active Performance Systems

Proven efficacy

Recommended use level: 1.0 to 5.0%

Ethience® Protect – The eco-conscious barrier function balancer

Our body is constantly fighting against external agents, such as pollution and climate change. The skin is the body's first line of defense, not only preventing the entry of harmful components but also avoiding excessive water loss. But, disruptions to the skin's barrier function can be caused also by intrinsic conditions, such as stress, and these both factors can lead to a compromised skin. Typically, compromised skin is dry, irritated, reactive and sensitive, and it can be the source of strong discomfort. Protecting and strengthening all these players involved in upholding the skin's crucial barrier function is essential for maintaining a healthy and radiant skin.

As compromised skin is an important issue for global consumers, Beraca and Clariant Active Ingredients combined their expertises to offer to the market **Ethience® Protect**: an active ingredient that contains plant-based polyphenols known for their anti-inflammatory properties and beneficial effects on skin's barrier function.

Ethience® Protect focus on the skin's three structural layers, that overlaps: the lipid layer on the skin's surface, ensures primary protection, the stratum corneum that, like bricks set in mortar, consists of corneocytes embedded in a lipid matrix and the viable epidermis with its strong intercellular cohesion, ensured by different types of cellular junctions and the solidity, warranted by the cell cytoskeletons.

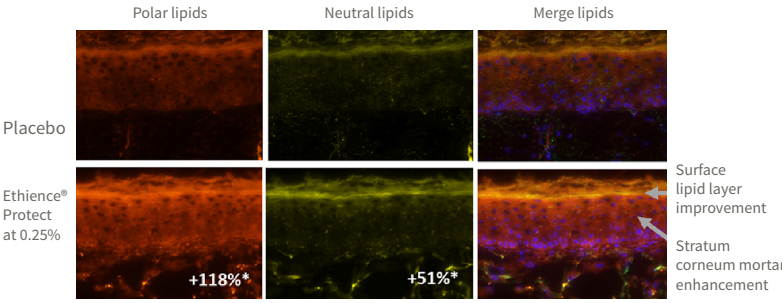
By acting on these three essential skin levels, **Ethience® Protect** relieves compromised skin: the protective outermost lipid layer - to prevent the entry of external components; the bricks and mortar of the stratum corneum - to uphold a cohesive structure; the viable epidermis - to restore keratinocyte solidity and cohesion and thus reinforcing the skin's structure, promoting a strong and resilient barrier function.

Ethience® Protect is obtained from a co-product of sustainable Brazil nut oil production. This means the production process of **Ethience® Protect** touches the circular economy concept since, by enabling the use of the entire fruit, we maximize its natural potential for a residue-free production.

Efficacy Test

	Stratum corneum lipid content	Epidermis integrity	Skin barrier recovery	Hydration improvement on shaved men	Hydration improvement on mask-wearing
Test type	*in vitro*	*in vitro*	*in vivo*	*in vivo*	*in vivo*
Methodology	Immunofluorescence	Immunofluorescence	TEWL	Corneometry	Corneometry
Experimental groups	Placebo and Ethience® Protect at 0.25%	Placebo and Ethience® Protect at 0.25%	Control, Placebo and Ethience® Protect at 1.0%	Placebo and Ethience® Protect at 1.0%	Placebo and Ethience® Protect at 1.0%
Time of measurements	-	-	After 3 hours	After 7 and 35 days	After 7 and 35 days
Additional information	Evaluation of polar lipids and neutral lipids content in full-thickness reconstructed skin	Evaluation of keratin-10 strengthening	15 female volunteers aged from 30 to 54 years old	13 male volunteers aged from 30 to 54 years old	14 female volunteers aged from 22 to 55 years old

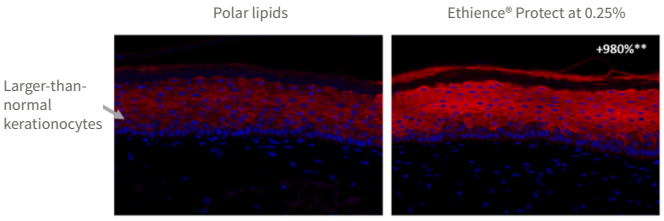
Stratum corneum lipid content



** Statistical significance p<0.05 compared to Placebo.*

Figure 1. Evaluation of polar and neutral lipids in the full-thickness reconstructed skin using Nile red staining. The lipid content was measured with immunofluorescence; the probe is red in presence of polar lipids and yellow-gold in presence of neutral lipids. Both polar and neutral lipids, corresponding to global lipid content, are stimulated by Ethience® Protect, reinforcing barrier impermeability. Through enhancement of the surface lipid layer, the first protective level of the skin barrier is maintained. The lipid mortar of the stratum corneum is also reinforced.

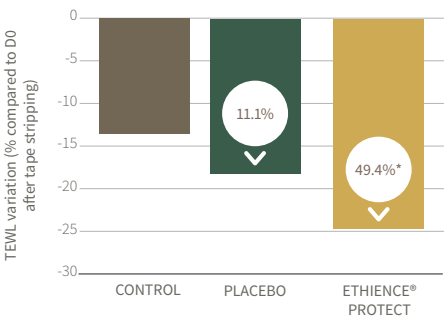
Epidermis integrity



***Statistical significance p<0.01 compared to Placebo.*

Figure 2. Evaluation of epidermis integrity by investigation of keratin-10, a component of intermediate filaments. Ethience® Protect strongly increases keratin-10, confirming the ingredient's ability to strengthen an important cytoskeleton component, thus reinforcing cell junctions and ultimately maintaining barrier function integrity.

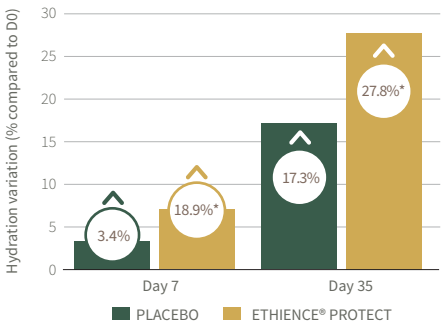
Skin barrier recovery



** Statistical significance p<0.05 compared to CONTROL.*

Graph 1. After only 3 hours, Ethience® Protect significantly reduced TEWL by 49.4%. The skin barrier function is restored faster and more efficiently than Placebo. Ethience® Protect is a potent barrier function enhancer, preventing water loss.

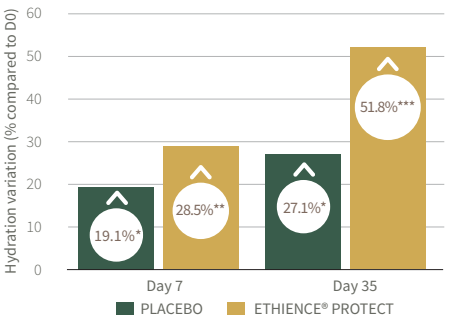
Hydration improvement on shaved men



** Statistical significance p<0.05 compared to D0.*

Graph 2. After one week, Ethience® Protect boosted skin moisture by a significant 19%, and after 35 days by 28%. The lack of hydration, closely associated with barrier damage caused by shaving, is improved.

Hydration improvement on mask-wearing



** Statistical significance p<0.05 compared to D0.*
*** Statistical significance p<0.01 compared to D0.*
**** Statistical significance p<0.001 compared to D0.*

Graph 3. Ethience® Protect rehydrates the skin by 28.5% after only 7 days and by almost 52% after 35 days, counteracting the barrier damage caused by mask friction. Ethience® Protect supports and repairs barrier function better than Placebo.

Indication

- Creams, serums and moisturizing lotion;
- Proaging products;
- Care for sensitive and dry skin;
- Care for skin repair.

Properties

- Moisturizer;
- Skin repairer;
- Maintain the skin barrier function.