

Ai-LuroS™



Botanical extract
for cosmetics
from Nagase Viita

Ai-LuroS™

for brightening, anti-oxidant



NAGASE
Personal Care

Ai-Luros™

A botanical extract composed of Japanese indigo ("Ai")

Ai-Luros™ is a multifunctional personal care ingredient with brightening and other beneficial effects. It is a mixture of *Polygonum tinctorium* (indigo called "Ai" in Japanese) leaf and stem water extract and 1,3-butylene glycol.

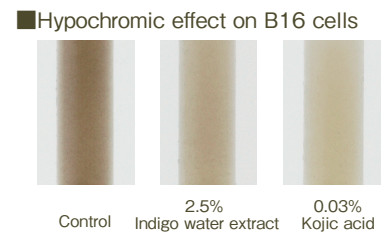
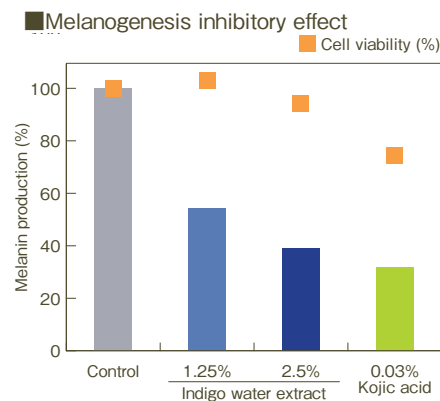
In both Japan and China, the plant primarily used for indigo dyeing has been indigo plants (*Polygonum tinctorium* Lour., Polygonaceae family). It is believed that the dyeing technique along with the plant itself was introduced to Japan prior to the 7th century via China and the Korean Peninsula. Meanwhile, indigo has also long been used as a medicinal plant. Its inclusion in ancient Chinese medical textbooks : *Compendium of Materia Medica* (本草綱目), a pharmacopoeia compiled during the Ming Dynasty in the 16th century that had a significant influence on Japan, attests to the long history of indigo as a medicinal plant.



Indigo plants

BENEFIT 1 Skin brightening effect

Indigo water extract suppresses melanin production in B16 cells and has a hypochromic effect on the cells.



Each sample was added to 1-day cultured B16 cells, and the cells were continued to be cultured for another 3 days.

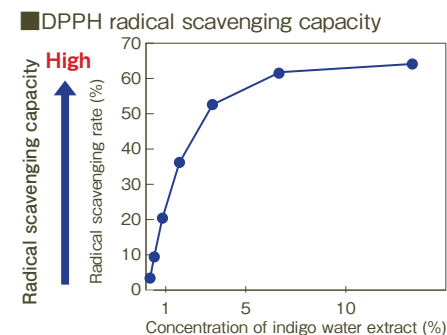
After the cells were collected, they were packed in capillary tubes to observe the color tone.

Each sample was added to 1-day cultured B16 cells, and the cells were continued to be cultured for another 3 days. After the cells were collected on the membrane, the color tone was measured with a densitometer and defined as melanin production.

BENEFIT 2 Antioxidant effect

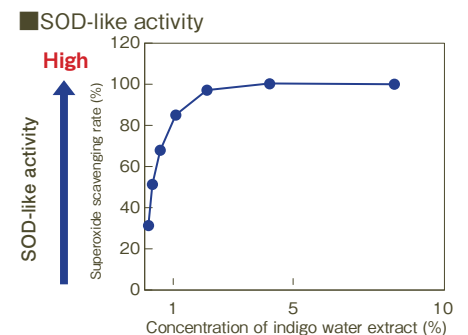
Our skin is damaged by reactive oxygen species generated by ultraviolet rays and various other factors. Substances with antioxidant properties are considered to be one of the important factors to protect the skin from the harmful effects of these reactive oxygen species.

Indigo water extract possesses antioxidant properties, including DPPH radical scavenging capacity and SOD-like activity.



The DPPH radical scavenging rate of the sample solution was measured by colorimetric method.

The radical scavenging capacity was evaluated using the DPPH radical scavenging rate as an index.



The superoxide scavenging rate of the sample solution was measured by the NBT method (SOD Assay Kit-WST).

The SOD-like activity of the sample solution was evaluated using the superoxide scavenging rate as an index.



Ai-Luros™

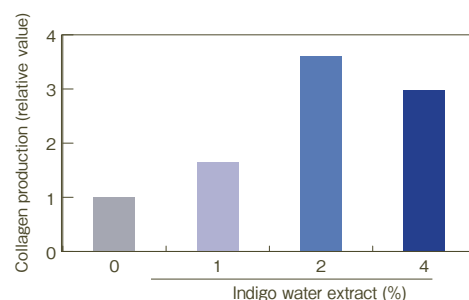
BENEFIT 3

Promotive action on collagen production

The maintenance of skin elasticity is supported by epidermal keratinocytes and dermal fibroblasts.

Collagen secreted by fibroblasts plays a crucial role in maintaining skin elasticity. A decrease or denaturation in collagen levels is considered to be one of the causes of wrinkles and sagging.

Indigo water extract promotes collagen production.



Indigo water extract was added to human fibroblasts, and the amount of collagen in the cells was measured after 3 days of culturing.

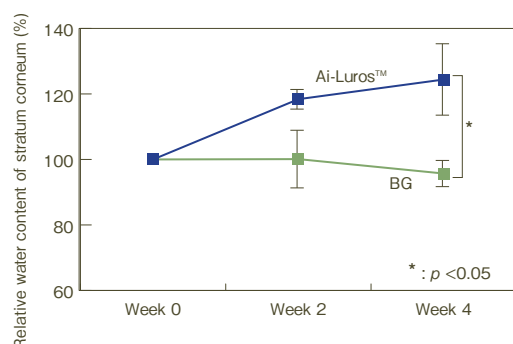
BENEFIT 4

Moisturizing effect of Ai-Luros™

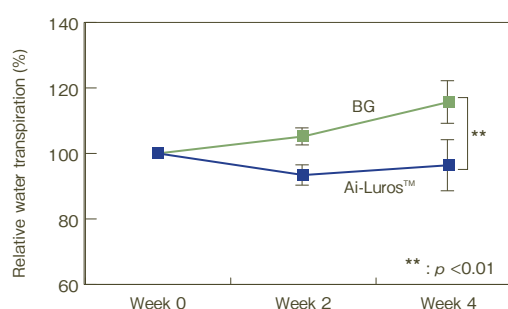
Retention of moisture level in the stratum corneum is essential for maintaining healthy skin. Furthermore, enhancing skin's barrier function to prevent transepidermal water loss is also important for keeping the skin well-hydrated.

Ai-Luros™ exerts a moisturizing effect by increasing the moisture content of the stratum corneum and suppressing transepidermal water loss.

■ Water content of stratum corneum



■ Transepidermal water loss (TEWL)



Ai-Luros™ or BG (30% aqueous solution) as a control was applied to the inner forearm 3 times daily for 4 consecutive weeks. The water content of stratum corneum and transepidermal water loss (TEWL) at the application site were measured before application, and 2 and 4 weeks after application (n=5, female, bar : $\pm$ SE).

INFORMATION

■ CHARACTERISTICS	Mixture of <i>Polygonum tinctorium</i> leaf and stem water extract and 1,3-Butylene glycol
■ DESCRIPTION	A light brown to brown solution and characteristic odor
■ PACKAGE	Polyethylene container in a carton box (Net 1kg)
■ STORAGE	Store in a cool and dark place
■ EXPIRATION	Two (2) years from the production date
■ INCI NAME	Water Butylene Glycol Polygonum Tinctorium Leaf/Stem Extract
■ APPLICATIONS	Skin Care, Body Care, Hair Care, Oral Care, Sun Care
■ SAFETY	Data acquired

● Ai-Luros is a trademark of Nagase Viita Co., Ltd., registered in Japan.



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Please visit our website for further information.



Nagase Viita has received EcoVadis Platinum rating in sustainability for two consecutive years. EcoVadis is an independent institution that assesses sustainability of over 150,000 supplier companies operating in more than 185 countries across more than 250 industries. Platinum is the highest possible rating given by EcoVadis, awarded to companies whose overall score rank in the top 1% of all eligible companies.

Ai-Luros™ is manufactured by Nagase Viita Co., Ltd. in Japan

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