

AC Vegan Yogurt Hydrolysate SF



INTRODUCTION

An *in-vivo* study was conducted over a period of six weeks to evaluate the effects of 3.0% **AC Vegan Yogurt Hydrolysate SF** in a base lotion on red area parameters compared to the base lotion alone. **AC Vegan Yogurt Hydrolysate SF** demonstrated the ability to provide a reduction in Red Area feature counts by 40.49% when compared to the base group after four weeks of treatment. Two weeks after treatment ceased, **AC Vegan Yogurt Hydrolysate SF** continued to provide red area reduction by 72.78% when compared to the base group.

When you look good, you feel good! Factors such as stress, oily skin, or unfriendly bacteria can wreak havoc on a good complexion. Probiotics are making a stance in the personal care industry as a natural mechanism to help the skin restore its own beneficial bacteria. **AC Vegan Yogurt Hydrolysate** utilizes probiotic technology to improve the complexion of the skin by reducing red areas.

AC Vegan Yogurt Hydrolysate can offer a 2-fold benefit including an immediate and prolonged effect. Probiotics offer these short and long-term benefits as they assist in recolonizing the bacterial environment on the skin. The immediate effect will be apparent as the probiotic material upsets the bacterial balance on the skin. After the initial interaction, the good bacteria, on the skin, may not generate as fast as the 'bad' bacteria. The good bacteria will work to obtain stability on the skin, with the assistance of probiotics. The long-term benefits or a prolonged effect will then become evident, resulting in a reduction of symptoms. In many studies with the gut, colon, and small intestine, probiotic colonization could take from days to months to provide quantifiable results⁴. The least reported period was 2-3 weeks⁵. This process is evident in the VISIA study conducted on **AC Vegan Yogurt Hydrolysate** to demonstrate the immediate and prolonged effect on red area reduction over the course of use. Even after treatment has ended, red areas display a prolonged and lasting improvement. Experts agree that the best way to use probiotics is preventatively, using them on a continuous basis to provide lasting results⁵.

MATERIALS AND METHODS

This study was conducted using 16 M/F participants between the ages of 23 - 37. Each participant was instructed to apply 2.0 mg of lotion to their entire face twice a day for a four week period. Participants were instructed to continue their usual skin care routine and to apply the lotion once their everyday skin care routine is finished. Half of the participant population used 3.0% **AC Vegan Yogurt Hydrolysate SF** in a Cetaphil Daily Facial Moisturizer for all skin types, while the other half used the Cetaphil Daily Facial Moisturizer alone as a control.

Code Number: 20653SFV

INCI Name: Cocos Nucifera (Coconut)
Fruit Extract & Lactobacillus Ferment

INCI Status: Conforms

REACH Status: Complies

CAS Number: 8001-31-8 & 68333-16-4

EINECS Number: 232-282-8 & N/A

TRF#: 4091

Lot Number(s): NC180103-B

Suggested Use Levels: 1.0 - 10.0%
Use Level for Assay: 3.0%

Sponsor:

Active Concepts, LLC
107 Technology Drive
Lincolnton, North Carolina 28092

Study Director: Maureen Danaher

Principle Investigator: Kara Fenton-Ray

Suggested Applications:

Moisturizing, Conditioning

Benefits of **AC Vegan Yogurt Hydrolysate SF**:

- Moisturization
- Topical Probiotic
- Great in Any Formulation

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Baseline photos were taken prior to starting the lotion regimen. Photos were taken once a week for 6 weeks, with four weeks being the regular testing period and the final two weeks being the regression period where application has ceased. Female participants were instructed to not wear makeup during the testing period.

Photographic assessments were performed using the VISIA Complexion Analysis System (Canfield Scientific., Fairfield, NJ, USA). The VISIA System, with a configurable head support, ensured consistent positioning of each subject’s head. The subjects cleaned their skin with a gentle facial wipe (Daily Facial Towelettes – Paraben Free Formula by Kirkland Signature) before the image was obtained. The photographic images were captured with standard, cross-polarized, parallel polarized, and ultraviolet light. Images were taken for each subject to quantify the feature counts for Red Areas.

Feature counts provide a count of the number of discrete instances of the feature being evaluated. Skin with a lower feature count was considered to be more youthful in appearance. In the present study, scores were used to more objectively assess changes in skin condition. The average scores for the front of face were calculated, and the differences between time points were recorded and compared. For statistical analysis a two-sample t-test, assuming unequal variance, was performed to compare data. The significance threshold was set at 0.05.

RESULTS

Reduction in red areas were determined throughout the four week treatment period and the two week regression period, after treatment ceased. Figure 1 illustrates the reduction in red areas throughout the study and depicts the percent change, in feature counts, between the experimental and base values. Statistical analysis was performed to compare the experimental and base feature counts throughout the study. Figure 2 displays the p-values for red area feature counts highlighted in yellow. The resulting p-values are less than 0.05. The VISIA Complexion Analysis System provides photographic assessments with image enhancements to provide higher visualization of feature changes. Figures 3 and 4 provide visualizations of red area feature changes throughout the study period on a participant using **AC Vegan Yogurt Hydrolysate SF**. Selected time periods, in Figures 3 and 4, are shown with both natural photographs and VISIA enhanced images of the same participant. Red area feature counts were collected for experimental and base groups during the study. The averages were calculated as well as the percent change between the experimental and base values. Figure 5 details the average feature counts for red areas during the study for experimental and base participants as well as the percent change.

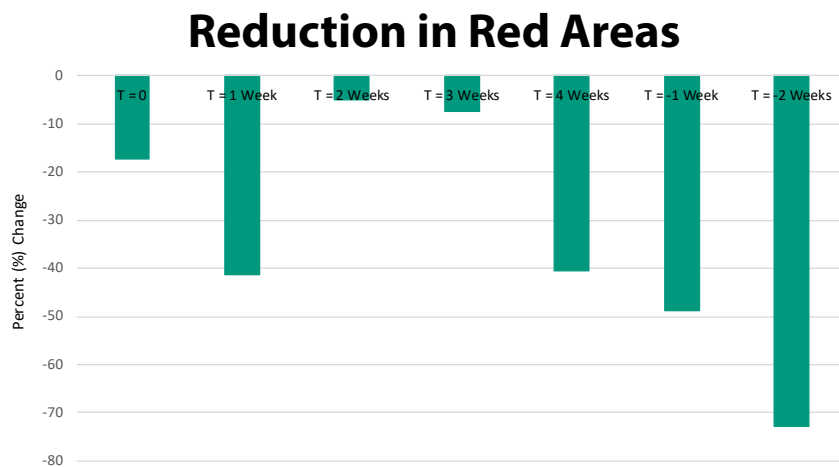


Figure 1. Percent change in feature counts from front face averages comparing experimental and base values throughout treatment

Red Areas Statistical Analysis

t-Test: Two-Sample Assuming Unequal Variances		
Red Areas Front Feature Count Averages (Experimental vs. Base)		
	Variable 1	Variable 2
Mean	158.1760204	208.0068027
Variance	254.728043	571.1887215
Observations	7	7
Hypothesized Mean Difference	0	
df	10	
t Stat	-4.587526486	
P(T<=t) one-tail	0.000499515	
t Critical one-tail	1.812461123	
P(T<=t) two-tail	0.000999031	
t Critical two-tail	2.228138852	

Figure 2. Statistical analysis on front face feature count averages comparing experimental and base values throughout treatment

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RESULTS

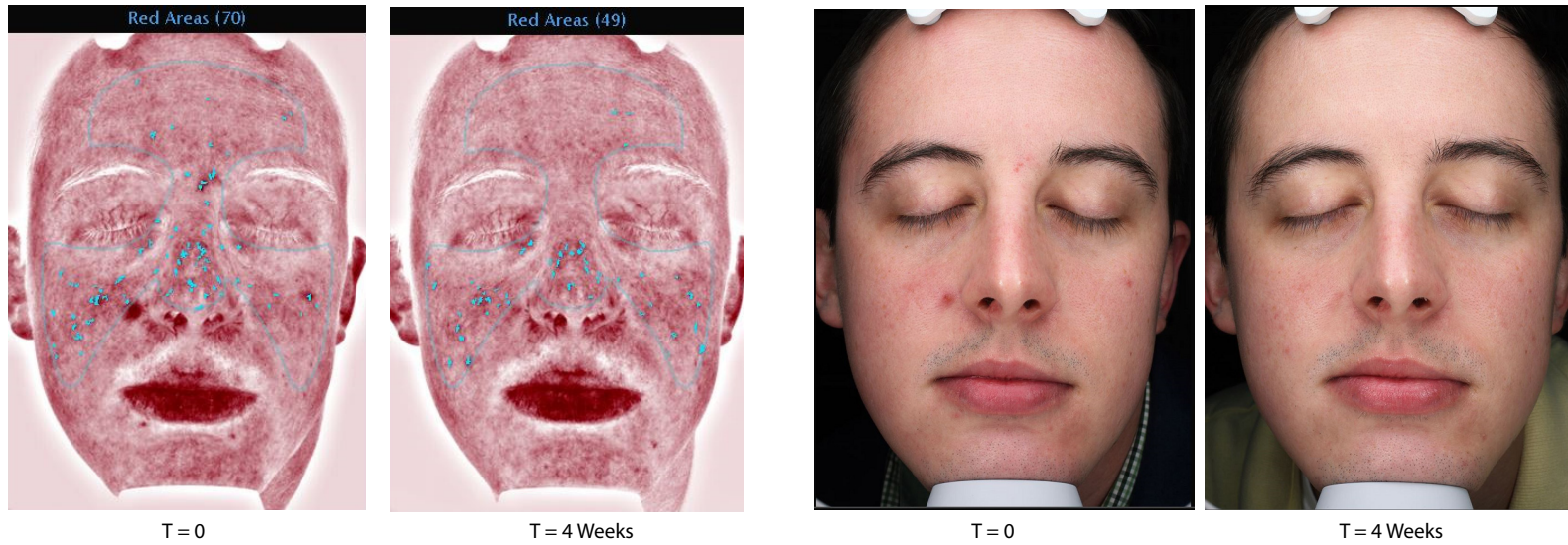


Figure 3. Panelist #3 treated with 3.0% AC Vegan Yogurt Hydrolysate SF in Base Lotion displays a reduction (30%) in feature counts for red areas from beginning of treatment (T=0) to T=4 Weeks via VISIA Image Analysis. Images on the left are panelist #3 with image enhancement, through VISIA, which provides higher visualization of feature changes. Images on the right are natural photos of panelist #3.

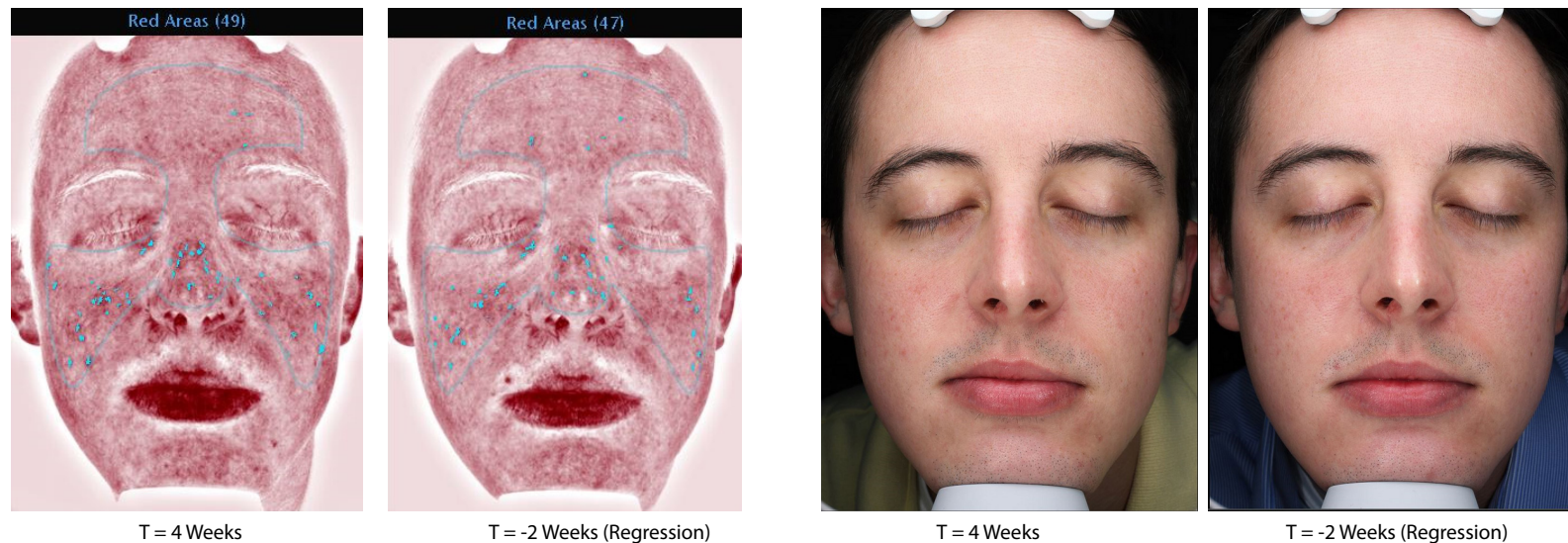


Figure 4. Panelist #3 treated with 3.0% AC Vegan Yogurt Hydrolysate SF in Base Lotion displays a reduction (4.08%) in feature counts for red areas from 4 weeks to -2 weeks (regression) via VISIA Image Analysis. Images on the left are panelist #3 with image enhancement, through VISIA, which provides higher visualization of feature changes. Images on the right are natural photos of panelist #3.

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RESULTS

Average Feature Counts for Red Areas

	Front Face Feature Count Averages						
	T = 0	T = 1 Week	T = 2 Weeks	T = 3 Weeks	T = 4 Weeks	T=-1 Week	T=-2 Weeks
Experimental [E]	157.00	158.25	168.75	180.13	167.63	139.86	135.63
Base [B]	184.14	223.57	177.17	193.33	235.50	208.00	234.33
% Change (E/B)	-17.29	-41.28	-4.99	-7.33	-40.49	-48.72	-72.78

Figure 5. Feature counts for red areas determined using front face averages of experimental and base groups.

DISCUSSION

Digital photographs and facial surface analysis were conducted as objective computer assessments by VISIA Complexion Analysis. Improvements in Red Areas were evaluated by comparing feature counts throughout the course of treatment. 3.0% **AC Vegan Yogurt Hydrolysate SF** in base lotion demonstrated the ability to reduce the average feature count of Red Areas by 40.49% after four weeks of treatment application and the counts were 72.78% lower than the base alone after two weeks post treatment. The active in base lotion demonstrated a statistically significant difference in feature counts for Red Areas over the course of the study, comparing experimental treatment to base treatment. P-values were less than or equal to 5% indicating results of the study, regarding Red Areas, were not due to random chance.

Yogurt is recognized as a potent probiotic and has a long list of benefits, including moisturization properties, sunburn relief, anti-acne properties, reducing discoloration, and preventing premature aging¹. Probiotics are defined as ‘a live microbial culture product which beneficially influences the wealth and nutrition of the host’³. Probiotics are bacteria that work to protect and balance the healthy bacterial environment present on the skin. **AC Vegan Yogurt Hydrolysate SF** does not contain live bacteria, but rather as it is produced through the fermentation of probiotic bacteria. Therefore, **AC Vegan Yogurt Hydrolysate SF** acts as a probiotic to improve the complexion of the skin by reducing red areas.

Breakouts, inflammation, and redness can be a big problem for anyone, but in order to address the problem we have to determine the cause. Pores on the skin collect dead skin cells and excess sebum creating the ideal environment for the proliferation of certain bacteria. Although bacteria are normally found, numerous scientific studies have shown that lowering specific bacterial count can greatly reduce inflammation, redness and breakouts, especially for those with problem skin. **AC Vegan Yogurt Hydrolysate SF** can be used to minimize red areas for healthier-looking skin. Bacteria can initiate an immune response when the body recognizes pathogenic or excess bacteria as foreign. This response could include inflammation and red areas. A probiotic can assist in regulating the skin’s microflora composition by reducing unwanted bacteria and in turn will reduce redness, and inflammation resulting in healthier skin. This suggests that maintaining natural commensal bacteria would be an effective method to minimize pathogenic bacteria on the skin therefore reducing inflammation, red areas, and problem breakouts

Probiotics can play an important role in maintaining the natural population of the skin microbiome. The skin microbiome is an accumulation of the microbial communities that inhabit the skin and are key players in host defence. Probiotics can be incorporated into cosmetics using bacterial lysates, which contain all the beneficial active components of live bacteria without the live bacteria. This offers a safe alternative for cosmetics products and consumers to create powerful probiotic actives. Acting as a probiotic, **AC Vegan Yogurt Hydrolysate SF** assists the skin with red area reduction over the course of use and may promote natural microbiome protection.

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DISCUSSION

The microbiome is a complex system and visible changes may not appear overnight. Good, healthy bacteria will take time to repopulate. Recent research indicates regular probiotic use may be necessary for 2-3 weeks, or longer, to deliver results and achieve maximum benefits. Prolonged probiotic use increases the opportunity for lasting results and is a reflection of the underlying mechanism involved in balancing skin microflora and bacterial colonization⁵.

AC Vegan Yogurt Hydrolysate can offer a 2-fold change or benefit including an immediate and prolonged effect. Probiotics offer these short and long-term effects as they assist in recolonizing the bacterial environment on the skin. When using probiotics an immediate effect may be apparent within the first week of treatment as the probiotic material upsets the bacterial balance on the skin. This can deliver a variety of positive results, such as a reduction in redness or inflammation, as the pathogenic bacteria are displaced. After the initial interaction, the good bacteria, on the skin, may not generate as fast as the pathogenic bacteria. This could result in reoccurring symptoms while the good bacteria work to obtain stability on the skin. Once stability is achieved, long-term benefits or a prolonged effect will then become evident, demonstrated in week 4 on Figure 1.

Extensive research has been conducted on microbiota colonization in the gut, colon, and small intestine. Colonization by probiotic influenced bacteria could take from days to months to provide results. The least reported period was 2-3 weeks. This study demonstrates the ability of **AC Vegan Yogurt Hydrolysate** to provide immediate (1 week after treatment) and prolonged benefits (after 4 weeks of treatment). Even after treatment has ended, red areas display prolonged improvement with **AC Vegan Yogurt Hydrolysate**.

AC Vegan Yogurt Hydrolysate SF also capitalizes on the rising trend of veganism in the cosmetic and personal care industry and provides exceptional moisturization, redness reduction, and probiotic benefits in a wide array of formulations.

References:

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