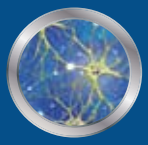

PRODUCT HIGHLIGHTS

Worthington Biochemical Corporation

PAPAIN

Neural Cell Isolation/Immunochemistry

Worthington Papain is purified from Carica papaya latex. This enzyme has wide specificity, and it will degrade most protein substrates more extensively than the pancreatic proteases. For tissue dissociation applications papain has proved less damaging and more effective than other proteases. Huettner and Baughman [*J. Neuroscience, 6*, 3044 (1986)] described a method using papain to obtain high yields of viable, morphologically intact cortical neurons from postnatal rats which is the basis of our Papain Dissociation System, Code: PDS.

Worthington also produces a lyophilized form of our widely used crystalline papain preparation. This product (Code: PAPL) can be used in place of the aqueous suspension preparation for immunochemical and cell isolation applications. It offers the convenience, stability and versatility of a lyophilized powder along with the enzymatic activity of the liquid preparation.

Description	Activity	Code	Cat. No.	Size
Suspension, Twice Crystallized. 0.22µm Filtered A suspension in 0.05M sodium acetate, pH 4.5. It is recommended that the enzyme be fully activated before use in a solution containing 1.1mM EDTA, 0.067mM mercaptoethanol and 5.5mM cysteine-HCl for 30 minutes. Store at 2 - 8°C.	Activates to ≥ 20 Units per mg protein	**PAP***	LS003124 LS003126 LS003127 LS003128	25 mg 100 mg 1 gm Bulk
Lyophilized powder Prepared from twice crystallized suspension containing sodium acetate. It is recommended that before use, the enzyme be fully activated as described above. Store at 2 - 8°C.	Activates to ≥ 15 Units per mg protein	**PAPL**	LS003118 LS003119 LS003120 LS003122	25 mg 100 mg 1 gm Bulk
Papain Vial, PDS Kit Component Papain containing L-cysteine and EDTA, five single use 100 unit vials per package. This material is 0.22µm membrane filtered and lyophilized in autoclaved vials. A vial reconstituted with five mls of EBSS (vial 1) yields a solution at 20 units of papain per ml in one millimolar L-cysteine with 0.5mm EDTA. Brief incubation is needed to insure full solubility and activity.	Activates to ≥ 100 Units per vial	**PAP2**	LK003176 LK003178	1 vi 5 vi

*Requires special shipping

(Over)

[10.13]

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ISO9001 Certified

Papain has a molecular weight of 23,000 daltons and an optimum pH range of 6.0 - 7.0. It may exist as a zymogen since native crystalline papain is unreactive until acted upon by mild reducing agents, e.g., cysteine or cyanide. In addition to its proteolytic activity, papain is also an esterase. The action of papain on leucine methyl ester produces an insoluble polyleucine peptide. Papain is activated by cysteine, sulfide, and sulfite. It is enhanced when heavy metal binding agents such as EDTA are also present. N-bromosuccinimide enhances enzyme activity. Papain is inhibited by sulfhydryl reagents, heavy metals and carbonyl reagents. Papain may be inactivated by H_2O_2 generated by gamma-irradiation of H_2O, the active SH group being oxidized to sulfenic acid. Papain is assayed using a titrimetric determination of the acid produced during the hydrolysis of benzoyl-L-arginine ethyl ester (BAEE). It is recommended that the enzyme be fully activated before use. Stabilizing agents are EDTA, cysteine and dimercaptoethanol.

Stability: Stable for 6-12 months at 2 - 8°C.

Storage: Store at 2 - 8°C. Do not freeze aqueous suspensions.

Unit Definition: 1 unit hydrolyzes 1 µmole of benzoyl-L-arginine ethyl ester per minute at 25°C, pH 6.2, after activation in a solution containing 1.1mM EDTA, 0.067mM mercaptoethanol and 5.5mM cysteine-HCl for 30 minutes.

Technical Notes

Papain should be activated before use to ensure maximum activity. The normal activation buffer is a solution containing 1.1mM EDTA, 0.067mM mercaptoethanol and 5.5mM cysteine-HCl. After 30 minutes in this solution, the enzyme is completely activated.

Related Products

Cell Isolation Optimizing System
Collagenase
Deoxyribonuclease I
Elastase
Hyaluronidase
Neonatal Cardiomyocyte Isolation Kit
Neutral Protease (Dispase®)
Papain (Neural) Dissociation System
Hepatocyte Isolation System
Proteinase K
STEMxyme™ 1 & 2 Collagenase/Neutral Protease Blends
Trypsin
Trypsin Inhibitors

Complete Catalog, Tissue Dissociation Guide and Enzyme Manual available online at:

Worthington-Biochem.com
TissueDissociation.com