

Pharmaceutical Application of Artificial Organ

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Abstract: *Artificial cells for pharmaceutical and therapeutic applications started as microencapsulation on the micron scale. This has now expanded up to the higher range of macrocapsules and down to the nanometer range of nanocapsules and even to the macromolecular range of cross-linked hemoglobin as blood substitutes. The technology of tissue engineering is a rapidly evolving interdisciplinary field of science that elevates cell-based research from 2D cultures through organoids to whole bionic organs. We also present the possibilities of microfluidic systems, based on the latest reports. We demonstrate the pros and cons of both technologies and indicate their use in the future of medicine.*

Keywords: 3D bioprinting; organ-on-a-chip; bionic tissue; bioink; cell culture

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