

## NEW BIOREACTOR FOR GROWING PLANT CELL CULTURE IN SUSPENSION

### DESCRIPTION OF THE TECHNOLOGY

It has designed and manufactured a **bubble column-type bioreactor** to carry out the culture of **cell a cell suspension** of any type of **plant** in aseptic conditions. Its novel design allows recovering the culture medium, to replace it with another medium and to reuse the remaining biomass for a next culture operation. This novel bioreactor is characterized by its low cost and because it allows a homogenous and efficient aeration, and the correct agitation of the culture medium, to replace it with another medium culture.

### MARKET APPLICATION SECTORS

The present invention is framed in the field of **Biotechnology**. In particular, it refers to a bioreactor to carry out, under aseptic conditions, plant cells culture in suspension with the aim of obtaining **biomass** or **metabolites**, or both, with **commercial interest** for the following sectors: cosmetic, pharmaceutical, nutraceuticals, food, agricultural, cleaning and personal care.

### TECHNICAL ADVANTAGES AND BUSINESS BENEFITS

This novel bioreactor has the following **advantages** over today's commercially available stirred tank or airlift bioreactors of similar size:

- 1) It is a **low cost** bioreactor.
- 2) It allows **homogenous** and **efficient** pneumatic **aeration** and **agitation**, even at high cell densities.
- 3) Its design allows working in a permanent **aseptic environment throughout the process**.
- 4) Its design allows a  $R^3$ :
  - **Recover** the culture medium.
  - **Replace** the culture medium.
  - **Re-use the biomass** for the next culture operation.
- 5) The materials used are **re-usable and economics**.
- 6) The design is adapted to the growing needs of **any type of plant cell culture** in suspension.
- 7) **Operating costs are low** compared to single use (disposable) models.
- 8) Especially suitable for obtaining products (biomass or metabolites) whose commercial value in the market is low or moderate.

### CURRENT STATE OF DEVELOPMENT

A **7-liter prototype** has been designed and built for the **laboratory scale** tests that have been carried out. In its construction, **re-usable materials** (glass and metal) have been used.

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### INTELLECTUAL PROPERTY RIGHTS

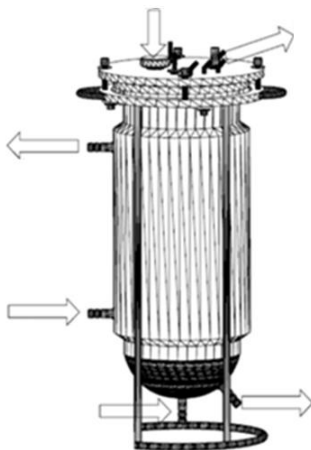
The present invention is protected through **patent granted with prior examination**:

- *Title of the patent: "Biorreactor tipo columna de burbujeo para cultivo de células vegetales en suspensión".*
- *Application number: P201730479.*
- *Application date: March 30<sup>th</sup>, 2017.*

### COLABORATION SOUGHT

It is looking for companies interested in acquiring this technology for commercial exploitation through **patent license agreement**.

### RELATED IMAGES



**Image 1:** assembled bioreactor parts.



**Image 2:** bioreactor prototype in operation.

### CONTACT

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