

Native Bovine Chymotrypsinogen A

Cat. No. NATE-0134

Lot. No. (See product label)

Introduction

Description Chymotrypsinogen is a proteolytic enzyme and a precursor (zymogen) of the digestive enzyme chymotrypsin. It is a single polypeptide chain consisting of 245 amino acid residues. It is synthesized in the acinar cells of the pancreas and stored inside membrane-bounded granules at the apex of the acinar cell. The cell is then stimulated by either a hormonal signal or a nerve impulse and the contents of the granules spill into a duct leading into the duodenum.

Synonyms chymotrypsinogen A; Chymotrypsinogen; Chymotrypsin

Product Information

Species Bovine

Source Bovine Pancreas

Form lyophilized powder

CAS No. 9035-75-0

Purity Purified, Five times crystallized, electrophoretically homogeneous

Activity Activates to at least 45 units per mg protein

Specificity In addition to bonds involving aromatic amino acids, chymotrypsin catalyzes at a high rate the hydrolysis of bonds of leucyl, methionyl, asparaginy, and glutamyl residues. A recent study has been made by Berezin and Martinek (1970) and Baumann et al. (1970).

Inhibitors The enzyme is inhibited by heavy metals, the natural trypsin inhibitors to various degrees (Birk 1961), an inhibitor from potato (Ryan and Balls 1962), and organophosphorus compounds. Gel filtration of chymotrypsin removes autolysis products and other contaminants (Yapel et al. 1966). The specificity of α -chloro ketone as α -chymotrypsin inhibitor has been studied by Kumar and Hein (1970). Erlanger et al. (1970) report phenothiazine-N-carbonyl chloride to be specific for chymotrypsin inhibition.

Pathway Activation of Matrix Metalloproteinases, organism-specific biosystem; Defective AMN causes hereditary megaloblastic anemia 1, organism-specific biosystem; Defective CUBN causes hereditary megaloblastic anemia 1, organism-specific biosystem

Unit Definition One Unit hydrolyzes one micromole of benzoyl-L-tyrosine ethyl ester per minute at 25°C, pH 7.8 in the presence of calcium. An activity of 45 units per mg using the above definition, is the equivalent of 10 kDa optical density of 1330 N.F. units per mg using ATEE as a substrate.

Storage and Shipping Information

Storage Store at 2-8°C

Stability The enzyme is stable for days in solution at pH 3.0 and for years as a dry powder when stored refrigerated.