

G-Hexuron

**Anti-Wrinkle
Skin-Lightening
Promotes Collagen**

McKinley
resources, inc.

G-Hexuron

INCI Name: Ascorbyl Glucoside

CAS Number: 129499-78-1



Description:

Among the well studied, 2-derivatives of stabilized L-Ascorbic Acid, the 2-glucoside (Ascorbyl Glucoside) is preferred by most researchers for post-UV efficacy in antioxidant activity, in Inflammation mitigation, in collagen stimulation and finally for inhibition of melanogenesis. G-Hexuron is the stabilized form of Vitamin C that can be topically applied to the skin in advanced formulations specifically targeted for antiaging and photo-protection benefits. G-Hexuron is the water soluble, Vitamin C, 2-derivative with superior formulation stability. G-Hexuron is both bioavailable and bioactive in its 2-glucoside form and has been shown to be more bio-persistent over time vs. Vitamin C. G-Hexuron is photo-protective, visibly lightens skin and possesses anti-aging properties similar to Vitamin C.

Technical Data:

Test/Properties:	Specification:
Appearance	White to cream powder
pH	2.0 ~ 2.5
Melting Point	158°C ~ 163°C
Optical rotation	186.0° ~ 188.0°
Loss on drying	≤ 1.0%
Residue on ignition	≤ 0.2%
Free ascorbid acid	≤ 0.1%
Free glucose	≤ 0.1%
Heavy metals (as Pb)	≤ 10ppm
Arsenic (AS203)	≤ 1ppm
Assay	≥ 98%

Recommended Use Level: 1% to 2%

Applications:

G-Hexuron is recommended for anti-aging, collagen stimulation and skin lightening. G-Hexuron applications include anti-aging and lightening products, foundations, sunscreens, masks, facial moisturizers, conditioners, creams, lotions, and whitening products.



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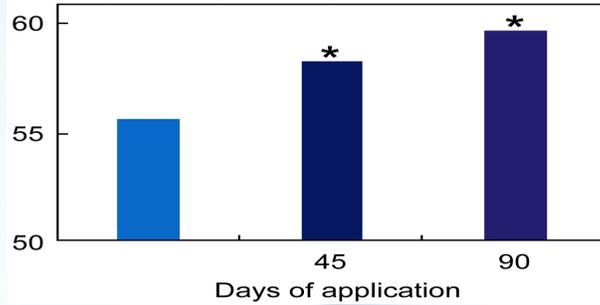
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In-vivo testing of G-Hexuron to show skin lightening effect

Skin brightness (L* value)



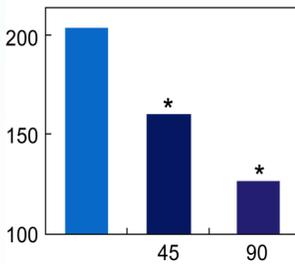
In clinical testing, sixteen female volunteers, ages (37 to 55) were used to test the skin lightening effects.

2% G-Hexuron was applied twice a day for a period of 90 days to show an increase in skin lightening.

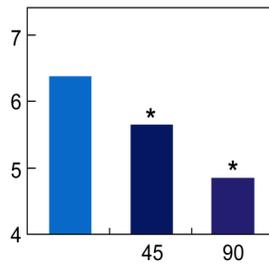
As a result, skin lightening increased by 80% in 45 days, and 120% in 90 days. Which is a ratio of 1.5 on day 45, and 2.5 after 90 days.

In-vivo testing of G-Hexuron to show anti-wrinkle effect

Wrinkle depth (µm)



Roughness (µm)

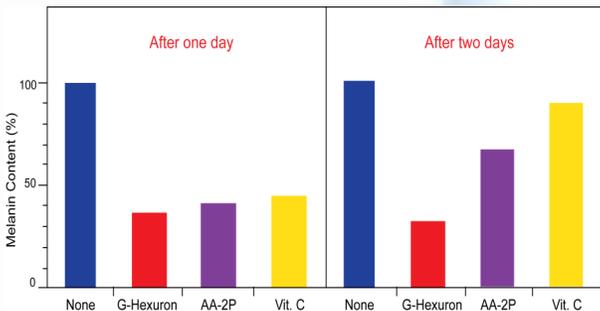


Clinical testing in an anti-aging skin study was conducted on sixteen female volunteers, age 37 to 55.

2% G-Hexuron in a formulation was applied twice a day over 90 days. The formulation was applied to the lateral area (crow's feet area) of the volunteers eyes and thoroughly across the cheek area.

As a result, the appearance of wrinkle depth is well improved after 45 days and substantially improved at 90 days.

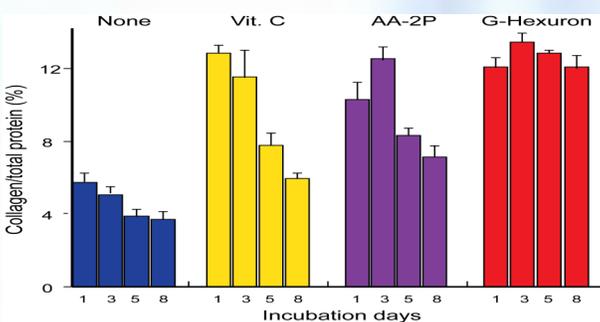
In-vitro testing of G-Hexuron to show melanin reduction⁽¹⁾



An in-vitro culture was treated with 2 mmol/L of G-Hexuron, AA-2P, or Vitamin C (Vit. C). Melanin content was checked after 24 and 48 hours.

After one day, G-Hexuron significantly reduced melanin content compared to untreated cells. After two days, G-Hexuron significantly reduced melanin content compared to all other groups.

In-vitro testing of G-Hexuron to show it promotes collagen protein synthesis⁽²⁾



An in-vitro culture of human fibroblasts was grown in the presence of 0.25 mM Vitamin C (Vit. C), AA-2P or G-Hexuron for 1-8 days.

G-Hexuron promoted a significant increase in collagen synthesis compared to the untreated group.

Notably, collagen synthesis decreased in Vitamin C and AA-2P treated cells at day 5, while levels for G-Hexuron treated cells remained stable.

¹Yoshimaru Kumano, et al., In Vitro and In Vivo Prolonged Biological Activities of Novel Vitamin C Derivative, 2-O-α-D-Glucopyranosyl-L-Ascorbic Acid (AA2G), in Cosmetic Fields, J Nutr Sci Vitaminol 44, 345-359 (1998).

²Yoshimaru Kumano, et al., Enhancing effect of 2-O-α-D-Glucopyranosyl-L-Ascorbic Acid, a Stable Ascorbic Acid Derivative, on Collagen Synthesis, Biol Pharm Bull 21 (7), 662-668 (1998).



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