AC LumiVitis

BECAUSE YOUR SKIN DESERVES TO SHINE,
NOT FADE IN THE LIGHT

INCI: *Saccharomyces Ferment & Vitis Vinifera (Grape) Fruit Cell Extract & Lactobacillus Ferment*

Active Concepts

Light is Life...

Light is essential to life. It regulates our circadian rhythm, supports vitamin D synthesis, and helps energize cellular metabolism. **Depending on the wavelength, dose, and duration of exposure**, light can deliver both beneficial and harmful effects to the skin. While moderate exposure contributes to important **physiological processes**, excessive or chronic exposure to sunlight, screen light, and red light radiation can impose stress on the skin.

These **wavelengths** penetrate the skin to varying **depths**, generating reactive oxygen species (ROS) and biological responses that, over time, may accelerate **photoaging** and cellular damage.

To truly protect and prolong skin vitality, **protection** must move **beyond surface photoprotection** toward intelligent, layer-targeted defense and repair, powered by nature-inspired actives that help support the skin's **intrinsic resilience** to light exposure.

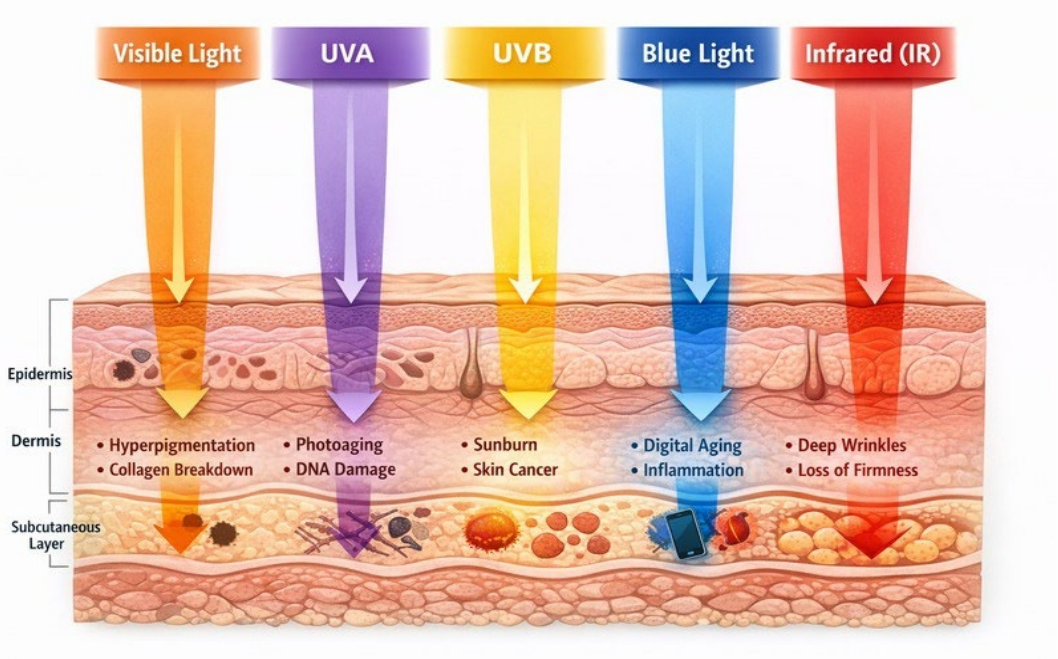
& Skin's greatest Challenge.

Active Concepts

How light interacts with skin layers

Modern skin exposure goes far beyond UV rays. Daily life exposes skin to multiple wavelengths of light and heat, which penetrate the skin and affect cellular metabolism and mitochondrial function.

- **UVB (280–320 nm)** - primarily *from sun exposure*, UVB is absorbed in the epidermis, where it can cause DNA damage and sunburn, contributing to skin inflammation and long-term photoaging.
- **UVA (320–400 nm)** - also mainly *from the sun and tanning devices*, UVA penetrates deeper into the dermis, generating reactive oxygen species (ROS) that degrade collagen and elastin, leading to wrinkles, loss of firmness, and pigmentation changes.
- **Visible & Blue Light (400–700 nm)** - *emitted by the sun* as well as *digital screens such as smartphones, tablets, and computers*, this spectrum penetrates the epidermis and upper dermis, contributing to oxidative stress and hyperpigmentation.
- **Infrared (IR, 700 nm–1 mm)** - *produced by the sun* and *environmental heat sources*, infrared radiation penetrates into the deep dermis and subcutaneous layers, increasing skin temperature and accelerating collagen degradation.



Each layer's biological response determines the balance between damage and adaptive repair.

Active Concepts

Light Risk vs. Benefit

Not all light effects are harmful. Controlled exposure can be therapeutic:

BLUE LIGHT

Risk: Chronic screen exposure may increase oxidative stress and digital aging.
Benefit: Targeted blue light effectively kills acne bacteria (*Propionibacterium acnes*) in clinical dermatology.

RED & NEAR-INFRARED (NIR)

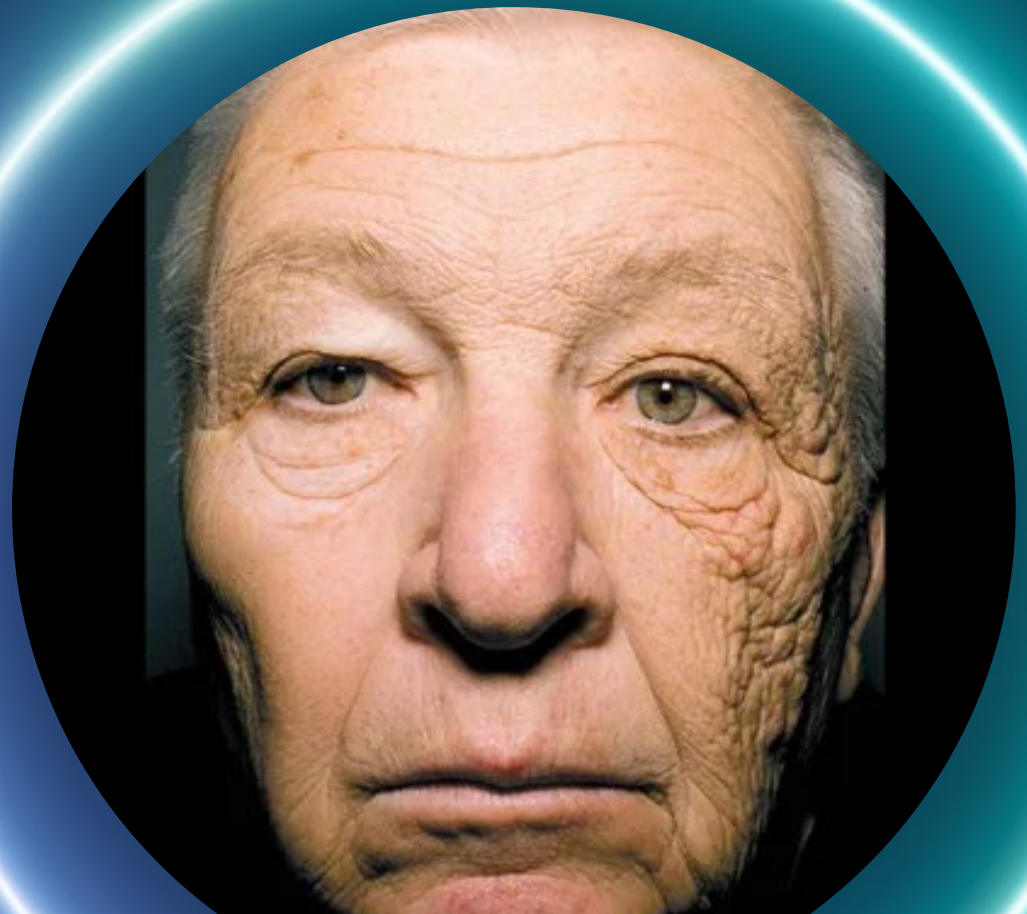
Risk: Unregulated IR heat can degrade collagen.
Benefit: Low-level red/NIR stimulates fibroblast activity, enhancing collagen production and repair (photobiomodulation).

UVA/UVB

Risk: DNA mutations, photoaging, cancer risk.
Benefit: Short, controlled UVB exposure enables vitamin D synthesis.

Active Concepts

The problem:
Light Accelerates Aging



Light exposure doesn't just affect the skin's surface; it reaches **deep into the mitochondria**, the cell's energy factories. When mitochondria are stressed, they over produce reactive oxygen species, flipping on the p38 MAPK "*stress switch*".

Mitochondria are the primary **energy-generating** organelles of the cell, but under stress they can become major sources of ROS, **creating oxidative imbalances** that initiate signaling cascade associated with inflammation, matrix degradation, and accelerated skin aging.[1]

Light activates oxidative stress & flips the p38 switch = aging accelerates.

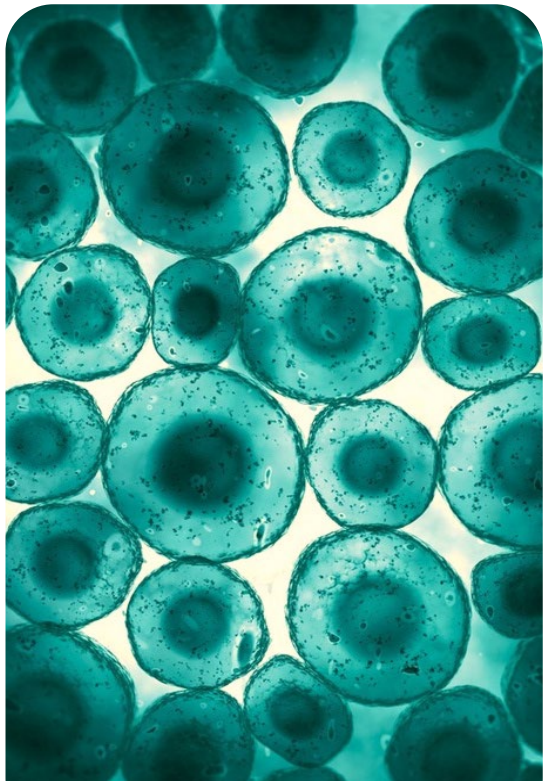
A 69-year-old man who drove a delivery truck for 28 years shows damaged skin on the left side of his face.

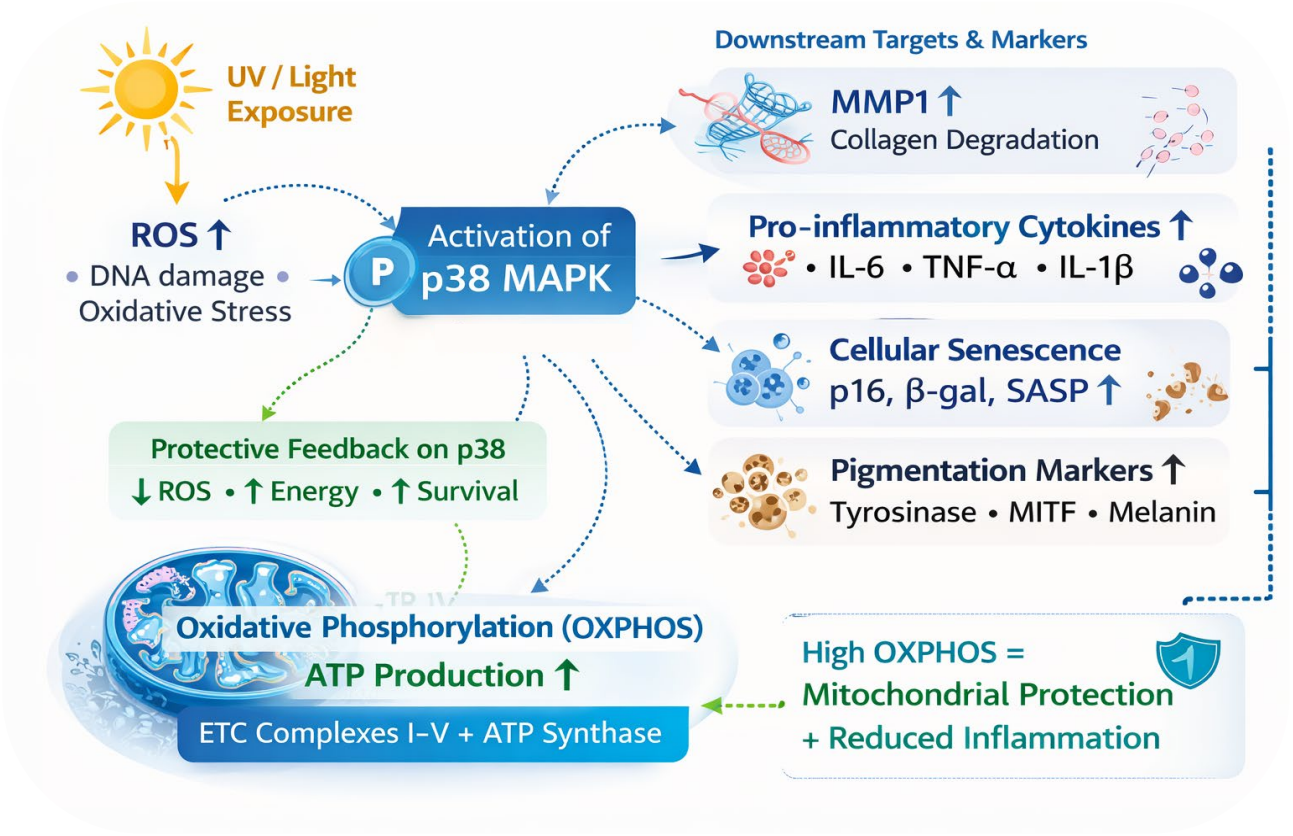
Source - The New England Journal of Medicine ©2012

Active Concepts

About science

One of the most critical pathways involved in this response is the **p38 mitogen-activated protein kinase (MAPK)** signaling pathway, often described as the cellular "**stress switch.**" p38 MAPK is activated by oxidative stress, inflammatory cytokines, and radiation exposure, and serves as a central regulator of cellular stress responses.[2]





Once activated, p38 MAPK influences downstream transcription factors that modulate inflammatory mediators and matrix-degrading enzymes within dermal fibroblasts, importantly, **matrix metalloproteinase-1 (MMP-1).** MMP-1 is a **collagenase** responsible for degrading type I and III collagen fibers that maintain structural integrity and elasticity of the skin.[3]

Flip the switch on photo-aging.

Limits of current cosmetic protection

Current dermatological and cosmetic strategies address some but not all light-induced damage:

- **SPF & UV Filters:** *Effective against UVB and some UVA, but do not block visible or IR light.*
- **Antioxidants (Vit C, E, polyphenols):** *Neutralize ROS but do not prevent all light-induced molecular signaling (e.g., MMP activation).*
- **Surface-Focused Actives:** *Most act at or above the epidermis, deeper photostress remains unaddressed.*

Each provides only partial protection rather than a comprehensive defense, leaving dermal structures vulnerable to cumulative light-induced stress and extracellular matrix degradation.

Active Concepts

The Solution

AC LumiVitis is a *next-generation active* designed to defend from **multi-spectrum aging,** the cumulative damage caused by sunlight, screen light, and heat.

Derived from **upcycled grape by-products** and enhanced through biotechnological fermentation, AC LumiVitis captures the harmony of nature and science to preserve skin's radiance against the hidden stresses of modern light exposure.

Rooted in the Latin words "*lumen*" (light) and "*vitis*" (vine), the name symbolizes **illumination** and **botanical heritage,** reflecting a sustainable, vineyard-to-skin story that resonates with both modern applications and luxury consumers.

The New longevity ↗

Light-Gevity

Inspired by the **convergence of skin longevity** science and biohacking, AC LumiVitis introduces “light-gevity”, a new vision of photoprotection focused on how skin responds to light over time, enhancing cellular resilience to daily exposome stress.

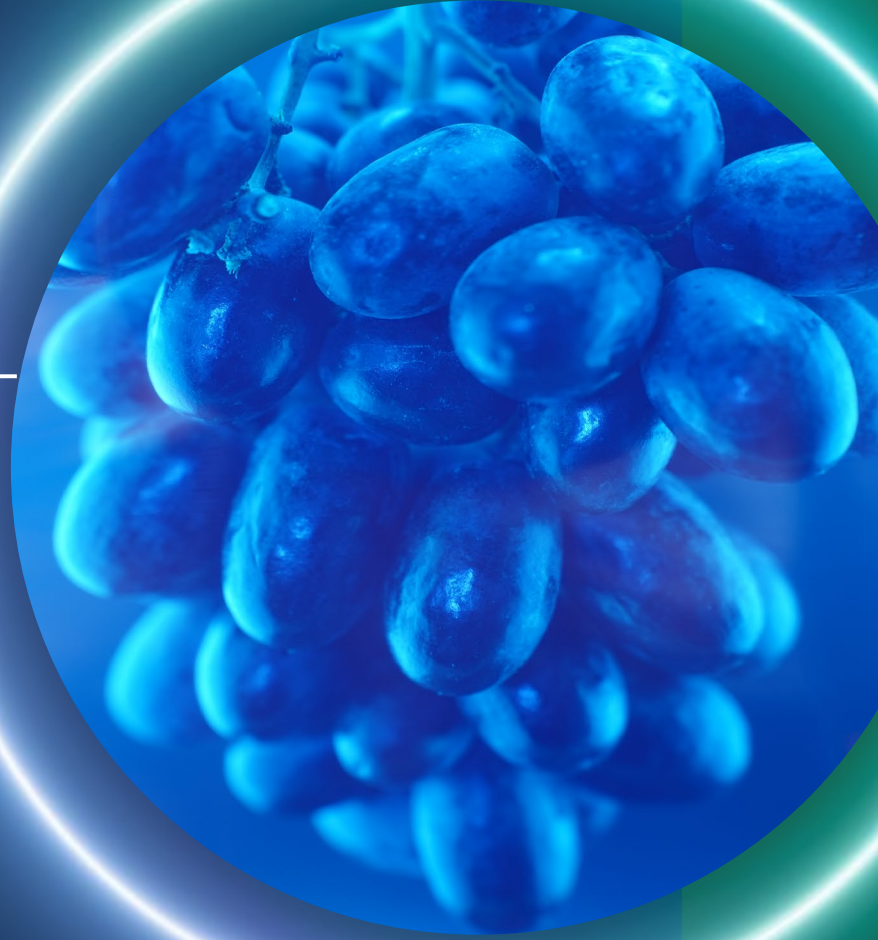
Working where conventional filters stop, it targets key pathways involved in photoaging, notably the p38 MAPK stress pathway and downstream MMP-1 expression, central drivers of collagen degradation. By **acting early in this cascade**, it helps regulate the signals that lead to visible aging.

This inside-out strategy supports **multi-level protection**, helping reduce oxidative stress, preserve mitochondrial function, and maintain skin integrity, shifting from damage control to **biohacking light-induced** aging for long-term skin longevity.

Acts where the filters stop.

Active Concepts

Driving innovation



AC LumiVitis is derived from upcycled grape residues from the wine industry, a sector that generates **significant amounts of by-products** after pressing. It transforms underutilized skins and seeds, naturally rich in protective polyphenols, into a high-value active.

Through targeted biofermentation, these compounds are converted into **highly bioavailable metabolites** (phenolic acids, flavonoid derivatives), enhancing stability and biological efficacy.

The result: a next-generation active that **strengthens the skin's defenses** against light-induced aging, bridging photoprotection, cellular longevity, and sustainable biotechnology.

Active Concepts

AC LumiVitis

Saccharomyces Ferment & Vitis Vinifera (Grape) Fruit Cell Extract & Lactobacillus Ferment

AC LumiVitis is your new bioactive ally designed to protect skin from the cumulative effects of modern light exposure. It defends against photoaging caused by sunlight, blue light from screens, and red light, acting beyond traditional filters and antioxidants.

Derived from upcycled vineyard byproducts and enhanced through biofermentation, AC LumiVitis represents a vineyard-to-skin innovation that supports cellular resilience, mitochondrial health, and skin longevity.

Rather than simply blocking light or neutralizing free radicals, AC LumiVitis works at the molecular signaling level, helping the skin maintain its collagen integrity, brightness, and youthful structure.

Multi-Spectrum Light Defense | Mitochondrial Longevity | Skin Luminosity

Benefits

MITOCHONDRIAL LONGEVITY

Helps protect mitochondria from light-induced oxidative stress, preserving cellular energy and resilience , powered by innovative biofermented grape actives.

MULTI -SPECTRUM LIGHT DEFENSE

Reinforces the skin’s internal defenses against the full light spectrum, acting at the cellular level where SPF filters cannot.

SKIN LUMINOSITY

Helps modulate key photoaging pathways such as p38 and MMP-1 to limit collagen degradation, while supporting skin luminosity.

Product Passport

Fruit Cells are Grown in Culture

Biofermentation:
Inoculation of Fruit Cells
with Saccharomyces

Filtration & Extraction in Water &
2,3-Butanediol at Specific pH and
Temperature for Specific Duration

Addition of
Lactobacillus Ferment

Isolation of Fruit Cells from
Vitis Vinifera (Grape)

AC LumiVitis

Manufacturing Process.

Efficacy Studies

"Stress Switch" Modulation

- MMP-1 ELISA

Mutli-Spectrum Light Defense

- Total Cellular Collagen in Response to Light Spectra

Mitochondrial Longevity

- Cellular Mitophagy-Parkin ELISA

Cellular Energetics

- Oxidative Phosphorylation

Glycation Prevention

- Advanced Glycation End Products Assay

Anti-inflammatory & Antioxidant

- IL-6 ELISA
- ROS Assay

Barrier & Hydration Support

- Moisturization Study
- TEWL Study

Brightness & Skin Appearance

- Melanin Inhibition Assay
- Skin Brightness Study
- VISIA – Reduction in Spots
- VISIA – Reduction in Red Areas

Microbiome Friendly

- In Vivo Dermal Microbiome Assay

"Stress Switch" Modulation

Matrix metalloproteinase-1 (MMP-1) is an enzyme responsible for breaking down collagen in the skin's extracellular matrix. To evaluate the protective potential of AC LumiVitis, an in *vitro* ELISA assay was conducted using human dermal fibroblasts exposed to UV-B or blue light to mimic light-induced stress. Following irradiation, cells were treated with AC LumiVitis and MMP-1 levels were quantified using antibody-based colorimetric detection.

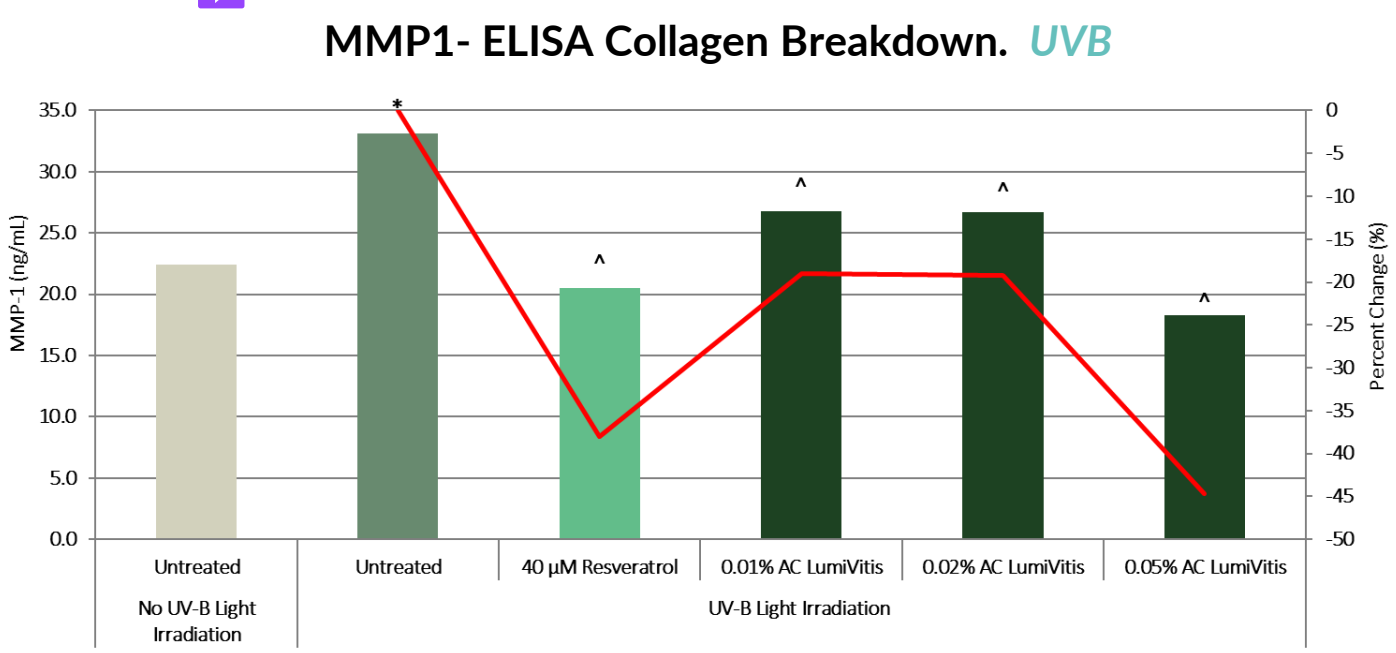


Figure 1. The effect of UV-B Light Irradiation on MMP-1 Concentrations in Fibroblasts. * indicates significance ($p \leq 0.05$) compared to untreated fibroblasts. ^ indicates significance ($p \leq 0.05$) compared to untreated fibroblasts with irradiation.

At 0.05%, AC LumiVitis reduces collagen breakdown induced by UV-B exposure by

–45%

"Stress Switch" Modulation

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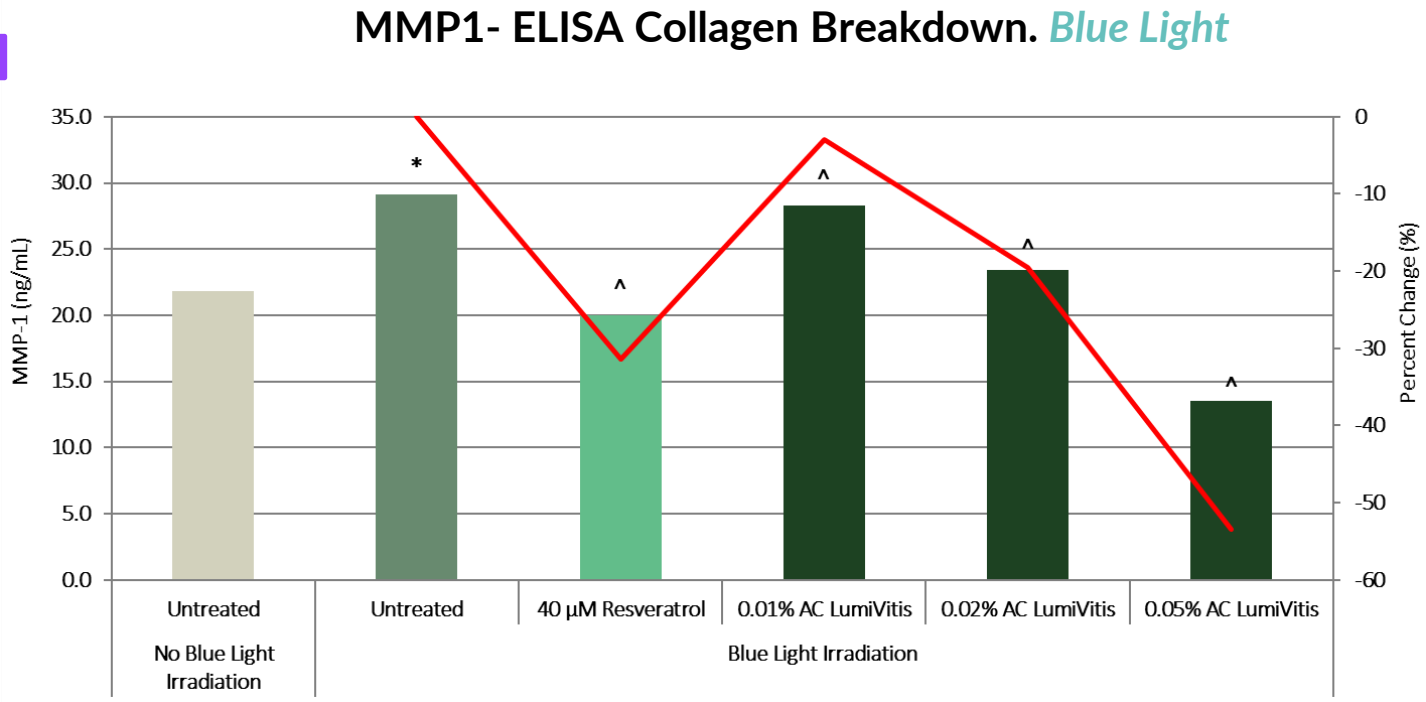

Figure 2. The effect of Blue Light Irradiation on MMP-1 Concentrations in Fibroblasts. * indicates significance ($p \leq 0.05$) compared to untreated fibroblasts. ^ indicates significance ($p \leq 0.05$) compared to untreated fibroblasts with irradiation.

At 0.05%, AC LumiVitis reduces collagen breakdown induced by **Blue Light exposure** by

–53%

Multi Spectrum Light Defense

To evaluate the ability of AC LumiVitis to support collagen integrity under light-induced stress, an *in vitro* Total Cellular Protein in Response to Light Spectra assay was conducted using human dermal fibroblasts exposed to UV-B, blue light, red light, or near infrared radiation. Sirius Red selectively binds to collagen while Fast Green binds to non-collagen proteins, enabling semiquantitative measurements of collagen levels through optical density analysis. By comparing treated and untreated samples, this assay assesses how AC LumiVitis helps protect collagen synthesis following light exposure.

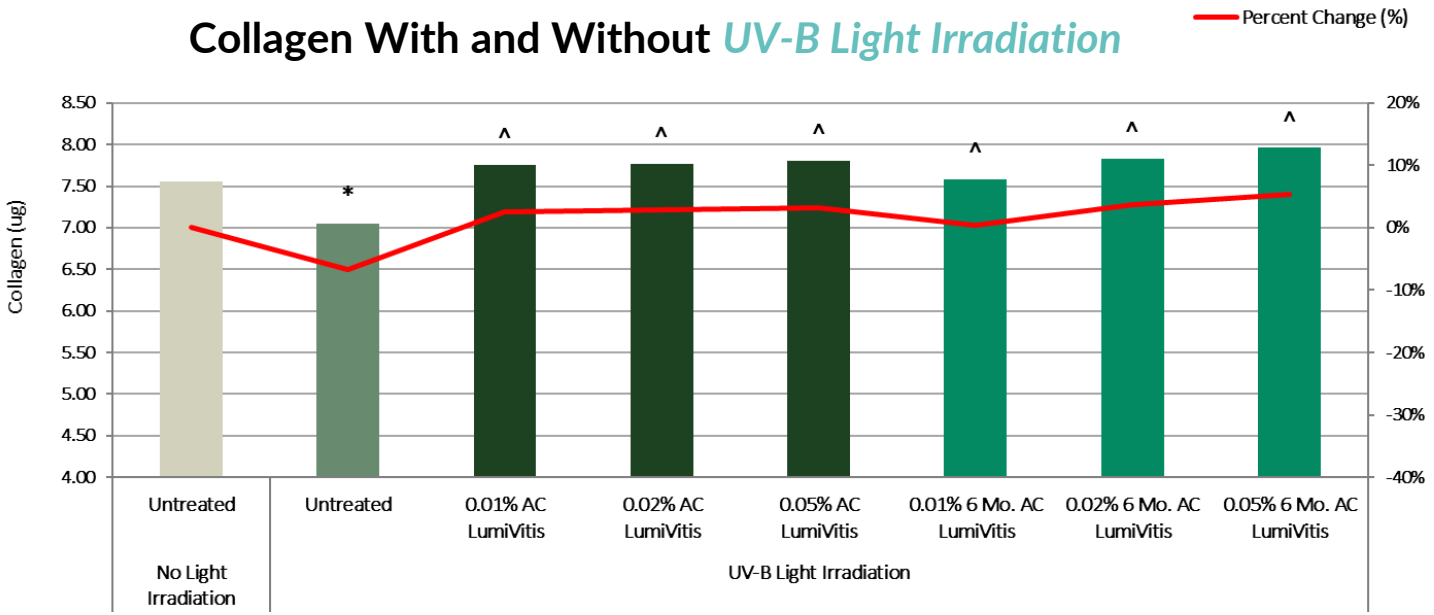

Figure 3. The effect of UV-B Light Irradiation on Collagen. * indicates significance ($p \leq 0.05$) compared to untreated fibroblasts. ^ indicates significance ($p \leq 0.05$) compared to untreated fibroblasts with irradiation. ` indicates significance ($p \leq 0.05$) between time of manufacture and six-month AC LumiVitis batches.

At 0.02%, AC LumiVitis increases collagen by on cells treated with **UV-B Light** by

+10%

Multi Spectrum Light Defense

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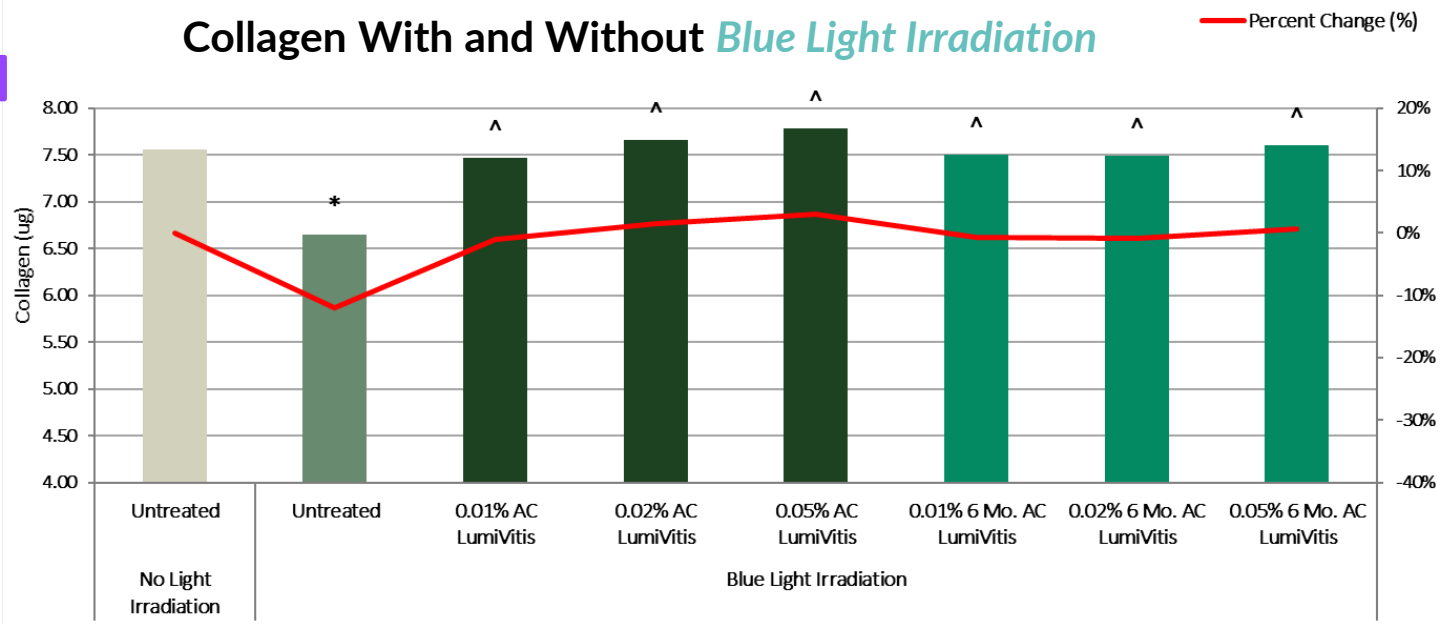

Figure 4. The effect of Blue Light Irradiation on Collagen. * indicates significance ($p \leq 0.05$) compared to untreated fibroblasts. ^ indicates significance ($p \leq 0.05$) compared to untreated fibroblasts with irradiation. ` indicates significance ($p \leq 0.05$) between time of manufacture and six-month AC LumiVitis batches.

At 0.02%, AC LumiVitis increases collagen by on cells treated with **Blue Light** by

+15%

Multi Spectrum Light Defense

To evaluate the ability of AC LumiVitis to support collagen integrity under light-induced stress, an *in vitro* Total Cellular Protein in Response to Light Spectra assay was conducted using human dermal fibroblasts exposed to UV-B, blue light, red light, or near infrared radiation. Sirius Red selectively binds to collagen while Fast Green binds to non-collagen proteins, enabling semiquantitative measurements of collagen levels through optical density analysis. By comparing treated and untreated samples, this assay assesses how AC LumiVitis helps protect collagen synthesis following light exposure.

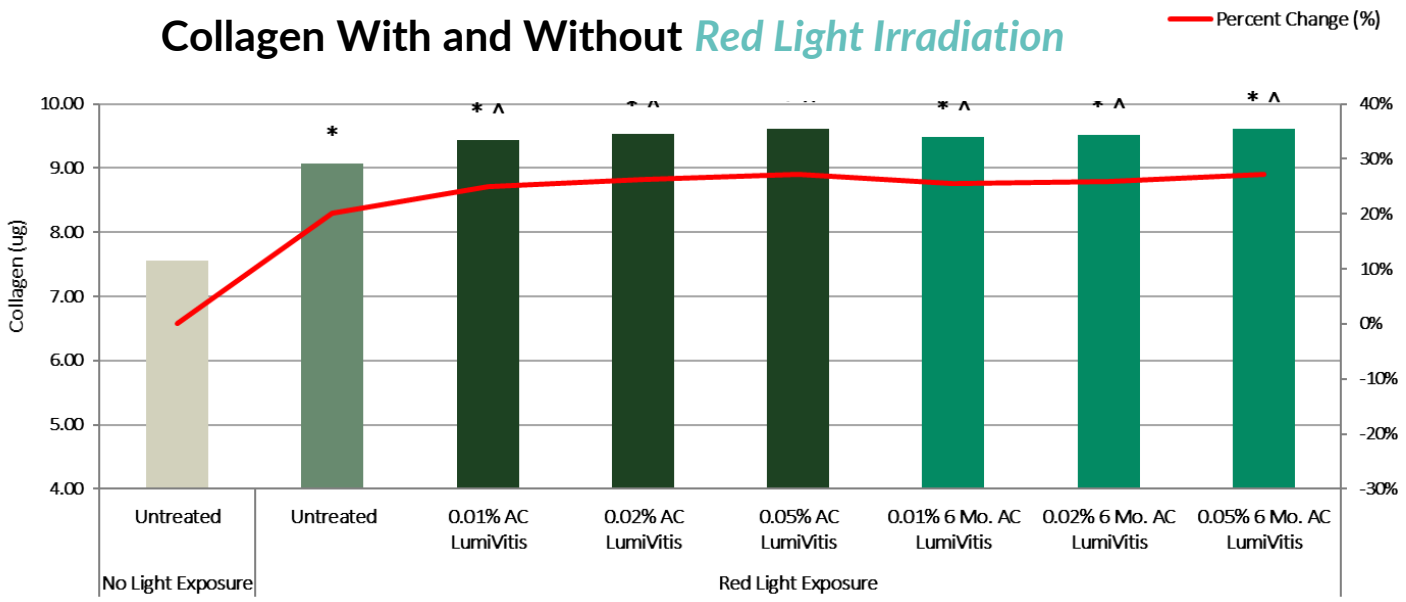

Figure 4. The effect of Red Light Exposure on Collagen. * indicates significance ($p \leq 0.05$) compared to untreated fibroblasts. ^ indicates significance ($p \leq 0.05$) compared to untreated fibroblasts with exposure. ` indicates significance ($p \leq 0.05$) between time of manufacture and six-month AC LumiVitis batches.

At 0.02%, AC LumiVitis increases collagen by on cells treated with **Red Light** by

+26%

Multi Spectrum Light Defense

To evaluate the ability of AC LumiVitis to support collagen integrity under light-induced stress, an *in vitro* Total Cellular Protein in Response to Light Spectra assay was conducted using human dermal fibroblasts exposed to UV-B, blue light, red light, or near infrared radiation. Sirius Red selectively binds to collagen while Fast Green binds to non-collagen proteins, enabling semiquantitative measurements of collagen levels through optical density analysis. By comparing treated and untreated samples, this assay assesses how AC LumiVitis helps protect collagen synthesis following light exposure.

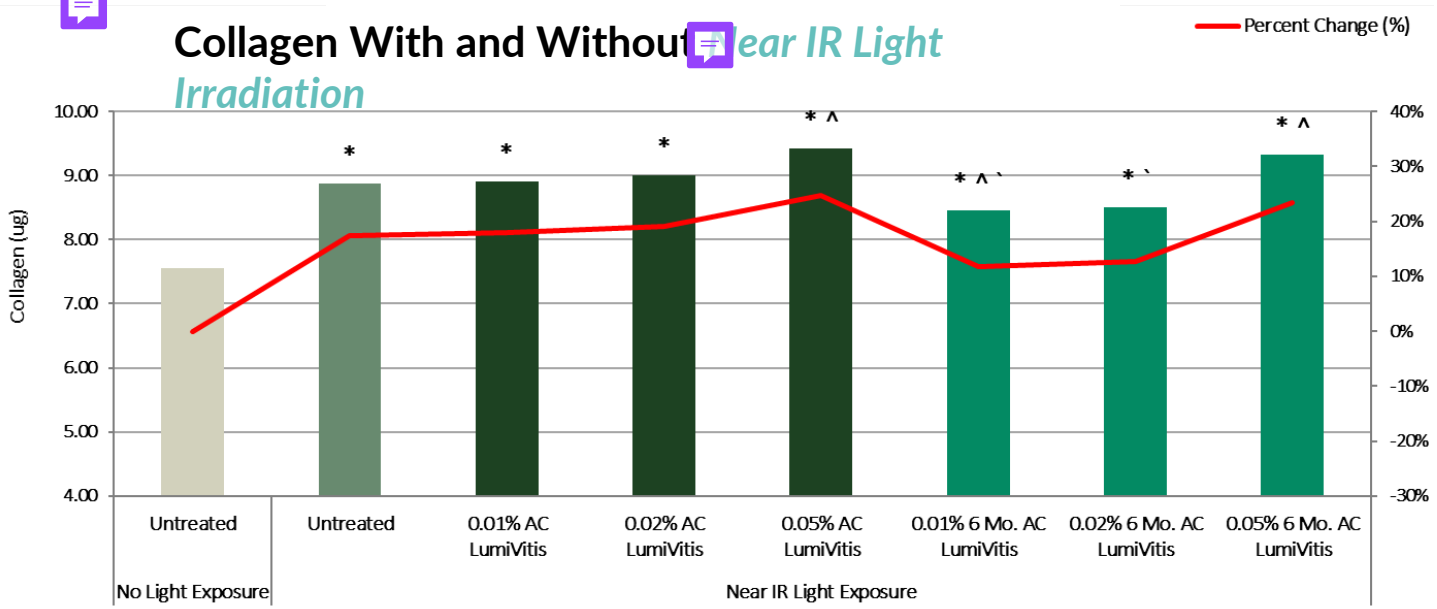

Figure 5. The effect of Near IR Light Exposure on Collagen. * indicates significance ($p \leq 0.05$) compared to untreated fibroblasts. ^ indicates significance ($p \leq 0.05$) compared to untreated fibroblasts with exposure. ` indicates significance ($p \leq 0.05$) between time of manufacture and six-month AC LumiVitis batches.

At 0.02%, AC LumiVitis increases collagen by on cells treated with **Near IR Light** by

+19%

Mitochondrial Longevity

Mitophagy is a specialized cellular renewal process that removed damaged mitochondria to maintain healthy energy production. To evaluate the ability of AC LumiVitis to support mitochondrial recovery following light-induced stress, a cellular mitophagy assay was performed by measuring the expression of Parkin, a key protein responsible for identifying and tagging damaged mitochondria for removal. Human epidermal keratinocytes were exposed to UV-B or blue light and treated with AC LumiVitis, after which Parkin levels were quantified using a colorimetric ELISA.

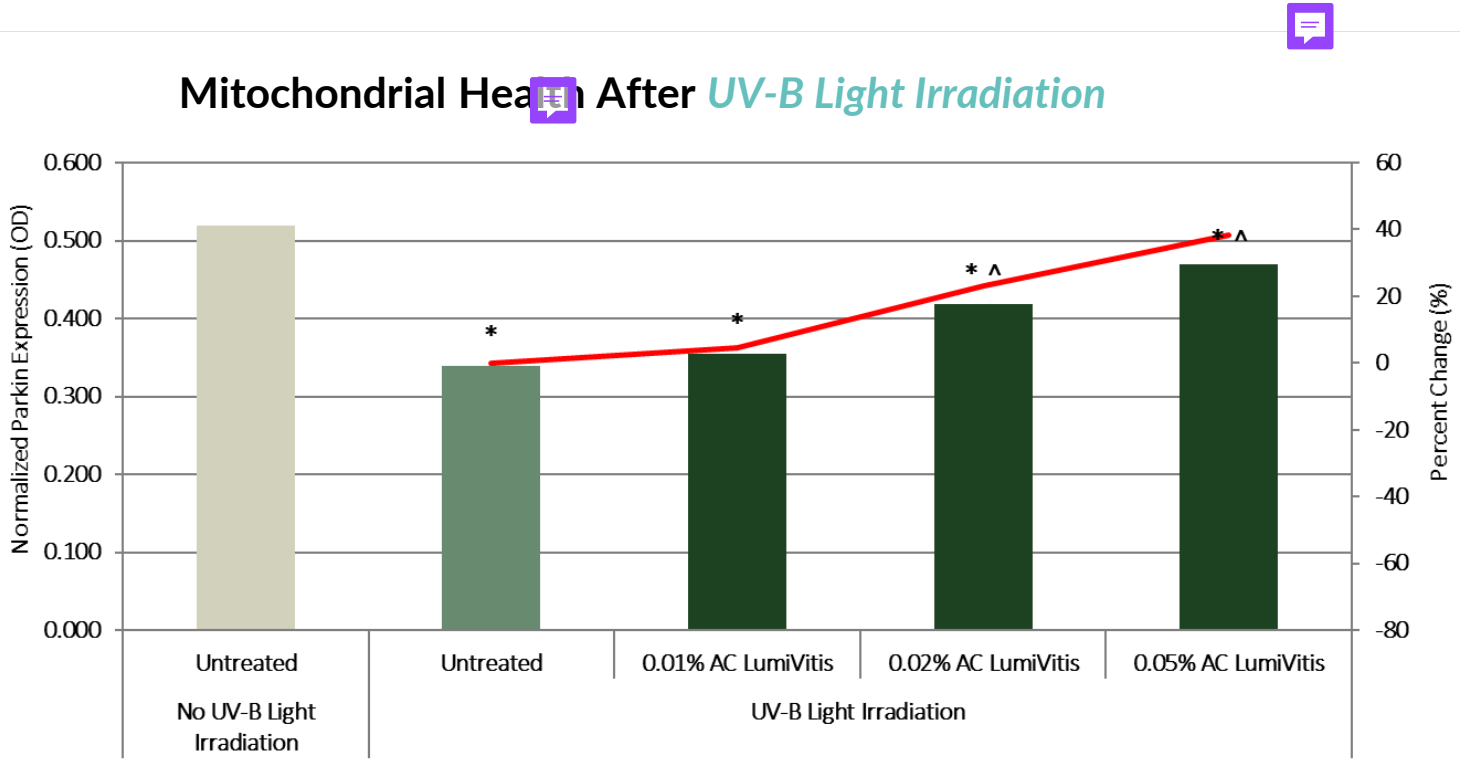

Figure 6. The effect of UV-B Light Irradiation on Parkin Expression in Keratinocytes. * indicates significance ($p \leq 0.05$) compared to untreated keratinocytes. ^ indicates significance ($p \leq 0.05$) compared to untreated keratinocytes with irradiation.

At 0.05%, AC LumiVitis boosts cellular stress defense after UV-B irradiation by

+38%

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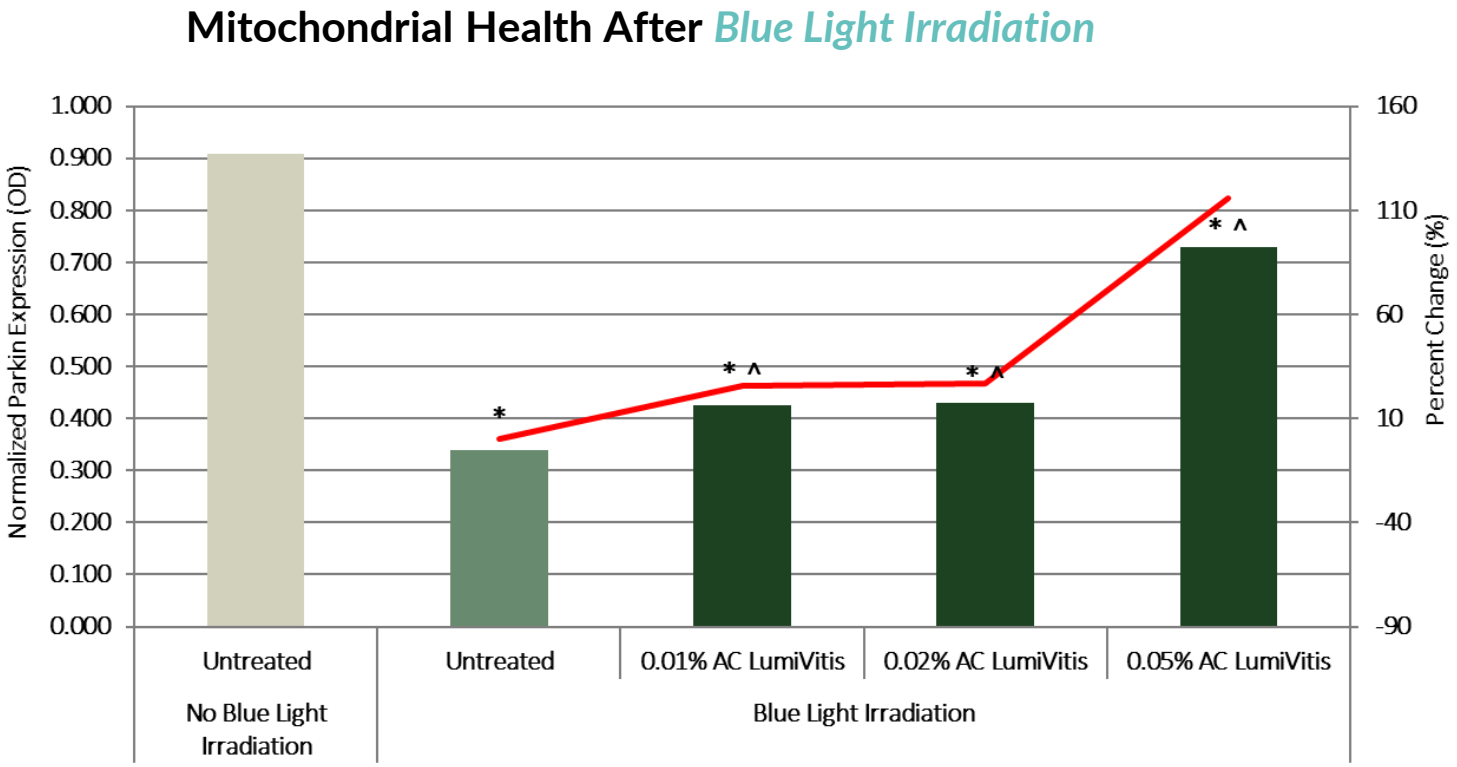


At 0.05%, AC LumiVitis boosts cellular stress defense after Blue Light irradiation by

+116%

Figure 7. The effect of Blue Light Irradiation on Parkin Expression in Keratinocytes. * indicates significance ($p \leq 0.05$) compared to untreated keratinocytes. ^ indicates significance ($p \leq 0.05$) compared to untreated keratinocytes with irradiation.

Sugar-Induced Aging

Advanced glycation end-products (AGEs) form when sugars bind to proteins such as collagen, leading to oxidative stress, inflammation, and impaired cellular function. To evaluate the protective potential of AC LumiVitis, an in vitro glycated collagen model was developed using the glycation precursor 3-deoxyglucosone (3DG) to simulate sugar-induced collagen damage. Human dermal fibroblasts were seeded onto glycated collagen surfaces treated with AC LumiVitis, and cellular behavior was assessed through measurements of fibroblast adherence and migration using fluorescence detection and a scratch-wound healing model.

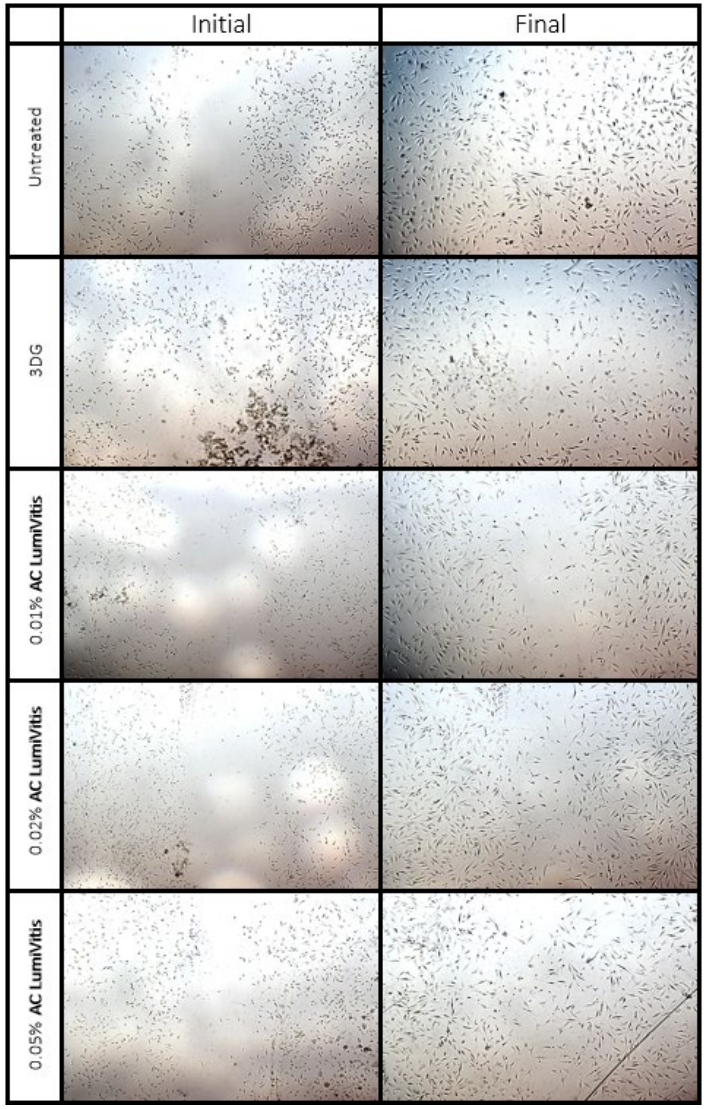


Image 1. Representative Images of Fibroblast Migration Over Time.

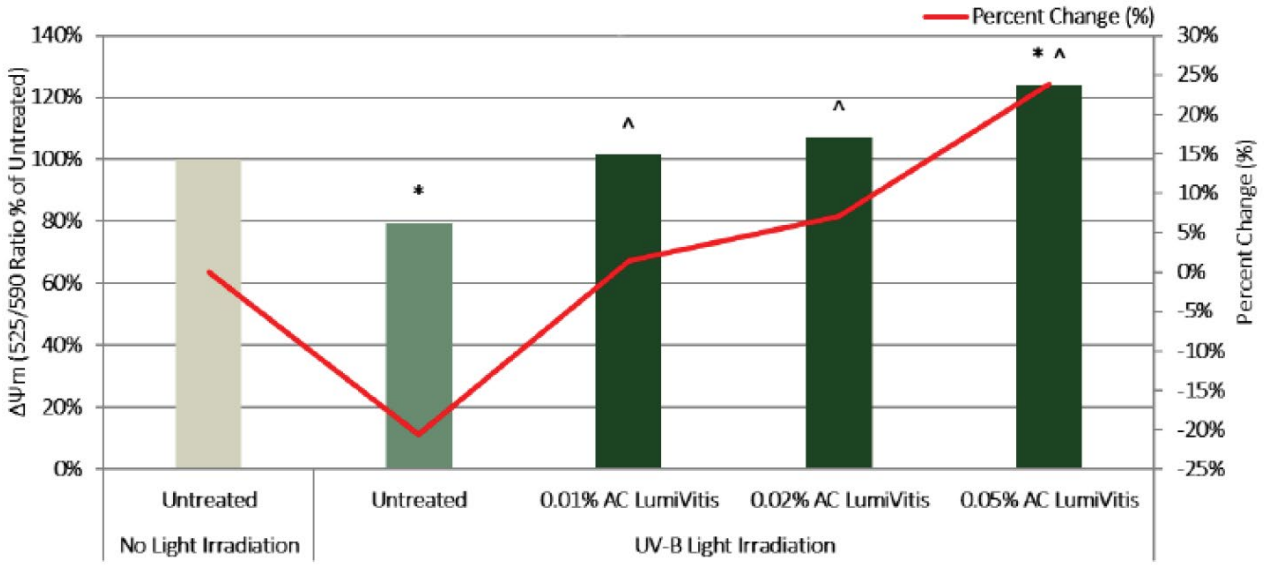
At 0.05%, AC LumiVitis exhibits wound closures by

+100%

Cellular Energetics

Healthy cellular metabolism relies on mitochondria to generate ATP, and a key indicator of mitochondrial health is the mitochondrial membrane potential (ΔΨm), an electrochemical gradient that drives oxidative phosphorylation and ATP production. To evaluate the ability of AC LumiVitis to support mitochondrial energy production, a mitochondrial membrane potential assay was conducted using human dermal fibroblasts exposed to light-induced stress. This assay utilizes the JC-10 fluorescent dye, which detects changed in ΔΨmas an indicator of mitochondrial activity and cellular energy generation.

Oxidative Phosphorylation with *UV-B Light Irradiation*



At 0.05%, AC LumiVitis increases mitochondrial health on UV-B-treated cells by

+24%

Figure 8. The Effect of UV-B Light Irradiation on ΔΨm in Dermal Fibroblasts. * indicates significance ($p \leq 0.05$) compared to untreated fibroblasts. ^ indicates significance ($p \leq 0.05$) compared to untreated fibroblasts with irradiation.

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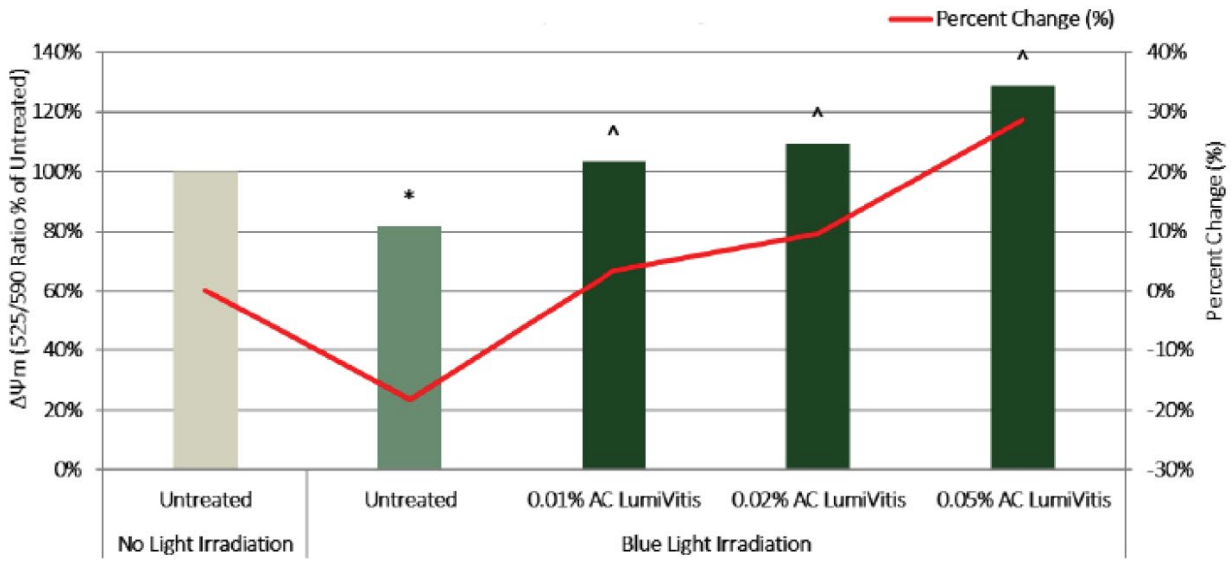
Oxidative Phosphorylation with *Blue Light Irradiation*



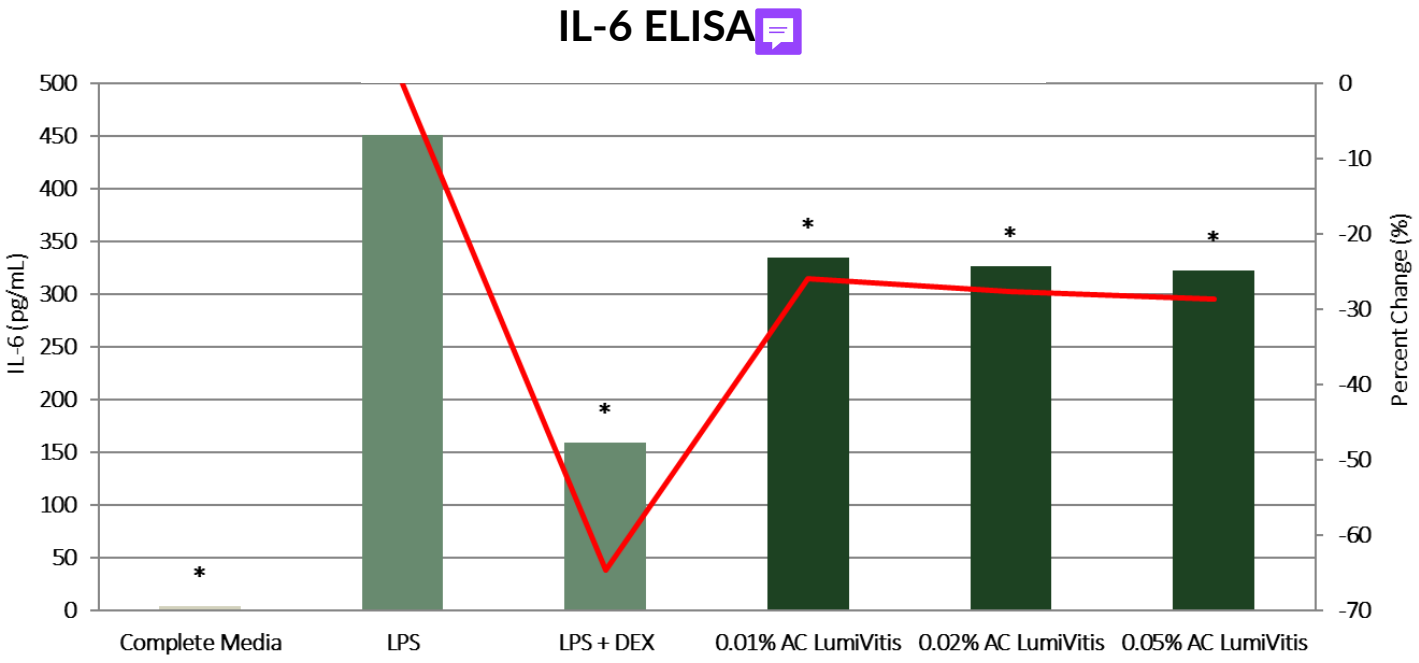
At 0.05%, AC LumiVitis increases mitochondrial health on **Blue Light-treated** cells by

+29%

Figure 9. The Effect of Blue Light Irradiation on ΔΨm in Dermal Fibroblasts. * indicates significance ($p \leq 0.05$) compared to untreated fibroblasts. ^ indicates significance ($p \leq 0.05$) compared to untreated fibroblasts with irradiation.

Anti-Inflammatory

Interleukin-6 (IL-6) is a key proinflammatory cytokine that plays a central role in skin inflammation by activating the NF-κB signaling pathway, which stimulates the production of inflammatory mediators and collagen-degrading enzymes. To evaluate the anti-inflammatory potential of AC LumiVitis, an *in vitro* ELISA assay was conducted using human dermal fibroblasts stimulated with lipopolysaccharide (LPS) to mimic an inflammatory environment. Following treatment with AC LumiVitis, IL-6 levels released into the culture media were quantified through antibody-based colorimetric detection.



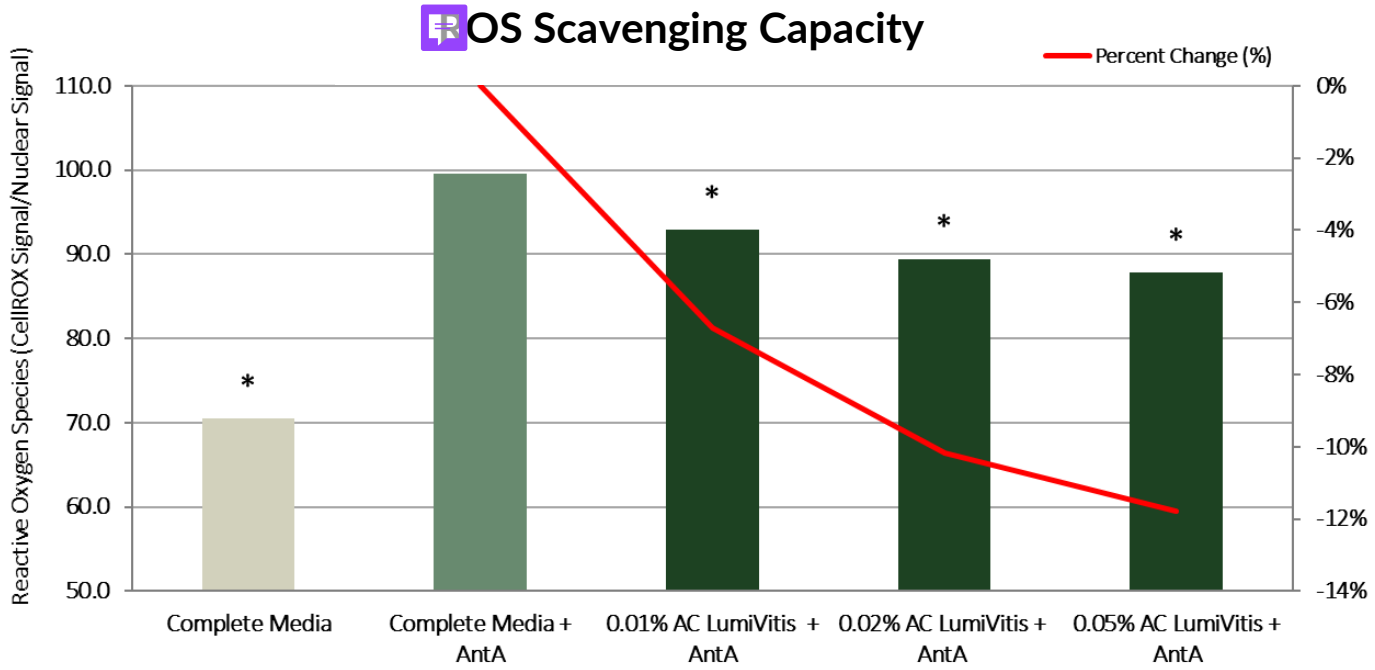
At 0.05%, AC LumiVitis decreases inflammation levels by

–29%

Figure 10. The effect of AC LumiVitis on IL-6 concentrations in fibroblasts. * indicates significance ($p \leq 0.05$) compared to fibroblasts incubated with LPS.

Antioxidant

Reactive oxygen species (ROS) are naturally produced during cellular metabolism, but environmental stressors such as UV radiation, pollution, and aging can cause excessive ROS accumulation, leading to oxidative stress. To evaluate the antioxidant potential of AC LumiVitis, an *in vitro* ROS scavenging assay was conducted using human dermal fibroblasts subjected to induced oxidative stress. Two fluorescent dyes were used to quantify ROS levels and normalize results to cell count, allowing precise measurement of oxidative stress within the cells.



At 0.05%, AC LumiVitis decreases oxidative stress levels by

-12%

Figure 11. The effect of AC LumiVitis on ROS scavenging. * indicates significance ($p \leq 0.05$) compared to AntA treated fibroblasts..

Moisturization

Skin hydration is essential for maintaining the structural integrity, flexibility, and barrier function of the stratum corneum. To evaluate the moisturizing benefits of AC LumiVitis, a four-week *in vivo* study was conducted with 20 healthy volunteers who applied formulations containing the ingredient to designated sites on the forearm twice daily. Skin hydration was measured weekly using a conductance-based probe that detects moisture levels in the upper layers of the skin.

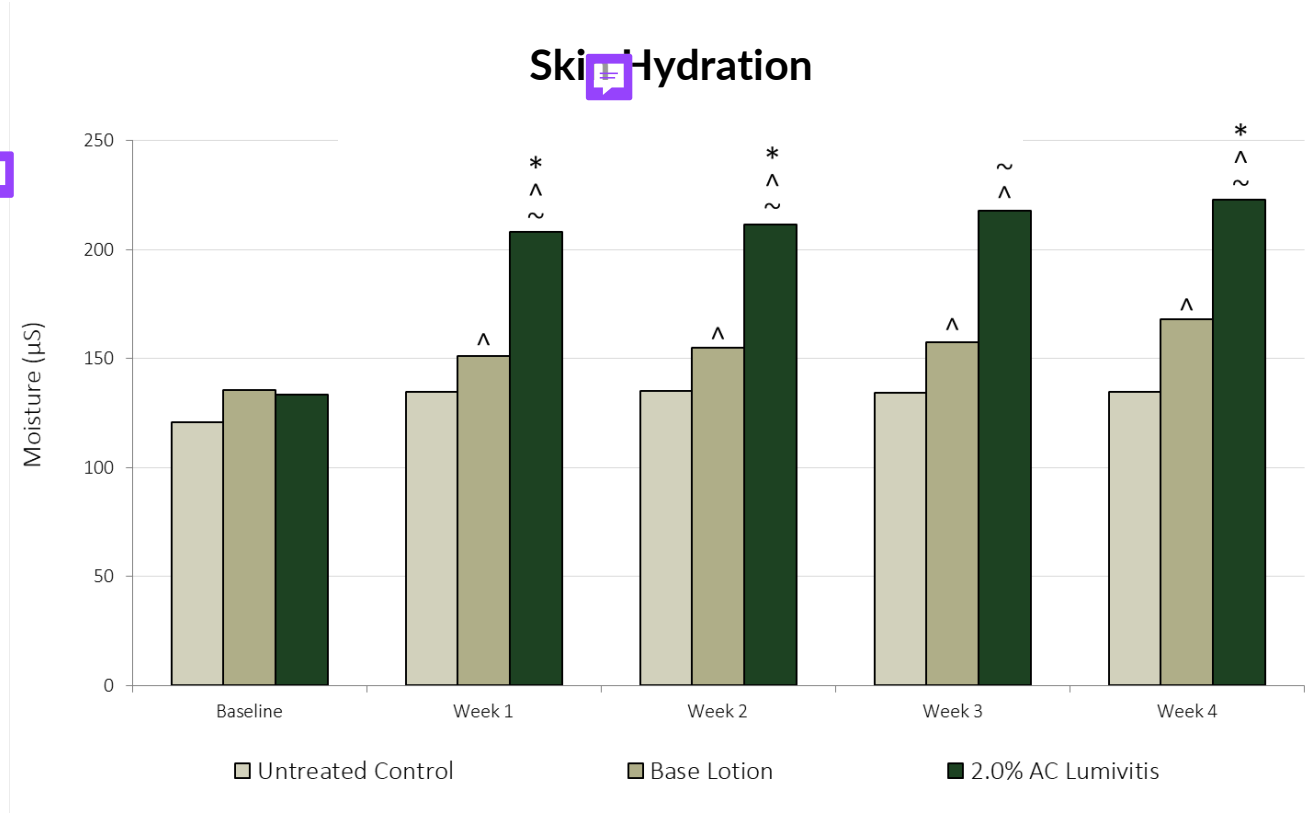


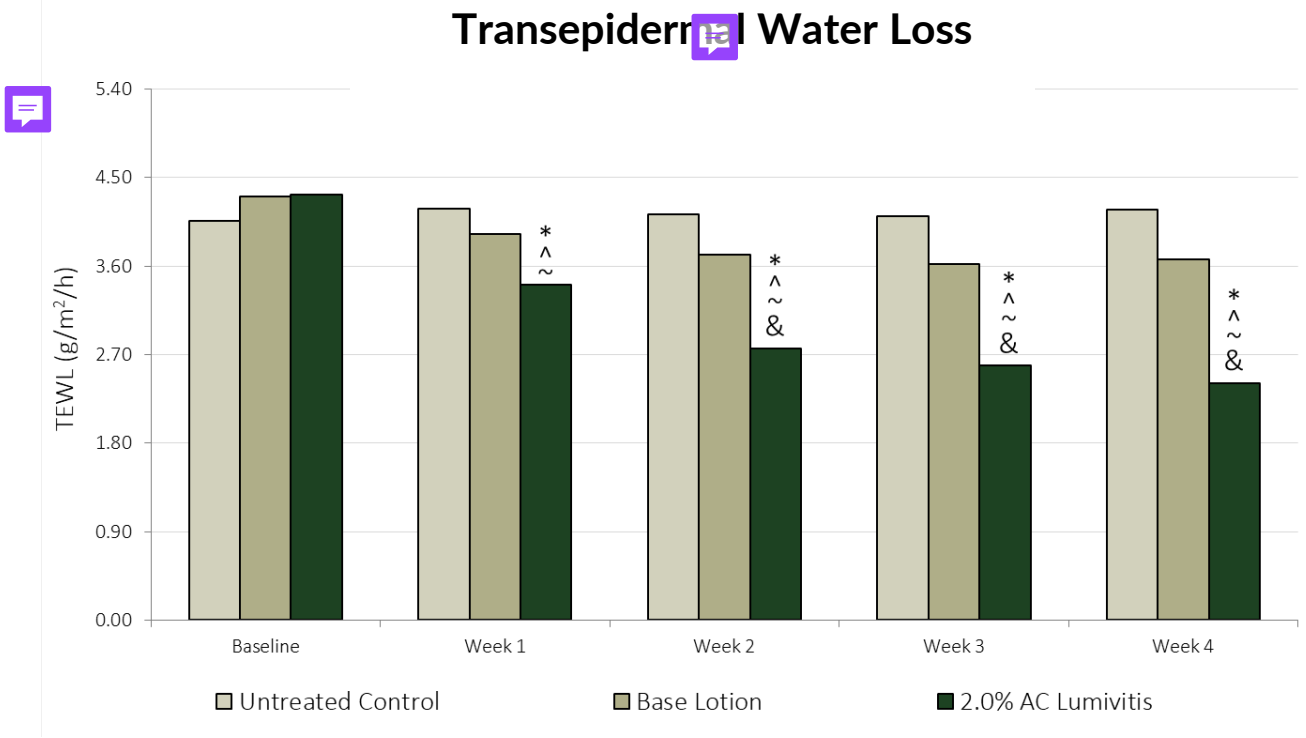
Figure 12. Skin Hydration Overtime* indicates significance ($p \leq 0.05$) compared to Baseline values. ^ indicates significance ($p \leq 0.05$) compared to Untreated Control within the same timepoint. ~ indicates significance ($p \leq 0.05$) compared to Base Lotion within the same timepoint.

At 2%, AC LumiVitis augments skin moisturization by

+67%

Barrier Repair

The skin's protective barrier plays a vital role in maintaining hydration and overall skin health by regulating transepidermal water loss (TEWL), the passive evaporation of water from the skin's surface. To evaluate the moisture-retention benefits of AC LumiVitis, a four-week in vivo study was conducted with 20 healthy volunteers who applied formulations containing the ingredient to designated forearm test sites twice daily. TEWL levels were measured weekly using a specialized probe that detects changes in water vapor density above the skin's surface.



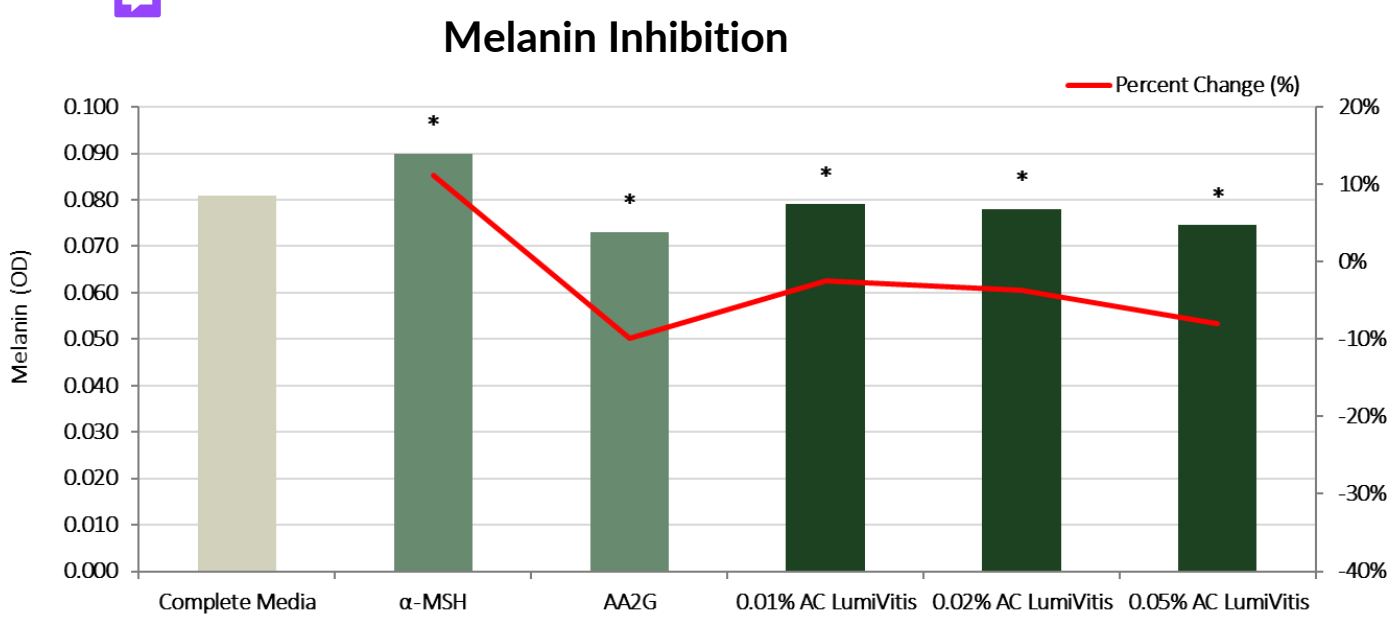
At 2%, AC LumiVitis reduces water loss by

–44%

Figure 13. TEWL Measurements Overtime. * indicates significance ($p \leq 0.05$) compared to Baseline values. ^ indicates significance ($p \leq 0.05$) compared to Untreated Control within the same timepoint. ~ indicates significance ($p \leq 0.05$) compared to Base Lotion within the same timepoint.

Even Skin Tone

Skin pigmentation is regulated by melanogenesis, the biological process in which melanocytes product melanin through the enzymatic conversion of L-tyrosine to dopaquinone by tyrosinase. To evalute the potential of AC LumiVitis to help regulate this pathway, an in vitro melanin inhibition assay was conducted using human epidermal melanocytes. Cells were treated with AC LumiVitis and the amount of melanin produced was quantified through optical density measurements following melanin extraction, evaluating the ingredient's ability to support a more even skin tone.



At 0.05%, AC LumiVitis decreases melanin levels by

-8%

Figure 14. The effect of α-MSH (20 µg/mL), AA2G (5 mM), and AC LumiVitis on melanin concentrations in epidermal melanocytes. * indicates significance ($p \leq 0.05$) compared to untreated melanocytes.

Skin Luminosity

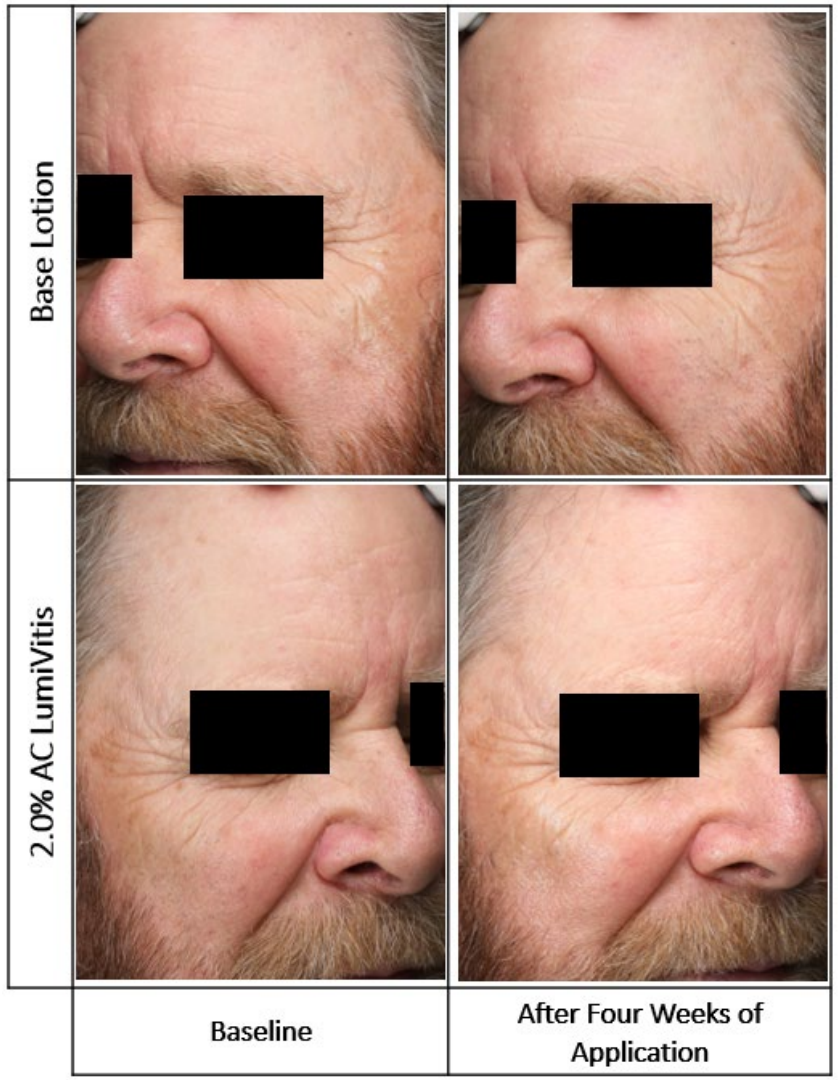


Image 2. VISIA Images of a Participant Over Time after Base[illegible]tion (Top) and 2.0% AC LumiVitis (Bottom) Appli[illegible]on.

Skin luminosity refers to the amount of light reflected from the skin's surface, influencing overall brightness and radiance. To evaluate the brightening potential of AC LumiVitis, a four-week in vivo study was conducted with participants applying formulations to designated halves of the face twice daily. Skin brightness was measured weekly using a colorimetric probe that quantifies L* values, a standard indicator of skin luminosity. Blue light exposure was also monitored through participants' screen time to reflect real-world conditions.

At 2%, AC LumiVitis improves brightness by

+4.6%

Redness Reduction

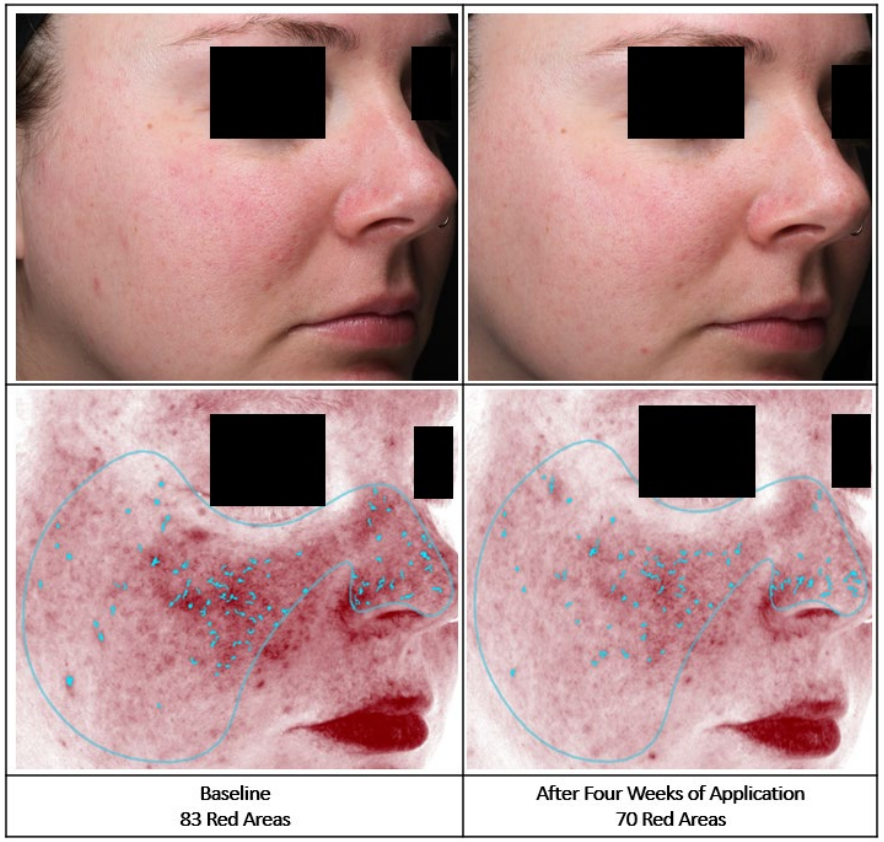


Image 3. Images of Participant Treated with 2.0% AC LumiVitis. Natural Photos (top) and VISIA Image Enhancement (bottom) Before and After Four weeks. Red Areas are concentrated darker red areas and denoted by light blue areas.

Visible red areas in the skin—often associated with inflammation, irritation, or vascular activity—can contribute to an uneven complexion and diminish overall skin clarity. o evaluate the ability of AC LumiVitis to improve skin tone, a four-week in vivo study was conducted in which participants applied formulations to designated halves of the face twice daily. High-resolution facial images were captured weekly using the VISIA® Complexion Analysis System to quantify red areas and assess overall skin appearance, while participants' blue light exposure was monitored through screen time to reflect real-world conditions.

At 2%, AC LumiVitis decreases red areas by

-14%

Hyperpigmentation Reduction

Surface spots, including hyperpigmentation, freckles, and post-acne marks—are localized areas of discoloration that can create an uneven skin tone and diminish overall radiance. To evaluate the ability of AC LumiVitis to improve overall complexion, a four-week in vivo study was conducted in which participants applied formulations to designated halves of the face twice daily. High-resolution facial images were captured weekly using the VISIA® Complexion Analysis System to quantify surface spot counts, while participants' blue light exposure was monitored through screen time to reflect real world conditions.

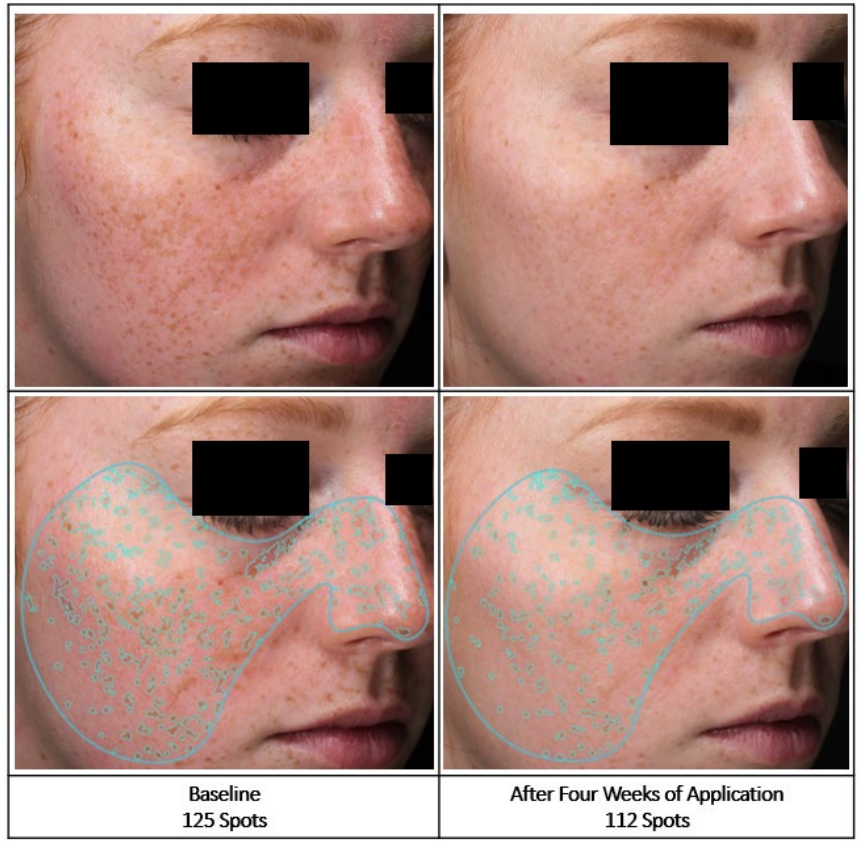


Image 4. Images of Participant Treated with 2.0% AC LumiVitis. Natural Photos (top) and VISIA Image Enhancement (bottom) Before and After Four weeks. Surface Spots are denoted by light blue shapes.

At 2%, AC LumiVitis decreases surface spots by

-6%

Dermal Microbiome

An Acute Blue Light Microbiome Study evaluated how topical application of 2.0% AC LumiVitis influences the balance of key skin bacteria on the T-zone following controlled blue light exposure. 10 volunteers applied either a base lotion or a lotion containing 2.0% AC LumiVitis, after which the treated area was exposed to blue light for 15 minutes. Microbiological swabs were collected at baseline, immediately after exposure, and 45 minutes later to assess the presence of *Staphylococcus epidermidis* (beneficial) and *Staphylococcus aureus* (pathogenic). Swabs were cultured on Mannitol Salt Agar plates, incubated for 24–48 hours, and bacterial growth was evaluated by estimating plate coverage to determine shifts in dermal microbiome balance.

S. epidermidis growth after Blue Light Exposure

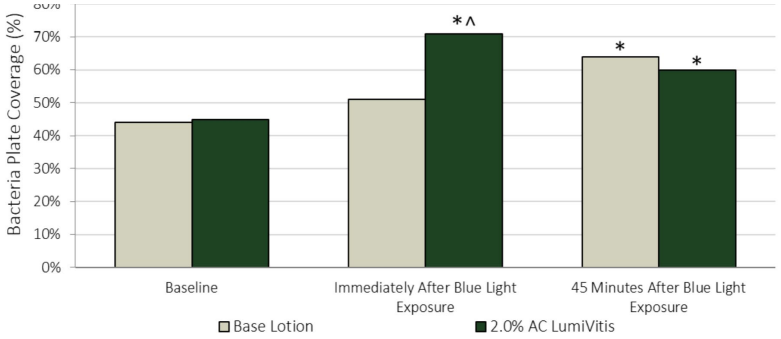


Figure 15. S. epidermidis Plate Coverage Overtime. * indicates significance ($p \leq 0.05$) compared to Baseline values. ^ indicates significance ($p \leq 0.05$) compared to Base Lotion within the same timepoint.

S. aureus growth after Blue Light Exposure

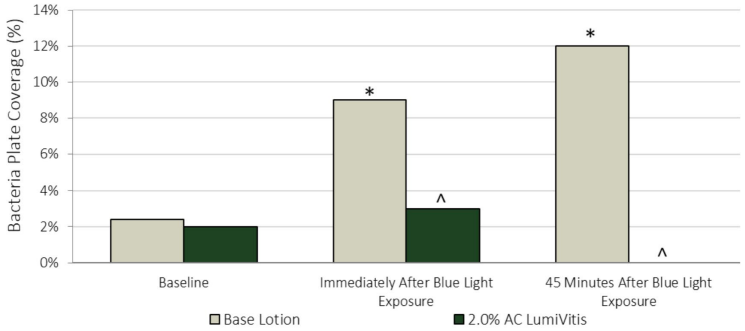


Figure 16. S. aureus Plate Coverage Overtime. * indicates significance ($p \leq 0.05$) compared to Baseline values. ^ indicates significance ($p \leq 0.05$) compared to Base Lotion within the same timepoint.

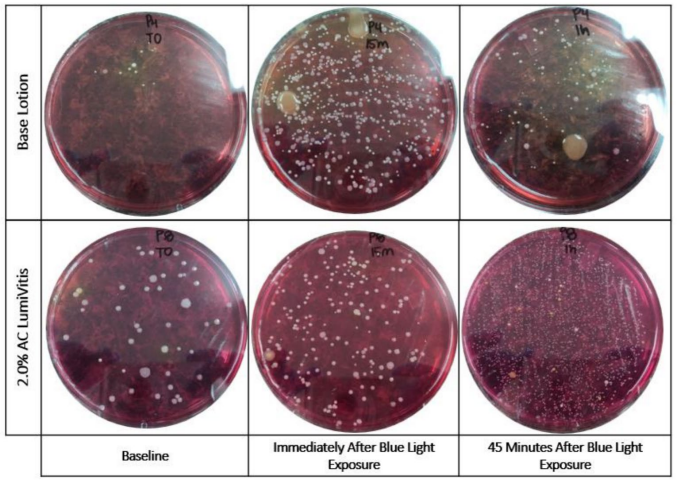


Image 5. Plate Photos demonstrating the presence of S. epidermidis and S. aureus coverage throughout the study. White, or colorless, dots represent S. epidermidis bacteria whereas yellow dots represent S. aureus bacteria.

At 2%, AC LumiVitis enhance microbiome resilience by

+71%

Summary

WHAT.

AC LumiVitis is an advanced bioactive ingredient designed to protect the skin from **cumulative damage caused by light**. It supports **mitochondrial health** and collagen preservation to maintain skin brightness and resilience.

WHY.

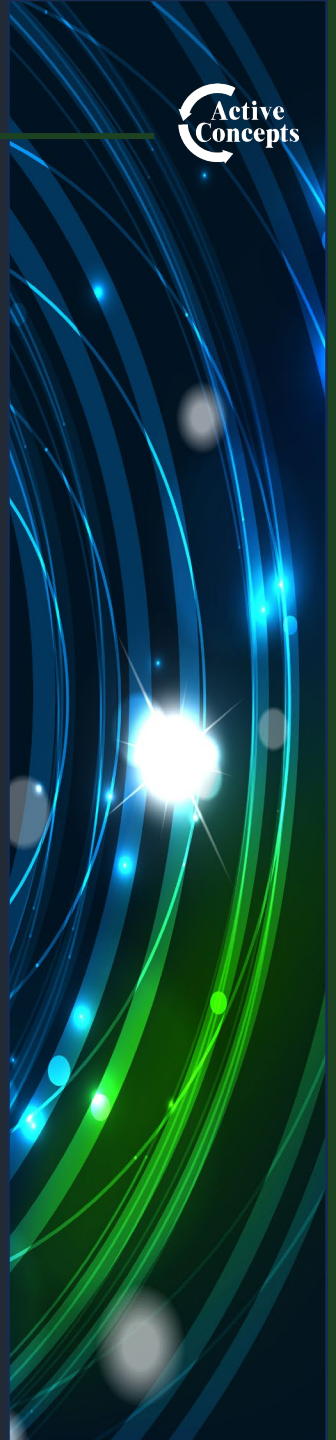
Light exposure activates the p38 cellular stress pathway, leading to collagen breakdown, inflammation, and photoaging. AC LumiVitis acts upstream to **modulate this stress switch**, helping **prevent multiple aging** signals beyond what antioxidants alone can achieve.

MADE OF.

Derived from **upcycled grape byproducts** and enhanced through **biofermentation**, this process concentrates powerful polyphenols and bioactive metabolites complex for effective skin protection.

ACTION.

AC LumiVitis helps protect mitochondria, reduce oxidative stress, and preserve collagen under light exposure. This results in brighter, more even skin with reduced spots, redness, and visible signs of photoaging.



Formulation Inspiration

MILKY PHOTON VEIL

	%	TRADE NAME	INCI	SUPPLIER
PHASE A				
	77.55	D1 Water	Water	Stock
	0.30	Natrlquest E30	Trisodium Ethylenediamine Disuccinate	Innospec
PHASE B				
	2.00	Zemea	Propanediol	Primient Covation
	1.00	Siligel	Xanthan Gum (and) Lecithin (and) Sclerotium Gum (and) Pullulan	Lucas Meyer
PHASE C				
	3.00	Halal Glycerin	Glycerin	Emery
	0.15	Keltrol CG-SFT	Xanthan Gum	CP Kelco
PHASE D				
	3.00	**Volatile Coconut Extract**	Coconut Alkanes, Coco-Caprylate/Caprate	Active Concepts
	8.00	Caprylic/Capric Triglycerides	Caprylic/Capric Triglycerides	Kraft
	2.00	Imwitor 375	Glyceryl Citrate, Lactate, Linoleate, Oleate	IOI Oleochemical
PHASE E				
	0.50	**AC LumiVitis**	Saccharomyces Ferment & Vitis Vinifera (Grape) Fruit Cell Extract & Lactobacillus Ferment	Active Concepts
PHASE F				
	1.00	Euxyl PE 9010	Phenoxyethanol, Ethylhexylglycerin	Shulke
PHASE G				
	0.00	50% Citric Acid	Water Citric Acid	Stock Cargill Inc.

Procedure

1. In a clean sanitized kettle, meter in DI Water and begin mixing using propeller [400-500 rpm]. Add Natrlquest E30 and continue mixing until homogeneous
2. In a separate kettle, meter in Zemea and begin mixing using propeller [300-400 rpm] sprinkle in Siligel and mix until a homogeneous slurry has formed
3. Add Phase B into Phase A with continuous propeller mixing [400-500 rpm]. Mix until batch is homogeneous.
4. In a separate kettle, meter in Glycerin and begin mixing using propeller [300-400 rpm] sprinkle in Keltrol CG-SFT and mix until a homogeneous slurry has formed
5. Add Phase D into Phase AB and mix until batch is homogeneous.
6. In a separate kettle, add Phase D ingredients and mix using propeller [300-400 rpm] until homogeneous. 7. Move Phase ABC to a fine emulsor screen homogenizer and begin mixing [2500-3500 rpm]. Slowly pour Phase D into Phase ABC and miw until batch is homogeneous
8. Once batch is homogeneous, add Phase E to main batch with continuous fine emulsor screen mixing [2500-3000 rpm]
9. Once batch is homogeneous, add Phase F to main batch with continuous fine emulsor screen mixing [2500-3000 rpm]
10. Once batch is homogeneous, check pH and adjust is needed using Phase G. Use a propeller [300-500 rpm] to adjust pH.

Active Concepts

Market Inspiration

SUN MATTERS

SPF 50 LIGHT SERUM

Sun protection serum with SPF 50, Hyaluronic Acid, Ectoin and Photobiome, moisturizing, protective and certified microbiome-friendly, Anti-Aging & vegan.

To go further with AC LumiVitis:

Adding mitochondrial protection + stress-switch modulation

WELEDA

BLUE GENTIAN & EDELWEISS CONTOURING SERUM

The active ingredients of a serum, the care of a body lotion. Discover the revitalizing Serum-Lotion enriched with Collagen+ Active Complex and bakuchiol; it firms the skin and prevents dark spots by neutralizing free radicals.

To go further with AC LumiVitis:

Biohacking multi light-induced stress pathways

SEBAMED

ANTI-AGEING Q10 LIFTING EYE CREAM

The ingredients of sebamed Anti-Ageing Q10 activate the energy production of skin cells and help to maintain skin's smoothness and elasticity. Regularly used, the cream protects against premature skin ageing.

To go further with AC LumiVitis:

Adding digital fatigue recovery for the eye contour

Active Concepts

AC LumiVitis

Active Concepts

Code: 21032

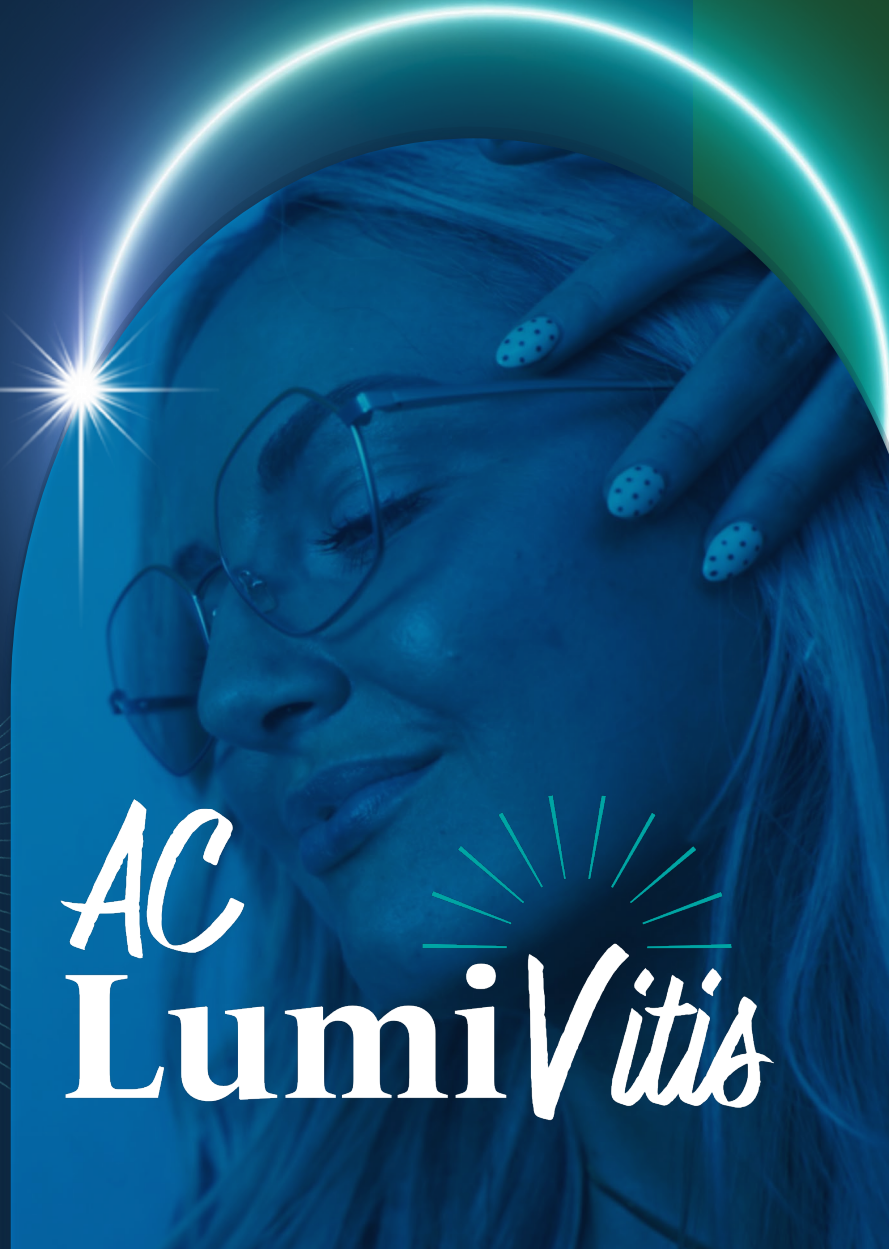
INCI: Saccharomyces Ferment & Vitis Vinifera (Grape) Fruit Cell Extract & Lactobacillus Ferment

Appearance: Clear to Slightly Hazy Liquid Pale Yellow to Amber

Suggested Use Level: 1-5%

Suggested Applications: Light Defense Technology, Mitochondrial Longevity, Skin Luminosity

Standardized for: Ferulic Acid Content (HPLC) 0.5 – 2.5%, Gallic Acid Content (HPLC) 0.5 – 2.5%



In Vitro
In Vivo
ISO 16128 NI & NOI
Vegan Compliant
COSMOS Compliant
China Compliant
Product Passport
Sephora Clean
Credo Clean

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