



AA2GTM

Healthier, Brighter, Younger-Looking Skin

Stabilized time-released Vitamin C

Protects against UV-induced damage

Brightens and evens skin tone

A stabilized and long-lasting Vitamin C, which features multiple daily and special skin care benefits, including skin brightening

AA2G™ is a stabilized Vitamin C derivative—L-Ascorbic Acid 2-Glucoside—synthesized from Vitamin C and starch through enzymatic technology developed by Nagase Viita (formerly Hayashibara). L-Ascorbic Acid 2-Glucoside is the main component of AA2G™. It has the same bioactive functionality in the body as Vitamin C, because it is hydrolyzed into Vitamin C and glucose by α -glucosidase—an enzyme naturally existing in cell membranes of the body and skin.

AA2G™ is metabolized more gradually in the skin than other Vitamin C derivatives, providing sustained physiological effects. In the commercialization process, AA2G™ has superior formulation stability as a raw material, whereas Vitamin C is known to have disadvantages in the storage and production of cosmetics, such as discoloration and degradation. Used worldwide as a cosmetic ingredient for many years, the distinctive characteristics of AA2G™ allow for the fullest use of Vitamin C's bioactive functionality in skin brightening, promotion of collagen synthesis, antioxidant effects and other skin care needs.

- Supplies Vitamin C continuously
- Inhibits production of melanin
- Lightens eumelanin and improves pigmentation
- Protects from skin damage caused by UV lights
- Improves wrinkles and skin texture

Formulation stability of AA2G™

AA2G™ is resistant to discoloration during production and storage of cosmetic products compared to other Vitamin C derivatives.

AA2G™



pH 5 pH 6 pH 7

SODIUM ASCORBYL PHOSPHATE (SAP)



pH 5 pH 6 pH 7

ETHYL ASCORBIC ACID (VC-Et)



pH 5 pH 6 pH 7

MAGNESIUM ASCORBYL PHOSPHATE (MAP)

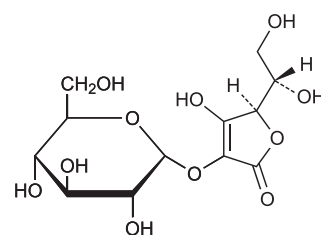


pH 5 pH 6 pH 7

2% solutions of various Vitamin C derivatives were stored at 40°C for 6 weeks.

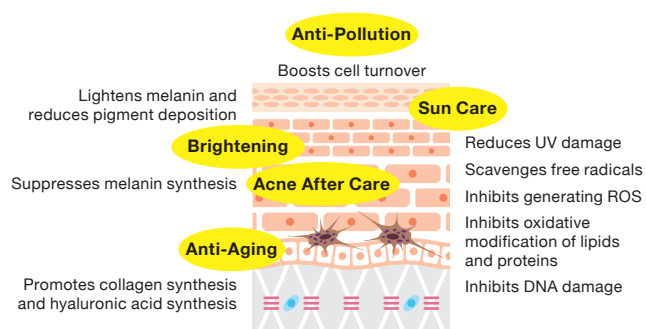
Structural formula of L-Ascorbic Acid 2-Glucoside

One glucose molecule is bound to the reaction site, 2' hydroxyl group of Vitamin C, to improve stability.



Multiple bioactive functions of AA2G™

In addition to the skin brightening effects, AA2G™ has been shown to have various positive effects on the skin.



BENEFIT 1

Reduces age spots

Lotion containing AA2G™ reduced and lightened age spots.

PICTURES OF AGE SPOTS



Week 0

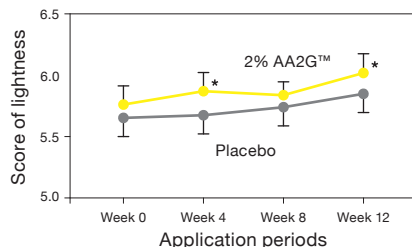


Week 12

vs. 0w, *: $p < 0.05$

Lotion with 2% AA2G™ or placebo was applied on the face of 46 females with age spots twice a day for 12 weeks. Score of lightness was determined by a dermatologist using skin tone color chart made by Japan Color Research Institute.

CHANGES IN LIGHTNESS SCORES



APPLICATIONS

Skin Care

Sun Care

Anti-Aging

PRODUCT FORMS

Lotions, Toners, Milk Lotions, Creams, Gels, Serums/Essences, Sunscreens

SUGGESTED USAGE LEVEL

Skin Care	0.5–5.0%
Anti-Aging	0.5–5.0%
Brightening	1.0–2.0%

INFORMATION

INCI NAME

Ascorbyl Glucoside

DESCRIPTION

White to yellowish-white powder or crystalline powder and odorless

STORAGE

Store in a cool, dark and dry place.

EXPIRATION

Eighteen (18) months from the production date (net 10 kg) or twelve (12) months from the production date (net 1 kg)

PACKAGE

Tin-free steel can in a carton box (net 10 kg) or zipper aluminum-laminated bag (net 1 kg)

SAFETY

Data acquired

FORMULATION DETAILS

After preparing an AA2G™ solution, neutralize it by using an alkaline agent before adding it to the formulation. Avoid heating for a long time at high temperature.

* Quasi-drugs containing AA2G™ as an active ingredient are approved in Japan. The claims are listed as: "Preventing pigmentation from sunlight in age spots and freckles" or "Suppressing melanin synthesis and preventing pigmentation in age spots and freckles."

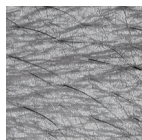
AA2G is a trademark of Nagase Viita Co., Ltd., registered in Japan, the U.S. and other countries.

BENEFIT 2

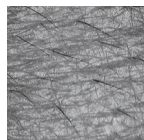
Reduces wrinkles and improves moisture content

Cream containing AA2G™ reduced the wrinkle index and increased moisture content in eye area.

MAGNIFIED PICTURES OF EYE AREA



Day 0



Day 42

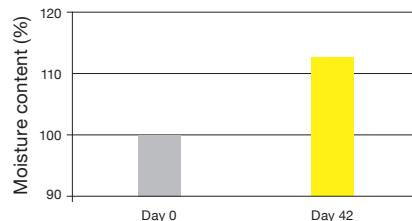


Wrinkle Index
5.28



Wrinkle Index
4.28

MOISTURE CONTENT BEFORE & AFTER APP.



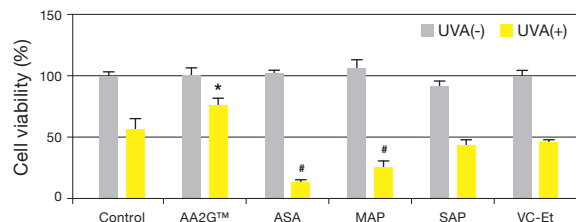
Cream with 2% AA2G™ was applied around the eyes of 10 females twice a day for 42 days. The moisture content of stratum corneum was measured in their eye area. A Wrinkle Index was calculated from binarized images of photos taken before and after the application.

BENEFIT 3

Reduces UV damage

AA2G™ suppressed cell damage on epidermal cells caused by UVA.

COMPARISON OF UVA-INDUCED NHEK DAMAGE INHIBITION



High viability vs. UVA(+) control, *: $p < 0.01$

Low viability vs. UVA(+) control, #: $p < 0.01$

Riboflavin and 0.25 mmol/L of Vitamin C derivatives were added to cultured NHEK cells. Cell viability was measured after 3 J/cm² UVA irradiation.



Raw material verified by ECOCERT GREENLIFE, conform to the COSMOS Standard

AA2G™ is certified as Halal

Contact Us

For further information, please contact dnpchb@nagase.co.jp

JAPAN

NAGASE & CO., LTD.

Life & Healthcare Products Dept.

5-1, Nihonbashi-Kobunacho, Chuo-ku, Tokyo 103-8355 JAPAN (From Oct. 2026)

T/F: +81-3-3665-3864/+81-3-3665-3131

<https://nagase.com/products/personal-care>

AMERICAS

Nagase America LLC (Itasca HQ)

300 Park Boulevard Suite 500, Itasca, IL 60143, U.S.A.

T/F: +1-630-467-8383/+1-630-467-1183

Nagase do Brasil Comércio de Produtos Químicos Ltda.

Rua Cubatão, 86, 304 e 306, Vila Mariana CEP 04013-000, São Paulo, SP

T/F: +55-11-3251-3111/+55-11-3262-3451

Nagase Enterprise Mexico S.A.de C.V.

Av. Cerro Gordo #130, Int. 4002, Col. Cerro Gordo, C.P. 37129 León,

Guanajuato, México

T: +52-477-7811-961

EUROPE

Nagase (Europa) GmbH

Werdener Strasse 4, 40227 Düsseldorf, Germany

T/F: +49-211-866200/+49-211-3237068

Nagase (Europa) GmbH, Lyon Branch

Bâtiment Bioserra 1, 60 avenue Rockefeller, 69 008 Lyon, France

T: +33-426-49-40-04

Nagase (Europa) GmbH, London Branch

33 Cavendish Square, London, W1G 0PW, UK

T/F: +44-20-7170-4100/+44-20-7170-4380

GREATER CHINA

Shanghai Nagase Trading Co., Ltd.

5F, Block B, One ITC, No.1901 Huashan Road, Xuhui District

Shanghai, P.R. of China 200030

T/F: +86-21-2221-0222/+86-21-2221-0256

Nagase (Hong Kong) Ltd.

Suite 607-9, 6/F, South Tower, World Finance Centre

17-19 Canton Road, Tsim Sha Tsui, Kowloon, Hong Kong

T/F: +852-2375-0000/+852-2377-2728

Nagase (Taiwan) Co., Ltd.

104105 13F-6, No. 168, Sec. 3, Nanjing E. Rd., ZhongShen Dist.,

Taipei City, Taiwan(R.O.C.)

T/F: +886-2-2773-3668/+886-2-7709-7205

KOREA

Nagase Korea Corporation

206,10, Dongtan-daero 21-gil, Hwaseong-si, Gyeonggi-do, Republic of Korea

T/F: +82-31-373-7709/+82-31-373-7710

ASEAN & THE MIDDLE EAST

Nagase Singapore (Pte) Ltd.

600 North Bridge Road #11-01 Parkview Square, Singapore 188778

T/F: +65-6398-0088/+65-6398-0227

Nagase Singapore (Pte) Ltd. Australia Branch

Suite 8, Level 1, 2 Brandon Park Drive, Wheelers Hill, Victoria 3150, Australia

T/F: +61-3-9562-5111/+65-6398-0227

Nagase (Thailand) Co., Ltd.

No.952 Ramaland Building., 14th Floor, Rama IV Road,

Kwaeng Suriyawongse, Khet Bangrak, Bangkok

T/F: +66-2-825-7000/+66-2-825-7111

Nagase India Private Ltd.

7th Floor, Godrej BKC, Plot No. C-68, G Block, BKC Bandra (East),

Mumbai, Maharashtra - 400051, INDIA

T: +91-983-365-8773

PT. Nagase Impor-Ekspor Indonesia

Wisma Keiai, 12th Floor Jl. Jend. Sudirman Kav. 3, Jakarta 10220 Indonesia

T/F: +62-21-579-00391/+62-21-579-00392

Nagase (Malaysia) Sdn. Bhd.

Level 11, Menara Southpoint, Mid Valley City, Medan Syed Putra Selatan, 59200,

Kuala Lumpur

T/F: +60-(0)3-6062 0310/+60-(0)3-6062 0312

Nagase Vietnam Co., Ltd.

Unit 1203 Corner Stone building 16 Phan Chu Trinh Street, Hoan Kiem District, Hanoi, Vietnam

T/F: +84-24-3926-4126/+84-24-3926-4124

Nagase Philippines Corporation

12th Floor Salcedo Towers, 169 H.V Dela Costa St. Salcedo Village, Makati City,

Philippines 1227

T/F: +63-(2)7750-2935/+63-(2)7625-0085



Please visit our website for further information.



AA2G™ is manufactured by Nagase Viita Co., Ltd. in Japan

The information provided herein is for customers in the cosmetic industry and/or cosmetic related industries. None of the information is for end consumers of the final formulations. The cosmetic industry and/or cosmetic related industry customer is responsible for determining whether products are in compliance with applicable laws and other governmental enactments. Performance of the products described herein should be verified by testing and carried out only by qualified experts. It is the sole responsibilities of the customer to carry out and arrange for such testing. Nagase Viita assumes no liability for providing such information and advice including the extent to which such information and advice may relate to existing third party intellectual property rights, especially patents rights. Nagase Viita does not make any warranty or representation, express or implied, with respect to the utility or completeness of the information provided and specifically disclaims the implied warranties of merchandise-ability and fitness for a particular purpose. Unauthorized reproduction of this brochure is prohibited.