

# GLAM: Innovative device for personalised diagnosis and therapy monitoring for genitourinary cancers

## Challenge

Currently, differential cancer diagnosis takes place daily in clinical settings for both patient stratification and monitoring patient responses to existing treatments. However, the outcome of this diagnosis today is still poor, with many deficiencies and false positives and negatives due to the low sensitivity and specificity of available methodologies. Moreover, as new targeted therapies are available to patients and to oncologists there is a huge need to improve personalised diagnosis and therapy.

## Market

Kidney, bladder, and prostate cancers are the most common genitourinary cancers, with 0.39, 0.47, and 1.33 million new cases worldwide in 2017. About 1 man in 8 will be diagnosed with prostate cancer during his lifetime, while bladder cancer is the fourth most common cancer in men, but it's less common in women.

## Asset

GLAM develops an integrated device based on novel label-free photonic biosensors with ultra-sensitivity, simplicity of use, portability, multiplexing and low cost. GLAM capitalises on the unprecedented sensitivity achieved using laser micro-ring resonators to detect key biomarkers in tumour development and treatment.

The GLAM device is a new diagnostic tool to detect biomarkers from biofluids, obtained in a non-invasive manner, specifically in urine and focusing on genitourinary cancers, enabling oncologists to take better treatment decisions.

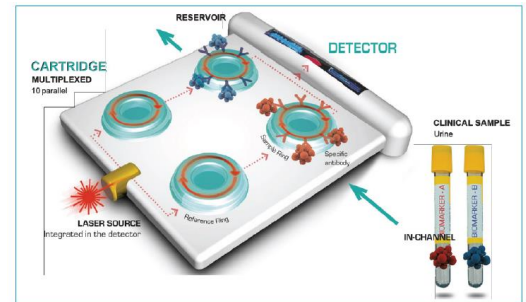
GLAM consortium already designed and generated the first prototypes of micro-ring structure:

- Antibodies have already been functionalised to the new micro-ring structures
- Patient recruitment has started to collect urine samples
- Preliminary preclinical proof of principle with a soluble biomarker and its corresponding detecting antibody.
- Several aspects related to technical documentations are already implemented by all the consortium partners which will serve as the regulatory basis for the CE Certification and ISO 13485

## Asset Value

- ❖ Miniaturised, ultra-sensitive, robust, reliable, fast, and cost-effective device, capable of multiplexed biomarker level determination
- ❖ Use of urine as the biological material
- ❖ Use of cheap, environmentally friendly, disposable cartridges
- ❖ Rapidity to read the samples through the laser application

GLAM project develops a device to monitor and diagnose genitourinary cancers in a personalised way, rapidly, and at low cost.



## Uses

- ❖ Diagnostic of:
  - Bladder cancer
  - Prostate cancer
  - Renal cancer

## Team

Elena Martinez - Scientific Leader  
Martina Giovannella - Tech Transfer Manager  
Eduardo Salas - Head of Tech Transfer

## Intellectual Property Status

"SELF-REFERENCED SENSOR"  
PCT/EP2020/061820 Priority Date: 30/04/2019  
Applicants: IBEC, ICFO, Univ. of Twente, Novelic, LEITAT

## Exploitation Plan

Patent available for licensing with technical cooperation / Technical co-development

## Stage of Development

TLR 3/4: Proof of concept done and functional verification ongoing

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