

AC Keratin Hydrolysate 30 PF



conditioning material
 ideal for hair care applications
 stabilize foam structures
 nourish the scalp, reduce irritation
 increase shine + improve feel!

BACKGROUND

Skin and hair, based on outward appearances, 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. **AC Keratin Hydrolysate 30 PF** is an aqueous solution derived from sheep wool that is an ideal ingredient where conditioning benefits are desired.

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. The hydrolysates can be modified to increase their substantivity similar to quaternized proteins or condensed with fatty acids to alter their surface activity. Further reaction of the condensate with an alkaline material will result in a salt that can be utilized as a mild surfactant. 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. Produced by a combination of alkaline and enzymatic hydrolysis,

Code Number: 20586PF

INCI Name: Hydrolyzed Keratin

INCI Status: Conforms

REACH Status: Complies

CAS Number: 69430-36-0

EINCS Number: 274-001-1

Origin: Animal

Processing:

GMO Free

No Ethoxylation

No Irradiation

No Sulphonation

Additives:

Preservatives: None

Antioxidants: None

Other additives: None

Solvents Used: Water

Appearance: Clear to Hazy
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,
Protection

Benefits of AC Keratin Hydrolysate 30 PF:

- Stabilizes Foam Structures
- Nourishes Scalp
- Reduces Irritation
- Strong Conditioning
- Increases Shine and Improves Feel

AC Keratin Hydrolysate 30 PF

AC Keratin Hydrolysate 30 PF is an aqueous solution with an average molecular weight of approximately 2000 Daltons. Because of its molecular weight, hydrolyzed keratin does not penetrate the skin or hair, but rather plates out to form tenacious films. This combination of properties makes **AC Keratin Hydrolysate 30 PF** an ideal ingredient where conditioning benefits are desired. The presence of hydrolyzed protein films on hair directly translates to increased shine and improved feel.

Because hydrolyzed proteins exist in solution as colloids, they are capable of interacting with anionic surfactants in such a way to form tightly bound protein-surfactant complexes. It is well recognized in the industry that the presence of these complexes in personal care formulations greatly reduces the irritation potential of the surfactant.¹ Studies conducted *in vivo* comparing surfactant solutions with varying concentrations of proteins show a clear dose dependent reduction in erythema.^{2,3} Proteins are avid film formers in solution as well as when applied to keratinaceous substrates. Proteins are ultimately what give beer its head, at least in unadulterated brews. With surfactant systems, this film forming behavior translates into longer lasting, or more stable foam structures.

BENEFITS

The addition of **AC Keratin Hydrolysate 30 PF** to a cosmetic formulation may provide real consumer perceivable benefits such as reduced irritation, conditioning, film-forming and sustained foam capabilities. **AC Keratin Hydrolysate 30 PF** may 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 evidenced in Figure 1, **AC Keratin Hydrolysate 30 PF** exhibited antioxidant activity comparable to 200µM Trolox®. The antioxidant capacity of **AC Keratin Hydrolysate 30 PF** increased as the concentration increased, as a result we can assure that its ability to minimize oxidative stress is dose dependent. 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.

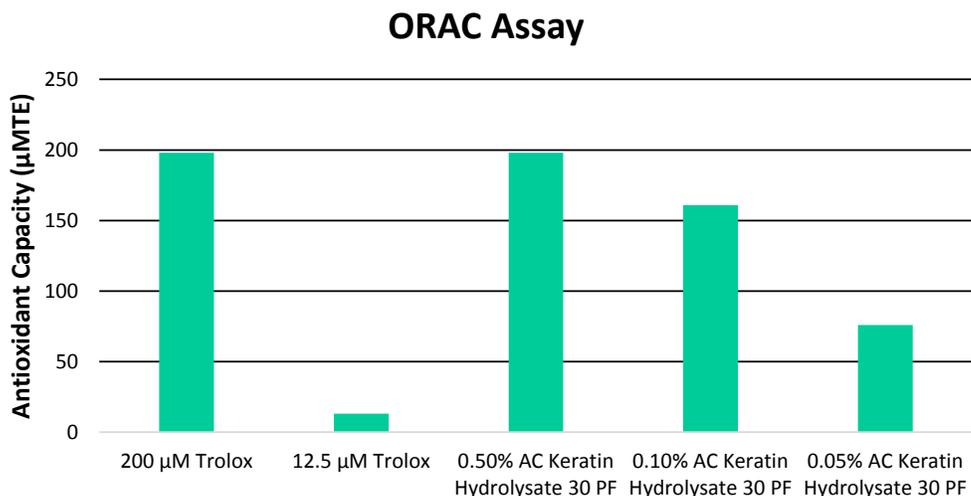


Figure 1. Antioxidant Capabilities

References

- 1) Teglia, A. et al. 1994. International Journal of Cosmetic Science. New protein ingredients for skin detergency: native wheat protein-surfactant complexes. 16:235-246
- 2) Teglia, A. et al. 1993. Cosmetics & Toiletries. Relationships between chemical characteristics and cosmetic properties of protein hydrolysates. 108:56-65
- 3) Goddard, E. et al. 1982. Cosmetics & Toiletries. Protection of skin by cationic cellulose: in vitro testing methods. 97:55-69



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