

ACB Yogurt Extract



biotechnology
Calcium and Collagen
 Vitamins and Minerals
 Natural Exfoliation
Biotechnology
 Topical Pro-biotic

BACKGROUND

Yogurt is widely recognized for its health benefits. The principal of these have often been attributed to the vitamins, calcium and mineral content. In addition to its traditional role as a food product, yogurt is used to improve skin conditions. First developed as early as 2000 BC in Middle-Eastern civilizations, yogurt was a way to preserve milk. One type of yogurt is thought to have originated by nomadic tribes of Eastern Europe and Western Asia. However, fermented and cultured milks may actually predate recorded history.

Yogurt is produced by inoculating milk with *L. bulgaricus* and *S. thermophilus*. Not unexpectedly, milk contains significant concentrations of growth factor. Researchers have reported that bovine milk contains platelet-derived growth factor (PDGF), Insulin-like growth factors (IGF-I, IGF-II), as well as transforming growth factor (TGF- α)¹. These growth factors, present in the whey or liquid fraction, stimulate fibroblast proliferation as well as the production of extra cellular proteins such as collagen². Collagen is described as the protein that forms the structural grid that holds other skin structures in place, thus an important skin molecule. It plays a role somewhat similar to that of steel rods in a reinforced concrete block. Collagen gives the skin its strength and durability.

SCIENCE

As with any other protein, collagen is composed of amino acids. Yet, it is unusually rich in a few specific amino acids, hydroxyproline, lysine and glycine. Many believe that foods or supplements rich in these amino acids may benefit the skin by stimulating collagen production. Increasing collagen production is important because the age-related decline in the collagen synthesis is partly responsible for the signs of skin aging such as wrinkles and sagging. One of the important concepts to consider is that the aforementioned growth factors are proteins. In any Inflammatory event, protease (for protein breakdown)

Code Number: 20070

INCI Name: Water & Yogurt Extract

INCI Status: Approved

REACH Status: Complies

CAS Number: 7732-18-5 & N/A

EINCS Number: 231-791-2 & N/A

Origin: Biotechnology

Processing:

GMO Free

No Ethoxylation

No Irradiation

No Sulphonation

Additives:

Preservatives: None

Antioxidants: None

Other additives: None

Solvents Used: Water

Appearance: Clear Liquid

Soluble/ Miscible: Water Soluble

100% Biodegradability

Microbial Count: <100 opg,

No Pathogens

Suggested Use Levels: 1.0 - 5.0%

Suggested Applications:

Exfoliation, Moisturizing

Benefits of ACB Yogurt Extract

- A Natural Exfoliator
- Intense Moisturization
- Great in any formulation

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activity is increased. If a single growth factor is applied to the skin, it is likely that its effects will be inhibited by the presence of endogenous proteases³. A field of interest where yogurt is receiving a great deal of attention is probiotics. A probiotic is “an organism that contributes to the health and balance of the intestinal tract; also referred to as ‘friendly’, ‘beneficial’, or ‘good’ bacteria which when ingested act to maintain a healthy intestinal tract and help fight illness and disease”⁴. Probiotics are found in live microbial food supplements and fermented foods such as yogurt. They are known as non-pathogenic microorganisms that may significantly improve one’s health. They inhabit one’s intestinal tract, skin, urogenital tract, oral and nasal cavities, and any area that is exposed to the outside world. Lactic Acid Bacteria (LAB) produce a variety of health benefits.

Studies have shown increase immune function, more efficient mineral metabolism, and beneficial changes in flora. A single mechanism is not responsible for the benefits. Specific and non-specific immune responses occur as a result of probiotic treatment. It is generally speculated that presentation of LAB to the immune system relaxes it from environmentally induced hyper-vigilance. One of the main products produced by LAB is lactic acid. Lactic acid, being a member of the alpha hydroxy acids or AHAs, works on the skin’s lipids by dismantling them, which allow the dead cells’ outer layer to fall off. This process is done by their ability to weaken bonds which hold dead skin cells together, thus provoking the dead cells to shed from the skin’s surface.

BENEFITS

AHAs have obtained the approval of the FDA as agents capable of penetrating the skin’s barrier, thus increasing the turnover rate of cells and lowers the outer skin’s thickness. Lactic acid is an excellent moisturizing ingredient beneficial for most hyper-proliferate skin conditions. While probiotic treatments typically focus on gastrointestinal or urogenital health, new research shows that it may have utility in the treatment of atopic eczema⁴. In this study, infants fed formula enriched with bacteria (Bifidobacterium lactic Bb12 or Lactobacillus strain GG (ATCC53103)) showed a significant reduction in atopic eczema. While there is a current lack of research dedicated to the effects of probiotics applied directly to the skin, it is interesting to speculate as to the benefits.

EFFICACY DATA

ACB Yogurt Extract exhibited antioxidant activity comparable to 200µM Trolox®. The antioxidant capacity of **ACB Yogurt Extract** increased as the concentration increased, as a result we can assure that its ability to minimize oxidative stress is dose dependent. **ACB Yogurt Extract** began exhibiting antioxidant activity at a 2.5% concentration and was designed for versatility in any formulation.

ORAC Assay

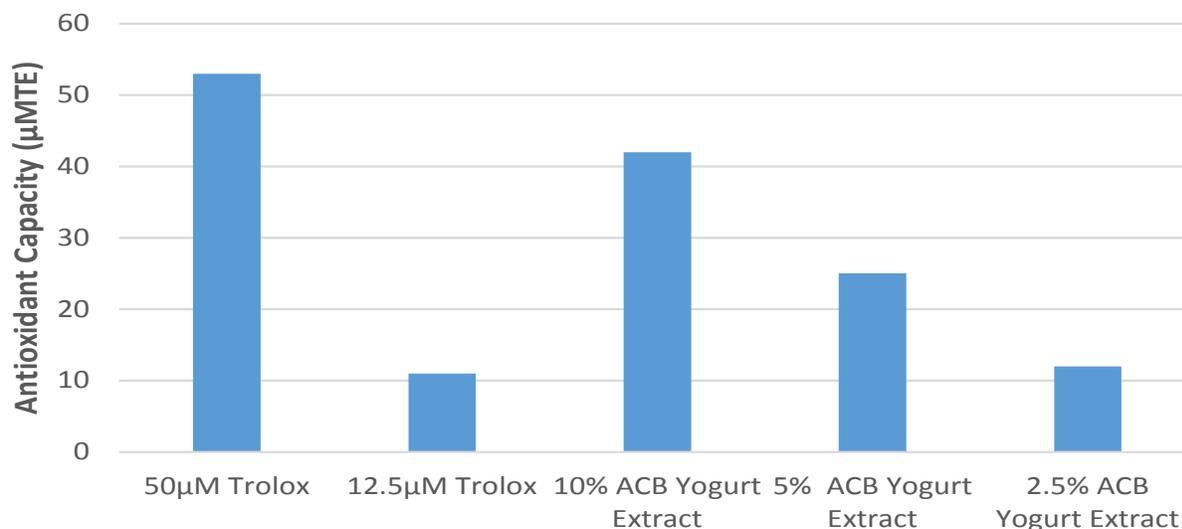


Figure 1. Antioxidant capability

ACB Yogurt Extract

As seen in Figure 2, **ACB Yogurt Extract** exhibited positive results by increasing cell metabolism. The increase in fluorescent signal indicates an increase in cellular metabolism and viability post **ACB Yogurt Extract** treatment. **ACB Yogurt Extract** is suitable for cosmetic applications designed to increase cell viability and metabolism. .

Cellular Viability Assay

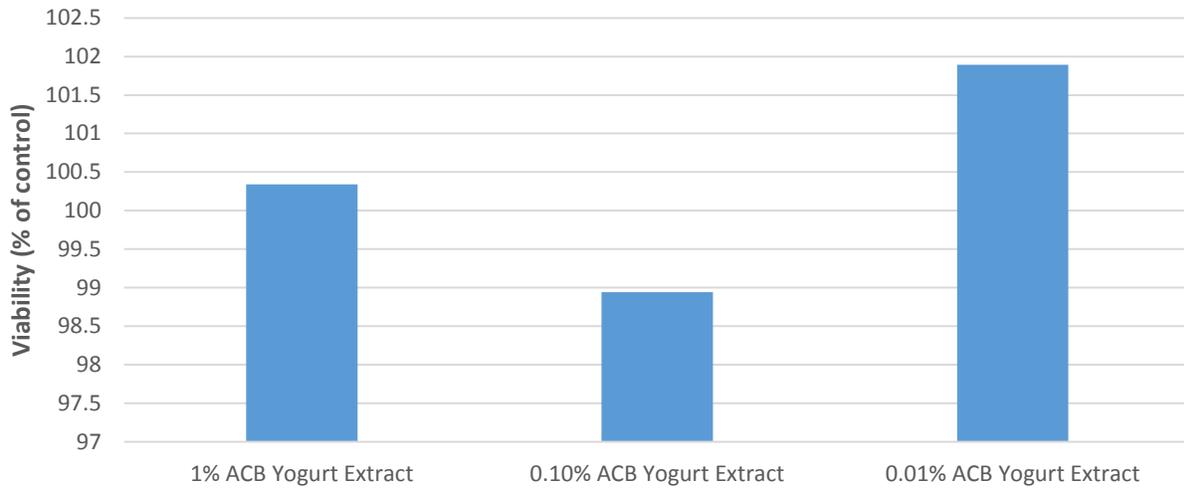


Figure 2. Cellular Viability

As seen in Figure 3, the cellular renewal assay indicates that **ACB Yogurt Extract** is capable of increasing cellular renewal by 13.63% when compared to controls.

Increases in Cellular Renewal

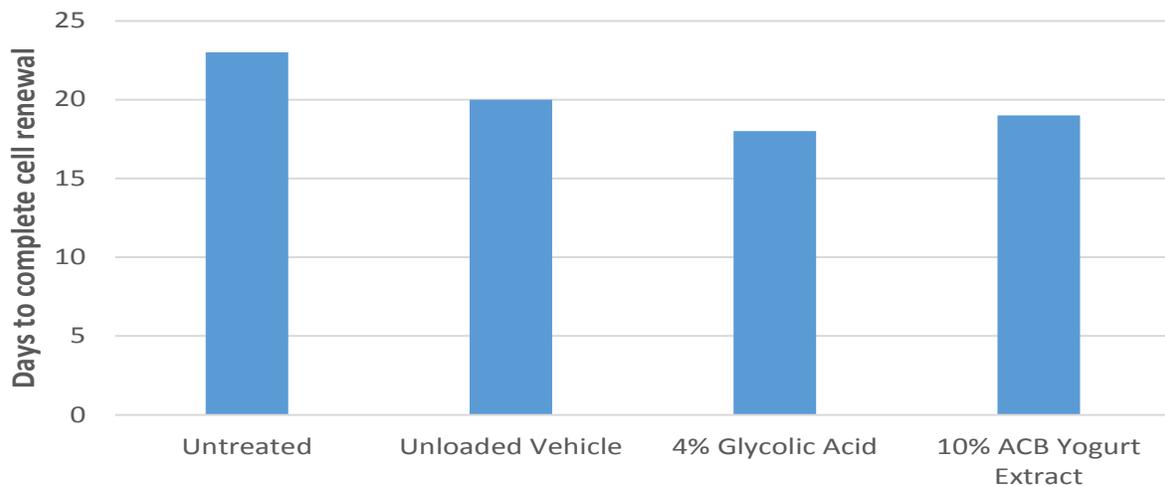


Figure 3. Cellular Renewal

References

- 1) Shing Y and Klagsbrun M. Purification and characterization of a bovine colostrums-derived growth factor. *Mol Endocrinol* 1:3335-338, 1987
- 2) Rayner T, et al. Mitogenic whey extract stimulates wound repair activity in vitro and promotes healing of rat incisional wounds. *AM J Physiol Regulatory Comp Physiol* 278:R1651-R1660, 2000
- 3) Yager DR, et al. Ability of chronic wound fluids to degrade peptide growth factors is associated with increased levels of elastase activity and diminished levels of proteinase inhibitors. *Wound Rep Reg* 5:23-32. 1997
- 4) White Coat Nutrition "Good Bacteria vs Bad Bacteria" Retrieved from <http://www.whitecoatnutrition.com/html/probiotic.html>.