Active Concepts

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Humidity Protection Analysis

Tradename: ACB Rice Water SF

Code: 16932

CAS #: 68553-81-1 & 8013-01-2 & 68333-16-4 (or) 1686112-36-6

Test Request Form #: 9079

Lot: N220316N

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

Test Performed:
Humidity Exposure with Qualitative Observation

Introduction

This study was performed to qualitatively assess the humidity protection capabilities of **ACB Rice Water SF (16932)** on the hair.

A bio-films action as a scaffolding rather than a true barrier is able to support and protect hair, this scaffolding allows small molecules and hydrogen ions in via its semi-permeable facade. It is this scaffolding and its semi-permeable membrane that promotes the exhibition of properties such as moisturization, pH balance, barrier protection, and additionally, protection from hair weakening after exposure to thermal processes. We see the actions of these bio-films in humidity protection leading to a smoother and well maintained hair tress with less frizz.

Materials

A. Hair Sample:	Bleached and Virgin Untreated; Bleached and Virgin 5.0% **ACB Rice Water SF** Treated; Bleached and Virgin Unfermented Water Treated; Bleached and Virgin DI Water Treated
B. Conditions:	Average 28°C; Average 93% RH
C. Equipment:	HOBO Onset temp/RH logger; Cannon EOS Rebel

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Methods

Four bleached and four virgin hair swatches were collected and treated with either 5.0% **ACB Rice Water SF** in DI water, unfermented rice water, DI water alone, or nothing (humidity control). A fifth hair swatch was used as a comparative control with no treatment and no humidity exposure. Each test swatch was evenly soaked in its designated treatment and blown dry for one minute. Initial images were taken post treatment and drying. The hair swatches were then fastened to the lid of the humidity chamber allowing of a natural hanging position and space in between each swatch. A 2000 ml beaker of boiling water was placed into the chamber and the lid secured allowing of a closed controlled environment. The temperature and humidity was monitored for the duration of the exposure. Final images were taken at the 30 minute time mark.

Results

5.0% **ACB Rice Water SF** in deionized (DI) water provides hair humidity protection in both bleached and virgin hair swatches. Additionally, **ACB Rice Water SF** appears shinier and smoother in texture than unfermented rice water and DI water treated samples and a more comparable appearance to the unexposed control.

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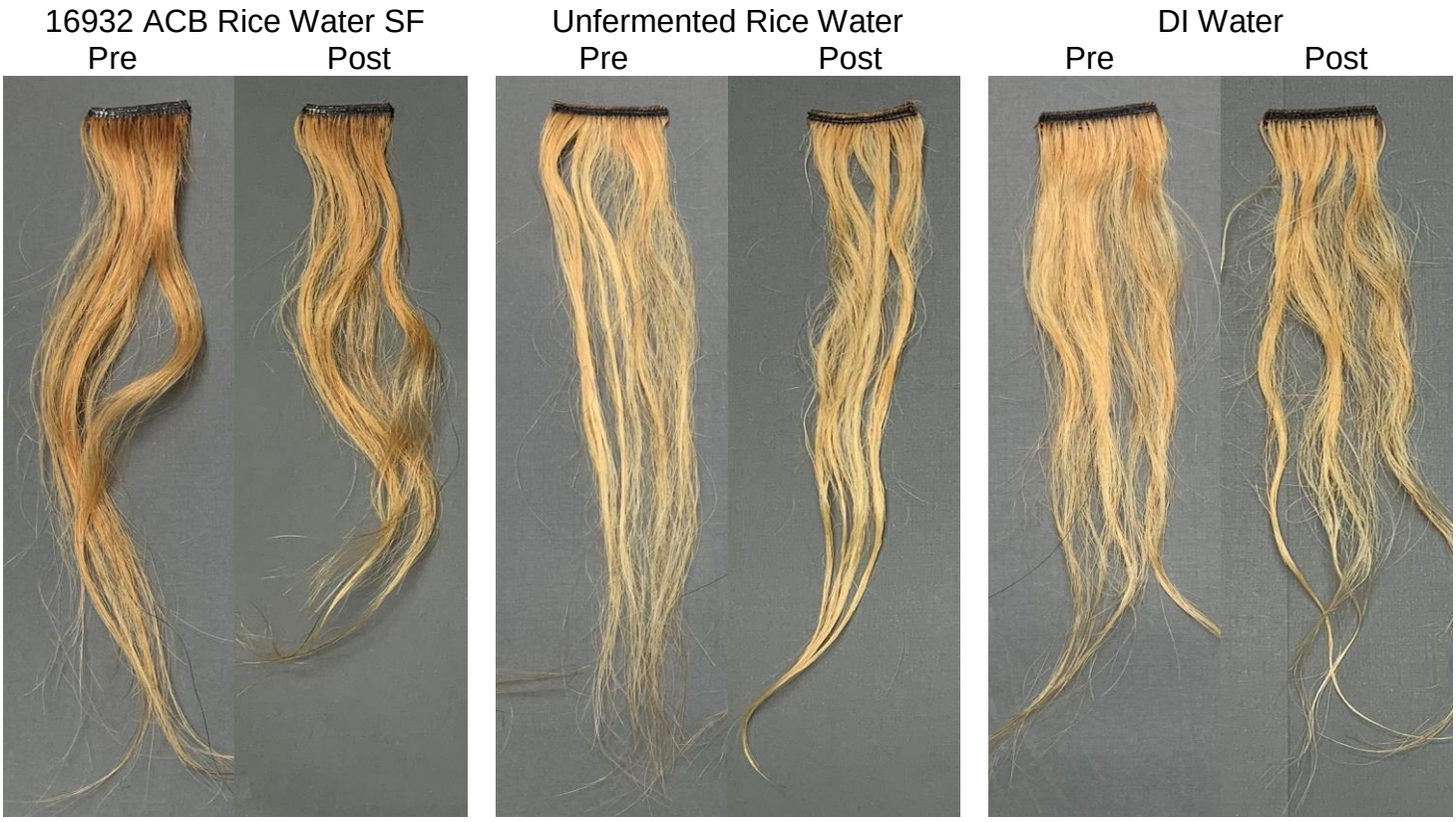

Figure 1: Pre-humidity Exposure and Post 30-minutes Humidity Exposure of Treated Bleached Hair Swatches

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Figure 2: Pre-humidity Exposure and Post 30-minutes Humidity Exposure of Control Bleached Hair Swatches

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Figure 3: Pre-humidity Exposure and Post 30-minutes Humidity Exposure of Treated Virgin Hair Swatches

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Figure 4: Pre-humidity Exposure and Post 30-minutes Humidity Exposure of Control Virgin Hair Swatches

Discussion

A qualitative study was performed to determine the humidity protecting ability of **ACB Rice Water SF**. The humidity protection of an unfermented rice water and DI water treated controls were also performed. All humidity-exposed swatches were also compared to an untreated humidity control and untreated and unexposed hair swatch. As demonstrated in Figures 1-4, the unfermented rice water control hair swatches were both extremely frizzy post 30 minutes of high humidity exposure compared to **ACB Rice Water SF** and the untreated and unexposed control. Conversely, the hair swatches treated with **ACB Rice Water SF** appeared more polished and smooth.

The results of this study indicate that **ACB Rice Water SF** is capable of protecting the hair from the deleterious effects of high humidity environments. The material helps smooth the hair better than the H2O controls after an equivalent exposure to high humidity. Overall, the **ACB Rice Water SF** is a suitable anti-frizz or anti-humidity protector for both chemical treated and virgin hair samples.