

# HAPLEX<sup>®</sup>

## Food Grade Sodium Hyaluronate

Sodium Hyaluronate (Hyaluronic Acid, HA) is a linear high molecular weight mucopolysaccharide composed by thousands of repeating disaccharide units of D-glucuronic acid and *N*-acetyl-D-glucosamine. HAPLEX<sup>®</sup>, developed by Bloomage Bitotech, was approved as a New Dietary Ingredient in China in 2008.



### 1 Advantages of HAPLEX<sup>®</sup>

#### High safety

- Produced by fermentation, non-GMO, fully in compliance with food ingredient standards
- Kosher and Halal certified, non-animal origin
- Safety and non-toxicity proved by the Chinese center for Disease Control and Prevention

#### High purity

- High content of HA, very low impurities (such as heavy metals and microorganisms)
- ISO 9001, HACCP and ISO 22000 qualified, no pollution of other unknown impurities in the production process
- Focusing on research and production of high purity and high quality sodium hyaluronate for more than 20 years, with advanced production process and management, the stability and reliability of our product can be assured

#### Precise molecular weight range control

- Customized products
- All-around technical support for HA application

### 2 Functions

#### • The decrease of HA in the body with age

Aging slows down the metabolism of cells, and HA synthesis in our body is decreased. As a result, there is no enough water in the collagenous fiber and elastic fiber of the skin, thus wrinkles appear. Because of the loss of HA within the synovial fluid of joints, it can lead to osteoarthritis.

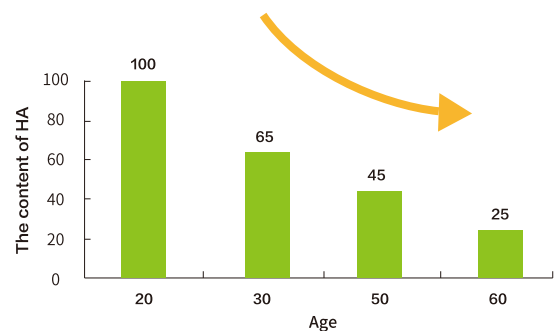


Fig1. HA content in the body decreases with age  
(Longas MO, Russell CS, He X-Y, 1987)

## ● Oral absorption of HA

The synthesis and degradation of HA in the body is a dynamic balanced process. It is proved by numerous studies that oral intake of HA can increase the precursors of HA and promote the synthesis of HA. So oral HA can increase endogenous HA to achieve health and beauty from within.

## ● Physiological functions of HA

### skin moisturizing

HA is one of the most hydrophilic molecules in nature. Like a molecular sponge, it is able to retain water up to 500-1,000 times of its own weight. So supplementation of exogenous HA by oral intake can nourish skin from within and make it elastic.

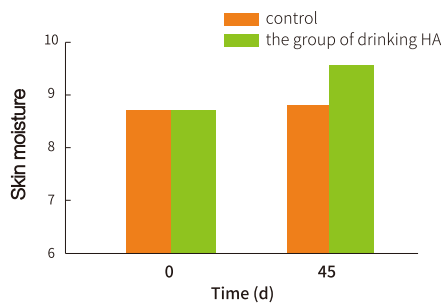


Fig.3. The change of skin moisture with oral intake of HAPLEX®  
(The evaluation of HAPLEX® to improve skin moisture by new dietary ingredient registered inspection agency)

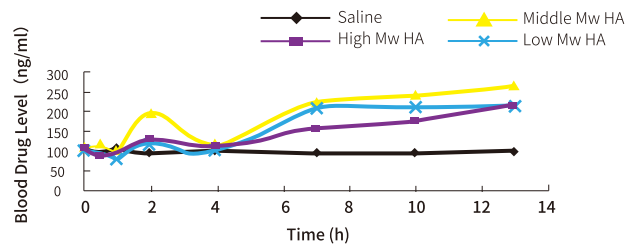


Fig.2. The bimodal concentration-time curve of HAPLEX® with different molecular weights during an oral administration experiment with rats. In around 2 hours, the organism can absorb the exogenous HA in form of non-monosaccharides, showing a rapid increase of blood drug level. After it was degraded and absorbed, new HA was synthesized, resulting in steady rise of blood drug level in around 6 to 13 hours.

### Joint care

HA is a natural organic compound present in joint fluid. With excellent viscoelastic properties, it gives the lubricating properties by reducing friction between cartilage surfaces to ensure soft movement of the joints. The exogenous supplementation of HA can make up the shortage of HA in the body, as a result, it can promote joint health.

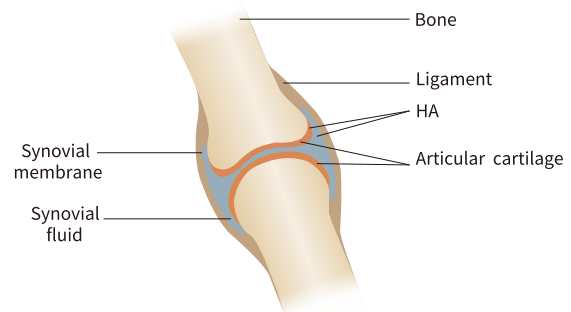


Fig.4. Joint structure

## ③ Applications in health food

The application of HA in the food was originally started in Japan and North America, and now it has been widely recognized by consumers. The common dosage forms and the main functional claims are:

Application & Dosage forms	Functional Claims
<p><b>Common food:</b> beverage, jelly, dairy products, etc.</p> <p><b>Health food:</b> usually in combination with Collagen, Vitamins, Chondroitin Sulphate, or Glucosamine to make tablets, capsules or oral liquid these popular forms</p>	<p>Joint Care</p> <p>Beauty-From-Within</p> <p>Antioxidation</p> <p>Digestive &amp; Eye Health</p>



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