



**SouthernCross**  
BOTANICALS

ACTIVE  
INGREDIENTS

## LIME PEARL™

### NEW SOURCE OF PRECIOUS AHAS

Caviar lime extract

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Gently improves skin exfoliation  
with an innovative process through  
TRPV3

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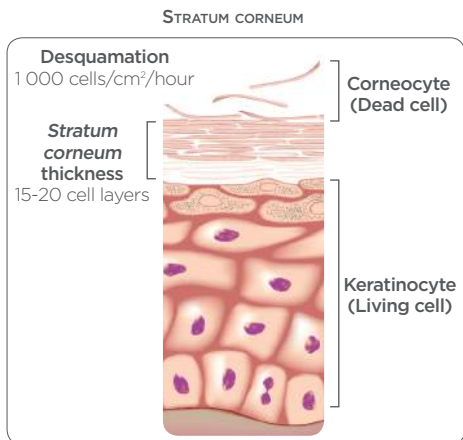
For a smoother, brighter and even  
skin complexion



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LIME PEARL™ IS AN EXFOLIATING AGENT EXTRACTED FROM CAVIAR LIME, A PRECIOUS FRUIT NATURALLY RICH IN AHAs. BY STIMULATING TRPV3 CHANNELS, IT OFFERS A NEW MECHANISM TO GENTLY PROMOTE SKIN EXFOLIATION.

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Dead cells (corneocytes) accumulated at the surface of the skin make skin look dull and lifeless. Exfoliation is the best way to remove them and reveal a fresher and newer skin beneath. Performed frequently, it helps keep a radiant look with soft skin.

AHAs ( $\alpha$ -hydroxy acids) or fruit acids are known to be active exfoliators due to their low pH and are widely used in chemical peels. However, their exact biological mechanism of action has been discovered only recently with the involvement of TRPV3, a keratinocyte transmembrane channel.

**Lime Pearl™ is a new natural source of AHAs extracted from the precious native Australian caviar lime especially designed to stimulate skin desquamation with an innovative mechanism of action.**

## NEW SOURCE OF AHAs

### Origin of caviar lime

Caviar lime (*Microcitrus Australasica*) is a small tree endemic to the sub-tropical rainforests of Northeastern New South Wales and Southeast Queensland of Australia. It produces magnificent green to deep purple-black cylindrical-shaped fruits, also known as finger lime. Elongated, they are about 30-120 mm large and 10-15 mm wide and contain beautiful small caviar size capsules.

### Composition

As most citrus species, caviar lime contains various fruit acids such as citric acid. It also contains vitamins, minerals, amino acids, antioxidants, etc.

### Traditional usage

The inside of caviar lime is composed of amazing tiny capsules that burst in the mouth to deliver a unique lime flavor. This inner caviar has been eaten as a traditional bushfood source by the Aboriginal people for thousands of years. Nowadays, it is still used by cooking chiefs and into drinks, marmalades, pickles, etc.

## TRPV3 AS AN INNOVATIVE TARGET OF EXFOLIATION

TRPV3 (Transient Receptor Potential Vanilloid-3) has been described recently to hardly contribute to the exfoliation process. As a channel located in keratinocyte membranes, TRPV3 permits the passage of cations such as  $\text{Ca}^{2+}$  into cells. In normal conditions, an ionic equilibrium exists between the inside and the outside of cells to maintain optimal functioning. If a disequilibrium occurs, an intracellular calcium ion excess leads to a cell dysfunction and induces the starting of the desquamation process.

**The activation of TRPV3 is a new biological mechanism to improve ionic exchanges and increase  $\text{Ca}^{2+}$  concentration into keratinocytes in order to stimulate the exfoliation process.**



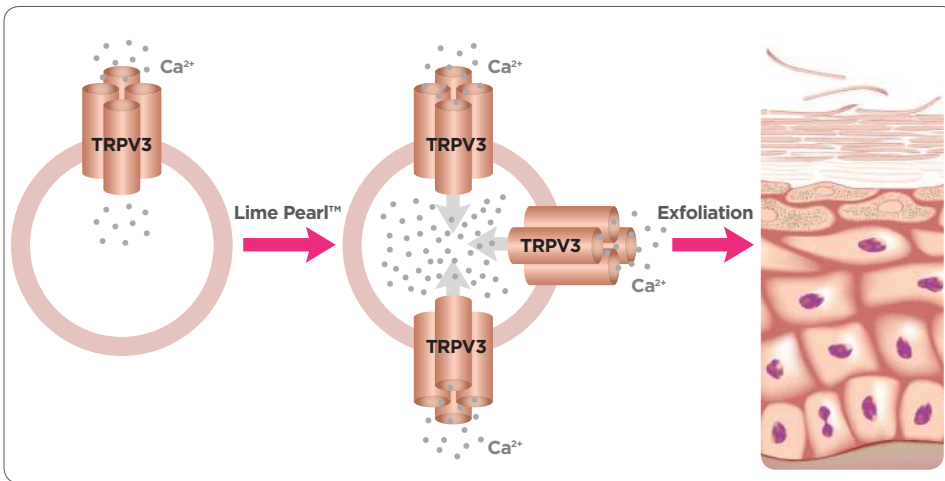
# STIMULATION OF TRPV3

## Activation by channel opening

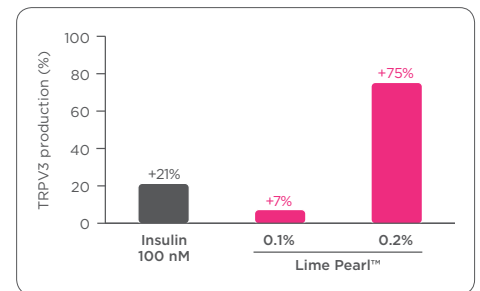
The penetration of Lime Pearl™ AHAs in keratinocytes creates an intracellular acidification. These acidic conditions strongly activate the TRPV3 channels by opening them thus allowing calcium ions to flow into the cell. This ion excess leads to the skin desquamation process.

## Increase in synthesis

Lime Pearl™ also stimulates TRPV3 synthesis improving the exchange capacity of  $\text{Ca}^{2+}$ . More calcium ions are able to penetrate into cell and create an ion overload that accelerates the skin desquamation process.



STIMULATION OF TRPV3 SYNTHESIS



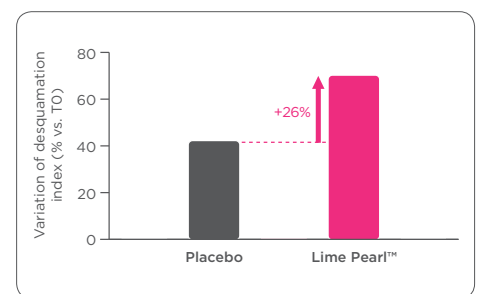
# SKIN EXFOLIATION ACTION

Test protocol

- 20 women volunteers with normal to dry skin (mean age of 47);
- Single application of a gel with 2% Lime Pearl™ on leg versus a placebo;
- Stripping were performed and images were analyzed in order to measure the desquamation induced by the product at T0 and after 30 minutes (skin was dabbed with a dry paper in order to remove any trace of product).

Lime Pearl™ provides a significant exfoliating action after only 30 minutes. Efficient in formulas with  $\text{pH} > 5$ , Lime Pearl™ doesn't induce any skin irritation.

SKIN EXFOLIATION EFFECT AFTER 30 MINUTES



**100% of the subjects demonstrated a positive effect.**

WITH FAST CLINICAL RESULTS, LIME PEARL™ PROVIDES GENTLE SKIN EXFOLIATION FOR A SMOOTHER, BRIGHTER AND EVEN SKIN COMPLEXION.

## PRODUCT DESCRIPTION

### INCI NAME

Glycerin (1) (and) Water (2) (and) Alcohol Denat. (3) (and) Microcitrus Australasica Fruit Extract (4)

### CAS

56-81-5 (1), 7732-18-5 (2), 64-17-5 (3), 1174331-57-7(4)

### EINECS

200-289-5 (1), 231-791-2 (2), 200-578-6 (3), - (4)

### APPEARANCE

Pale yellow to yellow-brown liquid

### FORMULATION

Should be incorporated at the end of the formulation at a temperature below 40°C.

### DOSAGE

1-2%

### OPTIMUM pH

2.5-8.0

### APPLICATIONS

- Peels
- Exfoliating Care
- Anti-aging Care
- Anti-wrinkle Care
- Smoothing Care
- Radiant Care
- Skin tone evenness/brightening Care
- Day and night skin Care
- Acne-prone Care
- Body Care
- Men Care

## FEATURES AND BENEFITS

FEATURES	BENEFITS
Precious AHAs from caviar lime	- New source of exfoliating agent - Glamorous marketing story
Stimulation of TRPV3	New biological mechanism of exfoliation process
Gentle exfoliating action at pH>5	- Excellent safety profile - No adverse effect
Fast action	Clinically proven activity after 30 minutes for 100% volunteers

## RENEWING FACE CREAM 13.301.03 C139

INGREDIENTS	INCI NAMES	%
<b>A</b> Deionized Water	Water	71.00
Chlorphenesin	Chlorphenesin	0.30
Dermofeel™ PA-3*	Sodium Phytate (and) Water (and) Alcohol	0.15
Biophilic™ H	Hydrogenated Lecithin (and) C12-16 Alcohols (and) Palmitic Acid	4.00
<b>B</b> Satiaxane CX 911	Xanthan Gum	0.50
Glycerin	Glycerin	2.00
<b>C</b> Dermofeel™ GSC*	Glyceryl Stearate Citrate	1.00
Sweet Almond Oil	Prunus Amygdalus Dulcis (Sweet Almond) Oil	5.50
Lanette D	Cetearyl Alcohol	4.00
Phenoxyethanol	Phenoxyethanol	0.60
Mirasil DM 350	Dimethicone	3.00
Cerabeil Blanchie Selection	Cera Alba	3.50
Vitapherole E1000	Tocopherol (and) Helianthus Annuus (Sunflower) Seed Oil	0.20
<b>D</b> Lime Pearl™	Glycerin (and) Water (and) Alcohol Denat. (and) Microcitrus Australasica Fruit Extract	2.00
Exo-P™	Water (and) Butylene Glycol (and) Alteromonas Ferment Filtrate	1.00
Simulskin™	Water (and) Phospholipids (and) Stearic Acid (and) Palmitic Acid	1.00
<b>E</b> SG 35303	Fragrance	0.25

pH: 5.0 - 6.0 - Viscosity (Rheo ELV 8, spindle 4, 6 rpm, 3 mn): 20 000 - 30 000 mPa.s

\* Distributed in France by Lucas Meyer Cosmetics and Unipex Solutions France.

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