

## Product Information

# Hyaluronidase from bovine testes

**H3506**

Storage Temperature -20 °C

CAS RN 37326-33-3

EC 3.2.1.35

Synonyms: Hyaluronoglucosaminidase,  
Hyaluronate 4-glycanohydrolase

## Product Description

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

Hyaluronidase from bovine testes is a tetramer of 4 equal subunits with a molecular mass of 14 kDa each.<sup>3</sup> This glycoprotein enzyme contains 5% mannose and 2.2% glucosamine.<sup>1</sup> It randomly hydrolyzes 1,4-linkages between N-acetyl- $\beta$  D glucosamine and D-glucuronate residues in hyaluronate. It also hydrolyzes 1,4- $\beta$ -D-glycosidic linkages between N-acetyl-galactosamine or N-acetyl-galactosamine sulfate and glucuronic acid in chondroitin, chondroitin 4- and 6-sulfates, and dermatan.<sup>4</sup> The enzyme's pH optimum is 4.5 to 6.0.<sup>5</sup>

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.

The following compounds inhibit hyaluronidase:  $Fe^{+2}$ ,  $Fe^{+3}$ ,  $Zn^{+2}$ ,  $Cu^{+2}$ , 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.<sup>5</sup>

**Specific Activity:** 400–1,000 units/mg solid**Unit definition:** One unit will degrade 0.75  $\mu$ g of the polysaccharide hyaluronic acid per minute at pH 5.35 at 37 °C (as measured by turbidimetric absorbance ( $\lambda$ : 600 nm) when complexed with BSA after 45 minutes).

## Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the 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

It is recommended that fresh solutions be prepared before use. Stability testing of frozen solutions of this product has not been performed in our laboratories. One published reference cites storage of 1.0 mg/mL stock solutions of hyaluronidase in PBS at -20 °C.<sup>7</sup>

## References

1. Borders, C.L., Jr., and Raftery, M.A., J. Biol. Chem., 243(13), 3756-3762 (1968).
2. Worthington Enzyme Manual (Freehold, NJ: 1993), pp. 224.
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5. The Enzyme Handbook, Schomburg, D., and Salzman, M., Springer-Verlag (Berlin/Heidelberg) Vol. 4, EC 3.2.1.35, p. 2 (1991).
6. De Saegui, M. et al., Arch. Biochem. Biophys., 121(3), 548-554 (1967).
7. Brem, G., and Nowshari, M.A., in Methods in Molecular Biology, Volume 254: Germ Cell Protocols (Volume 2; H. Schatten, ed.). Humana Press (Totowa, NJ), p. 218 (2004).

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