

HYALURONIC ACID

Description:

Hyaluronic acid (also called hyaluronan or hyaluronate) is an anionic, nonsulfated glycosaminoglycan distributed widely throughout connective, epithelial, and neural tissues. It is unique among glycosaminoglycans in that it is nonsulfated, forms in the plasma membrane instead of Golgi (Complex), and can be very large, with its molecular weight often reaching millions of Daltons.

Application:

The therapeutic application of hyaluronic acid is targeted to the tissues where it is found the most, like skin, cartilage and vitreous humor. It is used in eye surgery that is in corneal transplantation, cataract surgery, glaucoma surgery and surgery to repair retinal detachment. It is used in treatment of osteoarthritis of knees for a process called viscosupplementation. Dry scaly skin such that caused by atopic dermatitis can be treated by hyaluronic acid containing lotions. It can be used as tumor marker for prostate and breast cancer. Along with these it has a host of other cosmetic applications as well.

MW: > 3,00,000 Daltons

Unit Definition:

Hyaluronic acid can be quantified measuring the viscosity it imparts. Water is the primary viscosity standard with an accepted viscosity at 20°C of 0.01002 poise. There are many empirical methods for measuring viscosity which generally involve measurement of the time of flow or movement of a ball, ring or other object in a specifically shaped or sized apparatus. Hyaluronic acid viscosity is generally measured using Brookfield cone and plate viscometers at 20°C, with a variety of rotational speeds depending upon the instrument and viscosity.

Available form:

Lyophilized powder .

Solubility:

Sparingly soluble to soluble in water ,Insoluble in acetone and ethyl alcohol.

Stability and Storage:

Stable for 3 years at 2-8°C in sealed tamper proof containers.

Reference:

1. Merck Index, 12th Ed.,# 4757, p. 4762.
2. J. Biol.Chem., 107, 629 (1934).
3. Chemistry and Technology of Enzymes (New York, 1946).