

Phytokeratin PF



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 finger nails is the same material: keratin. Keratin for use in cosmetics is typically sourced from animals and no one can argue it is ineffective, thus the need for a naturally derived alternative has arisen. Phytokeratin PF was created to replicate the benefits of this 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.

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).

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

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

Origin: Botanical

Processing:

GMO Free
No Ethoxylation
No Irradiation
No Sulphonation

Additives:

Natural Antimicrobial: Leuconostoc/
Radish Root Ferment Filtrate
Preservatives: None
Antioxidants: None
Other additives: None

Solvents Used: Water

Appearance: Amber Liquid

Soluble/Miscible: Water Soluble

Ecological Information:

86.55% Biodegradability

Microbial Count:

< 100 CFU/g, No Pathogens

Suggested Use Levels: 1.0 – 5.0%

Suggested Applications: Conditioning, Film-Former, Moisturising, Soothing

Phytokeratin PF

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 hair 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

Phytokeratin 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

A half head study was conducted to determine the comparison of a control shampoo vs. 2.0% Phytokeratin PF in the control shampoo. Additionally, a comparison between the control conditioner and 2.0% Phytokeratin PF in the control conditioner were reported. Each volunteer's hair was photographed prior to the treatment and again after the shampoo and conditioner had been applied and the hair was styled. The images of the half-head study were used in conjunction with a sensory assessment subjectively rating the different parameters.

This assessment was conducted both before and after treatment. Based on the results obtained, Phytokeratin PF is capable of enhancing the smoothing, wet and dry combability, anti-frizz, overall feel, shine and hydration.

As shown in figure 1, Phytokeratin PF exhibited antioxidant activity comparable to 200µM Trolox®, an analogue of Vitamin E. The antioxidant capacity of Phytokeratin PF increased as the concentration increased, as a result we can assure that its ability to minimize oxidative stress is dose dependent. Phytokeratin 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.

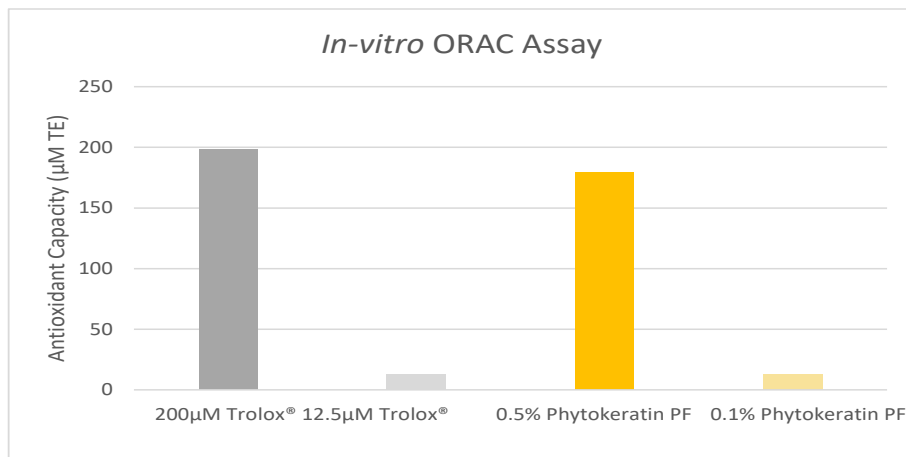


Figure 1. Antioxidant Capacity of Phytokeratin PF compared to the control Trolox®