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**Tradename:** ABS Willow Bark Extract

**Code:** 10200

**CAS #:** 84650-64-6

**Test Request Form #:** 10588

**Lot #:** 9394590

**Sponsor:** *Active Concepts, LLC; 107 Technology Drive Lincolnton, NC 28092*
**Study Director:** *Maureen Drumwright*
**Principle Investigator:** *Kayla Patterson*

**Test Performed:**
Cellular Renewal Assay

## Introduction

Skin cells are frequently exposed to ultraviolet light damage and other chemical and environmental aggregates. Their death and replacement through cellular renewal processes minimize the potential longer-term harmful effects of these exposures. Aiding in the processes of cellular renewal can improve the skin's physical appearance as well as function as a protective barrier.

**ABS Willow Bark Extract** was evaluated for its ability to accelerate cell renewal by means of a traditional skin pigmentation assay protocol.

## Assay Principle

Dermal Dye Max™ was used to induce skin pigmentation. The active ingredient in Dermal Dye Max™ is dihydroxyacetone (DHA), also known as glycerone, and is a simple saccharide.

## Materials

A. **Equipment:** DermaLab Skin Combo (Pigmentation Probe) Pipettes
B. **Reagents:** Dermal Dye Max™ (Alpine Valley Naturals); Cetaphil Moisturizing for All Skin Types; Synthetic Salicylic Acid (positive control)

## Methods

Volunteers, male and female, between the ages of 20 and 45 and who were known to be free of any skin pathologies participated in this study. Derma Dye Max™ was applied to four identified test patches on the volar forearm. The dye was left to develop for 24 hours prior to baseline readings. A fifth skin patch was identified as the skin baseline control and no dye nor treatment were applied to this site. Post dye development and prior to the initial application, baseline DermaLab pigmentation index readings were taken for all five identified sites.

Approximately 0.2 g of each lotion treatment, 1.0% synthetic salicylic acid positive control, 2.0% **ABS Willow Bark Extract**, and the base formula were applied to three 2cm x 2cm respective locations on the volar forearm. The fourth test site was left untreated as a dye baseline test site. Readings were taken every 24 hours until the active test site returned to baseline. After each daily reading, treatment of each respective test site was performed following the same parameters listed above.

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## Results

**ABS Willow Bark Extract** was able to return the test site to baseline pigmentation readings in four days.

Pigmentation percent change was calculated for all four-dye location test site readings for each respective day, using the equation below.

$$Percent\ (\%)\ Change = \frac{Pigmentation\ Index_{Sample\ Site} - Pigmentation\ Index_{Skin\ Control\ Site}}{Pigmentation\ Index_{Skin\ Control\ Site}} \times 100$$

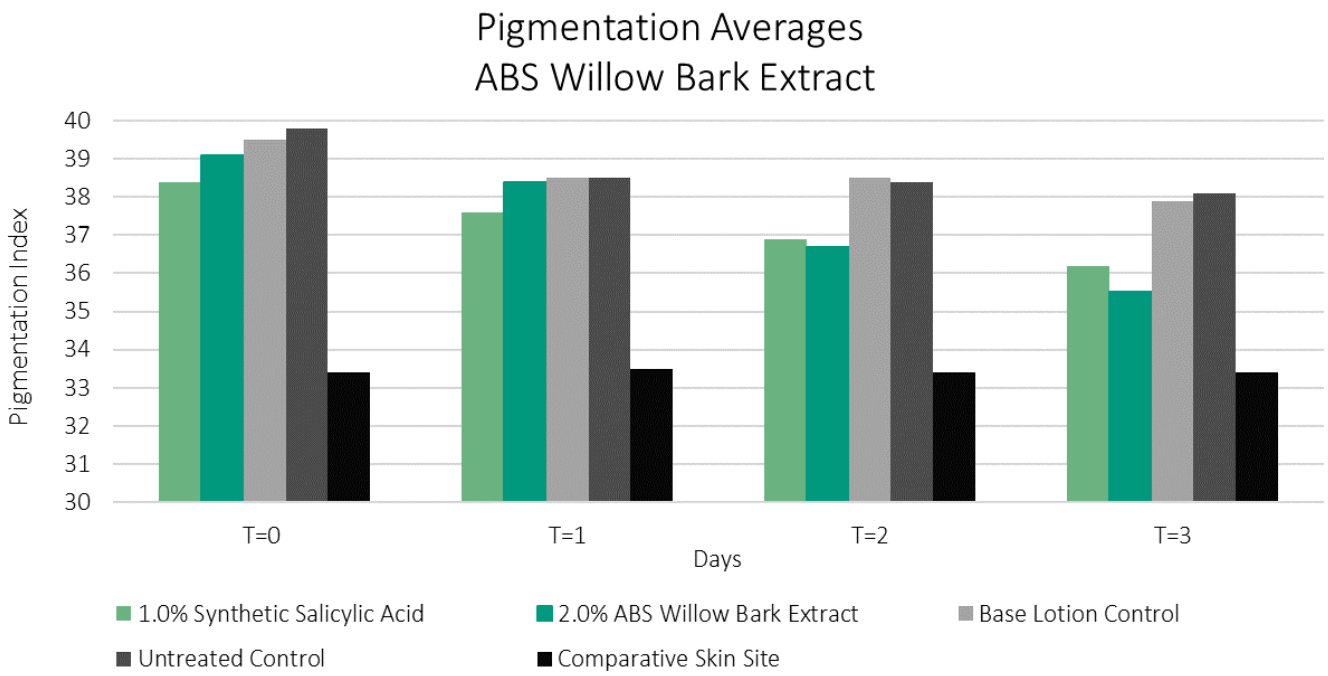


**Figure 1.** Pigmentation Index Readings

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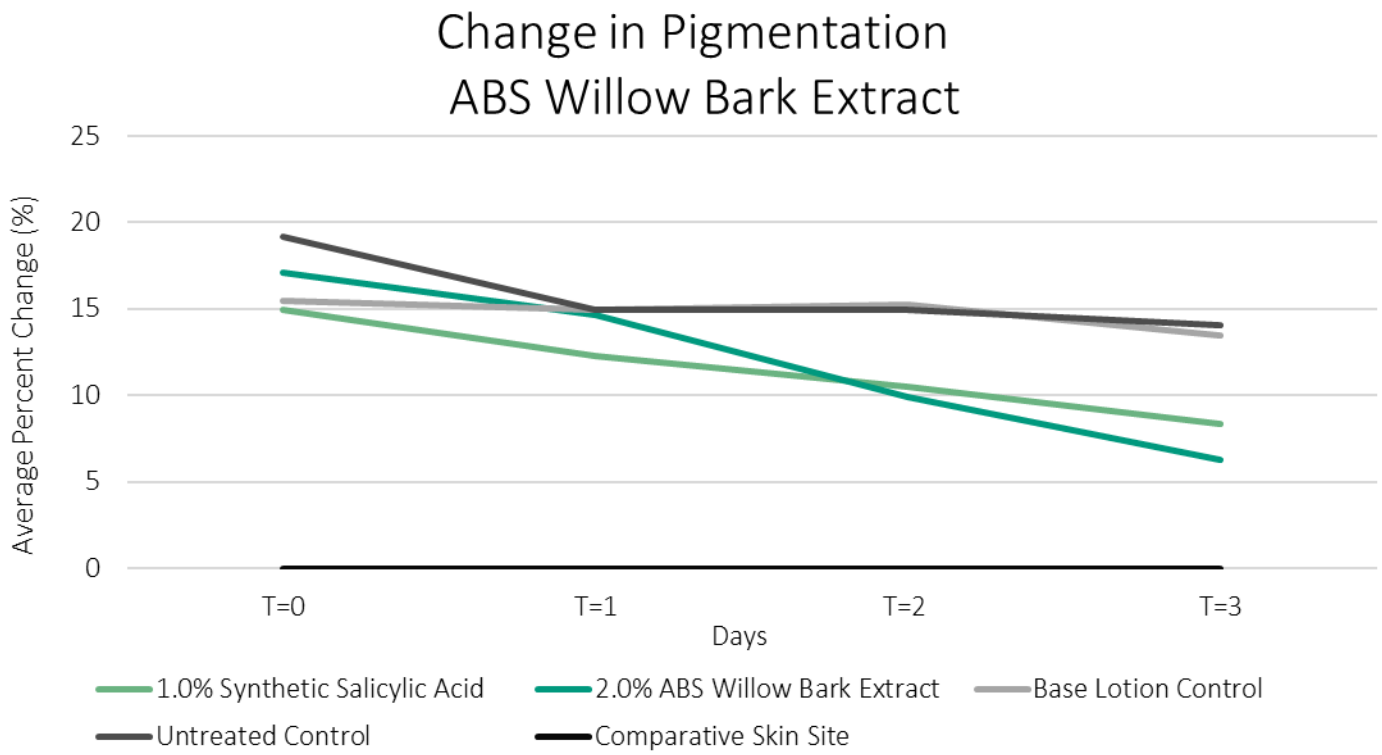


**Figure 2.** Percent Change in Pigmentation

## Discussion

The results indicate that **ABS Willow Bark Extract** is capable of increasing cellular renewal when compared to the untreated skin dye control site. Cellular renewal is beneficial for visibly improving skin tone and texture as well as aiding in the skin's function as a protective barrier from harmful chemical and environmental exposure that can lead to premature aging.

As seen in Figure 2, **ABS Willow Bark Extract** had the greatest percent change reduction back to baseline when compared to all other test controls. **ABS Willow Bark Extract** outperformed the synthetic salicylic acid positive control in the induction of cellular renewal and was able to return skin to the untreated baseline pigmentation readings. **ABS Willow Bark Extract** induced a 94% change in pigmentation over the course of four days compared to the synthetic salicylic acid positive control, which induced a 92% change in pigmentation (Figures 1, 2). It can therefore be concluded that at normal use concentrations, **ABS Willow Bark Extract** contributes to cellular renewal, indicating a healthier, more vibrant skin tone and helping to reverse the signs of aging.

## 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/