

AC Griffonia Lysate Advanced



forefront of modern skin care
Neuro-Cosmetics
 immediately perceivable
 tightening + longer term anti-aging
 don't worry
 be happy

BACKGROUND

"When you look good, you feel good." The thought shared by all cosmetic and personal care consumers is: The products we use, make us feel good. These feelings that accompany the use of cosmetics push neuro-cosmetics to the forefront of modern skin care. Serotonin, a neurotransmitter known to promote feelings of happiness, can be capitalized on and marketed as such, to seamlessly enhance products specifically designed as neuro-cosmetics. The naturally occurring amino acid, 5-hydroxytryptophan (5-HTP), is the chemical precursor in the biosynthesis of serotonin. When used, 5-HTP transforms personal care formulas into true neuro-cosmetics, capable of making consumers feel and look good. **AC Griffonia Lysate Advanced** takes advantage of the 5-HTP content in griffonia seed cells, providing formulators with a neuro-cosmetic material that delivers immediately perceivable results and long-term benefits for anti-aging skin care.

SCIENCE

Griffonia, a shrub native to parts of Africa, has developed a unique defense mechanism to protect itself from extreme sun exposure. The seeds of the plant contain 5-HTP, which, as previously mentioned, is the chemical precursor of the neurotransmitter, serotonin.

In addition to being a "feel good" chemical, this neurotransmitter has demonstrated its ability to protect human melanocytes from UV-induced apoptosis. By inhibiting UV induced damage, we can help ameliorate anticipated skin damage caused by over exposure. We can naturally and gently isolate the 5-HTP from the plant for use in cosmetics. Since the plant is constantly under intense UV exposure, it needed to evolve a means to protect itself from UV damage and research has shown that 5-HTP content in the plant is integral to its survival. In the plant, 5-HTP inhibits UV-induced apoptosis or programmed cell death.

Furthermore, Active Concepts extracts the high molecular weight carbohydrates from cells isolated from the African shrub during the manufacturing process for additional anti-aging benefits. High molecular weight carbohydrates act as strong film-formers and are responsible for perceivable sensorial benefits, specifically tightening, associated with **AC Griffonia Lysate Advanced**.

Code Number: 16634

INCI Name: Griffonia Simplicifolia Seed Extract

INCI Status: Conforms

REACH Status: Complies

CAS Number: 999999-99-4

EINECS Number: 310-127-6

Origin: Botanical

Processing:

GMO Free

No Ethoxylation

No Irradiation

No Sulphonation

Additives:

Preservatives: None

Antioxidants: None

Other additives: None

Solvents Used: Water

Appearance: Clear to Slightly Hazy Liquid

Soluble/ Miscible: Water Soluble

Ecological Information:

95.8% Biodegradability

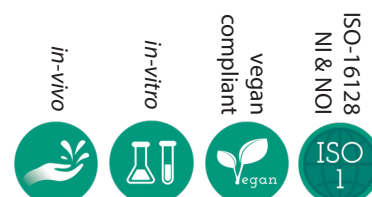
Microbial Count: < 100 CFU/g,
No Pathogens

Suggested Use Levels: 1.0 - 10.0%

Suggested Applications: Anti-Aging,
UV Protection, Tightening, Lifting

Benefits of AC Griffonia Lysate Advanced:

- Immediately Perceivable Results
- Neuro-Cosmetic
- Long Term Anti-Aging Benefits
- 5-HTP Marketing
- UV Protection



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BENEFITS

The combination of components that make up **AC Griffonia Lysate Advanced** result in a long-term anti-aging product, which also imparts a tangible and supple film on the skin. This film not only protects against environmental damage, but also immediately tightens and lifts the skin, revealing a firm, younger-looking complexion.

EFFICACY

Lysek et al. reported 5-HTP is capable of suppressing UV induced apoptosis in human monocytes. The decrease in apoptosis is due to the decrease in UV induced damage, which triggers the cell death. Clearly, these findings suggest that using 5-HTP may be a novel approach to inhibiting extrinsic damage caused by UV radiation.¹ As demonstrated in Figure 1, an increase in the concentration of 5-HTP shows a decrease in UV induced apoptosis.

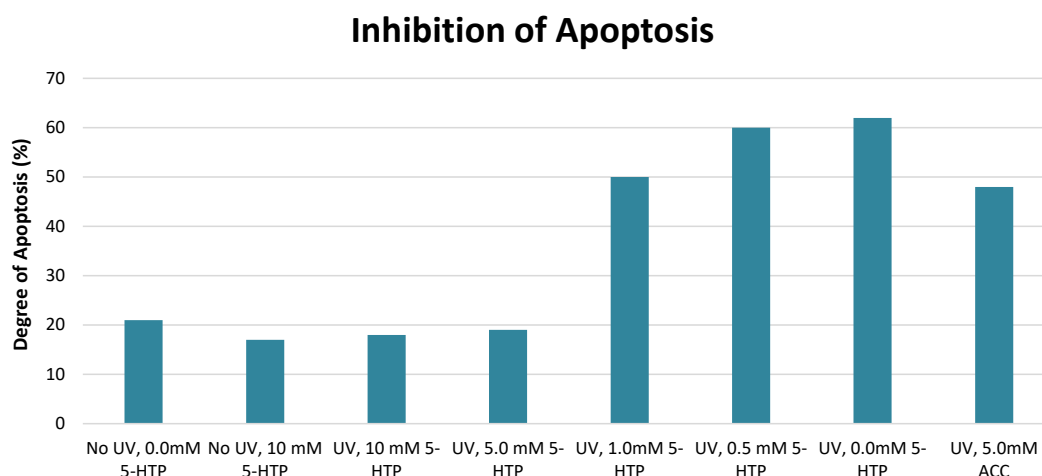


Figure 1. Apoptosis [%] of UV-exposed ($\lambda = 254 \text{ nm}$, $1 \text{ mW} \cdot \text{cm}^{-2}$, 2 h) human monocytes in the presence of different concentrations of 5-HTP. ACC = N-acetylcysteine, a known anti-apoptotic agent.¹

Additionally, an *in-vitro* Oxygen Radical Absorbance Capacity (ORAC) assay was conducted to assess the antioxidant capacity of **AC Griffonia Lysate Advanced**. 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 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.

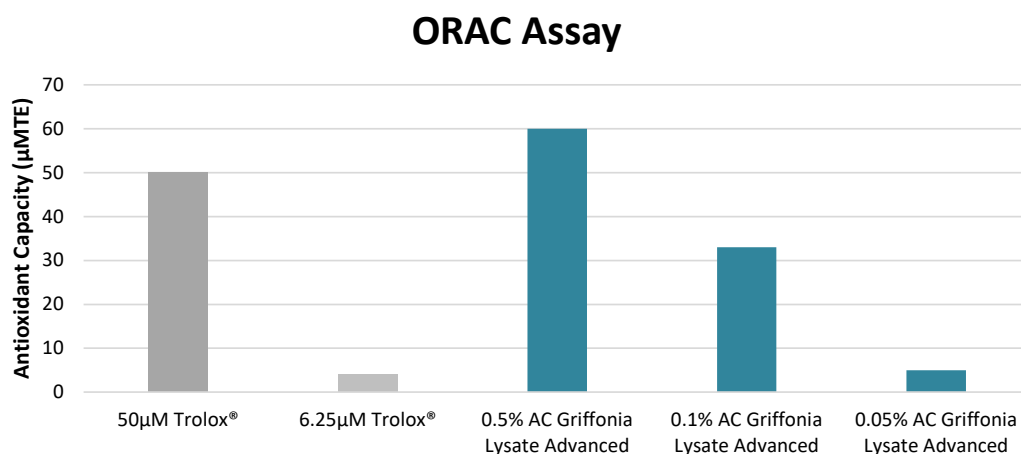


Figure 2. Antioxidant capacities.

AC Griffonia Lysate Advanced

Figure 2 displays the ability of **AC Griffonia Lysate Advanced** to exhibit greater antioxidant activity than 50µM Trolox®. The antioxidant capacity of **AC Griffonia Lysate Advanced** increased as the concentration increased, therefore indicating that the ability to minimize oxidative stress is dose dependent. This study concludes that **AC Griffonia Lysate Advanced** is capable of providing antioxidant properties and aids in the anti-aging process offering protection at the cellular level.

An *in-vivo* study was conducted to evaluate the immediately perceivable skin tightening benefits of **AC Griffonia Lysate Advanced**. Along with perceivable skin tightening, images were taken to visually assess the appearance of fine lines and wrinkles after a short term period. All participants were asked to evaluate the improvement in skin tightening compared to the control. Results indicate that this material is capable of significantly increasing perceivable skin tightening and minimizes the appearance of wrinkles and fine lines compared to the control.



Figure 3. Participant #2 treated with 5.0% **AC Griffonia Lysate Advanced** in Base Serum displays a reduction (10.0%) in wrinkle feature counts from beginning of treatment (T=0) to T=3 minutes via VISIA Image Analysis. Images on the top are participant #2 with image enhancement, through VISIA, which provides higher visualization of feature changes. Images on the bottom are natural photos of participant #2.

Reference:

1. Lysek, Nicola *et al.* L-5Hydroxytryptophan: Antioxidant and Anti-Apoptotic Principle of the Intertidal Sponge Hymeniacidon Heliophila. A Naturforsch; 58c:568-572 (2003).