



Hyaluronic acid for skin care

Q. P. Corporation, a Japanese leading food manufacturer founded in 1919, is now a world top-notch hyaluronic acid (and its salt) producer of wide variety, different grades and molecular weights.

Why don't you get in touch with our distributor for more information about our excellent quality supported by 'Purity' 'Scientific data' and 'cGMP-conforming process'.

- **Purity**

- HA purity not less than 95%
- No smell, No taste
- Transparent solution

- **Scientific data**

- Original scientific data (including clinical data)

- **cGMP-conforming process**

- Our production process of HA including food and cosmetic grades conforms to cGMP of pharmaceutical HA.



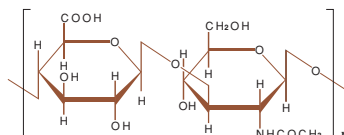
What is hyaluronic acid ?

Hyaluronic acid has a linear structure consisting of multiple disaccharides of N-acetylglucosamine and D-glucuronic acid.

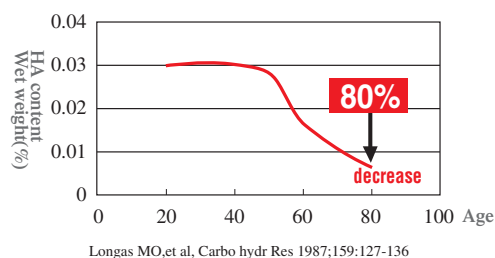
Hyaluronic acid naturally exists in skin, ligament, main artery, tendon, valve, synovial fluid and other organs or tissues of any vertebrate as well as in some micro-organisms. Especially skin contains large amount of hyaluronic acid which amounts to about 50% of total hyaluronic acid existing in a live body.

In the skin tissue hyaluronic acid exists in between skin cells and “keeps inter-cellular gap to maintain skin tissue structure” and “retains moisture to keep skin moist”.

In this way, hyaluronic acid keeps skin moist and elastic. However, it is reported that hyaluronic acid contents in the skin decreases as one gets aged and is believed that the decrease is a cause of fading freshness or elasticity of skin, while developing wrinkles by aging.



HA amount decrease by aging



Hyaluronic acid for cosmetic use

Hyaluronic acid is formulated in various cosmetics like facial lotions, milky lotions, foundations, lip balms and facial packs mainly because of its excellent moisture retention property. It is believed that hyaluronic acid contained in such cosmetics creates protective film on the surface of skin, which retains moisture, and at the same time prevents moisture in the skin from evaporating out, so that improves freshness of the skin.

Transparency of “Q.P. Hyaluronsan HA-LQH” solution

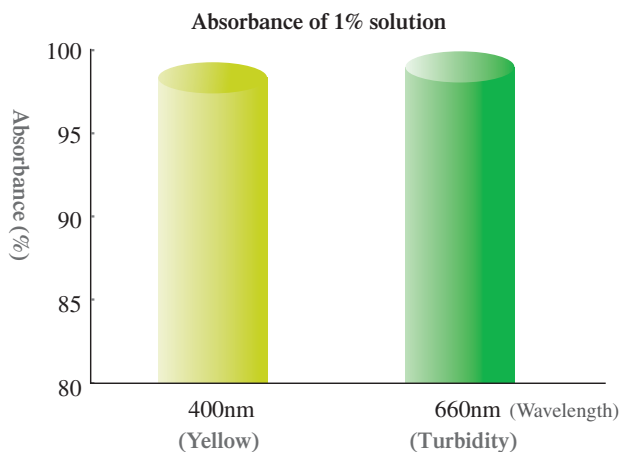
We have confirmed high transparency (absorbance) of cosmetic grade “Q.P. Hyaluronsan HA-LQH” as follows:

Test method :

Absorbance of 1% aqueous solution of Hyaluronsan HA-LQH was measured with UV400nm and UV660nm rays.

Test result :

In each case absorbance is nearly 100%, which proves very high transparency of Hyaluronsan HA-LQH solution.



Heat stability of “Q.P. Hyaluronsan HA-LQH”

We have confirmed high heat stability of cosmetic grade “Q.P. Hyaluronsan HA-LQH” as follows.

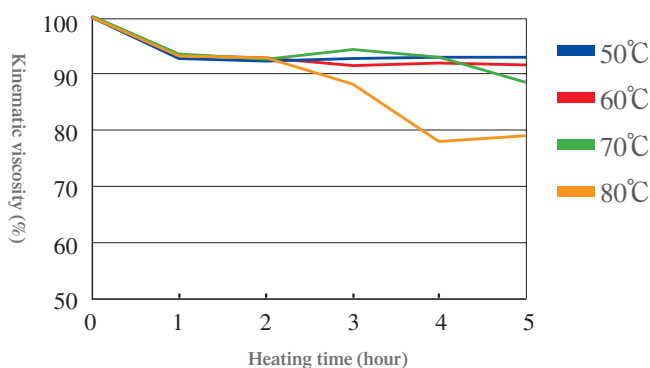
Test method :

0.2% aqueous solution of “Q.P. Hyaluronsan HA-LQH” was heated for 5 hours at temperature of 50, 60, 70, and 80°C respectively to see changes in kinematic viscosity.

Test result :

Changes in kinematic viscosity are shown in percentage with pre-heating viscosity as 100.

As molecular weight has been reduced by heat, viscosity has also been reduced during the lapse of time. However at below 70°C kinematic viscosity has changed little in 5 hours.



Hyaluronic acid for food use

Hyaluronic acid, when orally taken, is expected to have durable effect to retain moisture in the skin from inside the body. Namely, hyaluronic acid is a functional material to give moisturizing effect from both inside and outside the skin.

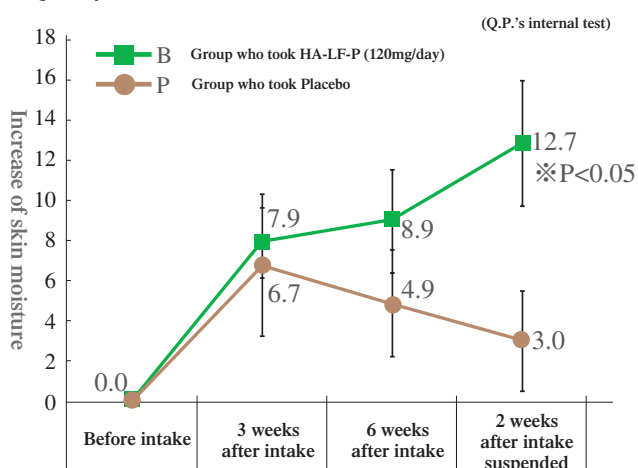
It is used as an important ingredient for dietary supplements, and many other products like mineral water, wine, chewing gum, sweets, jelly, salad dressing and rice gruel as well in Japan.

Improvement of dry skin by “Q.P. Hyaluronsan HA-LF-P/HA-F”

We have confirmed effectiveness of “Q.P. Hyaluronsan HA-LF-P” and “Q.P. Hyaluronsan HA-F” to improve dry and damaged skin by its oral intake as follows:

Test sample	: Capsule containing “Q.P. Hyaluronsan HA-LF-P”
Doze	: 120mg/day
Control sample	: Crystallized cellulose
Subject	: Japanese female, age between 35 and 60
Number of subjects	: 22 in each group
Test method	: Double blind test
Test item	: Moisture contents in cheek skin
Equipments	: CORNEOMETER CM825

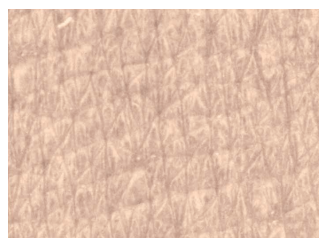
Change of skin moisture contents by oral intake of “Q.P. Hyaluronsan HA-LF-P”



It was confirmed that oral intake of “Q.P. Hyaluronsan HA-LF-P” had increased moisture contents in the skin.

It was confirmed that oral intake of “Q.P. Hyaluronsan HA-F” had improved skin condition.

Test sample	: Capsule containing “Q.P. Hyaluronsan HA-F”
Doze	: 120mg/day
Control sample	: Crystallized cellulose
Subjects	: 35 (male 13, female 22, age between 19 and 70)
Test method	: Double blind test
Test item	: Analysis of skin surface by microscopic image of skin surface
Equipments	: VISIOSCAN



Immediately before intake
(rear neck skin)



4 weeks after starting intake

Clinical test result on the effect of hyaluronic acid contained food to dry skin and damaged skin. Aesthetic Dermatology Vol.12 :109~120, 2002



An example of solution appearance

Safety of Q.P. microbe fermentation products

Cosmetic grade “Q.P. Hyaluronsan HA-LQH”

① Process control

Q.P. Corporation does not use any animal origin material for culture medium.

Q.P.'s production process has both heat sterilization and membrane filtration system.

② Safety test

Acute oral toxicity test (LD₅₀) : not less than 10g/kg (toxicity not confirmed)

Ames test : negative

Hemolysis test : negative (by each lot)

Human-patch test : no abnormality observed

Food grade “Q.P. Hyaluronsan HA-LF-P”

① Process control

Q.P. Corporation does not use any animal origin material for culture medium.

Q.P.'s production process has both heat sterilization and membrane filtration system.

② Safety test

Acute oral toxicity test (LD₅₀) : not less than 10g/kg (toxicity not confirmed)

Acceptable daily intake test (ADI) : NOAEL 3.5g/kg/day

Ames test : negative

Hemolysis test : negative

Hyaluronic acid for pharmaceutical use

Hyaluronic acid as API(Active Pharmaceutical Ingredient) for eye drops, curative medicines for arthritis, adjuncts for ophthalmologic surgery are also available.

Q.P. Hyaluronsan products line-up

Molecular wt	for pharmaceutical use	for cosmetic use	for food use
3,000 (thousand)	Hyaluronsan HA-QSE	Hyaluronsan HA-QSS	—
1,700	—	Hyaluronsan HA-LQH	—
1,200	—	Hyaluronsan HA-LQ	—
1,000	Hyaluronsan HA-AM	Hyaluronsan HA-Q	—
800	—	—	Hyaluronsan HA-F
500~700	—	Hyaluronsan HA-M5070	—
200	—	—	Hyaluronsan HA-LF-P
1~100	—	Hyaluronsan HA-L510	Hyaluronsan HA-LF5-A
~10	—	HyalO-Oligo [™]	—

blue letters : chicken comb extraction product

red letters : microbe fermentation product

HyalO-Oligo[®] and Hyaluronsan HA-LF5-A are “hyaluronic acid”, the others are “sodium hyaluronate”.

Q.P. CORPORATION, FINE CHEMICAL DIVISION

Tokyo 4-13, 1-Chome, Shibuya, Shibuya-ku, Tokyo, 150-0002, Japan

Tel:+81-3-3486-3338 Fax:+81-3-3486-4640

URL <http://www.kewpie.co.jp/>

HYALO-OLIGO

Penetrating into horny layer of
your skin with its nano-size

Surprisingly moisten your skin

QP's 'Hyalo-Oligo' is a Hyaluronic Acid
of extra-low molecule size
— average less than 10,000—

Hyalo-Oligo

'Hyalo-Oligo' does not simply cover your skin surface but "penetrates deep into horny layer of your skin and moisten it from inside".

Common Hyaluronic Acid products stay on the surface of your skin so are easily washed away but 'Hyalo-Oligo' "penetrates deep into horny layer of your skin and stays there long".

Now you don't have to worry about washing face. 'Hyalo-Oligo' is still there and keeps moistening your skin.



manufactured by **Q.P. Corporation**

1-4-13, Shibuya, Shibuya-ku, Tokyo, 150-0002, Japan

Phone: +81-3-3486-3338 Fax: +81-3-3486-4640

www.kewpie.co.jp

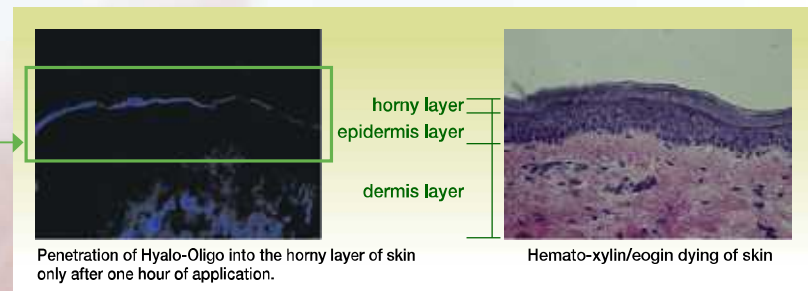
Hyalo-Oligo

penetrating deep into horny layer of the skin and retaining moisture in it.

1 Penetration into horny layer of the skin

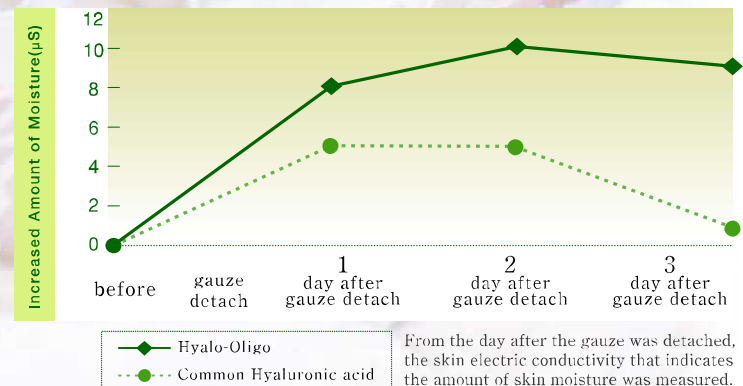
As the result of the penetration test in human skin, fluorescence characteristic to Hyalo-Oligo has been detected in horny layer of the skin.

This verifies that Hyalo-Oligo penetrates into horny layer of the skin.



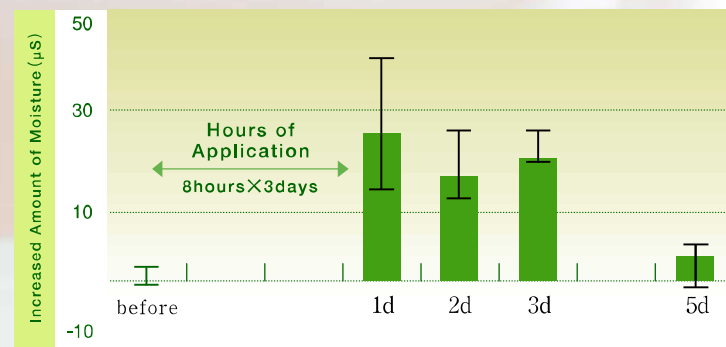
2 High capacity of water-holding

The gauze soaked in 1% solution of Hyalo-Oligo was attached to the human skin for 24 hours. (Control : 1% solution of common hyaluronic acid) After the gauze was detached, the skin electric conductivity indicating the amount of skin moisture was measured at three points ,namely 1 day after detaching gauze(right 1), 2 days after(right 2), 3 days after (right 3).



3 Long lasting moisture in the skin

The gauze soaked in 1% solution of Hyalo-Oligo was attached to the human skin for 8hours×3days. After this application, the skin electric conductivity indicating the amount of skin moisture was measured at three points,namely 1 day after the application (right 1d), 2 days after (right 2d), 3 days after (right 3d).



Low molecular weight Hyaluronic Acid 'Hyalo-Oligo' "penetrates into horny layer of the skin" and "keeps moistening the skin".