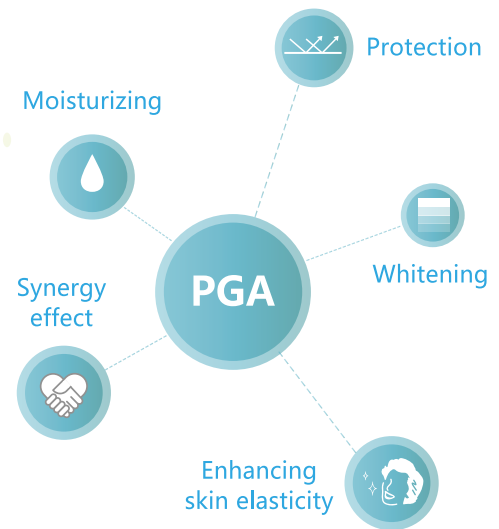


Hyafactor™-PGA

Sodium polyglutamate

【Introduction】

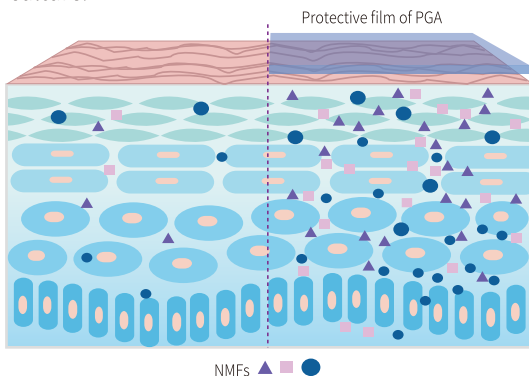
Polyglutamic acid (PGA) which exists frequently in nature in the form of sodium polyglutamate, is usually a sticky anionic amino acids polymer. Initially, it was found in a traditional food ‘natto’, which is also called γ -polyglutamic acid (γ -PGA). The polymer is an isomorphism type of polypeptide biopolymers with glutamic acid as a structural unit and connected by amide bond formed through α -amino and γ -carboxyl group. Since each of the structural unit of glutamic acid contains a plurality of hydrophilic groups, a large amount of hydrogen bonds can be formed inside or between the polymer chains, so PGA can effectively capture and retain moisture, enhance skin elasticity, and be regarded as a good natural moisturizing ingredient widely used in personal care products. Our Hyafactor™-PGA is produced by fermentation with a superior strain of *Bacillus subtilis*. Its INCI name is sodium polyglutamate.



【Efficacy】

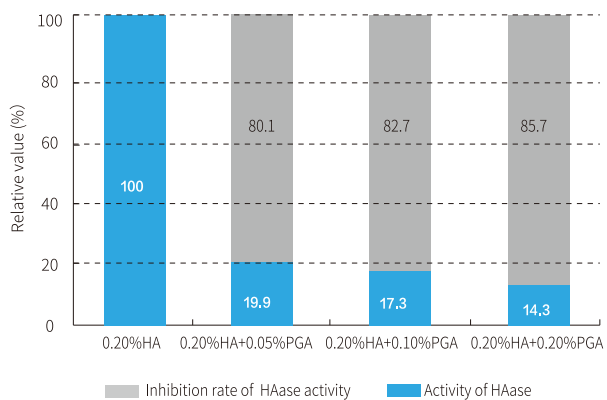
1 Promote the accumulation of NMFs

PGA has excellent biocompatibility and film-forming properties, it can protect the skin effectively and maintain skin in the healthy pH environment. Also, it can promote the skin's natural moisturizing ingredients accumulation and increase the level of natural moisturizing factors (NMFs) in the skin culture.



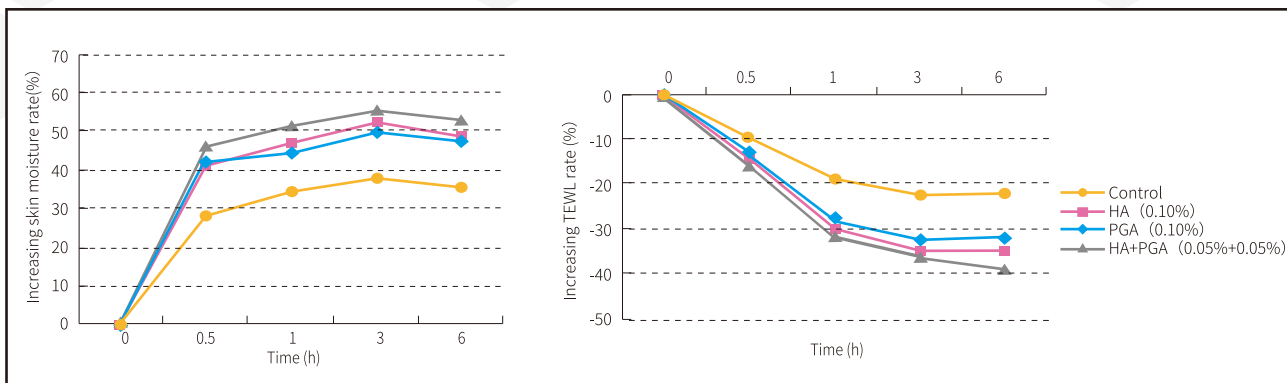
2 Reduction of hyaluronic acid (HA) degradation

HA is a high-quality natural moisturizing factor, however HA can be hydrolyzed quickly by hyaluronidase (HAase). PGA can effectively inhibit the activity of HAase, increasing and maintaining the level of HA in the skin culture while leaving the skin more healthy and youthful.



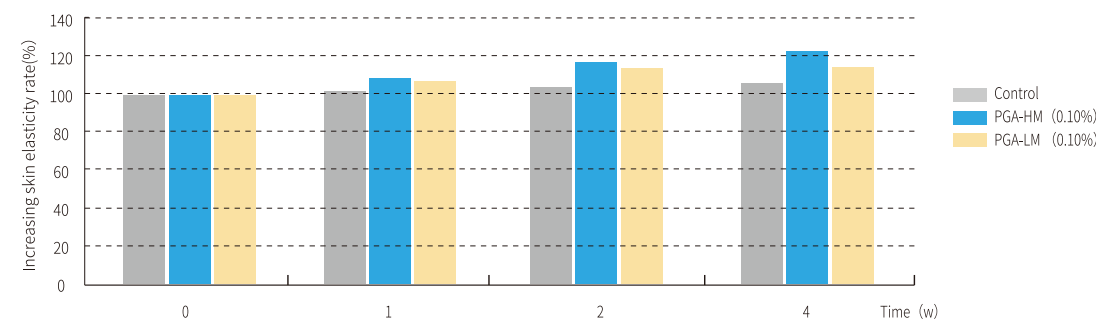
3 Enhance hydrating and moisturizing capacity of skin

PGA can reshape the skin self-moist system, further improve the skin hydrating and moisturizing capacity. In addition, PGA can penetrate and humidify the corneous layer, leaving the skin smooth and moist.



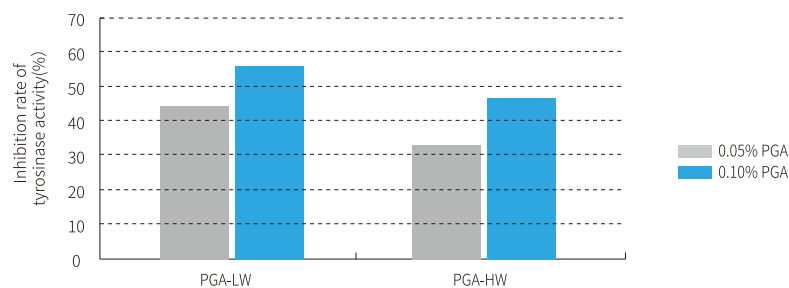
4 Improve elasticity and softness of the skin

PGA can effectively activate cells and promote the skin fibroblasts to synthesize more elastin and collagen, thereby improving skin elasticity and softness, fading fine lines and delaying skin aging.



5 Inhibition of melanin production

PGA can inhibit the activity of tyrosinase, so that it can reduce the production of melanin and improve skin tone, leaving the skin whitening.



6 Effect of synergy with other ingredients

PGA can not only efficiently increase the moisture of the skin but also provide better skin feeling, smoothness and silkiness when used in combination with HA or other cosmetics ingredients. PGA builds a good embedded delivery system by its anionic groups and then control the release of nutrients and moisture continuously. In turn the active ingredients and nutrients will perform more effectively. By forming a protective film, it can help the skin to resist from external aggressions and soothes the response of allergy and inflammatory.

[Application] Cream, Emulsion, Serum, Mask, Cleanser and Hair care products, etc.

[Recommended dosage] 0.05% - 1%.



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