

## HYALURONIDASE

### Description:

Hyaluronidase is an enzyme purified from ovine or bovine testes and capable of hydrolyzing mucopolysaccharides of the type hyaluronic acid. It catalyzes the random hydrolysis of the 1-4 bond between N-acetyl-D-glucosamine and D-glucuronic acid in hyaluronic acid. It also hydrolyses 1,4-beta-D-glycosidic linkages between N-acetyl-galactosamine or N-acetylgalactosamine sulfate and glucuronic acid in chondroitin sulfates A and C and dermatan.

### Application:

By catalyzing the hydrolysis of hyaluronic acid, a major constituent of the interstitial barrier, hyaluronidase lowers the viscosity of hyaluronic acid, thereby increasing tissue permeability. It is, therefore, used in medicine in conjunction with other drugs in order to speed their dispersion and delivery. The most common application is in ophthalmic surgery, in which it is used in combination with local anesthetics. It also increases the absorption rate of parenteral fluids given by hypodermoclysis, and is an adjunct in subcutaneous urography for improving resorption of radiopaque agents. Hyalurodinase is also used for extravasation of hyperosmolar solutions.

**MW:** 70-74Kda for  $\alpha$  form and 60-63Kda for  $\beta$  form.

### Unit Definition:

One unit is based on the change in absorbance at 600 nm (change in turbidity) of a IP/BP/USP reference standard hyaluronidase which is assayed concurrently with test sample.

The new unit definition is: One unit will cause a change in  $A_{600nm}$  of 0.330 per minute at pH 5.7 at 37°C (45 minute assay).

### Available form:

Lyophilized powder confirming to IP/BP/USP specifications.

### Solubility:

Lyophilized Hyaluronidase can be solubilized in sterile water not less than 100mg/ml, which can then be further increased in physiological saline solution.

### Stability and Storage:

A. Lyophilized Hyaluronidase  $\geq 300$  IP/BP/USP units/mg can be stored at 2-8°C for 3 years with minimal loss of activity.

B. Lyophilized Hyaluronidase  $\geq 3000$  IP/BP/USP units/mg can be stored at -20°C for 12 months.

### Reference:

1. The Enzymes 2nd Ed., 4, 447, (1960).
2. J. Biol. Chem., 219, 13, (1956).
3. Adv. Enzymol., 13, 199-236, (1952).