

AC Plant Keratin PF



Combination of plants
 No animal byproducts
 Botanical Exfoliator
 Conditions Skin and Hair
 Natural Moisturization

BACKGROUND

Take a glance at your skin. Now, take a look at your hair. Based on outward appearances, they are as different as night and day. Anyone would be surprised to know that a major component of your skin, hair, and even your fingernails is the same material: keratin. Keratin is sourced from animals, NO one can argue it is ineffective, thus the need for a naturally derived alternative has arisen. **AC Plant Keratin PF** was created to replicate the benefits of the animal protein with none of the stigma. Keratin is a structural protein that does not soften in hot or cold water and is not susceptible to proteolysis. However, keratinaceous substances are somewhat vulnerable in another way. Repeated exposure of skin and hair to soaps, chemicals, hard water and harsh weather can cause dryness which can lead to more significant detrimental effects such as roughness, scaling, dullness and eventual breakage.

The high natural protein content of both the skin and the hair allows for extensive protein use in a wide variety of cosmetic applications. Because of their poor water solubility, most proteins are unsuitable for use in cosmetics. In order to be incorporated into cosmetic applications, proteins must undergo hydrolysis; the process by which a protein is cleaved in small peptide chains called hydrolysates or cleaved further into amino acid molecules. Traditionally, almost all proteins utilized in cosmetic products were derived from animal sources because of their availability and high functionality as a moisturizers, conditioners and film formers.

Recently, consumer concerns regarding the use of animal proteins has led to user-friendly plant-based alternatives from sustainable sources such as wheat, corn and soybeans. Hydrolyzed proteins play an important and functional role in keeping our skin and hair moisturized and healthy.

Code Number: 20624PF

INCI Name: Hydrolyzed Corn Protein & Hydrolyzed Wheat Protein & Hydrolyzed Soy Protein

INCI Status: Conforms

REACH Status: Complies

CAS Number: 100209-41-4 & 100209-45-8 & 68607-88-5

EINCS Number: 309-349-6 & 309-353-8 & 271-770-5

Origin: Botanical

Processing:

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

Additives:

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

Solvents Used: Water

Appearance: Amber Liquid

Soluble/ Miscible: Water Soluble
 100% Biodegradability

Microbial Count: < 100 opg,
 No Pathogens

Suggested Use Levels: 1.0 - 5.0%

Suggested Applications:
 Moisturization, Conditioning

Benefits of AC Plant Keratin PF

- Versatile in Formulations
- Intense Moisturizing Benefits
- Conditions Hair and Skin

AC Plant Keratin PF

SCIENCE

In the skin, Hydrolyzed proteins are among a group of key nutrients that are often referred to as the natural moisturizing factor (NMF). These compounds are responsible for maintaining moisture content and suppleness of the skin by attracting and retaining water to keep the outer layer of the stratum corneum hydrated. Hydrolyzed proteins derived from plants such as corn, wheat and soybeans are substantive to both skin and hair.

When applied to the skin, these proteins penetrate the outer layers of the stratum corneum to provide hydrating benefits while forming a film that minimizes trans-epidermal water loss (TEWL). Hydrolyzed proteins have also been shown to reduce irritation caused by surfactants typically used in shampoos and cleansers. In hair care, hydrolyzed proteins are able to penetrate the outermost layer called the cuticle. In doing so, these proteins offer protective benefits by helping to repair split ends and cuticle damage, increasing strength and elasticity and limiting the adverse effects of chemical processing.

BENEFITS

AC Plant Keratin PF features hydrolyzed proteins derived from wheat, corn and soybeans, which combined can enhance moisturization and conditioning properties of a wide variety of skin care and hair care applications, in addition to, providing film forming and anti-irritant benefits to leave skin and hair hydrated and healthy.

EFFICACY DATA

As shown in figure 1, **AC Plant Keratin PF** exhibited antioxidant activity comparable to 200µM Trolox®. The antioxidant capacity of **AC Plant Keratin PF** increased as the concentration increased, as a result we can assure that its ability to minimize oxidative stress is dose dependent. **AC Plant Keratin PF** began exhibiting antioxidant activity at a 0.1% concentration and was designed for problem skin with and hair. With the present study we can confirm that this unique ingredient is not only capable of providing functional benefits but it is also capable of providing potent antioxidant benefits when added to cosmetic applications.

ORAC Assay

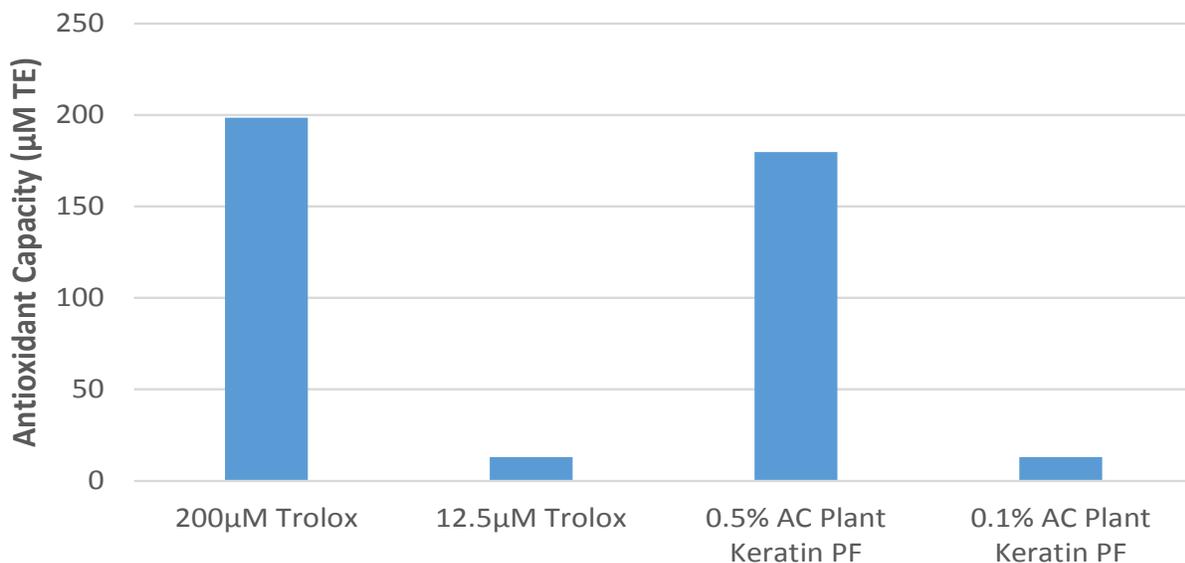


Figure 1. Antioxidant capability

AC Plant Keratin PF

Cellular Viability Assay

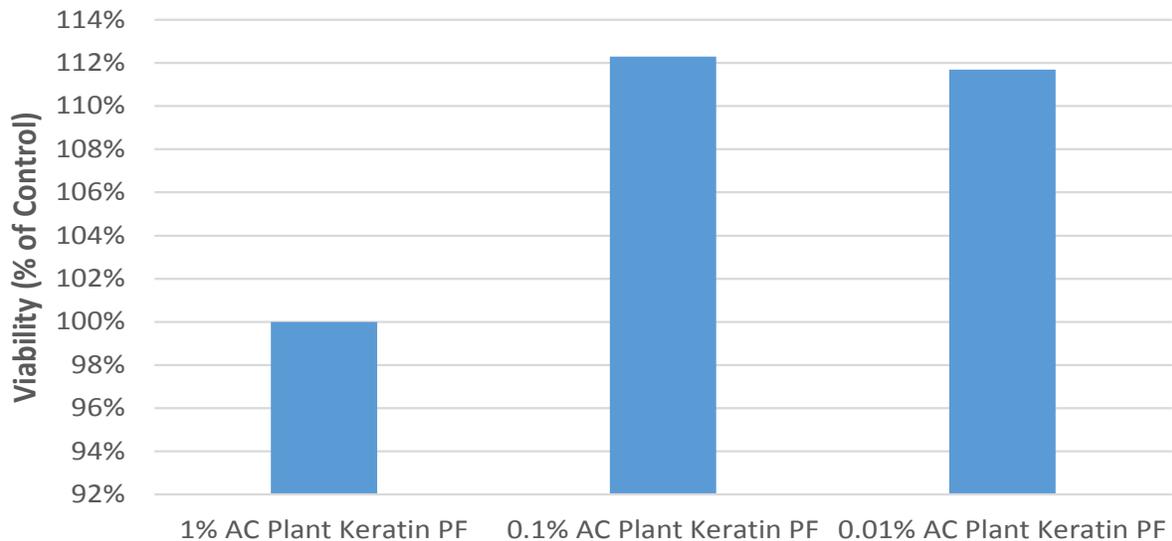


Figure 2. Cellular Viability

In this study, **AC Plant Keratin PF** was tested to evaluate its effects on the viability of normal human dermal fibroblasts (NDHF). At concentrations of both 0.1% and 0.01% **AC Plant Keratin PF**, nor the preservatives contained therein exhibited any inhibition of cell viability. It can therefore be concluded that at normal use concentrations **AC Plant Keratin PF** is not cytotoxic. The data obtained from this study met criteria for a valid assay and the controls performed as anticipated.

References

- 1) Yang, C. et al. 1992. Protoplasma. Intermediate filaments in higher plant cells and their assembly in a cell-free system. 171(1): 44-45
- 2) Secchi, G. et al. 2008. Clinics in Dermatology. Role of protein in cosmetics. 26(4): 321-325
- 3) Lipkowski, A. et al. 2009. Polimery. Keratin-associated protein micromaterials for medical and cosmetic applications. 54(5): 386-388