Moisturization Assay

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Tradename: ABS Rice Lipids Plus

Code: 10350

CAS #: 8016-60-2

Test Request Form #: 1766

Lot #: 44655P

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

Test Performed:
Moisturization Assay

Introduction
Dehydrated skin is more prone to various forms of UV damage. Hydration can reduce the appearance of fine lines and wrinkles by improving skin elasticity. Proper skin hydration can also reduce breakouts by regulating the oil production of skin. Skin that is properly hydrated can appear healthier and more youthful in appearance.

The Moisturization Assay was conducted to assess the moisturizing ability of **ABS Rice Lipids Plus**.

Assay Principle
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.

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

Methods
20 M/F volunteers were known to be free of any skin pathologies participated in this study. 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 2 mg 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.

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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.

Results

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

Percent change in moisturization is calculated by the following formula:

$$Percent\ (\%)\ Change = \frac{Average\ Moisture\ Value_{T=24\ hours.etc} - Average\ Baseline\ Value_{T=0}}{Average\ Baseline\ Value_{T=0}}\ x\ 100$$

Table 1. Moisture Difference Between Test Sites at Each Time

Percent (%) Difference	T=0	T = 1 Week	T= 2 Weeks	T= 3 Weeks	T= 4 Weeks
Experimental (2.0% ABS Rice Lipids Plus) vs Base Lotion	1	29	22	30	29
Experimental (2.0% ABS Rice Lipids Plus) vs Untreated Control	14	48	50	60	61
Base Lotion vs Untreated Control	15	20	28	31	33

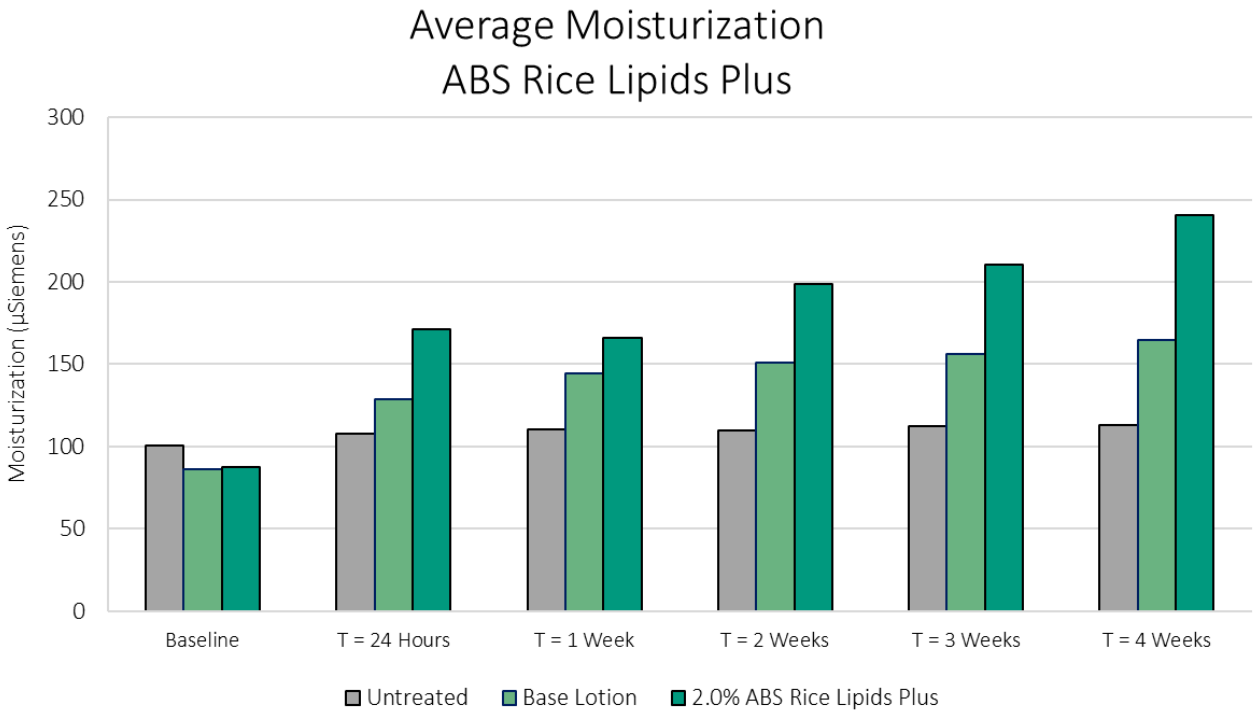

Figure 1. Average Increase in Moisturization (µSiemens)

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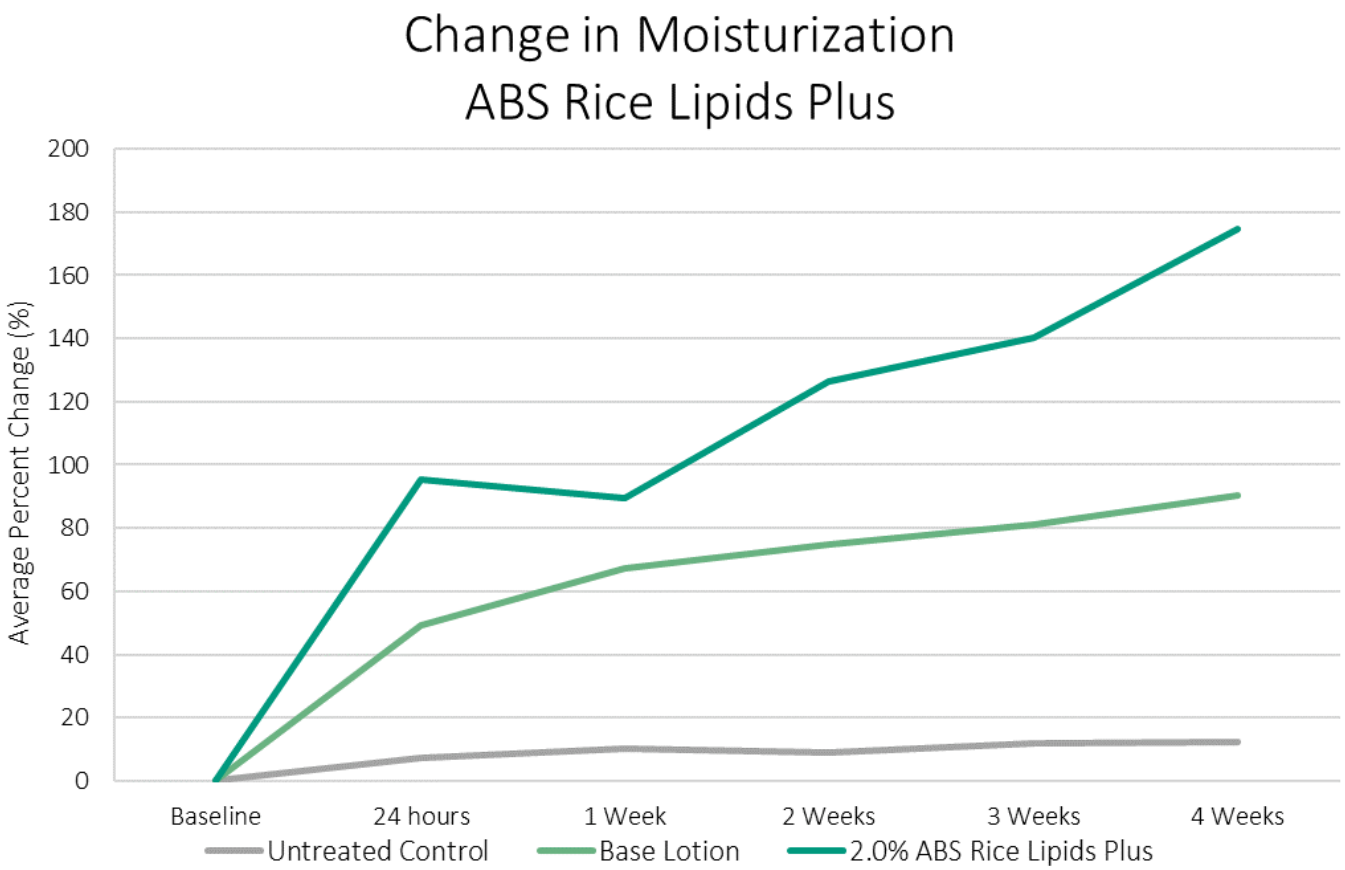

Figure 2. Percent Change in Moisturization of Each Time Point Compared to Baseline

Table 2. T-test Analysis of the Moisture Percent Difference (%) Between 2.0% **ABS Rice Lipids Plus** and Base Lotion at T = 1 Week (n=20, α=0.05, df=23)

	ABS Rice Lipids Plus	Base Lotion
Mean	183.1	146.2
Variance	545.5	60.29
t Stat	6.71	
P(T<=t) two-tail	7.55E-07	
t Critical two-tail	2.068	

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Table 3. T-test Analysis of the Moisture Percent Difference (%) Between 2.0% **ABS Rice Lipids Plus** and Base Lotion at T = 4 Weeks (n=20, α=0.05, df=22)

	ABS Rice Lipids Plus	Base Lotion
Mean	240.7	164.1
Variance	582.5	49.19
t Stat	13.65	
P(T<=t) two-tail	3.19E-12	
t Critical two-tail	2.073	

Discussion

As evidenced in a four-week efficacy study of 2.0% **ABS Rice Lipids Plus** on skin, moisture levels were significantly improved by 89% after 1 week and by 175% after 4 weeks when compared to the baseline value, respectively (Figure 2). When compared to the base lotion, 2.0% **ABS Rice Lipids Plus** had 28% and 38% higher moisture levels after 24 hours and 4 weeks, respectively (Figure 1, Tables 1, 2, 3). Moisture levels of 2.0% **ABS Rice Lipids Plus** were also 45% and 72% higher than the untreated control at 24 hours and 4 weeks (Table 1). Results indicate that **ABS Rice Lipids Plus** in a base lotion is capable of increasing skin moisturization to a greater degree when compared to the base lotion alone.

With the present study, we can confirm that **ABS Rice Lipids Plus** 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/