Panomics

Cancer Cell Isolation Kit

User Manual
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Panomics, Inc.

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Citing Cancer Cell Isolation Kits in Publications

When describing a procedure for publication using this product, we would appreciate it if you would refer to it as the Cancer Cell Isolation Kit from Panomics

If a paper cites the Cancer Cell Isolation Kit and is published in a research journal, the lead author(s) may receive a travel stipend for use at a technology conference or tradeshow by sending a copy of the paper to our technical support group at techsupport@panomics.com or via fax at (510) 818-2610.

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Introduction

Overview

Isolation and purification of tumor cell (TC) from various tumor tissues such as surgical tumor tissues, ascites or carcinous hydrothorax is a common process to obtain the purified tumor cells for further studies. But unfortunately, most traditional isolation and purification methods might damage the tumor cells so as to limit the downstream applications.

It is a well-known fact that tumor tissue is always mixed with many normal cells including lymphocyte, fibroblast, interstitial cell and necrosis tumor cell. It is difficult to obtain high purifty of primary tumor cells because of the low ratio of purified cells. Panomics' Cancer Cell Isolation Kit combines novel reagent compositions and handling processes to successfully isolate purified tumor cells. The kit can be readily used to rapidly separate the cancer cells from various solid tumor sources. It is suitable for many carcinous tissue, for example, lung cancer tissue, liver cancer tissue, kidney cancer tissue, breast cancer tissue, ovarian cancer tissue, nasopharnyx cancer tissue.

Kit Features

1. Mild processes for isolation and purification of cells which maintain the biological activities of the cells to enable culture of primary tumors.

2. Increased survivial ratio of primary tumor cells, being up to 75-85% in most situations.

3. Used for the separation of TCs both from surgical tissue, ascites or carcinous hydrothorax materials. The purified TCs can be used for molecular biology analysis and for cancer immunotherapy.

4. Broad based, economical kit for researchers.

Materials

Materials Provided

Component	Catalogue #		
	CI0002	CI0004	CI0010
Tumor Cell Digestion Solution	30 mL	60 mL	150 mL
Tumor Cell Suspension Solution	100 mL	200 mL	500 mL
Tumor Cell Purification Solution	40 mL	80 mL	200 mL
100mm cell strainer	2	4	10

Additional Materials Required

RPMI-1640 Medium, Without Serum
Centrifuge Suitable For 50 mL Conical Tube
6-Well Culture Plate
Constant Temperature Water Bath
90mm Sterile Culture Dish
Surgical Scissors

Pre-treatment of Tumor Tissue

All procedures should be carried out using asceptic techniques. Thaw TC purification solutions in 37°C water bath prior to start.

1.1 Place the tumor tissue (1-2cm^3), taken from biospy, into a cell-culture dish containing 10 mL RPMI-1640 medium (without serum) and pick out non-tumor tissue and necrotic tumor tissue with sterile ophthalmological tweezers.

1.2 Transfer the tumor tissue to a new dish and cut the tumor into small pieces. Resuspend the tissue fragments with 20 mL RPMI-1640 medium (without serum) and transfer everything into a 50 mL conical tube. Centrifuge at 1,200 rpm for 6 minutes at room temperature and discard the supernatant.

1.3 Resuspend the pelleted material with 10 mL of **Tumor Cell Digestion Solution** and incubate the tube at 37°C for 2-4 hour with agitation.

1.4 Add 10mL **Tumor Cell Suspension Solution** and mix well by pipetting. Pass this suspension through the 100 mm cell strainer (provided) and collect the flow through in a clean 50mL conical tube.

1.5 Centrifugate the flow through at 1,200 rpm for 8 minutes and remove the supernatant. Resuspend the pellet in 20mL Tumor Cell suspension solu-

tion and mix well to obtain a homogeneous cell mixture.

Isolation and Enrichment of Tumor Cells

2.1 Add 20 mL **Tumor Cell Purification Solution** to a 50mL conical tube, label this Tube A, and centrifuge at 1,200 rpm for 2 minutes at room temperature.

2.2 Carefully layer the 20 mL cell mixture from step 1.5 on top of the solution in Tube A. ***Note:*** *This is done by pipetting the solution slowly down the wall of the conical tube.*

2.3 Let the tube stand in a vertical position for 6 minutes at room temperature. **It is critical that the duration of incubation is strictly adhered to, otherwise purity of the isolated cancer cells will be compromised.**

2.4 Carefully place the tip of a pipette at the bottom of the solutions in the conical tube and remove 6 mL of the **Tumor Cell Purification Solution** from the bottom. Transfer this solution to a fresh 50 mL conical tube and label this Tube B.

2.5 Centrifuge Tube B at 1200 rpm for 8 minutes. Remove the supernatant.

2.6 Resuspend the cell pellet in Tube B with 5 mL RPMI-1640 culture media, containing 10% serum and 1% penicillin and streptamycin.

2.7 Transfer the cells into one well of a six-well plate. Culture the purified tumor cells for 3-4 days.

Contacting Panomics

For ordering information or technical support, contact the appropriate resource provided below according to your geographical location.

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