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Look for Cell Invasion Experiment? How About Following Information?

181830691 [1]

[1]Marine Biological Laboratory

1 *Works for me* This protocol is published without a DOI.

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ABSTRACT

The cell transwell is put into the culture plate, the chamber was called the upper chamber, the culture plate was called the lower chamber, the upper chamber was filled with the upper culture medium, the lower chamber was filled with the lower culture medium, and the upper and lower culture medium were separated by polycarbonate membrane.The cells is planted in the upper chamber. Due to the permeability of the polycarbonate membrane, the components in the lower culture medium could affect the cells in the upper chamber, it is convenientto study the growth and movement of cells according to the effects conducted by the components in the lower culture medium.

EXTERNAL LINK

https://www.creative-proteomics.com/services/cell-colored-adhesion-assay.htm

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MATERIALS TEXT

Transwell

It will be simple for researchers to study co-culture, chemotaxis, migration and cell invasion by using polycarbonate membranes with different pore sizes and different treatments.

Common experimental introduction

Cells will not migrate through the pore size less than 3.0 m. Therefore, it would be better to utilize the pore size below 3.0 m, if projects are not interfering to cell movement ability. If the experimental purpose is to study the effect conducted by cells planned in lower compartment, it would be better to planned targeted cells in the upper compartment.

Chemotactic experiments

Cells in the upper compartment can migrate to the lower one, if the polycarbonate membrane with 5.0/8.0/12.0μm is available. The amount of cells in the lower compartment will reflect the chemotactic ability of the components in the lower compartment.

Tumor cell migration experiment

8.0 and 12.0 μm membrane are commonly used to study the chemotactic ability of tumor cells. Tumor cells planned in upper compartment will get into the lower compartment with FBS or some specific chemokines, in which the amount of tumor cells will be the only research target.

Tumor cell invasion experiment

8.0 and 12.0 μm membrane are commonly used to tumor cell invasion experiment which shares the same principle with tumor cell invasion experiment. However, the only difference between cell invasion and cell migration is that polycarbonate membrane is coated with matrix glue in order to create the same condition with extracellular matrix in vivo. Cells will secret matrix metalloproteinases to degrade the matrix glue before passing through the polycarbonate membrane. The amount of tumor cells in the lower compartment will reflect the invasion ability of tumor cells.

Cells counting methods

Adherent

Crossing the membrane, cells will attach to the inferior compartment side of membrane rather than the inferior compartment. The cells can be counted under the microscope by staining them.

Indirect counting methods
Due to the function of some cells and membranes, cells sometimes cant stick to membrane but fall into the lower compartment. Once there are a large number of cells crossing the membrane, and researchers can not count the accurate cell numbers, indirect counting method, sharing the same experimental principle with MTT, is usually applied.

According to the introduction above, cell invasion is related to cell migration, and defines the ability of cells to become motile and to navigate through the extracellular matrix within a tissue or to infiltrate neighbouring tissues.