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THE HEART OF NATURE

Remodel

Anti-cellulite Phytoextract

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Definition

Known in technical terms as Edematous fibrosclerotic panniculopathy (EFP), cellulite is an alteration of the dermis determined by morphological changes in the subcutaneous panniculus adiposus known as the areolar layer.

In their early stages, these changes are characterised by:

- a volumetric increase of adipocytes with a consequent compression of the surrounding tissue and difficulties in blood/lymphatic microcirculation;
- a reduced elasticity of the adipose tissue;
- an increase in interstitial fluids that give rise to the typical symptoms of the lipedema phase (sense of swelling, pale skin painful to the touch).

Cellulite

Can affect different areas of the body that contain subcutaneous adipose tissue. Specifically, the back and outer sides of the thighs and buttocks.

85-98% of women experience it, [1] perhaps related to the different structure of the subcutaneous tissue. Diet and lifestyle are considered secondary etiological factors. [5]

It is determined by an increase in volume of the adipose papillae in the dermis that give the skin an irregular appearance, described as orange peel or dimpled.

It is exacerbated by factors such as weakened dermal structure, reduced blood/lymphatic microcirculation, and chronic inflammatory conditions.

It responds well to a combination of stimuli, such as physical activity, massages and topical cosmetic treatments aimed at mobilizing adipose accumulations and draining excess fluid.

The cosmetic treatment intervenes in particular in the oedematous phase, promoting the correct balance of water exchanges and lipid metabolism. Combinations of different active ingredients capable of implementing synergistic effects are required to make effective formulations. [5]

Remodel

Remodel

Multi-active phytoextract that acts minimizing the aesthetic traits typical of cellulite thanks to the synergistic action of its plant components.

Ananas Sativus Fruit Extract

Aesculus hippocastanum Seed Extract

Centella asiatica Extract

Humulus lupulus Extract

Hedera helix Leaf Extract

Spiraea ulmaria Flower Extract

Equisetum arvense Extract

Ingredients

INCI: Glycerin, Aqua, Ananas sativus Fruit Extract, Aesculus hippocastanum Seed Extract, Leuconostoc/Radish Root Ferment Filtrate, Pentylene Glycol, Centella asiatica Extract, Humulus lupulus Extract, Hedera helix Leaf Extract, Spiraea ulmaria Flower Extract, Equisetum arvense Extract, Citric Acid.

US INCI: Glycerin, Water, Ananas sativus (Pineapple) Fruit Extract, Aesculus hippocastanum (Horse chestnut) Seed Extract, Leuconostoc/Radish Root Ferment Filtrate, Pentylene Glycol, Centella asiatica Extract, Humulus lupulus Extract, Hedera helix (Ivy) Leaf/Stem Extract, Spiraea ulmaria Flower Extract, Equisetum arvense Extract, Citric Acid.

Recommended dose: 4.0 %

Appearance: water-soluble clear liquid.

Certified: COSMOS APPROVED.

Pineapple

Ananas sativus

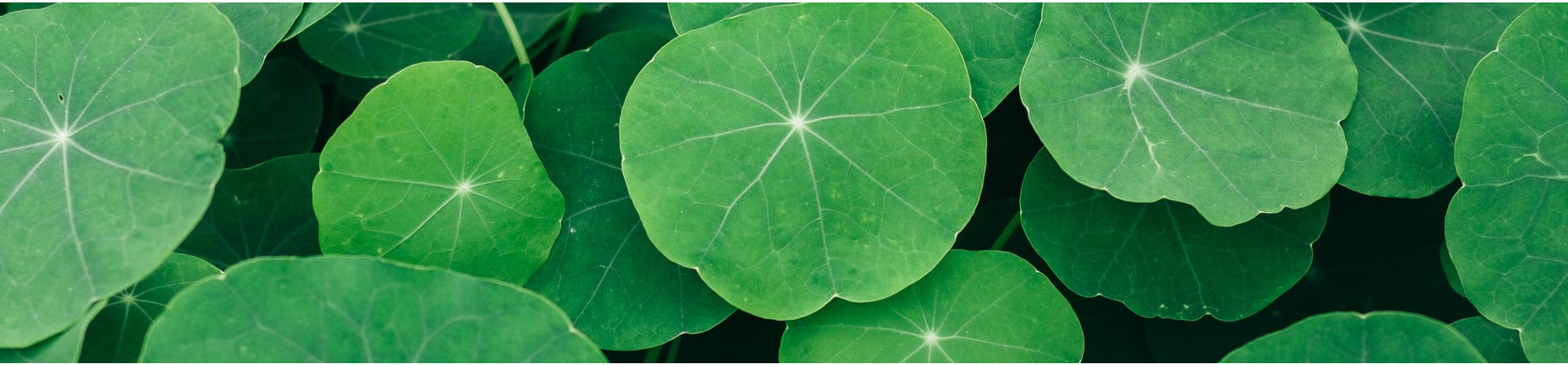
Pineapple belongs to the *Bromeliaceae* family and is rich in bromelain, a mixture of enzymes with proteolytic activity. The leaves and fruits boast an anti-inflammatory and anti-oedematous action. [2,3,4]

Horse Chestnut

Aesculus hippocastanum

The most important bio-active constituent extracted from horse chestnut seed is escin, a saponin with marked anti-inflammatory and anti-oedematous properties. Thanks to its active ingredients, the horse chestnut fruit increases the resistance of the capillaries and reduces their permeability, contrasting the accumulation of excess interstitial liquids and promoting lymphatic drainage. [6]

Indian pennywort



Centella asiatica

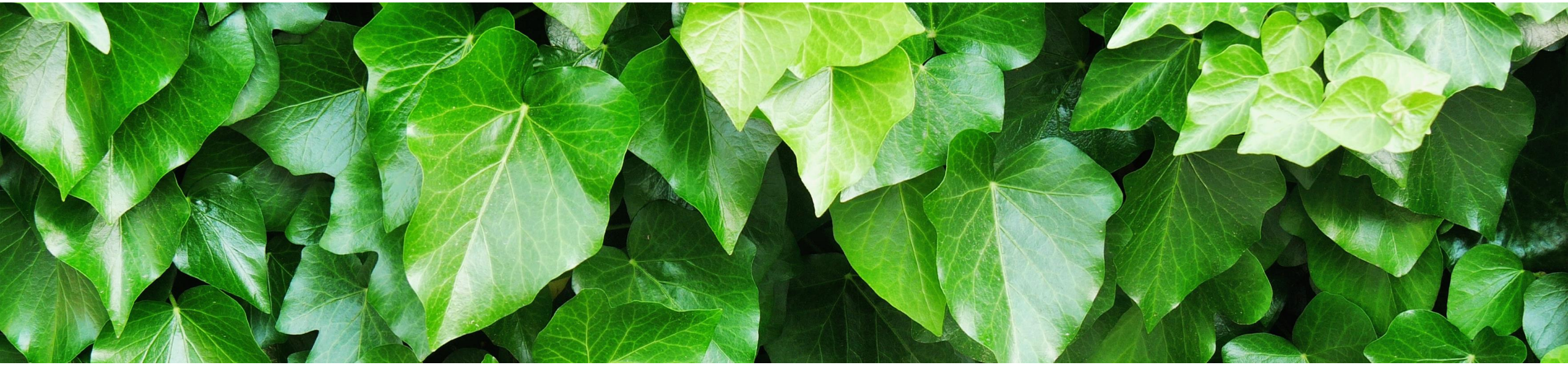
Indian pennywort improves connective vascularisation and acts as an anti-inflammatory on capillaries with a consequent decrease in oedema. Thanks to its triterpenic fraction, it influences the trophism of fibroblasts and regulates the production of type I and III native collagen, which improves skin elasticity and firmness. [2,4,6]

Hop

Humulus lupulus

Hop extract acts on skin tone and firmness. Its use is therefore indicated for the preparation of cosmetic formulations useful to counteract skin relaxation and loss of elasticity. [6]

Ivy



Hedera helix

Ivy extract is rich in ivy-saponins, known to improve venous and lymphatic drainage, reduce local inflammation, inhibit hyaluronidase and promote drainage of body fluids, resulting in an anti-oedematous effect. [2.3,4.5]

Meadowsweet

Spiraea ulmaria

Meadowsweet extract contains ellagitannins, flavonoids – in particular, quercetin and apigenin – and salicylic derivatives. Numerous in vitro studies have demonstrated the anti-inflammatory activity of aqueous and hydroalcoholic meadowsweet extracts. [7]

Horsetail

Equisetum arvense

Thanks to its high mineral content, horsetail extract is used both in the treatment of stretch marks and cellulite, both of which are indicative of a decay of the supporting tissues.[5]

Preservation

The phytocomplex does not contain any of the preservatives listed in Annex V of Cosmetic Regulation 1223/2009.

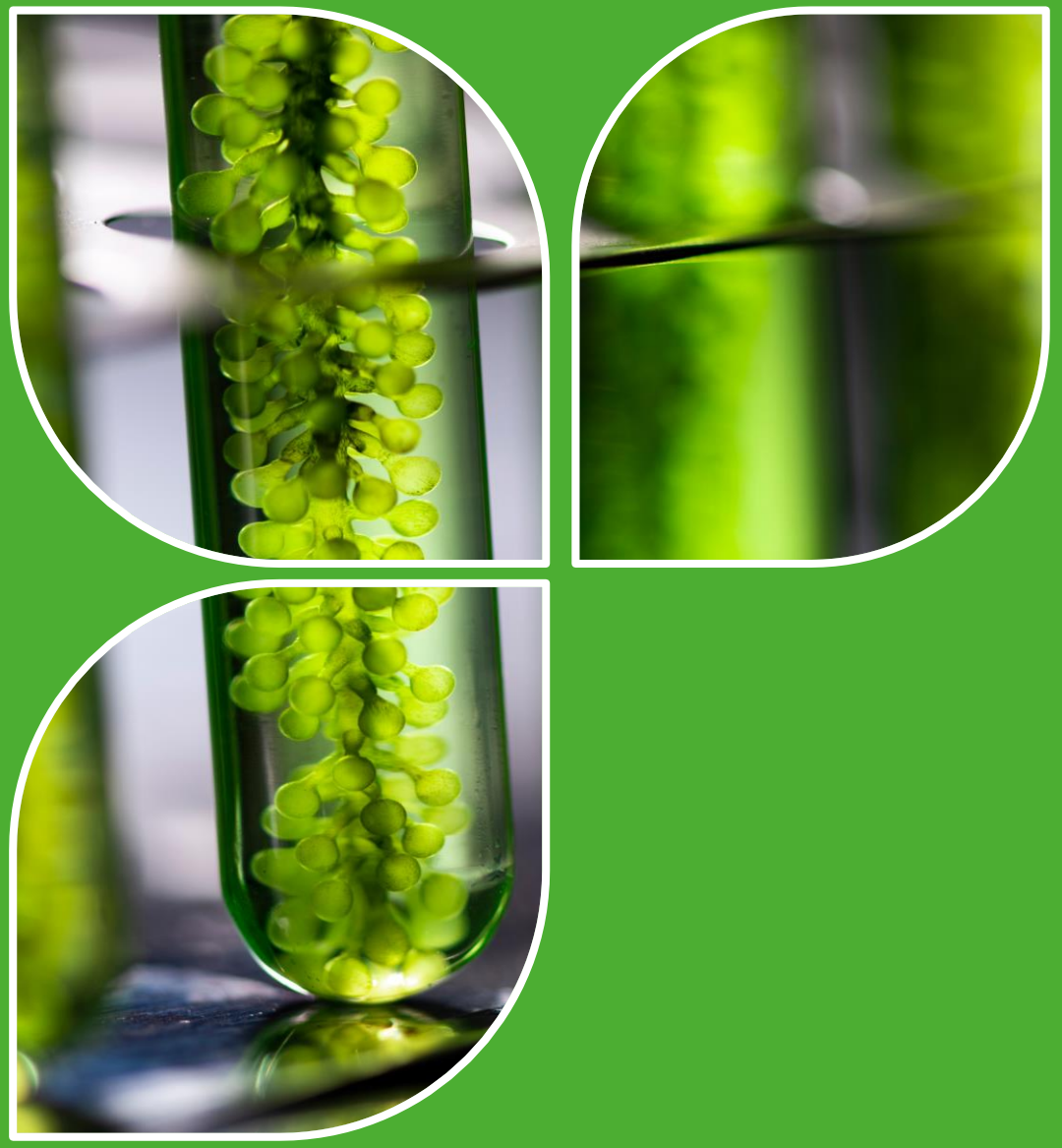
The following are used as a preservatives:

- **Fermented radish root** (Leuconostoc/Radish Root Ferment Filtrate), an ingredient capable of acting as a broad-spectrum antimicrobial. Fermented radish ensures excellent skin compatibility;

- **Pentylene glycol** 100%-naturally derived from corn and cane sugar parts not intended for the food industry.

Effect

*Bibliographic references available on p. 24.



Efficacy

In vivo study

The cosmetic efficacy of Remodel was evaluated through a 28-day long term clinical-instrumental test including:

- Anthropometric measurement of the circumference;
- Plicometric measurement of the skin fold;
- Bioelectrical impedance assessment (BIA) that evaluates any changes in adipose tissue.

Clinical instrumental evaluations were performed at time t0 (baseline value), at 14-day (t14d), and 28-day (t28d) intervals.

Executing the test

10 female subjects with I-III grade cellulite on thighs and buttocks, according to the classification of Rossi and Vergagnini, were selected. [8]

Inclusion Criteria:

- female,
- age range between 18 and 35,
- BMI (body mass index) between 20 and 27,
- normal blood levels of cholesterol and triglycerides, good health, absence of skin diseases, absence of topical or systemic drug treatments in place, negative history of ACD and thyroid diseases,
- commitment not to practice sports, diet, massages and not to vary the normal daily routine (unusual physical activities) and a body weight +/- 2 kg,
- commitment not to use other products of the same category in the treated areas,
- commitment not to start, modify or suspend birth control pills during the treatment,
- none of the women in the study were pregnant, lactating, or menopausal. None of the women had undergone similar studies in the previous 6 months.

Cosmetic emulsion (BASE) O/W application with 4% of the active ingredient once per day.

Variations of body adiposity

The mean BMI at t0 was 24.1 kg per square metre and 24.3 at the final visit. A slight but non-significant reduction in mean weight was obtained after 4 weeks of treatment compared with baseline (from 54.8 kg to 54.2). On impedance testing, there were no statistically significant differences in body adipose tissue parameters analysed after 4 weeks of treatment.

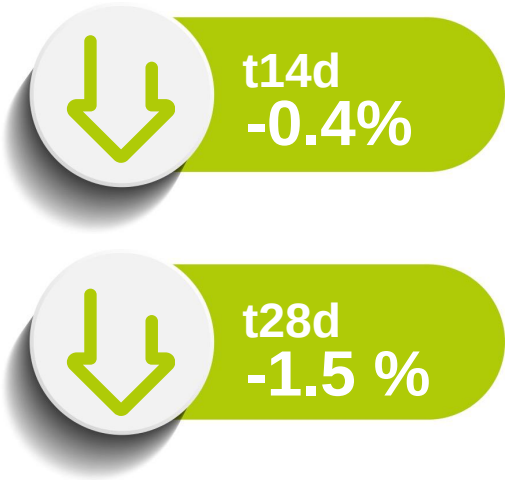
BIA measurements	t0	t28d	p-value
Weight (%)	54.79 ± 8.14	54.7 ± 7.84	0.321
BMI (Kg/m^2)	24.2 ± 0.93	24.28 ± 0.79	0.249
Body fat mass (Kg)	15.08 ± 1.44	15.1 ± 1.44	0.451
Percent body fat (%)	25.2 ± 1.63	24.85 ± 1.19	0.135

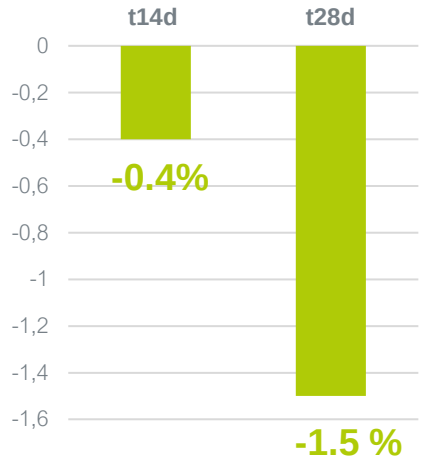
Morphometric evaluations

The measurement of circumferences in centimetres showed a significant reduction in thigh circumference after 28 days:

REMODEL 4%	t0	t14d	t28d
Circumference measurement	55.82 ± 4.08	55.56 ± 3.98	54.94 ± 3.86
Baseline change from t0 (mean and SD)		- 0.2 ± 0.84	- 0.8 ± 0.96
Percentage change from t0 (mean)		- 0.4 %	- 1.5 %
p-value		0.358	0.018

Circumference measurement: percentage change mean from t0



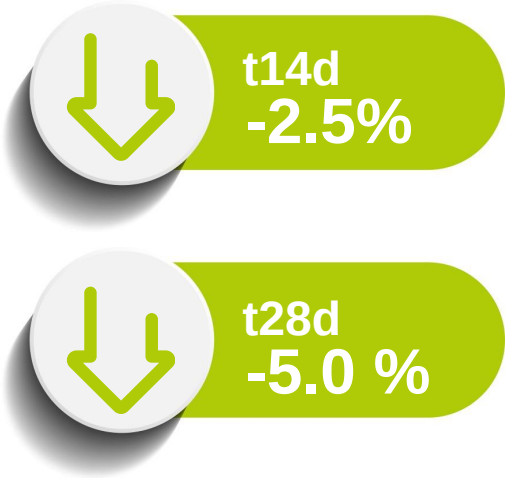


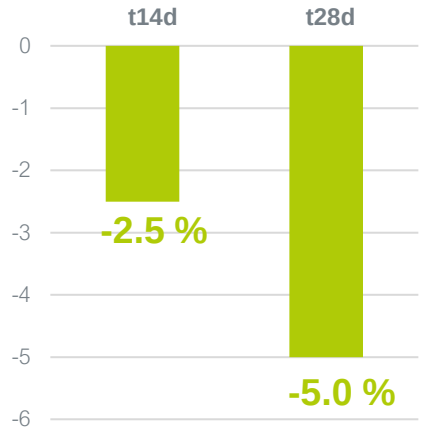
Morphometric evaluations

The plicometer measurement performed in millimetres showed a statistically significant reduction of the skin fold of the thigh after 28 days:

REMODEL 4%	t0	t14d	t28d
Plicometric measurement	6.04 ± 0.54	5.87 ± 0.34	5.73 ± 0.50
Baseline change from t0 (mean and SD)		- 0.1 ± 0.29	- 0.3 ± 0.29
Percentage change from t0 (mean)		- 2.4 %	- 5.0 %
p-value		0.108	0.005

Percentage change mean from t0





Conclusions

-1.5%

The circumference in the middle-third of the thighs is reduced by a mean rate of 1.5% after 28 days of daily application.

-5%

Plicometry shows a 5% reduction in the thigh after 28 days.

Impedance values showed that these improvements occurred in the absence of weight loss due to low-calorie diets.

None of the 10 volunteers had any irritative or allergic adverse reactions.

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