

Refine Ginger

Restores skin texture

NÆOLYS
NATURE EXPANDED



Refine Ginger

Restores skin texture

A STORY

The ginger | *Zingiber officinale, Zingiberaceae*
The spice with a rich well known aroma

Cultivated throughout tropical Asia for its aromatic properties, this rapidly growing perennial herbaceous plant has gradually spread from East to West. Although the flowering parts are also edible, the rhizome is most commonly consumed fresh, fried or dry. It is a spice used in many Indian, Chinese and Japanese recipes; it is also used to make curry paste in India and to flavour drinks. As a medicinal plant, it is well known for its effectiveness against nausea; it is credited with numerous other properties which have yet to be proved. Its essential oil is a component of many perfumes, giving them a complex note that is initially fresh and then becomes hot and lemony on the finish.

Key points

An active plant cell

Developed to deliver the highest amount of original active molecules.

A high tech natural ingredient

Created to preserve and improve the identity and the benefits of a natural product.

A corrective effect

Tightens pores for a more uniform complexion.

Depending on skin type and with age, facial pores tend to dilate more and for longer, and to bring more sebum to the skin's surface; it is therefore necessary to work on the key factors in their opening mechanism and its consequences. For finer textured skin, and a more even, less shiny complexion.



PRODUCT BENEFITS

Balance

Astringent

Tightens and reduces the number of pores.

Firming

Helps to tighten the skin, maintains production of supporting fibres.

Matifying

Reduces sebum production.

Moisturizing

Increases water supply to the epidermis.

Antioxidant

Reduces the production of free radicals.

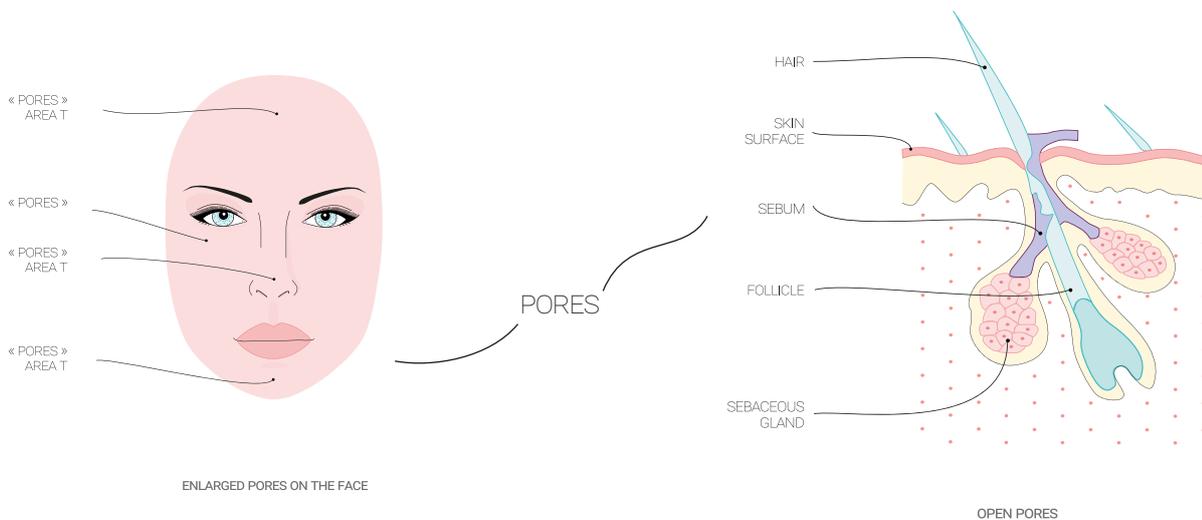
To be used in skincare or make-up products like cream, fluid, serum, balm, lotion, milk, foundation, concealer, etc. All the skin care and make-up products dedicated to refine skin texture.

HOW IT WORKS

Why pores become enlarged and the consequences

In order for our skin to function and remain healthy, our faces are covered with pores. We have about 300,000 of these openings of the pilosebaceous glands on the skin's surface, which excrete sebum, sweat and dead skin cells, thereby allowing the skin to "breathe". At their normal size, these pores are barely visible. However, three factors can increase their diameter and make them more noticeable: skin type, if it is oily, the pores will excrete more sebum; age, because over time, the skin slackens and the pores' diameter increases; finally the sun, which accelerates ageing, resulting in slackening. Pores can also dilate when they are clogged with an excessive secretion of sebum or an accumulation of dead cells.

When it involves a large number of pores, this dilation can result in an irregular texture, shiny skin, or an "off-colour" appearance. It can also cause the formation of blackheads, i.e. the oxidation of sebum.



Refine Ginger reduces the appearance of pores and rebalances their environment

To correct the complexion, Refine Ginger acts on both the dermis and the epidermis, at the source of the pores and their general environment, so as to restore smoother, more uniform skin.

A corrective action on pores

Tightening and reduction of the number of pores

For improved contraction of skin tissue, which relaxes due to the effects of sebum and ageing, Refine Ginger not only increases the production of the supporting fibres (proteoglycans) for greater firmness, it also increases elastin production for greater skin elasticity, enabling pores to close more easily.

Reduces sebum production

Because this enzyme increases pore dilation, Refine Ginger reduces sebum production, which takes place in the hair follicles, by limiting the effect of the enzyme 5-alpha reductase, which is the cause of the hormonal activity responsible for sebum production.

A general rebalancing effect: anti-oxidation and hydration

Increases hydration

All types of skin sometime become dehydrated (lacking water), even oily skin, because they are all subject to the same forms of stress or changes - climate-related, hormonal, detergent products, etc. Refine Ginger improves the supply of water from the dermis to the epidermis by increasing the presence of glycosaminoglycans (including hyaluronic acid) in the dermis.

Reduces oxidation

When pores are dilated, they become black. This is due to the oxidation of the sebum and keratin in the pore. Refine Ginger reduces this oxidation by decreasing lipid peroxidation.

Thanks to Refine Ginger's action, the skin regains its balance: pore size is reduced and the skin is less shiny. The complexion is more uniform.

CLINICAL TESTING RESULTS

Matifying effect and reduction in pore size in 28 days

The panel's verdict

80% of women reported tightened pores

85% of women reported more refined skin texture

At a concentration of 0.5%

IN VITRO TESTING RESULTS

Moisturizing effect

Due to a **18%** increase in the synthesis of glycosaminoglycans.

Firming effect

Due to a **20%** increase of elastin rate.

Due to a **18%** increase of peri-membran proteoglycans, a **21%** increase of transmembran proteoglycans and a **21%** increase of matricial proteoglycans.

Matifying effect

Due to a **17%** decrease in activity of the enzyme 5-alpha reductase.

Antioxidant effect

Due to a reduction in free radicals demonstrated by a reduction in MDA production for endogeneous production of **19%** and by a reduction in MDA production of **23%** induced by UVB.

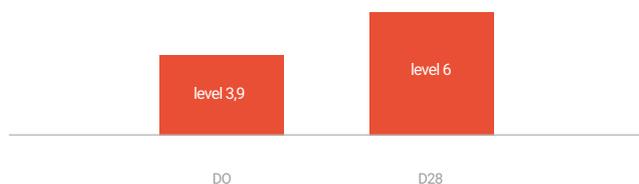
At a concentration of 0.5%

Clinical study

Reduction of pores (one application/day)

VISIBILITY OF PORES

Level 0 Irregular skin texture (numerous dilated pores, rough texture - "orange peel" appearance)
Level 9 Regular skin texture (smooth, fine texture - number of pores has decreased and they are tighter)

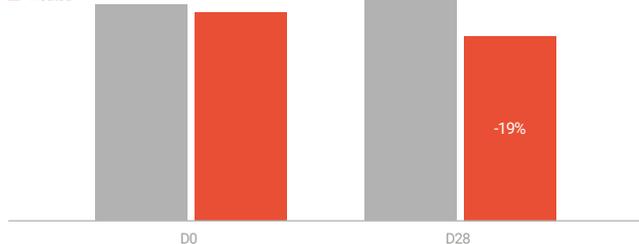


Around 50% improvement in skin texture after 28 days

Matifying effect (one application/day)

LEVEL OF SEBUM

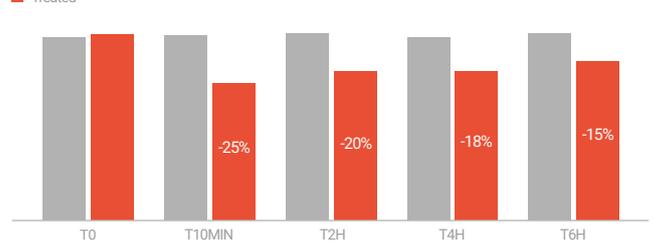
■ Control
■ Treated



19% reduction in sebum secretion after 28 days

LEVEL OF SHININESS

■ Control
■ Treated



15% reduction in shininess after 6 hours

Study conditions :

- Study carried out for 6 hours and for 28 days on 20 women aged 18 to 50 years-old with dilated pores on their cheeks
- Emulsion containing 0.5% of Refine Ginger (dispersion form, 20% cells)

Technical information on the formulation of Refine Ginger

INCI name of cells

Zingiber officinale (Ginger) leaf cell extract

form

20% cells in 80% vegetable glycerin

aspect

liquid

concentration

starting at 0.5%

dispersible

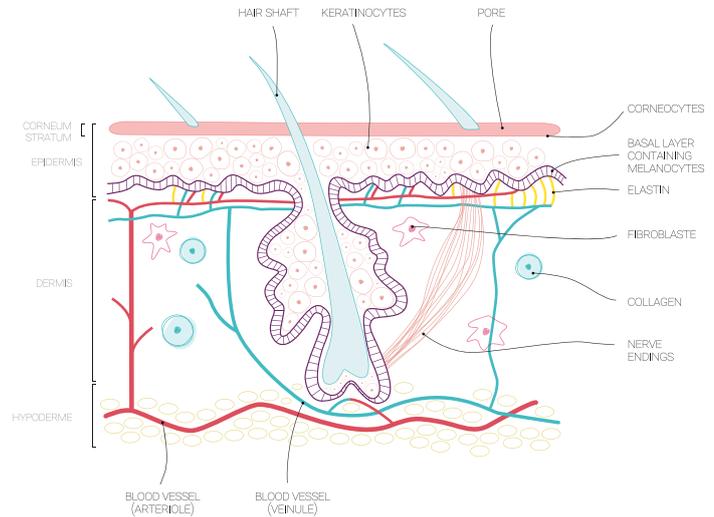
in any formulation (emulsion, lotion, fluid)

In vitro testing results

Restores a finer, more uniform texture to the skin

Refine Ginger has various effects through a corrective action in the dermis: firming, softening and reduction of sebum production

EPIDERMIS AND DERMIS WITH HAIR ZONE INCLUDING PORE

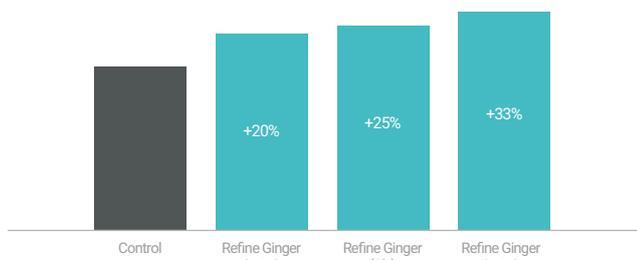


Firms the skin

Refine Ginger stimulates the production of fibres and the components of the extracellular matrix to increase synthesis, thereby improving support and elasticity. Proteoglycans are made of a combination of a protein and a glycosaminoglycan. As they are made of long O-glycosylated chains, they act as "water traps": they have moisturizing, buffering, liaison and resistance properties. Elastin is another fibrous protein and the main structural component of the elastic fibres in the extra cellular matrix.

Study of elastin

ELASTIN ($\mu\text{g}/\text{Mg}$ of proteins)

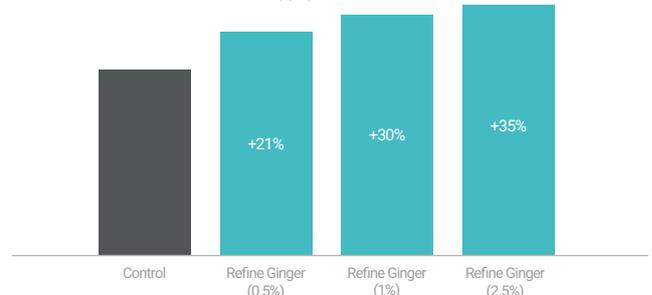


Increase of elastin

→ At concentrations of 0.5%, 1% and 2.5%, increase of elastin rate of 20%, 25% and 33% respectively.

Study of proteoglycans

INCORPORATION OF ^3H -GLUCOSAMINE (cpm)



Increase of matricial proteoglycans

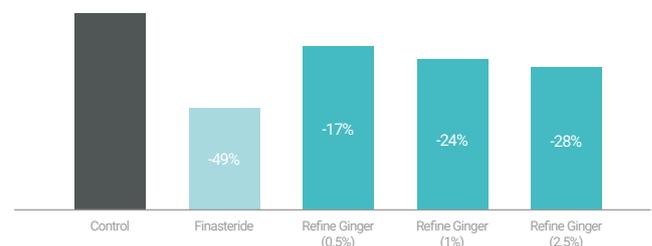
→ At concentrations of 0.5%, 1% and 2.5%, increase of matricial proteoglycans of 21%, 30% and 35% respectively.

Reduces sebum production

Refine Ginger affects the activity of the enzyme responsible for sebum production, 5-alpha reductase. Present in hair follicles, too much of this enzyme can be produced which then results in excessive levels of dihydrotestosterone (DHT), a hormone that boosts the secretion of sebum produced in the sebaceous glands.

Study of 5-alpha reductase activity

5 α -REDUCTASE (pmol/min/Mg of proteins)



Decrease of the 5-alpha reductase activity

→ At concentrations of 0.5%, 1% and 2.5%, decrease of the 5-alpha reductase activity of 17%, 24% and 28% respectively.

By a rebalancing effect on the epidermis: anti-oxidation and hydration

Increases water supply to the epidermis

To encourage better hydration, Naolys chose to study how Refine Ginger increased the supply of water in the epidermis from the dermis.

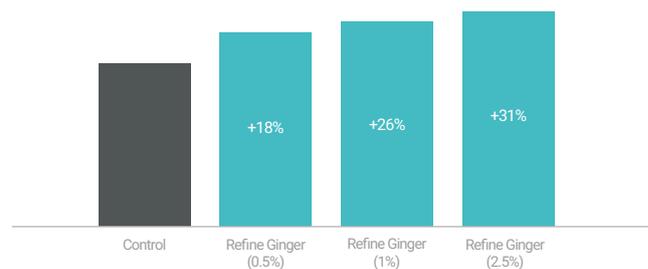
In the extra cellular matrix, the GAGs (glycosaminoglycans) are large acidic chains that have substantial capacity to attract water.

There are several types, including hyaluronic acid.

They thus act as a vehicle for transporting water to the epidermis.

Study of glycosaminoglycans

INCORPORATION OF $[^3\text{H}]$ -GLUCOSAMINE (cpm)



Increase of glycosaminoglycans

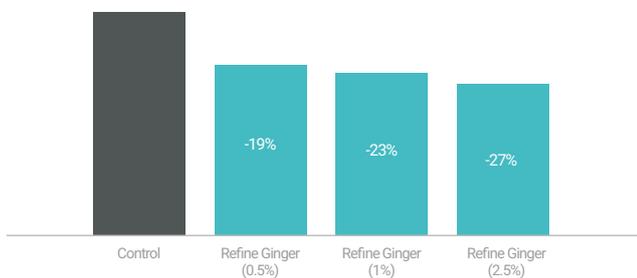
→ At concentrations of 0.5%, 1% and 2.5%, increase of glycosaminoglycans of 18%, 26% and 31% respectively.

Reduces general oxidation

Beyond physiological oxidation, numerous situations can cause an excess of free radicals to develop, from intense exposure to sunlight (UV rays) to intense inflammatory reactions. These oxygenated free radicals attack the phospholipid membrane and disrupt the properties of the cell membrane. In terms of the epidermis, if the pore is full of sebum, oxidation takes place when the sebum arrives at the skin's surface.

Study of physiological lipid peroxidation

MDA ($\mu\text{g}/\text{Mg}$ of proteins)

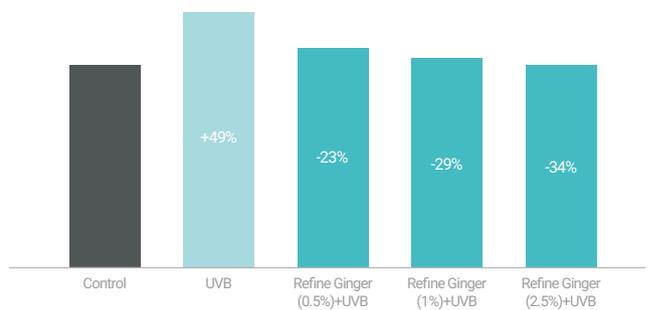


Decrease of MDA

→ At concentrations of 0.5%, 1% and 2.5%, decrease in the physiological lipid peroxidation translated by the release of MDA (malondialdehyde) by 19%, 23% and 27% respectively.

Study of lipid peroxidation induced by UVB

MDA ($\mu\text{g}/\text{Mg}$ of proteins)



Decrease of MDA

→ At concentrations of 0.5%, 1% and 2.5%, decrease in the lipid peroxidation induced by UVB translated by the release of MDA (malondialdehyde) by 23%, 29% and 34% respectively.

