



Hair Hydration via Gravimetric Analysis

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Tradename: ACB Rice Water SF

Code: 16932

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

Test Request Form #: 9080

Lot #: N220303D

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

Study Director: *Maureen Danaher*

Principle Investigator: *Grant Tyler*

Test Performed:

Hair Hydration via Gravimetric Analysis

Introduction

A gravimetric analysis was performed in order to assess the hydrating ability of **ACB Rice Water SF (16932)** on the hair.

Materials

- A. Untreated virgin hair swatch
- B. Untreated bleached hair swatch
- C. 5.0% **ACB Rice Water SF (16932)** treated hair swatch
- D. H₂O treated hair swatch
- E. Unfermented Rice Water treated hair swatch
- F. Yamato constant temperature oven DKN402C @ 105°C
- G. Mettler Toledo precision balance ME103TE
- H. Medium size weigh trays

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Methods

Four bleached and four virgin hair swatches were collected, weighed, and then treated with 5.0% **ACB Rice Water SF**, unfermented rice water, water alone, or left as an untreated control. After treatment, hair swatches were weighed again, and then placed into a constant temperature-drying oven for 1 hour at 105°C. When removed from the oven, hair was given time to cool in a humidity-controlled chamber, and then weighed. Hair hydration was determined by calculating the percent moisture per hair swatch.

Results

ACB Rice Water SF demonstrated moisture retention abilities at a 5.0% concentration.

<u>Virgin Hair</u>	Untreated Control	H₂O	Unfermented Rice Water	5.0% ACB Rice Water SF
Initial Mass	1.03	0.85	0.95	0.74
Initial Mass + Test Product	1.03	1.73	1.78	1.51
Final Mass	0.93	0.77	0.87	0.88
% Moisture	-9.7%	-4.6%	-4.5%	9.3%

Table 1. Percent Moisture by Gravimetric Analysis for Virgin Hair Swatches

<u>Bleached Hair</u>	Untreated Control	H₂O	Unfermented Rice Water	5.0% ACB Rice Water SF
Initial Mass	0.86	0.63	0.75	0.76
Initial Mass + Test Product	0.86	1.51	1.65	1.66
Final Mass	0.76	0.55	0.68	0.88
% Moisture	-11.6%	-5.3%	-4.2%	7.2%

Table 2. Percent Moisture by gravimetric Analysis for Bleached Hair Swatches

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Discussion

A gravimetric analysis was performed to determine the hair hydrating ability of **ACB Rice Water SF** (16932) compared to a H₂O control, an unfermented rice water treated control, and an untreated control. As demonstrated in Table 1, the untreated, unfermented rice water treated, and H₂O treated control virgin hair swatches experienced a 9.7%, 4.5%, and 4.6% loss of moisture, respectively. As demonstrated in Table 2, the untreated, unfermented rice water treated, and H₂O treated control bleached hair swatches experienced an 11.6%, 4.2%, and 5.3% loss of moisture, respectively.

Conversely, the virgin hair swatches treated with **ACB Rice Water SF** experienced moisture retention of 9.3%, while the bleached hair swatches treated with **ACB Rice Water SF** experienced moisture retention of 7.2%.

The results of this study indicate that **ACB Rice Water SF** is capable of maintaining and enhancing hydration when compared to the untreated, unfermented rice water, and H₂O control in both natural and chemically treated hair. Overall, **ACB Rice Water SF** is a suitable addition to finished formulas intended to promote hair hydration.