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FACULDADE DE CIÊNCIAS E TECNOLOGIA
UNIVERSIDADE NOVA DE LISBOA

Chemistry Department

Fast Screening Cardiac Biomarkers

REQUIMTE-CQFB
BioMarK Sensor Research/ISEP

BIOMARK Sensor Research

requimte
rede de química e tecnologia

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2010 to 2013 - PhD student
REQUIMTE - Department of Chemistry and BioMarK/ISEP
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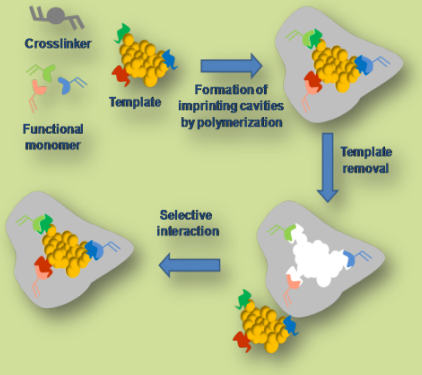
Skills & Expertise
Nanotechnology; Biomarkers; Electrochemistry; Biosensors; Materials Science; Chemistry.

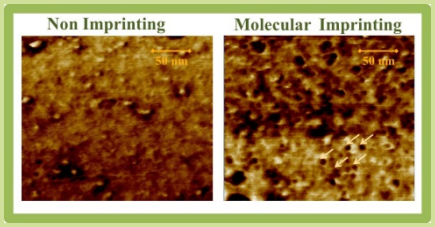
Objectives

The main goal of the project is to develop a low cost sensing-platform based on newly Molecular Imprinted Polymer (MIP) with electrochemical transduction for screening cardiac biomarkers in point-of-care, an excellent tool to support the Portuguese 'Via Verde Coronária'. These were applied to screen the conventional biomarkers of clinical interest all peptides in nature. These include troponin T, creatine kinase isoenzyme (CK-MB) and Myoglobin.



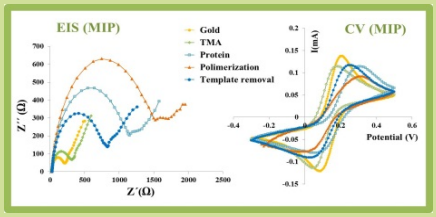
Methodology

(i) Synthesis of new sensing materials based on molecularly imprinted polymers of suitable selectivity and/or specificity.
(ii) Application of the sensing materials over conductive supports and analytical characterization of the sensing devices.
(iii) Application of the sensing units to real samples and validation of the analytical results.



Expected Results

(i) Construction of biosensing devices for each cardiac biomarkers relying on new plastic antibodies of suitable selectivity and stability. Full analytical characterization of at least one biosensing device for each biomarker.
(ii) Application of the single devices to real samples and validation of the obtained results. Identifying the most suitable biosensing units and, subsequently, establish a multi-analyte platform for application in clinical analysis, conducted in point-of-care.



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