

Datasheet for ABIN5706430

Collagenase/Elastase



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Overview

Quantity:	1 each
Reactivity:	Clostridium histolyticum, Pig

Product Details

Purification:	<p>Collagenase/Elastase is partially purified and 0.22µm filtered and contains 22,500 units of collagenase type 1 and 30 units of elastase per vial. Collagenase type 1 has the original balance of collagenase, caseinase, clostripain and tryptic activities. The collagenase assay is a modification of the Mandl collagen digestion procedure wherein collagenase is incubated for five hours with native collagen and the extent of collagen breakdown is determined using the Moore and Stein, JBC, 176, 367, (1948) colorimetric ninhydrin method. Amino acids released are expressed as micromoles L-leucine per milligram collagenase in 5 hours at 37°C, pH 7.5. Caseinase activity, a measure of non-specific proteolytic activity, is determined using the above assay and substituting 25 milligrams vitamin free casein for the collagen substrate. Caseinase activity is calculated as for collagenase activity. Clostripain activity is measured after activation in 2.5 mM dithiothreitol (DTT). One unit hydrolyzes one micromole of BAEE per minute at 25°C, pH 7.6, after activation. Tryptic activity is assayed using the same BAEE method as clostripain, but without activation. Porcine pancreatic elastase has a molecular weight of 25.9 kDa, and a pH optimum of 8.5. Suitable for the isolation of Type II lung cells.</p>
Biological Activity Comment:	<p>Collagenase: ≥125 CDU/mg dry weight Caseinase: ≥200 u/mg dry weight Clostripain: ≤4.0 u/mg dry weight Tryptic: ≤0.5 u/mg dry weight Elastase: ≥30 units per vial</p>

Target Details

UniProt:	P00772
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Application Details

Application Notes: Application Note: Elastase is assayed using a method adapted from that of Feinstein et al., Biochem. Biophys. Res. Comm., 50, 1020 (1973) and using the more soluble substrate of Bieth et al., Biochem. Med., 11, 350 (1974). 1 SucAla3NA unit is approximately equivalent to 6 elastin digestion units. Aqueous liquid suspensions should be aseptically handled to avoid bacterial contamination. Due to the viscous nature of the aqueous suspension the vial should be rinsed to recover contents. One Unit cleaves one micromole of N-succinyl-L-alanyl-L-alanyl-L-alanine-p-nitroanilide per minute at 25 °C, pH 8.0. The collagenase assay is a modification of Mandl wherein collagenase is incubated for five hours with native collagen and the extent of collagen breakdown is determined using the Moore and Stein, JBC, 176, 367, (1948) colorimetric ninhydrin method. Collagenase is typically used at concentrations from 0.05 % to 0.5 % (w/v) in balanced salt solutions such as Hank's, Earle's and others. Specific conditions for reactivity should be optimized by the end user.

Comment: Synonyms: Clostridium histolyticum, Bacterial collagenases, collagenase, Porcine pancreatic elastase, Protease, ColH, ColG, Chymotrypsin-like elastase family member 1, Elastase-1
Background: Collagenase preparations contain several isoforms of two different collagenases, a sulfhydryl protease, clostripain, a trypsin-like enzyme, and an aminopeptidase. This combination of collagenolytic and proteolytic activities is effective at breaking down intercellular matrices, the essential part of tissue dissociation. Crude collagenases are widely used in enzymatic primary cell isolation and tissue dissociation procedures. Most researchers employ either crude collagenase preparations such as Types 1, 2, 3, and 4 or chromatographically purified collagenase, the latter usually combined with secondary enzymes such as elastase, hyaluronidase, etc. Elastase is a serine protease that also hydrolyzes amides and esters. It is produced in the pancreas as an inactive zymogen, and activated in the duodenum by trypsin. The following information applies to porcine elastase. While elastase will hydrolyze a wide variety of protein substrates, it is unique among proteases in its ability to hydrolyze native elastin, a substrate not attacked by trypsin, chymotrypsin or pepsin. Soybean trypsin inhibitor and kallikrein inhibitor suppress proteolytic but not elastolytic activity. Collagenase is ideal for researches focused in Stem Cell and Biomarker Research.
Gene Name: CELA1, colH, colG

Restrictions: For Research Use only

Handling

Format: Lyophilized

Reconstitution: Reconstitution Volume: 10.0 mL

Handling

	Reconstitution Buffer: Restore with deionized water (or equivalent)
Buffer:	Buffer: None Stabilizer: None
Preservative:	Without preservative
Storage:	4 °C,-20 °C
Expiry Date:	12 months