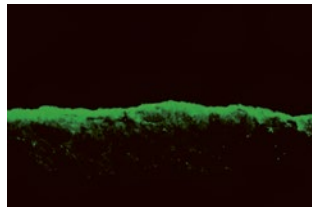
The degree of cellulite was assessed by visual rating on a five point scale by a professional.

Results showed that Iso-SlimComplex visibly reduced cellulite. The mean degree of cellulite was 37% lower after six weeks compared to the untreated thigh. This corresponds to more than 1 point in the five point scale.

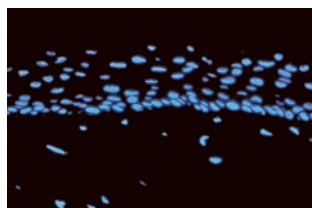
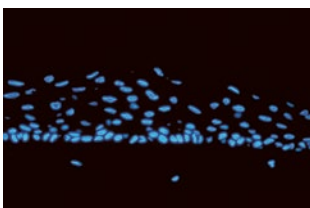
Genistein Stimulates Collagen IV Production

Control

Genistein

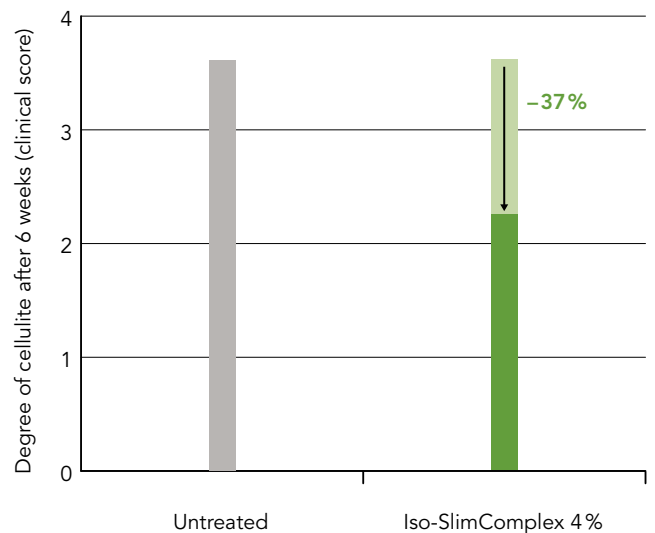


Collagen IV



Nuclei of keratinocytes and fibroblasts

The Degree of Cellulite is Reduced





Slimming Effect

The slimming effect of Iso-SlimComplex was evaluated by measuring the thigh circumference in the same study.

Results showed that the thigh circumference was reduced by 2.3 cm after 3 weeks and 3.8 cm after six weeks respectively.



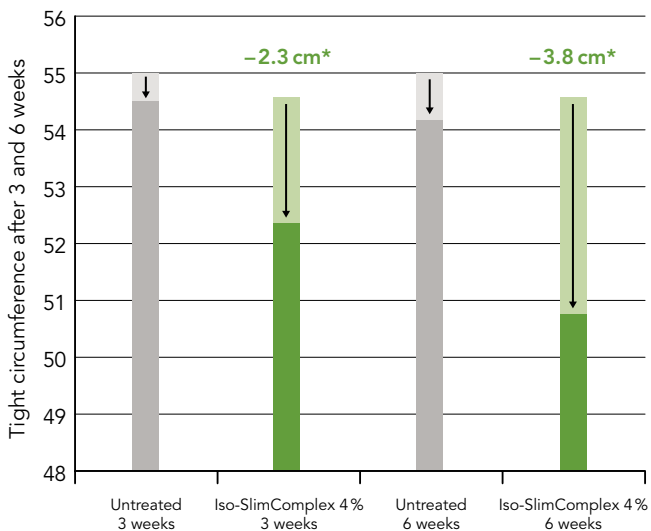
Improvement of the Skin Quality

The effect of Iso-SlimComplex on skin elasticity and smoothness was also evaluated in the same study using a cutometer and the PRIMOS system respectively.

Results showed a 57% skin firmness increase and a 41% skin smoothness increase after six weeks compared to the untreated thigh.

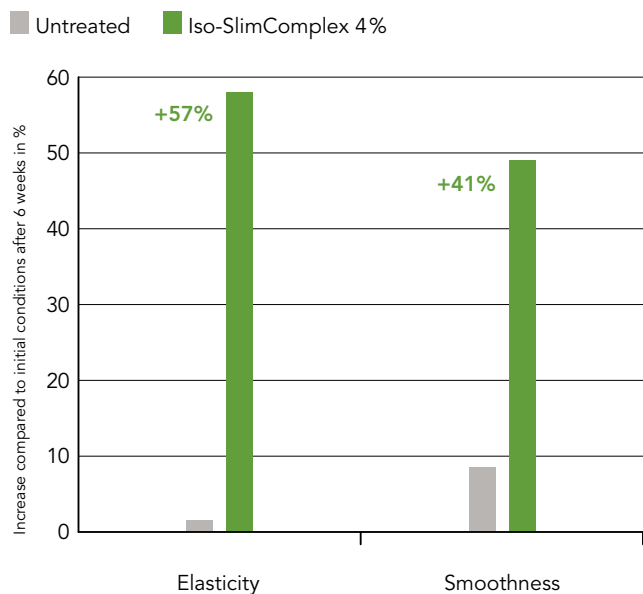
By improving the skin extensibility and thus by limiting the hardening of tissues caused by the hypertrophy of adipocytes, Iso-SlimComplex prevents the apparition and the worsening of cellulite.

Reduction of the Thigh Circumference



*p<0.05 versus initial conditions and untreated

A Smoother and More Elastic Skin



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Applications in Body Care

- Anti-cellulite
- Slimming
- Anti-aging
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Marketing Benefits

- Double result: anti-cellulite + slimming
- Contains genistein, the biologically active form of the most abundant soy isoflavone
- Patent EP1234572B1

Innovating for your success

Mibelle Biochemistry designs and develops innovative, high-quality actives based on naturally derived compounds and profound scientific know-how. Inspired by nature – Realized by science.

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