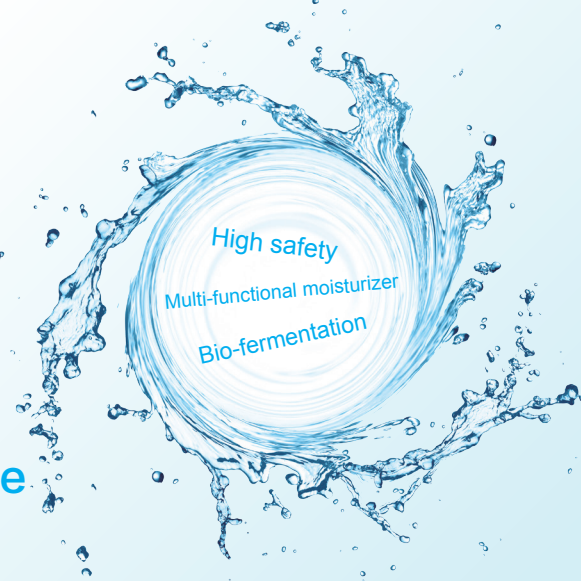


Hyafactor™-NAG

N-acetyl-D-glucosamine

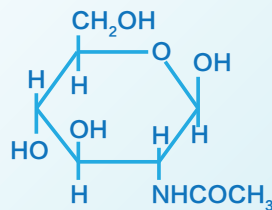
INCI name: Acetyl glucosamine



[Introduction]

Acetyl glucosamine (NAG), a basic component unit of numerous polysaccharides in cells has many important physiological functions in organisms. Hyafactor™-NAG is a small amino monosaccharide molecule obtained by bio-fermentation. It possesses excellent transdermal absorption and can improve the skin hydration. In addition, NAG as a high-quality and multi-functional moisturizer has been widely used in various cosmetic formulations.

Structural formula:

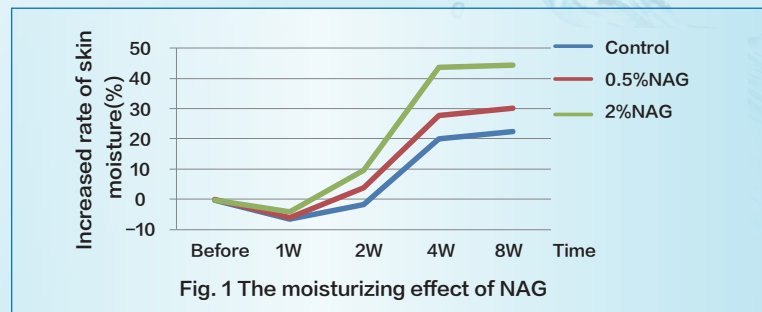


Molecular formula: $C_8H_{15}NO_6$

[Efficacy]

1 High-quality moisturizer

The excellent transdermal absorption ability of NAG can improve the skin hydration to make it a high-quality moisturizer; as confirmed by the moisturizing experiment (Fig. 1).



2 Promoting HA synthesis

NAG can enhance the activity of hyaluronic acid synthase (HAS) promoting the synthesis and secretion of hyaluronic acid by the keratinocytes and fibroblast cells, thus improving the hyaluronic acid content of the skin.

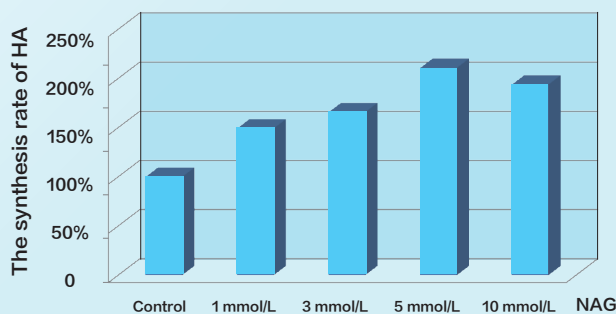
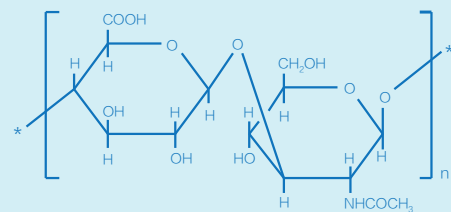


Fig. 2 NAG can promote HA synthesis



Structure of Hyaluronic Acid

HA is a linear high molecular weight mucopolysaccharide composed by thousands of repeating disaccharides units of D-glucuronic acid and N-acetyl-D-glucosamine.

3 Natural exfoliating regulator

NAG is a natural exfoliating regulator during the metabolism of keratinocytes. The glycoprotein present on the surface of keratinocytes will cause these keratinized keratinocytes bond together and hard to peel off when in presence of an abnormal metabolism. NAG on the contrary can improve and maintain the metabolism of glycoprotein on the surface of keratinocytes in the way that the natural exfoliation of cutin makes the skin smoother and delicate.

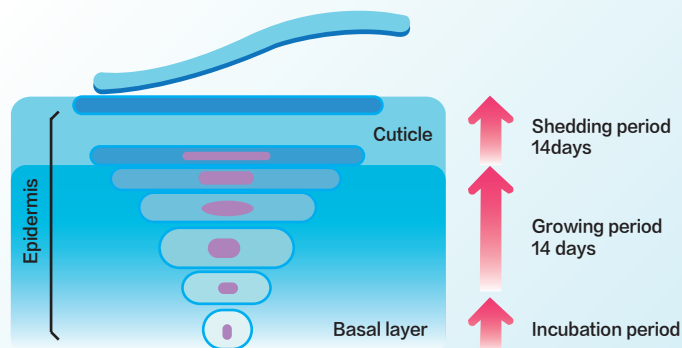


Fig. 3 The metabolism of corneous cells

4 Whitening skin

NAG can inhibit the tyrosinase activity leading to the reduction of melanin synthesis. What's more, the synergy effect of NAG and nicotinamide can reduce the skin pigmentation, fade skin color spot and reduce the phenomenon of uneven complexion caused by UV radiation, showing a beautiful and charming skin.

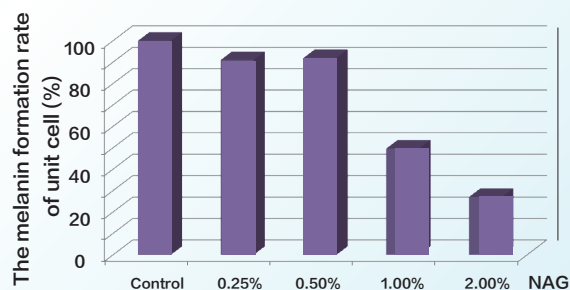


Fig. 4 The effect of NAG on the formation of melanin in unit cell

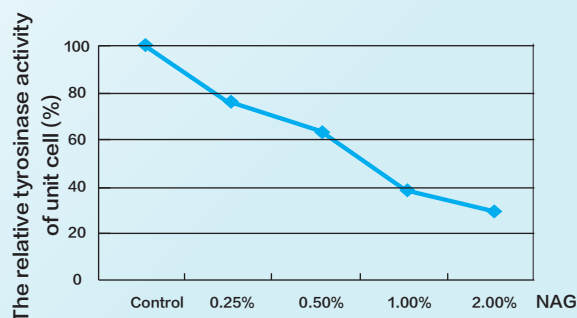


Fig. 5 The effect of NAG on tyrosinase activity in unit cell

5 Scavenging free radicals

NAG can reduce free radicals damage occurred to the skin by scavenging free radicals, and it is able to enhance the anti-wrinkle, anti-aging and skin tissue repairing ability as well.

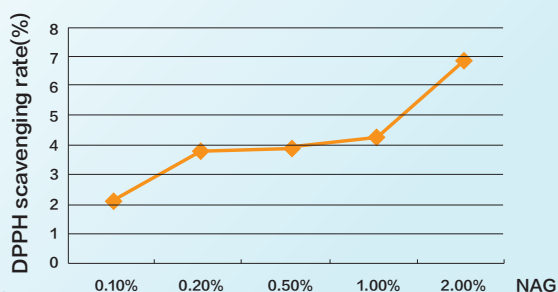


Fig. 6 The ability of scavenging free radicals

[Application]

Cream, Emulsion, Serum, Mask, etc..

[Recommended dosage] 0.5% - 2%



BLOOMAGE FREDA BIOPHARM CO., LTD.

Add: No.678 Tianchen St., High - Tech Development Zone, Jinan, China 250101

Tel: +86 531 82685998 Fax: +86 531 82685988

www.bloomagefreda.com E-mail: customer@bloomagefreda.com

Copyright © Sep. 2016, Bloomage Freda Biopharm

The Science of Beauty