



BIOENGINEERING ASPECTS OF TISSUES CULTURE BIOREACTORS FOR MEDICINE AND ENVIRONMENTAL APPLICATIONS

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Abstract

Development of industrial cell culture processes needs a good engineering practice and system expertise in achieving a successful integrated process using disposable components. The bioreactors for 3D tissues systems could be an advantageous alternative in terms of low contamination risk, easiness of handling and scaling-up. A careful and strategic design of these equipments provides a better process control and a safe and reproducible production of tissue construct. They can offer the technical means to perform controlled studies aimed to understanding the specific biological, chemical or physical effects. An important problem that has to be solved is the bioreactors scalability of the technology in mammalian systems. A cell line development process, carried on bioreactors, should be well defined and standardized so that areas requiring high-throughput and repetitive work can be identified.

Key words: bioengineering, bioreactor, cell, tissue, transfer process, scaling-up

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