

# Papain



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Catalog #07465 25 mg  
Catalog #07466 100 mg

## Product Description

Papain is a cysteine protease consisting of a single polypeptide containing three disulfide bridges. Native crystalline papain is unreactive until acted upon by mild reducing agents, e.g. cysteine, sulfide, or sulfite, and therefore likely exists as a zymogen. Papain has a wide specificity with a preference towards arginine, lysine, and phenylalanine. This enzyme degrades protein substrates, such as the intercellular matrices of cartilage, more extensively than pancreatic proteases; it is typically less damaging and more effective than other proteases for tissue dissociation applications (Huettner & Baugham; Lam) and has also been used for the dissociation of neural tissue (Fasano et al.).

## Product Information

**Alternative Names:** Papainase; Papaya peptidase I  
**Format:** Lyophilized powder  
**Storage:** Store at 2 - 8°C.  
**Stability:** Stable as supplied for 6 months from date of receipt.  
**Reconstitution:** Lyophilized Papain can be reconstituted in activation buffer and further diluted in a balanced salt solution (e.g. Hanks' Balanced Salt Solution [HBSS]) or appropriate buffer of choice to a final desired concentration. For more information, refer to Directions for Use.  
**Molecular Weight:** 23.4 kDa  
**CAS Number:** 9001-73-4  
**Optimum pH:** 6.0 - 7.0  
**Cleavage Site:** -X-t-Y- : X = preference for Arg, Lys, and Phe, otherwise nonspecific; Y = nonspecific

Please refer to the Safety Data Sheet (SDS) for hazard information.

## Specifications

**Source:** Carica papaya latex  
**Activity:** Activates to at least 15 units/mg protein (refer to Certificate of Analysis for lot-specific % protein). See Notes for further information.

## Directions for Use

Papain should be activated immediately before use. To activate Papain, reconstitute the lyophilized Papain using an aqueous solution containing 1.1 mM EDTA, 0.067 mM mercaptoethanol, and 5.5 mM cysteine-HCl and incubate for 30 minutes at room temperature (15 - 25°C). If a sterile solution is required, the Papain solution can be filtered through a 0.22 µm filter after activation. After activation, the Papain solution can be further diluted to a desired concentration using a balanced salt buffer (e.g. HBSS) or appropriate buffer of choice.

## Notes

### ACTIVITY UNITS

1 unit hydrolyzes 1 µmol of N $\alpha$ - benzoyl-L-arginine ethyl ester (BEAA)/minute at 25°C, pH 6.2, after activation.

## Related Products

For a complete list of dissociation reagents, as well as related products available from STEMCELL Technologies, visit [www.stemcell.com](http://www.stemcell.com), or contact us at [techsupport@stemcell.com](mailto:techsupport@stemcell.com).

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