Creative Enzymes®

Native Bacillus polymyxa Dispase I

Cat. No. NATE-0191

Lot. No. (See product label)

Introduction

Description Dispase I is a rapid, effective, gentle and neutral protease that can separate intact epidermis from the dermis. It can also separate intact epithelial sheets in culture from the substratum. The enzyme preserves the viability of the epithelial cells while cleaving the basement membrane zone region. It can also be used to prevent clumping in suspension cultures. This protease cleaves fibronectin and type IV collagen, but not laminin, type V collagen, serum albumin, or transferrin. It hydrolyzes N-terminal peptide bonds of non-polar amino acid residues. It preferentially attacks denatured and intercellular proteins with exposed hydrophobic amino acid residues. Ca2+, Mg2+, Mn2+, Fe2+, Fe3+ and Al3+ activate the enzyme. EDTA, EGTA, Hg2+ and other heavy metals inhibit the enzyme activity. The enzyme contains 1g-atom of zinc per g-mol of purified enzyme. If this zinc component is removed by chelating agents such as EDTA or EGTA, an inactive apoenzyme is obtained. The enzyme is not inhibited by serum.

Applications Dispase I has been used in a study to assess the effect of amniotic membrane on wound size in the early stages of the healing process. Dispase I has also been used in a study to investigate a dityrosine-based substrate for a protease assay. Dispase I has been used in lung digestion and processing for flow staining, as well as for CD4 cell isolation in mice. The enzyme has also been used to digest excised wounds and a small amount of surrounding skin for the detection of GFP+ (green fluorescence protein) cells. This study to investigated the effect of differentiation and angiogenesis of bone marrow-derived mesenchymal stem cells on wound healing. It has also been used to remove the epidermis during the isolation of dermal fibroblasts from mice.

Synonyms Dispase I; Dispase; 42613-33-2; Protease from Bacillus polymyxa

Product Information

Source Bacillus polymyxa

Form lyophilized powder containing calcium acetate

CAS No. 42613-33-2

Activity > 10 unit/mg solid

Unit Definition One unit will hydrolyze casein to produce color equivalent to 1.0 μmole (181 μg) of tyrosine per min at pH 7.5 at 37°C (color by Folin-Ciocalteu reagent), unless otherwise indicated.

Storage and Shipping Information

Storage 2-8°C