Accelerator of Research in Technology (ART) in Bioprinting: our toolbox and expertize for tissue engineering and advanced cell culture model creation

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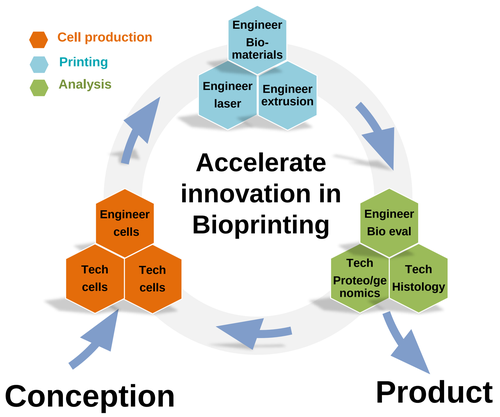
OUR OBJECTIVES

- Develop a 3D bioprinting structure, which offers training and technological development to INSERM laboratories
- Create and accelerate the development of issue models for research and in regenerative medicine applications
- To deploy 3D bioprinting technologies in INSERM laboratories

ART WORK FLOW

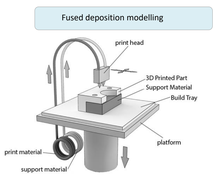


We structured our work approach in 3 main areas:

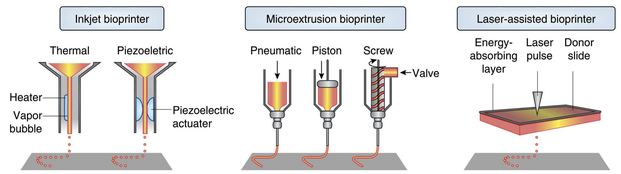
1. Creation and production of the cellular models
2. Development of bioinks and bioprinting process
3. Maturation and evaluation of the printed models

BIOPRINTING TECHNOLOGIES

3D Printing:

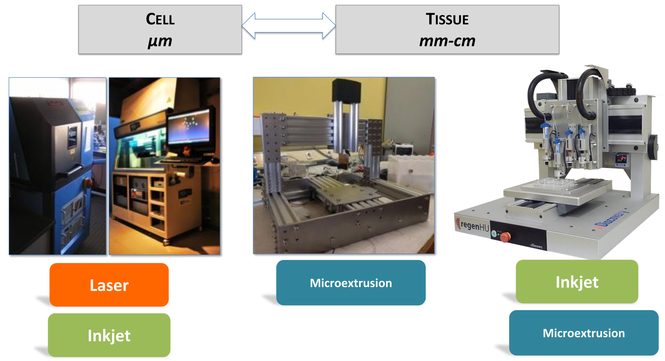


3D Bioprinting:

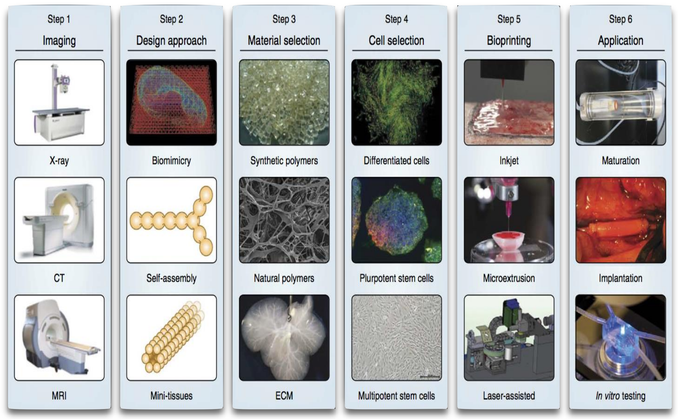


Murphy, S.V., and Atala, A. (2014).
3D bioprinting of tissues and organs.
Nature Biotechnology 32, 773–785.

BIOPRINTING TECHNOLOGIES DEPLOYED AT THE ART



BIOPRINTING PROCESS



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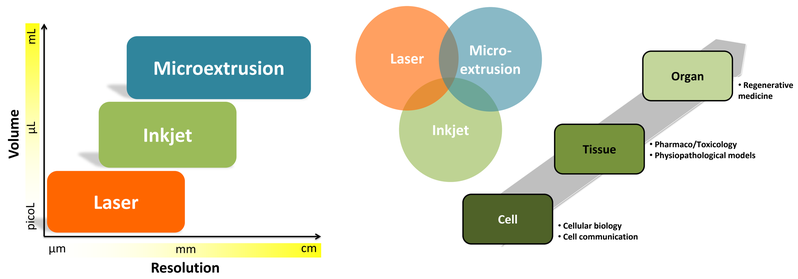
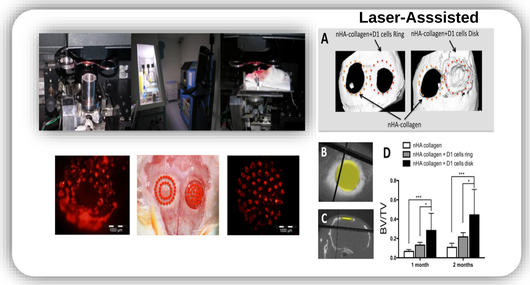
COMPLEMENTARY TECHNOLOGIES



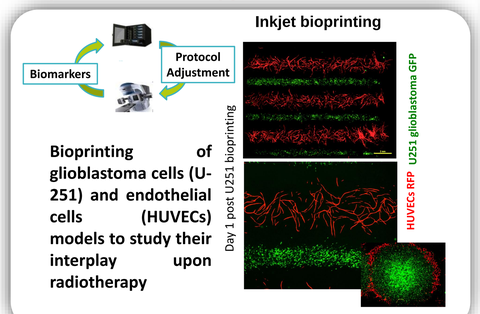
We synergize our expertize in Biology, Chemistry and Physics to provide an interdisciplinary input on the development of biofabrication projects.

ONGOING PROJECTS

In vivo and *In situ* bioprinting

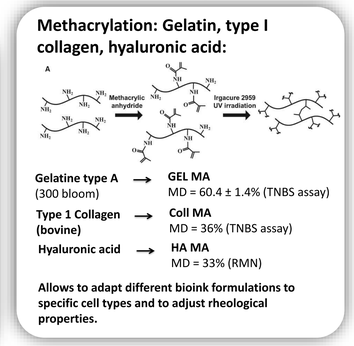


Bioprinting tumor models for the study of tumor response to radiotherapy

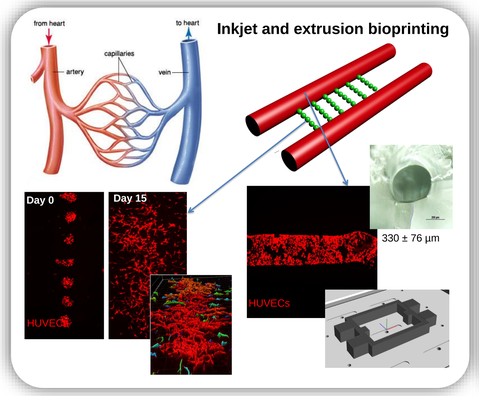


Bioprinting of glioblastoma cells (U-251) and endothelial cells (HUVECs) models to study their interplay upon radiotherapy

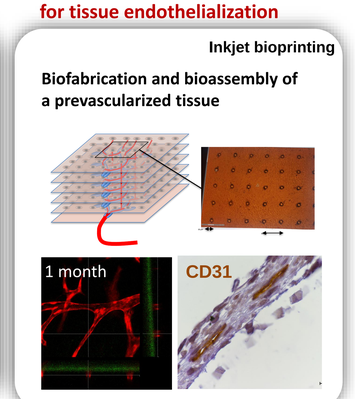
Bioink development



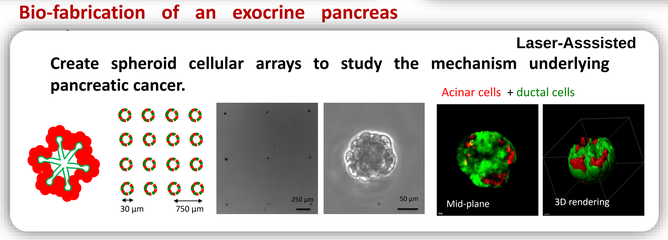
Hyerarquical Perfusable systems



Extracellular matrix as a biopaper for tissue endothelialization



Bio-fabrication of an exocrine pancreas



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