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Datasheet for MB-127-0050

Neutral Protease Dispase®

Overview

Description:	Neutral Protease Dispase®, Animal Origin Free - MB-127-0050
Item No.:	MB-127-0050
Size:	50 mg
Origin:	Bacillus polymyxa

Product Details

Background:	Neutral protease (Dispase®) is a non-mammalian animal origin free metallo, neutral protease. Its mild proteolytic action makes the enzyme especially suitable for the preparation of primary cells and secondary (subcultivation) in cell culture since it is gentle on cell membranes. This protease is also used as a secondary enzyme in cell isolation and tissue dissociation applications, commonly used with collagenase. Neutral protease is an extremely stable Zn-metalloendopeptidase that is produced by Paenibacillus polymyxa. It is involved in the generation of beta- and alpha-amylases from the large amylase precursor. Although related to trypsin, neutral protease is significantly less harmful to cells and can help prevent unwanted cell clumping without cell membrane damage after one hour incubations. Neutral protease (Dispase®) is ideal for researchers focused in Stem Cell and Biomarker Research.
Synonyms:	Paenibacillus polymyxa, beta-amylase, alpha-amylase, trypsin, Bacillus subtilis, Bacillus thermoproteolyticus, Bacillus megaterium, Bacillus cereus, Streptomyces griseus, Aspergillus oryzae, Serratia, Bacillus polymyxa, Bacillolysin
Species of Origin:	Bacillus polymyxa
Reagent Type:	Enzyme

Target Details

Gene Name:	npr

Purity/Specificity:	Neutral protease (Dispase®) is purified and one unit releases one micromole of Folin positive amino acids, measured as tyrosine, at 37°C, pH 7.5, using casein as the substrate. The enzyme is known to contain 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. Calcium has been detected in the purified protein and is believed to play a role in maintaining the structure and configuration, and preventing autolysis. Neutral protease is a non-specific metalloprotease. It cleaves fibronectin, collagen IV, and to a lesser extent collagen I, but it does not cleave collagen V or laminin. It hydrolyzes N-terminal peptide bonds of non-polar amino acid residues and may preferentially attack denatured and intercellular proteins with exposed hydrophobic amino acid residues. It is believed to bind one zinc ion and four calcium ions per subunit. Unlike other Bacillus species that produce neutral, alkaline, or a mixture of both proteases, Paenibacillus polymyxa is one of three species that produces only a neutral protease.
Relevant Links:	• MB-127-0050 SDS • UniProtKB - P29148

Application Details

Application Note:	Neutral protease (Dispase®) is designed for primary cell isolation and tissue dissociation. It is commonly used to separate skin epidermis from dermis leaving intact epithelial sheets and stem cell, hepatocyte and other cell isolation applications. However, due to the diversity of the variables involved, exact isolation conditions should be determined empirically for each cell/tissue application. Expect a band approximately 36 kDa in size by western blot in the appropriate tissue or cell lysate. Specific conditions for reactivity should be optimized by the end user.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
Other:	Caseinase - 7,460 % Protein - 76% Endotoxin Level - <0.25 EU/mg

Formulation

Physical State:	Lyophilized
Concentration:	9.41 units/mg by dry weight
Buffer:	None
Preservative:	None
Stabilizer:	None
Reconstitution Volume:	10.0 mL

Reconstitution Buffer:	Restore with deionized water (or equivalent)

Shipping & Handling

Shipping Condition:	Ambient
Storage Condition:	Stable at 2-8°C for 12 months. Aliquot and store at -20°C after reconstitution with water or commonly used balanced salt solutions or media. Stable over a wide pH range: 4.0-9.0, optimum pH 5.9-7.0. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. Dilute only prior to immediate use.
Expiration:	Expiration date is one (1) year from date of receipt.

Disclaimer

This product is for research use only and is not intended for therapeutic or diagnostic applications. Please contact a technical service representative for more information. All products of animal origin manufactured by Rockland Immunochemicals are derived from starting materials of North American origin. Collection was performed in United States Department of Agriculture (USDA) inspected facilities and all materials have been inspected and certified to be free of disease and suitable for exportation. All properties listed are typical characteristics and are not specifications. All suggestions and data are offered in good faith but without guarantee as conditions and methods of use of our products are beyond our control. All claims must be made within 30 days following the date of delivery. The prospective user must determine the suitability of our materials before adopting them on a commercial scale. Suggested uses of our products are not recommendations to use our products in violation of any patent or as a license under any patent of Rockland Immunochemicals, Inc. If you require a commercial license to use this material and do not have one, then return this material, unopened to: Rockland Inc., P.O. BOX 5199, Limerick, Pennsylvania, USA.