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Thank you for your interest in our research overview.



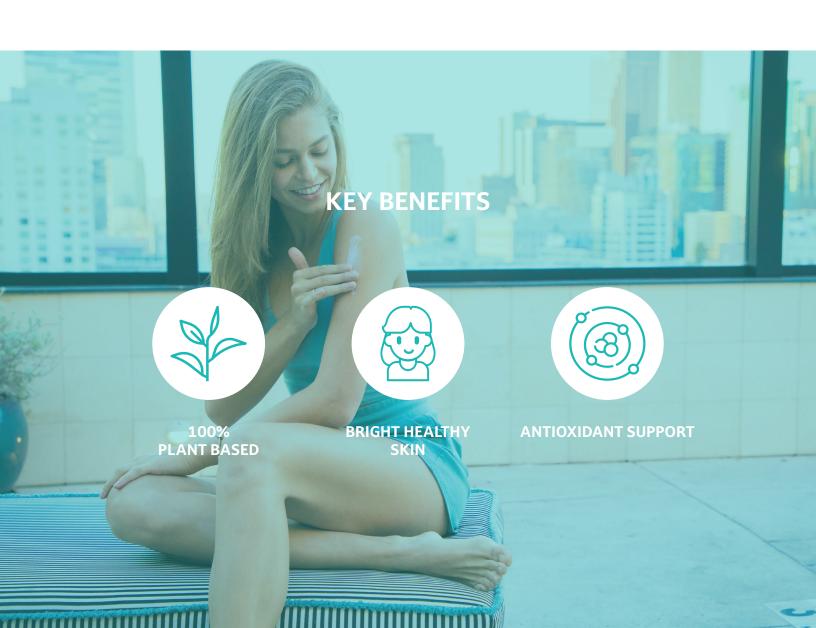
## **BEAUTY FROM WITHIN**

NuLiv Science utilizes a proprietary extraction technology to produce this unique verbascoside.

Validated by HPLC as a true verbascoside (a caffeoyl phenylethanoid glycoside (C29H36O15))

A well-studied antioxidant for beauty from within applications

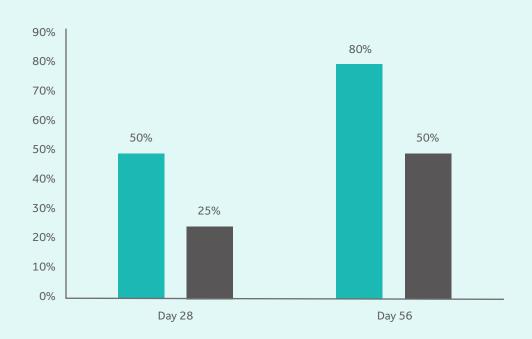
1 human clinical trial on Verbasnol™



### **VERBASNOL™ HUMAN CLINICAL STUDY**

This two-month study focused on adult women with poor Global Acne Grading Systems ("GAGS") scores, a widely accepted metric in dermatology for evaluating acne severity. The study demonstrated that Verbasnol™ may be effective in lowering acne severity, as well as improving various skin health factors.

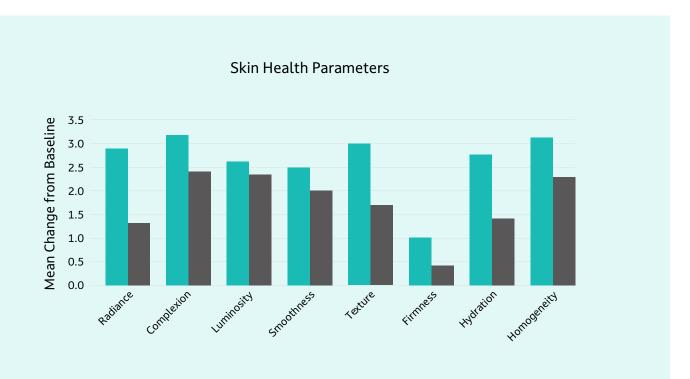
#### Global Acne Grading System (GAGS) Score Analysis



**Time Points** 

Verbasnol<sup>™</sup> treatment for two months indicated that 80% of participants in the Verbasnol<sup>™</sup> group moved to the mild category from the moderate category of the Global Acne Grading System (GAGS). In contrast, in the placebo group, only 50% of participants moved to the mild category. This shows that Verbasnol<sup>™</sup> had a better effect on acne than the placebo.

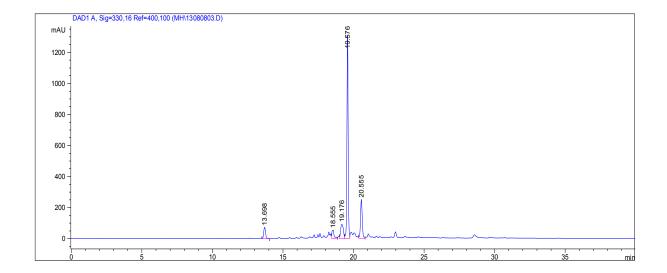
## **VERBASNOL™ HUMAN CLINICAL STUDY**



Participants were asked to rate a series of questions regarding radiance, complexion, luminosity, smoothness, texture, firmness, and skin hydration. Final data was collected on day 56 of the study which demonstrated a better effect of Verbasnol™ over the placebo group on all the skin health parameters

# **VERBASNOL™ VERBASCOSIDE**

Verbasnol $^{\text{™}}$  is NuLiv Science's proprietary verbascoside extracted from *Rehmannia glutinosa* which has been validated as a true verbascoside by HPLC chromatography.



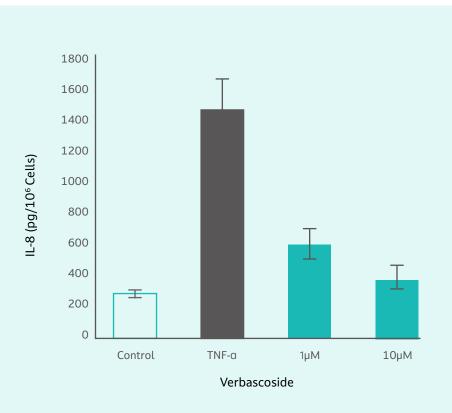
### A HISTORY OF VERBASCOSIDE

Verbascoside is a potent polyphenol found in plants like olive oil and lemon verbena. For the plant itself, Verbascoside functions as a protector, defending the foliage against stressors like UV rays, pathogens, and hungry herbivores. Ancient traditions revered it for its healing properties and potential for skin health applications, looking to tap into the role it plays within the plant. Over time, scientific exploration unveiled its modern skincare potential.

This compound's antioxidant prowess works to fight free radicals, combating premature skin aging, while working to soothe sensitive skin. Verbascoside has also been shown to support collagen synthesis, crucial for skin elasticity and firmness, making it a helpful ingredient in healthy aging formulations.

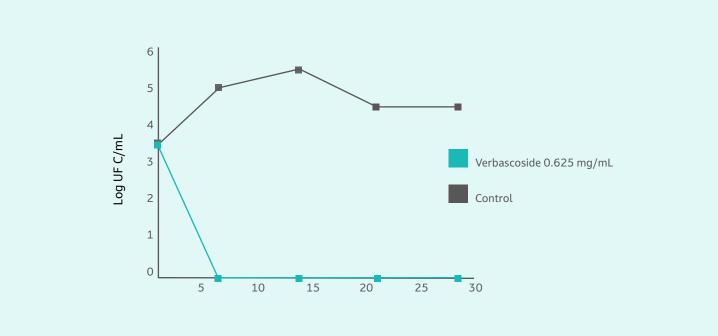
Its journey from a traditional remedy to a scientifically recognized skincare asset underscores its relevance. In contemporary skincare, it's a sought-after ingredient in many skin health formats for its natural protective properties and skin-rejuvenating abilities. Verbascoside's capacity to tackle oxidative stress, inflammation, and aid in skin regeneration cements its role in promoting healthier, resilient skin.

## **ANTI-INFLAMMATORY ACTIVITY**



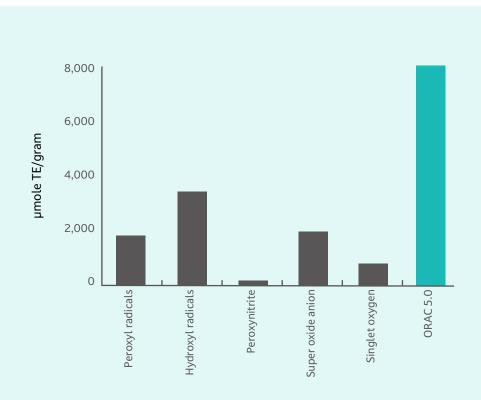
**Verbascoside** shows a strong anti-inflammatory activity since it induces a dose-dependent decrease of the expression of the pro-inflammatory chemokine IL-8on primary cultures of human keratinocytes stimulated by TNF- $\alpha$ .

## **ANTI-MALASSEZIA FURFUR ACTIVITY**



**Verbascoside** is a strong inhibitor of *Malassezia furfur* yeast growth with a MIC (Minimum Inhibitory Concentration) of 0.625 mg/mL.

### **ANTI-OXIDANT ACTIVITY**



ORAC (Oxygen Radical Absorbance Capacity) measures a substance's ability to neutralize free radicals, showcasing its antioxidant strength and potential to mitigate oxidative stress. A high ORAC value, typically above 5,000 µmol TE (Trolox Equivalents) per 100 grams or exceeding 1,000 µmol TE per serving, denotes potent antioxidant capacity, indicating effectiveness in combating cellular damage caused by free radicals and supporting overall health. This graph indicates the ORAC value of Verbasnol.\*\*.

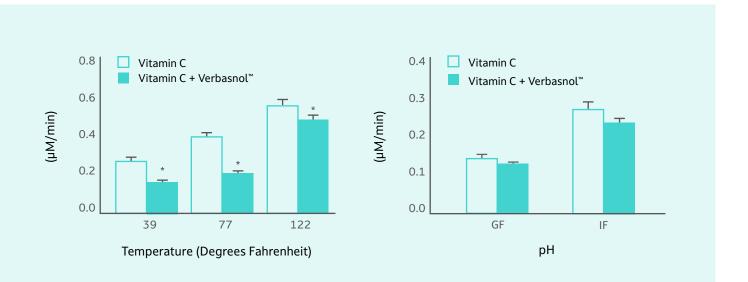


Customer: NuLiv Science

Sample Identification: Batch #: B-14657

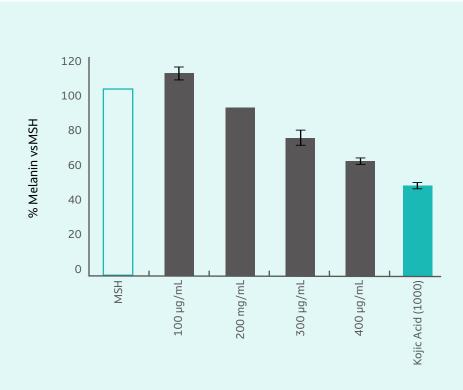
Description: VerbasNol (Verbascoside 10%), powder, MRTGH131122

## **VITAMIN C DEGRADATION**



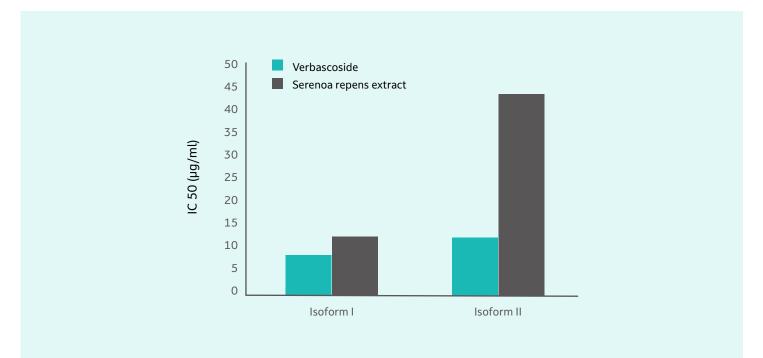
An internal study assessed the effect of Verbasnol<sup>™</sup> on the stability of vitamin C at temperatures ranging from 39°F to 122°F and in gastric and intestinal fluids. Vitamin C is also easily degraded at high pH. In our gastrointestinal tract, pH varies from highly acidic in the stomach (pH 1-3) to neutral or slightly alkaline in the duodenum (pH 6) and along the jejunum and ileum (pH 6-7.5).

## **ANTI-TYROSINASE ACTIVITY**



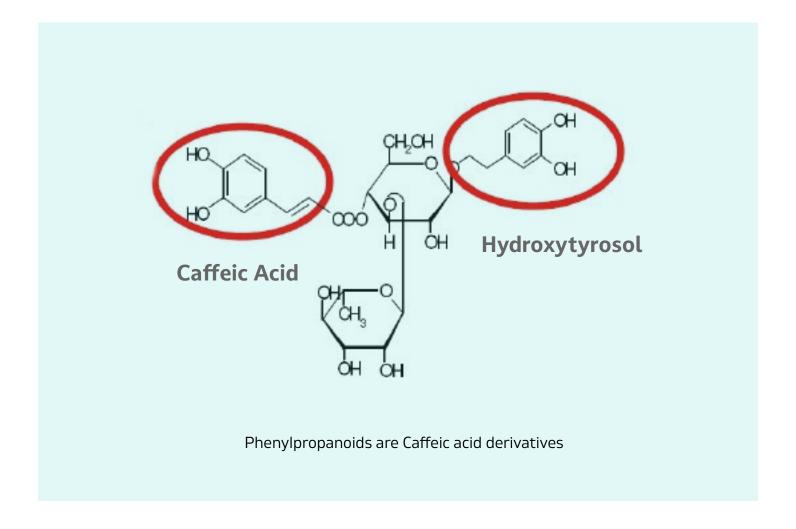
**Verbascoside** produces a significant reduction ( $\sim$ 40%) at 400µg/mL, of the melanin synthesis in cultured melanocytes. This is comparable to the inhibition of  $\sim$ 50% reached by the positive reference standard (1000µg/mL kojic acid).

## **SEBUM ACTIVITY**



Effective against  $5\alpha$ -reductase, enzyme involved in sebum production. Inhibits  $5\alpha$ -reductase, especially type II, more efficiently than *Serenoa repens* alcoholic extract, a common benchmark for this type of activity.

# **VERBASCOSIDE**



### **TYPICAL PROPERTIES**

**Composition** Verbasnol™

Rehmannia glutinosa extract

titrated at 10% of verbascoside and maltodextrin

**Appearance** Ambered-colored powder

**Solubility** Freely soluble in water (Eur. Ph. 5th Edition)

Perservatives Absent
Aflatoxins Absent
GMO Absent
Pesticides Absent

Microbiology Total microbial count: Bacteria < 100 CFU/g

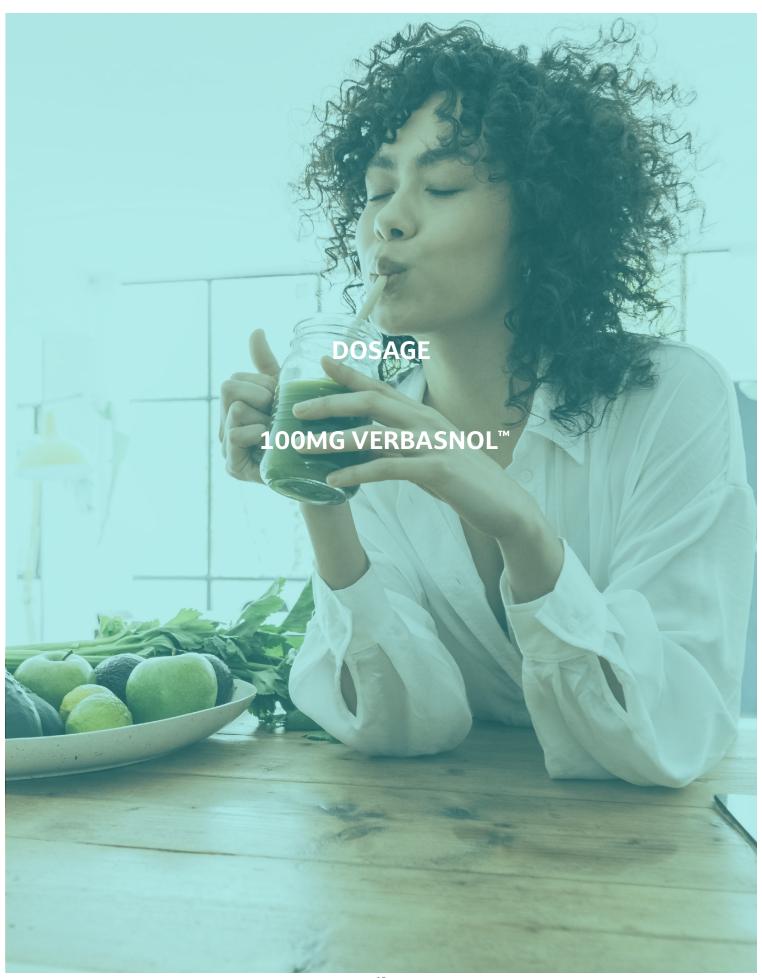
Packaging 1kg

**Storage** Store the product in the original, well-closed container,

in a cool, dry area and protected from light

**Shelf Life** 24 months

Safety Safety tested for both cosmetic and nutritional applications



For questions and additional information please contact



nulivscience.com