Creative Enzymes®

Native Clostridium histolyticum Collagenase

Cat. No. DIGS-253

Lot. No. (See product label)

Introduction

Description	Collagenases are endopeptidases that digest native collagen in the triple helix region. Collagens are the major fibrous component of animal extracellular connective tissue. Bacterial collagenases differ from vertebrate collagenases in that they exhibit broader substrate specificity (Peterkofsky 1982, Birkedal-Hansen 1987). Unlike animal collagenases that split collagen in its native triple-helical conformation (Woolley et al. 1975, Gross et al. 1974), bacterial collagenase is unique because it can degrade both water-insoluble native collagens and water-soluble denatured ones. It can attack almost all collagen types, and is able to make multiple cleavages within triple helical regions (Mookhtiar and Van Wart 1992).
Applications	Isolation of adipocytes, hepatocytes, and cells from lung, epithelium and adrenal tissue Isolation of cardiomyocytes and cells from bone, cartilage, muscle, thyroid, and endothelium Isolation of mammary and various other soft tissues Isolation of human and porcine pancreatic islet cells (Kin 2007) Treatment of tissues with crude collagenase, with its mixture of proteolytic activities, provides gentle, selective digestion of the intercellular matrix with little damage to cells or loss of viability AFA collagenase is suitable for applications needing to avoid introduction of animal derived pathogens into bioprocessing procedures
Synonyms	EC 3.4.24.3; Collagenase; Clostridiopeptidase A; Clostridium histolyticum collagenase; collagenase A; collagenase I; Achromobacter iophagus collagenase; aspergillopeptidase C; nucleolysin; Collagenase, Type 1; Collagenase, Type 2; Collagenase, Type 3; Collagenase, Type 4; Collagenase, Type 5

Product Information

Source	Clostridium histolyticum
Form	Lyophilized powder
EC Number	EC 3.4.24.3
CAS No.	9001-12-1
Molecular Weight	68 to 130 kDa
Activity	Type 1 > 125 units per mg; Type 2 > 125 units per mg; Type 3 > 100 units per mg; Type 4 > 160 units per mg; Type 5 > 450 units per mg
Optimum pH	6.3-8.5
Composition	Clostridium collagenases represent unusually large metalloproteases, a family of proteases that shares a zinc-containing motif at the center of the active site (Gonzales and Robert-Baudouy 1996).
Activators	Ca2+ Zn2+
Inhibitors	EDTA, EGTA Cysteine, histidine DTT 2-mercaptoethanol o-phenanthroline Hg2+, Pb2+, Cd2+, Cu2+, Zn2+ Not inhibited by DFP or serum
Unit Definition	One Unit releases one micromole of L-leucine equivalents from collagen in 5 hours

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Storage and Shipping Information

Stability	This product is stable for at least one year when stored at-20°C. There is no loss in FALGPA or protease activity in 30 days at 37°C, 50°C and-20°C