Active Concepts

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Cellular Renewal Assay

Tradename: ABS Pap-Ango Enzyme PF

Code: 10268PF

CAS#: 84012-30-6 & 90063-86-8

Test Request Form #: 6163

Lot #: 71971P

Sponsor: *Active Concepts, LLC; 107 Technology Drive Lincolnton, NC 28092*
Study Director: *Maureen Danaher*
Principle Investigator: *Jennifer Goodman*

Test Performed:
Cellular Renewal Assay

Abstract:

ABS Pap-Ango Enzyme PF was evaluated for its ability to accelerate cell renewal by means of a traditional skin pigmentation assay protocol.

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.

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; Glycolic Acid (positive control)

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Methods:

Testing began March 23, 2020 and concluded March 27, 2020. 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, 5% glycolic acid positive control, 5% **ABS Pap-Ango Enzyme PF**, 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.

Results:

ABS Pap-Ango Enzyme PF was able to return the test site to baseline pigmentation readings in three days.

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

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

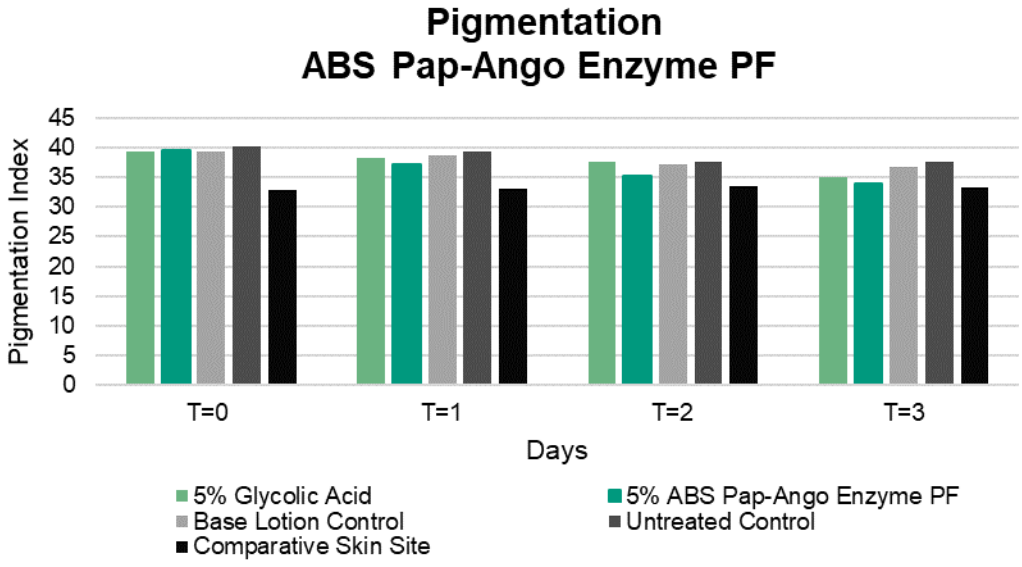

Figure 1: Pigmentation Index Readings

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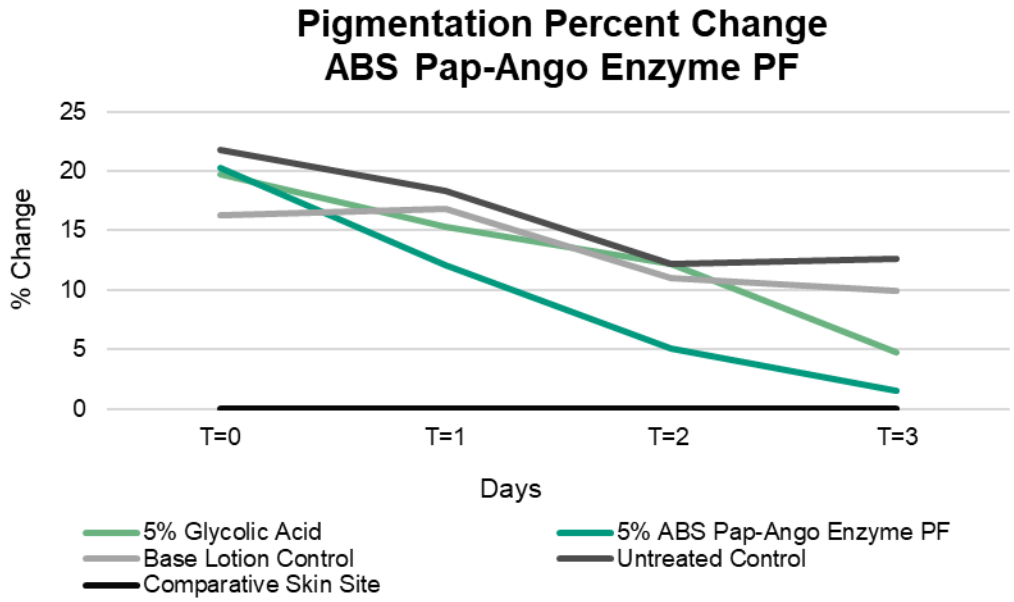

Figure 2: Percent Change in Pigmentation

Discussion:

The results indicate that **ABS Pap-Ango Enzyme PF** 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 Pap-Ango Enzyme PF** had the greatest percent change reduction back to baseline when compared to all other test controls. **ABS Pap-Ango Enzyme PF** outperformed the glycolic acid positive control in the induction of cellular renewal and was able to return skin to the untreated baseline pigmentation readings. **ABS Pap-Ango Enzyme PF** induced a 98.5% change in pigmentation over the course of 3 days compared to the glycolic acid positive control which only induced a 95.2% change in pigmentation. It can therefore be concluded that at normal use concentrations, **ABS Pap-Ango Enzyme PF** contributes to cellular renewal, indicating a healthier, more vibrant skin tone and helping to reverse the signs of aging.