



# NANO CELLULITECH

## BODY CARE

**Actives:** Caffeine, Green Tea Oil,  
Arnica Montana Oil and  
Palmarosa Essential Oil

### Characteristics

**Aspect:** White to cream

Milky liquid

**Concentration of use:**

0.5 to 10%

**Stability pH:**

2.5 to 7.0

### Benefits

- Cellulite treatment
- Improves blood flow
- Reduce body measures
- Draining, anti-inflammatory and anti-free radicals action
- Reduces lipogenesis and activates lipolysis
- Moisturizing

### Application

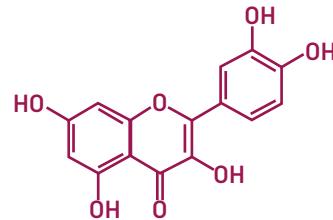
Gels, cream gels, emulsions in general.



**Nano Cellulitech** is a blend of active ingredients encapsulated in lipid particles with a particle diameter greater than 200nm. The blend encapsulation through Nanovetores Technology allows the stabilization of sensitive and complex components to be formulated in the free form. The active blend of Nano Cellulitech acts synergistically in the treatment of cellulite and in the reduction of measures, providing a draining, anti-inflammatory, free anti-radical action, reducing lipogenesis, activating lipolysis with significant improvement of microcirculation.

## Description

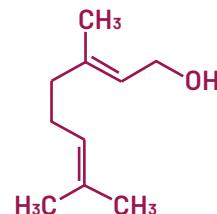
The active blend of Nano Cellulitech acts synergistically in the treatment of gynoid lipodystrophy and in the reduction of measures, conferring a draining, anti-inflammatory, anti-free radicals action, reducing lipogenesis, activating lipolysis with significant improvement of microcirculation. Gynoid lipodystrophy, commonly known as cellulite, is a change in fatty tissue with the appearance of deformations in the skin similar to the appearance of orange peel. It can occur in any region of the body, however, it is more frequent in the region of the glutes and thighs and affects more women than men.<sup>1</sup> Topical treatments for cellulite include several agents and mechanisms of action, starting with those that activate microcirculation, reduce lipogenesis, promote lipolysis, restore the normal structure of the dermis and subcutaneous tissue, and agents that eliminate free radicals or prevent their formation.<sup>2</sup>



**Chemical name:** Quercetin CAS: 117-39-5

**Molar mass:** 302,2 g/mol

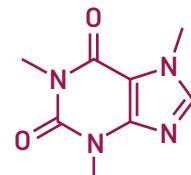
**Image 1:** Chemical information and molecular structure of quercetin, a flavonoid component of Arnica Montana Essential Oil



**Chemical name:** Geraniol CAS: 106-24-1

**Molar mass:** 154,24 g/mol

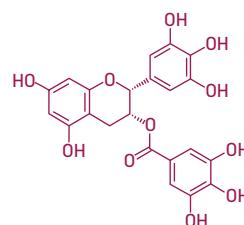
**Image 2:** Chemical information and molecular structure of geraniol, a component of Palmarosa Essential Oil.



**Chemical name:** Caffeine CAS: 58-08-2

**Molar mass:** 194,19 g/mol

**Image 3:** Chemical information and molecular structure of caffeine.



**Chemical name:** Epigallocatequina-3-galato CAS: 989-51-5

**Molar mass:** 458.372 g/mol

**Image 4:** Chemical information and molecular information of epigallocatechin-3-gallate, a component of Green Tea Oil.

**100%**

of the research participants noticed an improvement in the skin in the following aspects

- Reduction of orange peel aspect;
- Smoother and more hydrated skin;
- Decreased skin roughness;
- Effective in anti-cellulite treatment.

## **Arnica Montana Essential Oil**

Arnica Montana essential oil has a proven anti-inflammatory action and has among its main components flavonoids such as quercetin and its derivatives, sesquiterpenes, lactones, alcohols, carotenoids, essential oil, inulin, tannins, among other constituents.<sup>3</sup>

## **Palmarosa Essential Oil**

The Palmarosa Essential Oil is rich in geraniol, and has antioxidant and anti-inflammatory activity, also acting on toning, cell regeneration and skin lightening.<sup>4</sup>

## **Caffeine**

Caffeine is an alkaloid of the group of methylxanthines, substances that are characterized by being agents that reduce lipogenesis and promotes lipolysis. In addition to having an astringent action, promoting cleanliness and balance of the skin, caffeine is regenerative and improves blood microcirculation.<sup>5</sup>

## **Green Tea Oil**

It is rich in polyphenols (bioflavonoids) and catechins, mainly epigallocatechin-3-O-gallate, the Green Tea Oil acts synergistically with caffeine, potentiating lipolytic action by inhibiting phosphodiesterase, an enzyme that degrades cAMP, a type of cell messenger.<sup>6</sup> Known for being a potent antioxidant, green tea oil helps neutralize the action of free radicals that act on skin aging, mainly caused by UV radiation.<sup>7</sup> This oil also stimulates keratinocytes, which act in the cell renewal process, normalizing the speed of skin regeneration.<sup>8</sup> In addition, catechins also promote activation of the microcirculation.



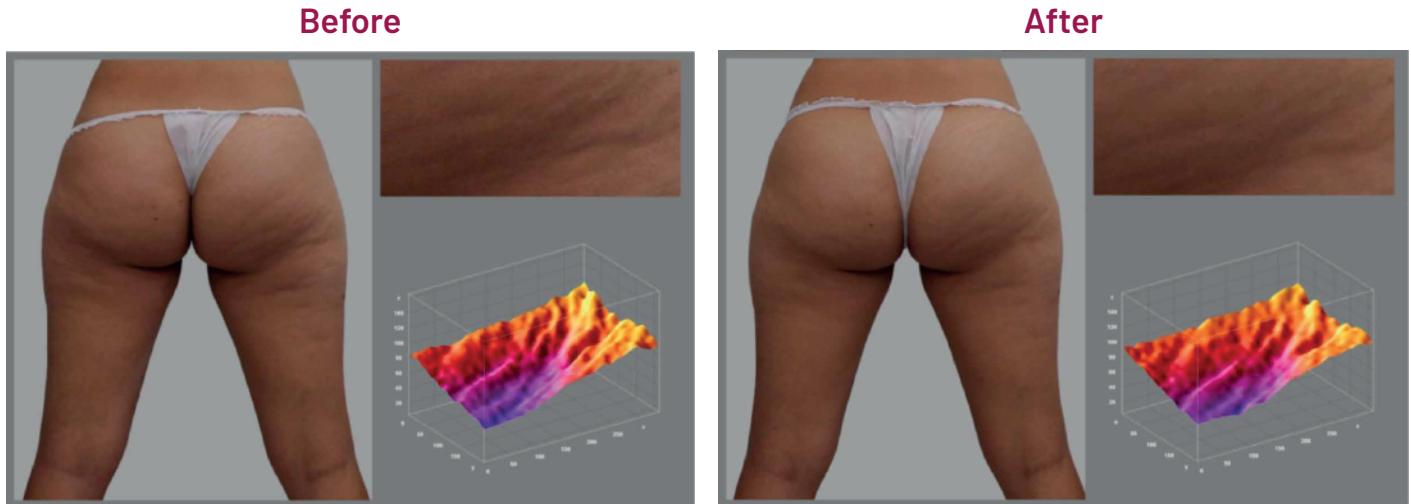
# Efficacy Test

## Test 1

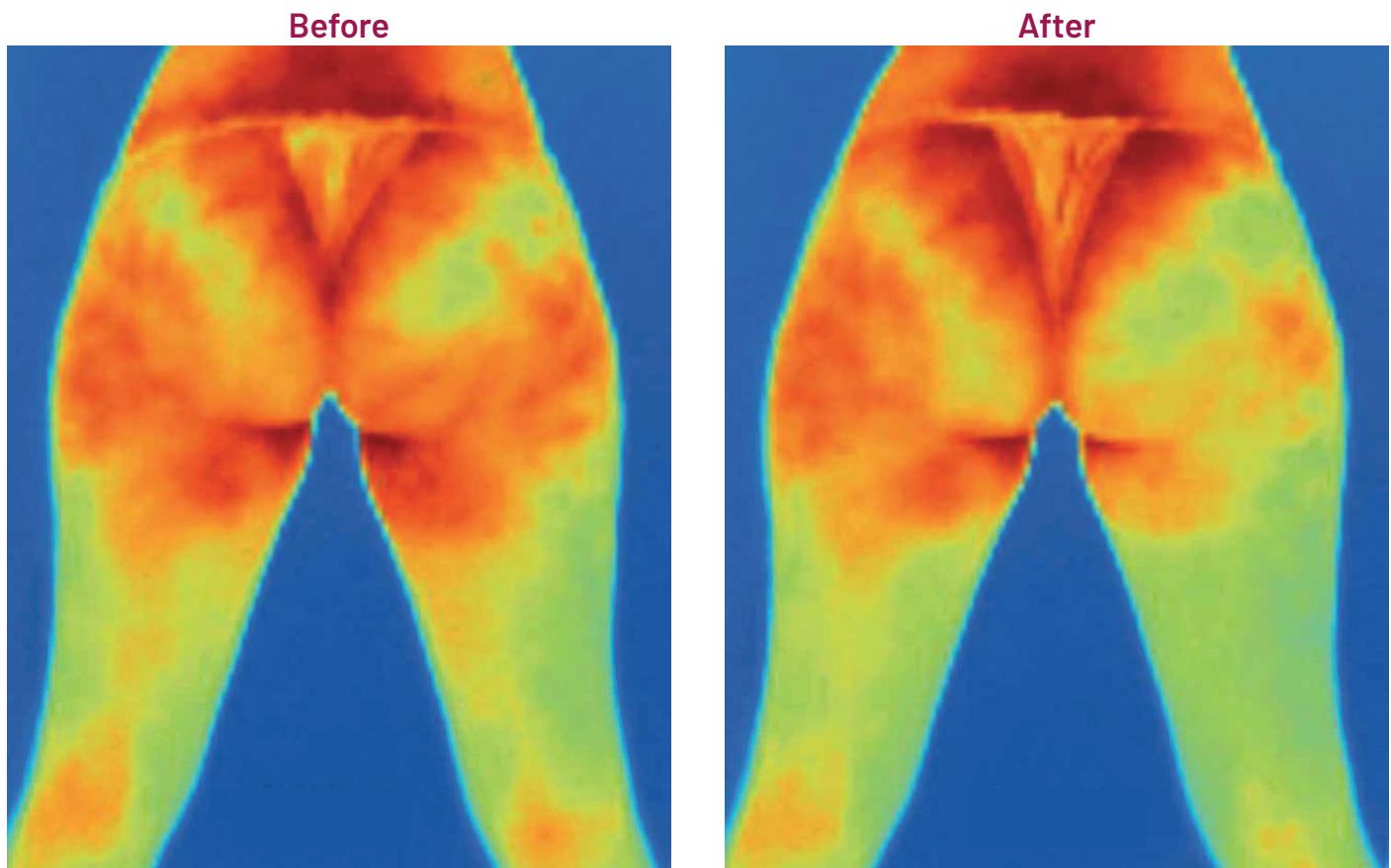
Nano Cellulitech has been clinically tested for effectiveness in a suitable laboratory.

**Evaluated Product:** Body Lotion with Nano Cellulitech 10%

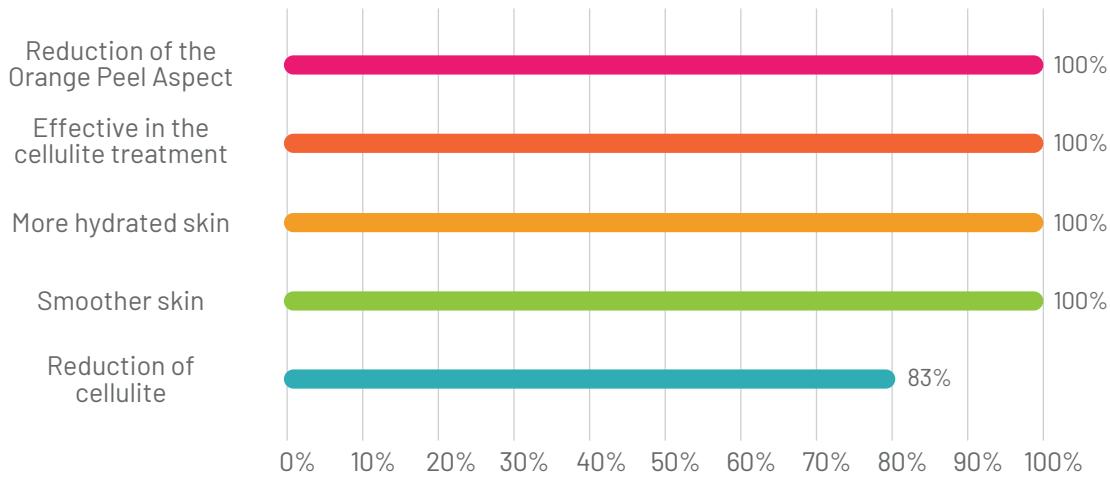
**Evaluation time:** After application under normal conditions of product use.



**Conclusion:** The images show a tendency to reduce the signs of gynoid lipodystrophy (LG) after the first application of the product.



**Conclusion:** The images show a tendency to decrease the surface temperature of the skin after the first application, indicating an improvement in blood flow in the region.



**Graph 1:** Results obtained in percentage through the sensorial evaluation by perceived effectiveness by volunteers.

**Conclusion:** Through the sensory evaluation for clinical effectiveness, it was observed an improvement in the orange peel aspect of the skin for 67% of the research participants. This result is an indication that the investigational product tended to reduce the clinical signs of cellulite right after the first application.

## Formula Suggestion

### Body lotion with Nano Cellulitech 10%

PHASE I %	PHASE II %	PHASE III %
EDTA.....0,10	Xantham gum.....0,20	BHT.....0,05
Glycerin.....2,00	Hydroxyethyl.....0,25	Olivem 1000.....3,00
Water qsp.....100,00		Oliwax LC.....1,00
		Glyceryl Monostearate.....4,00
Technique: Mix	Technique: Reser-	Mineral oil.....3,00
		Triglycerides of caprylic and capric acid.....3,00
		Dimethicone.....1,00
		Technique: Heat to 70-75°C.
PHASE IV %	PHASE V %	
Nano Cellulitech.....0,1- 10,00	Preservative.....qs	
Technique: Reserve	Technique: Reserve	

1. Disperse phase II into I under agitation and heat until 70-75 ° C;
2. Add phase III on I+II maintaining agitation and temperature for 10 minutes.;
3. Reserve
4. Adjust pH = 5.5-6.5
5. Add phases IV and V below 40oC

## Regulatory Information

INCI Name	Cas Number
AQUA	7732-18-5
LINOLEIC ACID	60-33-3
OLEIC ACID	112-80-1
CAMELLIA SINENSIS LEAF OIL	68916-73-4
PPG-15 STEARYL ETHER	25231-21-4
CAFFEINE	58-08-2
ARNICA MONTANA FLOWER OIL	68990-11-4
POLOXAMER 407	9003-11-6
GLYCOLIC ACID	79-14-1
STEARETH-2	9005-00-9
STEARETH-21	9005-00-9
SODIUM BENZOATE	532-32-1
PHENOXYETHANOL	122-99-6
CAPRYLYL GLYCOL	1117-86-8
CYMBOPOGON MARTINI OIL	84649-81-0
BHT	128-37-0



## Marketing Appeals

- Anticellulite;
- Improves microcirculation;
- Body measures reduction;
- Visible results after one application;
- Draining, anti-inflammatory and anti-free radicals action;
- Hydration.



## Physical - Chemical Information

Aspect	Milky Liquid
Color	White to Cream
Odor	Characteristic
pH	2,5 to 5,5
Dispersibility	Dispersion of encapsulated actives in water
Relative Density	0,9 to 1,1 g/mL
Chemical Identity	Organic
Characterization	Blend

## How to Use

Add to the formulation below 40 ° C under moderate agitation.

\* As it contains natural actives, the product may undergo changes in color and odor.

## Storage

Keep at room temperature around 25 ° C. Shake before use.

## Incompatibility

Ethanol and other organic solvents.



Our production process is based on Green Chemistry, being water-based and free of organic solvents, totally sustainable. We do not generate waste that could be harmful to users or the environment



We do not test on animals. All tests are conducted in trustworthy laboratories with human volunteers.



Essential oils, Vitamins, Acids and Natural Extracts are highly oxidative substances that degrade quickly and react constantly with the medium and other cosmetic compounds (light, oxygen, packaging, preservatives, fragrances, surfactants, etc.). By encapsulating it, we guarantee the stability of the active ingredients and protect them from potential reactions with the formulation or the environment.

## Bibliographic references

- 1.** LUPI, O.; et al. Evaluation of the effects of caffeine in the microcirculation and edema on thighs and buttocks using the orthogonal polarization spectral imaging and clinical parameters. *Journal of Cosmetic Dermatology*, v. 6, n. 2, p. 102-107, 2007.
- 2.** HEXSEL, D.; SOIREFMANN, M. Cosmeceuticals for Cellulite. *Seminars in Cutaneous Medicine and Surgery*, v. 30, n. 3, p. 167-170, 2011.
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- 4.** CHEN, W.; VILJOEN, A.M. Geraniol - A review of a commercially important fragrance material. *South African Journal of Botany*, v. 76, p. 643-651, 2010.
- 5.** MIYAZAKI, S.F. Utilização do Chá Verde em Cosméticos. *Cadernos de Prospecção*, v. 1, n. 1, p. 10-13, 2008.
- 6.** WESTERERP-PLANTENGA, M.S. Green tea catechins, caffeine and body-weight regulation. *Physiology & Behavior*, v. 100, n. 1, p. 42-46, 2010.
- 7.** DAL BELO, S.E.; et al. Skin penetration of epigallocatechin-3-gallate and quercetin from green tea and Ginkgo biloba extracts vehiculated in cosmetic formulations. *Skin Pharmacology and Physiology*, v. 22, n. 6, p. 299-304, 2009.
- 8.** HSU, S. Green tea and the skin. *Journal of the American Academy of Dermatology*, v. 52, n. 6, p. 1049-1059, 2005.

# Nanovetores Encapsulation Technology



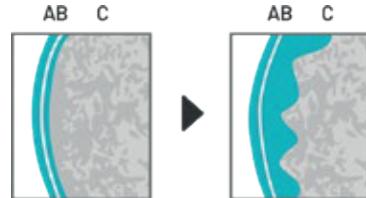
**Active Ingredient Protection** against oxidation resulted from interaction with external environment and other components of the cosmetic formulation.



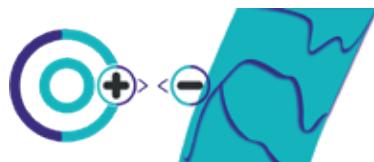
**Monodispersity**, that ensures control of the particle size, providing adequate permeation to its proposed action.



**Secure particles** larger than 200nm, biocompatible and biodegradable.



**Greater Permeation** on the contact surface due to the small size of the capsule.



**Surface Charge Control** of the particle, promoting greater affinity with the contact surface.



**Water Base.** Active ingredients are manufactured without the use of organic solvents, ensuring safety for users and the environment.

## Use Encapsulated Active Ingredients and Ensure:

- Stability Improvement
- Increased compatibility in the formulation
- Occlusion of odors
- Increased skin permeation
- Reduced dose
- Use of sensitive active ingredients (without refrigeration)
- Increased Solubility
- Prolonged release
- Increased effectiveness



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