

Tradename: AC PomeaShield

Code: 16935

CAS #: 7732-18-5 & 84961-57-9 & 1686112-36-6 (or) 68333-16-4

Test Request Form #: 10113

Lot #: N230313E

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

Study Director: *Maureen Drumwright*

Principle Investigator: *Kayla Patterson*

Test Performed:

Moisturization Assay

Introduction

An *in-vivo* study was conducted over a period of four weeks to evaluate the moisturization benefits of **AC PomeaShield**. 20 M/F subjects between the ages of 23-45 participated in the study. Results indicate **AC PomeaShield** is capable of significantly increasing moisturization.

The Moisturization Assay was conducted to assess the moisturizing ability of **AC PomeaShield**.

Materials

A. Equipment: DermaLab Skin Combo (Hydration/ Moisture Pin Probe)

Methods

The moisture module provides information about the skin's hydration by measuring the conducting properties of the upper skin layers when subjected to an alternating voltage. The method is referred to as a conductance measurement and the output is presented in the unit of uSiemens (uS). A moisture pin probe is the tool used to gather hydration values.

Twenty male and female volunteers between the ages of 23 and 45 who were known to be free of any skin pathologies and had Fitzpatrick skin types I to III participated in this study (Table 1). A Dermalab Corneometer was used to measure the moisture levels on the subject's volar forearms. The Corneometer is an instrument that measures the amount of water within the skin. The presence of moisture in the skin improves conductance therefore results in higher readings than dry skin. Therefore, the higher the levels of moisture, the higher the readings from the Corneometer will be. Baseline moisturization readings were taken on the first day of the study.

Following initial measurements, subjects were instructed to apply 0.2 g of each treatment to their volar forearm twice a day for a four-week period. Measurements were taken 24 hours after the first application of test materials and then weekly for four weeks.

For added perspective, measurements of an untreated test site and a site treated with a base lotion (Cetaphil Moisturizing for All Skin Types) were recorded.

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

Results

AC PomeaShield showed high moisturizing capabilities alone at a 2.0% concentration. Please note each value is an average of three consecutive readings per test site.

Percent change in moisturization is calculated by the following formula:

$$\text{Percent (\%) Change} = \frac{\text{Average Moisture Value}_{T=24 \text{ hours.etc}} - \text{Average Baseline Value}_{T=0}}{\text{Average Baseline Value}_{T=0}} \times 100$$

Table 2. Moisture Difference between Test Sites at Each Time

Percent (%) Difference	T = 0	T = 24 Hours	T=1 Week	T=2 Weeks	T=3 Weeks	T=4 Weeks
Experimental (2.0% AC PomeaShield + Base Lotion) vs Base Lotion	19	9	12	10	22	8
Experimental (2.0% AC PomeaShield + Base Lotion) vs Untreated Control	20	24	21	42	34	26
Base vs Untreated Control	1	15	9	32	12	18

Average Moisture Readings AC PomeaShield

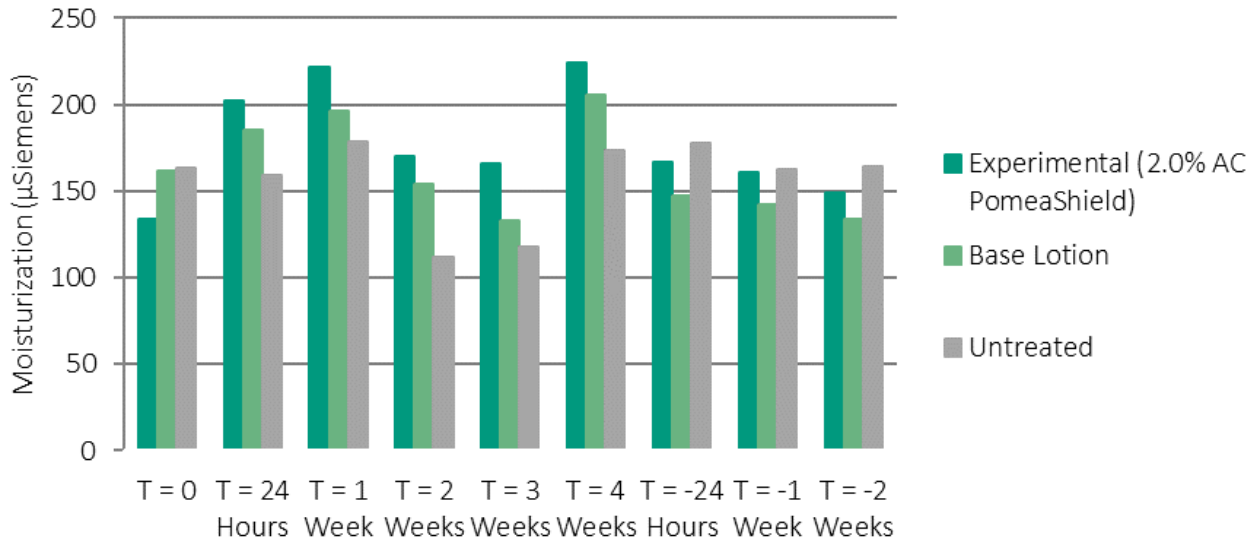


Figure 1. Average Moisturization Levels (µSiemens) at Each Time Point.

Change in Moisturization AC PomeaShield

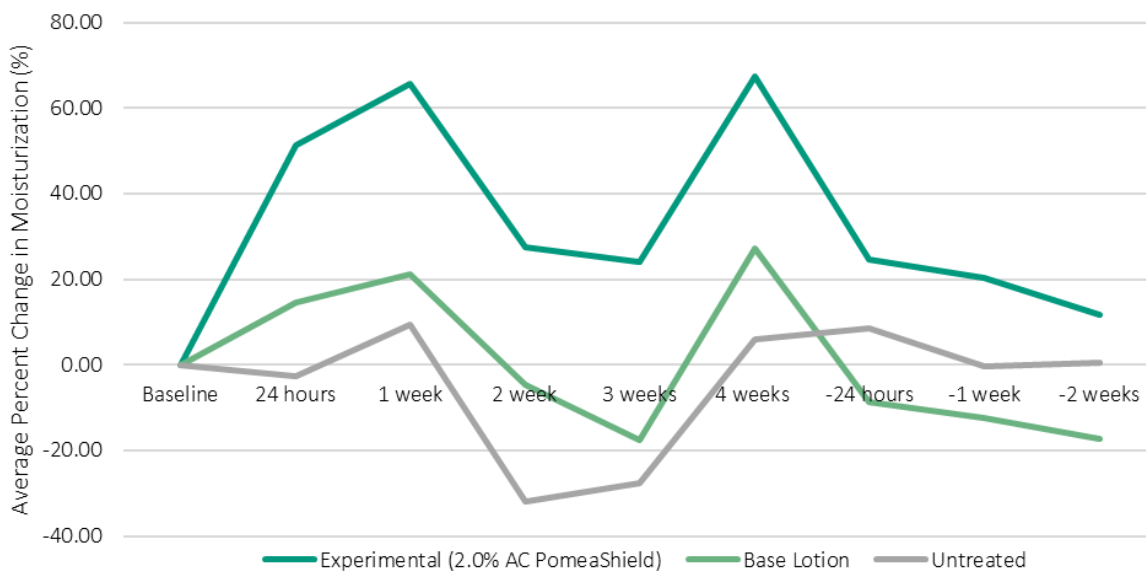


Figure 2. Percent Change in Moisturization of Each Time Point Compared to Baseline

Table 3. T-test Analysis of the Moisture Percent Change (%) Between Baseline and T=24 hours of 2.0% **AC PomeaShield** (n=20, $\alpha=0.05$, df=36)

	T = 0	T= 24 hours
Mean	133.7	202.4
Variance	10080	6358
t Stat	-2.39	
P(T<=t) two-tail	0.0218	
t Critical two-tail	2.028	

Table 4. T-test Analysis of the Moisture Percent Change (%) Between Baseline and T=1 week of 2.0% **AC PomeaShield** (n=20, $\alpha=0.05$, df=34)

	T = 0	T= 1 week
Mean	133.7	221.4
Variance	10080	21411
t Stat	-2.21	
P(T<=t) two-tail	0.0339	
t Critical two-tail	2.032	

Table 5. T-test Analysis of the Moisture Percent Change (%) Between Baseline and T=4 weeks of 2.0% **AC PomeaShield** (n=20, $\alpha=0.05$, df=32)

	T = 0	T= 4 weeks
Mean	133.7	223.9
Variance	10080	26661
t Stat	-2.104	
P(T<=t) two-tail	0.0432	
t Critical two-tail	2.036	

Discussion

As evidenced in a four-week efficacy study of **AC PomeaShield** on skin, moisture levels were significantly improved by 51% after 24 hours, 66% after one week, and by 67% after four weeks when compared to the baseline value (Figures 1, 2; Tables 3, 4, 5). When compared to the base lotion, **AC PomeaShield** had higher moisture levels by 9% after 24 hours, 12% after one week, and 12% after four weeks, respectively (Table 2). Results indicate that **AC PomeaShield** in a base lotion is capable of increasing skin moisturization to a greater degree when compared to the base lotion alone. After 24 hours, the site testing 2.0% **AC PomeaShield** was 24% and 9% more moisturized than the untreated control and base lotion values, respectively (Table 2). After one week, the site testing 2.0% **AC PomeaShield** was 21% and 12% more moisturized than the untreated control and base lotion values, respectively (Table 2). With the present study, we can confirm that **AC PomeaShield** is capable of providing moisturizing and hydrating benefits when added to personal care applications at recommended use levels.

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/>