

Product Information

Hyaluronidase from bovine testes

Catalog Number **H3506**
Storage Temperature -20°C

CAS RN 37326-33-3
EC 3.2.1.35

Synonyms: Hyaluronoglucosaminidase;
Hyaluronate 4-glycanohydrolase

Product Description

Molecular mass:¹ 60 kDa
Extinction Coefficient:² $E^{1\%} = 8.0$ (280 nm)

Hyaluronidase from bovine testes is a tetramer consisting of 4 equal subunits with a molecular mass 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

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.

pH optimum:⁵ 4.5–6.0

Hyaluronidase is inhibited by the following compounds: Fe^{+2} , Fe^{+3} , Zn^{+2} , Cu^{+2} , heparin, aurintricarboxylic 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

Specific Activity: 400–1,000 units/mg solid

Unit definition: One unit is based on the change in absorbance at 600 nm (change in turbidity) of a USP reference standard hyaluronidase, which is assayed concurrently with each lot of this product.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

This enzyme is soluble in 0.02 M phosphate buffer, pH 7, with 77 mM sodium chloride and 0.01% BSA at 1 mg/ml, yielding a clear solution.

Storage/Stability

Stock solutions of this enzyme are not considered to be stable. Solutions should be prepared fresh, directly before use.

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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