60192.

AC ExoCalm

BioAuthentic Exosome
Redness Reduction
Scalp-Friendly

Active Concepts

VEGAN

SEPHORA CLEAN

CREDO CLEAN

GLOBALLY COMPLIANT

COSMOS COMPLIANT

ISO 16128

THE FEATURES.

A new era of skin and scalp care, powered by the finest Italian licorice. AC ExoCalm is a natural exosomal delivery system encapsulating upcycled licorice root extract sourced directly from Calabria. Using BioAuthentic Exosome technology, it delivers targeted anti-inflammatory benefits to both the skin and scalp. Clinically shown to reduce redness, calm irritation, and support scalp health, AC ExoCalm promotes a visibly healthier, more resilient complexion to leave you feeling "ex-SO-calm".

*INCI: Water & Glycyrrhiza Glabra (**Licorice**) Root Extract*

TECHNICAL DATA SHEET.

AC ExoCalm

THE STORY.

At the forefront of beauty innovation, delivery systems serve as essential couriers that unlock the full potential of cosmetic actives. Bridging the gap between science and sustainability, Active Concepts pioneers a natural, plant-based approach with our BioAuthentic Exosome technology: advanced, plant-derived vesicles that can precisely deliver benefits to both the skin and scalp.

Our latest breakthrough, AC ExoCalm, leverages upcycled licorice root extract sourced from Calabria, Italy, renowned worldwide for its superior licorice. This exosomal delivery system transforms licorice pomace, a by-product traditionally discarded, into a high-performance ingredient designed to reduce inflammation, calm irritation, and soothe redness across skin and scalp alike.

By leveraging the power of natural exosomes to enhance cell-to-cell communication, AC ExoCalm maximizes the efficacy of licorice's anti-inflammatory properties while championing ethical sourcing and green chemistry. This positions AC ExoCalm not just as a solution for skin inflammation but also as a cutting-edge innovation advancing scalp care, promoting healthier, balanced, and visibly calmer skin and scalp environments.

THE SCIENCE.

By definition, exosomes are the smallest forms of extracellular vesicles and are natural, membrane-derived particles shed by most cells in response to various stimuli.[1] Their unique ability to enhance cell-to-cell communication makes them highly efficient carriers for improving the delivery and bioavailability of actives to target cells.[2] While exosome research is well-established in pharmaceuticals for therapeutic and diagnostic applications, their use in personal care remains emerging and primarily focused on skin rejuvenation and anti-aging, typically sourced from human or animal stem cells. Our BioAuthentic Exosome line offers a significant advance in delivery system innovation by providing naturally derived vesicles with a broad range of targeted benefits, setting brands apart through differentiation as well as sustainability. Exosome concentration was determined using a Horiba LA-300 by generating a volume-based particle size distribution. Light scattering measurements were converted from particle volume to estimated particle number by applying spherical geometry and density corrections appropriate for lipidbased vesicles, enabling calculation of exosome concentration 1.43 × 10^{11} exosomes per milliliter.

AC ExoCalm focuses on anti-inflammation and reducing skin redness, capitalizing on upcycled licorice root extract. Known to contain glycyrrhetinic acid, licorice is able to provide anti-inflammatory benefits. This triterpenoid saponin glycoside is the major water-soluble component of licorice root. During metabolism, glycyrrhizin is hydrolyzed into two pentacyclic triterpenoids, which has attracted attention for their pharmacological properties. However, glycyrrhetinic acid has some undesirable physiochemical properties such as low water solubility, poor bioavailability, and inadequate lipophilicity.[3] Although, when integrated into a BioAuthentic Exosome, licorice experiences enhanced delivery and bioavailability, ultimately ensuring the customer reaps the full spectrum of its anti-inflammatory benefits. AC ExoCalm goes beyond just facial and body care—it's anti-inflammatory benefits also extend to the scalp. By reducing redness, irritation, and inflammation, it can help to maintain scalp hydration, creating the ideal environment for healthy hair growth. This multifunctional approach to soothing both skin and scalp inflammation makes AC ExoCalm a powerful and versatile ingredient for personal care formulations.

THE TECHNICAL DETAILS.

INCI. Water & Glycyrrhiza Glabra (Licorice) Root Extract & Phospholipids
CAS. 7732-18-5 & 84775-66-6 & 123465-35-0 (or) 8002-43-5
EINECS. 231-791-2 & 283-895-2 & N/A (or) 232-307-2
EUROPE. Compliant
USA. Compliant
CHINA. Compliant

Origin. Botanical/Bacteria
Natural Antimicrobial. Lactobacillus Ferment
Preservatives. None
Solvents Used. Water
Appearance. Liquid Exosomal Dispersion, Light Beige to Orange

THE FORMULATION TIPS.

pH Stability. 3 - 7
Temperature Stability. Stable up to 50°C. Do not freeze.
Use Level. 1 - 10%

Ionic State. Cationic
Alcohol Compatibility. Compatible with up to 10% alcohol at 10%
Solubility. Water Dispersible.
Pro Tips. Product may change appearance if exposed to cold temperatures during shipment or storage. If this happens, please gently warm to 45-50°C and mix until normal appearance is restored.

THE BENEFITS OVERVIEW.

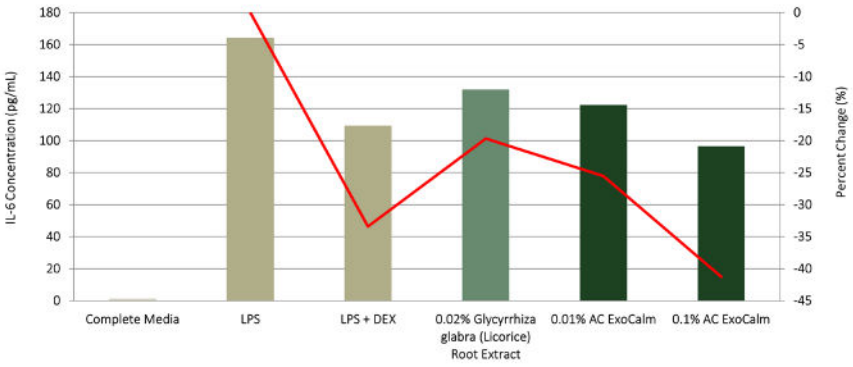
Anti-Inflammation	*IL-6 ELISA*
Redness Reduction	*VISIA: Reduction in Red Areas*
Calms the Skin	*Anti-Erythema*
Luminous Complexion	*Brightness Study*
Scalp Care	*Scalp Care Study, Scalp Sebum Reduction Study*
Antioxidant Protection	*Radical Oxygen Species (ROS), Oxygen Reactive Absorbance Species (ORAC)*
Anti-Pollution Protection	*Airborne Pollutant Protection Assay*
Amplifies Hydration	*24-hr Hydration*
Moisture Retention	*24-hr Transepidermal Water Loss (TEWL)*
Skin Absorbance	*UV Dye Penetration Study*

THE EFFICACY.

Anti-Inflammation.

Interleukin-6 (IL-6) is a proinflammatory cytokine involved in both skin inflammation and visible aging, contributing to collagen breakdown and loss of elasticity. AC ExoCalm was evaluated via IL-6 ELISA to assess its ability to reduce inflammatory signaling in dermal fibroblasts. Powered by BioAuthentic Exosome technology, the delivery of Glycyrrhiza glabra (licorice) root extract showed a measurable reduction in IL-6 levels. These results highlight AC ExoCalm's potential to support a calmer, more resilient skin environment while defending against signs of aging.

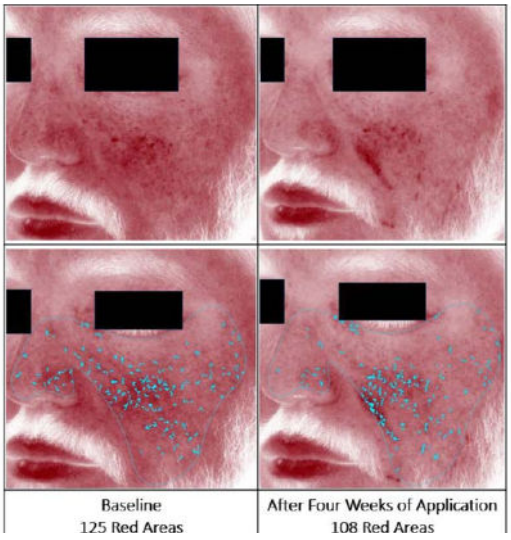
IL-6 ELISA



Reduced inflammation by -41%

Redness Reduction.

Skin erythema refers to the redness of skin and is a result of dilation and irritation of superficial capillaries. The appearance of a red hue on the skin is due to the augmented flow of blood through capillaries. Accordingly, an Anti-Erythema Study was conducted to evaluate the immediate and short-term redness and irritation reducing properties of AC ExoCalm.

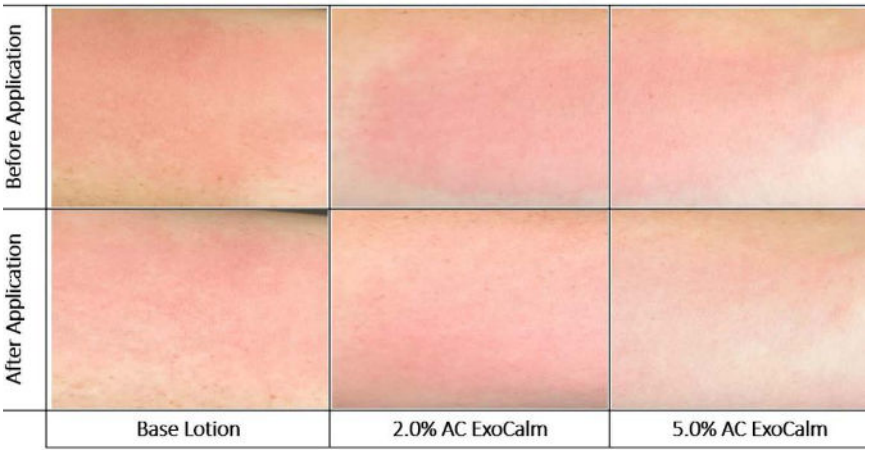


Decreased red areas by -16%

THE EFFICACY CONTINUED.

Calms the Skin.

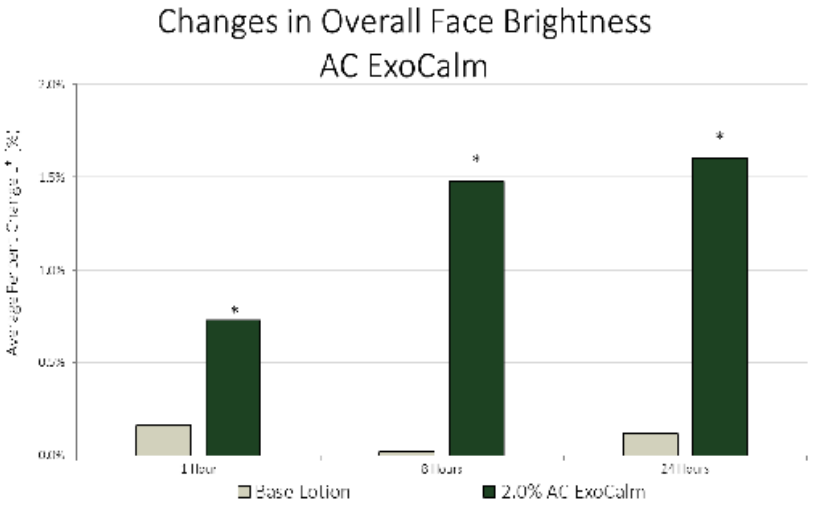
Skin erythema refers to the redness of skin and is a result of dilation and irritation of superficial capillaries. The appearance of a red hue on the skin is due to the augmented flow of blood through capillaries. Accordingly, an Anti-Erythema Study was conducted to evaluate the immediate and short-term redness and irritation reducing properties of AC ExoCalm.



Reduced skin redness by -3.3%

Luminous Complexion.

Skin luminosity is referred to as the intensity of light reflected from the skin's surface. Increasing skin luminosity brightens the appearance of skin and enhances natural radiance. By enhancing skin brightness, the appearance of dark and dull skin is lessened, which is highly desired by consumers. Accordingly, a Brightness Study was conducted to evaluate the ability of AC ExoCalm to increase skin luminosity. The key active ingredient in AC ExoCalm, *Glycyrrhiza glabra* (Licorice) Root Extract, was tested to demonstrate the superior nature of Bioauthentic Exosomes as a delivery system.

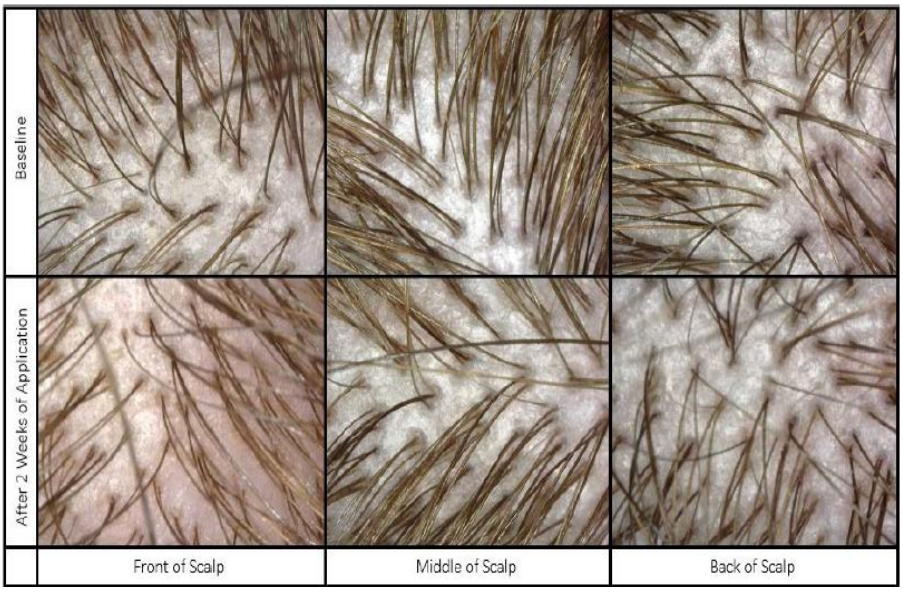


Increased face brightness by +1.6%

THE EFFICACY CONTINUED.

Scalp-Care Friendly.

Erythema is abnormal redness of the skin or scalp which occurs when blood capillaries are congested and dilated. Irritation of the skin and scalp are often associated with increased erythema levels. As a result of erythema on the scalp, consumers may experience a tightening sensation, scalp flakiness, and poor scalp hydration. Therefore, reducing scalp erythema while also improving scalp hydration can alleviate the unwanted symptoms of irritation. Accordingly, a Scalp Care Study was conducted to assess the ability of AC ExoCalm to reduce scalp erythema overtime while maintaining moisturization.

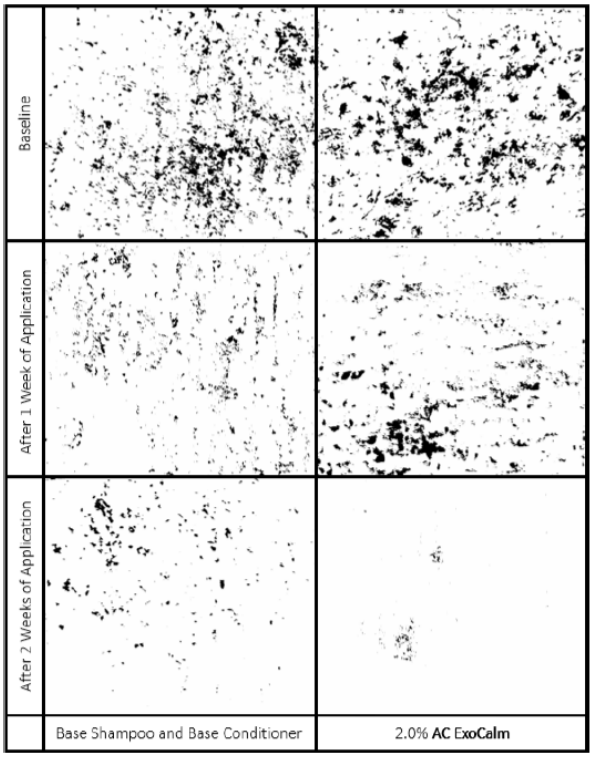


Reduced redness by -19%

Increased hydration by +17%

Balances Scalp Sebum.

Sebum is the oily, waxy secretion of sebaceous glands helping to moisturize and protect the skin from bacterial and fungal pathogens. An insufficient amount of sebum can trigger dry, red, and itchy skin on the scalp whereas an overproduction of sebum leads to an oily scalp, increased presence of dandruff, and leaves a visible shine. The shiny and greasy appearance associated with excess sebum and oily skin is undesirable and reducing these attributes through cosmetic applications is highly sought after. Accordingly, a scalp sebum reduction study was conducted to evaluate the ability of AC ExoCalm to decrease sebum on the scalp while maintaining moisturization.

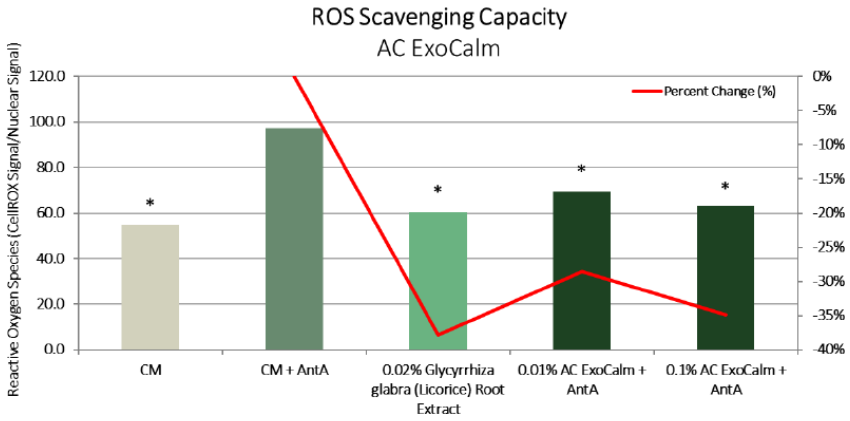


Decreased scalp sebum by -61%

THE EFFICACY CONTINUED.

Antioxidant Protection.

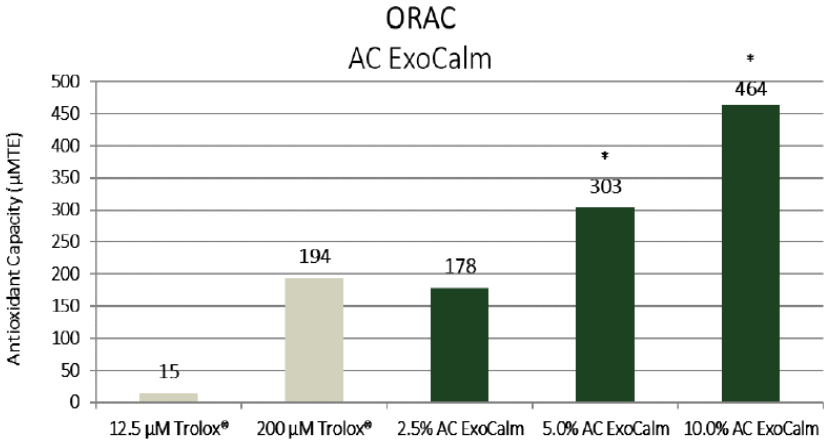
Low levels of intracellular oxidative stress are produced during normal physiological functions. However, UV irradiation, pollutants, foreign substances, and aging elicit unrestricted increases in reactive oxygen species (ROS). These deregulated augmentations in oxidative stress lead to an acceleration of DNA mutation, cellular senescence, advanced glycation end products, protein oxidation, and collagen degradation. Accordingly, a ROS Scavenging Assay was conducted to assess the *in vitro* effect of AC ExoCalm to scavenge unnecessary oxidative stress in dermal fibroblasts. The key active ingredient in AC ExoCalm, *Glycyrrhiza glabra* (Licorice) Root Extract, was tested to demonstrate the superior nature of Bioauthentic Exosomes as a delivery system. Attenuating excessive ROS can help to preserve cellular homeostasis and blunts intrinsic and extrinsic age-related declines in skin cell function.



Reduced ROS levels by -35%

Antioxidant Protection.

Reactive oxygen species (ROS) are generated by normal cellular processes, environmental stresses, and UV irradiation. ROS are dangerous to cellular structures and functional molecules (i.e DNA, proteins, lipids) as they act as strong oxidizing agents or free radicals. The oxygen radical absorbance capacity (ORAC) assay is a standard method used to assess antioxidant capacity of physiological fluids, foods, beverages, and natural products. The assay quantitatively measures a sample's ability to quench free radicals that have the potential to react with and damage cellular components. Accordingly, the Oxygen Radical Absorbance Capacity (ORAC) assay was conducted to assess the antioxidant capacity of AC ExoCalm.

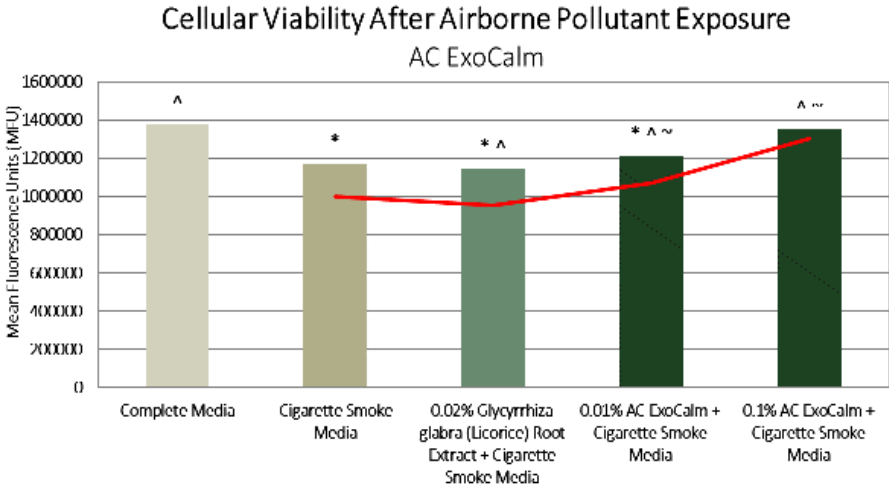


Demonstrates higher antioxidant power than Trolox®

THE EFFICACY CONTINUED.

Anti-Pollution Protection.

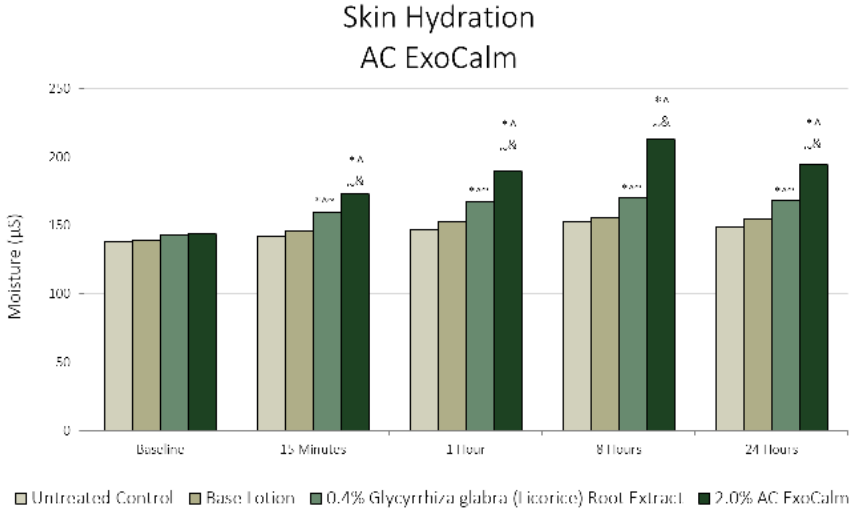
Skin erythema refers to the redness of skin and is a result of dilation and irritation of superficial capillaries. The appearance of a red hue on the skin is due to the augmented flow of blood through capillaries. Accordingly, an Anti-Erythema Study was conducted to evaluate the immediate and short-term redness and irritation reducing properties of AC ExoCalm.



Increased cell viability by +85%

Amplifies Hydration.

The skin's structural and functional integrity is predominantly dependent on sufficient hydration levels. Adequately hydrated skin is flexible, resistant to shearing forces, an effective protective barrier, and appears more youthful with a reduction in fine lines and wrinkles. Conversely, insufficiently hydrated skin is present in many skin diseases and exhibits a compromised protective barrier, feels dry, flaky, and rough, and is correlated with skin aging. Consequently, proper hydration maintains the skin's structural and functional integrity and contributes to the appearance of healthier looking skin. Accordingly, a Moisturization Study was conducted to evaluate the immediate and short-term skin hydrating properties of AC ExoCalm. The key active ingredient in AC ExoCalm, Glycyrrhiza glabra (Licorice) Root Extract, was tested to demonstrate the superior nature of Bioauthentic Exosomes

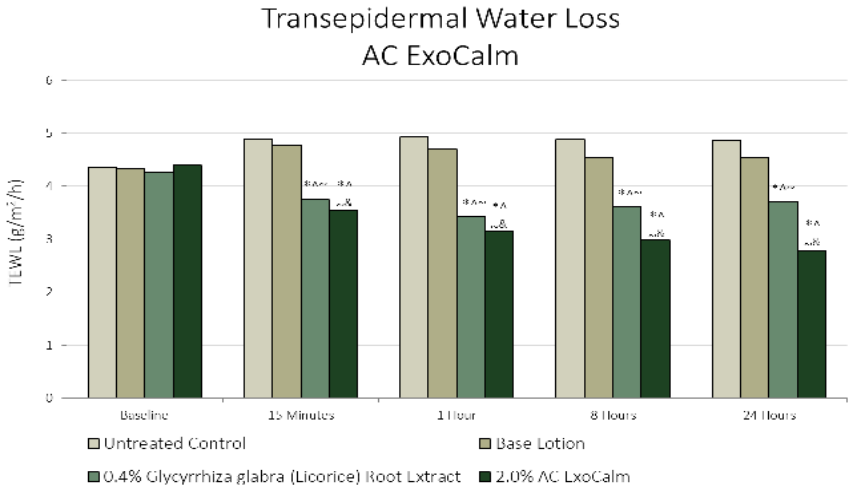


Increased moisturization by +48%

THE EFFICACY CONTINUED.

Moisture Retention.

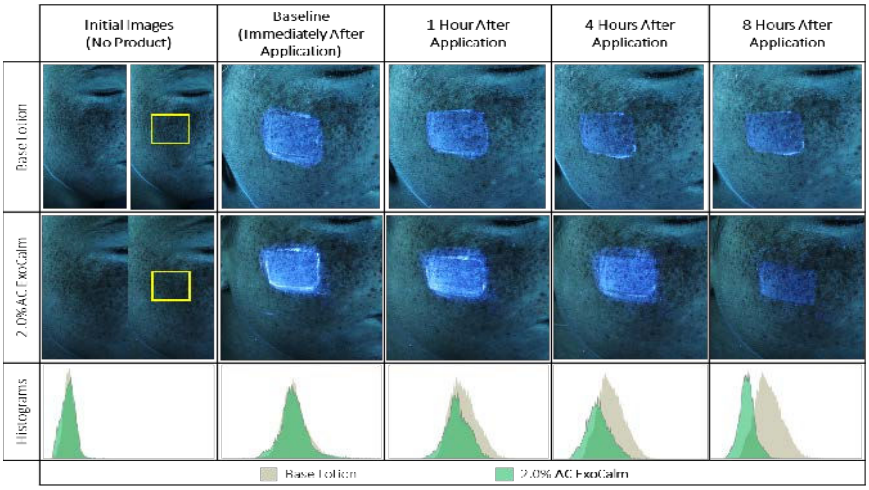
Moisture retention is a fundamental component to the preservation of the skin's protective barrier function. Transepidermal water loss (TEWL) is the passive evaporation of water across the stratum corneum to the external environment because of the water vapor pressure gradient on both sides of the skin barrier. In healthy skin, decreased TEWL indicates properly hydrated skin. However, when the skin's protective barrier is compromised, TEWL levels are high and the skin feels dry, flaky, and rough. High TEWL levels, and reduced skin hydration, are correlated with skin aging and seen in many skin diseases. Consequently, moderating excessive TEWL improves the skin's protective barrier function and contributes to the appearance of healthier looking skin. Accordingly, a Transepidermal Water Loss Study was conducted to evaluate the immediate and short-term moisture retention properties of AC ExoCalm. The key active ingredient in AC ExoCalm, *Glycyrrhiza glabra* (Licorice) Root Extract, was tested to demonstrate the superior nature of Bioauthentic Exosomes as a delivery system.



Reduced TEWL by -36%

UV Dye Penetration.

The skin's ability to regenerate, repair, and maintain homeostasis is influenced by intercellular communication and the delivery of bioactive molecules to deeper layers. Exosomes—nanosized extracellular vesicles secreted by cells—play a critical role in mediating this communication by transporting proteins, lipids, and nucleic acids that regulate cellular activity. When effectively delivered into the skin, exosomes can contribute to improved elasticity, barrier function, and overall skin vitality. In contrast, limited penetration reduces their biological efficacy, diminishing potential benefits for skin rejuvenation and repair. Accordingly, a UV Dye Penetration Study was conducted to evaluate exosome penetration of AC ExoCalm over time. A fluorescent dye was attached to the lipid bilayer in AC ExoCalm, allowing us to visually track exosome-associated fluorescence. 2.0% AC ExoCalm and a base lotion were applied to predetermined test sites on participants' cheeks and photographed under UV light at various time points after application. The brightness visible in these photos indicates how much product remains on the skin's surface. As the brightness diminishes, it shows that the exosomes have beenabsorbed into the skin.



Enhanced skin absorbance by +50%

References:
1. Kalluri R, LeBleu VS. The biology, function, and biomedical applications of exosomes. Science. 2020 Feb 7;367(6478):eaau6977. doi: 10.1126/science.aau6977. PMID: 32029601; PMCID: PMC7717626.
2. Hannafon BN, Ding WQ. Intercellular communication by exosome-derived microRNAs in cancer. Int J Mol Sci. 2013 Jul 9;14(7):14240-69. doi: 10.3390/ijms140714240. PMID: 23839094; PMCID:
PMC3742242.
3. Kowalska, Agnieszka, and Urszula Kalinowska-Lis. "18β-Glycyrrhetinic acid: its core biological properties and dermatological applications." International journal of cosmetic science 41.4 (2019): 325-331.

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