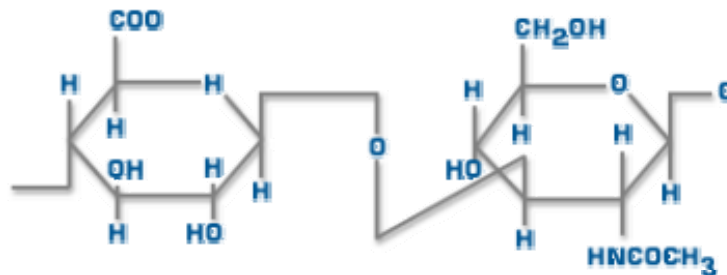




## product overview - *PureH.A.<sup>®</sup> Hyaluronic Acid* (patent-pending)



### Product overview

Hyaluronic Acid (Hyaluronan, HA) is a straight macromolecular mucopolysaccharide composed of repeating disaccharide units of N-acetylglucosamine and D-glucuronic acid. HA occurs widely in the extra-cellular space of human and animal connective tissue, vitreum, umbilical cord, skin, joint synovial fluid, and as a cementing agent in the subcutaneous tissue. HA is naturally distributed throughout the human body where, among other noteworthy properties, it holds water in the extra-cellular matrix of dermal and joint connective tissue, contributing to joint lubrication and elasticity of the skin. HA molecular weight is from several thousand to several million daltons. Its aqueous solution has outstanding moisture retention capacity, high viscoelasticity and lubricity. As we age, HA production and content in our body slows down, resulting in a loss of viscoelasticity in the tissue that manifests itself visibly in wrinkles and physically in joint pain. It is widely used in the cosmetics, pharmaceutical and nutraceutical industries.

**Collagen Nutraceuticals' HA products are manufactured utilizing a patented advanced technology that meets the requirements of the International GMP Standard, and are recognized through the ISO9001 Quality System Certification.**

### Cosmetic Grade HA

HA is a natural biotic component that exists extensively in the skin and in other tissue. It has a remarkable moisture retention capacity. It is the best ingredient as a natural moisturizing agent in cosmetics. When HA is applied to the skin, macromolecular HA can form an air permeable thin layer and keep the skin smooth and moist, as well as protect it from bacteria, dust, and ultraviolet rays. With low molecular HA penetrating into corium, it will slightly enlarge blood capillaries, speed circulation of blood, improve intermediary metabolism and nourishment absorbing ability of skin, thus smoothing wrinkles, increasing skin's elasticity and delaying its aging. Additionally, HA can further hyperplasia of epidermal cells, clean free radicals, as well as prevent and rehabilitate a



breach of the skin. Its aqueous solution has very high viscosity, which can make water become thicker. Creams made by means of emulsifying HA with oil are fine and homogeneous with stable emulsification.

HA is the best natural moisturizing component used in cosmetics. It has high compatibility and can be added to various cosmetic formulations such as cream, lotion, cosmetic water, essence, milk for facial cleansing, liquid for bath, as an agent for hair shampoos, conditioners and mousse, and in lipstick.

Recommended quantities for formulation are about 0.05%-0.5%

### **Medical Grade HA**

HA is the main component of human intercellular substance, vitreum, and joint synovia. It can retain water, keep intercellular space, accommodate osmotic pressure, lubricate and further rehabilitation of cells. In its aqueous solution, a mount of carboxyl and hydroxyl in its molecular, which can form hydrogen bonding in molecule and between molecules, thus making it a powerful water keeping action. It can bind with over 400-fold of its own weight in water. HA aqueous solution has high viscoelasticity because its molecules form complex three reticula grade. As a main component of intercellular substance, HA is directly involved with transfer of exchange of electrolytes inside and outside cells, demonstrating the filter action of physical and molecule information. Macromolecular HA can prevent cells from moving, hyperplasia, disintegration and engulfment, while low molecular weight HA has furtherance actions. HA has peculiar physical and chemical properties and biological actions,

widely used in medicine. It can be used as a viscoelasticity agent in artificial crystal planting in ocular surgery, as a filling agent in osteoarthritis, and as an agent in eye drops. It has good action towards adhesion prevention in surgical operations and for healing cuts on the skin. Compounding and other drugs can allow slow release of the drug. With the development of medical technology, HA will be more widely used in medicine.

### **Food Grade HA**

HA is an important molecule in human biological activity. With the decrease of HA content in skin, the water retaining ability of the skin is weakened and skin looks coarse and wrinkled. The decrease of HA in other instances can lead to arthritis, arteriosclerosis, plus other disorders and brain atrophy. All in all the decrease of HA in the human body can lead to premature senility. Oral HA can increase HA content in the human body by replacing deficiencies of HA. Digesting and absorbing HA as a daily dietary supplement can make the skin moist, smooth and soft. Oral HA can slow down the aging process, prevent arthritis, arteriosclerosis, plus disorder and brain atrophy.

### **HA 1% Solution**

This product is HA aqueous solution dissolved in water. It is a colorless and transparent liquid in which the HA content is about 1%. It is widely used in various cosmetics such as creams, lotions, cosmetic water, essence, milk for facial cleansing, liquid for bathing, as an agent for hair shampoos, conditioners and mousses, and in lipstick. Because it can be added without dissolving, it is convenient to use.



## Frequently Asked Questions

### What is HA?

Hyaluronic acid (HA), also known as hyaluronan, is an important disaccharide found in every tissue of the body, but in particular as an essential lubricant of healthy joints, skin and eyes. It is part of a group of macromolecules in the body labeled as glycosaminoglycans (GAGs), which are primarily in cell membranes and in the intercellular matrix of connective tissue. Along with water, HA's unique property of high viscosity, and therefore low compressibility, provides vital shock absorption and lubrication properties.

### Where does HA work?

In the intercellular matrix, HA essentially operates with water to "bathe" cells. This distribution along with the property of high viscosity provides for separation of cells and intercellular fibers to facilitate movement of nutrients and waste, protection of underlying tissue such as cartilage, bone, and muscle from wear and tear, and hydration and structure.

HA can be found more concentrated in areas of the body that endure increased movement and friction or have a higher fluid component such as the eyes, ears, heart, and joints. In the joints, HA is secreted by chondrocytes (articular cells) and is one of the most essential components of the vitreous humor (joint fluid) that protects the joints from deterioration.

HA works similarly as a component of the fluids lubricating the heart to prevent friction between the heart and surrounding membranes, as well as lubrication of the corneal epithelium on the surface of the eye. HA also provides an optically clear structural component for rigidity in the vitreous (fluid) of the eye.

### What else does HA do?

In addition to its physical contributions, HA has also been found to assist in regulation of cell turnover in the skin, to serve as an anti-oxidant to free-radicals generated by UV radiation, and as an aide in communication between cells in cell-mediated immune response.

### Where did the hype start?

Recent attention on HA began after ABC News published a report on the Japanese village of Yuzuri Hara, where the residents were living long and healthy lives at much higher

rates than most other peoples. After studying them, they figured out their diets stimulated and supplied high quantities of HA in their bodies. To rule out the effects of genetics, researchers saw that younger generations of Yuzuri Hara exposed to new western foods infiltrating the region expressed health problems and created an "upside down health pyramid" where elderly parents were outliving their adult children, supporting the HA-connection.

### Why HA Supplements?

As we age, HA content in our bodies tends to decrease, which manifests itself in the form of skin wrinkles, joint pain, and other connective tissue complications. Our western diets leave little room for sufficient supply of HA, therefore people have turned to the prospect of using HA-rich supplements. In fact, a major Japanese pharmaceutical company conducted a clinical study on HA supplementation on 1,000 people, and roughly half reported smoother skin, less fatigue, and better eyesight.

### Why PureH.A.®?

Daily oral supplementation with 50-100mg of PureH.A.® Hyaluronic Acid extracted from rooster/hen's combs under patent-pending technology is excellent for providing the body with a low-molecular weight source of HA, which means higher absorption. PureH.A.® is the only patent-pending HA supplements on the market today that comes from natural sources, rather than bacterial fermentation in a laboratory (synthetic HA). Synthetic HA may have side effects such as edema (water retention) in some subjects, however natural HA has not been shown to display such side effects. PureH.A.® is colorless, neutral in odor, water-soluble and is classified as a food. It is safe, effective, and easy to take as a dietary supplement for today's health-conscious consumer.

**For more information please contact Collagen Nutraceuticals, Inc. at 951-600-3899 or via Fax 951-600-8676 or email to [help@collagennutra.com](mailto:help@collagennutra.com).**