

Product Information

Hyaluronidase From bovine testes

Product Number **H 3884**

Storage Temperature -0°C

Product Description

Enzyme Commission (EC) Number: 3.2.1.35

CAS Number : 37326-33-3

Molecular Weight: 60 kDa¹

Extinction Coefficient: $E^{1\%} = 8.0$ (280 nm)²

Hyaluronidase from bovine testes is a tetramer consisting of 4 equal subunits with a molecular weight of 14 kDa each.³ The enzyme is a glycoprotein containing 5% mannose and 2.2% glucosamine.¹

This enzyme will randomly hydrolyze 1,4-linkages between N-acetyl- β -D-glucosamine and D-glucuronate residues in hyaluronate. It will also hydrolyze 1,4- β -D-glycosidic linkages between N-acetyl-galactosamine or N-acetyl-galactosamine sulfate and glucuronic acid in chondroitin, chondroitin 4- and 6-sulfates, and dermatan.⁴ The pH optimum for hyaluronidase is 4.5 to 6.0.⁵

Hyaluronidase is inhibited by the following compounds: Fe^{2+} , Fe^{3+} , Zn^{2+} , Cu^{2+} , heparin, aurointricarboxylic acid, sulfated, nitrated, or acetylated hyaluronic acids, sulfated cellulose esters, sulfated chitin esters, sulfated carboxycellulose, sulfated xylan, bile salts, sulfated steroids, hexylresorcinol, o- and p-quinones, and sulfated aliphatic alcohols.⁶

Hyaluronidase is often used in conjunction with collagenase to dissociate the extracellular matrix between cells of animal tissue, in order to release viable cells for use in tissue culture. It may also be used to clarify synovial fluids in order to make cell counts possible.

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This enzyme is soluble in 20 mM sodium phosphate buffer, pH 7.0, with 77 mM sodium chloride, and 0.1 mg/ml BSA at 1 mg/ml, yielding a clear solution

Procedure

Synovial fluid clarification protocol is as follows:

1. Prepare a 0.5 mg/ml enzyme solution in cold 20 mM sodium phosphate buffer, pH 7.0, with 77 mM NaCl, and 0.1 mg/ml BSA.
2. Using a dropper, add 1 drop per ml of fluid to be treated.
3. Incubate 5 minutes at room temperature.

References

1. Borders, C. L., Jr., and Raftery, M. A., Purification and partial characterization of testicular hyaluronidase. *J. Biol. Chem.*, **243**, 3756-3762 (1968).
2. Worthington Enzyme Manual, Worthington, V., Worthington Biochemical Corporation (Freehold, NJ: 1993), pp. 224.
3. Khorlin, A. Y., et al., Subunit structure of testicular hyaluronidase. *FEBS Letters*, **31**, 107-110 (1973).
4. *Enzyme Nomenclature*, Academic Press (San Diego, CA: 1992), p. 350.
5. De Salegui, M., et al., A comparison of serum and testicular hyaluronidase. *Arch. Biochem. Biophys.*, **121**, 548-554 (1967).
6. *The Enzyme Handbook*, Schomburg, D. and Salzmann, M., Springer-Verlag (Berlin Heidelberg: 1991) Vol. 4, EC 3.2.1.35, pp. 2.

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