

# **EFFICIENSEA®**

Offers efficient protection to irritated skin

\*

**Protects DNA** 

Keeps inflammation under control

Promotes a soothing effect



Oxidative stress is considered to be a major contributor to the aging process. In skin, its consequences induce important damage such as:

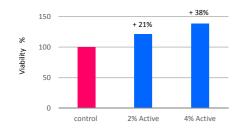
- ▶ deterioration of DNA,
- ▶ aging acceleration with the degradation of connective tissue proteins (e.g. elastin) and the development of irregular pigmentation,
- ▶ inflammation processes due to membrane lipoperoxidation.

GELYMA proposes EFFICIENSEA® to provide effective protection against such harmful damage in the skin.

# Mechanisms of action

## EFFICIENSEA® increases skin cell viability

In vitro test performed on reconstituted skin. Viability determined by MTT test after 48 h cultivation.

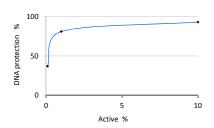


2% EFFICIENSEA\* lead to + 21% stimulation compared to untreated control.

Statistical validation (ANOVA, least significant difference)

#### EFFICIENSEA® protects DNA against singlet oxygen-induced damage

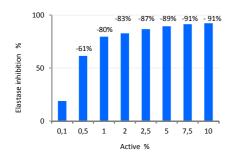
Chemiluminescent 3D Assay based on a repair reaction of DNA by using plasmid DNA adsorbed on sensitized microplates.



EFFICIENSEA® induces a potent protection of DNA against singlet oxygen, which is a very reactive form of oxygen capable of rapidly oxidizing many molecules *e.g.* membrane lipids & DNA.

DNA protection reaches up to 50% with 0.2% EFFICIENSEA® only and 81% with 1%.

## EFFICIENSEA® inhibits elastase



Elastase can attack all major connective tissue proteins.

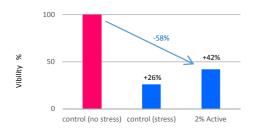
 $\ensuremath{\mathsf{EFFICIENSEA}^*}$  inhibits elastase with a dose dependent activity.

 $1\%~\text{EFFICIENSEA}^{\circ}$  induce - 80% inhibition.

By inhibiting elastase, EFFICIENSEA® prevents the degradation of elastin that is the molecule which brings bodily tissues their elasticity.

#### EFFICIENSEA® protects against UVB irradiation

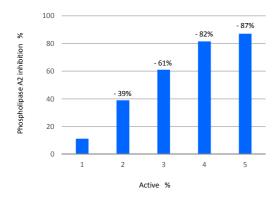
In vitro test performed on reconstituted skin submitted to UVB (300mJ/cm²) in the presence or absence of 2% active. Viability determined by MTT test after 48 h cultivation.

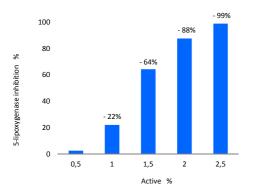


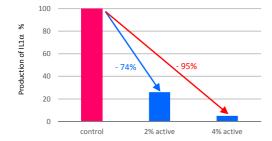
UVB is mostly absorbed in the epidermis.

2% EFFICIENSEA  $^{\circ}$  induce +42% protection against UVB irradiation.

## EFFICIENSEA keeps inflammation under control







EFFICIENSEA\* delivers powerful anti-inflammatory action at two levels of the arachidonic cascade.

Its inhibitory potency increases both for phospholipase A2 and 5-lipoxygenase, as its concentration increases.

## Inhibition of phospholipase A2

EFFICIENSEA® stops the release of arachidonic acid by phospholipase A2 from membrane phospholipids.

3% EFFICIENSEA® give -61% inhibition.

## Inhibition of 5-lipoxygenase

The 5-lipoxygenase generates hydroperoxydes which are the precursors of leukotrienes.

EFFICIENSEA® potently limits the production of leukotrienes by inhibiting the 5-lipoxygenase activity.

2% EFFICIENSEA® give -88% inhibition.

## Inhibition of interleukin IL1 $\!\alpha$

Elisa testing on reconstituted skins after UVB irradiation (dose:  $300\,\mathrm{mJ/cm^2}$ ).

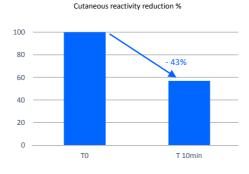
Adding of 2% and 4% EFFICIENSEA\* in the culture medium inhibits respectively of -74% and -95% the synthesis of IL1 $\alpha$ .

These data confirm the powerful capacity of EFFICIENSEA® to mitigate the inflammatory response in skin.

## EFFICIENSEA® attenuates skin irritation (stinging sensations)

## Clinical study

Evaluation of the anti-irritant properties of EFFICIENSEA® incorporated at 10% into a gel on the nasolabial fold of 20 volunteers (17 female – 3 male of 19-70 years old) after irritation induced by a solution 10% lactic acid (stinging test). Statistical validation: Wilcoxon test (IDEAFRANCE).



After 10 min application only, significant reduction of irritation: -43% decrease in stinging.

EFFICIENSEA® reduces skin irritation to chemicals and promotes a soothing effect.



## **EFFICIENSEA®**

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#### Algal source

EFFICIENSEA® is a patented calibrated active ingredient, extracted selectively from the brown seaweed *Pelvetia canaliculata* (L.) Decaisne & Thuret collected in Brittany (France).

Pelvetia canaliculata is endemic to the European Atlantic Ocean where it is commonly found in abundance on the rocky shores, farthest up in the eulittoral zone. It shows high resistance to stress against drying.

Patent FR 2 838 340

## Cosmetic benefits

EFFICIENSEA® shows efficient protection of DNA. It also inhibits elastase that mediates connective tissue destruction. Therefore EFFICIENSEA® delivers protection against DNA deterioration and skin aging acceleration.

By restricting the generation of inflammatory mediators, EFFICIENSEA® prevents skin irritation and discomfort. It relieves stinging sensations for a better skin comfort.

EFFICIENSEA® is ideal for reactive and sensitive skins.

# Cosmetic applications

All soothing care for reactive and sensitive skin - After sun care - After depilatory products - After shave products.

Recommended use levels: 1% - 10%.

## **Characteristics**

INCI names water CAS n° 7732-18-5 EINECS n° 231-791-2

Pelvetia canaliculata extract CAS n° 223751-75-5

Limpid liquid brown colored.

Preservative by selection: microcare SB or phenoxyethanol.

Packing size: 1kg - 5kg -10 kg.





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