

# 快速尿液微型核酸偵測系統輔助診斷 泌尿道上皮癌

## 主要領域

## 創新檢測技術

### ■ 產品/技術簡介

- 我們發展一種免反轉錄及免聚合酶鏈結反應擴增序列而直接結合奈米金球標的、雙雜交反應與奈米金屬結構的多通量微流體奈米晶片光學感測平台，並檢測泌尿道上皮癌的微型核酸標記分子，進行癌復發的先期監測，以作為這一個通用的分子診斷檢測平台的應用展示。

### ■ 應用: 癌症檢測

- 泌尿道上皮癌檢測
- 腎臟癌檢測
- 攝護腺癌檢測

### ■ 優勢

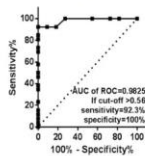
- 非侵入式、低檢測成本、快速診斷
- 高敏感性和高專一性準確診斷

### ■ 專利現況

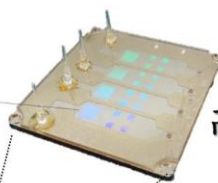
- 台灣專利 I547373, 2016/09/01 核准
- 大陸專利 ZL 201410471384.5, 2016/12/21 核准
- 美國專利 10,379,045 B2, 2019/08/13 核准
- 美國實用專利申請案 (16/940,284)，台灣、大陸及歐盟的專利申請中

## 核心技術

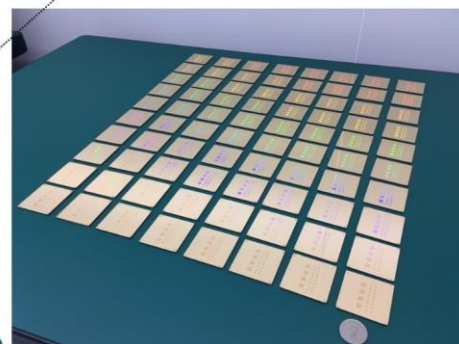
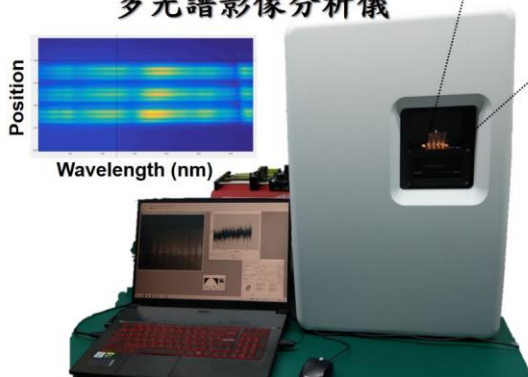
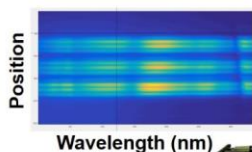
### 高專一性微型核酸標記分子



### 高靈敏度微流道奈米晶片



### 多光譜影像分析儀



# Rapid Urothelial Carcinoma Diagnosis

## Research Area

## Innovative Detection Technology

### ■ Technical statement:

- We developed a optical sensing platform for molecular diagnostics, which utilizes functionalized gold nanoparticles, the double hybridization method and gold nanostructures instead of the use of the reverse transcription of microRNAs and polymerase chain reaction. To demonstrate the applications of this universal sensing platform for molecular diagnostics, the detection of specific microRNA biomarkers in urine for early monitoring of urothelial carcinoma recurrence was conducted.

### ■ Applications:

*Urothelial carcinoma, kidney cancer and prostate cancer diagnosis*

### ■ Advantages:

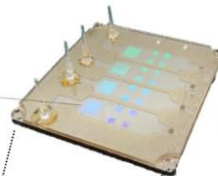
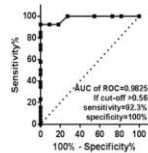
- Non-invasive, cost-effective and rapid diagnosis
- High sensitivity and specificity

### ■ Patent status:

- Taiwan I547373, issued at 2016/09/01
- China ZL 201410471384.5, issued at 2016/12/21
- US 10,379,045 B2, issued at 2019/08/13
- DETECTION OF A TUMOR IN A URINARY ORGAN, PCT

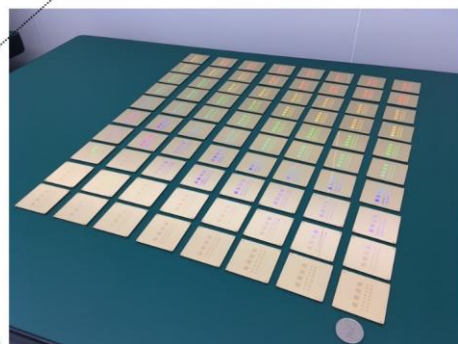
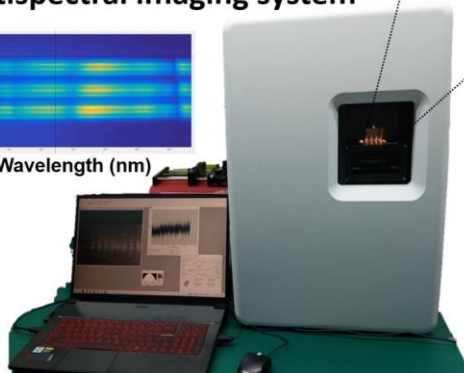
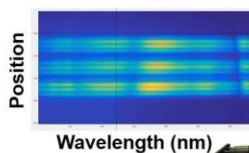
## Our Core Technologies

### Specific urinary miRNA biomarkers



### Sensitive microfluidic nanochips

### Multispectral imaging system



計畫主持人 Project PI



李光立博士

計畫主持人 Project Co-PI



魏培坤研究員

計畫成員 Member



鄭致言研究員



林恆教授



陳錫賢醫師



侯憲三博士

- Contact person: Dr. Kuang-Li Lee (李光立 博士)
- TEL: +886-2-7750-5500 #1599
- Email: [klee@gate.sinica.edu.tw](mailto:klee@gate.sinica.edu.tw)