

MULTIFUNCTIONAL MICRODEVICES FOR CELL ENTRAPMENT

A new approach for the integrated immunoprotection of transplanted cells is investigated, irrespective of the cell origin and maturation level. Microcapsules and microfibers, based on cross-linked polysaccharides coated with cationic polymers are produced. The devices contain multiple compartments that can interact with the encapsulated cell. By this approach, the “cell compartment” benefits from a “chemical/pharmacologic agent compartment” constituted of a sustained release formulation able to deliver the included biological response modifiers for long periods of time.

GOALS

Production of encapsulated cells for cell transplantation and tissue engineering applications.

INSTRUMENTS AND METHODS

In vitro cell culture, stem cell isolation and characterization, microdevice fabrication, polymer purification and processing, factorial design.

SUBJECTS

Pharmaceutics, Material Science, Bioengineering.

WORKING GROUP

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COLLABORATIONS

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