



## Transepidermal Water Loss Study

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**Tradename:** ACB Kale Protein Blend

**Code:** 20036

**CAS #:** 100209-45-8 & 100209-45-8 & 100209-45-8

**Test Request Form #:** 1269

**Lot Number:** NC-150401

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

**Study Director:** Erica Segura

**Principle Investigator:** Meghan Darley

**Test Performed:** Transepidermal Water Loss Study

### Introduction

An *in-vivo* study was conducted over a period of three weeks to evaluate the ability of **ACB Kale Protein Blend** to enhance barrier function through reduction in Transepidermal Water Loss (TEWL). Results indicate that this material is capable of efficiently reducing TEWL which allows moisture retention.

### Materials

A. Equipment: DermaLab Skin Combo

### Methods

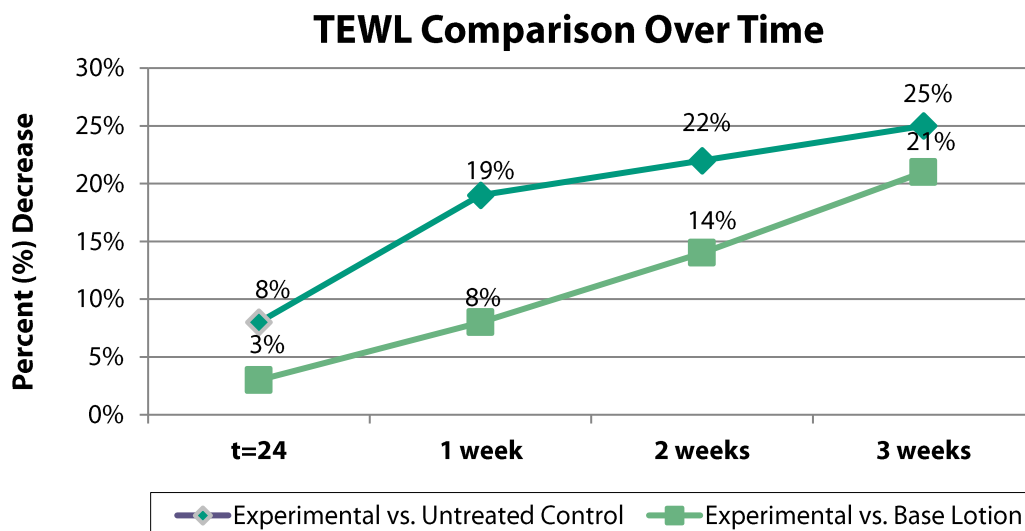
Ten volunteers M/F between the ages of 23 and 45 and who were known to be free of any skin pathologies participated in this study. A Dermalab Combo was used to measure TEWL on the subject's volar forearms. The instrument consists of a probe that is based upon the vapor gradient with an open chamber. This open chamber design maintains the free natural evaporation from the skin without interfering with the environment over the measurement area. This ensures unbiased and accurate readings. Operation of the water loss module is fully menu drive, allowing for pre-setting and standard deviation or measurement time. Baseline TEWL readings were taken on day one of the study.

Following initial measurements, all subjects were asked to apply 5milligrams of each test material on their volar forearms. Measurements were taken immediately after application of the test materials and then weekly for three weeks. The test material consisted of 2% **ACB Kale Protein Blend** in a base lotion.

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.

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## Results



**Figure 1:** Improvements in barrier function following application of the test materials after a period of 3 weeks.

## Discussion

As shown in Figure 1, results indicate continuous improvements in the barrier of the skin throughout the 3 week test period. After one week, the solution containing 2.0% **ACB Kale Protein Blend** decreased TEWL 8% more effectively than the base lotion alone. After three weeks, the solution containing 2.0% **ACB Kale Protein Blend** demonstrated even more effective barrier protection, decreasing TEWL 21% better than the base lotion alone.

When compared to the untreated control, the solution containing 2.0% **ACB Kale Protein Blend** decreased transepidermal water loss by 19% after one week and by 25% after three weeks.