

Tradename: AC WonderShroom

Code: 21029

CAS #: 84650-60-2 & 999999-99-4 (or) 68917-13-5 & 999999-99-4 (or) 68917-13-5 & N/A (or) 9057-02-7

Test Request Form #: 11687

Lot #: N240509A

Sponsor: *Active Concepts, LLC; 107 Technology Drive Lincolnton, NC 28092*

Study Director: *Daniel Shill*

Principal Investigator: *Kayla Goodson*

Test Performed:

Elasticity Study

Introduction

Elasticity is responsible for giving skin a plump and healthy appearance. Skin elasticity is measured by the amount of time it takes for skin to bounce back when stretched. With age, skin elasticity decreases and leads to sagging, fine lines, and wrinkles. Maintaining a proper level of skin elasticity results in firmer skin that looks healthier and more youthful in appearance.

Accordingly, an Elasticity Study was conducted to assess the ability of **AC WonderShroom** to improve skin elasticity overtime.

Study Principle

The elasticity measurement of the DermaLab Combo is based on suction applied to the surface of the skin. The probe uses tape to hold the skin in place, so the vacuum measurement chamber receives consistent readings. Once skin is lifted, the negative pressure is released, and the retraction time is measured. Higher retraction times are indicative of poor skin elasticity. Therefore, skin elasticity strongly correlates with its appearance of looking young or old.

Materials

- A. **Equipment:** DermaLab Skin Combo (Elasticity Probe)
- B. **Products:** Base Lotion (Cetaphil® Moisturizing Cream for All Skin Types)
- C. **Software:** Excel Analysis ToolPak (Microsoft)

Methods

20 volunteers between the ages of 23 and 50, who were known to be free of any skin pathologies with Fitzpatrick skin types I to IV, participated in this study (Table 1).

Table 1. The Fitzpatrick Classification of Skin Types Chart¹

Fitzpatrick Skin Type Descriptions*	
Skin Type	Description
I	Always burns, never tans
II	Burns easily, tans minimally
III	Burns moderately, tans to light brown
IV	Burns minimally, tans to moderate brown
V	Rarely burns, tans to dark
VI	Never burns, least sensitive to changes

*Adapted from The Surgeon General's Call to Action to Prevent Skin Cancer

Four randomly assigned test sites were identified on the volar forearm of participants and baseline elasticity measurements were recorded. Following baseline measurements, participants applied 0.2 g of each treatment to their volar forearm twice a day for four weeks. Elasticity measurements were recorded once a week for four weeks. The skin test site conditions and treatments are described below (Table 2). The Base Lotion utilized in this study was Cetaphil® Moisturizing Cream for All Skin Types.

Table 2. Descriptions of the Conditions and Treatments for each Skin Test Site

Skin Test Site	Condition	Treatment / Test Article Application Description
1	Untreated Control	None
2	Base Lotion	Base Lotion
3	2.0% Caffeine	2.0% Caffeine in Base Lotion
4	2.0% AC WonderShroom	2.0% AC WonderShroom in Base Lotion

An average of three consecutive measurements for Young's Elasticity Modulus (MPa) were recorded per condition at each time point. Data are displayed as averages from all volunteers and analyzed using t-tests with statistical significance accepted at $p \leq 0.05$. The percent change for Skin Elasticity measurements were calculated for each test site at every timepoint relative to baseline values, using the following equation:

$$\text{Percent Change (\%)} = \frac{\text{Skin Elasticity}_{\text{Week}} - \text{Skin Elasticity}_{\text{Baseline}}}{\text{Skin Elasticity}_{\text{Baseline}}} \times 100$$

Results

The data obtained met criteria for a valid study as the Untreated Control, Base Lotion, and 2.0% Caffeine performed as anticipated. Application of 2.0% **AC WonderShroom** twice a day for four weeks demonstrated effective improvements in elasticity throughout the study duration compared to all other conditions.

Skin Elasticity AC WonderShroom

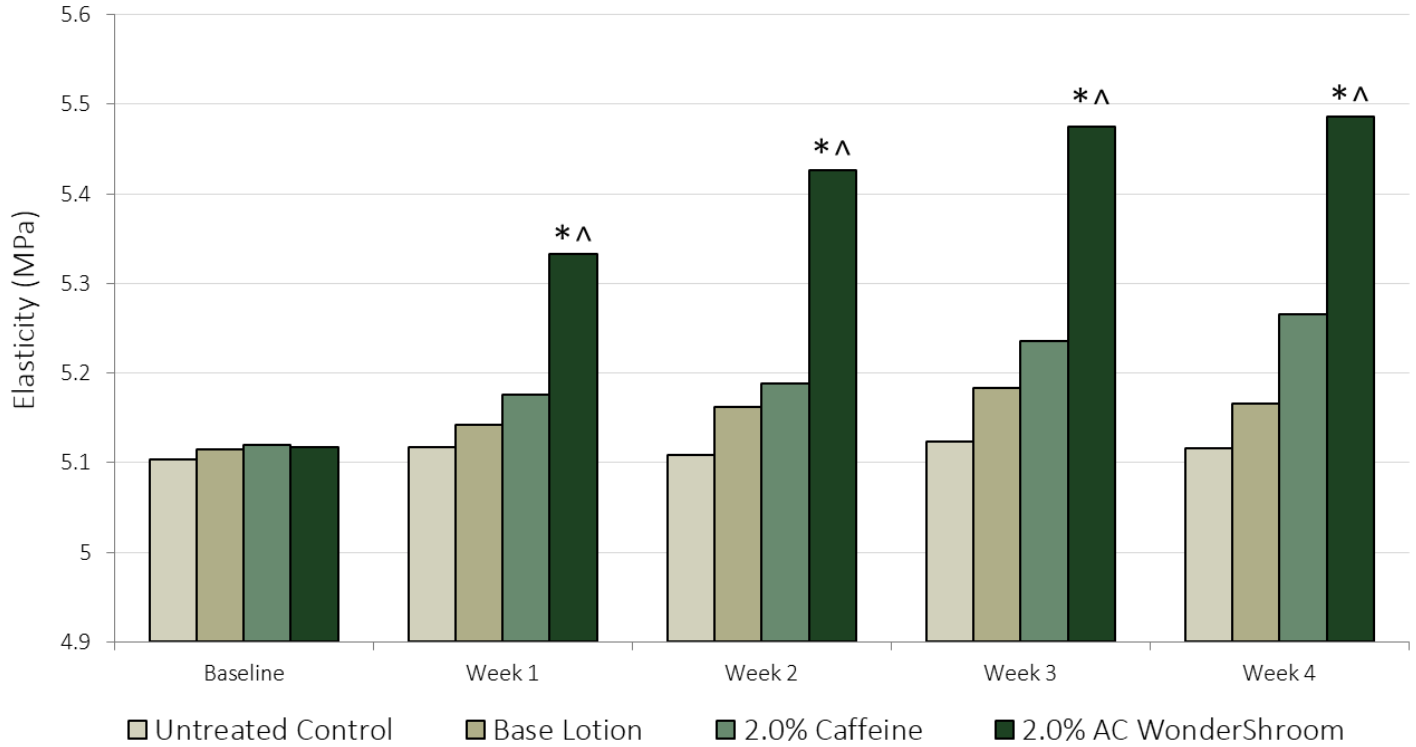


Figure 1. Skin Elasticity Overtime. * indicates significance ($p \leq 0.05$) compared to Baseline values within the same condition. ^ indicates significance ($p \leq 0.05$) compared to Untreated Control, Base Lotion, and 2.0% Caffeine within the same timepoint.

Table 3. T-test Analysis of Elasticity from Baseline to After Four Weeks of Application. * indicates significance ($p \leq 0.05$) compared to Baseline values within the same condition.

	Untreated Control	Base Lotion	2.0% Caffeine	2.0% AC WonderShroom
P-value	0.966	0.860	0.613	< 0.001*

Table 4. T-test Analysis of Elasticity After Four Weeks of Application. ^ indicates significance ($p \leq 0.05$) between conditions at the same timepoint.

	Untreated Control vs Base Lotion	Untreated Control vs 2.0% Caffeine	Untreated Control vs 2.0% AC WonderShroom	Base Lotion vs 2.0% Caffeine	Base Lotion vs 2.0% AC WonderShroom	2.0% Caffeine vs 2.0% AC WonderShroom
P-value	0.857	0.601	0.018^	0.714	0.007^	0.047^

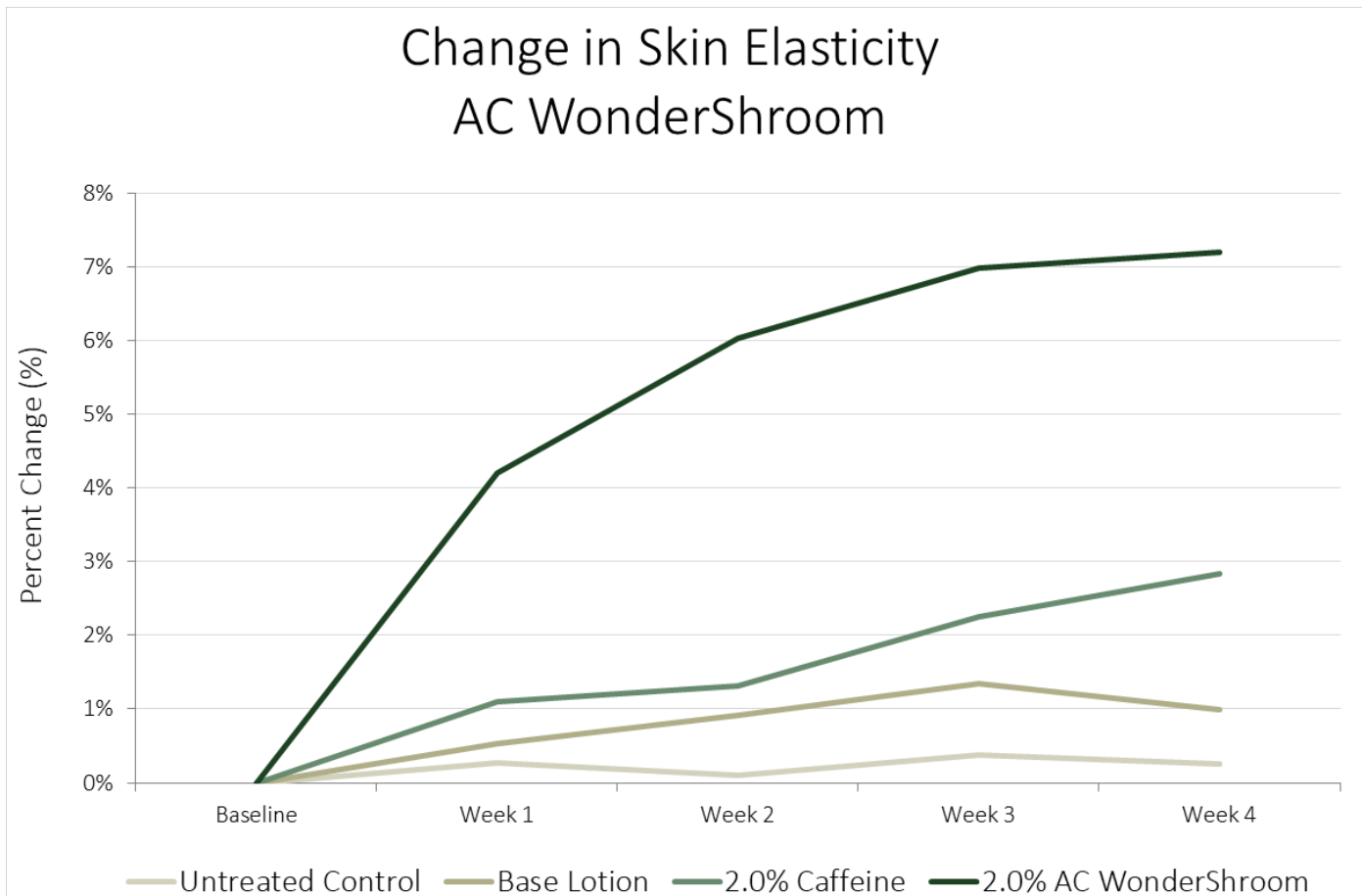


Figure 3. Percent Change in Elasticity Relative to Baseline Values

Discussion

The ability of **AC WonderShroom** to enhance skin elasticity was assessed throughout four weeks of twice daily application. As shown in Figure 1 and 2, skin elasticity did not significantly change throughout the study with the Untreated Control, Base Lotion, or 2.0% Caffeine test sites, indicating consistent skin elasticity throughout the four weeks (Table 3). Conversely, applying 2.0% **AC WonderShroom** twice a day for four weeks augmented skin elasticity by 7% (Figures 1, 2; Table 3). These results demonstrate **AC WonderShroom** has effective skin elasticity enhancing properties.

Similar results are shown when examining the collective effect of each condition. There is no difference in skin elasticity between the Untreated Control and Base Lotion after four weeks (Figure 1; Table 4). However, applying 2.0% **AC WonderShroom** significantly increased elasticity compared to the Untreated Control, Base Lotion, and 2.0% Caffeine (Figure 1; Table 4). These results demonstrate **AC WonderShroom** improves skin elasticity with repeated applications.

Taken together, these results indicate **AC WonderShroom** increases skin elasticity when added to personal care applications at recommended use levels. Collectively, **AC WonderShroom** demonstrates enhanced elasticity properties which improves the skin's retraction time and contributes to the appearance of healthier looking skin.

References

1. Sharma AN, Patel BC. Laser Fitzpatrick Skin Type Recommendations. [Updated 2022 Mar 9]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK557626/>