

Recombinant Collagenase mix and Porcine Trypsin

Cat. No. Tissue Digestion-29 **Lot. No.** (See product label)

SPECIFICATION

Product Overview

This kit contains a recombinant collagenase mix and recombinant porcine trypsin. The recombinant collagenase mix, expressed in E.coli, specifically cleaves the bond between the neutral amino acid (X) and glycine within the collagen-specific Pro-X-Gly-Pro sequence. The recombinant porcine trypsin, expressed in Pichia pastoris, targets the C-terminal peptide bonds of lysine and arginine in proteins. Neither component contains animal-derived materials. When used in combination, they enable efficient digestion of animal organs (e.g., heart, liver, kidney) to isolate primary cells. This kit is composed of a recombinant collagenase mix and recombinant porcine trypsin, both free of animal-derived components, and can be applied to the digestion of various animal organs and tissues such as the heart, liver, and kidney. Residual Host Cell Protein: < 50 ppm Collagenase Activity: ≥ 3500 CDU Mycoplasma assay: Negative

Species

Porcine

Source

E.coli and Yeast

Description

Our Tissue digestion kit feature high purity and stability, enhancing the reproducibility and standardization of tissue/cell dissociation, effectively improving cell yield and viability.

Purity

≥ 95% by SDS-PAGE

Bio-activity

≥ 25 KU

Advantages

1. High Batch-to-Batch Stability: Effectively avoids variations between batches,

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ensuring highly reproducible experimental results. 2. High purity: Purity > 95%, free from contamination by other proteases. 3. Flexible combination: The digestion solution ratio can be freely adjusted according to specific experimental applications to achieve maximum digestion efficiency. 4. Animal Component-Free: Recombinantly expressed, containing no animal-derived components.

Unit definition

1. Definition of collagenase activity: One CDU is defined as the amount of enzyme that can release polypeptides from the collagen of bovine Achilles tendon within 5 hours at pH 7.4, 37 centigrade in the presence of calcium ions, and the ninhydrin color is equivalent to 1.0 μmol of leucine. 2. Definition of trypsin activity: One unit (U) is defined as the amount of enzyme that can hydrolyze BAEE per minute at 25 centigrade, pH 7.6 in a 3.2 mL reaction system (1 cm optical path), resulting in an increase of 0.003 in the absorbance at 253 nm.

Endotoxin

< 10 EU/mg

Usage

1. Thaw the recombinant collagenase mix and recombinant porcine trypsin in the kit. Under aseptic conditions, mix the two solutions at a 1: 4 volume ratio to prepare the digestion solution. If dilution is required, use HBSS or PBS. 2. Transfer the mouse heart from the tissue preservation solution and rinse 2-3 times with pre-cooled PBS (+2% penicillin-streptomycin). 3. Remove the excess parts from the tissue (such as connective tissue and adipose tissue). 4. Mince the mouse heart into pieces (approximately 3 mm³) and transfer them into a centrifuge tube. Then, add 1.5 mL of the digestion solution and incubate at 37 centigrade for 20 minutes. Mix the suspension by pipetting up and down or inverting the tube every 10 min. Monitor digestion status to avoid overdigestion. Examine the suspension under a microscope; ideal digestion yields single cells or small clusters (< 70 μm). 5. Allow the suspension to settle briefly. Collect the supernatant. Add 1.5 mL fresh digestion solution to the pellet and repeat incubation (37 centigrade, 20 min) with mixing every 10 min. 6. Repeat this step once. 7. Combine all supernatants, add 5 mL complete DMEM

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medium to stop digestion, and centrifuge at $300 \times g$ (4 centigrade, 5 min). Discard the supernatant. 8. Resuspend the cell pellet in 5 mL PBS (+1% penicillin-streptomycin), filter through a 70 μm cell strainer, and centrifuge again ($300 \times g$, 4 centigrade, 5 min). 9. Resuspend the cell pellet in 5 mL PBS (+1% penicillin-streptomycin), centrifuge again ($300 \times g$, 4 centigrade, 5 min), and discard the supernatant. 10. Resuspend the final pellet in complete DMEM medium and culture in a dish.

Applications

Digest animal tissues to obtain primary cells.

Note

1. If you need more cell clumps rather than single cells, we recommend shortening the digestion time or reducing the proportion of trypsin; 2. Try to avoid freeze-thaw cycles of this product after receipt. If there is any remaining product, it is recommended to aliquot and store it at -20 centigrade; 3. Please wear lab coat and disposable gloves when using; 4. This product should not be used directly for clinical diagnosis and treatment.

Stability

This product should be stored at -20 centigrade and can be stored for at least 12 months.

Storage

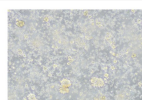
Store at -20 centigrade.

Shipping

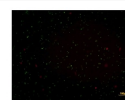
Dry Ice

Tissue digestion


Digestion of the mouse heart



Digestion of the mouse kidney



Digestion of the mouse heart (Dual fluorescence)

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organoid digestion

Sample type	Testing Indicators	Control	Ours
Tumor samples of human colorectal cancer	Cell viability	82%	92%
	Recovery rate	5×10 ⁶ cell/ml	5.8×10 ⁶ cell/ml
Tumor samples of human lung cancer	Cell viability	85%	89%
	Recovery rate	4×10 ⁷ cell/ml	5.2×10 ⁶ cell/ml

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