

Product Information

Collagenase-Hyaluronidase Blend

B20222

Product Description

The tissue dissociation process consists in the detachment of the extracellular matrix of animal tissue and the isolation of viable and functional cell, with minimal impact, for tissue culture use.^{1,2,3,5}

Collagenase-Hyaluronidase blend is a tissue dissociation enzyme blend, combined with Collagenase from *Clostridium histolyticum* and Hyaluronidase from Bovine testes.

The main enzyme used for tissue dissociation is Collagenase. Collagenases (Clostridiopeptidase A) are metalloproteinases involved in the degradation of the extracellular matrices of animal cells, due to their ability to digest native collagen under physiological conditions that holds animal tissues together.^{6,7} Collagenase from *Clostridium histolyticum* is mainly used for the dissociation of tissues for the establishment of primary cell cultures.⁸

The second enzyme found in the blend is Hyaluronidase.

Hyaluronidase principal role is the cleavage of hyaluronic acid, the major component of the extracellular matrix.⁴ Human hyaluronidase is present both in organs (testes, spleen, skin, eyes, liver, kidneys, uterus, and placenta) and in several body fluids (tears, blood, and semen).⁹

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

Collagenase-Hyaluronidase blend is an important tool in tissue dissociation research field. It can be used for the effective dissociation of tissues and the isolation of single-cells preparations required in assays.

Reagent

Supplied as a lyophilized powder.

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

To receive the enzyme activity, describe in the Certificate of Acceptance (COA):

Reconstitute the content of a vial with cold 10 mL of Hanks' Balanced Salt solution (HBSS) modified, without calcium chloride and magnesium sulfate (H6648). Mix the vial by inversion until all the lyophilized product is diluted in Hanks' Balanced Salt solution.

After reconstitution, collagenase concentration will be approximately 1 mg/mL.

Storage/Stability

Store the product at -20 °C. The product retains its activity for at least 2 years as supplied. It is not recommended repeated freezing and thawing since activity decreases after reconstitution.

Product Profile

Enzymatic activity of 10 mL/vial reconstituted solution equivalent to:

Collagenase enzymatic activity: 1.0-5.0 units/mL

Hyaluronidase enzymatic activity: 80-400 units/mL

Unit Definition

Collagenase enzymatic activity

One unit hydrolyzes 1.0 micromole of FALGPA (Furylacryloyl-Leu-Gly-Pro-Ala, F5135) per minute at pH 7.5 at 25 °C in the presence of calcium ions.

Hyaluronidase Unit Definition

One unit will cause a change in percentage of Transmittance at 600 nm of 0.330 per minute at pH 5.35 at 37 °C in a 2.0 mL reaction mixture for 45-minute assay of 0.03% hyaluronic acid cleavage.

Note: To obtain the best results in different techniques and preparations we recommend on determining optimal working concentration by calibration test.

References

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