



Activoil™ Echnidium

A stabilized system of liposoluble actives

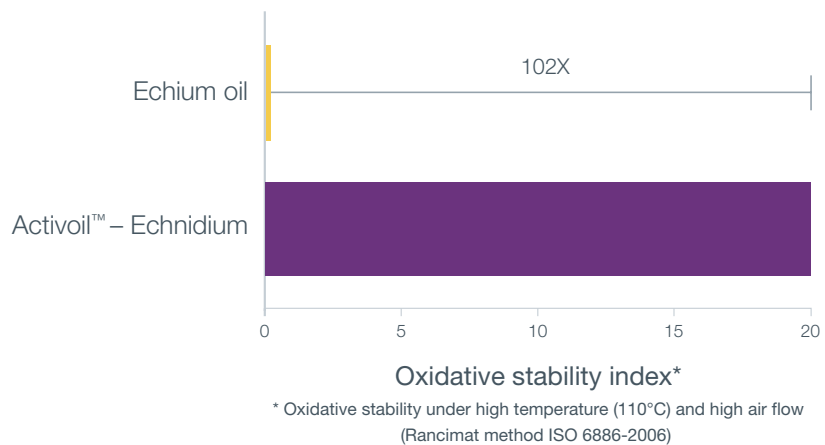
Activoil™-Echnidium

The ingredient line **Activoil™** (patent pending) consists of a stabilized system of liposoluble actives amalgamated with natural antioxidants together into a vegetable lipophilic matrix. This technology provides the double-advantage of preserving the biological potential of vegetable oils and plant-derived liposoluble actives through the presence of natural antioxidants.

Activoil™-Echnidium combines the best of Echium seed oil enriched with a *Cnidium monnieri* fruit super critical fluid CO₂ extract enriched in osthol. **Activoil™-Echnidium** synergizes the action of stearidonic acid (C18:4n-3) fatty acid with that of osthol to: 1) protect and repair skin barrier function and 2) soothe erythema upon chemical stress.

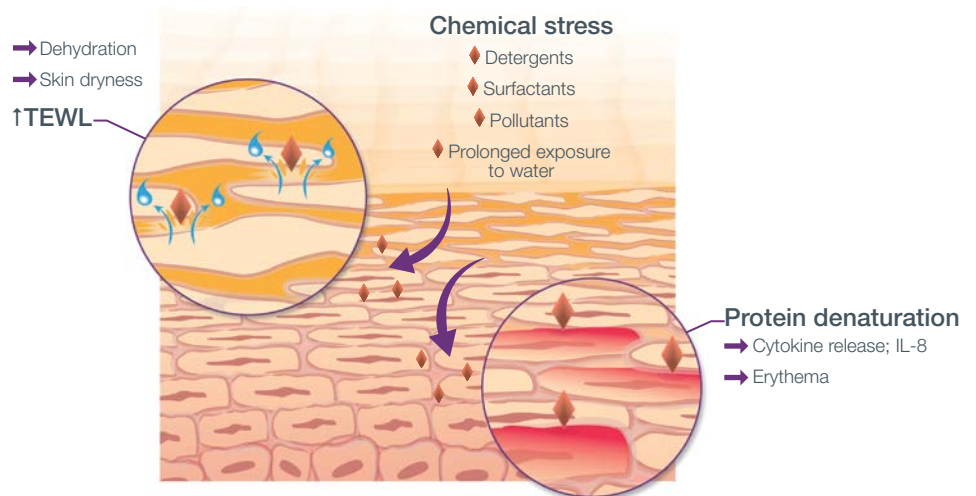
Oxidative stability

Oxidative stability of Activoil™-Echnidium



■ In comparison with Echium oil, **Activoil™-Echnidium** displays an oxidative stability of more than 100-fold when exposed to extreme oxidative conditions.

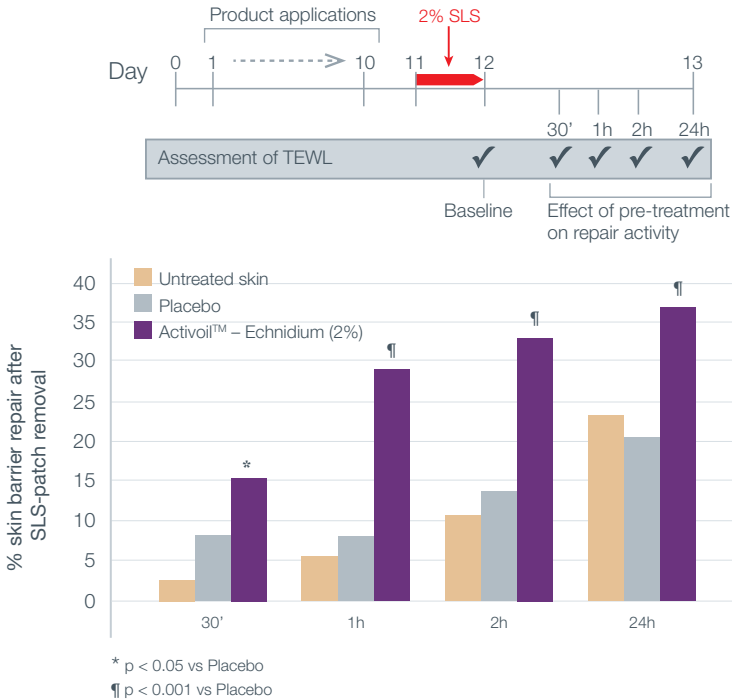
Chemical stress



Various stress agents can penetrate the epidermis causing damage to the stratum corneum barrier function. Openings in the lipid barrier would drive to an excessive water loss. Furthermore, stress agents may initiate a cascade of cellular responses ultimately leading to skin irritation.

Maintenance and repair of skin barrier function

Reduction of SLS-induced skin barrier function loss
product applied before SLS exposure – Pre-treatment



■ Accelerates barrier repair of chemically induced skin damage

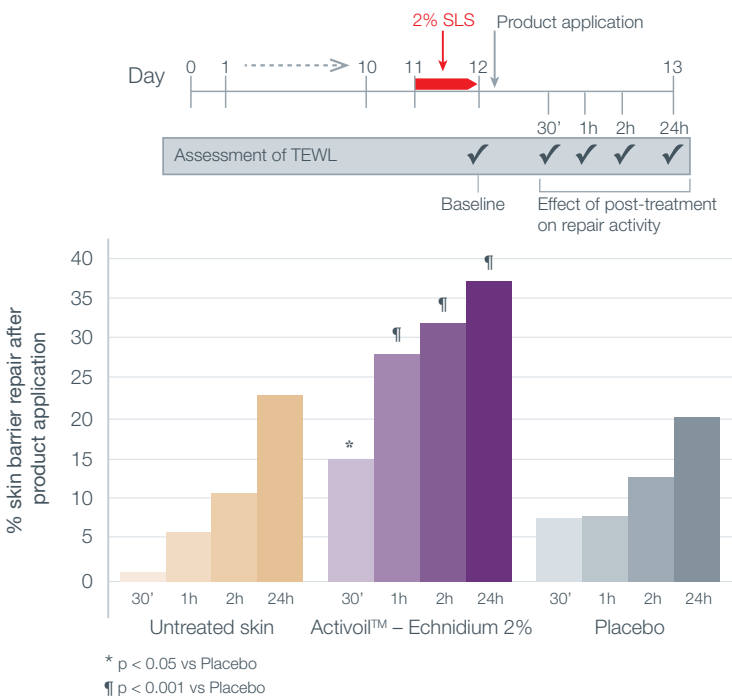
- Exposure to SLS compromises the skin barrier function
- Untreated skin progressively repairs itself
- Protecting the skin with **Activoil™-Echnidium** allows for a faster barrier recovery

Prevention of chemically-induced skin dryness

Maintenance of skin barrier function

Restoration of barrier function

Repair of SLS-induced skin barrier function loss
product applied after SLS exposure – Post-treatment
one single application

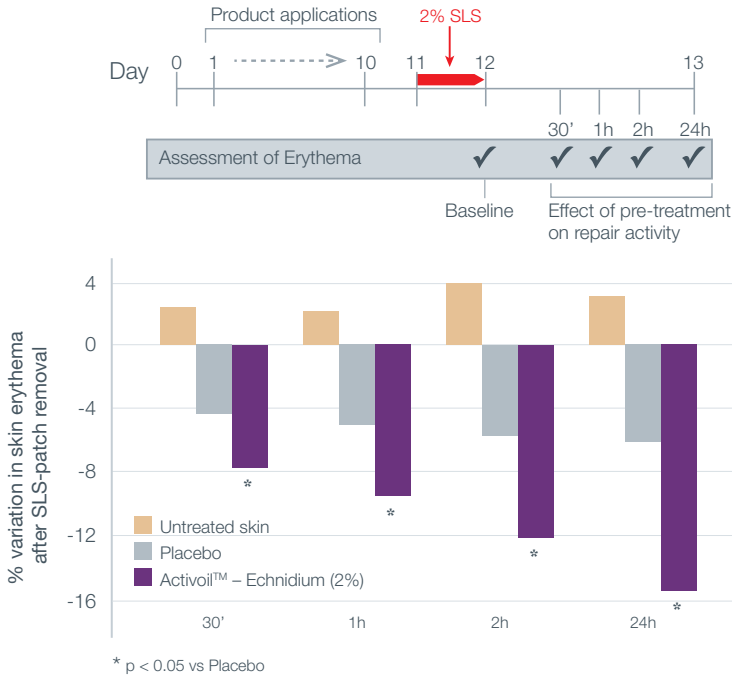


■ Significant barrier recovery when applied following a chemical stress

- Barrier of untreated skin slowly repairs itself from SLS damage
- Post-SLS exposure application of **Activoil™-Echnidium** accelerates significantly barrier repair

Prevention and reduction of erythema

Reduction of SLS-induced skin erythema product applied before SLS exposure – Pre-treatment



■ Provides protection against chemical induced erythema

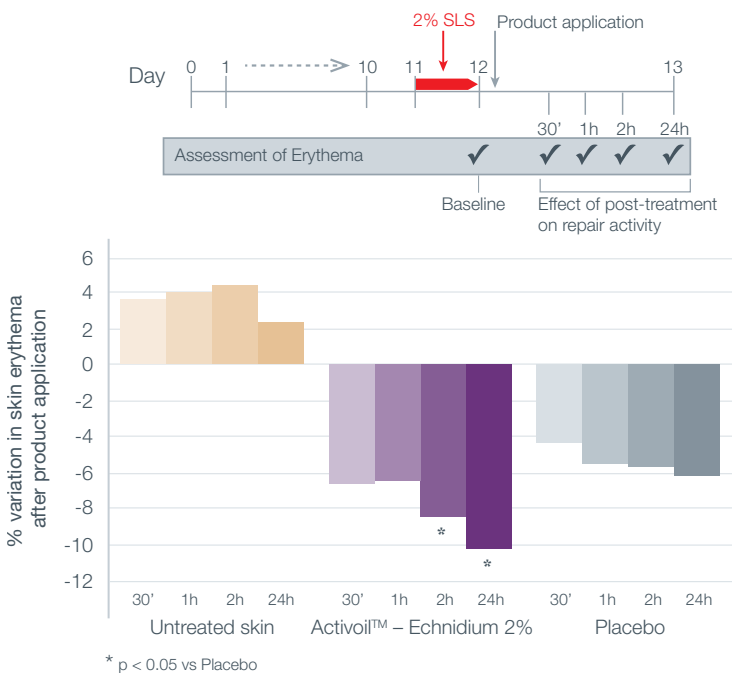
- Exposure to SLS causes clinical signs of irritation
- Erythema persists on untreated skin for up to 24h after SLS exposure
- Protecting the skin with **Activoil™-Echnidium** allows for a faster erythema recovery

Protection against chemical stress

Reduction of skin irritation

Soothing action

Reduction of SLS-induced skin erythema product applied after SLS exposure – Post-treatment one single application



■ Significantly reduces erythema caused by a chemical stress

- Untreated skin still shows clinical signs of irritation 24h after SLS exposure
- Post-SLS exposure application of **Activoil™-Echnidium** hastens the recovery of skin homeostasis

Echium plantagineum & *Cnidium monnieri*

Echium oil is obtained from *E. plantagineum* seeds and is a powerful new source of omega 3, 6, and 9 essential fatty acids. It is the stearidonic acid (C18: 4*n*-3) content of Echium oil that makes it unique among plant seed oils. Stearidonic acid is a powerful anti-inflammatory substance, which also acts to help protect the skin from environmental damage.

Extracts of *Cnidium monnieri* fruits are a source of various compounds such as osthol – a lipophilic biologically active molecule used in the Traditional Chinese Medicine. Osthol is endowed with various biological activities such as: promotion of cell viability, reduction of intracellular oxidative stress, and alleviation of inflammation. Interestingly, osthol is an activator of PPAR α/γ pathways involved in cell differentiation and lipid metabolism stimulation. **Activoil™-Echnidium** represents an ideal stabilized complex of lipophilic ingredients to help protect and repair the skin barrier function and soothe irritation upon exposure to chemical stress.

Clinical actions

- Prevents and repairs chemically-induced barrier damage
- Prevents and repairs chemically-induced irritation
- Provides soothing action against chemical stress

Technical information

- INCI (proposed): Echium Plantagineum Seed Oil, Octyldodecanol, Octyldodecyl Oleate, Octyldodecyl Stearoyl Stearate, Alcohol, Cnidium Monnieri Fruit Extract, Rosmarinus Officinalis (Rosemary) Leaf Extract, Solidago Virgaurea (Goldenrod) Extract
- Oil soluble
- Stabilized against oxidation
- Recommended use level: 1-3%
- Ideal for:
 - Sensitive skin
 - Compromised barrier – dermatitis
 - Occupational exposures
 - Functional improvement of barrier function
 - Prevention of environmental stress induced skin damage

Background

Efficacy

Formulation

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