

## DEVICE FOR THE ISOLATION OF CELLS FROM TISSUE EXPLANTS

### KEYWORDS

Adherent cells, tissue explants, cell culture, non-enzymatic method, isolation device

### TECHNOLOGY DESCRIPTION

Device to **isolate adherent cells from tissue explants**, using a **non-enzymatic method**

#### Improvements:

- design allows the distribution of tissue fragments within pre-determined positions and to immobilize them between the device and the cell growth area of a tissue culture container
- tissue fragments are immobilized throughout the time in culture, favoring cell migration from the explants to the tissue culture container

**Application of the device for improving the isolation of cells from tissue explants**

### ADVANTAGES OVER ALTERNATIVE TECHNOLOGIES

Non-enzymatic method with glass coverslips or stainless-steel mesh disks:

- More robust - restrained by design from moving in any direction, assuring that no fragments detach
- Cheaper – potential to be mass-produced and distributed like other single use sterilized cell culture material
- More efficient and effective - the contact area between the explants and tissue culture supporting material was greatly increased (cell colonies may arise both on the cell culture dish and on the device itself), rising the chances that cells migrate from the tissue fragments and effectively form colonies
- Minimizes variability associated with the operator - the spike-based design of the device allows the explants to be distributed at fixed positions

### APPLICATIONS

- Greatly facilitate the process of adherent cells isolation
  - Examples: umbilical cord mesenchymal stem/stromal cells (MSCs) that are widely used in biomedical applications and are being increasingly tested in clinical trials

### PATENT SPECIFICATIONS

Reference: Portuguese National Application

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