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Tradename: AC Phytocoll PF

**Code:** 16564

CAS #: 8013-01-2

Test Request Form #: 65

Sponsor: Active Concepts, LLC; 107 Technology Drive Lincolnton, NC 28092 Study Director: Erica Segura Principle Investigator: Meghan Darley

<u>Test Performed:</u> Moisturization/Hydration Assay

## Introduction

An *in-vivo* study was conducted over a period of three weeks to evaluate the moisturization benefits of **AC Phytocoll PF**. 10 M/F subjects between the ages of 23-45 participated in the study. Results indicate that this material is capable of significantly increasing moisturization compared to the control.

The moisturization assay was conducted to assess the moisturizing ability of AC Phytocoll PF.

### 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.

10 volunteers M/F between the ages of 23 and 45 and who 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 day one of the study.

Following initial measurements, all subjects were asked to apply 2 mg of each test material on their volar forearms. Measurements were taken immediately after application of test materials and then weekly for 4 weeks. The test material consisted of 2% **AC Phytocoll PF** in a base lotion.

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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

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

#### Individual Raw Data:

|                   | T=0 | T=24 | 1 week | 2 weeks | 3 weeks | 4 weeks |
|-------------------|-----|------|--------|---------|---------|---------|
| Subject 1-Test    |     |      |        |         |         |         |
| Experimental      | 75  | 151  | 178    | 248     | 221     | 211     |
| Base Lotion       | 65  | 100  | 119    | 125     | 145     | 169     |
| Untreated Control | 43  | 49   | 47     | 53      | 51      | 50      |
| Subject 2-Test    |     |      |        |         |         |         |
| Experimental      | 43  | 91   | 136    | 141     | 155     | 173     |
| Base Lotion       | 53  | 84   | 100    | 131     | 166     | 130     |
| Untreated Control | 35  | 55   | 57     | 75      | 115     | 57      |
| Subject 3-Test    |     |      |        |         |         |         |
| Experimental      | 39  | 71   | 82     | 88      | 94      | 78      |
| Base Lotion       | 43  | 72   | 67     | 97      | 83      | 123     |
| Untreated Control | 65  | 98   | 131    | 96      | 95      | 126     |
| Subject 4-Test    |     |      |        |         |         |         |
| Experimental      | 47  | 97   | 111    | 130     | 149     | 164     |
| Base Lotion       | 35  | 69   | 82     | 124     | 63      | 78      |
| Untreated Control | 31  | 61   | 62     | 119     | 57      | 66      |
| Subject 5-Test    |     |      |        |         |         |         |
| Experimental      | 65  | 64   | 136    | 122     | 135     | 133     |
| Base Lotion       | 70  | 72   | 168    | 154     | 181     | 197     |
| Untreated Control | 45  | 46   | 96     | 100     | 91      | 81      |
| Subject 6-Test    |     |      |        |         |         |         |
| Experimental      | 39  | 83   | 90     | 101     | 100     | 79      |
| Base Lotion       | 31  | 83   | 88     | 78      | 93      | 94      |
| Untreated         | 58  | 95   | 113    | 127     | 124     | 138     |
| Subject 7-Test    |     |      |        |         |         |         |
| Experimental      | 33  | 75   | 112    | 113     | 153     | 163     |
| Base Lotion       | 51  | 115  | 162    | 147     | 199     | 125     |
| Untreated Control | 27  | 40   | 41     | 59      | 94      | 57      |

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# **Moisturization/Hydration Assay**

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|                   | T=0 | T=24 | 1 week | 2 weeks | 3 weeks | 4 weeks |
|-------------------|-----|------|--------|---------|---------|---------|
| Subject 8-Test    |     |      |        |         |         |         |
| Experimental      | 44  | 108  | 117    | 125     | 162     | 165     |
| Base Lotion       | 30  | 77   | 104    | 101     | 115     | 96      |
| Untreated Control | 30  | 75   | 100    | 86      | 126     | 96      |
| Subject 9-Test    |     |      |        |         |         |         |
| Experimental      | 53  | 73   | 102    | 105     | 101     | 110     |
| Base Lotion       | 45  | 68   | 92     | 105     | 106     | 95      |
| Untreated Control | 49  | 74   | 87     | 90      | 99      | 91      |
| Subject 10-Test   |     |      |        |         |         |         |
| Experimental      | 45  | 93   | 114    | 136     | 147     | 143     |
| Base Lotion       | 49  | 106  | 126    | 161     | 161     | 166     |
| Untreated Control | 47  | 75   | 88     | 82      | 97      | 116     |
| # of Subjects     | 10  | 10   | 10     | 10      | 10      | 10      |

### **Results of Group:**

|                                      |       | T = 24 | T = 1  | T = 2  | T = 3  | T = 4  |
|--------------------------------------|-------|--------|--------|--------|--------|--------|
| Averages                             | T = 0 | Hours  | Week   | Weeks  | Weeks  | Weeks  |
| Experimental (2.0 AC Phytocoll PF in |       |        |        |        |        |        |
| Base Lotion)                         | 48.30 | 100.67 | 117.80 | 130.90 | 141.70 | 141.90 |
| Base Lotion                          | 47.20 | 97.00  | 110.80 | 122.30 | 131.20 | 127.30 |
|                                      |       |        |        |        |        |        |
| Untreated                            | 43.00 | 74.22  | 82.20  | 88.70  | 94.90  | 87.80  |

#### Chart 1: Average Results.

|                                       |       | T = 24 | T = 1 | T = 2 | T = 3 | T = 4 |
|---------------------------------------|-------|--------|-------|-------|-------|-------|
| Percent Change                        | T = 0 | Hours  | Week  | Weeks | Weeks | Weeks |
| Base Lotion vs. Untreated Control     | 9.77  | 30.69  | 34.79 | 37.88 | 38.25 | 44.99 |
| Experimental (2.0% AC Phytocoll PF in |       |        |       |       |       |       |
| Base Lotion) vs. Untreated Control    | 12.33 | 35.63  | 43.31 | 47.58 | 49.32 | 61.62 |
| Experimental (2.0% AC Phytocoll PF in |       |        |       |       |       |       |
| Base Lotion) vs. Base Lotion          | 2.33  | 3.78   | 6.32  | 7.03  | 8.00  | 11.47 |

#### **Chart 2: Percent Change Results.**

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## Average Moisturization

Figure 1: Moisturization Results.

**Comparative Moisturization** 70 Base Lotion vs. 60 Percent (%) Difference Untreated Control 50 40 Experimental (2.0% AC Phytocoll PF in Base 30 Lotion) vs. Untreated Control 20 Experimental (2.0% AC 10 Phytocoll PF in Base Lotion) vs. Base Lotion 0 T = 0T = 24 T = 1T = 2T = 3T = 4Hours Week Weeks Weeks Weeks



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## Discussion

As evidenced in a 4-week efficacy study of **AC Phytocoll PF** on the skin, moisture levels were improved by 35.63% after 24 hours and by 61.62% after 4 weeks when compared to the untreated control. The results indicate that **AC Phytocoll PF** is capable of increasing moisturization when compared to the untreated control and the base lotion. The present study confirms that **AC Phytocoll PF** is capable of providing moisturizing and skin hydrating benefits when added to cosmetic applications.

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