



OCEA DEFENCE®

Marine skin immunity booster

*

Reinforces the cutaneous shield

Reduces UV-induced erythema with a short term efficacy

Improves the comfort of fragile & vulnerable skin



Skin is the first line of defense against a variety of physical, chemical and microbiological assaults which can lead to structural and biological damage. This cumulative damage to our skin increases with age and can result in chronic inflammation.

OCEA DEFENCE® is an active prepared from the brown macroalga *Laminaria ochroleuca*, capable to help the skin to react to such aggressions, to repair damage by boosting skin's own self defense mechanisms and to act as an anti-inflammatory agent.

Mechanisms of action

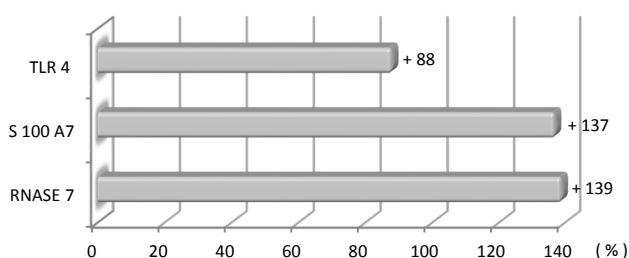
The mechanisms of action of OCEA DEFENCE have been studied by genomic analysis and *in vivo* study.

Genomic analysis: Reconstituted human epidermis (RHE model -11 days old) submitted to a unique topic application (3mg/cm²) during 24h. Experiments performed in duplicate. After mRNA extraction, expression of makers evaluated by RT-qPCR (BIOALTERNATIVES – SEPhRA PHARMA- FRANCE).

In vivo study relative to anti-erythema efficacy (ABICH COSMETIC LAB. Milano - ITALY).

OCEA DEFENCE® improves natural cutaneous defences by boosting the innate immune system

► Up- regulation of several antimicrobial peptides TLR 4 - S100 A7 - RNASE 7



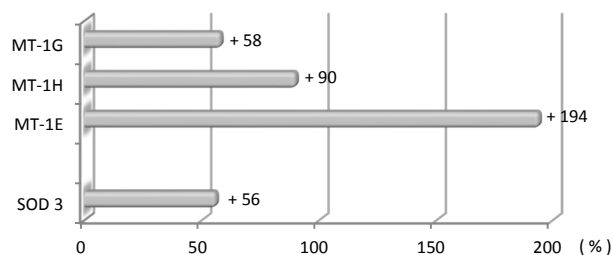
The innate immune system acts as a chemical barrier based on the release of various antimicrobial peptides.

- ◆ **TLR 4** plays a key role in the initiation of innate immunity.
- ◆ **S 100 A7** regulates fundamental biological processes. It is viewed as a key molecule of the cutaneous barrier.
- ◆ **RNase 7** shows a large spectrum antimicrobial activity. Its expression is lower in the *stratum corneum* of dry skin and aged skin.

OCEA DEFENCE® prevents external aggressions and infection against pathogen and keeps skin healthy.

OCEA DEFENCE® regulates the protective mechanisms linked to cellular homeostasis & oxidative stress

► Up-regulation of the metallothioneins MT-1 & the extracellular SOD



The metallothionein **MT-1** operates in cellular homeostasis and the prevention of tissue damage.

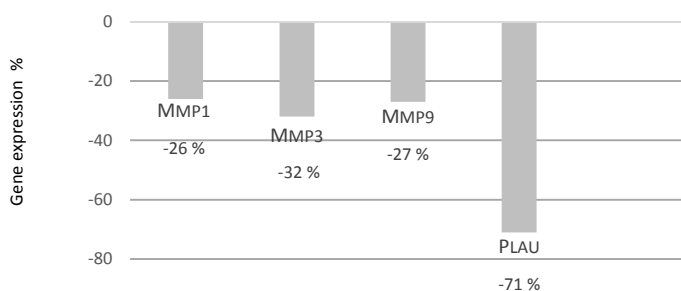
The extracellular superoxide dismutase **SOD 3** participates in the majority of antioxidant systems in the skin.

OCEA DEFENCE® prevents tissue damage against oxidative stress.

OCEA DEFENCE® helps maintain cell homeostasis and detoxifies cells.

OCEA DEFENCE® protects the connective tissue from degradation

► Down-regulation of several metalloproteinases MMP & the plasminogen activator urokinase PLAU



The metalloproteinases **MMPs** degrades the extracellular matrix components.

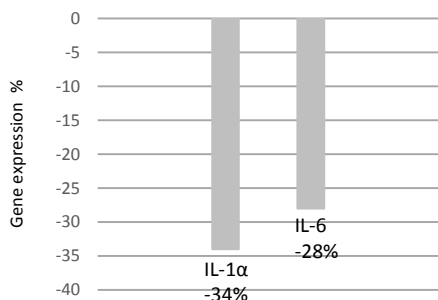
The plasminogen activator urokinase **PLAU** is involved in remodeling of thematrix. Its activity change is closely related to some diseased skins accompanied by rough skin and abnormal cornification.

OCEA DEFENCE® activates skin repair and restructuring processes.

OCEA DEFENCE® improves rough skin.

OCEA DEFENCE® keeps inflammation under control by inhibiting major pro-inflammatory cytokines

➤ Down-regulation of the pro-inflammatory cytokines



The role of cytokines is essential at the skin level.

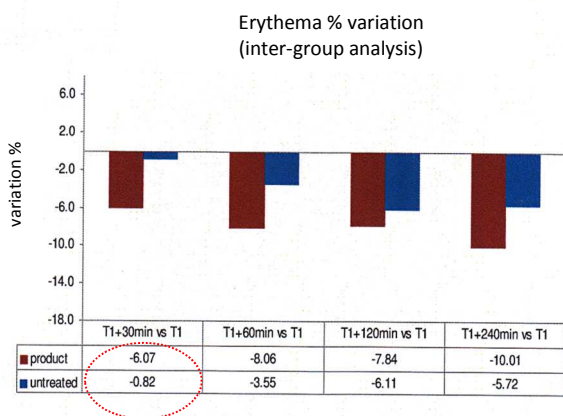
- ♦ The cytokine IL-1α is released in the early phase of inflammation.
- ♦ The cytokine IL-6 is involved in numerous biological processes.

OCEA DEFENCE® can be used to soothe acute and chronic irritations.

OCEA DEFENCE® significantly reduces UV-induced erythema with a short term efficacy

Clinical study

Panel of 10 volunteers exposed to a fixed irradiation dose MED x1.5. Formulation: basic gel with 2% active. Measurement of the index of erythema before product application (T1), then after 30 min - 60 min and 120 min after application (ABICH COSMETIC LAB. Milano - ITALY).



OCEA DEFENCE® demonstrates a short term efficacy to reduce the redness: reduction of 6.07% after 30 min and continues to promote efficacy over time (see 4h data).



T1



T1 + 60 min



T1 + 120 min

OCEA DEFENCE® soothes after irritation only 30 min UV exposure.

OCEA DEFENCE®

Marine
skin immunity booster

Algal source

Laminaria ochroleuca is a yellow-brown digitate kelp present in the intertidal zones of the Atlantic Ocean, the south-west Mediterranean and in the straits of Messina. It can form large dense forest.



Population of *Laminaria ochroleuca*

Cosmetic benefits

OCEA DEFENCE® is new marine approach to regulate the level of tolerance of sensitive and vulnerable skin, against various cutaneous disorders from the external environment e.g. microbial infection, oxidative stress, pollution, UV radiations.

By reinforcing the cutaneous shield and fighting inflammation, OCEA DEFENCE® boosts skin's own self defence mechanisms. The skin becomes better protected against the risk of infection and irritation.

OCEA DEFENCE® reduces skin erythema caused by the sun with a short term efficacy.

OCEA DEFENCE® improves the comfort of fragile and vulnerable skin.

Cosmetic applications

Treatment for sensitive and vulnerable skin - Anti-redness products - Protective care - Sun care & after sun formulations.

Recommended use level: 2%.

Characteristics

INCI names	Caprylic/capric triglycerides	CAS n° 73398-61-5/65381-09-1	EINECS n° 277-452-2/265-724-3
	<i>Laminaria ochroleuca</i> extract	CAS n° 92128-82-0	EINECS n° 295-780-4
	Tocopherol mixed	CAS n° 59-02-9	EINECS n° 200-412-2
		16698-35-4	240-747-1
		54-28-4	200-201-5
		119-13-1	204-299-0

Transparent limpid liquid.

Preservative free.

Packing size: 1Kg – 5kg – 10 kg.



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GELYMA

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