

NANO RELIEF ECO

MUSCLE PAIN RELIEF

Active ingredients:

Essential Oils of Sweet
Birch and Vetiver.

Benefits

- Assists in relieving muscle pain;
- After-sun use;
- Relief from minor burns;
- Improves blood microcirculation;
- Regenerates skin.

Usage

Gels, gel-cream, emulsions, and
body sprays.



NANO
VETORES®
GROUP



inHarmony
NANOVETORES



DESCRIPTION

Nano Relief ECO is a blend of encapsulated essential oils. It has a prolonged release, releasing about 80% of its contents gradually over a period of 8 hours after product application, ensuring immediate and continuous muscle pain relief. Blend encapsulation through the Nanovetores Technology allows the stabilization of sensitive compo-

nents, complex of being formulated in their free format. Using the product assists in general muscle pain relief.

Nano Relief ECO is a blend of essential oils of sweet birch (slow betula) and vetiver encapsulated in lipid multifunctional particles.

Sweet Birch

Sweet Birch (slow betula) is a plant native to eastern North America and has an average life of 150 years. From the plant's bark is extracted essential oil, whose main component is methyl salicylate, a substance responsible for the regene-

rative property of this plant and its characteristic odor. Methyl salicylate is an ester with a chemical structure quite similar to aspirin. It is used as a flavoring agent and especially as anti-inflammatory and analgesic for several products^{1,2}.

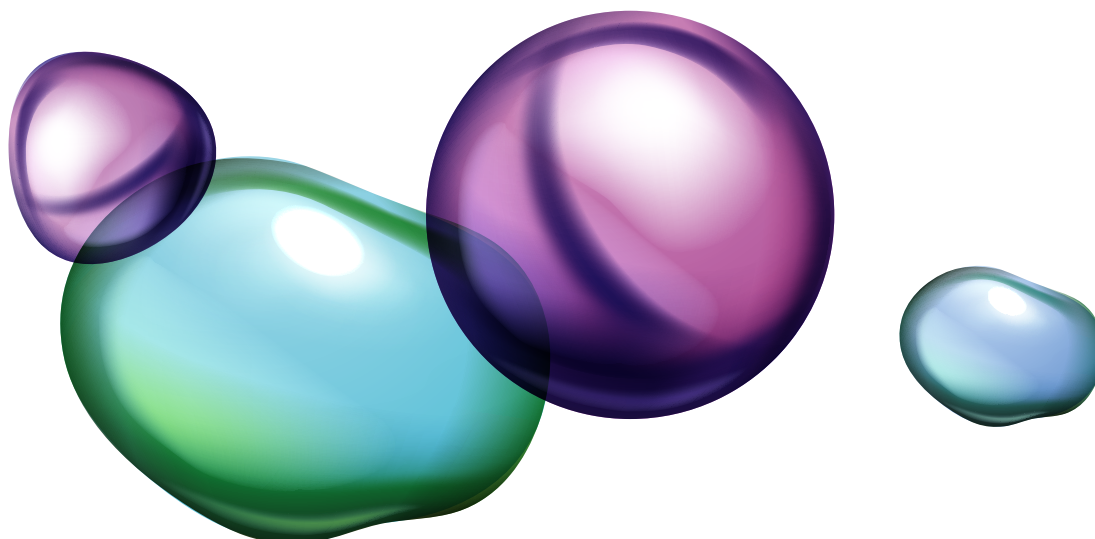
Vetiver

Vetiver is a plant of the grass family, also known as vetiver grass, native to the Indian subcontinent. The plant is used in these regions mainly for erosion control, from it is extracted a highly aromatic essential oil, used extensively in fine perfumery and cosmetic products. It's a great massage oil used in Ayurvedic medicine because of its stimulant and rubefacient properties, activa-

ting local blood circulation and providing relief from arthritis, rheumatism, and muscle pain in general. Vetiver essential oil is also used as a tonic, detoxifying, repellent, and antiseptic element. It helps fighting acne, as it promotes skin regeneration and strengthens tissues, aiding in the healing process. Its main constituents are vetiverol, terpenes and sesquiterpenoids^{3,4}.

Nano Relief ECO is indicated to support topical treatment for muscle pain, bruises, torticollis, neuralgia, and rheumatism, as well as after

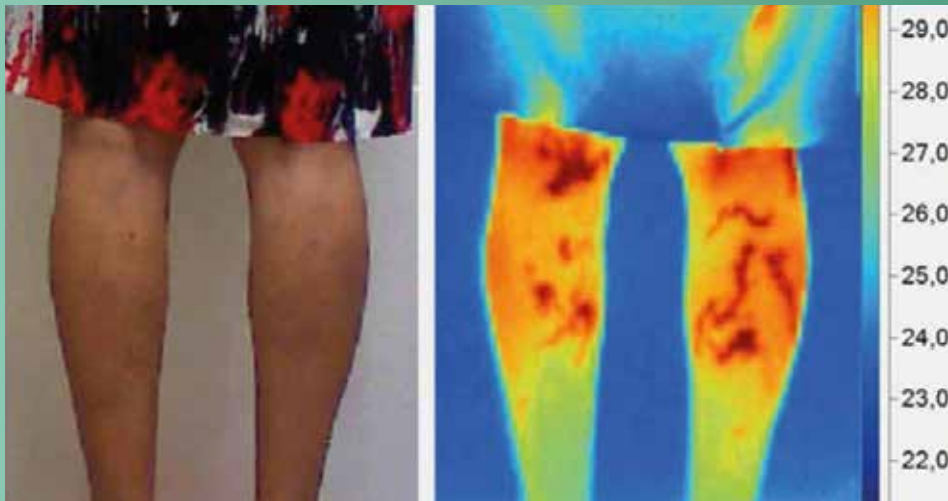
sun-formulations and for the treatment of minor burns.



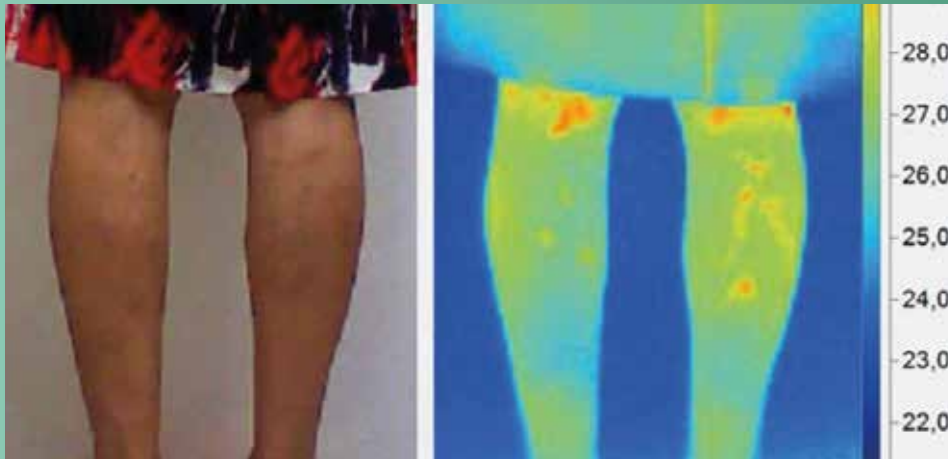
EFFECTIVENESS TEST

Objective: To evaluate the safety and effectiveness of the product **Gel Cream with Nano Relief 10%**.

Initial image



After 1 hour



Results: In the initial image it is possible to observe the heating, characteristic in skin areas with vascular changes (red areas are indicative of pain). After 1 hour of product application improvement of blood circulation was seen, as evidenced by decre-

ased blood flow in the regions affected by varices. This is an indication that the product gives feeling of comfort by decreasing feelings of tiredness and pain caused by vascular changes.

SAFETY TEST

Clinical study of topical skin compatibility: None of the volunteers had a significant skin reaction (erythema, edema, papules, or vesicles) in the application areas of the product, in the research of primary and accumulated irritability and dermal sensitization, during the study period, and the product was considered safe for topical use.

SENSORY ANALYSIS

Sensory analysis by perceived clinical effectiveness.

Leg **relaxation**

100%

Swelling reduction

57%

Reduced feeling of **tiredness** and increased feeling of **comfort**

86%

*Volunteer perception percentage.



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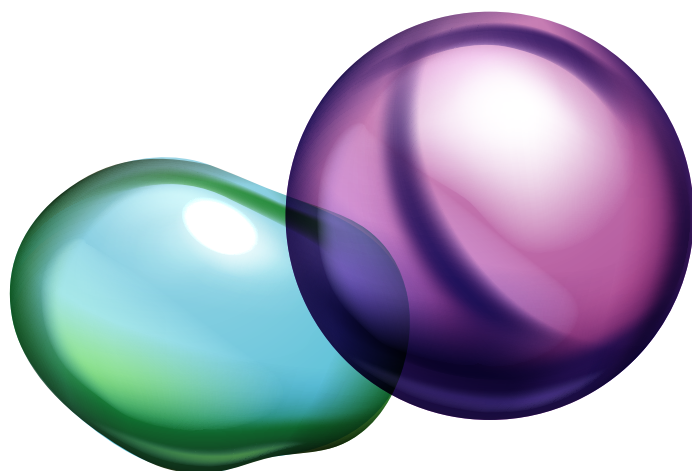
Regulatory information

INCI Name	CAS Number
AQUA	7732-18-5
BETULA LENTA BARK OIL	85251-66-7
VETIVERIA ZIZANOIDES ROOT OIL	8016-96-4
ASTROCARYUM MURUMURU SEED BUTTER	356065-49-1
PROPANEDIOL	504-63-2
GLYCERYL CAPRYLATE	26402-26-6
GLYCERYL UNDECYLENATE	65684-27-7
DECYL GLUCOSIDE	54549-25-6
BENTONITE	1302-78-9
SODIUM LAUROYL LACTYLATE	13557-75-0
TOCOPHEROL	1406-66-2
HELIANTHUS ANNUS SEED OIL	8001-21-6



Physical-Chemical Information

ASPECT	MILKY LIQUID
COLOR	WHITE TO CREAM
ODOR	CHARACTERISTIC
pH	5.0 to 7.5
DISPERSIBILITY	DISPERSION OF ENCAPSULATED ACTIVE INGREDIENTS IN WATER.
RELATIVE DENSITY	0.9 to 1.1 g/ML



NOTE

As it contains natural active ingredients, the product may change in color and odor.

USAGE CONCENTRATION

2.0 to 10.0%

pH STABILITY

4.0 to 7.0

COMPATIBILITIES

Gels, gel-cream, emulsions, and body sprays.

INCOMPATIBILITY

Ethanol and other organic solvents.

STORAGE

Keep in a cool place, protected from light and heat. Shake before use.



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.

References

1. GENNARO, A. R. Remington. **Farmácia**. 17. ed. Buenos Aires: Editorial Médica Panamericana, 1987, p. 1747, 2001-2012.
2. COLE, B.; et al. **Triterpenoid Extractives in the Outer Bark of *Betula lenta* (Black Birch)**. *Holzforschung - International Journal of the Biology, Chemistry, Physics and Technology of Wood*, v.45, n.4, p.265-268, 1991.
3. CHOMCHALOW, N. **The Utilization of Vetiver as Medicinal and Aromatic Plants with Special Reference to Thailand**. Pacific Rim Vetiver Network, Office of the Royal Development Projects Board, Technical Bulletin, Bangkok, Thailand, September 2001.
4. CHOMCHALOW, N.; CHAPMAN, K. **Other Uses and Utilization of Vetiver** - Reviewer. Disponível em: <http://vetiver.com/ICV3-Proceedings/THAI_o-ther%20uses.pdf>. Acesso em: 10 jul. 2013.

Nanovetores Encapsulation Technology



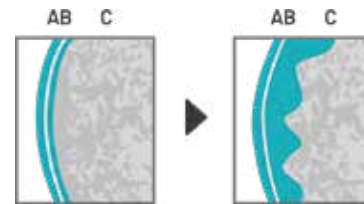
Active Ingredient Protection against oxidation resulted from interaction with external environment and other components of the cosmetic formulation.



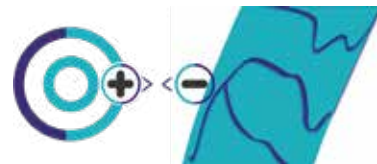
Monodispersity, that ensures control of the particle size, providing adequate permeation to its proposed action.



Secure particles larger than 200nm, bio-compatible 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 compability 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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