

16503PF.

AC Moisture-Plex Advanced PF

Skin Hydration
Antioxidant
Pro-Collagen



VEGAN



SEPHORA
CLEAN



CREDO
CLEAN



GLOBALY
COMPLIANT



THE FEATURES.

The epidermis is a key part of our immune system, protecting us from environmental stressors—but without proper hydration, it can't function at its best. Healthy-looking skin is also well-functioning skin. Infused with nature's finest hydrators to restore your skin's natural glow, AC Moisture-Plex Advanced PF is your answer for quenching dry, thirsty skin. In addition to providing potent hydration benefits, this ingredient is also formulated to improve moisture retention, antioxidant protection, anti-inflammation, wound healing, and collagen production. Crafted with care using earth-friendly ingredients, AC Moisture-Plex Advanced PF nourishes and rejuvenates skin from within!

INCI: Glycerin & Water & Sodium PCA & Urea & Trehalose & Polyquaternium-51 & Sodium Hyaluronate

TECHNICAL DATA SHEET.

AC Moisture-Plex Advanced PF

THE STORY.

If we were asked to describe our skin, we would probably make a description based on its physical characteristics and not its function. True, we like our skin to feel soft and smooth; but more importantly, we need our skin to protect us from UV damage, free radicals, and hazardous microorganisms while providing barrier protection from various chemicals and liquids. The epidermis is part of our innate immune system and serves as one of the body's primary defense mechanisms to protect us from an onslaught of environmental stimuli. Yet the ability of the epidermis to fulfill all these functions tends to diminish if it is not properly hydrated, so the way we like our skin to look and feel is also optimal for its function.

There are a multitude of ways for our skin to become dry, which results in irritation, damage, and loss of function. We must worry about more than just cold temperatures, changes in humidity, and the wind drying out our skin, and often the products we use can cause the same drying effect. Soap, facial cleansers, and toners are notorious for dehydrating our skin, and ironically due to the alcohol content, some moisturizers can actually cause the same effect.

AC Moisture-Plex Advanced PF is formulated to address these issues by improving skin hydration, moisture retention, antioxidant protection, anti-inflammation, wound healing, and collagen production. AC Moisture-Plex Advanced PF offers a powerful complex of sodium PCA, urea, polyquaternium-51, and sodium hyaluronate for a radiant, healthier-looking complexion.



THE SCIENCE.

Because the epidermis is comprised primarily of a lipid base, the topical application of glycerin may help hydrate the skin and prevent lipid damage. For additional hydration, we have incorporated sodium PCA, which is known as a skin and hair-conditioning agent.¹ Working in tandem, urea is referenced as being a hygroscopic molecule and a component of the skin's natural moisturizing factor, making it often used in skin care applications such as moisturizers.² Urea-containing moisturizing formulations, for instance, can help restore the cutaneous barrier, reducing skin roughness and peeling.² In AC Moisture-Plex Advanced PF, both sodium PCA and urea may function as humectants to help the skin stay moist.

Trehalose is a glucose disaccharide found in yeast, plants, algae, bacteria, and insects, and has been used in cosmetic products as an antioxidant, skin protectant, and moisturizer.³ One of the unique aspects of trehalose is its ability to contribute to the stabilization of organisms that can survive either freezing conditions or dehydration, which may be due to its high hydration potential and ability to stabilize lipid bilayers by ordering water molecules around the membrane.³ Apart from being an energy source, this sugar molecule has also been shown to act as a protective agent against osmotic stress, heat shock, and stabilizer during dormancy.³

Polymers such as polyquaternium-51 have been shown the ability to form a protective film that can act as a moisture barrier⁴, while a polysaccharide like sodium hyaluronate is reportedly used in cosmetics as a skin-conditioning agent.⁵ In addition, sodium hyaluronate is known to play a role in many biological functions, including cellular proliferation, anti-inflammatory effects, antioxidant protection, and wound repair.⁶ It was referenced that the anti-inflammation, antioxidant, and cell proliferation properties of sodium hyaluronate could promote and hasten epithelial wound healing.⁶ By helping to support skin repair and barrier function, these characteristics may also help facilitate healthy collagen turnover.

THE TECHNICAL DETAILS.

INCI. Glycerin & Water & Sodium PCA & Urea & Trehalose & Polyquaternium-51 & Sodium Hyaluronate

CAS. 56-81-5 & 7732-18-5 & 28874-51-3 & 57-13-6 & 99-20-7 & 125275-25-4 & 9067-32-7

EINECS. 200-289-5 & 231-791-2 & 249-277-1 & 200-315-5 & 202-739-6 & N/A & N/A

EUROPE. Compliant

USA. Compliant

CHINA. Compliant

Origin. Botanical/Bacteria/Bacterial Fermentation/Synthetic
Natural Antimicrobial. Leuconostoc/Radish Root Ferment Filtrate*

Preservatives. None

Solvents Used. Glycerin & Water

Appearance. Slightly Hazy to Transparent Liquid, Colorless to Yellow

THE FORMULATION TIPS.

pH Stability. 4 - 7

Temperature Stability. Stable up to 70° Celsius

Use Level. 1 - 10%

Ionic State. Nonionic

Alcohol Compatibility. Compatible with up to 50% SDA-40 at 5%

Solubility. Water Soluble

Pro Tips. It is recommended that this product is added during cooling, after the emulsion has been formed.

* Please note this product contains Leuconostoc/Radish Root Ferment Filtrate (Tradename: M15008-Leucidal® Liquid) - produced by Active Micro Technologies, LLC - containing 18.0-22.0% Phenolics (tested as Salicylic Acid). Please refer Leucidal® Liquid product literature for additional information.

AC Moisture-Plex Advanced PF

THE BENEFITS OVERVIEW.

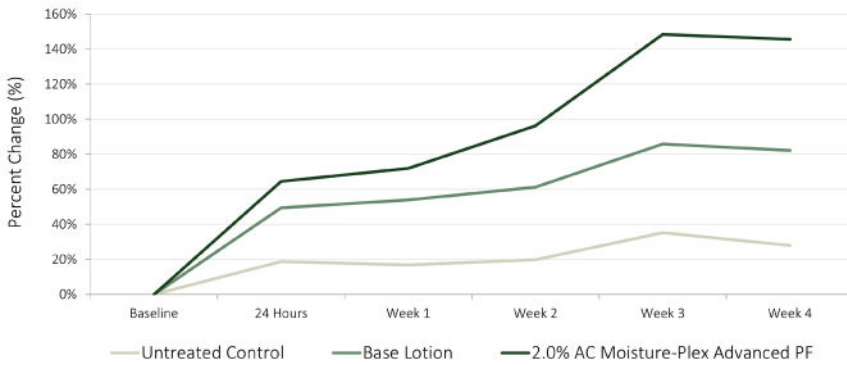
Skin Hydration <i>Moisturization Study</i>		Anti-Inflammation <i>IL-6 ELISA Analysis</i>	
Moisture Retention <i>Transepidermal Water Loss (TEWL) Study</i>		Wound Healing <i>Scratch Assay</i>	
Antioxidant Protection <i>Oxygen Radical Absorbance Capacity (ORAC) Assay</i>		Collagen Boosting <i>High Resolution Ultrasound Skin-Imaging Study</i>	

THE EFFICACY.

Skin Hydration

A moisturization study was conducted to evaluate the skin hydrating properties of AC Moisture-Plex Advanced PF. 10 volunteers between the ages of 23 and 45, who were known to be free of any skin pathologies with Fitzpatrick skin types I to III, participated in this study. Three randomly assigned test sites were identified on the volar forearm of participants and baseline moisture measurements were recorded. Following baseline measurements, participants applied 0.2 g of each test material on their volar forearms twice a day for four weeks. Moisture measurements were recorded once a week for four weeks. Results indicate AC Moisture-Plex Advanced PF increases skin moisturization when added to personal care applications at recommended use levels.

Skin Hydration

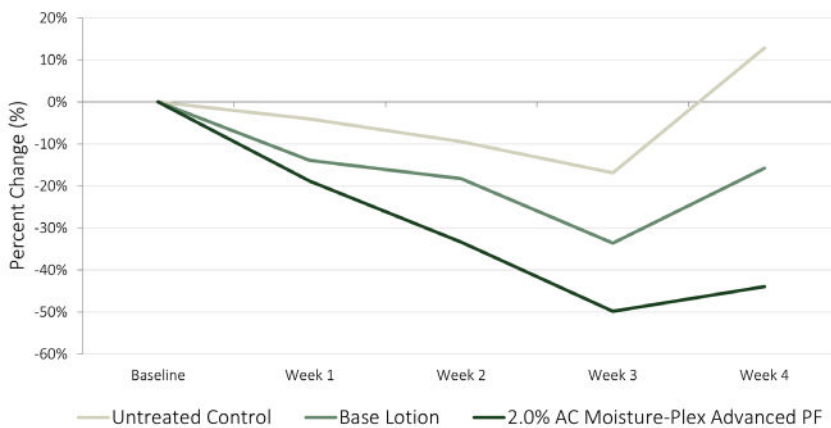


Enhances skin hydration by +14%

Moisture Retention

A transepidermal water loss study was conducted to evaluate the moisture retention properties of AC Moisture-Plex Advanced PF. 10 volunteers between the ages of 23 and 45, who were known to be free of any skin pathologies with Fitzpatrick skin types I to III, participated in this study. Three randomly assigned test sites were identified on the volar forearm of participants and baseline TEWL measurements were recorded. Following baseline measurements, participants applied 0.2 g of each test material on their volar forearms twice a day for four weeks. TEWL measurements were recorded once a week for four weeks. Results indicate AC Moisture-Plex Advanced PF reduces TEWL when added to personal care applications at recommended use levels.

Moisture Retention



Reduces TEWL by -44%

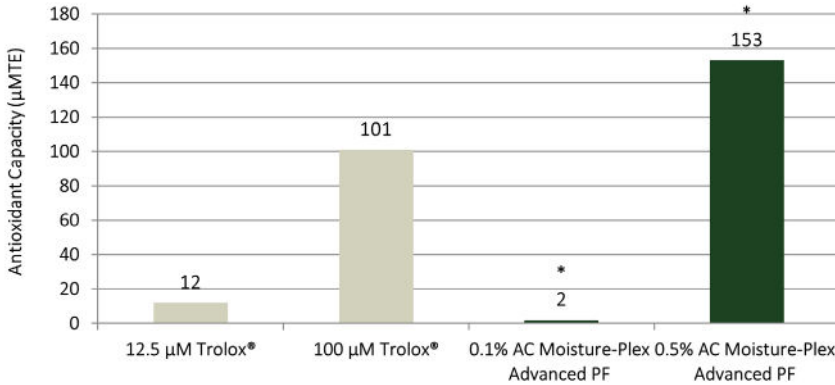
AC Moisture-Plex Advanced PF

THE EFFICACY CONTINUED.

Antioxidant Protection

An oxygen radical absorbance capacity (ORAC) assay was conducted to assess the antioxidant capacity of AC Moisture-Plex Advanced PF. Solutions of AC Moisture-Plex Advanced PF and Trolox® (positive control) were prepared in 75 mM potassium phosphate buffer. Materials were prepared at two different concentrations/dilutions. Trolox® was used as a reference for antioxidant capacity and prepared at concentrations ranging from 12.5 µM to 100 µM in 75 mM potassium phosphate buffer. Results indicate AC Moisture-Plex Advanced PF is capable of providing antioxidant properties and aids in the anti-aging process through protection at the cellular level.

Antioxidant Protection

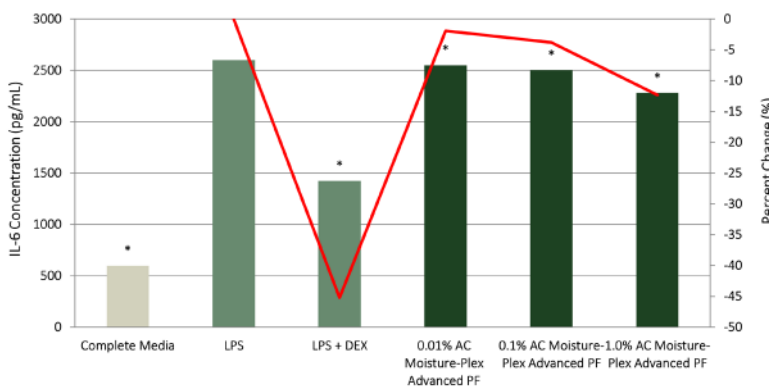


Increases antioxidant capacity by +41%

Anti-Inflammation

An interleukin-6 ELISA was conducted to assess the *in vitro* effect of AC Moisture-Plex Advanced PF to elicit changes in IL-6 levels in dermal fibroblasts. Human dermal fibroblasts were seeded into 12-well tissue culture plates and allowed to grow to confluency in complete media (CM). 0.01%, 0.1%, and 1.0% concentrations of AC Moisture-Plex Advanced PF were added to CM containing 1 µg/mL LPS and incubated with fibroblasts for 72 hours. LPS is utilized to create an inflammatory environment and dexamethasone (DEX) in the presence of LPS was used as a positive control to quell inflammation. Results indicate AC Moisture-Plex Advanced PF exerts an anti-inflammatory effect, which may help to attenuate characteristics of cellular aging.

Anti-Inflammation



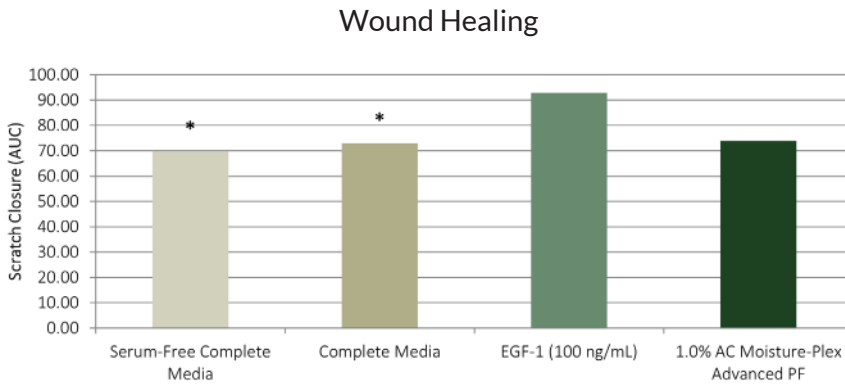
Decreases IL-6 levels by -12%

AC Moisture-Plex Advanced PF

THE EFFICACY CONTINUED.

Wound Healing

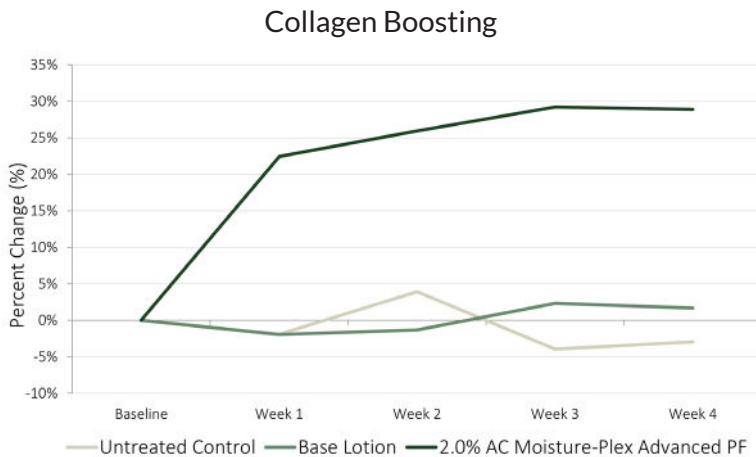
A scratch assay was conducted to assess the *in vitro* wound healing properties of AC Moisture-Plex Advanced PF in dermal fibroblasts. Human dermal fibroblasts were seeded into a 6-well tissue culture plate and allowed to grow to confluency in complete media. When cell growth reached confluency, scratches were made in the well in an 'X' pattern, generating an *in vitro* "wound" which is the area devoid of cells. The rate at which the fibroblasts migrate to fill the area devoid of cells indicates wound healing. Results indicate AC Moisture-Plex Advanced PF activates cellular migration and wound healing in fibroblasts.



Improves cell migration by +5.6%

Collagen Boosting

A high-resolution ultrasound skin imaging study was conducted to assess the ability of AC Moisture-Plex Advanced PF to improve Collagen Fiber Density. 10 volunteers between the ages of 23 and 45, who were known to be free of any skin pathologies with Fitzpatrick skin types I to IV, participated in this study. Three randomly assigned test sites were identified on the volar forearm of participants and baseline measurements were recorded. Following baseline measurements, participants applied 0.2 g of each test material on their volar forearms twice a day for four weeks. Measurements were recorded once a week for four weeks. Results indicate AC Moisture-Plex Advanced PF improves normal skin aging by augmenting collagen density resulting in a healthier and more youthful skin appearance.



Boosts collagen density by +29%

References:

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- Tsotsou, Georgia Eleni. "Extraction-free analysis in cosmetics by digital image colorimetry, illustrated by the quantification of urea." *Heliyon* 10.3 (2024).
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