

Life Sciences Department

Lung CARD

CIGMH - Nanotheranostics Group



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Development of a microencapsulated feed for fish larvae

PhD in Inorganic Biochemistry

Innovative Platforms for MRI-Based applications

Objectives

The Lung CARD project aims to develop a cheap, rapid and reliable assay for the detection of somatic mutations.

To achieve this goal, we plan to use a microfluidic system for the amplification and detection of mutations associated with clinical assessment in lung cancer NSCLC, by hybridization of colloidal gold nanoprobcs.

Methodology

Design of nanoprobcs able to identify the specific gene sequences

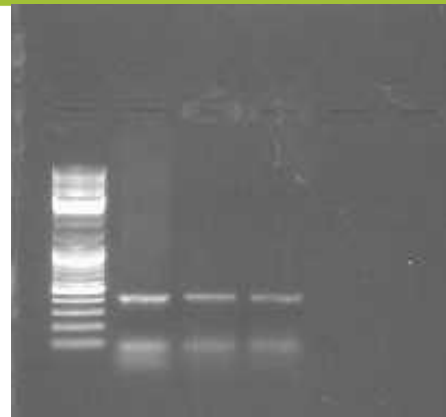
Characterization of the probes

Optimization of the hybridization conditions for identification of DNA amplicons

Optimization of PCR

Optimization of reaction parameters on the microfluidic system

Agarose gel of PCR products obtained using encapsulated PCR reagents



Expected Results

It is expected to develop an assay that can be repeatedly used as a prognostic tool as a consequence of a proper

- Synthesis of gold nanoparticles
- Functionalization of nanoparticles with DNA probes
- Hybridization of nanoparticles with target DNA

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