AC Southernwood Plump BG PF

Plumping Action
Increase Adipose Density
Natural, Botanical
anti-aging, versatile in formulations
anti-wrinkle

BACKGROUND

With a presence on every continent, Southernwood has a variety of uses ranging from industrial strength dyes to luxury culinary additives like spices or garnish. One of the more unique qualities of Southernwood is the presence of useful Oligosaccharides (long chain carbohydrates), which have begun to find their way into our cosmetics. [1]

Over the course of our lives we witness a variety of changes due to aging. Among them, we notice the change in our faces contours, and our skins firmness. Comparing a photograph of yourself 10 years ago and one from today will likely highlight a few things, most noticeably the change in cheek structure and the skin sag, but why? With the exception of the increase in wrinkle formation that naturally occurs with aging, over time the concentrations of subcutaneous adipose tissue wanes and the contours of our face become less apparent.

In the world of plastic surgery follow a face-lift procedure, the surgeon will typically inject adipose tissue directly into different areas of the face to increase the facial contours.[2,3] This causes the patients faces to appear fuller and the skin underneath more firm as a result. The oligosaccharides in **AC Southernwood Plump BG PF** are intended to mimic this effect with none of the invasiveness.

SCIENCE

AC Southernwood Plump BG PF consists of oligosaccharides that may stimulate adipogenesis *in vivo* thus triggering a swelling of adipocytes. The increase in adipose is intended to replicate the effects achieved by surgeons injecting adipose tissue subcutaneously. Efficacy testing indicates that **AC Southernwood Plump BG PF** may actually stimulate adipocyte differentiation by increasing the expression of mRNA that codes for PPARs-g (a transcription

Code Number: 20419PF

INCI Name: Butylene Glycol & Artemisia Abrotanum Extract & Water
INCI Status: Conforms
REACH Status: Complies
CAS Number: 107-88-0 & 89957-58-4 & 7732-18-5
EINECS Number: 203-529-7 & 289-576-4 & 231-791-2

Origin: Botanical and Synthetic
Processing:
GMO Free
No Ethoxylation
No Irradiation
No Sulphonation
Additives:
Preservatives: None
Antioxidants: None
Other additives: None
Solvents Used: Butylene Glycol
Appearance: Clear to Slightly Hazy, Brown Liquid
Soluble/ Miscible: Water Soluble
Ecological Information:
85.65% Biodegradability
Microbial Count: <100 CFU/g
No Pathogens

Suggested Use Levels: 2.0 - 4.0%
Suggested Applications: Anti-aging Anti-Wrinkle, Plumping, Improves Skin Characteristics

Benefits of **AC Southernwood Plump BG PF:**

- Versatile in Formulations
- Skin Smoothing
- Anti-Aging

factor that is involved in adipogenesis).Further in vitro testing reveals that **AC Southernwood Plump BG PF** may increase the activity of G3PDH (glycerol-3- phosphate dehydrogenase), which is an enzyme that increases the concentration of triglycerides that are stored in mature adipocytes.

BENEFITS

Through the use of these long chain carbohydrates **AC Southernwood Plump BG PF** has been designed to give immediate benefit by highlighting the facial contours and contributing to skin firming. In the long term, the potential for the stimulation of adipogenesis and the creation of new adipocytes to bring long lasting facial contours and firmness makes **AC Southernwood Plump BG PF** ideal for any modern anti-aging product.

EFFICACY DATA

An *in-vivo* skin smoothing study was performed to determine an increase in skin smoothness using **AC Southernwood Plump BG PF**. This study was based on comparing silicone impressions that were made of the test sites before and after the 30 day twice daily treatment on 20 (M/F) subjects between the ages of 38 and 53. Two areas on the subject's cheeks as well as two areas along the outer eye were selected for the trial. The results in Figure 1 indicate that **AC Southernwood Plump BG PF** is capable of reducing the appearance of Crow's feet by 12.0% and reducing the appearance of wrinkles on the cheeks by 4.0%.

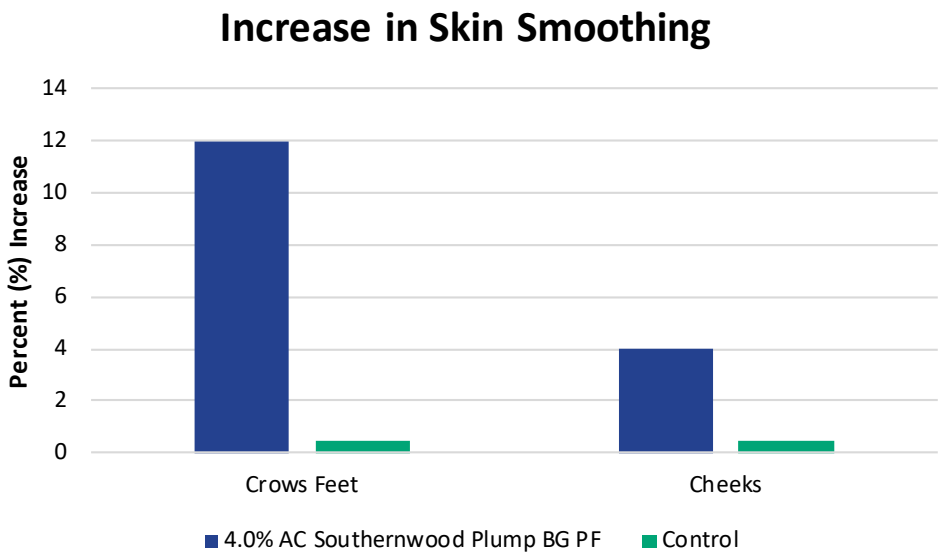

Figure 1. Improvements in Skin Smoothing.

Another *in-vivo* study was conducted to assess the effects that **AC Southernwood Plump BG PF** has on skin characteristics, such as tone, elasticity, fine lines and wrinkles. 20 (M/F) subjects applied a lotion containing 4.0% **AC Southernwood Plump BG PF** to their face twice daily for 60 days. The results in Figure 2 indicate **AC Southernwood Plump BG PF** is capable of increasing epidermal tone by 91% while improving epidermis elasicity by 63%. **AC Southernwood Plump BG PF** also decreased the appearance of crow's feet by 12% while decreasing fine lines and wrinkles on the cheeks by 10%. **AC Southernwood Plump BG PF** can be recommended to increase skin tone and elasticity for anti-aging benefits.

AC Southernwood Plump BG PF

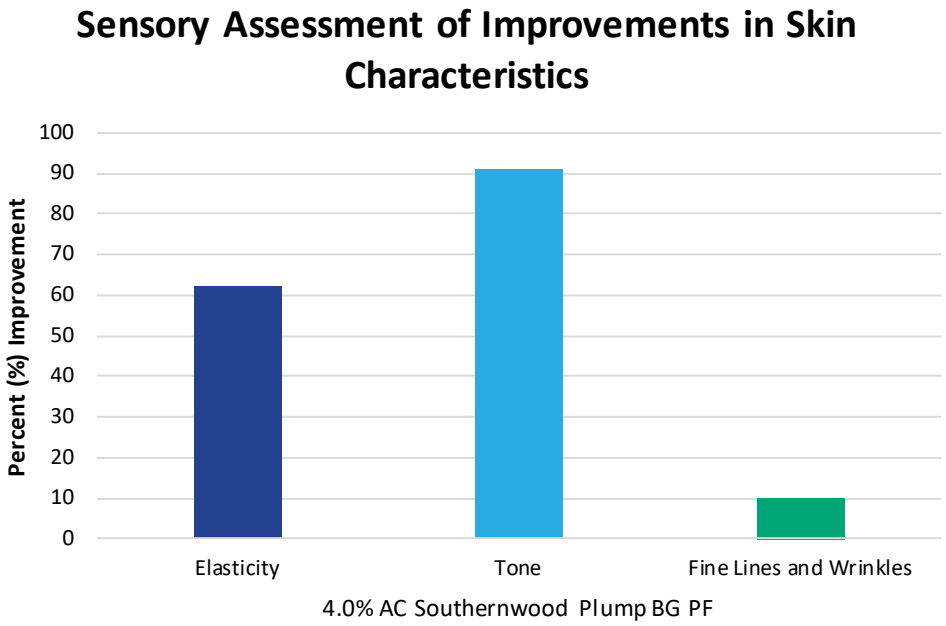

Figure 2. Effects on skin characteristics.

An *in-vitro* triglyceride and G3PDH study was performed to determine the effect of **AC Southernwood Plump BG PF** on triglyceride and G3PDH synthesis. As seen in Figure 3, 20 (m/f) subjects between the ages of 38 and 53 participated. Triglycerides are among the primary components of adipose tissue. G3PDH (glycerol-3-phosphate dehydrogenase) is an enzyme that is involved in the storage of fat. Adipocytes were incubated with 0.5% **AC Southernwood Plump BG PF** to determine whether or not it may increase the synthesis of triglycerides and G3PDH. . The results indicate the **AC Southernwood Plump BG PF** is capable of increasing triglyceride and G3PDH synthesis. These findings suggest that **AC Southernwood Plump BG PF** may be effective at increasing the synthesis and bstorage of adipose tissue.

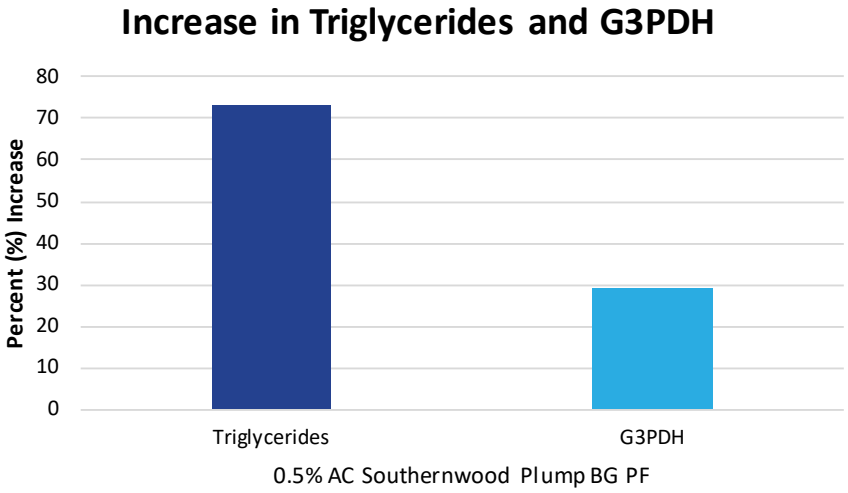

Figure 3. Percent increase in triglycerides when using **AC Southernwood Plump BG PF.**

AC Southernwood Plump BG PF

The cellular viability assay is useful for quantitatively measuring cell-mediated cytotoxicity, cell proliferation and mitochondrial metabolic activity. Increased metabolism in a cell indicates ample cellular respiration and adenosine triphosphate (ATP) production. ATP is the molecular energy of cells and is required in basic cell function and signal transduction. A decrease is ATP levels indicates cytotoxicity and decreased cell function while an increase in ATP levels indicates healthy cells.

The cellular viability assay was conducted to assess the ability of AC Southernwood Plump BG to increase cellular metabolic activity in cultured dermal fibroblasts. As shown in Figure 4, **AC Southernwood Plump BG PF** exhibited positive results by increasing cell metabolism. The increase in fluorescent signal indicates an increase in cellular metabolism and viability post **AC Southernwood Plump BG PF** treatment. For these reasons, we can assume **AC Southernwood Plump BG PF** is suitable for cosmetic applications designed to increase cell viability and metabolism.

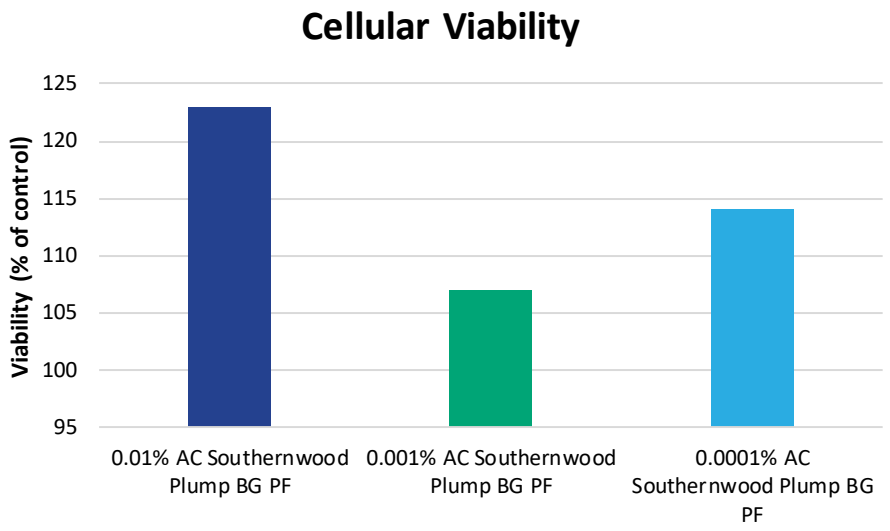

Figure 4. Cellular Viability Assay.

References:

1) Patel et al. 2010. World Journal of Microbiology and Biotechnology. Functional oligosaccharides: production, properties and applications. 27(5): 1119-1128
2) Zamfir et al. 2003. Oxford Journals. Structural Investigation of chondroitin/dermatan sulfate oligosaccharides from human skin fibroblast decorin. 13(11): 733-742
3) J Paufique et al. 2010. USPTO 7,185,948

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