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Research Abstract

Partial Characterization of a Cysteine Peptidase (TcCys) From Cacao Fruits (*Theobroma Cacao*) Variety Criollo-White Almond

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Abstract: Enzymes, especially peptidase, have become an important and indispensable part of the processes used by the modern food and feed industry to produce a large and diversified range of products for human and animal consumption. A cystein peptidase, used extensively in the food industry, was partially characterized from germinated cacao seeds (*Theobroma cacao* L.) variety "criollo white-almond" through a simple reproducible method consisting of extraction, precipitation with 30% ammonium sulfate and two ion exchange chromatographic steps. The relative molecular weight of the enzyme was estimated to be 25 kDa by SDS-PAGE. The cystein peptidase had a pH optimum at 5.0. In addition, it had a temperature optimum of 50°C and based on a thermal stability study, its stable at 60°C after preincubation of the enzyme for 1 h prior to substrate addition. The proteolytic activity of the enzyme was inhibited by thiol-specific inhibitor, p-chloromercuribenzoate and recovered by reagents reductor such as glutation, β ME and dithitreitol.

Keywords: Cysteine peptidase, cacao criollo, white-almond, Theobroma cacao.

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