

ABS Apple AHA's



immediately perceivable smoothness
 exfoliates and softens the skin
 the AHA product that provides
 real anti-aging results
 using malic acid for healthier,
 younger-looking skin!

BACKGROUND

Scarlet O'Hara, Rambo, Malinda, Red Baron, Jonathan and Golden Earl. At first glance, this looks like a list of famous and not-so-famous names. Actually, believe it or not, these are the names of some cultivated apple varieties. Most are familiar with common supermarket cultivars such as Red Delicious, Granny Smith, Fuji, and McIntosh. Over the years, more and more people are choosing to adopt healthier lifestyles by including apples as part of their diets, thus supporting the old adage "an apple a day keeps the doctor away!" The numerous apple varieties are as seemingly endless as their uses. The growing popularity of apples has led to its usage outside of the food industry. Apples are now utilized in cancer prevention research and in cosmetic and personal care applications. The significance of apples in personal care products has been attributed to the presence of an alpha-hydroxy acid (AHA), malic acid, which promotes the appearance of healthier-looking and smoother-feeling skin.

SCIENCE

Malic acid, an acid present in apples and pears, was first isolated from apple juice in 1785. Malic acid contributes to the sourness of green apples and is often used as a food additive to impart a sour taste. Glycolic acid, the smallest AHA molecule, is isolated from sugar cane and sugar beets and is most often used in chemical peels. Lactic acid, a hygroscopic AHA, also known as milk acid is primarily found in sour milk products. Citric acid, a natural preservative, is found in a variety of fruits, most notably citrus, with lemons and limes having the highest concentrations.

AHA's are being used more frequently in cosmetic formulations in order to exfoliate the skin and reduce signs of sun damage and aging². The idea of using AHA technology was inspired by chemical peel treatments used by dermatologists to treat various skin conditions. AHA usage has become increasingly popular as a result of their immediate perceived effects as well as their ease of use in aqueous systems while also improving the skin's texture and minimizing the appearance of pores, fine lines and wrinkles to create an overall healthy, revitalized aesthetic.

Code Number: 10286

INCI Name: Water & Propylene Glycol & Malic Acid & Pyrus Malus (Apple) Fruit Extract & Glycolic Acid & Lactic Acid & Citric Acid

INCI Status: Approved

REACH Status: Compliant

CAS Number: 7732-18-5 & 57-55-6 & 97-67-6 & 85251-63-4 & 79-14-1 & 50-21-5 & 77-92-9

EINECS Number: 231-791-2 & 200-338-0 & 202-601-2 & 286-475-7 & 201-180-5 & 200-018-0 & 201-069-1

Origin: Botanical & Synthetic

Processing:

- GMO Free
- No Ethoxylation
- No Irradiation
- No Sulphonation

Additives:

- Preservatives: None
- Antioxidants: None
- Other additives: None

Solvents Used: Water & Propylene Glycol

Appearance: Orange Liquid

Soluble/ Miscible: Water Soluble

Ecological Information:

89.9% Biodegradability

Microbial Count:

< 100opg, No Pathogens

Suggested Use Levels: 1.0 - 10.0%

Suggested Applications:

Exfoliating, Softening, Anti-Aging

Benefits of **ABS Apple AHA's:**

- Alpha Hydroxy Acid Product
- Perceivable Results
- Smoother, Healthier Looking Skin
- Anti-aging
- Improves Cellular Renewal/ Exfoliates

ABS Apple AHA's

BENEFITS

The mechanism of action of AHA's is to bind to cell adhesion molecules and reduce the calcium ion concentration thus disrupting cellular adhesion. This results in the desquamation (shedding) of the outermost layer of skin. The reduction of calcium ion levels also promotes cell growth and retardation of cellular differentiation therefore giving rise to younger-looking skin. **ABS Apple AHA's** are primarily recommended for exfoliation and cellular renewal applications. **ABS Apple AHA's** contain apple extracts, when blended with malic, glycolic, lactic, and citric acids provide a potent combination for the proper exfoliation of dead skin cells, to create a noticeable improvement in the skin's texture and appearance.

EFFICACY

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 in 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 **ABS Apple AHA's** to increase cellular metabolic activity in cultured dermal fibroblasts. As shown in Figure 1, **ABS Apple AHA's** exhibited positive results by increasing cell metabolism. The increase in fluorescent signal indicates an increase in cellular metabolism and viability post **ABS Apple AHA's** treatment. For these reasons, we can assume **ABS Apple AHA's** is suitable for cosmetic applications designed to increase cell viability and metabolism.

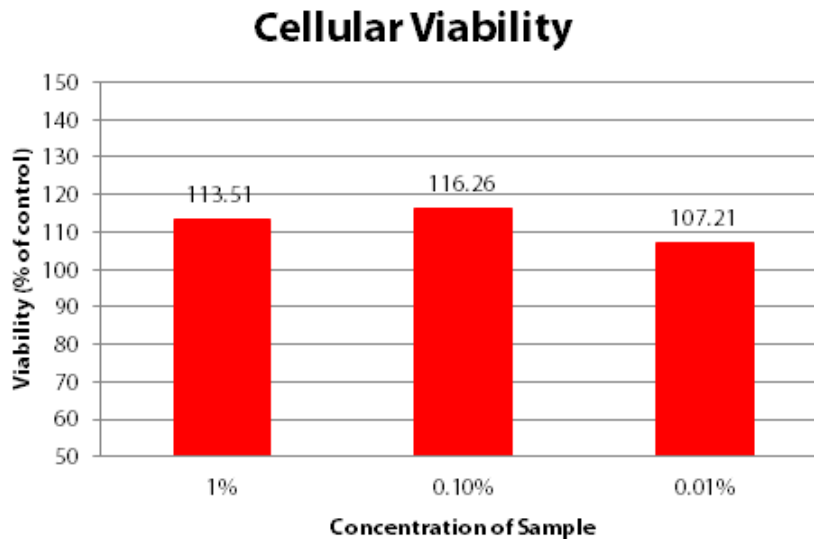


Figure 1. ABS Apple AHA's exhibit the ability to increase cell metabolism.