

# NEW BIOREACTOR FOR GROWING PLANT CELL CULTURE IN SUSPENSION

**P** PATENTED TECHNOLOGY



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## ABSTRACT

The Plant Proteomics and Functional Genomics research group at the University of Alicante 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 to recover 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. We look for companies interested in licensing this technology for commercial exploitation.

## TECHNOLOGY ADVANTAGES AND INNOVATIVE ASPECTS

### INNOVATIVE ASPECTS AND ADVANTAGES OF THE TECHNOLOGY

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 for working in a permanent **aseptic environment** throughout the process.
- 4) Its design allows a **R<sup>3</sup>**:
  - **Recover** the culture medium.
  - **Replace** the culture medium.
  - **Re-use the biomass** for the next culture operation.
- 5) The materials used are **re-usable**.
- 6) The design is adapted to the growing needs of **any type of plant cell culture** in suspension.
- 7) **Reduction of operational cost** versus single use (disposable) models.
- 8) Especially suitable for obtaining products (biomass or metabolites) whose commercial value in the market is low or moderate.
- 9) The design is adapted to the needs of plant cells culture in suspension.

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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.
- Cleaning and personal care.
- Nutraceuticals.
- Food.
- Agricultural.

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#### COLLABORATION SOUGHT

We look for companies interested in licensing this invention for commercial exploitation through:

- License agreement.
  - Technology and knowledge transfer agreements.
  - Provide technological support in those techniques that require high training or sophisticated instruments that are not available to the requesting company.
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