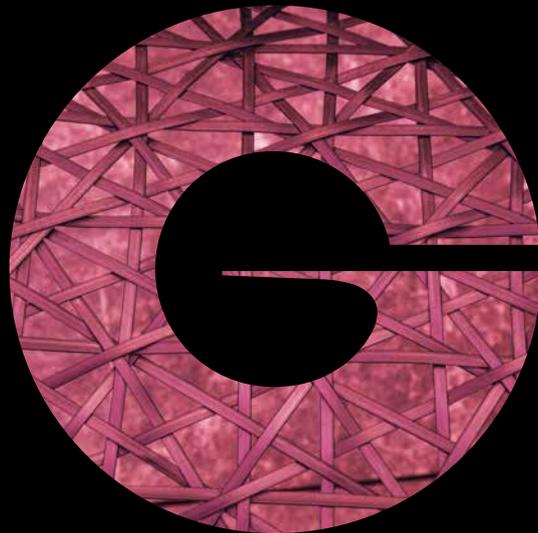


Active Beauty
Unisooth™ EG-28
Dark circles eraser

Crafted by white and green technologies



Focus on the product

Under eye dark circles are triggered by irritation

Dark circles are the result of a complex set of biological parameters, that are closely linked to inflammation:

- ▶ Excessive pigmentation (accumulation of melanin)^{1,2} directly increases when skin is irritated.
- ▶ Periorbital edema² becomes more visible when inflammation increases.
- ▶ Poor blood circulation³ causes the accumulation of non-oxygenated blood in capillaries and tissues due to blood leakage which increases the dark-bluish color of dark circles.

All of these processes increase as we age and lead to darkening of the skin color under the eyes.

Unisooth™ EG-28: an optimised blend of “Gallate” derivatives...

Unisooth™ EG-28 is a balanced combination of activated forms of gallic acid which consists of the following:

- ▶ A glycosylated form of gallic acid coming from oak leaves
- ▶ A glycosylated form of epigallocatechin gallate originating from green tea
- ▶ Propyl Gallate

While propyl gallate is a well known lipoxygenase inhibitor and antioxidant in literature, gallic acid and epigallocatechin gallate inhibit histamine release, decrease cytokine production and reduce immune cell infiltration. The combination of these substances results in a strong anti-inflammatory action coupled with significant antioxidant properties.

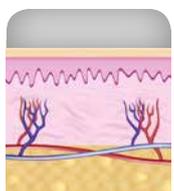
... to get rid of dark circles by decreasing under eye skin irritation

Unisooth™ EG-28 acts synergistically on several biological targets to block the initial causes of dark circle formation:

- ▶ It inhibits one of the major inflammation pathways of the body, NF-kB. This results in preventing the release of IL-8 and CXCL-1, two of the key cytokines involved in skin irritation and redness.
- ▶ It activates the pro-lymphatic factor VEGFR-3 gene expression to increase lymph circulation and reduce periorbital edema.
- ▶ It activates Heme Oxygenase 1 gene expression which is an anti-inflammatory and antioxidant factor. It is also well known to generate CO with vasorelaxant and endothelial cell protection effects. It assists in the recovery of normal blood flow under the eye and lessens blood leakage.

Clinical tests on 25 subjects have demonstrated a significant decrease of skin redness, water loss and appearance of dark circles as early as 15 days!

Under eye dark circle



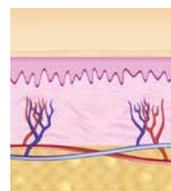
Irritated darkened skin

- ▶ Nf-kB activated: IL-8 and CXCL-1 released
- ▶ Hyperpigmentation due to melanin production
- ▶ Periorbital edema
- ▶ Increased blood pressure

Unisooth™ EG-28



Normal under eye skin



Soothed skin

- ▶ Nf-kB inhibited: IL-8 and CXCL-1 release decreased
- ▶ Melanin production diminished
- ▶ Lymph circulation increase
- ▶ Blood pressure decrease and increased blood flow circulation

¹ Dermatological Surgery, 2009; 35:1163-1171

² Journal of Cosmetic Dermatology, 2007; 6:211-215

³ Journal of Cosmetic Dermatology, 2004; 3(2):73-5

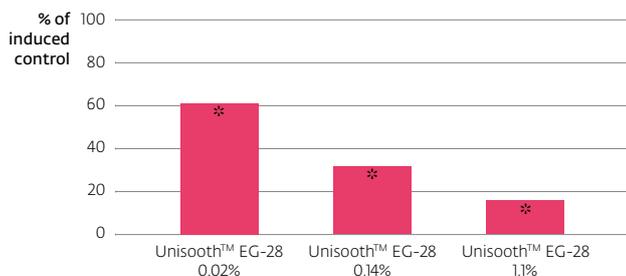
Biological activity

Controlling key inflammation factors (*in vitro* tests)

Unisoorth™ EG-28 was tested for its ability to inhibit the NF-κB pathway. Transformed human cells (HT29) were transfected with a NF-κB reporter gene plasmid. These were incubated for 24 hours with TNF-α in the presence or absence of Unisoorth™ EG-28 at differing concentrations. A colorimetric reaction determined the NF-κB activity.

Unisoorth™ EG-28 was tested for its ability to inhibit interleukin 8 (IL-8) and chemokine CXCL1 release in normal human epidermal keratinocytes (NHEK). The NHEK were incubated with TNF-α and interleukin-1α (both at 5 ng/ml, referred to as CTK mix). Unisoorth™ EG-28 was compared to the reference NF-κB Inhibitor III.

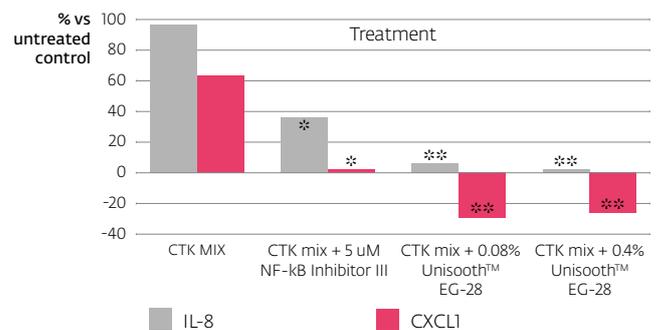
Control of NF-κB activity



Results: Treatment with increasing doses of Unisoorth™ EG-28 significantly **inhibits up to -85% of the Nf-κB activity** in human cells induced with TNF-α.

*z<1.96 Wilcoxon test

Control of IL-8 and CXCL1 release



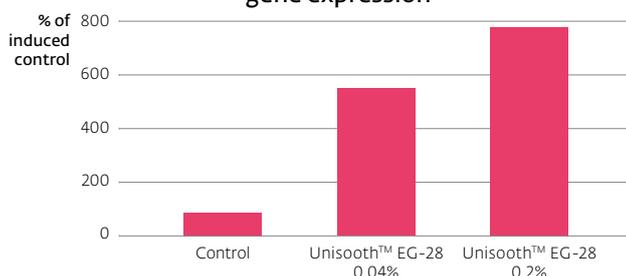
Results: Unisoorth™ EG-28 significantly **inhibits the release of IL-8 and CXCL1 inflammatory cytokines**. The inhibitory activity at higher doses was superior to NF-κB Inhibitor III and up to -99% of IL-8 release and -135% of CXCL1 release compared to CTK mix.

*p<0.01/**p<0.001 compared to control/CTK mix, Student's t Test

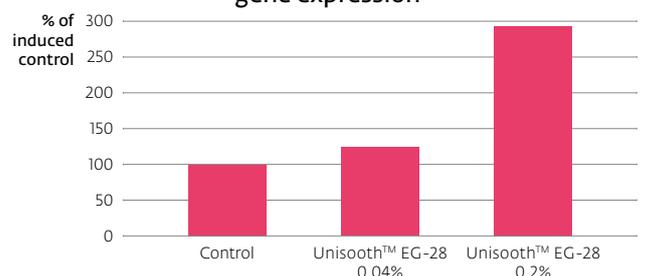
Promoting lymph circulation and vasorelaxation (*in vitro* tests)

Unisoorth™ EG-28 was tested for its ability to stimulate the pro-lymphatic factor Vascular Endothelial Growth Factor Receptor 3 (VEGFR 3) and the Heme Oxygenase 1 gene expression. Human dermal microvascular endothelial cells were incubated for 24 hours in a medium containing or not containing Unisoorth™ EG-28.

Lymph draining factor VEGFR3 gene expression



Vasorelaxant factor Heme Oxygenase 1 gene expression



Results: 0.2% of Unisoorth™ EG-28 **increases VEGFR 3 (+675%) and Heme Oxygenase 1 (+194%) genes synthesis**.

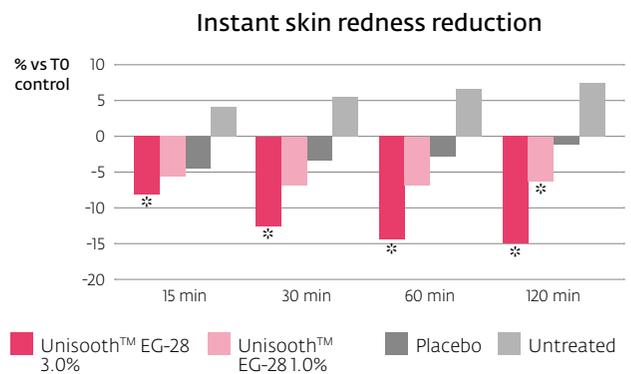
Efficacy

Clinical evaluation: reduction of skin inflammation...

Unisoorth™ EG-28 was tested versus a placebo at 1% and 3% for its ability to reduce skin irritation. Skin irritation was induced by a 24h patch occlusion with a 2% sodium lauryl sulfate (SLS) aqueous solution on the skin. Erythema index (Mexameter®) and Trans-Epidermal Water Loss (Tewameter®) were evaluated after 15 min, 30 min, 60 min and 120 min.

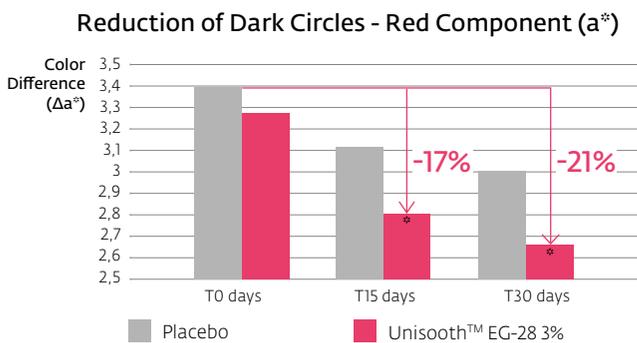
Results: Unisoorth™ EG-28 significantly reduces SLS-induced skin irritation compared to placebo. Redness was significantly decreased after 15 min (-8%) and up to -15% after 120 min, compared to placebo. TEWL (data not shown) was significantly decreased after 30 min (-17%) and up to -23% after 120 min, compared to placebo.

*p<0.05 compared to placebo, Student's t Test

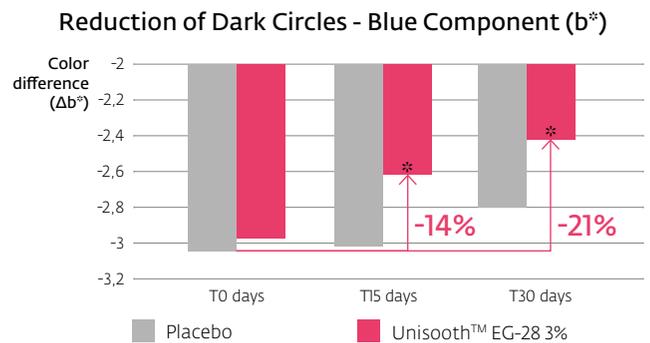


... Leading to a visible reduction of dark circles

A clinical trial was performed to evaluate the efficiency of Unisoorth™ EG-28 on the reduction of dark circles. A gel containing 3% of Unisoorth™ EG-28 was tested against a placebo in a double-blind study on 25 human volunteers. The products were applied twice per day for 30 days on the area around the eyes. Color changes of the dark circles were evaluated (spectrophotometer) after 15 and 30 days.



*p<0.01 compared to placebo, Student's t Test



*p<0.05 compared to placebo, Student's t Test

Results: Unisoorth™ EG-28 significantly reduces dark circles compared to placebo in only 15 days with a visible reduction of under eye edema. There is a significant reduction of the Red (-21%) and the Blue (-21%) components after 30 days.



Summary



By equivalence

Technical information

INCI:	Water (and) Propyl Gallate (and) Gallyl Glucoside (and) Epigallocatechin Gallatyl Glucoside
Origin:	Glycosylated plant extract
Preservation:	Preserved with Benzyl Alcohol and Dehydroacetic Acid
Appearance:	Clear, colourless to yellow liquid
Solubility:	Water-soluble
Dosage:	1-3%
Processing:	Can be added at the end of the formulation process under stirring or homogenising. It can be heated for a short time with the water phase of a formulation. Formulate at pH between 5.0 and 7.0 and temperature below 40°C.

Claims

Claims:	Removes under eye dark circles, anti puffiness, soothes instantly irritated skin, improves under eye microcirculation, protection from environmental stress.
Applications:	Eye contour, eye creams, eye serum, BB (Blemish Balm) creams, soothing treatments, protective care, sensitive skins, after sun / sun care products.

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