



## CANDIDA AURIS DNA DETECTION DEVICE

### DESCRIPTION OF THE TECHNOLOGY

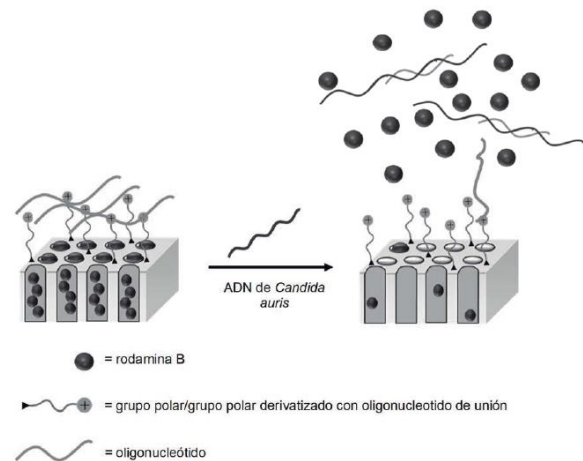
A new rapid and sensitive detection system for *Candida auris*, an emerging species highly resistant to currently available antifungal drugs, which can cause fungemia and deep infections associated with high mortality, especially in patients admitted to intensive care and resuscitation units. It Works through a system based on the synergy of hybrid porous, organic and inorganic materials, and on the technology of molecular gates based on specific oligonucleotide sequences.

A genetic chromium / fluoro indicator is introduced in the porous support for signaling, which will only be released in the presence of *C. auris* DNA as a consequence of hybridization of the target DNA with the oligonucleotide that blocks the entry of the pores.

This diagnostic method offers results in 30 minutes, compared to 2-4 days of traditional techniques, with a detection limit of 0.1 pg /  $\mu$ L of extracted DNA and high specificity.

It is a simple system, which does not require complex equipment, which, added to the low price of materials, makes the present invention an economically competitive device compared to the few alternatives currently found in the market.

It Will allow to improve the clinical prognosis of these infections and avoid an excessive prescription of antifungal drugs, which will have a positive impact on the economic sustainability of the health system, on the patient and on society, since it will not contribute to the increase in resistance to antifungal therapy.



### MARKET APPLICATION SECTORS

Hospital services and clinical microbiology companies for the diagnosis of infections by this microorganism.

### TECHNICAL ADVANTAGES AND BUSINESS BENEFITS

- Fast and sensitive system for biological samples, easy to use and easily transportable.
- It allows an early diagnosis and better adjustment of antimicrobial treatment.
- Reduces the response time associated with samples from patients with this type of infection (30-60 minutes versus 2-4 days for traditional techniques).
- It enhances the economic sustainability of the health system, avoiding the increase in resistance to antifungal therapy.
- It makes it possible to use the final model in the primary and / or outpatient medical consultation itself.
- It has less dependence on specialized laboratories.

### CURRENT STATE OF DEVELOPMENT

Currently, the technology has been validated in the laboratory with 17 blood samples from patients with fungemia caused by *C. auris* and, as negative controls, 5 blood samples from patients without fungemia.



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### INTELLECTUAL PROPERTY RIGHTS

National Patent / Priority Date: P202030357, April 27, 2020, jointly owned with UPV, UV and CIBER.

Title: Method for the rapid detection of *Candida auris* and the diagnosis of infection caused by this pathogen

### COLABORATION SOUGHT

Search for licensees: national or international biotechnology companies and pharmaceutical companies interested in the development of fungal diagnostic products.

### RELATED IMAGES

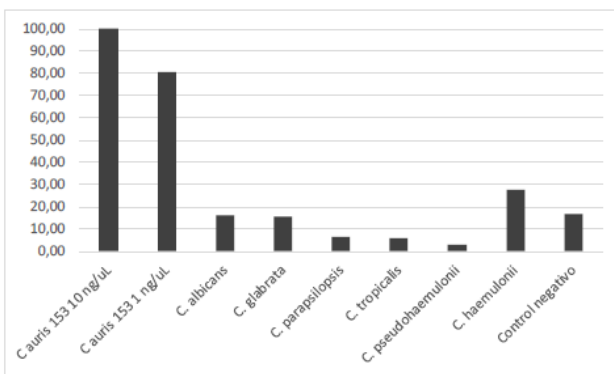


Image 1: Colorant liberation study for different interfering microorganisms.

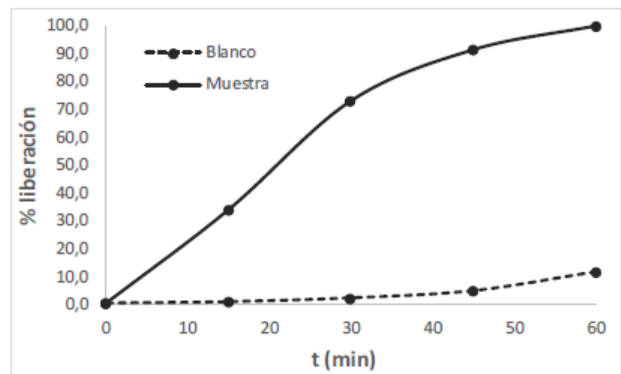


Image 2: Colorant liberation study in the presence of  $10^2$  cfu/mL of *C. auris* (sample) and absence (blank).

## CONTACT

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