

# Passioline®

Takes care of weakened and damaged skins:  
repairs, remodels and soothes

Patented, eco-designed active ingredient obtained by  
**molecular distillation process**  
Concentrate of precious molecules from Virgin Maracuja oil  
(*Passiflora edulis*)  
Responsible sourcing from Peru

**O Repairs skin tissue at three levels**

Stimulates the key markers of cell proliferation,  
cell migration and the DEJ

**O Regenerates, restructures and remodels the skin**

Stimulates the synthesis of elastin and collagen;  
boosts the contractile force of fibroblasts

**O Soothes skin weakened  
by the healing process**



Expanscience is the first pharmaceutical & dermocosmetics laboratory in the world to be certified by B CORP, and the first to be recognized as "Exemplary" by the AFAQ 26000 in France



Expanscience is a member of the UEBT for protecting biodiversity and complying with fair trade regulations



**EXPANSCIENCE®**  
**LABORATOIRES**

Protecting your health through innovation

# Identity

## Botanical information

**Botanical name:** *Passiflora edulis* f. *flavicarpa*

**Common names:** Maracuya, Maracuja, passion fruit, yellow granadilla.

**Family:** Passifloraceae

**Characteristics:** a climber grown like a vine, which bears fruits 50 to 80 mm in diameter and about 150g in weight that are harvested when they turn yellow.

**Environment:** subtropical, arid climate with very little rainfall, irrigation by rivers flowing down from the Andes.

**Traditional uses:** food (fruit juice and other drinks, ice creams, yoghurts, jams, cakes), medicinal (relaxation) and cosmetic (oil used in soaps, nail varnish, hair dyes, etc.).



## Latin American Plant Supply Chain (Peru)

Maracuja, is a climber native to South America. It is very well known for the use of its fruit that has a high **antioxidant** content, and from which a distinctive juice is produced.

Laboratoires Expanscience contribute to local economic development and are engaged in a process of **adding value to by-products**. By using seeds from the food industry that have been discarded until now, Expanscience offers producers access to a new market. Our recent acquisition of the Deshidratados Tropicales processing plant in Peru guarantees environmentally-friendly sourcing for the Maracuja supply chain.

PASSIOLINE® is an **unsaponifiables concentrate** (notably **tocotrienols**) produced by a **patented molecular distillation process** from Maracuja Oil. At the same time the oil is produced, the seeds are doubly valued by the production of an anti-pollution active ingredient (ORMESIA®).

# Concept

## PASSIOLINE® takes care of damaged and weakened skin

Unightly skin lesions are a regular part of our daily lives. These include chapping, irritations, acne, burns, cuts and post-surgery.

Damaged skin activates a healing process to return to its original condition. This process has two key phases: the **repair** and the **regeneration** of tissues.

**PASSIOLINE® stimulates the key markers involved in skin repair and remodelling to promote and improve the healing process.**

## Healing is a complex process that involves multiple steps, two of which are key for skin tissues:

• **REPAIR**, enabling tissues to be quickly restored at three levels. In addition to the cell proliferation that is vital for tissue recovery, the following markers are involved:

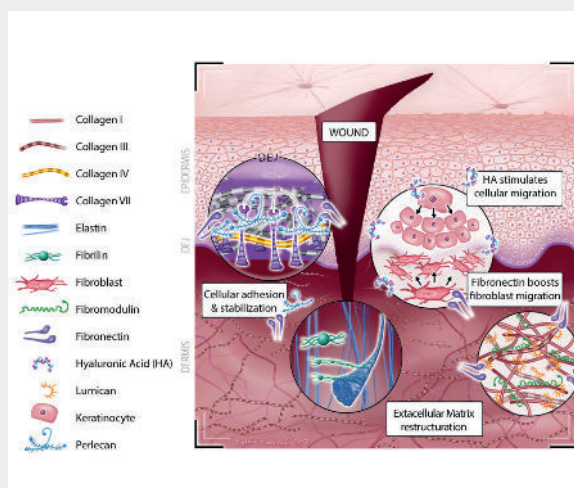
- **Hyaluronic acid:** an essential component of the different stages of healing, promoting cell migration and reepithelialisation in particular.

- **Perlecan:** proteoglycan and essential DEJ constituent protein, along with fibronectin, playing an important role in stabilisation and adhesion of cells to the matrix.

• **REMODELLING OR REGENERATION** to restore tissues integrity and mechanical properties. The following markers are involved:

- **Elastin:** needed to rebuild and provide elasticity to the matrix while regenerating.

- **Fibromodulin, lumican:** proteoglycans involved in the assembly and structural organisation of collagen fibres, as well as in regulating the contractile forces of fibroblasts.



# Biological efficacy

## 1 - Repairing effect at three levels: dermis, DEJ, epidermis

PASSIOLINE® stimulates the key markers involved in the skin repair mechanisms, the first step in healing.

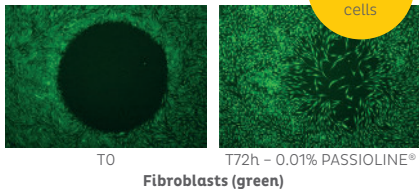
**PASSIOLINE® stimulates the proliferation and migration of fibroblasts**

PROLIFERATION  
0.01% PASSIOLINE®, 72h

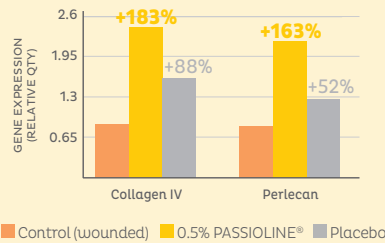
**+74%\***  
us untreated cells

MIGRATION  
Artificial wound

**+27%\*\***  
us untreated cells



**PASSIOLINE® stimulates the repair of the DEJ after an artificial wound, reconstructed skin, 4h.**



**PASSIOLINE® stimulates the proliferation and migration of keratinocytes**

PROLIFERATION  
0.01% PASSIOLINE®, 72h

**+32%\*\*\***  
us untreated cells

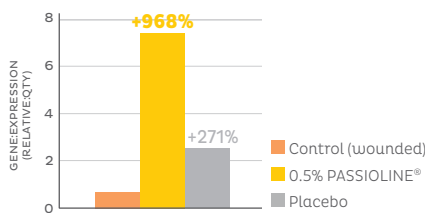
HYALURONIC ACID  
0.01% PASSIOLINE®, 48h  
Hyaluronic acid stimulates the migration of keratinocytes

**+79%\*\*\***  
us untreated cells

## 2 - Regenerating, remodelling, restructuring effect

PASSIOLINE® stimulates the key markers involved in the reorganization of the ECM, enabling tissues to be properly remodelled and mechanical skin properties to be restored following a lesion.

**PASSIOLINE® stimulates elastin synthesis following an artificial wound, reconstructed skin, 4h.**



**PASSIOLINE® stimulates the synthesis of key markers in the dermis and in tissues remodelling**

**+87%\*\*\***  
collagen I

**+44%\***  
lumican

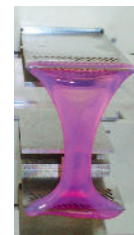
**+108%\***  
fibromodulin

us untreated cells

Fibroblasts, 24h, gene expression,  
0.01% or 0.05% PASSIOLINE®

**PASSIOLINE® stimulates the contractile force of fibroblasts**

Fibroblasts (65-year-old donor)



GlaSBox® test

**+21.6%**  
average T0 - T+6h

**+21.4%**  
average T0 - T+24h

0.01% PASSIOLINE®  
us untreated cells

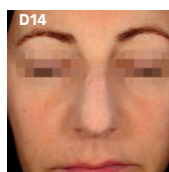
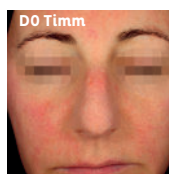
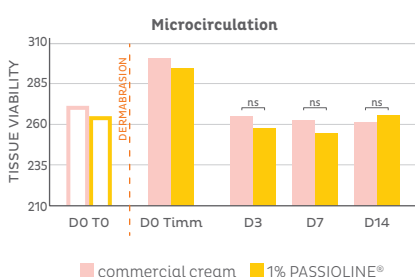
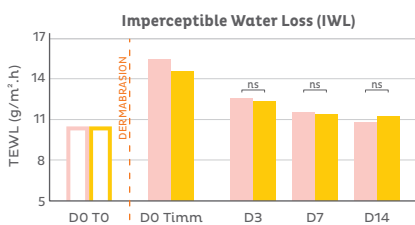
▶ All of these markers play a key role in counteracting the effects of skin ageing.

# Clinical study

## Repairing, regenerating & soothing effect

Double-blind, randomised study including a **dermabrasion** procedure. Comparative study with a **commercial repairing cream** selected among the market leaders.

- 48 women (age ≥ 18), divided into two groups **after a superficial dermabrasion**
- Each group applied a cream twice daily for 14 days: either **1% PASSIOLINE®** or the commercial cream
- **Repairing and soothing effects measured** (TEWL and microcirculation)



• PASSIOLINE® is **as effective as** the commercial cream in terms of TEWL and microcirculation throughout the study: D3, D7 and D14.

• PASSIOLINE® has a **repairing effect**: from D3 there is a significant reduction in the TEWL compared to the post-dermabrasion condition.

• PASSIOLINE® has a **soothing effect**: from D3 there is a significant reduction in microcirculation compared to the post-dermabrasion condition.

• PASSIOLINE® enabled the TEWL to **return to its original level** by D14 and microcirculation from D3.

**Perceived effectiveness of PASSIOLINE® : self-evaluation after 14 days**

- Soothes the visible effects of dermabrasion
- Soothes the visible redness from dermabrasion
- Soothes discomfort from dermabrasion

**92%\***  
satisfaction rate

\* p<0.05 \*\* p<0.01 \*\*\* p<0.001

SOOTHES DAMAGED AND WEAKENED SKIN.

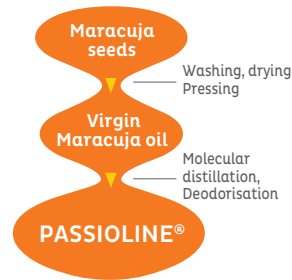
# Notes for formulators

## General information

- Description: Yellow liquid that may be cloudy or present a deposit.
- INCI name (PCPC): *Passiflora Edulis Seed Oil*  
*IECIC listed – 2015 edition (China)*
- Preservative system: none
- Origin: Plant – Maracuja extract
- Recommended percentage: 0.5-1%
- Solubility: in oily phase
- Recommended formulation temperature: up to 50°C
- Storage conditions: away from light, under nitrogen atmosphere in a hermetically sealed container, between 15°C and 25°C
- Patent(s): WO2015044254, 02/04/2015
- Approval: raw material approved by Ecocert Greenlife, conform to the COSMOS Standard



## Process



## Applications

- Repairing skin care, helps wound healing
- Skin care for weakened, damaged and very dry skin
- Regenerative and restructuring skin care (anti-ageing or post-surgery)
- Soothing skin care, after-sun care

## PASSIOLINE® in Oils Re-Pair Oily Biphasic Serum

A	EMOGREEN L15	C15-19 Alkane	53,80%
	<b>PASSIOLINE®</b>	<b>Passiflora Edulis Seed Oil</b>	<b>1.00%</b>
	<b>LABORATOIRES EXPANSCIENCE</b>		
	<b>VIRGIN MARACUJA OIL</b>	<b>Passiflora Edulis Seed Oil</b>	<b>5.00%</b>
	<b>LABORATOIRES EXPANSCIENCE</b>		
	<b>PREMIUM AVOCADO OIL</b>	<b>Persea Gratissima Oil</b>	<b>10.00%</b>
	<b>LABORATOIRES EXPANSCIENCE</b>		
	GOLDEN JOJOBA OIL (BCE1032)	Simmondsia Chinensis Seed Oil, Helianthus Annuus Seed Oil	8.00%
	ROSAMOX	Rosmarinus Officinalis Leaf Extract	0.10%
	GRAPEFRUIT ESSENTIAL OIL WITHOUT FUROCOUMARINES	Perfume	2.00%
B	ISOPENTYLDIOL	Isopentyldiol	20.00%
	UNICERT RED K7057-J 0.1% in aqueous solution	Aqua Ci 17200	0.10%

### Formulation instructions on demand