

# Radioactive compounds for non-invasive detection of Gram-positive infectious diseases

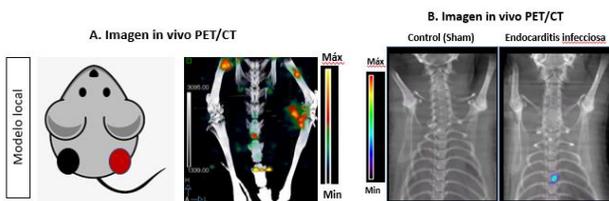
## Introduction

Infections caused by multidrug-resistant Gram-positive bacteria represent a major public health burden not only in terms of morbidity and mortality, but also in terms of increased expenditure on patient management and implementation of infection control measures.

There is an urgent need for proper diagnostic techniques in infectious diseases, which can help physicians decide on appropriate treatment to eradicate them.

## Invention

IiSGM has developed a novel and selective protein-based radiotracer  $[^{99m}\text{Tc}]\text{-DTPA-Collagen}$  for the selective detection of Gram-positive bacteria in nuclear medicine (SPECT, PET, etc). This radiotracer consist of the radioactive labelling of collagen type I.



## State of Development

The  $[^{99m}\text{Tc}]\text{-DTPA-Collagen}$  radiotracer is currently at TRL4, where an *in vivo* evaluation in two different animal models has been performed.

## Advantages

- ✓ The radiotracer is used for the early, selective, and non-invasive diagnosis of Gram-positive bacterial infections.
- ✓ The radiotracer compound can distinguish a sterile inflammatory process vs. an infectious process.
- ✓ The radiotracer compound is easy to produce and it is suitable for the diagnostic in nuclear medicine.
- ✓ The radiotracer contains Collagen type I which is the main structural protein in the extracellular matrix of connective tissues, and it has specific interaction with Gram-positive bacteria.
- ✓ The new radiotracer is administrated intravenous thanks to the high solubility in water and lack of undesired impurities.

## Application

The IiSGM radiotracer will be used in nuclear medicine to diagnose properly Gram-positive bacterial infections such as Infective Endocarditis and Osteomyelitis among others.

## Market potential

- The global infectious disease diagnostics market was valued at USD 15.53 Bn in 2018 and it is projected to reach USD 28.79 Bn in 2027, at a CAGR of 7.1%.
- IiSGM has initially been focused on two indications: Infective Endocarditis (IE) and Osteomyelitis (e.g. diabetic food disease).
- Incidence of IE ranges from 2.6 to 7 cases per 100,000 population per year. The size of IE diagnostics market is in the range of USD 2.2-2.5 Bn with a CAGR of 6% (2020-2030).
- Incidence of Osteomyelitis is approximately 13 per 100,000 in children and 90 per 100,000 in adults. The Osteomyelitis diagnosis market is estimated to be USD 2.8 M with a CAGR of 7% (2020-2027).

## IPR Position

The priority patent application has not been published yet. It is pending to be filled a PCT application to achieve international IP protection.

## Inventors

Beatriz Salinas, Manuel Desco, Patricia Muñoz, Emilio Bouza

## Opportunity

The radiotracer is available to be licensed to radiopharmaceutical companies

### Contact:

Antonio Rodríguez  
+34 914269279

innovacion@iisgm.com

Unidad de Apoyo a la Innovación

www.iisgm.com/innovacion