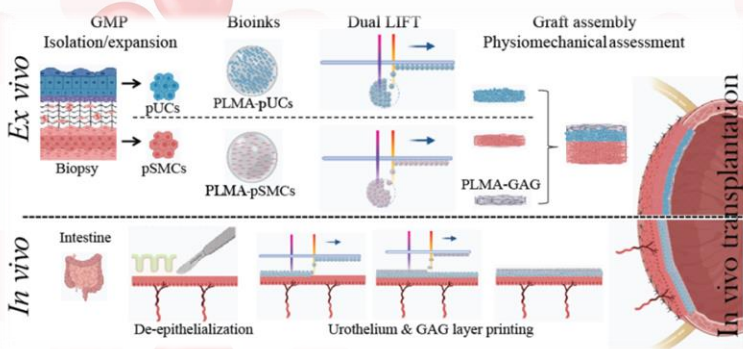


UR Print

Urinary Bladder Bioprinting For Fully Autologous Transplantation



Project Objectives

The aim of UroPrint is to laser print fully functional immunocompatible urothelial tissue ex vivo and in vivo for bladder augmentation and replacement. This vision is enabled by combining and advancing a number of achievements in the fields of optics and laser technologies, materials, engineering and micro-instrumentation, genetics, cell biology and experimental surgery. We propose to pursue two equally novel approaches: i) print ex vivo fully autologous bladder tissue employing primary urothelial cells (pUCs) and smooth muscle cells (pSMCs) embedded within a novel xeno-free human-based hydrogel from methacrylated platelet lysate (PLMA); ii) in vivo print autologous pUCs in PLMA directly onto de-epithelialized intestinal muscle which preserves its original vasculature. The overall goal of the UroPrint project is to:

- to integrate all ex vivo cell processes under GMP compliance
- to generate engineered bladder tissue using novel scaffolds ex vivo
- to develop a prototype for elasticity and permeability measurements
- to bioprint in vivo on cleared intestinal muscle tissue

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Project Coordinator:

Dr. APOSTOLOS KLINAKIS

Biomedical Research Foundation of the Academy of Athens (BRFAA)



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para a Investigação e Desenvolvimento



Key Facts

- 4 years project
- 3.06 M€ project budget
- 6 partners
- 4 countries

Project Impact

UroPrint project will make a significant contribution and provide a viable solution to the existing medical problem of enterocystoplasty and urine diversion while substantially advancing technologies and concepts that could impact other fields in regenerative medicine. UroPrint's belief is that cystoplasty, without the current side effects, could become a viable option for the majority of bladder cancer patients improving their quality of life, while at the same time, significantly reducing the cost of bladder cancer treatment.

Project Team

UroPrint brings together key European members with diverse and complementary expertise, distinguished scientists of renowned institutions or companies, ranking high in the respective European countries which are qualified and dedicated to UroPrint's needs. Their respective infrastructures can fully support their efforts enabling them to provide the EU with new disruptive knowledge which will be implemented in UroPrint's products and services.

Website:

www.uroprint.eu/