NEW VIBROACOUSTIC DEVICE INCREASES THE SURVIVAL OF CELLS INCUBATED OR PROCESSED IN THE LABORATORY

LICENSED

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ABSTRACT

Researchers at the University of Alicante, in collaboration with Corrientes del Sur SL, have developed a biocompatible device that controls the noise and vibrations of incubators and other equipment used to handle and/or process biological samples.

This device reduces the mechanical stress caused by noise and vibrations on cells, improving survival and increasing cell proliferation. It also improves sensitivity in cell and molecular dynamics assays, and by reducing the variability associated with laboratory equipment, the reliability and reproducibility of experiments are increased in a convenient, rapid, and safe manner.

Companies interested in acquiring this technology for commercial exploitation are being sought.

ADVANTAGES AND INNOVATIVE ASPECTS

ADVANTAGES OF TECHNOLOGY

The main **advantages** of this innovative device are listed below:

1) **Mechanical stress** is reduced at the cellular level by attenuating airborne and impact noise on the culture plate.

2) **Vibration transmissions** are reduced by decoupling the culture plate from the incubator structure.

3) **Homogeneity in environmental conditions** is improved by reducing fluctuations and vibroacoustic variations in the cellular environment. Therefore, the results obtained are independent of the equipment used and its configuration, thereby reducing variability.

4) **Reliability and reproducibility in cell dynamics experiments** are increased by minimizing masking phenomena caused by ambient vibroacoustic energy.

5) **Sensitivity** is improved in cell and molecular dynamics assays by reducing the mechanical stress that background noise from the incubator exerts on the biological sample.

6) **The available space** is optimized by allowing stacking. This stacking of different devices, in turn, increases the equivalent sound absorption area and results in a **greater reduction in overall cellular stress**.

7) **The acoustic energy incident** on the culture plate inside the device is reduced, which decreases mechanical stress on the biological samples.

INNOVATIVE ASPECTS OF TECHNOLOGY

There is no device on the market that protects cell samples from the noise generated by incubators and other devices, leaving biological cultures exposed to their effects on cell dynamics.

The design of this **innovative biocompatible device** has been specifically conceived for **optimal vibroacoustic control** of incubators and other devices related to the processing and/or handling of biological samples, **significantly increasing cell survival and proliferation**.

The object of the present invention is to comfortably, quickly and safely reduce mechanical stress in biological samples , thus improving the reliability and reproducibility of cell dynamics assays.

MARKET APPLICATIONS

The present invention falls within the **biological sector**, specifically in the field of **cell culture** and the **manipulation and/or processing of cultures**.

This technology can be applied in a variety of contexts, such as **incubators**, **biological safety hoods** (especially laminar flow hoods), or anywhere where the sample is in a noisy or vibrating environment.

This is a particularly interesting device for carrying out studies in **experimental biology and neuroscience**.

COLLABORATION SOUGHT

They are looking for companies interested in acquiring this technology for **commercial exploitation**. through:

- Patent license agreements.
- Agreements on technology and knowledge transfer.
- Development of new applications.

Company profile sought:

- Manufacturers of insulating materials.
- Incubator manufacturers.
- Manufacturers of equipment for the processing and/or handling of biological samples.