



Product Specification Sheet

Cat# HYO-03

Hyaluronidase (5000 U/mg), Ovine Testis

Size: 20 KU

General Information

The hyaluronidases (EC 3.2.1.35) are a family of enzymes that degrade hyaluronic acid. In humans, there are six associated genes, including HYAL1, HYAL2, HYAL3, and PH-20/SPAM1. By catalyzing the hydrolysis of hyaluronan, a constituent of the extracellular matrix (ECM), hyaluronidase lowers the viscosity of hyaluronan, thereby increasing tissue permeability. It is, therefore, used in medicine in conjunction with other drugs to speed their dispersion and delivery. Common applications are ophthalmic surgery, 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. Hyaluronidase is also used for extravasation of hyperosmolar solutions.

Brand names of animal-derived hyaluronidase include Hydase™ (developed and manufactured by PrimaPharm Inc., distributed by Akorn Inc.), which has been FDA-approved as a "thimerosal-free" animal-derived hyaluronidase, Vitrase (ISTA Pharmaceuticals), Amphadase (Amphastar Pharmaceuticals), and Wydase. Wydase, however, is no longer manufactured.

In 2005, the FDA approved a synthetic (recombinant or rDNA) "human" hyaluronidase, Hylenex (Halozyme Therapeutics)

Sheep hyaluronidase is 478-aa. Mature protein is 21-451 aa (2).

Purity / Grade: > 5000 U/mg

Systematic Name: Hyaluronate 4-glycanohydrolase

Unit Definition: The amount of enzyme causing the same turbidity reduction as the 'International Unit' as compared with the international standard

Presentation matrix: Lyophilised

CAS Number: 37326-33-3

EC Number: 3.2.1.35

EINECS: 253-464-3

Source: Ovine Testes

Assay Method

The assay is based on the following reaction:
HYALURONIDASE
Hyaluronic acid -----> Acetylglucosamine

An anhydro sugar is first formed from N-acetylglucosamine, followed by the conversion of the sugar into its furan derivative, as a result of increasing the acidity of the solution. This furan derivative then reacts with p-dimethylamino-benzaldehyde to form a colored complex, which is measured spectrophotometrically at 585 nm. Detailed procedures for the assay of hyaluronidase are available in Methods of Enzymatic Analysis, Bergmeyer, H.U., ed., Vol. 2, pp. 944-948, Academic Press, New York, 1974.

Recommended Use: In anti-cellulite preparations / promotion of topical drug absorption / local anesthesia / dispersion and dissipation of fluids and edema /in tissue and cell dissociation

Solubility: Dissolves readily at 5mg/ml in 0.02M sodium phosphate, pH 6.9, containing 0.45% sodium chloride and 0.01% bovine serum albumin to give a clear solution.

Source and Storage:

Hyaluronidase is obtained from ovine testes. It is supplied as freeze dried powder.

Store powder at -20oC or below under dry conditions. Allow the product to reach room temp before opening the vial and dissolve in appropriate buffers for usage. Before returning to storage, re-dessicate under vacuum over silica gel for a minimum of 4 hours to provide best conditions for long term preservation of enzyme activity.

References

1. Csoka AB (2001) *journal of the International Society for Matrix Biology* **20** (8): 499-508; Starr CR (2006) *Infection and immunity* **74** (1): 40-8;
2. Dirks C (2002) *J. Virol.* **76**, 2141-2149; Rai SK (2001) *PNAS* **98**, 4443-4448.

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